JEFFERSON MEDICAL CENTER
WEST ADDITION

FINAL STORMWATER MANAGEMENT & STORM DRAIN REPORT

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WEST VIRGINIA.

JOSEPH H. CECI

LICENSE NO.____169144____ EXPIRATION DATE:_12/31/2026___

MAY 2026
REV. AUGUST 2026

FOX PROJECT NO.: 25-32256



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PROJECT NARRATIVE

PURPOSE

The purpose of this report is to present the hydrologic and hydraulic data pertaining to the redevelopment of the Jefferson Medical Center. The computations provided are used to design stormwater management to the maximum extent practicable for the site in accordance State of West Virginia regulations. The intent of this report is to provide computations and supporting information necessary to show stormwater management and storm drain will be provided in accordance with the City of Ranson and the West Virginia Department of Environmental Protection requirements.

INTRODUCTION

The Jefferson Medical Center is located at 300 South Preston St. bounded by East 5th Ave, Fairfax Blvd, and East 3rd Ave. in the City of Ranson, WV. The existing site is considered fully developed Urban Land. The existing drainage area flows overland toward Fairfax Blvd where it is captured in an enclosed storm drain system. Jefferson Medical Center is within the Evitts Run watershed, which drains into the Shenandoah River and eventually the Potomac River.

The existing hospital was constructed prior to the requirements to provide stormwater management. Around 2003 the hospital expanded the Emergency Department on the south side of the hospital. A small stormwater management facility was provided to manage stormwater runoff. This SWM facility can be seen on the Existing Conditions plan. In order to manage stormwater back to the original site conditions, a 2003 drainage area map was developed. The 2003 Existing Conditions Drainage Area Map includes the existing building along E. 3rd Ave. and the single-family houses along S. Fairfax Blvd., as well as the original hospital footprint.

The proposed project consists of the construction of an approximately 67,600 sq. ft. expansion to the existing hospital building, as well as the associated site improvement.

As part of the current expansion project, this SWM facility, constructed in 2003, will be removed. As such, stormwater management will be required to capture the 2003 expansion as well as the current expansion. The current proposed conditions Drainage Area Map includes the 2003 emergency department expansion as well as the proposed West Addition and associated site improvements.

HYDROLOGY ANALYSIS

The Soil Conservation Service (SCS) TR-55 computer program was used to determine the hydrologic conditions of the proposed development area. The watersheds are based upon aerial topography and field run topography. Soil types were identified from the USGS Soil Survey for Jefferson County. The soil types for the area of study are considered ‘Urban Land’ 85 percent.

Drainage area boundaries, soil types, land uses and flow paths are shown on the plan attached to this report.

STORMWATER MANAGEMENT SYSTEM

The lack of available land on-site precludes the use of an above-ground SWM pond. Due to the site constraints and the critical need to maximize developable acreage for the Jefferson Medical Center, an underground stormwater management facility is proposed for this site. An underground stormwater management facility optimizes land use and allows us to maintain the required parking layout and vehicular circulation. Placing the SWM facility underground also eliminates the safety, aesthetic, and land-use liabilities associated with an above-ground facility, especially with the number of visitors to the hospital site daily.

The proposed underground SWM facility consists of approximately 1,040LF of 42" ALCMP. The facility will control the 1, 2, 10 and 100-year storm events to be equal to or less than the existing conditions.

STORMWATER QUALITY

Water quality compliance for the proposed impervious drainage area is achieved through the use of a proprietary Manufactured Treatment Device (MTD) in accordance with Virginia DEQ Practice 17 (Filtering Devices). The design utilizes a Contech Jellyfish Filter configured in an inline arrangement.

The proposed Contech Jellyfish Filter functions as an inline filtration system designed in compliance with the Virginia Stormwater Management Program (VSMP) regulations. The inline setup utilizes an internal Maintenance Access Wall (MAW) baffle wall and weir plate. Runoff is directed through the membrane cartridges, while extreme storm events (e.g., the 10-year or 100-year peak flows) pool over the internal weir crest and discharge directly to the outlet pipe. This inline bypass mechanism ensures structural and hydraulic integrity without requiring a separate external bypass manhole.

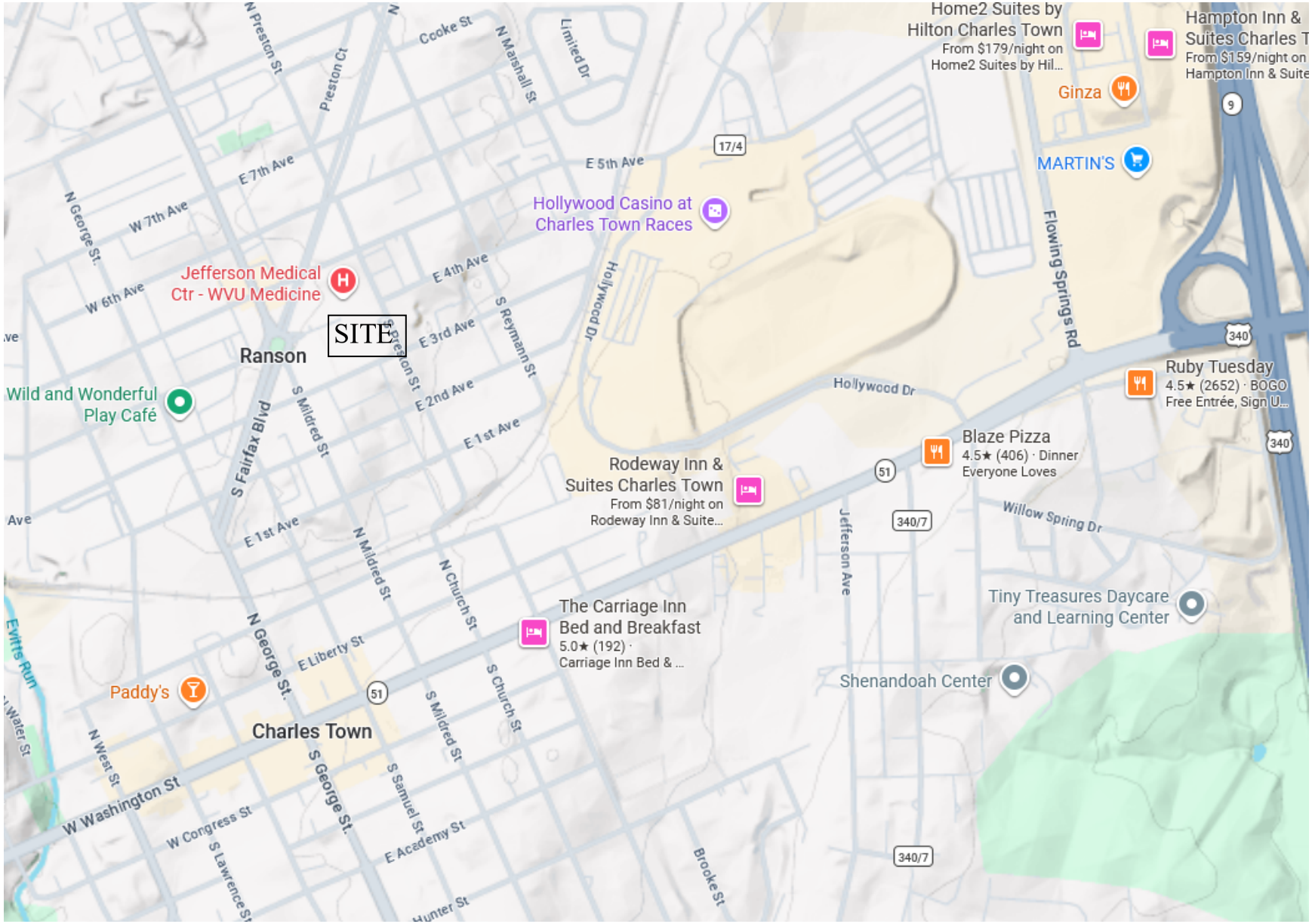
The Contech Jellyfish Filter structure has a 65% Total Phosphorus (TP) Removal Efficiency. The high surface area membrane cartridges, combined with up-flow hydraulics, frequent passive backwashing, and rinseable/reusable cartridges, ensure long-lasting performance.

UNDERGROUND SWM FACILITY		
STORM EVENT	EXISTING CONDITIONS (cfs)	DEVELOPED CONDITIONS (cfs)
1	13.16	12.40
2	16.71	15.93
10	26.35	26.01
100	43.83	28.19

CONCLUSION

The proposed underground SWM facility will manage the runoff of the 1, 2, 10 and 100-year storm events to be equal to or less than the existing conditions; therefore, no adverse impacts are anticipated downstream.

The required stormwater quality treatment is met through the use of the Contech Jellyfish structure. These structures are on the list of Maryland Department of the Environment approved alternative/innovative technologies for stormwater management and the Virginia Stormwater Management Program (VSMP) Technical Criteria, Part IIB Water Quality Design Requirements for Manufactured Treatment Devices (MTDs).



VICINITY MAP

N.T.S

SOILS MAP

Custom Soil Resource Report
Soil Map



Map Scale: 1:2,960 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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: Jefferson County, West Virginia
Survey Area Data: Version 19, Sep 5, 2025

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

Date(s) aerial images were photographed: Sep 23, 2020—Nov 3, 2020

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ub	Urban land	21.6	87.2%
UwC	Urban land-Hagerstown complex, 0 to 15 percent slopes	3.2	12.8%
Totals for Area of Interest		**24.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Jefferson County, West Virginia

Ub—Urban land

Map Unit Setting

National map unit symbol: 1vdpq
Mean annual precipitation: 33 to 45 inches
Mean annual air temperature: 51 to 56 degrees F
Frost-free period: 141 to 168 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Other vegetative classification: Not Suited (NS)
Hydric soil rating: No

UwC—Urban land-Hagerstown complex, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1vdpm
Elevation: 90 to 180 feet
Mean annual precipitation: 33 to 45 inches
Mean annual air temperature: 51 to 56 degrees F
Frost-free period: 141 to 168 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 40 percent
Hagerstown, silt loam, and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Other vegetative classification: Not Suited (NS)
Hydric soil rating: No

Description of Hagerstown, Silt Loam

Setting

Landscape: Karst
Landform: Hillslopes

Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Clayey residuum weathered from limestone

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 23 inches: silt loam
H3 - 23 to 75 inches: clay

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.4 inches)

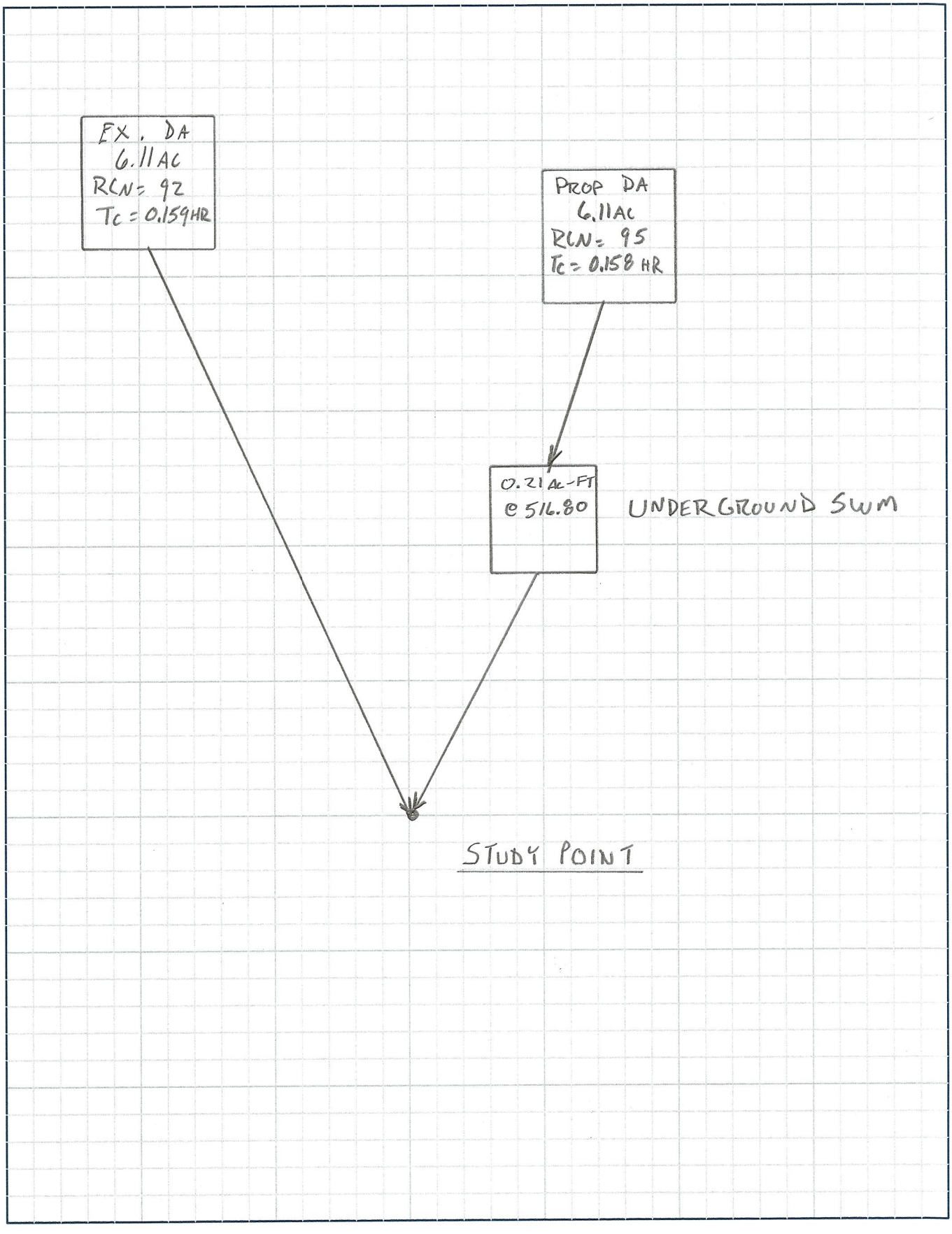
Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F147XY003PA - Mixed Limestone Upland
Other vegetative classification: Moist Loams (ML2)
Hydric soil rating: No

EXISTING / PROPOSED TR-55

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PROJECT JEFFERSON MEDICAL CENTER
JOB No.
COMP. BY J. CECI DATE 8/27/26
CHK'D. BY DATE
SHEET 1 OF 1 SCALE



WinTR-55 Current Data Description

--- Identification Data ---

User: JHC
Project: JEFFERSON MEDICAL
SubTitle:
State: West Virginia
County: Jefferson NOAA-B
Filename: H:\Corres-ChangeOrders\25\32256 Kahler Slater - Jefferson Medical Center\ENGR\JMC TR-55 08-27-26

Date: 8/27/2026
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
EXISTING		Outlet	6.11	92	0.159
PROPOSED		Outlet	6.11	95	0.158

Total area: 12.22 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

1-Yr (in)	2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)
2.38	2.86	3.58	4.17	5.05	5.78	6.57

Storm Data Source: Jefferson NOAA-B County, West Virginia (NRCS)
Rainfall Distribution Type: NOAA_B
Dimensionless Unit Hydrograph: <standard>

Jefferson NOAA-B County, West Virginia

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 1-Yr (cfs)	2-Yr (cfs)	10-Yr (cfs)	100-Yr (cfs)
SUBAREAS				
EXISTING	12.64	16.00	25.20	41.83
PROPOSED	14.27	17.66	26.72	43.09
REACHES				
OUTLET	26.91	33.64	51.90	84.85

Jefferson NOAA-B County, West Virginia

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
EXISTING							
SHEET	50	0.0200	0.240				0.144
SHALLOW	227	0.0419	0.025				0.015
SHALLOW	335	0.6600	0.050				
					Time of Concentration		0.159
PROPOSED							
SHEET	35	0.0200	0.240				0.109
SHALLOW	18	0.1000	0.050				0.001
SHALLOW	123	0.0122	0.025				0.015
CHANNEL	592					5.000	0.033
					Time of Concentration		0.158

Jefferson NOAA-B County, West Virginia

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
EXISTING	Open space; grass cover > 75% (good)	D	2.07	80
	Paved parking lots, roofs, driveways	D	4.04	98
	Total Area / Weighted Curve Number		6.11	92
PROPOSED	Open space; grass cover > 75% (good)	D	1	80
	Paved parking lots, roofs, driveways	D	5.11	98
	Total Area / Weighted Curve Number		6.11	95

UNDERGROUND SWM FACILITY DESIGN

PondMaker Worksheet Detailed Report: Worksheet (PO-7) - 1

Element Details

ID	109
Label	Worksheet (PO-7) - 1
Select Pond to Design	PO-7
Flow Allowed Below Target	99.0
Flow Allowed Above Target	0.0
Flow Allowed Below Target	99.0
Flow Allowed Above Target	0.0
Volume Allowed Below Target	99.0
Volume Allowed Above Target	99.0
Tolerance Display	Display numerical values for tolerance fields

Notes

Volume

Pond Type	Pipe	Pipe Storage Number of Barrels	9
Pipe Storage Upstream Invert	514.32 ft	Pipe Storage Slice Width	0.25 ft
Pipe Storage Downstream Invert	514.32 ft	Pipe Storage Vertical Increment	0.25 ft
Pipe Storage Length	139.00 ft	Use Void Space?	False
Pipe Storage Diameter	42.0 in		

Infiltration

Infiltration Method	No Infiltration

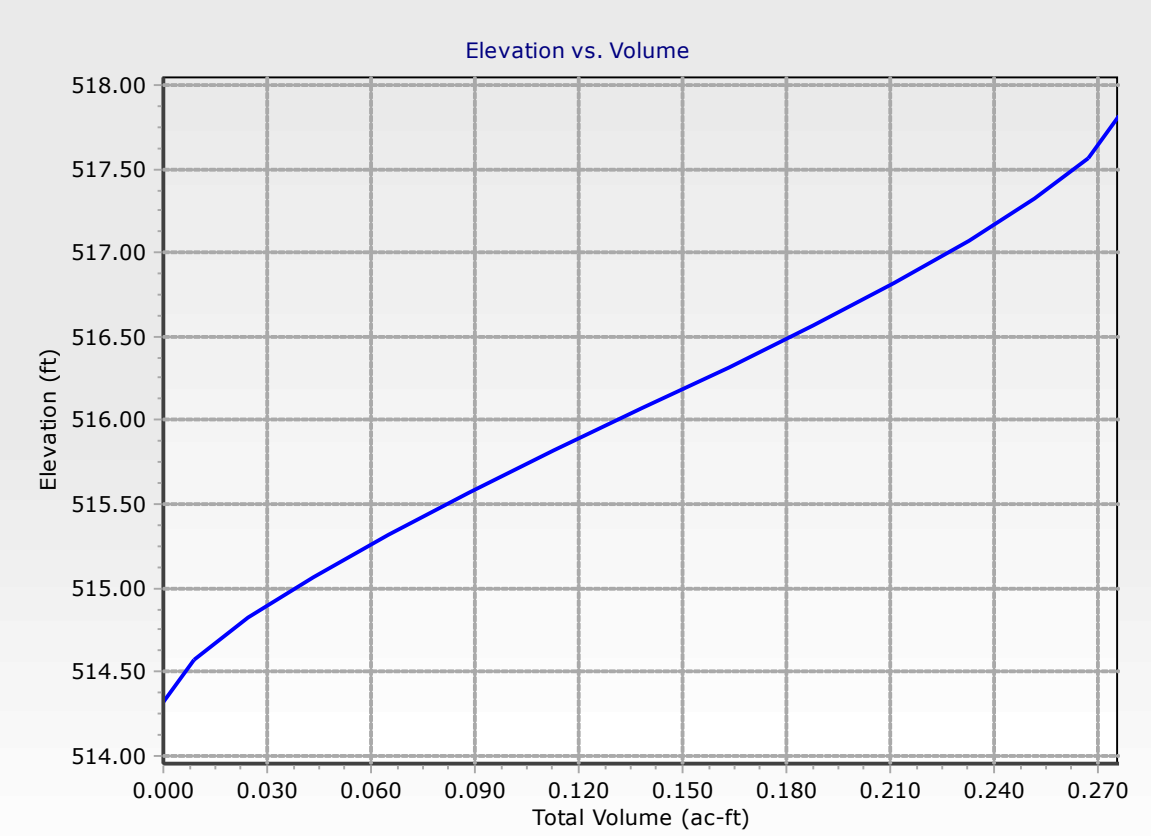
Output

Detention Time	None

Initial Conditions

Is Outflow Averaging On?	False	Define Starting Water Surface Elevation	Pond Invert

PondMaker Worksheet Detailed Report: Worksheet (PO-7) - 1



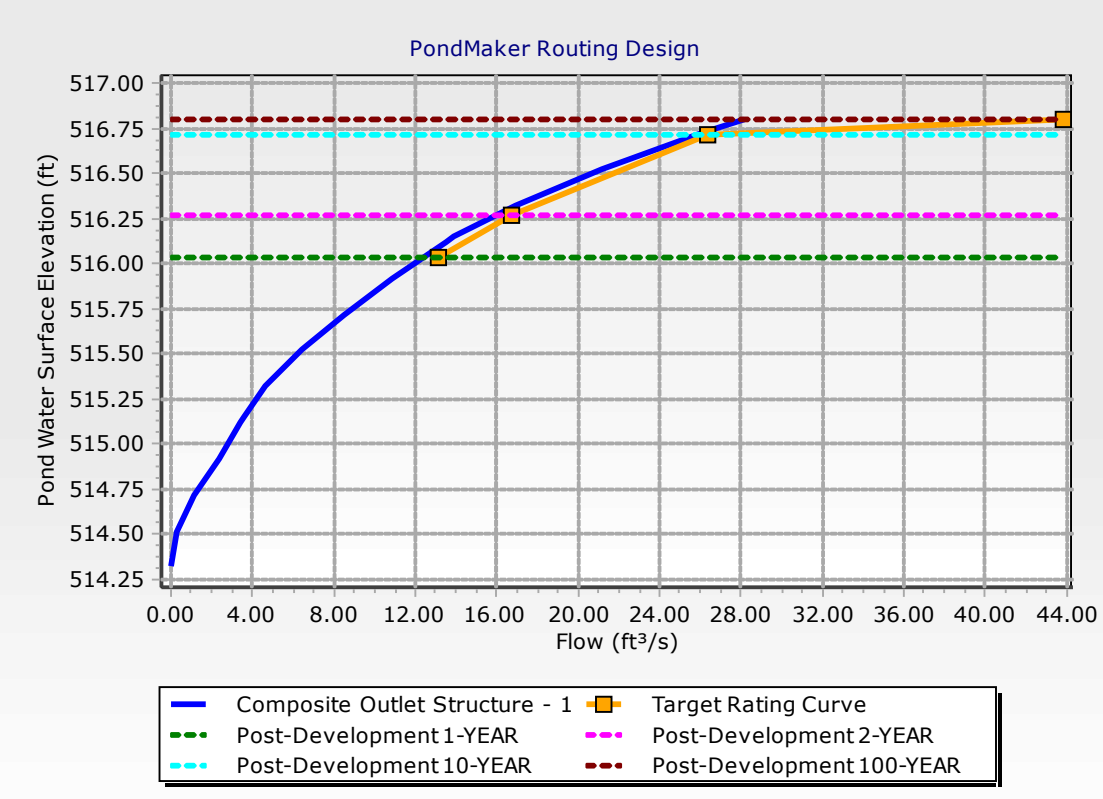
PondMaker Worksheet Detailed Report: Worksheet (PO-7) - 1

PondMaker Worksheet (Routing Design)

Design Scenario	Design Return Event	Target Peak Outflow (ft^3/s)	Computed Peak Outflow (ft^3/s)	Computed Peak Outflow vs. Target (ft^3/s)	Target Outflow Volume (ac-ft)	Computed Volume Outflow (ac-ft)	Computed Outflow Volume vs. Target (ac-ft)	Routing Outlet Structure
Post-Development 1-YEAR	1	13.16	12.40	-0.76	0.804	0.935	0.131	Composite Outlet Structure - 1
Post-Development 2-YEAR	2	16.71	15.93	-0.78	1.032	1.171	0.140	Composite Outlet Structure - 1
Post-Development 10-YEAR	10	26.35	26.01	-0.34	1.669	1.823	0.154	Composite Outlet Structure - 1
Post-Development 100-YEAR	100	43.83	28.19	-15.64	2.863	3.096	0.233	Composite Outlet Structure - 1

Computed Max Water Elevation (ft)	Freeboard Depth (ft)	Maximum Storage (ac-ft)
516.04	1.78	0.135
516.27	1.55	0.158
516.72	1.10	0.201
516.80	1.02	0.209

PondMaker Worksheet Detailed Report: Worksheet (PO-7) - 1



Subsection: Master Network Summary

Catchments Summary

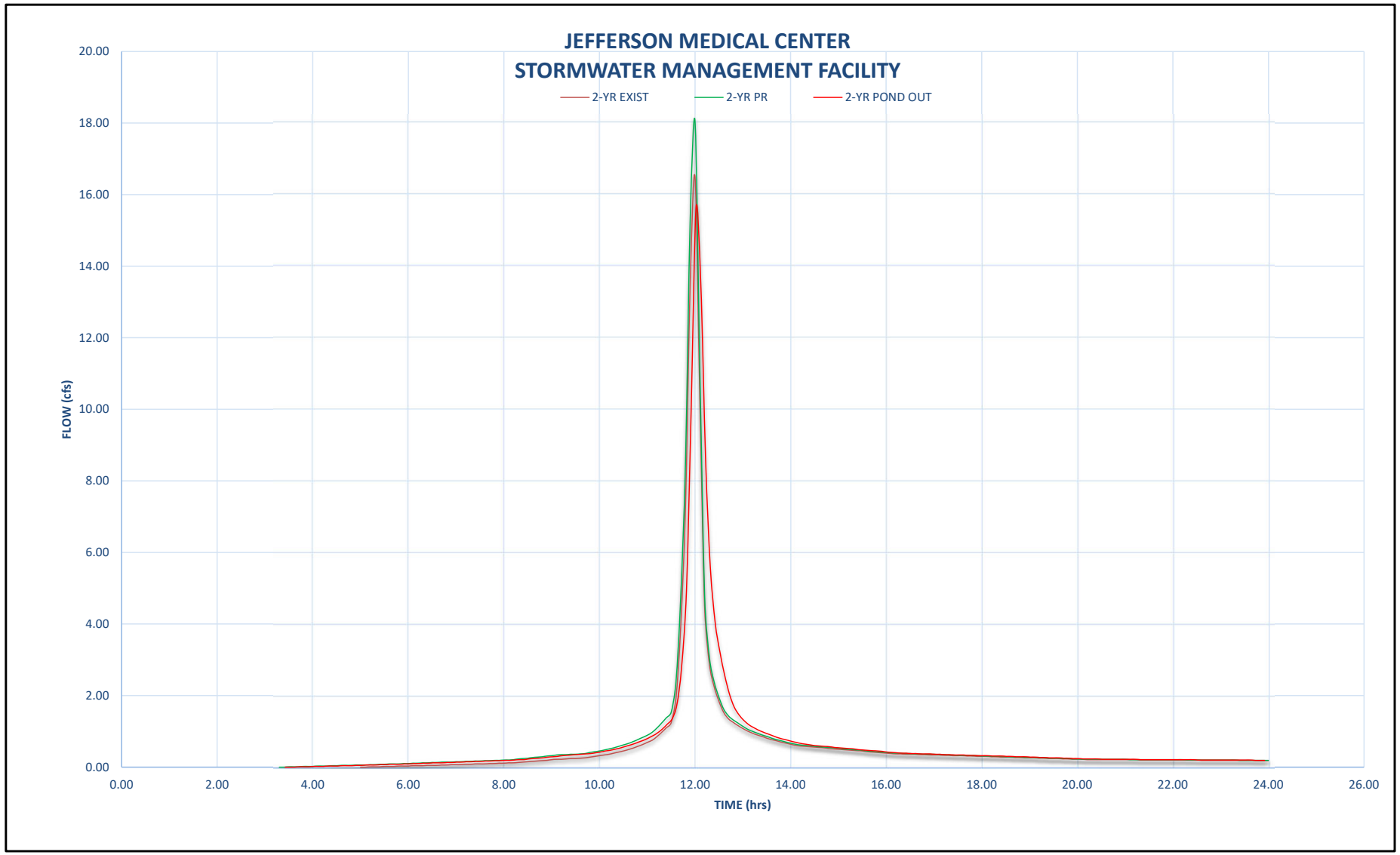
Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)
EXISTING	Pre-Development 1-YEAR	1	0.804	11.980	13.16
EXISTING	Pre-Development 2-YEAR	2	1.032	11.980	16.71
EXISTING	Pre-Development 10-YEAR	10	1.669	11.980	26.35
EXISTING	Pre-Development 100-YEAR	100	2.863	11.960	43.83
PROPOSED	Post-Development 1-YEAR	1	0.939	11.980	14.90
PROPOSED	Post-Development 2-YEAR	2	1.175	11.960	18.44
PROPOSED	Post-Development 10-YEAR	10	1.829	11.960	27.99
PROPOSED	Post-Development 100-YEAR	100	3.039	11.960	45.26

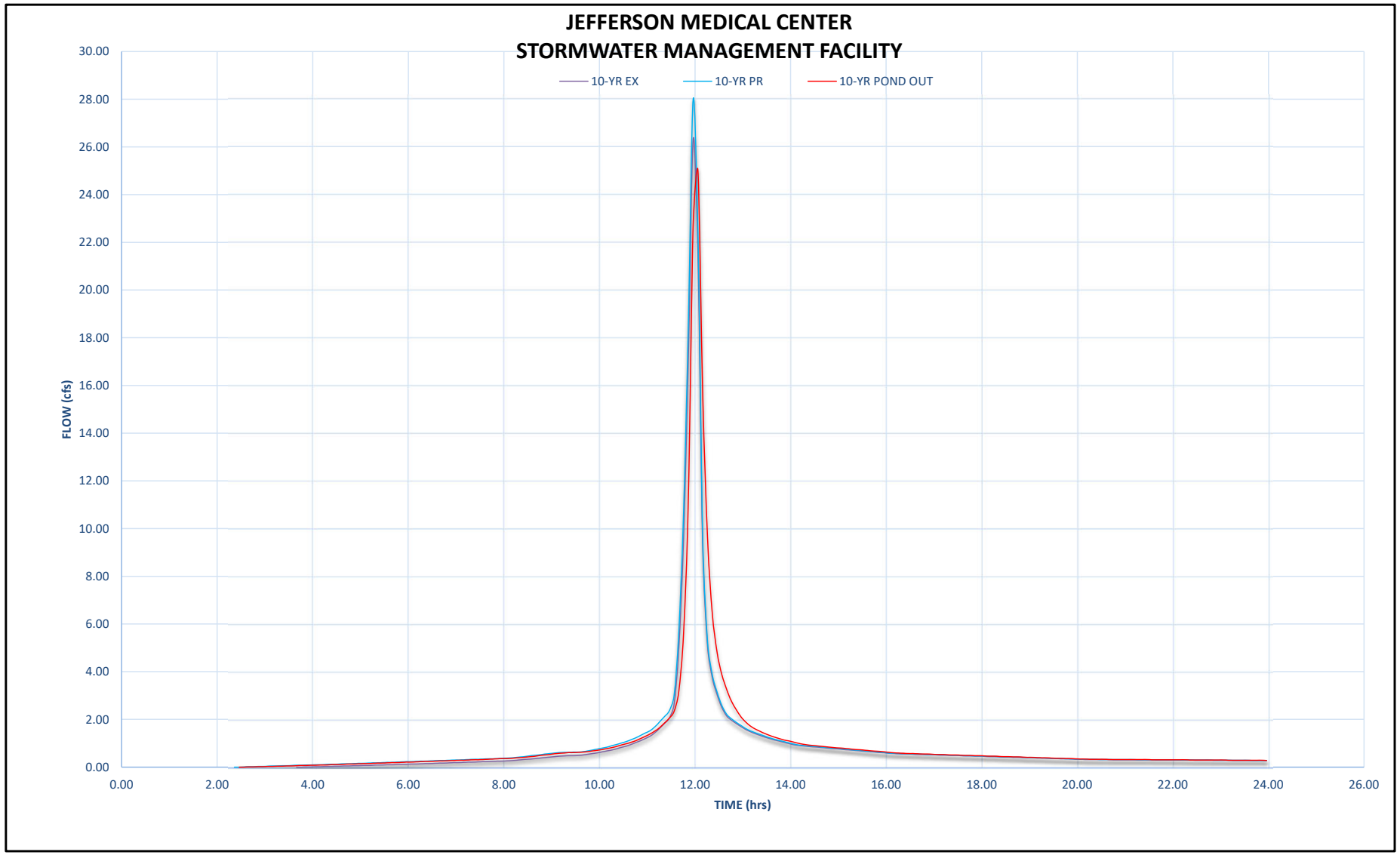
Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)	
O-40	Post-Development 1-YEAR	1	0.935	12.060	12.40	PROP OUT
O-40	Pre-Development 1-YEAR	1	0.804	11.980	13.16	EXIST
O-40	Pre-Development 2-YEAR	2	1.032	11.980	16.71	EXIST
O-40	Post-Development 2-YEAR	2	1.171	12.040	15.93	PROP OUT
O-40	Pre-Development 10-YEAR	10	1.669	11.980	26.35	EXIST
O-40	Post-Development 10-YEAR	10	1.823	12.020	26.01	PROP OUT
O-40	Pre-Development 100-YEAR	100	2.863	11.960	43.83	EXIST
O-40	Post-Development 100-YEAR	100	3.096	11.900	28.19	PROP OUT

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)


JEFFERSON MEDICAL CENTER
STORMWATER MANAGEMENT FACILITY
2-YR EXIST
2-YR PR
2-YR POND OUT
FLOW (cfs)
TIME (hrs)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
24.00
26.00


JEFFERSON MEDICAL CENTER
STORMWATER MANAGEMENT FACILITY
10-YR EX
10-YR PR
10-YR POND OUT
FLOW (cfs)
TIME (hrs)
30.00
28.00
26.00
24.00
22.00
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
24.00
26.00

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	0.159 hours
Area (User Defined)	6.110 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	11.978 hours
Flow (Peak, Computed)	16.73 ft³/s
Output Increment	0.020 hours
Time to Flow (Peak Interpolated Output)	11.980 hours
Flow (Peak Interpolated Output)	16.71 ft³/s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	6.110 acres
Maximum Retention (Pervious)	0.9 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.0 in
Runoff Volume (Pervious)	1.033 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.032 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.159 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	43.54 ft³/s

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	0.159 hours
Area (User Defined)	6.110 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
5.000	0.00	0.00	0.00	0.00	0.00
5.100	0.00	0.00	0.00	0.01	0.01
5.200	0.01	0.01	0.01	0.01	0.01
5.300	0.01	0.01	0.01	0.01	0.01
5.400	0.01	0.01	0.01	0.01	0.01
5.500	0.02	0.02	0.02	0.02	0.02
5.600	0.02	0.02	0.02	0.02	0.02
5.700	0.02	0.02	0.02	0.02	0.02
5.800	0.03	0.03	0.03	0.03	0.03
5.900	0.03	0.03	0.03	0.03	0.03
6.000	0.03	0.03	0.03	0.03	0.03
6.100	0.04	0.04	0.04	0.04	0.04
6.200	0.04	0.04	0.04	0.04	0.04
6.300	0.04	0.04	0.04	0.04	0.05
6.400	0.05	0.05	0.05	0.05	0.05
6.500	0.05	0.05	0.05	0.05	0.05
6.600	0.05	0.05	0.06	0.06	0.06
6.700	0.06	0.06	0.06	0.06	0.06
6.800	0.06	0.06	0.06	0.06	0.06
6.900	0.07	0.07	0.07	0.07	0.07
7.000	0.07	0.07	0.07	0.07	0.07
7.100	0.07	0.07	0.07	0.08	0.08
7.200	0.08	0.08	0.08	0.08	0.08
7.300	0.08	0.08	0.08	0.08	0.08
7.400	0.09	0.09	0.09	0.09	0.09
7.500	0.09	0.09	0.09	0.09	0.09
7.600	0.09	0.09	0.10	0.10	0.10
7.700	0.10	0.10	0.10	0.10	0.10
7.800	0.10	0.10	0.10	0.10	0.11
7.900	0.11	0.11	0.11	0.11	0.11
8.000	0.11	0.11	0.11	0.11	0.11
8.100	0.12	0.12	0.12	0.12	0.12
8.200	0.12	0.12	0.13	0.13	0.13
8.300	0.13	0.13	0.14	0.14	0.14

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: EXISTING Storm Event: 2-YR
Scenario: Pre-Development 2-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.400	0.14	0.14	0.14	0.15	0.15
8.500	0.15	0.15	0.15	0.16	0.16
8.600	0.16	0.16	0.17	0.17	0.17
8.700	0.17	0.17	0.18	0.18	0.18
8.800	0.18	0.19	0.19	0.19	0.19
8.900	0.19	0.20	0.20	0.20	0.20
9.000	0.21	0.21	0.21	0.21	0.22
9.100	0.22	0.22	0.22	0.22	0.22
9.200	0.22	0.23	0.23	0.23	0.23
9.300	0.23	0.23	0.23	0.23	0.24
9.400	0.24	0.24	0.24	0.24	0.24
9.500	0.24	0.24	0.24	0.25	0.25
9.600	0.25	0.25	0.25	0.26	0.26
9.700	0.26	0.27	0.27	0.27	0.28
9.800	0.28	0.28	0.29	0.29	0.29
9.900	0.30	0.30	0.31	0.31	0.31
10.000	0.32	0.32	0.33	0.33	0.33
10.100	0.34	0.34	0.35	0.35	0.36
10.200	0.36	0.37	0.38	0.38	0.39
10.300	0.39	0.40	0.40	0.41	0.42
10.400	0.42	0.43	0.43	0.44	0.45
10.500	0.45	0.46	0.47	0.47	0.48
10.600	0.49	0.50	0.50	0.51	0.52
10.700	0.53	0.54	0.55	0.56	0.57
10.800	0.58	0.59	0.60	0.61	0.62
10.900	0.63	0.64	0.65	0.66	0.67
11.000	0.69	0.70	0.71	0.72	0.74
11.100	0.75	0.77	0.79	0.81	0.83
11.200	0.85	0.87	0.90	0.92	0.94
11.300	0.97	0.99	1.02	1.04	1.07
11.400	1.10	1.12	1.15	1.18	1.20
11.500	1.24	1.29	1.38	1.52	1.71
11.600	1.93	2.19	2.50	2.91	3.40
11.700	3.92	4.47	5.08	5.77	6.52
11.800	7.33	8.20	9.25	10.52	12.01
11.900	13.56	14.97	16.04	16.62	16.71
12.000	16.48	15.98	15.13	13.82	12.15
12.100	10.37	8.68	7.19	6.02	5.15
12.200	4.50	4.01	3.62	3.32	3.08
12.300	2.88	2.72	2.58	2.46	2.35
12.400	2.25	2.16	2.08	1.99	1.91
12.500	1.84	1.77	1.70	1.64	1.59
12.600	1.53	1.49	1.45	1.41	1.38

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
12.700	1.35	1.33	1.31	1.29	1.27
12.800	1.25	1.23	1.22	1.20	1.18
12.900	1.16	1.15	1.13	1.11	1.10
13.000	1.08	1.07	1.05	1.04	1.02
13.100	1.01	0.99	0.98	0.97	0.96
13.200	0.95	0.94	0.93	0.92	0.91
13.300	0.90	0.89	0.89	0.88	0.87
13.400	0.86	0.85	0.84	0.83	0.82
13.500	0.81	0.80	0.80	0.79	0.78
13.600	0.77	0.76	0.76	0.75	0.74
13.700	0.74	0.73	0.72	0.72	0.71
13.800	0.70	0.70	0.69	0.68	0.68
13.900	0.67	0.66	0.66	0.65	0.65
14.000	0.64	0.63	0.63	0.62	0.62
14.100	0.61	0.61	0.60	0.60	0.60
14.200	0.59	0.59	0.59	0.58	0.58
14.300	0.58	0.58	0.58	0.57	0.57
14.400	0.57	0.57	0.56	0.56	0.56
14.500	0.56	0.56	0.55	0.55	0.55
14.600	0.55	0.54	0.54	0.54	0.54
14.700	0.54	0.53	0.53	0.53	0.53
14.800	0.52	0.52	0.52	0.52	0.52
14.900	0.51	0.51	0.51	0.51	0.50
15.000	0.50	0.50	0.50	0.50	0.49
15.100	0.49	0.49	0.49	0.48	0.48
15.200	0.48	0.48	0.48	0.47	0.47
15.300	0.47	0.47	0.46	0.46	0.46
15.400	0.46	0.45	0.45	0.45	0.45
15.500	0.45	0.44	0.44	0.44	0.44
15.600	0.43	0.43	0.43	0.43	0.43
15.700	0.42	0.42	0.42	0.42	0.41
15.800	0.41	0.41	0.41	0.41	0.40
15.900	0.40	0.40	0.40	0.39	0.39
16.000	0.39	0.39	0.39	0.38	0.38
16.100	0.38	0.38	0.38	0.38	0.37
16.200	0.37	0.37	0.37	0.37	0.37
16.300	0.37	0.37	0.37	0.37	0.37
16.400	0.36	0.36	0.36	0.36	0.36
16.500	0.36	0.36	0.36	0.36	0.36
16.600	0.36	0.36	0.36	0.35	0.35
16.700	0.35	0.35	0.35	0.35	0.35
16.800	0.35	0.35	0.35	0.35	0.35
16.900	0.34	0.34	0.34	0.34	0.34

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: EXISTING Storm Event: 2-YR
Scenario: Pre-Development 2-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
17.000	0.34	0.34	0.34	0.34	0.34
17.100	0.34	0.34	0.34	0.33	0.33
17.200	0.33	0.33	0.33	0.33	0.33
17.300	0.33	0.33	0.33	0.33	0.33
17.400	0.32	0.32	0.32	0.32	0.32
17.500	0.32	0.32	0.32	0.32	0.32
17.600	0.32	0.32	0.32	0.31	0.31
17.700	0.31	0.31	0.31	0.31	0.31
17.800	0.31	0.31	0.31	0.31	0.31
17.900	0.30	0.30	0.30	0.30	0.30
18.000	0.30	0.30	0.30	0.30	0.30
18.100	0.30	0.30	0.30	0.29	0.29
18.200	0.29	0.29	0.29	0.29	0.29
18.300	0.29	0.29	0.29	0.29	0.29
18.400	0.28	0.28	0.28	0.28	0.28
18.500	0.28	0.28	0.28	0.28	0.28
18.600	0.28	0.28	0.27	0.27	0.27
18.700	0.27	0.27	0.27	0.27	0.27
18.800	0.27	0.27	0.27	0.27	0.26
18.900	0.26	0.26	0.26	0.26	0.26
19.000	0.26	0.26	0.26	0.26	0.26
19.100	0.26	0.26	0.25	0.25	0.25
19.200	0.25	0.25	0.25	0.25	0.25
19.300	0.25	0.25	0.25	0.25	0.24
19.400	0.24	0.24	0.24	0.24	0.24
19.500	0.24	0.24	0.24	0.24	0.24
19.600	0.24	0.23	0.23	0.23	0.23
19.700	0.23	0.23	0.23	0.23	0.23
19.800	0.23	0.23	0.23	0.23	0.22
19.900	0.22	0.22	0.22	0.22	0.22
20.000	0.22	0.22	0.22	0.22	0.22
20.100	0.22	0.22	0.22	0.21	0.21
20.200	0.21	0.21	0.21	0.21	0.21
20.300	0.21	0.21	0.21	0.21	0.21
20.400	0.21	0.21	0.21	0.21	0.21
20.500	0.21	0.21	0.21	0.21	0.21
20.600	0.21	0.21	0.21	0.21	0.21
20.700	0.21	0.21	0.21	0.21	0.21
20.800	0.21	0.21	0.21	0.21	0.21
20.900	0.21	0.21	0.21	0.21	0.21
21.000	0.21	0.21	0.21	0.21	0.21
21.100	0.21	0.21	0.21	0.21	0.21
21.200	0.21	0.21	0.21	0.21	0.21

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: EXISTING Storm Event: 2-YR
Scenario: Pre-Development 2-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
21.300	0.20	0.20	0.20	0.20	0.20
21.400	0.20	0.20	0.20	0.20	0.20
21.500	0.20	0.20	0.20	0.20	0.20
21.600	0.20	0.20	0.20	0.20	0.20
21.700	0.20	0.20	0.20	0.20	0.20
21.800	0.20	0.20	0.20	0.20	0.20
21.900	0.20	0.20	0.20	0.20	0.20
22.000	0.20	0.20	0.20	0.20	0.20
22.100	0.20	0.20	0.20	0.20	0.20
22.200	0.20	0.20	0.20	0.20	0.20
22.300	0.20	0.20	0.20	0.20	0.20
22.400	0.20	0.20	0.20	0.20	0.20
22.500	0.20	0.20	0.20	0.19	0.19
22.600	0.19	0.19	0.19	0.19	0.19
22.700	0.19	0.19	0.19	0.19	0.19
22.800	0.19	0.19	0.19	0.19	0.19
22.900	0.19	0.19	0.19	0.19	0.19
23.000	0.19	0.19	0.19	0.19	0.19
23.100	0.19	0.19	0.19	0.19	0.19
23.200	0.19	0.19	0.19	0.19	0.19
23.300	0.19	0.19	0.19	0.19	0.19
23.400	0.19	0.19	0.19	0.19	0.19
23.500	0.19	0.19	0.19	0.19	0.19
23.600	0.19	0.19	0.19	0.19	0.19
23.700	0.19	0.19	0.19	0.19	0.19
23.800	0.18	0.18	0.18	0.18	0.18
23.900	0.18	0.18	0.18	0.18	0.18
24.000	0.18	(N/A)	(N/A)	(N/A)	(N/A)

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.2 in
Time of Concentration (Composite)	0.159 hours
Area (User Defined)	6.110 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	11.978 hours
Flow (Peak, Computed)	26.39 ft³/s
Output Increment	0.020 hours
Time to Flow (Peak Interpolated Output)	11.980 hours
Flow (Peak Interpolated Output)	26.35 ft³/s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	6.110 acres
Maximum Retention (Pervious)	0.9 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.3 in
Runoff Volume (Pervious)	1.671 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.669 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.159 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	43.54 ft³/s

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.106 hours
Unit receding limb, Tr	0.424 hours
Total unit time, Tb	0.530 hours

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.2 in
Time of Concentration (Composite)	0.159 hours
Area (User Defined)	6.110 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
3.660	0.00	0.00	0.00	0.00	0.00
3.760	0.00	0.01	0.01	0.01	0.01
3.860	0.01	0.01	0.01	0.01	0.01
3.960	0.01	0.01	0.02	0.02	0.02
4.060	0.02	0.02	0.02	0.02	0.02
4.160	0.02	0.02	0.02	0.03	0.03
4.260	0.03	0.03	0.03	0.03	0.03
4.360	0.03	0.03	0.03	0.04	0.04
4.460	0.04	0.04	0.04	0.04	0.04
4.560	0.04	0.04	0.04	0.05	0.05
4.660	0.05	0.05	0.05	0.05	0.05
4.760	0.05	0.05	0.05	0.06	0.06
4.860	0.06	0.06	0.06	0.06	0.06
4.960	0.06	0.06	0.07	0.07	0.07
5.060	0.07	0.07	0.07	0.07	0.07
5.160	0.07	0.08	0.08	0.08	0.08
5.260	0.08	0.08	0.08	0.08	0.08
5.360	0.09	0.09	0.09	0.09	0.09
5.460	0.09	0.09	0.09	0.10	0.10
5.560	0.10	0.10	0.10	0.10	0.10
5.660	0.10	0.10	0.11	0.11	0.11
5.760	0.11	0.11	0.11	0.11	0.11
5.860	0.12	0.12	0.12	0.12	0.12
5.960	0.12	0.12	0.12	0.13	0.13
6.060	0.13	0.13	0.13	0.13	0.13
6.160	0.13	0.14	0.14	0.14	0.14
6.260	0.14	0.14	0.14	0.14	0.15
6.360	0.15	0.15	0.15	0.15	0.15
6.460	0.15	0.15	0.16	0.16	0.16
6.560	0.16	0.16	0.16	0.16	0.17
6.660	0.17	0.17	0.17	0.17	0.17
6.760	0.17	0.17	0.18	0.18	0.18
6.860	0.18	0.18	0.18	0.18	0.19
6.960	0.19	0.19	0.19	0.19	0.19

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: EXISTING Storm Event: 10-YR
Scenario: Pre-Development 10-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.060	0.19	0.19	0.20	0.20	0.20
7.160	0.20	0.20	0.20	0.20	0.21
7.260	0.21	0.21	0.21	0.21	0.21
7.360	0.21	0.21	0.22	0.22	0.22
7.460	0.22	0.22	0.22	0.22	0.23
7.560	0.23	0.23	0.23	0.23	0.23
7.660	0.23	0.24	0.24	0.24	0.24
7.760	0.24	0.24	0.24	0.25	0.25
7.860	0.25	0.25	0.25	0.25	0.25
7.960	0.25	0.26	0.26	0.26	0.26
8.060	0.26	0.26	0.27	0.27	0.27
8.160	0.27	0.28	0.28	0.28	0.29
8.260	0.29	0.29	0.30	0.30	0.30
8.360	0.31	0.31	0.31	0.32	0.32
8.460	0.33	0.33	0.33	0.34	0.34
8.560	0.34	0.35	0.35	0.36	0.36
8.660	0.36	0.37	0.37	0.37	0.38
8.760	0.38	0.39	0.39	0.39	0.40
8.860	0.40	0.41	0.41	0.42	0.42
8.960	0.42	0.43	0.43	0.44	0.44
9.060	0.44	0.45	0.45	0.45	0.46
9.160	0.46	0.46	0.46	0.46	0.47
9.260	0.47	0.47	0.47	0.47	0.47
9.360	0.48	0.48	0.48	0.48	0.48
9.460	0.48	0.48	0.49	0.49	0.49
9.560	0.49	0.49	0.50	0.50	0.50
9.660	0.51	0.51	0.52	0.52	0.53
9.760	0.54	0.54	0.55	0.56	0.56
9.860	0.57	0.58	0.58	0.59	0.59
9.960	0.60	0.61	0.62	0.62	0.63
10.060	0.64	0.64	0.65	0.66	0.67
10.160	0.68	0.69	0.70	0.71	0.71
10.260	0.72	0.73	0.74	0.75	0.76
10.360	0.77	0.78	0.79	0.81	0.82
10.460	0.83	0.84	0.85	0.86	0.87
10.560	0.88	0.89	0.91	0.92	0.93
10.660	0.95	0.96	0.98	0.99	1.01
10.760	1.03	1.04	1.06	1.08	1.09
10.860	1.11	1.13	1.15	1.16	1.18
10.960	1.20	1.22	1.24	1.26	1.28
11.060	1.30	1.32	1.35	1.38	1.41
11.160	1.44	1.48	1.51	1.55	1.59
11.260	1.63	1.67	1.71	1.75	1.79

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: EXISTING Storm Event: 10-YR
Scenario: Pre-Development 10-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.360	1.83	1.88	1.92	1.96	2.01
11.460	2.05	2.09	2.15	2.23	2.38
11.560	2.62	2.94	3.32	3.75	4.27
11.660	4.95	5.77	6.62	7.52	8.50
11.760	9.61	10.82	12.09	13.47	15.10
11.860	17.08	19.38	21.76	23.90	25.50
11.960	26.31	26.35	25.90	25.03	23.63
12.060	21.53	18.90	16.11	13.47	11.15
12.160	9.32	7.96	6.95	6.18	5.58
12.260	5.11	4.73	4.43	4.17	3.96
12.360	3.77	3.60	3.44	3.31	3.18
12.460	3.05	2.93	2.81	2.70	2.61
12.560	2.51	2.43	2.35	2.27	2.21
12.660	2.15	2.11	2.07	2.03	2.00
12.760	1.97	1.94	1.91	1.88	1.85
12.860	1.83	1.80	1.77	1.75	1.72
12.960	1.70	1.67	1.65	1.62	1.60
13.060	1.58	1.56	1.53	1.51	1.50
13.160	1.48	1.46	1.45	1.43	1.42
13.260	1.40	1.39	1.37	1.36	1.35
13.360	1.33	1.32	1.30	1.29	1.28
13.460	1.26	1.25	1.24	1.22	1.21
13.560	1.20	1.18	1.17	1.16	1.15
13.660	1.14	1.13	1.12	1.11	1.10
13.760	1.09	1.08	1.07	1.06	1.05
13.860	1.04	1.03	1.02	1.01	1.00
13.960	0.99	0.98	0.97	0.96	0.95
14.060	0.94	0.94	0.93	0.92	0.91
14.160	0.91	0.90	0.90	0.89	0.89
14.260	0.89	0.88	0.88	0.88	0.87
14.360	0.87	0.87	0.86	0.86	0.85
14.460	0.85	0.85	0.84	0.84	0.84
14.560	0.84	0.83	0.83	0.82	0.82
14.660	0.82	0.81	0.81	0.81	0.80
14.760	0.80	0.80	0.79	0.79	0.79
14.860	0.78	0.78	0.78	0.77	0.77
14.960	0.77	0.76	0.76	0.76	0.75
15.060	0.75	0.75	0.74	0.74	0.74
15.160	0.73	0.73	0.73	0.72	0.72
15.260	0.72	0.71	0.71	0.71	0.70
15.360	0.70	0.70	0.69	0.69	0.68
15.460	0.68	0.68	0.67	0.67	0.67
15.560	0.66	0.66	0.66	0.65	0.65

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: EXISTING Storm Event: 10-YR
Scenario: Pre-Development 10-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.660	0.65	0.64	0.64	0.64	0.63
15.760	0.63	0.63	0.62	0.62	0.62
15.860	0.61	0.61	0.61	0.60	0.60
15.960	0.60	0.59	0.59	0.59	0.58
16.060	0.58	0.58	0.57	0.57	0.57
16.160	0.57	0.57	0.56	0.56	0.56
16.260	0.56	0.56	0.56	0.56	0.55
16.360	0.55	0.55	0.55	0.55	0.55
16.460	0.55	0.55	0.54	0.54	0.54
16.560	0.54	0.54	0.54	0.54	0.54
16.660	0.53	0.53	0.53	0.53	0.53
16.760	0.53	0.53	0.53	0.53	0.52
16.860	0.52	0.52	0.52	0.52	0.52
16.960	0.52	0.52	0.51	0.51	0.51
17.060	0.51	0.51	0.51	0.51	0.51
17.160	0.50	0.50	0.50	0.50	0.50
17.260	0.50	0.50	0.50	0.49	0.49
17.360	0.49	0.49	0.49	0.49	0.49
17.460	0.49	0.48	0.48	0.48	0.48
17.560	0.48	0.48	0.48	0.48	0.48
17.660	0.47	0.47	0.47	0.47	0.47
17.760	0.47	0.47	0.47	0.46	0.46
17.860	0.46	0.46	0.46	0.46	0.46
17.960	0.46	0.45	0.45	0.45	0.45
18.060	0.45	0.45	0.45	0.45	0.44
18.160	0.44	0.44	0.44	0.44	0.44
18.260	0.44	0.44	0.43	0.43	0.43
18.360	0.43	0.43	0.43	0.43	0.43
18.460	0.42	0.42	0.42	0.42	0.42
18.560	0.42	0.42	0.42	0.42	0.41
18.660	0.41	0.41	0.41	0.41	0.41
18.760	0.41	0.41	0.40	0.40	0.40
18.860	0.40	0.40	0.40	0.40	0.40
18.960	0.39	0.39	0.39	0.39	0.39
19.060	0.39	0.39	0.39	0.38	0.38
19.160	0.38	0.38	0.38	0.38	0.38
19.260	0.38	0.37	0.37	0.37	0.37
19.360	0.37	0.37	0.37	0.37	0.36
19.460	0.36	0.36	0.36	0.36	0.36
19.560	0.36	0.36	0.35	0.35	0.35
19.660	0.35	0.35	0.35	0.35	0.35
19.760	0.35	0.34	0.34	0.34	0.34
19.860	0.34	0.34	0.34	0.34	0.33

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: EXISTING Storm Event: 10-YR
Scenario: Pre-Development 10-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.960	0.33	0.33	0.33	0.33	0.33
20.060	0.33	0.33	0.33	0.32	0.32
20.160	0.32	0.32	0.32	0.32	0.32
20.260	0.32	0.32	0.32	0.32	0.32
20.360	0.32	0.32	0.32	0.32	0.32
20.460	0.32	0.32	0.32	0.32	0.32
20.560	0.32	0.32	0.32	0.32	0.32
20.660	0.32	0.32	0.32	0.32	0.32
20.760	0.31	0.31	0.31	0.31	0.31
20.860	0.31	0.31	0.31	0.31	0.31
20.960	0.31	0.31	0.31	0.31	0.31
21.060	0.31	0.31	0.31	0.31	0.31
21.160	0.31	0.31	0.31	0.31	0.31
21.260	0.31	0.31	0.31	0.31	0.31
21.360	0.31	0.31	0.31	0.31	0.31
21.460	0.31	0.31	0.31	0.31	0.31
21.560	0.31	0.30	0.30	0.30	0.30
21.660	0.30	0.30	0.30	0.30	0.30
21.760	0.30	0.30	0.30	0.30	0.30
21.860	0.30	0.30	0.30	0.30	0.30
21.960	0.30	0.30	0.30	0.30	0.30
22.060	0.30	0.30	0.30	0.30	0.30
22.160	0.30	0.30	0.30	0.30	0.30
22.260	0.30	0.30	0.30	0.30	0.30
22.360	0.30	0.30	0.29	0.29	0.29
22.460	0.29	0.29	0.29	0.29	0.29
22.560	0.29	0.29	0.29	0.29	0.29
22.660	0.29	0.29	0.29	0.29	0.29
22.760	0.29	0.29	0.29	0.29	0.29
22.860	0.29	0.29	0.29	0.29	0.29
22.960	0.29	0.29	0.29	0.29	0.29
23.060	0.29	0.29	0.29	0.29	0.29
23.160	0.29	0.29	0.28	0.28	0.28
23.260	0.28	0.28	0.28	0.28	0.28
23.360	0.28	0.28	0.28	0.28	0.28
23.460	0.28	0.28	0.28	0.28	0.28
23.560	0.28	0.28	0.28	0.28	0.28
23.660	0.28	0.28	0.28	0.28	0.28
23.760	0.28	0.28	0.28	0.28	0.28
23.860	0.28	0.28	0.28	0.28	0.28
23.960	0.28	0.28	0.28	(N/A)	(N/A)

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	6.6 in
Time of Concentration (Composite)	0.159 hours
Area (User Defined)	6.110 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	11.978 hours
Flow (Peak, Computed)	43.86 ft³/s
Output Increment	0.020 hours
Time to Flow (Peak Interpolated Output)	11.960 hours
Flow (Peak Interpolated Output)	43.83 ft³/s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	6.110 acres
Maximum Retention (Pervious)	0.9 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.6 in
Runoff Volume (Pervious)	2.867 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.863 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.159 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	43.54 ft³/s

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	0.158 hours
Area (User Defined)	6.110 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	11.966 hours
Flow (Peak, Computed)	18.54 ft³/s
Output Increment	0.020 hours
Time to Flow (Peak Interpolated Output)	11.960 hours
Flow (Peak Interpolated Output)	18.44 ft³/s

Drainage Area	
SCS CN (Composite)	95.000
Area (User Defined)	6.110 acres
Maximum Retention (Pervious)	0.5 in
Maximum Retention (Pervious, 20 percent)	0.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.3 in
Runoff Volume (Pervious)	1.178 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.175 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.158 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	43.82 ft³/s

Subsection: Unit Hydrograph Summary
Label: PROPOSED
Scenario: Post-Development 2-YEAR

Return Event: 2 years
Storm Event: 2-YR

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.105 hours
Unit receding limb, Tr	0.421 hours
Total unit time, Tb	0.527 hours

Storm Event	2-YR
Return Event	2 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	0.158 hours
Area (User Defined)	6.110 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
3.300	0.00	0.00	0.00	0.00	0.00
3.400	0.00	0.00	0.00	0.01	0.01
3.500	0.01	0.01	0.01	0.01	0.01
3.600	0.01	0.01	0.01	0.01	0.01
3.700	0.01	0.01	0.01	0.02	0.02
3.800	0.02	0.02	0.02	0.02	0.02
3.900	0.02	0.02	0.02	0.02	0.02
4.000	0.02	0.02	0.02	0.03	0.03
4.100	0.03	0.03	0.03	0.03	0.03
4.200	0.03	0.03	0.03	0.03	0.03
4.300	0.03	0.03	0.04	0.04	0.04
4.400	0.04	0.04	0.04	0.04	0.04
4.500	0.04	0.04	0.04	0.04	0.04
4.600	0.05	0.05	0.05	0.05	0.05
4.700	0.05	0.05	0.05	0.05	0.05
4.800	0.05	0.05	0.05	0.06	0.06
4.900	0.06	0.06	0.06	0.06	0.06
5.000	0.06	0.06	0.06	0.06	0.06
5.100	0.06	0.07	0.07	0.07	0.07
5.200	0.07	0.07	0.07	0.07	0.07
5.300	0.07	0.07	0.07	0.08	0.08
5.400	0.08	0.08	0.08	0.08	0.08
5.500	0.08	0.08	0.08	0.08	0.09
5.600	0.09	0.09	0.09	0.09	0.09
5.700	0.09	0.09	0.09	0.09	0.09
5.800	0.09	0.10	0.10	0.10	0.10
5.900	0.10	0.10	0.10	0.10	0.10
6.000	0.10	0.10	0.11	0.11	0.11
6.100	0.11	0.11	0.11	0.11	0.11
6.200	0.11	0.11	0.11	0.12	0.12
6.300	0.12	0.12	0.12	0.12	0.12
6.400	0.12	0.12	0.12	0.12	0.13
6.500	0.13	0.13	0.13	0.13	0.13
6.600	0.13	0.13	0.13	0.13	0.13

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: PROPOSED Storm Event: 2-YR
Scenario: Post-Development 2-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
6.700	0.14	0.14	0.14	0.14	0.14
6.800	0.14	0.14	0.14	0.14	0.14
6.900	0.14	0.15	0.15	0.15	0.15
7.000	0.15	0.15	0.15	0.15	0.15
7.100	0.15	0.16	0.16	0.16	0.16
7.200	0.16	0.16	0.16	0.16	0.16
7.300	0.16	0.16	0.17	0.17	0.17
7.400	0.17	0.17	0.17	0.17	0.17
7.500	0.17	0.17	0.18	0.18	0.18
7.600	0.18	0.18	0.18	0.18	0.18
7.700	0.18	0.18	0.19	0.19	0.19
7.800	0.19	0.19	0.19	0.19	0.19
7.900	0.19	0.19	0.19	0.20	0.20
8.000	0.20	0.20	0.20	0.20	0.20
8.100	0.20	0.21	0.21	0.21	0.21
8.200	0.21	0.22	0.22	0.22	0.22
8.300	0.23	0.23	0.23	0.23	0.24
8.400	0.24	0.24	0.24	0.25	0.25
8.500	0.25	0.26	0.26	0.26	0.26
8.600	0.27	0.27	0.27	0.27	0.28
8.700	0.28	0.28	0.29	0.29	0.29
8.800	0.29	0.30	0.30	0.30	0.31
8.900	0.31	0.31	0.32	0.32	0.32
9.000	0.32	0.33	0.33	0.33	0.33
9.100	0.34	0.34	0.34	0.34	0.34
9.200	0.35	0.35	0.35	0.35	0.35
9.300	0.35	0.35	0.35	0.35	0.35
9.400	0.36	0.36	0.36	0.36	0.36
9.500	0.36	0.36	0.36	0.36	0.37
9.600	0.37	0.37	0.37	0.38	0.38
9.700	0.38	0.39	0.39	0.40	0.40
9.800	0.41	0.41	0.41	0.42	0.42
9.900	0.43	0.43	0.44	0.44	0.45
10.000	0.45	0.46	0.46	0.47	0.47
10.100	0.48	0.48	0.49	0.50	0.50
10.200	0.51	0.52	0.52	0.53	0.54
10.300	0.54	0.55	0.56	0.57	0.57
10.400	0.58	0.59	0.60	0.60	0.61
10.500	0.62	0.63	0.63	0.64	0.65
10.600	0.66	0.67	0.68	0.69	0.70
10.700	0.71	0.72	0.73	0.75	0.76
10.800	0.77	0.78	0.79	0.81	0.82
10.900	0.83	0.84	0.86	0.87	0.88

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: PROPOSED Storm Event: 2-YR
Scenario: Post-Development 2-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.000	0.89	0.91	0.92	0.94	0.96
11.100	0.97	0.99	1.01	1.04	1.06
11.200	1.09	1.12	1.14	1.17	1.20
11.300	1.23	1.26	1.29	1.32	1.35
11.400	1.38	1.41	1.44	1.47	1.50
11.500	1.53	1.59	1.69	1.87	2.11
11.600	2.38	2.70	3.08	3.56	4.13
11.700	4.73	5.37	6.06	6.84	7.69
11.800	8.56	9.50	10.59	12.00	13.66
11.900	15.35	16.85	17.94	18.44	18.41
12.000	18.03	17.36	16.32	14.88	13.09
12.100	11.17	9.33	7.73	6.45	5.50
12.200	4.80	4.26	3.85	3.53	3.27
12.300	3.06	2.89	2.74	2.61	2.49
12.400	2.38	2.29	2.20	2.11	2.03
12.500	1.95	1.87	1.80	1.74	1.68
12.600	1.62	1.57	1.53	1.49	1.46
12.700	1.43	1.41	1.38	1.36	1.34
12.800	1.32	1.30	1.28	1.26	1.25
12.900	1.23	1.21	1.19	1.18	1.16
13.000	1.14	1.12	1.11	1.09	1.08
13.100	1.06	1.05	1.04	1.02	1.01
13.200	1.00	0.99	0.98	0.97	0.96
13.300	0.95	0.94	0.93	0.92	0.91
13.400	0.90	0.89	0.88	0.88	0.87
13.500	0.86	0.85	0.84	0.83	0.82
13.600	0.81	0.80	0.80	0.79	0.78
13.700	0.77	0.77	0.76	0.75	0.75
13.800	0.74	0.73	0.73	0.72	0.71
13.900	0.70	0.70	0.69	0.68	0.68
14.000	0.67	0.66	0.66	0.65	0.65
14.100	0.64	0.64	0.63	0.63	0.63
14.200	0.62	0.62	0.62	0.61	0.61
14.300	0.61	0.61	0.60	0.60	0.60
14.400	0.60	0.59	0.59	0.59	0.59
14.500	0.58	0.58	0.58	0.58	0.58
14.600	0.57	0.57	0.57	0.57	0.56
14.700	0.56	0.56	0.56	0.55	0.55
14.800	0.55	0.55	0.54	0.54	0.54
14.900	0.54	0.54	0.53	0.53	0.53
15.000	0.53	0.52	0.52	0.52	0.52
15.100	0.51	0.51	0.51	0.51	0.50
15.200	0.50	0.50	0.50	0.49	0.49

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: PROPOSED Storm Event: 2-YR
Scenario: Post-Development 2-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.300	0.49	0.49	0.49	0.48	0.48
15.400	0.48	0.48	0.47	0.47	0.47
15.500	0.47	0.46	0.46	0.46	0.46
15.600	0.45	0.45	0.45	0.45	0.44
15.700	0.44	0.44	0.44	0.44	0.43
15.800	0.43	0.43	0.43	0.42	0.42
15.900	0.42	0.42	0.41	0.41	0.41
16.000	0.41	0.40	0.40	0.40	0.40
16.100	0.40	0.40	0.39	0.39	0.39
16.200	0.39	0.39	0.39	0.39	0.39
16.300	0.39	0.38	0.38	0.38	0.38
16.400	0.38	0.38	0.38	0.38	0.38
16.500	0.38	0.38	0.37	0.37	0.37
16.600	0.37	0.37	0.37	0.37	0.37
16.700	0.37	0.37	0.37	0.37	0.36
16.800	0.36	0.36	0.36	0.36	0.36
16.900	0.36	0.36	0.36	0.36	0.36
17.000	0.36	0.35	0.35	0.35	0.35
17.100	0.35	0.35	0.35	0.35	0.35
17.200	0.35	0.35	0.35	0.34	0.34
17.300	0.34	0.34	0.34	0.34	0.34
17.400	0.34	0.34	0.34	0.34	0.34
17.500	0.33	0.33	0.33	0.33	0.33
17.600	0.33	0.33	0.33	0.33	0.33
17.700	0.33	0.33	0.32	0.32	0.32
17.800	0.32	0.32	0.32	0.32	0.32
17.900	0.32	0.32	0.32	0.31	0.31
18.000	0.31	0.31	0.31	0.31	0.31
18.100	0.31	0.31	0.31	0.31	0.31
18.200	0.30	0.30	0.30	0.30	0.30
18.300	0.30	0.30	0.30	0.30	0.30
18.400	0.30	0.30	0.29	0.29	0.29
18.500	0.29	0.29	0.29	0.29	0.29
18.600	0.29	0.29	0.29	0.28	0.28
18.700	0.28	0.28	0.28	0.28	0.28
18.800	0.28	0.28	0.28	0.28	0.28
18.900	0.27	0.27	0.27	0.27	0.27
19.000	0.27	0.27	0.27	0.27	0.27
19.100	0.27	0.27	0.26	0.26	0.26
19.200	0.26	0.26	0.26	0.26	0.26
19.300	0.26	0.26	0.26	0.26	0.25
19.400	0.25	0.25	0.25	0.25	0.25
19.500	0.25	0.25	0.25	0.25	0.25

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 2 years
Label: PROPOSED Storm Event: 2-YR
Scenario: Post-Development 2-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.600	0.25	0.24	0.24	0.24	0.24
19.700	0.24	0.24	0.24	0.24	0.24
19.800	0.24	0.24	0.23	0.23	0.23
19.900	0.23	0.23	0.23	0.23	0.23
20.000	0.23	0.23	0.23	0.23	0.22
20.100	0.22	0.22	0.22	0.22	0.22
20.200	0.22	0.22	0.22	0.22	0.22
20.300	0.22	0.22	0.22	0.22	0.22
20.400	0.22	0.22	0.22	0.22	0.22
20.500	0.22	0.22	0.22	0.22	0.22
20.600	0.22	0.22	0.22	0.22	0.22
20.700	0.22	0.22	0.22	0.22	0.22
20.800	0.22	0.22	0.22	0.22	0.22
20.900	0.22	0.22	0.22	0.22	0.22
21.000	0.22	0.22	0.21	0.21	0.21
21.100	0.21	0.21	0.21	0.21	0.21
21.200	0.21	0.21	0.21	0.21	0.21
21.300	0.21	0.21	0.21	0.21	0.21
21.400	0.21	0.21	0.21	0.21	0.21
21.500	0.21	0.21	0.21	0.21	0.21
21.600	0.21	0.21	0.21	0.21	0.21
21.700	0.21	0.21	0.21	0.21	0.21
21.800	0.21	0.21	0.21	0.21	0.21
21.900	0.21	0.21	0.21	0.21	0.21
22.000	0.21	0.21	0.21	0.21	0.21
22.100	0.21	0.21	0.21	0.21	0.21
22.200	0.21	0.20	0.20	0.20	0.20
22.300	0.20	0.20	0.20	0.20	0.20
22.400	0.20	0.20	0.20	0.20	0.20
22.500	0.20	0.20	0.20	0.20	0.20
22.600	0.20	0.20	0.20	0.20	0.20
22.700	0.20	0.20	0.20	0.20	0.20
22.800	0.20	0.20	0.20	0.20	0.20
22.900	0.20	0.20	0.20	0.20	0.20
23.000	0.20	0.20	0.20	0.20	0.20
23.100	0.20	0.20	0.20	0.20	0.20
23.200	0.20	0.20	0.20	0.20	0.20
23.300	0.20	0.20	0.20	0.20	0.20
23.400	0.19	0.19	0.19	0.19	0.19
23.500	0.19	0.19	0.19	0.19	0.19
23.600	0.19	0.19	0.19	0.19	0.19
23.700	0.19	0.19	0.19	0.19	0.19
23.800	0.19	0.19	0.19	0.19	0.19

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.2 in
Time of Concentration (Composite)	0.158 hours
Area (User Defined)	6.110 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	11.966 hours
Flow (Peak, Computed)	28.13 ft³/s
Output Increment	0.020 hours
Time to Flow (Peak Interpolated Output)	11.960 hours
Flow (Peak Interpolated Output)	27.99 ft³/s

Drainage Area	
SCS CN (Composite)	95.000
Area (User Defined)	6.110 acres
Maximum Retention (Pervious)	0.5 in
Maximum Retention (Pervious, 20 percent)	0.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.6 in
Runoff Volume (Pervious)	1.832 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.829 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.158 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	43.82 ft³/s

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.105 hours
Unit receding limb, Tr	0.421 hours
Total unit time, Tb	0.527 hours

Storm Event	10-YR
Return Event	10 years
Duration	24.000 hours
Depth	4.2 in
Time of Concentration (Composite)	0.158 hours
Area (User Defined)	6.110 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
2.360	0.00	0.00	0.00	0.00	0.00
2.460	0.00	0.01	0.01	0.01	0.01
2.560	0.01	0.01	0.01	0.01	0.02
2.660	0.02	0.02	0.02	0.02	0.02
2.760	0.02	0.02	0.02	0.03	0.03
2.860	0.03	0.03	0.03	0.03	0.03
2.960	0.03	0.04	0.04	0.04	0.04
3.060	0.04	0.04	0.04	0.04	0.05
3.160	0.05	0.05	0.05	0.05	0.05
3.260	0.05	0.05	0.05	0.06	0.06
3.360	0.06	0.06	0.06	0.06	0.06
3.460	0.06	0.06	0.07	0.07	0.07
3.560	0.07	0.07	0.07	0.07	0.07
3.660	0.08	0.08	0.08	0.08	0.08
3.760	0.08	0.08	0.08	0.08	0.09
3.860	0.09	0.09	0.09	0.09	0.09
3.960	0.09	0.09	0.09	0.10	0.10
4.060	0.10	0.10	0.10	0.10	0.10
4.160	0.10	0.11	0.11	0.11	0.11
4.260	0.11	0.11	0.11	0.11	0.12
4.360	0.12	0.12	0.12	0.12	0.12
4.460	0.12	0.12	0.13	0.13	0.13
4.560	0.13	0.13	0.13	0.13	0.13
4.660	0.14	0.14	0.14	0.14	0.14
4.760	0.14	0.14	0.15	0.15	0.15
4.860	0.15	0.15	0.15	0.15	0.15
4.960	0.16	0.16	0.16	0.16	0.16
5.060	0.16	0.16	0.17	0.17	0.17
5.160	0.17	0.17	0.17	0.17	0.18
5.260	0.18	0.18	0.18	0.18	0.18
5.360	0.18	0.19	0.19	0.19	0.19
5.460	0.19	0.19	0.19	0.19	0.20
5.560	0.20	0.20	0.20	0.20	0.20
5.660	0.20	0.21	0.21	0.21	0.21

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PROPOSED Storm Event: 10-YR
Scenario: Post-Development 10-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
5.760	0.21	0.21	0.21	0.22	0.22
5.860	0.22	0.22	0.22	0.22	0.22
5.960	0.23	0.23	0.23	0.23	0.23
6.060	0.23	0.23	0.24	0.24	0.24
6.160	0.24	0.24	0.24	0.24	0.25
6.260	0.25	0.25	0.25	0.25	0.25
6.360	0.25	0.26	0.26	0.26	0.26
6.460	0.26	0.26	0.26	0.27	0.27
6.560	0.27	0.27	0.27	0.27	0.27
6.660	0.28	0.28	0.28	0.28	0.28
6.760	0.28	0.28	0.29	0.29	0.29
6.860	0.29	0.29	0.29	0.29	0.30
6.960	0.30	0.30	0.30	0.30	0.30
7.060	0.30	0.31	0.31	0.31	0.31
7.160	0.31	0.31	0.31	0.32	0.32
7.260	0.32	0.32	0.32	0.32	0.32
7.360	0.33	0.33	0.33	0.33	0.33
7.460	0.33	0.33	0.34	0.34	0.34
7.560	0.34	0.34	0.34	0.34	0.35
7.660	0.35	0.35	0.35	0.35	0.35
7.760	0.35	0.36	0.36	0.36	0.36
7.860	0.36	0.36	0.36	0.37	0.37
7.960	0.37	0.37	0.37	0.37	0.38
8.060	0.38	0.38	0.38	0.38	0.39
8.160	0.39	0.39	0.40	0.40	0.41
8.260	0.41	0.41	0.42	0.42	0.43
8.360	0.43	0.44	0.44	0.44	0.45
8.460	0.45	0.46	0.46	0.47	0.47
8.560	0.48	0.48	0.48	0.49	0.49
8.660	0.50	0.50	0.51	0.51	0.52
8.760	0.52	0.53	0.53	0.54	0.54
8.860	0.55	0.55	0.55	0.56	0.56
8.960	0.57	0.57	0.58	0.58	0.59
9.060	0.59	0.60	0.60	0.60	0.61
9.160	0.61	0.61	0.61	0.61	0.61
9.260	0.62	0.62	0.62	0.62	0.62
9.360	0.62	0.62	0.62	0.62	0.63
9.460	0.63	0.63	0.63	0.63	0.63
9.560	0.63	0.64	0.64	0.64	0.65
9.660	0.65	0.66	0.66	0.67	0.68
9.760	0.68	0.69	0.70	0.71	0.71
9.860	0.72	0.73	0.74	0.74	0.75
9.960	0.76	0.77	0.77	0.78	0.79

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PROPOSED Storm Event: 10-YR
Scenario: Post-Development 10-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.060	0.80	0.81	0.82	0.82	0.83
10.160	0.84	0.85	0.87	0.88	0.89
10.260	0.90	0.91	0.92	0.93	0.94
10.360	0.95	0.97	0.98	0.99	1.00
10.460	1.01	1.02	1.03	1.05	1.06
10.560	1.07	1.09	1.10	1.11	1.13
10.660	1.15	1.16	1.18	1.20	1.22
10.760	1.23	1.25	1.27	1.29	1.31
10.860	1.33	1.35	1.37	1.39	1.41
10.960	1.43	1.45	1.47	1.49	1.51
11.060	1.53	1.56	1.59	1.62	1.65
11.160	1.69	1.73	1.77	1.81	1.85
11.260	1.90	1.94	1.99	2.03	2.08
11.360	2.12	2.17	2.22	2.26	2.31
11.460	2.36	2.40	2.46	2.54	2.71
11.560	2.98	3.36	3.79	4.28	4.89
11.660	5.64	6.51	7.45	8.44	9.50
11.760	10.69	11.98	13.30	14.72	16.37
11.860	18.48	20.96	23.49	25.70	27.30
11.960	27.99	27.90	27.27	26.20	24.61
12.060	22.39	19.68	16.78	14.01	11.60
12.160	9.67	8.24	7.19	6.39	5.76
12.260	5.28	4.89	4.57	4.31	4.09
12.360	3.89	3.71	3.56	3.41	3.28
12.460	3.15	3.02	2.90	2.79	2.69
12.560	2.59	2.50	2.42	2.34	2.28
12.660	2.22	2.17	2.13	2.09	2.06
12.760	2.03	1.99	1.97	1.94	1.91
12.860	1.88	1.86	1.83	1.80	1.78
12.960	1.75	1.72	1.70	1.67	1.65
13.060	1.62	1.60	1.58	1.56	1.54
13.160	1.52	1.50	1.49	1.47	1.46
13.260	1.44	1.43	1.41	1.40	1.38
13.360	1.37	1.36	1.34	1.33	1.31
13.460	1.30	1.29	1.27	1.26	1.24
13.560	1.23	1.22	1.21	1.19	1.18
13.660	1.17	1.16	1.15	1.14	1.13
13.760	1.12	1.11	1.10	1.09	1.08
13.860	1.07	1.06	1.05	1.04	1.03
13.960	1.02	1.01	1.00	0.99	0.98
14.060	0.97	0.96	0.95	0.95	0.94
14.160	0.93	0.93	0.92	0.92	0.91
14.260	0.91	0.91	0.90	0.90	0.90

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PROPOSED Storm Event: 10-YR
Scenario: Post-Development 10-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.360	0.89	0.89	0.88	0.88	0.88
14.460	0.87	0.87	0.87	0.86	0.86
14.560	0.86	0.85	0.85	0.85	0.84
14.660	0.84	0.84	0.83	0.83	0.83
14.760	0.82	0.82	0.81	0.81	0.81
14.860	0.80	0.80	0.80	0.79	0.79
14.960	0.79	0.78	0.78	0.78	0.77
15.060	0.77	0.76	0.76	0.76	0.76
15.160	0.75	0.75	0.74	0.74	0.74
15.260	0.73	0.73	0.73	0.72	0.72
15.360	0.72	0.71	0.71	0.71	0.70
15.460	0.70	0.69	0.69	0.69	0.68
15.560	0.68	0.68	0.67	0.67	0.67
15.660	0.66	0.66	0.66	0.65	0.65
15.760	0.65	0.64	0.64	0.63	0.63
15.860	0.63	0.62	0.62	0.62	0.61
15.960	0.61	0.61	0.60	0.60	0.60
16.060	0.59	0.59	0.59	0.59	0.58
16.160	0.58	0.58	0.58	0.58	0.57
16.260	0.57	0.57	0.57	0.57	0.57
16.360	0.57	0.57	0.56	0.56	0.56
16.460	0.56	0.56	0.56	0.56	0.56
16.560	0.55	0.55	0.55	0.55	0.55
16.660	0.55	0.55	0.55	0.54	0.54
16.760	0.54	0.54	0.54	0.54	0.54
16.860	0.53	0.53	0.53	0.53	0.53
16.960	0.53	0.53	0.53	0.52	0.52
17.060	0.52	0.52	0.52	0.52	0.52
17.160	0.52	0.51	0.51	0.51	0.51
17.260	0.51	0.51	0.51	0.51	0.51
17.360	0.50	0.50	0.50	0.50	0.50
17.460	0.50	0.50	0.49	0.49	0.49
17.560	0.49	0.49	0.49	0.49	0.49
17.660	0.48	0.48	0.48	0.48	0.48
17.760	0.48	0.48	0.48	0.47	0.47
17.860	0.47	0.47	0.47	0.47	0.47
17.960	0.47	0.46	0.46	0.46	0.46
18.060	0.46	0.46	0.46	0.46	0.45
18.160	0.45	0.45	0.45	0.45	0.45
18.260	0.45	0.45	0.44	0.44	0.44
18.360	0.44	0.44	0.44	0.44	0.44
18.460	0.43	0.43	0.43	0.43	0.43
18.560	0.43	0.43	0.43	0.42	0.42

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PROPOSED Storm Event: 10-YR
Scenario: Post-Development 10-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.660	0.42	0.42	0.42	0.42	0.42
18.760	0.42	0.41	0.41	0.41	0.41
18.860	0.41	0.41	0.41	0.41	0.40
18.960	0.40	0.40	0.40	0.40	0.40
19.060	0.40	0.40	0.39	0.39	0.39
19.160	0.39	0.39	0.39	0.39	0.38
19.260	0.38	0.38	0.38	0.38	0.38
19.360	0.38	0.38	0.37	0.37	0.37
19.460	0.37	0.37	0.37	0.37	0.37
19.560	0.37	0.36	0.36	0.36	0.36
19.660	0.36	0.36	0.36	0.35	0.35
19.760	0.35	0.35	0.35	0.35	0.35
19.860	0.35	0.34	0.34	0.34	0.34
19.960	0.34	0.34	0.34	0.34	0.33
20.060	0.33	0.33	0.33	0.33	0.33
20.160	0.33	0.33	0.33	0.33	0.33
20.260	0.33	0.33	0.33	0.33	0.33
20.360	0.33	0.33	0.33	0.33	0.33
20.460	0.32	0.32	0.32	0.32	0.32
20.560	0.32	0.32	0.32	0.32	0.32
20.660	0.32	0.32	0.32	0.32	0.32
20.760	0.32	0.32	0.32	0.32	0.32
20.860	0.32	0.32	0.32	0.32	0.32
20.960	0.32	0.32	0.32	0.32	0.32
21.060	0.32	0.32	0.32	0.32	0.32
21.160	0.32	0.32	0.32	0.32	0.31
21.260	0.31	0.31	0.31	0.31	0.31
21.360	0.31	0.31	0.31	0.31	0.31
21.460	0.31	0.31	0.31	0.31	0.31
21.560	0.31	0.31	0.31	0.31	0.31
21.660	0.31	0.31	0.31	0.31	0.31
21.760	0.31	0.31	0.31	0.31	0.31
21.860	0.31	0.31	0.31	0.31	0.31
21.960	0.31	0.31	0.31	0.31	0.30
22.060	0.30	0.30	0.30	0.30	0.30
22.160	0.30	0.30	0.30	0.30	0.30
22.260	0.30	0.30	0.30	0.30	0.30
22.360	0.30	0.30	0.30	0.30	0.30
22.460	0.30	0.30	0.30	0.30	0.30
22.560	0.30	0.30	0.30	0.30	0.30
22.660	0.30	0.30	0.30	0.30	0.30
22.760	0.30	0.30	0.30	0.30	0.29
22.860	0.29	0.29	0.29	0.29	0.29

Subsection: Unit Hydrograph (Hydrograph Table) Return Event: 10 years
Label: PROPOSED Storm Event: 10-YR
Scenario: Post-Development 10-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
22.960	0.29	0.29	0.29	0.29	0.29
23.060	0.29	0.29	0.29	0.29	0.29
23.160	0.29	0.29	0.29	0.29	0.29
23.260	0.29	0.29	0.29	0.29	0.29
23.360	0.29	0.29	0.29	0.29	0.29
23.460	0.29	0.29	0.29	0.29	0.29
23.560	0.29	0.29	0.29	0.29	0.28
23.660	0.28	0.28	0.28	0.28	0.28
23.760	0.28	0.28	0.28	0.28	0.28
23.860	0.28	0.28	0.28	0.28	0.28
23.960	0.28	0.28	0.28	(N/A)	(N/A)

Storm Event	100-YR
Return Event	100 years
Duration	24.000 hours
Depth	6.6 in
Time of Concentration (Composite)	0.158 hours
Area (User Defined)	6.110 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	11.966 hours
Flow (Peak, Computed)	45.45 ft³/s
Output Increment	0.020 hours
Time to Flow (Peak Interpolated Output)	11.960 hours
Flow (Peak Interpolated Output)	45.26 ft³/s

Drainage Area	
SCS CN (Composite)	95.000
Area (User Defined)	6.110 acres
Maximum Retention (Pervious)	0.5 in
Maximum Retention (Pervious, 20 percent)	0.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	3.044 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3.039 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.158 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	43.82 ft³/s

WEIR OUTLET STRUCTURE

Subsection: Outlet Input Data
Label: Composite Outlet Structure - 1
Scenario: Post-Development 1-YEAR

Return Event: 1 years
Storm Event: 1-YR

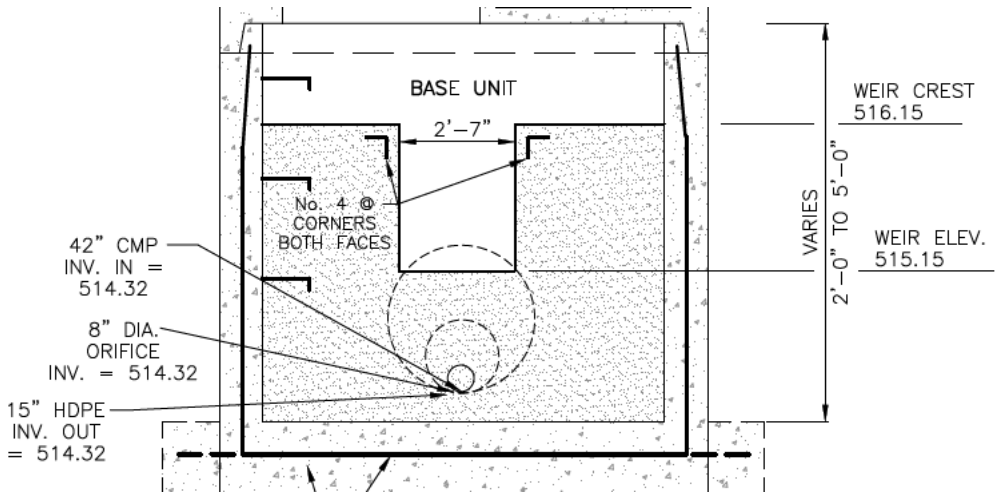
Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	3
Elevation	514.32 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	515.15 ft
Weir Length	2.58 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: Weir - 2 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	516.15 ft
Weir Length	2.80 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s



Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1
Scenario: Post-Development 1-YEAR

Return Event: 1 years
Storm Event: 1-YR

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Orifice - 1 (Orifice-Circular)

Upstream ID = (Pond Water Surface)
Downstream ID = Tailwater (Pond Outfall)

STAGE -DISCHARGE

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
514.32	0.00	(N/A)	0.00
514.52	0.32	(N/A)	0.00
514.72	1.16	(N/A)	0.00
514.92	2.36	(N/A)	0.00
515.12	3.44	(N/A)	0.00
515.15	3.55	(N/A)	0.00
515.32	4.12	(N/A)	0.00
515.52	4.69	(N/A)	0.00
515.72	5.21	(N/A)	0.00
515.92	5.67	(N/A)	0.00
516.12	6.10	(N/A)	0.00
516.15	6.17	(N/A)	0.00
516.32	6.51	(N/A)	0.00
516.52	6.89	(N/A)	0.00
516.72	7.25	(N/A)	0.00
516.80	7.38	(N/A)	0.00

Computation Messages

Upstream HW &
DNstream TW < Inv.El
CRIT.DEPTH CONTROL
Vh= .052ft Dcr= .148ft
CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL
Vh= .110ft Dcr= .290ft
CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL
Vh= .180ft Dcr= .420ft
CRIT.DEPTH Hev= .00ft
H =.47
H =.50
H =.67
H =.87
H =1.07
H =1.27
H =1.47
H =1.50
H =1.67
H =1.87
H =2.07

Requested Pond Water Surface Elevations	
Minimum (Headwater)	514.32 ft
Increment (Headwater)	0.20 ft
Maximum (Headwater)	516.80 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	TW	514.32	516.80
Rectangular Weir	Weir - 1	Forward	TW	515.15	516.80
Rectangular Weir	Weir - 2	Forward	TW	516.15	516.80
Tailwater Settings	Tailwater			(N/A)	(N/A)

Subsection: Elevation-Volume-Flow Table (Pond)
Label: PO-7
Scenario: Post-Development 1-YEAR

Return Event: 1 years
Storm Event: 1-YR

STAGE STORAGE

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	514.32 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.020 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ac-ft)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
514.32	0.00	0.000	0.000	0.00	0.00	0.00
514.52	0.32	0.007	0.000	0.00	0.32	8.80
514.72	1.16	0.018	0.000	0.00	1.16	22.98
514.92	2.36	0.032	0.000	0.00	2.36	40.96
515.12	3.44	0.048	0.000	0.00	3.44	61.23
515.15	3.55	0.050	0.000	0.00	3.55	64.50
515.32	4.66	0.065	0.000	0.00	4.66	83.48
515.52	6.43	0.084	0.000	0.00	6.43	107.95
515.72	8.54	0.103	0.000	0.00	8.54	133.53
515.92	10.90	0.123	0.000	0.00	10.90	159.89
516.12	13.50	0.143	0.000	0.00	13.50	186.73
516.15	13.91	0.146	0.000	0.00	13.91	190.77
516.32	16.89	0.163	0.000	0.00	16.89	214.36
516.52	21.19	0.183	0.000	0.00	21.19	242.40
516.72	26.09	0.202	0.000	0.00	26.09	270.25
516.80	28.19	0.209	0.000	0.00	28.19	281.43

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 2-YEAR

Return Event: 2 years
Storm Event: 2-YR

Peak Discharge	15.93 ft³/s
Time to Peak	12.040 hours
Hydrograph Volume	1.171 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
3.420	0.00	0.00	0.00	0.00	0.00
3.520	0.00	0.00	0.00	0.00	0.00
3.620	0.00	0.00	0.01	0.01	0.01
3.720	0.01	0.01	0.01	0.01	0.01
3.820	0.01	0.01	0.01	0.01	0.01
3.920	0.01	0.01	0.01	0.01	0.02
4.020	0.02	0.02	0.02	0.02	0.02
4.120	0.02	0.02	0.02	0.02	0.02
4.220	0.02	0.02	0.02	0.02	0.02
4.320	0.03	0.03	0.03	0.03	0.03
4.420	0.03	0.03	0.03	0.03	0.03
4.520	0.03	0.03	0.03	0.03	0.04
4.620	0.04	0.04	0.04	0.04	0.04
4.720	0.04	0.04	0.04	0.04	0.04
4.820	0.04	0.04	0.05	0.05	0.05
4.920	0.05	0.05	0.05	0.05	0.05
5.020	0.05	0.05	0.05	0.05	0.05
5.120	0.06	0.06	0.06	0.06	0.06
5.220	0.06	0.06	0.06	0.06	0.06
5.320	0.06	0.06	0.06	0.07	0.07
5.420	0.07	0.07	0.07	0.07	0.07
5.520	0.07	0.07	0.07	0.07	0.07
5.620	0.08	0.08	0.08	0.08	0.08
5.720	0.08	0.08	0.08	0.08	0.08
5.820	0.08	0.08	0.09	0.09	0.09
5.920	0.09	0.09	0.09	0.09	0.09
6.020	0.09	0.09	0.09	0.10	0.10
6.120	0.10	0.10	0.10	0.10	0.10
6.220	0.10	0.10	0.10	0.10	0.11
6.320	0.11	0.11	0.11	0.11	0.11
6.420	0.11	0.11	0.11	0.11	0.11
6.520	0.12	0.12	0.12	0.12	0.12
6.620	0.12	0.12	0.12	0.12	0.12
6.720	0.12	0.13	0.13	0.13	0.13
6.820	0.13	0.13	0.13	0.13	0.13
6.920	0.13	0.13	0.14	0.14	0.14
7.020	0.14	0.14	0.14	0.14	0.14
7.120	0.14	0.14	0.14	0.15	0.15
7.220	0.15	0.15	0.15	0.15	0.15

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 2-YEAR

Return Event: 2 years
Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.320	0.15	0.15	0.15	0.16	0.16
7.420	0.16	0.16	0.16	0.16	0.16
7.520	0.16	0.16	0.16	0.16	0.17
7.620	0.17	0.17	0.17	0.17	0.17
7.720	0.17	0.17	0.17	0.17	0.18
7.820	0.18	0.18	0.18	0.18	0.18
7.920	0.18	0.18	0.18	0.18	0.18
8.020	0.19	0.19	0.19	0.19	0.19
8.120	0.19	0.19	0.19	0.19	0.20
8.220	0.20	0.20	0.20	0.20	0.20
8.320	0.21	0.21	0.21	0.21	0.21
8.420	0.21	0.22	0.22	0.22	0.22
8.520	0.23	0.23	0.23	0.23	0.23
8.620	0.24	0.24	0.24	0.24	0.25
8.720	0.25	0.25	0.25	0.26	0.26
8.820	0.26	0.26	0.27	0.27	0.27
8.920	0.28	0.28	0.28	0.28	0.29
9.020	0.29	0.29	0.30	0.30	0.30
9.120	0.30	0.31	0.31	0.31	0.31
9.220	0.32	0.32	0.32	0.33	0.33
9.320	0.33	0.33	0.34	0.34	0.34
9.420	0.34	0.34	0.35	0.35	0.35
9.520	0.35	0.35	0.35	0.35	0.36
9.620	0.36	0.36	0.36	0.36	0.37
9.720	0.37	0.37	0.37	0.38	0.38
9.820	0.38	0.39	0.39	0.39	0.40
9.920	0.40	0.41	0.41	0.41	0.42
10.020	0.42	0.43	0.43	0.44	0.44
10.120	0.45	0.45	0.46	0.46	0.47
10.220	0.47	0.48	0.48	0.49	0.50
10.320	0.50	0.51	0.51	0.52	0.53
10.420	0.53	0.54	0.55	0.56	0.56
10.520	0.57	0.58	0.58	0.59	0.60
10.620	0.61	0.61	0.62	0.63	0.64
10.720	0.65	0.66	0.67	0.68	0.69
10.820	0.70	0.71	0.72	0.73	0.74
10.920	0.75	0.76	0.78	0.79	0.80
11.020	0.81	0.82	0.84	0.85	0.86
11.120	0.88	0.89	0.91	0.93	0.94
11.220	0.96	0.98	1.00	1.02	1.05
11.320	1.07	1.09	1.12	1.14	1.17
11.420	1.20	1.23	1.26	1.29	1.32
11.520	1.35	1.39	1.44	1.52	1.61

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 2-YEAR

Return Event: 2 years
Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.620	1.74	1.89	2.08	2.32	2.55
11.720	2.82	3.13	3.47	3.85	4.34
11.820	4.95	5.69	6.51	7.55	8.71
11.920	10.03	11.39	12.70	13.82	14.92
12.020	15.62	15.93	15.85	15.37	14.55
12.120	13.55	12.58	11.52	10.48	9.52
12.220	8.62	7.87	7.18	6.56	6.05
12.320	5.60	5.20	4.83	4.53	4.29
12.420	4.06	3.85	3.65	3.50	3.38
12.520	3.22	3.07	2.94	2.81	2.68
12.620	2.57	2.46	2.36	2.24	2.13
12.720	2.04	1.95	1.87	1.80	1.74
12.820	1.68	1.63	1.58	1.54	1.50
12.920	1.46	1.43	1.39	1.36	1.33
13.020	1.31	1.28	1.26	1.23	1.21
13.120	1.19	1.17	1.15	1.14	1.12
13.220	1.11	1.09	1.08	1.06	1.05
13.320	1.04	1.03	1.02	1.00	0.99
13.420	0.98	0.97	0.96	0.95	0.94
13.520	0.93	0.92	0.91	0.90	0.89
13.620	0.88	0.87	0.86	0.85	0.84
13.720	0.83	0.83	0.82	0.81	0.80
13.820	0.79	0.79	0.78	0.77	0.76
13.920	0.76	0.75	0.74	0.73	0.73
14.020	0.72	0.71	0.71	0.70	0.69
14.120	0.69	0.68	0.67	0.67	0.66
14.220	0.66	0.65	0.65	0.64	0.64
14.320	0.64	0.63	0.63	0.63	0.62
14.420	0.62	0.62	0.61	0.61	0.61
14.520	0.60	0.60	0.60	0.60	0.59
14.620	0.59	0.59	0.59	0.58	0.58
14.720	0.58	0.58	0.57	0.57	0.57
14.820	0.57	0.56	0.56	0.56	0.56
14.920	0.55	0.55	0.55	0.55	0.54
15.020	0.54	0.54	0.54	0.53	0.53
15.120	0.53	0.53	0.53	0.52	0.52
15.220	0.52	0.52	0.51	0.51	0.51
15.320	0.51	0.50	0.50	0.50	0.50
15.420	0.49	0.49	0.49	0.49	0.49
15.520	0.48	0.48	0.48	0.48	0.47
15.620	0.47	0.47	0.47	0.46	0.46
15.720	0.46	0.46	0.45	0.45	0.45
15.820	0.45	0.44	0.44	0.44	0.44

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 2-YEAR

Return Event: 2 years
Storm Event: 2-YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.920	0.44	0.43	0.43	0.43	0.43
16.020	0.42	0.42	0.42	0.42	0.41
16.120	0.41	0.41	0.41	0.41	0.40
16.220	0.40	0.40	0.40	0.40	0.40
16.320	0.39	0.39	0.39	0.39	0.39
16.420	0.39	0.39	0.39	0.39	0.38
16.520	0.38	0.38	0.38	0.38	0.38
16.620	0.38	0.38	0.38	0.38	0.38
16.720	0.37	0.37	0.37	0.37	0.37
16.820	0.37	0.37	0.37	0.37	0.37
16.920	0.37	0.36	0.36	0.36	0.36
17.020	0.36	0.36	0.36	0.36	0.36
17.120	0.36	0.36	0.36	0.35	0.35
17.220	0.35	0.35	0.35	0.35	0.35
17.320	0.35	0.35	0.35	0.35	0.35
17.420	0.34	0.34	0.34	0.34	0.34
17.520	0.34	0.34	0.34	0.34	0.34
17.620	0.34	0.34	0.33	0.33	0.33
17.720	0.33	0.33	0.33	0.33	0.33
17.820	0.33	0.33	0.33	0.32	0.32
17.920	0.32	0.32	0.32	0.32	0.32
18.020	0.32	0.32	0.32	0.32	0.32
18.120	0.32	0.32	0.31	0.31	0.31
18.220	0.31	0.31	0.31	0.31	0.31
18.320	0.31	0.31	0.31	0.31	0.31
18.420	0.31	0.30	0.30	0.30	0.30
18.520	0.30	0.30	0.30	0.30	0.30
18.620	0.30	0.30	0.30	0.30	0.29
18.720	0.29	0.29	0.29	0.29	0.29
18.820	0.29	0.29	0.29	0.29	0.29
18.920	0.29	0.28	0.28	0.28	0.28
19.020	0.28	0.28	0.28	0.28	0.28
19.120	0.28	0.28	0.28	0.27	0.27
19.220	0.27	0.27	0.27	0.27	0.27
19.320	0.27	0.27	0.27	0.27	0.26
19.420	0.26	0.26	0.26	0.26	0.26
19.520	0.26	0.26	0.26	0.26	0.26
19.620	0.26	0.25	0.25	0.25	0.25
19.720	0.25	0.25	0.25	0.25	0.25
19.820	0.25	0.25	0.25	0.24	0.24
19.920	0.24	0.24	0.24	0.24	0.24
20.020	0.24	0.24	0.24	0.24	0.24
20.120	0.23	0.23	0.23	0.23	0.23

Subsection: Pond Routed Hydrograph (total out) Return Event: 2 years
Label: PO-7 (OUT) Storm Event: 2-YR
Scenario: Post-Development 2-YEAR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
20.220	0.23	0.23	0.23	0.23	0.23
20.320	0.23	0.23	0.23	0.23	0.23
20.420	0.23	0.23	0.22	0.22	0.22
20.520	0.22	0.22	0.22	0.22	0.22
20.620	0.22	0.22	0.22	0.22	0.22
20.720	0.22	0.22	0.22	0.22	0.22
20.820	0.22	0.22	0.22	0.22	0.22
20.920	0.22	0.22	0.22	0.22	0.22
21.020	0.22	0.22	0.22	0.22	0.22
21.120	0.22	0.22	0.22	0.22	0.22
21.220	0.22	0.22	0.22	0.22	0.22
21.320	0.21	0.21	0.21	0.21	0.21
21.420	0.21	0.21	0.21	0.21	0.21
21.520	0.21	0.21	0.21	0.21	0.21
21.620	0.21	0.21	0.21	0.21	0.21
21.720	0.21	0.21	0.21	0.21	0.21
21.820	0.21	0.21	0.21	0.21	0.21
21.920	0.21	0.21	0.21	0.21	0.21
22.020	0.21	0.21	0.21	0.21	0.21
22.120	0.21	0.21	0.21	0.21	0.21
22.220	0.21	0.21	0.21	0.21	0.21
22.320	0.21	0.21	0.21	0.21	0.21
22.420	0.21	0.21	0.21	0.21	0.20
22.520	0.20	0.20	0.20	0.20	0.20
22.620	0.20	0.20	0.20	0.20	0.20
22.720	0.20	0.20	0.20	0.20	0.20
22.820	0.20	0.20	0.20	0.20	0.20
22.920	0.20	0.20	0.20	0.20	0.20
23.020	0.20	0.20	0.20	0.20	0.20
23.120	0.20	0.20	0.20	0.20	0.20
23.220	0.20	0.20	0.20	0.20	0.20
23.320	0.20	0.20	0.20	0.20	0.20
23.420	0.20	0.20	0.20	0.20	0.20
23.520	0.20	0.20	0.20	0.20	0.20
23.620	0.20	0.20	0.20	0.19	0.19
23.720	0.19	0.19	0.19	0.19	0.19
23.820	0.19	0.19	0.19	0.19	0.19
23.920	0.19	0.19	0.19	0.19	0.19

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 10-YEAR

Return Event: 10 years
Storm Event: 10-YR

Peak Discharge	26.01 ft³/s
Time to Peak	12.020 hours
Hydrograph Volume	1.823 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
2.460	0.00	0.00	0.00	0.00	0.00
2.560	0.00	0.00	0.00	0.00	0.01
2.660	0.01	0.01	0.01	0.01	0.01
2.760	0.01	0.01	0.01	0.01	0.01
2.860	0.02	0.02	0.02	0.02	0.02
2.960	0.02	0.02	0.02	0.02	0.02
3.060	0.03	0.03	0.03	0.03	0.03
3.160	0.03	0.03	0.03	0.03	0.04
3.260	0.04	0.04	0.04	0.04	0.04
3.360	0.04	0.04	0.04	0.05	0.05
3.460	0.05	0.05	0.05	0.05	0.05
3.560	0.05	0.06	0.06	0.06	0.06
3.660	0.06	0.06	0.06	0.06	0.06
3.760	0.07	0.07	0.07	0.07	0.07
3.860	0.07	0.07	0.07	0.07	0.08
3.960	0.08	0.08	0.08	0.08	0.08
4.060	0.08	0.08	0.08	0.09	0.09
4.160	0.09	0.09	0.09	0.09	0.09
4.260	0.09	0.10	0.10	0.10	0.10
4.360	0.10	0.10	0.10	0.10	0.11
4.460	0.11	0.11	0.11	0.11	0.11
4.560	0.11	0.11	0.12	0.12	0.12
4.660	0.12	0.12	0.12	0.12	0.12
4.760	0.13	0.13	0.13	0.13	0.13
4.860	0.13	0.13	0.13	0.14	0.14
4.960	0.14	0.14	0.14	0.14	0.14
5.060	0.15	0.15	0.15	0.15	0.15
5.160	0.15	0.15	0.15	0.16	0.16
5.260	0.16	0.16	0.16	0.16	0.16
5.360	0.17	0.17	0.17	0.17	0.17
5.460	0.17	0.17	0.18	0.18	0.18
5.560	0.18	0.18	0.18	0.18	0.18
5.660	0.19	0.19	0.19	0.19	0.19
5.760	0.19	0.19	0.20	0.20	0.20
5.860	0.20	0.20	0.20	0.20	0.21
5.960	0.21	0.21	0.21	0.21	0.21
6.060	0.21	0.22	0.22	0.22	0.22
6.160	0.22	0.22	0.22	0.23	0.23
6.260	0.23	0.23	0.23	0.23	0.23

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 10-YEAR

Return Event: 10 years
Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
6.360	0.24	0.24	0.24	0.24	0.24
6.460	0.24	0.24	0.25	0.25	0.25
6.560	0.25	0.25	0.25	0.25	0.26
6.660	0.26	0.26	0.26	0.26	0.26
6.760	0.26	0.27	0.27	0.27	0.27
6.860	0.27	0.27	0.27	0.28	0.28
6.960	0.28	0.28	0.28	0.28	0.28
7.060	0.29	0.29	0.29	0.29	0.29
7.160	0.29	0.29	0.30	0.30	0.30
7.260	0.30	0.30	0.30	0.30	0.31
7.360	0.31	0.31	0.31	0.31	0.31
7.460	0.31	0.32	0.32	0.32	0.32
7.560	0.32	0.33	0.33	0.33	0.33
7.660	0.33	0.33	0.34	0.34	0.34
7.760	0.34	0.34	0.34	0.35	0.35
7.860	0.35	0.35	0.35	0.35	0.36
7.960	0.36	0.36	0.36	0.36	0.36
8.060	0.36	0.37	0.37	0.37	0.37
8.160	0.37	0.38	0.38	0.38	0.38
8.260	0.39	0.39	0.39	0.40	0.40
8.360	0.40	0.41	0.41	0.41	0.42
8.460	0.42	0.43	0.43	0.43	0.44
8.560	0.44	0.45	0.45	0.46	0.46
8.660	0.46	0.47	0.47	0.48	0.48
8.760	0.49	0.49	0.50	0.50	0.50
8.860	0.51	0.51	0.52	0.52	0.53
8.960	0.53	0.54	0.54	0.55	0.55
9.060	0.56	0.56	0.56	0.57	0.57
9.160	0.58	0.58	0.58	0.59	0.59
9.260	0.59	0.60	0.60	0.60	0.60
9.360	0.61	0.61	0.61	0.61	0.61
9.460	0.61	0.62	0.62	0.62	0.62
9.560	0.62	0.62	0.62	0.63	0.63
9.660	0.63	0.63	0.64	0.64	0.65
9.760	0.65	0.65	0.66	0.66	0.67
9.860	0.68	0.68	0.69	0.69	0.70
9.960	0.71	0.71	0.72	0.73	0.73
10.060	0.74	0.75	0.76	0.76	0.77
10.160	0.78	0.79	0.80	0.80	0.81
10.260	0.82	0.83	0.84	0.85	0.86
10.360	0.87	0.88	0.89	0.90	0.91
10.460	0.93	0.94	0.95	0.96	0.97
10.560	0.98	0.99	1.00	1.02	1.03

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 10-YEAR

Return Event: 10 years
Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.660	1.04	1.05	1.07	1.08	1.10
10.760	1.11	1.13	1.14	1.16	1.18
10.860	1.20	1.22	1.24	1.26	1.27
10.960	1.29	1.31	1.33	1.35	1.37
11.060	1.39	1.41	1.43	1.46	1.48
11.160	1.51	1.53	1.56	1.59	1.62
11.260	1.66	1.69	1.73	1.77	1.81
11.360	1.85	1.89	1.93	1.97	2.01
11.460	2.05	2.10	2.14	2.19	2.25
11.560	2.33	2.43	2.55	2.71	2.91
11.660	3.16	3.46	3.80	4.28	4.87
11.760	5.63	6.46	7.48	8.55	9.81
11.860	11.20	12.85	14.92	17.47	20.24
11.960	22.70	24.55	25.62	26.01	25.80
12.060	24.99	23.60	21.71	19.71	17.59
12.160	15.71	14.00	12.75	11.59	10.55
12.260	9.65	8.83	8.13	7.52	6.98
12.360	6.49	6.09	5.73	5.41	5.11
12.460	4.83	4.60	4.40	4.22	4.05
12.560	3.89	3.73	3.58	3.49	3.39
12.660	3.27	3.16	3.05	2.95	2.86
12.760	2.77	2.69	2.61	2.54	2.48
12.860	2.42	2.36	2.29	2.22	2.17
12.960	2.11	2.06	2.01	1.97	1.93
13.060	1.89	1.85	1.82	1.78	1.75
13.160	1.72	1.69	1.67	1.64	1.62
13.260	1.60	1.57	1.55	1.53	1.52
13.360	1.50	1.48	1.46	1.44	1.43
13.460	1.41	1.40	1.38	1.36	1.35
13.560	1.33	1.32	1.31	1.29	1.28
13.660	1.26	1.25	1.24	1.22	1.21
13.760	1.20	1.19	1.18	1.17	1.15
13.860	1.14	1.13	1.12	1.11	1.11
13.960	1.10	1.09	1.08	1.07	1.06
14.060	1.05	1.04	1.03	1.02	1.01
14.160	1.00	0.99	0.98	0.98	0.97
14.260	0.96	0.96	0.95	0.94	0.94
14.360	0.93	0.93	0.92	0.92	0.91
14.460	0.91	0.90	0.90	0.90	0.89
14.560	0.89	0.88	0.88	0.88	0.87
14.660	0.87	0.87	0.86	0.86	0.85
14.760	0.85	0.85	0.84	0.84	0.84
14.860	0.83	0.83	0.83	0.82	0.82

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 10-YEAR

Return Event: 10 years
Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.960	0.81	0.81	0.81	0.80	0.80
15.060	0.80	0.79	0.79	0.79	0.78
15.160	0.78	0.78	0.77	0.77	0.77
15.260	0.76	0.76	0.75	0.75	0.75
15.360	0.74	0.74	0.74	0.73	0.73
15.460	0.73	0.72	0.72	0.72	0.71
15.560	0.71	0.71	0.70	0.70	0.69
15.660	0.69	0.69	0.68	0.68	0.68
15.760	0.67	0.67	0.67	0.66	0.66
15.860	0.66	0.65	0.65	0.65	0.64
15.960	0.64	0.63	0.63	0.63	0.62
16.060	0.62	0.62	0.61	0.61	0.61
16.160	0.60	0.60	0.60	0.60	0.59
16.260	0.59	0.59	0.59	0.58	0.58
16.360	0.58	0.58	0.58	0.58	0.57
16.460	0.57	0.57	0.57	0.57	0.57
16.560	0.57	0.56	0.56	0.56	0.56
16.660	0.56	0.56	0.56	0.55	0.55
16.760	0.55	0.55	0.55	0.55	0.55
16.860	0.55	0.54	0.54	0.54	0.54
16.960	0.54	0.54	0.54	0.54	0.53
17.060	0.53	0.53	0.53	0.53	0.53
17.160	0.53	0.52	0.52	0.52	0.52
17.260	0.52	0.52	0.52	0.52	0.51
17.360	0.51	0.51	0.51	0.51	0.51
17.460	0.51	0.51	0.50	0.50	0.50
17.560	0.50	0.50	0.50	0.50	0.50
17.660	0.49	0.49	0.49	0.49	0.49
17.760	0.49	0.49	0.49	0.48	0.48
17.860	0.48	0.48	0.48	0.48	0.48
17.960	0.48	0.47	0.47	0.47	0.47
18.060	0.47	0.47	0.47	0.47	0.46
18.160	0.46	0.46	0.46	0.46	0.46
18.260	0.46	0.46	0.45	0.45	0.45
18.360	0.45	0.45	0.45	0.45	0.45
18.460	0.44	0.44	0.44	0.44	0.44
18.560	0.44	0.44	0.44	0.43	0.43
18.660	0.43	0.43	0.43	0.43	0.43
18.760	0.43	0.42	0.42	0.42	0.42
18.860	0.42	0.42	0.42	0.42	0.41
18.960	0.41	0.41	0.41	0.41	0.41
19.060	0.41	0.41	0.40	0.40	0.40
19.160	0.40	0.40	0.40	0.40	0.40

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 10-YEAR

Return Event: 10 years
Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.260	0.39	0.39	0.39	0.39	0.39
19.360	0.39	0.39	0.39	0.38	0.38
19.460	0.38	0.38	0.38	0.38	0.38
19.560	0.37	0.37	0.37	0.37	0.37
19.660	0.37	0.37	0.37	0.36	0.36
19.760	0.36	0.36	0.36	0.36	0.36
19.860	0.36	0.35	0.35	0.35	0.35
19.960	0.35	0.35	0.35	0.35	0.34
20.060	0.34	0.34	0.34	0.34	0.34
20.160	0.34	0.34	0.34	0.33	0.33
20.260	0.33	0.33	0.33	0.33	0.33
20.360	0.33	0.33	0.33	0.33	0.33
20.460	0.33	0.33	0.33	0.33	0.33
20.560	0.33	0.33	0.33	0.33	0.33
20.660	0.32	0.32	0.32	0.32	0.32
20.760	0.32	0.32	0.32	0.32	0.32
20.860	0.32	0.32	0.32	0.32	0.32
20.960	0.32	0.32	0.32	0.32	0.32
21.060	0.32	0.32	0.32	0.32	0.32
21.160	0.32	0.32	0.32	0.32	0.32
21.260	0.32	0.32	0.32	0.32	0.32
21.360	0.32	0.32	0.32	0.32	0.32
21.460	0.32	0.32	0.31	0.31	0.31
21.560	0.31	0.31	0.31	0.31	0.31
21.660	0.31	0.31	0.31	0.31	0.31
21.760	0.31	0.31	0.31	0.31	0.31
21.860	0.31	0.31	0.31	0.31	0.31
21.960	0.31	0.31	0.31	0.31	0.31
22.060	0.31	0.31	0.31	0.31	0.31
22.160	0.31	0.31	0.31	0.31	0.31
22.260	0.31	0.31	0.31	0.30	0.30
22.360	0.30	0.30	0.30	0.30	0.30
22.460	0.30	0.30	0.30	0.30	0.30
22.560	0.30	0.30	0.30	0.30	0.30
22.660	0.30	0.30	0.30	0.30	0.30
22.760	0.30	0.30	0.30	0.30	0.30
22.860	0.30	0.30	0.30	0.30	0.30
22.960	0.30	0.30	0.30	0.30	0.30
23.060	0.30	0.30	0.30	0.29	0.29
23.160	0.29	0.29	0.29	0.29	0.29
23.260	0.29	0.29	0.29	0.29	0.29
23.360	0.29	0.29	0.29	0.29	0.29
23.460	0.29	0.29	0.29	0.29	0.29

Subsection: Pond Routed Hydrograph (total out)
Label: PO-7 (OUT)
Scenario: Post-Development 10-YEAR

Return Event: 10 years
Storm Event: 10-YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.020 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.560	0.29	0.29	0.29	0.29	0.29
23.660	0.29	0.29	0.29	0.29	0.29
23.760	0.29	0.29	0.29	0.29	0.29
23.860	0.29	0.29	0.29	0.28	0.28
23.960	0.28	0.28	0.28	(N/A)	(N/A)

WATER QUALITY SWM STRUCTURE DESIGN

West Virginia MS4 Stormwater Compliance Spreadsheet

data input cells

calculation cells

constant values

Site Data

Site Name: Jefferson Medical Center

Site Information

Post-Development Land Cover

Drainage Area A

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Forest/Preserved Open Space (acres)	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres)	0.00	0.00	0.00	0.48	0.48
Impervious Cover (acres)	0.00	0.00	0.00	2.42	2.42
				Total	2.90

Drainage Area B

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Forest/Preserved Open Space (acres)	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres)	0.00	0.00	0.00	0.00	0.00
Impervious Cover (acres)	0.00	0.00	0.00	0.00	0.00
				Total	0.00

Drainage Area C

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Forest/Preserved Open Space (acres)	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres)	0.00	0.00	0.00	0.00	0.00
Impervious Cover (acres)	0.00	0.00	0.00	0.00	0.00
				Total	0.00

Drainage Area D

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Forest/Preserved Open Space (acres)	0.00	0.00	0.00	0.00	0.00

Managed Turf (acres)	0.00	0.00	0.00	0.00	0.00
Impervious Cover (acres)	0.00	0.00	0.00	0.00	0.00
				Total	0.00
Drainage Area E					
Land Cover Type	**HSG A soils**	**HSG B Soils**	**HSG C Soils**	**HSG D Soils**	**Totals**
Forest/Preserved Open Space (acres)	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres)	0.00	0.00	0.00	0.00	0.00
Impervious Cover (acres)	0.00	0.00	0.00	0.00	0.00
				Total	0.00

Rv Coefficients					
Land Cover Type	**HSG A soils**	**HSG B Soils**	**HSG C Soils**	**HSG D Soils**	
Forest/Preserved Open Space	0.00	0.00	0.00	0.00	
Managed Turf	0.15	0.20	0.22	0.25	
Impervious Cover	0.95	0.95	0.95	0.95	
Land Cover Summary					
Forest/Preserved Open Space (acres)	0.00				
Weighted Rv(forest)	0.00				
% Forest	0%				
Managed Turf (acres)	0.48				
Weighted Rv(turf)	0.25				
% Managed Turf	17%				
Impervious Cover (acres)	2.42				
Rv(impervious)	0.95				
% Impervious	83%				
Site Area (acres)	2.90				
Site Rv	**0.83**				
Development Credits (Select all that apply)					
Is the proposed development:					
a) Redevelopment?			Yes		
b) Brownfield redevelopment?			No		
c) High density (>7 units per acre)?			No		
d) Vertical Density, (Floor to Area Ratio (FAR) of 2 or >18 units per acre)?			No		
e) Mixed use or Transit Oriented Development (within 1/2 mile of transit)?			No		
	Total Credits (inches)		**0.2**		
Runoff Reduction Rainfall Event (inches)	0.80				
Target Runoff Reduction Volume, RRv (acre-feet)	0.16				
Target Runoff Reduction Volume, RRv (cubic feet)	7,025				

Summary for Subcatchment 1S: DA

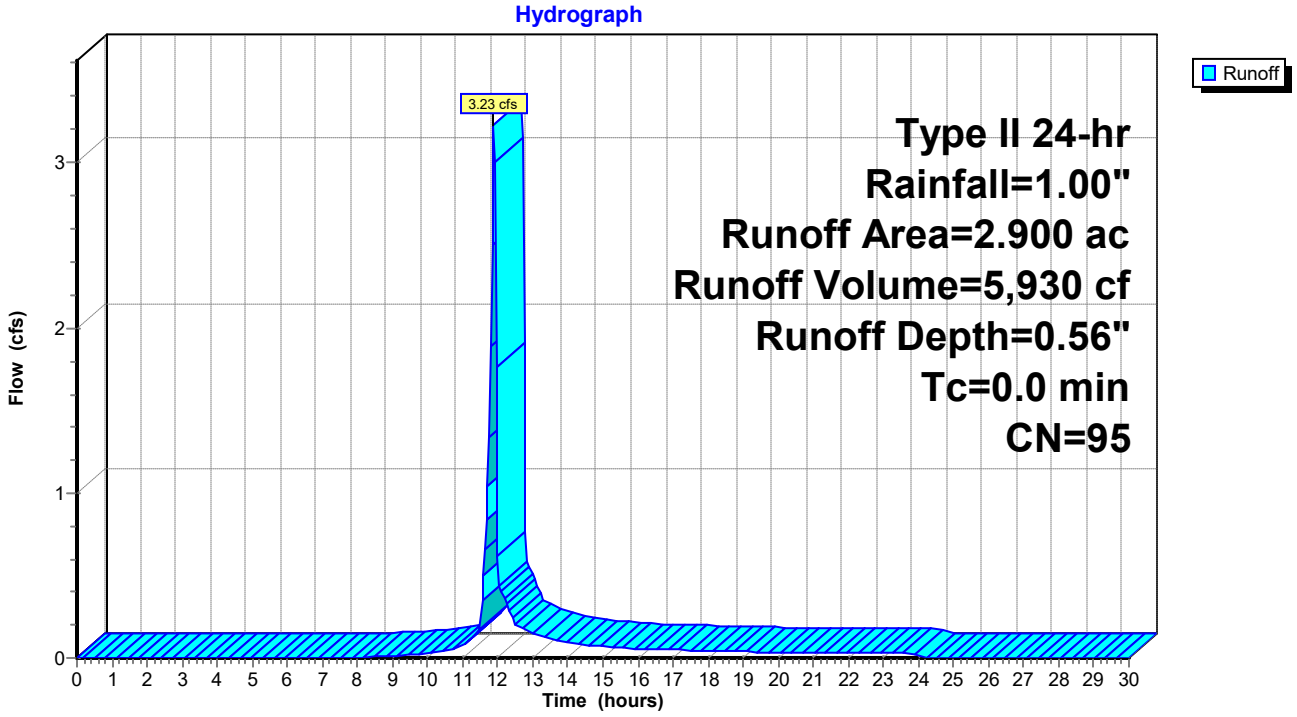
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 3.23 cfs @ 11.89 hrs, Volume= 5,930 cf, Depth= 0.56"
Routed to Pond 1A : ALCMP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.04 hrs
Type II 24-hr Rainfall=1.00"

	Area (ac)	CN	Description
*	2.420	98	
*	0.480	78	
	2.900	95	Weighted Average
	0.480		16.55% Pervious Area
	2.420		83.45% Impervious Area

Subcatchment 1S: DA



Summary for Pond 1A: ALCMP

[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=142)

Inflow Area = 126,324 sf, 83.45% Impervious, Inflow Depth = 0.56"
Inflow = 3.23 cfs @ 11.89 hrs, Volume= 5,930 cf
Outflow = 1.17 cfs @ 11.98 hrs, Volume= 5,947 cf, Atten= 64%, Lag= 5.4 min
Primary = 1.17 cfs @ 11.98 hrs, Volume= 5,947 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.04 hrs
Peak Elev= 1.12' @ 11.98 hrs Surf.Area= 5,510 sf Storage= 1,190 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 5.0 min (820.4 - 815.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	0 cf	**47.50'W x 116.00'L x 4.50'H Field A** 24,795 cf Overall - 10,006 cf Embedded = 14,789 cf x 0.0% Voids
#2A	0.50'	10,006 cf	**CMP Round 42** x 54 Inside #1 Effective Size= 42.0"W x 42.0"H => 9.62 sf x 20.00'L = 192.4 cf Overall Size= 42.0"W x 42.0"H x 20.00'L Row Length Adjustment= -9.50' x 9.62 sf x 9 rows 45.50' Header x 9.62 sf x 1 = 437.8 cf Inside
		10,006 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	2.83'	**2.7' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	0.00'	**7.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.17 cfs @ 11.98 hrs HW=1.11' (Free Discharge)
└**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice/Grate** (Orifice Controls 1.17 cfs @ 4.36 fps)

Pond 1A: ALCMP - Chamber Wizard Field A

Chamber Model = CMP Round 42 (Round Corrugated Metal Pipe)
Effective Size= 42.0"W x 42.0"H => 9.62 sf x 20.00'L = 192.4 cf
Overall Size= 42.0"W x 42.0"H x 20.00'L
Row Length Adjustment= -9.50' x 9.62 sf x 9 rows

42.0" Wide + 21.0" Spacing = 63.0" C-C Row Spacing

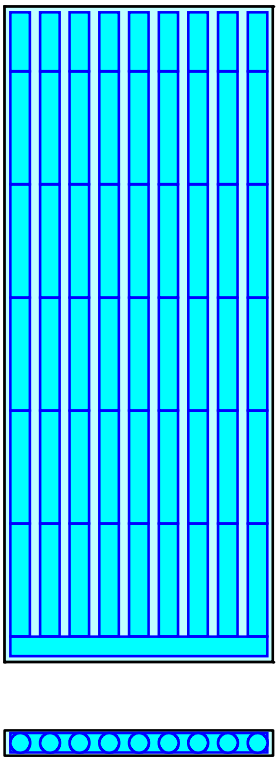
6 Chambers/Row x 20.00' Long -9.50' Row Adjustment +3.50' Header x 1 = 114.00' Row Length +12.0" End Stone x 2 = 116.00' Base Length
9 Rows x 42.0" Wide + 21.0" Spacing x 8 + 12.0" Side Stone x 2 = 47.50' Base Width
6.0" Stone Base + 42.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

54 Chambers x 192.4 cf -9.50' Row Adjustment x 9.62 sf x 9 Rows + 45.50' Header x 9.62 sf = 10,006.0 cf Chamber Storage

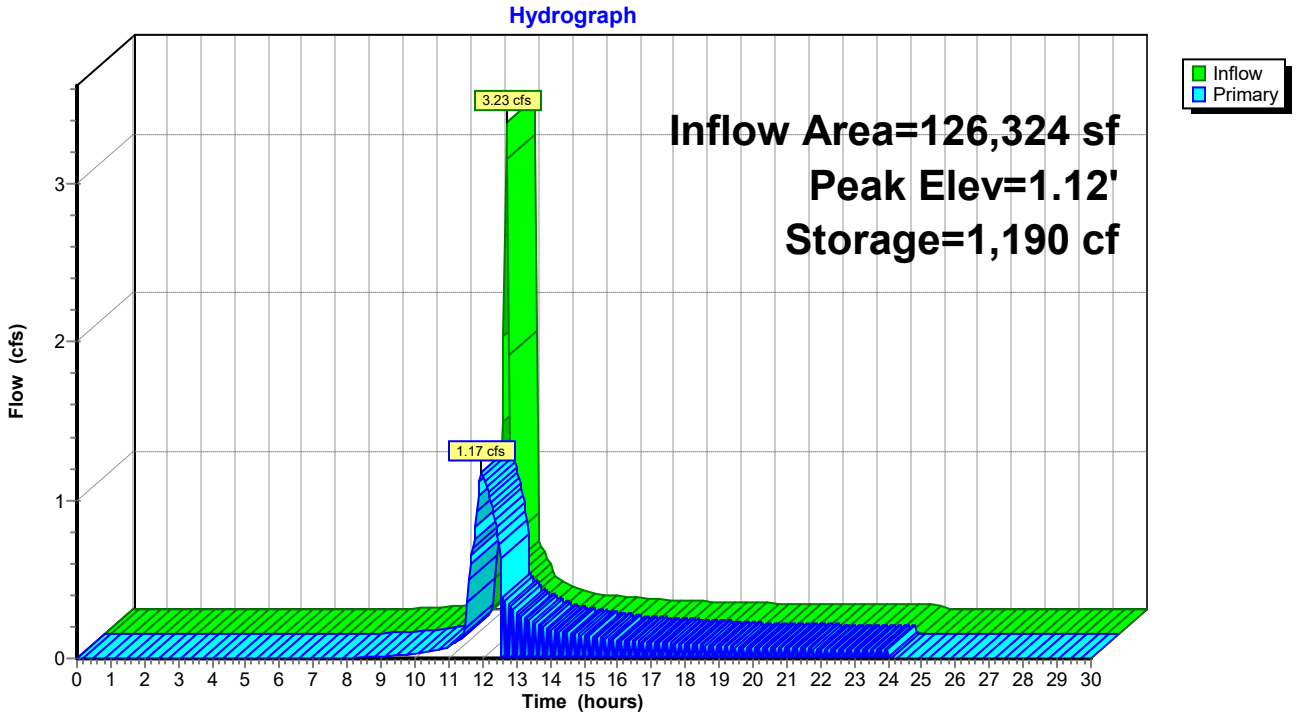
24,795.0 cf Field - 10,006.0 cf Chambers = 14,789.0 cf Stone x 0.0% Voids = 0.0 cf Stone Storage

Chamber Storage = 10,006.0 cf = 0.230 af
Overall Storage Efficiency = 40.4%
Overall System Size = 116.00' x 47.50' x 4.50'

54 Chambers
918.3 cy Field
547.7 cy Stone



Pond 1A: ALCMP



Stage-Area-Storage for Pond 1A: ALCMP

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
0.00	0	2.60	6,268
0.05	0	2.65	6,446
0.10	0	2.70	6,623
0.15	0	2.75	6,798
0.20	0	2.80	6,972
0.25	0	2.85	7,143
0.30	0	2.90	7,313
0.35	0	2.95	7,481
0.40	0	3.00	7,647
0.45	0	3.05	7,810
0.50	0	3.10	7,971
0.55	29	3.15	8,128
0.60	81	3.20	8,283
0.65	149	3.25	8,434
0.70	228	3.30	8,581
0.75	317	3.35	8,725
0.80	415	3.40	8,864
0.85	521	3.45	8,999
0.90	633	3.50	9,129
0.95	752	3.55	9,254
1.00	877	3.60	9,373
1.05	1,007	3.65	9,485
1.10	1,142	3.70	9,591
1.15	1,281	3.75	9,689
1.20	1,425	3.80	9,778
1.25	1,572	3.85	9,857
1.30	1,723	3.90	9,925
1.35	1,878	3.95	9,977
1.40	2,035	4.00	**10,006**
1.45	2,196	4.05	10,006
1.50	2,359	4.10	10,006
1.55	2,525	4.15	10,006
1.60	2,693	4.20	10,006
1.65	2,863	4.25	10,006
1.70	3,034	4.30	10,006
1.75	3,208	4.35	10,006
1.80	3,383	4.40	10,006
1.85	3,560	4.45	10,006
1.90	3,738	4.50	10,006
1.95	3,916		
2.00	4,096		
2.05	4,277		
2.10	4,458		
2.15	4,639		
2.20	4,821		
2.25	5,003		
2.30	5,185		
2.35	5,367		
2.40	5,548		
2.45	5,729		
2.50	5,910		
2.55	6,090		

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Project Name:	Jefferson Medical Center		
Site Designation:	JF unit	Date:	5/11/26
Location:	Ranson WV	Designed By:	CP
Engineer of Record:	Fox & Associates, Inc.		

Mass Loading Calculations:

Water Quality Flow (cfs)	1.17
Annual Rainfall (inches)	43
Total Drainage Area, A (ac)	2.90
Post Development Impervious Area, A_I (ac)	2.42
Pervious Area, A_P (ac)	0.48
Impervious Runoff Coefficient, Rv	0.95
Pervious Runoff Coefficient, Rv	0.25
Forest Runoff Coefficient, Rv	0.05
Open Space Runoff Coefficient, Rv	0.15
% Impervious	83%
Runoff Coefficient, Rc	0.83
TSS Removal By Pretreatment	20%
Agency Required TSS % Removal	80%
Required TSS Removal Efficiency of Filter	75%
Percent Runoff Capture	90%
Mean Annual Runoff, V_t (ft^3)	339,824
Event Mean Concentration of Pollutant, EMC (mg/L)	60
Annual Mass Load, M_{total} (lbs)	1272.11

Mass Based Filter Sizing:

Mass to be Captured by System (lbs)	763.27
Filter Type	Jellyfish
Structure Type	Peak Diversion
Cartridge Length	54''
Allowable Load Per Hi-Flo Cartridge (lbs)	125
Allowable Load Per Draindown Cartridge (lbs)	63
# Hi-Flo Cartridges Required	6
# Draindown Cartridges Required	2
Recommended Model	8'x6' Peak Diversion
TSS Treatment Capacity (lbs)	876.00
Maximum Water Quality Flow	1.25 cfs

STORM DRAIN COMPUTATIONS

FOX & ASSOCIATES INC. Est. 1966
ENGINEERS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

82 Worman's Mill Ct Suite G Frederick, MD 21701
Phone: 301-695-0880 Fax: 301-293-6009

STORM DRAIN COMPUTATIONS

FOR

JEFFERSON MEDICAL CENTER

COMPUTED BY: E. Joaquin Chavez
CHECKED BY :
DATE: 2/11/2026
JOB NO.: 25-32256

FROM NO.	TO NO.	AREA NO.	INC AREA ACRES	TOTAL AREA ACRES	C	CA	SUM CA	TC MIN	I 10 YR IN / HR	Q CFS	SLOPE % MIN.	SLOPE % ACTUAL	n	PIPE SIZE (IN.)	VELOCITY FPS FULL FLOW	VELOCITY FPS ACTUAL	LENGTH FT.	TIME IN PIPE MIN.	FULL FLOW CAPACITY CFS	REMARKS
EX-4	EX-3		0.12	0.123	0.70	0.086	0.09	5.00	6.28	0.54	0.002	7.41	0.011	18	0.31	7.07	54	0.10	33.83	
EX-3	EX-2		0.00	0.123	0.00	0.000	0.09	5.10	6.27	0.54	0.002	0.50	0.011	18	0.30	2.75	82	0.50	8.79	
EX-2	131		0.24	0.363	0.74	0.178	0.26	5.70	6.19	1.63	0.017	0.50	0.011	18	0.92	3.79	6	0.00	8.79	
123	131		0.47	0.470	0.77	0.362	0.36	5.00	6.28	2.27	0.088	1.00	0.011	15	1.85	5.42	123	0.40	7.64	
131	EX-1		0.24	1.068	0.74	0.174	0.80	5.60	6.21	4.96	0.159	0.50	0.011	18	2.81	4.99	74	0.20	8.79	
119	EX-1		0.27	0.270	0.83	0.224	0.22	5.00	6.28	1.41	0.034	1.00	0.011	15	1.15	4.75	2	0.00	7.64	
EX-1	118		0.18	1.513	0.73	0.128	1.15	5.80	6.18	7.11	0.327	1.00	0.011	18	4.02	7.07	63	0.10	12.43	
R-1	118		0.68	0.678	0.90	0.610	0.61	5.00	6.28	3.83	0.825	1.77	0.011	12	4.88	6.07	50	0.10	5.61	
121	118		0.13	0.130	0.57	0.074	0.57	5.00	6.28	3.58	0.219	1.00	0.011	15	2.92	6.12	32	0.10	7.64	
118	117			2.321		0.000	2.33	5.80	6.18	14.40	1.339	1.40	0.011	18	8.15	9.47	36	0.10	14.70	
117	116		0.23	2.551	0.89	0.204	2.54	7.50	5.80	14.72	0.302	0.50	0.011	24	4.68	6.65	57	0.10	18.93	
114	112		0.03	0.034	0.90	0.031	0.03	5.00	6.28	0.19	0.001	1.82	0.011	15	0.16	3.64	83	0.40	10.31	
112	111		0.09	0.124	0.90	0.081	0.11	5.40	6.24	0.70	0.008	2.37	0.011	15	0.57	5.41	47	0.10	11.76	
111	116		0.10	0.223	0.85	0.084	0.20	5.50	6.23	1.22	0.025	3.03	0.011	15	0.99	6.76	57	0.10	13.30	
116	109		0.08	2.855	0.85	0.069	2.80	7.60	5.78	16.19	0.365	0.50	0.011	24	5.15	6.76	99	0.20	18.93	

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STORM DRAIN COMPUTATIONS

FOR

JEFFERSON MEDICAL CENTER

COMPUTED BY: E. Joaquin Chavez
CHECKED BY :
DATE: 2/11/2026
JOB NO.: 25-32256
PAGE: 2 OF 3

FROM	TO	AREA	INC AREA	TOTAL AREA	C	CA	SUM CA	TC	I 10 YR	Q	SLOPE %		n	PIPE SIZE (IN.)	VELOCITY FPS		LENGTH	TIME IN PIPE	FULL FLOW CAPACITY	REMARKS
NO.	NO.	NO.	ACRES	ACRES				MIN	IN / HR	CFS	MIN.	ACTUAL			FULL FLOW	ACTUAL	FT.	MIN.	CFS	
115	109		0.29	0.286	0.89	0.255	0.25	5.00	6.28	1.60	0.044	2.40	0.011	15	1.30	6.79	10	0.00	11.84	
109	107		0.10	3.236	0.90	0.086	3.14	7.80	5.73	18.01	0.451	0.50	0.011	24	5.73	6.89	99	0.20	18.93	
107	106		0.17	3.405	0.82	0.138	3.28	8.00	5.68	18.64	0.484	0.50	0.011	24	5.93	6.86	105	0.30	18.93	
106	128		0.12	3.522	0.82	0.096	3.38	8.30	5.61	18.95	0.500	0.52	0.011	24	6.03	6.99	54	0.10	19.23	
105	110		0.18	0.176	0.88	0.155	0.15	5.00	6.28	0.97	0.016	2.27	0.011	15	0.79	5.70	18	0.10	11.50	
110	104		0.24	0.412	0.77	0.182	0.34	5.10	6.27	2.11	0.076	1.33	0.011	15	1.72	5.89	30	0.10	8.82	
104	100		0.10	0.510	0.86	0.085	0.42	5.20	6.26	2.64	0.119	1.33	0.011	15	2.15	6.27	3	0.00	8.82	
122	125		0.03	0.030	0.85	0.026	0.03	5.00	6.28	0.16	0.000	7.29	0.011	15	0.13	4.99	48	0.20	8.99	
113	125		0.05	0.050	0.90	0.045	0.62	5.00	6.28	3.90	0.260	6.57	0.011	15	3.18	12.44	8	0.00	7.71	
126	125		0.52	0.520	0.95	0.494	0.49	5.00	6.28	3.10	0.164	0.56	0.011	15	2.53	4.73	36	0.10	34.81	
125	132	MH					1.14	5.20	6.26	7.14	0.871	1.28	0.011	15	5.82	7.86	43	0.10	8.64	

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STORM DRAIN COMPUTATIONS

FOR

JEFFERSON MEDICAL CENTER

COMPUTED BY: E. Joaquin Chavez
CHECKED BY :
DATE: 2/11/2026
JOB NO.: 25-32256
PAGE: 3 OF 3

FROM	TO	AREA	INC AREA	TOTAL AREA	C	CA	SUM CA	TC	I 10 YR	Q	SLOPE %		n	PIPE SIZE (IN.)	VELOCITY FPS		LENGTH	TIME IN PIPE	FULL FLOW CAPACITY	REMARKS
NO.	NO.	NO.	ACRES	ACRES				MIN	IN / HR	CFS	MIN.	ACTUAL			FULL FLOW	ACTUAL	FT.	MIN.	CFS	
133	132		0.32	0.32	0.95	0.304	0.304	5.00	6.28	1.91	0.062	1.00	0.011	15	1.56	5.17	13	0.00	7.64	
132	102						1.44	5.30	6.25	9.03	1.392	1.5	0.011	15	7.36	8.68	13	0.00		
103	102		0.11	0.110	0.88	0.097	0.10	5.00	6.28	0.61	0.006	0.50	0.011	15	0.50	2.96	49	0.30	5.40	
102	130						1.54	5.30	6.25	9.63	0.129	0.50	0.011	24	3.07	6.04	15	0.00	18.93	
130	124		0.20	0.198	0.71	0.141	1.68	5.30	6.25	10.51	0.391	0.50	0.024	27	3.36	5.65	22	0.10	11.88	

‘C’ VALUE COMPUTATIONS

Project:	JEFFERSON MEDICAL CENTER
Engineer:	J. Chavez / J CECI
Date:	2/11/2026 rev 08/19/2026
Subject:	Storm Drain Design, Spread Calculations

STR. # EX-4

Total Area =	0.12	Acres
Impervious Area =	0.08	Acres
Grass Area =	0.04	Acres

c= (0.3 x 0.04 + 0.9 x 0.081) / 0.12

c= 0.70

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.538	cfs

STR. # EX-2

Total Area =	0.24	Acres
Impervious Area =	0.17	Acres
Grass Area =	0.06	Acres

c= (0.3 x 0.06 + 0.9 x 0.172) / 0.24

c= 0.74

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	1.092	cfs

STR. # EX-1

Total Area =	0.18	Acres
Impervious Area =	0.13	Acres
Grass Area =	0.05	Acres

c= (0.3 x 0.05 + 0.9 x 0.126) / 0.18

c= 0.73

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.804	cfs

STR. # 119

Total Area =	0.27	Acres
Impervious Area =	0.23	Acres
Grass Area =	0.04	Acres

c= (0.3 x 0.04 + 0.9 x 0.23) / 0.27

c= 0.81

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	1.375	cfs

STR. # 117

Total Area =	0.23	Acres
Impervious Area =	0.22	Acres
Grass Area =	0	Acres

c= (0.3 x 0 + 0.9 x 0.225) / 0.23

c= 0.89

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	1.28	cfs

STR. # 116

Total Area =	0.08	Acres
Impervious Area =	0.07	Acres
Grass Area =	0.01	Acres

c= (0.3 x 0.01 + 0.9 x 0.074) / 0.08

c= 0.85

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.434	cfs

STR. # 109

Total Area =	0.10	Acres
Impervious Area =	0.08	Acres
Grass Area =	0.01	Acres

c= (0.3 x 0.01 + 0.9 x 0.082) / 0.10

c= 0.82

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.489	cfs

STR. # 107

Total Area =	0.17	Acres
Impervious Area =	0.15	Acres
Grass Area =	0.02	Acres

c= (0.3 x 0.02 + 0.9 x 0.151) / 0.17

c= 0.84

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.889	cfs

STR. # 106

Total Area =	0.12	Acres
Impervious Area =	0.1	Acres
Grass Area =	0.02	Acres

c= (0.3 x 0.02 + 0.9 x 0.101) / 0.12

c= 0.82

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.601	cfs

STR. # 104

Total Area =	0.12	Acres
Impervious Area =	0.11	Acres
Grass Area =	0.01	Acres

c= (0.3 x 0.01 + 0.9 x 0.114) / 0.12

c= 0.87

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.654	cfs

STR. # 110

Total Area =	0.23	Acres
Impervious Area =	0.18	Acres
Grass Area =	0.05	Acres

c= (0.3 x 0.05 + 0.9 x 0.177) / 0.23

c= 0.76

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	1.102	cfs

STR. # 105

Total Area =	0.18	Acres
Impervious Area =	0.17	Acres
Grass Area =	0.01	Acres

c= (0.3 x 0.01 + 0.9 x 0.169) / 0.18

c= 0.88

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.967	cfs

STR. # 114

Total Area =	0.03	Acres
Impervious Area =	0.03	Acres
Grass Area =	0	Acres

c= (0.3 x 0 + 0.9 x 0.034) / 0.03 = 0.90

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.194	cfs

STR. # 112

Total Area =	0.09	Acres
Impervious Area =	0.09	Acres
Grass Area =	0	Acres

c= (0.3 x 0 + 0.9 x 0.09) / 0.09 = 0.90

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.508	cfs

STR. # 111

Total Area =	0.10	Acres
Impervious Area =	0.09	Acres
Grass Area =	0.01	Acres

c= (0.3 x 0.01 + 0.9 x 0.091) / 0.10 = 0.85

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.526	cfs

STR. # 115

Total Area =	0.28	Acres
Impervious Area =	0.27	Acres
Grass Area =	0.01	Acres

c= (0.3 x 0.01 + 0.9 x 0.274) / 0.28 = 0.89

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	1.56	cfs

STR. # 113

Total Area =	0.05	Acres
Impervious Area =	0.05	Acres
Grass Area =	0.00	Acres

c= (0.3 x 0 + 0.9 x 0.051) / 0.05 = 0.90

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.287	cfs

STR. # 126

Total Area =	0.52	Acres
Impervious Area =	0.48	Acres
Grass Area =	0.04	Acres

c= (0.3 x 0.04 + 0.9 x 0.484) / 0.52

c= 0.86

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	2.802	cfs

STR. # 122

Total Area =	0.03	Acres
Impervious Area =	0.03	Acres
Grass Area =	0	Acres

c= (0.3 x 0 + 0.9 x 0.027) / 0.03

c= 0.83

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.157	cfs

STR. # 103

Total Area =	0.11	Acres
Impervious Area =	0.11	Acres
Grass Area =	0.00	Acres

c= (0.3 x 0.00 + 0.9 x 0.111) / 0.11

c= 0.88

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.632	cfs

STR. # 130

Total Area =	0.20	Acres
Impervious Area =	0.14	Acres
Grass Area =	0.06	Acres

c= (0.3 x 0.06 + 0.9 x 0.135) / 0.20

c= 0.71

Time of Concentration =	5	Min.
Rainfall Intensity for 10 Year Storm =	6.28	(From ATLAS-14 Intensities WV)
Q for 10 Year Storm = CIA =	0.882	cfs

SPREAD COMPUTATIONS

Hydraulic Analysis Report

Curb and Gutter Analysis: STR 121

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0100 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 1.0000 ft

Gutter Result Parameters

Width of Spread: 8.1752 ft

Gutter Result Parameters

Design Flow: 0.4700 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.3342 ft^2

Eo (Gutter Flow to Total Flow): 0.2942

Gutter Depth at Curb: 0.9810 in

Inlet Input Parameters

Inlet Location: Inlet in Sag

Percent Clogging: 0.0000 %

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Curb opening height: 6.0000 in

Local Depression: 2.0000 in

Inlet Result Parameters

Perimeter: 11.8000 ft

Effective Perimeter: 11.8000 ft

Area: 6.6667 ft^2

Effective Area: 6.6667 ft^2

Depth at curb face (upstream of local depression): 0.0669 ft

Computed Width of Spread at Sag: 6.6936 ft

Flow type: Weir Flow

Efficiency: 1.0000

Curb and Gutter Analysis: STR 119

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0500 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 1.0000 ft

Gutter Result Parameters

Width of Spread: 4.0889 ft

Gutter Result Parameters

Design Flow: 1.3700 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.4180 ft^2

Eo (Gutter Flow to Total Flow): 0.5271

Gutter Depth at Curb: 2.4533 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Local Depression: 2.0000 in

Inlet Result Parameters

Intercepted Flow: 1.3700 cfs

Bypass Flow: 0.0000 cfs

Efficiency: 1.0000

Curb and Gutter Analysis: STR 117

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0150 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 8.3638 ft

Gutter Result Parameters

Design Flow: 1.2800 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.5246 ft^2

Eo (Gutter Flow to Total Flow): 0.0003

Gutter Depth at Curb: 1.5055 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Grate

Grate Type: Reticuline

Grate Width: 3.5000 ft

Grate Length: 3.5000 ft

Local Depression: 0.0000 in

Inlet Result Parameters

Intercepted Flow: 1.1702 cfs

Bypass Flow: 0.1098 cfs

Approach Velocity: 2.4398 ft/s

Splash-over Velocity: 6.4902 ft/s

Efficiency: 0.9142

Curb and Gutter Analysis: STR 116

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0300 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 1.0000 ft

Gutter Result Parameters

Width of Spread: 3.6880 ft

Gutter Result Parameters

Design Flow: 0.4300 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.2040 ft^2

Eo (Gutter Flow to Total Flow): 0.5702

Gutter Depth at Curb: 1.3277 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Local Depression: 2.0000 in

Inlet Result Parameters

Intercepted Flow: 0.4300 cfs

Bypass Flow: 0.0000 cfs

Efficiency: 1.0000

Curb and Gutter Analysis: STR 115

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0200 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 1.0000 ft

Gutter Result Parameters

Width of Spread: 8.6679 ft

Gutter Result Parameters

Design Flow: 1.5600 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.7513 ft^2

Eo (Gutter Flow to Total Flow): 0.2791

Gutter Depth at Curb: 2.0803 in

Inlet Input Parameters

Inlet Location: Inlet in Sag

Percent Clogging: 0.0000 %

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Curb opening height: 0.5000 in

Local Depression: 2.0000 in

Inlet Result Parameters

Perimeter: 11.8000 ft

Effective Perimeter: 11.8000 ft

Area: 2.0833 ft^2

Effective Area: 2.0833 ft^2

Depth at curb face (upstream of local depression): 0.1489 ft

Computed Width of Spread at Sag: 7.4470 ft

Flow type: Weir Flow

Efficiency: 1.0000

Curb and Gutter Analysis: STR 109

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0200 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 1.0000 ft

Gutter Result Parameters

Width of Spread: 8.3127 ft

Gutter Result Parameters

Design Flow: 1.5600 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.6910 ft^2

Eo (Gutter Flow to Total Flow): 0.2898

Gutter Depth at Curb: 1.9950 in

Inlet Input Parameters

Inlet Location: Inlet in Sag

Percent Clogging: 0.0000 %

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Curb opening height: 0.5000 in

Local Depression: 2.0000 in

Inlet Result Parameters

Perimeter: 11.8000 ft

Effective Perimeter: 11.8000 ft

Area: 2.0833 ft^2

Effective Area: 2.0833 ft^2

Depth at curb face (upstream of local depression): 0.1489 ft

Computed Width of Spread at Sag: 7.4470 ft

Flow type: Weir Flow

Efficiency: 1.0000

Curb and Gutter Analysis: STR 112

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0300 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 3.6640 ft

Gutter Result Parameters

Design Flow: 0.5000 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.2014 ft^2

Eo (Gutter Flow to Total Flow): 0.0007

Gutter Depth at Curb: 1.3191 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Local Depression: 2.0000 in

Inlet Result Parameters

Intercepted Flow: 0.5000 cfs

Bypass Flow: 0.0000 cfs

Efficiency: 1.0000

Curb and Gutter Analysis: STR 111

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0300 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 3.7344 ft

Gutter Result Parameters

Design Flow: 0.5260 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.2092 ft^2

Eo (Gutter Flow to Total Flow): 0.0007

Gutter Depth at Curb: 1.3444 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Local Depression: 2.0000 in

Inlet Result Parameters

Intercepted Flow: 0.5260 cfs

Bypass Flow: 0.0000 cfs

Efficiency: 1.0000

Curb and Gutter Analysis: STR 114

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0100 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 4.7745 ft

Gutter Result Parameters

Design Flow: 0.1940 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.1140 ft^2

Eo (Gutter Flow to Total Flow): 0.0006

Gutter Depth at Curb: 0.5729 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Local Depression: 2.0000 in

Inlet Result Parameters

Intercepted Flow: 0.1940 cfs

Bypass Flow: 0.0000 cfs

Efficiency: 1.0000

Curb and Gutter Analysis: STR 107

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0150 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 1.0000 ft

Gutter Result Parameters

Width of Spread: 8.0617 ft

Gutter Result Parameters

Design Flow: 0.8900 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.4874 ft^2

Eo (Gutter Flow to Total Flow): 0.2979

Gutter Depth at Curb: 1.4511 in

Inlet Input Parameters

Inlet Location: Inlet in Sag

Percent Clogging: 0.0000 %

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Curb opening height: 6.0000 in

Local Depression: 2.0000 in

Inlet Result Parameters

Perimeter: 11.8000 ft

Effective Perimeter: 11.8000 ft

Area: 6.6667 ft^2

Effective Area: 6.6667 ft^2

Depth at curb face (upstream of local depression): 0.1025 ft

Computed Width of Spread at Sag: 6.8301 ft

Flow type: Weir Flow

Efficiency: 1.0000

Curb and Gutter Analysis: STR 106

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0150 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 1.0000 ft

Gutter Result Parameters

Width of Spread: 6.6199 ft

Gutter Result Parameters

Design Flow: 0.6000 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.3287 ft^2

Eo (Gutter Flow to Total Flow): 0.3542

Gutter Depth at Curb: 1.1916 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Local Depression: 2.0000 in

Inlet Result Parameters

Intercepted Flow: 0.6000 cfs

Bypass Flow: 0.0000 cfs

Efficiency: 1.0000

Curb and Gutter Analysis: STR 110

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0150 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 8.3638 ft

Gutter Result Parameters

Design Flow: 1.2800 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.5246 ft^2

Eo (Gutter Flow to Total Flow): 0.0003

Gutter Depth at Curb: 1.5055 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Grate

Grate Type: Curved vane

Grate Width: 2.7500 ft

Grate Length: 5.5000 ft

Local Depression: 0.0000 in

Inlet Result Parameters

Intercepted Flow: 1.1106 cfs

Bypass Flow: 0.1694 cfs

Approach Velocity: 2.4398 ft/s

Splash-over Velocity: 10.9475 ft/s

Efficiency: 0.8676

Curb and Gutter Analysis: STR 105

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0200 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 5.3638 ft

Gutter Result Parameters

Design Flow: 0.9700 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.2877 ft^2

Eo (Gutter Flow to Total Flow): 0.0005

Gutter Depth at Curb: 1.2873 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Local Depression: 2.0000 in

Inlet Result Parameters

Intercepted Flow: 0.9700 cfs

Bypass Flow: 0.0000 cfs

Efficiency: 1.0000

Curb and Gutter Analysis: STR 122

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0200 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 1.0000 ft

Gutter Result Parameters

Width of Spread: 2.2414 ft

Gutter Result Parameters

Design Flow: 0.1570 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.0502 ft^2

Eo (Gutter Flow to Total Flow): 0.7935

Gutter Depth at Curb: 0.5379 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Curb Opening

Length of Inlet: 10.0000 ft

Local Depression: 2.0000 in

Inlet Result Parameters

Intercepted Flow: 0.1570 cfs

Bypass Flow: 0.0000 cfs

Efficiency: 1.0000

Curb and Gutter Analysis: STR 113

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0110 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 5.7955 ft

Gutter Result Parameters

Design Flow: 0.2870 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.1847 ft^2

Eo (Gutter Flow to Total Flow): 0.0005

Gutter Depth at Curb: 0.7650 in

Inlet Input Parameters

Inlet Location: Inlet in Sag

Percent Clogging: 0.0000 %

Inlet Type: Grate

Grate Type: Reticuline

Grate Width: 3.5000 ft

Grate Length: 3.5000 ft

Local Depression: 0.0000 in

Inlet Result Parameters

Perimeter: 10.5000 ft

Effective Perimeter: 10.5000 ft

Area: 9.8000 ft^2

Effective Area: 9.8000 ft^2

Depth at center of grate: 0.0436 ft

Computed Width of Spread at Sag: 5.7157 ft

Flow type: Weir Flow

Efficiency: 1.0000

Curb and Gutter Analysis: STR 126

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0110 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 13.6166 ft

Gutter Result Parameters

Design Flow: 2.8000 cfs

Gutter Depression: 0.0000 in

Area of Flow: 1.0198 ft^2

Eo (Gutter Flow to Total Flow): 0.0002

Gutter Depth at Curb: 1.7974 in

Inlet Input Parameters

Inlet Location: Inlet in Sag

Percent Clogging: 0.0000 %

Inlet Type: Grate

Grate Type: Reticuline

Grate Width: 3.5000 ft

Grate Length: 3.5000 ft

Local Depression: 0.0000 in

Inlet Result Parameters

Perimeter: 10.5000 ft

Effective Perimeter: 10.5000 ft

Area: 9.8000 ft^2

Effective Area: 9.8000 ft^2

Depth at center of grate: 0.1992 ft

Computed Width of Spread at Sag: 19.8567 ft

Flow type: Weir Flow

Efficiency: 1.0000

Curb and Gutter Analysis: STR 133

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0110 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 11.7505 ft

Gutter Result Parameters

Design Flow: 1.8900 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.7594 ft^2

Eo (Gutter Flow to Total Flow): 0.0002

Gutter Depth at Curb: 1.5511 in

Inlet Input Parameters

Inlet Location: Inlet in Sag

Percent Clogging: 0.0000 %

Inlet Type: Grate

Grate Type: Reticuline

Grate Width: 3.5000 ft

Grate Length: 3.5000 ft

Local Depression: 0.0000 in

Inlet Result Parameters

Perimeter: 10.5000 ft

Effective Perimeter: 10.5000 ft

Area: 9.8000 ft^2

Effective Area: 9.8000 ft^2

Depth at center of grate: 0.1533 ft

Computed Width of Spread at Sag: 15.6829 ft

Flow type: Weir Flow

Efficiency: 1.0000

Curb and Gutter Analysis: STR 130

Notes:

Gutter Input Parameters

Longitudinal Slope of Road: 0.0000 ft/ft

Cross-Slope of Pavement: 0.0200 ft/ft

Uniform Gutter Geometry

Manning's n: 0.0150

Gutter Width: 0.0010 ft

Gutter Result Parameters

Width of Spread: 7.5028 ft

Gutter Result Parameters

Design Flow: 1.8000 cfs

Gutter Depression: 0.0000 in

Area of Flow: 0.5629 ft^2

Eo (Gutter Flow to Total Flow): 0.0004

Gutter Depth at Curb: 1.8007 in

Inlet Input Parameters

Inlet Location: Inlet on Grade

Inlet Type: Grate

Grate Type: Reticuline

Grate Width: 3.5000 ft

Grate Length: 3.5000 ft

Local Depression: 0.0000 in

Inlet Result Parameters

Intercepted Flow: 1.7373 cfs

Bypass Flow: 0.0627 cfs

Approach Velocity: 3.1976 ft/s

Splash-over Velocity: 6.4902 ft/s

Efficiency: 0.9652

HYDRAULIC GRADE LINE COMPUTATIONS

FOX & ASSOCIATES INC. Est. 1966
ENGINEERS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

82 Worman's Mill Ct. Suite G
Frederick, MD 21701

HYDRAULIC GRADIENT COMPUTATIONS

FOR

JEFFERSON MEDICAL CENTER

COMPUTED:	J. CECI
DATE:	8/19/2026
JOB NO.	25-32256
PAGE:	1 OF 6

FROM NO.	TO NO.	SUM CA	TC MIN	I_{10}YR IN / HR	Q CFS	SLOPE % n= MIN.	0.011 ACTUAL	PIPE SIZE (IN.)	VELOCITY FPS FULL FLOW	VELOCITY FPS ACTUAL	LENGTH FT.	K_b	DESCRIPTION OF LOSS		ELEVATION FT.	REMARKS
															516.79	10-YR WSE
128	106	3.380	8.30	5.61	18.96	0.501	0.52	24	6.04	6.99	54.00		H_f=	(54 x .005) 0.27	517.06	
												0.80	H_b=	$(0.80x6.99^2)/64.4$ 0.61	517.67	
106	107	3.280	8.00	5.68	18.63	0.483	0.50	24	5.93	6.86	105.00		H_f=	(105 x .0048) 0.51	518.17	
												1.25	H_b=	$(1.25x6.86^2)/64.4$ 0.91	519.09	
107	109	3.140	7.80	5.73	17.99	0.451	0.50	24	5.73	6.89	99.00		H_f=	(99 x .0045) 0.45	519.53	
												0.78	H_b=	$(0.78x6.89^2)/64.4$ 0.57	520.11	
109	116	2.800	7.60	5.78	16.18	0.365	0.50	24	5.15	6.76	99.00		H_f=	(96x .00365) 0.36	520.47	
												1.15	H_b=	$(1.15x6.76^2)/64.4$ 0.82	521.29	
116	117	2.540	7.50	5.80	14.73	0.363	0.50	24	4.69	6.65	57.00		H_f=	(57 x .0036) 0.21	521.49	
												1.13	H_b=	$(1.13x6.65^2)/64.4$ 0.78	522.27	

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82 Worman's Mill Ct. Suite G
Frederick, MD 21701

HYDRAULIC GRADIENT COMPUTATIONS

FOR

JEFFERSON MEDICAL CENTER

COMPUTED:	J. CECI
DATE:	8/19/2026
JOB NO.	25-32256
PAGE:	2 OF 6

FROM NO.	TO NO.	SUM CA	TC MIN	I_{10}YR IN / HR	Q CFS	SLOPE % n= MIN.	0.011 ACTUAL	PIPE SIZE (IN.)	VELOCITY FPS FULL FLOW	VELOCITY FPS ACTUAL	LENGTH FT.	K_b	DESCRIPTION OF LOSS		ELEVATION FT.	REMARKS
															522.27	
117	118	2.330	5.80	6.18	14.40	1.339	1.40	18	8.15	9.47	36.00		H_f=	(36 x 0.0133) 0.48	522.75	
												0.18	H_b=	$(0.18x9.47^2)/64.4$ 0.25	523.00	
118	EX-1	1.150	5.80	6.18	7.11	0.326	1.00	18	4.02	7.07	63.00		H_f=	(63 x .0.0032) 0.21	530.34	PIPE CROWN=530.12 530.13+0.21=530.34
												1.50	H_b=	$(1.50x7.07^2)/64.4$ 1.16	531.50	
EX-1	119	0.220	5.00	6.28	1.38	0.033	1.00	15	1.13	4.75	2.00		H_f=	(2x .0033) 0.00	531.50	
															531.43	PIPE CROWN
118	121	0.570	5.00	6.28	3.58	0.219	1.00	15	2.92	6.12	32.00		H_f=	(32 x 0.00219) 0.07	531.50	
															521.29	HGL IN 116
116	111	0.200	5.50	6.23	1.25	0.032	3.03	15	1.02	6.76	57.00		H_f=	(57 x .00032) 0.02	521.31	
												1.26	H_b=	$(1.26x6.76^2)/64.4$ 0.89	522.20	

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Frederick, MD 21701

HYDRAULIC GRADIENT COMPUTATIONS

FOR

JEFFERSON MEDICAL CENTER

COMPUTED:	J. CECI
DATE:	8/19/2026
JOB NO.	25-32256
PAGE:	3 OF 6

FROM NO.	TO NO.	SUM CA	TC MIN	I_{10}YR IN / HR	Q CFS	SLOPE % n= MIN.	0.011 ACTUAL	PIPE SIZE (IN.)	VELOCITY FPS FULL FLOW	VELOCITY FPS ACTUAL	LENGTH FT.	K_b	DESCRIPTION OF LOSS		ELEVATION FT.	REMARKS
															522.20	
111	112	0.110	5.40	6.24	0.69	0.008	2.37	15	0.56	5.41	47.00		H_f= (47 x 0.0008)	0.00	522.20	
												0.85	H_b= $(0.85x5.41^2)/64.4$	0.39	522.59	
112	114	0.030	5.00	6.28	0.19	0.001	1.82	15	0.15	3.64	83.00		H_f= (83 x .0.0001)	0.00	522.59	
															520.47	HGL IN 109
109	115	0.250	5.00	6.28	1.57	0.042	2.40	15	1.28	6.79	10.00		H_f= (10x .00042)	0.00	520.47	
															516.79	10-YR WSE
124	130	1.680	5.30	6.25	10.50	0.391	0.50	27	3.36	5.65	22.00		H_f= (22 x 0.0039)	0.09	516.88	
												1.12	H_b= $(1.12x5.65^2)/64.4$	0.56	517.43	
130	102	1.540	5.30	6.25	9.63	0.155	0.50	24	3.06	6.04	15.00		H_f= (15 x .0015)	0.02	517.45	
												1.13	H_b= $(1.13x6.04^2)/64.4$	0.64	518.09	

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LANDSCAPE ARCHITECTS

82 Worman's Mill Ct. Suite G
Frederick, MD 21701

HYDRAULIC GRADIENT COMPUTATIONS

FOR

JEFFERSON MEDICAL CENTER

COMPUTED:	J. CECI
DATE:	8/19/2026
JOB NO.	25-32256
PAGE:	4 OF 6

FROM NO.	TO NO.	SUM CA	TC MIN	I_{10}YR IN / HR	Q CFS	SLOPE % n= MIN.	0.011 ACTUAL	PIPE SIZE (IN.)	VELOCITY FPS FULL FLOW	VELOCITY FPS ACTUAL	LENGTH FT.	K_b	DESCRIPTION OF LOSS		ELEVATION FT.	REMARKS
															518.09	
102	132	1.440	5.30	6.25	9.00	1.383	1.50	15	7.33	8.68	13.00		H_f= (13 x 0.0138)	0.18	518.27	
												0.50	H_b= $(0.5x8.68^2)/64.4$	0.58	518.86	
132	125	1.140	5.20	6.26	7.14	0.870	1.28	15	5.82	7.86	43.00		H_f= (43 x 0.0087)	0.37	519.23	
												0.90	H_b= $(0.9x7.86^2)/64.4$	0.86	520.10	
125	122	0.030	5.00	6.28	0.19	0.001	7.29	15	0.15	4.49	48.00		H_f= (48x .00001)	0.00	522.75	PIPE CROWN=522.75
															518.09	HGL IN 102
102	103	0.100	5.00	6.28	0.63	0.007	0.50	15	0.51	2.96	49.00		H_f= (49 x 0.00007)	0.00	518.09	
															518.27	HGL IN 132
132	133	0.300	5.00	6.28	1.88	0.073	1.00	15	1.54	5.18	13.00		H_f= (13 x .00073)	0.01	518.28	

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HYDRAULIC GRADIENT COMPUTATIONS

FOR

JEFFERSON MEDICAL CENTER

COMPUTED:	J. CECI
DATE:	8/19/2026
JOB NO.	25-32256
PAGE:	5 OF 6

FROM NO.	TO NO.	SUM CA	TC MIN	I_{10}YR IN / HR	Q CFS	SLOPE % n= MIN.	0.011 ACTUAL	PIPE SIZE (IN.)	VELOCITY FPS FULL FLOW	VELOCITY FPS ACTUAL	LENGTH FT.	K_b	DESCRIPTION OF LOSS	ELEVATION FT.	REMARKS
														519.23	HGL IN 125
125	126	0.490	5.00	6.28	3.08	0.162	6.57	15	2.51	12.44	36.00		H_f= (36 x 0.0016) 0.06	519.29	
														522.75	PIPE CROWN
125	113	0.620	5.00	6.28	3.89	0.259	3.90	15	3.17	6.57	8.00		H_f= (8 x 0.0026) 0.02	522.77	
														532.52	PIPE CROWN
131	123	0.360	5.00	6.28	2.26	0.087	1.00	15	1.84	5.42	123.00		H_f= (123x .00087) 0.11	532.63	
														516.79	10-YR WSE
100	104	0.420	5.20	6.28	2.64	0.119	1.33	15	2.15	6.27	3.00		H_f= (3 x 0.00119) 0.00	516.79	
												1.50	H_b= $(1.50x6.27^2)/64.4$ 0.92	517.71	
104	110	0.340	5.10	6.27	2.13	0.093	1.33	15	1.74	5.89	30.00		H_f= (30 x .00093) 0.03	517.74	
												0.50	H_b= $(0.5x5.89^2)/64.4$ 0.27	518.01	

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HYDRAULIC GRADIENT COMPUTATIONS

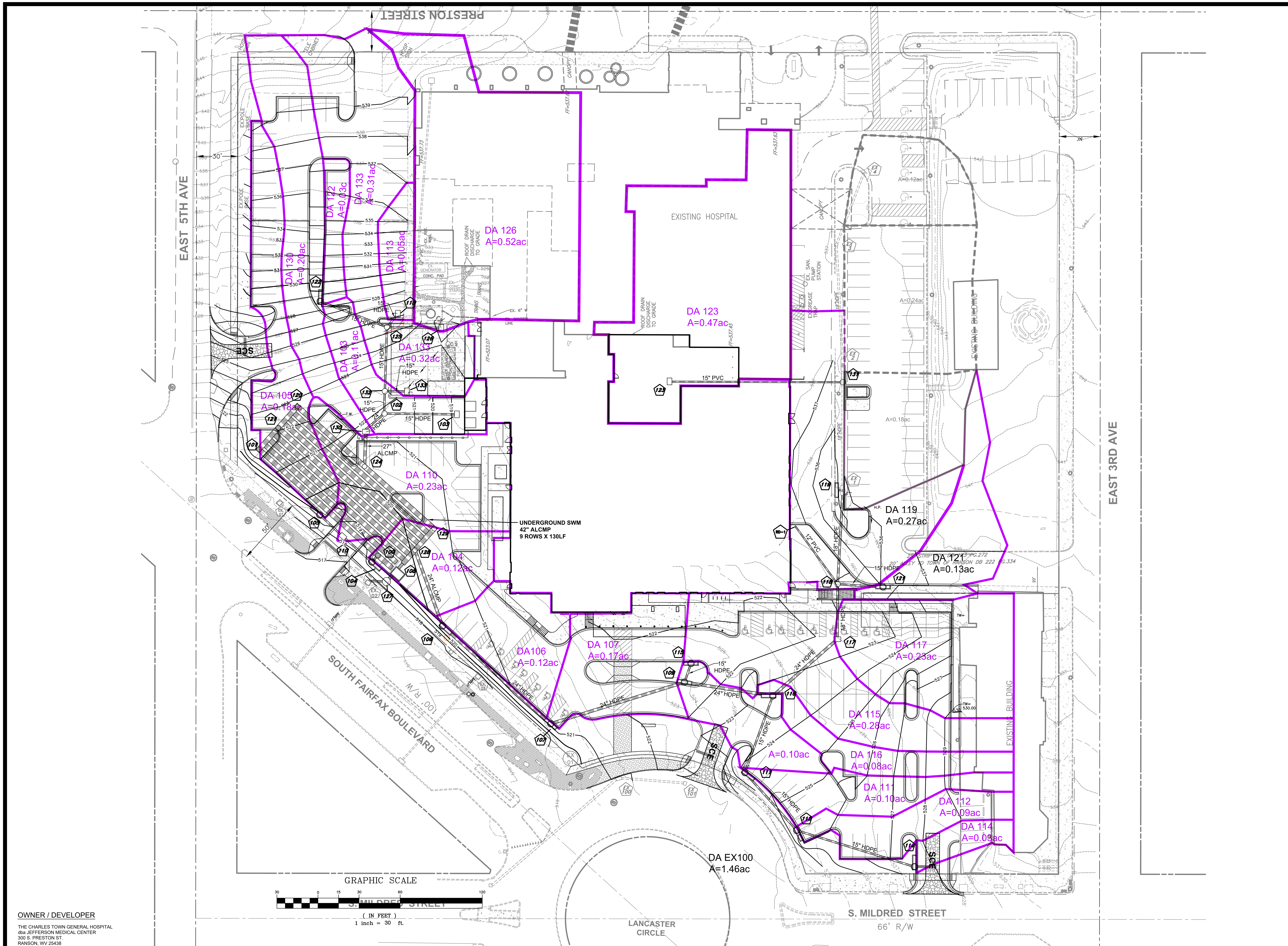
FOR

JEFFERSON MEDICAL CENTER

COMPUTED:	J. CECI
DATE:	8/19/2026
JOB NO.	25-32256
PAGE:	6 OF 6

FROM	TO	SUM CA	TC	I_{10}YR	Q	SLOPE %		PIPE SIZE (IN.)	VELOCITY FPS		LENGTH	K_b	DESCRIPTION OF LOSS	ELEVATION	REMARKS
						n=	0.011								
NO.	NO.		MIN	IN / HR	CFS	MIN.	ACTUAL		FULL FLOW	ACTUAL	FT.			FT.	
														518.01	
110	105	0.150	5.00	6.28	0.94	0.015	2.27	15	0.77	5.70	18.00		H_f= (18 x 0.0002) 0.00	518.01	

DRAINAGE AREA MAPS



OWNER / DEVELOPER

THE CHARLES TOWN GENERAL HOSPITAL
dba JEFFERSON MEDICAL CENTER
300 S. PRESTON ST.
RANSON, WV 25438

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FAX: (301)293-6009

WWW.FOXASSOCIATESINC.COM Email: FOXFREDERICK@FOXASSOCIATESINC.COM

DRAWN BY | REVISION | DATE

STORM DRAIN DRAINAGE AREA MAP

WEST VIRGINIA UNIVERSITY MEDICINE JEFFERSON MEDICAL CENTER

SITUATED AT 300 S. PRESTON ST.
CITY OF RANSON, WV 25438
JEFFERSON COUNTY

SCALE: 1"=30'

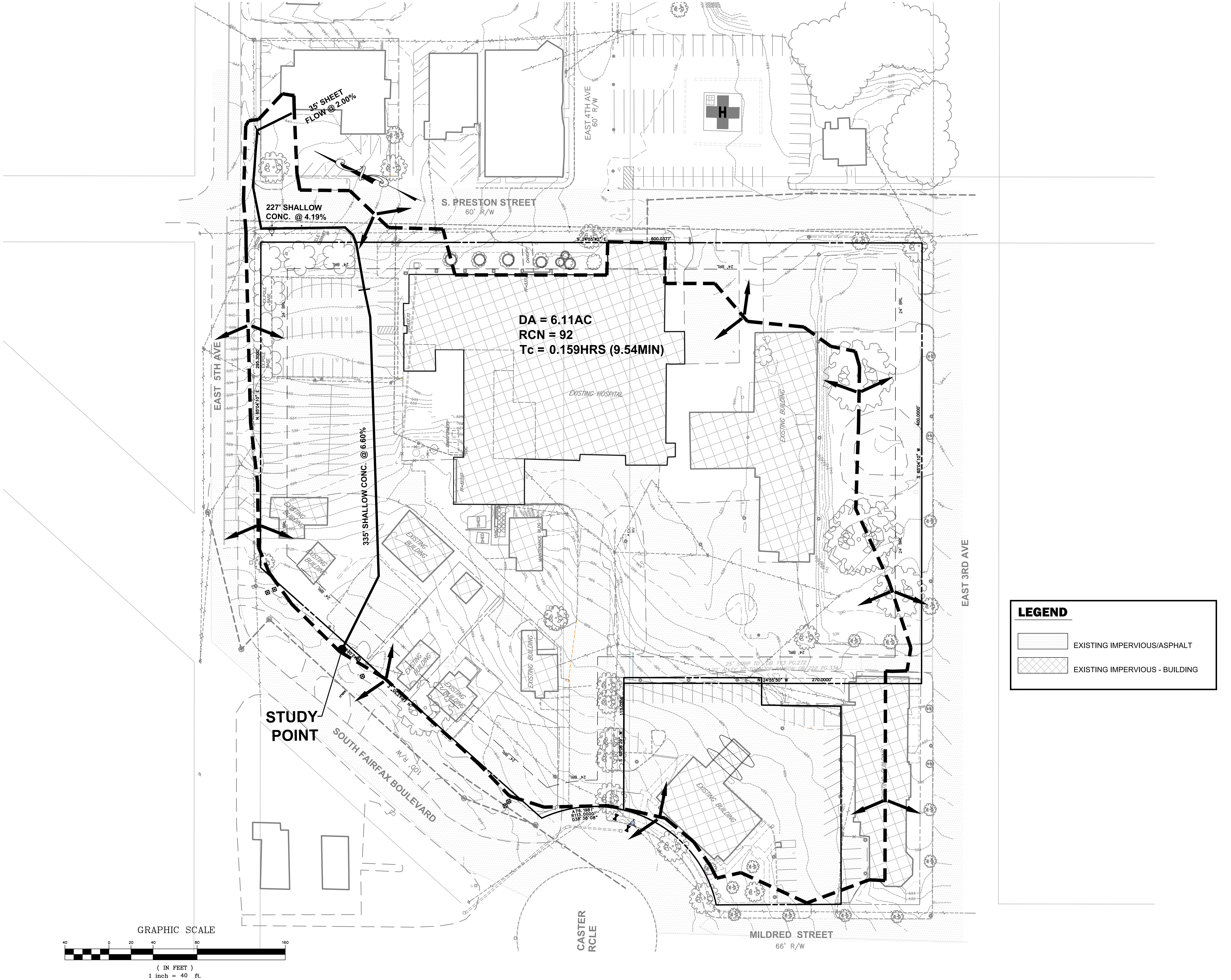
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WEST VIRGINIA

LICENSE No.: EXP. DATE:

PROJECT NO.	25-32256
DRAWING NO.	D-3662
DATE:	MAY, 2026
DRAWN BY:	JHC
CHECKED BY:	JHC

SHEET 1 OF 1



OWNER / DEVELOPER

THE CHARLES TOWN GENERAL HOSPITAL
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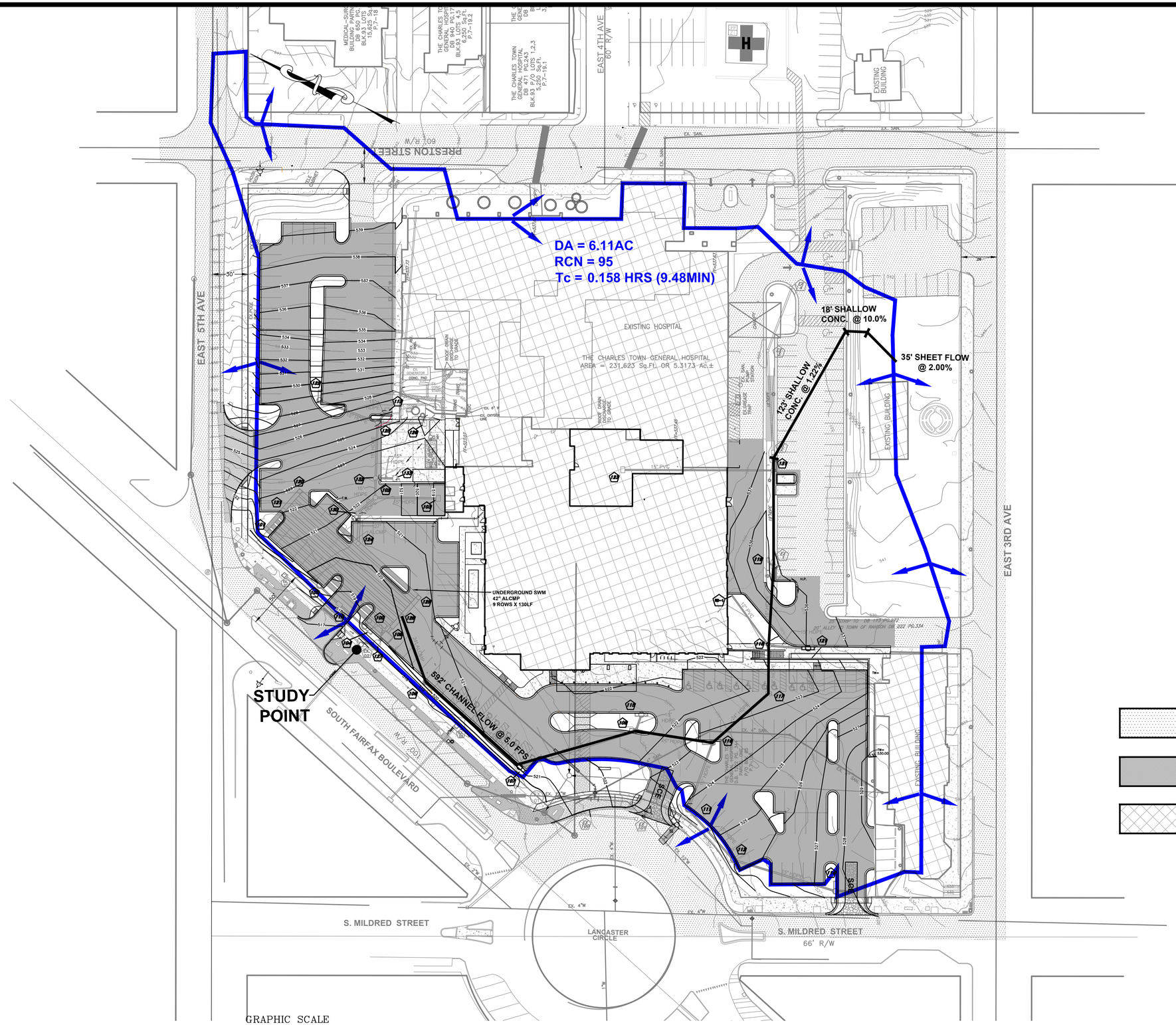
2003 EXISTING CONDITIONS DRAINAGE AREA MAP

WEST VIRGINIA UNIVERSITY MEDICINE
JEFFERSON MEDICAL CENTER

SITUATED AT 300 S. PRESTON ST.
CITY OF RANSON, WV 25438
JEFFERSON COUNTY

SCALE: 1"=40'

PROJECT NO. 25-32256
DRAWING NO. D-3662
DATE: MAY, 2026
DRAWN BY: JHC
CHECKED BY: JHC



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

OWNER / DEVELOPER

THE CHARLES TOWN GENERAL HOSPITAL
dba JEFFERSON MEDICAL CENTER
300 S. PRESTON ST.
RANSON, WV 25438

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DATE

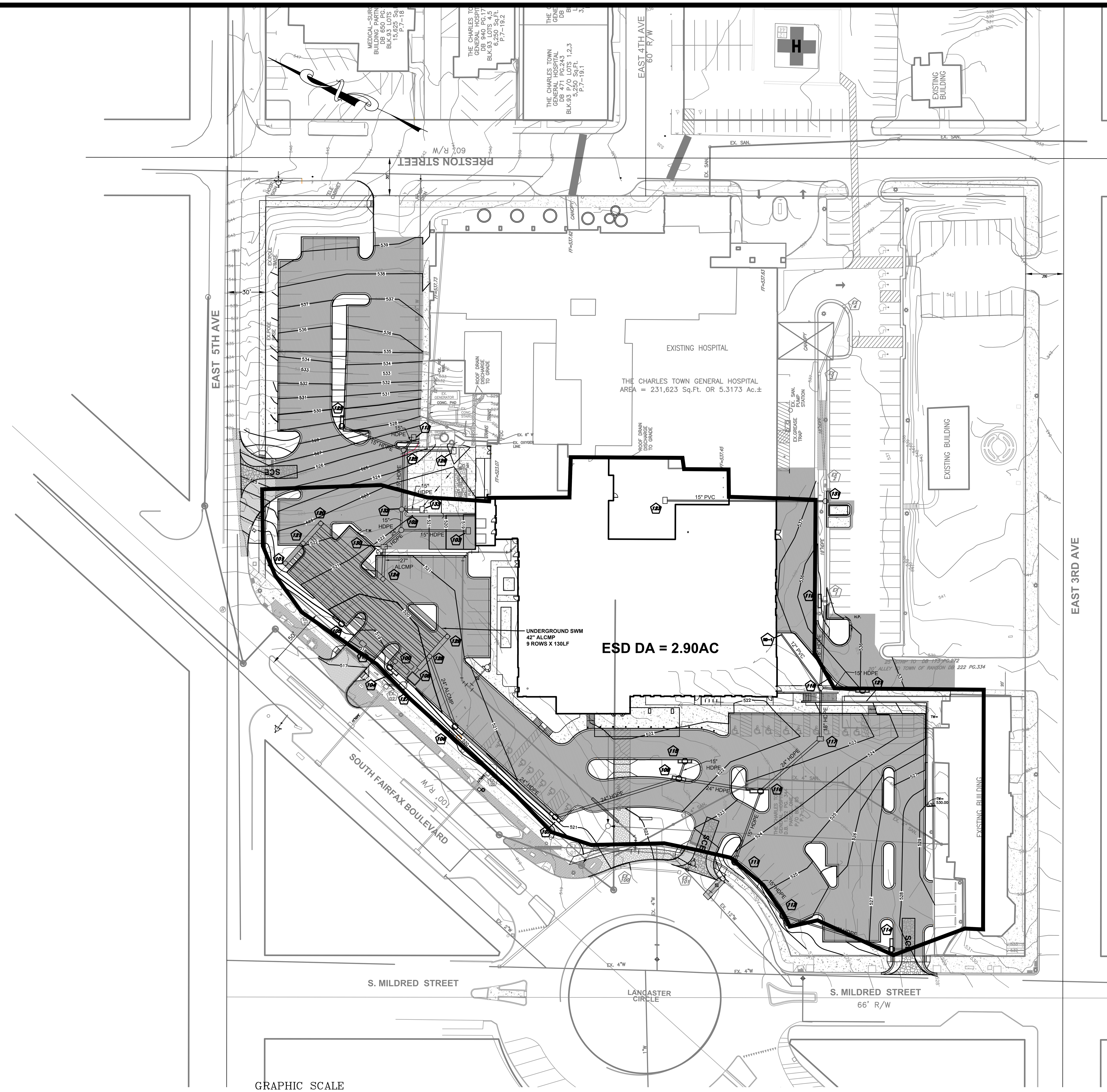
PROPOSED SWM DRAINAGE AREA MAP
WEST VIRGINIA UNIVERSITY MEDICINE
JEFFERSON MEDICAL CENTER
SITUATED AT 300 S. PRESTON ST.
CITY OF RANSON, WV 25438
JEFFERSON COUNTY

SCALE: 1"=40'

PROJECT NO. 25-32256
DRAWING NO. D-3662
DATE: MAY, 2026
DRAWN BY: JHC
CHECKED BY: JHC

SHEET 1 OF 1

H:\CARLSON PROJECTS\25\32256 KAHLER SLATER - JEFFERSON MEDICAL CENTER\DWG\CONST DOCS\CD-01.DWG, 8/28/2026 9:57:53 AM, JCECI.I1





(legend swatch)	EXIST IMPERVIOUS ASPHALT
(legend swatch)	PROP. IMPERVIOUS ASPHALT
(legend swatch)	EXIST/PROP. IMPERVIOUS BUILDING

OWNER / DEVELOPER

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PROPOSED ESD DRAINAGE AREA MAP

WEST VIRGINIA UNIVERSITY MEDICINE JEFFERSON MEDICAL CENTER

SITUATED AT 300 S. PRESTON ST.
CITY OF RANSON, WV 25438
JEFFERSON COUNTY

SCALE: 1"=40'

PROJECT NO. 25-32256
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SHEET 1 OF 1