CITY OF SAN MARCOS

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

Meritage Housing Development

Twin Oaks Valley Road
San Marcos, CA 92069

ASSESSOR'S PARCEL NUMBER(S):
218-330-26, 218-330-27, 218-330-28, 218-330-13, 218-330-09, 218-330-08, 218-330-05, 218-110-02, 218-110-03

ENGINEER OF WORK:

_____

Robert Dentino, PE 45629

PREPARED FOR:

Meritage Homes
5 Peters Canyon Suite #310
Irvine, CA 92606

Contact Person: Meritage Homes - Johanna Crooker
Phone: 949-299-3824
E-mail: johanna.crooker@mlcholdings.net

PDP SWQMP PREPARED BY:

Excel Engineering
440 State Place
Escondido, CA 92029
(760) 745-8188

DATE OF SWQMP:
11/21/2024

PLANS PREPARED BY:
Excel Engineering
440 State Place
Escondido, CA 92029
(760) 745-8188



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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

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PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Oakcrest Subdivision N. Twin Oaks Valley Rd
Permit Application Number: SP25-0004

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 San Marcos BMP Design Manual, which is a design manual for compliance with local City of San Marcos 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.

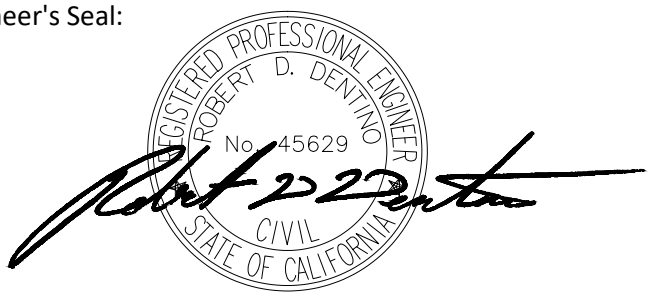
_____
Engineer of Work's Signature, PE Number & Expiration Date

Robert D. Dentino, RCE 45629, 12-31-2026
Print Name

Excel Engineering
Company

_____
Date

Engineer's Seal:



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PDP SWQMP PROJECT OWNER'S CERTIFICATION PAGE

Project Name: Oakcrest Subdivision N. Twin Oaks Valley Rd
Permit Application Number: SP25-0004

PROJECT OWNER'S CERTIFICATION

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

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

Johanna Crooker
Project Owner's Signature

Johanna Crooker
Print Name

Meritage Homes of California, Inc.
Company

01/06/2025
Date

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SUBMITTAL RECORD

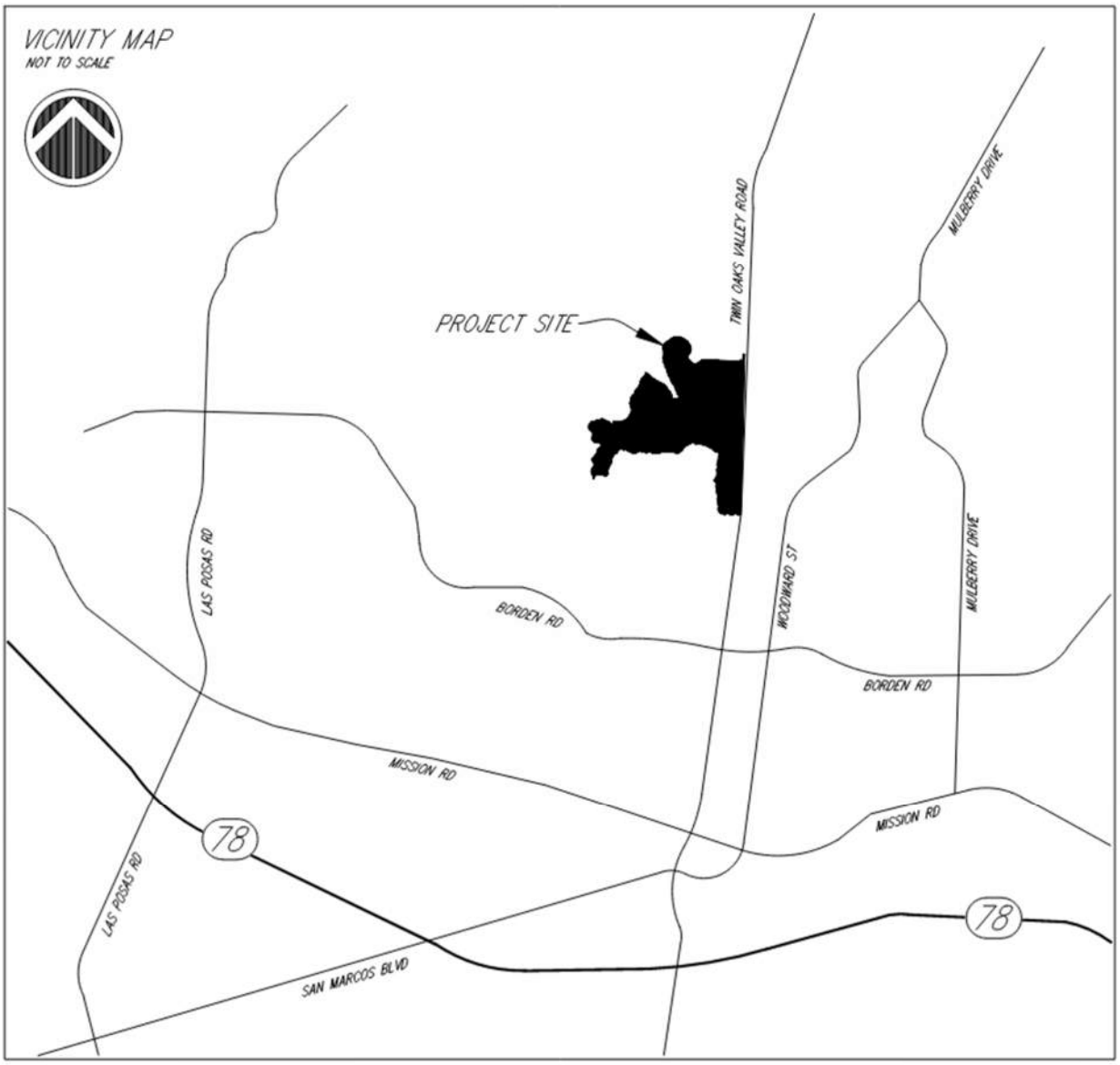
Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck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

Submittal Number	Date	Project Status	Summary of Changes
1	11/21/2024	☑ Preliminary Design / Planning/ CEQA ☐ Final Design	Initial Submittal
2	09/04/2025	☑ Preliminary Design / Planning/ CEQA ☐ Final Design	Second Submittal
3		☐ Preliminary Design / Planning/ CEQA Final Design	
4		☐ Preliminary Design / Planning/ CEQA ☐ Final Design	

PROJECT VICINITY MAP

Project Name: Oakcrest Subdivision N. Twin Oaks Valley Rd

Permit Application Number: SP25-0004



Applicability of Storm Water Best Management Practices (BMP) Requirements

(Storm Water Intake Form for all Development Permit Applications)
For detailed information please visit:
http://www.san-marcos.net/departments/development-services/stormwater/development-planning

Form I-1
[March 15, 2016]

Project Identification

Project Name: Meritage Subdivision on North Twin Oaks Valley Road

Description: Description: Residential Subdivision

Permit Application Number (if applicable): SP25-0004 | Date: 10/21/2024

Project Address: 1010, 1022, 1050, North Twin Oaks Valley Road, San Marcos, CA 92078

Determination of Requirements

This form is required as part of the City's application process. The purpose of this form is to identify potential land development planning storm water requirements that apply to development projects.

Development projects are defined as construction, rehabilitation, redevelopment, or reconstruction of any public or private projects. In addition, the identification of a development project, as it relates to storm water regulations, would truly apply to development and redevelopment activities that have the potential to contact storm water and contribute a source of pollutants, or reduce the natural absorption and infiltration abilities of the land.

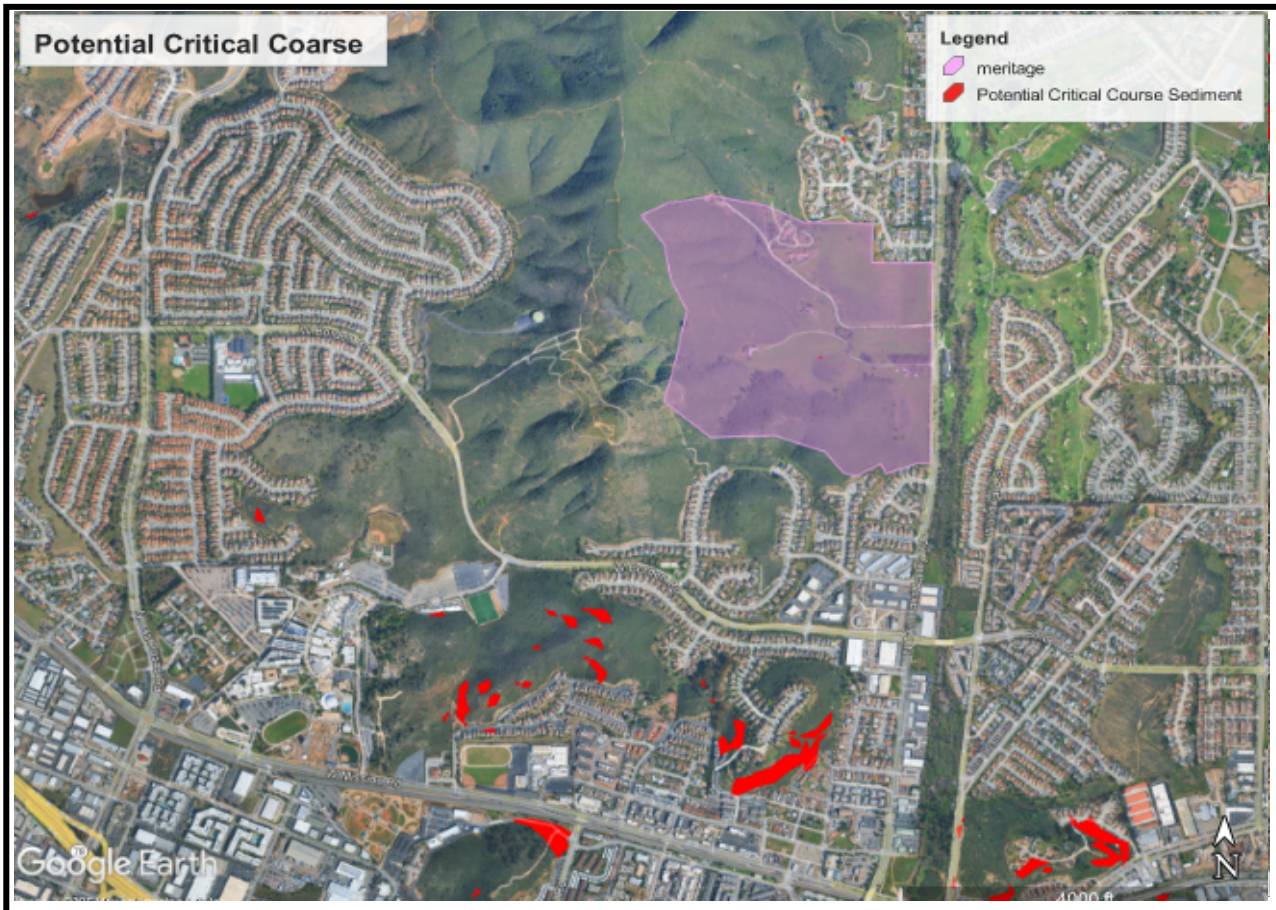
To access the BMP Design Manual, Storm Water Quality Management Plan (SWQMP) templates, and other pertinent information related to this program please refer to:
http://www.san-marcos.net/departments/development-services/stormwater/development-planning

Please answer each of the following steps below, starting with Step 1 and progressing through each step until reaching "Stop".

Step	Answer	Progression
Step 1: Based on the above, Is the project a "development project" (See definition above)? See Section 1.3 of the BMP Design Manual for further guidance if necessary.	☑ Yes	Go to Step 2.
	☐ No	Permanent BMP requirements do not apply. No SWQMP will be required. Provide brief discussion below. **STOP.**
Discussion / justification if the project is not a "development project" (e.g., the project includes *only* interior remodels within an existing building):		
Step 2: Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? **To answer this item, complete Form I-2, Project Type Determination. See Section 1.4 of the BMP Design Manual *in its entirety* for guidance.** **In addition to Section 1.4, please refer to the City's SWQMP Submittal Requirements form.**	☐ Standard Project	Only Standard Project requirements apply, including Standard Project SWQMP. **STOP.**
	☑ PDP	Standard and PDP requirements apply, including PDP SWQMP. **Go to Step 3 on the following page.**
	☐ Exception to PDP definitions	Standard Project requirements apply, and any additional requirements specific to the type of project. Provide discussion and list any additional requirements below. Prepare Standard Project SWQMP. **STOP.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:		

Form I-1 Page 2, Form Date: March 15, 2016		
Step 3 (PDPs only). Please answer the list of questions in this section to determine if hydromodification requirements reply to the proposed PDP. Does the project:		
Step 3a. Discharge storm water runoff directly to the Pacific Ocean?	☐ Yes	**STOP**. Hydromodification requirements do not apply.
	☑ No	Continue to Step 3b.
Step 3b. Discharge storm water runoff directly to an enclosed embayment, not within protected areas?	☐ Yes	**STOP**. Hydromodification requirements do not apply.
	☑ No	Continue to Step 3c.
Step 3c. Discharge storm water runoff directly to a water storage reservoir or lake, below spillway or normal operating level?	☐ Yes	**STOP**. Hydromodification requirements do not apply.
	☑ No	Continue to Step 3d.
Step 3d. Discharge storm water runoff directly to an area identified in WMAA?	☐ Yes	**STOP**. Hydromodification requirements do not apply.
	☑ No	Hydromodification requirements apply to the project. Go to Step 4.
Discussion / justification if hydromodification control requirements do <u>not</u> apply:		

Step 4 (PDPs subject to hydromodification control requirements only). Does protection of critical coarse sediment yield areas apply based on review of WMAA Potential Critical Coarse Sediment Yield Area Map? See Section 6.2 of the BMP Design Manual for guidance.	☐ Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). Stop.
	☑ No	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. Stop.



No Potential Critical Coarse Sediment Yield areas nearby that will influence the project.

Project Type Determination Checklist			Form I-2 [March 15, 2016]
Project Information			
Project Name/Description: Meritage Subdivision on North Twin Oaks Valley Road			
Permit Application Number (if applicable):			Date: 11/25/2024
Project Address: Meritage Subdivision on North Twin Oaks Valley Road			
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: 947,851.5 ft^2 (21.76) acres			
Is the project in any of the following categories, (a) through (f)?			
Yes ☑	No ☐	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☐	No ☑	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☑	No ☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

Form I-2 Page 2, Form Date: March 15, 2016			
Yes ☐	No ☑	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.*
Yes ☐	No ☑	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☑	No ☐	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See BMP Design Manual Section 1.4.2 for additional guidance.*

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

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

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

The following is for redevelopment PDPs only:

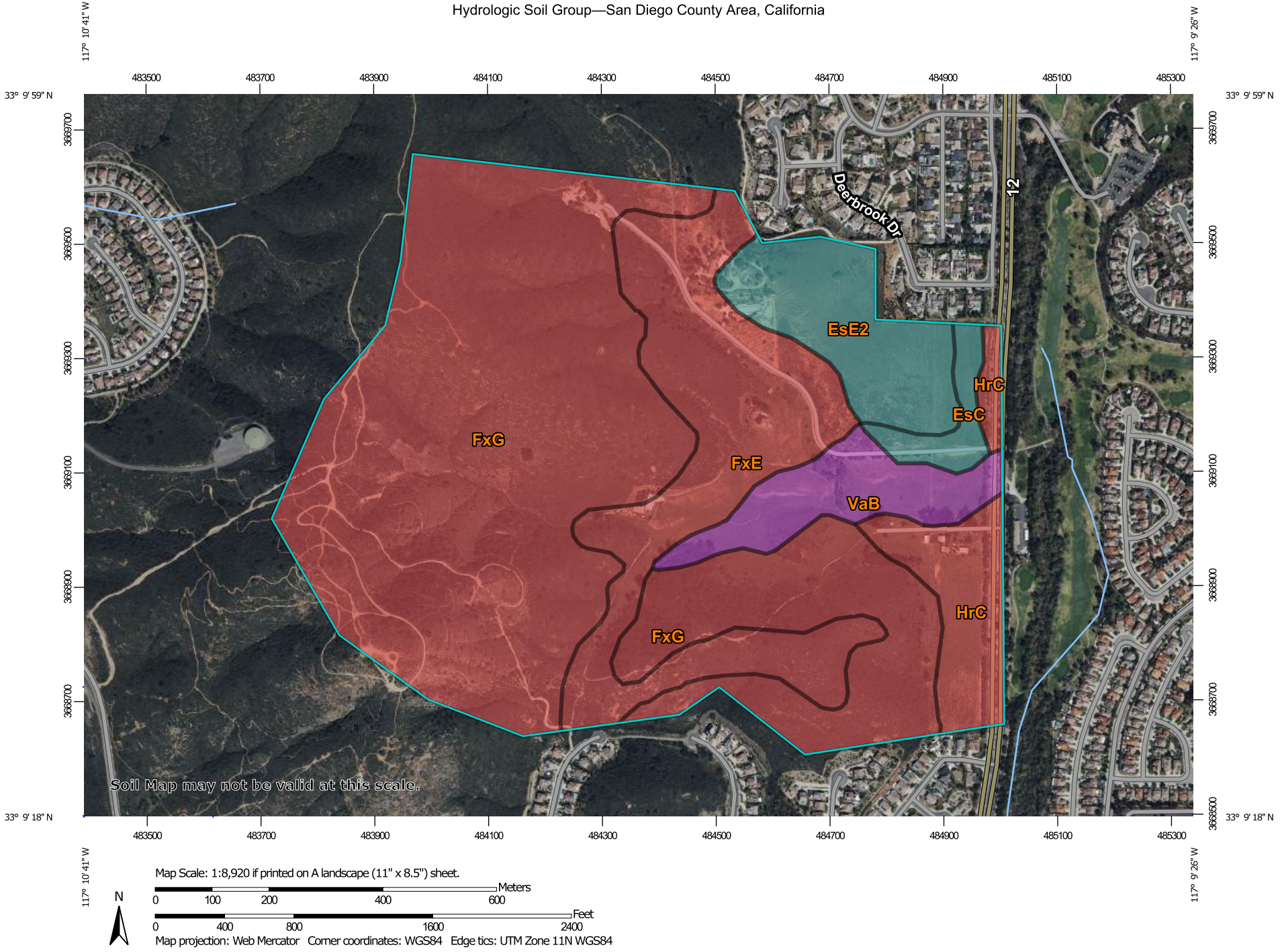
The area of existing (pre-project) impervious area at the project site is: _____ ft^2 (A)
The total proposed newly created or replaced impervious area is _____ ft^2 (B)
Percent impervious surface created or replaced (B/A)*100: _____%
The percent impervious surface created or replaced is (select one based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

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

OR

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

Site Information Checklist For PDPs	Form I-3B (PDPs) [March 15, 2016]
Project Summary Information	
Project Name	Meritage Subdivision on North Twin Oaks Valley Road
Project Address	1010 N. Twin Oaks Valley Rd
Assessor's Parcel Number(s) (APN(s))	218-330-(26;28), 218-330-13, 218-330-(08;09), 218-330-05, 218-110-(02;03)
Permit Application Number	SP25-0004
Project Hydrologic Unit	Select One: ☐ Santa Margarita 902 ☐ San Luis Rey 903 ☑ Carlsbad 904 ☐ San Dieguito 905 ☐ Penasquitos 906 ☐ San Diego 907 ☐ Pueblo San Diego 908 ☐ Sweetwater 909 ☐ Otay 910 ☐ Tijuana 911
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	The project is located in the Richland Hydrologic Sub Area of the San Marcos Hydrologic Area of the Carlsbad Hydrologic Unit (904.52).
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	130.1 Acres (5,927,185.9 Square Feet)
Area to be Disturbed by the Project (Project Area)	70.929 Acres (3,089,686 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	21.76 Acres (947,851.5 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	49.169 Acres (2,141,834.5 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	


117° 10' 41" W
117° 9' 26" W
33° 9' 59" N
33° 9' 18" N
483500
483700
483900
484100
484300
484500
484700
484900
485100
485300
3669700
3669500
3669300
3669100
3668900
3668700
3668500
Deerbrook Dr
12
EsE2
HrC
EsC
FxG
FxE
VaB
HrC
FxG
Soil Map may not be valid at this scale.
Map Scale: 1:8,920 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 100 200 400 600
Feet
0 400 800 1600 2400
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 20, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 14, 2022—Mar 17, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EsC	Escondido very fine sandy loam, 5 to 9 percent slopes	C	4.8	1.9%
EsE2	Escondido very fine sandy loam, 15 to 30 percent slopes , eroded	C	19.6	7.7%
FxE	Friant rocky fine sandy loam, 9 to 30 percent slopes	D	49.6	19.5%
FxG	Friant rocky fine sandy loam, 30 to 70 percent slopes	D	149.7	59.0%
HrC	Huerhuero loam, 2 to 9 percent slopes	D	15.4	6.1%
VaB	Visalia sandy loam, 2 to 5 percent slopes	A	14.6	5.8%
Totals for Area of Interest			**253.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Description of Existing Site Condition

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

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

Description / Additional Information:

The existing site is an agricultural area with a few homes on it. There are three soil types A, D and C. The main valley being A soil.

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;
(2) Is runoff from offsite conveyed through the site? If yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site;
(3)Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels; and
(4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations.

Describe existing site drainage patterns:

The majority of the existing offsite surface slopes generally from the West and travels easterly through several natural seasonal waterways. Water then confluences into an agricultural area that has a fairly flat surface and consisting of a combination of Hydrologic soil types "A", "C" and, "D". south. When the water reaches various discharge points along Twin Valley Oaks, (3 pocs along Twin valley Oaks and 1 in the existing housing development to the north)

There are existing structures including residential buildings on site. The site is currently used for agriculture purposes and as such been graded heavily in the lower flatter portions of the site.

Description of Proposed Site Development

Project Description / Proposed Land Use and/or Activities:

The project is proposing to building a residential tract consisting of condos for medium density residential and larger residential lots for lower density residential purposes. There are planned parks being proposed as well as all streets, lighting, utilities and, amenities for a such a project.

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

The proposed impervious areas of the project will include a residential buildings, flatwork around buildings, associated streets and, various parking areas.

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

The proposed pervious areas of the project will include 14 biofiltration BMPs (BF-2), approximately 40 Street trees and a detention area to intercept offsite water. There will be residential lots that will be maintained by the owners with rules established by an HOA. All private streets and slopes will have landscaping maintained by the HOA and will be in accordance with the City of San Marcos landscape requirements.

Does the project include grading and changes to site topography?

☑ Yes

☐ No

Description / Additional Information:

The proposed grading will shift some of the natural drainage from one POC to another and thus will be mitigated for. This is to accommodate streets and homes without slopes becoming too steep for future residents.

Description of Proposed Site Drainage Patterns

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

☑ Yes
☐ No

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

Describe proposed site drainage patterns:

The project proposes to build numerous biofiltration basins that in various locations that will intercept, treat and then convey the water to an underground stormwater system to confluence with storm lines that have intercepted the offsite water around the site. The lines will be sized in final engineering to reflect the HGL levels and ensure proper sizing. Water onsite will sheet flow to curb inlets which will discharge to basins.

Along the main entrance to the residential tract, which is approximately where POC-2 is located; is the main 66 inch line that will convey most of the water from the site. All water this POC will confluence in several areas to this line.

The Southern most driveway will be the location of POC-1. This POC will have a single biofiltration basin on site, then a vegetated swale down in the public area to treat the driveway.

The existing housing track to the north discharges water to an existing channel that then goes to a culvert. The proposed project will to be to remove that existing channel and replace it with a sized culvert to keep all stormwater underground. This connection will be where POC-3 and POC-4 will discharge through the site then under Twin Oaks Valley Rd. In an existing Culvert.

Form I-3B Page 6 of 10, Form Date: March 15, 2016

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

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

The flow path of storm water from the project site discharge the upper of San Marcos Creek then to the Lake San Marcos. The flow path continues by discharging into the lower San Marcos Creek into the Batiquitos Lagoon and ultimate discharge to the Pacific Ocean.

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
San Marcos Creek	Pesticides, Toxicity, Pathogens, TDS, Benthic Community Effects, Metals, Nutrients	Nutrients
Lake San Marcos	Metals, Pathogens	
Batiquitos Lagoon	Trash, Pathogens, Toxicity	

Identification of Project Site Pollutants*

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

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

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

Hydromodification Management Requirements

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

☑ Yes, hydromodification management flow control structural BMPs required.

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

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

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

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

Critical Coarse Sediment Yield Areas*

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

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

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.

Water runs easterly to N. Twin Valley Oaks Road. Once to the road there are 4 POCs that water discharges to. The most northern Poc being Poc 4 is on Deerbrook dr. Moving southward the existing channel along Twin Oaks Valley Rd. would contain the 3 Poc. Further south where the existing channel and the existing box culverts converge has the 2nd poc before the confluence of water. The first Poc is located behind the homes along Legacy dr in a brow ditch that discharges to N. Twin Oaks Valley Rd.

Has a geomorphic assessment been performed for the receiving channel(s)?

- ☑ No, the low flow threshold is 0.1Q2 (default low flow threshold)
- ☐ Yes, the result is the low flow threshold is 0.1Q2
- ☐ Yes, the result is the low flow threshold is 0.3Q2
- ☐ Yes, the result is the low flow threshold is 0.5Q2

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

Discussion / Additional Information: (optional)

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.

There is a ridgeline requirement to keep development below a certain position and leave the tops of the hills open space.

Optional Additional Information or Continuation of Previous Sections As Needed

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

Source Control BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)	Form I-4 [March 15, 2016]

Project Identification

Project Name: Meritage Subdivision on North Twin Oaks Valley Road

Permit Application Number: SP25-0004

Source Control BMPs

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

Answer each category below pursuant to the following.

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

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

Form I-4 Page 2 of 2, Form Date: March 15, 2016			
Source Control Requirement	**Applied?**		
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☑ Yes	☐ No	☐ N/A
Discussion / justification if SC-5 not implemented:			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)			
☑ On-site storm drain inlets	☑ Yes	☐ No	☐ N/A
☐ Interior floor drains and elevator shaft sump pumps	☐ Yes	☐ No	☑ N/A
☑ Interior parking garages	☑ Yes	☐ No	☐ N/A
☑ Need for future indoor & structural pest control	☑ Yes	☐ No	☐ N/A
☑ Landscape/Outdoor Pesticide Use	☑ Yes	☐ No	☐ N/A
☑ Pools, spas, decorative fountains, and other water features	☑ Yes	☐ No	☐ N/A
☐ Food service	☐ Yes	☐ No	☑ N/A
☑ Refuse areas	☑ Yes	☐ No	☐ N/A
☐ Industrial processes	☐ Yes	☐ No	☑ N/A
☐ Outdoor storage of equipment or materials	☐ Yes	☐ No	☑ N/A
☐ Vehicle and Equipment Cleaning	☐ Yes	☐ No	☑ N/A
☐ Vehicle/Equipment Repair and Maintenance	☐ Yes	☐ No	☑ N/A
☐ Fuel Dispensing Areas	☐ Yes	☐ No	☑ N/A
☐ Loading Docks	☐ Yes	☐ No	☑ N/A
☑ Fire Sprinkler Test Water	☑ Yes	☐ No	☐ N/A
☐ Miscellaneous Drain or Wash Water	☐ Yes	☐ No	☑ N/A
☐ Plazas, sidewalks, and parking lots	☑ Yes	☐ No	☐ N/A
Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for <u>all</u> "No" answers shown above.			

Site Design BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)	Form I-5 [March 15, 2016]

Project Identification

Project Name: Oakcrest Subdivision N. Twin Oaks Valley Rd

Permit Application Number SP25-0004

Site Design BMPs

All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the Model BMP Design Manual for information to implement site design BMPs shown in this checklist.

Answer each category below pursuant to the following.

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

Site Design Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	☑ Yes	☐ No	☐ N/A
Discussion / justification if SD-1 not implemented:			
SD-2 Conserve Natural Areas, Soils, and Vegetation	☑ Yes	☐ No	☐ N/A
Discussion / justification if SD-2 not implemented:			
SD-3 Minimize Impervious Area	☑ Yes	☐ No	☐ N/A
Discussion / justification if SD-3 not implemented:			
SD-4 Minimize Soil Compaction	☑ Yes	☐ No	☐ N/A
Discussion / justification if SD-4 not implemented:			
SD-5 Impervious Area Dispersion	☑ Yes	☐ No	☐ N/A
Discussion / justification if SD-5 not implemented: There is an area of the future park currently as a dispersion area. Depending on the design of the future park this may change and will be updated.			

Form I-5 Page 2 of 2, Form Date: March 15, 2016			
Site Design Requirement	**Applied?**		
SD-6 Runoff Collection	☑ Yes	☐ No	☐ N/A
Discussion / justification if SD-6 not implemented:			
SD-7 Landscaping with Native or Drought Tolerant Species	☑ Yes	☐ No	☐ N/A
Discussion / justification if SD-7 not implemented:			
SD-8 Harvesting and Using Precipitation	☐ Yes	☐ No	☑ N/A
Discussion / justification if SD-8 not implemented:			

Summary of PDP Structural BMPs	Form I-6 (PDPs) [March 15, 2016]

Project Identification

Project Name: Meritage Subdivision on North Twin Oaks Valley Road

Permit Application Number:

PDP Structural BMPs

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

PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the BMP Design Manual).

Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the BMP Design Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

Step 1, the project was divided up and evaluated at the DMA scale. Each DMA area was classified as Self-Treating, Self-Retaining or Draining to a Best Management Practice (BMP).

Step 2, For the DMAs that drain to BMPs, the appropriate runoff factors were applied to each area and the required Design Capture Volume (DCV) of each sub area calculated. For this project, Harvest and reuse is not considered feasible.

Step 3, due to the some of the soils having A and C soil open bottom BMPs can be considered depending on results from geotechnical report.

Step 3A&B for the no infiltration condition leads to section 5.5.3 which is the Biofiltration BMP category. The various sizing methods included in Appendix B.5 were followed and the entire DCV can be treated within the proposed BMPs.

Step 4, each Biofiltration BMP area is sized in accordance with the fact sheet BF- 2 found in appendix E of the BMP design manual. This project requires hydromodification controls, so the Biofiltration units accomplish both storm water treatment and flow control mitigation in an integrated design.

(Continue on page 2 as necessary.)

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

(Continued from page 1)

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

Structural BMP ID No. BMP-A

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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-B	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-C	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-D	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-E	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-F	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-G	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-H	
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) UTILIZING STREET TREES FOR BMP-H	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-I	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-J	
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 DETENTION BASIN ☐ 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) PEAK FLOW AND HYDROMOD CONTROL FACILITY	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-K	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-L	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-M	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-N	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-O	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-P	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-Q	
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) UTILIZING STREET TREES FOR BMP-Q	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

Form I-6 Page 4 of 4 (Copy as many as needed) Form Date: March 15, 2016	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-R	
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) UTILIZING DISPERSION FOR BMP-R	
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)	The Engineer of Work Robert Dentino Excel Engineering 440 State Place Escondido, CA 92029
Who will be the final owner of this BMP?	Future HOA
Who will maintain this BMP into perpetuity?	Future HOA
What is the funding mechanism for maintenance?	Future HOA

ATTACHMENT 1
BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

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

Attachment 1A

DMA Exhibit

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

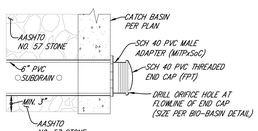
The DMA Exhibit must identify:

- ☑ Underlying hydrologic soil group
- ☑ Approximate depth to groundwater
- ☑ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- ☑ Critical coarse sediment yield areas to be protected
- ☑ Existing topography and impervious areas
- ☑ Existing and proposed site drainage network and connections to drainage offsite
- ☑ Proposed demolition
- ☑ Proposed grading
- ☑ Proposed impervious features
- ☑ Proposed design features and surface treatments used to minimize imperviousness
- ☑ Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
- ☑ Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Form I-3B)
- ☑ Structural BMPs (identify location, type of BMP, and size/detail)



DETAIL
"NO DUMPING" AT CATCH BASINS

NOTE: ALL CATCH BASINS WITH GRATES SHALL BE STENCILED WITH CITY REQUIRED ITEM PER ABOVE DETAIL (DAS MANUFACTURING #220 OR EQUIVALENT).



LOWER ORIFICE DETAIL
NOT TO SCALE

PERMANENT WATER QUALITY TREATMENT FACILITY

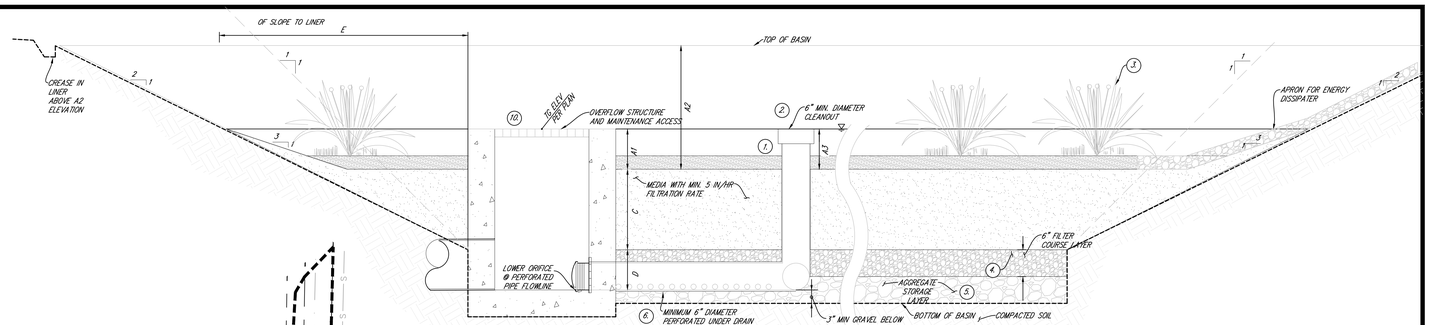
KEEPING OUR WATER WAYS CLEAN
MAINTAIN WITH CARE – NO MODIFICATIONS WITHOUT AGENCY APPROVAL

DETAIL
WATER QUALITY SIGN– PLACED AT EACH BIOFILTRATION BASIN

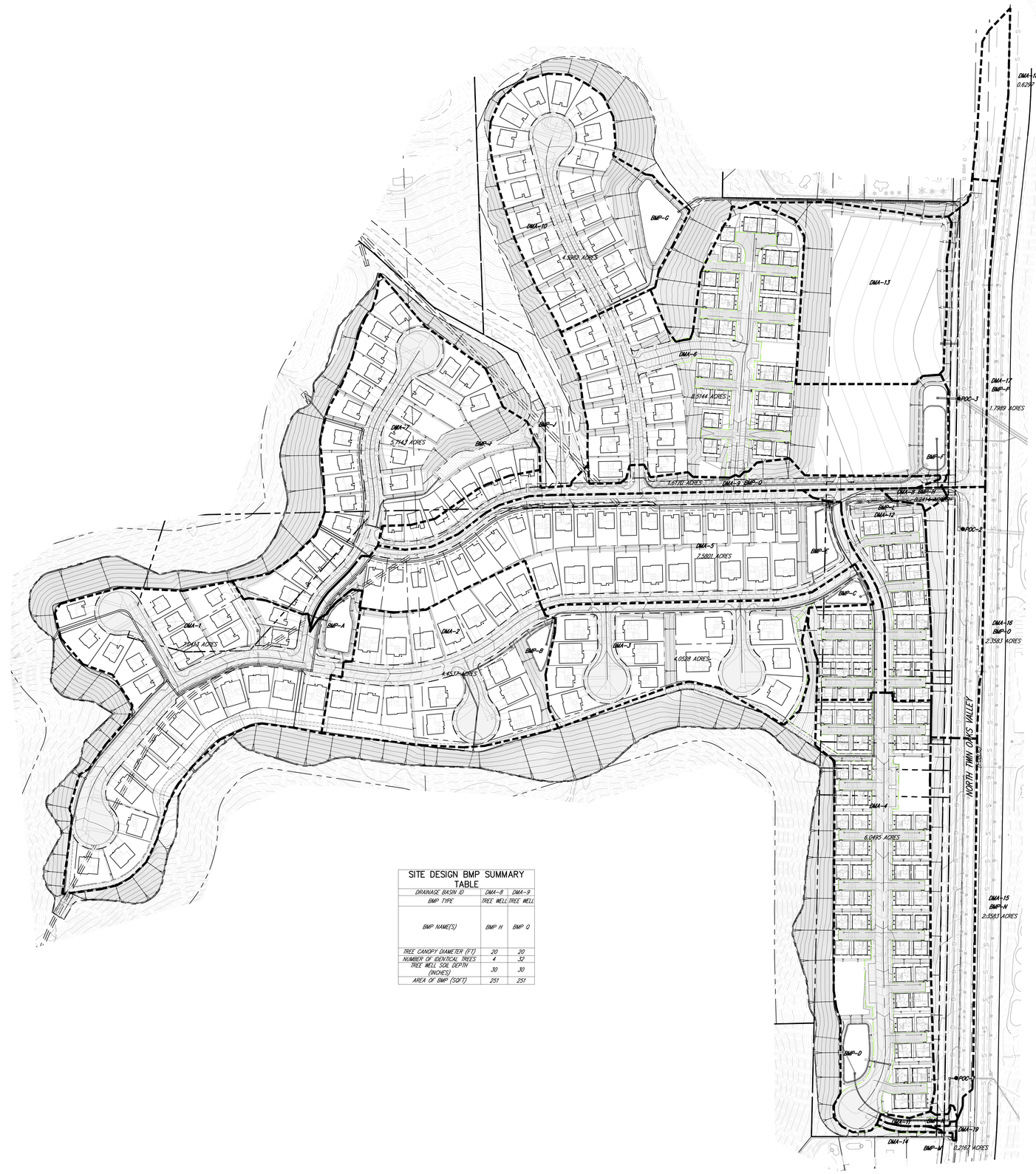
NOTE: ALL BIOFILTRATION AREAS WILL HAVE A SIGN POSTED TO BE VISIBLE AT ALL TIMES.



6" PVC PIPE PERFORATION LAYOUT DETAIL
NOT TO SCALE



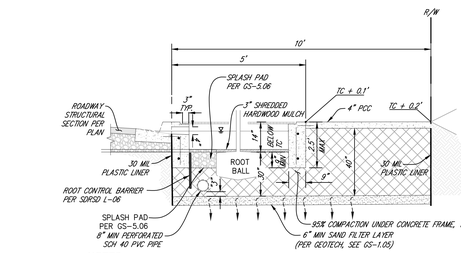
BIOFILTRATION BASIN DETAIL
NOT TO SCALE



SITE DESIGN BMP SUMMARY TABLE		
DRAINAGE BASIN ID	DMA-8	DMA-9
BMP TYPE	TREE WELL	TREE WELL
BMP NAME(S)	BMP H	BMP Q
TREE CANOPY DIAMETER (FT)	20	20
NUMBER OF IDENTICAL TREES	4	32
TREE WELL SOIL DEPTH (INCHES)	30	30
AREA OF BMP (SQFT)	251	251

STRUCTURAL BIO-BASIN SUMMARY TABLE

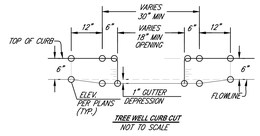
DMA NAME	DMA TYPE	BMP NAME	TYPE OF BMP	EFFECTIVE AREA (SQFT)	A1 (INCH) WATER QUALITY	A2 (INCH) TOP OF BASIN	A3 (INCH) CLEAN OUT	B (INCH) UPPER ORIFICE	C (INCH) MEDIA	D (INCH) GRAVEL	E (INCH) OFFSET	BOX RISER OVERFLOW STRUCUTRE SIZE (INCH)	ORIFICES DIAMETER	
													UPPER (INCH)	LOWER (INCH)
DMA-1	DRAINS TO BMP	BMP-A	BIOFILTRATION	10306	9	21	9	N/A	18	15	2.25	3X3	N/A	2.5
DMA-2	DRAINS TO BMP	BMP-B	BIOFILTRATION	5471	9	21	9	N/A	18	15	2.25	3X4	N/A	1.5
DMA-3	DRAINS TO BMP	BMP-C	BIOFILTRATION	5720	9	21	9	N/A	18	15	2.25	3X5	N/A	1.5
DMA-4	DRAINS TO BMP	BMP-D	BIOFILTRATION	10119	9	21	9	N/A	18	15	2.25	3X6	N/A	1
DMA-5	DRAINS TO BMP	BMP-E	BIOFILTRATION	10302	9	21	9	N/A	18	15	2.25	3X7	N/A	1.75
DMA-6	DRAINS TO BMP	BMP-F	BIOFILTRATION	8456	9	21	9	N/A	18	15	2.25	3X8	N/A	3
DMA-7	DRAINS TO BMP	BMP-I	BIOFILTRATION	7698	9	21	9	N/A	18	12	2.25	3X9	N/A	1.5
DMA-10	DRAINS TO BMP	BMP-G	BIOFILTRATION	5769	9	21	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-11 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-K	BIOFILTRATION	379	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-12 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-L	BIOFILTRATION	3201	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-14 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-M	BIOFILTRATION	200	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-15 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-N	BIOFILTRATION	1800	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-16 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-O	BIOFILTRATION	1275	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-17 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-P	BIOFILTRATION	2345	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5



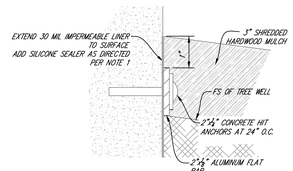
NOTES:

1. PONDING DEPTH PER DESIGN PLANS, 4" MAX.
2. WHERE APPLICABLE, REMOVE EXISTING CURB & GUTTER. CONSTRUCT CURB & GUTTER MONOLITHIC.
3. CURB & GUTTER TO BE CONSTRUCTED PER SDRSD G-02.
4. ELEVATIONS SHALL BE SHOWN ON PLANS WHERE INDICATED BY " " SYMBOL.
5. SEAL PLASTIC LINER TO ADJACENT IMPROVEMENTS AND EDGE RESTRAINTS PER GS-5.15.
6. CONCRETE SHALL BE 520-C-2500 UNLESS OTHERWISE SPECIFIED.
7. GUTTER TRANSITION LENGTH PER DESIGN PLANS; AN ADDITIONAL 2.5-FT CURB TRANSITION LENGTH IS RECOMMENDED FOR EVERY 1" OF ADDITIONAL GUTTER DEPRESSION.
8. PARALLEL STREET PARKING PROHIBITED FOR BMP'S WITH TREE WELL WITHOUT STRUCTURAL SOIL.
9. 3. IF NRCS HYDROLOGIC SOIL GROUP D IS ENCOUNTERED, OR IF THE DESIGN SUBSOIL INFILTRATION RATE IS LESS THAN 0.1 IN/HR, AN UNDERDRAIN PIPE SHALL BE EMBEDDED WITHIN THE STRUCTURAL SOIL & CONNECTED TO A NEARBY STORM DRAIN SYSTEM PER GS-5.12 & GS-5.13.
10. REFER TO GS-1.00 FOR ALL DETAILS NOT SHOWN HERE.

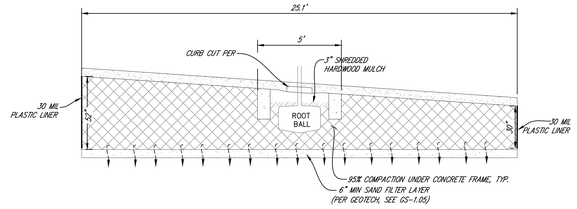
TREE WELL SECTION WIDTH SECTION



TREE WELL CURB CUT
NOT TO SCALE



LINER ATTACHMENT TO ADJACENT CONCRETE DETAIL



TREE WELL SECTION LENGTH SECTION

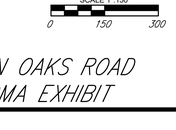
NOTES:

1. ON CLEAN CONCRETE SURFACE, ADHERE LINER TO CONCRETE WITH SILICONE SEALANT OR EQUIVALENT PER MANUFACTURER RECOMMENDATIONS TO TOP ½" OF LINER.
2. SECURE LINER TO CONCRETE WITH 2" ALUMINUM OR STAINLESS STEEL FLAT BAR AS DIRECTED PER PLAN.
3. AS AN ALTERNATIVE, HIT ANCHORS CAN BE SUBSTITUTED WITH STAINLESS STEEL ANCHORS AT 24" O.C. OR POWDER ACTUATED FASTENERS AT 12" O.C.
4. TRIM EXCESS LINER TO BE FLUSH WITH SURFACE ELEVATION.
5. CONTRACTOR MEANS AND METHODS SHOULD AVOID/MINIMIZE WRINKLES TO THE LINER.
6. PARALLEL STREET PARKING PROHIBITED WITH THIS BMP.

WATER QUALITY BASIN INSTALLATION NOTES:

1. 3 INCHES OF WELL-AGED, SHREDDED HARDWOOD MULCH.
2. AN UNDERDRAIN CLEANOUT WITH A MINIMUM 6-INCH DIAMETER AND LOCKABLE CAP IS PLACED EVERY 250 TO 300FEET AS REQUIRED BASED ON UNDERDRAIN LENGTH.
3. VEGETATION USED SHOULD BE SUITABLE FOR THE CLIMATE PER LANDSCAPE PLANS. LANDSCAPING SHALL ALSO BE CONSISTENT WITH APPENDIX E.26 OF THE CITY'S BMP MANUAL.
4. FILTER COARSE IS A MINIMUM OF 6 INCHES PROVIDED IN TWO SEPARATE 3 INCH LAYERS. THE TOP LAYER SHALL BE MADE OF ASTM C33 CHOKER SAND AND THE BOTTOM LAYER BE OF ASTM NO. 8 AGGREGATE. MARKERS STAKES SHALL BE USED TO ENSURE UNIFORM LIFT THICKNESS.
5. AASHTO NO. 57 STONE OR CLASS 2 PERMEABLE PER CAL TRANS SPECIFICATION 68-1.025 IS RECOMMENDED FOR THE AGGREGATE STORAGE LAYER. WASHED, OPEN-GRADED CRUSHED ROCK MAY BE USED, HOWEVER, A 4 INCH MINIMUM WASHED PEA GRAVEL FILTER COURSE LAYER AT THE TOP OF THE CRUSHED ROCK IS REQUIRED.
6. IMPERMEABLE LINER SHALL BE INSTALLED WHEN THE BIOFILTRATION BASIN IS WITHIN 10 FEET OF RETAINING WALLS OR BUILDING FOUNDATIONS, OR AS RECOMMENDED BY THE SOILS ENGINEER, OR REQUIRED BY THESE PLANS. IMPERMEABLE LINER SHALL BE 30 MIL THICK (PER COUNTY OF SAN DIEGO GREEN STREETS DESIGN STANDARD DRAWING GS-3.00 AND COUNTY GREEN STREETS SUPPLEMENT TO CAL TRANS SPECIFICATIONS 20-11.08B) CONFIGURED TO ENTIRELY ENCOMPASS THE SIDES OF THE WATER QUALITY BASIN.
7. IMPERMEABLE LINER BE CONSTRUCTED IN COMPLIANCE WITH THE COUNTY OF SAN DIEGO GREEN STREETS SUPPLEMENT TO CAL TRANS SPECIFICATIONS 20-11.08B.
8. BIOFILTRATION SOIL MEDIA LAYER (BSM) SHALL CONSIST OF 60% TO 80% BY VOLUME SAND, UP TO 20% BY VOLUME TOPSOIL, AND UP 20% BY VOLUME COMPOST (PER CITY OF SAN MARCOS BMP DESIGN MANUAL SECTION F.5) PLACED IN 6" LIFTS AND COMPACTED WITH WATER PRIOR TO THE NEXT LIFT. INITIAL PERMEABILITY SHALL BE 8" PER HOUR (WITH ASSUMED STABILIZED PERMEABILITY OF 5" PER HOUR).
9. THE AGGREGATE STORAGE LAYER SHALL BE COMPACTED IN ACCORDANCE WITH SOILS ENGINEER'S RECOMMENDATIONS.
10. OVERFLOW STRUCTURE TO HAVE A MINIMUM OF 12 INCHES OF FREEBOARD.
11. ALL LINER INSTALLATIONS, FIELD WELDING OF SEAMS, AND OBSERVATION OF SOIL MIX PLACEMENT SHALL REQUIRE SPECIAL INSPECTION BY THE PROJECT GEOTECHNICAL ENGINEER OR OTHER QUALIFIED PERSON. A LETTER CERTIFYING PROPER INSTALLATION SHALL BE PROVIDED TO THE ENGINEER OF RECORD TO ACCEPTANCE OF THE FACILITIES.
12. SPECIAL INSPECTION SHALL BE REQUIRED FOR CONSTRUCTION OF ALL BIOFILTRATION BASINS. INSPECTION SHALL BE PERFORMED BY A QUALIFIED INDIVIDUAL (SUCH AS: ENGINEER OF RECORD, QSD). INSPECTION SHALL INCLUDE:
    - VERIFICATION OF OVERALL DIMENSIONS PRIOR TO PLACEMENT OF MATERIALS;
    - PLACEMENT OF THE LINER, IF REQUIRED, AND SEAMS OR PENETRATIONS
    - PLACEMENT OF THE GRAVEL, FILTER MATERIALS, AND FILTER MEDIA;
    - ALL INLET AND OUTLET STRUCTURES INCLUDING UNDERDRAINS, IF REQUIRED.
    - CONTRACTOR SHALL TAKE PICTURES AT EACH STAGE OF INSTALLATION AND SUBMITTED TO ENGINEER FOR VERIFICATION OF INSTALL.

    INSPECTOR SHALL BE GIVEN A MINIMUM OF 48 HOURS PRIOR TO INSPECTION. UPON COMPLETION THE INSPECTOR SHALL PROVIDE A CERTIFICATION TO THE ENGINEER OF WORK.
13. PROPOSED MATERIALS, SUCH AS AGGREGATE, FILTER MATERIAL, AND FILTER MEDIA SHALL BE SUBMITTED TO THE ENGINEER OF WORK FOR APPROVAL.



TWIN OAKS ROAD
DMA EXHIBIT

HYDROLOGIC SOIL GROUP
THE ONSITE HYDROLOGICAL SOIL GROUP FOR THIS SITE IS TYPE D.

EXISTING SITE FEATURES:

- THE APPROXIMATE DEPTH TO GROUNDWATER IS GREATER THAN 20 FEET.
- THERE ARE NO NATURAL HYDROLOGIC FEATURES ON THE SITE.
- THE SITE PROPOSES TO CONNECT TO THE EXISTING PUBLIC STORM DRAIN SYSTEM LOCATED IN THE SOUTH EDGE OF THE SITE.
- BASED ON WATERSHED MAPPING OF POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS (CCSYA), THERE ARE NO CCSYA LOCATED WITHIN THE PROJECT BOUNDARY, OR TRIBUTARY TO THE RUNOFF BYPASSED AROUND THE SITE.

EXCEL ENGINEERING
LAND PLANNING • ENGINEERING • SURVEYING INC.
440 STATE PLACE, ESCONDIDO, CA 92029
PH (760)745-8118 FX (760)745-3234

SHEET 22 OF 21 SHEETS
WQMP EXHIBIT

Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

NOT FOR CONSTRUCTION

C:\ACADM\Engineering\1W1W-01\Sheets - 1W1W24 DMA.dwg, 8/8/2025 2:15 PM, JEROMAL PILOT (3)S

Attachment 1B

Tabular Summary of DMA's

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

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA-1 to A	DMA-2 to B	DMA-3 to C	DMA-4 to D	DMA-5 to E	DMA-6 to F	DMA-7 to I	DMA-10 to G	DMA-11 to K	unitless
	2	85th Percentile 24-hr Storm Depth	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	inches
	3	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	140,050	83,630	86,786	150,205	163,050	82,368	93,685	73,903	5,873	sq-ft
	4	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)										sq-ft
	5	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)										sq-ft
	6	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)	23,051	87,318	44,806		129,044	6,525				sq-ft
	7	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)										sq-ft
	8	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)					10,798	254,402		126,397		sq-ft
	9	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)	143,620	23,055	44,946	113,312	27,298	27,593	148,393		3,565	sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)										sq-ft
	12	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)										sq-ft
	13	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)										sq-ft
	14	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)										sq-ft
	15	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)										sq-ft
	16	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)										sq-ft
	17	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)										sq-ft
	18	Number of Tree Wells Proposed per SD-A										#
	19	Average Mature Tree Canopy Diameter										ft
	20	Number of Rain Barrels Proposed per SD-E										#
	21	Average Rain Barrel Size										gal
Initial Runoff Factor Calculation	22	Total Tributary Area	306,721	194,003	176,538	263,517	330,189	370,888	242,078	200,300	9,438	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	26	Initial Design Capture Volume	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	32	Design Capture Volume After Dispersion Techniques	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	36	Final Effective Tributary Area	171,764	91,181	95,331	168,651	171,698	140,937	128,301	96,144	6,323	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet

No Warning Messages

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

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA-1 to A	DMA-2 to B	DMA-3 to C	DMA-4 to D	DMA-5 to E	DMA-6 to F	DMA-7 to I	DMA-10 to G	DMA-11 to K	unitless
	2	85th Percentile 24-hr Storm Depth	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	inches
	3	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	140,050	83,630	86,786	150,205	163,050	82,368	93,685	73,903	5,873	sq-ft
	4	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)										sq-ft
	5	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)										sq-ft
	6	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)	23,051	87,318	44,806		129,044	6,525				sq-ft
	7	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)										sq-ft
	8	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)					10,798	254,402		126,397		sq-ft
	9	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)	143,620	23,055	44,946	113,312	27,298	27,593	148,393		3,565	sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)										sq-ft
	12	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)										sq-ft
	13	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)										sq-ft
	14	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)										sq-ft
	15	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)										sq-ft
	16	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)										sq-ft
	17	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)										sq-ft
	18	Number of Tree Wells Proposed per SD-A										#
	19	Average Mature Tree Canopy Diameter										ft
	20	Number of Rain Barrels Proposed per SD-E										#
	21	Average Rain Barrel Size										gal
Initial Runoff Factor Calculation	22	Total Tributary Area	306,721	194,003	176,538	263,517	330,189	370,888	242,078	200,300	9,438	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	26	Initial Design Capture Volume	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	32	Design Capture Volume After Dispersion Techniques	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	36	Final Effective Tributary Area	171,764	91,181	95,331	168,651	171,698	140,937	128,301	96,144	6,323	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet

No Warning Messages

SSD-BMP Automated Worksheet I-1: Step 1. Calculation of Design Capture Volume (V1.0)						
Category	**#**	**Description**	*i*	*ii*	*iii*	**Units**
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	dma-9 to Q	dma-8 to H	DMA-19 to R	unitless
	2	85th Percentile 24-hr Storm Depth	0.72	0.72	0.72	inches
	3	Is Hydromodification Control Applicable?	No	No	Yes	yes/no
	4	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	42,837	9,460		sq-ft
	5	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)				sq-ft
	6	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)				sq-ft
	7	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)				sq-ft
	8	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)				sq-ft
	9	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)				sq-ft
	10	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)	27,600	9,089		sq-ft
SSD-BMPs Proposed	11	Does Tributary Incorporate Dispersion and/or Rain Barrels?	No	No	Yes	yes/no
	12	Does Tributary Incorporate Tree Wells?	Yes	Yes	No	yes/no
Dispersion Area & Rain Barrel Inputs (Optional)	13	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)			2,302	sq-ft
	14	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)				sq-ft
	15	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)			3,276	sq-ft
	16	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)				sq-ft
	17	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)				sq-ft
	18	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)				sq-ft
	19	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)				sq-ft
	20	Number of Rain Barrels Proposed per SD-E				#
	21	Average Rain Barrel Size				gal
Initial Runoff Factor Calculation	22	Total Tributary Area	70,437	18,549	5,578	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.66	0.61	0.00	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.43	unitless
	25	Initial Weighted Runoff Factor	0.66	0.61	0.43	unitless
	26	Initial Design Capture Volume	2,789	679	144	cubic-feet
Dispersion Area Adjustment & Rain Barrel Adjustment	27	Total Impervious Area Dispersed to Pervious Surface	0	0	2,302	sq-ft
	28	Total Pervious Dispersion Area	0	0	3,276	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area for DCV Reduction	n/a	n/a	0.70	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	0.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.66	0.61	0.00	unitless
	32	Design Capture Volume After Dispersion Techniques	2,789	679	0	cubic-feet
	33	Total Rain Barrel Volume Reduction	0	0	0	cubic-feet
Results	34	Final Adjusted Runoff Factor	0.66	0.61	0.00	unitless
	35	Final Effective Tributary Area	46,488	11,315	0	sq-ft
	36	Initial Design Capture Volume Retained by Dispersion Area and Rain Barrel(s)	0	0	144	cubic-feet
	37	Remaining Design Capture Volume Tributary to Tree Well(s)	2,789	679	0	cubic-feet

No Warning Messages

Attachment 1C

Harvest and Use Feasibility
Screening Checklist

Harvest and Use Feasibility Checklist	Form I-7

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

☑ Toilet and urinal flushing
☑ Landscape irrigation
☐ Other:_____

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

Flushing: (72 employees)x(9.3 gal/emp) = 669.6 gallons (669.6 gal)(1.5 days)/(7.48 gal/cu. ft.) = 134.3 cu. ft.
Irrigation: 36-hr Mod. Water per Table B.3-3 = (1,470 gal days/acre)(0.49 acres)/(7.48 gal/cu feet) = 96.3 cu ft.
Total Demand = 230.6 cu. ft.

3. Calculate the DCV using worksheet B-2.1.

DCV = 4333 (cubic feet)

DCV = 4333
0.25xDCV=1083.25

3a. Is the 36 hour demand greater than or equal to the DCV?	3b. Is the 36 hour demand greater than 0.25DCV but less than the full DCV?	3c. Is the 36 hour demand less than 0.25DCV?
☐ Yes / ☐ No ⇨ ⇩	☐ Yes / ☐ No ⇨ ⇩	☐ Yes ⇩
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	Harvest and use is considered to be infeasible.

Is harvest and use feasible based on further evaluation?

☐ Yes, refer to Appendix E to select and size harvest and use BMPs.

☑ No, select alternate BMPs.

Attachment 1D

Categorization of Infiltration
Feasibility Condition

Worksheet I-8 : Categorization of Infiltration Feasibility Condition

Categorization of Infiltration Feasibility Condition		Worksheet I-8	
Part 1 - Full Infiltration Feasibility Screening Criteria Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?			
Criteria	Screening Question	Yes	No
1	Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X
Provide basis: The NRCS soils across the site are all Type A,C,and D soils. the site soils are consistent with the NRCS mapped soil types based on site explorations and percolation testing. According to soil report, the approximate depth to groundwater is between 25-30 feet below the surface. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
2	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X
Provide basis: The NRCS soils across the site are all Type A,C,and D soils. the site soils are consistent with the NRCS mapped soil types based on site explorations and percolation testing. According to soil report, the approximate depth to groundwater is between 25-30 feet below the surface. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			

Worksheet I-8 Page 2 of 4			
Criteria	Screening Question	Yes	No
3	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		X
Provide basis: The NRCS soils across the site are all Type A,C,and D soils. the site soils are consistent with the NRCS mapped soil types based on site explorations and percolation testing. According to soil report, the approximate depth to groundwater is between 25-30 feet below the surface. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		X
Provide basis: The NRCS soils across the site are all Type A,C,and D soils. the site soils are consistent with the NRCS mapped soil types based on site explorations and percolation testing. According to soil report, the approximate depth to groundwater is between 25-30 feet below the surface. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result*	If all answers to rows 1 - 4 are "Yes" a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration If any answer from row 1-4 is "No", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		

*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 City Engineer to substantiate findings.

Worksheet I-8 Page 3 of 4			
Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?			
Criteria	Screening Question	Yes	No
5	Do soil and geologic conditions allow for infiltration in any appreciable rate or volume? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X
Provide basis: Due to site soils not percolating and the significant amount of clayey soils, it is unlikely that any appreciable volume of water will infiltrate. The NRCS soils across the site are all Type A,C,and D soils. the site soils are consistent with the NRCS mapped soil types based on site explorations and percolation testing. According to soil report, the approximate depth to groundwater is between 25-30 feet below the surface. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
6	Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X
Provide basis: The NRCS soils across the site are all Type A,C,and D soils. the site soils are consistent with the NRCS mapped soil types based on site explorations and percolation testing. According to soil report, the approximate depth to groundwater is between 25-30 feet below the surface. 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.			

Worksheet I-8 Page 4 of 4			
Criteria	Screening Question	Yes	No
7	Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		X
Provide basis: The NRCS soils across the site are all Type A,C,and D soils. the site soils are consistent with the NRCS mapped soil types based on site explorations and percolation testing. According to soil report, the approximate depth to groundwater is between 25-30 feet below the surface. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
8	Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.		X
Provide basis: The NRCS soils across the site are all Type A,C,and D soils. the site soils are consistent with the NRCS mapped soil types based on site explorations and percolation testing. According to soil report, the approximate depth to groundwater is between 25-30 feet below the surface. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
Part 2 Result*	If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration. If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.		No Inf.

*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 City Engineer to substantiate findings

Attachment 1E

Pollutant Control BMP Design
Worksheets & Calculations

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

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA-1 to A	DMA-2 to B	DMA-3 to C	DMA-4 to D	DMA-5 to E	DMA-6 to F	DMA-7 to I	DMA-10 to G	DMA-11 to K	unitless
	2	85th Percentile 24-hr Storm Depth	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	inches
	3	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	140,050	83,630	86,786	150,205	163,050	82,368	93,685	73,903	5,873	sq-ft
	4	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)										sq-ft
	5	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)										sq-ft
	6	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)	23,051	87,318	44,806		129,044	6,525				sq-ft
	7	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)										sq-ft
	8	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)					10,798	254,402		126,397		sq-ft
	9	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)	143,620	23,055	44,946	113,312	27,298	27,593	148,393		3,565	sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)										sq-ft
	12	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)										sq-ft
	13	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)										sq-ft
	14	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)										sq-ft
	15	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)										sq-ft
	16	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)										sq-ft
	17	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)										sq-ft
	18	Number of Tree Wells Proposed per SD-A										#
	19	Average Mature Tree Canopy Diameter										ft
	20	Number of Rain Barrels Proposed per SD-E										#
	21	Average Rain Barrel Size										gal
Initial Runoff Factor Calculation	22	Total Tributary Area	306,721	194,003	176,538	263,517	330,189	370,888	242,078	200,300	9,438	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	26	Initial Design Capture Volume	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	32	Design Capture Volume After Dispersion Techniques	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	36	Final Effective Tributary Area	171,764	91,181	95,331	168,651	171,698	140,937	128,301	96,144	6,323	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet

No Warning Messages

Automated Worksheet B.3: BMP Performance (V2.0)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	Units
BMP Inputs	1	Drainage Basin ID or Name	DMA-1 to A	DMA-2 to B	DMA-3 to C	DMA-4 to D	DMA-5 to E	DMA-6 to F	DMA-7 to I	DMA-10 to G	DMA-11 to K	sq-ft
	2	Design Infiltration Rate Recommended	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.025	in/hr
	3	Design Capture Volume Tributary to BMP	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
	4	Is BMP Vegetated or Unvegetated?	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	unitless
	5	Is BMP Impermeably Lined or Unlined?	Lined	Lined	Lined	Lined	Lined	Lined	Lined	Unlined	Unlined	unitless
	6	Does BMP Have an Underdrain?	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	unitless
	7	Does BMP Utilize Standard or Specialized Media?	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	unitless
	8	Provided Surface Area	7,205	4,378	3,717	8,216	9,465	8,457	4,000	13,087	200	sq-ft
	9	Provided Surface Ponding Depth	6	6	6	6	6	6	6	6	6	inches
	10	Provided Soil Media Thickness	21	21	21	21	21	21	21	21	21	inches
	11	Provided Gravel Thickness (Total Thickness)	15	15	15	15	15	15	15	12	12	inches
	12	Underdrain Offset	3	3	3	3	3	3	3	3	3	inches
	13	Diameter of Underdrain or Hydromod Orifice (Select Smallest)	2.50	1.50	1.50	1.00	1.75	3.00	1.50	1.13	0.50	inches
	14	Specialized Soil Media Filtration Rate										in/hr
	15	Specialized Soil Media Pore Space for Retention										unitless
	16	Specialized Soil Media Pore Space for Biofiltration										unitless
	17	Specialized Gravel Media Pore Space										unitless
Retention Calculations	18	Volume Infiltrated Over 6 Hour Storm	0	0	0	0	0	0	0	654	3	cubic-feet
	19	Ponding Pore Space Available for Retention	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	20	Soil Media Pore Space Available for Retention	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	unitless
	21	Gravel Pore Space Available for Retention (Above Underdrain)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	22	Gravel Pore Space Available for Retention (Below Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	23	Effective Retention Depth	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	inches
	24	Fraction of DCV Retained (Independent of Drawdown Time)	0.13	0.15	0.12	0.15	0.17	0.19	0.10	0.54	0.11	ratio
	25	Calculated Retention Storage Drawdown Time	120	120	120	120	120	120	120	23	90	hours
	26	Efficacy of Retention Processes	0.15	0.17	0.14	0.17	0.19	0.21	0.12	0.83	0.15	ratio
	27	Volume Retained by BMP (Considering Drawdown Time)	1,555	935	806	1,730	1,968	1,785	930	4,783	55	cubic-feet
	28	Design Capture Volume Remaining for Biofiltration	8,751	4,536	4,914	8,389	8,334	6,671	6,768	986	324	cubic-feet
Biofiltration Calculations	29	Max Hydromod Flow Rate through Underdrain	0.2911	0.1055	0.1055	0.0470	0.1434	0.4178	0.1055	0.0571	0.0113	cfs
	30	Max Soil Filtration Rate Allowed by Underdrain Orifice	1.75	1.04	1.23	0.25	0.65	2.13	1.14	0.19	2.45	in/hr
	31	Soil Media Filtration Rate per Specifications	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	in/hr
	32	Soil Media Filtration Rate to be used for Sizing	1.75	1.04	1.23	0.25	0.65	2.13	1.14	0.19	2.45	in/hr
	33	Depth Biofiltered Over 6 Hour Storm	10.47	6.25	7.36	1.48	3.93	12.81	6.84	1.13	14.69	inches
	34	Ponding Pore Space Available for Biofiltration	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	unitless
	35	Soil Media Pore Space Available for Biofiltration	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	unitless
	36	Gravel Pore Space Available for Biofiltration (Above Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	37	Effective Depth of Biofiltration Storage	15.00	15.00	15.00	15.00	15.00	15.00	15.00	13.80	13.80	inches
	38	Drawdown Time for Surface Ponding	3	6	5	24	9	3	5	21	2	hours
	39	Drawdown Time for Effective Biofiltration Depth	9	14	12	61	23	7	13	48	6	hours
	40	Total Depth Biofiltered	25.47	21.25	22.36	16.48	18.93	27.81	21.84	14.93	28.49	inches
	41	Option 1 - Biofilter 1.50 DCV: Target Volume	13,127	6,804	7,371	12,584	12,502	10,007	10,152	1,479	485	cubic-feet
	42	Option 1 - Provided Biofiltration Volume	13,127	6,804	6,925	11,286	12,502	10,007	7,279	1,479	475	cubic-feet
	43	Option 2 - Store 0.75 DCV: Target Volume	6,563	3,402	3,686	6,292	6,251	5,004	5,076	740	243	cubic-feet
	44	Option 2 - Provided Storage Volume	6,563	3,402	3,686	6,292	6,251	5,004	5,000	740	230	cubic-feet
	45	Portion of Biofiltration Performance Standard Satisfied	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.98	ratio
Result	46	Do Site Design Elements and BMPs Satisfy Annual Retention Requirements?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	47	Overall Portion of Performance Standard Satisfied (BMP Efficacy Factor)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	48	**Deficit of Effectively Treated Stormwater**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	cubic-feet

No Warning Messages

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

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA-1 to A	DMA-2 to B	DMA-3 to C	DMA-4 to D	DMA-5 to E	DMA-6 to F	DMA-7 to I	DMA-10 to G	DMA-11 to K	unitless
	2	85th Percentile 24-hr Storm Depth	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	inches
	3	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	140,050	83,630	86,786	150,205	163,050	82,368	93,685	73,903	5,873	sq-ft
	4	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)										sq-ft
	5	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)										sq-ft
	6	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)	23,051	87,318	44,806		129,044	6,525				sq-ft
	7	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)										sq-ft
	8	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)					10,798	254,402		126,397		sq-ft
	9	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)	143,620	23,055	44,946	113,312	27,298	27,593	148,393		3,565	sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)										sq-ft
	12	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)										sq-ft
	13	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)										sq-ft
	14	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)										sq-ft
	15	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)										sq-ft
	16	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)										sq-ft
	17	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)										sq-ft
	18	Number of Tree Wells Proposed per SD-A										#
	19	Average Mature Tree Canopy Diameter										ft
	20	Number of Rain Barrels Proposed per SD-E										#
	21	Average Rain Barrel Size										gal
Initial Runoff Factor Calculation	22	Total Tributary Area	306,721	194,003	176,538	263,517	330,189	370,888	242,078	200,300	9,438	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	26	Initial Design Capture Volume	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	32	Design Capture Volume After Dispersion Techniques	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.56	0.47	0.54	0.64	0.52	0.38	0.53	0.48	0.67	unitless
	36	Final Effective Tributary Area	171,764	91,181	95,331	168,651	171,698	140,937	128,301	96,144	6,323	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet

No Warning Messages

Automated Worksheet B.3: BMP Performance (V2.0)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	Units
BMP Inputs	1	Drainage Basin ID or Name	DMA-1 to A	DMA-2 to B	DMA-3 to C	DMA-4 to D	DMA-5 to E	DMA-6 to F	DMA-7 to I	DMA-10 to G	DMA-11 to K	sq-ft
	2	Design Infiltration Rate Recommended	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.025	in/hr
	3	Design Capture Volume Tributary to BMP	10,306	5,471	5,720	10,119	10,302	8,456	7,698	5,769	379	cubic-feet
	4	Is BMP Vegetated or Unvegetated?	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	unitless
	5	Is BMP Impermeably Lined or Unlined?	Lined	Lined	Lined	Lined	Lined	Lined	Lined	Unlined	Unlined	unitless
	6	Does BMP Have an Underdrain?	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	unitless
	7	Does BMP Utilize Standard or Specialized Media?	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	unitless
	8	Provided Surface Area	7,205	4,378	3,717	8,216	9,465	8,457	4,000	13,087	200	sq-ft
	9	Provided Surface Ponding Depth	6	6	6	6	6	6	6	6	6	inches
	10	Provided Soil Media Thickness	21	21	21	21	21	21	21	21	21	inches
	11	Provided Gravel Thickness (Total Thickness)	15	15	15	15	15	15	15	12	12	inches
	12	Underdrain Offset	3	3	3	3	3	3	3	3	3	inches
	13	Diameter of Underdrain or Hydromod Orifice (Select Smallest)	2.50	1.50	1.50	1.00	1.75	3.00	1.50	1.13	0.50	inches
	14	Specialized Soil Media Filtration Rate										in/hr
	15	Specialized Soil Media Pore Space for Retention										unitless
	16	Specialized Soil Media Pore Space for Biofiltration										unitless
	17	Specialized Gravel Media Pore Space										unitless
Retention Calculations	18	Volume Infiltrated Over 6 Hour Storm	0	0	0	0	0	0	0	654	3	cubic-feet
	19	Ponding Pore Space Available for Retention	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	20	Soil Media Pore Space Available for Retention	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	unitless
	21	Gravel Pore Space Available for Retention (Above Underdrain)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	22	Gravel Pore Space Available for Retention (Below Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	23	Effective Retention Depth	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	inches
	24	Fraction of DCV Retained (Independent of Drawdown Time)	0.13	0.15	0.12	0.15	0.17	0.19	0.10	0.54	0.11	ratio
	25	Calculated Retention Storage Drawdown Time	120	120	120	120	120	120	120	23	90	hours
	26	Efficacy of Retention Processes	0.15	0.17	0.14	0.17	0.19	0.21	0.12	0.83	0.15	ratio
	27	Volume Retained by BMP (Considering Drawdown Time)	1,555	935	806	1,730	1,968	1,785	930	4,783	55	cubic-feet
	28	Design Capture Volume Remaining for Biofiltration	8,751	4,536	4,914	8,389	8,334	6,671	6,768	986	324	cubic-feet
Biofiltration Calculations	29	Max Hydromod Flow Rate through Underdrain	0.2911	0.1055	0.1055	0.0470	0.1434	0.4178	0.1055	0.0571	0.0113	cfs
	30	Max Soil Filtration Rate Allowed by Underdrain Orifice	1.75	1.04	1.23	0.25	0.65	2.13	1.14	0.19	2.45	in/hr
	31	Soil Media Filtration Rate per Specifications	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	in/hr
	32	Soil Media Filtration Rate to be used for Sizing	1.75	1.04	1.23	0.25	0.65	2.13	1.14	0.19	2.45	in/hr
	33	Depth Biofiltered Over 6 Hour Storm	10.47	6.25	7.36	1.48	3.93	12.81	6.84	1.13	14.69	inches
	34	Ponding Pore Space Available for Biofiltration	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	unitless
	35	Soil Media Pore Space Available for Biofiltration	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	unitless
	36	Gravel Pore Space Available for Biofiltration (Above Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	37	Effective Depth of Biofiltration Storage	15.00	15.00	15.00	15.00	15.00	15.00	15.00	13.80	13.80	inches
	38	Drawdown Time for Surface Ponding	3	6	5	24	9	3	5	21	2	hours
	39	Drawdown Time for Effective Biofiltration Depth	9	14	12	61	23	7	13	48	6	hours
	40	Total Depth Biofiltered	25.47	21.25	22.36	16.48	18.93	27.81	21.84	14.93	28.49	inches
	41	Option 1 - Biofilter 1.50 DCV: Target Volume	13,127	6,804	7,371	12,584	12,502	10,007	10,152	1,479	485	cubic-feet
	42	Option 1 - Provided Biofiltration Volume	13,127	6,804	6,925	11,286	12,502	10,007	7,279	1,479	475	cubic-feet
	43	Option 2 - Store 0.75 DCV: Target Volume	6,563	3,402	3,686	6,292	6,251	5,004	5,076	740	243	cubic-feet
	44	Option 2 - Provided Storage Volume	6,563	3,402	3,686	6,292	6,251	5,004	5,000	740	230	cubic-feet
	45	Portion of Biofiltration Performance Standard Satisfied	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.98	ratio
Result	46	Do Site Design Elements and BMPs Satisfy Annual Retention Requirements?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	47	Overall Portion of Performance Standard Satisfied (BMP Efficacy Factor)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	48	**Deficit of Effectively Treated Stormwater**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	cubic-feet

No Warning Messages

SSD-BMP Automated Worksheet I-1: Step 1. Calculation of Design Capture Volume (V1.0)						
Category	**#**	**Description**	*i*	*ii*	*iii*	**Units**
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	dma-9 to Q	dma-8 to H	DMA-19 to R	unitless
	2	85th Percentile 24-hr Storm Depth	0.72	0.72	0.72	inches
	3	Is Hydromodification Control Applicable?	No	No	Yes	yes/no
	4	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	42,837	9,460		sq-ft
	5	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)				sq-ft
	6	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)				sq-ft
	7	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)				sq-ft
	8	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)				sq-ft
	9	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)				sq-ft
	10	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)	27,600	9,089		sq-ft
SSD-BMPs Proposed	11	Does Tributary Incorporate Dispersion and/or Rain Barrels?	No	No	Yes	yes/no
	12	Does Tributary Incorporate Tree Wells?	Yes	Yes	No	yes/no
Dispersion Area & Rain Barrel Inputs (Optional)	13	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)			2,302	sq-ft
	14	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)				sq-ft
	15	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)			3,276	sq-ft
	16	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)				sq-ft
	17	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)				sq-ft
	18	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)				sq-ft
	19	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)				sq-ft
	20	Number of Rain Barrels Proposed per SD-E				#
	21	Average Rain Barrel Size				gal
Initial Runoff Factor Calculation	22	Total Tributary Area	70,437	18,549	5,578	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.66	0.61	0.00	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.43	unitless
	25	Initial Weighted Runoff Factor	0.66	0.61	0.43	unitless
	26	Initial Design Capture Volume	2,789	679	144	cubic-feet
Dispersion Area Adjustment & Rain Barrel Adjustment	27	Total Impervious Area Dispersed to Pervious Surface	0	0	2,302	sq-ft
	28	Total Pervious Dispersion Area	0	0	3,276	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area for DCV Reduction	n/a	n/a	0.70	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	0.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.66	0.61	0.00	unitless
	32	Design Capture Volume After Dispersion Techniques	2,789	679	0	cubic-feet
	33	Total Rain Barrel Volume Reduction	0	0	0	cubic-feet
Results	34	Final Adjusted Runoff Factor	0.66	0.61	0.00	unitless
	35	Final Effective Tributary Area	46,488	11,315	0	sq-ft
	36	Initial Design Capture Volume Retained by Dispersion Area and Rain Barrel(s)	0	0	144	cubic-feet
	37	Remaining Design Capture Volume Tributary to Tree Well(s)	2,789	679	0	cubic-feet

No Warning Messages

SSD-BMP Automated Worksheet I-2: Step 2. Dispersion Area Validation (V1.0)				
Category	**#**	**Description**	***iii***	**Units**
Standard Dispersion Area Inputs	1	Drainage Basin ID or Name	DMA-19 to R	unitless
	2	Final Design Capture Volume (DCV)	0	cubic-feet
	3	Is Hydromodification Control Applicable?	Yes	yes/no
	4	Total Impervious Area Dispersed to Pervious Surface	2,302	sq-ft
	5	Total Engineered Pervious Surface and/or Natural Soil Dispersion Area (Does Not Include Semi-Pervious Surfaces Serving as Dispersion Area)	3,276	sq-ft
	6	Ratio of Dispersed Impervious Area to Total Engineered Pervious Surface and/or Natural Soil Dispersion Area	0.70	unitless
	7	Dispersion Area Length (Length of Sheet Flow Across Dispersion Area)	25	feet
	8	Dispersion Area Slope	2.1	%
	9	Thickness of Amended Soil	11	inches
	10	How is Flow Dispersed Across Width of Dispersion Area (definitions below*)?	Sheet Flow	unitless
Results	11	Is DCV Requirement Fully Satisfied by Dispersion Area?	Yes	yes/no
	12	Is Hydromodification Control Requirement Satisfied by Dispersion Area?	Yes	yes/no
	13	Are Dispersion Area Length, Slope, and Thickness of Amended Soil (when applicable) Adequate?	Yes	yes/no

No Warning Messages

Notes:

***How is Flow Dispersed Across Width of Pervious Dispersion Area?**

Sheet Flow:	Flow arrives as sheet flow across the width of the adjacent impervious area
Spreader(s):	Flow is discharged from flow spreader(s) across the width of the pervious area
Roof Drains:	Discharge from roof drains distributed across the width of the pervious area
Curb Cuts:	Discharge from curb cuts distributed across the width of the pervious area
Other:	Other (Describe in PDP SWQMP)

SSD-BMP Automated Worksheet I-3: Step 3. Tree Well Sizing (V1.0)					
Category	**#**	**Description**	***i***	***ii***	**Units**
Standard Tree Well Inputs	1	Drainage Basin ID or Name	dma-9 to Q	dma-8 to H	unitless
	2	Design Capture Volume Tributary to BMP	2,789	679	cubic-feet
	3	Is Hydromodification Control Applicable?	No	No	yes/no
	4	Predominant NRCS Soil Type Within Tree Well(s) Location	D	D	unitless
	5	Select a Tree Species for the Tree Well(s) Consistent with SD-A Tree Palette Table Note: Numbers shown in list are Tree Species Mature Canopy Diameters	20' - Catalina Cherry	20' - Catalina Cherry	unitless
	6	Tree Well(s) Soil Depth (Installation Depth) Must be 30, 36, 42, or 48 Inches; Select from Standard Depths**	30	30	inches
	7	Number of Identical* Tree Wells Proposed for this DMA	32	5	trees
	8	Proposed Width of Tree Well(s) Soil Installation for One (1) Tree	10.0	9.5	feet
	9	Proposed Length of Tree Well(s) Soil Installation for One (1) Tree	25.1	26.5	feet
Tree Data	10	Botanical Name of Tree Species	Prunus Lynoii	Prunus Lynoii	unitless
	11	Tree Species Mature Height per SD-A	40	40	feet
	12	Tree Species Mature Canopy Diameter per SD-A	20	20	feet
	13	Minimum Soil Volume Required In Tree Well (2 Cubic Feet Per Square Foot of Mature Tree Canopy Projection Area)	628	628	cubic-feet
	14	Credit Volume Per Tree	180	180	cubic-feet
Tree Well Sizing Calculations	15	DCV Multiplier To Meet Flow Control Requirements	n/a	n/a	unitless
	16	Required Retention Volume (RRV) To Meet Flow Control Requirements	n/a	n/a	cubic-feet
	17	Number of Trees Required	16	4	trees
	18	Total Area of Tree Well Soil Required for Each Tree	251	251	sq-ft
	19	Approximate Required Width of Tree Well Soil Area for Each Tree	16	16	feet
	20	Approximate Required Length of Tree Well Soil Area for Each Tree	16	16	feet
	21	Number of Trees Proposed for this DMA	32	5	trees
	22	Total Area of Tree Well Soil Proposed for Each Tree	251	252	sq-ft
	23	Minimum Spacing Between Multiple Trees To Meet Soil Area Requirements (when applicable)***	25.1	26.5	feet
Results	24	Are Tree Well Soil Installation Requirements Met?	Yes	Yes	yes/no
	25	Is Remaining DCV Requirement Fully Satisfied by Tree Well(s)?	Yes	Yes	yes/no
	26	Is Hydromodification Control Requirement Satisfied by Tree Well(s)?	n/a	n/a	yes/no

No Warning Messages

Notes:

*If using more than one mature canopy diameter within the same DMA, only the smallest mature canopy diameter should be entered. Alternatively, if more than one mature canopy diameter is

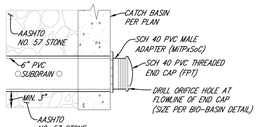
**If the actual proposed installation depth is not available in the table of standard depths, select the next lower depth.

***Tree Canopy or Agency Requirements May Also Influence the Minimum Spacing of Trees.



DETAIL
"NO DUMPING" AT CATCH BASINS

NOTE: ALL CATCH BASINS WITH GRATES SHALL BE STENCILED WITH CITY REQUIRED ITEM PER ABOVE DETAIL (DAS MANUFACTURING #220 OR EQUIVALENT).



LOWER ORIFICE DETAIL
NOT TO SCALE

PERMANENT WATER QUALITY TREATMENT FACILITY

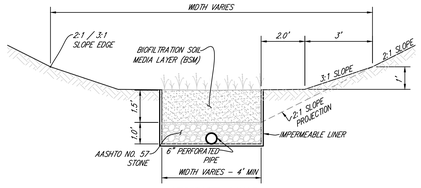
KEEPING OUR WATER WAYS CLEAN
MAINTAIN WITH CARE – NO MODIFICATIONS WITHOUT AGENCY APPROVAL

DETAIL
WATER QUALITY SIGN– PLACED AT EACH BIOFILTRATION BASIN

NOTE: ALL BIOFILTRATION AREAS WILL HAVE A SIGN POSTED TO BE VISIBLE AT ALL TIMES.



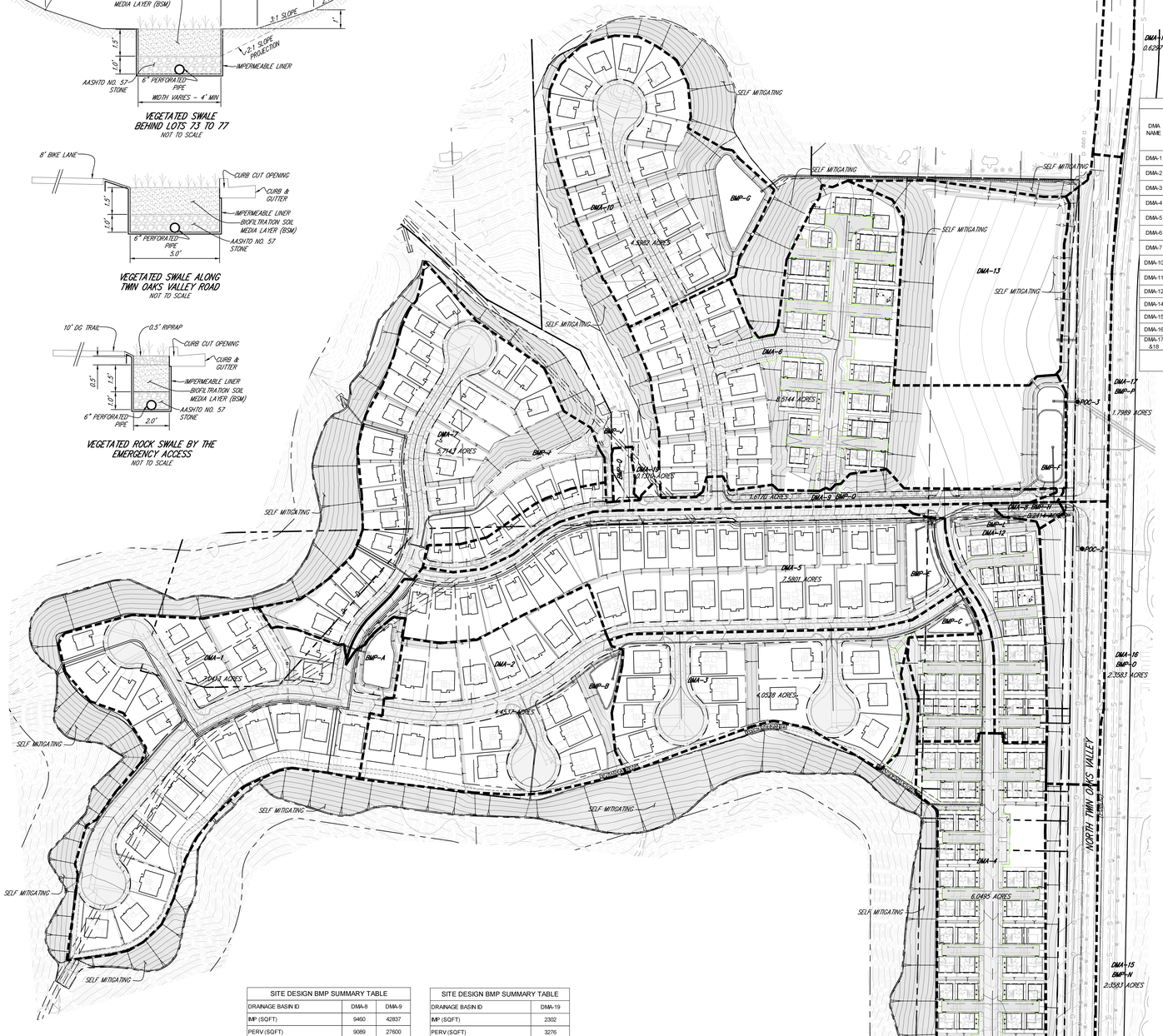
6" PVC PIPE PERFORATION LAYOUT DETAIL
NOT TO SCALE



VEGETATED SWALE BEHIND LOTS 73 TO 77
NOT TO SCALE

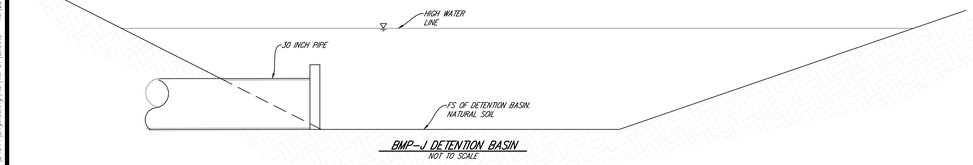
VEGETATED SWALE ALONG TWIN OAKS VALLEY ROAD
NOT TO SCALE

VEGETATED ROCK SWALE BY THE EMERGENCY ACCESS
NOT TO SCALE

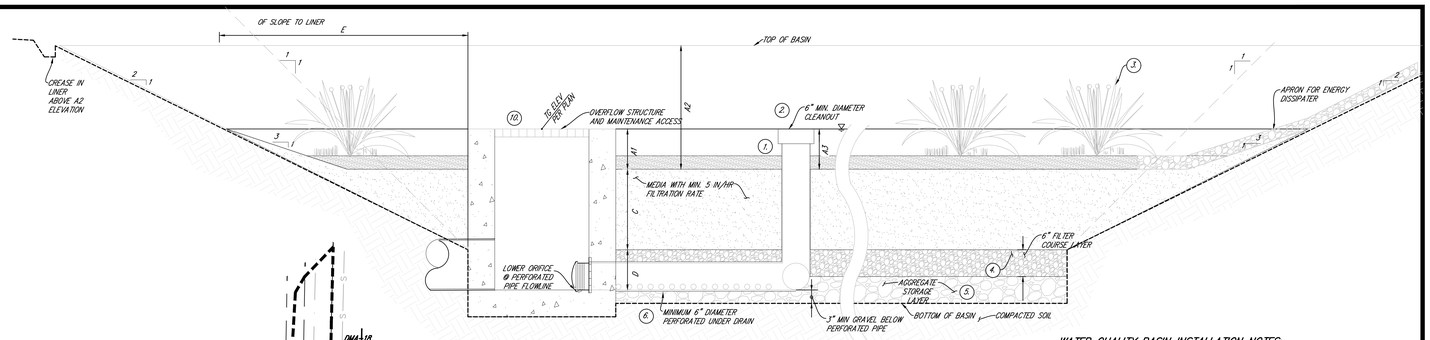


SITE DESIGN BMP SUMMARY TABLE		
DRAINAGE BASIN ID	DMA-8	DMA-9
IMP (SQFT)	9460	42837
PERV (SQFT)	9089	27600
BMP TYPE	TREE WELL	TREE WELL
BMP NAME(S)	BMP H	BMP Q
TREE CANOPY DIAMETER (FT)	20	20
NUMBER OF IDENTICAL TREES	4	32
TREE WELL SOIL DEPTH (INCHES)	30	30
AREA OF EACH BMP (SQFT)	251	251

SITE DESIGN BMP SUMMARY TABLE	
DRAINAGE BASIN ID	DMA-19
IMP (SQFT)	2302
PERV (SQFT)	3276
BMP TYPE	DISPERSION
BMP NAME(S)	BMP R
LENGTH OF SHEET (FT)	25
SLOPE	2:1
THICKNESS OF AMMENDED SOIL (IN)	11
HOW DISPERSED	SHEET FLOW



BMP–J DETENTION BASIN
NOT TO SCALE



BIOFILTRATION BASIN DETAIL
NOT TO SCALE

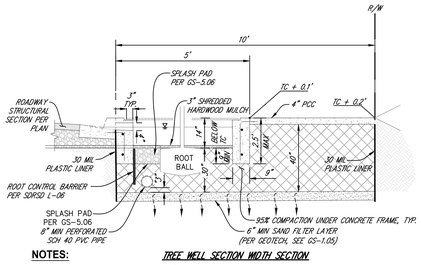
STRUCTURAL BIO-BASIN SUMMARY TABLE

DMA NAME	DMA TYPE	BMP NAME	TYPE OF BMP	IMPERVIOUS	PERVIOUS	EFFECTIVE AREA (SQFT)	A1 (INCH) WATER QUALITY	A2 (INCH) TOP OF BASIN	A3 (INCH) CLEAN OUT	B (INCH) UPPER ORIFICE	C (INCH) MEDIA	D (INCH) GRAVEL	E (INCH) OFFSET	BOX RSER OVERFLOW STRUCUTRE SIZE (INCH)	ORIFICES DIAMETER	
				FT2	FT2										UPPER (INCH)	LOWER (INCH)
DMA-1	DRAINS TO BMP	BMP-A	BIOFILTRATION BF-2	140049.781	166671	7204.819	9	12	9	N/A	18	15	2.25	3X3	N/A	2.5
DMA-2	DRAINS TO BMP	BMP-B	BIOFILTRATION BF-2	83629.69	110373.283	4378.342	9	12	9	N/A	18	15	2.25	3X4	N/A	1.5
DMA-3	DRAINS TO BMP	BMP-C	BIOFILTRATION BF-2	86786.327	89752	3716.807	9	12	9	N/A	18	15	2.25	3X5	N/A	1.5
DMA-4	DRAINS TO BMP	BMP-D	BIOFILTRATION BF-2	150204.8023	113312.3947	8216.028	9	12	9	N/A	18	15	2.25	3X6	N/A	1
DMA-5	DRAINS TO BMP	BMP-E	BIOFILTRATION BF-2	163049.7	167139.4	9464.736	9	12	9	N/A	18	15	2.25	3X7	N/A	1.75
DMA-6	DRAINS TO BMP	BMP-F	BIOFILTRATION BF-2	823682.2131	288520.17	8456.637	9	12	9	N/A	18	15	2.25	3X8	N/A	3
DMA-7	DRAINS TO BMP	BMP-I	BIOFILTRATION BF-2	93684.682	148392.9	4000	9	12	9	N/A	18	12	2.25	3X9	N/A	1.5
DMA-10	DRAINS TO BMP	BMP-G	BIOFILTRATION BF-2	73902.81	126396.8	13086.921	9	12	9	N/A	18	12	2.25	3X12	N/A	1.125
DMA-11	DRAINS TO BMP	BMP-K	BIOFILTRATION BF-2	5873	3565.48	200	9	12	9	N/A	18	12	2.25	3X13	N/A	0.5
DMA-12	DRAINS TO BMP	BMP-L	BIOFILTRATION BF-2	49126.083	29335.82	2500	9	12	9	N/A	18	12	2.25	3X14	N/A	2.5
DMA-14	DRAINS TO BMP	BMP-M	BIOFILTRATION BF-2	1782.61	496.533	200	9	12	9	N/A	18	12	2.25	3X15	N/A	0.5
DMA-15	DRAINS TO BMP	BMP-N	BIOFILTRATION BF-2	38298	64608	1800	9	12	9	N/A	18	12	2.25	3X16	N/A	0.5
DMA-16	DRAINS TO BMP	BMP-O	BIOFILTRATION BF-2	31610.86	46303.89	1275	9	12	9	N/A	18	12	2.25	3X17	N/A	0.5
DMA-17 &18	DRAINS TO BMP	BMP-P	BIOFILTRATION BF-2	#N/A	#N/A	#N/A	9	12	9	N/A	18	12	2.25	3X18	N/A	#N/A
		BMP-J	DETENTION BASIN FOR ADDITIONAL STORAGE	NA	NA	276	NA	72	NA	NA	NA	NA	NA	CONTROLLED BY 30 IN PIPE OPENING TO ALLOW PONDING		

WATER QUALITY BASIN INSTALLATION NOTES:

1. 3 INCHES OF WELL–AGED, SHREDDED HARDWOOD MULCH.
2. AN UNDERDRAIN CLEANOUT WITH A MINIMUM 6–INCH DIAMETER AND LOCKABLE CAP IS PLACED EVERY 250 TO 300FEET AS REQUIRED BASED ON UNDERDRAIN LENGTH.
3. VEGETATION USED SHOULD BE SUITABLE FOR THE CLIMATE PER LANDSCAPE PLANS. LANDSCAPING SHALL ALSO BE CONSISTENT WITH APPENDIX E.26 OF THE CITY'S BMP MANUAL.
4. FILTER COARSE IS A MINIMUM OF 6 INCHES PROVIDED IN TWO SEPARATE 3 INCH LAYERS. THE TOP LAYER SHALL BE MADE OF ASTM C33 CHOKER SAND AND THE BOTTOM LAYER BE OF ASTM NO. 8 AGGREGATE. MARKERS STAKES SHALL BE USED TO ENSURE UNIFORM LIFT THICKNESS.
5. AASHTO NO. 57 STONE OR CLASS 2 PERMEABLE PER CAL TRANS SPECIFICATION 68–1.025 IS RECOMMENDED FOR THE AGGREGATE STORAGE LAYER. WASHED, OPEN–GRADED CRUSHED ROCK MAY BE USED, HOWEVER, A 4 INCH MINIMUM WASHED PEA GRAVEL FILTER COURSE LAYER AT THE TOP OF THE CRUSHED ROCK IS REQUIRED.
6. IMPERMEABLE LINER SHALL BE INSTALLED IN ALL BIOFILTRATION BASINS AS REQUIRED BY THESE PLANS. IMPERMEABLE LINER SHALL BE 30 MIL THICK (PER COUNTY OF SAN DIEGO GREEN STREETS DESIGN STANDARD) DRAWING CC–3.00 AND COUNTY GREEN STREETS SUPPLEMENT TO CAL TRANS SPECIFICATIONS 20–11.08B) CONFIGURED TO ENTIRELY ENCOMPASS THE SIDES OF THE WATER QUALITY BASIN.
7. IMPERMEABLE LINER BE CONSTRUCTED IN COMPLIANCE WITH THE COUNTY OF SAN DIEGO GREEN STREETS SUPPLEMENT TO CAL TRANS SPECIFICATIONS 20–11.08B.
8. BIOFILTRATION SOIL MEDIA LAYER (BSM) SHALL CONSIST OF 60% TO 80% BY VOLUME SAND, UP TO 20% BY VOLUME TOPSOIL AND UP 20% BY VOLUME COMPOST (PER CITY OF SAN MARCOS BMP DESIGN MANUAL SECTION F.1) PLACED IN 6" LIFTS AND COMPACTED WITH WATER PRIOR TO THE NEXT LIFT. INITIAL PERMEABILITY SHALL BE 8" PER HOUR (WITH ASSUMED STABILIZED PERMEABILITY OF 5" PER HOUR).
9. THE AGGREGATE STORAGE LAYER SHALL BE COMPACTED IN ACCORDANCE WITH SOILS ENGINEER'S RECOMMENDATIONS.
10. OVERFLOW STRUCTURE TO HAVE A MINIMUM OF 12 INCHES OF FREEBOARD.
11. ALL LINER INSTALLATIONS, FIELD WELDING OF SEAMS, AND OBSERVATION OF SOIL MIX PLACEMENT SHALL REQUIRE SPECIAL INSPECTION BY THE PROJECT GEOTECHNICAL ENGINEER OR OTHER QUALIFIED PERSON. A LETTER CERTIFYING PROPER INSTALLATION SHALL BE PROVIDED TO THE ENGINEER OF RECORD TO ACCEPTANCE OF THE FACILITIES.
12. SPECIAL INSPECTION SHALL BE REQUIRED FOR CONSTRUCTION OF ALL BIOFILTRATION BASINS. INSPECTION SHALL BE PERFORMED BY A QUALIFIED INDIVIDUAL (SUCH AS: ENGINEER OF RECORD, QSD). INSPECTION SHALL INCLUDE:
    - VERIFICATION OF OVERALL DIMENSIONS PRIOR TO PLACEMENT OF MATERIALS;
    - PLACEMENT OF THE LINER, IF REQUIRED, AND SEAMS OR PENETRATIONS
    - PLACEMENT OF THE GRAVEL, FILTER MATERIALS, AND FILTER MEDIA;
    - ALL INLET AND OUTLET STRUCTURES INCLUDING UNDERDRAINS, IF REQUIRED.
    - CONTRACTOR SHALL TAKE PICTURES AT EACH STAGE OF INSTALLATION AND SUBMITTED TO ENGINEER FOR VERIFICATION OF INSTALL.

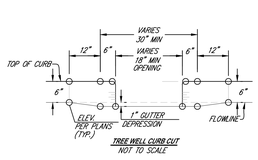
    INSPECTOR SHALL BE GIVEN A MINIMUM OF 48 HOURS PRIOR TO INSPECTION. UPON COMPLETION THE INSPECTOR SHALL PROVIDE A CERTIFICATION TO THE ENGINEER OF WORK.
13. PROPOSED MATERIALS, SUCH AS AGGREGATE, FILTER MATERIAL, AND FILTER MEDIA SHALL BE SUBMITTED TO THE ENGINEER OF WORK FOR APPROVAL.



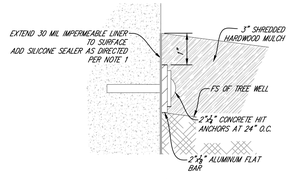
TREE WELL SECTION WIDTH SECTION

NOTES:

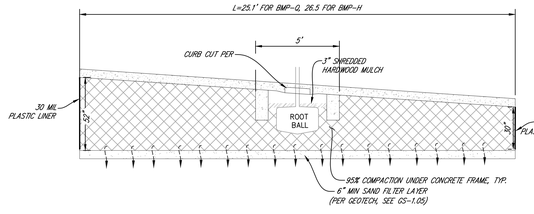
1. PONDING DEPTH PER DESIGN PLANS, 4" MAX.
2. WHERE APPLICABLE, REMOVE EXISTING CURB & GUTTER, CONSTRUCT CURB & GUTTER MONOLITHIC.
3. CURB & GUTTER TO BE CONSTRUCTED PER SDRSD G–02.
4. ELEVATIONS SHALL BE SHOWN ON PLANS WHERE INDICATED BY " " SYMBOL.
5. SEAL PLASTIC LINER TO ADJACENT IMPROVEMENTS AND EDGE RESTRAINTS PER GS–5.15.
6. CONCRETE SHALL BE 520–C–2500 UNLESS OTHERWISE SPECIFIED.
7. GUTTER TRANSITION LENGTH PER DESIGN PLANS; AN ADDITIONAL 2.5–FT CURB TRANSITION LENGTH IS RECOMMENDED FOR EVERY 1" OF ADDITIONAL GUTTER DEPRESSION.
8. PARALLEL STREET PARKING PROHIBITED FOR BMP'S WITH TREE WELL WITHOUT STRUCTURAL SOIL.
9. 3. IF NRCS HYDROLOGIC SOIL GROUP D IS ENCOUNTERED, OR IF THE DESIGN SUBSOIL INFILTRATION RATE IS LESS THAN 0.1 IN/HR, AN UNDERDRAIN PIPE SHALL BE EMBEDDED WITHIN THE STRUCTURAL SOIL & CONNECTED TO A NEARBY STORM DRAIN SYSTEM PER GS–5.12 & GS–5.13.
10. REFER TO GS–1.00 FOR ALL DETAILS NOT SHOWN HERE.



TREE WELL CURB CUT
NOT TO SCALE



LINER ATTACHMENT TO ADJACENT CONCRETE DETAIL



TREE WELL SECTION LENGTH SECTION

NOTES:

1. ON CLEAN CONCRETE SURFACE, ADHERE LINER TO CONCRETE WITH SILICONE SEALANT OR EQUIVALENT PER MANUFACTURER RECOMMENDATIONS TO TOP ½" OF LINER.
2. SECURE LINER TO CONCRETE WITH 2" ALUMINUM OR STAINLESS STEEL FLAT BAR AS DIRECTED PER PLAN.
3. AS AN ALTERNATIVE, HIT ANCHORS CAN BE SUBSTITUTED WITH STAINLESS STEEL ANCHORS AT 24" O.C. OR POWDER ACTUATED FASTENERS AT 12" O.C.
4. TRIM EXCESS LINER TO BE FLUSH WITH SURFACE ELEVATION.
5. CONTRACTOR MEANS AND METHODS SHOULD AVOID/MINIMIZE WRINKLES TO THE LINER.
6. PARALLEL STREET PARKING PROHIBITED WITH THIS BMP.

SCALE 1"=150'
0 150 300

TWIN OAKS ROAD
DMA EXHIBIT

HYDROLOGIC SOIL GROUP
THE ONSITE HYDROLOGICAL SOIL GROUP FOR THIS SITE IS TYPE D.

EXISTING SITE FEATURES:

- THE APPROXIMATE DEPTH TO GROUNDWATER IS GREATER THAN 20 FEET.
- THERE ARE NO NATURAL HYDROLOGIC FEATURES ON THE SITE.
- THE SITE PROPOSES TO CONNECT TO THE EXISTING PUBLIC STORM DRAIN SYSTEM LOCATED IN THE SOUTH EDGE OF THE SITE.
- BASED ON WATERSHED MAPPING OF POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS (CCSYA), THERE ARE NO CCSYA LOCATED WITHIN THE PROJECT BOUNDARY OR TRIBUTARY TO THE RUNOFF BYPASSED AROUND THE SITE.

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SHEET 22 OF 22 SHEETS
WQMP EXHIBIT

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OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

NOT FOR CONSTRUCTION

I:\EXCEL\ACAD\Engineering\18118 01 Sheets - WQMP\EXHIBIT\DMA.dwg 11/29/2023 10:52 PM ORIGINAL PLOT SIZE

ATTACHMENT 2
BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

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

Indicate which Items are Included behind this cover sheet:

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

Attachment 2A:

Hydromodification Management Exhibit

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)

0.3707 ACRES

0.6325 ACRES

104.5570 ACRES

76.3540 ACRES

DRAINAGE-BASIN 2.2
15.118 ACRES

DRAINAGE-BASIN 2.3
4.9347 ACRES

DRAINAGE-BASIN 4
1.4514 ACRES

DRAINAGE-BASIN 2.1
4.2646 ACRES

DRAINAGE-BASIN 2.2

DRAINAGE-BASIN 2.4
12.918 ACRES

DRAINAGE-BASIN 2.3

POC-4

DRAINAGE-BASIN 3.1
9.4671 ACRES

3.38

DRAINAGE-BASIN 1
6.5653 ACRES

DRAINAGE-BASIN 3.2
0.3337 ACRES

POC-3

POC-1

0 200 400 Feet

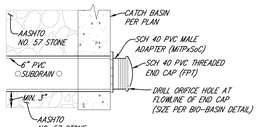
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V:\24\24044\Engineering\PM\TM 01\Storm-SDP\Working Files\SHMM\24044-Pre Dev-hydromod Exhibit.dwg 3/6/2025 1:13 PM ORIGINAL PLOT SIZE: PDF 24X36



DETAIL
"NO DUMPING" AT CATCH BASINS

NOTE: ALL CATCH BASINS WITH GRATES SHALL BE STENCILED WITH CITY REQUIRED ITEM PER ABOVE DETAIL (DAS MANUFACTURING #220 OR EQUIVALENT).



LOWER ORIFICE DETAIL
NOT TO SCALE

PERMANENT WATER QUALITY TREATMENT FACILITY

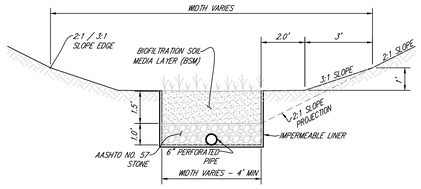
KEEPING OUR WATER WAYS CLEAN
MAINTAIN WITH CARE – NO MODIFICATIONS WITHOUT AGENCY APPROVAL

DETAIL
WATER QUALITY SIGN– PLACED AT EACH BIOFILTRATION BASIN

NOTE: ALL BIOFILTRATION AREAS WILL HAVE A SIGN POSTED TO BE VISIBLE AT ALL TIMES.



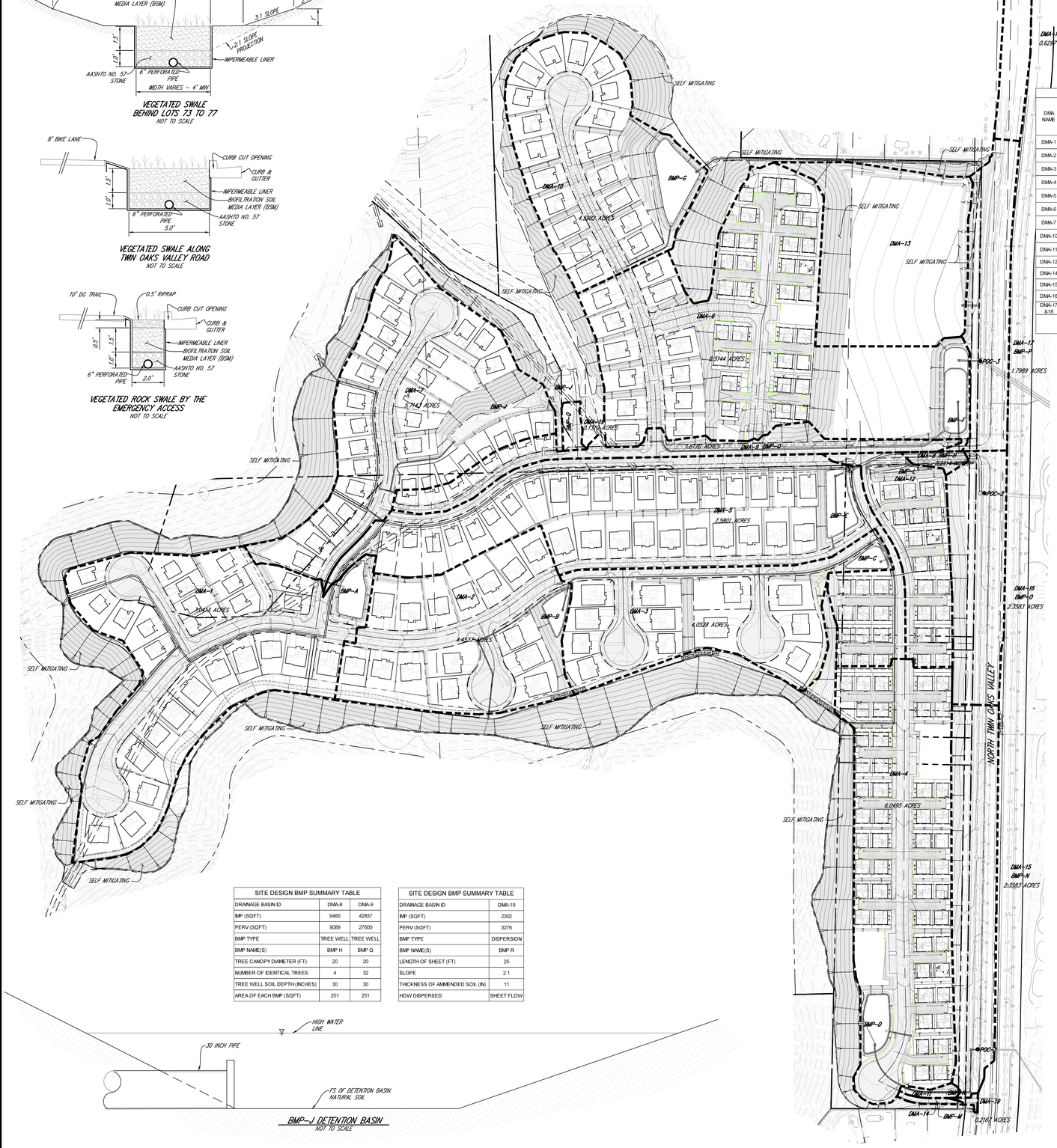
6" PVC PIPE PERFORATION LAYOUT DETAIL
NOT TO SCALE



VEGETATED SWALE BEHIND LOTS 73 TO 77
NOT TO SCALE

VEGETATED SWALE ALONG TWIN OAKS VALLEY ROAD
NOT TO SCALE

VEGETATED ROCK SWALE BY THE EMERGENCY ACCESS
NOT TO SCALE

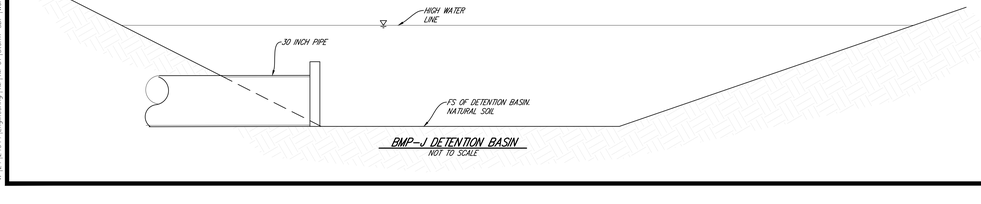


SITE DESIGN BMP SUMMARY TABLE

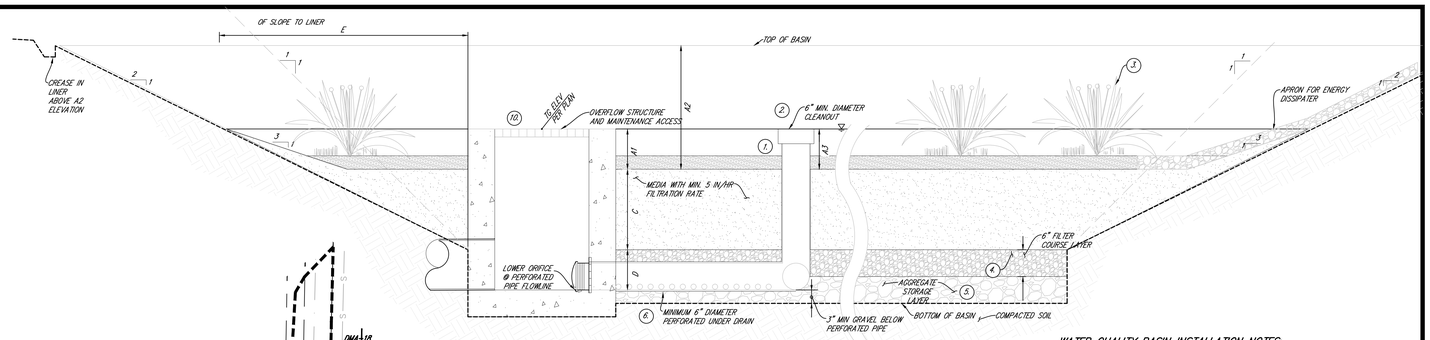
DRAINAGE BASIN ID	DMA-8	DMA-9
IMP (SQFT)	9460	42837
PERV (SQFT)	9089	27600
BMP TYPE	TREE WELL	TREE WELL
BMP NAME(S)	BMP H	BMP Q
TREE CANOPY DIAMETER (FT)	20	20
NUMBER OF IDENTICAL TREES	4	32
TREE WELL SOIL DEPTH (INCHES)	30	30
AREA OF EACH BMP (SQFT)	251	251

SITE DESIGN BMP SUMMARY TABLE

DRAINAGE BASIN ID	DMA-19
IMP (SQFT)	2302
PERV (SQFT)	3276
BMP TYPE	DISPERSION
BMP NAME(S)	BMP R
LENGTH OF SHEET (FT)	25
SLOPE	2:1
THICKNESS OF AMMENDED SOIL (IN)	11
HOW DISPERSED	SHEET FLOW



BMP–J DETENTION BASIN
NOT TO SCALE



BIOFILTRATION BASIN DETAIL
NOT TO SCALE

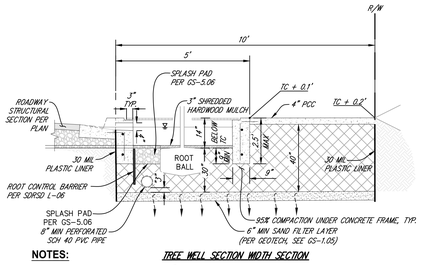
STRUCTURAL BIO-BASIN SUMMARY TABLE

DMA NAME	DMA TYPE	BMP NAME	TYPE OF BMP	IMPERVIOUS	PERVIOUS	EFFECTIVE AREA (SQFT)	A1 (INCH) WATER QUALITY	A2 (INCH) TOP OF BASIN	A3 (INCH) CLEAN OUT	B (INCH) UPPER ORIFICE	C (INCH) MEDIA	D (INCH) GRAVEL	E (INCH) OFFSET	BOX RSER OVERFLOW STRUCUTRE SIZE (INCH)	ORIFICES DIAMETER	
				FT2	FT2										UPPER (INCH)	LOWER (INCH)
DMA-1	DRAINS TO BMP	BMP-A	BIOFILTRATION BF-2	140049.781	166671	7204.819	9	12	9	N/A	18	15	2.25	3X3	N/A	2.5
DMA-2	DRAINS TO BMP	BMP-B	BIOFILTRATION BF-2	83629.69	110373.283	4378.342	9	12	9	N/A	18	15	2.25	3X4	N/A	1.5
DMA-3	DRAINS TO BMP	BMP-C	BIOFILTRATION BF-2	86786.327	89752	3716.807	9	12	9	N/A	18	15	2.25	3X5	N/A	1.5
DMA-4	DRAINS TO BMP	BMP-D	BIOFILTRATION BF-2	150204.8023	113312.3947	8216.028	9	12	9	N/A	18	15	2.25	3X6	N/A	1
DMA-5	DRAINS TO BMP	BMP-E	BIOFILTRATION BF-2	163049.7	167139.4	9464.736	9	12	9	N/A	18	15	2.25	3X7	N/A	1.75
DMA-6	DRAINS TO BMP	BMP-F	BIOFILTRATION BF-2	82368.22131	288520.17	8456.637	9	12	9	N/A	18	15	2.25	3X8	N/A	3
DMA-7	DRAINS TO BMP	BMP-I	BIOFILTRATION BF-2	93684.682	148392.9	4000	9	12	9	N/A	18	12	2.25	3X9	N/A	1.5
DMA-10	DRAINS TO BMP	BMP-G	BIOFILTRATION BF-2	73902.81	126396.8	13086.921	9	12	9	N/A	18	12	2.25	3X12	N/A	1.125
DMA-11	DRAINS TO BMP	BMP-K	BIOFILTRATION BF-2	5873	3565.48	200	9	12	9	N/A	18	12	2.25	3X13	N/A	0.5
DMA-12	DRAINS TO BMP	BMP-L	BIOFILTRATION BF-2	49126.083	29335.82	2500	9	12	9	N/A	18	12	2.25	3X14	N/A	2.5
DMA-14	DRAINS TO BMP	BMP-M	BIOFILTRATION BF-2	1782.61	496.533	200	9	12	9	N/A	18	12	2.25	3X15	N/A	0.5
DMA-15	DRAINS TO BMP	BMP-N	BIOFILTRATION BF-2	38298	64608	1800	9	12	9	N/A	18	12	2.25	3X16	N/A	0.5
DMA-16	DRAINS TO BMP	BMP-O	BIOFILTRATION BF-2	31610.86	46303.89	1275	9	12	9	N/A	18	12	2.25	3X17	N/A	0.5
DMA-17 &18	DRAINS TO BMP	BMP-P	BIOFILTRATION BF-2	#N/A	#N/A	#N/A	9	12	9	N/A	18	12	2.25	3X18	N/A	#N/A
		BMP-J	DETENTION BASIN FOR ADDITIONAL STORAGE	NA	NA	276	NA	72	NA	NA	NA	NA	NA	CONTROLLED BY 30 IN PIPE OPENING TO ALLOW PONDING		

WATER QUALITY BASIN INSTALLATION NOTES:

1. 3 INCHES OF WELL–AGED, SHREDDED HARDWOOD MULCH.
2. AN UNDERDRAIN CLEANOUT WITH A MINIMUM 6–INCH DIAMETER AND LOCKABLE CAP IS PLACED EVERY 250 TO 300FEET AS REQUIRED BASED ON UNDERDRAIN LENGTH.
3. VEGETATION USED SHOULD BE SUITABLE FOR THE CLIMATE PER LANDSCAPE PLANS. LANDSCAPING SHALL ALSO BE CONSISTENT WITH APPENDIX E.26 OF THE CITY'S BMP MANUAL.
4. FILTER COARSE IS A MINIMUM OF 6 INCHES PROVIDED IN TWO SEPARATE 3 INCH LAYERS. THE TOP LAYER SHALL BE MADE OF ASTM C33 CHOKER SAND AND THE BOTTOM LAYER BE OF ASTM NO. 8 AGGREGATE. MARKERS STAKES SHALL BE USED TO ENSURE UNIFORM LIFT THICKNESS.
5. AASHTO NO. 57 STONE OR CLASS 2 PERMEABLE PER CAL TRANS SPECIFICATION 68–1.025 IS RECOMMENDED FOR THE AGGREGATE STORAGE LAYER. WASHED, OPEN–GRADED CRUSHED ROCK MAY BE USED, HOWEVER, A 4 INCH MINIMUM WASHED PEA GRAVEL FILTER COURSE LAYER AT THE TOP OF THE CRUSHED ROCK IS REQUIRED.
6. IMPERMEABLE LINER SHALL BE INSTALLED IN ALL BIOFILTRATION BASINS AS REQUIRED BY THESE PLANS. IMPERMEABLE LINER SHALL BE 30 MIL THICK (PER COUNTY OF SAN DIEGO GREEN STREETS DESIGN STANDARD) DRAWING CC–3.00 AND COUNTY GREEN STREETS SUPPLEMENT TO CAL TRANS SPECIFICATIONS 20–11.08B) CONFIGURED TO ENTIRELY ENCOMPASS THE SIDES OF THE WATER QUALITY BASIN.
7. IMPERMEABLE LINER BE CONSTRUCTED IN COMPLIANCE WITH THE COUNTY OF SAN DIEGO GREEN STREETS SUPPLEMENT TO CAL TRANS SPECIFICATIONS 20–11.08B.
8. BIOFILTRATION SOIL MEDIA LAYER (BSM) SHALL CONSIST OF 60% TO 80% BY VOLUME SAND, UP TO 20% BY VOLUME TOPSOIL AND UP 20% BY VOLUME COMPOST (PER CITY OF SAN MARCOS BMP DESIGN MANUAL SECTION F.1) PLACED IN 6" LIFTS AND COMPACTED WITH WATER PRIOR TO THE NEXT LIFT. INITIAL PERMEABILITY SHALL BE 8" PER HOUR (WITH ASSUMED STABILIZED PERMEABILITY OF 5" PER HOUR).
9. THE AGGREGATE STORAGE LAYER SHALL BE COMPACTED IN ACCORDANCE WITH SOILS ENGINEER'S RECOMMENDATIONS.
10. OVERFLOW STRUCTURE TO HAVE A MINIMUM OF 12 INCHES OF FREEBOARD.
11. ALL LINER INSTALLATIONS, FIELD WELDING OF SEAMS, AND OBSERVATION OF SOIL MIX PLACEMENT SHALL REQUIRE SPECIAL INSPECTION BY THE PROJECT GEOTECHNICAL ENGINEER OR OTHER QUALIFIED PERSON. A LETTER CERTIFYING PROPER INSTALLATION SHALL BE PROVIDED TO THE ENGINEER OF RECORD TO ACCEPTANCE OF THE FACILITIES.
12. SPECIAL INSPECTION SHALL BE REQUIRED FOR CONSTRUCTION OF ALL BIOFILTRATION BASINS. INSPECTION SHALL BE PERFORMED BY A QUALIFIED INDIVIDUAL (SUCH AS: ENGINEER OF RECORD, QSD). INSPECTION SHALL INCLUDE:
    - VERIFICATION OF OVERALL DIMENSIONS PRIOR TO PLACEMENT OF MATERIALS;
    - PLACEMENT OF THE LINER, IF REQUIRED, AND SEAMS OR PENETRATIONS
    - PLACEMENT OF THE GRAVEL, FILTER MATERIALS, AND FILTER MEDIA;
    - ALL INLET AND OUTLET STRUCTURES INCLUDING UNDERDRAINS, IF REQUIRED.
    - CONTRACTOR SHALL TAKE PICTURES AT EACH STAGE OF INSTALLATION AND SUBMITTED TO ENGINEER FOR VERIFICATION OF INSTALL.

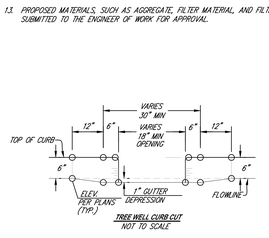
    INSPECTOR SHALL BE GIVEN A MINIMUM OF 48 HOURS PRIOR TO INSPECTION. UPON COMPLETION THE INSPECTOR SHALL PROVIDE A CERTIFICATION TO THE ENGINEER OF WORK.
13. PROPOSED MATERIALS, SUCH AS AGGREGATE, FILTER MATERIAL, AND FILTER MEDIA SHALL BE SUBMITTED TO THE ENGINEER OF WORK FOR APPROVAL.



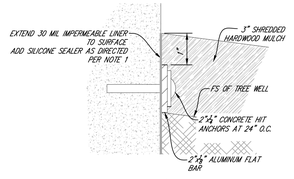
TREE WELL SECTION WIDTH SECTION

NOTES:

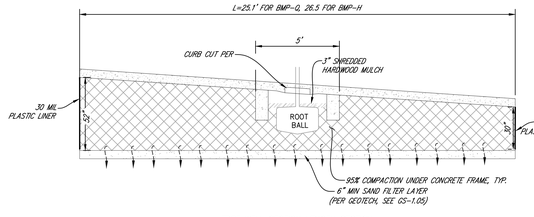
1. PONDING DEPTH PER DESIGN PLANS, 4" MAX.
2. WHERE APPLICABLE, REMOVE EXISTING CURB & GUTTER, CONSTRUCT CURB & GUTTER MONOLITHIC.
3. CURB & GUTTER TO BE CONSTRUCTED PER SDRSD G–02.
4. ELEVATIONS SHALL BE SHOWN ON PLANS WHERE INDICATED BY " " SYMBOL.
5. SEAL PLASTIC LINER TO ADJACENT IMPROVEMENTS AND EDGE RESTRAINTS PER GS–5.15.
6. CONCRETE SHALL BE 520–C–2500 UNLESS OTHERWISE SPECIFIED.
7. GUTTER TRANSITION LENGTH PER DESIGN PLANS; AN ADDITIONAL 2.5–FT CURB TRANSITION LENGTH IS RECOMMENDED FOR EVERY 1" OF ADDITIONAL GUTTER DEPRESSION.
8. PARALLEL STREET PARKING PROHIBITED FOR BMP'S WITH TREE WELL WITHOUT STRUCTURAL SOIL.
9. IF HRGS HYDROLOGIC SOIL GROUP D IS ENCOUNTERED, OR IF THE DESIGN SUBSOIL INFILTRATION RATE IS LESS THAN 0.1 IN/HR, AN UNDERDRAIN PIPE SHALL BE EMBEDDED WITHIN THE STRUCTURAL SOIL & CONNECTED TO A NEARBY STORM DRAIN SYSTEM PER GS–5.12 & GS–5.13.
10. REFER TO GS–1.00 FOR ALL DETAILS NOT SHOWN HERE.



TREE WELL CURB CUT
NOT TO SCALE



LINER ATTACHMENT TO ADJACENT CONCRETE DETAIL



TREE WELL SECTION LENGTH SECTION

NOTES:

1. ON CLEAN CONCRETE SURFACE, ADHERE LINER TO CONCRETE WITH SILICONE SEALANT OR EQUIVALENT PER MANUFACTURER RECOMMENDATIONS TO TOP ½" OF LINER.
2. SECURE LINER TO CONCRETE WITH 2" ALUMINUM OR STAINLESS STEEL FLAT BAR AS DIRECTED PER PLAN.
3. AS AN ALTERNATIVE, HIT ANCHORS CAN BE SUBSTITUTED WITH STAINLESS STEEL ANCHORS AT 24" O.C. OR POWDER ACTUATED FASTENERS AT 12" O.C.
4. TRIM EXCESS LINER TO BE FLUSH WITH SURFACE ELEVATION.
5. CONTRACTOR MEANS AND METHODS SHOULD AVOID/MINIMIZE WRINKLES TO THE LINER.
6. PARALLEL STREET PARKING PROHIBITED WITH THIS BMP.

SCALE 1"=150'
0 150 300

TWIN OAKS ROAD HYDROMOD EXHIBIT

HYDROLOGIC SOIL GROUP

THE ONSITE HYDROLOGICAL SOIL GROUP FOR THIS SITE IS TYPE D.

EXISTING SITE FEATURES:

- THE APPROXIMATE DEPTH TO GROUNDWATER IS GREATER THAN 20 FEET.
- THERE ARE NO NATURAL HYDROLOGIC FEATURES ON THE SITE.
- THE SITE PROPOSES TO CONNECT TO THE EXISTING PUBLIC STORM DRAIN SYSTEM LOCATED IN THE SOUTH EDGE OF THE SITE.
- BASED ON WATERSHED MAPPING OF POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS (CCSYA), THERE ARE NO CCSYA LOCATED WITHIN THE PROJECT BOUNDARY OR TRIBUTARY TO THE RUNOFF BYPASSED AROUND THE SITE.

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SHEET 22 OF 22 SHEETS
WQMP EXHIBIT

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SAN MARCOS, CA

NOT FOR CONSTRUCTION

I:\EXCEL\OAKCREST\Engineering\WQMP\01 Basin - QMP Working Files\Hydromod\OAKCREST_HydromodExhibit.dwg 10/29/2025 10:35:58 AM BRANDAL 49.00 SQFT

Attachment 2B:

Management of Critical Coarse Sediment Yield Areas

Worksheet H.6-1: Verification of GLUs

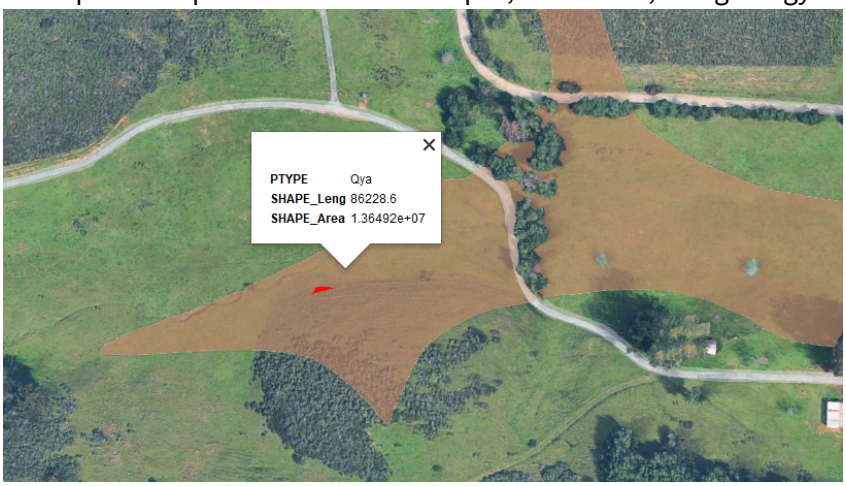
Verification of GLUs		Worksheet H.6-1
Detailed project-level review of GLUs may be performed to verify the presence or absence of potential critical coarse sediment yield areas within the project site and/or upstream areas. Use this form to document the evaluation of slope, geology, and land cover combined to determine the site-specific GLUs. Complete all sections of this form.		
Project Name: Oakcrest Subdivision N. Twin Oaks Valley Rd		
Project Tracking Number / Permit Application Number: SP25-0004		
1	What are the pre-project slopes?	☐ 0% to 10% (1) ☐ 10% to 20% (2) ☐ 20% to 40% (3) ☑ >40% (4)
2	What is the underlying geology? Refer to Appendix H.6 to classify geologic categories into a geology grouping. Note: site-specific geology may be determined in the field by a qualified geologist.	☐ Coarse bedrock (CB) ☐ Coarse sedimentary impermeable (CSI) ☑ Coarse sedimentary permeable (CSP) ☐ Fine bedrock (FB) ☐ Fine sedimentary impermeable (FSI) ☐ Fine sedimentary permeable (FSP) ☐ Other (O)
3	What is the pre-project land cover? Refer to Appendix H.6 for land cover category definitions. Note: Land cover shall be determined from aerial photography and/or field visit.	☑ Agriculture/grass ☐ Forest ☐ Developed ☐ Scrub/shrub ☐ Other ☐ Unknown
4	List the GLU(s) within the project site and/or upstream areas. Note the GLU nomenclature format is as follows: Geology – Land Cover – Slope Category (e.g. "CB-Agricultural/Grass-3" for a GLU consisting of coarse bedrock geology, agricultural/grass land cover, and 20% to 40% slope).	1. 40% > Slopes 2. Qya = CSP 3. Agriculture/grass

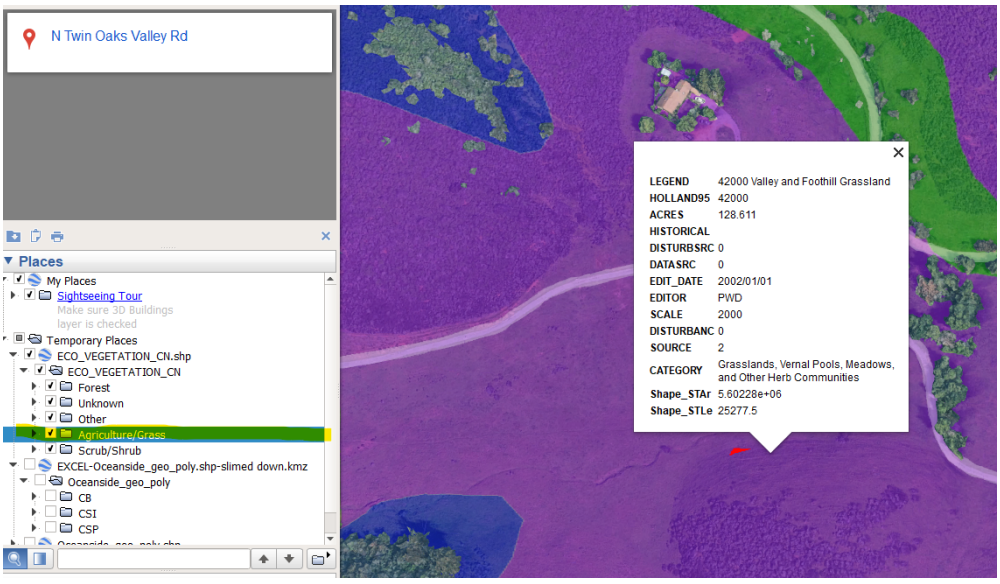

Potential Critical Coarse
Legend
meritage
Potential Critical Course Sediment
Deer Brook Dr
S12
N Twin Oaks Valley Rd
N Twin Oaks Valley Rd
Golf Glen Dr
Legacy Dr
Google Earth
Image © 2025 Vexcel Imaging US, Inc.
N
1000 ft

Worksheet H.6-1; Page 2 of 2

5 Photo(s)

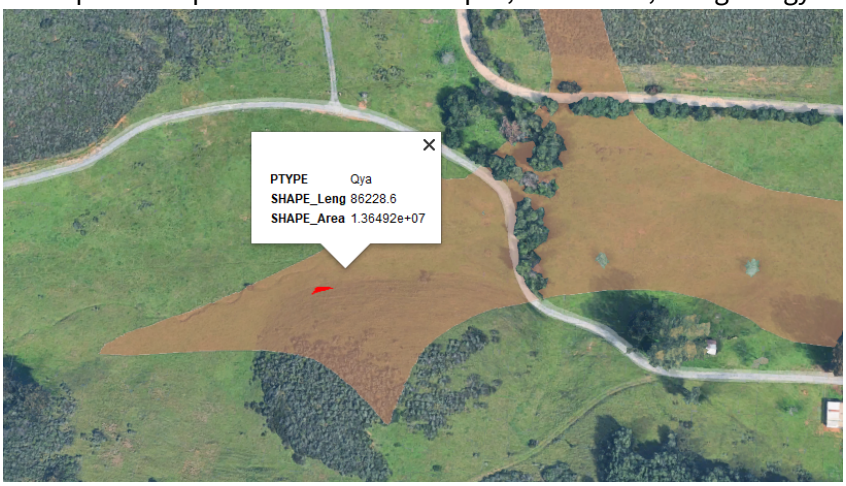
Insert photos representative of the slopes, land cover, and geology.





This is utilizing the coding in tables H.6-1 and H.6-2

Worksheet H.6-1; Page 2 of 2

5	Photo(s) Insert photos representative of the slopes, land cover, and geology.  		
6	Are any of the GLUs found within the project boundary and/or upstream areas (listed in row 4) also listed in Table H.6-1?	☑ Yes	Go to 7
		☐ No	Go to 8
7	End – Provide management measures for preservation of coarse sediment supply as described in this guidance document, or the project applicant may elect to determine whether downstream systems would be sensitive to reduction of coarse sediment yield from the project site and/or perform site-specific method for mapping critical coarse sediment yield areas.		
8	End – Site-specific GLUs do not warrant preservation of coarse sediment supply, no measures for protection of critical coarse sediment yield areas onsite are necessary. Optional: use the note section below to provide justification for these findings.		
9	Notes		

CSP-Agricultural/Grass-4	Coarse Sedimentary Permeable	Agricultural/Grass	>40%
CSP-Forest-3	Coarse Sedimentary Permeable	Forest	20% - 40%
CSP-Forest-4	Coarse Sedimentary Permeable	Forest	>40%
CSP-Scrub/Shrub-4	Coarse Sedimentary Permeable	Scrub/Shrub	>40%

H.6.2 Assumptions for Regional WMAA PCCSYA Maps

This section summarizes the assumptions used while developing Regional WMAA PCCSYA maps that are not listed in Appendix H.6.1.1:

- Critical coarse sediment would be generated from GLUs that are
  - composed of geologic units likely to generate coarse sediment (i.e. produces greater than 50% sand (0.074 mm; no. 200 sieve) by weight when weathered); and
  - have a potential for high relative sediment production (GLUs that produce soil loss greater than 8.4 tons/acre/year are assigned a high relative rating, this corresponds to 42% of the total coarse soil loss from the MS4-permitted region within the County of San Diego)
- Relative sediment production was assigned using RUSLE analysis of GLUs. It was assumed that this relative rating represents sediment production from sheet erosion, rill erosion, gullies and lower order channels, since these features are mostly on the hillslopes that are represented by the GLUs.
  - While performing the RUSLE analysis to assign the relative ranking, C factor from the regional maps from USEPA was adjusted to 0 for developed land covers to account for management actions implemented on developed sites (e.g. impervious surfaces).
- WMAA mapping does not account for sediment production from in-stream sediment supply (since these are mostly protected through other regulations) and sediment production from mass failures like landslides which are difficult to estimate on a regional scale without performing extensive field investigations.
- Regional WMAA map assumes that all receiving waters require coarse sediment and the map also does not account for potential existing impediments that may hinder delivery of coarse sediment to receiving waters.

For additional details refer to the Regional WMAA document on the Project Clean Water website at the following address:

http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=248&Itemid=219

C in this case is not runoff factor. It is Cover Factor

$$A = R \times K \times LS \times C \times P$$

R=36.96
K=0.32
LS=3.6
C= 0.14
P= 1

A= 36.96*0.32*3.6*0.14*1 = 5.96 tons/acre/year. This is medium production and not significant to downstream sediment supply. NOT CRITICAL COARSE SEDIMENT

• Critical coarse sediment would be generated from GLUs that are
o composed of geologic units likely to generate coarse sediment (i.e. produces greater than 50% sand (0.074 mm; no. 200 sieve) by weight when weathered); and
o have a potential for high relative sediment production (GLUs that produce soil loss greater than 8.4 tons/acre/year are assigned a high relative rating, this corresponds to 42% of the total coarse soil loss from the MS4-permitted region within the County of San Diego)

In order to determine the threshold of the 8.4 tons/acre/year the RUSLE equation must be utilized. 8.4 tons is considered high so if the amount is less than 8.4 it does not produce enough sediment to be considered a significant loss and can be ignored. The other portion must be met with the GLUS with the tables of H.6-1 and H.6-2 to see if the area is indeed within the appropriate GLUS. This site was within the appropriate GLUS but did not produce an appropriate amount of sediment as it came in as 8.4 tons/acres/year. Since this was done with accordance to the USDA and EPA RUSLE equation and City of San Marcos bmp manual this are is not considered CCS.

following the next pages are pages defining the terms from the EPA

Revised Universal Soil Loss Equation Version 2 (RUSLE2) Factor Updates

U.S. Environmental Protection Agency's (EPA) Pollutant Load Estimation Tool (PLET) provides county-level defaults for the universal soil loss equation (USLE) factor values. In PLET, USLE and revised USLE (RUSLE) factors are used to compute annual long-term sediment loadings in tons/year. For more information on the history and usage of USLE, refer to background information and supporting documentation (USDA 2023a) provided by the U.S. Department of Agriculture (USDA) Agricultural Research Service. Since USLE was first published, the USDA Agriculture Research Service has provided updates to the technology and methodology for estimating and deriving USLE factor values. These updates include the RUSLE and a further-enhanced Windows version called RUSLE version 2 (RUSLE2). This documentation summarizes the January 2024 update of PLET USLE factors to reflect RUSLE2 methodology.

The factors included in the RUSLE2 are:

R – rainfall runoff erosivity factor
K – soil erodibility factor
L – slope length factor
S – slope steepness factor
C – cover and management factor
P – support practice factor
LS – topographic factor derived from L and S factors (see equation 1)

Before the January 2024 update, the USLE factors were transferred over from the Spreadsheet Tool for Estimating Pollutant Loads (STEPL). These values were derived from the 1992 Natural Resource Inventory (NRI), produced by the USDA Natural Resources Conservation Service. The NRI (USDA 2023b) is a statistical survey conducted annually to assess the status, condition, and trends in land, soil, and water resources of the United States, excluding Alaska. NRI estimates of sheet and rill erosion use standard USLE technology for estimates before 2008 and the revised USLE version 2 (RUSLE2) methodology for 2008–2017 (USDA 2020). At the time of the January 2024 update, the 2017 NRI dataset was the most recent NRI release for the RUSLE2 factor values. The 1992 dataset used in STEPL only included cropland USLE factor values, with pastureland and forestland values extrapolated from the cropland factor values. The 1992 NRI provided R, K, LS, C, and P factor values for cropland. The cropland R, K, and LS values were applied to pastureland and forestland. The C factor was set at 0.04 for pastureland and 0.003 for forestland, and the P factor was set at 1 for both pastureland and forestland.

Derivation of Updated Factor Values

For the January 2024 RUSLE2 update, the 2015 cropland and 2017 cropland and pastureland R, K, L, S, C, and P were obtained from NRI. The LS factor was calculated based on the slope length (L) and percent slope (S). To provide the most up-to-date factor values in PLET, data from the 2017 NRI were used preferentially. If a jurisdiction did not have 2017 data, 2015 data were used, and if 2015 data were also unavailable, the original 1992 values were applied. In cases where the 1992 data were applied, the values still represent USLE and have not been updated to RUSLE. The supporting documentation of individual values by jurisdiction contains a column denoting which data years were applied to a particular jurisdiction for a given land use. This data is available upon request. In the future, PLET factor values for RUSLE2 will be updated on a routine basis as NRI datasets are released.

The factor values were derived and applied as follows:

R – Rainfall Runoff Erosivity Factor

- Cropland – reported R factor in 2017 NRI, or 2015 NRI R factor if 2017 data are unavailable, or 1992 R factor if both 2017 and 2015 data are unavailable.
- Pastureland – reported R factor in 2017 NRI, or 1992 R factor, which is derived from 1992 cropland R factor, if 2017 data are unavailable.
- Forestland – average value of the applied cropland and pastureland R factor.

K – Soil Erodibility Factor

- Cropland – reported K factor in 2017 NRI, or 2015 NRI K factor if 2017 data are unavailable, or 1992 K factor if both 2017 and 2015 data are unavailable.
- Pastureland – reported K factor in 2017 NRI, or 1992 K factor, which is derived from 1992 cropland K factor, if 2017 data are unavailable.
- Forestland – value of the applied pastureland K factor.
- In the 2017 and 2015 NRI datasets, both the USLE and RUSLE2 K factors were provided. The RUSLE2 values are used in the PLET update.

LS – Slope Length and Steepness Factor

- Cropland – derived from the percent slope (S) and slope length (L) factors in 2017 NRI or 2015, if applicable, using the formula (Ag Handbook No. 537 – Wischmeier and Smith 1978):

$$LS = [0.065 + 0.0456\ (slope) + 0.006541\ (slope)^2](slope\ length \div constant)^{NN} \qquad \text{(Equation 1)}$$

Where: slope = slope steepness in %; slope length = length of slope in meters (feet); constant = 22.1 metric (72.5 Imperial); NN = exponent determined based on the percent slope (refer to Table 1)

Table 1. NN Values

S	<1	1 ≤ Slope <3	3 ≤ Slope <5	≥5
NN	0.2	0.3	0.4	0.5

If data for 2017 and 2015 data are unavailable, the LS factor from 1992 is applied.

- Pastureland – derived from the percent slope (S) and slope length (L) factors in 2017 NRI using the formula described above, or applying the LS factor from 1992, if 2017 data are unavailable.
- Forestland – the applicable pastureland LS factor.

C – Cover and Management Factor

- Cropland – reported C factor in 2017 NRI, or 2015 NRI C factor if 2017 data are unavailable, or 1992 C factor if both 2017 and 2015 data are unavailable. Reported C factors below 0.2 are set at 0.2 to reflect conventional tillage and avoid double counting conservation tillage if it is applied as a BMP in a PLET scenario. C factors above 0.2 are retained.

- Pastureland – reported C factor in 2017 NRI or 1992 C factors if 2017 data are unavailable. Reported C factors below 0.04 are set at 0.04 to reflect conventional management practices and avoid double counting when other BMPs are applied in a PLET scenario. Note that in STEPL and the original PLET, all pastureland C factors were set at 0.04.
- Forestland – consistent with STEPL and the original PLET, all forestland C factors are set at 0.003. The value of 0.003 agrees with published C factor values and ranges (provided in Appendix A).

P – Support Practice Factor

- Cropland – reported P factor in 2017 NRI, or 2015 NRI R factor if 2017 data are unavailable, or 1992 R factor if both 2017 and 2015 data are unavailable.
- Pastureland – reported P factor in 2017 NRI, or if 2017 data are unavailable, set to 1. Approximately 90% of jurisdictions in the 2017 NRI have a P factor of 1. Note that in STEPL and the original PLET, all pastureland P factors were set at 1.
- Forestland – all forestland P factors are set at 1. Note that in STEPL and the original PLET, all forestland P factors were set at 1.

While the NRI includes all states, except for Alaska[1] and Puerto Rico, no single year of NRI annual data contained a complete dataset of all counties within the United States. To build a complete default dataset for PLET that included all counties, the RUSLE2 update includes a mixture of the 1992, 2015, and 2017 NRI datasets. Despite attempts to include all counties, a small subset of jurisdictions lacks NRI data for the years 1992, 2015, and 2017. For example, missing jurisdictions for cropland values accounted for less than 1% of all jurisdictions, and missing jurisdictions for pastureland accounted for less than 3.5% of all jurisdictions. It appears that the subset of jurisdictions without NRI data likely contained no cropland or pastureland within their boundaries, e.g., New York, NY; Philadelphia, PA; and independent cities within Virginia.

References

USDA (U.S. Department of Agriculture). 2023a. *About the Universal Soil Loss Equation*. Agricultural Research Service. National Soil Erosion Research Laboratory, West Lafayette, IN. https://www.ars.usda.gov/midwest-area/west-lafayette-in/national-soil-erosion-research/docs/usle-database/research/. Accessed on December 3, 2023.

USDA (U.S. Department of Agriculture). 2023b. *National Resources Inventory*. https://www.nrcs.usda.gov/nri. Accessed on December 3, 2023.

USDA (U.S. Department of Agriculture). 2020. *Summary Report: 2017 National Resources Inventory*. Natural Resources Conservation Service, Washington, DC, and the Center for Survey Statistics and Methodology, Iowa State University, Ames, IA. https://www.nrcs.usda.gov/sites/default/files/2022-10/2017NRISummary_Final.pdf.

Wischmeier, W.H. and D.D. Smith. 1978. *Predicting rainfall erosion losses – a guide to conservation planning*. Agriculture Handbook No. 537. U.S Department of Agriculture, Washington, DC.

[1] Due to a lack of NRI data, factors values are not included for Alaska in the January 2024 update.



LS = 3.6



K = 0.32

Calculate R Factor

Facility Information

Start Date: 09/05/2025	**Latitude:** 33.1621
End Date: 09/05/2026	**Longitude:** -117.1633

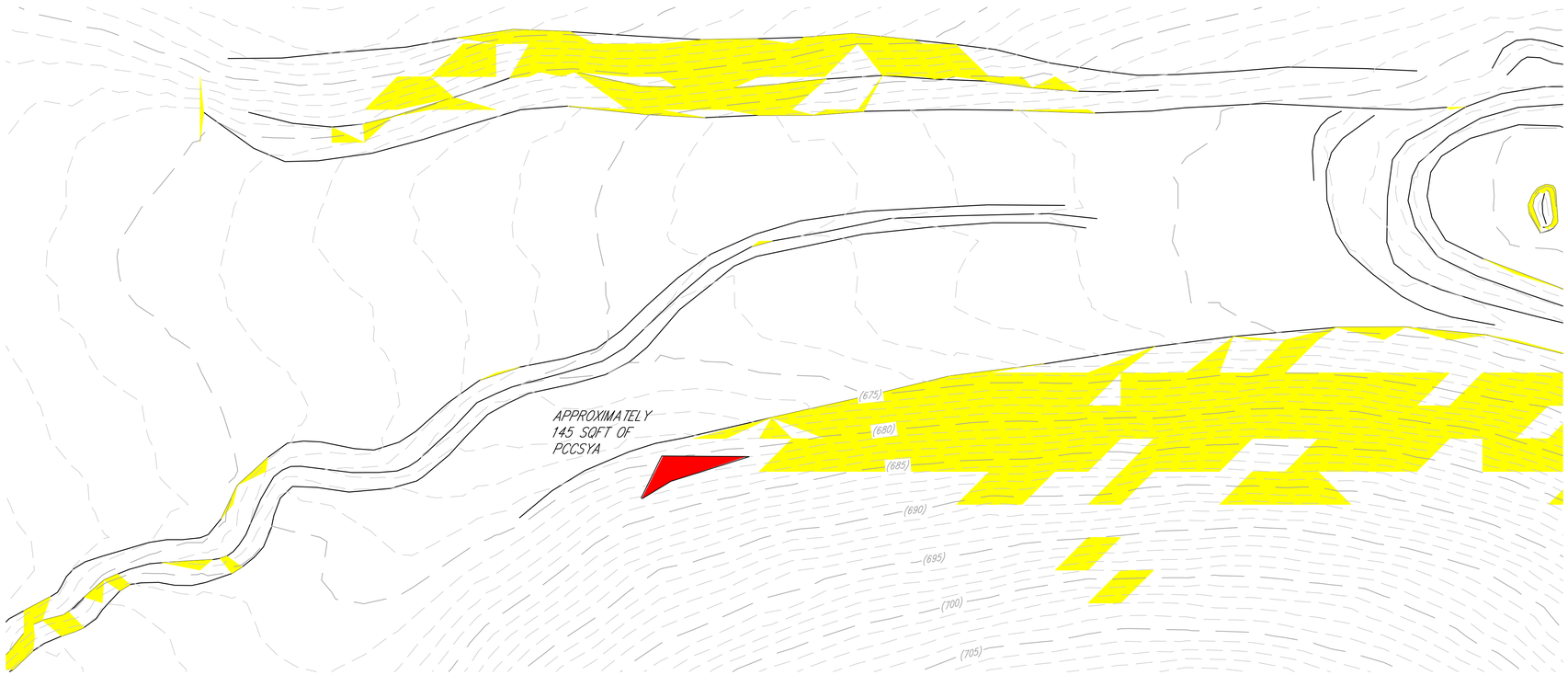
Calculation Results

Rainfall erosivity factor (R Factor) = 36.96

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

R=36.96





LEDGEND

PCCSYA

SLOPE OVER 40%

SCALE 1":20'

0 20 40 60 80

SLOPE ANALYSIS EXHIBIT

EXCEL ENGINEERING
LAND PLANNING • ENGINEERING • SURVEYING
440 STATE PLACE, ESCONDIDO, CA 92029
PH (760)745-8118 FX (760)745-1890

Attachment 2D:

Flow Control Facility Design

POC-1

STATISTICS ANALYSIS OF THE SWMM FILES FOR:

DISCHARGE NODE: POC-1

ANALYSIS DETAILS

Stream Susceptibility to Channel Erosion: High
Low Flow Threshold = (0.1)Q2 = (0.1)3.000 = Qlf = 0.3000 (cfs)
Flow Control Upper Limit = Q10 = 4.300 (cfs)
Assumed time between storms (hours): 24

PRE-DEVELOPMENT SWMM FILE

SWMM file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
SWMM file time stamp: 8/21/2024 3:53:58 PM
Selected Node to Analyze: POC-1

POST-DEVELOPMENT MITIGATED SWMM FILE

SWMM file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
SWMM file time stamp: 1/7/2025 2:24:04 PM
Selected Node to Analyze: POC-1

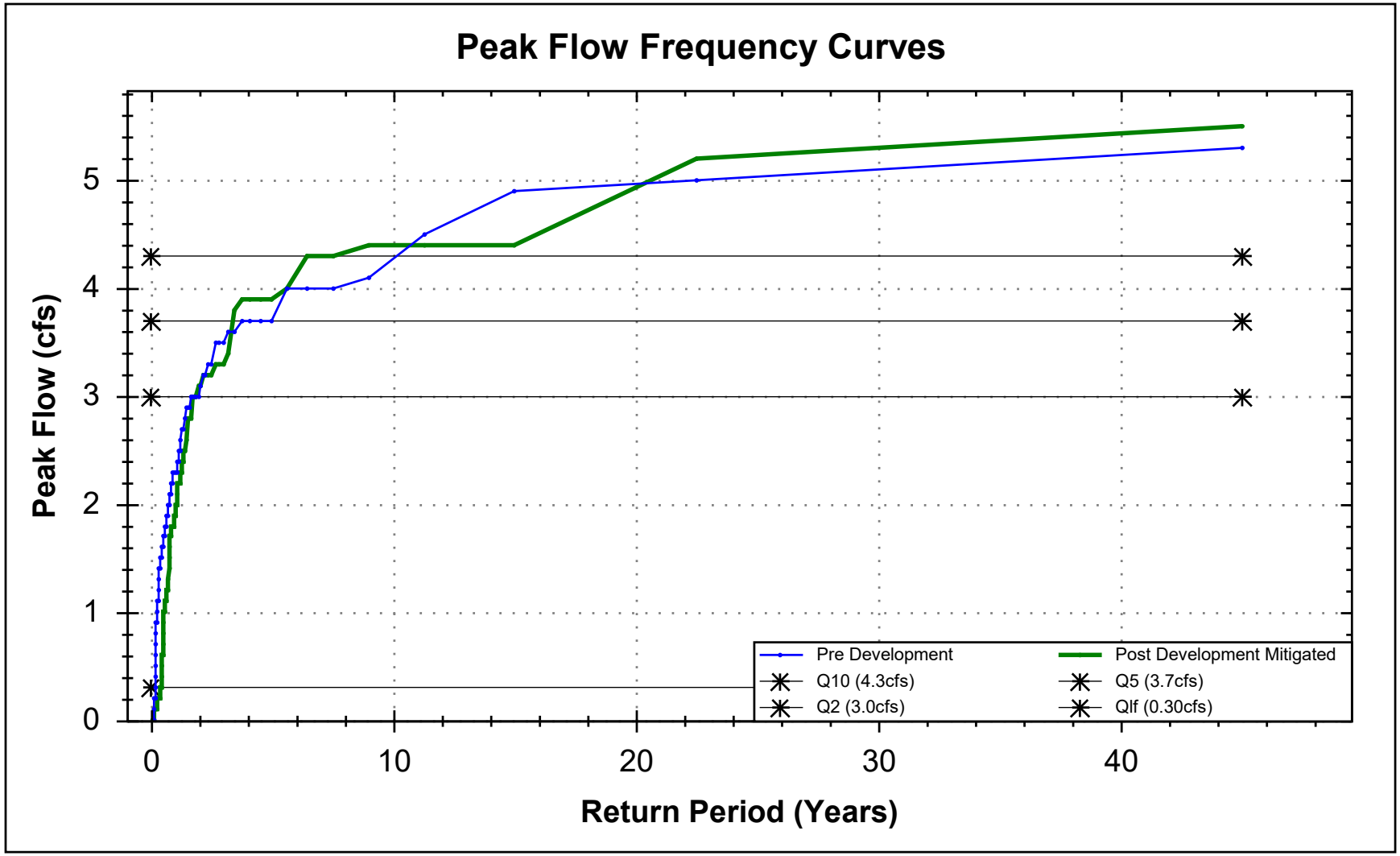
MITIGATED CONDITIONS RESULTS

For the Mitigated Conditions:

Peak Flow Conditions PASS
Flow Duration Conditions PASS

The Mitigated Conditions peak flow frequency curve is composed of 360 points. Of the points, 5 point(s) are above the flow control upper limit (Q10 = 4.3 (cfs)), 231 point(s) are below the low flow threshold value (Qlf = 0.30 (cfs)). Of the points within the flow control range (Qlf to Q10), 116 point(s) have a lower peak flow rate than pre-development conditions, and 8 point(s) have a peak flow that exceeds the pre-development by less than 10%. These points all pass. There are no points that failed, therefore the peak flow requirements have been met.

The Mitigated Conditions flow duration curve is composed of 100 flow bins (points). Each point represents the number of hours where the discharge was equal to or greater than the discharge value, but less than the next greater discharge value. Within the flow control range, comparing the post-development flow duration curve to the pre-development flow duration curve, 100 post-development curve point(s) have a lower flow duration than pre-development conditions. These points all pass. There are no points that failed, therefore the flow duration requirements have been met.


Peak Flow Frequency Curves
Peak Flow (cfs)
0
1
2
3
4
5
0
10
20
30
40
Return Period (Years)
Pre Development
Post Development Mitigated
Q10 (4.3cfs)
Q5 (3.7cfs)
Q2 (3.0cfs)
Qlf (0.30cfs)

Compare Post-Development Curve to Pre-Development Curve
Flow Control Upper Limit: 4.3 (cfs)
Flow Control Lower Limit: 0.30 (cfs)

post-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
post-development time stamp: 1/7/2025 2:24:04 PM
Compared to:
pre-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
pre-development time stamp: 8/21/2024 3:53:58 PM

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
0	45.00	5.50	5.30	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (4.3 (cfs))
1	22.50	5.20	5.00	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (4.3 (cfs))
2	15.00	4.40	4.90	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (4.3 (cfs))
3	11.30	4.40	4.50	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (4.3 (cfs))
4	9.00	4.40	4.10	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (4.3 (cfs))
5	7.50	4.30	4.00	FALSE	TRUE	FALSE	Pass- Qpost < 110% QPre
6	6.40	4.30	4.00	FALSE	TRUE	FALSE	Pass- Qpost < 110% QPre
7	5.60	4.00	4.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
8	5.00	3.90	3.70	FALSE	TRUE	FALSE	Pass- Qpost < 110% QPre
9	4.50	3.90	3.70	FALSE	TRUE	FALSE	Pass- Qpost < 110% QPre
10	4.10	3.90	3.70	FALSE	TRUE	FALSE	Pass- Qpost < 110% QPre
11	3.80	3.90	3.70	FALSE	TRUE	FALSE	Pass- Qpost < 110% QPre
12	3.50	3.80	3.60	FALSE	TRUE	FALSE	Pass- Qpost < 110% QPre
13	3.20	3.40	3.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
14	3.00	3.30	3.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
15	2.80	3.30	3.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
16	2.60	3.30	3.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
17	2.50	3.20	3.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
18	2.40	3.20	3.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
19	2.30	3.20	3.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
20	2.10	3.20	3.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
21	2.00	3.10	3.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
22	2.00	3.10	3.00	FALSE	TRUE	FALSE	Pass- Qpost < 110% QPre
23	1.90	3.00	3.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
24	1.80	3.00	3.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
25	1.70	3.00	3.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
26	1.70	2.80	3.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
27	1.60	2.80	2.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
28	1.60	2.80	2.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
29	1.50	2.80	2.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
30	1.50	2.60	2.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
31	1.40	2.50	2.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
32	1.40	2.50	2.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
33	1.30	2.40	2.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
34	1.30	2.40	2.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
35	1.30	2.30	2.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
36	1.20	2.30	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
37	1.20	2.20	2.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
38	1.20	2.20	2.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
39	1.10	2.20	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
40	1.10	2.20	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
41	1.10	2.10	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
42	1.00	2.00	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
43	1.00	2.00	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
44	1.00	1.90	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
45	1.00	1.90	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
46	1.00	1.90	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
47	0.90	1.80	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
48	0.90	1.80	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
49	0.90	1.80	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
50	0.90	1.80	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
51	0.90	1.80	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
52	0.80	1.80	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
53	0.80	1.80	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
54	0.80	1.80	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
55	0.80	1.70	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
56	0.80	1.70	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
57	0.80	1.60	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
58	0.80	1.60	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
59	0.80	1.50	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
60	0.70	1.40	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
61	0.70	1.30	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
62	0.70	1.20	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
63	0.70	1.20	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
64	0.70	1.20	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
65	0.70	1.20	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
66	0.70	1.20	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
67	0.70	1.20	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
68	0.70	1.20	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
69	0.60	1.20	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
70	0.60	1.10	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
71	0.60	1.10	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
72	0.60	1.10	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
73	0.60	1.10	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
74	0.60	1.10	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
75	0.60	1.10	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
76	0.60	1.10	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
77	0.60	1.10	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
78	0.60	1.10	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
79	0.60	1.10	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
80	0.60	1.10	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
81	0.50	1.10	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
82	0.50	1.00	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
83	0.50	1.00	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
84	0.50	0.90	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
85	0.50	0.90	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
86	0.50	0.80	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
87	0.50	0.80	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
88	0.50	0.70	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
89	0.50	0.70	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
90	0.50	0.70	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
91	0.50	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
92	0.50	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
93	0.50	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
94	0.50	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
95	0.50	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
96	0.50	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
97	0.50	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
98	0.50	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
99	0.50	0.50	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
100	0.40	0.50	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
101	0.40	0.50	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
102	0.40	0.40	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
103	0.40	0.40	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
104	0.40	0.40	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
105	0.40	0.40	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
106	0.40	0.40	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
107	0.40	0.40	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
108	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
109	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
110	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
111	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
112	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
113	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
114	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
115	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
116	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
117	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
118	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
119	0.40	0.30	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
120	0.40	0.30	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
121	0.40	0.30	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
122	0.40	0.30	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
123	0.40	0.30	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
124	0.40	0.30	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
125	0.40	0.30	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
126	0.40	0.30	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
127	0.40	0.30	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
128	0.30	0.30	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
129	0.30	0.20	1.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
130	0.30	0.20	1.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
131	0.30	0.20	1.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
132	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
133	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
134	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
135	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
136	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
137	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
138	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
139	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
140	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
141	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
142	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
143	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
144	0.30	0.20	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
145	0.30	0.20	1.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
146	0.30	0.20	1.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
147	0.30	0.20	1.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
148	0.30	0.20	1.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
149	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
150	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
151	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
152	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
153	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
154	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
155	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
156	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
157	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
158	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
159	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
160	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
161	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
162	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
163	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
164	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
165	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
166	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
167	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
168	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
169	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
170	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
171	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
172	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
173	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
174	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
175	0.30	0.20	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
176	0.30	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
177	0.30	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
178	0.30	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
179	0.30	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
180	0.20	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
181	0.20	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
182	0.20	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
183	0.20	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
184	0.20	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
185	0.20	0.20	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
186	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
187	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
188	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
189	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
190	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
191	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
192	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
193	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
194	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
195	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
196	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
197	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
198	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
199	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
200	0.20	0.10	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
201	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
202	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
203	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
204	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
205	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
206	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
207	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
208	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
209	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
210	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
211	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
212	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
213	0.20	0.10	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
214	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
215	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
216	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
217	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
218	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
219	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
220	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
221	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
222	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
223	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
224	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
225	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
226	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
227	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
228	0.20	0.10	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
229	0.20	0.10	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
230	0.20	0.10	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
231	0.20	0.10	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
232	0.20	0.10	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
233	0.20	0.10	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
234	0.20	0.10	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
235	0.20	0.10	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
236	0.20	0.10	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
237	0.20	0.10	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
238	0.20	0.10	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
239	0.20	0.10	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
240	0.20	0.10	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
241	0.20	0.10	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
242	0.20	0.10	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
243	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
244	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
245	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
246	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
247	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
248	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
249	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
250	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
251	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
252	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
253	0.20	0.10	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
254	0.20	0.10	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
255	0.20	0.10	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
256	0.20	0.10	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
257	0.20	0.10	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
258	0.20	0.10	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
259	0.20	0.10	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
260	0.20	0.10	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
261	0.20	0.10	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
262	0.20	0.10	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
263	0.20	0.10	0.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
264	0.20	0.10	0.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
265	0.20	0.10	0.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
266	0.20	0.10	0.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
267	0.20	0.10	0.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
268	0.20	0.10	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
269	0.20	0.10	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
270	0.20	0.10	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
271	0.20	0.10	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
272	0.20	0.10	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
273	0.20	0.00	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
274	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
275	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
276	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
277	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
278	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
279	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
280	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
281	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
282	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
283	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
284	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
285	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
286	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
287	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
288	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
289	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
290	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
291	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
292	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
293	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
294	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
295	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
296	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
297	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
298	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
299	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
300	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
301	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
302	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
303	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
304	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
305	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
306	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
307	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
308	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
309	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
310	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
311	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
312	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
313	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
314	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
315	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
316	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
317	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
318	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
319	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
320	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
321	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
322	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
323	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
324	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
325	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
326	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
327	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
328	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
329	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
330	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
331	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
332	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
333	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
334	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
335	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
336	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
337	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
338	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
339	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
340	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
341	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
342	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
343	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
344	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
345	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
346	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
347	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
348	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
349	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
350	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
351	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
352	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
353	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
354	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
355	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
356	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
357	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
358	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))
359	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.30 (cfs))

SWMM.out file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
SWMM.out time stamp: 8/21/2024 3:53:58 PM

Q10: 4.300 (cfs)
Q5: 3.700 (cfs)
Q2: 3.000 (cfs)

Peak Flow Statistics Table Values

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
1	1993/01/06 16:00:00	1993/01/10 19:00:00	100	5.3	0.30%	45
2	1971/02/23 05:00:00	1971/02/23 12:00:00	8	5	0.60%	22.5
3	1986/02/15 01:00:00	1986/02/15 12:00:00	12	4.9	1.00%	15
4	1995/01/25 08:00:00	1995/01/25 23:00:00	16	4.5	1.30%	11.25
5	1995/01/04 15:00:00	1995/01/04 23:00:00	9	4.1	1.60%	9
6	1967/11/19 06:00:00	1967/11/20 04:00:00	23	4	1.90%	7.5
7	1983/12/25 06:00:00	1983/12/25 20:00:00	15	4	2.30%	6.43
8	1998/02/14 14:00:00	1998/02/15 02:00:00	13	4	2.60%	5.63
9	1966/12/05 01:00:00	1966/12/07 00:00:00	48	3.7	2.90%	5
10	1978/01/14 16:00:00	1978/01/16 14:00:00	47	3.7	3.20%	4.5
11	1978/03/16 22:00:00	1978/03/18 15:00:00	42	3.7	3.60%	4.09
12	1988/04/20 07:00:00	1988/04/21 23:00:00	41	3.7	3.90%	3.75
13	1981/02/09 00:00:00	1981/02/09 09:00:00	10	3.6	4.20%	3.46
14	1983/03/01 14:00:00	1983/03/03 09:00:00	44	3.6	4.50%	3.21
15	1972/11/14 13:00:00	1972/11/14 16:00:00	4	3.5	4.90%	3
16	1983/11/25 00:00:00	1983/11/25 04:00:00	5	3.5	5.20%	2.81
17	2007/01/31 00:00:00	2007/01/31 01:00:00	2	3.5	5.50%	2.65
18	1967/04/11 09:00:00	1967/04/12 06:00:00	22	3.3	5.80%	2.5
19	2007/08/26 07:00:00	2007/08/26 09:00:00	3	3.3	6.10%	2.37
20	2005/01/09 04:00:00	2005/01/09 23:00:00	20	3.2	6.50%	2.25
21	2005/01/11 02:00:00	2005/01/11 10:00:00	9	3.2	6.80%	2.14
22	1969/01/24 07:00:00	1969/01/25 18:00:00	36	3.1	7.10%	2.05
23	1967/12/18 15:00:00	1967/12/19 16:00:00	26	3	7.40%	1.96
24	1980/01/28 08:00:00	1980/01/30 20:00:00	61	3	7.80%	1.88
25	1980/02/16 18:00:00	1980/02/21 00:00:00	103	3	8.10%	1.8
26	1993/01/12 19:00:00	1993/01/14 06:00:00	36	3	8.40%	1.73
27	1998/01/09 16:00:00	1998/01/10 19:00:00	28	3	8.70%	1.67
28	1991/03/20 07:00:00	1991/03/21 08:00:00	26	2.9	9.10%	1.61
29	1992/02/15 13:00:00	1992/02/15 19:00:00	7	2.9	9.40%	1.55
30	2004/10/18 09:00:00	2004/10/18 12:00:00	4	2.9	9.70%	1.5
31	2007/11/30 10:00:00	2007/12/01 01:00:00	16	2.9	10.00%	1.45
32	1998/02/03 16:00:00	1998/02/03 21:00:00	6	2.8	10.40%	1.41
33	1965/11/22 04:00:00	1965/11/23 06:00:00	27	2.7	10.70%	1.36
34	1980/03/02 21:00:00	1980/03/03 04:00:00	8	2.7	11.00%	1.32

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
35	1993/02/08 01:00:00	1993/02/08 12:00:00	12	2.7	11.30%	1.29
36	2004/10/19 16:00:00	2004/10/20 17:00:00	26	2.7	11.70%	1.25
37	1985/11/25 00:00:00	1985/11/25 07:00:00	8	2.6	12.00%	1.22
38	1974/12/04 09:00:00	1974/12/04 11:00:00	3	2.5	12.30%	1.18
39	1981/03/19 21:00:00	1981/03/19 23:00:00	3	2.5	12.60%	1.15
40	1978/02/05 20:00:00	1978/02/06 23:00:00	28	2.4	12.90%	1.13
41	1982/03/18 02:00:00	1982/03/19 18:00:00	41	2.4	13.30%	1.1
42	1970/03/04 22:00:00	1970/03/05 02:00:00	5	2.3	13.60%	1.07
43	1970/11/29 14:00:00	1970/11/30 00:00:00	11	2.3	13.90%	1.05
44	1976/04/14 11:00:00	1976/04/14 12:00:00	2	2.3	14.20%	1.02
45	1979/01/17 12:00:00	1979/01/18 17:00:00	30	2.3	14.60%	1
46	1993/11/14 17:00:00	1993/11/14 18:00:00	2	2.3	14.90%	0.98
47	2003/02/25 17:00:00	2003/02/25 19:00:00	3	2.3	15.20%	0.96
48	2004/10/27 04:00:00	2004/10/27 10:00:00	7	2.3	15.50%	0.94
49	2006/04/04 23:00:00	2006/04/05 10:00:00	12	2.3	15.90%	0.92
50	1973/02/11 05:00:00	1973/02/13 02:00:00	46	2.2	16.20%	0.9
51	1974/01/04 19:00:00	1974/01/05 04:00:00	10	2.2	16.50%	0.88
52	1979/01/05 08:00:00	1979/01/06 08:00:00	25	2.2	16.80%	0.87
53	1980/01/10 23:00:00	1980/01/12 09:00:00	35	2.2	17.20%	0.85
54	1983/02/27 17:00:00	1983/02/27 22:00:00	6	2.2	17.50%	0.83
55	2003/02/11 17:00:00	2003/02/13 19:00:00	51	2.2	17.80%	0.82
56	1969/02/06 08:00:00	1969/02/06 12:00:00	5	2.1	18.10%	0.8
57	1976/03/03 00:00:00	1976/03/03 03:00:00	4	2.1	18.40%	0.79
58	1978/12/17 19:00:00	1978/12/18 14:00:00	20	2.1	18.80%	0.78
59	1982/01/01 09:00:00	1982/01/01 12:00:00	4	2.1	19.10%	0.76
60	2004/02/26 06:00:00	2004/02/26 10:00:00	5	2.1	19.40%	0.75
61	1970/02/28 16:00:00	1970/03/02 08:00:00	41	2	19.70%	0.74
62	1977/05/08 18:00:00	1977/05/08 23:00:00	6	2	20.10%	0.73
63	1982/12/22 23:00:00	1982/12/23 01:00:00	3	2	20.40%	0.71
64	1991/02/27 18:00:00	1991/03/01 14:00:00	45	2	20.70%	0.7
65	1995/03/05 08:00:00	1995/03/06 02:00:00	19	2	21.00%	0.69
66	1965/12/13 01:00:00	1965/12/13 02:00:00	2	1.9	21.40%	0.68
67	1976/12/31 09:00:00	1976/12/31 13:00:00	5	1.9	21.70%	0.67
68	1991/03/19 00:00:00	1991/03/19 05:00:00	6	1.9	22.00%	0.66
69	1998/02/08 16:00:00	1998/02/08 23:00:00	8	1.9	22.30%	0.65
70	2004/02/22 14:00:00	2004/02/23 04:00:00	15	1.9	22.70%	0.64
71	1983/03/20 20:00:00	1983/03/21 04:00:00	9	1.8	23.00%	0.63
72	1983/03/23 18:00:00	1983/03/23 23:00:00	6	1.8	23.30%	0.63
73	1985/11/29 08:00:00	1985/11/29 19:00:00	12	1.8	23.60%	0.62
74	1994/02/07 15:00:00	1994/02/07 22:00:00	8	1.8	23.90%	0.61
75	1994/03/25 00:00:00	1994/03/25 16:00:00	17	1.8	24.30%	0.6
76	1995/03/11 03:00:00	1995/03/12 02:00:00	24	1.8	24.60%	0.59

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
77	2003/03/15 17:00:00	2003/03/16 19:00:00	27	1.8	24.90%	0.58
78	2003/04/14 17:00:00	2003/04/14 18:00:00	2	1.8	25.20%	0.58
79	1965/04/08 14:00:00	1965/04/10 01:00:00	36	1.7	25.60%	0.57
80	1965/12/09 06:00:00	1965/12/10 11:00:00	30	1.7	25.90%	0.56
81	1970/12/21 03:00:00	1970/12/21 11:00:00	9	1.7	26.20%	0.56
82	1972/12/04 15:00:00	1972/12/04 20:00:00	6	1.7	26.50%	0.55
83	1981/03/01 05:00:00	1981/03/01 17:00:00	13	1.7	26.90%	0.54
84	1991/12/29 16:00:00	1991/12/29 19:00:00	4	1.7	27.20%	0.54
85	1992/02/06 17:00:00	1992/02/07 01:00:00	9	1.7	27.50%	0.53
86	1998/02/22 17:00:00	1998/02/24 20:00:00	52	1.7	27.80%	0.52
87	2006/01/02 14:00:00	2006/01/02 15:00:00	2	1.7	28.20%	0.52
88	1965/12/29 20:00:00	1965/12/29 22:00:00	3	1.6	28.50%	0.51
89	1967/01/24 18:00:00	1967/01/25 01:00:00	8	1.6	28.80%	0.51
90	1967/11/21 13:00:00	1967/11/21 15:00:00	3	1.6	29.10%	0.5
91	1974/03/08 02:00:00	1974/03/08 15:00:00	14	1.6	29.40%	0.5
92	1976/02/08 15:00:00	1976/02/09 04:00:00	14	1.6	29.80%	0.49
93	1979/03/01 13:00:00	1979/03/01 21:00:00	9	1.6	30.10%	0.48
94	1980/03/06 01:00:00	1980/03/06 15:00:00	15	1.6	30.40%	0.48
95	1982/03/15 13:00:00	1982/03/16 01:00:00	13	1.6	30.70%	0.47
96	1983/01/27 08:00:00	1983/01/27 15:00:00	8	1.6	31.10%	0.47
97	1988/12/24 22:00:00	1988/12/25 03:00:00	6	1.6	31.40%	0.46
98	1991/03/25 07:00:00	1991/03/27 13:00:00	55	1.6	31.70%	0.46
99	1992/01/05 15:00:00	1992/01/06 04:00:00	14	1.6	32.00%	0.46
100	1996/01/31 18:00:00	1996/02/01 05:00:00	12	1.6	32.40%	0.45
101	1996/11/21 20:00:00	1996/11/22 04:00:00	9	1.6	32.70%	0.45
102	1964/11/17 18:00:00	1964/11/18 00:00:00	7	1.5	33.00%	0.44
103	1973/01/16 20:00:00	1973/01/16 23:00:00	4	1.5	33.30%	0.44
104	1973/03/11 13:00:00	1973/03/11 18:00:00	6	1.5	33.70%	0.43
105	1975/03/08 09:00:00	1975/03/08 14:00:00	6	1.5	34.00%	0.43
106	1976/02/05 06:00:00	1976/02/07 10:00:00	53	1.5	34.30%	0.43
107	1978/03/12 14:00:00	1978/03/15 04:00:00	63	1.5	34.60%	0.42
108	1978/11/13 23:00:00	1978/11/14 00:00:00	2	1.5	35.00%	0.42
109	1983/11/20 12:00:00	1983/11/21 11:00:00	24	1.5	35.30%	0.41
110	1986/03/10 16:00:00	1986/03/10 21:00:00	6	1.5	35.60%	0.41
111	1987/01/07 00:00:00	1987/01/07 09:00:00	10	1.5	35.90%	0.41
112	1987/11/04 17:00:00	1987/11/05 00:00:00	8	1.5	36.20%	0.4
113	1992/02/12 18:00:00	1992/02/13 07:00:00	14	1.5	36.60%	0.4
114	1994/02/17 12:00:00	1994/02/17 14:00:00	3	1.5	36.90%	0.4
115	1994/04/28 00:00:00	1994/04/28 02:00:00	3	1.5	37.20%	0.39
116	1998/02/17 17:00:00	1998/02/17 20:00:00	4	1.5	37.50%	0.39
117	2001/11/24 17:00:00	2001/11/24 19:00:00	3	1.5	37.90%	0.39
118	2002/12/20 17:00:00	2002/12/20 21:00:00	5	1.5	38.20%	0.38

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
119	2004/02/03 00:00:00	2004/02/03 02:00:00	3	1.5	38.50%	0.38
120	2005/01/03 08:00:00	2005/01/04 13:00:00	30	1.5	38.80%	0.38
121	1966/12/03 13:00:00	1966/12/03 21:00:00	9	1.4	39.20%	0.37
122	1967/01/22 19:00:00	1967/01/23 02:00:00	8	1.4	39.50%	0.37
123	1969/01/14 07:00:00	1969/01/14 13:00:00	7	1.4	39.80%	0.37
124	1980/02/14 01:00:00	1980/02/14 12:00:00	12	1.4	40.10%	0.36
125	1986/11/17 22:00:00	1986/11/18 03:00:00	6	1.4	40.50%	0.36
126	1988/01/17 12:00:00	1988/01/17 22:00:00	11	1.4	40.80%	0.36
127	1990/01/17 03:00:00	1990/01/17 05:00:00	3	1.4	41.10%	0.35
128	1993/01/15 13:00:00	1993/01/18 19:00:00	79	1.4	41.40%	0.35
129	1993/03/28 03:00:00	1993/03/28 04:00:00	2	1.4	41.70%	0.35
130	1998/02/06 17:00:00	1998/02/06 21:00:00	5	1.4	42.10%	0.35
131	1998/03/28 17:00:00	1998/03/29 18:00:00	26	1.4	42.40%	0.34
132	2002/11/08 17:00:00	2002/11/09 18:00:00	26	1.4	42.70%	0.34
133	1965/11/16 18:00:00	1965/11/17 00:00:00	7	1.3	43.00%	0.34
134	1966/11/07 16:00:00	1966/11/07 19:00:00	4	1.3	43.40%	0.34
135	1980/01/09 05:00:00	1980/01/09 20:00:00	16	1.3	43.70%	0.33
136	1992/12/29 14:00:00	1992/12/29 21:00:00	8	1.3	44.00%	0.33
137	1994/02/20 16:00:00	1994/02/20 17:00:00	2	1.3	44.30%	0.33
138	1995/02/14 09:00:00	1995/02/14 11:00:00	3	1.3	44.70%	0.33
139	1996/12/09 18:00:00	1996/12/09 21:00:00	4	1.3	45.00%	0.32
140	1998/05/12 17:00:00	1998/05/12 20:00:00	4	1.3	45.30%	0.32
141	2001/01/11 04:00:00	2001/01/12 10:00:00	31	1.3	45.60%	0.32
142	2002/12/16 17:00:00	2002/12/16 20:00:00	4	1.3	46.00%	0.32
143	2005/02/21 03:00:00	2005/02/21 18:00:00	16	1.3	46.30%	0.32
144	2005/02/22 19:00:00	2005/02/23 12:00:00	18	1.3	46.60%	0.31
145	2006/03/10 17:00:00	2006/03/11 05:00:00	13	1.3	46.90%	0.31
146	1968/03/08 10:00:00	1968/03/08 14:00:00	5	1.2	47.20%	0.31
147	1973/11/22 23:00:00	1973/11/23 03:00:00	5	1.2	47.60%	0.31
148	1986/02/08 05:00:00	1986/02/08 08:00:00	4	1.2	47.90%	0.3
149	2004/12/29 02:00:00	2004/12/29 07:00:00	6	1.2	48.20%	0.3
150	1969/01/20 09:00:00	1969/01/21 17:00:00	33	1.1	48.50%	0.3
151	1969/02/22 02:00:00	1969/02/22 08:00:00	7	1.1	48.90%	0.3
152	1969/02/23 23:00:00	1969/02/26 00:00:00	50	1.1	49.20%	0.3
153	1970/03/08 12:00:00	1970/03/08 20:00:00	9	1.1	49.50%	0.29
154	1972/11/11 08:00:00	1972/11/11 10:00:00	3	1.1	49.80%	0.29
155	1972/11/16 12:00:00	1972/11/16 18:00:00	7	1.1	50.20%	0.29
156	1973/03/08 13:00:00	1973/03/08 21:00:00	9	1.1	50.50%	0.29
157	1974/01/06 13:00:00	1974/01/08 05:00:00	41	1.1	50.80%	0.29
158	1975/03/10 11:00:00	1975/03/11 15:00:00	29	1.1	51.10%	0.29
159	1976/03/01 17:00:00	1976/03/01 20:00:00	4	1.1	51.50%	0.28
160	1976/09/10 06:00:00	1976/09/10 22:00:00	17	1.1	51.80%	0.28

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
161	1980/01/18 18:00:00	1980/01/19 01:00:00	8	1.1	52.10%	0.28
162	1982/02/10 10:00:00	1982/02/10 22:00:00	13	1.1	52.40%	0.28
163	1983/01/29 02:00:00	1983/01/29 05:00:00	4	1.1	52.80%	0.28
164	1983/02/08 04:00:00	1983/02/08 07:00:00	4	1.1	53.10%	0.27
165	1983/03/18 04:00:00	1983/03/18 20:00:00	17	1.1	53.40%	0.27
166	1985/11/11 10:00:00	1985/11/11 17:00:00	8	1.1	53.70%	0.27
167	1987/01/04 17:00:00	1987/01/05 00:00:00	8	1.1	54.00%	0.27
168	1987/12/16 19:00:00	1987/12/16 23:00:00	5	1.1	54.40%	0.27
169	1988/12/21 04:00:00	1988/12/21 08:00:00	5	1.1	54.70%	0.27
170	1990/01/14 04:00:00	1990/01/14 07:00:00	4	1.1	55.00%	0.27
171	1993/02/19 18:00:00	1993/02/20 00:00:00	7	1.1	55.30%	0.26
172	1995/03/23 12:00:00	1995/03/23 14:00:00	3	1.1	55.70%	0.26
173	2005/01/07 14:00:00	2005/01/07 17:00:00	4	1.1	56.00%	0.26
174	2008/01/05 05:00:00	2008/01/07 06:00:00	50	1.1	56.30%	0.26
175	2008/02/03 11:00:00	2008/02/03 16:00:00	6	1.1	56.60%	0.26
176	2008/02/22 04:00:00	2008/02/22 11:00:00	8	1.1	57.00%	0.26
177	1965/12/14 15:00:00	1965/12/14 17:00:00	3	1	57.30%	0.25
178	1967/03/13 15:00:00	1967/03/13 23:00:00	9	1	57.60%	0.25
179	1971/12/25 05:00:00	1971/12/26 00:00:00	20	1	57.90%	0.25
180	1971/12/27 14:00:00	1971/12/28 16:00:00	27	1	58.30%	0.25
181	1973/01/18 21:00:00	1973/01/19 03:00:00	7	1	58.60%	0.25
182	1975/04/08 03:00:00	1975/04/09 02:00:00	24	1	58.90%	0.25
183	1976/11/12 01:00:00	1976/11/12 10:00:00	10	1	59.20%	0.25
184	1977/08/17 01:00:00	1977/08/17 11:00:00	11	1	59.50%	0.25
185	1979/01/31 07:00:00	1979/02/01 12:00:00	30	1	59.90%	0.24
186	1979/03/17 06:00:00	1979/03/17 09:00:00	4	1	60.20%	0.24
187	1979/03/27 10:00:00	1979/03/28 04:00:00	19	1	60.50%	0.24
188	1980/03/10 18:00:00	1980/03/10 21:00:00	4	1	60.80%	0.24
189	1981/03/05 07:00:00	1981/03/05 16:00:00	10	1	61.20%	0.24
190	1986/03/15 22:00:00	1986/03/16 19:00:00	22	1	61.50%	0.24
191	1988/11/25 11:00:00	1988/11/25 15:00:00	5	1	61.80%	0.24
192	1992/03/02 11:00:00	1992/03/02 12:00:00	2	1	62.10%	0.23
193	1992/12/07 11:00:00	1992/12/07 18:00:00	8	1	62.50%	0.23
194	1995/01/07 19:00:00	1995/01/08 05:00:00	11	1	62.80%	0.23
195	1996/02/25 10:00:00	1996/02/26 01:00:00	16	1	63.10%	0.23
196	1997/01/12 16:00:00	1997/01/13 13:00:00	22	1	63.40%	0.23
197	1997/12/06 17:00:00	1997/12/06 19:00:00	3	1	63.80%	0.23
198	1998/04/11 17:00:00	1998/04/11 20:00:00	4	1	64.10%	0.23
199	2000/02/21 17:00:00	2000/02/21 20:00:00	4	1	64.40%	0.23
200	2002/11/29 17:00:00	2002/11/29 20:00:00	4	1	64.70%	0.23
201	2005/02/18 04:00:00	2005/02/19 02:00:00	23	1	65.00%	0.22
202	1968/04/01 20:00:00	1968/04/01 21:00:00	2	0.9	65.40%	0.22

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
203	1970/12/19 02:00:00	1970/12/19 07:00:00	6	0.9	65.70%	0.22
204	1971/05/07 20:00:00	1971/05/07 22:00:00	3	0.9	66.00%	0.22
205	1973/03/22 00:00:00	1973/03/22 03:00:00	4	0.9	66.30%	0.22
206	1976/04/12 23:00:00	1976/04/13 05:00:00	7	0.9	66.70%	0.22
207	1982/11/10 04:00:00	1982/11/11 02:00:00	23	0.9	67.00%	0.22
208	1982/11/30 12:00:00	1982/11/30 20:00:00	9	0.9	67.30%	0.22
209	1983/04/30 04:00:00	1983/04/30 06:00:00	3	0.9	67.60%	0.22
210	1986/03/12 14:00:00	1986/03/12 15:00:00	2	0.9	68.00%	0.21
211	1993/02/23 20:00:00	1993/02/24 06:00:00	11	0.9	68.30%	0.21
212	1996/01/21 19:00:00	1996/01/21 21:00:00	3	0.9	68.60%	0.21
213	1998/03/25 17:00:00	1998/03/26 18:00:00	26	0.9	68.90%	0.21
214	2004/03/02 03:00:00	2004/03/02 05:00:00	3	0.9	69.30%	0.21
215	1965/04/01 22:00:00	1965/04/02 03:00:00	6	0.8	69.60%	0.21
216	1965/12/16 06:00:00	1965/12/16 09:00:00	4	0.8	69.90%	0.21
217	1967/04/22 03:00:00	1967/04/22 06:00:00	4	0.8	70.20%	0.21
218	1969/02/18 18:00:00	1969/02/18 20:00:00	3	0.8	70.60%	0.21
219	1975/04/06 12:00:00	1975/04/06 14:00:00	3	0.8	70.90%	0.21
220	1977/12/26 04:00:00	1977/12/26 19:00:00	16	0.8	71.20%	0.21
221	1978/11/21 19:00:00	1978/11/21 21:00:00	3	0.8	71.50%	0.2
222	1979/02/21 05:00:00	1979/02/21 23:00:00	19	0.8	71.80%	0.2
223	1982/01/20 23:00:00	1982/01/21 02:00:00	4	0.8	72.20%	0.2
224	1983/05/01 07:00:00	1983/05/01 09:00:00	3	0.8	72.50%	0.2
225	1986/09/25 03:00:00	1986/09/25 07:00:00	5	0.8	72.80%	0.2
226	1992/01/07 20:00:00	1992/01/07 23:00:00	4	0.8	73.10%	0.2
227	1993/01/31 02:00:00	1993/01/31 03:00:00	2	0.8	73.50%	0.2
228	1994/04/26 11:00:00	1994/04/26 22:00:00	12	0.8	73.80%	0.2
229	1995/01/12 09:00:00	1995/01/12 15:00:00	7	0.8	74.10%	0.2
230	2002/03/17 23:00:00	2002/03/18 00:00:00	2	0.8	74.40%	0.2
231	2006/02/28 00:00:00	2006/02/28 08:00:00	9	0.8	74.80%	0.2
232	1969/03/13 14:00:00	1969/03/13 19:00:00	6	0.7	75.10%	0.19
233	1978/01/30 12:00:00	1978/01/30 14:00:00	3	0.7	75.40%	0.19
234	1978/03/31 03:00:00	1978/03/31 04:00:00	2	0.7	75.70%	0.19
235	1978/04/07 01:00:00	1978/04/07 03:00:00	3	0.7	76.10%	0.19
236	1982/03/28 18:00:00	1982/03/28 19:00:00	2	0.7	76.40%	0.19
237	1995/04/18 10:00:00	1995/04/18 12:00:00	3	0.7	76.70%	0.19
238	1995/12/20 17:00:00	1995/12/20 18:00:00	2	0.7	77.00%	0.19
239	2000/02/13 17:00:00	2000/02/13 19:00:00	3	0.7	77.30%	0.19
240	2000/10/30 00:00:00	2000/10/30 01:00:00	2	0.7	77.70%	0.19
241	2006/03/28 22:00:00	2006/03/29 02:00:00	5	0.7	78.00%	0.19
242	1973/03/20 08:00:00	1973/03/20 12:00:00	5	0.6	78.30%	0.19
243	1979/10/20 14:00:00	1979/10/20 16:00:00	3	0.6	78.60%	0.19
244	1990/06/10 04:00:00	1990/06/10 06:00:00	3	0.6	79.00%	0.18

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
245	2001/12/21 17:00:00	2001/12/21 19:00:00	3	0.6	79.30%	0.18
246	2003/12/25 18:00:00	2003/12/25 20:00:00	3	0.6	79.60%	0.18
247	2005/02/11 12:00:00	2005/02/12 13:00:00	26	0.6	79.90%	0.18
248	2005/03/22 23:00:00	2005/03/23 00:00:00	2	0.6	80.30%	0.18
249	2006/03/21 02:00:00	2006/03/21 03:00:00	2	0.6	80.60%	0.18
250	1965/02/06 18:00:00	1965/02/06 19:00:00	2	0.5	80.90%	0.18
251	1965/11/25 11:00:00	1965/11/25 14:00:00	4	0.5	81.20%	0.18
252	1969/01/26 19:00:00	1969/01/26 21:00:00	3	0.5	81.60%	0.18
253	1969/03/21 20:00:00	1969/03/21 21:00:00	2	0.5	81.90%	0.18
254	1970/03/11 12:00:00	1970/03/11 17:00:00	6	0.5	82.20%	0.18
255	1980/03/26 00:00:00	1980/03/26 02:00:00	3	0.5	82.50%	0.18
256	1983/12/03 17:00:00	1983/12/03 18:00:00	2	0.5	82.80%	0.18
257	1985/12/02 23:00:00	1985/12/03 04:00:00	6	0.5	83.20%	0.18
258	1992/03/23 04:00:00	1992/03/23 05:00:00	2	0.5	83.50%	0.17
259	1994/12/25 03:00:00	1994/12/25 04:00:00	2	0.5	83.80%	0.17
260	1995/01/10 22:00:00	1995/01/11 00:00:00	3	0.5	84.10%	0.17
261	1996/02/27 21:00:00	1996/02/27 23:00:00	3	0.5	84.50%	0.17
262	1996/12/11 14:00:00	1996/12/11 17:00:00	4	0.5	84.80%	0.17
263	1997/01/15 20:00:00	1997/01/15 21:00:00	2	0.5	85.10%	0.17
264	1997/01/25 23:00:00	1997/01/26 10:00:00	12	0.5	85.40%	0.17
265	2008/02/14 12:00:00	2008/02/14 14:00:00	3	0.5	85.80%	0.17
266	1969/01/28 20:00:00	1969/01/28 21:00:00	2	0.4	86.10%	0.17
267	1970/03/06 22:00:00	1970/03/07 02:00:00	5	0.4	86.40%	0.17
268	1972/12/08 13:00:00	1972/12/08 15:00:00	3	0.4	86.70%	0.17
269	1973/02/28 05:00:00	1973/02/28 07:00:00	3	0.4	87.10%	0.17
270	1973/03/06 23:00:00	1973/03/07 02:00:00	4	0.4	87.40%	0.17
271	1975/02/10 02:00:00	1975/02/10 04:00:00	3	0.4	87.70%	0.17
272	1977/01/03 23:00:00	1977/01/04 01:00:00	3	0.4	88.00%	0.17
273	1979/02/02 16:00:00	1979/02/02 17:00:00	2	0.4	88.30%	0.17
274	1979/03/19 01:00:00	1979/03/20 04:00:00	28	0.4	88.70%	0.16
275	1981/02/25 21:00:00	1981/02/25 23:00:00	3	0.4	89.00%	0.16
276	1981/11/28 09:00:00	1981/11/29 00:00:00	16	0.4	89.30%	0.16
277	1982/04/02 12:00:00	1982/04/02 17:00:00	6	0.4	89.60%	0.16
278	1983/03/22 13:00:00	1983/03/22 16:00:00	4	0.4	90.00%	0.16
279	2007/12/08 07:00:00	2007/12/08 08:00:00	2	0.4	90.30%	0.16
280	1965/04/03 08:00:00	1965/04/03 21:00:00	14	0.3	90.60%	0.16
281	1975/12/11 23:00:00	1975/12/12 00:00:00	2	0.3	90.90%	0.16
282	1976/04/15 16:00:00	1976/04/15 18:00:00	3	0.3	91.30%	0.16
283	1987/11/02 03:00:00	1987/11/02 05:00:00	3	0.3	91.60%	0.16
284	1995/12/23 10:00:00	1995/12/23 11:00:00	2	0.3	91.90%	0.16
285	1998/01/29 17:00:00	1998/01/29 19:00:00	3	0.3	92.20%	0.16
286	2003/05/03 17:00:00	2003/05/03 18:00:00	2	0.3	92.60%	0.16

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
287	2005/04/28 09:00:00	2005/04/28 10:00:00	2	0.3	92.90%	0.16
288	2008/01/23 22:00:00	2008/01/23 23:00:00	2	0.3	93.20%	0.16
289	1974/04/02 05:00:00	1974/04/02 08:00:00	4	0.2	93.50%	0.16
290	1978/03/22 05:00:00	1978/03/22 06:00:00	2	0.2	93.90%	0.16
291	1983/02/25 00:00:00	1983/02/25 01:00:00	2	0.2	94.20%	0.16
292	1986/03/13 17:00:00	1986/03/13 20:00:00	4	0.2	94.50%	0.15
293	1986/12/06 17:00:00	1986/12/06 19:00:00	3	0.2	94.80%	0.15
294	1992/03/26 19:00:00	1992/03/26 20:00:00	2	0.2	95.10%	0.15
295	1994/03/19 04:00:00	1994/03/19 09:00:00	6	0.2	95.50%	0.15
296	2000/02/17 17:00:00	2000/02/17 18:00:00	2	0.2	95.80%	0.15
297	2004/12/31 16:00:00	2004/12/31 18:00:00	3	0.2	96.10%	0.15
298	1964/12/27 16:00:00	1964/12/27 17:00:00	2	0.1	96.40%	0.15
299	1974/10/29 05:00:00	1974/10/29 09:00:00	5	0.1	96.80%	0.15
300	1977/03/25 02:00:00	1977/03/25 04:00:00	3	0.1	97.10%	0.15
301	1978/09/05 18:00:00	1978/09/05 19:00:00	2	0.1	97.40%	0.15
302	1965/03/31 18:00:00	1965/03/31 19:00:00	2	0	97.70%	0.15
303	1975/11/28 16:00:00	1975/11/28 18:00:00	3	0	98.10%	0.15
304	1982/12/09 19:00:00	1982/12/09 20:00:00	2	0	98.40%	0.15
305	1987/12/04 21:00:00	1987/12/04 22:00:00	2	0	98.70%	0.15
306	1989/03/25 17:00:00	1989/03/25 18:00:00	2	0	99.00%	0.15
307	1991/01/09 14:00:00	1991/01/09 15:00:00	2	0	99.40%	0.15
308	2007/02/13 02:00:00	2007/02/13 03:00:00	2	0	99.70%	0.15
--End of Data----------						

SWMM.out file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
SWMM.out time stamp: 1/7/2025 2:24:04 PM

Peak Flow Statistics Table Values

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
1	1993/01/06 05:00:00	1993/01/11 13:00:00	129	5.5	0.10%	45
2	1971/02/23 04:00:00	1971/02/24 11:00:00	32	5.2	0.30%	22.5
3	1967/11/19 04:00:00	1967/11/23 16:00:00	109	4.4	0.40%	15
4	1983/12/24 19:00:00	1983/12/28 03:00:00	81	4.4	0.60%	11.25
5	1995/01/03 08:00:00	1995/01/06 03:00:00	68	4.4	0.70%	9
6	1986/02/15 00:00:00	1986/02/16 19:00:00	44	4.3	0.90%	7.5
7	1998/02/14 04:00:00	1998/02/21 02:00:00	167	4.3	1.00%	6.43
8	2007/08/26 07:00:00	2007/08/27 04:00:00	22	4	1.10%	5.63
9	1966/12/03 06:00:00	1966/12/07 18:00:00	109	3.9	1.30%	5
10	1978/01/14 15:00:00	1978/01/17 08:00:00	66	3.9	1.40%	4.5
11	1978/03/11 18:00:00	1978/03/19 09:00:00	184	3.9	1.60%	4.09
12	1995/01/24 00:00:00	1995/01/27 16:00:00	89	3.9	1.70%	3.75
13	1981/02/08 18:00:00	1981/02/10 22:00:00	53	3.8	1.80%	3.46
14	2007/01/30 00:00:00	2007/02/01 05:00:00	54	3.4	2.00%	3.21
15	1980/01/27 21:00:00	1980/01/31 14:00:00	90	3.3	2.10%	3
16	1998/01/09 04:00:00	1998/01/11 19:00:00	64	3.3	2.30%	2.81
17	2005/01/07 05:00:00	2005/01/12 17:00:00	133	3.3	2.40%	2.65
18	1969/01/24 05:00:00	1969/01/29 15:00:00	131	3.2	2.60%	2.5
19	1980/02/13 13:00:00	1980/02/22 05:00:00	209	3.2	2.70%	2.37
20	1983/02/24 10:00:00	1983/03/05 03:00:00	210	3.2	2.80%	2.25
21	1988/04/20 00:00:00	1988/04/22 18:00:00	67	3.2	3.00%	2.14
22	1993/01/12 15:00:00	1993/01/19 16:00:00	170	3.1	3.10%	2.05
23	2007/11/30 08:00:00	2007/12/01 20:00:00	37	3.1	3.30%	1.96
24	1985/11/24 16:00:00	1985/11/26 15:00:00	48	3	3.40%	1.88
25	1993/02/07 20:00:00	1993/02/10 12:00:00	65	3	3.60%	1.8
26	1998/02/03 04:00:00	1998/02/09 22:00:00	163	3	3.70%	1.73
27	1965/11/22 03:00:00	1965/11/26 08:00:00	102	2.8	3.80%	1.67
28	1967/04/11 09:00:00	1967/04/13 00:00:00	40	2.8	4.00%	1.61
29	1972/11/14 13:00:00	1972/11/18 06:00:00	90	2.8	4.10%	1.55
30	1983/11/25 00:00:00	1983/11/25 22:00:00	23	2.8	4.30%	1.5
31	2004/10/17 09:00:00	2004/10/21 15:00:00	103	2.6	4.40%	1.45
32	1979/01/05 07:00:00	1979/01/07 02:00:00	44	2.5	4.50%	1.41
33	1982/03/15 13:00:00	1982/03/20 22:00:00	130	2.5	4.70%	1.36
34	1978/12/16 23:00:00	1978/12/20 06:00:00	80	2.4	4.80%	1.32

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
35	1980/03/02 21:00:00	1980/03/04 12:00:00	40	2.4	5.00%	1.29
36	1991/03/19 00:00:00	1991/03/22 04:00:00	77	2.3	5.10%	1.25
37	2004/02/26 03:00:00	2004/02/28 06:00:00	52	2.3	5.30%	1.22
38	1967/12/16 14:00:00	1967/12/20 20:00:00	103	2.2	5.40%	1.18
39	1974/12/04 04:00:00	1974/12/05 09:00:00	30	2.2	5.50%	1.15
40	1991/02/27 14:00:00	1991/03/02 08:00:00	67	2.2	5.70%	1.13
41	1995/03/03 07:00:00	1995/03/07 00:00:00	90	2.2	5.80%	1.1
42	1992/02/06 10:00:00	1992/02/07 22:00:00	37	2.1	6.00%	1.07
43	1985/11/29 07:00:00	1985/11/30 15:00:00	33	2	6.10%	1.05
44	2004/10/27 03:00:00	2004/10/29 00:00:00	46	2	6.30%	1.02
45	1980/01/07 15:00:00	1980/01/13 14:00:00	144	1.9	6.40%	1
46	1992/02/15 13:00:00	1992/02/16 17:00:00	29	1.9	6.50%	0.98
47	1996/11/21 17:00:00	1996/11/23 12:00:00	44	1.9	6.70%	0.96
48	1967/01/22 17:00:00	1967/01/25 19:00:00	75	1.8	6.80%	0.94
49	1969/01/13 18:00:00	1969/01/15 07:00:00	38	1.8	7.00%	0.92
50	1970/02/28 14:00:00	1970/03/03 02:00:00	61	1.8	7.10%	0.9
51	1970/03/04 21:00:00	1970/03/09 14:00:00	114	1.8	7.20%	0.88
52	1974/03/06 20:00:00	1974/03/09 09:00:00	62	1.8	7.40%	0.87
53	1977/05/08 11:00:00	1977/05/10 13:00:00	51	1.8	7.50%	0.85
54	1981/02/28 16:00:00	1981/03/03 06:00:00	63	1.8	7.70%	0.83
55	1986/11/17 19:00:00	1986/11/18 22:00:00	28	1.8	7.80%	0.82
56	1991/03/25 07:00:00	1991/03/28 13:00:00	79	1.7	8.00%	0.8
57	1996/01/31 05:00:00	1996/02/02 06:00:00	50	1.7	8.10%	0.79
58	1969/02/05 04:00:00	1969/02/07 13:00:00	58	1.6	8.20%	0.78
59	1988/01/17 06:00:00	1988/01/18 16:00:00	35	1.6	8.40%	0.76
60	2005/02/18 05:00:00	2005/02/24 08:00:00	148	1.5	8.50%	0.75
61	1995/03/11 02:00:00	1995/03/12 20:00:00	43	1.4	8.70%	0.74
62	1965/04/07 05:00:00	1965/04/10 19:00:00	87	1.3	8.80%	0.73
63	1969/02/22 02:00:00	1969/02/27 01:00:00	120	1.2	8.90%	0.71
64	1970/11/28 21:00:00	1970/11/30 22:00:00	50	1.2	9.10%	0.7
65	1973/01/16 16:00:00	1973/01/17 17:00:00	26	1.2	9.20%	0.69
66	1974/01/04 18:00:00	1974/01/09 23:00:00	126	1.2	9.40%	0.68
67	1976/02/03 18:00:00	1976/02/11 06:00:00	181	1.2	9.50%	0.67
68	1976/09/09 20:00:00	1976/09/11 16:00:00	45	1.2	9.70%	0.66
69	1992/12/07 08:00:00	1992/12/08 18:00:00	35	1.2	9.80%	0.65
70	1994/02/17 11:00:00	1994/02/21 14:00:00	100	1.2	9.90%	0.64
71	1965/12/09 06:00:00	1965/12/17 04:00:00	191	1.1	10.10%	0.63
72	1967/03/13 12:00:00	1967/03/14 17:00:00	30	1.1	10.20%	0.63
73	1968/03/07 22:00:00	1968/03/09 08:00:00	35	1.1	10.40%	0.62
74	1976/03/01 09:00:00	1976/03/04 03:00:00	67	1.1	10.50%	0.61
75	1977/08/16 15:00:00	1977/08/18 14:00:00	48	1.1	10.70%	0.6
76	1978/02/05 01:00:00	1978/02/07 17:00:00	65	1.1	10.80%	0.59

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
77	1979/03/01 08:00:00	1979/03/02 15:00:00	32	1.1	10.90%	0.58
78	1982/11/29 16:00:00	1982/12/01 14:00:00	47	1.1	11.10%	0.58
79	1982/12/22 19:00:00	1982/12/23 19:00:00	25	1.1	11.20%	0.57
80	1986/09/24 00:00:00	1986/09/26 02:00:00	51	1.1	11.40%	0.56
81	1995/02/13 14:00:00	1995/02/15 17:00:00	52	1.1	11.50%	0.56
82	1997/01/12 14:00:00	1997/01/14 18:00:00	53	1.1	11.60%	0.55
83	1966/11/07 15:00:00	1966/11/08 15:00:00	25	1	11.80%	0.54
84	1981/03/19 21:00:00	1981/03/21 04:00:00	32	1	11.90%	0.54
85	1993/02/18 15:00:00	1993/02/21 08:00:00	66	0.9	12.10%	0.53
86	2004/02/22 03:00:00	2004/02/24 03:00:00	49	0.9	12.20%	0.52
87	1965/11/14 10:00:00	1965/11/18 17:00:00	104	0.8	12.40%	0.52
88	1987/01/04 14:00:00	1987/01/08 03:00:00	86	0.8	12.50%	0.51
89	1986/02/07 20:00:00	1986/02/09 14:00:00	43	0.7	12.60%	0.51
90	1988/12/24 21:00:00	1988/12/26 17:00:00	45	0.7	12.80%	0.5
91	2001/01/10 23:00:00	2001/01/13 09:00:00	59	0.7	12.90%	0.5
92	1979/03/27 04:00:00	1979/03/29 17:00:00	62	0.6	13.10%	0.49
93	1982/02/09 17:00:00	1982/02/11 16:00:00	48	0.6	13.20%	0.48
94	1985/11/11 05:00:00	1985/11/13 03:00:00	47	0.6	13.40%	0.48
95	1987/12/16 13:00:00	1987/12/18 05:00:00	41	0.6	13.50%	0.47
96	1992/01/05 09:00:00	1992/01/08 17:00:00	81	0.6	13.60%	0.47
97	1992/02/12 18:00:00	1992/02/14 02:00:00	33	0.6	13.80%	0.46
98	2008/01/05 02:00:00	2008/01/08 02:00:00	73	0.6	13.90%	0.46
99	2008/02/20 11:00:00	2008/02/23 08:00:00	70	0.6	14.10%	0.46
100	1975/03/05 15:00:00	1975/03/12 09:00:00	163	0.5	14.20%	0.45
101	1975/04/05 22:00:00	1975/04/10 07:00:00	106	0.5	14.30%	0.45
102	1983/03/20 20:00:00	1983/03/25 02:00:00	103	0.5	14.50%	0.44
103	1972/12/04 13:00:00	1972/12/05 14:00:00	26	0.4	14.60%	0.44
104	1995/01/07 18:00:00	1995/01/09 04:00:00	35	0.4	14.80%	0.43
105	2003/02/11 07:00:00	2003/02/15 17:00:00	107	0.4	14.90%	0.43
106	2003/02/25 04:00:00	2003/02/28 18:00:00	87	0.4	15.10%	0.43
107	2004/12/28 08:00:00	2005/01/01 12:00:00	101	0.4	15.20%	0.42
108	2006/04/04 19:00:00	2006/04/06 05:00:00	35	0.4	15.30%	0.42
109	1964/11/17 14:00:00	1964/11/18 18:00:00	29	0.3	15.50%	0.41
110	1970/12/16 23:00:00	1970/12/23 03:00:00	149	0.3	15.60%	0.41
111	1971/12/22 06:00:00	1971/12/29 10:00:00	173	0.3	15.80%	0.41
112	1976/04/11 20:00:00	1976/04/16 16:00:00	117	0.3	15.90%	0.4
113	1976/11/11 23:00:00	1976/11/13 06:00:00	32	0.3	16.10%	0.4
114	1976/12/30 14:00:00	1977/01/01 07:00:00	42	0.3	16.20%	0.4
115	1979/01/15 15:00:00	1979/01/19 11:00:00	93	0.3	16.30%	0.39
116	1979/10/19 23:00:00	1979/10/21 19:00:00	45	0.3	16.50%	0.39
117	1980/03/10 15:00:00	1980/03/11 15:00:00	25	0.3	16.60%	0.39
118	1981/12/30 08:00:00	1982/01/03 03:00:00	92	0.3	16.80%	0.38

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
119	1983/03/17 05:00:00	1983/03/19 18:00:00	62	0.3	16.90%	0.38
120	1986/03/08 16:00:00	1986/03/17 19:00:00	220	0.3	17.00%	0.38
121	1987/11/04 17:00:00	1987/11/06 11:00:00	43	0.3	17.20%	0.37
122	1989/03/25 11:00:00	1989/03/27 02:00:00	40	0.3	17.30%	0.37
123	1995/01/10 17:00:00	1995/01/13 12:00:00	68	0.3	17.50%	0.37
124	1998/02/22 09:00:00	1998/02/25 19:00:00	83	0.3	17.60%	0.36
125	2003/04/14 05:00:00	2003/04/16 16:00:00	60	0.3	17.80%	0.36
126	2005/01/03 05:00:00	2005/01/05 09:00:00	53	0.3	17.90%	0.36
127	2005/02/11 02:00:00	2005/02/13 14:00:00	61	0.3	18.00%	0.35
128	2006/02/27 20:00:00	2006/03/01 07:00:00	36	0.3	18.20%	0.35
129	2008/02/03 08:00:00	2008/02/04 21:00:00	38	0.3	18.30%	0.35
130	1964/12/27 09:00:00	1964/12/29 05:00:00	45	0.2	18.50%	0.35
131	1965/02/06 01:00:00	1965/02/07 20:00:00	44	0.2	18.60%	0.34
132	1965/03/31 15:00:00	1965/04/05 08:00:00	114	0.2	18.80%	0.34
133	1965/12/29 17:00:00	1966/01/01 03:00:00	59	0.2	18.90%	0.34
134	1966/02/06 11:00:00	1966/02/08 19:00:00	57	0.2	19.00%	0.34
135	1968/04/01 20:00:00	1968/04/03 06:00:00	35	0.2	19.20%	0.33
136	1969/01/18 23:00:00	1969/01/22 17:00:00	91	0.2	19.30%	0.33
137	1969/02/18 10:00:00	1969/02/20 16:00:00	55	0.2	19.50%	0.33
138	1971/05/06 07:00:00	1971/05/08 22:00:00	64	0.2	19.60%	0.33
139	1972/11/11 02:00:00	1972/11/12 04:00:00	27	0.2	19.70%	0.32
140	1973/01/18 21:00:00	1973/01/19 21:00:00	25	0.2	19.90%	0.32
141	1973/02/10 23:00:00	1973/02/13 20:00:00	70	0.2	20.00%	0.32
142	1973/03/04 00:00:00	1973/03/09 15:00:00	136	0.2	20.20%	0.32
143	1973/03/11 12:00:00	1973/03/14 15:00:00	76	0.2	20.30%	0.32
144	1973/03/20 08:00:00	1973/03/22 21:00:00	62	0.2	20.50%	0.31
145	1973/11/22 20:00:00	1973/11/25 02:00:00	55	0.2	20.60%	0.31
146	1974/10/28 06:00:00	1974/10/30 09:00:00	52	0.2	20.70%	0.31
147	1977/12/25 12:00:00	1977/12/30 04:00:00	113	0.2	20.90%	0.31
148	1978/11/10 19:00:00	1978/11/15 02:00:00	104	0.2	21.00%	0.3
149	1979/02/21 02:00:00	1979/02/23 21:00:00	68	0.2	21.20%	0.3
150	1979/03/17 05:00:00	1979/03/21 14:00:00	106	0.2	21.30%	0.3
151	1980/03/06 00:00:00	1980/03/07 09:00:00	34	0.2	21.40%	0.3
152	1981/02/25 06:00:00	1981/02/26 19:00:00	38	0.2	21.60%	0.3
153	1981/11/26 19:00:00	1981/11/30 04:00:00	82	0.2	21.70%	0.29
154	1982/01/20 04:00:00	1982/01/22 09:00:00	54	0.2	21.90%	0.29
155	1982/11/09 14:00:00	1982/11/11 20:00:00	55	0.2	22.00%	0.29
156	1983/01/27 08:00:00	1983/01/29 23:00:00	64	0.2	22.20%	0.29
157	1983/02/05 18:00:00	1983/02/09 06:00:00	85	0.2	22.30%	0.29
158	1983/04/29 03:00:00	1983/05/02 03:00:00	73	0.2	22.40%	0.29
159	1983/11/20 10:00:00	1983/11/22 05:00:00	44	0.2	22.60%	0.28
160	1983/12/03 16:00:00	1983/12/04 15:00:00	24	0.2	22.70%	0.28

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
161	1985/12/02 17:00:00	1985/12/04 00:00:00	32	0.2	22.90%	0.28
162	1986/12/06 04:00:00	1986/12/08 02:00:00	47	0.2	23.00%	0.28
163	1988/02/02 04:00:00	1988/02/03 13:00:00	34	0.2	23.20%	0.28
164	1988/11/25 07:00:00	1988/11/26 13:00:00	31	0.2	23.30%	0.27
165	1988/12/21 03:00:00	1988/12/23 10:00:00	56	0.2	23.40%	0.27
166	1990/01/13 05:00:00	1990/01/18 01:00:00	117	0.2	23.60%	0.27
167	1991/12/28 01:00:00	1991/12/30 21:00:00	69	0.2	23.70%	0.27
168	1992/03/02 06:00:00	1992/03/04 05:00:00	48	0.2	23.90%	0.27
169	1992/12/27 19:00:00	1992/12/30 15:00:00	69	0.2	24.00%	0.27
170	1993/01/31 01:00:00	1993/01/31 21:00:00	21	0.2	24.10%	0.27
171	1993/11/14 17:00:00	1993/11/15 12:00:00	20	0.2	24.30%	0.26
172	1994/02/07 04:00:00	1994/02/09 02:00:00	47	0.2	24.40%	0.26
173	1994/03/19 02:00:00	1994/03/21 04:00:00	51	0.2	24.60%	0.26
174	1994/03/24 22:00:00	1994/03/26 10:00:00	37	0.2	24.70%	0.26
175	1996/12/09 18:00:00	1996/12/12 15:00:00	70	0.2	24.90%	0.26
176	1997/01/25 20:00:00	1997/01/27 20:00:00	49	0.2	25.00%	0.26
177	2001/11/24 06:00:00	2001/11/25 20:00:00	39	0.2	25.10%	0.25
178	2002/11/08 07:00:00	2002/11/10 20:00:00	62	0.2	25.30%	0.25
179	2002/12/20 06:00:00	2002/12/22 11:00:00	54	0.2	25.40%	0.25
180	2003/03/15 06:00:00	2003/03/17 19:00:00	62	0.2	25.60%	0.25
181	2004/02/03 00:00:00	2004/02/04 07:00:00	32	0.2	25.70%	0.25
182	2005/04/28 09:00:00	2005/04/29 12:00:00	28	0.2	25.90%	0.25
183	2005/12/31 17:00:00	2006/01/03 15:00:00	71	0.2	26.00%	0.25
184	2006/03/10 17:00:00	2006/03/13 10:00:00	66	0.2	26.10%	0.25
185	2006/03/28 22:00:00	2006/03/29 22:00:00	25	0.2	26.30%	0.24
186	2008/02/14 12:00:00	2008/02/15 11:00:00	24	0.2	26.40%	0.24
187	1964/10/15 10:00:00	1964/10/16 09:00:00	24	0.1	26.60%	0.24
188	1964/11/09 13:00:00	1964/11/12 21:00:00	81	0.1	26.70%	0.24
189	1965/03/11 10:00:00	1965/03/13 12:00:00	51	0.1	26.80%	0.24
190	1967/04/18 20:00:00	1967/04/23 00:00:00	101	0.1	27.00%	0.24
191	1967/08/31 03:00:00	1967/09/01 02:00:00	24	0.1	27.10%	0.24
192	1968/02/13 10:00:00	1968/02/14 18:00:00	33	0.1	27.30%	0.23
193	1968/12/25 19:00:00	1968/12/27 05:00:00	35	0.1	27.40%	0.23
194	1969/03/10 03:00:00	1969/03/11 17:00:00	39	0.1	27.60%	0.23
195	1969/03/12 22:00:00	1969/03/14 13:00:00	40	0.1	27.70%	0.23
196	1969/03/21 14:00:00	1969/03/22 15:00:00	26	0.1	27.80%	0.23
197	1969/11/06 19:00:00	1969/11/07 21:00:00	27	0.1	28.00%	0.23
198	1970/03/11 11:00:00	1970/03/12 23:00:00	37	0.1	28.10%	0.23
199	1970/10/03 15:00:00	1970/10/04 10:00:00	20	0.1	28.30%	0.23
200	1971/01/02 05:00:00	1971/01/03 12:00:00	32	0.1	28.40%	0.23
201	1971/02/16 17:00:00	1971/02/18 05:00:00	37	0.1	28.60%	0.22
202	1971/04/14 12:00:00	1971/04/16 21:00:00	58	0.1	28.70%	0.22

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
203	1971/05/28 02:00:00	1971/05/29 18:00:00	41	0.1	28.80%	0.22
204	1971/10/16 05:00:00	1971/10/18 00:00:00	44	0.1	29.00%	0.22
205	1972/12/07 05:00:00	1972/12/09 21:00:00	65	0.1	29.10%	0.22
206	1973/02/27 23:00:00	1973/03/01 01:00:00	27	0.1	29.30%	0.22
207	1973/11/17 07:00:00	1973/11/19 06:00:00	48	0.1	29.40%	0.22
208	1974/01/01 05:00:00	1974/01/02 16:00:00	36	0.1	29.50%	0.22
209	1974/04/02 02:00:00	1974/04/03 06:00:00	29	0.1	29.70%	0.22
210	1975/02/03 10:00:00	1975/02/05 17:00:00	56	0.1	29.80%	0.21
211	1975/02/09 07:00:00	1975/02/10 22:00:00	40	0.1	30.00%	0.21
212	1975/11/27 18:00:00	1975/11/29 17:00:00	48	0.1	30.10%	0.21
213	1975/12/11 23:00:00	1975/12/13 10:00:00	36	0.1	30.30%	0.21
214	1976/10/22 20:00:00	1976/10/23 22:00:00	27	0.1	30.40%	0.21
215	1977/01/03 13:00:00	1977/01/04 19:00:00	31	0.1	30.50%	0.21
216	1977/03/16 13:00:00	1977/03/17 19:00:00	31	0.1	30.70%	0.21
217	1977/03/24 12:00:00	1977/03/26 07:00:00	44	0.1	30.80%	0.21
218	1977/12/18 02:00:00	1977/12/19 02:00:00	25	0.1	31.00%	0.21
219	1978/01/30 08:00:00	1978/01/31 17:00:00	34	0.1	31.10%	0.21
220	1978/03/22 05:00:00	1978/03/24 04:00:00	48	0.1	31.30%	0.21
221	1978/03/30 15:00:00	1978/04/01 08:00:00	42	0.1	31.40%	0.2
222	1978/04/07 01:00:00	1978/04/08 16:00:00	40	0.1	31.50%	0.2
223	1978/09/05 18:00:00	1978/09/07 18:00:00	49	0.1	31.70%	0.2
224	1978/11/21 19:00:00	1978/11/24 08:00:00	62	0.1	31.80%	0.2
225	1979/01/31 01:00:00	1979/02/03 11:00:00	83	0.1	32.00%	0.2
226	1979/02/14 03:00:00	1979/02/15 00:00:00	22	0.1	32.10%	0.2
227	1980/01/18 04:00:00	1980/01/19 19:00:00	40	0.1	32.20%	0.2
228	1980/03/25 23:00:00	1980/03/26 20:00:00	22	0.1	32.40%	0.2
229	1980/12/04 13:00:00	1980/12/05 20:00:00	32	0.1	32.50%	0.2
230	1981/01/28 07:00:00	1981/01/31 09:00:00	75	0.1	32.70%	0.2
231	1981/03/04 08:00:00	1981/03/06 10:00:00	51	0.1	32.80%	0.2
232	1981/03/26 23:00:00	1981/03/27 18:00:00	20	0.1	33.00%	0.19
233	1982/01/28 18:00:00	1982/01/29 18:00:00	25	0.1	33.10%	0.19
234	1982/03/26 22:00:00	1982/03/29 11:00:00	62	0.1	33.20%	0.19
235	1982/03/31 03:00:00	1982/04/03 21:00:00	91	0.1	33.40%	0.19
236	1983/10/01 05:00:00	1983/10/02 13:00:00	33	0.1	33.50%	0.19
237	1983/10/07 08:00:00	1983/10/08 05:00:00	22	0.1	33.70%	0.19
238	1983/11/11 23:00:00	1983/11/13 23:00:00	49	0.1	33.80%	0.19
239	1984/12/08 00:00:00	1984/12/08 20:00:00	21	0.1	33.90%	0.19
240	1985/02/01 16:00:00	1985/02/03 23:00:00	56	0.1	34.10%	0.19
241	1985/09/18 09:00:00	1985/09/19 07:00:00	23	0.1	34.20%	0.19
242	1986/01/30 04:00:00	1986/02/01 16:00:00	61	0.1	34.40%	0.19
243	1986/04/06 06:00:00	1986/04/07 13:00:00	32	0.1	34.50%	0.19
244	1986/10/09 19:00:00	1986/10/11 08:00:00	38	0.1	34.70%	0.18

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
245	1987/02/23 14:00:00	1987/02/26 22:00:00	81	0.1	34.80%	0.18
246	1987/10/22 16:00:00	1987/10/23 23:00:00	32	0.1	34.90%	0.18
247	1987/12/04 21:00:00	1987/12/05 18:00:00	22	0.1	35.10%	0.18
248	1988/01/05 14:00:00	1988/01/06 14:00:00	25	0.1	35.20%	0.18
249	1988/04/14 19:00:00	1988/04/15 20:00:00	26	0.1	35.40%	0.18
250	1990/01/31 01:00:00	1990/01/31 22:00:00	22	0.1	35.50%	0.18
251	1990/02/17 11:00:00	1990/02/19 18:00:00	56	0.1	35.70%	0.18
252	1990/06/09 10:00:00	1990/06/11 04:00:00	43	0.1	35.80%	0.18
253	1991/01/09 14:00:00	1991/01/10 10:00:00	21	0.1	35.90%	0.18
254	1991/10/26 22:00:00	1991/10/27 20:00:00	23	0.1	36.10%	0.18
255	1992/02/10 00:00:00	1992/02/10 21:00:00	22	0.1	36.20%	0.18
256	1992/03/20 17:00:00	1992/03/24 00:00:00	80	0.1	36.40%	0.18
257	1992/03/26 17:00:00	1992/03/27 14:00:00	22	0.1	36.50%	0.18
258	1993/02/23 19:00:00	1993/02/25 02:00:00	32	0.1	36.60%	0.17
259	1993/03/26 02:00:00	1993/03/28 22:00:00	69	0.1	36.80%	0.17
260	1994/02/03 21:00:00	1994/02/05 12:00:00	40	0.1	36.90%	0.17
261	1994/03/06 06:00:00	1994/03/08 02:00:00	45	0.1	37.10%	0.17
262	1994/04/25 17:00:00	1994/04/28 20:00:00	76	0.1	37.20%	0.17
263	1994/11/10 12:00:00	1994/11/11 08:00:00	21	0.1	37.40%	0.17
264	1994/12/24 08:00:00	1994/12/26 02:00:00	43	0.1	37.50%	0.17
265	1995/03/21 11:00:00	1995/03/24 09:00:00	71	0.1	37.60%	0.17
266	1995/04/16 07:00:00	1995/04/19 14:00:00	80	0.1	37.80%	0.17
267	1995/12/20 17:00:00	1995/12/21 13:00:00	21	0.1	37.90%	0.17
268	1995/12/23 10:00:00	1995/12/24 06:00:00	21	0.1	38.10%	0.17
269	1996/01/21 19:00:00	1996/01/23 06:00:00	36	0.1	38.20%	0.17
270	1996/02/25 10:00:00	1996/02/28 17:00:00	80	0.1	38.40%	0.17
271	1996/03/12 18:00:00	1996/03/14 09:00:00	40	0.1	38.50%	0.17
272	1996/10/30 14:00:00	1996/10/31 12:00:00	23	0.1	38.60%	0.17
273	1997/04/04 10:00:00	1997/04/05 03:00:00	18	0.1	38.80%	0.17
274	1997/12/06 09:00:00	1997/12/08 18:00:00	58	0.1	38.90%	0.16
275	1998/01/29 11:00:00	1998/01/30 18:00:00	32	0.1	39.10%	0.16
276	1998/03/25 10:00:00	1998/04/02 11:00:00	194	0.1	39.20%	0.16
277	1998/04/11 10:00:00	1998/04/12 23:00:00	38	0.1	39.30%	0.16
278	1998/05/12 08:00:00	1998/05/13 21:00:00	38	0.1	39.50%	0.16
279	2000/02/13 10:00:00	2000/02/14 20:00:00	35	0.1	39.60%	0.16
280	2000/02/17 13:00:00	2000/02/18 18:00:00	30	0.1	39.80%	0.16
281	2000/02/21 08:00:00	2000/02/23 17:00:00	58	0.1	39.90%	0.16
282	2000/04/17 18:00:00	2000/04/19 00:00:00	31	0.1	40.10%	0.16
283	2000/10/29 23:00:00	2000/10/30 19:00:00	21	0.1	40.20%	0.16
284	2001/01/26 12:00:00	2001/01/28 07:00:00	44	0.1	40.30%	0.16
285	2001/12/21 11:00:00	2001/12/22 18:00:00	32	0.1	40.50%	0.16
286	2002/03/17 23:00:00	2002/03/18 22:00:00	24	0.1	40.60%	0.16

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
287	2002/11/29 09:00:00	2002/11/30 19:00:00	35	0.1	40.80%	0.16
288	2002/12/16 06:00:00	2002/12/17 21:00:00	40	0.1	40.90%	0.16
289	2003/12/25 01:00:00	2003/12/26 15:00:00	39	0.1	41.10%	0.16
290	2004/02/18 17:00:00	2004/02/19 13:00:00	21	0.1	41.20%	0.16
291	2004/03/02 02:00:00	2004/03/03 03:00:00	26	0.1	41.30%	0.16
292	2004/04/01 22:00:00	2004/04/03 04:00:00	31	0.1	41.50%	0.15
293	2005/03/22 20:00:00	2005/03/23 19:00:00	24	0.1	41.60%	0.15
294	2006/05/22 04:00:00	2006/05/23 02:00:00	23	0.1	41.80%	0.15
295	2006/12/10 00:00:00	2006/12/11 03:00:00	28	0.1	41.90%	0.15
296	2007/02/19 03:00:00	2007/02/20 11:00:00	33	0.1	42.00%	0.15
297	2007/04/20 15:00:00	2007/04/21 11:00:00	21	0.1	42.20%	0.15
298	2007/12/07 05:00:00	2007/12/09 13:00:00	57	0.1	42.30%	0.15
299	2008/01/23 20:00:00	2008/01/24 19:00:00	24	0.1	42.50%	0.15
300	1964/09/24 15:00:00	1964/09/25 05:00:00	15	0	42.60%	0.15
301	1965/01/07 12:00:00	1965/01/07 23:00:00	12	0	42.80%	0.15
302	1965/01/24 08:00:00	1965/01/25 05:00:00	22	0	42.90%	0.15
303	1965/03/15 03:00:00	1965/03/15 18:00:00	16	0	43.00%	0.15
304	1965/03/24 17:00:00	1965/03/24 21:00:00	5	0	43.20%	0.15
305	1965/12/22 00:00:00	1965/12/23 14:00:00	39	0	43.30%	0.15
306	1966/01/20 02:00:00	1966/01/20 05:00:00	4	0	43.50%	0.15
307	1966/02/10 16:00:00	1966/02/10 22:00:00	7	0	43.60%	0.15
308	1966/02/25 04:00:00	1966/02/25 08:00:00	5	0	43.80%	0.15
309	1966/03/02 11:00:00	1966/03/02 16:00:00	6	0	43.90%	0.15
310	1966/03/13 16:00:00	1966/03/13 20:00:00	5	0	44.00%	0.15
311	1966/03/24 20:00:00	1966/03/25 00:00:00	5	0	44.20%	0.15
312	1966/05/10 06:00:00	1966/05/10 08:00:00	3	0	44.30%	0.14
313	1966/09/30 01:00:00	1966/09/30 17:00:00	17	0	44.50%	0.14
314	1966/10/04 01:00:00	1966/10/05 21:00:00	45	0	44.60%	0.14
315	1966/10/10 12:00:00	1966/10/11 08:00:00	21	0	44.70%	0.14
316	1966/10/18 13:00:00	1966/10/18 17:00:00	5	0	44.90%	0.14
317	1967/01/31 05:00:00	1967/01/31 11:00:00	7	0	45.00%	0.14
318	1967/03/04 01:00:00	1967/03/05 00:00:00	24	0	45.20%	0.14
319	1967/03/11 10:00:00	1967/03/11 15:00:00	6	0	45.30%	0.14
320	1967/03/29 07:00:00	1967/03/29 10:00:00	4	0	45.50%	0.14
321	1967/03/31 11:00:00	1967/04/02 20:00:00	58	0	45.60%	0.14
322	1967/04/04 17:00:00	1967/04/05 14:00:00	22	0	45.70%	0.14
323	1967/04/24 12:00:00	1967/04/24 17:00:00	6	0	45.90%	0.14
324	1967/04/28 20:00:00	1967/04/29 00:00:00	5	0	46.00%	0.14
325	1967/06/09 08:00:00	1967/06/09 09:00:00	2	0	46.20%	0.14
326	1967/06/13 13:00:00	1967/06/14 03:00:00	15	0	46.30%	0.14
327	1967/07/26 22:00:00	1967/07/26 23:00:00	2	0	46.40%	0.14
328	1967/09/02 22:00:00	1967/09/03 03:00:00	6	0	46.60%	0.14

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
329	1967/09/29 22:00:00	1967/09/30 12:00:00	15	0	46.70%	0.14
330	1967/11/28 11:00:00	1967/11/28 16:00:00	6	0	46.90%	0.14
331	1967/11/30 17:00:00	1967/12/01 16:00:00	24	0	47.00%	0.14
332	1967/12/08 02:00:00	1967/12/08 08:00:00	7	0	47.20%	0.14
333	1967/12/13 11:00:00	1967/12/14 04:00:00	18	0	47.30%	0.14
334	1968/01/10 06:00:00	1968/01/10 10:00:00	5	0	47.40%	0.14
335	1968/01/27 08:00:00	1968/01/29 01:00:00	42	0	47.60%	0.13
336	1968/02/10 05:00:00	1968/02/10 10:00:00	6	0	47.70%	0.13
337	1968/03/13 23:00:00	1968/03/14 04:00:00	6	0	47.90%	0.13
338	1968/03/17 03:00:00	1968/03/17 08:00:00	6	0	48.00%	0.13
339	1968/03/18 14:00:00	1968/03/19 06:00:00	17	0	48.20%	0.13
340	1968/05/12 06:00:00	1968/05/12 20:00:00	15	0	48.30%	0.13
341	1968/06/07 08:00:00	1968/06/07 09:00:00	2	0	48.40%	0.13
342	1968/07/09 22:00:00	1968/07/10 12:00:00	15	0	48.60%	0.13
343	1968/09/13 12:00:00	1968/09/13 14:00:00	3	0	48.70%	0.13
344	1968/10/30 11:00:00	1968/10/30 13:00:00	3	0	48.90%	0.13
345	1968/11/15 07:00:00	1968/11/16 14:00:00	32	0	49.00%	0.13
346	1968/12/01 12:00:00	1968/12/01 17:00:00	6	0	49.10%	0.13
347	1968/12/19 15:00:00	1968/12/21 05:00:00	39	0	49.30%	0.13
348	1969/01/17 12:00:00	1969/01/17 18:00:00	7	0	49.40%	0.13
349	1969/02/15 19:00:00	1969/02/16 11:00:00	17	0	49.60%	0.13
350	1969/02/28 23:00:00	1969/03/01 16:00:00	18	0	49.70%	0.13
351	1969/04/03 03:00:00	1969/04/03 06:00:00	4	0	49.90%	0.13
352	1969/04/05 21:00:00	1969/04/06 12:00:00	16	0	50.00%	0.13
353	1969/06/11 10:00:00	1969/06/11 23:00:00	14	0	50.10%	0.13
354	1969/06/17 10:00:00	1969/06/17 13:00:00	4	0	50.30%	0.13
355	1969/08/10 06:00:00	1969/08/10 08:00:00	3	0	50.40%	0.13
356	1969/09/07 01:00:00	1969/09/07 03:00:00	3	0	50.60%	0.13
357	1969/11/10 01:00:00	1969/11/10 21:00:00	21	0	50.70%	0.13
358	1969/11/15 22:00:00	1969/11/16 03:00:00	6	0	50.90%	0.13
359	1969/12/08 20:00:00	1969/12/09 13:00:00	18	0	51.00%	0.13
360	1969/12/26 11:00:00	1969/12/26 16:00:00	6	0	51.10%	0.13
361	1970/01/10 02:00:00	1970/01/10 07:00:00	6	0	51.30%	0.13
362	1970/01/11 15:00:00	1970/01/12 18:00:00	28	0	51.40%	0.12
363	1970/01/15 03:00:00	1970/01/15 09:00:00	7	0	51.60%	0.12
364	1970/01/16 17:00:00	1970/01/17 14:00:00	22	0	51.70%	0.12
365	1970/01/18 15:00:00	1970/01/18 21:00:00	7	0	51.80%	0.12
366	1970/02/10 02:00:00	1970/02/12 01:00:00	48	0	52.00%	0.12
367	1970/04/30 10:00:00	1970/05/01 00:00:00	15	0	52.10%	0.12
368	1970/11/26 00:00:00	1970/11/27 06:00:00	31	0	52.30%	0.12
369	1970/12/02 16:00:00	1970/12/02 22:00:00	7	0	52.40%	0.12
370	1970/12/09 06:00:00	1970/12/10 00:00:00	19	0	52.60%	0.12

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
371	1971/01/12 20:00:00	1971/01/13 18:00:00	23	0	52.70%	0.12
372	1971/02/19 18:00:00	1971/02/20 15:00:00	22	0	52.80%	0.12
373	1971/03/13 07:00:00	1971/03/14 09:00:00	27	0	53.00%	0.12
374	1971/04/23 08:00:00	1971/04/23 23:00:00	16	0	53.10%	0.12
375	1971/05/03 10:00:00	1971/05/03 13:00:00	4	0	53.30%	0.12
376	1971/06/02 13:00:00	1971/06/02 17:00:00	5	0	53.40%	0.12
377	1971/06/05 15:00:00	1971/06/05 19:00:00	5	0	53.60%	0.12
378	1971/10/22 14:00:00	1971/10/22 19:00:00	6	0	53.70%	0.12
379	1971/10/24 12:00:00	1971/10/25 19:00:00	32	0	53.80%	0.12
380	1971/10/30 11:00:00	1971/10/30 16:00:00	6	0	54.00%	0.12
381	1971/11/13 14:00:00	1971/11/13 18:00:00	5	0	54.10%	0.12
382	1971/11/15 17:00:00	1971/11/15 23:00:00	7	0	54.30%	0.12
383	1971/11/29 07:00:00	1971/11/29 12:00:00	6	0	54.40%	0.12
384	1971/12/03 01:00:00	1971/12/04 18:00:00	42	0	54.50%	0.12
385	1971/12/07 02:00:00	1971/12/07 19:00:00	18	0	54.70%	0.12
386	1971/12/31 05:00:00	1971/12/31 22:00:00	18	0	54.80%	0.12
387	1972/01/09 10:00:00	1972/01/10 19:00:00	34	0	55.00%	0.12
388	1972/02/05 09:00:00	1972/02/06 17:00:00	33	0	55.10%	0.12
389	1972/04/13 04:00:00	1972/04/13 18:00:00	15	0	55.30%	0.12
390	1972/04/21 10:00:00	1972/04/21 13:00:00	4	0	55.40%	0.12
391	1972/04/30 05:00:00	1972/05/01 02:00:00	22	0	55.50%	0.12
392	1972/05/19 05:00:00	1972/05/21 07:00:00	51	0	55.70%	0.12
393	1972/06/07 05:00:00	1972/06/07 06:00:00	2	0	55.80%	0.12
394	1972/06/10 03:00:00	1972/06/10 07:00:00	5	0	56.00%	0.11
395	1972/06/22 14:00:00	1972/06/22 15:00:00	2	0	56.10%	0.11
396	1972/09/06 06:00:00	1972/09/07 03:00:00	22	0	56.30%	0.11
397	1972/10/11 16:00:00	1972/10/11 18:00:00	3	0	56.40%	0.11
398	1972/10/17 10:00:00	1972/10/17 15:00:00	6	0	56.50%	0.11
399	1972/10/19 03:00:00	1972/10/21 09:00:00	55	0	56.70%	0.11
400	1972/11/08 02:00:00	1972/11/08 05:00:00	4	0	56.80%	0.11
401	1973/01/04 02:00:00	1973/01/05 12:00:00	35	0	57.00%	0.11
402	1973/01/09 11:00:00	1973/01/10 20:00:00	34	0	57.10%	0.11
403	1973/01/25 22:00:00	1973/01/26 04:00:00	7	0	57.20%	0.11
404	1973/01/30 14:00:00	1973/01/30 20:00:00	7	0	57.40%	0.11
405	1973/02/03 14:00:00	1973/02/04 16:00:00	27	0	57.50%	0.11
406	1973/02/06 02:00:00	1973/02/07 22:00:00	45	0	57.70%	0.11
407	1973/02/21 10:00:00	1973/02/21 15:00:00	6	0	57.80%	0.11
408	1973/03/27 04:00:00	1973/03/29 04:00:00	49	0	58.00%	0.11
409	1973/04/21 11:00:00	1973/04/21 13:00:00	3	0	58.10%	0.11
410	1973/04/30 05:00:00	1973/05/01 04:00:00	24	0	58.20%	0.11
411	1973/05/23 16:00:00	1973/05/23 18:00:00	3	0	58.40%	0.11
412	1973/05/28 11:00:00	1973/05/28 15:00:00	5	0	58.50%	0.11

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
413	1973/05/31 10:00:00	1973/05/31 14:00:00	5	0	58.70%	0.11
414	1973/12/01 15:00:00	1973/12/02 08:00:00	18	0	58.80%	0.11
415	1973/12/16 16:00:00	1973/12/16 21:00:00	6	0	58.90%	0.11
416	1973/12/20 15:00:00	1973/12/20 21:00:00	7	0	59.10%	0.11
417	1973/12/22 04:00:00	1973/12/22 10:00:00	7	0	59.20%	0.11
418	1974/01/20 18:00:00	1974/01/21 11:00:00	18	0	59.40%	0.11
419	1974/02/18 17:00:00	1974/02/20 02:00:00	34	0	59.50%	0.11
420	1974/03/02 11:00:00	1974/03/04 04:00:00	42	0	59.70%	0.11
421	1974/03/27 10:00:00	1974/03/28 01:00:00	16	0	59.80%	0.11
422	1974/06/08 13:00:00	1974/06/08 14:00:00	2	0	59.90%	0.11
423	1974/11/02 00:00:00	1974/11/02 06:00:00	7	0	60.10%	0.11
424	1974/11/03 17:00:00	1974/11/03 23:00:00	7	0	60.20%	0.11
425	1974/12/28 07:00:00	1974/12/30 05:00:00	47	0	60.40%	0.11
426	1975/01/30 19:00:00	1975/01/31 16:00:00	22	0	60.50%	0.11
427	1975/02/14 06:00:00	1975/02/14 12:00:00	7	0	60.70%	0.11
428	1975/03/14 03:00:00	1975/03/15 04:00:00	26	0	60.80%	0.11
429	1975/03/22 09:00:00	1975/03/23 21:00:00	37	0	60.90%	0.11
430	1975/03/25 11:00:00	1975/03/26 05:00:00	19	0	61.10%	0.11
431	1975/03/31 22:00:00	1975/04/01 22:00:00	25	0	61.20%	0.1
432	1975/04/17 04:00:00	1975/04/18 19:00:00	40	0	61.40%	0.1
433	1975/04/23 16:00:00	1975/04/23 20:00:00	5	0	61.50%	0.1
434	1975/05/20 03:00:00	1975/05/20 05:00:00	3	0	61.60%	0.1
435	1975/06/07 15:00:00	1975/06/07 16:00:00	2	0	61.80%	0.1
436	1975/10/28 23:00:00	1975/10/29 01:00:00	3	0	61.90%	0.1
437	1975/12/20 01:00:00	1975/12/20 07:00:00	7	0	62.10%	0.1
438	1976/04/04 10:00:00	1976/04/05 06:00:00	21	0	62.20%	0.1
439	1976/09/03 18:00:00	1976/09/03 20:00:00	3	0	62.40%	0.1
440	1976/09/14 12:00:00	1976/09/14 17:00:00	6	0	62.50%	0.1
441	1976/11/27 05:00:00	1976/11/28 01:00:00	21	0	62.60%	0.1
442	1977/01/06 20:00:00	1977/01/08 02:00:00	31	0	62.80%	0.1
443	1977/01/21 16:00:00	1977/01/21 21:00:00	6	0	62.90%	0.1
444	1977/01/28 18:00:00	1977/01/29 11:00:00	18	0	63.10%	0.1
445	1977/02/22 02:00:00	1977/02/24 09:00:00	56	0	63.20%	0.1
446	1977/04/02 02:00:00	1977/04/02 06:00:00	5	0	63.40%	0.1
447	1977/05/05 22:00:00	1977/05/06 00:00:00	3	0	63.50%	0.1
448	1977/05/12 20:00:00	1977/05/13 11:00:00	16	0	63.60%	0.1
449	1977/05/24 07:00:00	1977/05/24 21:00:00	15	0	63.80%	0.1
450	1977/08/12 12:00:00	1977/08/12 14:00:00	3	0	63.90%	0.1
451	1977/10/06 04:00:00	1977/10/06 06:00:00	3	0	64.10%	0.1
452	1977/11/06 03:00:00	1977/11/06 06:00:00	4	0	64.20%	0.1
453	1977/12/23 04:00:00	1977/12/23 21:00:00	18	0	64.30%	0.1
454	1978/01/10 18:00:00	1978/01/11 15:00:00	22	0	64.50%	0.1

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
455	1978/01/12 17:00:00	1978/01/12 23:00:00	7	0	64.60%	0.1
456	1978/01/26 11:00:00	1978/01/26 16:00:00	6	0	64.80%	0.1
457	1978/04/02 18:00:00	1978/04/02 23:00:00	6	0	64.90%	0.1
458	1978/04/15 21:00:00	1978/04/16 18:00:00	22	0	65.10%	0.1
459	1978/04/26 10:00:00	1978/04/26 13:00:00	4	0	65.20%	0.1
460	1978/05/01 12:00:00	1978/05/01 16:00:00	5	0	65.30%	0.1
461	1978/09/19 14:00:00	1978/09/19 16:00:00	3	0	65.50%	0.1
462	1979/01/09 09:00:00	1979/01/10 08:00:00	24	0	65.60%	0.1
463	1979/01/29 10:00:00	1979/01/29 15:00:00	6	0	65.80%	0.1
464	1979/03/13 11:00:00	1979/03/13 15:00:00	5	0	65.90%	0.1
465	1979/03/15 23:00:00	1979/03/16 04:00:00	6	0	66.10%	0.1
466	1979/05/19 16:00:00	1979/05/19 18:00:00	3	0	66.20%	0.1
467	1979/08/13 16:00:00	1979/08/13 18:00:00	3	0	66.30%	0.1
468	1979/11/04 08:00:00	1979/11/04 12:00:00	5	0	66.50%	0.1
469	1979/11/05 15:00:00	1979/11/05 21:00:00	7	0	66.60%	0.1
470	1979/11/07 19:00:00	1979/11/09 17:00:00	47	0	66.80%	0.1
471	1979/12/22 11:00:00	1979/12/22 14:00:00	4	0	66.90%	0.1
472	1980/01/15 11:00:00	1980/01/15 17:00:00	7	0	67.00%	0.1
473	1980/03/18 09:00:00	1980/03/19 03:00:00	19	0	67.20%	0.1
474	1980/03/21 19:00:00	1980/03/22 19:00:00	25	0	67.30%	0.1
475	1980/04/21 05:00:00	1980/04/21 07:00:00	3	0	67.50%	0.1
476	1980/04/22 16:00:00	1980/04/24 18:00:00	51	0	67.60%	0.1
477	1980/04/28 18:00:00	1980/04/30 02:00:00	33	0	67.80%	0.09
478	1980/05/02 00:00:00	1980/05/02 05:00:00	6	0	67.90%	0.09
479	1980/05/10 12:00:00	1980/05/11 02:00:00	15	0	68.00%	0.09
480	1980/10/26 11:00:00	1980/10/26 13:00:00	3	0	68.20%	0.09
481	1980/12/07 12:00:00	1980/12/08 05:00:00	18	0	68.30%	0.09
482	1980/12/11 15:00:00	1980/12/11 21:00:00	7	0	68.50%	0.09
483	1981/01/11 18:00:00	1981/01/11 21:00:00	4	0	68.60%	0.09
484	1981/03/14 03:00:00	1981/03/14 08:00:00	6	0	68.80%	0.09
485	1981/04/02 07:00:00	1981/04/03 03:00:00	21	0	68.90%	0.09
486	1981/04/18 14:00:00	1981/04/19 21:00:00	32	0	69.00%	0.09
487	1981/05/16 12:00:00	1981/05/16 14:00:00	3	0	69.20%	0.09
488	1981/05/27 02:00:00	1981/05/27 04:00:00	3	0	69.30%	0.09
489	1981/10/01 03:00:00	1981/10/01 05:00:00	3	0	69.50%	0.09
490	1981/10/11 07:00:00	1981/10/11 22:00:00	16	0	69.60%	0.09
491	1981/10/29 00:00:00	1981/10/29 02:00:00	3	0	69.70%	0.09
492	1981/12/21 05:00:00	1981/12/21 09:00:00	5	0	69.90%	0.09
493	1982/01/05 05:00:00	1982/01/06 09:00:00	29	0	70.00%	0.09
494	1982/01/10 19:00:00	1982/01/11 16:00:00	22	0	70.20%	0.09
495	1982/02/05 15:00:00	1982/02/05 20:00:00	6	0	70.30%	0.09
496	1982/02/08 04:00:00	1982/02/08 10:00:00	7	0	70.50%	0.09

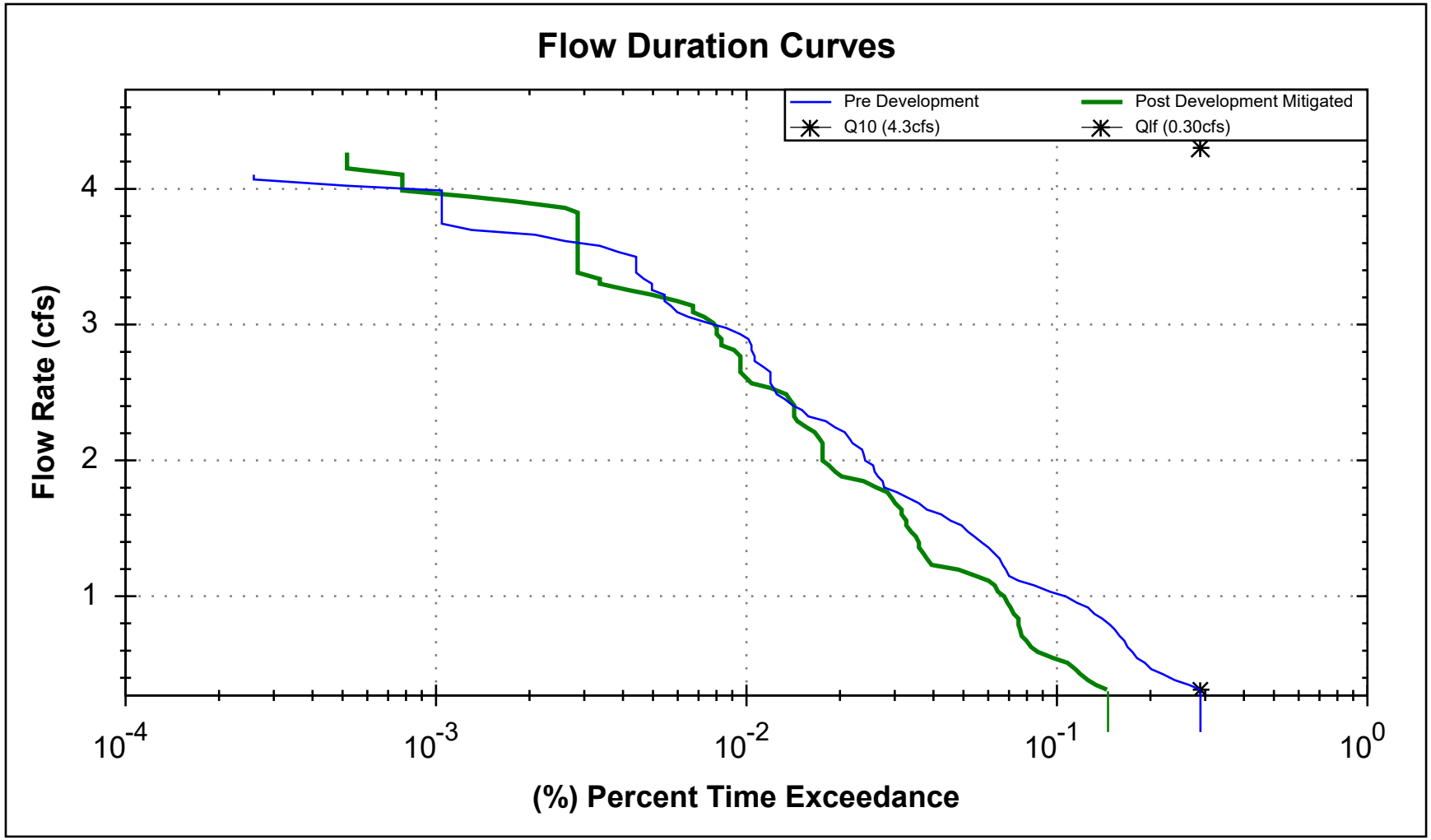
Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
497	1982/02/16 10:00:00	1982/02/16 15:00:00	6	0	70.60%	0.09
498	1982/03/02 20:00:00	1982/03/03 12:00:00	17	0	70.70%	0.09
499	1982/03/12 15:00:00	1982/03/12 19:00:00	5	0	70.90%	0.09
500	1982/04/05 16:00:00	1982/04/05 21:00:00	6	0	71.00%	0.09
501	1982/05/11 09:00:00	1982/05/11 11:00:00	3	0	71.20%	0.09
502	1982/05/26 14:00:00	1982/05/26 16:00:00	3	0	71.30%	0.09
503	1982/09/16 14:00:00	1982/09/16 16:00:00	3	0	71.40%	0.09
504	1982/09/22 14:00:00	1982/09/22 18:00:00	5	0	71.60%	0.09
505	1982/09/26 02:00:00	1982/09/27 10:00:00	33	0	71.70%	0.09
506	1982/10/26 11:00:00	1982/10/26 13:00:00	3	0	71.90%	0.09
507	1982/10/31 16:00:00	1982/10/31 21:00:00	6	0	72.00%	0.09
508	1982/11/19 03:00:00	1982/11/20 08:00:00	30	0	72.20%	0.09
509	1982/12/08 00:00:00	1982/12/10 16:00:00	65	0	72.30%	0.09
510	1982/12/29 20:00:00	1982/12/30 19:00:00	24	0	72.40%	0.09
511	1983/01/19 05:00:00	1983/01/20 02:00:00	22	0	72.60%	0.09
512	1983/01/23 01:00:00	1983/01/23 18:00:00	18	0	72.70%	0.09
513	1983/01/24 19:00:00	1983/01/25 12:00:00	18	0	72.90%	0.09
514	1983/02/02 13:00:00	1983/02/03 15:00:00	27	0	73.00%	0.09
515	1983/03/06 04:00:00	1983/03/07 04:00:00	25	0	73.20%	0.09
516	1983/03/15 11:00:00	1983/03/15 15:00:00	5	0	73.30%	0.09
517	1983/04/11 00:00:00	1983/04/13 07:00:00	56	0	73.40%	0.09
518	1983/04/17 23:00:00	1983/04/18 23:00:00	25	0	73.60%	0.09
519	1983/04/20 02:00:00	1983/04/22 04:00:00	51	0	73.70%	0.09
520	1983/08/07 10:00:00	1983/08/07 12:00:00	3	0	73.90%	0.09
521	1983/08/16 16:00:00	1983/08/19 00:00:00	57	0	74.00%	0.09
522	1983/11/18 03:00:00	1983/11/18 09:00:00	7	0	74.10%	0.09
523	1983/12/09 19:00:00	1983/12/10 16:00:00	22	0	74.30%	0.09
524	1984/01/16 19:00:00	1984/01/17 11:00:00	17	0	74.40%	0.09
525	1984/03/24 14:00:00	1984/03/24 20:00:00	7	0	74.60%	0.09
526	1984/04/06 07:00:00	1984/04/06 19:00:00	13	0	74.70%	0.09
527	1984/12/14 14:00:00	1984/12/15 04:00:00	15	0	74.90%	0.09
528	1984/12/16 05:00:00	1984/12/16 14:00:00	10	0	75.00%	0.09
529	1984/12/18 15:00:00	1984/12/19 23:00:00	33	0	75.10%	0.09
530	1985/01/09 14:00:00	1985/01/09 18:00:00	5	0	75.30%	0.09
531	1985/02/09 06:00:00	1985/02/10 10:00:00	29	0	75.40%	0.09
532	1985/02/20 21:00:00	1985/02/21 13:00:00	17	0	75.60%	0.09
533	1985/03/02 14:00:00	1985/03/03 18:00:00	29	0	75.70%	0.08
534	1985/03/12 12:00:00	1985/03/12 16:00:00	5	0	75.90%	0.08
535	1985/03/27 09:00:00	1985/03/29 04:00:00	44	0	76.00%	0.08
536	1985/04/21 15:00:00	1985/04/22 08:00:00	18	0	76.10%	0.08
537	1985/05/30 16:00:00	1985/05/30 20:00:00	5	0	76.30%	0.08
538	1985/06/03 03:00:00	1985/06/03 03:00:00	1	0	76.40%	0.08

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
539	1985/08/10 15:00:00	1985/08/10 20:00:00	6	0	76.60%	0.08
540	1985/10/07 15:00:00	1985/10/08 05:00:00	15	0	76.70%	0.08
541	1985/10/09 12:00:00	1985/10/10 09:00:00	22	0	76.80%	0.08
542	1985/10/22 01:00:00	1985/10/22 07:00:00	7	0	77.00%	0.08
543	1985/12/11 03:00:00	1985/12/12 02:00:00	24	0	77.10%	0.08
544	1986/01/02 16:00:00	1986/01/03 04:00:00	13	0	77.30%	0.08
545	1986/07/19 14:00:00	1986/07/20 11:00:00	22	0	77.40%	0.08
546	1986/08/18 07:00:00	1986/08/18 09:00:00	3	0	77.60%	0.08
547	1986/09/18 12:00:00	1986/09/18 17:00:00	6	0	77.70%	0.08
548	1986/12/20 07:00:00	1986/12/21 00:00:00	18	0	77.80%	0.08
549	1987/02/13 22:00:00	1987/02/14 12:00:00	15	0	78.00%	0.08
550	1987/04/03 22:00:00	1987/04/04 19:00:00	22	0	78.10%	0.08
551	1987/10/12 19:00:00	1987/10/13 15:00:00	21	0	78.30%	0.08
552	1987/10/28 20:00:00	1987/10/29 18:00:00	23	0	78.40%	0.08
553	1987/10/31 03:00:00	1987/11/02 22:00:00	68	0	78.60%	0.08
554	1987/11/14 03:00:00	1987/11/14 11:00:00	9	0	78.70%	0.08
555	1987/11/20 17:00:00	1987/11/20 20:00:00	4	0	78.80%	0.08
556	1987/12/19 15:00:00	1987/12/20 12:00:00	22	0	79.00%	0.08
557	1987/12/29 18:00:00	1987/12/30 09:00:00	16	0	79.10%	0.08
558	1988/02/29 23:00:00	1988/03/02 21:00:00	47	0	79.30%	0.08
559	1988/05/29 08:00:00	1988/05/29 09:00:00	2	0	79.40%	0.08
560	1988/11/14 08:00:00	1988/11/15 05:00:00	22	0	79.50%	0.08
561	1988/12/15 14:00:00	1988/12/19 17:00:00	100	0	79.70%	0.08
562	1989/01/04 10:00:00	1989/01/08 02:00:00	89	0	79.80%	0.08
563	1989/02/02 11:00:00	1989/02/03 00:00:00	14	0	80.00%	0.08
564	1989/02/04 05:00:00	1989/02/05 09:00:00	29	0	80.10%	0.08
565	1989/03/02 22:00:00	1989/03/03 11:00:00	14	0	80.30%	0.08
566	1989/09/17 05:00:00	1989/09/17 17:00:00	13	0	80.40%	0.08
567	1989/09/19 12:00:00	1989/09/19 12:00:00	1	0	80.50%	0.08
568	1989/10/22 01:00:00	1989/10/23 01:00:00	25	0	80.70%	0.08
569	1989/11/26 11:00:00	1989/11/26 21:00:00	11	0	80.80%	0.08
570	1990/01/02 04:00:00	1990/01/03 02:00:00	23	0	81.00%	0.08
571	1990/02/04 12:00:00	1990/02/05 04:00:00	17	0	81.10%	0.08
572	1990/03/11 03:00:00	1990/03/11 18:00:00	16	0	81.30%	0.08
573	1990/03/12 20:00:00	1990/03/12 23:00:00	4	0	81.40%	0.08
574	1990/03/28 19:00:00	1990/03/28 22:00:00	4	0	81.50%	0.08
575	1990/04/04 10:00:00	1990/04/05 17:00:00	32	0	81.70%	0.08
576	1990/05/28 06:00:00	1990/05/29 02:00:00	21	0	81.80%	0.08
577	1990/08/06 01:00:00	1990/08/06 03:00:00	3	0	82.00%	0.08
578	1990/08/09 17:00:00	1990/08/09 21:00:00	5	0	82.10%	0.08
579	1990/11/19 23:00:00	1990/11/21 01:00:00	27	0	82.20%	0.08
580	1990/11/26 03:00:00	1990/11/26 22:00:00	20	0	82.40%	0.08

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
581	1990/12/19 14:00:00	1990/12/20 22:00:00	33	0	82.50%	0.08
582	1991/01/03 14:00:00	1991/01/05 07:00:00	42	0	82.70%	0.08
583	1991/03/11 04:00:00	1991/03/11 19:00:00	16	0	82.80%	0.08
584	1991/03/13 18:00:00	1991/03/16 10:00:00	65	0	83.00%	0.08
585	1991/07/31 12:00:00	1991/07/31 13:00:00	2	0	83.10%	0.08
586	1991/09/20 19:00:00	1991/09/20 23:00:00	5	0	83.20%	0.08
587	1991/12/10 01:00:00	1991/12/11 10:00:00	34	0	83.40%	0.08
588	1991/12/17 13:00:00	1991/12/19 16:00:00	52	0	83.50%	0.08
589	1992/01/03 00:00:00	1992/01/04 08:00:00	33	0	83.70%	0.08
590	1992/03/08 00:00:00	1992/03/08 11:00:00	12	0	83.80%	0.08
591	1992/03/31 17:00:00	1992/04/01 01:00:00	9	0	83.90%	0.08
592	1992/05/22 19:00:00	1992/05/22 22:00:00	4	0	84.10%	0.08
593	1992/10/23 05:00:00	1992/10/23 17:00:00	13	0	84.20%	0.08
594	1992/10/29 01:00:00	1992/10/29 07:00:00	7	0	84.40%	0.08
595	1992/10/30 19:00:00	1992/10/31 06:00:00	12	0	84.50%	0.08
596	1992/12/04 01:00:00	1992/12/05 09:00:00	33	0	84.70%	0.08
597	1992/12/11 18:00:00	1992/12/12 03:00:00	10	0	84.80%	0.08
598	1992/12/17 23:00:00	1992/12/19 00:00:00	26	0	84.90%	0.08
599	1993/01/02 12:00:00	1993/01/03 14:00:00	27	0	85.10%	0.08
600	1993/02/26 20:00:00	1993/02/27 07:00:00	12	0	85.20%	0.08
601	1993/06/05 14:00:00	1993/06/06 12:00:00	23	0	85.40%	0.08
602	1993/11/11 10:00:00	1993/11/12 22:00:00	37	0	85.50%	0.08
603	1993/11/23 00:00:00	1993/11/23 23:00:00	24	0	85.70%	0.08
604	1993/11/30 06:00:00	1993/11/30 18:00:00	13	0	85.80%	0.08
605	1993/12/11 17:00:00	1993/12/12 22:00:00	30	0	85.90%	0.07
606	1993/12/14 18:00:00	1993/12/15 18:00:00	25	0	86.10%	0.07
607	1993/12/19 09:00:00	1993/12/19 09:00:00	1	0	86.20%	0.07
608	1994/01/25 02:00:00	1994/01/28 05:00:00	76	0	86.40%	0.07
609	1994/04/09 09:00:00	1994/04/10 09:00:00	25	0	86.50%	0.07
610	1994/04/24 05:00:00	1994/04/24 10:00:00	6	0	86.60%	0.07
611	1994/11/16 09:00:00	1994/11/16 22:00:00	14	0	86.80%	0.07
612	1994/11/18 05:00:00	1994/11/18 13:00:00	9	0	86.90%	0.07
613	1994/12/17 17:00:00	1994/12/17 18:00:00	2	0	87.10%	0.07
614	1994/12/22 21:00:00	1994/12/23 01:00:00	5	0	87.20%	0.07
615	1995/01/15 05:00:00	1995/01/18 01:00:00	69	0	87.40%	0.07
616	1995/01/21 04:00:00	1995/01/22 00:00:00	21	0	87.50%	0.07
617	1995/05/06 05:00:00	1995/05/06 19:00:00	15	0	87.60%	0.07
618	1995/05/14 22:00:00	1995/05/15 08:00:00	11	0	87.80%	0.07
619	1995/06/15 23:00:00	1995/06/17 18:00:00	44	0	87.90%	0.07
620	1995/11/01 09:00:00	1995/11/01 10:00:00	2	0	88.10%	0.07
621	1995/12/13 07:00:00	1995/12/14 11:00:00	29	0	88.20%	0.07
622	1996/01/16 21:00:00	1996/01/17 16:00:00	20	0	88.40%	0.07

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
623	1996/01/25 14:00:00	1996/01/25 22:00:00	9	0	88.50%	0.07
624	1996/02/21 11:00:00	1996/02/22 17:00:00	31	0	88.60%	0.07
625	1996/03/04 23:00:00	1996/03/05 22:00:00	24	0	88.80%	0.07
626	1996/04/18 02:00:00	1996/04/19 02:00:00	25	0	88.90%	0.07
627	1996/11/29 03:00:00	1996/11/29 05:00:00	3	0	89.10%	0.07
628	1996/12/06 02:00:00	1996/12/07 04:00:00	27	0	89.20%	0.07
629	1996/12/22 16:00:00	1996/12/23 08:00:00	17	0	89.30%	0.07
630	1996/12/27 18:00:00	1996/12/28 16:00:00	23	0	89.50%	0.07
631	1997/01/02 02:00:00	1997/01/02 08:00:00	7	0	89.60%	0.07
632	1997/01/05 10:00:00	1997/01/06 10:00:00	25	0	89.80%	0.07
633	1997/01/15 19:00:00	1997/01/16 15:00:00	21	0	89.90%	0.07
634	1997/01/23 07:00:00	1997/01/24 08:00:00	26	0	90.10%	0.07
635	1997/02/10 20:00:00	1997/02/11 15:00:00	20	0	90.20%	0.07
636	1997/02/27 12:00:00	1997/02/28 21:00:00	34	0	90.30%	0.07
637	1997/12/21 17:00:00	1997/12/22 06:00:00	14	0	90.50%	0.07
638	1998/01/04 17:00:00	1998/01/05 06:00:00	14	0	90.60%	0.07
639	1998/01/13 18:00:00	1998/01/14 00:00:00	7	0	90.80%	0.07
640	1998/01/19 14:00:00	1998/01/20 10:00:00	21	0	90.90%	0.07
641	1998/03/06 17:00:00	1998/03/07 07:00:00	15	0	91.10%	0.07
642	1998/03/15 18:00:00	1998/03/15 22:00:00	5	0	91.20%	0.07
643	1998/04/14 18:00:00	1998/04/16 05:00:00	36	0	91.30%	0.07
644	1998/05/05 17:00:00	1998/05/06 07:00:00	15	0	91.50%	0.07
645	2000/01/01 17:00:00	2000/01/02 04:00:00	12	0	91.60%	0.07
646	2000/01/25 18:00:00	2000/01/25 22:00:00	5	0	91.80%	0.07
647	2000/02/11 17:00:00	2000/02/12 02:00:00	10	0	91.90%	0.07
648	2000/10/21 19:00:00	2000/10/22 02:00:00	8	0	92.00%	0.07
649	2000/11/10 06:00:00	2000/11/11 21:00:00	40	0	92.20%	0.07
650	2000/11/22 22:00:00	2000/11/22 23:00:00	2	0	92.30%	0.07
651	2001/01/08 17:00:00	2001/01/09 11:00:00	19	0	92.50%	0.07
652	2001/04/21 02:00:00	2001/04/22 07:00:00	30	0	92.60%	0.07
653	2001/05/29 16:00:00	2001/05/30 06:00:00	15	0	92.80%	0.07
654	2001/11/13 18:00:00	2001/11/13 22:00:00	5	0	92.90%	0.07
655	2001/11/29 17:00:00	2001/11/30 05:00:00	13	0	93.00%	0.07
656	2001/12/03 15:00:00	2001/12/04 09:00:00	19	0	93.20%	0.07
657	2001/12/09 12:00:00	2001/12/10 18:00:00	31	0	93.30%	0.07
658	2001/12/14 18:00:00	2001/12/15 00:00:00	7	0	93.50%	0.07
659	2002/01/28 05:00:00	2002/01/29 16:00:00	36	0	93.60%	0.07
660	2002/03/07 16:00:00	2002/03/08 08:00:00	17	0	93.80%	0.07
661	2002/03/16 08:00:00	2002/03/16 16:00:00	9	0	93.90%	0.07
662	2002/04/24 13:00:00	2002/04/25 02:00:00	14	0	94.00%	0.07
663	2003/04/17 18:00:00	2003/04/17 19:00:00	2	0	94.20%	0.07
664	2003/05/03 15:00:00	2003/05/04 15:00:00	25	0	94.30%	0.07

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
665	2003/11/12 06:00:00	2003/11/13 06:00:00	25	0	94.50%	0.07
666	2003/11/16 02:00:00	2003/11/16 10:00:00	9	0	94.60%	0.07
667	2003/12/08 00:00:00	2003/12/08 11:00:00	12	0	94.70%	0.07
668	2004/01/02 22:00:00	2004/01/03 10:00:00	13	0	94.90%	0.07
669	2004/01/19 11:00:00	2004/01/19 11:00:00	1	0	95.00%	0.07
670	2004/01/28 06:00:00	2004/01/28 23:00:00	18	0	95.20%	0.07
671	2004/04/17 15:00:00	2004/04/18 05:00:00	15	0	95.30%	0.07
672	2004/11/21 06:00:00	2004/11/22 03:00:00	22	0	95.50%	0.07
673	2004/11/29 13:00:00	2004/11/30 01:00:00	13	0	95.60%	0.07
674	2004/12/05 06:00:00	2004/12/06 13:00:00	32	0	95.70%	0.07
675	2005/01/27 00:00:00	2005/01/27 08:00:00	9	0	95.90%	0.07
676	2005/01/28 16:00:00	2005/01/29 15:00:00	24	0	96.00%	0.07
677	2005/03/04 16:00:00	2005/03/05 23:00:00	32	0	96.20%	0.07
678	2005/03/19 08:00:00	2005/03/20 10:00:00	27	0	96.30%	0.07
679	2005/09/20 04:00:00	2005/09/20 13:00:00	10	0	96.40%	0.07
680	2005/10/16 17:00:00	2005/10/19 06:00:00	62	0	96.60%	0.07
681	2006/02/18 01:00:00	2006/02/19 20:00:00	44	0	96.70%	0.07
682	2006/03/08 07:00:00	2006/03/08 13:00:00	7	0	96.90%	0.07
683	2006/03/17 21:00:00	2006/03/18 21:00:00	25	0	97.00%	0.07
684	2006/03/21 02:00:00	2006/03/22 01:00:00	24	0	97.20%	0.07
685	2006/04/14 14:00:00	2006/04/16 00:00:00	35	0	97.30%	0.07
686	2006/07/29 04:00:00	2006/07/29 09:00:00	6	0	97.40%	0.07
687	2006/10/14 03:00:00	2006/10/15 04:00:00	26	0	97.60%	0.07
688	2006/11/27 12:00:00	2006/11/28 07:00:00	20	0	97.70%	0.07
689	2006/12/16 21:00:00	2006/12/17 20:00:00	24	0	97.90%	0.07
690	2006/12/27 08:00:00	2006/12/27 21:00:00	14	0	98.00%	0.07
691	2007/01/05 03:00:00	2007/01/05 03:00:00	1	0	98.20%	0.07
692	2007/02/11 13:00:00	2007/02/11 21:00:00	9	0	98.30%	0.07
693	2007/02/12 23:00:00	2007/02/14 12:00:00	38	0	98.40%	0.07
694	2007/02/22 22:00:00	2007/02/24 00:00:00	27	0	98.60%	0.07
695	2007/02/28 05:00:00	2007/02/28 19:00:00	15	0	98.70%	0.07
696	2007/03/21 10:00:00	2007/03/21 17:00:00	8	0	98.90%	0.07
697	2007/04/23 01:00:00	2007/04/23 15:00:00	15	0	99.00%	0.07
698	2007/05/23 03:00:00	2007/05/23 07:00:00	5	0	99.10%	0.06
699	2007/10/13 07:00:00	2007/10/13 15:00:00	9	0	99.30%	0.06
700	2007/12/19 01:00:00	2007/12/21 22:00:00	70	0	99.40%	0.06
701	2008/01/21 09:00:00	2008/01/21 17:00:00	9	0	99.60%	0.06
702	2008/01/26 22:00:00	2008/01/29 07:00:00	58	0	99.70%	0.06
703	2008/02/24 09:00:00	2008/02/25 04:00:00	20	0	99.90%	0.06
--End of Data----------						


Flow Duration Curves
Pre Development
Post Development Mitigated
Q10 (4.3cfs)
Qlf (0.30cfs)
Flow Rate (cfs)
4
3
2
1
10-4
10-3
10-2
10-1
100
(%) Percent Time Exceedance

Compare Post-Development Curve to Pre-Development Curve
Flow Control Upper Limit: 4.3 (cfs)
Flow Control Lower Limit: 0.30 (cfs)

post-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
post-development time stamp: 1/7/2025 2:24:04 PM
Compared to:
pre-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
pre-development time stamp: 8/21/2024 3:53:58 PM

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
0	0.30	0.10	0.30	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
1	0.30	0.10	0.30	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
2	0.40	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
3	0.40	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
4	0.50	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
5	0.50	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
6	0.50	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
7	0.60	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
8	0.60	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
9	0.70	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
10	0.70	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
11	0.70	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
12	0.80	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
13	0.80	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
14	0.90	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
15	0.90	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
16	0.90	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
17	1.00	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
18	1.00	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
19	1.10	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
20	1.10	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
21	1.10	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
22	1.20	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
23	1.20	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
24	1.30	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
25	1.30	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
26	1.40	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
27	1.40	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
28	1.40	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
29	1.50	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
30	1.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
31	1.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
32	1.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
33	1.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
34	1.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
35	1.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
36	1.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
37	1.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
38	1.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
39	1.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
40	1.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
41	2.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
42	2.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
43	2.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
44	2.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
45	2.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
46	2.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
47	2.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
48	2.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
49	2.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
50	2.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
51	2.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
52	2.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
53	2.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
54	2.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
55	2.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
56	2.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
57	2.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
58	2.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
59	2.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
60	2.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
61	2.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
62	2.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
63	2.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
64	2.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
65	2.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
66	3.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
67	3.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
68	3.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
69	3.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
70	3.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
71	3.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
72	3.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
73	3.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
74	3.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
75	3.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
76	3.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
77	3.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
78	3.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
79	3.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
80	3.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
81	3.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
82	3.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
83	3.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
84	3.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
85	3.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
86	3.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
87	3.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
88	3.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
89	3.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
90	3.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
91	4.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
92	4.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
93	4.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
94	4.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
95	4.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
96	4.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
97	4.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
98	4.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
99	4.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Duration Table Summary at Project Discharge Point

file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
time stamp: 8/21/2024 3:53:58 PM

DISCHARGE		Number of periods when discharge was equal to or greater than DISCHARGE column but less than that shown on the next line		
Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1	0.3	86	1109	0.290
2	0.3	97	1023	0.267
3	0.4	81	926	0.242
4	0.4	71	845	0.221
5	0.5	32	774	0.202
6	0.5	41	742	0.194
7	0.5	24	701	0.183
8	0.6	24	677	0.177
9	0.6	21	653	0.171
10	0.7	19	632	0.165
11	0.7	20	613	0.160
12	0.7	20	593	0.155
13	0.8	34	573	0.150
14	0.8	28	539	0.141
15	0.9	28	511	0.134
16	0.9	35	483	0.126
17	0.9	34	448	0.117
18	1.0	49	414	0.108
19	1.0	39	365	0.095
20	1.1	35	326	0.085
21	1.1	22	291	0.076
22	1.1	4	269	0.070
23	1.2	8	265	0.069
24	1.2	6	257	0.067
25	1.3	7	251	0.066
26	1.3	12	244	0.064
27	1.4	12	232	0.061
28	1.4	11	220	0.057
29	1.4	10	209	0.055
30	1.5	10	199	0.052
31	1.5	14	189	0.049
32	1.6	11	175	0.046
33	1.6	17	164	0.043
34	1.6	8	147	0.038
35	1.7	10	139	0.036
36	1.7	11	129	0.034
37	1.8	11	118	0.031
38	1.8	1	107	0.028
39	1.8	4	106	0.028
40	1.9	2	102	0.027
41	1.9	2	100	0.026
42	2.0	5	98	0.026
43	2.0	1	93	0.024
44	2.0	1	92	0.024
45	2.1	6	91	0.024

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
46	2.1	2	85	0.022
47	2.2	3	83	0.022
48	2.2	6	80	0.021
49	2.2	5	74	0.019
50	2.3	8	69	0.018
51	2.3	3	61	0.016
52	2.4	4	58	0.015
53	2.4	3	54	0.014
54	2.4	3	51	0.013
55	2.5	1	48	0.013
56	2.5	1	47	0.012
57	2.6	0	46	0.012
58	2.6	0	46	0.012
59	2.6	2	46	0.012
60	2.7	3	44	0.011
61	2.7	0	41	0.011
62	2.8	1	41	0.011
63	2.8	0	40	0.010
64	2.8	1	40	0.010
65	2.9	2	39	0.010
66	2.9	4	37	0.010
67	3.0	4	33	0.009
68	3.0	4	29	0.008
69	3.0	2	25	0.007
70	3.1	1	23	0.006
71	3.1	1	22	0.006
72	3.2	0	21	0.005
73	3.2	2	21	0.005
74	3.2	0	19	0.005
75	3.3	1	19	0.005
76	3.3	1	18	0.005
77	3.4	0	17	0.004
78	3.4	0	17	0.004
79	3.5	0	17	0.004
80	3.5	2	17	0.004
81	3.5	2	15	0.004
82	3.6	3	13	0.003
83	3.6	2	10	0.003
84	3.7	3	8	0.002
85	3.7	1	5	0.001
86	3.7	0	4	0.001
87	3.8	0	4	0.001
88	3.8	0	4	0.001
89	3.9	0	4	0.001
90	3.9	0	4	0.001
91	3.9	0	4	0.001
92	4.0	2	4	0.001
93	4.0	1	2	0.001
94	4.1	0	1	0.000
95	4.1	1	1	0.000
96	4.1	0	0	0.000
97	4.2	0	0	0.000
98	4.2	0	0	0.000
99	4.3	0	0	0.000

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
100	4.3	0	0	0.000
---------End of Data----------				

Duration Table Summary at Project Discharge Point

file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
time stamp: 1/7/2025 2:24:04 PM

DISCHARGE		Number of periods when discharge was equal to or greater than DISCHARGE column but less than that shown on the next line		
Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1	0.3	47	559	0.146
2	0.3	29	512	0.134
3	0.4	23	483	0.126
4	0.4	20	460	0.120
5	0.5	23	440	0.115
6	0.5	42	417	0.109
7	0.5	42	375	0.098
8	0.6	14	333	0.087
9	0.6	12	319	0.083
10	0.7	11	307	0.080
11	0.7	4	296	0.077
12	0.7	2	292	0.076
13	0.8	1	290	0.076
14	0.8	8	289	0.076
15	0.9	7	281	0.073
16	0.9	6	274	0.072
17	0.9	8	268	0.070
18	1.0	11	260	0.068
19	1.0	5	249	0.065
20	1.1	12	244	0.064
21	1.1	21	232	0.061
22	1.1	26	211	0.055
23	1.2	33	185	0.048
24	1.2	6	152	0.040
25	1.3	3	146	0.038
26	1.3	4	143	0.037
27	1.4	1	139	0.036
28	1.4	3	138	0.036
29	1.4	5	135	0.035
30	1.5	4	130	0.034
31	1.5	0	126	0.033
32	1.6	4	126	0.033
33	1.6	1	122	0.032
34	1.6	5	121	0.032
35	1.7	2	116	0.030
36	1.7	4	114	0.030
37	1.8	9	110	0.029
38	1.8	9	101	0.026
39	1.8	14	92	0.024
40	1.9	4	78	0.020
41	1.9	3	74	0.019
42	2.0	3	71	0.019
43	2.0	0	68	0.018
44	2.0	0	68	0.018
45	2.1	0	68	0.018

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
46	2.1	2	68	0.018
47	2.2	2	66	0.017
48	2.2	4	64	0.017
49	2.2	4	60	0.016
50	2.3	1	56	0.015
51	2.3	0	55	0.014
52	2.4	0	55	0.014
53	2.4	2	55	0.014
54	2.4	1	53	0.014
55	2.5	6	52	0.014
56	2.5	6	46	0.012
57	2.6	2	40	0.010
58	2.6	1	38	0.010
59	2.6	0	37	0.010
60	2.7	0	37	0.010
61	2.7	0	37	0.010
62	2.8	2	37	0.010
63	2.8	3	35	0.009
64	2.8	0	32	0.008
65	2.9	1	32	0.008
66	2.9	0	31	0.008
67	3.0	1	31	0.008
68	3.0	2	30	0.008
69	3.0	2	28	0.007
70	3.1	0	26	0.007
71	3.1	3	26	0.007
72	3.2	4	23	0.006
73	3.2	3	19	0.005
74	3.2	3	16	0.004
75	3.3	0	13	0.003
76	3.3	2	13	0.003
77	3.4	0	11	0.003
78	3.4	0	11	0.003
79	3.5	0	11	0.003
80	3.5	0	11	0.003
81	3.5	0	11	0.003
82	3.6	0	11	0.003
83	3.6	0	11	0.003
84	3.7	0	11	0.003
85	3.7	0	11	0.003
86	3.7	0	11	0.003
87	3.8	0	11	0.003
88	3.8	1	11	0.003
89	3.9	3	10	0.003
90	3.9	2	7	0.002
91	3.9	2	5	0.001
92	4.0	0	3	0.001
93	4.0	0	3	0.001
94	4.1	0	3	0.001
95	4.1	1	3	0.001
96	4.1	0	2	0.001
97	4.2	0	2	0.001
98	4.2	0	2	0.001
99	4.3	2	2	0.001

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
100	4.3	0	0	0.000
---------End of Data----------				

END OF STATISTICS ANALYSIS

POC-2

STATISTICS ANALYSIS OF THE SWMM FILES FOR:

DISCHARGE NODE: POC-2

ANALYSIS DETAILS

Stream Susceptibility to Channel Erosion: High
Low Flow Threshold = (0.1)Q2 = (0.1)12.200 = Qlf = 1.2200 (cfs)
Flow Control Upper Limit = Q10 = 19.200 (cfs)
Assumed time between storms (hours): 24

PRE-DEVELOPMENT SWMM FILE

SWMM file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
SWMM file time stamp: 8/21/2024 3:53:58 PM
Selected Node to Analyze: POC-2

POST-DEVELOPMENT MITIGATED SWMM FILE

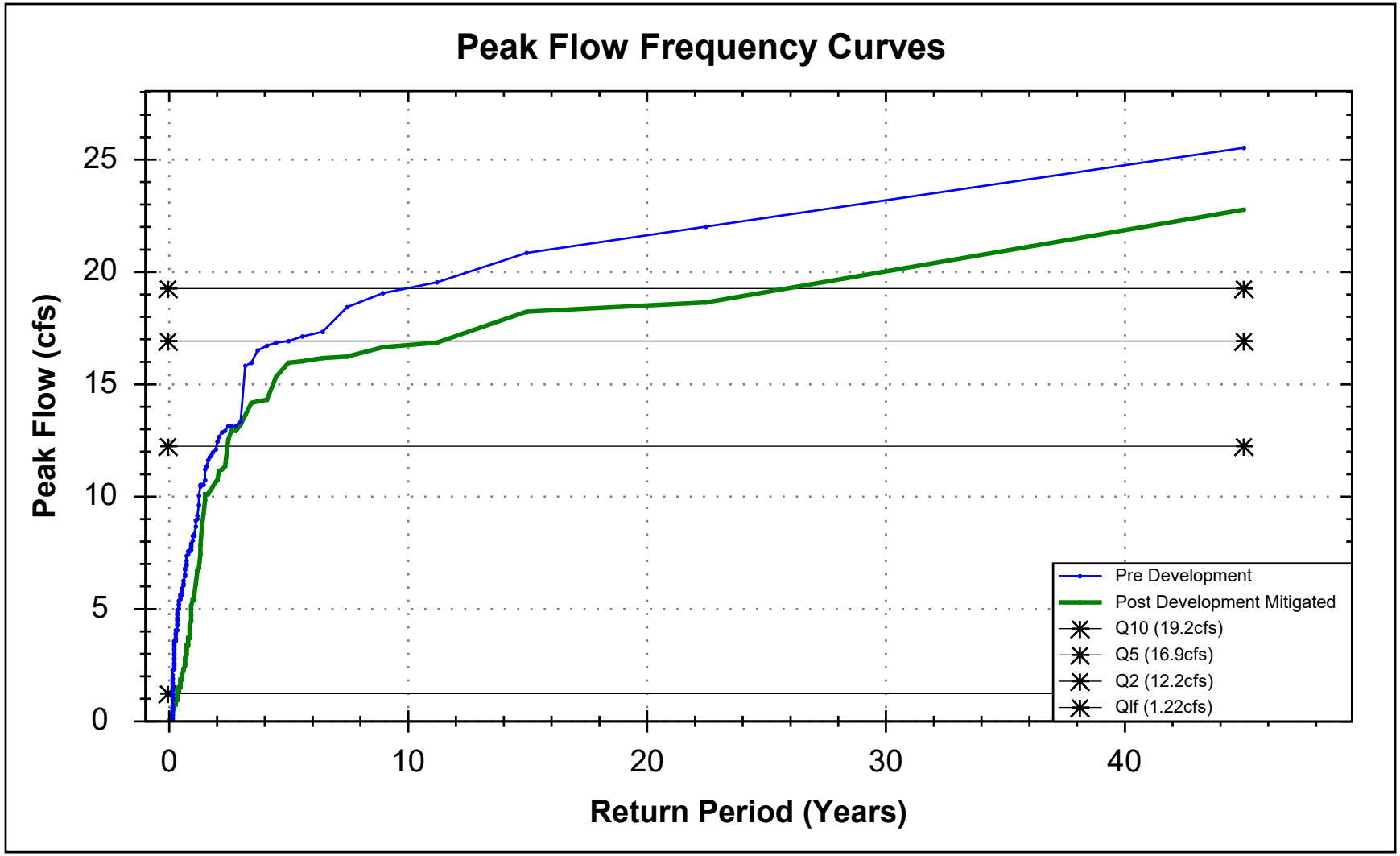
SWMM file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
SWMM file time stamp: 1/7/2025 2:24:04 PM
Selected Node to Analyze: POC-2

MITIGATED CONDITIONS RESULTS

For the Mitigated Conditions:
Peak Flow Conditions PASS
Flow Duration Conditions PASS

The Mitigated Conditions peak flow frequency curve is composed of 375 points. Of the points, 1 point(s) are above the flow control upper limit (Q10 = 19.2 (cfs)), 262 point(s) are below the low flow threshold value (Qlf = 1.22 (cfs)). Of the points within the flow control range (Qlf to Q10), 112 point(s) have a lower peak flow rate than pre-development conditions. These points all pass. There are no points that failed, therefore the peak flow requirements have been met.

The Mitigated Conditions flow duration curve is composed of 100 flow bins (points). Each point represents the number of hours where the discharge was equal to or greater than the discharge value, but less than the next greater discharge value. Within the flow control range, comparing the post-development flow duration curve to the pre-development flow duration curve, 100 post-development curve point(s) have a lower flow duration than pre-development conditions. These points all pass. There are no points that failed, therefore the flow duration requirements have been met.


Peak Flow Frequency Curves
Peak Flow (cfs)
0
5
10
15
20
25
0
10
20
30
40
Return Period (Years)
Pre Development
Post Development Mitigated
Q10 (19.2cfs)
Q5 (16.9cfs)
Q2 (12.2cfs)
Qlf (1.22cfs)

Compare Post-Development Curve to Pre-Development Curve
Flow Control Upper Limit: 19.2 (cfs)
Flow Control Lower Limit: 1.22 (cfs)

post-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
post-development time stamp: 1/7/2025 2:24:04 PM
Compared to:
pre-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
pre-development time stamp: 8/21/2024 3:53:58 PM

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
0	45.00	22.70	25.50	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (19.2 (cfs))
1	22.50	18.60	22.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
2	15.00	18.20	20.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
3	11.30	16.80	19.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
4	9.00	16.60	19.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
5	7.50	16.20	18.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
6	6.40	16.10	17.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
7	5.60	16.00	17.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
8	5.00	15.90	16.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
9	4.50	15.30	16.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
10	4.10	14.30	16.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
11	3.80	14.20	16.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
12	3.50	14.10	15.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
13	3.20	13.60	15.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
14	3.00	13.20	13.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
15	2.80	12.90	13.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
16	2.60	12.90	13.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
17	2.50	12.50	13.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
18	2.40	11.30	12.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
19	2.30	11.20	12.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
20	2.10	11.10	12.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
21	2.00	10.70	12.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
22	2.00	10.60	12.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
23	1.90	10.40	11.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
24	1.80	10.30	11.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
25	1.70	10.20	11.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
26	1.70	10.10	11.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
27	1.60	10.10	11.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
28	1.60	10.10	11.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
29	1.50	9.80	10.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
30	1.50	9.20	10.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
31	1.40	8.60	10.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
32	1.40	7.80	10.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
33	1.30	7.40	10.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
34	1.30	6.80	10.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
35	1.30	6.80	9.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
36	1.20	6.70	9.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
37	1.20	6.60	9.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
38	1.20	6.10	8.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
39	1.10	6.10	8.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
40	1.10	5.60	8.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
41	1.10	5.50	8.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
42	1.00	5.40	8.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
43	1.00	5.40	8.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
44	1.00	5.30	8.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
45	1.00	5.10	7.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
46	1.00	5.00	7.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
47	0.90	4.70	7.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
48	0.90	4.40	7.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
49	0.90	4.20	7.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
50	0.90	4.20	7.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
51	0.90	3.70	7.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
52	0.80	3.70	7.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
53	0.80	3.50	7.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
54	0.80	3.50	7.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
55	0.80	3.40	7.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
56	0.80	3.30	7.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
57	0.80	3.30	7.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
58	0.80	3.20	7.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
59	0.80	3.10	7.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
60	0.70	3.00	6.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
61	0.70	2.90	6.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
62	0.70	2.80	6.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
63	0.70	2.70	6.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
64	0.70	2.60	6.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
65	0.70	2.50	6.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
66	0.70	2.50	6.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
67	0.70	2.40	6.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
68	0.70	2.30	6.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
69	0.60	2.30	6.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
70	0.60	2.30	6.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
71	0.60	2.30	6.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
72	0.60	2.20	6.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
73	0.60	2.20	6.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
74	0.60	2.20	6.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
75	0.60	2.00	5.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
76	0.60	1.90	5.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
77	0.60	1.90	5.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
78	0.60	1.90	5.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
79	0.60	1.90	5.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
80	0.60	1.80	5.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
81	0.50	1.80	5.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
82	0.50	1.80	5.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
83	0.50	1.80	5.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
84	0.50	1.80	5.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
85	0.50	1.80	5.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
86	0.50	1.70	5.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
87	0.50	1.70	5.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
88	0.50	1.70	5.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
89	0.50	1.60	5.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
90	0.50	1.60	5.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
91	0.50	1.50	5.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
92	0.50	1.50	5.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
93	0.50	1.50	5.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
94	0.50	1.50	5.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
95	0.50	1.50	5.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
96	0.50	1.50	5.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
97	0.50	1.50	5.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
98	0.50	1.50	5.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
99	0.50	1.50	5.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
100	0.40	1.50	5.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
101	0.40	1.40	5.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
102	0.40	1.40	5.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
103	0.40	1.40	5.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
104	0.40	1.40	5.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
105	0.40	1.40	5.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
106	0.40	1.40	5.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
107	0.40	1.40	5.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
108	0.40	1.30	5.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
109	0.40	1.30	5.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
110	0.40	1.30	5.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
111	0.40	1.30	5.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
112	0.40	1.30	4.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
113	0.40	1.20	4.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
114	0.40	1.20	4.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
115	0.40	1.20	4.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
116	0.40	1.20	4.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
117	0.40	1.20	4.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
118	0.40	1.10	4.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
119	0.40	1.10	4.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
120	0.40	1.10	4.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
121	0.40	1.10	4.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
122	0.40	1.10	4.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
123	0.40	1.00	4.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
124	0.40	1.00	4.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
125	0.40	1.00	4.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
126	0.40	1.00	4.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
127	0.40	1.00	4.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
128	0.30	1.00	4.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
129	0.30	1.00	4.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
130	0.30	1.00	4.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
131	0.30	1.00	4.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
132	0.30	0.90	4.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
133	0.30	0.90	4.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
134	0.30	0.90	4.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
135	0.30	0.90	4.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
136	0.30	0.90	3.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
137	0.30	0.90	3.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
138	0.30	0.90	3.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
139	0.30	0.90	3.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
140	0.30	0.90	3.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
141	0.30	0.90	3.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
142	0.30	0.90	3.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
143	0.30	0.90	3.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
144	0.30	0.90	3.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
145	0.30	0.90	3.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
146	0.30	0.80	3.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
147	0.30	0.80	3.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
148	0.30	0.80	3.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
149	0.30	0.80	3.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
150	0.30	0.80	3.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
151	0.30	0.80	3.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
152	0.30	0.80	3.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
153	0.30	0.80	3.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
154	0.30	0.80	3.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
155	0.30	0.80	3.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
156	0.30	0.80	3.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
157	0.30	0.80	3.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
158	0.30	0.80	3.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
159	0.30	0.80	3.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
160	0.30	0.80	3.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
161	0.30	0.70	3.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
162	0.30	0.70	3.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
163	0.30	0.70	3.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
164	0.30	0.70	3.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
165	0.30	0.70	3.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
166	0.30	0.70	3.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
167	0.30	0.70	3.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
168	0.30	0.70	3.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
169	0.30	0.70	3.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
170	0.30	0.70	3.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
171	0.30	0.70	3.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
172	0.30	0.70	3.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
173	0.30	0.70	3.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
174	0.30	0.70	3.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
175	0.30	0.70	3.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
176	0.30	0.70	3.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
177	0.30	0.70	3.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
178	0.30	0.70	3.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
179	0.30	0.70	3.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
180	0.20	0.70	3.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
181	0.20	0.70	3.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
182	0.20	0.60	3.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
183	0.20	0.60	3.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
184	0.20	0.60	3.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
185	0.20	0.60	3.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
186	0.20	0.60	3.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
187	0.20	0.60	3.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
188	0.20	0.60	3.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
189	0.20	0.60	3.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
190	0.20	0.60	2.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
191	0.20	0.60	2.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
192	0.20	0.60	2.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
193	0.20	0.60	2.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
194	0.20	0.60	2.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
195	0.20	0.60	2.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
196	0.20	0.60	2.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
197	0.20	0.60	2.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
198	0.20	0.60	2.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
199	0.20	0.60	2.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
200	0.20	0.60	2.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
201	0.20	0.60	2.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
202	0.20	0.60	2.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
203	0.20	0.50	2.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
204	0.20	0.50	2.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
205	0.20	0.50	2.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
206	0.20	0.50	2.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
207	0.20	0.50	2.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
208	0.20	0.50	2.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
209	0.20	0.50	2.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
210	0.20	0.50	2.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
211	0.20	0.50	2.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
212	0.20	0.50	2.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
213	0.20	0.50	2.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
214	0.20	0.50	2.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
215	0.20	0.50	2.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
216	0.20	0.50	2.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
217	0.20	0.50	2.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
218	0.20	0.50	2.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
219	0.20	0.50	2.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
220	0.20	0.50	2.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
221	0.20	0.50	2.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
222	0.20	0.50	2.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
223	0.20	0.50	2.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
224	0.20	0.50	2.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
225	0.20	0.50	2.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
226	0.20	0.50	1.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
227	0.20	0.50	1.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
228	0.20	0.50	1.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
229	0.20	0.50	1.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
230	0.20	0.40	1.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
231	0.20	0.40	1.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
232	0.20	0.40	1.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
233	0.20	0.40	1.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
234	0.20	0.40	1.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
235	0.20	0.40	1.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
236	0.20	0.40	1.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
237	0.20	0.40	1.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
238	0.20	0.40	1.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
239	0.20	0.40	1.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
240	0.20	0.40	1.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
241	0.20	0.40	1.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
242	0.20	0.40	1.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
243	0.20	0.40	1.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
244	0.20	0.40	1.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
245	0.20	0.40	1.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
246	0.20	0.40	1.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
247	0.20	0.40	1.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
248	0.20	0.40	1.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
249	0.20	0.40	1.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
250	0.20	0.30	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
251	0.20	0.30	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
252	0.20	0.30	1.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
253	0.20	0.30	1.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
254	0.20	0.30	1.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
255	0.20	0.30	1.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
256	0.20	0.30	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
257	0.20	0.30	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
258	0.20	0.30	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
259	0.20	0.30	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
260	0.20	0.30	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
261	0.20	0.30	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
262	0.20	0.30	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
263	0.20	0.30	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
264	0.20	0.30	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
265	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
266	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
267	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
268	0.20	0.30	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
269	0.20	0.30	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
270	0.20	0.30	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
271	0.20	0.30	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
272	0.20	0.30	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
273	0.20	0.20	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
274	0.20	0.20	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
275	0.10	0.20	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
276	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
277	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
278	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
279	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
280	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
281	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
282	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
283	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
284	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
285	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
286	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
287	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
288	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
289	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
290	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
291	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
292	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
293	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
294	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
295	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
296	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
297	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
298	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
299	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
300	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
301	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
302	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
303	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
304	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
305	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
306	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
307	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
308	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
309	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
310	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
311	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
312	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
313	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
314	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
315	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
316	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
317	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
318	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
319	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
320	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
321	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
322	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
323	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
324	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
325	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
326	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
327	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
328	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
329	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
330	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
331	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
332	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
333	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
334	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
335	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
336	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
337	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
338	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
339	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
340	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
341	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
342	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
343	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
344	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
345	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
346	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
347	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
348	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
349	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
350	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
351	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
352	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
353	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
354	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
355	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
356	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
357	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
358	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
359	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
360	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
361	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
362	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
363	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
364	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
365	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
366	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
367	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
368	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
369	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
370	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
371	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
372	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
373	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))
374	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (1.22 (cfs))

SWMM.out file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
SWMM.out time stamp: 8/21/2024 3:53:58 PM

Q10: 19.200 (cfs)
Q5: 16.900 (cfs)
Q2: 12.200 (cfs)

Peak Flow Statistics Table Values

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
1	1993/01/06 16:00:00	1993/01/10 19:00:00	100	25.5	0.30%	45
2	1971/02/23 05:00:00	1971/02/23 13:00:00	9	22	0.60%	22.5
3	1995/01/25 08:00:00	1995/01/25 23:00:00	16	20.8	1.00%	15
4	1995/01/04 15:00:00	1995/01/04 23:00:00	9	19.5	1.30%	11.25
5	1986/02/15 01:00:00	1986/02/15 12:00:00	12	19	1.60%	9
6	1998/02/14 14:00:00	1998/02/15 02:00:00	13	18.4	1.90%	7.5
7	1967/11/19 06:00:00	1967/11/20 04:00:00	23	17.3	2.30%	6.43
8	1983/12/25 06:00:00	1983/12/25 21:00:00	16	17.1	2.60%	5.63
9	1978/03/16 22:00:00	1978/03/18 15:00:00	42	16.9	2.90%	5
10	1966/12/05 01:00:00	1966/12/07 01:00:00	49	16.8	3.20%	4.5
11	1983/03/01 14:00:00	1983/03/03 09:00:00	44	16.7	3.60%	4.09
12	1978/01/14 16:00:00	1978/01/16 14:00:00	47	16.5	3.90%	3.75
13	1988/04/20 07:00:00	1988/04/21 23:00:00	41	15.9	4.20%	3.46
14	1981/02/09 00:00:00	1981/02/09 09:00:00	10	15.8	4.50%	3.21
15	1969/01/24 07:00:00	1969/01/25 18:00:00	36	13.3	4.90%	3
16	1972/11/14 13:00:00	1972/11/14 16:00:00	4	13.1	5.20%	2.81
17	1980/01/28 08:00:00	1980/01/30 21:00:00	62	13.1	5.50%	2.65
18	2005/01/11 02:00:00	2005/01/11 10:00:00	9	13.1	5.80%	2.5
19	1983/11/25 00:00:00	1983/11/25 04:00:00	5	12.9	6.20%	2.37
20	2007/01/31 00:00:00	2007/01/31 01:00:00	2	12.8	6.50%	2.25
21	2007/08/26 07:00:00	2007/08/26 09:00:00	3	12.6	6.80%	2.14
22	1998/01/09 16:00:00	1998/01/10 20:00:00	29	12.4	7.10%	2.05
23	2005/01/09 04:00:00	2005/01/10 00:00:00	21	12.1	7.50%	1.96
24	2007/11/30 10:00:00	2007/12/01 01:00:00	16	11.9	7.80%	1.88
25	1967/04/11 09:00:00	1967/04/12 06:00:00	22	11.8	8.10%	1.8
26	2004/10/18 09:00:00	2004/10/18 12:00:00	4	11.7	8.40%	1.73
27	1993/01/12 19:00:00	1993/01/14 07:00:00	37	11.6	8.80%	1.67
28	1980/02/16 18:00:00	1980/02/21 01:00:00	104	11.3	9.10%	1.61
29	1991/03/20 07:00:00	1991/03/21 08:00:00	26	11.2	9.40%	1.55
30	1998/02/03 16:00:00	1998/02/03 23:00:00	8	10.7	9.70%	1.5
31	1965/11/22 04:00:00	1965/11/23 07:00:00	28	10.5	10.10%	1.45
32	1967/12/18 15:00:00	1967/12/19 16:00:00	26	10.5	10.40%	1.41
33	1992/02/15 13:00:00	1992/02/15 19:00:00	7	10.5	10.70%	1.36
34	2004/10/19 16:00:00	2004/10/20 17:00:00	26	10.4	11.00%	1.32

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
35	1985/11/25 00:00:00	1985/11/25 09:00:00	10	10	11.40%	1.29
36	1993/02/08 01:00:00	1993/02/08 12:00:00	12	9.6	11.70%	1.25
37	1974/12/04 09:00:00	1974/12/04 11:00:00	3	9.1	12.00%	1.22
38	1980/03/02 21:00:00	1980/03/03 04:00:00	8	9	12.30%	1.18
39	1979/01/05 08:00:00	1979/01/06 08:00:00	25	8.9	12.70%	1.15
40	1981/03/19 21:00:00	1981/03/19 23:00:00	3	8.6	13.00%	1.13
41	1982/03/18 02:00:00	1982/03/19 18:00:00	41	8.3	13.30%	1.1
42	1970/03/04 22:00:00	1970/03/05 02:00:00	5	8.2	13.60%	1.07
43	2003/02/25 17:00:00	2003/02/25 20:00:00	4	8.2	14.00%	1.05
44	2004/10/27 04:00:00	2004/10/27 10:00:00	7	8.2	14.30%	1.02
45	1978/02/05 20:00:00	1978/02/06 23:00:00	28	8	14.60%	1
46	1980/01/10 23:00:00	1980/01/12 09:00:00	35	7.9	14.90%	0.98
47	2006/04/04 23:00:00	2006/04/05 10:00:00	12	7.8	15.30%	0.96
48	2003/02/11 17:00:00	2003/02/13 20:00:00	52	7.7	15.60%	0.94
49	1976/04/14 11:00:00	1976/04/14 13:00:00	3	7.6	15.90%	0.92
50	1979/01/17 12:00:00	1979/01/18 17:00:00	30	7.6	16.20%	0.9
51	1983/02/27 17:00:00	1983/02/27 22:00:00	6	7.6	16.60%	0.88
52	1970/11/29 14:00:00	1970/11/30 01:00:00	12	7.5	16.90%	0.87
53	1978/12/17 19:00:00	1978/12/18 14:00:00	20	7.5	17.20%	0.85
54	1993/11/14 17:00:00	1993/11/14 18:00:00	2	7.5	17.50%	0.83
55	1969/02/06 08:00:00	1969/02/06 12:00:00	5	7.4	17.90%	0.82
56	1982/01/01 09:00:00	1982/01/01 12:00:00	4	7.4	18.20%	0.8
57	2004/02/26 06:00:00	2004/02/26 11:00:00	6	7.4	18.50%	0.79
58	1973/02/11 05:00:00	1973/02/13 02:00:00	46	7.3	18.80%	0.78
59	1977/05/08 18:00:00	1977/05/08 23:00:00	6	7.1	19.20%	0.76
60	1974/01/04 19:00:00	1974/01/05 04:00:00	10	7	19.50%	0.75
61	1991/02/27 18:00:00	1991/03/01 14:00:00	45	6.9	19.80%	0.74
62	1995/03/05 08:00:00	1995/03/06 03:00:00	20	6.9	20.10%	0.73
63	1976/03/03 00:00:00	1976/03/03 05:00:00	6	6.8	20.50%	0.71
64	1982/12/22 23:00:00	1982/12/23 01:00:00	3	6.7	20.80%	0.7
65	1970/02/28 16:00:00	1970/03/02 08:00:00	41	6.5	21.10%	0.69
66	1991/03/19 00:00:00	1991/03/19 05:00:00	6	6.5	21.40%	0.68
67	1985/11/29 08:00:00	1985/11/29 19:00:00	12	6.4	21.80%	0.67
68	1998/02/08 16:00:00	1998/02/08 23:00:00	8	6.4	22.10%	0.66
69	1965/12/13 01:00:00	1965/12/13 04:00:00	4	6.2	22.40%	0.65
70	1983/03/23 18:00:00	1983/03/23 23:00:00	6	6.2	22.70%	0.64
71	2004/02/22 14:00:00	2004/02/23 09:00:00	20	6.2	23.10%	0.63
72	1965/04/08 14:00:00	1965/04/10 01:00:00	36	6.1	23.40%	0.63
73	1981/03/01 05:00:00	1981/03/01 18:00:00	14	6	23.70%	0.62
74	1992/02/06 17:00:00	1992/02/07 01:00:00	9	6	24.00%	0.61
75	1994/03/25 00:00:00	1994/03/25 17:00:00	18	6	24.40%	0.6
76	1970/12/21 03:00:00	1970/12/21 11:00:00	9	5.9	24.70%	0.59

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
77	1995/03/11 03:00:00	1995/03/12 02:00:00	24	5.9	25.00%	0.58
78	1976/12/31 09:00:00	1976/12/31 13:00:00	5	5.8	25.30%	0.58
79	1994/02/07 15:00:00	1994/02/07 22:00:00	8	5.8	25.60%	0.57
80	1976/02/08 15:00:00	1976/02/09 04:00:00	14	5.7	26.00%	0.56
81	1988/12/24 22:00:00	1988/12/25 03:00:00	6	5.7	26.30%	0.56
82	1991/12/29 16:00:00	1991/12/29 19:00:00	4	5.7	26.60%	0.55
83	1998/02/22 17:00:00	1998/02/24 21:00:00	53	5.7	26.90%	0.54
84	2003/03/15 17:00:00	2003/03/16 20:00:00	28	5.7	27.30%	0.54
85	1974/03/08 02:00:00	1974/03/08 15:00:00	14	5.6	27.60%	0.53
86	1980/03/06 01:00:00	1980/03/06 15:00:00	15	5.6	27.90%	0.52
87	1983/01/27 08:00:00	1983/01/27 15:00:00	8	5.6	28.20%	0.52
88	1991/03/25 07:00:00	1991/03/27 13:00:00	55	5.6	28.60%	0.51
89	1967/11/21 13:00:00	1967/11/21 15:00:00	3	5.5	28.90%	0.51
90	1979/03/01 13:00:00	1979/03/01 21:00:00	9	5.5	29.20%	0.5
91	2003/04/14 17:00:00	2003/04/14 19:00:00	3	5.5	29.50%	0.5
92	1967/01/24 18:00:00	1967/01/25 01:00:00	8	5.4	29.90%	0.49
93	1983/03/20 20:00:00	1983/03/21 04:00:00	9	5.4	30.20%	0.48
94	1992/01/05 15:00:00	1992/01/06 04:00:00	14	5.4	30.50%	0.48
95	1994/02/17 12:00:00	1994/02/17 15:00:00	4	5.4	30.80%	0.47
96	1996/01/31 18:00:00	1996/02/01 09:00:00	16	5.4	31.20%	0.47
97	1996/11/21 20:00:00	1996/11/22 05:00:00	10	5.4	31.50%	0.46
98	1973/01/16 20:00:00	1973/01/16 23:00:00	4	5.3	31.80%	0.46
99	2005/01/03 08:00:00	2005/01/04 13:00:00	30	5.3	32.10%	0.46
100	1965/12/09 06:00:00	1965/12/10 11:00:00	30	5.2	32.50%	0.45
101	1982/03/15 13:00:00	1982/03/16 01:00:00	13	5.2	32.80%	0.45
102	1965/12/29 20:00:00	1965/12/29 22:00:00	3	5.1	33.10%	0.44
103	1972/12/04 15:00:00	1972/12/04 20:00:00	6	5.1	33.40%	0.44
104	1975/03/08 09:00:00	1975/03/08 14:00:00	6	5.1	33.80%	0.43
105	1987/01/07 00:00:00	1987/01/07 10:00:00	11	5.1	34.10%	0.43
106	2006/01/02 14:00:00	2006/01/02 16:00:00	3	5.1	34.40%	0.43
107	1966/12/03 13:00:00	1966/12/03 21:00:00	9	5	34.70%	0.42
108	1967/01/22 19:00:00	1967/01/23 02:00:00	8	5	35.10%	0.42
109	1969/01/14 07:00:00	1969/01/14 13:00:00	7	5	35.40%	0.41
110	1976/02/05 06:00:00	1976/02/07 10:00:00	53	5	35.70%	0.41
111	1992/02/12 18:00:00	1992/02/13 08:00:00	15	5	36.00%	0.41
112	1998/02/17 17:00:00	1998/02/17 21:00:00	5	5	36.40%	0.4
113	1978/11/13 23:00:00	1978/11/14 00:00:00	2	4.9	36.70%	0.4
114	1980/02/14 01:00:00	1980/02/14 12:00:00	12	4.8	37.00%	0.4
115	1986/11/17 22:00:00	1986/11/18 03:00:00	6	4.8	37.30%	0.39
116	1993/01/15 13:00:00	1993/01/18 19:00:00	79	4.8	37.70%	0.39
117	2002/12/20 17:00:00	2002/12/20 22:00:00	6	4.8	38.00%	0.39
118	1983/11/20 12:00:00	1983/11/21 11:00:00	24	4.7	38.30%	0.38

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
119	1988/01/17 12:00:00	1988/01/17 22:00:00	11	4.7	38.60%	0.38
120	2005/02/21 03:00:00	2005/02/23 14:00:00	60	4.7	39.00%	0.38
121	1994/04/28 00:00:00	1994/04/28 02:00:00	3	4.6	39.30%	0.37
122	1965/11/16 18:00:00	1965/11/17 00:00:00	7	4.5	39.60%	0.37
123	1978/03/12 14:00:00	1978/03/15 09:00:00	68	4.5	39.90%	0.37
124	1998/02/06 17:00:00	1998/02/06 22:00:00	6	4.5	40.30%	0.36
125	1998/03/28 17:00:00	1998/03/29 19:00:00	27	4.5	40.60%	0.36
126	2001/11/24 17:00:00	2001/11/24 20:00:00	4	4.5	40.90%	0.36
127	2004/02/03 00:00:00	2004/02/03 02:00:00	3	4.5	41.20%	0.35
128	1973/03/11 13:00:00	1973/03/11 18:00:00	6	4.4	41.60%	0.35
129	2001/01/11 04:00:00	2001/01/12 10:00:00	31	4.4	41.90%	0.35
130	1964/11/17 18:00:00	1964/11/18 00:00:00	7	4.3	42.20%	0.35
131	1990/01/17 03:00:00	1990/01/17 05:00:00	3	4.2	42.50%	0.34
132	1995/02/14 09:00:00	1995/02/14 11:00:00	3	4.2	42.90%	0.34
133	2002/12/16 17:00:00	2002/12/16 21:00:00	5	4.2	43.20%	0.34
134	1986/02/08 05:00:00	1986/02/08 19:00:00	15	4	43.50%	0.34
135	1994/02/20 16:00:00	1994/02/20 17:00:00	2	4	43.80%	0.33
136	1998/05/12 17:00:00	1998/05/12 20:00:00	4	4	44.20%	0.33
137	1969/01/20 09:00:00	1969/01/21 17:00:00	33	3.9	44.50%	0.33
138	1969/02/22 02:00:00	1969/02/22 08:00:00	7	3.9	44.80%	0.33
139	1969/02/23 23:00:00	1969/02/26 00:00:00	50	3.9	45.10%	0.32
140	1970/03/08 12:00:00	1970/03/08 20:00:00	9	3.9	45.50%	0.32
141	1974/01/06 13:00:00	1974/01/08 06:00:00	42	3.9	45.80%	0.32
142	1987/12/16 19:00:00	1987/12/17 00:00:00	6	3.9	46.10%	0.32
143	1992/12/29 14:00:00	1992/12/29 21:00:00	8	3.9	46.40%	0.32
144	1993/03/28 03:00:00	1993/03/28 04:00:00	2	3.9	46.80%	0.31
145	2002/11/08 17:00:00	2002/11/09 18:00:00	26	3.9	47.10%	0.31
146	1968/03/08 10:00:00	1968/03/08 14:00:00	5	3.8	47.40%	0.31
147	1973/03/08 13:00:00	1973/03/08 21:00:00	9	3.8	47.70%	0.31
148	1980/01/09 05:00:00	1980/01/09 20:00:00	16	3.8	48.10%	0.3
149	1983/02/08 04:00:00	1983/02/08 07:00:00	4	3.8	48.40%	0.3
150	1986/03/10 16:00:00	1986/03/10 21:00:00	6	3.8	48.70%	0.3
151	1987/11/04 17:00:00	1987/11/05 00:00:00	8	3.8	49.00%	0.3
152	1996/12/09 18:00:00	1996/12/09 21:00:00	4	3.8	49.40%	0.3
153	1967/03/13 15:00:00	1967/03/13 23:00:00	9	3.7	49.70%	0.29
154	1972/11/16 12:00:00	1972/11/16 18:00:00	7	3.7	50.00%	0.29
155	1975/03/10 11:00:00	1975/03/11 15:00:00	29	3.7	50.30%	0.29
156	1988/12/21 04:00:00	1988/12/21 09:00:00	6	3.7	50.60%	0.29
157	2005/01/07 14:00:00	2005/01/07 17:00:00	4	3.7	51.00%	0.29
158	2006/03/10 17:00:00	2006/03/11 05:00:00	13	3.7	51.30%	0.29
159	1965/12/14 15:00:00	1965/12/14 18:00:00	4	3.6	51.60%	0.28
160	1971/12/25 05:00:00	1971/12/26 00:00:00	20	3.6	51.90%	0.28

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
161	1975/04/08 03:00:00	1975/04/09 02:00:00	24	3.6	52.30%	0.28
162	1982/02/10 10:00:00	1982/02/10 22:00:00	13	3.6	52.60%	0.28
163	1992/12/07 11:00:00	1992/12/07 18:00:00	8	3.6	52.90%	0.28
164	1966/11/07 16:00:00	1966/11/07 19:00:00	4	3.5	53.20%	0.27
165	1971/12/27 14:00:00	1971/12/28 16:00:00	27	3.5	53.60%	0.27
166	1980/03/10 18:00:00	1980/03/10 21:00:00	4	3.5	53.90%	0.27
167	1986/03/15 22:00:00	1986/03/16 19:00:00	22	3.5	54.20%	0.27
168	1987/01/04 17:00:00	1987/01/05 00:00:00	8	3.5	54.50%	0.27
169	1995/03/23 12:00:00	1995/03/23 14:00:00	3	3.5	54.90%	0.27
170	1997/01/12 16:00:00	1997/01/13 13:00:00	22	3.5	55.20%	0.27
171	1973/01/18 21:00:00	1973/01/19 03:00:00	7	3.4	55.50%	0.26
172	1979/03/17 06:00:00	1979/03/17 09:00:00	4	3.4	55.80%	0.26
173	1979/03/27 10:00:00	1979/03/28 04:00:00	19	3.4	56.20%	0.26
174	1983/01/29 02:00:00	1983/01/29 05:00:00	4	3.4	56.50%	0.26
175	1983/03/18 04:00:00	1983/03/18 20:00:00	17	3.4	56.80%	0.26
176	2004/12/29 02:00:00	2004/12/29 07:00:00	6	3.4	57.10%	0.26
177	1970/12/19 02:00:00	1970/12/19 07:00:00	6	3.3	57.50%	0.25
178	1971/05/07 20:00:00	1971/05/07 22:00:00	3	3.3	57.80%	0.25
179	1973/11/22 23:00:00	1973/11/23 03:00:00	5	3.3	58.10%	0.25
180	1976/11/12 01:00:00	1976/11/12 10:00:00	10	3.3	58.40%	0.25
181	2004/03/02 03:00:00	2004/03/02 05:00:00	3	3.3	58.80%	0.25
182	2008/02/03 11:00:00	2008/02/03 17:00:00	7	3.3	59.10%	0.25
183	2008/02/22 04:00:00	2008/02/22 11:00:00	8	3.3	59.40%	0.25
184	1980/01/18 18:00:00	1980/01/19 02:00:00	9	3.2	59.70%	0.25
185	1982/11/30 12:00:00	1982/11/30 20:00:00	9	3.2	60.10%	0.24
186	1976/03/01 17:00:00	1976/03/01 20:00:00	4	3.1	60.40%	0.24
187	1983/04/30 04:00:00	1983/04/30 06:00:00	3	3.1	60.70%	0.24
188	1988/11/25 11:00:00	1988/11/25 15:00:00	5	3.1	61.00%	0.24
189	1976/09/10 06:00:00	1976/09/10 22:00:00	17	3	61.40%	0.24
190	1985/11/11 10:00:00	1985/11/11 17:00:00	8	3	61.70%	0.24
191	1976/04/12 23:00:00	1976/04/13 05:00:00	7	2.9	62.00%	0.24
192	1986/09/25 03:00:00	1986/09/25 08:00:00	6	2.9	62.30%	0.23
193	1992/01/07 20:00:00	1992/01/07 23:00:00	4	2.9	62.70%	0.23
194	1995/01/12 09:00:00	1995/01/12 16:00:00	8	2.9	63.00%	0.23
195	2000/02/21 17:00:00	2000/02/21 21:00:00	5	2.9	63.30%	0.23
196	2002/11/29 17:00:00	2002/11/29 21:00:00	5	2.9	63.60%	0.23
197	1965/12/16 06:00:00	1965/12/16 10:00:00	5	2.8	64.00%	0.23
198	1982/11/10 04:00:00	1982/11/11 02:00:00	23	2.8	64.30%	0.23
199	1986/03/12 14:00:00	1986/03/12 15:00:00	2	2.8	64.60%	0.23
200	2008/01/05 05:00:00	2008/01/07 06:00:00	50	2.8	64.90%	0.23
201	1972/11/11 08:00:00	1972/11/11 10:00:00	3	2.7	65.30%	0.22
202	1977/08/17 01:00:00	1977/08/17 11:00:00	11	2.7	65.60%	0.22

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
203	1979/01/31 07:00:00	1979/02/01 12:00:00	30	2.7	65.90%	0.22
204	1990/01/14 04:00:00	1990/01/14 07:00:00	4	2.7	66.20%	0.22
205	1993/02/19 18:00:00	1993/02/20 01:00:00	8	2.7	66.60%	0.22
206	1998/04/11 17:00:00	1998/04/11 20:00:00	4	2.7	66.90%	0.22
207	1973/03/22 00:00:00	1973/03/22 03:00:00	4	2.6	67.20%	0.22
208	1992/03/02 11:00:00	1992/03/02 12:00:00	2	2.6	67.50%	0.22
209	1995/01/07 19:00:00	1995/01/08 05:00:00	11	2.6	67.90%	0.22
210	1997/12/06 17:00:00	1997/12/06 20:00:00	4	2.6	68.20%	0.21
211	1998/03/25 17:00:00	1998/03/26 19:00:00	27	2.6	68.50%	0.21
212	1978/04/07 01:00:00	1978/04/07 03:00:00	3	2.5	68.80%	0.21
213	1979/02/21 05:00:00	1979/02/21 23:00:00	19	2.5	69.20%	0.21
214	1981/03/05 07:00:00	1981/03/05 16:00:00	10	2.5	69.50%	0.21
215	2006/02/28 00:00:00	2006/02/28 10:00:00	11	2.5	69.80%	0.21
216	1995/04/18 10:00:00	1995/04/18 12:00:00	3	2.4	70.10%	0.21
217	1996/02/25 10:00:00	1996/02/26 02:00:00	17	2.4	70.50%	0.21
218	1968/04/01 20:00:00	1968/04/01 21:00:00	2	2.3	70.80%	0.21
219	1978/03/31 03:00:00	1978/03/31 06:00:00	4	2.2	71.10%	0.21
220	1993/02/23 20:00:00	1993/02/24 06:00:00	11	2.2	71.40%	0.21
221	1996/01/21 19:00:00	1996/01/21 21:00:00	3	2.2	71.80%	0.2
222	2006/03/28 22:00:00	2006/03/29 02:00:00	5	2.2	72.10%	0.2
223	1967/04/22 03:00:00	1967/04/22 06:00:00	4	2	72.40%	0.2
224	1969/02/18 18:00:00	1969/02/18 20:00:00	3	2	72.70%	0.2
225	1993/01/31 02:00:00	1993/01/31 03:00:00	2	2	73.10%	0.2
226	2000/10/30 00:00:00	2000/10/30 01:00:00	2	2	73.40%	0.2
227	2005/03/22 23:00:00	2005/03/23 01:00:00	3	2	73.70%	0.2
228	1965/04/01 22:00:00	1965/04/02 03:00:00	6	1.9	74.00%	0.2
229	1973/03/20 08:00:00	1973/03/20 12:00:00	5	1.9	74.40%	0.2
230	1982/01/20 23:00:00	1982/01/21 02:00:00	4	1.9	74.70%	0.2
231	1994/04/26 11:00:00	1994/04/26 22:00:00	12	1.9	75.00%	0.2
232	1996/12/11 14:00:00	1996/12/11 17:00:00	4	1.9	75.30%	0.19
233	1997/01/25 23:00:00	1997/01/26 10:00:00	12	1.9	75.60%	0.19
234	1977/12/26 04:00:00	1977/12/26 19:00:00	16	1.8	76.00%	0.19
235	1978/11/21 19:00:00	1978/11/21 21:00:00	3	1.8	76.30%	0.19
236	1979/10/20 14:00:00	1979/10/20 16:00:00	3	1.8	76.60%	0.19
237	1983/05/01 07:00:00	1983/05/01 09:00:00	3	1.8	76.90%	0.19
238	1985/12/02 23:00:00	1985/12/03 04:00:00	6	1.8	77.30%	0.19
239	2002/03/17 23:00:00	2002/03/18 00:00:00	2	1.8	77.60%	0.19
240	1975/04/06 12:00:00	1975/04/06 14:00:00	3	1.7	77.90%	0.19
241	1996/02/27 21:00:00	1996/02/27 23:00:00	3	1.7	78.20%	0.19
242	2003/12/25 18:00:00	2003/12/25 20:00:00	3	1.7	78.60%	0.19
243	1969/01/26 19:00:00	1969/01/26 22:00:00	4	1.6	78.90%	0.19
244	1969/03/13 14:00:00	1969/03/13 19:00:00	6	1.6	79.20%	0.18

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
245	1978/01/30 12:00:00	1978/01/30 14:00:00	3	1.6	79.50%	0.18
246	1982/03/28 18:00:00	1982/03/28 19:00:00	2	1.6	79.90%	0.18
247	1995/12/20 17:00:00	1995/12/20 18:00:00	2	1.6	80.20%	0.18
248	2000/02/13 17:00:00	2000/02/13 20:00:00	4	1.6	80.50%	0.18
249	2008/02/14 12:00:00	2008/02/14 14:00:00	3	1.6	80.80%	0.18
250	1972/12/08 13:00:00	1972/12/08 15:00:00	3	1.5	81.20%	0.18
251	1979/03/19 01:00:00	1979/03/20 04:00:00	28	1.5	81.50%	0.18
252	1992/03/23 04:00:00	1992/03/23 05:00:00	2	1.5	81.80%	0.18
253	1995/01/10 22:00:00	1995/01/11 00:00:00	3	1.5	82.10%	0.18
254	2005/02/11 12:00:00	2005/02/12 14:00:00	27	1.5	82.50%	0.18
255	1970/03/06 22:00:00	1970/03/07 02:00:00	5	1.4	82.80%	0.18
256	1990/06/10 04:00:00	1990/06/10 06:00:00	3	1.4	83.10%	0.18
257	2005/02/18 04:00:00	2005/02/19 02:00:00	23	1.4	83.40%	0.18
258	2006/03/21 02:00:00	2006/03/21 04:00:00	3	1.4	83.80%	0.17
259	1973/03/06 23:00:00	1973/03/07 02:00:00	4	1.3	84.10%	0.17
260	1981/02/25 21:00:00	1981/02/25 23:00:00	3	1.3	84.40%	0.17
261	1982/04/02 12:00:00	1982/04/02 17:00:00	6	1.3	84.70%	0.17
262	1994/12/25 03:00:00	1994/12/25 04:00:00	2	1.3	85.10%	0.17
263	2001/12/21 17:00:00	2001/12/21 20:00:00	4	1.3	85.40%	0.17
264	1965/11/25 11:00:00	1965/11/25 14:00:00	4	1.2	85.70%	0.17
265	1969/01/28 20:00:00	1969/01/28 21:00:00	2	1.2	86.00%	0.17
266	1970/03/11 12:00:00	1970/03/11 17:00:00	6	1.2	86.40%	0.17
267	1980/03/26 00:00:00	1980/03/26 02:00:00	3	1.2	86.70%	0.17
268	1983/03/22 13:00:00	1983/03/22 16:00:00	4	1.2	87.00%	0.17
269	1965/02/06 18:00:00	1965/02/06 19:00:00	2	1.1	87.30%	0.17
270	1969/03/21 20:00:00	1969/03/21 21:00:00	2	1.1	87.70%	0.17
271	1975/02/10 02:00:00	1975/02/10 04:00:00	3	1.1	88.00%	0.17
272	1977/01/03 23:00:00	1977/01/04 01:00:00	3	1.1	88.30%	0.17
273	1983/12/03 17:00:00	1983/12/03 18:00:00	2	1.1	88.60%	0.17
274	1997/01/15 20:00:00	1997/01/15 21:00:00	2	1.1	89.00%	0.16
275	1965/04/03 08:00:00	1965/04/03 21:00:00	14	1	89.30%	0.16
276	1976/04/15 16:00:00	1976/04/15 18:00:00	3	1	89.60%	0.16
277	1979/02/02 16:00:00	1979/02/02 17:00:00	2	1	89.90%	0.16
278	1973/02/28 05:00:00	1973/02/28 07:00:00	3	0.9	90.30%	0.16
279	1981/11/28 09:00:00	1981/11/29 00:00:00	16	0.9	90.60%	0.16
280	2007/12/08 07:00:00	2007/12/08 09:00:00	3	0.9	90.90%	0.16
281	2008/01/23 22:00:00	2008/01/23 23:00:00	2	0.9	91.20%	0.16
282	2003/05/03 17:00:00	2003/05/03 19:00:00	3	0.7	91.60%	0.16
283	2005/04/28 09:00:00	2005/04/28 10:00:00	2	0.7	91.90%	0.16
284	1974/04/02 05:00:00	1974/04/02 08:00:00	4	0.6	92.20%	0.16
285	1986/03/13 17:00:00	1986/03/13 21:00:00	5	0.6	92.50%	0.16
286	1987/11/02 03:00:00	1987/11/02 05:00:00	3	0.6	92.90%	0.16

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
287	1995/12/23 10:00:00	1995/12/23 11:00:00	2	0.6	93.20%	0.16
288	1998/01/29 17:00:00	1998/01/29 19:00:00	3	0.6	93.50%	0.16
289	1975/12/11 23:00:00	1975/12/12 08:00:00	10	0.5	93.80%	0.16
290	1983/02/25 00:00:00	1983/02/25 01:00:00	2	0.5	94.20%	0.16
291	1986/12/06 17:00:00	1986/12/06 19:00:00	3	0.5	94.50%	0.16
292	1994/03/19 04:00:00	1994/03/19 09:00:00	6	0.5	94.80%	0.15
293	2000/02/17 17:00:00	2000/02/17 19:00:00	3	0.5	95.10%	0.15
294	1974/10/29 05:00:00	1974/10/29 09:00:00	5	0.4	95.50%	0.15
295	1978/03/22 05:00:00	1978/03/22 06:00:00	2	0.4	95.80%	0.15
296	1992/03/26 19:00:00	1992/03/26 20:00:00	2	0.4	96.10%	0.15
297	2004/12/31 16:00:00	2004/12/31 18:00:00	3	0.4	96.40%	0.15
298	1977/03/25 02:00:00	1977/03/25 04:00:00	3	0.2	96.80%	0.15
299	1978/09/05 18:00:00	1978/09/05 19:00:00	2	0.2	97.10%	0.15
300	1964/12/27 16:00:00	1964/12/27 17:00:00	2	0.1	97.40%	0.15
301	1975/11/28 16:00:00	1975/11/28 18:00:00	3	0.1	97.70%	0.15
302	1989/03/25 17:00:00	1989/03/25 18:00:00	2	0.1	98.10%	0.15
303	2007/02/13 02:00:00	2007/02/13 03:00:00	2	0.1	98.40%	0.15
304	1965/03/31 18:00:00	1965/03/31 19:00:00	2	0	98.70%	0.15
305	1982/12/09 19:00:00	1982/12/09 20:00:00	2	0	99.00%	0.15
306	1987/12/04 21:00:00	1987/12/04 22:00:00	2	0	99.40%	0.15
307	1991/01/09 14:00:00	1991/01/09 15:00:00	2	0	99.70%	0.15
--End of Data----------						

SWMM.out file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
SWMM.out time stamp: 1/7/2025 2:24:04 PM

Peak Flow Statistics Table Values

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
1	1993/01/06 02:00:00	1993/01/11 05:00:00	124	22.7	0.10%	45
2	1971/02/23 04:00:00	1971/02/24 10:00:00	31	18.6	0.20%	22.5
3	1995/01/03 07:00:00	1995/01/06 00:00:00	66	18.2	0.30%	15
4	1995/01/23 21:00:00	1995/01/27 14:00:00	90	16.8	0.50%	11.25
5	1967/11/19 03:00:00	1967/11/23 13:00:00	107	16.6	0.60%	9
6	1986/02/14 23:00:00	1986/02/16 12:00:00	38	16.2	0.70%	7.5
7	1966/12/03 05:00:00	1966/12/07 22:00:00	114	16.1	0.80%	6.43
8	1998/02/14 02:00:00	1998/02/20 22:00:00	165	16	0.90%	5.63
9	1983/12/24 19:00:00	1983/12/27 21:00:00	75	15.9	1.00%	5
10	1978/01/14 14:00:00	1978/01/17 12:00:00	71	15.3	1.10%	4.5
11	2007/08/26 07:00:00	2007/08/27 01:00:00	19	14.3	1.30%	4.09
12	1978/03/11 17:00:00	1978/03/18 23:00:00	175	14.2	1.40%	3.75
13	1983/02/24 09:00:00	1983/03/04 14:00:00	198	14.1	1.50%	3.46
14	2007/01/29 22:00:00	2007/01/31 20:00:00	47	13.6	1.60%	3.21
15	1988/04/19 23:00:00	1988/04/23 14:00:00	88	13.2	1.70%	3
16	1980/01/27 20:00:00	1980/01/31 15:00:00	92	12.9	1.80%	2.81
17	1981/02/08 17:00:00	1981/02/10 14:00:00	46	12.9	2.00%	2.65
18	1969/01/24 04:00:00	1969/01/29 06:00:00	123	12.5	2.10%	2.5
19	1980/02/13 12:00:00	1980/02/22 01:00:00	206	11.3	2.20%	2.37
20	1972/11/14 12:00:00	1972/11/17 21:00:00	82	11.2	2.30%	2.25
21	1965/11/21 22:00:00	1965/11/26 00:00:00	99	11.1	2.40%	2.14
22	1983/11/24 23:00:00	1983/11/25 22:00:00	24	10.7	2.50%	2.05
23	2004/10/17 08:00:00	2004/10/21 14:00:00	103	10.6	2.60%	1.96
24	1993/01/12 14:00:00	1993/01/19 12:00:00	167	10.4	2.80%	1.88
25	1967/04/11 08:00:00	1967/04/12 18:00:00	35	10.3	2.90%	1.8
26	1998/01/09 02:00:00	1998/01/11 11:00:00	58	10.2	3.00%	1.73
27	1993/02/07 12:00:00	1993/02/10 03:00:00	64	10.1	3.10%	1.67
28	2005/01/07 04:00:00	2005/01/12 10:00:00	127	10.1	3.20%	1.61
29	2007/11/30 07:00:00	2007/12/01 23:00:00	41	10.1	3.30%	1.55
30	1979/01/05 07:00:00	1979/01/07 06:00:00	48	9.8	3.40%	1.5
31	1998/02/03 02:00:00	1998/02/05 01:00:00	48	9.2	3.60%	1.45
32	1995/03/05 02:00:00	1995/03/07 01:00:00	48	8.6	3.70%	1.41
33	1991/03/19 00:00:00	1991/03/21 22:00:00	71	7.8	3.80%	1.36
34	1985/11/24 15:00:00	1985/11/27 09:00:00	67	7.4	3.90%	1.32

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
35	1980/01/07 14:00:00	1980/01/13 05:00:00	136	6.8	4.00%	1.29
36	2004/10/27 02:00:00	2004/10/28 15:00:00	38	6.8	4.10%	1.25
37	2004/02/26 01:00:00	2004/02/27 23:00:00	47	6.7	4.20%	1.22
38	1980/03/02 20:00:00	1980/03/04 04:00:00	33	6.6	4.40%	1.18
39	1967/12/18 14:00:00	1967/12/20 13:00:00	48	6.1	4.50%	1.15
40	1974/12/04 03:00:00	1974/12/05 08:00:00	30	6.1	4.60%	1.13
41	1970/03/04 21:00:00	1970/03/09 14:00:00	114	5.6	4.70%	1.1
42	1970/02/28 13:00:00	1970/03/03 05:00:00	65	5.5	4.80%	1.07
43	1985/11/29 06:00:00	1985/11/30 17:00:00	36	5.4	4.90%	1.05
44	1992/02/15 05:00:00	1992/02/16 16:00:00	36	5.4	5.10%	1.02
45	1991/02/27 13:00:00	1991/03/02 12:00:00	72	5.3	5.20%	1
46	1967/01/22 16:00:00	1967/01/25 23:00:00	80	5.1	5.30%	0.98
47	1981/02/28 15:00:00	1981/03/02 21:00:00	55	5	5.40%	0.96
48	1996/01/31 04:00:00	1996/02/02 05:00:00	50	4.7	5.50%	0.94
49	1982/03/17 18:00:00	1982/03/20 13:00:00	68	4.4	5.60%	0.92
50	1978/12/16 22:00:00	1978/12/19 18:00:00	69	4.2	5.70%	0.9
51	2005/02/18 04:00:00	2005/02/24 04:00:00	145	4.2	5.90%	0.88
52	1977/05/08 10:00:00	1977/05/10 05:00:00	44	3.7	6.00%	0.87
53	1991/03/25 06:00:00	1991/03/28 12:00:00	79	3.7	6.10%	0.85
54	1974/03/06 19:00:00	1974/03/09 13:00:00	67	3.5	6.20%	0.83
55	1996/11/21 16:00:00	1996/11/23 06:00:00	39	3.5	6.30%	0.82
56	1970/11/28 20:00:00	1970/11/30 23:00:00	52	3.4	6.40%	0.8
57	1981/12/30 07:00:00	1982/01/02 17:00:00	83	3.3	6.50%	0.79
58	2003/02/25 02:00:00	2003/02/28 17:00:00	88	3.3	6.70%	0.78
59	1969/02/05 03:00:00	1969/02/07 11:00:00	57	3.2	6.80%	0.76
60	1978/02/05 00:00:00	1978/02/07 13:00:00	62	3.1	6.90%	0.75
61	1976/02/03 17:00:00	1976/02/10 18:00:00	170	3	7.00%	0.74
62	1981/03/19 20:00:00	1981/03/20 18:00:00	23	2.9	7.10%	0.73
63	1995/03/11 02:00:00	1995/03/12 18:00:00	41	2.8	7.20%	0.71
64	2006/04/04 18:00:00	2006/04/06 04:00:00	35	2.7	7.30%	0.7
65	1992/02/12 18:00:00	1992/02/14 03:00:00	34	2.6	7.50%	0.69
66	1965/04/07 04:00:00	1965/04/12 04:00:00	121	2.5	7.60%	0.68
67	1969/02/22 02:00:00	1969/02/26 23:00:00	118	2.5	7.70%	0.67
68	1974/01/04 17:00:00	1974/01/09 20:00:00	124	2.4	7.80%	0.66
69	1968/03/07 21:00:00	1968/03/09 09:00:00	37	2.3	7.90%	0.65
70	1982/11/29 15:00:00	1982/12/01 16:00:00	50	2.3	8.00%	0.64
71	1982/12/22 18:00:00	1982/12/23 20:00:00	27	2.3	8.20%	0.63
72	1988/12/24 20:00:00	1988/12/26 07:00:00	36	2.3	8.30%	0.63
73	1965/12/09 04:00:00	1965/12/11 04:00:00	49	2.2	8.40%	0.62
74	1979/03/01 07:00:00	1979/03/02 16:00:00	34	2.2	8.50%	0.61
75	1994/02/17 11:00:00	1994/02/19 08:00:00	46	2.2	8.60%	0.6
76	1993/02/18 13:00:00	1993/02/21 00:00:00	60	2	8.70%	0.59

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
77	1969/01/13 17:00:00	1969/01/15 09:00:00	41	1.9	8.80%	0.58
78	1992/02/06 08:00:00	1992/02/07 21:00:00	38	1.9	9.00%	0.58
79	2004/02/21 15:00:00	2004/02/24 03:00:00	61	1.9	9.10%	0.57
80	2005/01/03 04:00:00	2005/01/05 03:00:00	48	1.9	9.20%	0.56
81	1965/11/14 07:00:00	1965/11/18 17:00:00	107	1.8	9.30%	0.56
82	1973/01/16 15:00:00	1973/01/19 20:00:00	78	1.8	9.40%	0.55
83	1975/04/05 21:00:00	1975/04/10 00:00:00	100	1.8	9.50%	0.54
84	1976/03/01 08:00:00	1976/03/04 01:00:00	66	1.8	9.60%	0.54
85	1986/11/17 18:00:00	1986/11/19 00:00:00	31	1.8	9.80%	0.53
86	1994/02/07 02:00:00	1994/02/08 21:00:00	44	1.8	9.90%	0.52
87	1992/01/02 23:00:00	1992/01/08 13:00:00	135	1.7	10.00%	0.52
88	2003/02/11 02:00:00	2003/02/15 03:00:00	98	1.7	10.10%	0.51
89	2008/02/22 02:00:00	2008/02/24 17:00:00	64	1.7	10.20%	0.51
90	1979/01/15 14:00:00	1979/01/19 04:00:00	87	1.6	10.30%	0.5
91	1995/01/07 16:00:00	1995/01/09 01:00:00	34	1.6	10.40%	0.5
92	1966/11/07 14:00:00	1966/11/08 15:00:00	26	1.5	10.60%	0.49
93	1970/12/16 22:00:00	1970/12/22 14:00:00	137	1.5	10.70%	0.48
94	1975/03/08 08:00:00	1975/03/12 03:00:00	92	1.5	10.80%	0.48
95	1977/08/16 14:00:00	1977/08/18 08:00:00	43	1.5	10.90%	0.47
96	1982/02/09 16:00:00	1982/02/11 16:00:00	49	1.5	11.00%	0.47
97	1983/03/20 20:00:00	1983/03/24 22:00:00	99	1.5	11.10%	0.46
98	1986/09/23 20:00:00	1986/09/26 07:00:00	60	1.5	11.30%	0.46
99	1992/12/07 08:00:00	1992/12/08 14:00:00	31	1.5	11.40%	0.46
100	1995/02/13 10:00:00	1995/02/15 15:00:00	54	1.5	11.50%	0.45
101	1997/01/12 13:00:00	1997/01/14 12:00:00	48	1.5	11.60%	0.45
102	1976/09/09 19:00:00	1976/09/11 18:00:00	48	1.4	11.70%	0.44
103	1976/12/30 13:00:00	1977/01/01 07:00:00	43	1.4	11.80%	0.44
104	1986/02/07 19:00:00	1986/02/09 09:00:00	39	1.4	11.90%	0.43
105	1987/01/04 13:00:00	1987/01/08 02:00:00	86	1.4	12.10%	0.43
106	1988/01/17 03:00:00	1988/01/18 17:00:00	39	1.4	12.20%	0.43
107	1998/02/06 02:00:00	1998/02/09 19:00:00	90	1.4	12.30%	0.42
108	2008/01/05 01:00:00	2008/01/07 22:00:00	70	1.4	12.40%	0.42
109	1973/03/04 00:00:00	1973/03/09 15:00:00	136	1.3	12.50%	0.41
110	1987/12/16 12:00:00	1987/12/17 23:00:00	36	1.3	12.60%	0.41
111	2001/01/10 20:00:00	2001/01/12 23:00:00	52	1.3	12.70%	0.41
112	2003/04/13 15:00:00	2003/04/16 03:00:00	61	1.3	12.90%	0.4
113	2005/12/31 16:00:00	2006/01/03 11:00:00	68	1.3	13.00%	0.4
114	1967/03/13 11:00:00	1967/03/14 18:00:00	32	1.2	13.10%	0.4
115	1972/12/04 12:00:00	1972/12/05 15:00:00	28	1.2	13.20%	0.39
116	1973/02/10 22:00:00	1973/02/13 14:00:00	65	1.2	13.30%	0.39
117	1983/01/27 07:00:00	1983/01/29 20:00:00	62	1.2	13.40%	0.39
118	2004/12/28 06:00:00	2005/01/01 05:00:00	96	1.2	13.50%	0.38

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
119	1973/11/22 19:00:00	1973/11/24 22:00:00	52	1.1	13.70%	0.38
120	1980/03/06 00:00:00	1980/03/07 06:00:00	31	1.1	13.80%	0.38
121	1980/03/10 14:00:00	1980/03/11 16:00:00	27	1.1	13.90%	0.37
122	1993/11/14 06:00:00	1993/11/15 06:00:00	25	1.1	14.00%	0.37
123	2008/02/03 06:00:00	2008/02/04 14:00:00	33	1.1	14.10%	0.37
124	1964/11/17 13:00:00	1964/11/18 18:00:00	30	1	14.20%	0.36
125	1971/12/24 15:00:00	1971/12/29 05:00:00	111	1	14.40%	0.36
126	1979/03/27 03:00:00	1979/03/29 13:00:00	59	1	14.50%	0.36
127	1982/03/15 12:00:00	1982/03/16 17:00:00	30	1	14.60%	0.35
128	1985/11/11 03:00:00	1985/11/12 19:00:00	41	1	14.70%	0.35
129	1995/01/10 16:00:00	1995/01/13 09:00:00	66	1	14.80%	0.35
130	1997/01/25 15:00:00	1997/01/27 12:00:00	46	1	14.90%	0.35
131	1998/02/22 02:00:00	1998/02/25 17:00:00	88	1	15.00%	0.34
132	2006/02/27 19:00:00	2006/03/01 04:00:00	34	1	15.20%	0.34
133	1965/12/29 08:00:00	1966/01/01 09:00:00	74	0.9	15.30%	0.34
134	1969/01/18 22:00:00	1969/01/22 10:00:00	85	0.9	15.40%	0.34
135	1973/03/11 11:00:00	1973/03/14 04:00:00	66	0.9	15.50%	0.33
136	1976/04/11 19:00:00	1976/04/16 06:00:00	108	0.9	15.60%	0.33
137	1976/11/11 22:00:00	1976/11/13 04:00:00	31	0.9	15.70%	0.33
138	1979/03/17 05:00:00	1979/03/21 10:00:00	102	0.9	15.80%	0.33
139	1983/02/05 17:00:00	1983/02/09 01:00:00	81	0.9	16.00%	0.32
140	1983/03/17 04:00:00	1983/03/19 14:00:00	59	0.9	16.10%	0.32
141	1985/12/02 12:00:00	1985/12/03 20:00:00	33	0.9	16.20%	0.32
142	1986/03/08 15:00:00	1986/03/14 12:00:00	142	0.9	16.30%	0.32
143	1986/03/15 20:00:00	1986/03/17 15:00:00	44	0.9	16.40%	0.32
144	1987/11/04 15:00:00	1987/11/05 23:00:00	33	0.9	16.50%	0.31
145	1992/12/27 16:00:00	1992/12/30 13:00:00	70	0.9	16.60%	0.31
146	1994/03/19 02:00:00	1994/03/20 17:00:00	40	0.9	16.80%	0.31
147	1973/03/20 08:00:00	1973/03/22 17:00:00	58	0.8	16.90%	0.31
148	1974/10/28 05:00:00	1974/10/30 04:00:00	48	0.8	17.00%	0.3
149	1979/10/19 22:00:00	1979/10/21 15:00:00	42	0.8	17.10%	0.3
150	1982/01/20 03:00:00	1982/01/22 03:00:00	49	0.8	17.20%	0.3
151	1986/12/06 03:00:00	1986/12/07 18:00:00	40	0.8	17.30%	0.3
152	1988/11/25 05:00:00	1988/11/26 13:00:00	33	0.8	17.50%	0.3
153	1989/03/25 09:00:00	1989/03/26 16:00:00	32	0.8	17.60%	0.29
154	1990/01/13 03:00:00	1990/01/17 19:00:00	113	0.8	17.70%	0.29
155	1991/12/29 15:00:00	1991/12/30 14:00:00	24	0.8	17.80%	0.29
156	1994/03/24 21:00:00	1994/03/26 07:00:00	35	0.8	17.90%	0.29
157	1995/03/23 09:00:00	1995/03/24 06:00:00	22	0.8	18.00%	0.29
158	1996/12/09 15:00:00	1996/12/12 09:00:00	67	0.8	18.10%	0.29
159	2004/03/02 00:00:00	2004/03/03 09:00:00	34	0.8	18.30%	0.28
160	2005/02/11 01:00:00	2005/02/13 08:00:00	56	0.8	18.40%	0.28

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
161	2008/02/14 11:00:00	2008/02/15 07:00:00	21	0.8	18.50%	0.28
162	1964/12/27 07:00:00	1964/12/29 08:00:00	50	0.7	18.60%	0.28
163	1965/03/31 14:00:00	1965/04/05 15:00:00	122	0.7	18.70%	0.28
164	1965/12/12 06:00:00	1965/12/16 23:00:00	114	0.7	18.80%	0.27
165	1969/02/18 09:00:00	1969/02/20 08:00:00	48	0.7	18.90%	0.27
166	1970/03/11 10:00:00	1970/03/12 12:00:00	27	0.7	19.10%	0.27
167	1977/12/25 11:00:00	1977/12/29 20:00:00	106	0.7	19.20%	0.27
168	1978/03/30 14:00:00	1978/04/01 03:00:00	38	0.7	19.30%	0.27
169	1978/11/13 21:00:00	1978/11/14 18:00:00	22	0.7	19.40%	0.27
170	1979/02/21 01:00:00	1979/02/23 14:00:00	62	0.7	19.50%	0.27
171	1981/02/25 05:00:00	1981/02/26 14:00:00	34	0.7	19.60%	0.26
172	1981/11/26 18:00:00	1981/11/29 18:00:00	73	0.7	19.70%	0.26
173	1982/03/26 21:00:00	1982/03/29 03:00:00	55	0.7	19.90%	0.26
174	1982/11/09 13:00:00	1982/11/11 15:00:00	51	0.7	20.00%	0.26
175	1983/04/29 02:00:00	1983/05/01 19:00:00	66	0.7	20.10%	0.26
176	1988/12/21 01:00:00	1988/12/21 23:00:00	23	0.7	20.20%	0.26
177	1995/04/18 08:00:00	1995/04/19 12:00:00	29	0.7	20.30%	0.25
178	1998/03/25 02:00:00	1998/04/02 17:00:00	208	0.7	20.40%	0.25
179	2002/12/20 02:00:00	2002/12/22 00:00:00	47	0.7	20.60%	0.25
180	2003/03/15 02:00:00	2003/03/17 17:00:00	64	0.7	20.70%	0.25
181	2006/03/10 13:00:00	2006/03/13 03:00:00	63	0.7	20.80%	0.25
182	2006/03/28 02:00:00	2006/03/29 16:00:00	39	0.7	20.90%	0.25
183	1965/02/06 00:00:00	1965/02/07 11:00:00	36	0.6	21.00%	0.25
184	1971/05/07 18:00:00	1971/05/08 14:00:00	21	0.6	21.10%	0.25
185	1971/12/22 05:00:00	1971/12/23 14:00:00	34	0.6	21.20%	0.24
186	1972/12/07 04:00:00	1972/12/09 09:00:00	54	0.6	21.40%	0.24
187	1973/02/27 23:00:00	1973/02/28 20:00:00	22	0.6	21.50%	0.24
188	1975/02/09 06:00:00	1975/02/10 17:00:00	36	0.6	21.60%	0.24
189	1977/01/03 12:00:00	1977/01/04 13:00:00	26	0.6	21.70%	0.24
190	1978/01/30 07:00:00	1978/01/31 08:00:00	26	0.6	21.80%	0.24
191	1978/04/07 01:00:00	1978/04/08 14:00:00	38	0.6	21.90%	0.24
192	1978/11/10 18:00:00	1978/11/12 14:00:00	45	0.6	22.00%	0.23
193	1980/01/18 04:00:00	1980/01/19 14:00:00	35	0.6	22.20%	0.23
194	1981/03/04 07:00:00	1981/03/06 03:00:00	45	0.6	22.30%	0.23
195	1982/03/31 02:00:00	1982/04/03 13:00:00	84	0.6	22.40%	0.23
196	1983/11/20 09:00:00	1983/11/21 18:00:00	34	0.6	22.50%	0.23
197	1983/12/03 15:00:00	1983/12/04 08:00:00	18	0.6	22.60%	0.23
198	1988/02/02 03:00:00	1988/02/03 07:00:00	29	0.6	22.70%	0.23
199	1994/02/20 12:00:00	1994/02/21 07:00:00	20	0.6	22.80%	0.23
200	1996/03/12 17:00:00	1996/03/14 08:00:00	40	0.6	23.00%	0.23
201	2000/02/21 02:00:00	2000/02/23 03:00:00	50	0.6	23.10%	0.22
202	2002/11/08 02:00:00	2002/11/10 17:00:00	64	0.6	23.20%	0.22

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
203	2003/12/24 23:00:00	2003/12/26 12:00:00	38	0.6	23.30%	0.22
204	1966/02/06 10:00:00	1966/02/08 08:00:00	47	0.5	23.40%	0.22
205	1967/04/21 12:00:00	1967/04/22 17:00:00	30	0.5	23.50%	0.22
206	1969/03/12 21:00:00	1969/03/14 06:00:00	34	0.5	23.70%	0.22
207	1969/03/21 13:00:00	1969/03/22 09:00:00	21	0.5	23.80%	0.22
208	1972/11/11 01:00:00	1972/11/12 01:00:00	25	0.5	23.90%	0.22
209	1974/04/02 01:00:00	1974/04/02 22:00:00	22	0.5	24.00%	0.22
210	1975/11/27 17:00:00	1975/11/29 08:00:00	40	0.5	24.10%	0.21
211	1975/12/11 23:00:00	1975/12/13 00:00:00	26	0.5	24.20%	0.21
212	1978/11/21 18:00:00	1978/11/24 01:00:00	56	0.5	24.30%	0.21
213	1979/01/31 00:00:00	1979/02/03 01:00:00	74	0.5	24.50%	0.21
214	1980/03/25 22:00:00	1980/03/26 14:00:00	17	0.5	24.60%	0.21
215	1980/12/04 13:00:00	1980/12/05 09:00:00	21	0.5	24.70%	0.21
216	1981/01/28 06:00:00	1981/01/31 00:00:00	67	0.5	24.80%	0.21
217	1990/02/17 10:00:00	1990/02/19 09:00:00	48	0.5	24.90%	0.21
218	1992/03/02 01:00:00	1992/03/03 22:00:00	46	0.5	25.00%	0.21
219	1992/03/20 16:00:00	1992/03/23 16:00:00	73	0.5	25.10%	0.21
220	1992/03/26 16:00:00	1992/03/27 06:00:00	15	0.5	25.30%	0.21
221	1993/01/31 01:00:00	1993/01/31 15:00:00	15	0.5	25.40%	0.2
222	1993/02/23 19:00:00	1993/02/24 18:00:00	24	0.5	25.50%	0.2
223	1994/03/06 05:00:00	1994/03/07 18:00:00	38	0.5	25.60%	0.2
224	1994/04/25 15:00:00	1994/04/28 15:00:00	73	0.5	25.70%	0.2
225	1995/03/21 09:00:00	1995/03/22 03:00:00	19	0.5	25.80%	0.2
226	1996/02/25 09:00:00	1996/02/26 16:00:00	32	0.5	25.90%	0.2
227	1996/02/27 21:00:00	1996/02/28 09:00:00	13	0.5	26.10%	0.2
228	2001/11/24 02:00:00	2001/11/25 12:00:00	35	0.5	26.20%	0.2
229	2004/02/02 23:00:00	2004/02/04 08:00:00	34	0.5	26.30%	0.2
230	2005/04/28 07:00:00	2005/04/29 05:00:00	23	0.5	26.40%	0.2
231	2007/02/19 01:00:00	2007/02/20 04:00:00	28	0.5	26.50%	0.2
232	2007/12/07 04:00:00	2007/12/09 01:00:00	46	0.5	26.60%	0.19
233	1964/11/09 12:00:00	1964/11/12 11:00:00	72	0.4	26.80%	0.19
234	1973/11/17 06:00:00	1973/11/18 23:00:00	42	0.4	26.90%	0.19
235	1977/03/16 12:00:00	1977/03/17 11:00:00	24	0.4	27.00%	0.19
236	1977/03/24 11:00:00	1977/03/25 22:00:00	36	0.4	27.10%	0.19
237	1978/03/22 04:00:00	1978/03/23 18:00:00	39	0.4	27.20%	0.19
238	1982/12/07 23:00:00	1982/12/10 06:00:00	56	0.4	27.30%	0.19
239	1983/10/07 07:00:00	1983/10/07 22:00:00	16	0.4	27.40%	0.19
240	1985/12/09 16:00:00	1985/12/11 15:00:00	48	0.4	27.60%	0.19
241	1986/01/30 01:00:00	1986/02/01 05:00:00	53	0.4	27.70%	0.19
242	1987/12/04 21:00:00	1987/12/05 10:00:00	14	0.4	27.80%	0.19
243	1988/04/14 18:00:00	1988/04/16 05:00:00	36	0.4	27.90%	0.19
244	1990/06/09 07:00:00	1990/06/10 19:00:00	37	0.4	28.00%	0.18

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
245	1991/01/09 09:00:00	1991/01/10 02:00:00	18	0.4	28.10%	0.18
246	1993/03/26 00:00:00	1993/03/28 16:00:00	65	0.4	28.20%	0.18
247	1994/02/03 20:00:00	1994/02/05 07:00:00	36	0.4	28.40%	0.18
248	1994/12/24 05:00:00	1994/12/25 17:00:00	37	0.4	28.50%	0.18
249	1995/01/15 03:00:00	1995/01/17 12:00:00	58	0.4	28.60%	0.18
250	1996/01/21 18:00:00	1996/01/22 19:00:00	26	0.4	28.70%	0.18
251	1997/01/15 18:00:00	1997/01/16 04:00:00	11	0.4	28.80%	0.18
252	1998/04/11 02:00:00	1998/04/12 20:00:00	43	0.4	28.90%	0.18
253	1998/05/12 02:00:00	1998/05/13 18:00:00	41	0.4	29.00%	0.18
254	2000/04/17 16:00:00	2000/04/18 13:00:00	22	0.4	29.20%	0.18
255	2000/10/29 20:00:00	2000/10/30 12:00:00	17	0.4	29.30%	0.18
256	2001/01/26 11:00:00	2001/01/28 08:00:00	46	0.4	29.40%	0.18
257	2002/12/16 02:00:00	2002/12/17 17:00:00	40	0.4	29.50%	0.18
258	2005/03/22 19:00:00	2005/03/23 11:00:00	17	0.4	29.60%	0.17
259	2006/03/20 04:00:00	2006/03/21 12:00:00	33	0.4	29.70%	0.17
260	1968/04/01 19:00:00	1968/04/02 17:00:00	23	0.3	29.90%	0.17
261	1968/12/25 18:00:00	1968/12/26 16:00:00	23	0.3	30.00%	0.17
262	1969/11/06 18:00:00	1969/11/07 11:00:00	18	0.3	30.10%	0.17
263	1969/11/10 00:00:00	1969/11/10 10:00:00	11	0.3	30.20%	0.17
264	1970/02/10 01:00:00	1970/02/11 12:00:00	36	0.3	30.30%	0.17
265	1971/01/02 04:00:00	1971/01/02 23:00:00	20	0.3	30.40%	0.17
266	1971/05/28 01:00:00	1971/05/29 07:00:00	31	0.3	30.50%	0.17
267	1972/05/19 04:00:00	1972/05/20 18:00:00	39	0.3	30.70%	0.17
268	1975/02/03 09:00:00	1975/02/05 13:00:00	53	0.3	30.80%	0.17
269	1975/03/05 14:00:00	1975/03/06 23:00:00	34	0.3	30.90%	0.17
270	1977/01/06 19:00:00	1977/01/07 13:00:00	19	0.3	31.00%	0.17
271	1977/12/18 01:00:00	1977/12/18 17:00:00	17	0.3	31.10%	0.17
272	1978/09/05 17:00:00	1978/09/06 08:00:00	16	0.3	31.20%	0.17
273	1979/01/09 08:00:00	1979/01/09 20:00:00	13	0.3	31.30%	0.17
274	1982/01/05 04:00:00	1982/01/05 21:00:00	18	0.3	31.50%	0.16
275	1982/01/10 18:00:00	1982/01/11 04:00:00	11	0.3	31.60%	0.16
276	1982/01/28 17:00:00	1982/01/29 08:00:00	16	0.3	31.70%	0.16
277	1982/11/19 02:00:00	1982/11/19 22:00:00	21	0.3	31.80%	0.16
278	1983/02/02 12:00:00	1983/02/03 03:00:00	16	0.3	31.90%	0.16
279	1983/11/11 22:00:00	1983/11/13 10:00:00	37	0.3	32.00%	0.16
280	1985/02/01 15:00:00	1985/02/03 20:00:00	54	0.3	32.10%	0.16
281	1985/02/09 05:00:00	1985/02/10 00:00:00	20	0.3	32.30%	0.16
282	1986/04/06 05:00:00	1986/04/07 01:00:00	21	0.3	32.40%	0.16
283	1986/10/09 18:00:00	1986/10/11 07:00:00	38	0.3	32.50%	0.16
284	1987/02/23 13:00:00	1987/02/26 09:00:00	69	0.3	32.60%	0.16
285	1987/10/31 00:00:00	1987/11/02 12:00:00	61	0.3	32.70%	0.16
286	1987/12/19 14:00:00	1987/12/20 00:00:00	11	0.3	32.80%	0.16

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
287	1991/10/26 20:00:00	1991/10/27 11:00:00	16	0.3	33.00%	0.16
288	1992/02/09 23:00:00	1992/02/10 09:00:00	11	0.3	33.10%	0.16
289	1995/04/16 06:00:00	1995/04/17 04:00:00	23	0.3	33.20%	0.16
290	1995/12/20 17:00:00	1995/12/21 03:00:00	11	0.3	33.30%	0.16
291	1995/12/23 10:00:00	1995/12/23 20:00:00	11	0.3	33.40%	0.16
292	1996/10/30 13:00:00	1996/10/31 02:00:00	14	0.3	33.50%	0.15
293	2000/02/17 02:00:00	2000/02/18 05:00:00	28	0.3	33.60%	0.15
294	2005/10/16 16:00:00	2005/10/18 19:00:00	52	0.3	33.80%	0.15
295	2006/05/22 04:00:00	2006/05/22 17:00:00	14	0.3	33.90%	0.15
296	2007/02/22 21:00:00	2007/02/23 10:00:00	14	0.3	34.00%	0.15
297	2008/01/23 19:00:00	2008/01/24 10:00:00	16	0.3	34.10%	0.15
298	2008/01/26 21:00:00	2008/01/28 18:00:00	46	0.3	34.20%	0.15
299	1964/10/15 09:00:00	1964/10/15 20:00:00	12	0.2	34.30%	0.15
300	1965/01/24 06:00:00	1965/01/24 11:00:00	6	0.2	34.40%	0.15
301	1965/12/21 23:00:00	1965/12/23 02:00:00	28	0.2	34.60%	0.15
302	1966/10/10 12:00:00	1966/10/10 19:00:00	8	0.2	34.70%	0.15
303	1967/03/31 10:00:00	1967/04/02 10:00:00	49	0.2	34.80%	0.15
304	1967/04/04 16:00:00	1967/04/05 02:00:00	11	0.2	34.90%	0.15
305	1967/04/18 19:00:00	1967/04/20 02:00:00	32	0.2	35.00%	0.15
306	1967/12/16 13:00:00	1967/12/17 09:00:00	21	0.2	35.10%	0.15
307	1968/02/13 09:00:00	1968/02/14 05:00:00	21	0.2	35.20%	0.15
308	1968/11/15 06:00:00	1968/11/16 00:00:00	19	0.2	35.40%	0.15
309	1968/12/19 14:00:00	1968/12/20 13:00:00	24	0.2	35.50%	0.15
310	1969/03/10 02:00:00	1969/03/11 13:00:00	36	0.2	35.60%	0.15
311	1970/01/16 16:00:00	1970/01/17 03:00:00	12	0.2	35.70%	0.15
312	1970/10/03 14:00:00	1970/10/03 23:00:00	10	0.2	35.80%	0.14
313	1970/11/25 23:00:00	1970/11/26 17:00:00	19	0.2	35.90%	0.14
314	1971/10/16 04:00:00	1971/10/17 15:00:00	36	0.2	36.10%	0.14
315	1971/12/31 04:00:00	1971/12/31 12:00:00	9	0.2	36.20%	0.14
316	1972/01/09 09:00:00	1972/01/10 06:00:00	22	0.2	36.30%	0.14
317	1972/10/19 03:00:00	1972/10/20 22:00:00	44	0.2	36.40%	0.14
318	1973/01/04 01:00:00	1973/01/04 23:00:00	23	0.2	36.50%	0.14
319	1973/01/09 10:00:00	1973/01/10 08:00:00	23	0.2	36.60%	0.14
320	1974/01/01 04:00:00	1974/01/02 03:00:00	24	0.2	36.70%	0.14
321	1974/03/02 10:00:00	1974/03/03 18:00:00	33	0.2	36.90%	0.14
322	1974/12/28 06:00:00	1974/12/29 17:00:00	36	0.2	37.00%	0.14
323	1975/03/14 02:00:00	1975/03/14 17:00:00	16	0.2	37.10%	0.14
324	1975/03/22 08:00:00	1975/03/23 17:00:00	34	0.2	37.20%	0.14
325	1976/11/27 04:00:00	1976/11/27 11:00:00	8	0.2	37.30%	0.14
326	1978/01/10 17:00:00	1978/01/11 01:00:00	9	0.2	37.40%	0.14
327	1979/02/14 03:00:00	1979/02/14 15:00:00	13	0.2	37.50%	0.14
328	1979/11/07 19:00:00	1979/11/09 07:00:00	37	0.2	37.70%	0.14

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
329	1980/12/07 11:00:00	1980/12/07 18:00:00	8	0.2	37.80%	0.14
330	1981/03/26 22:00:00	1981/03/27 06:00:00	9	0.2	37.90%	0.14
331	1983/01/19 04:00:00	1983/01/19 09:00:00	6	0.2	38.00%	0.14
332	1983/01/24 18:00:00	1983/01/25 02:00:00	9	0.2	38.10%	0.14
333	1983/03/06 03:00:00	1983/03/06 17:00:00	15	0.2	38.20%	0.14
334	1983/04/20 01:00:00	1983/04/21 16:00:00	40	0.2	38.30%	0.14
335	1983/10/01 04:00:00	1983/10/02 01:00:00	22	0.2	38.50%	0.13
336	1983/12/09 18:00:00	1983/12/10 03:00:00	10	0.2	38.60%	0.13
337	1985/03/27 08:00:00	1985/03/28 15:00:00	32	0.2	38.70%	0.13
338	1985/09/18 08:00:00	1985/09/18 20:00:00	13	0.2	38.80%	0.13
339	1987/04/03 04:00:00	1987/04/04 02:00:00	23	0.2	38.90%	0.13
340	1987/10/22 16:00:00	1987/10/24 08:00:00	41	0.2	39.00%	0.13
341	1987/10/28 19:00:00	1987/10/29 04:00:00	10	0.2	39.20%	0.13
342	1988/01/05 13:00:00	1988/01/06 02:00:00	14	0.2	39.30%	0.13
343	1988/11/14 05:00:00	1988/11/14 12:00:00	8	0.2	39.40%	0.13
344	1990/01/31 00:00:00	1990/01/31 06:00:00	7	0.2	39.50%	0.13
345	1991/03/13 17:00:00	1991/03/16 02:00:00	58	0.2	39.60%	0.13
346	1991/12/28 00:00:00	1991/12/28 08:00:00	9	0.2	39.70%	0.13
347	1992/12/17 22:00:00	1992/12/18 11:00:00	14	0.2	39.80%	0.13
348	1993/01/02 02:00:00	1993/01/03 03:00:00	26	0.2	40.00%	0.13
349	1993/11/22 22:00:00	1993/11/23 09:00:00	12	0.2	40.10%	0.13
350	1994/01/25 00:00:00	1994/01/27 19:00:00	68	0.2	40.20%	0.13
351	1995/01/21 02:00:00	1995/01/21 11:00:00	10	0.2	40.30%	0.13
352	1996/04/18 00:00:00	1996/04/18 12:00:00	13	0.2	40.40%	0.13
353	1997/01/23 03:00:00	1997/01/24 04:00:00	26	0.2	40.50%	0.13
354	1997/12/06 02:00:00	1997/12/08 03:00:00	50	0.2	40.60%	0.13
355	1998/01/29 02:00:00	1998/01/30 04:00:00	27	0.2	40.80%	0.13
356	2000/02/13 02:00:00	2000/02/14 17:00:00	40	0.2	40.90%	0.13
357	2001/04/21 00:00:00	2001/04/21 18:00:00	19	0.2	41.00%	0.13
358	2001/12/09 02:00:00	2001/12/10 04:00:00	27	0.2	41.10%	0.13
359	2001/12/21 02:00:00	2001/12/22 05:00:00	28	0.2	41.20%	0.13
360	2002/03/17 20:00:00	2002/03/18 08:00:00	13	0.2	41.30%	0.13
361	2002/11/29 02:00:00	2002/11/30 17:00:00	40	0.2	41.40%	0.13
362	2003/11/12 03:00:00	2003/11/12 16:00:00	14	0.2	41.60%	0.12
363	2004/02/18 16:00:00	2004/02/18 21:00:00	6	0.2	41.70%	0.12
364	2004/11/21 05:00:00	2004/11/21 13:00:00	9	0.2	41.80%	0.12
365	2004/12/04 14:00:00	2004/12/06 02:00:00	37	0.2	41.90%	0.12
366	2005/03/04 15:00:00	2005/03/05 11:00:00	21	0.2	42.00%	0.12
367	2006/12/09 22:00:00	2006/12/11 02:00:00	29	0.2	42.10%	0.12
368	2007/04/20 14:00:00	2007/04/20 23:00:00	10	0.2	42.30%	0.12
369	2007/12/20 22:00:00	2007/12/21 11:00:00	14	0.2	42.40%	0.12
370	1964/09/24 14:00:00	1964/09/24 14:00:00	1	0.1	42.50%	0.12

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
371	1965/03/11 07:00:00	1965/03/11 17:00:00	11	0.1	42.60%	0.12
372	1965/03/15 02:00:00	1965/03/15 09:00:00	8	0.1	42.70%	0.12
373	1966/10/04 00:00:00	1966/10/05 14:00:00	39	0.1	42.80%	0.12
374	1967/08/31 02:00:00	1967/08/31 09:00:00	8	0.1	42.90%	0.12
375	1967/11/30 16:00:00	1967/12/01 03:00:00	12	0.1	43.10%	0.12
376	1967/12/13 10:00:00	1967/12/13 14:00:00	5	0.1	43.20%	0.12
377	1968/01/27 07:00:00	1968/01/28 08:00:00	26	0.1	43.30%	0.12
378	1968/03/18 13:00:00	1968/03/18 17:00:00	5	0.1	43.40%	0.12
379	1969/02/28 22:00:00	1969/03/01 08:00:00	11	0.1	43.50%	0.12
380	1969/04/05 20:00:00	1969/04/05 22:00:00	3	0.1	43.60%	0.12
381	1970/04/30 09:00:00	1970/04/30 09:00:00	1	0.1	43.70%	0.12
382	1971/01/12 19:00:00	1971/01/13 01:00:00	7	0.1	43.90%	0.12
383	1971/02/16 16:00:00	1971/02/17 15:00:00	24	0.1	44.00%	0.12
384	1971/02/19 17:00:00	1971/02/20 11:00:00	19	0.1	44.10%	0.12
385	1971/03/13 06:00:00	1971/03/13 17:00:00	12	0.1	44.20%	0.12
386	1971/04/14 11:00:00	1971/04/14 16:00:00	6	0.1	44.30%	0.12
387	1971/04/15 22:00:00	1971/04/16 13:00:00	16	0.1	44.40%	0.12
388	1971/12/03 00:00:00	1971/12/04 02:00:00	27	0.1	44.50%	0.12
389	1971/12/07 01:00:00	1971/12/07 04:00:00	4	0.1	44.70%	0.12
390	1972/04/30 04:00:00	1972/04/30 10:00:00	7	0.1	44.80%	0.12
391	1973/02/03 13:00:00	1973/02/03 23:00:00	11	0.1	44.90%	0.12
392	1973/02/06 01:00:00	1973/02/06 09:00:00	9	0.1	45.00%	0.12
393	1973/03/27 03:00:00	1973/03/27 20:00:00	18	0.1	45.10%	0.12
394	1973/04/30 05:00:00	1973/04/30 11:00:00	7	0.1	45.20%	0.11
395	1973/12/01 15:00:00	1973/12/01 17:00:00	3	0.1	45.40%	0.11
396	1975/01/30 18:00:00	1975/01/30 22:00:00	5	0.1	45.50%	0.11
397	1975/03/25 10:00:00	1975/03/26 02:00:00	17	0.1	45.60%	0.11
398	1975/03/31 21:00:00	1975/04/01 10:00:00	14	0.1	45.70%	0.11
399	1976/10/22 20:00:00	1976/10/23 14:00:00	19	0.1	45.80%	0.11
400	1977/01/28 17:00:00	1977/01/28 20:00:00	4	0.1	45.90%	0.11
401	1977/05/12 19:00:00	1977/05/13 04:00:00	10	0.1	46.00%	0.11
402	1977/12/23 03:00:00	1977/12/23 10:00:00	8	0.1	46.20%	0.11
403	1978/04/15 20:00:00	1978/04/16 03:00:00	8	0.1	46.30%	0.11
404	1980/03/21 19:00:00	1980/03/22 05:00:00	11	0.1	46.40%	0.11
405	1980/04/22 15:00:00	1980/04/23 05:00:00	15	0.1	46.50%	0.11
406	1982/09/26 01:00:00	1982/09/26 21:00:00	21	0.1	46.60%	0.11
407	1983/04/17 22:00:00	1983/04/18 06:00:00	9	0.1	46.70%	0.11
408	1983/08/16 15:00:00	1983/08/16 18:00:00	4	0.1	46.80%	0.11
409	1984/03/24 13:00:00	1984/03/24 13:00:00	1	0.1	47.00%	0.11
410	1984/04/06 06:00:00	1984/04/06 15:00:00	10	0.1	47.10%	0.11
411	1984/12/07 23:00:00	1984/12/08 04:00:00	6	0.1	47.20%	0.11
412	1984/12/14 14:00:00	1984/12/14 15:00:00	2	0.1	47.30%	0.11

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
413	1984/12/16 04:00:00	1984/12/16 05:00:00	2	0.1	47.40%	0.11
414	1985/02/20 20:00:00	1985/02/20 22:00:00	3	0.1	47.50%	0.11
415	1985/03/02 13:00:00	1985/03/03 02:00:00	14	0.1	47.60%	0.11
416	1985/08/10 14:00:00	1985/08/10 14:00:00	1	0.1	47.80%	0.11
417	1985/10/07 14:00:00	1985/10/07 14:00:00	1	0.1	47.90%	0.11
418	1985/10/09 12:00:00	1985/10/09 20:00:00	9	0.1	48.00%	0.11
419	1986/01/02 15:00:00	1986/01/02 17:00:00	3	0.1	48.10%	0.11
420	1986/07/19 12:00:00	1986/07/19 17:00:00	6	0.1	48.20%	0.11
421	1986/09/18 11:00:00	1986/09/18 11:00:00	1	0.1	48.30%	0.11
422	1986/12/20 06:00:00	1986/12/20 14:00:00	9	0.1	48.50%	0.11
423	1987/10/12 18:00:00	1987/10/12 21:00:00	4	0.1	48.60%	0.11
424	1988/02/29 22:00:00	1988/03/02 07:00:00	34	0.1	48.70%	0.11
425	1988/12/15 07:00:00	1988/12/16 22:00:00	40	0.1	48.80%	0.11
426	1988/12/18 06:00:00	1988/12/19 07:00:00	26	0.1	48.90%	0.11
427	1988/12/23 00:00:00	1988/12/23 05:00:00	6	0.1	49.00%	0.11
428	1989/01/05 17:00:00	1989/01/06 05:00:00	13	0.1	49.10%	0.11
429	1989/02/04 04:00:00	1989/02/04 18:00:00	15	0.1	49.30%	0.11
430	1989/10/21 23:00:00	1989/10/22 07:00:00	9	0.1	49.40%	0.11
431	1990/01/02 01:00:00	1990/01/02 13:00:00	13	0.1	49.50%	0.1
432	1990/02/04 11:00:00	1990/02/04 16:00:00	6	0.1	49.60%	0.1
433	1990/03/11 01:00:00	1990/03/11 03:00:00	3	0.1	49.70%	0.1
434	1990/04/04 09:00:00	1990/04/05 12:00:00	28	0.1	49.80%	0.1
435	1990/05/28 04:00:00	1990/05/29 05:00:00	26	0.1	49.90%	0.1
436	1990/11/19 22:00:00	1990/11/20 07:00:00	10	0.1	50.10%	0.1
437	1990/11/26 02:00:00	1990/11/26 11:00:00	10	0.1	50.20%	0.1
438	1990/12/19 13:00:00	1990/12/20 08:00:00	20	0.1	50.30%	0.1
439	1991/01/03 12:00:00	1991/01/04 19:00:00	32	0.1	50.40%	0.1
440	1991/12/17 11:00:00	1991/12/19 11:00:00	49	0.1	50.50%	0.1
441	1992/03/31 16:00:00	1992/04/01 13:00:00	22	0.1	50.60%	0.1
442	1993/06/05 13:00:00	1993/06/05 18:00:00	6	0.1	50.70%	0.1
443	1993/11/11 05:00:00	1993/11/12 17:00:00	37	0.1	50.90%	0.1
444	1993/12/11 16:00:00	1993/12/12 06:00:00	15	0.1	51.00%	0.1
445	1993/12/14 17:00:00	1993/12/15 12:00:00	20	0.1	51.10%	0.1
446	1994/04/09 05:00:00	1994/04/09 16:00:00	12	0.1	51.20%	0.1
447	1994/11/10 11:00:00	1994/11/10 14:00:00	4	0.1	51.30%	0.1
448	1995/06/15 21:00:00	1995/06/17 13:00:00	41	0.1	51.40%	0.1
449	1996/03/04 17:00:00	1996/03/05 08:00:00	16	0.1	51.50%	0.1
450	1996/12/05 22:00:00	1996/12/06 12:00:00	15	0.1	51.70%	0.1
451	1997/01/05 09:00:00	1997/01/05 19:00:00	11	0.1	51.80%	0.1
452	1997/02/10 19:00:00	1997/02/11 01:00:00	7	0.1	51.90%	0.1
453	1997/02/27 11:00:00	1997/02/28 05:00:00	19	0.1	52.00%	0.1
454	1997/04/03 17:00:00	1997/04/04 13:00:00	21	0.1	52.10%	0.1

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
455	1998/04/14 08:00:00	1998/04/16 00:00:00	41	0.1	52.20%	0.1
456	2000/10/21 18:00:00	2000/10/21 18:00:00	1	0.1	52.40%	0.1
457	2000/11/10 04:00:00	2000/11/11 07:00:00	28	0.1	52.50%	0.1
458	2001/05/29 15:00:00	2001/05/29 15:00:00	1	0.1	52.60%	0.1
459	2001/12/03 05:00:00	2001/12/04 00:00:00	20	0.1	52.70%	0.1
460	2002/03/07 11:00:00	2002/03/08 02:00:00	16	0.1	52.80%	0.1
461	2003/05/03 02:00:00	2003/05/04 01:00:00	24	0.1	52.90%	0.1
462	2004/01/28 05:00:00	2004/01/28 08:00:00	4	0.1	53.00%	0.1
463	2004/04/01 22:00:00	2004/04/02 18:00:00	21	0.1	53.20%	0.1
464	2004/04/17 13:00:00	2004/04/17 15:00:00	3	0.1	53.30%	0.1
465	2004/11/29 12:00:00	2004/11/29 13:00:00	2	0.1	53.40%	0.1
466	2005/01/28 15:00:00	2005/01/29 06:00:00	16	0.1	53.50%	0.1
467	2005/09/20 02:00:00	2005/09/20 03:00:00	2	0.1	53.60%	0.1
468	2006/02/17 23:00:00	2006/02/19 06:00:00	32	0.1	53.70%	0.1
469	2006/03/17 20:00:00	2006/03/19 01:00:00	30	0.1	53.80%	0.1
470	2006/04/14 13:00:00	2006/04/15 11:00:00	23	0.1	54.00%	0.1
471	2006/10/13 20:00:00	2006/10/14 13:00:00	18	0.1	54.10%	0.1
472	2006/12/16 20:00:00	2006/12/17 10:00:00	15	0.1	54.20%	0.1
473	2007/02/12 22:00:00	2007/02/14 04:00:00	31	0.1	54.30%	0.1
474	2007/02/28 05:00:00	2007/02/28 07:00:00	3	0.1	54.40%	0.1
475	2007/04/22 23:00:00	2007/04/23 07:00:00	9	0.1	54.50%	0.1
476	2007/12/19 00:00:00	2007/12/19 10:00:00	11	0.1	54.60%	0.1
477	2008/02/20 09:00:00	2008/02/20 18:00:00	10	0.1	54.80%	0.09
478	1964/11/26 12:00:00	1964/11/26 18:00:00	7	0	54.90%	0.09
479	1965/01/07 10:00:00	1965/01/07 15:00:00	6	0	55.00%	0.09
480	1965/03/07 01:00:00	1965/03/07 10:00:00	10	0	55.10%	0.09
481	1965/03/13 06:00:00	1965/03/13 10:00:00	5	0	55.20%	0.09
482	1965/03/24 09:00:00	1965/03/24 17:00:00	9	0	55.30%	0.09
483	1965/05/23 02:00:00	1965/05/24 09:00:00	32	0	55.50%	0.09
484	1965/06/25 06:00:00	1965/06/25 08:00:00	3	0	55.60%	0.09
485	1965/09/05 18:00:00	1965/09/05 18:00:00	1	0	55.70%	0.09
486	1966/01/19 16:00:00	1966/01/20 02:00:00	11	0	55.80%	0.09
487	1966/02/10 15:00:00	1966/02/10 16:00:00	2	0	55.90%	0.09
488	1966/02/25 03:00:00	1966/02/25 04:00:00	2	0	56.00%	0.09
489	1966/03/02 10:00:00	1966/03/02 10:00:00	1	0	56.10%	0.09
490	1966/03/13 15:00:00	1966/03/13 15:00:00	1	0	56.30%	0.09
491	1966/03/24 19:00:00	1966/03/24 19:00:00	1	0	56.40%	0.09
492	1966/05/10 05:00:00	1966/05/10 05:00:00	1	0	56.50%	0.09
493	1966/09/30 00:00:00	1966/09/30 11:00:00	12	0	56.60%	0.09
494	1966/10/18 12:00:00	1966/10/18 12:00:00	1	0	56.70%	0.09
495	1967/01/31 04:00:00	1967/01/31 05:00:00	2	0	56.80%	0.09
496	1967/03/04 00:00:00	1967/03/04 10:00:00	11	0	56.90%	0.09

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
497	1967/03/11 09:00:00	1967/03/11 09:00:00	1	0	57.10%	0.09
498	1967/03/29 06:00:00	1967/03/29 06:00:00	1	0	57.20%	0.09
499	1967/04/24 11:00:00	1967/04/24 12:00:00	2	0	57.30%	0.09
500	1967/04/28 19:00:00	1967/04/28 19:00:00	1	0	57.40%	0.09
501	1967/06/09 07:00:00	1967/06/09 07:00:00	1	0	57.50%	0.09
502	1967/06/13 12:00:00	1967/06/13 16:00:00	5	0	57.60%	0.09
503	1967/07/26 21:00:00	1967/07/26 21:00:00	1	0	57.70%	0.09
504	1967/09/02 21:00:00	1967/09/02 21:00:00	1	0	57.90%	0.09
505	1967/09/29 21:00:00	1967/09/30 01:00:00	5	0	58.00%	0.09
506	1967/11/28 10:00:00	1967/11/28 11:00:00	2	0	58.10%	0.09
507	1967/12/08 01:00:00	1967/12/08 02:00:00	2	0	58.20%	0.09
508	1968/01/10 05:00:00	1968/01/10 06:00:00	2	0	58.30%	0.09
509	1968/02/10 04:00:00	1968/02/10 05:00:00	2	0	58.40%	0.09
510	1968/03/13 22:00:00	1968/03/13 22:00:00	1	0	58.60%	0.09
511	1968/03/17 02:00:00	1968/03/17 02:00:00	1	0	58.70%	0.09
512	1968/05/12 05:00:00	1968/05/12 08:00:00	4	0	58.80%	0.09
513	1968/06/07 07:00:00	1968/06/07 07:00:00	1	0	58.90%	0.09
514	1968/07/09 21:00:00	1968/07/09 22:00:00	2	0	59.00%	0.09
515	1968/09/13 11:00:00	1968/09/13 11:00:00	1	0	59.10%	0.09
516	1968/10/30 10:00:00	1968/10/30 10:00:00	1	0	59.20%	0.09
517	1968/12/01 11:00:00	1968/12/01 12:00:00	2	0	59.40%	0.09
518	1969/01/17 11:00:00	1969/01/17 13:00:00	3	0	59.50%	0.09
519	1969/02/15 18:00:00	1969/02/15 22:00:00	5	0	59.60%	0.09
520	1969/04/03 02:00:00	1969/04/03 02:00:00	1	0	59.70%	0.09
521	1969/06/11 09:00:00	1969/06/11 12:00:00	4	0	59.80%	0.09
522	1969/06/17 09:00:00	1969/06/17 09:00:00	1	0	59.90%	0.09
523	1969/08/10 05:00:00	1969/08/10 05:00:00	1	0	60.00%	0.09
524	1969/09/07 00:00:00	1969/09/07 00:00:00	1	0	60.20%	0.09
525	1969/11/15 21:00:00	1969/11/15 22:00:00	2	0	60.30%	0.09
526	1969/12/08 19:00:00	1969/12/09 01:00:00	7	0	60.40%	0.09
527	1969/12/26 10:00:00	1969/12/26 11:00:00	2	0	60.50%	0.09
528	1970/01/10 01:00:00	1970/01/10 02:00:00	2	0	60.60%	0.09
529	1970/01/11 14:00:00	1970/01/12 05:00:00	16	0	60.70%	0.09
530	1970/01/15 02:00:00	1970/01/15 03:00:00	2	0	60.80%	0.09
531	1970/01/18 14:00:00	1970/01/18 17:00:00	4	0	61.00%	0.09
532	1970/12/02 15:00:00	1970/12/02 17:00:00	3	0	61.10%	0.09
533	1970/12/09 05:00:00	1970/12/09 12:00:00	8	0	61.20%	0.08
534	1971/04/23 07:00:00	1971/04/23 10:00:00	4	0	61.30%	0.08
535	1971/05/03 09:00:00	1971/05/03 09:00:00	1	0	61.40%	0.08
536	1971/05/06 06:00:00	1971/05/06 11:00:00	6	0	61.50%	0.08
537	1971/06/02 12:00:00	1971/06/02 12:00:00	1	0	61.70%	0.08
538	1971/06/05 14:00:00	1971/06/05 14:00:00	1	0	61.80%	0.08

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
539	1971/10/22 13:00:00	1971/10/22 13:00:00	1	0	61.90%	0.08
540	1971/10/24 11:00:00	1971/10/24 11:00:00	1	0	62.00%	0.08
541	1971/10/25 13:00:00	1971/10/25 13:00:00	1	0	62.10%	0.08
542	1971/10/30 10:00:00	1971/10/30 10:00:00	1	0	62.20%	0.08
543	1971/11/13 13:00:00	1971/11/13 14:00:00	2	0	62.30%	0.08
544	1971/11/15 16:00:00	1971/11/15 17:00:00	2	0	62.50%	0.08
545	1971/11/29 06:00:00	1971/11/29 07:00:00	2	0	62.60%	0.08
546	1972/02/05 08:00:00	1972/02/06 09:00:00	26	0	62.70%	0.08
547	1972/04/13 03:00:00	1972/04/13 08:00:00	6	0	62.80%	0.08
548	1972/04/21 09:00:00	1972/04/21 09:00:00	1	0	62.90%	0.08
549	1972/06/07 04:00:00	1972/06/07 04:00:00	1	0	63.00%	0.08
550	1972/06/10 02:00:00	1972/06/10 02:00:00	1	0	63.10%	0.08
551	1972/06/22 13:00:00	1972/06/22 13:00:00	1	0	63.30%	0.08
552	1972/09/06 05:00:00	1972/09/06 21:00:00	17	0	63.40%	0.08
553	1972/10/11 15:00:00	1972/10/11 15:00:00	1	0	63.50%	0.08
554	1972/10/17 09:00:00	1972/10/17 09:00:00	1	0	63.60%	0.08
555	1972/11/08 01:00:00	1972/11/08 02:00:00	2	0	63.70%	0.08
556	1973/01/25 21:00:00	1973/01/25 22:00:00	2	0	63.80%	0.08
557	1973/01/30 13:00:00	1973/01/30 14:00:00	2	0	63.90%	0.08
558	1973/02/07 15:00:00	1973/02/07 18:00:00	4	0	64.10%	0.08
559	1973/02/21 09:00:00	1973/02/21 10:00:00	2	0	64.20%	0.08
560	1973/03/28 21:00:00	1973/03/29 00:00:00	4	0	64.30%	0.08
561	1973/04/21 10:00:00	1973/04/21 10:00:00	1	0	64.40%	0.08
562	1973/05/23 15:00:00	1973/05/23 15:00:00	1	0	64.50%	0.08
563	1973/05/28 10:00:00	1973/05/28 10:00:00	1	0	64.60%	0.08
564	1973/05/31 09:00:00	1973/05/31 09:00:00	1	0	64.80%	0.08
565	1973/12/16 15:00:00	1973/12/16 16:00:00	2	0	64.90%	0.08
566	1973/12/20 14:00:00	1973/12/20 15:00:00	2	0	65.00%	0.08
567	1973/12/22 03:00:00	1973/12/22 04:00:00	2	0	65.10%	0.08
568	1974/01/20 17:00:00	1974/01/20 23:00:00	7	0	65.20%	0.08
569	1974/02/18 16:00:00	1974/02/18 17:00:00	2	0	65.30%	0.08
570	1974/02/19 19:00:00	1974/02/19 20:00:00	2	0	65.40%	0.08
571	1974/03/27 09:00:00	1974/03/27 10:00:00	2	0	65.60%	0.08
572	1974/06/08 12:00:00	1974/06/08 12:00:00	1	0	65.70%	0.08
573	1974/11/01 23:00:00	1974/11/02 00:00:00	2	0	65.80%	0.08
574	1974/11/03 16:00:00	1974/11/03 17:00:00	2	0	65.90%	0.08
575	1975/02/14 05:00:00	1975/02/14 06:00:00	2	0	66.00%	0.08
576	1975/04/17 03:00:00	1975/04/17 08:00:00	6	0	66.10%	0.08
577	1975/04/18 13:00:00	1975/04/18 13:00:00	1	0	66.20%	0.08
578	1975/04/23 15:00:00	1975/04/23 15:00:00	1	0	66.40%	0.08
579	1975/05/20 02:00:00	1975/05/20 02:00:00	1	0	66.50%	0.08
580	1975/06/07 14:00:00	1975/06/07 14:00:00	1	0	66.60%	0.08

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
581	1975/10/28 22:00:00	1975/10/28 22:00:00	1	0	66.70%	0.08
582	1975/12/20 00:00:00	1975/12/20 01:00:00	2	0	66.80%	0.08
583	1976/04/04 09:00:00	1976/04/05 00:00:00	16	0	66.90%	0.08
584	1976/09/03 17:00:00	1976/09/03 17:00:00	1	0	67.00%	0.08
585	1976/09/14 11:00:00	1976/09/14 11:00:00	1	0	67.20%	0.08
586	1977/01/21 15:00:00	1977/01/21 16:00:00	2	0	67.30%	0.08
587	1977/02/22 01:00:00	1977/02/22 03:00:00	3	0	67.40%	0.08
588	1977/02/23 12:00:00	1977/02/24 02:00:00	15	0	67.50%	0.08
589	1977/04/02 01:00:00	1977/04/02 01:00:00	1	0	67.60%	0.08
590	1977/05/05 21:00:00	1977/05/05 21:00:00	1	0	67.70%	0.08
591	1977/05/24 06:00:00	1977/05/24 09:00:00	4	0	67.90%	0.08
592	1977/08/12 11:00:00	1977/08/12 11:00:00	1	0	68.00%	0.08
593	1977/10/06 03:00:00	1977/10/06 03:00:00	1	0	68.10%	0.08
594	1977/11/06 02:00:00	1977/11/06 03:00:00	2	0	68.20%	0.08
595	1978/01/12 16:00:00	1978/01/12 19:00:00	4	0	68.30%	0.08
596	1978/01/26 10:00:00	1978/01/26 11:00:00	2	0	68.40%	0.08
597	1978/04/02 17:00:00	1978/04/02 19:00:00	3	0	68.50%	0.08
598	1978/04/26 09:00:00	1978/04/26 09:00:00	1	0	68.70%	0.08
599	1978/05/01 11:00:00	1978/05/01 11:00:00	1	0	68.80%	0.08
600	1978/09/07 12:00:00	1978/09/07 15:00:00	4	0	68.90%	0.08
601	1978/09/19 13:00:00	1978/09/19 13:00:00	1	0	69.00%	0.08
602	1979/01/29 09:00:00	1979/01/29 10:00:00	2	0	69.10%	0.08
603	1979/03/13 10:00:00	1979/03/13 10:00:00	1	0	69.20%	0.08
604	1979/03/15 22:00:00	1979/03/15 22:00:00	1	0	69.30%	0.08
605	1979/05/19 15:00:00	1979/05/19 15:00:00	1	0	69.50%	0.07
606	1979/08/13 15:00:00	1979/08/13 15:00:00	1	0	69.60%	0.07
607	1979/11/04 07:00:00	1979/11/04 08:00:00	2	0	69.70%	0.07
608	1979/11/05 14:00:00	1979/11/05 15:00:00	2	0	69.80%	0.07
609	1979/12/22 10:00:00	1979/12/22 11:00:00	2	0	69.90%	0.07
610	1980/01/15 10:00:00	1980/01/15 11:00:00	2	0	70.00%	0.07
611	1980/03/18 08:00:00	1980/03/18 19:00:00	12	0	70.10%	0.07
612	1980/04/21 04:00:00	1980/04/21 04:00:00	1	0	70.30%	0.07
613	1980/04/24 12:00:00	1980/04/24 12:00:00	1	0	70.40%	0.07
614	1980/04/28 17:00:00	1980/04/29 20:00:00	28	0	70.50%	0.07
615	1980/05/01 23:00:00	1980/05/01 23:00:00	1	0	70.60%	0.07
616	1980/05/10 11:00:00	1980/05/10 12:00:00	2	0	70.70%	0.07
617	1980/10/26 10:00:00	1980/10/26 10:00:00	1	0	70.80%	0.07
618	1980/12/11 14:00:00	1980/12/11 15:00:00	2	0	71.00%	0.07
619	1981/01/11 17:00:00	1981/01/11 18:00:00	2	0	71.10%	0.07
620	1981/03/14 02:00:00	1981/03/14 02:00:00	1	0	71.20%	0.07
621	1981/04/02 06:00:00	1981/04/02 21:00:00	16	0	71.30%	0.07
622	1981/04/18 13:00:00	1981/04/19 09:00:00	21	0	71.40%	0.07

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
623	1981/05/16 11:00:00	1981/05/16 11:00:00	1	0	71.50%	0.07
624	1981/05/27 01:00:00	1981/05/27 01:00:00	1	0	71.60%	0.07
625	1981/10/01 02:00:00	1981/10/01 02:00:00	1	0	71.80%	0.07
626	1981/10/11 06:00:00	1981/10/11 07:00:00	2	0	71.90%	0.07
627	1981/10/28 23:00:00	1981/10/28 23:00:00	1	0	72.00%	0.07
628	1981/12/21 04:00:00	1981/12/21 05:00:00	2	0	72.10%	0.07
629	1982/02/05 14:00:00	1982/02/05 15:00:00	2	0	72.20%	0.07
630	1982/02/08 03:00:00	1982/02/08 04:00:00	2	0	72.30%	0.07
631	1982/02/16 09:00:00	1982/02/16 10:00:00	2	0	72.40%	0.07
632	1982/03/02 19:00:00	1982/03/03 00:00:00	6	0	72.60%	0.07
633	1982/03/12 14:00:00	1982/03/12 14:00:00	1	0	72.70%	0.07
634	1982/04/05 15:00:00	1982/04/05 15:00:00	1	0	72.80%	0.07
635	1982/05/11 08:00:00	1982/05/11 08:00:00	1	0	72.90%	0.07
636	1982/05/26 13:00:00	1982/05/26 13:00:00	1	0	73.00%	0.07
637	1982/09/16 13:00:00	1982/09/16 13:00:00	1	0	73.10%	0.07
638	1982/09/22 13:00:00	1982/09/22 13:00:00	1	0	73.20%	0.07
639	1982/10/26 10:00:00	1982/10/26 10:00:00	1	0	73.40%	0.07
640	1982/10/31 15:00:00	1982/10/31 15:00:00	1	0	73.50%	0.07
641	1982/12/29 19:00:00	1982/12/30 11:00:00	17	0	73.60%	0.07
642	1983/01/23 00:00:00	1983/01/23 06:00:00	7	0	73.70%	0.07
643	1983/03/15 10:00:00	1983/03/15 10:00:00	1	0	73.80%	0.07
644	1983/04/10 23:00:00	1983/04/13 00:00:00	50	0	73.90%	0.07
645	1983/08/07 09:00:00	1983/08/07 09:00:00	1	0	74.10%	0.07
646	1983/08/18 09:00:00	1983/08/18 16:00:00	8	0	74.20%	0.07
647	1983/11/18 02:00:00	1983/11/18 03:00:00	2	0	74.30%	0.07
648	1983/12/22 11:00:00	1983/12/22 12:00:00	2	0	74.40%	0.07
649	1984/01/16 16:00:00	1984/01/16 22:00:00	7	0	74.50%	0.07
650	1984/10/17 08:00:00	1984/10/17 08:00:00	1	0	74.60%	0.07
651	1984/11/13 10:00:00	1984/11/13 11:00:00	2	0	74.70%	0.07
652	1984/11/22 16:00:00	1984/11/22 16:00:00	1	0	74.90%	0.07
653	1984/11/24 16:00:00	1984/11/24 16:00:00	1	0	75.00%	0.07
654	1984/12/12 23:00:00	1984/12/13 00:00:00	2	0	75.10%	0.07
655	1984/12/18 14:00:00	1984/12/19 21:00:00	32	0	75.20%	0.07
656	1985/01/09 13:00:00	1985/01/09 14:00:00	2	0	75.30%	0.07
657	1985/03/12 11:00:00	1985/03/12 11:00:00	1	0	75.40%	0.07
658	1985/04/21 14:00:00	1985/04/22 02:00:00	13	0	75.50%	0.07
659	1985/05/30 15:00:00	1985/05/30 16:00:00	2	0	75.70%	0.07
660	1985/06/02 22:00:00	1985/06/03 02:00:00	5	0	75.80%	0.07
661	1985/07/18 16:00:00	1985/07/18 16:00:00	1	0	75.90%	0.07
662	1985/09/04 11:00:00	1985/09/04 12:00:00	2	0	76.00%	0.07
663	1985/10/22 00:00:00	1985/10/22 01:00:00	2	0	76.10%	0.07
664	1986/02/13 09:00:00	1986/02/13 09:00:00	1	0	76.20%	0.07

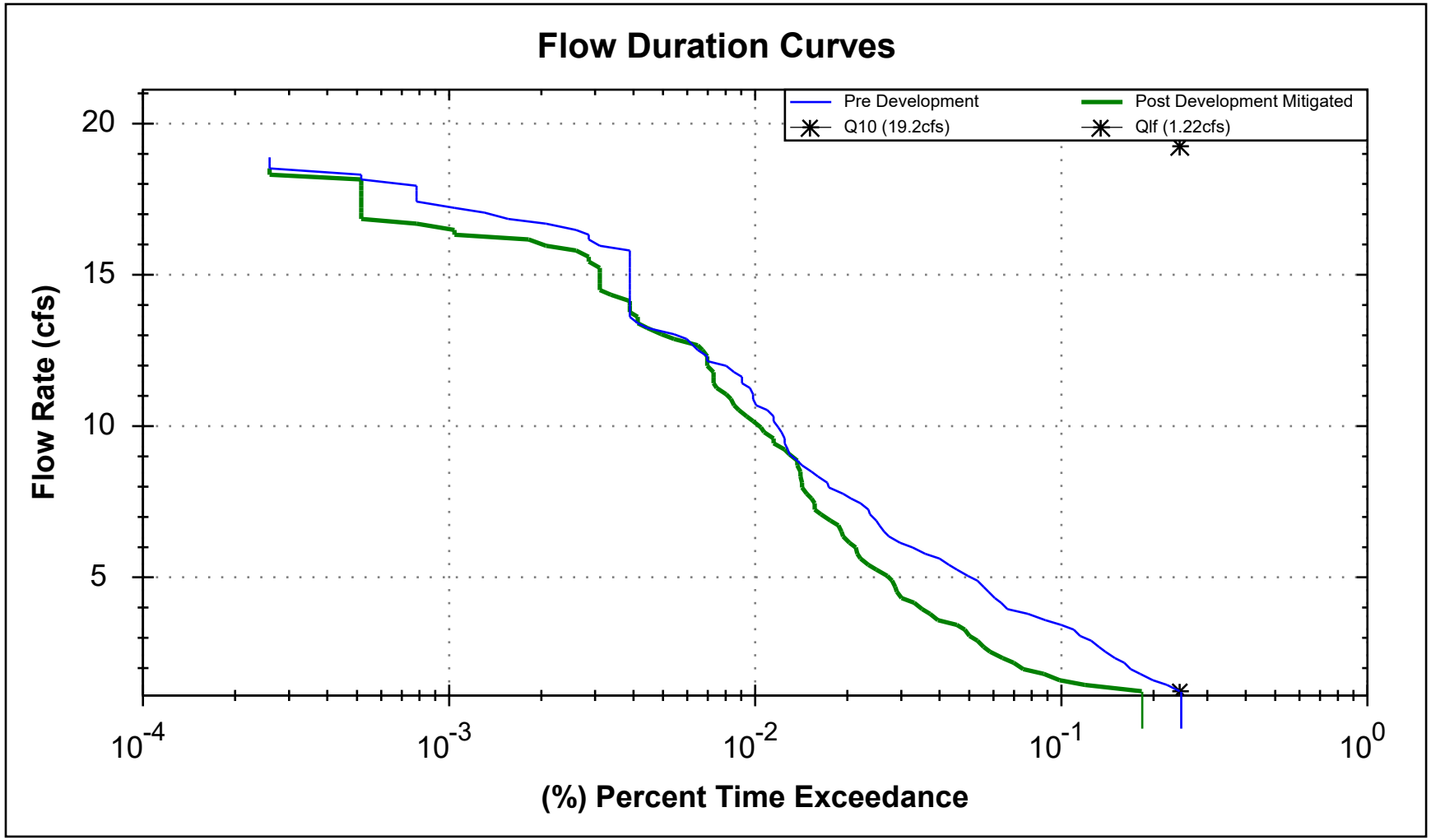
Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
665	1986/02/18 22:00:00	1986/02/19 14:00:00	17	0	76.30%	0.07
666	1986/05/22 10:00:00	1986/05/22 10:00:00	1	0	76.50%	0.07
667	1986/07/22 14:00:00	1986/07/22 16:00:00	3	0	76.60%	0.07
668	1986/08/18 06:00:00	1986/08/18 06:00:00	1	0	76.70%	0.07
669	1986/10/08 16:00:00	1986/10/08 16:00:00	1	0	76.80%	0.07
670	1986/12/30 16:00:00	1986/12/30 17:00:00	2	0	76.90%	0.07
671	1987/02/01 01:00:00	1987/02/01 01:00:00	1	0	77.00%	0.07
672	1987/02/13 19:00:00	1987/02/14 01:00:00	7	0	77.20%	0.07
673	1987/02/15 15:00:00	1987/02/15 15:00:00	1	0	77.30%	0.07
674	1987/03/06 12:00:00	1987/03/06 12:00:00	1	0	77.40%	0.07
675	1987/03/15 01:00:00	1987/03/15 01:00:00	1	0	77.50%	0.07
676	1987/03/21 16:00:00	1987/03/21 21:00:00	6	0	77.60%	0.07
677	1987/03/23 21:00:00	1987/03/23 21:00:00	1	0	77.70%	0.07
678	1987/05/01 01:00:00	1987/05/01 01:00:00	1	0	77.80%	0.07
679	1987/05/20 08:00:00	1987/05/20 08:00:00	1	0	78.00%	0.07
680	1987/07/18 00:00:00	1987/07/18 00:00:00	1	0	78.10%	0.07
681	1987/08/14 09:00:00	1987/08/14 09:00:00	1	0	78.20%	0.07
682	1987/09/01 01:00:00	1987/09/01 01:00:00	1	0	78.30%	0.07
683	1987/09/13 05:00:00	1987/09/13 05:00:00	1	0	78.40%	0.07
684	1987/10/07 09:00:00	1987/10/07 09:00:00	1	0	78.50%	0.07
685	1987/11/14 02:00:00	1987/11/14 04:00:00	3	0	78.60%	0.07
686	1987/11/17 21:00:00	1987/11/18 00:00:00	4	0	78.80%	0.07
687	1987/11/20 16:00:00	1987/11/20 17:00:00	2	0	78.90%	0.07
688	1987/12/07 05:00:00	1987/12/07 06:00:00	2	0	79.00%	0.07
689	1987/12/29 15:00:00	1987/12/30 06:00:00	16	0	79.10%	0.07
690	1988/02/01 01:00:00	1988/02/01 01:00:00	1	0	79.20%	0.07
691	1988/05/05 22:00:00	1988/05/05 22:00:00	1	0	79.30%	0.07
692	1988/05/29 04:00:00	1988/05/29 07:00:00	4	0	79.40%	0.07
693	1988/05/31 16:00:00	1988/05/31 16:00:00	1	0	79.60%	0.07
694	1988/11/23 22:00:00	1988/11/24 01:00:00	4	0	79.70%	0.07
695	1988/12/28 00:00:00	1988/12/28 01:00:00	2	0	79.80%	0.07
696	1989/01/04 08:00:00	1989/01/04 13:00:00	6	0	79.90%	0.07
697	1989/01/07 16:00:00	1989/01/07 20:00:00	5	0	80.00%	0.07
698	1989/01/28 14:00:00	1989/01/28 15:00:00	2	0	80.10%	0.06
699	1989/02/02 10:00:00	1989/02/02 14:00:00	5	0	80.30%	0.06
700	1989/03/02 19:00:00	1989/03/03 01:00:00	7	0	80.40%	0.06
701	1989/03/08 20:00:00	1989/03/08 20:00:00	1	0	80.50%	0.06
702	1989/04/12 06:00:00	1989/04/12 06:00:00	1	0	80.60%	0.06
703	1989/04/26 03:00:00	1989/04/26 03:00:00	1	0	80.70%	0.06
704	1989/05/15 12:00:00	1989/05/15 12:00:00	1	0	80.80%	0.06
705	1989/09/17 04:00:00	1989/09/17 16:00:00	13	0	80.90%	0.06
706	1989/09/19 10:00:00	1989/09/19 11:00:00	2	0	81.10%	0.06

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
707	1989/10/25 20:00:00	1989/10/25 20:00:00	1	0	81.20%	0.06
708	1989/11/26 08:00:00	1989/11/26 18:00:00	11	0	81.30%	0.06
709	1990/03/05 16:00:00	1990/03/05 16:00:00	1	0	81.40%	0.06
710	1990/03/12 12:00:00	1990/03/12 19:00:00	8	0	81.50%	0.06
711	1990/03/28 18:00:00	1990/03/28 18:00:00	1	0	81.60%	0.06
712	1990/04/16 21:00:00	1990/04/17 12:00:00	16	0	81.70%	0.06
713	1990/04/18 19:00:00	1990/04/19 19:00:00	25	0	81.90%	0.06
714	1990/04/25 00:00:00	1990/04/25 00:00:00	1	0	82.00%	0.06
715	1990/07/13 12:00:00	1990/07/13 12:00:00	1	0	82.10%	0.06
716	1990/08/06 00:00:00	1990/08/06 00:00:00	1	0	82.20%	0.06
717	1990/08/09 16:00:00	1990/08/09 16:00:00	1	0	82.30%	0.06
718	1990/12/15 22:00:00	1990/12/15 23:00:00	2	0	82.40%	0.06
719	1991/03/11 02:00:00	1991/03/11 07:00:00	6	0	82.50%	0.06
720	1991/04/21 03:00:00	1991/04/21 03:00:00	1	0	82.70%	0.06
721	1991/07/31 11:00:00	1991/07/31 11:00:00	1	0	82.80%	0.06
722	1991/09/20 17:00:00	1991/09/20 18:00:00	2	0	82.90%	0.06
723	1991/11/29 19:00:00	1991/11/29 19:00:00	1	0	83.00%	0.06
724	1991/12/08 17:00:00	1991/12/08 18:00:00	2	0	83.10%	0.06
725	1991/12/09 23:00:00	1991/12/11 09:00:00	35	0	83.20%	0.06
726	1992/03/06 18:00:00	1992/03/08 04:00:00	35	0	83.40%	0.06
727	1992/03/29 11:00:00	1992/03/29 11:00:00	1	0	83.50%	0.06
728	1992/05/05 22:00:00	1992/05/05 22:00:00	1	0	83.60%	0.06
729	1992/05/22 17:00:00	1992/05/22 19:00:00	3	0	83.70%	0.06
730	1992/08/13 16:00:00	1992/08/13 17:00:00	2	0	83.80%	0.06
731	1992/10/21 16:00:00	1992/10/21 16:00:00	1	0	83.90%	0.06
732	1992/10/23 04:00:00	1992/10/23 07:00:00	4	0	84.00%	0.06
733	1992/10/28 23:00:00	1992/10/29 03:00:00	5	0	84.20%	0.06
734	1992/10/30 17:00:00	1992/10/30 20:00:00	4	0	84.30%	0.06
735	1992/11/20 16:00:00	1992/11/20 16:00:00	1	0	84.40%	0.06
736	1992/11/22 23:00:00	1992/11/22 23:00:00	1	0	84.50%	0.06
737	1992/12/03 23:00:00	1992/12/04 20:00:00	22	0	84.60%	0.06
738	1992/12/11 17:00:00	1992/12/11 22:00:00	6	0	84.70%	0.06
739	1993/02/22 06:00:00	1993/02/22 06:00:00	1	0	84.80%	0.06
740	1993/02/26 15:00:00	1993/02/27 11:00:00	21	0	85.00%	0.06
741	1993/10/16 06:00:00	1993/10/16 06:00:00	1	0	85.10%	0.06
742	1993/11/30 04:00:00	1993/11/30 07:00:00	4	0	85.20%	0.06
743	1993/12/19 04:00:00	1993/12/19 09:00:00	6	0	85.30%	0.06
744	1994/02/11 07:00:00	1994/02/11 07:00:00	1	0	85.40%	0.06
745	1994/04/24 04:00:00	1994/04/24 05:00:00	2	0	85.50%	0.06
746	1994/05/08 09:00:00	1994/05/08 09:00:00	1	0	85.60%	0.06
747	1994/05/15 02:00:00	1994/05/15 02:00:00	1	0	85.80%	0.06
748	1994/11/16 08:00:00	1994/11/16 10:00:00	3	0	85.90%	0.06

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
749	1994/11/18 03:00:00	1994/11/18 06:00:00	4	0	86.00%	0.06
750	1994/11/26 11:00:00	1994/11/26 11:00:00	1	0	86.10%	0.06
751	1994/12/13 06:00:00	1994/12/13 07:00:00	2	0	86.20%	0.06
752	1994/12/17 15:00:00	1994/12/17 17:00:00	3	0	86.30%	0.06
753	1994/12/22 07:00:00	1994/12/22 22:00:00	16	0	86.50%	0.06
754	1995/03/03 05:00:00	1995/03/04 00:00:00	20	0	86.60%	0.06
755	1995/04/07 10:00:00	1995/04/07 11:00:00	2	0	86.70%	0.06
756	1995/05/06 02:00:00	1995/05/06 10:00:00	9	0	86.80%	0.06
757	1995/05/13 07:00:00	1995/05/13 12:00:00	6	0	86.90%	0.06
758	1995/05/14 21:00:00	1995/05/15 02:00:00	6	0	87.00%	0.06
759	1995/05/23 13:00:00	1995/05/23 13:00:00	1	0	87.10%	0.06
760	1995/07/16 08:00:00	1995/07/16 08:00:00	1	0	87.30%	0.06
761	1995/10/01 01:00:00	1995/10/01 01:00:00	1	0	87.40%	0.06
762	1995/11/01 03:00:00	1995/11/01 08:00:00	6	0	87.50%	0.06
763	1995/12/13 04:00:00	1995/12/14 09:00:00	30	0	87.60%	0.06
764	1996/01/16 19:00:00	1996/01/17 01:00:00	7	0	87.70%	0.06
765	1996/01/25 11:00:00	1996/01/25 20:00:00	10	0	87.80%	0.06
766	1996/01/28 08:00:00	1996/01/28 09:00:00	2	0	87.90%	0.06
767	1996/02/21 02:00:00	1996/02/22 01:00:00	24	0	88.10%	0.06
768	1996/05/24 15:00:00	1996/05/24 16:00:00	2	0	88.20%	0.06
769	1996/07/10 14:00:00	1996/07/10 14:00:00	1	0	88.30%	0.06
770	1996/07/19 10:00:00	1996/07/19 10:00:00	1	0	88.40%	0.06
771	1996/10/25 22:00:00	1996/10/25 22:00:00	1	0	88.50%	0.06
772	1996/11/29 02:00:00	1996/11/29 03:00:00	2	0	88.60%	0.06
773	1996/12/22 15:00:00	1996/12/22 20:00:00	6	0	88.70%	0.06
774	1996/12/27 16:00:00	1996/12/28 09:00:00	18	0	88.90%	0.06
775	1997/01/02 01:00:00	1997/01/02 02:00:00	2	0	89.00%	0.06
776	1997/02/17 18:00:00	1997/02/18 13:00:00	20	0	89.10%	0.06
777	1997/04/08 10:00:00	1997/04/08 10:00:00	1	0	89.20%	0.06
778	1997/05/24 07:00:00	1997/05/24 07:00:00	1	0	89.30%	0.06
779	1997/12/18 15:00:00	1997/12/18 18:00:00	4	0	89.40%	0.06
780	1997/12/21 08:00:00	1997/12/22 17:00:00	34	0	89.60%	0.06
781	1998/01/02 16:00:00	1998/01/04 21:00:00	54	0	89.70%	0.06
782	1998/01/13 11:00:00	1998/01/13 20:00:00	10	0	89.80%	0.06
783	1998/01/15 15:00:00	1998/01/16 17:00:00	27	0	89.90%	0.06
784	1998/01/19 04:00:00	1998/01/20 00:00:00	21	0	90.00%	0.06
785	1998/03/01 17:00:00	1998/03/01 17:00:00	1	0	90.10%	0.06
786	1998/03/06 04:00:00	1998/03/06 23:00:00	20	0	90.20%	0.06
787	1998/03/15 11:00:00	1998/03/15 19:00:00	9	0	90.40%	0.06
788	1998/04/06 17:00:00	1998/04/07 18:00:00	26	0	90.50%	0.06
789	1998/04/19 15:00:00	1998/04/19 18:00:00	4	0	90.60%	0.06
790	1998/04/28 11:00:00	1998/04/28 19:00:00	9	0	90.70%	0.06

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
791	1998/05/04 16:00:00	1998/05/06 17:00:00	50	0	90.80%	0.06
792	1998/05/26 17:00:00	1998/05/26 17:00:00	1	0	90.90%	0.06
793	1998/06/12 17:00:00	1998/06/12 17:00:00	1	0	91.00%	0.06
794	2000/01/01 09:00:00	2000/01/02 18:00:00	34	0	91.20%	0.06
795	2000/01/17 17:00:00	2000/01/17 17:00:00	1	0	91.30%	0.06
796	2000/01/25 12:00:00	2000/01/25 19:00:00	8	0	91.40%	0.06
797	2000/02/11 09:00:00	2000/02/11 20:00:00	12	0	91.50%	0.06
798	2000/02/28 15:00:00	2000/02/28 17:00:00	3	0	91.60%	0.06
799	2000/04/14 22:00:00	2000/04/14 22:00:00	1	0	91.70%	0.06
800	2000/04/21 19:00:00	2000/04/22 05:00:00	11	0	91.80%	0.06
801	2000/05/25 23:00:00	2000/05/26 00:00:00	2	0	92.00%	0.06
802	2000/09/23 02:00:00	2000/09/23 02:00:00	1	0	92.10%	0.06
803	2000/10/06 13:00:00	2000/10/06 13:00:00	1	0	92.20%	0.06
804	2000/10/10 08:00:00	2000/10/11 09:00:00	26	0	92.30%	0.06
805	2000/10/26 09:00:00	2000/10/27 02:00:00	18	0	92.40%	0.06
806	2000/11/22 21:00:00	2000/11/22 22:00:00	2	0	92.50%	0.06
807	2001/01/08 16:00:00	2001/01/09 05:00:00	14	0	92.70%	0.06
808	2001/01/15 21:00:00	2001/01/15 22:00:00	2	0	92.80%	0.06
809	2001/08/20 15:00:00	2001/08/21 17:00:00	27	0	92.90%	0.06
810	2001/11/04 16:00:00	2001/11/04 17:00:00	2	0	93.00%	0.06
811	2001/11/12 17:00:00	2001/11/13 19:00:00	27	0	93.10%	0.06
812	2001/11/29 09:00:00	2001/11/29 22:00:00	14	0	93.20%	0.06
813	2001/12/14 11:00:00	2001/12/15 17:00:00	31	0	93.30%	0.06
814	2001/12/30 16:00:00	2001/12/30 17:00:00	2	0	93.50%	0.06
815	2002/01/03 17:00:00	2002/01/03 17:00:00	1	0	93.60%	0.06
816	2002/01/28 03:00:00	2002/01/29 10:00:00	32	0	93.70%	0.06
817	2002/02/17 17:00:00	2002/02/18 17:00:00	25	0	93.80%	0.06
818	2002/03/16 06:00:00	2002/03/16 08:00:00	3	0	93.90%	0.06
819	2002/03/24 02:00:00	2002/03/24 04:00:00	3	0	94.00%	0.06
820	2002/04/15 09:00:00	2002/04/15 09:00:00	1	0	94.10%	0.06
821	2002/04/24 11:00:00	2002/04/24 14:00:00	4	0	94.30%	0.06
822	2002/04/26 09:00:00	2002/04/26 09:00:00	1	0	94.40%	0.06
823	2002/05/20 23:00:00	2002/05/20 23:00:00	1	0	94.50%	0.06
824	2002/09/06 16:00:00	2002/09/06 17:00:00	2	0	94.60%	0.06
825	2002/12/29 16:00:00	2002/12/29 17:00:00	2	0	94.70%	0.06
826	2003/03/04 16:00:00	2003/03/04 17:00:00	2	0	94.80%	0.05
827	2003/04/05 17:00:00	2003/04/05 17:00:00	1	0	94.90%	0.05
828	2003/04/17 11:00:00	2003/04/17 19:00:00	9	0	95.10%	0.05
829	2003/05/07 17:00:00	2003/05/07 17:00:00	1	0	95.20%	0.05
830	2003/06/10 17:00:00	2003/06/11 17:00:00	25	0	95.30%	0.05
831	2003/06/20 17:00:00	2003/06/20 17:00:00	1	0	95.40%	0.05
832	2003/07/30 07:00:00	2003/07/30 07:00:00	1	0	95.50%	0.05

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
833	2003/11/01 05:00:00	2003/11/01 05:00:00	1	0	95.60%	0.05
834	2003/11/03 18:00:00	2003/11/03 23:00:00	6	0	95.80%	0.05
835	2003/11/16 01:00:00	2003/11/16 03:00:00	3	0	95.90%	0.05
836	2003/12/07 21:00:00	2003/12/08 01:00:00	5	0	96.00%	0.05
837	2003/12/11 17:00:00	2003/12/11 18:00:00	2	0	96.10%	0.05
838	2004/01/02 19:00:00	2004/01/03 02:00:00	8	0	96.20%	0.05
839	2004/01/19 08:00:00	2004/01/19 11:00:00	4	0	96.30%	0.05
840	2004/01/25 03:00:00	2004/01/25 04:00:00	2	0	96.40%	0.05
841	2004/01/31 07:00:00	2004/01/31 08:00:00	2	0	96.60%	0.05
842	2004/03/26 10:00:00	2004/03/26 10:00:00	1	0	96.70%	0.05
843	2004/11/12 12:00:00	2004/11/12 12:00:00	1	0	96.80%	0.05
844	2004/12/08 07:00:00	2004/12/08 08:00:00	2	0	96.90%	0.05
845	2005/01/26 02:00:00	2005/01/27 01:00:00	24	0	97.00%	0.05
846	2005/02/07 08:00:00	2005/02/07 08:00:00	1	0	97.10%	0.05
847	2005/03/18 17:00:00	2005/03/20 05:00:00	37	0	97.20%	0.05
848	2005/03/24 15:00:00	2005/03/24 15:00:00	1	0	97.40%	0.05
849	2005/05/06 02:00:00	2005/05/06 02:00:00	1	0	97.50%	0.05
850	2005/07/23 05:00:00	2005/07/23 05:00:00	1	0	97.60%	0.05
851	2005/12/03 02:00:00	2005/12/03 03:00:00	2	0	97.70%	0.05
852	2006/03/03 17:00:00	2006/03/03 17:00:00	1	0	97.80%	0.05
853	2006/03/07 01:00:00	2006/03/08 06:00:00	30	0	97.90%	0.05
854	2006/03/26 00:00:00	2006/03/26 03:00:00	4	0	98.00%	0.05
855	2006/04/23 06:00:00	2006/04/23 06:00:00	1	0	98.20%	0.05
856	2006/07/29 00:00:00	2006/07/29 05:00:00	6	0	98.30%	0.05
857	2006/07/30 08:00:00	2006/07/31 07:00:00	24	0	98.40%	0.05
858	2006/11/27 10:00:00	2006/11/28 00:00:00	15	0	98.50%	0.05
859	2006/12/22 08:00:00	2006/12/22 09:00:00	2	0	98.60%	0.05
860	2006/12/27 07:00:00	2006/12/27 12:00:00	6	0	98.70%	0.05
861	2007/01/04 22:00:00	2007/01/05 03:00:00	6	0	98.90%	0.05
862	2007/02/11 12:00:00	2007/02/11 13:00:00	2	0	99.00%	0.05
863	2007/02/27 00:00:00	2007/02/27 00:00:00	1	0	99.10%	0.05
864	2007/03/21 04:00:00	2007/03/21 10:00:00	7	0	99.20%	0.05
865	2007/03/27 05:00:00	2007/03/27 16:00:00	12	0	99.30%	0.05
866	2007/05/23 01:00:00	2007/05/23 02:00:00	2	0	99.40%	0.05
867	2007/09/22 11:00:00	2007/09/22 11:00:00	1	0	99.50%	0.05
868	2007/10/13 03:00:00	2007/10/13 07:00:00	5	0	99.70%	0.05
869	2007/10/17 09:00:00	2007/10/17 09:00:00	1	0	99.80%	0.05
870	2008/01/21 08:00:00	2008/01/21 10:00:00	3	0	99.90%	0.05
--End of Data----------						


Flow Duration Curves
Pre Development
Post Development Mitigated
Q10 (19.2cfs)
Qlf (1.22cfs)
Flow Rate (cfs)
20
15
10
5
10-4
10-3
10-2
10-1
100
(%) Percent Time Exceedance

Compare Post-Development Curve to Pre-Development Curve
Flow Control Upper Limit: 19.2 (cfs)
Flow Control Lower Limit: 1.22 (cfs)

post-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
post-development time stamp: 1/7/2025 2:24:04 PM
Compared to:
pre-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
pre-development time stamp: 8/21/2024 3:53:58 PM

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
0	1.20	0.20	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
1	1.40	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
2	1.60	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
3	1.80	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
4	1.90	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
5	2.10	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
6	2.30	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
7	2.50	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
8	2.70	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
9	2.90	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
10	3.00	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
11	3.20	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
12	3.40	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
13	3.60	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
14	3.80	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
15	3.90	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
16	4.10	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
17	4.30	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
18	4.50	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
19	4.70	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
20	4.90	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
21	5.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
22	5.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
23	5.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
24	5.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
25	5.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
26	5.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
27	6.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
28	6.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
29	6.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
30	6.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
31	6.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
32	7.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
33	7.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
34	7.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
35	7.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
36	7.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
37	7.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
38	8.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
39	8.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
40	8.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
41	8.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
42	8.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
43	9.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
44	9.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
45	9.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
46	9.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
47	9.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
48	9.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
49	10.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
50	10.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
51	10.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
52	10.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
53	10.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
54	11.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
55	11.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
56	11.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
57	11.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
58	11.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
59	11.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
60	12.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
61	12.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
62	12.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
63	12.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
64	12.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
65	13.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
66	13.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
67	13.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
68	13.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
69	13.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
70	13.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
71	14.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
72	14.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
73	14.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
74	14.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
75	14.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
76	15.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
77	15.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
78	15.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
79	15.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
80	15.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
81	15.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
82	16.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
83	16.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
84	16.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
85	16.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
86	16.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
87	17.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
88	17.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
89	17.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
90	17.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
91	17.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
92	17.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
93	18.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
94	18.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
95	18.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
96	18.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
97	18.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
98	19.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
99	19.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Duration Table Summary at Project Discharge Point

file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
time stamp: 8/21/2024 3:53:58 PM

DISCHARGE		Number of periods when discharge was equal to or greater than DISCHARGE column but less than that shown on the next line		
Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1	1.2	93	943	0.246
2	1.4	79	850	0.222
3	1.6	75	771	0.201
4	1.8	45	696	0.182
5	1.9	32	651	0.170
6	2.1	46	619	0.162
7	2.3	34	573	0.150
8	2.5	27	539	0.141
9	2.7	32	512	0.134
10	2.9	35	480	0.125
11	3.0	21	445	0.116
12	3.2	41	424	0.111
13	3.4	42	383	0.100
14	3.6	42	341	0.089
15	3.8	41	299	0.078
16	3.9	13	258	0.067
17	4.1	11	245	0.064
18	4.3	10	234	0.061
19	4.5	8	224	0.059
20	4.7	11	216	0.056
21	4.9	14	205	0.054
22	5.0	16	191	0.050
23	5.2	10	175	0.046
24	5.4	10	165	0.043
25	5.6	16	155	0.040
26	5.8	13	139	0.036
27	5.9	11	126	0.033
28	6.1	10	115	0.030
29	6.3	3	105	0.027
30	6.5	4	102	0.027
31	6.7	2	98	0.026
32	6.9	5	96	0.025
33	7.0	1	91	0.024
34	7.2	5	90	0.024
35	7.4	6	85	0.022
36	7.6	4	79	0.021
37	7.8	8	75	0.020
38	7.9	1	67	0.018
39	8.1	4	66	0.017
40	8.3	3	62	0.016
41	8.5	4	59	0.015
42	8.7	2	55	0.014
43	8.8	3	53	0.014
44	9.0	1	50	0.013
45	9.2	1	49	0.013

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
46	9.4	0	48	0.013
47	9.6	1	48	0.013
48	9.8	1	47	0.012
49	9.9	2	46	0.012
50	10.1	0	44	0.011
51	10.3	2	44	0.011
52	10.5	3	42	0.011
53	10.7	1	39	0.010
54	10.8	0	38	0.010
55	11.0	1	38	0.010
56	11.2	2	37	0.010
57	11.4	0	35	0.009
58	11.6	2	35	0.009
59	11.8	2	33	0.009
60	11.9	4	31	0.008
61	12.1	0	27	0.007
62	12.3	2	27	0.007
63	12.5	1	25	0.007
64	12.7	1	24	0.006
65	12.8	2	23	0.006
66	13.0	4	21	0.005
67	13.2	1	17	0.004
68	13.4	1	16	0.004
69	13.6	0	15	0.004
70	13.8	0	15	0.004
71	13.9	0	15	0.004
72	14.1	0	15	0.004
73	14.3	0	15	0.004
74	14.5	0	15	0.004
75	14.7	0	15	0.004
76	14.8	0	15	0.004
77	15.0	0	15	0.004
78	15.2	0	15	0.004
79	15.4	0	15	0.004
80	15.6	0	15	0.004
81	15.7	3	15	0.004
82	15.9	1	12	0.003
83	16.1	0	11	0.003
84	16.3	1	11	0.003
85	16.5	2	10	0.003
86	16.7	2	8	0.002
87	16.8	1	6	0.002
88	17.0	1	5	0.001
89	17.2	1	4	0.001
90	17.4	0	3	0.001
91	17.6	0	3	0.001
92	17.7	0	3	0.001
93	17.9	1	3	0.001
94	18.1	0	2	0.001
95	18.3	1	2	0.001
96	18.5	0	1	0.000
97	18.7	0	1	0.000
98	18.8	1	1	0.000
99	19.0	0	0	0.000

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
100	19.2	0	0	0.000
---------End of Data----------				

Duration Table Summary at Project Discharge Point

file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
time stamp: 1/7/2025 2:24:04 PM

DISCHARGE		Number of periods when discharge was equal to or greater than DISCHARGE column but less than that shown on the next line		
Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1	1.2	246	704	0.184
2	1.4	77	458	0.120
3	1.6	42	381	0.100
4	1.8	48	339	0.089
5	1.9	23	291	0.076
6	2.1	20	268	0.070
7	2.3	22	248	0.065
8	2.5	12	226	0.059
9	2.7	8	214	0.056
10	2.9	13	206	0.054
11	3.0	6	193	0.050
12	3.2	12	187	0.049
13	3.4	23	175	0.046
14	3.6	9	152	0.040
15	3.8	7	143	0.037
16	3.9	9	136	0.036
17	4.1	11	127	0.033
18	4.3	4	116	0.030
19	4.5	1	112	0.029
20	4.7	3	111	0.029
21	4.9	4	108	0.028
22	5.0	8	104	0.027
23	5.2	6	96	0.025
24	5.4	5	90	0.024
25	5.6	2	85	0.022
26	5.8	1	83	0.022
27	5.9	4	82	0.021
28	6.1	3	78	0.020
29	6.3	1	75	0.020
30	6.5	2	74	0.019
31	6.7	4	72	0.019
32	6.9	5	68	0.018
33	7.0	3	63	0.016
34	7.2	0	60	0.016
35	7.4	1	60	0.016
36	7.6	2	59	0.015
37	7.8	2	57	0.015
38	7.9	0	55	0.014
39	8.1	1	55	0.014
40	8.3	0	54	0.014
41	8.5	1	54	0.014
42	8.7	0	53	0.014
43	8.8	3	53	0.014
44	9.0	2	50	0.013
45	9.2	4	48	0.013

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
46	9.4	0	44	0.011
47	9.6	3	44	0.011
48	9.8	1	41	0.011
49	9.9	2	40	0.010
50	10.1	2	38	0.010
51	10.3	2	36	0.009
52	10.5	1	34	0.009
53	10.7	1	33	0.009
54	10.8	1	32	0.008
55	11.0	2	31	0.008
56	11.2	1	29	0.008
57	11.4	0	28	0.007
58	11.6	0	28	0.007
59	11.8	1	28	0.007
60	11.9	0	27	0.007
61	12.1	0	27	0.007
62	12.3	1	27	0.007
63	12.5	1	26	0.007
64	12.7	4	25	0.007
65	12.8	2	21	0.005
66	13.0	2	19	0.005
67	13.2	1	17	0.004
68	13.4	0	16	0.004
69	13.6	1	16	0.004
70	13.8	0	15	0.004
71	13.9	0	15	0.004
72	14.1	2	15	0.004
73	14.3	1	13	0.003
74	14.5	0	12	0.003
75	14.7	0	12	0.003
76	14.8	0	12	0.003
77	15.0	0	12	0.003
78	15.2	1	12	0.003
79	15.4	0	11	0.003
80	15.6	1	11	0.003
81	15.7	2	10	0.003
82	15.9	1	8	0.002
83	16.1	3	7	0.002
84	16.3	0	4	0.001
85	16.5	1	4	0.001
86	16.7	1	3	0.001
87	16.8	0	2	0.001
88	17.0	0	2	0.001
89	17.2	0	2	0.001
90	17.4	0	2	0.001
91	17.6	0	2	0.001
92	17.7	0	2	0.001
93	17.9	0	2	0.001
94	18.1	1	2	0.001
95	18.3	0	1	0.000
96	18.5	1	1	0.000
97	18.7	0	0	0.000
98	18.8	0	0	0.000
99	19.0	0	0	0.000

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
100	19.2	0	0	0.000
---------End of Data----------				

END OF STATISTICS ANALYSIS

POC-3

STATISTICS ANALYSIS OF THE SWMM FILES FOR:

DISCHARGE NODE: POC-3

ANALYSIS DETAILS

Stream Susceptibility to Channel Erosion: High
Low Flow Threshold = (0.1)Q2 = (0.1)4.500 = Qlf = 0.4500 (cfs)
Flow Control Upper Limit = Q10 = 6.400 (cfs)
Assumed time between storms (hours): 24

PRE-DEVELOPMENT SWMM FILE

SWMM file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
SWMM file time stamp: 8/21/2024 3:53:58 PM
Selected Node to Analyze: POC-3

POST-DEVELOPMENT MITIGATED SWMM FILE

SWMM file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
SWMM file time stamp: 1/7/2025 2:24:04 PM
Selected Node to Analyze: POC-3

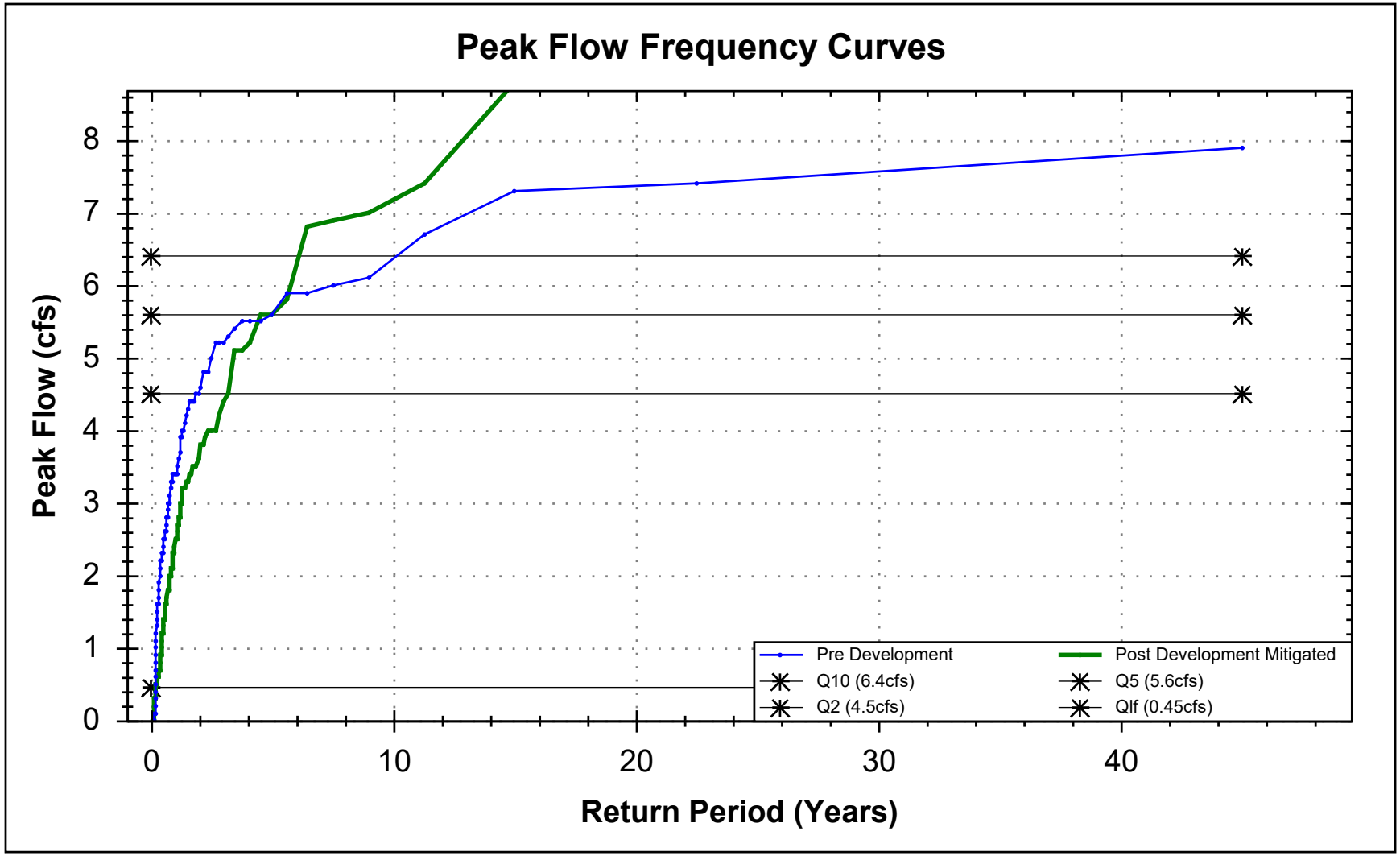
MITIGATED CONDITIONS RESULTS

For the Mitigated Conditions:

Peak Flow Conditions PASS
Flow Duration Conditions PASS

The Mitigated Conditions peak flow frequency curve is composed of 367 points. Of the points, 7 point(s) are above the flow control upper limit (Q10 = 6.4 (cfs)), 155 point(s) are below the low flow threshold value (Qlf = 0.45 (cfs)). Of the points within the flow control range (Qlf to Q10), 204 point(s) have a lower peak flow rate than pre-development conditions, and 1 point(s) have a peak flow that exceeds the pre-development by less than 10%. These points all pass. There are no points that failed, therefore the peak flow requirements have been met.

The Mitigated Conditions flow duration curve is composed of 100 flow bins (points). Each point represents the number of hours where the discharge was equal to or greater than the discharge value, but less than the next greater discharge value. Within the flow control range, comparing the post-development flow duration curve to the pre-development flow duration curve, 100 post-development curve point(s) have a lower flow duration than pre-development conditions. These points all pass. There are no points that failed, therefore the flow duration requirements have been met.


Peak Flow Frequency Curves
Peak Flow (cfs)
0
1
2
3
4
5
6
7
8
0
10
20
30
40
Return Period (Years)
Pre Development
Post Development Mitigated
Q10 (6.4cfs)
Q5 (5.6cfs)
Q2 (4.5cfs)
Qlf (0.45cfs)

Compare Post-Development Curve to Pre-Development Curve
Flow Control Upper Limit: 6.4 (cfs)
Flow Control Lower Limit: 0.45 (cfs)

post-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
post-development time stamp: 1/7/2025 2:24:04 PM
Compared to:
pre-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
pre-development time stamp: 8/21/2024 3:53:58 PM

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
0	45.00	9.90	7.90	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (6.4 (cfs))
1	22.50	9.60	7.40	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (6.4 (cfs))
2	15.00	8.80	7.30	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (6.4 (cfs))
3	11.30	7.40	6.70	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (6.4 (cfs))
4	9.00	7.00	6.10	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (6.4 (cfs))
5	7.50	6.90	6.00	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (6.4 (cfs))
6	6.40	6.80	5.90	FALSE	FALSE	FALSE	Pass- Qpost Above Q10 (6.4 (cfs))
7	5.60	5.80	5.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
8	5.00	5.60	5.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
9	4.50	5.60	5.50	FALSE	TRUE	FALSE	Pass- Qpost < 110% QPre
10	4.10	5.20	5.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
11	3.80	5.10	5.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
12	3.50	5.10	5.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
13	3.20	4.50	5.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
14	3.00	4.40	5.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
15	2.80	4.20	5.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
16	2.60	4.00	5.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
17	2.50	4.00	5.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
18	2.40	4.00	4.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
19	2.30	3.90	4.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
20	2.10	3.80	4.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
21	2.00	3.80	4.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
22	2.00	3.60	4.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
23	1.90	3.50	4.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
24	1.80	3.50	4.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
25	1.70	3.50	4.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
26	1.70	3.40	4.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
27	1.60	3.40	4.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
28	1.60	3.30	4.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
29	1.50	3.30	4.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
30	1.50	3.30	4.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
31	1.40	3.20	4.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
32	1.40	3.20	4.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
33	1.30	3.20	4.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
34	1.30	3.20	4.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
35	1.30	3.00	3.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
36	1.20	3.00	3.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
37	1.20	2.80	3.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
38	1.20	2.80	3.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
39	1.10	2.70	3.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
40	1.10	2.70	3.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
41	1.10	2.60	3.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
42	1.00	2.50	3.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
43	1.00	2.50	3.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
44	1.00	2.50	3.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
45	1.00	2.40	3.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
46	1.00	2.40	3.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
47	0.90	2.30	3.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
48	0.90	2.30	3.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
49	0.90	2.10	3.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
50	0.90	2.10	3.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
51	0.90	2.10	3.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
52	0.80	2.10	3.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
53	0.80	2.10	3.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
54	0.80	2.00	3.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
55	0.80	2.00	3.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
56	0.80	2.00	3.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
57	0.80	2.00	3.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
58	0.80	2.00	3.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
59	0.80	2.00	3.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
60	0.70	1.80	3.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
61	0.70	1.80	3.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
62	0.70	1.80	3.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
63	0.70	1.80	2.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
64	0.70	1.80	2.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
65	0.70	1.80	2.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
66	0.70	1.80	2.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
67	0.70	1.70	2.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
68	0.70	1.70	2.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
69	0.60	1.70	2.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
70	0.60	1.70	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
71	0.60	1.70	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
72	0.60	1.60	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
73	0.60	1.60	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
74	0.60	1.60	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
75	0.60	1.60	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
76	0.60	1.50	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
77	0.60	1.50	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
78	0.60	1.50	2.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
79	0.60	1.50	2.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
80	0.60	1.40	2.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
81	0.50	1.40	2.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
82	0.50	1.40	2.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
83	0.50	1.40	2.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
84	0.50	1.30	2.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
85	0.50	1.30	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
86	0.50	1.30	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
87	0.50	1.30	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
88	0.50	1.30	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
89	0.50	1.30	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
90	0.50	1.30	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
91	0.50	1.30	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
92	0.50	1.20	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
93	0.50	1.20	2.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
94	0.50	1.20	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
95	0.50	1.20	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
96	0.50	1.20	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
97	0.50	1.20	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
98	0.50	1.20	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
99	0.50	1.20	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
100	0.40	1.20	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
101	0.40	1.20	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
102	0.40	1.10	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
103	0.40	1.10	2.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
104	0.40	1.10	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
105	0.40	1.10	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
106	0.40	1.00	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
107	0.40	0.90	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
108	0.40	0.90	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
109	0.40	0.90	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
110	0.40	0.90	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
111	0.40	0.90	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
112	0.40	0.90	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
113	0.40	0.90	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
114	0.40	0.90	2.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
115	0.40	0.90	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
116	0.40	0.90	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
117	0.40	0.80	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
118	0.40	0.80	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
119	0.40	0.80	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
120	0.40	0.80	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
121	0.40	0.80	2.10	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
122	0.40	0.80	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
123	0.40	0.80	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
124	0.40	0.80	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
125	0.40	0.80	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
126	0.40	0.80	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
127	0.40	0.70	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
128	0.30	0.70	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
129	0.30	0.70	2.00	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
130	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
131	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
132	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
133	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
134	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
135	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
136	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
137	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
138	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
139	0.30	0.70	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
140	0.30	0.60	1.90	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
141	0.30	0.60	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
142	0.30	0.60	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
143	0.30	0.60	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
144	0.30	0.60	1.80	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
145	0.30	0.60	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
146	0.30	0.60	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
147	0.30	0.60	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
148	0.30	0.60	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
149	0.30	0.60	1.70	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
150	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
151	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
152	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
153	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
154	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
155	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
156	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
157	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
158	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
159	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
160	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
161	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
162	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
163	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
164	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
165	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
166	0.30	0.60	1.60	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
167	0.30	0.60	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
168	0.30	0.60	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
169	0.30	0.60	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
170	0.30	0.60	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
171	0.30	0.60	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
172	0.30	0.60	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
173	0.30	0.50	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
174	0.30	0.50	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
175	0.30	0.50	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
176	0.30	0.50	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
177	0.30	0.50	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
178	0.30	0.50	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
179	0.30	0.50	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
180	0.20	0.50	1.50	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
181	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
182	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
183	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
184	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
185	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
186	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
187	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
188	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
189	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
190	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
191	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
192	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
193	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
194	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
195	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
196	0.20	0.50	1.40	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
197	0.20	0.50	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
198	0.20	0.50	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
199	0.20	0.50	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
200	0.20	0.50	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
201	0.20	0.50	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
202	0.20	0.50	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
203	0.20	0.50	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
204	0.20	0.50	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
205	0.20	0.50	1.30	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
206	0.20	0.50	1.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
207	0.20	0.50	1.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
208	0.20	0.50	1.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
209	0.20	0.50	1.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
210	0.20	0.50	1.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
211	0.20	0.50	1.20	TRUE	FALSE	FALSE	Pass- Qpost < Qpre
212	0.20	0.40	1.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
213	0.20	0.40	1.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
214	0.20	0.40	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
215	0.20	0.40	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
216	0.20	0.40	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
217	0.20	0.40	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
218	0.20	0.40	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
219	0.20	0.40	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
220	0.20	0.40	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
221	0.20	0.40	1.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
222	0.20	0.40	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
223	0.20	0.40	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
224	0.20	0.40	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
225	0.20	0.40	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
226	0.20	0.40	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
227	0.20	0.40	1.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
228	0.20	0.40	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
229	0.20	0.40	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
230	0.20	0.40	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
231	0.20	0.40	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
232	0.20	0.40	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
233	0.20	0.40	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
234	0.20	0.40	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
235	0.20	0.40	0.90	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
236	0.20	0.40	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
237	0.20	0.40	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
238	0.20	0.40	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
239	0.20	0.40	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
240	0.20	0.40	0.80	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
241	0.20	0.40	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
242	0.20	0.40	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
243	0.20	0.40	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
244	0.20	0.40	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
245	0.20	0.30	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
246	0.20	0.30	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
247	0.20	0.30	0.70	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
248	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
249	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
250	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
251	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
252	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
253	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
254	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
255	0.20	0.30	0.60	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
256	0.20	0.30	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
257	0.20	0.30	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
258	0.20	0.30	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
259	0.20	0.30	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
260	0.20	0.30	0.50	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
261	0.20	0.30	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
262	0.20	0.30	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
263	0.20	0.30	0.40	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
264	0.20	0.30	0.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
265	0.20	0.30	0.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
266	0.20	0.30	0.30	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
267	0.20	0.30	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
268	0.20	0.30	0.20	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
269	0.20	0.30	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
270	0.20	0.30	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
271	0.20	0.30	0.10	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
272	0.20	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
273	0.20	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
274	0.20	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
275	0.10	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
276	0.10	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
277	0.10	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
278	0.10	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
279	0.10	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
280	0.10	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
281	0.10	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
282	0.10	0.30	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
283	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
284	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
285	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
286	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
287	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
288	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
289	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
290	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
291	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
292	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
293	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
294	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
295	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
296	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
297	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
298	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
299	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
300	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
301	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
302	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
303	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
304	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
305	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
306	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
307	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
308	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
309	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
310	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
311	0.10	0.20	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
312	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
313	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
314	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
315	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
316	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
317	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
318	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
319	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
320	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
321	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
322	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
323	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
324	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
325	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
326	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
327	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
328	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
329	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
330	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
331	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))

Post PT #	Rtn Prd (yrs)	Post Dev Q (cfs)	Pre Dev Q (cfs)	Qpost < Qpre	Qpost > Qpre	Qpost > 110% Qpre	Pass/Fail
332	0.10	0.10	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
333	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
334	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
335	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
336	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
337	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
338	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
339	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
340	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
341	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
342	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
343	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
344	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
345	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
346	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
347	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
348	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
349	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
350	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
351	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
352	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
353	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
354	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
355	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
356	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
357	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
358	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
359	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
360	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
361	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
362	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
363	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
364	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
365	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))
366	0.10	0.00	0.00	FALSE	FALSE	FALSE	Pass- Qpost Below Qlf (0.45 (cfs))

SWMM.out file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
SWMM.out time stamp: 8/21/2024 3:53:58 PM

Q10: 6.400 (cfs)
Q5: 5.600 (cfs)
Q2: 4.500 (cfs)

Peak Flow Statistics Table Values

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
1	1993/01/06 16:00:00	1993/01/10 19:00:00	100	7.9	0.30%	45
2	1971/02/23 05:00:00	1971/02/23 12:00:00	8	7.4	0.70%	22.5
3	1986/02/15 01:00:00	1986/02/15 12:00:00	12	7.3	1.00%	15
4	1995/01/25 08:00:00	1995/01/25 23:00:00	16	6.7	1.30%	11.25
5	1995/01/04 15:00:00	1995/01/04 23:00:00	9	6.1	1.70%	9
6	1998/02/14 14:00:00	1998/02/15 02:00:00	13	6	2.00%	7.5
7	1967/11/19 07:00:00	1967/11/20 04:00:00	22	5.9	2.30%	6.43
8	1983/12/25 06:00:00	1983/12/25 20:00:00	15	5.9	2.70%	5.63
9	1978/01/14 16:00:00	1978/01/16 14:00:00	47	5.6	3.00%	5
10	1966/12/05 01:00:00	1966/12/07 00:00:00	48	5.5	3.30%	4.5
11	1978/03/16 22:00:00	1978/03/18 15:00:00	42	5.5	3.70%	4.09
12	1988/04/20 08:00:00	1988/04/21 23:00:00	40	5.5	4.00%	3.75
13	1983/03/01 14:00:00	1983/03/03 09:00:00	44	5.4	4.30%	3.46
14	1981/02/09 05:00:00	1981/02/09 09:00:00	5	5.3	4.70%	3.21
15	1972/11/14 13:00:00	1972/11/14 16:00:00	4	5.2	5.00%	3
16	1983/11/25 00:00:00	1983/11/25 04:00:00	5	5.2	5.30%	2.81
17	2007/01/31 00:00:00	2007/01/31 01:00:00	2	5.2	5.60%	2.65
18	1967/04/11 10:00:00	1967/04/12 06:00:00	21	5	6.00%	2.5
19	2005/01/09 04:00:00	2005/01/09 23:00:00	20	4.8	6.30%	2.37
20	2005/01/11 02:00:00	2005/01/11 10:00:00	9	4.8	6.60%	2.25
21	2007/08/26 07:00:00	2007/08/26 09:00:00	3	4.8	7.00%	2.14
22	1969/01/24 07:00:00	1969/01/25 18:00:00	36	4.6	7.30%	2.05
23	1980/02/16 18:00:00	1980/02/21 00:00:00	103	4.5	7.60%	1.96
24	1998/01/09 16:00:00	1998/01/10 19:00:00	28	4.5	8.00%	1.88
25	1967/12/18 15:00:00	1967/12/19 16:00:00	26	4.4	8.30%	1.8
26	1980/01/28 08:00:00	1980/01/30 20:00:00	61	4.4	8.60%	1.73
27	1993/01/12 19:00:00	1993/01/14 06:00:00	36	4.4	9.00%	1.67
28	2007/11/30 10:00:00	2007/12/01 01:00:00	16	4.4	9.30%	1.61
29	1991/03/20 07:00:00	1991/03/21 08:00:00	26	4.3	9.60%	1.55
30	1992/02/15 13:00:00	1992/02/15 19:00:00	7	4.3	10.00%	1.5
31	2004/10/18 09:00:00	2004/10/18 12:00:00	4	4.2	10.30%	1.45
32	1998/02/03 16:00:00	1998/02/03 21:00:00	6	4.1	10.60%	1.41
33	1965/11/22 04:00:00	1965/11/23 06:00:00	27	4	11.00%	1.36
34	1993/02/08 01:00:00	1993/02/08 12:00:00	12	4	11.30%	1.32

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
35	2004/10/19 16:00:00	2004/10/20 17:00:00	26	4	11.60%	1.29
36	1980/03/02 21:00:00	1980/03/03 04:00:00	8	3.9	12.00%	1.25
37	1985/11/25 00:00:00	1985/11/25 07:00:00	8	3.9	12.30%	1.22
38	1981/03/19 21:00:00	1981/03/19 23:00:00	3	3.7	12.60%	1.18
39	1974/12/04 09:00:00	1974/12/04 11:00:00	3	3.6	13.00%	1.15
40	1982/03/18 02:00:00	1982/03/19 18:00:00	41	3.6	13.30%	1.13
41	1978/02/05 20:00:00	1978/02/06 23:00:00	28	3.5	13.60%	1.1
42	2006/04/04 18:00:00	2006/04/05 10:00:00	17	3.5	14.00%	1.07
43	1970/03/04 22:00:00	1970/03/05 02:00:00	5	3.4	14.30%	1.05
44	1970/11/29 14:00:00	1970/11/30 00:00:00	11	3.4	14.60%	1.02
45	1976/04/14 11:00:00	1976/04/14 12:00:00	2	3.4	15.00%	1
46	1979/01/17 12:00:00	1979/01/18 17:00:00	30	3.4	15.30%	0.98
47	1993/11/14 17:00:00	1993/11/14 18:00:00	2	3.4	15.60%	0.96
48	2003/02/25 17:00:00	2003/02/25 19:00:00	3	3.4	15.90%	0.94
49	2004/10/27 04:00:00	2004/10/27 10:00:00	7	3.4	16.30%	0.92
50	1979/01/05 08:00:00	1979/01/06 08:00:00	25	3.3	16.60%	0.9
51	1980/01/10 23:00:00	1980/01/11 15:00:00	17	3.3	16.90%	0.88
52	1983/02/27 17:00:00	1983/02/27 22:00:00	6	3.3	17.30%	0.87
53	2003/02/11 17:00:00	2003/02/13 19:00:00	51	3.3	17.60%	0.85
54	1973/02/11 05:00:00	1973/02/13 02:00:00	46	3.2	17.90%	0.83
55	1974/01/04 19:00:00	1974/01/05 04:00:00	10	3.2	18.30%	0.82
56	1978/12/17 19:00:00	1978/12/18 14:00:00	20	3.2	18.60%	0.8
57	1969/02/06 08:00:00	1969/02/06 12:00:00	5	3.1	18.90%	0.79
58	1976/03/03 00:00:00	1976/03/03 03:00:00	4	3.1	19.30%	0.78
59	1982/01/01 09:00:00	1982/01/01 12:00:00	4	3.1	19.60%	0.76
60	2004/02/26 06:00:00	2004/02/26 10:00:00	5	3.1	19.90%	0.75
61	1970/02/28 16:00:00	1970/03/02 08:00:00	41	3	20.30%	0.74
62	1977/05/08 18:00:00	1977/05/08 23:00:00	6	3	20.60%	0.73
63	1991/02/27 18:00:00	1991/03/01 14:00:00	45	3	20.90%	0.71
64	1965/12/13 01:00:00	1965/12/13 02:00:00	2	2.9	21.30%	0.7
65	1982/12/22 23:00:00	1982/12/23 01:00:00	3	2.9	21.60%	0.69
66	1995/03/05 08:00:00	1995/03/06 02:00:00	19	2.9	21.90%	0.68
67	1991/03/19 00:00:00	1991/03/19 05:00:00	6	2.8	22.30%	0.67
68	1998/02/08 16:00:00	1998/02/08 23:00:00	8	2.8	22.60%	0.66
69	2004/02/22 14:00:00	2004/02/23 04:00:00	15	2.8	22.90%	0.65
70	1985/11/29 08:00:00	1985/11/29 19:00:00	12	2.7	23.30%	0.64
71	1965/04/08 14:00:00	1965/04/10 01:00:00	36	2.6	23.60%	0.63
72	1976/12/31 09:00:00	1976/12/31 13:00:00	5	2.6	23.90%	0.63
73	1981/03/01 05:00:00	1981/03/01 17:00:00	13	2.6	24.30%	0.62
74	1983/03/20 20:00:00	1983/03/21 04:00:00	9	2.6	24.60%	0.61
75	1983/03/23 18:00:00	1983/03/23 23:00:00	6	2.6	24.90%	0.6
76	1992/02/06 17:00:00	1992/02/07 01:00:00	9	2.6	25.20%	0.59

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
77	1994/02/07 15:00:00	1994/02/07 22:00:00	8	2.6	25.60%	0.58
78	1994/03/25 00:00:00	1994/03/25 16:00:00	17	2.6	25.90%	0.58
79	1995/03/11 02:00:00	1995/03/12 02:00:00	25	2.6	26.20%	0.57
80	1970/12/21 03:00:00	1970/12/21 11:00:00	9	2.5	26.60%	0.56
81	1974/03/08 02:00:00	1974/03/08 15:00:00	14	2.5	26.90%	0.56
82	1991/12/29 16:00:00	1991/12/29 19:00:00	4	2.5	27.20%	0.55
83	1998/02/22 17:00:00	1998/02/24 20:00:00	52	2.5	27.60%	0.54
84	2003/03/15 17:00:00	2003/03/16 19:00:00	27	2.5	27.90%	0.54
85	2003/04/14 17:00:00	2003/04/14 18:00:00	2	2.5	28.20%	0.53
86	1965/12/09 06:00:00	1965/12/10 11:00:00	30	2.4	28.60%	0.52
87	1976/02/08 15:00:00	1976/02/09 04:00:00	14	2.4	28.90%	0.52
88	1979/03/01 13:00:00	1979/03/01 21:00:00	9	2.4	29.20%	0.51
89	1980/03/06 01:00:00	1980/03/06 15:00:00	15	2.4	29.60%	0.51
90	1983/01/27 08:00:00	1983/01/27 15:00:00	8	2.4	29.90%	0.5
91	1983/11/20 12:00:00	1983/11/21 11:00:00	24	2.4	30.20%	0.5
92	1988/12/24 22:00:00	1988/12/25 03:00:00	6	2.4	30.60%	0.49
93	1991/03/25 07:00:00	1991/03/27 13:00:00	55	2.4	30.90%	0.48
94	2006/01/02 14:00:00	2006/01/02 15:00:00	2	2.4	31.20%	0.48
95	1965/12/29 20:00:00	1965/12/29 22:00:00	3	2.3	31.60%	0.47
96	1967/01/24 18:00:00	1967/01/25 01:00:00	8	2.3	31.90%	0.47
97	1967/11/21 13:00:00	1967/11/21 15:00:00	3	2.3	32.20%	0.46
98	1972/12/04 15:00:00	1972/12/04 20:00:00	6	2.3	32.60%	0.46
99	1982/03/15 13:00:00	1982/03/16 01:00:00	13	2.3	32.90%	0.46
100	1987/01/07 00:00:00	1987/01/07 09:00:00	10	2.3	33.20%	0.45
101	1992/01/05 15:00:00	1992/01/06 04:00:00	14	2.3	33.60%	0.45
102	1996/01/31 18:00:00	1996/02/01 05:00:00	12	2.3	33.90%	0.44
103	1996/11/21 20:00:00	1996/11/22 04:00:00	9	2.3	34.20%	0.44
104	1998/02/17 17:00:00	1998/02/17 20:00:00	4	2.3	34.60%	0.43
105	1973/01/16 20:00:00	1973/01/16 23:00:00	4	2.2	34.90%	0.43
106	1975/03/08 09:00:00	1975/03/08 14:00:00	6	2.2	35.20%	0.43
107	1976/02/05 06:00:00	1976/02/07 10:00:00	53	2.2	35.50%	0.42
108	1978/03/12 14:00:00	1978/03/15 04:00:00	63	2.2	35.90%	0.42
109	1978/11/13 23:00:00	1978/11/14 00:00:00	2	2.2	36.20%	0.41
110	1992/02/12 18:00:00	1992/02/13 07:00:00	14	2.2	36.50%	0.41
111	1994/02/17 12:00:00	1994/02/17 14:00:00	3	2.2	36.90%	0.41
112	1994/04/28 00:00:00	1994/04/28 02:00:00	3	2.2	37.20%	0.4
113	2002/12/20 17:00:00	2002/12/20 21:00:00	5	2.2	37.50%	0.4
114	2004/02/03 00:00:00	2004/02/03 02:00:00	3	2.2	37.90%	0.4
115	2005/01/03 08:00:00	2005/01/04 13:00:00	30	2.2	38.20%	0.39
116	1964/11/17 18:00:00	1964/11/18 00:00:00	7	2.1	38.50%	0.39
117	1966/12/03 08:00:00	1966/12/03 21:00:00	14	2.1	38.90%	0.39
118	1967/01/22 19:00:00	1967/01/23 02:00:00	8	2.1	39.20%	0.38

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
119	1969/01/14 07:00:00	1969/01/14 13:00:00	7	2.1	39.50%	0.38
120	1973/03/11 13:00:00	1973/03/11 18:00:00	6	2.1	39.90%	0.38
121	1993/01/15 13:00:00	1993/01/18 19:00:00	79	2.1	40.20%	0.37
122	1998/02/06 17:00:00	1998/02/06 21:00:00	5	2.1	40.50%	0.37
123	1980/02/14 01:00:00	1980/02/14 12:00:00	12	2	40.90%	0.37
124	1986/11/17 22:00:00	1986/11/18 03:00:00	6	2	41.20%	0.36
125	1988/01/17 12:00:00	1988/01/17 22:00:00	11	2	41.50%	0.36
126	1990/01/17 03:00:00	1990/01/17 05:00:00	3	2	41.90%	0.36
127	1998/03/28 17:00:00	1998/03/29 18:00:00	26	2	42.20%	0.35
128	2002/12/16 17:00:00	2002/12/16 20:00:00	4	2	42.50%	0.35
129	2005/02/21 03:00:00	2005/02/21 18:00:00	16	2	42.90%	0.35
130	2005/02/22 19:00:00	2005/02/23 12:00:00	18	2	43.20%	0.35
131	1965/11/16 18:00:00	1965/11/17 00:00:00	7	1.9	43.50%	0.34
132	1973/11/22 23:00:00	1973/11/23 03:00:00	5	1.9	43.90%	0.34
133	1980/01/09 05:00:00	1980/01/09 20:00:00	16	1.9	44.20%	0.34
134	1986/03/10 16:00:00	1986/03/10 21:00:00	6	1.9	44.50%	0.34
135	1987/11/04 17:00:00	1987/11/05 00:00:00	8	1.9	44.90%	0.33
136	1993/03/28 03:00:00	1993/03/28 04:00:00	2	1.9	45.20%	0.33
137	1995/02/14 09:00:00	1995/02/14 11:00:00	3	1.9	45.50%	0.33
138	1996/12/09 18:00:00	1996/12/09 21:00:00	4	1.9	45.80%	0.33
139	1998/05/12 17:00:00	1998/05/12 20:00:00	4	1.9	46.20%	0.32
140	2001/01/11 04:00:00	2001/01/12 10:00:00	31	1.9	46.50%	0.32
141	2001/11/24 17:00:00	2001/11/24 18:00:00	2	1.9	46.80%	0.32
142	1992/12/29 14:00:00	1992/12/29 21:00:00	8	1.8	47.20%	0.32
143	1994/02/20 16:00:00	1994/02/20 17:00:00	2	1.8	47.50%	0.32
144	2002/11/08 17:00:00	2002/11/09 18:00:00	26	1.8	47.80%	0.31
145	2006/03/10 17:00:00	2006/03/11 05:00:00	13	1.8	48.20%	0.31
146	1968/03/08 10:00:00	1968/03/08 14:00:00	5	1.7	48.50%	0.31
147	1969/02/23 23:00:00	1969/02/26 00:00:00	50	1.7	48.80%	0.31
148	1974/01/06 13:00:00	1974/01/08 05:00:00	41	1.7	49.20%	0.3
149	1986/02/08 05:00:00	1986/02/08 08:00:00	4	1.7	49.50%	0.3
150	1987/12/16 19:00:00	1987/12/16 23:00:00	5	1.7	49.80%	0.3
151	1966/11/07 16:00:00	1966/11/07 19:00:00	4	1.6	50.20%	0.3
152	1969/01/20 09:00:00	1969/01/21 17:00:00	33	1.6	50.50%	0.3
153	1969/02/22 02:00:00	1969/02/22 08:00:00	7	1.6	50.80%	0.29
154	1970/03/08 12:00:00	1970/03/08 20:00:00	9	1.6	51.20%	0.29
155	1972/11/16 12:00:00	1972/11/16 18:00:00	7	1.6	51.50%	0.29
156	1973/03/08 13:00:00	1973/03/08 21:00:00	9	1.6	51.80%	0.29
157	1975/03/10 11:00:00	1975/03/11 15:00:00	29	1.6	52.20%	0.29
158	1975/04/08 03:00:00	1975/04/09 02:00:00	24	1.6	52.50%	0.29
159	1982/02/10 10:00:00	1982/02/10 22:00:00	13	1.6	52.80%	0.28
160	1983/01/29 02:00:00	1983/01/29 05:00:00	4	1.6	53.20%	0.28

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
161	1983/02/08 04:00:00	1983/02/08 07:00:00	4	1.6	53.50%	0.28
162	1983/03/18 04:00:00	1983/03/18 20:00:00	17	1.6	53.80%	0.28
163	1987/01/04 17:00:00	1987/01/05 00:00:00	8	1.6	54.20%	0.28
164	1995/03/23 12:00:00	1995/03/23 14:00:00	3	1.6	54.50%	0.27
165	2004/12/29 02:00:00	2004/12/29 07:00:00	6	1.6	54.80%	0.27
166	2005/01/07 14:00:00	2005/01/07 17:00:00	4	1.6	55.10%	0.27
167	2008/02/22 04:00:00	2008/02/22 11:00:00	8	1.6	55.50%	0.27
168	1965/12/14 15:00:00	1965/12/14 17:00:00	3	1.5	55.80%	0.27
169	1967/03/13 16:00:00	1967/03/13 23:00:00	8	1.5	56.10%	0.27
170	1971/12/25 05:00:00	1971/12/26 00:00:00	20	1.5	56.50%	0.27
171	1971/12/27 14:00:00	1971/12/28 16:00:00	27	1.5	56.80%	0.26
172	1979/03/27 10:00:00	1979/03/28 04:00:00	19	1.5	57.10%	0.26
173	1980/01/18 18:00:00	1980/01/19 01:00:00	8	1.5	57.50%	0.26
174	1986/03/15 22:00:00	1986/03/16 19:00:00	22	1.5	57.80%	0.26
175	1988/12/21 07:00:00	1988/12/21 08:00:00	2	1.5	58.10%	0.26
176	1992/12/07 11:00:00	1992/12/07 18:00:00	8	1.5	58.50%	0.26
177	1997/01/12 16:00:00	1997/01/13 13:00:00	22	1.5	58.80%	0.25
178	2000/02/21 17:00:00	2000/02/21 20:00:00	4	1.5	59.10%	0.25
179	2002/11/29 17:00:00	2002/11/29 20:00:00	4	1.5	59.50%	0.25
180	2008/01/05 05:00:00	2008/01/07 06:00:00	50	1.5	59.80%	0.25
181	2008/02/03 11:00:00	2008/02/03 16:00:00	6	1.5	60.10%	0.25
182	1970/12/19 02:00:00	1970/12/19 07:00:00	6	1.4	60.50%	0.25
183	1971/05/07 20:00:00	1971/05/07 22:00:00	3	1.4	60.80%	0.25
184	1973/01/18 21:00:00	1973/01/19 03:00:00	7	1.4	61.10%	0.25
185	1976/03/01 17:00:00	1976/03/01 20:00:00	4	1.4	61.50%	0.24
186	1976/11/12 02:00:00	1976/11/12 10:00:00	9	1.4	61.80%	0.24
187	1979/03/17 06:00:00	1979/03/17 09:00:00	4	1.4	62.10%	0.24
188	1980/03/10 18:00:00	1980/03/10 21:00:00	4	1.4	62.50%	0.24
189	1981/03/05 07:00:00	1981/03/05 16:00:00	10	1.4	62.80%	0.24
190	1982/11/30 12:00:00	1982/11/30 20:00:00	9	1.4	63.10%	0.24
191	1985/11/11 10:00:00	1985/11/11 17:00:00	8	1.4	63.50%	0.24
192	1988/11/25 11:00:00	1988/11/25 15:00:00	5	1.4	63.80%	0.23
193	1993/02/19 18:00:00	1993/02/20 00:00:00	7	1.4	64.10%	0.23
194	1995/01/07 19:00:00	1995/01/08 05:00:00	11	1.4	64.50%	0.23
195	1997/12/06 17:00:00	1997/12/06 19:00:00	3	1.4	64.80%	0.23
196	1998/04/11 17:00:00	1998/04/11 20:00:00	4	1.4	65.10%	0.23
197	2004/03/02 03:00:00	2004/03/02 05:00:00	3	1.4	65.40%	0.23
198	1965/12/16 06:00:00	1965/12/16 09:00:00	4	1.3	65.80%	0.23
199	1973/03/22 00:00:00	1973/03/22 03:00:00	4	1.3	66.10%	0.23
200	1976/09/10 06:00:00	1976/09/10 22:00:00	17	1.3	66.40%	0.23
201	1979/01/31 07:00:00	1979/02/01 12:00:00	30	1.3	66.80%	0.22
202	1983/04/30 04:00:00	1983/04/30 06:00:00	3	1.3	67.10%	0.22

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
203	1986/03/12 14:00:00	1986/03/12 15:00:00	2	1.3	67.40%	0.22
204	1990/01/14 04:00:00	1990/01/14 07:00:00	4	1.3	67.80%	0.22
205	1992/03/02 11:00:00	1992/03/02 12:00:00	2	1.3	68.10%	0.22
206	1998/03/25 17:00:00	1998/03/26 19:00:00	27	1.3	68.40%	0.22
207	1972/11/11 08:00:00	1972/11/11 10:00:00	3	1.2	68.80%	0.22
208	1976/04/13 00:00:00	1976/04/13 05:00:00	6	1.2	69.10%	0.22
209	1977/08/17 01:00:00	1977/08/17 11:00:00	11	1.2	69.40%	0.22
210	1986/09/25 03:00:00	1986/09/25 07:00:00	5	1.2	69.80%	0.21
211	1992/01/07 20:00:00	1992/01/07 23:00:00	4	1.2	70.10%	0.21
212	1993/02/23 23:00:00	1993/02/24 08:00:00	10	1.2	70.40%	0.21
213	1995/01/12 09:00:00	1995/01/12 15:00:00	7	1.2	70.80%	0.21
214	1996/02/25 10:00:00	1996/02/26 01:00:00	16	1.2	71.10%	0.21
215	1965/04/01 22:00:00	1965/04/02 03:00:00	6	1.1	71.40%	0.21
216	1967/04/22 03:00:00	1967/04/22 06:00:00	4	1.1	71.80%	0.21
217	1968/04/01 20:00:00	1968/04/01 21:00:00	2	1.1	72.10%	0.21
218	1969/02/18 18:00:00	1969/02/18 20:00:00	3	1.1	72.40%	0.21
219	1978/04/07 01:00:00	1978/04/07 03:00:00	3	1.1	72.80%	0.21
220	1979/02/21 05:00:00	1979/02/21 23:00:00	19	1.1	73.10%	0.21
221	1982/11/10 04:00:00	1982/11/11 02:00:00	23	1.1	73.40%	0.2
222	1996/01/21 19:00:00	1996/01/21 21:00:00	3	1.1	73.80%	0.2
223	2006/02/28 00:00:00	2006/02/28 08:00:00	9	1.1	74.10%	0.2
224	1975/04/06 12:00:00	1975/04/06 14:00:00	3	1	74.40%	0.2
225	1977/12/26 04:00:00	1977/12/26 19:00:00	16	1	74.80%	0.2
226	1978/03/31 03:00:00	1978/03/31 04:00:00	2	1	75.10%	0.2
227	1982/01/20 23:00:00	1982/01/21 02:00:00	4	1	75.40%	0.2
228	1983/05/01 07:00:00	1983/05/01 09:00:00	3	1	75.70%	0.2
229	1995/04/18 10:00:00	1995/04/18 12:00:00	3	1	76.10%	0.2
230	2002/03/17 23:00:00	2002/03/18 00:00:00	2	1	76.40%	0.2
231	1969/03/13 14:00:00	1969/03/13 19:00:00	6	0.9	76.70%	0.2
232	1973/03/20 09:00:00	1973/03/20 12:00:00	4	0.9	77.10%	0.19
233	1978/11/21 19:00:00	1978/11/21 21:00:00	3	0.9	77.40%	0.19
234	1982/03/28 18:00:00	1982/03/28 19:00:00	2	0.9	77.70%	0.19
235	1993/01/31 02:00:00	1993/01/31 03:00:00	2	0.9	78.10%	0.19
236	1994/04/26 21:00:00	1994/04/26 22:00:00	2	0.9	78.40%	0.19
237	2000/02/13 17:00:00	2000/02/13 19:00:00	3	0.9	78.70%	0.19
238	2005/03/22 23:00:00	2005/03/23 00:00:00	2	0.9	79.10%	0.19
239	2006/03/28 22:00:00	2006/03/29 02:00:00	5	0.9	79.40%	0.19
240	1978/01/30 12:00:00	1978/01/30 14:00:00	3	0.8	79.70%	0.19
241	1979/10/20 14:00:00	1979/10/20 16:00:00	3	0.8	80.10%	0.19
242	1985/12/02 23:00:00	1985/12/03 04:00:00	6	0.8	80.40%	0.19
243	1994/12/25 03:00:00	1994/12/25 04:00:00	2	0.8	80.70%	0.19
244	1996/12/11 14:00:00	1996/12/11 17:00:00	4	0.8	81.10%	0.18

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
245	1997/01/25 23:00:00	1997/01/26 10:00:00	12	0.8	81.40%	0.18
246	2006/03/21 02:00:00	2006/03/21 03:00:00	2	0.8	81.70%	0.18
247	1965/11/25 11:00:00	1965/11/25 14:00:00	4	0.7	82.10%	0.18
248	1969/01/26 19:00:00	1969/01/26 21:00:00	3	0.7	82.40%	0.18
249	1990/06/10 04:00:00	1990/06/10 06:00:00	3	0.7	82.70%	0.18
250	1992/03/23 04:00:00	1992/03/23 05:00:00	2	0.7	83.10%	0.18
251	1995/01/10 22:00:00	1995/01/11 00:00:00	3	0.7	83.40%	0.18
252	1995/12/20 17:00:00	1995/12/20 18:00:00	2	0.7	83.70%	0.18
253	2001/12/21 17:00:00	2001/12/21 19:00:00	3	0.7	84.10%	0.18
254	2008/02/14 12:00:00	2008/02/14 14:00:00	3	0.7	84.40%	0.18
255	1965/02/06 18:00:00	1965/02/06 19:00:00	2	0.6	84.70%	0.18
256	1969/01/28 20:00:00	1969/01/28 21:00:00	2	0.6	85.00%	0.18
257	1970/03/06 22:00:00	1970/03/07 02:00:00	5	0.6	85.40%	0.18
258	1970/03/11 12:00:00	1970/03/11 17:00:00	6	0.6	85.70%	0.17
259	1972/12/08 13:00:00	1972/12/08 15:00:00	3	0.6	86.00%	0.17
260	1973/03/06 23:00:00	1973/03/07 02:00:00	4	0.6	86.40%	0.17
261	1979/03/19 01:00:00	1979/03/20 04:00:00	28	0.6	86.70%	0.17
262	1980/03/26 00:00:00	1980/03/26 02:00:00	3	0.6	87.00%	0.17
263	1982/04/02 12:00:00	1982/04/02 17:00:00	6	0.6	87.40%	0.17
264	1983/03/22 13:00:00	1983/03/22 16:00:00	4	0.6	87.70%	0.17
265	1997/01/15 20:00:00	1997/01/15 21:00:00	2	0.6	88.00%	0.17
266	2003/12/25 19:00:00	2003/12/25 20:00:00	2	0.6	88.40%	0.17
267	2005/02/12 00:00:00	2005/02/12 13:00:00	14	0.6	88.70%	0.17
268	1965/04/03 08:00:00	1965/04/03 21:00:00	14	0.5	89.00%	0.17
269	1969/03/21 20:00:00	1969/03/21 21:00:00	2	0.5	89.40%	0.17
270	1975/02/10 02:00:00	1975/02/10 04:00:00	3	0.5	89.70%	0.17
271	1977/01/03 23:00:00	1977/01/04 01:00:00	3	0.5	90.00%	0.17
272	1979/02/02 16:00:00	1979/02/02 17:00:00	2	0.5	90.40%	0.17
273	1981/02/25 22:00:00	1981/02/25 23:00:00	2	0.5	90.70%	0.17
274	1983/12/03 17:00:00	1983/12/03 18:00:00	2	0.5	91.00%	0.16
275	1976/04/15 17:00:00	1976/04/15 18:00:00	2	0.4	91.40%	0.16
276	1987/11/02 03:00:00	1987/11/02 05:00:00	3	0.4	91.70%	0.16
277	2003/05/03 17:00:00	2003/05/03 18:00:00	2	0.4	92.00%	0.16
278	2005/02/18 06:00:00	2005/02/19 01:00:00	20	0.4	92.40%	0.16
279	2007/12/08 07:00:00	2007/12/08 08:00:00	2	0.4	92.70%	0.16
280	1973/02/28 05:00:00	1973/02/28 07:00:00	3	0.3	93.00%	0.16
281	1981/11/28 22:00:00	1981/11/29 00:00:00	3	0.3	93.40%	0.16
282	1995/12/23 10:00:00	1995/12/23 11:00:00	2	0.3	93.70%	0.16
283	1998/01/29 17:00:00	1998/01/29 19:00:00	3	0.3	94.00%	0.16
284	2000/02/17 17:00:00	2000/02/17 19:00:00	3	0.3	94.40%	0.16
285	1974/04/02 05:00:00	1974/04/02 08:00:00	4	0.2	94.70%	0.16
286	1986/03/13 17:00:00	1986/03/13 20:00:00	4	0.2	95.00%	0.16

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
287	1986/12/06 18:00:00	1986/12/06 19:00:00	2	0.2	95.30%	0.16
288	2004/12/31 16:00:00	2004/12/31 18:00:00	3	0.2	95.70%	0.16
289	1974/10/29 05:00:00	1974/10/29 09:00:00	5	0.1	96.00%	0.16
290	1975/12/11 23:00:00	1975/12/12 00:00:00	2	0.1	96.30%	0.16
291	1978/03/22 05:00:00	1978/03/22 06:00:00	2	0.1	96.70%	0.16
292	1983/02/25 00:00:00	1983/02/25 01:00:00	2	0.1	97.00%	0.15
293	1992/03/26 19:00:00	1992/03/26 20:00:00	2	0.1	97.30%	0.15
294	2005/04/28 09:00:00	2005/04/28 10:00:00	2	0.1	97.70%	0.15
295	1977/03/25 03:00:00	1977/03/25 04:00:00	2	0	98.00%	0.15
296	1994/03/19 04:00:00	1994/03/19 05:00:00	2	0	98.30%	0.15
297	1996/02/27 22:00:00	1996/02/27 23:00:00	2	0	98.70%	0.15
298	2000/10/30 00:00:00	2000/10/30 01:00:00	2	0	99.00%	0.15
299	2007/02/13 02:00:00	2007/02/13 03:00:00	2	0	99.30%	0.15
300	2008/01/23 22:00:00	2008/01/23 23:00:00	2	0	99.70%	0.15
--End of Data----------						

SWMM.out file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
SWMM.out time stamp: 1/7/2025 2:24:04 PM

Peak Flow Statistics Table Values

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
1	1995/01/03 07:00:00	1995/01/09 13:00:00	151	9.9	0.10%	45
2	1993/01/06 02:00:00	1993/01/20 03:00:00	338	9.6	0.30%	22.5
3	1966/12/03 05:00:00	1966/12/08 15:00:00	131	8.8	0.40%	15
4	1971/02/23 04:00:00	1971/02/24 20:00:00	41	7.4	0.50%	11.25
5	1978/01/10 17:00:00	1978/01/18 04:00:00	180	7	0.70%	9
6	1978/03/11 17:00:00	1978/03/19 14:00:00	190	6.9	0.80%	7.5
7	1983/02/24 09:00:00	1983/03/07 12:00:00	268	6.8	0.90%	6.43
8	1969/01/24 04:00:00	1969/01/30 00:00:00	141	5.8	1.10%	5.63
9	1980/01/27 20:00:00	1980/02/01 04:00:00	105	5.6	1.20%	5
10	1986/02/13 09:00:00	1986/02/17 05:00:00	93	5.6	1.30%	4.5
11	1965/11/21 23:00:00	1965/11/26 15:00:00	113	5.2	1.50%	4.09
12	1995/01/23 21:00:00	1995/01/28 13:00:00	113	5.1	1.60%	3.75
13	1998/02/14 02:00:00	1998/02/26 04:00:00	291	5.1	1.70%	3.46
14	1980/02/13 12:00:00	1980/02/22 14:00:00	219	4.5	1.90%	3.21
15	1967/11/19 03:00:00	1967/11/24 10:00:00	128	4.4	2.00%	3
16	1979/01/05 07:00:00	1979/01/07 20:00:00	62	4.2	2.10%	2.81
17	1988/04/19 23:00:00	1988/04/24 00:00:00	98	4	2.20%	2.65
18	1995/03/03 05:00:00	1995/03/07 12:00:00	104	4	2.40%	2.5
19	2004/10/17 08:00:00	2004/10/22 02:00:00	115	4	2.50%	2.37
20	1983/12/24 19:00:00	1983/12/28 20:00:00	98	3.9	2.60%	2.25
21	1981/02/08 17:00:00	1981/02/11 10:00:00	66	3.8	2.80%	2.14
22	1998/01/09 02:00:00	1998/01/12 03:00:00	74	3.8	2.90%	2.05
23	1972/11/14 12:00:00	1972/11/18 13:00:00	98	3.6	3.00%	1.96
24	1983/11/24 23:00:00	1983/11/26 05:00:00	31	3.5	3.20%	1.88
25	2005/01/07 04:00:00	2005/01/13 06:00:00	147	3.5	3.30%	1.8
26	2007/01/29 22:00:00	2007/02/01 14:00:00	65	3.5	3.40%	1.73
27	1992/02/12 18:00:00	1992/02/17 00:00:00	103	3.4	3.60%	1.67
28	1998/02/03 02:00:00	1998/02/10 14:00:00	181	3.4	3.70%	1.61
29	1980/01/07 14:00:00	1980/01/14 04:00:00	159	3.3	3.80%	1.55
30	1991/03/19 00:00:00	1991/03/22 09:00:00	82	3.3	4.00%	1.5
31	2007/08/26 07:00:00	2007/08/27 06:00:00	24	3.3	4.10%	1.45
32	1967/04/11 08:00:00	1967/04/13 02:00:00	43	3.2	4.20%	1.41
33	1967/12/16 13:00:00	1967/12/21 12:00:00	120	3.2	4.40%	1.36
34	1993/02/07 12:00:00	1993/02/11 00:00:00	85	3.2	4.50%	1.32

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
35	2007/11/30 07:00:00	2007/12/02 11:00:00	53	3.2	4.60%	1.29
36	2003/02/25 02:00:00	2003/03/01 07:00:00	102	3	4.80%	1.25
37	2004/02/26 01:00:00	2004/02/28 21:00:00	69	3	4.90%	1.22
38	1981/12/30 07:00:00	1982/01/03 13:00:00	103	2.8	5.00%	1.18
39	2004/10/27 02:00:00	2004/10/29 09:00:00	56	2.8	5.20%	1.15
40	1969/02/05 03:00:00	1969/02/07 20:00:00	66	2.7	5.30%	1.13
41	1970/03/04 21:00:00	1970/03/09 22:00:00	122	2.7	5.40%	1.1
42	1980/03/02 20:00:00	1980/03/04 18:00:00	47	2.6	5.60%	1.07
43	1982/03/15 12:00:00	1982/03/21 07:00:00	140	2.5	5.70%	1.05
44	1985/11/24 15:00:00	1985/11/28 01:00:00	83	2.5	5.80%	1.02
45	2003/02/11 03:00:00	2003/02/16 01:00:00	119	2.5	6.00%	1
46	1985/11/29 06:00:00	1985/12/01 04:00:00	47	2.4	6.10%	0.98
47	2003/04/13 17:00:00	2003/04/18 12:00:00	116	2.4	6.20%	0.96
48	1974/12/04 03:00:00	1974/12/05 18:00:00	40	2.3	6.30%	0.94
49	2005/12/31 16:00:00	2006/01/04 01:00:00	82	2.3	6.50%	0.92
50	1965/04/07 04:00:00	1965/04/12 18:00:00	135	2.1	6.60%	0.9
51	1967/01/22 16:00:00	1967/01/26 11:00:00	92	2.1	6.70%	0.88
52	1974/03/06 19:00:00	1974/03/09 18:00:00	72	2.1	6.90%	0.87
53	1978/12/16 22:00:00	1978/12/20 15:00:00	90	2.1	7.00%	0.85
54	1991/03/25 06:00:00	1991/03/28 20:00:00	87	2.1	7.10%	0.83
55	1965/11/14 08:00:00	1965/11/19 13:00:00	126	2	7.30%	0.82
56	1970/02/28 13:00:00	1970/03/03 14:00:00	74	2	7.40%	0.8
57	1976/02/03 17:00:00	1976/02/11 14:00:00	190	2	7.50%	0.79
58	1978/02/05 00:00:00	1978/02/08 00:00:00	73	2	7.70%	0.78
59	1979/01/15 14:00:00	1979/01/19 20:00:00	103	2	7.80%	0.76
60	1991/02/27 13:00:00	1991/03/02 20:00:00	80	2	7.90%	0.75
61	1965/12/29 08:00:00	1966/01/02 08:00:00	97	1.8	8.10%	0.74
62	1970/11/28 20:00:00	1970/12/01 06:00:00	59	1.8	8.20%	0.73
63	1992/02/06 08:00:00	1992/02/08 05:00:00	46	1.8	8.30%	0.71
64	2002/11/08 03:00:00	2002/11/11 09:00:00	79	1.8	8.50%	0.7
65	2003/03/15 03:00:00	2003/03/18 00:00:00	70	1.8	8.60%	0.69
66	2005/02/18 04:00:00	2005/02/24 16:00:00	157	1.8	8.70%	0.68
67	2006/04/04 18:00:00	2006/04/06 09:00:00	40	1.8	8.90%	0.67
68	1970/12/16 22:00:00	1970/12/23 12:00:00	159	1.7	9.00%	0.66
69	1977/05/08 10:00:00	1977/05/10 20:00:00	59	1.7	9.10%	0.65
70	1993/11/11 05:00:00	1993/11/15 20:00:00	112	1.7	9.30%	0.64
71	1994/02/03 20:00:00	1994/02/09 09:00:00	134	1.7	9.40%	0.63
72	2004/02/21 15:00:00	2004/02/24 10:00:00	68	1.7	9.50%	0.63
73	1969/02/18 09:00:00	1969/02/27 09:00:00	217	1.6	9.70%	0.62
74	1986/09/23 20:00:00	1986/09/26 17:00:00	70	1.6	9.80%	0.61
75	1987/01/04 13:00:00	1987/01/08 13:00:00	97	1.6	9.90%	0.6
76	1992/01/02 23:00:00	1992/01/09 02:00:00	148	1.6	10.10%	0.59

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
77	1965/12/09 04:00:00	1965/12/17 15:00:00	204	1.5	10.20%	0.58
78	1981/02/28 15:00:00	1981/03/06 15:00:00	145	1.5	10.30%	0.58
79	1983/03/15 10:00:00	1983/03/25 16:00:00	247	1.5	10.40%	0.57
80	1988/12/15 07:00:00	1988/12/28 18:00:00	324	1.5	10.60%	0.56
81	1974/01/04 17:00:00	1974/01/10 19:00:00	147	1.4	10.70%	0.56
82	1976/03/01 08:00:00	1976/03/04 08:00:00	73	1.4	10.80%	0.55
83	2001/11/24 03:00:00	2001/11/26 02:00:00	48	1.4	11.00%	0.54
84	2003/12/24 23:00:00	2003/12/27 00:00:00	50	1.4	11.10%	0.54
85	1971/12/22 05:00:00	1971/12/29 21:00:00	185	1.3	11.20%	0.53
86	1973/02/10 22:00:00	1973/02/14 03:00:00	78	1.3	11.40%	0.52
87	1986/03/08 15:00:00	1986/03/18 06:00:00	232	1.3	11.50%	0.52
88	1987/11/04 15:00:00	1987/11/06 18:00:00	52	1.3	11.60%	0.51
89	1990/01/13 04:00:00	1990/01/18 11:00:00	128	1.3	11.80%	0.51
90	1995/02/13 10:00:00	1995/02/16 08:00:00	71	1.3	11.90%	0.5
91	1996/11/21 16:00:00	1996/11/24 03:00:00	60	1.3	12.00%	0.5
92	2008/02/20 09:00:00	2008/02/25 13:00:00	125	1.3	12.20%	0.49
93	1969/01/17 11:00:00	1969/01/23 02:00:00	136	1.2	12.30%	0.48
94	1983/01/27 07:00:00	1983/01/30 08:00:00	74	1.2	12.40%	0.48
95	1983/02/05 17:00:00	1983/02/09 13:00:00	93	1.2	12.60%	0.47
96	1991/12/28 00:00:00	1991/12/31 07:00:00	80	1.2	12.70%	0.47
97	1994/03/24 21:00:00	1994/03/26 16:00:00	44	1.2	12.80%	0.46
98	1995/04/16 06:00:00	1995/04/20 00:00:00	91	1.2	13.00%	0.46
99	1996/01/31 04:00:00	1996/02/02 14:00:00	59	1.2	13.10%	0.46
100	2001/01/08 16:00:00	2001/01/13 18:00:00	123	1.2	13.20%	0.45
101	2004/03/02 00:00:00	2004/03/04 00:00:00	49	1.2	13.40%	0.45
102	2005/01/03 04:00:00	2005/01/06 01:00:00	70	1.2	13.50%	0.44
103	1973/01/16 15:00:00	1973/01/20 06:00:00	88	1.1	13.60%	0.44
104	1973/03/04 00:00:00	1973/03/09 20:00:00	141	1.1	13.80%	0.43
105	1976/04/11 19:00:00	1976/04/16 18:00:00	120	1.1	13.90%	0.43
106	2002/12/20 02:00:00	2002/12/22 23:00:00	70	1.1	14.00%	0.43
107	1975/03/05 14:00:00	1975/03/12 14:00:00	169	1	14.20%	0.42
108	1966/11/07 14:00:00	1966/11/08 22:00:00	33	0.9	14.30%	0.42
109	1976/12/30 13:00:00	1977/01/01 16:00:00	52	0.9	14.40%	0.41
110	1978/11/10 18:00:00	1978/11/15 14:00:00	117	0.9	14.60%	0.41
111	1980/03/06 00:00:00	1980/03/07 14:00:00	39	0.9	14.70%	0.41
112	1982/12/22 18:00:00	1982/12/24 04:00:00	35	0.9	14.80%	0.4
113	1992/12/27 16:00:00	1992/12/31 00:00:00	81	0.9	14.90%	0.4
114	1994/02/17 11:00:00	1994/02/21 22:00:00	108	0.9	15.10%	0.4
115	1995/03/11 02:00:00	1995/03/13 03:00:00	50	0.9	15.20%	0.39
116	1996/12/09 15:00:00	1996/12/13 00:00:00	82	0.9	15.30%	0.39
117	1998/03/25 04:00:00	1998/04/02 19:00:00	208	0.9	15.50%	0.39
118	1968/03/07 21:00:00	1968/03/09 13:00:00	41	0.8	15.60%	0.38

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
119	1969/01/13 17:00:00	1969/01/15 16:00:00	48	0.8	15.70%	0.38
120	1972/12/04 12:00:00	1972/12/05 23:00:00	36	0.8	15.90%	0.38
121	1979/03/01 07:00:00	1979/03/02 20:00:00	38	0.8	16.00%	0.37
122	1981/03/19 20:00:00	1981/03/21 09:00:00	38	0.8	16.10%	0.37
123	1986/11/17 18:00:00	1986/11/19 05:00:00	36	0.8	16.30%	0.37
124	1995/03/21 09:00:00	1995/03/24 21:00:00	85	0.8	16.40%	0.36
125	1998/05/12 03:00:00	1998/05/14 04:00:00	50	0.8	16.50%	0.36
126	2002/12/16 03:00:00	2002/12/18 11:00:00	57	0.8	16.70%	0.36
127	2008/02/03 06:00:00	2008/02/05 04:00:00	47	0.8	16.80%	0.35
128	1964/11/17 13:00:00	1964/11/19 01:00:00	37	0.7	16.90%	0.35
129	1973/11/22 19:00:00	1973/11/25 20:00:00	74	0.7	17.10%	0.35
130	1976/09/09 19:00:00	1976/09/11 18:00:00	48	0.7	17.20%	0.35
131	1976/11/11 22:00:00	1976/11/13 13:00:00	40	0.7	17.30%	0.34
132	1981/02/25 05:00:00	1981/02/27 02:00:00	46	0.7	17.50%	0.34
133	1985/12/02 12:00:00	1985/12/04 14:00:00	51	0.7	17.60%	0.34
134	1988/01/17 03:00:00	1988/01/19 01:00:00	47	0.7	17.70%	0.34
135	1993/01/31 01:00:00	1993/02/01 05:00:00	29	0.7	17.90%	0.33
136	1997/01/12 13:00:00	1997/01/17 00:00:00	108	0.7	18.00%	0.33
137	1997/01/23 03:00:00	1997/01/28 12:00:00	130	0.7	18.10%	0.33
138	2006/03/10 13:00:00	2006/03/13 22:00:00	82	0.7	18.30%	0.33
139	2008/01/05 01:00:00	2008/01/08 11:00:00	83	0.7	18.40%	0.32
140	2008/02/14 11:00:00	2008/02/15 18:00:00	32	0.7	18.50%	0.32
141	1967/03/13 11:00:00	1967/03/14 22:00:00	36	0.6	18.70%	0.32
142	1968/04/01 19:00:00	1968/04/03 08:00:00	38	0.6	18.80%	0.32
143	1969/03/21 13:00:00	1969/03/22 20:00:00	32	0.6	18.90%	0.32
144	1971/05/06 06:00:00	1971/05/08 23:00:00	66	0.6	19.00%	0.31
145	1972/11/11 01:00:00	1972/11/12 11:00:00	35	0.6	19.20%	0.31
146	1973/03/20 08:00:00	1973/03/23 02:00:00	67	0.6	19.30%	0.31
147	1977/08/16 14:00:00	1977/08/18 16:00:00	51	0.6	19.40%	0.31
148	1978/03/30 14:00:00	1978/04/03 13:00:00	96	0.6	19.60%	0.3
149	1978/04/07 01:00:00	1978/04/09 06:00:00	54	0.6	19.70%	0.3
150	1978/09/05 17:00:00	1978/09/08 08:00:00	64	0.6	19.80%	0.3
151	1979/02/21 01:00:00	1979/02/24 10:00:00	82	0.6	20.00%	0.3
152	1979/03/15 22:00:00	1979/03/22 05:00:00	152	0.6	20.10%	0.3
153	1979/10/19 22:00:00	1979/10/22 09:00:00	60	0.6	20.20%	0.29
154	1980/03/10 14:00:00	1980/03/11 20:00:00	31	0.6	20.40%	0.29
155	1982/11/09 13:00:00	1982/11/12 03:00:00	63	0.6	20.50%	0.29
156	1982/11/29 15:00:00	1982/12/01 23:00:00	57	0.6	20.60%	0.29
157	1983/04/29 02:00:00	1983/05/02 05:00:00	76	0.6	20.80%	0.29
158	1983/11/20 09:00:00	1983/11/22 12:00:00	52	0.6	20.90%	0.29
159	1983/12/03 15:00:00	1983/12/05 04:00:00	38	0.6	21.00%	0.28
160	1985/11/11 03:00:00	1985/11/13 10:00:00	56	0.6	21.20%	0.28

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
161	1986/02/07 19:00:00	1986/02/09 21:00:00	51	0.6	21.30%	0.28
162	1986/12/06 03:00:00	1986/12/08 11:00:00	57	0.6	21.40%	0.28
163	1987/12/04 21:00:00	1987/12/06 03:00:00	31	0.6	21.60%	0.28
164	1987/12/16 12:00:00	1987/12/20 21:00:00	106	0.6	21.70%	0.27
165	1988/11/23 22:00:00	1988/11/27 07:00:00	82	0.6	21.80%	0.27
166	1992/03/02 01:00:00	1992/03/04 17:00:00	65	0.6	22.00%	0.27
167	1992/12/07 08:00:00	1992/12/09 03:00:00	44	0.6	22.10%	0.27
168	1994/03/19 02:00:00	1994/03/21 08:00:00	55	0.6	22.20%	0.27
169	1996/01/21 18:00:00	1996/01/23 14:00:00	45	0.6	22.40%	0.27
170	2004/02/02 23:00:00	2004/02/05 04:00:00	54	0.6	22.50%	0.27
171	2004/12/28 06:00:00	2005/01/01 21:00:00	112	0.6	22.60%	0.26
172	2005/04/28 07:00:00	2005/04/29 21:00:00	39	0.6	22.80%	0.26
173	2006/02/27 19:00:00	2006/03/01 12:00:00	42	0.6	22.90%	0.26
174	1964/12/27 07:00:00	1964/12/29 23:00:00	65	0.5	23.00%	0.26
175	1965/02/06 00:00:00	1965/02/08 03:00:00	52	0.5	23.10%	0.26
176	1965/03/31 14:00:00	1965/04/05 22:00:00	129	0.5	23.30%	0.26
177	1966/02/06 10:00:00	1966/02/09 02:00:00	65	0.5	23.40%	0.25
178	1970/10/03 14:00:00	1970/10/04 15:00:00	26	0.5	23.50%	0.25
179	1971/05/28 01:00:00	1971/05/29 22:00:00	46	0.5	23.70%	0.25
180	1973/02/27 23:00:00	1973/03/01 07:00:00	33	0.5	23.80%	0.25
181	1973/03/11 11:00:00	1973/03/14 21:00:00	83	0.5	23.90%	0.25
182	1974/01/01 04:00:00	1974/01/03 01:00:00	46	0.5	24.10%	0.25
183	1974/04/02 01:00:00	1974/04/03 08:00:00	32	0.5	24.20%	0.25
184	1974/10/28 05:00:00	1974/10/30 13:00:00	57	0.5	24.30%	0.25
185	1975/04/05 21:00:00	1975/04/10 13:00:00	113	0.5	24.50%	0.24
186	1975/12/11 23:00:00	1975/12/13 23:00:00	49	0.5	24.60%	0.24
187	1977/03/24 11:00:00	1977/03/26 12:00:00	50	0.5	24.70%	0.24
188	1978/01/30 07:00:00	1978/02/01 06:00:00	48	0.5	24.90%	0.24
189	1978/11/21 18:00:00	1978/11/24 15:00:00	70	0.5	25.00%	0.24
190	1979/03/27 03:00:00	1979/03/30 08:00:00	78	0.5	25.10%	0.24
191	1980/01/18 04:00:00	1980/01/20 04:00:00	49	0.5	25.30%	0.24
192	1980/03/25 22:00:00	1980/03/27 01:00:00	28	0.5	25.40%	0.23
193	1980/12/04 13:00:00	1980/12/06 05:00:00	41	0.5	25.50%	0.23
194	1981/11/26 18:00:00	1981/11/30 12:00:00	91	0.5	25.70%	0.23
195	1982/01/20 03:00:00	1982/01/22 18:00:00	64	0.5	25.80%	0.23
196	1982/02/08 03:00:00	1982/02/11 23:00:00	93	0.5	25.90%	0.23
197	1986/01/30 01:00:00	1986/02/01 23:00:00	71	0.5	26.10%	0.23
198	1986/04/06 05:00:00	1986/04/07 16:00:00	36	0.5	26.20%	0.23
199	1986/10/08 16:00:00	1986/10/11 21:00:00	78	0.5	26.30%	0.23
200	1988/04/14 18:00:00	1988/04/16 15:00:00	46	0.5	26.50%	0.23
201	1989/03/25 09:00:00	1989/03/27 10:00:00	50	0.5	26.60%	0.22
202	1990/02/17 10:00:00	1990/02/20 05:00:00	68	0.5	26.70%	0.22

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
203	1993/02/18 13:00:00	1993/02/25 09:00:00	165	0.5	26.90%	0.22
204	1993/03/26 00:00:00	1993/03/29 03:00:00	76	0.5	27.00%	0.22
205	1995/01/10 16:00:00	1995/01/14 00:00:00	81	0.5	27.10%	0.22
206	1996/02/25 09:00:00	1996/02/29 00:00:00	88	0.5	27.20%	0.22
207	2000/10/29 20:00:00	2000/10/31 00:00:00	29	0.5	27.40%	0.22
208	2005/02/11 01:00:00	2005/02/14 02:00:00	74	0.5	27.50%	0.22
209	2005/03/22 19:00:00	2005/03/25 04:00:00	58	0.5	27.60%	0.22
210	2006/03/28 02:00:00	2006/03/30 05:00:00	52	0.5	27.80%	0.21
211	2006/05/22 04:00:00	2006/05/23 05:00:00	26	0.5	27.90%	0.21
212	2007/04/20 14:00:00	2007/04/21 14:00:00	25	0.5	28.00%	0.21
213	1964/11/09 12:00:00	1964/11/13 07:00:00	92	0.4	28.20%	0.21
214	1967/04/18 19:00:00	1967/04/23 02:00:00	104	0.4	28.30%	0.21
215	1968/02/13 09:00:00	1968/02/15 01:00:00	41	0.4	28.40%	0.21
216	1968/12/25 18:00:00	1968/12/27 14:00:00	45	0.4	28.60%	0.21
217	1969/03/10 02:00:00	1969/03/14 18:00:00	113	0.4	28.70%	0.21
218	1969/11/06 18:00:00	1969/11/08 04:00:00	35	0.4	28.80%	0.21
219	1970/03/11 10:00:00	1970/03/13 04:00:00	43	0.4	29.00%	0.21
220	1971/01/02 04:00:00	1971/01/03 22:00:00	43	0.4	29.10%	0.21
221	1975/11/27 17:00:00	1975/11/30 00:00:00	56	0.4	29.20%	0.2
222	1977/12/18 01:00:00	1977/12/19 11:00:00	35	0.4	29.40%	0.2
223	1977/12/25 11:00:00	1977/12/30 19:00:00	129	0.4	29.50%	0.2
224	1978/03/22 04:00:00	1978/03/24 13:00:00	58	0.4	29.60%	0.2
225	1979/01/29 09:00:00	1979/02/03 18:00:00	130	0.4	29.80%	0.2
226	1981/01/28 06:00:00	1981/01/31 23:00:00	90	0.4	29.90%	0.2
227	1981/03/26 22:00:00	1981/03/27 23:00:00	26	0.4	30.00%	0.2
228	1982/01/28 17:00:00	1982/01/30 03:00:00	35	0.4	30.20%	0.2
229	1983/10/01 04:00:00	1983/10/02 17:00:00	38	0.4	30.30%	0.2
230	1983/10/07 07:00:00	1983/10/08 09:00:00	27	0.4	30.40%	0.2
231	1985/02/01 15:00:00	1985/02/04 17:00:00	75	0.4	30.60%	0.2
232	1985/09/18 08:00:00	1985/09/19 10:00:00	27	0.4	30.70%	0.19
233	1988/01/05 13:00:00	1988/01/06 23:00:00	35	0.4	30.80%	0.19
234	1988/02/01 01:00:00	1988/02/03 20:00:00	68	0.4	31.00%	0.19
235	1990/06/09 09:00:00	1990/06/11 04:00:00	44	0.4	31.10%	0.19
236	1991/01/09 09:00:00	1991/01/10 19:00:00	35	0.4	31.20%	0.19
237	1991/10/26 20:00:00	1991/10/28 00:00:00	29	0.4	31.30%	0.19
238	1992/03/20 16:00:00	1992/03/24 08:00:00	89	0.4	31.50%	0.19
239	1992/03/26 16:00:00	1992/03/27 19:00:00	28	0.4	31.60%	0.19
240	1994/03/06 05:00:00	1994/03/08 10:00:00	54	0.4	31.70%	0.19
241	1994/04/24 04:00:00	1994/04/28 22:00:00	115	0.4	31.90%	0.19
242	1994/12/22 07:00:00	1994/12/26 11:00:00	101	0.4	32.00%	0.19
243	1995/12/20 17:00:00	1995/12/21 22:00:00	30	0.4	32.10%	0.19
244	1996/10/30 13:00:00	1996/10/31 16:00:00	28	0.4	32.30%	0.18

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
245	1998/04/11 06:00:00	1998/04/16 17:00:00	132	0.4	32.40%	0.18
246	2000/02/21 03:00:00	2000/02/24 01:00:00	71	0.4	32.50%	0.18
247	2000/04/17 16:00:00	2000/04/19 05:00:00	38	0.4	32.70%	0.18
248	2002/11/29 03:00:00	2002/12/01 04:00:00	50	0.4	32.80%	0.18
249	2004/02/18 16:00:00	2004/02/19 20:00:00	29	0.4	32.90%	0.18
250	2006/12/09 22:00:00	2006/12/11 21:00:00	48	0.4	33.10%	0.18
251	2008/01/23 19:00:00	2008/01/25 09:00:00	39	0.4	33.20%	0.18
252	1964/10/15 09:00:00	1964/10/16 13:00:00	29	0.3	33.30%	0.18
253	1965/01/24 07:00:00	1965/01/25 13:00:00	31	0.3	33.50%	0.18
254	1965/03/11 08:00:00	1965/03/16 04:00:00	117	0.3	33.60%	0.18
255	1966/10/10 12:00:00	1966/10/11 12:00:00	25	0.3	33.70%	0.18
256	1967/03/31 10:00:00	1967/04/03 03:00:00	66	0.3	33.90%	0.18
257	1968/12/19 14:00:00	1968/12/21 14:00:00	49	0.3	34.00%	0.18
258	1969/11/10 00:00:00	1969/11/11 04:00:00	29	0.3	34.10%	0.17
259	1970/01/15 02:00:00	1970/01/19 17:00:00	112	0.3	34.30%	0.17
260	1970/02/10 01:00:00	1970/02/12 08:00:00	56	0.3	34.40%	0.17
261	1971/03/13 06:00:00	1971/03/14 17:00:00	36	0.3	34.50%	0.17
262	1971/04/14 11:00:00	1971/04/17 05:00:00	67	0.3	34.70%	0.17
263	1971/10/16 04:00:00	1971/10/18 09:00:00	54	0.3	34.80%	0.17
264	1972/05/19 04:00:00	1972/05/21 09:00:00	54	0.3	34.90%	0.17
265	1972/12/07 04:00:00	1972/12/10 06:00:00	75	0.3	35.10%	0.17
266	1973/02/03 13:00:00	1973/02/04 23:00:00	35	0.3	35.20%	0.17
267	1973/11/17 06:00:00	1973/11/19 13:00:00	56	0.3	35.30%	0.17
268	1974/12/28 06:00:00	1974/12/30 14:00:00	57	0.3	35.40%	0.17
269	1975/02/03 09:00:00	1975/02/06 10:00:00	74	0.3	35.60%	0.17
270	1975/02/09 06:00:00	1975/02/11 05:00:00	48	0.3	35.70%	0.17
271	1975/03/22 08:00:00	1975/03/26 21:00:00	110	0.3	35.80%	0.17
272	1976/10/22 20:00:00	1976/10/24 12:00:00	41	0.3	36.00%	0.17
273	1976/11/27 04:00:00	1976/11/28 08:00:00	29	0.3	36.10%	0.17
274	1977/01/03 12:00:00	1977/01/05 04:00:00	41	0.3	36.20%	0.16
275	1977/03/16 12:00:00	1977/03/18 00:00:00	37	0.3	36.40%	0.16
276	1978/04/15 20:00:00	1978/04/16 20:00:00	25	0.3	36.50%	0.16
277	1979/02/14 03:00:00	1979/02/15 07:00:00	29	0.3	36.60%	0.16
278	1979/11/07 19:00:00	1979/11/10 03:00:00	57	0.3	36.80%	0.16
279	1982/03/26 21:00:00	1982/03/29 18:00:00	70	0.3	36.90%	0.16
280	1982/03/31 02:00:00	1982/04/04 05:00:00	100	0.3	37.00%	0.16
281	1982/11/19 02:00:00	1982/11/20 15:00:00	38	0.3	37.20%	0.16
282	1983/01/19 04:00:00	1983/01/20 11:00:00	32	0.3	37.30%	0.16
283	1983/04/17 22:00:00	1983/04/22 06:00:00	105	0.3	37.40%	0.16
284	1983/11/11 22:00:00	1983/11/14 06:00:00	57	0.3	37.60%	0.16
285	1983/12/09 18:00:00	1983/12/11 01:00:00	32	0.3	37.70%	0.16
286	1984/12/07 23:00:00	1984/12/09 05:00:00	31	0.3	37.80%	0.16

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
287	1985/02/09 05:00:00	1985/02/10 17:00:00	37	0.3	38.00%	0.16
288	1985/03/27 08:00:00	1985/03/29 09:00:00	50	0.3	38.10%	0.16
289	1985/12/09 16:00:00	1985/12/12 11:00:00	68	0.3	38.20%	0.16
290	1987/02/23 13:00:00	1987/02/27 05:00:00	89	0.3	38.40%	0.16
291	1987/04/03 04:00:00	1987/04/04 22:00:00	43	0.3	38.50%	0.16
292	1987/10/22 16:00:00	1987/10/24 21:00:00	54	0.3	38.60%	0.15
293	1990/01/02 03:00:00	1990/01/03 11:00:00	33	0.3	38.80%	0.15
294	1990/01/31 00:00:00	1990/02/01 06:00:00	31	0.3	38.90%	0.15
295	1992/02/09 23:00:00	1992/02/11 04:00:00	30	0.3	39.00%	0.15
296	1992/12/17 22:00:00	1992/12/19 08:00:00	35	0.3	39.20%	0.15
297	1993/11/22 22:00:00	1993/11/24 06:00:00	33	0.3	39.30%	0.15
298	1993/12/11 16:00:00	1993/12/13 06:00:00	39	0.3	39.40%	0.15
299	1994/01/25 00:00:00	1994/01/28 16:00:00	89	0.3	39.60%	0.15
300	1995/12/23 10:00:00	1995/12/24 15:00:00	30	0.3	39.70%	0.15
301	1996/03/12 17:00:00	1996/03/15 00:00:00	56	0.3	39.80%	0.15
302	1996/04/18 00:00:00	1996/04/19 04:00:00	29	0.3	39.90%	0.15
303	1997/04/03 17:00:00	1997/04/05 08:00:00	40	0.3	40.10%	0.15
304	1997/12/06 03:00:00	1997/12/09 03:00:00	73	0.3	40.20%	0.15
305	1998/01/29 03:00:00	1998/01/31 03:00:00	49	0.3	40.30%	0.15
306	2000/02/17 03:00:00	2000/02/19 01:00:00	47	0.3	40.50%	0.15
307	2001/01/26 11:00:00	2001/01/29 06:00:00	68	0.3	40.60%	0.15
308	2001/12/09 03:00:00	2001/12/11 03:00:00	49	0.3	40.70%	0.15
309	2001/12/21 03:00:00	2001/12/23 03:00:00	49	0.3	40.90%	0.15
310	2002/03/16 06:00:00	2002/03/19 03:00:00	70	0.3	41.00%	0.15
311	2004/11/21 05:00:00	2004/11/22 10:00:00	30	0.3	41.10%	0.15
312	2004/12/04 14:00:00	2004/12/06 22:00:00	57	0.3	41.30%	0.14
313	2005/03/04 15:00:00	2005/03/06 04:00:00	38	0.3	41.40%	0.14
314	2005/10/16 16:00:00	2005/10/19 10:00:00	67	0.3	41.50%	0.14
315	2006/03/17 20:00:00	2006/03/22 05:00:00	106	0.3	41.70%	0.14
316	2007/02/19 01:00:00	2007/02/20 18:00:00	42	0.3	41.80%	0.14
317	2007/12/07 04:00:00	2007/12/10 00:00:00	69	0.3	41.90%	0.14
318	2007/12/19 00:00:00	2007/12/22 07:00:00	80	0.3	42.10%	0.14
319	1965/12/21 23:00:00	1965/12/24 01:00:00	51	0.2	42.20%	0.14
320	1967/04/04 16:00:00	1967/04/05 16:00:00	25	0.2	42.30%	0.14
321	1967/08/31 02:00:00	1967/09/01 04:00:00	27	0.2	42.50%	0.14
322	1967/11/30 16:00:00	1967/12/02 01:00:00	34	0.2	42.60%	0.14
323	1967/12/13 10:00:00	1967/12/14 17:00:00	32	0.2	42.70%	0.14
324	1968/01/27 07:00:00	1968/01/29 11:00:00	53	0.2	42.90%	0.14
325	1968/03/17 02:00:00	1968/03/19 14:00:00	61	0.2	43.00%	0.14
326	1968/11/15 06:00:00	1968/11/16 21:00:00	40	0.2	43.10%	0.14
327	1969/02/15 18:00:00	1969/02/16 23:00:00	30	0.2	43.30%	0.14
328	1970/11/25 23:00:00	1970/11/27 13:00:00	39	0.2	43.40%	0.14

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
329	1971/01/12 19:00:00	1971/01/14 03:00:00	33	0.2	43.50%	0.14
330	1971/02/16 16:00:00	1971/02/18 12:00:00	45	0.2	43.70%	0.14
331	1971/12/03 00:00:00	1971/12/05 05:00:00	54	0.2	43.80%	0.14
332	1971/12/07 01:00:00	1971/12/08 06:00:00	30	0.2	43.90%	0.14
333	1971/12/31 04:00:00	1972/01/01 10:00:00	31	0.2	44.00%	0.14
334	1972/01/09 09:00:00	1972/01/11 04:00:00	44	0.2	44.20%	0.14
335	1972/10/17 09:00:00	1972/10/21 14:00:00	102	0.2	44.30%	0.13
336	1973/01/04 01:00:00	1973/01/05 21:00:00	45	0.2	44.40%	0.13
337	1973/01/09 10:00:00	1973/01/11 05:00:00	44	0.2	44.60%	0.13
338	1973/02/06 01:00:00	1973/02/08 16:00:00	64	0.2	44.70%	0.13
339	1973/12/01 15:00:00	1973/12/02 19:00:00	29	0.2	44.80%	0.13
340	1974/03/02 10:00:00	1974/03/04 13:00:00	52	0.2	45.00%	0.13
341	1974/03/27 09:00:00	1974/03/28 10:00:00	26	0.2	45.10%	0.13
342	1975/01/30 18:00:00	1975/02/01 01:00:00	32	0.2	45.20%	0.13
343	1975/03/14 02:00:00	1975/03/15 11:00:00	34	0.2	45.40%	0.13
344	1975/03/31 21:00:00	1975/04/02 02:00:00	30	0.2	45.50%	0.13
345	1977/01/06 19:00:00	1977/01/08 11:00:00	41	0.2	45.60%	0.13
346	1977/01/28 17:00:00	1977/01/29 23:00:00	31	0.2	45.80%	0.13
347	1977/02/22 01:00:00	1977/02/25 03:00:00	75	0.2	45.90%	0.13
348	1977/12/23 03:00:00	1977/12/24 10:00:00	32	0.2	46.00%	0.13
349	1979/01/09 08:00:00	1979/01/10 17:00:00	34	0.2	46.20%	0.13
350	1980/03/21 19:00:00	1980/03/23 00:00:00	30	0.2	46.30%	0.13
351	1980/04/21 04:00:00	1980/04/25 08:00:00	101	0.2	46.40%	0.13
352	1980/12/07 11:00:00	1980/12/08 16:00:00	30	0.2	46.60%	0.13
353	1982/01/05 04:00:00	1982/01/06 18:00:00	39	0.2	46.70%	0.13
354	1982/01/10 18:00:00	1982/01/12 01:00:00	32	0.2	46.80%	0.13
355	1982/12/07 23:00:00	1982/12/11 01:00:00	75	0.2	47.00%	0.13
356	1983/01/23 00:00:00	1983/01/25 23:00:00	72	0.2	47.10%	0.13
357	1983/02/02 12:00:00	1983/02/03 22:00:00	35	0.2	47.20%	0.13
358	1983/08/16 15:00:00	1983/08/19 11:00:00	69	0.2	47.40%	0.13
359	1985/02/20 20:00:00	1985/02/21 23:00:00	28	0.2	47.50%	0.13
360	1985/03/02 13:00:00	1985/03/04 01:00:00	37	0.2	47.60%	0.13
361	1986/07/19 12:00:00	1986/07/20 11:00:00	24	0.2	47.80%	0.13
362	1987/10/12 18:00:00	1987/10/13 19:00:00	26	0.2	47.90%	0.12
363	1987/10/28 19:00:00	1987/10/29 22:00:00	28	0.2	48.00%	0.12
364	1987/10/31 00:00:00	1987/11/03 06:00:00	79	0.2	48.10%	0.12
365	1988/02/29 22:00:00	1988/03/03 02:00:00	53	0.2	48.30%	0.12
366	1988/11/14 05:00:00	1988/11/15 12:00:00	32	0.2	48.40%	0.12
367	1989/01/04 08:00:00	1989/01/08 20:00:00	109	0.2	48.50%	0.12
368	1989/02/02 10:00:00	1989/02/05 16:00:00	79	0.2	48.70%	0.12
369	1990/02/04 11:00:00	1990/02/05 14:00:00	28	0.2	48.80%	0.12
370	1990/04/04 09:00:00	1990/04/06 07:00:00	47	0.2	48.90%	0.12

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
371	1990/11/26 02:00:00	1990/11/27 09:00:00	32	0.2	49.10%	0.12
372	1990/12/19 13:00:00	1990/12/21 09:00:00	45	0.2	49.20%	0.12
373	1991/01/03 12:00:00	1991/01/05 16:00:00	53	0.2	49.30%	0.12
374	1991/03/13 17:00:00	1991/03/16 20:00:00	76	0.2	49.50%	0.12
375	1993/01/02 03:00:00	1993/01/04 03:00:00	49	0.2	49.60%	0.12
376	1993/06/05 13:00:00	1993/06/06 12:00:00	24	0.2	49.70%	0.12
377	1993/12/14 17:00:00	1993/12/16 11:00:00	43	0.2	49.90%	0.12
378	1994/04/09 05:00:00	1994/04/10 11:00:00	31	0.2	50.00%	0.12
379	1994/11/10 11:00:00	1994/11/11 15:00:00	29	0.2	50.10%	0.12
380	1995/01/15 03:00:00	1995/01/18 12:00:00	82	0.2	50.30%	0.12
381	1995/01/21 02:00:00	1995/01/22 09:00:00	32	0.2	50.40%	0.12
382	1996/03/04 17:00:00	1996/03/06 03:00:00	35	0.2	50.50%	0.12
383	1997/01/05 09:00:00	1997/01/06 19:00:00	35	0.2	50.70%	0.12
384	1997/02/27 11:00:00	1997/03/01 03:00:00	41	0.2	50.80%	0.12
385	2000/02/11 10:00:00	2000/02/15 11:00:00	98	0.2	50.90%	0.12
386	2000/11/10 04:00:00	2000/11/12 08:00:00	53	0.2	51.10%	0.12
387	2001/04/21 00:00:00	2001/04/22 09:00:00	34	0.2	51.20%	0.12
388	2003/05/03 09:00:00	2003/05/04 18:00:00	34	0.2	51.30%	0.12
389	2003/11/12 03:00:00	2003/11/13 13:00:00	35	0.2	51.50%	0.12
390	2004/01/28 05:00:00	2004/01/29 10:00:00	30	0.2	51.60%	0.12
391	2004/04/01 22:00:00	2004/04/03 12:00:00	39	0.2	51.70%	0.12
392	2005/01/26 02:00:00	2005/01/30 07:00:00	102	0.2	51.90%	0.12
393	2006/04/14 13:00:00	2006/04/16 05:00:00	41	0.2	52.00%	0.12
394	2006/12/16 20:00:00	2006/12/18 09:00:00	38	0.2	52.10%	0.11
395	2007/02/11 12:00:00	2007/02/15 01:00:00	86	0.2	52.20%	0.11
396	2007/02/22 21:00:00	2007/02/24 07:00:00	35	0.2	52.40%	0.11
397	2007/04/22 23:00:00	2007/04/23 23:00:00	25	0.2	52.50%	0.11
398	2008/01/26 21:00:00	2008/01/29 16:00:00	68	0.2	52.60%	0.11
399	1964/09/24 14:00:00	1964/09/25 12:00:00	23	0.1	52.80%	0.11
400	1965/01/07 10:00:00	1965/01/08 17:00:00	32	0.1	52.90%	0.11
401	1966/02/10 15:00:00	1966/02/11 16:00:00	26	0.1	53.00%	0.11
402	1966/10/04 00:00:00	1966/10/06 12:00:00	61	0.1	53.20%	0.11
403	1967/03/04 00:00:00	1967/03/05 10:00:00	35	0.1	53.30%	0.11
404	1968/05/12 05:00:00	1968/05/13 04:00:00	24	0.1	53.40%	0.11
405	1968/07/09 21:00:00	1968/07/10 17:00:00	21	0.1	53.60%	0.11
406	1969/02/28 22:00:00	1969/03/02 02:00:00	29	0.1	53.70%	0.11
407	1969/04/05 20:00:00	1969/04/06 18:00:00	23	0.1	53.80%	0.11
408	1969/06/11 09:00:00	1969/06/12 07:00:00	23	0.1	54.00%	0.11
409	1969/12/08 19:00:00	1969/12/10 04:00:00	34	0.1	54.10%	0.11
410	1970/01/10 01:00:00	1970/01/13 08:00:00	80	0.1	54.20%	0.11
411	1970/04/30 09:00:00	1970/05/01 06:00:00	22	0.1	54.40%	0.11
412	1970/12/02 15:00:00	1970/12/03 18:00:00	28	0.1	54.50%	0.11

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
413	1970/12/09 05:00:00	1970/12/10 15:00:00	35	0.1	54.60%	0.11
414	1971/02/19 17:00:00	1971/02/21 08:00:00	40	0.1	54.80%	0.11
415	1971/04/23 07:00:00	1971/04/24 06:00:00	24	0.1	54.90%	0.11
416	1971/10/22 13:00:00	1971/10/26 11:00:00	95	0.1	55.00%	0.11
417	1972/04/30 04:00:00	1972/05/01 07:00:00	28	0.1	55.20%	0.11
418	1973/01/30 13:00:00	1973/01/31 16:00:00	28	0.1	55.30%	0.11
419	1973/03/27 03:00:00	1973/03/29 20:00:00	66	0.1	55.40%	0.11
420	1973/04/30 05:00:00	1973/05/01 08:00:00	28	0.1	55.60%	0.11
421	1973/12/20 14:00:00	1973/12/23 06:00:00	65	0.1	55.70%	0.11
422	1974/01/20 17:00:00	1974/01/22 02:00:00	34	0.1	55.80%	0.11
423	1974/11/01 23:00:00	1974/11/04 17:00:00	67	0.1	56.00%	0.11
424	1977/05/12 19:00:00	1977/05/13 20:00:00	26	0.1	56.10%	0.11
425	1977/05/24 06:00:00	1977/05/25 05:00:00	24	0.1	56.20%	0.11
426	1980/01/15 10:00:00	1980/01/16 13:00:00	28	0.1	56.30%	0.11
427	1980/03/18 08:00:00	1980/03/19 18:00:00	35	0.1	56.50%	0.11
428	1980/05/10 11:00:00	1980/05/11 08:00:00	22	0.1	56.60%	0.11
429	1980/12/11 14:00:00	1980/12/12 17:00:00	28	0.1	56.70%	0.11
430	1981/04/18 13:00:00	1981/04/20 06:00:00	42	0.1	56.90%	0.11
431	1981/10/11 06:00:00	1981/10/12 06:00:00	25	0.1	57.00%	0.1
432	1982/09/26 01:00:00	1982/09/27 14:00:00	38	0.1	57.10%	0.1
433	1982/12/29 19:00:00	1982/12/31 14:00:00	44	0.1	57.30%	0.1
434	1984/01/16 16:00:00	1984/01/18 01:00:00	34	0.1	57.40%	0.1
435	1984/04/06 06:00:00	1984/04/07 07:00:00	26	0.1	57.50%	0.1
436	1984/12/12 23:00:00	1984/12/17 08:00:00	106	0.1	57.70%	0.1
437	1984/12/18 14:00:00	1984/12/20 20:00:00	55	0.1	57.80%	0.1
438	1985/10/07 14:00:00	1985/10/10 16:00:00	75	0.1	57.90%	0.1
439	1986/01/02 15:00:00	1986/01/03 20:00:00	30	0.1	58.10%	0.1
440	1986/12/20 06:00:00	1986/12/21 16:00:00	35	0.1	58.20%	0.1
441	1987/02/13 19:00:00	1987/02/16 07:00:00	61	0.1	58.30%	0.1
442	1989/09/17 04:00:00	1989/09/18 07:00:00	28	0.1	58.50%	0.1
443	1989/10/21 23:00:00	1989/10/23 05:00:00	31	0.1	58.60%	0.1
444	1990/03/11 01:00:00	1990/03/13 17:00:00	65	0.1	58.70%	0.1
445	1990/05/28 04:00:00	1990/05/29 15:00:00	36	0.1	58.90%	0.1
446	1990/11/19 22:00:00	1990/11/21 08:00:00	35	0.1	59.00%	0.1
447	1991/03/11 02:00:00	1991/03/12 06:00:00	29	0.1	59.10%	0.1
448	1991/12/17 11:00:00	1991/12/20 11:00:00	73	0.1	59.30%	0.1
449	1992/03/06 18:00:00	1992/03/09 02:00:00	57	0.1	59.40%	0.1
450	1992/03/31 16:00:00	1992/04/01 23:00:00	32	0.1	59.50%	0.1
451	1992/10/28 23:00:00	1992/10/31 18:00:00	68	0.1	59.70%	0.1
452	1992/12/03 23:00:00	1992/12/05 22:00:00	48	0.1	59.80%	0.1
453	1993/02/26 15:00:00	1993/02/28 07:00:00	41	0.1	59.90%	0.1
454	1993/11/30 04:00:00	1993/12/01 09:00:00	30	0.1	60.10%	0.1

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
455	1994/11/16 08:00:00	1994/11/19 06:00:00	71	0.1	60.20%	0.1
456	1995/06/15 21:00:00	1995/06/18 06:00:00	58	0.1	60.30%	0.1
457	1995/12/13 04:00:00	1995/12/15 09:00:00	54	0.1	60.40%	0.1
458	1996/01/16 19:00:00	1996/01/18 04:00:00	34	0.1	60.60%	0.1
459	1996/02/21 02:00:00	1996/02/23 03:00:00	50	0.1	60.70%	0.1
460	1996/12/05 22:00:00	1996/12/07 14:00:00	41	0.1	60.80%	0.1
461	1996/12/22 15:00:00	1996/12/23 22:00:00	32	0.1	61.00%	0.1
462	1996/12/27 16:00:00	1996/12/29 10:00:00	43	0.1	61.10%	0.1
463	1997/01/02 01:00:00	1997/01/03 04:00:00	28	0.1	61.20%	0.1
464	1997/02/10 19:00:00	1997/02/12 02:00:00	32	0.1	61.40%	0.1
465	1997/12/21 09:00:00	1997/12/23 03:00:00	43	0.1	61.50%	0.1
466	1998/01/02 17:00:00	1998/01/05 23:00:00	79	0.1	61.60%	0.1
467	1998/01/13 12:00:00	1998/01/17 09:00:00	94	0.1	61.80%	0.1
468	1998/01/19 05:00:00	1998/01/21 01:00:00	45	0.1	61.90%	0.1
469	1998/03/06 06:00:00	1998/03/07 20:00:00	39	0.1	62.00%	0.1
470	2001/05/29 15:00:00	2001/05/30 12:00:00	22	0.1	62.20%	0.1
471	2001/11/29 10:00:00	2001/11/30 21:00:00	36	0.1	62.30%	0.1
472	2001/12/03 06:00:00	2001/12/05 00:00:00	43	0.1	62.40%	0.1
473	2001/12/14 12:00:00	2001/12/16 02:00:00	39	0.1	62.60%	0.1
474	2002/03/07 11:00:00	2002/03/08 23:00:00	37	0.1	62.70%	0.1
475	2002/04/24 11:00:00	2002/04/26 16:00:00	54	0.1	62.80%	0.1
476	2003/11/16 01:00:00	2003/11/17 04:00:00	28	0.1	63.00%	0.1
477	2003/12/07 21:00:00	2003/12/09 04:00:00	32	0.1	63.10%	0.09
478	2004/01/02 19:00:00	2004/01/04 04:00:00	34	0.1	63.20%	0.09
479	2004/04/17 13:00:00	2004/04/18 12:00:00	24	0.1	63.40%	0.09
480	2004/11/29 12:00:00	2004/11/30 14:00:00	27	0.1	63.50%	0.09
481	2006/02/17 23:00:00	2006/02/20 07:00:00	57	0.1	63.60%	0.09
482	2006/10/13 20:00:00	2006/10/15 11:00:00	40	0.1	63.80%	0.09
483	2006/11/27 10:00:00	2006/11/29 01:00:00	40	0.1	63.90%	0.09
484	2006/12/27 07:00:00	2006/12/28 14:00:00	32	0.1	64.00%	0.09
485	2007/02/27 00:00:00	2007/03/01 06:00:00	55	0.1	64.20%	0.09
486	1964/11/26 13:00:00	1964/11/27 07:00:00	19	0	64.30%	0.09
487	1965/03/07 01:00:00	1965/03/08 01:00:00	25	0	64.40%	0.09
488	1965/03/24 10:00:00	1965/03/25 15:00:00	30	0	64.60%	0.09
489	1965/05/24 09:00:00	1965/05/24 16:00:00	8	0	64.70%	0.09
490	1966/01/19 16:00:00	1966/01/21 03:00:00	36	0	64.80%	0.09
491	1966/02/25 03:00:00	1966/02/26 04:00:00	26	0	64.90%	0.09
492	1966/03/02 10:00:00	1966/03/03 09:00:00	24	0	65.10%	0.09
493	1966/03/13 15:00:00	1966/03/14 14:00:00	24	0	65.20%	0.09
494	1966/03/24 19:00:00	1966/03/25 18:00:00	24	0	65.30%	0.09
495	1966/05/10 05:00:00	1966/05/11 00:00:00	20	0	65.50%	0.09
496	1966/09/30 00:00:00	1966/10/01 09:00:00	34	0	65.60%	0.09

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
497	1966/10/18 12:00:00	1966/10/19 10:00:00	23	0	65.70%	0.09
498	1967/01/31 04:00:00	1967/02/01 06:00:00	27	0	65.90%	0.09
499	1967/03/11 09:00:00	1967/03/12 08:00:00	24	0	66.00%	0.09
500	1967/03/29 06:00:00	1967/03/30 05:00:00	24	0	66.10%	0.09
501	1967/04/24 11:00:00	1967/04/25 07:00:00	21	0	66.30%	0.09
502	1967/04/28 19:00:00	1967/04/29 15:00:00	21	0	66.40%	0.09
503	1967/06/09 07:00:00	1967/06/10 01:00:00	19	0	66.50%	0.09
504	1967/06/13 12:00:00	1967/06/14 11:00:00	24	0	66.70%	0.09
505	1967/07/26 21:00:00	1967/07/27 15:00:00	19	0	66.80%	0.09
506	1967/09/02 21:00:00	1967/09/03 17:00:00	21	0	66.90%	0.09
507	1967/09/29 21:00:00	1967/09/30 22:00:00	26	0	67.10%	0.09
508	1967/11/28 10:00:00	1967/11/29 11:00:00	26	0	67.20%	0.09
509	1967/12/08 01:00:00	1967/12/09 04:00:00	28	0	67.30%	0.09
510	1968/01/10 05:00:00	1968/01/11 08:00:00	28	0	67.50%	0.09
511	1968/02/10 04:00:00	1968/02/11 05:00:00	26	0	67.60%	0.09
512	1968/03/13 22:00:00	1968/03/14 21:00:00	24	0	67.70%	0.09
513	1968/06/07 07:00:00	1968/06/08 01:00:00	19	0	67.90%	0.09
514	1968/09/13 11:00:00	1968/09/14 07:00:00	21	0	68.00%	0.09
515	1968/10/30 10:00:00	1968/10/31 08:00:00	23	0	68.10%	0.09
516	1968/12/01 11:00:00	1968/12/02 14:00:00	28	0	68.30%	0.09
517	1969/04/03 02:00:00	1969/04/03 22:00:00	21	0	68.40%	0.09
518	1969/06/17 09:00:00	1969/06/18 03:00:00	19	0	68.50%	0.09
519	1969/08/10 05:00:00	1969/08/10 23:00:00	19	0	68.70%	0.09
520	1969/09/07 00:00:00	1969/09/07 20:00:00	21	0	68.80%	0.09
521	1969/11/15 21:00:00	1969/11/16 22:00:00	26	0	68.90%	0.09
522	1969/12/26 10:00:00	1969/12/27 13:00:00	28	0	69.00%	0.09
523	1971/05/03 09:00:00	1971/05/04 04:00:00	20	0	69.20%	0.09
524	1971/06/02 12:00:00	1971/06/03 06:00:00	19	0	69.30%	0.09
525	1971/06/05 14:00:00	1971/06/06 08:00:00	19	0	69.40%	0.09
526	1971/10/30 10:00:00	1971/10/31 08:00:00	23	0	69.60%	0.09
527	1971/11/13 13:00:00	1971/11/14 14:00:00	26	0	69.70%	0.09
528	1971/11/15 16:00:00	1971/11/16 17:00:00	26	0	69.80%	0.09
529	1971/11/29 06:00:00	1971/11/30 07:00:00	26	0	70.00%	0.09
530	1972/02/05 08:00:00	1972/02/07 10:00:00	51	0	70.10%	0.09
531	1972/04/13 03:00:00	1972/04/14 05:00:00	27	0	70.20%	0.09
532	1972/04/21 09:00:00	1972/04/22 05:00:00	21	0	70.40%	0.09
533	1972/06/07 04:00:00	1972/06/07 22:00:00	19	0	70.50%	0.08
534	1972/06/10 02:00:00	1972/06/10 20:00:00	19	0	70.60%	0.08
535	1972/06/22 13:00:00	1972/06/23 07:00:00	19	0	70.80%	0.08
536	1972/09/06 05:00:00	1972/09/07 17:00:00	37	0	70.90%	0.08
537	1972/10/11 15:00:00	1972/10/12 13:00:00	23	0	71.00%	0.08
538	1972/11/08 01:00:00	1972/11/09 02:00:00	26	0	71.20%	0.08

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
539	1973/01/25 21:00:00	1973/01/27 00:00:00	28	0	71.30%	0.08
540	1973/02/21 09:00:00	1973/02/22 10:00:00	26	0	71.40%	0.08
541	1973/04/21 10:00:00	1973/04/22 06:00:00	21	0	71.60%	0.08
542	1973/05/23 15:00:00	1973/05/24 10:00:00	20	0	71.70%	0.08
543	1973/05/28 10:00:00	1973/05/29 05:00:00	20	0	71.80%	0.08
544	1973/05/31 09:00:00	1973/06/01 03:00:00	19	0	72.00%	0.08
545	1973/12/16 15:00:00	1973/12/17 18:00:00	28	0	72.10%	0.08
546	1974/02/18 16:00:00	1974/02/20 20:00:00	53	0	72.20%	0.08
547	1974/06/08 12:00:00	1974/06/09 06:00:00	19	0	72.40%	0.08
548	1975/02/14 05:00:00	1975/02/15 06:00:00	26	0	72.50%	0.08
549	1975/04/17 03:00:00	1975/04/19 09:00:00	55	0	72.60%	0.08
550	1975/04/23 15:00:00	1975/04/24 11:00:00	21	0	72.80%	0.08
551	1975/05/20 02:00:00	1975/05/20 21:00:00	20	0	72.90%	0.08
552	1975/06/07 14:00:00	1975/06/08 08:00:00	19	0	73.00%	0.08
553	1975/10/28 22:00:00	1975/10/29 20:00:00	23	0	73.10%	0.08
554	1975/12/20 00:00:00	1975/12/21 03:00:00	28	0	73.30%	0.08
555	1976/04/04 09:00:00	1976/04/05 20:00:00	36	0	73.40%	0.08
556	1976/09/03 17:00:00	1976/09/04 13:00:00	21	0	73.50%	0.08
557	1976/09/14 11:00:00	1976/09/15 07:00:00	21	0	73.70%	0.08
558	1977/01/21 15:00:00	1977/01/22 18:00:00	28	0	73.80%	0.08
559	1977/04/02 01:00:00	1977/04/02 21:00:00	21	0	73.90%	0.08
560	1977/05/05 21:00:00	1977/05/06 16:00:00	20	0	74.10%	0.08
561	1977/08/12 11:00:00	1977/08/13 05:00:00	19	0	74.20%	0.08
562	1977/10/06 03:00:00	1977/10/07 01:00:00	23	0	74.30%	0.08
563	1977/11/06 02:00:00	1977/11/07 03:00:00	26	0	74.50%	0.08
564	1978/01/26 10:00:00	1978/01/27 13:00:00	28	0	74.60%	0.08
565	1978/04/26 09:00:00	1978/04/27 05:00:00	21	0	74.70%	0.08
566	1978/05/01 11:00:00	1978/05/02 06:00:00	20	0	74.90%	0.08
567	1978/09/19 13:00:00	1978/09/20 09:00:00	21	0	75.00%	0.08
568	1979/03/13 10:00:00	1979/03/14 09:00:00	24	0	75.10%	0.08
569	1979/05/19 15:00:00	1979/05/20 10:00:00	20	0	75.30%	0.08
570	1979/08/13 15:00:00	1979/08/14 09:00:00	19	0	75.40%	0.08
571	1979/11/04 07:00:00	1979/11/06 15:00:00	57	0	75.50%	0.08
572	1979/12/22 10:00:00	1979/12/23 13:00:00	28	0	75.70%	0.08
573	1980/04/28 17:00:00	1980/04/30 16:00:00	48	0	75.80%	0.08
574	1980/05/01 23:00:00	1980/05/02 18:00:00	20	0	75.90%	0.08
575	1980/10/26 10:00:00	1980/10/27 08:00:00	23	0	76.10%	0.08
576	1981/01/11 17:00:00	1981/01/12 20:00:00	28	0	76.20%	0.08
577	1981/03/14 02:00:00	1981/03/15 01:00:00	24	0	76.30%	0.08
578	1981/04/02 06:00:00	1981/04/03 17:00:00	36	0	76.50%	0.08
579	1981/05/16 11:00:00	1981/05/17 06:00:00	20	0	76.60%	0.08
580	1981/05/27 01:00:00	1981/05/27 20:00:00	20	0	76.70%	0.08

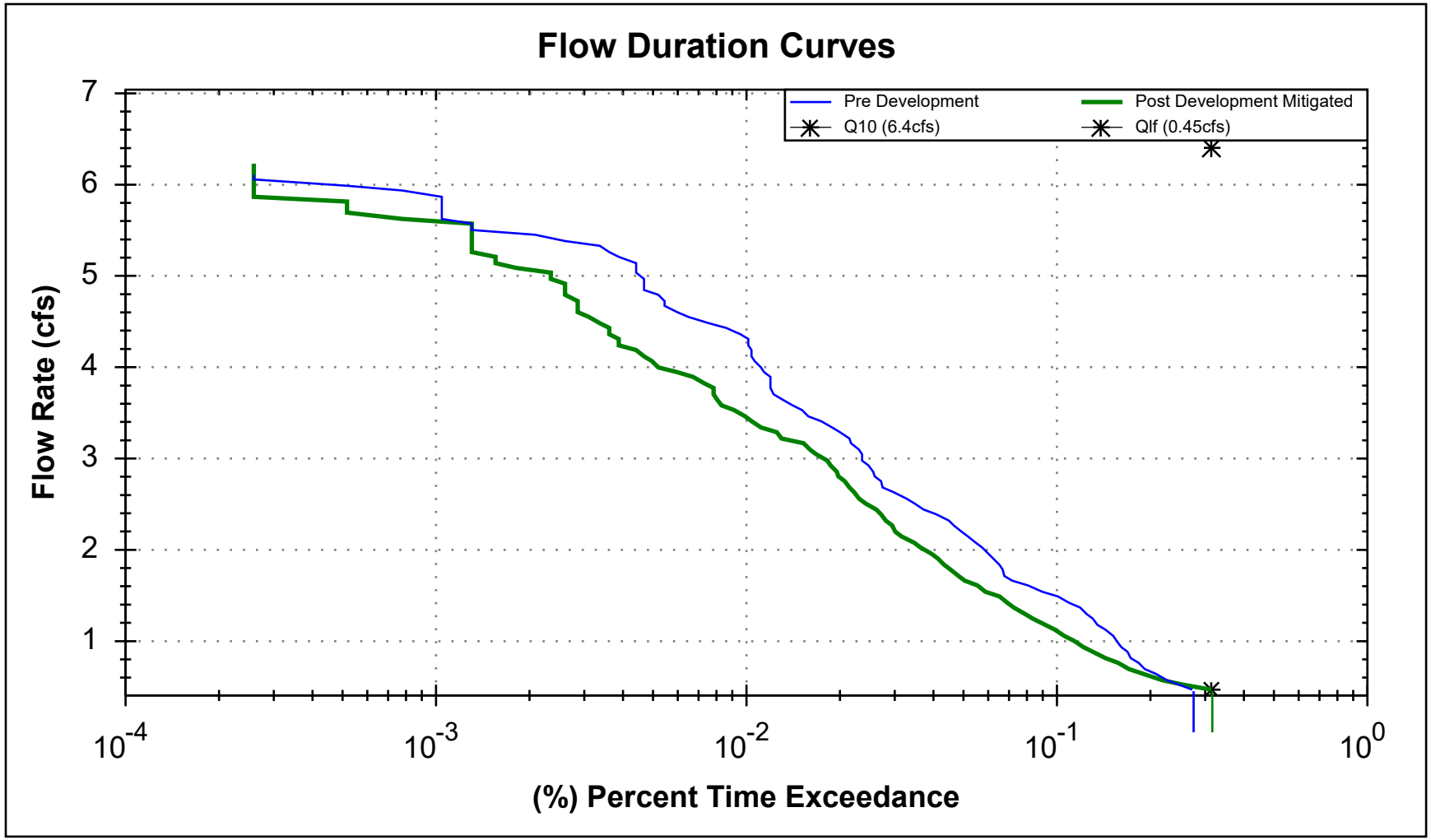
Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
581	1981/10/01 02:00:00	1981/10/02 00:00:00	23	0	76.90%	0.08
582	1981/10/28 23:00:00	1981/10/29 21:00:00	23	0	77.00%	0.08
583	1981/12/21 04:00:00	1981/12/22 07:00:00	28	0	77.10%	0.08
584	1982/02/05 14:00:00	1982/02/06 15:00:00	26	0	77.20%	0.08
585	1982/02/16 09:00:00	1982/02/17 10:00:00	26	0	77.40%	0.08
586	1982/03/02 19:00:00	1982/03/04 00:00:00	30	0	77.50%	0.08
587	1982/03/12 14:00:00	1982/03/13 13:00:00	24	0	77.60%	0.08
588	1982/04/05 15:00:00	1982/04/06 11:00:00	21	0	77.80%	0.08
589	1982/05/11 08:00:00	1982/05/12 03:00:00	20	0	77.90%	0.08
590	1982/05/26 13:00:00	1982/05/27 08:00:00	20	0	78.00%	0.08
591	1982/09/16 13:00:00	1982/09/17 09:00:00	21	0	78.20%	0.08
592	1982/09/22 13:00:00	1982/09/23 09:00:00	21	0	78.30%	0.08
593	1982/10/26 10:00:00	1982/10/27 08:00:00	23	0	78.40%	0.08
594	1982/10/31 15:00:00	1982/11/01 15:00:00	25	0	78.60%	0.08
595	1983/04/10 23:00:00	1983/04/13 20:00:00	70	0	78.70%	0.08
596	1983/08/07 09:00:00	1983/08/08 03:00:00	19	0	78.80%	0.08
597	1983/11/18 02:00:00	1983/11/19 03:00:00	26	0	79.00%	0.08
598	1983/12/22 11:00:00	1983/12/23 05:00:00	19	0	79.10%	0.08
599	1984/03/24 13:00:00	1984/03/25 13:00:00	25	0	79.20%	0.08
600	1984/10/17 08:00:00	1984/10/17 21:00:00	14	0	79.40%	0.08
601	1984/11/13 10:00:00	1984/11/14 09:00:00	24	0	79.50%	0.08
602	1984/11/22 16:00:00	1984/11/23 08:00:00	17	0	79.60%	0.08
603	1984/11/24 16:00:00	1984/11/25 08:00:00	17	0	79.80%	0.08
604	1985/01/09 13:00:00	1985/01/10 16:00:00	28	0	79.90%	0.08
605	1985/03/12 11:00:00	1985/03/13 10:00:00	24	0	80.00%	0.07
606	1985/04/21 14:00:00	1985/04/22 22:00:00	33	0	80.20%	0.07
607	1985/05/30 15:00:00	1985/05/31 11:00:00	21	0	80.30%	0.07
608	1985/06/02 22:00:00	1985/06/03 18:00:00	21	0	80.40%	0.07
609	1985/07/18 16:00:00	1985/07/19 00:00:00	9	0	80.60%	0.07
610	1985/08/10 14:00:00	1985/08/11 09:00:00	20	0	80.70%	0.07
611	1985/09/04 11:00:00	1985/09/05 05:00:00	19	0	80.80%	0.07
612	1985/10/22 00:00:00	1985/10/22 23:00:00	24	0	81.00%	0.07
613	1986/02/18 22:00:00	1986/02/20 06:00:00	33	0	81.10%	0.07
614	1986/05/22 10:00:00	1986/05/22 19:00:00	10	0	81.20%	0.07
615	1986/07/22 14:00:00	1986/07/23 03:00:00	14	0	81.30%	0.07
616	1986/08/18 06:00:00	1986/08/19 00:00:00	19	0	81.50%	0.07
617	1986/09/18 11:00:00	1986/09/19 08:00:00	22	0	81.60%	0.07
618	1986/12/30 16:00:00	1986/12/31 10:00:00	19	0	81.70%	0.07
619	1987/02/01 01:00:00	1987/02/01 17:00:00	17	0	81.90%	0.07
620	1987/03/06 12:00:00	1987/03/07 01:00:00	14	0	82.00%	0.07
621	1987/03/15 01:00:00	1987/03/15 14:00:00	14	0	82.10%	0.07
622	1987/03/21 16:00:00	1987/03/22 13:00:00	22	0	82.30%	0.07

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
623	1987/03/23 21:00:00	1987/03/24 10:00:00	14	0	82.40%	0.07
624	1987/05/01 01:00:00	1987/05/01 10:00:00	10	0	82.50%	0.07
625	1987/05/20 08:00:00	1987/05/21 01:00:00	18	0	82.70%	0.07
626	1987/07/18 00:00:00	1987/07/18 16:00:00	17	0	82.80%	0.07
627	1987/08/14 09:00:00	1987/08/14 17:00:00	9	0	82.90%	0.07
628	1987/09/01 01:00:00	1987/09/01 11:00:00	11	0	83.10%	0.07
629	1987/09/13 05:00:00	1987/09/13 15:00:00	11	0	83.20%	0.07
630	1987/10/07 09:00:00	1987/10/08 05:00:00	21	0	83.30%	0.07
631	1987/11/14 02:00:00	1987/11/15 04:00:00	27	0	83.50%	0.07
632	1987/11/17 21:00:00	1987/11/18 22:00:00	26	0	83.60%	0.07
633	1987/11/20 16:00:00	1987/11/21 15:00:00	24	0	83.70%	0.07
634	1987/12/07 05:00:00	1987/12/07 23:00:00	19	0	83.90%	0.07
635	1987/12/29 15:00:00	1987/12/31 07:00:00	41	0	84.00%	0.07
636	1988/05/05 22:00:00	1988/05/06 07:00:00	10	0	84.10%	0.07
637	1988/05/29 04:00:00	1988/05/30 01:00:00	22	0	84.30%	0.07
638	1988/05/31 16:00:00	1988/06/01 01:00:00	10	0	84.40%	0.07
639	1989/01/28 14:00:00	1989/01/29 08:00:00	19	0	84.50%	0.07
640	1989/03/02 19:00:00	1989/03/04 00:00:00	30	0	84.70%	0.07
641	1989/03/08 20:00:00	1989/03/09 09:00:00	14	0	84.80%	0.07
642	1989/04/12 06:00:00	1989/04/12 16:00:00	11	0	84.90%	0.07
643	1989/04/26 03:00:00	1989/04/26 13:00:00	11	0	85.10%	0.07
644	1989/05/15 12:00:00	1989/05/15 21:00:00	10	0	85.20%	0.07
645	1989/09/19 10:00:00	1989/09/20 04:00:00	19	0	85.30%	0.07
646	1989/10/25 20:00:00	1989/10/26 09:00:00	14	0	85.40%	0.07
647	1989/11/26 08:00:00	1989/11/27 17:00:00	34	0	85.60%	0.07
648	1990/03/05 16:00:00	1990/03/06 05:00:00	14	0	85.70%	0.07
649	1990/03/28 18:00:00	1990/03/29 17:00:00	24	0	85.80%	0.07
650	1990/04/16 21:00:00	1990/04/20 05:00:00	81	0	86.00%	0.07
651	1990/04/25 00:00:00	1990/04/25 10:00:00	11	0	86.10%	0.07
652	1990/07/13 12:00:00	1990/07/13 20:00:00	9	0	86.20%	0.07
653	1990/08/06 00:00:00	1990/08/06 18:00:00	19	0	86.40%	0.07
654	1990/08/09 16:00:00	1990/08/10 10:00:00	19	0	86.50%	0.07
655	1990/12/15 22:00:00	1990/12/16 16:00:00	19	0	86.60%	0.07
656	1991/04/21 03:00:00	1991/04/21 13:00:00	11	0	86.80%	0.07
657	1991/07/31 11:00:00	1991/08/01 05:00:00	19	0	86.90%	0.07
658	1991/09/20 17:00:00	1991/09/21 14:00:00	22	0	87.00%	0.07
659	1991/11/29 19:00:00	1991/11/30 11:00:00	17	0	87.20%	0.07
660	1991/12/08 17:00:00	1991/12/12 09:00:00	89	0	87.30%	0.07
661	1992/03/29 11:00:00	1992/03/30 00:00:00	14	0	87.40%	0.07
662	1992/05/05 22:00:00	1992/05/06 07:00:00	10	0	87.60%	0.07
663	1992/05/22 17:00:00	1992/05/23 14:00:00	22	0	87.70%	0.07
664	1992/08/13 16:00:00	1992/08/14 07:00:00	16	0	87.80%	0.07

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
665	1992/10/21 16:00:00	1992/10/24 06:00:00	63	0	88.00%	0.07
666	1992/11/20 16:00:00	1992/11/21 08:00:00	17	0	88.10%	0.07
667	1992/11/22 23:00:00	1992/11/23 15:00:00	17	0	88.20%	0.07
668	1992/12/11 17:00:00	1992/12/12 23:00:00	31	0	88.40%	0.07
669	1993/10/16 06:00:00	1993/10/16 19:00:00	14	0	88.50%	0.07
670	1993/12/19 04:00:00	1993/12/20 08:00:00	29	0	88.60%	0.07
671	1994/02/11 07:00:00	1994/02/11 23:00:00	17	0	88.80%	0.07
672	1994/05/08 09:00:00	1994/05/08 18:00:00	10	0	88.90%	0.07
673	1994/05/15 02:00:00	1994/05/15 11:00:00	10	0	89.00%	0.07
674	1994/11/26 11:00:00	1994/11/27 03:00:00	17	0	89.20%	0.07
675	1994/12/13 06:00:00	1994/12/14 00:00:00	19	0	89.30%	0.07
676	1994/12/17 15:00:00	1994/12/18 17:00:00	27	0	89.40%	0.07
677	1995/04/07 10:00:00	1995/04/08 04:00:00	19	0	89.60%	0.07
678	1995/05/06 02:00:00	1995/05/07 05:00:00	28	0	89.70%	0.07
679	1995/05/13 07:00:00	1995/05/15 20:00:00	62	0	89.80%	0.07
680	1995/05/23 13:00:00	1995/05/23 22:00:00	10	0	89.90%	0.07
681	1995/07/16 08:00:00	1995/07/16 16:00:00	9	0	90.10%	0.07
682	1995/10/01 01:00:00	1995/10/01 14:00:00	14	0	90.20%	0.07
683	1995/11/01 03:00:00	1995/11/02 08:00:00	30	0	90.30%	0.07
684	1996/01/25 11:00:00	1996/01/26 21:00:00	35	0	90.50%	0.07
685	1996/01/28 08:00:00	1996/01/29 02:00:00	19	0	90.60%	0.07
686	1996/07/10 14:00:00	1996/07/10 22:00:00	9	0	90.70%	0.07
687	1996/07/19 10:00:00	1996/07/19 18:00:00	9	0	90.90%	0.07
688	1996/10/25 22:00:00	1996/10/26 11:00:00	14	0	91.00%	0.07
689	1996/11/29 02:00:00	1996/11/30 01:00:00	24	0	91.10%	0.07
690	1997/02/17 18:00:00	1997/02/19 05:00:00	36	0	91.30%	0.07
691	1997/04/08 10:00:00	1997/04/08 20:00:00	11	0	91.40%	0.07
692	1997/05/24 07:00:00	1997/05/24 16:00:00	10	0	91.50%	0.07
693	1997/12/18 16:00:00	1997/12/19 13:00:00	22	0	91.70%	0.07
694	1998/03/15 13:00:00	1998/03/16 16:00:00	28	0	91.80%	0.07
695	1998/04/07 17:00:00	1998/04/08 04:00:00	12	0	91.90%	0.07
696	1998/04/19 17:00:00	1998/04/20 04:00:00	12	0	92.10%	0.07
697	1998/04/28 15:00:00	1998/04/29 12:00:00	22	0	92.20%	0.07
698	1998/05/04 18:00:00	1998/05/06 21:00:00	52	0	92.30%	0.06
699	2000/01/01 10:00:00	2000/01/03 13:00:00	52	0	92.50%	0.06
700	2000/01/17 19:00:00	2000/01/17 21:00:00	3	0	92.60%	0.06
701	2000/01/25 13:00:00	2000/01/26 20:00:00	32	0	92.70%	0.06
702	2000/02/28 16:00:00	2000/02/29 09:00:00	18	0	92.90%	0.06
703	2000/04/14 22:00:00	2000/04/15 08:00:00	11	0	93.00%	0.06
704	2000/04/21 19:00:00	2000/04/22 16:00:00	22	0	93.10%	0.06
705	2000/05/25 23:00:00	2000/05/26 16:00:00	18	0	93.30%	0.06
706	2000/09/23 02:00:00	2000/09/23 12:00:00	11	0	93.40%	0.06

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
707	2000/10/06 13:00:00	2000/10/07 02:00:00	14	0	93.50%	0.06
708	2000/10/10 08:00:00	2000/10/11 22:00:00	39	0	93.70%	0.06
709	2000/10/21 18:00:00	2000/10/22 17:00:00	24	0	93.80%	0.06
710	2000/10/26 09:00:00	2000/10/27 15:00:00	31	0	93.90%	0.06
711	2000/11/22 21:00:00	2000/11/23 20:00:00	24	0	94.00%	0.06
712	2001/01/15 21:00:00	2001/01/16 15:00:00	19	0	94.20%	0.06
713	2001/08/20 17:00:00	2001/08/21 01:00:00	9	0	94.30%	0.06
714	2001/11/04 17:00:00	2001/11/05 06:00:00	14	0	94.40%	0.06
715	2001/11/13 12:00:00	2001/11/14 19:00:00	32	0	94.60%	0.06
716	2001/12/30 17:00:00	2001/12/31 09:00:00	17	0	94.70%	0.06
717	2002/01/03 19:00:00	2002/01/03 21:00:00	3	0	94.80%	0.06
718	2002/01/28 03:00:00	2002/01/30 12:00:00	58	0	95.00%	0.06
719	2002/02/18 17:00:00	2002/02/19 06:00:00	14	0	95.10%	0.06
720	2002/03/24 02:00:00	2002/03/24 18:00:00	17	0	95.20%	0.06
721	2002/04/15 09:00:00	2002/04/15 16:00:00	8	0	95.40%	0.06
722	2002/05/20 23:00:00	2002/05/21 05:00:00	7	0	95.50%	0.06
723	2002/09/06 18:00:00	2002/09/06 21:00:00	4	0	95.60%	0.06
724	2002/12/29 17:00:00	2002/12/30 09:00:00	17	0	95.80%	0.06
725	2003/03/04 17:00:00	2003/03/05 02:00:00	10	0	95.90%	0.06
726	2003/07/30 07:00:00	2003/07/30 15:00:00	9	0	96.00%	0.06
727	2003/11/01 05:00:00	2003/11/01 21:00:00	17	0	96.20%	0.06
728	2003/11/03 18:00:00	2003/11/04 19:00:00	26	0	96.30%	0.06
729	2003/12/11 17:00:00	2003/12/12 11:00:00	19	0	96.40%	0.06
730	2004/01/19 08:00:00	2004/01/20 11:00:00	28	0	96.60%	0.06
731	2004/01/25 03:00:00	2004/01/25 21:00:00	19	0	96.70%	0.06
732	2004/01/31 07:00:00	2004/02/01 01:00:00	19	0	96.80%	0.06
733	2004/03/26 10:00:00	2004/03/26 23:00:00	14	0	97.00%	0.06
734	2004/11/12 12:00:00	2004/11/13 04:00:00	17	0	97.10%	0.06
735	2004/12/08 07:00:00	2004/12/09 01:00:00	19	0	97.20%	0.06
736	2005/02/07 08:00:00	2005/02/08 00:00:00	17	0	97.40%	0.06
737	2005/03/18 17:00:00	2005/03/21 03:00:00	59	0	97.50%	0.06
738	2005/05/06 02:00:00	2005/05/06 11:00:00	10	0	97.60%	0.06
739	2005/07/23 05:00:00	2005/07/23 13:00:00	9	0	97.80%	0.06
740	2005/09/20 02:00:00	2005/09/21 00:00:00	23	0	97.90%	0.06
741	2005/12/03 02:00:00	2005/12/03 20:00:00	19	0	98.00%	0.06
742	2006/03/03 17:00:00	2006/03/04 06:00:00	14	0	98.10%	0.06
743	2006/03/07 01:00:00	2006/03/09 05:00:00	53	0	98.30%	0.06
744	2006/03/26 00:00:00	2006/03/26 21:00:00	22	0	98.40%	0.06
745	2006/04/23 06:00:00	2006/04/23 16:00:00	11	0	98.50%	0.06
746	2006/07/29 00:00:00	2006/07/31 15:00:00	64	0	98.70%	0.06
747	2006/12/22 08:00:00	2006/12/23 02:00:00	19	0	98.80%	0.06
748	2007/01/04 22:00:00	2007/01/06 02:00:00	29	0	98.90%	0.06

Rank	Start Date	End Date	Duration (hr)	Peak (cfs)	Frequency (%)	Return Period (Yr)
749	2007/03/21 04:00:00	2007/03/22 09:00:00	30	0	99.10%	0.06
750	2007/03/27 05:00:00	2007/03/28 06:00:00	26	0	99.20%	0.06
751	2007/05/23 01:00:00	2007/05/23 22:00:00	22	0	99.30%	0.06
752	2007/09/22 11:00:00	2007/09/22 21:00:00	11	0	99.50%	0.06
753	2007/10/13 03:00:00	2007/10/14 06:00:00	28	0	99.60%	0.06
754	2007/10/17 09:00:00	2007/10/17 22:00:00	14	0	99.70%	0.06
755	2008/01/21 08:00:00	2008/01/22 13:00:00	30	0	99.90%	0.06
--End of Data----------						


Flow Duration Curves
Pre Development
Post Development Mitigated
Q10 (6.4cfs)
Qlf (0.45cfs)
Flow Rate (cfs)
7
6
5
4
3
2
1
10-4
10-3
10-2
10-1
100
(%) Percent Time Exceedance

Compare Post-Development Curve to Pre-Development Curve
Flow Control Upper Limit: 6.4 (cfs)
Flow Control Lower Limit: 0.45 (cfs)

post-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
post-development time stamp: 1/7/2025 2:24:04 PM
Compared to:
pre-development SWMM file: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
pre-development time stamp: 8/21/2024 3:53:58 PM

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
0	0.40	0.30	0.30	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
1	0.50	0.30	0.30	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
2	0.60	0.20	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
3	0.60	0.20	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
4	0.70	0.20	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
5	0.80	0.20	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
6	0.80	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
7	0.90	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
8	0.90	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
9	1.00	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
10	1.10	0.10	0.20	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
11	1.10	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
12	1.20	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
13	1.20	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
14	1.30	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
15	1.40	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
16	1.40	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
17	1.50	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
18	1.50	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
19	1.60	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
20	1.70	0.10	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
21	1.70	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
22	1.80	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
23	1.80	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
24	1.90	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
25	2.00	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
26	2.00	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
27	2.10	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
28	2.10	0.00	0.10	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
29	2.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
30	2.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
31	2.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
32	2.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
33	2.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
34	2.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
35	2.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
36	2.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
37	2.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
38	2.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
39	2.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
40	2.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
41	2.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
42	3.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
43	3.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
44	3.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
45	3.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
46	3.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
47	3.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
48	3.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
49	3.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
50	3.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
51	3.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
52	3.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
53	3.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
54	3.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
55	3.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
56	3.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
57	3.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
58	3.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
59	4.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
60	4.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
61	4.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
62	4.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
63	4.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
64	4.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
65	4.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
66	4.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
67	4.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
68	4.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
69	4.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
70	4.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
71	4.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
72	4.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
73	4.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
74	4.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
75	5.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
76	5.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
77	5.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
78	5.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
79	5.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
80	5.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
81	5.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
82	5.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
83	5.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
84	5.50	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
85	5.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
86	5.60	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
87	5.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
88	5.70	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
89	5.80	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
90	5.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
91	5.90	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
92	6.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
93	6.00	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
94	6.10	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
95	6.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
96	6.20	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
97	6.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Post PT #	Flow Rate (cfs)	Post Dev % Exceed	Pre Dev % Exceed	%Ex post < %Ex pre	%Ex post > %Ex pre	%Ex post > 110% %Ex pre	Pass/Fail
98	6.30	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration
99	6.40	0.00	0.00	TRUE	FALSE	FALSE	Pass: Post Duration <= Pre Duration

Duration Table Summary at Project Discharge Point

file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PreDev2.out
time stamp: 8/21/2024 3:53:58 PM

DISCHARGE		Number of periods when discharge was equal to or greater than DISCHARGE column but less than that shown on the next line		
Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1	0.5	96	1054	0.275
2	0.5	83	958	0.250
3	0.6	70	875	0.229
4	0.6	64	805	0.210
5	0.7	33	741	0.194
6	0.8	39	708	0.185
7	0.8	19	669	0.175
8	0.9	27	650	0.170
9	0.9	21	623	0.163
10	1.0	20	602	0.157
11	1.1	29	582	0.152
12	1.1	30	553	0.144
13	1.2	23	523	0.137
14	1.2	21	500	0.131
15	1.3	23	479	0.125
16	1.4	36	456	0.119
17	1.4	32	420	0.110
18	1.5	43	388	0.101
19	1.5	36	345	0.090
20	1.6	33	309	0.081
21	1.7	14	276	0.072
22	1.7	5	262	0.068
23	1.8	5	257	0.067
24	1.8	13	252	0.066
25	1.9	7	239	0.062
26	2.0	11	232	0.061
27	2.0	11	221	0.058
28	2.1	11	210	0.055
29	2.1	9	199	0.052
30	2.2	10	190	0.050
31	2.3	8	180	0.047
32	2.3	14	172	0.045
33	2.4	14	158	0.041
34	2.4	11	144	0.038
35	2.5	7	133	0.035
36	2.6	11	126	0.033
37	2.6	9	115	0.030
38	2.7	2	106	0.028
39	2.7	4	104	0.027
40	2.8	1	100	0.026
41	2.9	4	99	0.026
42	2.9	4	95	0.025
43	3.0	0	91	0.024
44	3.0	2	91	0.024
45	3.1	5	89	0.023

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
46	3.2	1	84	0.022
47	3.2	6	83	0.022
48	3.3	4	77	0.020
49	3.3	6	73	0.019
50	3.4	6	67	0.018
51	3.5	3	61	0.016
52	3.5	4	58	0.015
53	3.6	4	54	0.014
54	3.6	3	50	0.013
55	3.7	1	47	0.012
56	3.8	0	46	0.012
57	3.8	0	46	0.012
58	3.9	2	46	0.012
59	3.9	1	44	0.011
60	4.0	2	43	0.011
61	4.1	1	41	0.011
62	4.1	0	40	0.010
63	4.2	1	40	0.010
64	4.2	0	39	0.010
65	4.3	2	39	0.010
66	4.4	4	37	0.010
67	4.4	4	33	0.009
68	4.5	4	29	0.008
69	4.5	2	25	0.007
70	4.6	2	23	0.006
71	4.7	0	21	0.005
72	4.7	1	21	0.005
73	4.8	2	20	0.005
74	4.8	0	18	0.005
75	4.9	0	18	0.005
76	5.0	1	18	0.005
77	5.0	0	17	0.004
78	5.1	0	17	0.004
79	5.1	2	17	0.004
80	5.2	1	15	0.004
81	5.3	1	14	0.004
82	5.3	3	13	0.003
83	5.4	2	10	0.003
84	5.4	3	8	0.002
85	5.5	0	5	0.001
86	5.6	1	5	0.001
87	5.6	0	4	0.001
88	5.7	0	4	0.001
89	5.7	0	4	0.001
90	5.8	0	4	0.001
91	5.9	1	4	0.001
92	5.9	1	3	0.001
93	6.0	1	2	0.001
94	6.0	0	1	0.000
95	6.1	1	1	0.000
96	6.2	0	0	0.000
97	6.2	0	0	0.000
98	6.3	0	0	0.000
99	6.3	0	0	0.000

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
100	6.4	0	0	0.000
---------End of Data----------				

Duration Table Summary at Project Discharge Point

file name: D:\24044\Engineering\SDP\SDP 01\Working Files\SWMM\24044-PostDev3.out
time stamp: 1/7/2025 2:24:04 PM

DISCHARGE		Number of periods when discharge was equal to or greater than DISCHARGE column but less than that shown on the next line		
Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
1	0.5	216	1211	0.316
2	0.5	154	995	0.260
3	0.6	107	841	0.220
4	0.6	77	734	0.192
5	0.7	51	657	0.172
6	0.8	53	606	0.158
7	0.8	48	553	0.144
8	0.9	36	505	0.132
9	0.9	35	469	0.123
10	1.0	29	434	0.113
11	1.1	27	405	0.106
12	1.1	23	378	0.099
13	1.2	32	355	0.093
14	1.2	21	323	0.084
15	1.3	22	302	0.079
16	1.4	12	280	0.073
17	1.4	17	268	0.070
18	1.5	25	251	0.066
19	1.5	13	226	0.059
20	1.6	18	213	0.056
21	1.7	9	195	0.051
22	1.7	11	186	0.049
23	1.8	8	175	0.046
24	1.8	8	167	0.044
25	1.9	7	159	0.042
26	2.0	12	152	0.040
27	2.0	7	140	0.037
28	2.1	12	133	0.035
29	2.1	5	121	0.032
30	2.2	2	116	0.030
31	2.3	6	114	0.030
32	2.3	3	108	0.028
33	2.4	4	105	0.027
34	2.4	8	101	0.026
35	2.5	4	93	0.024
36	2.6	3	89	0.023
37	2.6	3	86	0.022
38	2.7	3	83	0.022
39	2.7	4	80	0.021
40	2.8	1	76	0.020
41	2.9	3	75	0.020
42	2.9	2	72	0.019
43	3.0	5	70	0.018
44	3.0	3	65	0.017
45	3.1	3	62	0.016

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
46	3.2	9	59	0.015
47	3.2	2	50	0.013
48	3.3	5	48	0.013
49	3.3	3	43	0.011
50	3.4	2	40	0.010
51	3.5	3	38	0.010
52	3.5	3	35	0.009
53	3.6	1	32	0.008
54	3.6	1	31	0.008
55	3.7	0	30	0.008
56	3.8	2	30	0.008
57	3.8	2	28	0.007
58	3.9	3	26	0.007
59	3.9	3	23	0.006
60	4.0	1	20	0.005
61	4.1	1	19	0.005
62	4.1	1	18	0.005
63	4.2	2	17	0.004
64	4.2	0	15	0.004
65	4.3	1	15	0.004
66	4.4	0	14	0.004
67	4.4	1	14	0.004
68	4.5	1	13	0.003
69	4.5	1	12	0.003
70	4.6	0	11	0.003
71	4.7	0	11	0.003
72	4.7	1	11	0.003
73	4.8	0	10	0.003
74	4.8	0	10	0.003
75	4.9	1	10	0.003
76	5.0	0	9	0.002
77	5.0	2	9	0.002
78	5.1	1	7	0.002
79	5.1	0	6	0.002
80	5.2	1	6	0.002
81	5.3	0	5	0.001
82	5.3	0	5	0.001
83	5.4	0	5	0.001
84	5.4	0	5	0.001
85	5.5	0	5	0.001
86	5.6	2	5	0.001
87	5.6	1	3	0.001
88	5.7	0	2	0.001
89	5.7	0	2	0.001
90	5.8	1	2	0.001
91	5.9	0	1	0.000
92	5.9	0	1	0.000
93	6.0	0	1	0.000
94	6.0	0	1	0.000
95	6.1	0	1	0.000
96	6.2	0	1	0.000
97	6.2	1	1	0.000
98	6.3	0	0	0.000
99	6.3	0	0	0.000

Bin Number	Discharge Rate (cfs)	Number of Periods	Total Periods Exceeding	Percent Time Exceeded
100	6.4	0	0	0.000
---------End of Data----------				

END OF STATISTICS ANALYSIS

SECTION VII. SUMMARY AND CONCLUSION

INP and RPT FILES

PRE

POST

Underdrain and Drawdown Results

The following table summarizes the underdrain coefficients used for each of the BMP units and translates the C factor coefficient to an equivalent round orifice diameter based on 1/16th inch increments. The drawdown equations are based on standard falling head drawdown theory. The primary drawdown number of interest is the surface drawdown based on vector concerns. The various soil and gravel storage layer calculations consider the void ratio and porosity of the respective layer. It should be noted that these drawdown calculations only consider the volume of water within the bioretention units. If the bioretention unit utilizes any storage above the berm height, then that storage drawdown is in addition to the values shown in the table below. Those calculations, if present, are shown elsewhere in the report. The derivation and explanation of the equations used to determine the values displayed in the chart are discussed in the following two sections of this portion of the report.

Sub Cat Name*	LID Process*	LID Area (sf)*	Orifice D (1/16in)	Orifice D (in)	UD C factor*	T surf (in)*	T soil (in)*	T store (in)*	n (soil)*	e (store)*	Drawdown surface (hr)	Drawdown Soil (hr)	Drawdown Storage (hr)	Drawdown total (hr)
BMP-A	BMP-A	1742.4	24	1.5	0.435359717	0.1	21	27	0.4	0.67	0.0	3.3	9.0	12.3
BMP-B	BMP-B	871.2	29	1.8125	1.273334039	0.1	21	15	0.4	0.67	0.0	1.4	2.2	3.6

The character * in the column heading indicates that the values was read directly from the SWMM inp file.
Assume: orifice coefficient C_o = 0.60, void ratio for surface = 1.0, centroid of underdrain orifice is located at h=0

Underdrain C Factor Equations

Based on the slotted drain example in the SWMM Drain Advisor (EPA SWMM 5.1 Help/Contents/Reference/Special Dialog Forms/LID Editors/LID Control Editor/LID Drain System/Drain Advisor) the underdrain coefficient C is the ratio of the orifice area (total slot area) to the LID area times a constant (60,000).

SWMM Ex: If the drain consists of slotted pipes where the slots act as orifices, then the drain exponent would be 0.5 and the drain coefficient would be 60,000 times the ratio of total slot area to LID area. For example, drain pipe with five 1/4" diameter holes per foot spaced 50 feet apart would have an area ratio of 0.000035 and a drain coefficient of 2.

The 60,000 constant in the above example corresponds to the combined constants in the standard orifice equation:

(Standard Orifice Equation)

$$q = C_o A_o \sqrt{2g}\sqrt{h}\ (cfs)$$

and

(SWMM Underdrain Equation (per unit area))

$$q = q/A_{LID}$$

or

$$q = C_o A_o/A_{LID}\sqrt{2g}\sqrt{h}\ (cfs/sf)$$

With a Co=0.6 and converting $\sqrt{2g}$ to units of inches and hours the constant becomes 60,046.

So the underdrain C factor per unit area of the LID becomes:

$$C = 60{,}046\ A_o/A_{LID}\ (in^{\wedge 1/2}/hr)$$

and

$$q = C * h^{1/2}$$

Drawdown Equations

The drawdown equations presented in the chart are the drawdown times for the respective layers within the bioretention unit (only). If the bioretention unit includes storage ponding above the berm height, then the drawdown time for the storage portion is in addition to the values shown in the chart. Those calculations (if present) are shown elsewhere in the report. For most cases the storage drawdown time will be comparatively short as compared to the bioretention drawdown times.

To derive a general formula that relates drawdown time for each layer of the bioretention unit in terms of the SWMM C factor, we set the change in water volume with respect to time equal to the standard orifice equation (found in the County Hydraulics manual):

$$q = \frac{dh}{dt} nAp = CoAo\sqrt{2gh}$$

Where n = porosity of the layer, A_P = area of the BMP unit, Co = orifice coefficient, Ao = area of the orifice, and g = gravity constant. The porosity n for the surface layer is 1.0, and the values for the soil and storage layers read from the SWMM LID definitions.

Solving the definite integral from h1 to h2

$$\int_{h=h1}^{h=h2} h^{-0.5} dh = \int_{t=0}^{t=T} \frac{CoAo\sqrt{2g}}{nAp}\ dt$$

$$2(\sqrt{h2} - \sqrt{h1}) = \frac{CoAo\sqrt{2g}}{nAp}\ (T)$$

$$Or$$

$$2n\left(\sqrt{h2} - \sqrt{h1}\right) = C\ (T)$$

$$where: C = \frac{CoAo\sqrt{2g}}{Ap}\ \ (in^{\wedge}1/2/hr)$$

Solving for T:

$$T = \frac{2n\left(\sqrt{h2} - \sqrt{h1}\right)}{C}\ \ (hr)$$

Where h2(in) is the total beginning head above the underdrain orifice at t=0 and h1(in) is the total ending head above the orifice at t=T. Ex: h2 for surface = depth of gravel storage plus depth of soil layer plus berm height, and h1 for surface = depth of gravel storage plus depth of soil layer.

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.

☐ I **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)

☐ I How to access the structural BMP(s) to inspect and perform maintenance

☐ I 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).

BF-1
Biofiltration

BMP MAINTENANCE FACT SHEET
FOR
STRUCTURAL BMP BF-1 BIOFILTRATION

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

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

Normal Expected Maintenance

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

Non-Standard Maintenance or BMP Failure

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

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

Other Special Considerations

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

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Biofiltration

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

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

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

References

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

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BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-A
Permit No.:	APN(s): 219-223-20&22	
Property / Development Name:	Responsible Party Name and Phone Number:	
Property Address of BMP:	Responsible Party Address:	

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

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-A
Permit No.:	APN(s): 219-223-20&22	

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-A
Permit No.:	APN(s): 219-223-20&22	

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-A
Permit No.:	APN(s): 219-223-20&22	

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-A
Permit No.:	APN(s): 219-223-20&22	

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

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

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-B
Permit No.:	APN(s): 219-223-20&22	
Property / Development Name:	Responsible Party Name and Phone Number:	
Property Address of BMP:	Responsible Party Address:	

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

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-B
Permit No.:	APN(s): 219-223-20&22	

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-B
Permit No.:	APN(s): 219-223-20&22	

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-B
Permit No.:	APN(s): 219-223-20&22	

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-B
Permit No.:	APN(s): 219-223-20&22	

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

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

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-C
Permit No.:	APN(s): 219-223-20&22	
Property / Development Name:	Responsible Party Name and Phone Number:	
Property Address of BMP:	Responsible Party Address:	

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

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-C
Permit No.:	APN(s): 219-223-20&22	

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-C
Permit No.:	APN(s): 219-223-20&22	

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-C
Permit No.:	APN(s): 219-223-20&22	

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

BF-1
Biofiltration

Date:	Inspector:	BMP ID No.: BMP-C
Permit No.:	APN(s): 219-223-20&22	

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

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

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

ATTACHMENT 4
Copy of Plan Sheets Showing Permanent Storm Water BMPs

This is the cover sheet for Attachment 4.

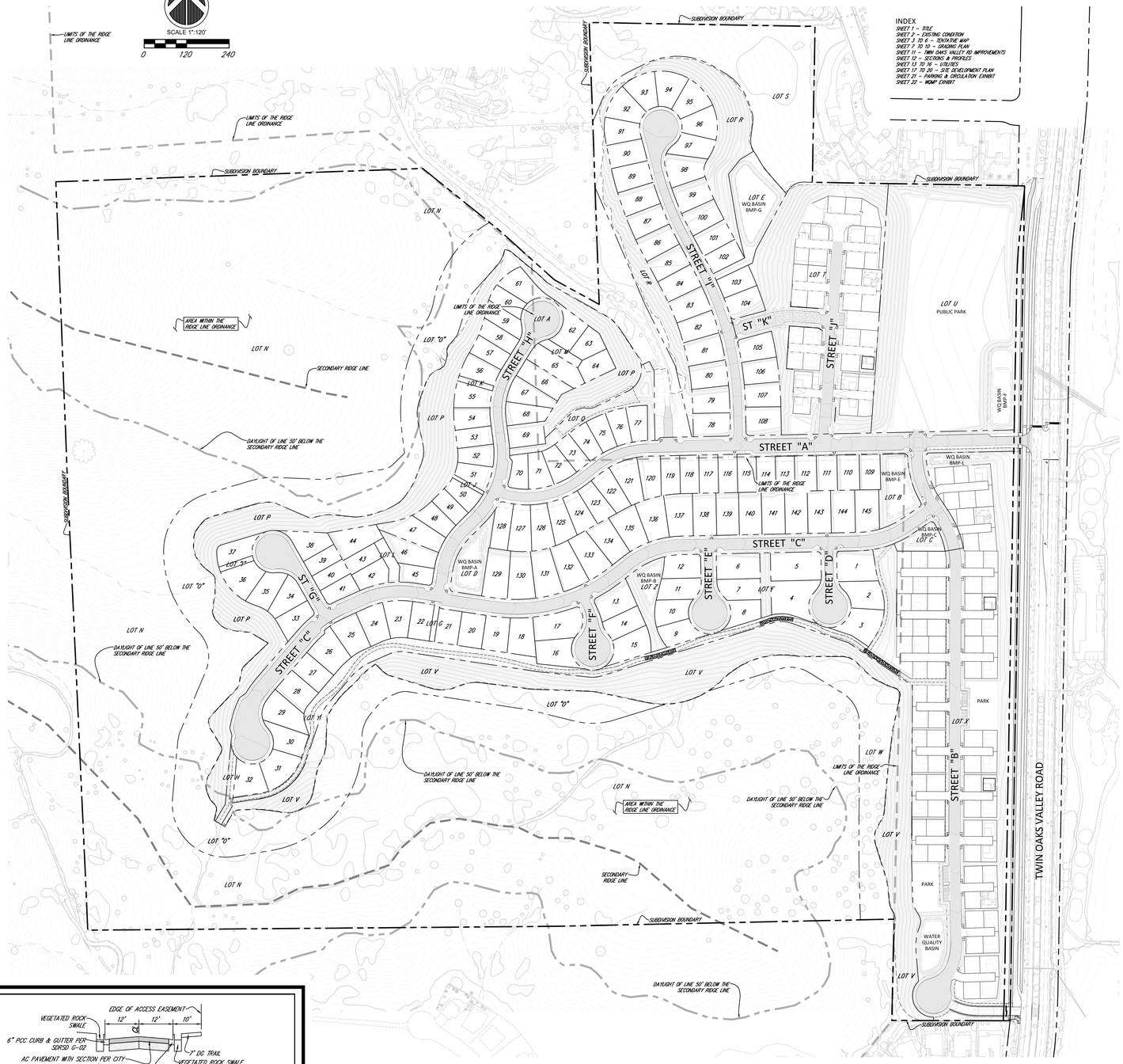
Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

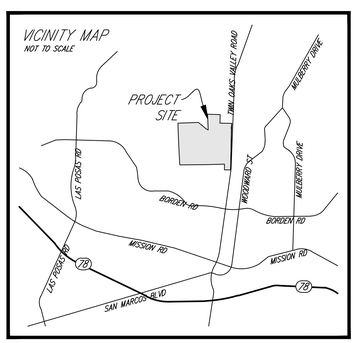
- ☑ Structural BMP(s) with ID numbers matching Form I-6 Summary of PDP Structural BMPs
- ☑ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- ☑ Details and specifications for construction of structural BMP(s)
- ☑ Signage indicating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

TENTATIVE MAP FOR OAKCREST SUBDIVISION

CITY OF SAN MARCOS, CA



EMERGENCY ACCESS
NOT TO SCALE



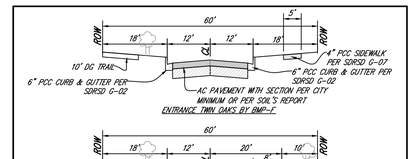
GRADING VOLUME

THE PRISMOIDAL VOLUME METHOD WAS USED TO CALCULATE THE VALUES SHOWN HEREON. VOLUMES INCLUDE REMOVAL, BULKING, SHRINKAGE, WQ BASINS, STORM DRAIN TRENCHES, BUILDING FOUNDATIONS AND STANDARD STREET SECTIONS.

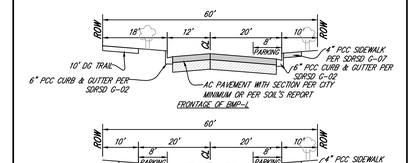
ADJUSTED CUT VOLUME = 662,300 CY.
ADJUSTED FILL VOLUME = 662,300 CY.

MERITAGE - OAKCREST EARTHWORK VOLUME (01/15/2025)

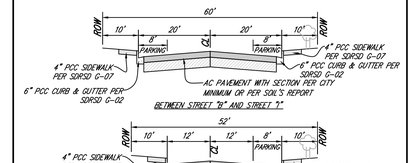
ITEM	ITEM DESCRIPTION	AREA	SECTION	VOLUME (CY)
1	C3D CUT			553,820.30
2	STREET & SIDEWALK SECTIONS (CUT AREA ONLY, ALREADY INCLUDED IN ITEM 1)		0.00	0.00
3	ADDITIONAL CUT DUE TO WQ BASIN (CUT AREAS ONLY)	34,137.93	4.00	5,057.47
4	ADDITIONAL CUT DUE TO SD PIPE TRENCHES			8,018.07
5	TOTAL RAW CUT			566,895.84
6	C3D CUT BULKING (ASSUMING 15% OF CUT MATERIALS) (REMOVED 1.5' OF TOP SOIL)	481,127.476	0.15	72,169.12
7	BULKING FROM OVER-EX (15% OF OVER-EX)			6,820.51
8	BLDG FOUNDATION & UTILITITES SPOILS (100 CY/BLDG)	100.00	198.00	19,800.00
9	TOTAL AVAILABLE MATERIALS FOR ON-SITE FILL			665,685.47
10				
11	C3D FILL			589,605.45
12	STREET & SIDEWALK SECTIONS (CUT AREA ONLY, ALREADY INCLUDED IN ITEM 11)		0.00	0.00
13	15% SHRINKAGE (TOP 1.5 FT OF TOTAL GP FOOTPRINT)	171,536.73	0.15	25,730.51
14	SHRINKAGE DUE TO ALLUVIAL REMOVE & RECOMPACT			43,591.32
15	RAW FILL VOLUME			658,927.28
16	RAW EXPORT (CY)			6,758.19
17	COMMON EXCAVATION/EMBANKMENT			662,300.00



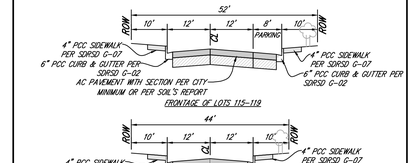
ENTRANCE TWIN OAKS BY BMP-F



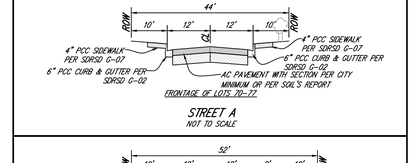
FRONTAGE OF BMP-I



BETWEEN STREET "E" AND STREET "I"

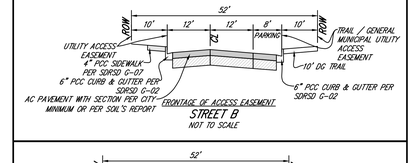


FRONTAGE OF LOTS 115–119



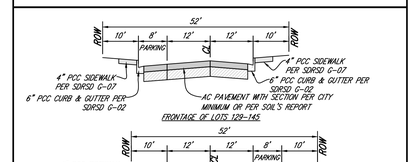
FRONTAGE OF LOTS 70–77

STREET A
NOT TO SCALE

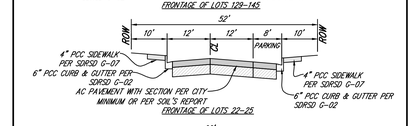


FRONTAGE OF ACCESS EASEMENT

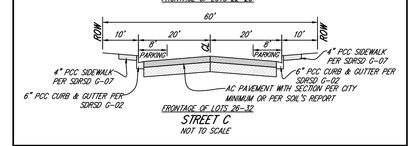
STREET B
NOT TO SCALE



FRONTAGE OF LOTS 129–145

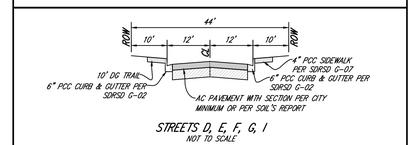


FRONTAGE OF LOTS 22–25

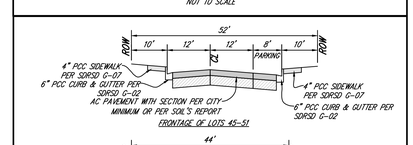


FRONTAGE OF LOTS 26–32

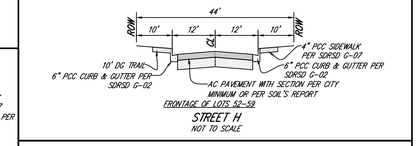
STREET C
NOT TO SCALE



STREETS D, E, F, G, I
NOT TO SCALE

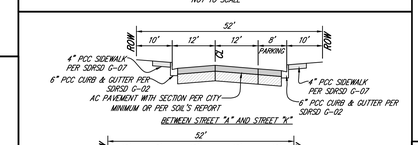


FRONTAGE OF LOTS 45–51

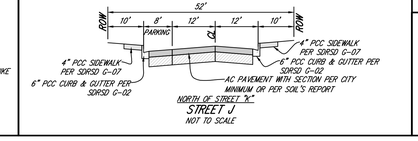


FRONTAGE OF LOTS 52–59

STREET H
NOT TO SCALE

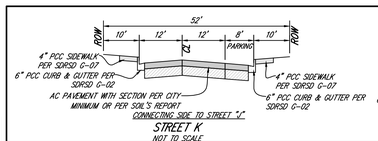


BETWEEN STREET "A" AND STREET "K"

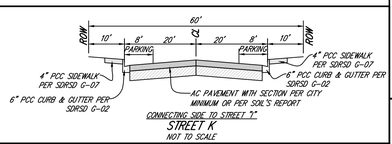


NORTH OF STREET "K"

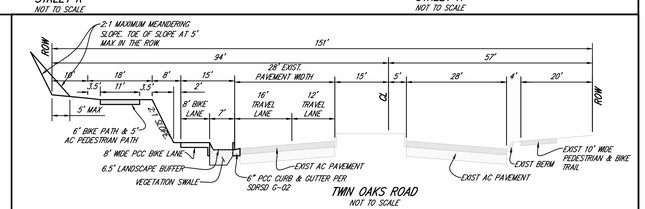
STREET J
NOT TO SCALE



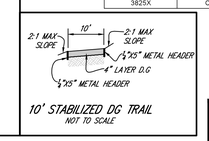
STREET K
NOT TO SCALE



STREET K
NOT TO SCALE



TWIN OAKS ROAD
NOT TO SCALE



10' STABILIZED DG TRAIL
NOT TO SCALE

MAP PREPARED BY:

EXCEL ENGINEERING
440 STATE PLACE
ESCONDIDO, CA 92029
PHONE (760) 745–8118
FAX (760) 745–1890
MICHAEL D. LEVIN, P.L.S. NO. 6896

LICENSED LAND SURVEYOR
Michael D. Levin
No. 6896
STATE OF CALIFORNIA

ENGINEER OF WORK

EXCEL ENGINEERING
440 STATE PLACE
ESCONDIDO, CA 92029
PHONE (760) 745–8118
FAX (760) 745–1890
ROBERT D. DENTINO, R.C.E NO. 45629

REGISTERED PROFESSIONAL ENGINEER
ROBERT D. DENTINO
No. 45629
CIVIL
STATE OF CALIFORNIA

OWNER'S CERTIFICATE

WE HEREBY CERTIFY THAT WE ARE THE RECORD OWNER OF THE PROPERTIES SHOWN ON THIS TENTATIVE SUBDIVISION MAP AND THAT SAID MAP SHOWS OUR ENTIRE CONTIGUOUS OWNERSHIP. WE UNDERSTAND THAT THE PROPERTY IS CONSIDERED CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, STREETS, UTILITY EASEMENTS OR RAILROAD RIGHTS OF WAY.

BY: _____

GROTH GEORGE & BARBARA FAMILY TRUST 07–05–89
COSTANZO FAMILY TRUST 02–01–91
ROBERT D. LYNDS AND CHRISTINE G. LYNDS LIVING REVOCABLE TRUST AGREEMENT DATED JUNE 21, 1990
COSTANZO FAMILY TRUST DATED FEBRUARY 1, 1991
TERESA L. DELLAMARY GROTH 2007 TRUST DATED JUNE 13, 2007

DEVELOPER

MERITAGE HOMES OF CALIFORNIA, INC

BY: _____ _____

JOHANNA CROOKER, VICE–PRESIDENT — DATE

DEVELOPER ADDRESS

5 PETERS CANYON, SUITE 310
IRVINE CA 92606
TELEPHONE (949) 299–3824

SOURCE OF TOPOGRAPHY

THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL TOPOGRAPHY DONE BY AEROTECH MAPPING, INC. FLOWN ON MARCH 24, 2022 & SUPPLEMENTED BY CONVENTIONAL FIELD SURVEY BY EXCEL ENGINEERING IN MAY 2024.

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE N.A.D. 83, ZONE 6 BEARINGS BETWEEN STATIONS "CP–007 AND "CP–009", AS SAID STATIONS ARE SHOWN ON ROS 23731. ie: (NORTH 12° 28' 08" EAST)

PROJECT BENCHMARK

THE BENCHMARK FOR THIS SURVEY IS CITY OF SAN MARCOS SURVEY CONTROL MONUMENT "CP–009", LOCATED IN THE TOP OF CURB ON THE NORTHWEST SIDE OF CHESAPEAKE COURT CUL–DE–SAC, 8 FEET SOUTHEASTERLY OF A FIRE HYDRANT, AS SHOWN ON ROS 23731.

ELEVATION: 675.65 DATUM: NAVD88

LEGAL DESCRIPTION

PORTIONS OF THE FRACTIONAL SECTION 2, TOWNSHIP 12 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, TOGETHER WITH PORTIONS OF BLOCKS 43, 44 AND 49 OF MAP OF RANCHO LOS VALLECITOS DE SAN MARCOS, MAP NO. 806, ALL LOCATED IN THE CITY OF SAN MARCOS, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA.

GENERAL NOTES

1. *POLICE PROTECTION PROVIDED BY THE COUNTY OF SAN DIEGO SHERIFF'S DEPARTMENT.*
2. *SETBACKS TO CONFORM TO ZONE REGULATIONS:*
   SINGLE FAMILY RESIDENTIAL
   FRONT YARD=15', GARAGE=20', SIDEYARD=5', REAR=15'
   DETACHED CONDOMINIUMS
   PER SPECIFIC PLAN

PUBLIC UTILITIES & DISTRICTS

SEWER	– VALLECITOS WATER DISTRICT
WATER	– VALLECITOS WATER DISTRICT
GAS & ELECTRIC	– SAN DIEGO GAS & ELECTRIC
TELEPHONE	– PACIFIC BELL TELEPHONE COMPANY
FIRE	– SAN MARCOS FIRE PROTECTION DISTRICT
SCHOOLS	– SAN MARCOS HIGH SCHOOL DISTRIC

EASEMENT NOTE

SEE SHEET 2 – EXISTING CONDITION
EASEMENTS OF RECORD NOT SHOWN HEREON SHALL BE HONORED, ABANDONED AND / OR RELOCATED TO THE SATISFACTION OF ALL INTERESTED PARTIES. PUBLIC UTILITY EASEMENTS NECESSARY TO SERVE THIS PROJECT WILL BE COORDINATED WITH THE SERVING UTILITY COMPANY.

ASSESSOR'S PARCEL NUMBERS

218–110–03, 218–110–02, 218–330–26, 218–330–05, 218–330–08, 218–330–09, 218–330–13, 218–330–27, 218–330–28

PRESENT & PROPOSED USE:

PRESENT: RESIDENTIAL, FARMING
PROPOSED: 112 SINGLE FAMILY RESIDENTIAL, 145 DETACHED CONDOMINIUMS, PUBLIC PARK, OPEN SPACE,

PRESENT & PROPOSED ZONING:

PRESENT: ESTATE, R–1–20
PROPOSED: SPECIFIC PLAN AREA (SINGLE FAMILY & DETACHED CONDOMINIUMS)

PROJECT NOTES & ASSOCIATED APPLICATIONS

A SPECIFIC PLAN IS PROPOSED FOR THIS PROJECT.

TENTATIVE MAP PREPARATION DATE

SEPTEMBER 2025

ACCESS

THE PROJECT WILL BE ACCESSED FROM THE PUBLIC STREET "TWIN OAKS VALLEY ROAD" AS SHOWN HEREON.

ON–SITE IMPROVEMENT NOTE

ALL IMPROVEMENTS AS SHOWN HEREON WITHIN THE LIMITS OF THE SUBDIVISION (EXCEPTING THEREFROM THE PUBLIC PARK & TRAILS) ARE PRIVATE & SHALL BE MAINTAINED BY AN HOA.

AREA SUMMARY

ITEM	DESCRIPTION	AREA (SF)	AREA (AC)
1	PROJECT TOTAL ACREAGE	5,927,179.36	136.07
2	GRADING AREA	2,988,612.70	68.61
3	TWIN OAKS RIGHT OF WAY	38,972.00	0.89
4	FIRE BUFFER OUTSIDE OF GRADING FOOTPRINT	608,710.93	13.97
5	BIOLOGICAL OPEN SPACE	2,290,891.99	52.59
6	TOTAL CLEARING AREA (ITEM 2+4)	3,597,323.63	82.58

BUILDING SUMMARY

FLOOR PLAN	BLDG TYPE	NO OF UNITS
3522	DETACHED SINGLE FAMILY	17
3524	DETACHED SINGLE FAMILY	18
3526	DETACHED SINGLE FAMILY	18
4014	DETACHED SINGLE FAMILY	17
4023	DETACHED SINGLE FAMILY	13
4027	DETACHED SINGLE FAMILY	13
5016	DETACHED SINGLE FAMILY	19
5024	DETACHED SINGLE FAMILY	13
5026	DETACHED SINGLE FAMILY	17
	SUBTOTAL	145
3060	CONDOMINIUM	26
3424	CONDOMINIUM	26
3424X	CONDOMINIUM	3
3523	CONDOMINIUM	26
3825	CONDOMINIUM	28
3825X	CONDOMINIUM	3

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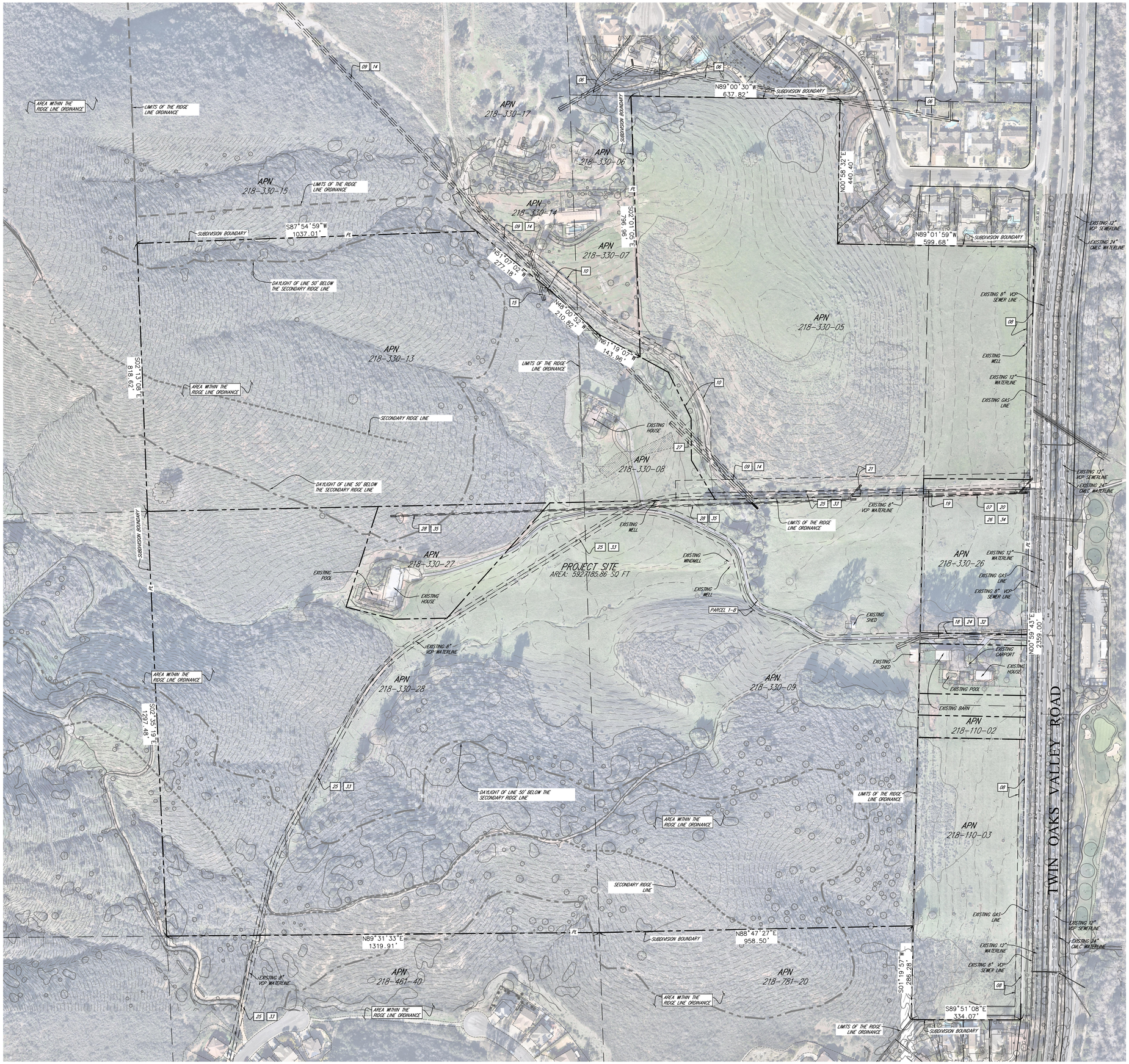
SHEET 1 OF 22 SHEETS
TITLE SHEET

Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

NOT FOR CONSTRUCTION

J:\21\21041 Engineering\14 TM 01\Sheets — 10/1/2025 11:30 PM ORIGINAL PLOT SIZE: ——



EXIST. EASEMENTS

PER FIRST AMERICAN TITLE COMPANY'S PRELIMINARY TITLE REPORT
DATE: JANUARY 23, 2025
ORDER NO. NSC-1278253-SD

06 AN EASEMENT FOR PUBLIC UTILITIES AND INGRESS, EGRESS AND INCIDENTAL PURPOSES, RECORDED OCTOBER 27, 1969 AS INSTRUMENT NO. 193256 OF OFFICIAL RECORDS. IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. TO REMAIN.

07 AN EASEMENT FOR PUBLIC UTILITIES AND INGRESS, EGRESS AND INCIDENTAL PURPOSES, RECORDED MARCH 24, 1969 AS INSTRUMENT NO. 50803 OF OFFICIAL RECORDS IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

08 AN EASEMENT FOR PUBLIC ROAD AND INCIDENTAL PURPOSES, RECORDED MARCH 4, 1971 AS INSTRUMENT NO. 41137 OF OFFICIAL RECORDS. IN FAVOR OF THE CITY OF SAN MARCOS. SAID INSTRUMENT ADDITIONALLY CONTAINS THE PRIVILEGE AND RIGHT TO EXTEND STRUCTURES AND EXCAVATION AND EMBANKMENT SLOPES BEYOND THE LIMITS WHERE REQUIRED FOR THE CONSTRUCTION AND MAINTENANCE THEREOF. TO REMAIN.

09 AN EASEMENT FOR PUBLIC UTILITIES AND INGRESS, EGRESS AND INCIDENTAL PURPOSES, RECORDED OCTOBER 28, 1974 AS INSTRUMENT NO. 74-287278 OF OFFICIAL RECORDS. IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. PORTIONS WITHIN THE PROJECT TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

10 AN EASEMENT FOR ROAD AND UTILITY AND INCIDENTAL PURPOSES, RECORDED NOVEMBER 29, 1976 AS INSTRUMENT NO. 76-397772 OF OFFICIAL RECORDS. IN FAVOR OF MAX M. ARLIN AND OLIVE E. ARLIN, HUSBAND AND WIFE AND CLUB HOTEL, INC., A NEVADA CORPORATION. TO REMAIN.

14 AN EASEMENT FOR PUBLIC UTILITIES AND INGRESS, EGRESS AND INCIDENTAL PURPOSES, RECORDED DECEMBER 7, 1982 AS INSTRUMENT NO. 82-374688 OF OFFICIAL RECORDS. IN FAVOR OF THE PACIFIC TELEPHONE AND TELEGRAPH COMPANY. PORTIONS WITHIN THE PROJECT TO BE QUITCLAIMED UPON INSTALATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

15 AN EASEMENT FOR PUBLIC UTILITIES AND INGRESS, EGRESS AND INCIDENTAL PURPOSES, RECORDED AUGUST 1, 1985 AS INSTRUMENT NO. 85-276477 OF OFFICIAL RECORDS. IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

18 AN EASEMENT FOR POLES, WIRES AND ANCHORAGE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY AND INCIDENTAL PURPOSES, RECORDED JULY 10, 1959 AS INSTRUMENT NO. 140170 OF OFFICIAL RECORDS. IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

19 AN EASEMENT FOR POWER TRANSMISSION AND COMMUNICATION AND INCIDENTAL PURPOSES, RECORDED JULY 5, 1961 AS INSTRUMENT NO. 114691 OF OFFICIAL RECORDS. IN FAVOR OF SAN MARCOS COUNTY WATER DISTRICT. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

20 AN EASEMENT FOR POLES, WIRES AND ANCHORAGE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY AND INCIDENTAL PURPOSES, RECORDED MARCH 24, 1969 AS INSTRUMENT NO. 50803 OF OFFICIAL RECORDS. IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

21 AN EASEMENT FOR ROAD AND INCIDENTAL PURPOSES, RECORDED DECEMBER 21, 1972 AS INSTRUMENT NO. 339038 OF OFFICIAL RECORDS. IN FAVOR OF CLUB HOTEL INC., A NEVADA CORPORATION. TO REMAIN.

24 AN EASEMENT FOR POLES, WIRES AND ANCHORAGE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY AND INCIDENTAL PURPOSES, RECORDED JULY 10, 1959 AS INSTRUMENT NO. 140170, IN BOOK 7764, PAGE 380 OF OFFICIAL RECORDS. IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

25 AN EASEMENT FOR A PIPELINE OR PIPELINES FOR ANY AND ALL PURPOSES, TOGETHER WITH THEIR NECESSARY FIXTURES AND APPURTENANCES INCLUDING BUT NOT LIMITED TO CONDUITS AND CABLES FOR POWER TRANSMISSION AND COMMUNICATION AND INCIDENTAL PURPOSES, RECORDED JULY 5, 1961 AS INSTRUMENT NO. 114637 OF OFFICIAL RECORDS. IN FAVOR OF SAN MARCOS COUNTY WATER DISTRICT. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

26 AN EASEMENT FOR PUBLIC UTILITIES, INGRESS, EGRESS AND INCIDENTAL PURPOSES, RECORDED MARCH 24, 1969 AS INSTRUMENT NO. 50828 OF OFFICIAL RECORDS. IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

27 AN EASEMENT FOR PUBLIC UTILITIES, INGRESS, EGRESS AND INCIDENTAL PURPOSES, RECORDED OCTOBER 28, 1974 AS INSTRUMENT NO. 74-287280 OF OFFICIAL RECORDS. IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

28 AN EASEMENT FOR AERIAL COMMUNICATION FACILITIES AND INCIDENTAL PURPOSES, RECORDED DECEMBER 2, 1982 AS INSTRUMENT NO. 82-374687 OF OFFICIAL RECORDS. IN FAVOR OF PACIFIC TELEPHONE AND TELEGRAPH COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

32 AN EASEMENT FOR POLES, WIRES AND ANCHORAGE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY AND INCIDENTAL PURPOSES, RECORDED JULY 10, 1959 AS INSTRUMENT NO. 140170, IN BOOK 7764, PAGE 380 OF OFFICIAL RECORDS. IN FAVOR OF: SAN DIEGO GAS AND ELECTRIC COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

33 AN EASEMENT FOR A PIPELINE OR PIPELINES FOR ANY AND ALL PURPOSES, TOGETHER WITH THEIR NECESSARY FIXTURES AND APPURTENANCES INCLUDING BUT NOT LIMITED TO CONDUITS AND CABLES FOR POWER TRANSMISSION AND COMMUNICATION AND INCIDENTAL PURPOSES, RECORDED JULY 5, 1961 AS INSTRUMENT NO. 114637 OF OFFICIAL RECORDS. IN FAVOR OF SAN MARCOS COUNTY WATER DISTRICT. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

34 AN EASEMENT FOR PUBLIC UTILITIES, INGRESS, EGRESS AND INCIDENTAL PURPOSES, RECORDED MARCH 24, 1969 AS INSTRUMENT NO. 50828 OF OFFICIAL RECORDS. IN FAVOR OF SAN DIEGO GAS AND ELECTRIC COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

35 AN EASEMENT FOR AERIAL COMMUNICATION FACILITIES AND INCIDENTAL PURPOSES, RECORDED DECEMBER 2, 1982 AS INSTRUMENT NO. 82-374687 OF OFFICIAL RECORDS. IN FAVOR OF PACIFIC TELEPHONE AND TELEGRAPH COMPANY. TO BE QUITCLAIMED UPON INSTALLATION OF THE NEW FACILITIES ASSOCIATED WITH THIS PROJECT.

PARCEL 1-B A THIRTY FOOT (30') EASEMENT FOR PRIVATE ROAD AND UTILITY PURPOSES OVER, UNDER, ALONG AND ACROSS A PORTION OF LOT 5 AND THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 2, TOWNSHIP 12 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF SAN MARCOS, COUNTY OF SAN DIEGO, STAND OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF TO BE RELINQUISHED.

EASEMENT QUITCLAIMED NOTE

ALL ON-SITE EASEMENTS OF RECORD SHOWN & NOT SHOWN HEREON SHALL BE IGNORED, ABANDONED, QUITCLAIMED AND / OR RELOCATED TO THE SATISFACTION OF ALL INTERESTED PARTIES. PUBLIC UTILITY EASEMENTS NECESSARY TO SERVE THIS PROJECT WILL BE COORDINATED WITH THE SERVING UTILITY COMPANY.

EASEMENTS TO REMAIN NOTE

THE FOLLOWING EASEMENTS WILL REMAIN:

10 AN EASEMENT FOR ROAD AND UTILITY AND INCIDENTAL PURPOSES, RECORDED NOVEMBER 29, 1976 AS INSTRUMENT NO. 76-397772 OF OFFICIAL RECORDS. IN FAVOR OF MAX M. ARLIN AND OLIVE E. ARLIN, HUSBAND AND WIFE AND CLUB HOTEL, INC., A NEVADA CORPORATION.

21 AN EASEMENT FOR ROAD AND INCIDENTAL PURPOSES, RECORDED DECEMBER 21, 1972 AS INSTRUMENT NO. 339038 OF OFFICIAL RECORDS. IN FAVOR OF CLUB HOTEL INC., A NEVADA CORPORATION.

LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE
- EXIST. MAJOR CONTOUR
- EXIST MINOR CONTOUR
- EXIST. WATER MAIN
- EXIST. SEWER MAIN
- EXIST. FLOW LINE
- EXIST. FIRE LINE
- EXIST. FIRE HYDRANT
- EXIST. STREET/PARKING LIGHT
- EXIST. STORM DRAIN INLETS/CLEANOUTS
- EXIST. WATER SERVICE LATERAL
- EXIST. SEWER SERVICE LATERAL
- EXIST. FIRE SERVICE LATERAL
- EXIST. PCC CURB
- EXIST. PCC CURB & GUTTER

SCALE 1":100'
0 100 200

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PH (760)745-8118 FX (760)745-8334

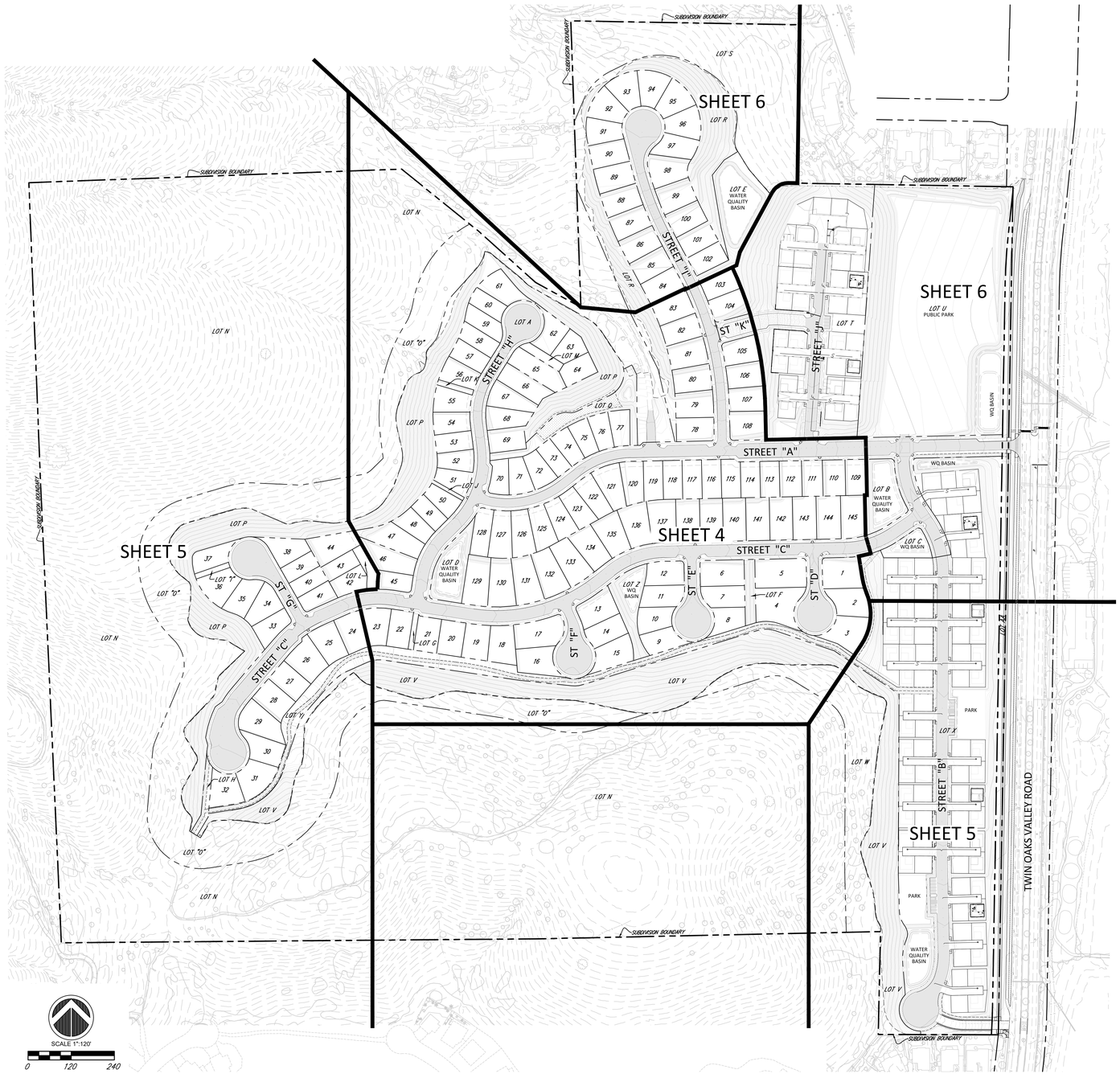
SHEET 2 OF 22 SHEETS
EXISTING CONDITION

Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

NOT FOR CONSTRUCTION

K:\24014\Engineering\GR\GR 01\Sheets - GR\24014 GR EXISTING.dwg 10/21/2025 3:32 PM ORIGINAL PLOT SIZE



LEGEND

- PROJECT BOUNDARY
- EXIST MAJOR CONTOUR — 100 —
- EXIST MINOR CONTOUR
- PROPOSE MAJOR CONTOUR — 100 —
- PROPOSE MINOR CONTOUR
- RETAINING WALL
- PCC CURB
- PCC CURB & GUTTER

LOT INFORMATION TABLE			
PARCEL ID	AREA(SF)	AREA(AC)	LOT DESCRIPTION
LOT 1	9,361.54	0.21	RESIDENTIAL
LOT 2	8,039.82	0.18	RESIDENTIAL
LOT 3	9,256.91	0.21	RESIDENTIAL
LOT 4	12,185.01	0.28	RESIDENTIAL
LOT 5	11,459.98	0.26	RESIDENTIAL
LOT 6	8,863.09	0.20	RESIDENTIAL
LOT 7	6,881.93	0.16	RESIDENTIAL
LOT 8	6,165.34	0.14	RESIDENTIAL
LOT 9	6,560.06	0.15	RESIDENTIAL
LOT 10	6,337.60	0.15	RESIDENTIAL
LOT 11	6,838.10	0.16	RESIDENTIAL
LOT 12	6,979.40	0.16	RESIDENTIAL
LOT 13	8,017.93	0.18	RESIDENTIAL
LOT 14	6,572.73	0.15	RESIDENTIAL
LOT 15	8,182.32	0.19	RESIDENTIAL
LOT 16	8,316.57	0.19	RESIDENTIAL
LOT 17	10,083.10	0.23	RESIDENTIAL
LOT 18	7,632.77	0.18	RESIDENTIAL
LOT 19	6,911.58	0.16	RESIDENTIAL
LOT 20	6,624.00	0.15	RESIDENTIAL
LOT 21	6,247.44	0.14	RESIDENTIAL
LOT 22	6,464.14	0.15	RESIDENTIAL
LOT 23	6,948.36	0.16	RESIDENTIAL
LOT 24	7,454.57	0.17	RESIDENTIAL
LOT 25	7,729.14	0.18	RESIDENTIAL
LOT 26	8,547.56	0.20	RESIDENTIAL
LOT 27	6,575.36	0.15	RESIDENTIAL
LOT 28	7,251.36	0.17	RESIDENTIAL
LOT 29	9,025.95	0.21	RESIDENTIAL
LOT 30	7,003.86	0.16	RESIDENTIAL
LOT 31	8,223.01	0.19	RESIDENTIAL
LOT 32	7,619.05	0.17	RESIDENTIAL
LOT 33	5,971.17	0.14	RESIDENTIAL
LOT 34	6,834.70	0.16	RESIDENTIAL
LOT 35	6,964.25	0.16	RESIDENTIAL
LOT 36	7,845.46	0.18	RESIDENTIAL
LOT 37	6,092.54	0.14	RESIDENTIAL
LOT 38	6,928.93	0.16	RESIDENTIAL
LOT 39	4,756.07	0.11	RESIDENTIAL
LOT 40	4,656.99	0.11	RESIDENTIAL
LOT 41	5,008.62	0.11	RESIDENTIAL
LOT 42	5,790.95	0.13	RESIDENTIAL
LOT 43	4,743.01	0.11	RESIDENTIAL
LOT 44	8,711.10	0.20	RESIDENTIAL
LOT 45	4,834.37	0.11	RESIDENTIAL
LOT 46	8,598.21	0.20	RESIDENTIAL
LOT 47	9,644.44	0.22	RESIDENTIAL
LOT 48	5,705.85	0.13	RESIDENTIAL
LOT 49	4,851.56	0.11	RESIDENTIAL
LOT 50	5,070.80	0.12	RESIDENTIAL
LOT 51	5,477.43	0.13	RESIDENTIAL
LOT 52	5,296.55	0.12	RESIDENTIAL
LOT 53	5,330.00	0.12	RESIDENTIAL
LOT 54	5,890.03	0.14	RESIDENTIAL
LOT 55	6,430.88	0.15	RESIDENTIAL
LOT 56	6,206.79	0.14	RESIDENTIAL
LOT 57	5,579.34	0.13	RESIDENTIAL
LOT 58	5,438.13	0.12	RESIDENTIAL
LOT 59	5,717.46	0.13	RESIDENTIAL
LOT 60	4,981.95	0.11	RESIDENTIAL
LOT 61	7,321.40	0.17	RESIDENTIAL
LOT 62	6,573.00	0.15	RESIDENTIAL
LOT 63	5,532.10	0.13	RESIDENTIAL
LOT 64	5,800.65	0.13	RESIDENTIAL
LOT 65	8,907.79	0.20	RESIDENTIAL
LOT 66	7,906.97	0.18	RESIDENTIAL
LOT 67	7,018.73	0.16	RESIDENTIAL
LOT 68	6,449.00	0.15	RESIDENTIAL
LOT 69	6,585.26	0.15	RESIDENTIAL
LOT 70	4,940.30	0.11	RESIDENTIAL
LOT 71	5,814.73	0.13	RESIDENTIAL
LOT 72	5,754.77	0.13	RESIDENTIAL
LOT 73	4,900.00	0.11	RESIDENTIAL
LOT 74	5,136.35	0.12	RESIDENTIAL
LOT 75	5,188.49	0.12	RESIDENTIAL
LOT 76	5,188.49	0.12	RESIDENTIAL
LOT 77	5,274.20	0.12	RESIDENTIAL
LOT 78	6,884.96	0.16	RESIDENTIAL
LOT 79	7,606.78	0.17	RESIDENTIAL
LOT 80	7,315.67	0.17	RESIDENTIAL
LOT 81	7,677.73	0.18	RESIDENTIAL
LOT 82	6,647.23	0.15	RESIDENTIAL
LOT 83	7,197.38	0.17	RESIDENTIAL
LOT 84	7,029.07	0.16	RESIDENTIAL
LOT 85	6,826.12	0.16	RESIDENTIAL
LOT 86	6,988.05	0.16	RESIDENTIAL

LOT INFORMATION TABLE			
PARCEL ID	AREA(SF)	AREA(AC)	LOT DESCRIPTION
LOT 87	7,030.61	0.16	RESIDENTIAL
LOT 88	7,030.77	0.16	RESIDENTIAL
LOT 89	7,030.73	0.16	RESIDENTIAL
LOT 90	6,755.38	0.16	RESIDENTIAL
LOT 91	6,203.78	0.14	RESIDENTIAL
LOT 92	6,992.14	0.16	RESIDENTIAL
LOT 93	6,992.10	0.16	RESIDENTIAL
LOT 94	6,992.12	0.16	RESIDENTIAL
LOT 95	6,992.12	0.16	RESIDENTIAL
LOT 96	6,992.12	0.16	RESIDENTIAL
LOT 97	6,673.35	0.15	RESIDENTIAL
LOT 98	8,168.95	0.19	RESIDENTIAL
LOT 99	7,284.27	0.17	RESIDENTIAL
LOT 100	6,757.19	0.16	RESIDENTIAL
LOT 101	6,400.00	0.15	RESIDENTIAL
LOT 102	5,815.95	0.13	RESIDENTIAL
LOT 103	5,926.15	0.14	RESIDENTIAL
LOT 104	6,958.90	0.16	RESIDENTIAL
LOT 105	6,895.49	0.16	RESIDENTIAL
LOT 106	6,725.33	0.15	RESIDENTIAL
LOT 107	6,661.29	0.15	RESIDENTIAL
LOT 108	8,006.22	0.18	RESIDENTIAL
LOT 109	5,900.00	0.14	RESIDENTIAL
LOT 110	6,300.00	0.14	RESIDENTIAL
LOT 111	5,800.00	0.13	RESIDENTIAL
LOT 112	6,200.00	0.14	RESIDENTIAL
LOT 113	5,399.29	0.12	RESIDENTIAL
LOT 114	5,406.56	0.12	RESIDENTIAL
LOT 115	5,729.09	0.13	RESIDENTIAL
LOT 116	5,832.00	0.13	RESIDENTIAL
LOT 117	5,844.63	0.13	RESIDENTIAL
LOT 118	5,811.61	0.13	RESIDENTIAL
LOT 119	5,936.73	0.14	RESIDENTIAL
LOT 120	6,930.16	0.16	RESIDENTIAL
LOT 121	7,689.87	0.18	RESIDENTIAL
LOT 122	6,629.62	0.15	RESIDENTIAL
LOT 123	6,173.57	0.14	RESIDENTIAL
LOT 124	6,197.39	0.14	RESIDENTIAL
LOT 125	6,724.10	0.15	RESIDENTIAL
LOT 126	7,392.06	0.17	RESIDENTIAL
LOT 127	7,692.30	0.18	RESIDENTIAL
LOT 128	6,510.40	0.15	RESIDENTIAL
LOT 129	9,348.18	0.21	RESIDENTIAL
LOT 130	9,172.79	0.21	RESIDENTIAL
LOT 131	9,013.77	0.21	RESIDENTIAL
LOT 132	8,824.85	0.20	RESIDENTIAL
LOT 133	8,639.14	0.20	RESIDENTIAL
LOT 134	7,988.24	0.18	RESIDENTIAL
LOT 135	8,143.16	0.19	RESIDENTIAL
LOT 136	8,515.25	0.20	RESIDENTIAL
LOT 137	8,948.64	0.21	RESIDENTIAL
LOT 138	7,935.19	0.18	RESIDENTIAL
LOT 139	7,675.52	0.18	RESIDENTIAL
LOT 140	7,675.52	0.18	RESIDENTIAL
LOT 141	7,915.38	0.18	RESIDENTIAL
LOT 142	7,675.52	0.18	RESIDENTIAL
LOT 143	7,915.38	0.18	RESIDENTIAL
LOT 144	8,155.24	0.19	RESIDENTIAL
LOT 145	8,010.60	0.18	RESIDENTIAL
LOT A	388,902.29	8.93	UTILITY & STREET LOT
LOT B	17,944.53	0.41	DRAINAGE LOT
LOT C	7,376.14	0.17	DRAINAGE LOT
LOT D	15,871.13	0.36	DRAINAGE LOT
LOT E	29,991.35	0.69	DRAINAGE LOT
LOT F	5,457.26	0.13	SLOPE & DRAINAGE LOT
LOT G	1,551.42	0.04	UTILITY, DRAINAGE & ACCESS LOT
LOT H	4,172.46	0.10	UTILITY, DRAINAGE & TRAIL LOT
LOT "I"	1,501.64	0.03	DRAINAGE LOT
LOT J	985.32	0.02	DRAINAGE LOT
LOT K	1,537.70	0.04	DRAINAGE LOT
LOT L	3,911.33	0.09	UTILITY, DRAINAGE & ACCESS LOT
LOT M	3,095.50	0.07	UTILITY, DRAINAGE & ACCESS LOT
LOT N	2,290,892.65	52.59	BIOLOGICAL OPEN SPACE
LOT P	176,148.32	4.04	SLOPE & DRAINAGE LOT
LOT "O"	393,713.67	9.04	FIRE BUFFER / CLEARING LOT
LOT Q	19,824.22	0.46	DRAINAGE LOT
LOT R	91,910.28	2.11	SLOPE & DRAINAGE LOT
LOT S	137,958.15	3.17	FIRE BUFFER / CLEARING LOT
LOT T	223,424.54	5.13	DETACHED CONDOMINIUM
LOT U	271,078.73	6.22	PUBLIC PARK
LOT V	202,930.74	4.66	SLOPE & DRAINAGE LOT
LOT W	77,037.59	1.77	FIRE BUFFER / CLEARING LOT
LOT X	444,452.01	10.20	DETACHED CONDOMINIUM
LOT Y	55,207.12	1.27	DRAINAGE & TRAIL LOT
LOT Z	14,203.20	0.33	SLOPE & DRAINAGE LOT
LOT AA	38,972.00	0.89	TWIN OAKS RIGHT OF WAY

AREA SUMMARY			
ITEM	DESCRIPTION	AREA (SF)	AREA (AC)
1	PROJECT TOTAL ACREAGE	5,927,179.36	136.07
2	GRADING AREA	2,988,612.70	68.61
3	TWIN OAKS RIGHT OF WAY	38,972.00	0.89
4	FIRE BUFFER OUTSIDE OF GRADING FOOTPRINT	608,710.93	13.97
5	BIOLOGICAL OPEN SPACE	2,290,891.99	52.59
6	TOTAL CLEARING AREA (ITEM 2+4)	3,597,323.63	82.58
7	SMALLEST RESIDENTIAL LOT SIZE	4,656.99	0.11
8	LARGEST RESIDENTIAL LOT SIZE	12,185.01	0.28
9	AVERAGE RESIDENTIAL LOT SIZE	6,945.71	0.16

NOTE: ALL STREETS WITHIN THIS TRACT ARE PRIVATE EXCEPTING THE PORTION OF STREET "A" SHOWN AS PUBLIC ROW.

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SHEET 3 OF 22 SHEETS
TM OVERALL & INDEX

Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

NOT FOR CONSTRUCTION

K:\2024\24044\Engineering\TM\TM SHTS\Sheet1 - TM 24044 TM ENTIRE MAP OVERALL.dwg 10/30/2025 1:31 PM GRAHAM, ELOY 32E

NOTE:
FOR LOT TYPICAL SETBACK SEE ("TYPICAL SINGLE FAMILY GRADING LAYOUT AND SETBACK") SHEET 7 OF 21

AREA NOTE:
LOTS 1-145 LOT AREAS SHOWN HERE ARE BOTH GROSS AND NET AREAS

NOTE:
BOXED NUMBERS ARE EASEMENT
REFER TO SHEET 2 FOR EASEMENT DETAIL

EASEMENT NOTE
EASEMENTS OF RECORD NOT SHOWN HEREON SHALL BE HONORED, ABANDONED AND / OR RELOCATED TO THE SATISFACTION OF ALL INTERESTED PARTIES. PUBLIC UTILITY EASEMENTS NECESSARY TO SERVE THIS PROJECT WILL BE COORDINATED WITH THE SERVING UTILITY COMPANY.

EASEMENT QUITCLAIMED NOTE
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EASEMENTS TO REMAIN NOTE
THE FOLLOWING EASEMENTS WILL REMAIN:

10 AN EASEMENT FOR ROAD AND UTILITY AND INCIDENTAL PURPOSES, RECORDED NOVEMBER 29, 1978 AS INSTRUMENT NO. 78-397722 OF OFFICIAL RECORDS. IN FAVOR OF MAX M. ARLIN AND OLIVE E. ARLIN, HUSBAND AND WIFE AND CLUB HOTEL, INC., A NEVADA CORPORATION.

21 AN EASEMENT FOR ROAD AND INCIDENTAL PURPOSES, RECORDED DECEMBER 21, 1972 AS INSTRUMENT NO. 339038 OF OFFICIAL RECORDS. IN FAVOR OF CLUB HOTEL INC., A NEVADA CORPORATION.

LEGEND

PROJECT BOUNDARY	
PROPERTY LINE	-PL-
RIGHT OF WAY	-RW-
FLOW LINE	
PCC BROW DITCH	
PCC CURB	
PCC CURB & GUTTER	
BEGINNING & END OF COURSE	

KEY MAP

MATCHLINE SEE SHEET 6

MATCHLINE SEE SHEET 5

LOT N
A=52.59 AC
BIOLOGICAL OPEN SPACE

LOT N
A=2290892.65 SF
BIOLOGICAL OPEN SPACE

"0"
A=77037.59 SF
FIRE BUFFER/
CLEARING LOT

ALTERNATE FIRE BUFFER LINE 150' FROM BUILDING OUTLINE

SEE EASEMENT ITEM 31 & 39 ON SHEET 2

PRIVATE DRAINAGE EASEMENT

10' PRIVATE DRAINAGE EASEMENT

15' PRIVATE DRAINAGE EASEMENT

EXIST. PRIVATE ROAD EASEMENT TO REMAIN

STREET "H"

STREET "I"

STREET "A"

STREET "C"

STREET "E"

STREET "F"

ST "K"

STREET "D"

LOT A
A=388902.29 SF
UTILITY & STREET LOT

LOT R
A=77037.59 SF
SLOPE & DRAINAGE LOT

LOT P
A=176148.32 SF
SLOPE & DRAINAGE LOT

LOT Q
A=19824.2 SF
DRAINAGE LOT

LOT K
A=1521.39 SF
DRAINAGE LOT

LOT J
A=961.32 SF
DRAINAGE LOT

LOT D
A=7587.51 SF
DRAINAGE LOT BMP-A

LOT M
A=3095.50 SF
UTILITY, DRAINAGE LOT & ACCESS LOT

LOT G
A=1651.42 SF
UTILITY, DRAINAGE & ACCESS LOT

LOT Z
A=14021.74 SF
SLOPE & DRAINAGE LOT BMP-B

LOT F
A=5394.62 SF
SLOPE & DRAINAGE LOT

LOT Y
A=58997.34 SF
DRAINAGE, & PUBLIC TRAIL LOT

LOT V
A=2029330.74 SF
SLOPE & DRAINAGE LOT

LOT W
A=77037.59 SF
FIRE BUFFER/
CLEARING LOT

LOT 61 A=7321.40 SF
LOT 60 A=4981.95 SF
LOT 59 A=5117.46 SF
LOT 58 A=5438.73 SF
LOT 57 A=5579.34 SF
LOT 56 A=8206.78 SF
LOT 55 A=6430.88 SF
LOT 54 A=5890.03 SF
LOT 53 A=5330.00 SF
LOT 52 A=5299.55 SF
LOT 51 A=5477.43 SF
LOT 50 A=5070.80 SF
LOT 49 A=4851.56 SF
LOT 48 A=5705.85 SF
LOT 47 A=9644.44 SF
LOT 46 A=8598.31 SF
LOT 45 A=4634.37 SF
LOT 62 A=6573.00 SF
LOT 63 A=5510.10 SF
LOT 64 A=3800.85 SF
LOT 65 A=8901.79 SF
LOT 66 A=7926.96 SF
LOT 67 A=7078.71 SF
LOT 68 A=6449.00 SF
LOT 69 A=6585.25 SF
LOT 70 A=4940.30 SF
LOT 71 A=5814.73 SF
LOT 72 A=5754.70 SF
LOT 73 A=6900.09 SF
LOT 74 A=5196.35 SF
LOT 75 A=5182.49 SF
LOT 76 A=5188.43 SF
LOT 77 A=5274.20 SF
LOT 78 A=6884.96 SF
LOT 79 A=7606.78 SF
LOT 80 A=7315.67 SF
LOT 81 A=7877.73 SF
LOT 82 A=8647.23 SF
LOT 83 A=7197.58 SF
LOT 103 A=5826.15 SF
LOT 104 A=6958.69 SF
LOT 105 A=6895.49 SF
LOT 106 A=6725.33 SF
LOT 107 A=6881.28 SF
LOT 108 A=8006.22 SF
LOT 109 A=5900.00 SF
LOT 110 A=5300.00 SF
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LOT 124 A=6197.39 SF
LOT 125 A=6724.10 SF
LOT 126 A=7392.08 SF
LOT 127 A=7692.39 SF
LOT 128 A=6510.40 SF
LOT 129 A=9348.78 SF
LOT 130 A=9172.78 SF
LOT 131 A=9013.77 SF
LOT 132 A=8824.85 SF
LOT 133 A=8638.13 SF
LOT 134 A=7988.24 SF
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LOT 136 A=8515.25 SF
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LOT 138 A=7935.19 SF
LOT 139 A=7675.52 SF
LOT 140 A=7675.52 SF
LOT 141 A=7910.38 SF
LOT 142 A=7675.52 SF
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LOT 145 A=8011.60 SF
LOT 1 A=9381.54 SF
LOT 2 A=8039.85 SF
LOT 3 A=8993.90 SF
LOT 4 A=11909.98 SF
LOT 5 A=11459.98 SF
LOT 6 A=8863.09 SF
LOT 7 A=8891.93 SF
LOT 8 A=5918.08 SF
LOT 9 A=6326.53 SF
LOT 10 A=6391.21 SF
LOT 11 A=6838.11 SF
LOT 12 A=6976.40 SF
LOT 13 A=8917.93 SF
LOT 14 A=6572.73 SF
LOT 15 A=7901.30 SF
LOT 16 A=8031.75 SF
LOT 17 A=10083.10 SF
LOT 18 A=7632.77 SF
LOT 19 A=6911.58 SF
LOT 20 A=6624.00 SF
LOT 21 A=6247.44 SF
LOT 22 A=6464.14 SF
LOT 23 A=6948.38 SF

SCALE 1"=40'
0 40 80

SHEET 4 OF 22 SHEETS
TENTATIVE MAP

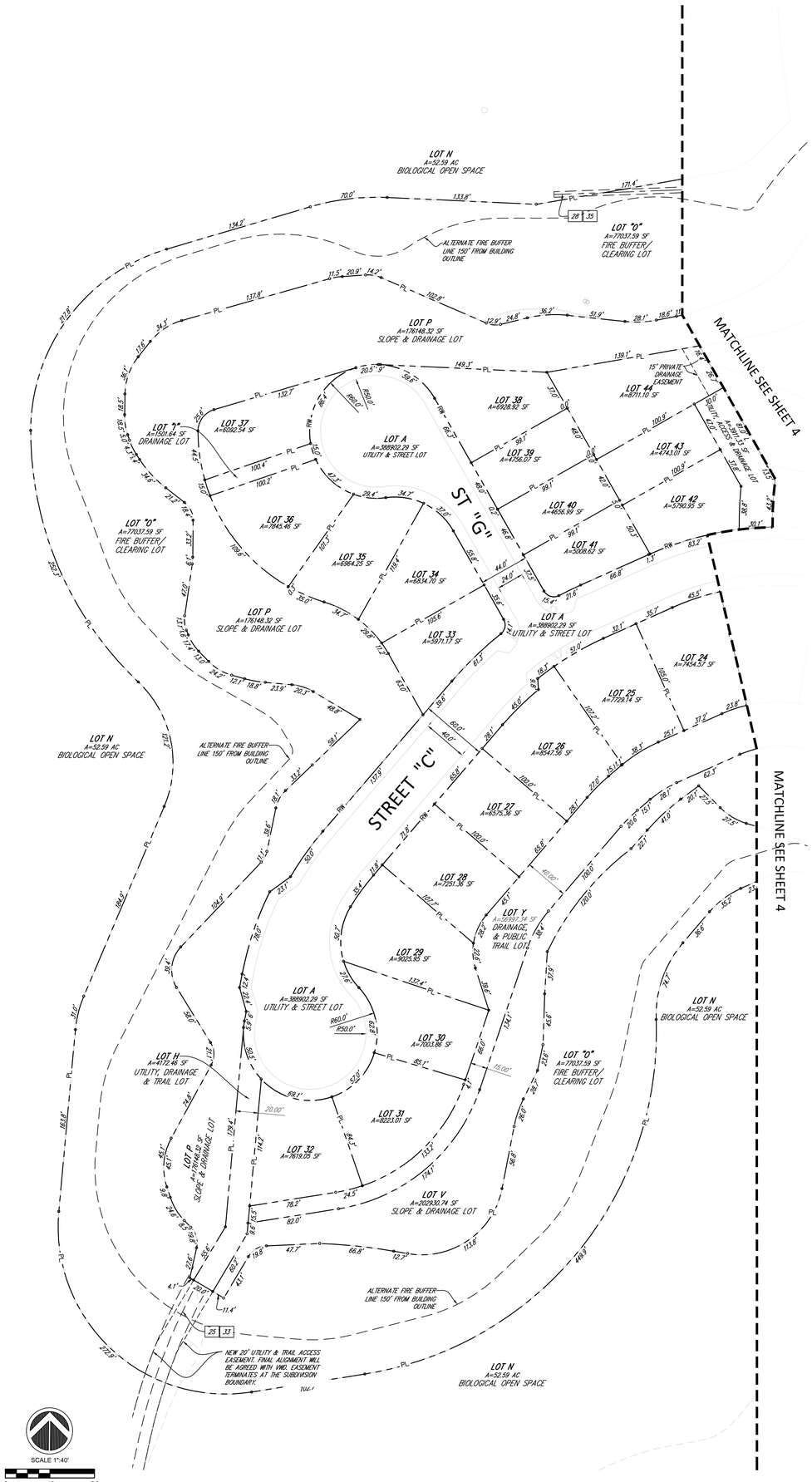
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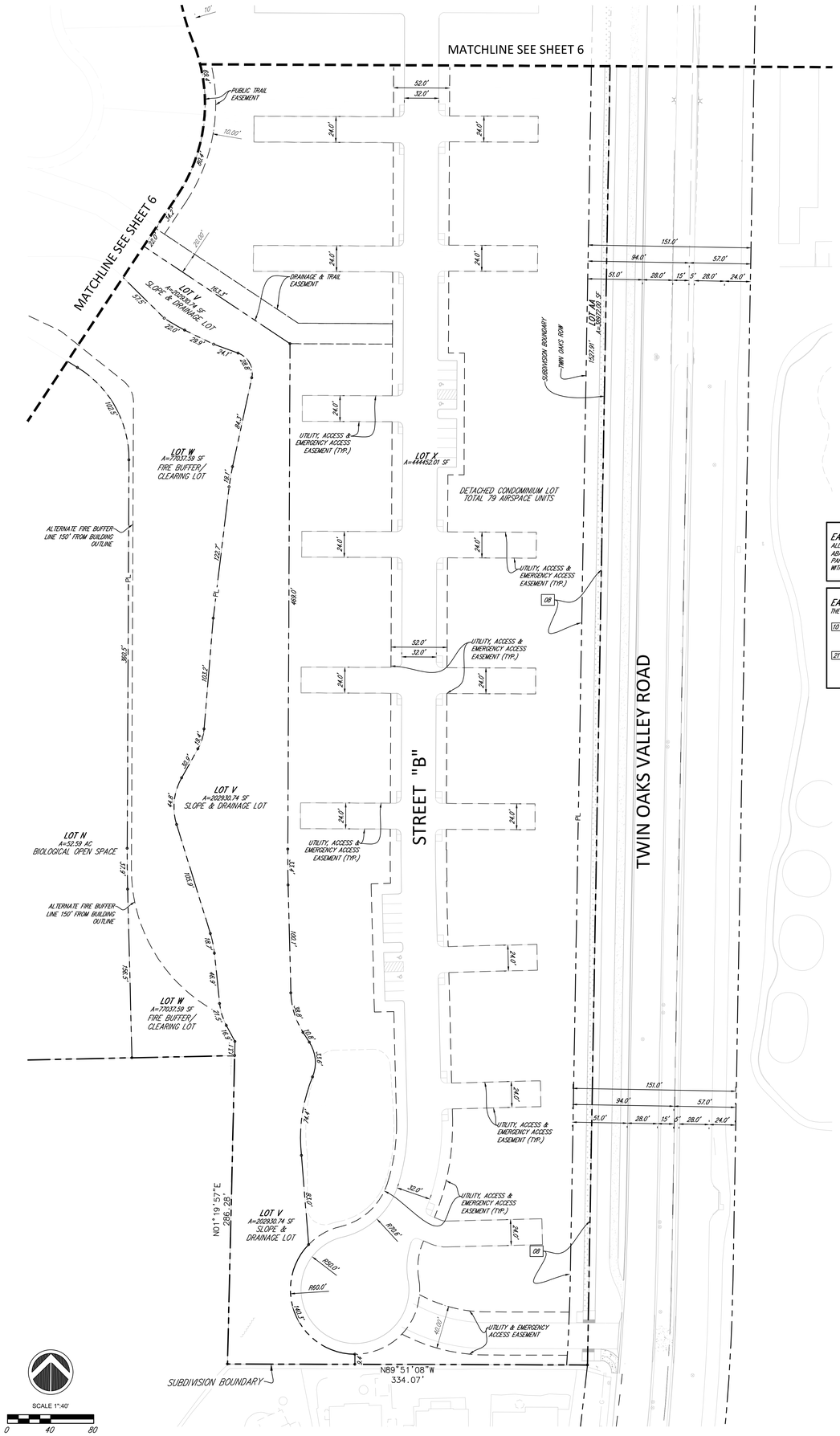
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SAN MARCOS, CA

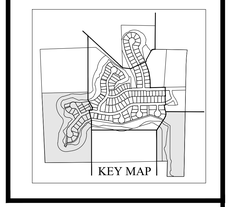
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P:\241240\Engineering\MAP\01 Sheets - 11"x17"\241240 TM TENTATIVE MAP.dwg 10/21/2025 1:33 PM ORIGINAL PLOT SIZE







LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE -PL-
- RIGHT OF WAY -RW-
- FLOW LINE
- PCC BROW DITCH
- PCC CURB
- PCC CURB & GUTTER
- BEGINNING & END OF COURSE

NOTE:
FOR LOT TYPICAL SETBACK SEE ("TYPICAL SINGLE FAMILY GRADING LAYOUT AND SETBACK") SHEET 7 OF 21

AREA NOTE:
LOTS 1-145 LOT AREAS SHOWN HERE ARE BOTH GROSS AND NET AREAS

NOTE:
BOXED NUMBERS ARE EASEMENT.
REFER TO SHEET 2 FOR EASEMENT DETAIL

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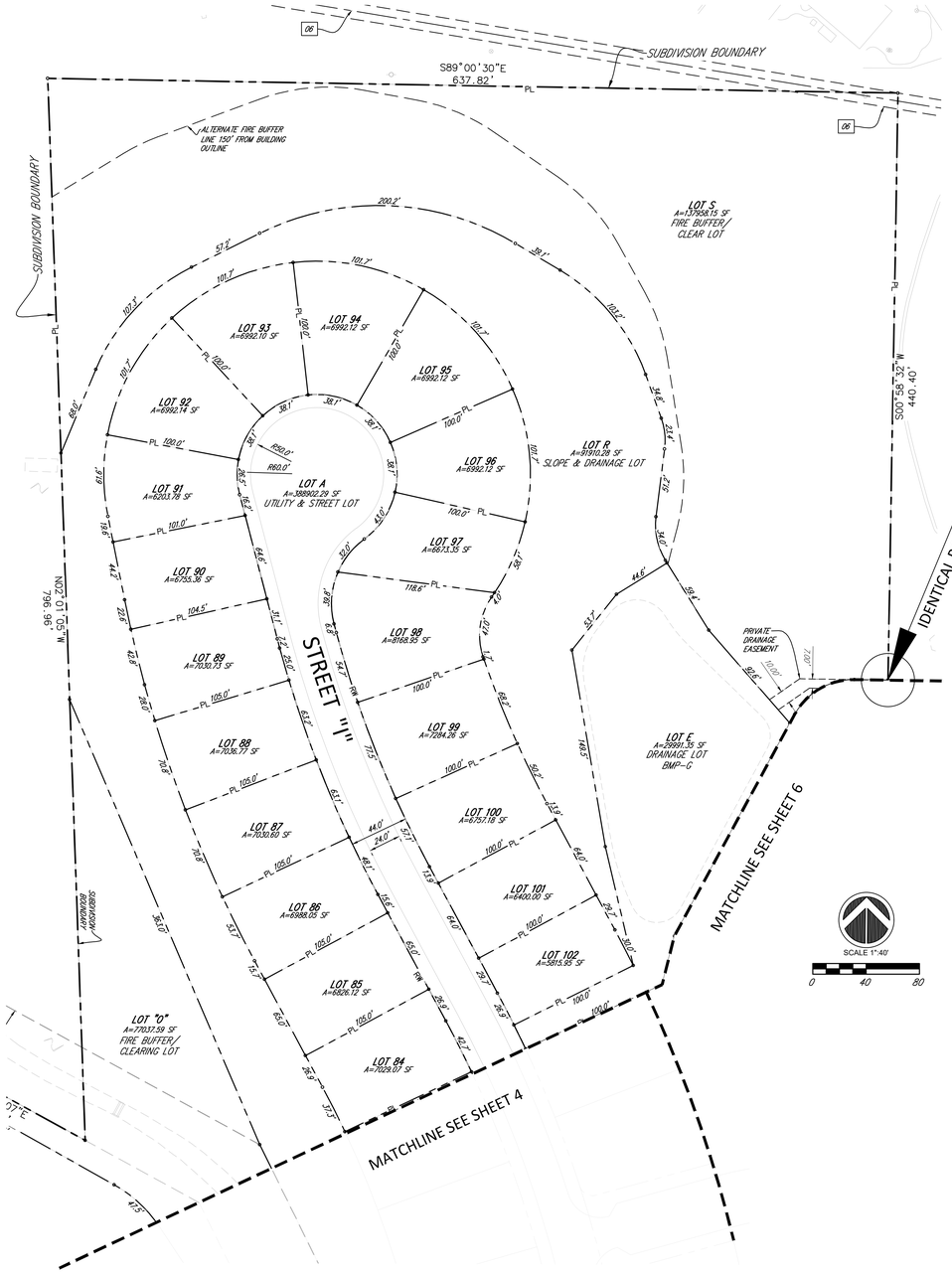
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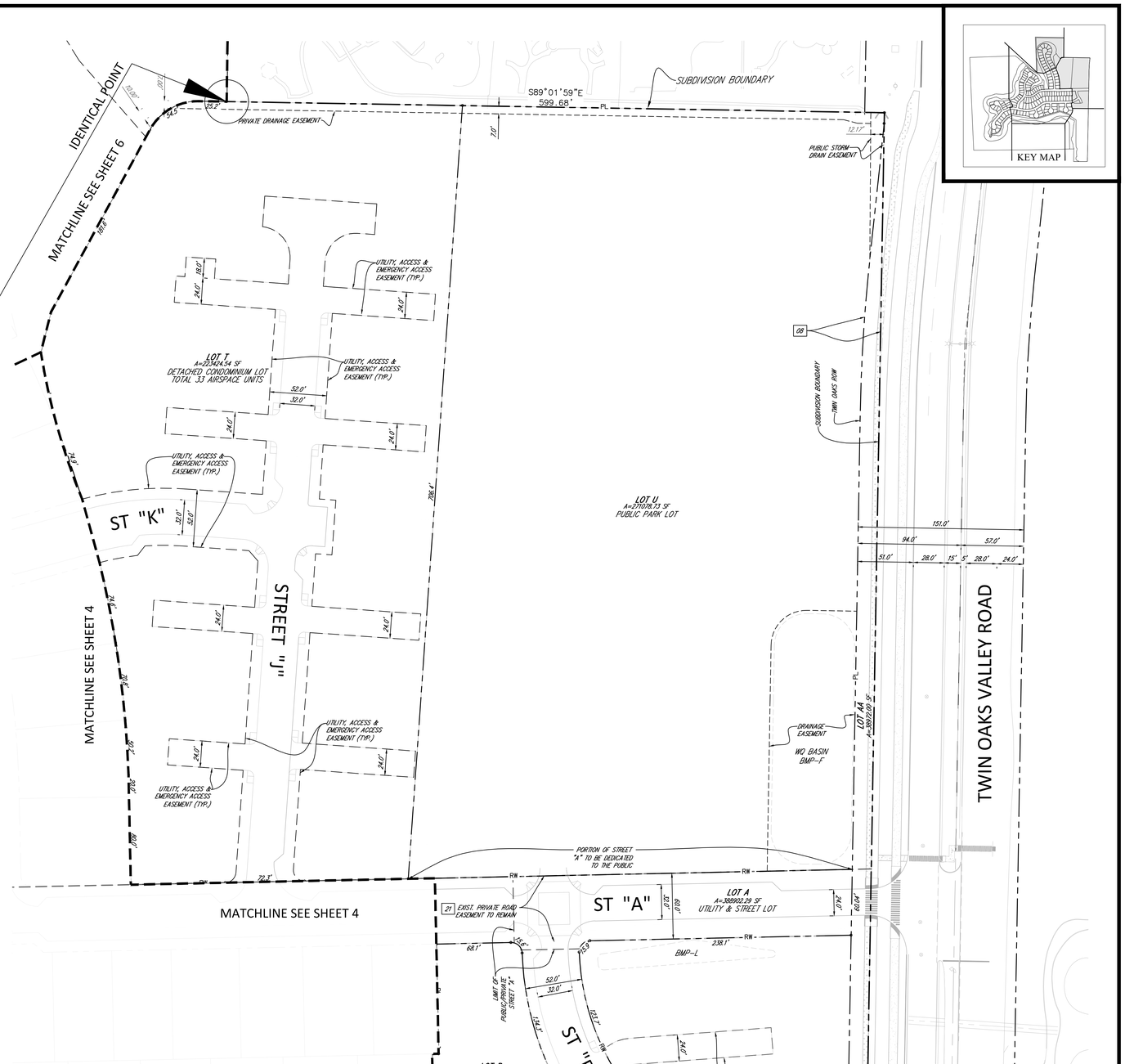
SHEET 5 OF 22 SHEETS
TENTATIVE MAP

Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

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LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE -PL-
- RIGHT OF WAY -RW-
- FLOW LINE
- PCC BROW DITCH
- PCC CURB
- PCC CURB & GUTTER
- BEGINNING & END OF COURSE

NOTE:
FOR LOT TYPICAL SETBACK SEE ("TYPICAL SINGLE FAMILY GRADING LAYOUT AND SETBACK") SHEET 7 OF 21

AREA NOTE:
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NOTE:
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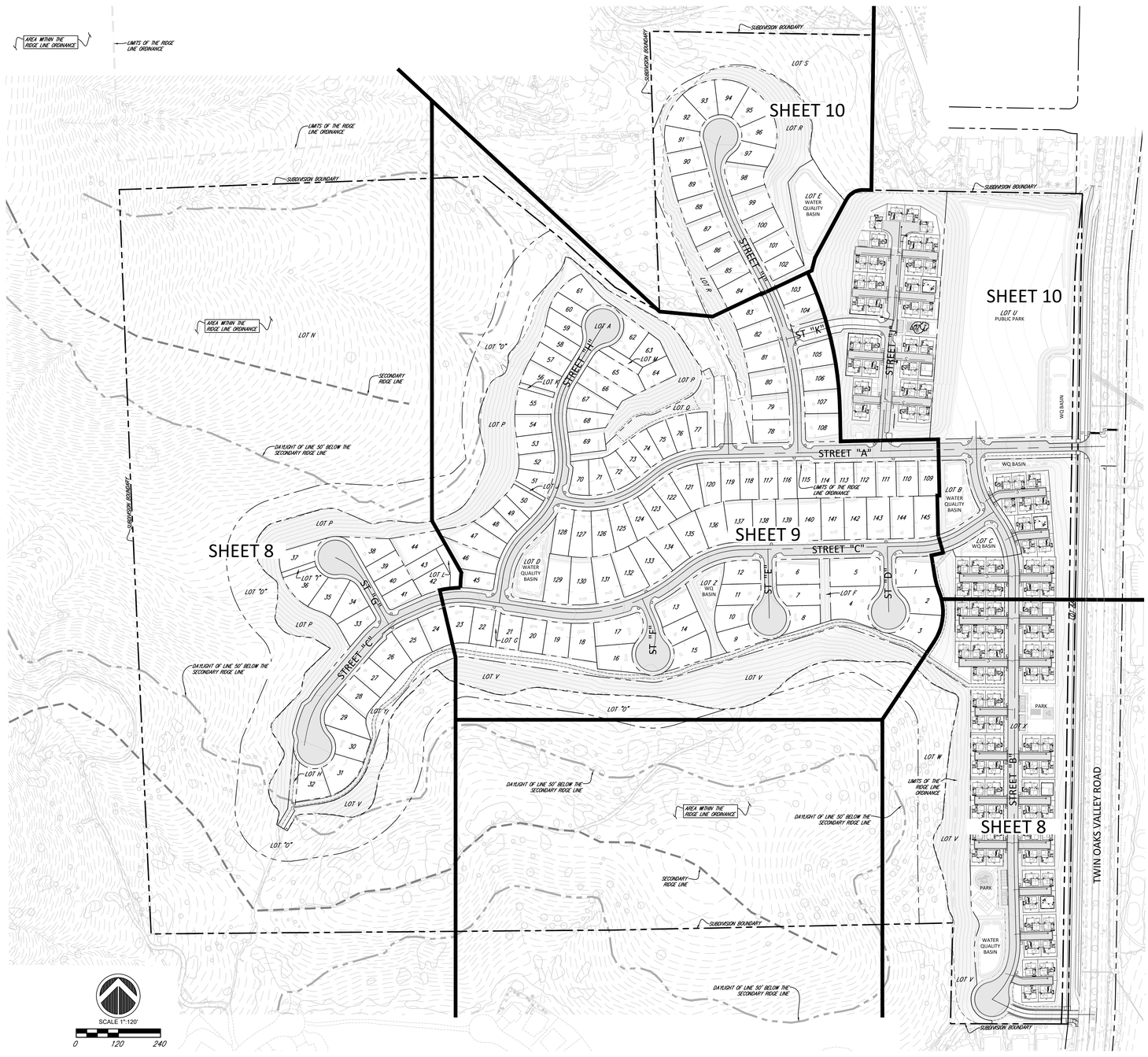
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SHEET 6 OF 22 SHEETS
TENTATIVE MAP

Meritage Homes
LIFE. BUILT. BETTER.

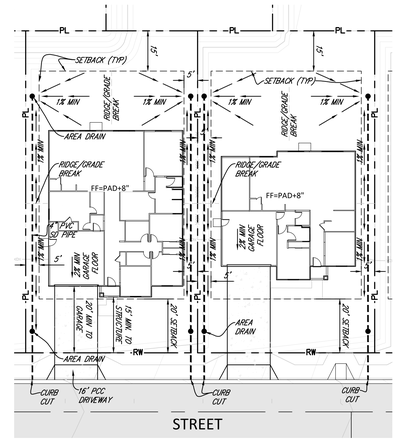
OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

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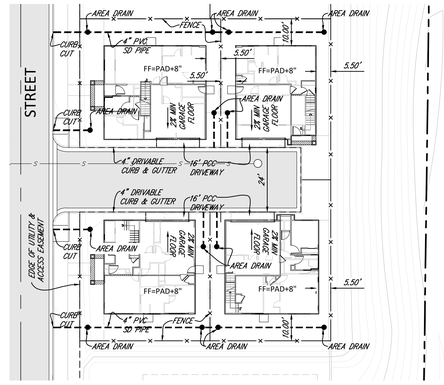


LEGEND

PROJECT BOUNDARY	
EXIST MAJOR CONTOUR	100
EXIST MINOR CONTOUR	
PROPOSE MAJOR CONTOUR	100
PROPOSE MINOR CONTOUR	
RETAINING WALL	
PCC CURB	
PCC CURB & GUTTER	



TYPICAL SINGLE FAMILY GRADING LAYOUT
NOT TO SCALE



TYPICAL DETACHED CONDOMINIUM GRADING LAYOUT
NOT TO SCALE

GRADING VOLUME

THE PRISMOIDAL VOLUME METHOD WAS USED TO CALCULATE THE VALUES SHOWN HEREON. VOLUMES INCLUDE REMEDIAL BULKING, SHRINKAGE, WQ BASINS, STORM DRAIN TRENCHES, BUILDING FOUNDATIONS AND STANDARD STREET SECTIONS.

ADJUSTED CUT VOLUME = 662,300 CY
ADJUSTED FILL VOLUME = 662,300 CY

MERITAGE - OAKCREST EARTHWORK VOLUME (01/15/2025)

ITEM	ITEM DESCRIPTION	AREA	SECTION	VOLUME (CY)
1	C3D CUT			553,820.30
2	STREET & SIDEWALK SECTIONS (CUT AREA ONLY, ALREADY INCLUDED IN ITEM 1)		0.00	0.00
3	ADDITIONAL CUT DUE TO WQ BASIN (CUT AREAS ONLY)	34,137.93	4.00	5,057.47
4	ADDITIONAL CUT DUE TO SD PIPE TRENCHES			8,018.07
5	TOTAL RAW CUT			566,895.84
6	C3D CUT BULKING (ASSUMING 15% OF CUT MATERIALS) (REMOVED 1.5' OF TOP SOIL)	481,127.476	0.15	72,169.12
7	BULKING FROM OVER-EX (15% OF OVER-EX)			6,820.51
8	BLDG FOUNDATION & UTILITITES SPOILS (100 CY/BLDG)	100.00	198.00	19,800.00
9	TOTAL AVAILABLE MATERIALS FOR ON-SITE FILL			665,685.47
10				
11	C3D FILL			589,605.45
12	STREET & SIDEWALK SECTIONS (CUT AREA ONLY, ALREADY INCLUDED IN ITEM 11)		0.00	0.00
13	15% SHRINKAGE (TOP 1.5 FT OF TOTAL GP FOOTPRINT)	171,536.73	0.15	25,730.51
14	SHRINKAGE DUE TO ALLUVIAL REMOVE & RECOMPACT			43,591.32
15	RAW FILL VOLUME			658,927.28
16	RAW EXPORT (CY)			6,758.19
17	COMMON EXCAVATION/EMBANKMENT		662,300.00	

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SHEET 7 OF 22 SHEETS
GP OVERALL & INDEX

Meritage Homes
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OAKCREST
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SAN MARCOS, CA

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P:\24\24041\Engineering\Plot\01\Sheets - 11x17\24041 PM GP OVERALL.dwg 1/27/2025 1:38 PM DRIGINAL PLOT SIZE

CONSTRUCTION NOTES
SURFACE IMPROVEMENTS

- SI-01 AC PAVEMENT
- SI-02 6" PCC CURB & GUTTER
- SI-03 RETAINING WALL
- SI-04 TRAFFIC SIGN
- SI-05 STREET LIGHTS
- SI-06 ADA RAMP
- SI-07 GRIND & OVERLAY
- SI-08 DG TRAIL

UTILITY IMPROVEMENTS

- UI-01 SEWER MANHOLE
- UI-02 FIRE HYDRANT
- UI-03 8" WATER MAIN (PUBLIC)
- UI-04 8" WATER MAIN (PRIVATE)
- UI-05 8" SEWER MAIN (PUBLIC)
- UI-06 8" SEWER MAIN (PRIVATE)

CONSTRUCTION NOTES
STORM DRAIN / WATER QUALITY IMPROVEMENTS

- SD-01 PCC BROW DITCH
- SD-02 STORM DRAIN INLET
- SD-03 STORM DRAIN BOX/CLEANOUT
- SD-04 STORM DRAIN PIPE
- SD-05 STORM DRAIN HEADWALL
- SD-06 RIPRAP
- SD-07 WATER QUALITY OUTLET CONTROL STRUCTURE
- SD-08 WATER QUALITY VEGETATED / ROCK SWALE
- SD-09 WATER QUALITY VEGETATED SWALE

KEY MAP

LEGEND

PROJECT BOUNDARY
PROPERTY LINE
RIGHT OF WAY
EXIST MAJOR CONTOUR
EXIST MINOR CONTOUR
PROPOSE MAJOR CONTOUR
PROPOSE MINOR CONTOUR
RETAINING WALL
EXIST WATER MAIN
EXIST SEWER MAIN
NEW WATER MAIN
NEW SEWER MAIN
FLOW LINE
PCC BROW DITCH
EXIST. FIRE LINE
FIRE HYDRANT
STREET/PARKING LIGHT
STORM DRAIN INLETS/CLEANOUTS
WATER SERVICE LATERAL
SEWER SERVICE LATERAL
FIRE SERVICE LATERAL
PCC CURB
PCC CURB & GUTTER
TEE LATERAL
BLOW OFF
AIR VENT
THRUST BLOCK
GREENSTREET TREE
2:1 MAX SLOPE

OVERHEAD UTILITY LINE NOTE:
ALL OVERHEAD UTILITY LINES UNDER 69 KVA WITHIN THE SUBDIVISION BOUNDARY OR ALONG THE PROJECT FRONTAGE ARE TO BE UNDERGROUNDED.

NOTES:
1. SEE SHEETS 3, 4, 6 FOR LOT INFORMATIONS (TM SHEETS).
2. SEE SHEET 11 FOR TWIN OAKS VALLEY ROAD IMPROVEMENTS.
3. SHEETS 14, 15, 16 FOR PROPOSED UTILITIES.
4. SEE SHEETS 18, 19, 20 FOR SITE DEVELOPMENT PLAN.
5. SEE SHEET 22 FOR WQMP EXHIBIT.

NOTES:
BOXED NUMBERS ARE EASEMENT
REFER TO SHEET 2 FOR EASEMENT DETAIL

MATCHLINE SEE SHEET 10
MATCHLINE SEE SHEET 9
STREET "A"
STREET "C"
STREET "D"
STREET "E"
STREET "F"
STREET "H"
ST "K"
LOT A UTILITY & STREET LOT
LOT D WATER QUALITY BASIN BMP-A
WQ BASIN BMP-B
LOT N BIOLOGICAL OPEN SPACE
PARCEL OVERALL 135.17 AC

SCALE 1"-40'
0 40 80

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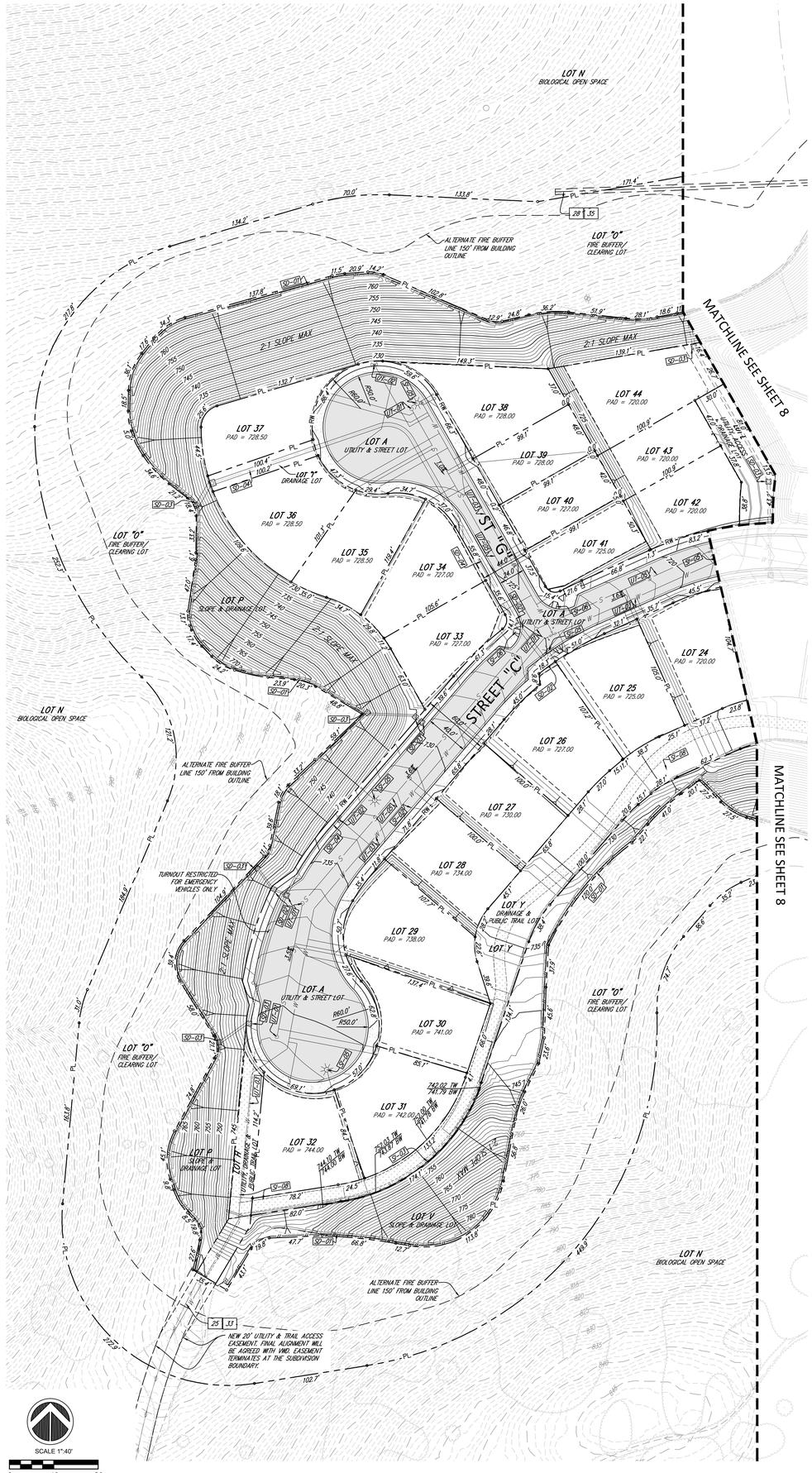
SHEET 8 OF 22 SHEETS
GRADING PLAN

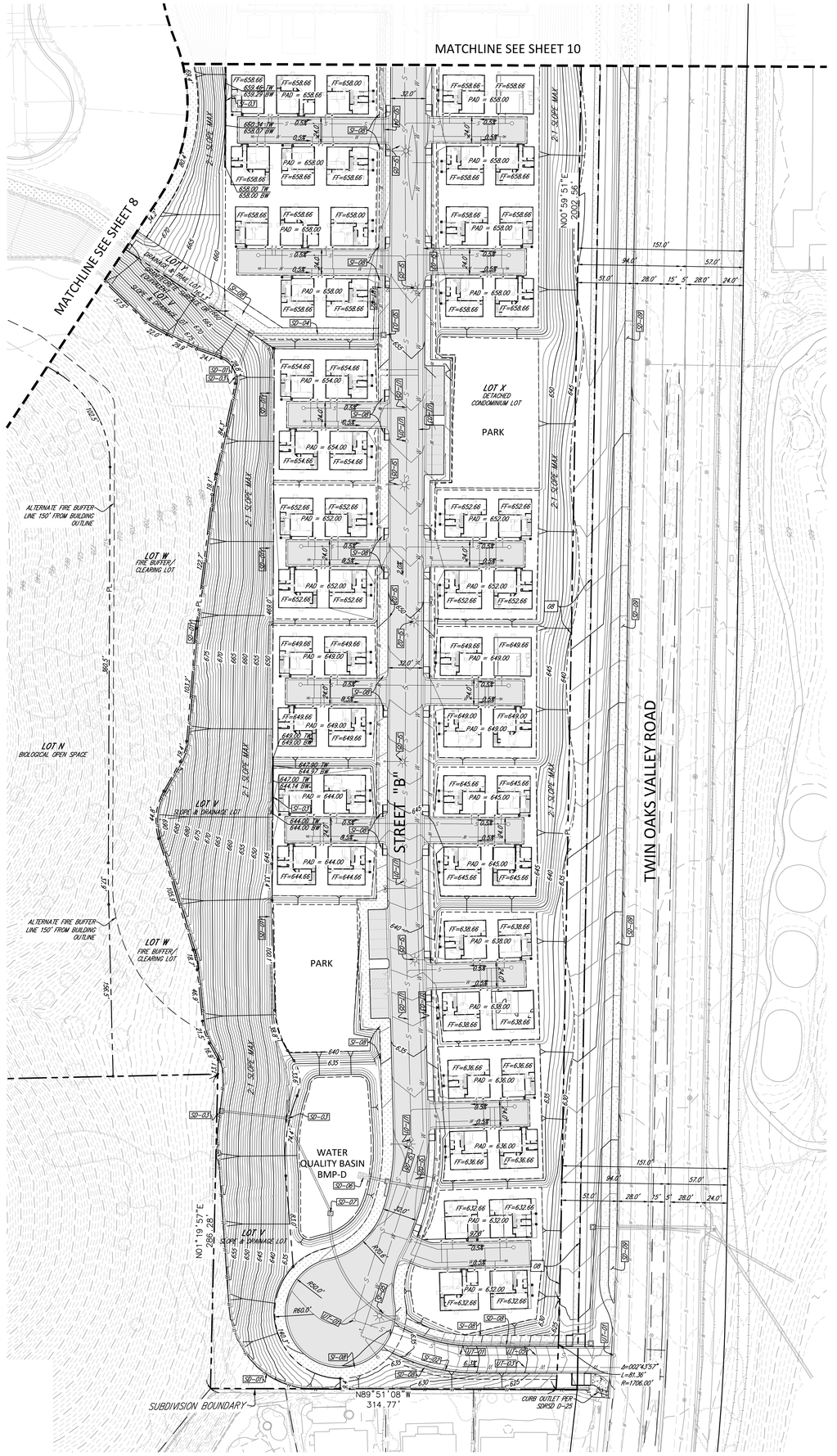
Meritage Homes
LIFE. BUILT. BETTER.

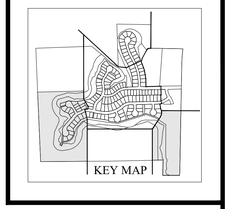
OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

NOT FOR CONSTRUCTION

J:\EXCEL\2404\Engineering\TM\TM 01\Sheets — 10/1/2024 11:29:09 AM BY GREGG — 10/1/2024 3:39 PM BY GREGG — ORIGINAL PLOT SIZE







OVERHEAD UTILITY LINE NOTE:
ALL OVERHEAD UTILITY LINES UNDER 69 KVA WITHIN THE SUBDIVISION BOUNDARY OR ALONG THE PROJECT FRONTAGE ARE TO BE UNDERGROUNDED.

LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE -PL-
- RIGHT OF WAY -RW-
- EXIST MAJOR CONTOUR 100
- EXIST MINOR CONTOUR
- PROPOSE MAJOR CONTOUR 100
- PROPOSE MINOR CONTOUR
- RETAINING WALL
- EXIST WATER MAIN W
- EXIST SEWER MAIN S
- NEW WATER MAIN W
- NEW SEWER MAIN S
- FLOW LINE
- PCC BROW DITCH
- EXIST. FIRE LINE F
- FIRE HYDRANT
- STREET/PARKING LIGHT
- STORM DRAIN INLETS/CLEANOUTS
- WATER SERVICE LATERAL W
- SEWER SERVICE LATERAL S
- FIRE SERVICE LATERAL F
- PCC CURB
- PCC CURB & GUTTER
- TEE LATERAL
- BLOW OFF
- AIR VENT
- THRUST BLOCK
- GREENSTREET TREE
- 2:1 MAX SLOPE

CONSTRUCTION NOTES

SURFACE IMPROVEMENTS

- SD-01 AC PAVEMENT
- SD-02 6" PCC CURB & GUTTER
- SD-03 RETAINING WALL
- SD-04 TRAFFIC SIGN
- SD-05 STREET LIGHTS
- SD-06 ADA RAMP
- SD-07 GRIND & OVERLAY
- SD-08 DG TRAIL

UTILITY IMPROVEMENTS

- UT-01 SEWER MANHOLE
- UT-02 FIRE HYDRANT
- UT-03 8" WATER MAIN (PUBLIC)
- UT-04 8" WATER MAIN (PRIVATE)
- UT-05 8" SEWER MAIN (PUBLIC)
- UT-06 8" SEWER MAIN (PRIVATE)

STORM DRAIN / WATER QUALITY IMPROVEMENTS

- SD-01 PCC BROW DITCH
- SD-02 STORM DRAIN INLET
- SD-03 STORM DRAIN BOX/CLEANOUT
- SD-04 STORM DRAIN PIPE
- SD-05 STORM DRAIN HEADWALL
- SD-06 RIPRAP
- SD-07 WATER QUALITY OUTLET CONTROL STRUCTURE
- SD-08 WATER QUALITY VEGETATED / ROCK SWALE
- SD-09 WATER QUALITY VEGETATED SWALE

NOTES:
1. SEE SHEETS 3, 4, 6 FOR LOT INFORMATIONS (TM SHEETS).
2. SEE SHEET 11 FOR TWIN OAKS VALLEY ROAD IMPROVEMENTS.
3. SHEETS 14, 15, 16 FOR PROPOSED UTILITIES.
4. SEE SHEETS 18, 19, 20 FOR SITE DEVELOPMENT PLAN.
5. SEE SHEET 22 FOR WQMP EXHIBIT.

NOTES:
BOXED NUMBERS ARE EASEMENT
REFER TO SHEET 2 FOR EASEMENT DETAIL

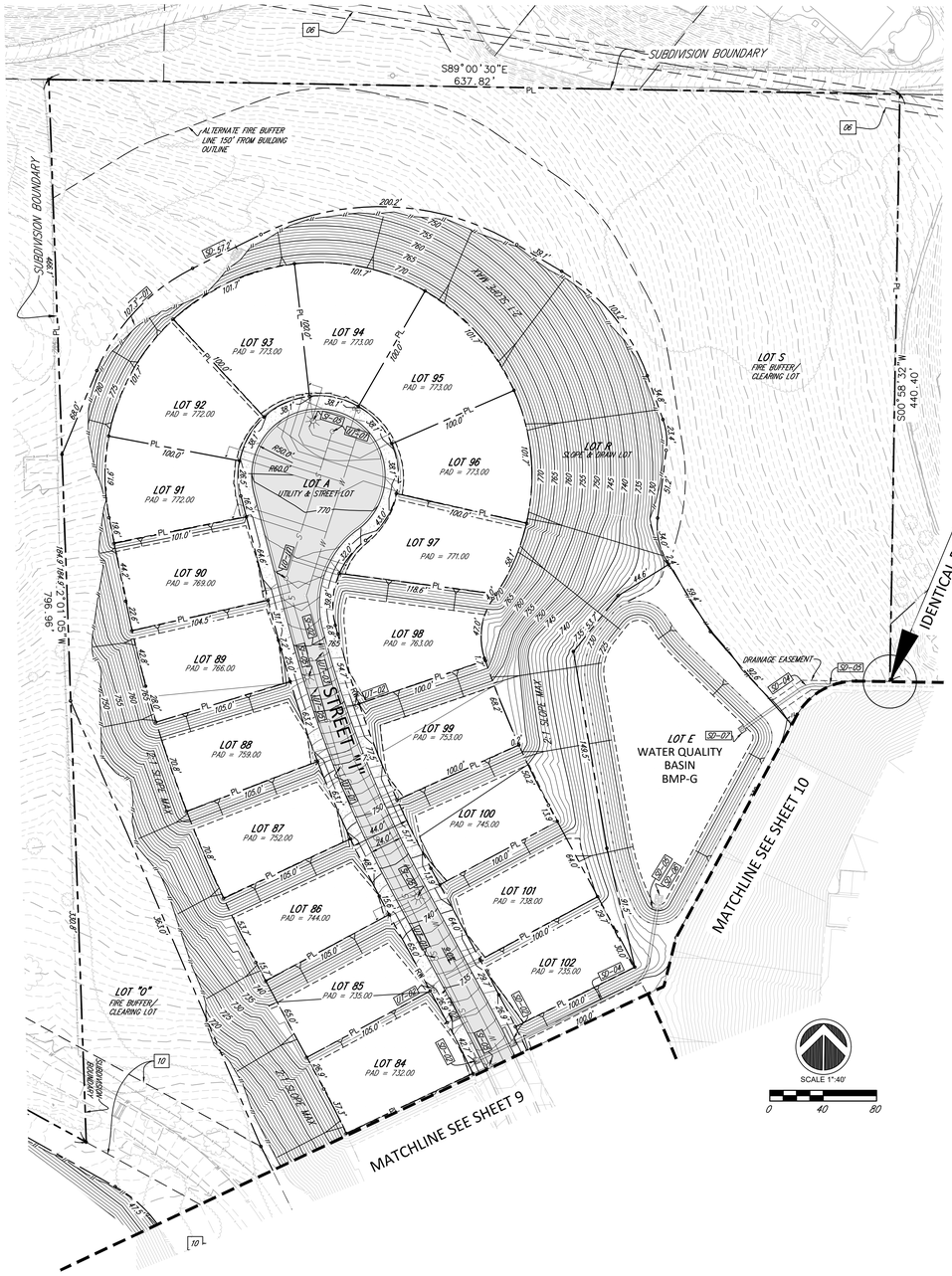
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SHEET 9 OF 22 SHEETS
GRADING PLAN

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OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

J:\21\21044\Engineering\TM\TM 01 Sheets - TM\21044 TM GP.dwg 11/21/2025 1:40 PM JEROMAL PLOT SIZE:





LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE —PL—
- RIGHT OF WAY —RW—
- EXIST MAJOR CONTOUR —100—
- EXIST MINOR CONTOUR
- PROPOSE MAJOR CONTOUR 100
- PROPOSE MINOR CONTOUR
- RETAINING WALL
- EXIST WATER MAIN
- EXIST SEWER MAIN
- NEW WATER MAIN W
- NEW SEWER MAIN S
- FLOW LINE
- PCC BROW DITCH
- EXIST. FIRE LINE F
- FIRE HYDRANT
- STREET/PARKING LIGHT
- STORM DRAIN INLETS/CLEANOUTS
- WATER SERVICE LATERAL
- SEWER SERVICE LATERAL
- FIRE SERVICE LATERAL
- PCC CURB
- PCC CURB & GUTTER
- TEE LATERAL
- BLOW OFF
- AIR VENT
- THRUST BLOCK
- GREENSTREET TREE
- 2:1 MAX SLOPE

CONSTRUCTION NOTES

SURFACE IMPROVEMENTS

- SD-01 AC PAVEMENT
- SD-02 6" PCC CURB & GUTTER
- SD-03 RETAINING WALL
- SD-04 TRAFFIC SIGN
- SD-05 STREET LIGHTS
- SD-06 ADA RAMP
- SD-07 GRIND & OVERLAY
- SD-08 DG TRAIL

UTILITY IMPROVEMENTS

- UT-01 SEWER MANHOLE
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- UT-05 8" SEWER MAIN (PUBLIC)
- UT-06 8" SEWER MAIN (PRIVATE)

CONSTRUCTION NOTES

STORM DRAIN / WATER QUALITY IMPROVEMENTS

- SD-01 PCC BROW DITCH
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- SD-06 RIPRAP
- SD-07 WATER QUALITY OUTLET CONTROL STRUCTURE
- SD-09 WATER QUALITY VEGETATED / ROCK SWALE
- SD-09 WATER QUALITY VEGETATED SWALE

NOTES:

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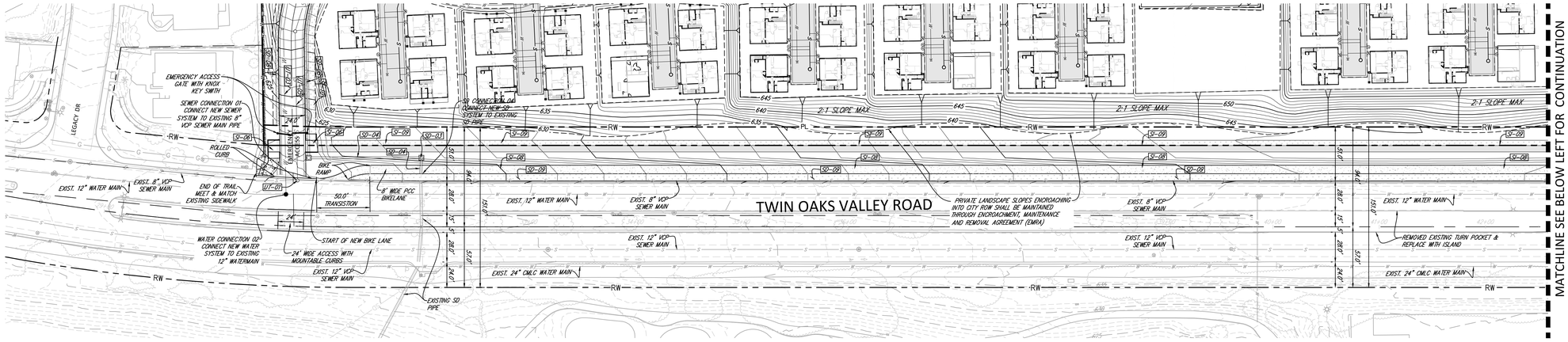
SHEET 10 OF 22 SHEETS
GRADING PLAN

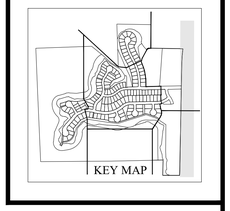
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OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

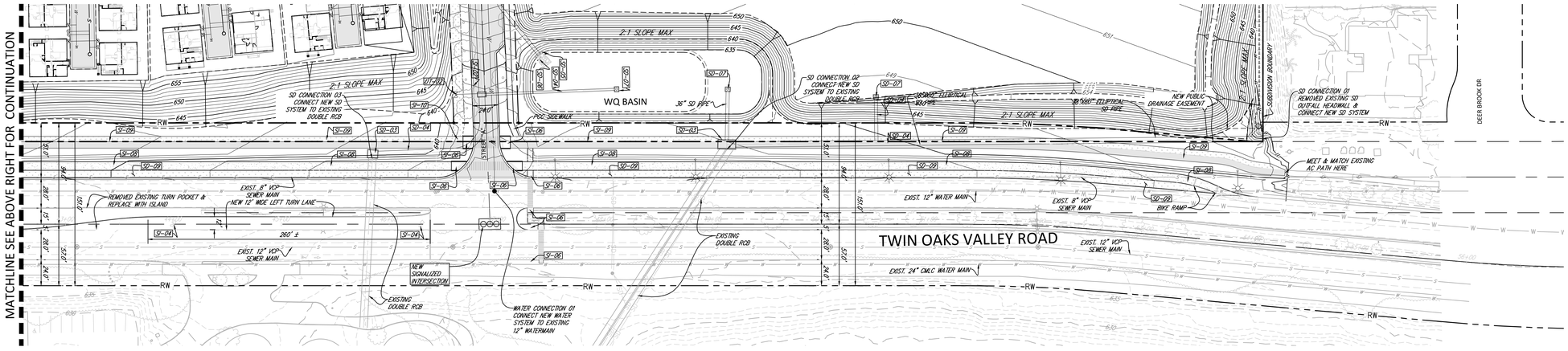
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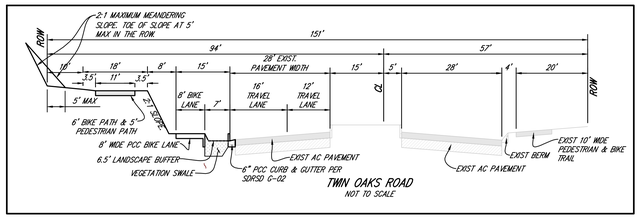




SCALE 1"=40'
0 40 80



SCALE 1"=40'
0 40 80



LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE
- RIGHT OF WAY
- EXIST MAJOR CONTOUR
- EXIST MINOR CONTOUR
- PROPOSE MAJOR CONTOUR
- PROPOSE MINOR CONTOUR
- RETAINING WALL
- EXIST WATER MAIN
- EXIST SEWER MAIN
- NEW WATER MAIN
- NEW SEWER MAIN
- FLOW LINE
- PCC BROW DITCH
- EXIST. FIRE LINE
- FIRE HYDRANT
- STREET/PARKING LIGHT
- STORM DRAIN INLETS/CLEANOUTS
- WATER SERVICE LATERAL
- SEWER SERVICE LATERAL
- FIRE SERVICE LATERAL
- PCC CURB
- PCC CURB & GUTTER
- TEE LATERAL
- BLOW OFF
- AIR VENT
- THRUST BLOCK
- GREENSTREET TREE
- 2:1 MAX SLOPE

CONSTRUCTION NOTES

STORM DRAIN / WATER QUALITY IMPROVEMENTS

- SD-01 PCC BROW DITCH
- SD-02 STORM DRAIN INLET
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SURFACE IMPROVEMENTS

- S-01 AC PAVEMENT
- S-02 6" PCC CURB & GUTTER
- S-03 RETAINING WALL
- S-04 TRAFFIC SIGN / MARKERS / LIGHT
- S-05 STREET LIGHTS
- S-06 ADA RAMP
- S-07 GRIND & OVERLAY
- S-08 8' PCC BIKE LANE
- S-09 11' WIDE TRAIL (6' BIKE / 5' PEDESTRIAN)
- S-10 10' PEDESTRIAN D.G. TRAIL

UTILITY IMPROVEMENTS

- U/T-01 SEWER MANHOLE
- U/T-02 FIRE HYDRANT
- U/T-03 8" WATER MAIN (PUBLIC)
- U/T-04 8" WATER MAIN (PRIVATE)
- U/T-05 8" SEWER MAIN (PUBLIC)
- U/T-06 8" SEWER MAIN (PRIVATE)

NOTES:

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3. SEE SHEETS 18, 19, 20 FOR SITE DEVELOPMENT PLAN.
4. SEE SHEET 22 FOR WQMP EXHIBIT.

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SHEET 11 OF 22 SHEETS

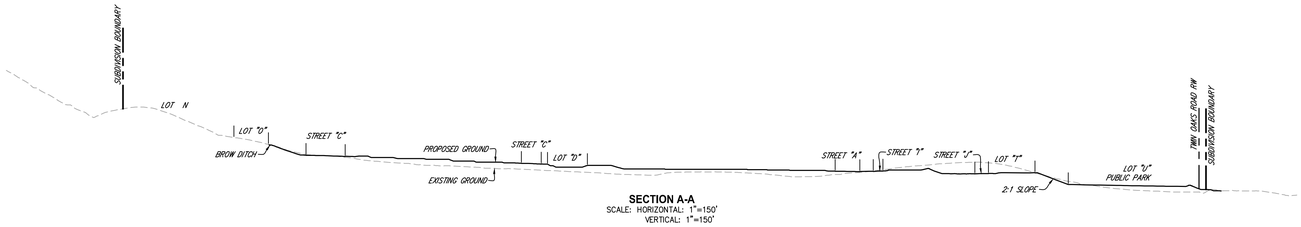
TWIN OAKS VALLEY RD IMPROVEMENTS

Meritage Homes LIFE. BUILT. BETTER.

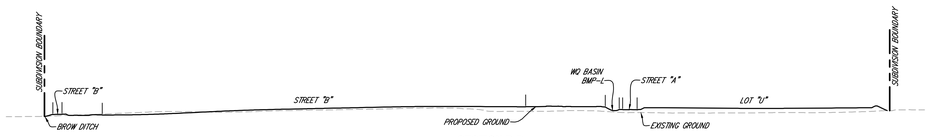
OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

NOT FOR CONSTRUCTION

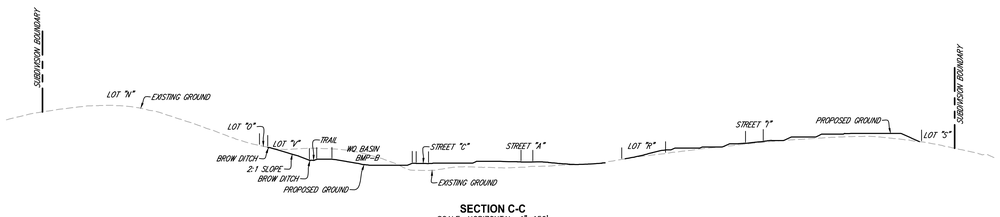
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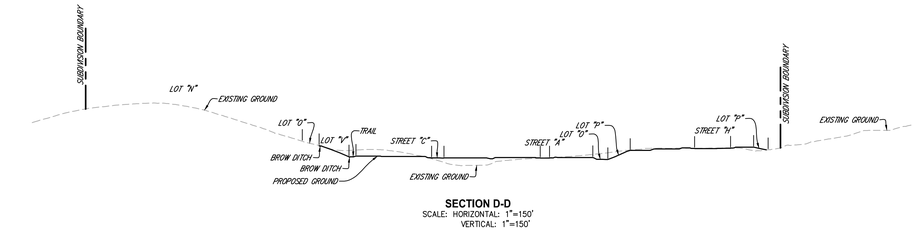
SECTION A-A
SCALE: HORIZONTAL: 1"=150'
VERTICAL: 1"=150'



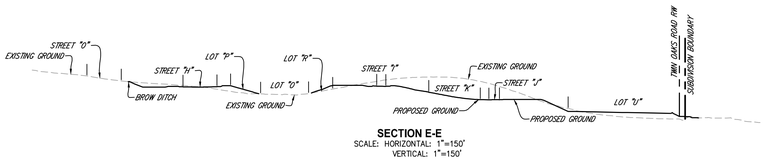
SECTION B-B
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VERTICAL: 1"=150'



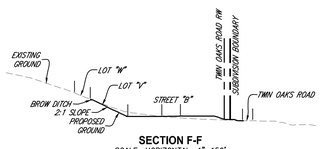
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VERTICAL: 1"=150'



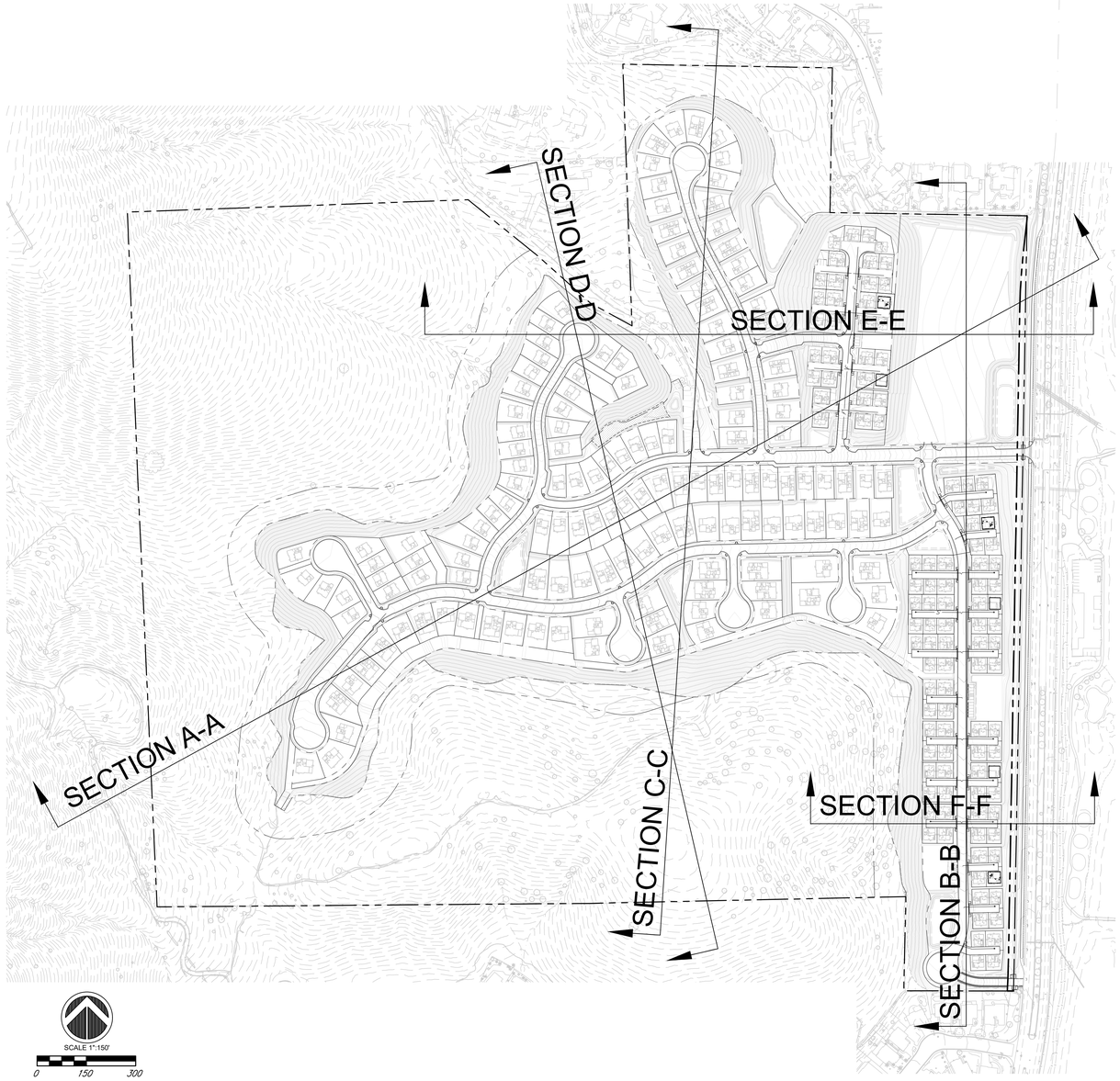
SECTION D-D
SCALE: HORIZONTAL: 1"=150'
VERTICAL: 1"=150'



SECTION E-E
SCALE: HORIZONTAL: 1"=150'
VERTICAL: 1"=150'



SECTION F-F
SCALE: HORIZONTAL: 1"=150'
VERTICAL: 1"=150'



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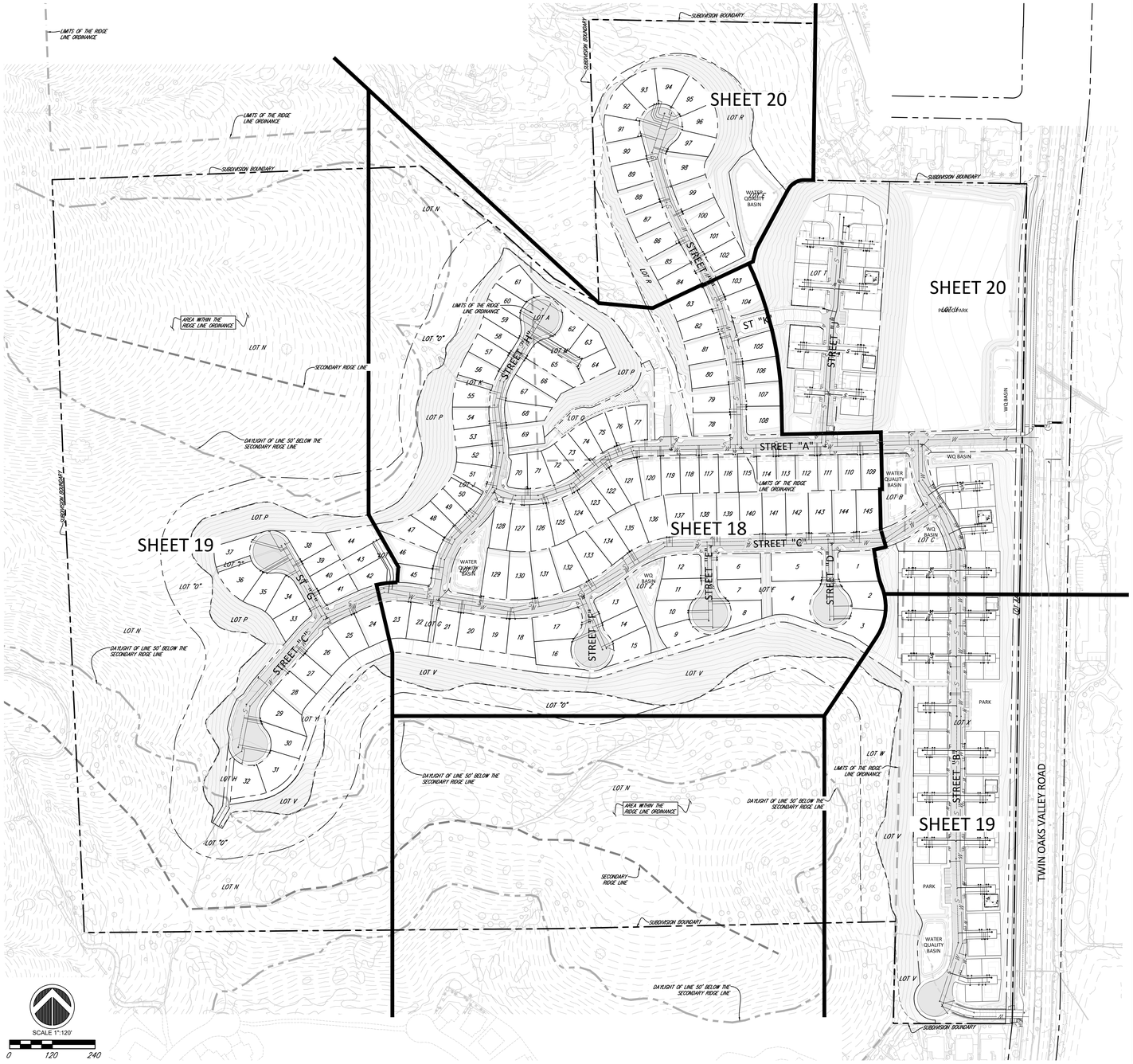
SHEET 12 OF 22 SHEETS
SECTIONS & PROFILES

Meritage Homes
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OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

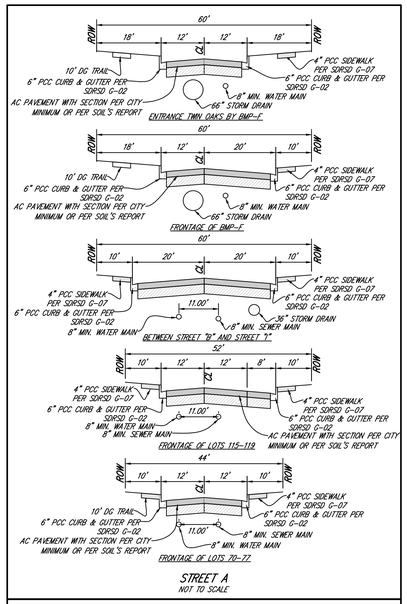
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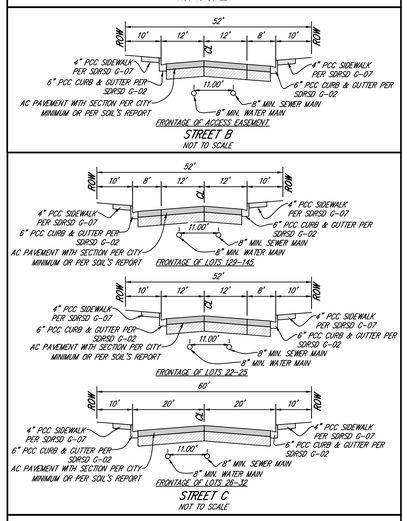
E:\247\24044\Engineering\TM\TM 01\Sheets — TM\24044 TM SECTIONS & PROFILES.dwg 10/29/2025 1:44 PM GRISHAM, KEVIN SIZE

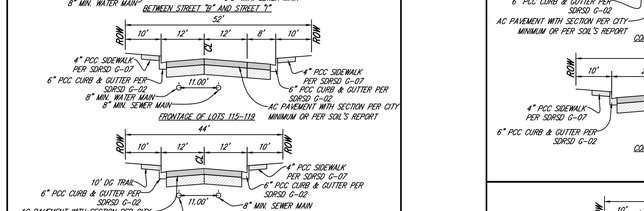


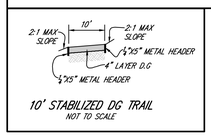
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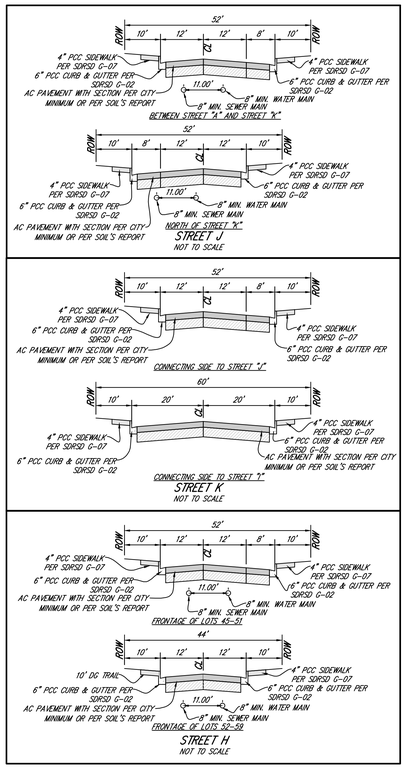
- PROJECT BOUNDARY
- PROPERTY LINE
- RIGHT OF WAY
- EXIST MAJOR CONTOUR
- EXIST MINOR CONTOUR
- PROPOSE MAJOR CONTOUR
- PROPOSE MINOR CONTOUR
- RETAINING WALL
- EXIST WATER MAIN
- EXIST SEWER MAIN
- NEW WATER MAIN
- NEW SEWER MAIN
- FIRE HYDRANT
- STREET/PARKING LIGHT
- STORM DRAIN INLETS/CLEANOUTS
- WATER SERVICE LATERAL
- SEWER SERVICE LATERAL
- FIRE SERVICE LATERAL
- PCC CURB
- PCC CURB & GUTTER
- TEE LATERAL
- BLOW OFF
- AIR VENT
- THRUST BLOCK
- GREENSTREET TREE











WATER & SEWER MAIN NOTES:

1. NO CURVES ON SEWER MAIN AND WATER MAIN LINES.
2. MINIMUM SPACING BETWEEN SEWER MAIN AND WATER MAIN: 11'
3. MINIMUM SEWER AND WATER MAIN DIAMETER: 8"
4. MINIMUM SEWER MAIN COVER: 40"
5. MINIMUM WATER MAIN COVER: 42"
6. MINIMUM MANHOLE DIAMETER: 48"

OVERHEAD UTILITY LINE NOTE:

ALL OVERHEAD UTILITY LINES UNDER 69 KVA WITHIN THE SUBDIVISION BOUNDARY OR ALONG THE PROJECT FRONTAGE ARE TO BE UNDERGROUNDED.

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SHEET 13 OF 22 SHEETS
UTILITIES OVERALL SHEET

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P:\2424\Civil Engineering\Plan Set\Sheets - Plan\2424 TM SHEETS OVERALL.dwg 11/21/2025 4:51 PM GRADING PLOT STYLE

CONSTRUCTION NOTES

- SD-01 PCC BROW DITCH
- SD-02 STORM DRAIN INLET
- SD-03 STORM DRAIN BOX/CLEANOUT
- SD-04 STORM DRAIN PIPE
- SD-05 STORM DRAIN HEADWALL
- SD-06 RIPRAP
- SD-07 WATER QUALITY OUTLET CONTROL STRUCTURE
- SD-08 REVERSE CURB OUTLET

UTILITY IMPROVEMENTS

- UT-01 SEWER MANHOLE
- UT-02 FIRE HYDRANT
- UT-03 8" WATER MAIN (PUBLIC)
- UT-04 8" WATER MAIN (PRIVATE)
- UT-05 8" SEWER MAIN (PUBLIC)
- UT-06 8" SEWER MAIN (PRIVATE)

LEGEND

PROJECT BOUNDARY
PROPERTY LINE
RIGHT OF WAY
EXIST MAJOR CONTOUR
EXIST MINOR CONTOUR
PROPOSE MAJOR CONTOUR
PROPOSE MINOR CONTOUR
RETAINING WALL
EXIST WATER MAIN
EXIST SEWER MAIN
NEW WATER MAIN
NEW SEWER MAIN
FLOW LINE
PCC BROW DITCH
EXIST. FIRE LINE
FIRE HYDRANT
STREET/PARKING LIGHT
STORM DRAIN INLETS/CLEANOUTS
WATER SERVICE LATERAL
SEWER SERVICE LATERAL
FIRE SERVICE LATERAL
PCC CURB
PCC CURB & GUTTER
TEE LATERAL
BLOW OFF
AIR VENT
THRUST BLOCK
GREENSTREET TREE

KEY MAP

NOTES:
1. SEE SHEETS 3, 4, 6 FOR LOT INFORMATIONS (TM SHEETS).
2. SEE SHEETS 7, 9, 8, 10 FOR GRADING INFORMATION & PAD ELEVATIONS.
3. SHEETS 17, 17, 18, 19 FOR SITE DEVELOPMENT PLAN.
4. SEE SHEET 22 FOR WQMP EXHIBIT.

MATCHLINE SEE SHEET 16
MATCHLINE SEE SHEET 15
STREET "H"
STREET "K"
STREET "A"
STREET "C"
ST "E"
ST "D"
ST "F"
LOT A A=188922.29 SF UTILITY & STREET LOT
LOT J DRAINAGE LOT
LOT K DRAINAGE LOT
LOT M UTILITY, ACCESS & DRAINAGE LOT
LOT N A=2290892.65 SF FIRE BUFFER LOT
LOT O A=393713.67 SF FIRE BUFFER LOT
LOT P A=176148.32 SF SLOPE & DRAINAGE LOT
LOT Q SLOPE & DRAINAGE LOT
LOT V A=202930.74 SF SLOPE & DRAINAGE LOT
LOT Y A=55207.12 SF DRAINAGE & ACCESS LOT
ALTERNATE FIRE BUFFER LINE 150' FROM BUILDING OUTLINE
10' DRAINAGE EASEMENT
15' DRAINAGE EASEMENT
WATER CONNECTION 04 CONNECT NEW WATER SYSTEM TO EXISTING 8" ACP WATERMAIN
SCALE 1"=40'
0 40 80

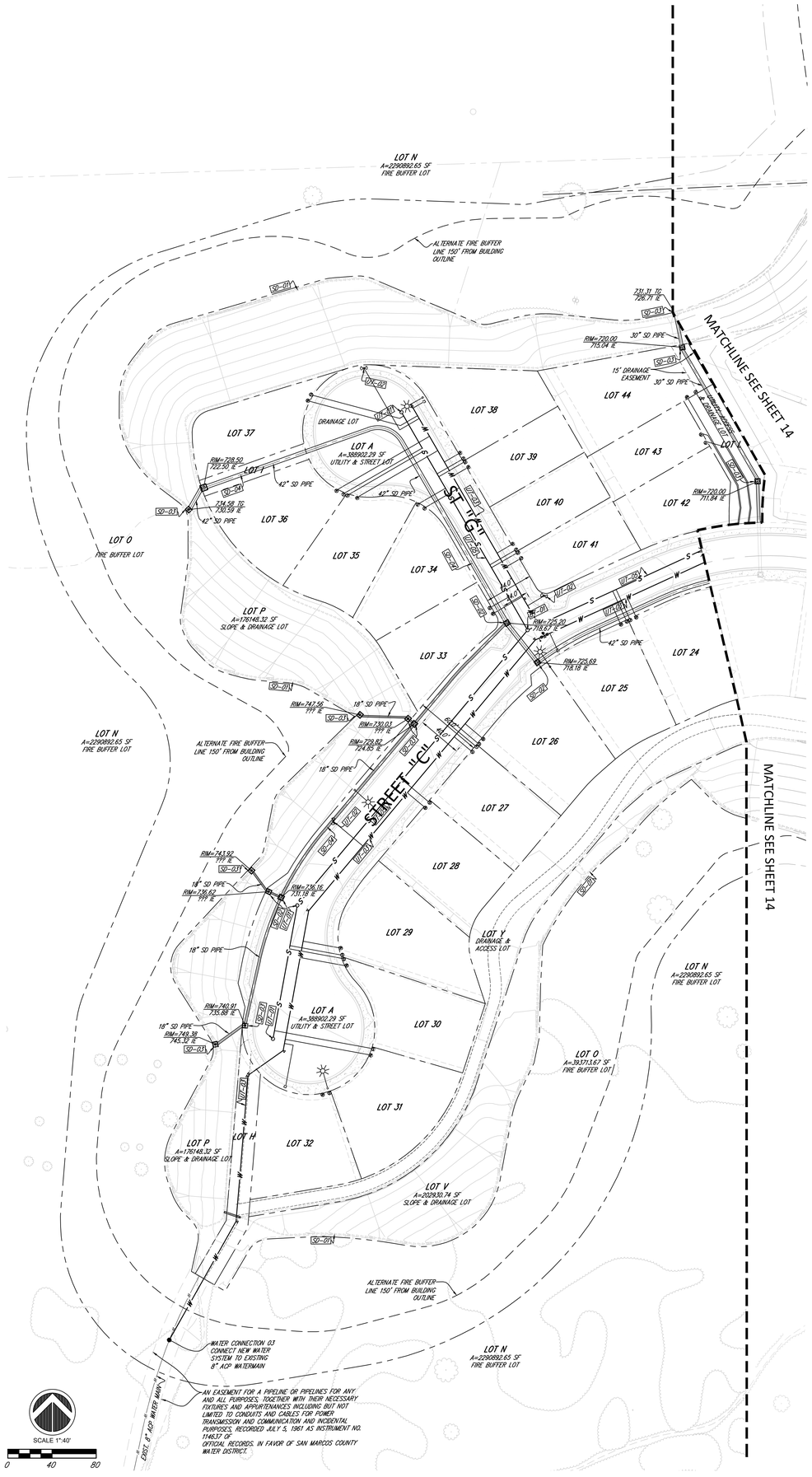
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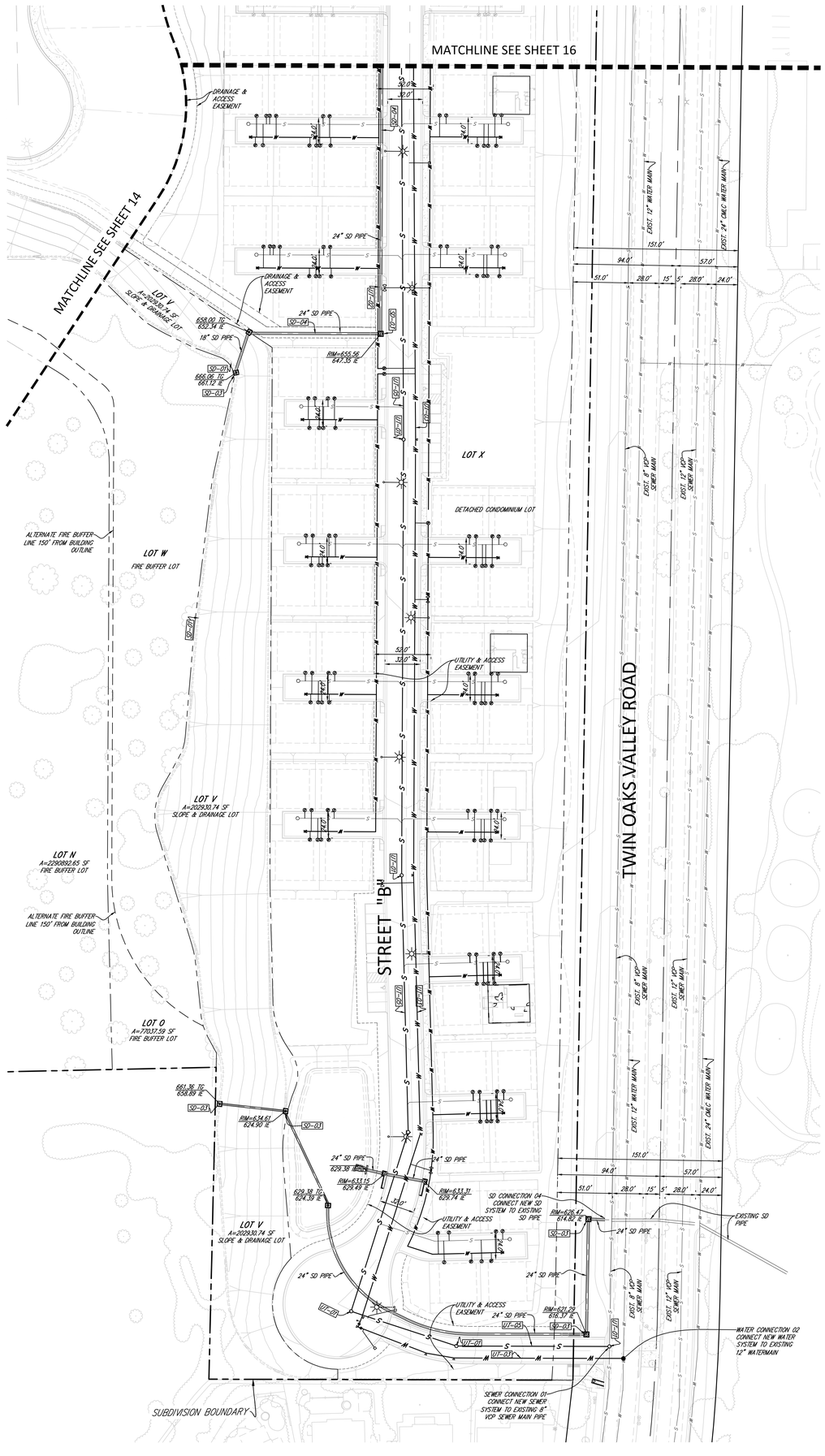
SHEET 14 OF 22 SHEETS
UTILITIES

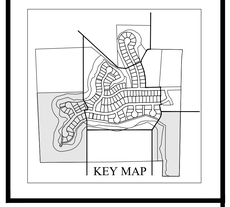
Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

E:\24\24041\Engineering\UW\UW01\Sheets — UW_U25044_UW_U01_SHEETS.dwg 10/21/2025 1:47 PM ORIGINAL PLOT SIZE







CONSTRUCTION NOTES

- SD-01 PCC BROW DITCH
- SD-02 STORM DRAIN INLET
- SD-03 STORM DRAIN BOX/CLEANOUT
- SD-04 STORM DRAIN PIPE
- SD-05 STORM DRAIN HEADWALL
- SD-06 RIPRAP
- SD-07 WATER QUALITY OUTLET CONTROL STRUCTURE
- SD-08 REVERSE CURB OUTLET

UTILITY IMPROVEMENTS

- UT-01 SEWER MANHOLE
- UT-02 FIRE HYDRANT
- UT-03 8" WATER MAIN (PUBLIC)
- UT-04 8" WATER MAIN (PRIVATE)
- UT-05 8" SEWER MAIN (PUBLIC)
- UT-06 8" SEWER MAIN (PRIVATE)

NOTES:

1. SEE SHEETS 3, 4, 6 FOR LOT INFORMATIONS (TM SHEETS).
2. SEE SHEETS 7, 8, 8, 10 FOR GRADING INFORMATION & PAD ELEVATIONS.
3. SHEETS 17, 17, 18, 19 FOR SITE DEVELOPMENT PLAN.
4. SEE SHEET 22 FOR WQMP EXHIBIT.

LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE -PL-
- RIGHT OF WAY -RW-
- EXIST MAJOR CONTOUR 100
- EXIST MINOR CONTOUR
- PROPOSE MAJOR CONTOUR 100
- PROPOSE MINOR CONTOUR
- RETAINING WALL
- EXIST WATER MAIN W
- EXIST SEWER MAIN S
- NEW WATER MAIN W
- NEW SEWER MAIN S
- FLOW LINE
- PCC BROW DITCH
- EXIST. FIRE LINE F
- FIRE HYDRANT
- STREET/PARKING LIGHT
- STORM DRAIN INLETS/CLEANOUTS
- WATER SERVICE LATERAL W
- SEWER SERVICE LATERAL S
- FIRE SERVICE LATERAL F
- PCC CURB
- PCC CURB & GUTTER
- TEE LATERAL
- BLOW OFF
- AIR VENT
- THRUST BLOCK
- GREENSTREET TREE

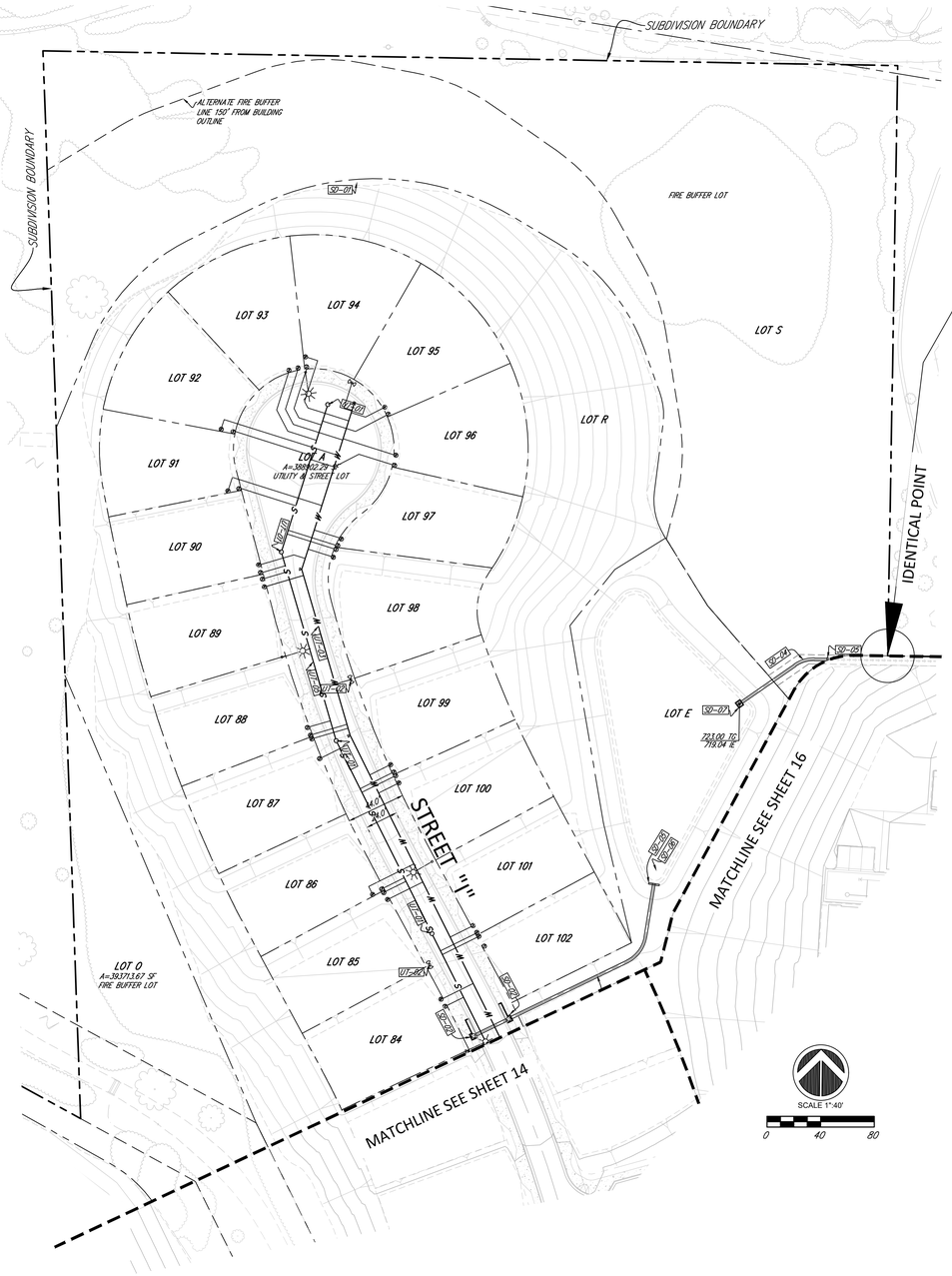
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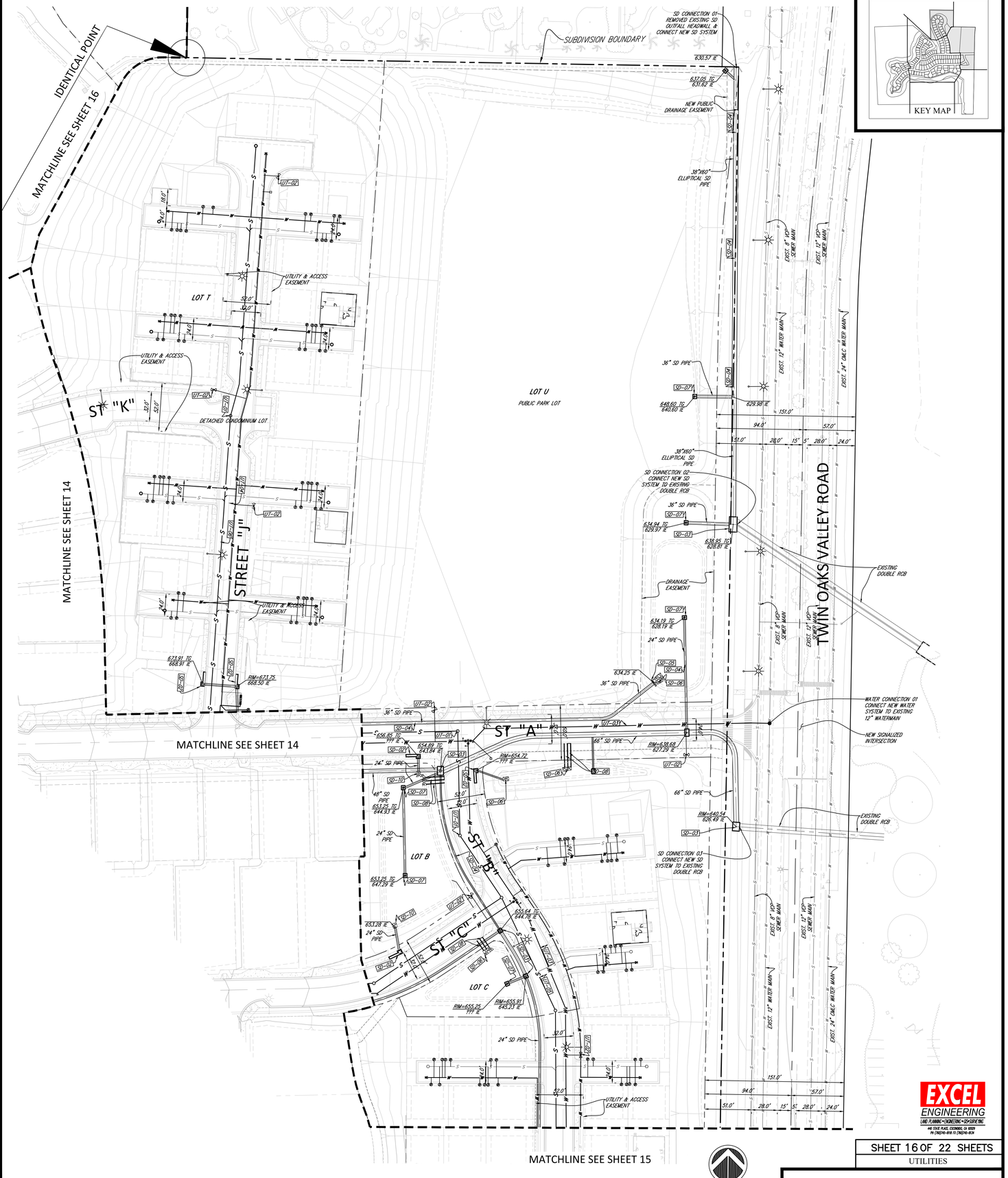
SHEET 15 OF 22 SHEETS
UTILITIES

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OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

K:\24\24041\Engineering\Utility Sheets\24041UTILITIES.dwg 12/22/2025 1:48 PM JORDAN PLOT SIZE





CONSTRUCTION NOTES

- SD-01 PCC BROW DITCH
- SD-02 STORM DRAIN INLET
- SD-03 STORM DRAIN BOX/CLEANOUT
- SD-04 STORM DRAIN PIPE
- SD-05 STORM DRAIN HEADWALL
- SD-06 RIPRAP
- SD-07 WATER QUALITY OUTLET CONTROL STRUCTURE
- SD-08 REVERSE CURB OUTLET

UTILITY IMPROVEMENTS

- UT-01 SEWER MANHOLE
- UT-02 FIRE HYDRANT
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- UT-04 8" WATER MAIN (PRIVATE)
- UT-05 8" SEWER MAIN (PUBLIC)
- UT-06 8" SEWER MAIN (PRIVATE)

LEGEND

PROJECT BOUNDARY
PROPERTY LINE
RIGHT OF WAY
EXIST MAJOR CONTOUR
EXIST MINOR CONTOUR
PROPOSE MAJOR CONTOUR
PROPOSE MINOR CONTOUR
RETAINING WALL
EXIST WATER MAIN
EXIST SEWER MAIN
NEW WATER MAIN
NEW SEWER MAIN
FLOW LINE
PCC BROW DITCH
EXIST. FIRE LINE
FIRE HYDRANT
STREET/PARKING LIGHT
STORM DRAIN INLETS/CLEANOUTS
WATER SERVICE LATERAL
SEWER SERVICE LATERAL
FIRE SERVICE LATERAL
PCC CURB
PCC CURB & GUTTER
TEE LATERAL
BLOW OFF
AIR VENT
THRUST BLOCK
GREENSTREET TREE

NOTES:

1. SEE SHEETS 3, 4, 6 FOR LOT INFORMATIONS (TM SHEETS).
2. SEE SHEETS 7, 9, 8, 10 FOR GRADING INFORMATION & PAD ELEVATIONS.
3. SHEETS 17, 17, 18, 19 FOR SITE DEVELOPMENT PLAN.
4. SEE SHEET 22 FOR WQMP EXHIBIT.

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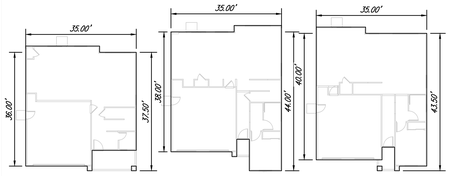
SHEET 16 OF 22 SHEETS
UTILITIES

Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

E:\24\24041\Engineering\TM\TM 01\Sheets — TM\24041 TM 16 (UTILITIES).dwg 10/21/2025 1:49 PM GRISWOLD, ELIOT SOE

35' WIDE SINGLE FAMILY FLOOR PLANS

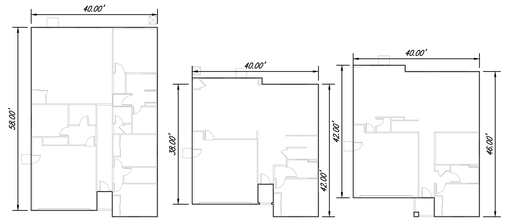


PLAN 3522
NOT TO SCALE

PLAN 3524
NOT TO SCALE

PLAN 3526
NOT TO SCALE

40' WIDE SINGLE FAMILY FLOOR PLANS

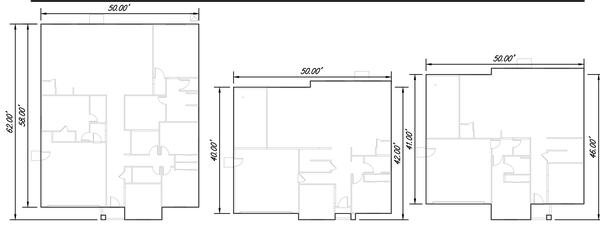


PLAN 4014
NOT TO SCALE

PLAN 4023
NOT TO SCALE

PLAN 4027
NOT TO SCALE

50' WIDE SINGLE FAMILY FLOOR PLANS

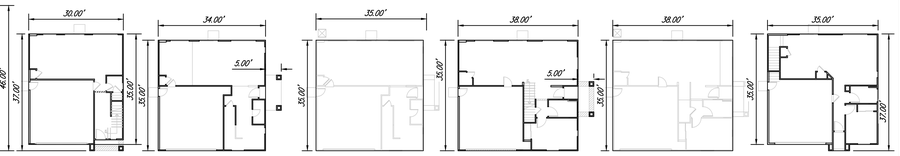


PLAN 5016
NOT TO SCALE

PLAN 5024
NOT TO SCALE

PLAN 5026
NOT TO SCALE

DETACHED CONDOMINIUM FLOOR PLANS



PLAN 3060
NOT TO SCALE

PLAN 3424
NOT TO SCALE

PLAN 3424X
NOT TO SCALE

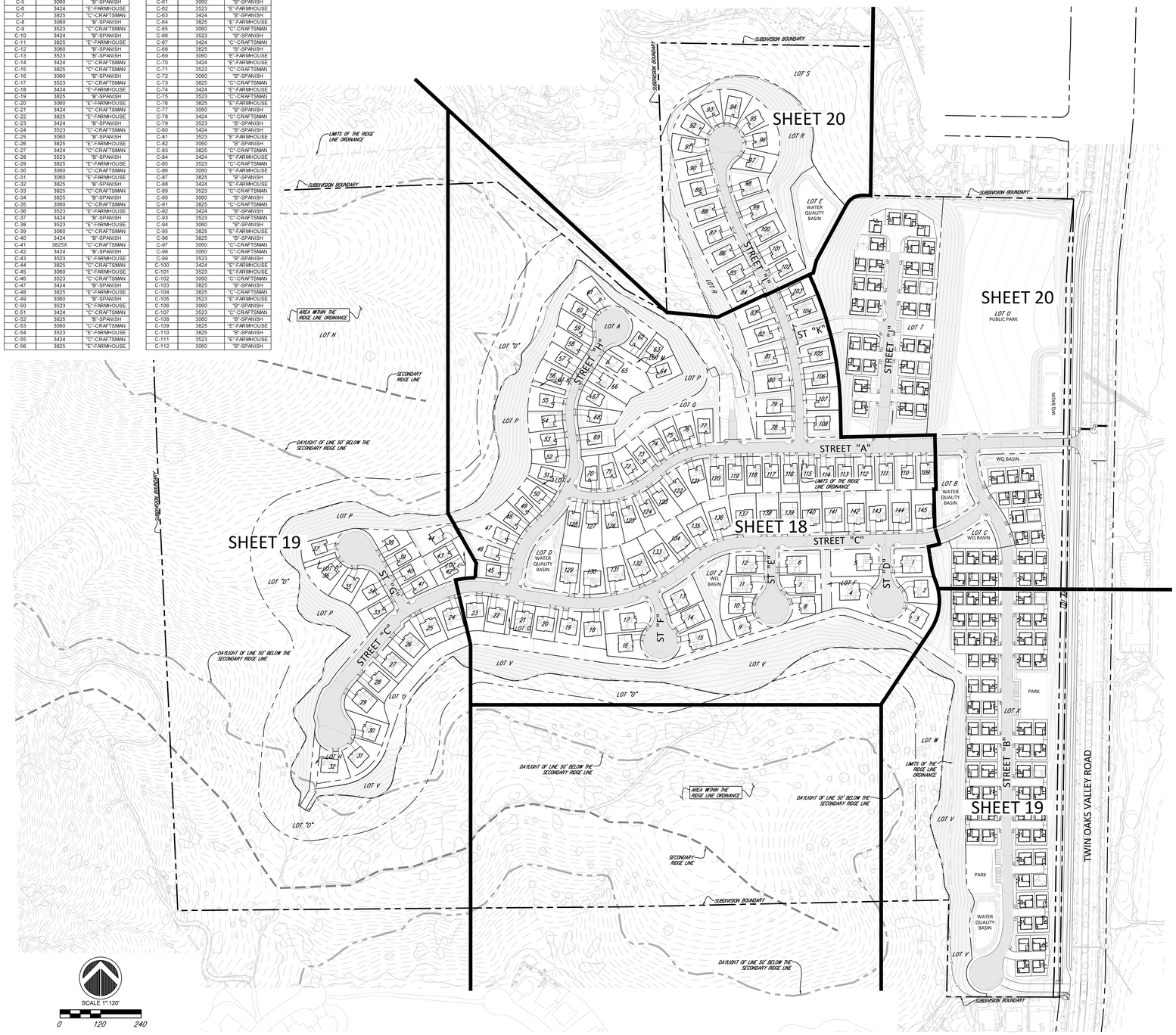
PLAN 3825
NOT TO SCALE

PLAN 3825X
NOT TO SCALE

PLAN 3523
NOT TO SCALE

CONDOMINIUM INFORMATION TABLE		
BLDG ID	BLDG PLAN TYPE	BLDG STYLE
C-1	3424	"E"-FARMHOUSE
C-2	3424	"C"-CRAFTSMAN
C-3	3523	"B"-SPANISH
C-4	3060	"C"-CRAFTSMAN
C-5	3060	"B"-SPANISH
C-6	3424	"E"-FARMHOUSE
C-7	3825	"C"-CRAFTSMAN
C-8	3060	"B"-SPANISH
C-9	3523	"C"-CRAFTSMAN
C-10	3424	"B"-SPANISH
C-11	3825	"E"-FARMHOUSE
C-12	3060	"B"-SPANISH
C-13	3523	"B"-SPANISH
C-14	3424	"C"-CRAFTSMAN
C-15	3825	"C"-CRAFTSMAN
C-16	3060	"B"-SPANISH
C-17	3523	"C"-CRAFTSMAN
C-18	3424	"E"-FARMHOUSE
C-19	3825	"B"-SPANISH
C-20	3060	"E"-FARMHOUSE
C-21	3424	"C"-CRAFTSMAN
C-22	3825	"E"-FARMHOUSE
C-23	3424	"B"-SPANISH
C-24	3523	"C"-CRAFTSMAN
C-25	3060	"B"-SPANISH
C-26	3825	"E"-FARMHOUSE
C-27	3424	"C"-CRAFTSMAN
C-28	3523	"B"-SPANISH
C-29	3825	"E"-FARMHOUSE
C-30	3060	"C"-CRAFTSMAN
C-31	3060	"E"-FARMHOUSE
C-32	3825	"B"-SPANISH
C-33	3825	"C"-CRAFTSMAN
C-34	3825	"B"-SPANISH
C-35	3060	"C"-CRAFTSMAN
C-36	3523	"E"-FARMHOUSE
C-37	3424	"B"-SPANISH
C-38	3523	"E"-FARMHOUSE
C-39	3060	"C"-CRAFTSMAN
C-40	3424	"B"-SPANISH
C-41	3825X	"C"-CRAFTSMAN
C-42	3424	"B"-SPANISH
C-43	3523	"E"-FARMHOUSE
C-44	3825	"C"-CRAFTSMAN
C-45	3060	"E"-FARMHOUSE
C-46	3523	"C"-CRAFTSMAN
C-47	3424	"B"-SPANISH
C-48	3825	"E"-FARMHOUSE
C-49	3060	"B"-SPANISH
C-50	3523	"E"-FARMHOUSE
C-51	3424	"C"-CRAFTSMAN
C-52	3825	"B"-SPANISH
C-53	3060	"C"-CRAFTSMAN
C-54	3523	"E"-FARMHOUSE
C-55	3424	"C"-CRAFTSMAN
C-56	3825	"E"-FARMHOUSE

CONDOMINIUM INFORMATION TABLE		
BLDG ID	BLDG PLAN TYPE	BLDG STYLE
C-57	3060	"C"-CRAFTSMAN
C-58	3523	"E"-FARMHOUSE
C-59	3424	"B"-SPANISH
C-60	3825	"C"-CRAFTSMAN
C-61	3060	"B"-SPANISH
C-62	3523	"E"-FARMHOUSE
C-63	3424	"B"-SPANISH
C-64	3825	"E"-FARMHOUSE
C-65	3060	"C"-CRAFTSMAN
C-66	3523	"B"-SPANISH
C-67	3424	"C"-CRAFTSMAN
C-68	3825	"B"-SPANISH
C-69	3060	"E"-FARMHOUSE
C-70	3424	"E"-FARMHOUSE
C-71	3523	"C"-CRAFTSMAN
C-72	3060	"B"-SPANISH
C-73	3825	"C"-CRAFTSMAN
C-74	3424	"E"-FARMHOUSE
C-75	3523	"C"-CRAFTSMAN
C-76	3825	"E"-FARMHOUSE
C-77	3060	"B"-SPANISH
C-78	3424	"C"-CRAFTSMAN
C-79	3523	"B"-SPANISH
C-80	3424	"B"-SPANISH
C-81	3523	"E"-FARMHOUSE
C-82	3060	"B"-SPANISH
C-83	3825	"C"-CRAFTSMAN
C-84	3424	"E"-FARMHOUSE
C-85	3523	"C"-CRAFTSMAN
C-86	3060	"E"-FARMHOUSE
C-87	3825	"B"-SPANISH
C-88	3424	"E"-FARMHOUSE
C-89	3523	"C"-CRAFTSMAN
C-90	3060	"B"-SPANISH
C-91	3825	"C"-CRAFTSMAN
C-92	3424	"B"-SPANISH
C-93	3523	"C"-CRAFTSMAN
C-94	3060	"B"-SPANISH
C-95	3825	"E"-FARMHOUSE
C-96	3825	"B"-SPANISH
C-97	3060	"C"-CRAFTSMAN
C-98	3060	"C"-CRAFTSMAN
C-99	3523	"B"-SPANISH
C-100	3424	"E"-FARMHOUSE
C-101	3523	"E"-FARMHOUSE
C-102	3060	"C"-CRAFTSMAN
C-103	3825	"B"-SPANISH
C-104	3825	"C"-CRAFTSMAN
C-105	3523	"E"-FARMHOUSE
C-106	3060	"B"-SPANISH
C-107	3523	"C"-CRAFTSMAN
C-108	3060	"B"-SPANISH
C-109	3825	"E"-FARMHOUSE
C-110	3825	"B"-SPANISH
C-111	3523	"E"-FARMHOUSE
C-112	3060	"B"-SPANISH



LOT INFORMATION TABLE					
PARCEL ID	AREA(SF)	BLDG PLAN TYPE	BLDG ORIENTATION	BLDG STYLE	LOT DESCRIPTION
LOT 1	9,361.54	5016	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 2	8,039.82	5024	-	"B"-SPANISH	RESIDENTIAL
LOT 3	9,256.91	5016	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 4	12,185.01	5016	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 5	11,459.98	5016	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 6	8,863.09	5016	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 7	6,881.93	5016	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 8	6,165.34	5016	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 9	6,560.06	5016	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 10	6,337.60	5016	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 11	6,838.10	5016	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 12	6,979.40	5016	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 13	8,017.93	5024	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 14	6,572.73	5016	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 15	8,182.32	5016	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 16	8,318.57	5024	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 17	10,083.10	5016	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 18	7,632.77	5024	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 19	6,911.58	5016	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 20	6,624.00	5024	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 21	6,247.44	5016	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 22	6,464.14	5016	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 23	6,948.36	5024	-	"B"-SPANISH	RESIDENTIAL
LOT 24	7,454.57	5016	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 25	7,729.14	5016	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 26	8,547.56	5016	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 27	6,575.36	5016	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 28	7,251.36	5016	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 29	9,025.95	5016	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 30	7,003.86	5016	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 31	8,223.01	5024	-	"B"-SPANISH	RESIDENTIAL
LOT 32	7,619.05	5024	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 33	5,971.17	3526	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 34	6,834.70	3522	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 35	6,964.25	3524	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 36	7,845.46	3522	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 37	6,092.54	3524	-	"B"-SPANISH	RESIDENTIAL
LOT 38	6,928.93	3522	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 39	4,756.07	3524	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 40	4,656.99	3522	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 41	5,008.62	3524	-	"B"-SPANISH	RESIDENTIAL
LOT 42	5,790.95	3524	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 43	4,743.01	3526	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 44	8,711.10	3522	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 45	4,834.37	3526	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 46	8,598.21	3524	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 47	9,644.44	3526	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 48	5,705.85	3524	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 49	4,851.56	3526	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 50	5,070.80	3522	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 51	5,477.43	3524	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 52	5,299.55	3522	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 53	5,330.00	3526	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 54	5,890.03	3522	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 55	6,430.88	3526	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 56	6,206.79	3524	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 57	5,579.34	3522	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 58	5,438.13	3526	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 59	5,717.46	3524	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 60	4,981.95	3526	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 61	7,321.40	3524	-	"B"-SPANISH	RESIDENTIAL
LOT 62	6,573.00	3524	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 63	5,532.10	3526	-	"B"-SPANISH	RESIDENTIAL
LOT 64	5,800.65	3524	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 65	8,907.79	3526	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 66	7,906.97	3522	-	"B"-SPANISH	RESIDENTIAL
LOT 67	7,018.73	3524	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 68	6,449.00	3522	-	"B"-SPANISH	RESIDENTIAL
LOT 69	6,585.26	3526	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 70	4,940.30	3526	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 71	5,814.73	3524	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 72	5,754.77	3522	-	"B"-SPANISH	RESIDENTIAL
LOT 73	4,900.00	3526	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 74	5,136.35	3522	-	"B"-SPANISH	RESIDENTIAL
LOT 75	5,188.49	3524	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 76	5,188.49	3522	-	"B"-SPANISH	RESIDENTIAL
LOT 77	5,274.20	3526	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 78	6,884.96	4014	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 79	7,606.78	4027	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 80	7,315.67	4023	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 81	7,677.73	4014	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 82	6,647.23	4027	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 83	7,197.38	4023	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 84	7,029.07	4014	-	"B"-SPANISH	RESIDENTIAL
LOT 85	6,826.12	4027	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 86	6,988.05	4014	-	"B"-SPANISH	RESIDENTIAL

LOT INFORMATION TABLE					
PARCEL ID	AREA(SF)	BLDG PLAN TYPE	BLDG ORIENTATION	BLDG STYLE	LOT DESCRIPTION
LOT 87	7,030.61	4027	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 88	7,036.77	4014	-	"B"-SPANISH	RESIDENTIAL
LOT 89	7,030.73	4023	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 90	6,755.36	4027	-	"B"-SPANISH	RESIDENTIAL
LOT 91	6,203.78	4023	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 92	6,992.14	4014	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 93	6,992.10	4023	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 94	6,992.12	4014	-	"B"-SPANISH	RESIDENTIAL
LOT 95	6,992.12	4027	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 96	6,992.12	4023	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 97	6,673.35	4027	-	"B"-SPANISH	RESIDENTIAL
LOT 98	8,188.95	4014	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 99	7,284.27	4027	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 100	6,757.19	4014	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 101	6,400.00	4027	-	"B"-SPANISH	RESIDENTIAL
LOT 102	5,815.95	4023	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 103	5,926.15	4023	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 104	6,958.90	4014	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 105	6,895.49	4014	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 106	6,725.33	4027	-	"B"-SPANISH	RESIDENTIAL
LOT 107	6,661.29	4023	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 108	8,006.22	4027	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 109	5,900.00	4014	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 110	6,300.00	4023	-	"B"-SPANISH	RESIDENTIAL
LOT 111	5,800.00	4014	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 112	6,200.00	4023	-	"B"-SPANISH	RESIDENTIAL
LOT 113	5,399.29	4014	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 114	5,406.56	4014	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 115	5,729.09	4023	-	"B"-SPANISH	RESIDENTIAL
LOT 116	5,832.00	4014	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 117	5,844.63	4023	-	"B"-SPANISH	RESIDENTIAL
LOT 118	5,811.61	4014	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 119	5,936.73	4027	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 120	6,930.16	4014	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 121	7,689.87	3522	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 122	6,629.62	3526	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 123	6,173.57	3522	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 124	6,197.39	3524	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 125	6,724.10	3526	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 126	7,392.06	3524	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 127	7,692.30	3522	MIRRORED / REVERSE	"C"-CRAFTSMAN	RESIDENTIAL
LOT 128	6,510.40	3526	MIRRORED / REVERSE	"B"-SPANISH	RESIDENTIAL
LOT 129	9,348.18	5016	MIRRORED / REVERSE	"E"-FARMHOUSE	RESIDENTIAL
LOT 130	9,172.79	5026	-	"B"-SPANISH	RESIDENTIAL
LOT 131	9,013.77	5024	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 132	8,824.85	5016	-	"B"-SPANISH	RESIDENTIAL
LOT 133	8,639.14	5026	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 134	7,988.24	5024	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 135	8,143.16	5026	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 136	8,515.25	5016	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 137	8,948.64	5024	-	"B"-SPANISH	RESIDENTIAL
LOT 138	7,935.19	5026	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 139	7,675.52	5016	-	"B"-SPANISH	RESIDENTIAL
LOT 140	7,675.52	5026	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 141	7,915.38	5024	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 142	7,675.52	5016	-	"B"-SPANISH	RESIDENTIAL
LOT 143	7,915.38	5026	-	"C"-CRAFTSMAN	RESIDENTIAL
LOT 144	8,155.24	5016	-	"E"-FARMHOUSE	RESIDENTIAL
LOT 145	8,010.60	5024	-	"B"-SPANISH	RESIDENTIAL
LOT A	388,902.29	-	-		UTILITY & STREET LOT
LOT B	17,944.53	-	-		DRAINAGE LOT
LOT C	7,376.14	-	-		DRAINAGE LOT
LOT D	15,871.13	-	-		DRAINAGE LOT
LOT E	29,991.35	-	-		DRAINAGE LOT
LOT F	5,457.26	-	-		SLOPE & DRAINAGE LOT
LOT G	1,551.42	-	-		UTILITY, DRAINAGE & ACCESS LOT
LOT H	4,172.46	-	-		UTILITY, DRAINAGE & TRAIL LOT
LOT "I"	1,501.64	-	-		DRAINAGE LOT
LOT J	985.32	-	-		DRAINAGE LOT
LOT K	1,537.70	-	-		DRAINAGE LOT
LOT L	3,911.33	-	-		UTILITY, DRAINAGE & ACCESS LOT
LOT M	3,095.50	-	-		UTILITY, DRAINAGE & ACCESS LOT
LOT N	2,290,892.65	-	-		BIOLOGICAL OPEN SPACE
LOT P	176,148.32	-	-		SLOPE & DRAINAGE LOT
LOT "O"	393,713.67	-	-		FIRE BUFFER / CLEARING LOT
LOT Q	19,824.22	-	-		DRAINAGE LOT
LOT R	91,910.28	-	-		SLOPE & DRAINAGE LOT
LOT S	137,958.15	-	-		FIRE BUFFER / CLEARING LOT
LOT T	223,424.54	-	-		DETACHED CONDOMINIUM
LOT U	271,078.73	-	-		PUBLIC PARK
LOT V	202,930.74	-	-		SLOPE & DRAINAGE LOT
LOT W	77,037.59	-	-		FIRE BUFFER / CLEARING LOT
LOT X	444,452.01	-	-		DETACHED CONDOMINIUM
LOT Y	55,207.12	-	-		DRAINAGE & TRAIL LOT
LOT Z	14,203.20	-	-		SLOPE & DRAINAGE LOT
LOT AA	38,972.00	-	-		TWIN OAKS RIGHT OF WAY
TOTAL	5,927,179.36	-	-		

LEGEND

- PROJECT BOUNDARY
- EXIST MAJOR CONTOUR — 100 —
- EXIST MINOR CONTOUR
- PROPOSE MAJOR CONTOUR — 100 —
- PROPOSE MINOR CONTOUR
- RETAINING WALL
- PCC CURB
- PCC CURB & GUTTER

BUILDING SUMMARY		
FLOOR PLAN	BLDG TYPE	NO OF UNITS
3522	DETACHED SINGLE FAMILY	17
3524	DETACHED SINGLE FAMILY	18
3526	DETACHED SINGLE FAMILY	18
4014	DETACHED SINGLE FAMILY	17
4023	DETACHED SINGLE FAMILY	13
4027	DETACHED SINGLE FAMILY	13
5016	DETACHED SINGLE FAMILY	19
5024	DETACHED SINGLE FAMILY	13
5026	DETACHED SINGLE FAMILY	17
	SUBTOTAL	145
3060	CONDOMINIUM	26
3424	CONDOMINIUM	26
3424X	CONDOMINIUM	3
3523	CONDOMINIUM	26
3825	CONDOMINIUM	28
3825X	CONDOMINIUM	3
	SUBTOTAL	112
TOTAL BUILDING UNITS		257

AREA SUMMARY			
ITEM	DESCRIPTION	AREA (SF)	AREA (AC)
1	PROJECT TOTAL ACREAGE	5,927,179.36	136.07
2	GRADING AREA	2,988,612.70	68.61
3	TWIN OAKS RIGHT OF WAY	38,972.00	0.89
4	FIRE BUFFER OUTSIDE OF GRADING FOOTPRINT	608,710.93	13.97
5	BIOLOGICAL OPEN SPACE	2,290,891.99	52.59
6	TOTAL CLEARING AREA (ITEM 2+4)	3,597,323.63	82.58
7	SMALLEST RESIDENTIAL LOT SIZE	4,656.99	0.11
8	LARGEST RESIDENTIAL LOT SIZE	12,185.01	0.28
9	AVERAGE RESIDENTIAL LOT SIZE	6,945.71	0.16

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SHEET 17 OF 22 SHEETS
SDP OVERALL & INDEX

Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

NOT FOR CONSTRUCTION

J:\21\21424\Engineering\1N1W 01\Sheets - 1N1W21424 1W SDP 092924(1).dwg 11/21/2025 5:50 PM CRISPINE PDT 30R

LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE — PL —
- RIGHT OF WAY — RW —
- EXIST MAJOR CONTOUR — 100 —
- EXIST MINOR CONTOUR
- PROPOSE MAJOR CONTOUR — 100 —
- PROPOSE MINOR CONTOUR
- RETAINING WALL
- EXIST WATER MAIN — W —
- EXIST SEWER MAIN — S —
- NEW WATER MAIN — W —
- NEW SEWER MAIN — S —
- FLOW LINE
- PCC BROW DITCH
- EXIST. FIRE LINE — F —
- FIRE HYDRANT
- STREET/PARKING LIGHT
- STORM DRAIN INLETS/CLEANOUTS
- WATER SERVICE LATERAL — w —
- SEWER SERVICE LATERAL — s —
- FIRE SERVICE LATERAL — f —
- PCC CURB
- PCC CURB & GUTTER
- TEE LATERAL
- BLOW OFF
- AIR VENT
- THRUST BLOCK
- GREENSTREET TREE
- 2:1 MAX SLOPE
- TRAIL
- CONDO UNIT NUMBER — C-XX

KEY MAP

NOTES:

BUILDING ELEVATION REQUIRED ENHANCEMENT

NOTES:

1. SEE SHEETS 3, 4, 6 FOR LOT INFORMATIONS (TM SHEETS).
2. SHEETS 14, 15, 16 FOR PROPOSED UTILITIES.
3. SEE SHEETS 7, 9, 8, 10 FOR GRADING INFORMATION & PAD ELEVATIONS.
4. SEE SHEET 22 FOR WQMP EXHIBIT.

GRADING & SETBACK NOTE

SEE SHEET 7 FOR TYPICAL SINGLE FAMILY GRADING LAYOUT DETAILS.

EASEMENT NOTE

EASEMENTS OF RECORD NOT SHOWN HEREON SHALL BE HONORED, ABANDONED AND / OR RELOCATED TO THE SATISFACTION OF ALL INTERESTED PARTIES. PUBLIC UTILITY EASEMENTS NECESSARY TO SERVE THIS PROJECT WILL BE COORDINATED WITH THE SERVING UTILITY COMPANY.

MATCHLINE SEE SHEET 20

MATCHLINE SEE SHEET 19

SEE EASEMENT ITEM 15 ON SHEET 2

SEE EASEMENT ITEM 31 & 39 ON SHEET 2

S48°00'52"E 210.82'

S61°19'07"E 143.96'

ALTERNATE FIRE BUFFER LINE 150' FROM BUILDING OUTLINE

LOT N BIOLOGICAL OPEN SPACE

LOT O FIRE BUFFER LOT

LOT A UTILITY & STREET LOT

LOT M UTILITY, ACCESS & DRAINAGE LOT

LOT P SLOPE & DRAINAGE LOT

LOT Q

LOT D WATER QUALITY BASIN

LOT Z SLOPE & DRAINAGE LOT WQ BASIN

LOT Y DRAINAGE & ACCESS LOT

LOT V SLOPE & DRAINAGE LOT

LOT W FIRE BUFFER LOT

LOT J DRAINAGE LOT

DRAINAGE EASEMENT

10' DRAINAGE EASEMENT

15' DRAINAGE EASEMENT

TRAIL

PA EASEMENT FOR ROAD, UTILITY AND DRAINAGE AS SHOWN ON THE MAP RECORDED AUGUST 25, 1978 IN BOOK 11 PAGE 59 OF RECORD OF SURVEYS, AND AS GRANTED TO THE CITY OF SAN MARCOS, AND OLD HOTEL INCL. A NEVADA CORPORATION.

STREET "A"

STREET "C"

ST "D"

ST "E"

ST "F"

ST "H"

ST "K"

STREET "I"

WATER QUALITY BASIN

WQ BA

C-15 C-16 C-22 C-18 C-17 C-21 C-19 C-20 C-24 C-112 C-111 C-107 C-108 C-106 C-105 C-101 C-102 C-98 C-99

SCALE 1"-40'

0 40 80

NOT FOR CONSTRUCTION

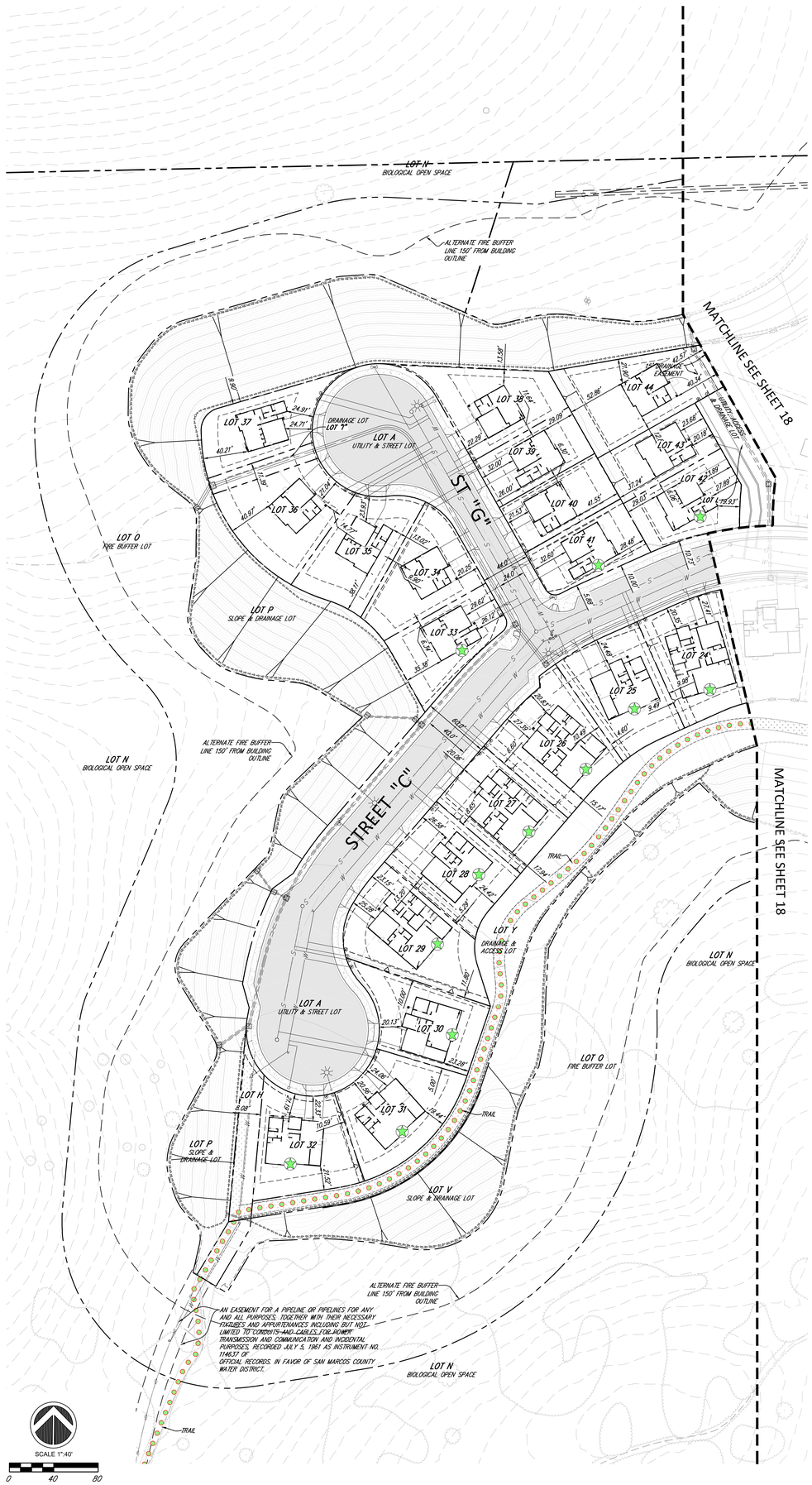
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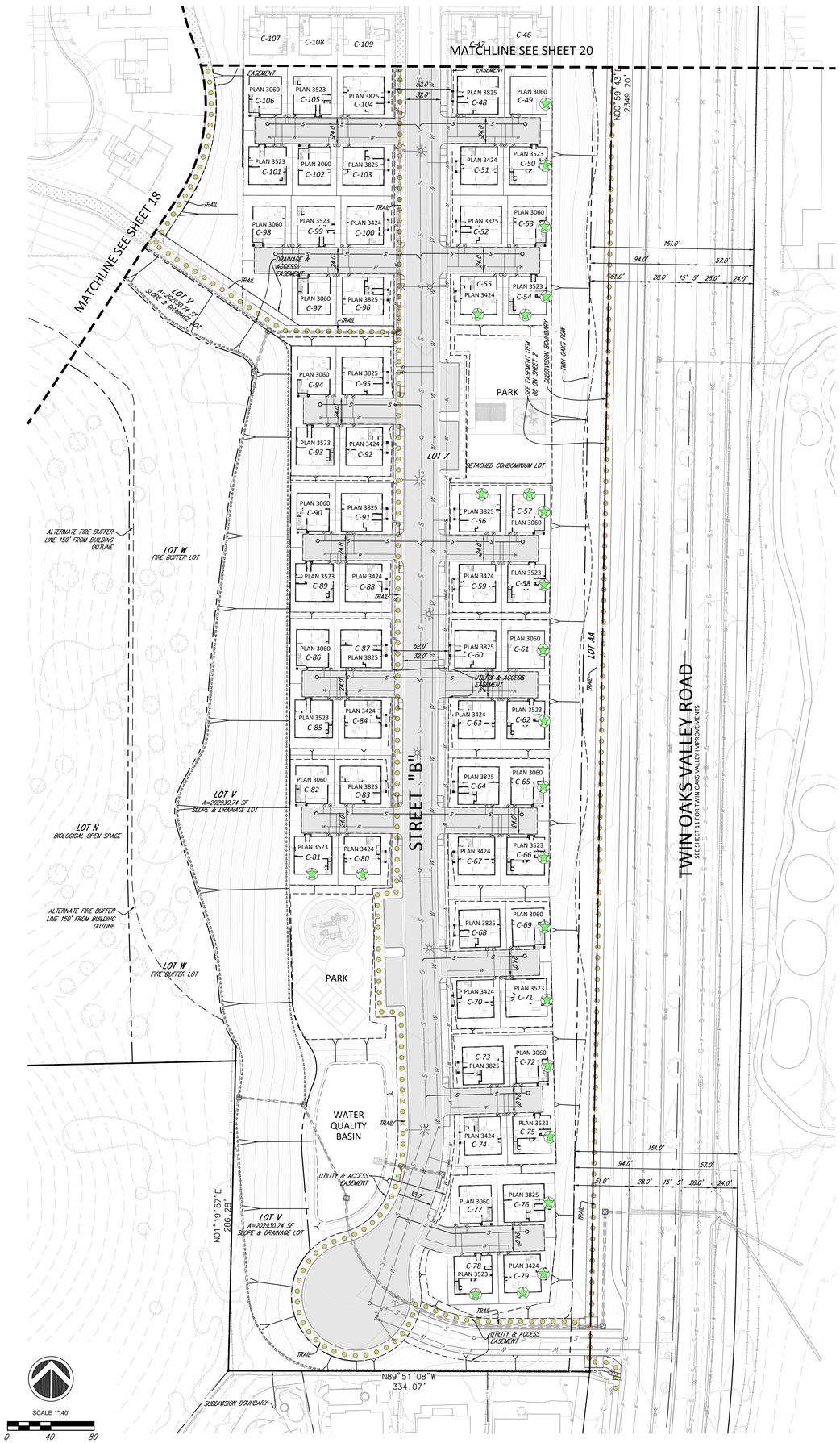
SHEET 18 OF 22 SHEETS
SITE DEVELOPMENT PLAN

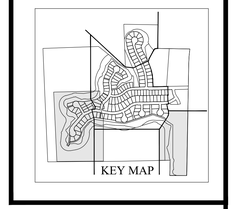
Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

E:\247424\Engineering\TM\TM 01 Sheets - TM_22424 TM 22P.dwg 11/21/2023 2:52 PM DRIGINAL PLOT SIZE







LEGEND

- PROJECT BOUNDARY
- PROPERTY LINE -PL-
- RIGHT OF WAY -RW-
- EXIST MAJOR CONTOUR 100
- EXIST MINOR CONTOUR
- PROPOSE MAJOR CONTOUR 100
- PROPOSE MINOR CONTOUR
- RETAINING WALL
- EXIST WATER MAIN W
- EXIST SEWER MAIN S
- NEW WATER MAIN W
- NEW SEWER MAIN S
- FLOW LINE
- PCC BROW DITCH
- EXIST. FIRE LINE F
- FIRE HYDRANT
- STREET/PARKING LIGHT
- STORM DRAIN INLETS/CLEANOUTS
- WATER SERVICE LATERAL W
- SEWER SERVICE LATERAL S
- FIRE SERVICE LATERAL F
- PCC CURB
- PCC CURB & GUTTER
- TEE LATERAL
- BLOW OFF
- AIR VENT
- THRUST BLOCK
- GREENSTREET TREE
- 2:1 MAX SLOPE
- TRAIL
- CONDO UNIT NUMBER C-XX

NOTES:

1. SEE SHEETS 3, 4, 6 FOR LOT INFORMATIONS (TM SHEETS).
2. SHEETS 14, 15, 16 FOR PROPOSED UTILITIES.
3. SEE SHEETS 7, 9, 8, 10 FOR GRADING INFORMATION & FMO ELEVATIONS.
4. SEE SHEET 22 FOR WQMP EXHIBIT.

GRADING & SETBACK NOTE:
SEE SHEET 7 FOR TYPICAL SINGLE FAMILY GRADING LAYOUT DETAILS.

NOTES:

BUILDING ELEVATION REQUIRED ENHANCEMENT

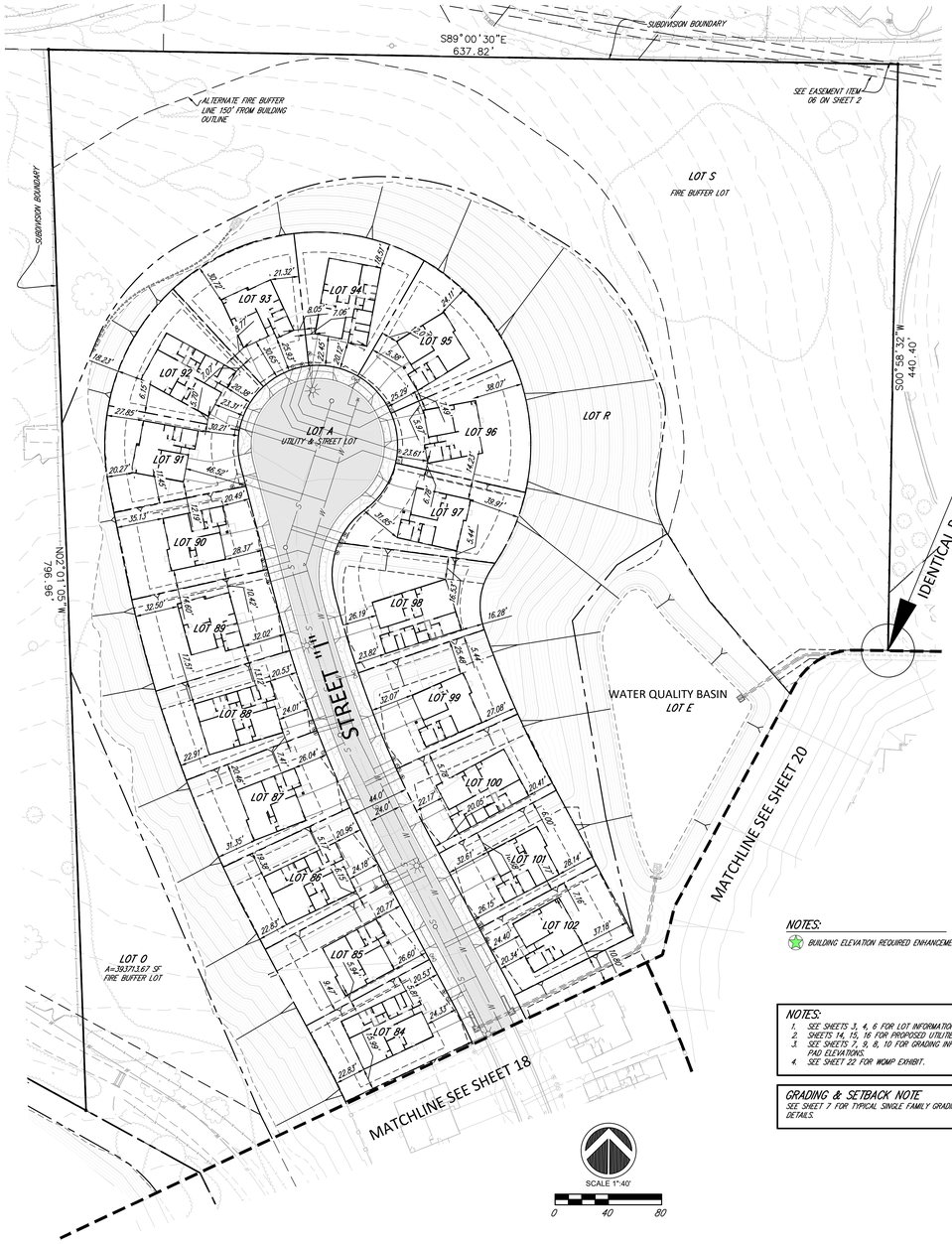
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SHEET 19 OF 22 SHEETS
SITE DEVELOPMENT PLAN

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OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

K:\24\24044 Engineering\ENG\24044 ENG01.dwg 10/21/2025 5:53 PM ORDONIA, ALEX



NOTES:

BUILDING ELEVATION REQUIRED ENHANCEMENT

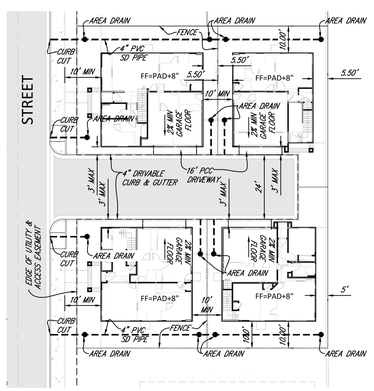
NOTES:

1. SEE SHEETS 3, 4, 6 FOR LOT INFORMATIONS (TM SHEETS).
2. SHEETS 14, 15, 16 FOR PROPOSED UTILITIES.
3. SEE SHEETS 7, 8, 9, 10 FOR GRADING INFORMATION & PAD ELEVATIONS.
4. SEE SHEET 22 FOR WQMP EXHIBIT.

GRADING & SETBACK NOTE:

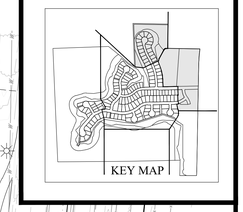
SEE SHEET 7 FOR TYPICAL SINGLE FAMILY GRADING LAYOUT DETAILS.

TYPICAL SINGLE FAMILY GRADING LAYOUT
NOT TO SCALE



TYPICAL DETACHED CONDOMINIUM GRADING LAYOUT
NOT TO SCALE

S89°01'59"E
599.68'
SUBDIVISION BOUNDARY
IDENTICAL POINT
MATCHLINE SEE SHEET 20
MATCHLINE SEE SHEET 9
MATCHLINE SEE SHEET 18
MATCHLINE SEE SHEET 19
NEW PUBLIC DRAINAGE EASEMENT
LOT U
PUBLIC PARK
PARK
ST "K"
STREET "J"
LOT T
DETACHED CONDOMINIUM LOT
UTILITY & ACCESS EASEMENT
DOG PARK
ST "A"
ST "B"
ST "C"
LOT A
LOT B
WATER QUALITY BASIN
LOT C
WQ BASIN
DRAINAGE EASEMENT
TWIN OAKS VALLEY ROAD
SEE SHEET 11 FOR TWIN OAKS VALLEY IMPROVEMENTS
TWIN OAKS ROW
SEE EASEMENT ITEM 06 ON SHEET 2
LOT AA
TRAIL
DRAINAGE & UTILITY & ACCESS
PLAN 3424 C-1
PLAN 3424 C-2
PLAN 3523 C-3
C-4 PLAN 3060
PLAN 3825 C-33
PLAN 3424 C-6
PLAN 3523 C-5
PLAN 3060 C-31
PLAN 3825 C-32
PLAN 3825 C-7
PLAN 3060 C-8
PLAN 3060 C-30
PLAN 3825 C-29
PLAN 3424 C-10
PLAN 3523 C-9
PLAN 3523 C-28
PLAN 3424 C-27
PLAN 3825 C-11
PLAN 3060 C-12
PLAN 3060 C-25
PLAN 3825 C-26
C-14 PLAN 3424
PLAN 3523 C-13
C-24 PLAN 3523
C-23 PLAN 3424
PLAN 3825 C-15
C-16 PLAN 3060
PLAN 3825 C-22
PLAN 3424 C-18
PLAN 3523 C-17
C-21 PLAN 3424
C-19 PLAN 3825
C-20 PLAN 3060
PLAN 3825 C-34
PLAN 3060 C-35
PLAN 3523 C-36
PLAN 3060 C-39
PLAN 3523 C-38
PLAN 3424 C-37
PLAN 3424 C-40
PLAN 3825X C-41
PLAN 3523 C-43
PLAN 3424 C-42
PLAN 3060 C-112
PLAN 3523 C-111
PLAN 3825 C-110
PLAN 3825 C-44
PLAN 3060 C-45
PLAN 3523 C-107
PLAN 3060 C-108
PLAN 3825 C-109
PLAN 3424 C-47
PLAN 3523 C-46
52.0'
32.0'
24.0'
151.0'
94.0'
57.0'
51.0'
28.0'
15'
5'
24'



LEGEND

PROJECT BOUNDARY	
PROPERTY LINE	-PL-
RIGHT OF WAY	-RW-
EXIST MAJOR CONTOUR	100
EXIST MINOR CONTOUR	
PROPOSE MAJOR CONTOUR	100
PROPOSE MINOR CONTOUR	
RETAINING WALL	
EXIST WATER MAIN	
EXIST SEWER MAIN	-S-
NEW WATER MAIN	-W-
NEW SEWER MAIN	-S-
FLOW LINE	
PCC BROW DITCH	
EXIST. FIRE LINE	-F-
FIRE HYDRANT	
STREET/PARKING LIGHT	
STORM DRAIN INLETS/CLEANOUTS	
WATER SERVICE LATERAL	-W-
SEWER SERVICE LATERAL	-S-
FIRE SERVICE LATERAL	-F-
PCC CURB	
PCC CURB & GUTTER	
TEE LATERAL	
BLOW OFF	
AIR VENT	
THRUST BLOCK	
GREENSTREET TREE	
2:1 MAX SLOPE	
TRAIL	
CONDO UNIT NUMBER	C-XX

SCALE 1"=40'
0
40
80

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SHEET 20 OF 22 SHEETS
SITE DEVELOPMENT PLAN

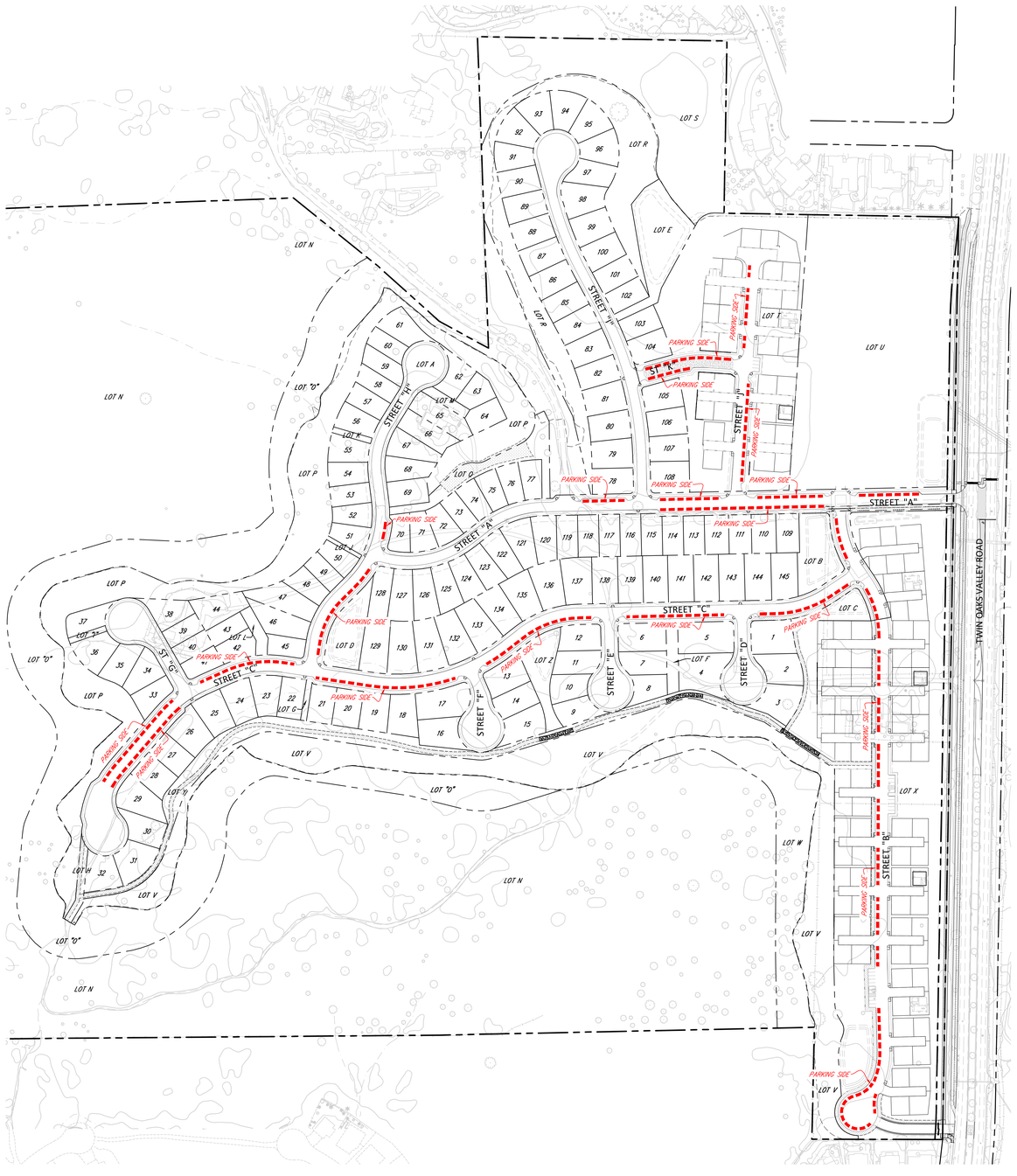
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SAN MARCOS, CA

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STREET PARKING EXHIBIT



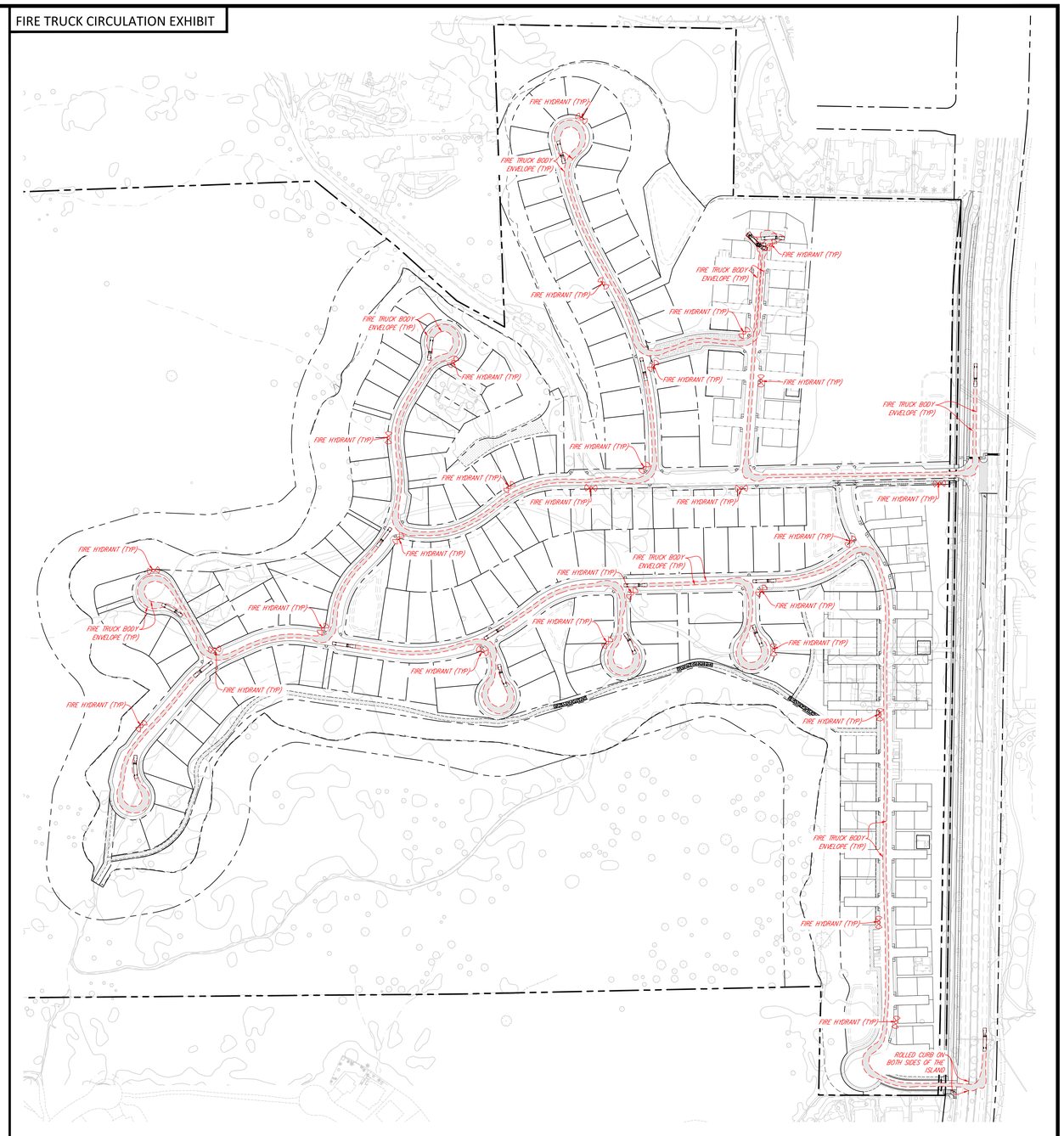
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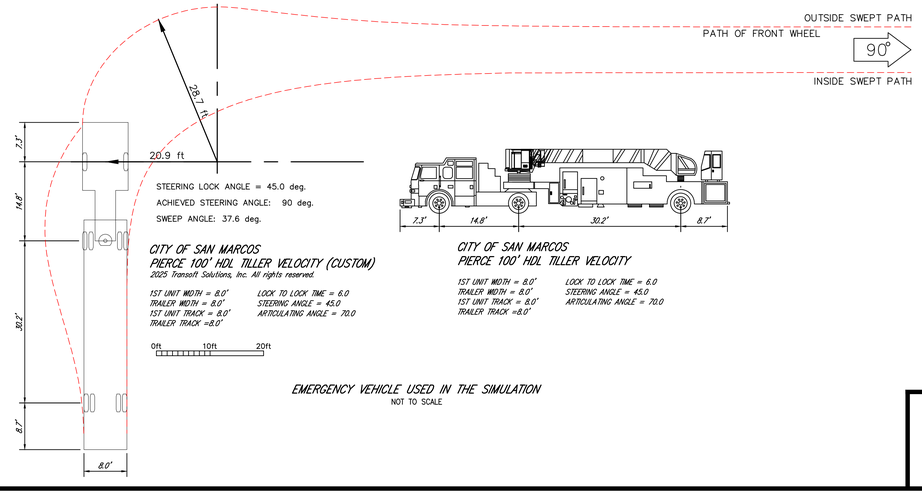
LEGEND

STREET PARKING SIDE

FIRE HYDRANT

FIRE TRUCK CIRCULATION EXHIBIT





EMERGENCY VEHICLE USED IN THE SIMULATION
NOT TO SCALE

SCALE 1":120'
0 120 240

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SHEET 21 OF 22 SHEETS
TITLE SHEET

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OAKCREST
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SAN MARCOS, CA

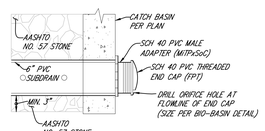
NOT FOR CONSTRUCTION

P:\24\24041\Engineering\Plot\01\Sheets - 16"x24"\24041 parking circulation.dwg 11/21/2025 1:58 PM DWONG PLOT SIZE



DETAIL
"NO DUMPING" AT CATCH BASINS

NOTE: ALL CATCH BASINS WITH GRATES SHALL BE STENCILED WITH CITY REQUIRED ITEM PER ABOVE DETAIL (OAS MANUFACTURING #S30 OR EQUIVALENT).



LOWER ORIFICE DETAIL
NOT TO SCALE

PERMANENT WATER QUALITY TREATMENT FACILITY

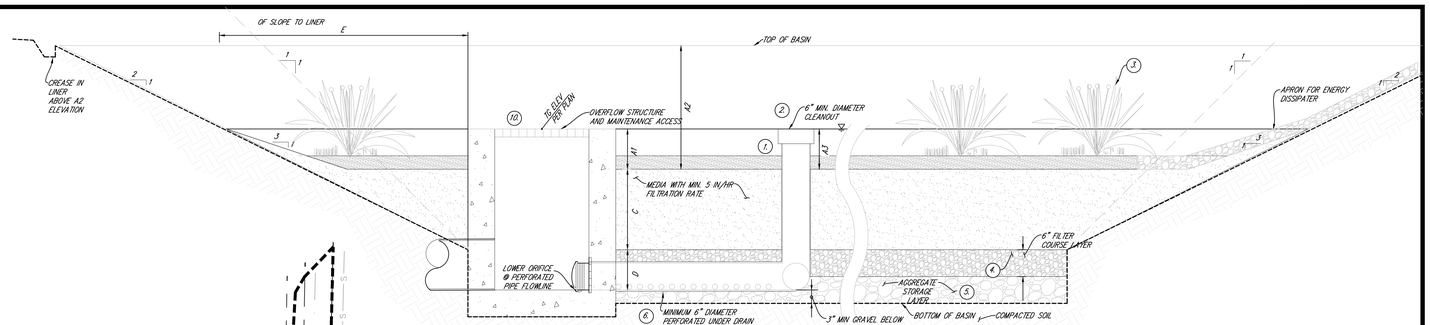
KEEPING OUR WATER WAYS CLEAN
MAINTAIN WITH CARE – NO MODIFICATIONS WITHOUT AGENCY APPROVAL

DETAIL
WATER QUALITY SIGN– PLACED AT EACH BIOFILTRATION BASIN

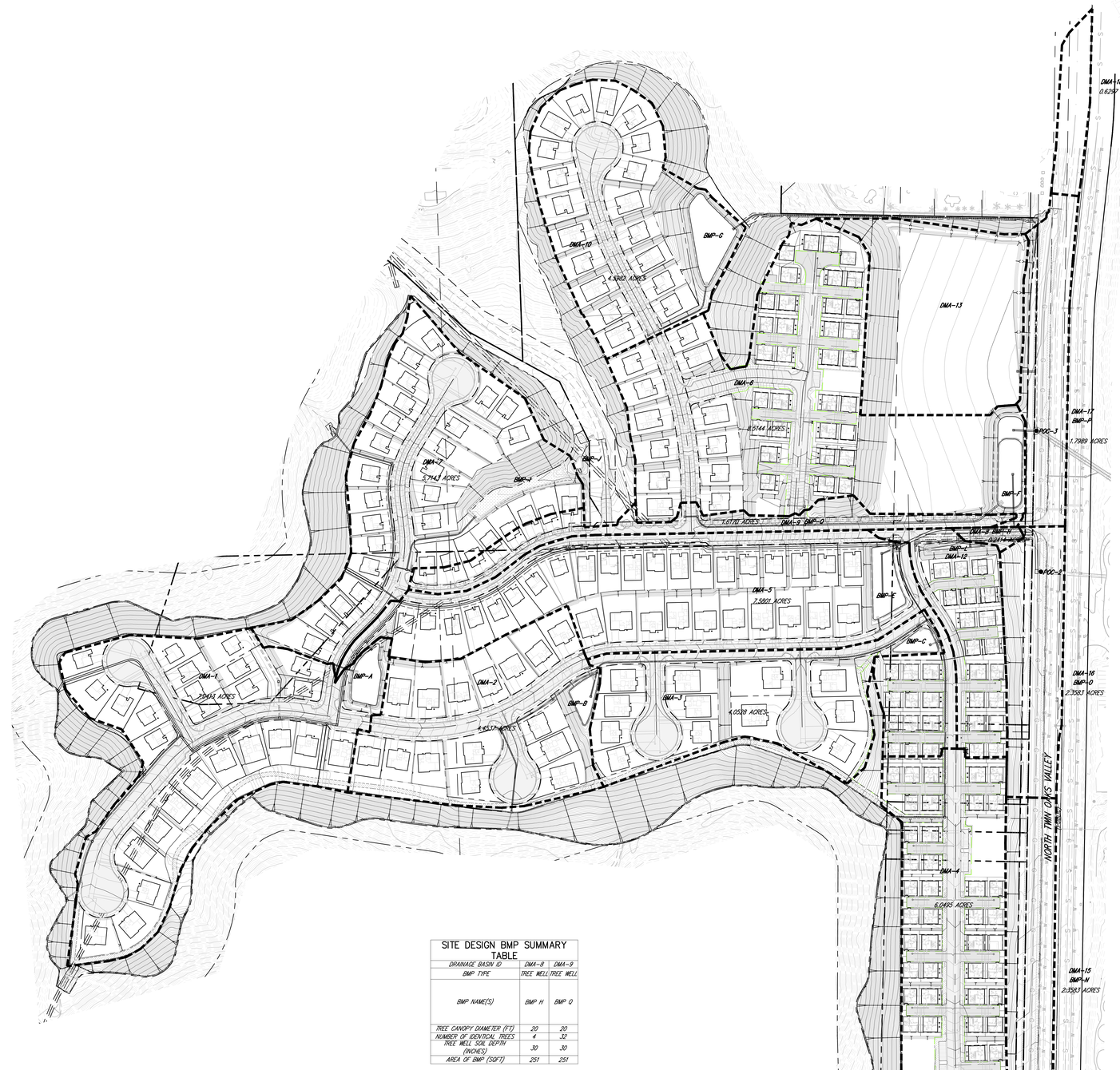
NOTE: ALL BIOFILTRATION AREAS WILL HAVE A SIGN POSTED TO BE VISIBLE AT ALL TIMES.



6" PVC PIPE PERFORATION LAYOUT DETAIL
NOT TO SCALE



BIOFILTRATION BASIN DETAIL
NOT TO SCALE



SITE DESIGN BMP SUMMARY TABLE

DRAINAGE BASIN ID	DMA-8	DMA-9
BMP TYPE	TREE WELL	TREE WELL
BMP NAME(S)	BMP H	BMP Q
TREE CANOPY DIAMETER (FT)	20	20
NUMBER OF IDENTICAL TREES	4	32
TREE WELL SOIL DEPTH (INCHES)	30	30
AREA OF BMP (SQFT)	251	251

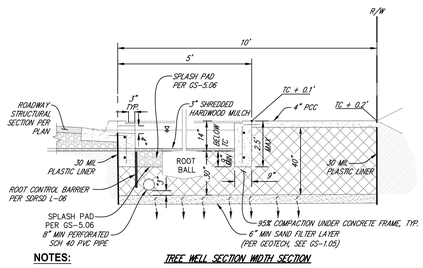
STRUCTURAL BIO-BASIN SUMMARY TABLE

DMA NAME	DMA TYPE	BMP NAME	TYPE OF BMP	EFFECTIVE AREA (SQFT)	A1 (INCH) WATER QUALITY	A2 (INCH) TOP OF BASIN	A3 (INCH) CLEAN OUT	B (INCH) UPPER ORIFICE	C (INCH) MEDIA	D (INCH) GRAVEL	E (INCH) OFFSET	BOX RISER OVERFLOW STRUCUTRE SIZE (INCH)	ORIFICES DIAMETER	
													UPPER (INCH)	LOWER (INCH)
DMA-1	DRAINS TO BMP	BMP-A	BIOFILTRATION	10306	9	21	9	N/A	18	15	2.25	3X3	N/A	2.5
DMA-2	DRAINS TO BMP	BMP-B	BIOFILTRATION	5471	9	21	9	N/A	18	15	2.25	3X4	N/A	1.5
DMA-3	DRAINS TO BMP	BMP-C	BIOFILTRATION	5720	9	21	9	N/A	18	15	2.25	3X5	N/A	1.5
DMA-4	DRAINS TO BMP	BMP-D	BIOFILTRATION	10119	9	21	9	N/A	18	15	2.25	3X6	N/A	1
DMA-5	DRAINS TO BMP	BMP-E	BIOFILTRATION	10302	9	21	9	N/A	18	15	2.25	3X7	N/A	1.75
DMA-6	DRAINS TO BMP	BMP-F	BIOFILTRATION	8456	9	21	9	N/A	18	15	2.25	3X8	N/A	3
DMA-7	DRAINS TO BMP	BMP-I	BIOFILTRATION	7698	9	21	9	N/A	18	12	2.25	3X9	N/A	1.5
DMA-10	DRAINS TO BMP	BMP-G	BIOFILTRATION	5769	9	21	9	N/A	18	12	2.25	2x2	N/A	0.5
UNNAMED (GREEN STREETS DMA)	DRAINS TO BMP	BMP-K	BIOFILTRATION	379	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-12 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-L	BIOFILTRATION	3201	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-14 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-M	BIOFILTRATION	200	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-15 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-N	BIOFILTRATION	1800	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-16 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-O	BIOFILTRATION	1275	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5
DMA-17 (GREEN STREETS DMA)	DRAINS TO BMP	BMP-P	BIOFILTRATION	2345	9	9	9	N/A	18	12	2.25	2x2	N/A	0.5

WATER QUALITY BASIN INSTALLATION NOTES:

1. 3 INCHES OF WELL-AGED, SHREDDED HARDWOOD MULCH.
2. AN UNDERDRAIN CLEANOUT WITH A MINIMUM 6-INCH DIAMETER AND LOCKABLE CAP IS PLACED EVERY 250 TO 300FEET AS REQUIRED BASED ON UNDERDRAIN LENGTH.
3. VEGETATION USED SHOULD BE SUITABLE FOR THE CLIMATE PER LANDSCAPE PLANS. LANDSCAPING SHALL ALSO BE CONSISTENT WITH APPENDIX E.26 OF THE CITY'S BMP MANUAL.
4. FILTER COARSE IS A MINIMUM OF 6 INCHES PROVIDED IN TWO SEPARATE 3 INCH LAYERS. THE TOP LAYER SHALL BE MADE OF ASTM C33 CHOKER SAND AND THE BOTTOM LAYER BE OF ASTM NO. 8 AGGREGATE. MARKERS STAKES SHALL BE USED TO ENSURE UNIFORM LIFT THICKNESS.
5. AASHTO NO. 57 STONE OR CLASS 2 PERMEABLE PER CAL TRANS SPECIFICATION 68-1.025 IS RECOMMENDED FOR THE AGGREGATE STORAGE LAYER. WASHED, OPEN-GRADED CRUSHED ROCK MAY BE USED, HOWEVER, A 4 INCH MINIMUM WASHED PEA GRAVEL FILTER COURSE LAYER AT THE TOP OF THE CRUSHED ROCK IS REQUIRED.
6. IMPERMEABLE LINER SHALL BE INSTALLED WHEN THE BIOFILTRATION BASIN IS WITHIN 10 FEET OF RETAINING WALLS OR BUILDING FOUNDATIONS, OR AS RECOMMENDED BY THE SOILS ENGINEER, OR REQUIRED BY THESE PLANS. IMPERMEABLE LINER SHALL BE 30 MIL THICK (PER COUNTY OF SAN DIEGO GREEN STREETS DESIGN STANDARD DRAWING GS-3.00 AND COUNTY GREEN STREETS SUPPLEMENT TO CAL TRANS SPECIFICATIONS 20-11.08B) CONFIGURED TO ENTIRELY ENCOMPASS THE SIDES OF THE WATER QUALITY BASIN.
7. IMPERMEABLE LINER BE CONSTRUCTED IN COMPLIANCE WITH THE COUNTY OF SAN DIEGO GREEN STREETS SUPPLEMENT TO CAL TRANS SPECIFICATIONS 20-11.08B.
8. BIOFILTRATION SOIL MEDIA LAYER (BSM) SHALL CONSIST OF 60% TO 80% BY VOLUME SAND, UP TO 20% BY VOLUME TOPSOIL, AND UP 20% BY VOLUME COMPOST (PER CITY OF SAN MARCOS BMP DESIGN MANUAL SECTION F.5) PLACED IN 6" LIFTS AND COMPACTED WITH WATER PRIOR TO THE NEXT LIFT. INITIAL PERMEABILITY SHALL BE 8" PER HOUR (WITH ASSUMED STABILIZED PERMEABILITY OF 5" PER HOUR).
9. THE AGGREGATE STORAGE LAYER SHALL BE COMPACTED IN ACCORDANCE WITH SOILS ENGINEER'S RECOMMENDATIONS.
10. OVERFLOW STRUCTURE TO HAVE A MINIMUM OF 12 INCHES OF FREEBOARD.
11. ALL LINER INSTALLATIONS, FIELD WELDING OF SEAMS, AND OBSERVATION OF SOIL MIX PLACEMENT SHALL REQUIRE SPECIAL INSPECTION BY THE PROJECT GEOTECHNICAL ENGINEER OR OTHER QUALIFIED PERSON. A LETTER CERTIFYING PROPER INSTALLATION SHALL BE PROVIDED TO THE ENGINEER OF RECORD TO ACCEPTANCE OF THE FACILITIES.
12. SPECIAL INSPECTION SHALL BE REQUIRED FOR CONSTRUCTION OF ALL BIOFILTRATION BASINS. INSPECTION SHALL BE PERFORMED BY A QUALIFIED INDIVIDUAL (SUCH AS: ENGINEER OF RECORD, QSD). INSPECTION SHALL INCLUDE:
    - VERIFICATION OF OVERALL DIMENSIONS PRIOR TO PLACEMENT OF MATERIALS;
    - PLACEMENT OF THE LINER, IF REQUIRED, AND SEAMS OR PENETRATIONS
    - PLACEMENT OF THE GRAVEL, FILTER MATERIALS, AND FILTER MEDIA;
    - ALL INLET AND OUTLET STRUCTURES INCLUDING UNDERDRAINS, IF REQUIRED.
    - CONTRACTOR SHALL TAKE PICTURES AT EACH STAGE OF INSTALLATION AND SUBMITTED TO ENGINEER FOR VERIFICATION OF INSTALL.

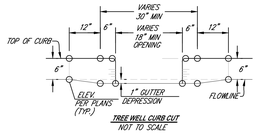
    INSPECTOR SHALL BE GIVEN A MINIMUM OF 48 HOURS PRIOR TO INSPECTION. UPON COMPLETION THE INSPECTOR SHALL PROVIDE A CERTIFICATION TO THE ENGINEER OF WORK.
13. PROPOSED MATERIALS, SUCH AS AGGREGATE, FILTER MATERIAL, AND FILTER MEDIA SHALL BE SUBMITTED TO THE ENGINEER OF WORK FOR APPROVAL.



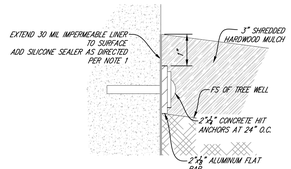
NOTES:

1. PONDING DEPTH PER DESIGN PLANS, 4" MAX.
2. WHERE APPLICABLE, REMOVE EXISTING CURB & GUTTER. CONSTRUCT CURB & GUTTER MONOLITHIC.
3. CURB & GUTTER TO BE CONSTRUCTED PER SDRSD G-02.
4. ELEVATIONS SHALL BE SHOWN ON PLANS WHERE INDICATED BY " " SYMBOL
5. SEAL PLASTIC LINER TO ADJACENT IMPROVEMENTS AND EDGE RESTRAINTS PER GS-5.15.
6. CONCRETE SHALL BE 520-C-2500 UNLESS OTHERWISE SPECIFIED.
7. GUTTER TRANSITION LENGTH PER DESIGN PLANS; AN ADDITIONAL 2.5-FT CURB TRANSITION LENGTH IS RECOMMENDED FOR EVERY 1" OF ADDITIONAL GUTTER DEPRESSION.
8. PARALLEL STREET PARKING PROHIBITED FOR BMP'S WITH TREE WELL WITHOUT STRUCTURAL SOIL.
9. 3. IF NRCS HYDROLOGIC SOIL GROUP D IS ENCOUNTERED, OR IF THE DESIGN SUBSOIL INFILTRATION RATE IS LESS THAN 0.1 IN/HR, AN UNDERDRAIN PIPE SHALL BE EMBEDDED WITHIN THE STRUCTURAL SOIL & CONNECTED TO A NEARBY STORM DRAIN SYSTEM PER GS-5.12 & GS-5.13.
10. REFER TO GS-1.00 FOR ALL DETAILS NOT SHOWN HERE.

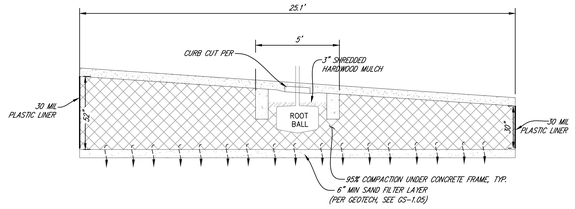
TREE WELL SECTION WIDTH SECTION



TREE WELL CURB CUT
NOT TO SCALE



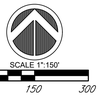
LINER ATTACHMENT TO ADJACENT CONCRETE DETAIL



TREE WELL SECTION LENGTH SECTION

NOTES:

1. ON CLEAN CONCRETE SURFACE, ADHERE LINER TO CONCRETE WITH SILICONE SEALANT OR EQUIVALENT PER MANUFACTURER RECOMMENDATIONS TO TOP ½" OF LINER.
2. SECURE LINER TO CONCRETE WITH 2" ALUMINUM OR STAINLESS STEEL FLAT BAR AS DIRECTED PER PLAN.
3. AS AN ALTERNATIVE, HIT ANCHORS CAN BE SUBSTITUTED WITH STAINLESS STEEL ANCHORS AT 24" O.C. OR POWDER ACTUATED FASTENERS AT 12" O.C.
4. TRIM EXCESS LINER TO BE FLUSH WITH SURFACE ELEVATION.
5. CONTRACTOR MEANS AND METHODS SHOULD AVOID/MINIMIZE WRINKLES TO THE LINER.
6. PARALLEL STREET PARKING PROHIBITED WITH THIS BMP.



TWIN OAKS ROAD
DMA EXHIBIT

HYDROLOGIC SOIL GROUP
THE ONSITE HYDROLOGICAL SOIL GROUP FOR THIS SITE IS TYPE D.

EXISTING SITE FEATURES:

- THE APPROXIMATE DEPTH TO GROUNDWATER IS GREATER THAN 20 FEET.
- THERE ARE NO NATURAL HYDROLOGIC FEATURES ON THE SITE.
- THE SITE PROPOSES TO CONNECT TO THE EXISTING PUBLIC STORM DRAIN SYSTEM LOCATED IN THE SOUTH EDGE OF THE SITE.
- BASED ON WATERSHED MAPPING OF POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS (CCSYA), THERE ARE NO CCSYA LOCATED WITHIN THE PROJECT BOUNDARY, OR TRIBUTARY TO THE RUNOFF BYPASSED AROUND THE SITE.

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SHEET 22 OF 21 SHEETS
WQMP EXHIBIT

Meritage Homes
LIFE. BUILT. BETTER.

OAKCREST
N. TWIN OAKS VALLEY RD
SAN MARCOS, CA

NOT FOR CONSTRUCTION

S:\EXCEL\Engineering\TWTW-01\Sheets - TWTW01 DMA.dwg, 8/8/2025 2:15 PM, JEROMAL PILOT (3)