STORMWATER MANAGEMENT REPORT

Prepared for:

GROVE STREET DEVELOPERS LLC

Proposed Townhouse Development

251 Grove Avenue
Block 1201, Lot 12
Township of Verona
Essex County, NJ

Prepared by:

DYNAMIC ENGINEERING

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May 2026
Last Revised October 2026
DEC# 0922 25-03663

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I. INTRODUCTION

The intention of this study is to analyze the stormwater drainage conditions that will occur as a result of the proposed redevelopment of the subject site, located at 251 Grove Avenue in the Township of Verona, Essex County, New Jersey and identified as Block 1201, Lot 12 in the Township of Verona Tax Maps. Stormwater runoff generated within the subject site drains to two separate points of analysis via overland flow; the Grove Avenue right-of-way (identified as POA-1) and the Peckman River (identified as POA-2). Under existing conditions, the subject site is presently developed consisting of an industrial outdoor storage yard, and five (5) one-story buildings. The parcel is approximately 241,164 SF (5.54 Acres) in area.

Under proposed conditions, the existing improvements will be demolished for the construction of 84 townhouse units with associated site improvements including parking areas, utilities, stormwater management facilities, and landscaping as shown on the accompanying site plans.

The scope of this study focuses on the on-site drainage conditions, which will include a decrease of approximately 94,484 SF (2.17 acres) of impervious surface coverage.

The on-site limit of disturbance for the project is greater than one acre and therefore the proposed redevelopment meets the definition of a “major development” under N.J.A.C. 7:8. The primary design constraints for this project are based on requirements established in N.J.A.C. 7:8, the New Jersey Soil Erosion and Sediment Control Standards, the 251 ½ Grove Avenue Redevelopment Plan, the Township of Verona Zoning Code, and Essex County requirements. More specifically, the stormwater management design will serve to maintain existing drainage patterns, post-development runoff hydrographs will not exceed the pre-construction runoff hydrographs at any point in time, and the improvements will not have a negative impact on downstream facilities.

II. EXISTING SITE CONDITIONS

The subject site consists of 5.54 acres and is fully developed with five (5) existing structures with associated parking and industrial outdoor storage. The site consists of approximately 224,605 SF of impervious surface coverage, including building, asphalt parking and storage areas, & compacted gravel that acts as an impervious surface. This study will consider the entire area within the on-site limit of disturbance of the proposed development.

The study area is comprised of two (2) drainage areas, identified as Existing Drainage Area 1 (EX-DA-1) and Existing Drainage Area 2 (EX-DA-2), detailed below. An Existing Drainage Area Map depicting this study area is included within the Appendix of this report.

Study Area EX-DA-1:

This area consists of the northernmost area of the subject site, including the existing access driveway, asphalt pavement area, compacted gravel areas acting as impervious coverage, associated sidewalks, and landscape area within the public right-of-way along the site's street frontage. Under existing conditions, stormwater runoff generated within this study area flows overland and/or is collected by the existing on-site conveyance system and ultimately conveyed to the existing stormwater conveyance network within the Grove Avenue right-of-way, identified as Point of Analysis 1 (POA-1).

Based on existing ground cover conditions and the Township of Verona definition for "redevelopment" within its Stormwater Management Controls and Requirements ordinance, a runoff curve number of 70, consistent with wooded land cover, was utilized for the pervious surfaces within this study area. Furthermore, times of concentration for pervious areas of 4.4 minutes and 4.2 minutes were calculated for current and future storm events, respectively. For impervious areas, times of concentration of 3.5 minutes and 3.4 minutes were calculated for current and future storm events, respectively.

Study Area EX-DA-2:

This area consists of the remainder of Lot 12 including the remaining on-site structures and industrial storage areas which contain compacted gravel acting as impervious coverage. Under existing conditions, stormwater runoff generated within this study area is conveyed to the Peckman River via overland flow and the existing on-site conveyance network. The Peckman River is further identified as Point of Analysis 2 (POA-2).

Based on existing ground cover conditions and the Township of Verona definition for "redevelopment" within its Stormwater Management Controls and Requirements ordinance, a runoff curve number of 70, consistent with wooded land cover, was utilized for the pervious surfaces within this study area. Furthermore, times of concentration for pervious areas of 9.4 minutes and 8.8 minutes were calculated for current and future storm events, respectively. For

impervious areas, times of concentration of 5.3 minutes and 5.2 minutes were calculated for current and future storm events, respectively.

III. PROPOSED SITE CONDITIONS

The proposed site redevelopment includes the demolition of the existing structures and construction of six townhouse clusters consisting of 84 total units with associated site improvements including parking areas, utilities, stormwater management facilities, and landscaping as shown on the accompanying site plans. The proposed development will result in a decrease in impervious coverage of approximately 94,484 SF when comparing the existing site to the proposed site.

The overall design of the proposed development has maintained existing on-site drainage patterns, with four (4) proposed drainage areas, identified and detailed below. A Proposed Drainage Area Map depicting this study area is included within the Appendix of this report.

Study Area PR-DA-1:

This area consists of 0.49 acres within the northern area of the subject site, including the proposed access driveway, sidewalks, landscape areas and the parking area located in the northeast corner of the site. Under proposed conditions, stormwater runoff generated within this study area is conveyed to the existing stormwater conveyance network within the Essex County Grove Avenue right-of-way previously identified as Point of Analysis 1 (POA-1)

Based on proposed ground cover conditions, a runoff curve number of 74 was utilized for the pervious surfaces within this study area. Furthermore, times of concentration for pervious areas of 5.0 minutes and 4.7 minutes were calculated for current and future storm events, respectively. For impervious areas, times of concentration of 2.5 minutes and 2.4 minutes were calculated for current and future storm events, respectively.

Study Area PR-DA-2.1:

This area consists of approximately 2.25 acres within the central portion of the site, including proposed townhouses, driveways, drive aisles, patio areas, sidewalks, landscape areas and parking areas. Under proposed conditions, stormwater runoff generated within this study area is conveyed to the Bioretention Basin 2.1 via overland flow and the proposed stormwater

conveyance network for on-site retention of the “retention storm” as required by the Township of Verona Stormwater Management Controls and Requirements ordinance. Runoff is ultimately discharged to the Peckman River, previously identified as Point of Analysis 2 (POA-2).

Based on proposed ground cover conditions, a runoff curve number of 74 was utilized for the pervious surfaces within this study area. Furthermore, times of concentration for pervious areas of 6.1 minutes and 5.8 minutes were calculated for current and future storm events, respectively. For impervious areas, times of concentration of 5.8 minutes and 5.4 minutes were calculated for current and future storm events, respectively.

Study Area PR-DA-2.2:

This area consists of approximately 1.57 acres within the southern portion of the site, including proposed townhouses, driveways, drive aisles, sidewalks, landscape areas and parking areas. Under proposed conditions, stormwater runoff generated within this study area is conveyed to the Bioretention Basin 2.2 via overland flow and the proposed stormwater conveyance network for on-site retention of the “retention storm” as required by the Township of Verona Stormwater Management Controls and Requirements ordinance. Runoff is ultimately discharged to the Peckman River, previously identified as Point of Analysis 2 (POA-2).

Based on proposed ground cover conditions, a runoff curve number of 74 was utilized for the pervious surfaces within this study area. Furthermore, times of concentration for pervious areas of 4.8 minutes and 4.7 minutes were calculated for current and future storm events, respectively. For impervious areas, times of concentration of 5.0 minutes and 4.9 minutes were calculated for current and future storm events, respectively.

Study Area PR-DA-2-UNDET:

The majority of this area is located within the southern portion of the site and includes landscape and patio areas. The remaining portion of this area is located within a small area adjacent to the northern parking area and includes landscape area. In total, this drainage area consists of approximately 1.08 acres. Under proposed conditions, stormwater runoff generated within this study area is conveyed via overland flow and the proposed conveyance network to the Peckman River, previously identified as Point of Analysis 2 (POA-2).

Based on proposed ground cover conditions, a runoff curve number of 74 was utilized for the pervious surfaces within this study area. Furthermore, times of concentration for pervious areas of 4.3 minutes and 4.1 minutes were calculated for current and future storm events, respectively. For impervious areas, times of concentration of 5.5 minutes and 5.2 minutes were calculated for current and future storm events, respectively.

IV. DESIGN METHODOLOGY

The intent of the design for the proposed stormwater management facilities for this project is to provide measures as required to address applicable aspects of N.J.A.C. 7:8, the New Jersey Soil Erosion and Sediment Control Standards, the 251 ½ Grove Avenue Redevelopment Plan, the Township of Verona Zoning Code, and Essex County requirements.

Based on our review of the existing site conditions and the Boundary, Location, & Topographic Survey prepared by Dynamic Survey, LLC, the Existing Drainage Area Map for current site conditions as defined within this summary was established. A Grading Plan was developed for the proposed site improvements with consideration to the existing drainage patterns and used in preparation of the proposed drainage area map. The Drainage Plan was designed to direct stormwater runoff from the proposed development to the existing points of analysis while providing compliance with the requirements mentioned above.

Runoff rates for the site were modeled utilizing the HydroCAD computer software, using the Urban Hydrology for Small Watershed TR55 method for the applicable design storms. The 2-, 10-, and 100-year design storms are based upon the Essex County 24 Hours Rainfall Frequency Data as published within the NOAA Atlas 14 with respective change factors applied for the current and projected storm events. All storm events utilize a Type D rainfall distribution.

The Runoff Curve Numbers were chosen to most appropriately reflect the existing and proposed site conditions as outlined in the USDA's "Urban Hydrology for Small Watersheds: TR-55".

V. NON-STRUCTURAL STORMWATER MANAGEMENT STRATEGIES

The site design has been prepared to implement non-structural stormwater management strategies in accordance with N.J.A.C. 7:8-2.4g. Some of the strategies implemented at this site location include the following:

Minimize impervious surface coverage: The proposed site shown on the accompanying engineering drawings has been designed to decrease impervious coverage when compared to existing conditions.

Minimize the decrease in the "time of concentration" from pre-construction to post-construction: The proposed stormwater management conveyance system has been designed such that the proposed time of concentration is not significantly decreased from pre-construction to post-construction.

Minimize soil compaction: The proposed development includes the creation of pervious coverage in areas on-site that are impervious under existing conditions, and an overall reduction in impervious coverage, thus decreasing the amount of compacted area on-site when compared to existing conditions.

Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawn fertilizers and pesticides: The proposed landscaping design has been prepared to provide an aesthetic improvement to the interior and perimeter of the site through the use of native species.

The New Jersey Best Management Practices (BMP) Manual was utilized in preparation of the design of this development.

VI. WATER QUANTITY STANDARDS

Due to the proposed reduction in impervious surface coverage and close alignment in the time of concentration for each drainage area between existing and proposed conditions, the post construction runoff hydrographs do not exceed the pre-construction runoff hydrographs at any point in time. This can be observed graphically and numerically via the Hydrograph Comparison Reports included within the Appendix of this Report, which shows compliance with the stormwater runoff quantity standards set forth in N.J.A.C. 7:8.

VII. WATER QUALITY STANDARDS

The proposed development does not propose an increase of more than one-quarter (1/4) acre of motor vehicle surface (158,346 SF decrease). Refer to the tables below for a comparison between the on-site regulated motor vehicle surface areas under existing and proposed conditions. The regulated motor vehicle surface in each drainage area is further detailed in the Existing and Proposed Drainage Area Maps included within the Appendix of this report.

Regulated Motor Vehicle Surface Coverage	
Existing	213,233 (4.90 Ac.)
Proposed	54,887 SF (1.26 Ac.)
TOTAL DECREASE	158,346 SF (3.64 Ac.)

As a result, the stormwater runoff quality standards set forth by N.J.A.C. 7:8 are not applicable.

However, the Township of Verona Stormwater Management Controls and Requirements Ordinance requires water quality treatment for the on-site regulated impervious surfaces. As such, stormwater runoff detained on-site that is ultimately discharged to POA-2, the Peckman River, will be treated for 80% TSS removal by one of the two (2) proposed green infrastructure small-scale bioretention basins. Bio-retention Basin 2.1 and Bio-retention Basin 2.2 have been designed in accordance with Chapter 9.7 of the NJ Stormwater Best Management Practices Manual.

VIII. GROUNDWATER RECHARGE STANDARDS

The subject site is a previously developed area within the Metropolitan Planning Area (PA1) of the State Plan Policy Map (SPPM). As such, it is classified as an “urban redevelopment area” per N.J.A.C. 7:8, and the groundwater recharge requirements therein are not applicable.

IX. TOWNSHIP OF VERONA RETENTION STORM

Section 150-25.2 defines the “retention storm” as one-half of the existing two-year rainfall for Essex County, multiplied by the projected two-year storm change factor. Per NOAA Atlas 14, the existing two-year rainfall is 3.44 inches. After applying the projected change factor of 1.19 and dividing by 2, depth of the retention storm is equal to 2.05 inches. In accordance with Section

150-25.4.S.2, the proposed redevelopment has been designed to manage the retention storm through on-site retention via the two (2) proposed green infrastructure bio-retention basins.

In compliance with green infrastructure guidelines outlined within Chapter 9.7 of the NJ Stormwater Best Management Practices Manual, the lowest orifice of the outlet control structure within the proposed basin has been set at the elevation of the water quality design storm (WQDS). A 6" weir has been selected for feasible constructability while allowing for further retention of the retention storm above the WQDS elevation. Within each basin, overflow grates are set at the peak water elevation during the retention storm. This allows the entirety of the retention storm to be retained and temporarily stored within the proposed green infrastructure bio-retention basins before being discharged at a controlled rate via the proposed underdrain system to POA-2. Emergency spillways for the basins have been set at the peak water elevation during the 100-year projected storm.

X. CONCLUSION

The proposed redevelopment of the subject site has been designed in a manner that will not adversely impact the existing drainage patterns, adjacent roadways or adjacent parcels. Per N.J.A.C. 7:8, the project is considered a "major development" and meets the requirements for stormwater runoff quantity therein. Due to the reduction of regulated motor vehicle surface, and the "urban redevelopment area" designation, the stormwater runoff quality and groundwater recharge standards, respectively, are not applicable. Therefore, the proposed development meets the regulatory requirements and will not have a negative impact on the existing stormwater management system on-site or within the vicinity of the subject parcel.

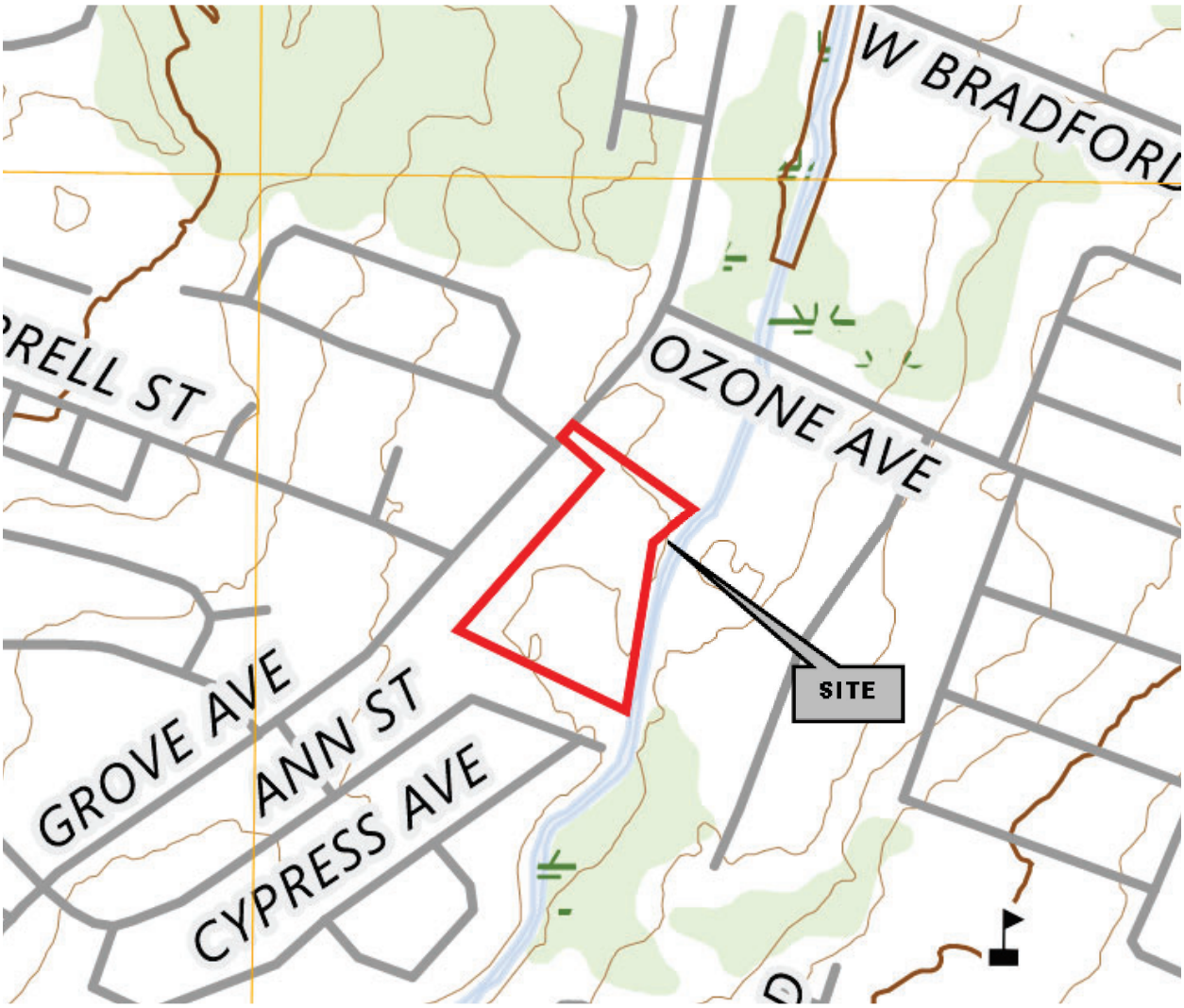
APPENDIX

USGS MAP

DYNAMIC
ENGINEERING EARTH SURVEY TRAFFIC

USGS Map

Orange Quad



NRCS WEB SOIL SURVEY

Hydrologic Soil Group—Essex County, New Jersey
(XI-PARCEL)



Map Scale: 1:1,650 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

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 Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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: Essex County, New Jersey
Survey Area Data: Version 18, Aug 29, 2022

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

Date(s) aerial images were photographed: Jun 4, 2022—Jul 22, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
PecuuB	Peckmantown - Urban land, Peckmantown substratum complex, 0 to 8 percent slopes	C	5.8	100.0%
Totals for Area of Interest			**5.8**	**100.0%**

Description

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

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

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

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

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

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

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

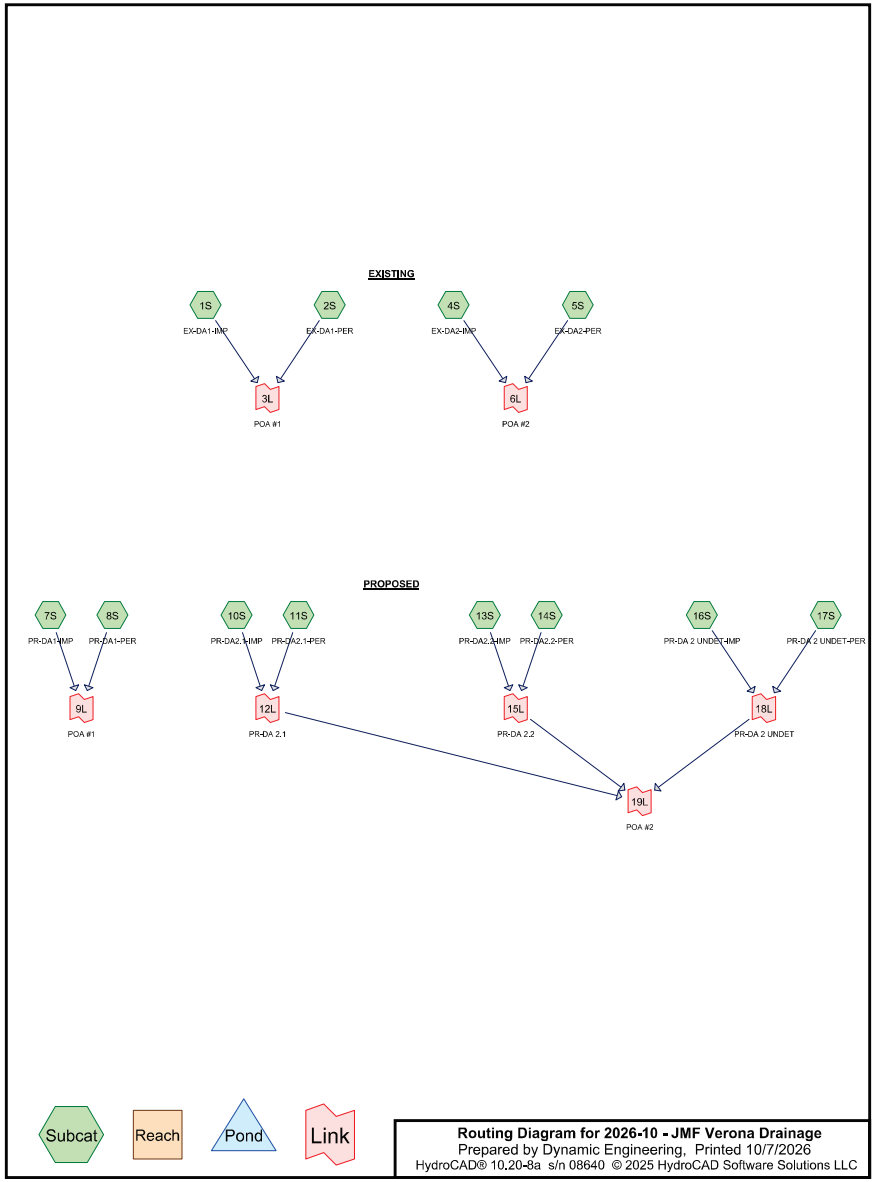
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

HYDROGRAPH COMPARISON REPORTS: 2-YR, 10-YR & 100-YR DESIGN STORMS



Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC	P2 (inches)
1	2-Year-Current	NOAA 24-hr	D	Default	24.00	1	3.47	2	3.47
2	2-Year-Projected	NOAA 24-hr	D	Default	24.00	1	4.09	2	4.09
3	10-Year-Current	NOAA 24-hr	D	Default	24.00	1	5.38	2	3.47
4	10-Year-Projected	NOAA 24-hr	D	Default	24.00	1	6.37	2	4.09
5	100-Year-Current	NOAA 24-hr	D	Default	24.00	1	9.18	2	3.47
6	100-Year-Projected	NOAA 24-hr	D	Default	24.00	1	11.52	2	4.09

Summary for Subcatchment 1S: EX-DA1-IMP

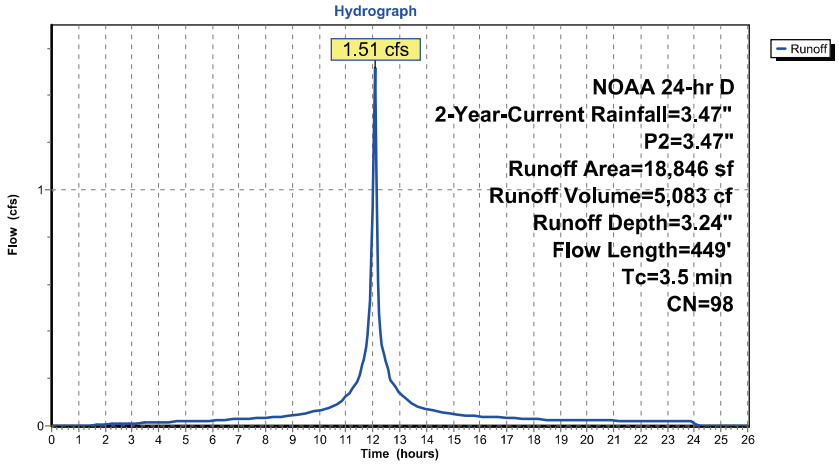
Runoff = 1.51 cfs @ 12.09 hrs, Volume= 5,083 cf, Depth= 3.24"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
*	18,142	98	IMPERVIOUS
*	704	98	BUILDINGS
	18,846	98	Weighted Average
	18,846		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0216	1.48		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 3.47"
2.4	349	0.0139	2.39		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
3.5	449	Total			

Subcatchment 1S: EX-DA1-IMP



Summary for Subcatchment 2S: EX-DA1-PER

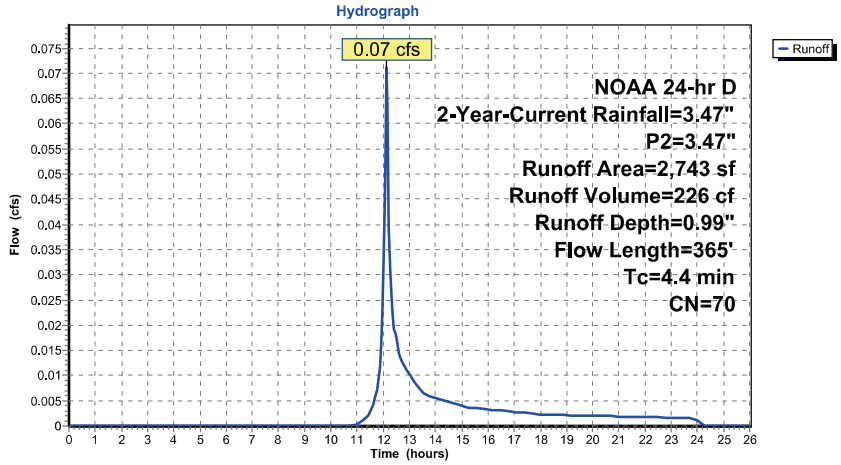
Runoff = 0.07 cfs @ 12.11 hrs, Volume= 226 cf, Depth= 0.99"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
2,743	70	Woods, Good, HSG C
2,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	7	0.0364	0.09		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
1.3	93	0.0130	1.19		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 3.47"
1.8	265	0.0139	2.39		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
4.4	365	Total			

Subcatchment 2S: EX-DA1-PER

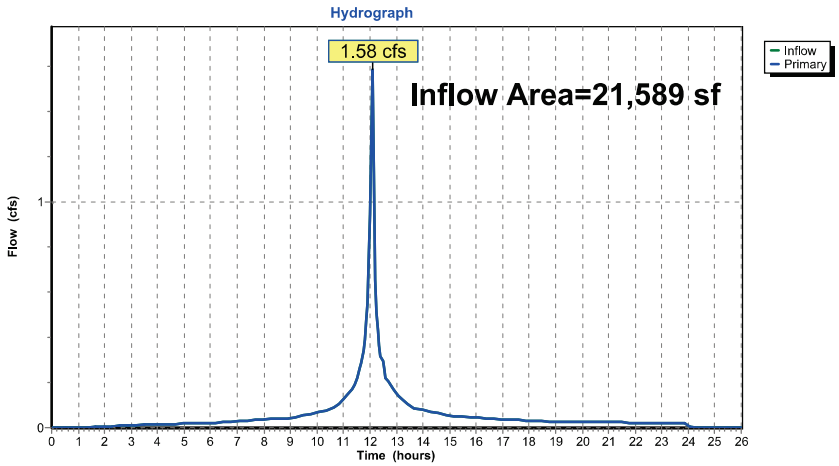


Summary for Link 3L: POA #1

Inflow Area = 21,589 sf, 87.29% Impervious, Inflow Depth = 2.95" for 2-Year-Current event
Inflow = 1.58 cfs @ 12.09 hrs, Volume= 5,309 cf
Primary = 1.58 cfs @ 12.09 hrs, Volume= 5,309 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 3L: POA #1



Summary for Subcatchment 4S: EX-DA2-IMP

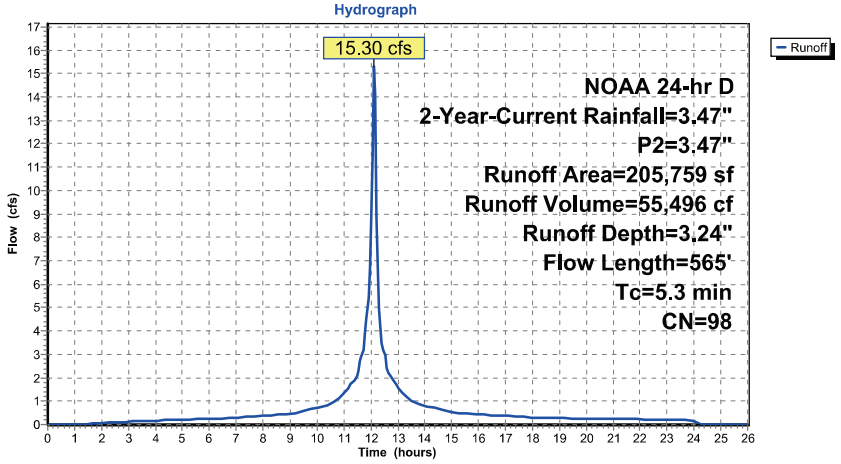
Runoff = 15.30 cfs @ 12.11 hrs, Volume= 55,496 cf, Depth= 3.24"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
*	195,091	98	IMPERVIOUS
*	10,668	98	BUILDING
	205,759	98	Weighted Average
	205,759		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0130	1.21		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 3.47"
2.2	230	0.0075	1.76		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
1.7	235	0.0130	2.31		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
5.3	565	Total			

Subcatchment 4S: EX-DA2-IMP



Summary for Subcatchment 5S: EX-DA2-PER

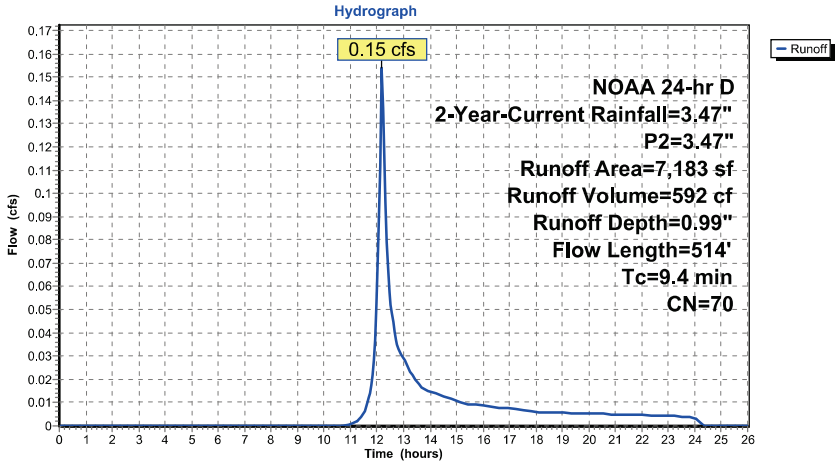
Runoff = 0.15 cfs @ 12.18 hrs, Volume= 592 cf, Depth= 0.99"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
7,183	70	Woods, Good, HSG C
7,183		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	54	0.0500	0.16		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
0.8	45	0.0100	0.93		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 3.47"
2.8	415	0.0150	2.49		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
9.4	514	Total			

Subcatchment 5S: EX-DA2-PER

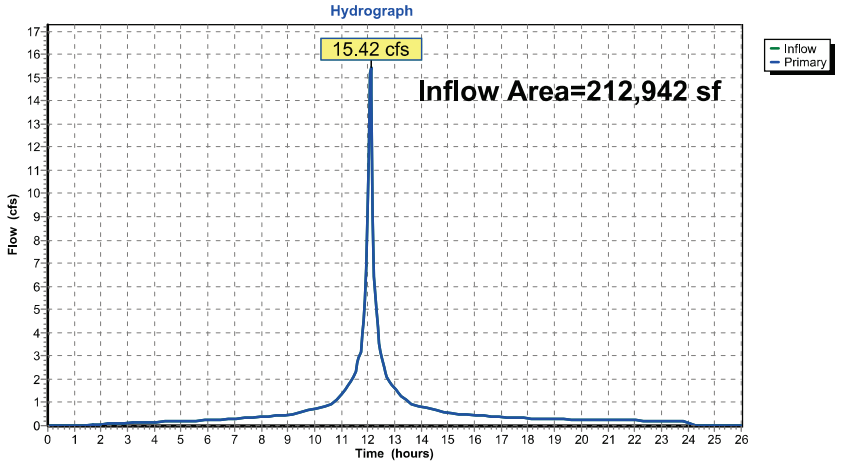


Summary for Link 6L: POA #2

Inflow Area = 212,942 sf, 96.63% Impervious, Inflow Depth = 3.16" for 2-Year-Current event
Inflow = 15.42 cfs @ 12.12 hrs, Volume= 56,088 cf
Primary = 15.42 cfs @ 12.12 hrs, Volume= 56,088 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 6L: POA #2



Summary for Subcatchment 7S: PR-DA1-IMP

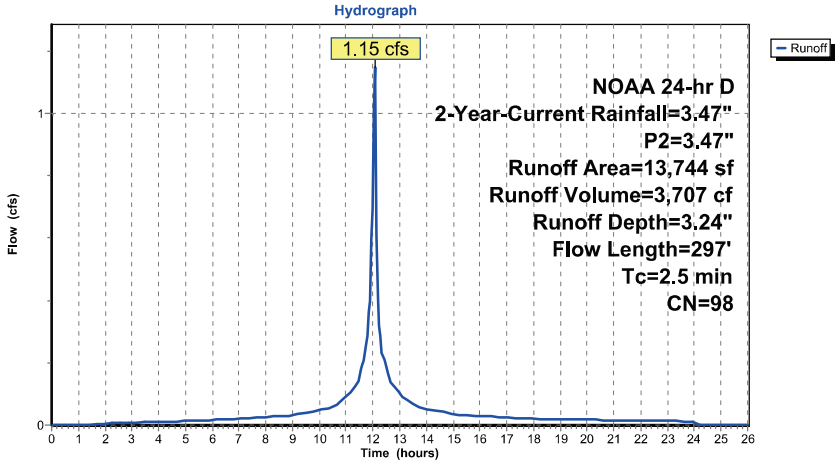
Runoff = 1.15 cfs @ 12.08 hrs, Volume= 3,707 cf, Depth= 3.24"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
*	13,744	98	IMPERVIOUS
	13,744		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0125	1.19		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 3.47"
1.0	174	0.0196	2.84		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
0.1	23	0.0100	5.70	7.00	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
2.5	297	Total			

Subcatchment 7S: PR-DA1-IMP



Summary for Subcatchment 8S: PR-DA1-PER

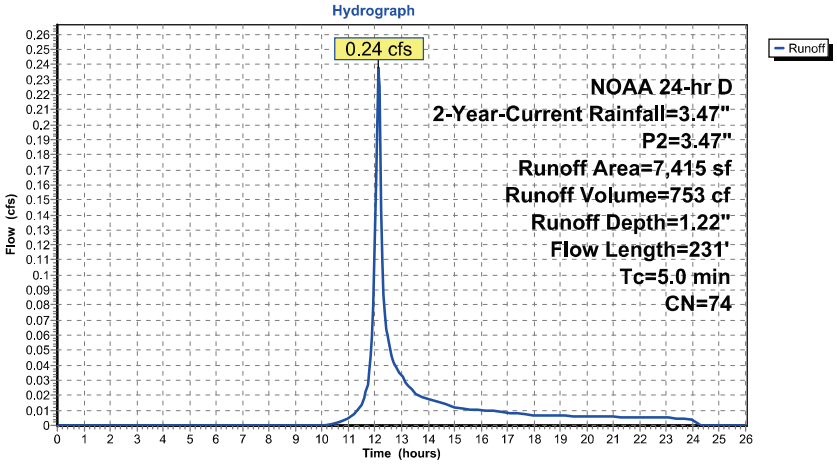
Runoff = 0.24 cfs @ 12.12 hrs, Volume= 753 cf, Depth= 1.22"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
7,415	74	>75% Grass cover, Good, HSG C
7,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	33	0.0692	0.16		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
0.1	8	0.0518	1.26		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 3.47"
0.8	59	0.0180	1.24		**Sheet Flow, TC-CD** Smooth surfaces n= 0.011 P2= 3.47"
0.5	80	0.0180	2.72		**Shallow Concentrated Flow, TC-DE** Paved Kv= 20.3 fps
0.1	29	0.0100	5.70	7.00	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	22	0.0104	5.82	7.14	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
5.0	231	Total			

Subcatchment 8S: PR-DA1-PER

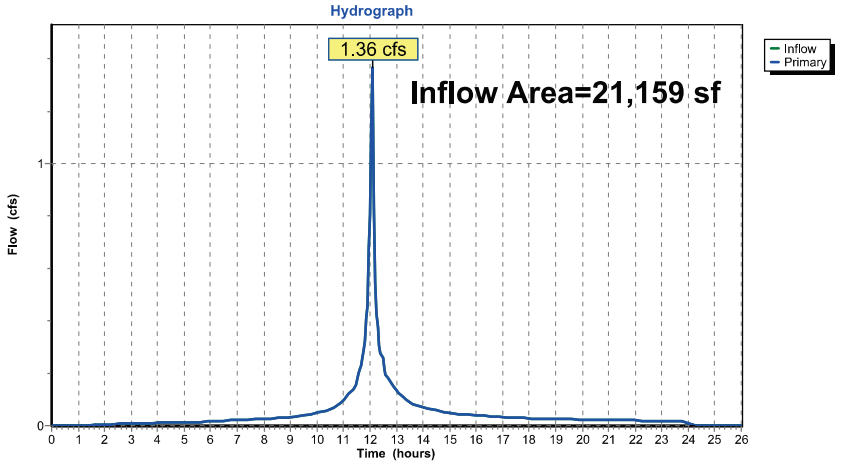


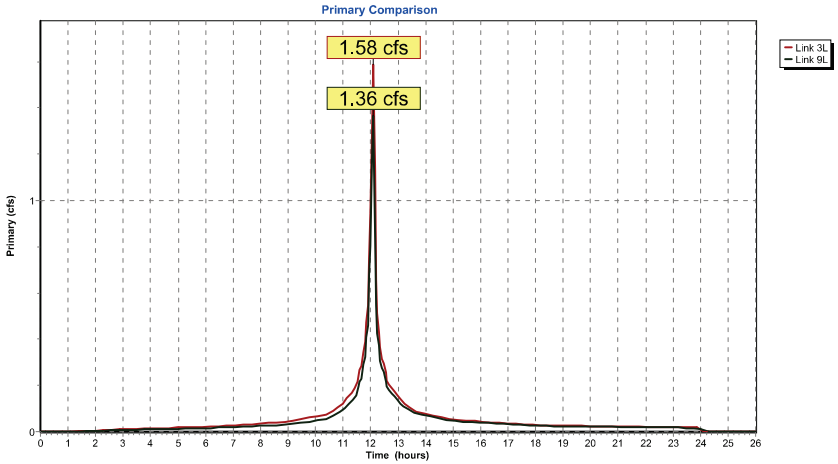
Summary for Link 9L: POA #1

Inflow Area = 21,159 sf, 64.96% Impervious, Inflow Depth = 2.53" for 2-Year-Current event
Inflow = 1.36 cfs @ 12.09 hrs, Volume= 4,460 cf
Primary = 1.36 cfs @ 12.09 hrs, Volume= 4,460 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 9L: POA #1





2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
0.00	0.00	0.00	2.60	0.01	0.01	5.20	0.02	0.01
0.05	0.00	0.00	2.65	0.01	0.01	5.25	0.02	0.01
0.10	0.00	0.00	2.70	0.01	0.01	5.30	0.02	0.01
0.15	0.00	0.00	2.75	0.01	0.01	5.35	0.02	0.01
0.20	0.00	0.00	2.80	0.01	0.01	5.40	0.02	0.01
0.25	0.00	0.00	2.85	0.01	0.01	5.45	0.02	0.01
0.30	0.00	0.00	2.90	0.01	0.01	5.50	0.02	0.01
0.35	0.00	0.00	2.95	0.01	0.01	5.55	0.02	0.01
0.40	0.00	0.00	3.00	0.01	0.01	5.60	0.02	0.01
0.45	0.00	0.00	3.05	0.01	0.01	5.65	0.02	0.01
0.50	0.00	0.00	3.10	0.01	0.01	5.70	0.02	0.01
0.55	0.00	0.00	3.15	0.01	0.01	5.75	0.02	0.02
0.60	0.00	0.00	3.20	0.01	0.01	5.80	0.02	0.02
0.65	0.00	0.00	3.25	0.01	0.01	5.85	0.02	0.02
0.70	0.00	0.00	3.30	0.01	0.01	5.90	0.02	0.02
0.75	0.00	0.00	3.35	0.01	0.01	5.95	0.02	0.02
0.80	0.00	0.00	3.40	0.01	0.01	6.00	0.02	0.02
0.85	0.00	0.00	3.45	0.01	0.01	6.05	0.02	0.02
0.90	0.00	0.00	3.50	0.01	0.01	6.10	0.02	0.02
0.95	0.00	0.00	3.55	0.01	0.01	6.15	0.02	0.02
1.00	0.00	0.00	3.60	0.01	0.01	6.20	0.02	0.02
1.05	0.00	0.00	3.65	0.01	0.01	6.25	0.02	0.02
1.10	0.00	0.00	3.70	0.01	0.01	6.30	0.02	0.02
1.15	0.00	0.00	3.75	0.01	0.01	6.35	0.02	0.02
1.20	0.00	0.00	3.80	0.01	0.01	6.40	0.02	0.02
1.25	0.00	0.00	3.85	0.01	0.01	6.45	0.02	0.02
1.30	0.00	0.00	3.90	0.01	0.01	6.50	0.02	0.02
1.35	0.00	0.00	3.95	0.01	0.01	6.55	0.02	0.02
1.40	0.00	0.00	4.00	0.01	0.01	6.60	0.03	0.02
1.45	0.00	0.00	4.05	0.02	0.01	6.65	0.03	0.02
1.50	0.00	0.00	4.10	0.02	0.01	6.70	0.03	0.02
1.55	0.00	0.00	4.15	0.02	0.01	6.75	0.03	0.02
1.60	0.00	0.00	4.20	0.02	0.01	6.80	0.03	0.02
1.65	0.00	0.00	4.25	0.02	0.01	6.85	0.03	0.02
1.70	0.00	0.00	4.30	0.02	0.01	6.90	0.03	0.02
1.75	0.00	0.00	4.35	0.02	0.01	6.95	0.03	0.02
1.80	0.00	0.00	4.40	0.02	0.01	7.00	0.03	0.02
1.85	0.01	0.00	4.45	0.02	0.01	7.05	0.03	0.02
1.90	0.01	0.00	4.50	0.02	0.01	7.10	0.03	0.02
1.95	0.01	0.00	4.55	0.02	0.01	7.15	0.03	0.02
2.00	0.01	0.00	4.60	0.02	0.01	7.20	0.03	0.02
2.05	0.01	0.00	4.65	0.02	0.01	7.25	0.03	0.02
2.10	0.01	0.00	4.70	0.02	0.01	7.30	0.03	0.02
2.15	0.01	0.01	4.75	0.02	0.01	7.35	0.03	0.02
2.20	0.01	0.01	4.80	0.02	0.01	7.40	0.03	0.02
2.25	0.01	0.01	4.85	0.02	0.01	7.45	0.03	0.02
2.30	0.01	0.01	4.90	0.02	0.01	7.50	0.03	0.02
2.35	0.01	0.01	4.95	0.02	0.01	7.55	0.03	0.02
2.40	0.01	0.01	5.00	0.02	0.01	7.60	0.03	0.02
2.45	0.01	0.01	5.05	0.02	0.01	7.65	0.03	0.02
2.50	0.01	0.01	5.10	0.02	0.01	7.70	0.03	0.02
2.55	0.01	0.01	5.15	0.02	0.01	7.75	0.03	0.02

Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
7.80	0.03	0.02	10.40	0.08	0.06	13.00	0.15	0.14
7.85	0.03	0.03	10.45	0.08	0.06	13.05	0.14	0.13
7.90	0.03	0.03	10.50	0.08	0.06	13.10	0.14	0.12
7.95	0.04	0.03	10.55	0.08	0.06	13.15	0.13	0.12
8.00	0.04	0.03	10.60	0.09	0.07	13.20	0.13	0.11
8.05	0.04	0.03	10.65	0.09	0.07	13.25	0.12	0.11
8.10	0.04	0.03	10.70	0.10	0.07	13.30	0.12	0.10
8.15	0.04	0.03	10.75	0.10	0.08	13.35	0.11	0.10
8.20	0.04	0.03	10.80	0.10	0.08	13.40	0.11	0.10
8.25	0.04	0.03	10.85	0.11	0.08	13.45	0.10	0.09
8.30	0.04	0.03	10.90	0.11	0.09	13.50	0.10	0.09
8.35	0.04	0.03	10.95	0.12	0.09	13.55	0.09	0.08
8.40	0.04	0.03	11.00	0.12	0.09	13.60	0.09	0.08
8.45	0.04	0.03	11.05	0.13	0.10	13.65	0.09	0.08
8.50	0.04	0.03	11.10	0.14	0.11	13.70	0.09	0.08
8.55	0.04	0.03	11.15	0.14	0.11	13.75	0.08	0.08
8.60	0.04	0.03	11.20	0.15	0.12	13.80	0.08	0.08
8.65	0.04	0.03	11.25	0.16	0.13	13.85	0.08	0.07
8.70	0.04	0.03	11.30	0.17	0.13	13.90	0.08	0.07
8.75	0.04	0.03	11.35	0.18	0.14	13.95	0.08	0.07
8.80	0.04	0.03	11.40	0.18	0.14	14.00	0.08	0.07
8.85	0.04	0.03	11.45	0.19	0.15	14.05	0.08	0.07
8.90	0.04	0.03	11.50	0.20	0.16	14.10	0.08	0.07
8.95	0.04	0.03	11.55	0.23	0.20	14.15	0.07	0.07
9.00	0.04	0.03	11.60	0.27	0.21	14.20	0.07	0.07
9.05	0.04	0.03	11.65	0.28	0.23	14.25	0.07	0.06
9.10	0.05	0.03	11.70	0.29	0.23	14.30	0.07	0.06
9.15	0.05	0.03	11.75	0.34	0.29	14.35	0.07	0.06
9.20	0.05	0.03	11.80	0.39	0.32	14.40	0.07	0.06
9.25	0.05	0.04	11.85	0.47	0.41	14.45	0.07	0.06
9.30	0.05	0.04	11.90	0.55	0.46	14.50	0.07	0.06
9.35	0.05	0.04	11.95	0.75	0.68	14.55	0.06	0.06
9.40	0.05	0.04	12.00	0.94	0.80	14.60	0.06	0.06
9.45	0.05	0.04	12.05	1.28	1.17	14.65	0.06	0.06
9.50	0.05	0.04	12.10	**1.58**	**1.34**	14.70	0.06	0.05
9.55	0.06	0.04	12.15	1.13	0.83	14.75	0.06	0.05
9.60	0.06	0.04	12.20	0.66	0.55	14.80	0.06	0.05
9.65	0.06	0.04	12.25	0.51	0.43	14.85	0.06	0.05
9.70	0.06	0.04	12.30	0.43	0.37	14.90	0.06	0.05
9.75	0.06	0.04	12.35	0.36	0.31	14.95	0.05	0.05
9.80	0.06	0.05	12.40	0.31	0.27	15.00	0.05	0.05
9.85	0.06	0.05	12.45	0.30	0.26	15.05	0.05	0.05
9.90	0.06	0.05	12.50	0.29	0.26	15.10	0.05	0.05
9.95	0.07	0.05	12.55	0.25	0.22	15.15	0.05	0.05
10.00	0.07	0.05	12.60	0.22	0.19	15.20	0.05	0.04
10.05	0.07	0.05	12.65	0.21	0.18	15.25	0.05	0.04
10.10	0.07	0.05	12.70	0.20	0.18	15.30	0.05	0.04
10.15	0.07	0.05	12.75	0.19	0.17	15.35	0.05	0.04
10.20	0.07	0.05	12.80	0.18	0.16	15.40	0.05	0.04
10.25	0.07	0.05	12.85	0.18	0.15	15.45	0.05	0.04
10.30	0.07	0.05	12.90	0.17	0.15	15.50	0.05	0.04
10.35	0.08	0.06	12.95	0.16	0.14	15.55	0.05	0.04

2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
15.60	0.05	0.04	18.20	0.03	0.03	20.80	0.02	0.02
15.65	0.05	0.04	18.25	0.03	0.03	20.85	0.02	0.02
15.70	0.05	0.04	18.30	0.03	0.03	20.90	0.02	0.02
15.75	0.05	0.04	18.35	0.03	0.03	20.95	0.02	0.02
15.80	0.05	0.04	18.40	0.03	0.03	21.00	0.02	0.02
15.85	0.04	0.04	18.45	0.03	0.03	21.05	0.02	0.02
15.90	0.04	0.04	18.50	0.03	0.03	21.10	0.02	0.02
15.95	0.04	0.04	18.55	0.03	0.03	21.15	0.02	0.02
16.00	0.04	0.04	18.60	0.03	0.03	21.20	0.02	0.02
16.05	0.04	0.04	18.65	0.03	0.03	21.25	0.02	0.02
16.10	0.04	0.04	18.70	0.03	0.03	21.30	0.02	0.02
16.15	0.04	0.04	18.75	0.03	0.03	21.35	0.02	0.02
16.20	0.04	0.04	18.80	0.03	0.03	21.40	0.02	0.02
16.25	0.04	0.04	18.85	0.03	0.02	21.45	0.02	0.02
16.30	0.04	0.04	18.90	0.03	0.02	21.50	0.02	0.02
16.35	0.04	0.04	18.95	0.03	0.02	21.55	0.02	0.02
16.40	0.04	0.04	19.00	0.03	0.02	21.60	0.02	0.02
16.45	0.04	0.04	19.05	0.03	0.02	21.65	0.02	0.02
16.50	0.04	0.04	19.10	0.03	0.02	21.70	0.02	0.02
16.55	0.04	0.04	19.15	0.03	0.02	21.75	0.02	0.02
16.60	0.04	0.04	19.20	0.03	0.02	21.80	0.02	0.02
16.65	0.04	0.04	19.25	0.03	0.02	21.85	0.02	0.02
16.70	0.04	0.04	19.30	0.03	0.02	21.90	0.02	0.02
16.75	0.04	0.03	19.35	0.03	0.02	21.95	0.02	0.02
16.80	0.04	0.03	19.40	0.03	0.02	22.00	0.02	0.02
16.85	0.04	0.03	19.45	0.03	0.02	22.05	0.02	0.02
16.90	0.04	0.03	19.50	0.03	0.02	22.10	0.02	0.02
16.95	0.04	0.03	19.55	0.03	0.02	22.15	0.02	0.02
17.00	0.04	0.03	19.60	0.03	0.02	22.20	0.02	0.02
17.05	0.04	0.03	19.65	0.03	0.02	22.25	0.02	0.02
17.10	0.04	0.03	19.70	0.03	0.02	22.30	0.02	0.02
17.15	0.04	0.03	19.75	0.03	0.02	22.35	0.02	0.02
17.20	0.04	0.03	19.80	0.03	0.02	22.40	0.02	0.02
17.25	0.03	0.03	19.85	0.03	0.02	22.45	0.02	0.02
17.30	0.03	0.03	19.90	0.03	0.02	22.50	0.02	0.02
17.35	0.03	0.03	19.95	0.03	0.02	22.55	0.02	0.02
17.40	0.03	0.03	20.00	0.03	0.02	22.60	0.02	0.02
17.45	0.03	0.03	20.05	0.03	0.02	22.65	0.02	0.02
17.50	0.03	0.03	20.10	0.03	0.02	22.70	0.02	0.02
17.55	0.03	0.03	20.15	0.03	0.02	22.75	0.02	0.02
17.60	0.03	0.03	20.20	0.02	0.02	22.80	0.02	0.02
17.65	0.03	0.03	20.25	0.02	0.02	22.85	0.02	0.02
17.70	0.03	0.03	20.30	0.02	0.02	22.90	0.02	0.02
17.75	0.03	0.03	20.35	0.02	0.02	22.95	0.02	0.02
17.80	0.03	0.03	20.40	0.02	0.02	23.00	0.02	0.02
17.85	0.03	0.03	20.45	0.02	0.02	23.05	0.02	0.02
17.90	0.03	0.03	20.50	0.02	0.02	23.10	0.02	0.02
17.95	0.03	0.03	20.55	0.02	0.02	23.15	0.02	0.02
18.00	0.03	0.03	20.60	0.02	0.02	23.20	0.02	0.02
18.05	0.03	0.03	20.65	0.02	0.02	23.25	0.02	0.02
18.10	0.03	0.03	20.70	0.02	0.02	23.30	0.02	0.02
18.15	0.03	0.03	20.75	0.02	0.02	23.35	0.02	0.02

Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
23.40	0.02	0.02	26.00	0.00	0.00
23.45	0.02	0.02			
23.50	0.02	0.02			
23.55	0.02	0.02			
23.60	0.02	0.02			
23.65	0.02	0.02			
23.70	0.02	0.02			
23.75	0.02	0.02			
23.80	0.02	0.02			
23.85	0.02	0.02			
23.90	0.02	0.02			
23.95	0.02	0.02			
24.00	0.02	0.02			
24.05	0.01	0.01			
24.10	0.00	0.00			
24.15	0.00	0.00			
24.20	0.00	0.00			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 10S: PR-DA2.1-IMP

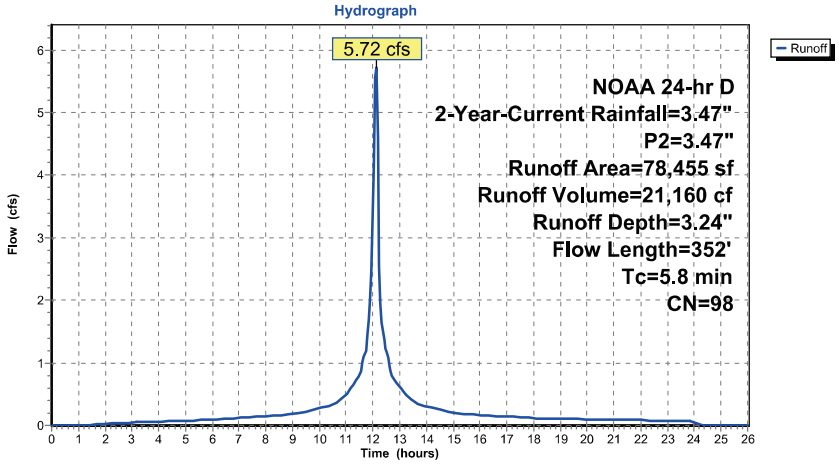
Runoff = 5.72 cfs @ 12.12 hrs, Volume= 21,160 cf, Depth= 3.24"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.84		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
3.4	15	0.0150	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.7	56	0.0220	1.33		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.8	352	Total			

Subcatchment 10S: PR-DA2.1-IMP



Summary for Subcatchment 11S: PR-DA2.1-PER

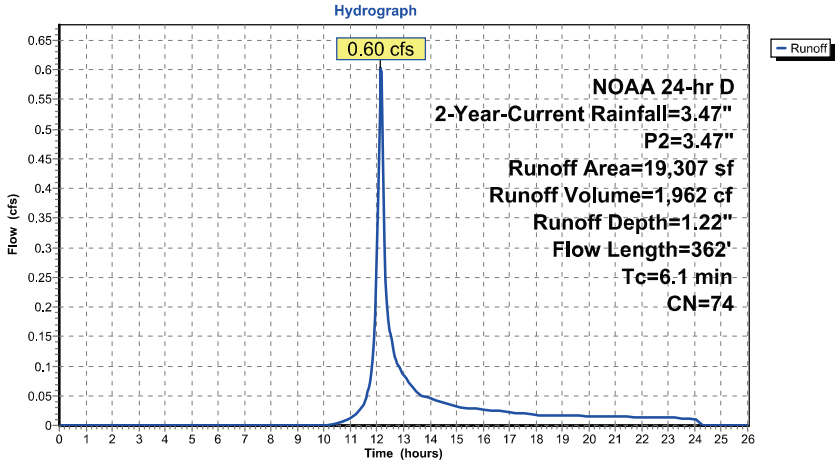
Runoff = 0.60 cfs @ 12.14 hrs, Volume= 1,962 cf, Depth= 1.22"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.4	30	0.0200	1.13		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 3.47"
0.6	33	0.0102	0.88		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
6.1	362	Total			

Subcatchment 11S: PR-DA2.1-PER

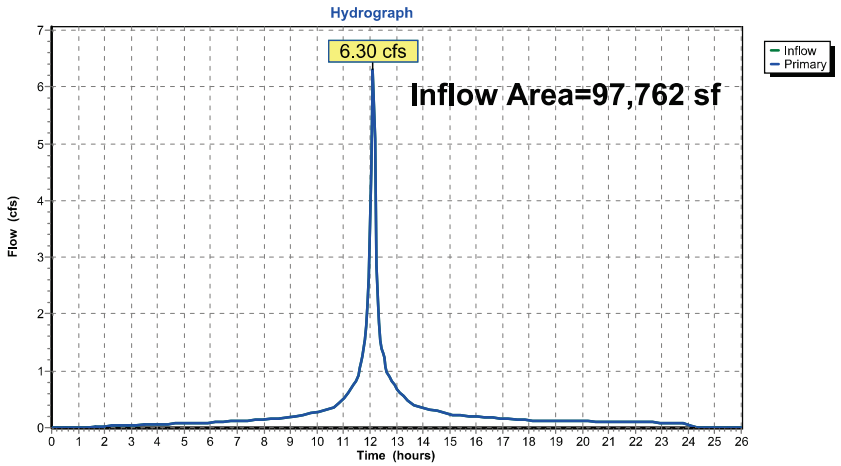


Summary for Link 12L: PR-DA 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 2.84" for 2-Year-Current event
Inflow = 6.30 cfs @ 12.12 hrs, Volume= 23,122 cf
Primary = 6.30 cfs @ 12.12 hrs, Volume= 23,122 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 12L: PR-DA 2.1



Summary for Subcatchment 13S: PR-DA2.2-IMP

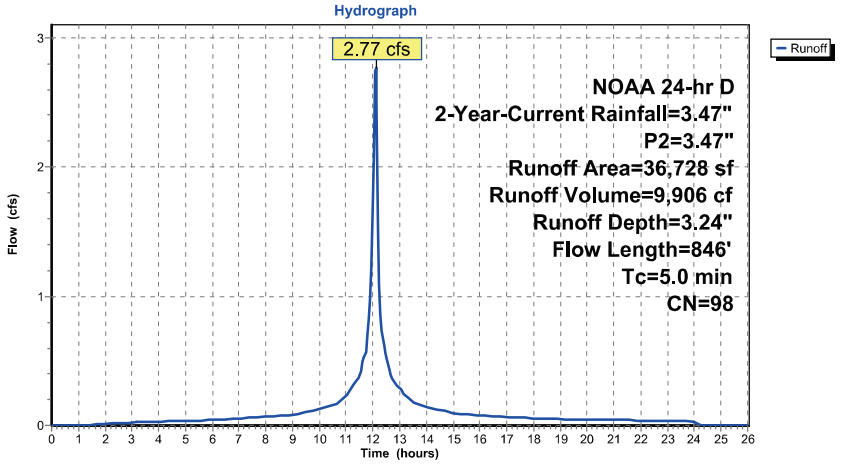
Runoff = 2.77 cfs @ 12.11 hrs, Volume= 9,906 cf, Depth= 3.24"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.90		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
1.3	8	0.0433	0.10		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
5.0	846	Total			

Subcatchment 13S: PR-DA2.2-IMP



Summary for Subcatchment 14S: PR-DA2.2-PER

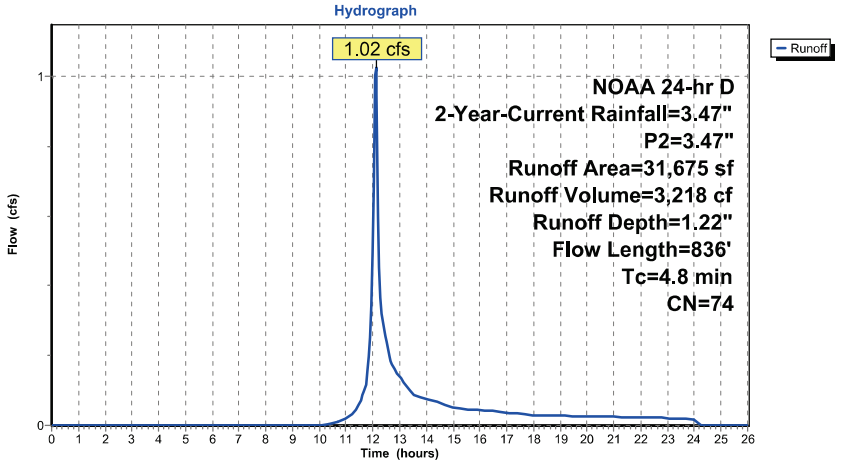
Runoff = 1.02 cfs @ 12.12 hrs, Volume= 3,218 cf, Depth= 1.22"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	8	0.0433	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.8	836	Total			

Subcatchment 14S: PR-DA2.2-PER

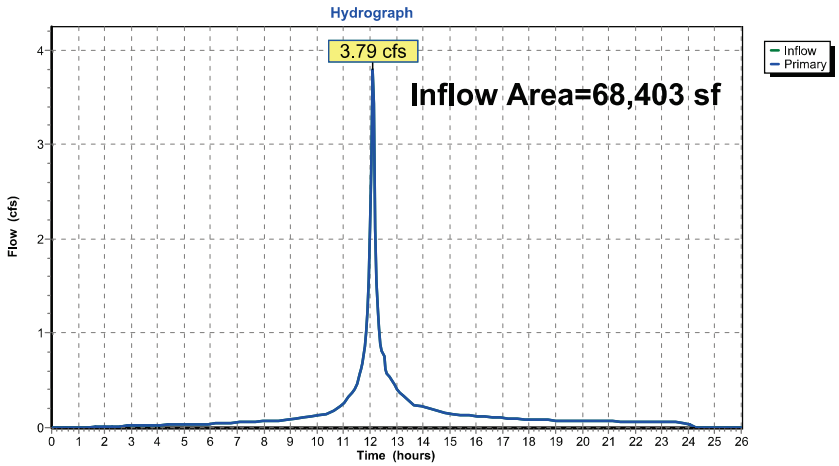


Summary for Link 15L: PR-DA 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 2.30" for 2-Year-Current event
Inflow = 3.79 cfs @ 12.11 hrs, Volume= 13,124 cf
Primary = 3.79 cfs @ 12.11 hrs, Volume= 13,124 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 15L: PR-DA 2.2



Summary for Subcatchment 16S: PR-DA 2 UNDET-IMP

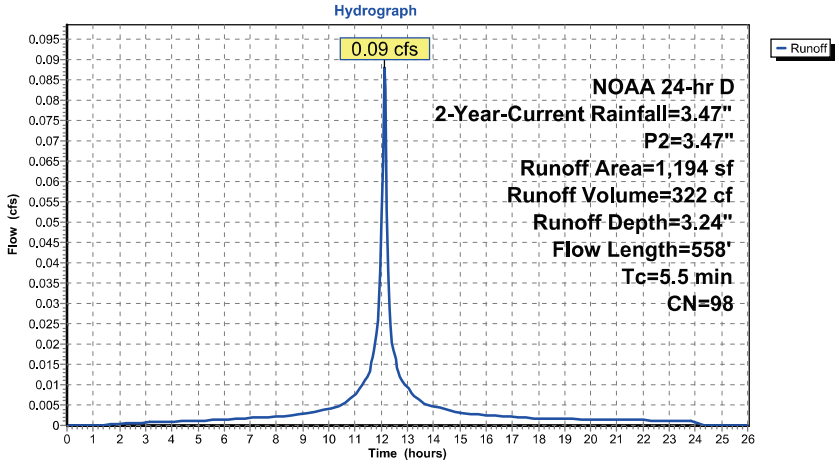
Runoff = 0.09 cfs @ 12.12 hrs, Volume= 322 cf, Depth= 3.24"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
*	1,194	98	IMPERVIOUS
	1,194		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.90		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
3.5	33	0.0650	0.16		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, F-G** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, G-H** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
5.5	558	Total			

Subcatchment 16S: PR-DA 2 UNDET-IMP



Summary for Subcatchment 17S: PR-DA 2 UNDET-PER

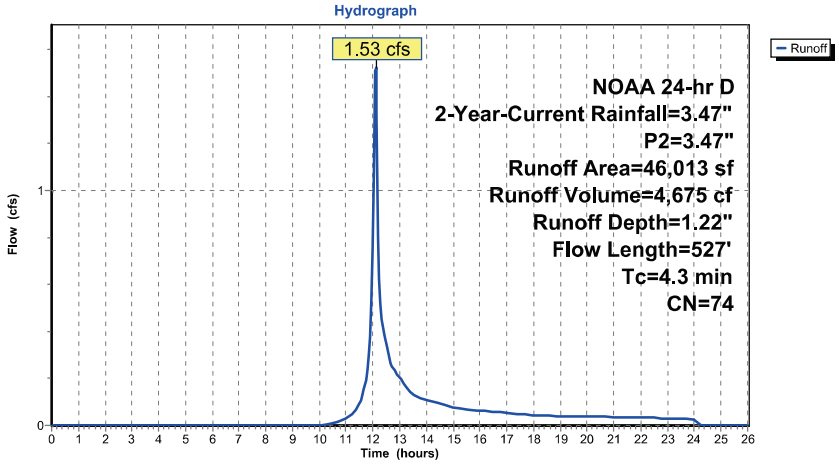
Runoff = 1.53 cfs @ 12.11 hrs, Volume= 4,675 cf, Depth= 1.22"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
46,013	74	>75% Grass cover, Good, HSG C
46,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	12	0.0200	0.08		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, TC-BC** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, TC-DE** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, TC-GH** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, TC-HI** Unpaved Kv= 16.1 fps
4.3	527	Total			

Subcatchment 17S: PR-DA 2 UNDET-PER

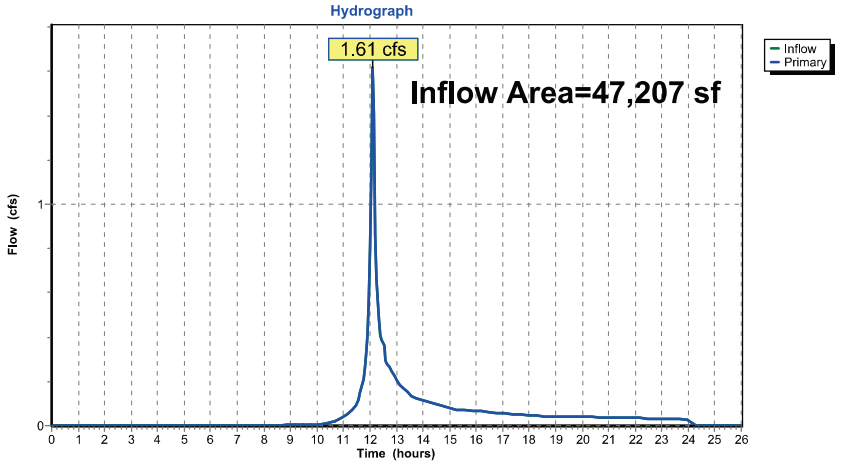


Summary for Link 18L: PR-DA 2 UNDET

Inflow Area = 47,207 sf, 2.53% Impervious, Inflow Depth = 1.27" for 2-Year-Current event
Inflow = 1.61 cfs @ 12.11 hrs, Volume= 4,997 cf
Primary = 1.61 cfs @ 12.11 hrs, Volume= 4,997 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 18L: PR-DA 2 UNDET

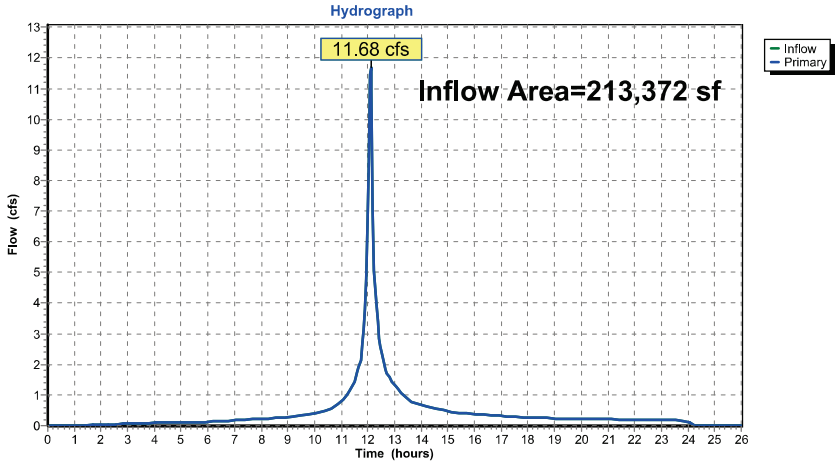


Summary for Link 19L: POA #2

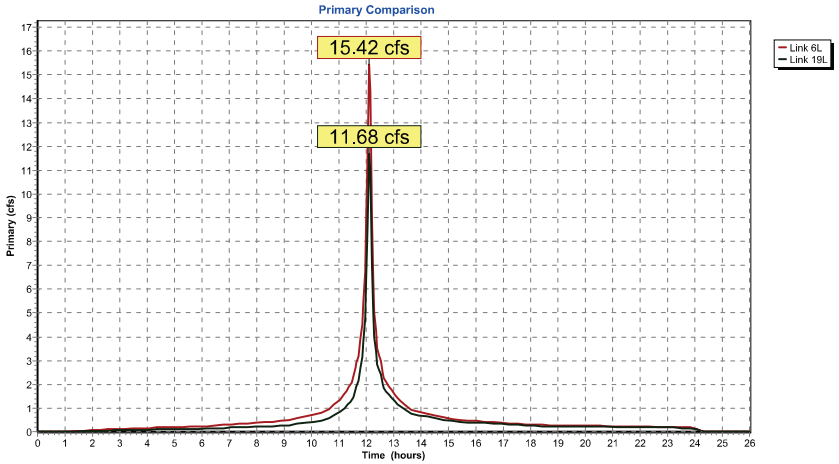
Inflow Area = 213,372 sf, 54.54% Impervious, Inflow Depth = 2.32" for 2-Year-Current event
Inflow = 11.68 cfs @ 12.12 hrs, Volume= 41,244 cf
Primary = 11.68 cfs @ 12.12 hrs, Volume= 41,244 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 19L: POA #2



2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC



Primary Comparison

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
0.00	0.00	0.00	2.60	0.10	0.06	5.20	0.21	0.12
0.05	0.00	0.00	2.65	0.10	0.06	5.25	0.21	0.12
0.10	0.00	0.00	2.70	0.10	0.06	5.30	0.21	0.12
0.15	0.00	0.00	2.75	0.11	0.06	5.35	0.21	0.12
0.20	0.00	0.00	2.80	0.11	0.06	5.40	0.21	0.12
0.25	0.00	0.00	2.85	0.11	0.06	5.45	0.21	0.12
0.30	0.00	0.00	2.90	0.11	0.06	5.50	0.22	0.12
0.35	0.00	0.00	2.95	0.12	0.07	5.55	0.22	0.12
0.40	0.00	0.00	3.00	0.12	0.07	5.60	0.22	0.12
0.45	0.00	0.00	3.05	0.12	0.07	5.65	0.22	0.12
0.50	0.00	0.00	3.10	0.12	0.07	5.70	0.22	0.13
0.55	0.00	0.00	3.15	0.13	0.07	5.75	0.22	0.13
0.60	0.00	0.00	3.20	0.13	0.07	5.80	0.22	0.13
0.65	0.00	0.00	3.25	0.13	0.07	5.85	0.23	0.13
0.70	0.00	0.00	3.30	0.13	0.07	5.90	0.23	0.13
0.75	0.00	0.00	3.35	0.13	0.08	5.95	0.23	0.13
0.80	0.00	0.00	3.40	0.14	0.08	6.00	0.23	0.13
0.85	0.00	0.00	3.45	0.14	0.08	6.05	0.23	0.13
0.90	0.00	0.00	3.50	0.14	0.08	6.10	0.24	0.13
0.95	0.00	0.00	3.55	0.14	0.08	6.15	0.24	0.14
1.00	0.00	0.00	3.60	0.15	0.08	6.20	0.24	0.14
1.05	0.00	0.00	3.65	0.15	0.08	6.25	0.25	0.14
1.10	0.00	0.00	3.70	0.15	0.08	6.30	0.25	0.14
1.15	0.00	0.00	3.75	0.15	0.09	6.35	0.26	0.14
1.20	0.01	0.00	3.80	0.15	0.09	6.40	0.26	0.15
1.25	0.01	0.01	3.85	0.16	0.09	6.45	0.26	0.15
1.30	0.02	0.01	3.90	0.16	0.09	6.50	0.27	0.15
1.35	0.02	0.01	3.95	0.16	0.09	6.55	0.27	0.15
1.40	0.02	0.01	4.00	0.16	0.09	6.60	0.27	0.16
1.45	0.03	0.01	4.05	0.16	0.09	6.65	0.28	0.16
1.50	0.03	0.02	4.10	0.17	0.09	6.70	0.28	0.16
1.55	0.03	0.02	4.15	0.17	0.09	6.75	0.29	0.16
1.60	0.04	0.02	4.20	0.17	0.10	6.80	0.29	0.16
1.65	0.04	0.02	4.25	0.17	0.10	6.85	0.29	0.17
1.70	0.04	0.02	4.30	0.17	0.10	6.90	0.30	0.17
1.75	0.05	0.03	4.35	0.18	0.10	6.95	0.30	0.17
1.80	0.05	0.03	4.40	0.18	0.10	7.00	0.31	0.17
1.85	0.05	0.03	4.45	0.18	0.10	7.05	0.31	0.17
1.90	0.06	0.03	4.50	0.18	0.10	7.10	0.31	0.18
1.95	0.06	0.03	4.55	0.18	0.10	7.15	0.32	0.18
2.00	0.06	0.04	4.60	0.18	0.10	7.20	0.32	0.18
2.05	0.07	0.04	4.65	0.19	0.11	7.25	0.33	0.18
2.10	0.07	0.04	4.70	0.19	0.11	7.30	0.33	0.19
2.15	0.07	0.04	4.75	0.19	0.11	7.35	0.33	0.19
2.20	0.08	0.04	4.80	0.19	0.11	7.40	0.34	0.19
2.25	0.08	0.04	4.85	0.19	0.11	7.45	0.34	0.19
2.30	0.08	0.05	4.90	0.20	0.11	7.50	0.35	0.20
2.35	0.08	0.05	4.95	0.20	0.11	7.55	0.35	0.20
2.40	0.09	0.05	5.00	0.20	0.11	7.60	0.35	0.20
2.45	0.09	0.05	5.05	0.20	0.11	7.65	0.36	0.20
2.50	0.09	0.05	5.10	0.20	0.11	7.70	0.36	0.20
2.55	0.09	0.05	5.15	0.20	0.11	7.75	0.37	0.21

2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
7.80	0.37	0.21	10.40	0.82	0.48	13.00	1.62	1.33
7.85	0.37	0.21	10.45	0.84	0.48	13.05	1.54	1.27
7.90	0.38	0.21	10.50	0.85	0.50	13.10	1.45	1.19
7.95	0.38	0.21	10.55	0.88	0.51	13.15	1.39	1.14
8.00	0.39	0.22	10.60	0.93	0.54	13.20	1.33	1.10
8.05	0.39	0.22	10.65	0.97	0.57	13.25	1.29	1.06
8.10	0.39	0.22	10.70	1.02	0.60	13.30	1.23	1.02
8.15	0.40	0.22	10.75	1.06	0.63	13.35	1.19	0.99
8.20	0.40	0.23	10.80	1.11	0.66	13.40	1.14	0.94
8.25	0.40	0.23	10.85	1.15	0.69	13.45	1.09	0.91
8.30	0.41	0.23	10.90	1.21	0.73	13.50	1.04	0.86
8.35	0.41	0.23	10.95	1.25	0.76	13.55	1.00	0.83
8.40	0.42	0.24	11.00	1.30	0.79	13.60	0.94	0.78
8.45	0.42	0.24	11.05	1.36	0.83	13.65	0.92	0.76
8.50	0.43	0.24	11.10	1.45	0.89	13.70	0.90	0.75
8.55	0.43	0.24	11.15	1.52	0.94	13.75	0.88	0.74
8.60	0.43	0.24	11.20	1.61	1.01	13.80	0.87	0.73
8.65	0.44	0.25	11.25	1.69	1.06	13.85	0.86	0.72
8.70	0.44	0.25	11.30	1.78	1.13	13.90	0.84	0.70
8.75	0.45	0.25	11.35	1.86	1.18	13.95	0.83	0.69
8.80	0.45	0.25	11.40	1.95	1.25	14.00	0.82	0.68
8.85	0.45	0.26	11.45	2.02	1.31	14.05	0.81	0.67
8.90	0.46	0.26	11.50	2.12	1.38	14.10	0.79	0.66
8.95	0.46	0.26	11.55	2.32	1.52	14.15	0.78	0.65
9.00	0.47	0.26	11.60	2.72	1.78	14.20	0.76	0.64
9.05	0.47	0.27	11.65	2.91	1.93	14.25	0.75	0.63
9.10	0.49	0.27	11.70	3.04	2.04	14.30	0.74	0.62
9.15	0.50	0.28	11.75	3.33	2.25	14.35	0.73	0.61
9.20	0.51	0.29	11.80	3.93	2.68	14.40	0.71	0.60
9.25	0.52	0.29	11.85	4.53	3.13	14.45	0.70	0.59
9.30	0.54	0.30	11.90	5.46	3.80	14.50	0.68	0.58
9.35	0.55	0.31	11.95	6.75	4.79	14.55	0.67	0.57
9.40	0.56	0.32	12.00	9.05	6.52	14.60	0.66	0.55
9.45	0.57	0.32	12.05	11.47	8.46	14.65	0.65	0.54
9.50	0.59	0.33	12.10	**15.21**	**11.46**	14.70	0.63	0.53
9.55	0.60	0.34	12.15	14.31	10.96	14.75	0.62	0.52
9.60	0.61	0.35	12.20	9.03	7.03	14.80	0.61	0.51
9.65	0.63	0.35	12.25	6.44	5.06	14.85	0.59	0.50
9.70	0.64	0.36	12.30	5.01	3.97	14.90	0.58	0.49
9.75	0.65	0.37	12.35	4.26	3.39	14.95	0.57	0.48
9.80	0.67	0.38	12.40	3.54	2.83	15.00	0.55	0.47
9.85	0.68	0.38	12.45	3.23	2.59	15.05	0.54	0.46
9.90	0.69	0.39	12.50	3.08	2.48	15.10	0.53	0.44
9.95	0.70	0.40	12.55	2.87	2.31	15.15	0.52	0.44
10.00	0.72	0.41	12.60	2.46	1.99	15.20	0.51	0.43
10.05	0.73	0.41	12.65	2.26	1.83	15.25	0.51	0.43
10.10	0.75	0.42	12.70	2.14	1.74	15.30	0.51	0.43
10.15	0.76	0.43	12.75	2.05	1.67	15.35	0.50	0.43
10.20	0.77	0.44	12.80	1.96	1.60	15.40	0.50	0.42
10.25	0.78	0.45	12.85	1.88	1.54	15.45	0.50	0.42
10.30	0.80	0.46	12.90	1.79	1.46	15.50	0.49	0.42
10.35	0.81	0.47	12.95	1.71	1.40	15.55	0.49	0.41

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
15.60	0.48	0.41	18.20	0.29	0.25	20.80	0.24	0.21
15.65	0.48	0.41	18.25	0.29	0.25	20.85	0.24	0.21
15.70	0.48	0.40	18.30	0.29	0.25	20.90	0.24	0.21
15.75	0.47	0.40	18.35	0.29	0.25	20.95	0.24	0.21
15.80	0.47	0.40	18.40	0.29	0.25	21.00	0.24	0.21
15.85	0.46	0.39	18.45	0.29	0.25	21.05	0.24	0.21
15.90	0.46	0.39	18.50	0.29	0.25	21.10	0.24	0.21
15.95	0.46	0.39	18.55	0.29	0.25	21.15	0.24	0.21
16.00	0.45	0.39	18.60	0.29	0.25	21.20	0.24	0.21
16.05	0.45	0.38	18.65	0.28	0.25	21.25	0.24	0.20
16.10	0.45	0.38	18.70	0.28	0.24	21.30	0.23	0.20
16.15	0.44	0.38	18.75	0.28	0.24	21.35	0.23	0.20
16.20	0.44	0.37	18.80	0.28	0.24	21.40	0.23	0.20
16.25	0.43	0.37	18.85	0.28	0.24	21.45	0.23	0.20
16.30	0.43	0.37	18.90	0.28	0.24	21.50	0.23	0.20
16.35	0.43	0.36	18.95	0.28	0.24	21.55	0.23	0.20
16.40	0.42	0.36	19.00	0.28	0.24	21.60	0.23	0.20
16.45	0.42	0.36	19.05	0.28	0.24	21.65	0.23	0.20
16.50	0.42	0.35	19.10	0.28	0.24	21.70	0.23	0.20
16.55	0.41	0.35	19.15	0.28	0.24	21.75	0.23	0.20
16.60	0.41	0.35	19.20	0.27	0.24	21.80	0.23	0.20
16.65	0.41	0.35	19.25	0.27	0.24	21.85	0.23	0.20
16.70	0.40	0.34	19.30	0.27	0.24	21.90	0.22	0.19
16.75	0.40	0.34	19.35	0.27	0.23	21.95	0.22	0.19
16.80	0.39	0.34	19.40	0.27	0.23	22.00	0.22	0.19
16.85	0.39	0.33	19.45	0.27	0.23	22.05	0.22	0.19
16.90	0.39	0.33	19.50	0.27	0.23	22.10	0.22	0.19
16.95	0.38	0.33	19.55	0.27	0.23	22.15	0.22	0.19
17.00	0.38	0.32	19.60	0.27	0.23	22.20	0.22	0.19
17.05	0.38	0.32	19.65	0.27	0.23	22.25	0.22	0.19
17.10	0.37	0.32	19.70	0.27	0.23	22.30	0.22	0.19
17.15	0.37	0.31	19.75	0.26	0.23	22.35	0.22	0.19
17.20	0.36	0.31	19.80	0.26	0.23	22.40	0.21	0.19
17.25	0.36	0.31	19.85	0.26	0.23	22.45	0.21	0.19
17.30	0.36	0.30	19.90	0.26	0.23	22.50	0.21	0.18
17.35	0.35	0.30	19.95	0.26	0.22	22.55	0.21	0.18
17.40	0.35	0.30	20.00	0.26	0.22	22.60	0.21	0.18
17.45	0.35	0.30	20.05	0.26	0.22	22.65	0.21	0.18
17.50	0.34	0.29	20.10	0.26	0.22	22.70	0.21	0.18
17.55	0.34	0.29	20.15	0.26	0.22	22.75	0.21	0.18
17.60	0.33	0.29	20.20	0.26	0.22	22.80	0.21	0.18
17.65	0.33	0.28	20.25	0.25	0.22	22.85	0.21	0.18
17.70	0.33	0.28	20.30	0.25	0.22	22.90	0.21	0.18
17.75	0.32	0.28	20.35	0.25	0.22	22.95	0.20	0.18
17.80	0.32	0.27	20.40	0.25	0.22	23.00	0.20	0.18
17.85	0.32	0.27	20.45	0.25	0.22	23.05	0.20	0.18
17.90	0.31	0.27	20.50	0.25	0.22	23.10	0.20	0.18
17.95	0.31	0.26	20.55	0.25	0.22	23.15	0.20	0.18
18.00	0.30	0.26	20.60	0.25	0.22	23.20	0.20	0.17
18.05	0.30	0.26	20.65	0.25	0.21	23.25	0.20	0.17
18.10	0.30	0.25	20.70	0.25	0.21	23.30	0.20	0.17
18.15	0.29	0.25	20.75	0.25	0.21	23.35	0.20	0.17

2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Current Rainfall=3.47", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
23.40	0.20	0.17	26.00	0.00	0.00
23.45	0.19	0.17			
23.50	0.19	0.17			
23.55	0.19	0.17			
23.60	0.19	0.17			
23.65	0.19	0.17			
23.70	0.19	0.17			
23.75	0.19	0.17			
23.80	0.19	0.16			
23.85	0.19	0.16			
23.90	0.19	0.16			
23.95	0.19	0.16			
24.00	0.19	0.16			
24.05	0.15	0.12			
24.10	0.05	0.04			
24.15	0.01	0.01			
24.20	0.00	0.00			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 1S: EX-DA1-IMP

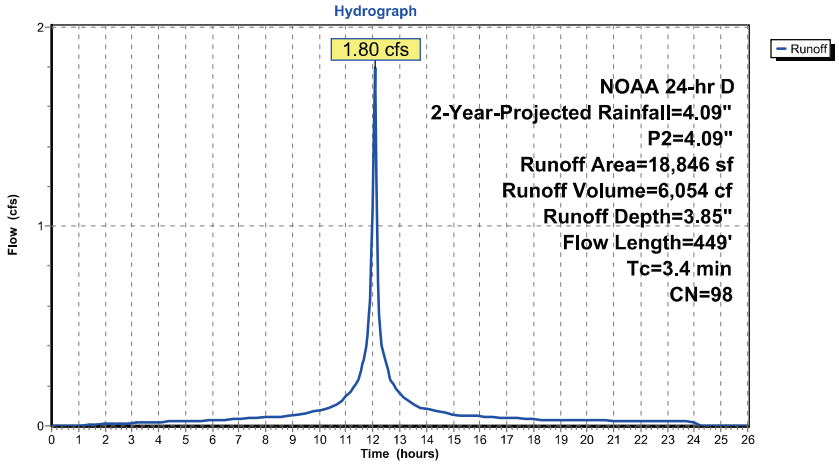
Runoff = 1.80 cfs @ 12.09 hrs, Volume= 6,054 cf, Depth= 3.85"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
*	18,142	98	IMPERVIOUS
*	704	98	BUILDINGS
	18,846	98	Weighted Average
	18,846		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0216	1.60		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 4.09"
2.4	349	0.0139	2.39		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
3.4	449	Total			

Subcatchment 1S: EX-DA1-IMP



Summary for Subcatchment 2S: EX-DA1-PER

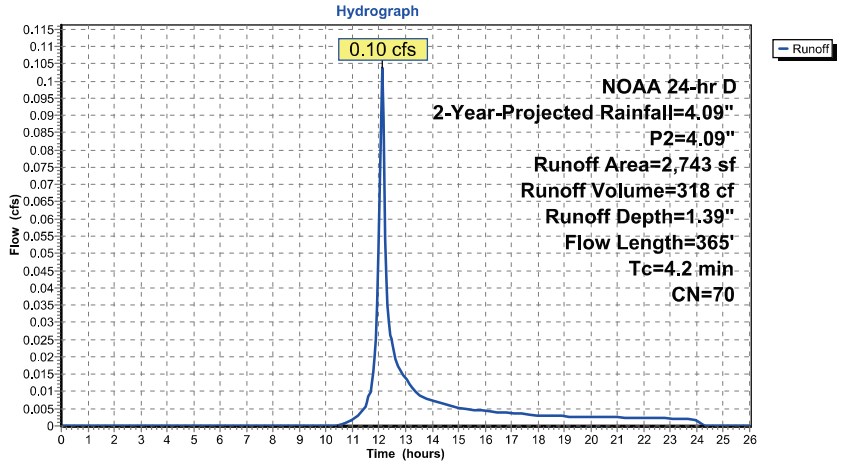
Runoff = 0.10 cfs @ 12.11 hrs, Volume= 318 cf, Depth= 1.39"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
	2,743	70	Woods, Good, HSG C
	2,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	7	0.0364	0.10		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
1.2	93	0.0130	1.29		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 4.09"
1.8	265	0.0139	2.39		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
4.2	365	Total			

Subcatchment 2S: EX-DA1-PER

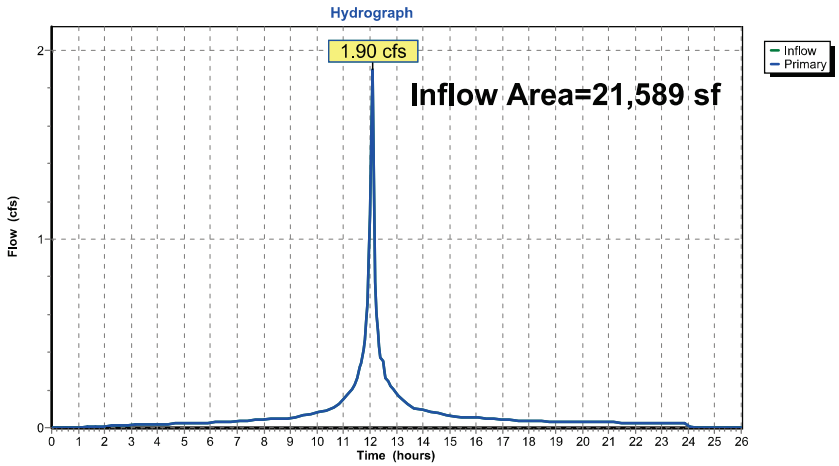


Summary for Link 3L: POA #1

Inflow Area = 21,589 sf, 87.29% Impervious, Inflow Depth = 3.54" for 2-Year-Projected event
Inflow = 1.90 cfs @ 12.09 hrs, Volume= 6,372 cf
Primary = 1.90 cfs @ 12.09 hrs, Volume= 6,372 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 3L: POA #1



Summary for Subcatchment 4S: EX-DA2-IMP

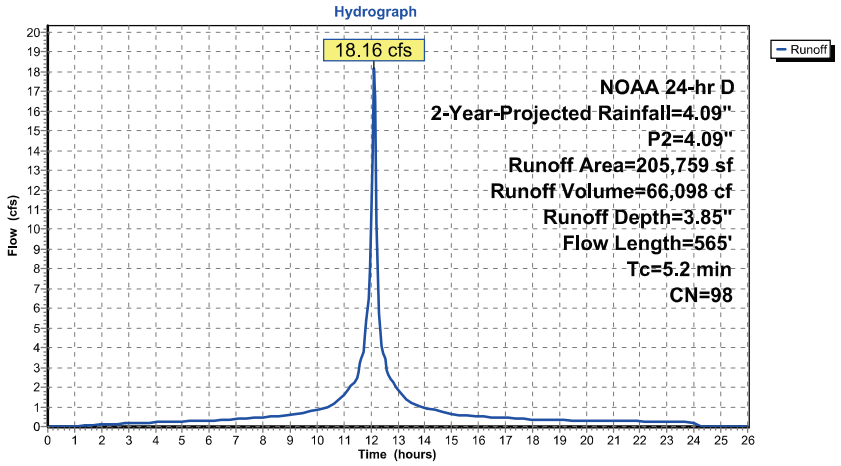
Runoff = 18.16 cfs @ 12.11 hrs, Volume= 66,098 cf, Depth= 3.85"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
*	195,091	98	IMPERVIOUS
*	10,668	98	BUILDING
	205,759	98	Weighted Average
	205,759		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0130	1.31		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 4.09"
2.2	230	0.0075	1.76		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
1.7	235	0.0130	2.31		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
5.2	565	Total			

Subcatchment 4S: EX-DA2-IMP



Summary for Subcatchment 5S: EX-DA2-PER

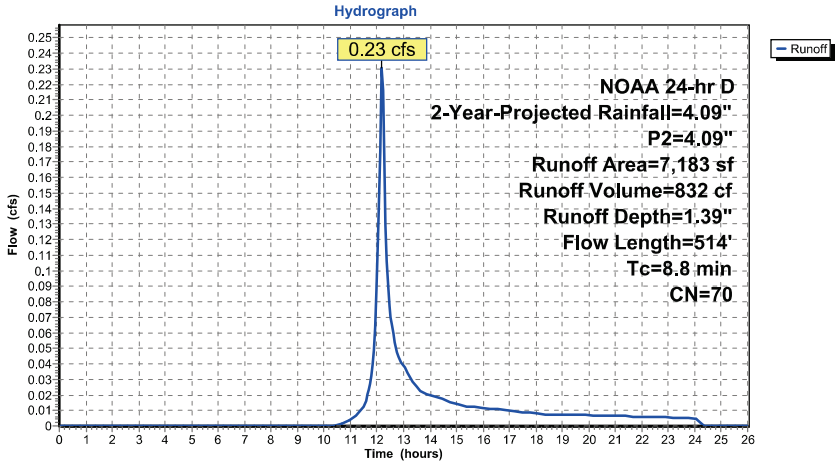
Runoff = 0.23 cfs @ 12.17 hrs, Volume= 832 cf, Depth= 1.39"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

Area (sf)	CN	Description
7,183	70	Woods, Good, HSG C
7,183		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	54	0.0500	0.17		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
0.7	45	0.0100	1.00		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 4.09"
2.8	415	0.0150	2.49		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
8.8	514	Total			

Subcatchment 5S: EX-DA2-PER

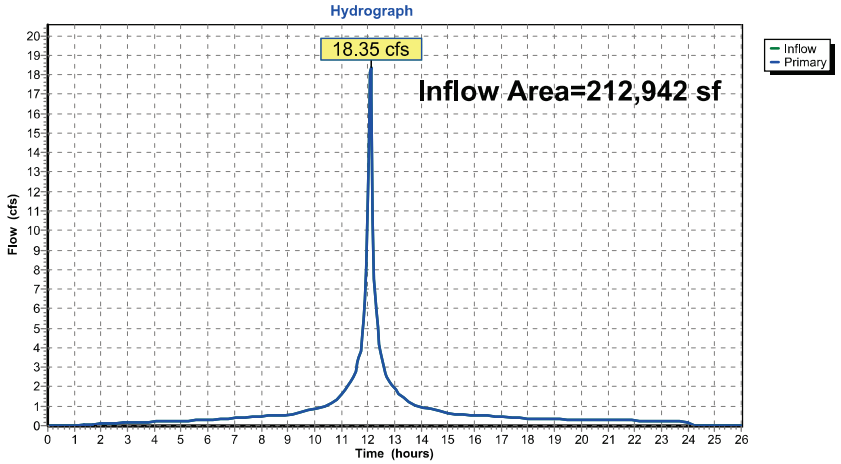


Summary for Link 6L: POA #2

Inflow Area = 212,942 sf, 96.63% Impervious, Inflow Depth = 3.77" for 2-Year-Projected event
Inflow = 18.35 cfs @ 12.11 hrs, Volume= 66,930 cf
Primary = 18.35 cfs @ 12.11 hrs, Volume= 66,930 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 6L: POA #2



Summary for Subcatchment 7S: PR-DA1-IMP

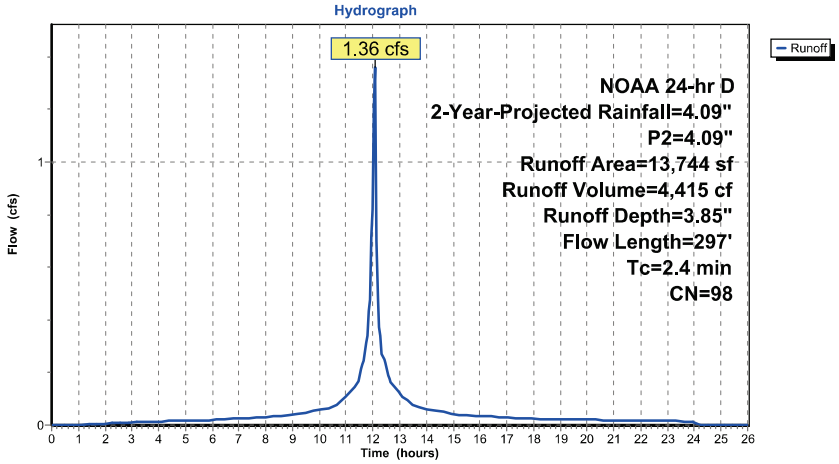
Runoff = 1.36 cfs @ 12.08 hrs, Volume= 4,415 cf, Depth= 3.85"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
*	13,744	98	IMPERVIOUS
	13,744		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0125	1.29		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 4.09"
1.0	174	0.0196	2.84		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
0.1	23	0.0100	5.70	7.00	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
2.4	297	Total			

Subcatchment 7S: PR-DA1-IMP



Summary for Subcatchment 8S: PR-DA1-PER

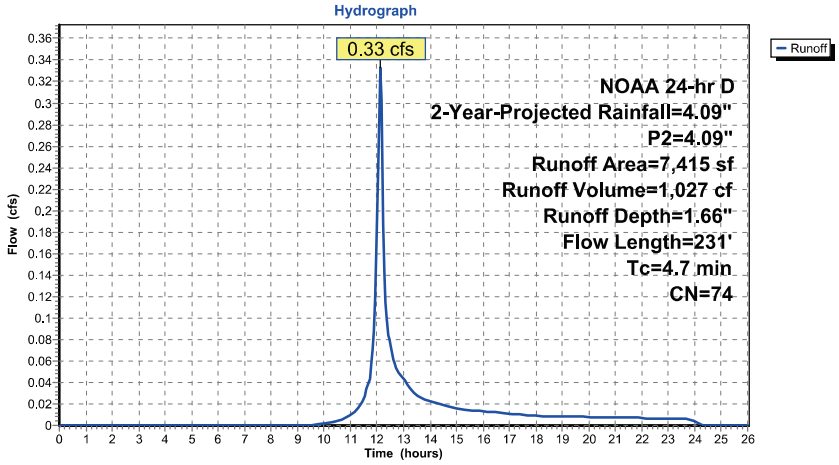
Runoff = 0.33 cfs @ 12.11 hrs, Volume= 1,027 cf, Depth= 1.66"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

Area (sf)	CN	Description
7,415	74	>75% Grass cover, Good, HSG C
7,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	33	0.0692	0.17		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
0.1	8	0.0518	1.37		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 4.09"
0.7	59	0.0180	1.34		**Sheet Flow, TC-CD** Smooth surfaces n= 0.011 P2= 4.09"
0.5	80	0.0180	2.72		**Shallow Concentrated Flow, TC-DE** Paved Kv= 20.3 fps
0.1	29	0.0100	5.70	7.00	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	22	0.0104	5.82	7.14	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
4.7	231	Total			

Subcatchment 8S: PR-DA1-PER

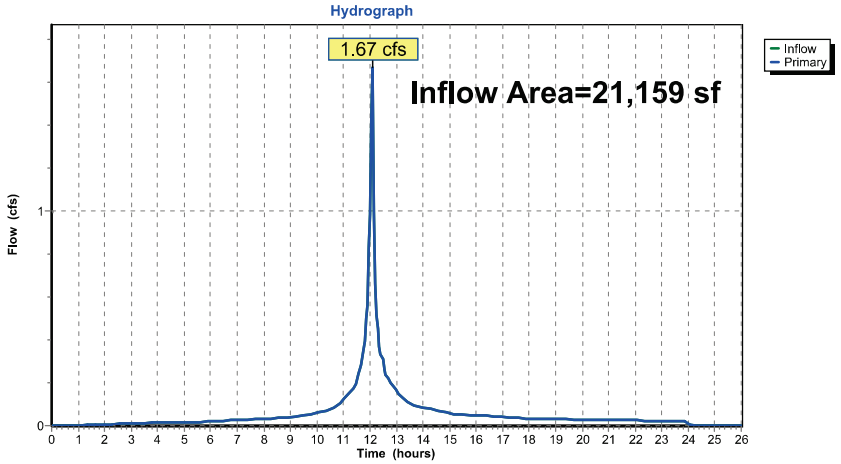


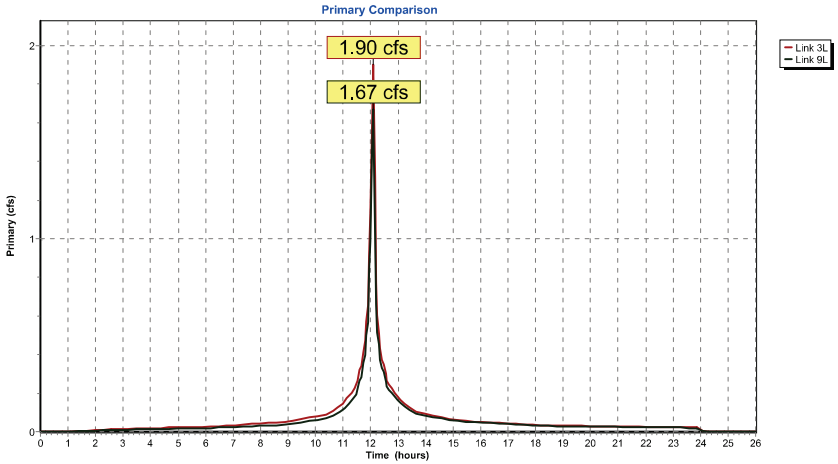
Summary for Link 9L: POA #1

Inflow Area = 21,159 sf, 64.96% Impervious, Inflow Depth = 3.09" for 2-Year-Projected event
Inflow = 1.67 cfs @ 12.09 hrs, Volume= 5,443 cf
Primary = 1.67 cfs @ 12.09 hrs, Volume= 5,443 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 9L: POA #1





2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
0.00	0.00	0.00	2.60	0.01	0.01	5.20	0.02	0.02
0.05	0.00	0.00	2.65	0.01	0.01	5.25	0.02	0.02
0.10	0.00	0.00	2.70	0.01	0.01	5.30	0.02	0.02
0.15	0.00	0.00	2.75	0.01	0.01	5.35	0.02	0.02
0.20	0.00	0.00	2.80	0.01	0.01	5.40	0.02	0.02
0.25	0.00	0.00	2.85	0.01	0.01	5.45	0.02	0.02
0.30	0.00	0.00	2.90	0.01	0.01	5.50	0.02	0.02
0.35	0.00	0.00	2.95	0.01	0.01	5.55	0.02	0.02
0.40	0.00	0.00	3.00	0.01	0.01	5.60	0.02	0.02
0.45	0.00	0.00	3.05	0.01	0.01	5.65	0.03	0.02
0.50	0.00	0.00	3.10	0.02	0.01	5.70	0.03	0.02
0.55	0.00	0.00	3.15	0.02	0.01	5.75	0.03	0.02
0.60	0.00	0.00	3.20	0.02	0.01	5.80	0.03	0.02
0.65	0.00	0.00	3.25	0.02	0.01	5.85	0.03	0.02
0.70	0.00	0.00	3.30	0.02	0.01	5.90	0.03	0.02
0.75	0.00	0.00	3.35	0.02	0.01	5.95	0.03	0.02
0.80	0.00	0.00	3.40	0.02	0.01	6.00	0.03	0.02
0.85	0.00	0.00	3.45	0.02	0.01	6.05	0.03	0.02
0.90	0.00	0.00	3.50	0.02	0.01	6.10	0.03	0.02
0.95	0.00	0.00	3.55	0.02	0.01	6.15	0.03	0.02
1.00	0.00	0.00	3.60	0.02	0.01	6.20	0.03	0.02
1.05	0.00	0.00	3.65	0.02	0.01	6.25	0.03	0.02
1.10	0.00	0.00	3.70	0.02	0.01	6.30	0.03	0.02
1.15	0.00	0.00	3.75	0.02	0.01	6.35	0.03	0.02
1.20	0.00	0.00	3.80	0.02	0.01	6.40	0.03	0.02
1.25	0.00	0.00	3.85	0.02	0.01	6.45	0.03	0.02
1.30	0.00	0.00	3.90	0.02	0.01	6.50	0.03	0.02
1.35	0.00	0.00	3.95	0.02	0.01	6.55	0.03	0.02
1.40	0.00	0.00	4.00	0.02	0.01	6.60	0.03	0.02
1.45	0.00	0.00	4.05	0.02	0.01	6.65	0.03	0.02
1.50	0.01	0.00	4.10	0.02	0.01	6.70	0.03	0.02
1.55	0.01	0.00	4.15	0.02	0.01	6.75	0.03	0.02
1.60	0.01	0.00	4.20	0.02	0.01	6.80	0.03	0.02
1.65	0.01	0.00	4.25	0.02	0.01	6.85	0.03	0.02
1.70	0.01	0.00	4.30	0.02	0.01	6.90	0.03	0.02
1.75	0.01	0.01	4.35	0.02	0.02	6.95	0.03	0.03
1.80	0.01	0.01	4.40	0.02	0.02	7.00	0.03	0.03
1.85	0.01	0.01	4.45	0.02	0.02	7.05	0.03	0.03
1.90	0.01	0.01	4.50	0.02	0.02	7.10	0.04	0.03
1.95	0.01	0.01	4.55	0.02	0.02	7.15	0.04	0.03
2.00	0.01	0.01	4.60	0.02	0.02	7.20	0.04	0.03
2.05	0.01	0.01	4.65	0.02	0.02	7.25	0.04	0.03
2.10	0.01	0.01	4.70	0.02	0.02	7.30	0.04	0.03
2.15	0.01	0.01	4.75	0.02	0.02	7.35	0.04	0.03
2.20	0.01	0.01	4.80	0.02	0.02	7.40	0.04	0.03
2.25	0.01	0.01	4.85	0.02	0.02	7.45	0.04	0.03
2.30	0.01	0.01	4.90	0.02	0.02	7.50	0.04	0.03
2.35	0.01	0.01	4.95	0.02	0.02	7.55	0.04	0.03
2.40	0.01	0.01	5.00	0.02	0.02	7.60	0.04	0.03
2.45	0.01	0.01	5.05	0.02	0.02	7.65	0.04	0.03
2.50	0.01	0.01	5.10	0.02	0.02	7.70	0.04	0.03
2.55	0.01	0.01	5.15	0.02	0.02	7.75	0.04	0.03

Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
7.80	0.04	0.03	10.40	0.09	0.07	13.00	0.18	0.16
7.85	0.04	0.03	10.45	0.09	0.07	13.05	0.17	0.15
7.90	0.04	0.03	10.50	0.09	0.07	13.10	0.16	0.15
7.95	0.04	0.03	10.55	0.10	0.08	13.15	0.16	0.14
8.00	0.04	0.03	10.60	0.10	0.08	13.20	0.15	0.14
8.05	0.04	0.03	10.65	0.11	0.09	13.25	0.14	0.13
8.10	0.04	0.03	10.70	0.11	0.09	13.30	0.14	0.13
8.15	0.04	0.03	10.75	0.12	0.10	13.35	0.13	0.12
8.20	0.04	0.03	10.80	0.12	0.10	13.40	0.13	0.12
8.25	0.05	0.03	10.85	0.13	0.10	13.45	0.12	0.11
8.30	0.05	0.03	10.90	0.14	0.11	13.50	0.12	0.11
8.35	0.05	0.03	10.95	0.14	0.11	13.55	0.11	0.10
8.40	0.05	0.03	11.00	0.15	0.12	13.60	0.11	0.10
8.45	0.05	0.03	11.05	0.16	0.13	13.65	0.10	0.09
8.50	0.05	0.03	11.10	0.16	0.13	13.70	0.10	0.09
8.55	0.05	0.03	11.15	0.17	0.14	13.75	0.10	0.09
8.60	0.05	0.04	11.20	0.18	0.15	13.80	0.10	0.09
8.65	0.05	0.04	11.25	0.19	0.16	13.85	0.10	0.09
8.70	0.05	0.04	11.30	0.20	0.16	13.90	0.10	0.09
8.75	0.05	0.04	11.35	0.21	0.17	13.95	0.09	0.09
8.80	0.05	0.04	11.40	0.22	0.18	14.00	0.09	0.09
8.85	0.05	0.04	11.45	0.23	0.19	14.05	0.09	0.08
8.90	0.05	0.04	11.50	0.24	0.20	14.10	0.09	0.08
8.95	0.05	0.04	11.55	0.28	0.24	14.15	0.09	0.08
9.00	0.05	0.04	11.60	0.32	0.26	14.20	0.09	0.08
9.05	0.05	0.04	11.65	0.33	0.28	14.25	0.09	0.08
9.10	0.05	0.04	11.70	0.34	0.29	14.30	0.08	0.08
9.15	0.06	0.04	11.75	0.41	0.36	14.35	0.08	0.08
9.20	0.06	0.04	11.80	0.47	0.40	14.40	0.08	0.07
9.25	0.06	0.04	11.85	0.57	0.50	14.45	0.08	0.07
9.30	0.06	0.04	11.90	0.66	0.56	14.50	0.08	0.07
9.35	0.06	0.05	11.95	0.91	0.83	14.55	0.08	0.07
9.40	0.06	0.05	12.00	1.13	0.99	14.60	0.08	0.07
9.45	0.06	0.05	12.05	1.55	1.44	14.65	0.07	0.07
9.50	0.07	0.05	12.10	**1.89**	**1.64**	14.70	0.07	0.07
9.55	0.07	0.05	12.15	1.32	1.00	14.75	0.07	0.06
9.60	0.07	0.05	12.20	0.77	0.66	14.80	0.07	0.06
9.65	0.07	0.05	12.25	0.60	0.51	14.85	0.07	0.06
9.70	0.07	0.05	12.30	0.51	0.45	14.90	0.07	0.06
9.75	0.07	0.05	12.35	0.43	0.37	14.95	0.06	0.06
9.80	0.07	0.06	12.40	0.37	0.33	15.00	0.06	0.06
9.85	0.08	0.06	12.45	0.36	0.32	15.05	0.06	0.06
9.90	0.08	0.06	12.50	0.35	0.31	15.10	0.06	0.06
9.95	0.08	0.06	12.55	0.30	0.26	15.15	0.06	0.05
10.00	0.08	0.06	12.60	0.26	0.24	15.20	0.06	0.05
10.05	0.08	0.06	12.65	0.25	0.22	15.25	0.06	0.05
10.10	0.08	0.06	12.70	0.24	0.22	15.30	0.06	0.05
10.15	0.08	0.06	12.75	0.23	0.20	15.35	0.06	0.05
10.20	0.09	0.06	12.80	0.22	0.20	15.40	0.06	0.05
10.25	0.09	0.07	12.85	0.21	0.19	15.45	0.06	0.05
10.30	0.09	0.07	12.90	0.20	0.18	15.50	0.06	0.05
10.35	0.09	0.07	12.95	0.19	0.17	15.55	0.06	0.05

2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
15.60	0.06	0.05	18.20	0.03	0.03	20.80	0.03	0.03
15.65	0.06	0.05	18.25	0.03	0.03	20.85	0.03	0.03
15.70	0.05	0.05	18.30	0.03	0.03	20.90	0.03	0.03
15.75	0.05	0.05	18.35	0.03	0.03	20.95	0.03	0.03
15.80	0.05	0.05	18.40	0.03	0.03	21.00	0.03	0.03
15.85	0.05	0.05	18.45	0.03	0.03	21.05	0.03	0.03
15.90	0.05	0.05	18.50	0.03	0.03	21.10	0.03	0.03
15.95	0.05	0.05	18.55	0.03	0.03	21.15	0.03	0.03
16.00	0.05	0.05	18.60	0.03	0.03	21.20	0.03	0.03
16.05	0.05	0.05	18.65	0.03	0.03	21.25	0.03	0.03
16.10	0.05	0.05	18.70	0.03	0.03	21.30	0.03	0.03
16.15	0.05	0.05	18.75	0.03	0.03	21.35	0.03	0.03
16.20	0.05	0.05	18.80	0.03	0.03	21.40	0.03	0.03
16.25	0.05	0.05	18.85	0.03	0.03	21.45	0.03	0.02
16.30	0.05	0.05	18.90	0.03	0.03	21.50	0.03	0.02
16.35	0.05	0.05	18.95	0.03	0.03	21.55	0.03	0.02
16.40	0.05	0.04	19.00	0.03	0.03	21.60	0.03	0.02
16.45	0.05	0.04	19.05	0.03	0.03	21.65	0.03	0.02
16.50	0.05	0.04	19.10	0.03	0.03	21.70	0.03	0.02
16.55	0.05	0.04	19.15	0.03	0.03	21.75	0.03	0.02
16.60	0.05	0.04	19.20	0.03	0.03	21.80	0.03	0.02
16.65	0.05	0.04	19.25	0.03	0.03	21.85	0.03	0.02
16.70	0.05	0.04	19.30	0.03	0.03	21.90	0.03	0.02
16.75	0.05	0.04	19.35	0.03	0.03	21.95	0.03	0.02
16.80	0.05	0.04	19.40	0.03	0.03	22.00	0.03	0.02
16.85	0.04	0.04	19.45	0.03	0.03	22.05	0.03	0.02
16.90	0.04	0.04	19.50	0.03	0.03	22.10	0.03	0.02
16.95	0.04	0.04	19.55	0.03	0.03	22.15	0.03	0.02
17.00	0.04	0.04	19.60	0.03	0.03	22.20	0.03	0.02
17.05	0.04	0.04	19.65	0.03	0.03	22.25	0.03	0.02
17.10	0.04	0.04	19.70	0.03	0.03	22.30	0.03	0.02
17.15	0.04	0.04	19.75	0.03	0.03	22.35	0.02	0.02
17.20	0.04	0.04	19.80	0.03	0.03	22.40	0.02	0.02
17.25	0.04	0.04	19.85	0.03	0.03	22.45	0.02	0.02
17.30	0.04	0.04	19.90	0.03	0.03	22.50	0.02	0.02
17.35	0.04	0.04	19.95	0.03	0.03	22.55	0.02	0.02
17.40	0.04	0.04	20.00	0.03	0.03	22.60	0.02	0.02
17.45	0.04	0.04	20.05	0.03	0.03	22.65	0.02	0.02
17.50	0.04	0.04	20.10	0.03	0.03	22.70	0.02	0.02
17.55	0.04	0.04	20.15	0.03	0.03	22.75	0.02	0.02
17.60	0.04	0.04	20.20	0.03	0.03	22.80	0.02	0.02
17.65	0.04	0.03	20.25	0.03	0.03	22.85	0.02	0.02
17.70	0.04	0.03	20.30	0.03	0.03	22.90	0.02	0.02
17.75	0.04	0.03	20.35	0.03	0.03	22.95	0.02	0.02
17.80	0.04	0.03	20.40	0.03	0.03	23.00	0.02	0.02
17.85	0.04	0.03	20.45	0.03	0.03	23.05	0.02	0.02
17.90	0.04	0.03	20.50	0.03	0.03	23.10	0.02	0.02
17.95	0.04	0.03	20.55	0.03	0.03	23.15	0.02	0.02
18.00	0.04	0.03	20.60	0.03	0.03	23.20	0.02	0.02
18.05	0.03	0.03	20.65	0.03	0.03	23.25	0.02	0.02
18.10	0.03	0.03	20.70	0.03	0.03	23.30	0.02	0.02
18.15	0.03	0.03	20.75	0.03	0.03	23.35	0.02	0.02

Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
23.40	0.02	0.02	26.00	0.00	0.00
23.45	0.02	0.02			
23.50	0.02	0.02			
23.55	0.02	0.02			
23.60	0.02	0.02			
23.65	0.02	0.02			
23.70	0.02	0.02			
23.75	0.02	0.02			
23.80	0.02	0.02			
23.85	0.02	0.02			
23.90	0.02	0.02			
23.95	0.02	0.02			
24.00	0.02	0.02			
24.05	0.01	0.01			
24.10	0.00	0.00			
24.15	0.00	0.00			
24.20	0.00	0.00			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 10S: PR-DA2.1-IMP

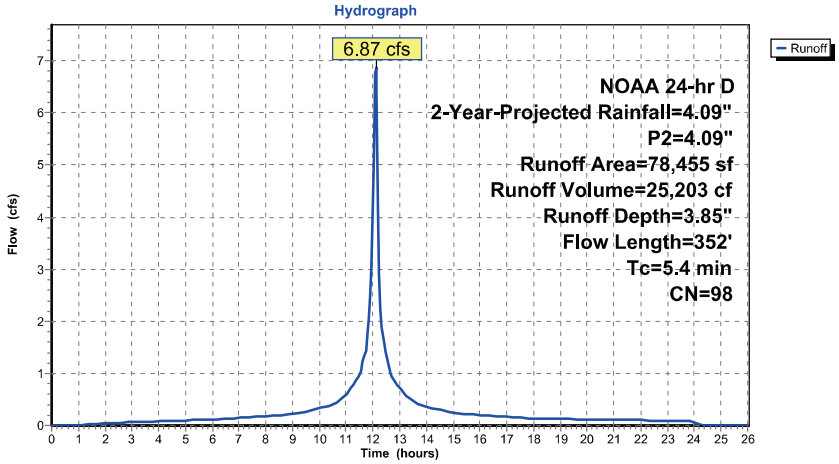
Runoff = 6.87 cfs @ 12.12 hrs, Volume= 25,203 cf, Depth= 3.85"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.91		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
3.1	15	0.0150	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.6	56	0.0220	1.44		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.4	352	Total			

Subcatchment 10S: PR-DA2.1-IMP



Summary for Subcatchment 11S: PR-DA2.1-PER

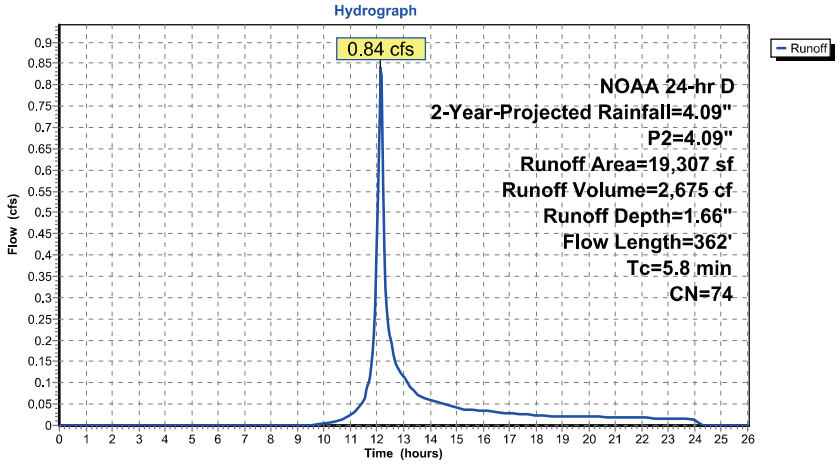
Runoff = 0.84 cfs @ 12.13 hrs, Volume= 2,675 cf, Depth= 1.66"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.4	30	0.0200	1.22		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 4.09"
0.6	33	0.0102	0.95		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
5.8	362	Total			

Subcatchment 11S: PR-DA2.1-PER

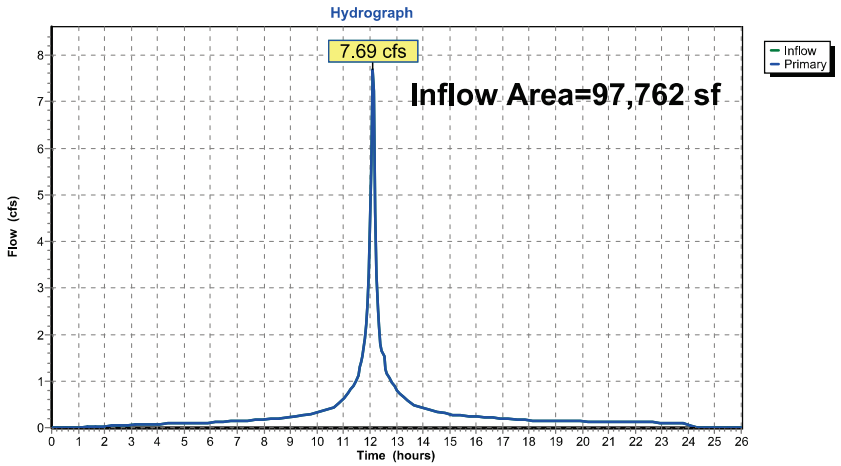


Summary for Link 12L: PR-DA 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 3.42" for 2-Year-Projected event
Inflow = 7.69 cfs @ 12.12 hrs, Volume= 27,878 cf
Primary = 7.69 cfs @ 12.12 hrs, Volume= 27,878 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 12L: PR-DA 2.1



Summary for Subcatchment 13S: PR-DA2.2-IMP

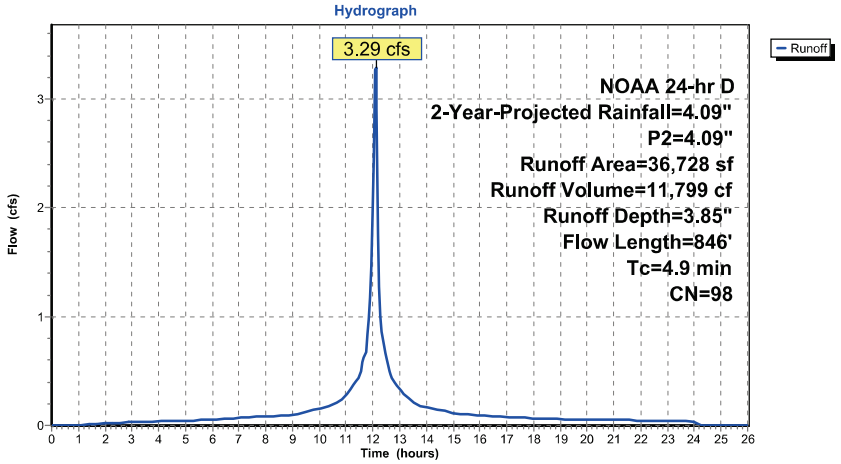
Runoff = 3.29 cfs @ 12.11 hrs, Volume= 11,799 cf, Depth= 3.85"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.98		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
1.2	8	0.0433	0.11		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
4.9	846	Total			

Subcatchment 13S: PR-DA2.2-IMP



Summary for Subcatchment 14S: PR-DA2.2-PER

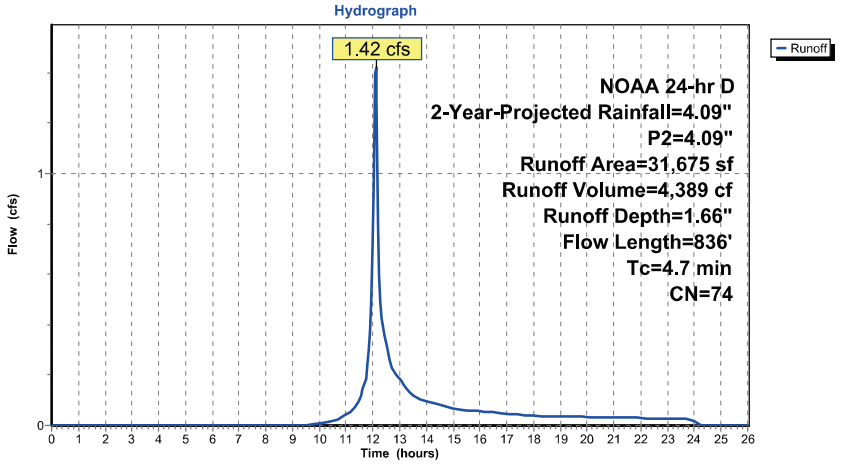
Runoff = 1.42 cfs @ 12.11 hrs, Volume= 4,389 cf, Depth= 1.66"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	8	0.0433	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.7	836	Total			

Subcatchment 14S: PR-DA2.2-PER

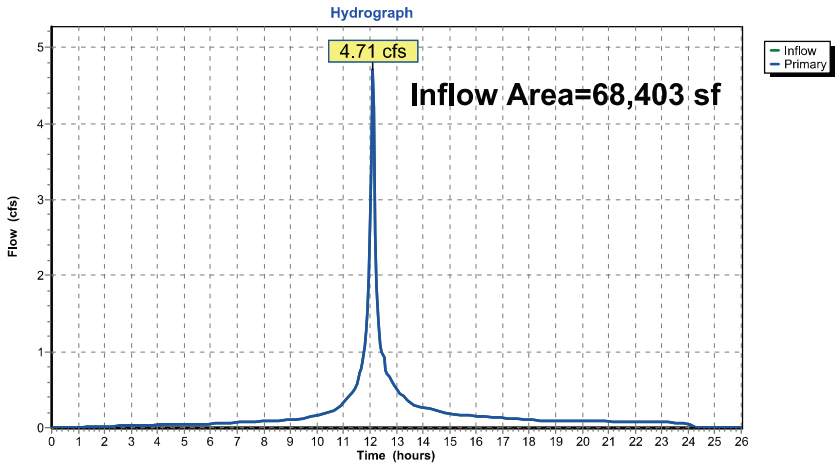


Summary for Link 15L: PR-DA 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 2.84" for 2-Year-Projected event
Inflow = 4.71 cfs @ 12.11 hrs, Volume= 16,187 cf
Primary = 4.71 cfs @ 12.11 hrs, Volume= 16,187 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 15L: PR-DA 2.2



Summary for Subcatchment 16S: PR-DA 2 UNDET-IMP

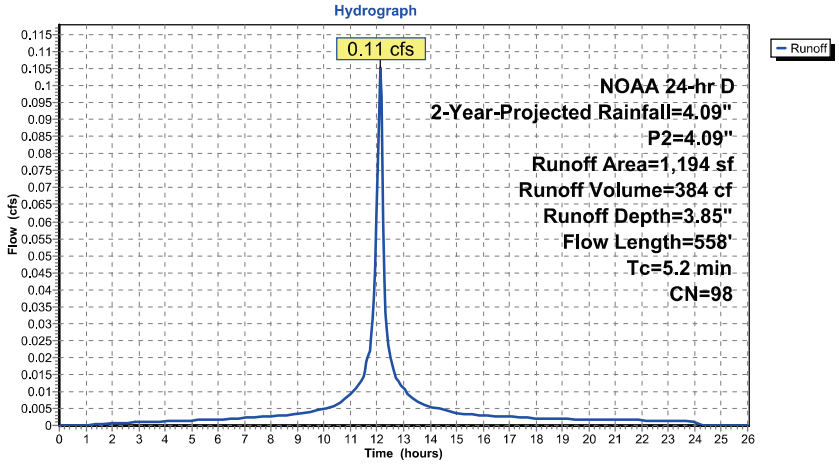
Runoff = 0.11 cfs @ 12.11 hrs, Volume= 384 cf, Depth= 3.85"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
*	1,194	98	IMPERVIOUS
	1,194		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.98		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
3.2	33	0.0650	0.17		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, F-G** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, G-H** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
5.2	558	Total			

Subcatchment 16S: PR-DA 2 UNDET-IMP



Summary for Subcatchment 17S: PR-DA 2 UNDET-PER

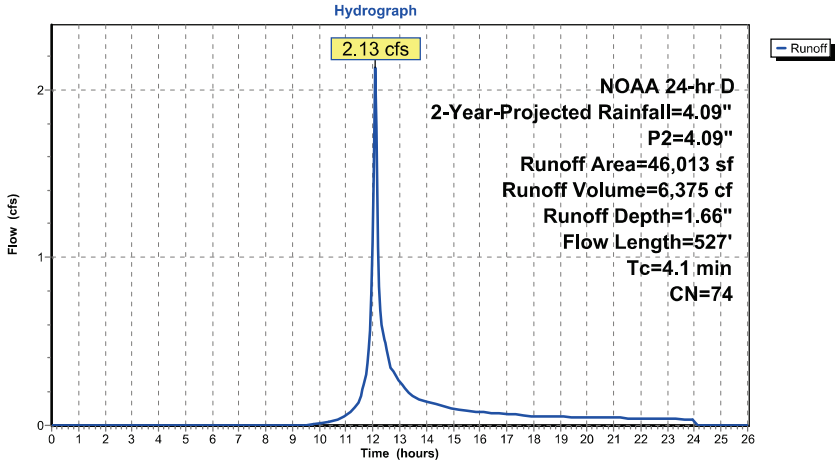
Runoff = 2.13 cfs @ 12.11 hrs, Volume= 6,375 cf, Depth= 1.66"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"

Area (sf)	CN	Description
46,013	74	>75% Grass cover, Good, HSG C
46,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	12	0.0200	0.09		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, TC-BC** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, TC-DE** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, TC-GH** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, TC-HI** Unpaved Kv= 16.1 fps
4.1	527	Total			

Subcatchment 17S: PR-DA 2 UNDET-PER

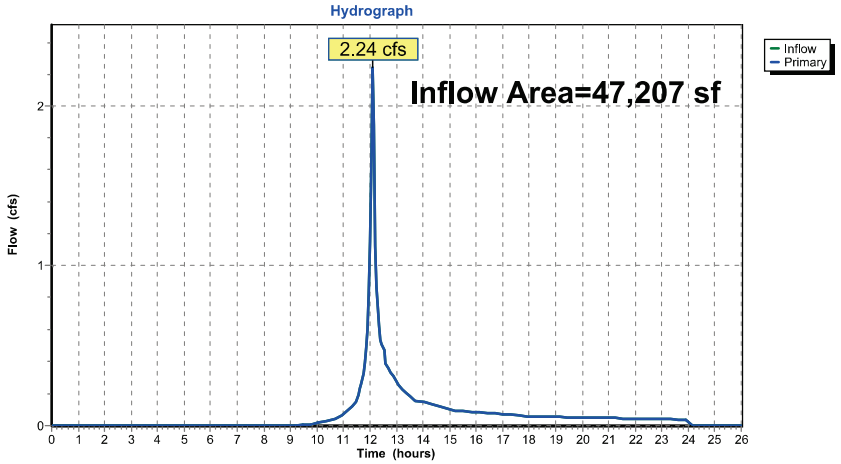


Summary for Link 18L: PR-DA 2 UNDET

Inflow Area = 47,207 sf, 2.53% Impervious, Inflow Depth = 1.72" for 2-Year-Projected event
Inflow = 2.24 cfs @ 12.11 hrs, Volume= 6,759 cf
Primary = 2.24 cfs @ 12.11 hrs, Volume= 6,759 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 18L: PR-DA 2 UNDET

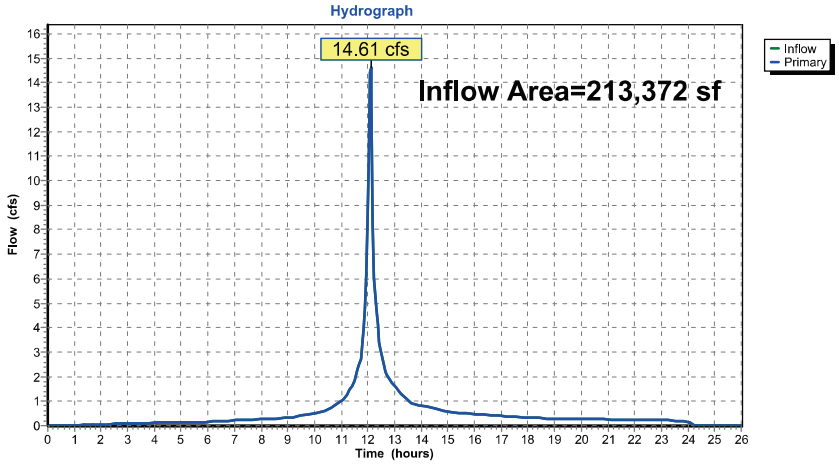


Summary for Link 19L: POA #2

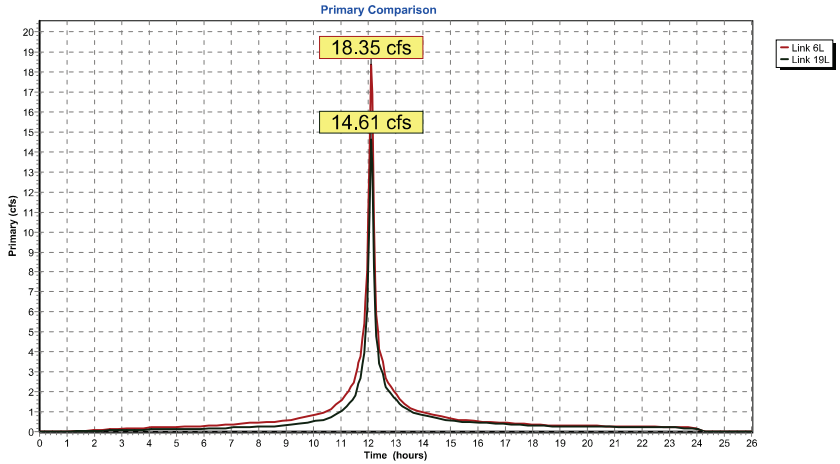
Inflow Area = 213,372 sf, 54.54% Impervious, Inflow Depth = 2.86" for 2-Year-Projected event
Inflow = 14.61 cfs @ 12.11 hrs, Volume= 50,824 cf
Primary = 14.61 cfs @ 12.11 hrs, Volume= 50,824 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 19L: POA #2



2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC



Primary Comparison

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
0.00	0.00	0.00	2.60	0.13	0.08	5.20	0.26	0.15
0.05	0.00	0.00	2.65	0.14	0.08	5.25	0.26	0.15
0.10	0.00	0.00	2.70	0.14	0.08	5.30	0.26	0.15
0.15	0.00	0.00	2.75	0.14	0.08	5.35	0.26	0.15
0.20	0.00	0.00	2.80	0.15	0.08	5.40	0.26	0.15
0.25	0.00	0.00	2.85	0.15	0.08	5.45	0.27	0.15
0.30	0.00	0.00	2.90	0.15	0.09	5.50	0.27	0.15
0.35	0.00	0.00	2.95	0.16	0.09	5.55	0.27	0.15
0.40	0.00	0.00	3.00	0.16	0.09	5.60	0.27	0.15
0.45	0.00	0.00	3.05	0.16	0.09	5.65	0.27	0.15
0.50	0.00	0.00	3.10	0.16	0.09	5.70	0.28	0.16
0.55	0.00	0.00	3.15	0.17	0.09	5.75	0.28	0.16
0.60	0.00	0.00	3.20	0.17	0.10	5.80	0.28	0.16
0.65	0.00	0.00	3.25	0.17	0.10	5.85	0.28	0.16
0.70	0.00	0.00	3.30	0.17	0.10	5.90	0.28	0.16
0.75	0.00	0.00	3.35	0.18	0.10	5.95	0.28	0.16
0.80	0.00	0.00	3.40	0.18	0.10	6.00	0.29	0.16
0.85	0.00	0.00	3.45	0.18	0.10	6.05	0.29	0.16
0.90	0.00	0.00	3.50	0.19	0.10	6.10	0.29	0.17
0.95	0.00	0.00	3.55	0.19	0.11	6.15	0.30	0.17
1.00	0.01	0.00	3.60	0.19	0.11	6.20	0.30	0.17
1.05	0.01	0.01	3.65	0.19	0.11	6.25	0.31	0.17
1.10	0.02	0.01	3.70	0.19	0.11	6.30	0.31	0.18
1.15	0.02	0.01	3.75	0.20	0.11	6.35	0.32	0.18
1.20	0.03	0.01	3.80	0.20	0.11	6.40	0.32	0.18
1.25	0.03	0.02	3.85	0.20	0.11	6.45	0.32	0.18
1.30	0.04	0.02	3.90	0.20	0.12	6.50	0.33	0.19
1.35	0.04	0.02	3.95	0.21	0.12	6.55	0.33	0.19
1.40	0.04	0.03	4.00	0.21	0.12	6.60	0.34	0.19
1.45	0.05	0.03	4.05	0.21	0.12	6.65	0.34	0.19
1.50	0.05	0.03	4.10	0.21	0.12	6.70	0.35	0.20
1.55	0.06	0.03	4.15	0.21	0.12	6.75	0.35	0.20
1.60	0.06	0.04	4.20	0.22	0.12	6.80	0.36	0.20
1.65	0.07	0.04	4.25	0.22	0.12	6.85	0.36	0.20
1.70	0.07	0.04	4.30	0.22	0.12	6.90	0.36	0.21
1.75	0.07	0.04	4.35	0.22	0.13	6.95	0.37	0.21
1.80	0.08	0.04	4.40	0.23	0.13	7.00	0.37	0.21
1.85	0.08	0.05	4.45	0.23	0.13	7.05	0.38	0.21
1.90	0.09	0.05	4.50	0.23	0.13	7.10	0.38	0.22
1.95	0.09	0.05	4.55	0.23	0.13	7.15	0.39	0.22
2.00	0.09	0.05	4.60	0.23	0.13	7.20	0.39	0.22
2.05	0.10	0.06	4.65	0.24	0.13	7.25	0.40	0.22
2.10	0.10	0.06	4.70	0.24	0.13	7.30	0.40	0.23
2.15	0.10	0.06	4.75	0.24	0.14	7.35	0.41	0.23
2.20	0.11	0.06	4.80	0.24	0.14	7.40	0.41	0.23
2.25	0.11	0.06	4.85	0.24	0.14	7.45	0.42	0.24
2.30	0.12	0.07	4.90	0.25	0.14	7.50	0.42	0.24
2.35	0.12	0.07	4.95	0.25	0.14	7.55	0.42	0.24
2.40	0.12	0.07	5.00	0.25	0.14	7.60	0.43	0.24
2.45	0.12	0.07	5.05	0.25	0.14	7.65	0.43	0.25
2.50	0.13	0.07	5.10	0.25	0.14	7.70	0.44	0.25
2.55	0.13	0.07	5.15	0.25	0.14	7.75	0.44	0.25

2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
7.80	0.45	0.25	10.40	0.99	0.60	13.00	1.91	1.62
7.85	0.45	0.26	10.45	1.00	0.61	13.05	1.82	1.54
7.90	0.46	0.26	10.50	1.02	0.63	13.10	1.71	1.45
7.95	0.46	0.26	10.55	1.05	0.65	13.15	1.64	1.39
8.00	0.47	0.26	10.60	1.11	0.69	13.20	1.57	1.34
8.05	0.47	0.27	10.65	1.16	0.72	13.25	1.52	1.30
8.10	0.48	0.27	10.70	1.22	0.76	13.30	1.46	1.24
8.15	0.48	0.27	10.75	1.27	0.80	13.35	1.41	1.20
8.20	0.49	0.27	10.80	1.33	0.84	13.40	1.34	1.15
8.25	0.49	0.28	10.85	1.38	0.88	13.45	1.29	1.10
8.30	0.49	0.28	10.90	1.44	0.92	13.50	1.23	1.05
8.35	0.50	0.28	10.95	1.49	0.96	13.55	1.18	1.01
8.40	0.51	0.29	11.00	1.55	1.00	13.60	1.11	0.95
8.45	0.51	0.29	11.05	1.62	1.05	13.65	1.08	0.93
8.50	0.51	0.29	11.10	1.73	1.13	13.70	1.06	0.91
8.55	0.52	0.29	11.15	1.82	1.19	13.75	1.05	0.90
8.60	0.52	0.30	11.20	1.93	1.27	13.80	1.03	0.88
8.65	0.53	0.30	11.25	2.01	1.34	13.85	1.01	0.87
8.70	0.53	0.30	11.30	2.13	1.42	13.90	1.00	0.86
8.75	0.54	0.30	11.35	2.21	1.49	13.95	0.98	0.85
8.80	0.54	0.31	11.40	2.33	1.57	14.00	0.97	0.83
8.85	0.55	0.31	11.45	2.41	1.64	14.05	0.95	0.82
8.90	0.55	0.31	11.50	2.53	1.73	14.10	0.93	0.81
8.95	0.55	0.31	11.55	2.77	1.92	14.15	0.92	0.79
9.00	0.56	0.32	11.60	3.24	2.26	14.20	0.90	0.78
9.05	0.57	0.32	11.65	3.47	2.43	14.25	0.89	0.77
9.10	0.59	0.33	11.70	3.61	2.55	14.30	0.87	0.75
9.15	0.60	0.34	11.75	3.97	2.84	14.35	0.86	0.74
9.20	0.61	0.35	11.80	4.69	3.39	14.40	0.84	0.73
9.25	0.63	0.36	11.85	5.41	3.96	14.45	0.83	0.71
9.30	0.65	0.37	11.90	6.51	4.80	14.50	0.81	0.70
9.35	0.66	0.37	11.95	8.07	6.09	14.55	0.80	0.69
9.40	0.68	0.38	12.00	10.82	8.26	14.60	0.78	0.67
9.45	0.69	0.39	12.05	13.72	10.74	14.65	0.76	0.66
9.50	0.71	0.40	12.10	**18.13**	**14.44**	14.70	0.75	0.65
9.55	0.72	0.41	12.15	16.89	13.31	14.75	0.73	0.64
9.60	0.74	0.42	12.20	10.52	8.30	14.80	0.72	0.62
9.65	0.75	0.43	12.25	7.54	6.03	14.85	0.70	0.61
9.70	0.77	0.44	12.30	5.88	4.77	14.90	0.68	0.59
9.75	0.78	0.45	12.35	5.01	4.09	14.95	0.67	0.58
9.80	0.80	0.46	12.40	4.17	3.42	15.00	0.65	0.57
9.85	0.81	0.47	12.45	3.82	3.16	15.05	0.64	0.56
9.90	0.83	0.49	12.50	3.64	3.03	15.10	0.62	0.54
9.95	0.84	0.50	12.55	3.38	2.81	15.15	0.61	0.53
10.00	0.86	0.51	12.60	2.90	2.41	15.20	0.61	0.53
10.05	0.87	0.52	12.65	2.67	2.23	15.25	0.60	0.52
10.10	0.89	0.53	12.70	2.52	2.12	15.30	0.60	0.52
10.15	0.91	0.54	12.75	2.43	2.04	15.35	0.59	0.52
10.20	0.92	0.55	12.80	2.31	1.95	15.40	0.59	0.51
10.25	0.94	0.56	12.85	2.22	1.87	15.45	0.59	0.51
10.30	0.95	0.58	12.90	2.11	1.78	15.50	0.58	0.51
10.35	0.97	0.59	12.95	2.02	1.71	15.55	0.58	0.50

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
15.60	0.57	0.50	18.20	0.35	0.31	20.80	0.29	0.26
15.65	0.57	0.49	18.25	0.35	0.30	20.85	0.29	0.26
15.70	0.56	0.49	18.30	0.34	0.30	20.90	0.29	0.25
15.75	0.56	0.49	18.35	0.34	0.30	20.95	0.29	0.25
15.80	0.55	0.48	18.40	0.34	0.30	21.00	0.28	0.25
15.85	0.55	0.48	18.45	0.34	0.30	21.05	0.28	0.25
15.90	0.54	0.48	18.50	0.34	0.30	21.10	0.28	0.25
15.95	0.54	0.47	18.55	0.34	0.30	21.15	0.28	0.25
16.00	0.54	0.47	18.60	0.34	0.30	21.20	0.28	0.25
16.05	0.53	0.47	18.65	0.34	0.30	21.25	0.28	0.25
16.10	0.53	0.46	18.70	0.33	0.30	21.30	0.28	0.25
16.15	0.52	0.46	18.75	0.33	0.30	21.35	0.28	0.25
16.20	0.52	0.45	18.80	0.33	0.30	21.40	0.28	0.25
16.25	0.51	0.45	18.85	0.33	0.29	21.45	0.28	0.25
16.30	0.51	0.45	18.90	0.33	0.29	21.50	0.27	0.24
16.35	0.51	0.44	18.95	0.33	0.29	21.55	0.27	0.24
16.40	0.50	0.44	19.00	0.33	0.29	21.60	0.27	0.24
16.45	0.50	0.44	19.05	0.33	0.29	21.65	0.27	0.24
16.50	0.49	0.43	19.10	0.33	0.29	21.70	0.27	0.24
16.55	0.49	0.43	19.15	0.33	0.29	21.75	0.27	0.24
16.60	0.48	0.42	19.20	0.32	0.29	21.80	0.27	0.24
16.65	0.48	0.42	19.25	0.32	0.29	21.85	0.27	0.24
16.70	0.47	0.42	19.30	0.32	0.29	21.90	0.27	0.24
16.75	0.47	0.41	19.35	0.32	0.28	21.95	0.26	0.24
16.80	0.47	0.41	19.40	0.32	0.28	22.00	0.26	0.23
16.85	0.46	0.41	19.45	0.32	0.28	22.05	0.26	0.23
16.90	0.46	0.40	19.50	0.32	0.28	22.10	0.26	0.23
16.95	0.45	0.40	19.55	0.32	0.28	22.15	0.26	0.23
17.00	0.45	0.39	19.60	0.32	0.28	22.20	0.26	0.23
17.05	0.44	0.39	19.65	0.31	0.28	22.25	0.26	0.23
17.10	0.44	0.39	19.70	0.31	0.28	22.30	0.26	0.23
17.15	0.44	0.38	19.75	0.31	0.28	22.35	0.25	0.23
17.20	0.43	0.38	19.80	0.31	0.28	22.40	0.25	0.23
17.25	0.43	0.37	19.85	0.31	0.27	22.45	0.25	0.22
17.30	0.42	0.37	19.90	0.31	0.27	22.50	0.25	0.22
17.35	0.42	0.37	19.95	0.31	0.27	22.55	0.25	0.22
17.40	0.41	0.36	20.00	0.31	0.27	22.60	0.25	0.22
17.45	0.41	0.36	20.05	0.31	0.27	22.65	0.25	0.22
17.50	0.40	0.36	20.10	0.30	0.27	22.70	0.25	0.22
17.55	0.40	0.35	20.15	0.30	0.27	22.75	0.25	0.22
17.60	0.39	0.35	20.20	0.30	0.27	22.80	0.25	0.22
17.65	0.39	0.34	20.25	0.30	0.27	22.85	0.24	0.22
17.70	0.39	0.34	20.30	0.30	0.27	22.90	0.24	0.22
17.75	0.38	0.34	20.35	0.30	0.26	22.95	0.24	0.22
17.80	0.38	0.33	20.40	0.30	0.26	23.00	0.24	0.21
17.85	0.37	0.33	20.45	0.30	0.26	23.05	0.24	0.21
17.90	0.37	0.32	20.50	0.30	0.26	23.10	0.24	0.21
17.95	0.36	0.32	20.55	0.29	0.26	23.15	0.24	0.21
18.00	0.36	0.32	20.60	0.29	0.26	23.20	0.24	0.21
18.05	0.36	0.31	20.65	0.29	0.26	23.25	0.23	0.21
18.10	0.35	0.31	20.70	0.29	0.26	23.30	0.23	0.21
18.15	0.35	0.31	20.75	0.29	0.26	23.35	0.23	0.21

2026-10 - JMF Verona Drainage *NOAA 24-hr D 2-Year-Projected Rainfall=4.09", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
23.40	0.23	0.21	26.00	0.00	0.00
23.45	0.23	0.21			
23.50	0.23	0.20			
23.55	0.23	0.20			
23.60	0.23	0.20			
23.65	0.23	0.20			
23.70	0.23	0.20			
23.75	0.22	0.20			
23.80	0.22	0.20			
23.85	0.22	0.20			
23.90	0.22	0.20			
23.95	0.22	0.20			
24.00	0.22	0.20			
24.05	0.17	0.15			
24.10	0.06	0.05			
24.15	0.01	0.01			
24.20	0.00	0.00			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 1S: EX-DA1-IMP

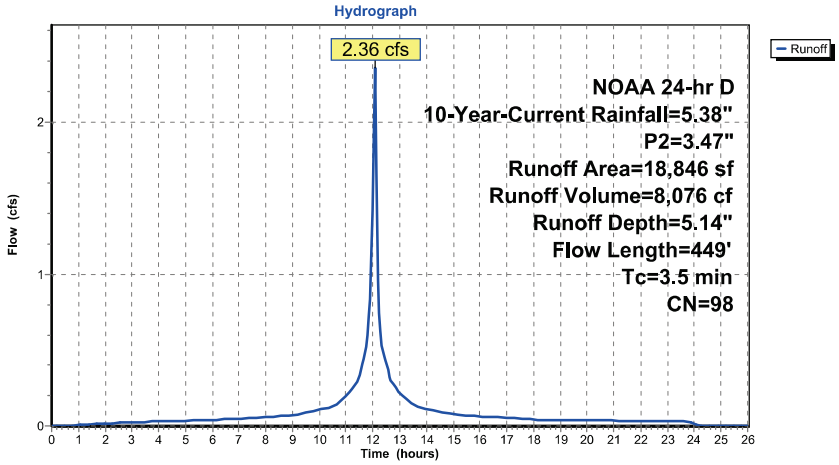
Runoff = 2.36 cfs @ 12.09 hrs, Volume= 8,076 cf, Depth= 5.14"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
*	18,142	98	IMPERVIOUS
*	704	98	BUILDINGS
	18,846	98	Weighted Average
	18,846		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0216	1.48		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 3.47"
2.4	349	0.0139	2.39		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
3.5	449	Total			

Subcatchment 1S: EX-DA1-IMP



Summary for Subcatchment 2S: EX-DA1-PER

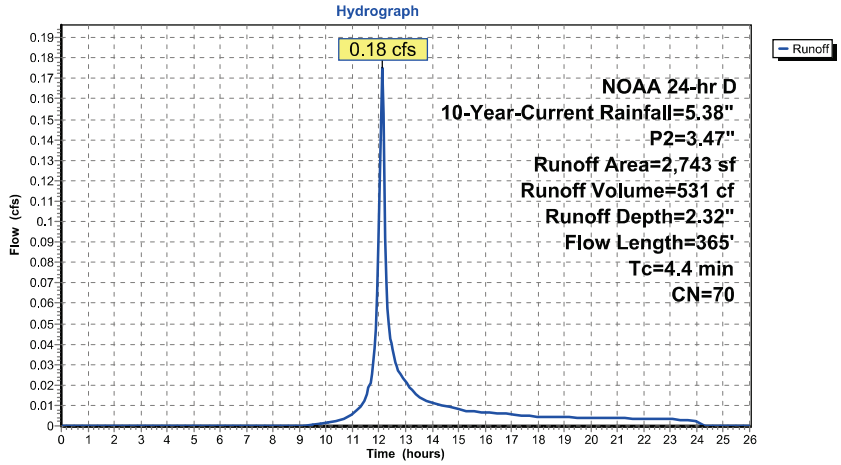
Runoff = 0.18 cfs @ 12.11 hrs, Volume= 531 cf, Depth= 2.32"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
2,743	70	Woods, Good, HSG C
2,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	7	0.0364	0.09		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
1.3	93	0.0130	1.19		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 3.47"
1.8	265	0.0139	2.39		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
4.4	365	Total			

Subcatchment 2S: EX-DA1-PER

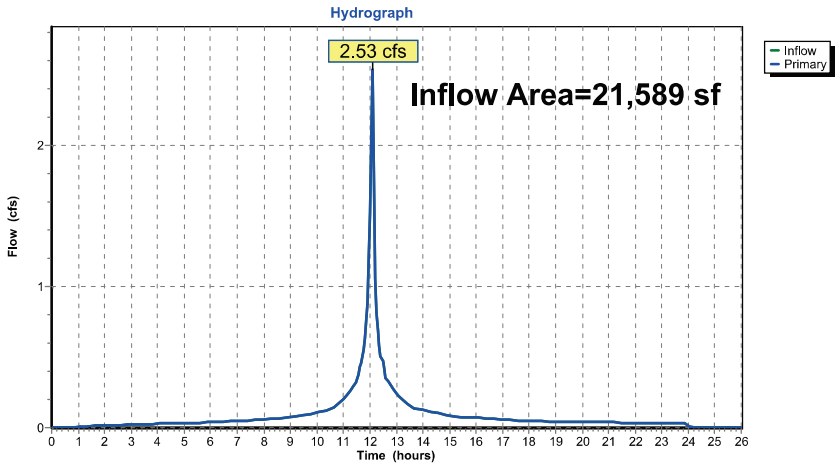


Summary for Link 3L: POA #1

Inflow Area = 21,589 sf, 87.29% Impervious, Inflow Depth = 4.78" for 10-Year-Current event
Inflow = 2.53 cfs @ 12.09 hrs, Volume= 8,607 cf
Primary = 2.53 cfs @ 12.09 hrs, Volume= 8,607 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 3L: POA #1



Summary for Subcatchment 4S: EX-DA2-IMP

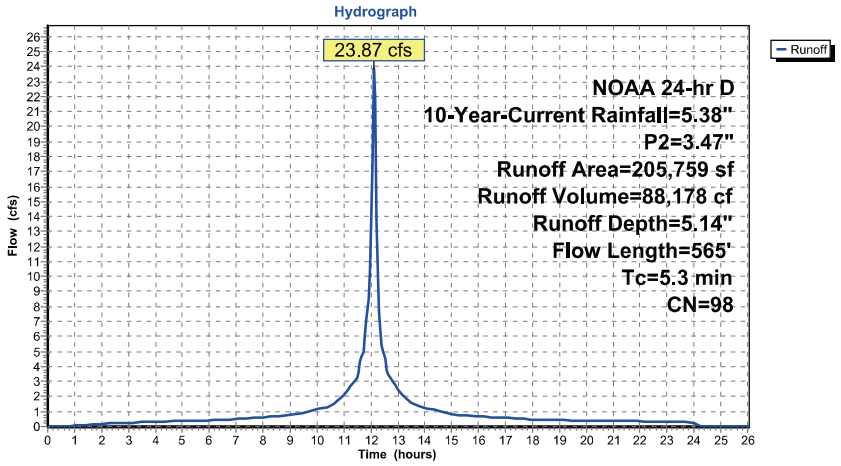
Runoff = 23.87 cfs @ 12.11 hrs, Volume= 88,178 cf, Depth= 5.14"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
*	195,091	98	IMPERVIOUS
*	10,668	98	BUILDING
	205,759	98	Weighted Average
	205,759		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0130	1.21		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 3.47"
2.2	230	0.0075	1.76		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
1.7	235	0.0130	2.31		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
5.3	565	Total			

Subcatchment 4S: EX-DA2-IMP



Summary for Subcatchment 5S: EX-DA2-PER

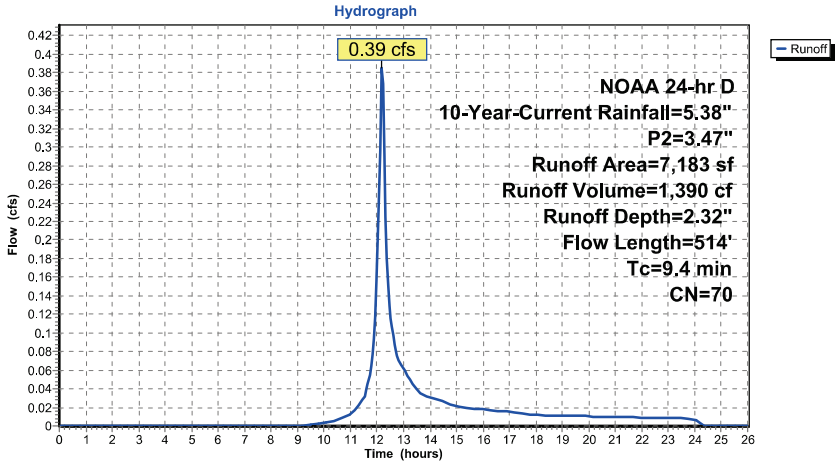
Runoff = 0.39 cfs @ 12.17 hrs, Volume= 1,390 cf, Depth= 2.32"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
7,183	70	Woods, Good, HSG C
7,183		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	54	0.0500	0.16		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
0.8	45	0.0100	0.93		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 3.47"
2.8	415	0.0150	2.49		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
9.4	514	Total			

Subcatchment 5S: EX-DA2-PER

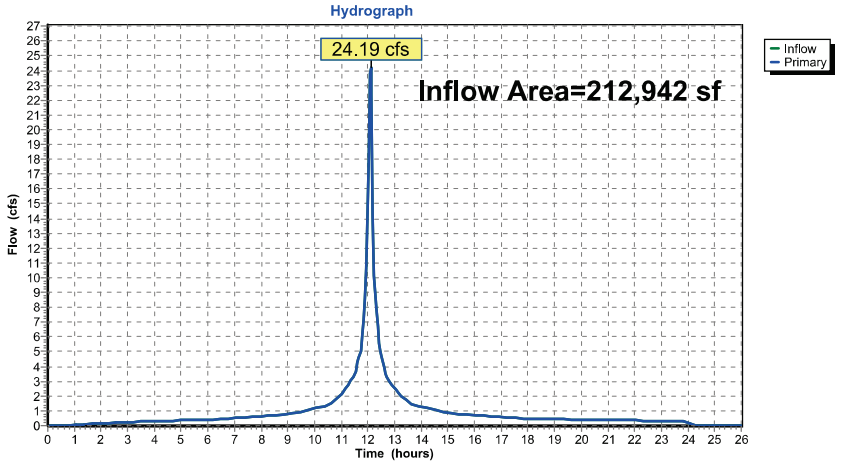


Summary for Link 6L: POA #2

Inflow Area = 212,942 sf, 96.63% Impervious, Inflow Depth = 5.05" for 10-Year-Current event
Inflow = 24.19 cfs @ 12.12 hrs, Volume= 89,568 cf
Primary = 24.19 cfs @ 12.12 hrs, Volume= 89,568 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 6L: POA #2



Summary for Subcatchment 7S: PR-DA1-IMP

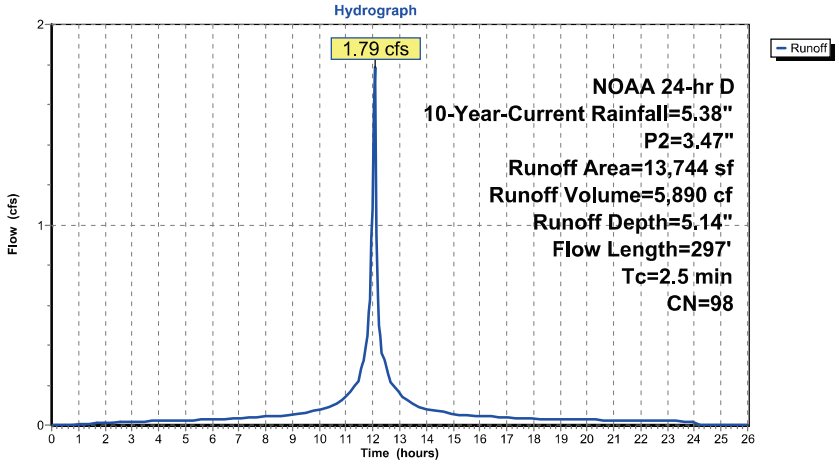
Runoff = 1.79 cfs @ 12.08 hrs, Volume= 5,890 cf, Depth= 5.14"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
*	13,744	98	IMPERVIOUS
	13,744		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0125	1.19		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 3.47"
1.0	174	0.0196	2.84		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
0.1	23	0.0100	5.70	7.00	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
2.5	297	Total			

Subcatchment 7S: PR-DA1-IMP



Summary for Subcatchment 8S: PR-DA1-PER

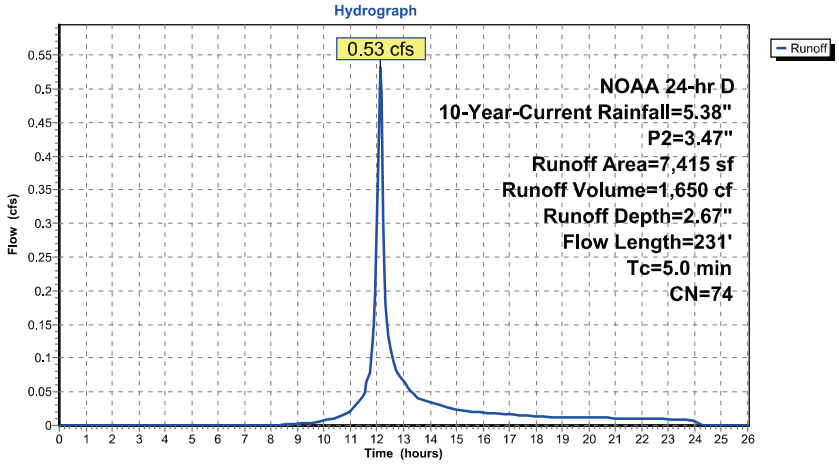
Runoff = 0.53 cfs @ 12.12 hrs, Volume= 1,650 cf, Depth= 2.67"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
7,415	74	>75% Grass cover, Good, HSG C
7,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	33	0.0692	0.16		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
0.1	8	0.0518	1.26		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 3.47"
0.8	59	0.0180	1.24		**Sheet Flow, TC-CD** Smooth surfaces n= 0.011 P2= 3.47"
0.5	80	0.0180	2.72		**Shallow Concentrated Flow, TC-DE** Paved Kv= 20.3 fps
0.1	29	0.0100	5.70	7.00	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	22	0.0104	5.82	7.14	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
5.0	231	Total			

Subcatchment 8S: PR-DA1-PER

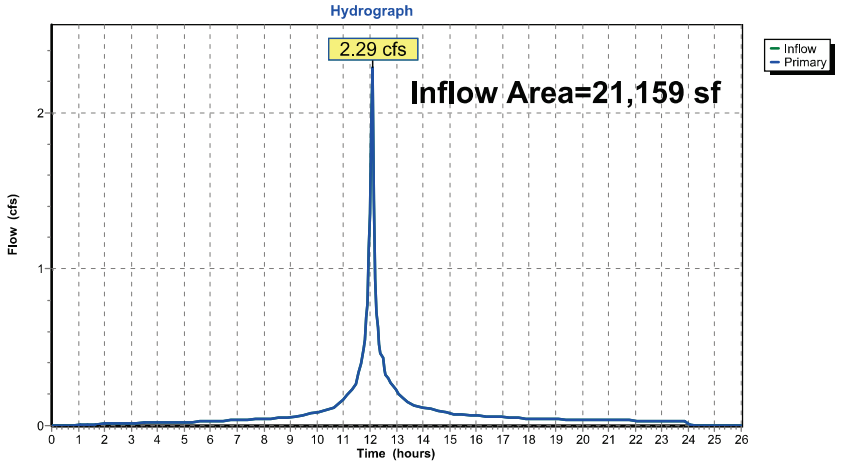


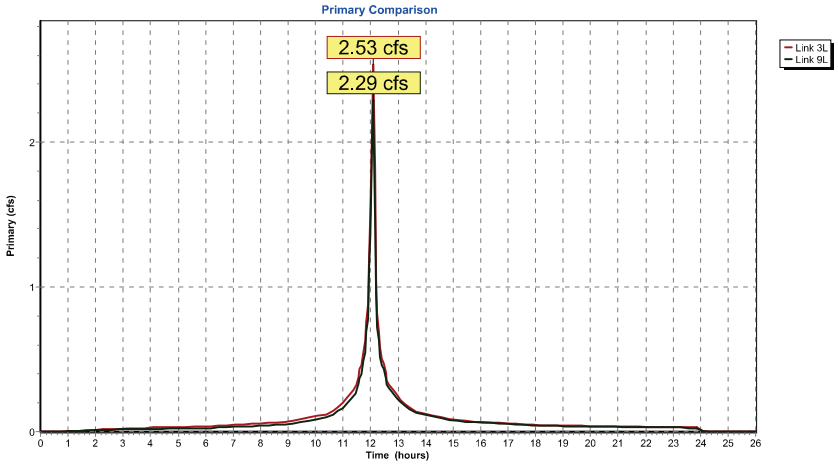
Summary for Link 9L: POA #1

Inflow Area = 21,159 sf, 64.96% Impervious, Inflow Depth = 4.28" for 10-Year-Current event
Inflow = 2.29 cfs @ 12.09 hrs, Volume= 7,540 cf
Primary = 2.29 cfs @ 12.09 hrs, Volume= 7,540 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 9L: POA #1





2026-10 - JMF Verona Drainage *NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
0.00	0.00	0.00	2.60	0.02	0.01	5.20	0.03	0.02
0.05	0.00	0.00	2.65	0.02	0.01	5.25	0.03	0.02
0.10	0.00	0.00	2.70	0.02	0.02	5.30	0.03	0.02
0.15	0.00	0.00	2.75	0.02	0.02	5.35	0.03	0.02
0.20	0.00	0.00	2.80	0.02	0.02	5.40	0.03	0.02
0.25	0.00	0.00	2.85	0.02	0.02	5.45	0.03	0.03
0.30	0.00	0.00	2.90	0.02	0.02	5.50	0.03	0.03
0.35	0.00	0.00	2.95	0.02	0.02	5.55	0.03	0.03
0.40	0.00	0.00	3.00	0.02	0.02	5.60	0.03	0.03
0.45	0.00	0.00	3.05	0.02	0.02	5.65	0.04	0.03
0.50	0.00	0.00	3.10	0.02	0.02	5.70	0.04	0.03
0.55	0.00	0.00	3.15	0.02	0.02	5.75	0.04	0.03
0.60	0.00	0.00	3.20	0.02	0.02	5.80	0.04	0.03
0.65	0.00	0.00	3.25	0.02	0.02	5.85	0.04	0.03
0.70	0.00	0.00	3.30	0.02	0.02	5.90	0.04	0.03
0.75	0.00	0.00	3.35	0.02	0.02	5.95	0.04	0.03
0.80	0.00	0.00	3.40	0.03	0.02	6.00	0.04	0.03
0.85	0.00	0.00	3.45	0.03	0.02	6.05	0.04	0.03
0.90	0.00	0.00	3.50	0.03	0.02	6.10	0.04	0.03
0.95	0.00	0.00	3.55	0.03	0.02	6.15	0.04	0.03
1.00	0.00	0.00	3.60	0.03	0.02	6.20	0.04	0.03
1.05	0.00	0.00	3.65	0.03	0.02	6.25	0.04	0.03
1.10	0.01	0.00	3.70	0.03	0.02	6.30	0.04	0.03
1.15	0.01	0.00	3.75	0.03	0.02	6.35	0.04	0.03
1.20	0.01	0.01	3.80	0.03	0.02	6.40	0.04	0.03
1.25	0.01	0.01	3.85	0.03	0.02	6.45	0.04	0.03
1.30	0.01	0.01	3.90	0.03	0.02	6.50	0.04	0.03
1.35	0.01	0.01	3.95	0.03	0.02	6.55	0.04	0.03
1.40	0.01	0.01	4.00	0.03	0.02	6.60	0.04	0.03
1.45	0.01	0.01	4.05	0.03	0.02	6.65	0.04	0.03
1.50	0.01	0.01	4.10	0.03	0.02	6.70	0.04	0.03
1.55	0.01	0.01	4.15	0.03	0.02	6.75	0.04	0.03
1.60	0.01	0.01	4.20	0.03	0.02	6.80	0.05	0.03
1.65	0.01	0.01	4.25	0.03	0.02	6.85	0.05	0.03
1.70	0.01	0.01	4.30	0.03	0.02	6.90	0.05	0.03
1.75	0.01	0.01	4.35	0.03	0.02	6.95	0.05	0.03
1.80	0.01	0.01	4.40	0.03	0.02	7.00	0.05	0.03
1.85	0.01	0.01	4.45	0.03	0.02	7.05	0.05	0.04
1.90	0.01	0.01	4.50	0.03	0.02	7.10	0.05	0.04
1.95	0.01	0.01	4.55	0.03	0.02	7.15	0.05	0.04
2.00	0.02	0.01	4.60	0.03	0.02	7.20	0.05	0.04
2.05	0.02	0.01	4.65	0.03	0.02	7.25	0.05	0.04
2.10	0.02	0.01	4.70	0.03	0.02	7.30	0.05	0.04
2.15	0.02	0.01	4.75	0.03	0.02	7.35	0.05	0.04
2.20	0.02	0.01	4.80	0.03	0.02	7.40	0.05	0.04
2.25	0.02	0.01	4.85	0.03	0.02	7.45	0.05	0.04
2.30	0.02	0.01	4.90	0.03	0.02	7.50	0.05	0.04
2.35	0.02	0.01	4.95	0.03	0.02	7.55	0.05	0.04
2.40	0.02	0.01	5.00	0.03	0.02	7.60	0.05	0.04
2.45	0.02	0.01	5.05	0.03	0.02	7.65	0.05	0.04
2.50	0.02	0.01	5.10	0.03	0.02	7.70	0.06	0.04
2.55	0.02	0.01	5.15	0.03	0.02	7.75	0.06	0.04

Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
7.80	0.06	0.04	10.40	0.12	0.10	13.00	0.24	0.22
7.85	0.06	0.04	10.45	0.13	0.10	13.05	0.23	0.21
7.90	0.06	0.04	10.50	0.13	0.10	13.10	0.22	0.20
7.95	0.06	0.04	10.55	0.13	0.11	13.15	0.21	0.19
8.00	0.06	0.04	10.60	0.14	0.11	13.20	0.20	0.19
8.05	0.06	0.04	10.65	0.15	0.12	13.25	0.19	0.18
8.10	0.06	0.04	10.70	0.15	0.13	13.30	0.19	0.17
8.15	0.06	0.04	10.75	0.16	0.13	13.35	0.18	0.16
8.20	0.06	0.04	10.80	0.17	0.14	13.40	0.17	0.16
8.25	0.06	0.05	10.85	0.18	0.15	13.45	0.16	0.15
8.30	0.06	0.05	10.90	0.18	0.15	13.50	0.16	0.15
8.35	0.06	0.05	10.95	0.19	0.16	13.55	0.15	0.14
8.40	0.06	0.05	11.00	0.20	0.16	13.60	0.14	0.13
8.45	0.06	0.05	11.05	0.21	0.18	13.65	0.14	0.13
8.50	0.06	0.05	11.10	0.22	0.18	13.70	0.14	0.13
8.55	0.06	0.05	11.15	0.24	0.20	13.75	0.13	0.13
8.60	0.07	0.05	11.20	0.25	0.21	13.80	0.13	0.12
8.65	0.07	0.05	11.25	0.26	0.22	13.85	0.13	0.12
8.70	0.07	0.05	11.30	0.27	0.23	13.90	0.13	0.12
8.75	0.07	0.05	11.35	0.29	0.24	13.95	0.13	0.12
8.80	0.07	0.05	11.40	0.30	0.25	14.00	0.12	0.12
8.85	0.07	0.05	11.45	0.31	0.27	14.05	0.12	0.11
8.90	0.07	0.05	11.50	0.32	0.28	14.10	0.12	0.11
8.95	0.07	0.05	11.55	0.38	0.34	14.15	0.12	0.11
9.00	0.07	0.05	11.60	0.43	0.37	14.20	0.12	0.11
9.05	0.07	0.05	11.65	0.45	0.39	14.25	0.11	0.11
9.10	0.07	0.06	11.70	0.46	0.40	14.30	0.11	0.11
9.15	0.07	0.06	11.75	0.55	0.49	14.35	0.11	0.10
9.20	0.08	0.06	11.80	0.63	0.55	14.40	0.11	0.10
9.25	0.08	0.06	11.85	0.76	0.69	14.45	0.11	0.10
9.30	0.08	0.06	11.90	0.88	0.78	14.50	0.10	0.10
9.35	0.08	0.06	11.95	1.21	1.13	14.55	0.10	0.10
9.40	0.08	0.07	12.00	1.52	1.36	14.60	0.10	0.09
9.45	0.09	0.07	12.05	2.06	1.95	14.65	0.10	0.09
9.50	0.09	0.07	12.10	**2.53**	**2.26**	14.70	0.10	0.09
9.55	0.09	0.07	12.15	1.81	1.44	14.75	0.09	0.09
9.60	0.09	0.07	12.20	1.05	0.94	14.80	0.09	0.09
9.65	0.09	0.07	12.25	0.82	0.72	14.85	0.09	0.08
9.70	0.10	0.07	12.30	0.68	0.63	14.90	0.09	0.08
9.75	0.10	0.08	12.35	0.58	0.52	14.95	0.09	0.08
9.80	0.10	0.08	12.40	0.50	0.46	15.00	0.08	0.08
9.85	0.10	0.08	12.45	0.48	0.44	15.05	0.08	0.08
9.90	0.10	0.08	12.50	0.46	0.43	15.10	0.08	0.08
9.95	0.11	0.08	12.55	0.41	0.36	15.15	0.08	0.07
10.00	0.11	0.09	12.60	0.35	0.32	15.20	0.08	0.07
10.05	0.11	0.09	12.65	0.33	0.31	15.25	0.08	0.07
10.10	0.11	0.09	12.70	0.32	0.30	15.30	0.08	0.07
10.15	0.11	0.09	12.75	0.31	0.28	15.35	0.08	0.07
10.20	0.12	0.09	12.80	0.29	0.27	15.40	0.08	0.07
10.25	0.12	0.09	12.85	0.28	0.26	15.45	0.08	0.07
10.30	0.12	0.10	12.90	0.27	0.25	15.50	0.08	0.07
10.35	0.12	0.10	12.95	0.25	0.23	15.55	0.07	0.07

2026-10 - JMF Verona Drainage *NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
15.60	0.07	0.07	18.20	0.05	0.04	20.80	0.04	0.04
15.65	0.07	0.07	18.25	0.05	0.04	20.85	0.04	0.04
15.70	0.07	0.07	18.30	0.04	0.04	20.90	0.04	0.04
15.75	0.07	0.07	18.35	0.04	0.04	20.95	0.04	0.04
15.80	0.07	0.07	18.40	0.04	0.04	21.00	0.04	0.04
15.85	0.07	0.07	18.45	0.04	0.04	21.05	0.04	0.03
15.90	0.07	0.07	18.50	0.04	0.04	21.10	0.04	0.03
15.95	0.07	0.07	18.55	0.04	0.04	21.15	0.04	0.03
16.00	0.07	0.07	18.60	0.04	0.04	21.20	0.04	0.03
16.05	0.07	0.06	18.65	0.04	0.04	21.25	0.04	0.03
16.10	0.07	0.06	18.70	0.04	0.04	21.30	0.04	0.03
16.15	0.07	0.06	18.75	0.04	0.04	21.35	0.04	0.03
16.20	0.07	0.06	18.80	0.04	0.04	21.40	0.04	0.03
16.25	0.07	0.06	18.85	0.04	0.04	21.45	0.04	0.03
16.30	0.07	0.06	18.90	0.04	0.04	21.50	0.04	0.03
16.35	0.07	0.06	18.95	0.04	0.04	21.55	0.04	0.03
16.40	0.07	0.06	19.00	0.04	0.04	21.60	0.04	0.03
16.45	0.06	0.06	19.05	0.04	0.04	21.65	0.04	0.03
16.50	0.06	0.06	19.10	0.04	0.04	21.70	0.04	0.03
16.55	0.06	0.06	19.15	0.04	0.04	21.75	0.04	0.03
16.60	0.06	0.06	19.20	0.04	0.04	21.80	0.03	0.03
16.65	0.06	0.06	19.25	0.04	0.04	21.85	0.03	0.03
16.70	0.06	0.06	19.30	0.04	0.04	21.90	0.03	0.03
16.75	0.06	0.06	19.35	0.04	0.04	21.95	0.03	0.03
16.80	0.06	0.06	19.40	0.04	0.04	22.00	0.03	0.03
16.85	0.06	0.06	19.45	0.04	0.04	22.05	0.03	0.03
16.90	0.06	0.06	19.50	0.04	0.04	22.10	0.03	0.03
16.95	0.06	0.06	19.55	0.04	0.04	22.15	0.03	0.03
17.00	0.06	0.05	19.60	0.04	0.04	22.20	0.03	0.03
17.05	0.06	0.05	19.65	0.04	0.04	22.25	0.03	0.03
17.10	0.06	0.05	19.70	0.04	0.04	22.30	0.03	0.03
17.15	0.06	0.05	19.75	0.04	0.04	22.35	0.03	0.03
17.20	0.06	0.05	19.80	0.04	0.04	22.40	0.03	0.03
17.25	0.06	0.05	19.85	0.04	0.04	22.45	0.03	0.03
17.30	0.05	0.05	19.90	0.04	0.04	22.50	0.03	0.03
17.35	0.05	0.05	19.95	0.04	0.04	22.55	0.03	0.03
17.40	0.05	0.05	20.00	0.04	0.04	22.60	0.03	0.03
17.45	0.05	0.05	20.05	0.04	0.04	22.65	0.03	0.03
17.50	0.05	0.05	20.10	0.04	0.04	22.70	0.03	0.03
17.55	0.05	0.05	20.15	0.04	0.04	22.75	0.03	0.03
17.60	0.05	0.05	20.20	0.04	0.04	22.80	0.03	0.03
17.65	0.05	0.05	20.25	0.04	0.04	22.85	0.03	0.03
17.70	0.05	0.05	20.30	0.04	0.04	22.90	0.03	0.03
17.75	0.05	0.05	20.35	0.04	0.04	22.95	0.03	0.03
17.80	0.05	0.05	20.40	0.04	0.04	23.00	0.03	0.03
17.85	0.05	0.05	20.45	0.04	0.04	23.05	0.03	0.03
17.90	0.05	0.04	20.50	0.04	0.04	23.10	0.03	0.03
17.95	0.05	0.04	20.55	0.04	0.04	23.15	0.03	0.03
18.00	0.05	0.04	20.60	0.04	0.04	23.20	0.03	0.03
18.05	0.05	0.04	20.65	0.04	0.04	23.25	0.03	0.03
18.10	0.05	0.04	20.70	0.04	0.04	23.30	0.03	0.03
18.15	0.05	0.04	20.75	0.04	0.04	23.35	0.03	0.03

Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
23.40	0.03	0.03	26.00	0.00	0.00
23.45	0.03	0.03			
23.50	0.03	0.03			
23.55	0.03	0.03			
23.60	0.03	0.03			
23.65	0.03	0.03			
23.70	0.03	0.03			
23.75	0.03	0.03			
23.80	0.03	0.03			
23.85	0.03	0.03			
23.90	0.03	0.03			
23.95	0.03	0.03			
24.00	0.03	0.03			
24.05	0.02	0.01			
24.10	0.00	0.00			
24.15	0.00	0.00			
24.20	0.00	0.00			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 10S: PR-DA2.1-IMP

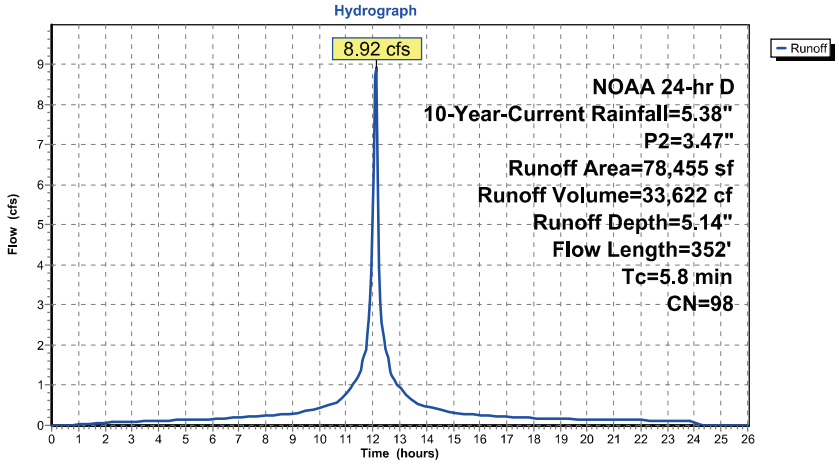
Runoff = 8.92 cfs @ 12.12 hrs, Volume= 33,622 cf, Depth= 5.14"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.84		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
3.4	15	0.0150	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.7	56	0.0220	1.33		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.8	352	Total			

Subcatchment 10S: PR-DA2.1-IMP



Summary for Subcatchment 11S: PR-DA2.1-PER

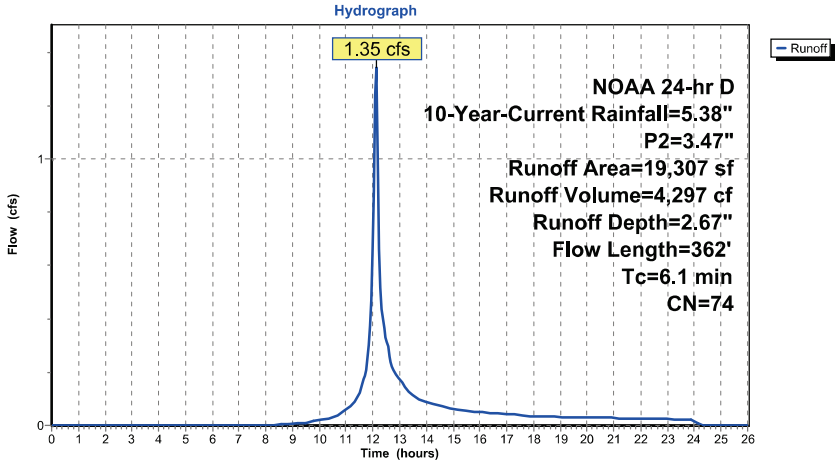
Runoff = 1.35 cfs @ 12.13 hrs, Volume= 4,297 cf, Depth= 2.67"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.4	30	0.0200	1.13		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 3.47"
0.6	33	0.0102	0.88		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
6.1	362	Total			

Subcatchment 11S: PR-DA2.1-PER

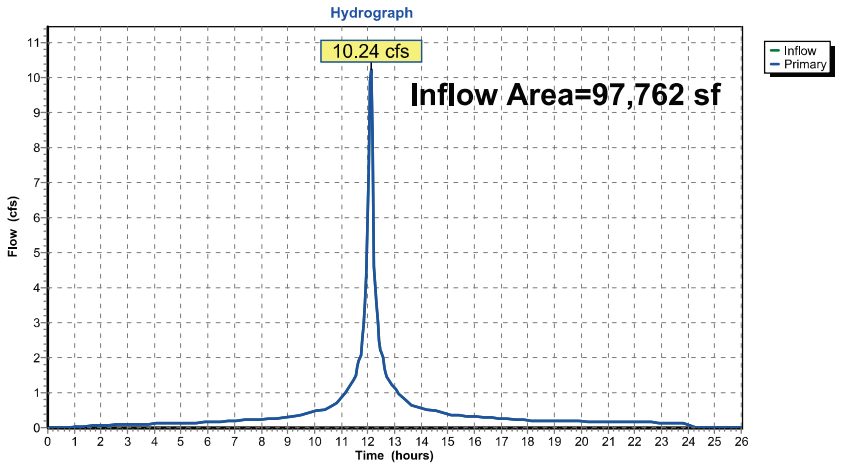


Summary for Link 12L: PR-DA 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 4.65" for 10-Year-Current event
Inflow = 10.24 cfs @ 12.12 hrs, Volume= 37,919 cf
Primary = 10.24 cfs @ 12.12 hrs, Volume= 37,919 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 12L: PR-DA 2.1



Summary for Subcatchment 13S: PR-DA2.2-IMP

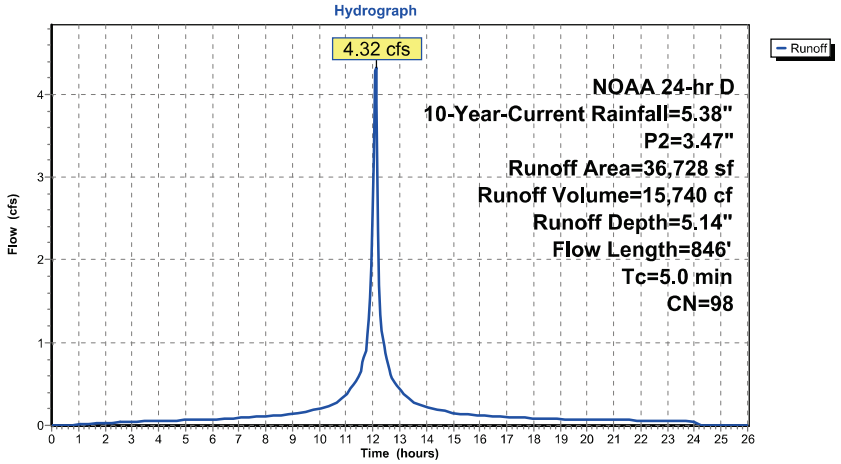
Runoff = 4.32 cfs @ 12.11 hrs, Volume= 15,740 cf, Depth= 5.14"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.90		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
1.3	8	0.0433	0.10		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
5.0	846	Total			

Subcatchment 13S: PR-DA2.2-IMP



Summary for Subcatchment 14S: PR-DA2.2-PER

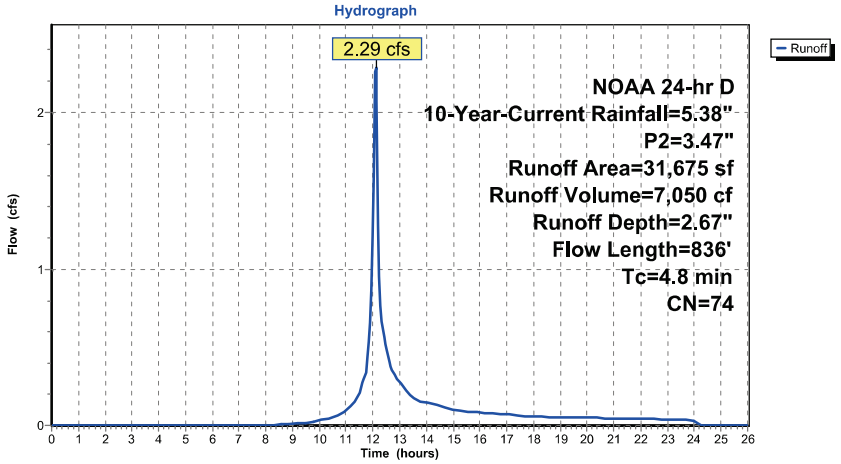
Runoff = 2.29 cfs @ 12.11 hrs, Volume= 7,050 cf, Depth= 2.67"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	8	0.0433	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.8	836	Total			

Subcatchment 14S: PR-DA2.2-PER

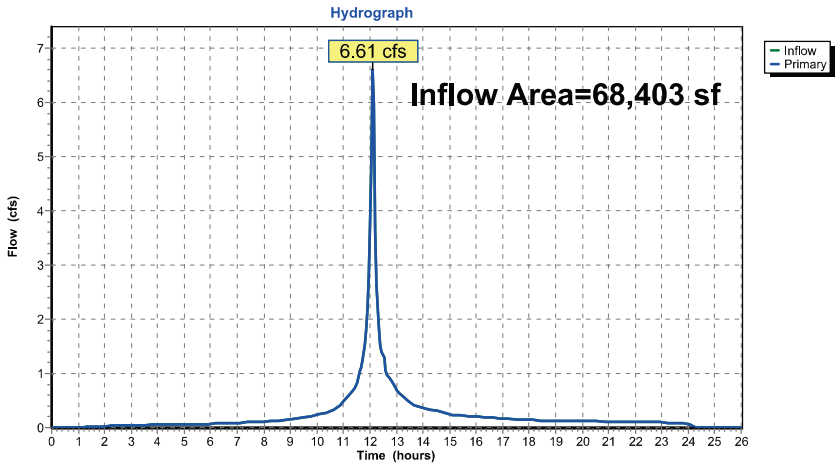


Summary for Link 15L: PR-DA 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 4.00" for 10-Year-Current event
Inflow = 6.61 cfs @ 12.11 hrs, Volume= 22,790 cf
Primary = 6.61 cfs @ 12.11 hrs, Volume= 22,790 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 15L: PR-DA 2.2



Summary for Subcatchment 16S: PR-DA 2 UNDET-IMP

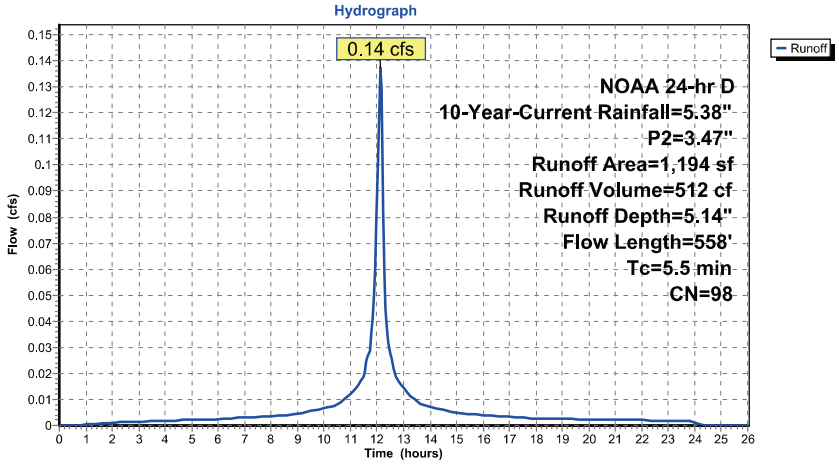
Runoff = 0.14 cfs @ 12.12 hrs, Volume= 512 cf, Depth= 5.14"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
*	1,194	98	IMPERVIOUS
	1,194		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.90		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
3.5	33	0.0650	0.16		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, F-G** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, G-H** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
5.5	558	Total			

Subcatchment 16S: PR-DA 2 UNDET-IMP



Summary for Subcatchment 17S: PR-DA 2 UNDET-PER

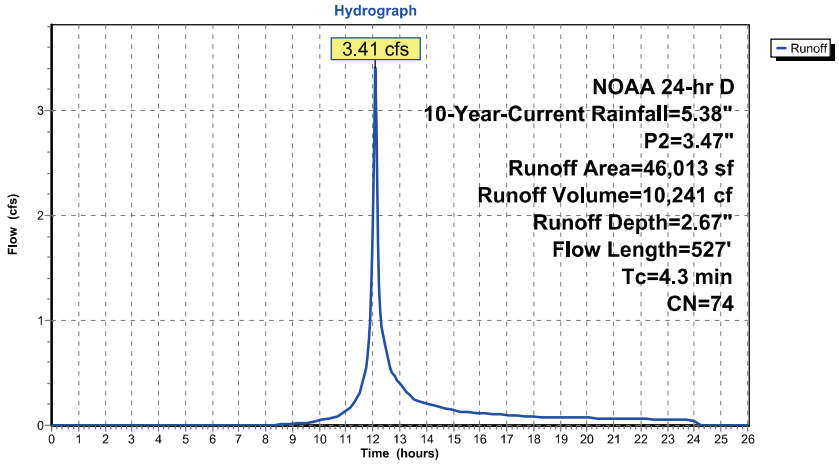
Runoff = 3.41 cfs @ 12.11 hrs, Volume= 10,241 cf, Depth= 2.67"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Current Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
46,013	74	>75% Grass cover, Good, HSG C
46,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	12	0.0200	0.08		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, TC-BC** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, TC-DE** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, TC-GH** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, TC-HI** Unpaved Kv= 16.1 fps
4.3	527	Total			

Subcatchment 17S: PR-DA 2 UNDET-PER

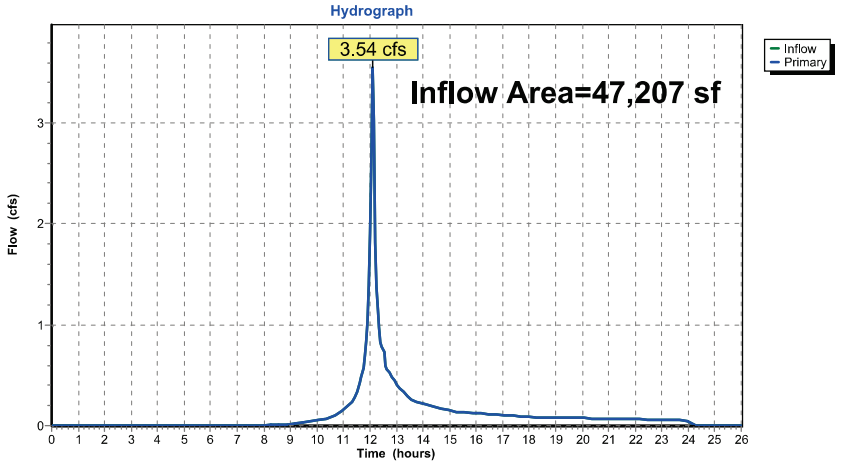


Summary for Link 18L: PR-DA 2 UNDET

Inflow Area = 47,207 sf, 2.53% Impervious, Inflow Depth = 2.73" for 10-Year-Current event
Inflow = 3.54 cfs @ 12.11 hrs, Volume= 10,753 cf
Primary = 3.54 cfs @ 12.11 hrs, Volume= 10,753 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 18L: PR-DA 2 UNDET

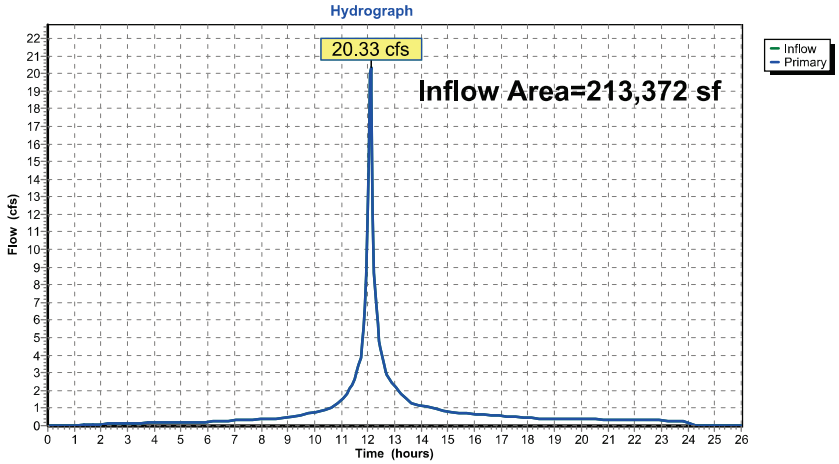


Summary for Link 19L: POA #2

Inflow Area = 213,372 sf, 54.54% Impervious, Inflow Depth = 4.02" for 10-Year-Current event
Inflow = 20.33 cfs @ 12.12 hrs, Volume= 71,462 cf
Primary = 20.33 cfs @ 12.12 hrs, Volume= 71,462 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 19L: POA #2



Summary for Subcatchment 1S: EX-DA1-IMP

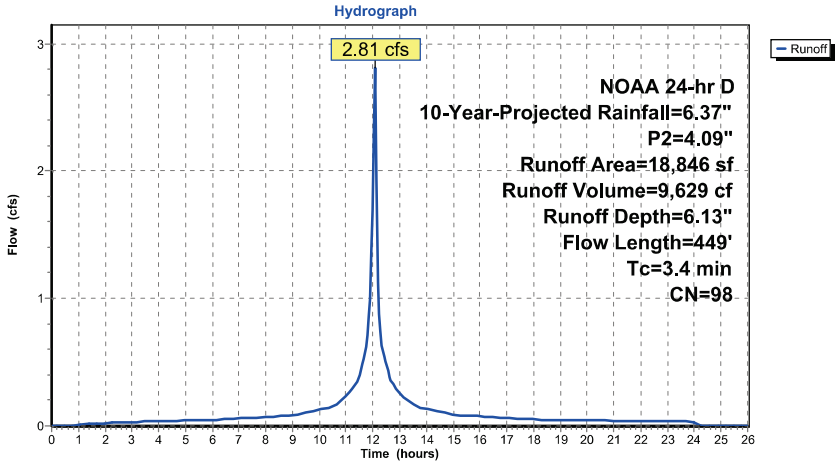
Runoff = 2.81 cfs @ 12.09 hrs, Volume= 9,629 cf, Depth= 6.13"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
*	18,142	98	IMPERVIOUS
*	704	98	BUILDINGS
	18,846	98	Weighted Average
	18,846		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0216	1.60		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 4.09"
2.4	349	0.0139	2.39		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
3.4	449	Total			

Subcatchment 1S: EX-DA1-IMP



Summary for Subcatchment 2S: EX-DA1-PER

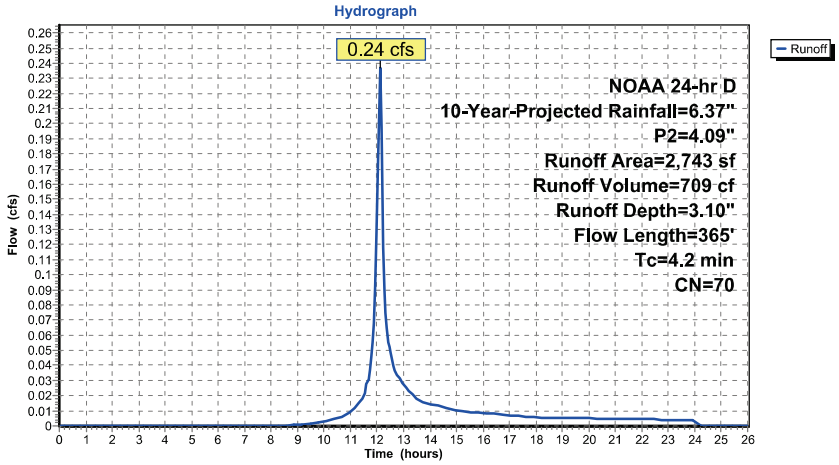
Runoff = 0.24 cfs @ 12.11 hrs, Volume= 709 cf, Depth= 3.10"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

Area (sf)	CN	Description
2,743	70	Woods, Good, HSG C
2,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	7	0.0364	0.10		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
1.2	93	0.0130	1.29		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 4.09"
1.8	265	0.0139	2.39		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
4.2	365	Total			

Subcatchment 2S: EX-DA1-PER

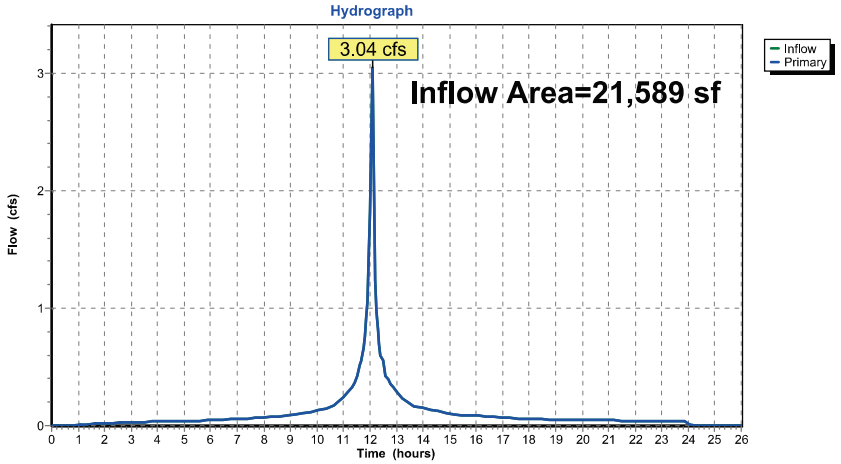


Summary for Link 3L: POA #1

Inflow Area = 21,589 sf, 87.29% Impervious, Inflow Depth = 5.75" for 10-Year-Projected event
Inflow = 3.04 cfs @ 12.09 hrs, Volume= 10,338 cf
Primary = 3.04 cfs @ 12.09 hrs, Volume= 10,338 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 3L: POA #1



Summary for Subcatchment 4S: EX-DA2-IMP

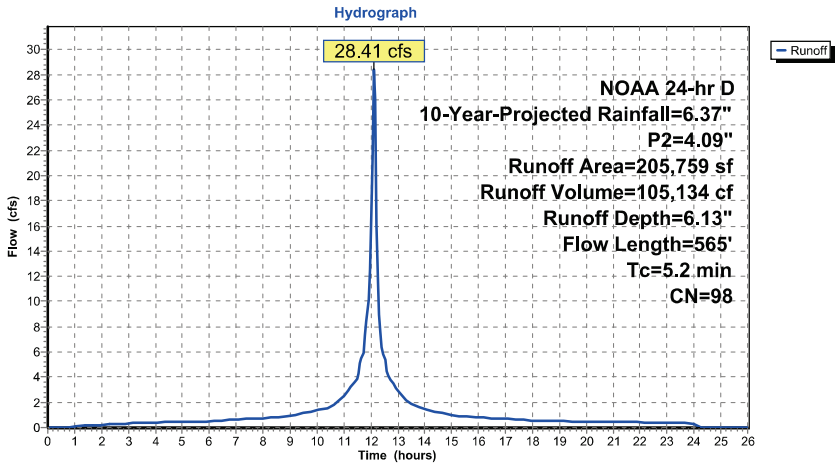
Runoff = 28.41 cfs @ 12.11 hrs, Volume= 105,134 cf, Depth= 6.13"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
*	195,091	98	IMPERVIOUS
*	10,668	98	BUILDING
	205,759	98	Weighted Average
	205,759		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0130	1.31		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 4.09"
2.2	230	0.0075	1.76		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
1.7	235	0.0130	2.31		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
5.2	565	Total			

Subcatchment 4S: EX-DA2-IMP



Summary for Subcatchment 5S: EX-DA2-PER

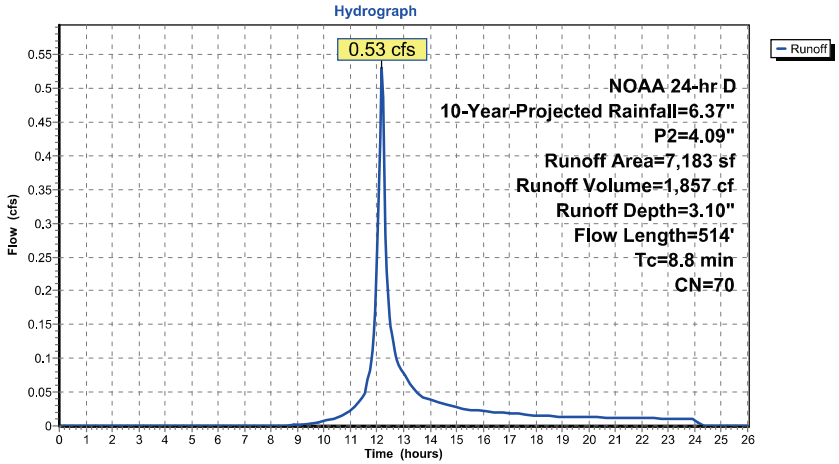
Runoff = 0.53 cfs @ 12.16 hrs, Volume= 1,857 cf, Depth= 3.10"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
	7,183	70	Woods, Good, HSG C
	7,183		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	54	0.0500	0.17		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
0.7	45	0.0100	1.00		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 4.09"
2.8	415	0.0150	2.49		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
8.8	514	Total			

Subcatchment 5S: EX-DA2-PER

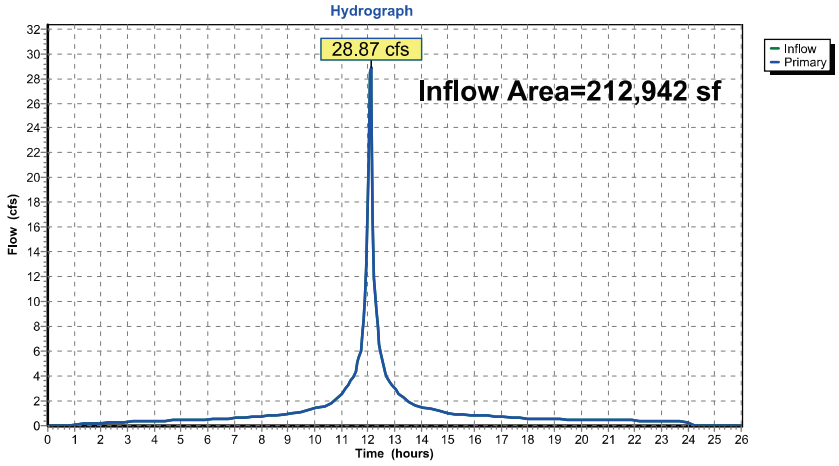


Summary for Link 6L: POA #2

Inflow Area = 212,942 sf, 96.63% Impervious, Inflow Depth = 6.03" for 10-Year-Projected event
Inflow = 28.87 cfs @ 12.11 hrs, Volume= 106,990 cf
Primary = 28.87 cfs @ 12.11 hrs, Volume= 106,990 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 6L: POA #2



Summary for Subcatchment 7S: PR-DA1-IMP

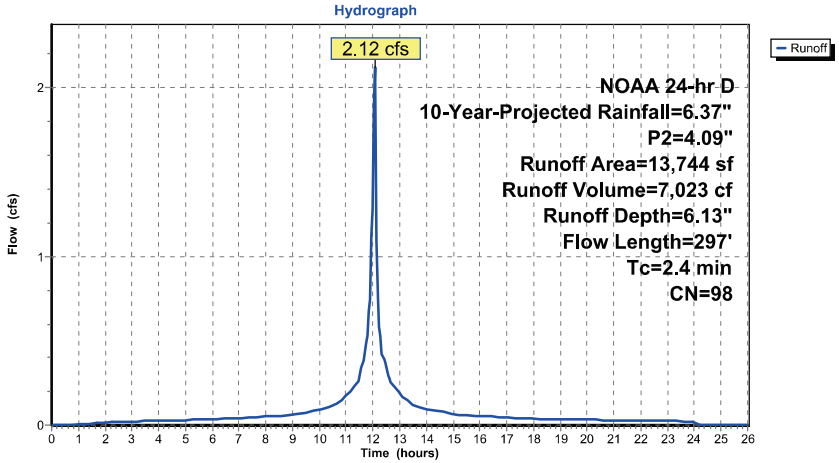
Runoff = 2.12 cfs @ 12.08 hrs, Volume= 7,023 cf, Depth= 6.13"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
*	13,744	98	IMPERVIOUS
	13,744		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0125	1.29		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 4.09"
1.0	174	0.0196	2.84		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
0.1	23	0.0100	5.70	7.00	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
2.4	297	Total			

Subcatchment 7S: PR-DA1-IMP



Summary for Subcatchment 8S: PR-DA1-PER

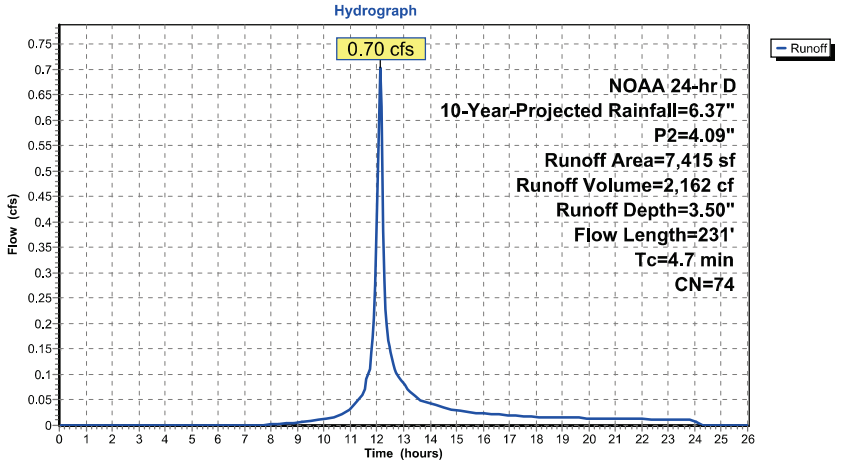
Runoff = 0.70 cfs @ 12.11 hrs, Volume= 2,162 cf, Depth= 3.50"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

Area (sf)	CN	Description
7,415	74	>75% Grass cover, Good, HSG C
7,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	33	0.0692	0.17		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
0.1	8	0.0518	1.37		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 4.09"
0.7	59	0.0180	1.34		**Sheet Flow, TC-CD** Smooth surfaces n= 0.011 P2= 4.09"
0.5	80	0.0180	2.72		**Shallow Concentrated Flow, TC-DE** Paved Kv= 20.3 fps
0.1	29	0.0100	5.70	7.00	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	22	0.0104	5.82	7.14	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
4.7	231	Total			

Subcatchment 8S: PR-DA1-PER

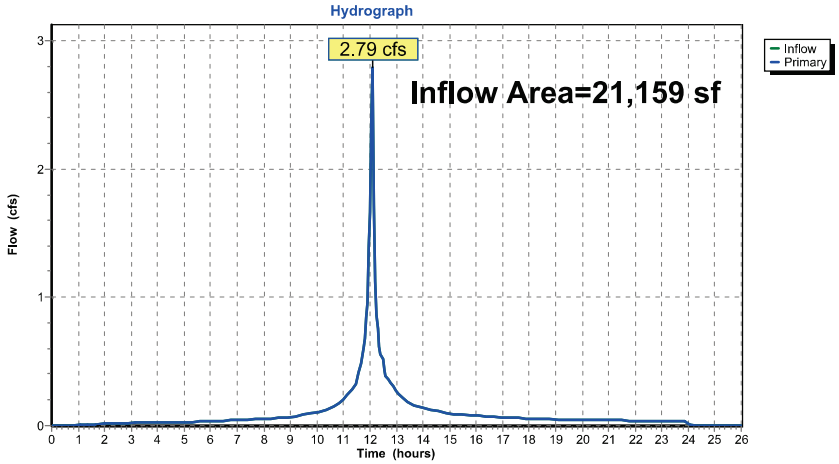


Summary for Link 9L: POA #1

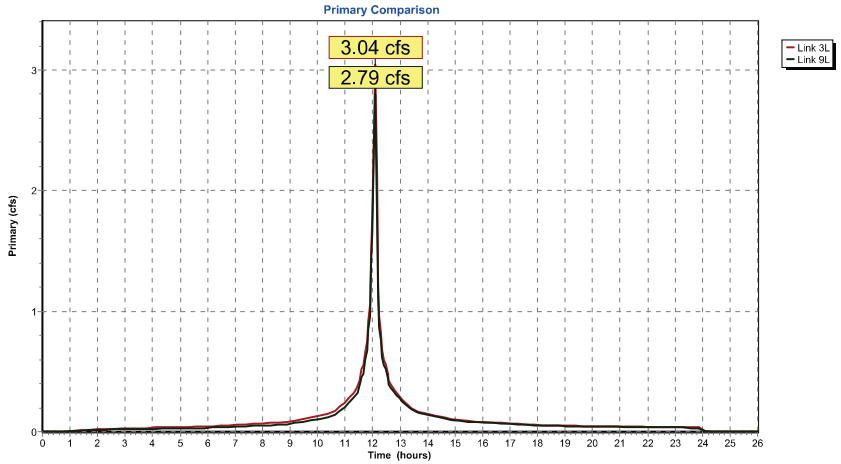
Inflow Area = 21,159 sf, 64.96% Impervious, Inflow Depth = 5.21" for 10-Year-Projected event
Inflow = 2.79 cfs @ 12.09 hrs, Volume= 9,184 cf
Primary = 2.79 cfs @ 12.09 hrs, Volume= 9,184 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 9L: POA #1



2026-10 - JMF Verona Drainage *NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
0.00	0.00	0.00	2.60	0.03	0.02	5.20	0.04	0.03
0.05	0.00	0.00	2.65	0.03	0.02	5.25	0.04	0.03
0.10	0.00	0.00	2.70	0.03	0.02	5.30	0.04	0.03
0.15	0.00	0.00	2.75	0.03	0.02	5.35	0.04	0.03
0.20	0.00	0.00	2.80	0.03	0.02	5.40	0.04	0.03
0.25	0.00	0.00	2.85	0.03	0.02	5.45	0.04	0.03
0.30	0.00	0.00	2.90	0.03	0.02	5.50	0.04	0.03
0.35	0.00	0.00	2.95	0.03	0.02	5.55	0.04	0.03
0.40	0.00	0.00	3.00	0.03	0.02	5.60	0.04	0.03
0.45	0.00	0.00	3.05	0.03	0.02	5.65	0.04	0.03
0.50	0.00	0.00	3.10	0.03	0.02	5.70	0.04	0.03
0.55	0.00	0.00	3.15	0.03	0.02	5.75	0.04	0.03
0.60	0.00	0.00	3.20	0.03	0.02	5.80	0.04	0.03
0.65	0.00	0.00	3.25	0.03	0.02	5.85	0.04	0.03
0.70	0.00	0.00	3.30	0.03	0.02	5.90	0.04	0.03
0.75	0.00	0.00	3.35	0.03	0.02	5.95	0.04	0.03
0.80	0.00	0.00	3.40	0.03	0.02	6.00	0.04	0.03
0.85	0.00	0.00	3.45	0.03	0.02	6.05	0.05	0.03
0.90	0.01	0.00	3.50	0.03	0.02	6.10	0.05	0.03
0.95	0.01	0.01	3.55	0.03	0.02	6.15	0.05	0.03
1.00	0.01	0.01	3.60	0.03	0.02	6.20	0.05	0.03
1.05	0.01	0.01	3.65	0.03	0.02	6.25	0.05	0.04
1.10	0.01	0.01	3.70	0.03	0.02	6.30	0.05	0.04
1.15	0.01	0.01	3.75	0.03	0.02	6.35	0.05	0.04
1.20	0.01	0.01	3.80	0.03	0.02	6.40	0.05	0.04
1.25	0.01	0.01	3.85	0.03	0.03	6.45	0.05	0.04
1.30	0.01	0.01	3.90	0.03	0.03	6.50	0.05	0.04
1.35	0.01	0.01	3.95	0.03	0.03	6.55	0.05	0.04
1.40	0.01	0.01	4.00	0.04	0.03	6.60	0.05	0.04
1.45	0.01	0.01	4.05	0.04	0.03	6.65	0.05	0.04
1.50	0.02	0.01	4.10	0.04	0.03	6.70	0.05	0.04
1.55	0.02	0.01	4.15	0.04	0.03	6.75	0.05	0.04
1.60	0.02	0.01	4.20	0.04	0.03	6.80	0.05	0.04
1.65	0.02	0.01	4.25	0.04	0.03	6.85	0.06	0.04
1.70	0.02	0.01	4.30	0.04	0.03	6.90	0.06	0.04
1.75	0.02	0.01	4.35	0.04	0.03	6.95	0.06	0.04
1.80	0.02	0.01	4.40	0.04	0.03	7.00	0.06	0.04
1.85	0.02	0.01	4.45	0.04	0.03	7.05	0.06	0.04
1.90	0.02	0.01	4.50	0.04	0.03	7.10	0.06	0.04
1.95	0.02	0.01	4.55	0.04	0.03	7.15	0.06	0.04
2.00	0.02	0.02	4.60	0.04	0.03	7.20	0.06	0.04
2.05	0.02	0.02	4.65	0.04	0.03	7.25	0.06	0.04
2.10	0.02	0.02	4.70	0.04	0.03	7.30	0.06	0.04
2.15	0.02	0.02	4.75	0.04	0.03	7.35	0.06	0.05
2.20	0.02	0.02	4.80	0.04	0.03	7.40	0.06	0.05
2.25	0.02	0.02	4.85	0.04	0.03	7.45	0.06	0.05
2.30	0.02	0.02	4.90	0.04	0.03	7.50	0.06	0.05
2.35	0.02	0.02	4.95	0.04	0.03	7.55	0.06	0.05
2.40	0.02	0.02	5.00	0.04	0.03	7.60	0.06	0.05
2.45	0.02	0.02	5.05	0.04	0.03	7.65	0.07	0.05
2.50	0.03	0.02	5.10	0.04	0.03	7.70	0.07	0.05
2.55	0.03	0.02	5.15	0.04	0.03	7.75	0.07	0.05

2026-10 - JMF Verona Drainage *NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
7.80	0.07	0.05	10.40	0.15	0.12	13.00	0.29	0.27
7.85	0.07	0.05	10.45	0.15	0.13	13.05	0.27	0.25
7.90	0.07	0.05	10.50	0.15	0.13	13.10	0.26	0.24
7.95	0.07	0.05	10.55	0.16	0.14	13.15	0.25	0.23
8.00	0.07	0.05	10.60	0.17	0.14	13.20	0.24	0.23
8.05	0.07	0.05	10.65	0.18	0.15	13.25	0.23	0.21
8.10	0.07	0.05	10.70	0.19	0.16	13.30	0.22	0.21
8.15	0.07	0.06	10.75	0.20	0.17	13.35	0.21	0.20
8.20	0.07	0.06	10.80	0.20	0.17	13.40	0.20	0.19
8.25	0.07	0.06	10.85	0.21	0.18	13.45	0.19	0.18
8.30	0.07	0.06	10.90	0.22	0.19	13.50	0.19	0.18
8.35	0.07	0.06	10.95	0.23	0.20	13.55	0.18	0.16
8.40	0.08	0.06	11.00	0.24	0.20	13.60	0.17	0.16
8.45	0.08	0.06	11.05	0.25	0.22	13.65	0.17	0.16
8.50	0.08	0.06	11.10	0.27	0.23	13.70	0.16	0.15
8.55	0.08	0.06	11.15	0.28	0.24	13.75	0.16	0.15
8.60	0.08	0.06	11.20	0.30	0.25	13.80	0.16	0.15
8.65	0.08	0.06	11.25	0.31	0.27	13.85	0.16	0.15
8.70	0.08	0.06	11.30	0.33	0.28	13.90	0.15	0.14
8.75	0.08	0.06	11.35	0.34	0.30	13.95	0.15	0.14
8.80	0.08	0.06	11.40	0.36	0.31	14.00	0.15	0.14
8.85	0.08	0.06	11.45	0.37	0.33	14.05	0.15	0.14
8.90	0.08	0.06	11.50	0.39	0.34	14.10	0.14	0.14
8.95	0.08	0.07	11.55	0.46	0.41	14.15	0.14	0.13
9.00	0.08	0.07	11.60	0.52	0.45	14.20	0.14	0.13
9.05	0.09	0.07	11.65	0.54	0.48	14.25	0.14	0.13
9.10	0.09	0.07	11.70	0.56	0.49	14.30	0.13	0.13
9.15	0.09	0.07	11.75	0.66	0.61	14.35	0.13	0.12
9.20	0.09	0.07	11.80	0.76	0.67	14.40	0.13	0.12
9.25	0.10	0.08	11.85	0.92	0.85	14.45	0.13	0.12
9.30	0.10	0.08	11.90	1.06	0.96	14.50	0.12	0.12
9.35	0.10	0.08	11.95	1.46	1.40	14.55	0.12	0.11
9.40	0.10	0.08	12.00	1.82	1.66	14.60	0.12	0.11
9.45	0.10	0.08	12.05	2.49	2.40	14.65	0.12	0.11
9.50	0.11	0.08	12.10	**3.03**	**2.75**	14.70	0.11	0.11
9.55	0.11	0.09	12.15	2.12	1.72	14.75	0.11	0.11
9.60	0.11	0.09	12.20	1.24	1.12	14.80	0.11	0.10
9.65	0.11	0.09	12.25	0.97	0.87	14.85	0.11	0.10
9.70	0.12	0.09	12.30	0.82	0.75	14.90	0.11	0.10
9.75	0.12	0.10	12.35	0.69	0.62	14.95	0.10	0.10
9.80	0.12	0.10	12.40	0.60	0.55	15.00	0.10	0.09
9.85	0.12	0.10	12.45	0.57	0.53	15.05	0.10	0.09
9.90	0.13	0.10	12.50	0.55	0.51	15.10	0.10	0.09
9.95	0.13	0.10	12.55	0.48	0.44	15.15	0.09	0.09
10.00	0.13	0.11	12.60	0.42	0.39	15.20	0.09	0.09
10.05	0.13	0.11	12.65	0.40	0.37	15.25	0.09	0.09
10.10	0.13	0.11	12.70	0.38	0.36	15.30	0.09	0.09
10.15	0.14	0.11	12.75	0.37	0.34	15.35	0.09	0.09
10.20	0.14	0.11	12.80	0.35	0.33	15.40	0.09	0.09
10.25	0.14	0.12	12.85	0.33	0.31	15.45	0.09	0.09
10.30	0.14	0.12	12.90	0.32	0.30	15.50	0.09	0.09
10.35	0.15	0.12	12.95	0.30	0.28	15.55	0.09	0.08

Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
15.60	0.09	0.08	18.20	0.05	0.05	20.80	0.04	0.04
15.65	0.09	0.08	18.25	0.05	0.05	20.85	0.04	0.04
15.70	0.09	0.08	18.30	0.05	0.05	20.90	0.04	0.04
15.75	0.09	0.08	18.35	0.05	0.05	20.95	0.04	0.04
15.80	0.09	0.08	18.40	0.05	0.05	21.00	0.04	0.04
15.85	0.08	0.08	18.45	0.05	0.05	21.05	0.04	0.04
15.90	0.08	0.08	18.50	0.05	0.05	21.10	0.04	0.04
15.95	0.08	0.08	18.55	0.05	0.05	21.15	0.04	0.04
16.00	0.08	0.08	18.60	0.05	0.05	21.20	0.04	0.04
16.05	0.08	0.08	18.65	0.05	0.05	21.25	0.04	0.04
16.10	0.08	0.08	18.70	0.05	0.05	21.30	0.04	0.04
16.15	0.08	0.08	18.75	0.05	0.05	21.35	0.04	0.04
16.20	0.08	0.08	18.80	0.05	0.05	21.40	0.04	0.04
16.25	0.08	0.08	18.85	0.05	0.05	21.45	0.04	0.04
16.30	0.08	0.07	18.90	0.05	0.05	21.50	0.04	0.04
16.35	0.08	0.07	18.95	0.05	0.05	21.55	0.04	0.04
16.40	0.08	0.07	19.00	0.05	0.05	21.60	0.04	0.04
16.45	0.08	0.07	19.05	0.05	0.05	21.65	0.04	0.04
16.50	0.08	0.07	19.10	0.05	0.05	21.70	0.04	0.04
16.55	0.08	0.07	19.15	0.05	0.05	21.75	0.04	0.04
16.60	0.07	0.07	19.20	0.05	0.05	21.80	0.04	0.04
16.65	0.07	0.07	19.25	0.05	0.05	21.85	0.04	0.04
16.70	0.07	0.07	19.30	0.05	0.05	21.90	0.04	0.04
16.75	0.07	0.07	19.35	0.05	0.05	21.95	0.04	0.04
16.80	0.07	0.07	19.40	0.05	0.05	22.00	0.04	0.04
16.85	0.07	0.07	19.45	0.05	0.05	22.05	0.04	0.04
16.90	0.07	0.07	19.50	0.05	0.05	22.10	0.04	0.04
16.95	0.07	0.07	19.55	0.05	0.05	22.15	0.04	0.04
17.00	0.07	0.07	19.60	0.05	0.05	22.20	0.04	0.04
17.05	0.07	0.06	19.65	0.05	0.05	22.25	0.04	0.04
17.10	0.07	0.06	19.70	0.05	0.05	22.30	0.04	0.04
17.15	0.07	0.06	19.75	0.05	0.05	22.35	0.04	0.04
17.20	0.07	0.06	19.80	0.05	0.05	22.40	0.04	0.04
17.25	0.07	0.06	19.85	0.05	0.05	22.45	0.04	0.04
17.30	0.07	0.06	19.90	0.05	0.05	22.50	0.04	0.04
17.35	0.06	0.06	19.95	0.05	0.05	22.55	0.04	0.04
17.40	0.06	0.06	20.00	0.05	0.05	22.60	0.04	0.04
17.45	0.06	0.06	20.05	0.05	0.05	22.65	0.04	0.04
17.50	0.06	0.06	20.10	0.05	0.05	22.70	0.04	0.04
17.55	0.06	0.06	20.15	0.05	0.04	22.75	0.04	0.04
17.60	0.06	0.06	20.20	0.05	0.04	22.80	0.04	0.04
17.65	0.06	0.06	20.25	0.05	0.04	22.85	0.04	0.04
17.70	0.06	0.06	20.30	0.05	0.04	22.90	0.04	0.04
17.75	0.06	0.06	20.35	0.05	0.04	22.95	0.04	0.04
17.80	0.06	0.06	20.40	0.05	0.04	23.00	0.04	0.04
17.85	0.06	0.05	20.45	0.05	0.04	23.05	0.04	0.04
17.90	0.06	0.05	20.50	0.05	0.04	23.10	0.04	0.04
17.95	0.06	0.05	20.55	0.05	0.04	23.15	0.04	0.04
18.00	0.06	0.05	20.60	0.05	0.04	23.20	0.04	0.03
18.05	0.05	0.05	20.65	0.05	0.04	23.25	0.04	0.03
18.10	0.05	0.05	20.70	0.05	0.04	23.30	0.04	0.03
18.15	0.05	0.05	20.75	0.05	0.04	23.35	0.04	0.03

2026-10 - JMF Verona Drainage *NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
23.40	0.04	0.03	26.00	0.00	0.00
23.45	0.04	0.03			
23.50	0.04	0.03			
23.55	0.04	0.03			
23.60	0.04	0.03			
23.65	0.04	0.03			
23.70	0.04	0.03			
23.75	0.03	0.03			
23.80	0.03	0.03			
23.85	0.03	0.03			
23.90	0.03	0.03			
23.95	0.03	0.03			
24.00	0.03	0.03			
24.05	0.02	0.01			
24.10	0.00	0.00			
24.15	0.00	0.00			
24.20	0.00	0.00			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 10S: PR-DA2.1-IMP

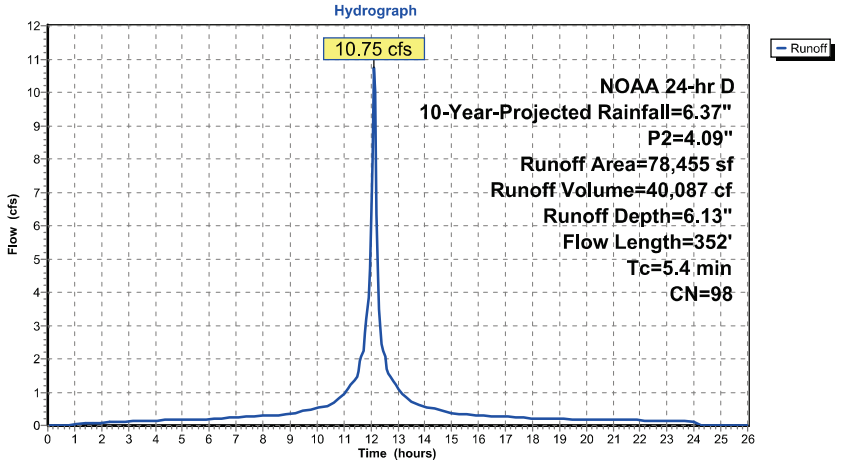
Runoff = 10.75 cfs @ 12.12 hrs, Volume= 40,087 cf, Depth= 6.13"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.91		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
3.1	15	0.0150	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.6	56	0.0220	1.44		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.4	352	Total			

Subcatchment 10S: PR-DA2.1-IMP



Summary for Subcatchment 11S: PR-DA2.1-PER

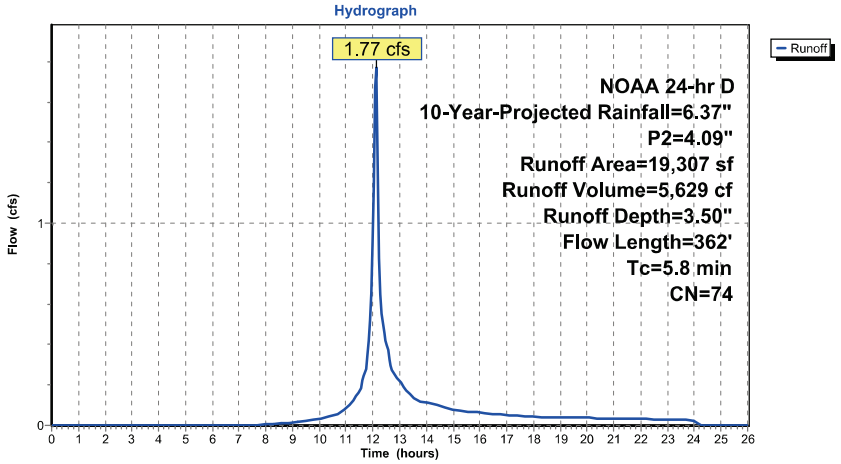
Runoff = 1.77 cfs @ 12.13 hrs, Volume= 5,629 cf, Depth= 3.50"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.4	30	0.0200	1.22		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 4.09"
0.6	33	0.0102	0.95		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
5.8	362	Total			

Subcatchment 11S: PR-DA2.1-PER

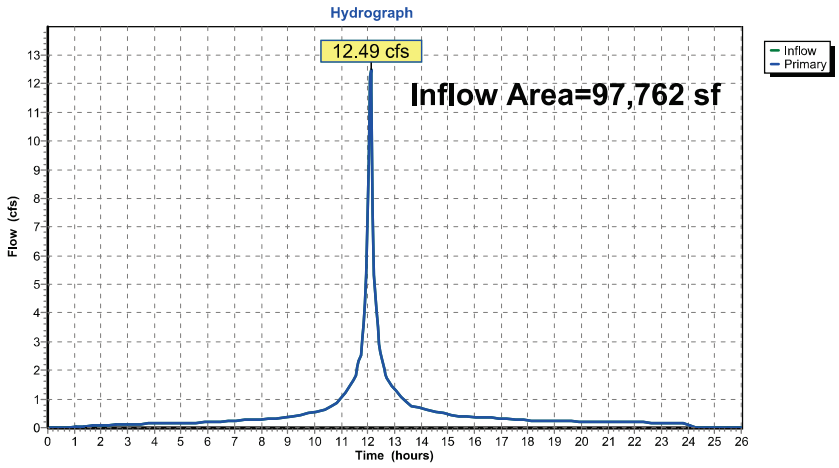


Summary for Link 12L: PR-DA 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 5.61" for 10-Year-Projected event
Inflow = 12.49 cfs @ 12.12 hrs, Volume= 45,716 cf
Primary = 12.49 cfs @ 12.12 hrs, Volume= 45,716 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 12L: PR-DA 2.1



Summary for Subcatchment 13S: PR-DA2.2-IMP

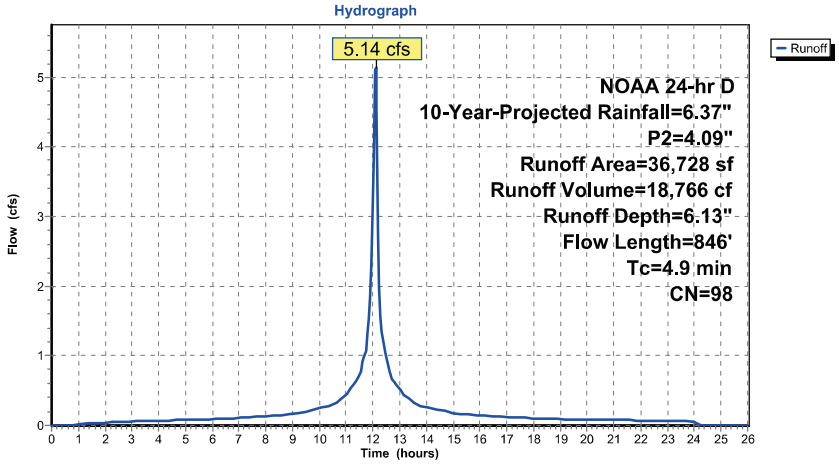
Runoff = 5.14 cfs @ 12.11 hrs, Volume= 18,766 cf, Depth= 6.13"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.98		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
1.2	8	0.0433	0.11		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
4.9	846	Total			

Subcatchment 13S: PR-DA2.2-IMP



Summary for Subcatchment 14S: PR-DA2.2-PER

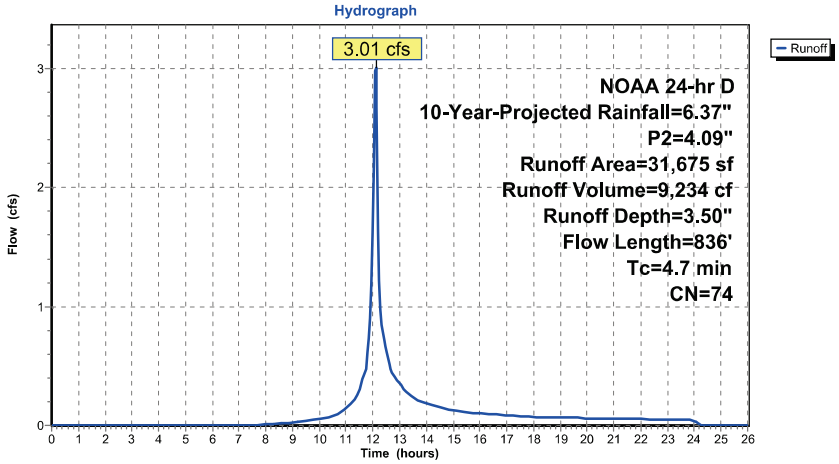
Runoff = 3.01 cfs @ 12.11 hrs, Volume= 9,234 cf, Depth= 3.50"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	8	0.0433	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.7	836	Total			

Subcatchment 14S: PR-DA2.2-PER

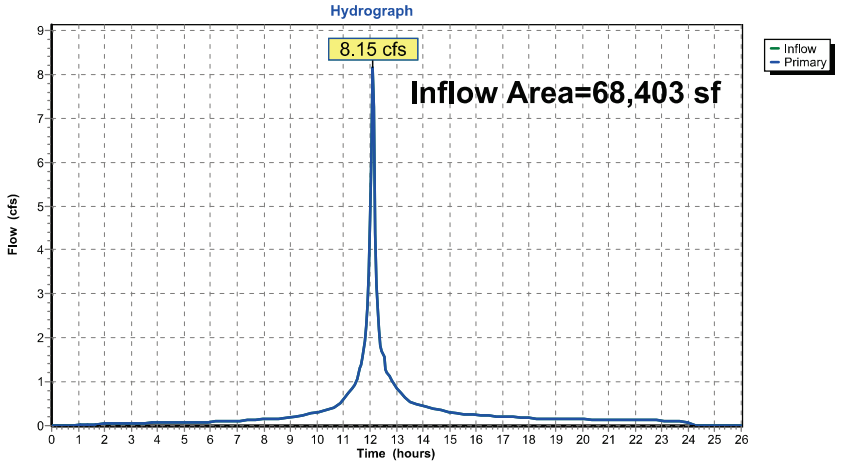


Summary for Link 15L: PR-DA 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 4.91" for 10-Year-Projected event
Inflow = 8.15 cfs @ 12.11 hrs, Volume= 28,001 cf
Primary = 8.15 cfs @ 12.11 hrs, Volume= 28,001 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 15L: PR-DA 2.2



Summary for Subcatchment 16S: PR-DA 2 UNDET-IMP

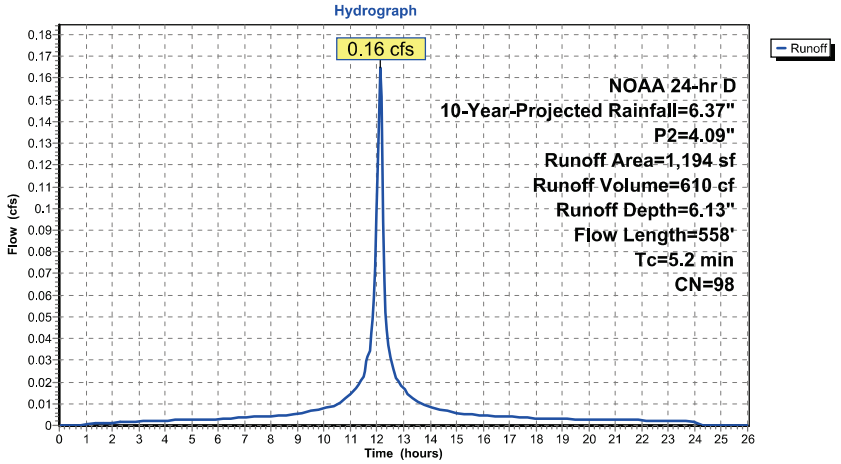
Runoff = 0.16 cfs @ 12.11 hrs, Volume= 610 cf, Depth= 6.13"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
*	1,194	98	IMPERVIOUS
	1,194		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.98		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
3.2	33	0.0650	0.17		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, F-G** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, G-H** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
5.2	558	Total			

Subcatchment 16S: PR-DA 2 UNDET-IMP



Summary for Subcatchment 17S: PR-DA 2 UNDET-PER

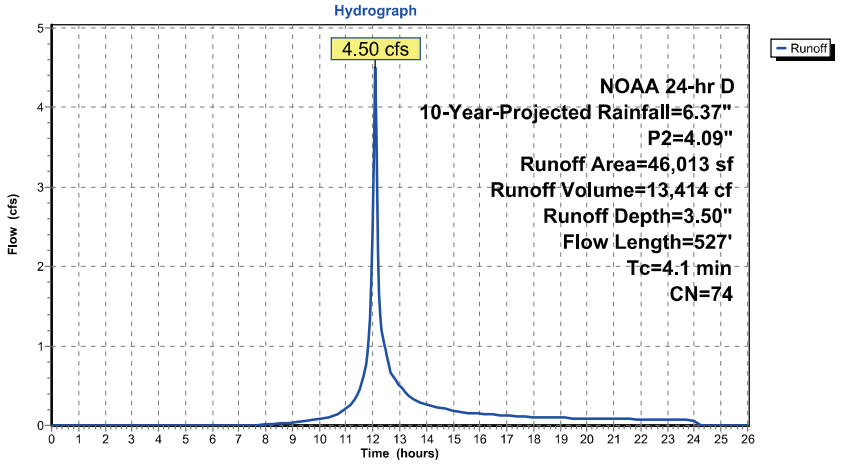
Runoff = 4.50 cfs @ 12.10 hrs, Volume= 13,414 cf, Depth= 3.50"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"

Area (sf)	CN	Description
46,013	74	>75% Grass cover, Good, HSG C
46,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	12	0.0200	0.09		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, TC-BC** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, TC-DE** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, TC-GH** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, TC-HI** Unpaved Kv= 16.1 fps
4.1	527	Total			

Subcatchment 17S: PR-DA 2 UNDET-PER

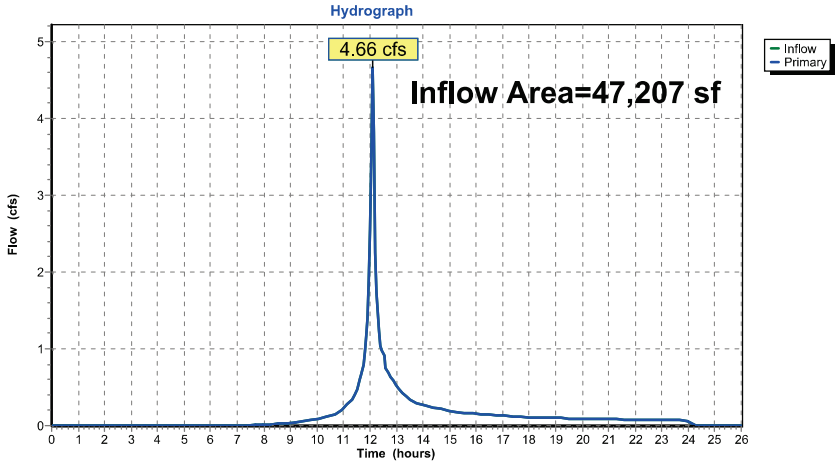


Summary for Link 18L: PR-DA 2 UNDET

Inflow Area = 47,207 sf, 2.53% Impervious, Inflow Depth = 3.57" for 10-Year-Projected event
Inflow = 4.66 cfs @ 12.10 hrs, Volume= 14,024 cf
Primary = 4.66 cfs @ 12.10 hrs, Volume= 14,024 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 18L: PR-DA 2 UNDET

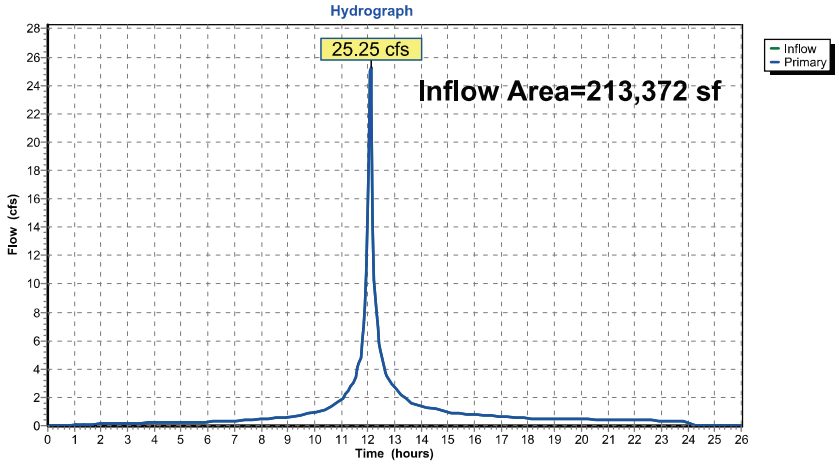


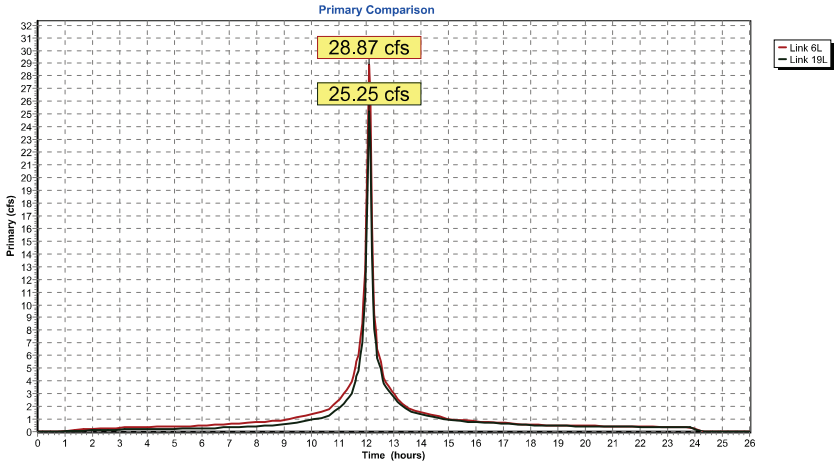
Summary for Link 19L: POA #2

Inflow Area = 213,372 sf, 54.54% Impervious, Inflow Depth = 4.93" for 10-Year-Projected event
Inflow = 25.25 cfs @ 12.11 hrs, Volume= 87,741 cf
Primary = 25.25 cfs @ 12.11 hrs, Volume= 87,741 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 19L: POA #2





2026-10 - JMF Verona Drainage *NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
0.00	0.00	0.00	2.60	0.28	0.16	5.20	0.45	0.25
0.05	0.00	0.00	2.65	0.29	0.16	5.25	0.45	0.25
0.10	0.00	0.00	2.70	0.29	0.16	5.30	0.45	0.26
0.15	0.00	0.00	2.75	0.30	0.17	5.35	0.46	0.26
0.20	0.00	0.00	2.80	0.30	0.17	5.40	0.46	0.26
0.25	0.00	0.00	2.85	0.30	0.17	5.45	0.46	0.26
0.30	0.00	0.00	2.90	0.31	0.17	5.50	0.46	0.26
0.35	0.00	0.00	2.95	0.31	0.18	5.55	0.46	0.26
0.40	0.00	0.00	3.00	0.31	0.18	5.60	0.47	0.26
0.45	0.00	0.00	3.05	0.32	0.18	5.65	0.47	0.26
0.50	0.00	0.00	3.10	0.32	0.18	5.70	0.47	0.27
0.55	0.00	0.00	3.15	0.33	0.18	5.75	0.47	0.27
0.60	0.00	0.00	3.20	0.33	0.19	5.80	0.48	0.27
0.65	0.00	0.00	3.25	0.33	0.19	5.85	0.48	0.27
0.70	0.01	0.01	3.30	0.34	0.19	5.90	0.48	0.27
0.75	0.02	0.01	3.35	0.34	0.19	5.95	0.48	0.27
0.80	0.04	0.02	3.40	0.34	0.19	6.00	0.48	0.27
0.85	0.05	0.03	3.45	0.35	0.20	6.05	0.49	0.28
0.90	0.06	0.03	3.50	0.35	0.20	6.10	0.50	0.28
0.95	0.07	0.04	3.55	0.35	0.20	6.15	0.50	0.28
1.00	0.08	0.04	3.60	0.36	0.20	6.20	0.51	0.29
1.05	0.09	0.05	3.65	0.36	0.20	6.25	0.52	0.29
1.10	0.10	0.05	3.70	0.36	0.21	6.30	0.53	0.30
1.15	0.10	0.06	3.75	0.37	0.21	6.35	0.53	0.30
1.20	0.11	0.06	3.80	0.37	0.21	6.40	0.54	0.30
1.25	0.12	0.07	3.85	0.37	0.21	6.45	0.54	0.31
1.30	0.13	0.07	3.90	0.38	0.21	6.50	0.55	0.31
1.35	0.14	0.08	3.95	0.38	0.21	6.55	0.56	0.32
1.40	0.15	0.08	4.00	0.38	0.22	6.60	0.57	0.32
1.45	0.15	0.09	4.05	0.39	0.22	6.65	0.57	0.32
1.50	0.16	0.09	4.10	0.39	0.22	6.70	0.58	0.33
1.55	0.17	0.09	4.15	0.39	0.22	6.75	0.59	0.33
1.60	0.17	0.10	4.20	0.39	0.22	6.80	0.59	0.34
1.65	0.18	0.10	4.25	0.40	0.22	6.85	0.60	0.34
1.70	0.19	0.11	4.30	0.40	0.23	6.90	0.61	0.34
1.75	0.19	0.11	4.35	0.40	0.23	6.95	0.61	0.35
1.80	0.20	0.11	4.40	0.41	0.23	7.00	0.62	0.35
1.85	0.21	0.12	4.45	0.41	0.23	7.05	0.63	0.36
1.90	0.21	0.12	4.50	0.41	0.23	7.10	0.64	0.36
1.95	0.22	0.12	4.55	0.41	0.23	7.15	0.64	0.36
2.00	0.22	0.13	4.60	0.42	0.24	7.20	0.65	0.37
2.05	0.23	0.13	4.65	0.42	0.24	7.25	0.66	0.37
2.10	0.23	0.13	4.70	0.42	0.24	7.30	0.66	0.38
2.15	0.24	0.14	4.75	0.42	0.24	7.35	0.67	0.38
2.20	0.25	0.14	4.80	0.43	0.24	7.40	0.68	0.39
2.25	0.25	0.14	4.85	0.43	0.24	7.45	0.69	0.39
2.30	0.25	0.14	4.90	0.43	0.24	7.50	0.69	0.40
2.35	0.26	0.15	4.95	0.43	0.25	7.55	0.70	0.40
2.40	0.26	0.15	5.00	0.44	0.25	7.60	0.71	0.41
2.45	0.27	0.15	5.05	0.44	0.25	7.65	0.71	0.41
2.50	0.27	0.15	5.10	0.44	0.25	7.70	0.72	0.42
2.55	0.28	0.16	5.15	0.44	0.25	7.75	0.73	0.43

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
7.80	0.74	0.43	10.40	1.58	1.11	13.00	3.00	2.72
7.85	0.74	0.44	10.45	1.60	1.13	13.05	2.86	2.60
7.90	0.75	0.44	10.50	1.63	1.15	13.10	2.68	2.44
7.95	0.75	0.45	10.55	1.68	1.19	13.15	2.58	2.34
8.00	0.76	0.46	10.60	1.77	1.26	13.20	2.47	2.25
8.05	0.77	0.46	10.65	1.85	1.32	13.25	2.39	2.18
8.10	0.78	0.47	10.70	1.94	1.40	13.30	2.29	2.09
8.15	0.78	0.47	10.75	2.02	1.46	13.35	2.21	2.01
8.20	0.79	0.48	10.80	2.12	1.54	13.40	2.11	1.92
8.25	0.80	0.48	10.85	2.20	1.60	13.45	2.03	1.85
8.30	0.80	0.49	10.90	2.30	1.68	13.50	1.93	1.76
8.35	0.81	0.50	10.95	2.38	1.74	13.55	1.85	1.69
8.40	0.82	0.50	11.00	2.48	1.82	13.60	1.75	1.60
8.45	0.83	0.51	11.05	2.58	1.92	13.65	1.70	1.55
8.50	0.83	0.51	11.10	2.76	2.05	13.70	1.66	1.52
8.55	0.84	0.52	11.15	2.89	2.16	13.75	1.64	1.50
8.60	0.85	0.53	11.20	3.06	2.30	13.80	1.61	1.48
8.65	0.86	0.53	11.25	3.20	2.42	13.85	1.59	1.46
8.70	0.86	0.54	11.30	3.38	2.56	13.90	1.56	1.44
8.75	0.87	0.55	11.35	3.51	2.68	13.95	1.54	1.42
8.80	0.88	0.55	11.40	3.69	2.83	14.00	1.51	1.39
8.85	0.88	0.56	11.45	3.83	2.95	14.05	1.49	1.37
8.90	0.89	0.56	11.50	4.01	3.11	14.10	1.47	1.35
8.95	0.90	0.57	11.55	4.39	3.45	14.15	1.44	1.33
9.00	0.91	0.58	11.60	5.14	4.05	14.20	1.42	1.30
9.05	0.92	0.59	11.65	5.49	4.34	14.25	1.40	1.28
9.10	0.95	0.61	11.70	5.72	4.55	14.30	1.37	1.26
9.15	0.97	0.62	11.75	6.29	5.06	14.35	1.35	1.24
9.20	0.99	0.64	11.80	7.42	6.01	14.40	1.32	1.21
9.25	1.01	0.66	11.85	8.55	7.02	14.45	1.30	1.19
9.30	1.04	0.68	11.90	10.27	8.48	14.50	1.27	1.17
9.35	1.06	0.69	11.95	12.73	10.75	14.55	1.25	1.15
9.40	1.09	0.71	12.00	17.05	14.47	14.60	1.22	1.13
9.45	1.11	0.73	12.05	21.60	18.74	14.65	1.20	1.11
9.50	1.14	0.75	12.10	**28.52**	**25.00**	14.70	1.17	1.08
9.55	1.16	0.77	12.15	26.58	22.81	14.75	1.15	1.06
9.60	1.19	0.79	12.20	16.60	14.14	14.80	1.12	1.04
9.65	1.21	0.80	12.25	11.89	10.26	14.85	1.10	1.02
9.70	1.23	0.82	12.30	9.27	8.10	14.90	1.07	0.99
9.75	1.26	0.84	12.35	7.89	6.93	14.95	1.05	0.97
9.80	1.28	0.86	12.40	6.56	5.79	15.00	1.02	0.95
9.85	1.31	0.88	12.45	6.01	5.35	15.05	1.00	0.93
9.90	1.33	0.90	12.50	5.73	5.13	15.10	0.98	0.90
9.95	1.35	0.92	12.55	5.32	4.74	15.15	0.96	0.89
10.00	1.38	0.94	12.60	4.56	4.07	15.20	0.95	0.88
10.05	1.40	0.96	12.65	4.20	3.77	15.25	0.94	0.87
10.10	1.43	0.98	12.70	3.97	3.57	15.30	0.94	0.87
10.15	1.45	1.00	12.75	3.81	3.44	15.35	0.93	0.86
10.20	1.48	1.02	12.80	3.63	3.28	15.40	0.92	0.86
10.25	1.50	1.04	12.85	3.49	3.16	15.45	0.92	0.85
10.30	1.53	1.07	12.90	3.32	3.00	15.50	0.91	0.84
10.35	1.55	1.08	12.95	3.18	2.88	15.55	0.90	0.84

2026-10 - JMF Verona Drainage *NOAA 24-hr D 10-Year-Projected Rainfall=6.37", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
15.60	0.89	0.83	18.20	0.54	0.51	20.80	0.45	0.42
15.65	0.89	0.82	18.25	0.54	0.51	20.85	0.45	0.42
15.70	0.88	0.82	18.30	0.54	0.50	20.90	0.45	0.42
15.75	0.88	0.81	18.35	0.54	0.50	20.95	0.45	0.42
15.80	0.87	0.80	18.40	0.54	0.50	21.00	0.45	0.42
15.85	0.86	0.80	18.45	0.53	0.50	21.05	0.44	0.42
15.90	0.85	0.79	18.50	0.53	0.50	21.10	0.44	0.41
15.95	0.85	0.79	18.55	0.53	0.50	21.15	0.44	0.41
16.00	0.84	0.78	18.60	0.53	0.49	21.20	0.44	0.41
16.05	0.84	0.78	18.65	0.53	0.49	21.25	0.44	0.41
16.10	0.83	0.77	18.70	0.52	0.49	21.30	0.43	0.41
16.15	0.82	0.76	18.75	0.52	0.49	21.35	0.43	0.41
16.20	0.81	0.75	18.80	0.52	0.49	21.40	0.43	0.41
16.25	0.81	0.75	18.85	0.52	0.49	21.45	0.43	0.41
16.30	0.80	0.74	18.90	0.52	0.48	21.50	0.43	0.40
16.35	0.79	0.74	18.95	0.52	0.48	21.55	0.43	0.40
16.40	0.79	0.73	19.00	0.51	0.48	21.60	0.42	0.40
16.45	0.78	0.72	19.05	0.51	0.48	21.65	0.42	0.40
16.50	0.77	0.72	19.10	0.51	0.48	21.70	0.42	0.40
16.55	0.76	0.71	19.15	0.51	0.48	21.75	0.42	0.39
16.60	0.76	0.70	19.20	0.51	0.48	21.80	0.42	0.39
16.65	0.75	0.70	19.25	0.51	0.47	21.85	0.42	0.39
16.70	0.74	0.69	19.30	0.51	0.47	21.90	0.42	0.39
16.75	0.74	0.69	19.35	0.50	0.47	21.95	0.41	0.39
16.80	0.73	0.68	19.40	0.50	0.47	22.00	0.41	0.39
16.85	0.72	0.67	19.45	0.50	0.47	22.05	0.41	0.39
16.90	0.72	0.67	19.50	0.50	0.47	22.10	0.41	0.38
16.95	0.71	0.66	19.55	0.50	0.47	22.15	0.41	0.38
17.00	0.70	0.65	19.60	0.49	0.46	22.20	0.41	0.38
17.05	0.70	0.65	19.65	0.49	0.46	22.25	0.40	0.38
17.10	0.69	0.64	19.70	0.49	0.46	22.30	0.40	0.38
17.15	0.68	0.64	19.75	0.49	0.46	22.35	0.40	0.37
17.20	0.67	0.63	19.80	0.49	0.46	22.40	0.40	0.37
17.25	0.67	0.62	19.85	0.49	0.45	22.45	0.40	0.37
17.30	0.66	0.62	19.90	0.48	0.45	22.50	0.39	0.37
17.35	0.65	0.61	19.95	0.48	0.45	22.55	0.39	0.37
17.40	0.65	0.60	20.00	0.48	0.45	22.60	0.39	0.37
17.45	0.64	0.60	20.05	0.48	0.45	22.65	0.39	0.37
17.50	0.63	0.59	20.10	0.48	0.45	22.70	0.39	0.36
17.55	0.63	0.58	20.15	0.48	0.45	22.75	0.39	0.36
17.60	0.62	0.58	20.20	0.47	0.44	22.80	0.38	0.36
17.65	0.61	0.57	20.25	0.47	0.44	22.85	0.38	0.36
17.70	0.60	0.56	20.30	0.47	0.44	22.90	0.38	0.36
17.75	0.60	0.56	20.35	0.47	0.44	22.95	0.38	0.36
17.80	0.59	0.55	20.40	0.47	0.44	23.00	0.38	0.35
17.85	0.59	0.55	20.45	0.47	0.44	23.05	0.37	0.35
17.90	0.58	0.54	20.50	0.46	0.43	23.10	0.37	0.35
17.95	0.57	0.53	20.55	0.46	0.43	23.15	0.37	0.35
18.00	0.56	0.53	20.60	0.46	0.43	23.20	0.37	0.35
18.05	0.56	0.52	20.65	0.46	0.43	23.25	0.37	0.35
18.10	0.55	0.51	20.70	0.46	0.43	23.30	0.37	0.34
18.15	0.55	0.51	20.75	0.45	0.43	23.35	0.36	0.34

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
23.40	0.36	0.34	26.00	0.00	0.00
23.45	0.36	0.34			
23.50	0.36	0.34			
23.55	0.36	0.34			
23.60	0.36	0.34			
23.65	0.35	0.33			
23.70	0.35	0.33			
23.75	0.35	0.33			
23.80	0.35	0.33			
23.85	0.35	0.33			
23.90	0.35	0.33			
23.95	0.35	0.33			
24.00	0.34	0.32			
24.05	0.27	0.24			
24.10	0.09	0.08			
24.15	0.02	0.02			
24.20	0.01	0.00			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 1S: EX-DA1-IMP

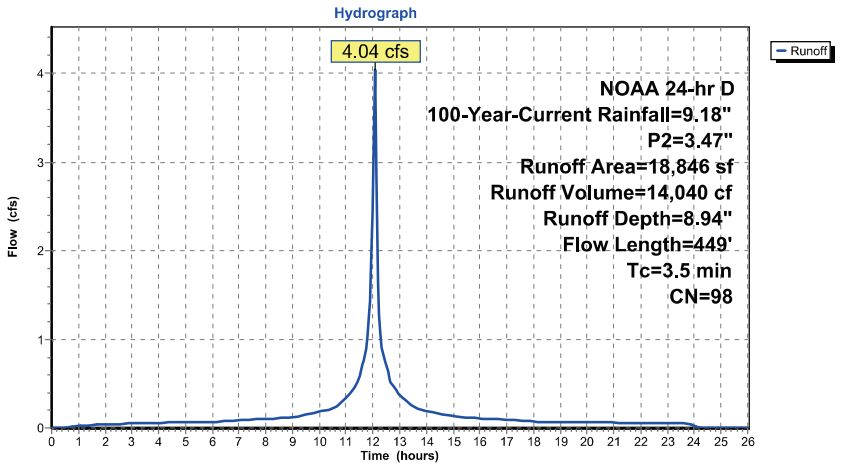
Runoff = 4.04 cfs @ 12.09 hrs, Volume= 14,040 cf, Depth= 8.94"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
*	18,142	98	IMPERVIOUS
*	704	98	BUILDINGS
	18,846	98	Weighted Average
	18,846		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0216	1.48		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 3.47"
2.4	349	0.0139	2.39		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
3.5	449	Total			

Subcatchment 1S: EX-DA1-IMP



Summary for Subcatchment 2S: EX-DA1-PER

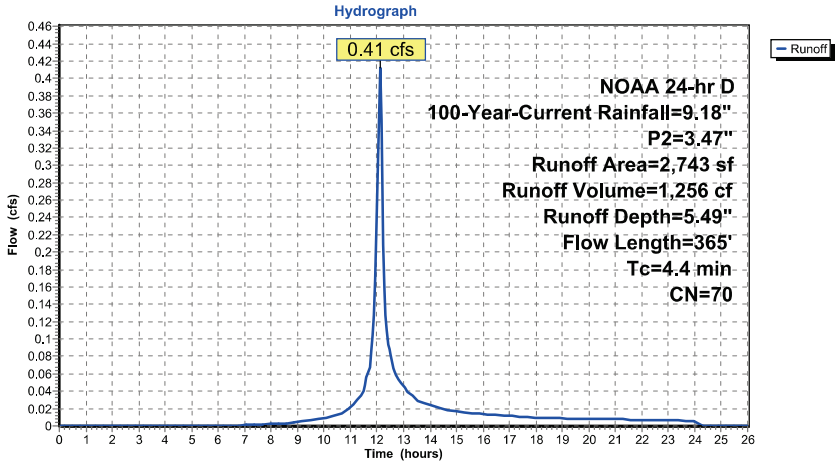
Runoff = 0.41 cfs @ 12.11 hrs, Volume= 1,256 cf, Depth= 5.49"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

Area (sf)	CN	Description
2,743	70	Woods, Good, HSG C
2,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	7	0.0364	0.09		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
1.3	93	0.0130	1.19		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 3.47"
1.8	265	0.0139	2.39		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
4.4	365	Total			

Subcatchment 2S: EX-DA1-PER

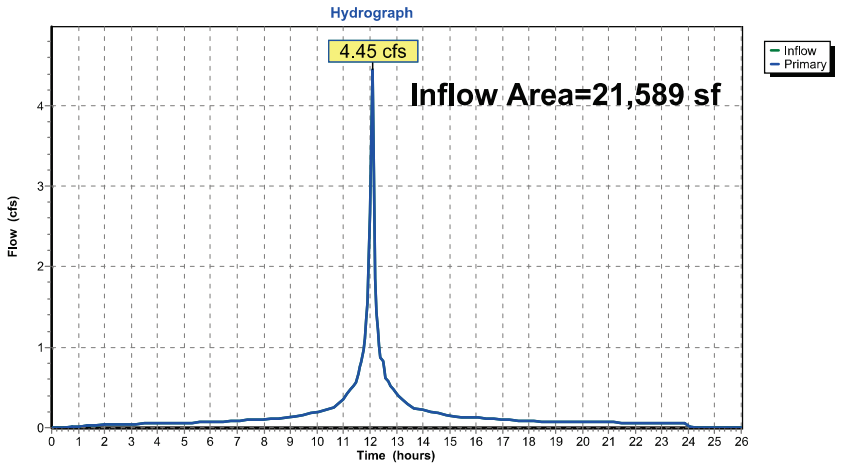


Summary for Link 3L: POA #1

Inflow Area = 21,589 sf, 87.29% Impervious, Inflow Depth = 8.50" for 100-Year-Current event
Inflow = 4.45 cfs @ 12.09 hrs, Volume= 15,295 cf
Primary = 4.45 cfs @ 12.09 hrs, Volume= 15,295 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 3L: POA #1



Summary for Subcatchment 4S: EX-DA2-IMP

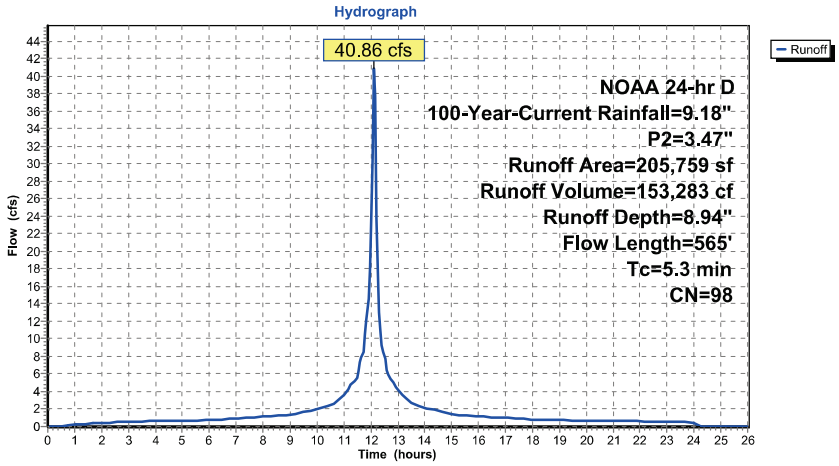
Runoff = 40.86 cfs @ 12.11 hrs, Volume= 153,283 cf, Depth= 8.94"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
*	195,091	98	IMPERVIOUS
*	10,668	98	BUILDING
	205,759	98	Weighted Average
	205,759		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0130	1.21		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 3.47"
2.2	230	0.0075	1.76		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
1.7	235	0.0130	2.31		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
5.3	565	Total			

Subcatchment 4S: EX-DA2-IMP



Summary for Subcatchment 5S: EX-DA2-PER

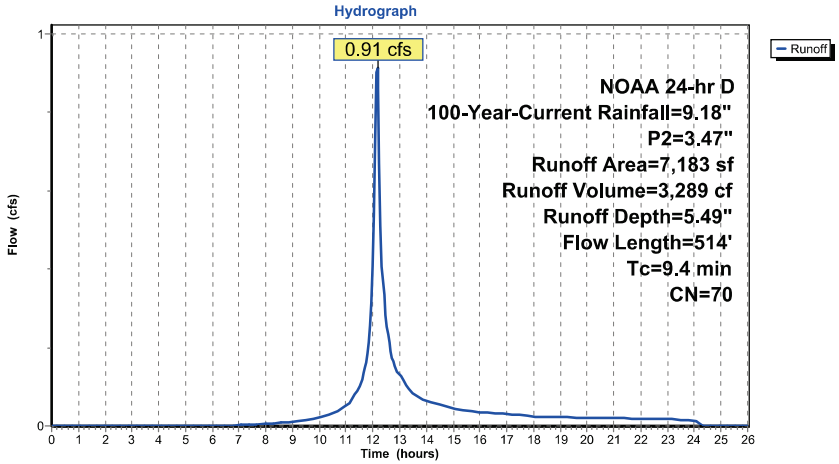
Runoff = 0.91 cfs @ 12.17 hrs, Volume= 3,289 cf, Depth= 5.49"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
	7,183	70	Woods, Good, HSG C
	7,183		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	54	0.0500	0.16		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
0.8	45	0.0100	0.93		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 3.47"
2.8	415	0.0150	2.49		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
9.4	514	Total			

Subcatchment 5S: EX-DA2-PER

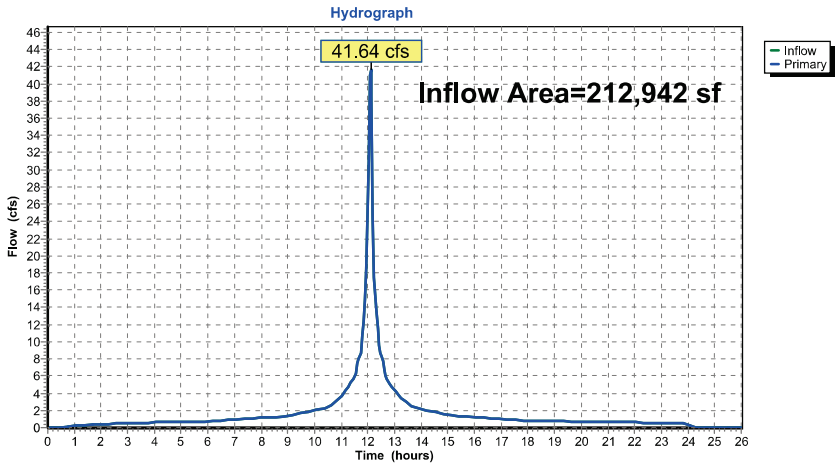


Summary for Link 6L: POA #2

Inflow Area = 212,942 sf, 96.63% Impervious, Inflow Depth = 8.82" for 100-Year-Current event
Inflow = 41.64 cfs @ 12.12 hrs, Volume= 156,571 cf
Primary = 41.64 cfs @ 12.12 hrs, Volume= 156,571 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 6L: POA #2



Summary for Subcatchment 7S: PR-DA1-IMP

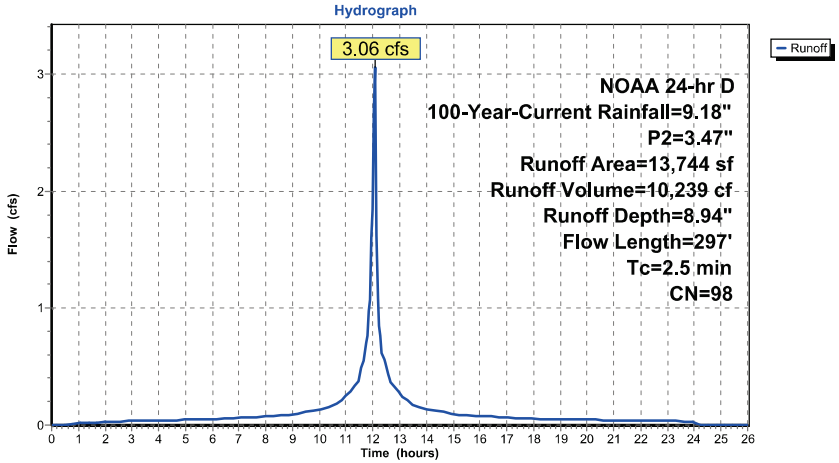
Runoff = 3.06 cfs @ 12.08 hrs, Volume= 10,239 cf, Depth= 8.94"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
*	13,744	98	IMPERVIOUS
	13,744		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0125	1.19		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 3.47"
1.0	174	0.0196	2.84		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
0.1	23	0.0100	5.70	7.00	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
2.5	297	Total			

Subcatchment 7S: PR-DA1-IMP



Summary for Subcatchment 8S: PR-DA1-PER

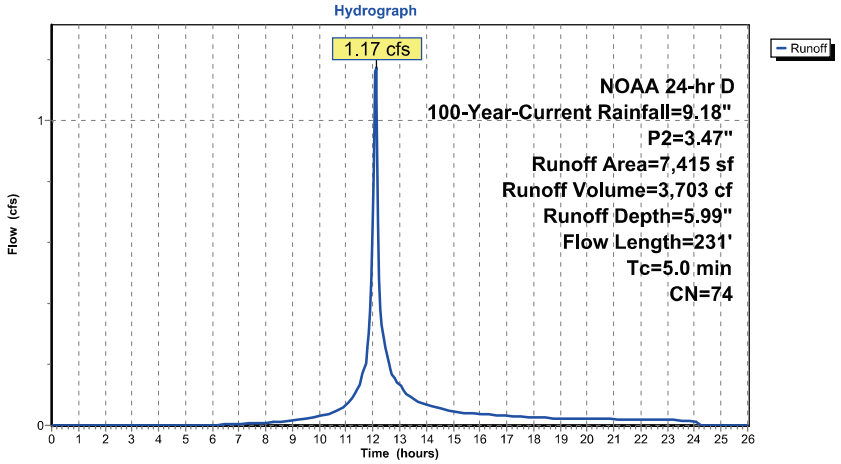
Runoff = 1.17 cfs @ 12.11 hrs, Volume= 3,703 cf, Depth= 5.99"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

Area (sf)	CN	Description
7,415	74	>75% Grass cover, Good, HSG C
7,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	33	0.0692	0.16		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
0.1	8	0.0518	1.26		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 3.47"
0.8	59	0.0180	1.24		**Sheet Flow, TC-CD** Smooth surfaces n= 0.011 P2= 3.47"
0.5	80	0.0180	2.72		**Shallow Concentrated Flow, TC-DE** Paved Kv= 20.3 fps
0.1	29	0.0100	5.70	7.00	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	22	0.0104	5.82	7.14	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
5.0	231	Total			

Subcatchment 8S: PR-DA1-PER

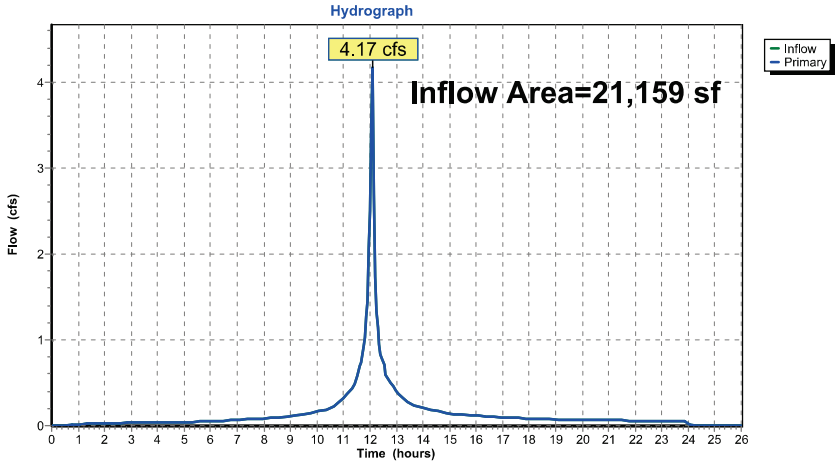


Summary for Link 9L: POA #1

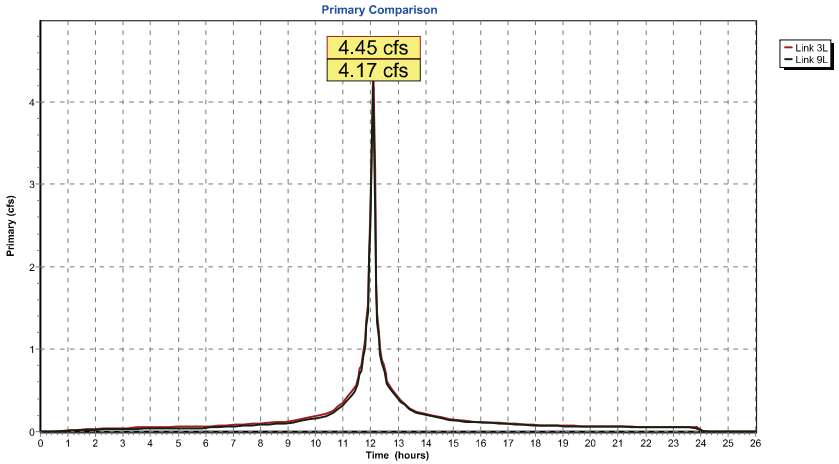
Inflow Area = 21,159 sf, 64.96% Impervious, Inflow Depth = 7.91" for 100-Year-Current event
Inflow = 4.17 cfs @ 12.09 hrs, Volume= 13,942 cf
Primary = 4.17 cfs @ 12.09 hrs, Volume= 13,942 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 9L: POA #1



2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
0.00	0.00	0.00	2.60	0.04	0.03	5.20	0.06	0.05
0.05	0.00	0.00	2.65	0.04	0.03	5.25	0.06	0.05
0.10	0.00	0.00	2.70	0.04	0.03	5.30	0.06	0.05
0.15	0.00	0.00	2.75	0.05	0.03	5.35	0.06	0.05
0.20	0.00	0.00	2.80	0.05	0.03	5.40	0.06	0.05
0.25	0.00	0.00	2.85	0.05	0.03	5.45	0.06	0.05
0.30	0.00	0.00	2.90	0.05	0.03	5.50	0.06	0.05
0.35	0.00	0.00	2.95	0.05	0.03	5.55	0.06	0.05
0.40	0.00	0.00	3.00	0.05	0.03	5.60	0.06	0.05
0.45	0.00	0.00	3.05	0.05	0.03	5.65	0.06	0.05
0.50	0.00	0.00	3.10	0.05	0.04	5.70	0.07	0.05
0.55	0.00	0.00	3.15	0.05	0.04	5.75	0.07	0.05
0.60	0.01	0.00	3.20	0.05	0.04	5.80	0.07	0.05
0.65	0.01	0.01	3.25	0.05	0.04	5.85	0.07	0.05
0.70	0.01	0.01	3.30	0.05	0.04	5.90	0.07	0.05
0.75	0.01	0.01	3.35	0.05	0.04	5.95	0.07	0.05
0.80	0.01	0.01	3.40	0.05	0.04	6.00	0.07	0.05
0.85	0.01	0.01	3.45	0.05	0.04	6.05	0.07	0.05
0.90	0.02	0.01	3.50	0.05	0.04	6.10	0.07	0.05
0.95	0.02	0.01	3.55	0.05	0.04	6.15	0.07	0.05
1.00	0.02	0.01	3.60	0.05	0.04	6.20	0.07	0.05
1.05	0.02	0.01	3.65	0.05	0.04	6.25	0.07	0.05
1.10	0.02	0.02	3.70	0.05	0.04	6.30	0.07	0.05
1.15	0.02	0.02	3.75	0.05	0.04	6.35	0.07	0.06
1.20	0.02	0.02	3.80	0.05	0.04	6.40	0.07	0.06
1.25	0.02	0.02	3.85	0.05	0.04	6.45	0.07	0.06
1.30	0.03	0.02	3.90	0.05	0.04	6.50	0.08	0.06
1.35	0.03	0.02	3.95	0.05	0.04	6.55	0.08	0.06
1.40	0.03	0.02	4.00	0.05	0.04	6.60	0.08	0.06
1.45	0.03	0.02	4.05	0.06	0.04	6.65	0.08	0.06
1.50	0.03	0.02	4.10	0.06	0.04	6.70	0.08	0.06
1.55	0.03	0.02	4.15	0.06	0.04	6.75	0.08	0.06
1.60	0.03	0.02	4.20	0.06	0.04	6.80	0.08	0.06
1.65	0.03	0.02	4.25	0.06	0.04	6.85	0.08	0.06
1.70	0.03	0.02	4.30	0.06	0.04	6.90	0.08	0.06
1.75	0.03	0.02	4.35	0.06	0.04	6.95	0.08	0.07
1.80	0.03	0.03	4.40	0.06	0.04	7.00	0.09	0.07
1.85	0.03	0.03	4.45	0.06	0.04	7.05	0.09	0.07
1.90	0.04	0.03	4.50	0.06	0.04	7.10	0.09	0.07
1.95	0.04	0.03	4.55	0.06	0.04	7.15	0.09	0.07
2.00	0.04	0.03	4.60	0.06	0.04	7.20	0.09	0.07
2.05	0.04	0.03	4.65	0.06	0.04	7.25	0.09	0.07
2.10	0.04	0.03	4.70	0.06	0.04	7.30	0.09	0.07
2.15	0.04	0.03	4.75	0.06	0.04	7.35	0.09	0.07
2.20	0.04	0.03	4.80	0.06	0.04	7.40	0.09	0.07
2.25	0.04	0.03	4.85	0.06	0.04	7.45	0.09	0.07
2.30	0.04	0.03	4.90	0.06	0.04	7.50	0.10	0.08
2.35	0.04	0.03	4.95	0.06	0.04	7.55	0.10	0.08
2.40	0.04	0.03	5.00	0.06	0.04	7.60	0.10	0.08
2.45	0.04	0.03	5.05	0.06	0.04	7.65	0.10	0.08
2.50	0.04	0.03	5.10	0.06	0.05	7.70	0.10	0.08
2.55	0.04	0.03	5.15	0.06	0.05	7.75	0.10	0.08

2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
7.80	0.10	0.08	10.40	0.22	0.19	13.00	0.42	0.40
7.85	0.10	0.08	10.45	0.23	0.20	13.05	0.40	0.38
7.90	0.10	0.08	10.50	0.23	0.20	13.10	0.38	0.36
7.95	0.10	0.08	10.55	0.24	0.21	13.15	0.36	0.34
8.00	0.11	0.08	10.60	0.25	0.22	13.20	0.35	0.34
8.05	0.11	0.09	10.65	0.27	0.23	13.25	0.34	0.32
8.10	0.11	0.09	10.70	0.28	0.24	13.30	0.32	0.31
8.15	0.11	0.09	10.75	0.29	0.26	13.35	0.31	0.30
8.20	0.11	0.09	10.80	0.30	0.27	13.40	0.30	0.29
8.25	0.11	0.09	10.85	0.32	0.28	13.45	0.29	0.27
8.30	0.11	0.09	10.90	0.33	0.29	13.50	0.27	0.26
8.35	0.11	0.09	10.95	0.34	0.30	13.55	0.26	0.25
8.40	0.11	0.09	11.00	0.35	0.31	13.60	0.25	0.24
8.45	0.11	0.09	11.05	0.38	0.34	13.65	0.24	0.23
8.50	0.12	0.09	11.10	0.40	0.35	13.70	0.24	0.23
8.55	0.12	0.10	11.15	0.42	0.38	13.75	0.23	0.22
8.60	0.12	0.10	11.20	0.44	0.39	13.80	0.23	0.22
8.65	0.12	0.10	11.25	0.46	0.42	13.85	0.23	0.22
8.70	0.12	0.10	11.30	0.48	0.43	13.90	0.22	0.21
8.75	0.12	0.10	11.35	0.51	0.46	13.95	0.22	0.21
8.80	0.12	0.10	11.40	0.53	0.48	14.00	0.22	0.21
8.85	0.12	0.10	11.45	0.55	0.50	14.05	0.21	0.20
8.90	0.12	0.10	11.50	0.58	0.52	14.10	0.21	0.20
8.95	0.12	0.10	11.55	0.67	0.63	14.15	0.21	0.20
9.00	0.13	0.10	11.60	0.76	0.69	14.20	0.20	0.19
9.05	0.13	0.11	11.65	0.80	0.73	14.25	0.20	0.19
9.10	0.13	0.11	11.70	0.82	0.75	14.30	0.20	0.19
9.15	0.14	0.11	11.75	0.97	0.92	14.35	0.19	0.18
9.20	0.14	0.12	11.80	1.11	1.02	14.40	0.19	0.18
9.25	0.14	0.12	11.85	1.34	1.28	14.45	0.19	0.18
9.30	0.15	0.12	11.90	1.56	1.45	14.50	0.18	0.17
9.35	0.15	0.13	11.95	2.13	2.08	14.55	0.18	0.17
9.40	0.15	0.13	12.00	2.67	2.50	14.60	0.17	0.17
9.45	0.16	0.13	12.05	3.61	3.55	14.65	0.17	0.16
9.50	0.16	0.13	12.10	**4.44**	**4.13**	14.70	0.17	0.16
9.55	0.16	0.14	12.15	3.18	2.70	14.75	0.16	0.16
9.60	0.17	0.14	12.20	1.85	1.74	14.80	0.16	0.15
9.65	0.17	0.14	12.25	1.43	1.33	14.85	0.16	0.15
9.70	0.17	0.15	12.30	1.20	1.14	14.90	0.15	0.15
9.75	0.18	0.15	12.35	1.02	0.94	14.95	0.15	0.14
9.80	0.18	0.15	12.40	0.88	0.83	15.00	0.15	0.14
9.85	0.18	0.16	12.45	0.83	0.79	15.05	0.14	0.14
9.90	0.19	0.16	12.50	0.81	0.77	15.10	0.14	0.13
9.95	0.19	0.16	12.55	0.71	0.66	15.15	0.14	0.13
10.00	0.19	0.17	12.60	0.62	0.59	15.20	0.14	0.13
10.05	0.20	0.17	12.65	0.58	0.55	15.25	0.14	0.13
10.10	0.20	0.17	12.70	0.56	0.53	15.30	0.14	0.13
10.15	0.20	0.18	12.75	0.54	0.51	15.35	0.13	0.13
10.20	0.21	0.18	12.80	0.51	0.49	15.40	0.13	0.13
10.25	0.21	0.18	12.85	0.49	0.46	15.45	0.13	0.13
10.30	0.21	0.19	12.90	0.47	0.45	15.50	0.13	0.13
10.35	0.22	0.19	12.95	0.44	0.42	15.55	0.13	0.12

Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
15.60	0.13	0.12	18.20	0.08	0.08	20.80	0.07	0.06
15.65	0.13	0.12	18.25	0.08	0.08	20.85	0.07	0.06
15.70	0.13	0.12	18.30	0.08	0.08	20.90	0.07	0.06
15.75	0.13	0.12	18.35	0.08	0.07	20.95	0.06	0.06
15.80	0.12	0.12	18.40	0.08	0.07	21.00	0.06	0.06
15.85	0.12	0.12	18.45	0.08	0.07	21.05	0.06	0.06
15.90	0.12	0.12	18.50	0.08	0.07	21.10	0.06	0.06
15.95	0.12	0.12	18.55	0.08	0.07	21.15	0.06	0.06
16.00	0.12	0.12	18.60	0.08	0.07	21.20	0.06	0.06
16.05	0.12	0.12	18.65	0.08	0.07	21.25	0.06	0.06
16.10	0.12	0.11	18.70	0.08	0.07	21.30	0.06	0.06
16.15	0.12	0.11	18.75	0.08	0.07	21.35	0.06	0.06
16.20	0.12	0.11	18.80	0.08	0.07	21.40	0.06	0.06
16.25	0.12	0.11	18.85	0.08	0.07	21.45	0.06	0.06
16.30	0.12	0.11	18.90	0.07	0.07	21.50	0.06	0.06
16.35	0.11	0.11	18.95	0.07	0.07	21.55	0.06	0.06
16.40	0.11	0.11	19.00	0.07	0.07	21.60	0.06	0.06
16.45	0.11	0.11	19.05	0.07	0.07	21.65	0.06	0.06
16.50	0.11	0.11	19.10	0.07	0.07	21.70	0.06	0.06
16.55	0.11	0.11	19.15	0.07	0.07	21.75	0.06	0.06
16.60	0.11	0.10	19.20	0.07	0.07	21.80	0.06	0.06
16.65	0.11	0.10	19.25	0.07	0.07	21.85	0.06	0.06
16.70	0.11	0.10	19.30	0.07	0.07	21.90	0.06	0.06
16.75	0.11	0.10	19.35	0.07	0.07	21.95	0.06	0.06
16.80	0.11	0.10	19.40	0.07	0.07	22.00	0.06	0.06
16.85	0.10	0.10	19.45	0.07	0.07	22.05	0.06	0.06
16.90	0.10	0.10	19.50	0.07	0.07	22.10	0.06	0.06
16.95	0.10	0.10	19.55	0.07	0.07	22.15	0.06	0.06
17.00	0.10	0.10	19.60	0.07	0.07	22.20	0.06	0.06
17.05	0.10	0.10	19.65	0.07	0.07	22.25	0.06	0.06
17.10	0.10	0.10	19.70	0.07	0.07	22.30	0.06	0.06
17.15	0.10	0.09	19.75	0.07	0.07	22.35	0.06	0.06
17.20	0.10	0.09	19.80	0.07	0.07	22.40	0.06	0.06
17.25	0.10	0.09	19.85	0.07	0.07	22.45	0.06	0.06
17.30	0.10	0.09	19.90	0.07	0.07	22.50	0.06	0.05
17.35	0.09	0.09	19.95	0.07	0.07	22.55	0.06	0.05
17.40	0.09	0.09	20.00	0.07	0.07	22.60	0.06	0.05
17.45	0.09	0.09	20.05	0.07	0.07	22.65	0.06	0.05
17.50	0.09	0.09	20.10	0.07	0.07	22.70	0.06	0.05
17.55	0.09	0.09	20.15	0.07	0.07	22.75	0.06	0.05
17.60	0.09	0.09	20.20	0.07	0.07	22.80	0.06	0.05
17.65	0.09	0.08	20.25	0.07	0.07	22.85	0.06	0.05
17.70	0.09	0.08	20.30	0.07	0.07	22.90	0.06	0.05
17.75	0.09	0.08	20.35	0.07	0.07	22.95	0.05	0.05
17.80	0.09	0.08	20.40	0.07	0.07	23.00	0.05	0.05
17.85	0.08	0.08	20.45	0.07	0.06	23.05	0.05	0.05
17.90	0.08	0.08	20.50	0.07	0.06	23.10	0.05	0.05
17.95	0.08	0.08	20.55	0.07	0.06	23.15	0.05	0.05
18.00	0.08	0.08	20.60	0.07	0.06	23.20	0.05	0.05
18.05	0.08	0.08	20.65	0.07	0.06	23.25	0.05	0.05
18.10	0.08	0.08	20.70	0.07	0.06	23.30	0.05	0.05
18.15	0.08	0.08	20.75	0.07	0.06	23.35	0.05	0.05

2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
23.40	0.05	0.05	26.00	0.00	0.00
23.45	0.05	0.05			
23.50	0.05	0.05			
23.55	0.05	0.05			
23.60	0.05	0.05			
23.65	0.05	0.05			
23.70	0.05	0.05			
23.75	0.05	0.05			
23.80	0.05	0.05			
23.85	0.05	0.05			
23.90	0.05	0.05			
23.95	0.05	0.05			
24.00	0.05	0.05			
24.05	0.03	0.02			
24.10	0.00	0.00			
24.15	0.00	0.00			
24.20	0.00	0.00			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 10S: PR-DA2.1-IMP

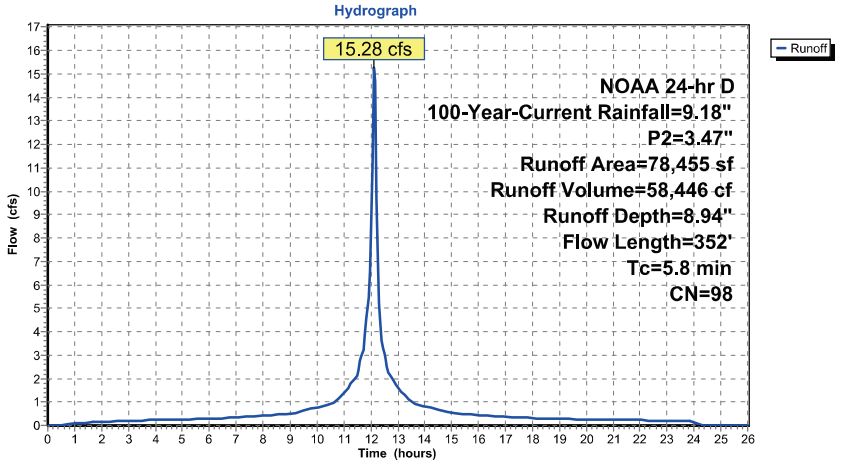
Runoff = 15.28 cfs @ 12.12 hrs, Volume= 58,446 cf, Depth= 8.94"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.84		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
3.4	15	0.0150	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.7	56	0.0220	1.33		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.8	352	Total			

Subcatchment 10S: PR-DA2.1-IMP



Summary for Subcatchment 11S: PR-DA2.1-PER

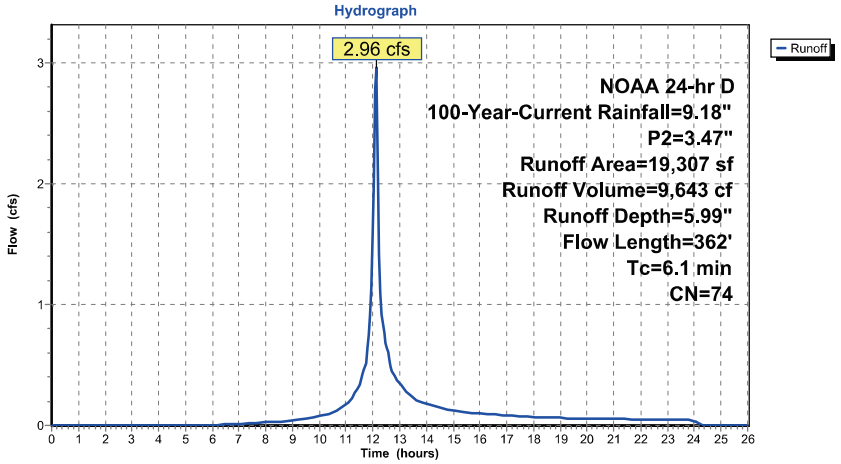
Runoff = 2.96 cfs @ 12.13 hrs, Volume= 9,643 cf, Depth= 5.99"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.4	30	0.0200	1.13		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 3.47"
0.6	33	0.0102	0.88		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
6.1	362	Total			

Subcatchment 11S: PR-DA2.1-PER

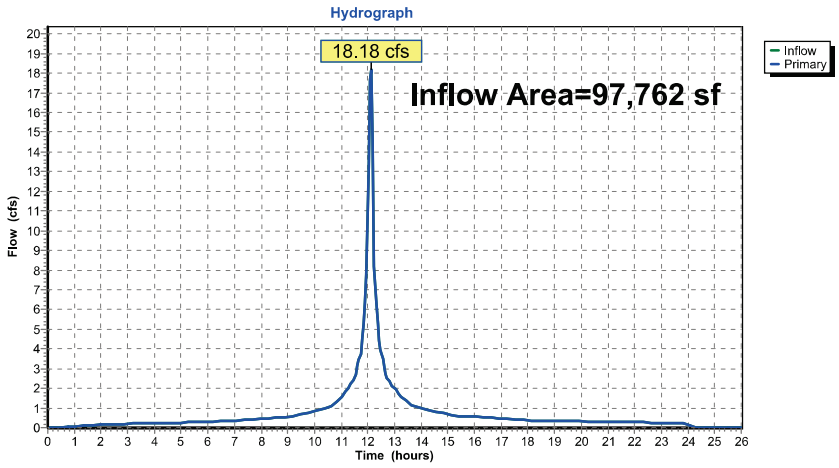


Summary for Link 12L: PR-DA 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 8.36" for 100-Year-Current event
Inflow = 18.18 cfs @ 12.12 hrs, Volume= 68,089 cf
Primary = 18.18 cfs @ 12.12 hrs, Volume= 68,089 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 12L: PR-DA 2.1



Summary for Subcatchment 13S: PR-DA2.2-IMP

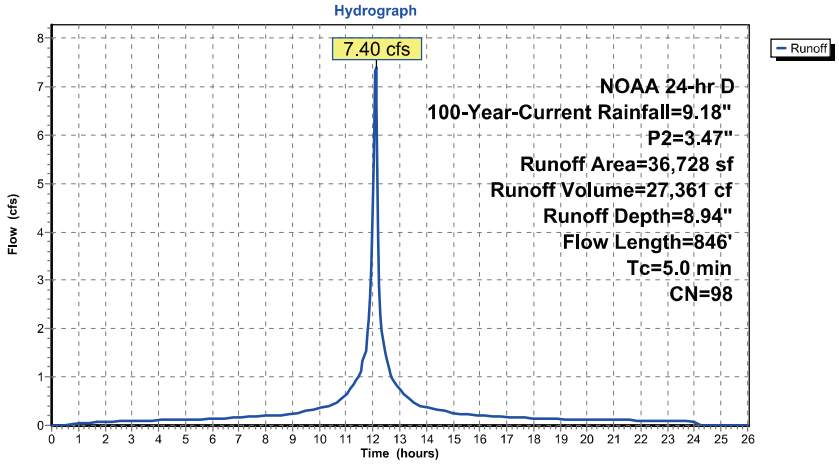
Runoff = 7.40 cfs @ 12.11 hrs, Volume= 27,361 cf, Depth= 8.94"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.90		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
1.3	8	0.0433	0.10		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
5.0	846	Total			

Subcatchment 13S: PR-DA2.2-IMP



Summary for Subcatchment 14S: PR-DA2.2-PER

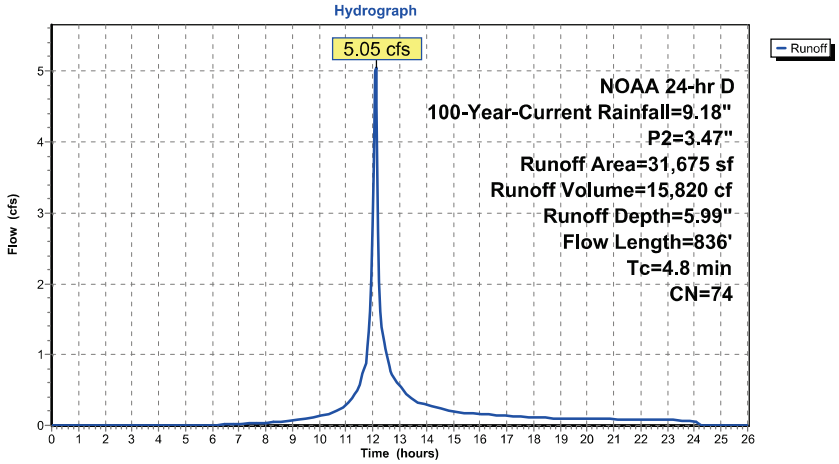
Runoff = 5.05 cfs @ 12.11 hrs, Volume= 15,820 cf, Depth= 5.99"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	8	0.0433	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.8	836	Total			

Subcatchment 14S: PR-DA2.2-PER

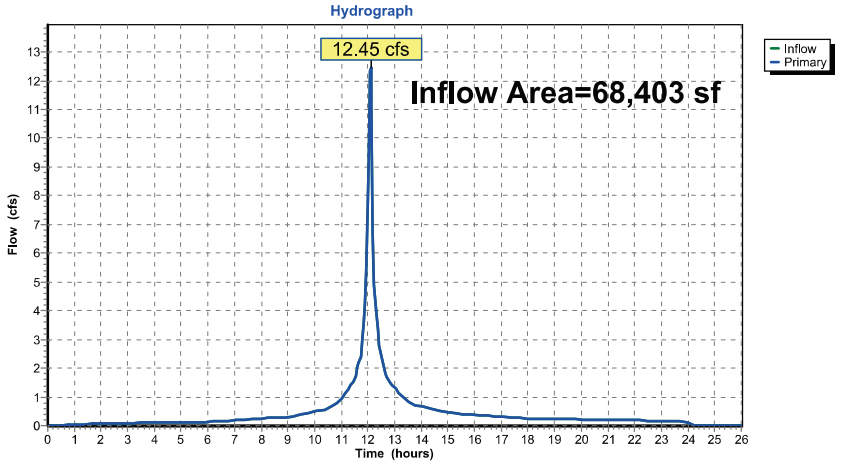


Summary for Link 15L: PR-DA 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 7.58" for 100-Year-Current event
Inflow = 12.45 cfs @ 12.11 hrs, Volume= 43,181 cf
Primary = 12.45 cfs @ 12.11 hrs, Volume= 43,181 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 15L: PR-DA 2.2



Summary for Subcatchment 16S: PR-DA 2 UNDET-IMP

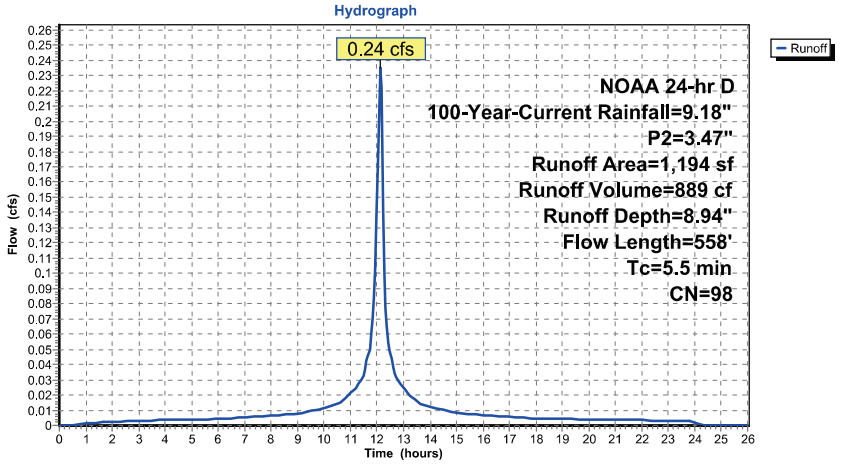
Runoff = 0.24 cfs @ 12.12 hrs, Volume= 889 cf, Depth= 8.94"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
*	1,194	98	IMPERVIOUS
	1,194		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.90		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
3.5	33	0.0650	0.16		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, F-G** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, G-H** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
5.5	558	Total			

Subcatchment 16S: PR-DA 2 UNDET-IMP



Summary for Subcatchment 17S: PR-DA 2 UNDET-PER

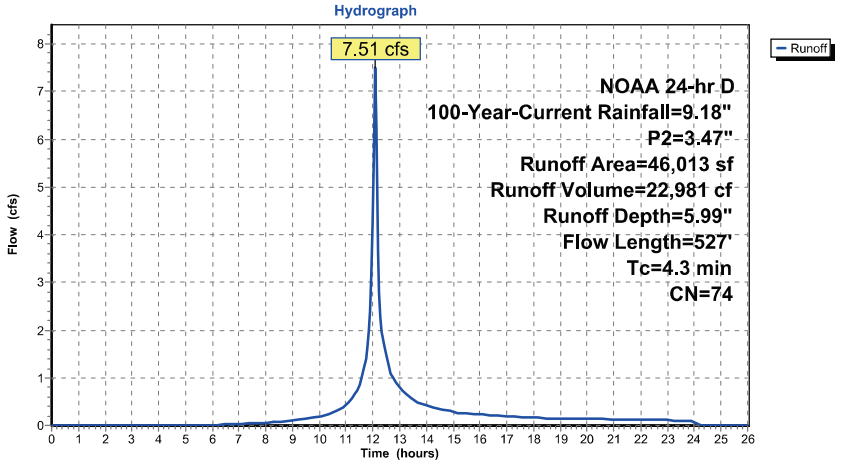
Runoff = 7.51 cfs @ 12.10 hrs, Volume= 22,981 cf, Depth= 5.99"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"

Area (sf)	CN	Description
46,013	74	>75% Grass cover, Good, HSG C
46,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	12	0.0200	0.08		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 3.47"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, TC-BC** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, TC-DE** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, TC-GH** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, TC-HI** Unpaved Kv= 16.1 fps
4.3	527	Total			

Subcatchment 17S: PR-DA 2 UNDET-PER

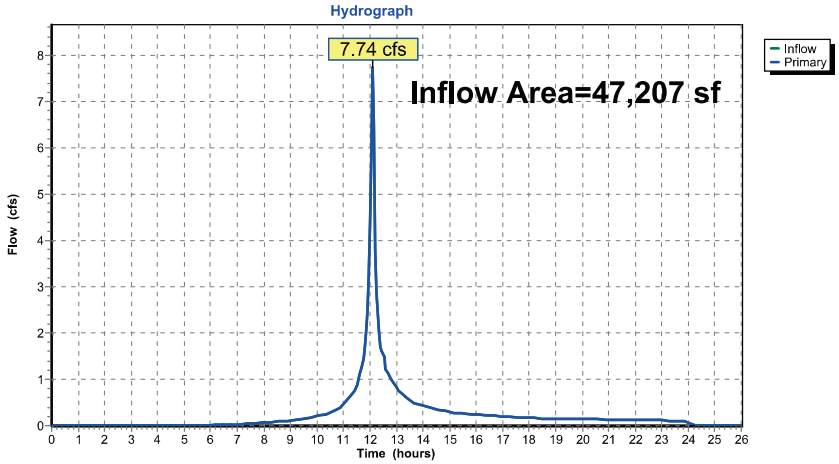


Summary for Link 18L: PR-DA 2 UNDET

Inflow Area = 47,207 sf, 2.53% Impervious, Inflow Depth = 6.07" for 100-Year-Current event
Inflow = 7.74 cfs @ 12.11 hrs, Volume= 23,870 cf
Primary = 7.74 cfs @ 12.11 hrs, Volume= 23,870 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 18L: PR-DA 2 UNDET

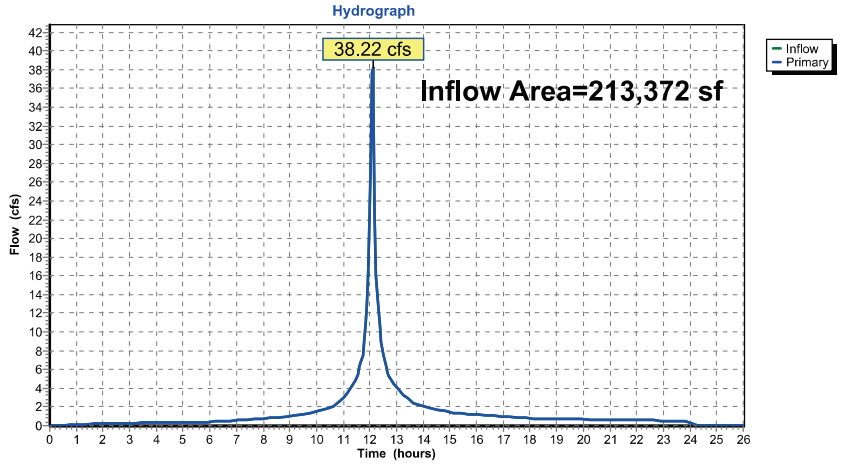


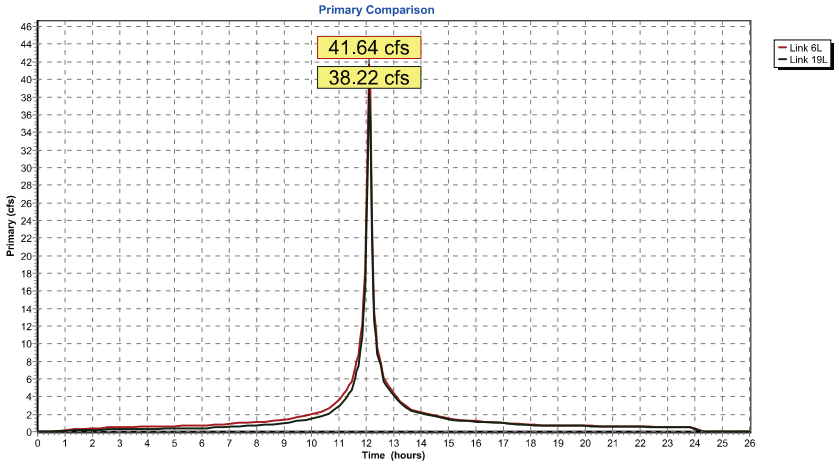
Summary for Link 19L: POA #2

Inflow Area = 213,372 sf, 54.54% Impervious, Inflow Depth = 7.60" for 100-Year-Current event
Inflow = 38.22 cfs @ 12.11 hrs, Volume= 135,140 cf
Primary = 38.22 cfs @ 12.11 hrs, Volume= 135,140 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 19L: POA #2





2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
0.00	0.00	0.00	2.60	0.47	0.27	5.20	0.68	0.38
0.05	0.00	0.00	2.65	0.48	0.27	5.25	0.68	0.39
0.10	0.00	0.00	2.70	0.49	0.27	5.30	0.69	0.39
0.15	0.00	0.00	2.75	0.49	0.28	5.35	0.69	0.39
0.20	0.00	0.00	2.80	0.49	0.28	5.40	0.69	0.39
0.25	0.00	0.00	2.85	0.50	0.28	5.45	0.69	0.39
0.30	0.00	0.00	2.90	0.51	0.29	5.50	0.70	0.39
0.35	0.00	0.00	2.95	0.51	0.29	5.55	0.70	0.40
0.40	0.00	0.00	3.00	0.51	0.29	5.60	0.70	0.40
0.45	0.00	0.00	3.05	0.52	0.29	5.65	0.70	0.40
0.50	0.01	0.01	3.10	0.52	0.30	5.70	0.71	0.41
0.55	0.03	0.02	3.15	0.53	0.30	5.75	0.71	0.41
0.60	0.06	0.03	3.20	0.53	0.30	5.80	0.72	0.41
0.65	0.08	0.04	3.25	0.54	0.30	5.85	0.72	0.42
0.70	0.10	0.05	3.30	0.54	0.31	5.90	0.72	0.42
0.75	0.12	0.06	3.35	0.55	0.31	5.95	0.72	0.42
0.80	0.13	0.07	3.40	0.55	0.31	6.00	0.73	0.43
0.85	0.15	0.08	3.45	0.55	0.31	6.05	0.73	0.43
0.90	0.17	0.09	3.50	0.56	0.32	6.10	0.74	0.44
0.95	0.18	0.10	3.55	0.56	0.32	6.15	0.75	0.44
1.00	0.20	0.11	3.60	0.57	0.32	6.20	0.76	0.45
1.05	0.21	0.12	3.65	0.57	0.32	6.25	0.77	0.46
1.10	0.23	0.13	3.70	0.58	0.33	6.30	0.78	0.47
1.15	0.24	0.13	3.75	0.58	0.33	6.35	0.79	0.48
1.20	0.25	0.14	3.80	0.58	0.33	6.40	0.80	0.48
1.25	0.26	0.15	3.85	0.58	0.33	6.45	0.81	0.49
1.30	0.28	0.16	3.90	0.59	0.33	6.50	0.82	0.50
1.35	0.29	0.16	3.95	0.59	0.34	6.55	0.83	0.50
1.40	0.30	0.17	4.00	0.60	0.34	6.60	0.84	0.51
1.45	0.31	0.17	4.05	0.60	0.34	6.65	0.85	0.52
1.50	0.32	0.18	4.10	0.61	0.34	6.70	0.86	0.53
1.55	0.33	0.18	4.15	0.61	0.34	6.75	0.87	0.54
1.60	0.34	0.19	4.20	0.61	0.35	6.80	0.88	0.55
1.65	0.34	0.19	4.25	0.62	0.35	6.85	0.89	0.55
1.70	0.35	0.20	4.30	0.62	0.35	6.90	0.90	0.56
1.75	0.36	0.20	4.35	0.62	0.35	6.95	0.91	0.57
1.80	0.37	0.21	4.40	0.63	0.36	7.00	0.92	0.58
1.85	0.38	0.21	4.45	0.63	0.36	7.05	0.93	0.59
1.90	0.39	0.22	4.50	0.63	0.36	7.10	0.94	0.60
1.95	0.39	0.22	4.55	0.64	0.36	7.15	0.95	0.60
2.00	0.40	0.23	4.60	0.64	0.36	7.20	0.97	0.61
2.05	0.41	0.23	4.65	0.64	0.36	7.25	0.97	0.62
2.10	0.41	0.23	4.70	0.65	0.36	7.30	0.99	0.63
2.15	0.42	0.24	4.75	0.65	0.37	7.35	0.99	0.64
2.20	0.43	0.24	4.80	0.65	0.37	7.40	1.01	0.65
2.25	0.43	0.24	4.85	0.66	0.37	7.45	1.02	0.66
2.30	0.44	0.25	4.90	0.66	0.37	7.50	1.03	0.67
2.35	0.45	0.25	4.95	0.66	0.38	7.55	1.03	0.67
2.40	0.45	0.26	5.00	0.67	0.38	7.60	1.05	0.68
2.45	0.46	0.26	5.05	0.67	0.38	7.65	1.05	0.69
2.50	0.46	0.26	5.10	0.67	0.38	7.70	1.07	0.70
2.55	0.47	0.26	5.15	0.68	0.38	7.75	1.08	0.71

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
7.80	1.09	0.72	10.40	2.31	1.79	13.00	4.35	4.11
7.85	1.10	0.73	10.45	2.34	1.82	13.05	4.15	3.92
7.90	1.11	0.74	10.50	2.38	1.85	13.10	3.89	3.68
7.95	1.11	0.74	10.55	2.45	1.91	13.15	3.74	3.53
8.00	1.13	0.76	10.60	2.58	2.02	13.20	3.58	3.39
8.05	1.14	0.77	10.65	2.69	2.12	13.25	3.46	3.28
8.10	1.15	0.77	10.70	2.84	2.24	13.30	3.32	3.14
8.15	1.16	0.78	10.75	2.95	2.34	13.35	3.20	3.03
8.20	1.17	0.79	10.80	3.09	2.46	13.40	3.06	2.90
8.25	1.18	0.80	10.85	3.21	2.56	13.45	2.94	2.79
8.30	1.19	0.81	10.90	3.35	2.68	13.50	2.80	2.65
8.35	1.20	0.82	10.95	3.46	2.78	13.55	2.68	2.54
8.40	1.21	0.83	11.00	3.61	2.91	13.60	2.54	2.40
8.45	1.22	0.84	11.05	3.76	3.05	13.65	2.46	2.34
8.50	1.23	0.85	11.10	4.01	3.26	13.70	2.41	2.29
8.55	1.24	0.86	11.15	4.20	3.43	13.75	2.38	2.26
8.60	1.25	0.87	11.20	4.46	3.65	13.80	2.34	2.22
8.65	1.26	0.88	11.25	4.65	3.83	13.85	2.31	2.19
8.70	1.27	0.89	11.30	4.91	4.06	13.90	2.26	2.15
8.75	1.28	0.90	11.35	5.11	4.24	13.95	2.23	2.12
8.80	1.29	0.91	11.40	5.37	4.47	14.00	2.19	2.09
8.85	1.30	0.92	11.45	5.57	4.66	14.05	2.16	2.06
8.90	1.31	0.93	11.50	5.83	4.89	14.10	2.12	2.02
8.95	1.32	0.94	11.55	6.37	5.39	14.15	2.09	1.99
9.00	1.33	0.95	11.60	7.44	6.32	14.20	2.05	1.95
9.05	1.35	0.97	11.65	7.97	6.80	14.25	2.02	1.92
9.10	1.39	0.99	11.70	8.31	7.12	14.30	1.98	1.89
9.15	1.42	1.02	11.75	9.10	7.87	14.35	1.95	1.86
9.20	1.46	1.05	11.80	10.73	9.32	14.40	1.91	1.82
9.25	1.49	1.07	11.85	12.35	10.84	14.45	1.88	1.79
9.30	1.53	1.11	11.90	14.84	13.07	14.50	1.84	1.75
9.35	1.56	1.13	11.95	18.34	16.39	14.55	1.81	1.72
9.40	1.60	1.16	12.00	24.53	22.03	14.60	1.77	1.69
9.45	1.63	1.19	12.05	31.01	28.33	14.65	1.74	1.66
9.50	1.67	1.22	12.10	**41.05**	**37.72**	14.70	1.70	1.62
9.55	1.70	1.25	12.15	38.68	35.23	14.75	1.67	1.59
9.60	1.74	1.28	12.20	24.53	22.29	14.80	1.63	1.55
9.65	1.77	1.31	12.25	17.50	16.00	14.85	1.60	1.52
9.70	1.81	1.34	12.30	13.59	12.53	14.90	1.55	1.48
9.75	1.84	1.37	12.35	11.53	10.66	14.95	1.52	1.45
9.80	1.88	1.40	12.40	9.57	8.89	15.00	1.48	1.42
9.85	1.91	1.43	12.45	8.74	8.14	15.05	1.45	1.39
9.90	1.95	1.46	12.50	8.32	7.78	15.10	1.41	1.35
9.95	1.98	1.49	12.55	7.73	7.22	15.15	1.39	1.33
10.00	2.02	1.53	12.60	6.65	6.21	15.20	1.38	1.32
10.05	2.05	1.56	12.65	6.10	5.72	15.25	1.37	1.31
10.10	2.09	1.59	12.70	5.76	5.41	15.30	1.36	1.30
10.15	2.12	1.62	12.75	5.53	5.20	15.35	1.35	1.29
10.20	2.16	1.65	12.80	5.27	4.96	15.40	1.34	1.28
10.25	2.19	1.68	12.85	5.07	4.77	15.45	1.33	1.27
10.30	2.24	1.72	12.90	4.81	4.53	15.50	1.32	1.26
10.35	2.27	1.75	12.95	4.61	4.35	15.55	1.31	1.25

2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Current Rainfall=9.18", P2=3.47"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
15.60	1.29	1.24	18.20	0.79	0.76	20.80	0.65	0.63
15.65	1.29	1.23	18.25	0.78	0.75	20.85	0.65	0.63
15.70	1.28	1.22	18.30	0.78	0.75	20.90	0.65	0.63
15.75	1.27	1.21	18.35	0.78	0.75	20.95	0.65	0.62
15.80	1.25	1.20	18.40	0.78	0.75	21.00	0.65	0.62
15.85	1.24	1.19	18.45	0.77	0.74	21.05	0.64	0.62
15.90	1.23	1.18	18.50	0.77	0.74	21.10	0.64	0.62
15.95	1.23	1.17	18.55	0.77	0.74	21.15	0.64	0.61
16.00	1.22	1.17	18.60	0.77	0.74	21.20	0.64	0.61
16.05	1.21	1.16	18.65	0.76	0.73	21.25	0.63	0.61
16.10	1.20	1.15	18.70	0.76	0.73	21.30	0.63	0.61
16.15	1.19	1.14	18.75	0.76	0.73	21.35	0.63	0.60
16.20	1.17	1.12	18.80	0.76	0.73	21.40	0.63	0.60
16.25	1.17	1.12	18.85	0.75	0.73	21.45	0.62	0.60
16.30	1.16	1.11	18.90	0.75	0.72	21.50	0.62	0.60
16.35	1.15	1.10	18.95	0.75	0.72	21.55	0.62	0.60
16.40	1.14	1.09	19.00	0.74	0.72	21.60	0.61	0.59
16.45	1.13	1.08	19.05	0.74	0.71	21.65	0.61	0.59
16.50	1.11	1.07	19.10	0.74	0.71	21.70	0.61	0.59
16.55	1.11	1.06	19.15	0.74	0.71	21.75	0.61	0.59
16.60	1.09	1.05	19.20	0.74	0.71	21.80	0.60	0.58
16.65	1.09	1.04	19.25	0.73	0.71	21.85	0.60	0.58
16.70	1.08	1.03	19.30	0.73	0.70	21.90	0.60	0.58
16.75	1.07	1.02	19.35	0.73	0.70	21.95	0.60	0.58
16.80	1.06	1.01	19.40	0.72	0.70	22.00	0.60	0.58
16.85	1.05	1.00	19.45	0.72	0.69	22.05	0.59	0.57
16.90	1.04	0.99	19.50	0.72	0.69	22.10	0.59	0.57
16.95	1.03	0.99	19.55	0.72	0.69	22.15	0.59	0.57
17.00	1.02	0.97	19.60	0.71	0.69	22.20	0.59	0.57
17.05	1.01	0.97	19.65	0.71	0.69	22.25	0.58	0.56
17.10	1.00	0.96	19.70	0.71	0.69	22.30	0.58	0.56
17.15	0.99	0.95	19.75	0.71	0.68	22.35	0.58	0.56
17.20	0.97	0.94	19.80	0.71	0.68	22.40	0.57	0.55
17.25	0.97	0.93	19.85	0.70	0.68	22.45	0.57	0.55
17.30	0.96	0.92	19.90	0.70	0.67	22.50	0.57	0.55
17.35	0.95	0.91	19.95	0.70	0.67	22.55	0.57	0.55
17.40	0.93	0.90	20.00	0.69	0.67	22.60	0.56	0.55
17.45	0.93	0.89	20.05	0.69	0.67	22.65	0.56	0.54
17.50	0.91	0.88	20.10	0.69	0.67	22.70	0.56	0.54
17.55	0.91	0.87	20.15	0.69	0.66	22.75	0.56	0.54
17.60	0.89	0.86	20.20	0.69	0.66	22.80	0.56	0.54
17.65	0.88	0.85	20.25	0.68	0.66	22.85	0.55	0.53
17.70	0.87	0.84	20.30	0.68	0.65	22.90	0.55	0.53
17.75	0.87	0.83	20.35	0.68	0.65	22.95	0.55	0.53
17.80	0.86	0.82	20.40	0.68	0.65	23.00	0.54	0.52
17.85	0.85	0.81	20.45	0.67	0.65	23.05	0.54	0.52
17.90	0.84	0.80	20.50	0.67	0.65	23.10	0.54	0.52
17.95	0.83	0.79	20.55	0.67	0.64	23.15	0.54	0.52
18.00	0.82	0.78	20.60	0.67	0.64	23.20	0.53	0.52
18.05	0.81	0.78	20.65	0.66	0.64	23.25	0.53	0.51
18.10	0.79	0.76	20.70	0.66	0.64	23.30	0.53	0.51
18.15	0.79	0.76	20.75	0.66	0.63	23.35	0.53	0.51

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
23.40	0.52	0.51	26.00	0.00	0.00
23.45	0.52	0.50			
23.50	0.52	0.50			
23.55	0.52	0.50			
23.60	0.51	0.50			
23.65	0.51	0.50			
23.70	0.51	0.49			
23.75	0.51	0.49			
23.80	0.50	0.49			
23.85	0.50	0.48			
23.90	0.50	0.48			
23.95	0.50	0.48			
24.00	0.50	0.48			
24.05	0.39	0.37			
24.10	0.14	0.13			
24.15	0.04	0.03			
24.20	0.01	0.01			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 1S: EX-DA1-IMP

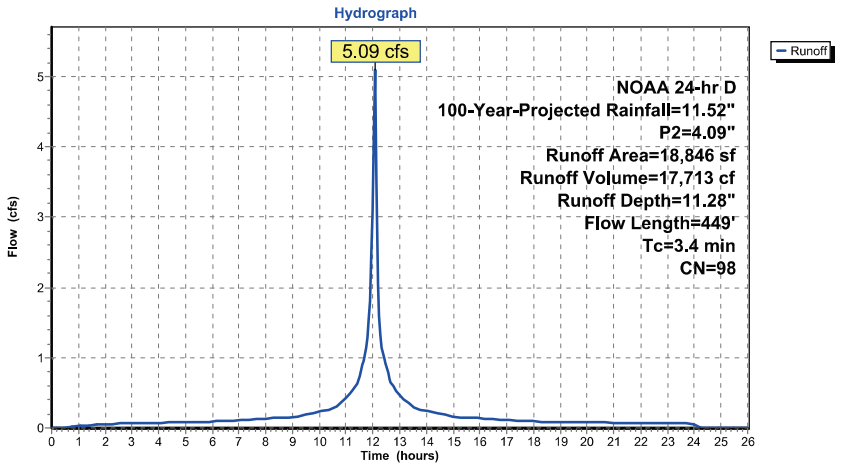
Runoff = 5.09 cfs @ 12.09 hrs, Volume= 17,713 cf, Depth=11.28"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	18,142	98	IMPERVIOUS
*	704	98	BUILDINGS
	18,846	98	Weighted Average
	18,846		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0216	1.60		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 4.09"
2.4	349	0.0139	2.39		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
3.4	449	Total			

Subcatchment 1S: EX-DA1-IMP



Summary for Subcatchment 2S: EX-DA1-PER

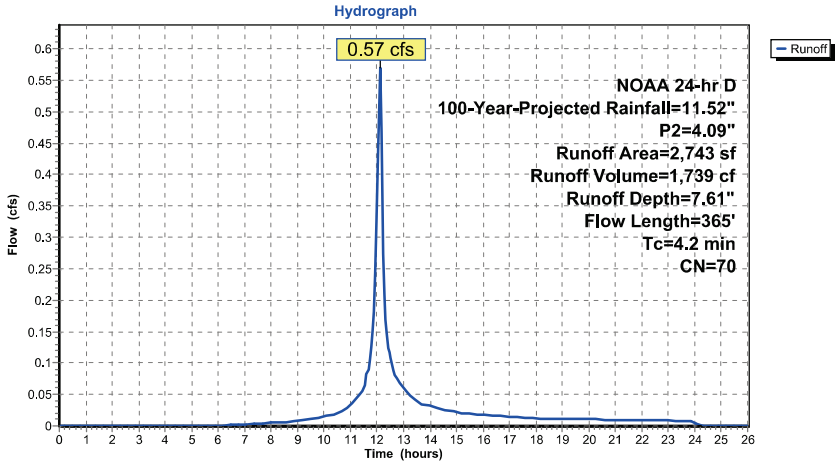
Runoff = 0.57 cfs @ 12.10 hrs, Volume= 1,739 cf, Depth= 7.61"
Routed to Link 3L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
2,743	70	Woods, Good, HSG C
2,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	7	0.0364	0.10		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
1.2	93	0.0130	1.29		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 4.09"
1.8	265	0.0139	2.39		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
4.2	365	Total			

Subcatchment 2S: EX-DA1-PER

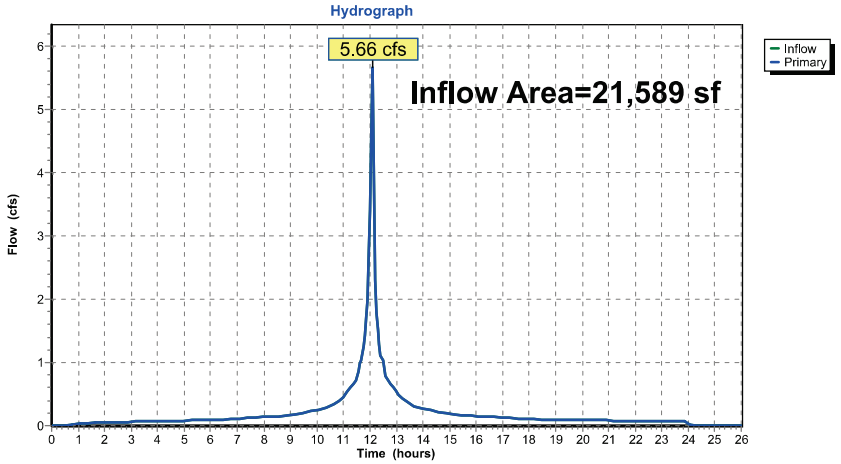


Summary for Link 3L: POA #1

Inflow Area = 21,589 sf, 87.29% Impervious, Inflow Depth = 10.81" for 100-Year-Projected event
Inflow = 5.66 cfs @ 12.09 hrs, Volume= 19,452 cf
Primary = 5.66 cfs @ 12.09 hrs, Volume= 19,452 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 3L: POA #1



Summary for Subcatchment 4S: EX-DA2-IMP

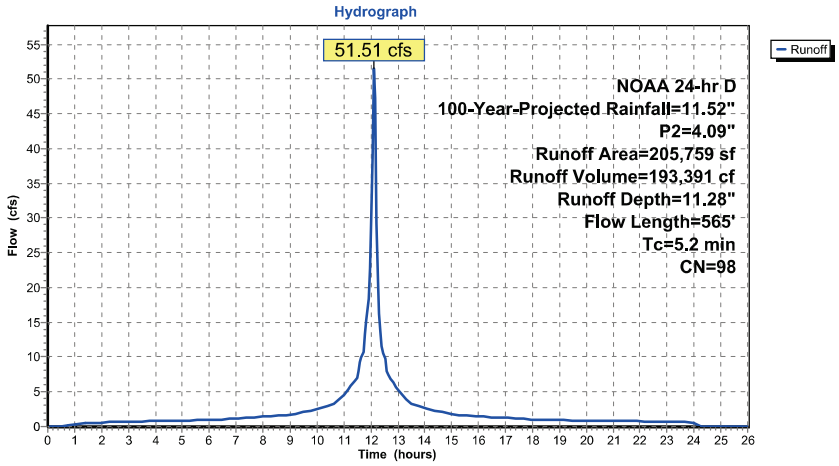
Runoff = 51.51 cfs @ 12.11 hrs, Volume= 193,391 cf, Depth=11.28"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	195,091	98	IMPERVIOUS
*	10,668	98	BUILDING
	205,759	98	Weighted Average
	205,759		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0130	1.31		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 4.09"
2.2	230	0.0075	1.76		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
1.7	235	0.0130	2.31		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
5.2	565	Total			

Subcatchment 4S: EX-DA2-IMP



Summary for Subcatchment 5S: EX-DA2-PER

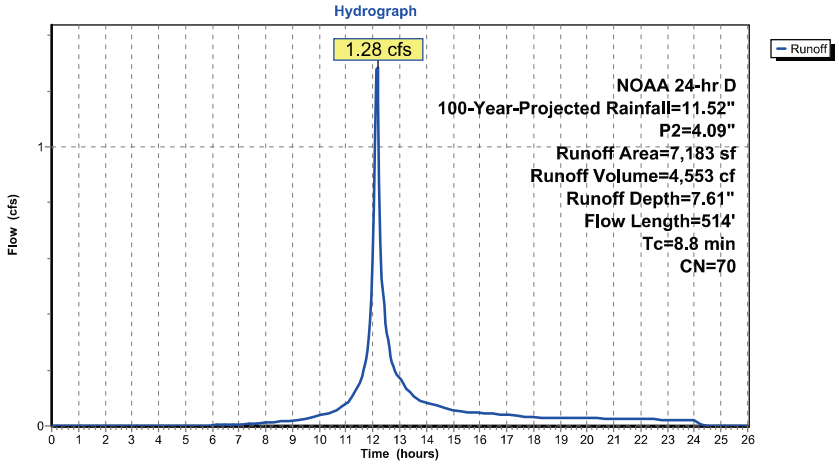
Runoff = 1.28 cfs @ 12.16 hrs, Volume= 4,553 cf, Depth= 7.61"
Routed to Link 6L : POA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
	7,183	70	Woods, Good, HSG C
	7,183		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	54	0.0500	0.17		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
0.7	45	0.0100	1.00		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 4.09"
2.8	415	0.0150	2.49		**Shallow Concentrated Flow, TC-CD** Paved Kv= 20.3 fps
8.8	514	Total			

Subcatchment 5S: EX-DA2-PER

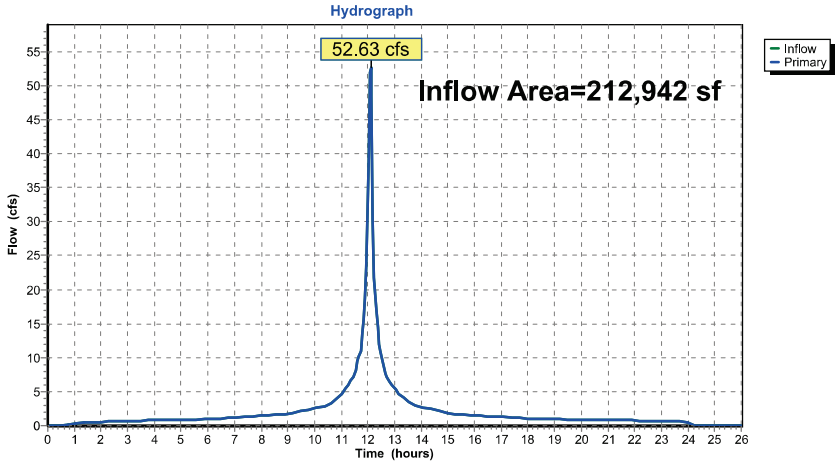


Summary for Link 6L: POA #2

Inflow Area = 212,942 sf, 96.63% Impervious, Inflow Depth = 11.15" for 100-Year-Projected event
Inflow = 52.63 cfs @ 12.11 hrs, Volume= 197,943 cf
Primary = 52.63 cfs @ 12.11 hrs, Volume= 197,943 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 121L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 6L: POA #2



Summary for Subcatchment 7S: PR-DA1-IMP

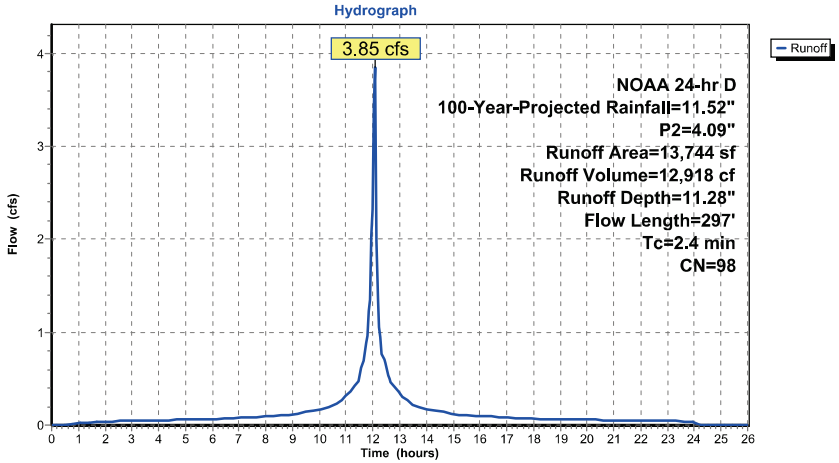
Runoff = 3.85 cfs @ 12.08 hrs, Volume= 12,918 cf, Depth=11.28"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	13,744	98	IMPERVIOUS
	13,744		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0125	1.29		**Sheet Flow, TC-AB** Smooth surfaces n= 0.011 P2= 4.09"
1.0	174	0.0196	2.84		**Shallow Concentrated Flow, TC-BC** Paved Kv= 20.3 fps
0.1	23	0.0100	5.70	7.00	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
2.4	297	Total			

Subcatchment 7S: PR-DA1-IMP



Summary for Subcatchment 8S: PR-DA1-PER

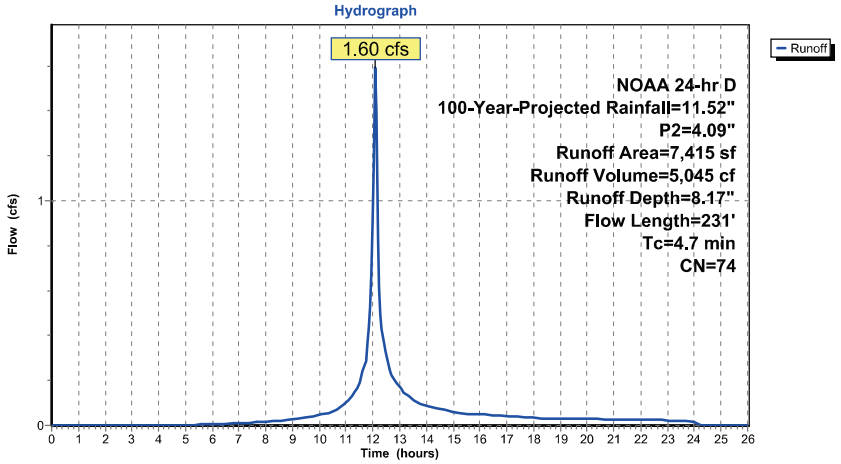
Runoff = 1.60 cfs @ 12.11 hrs, Volume= 5,045 cf, Depth= 8.17"
Routed to Link 9L : POA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
7,415	74	>75% Grass cover, Good, HSG C
7,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	33	0.0692	0.17		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
0.1	8	0.0518	1.37		**Sheet Flow, TC-BC** Smooth surfaces n= 0.011 P2= 4.09"
0.7	59	0.0180	1.34		**Sheet Flow, TC-CD** Smooth surfaces n= 0.011 P2= 4.09"
0.5	80	0.0180	2.72		**Shallow Concentrated Flow, TC-DE** Paved Kv= 20.3 fps
0.1	29	0.0100	5.70	7.00	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	22	0.0104	5.82	7.14	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
4.7	231	Total			

Subcatchment 8S: PR-DA1-PER

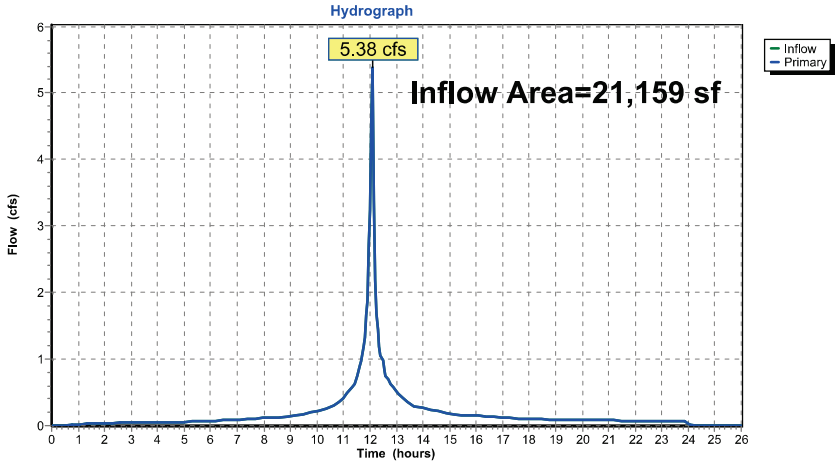


Summary for Link 9L: POA #1

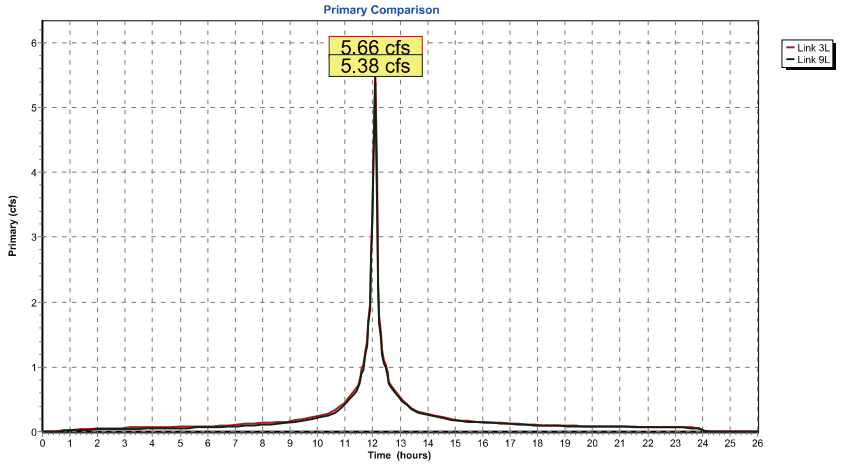
Inflow Area = 21,159 sf, 64.96% Impervious, Inflow Depth = 10.19" for 100-Year-Projected event
Inflow = 5.38 cfs @ 12.09 hrs, Volume= 17,963 cf
Primary = 5.38 cfs @ 12.09 hrs, Volume= 17,963 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 9L: POA #1



2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
0.00	0.00	0.00	2.60	0.06	0.04	5.20	0.08	0.06
0.05	0.00	0.00	2.65	0.06	0.04	5.25	0.08	0.06
0.10	0.00	0.00	2.70	0.06	0.04	5.30	0.08	0.06
0.15	0.00	0.00	2.75	0.06	0.04	5.35	0.08	0.06
0.20	0.00	0.00	2.80	0.06	0.04	5.40	0.08	0.06
0.25	0.00	0.00	2.85	0.06	0.04	5.45	0.08	0.06
0.30	0.00	0.00	2.90	0.06	0.05	5.50	0.08	0.06
0.35	0.00	0.00	2.95	0.06	0.05	5.55	0.08	0.06
0.40	0.00	0.00	3.00	0.06	0.05	5.60	0.08	0.06
0.45	0.01	0.00	3.05	0.06	0.05	5.65	0.08	0.06
0.50	0.01	0.01	3.10	0.06	0.05	5.70	0.08	0.06
0.55	0.01	0.01	3.15	0.06	0.05	5.75	0.08	0.06
0.60	0.01	0.01	3.20	0.06	0.05	5.80	0.08	0.07
0.65	0.02	0.01	3.25	0.06	0.05	5.85	0.08	0.07
0.70	0.02	0.01	3.30	0.07	0.05	5.90	0.09	0.07
0.75	0.02	0.02	3.35	0.07	0.05	5.95	0.09	0.07
0.80	0.02	0.02	3.40	0.07	0.05	6.00	0.09	0.07
0.85	0.02	0.02	3.45	0.07	0.05	6.05	0.09	0.07
0.90	0.03	0.02	3.50	0.07	0.05	6.10	0.09	0.07
0.95	0.03	0.02	3.55	0.07	0.05	6.15	0.09	0.07
1.00	0.03	0.02	3.60	0.07	0.05	6.20	0.09	0.07
1.05	0.03	0.02	3.65	0.07	0.05	6.25	0.09	0.07
1.10	0.03	0.02	3.70	0.07	0.05	6.30	0.09	0.07
1.15	0.03	0.03	3.75	0.07	0.05	6.35	0.09	0.07
1.20	0.04	0.03	3.80	0.07	0.05	6.40	0.10	0.08
1.25	0.04	0.03	3.85	0.07	0.05	6.45	0.10	0.08
1.30	0.04	0.03	3.90	0.07	0.05	6.50	0.10	0.08
1.35	0.04	0.03	3.95	0.07	0.05	6.55	0.10	0.08
1.40	0.04	0.03	4.00	0.07	0.05	6.60	0.10	0.08
1.45	0.04	0.03	4.05	0.07	0.05	6.65	0.10	0.08
1.50	0.04	0.03	4.10	0.07	0.05	6.70	0.10	0.08
1.55	0.04	0.03	4.15	0.07	0.05	6.75	0.10	0.08
1.60	0.04	0.03	4.20	0.07	0.05	6.80	0.11	0.08
1.65	0.05	0.03	4.25	0.07	0.05	6.85	0.11	0.09
1.70	0.05	0.03	4.30	0.07	0.05	6.90	0.11	0.09
1.75	0.05	0.03	4.35	0.07	0.05	6.95	0.11	0.09
1.80	0.05	0.03	4.40	0.07	0.05	7.00	0.11	0.09
1.85	0.05	0.04	4.45	0.07	0.05	7.05	0.11	0.09
1.90	0.05	0.04	4.50	0.07	0.05	7.10	0.11	0.09
1.95	0.05	0.04	4.55	0.08	0.06	7.15	0.11	0.09
2.00	0.05	0.04	4.60	0.08	0.06	7.20	0.12	0.09
2.05	0.05	0.04	4.65	0.08	0.06	7.25	0.12	0.09
2.10	0.05	0.04	4.70	0.08	0.06	7.30	0.12	0.10
2.15	0.05	0.04	4.75	0.08	0.06	7.35	0.12	0.10
2.20	0.05	0.04	4.80	0.08	0.06	7.40	0.12	0.10
2.25	0.05	0.04	4.85	0.08	0.06	7.45	0.12	0.10
2.30	0.06	0.04	4.90	0.08	0.06	7.50	0.12	0.10
2.35	0.06	0.04	4.95	0.08	0.06	7.55	0.12	0.10
2.40	0.06	0.04	5.00	0.08	0.06	7.60	0.12	0.10
2.45	0.06	0.04	5.05	0.08	0.06	7.65	0.13	0.10
2.50	0.06	0.04	5.10	0.08	0.06	7.70	0.13	0.11
2.55	0.06	0.04	5.15	0.08	0.06	7.75	0.13	0.11

2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
7.80	0.13	0.11	10.40	0.28	0.25	13.00	0.53	0.51
7.85	0.13	0.11	10.45	0.29	0.26	13.05	0.50	0.48
7.90	0.13	0.11	10.50	0.29	0.26	13.10	0.48	0.46
7.95	0.13	0.11	10.55	0.31	0.28	13.15	0.46	0.44
8.00	0.14	0.11	10.60	0.32	0.29	13.20	0.44	0.43
8.05	0.14	0.11	10.65	0.34	0.31	13.25	0.42	0.41
8.10	0.14	0.12	10.70	0.35	0.32	13.30	0.41	0.39
8.15	0.14	0.12	10.75	0.37	0.34	13.35	0.39	0.37
8.20	0.14	0.12	10.80	0.39	0.35	13.40	0.38	0.36
8.25	0.14	0.12	10.85	0.40	0.37	13.45	0.36	0.34
8.30	0.14	0.12	10.90	0.42	0.38	13.50	0.34	0.33
8.35	0.14	0.12	10.95	0.44	0.40	13.55	0.33	0.31
8.40	0.15	0.12	11.00	0.45	0.41	13.60	0.31	0.30
8.45	0.15	0.12	11.05	0.48	0.44	13.65	0.31	0.29
8.50	0.15	0.12	11.10	0.50	0.46	13.70	0.30	0.29
8.55	0.15	0.13	11.15	0.54	0.49	13.75	0.30	0.29
8.60	0.15	0.13	11.20	0.56	0.51	13.80	0.29	0.28
8.65	0.15	0.13	11.25	0.59	0.55	13.85	0.29	0.28
8.70	0.15	0.13	11.30	0.62	0.56	13.90	0.28	0.27
8.75	0.15	0.13	11.35	0.65	0.60	13.95	0.28	0.27
8.80	0.16	0.13	11.40	0.67	0.62	14.00	0.27	0.26
8.85	0.16	0.13	11.45	0.71	0.65	14.05	0.27	0.26
8.90	0.16	0.13	11.50	0.73	0.68	14.10	0.27	0.26
8.95	0.16	0.14	11.55	0.86	0.82	14.15	0.26	0.25
9.00	0.16	0.14	11.60	0.97	0.90	14.20	0.26	0.25
9.05	0.17	0.14	11.65	1.02	0.95	14.25	0.25	0.24
9.10	0.17	0.15	11.70	1.05	0.98	14.30	0.25	0.24
9.15	0.17	0.15	11.75	1.24	1.19	14.35	0.24	0.23
9.20	0.18	0.15	11.80	1.42	1.33	14.40	0.24	0.23
9.25	0.18	0.16	11.85	1.72	1.66	14.45	0.23	0.22
9.30	0.19	0.16	11.90	1.98	1.88	14.50	0.23	0.22
9.35	0.19	0.17	11.95	2.73	2.71	14.55	0.22	0.22
9.40	0.19	0.17	12.00	3.40	3.23	14.60	0.22	0.21
9.45	0.20	0.17	12.05	4.63	4.61	14.65	0.22	0.21
9.50	0.20	0.18	12.10	**5.64**	**5.31**	14.70	0.21	0.20
9.55	0.21	0.18	12.15	3.96	3.38	14.75	0.21	0.20
9.60	0.21	0.18	12.20	2.31	2.18	14.80	0.20	0.20
9.65	0.22	0.19	12.25	1.79	1.68	14.85	0.20	0.19
9.70	0.22	0.19	12.30	1.51	1.45	14.90	0.19	0.19
9.75	0.23	0.20	12.35	1.28	1.19	14.95	0.19	0.18
9.80	0.23	0.20	12.40	1.10	1.06	15.00	0.19	0.18
9.85	0.23	0.21	12.45	1.05	1.01	15.05	0.18	0.17
9.90	0.24	0.21	12.50	1.02	0.98	15.10	0.18	0.17
9.95	0.24	0.21	12.55	0.89	0.83	15.15	0.17	0.17
10.00	0.25	0.22	12.60	0.78	0.75	15.20	0.17	0.17
10.05	0.25	0.22	12.65	0.73	0.70	15.25	0.17	0.17
10.10	0.26	0.23	12.70	0.71	0.68	15.30	0.17	0.16
10.15	0.26	0.23	12.75	0.67	0.64	15.35	0.17	0.16
10.20	0.26	0.23	12.80	0.65	0.62	15.40	0.17	0.16
10.25	0.27	0.24	12.85	0.62	0.59	15.45	0.17	0.16
10.30	0.27	0.24	12.90	0.59	0.57	15.50	0.17	0.16
10.35	0.28	0.25	12.95	0.56	0.53	15.55	0.16	0.16

Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
15.60	0.16	0.16	18.20	0.10	0.10	20.80	0.08	0.08
15.65	0.16	0.16	18.25	0.10	0.10	20.85	0.08	0.08
15.70	0.16	0.16	18.30	0.10	0.10	20.90	0.08	0.08
15.75	0.16	0.15	18.35	0.10	0.09	20.95	0.08	0.08
15.80	0.16	0.15	18.40	0.10	0.09	21.00	0.08	0.08
15.85	0.16	0.15	18.45	0.10	0.09	21.05	0.08	0.08
15.90	0.16	0.15	18.50	0.10	0.09	21.10	0.08	0.08
15.95	0.15	0.15	18.55	0.10	0.09	21.15	0.08	0.08
16.00	0.15	0.15	18.60	0.10	0.09	21.20	0.08	0.08
16.05	0.15	0.15	18.65	0.10	0.09	21.25	0.08	0.08
16.10	0.15	0.15	18.70	0.10	0.09	21.30	0.08	0.08
16.15	0.15	0.14	18.75	0.10	0.09	21.35	0.08	0.08
16.20	0.15	0.14	18.80	0.10	0.09	21.40	0.08	0.08
16.25	0.15	0.14	18.85	0.09	0.09	21.45	0.08	0.08
16.30	0.15	0.14	18.90	0.09	0.09	21.50	0.08	0.08
16.35	0.14	0.14	18.95	0.09	0.09	21.55	0.08	0.08
16.40	0.14	0.14	19.00	0.09	0.09	21.60	0.08	0.08
16.45	0.14	0.14	19.05	0.09	0.09	21.65	0.08	0.07
16.50	0.14	0.14	19.10	0.09	0.09	21.70	0.08	0.07
16.55	0.14	0.13	19.15	0.09	0.09	21.75	0.08	0.07
16.60	0.14	0.13	19.20	0.09	0.09	21.80	0.08	0.07
16.65	0.14	0.13	19.25	0.09	0.09	21.85	0.08	0.07
16.70	0.14	0.13	19.30	0.09	0.09	21.90	0.08	0.07
16.75	0.13	0.13	19.35	0.09	0.09	21.95	0.08	0.07
16.80	0.13	0.13	19.40	0.09	0.09	22.00	0.08	0.07
16.85	0.13	0.13	19.45	0.09	0.09	22.05	0.07	0.07
16.90	0.13	0.13	19.50	0.09	0.09	22.10	0.07	0.07
16.95	0.13	0.12	19.55	0.09	0.09	22.15	0.07	0.07
17.00	0.13	0.12	19.60	0.09	0.09	22.20	0.07	0.07
17.05	0.13	0.12	19.65	0.09	0.09	22.25	0.07	0.07
17.10	0.13	0.12	19.70	0.09	0.09	22.30	0.07	0.07
17.15	0.12	0.12	19.75	0.09	0.09	22.35	0.07	0.07
17.20	0.12	0.12	19.80	0.09	0.09	22.40	0.07	0.07
17.25	0.12	0.12	19.85	0.09	0.09	22.45	0.07	0.07
17.30	0.12	0.12	19.90	0.09	0.09	22.50	0.07	0.07
17.35	0.12	0.11	19.95	0.09	0.09	22.55	0.07	0.07
17.40	0.12	0.11	20.00	0.09	0.08	22.60	0.07	0.07
17.45	0.12	0.11	20.05	0.09	0.08	22.65	0.07	0.07
17.50	0.11	0.11	20.10	0.09	0.08	22.70	0.07	0.07
17.55	0.11	0.11	20.15	0.09	0.08	22.75	0.07	0.07
17.60	0.11	0.11	20.20	0.09	0.08	22.80	0.07	0.07
17.65	0.11	0.11	20.25	0.09	0.08	22.85	0.07	0.07
17.70	0.11	0.11	20.30	0.09	0.08	22.90	0.07	0.07
17.75	0.11	0.10	20.35	0.09	0.08	22.95	0.07	0.07
17.80	0.11	0.10	20.40	0.09	0.08	23.00	0.07	0.07
17.85	0.11	0.10	20.45	0.08	0.08	23.05	0.07	0.07
17.90	0.10	0.10	20.50	0.08	0.08	23.10	0.07	0.07
17.95	0.10	0.10	20.55	0.08	0.08	23.15	0.07	0.07
18.00	0.10	0.10	20.60	0.08	0.08	23.20	0.07	0.07
18.05	0.10	0.10	20.65	0.08	0.08	23.25	0.07	0.06
18.10	0.10	0.10	20.70	0.08	0.08	23.30	0.07	0.06
18.15	0.10	0.10	20.75	0.08	0.08	23.35	0.07	0.06

2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
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Primary Comparison (continued)

Time (hours)	Link 3L (cfs)	Link 9L (cfs)	Time (hours)	Link 3L (cfs)	Link 9L (cfs)
23.40	0.07	0.06	26.00	0.00	0.00
23.45	0.07	0.06			
23.50	0.07	0.06			
23.55	0.07	0.06			
23.60	0.06	0.06			
23.65	0.06	0.06			
23.70	0.06	0.06			
23.75	0.06	0.06			
23.80	0.06	0.06			
23.85	0.06	0.06			
23.90	0.06	0.06			
23.95	0.06	0.06			
24.00	0.06	0.06			
24.05	0.03	0.03			
24.10	0.00	0.00			
24.15	0.00	0.00			
24.20	0.00	0.00			
24.25	0.00	0.00			
24.30	0.00	0.00			
24.35	0.00	0.00			
24.40	0.00	0.00			
24.45	0.00	0.00			
24.50	0.00	0.00			
24.55	0.00	0.00			
24.60	0.00	0.00			
24.65	0.00	0.00			
24.70	0.00	0.00			
24.75	0.00	0.00			
24.80	0.00	0.00			
24.85	0.00	0.00			
24.90	0.00	0.00			
24.95	0.00	0.00			
25.00	0.00	0.00			
25.05	0.00	0.00			
25.10	0.00	0.00			
25.15	0.00	0.00			
25.20	0.00	0.00			
25.25	0.00	0.00			
25.30	0.00	0.00			
25.35	0.00	0.00			
25.40	0.00	0.00			
25.45	0.00	0.00			
25.50	0.00	0.00			
25.55	0.00	0.00			
25.60	0.00	0.00			
25.65	0.00	0.00			
25.70	0.00	0.00			
25.75	0.00	0.00			
25.80	0.00	0.00			
25.85	0.00	0.00			
25.90	0.00	0.00			
25.95	0.00	0.00			

Summary for Subcatchment 10S: PR-DA2.1-IMP

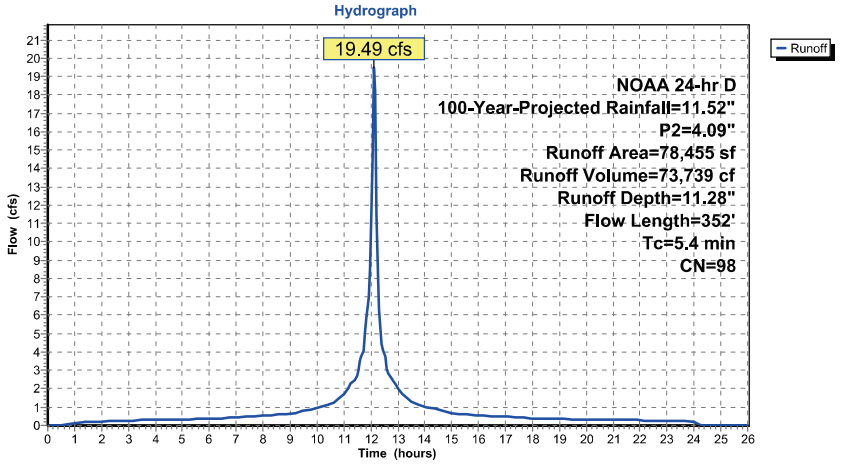
Runoff = 19.49 cfs @ 12.12 hrs, Volume= 73,739 cf, Depth=11.28"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.91		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
3.1	15	0.0150	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.6	56	0.0220	1.44		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.4	352	Total			

Subcatchment 10S: PR-DA2.1-IMP



Summary for Subcatchment 11S: PR-DA2.1-PER

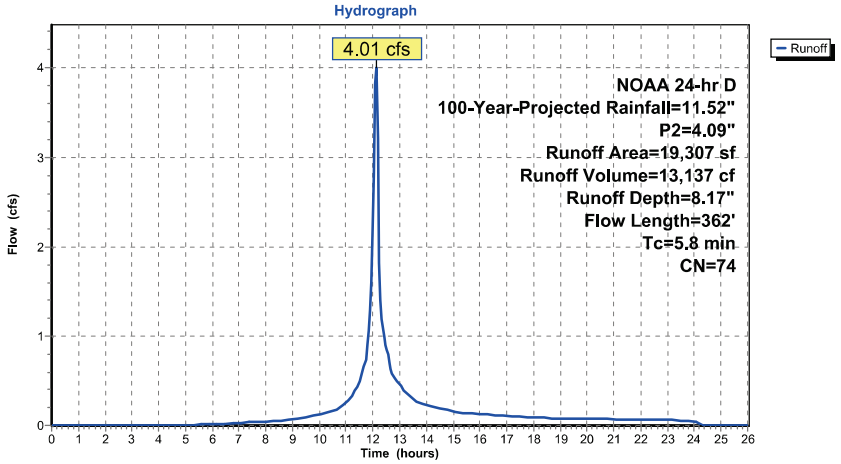
Runoff = 4.01 cfs @ 12.13 hrs, Volume= 13,137 cf, Depth= 8.17"
Routed to Link 12L : PR-DA 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.4	30	0.0200	1.22		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 4.09"
0.6	33	0.0102	0.95		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
5.8	362	Total			

Subcatchment 11S: PR-DA2.1-PER

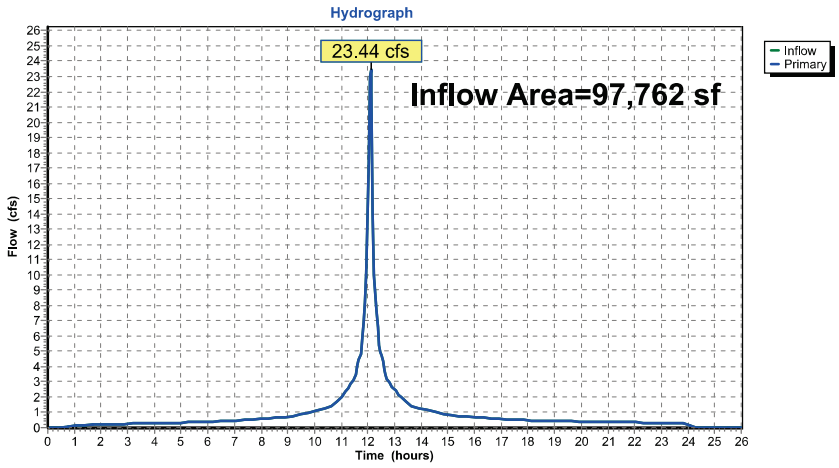


Summary for Link 12L: PR-DA 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 10.66" for 100-Year-Projected event
Inflow = 23.44 cfs @ 12.12 hrs, Volume= 86,876 cf
Primary = 23.44 cfs @ 12.12 hrs, Volume= 86,876 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 12L: PR-DA 2.1



Summary for Subcatchment 13S: PR-DA2.2-IMP

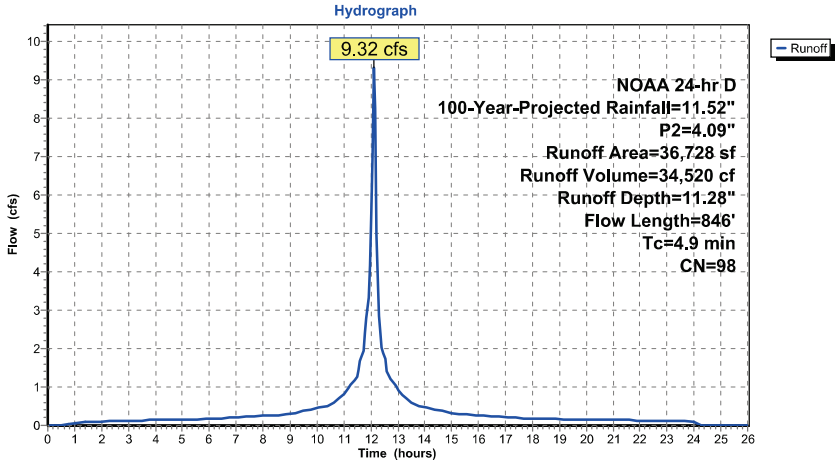
Runoff = 9.32 cfs @ 12.11 hrs, Volume= 34,520 cf, Depth=11.28"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.98		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
1.2	8	0.0433	0.11		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
4.9	846	Total			

Subcatchment 13S: PR-DA2.2-IMP



Summary for Subcatchment 14S: PR-DA2.2-PER

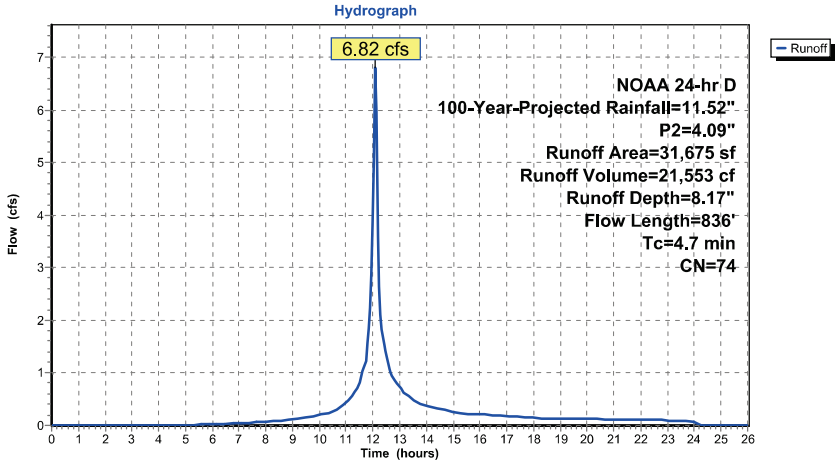
Runoff = 6.82 cfs @ 12.11 hrs, Volume= 21,553 cf, Depth= 8.17"
Routed to Link 15L : PR-DA 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	8	0.0433	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.7	836	Total			

Subcatchment 14S: PR-DA2.2-PER

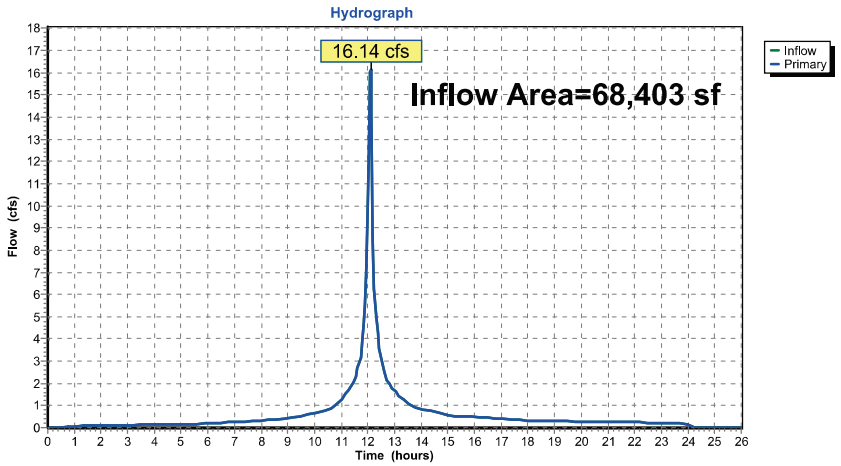


Summary for Link 15L: PR-DA 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 9.84" for 100-Year-Projected event
Inflow = 16.14 cfs @ 12.11 hrs, Volume= 56,073 cf
Primary = 16.14 cfs @ 12.11 hrs, Volume= 56,073 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 15L: PR-DA 2.2



Summary for Subcatchment 16S: PR-DA 2 UNDET-IMP

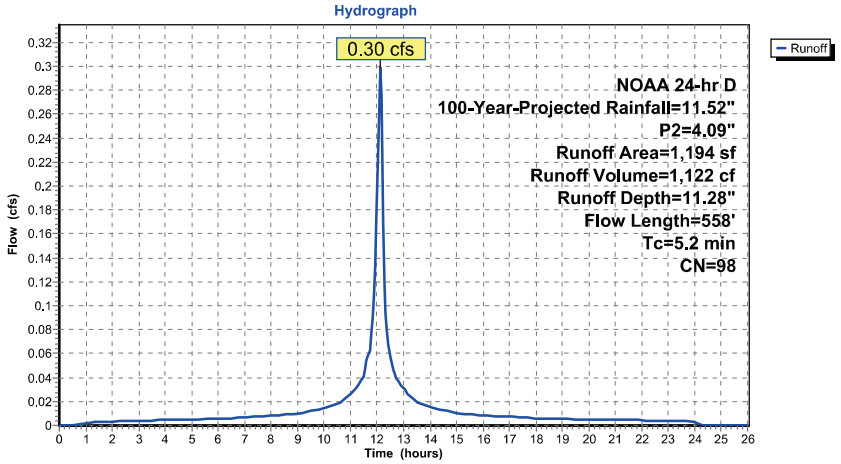
Runoff = 0.30 cfs @ 12.11 hrs, Volume= 1,122 cf, Depth=11.28"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	1,194	98	IMPERVIOUS
	1,194		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.98		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
3.2	33	0.0650	0.17		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, F-G** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, G-H** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
5.2	558	Total			

Subcatchment 16S: PR-DA 2 UNDET-IMP



Summary for Subcatchment 17S: PR-DA 2 UNDET-PER

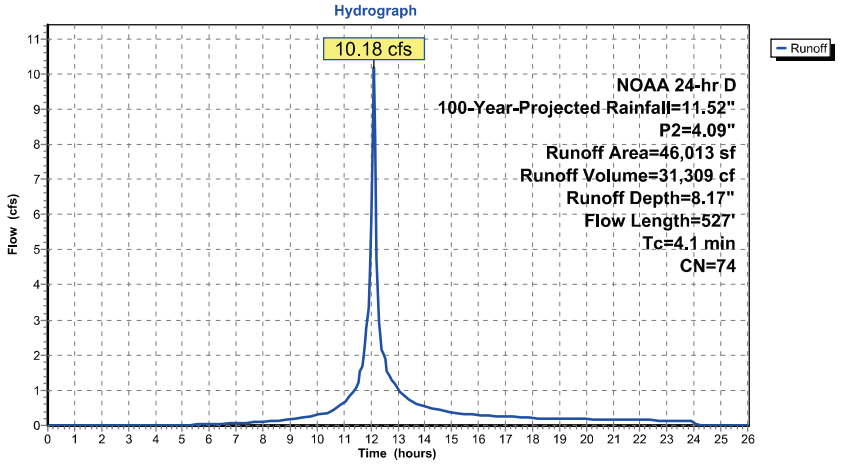
Runoff = 10.18 cfs @ 12.10 hrs, Volume= 31,309 cf, Depth= 8.17"
Routed to Link 18L : PR-DA 2 UNDET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
46,013	74	>75% Grass cover, Good, HSG C
46,013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	12	0.0200	0.09		**Sheet Flow, TC-AB** Grass: Dense n= 0.240 P2= 4.09"
0.4	182	0.0200	8.06	9.90	**Pipe Channel, TC-BC** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	55	0.0050	4.03	4.95	**Pipe Channel, TC-CD** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	40	0.0100	5.70	7.00	**Pipe Channel, TC-DE** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	43	0.0096	5.59	6.86	**Pipe Channel, TC-EF** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	106	0.0030	3.12	3.83	**Pipe Channel, TC-FG** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.3	60	0.0400	3.22		**Shallow Concentrated Flow, TC-GH** Unpaved Kv= 16.1 fps
0.1	29	0.0464	3.47		**Shallow Concentrated Flow, TC-HI** Unpaved Kv= 16.1 fps
4.1	527	Total			

Subcatchment 17S: PR-DA 2 UNDET-PER

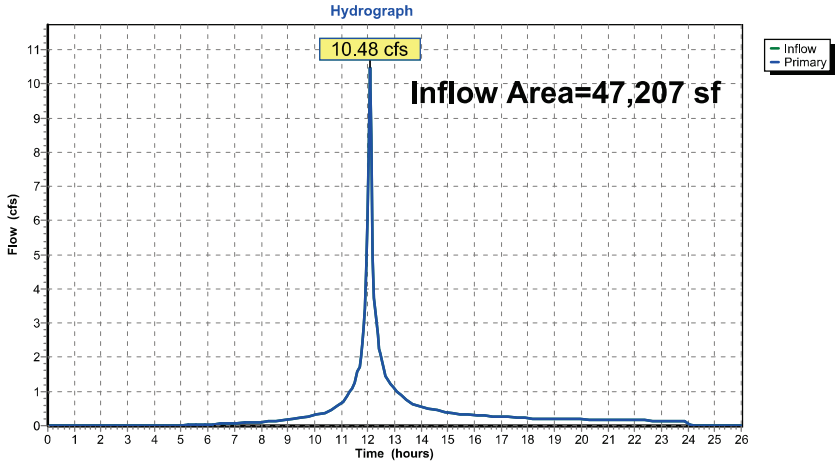


Summary for Link 18L: PR-DA 2 UNDET

Inflow Area = 47,207 sf, 2.53% Impervious, Inflow Depth = 8.24" for 100-Year-Projected event
Inflow = 10.48 cfs @ 12.10 hrs, Volume= 32,431 cf
Primary = 10.48 cfs @ 12.10 hrs, Volume= 32,431 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : POA #2

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 18L: PR-DA 2 UNDET

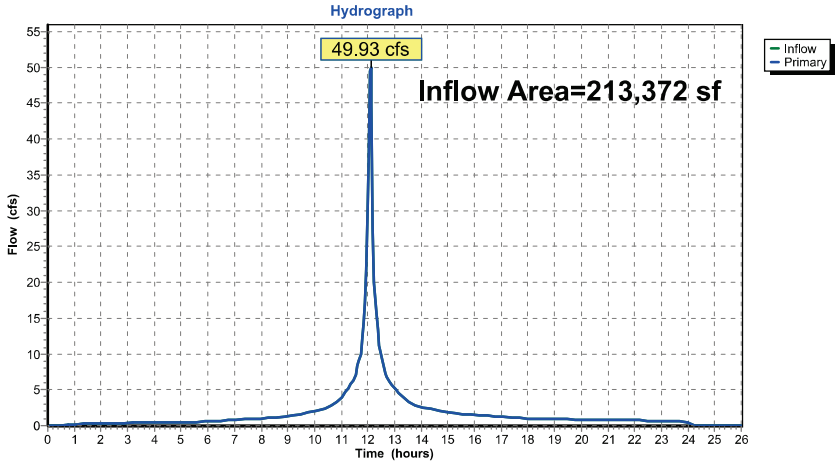


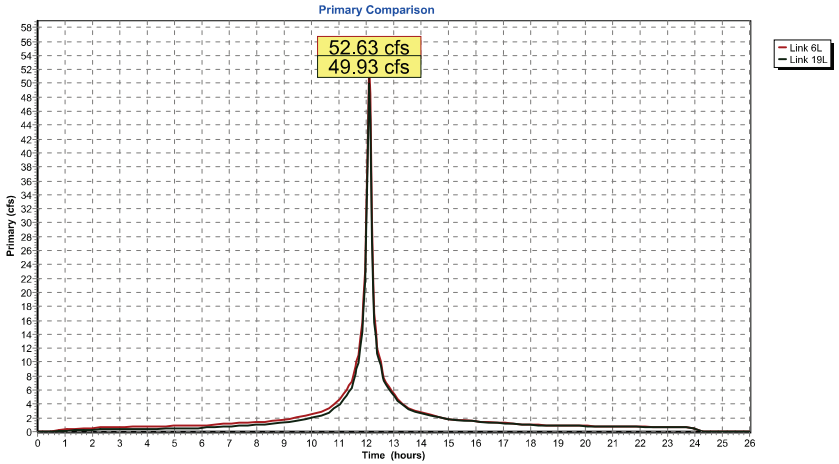
Summary for Link 19L: POA #2

Inflow Area = 213,372 sf, 54.54% Impervious, Inflow Depth = 9.86" for 100-Year-Projected event
Inflow = 49.93 cfs @ 12.11 hrs, Volume= 175,380 cf
Primary = 49.93 cfs @ 12.11 hrs, Volume= 175,380 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 120L

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 19L: POA #2





2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

Primary Comparison

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
0.00	0.00	0.00	2.60	0.63	0.36	5.20	0.87	0.52
0.05	0.00	0.00	2.65	0.64	0.36	5.25	0.87	0.52
0.10	0.00	0.00	2.70	0.65	0.37	5.30	0.88	0.53
0.15	0.00	0.00	2.75	0.65	0.37	5.35	0.88	0.53
0.20	0.00	0.00	2.80	0.66	0.37	5.40	0.88	0.53
0.25	0.00	0.00	2.85	0.66	0.38	5.45	0.89	0.54
0.30	0.00	0.00	2.90	0.67	0.38	5.50	0.89	0.54
0.35	0.00	0.00	2.95	0.68	0.38	5.55	0.90	0.55
0.40	0.01	0.01	3.00	0.68	0.38	5.60	0.90	0.55
0.45	0.04	0.02	3.05	0.68	0.39	5.65	0.90	0.55
0.50	0.07	0.04	3.10	0.69	0.39	5.70	0.91	0.56
0.55	0.10	0.06	3.15	0.70	0.39	5.75	0.91	0.57
0.60	0.13	0.08	3.20	0.70	0.40	5.80	0.92	0.57
0.65	0.16	0.09	3.25	0.71	0.40	5.85	0.92	0.57
0.70	0.19	0.11	3.30	0.71	0.40	5.90	0.92	0.58
0.75	0.21	0.12	3.35	0.72	0.40	5.95	0.93	0.58
0.80	0.24	0.13	3.40	0.72	0.41	6.00	0.93	0.59
0.85	0.26	0.15	3.45	0.73	0.41	6.05	0.94	0.59
0.90	0.28	0.16	3.50	0.73	0.41	6.10	0.95	0.60
0.95	0.30	0.17	3.55	0.74	0.42	6.15	0.96	0.61
1.00	0.32	0.18	3.60	0.74	0.42	6.20	0.98	0.62
1.05	0.33	0.19	3.65	0.74	0.42	6.25	0.99	0.63
1.10	0.35	0.20	3.70	0.75	0.42	6.30	1.00	0.64
1.15	0.36	0.21	3.75	0.75	0.43	6.35	1.01	0.65
1.20	0.38	0.22	3.80	0.76	0.43	6.40	1.03	0.66
1.25	0.40	0.22	3.85	0.76	0.43	6.45	1.04	0.67
1.30	0.41	0.23	3.90	0.77	0.43	6.50	1.05	0.68
1.35	0.42	0.24	3.95	0.77	0.44	6.55	1.06	0.69
1.40	0.43	0.25	4.00	0.78	0.44	6.60	1.08	0.71
1.45	0.45	0.25	4.05	0.78	0.44	6.65	1.09	0.72
1.50	0.46	0.26	4.10	0.78	0.44	6.70	1.10	0.73
1.55	0.47	0.26	4.15	0.79	0.45	6.75	1.11	0.74
1.60	0.48	0.27	4.20	0.79	0.45	6.80	1.13	0.75
1.65	0.49	0.28	4.25	0.80	0.45	6.85	1.14	0.76
1.70	0.50	0.28	4.30	0.80	0.45	6.90	1.15	0.77
1.75	0.51	0.29	4.35	0.80	0.45	6.95	1.16	0.78
1.80	0.52	0.29	4.40	0.81	0.46	7.00	1.18	0.79
1.85	0.53	0.30	4.45	0.81	0.46	7.05	1.19	0.80
1.90	0.54	0.30	4.50	0.82	0.46	7.10	1.20	0.82
1.95	0.54	0.31	4.55	0.82	0.46	7.15	1.21	0.83
2.00	0.55	0.31	4.60	0.83	0.47	7.20	1.23	0.84
2.05	0.56	0.32	4.65	0.83	0.47	7.25	1.24	0.85
2.10	0.57	0.32	4.70	0.83	0.47	7.30	1.25	0.86
2.15	0.58	0.33	4.75	0.83	0.48	7.35	1.27	0.87
2.20	0.58	0.33	4.80	0.84	0.48	7.40	1.28	0.89
2.25	0.59	0.33	4.85	0.84	0.49	7.45	1.29	0.90
2.30	0.60	0.34	4.90	0.85	0.49	7.50	1.31	0.91
2.35	0.60	0.34	4.95	0.85	0.50	7.55	1.32	0.92
2.40	0.61	0.35	5.00	0.86	0.50	7.60	1.33	0.93
2.45	0.62	0.35	5.05	0.86	0.50	7.65	1.34	0.94
2.50	0.62	0.35	5.10	0.86	0.51	7.70	1.36	0.95
2.55	0.63	0.36	5.15	0.87	0.51	7.75	1.37	0.97

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
7.80	1.38	0.98	10.40	2.91	2.38	13.00	5.47	5.23
7.85	1.39	0.99	10.45	2.95	2.42	13.05	5.21	4.99
7.90	1.40	1.00	10.50	3.00	2.47	13.10	4.89	4.68
7.95	1.42	1.01	10.55	3.10	2.56	13.15	4.69	4.50
8.00	1.43	1.03	10.60	3.27	2.70	13.20	4.49	4.31
8.05	1.45	1.04	10.65	3.40	2.83	13.25	4.35	4.17
8.10	1.46	1.05	10.70	3.59	2.99	13.30	4.16	4.00
8.15	1.47	1.06	10.75	3.73	3.11	13.35	4.02	3.86
8.20	1.48	1.08	10.80	3.91	3.27	13.40	3.84	3.69
8.25	1.49	1.09	10.85	4.05	3.41	13.45	3.69	3.55
8.30	1.51	1.10	10.90	4.24	3.57	13.50	3.51	3.37
8.35	1.52	1.11	10.95	4.38	3.70	13.55	3.37	3.23
8.40	1.54	1.13	11.00	4.56	3.86	13.60	3.18	3.06
8.45	1.55	1.14	11.05	4.75	4.05	13.65	3.09	2.98
8.50	1.56	1.15	11.10	5.07	4.33	13.70	3.03	2.92
8.55	1.57	1.16	11.15	5.31	4.56	13.75	2.98	2.88
8.60	1.59	1.18	11.20	5.63	4.84	13.80	2.94	2.83
8.65	1.60	1.19	11.25	5.88	5.08	13.85	2.90	2.79
8.70	1.61	1.20	11.30	6.20	5.37	13.90	2.84	2.74
8.75	1.62	1.21	11.35	6.45	5.61	13.95	2.80	2.71
8.80	1.64	1.23	11.40	6.78	5.91	14.00	2.76	2.66
8.85	1.65	1.24	11.45	7.03	6.15	14.05	2.72	2.62
8.90	1.66	1.25	11.50	7.35	6.45	14.10	2.67	2.58
8.95	1.67	1.26	11.55	8.06	7.16	14.15	2.63	2.54
9.00	1.69	1.28	11.60	9.41	8.38	14.20	2.58	2.49
9.05	1.71	1.30	11.65	10.06	8.96	14.25	2.54	2.45
9.10	1.76	1.34	11.70	10.49	9.35	14.30	2.49	2.41
9.15	1.80	1.37	11.75	11.52	10.41	14.35	2.45	2.37
9.20	1.85	1.41	11.80	13.57	12.31	14.40	2.40	2.32
9.25	1.89	1.45	11.85	15.65	14.34	14.45	2.36	2.28
9.30	1.94	1.49	11.90	18.78	17.23	14.50	2.31	2.23
9.35	1.98	1.53	11.95	23.25	21.77	14.55	2.27	2.19
9.40	2.02	1.57	12.00	31.12	29.11	14.60	2.22	2.15
9.45	2.06	1.60	12.05	39.41	37.47	14.65	2.18	2.11
9.50	2.11	1.64	12.10	**51.99**	**49.54**	14.70	2.13	2.06
9.55	2.15	1.68	12.15	48.50	44.73	14.75	2.09	2.02
9.60	2.20	1.72	12.20	30.36	27.56	14.80	2.04	1.98
9.65	2.24	1.76	12.25	21.74	19.96	14.85	2.00	1.94
9.70	2.29	1.80	12.30	16.94	15.74	14.90	1.95	1.89
9.75	2.33	1.84	12.35	14.40	13.45	14.95	1.91	1.85
9.80	2.38	1.88	12.40	11.97	11.22	15.00	1.86	1.80
9.85	2.42	1.92	12.45	10.95	10.36	15.05	1.82	1.76
9.90	2.47	1.96	12.50	10.44	9.93	15.10	1.77	1.72
9.95	2.51	2.00	12.55	9.69	9.16	15.15	1.75	1.69
10.00	2.56	2.05	12.60	8.32	7.86	15.20	1.73	1.68
10.05	2.60	2.08	12.65	7.65	7.27	15.25	1.72	1.66
10.10	2.65	2.13	12.70	7.22	6.89	15.30	1.70	1.65
10.15	2.69	2.17	12.75	6.94	6.63	15.35	1.69	1.64
10.20	2.73	2.21	12.80	6.61	6.32	15.40	1.68	1.63
10.25	2.77	2.25	12.85	6.36	6.08	15.45	1.67	1.62
10.30	2.83	2.30	12.90	6.04	5.78	15.50	1.65	1.60
10.35	2.87	2.34	12.95	5.79	5.53	15.55	1.64	1.59

2026-10 - JMF Verona Drainage *NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"*
Prepared by Dynamic Engineering Printed 10/7/2026
HydroCAD® 10.20-8a s/n 08640 © 2025 HydroCAD Software Solutions LLC

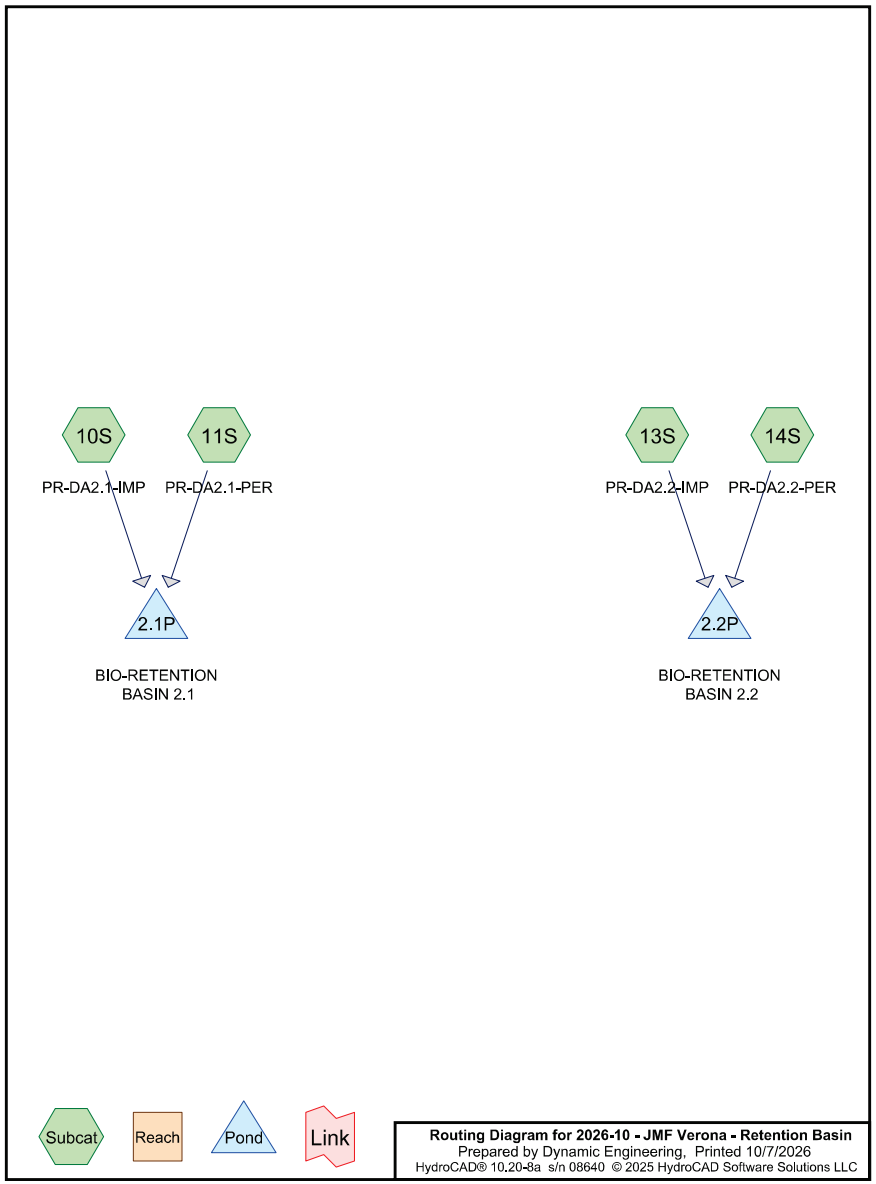
Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)	Time (hours)	Link 6L (cfs)	Link 19L (cfs)
15.60	1.63	1.58	18.20	0.99	0.96	20.80	0.82	0.80
15.65	1.62	1.57	18.25	0.98	0.96	20.85	0.82	0.80
15.70	1.61	1.56	18.30	0.98	0.95	20.90	0.82	0.80
15.75	1.59	1.55	18.35	0.98	0.95	20.95	0.81	0.79
15.80	1.58	1.53	18.40	0.97	0.95	21.00	0.81	0.79
15.85	1.56	1.52	18.45	0.97	0.95	21.05	0.81	0.79
15.90	1.55	1.51	18.50	0.97	0.94	21.10	0.80	0.78
15.95	1.54	1.50	18.55	0.96	0.94	21.15	0.80	0.78
16.00	1.53	1.48	18.60	0.96	0.94	21.20	0.80	0.78
16.05	1.52	1.47	18.65	0.96	0.93	21.25	0.80	0.78
16.10	1.51	1.46	18.70	0.95	0.93	21.30	0.79	0.77
16.15	1.49	1.45	18.75	0.95	0.93	21.35	0.79	0.77
16.20	1.47	1.43	18.80	0.95	0.93	21.40	0.79	0.77
16.25	1.46	1.42	18.85	0.95	0.92	21.45	0.78	0.77
16.30	1.45	1.41	18.90	0.94	0.92	21.50	0.78	0.76
16.35	1.44	1.40	18.95	0.94	0.91	21.55	0.77	0.76
16.40	1.43	1.39	19.00	0.94	0.91	21.60	0.77	0.75
16.45	1.42	1.37	19.05	0.93	0.91	21.65	0.77	0.75
16.50	1.40	1.36	19.10	0.93	0.91	21.70	0.77	0.75
16.55	1.39	1.35	19.15	0.93	0.90	21.75	0.76	0.74
16.60	1.38	1.34	19.20	0.92	0.90	21.80	0.76	0.74
16.65	1.37	1.33	19.25	0.92	0.90	21.85	0.76	0.74
16.70	1.35	1.31	19.30	0.92	0.89	21.90	0.75	0.74
16.75	1.34	1.30	19.35	0.91	0.89	21.95	0.75	0.73
16.80	1.33	1.29	19.40	0.91	0.89	22.00	0.75	0.73
16.85	1.32	1.28	19.45	0.91	0.88	22.05	0.75	0.73
16.90	1.30	1.27	19.50	0.91	0.88	22.10	0.74	0.72
16.95	1.29	1.25	19.55	0.90	0.88	22.15	0.74	0.72
17.00	1.28	1.24	19.60	0.90	0.87	22.20	0.74	0.72
17.05	1.26	1.23	19.65	0.90	0.87	22.25	0.73	0.72
17.10	1.25	1.22	19.70	0.89	0.87	22.30	0.73	0.71
17.15	1.24	1.20	19.75	0.89	0.87	22.35	0.72	0.71
17.20	1.22	1.19	19.80	0.89	0.86	22.40	0.72	0.70
17.25	1.21	1.18	19.85	0.88	0.86	22.45	0.72	0.70
17.30	1.20	1.17	19.90	0.88	0.86	22.50	0.71	0.70
17.35	1.19	1.16	19.95	0.88	0.85	22.55	0.71	0.70
17.40	1.17	1.14	20.00	0.87	0.85	22.60	0.71	0.69
17.45	1.16	1.13	20.05	0.87	0.85	22.65	0.71	0.69
17.50	1.15	1.12	20.10	0.87	0.85	22.70	0.70	0.69
17.55	1.14	1.11	20.15	0.87	0.84	22.75	0.70	0.68
17.60	1.12	1.09	20.20	0.86	0.84	22.80	0.70	0.68
17.65	1.11	1.08	20.25	0.86	0.84	22.85	0.70	0.68
17.70	1.10	1.07	20.30	0.85	0.83	22.90	0.69	0.68
17.75	1.09	1.06	20.35	0.85	0.83	22.95	0.69	0.67
17.80	1.08	1.05	20.40	0.85	0.83	23.00	0.68	0.67
17.85	1.06	1.04	20.45	0.85	0.83	23.05	0.68	0.66
17.90	1.05	1.02	20.50	0.84	0.82	23.10	0.68	0.66
17.95	1.04	1.01	20.55	0.84	0.82	23.15	0.68	0.66
18.00	1.03	1.00	20.60	0.84	0.82	23.20	0.67	0.66
18.05	1.01	0.99	20.65	0.84	0.81	23.25	0.67	0.65
18.10	1.00	0.97	20.70	0.83	0.81	23.30	0.66	0.65
18.15	0.99	0.96	20.75	0.83	0.81	23.35	0.66	0.65

Primary Comparison (continued)

Time (hours)	Link 6L (cfs)	Link 19L (cfs)
23.40	0.66	0.64
23.45	0.66	0.64
23.50	0.65	0.64
23.55	0.65	0.64
23.60	0.65	0.63
23.65	0.64	0.63
23.70	0.64	0.63
23.75	0.64	0.62
23.80	0.63	0.62
23.85	0.63	0.61
23.90	0.63	0.61
23.95	0.63	0.61
24.00	0.62	0.61
24.05	0.48	0.45
24.10	0.17	0.14
24.15	0.04	0.03
24.20	0.01	0.01
24.25	0.00	0.00
24.30	0.00	0.00
24.35	0.00	0.00
24.40	0.00	0.00
24.45	0.00	0.00
24.50	0.00	0.00
24.55	0.00	0.00
24.60	0.00	0.00
24.65	0.00	0.00
24.70	0.00	0.00
24.75	0.00	0.00
24.80	0.00	0.00
24.85	0.00	0.00
24.90	0.00	0.00
24.95	0.00	0.00
25.00	0.00	0.00
25.05	0.00	0.00
25.10	0.00	0.00
25.15	0.00	0.00
25.20	0.00	0.00
25.25	0.00	0.00
25.30	0.00	0.00
25.35	0.00	0.00
25.40	0.00	0.00
25.45	0.00	0.00
25.50	0.00	0.00
25.55	0.00	0.00
25.60	0.00	0.00
25.65	0.00	0.00
25.70	0.00	0.00
25.75	0.00	0.00
25.80	0.00	0.00
25.85	0.00	0.00
25.90	0.00	0.00
25.95	0.00	0.00
26.00	0.00	0.00

HYDROGRAPH REPORTS: WATER QUALITY DESIGN STORM AND TOWNSHIP OF VERONA RETENTION STORM



Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC	P2 (inches)
1	WQDS	NJ DEP 2-hr		Default	2.00	1	1.25	2	3.47
2	RETENTION	NOAA 24-hr	C	Default	24.00	1	2.05	2	3.47

Summary for Pond 2.1P: BIO-RETENTION BASIN 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 0.84" for WQDS event
Inflow = 5.27 cfs @ 1.09 hrs, Volume= 6,883 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to nonexistent node 3L

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 320.50' @ 2.40 hrs Surf.Area= 7,561 sf Storage= 6,883 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

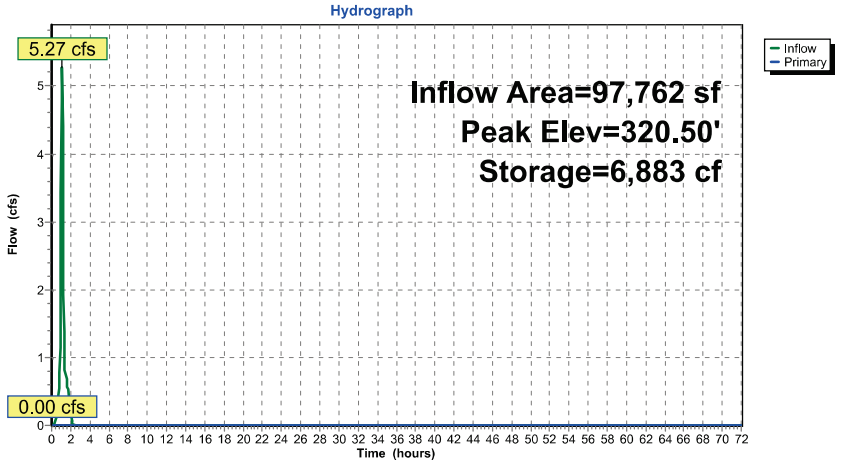
Volume	Invert	Avail.Storage	Storage Description
#1	319.50'	24,117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
319.50	6,217	0	0
320.50	7,562	6,890	6,890
321.50	8,964	8,263	15,153
322.50	8,964	8,964	24,117

Device	Routing	Invert	Outlet Devices
#1	Primary	316.92'	**24.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 316.92' / 316.87' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	320.50'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	320.76'	**6.0" x 2.0" Horiz. Orifice/Grate X 10.00 columns** X 27 rows C= 0.600 in 72.0" x 72.0" Grate (63% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=319.50' (Free Discharge)
└─**1=Culvert** (Passes 0.00 cfs of 16.50 cfs potential flow)
└─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2.1P: BIO-RETENTION BASIN 2.1



Summary for Pond 2.2P: BIO-RETENTION BASIN 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 0.59" for WQDS event
Inflow = 2.56 cfs @ 1.09 hrs, Volume= 3,361 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to nonexistent node 3L

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 319.63' @ 2.35 hrs Surf.Area= 5,672 sf Storage= 3,361 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

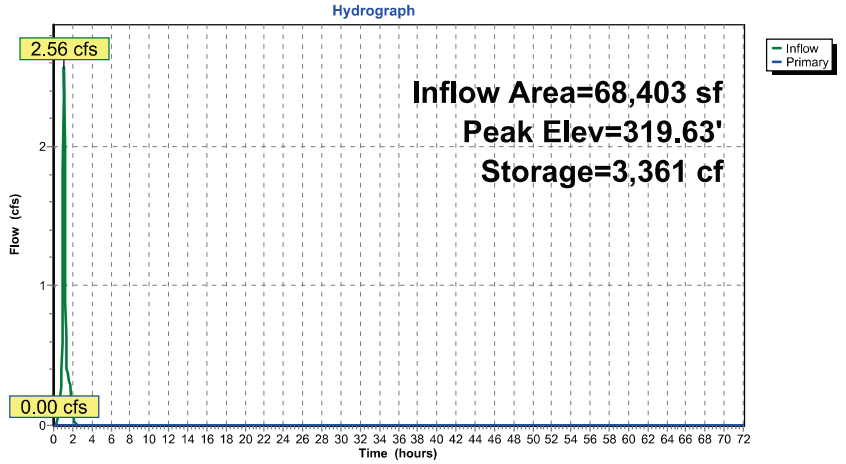
Volume	Invert	Avail.Storage	Storage Description
#1	319.00'	11,114 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
319.00	5,025	0	0
320.00	6,054	5,540	5,540
320.85	7,063	5,575	11,114

Device	Routing	Invert	Outlet Devices
#1	Primary	316.42'	**24.0" Round Culvert** L= 31.0' Ke= 0.500 Inlet / Outlet Invert= 316.42' / 316.27' S= 0.0048 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	319.63'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	319.63'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 1	319.77'	**6.0" x 2.0" Horiz. Orifice/Grate X 10.00 columns** X 27 rows C= 0.600 in 72.0" x 72.0" Grate (63% open area) Limited to weir flow at low heads
#5	Device 1	319.77'	**6.0" x 2.0" Horiz. Orifice/Grate X 10.00 columns** X 27 rows C= 0.600 in 72.0" x 72.0" Grate (63% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=319.00' (Free Discharge)
└─**1=Culvert** (Passes 0.00 cfs of 16.67 cfs potential flow)
  ├─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  ├─**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  ├─**4=Orifice/Grate** (Controls 0.00 cfs)
  └─**5=Orifice/Grate** (Controls 0.00 cfs)

Pond 2.2P: BIO-RETENTION BASIN 2.2



Summary for Subcatchment 10S: PR-DA2.1-IMP

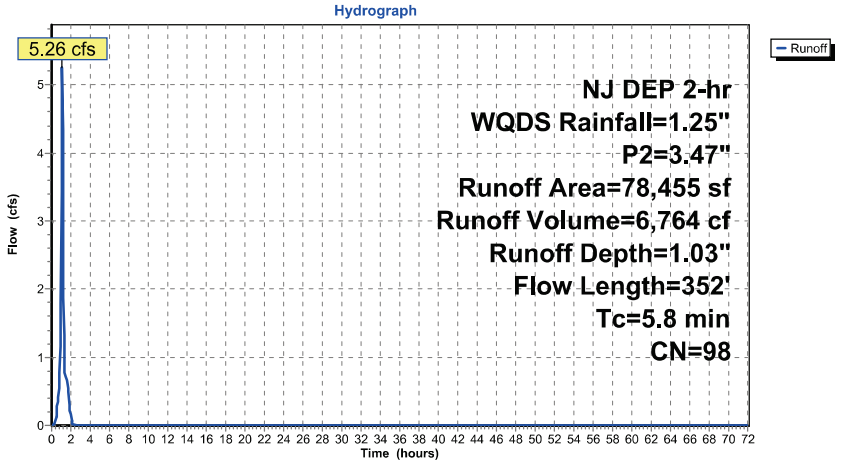
Runoff = 5.26 cfs @ 1.09 hrs, Volume= 6,764 cf, Depth= 1.03"
Routed to Pond 2.1P : BIO-RETENTION BASIN 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQDS Rainfall=1.25", P2=3.47"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.84		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
3.4	15	0.0150	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.7	56	0.0220	1.33		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.8	352	Total			

Subcatchment 10S: PR-DA2.1-IMP



Summary for Subcatchment 11S: PR-DA2.1-PER

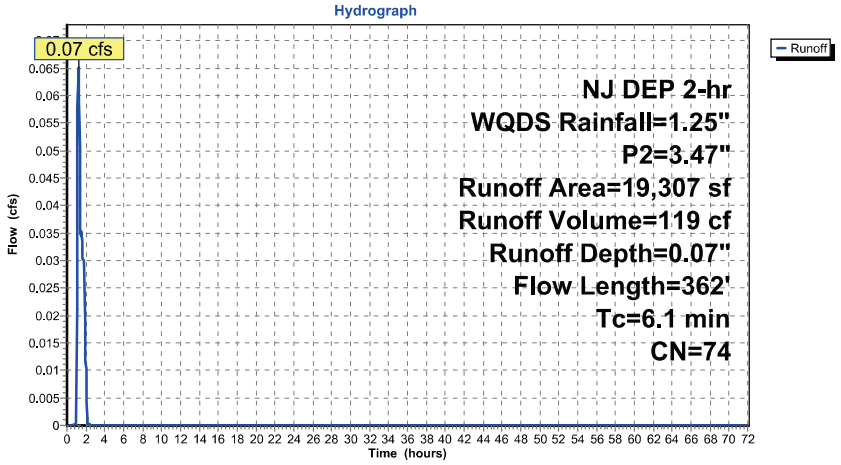
Runoff = 0.07 cfs @ 1.20 hrs, Volume= 119 cf, Depth= 0.07"
Routed to Pond 2.1P : BIO-RETENTION BASIN 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQDS Rainfall=1.25", P2=3.47"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.4	30	0.0200	1.13		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 3.47"
0.6	33	0.0102	0.88		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
6.1	362	Total			

Subcatchment 11S: PR-DA2.1-PER



Summary for Subcatchment 13S: PR-DA2.2-IMP

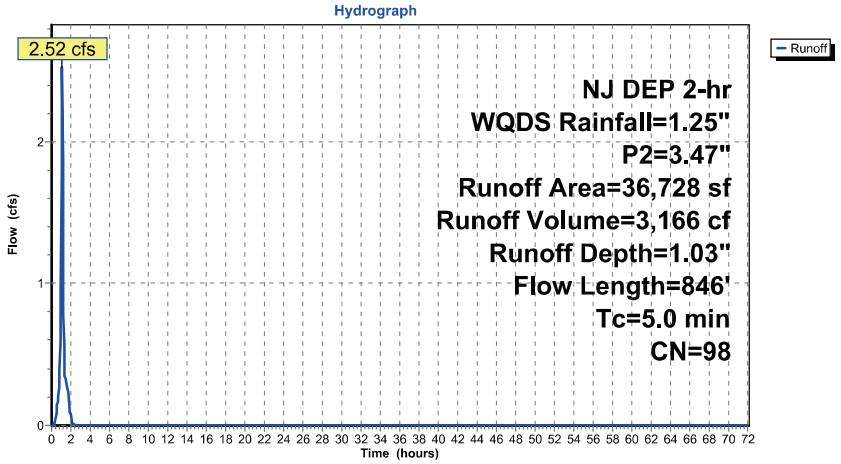
Runoff = 2.52 cfs @ 1.08 hrs, Volume= 3,166 cf, Depth= 1.03"
Routed to Pond 2.2P : BIO-RETENTION BASIN 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQDS Rainfall=1.25", P2=3.47"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.90		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
1.3	8	0.0433	0.10		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
5.0	846	Total			

Subcatchment 13S: PR-DA2.2-IMP



Summary for Subcatchment 14S: PR-DA2.2-PER

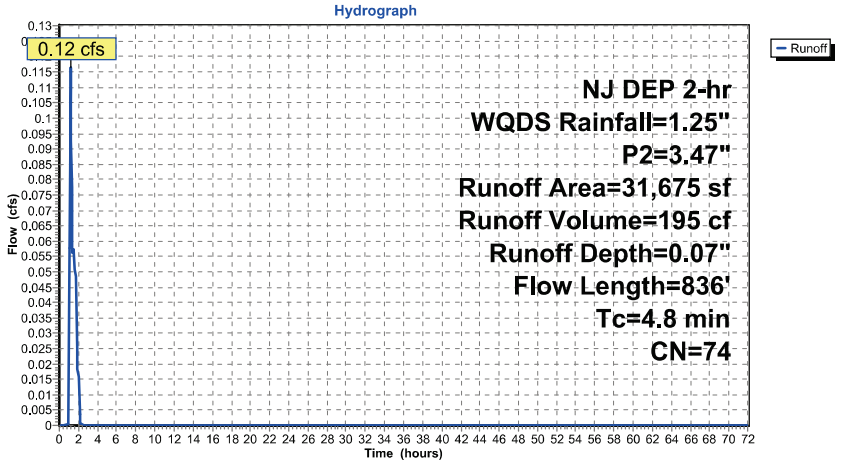
Runoff = 0.12 cfs @ 1.17 hrs, Volume= 195 cf, Depth= 0.07"
Routed to Pond 2.2P : BIO-RETENTION BASIN 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQDS Rainfall=1.25", P2=3.47"

Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	8	0.0433	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.8	836	Total			

Subcatchment 14S: PR-DA2.2-PER



Summary for Pond 2.1P: BIO-RETENTION BASIN 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 1.54" for RETENTION event
Inflow = 3.91 cfs @ 12.13 hrs, Volume= 12,525 cf
Outflow = 0.19 cfs @ 13.86 hrs, Volume= 5,633 cf, Atten= 95%, Lag= 104.3 min
Primary = 0.19 cfs @ 13.86 hrs, Volume= 5,633 cf
Routed to nonexistent node 3L

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 320.76' @ 13.86 hrs Surf.Area= 7,921 sf Storage= 8,870 cf

Plug-Flow detention time= 495.7 min calculated for 5,630 cf (45% of inflow)
Center-of-Mass det. time= 364.5 min (1,139.1 - 774.6)

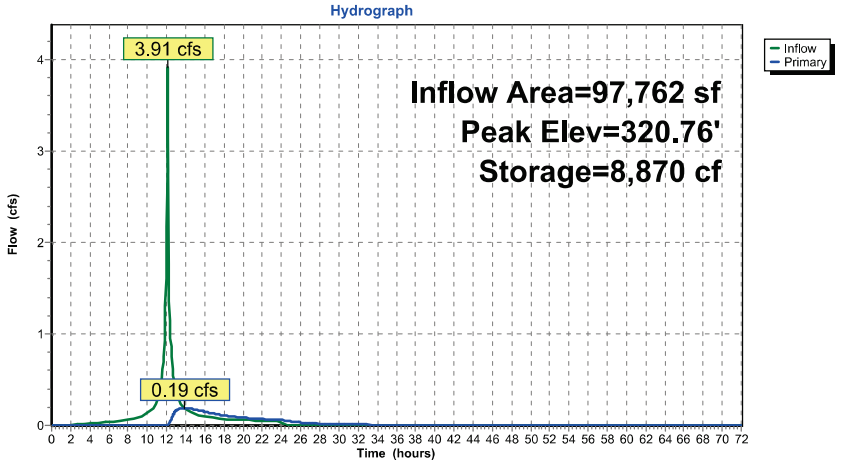
Volume	Invert	Avail.Storage	Storage Description
#1	319.50'	24,117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
319.50	6,217	0	0
320.50	7,562	6,890	6,890
321.50	8,964	8,263	15,153
322.50	8,964	8,964	24,117

Device	Routing	Invert	Outlet Devices
#1	Primary	316.92'	**24.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 316.92' / 316.87' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	320.50'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	320.76'	**6.0" x 2.0" Horiz. Orifice/Grate X 10.00 columns** X 27 rows C= 0.600 in 72.0" x 72.0" Grate (63% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 13.86 hrs HW=320.76' (Free Discharge)
└**1=Culvert** (Passes 0.19 cfs of 25.47 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.19 cfs @ 1.65 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2.1P: BIO-RETENTION BASIN 2.1



Summary for Pond 2.2P: BIO-RETENTION BASIN 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 1.15" for RETENTION event
Inflow = 2.09 cfs @ 12.11 hrs, Volume= 6,568 cf
Outflow = 0.19 cfs @ 13.09 hrs, Volume= 3,198 cf, Atten= 91%, Lag= 58.6 min
Primary = 0.19 cfs @ 13.09 hrs, Volume= 3,198 cf
Routed to nonexistent node 3L

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 319.77' @ 13.09 hrs Surf.Area= 5,819 sf Storage= 4,185 cf

Plug-Flow detention time= 376.3 min calculated for 3,198 cf (49% of inflow)
Center-of-Mass det. time= 244.4 min (1,031.8 - 787.4)

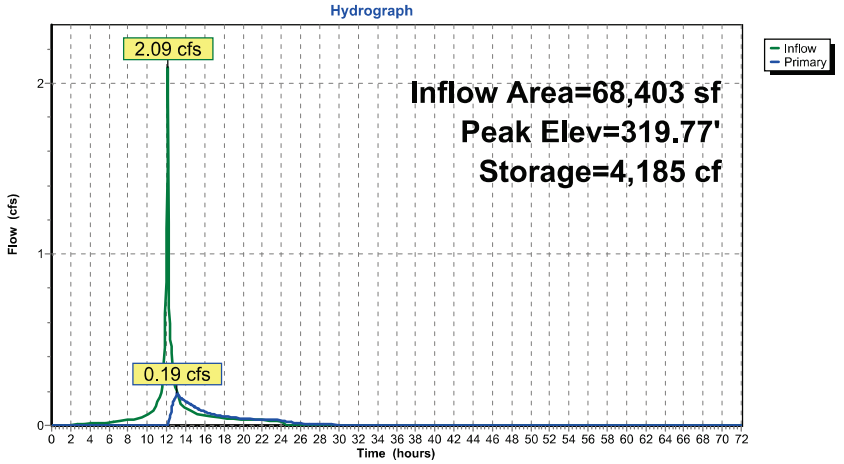
Volume	Invert	Avail.Storage	Storage Description
#1	319.00'	11,114 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
319.00	5,025	0	0
320.00	6,054	5,540	5,540
320.85	7,063	5,575	11,114

Device	Routing	Invert	Outlet Devices
#1	Primary	316.42'	**24.0" Round Culvert** L= 31.0' Ke= 0.500 Inlet / Outlet Invert= 316.42' / 316.27' S= 0.0048 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	319.63'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	319.63'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 1	319.77'	**6.0" x 2.0" Horiz. Orifice/Grate X 10.00 columns** X 27 rows C= 0.600 in 72.0" x 72.0" Grate (63% open area) Limited to weir flow at low heads
#5	Device 1	319.77'	**6.0" x 2.0" Horiz. Orifice/Grate X 10.00 columns** X 27 rows C= 0.600 in 72.0" x 72.0" Grate (63% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.18 cfs @ 13.09 hrs HW=319.77' (Free Discharge)
└**1=Culvert** (Passes 0.18 cfs of 22.84 cfs potential flow)
  ├**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 1.23 fps)
  ├**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 1.23 fps)
  ├**4=Orifice/Grate** (Weir Controls 0.01 cfs @ 0.14 fps)
  └**5=Orifice/Grate** (Weir Controls 0.01 cfs @ 0.14 fps)

Pond 2.2P: BIO-RETENTION BASIN 2.2



Summary for Subcatchment 10S: PR-DA2.1-IMP

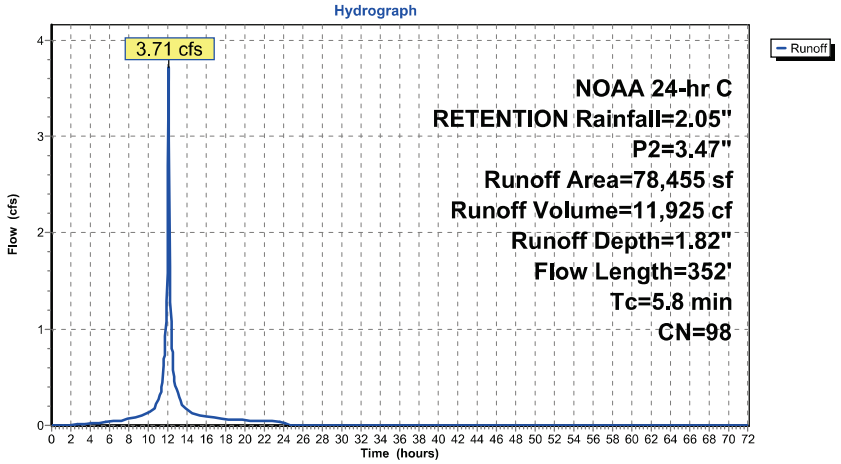
Runoff = 3.71 cfs @ 12.12 hrs, Volume= 11,925 cf, Depth= 1.82"
Routed to Pond 2.1P : BIO-RETENTION BASIN 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C RETENTION Rainfall=2.05", P2=3.47"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.84		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
3.4	15	0.0150	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.7	56	0.0220	1.33		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.8	352	Total			

Subcatchment 10S: PR-DA2.1-IMP



Summary for Subcatchment 11S: PR-DA2.1-PER

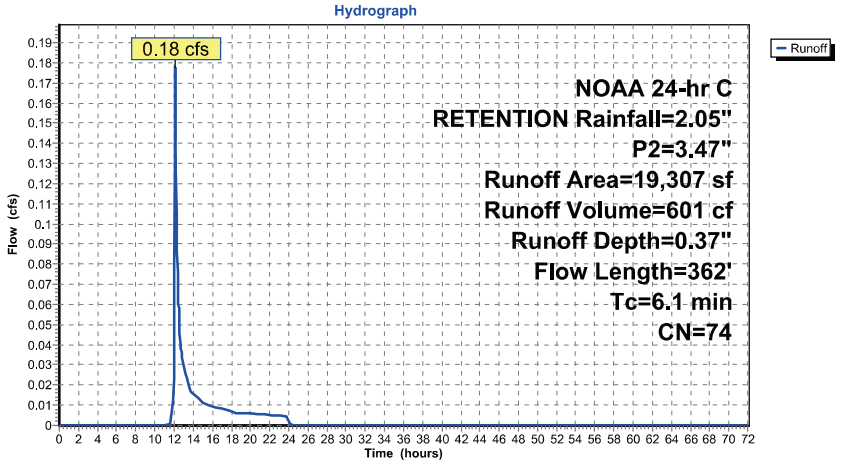
Runoff = 0.18 cfs @ 12.15 hrs, Volume= 601 cf, Depth= 0.37"
Routed to Pond 2.1P : BIO-RETENTION BASIN 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C RETENTION Rainfall=2.05", P2=3.47"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.4	30	0.0200	1.13		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 3.47"
0.6	33	0.0102	0.88		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 3.47"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
6.1	362	Total			

Subcatchment 11S: PR-DA2.1-PER



Summary for Subcatchment 13S: PR-DA2.2-IMP

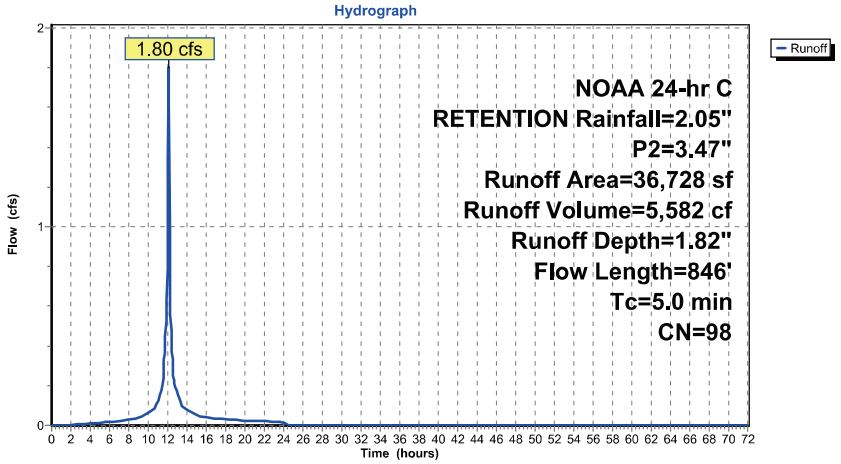
Runoff = 1.80 cfs @ 12.11 hrs, Volume= 5,582 cf, Depth= 1.82"
Routed to Pond 2.2P : BIO-RETENTION BASIN 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C RETENTION Rainfall=2.05", P2=3.47"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.90		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.47"
1.3	8	0.0433	0.10		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
5.0	846	Total			

Subcatchment 13S: PR-DA2.2-IMP



Summary for Subcatchment 14S: PR-DA2.2-PER

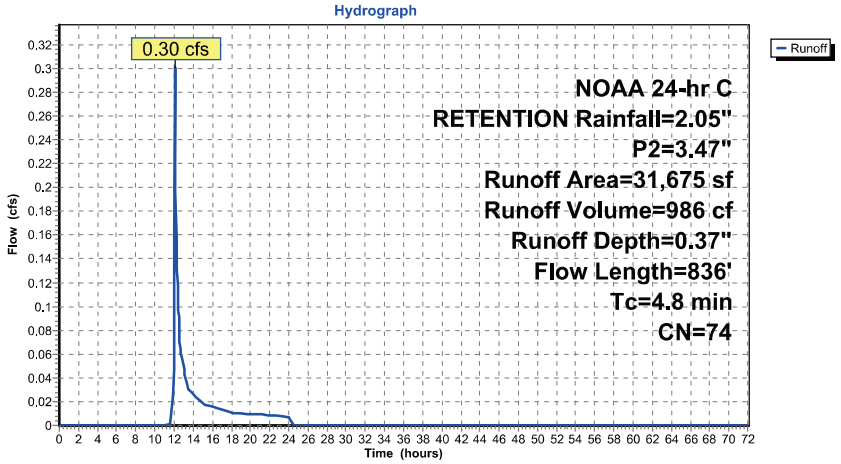
Runoff = 0.30 cfs @ 12.13 hrs, Volume= 986 cf, Depth= 0.37"
Routed to Pond 2.2P : BIO-RETENTION BASIN 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C RETENTION Rainfall=2.05", P2=3.47"

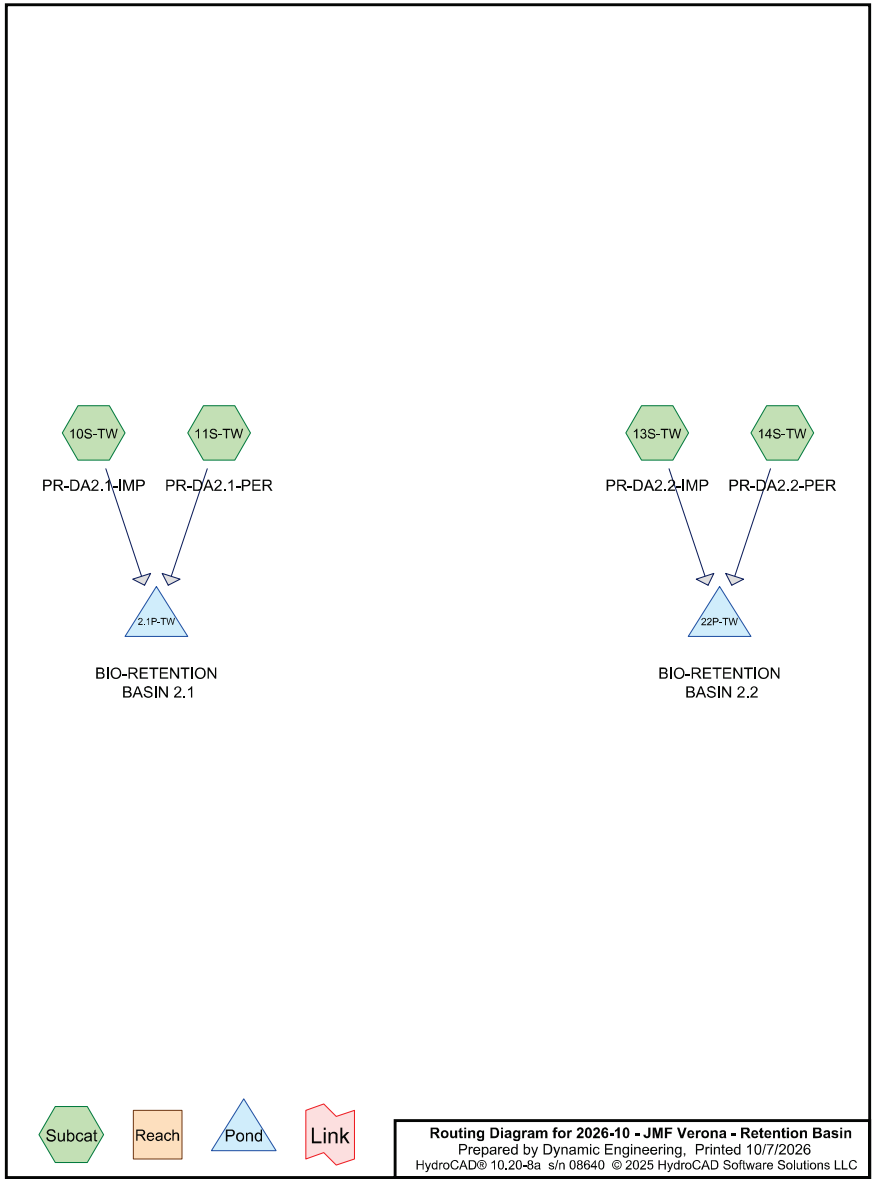
Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	8	0.0433	0.10		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.47"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.8	836	Total			

Subcatchment 14S: PR-DA2.2-PER



EMERGENCY SPILLWAY CALCULATIONS



Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC	P2 (inches)
1	100-Year-Projected	NOAA 24-hr	D	Default	24.00	1	11.52	2	4.09

Summary for Pond 2.1P-TW: BIO-RETENTION BASIN 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 10.66" for 100-Year-Projected event
Inflow = 23.44 cfs @ 12.12 hrs, Volume= 86,876 cf
Outflow = 22.20 cfs @ 12.15 hrs, Volume= 79,983 cf, Atten= 5%, Lag= 1.7 min
Primary = 22.20 cfs @ 12.15 hrs, Volume= 79,983 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 321.18' @ 12.15 hrs Surf.Area= 8,518 sf Storage= 12,375 cf

Plug-Flow detention time= 121.9 min calculated for 79,983 cf (92% of inflow)
Center-of-Mass det. time= 76.5 min (824.6 - 748.0)

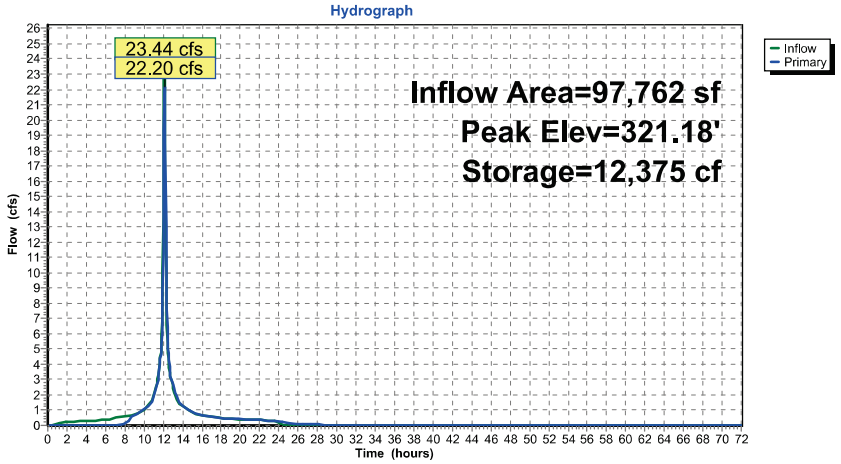
Volume	Invert	Avail.Storage	Storage Description
#1	319.50'	24,117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
319.50	6,217	0	0
320.50	7,562	6,890	6,890
321.50	8,964	8,263	15,153
322.50	8,964	8,964	24,117

Device	Routing	Invert	Outlet Devices
#1	Primary	316.92'	**24.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 316.92' / 316.87' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	320.50'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	320.76'	**6.0" x 2.0" Horiz. Orifice/Grate X 10.00 columns** X 27 rows C= 0.600 in 72.0" x 72.0" Grate (63% open area) Limited to weir flow at low heads

Primary OutFlow Max=21.99 cfs @ 12.15 hrs HW=321.18' TW=318.50' (Fixed TW Elev= 318.50')
↑ **1=Culvert** (Passes 21.99 cfs of 24.76 cfs potential flow)
↑ **2=Sharp-Crested Rectangular Weir** (Weir Controls 0.67 cfs @ 2.70 fps)
3=Orifice/Grate (Weir Controls 21.32 cfs @ 2.12 fps)

Pond 2.1P-TW: BIO-RETENTION BASIN 2.1



Summary for Subcatchment 10S-TW: PR-DA2.1-IMP

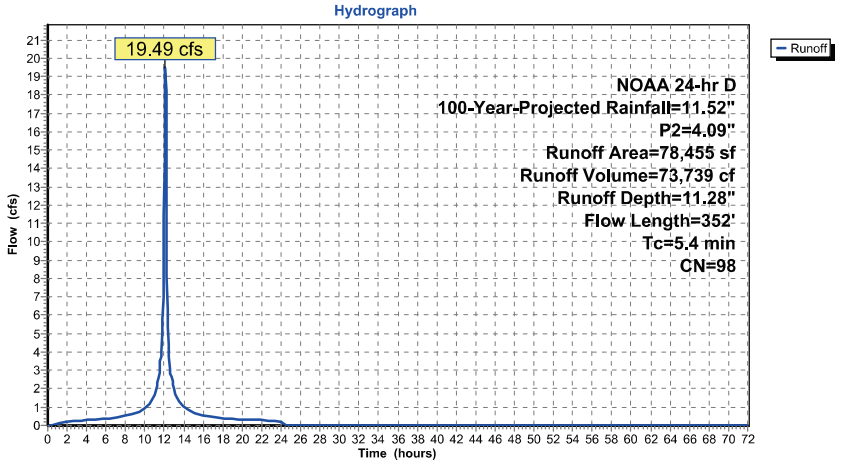
Runoff = 19.49 cfs @ 12.12 hrs, Volume= 73,739 cf, Depth=11.28"
Routed to Pond 2.1P-TW : BIO-RETENTION BASIN 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.91		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
3.1	15	0.0150	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.6	56	0.0220	1.44		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.4	352	Total			

Subcatchment 10S-TW: PR-DA2.1-IMP



Summary for Subcatchment 11S-TW: PR-DA2.1-PER

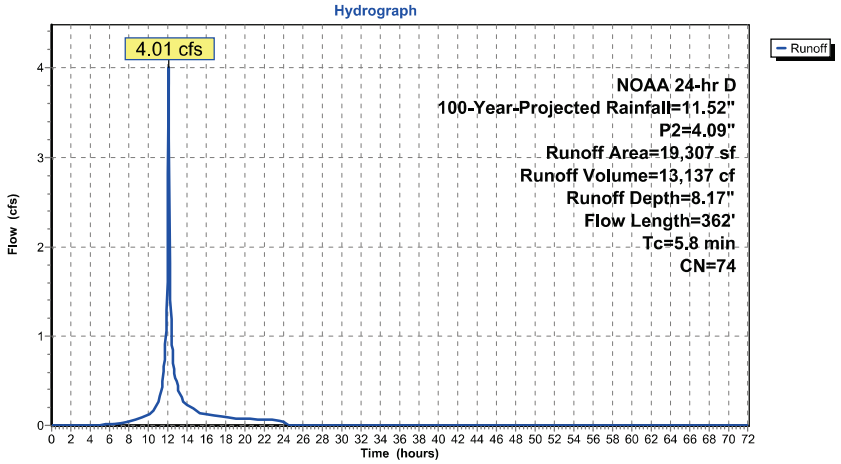
Runoff = 4.01 cfs @ 12.13 hrs, Volume= 13,137 cf, Depth= 8.17"
Routed to Pond 2.1P-TW : BIO-RETENTION BASIN 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.4	30	0.0200	1.22		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 4.09"
0.6	33	0.0102	0.95		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
5.8	362	Total			

Subcatchment 11S-TW: PR-DA2.1-PER



Summary for Subcatchment 13S-TW: PR-DA2.2-IMP

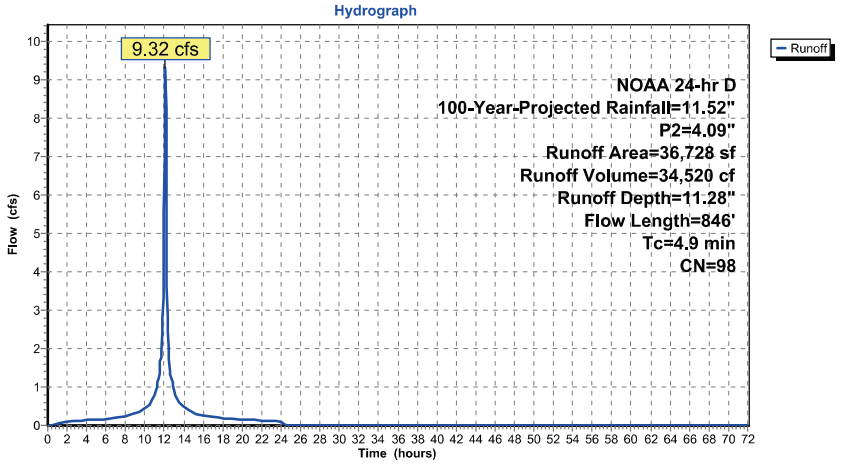
Runoff = 9.32 cfs @ 12.11 hrs, Volume= 34,520 cf, Depth=11.28"
Routed to Pond 22P-TW : BIO-RETENTION BASIN 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.98		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
1.2	8	0.0433	0.11		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
4.9	846	Total			

Subcatchment 13S-TW: PR-DA2.2-IMP



Summary for Subcatchment 14S-TW: PR-DA2.2-PER

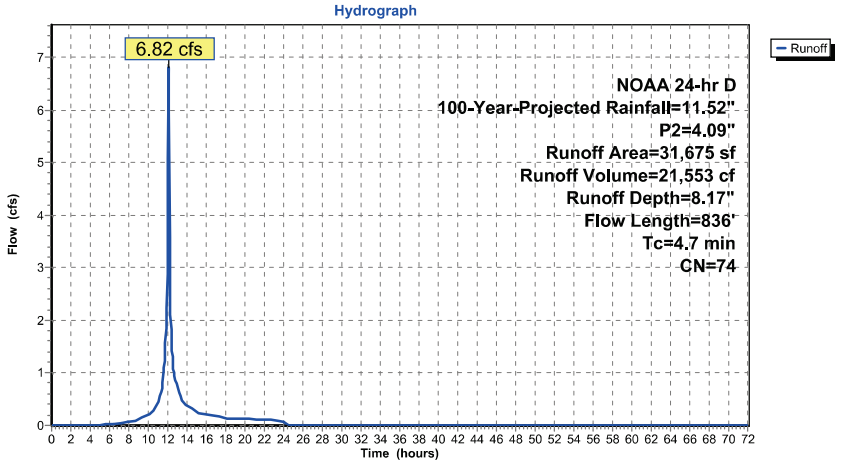
Runoff = 6.82 cfs @ 12.11 hrs, Volume= 21,553 cf, Depth= 8.17"
Routed to Pond 22P-TW : BIO-RETENTION BASIN 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	8	0.0433	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.7	836	Total			

Subcatchment 14S-TW: PR-DA2.2-PER



Summary for Pond 22P-TW: BIO-RETENTION BASIN 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 9.84" for 100-Year-Projected event
Inflow = 16.14 cfs @ 12.11 hrs, Volume= 56,073 cf
Outflow = 15.65 cfs @ 12.13 hrs, Volume= 52,703 cf, Atten= 3%, Lag= 1.3 min
Primary = 15.65 cfs @ 12.13 hrs, Volume= 52,703 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 319.98' @ 12.13 hrs Surf.Area= 6,033 sf Storage= 5,418 cf

Plug-Flow detention time= 86.2 min calculated for 52,703 cf (94% of inflow)
Center-of-Mass det. time= 50.3 min (814.3 - 764.0)

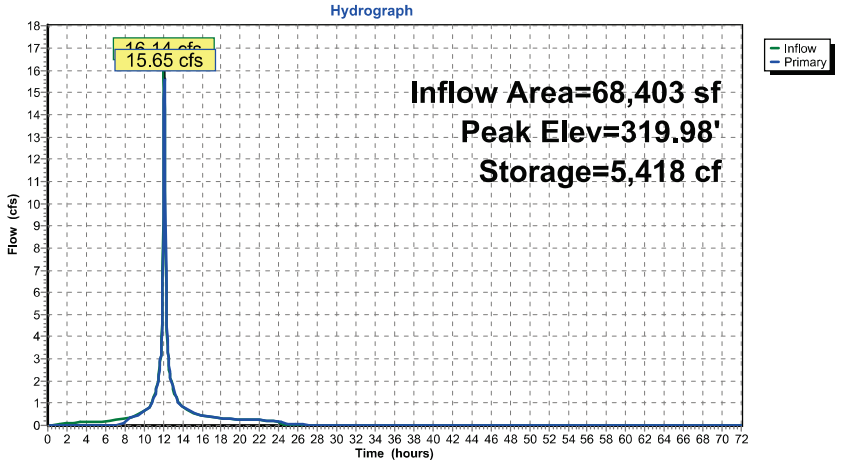
Volume	Invert	Avail.Storage	Storage Description
#1	319.00'	11,114 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

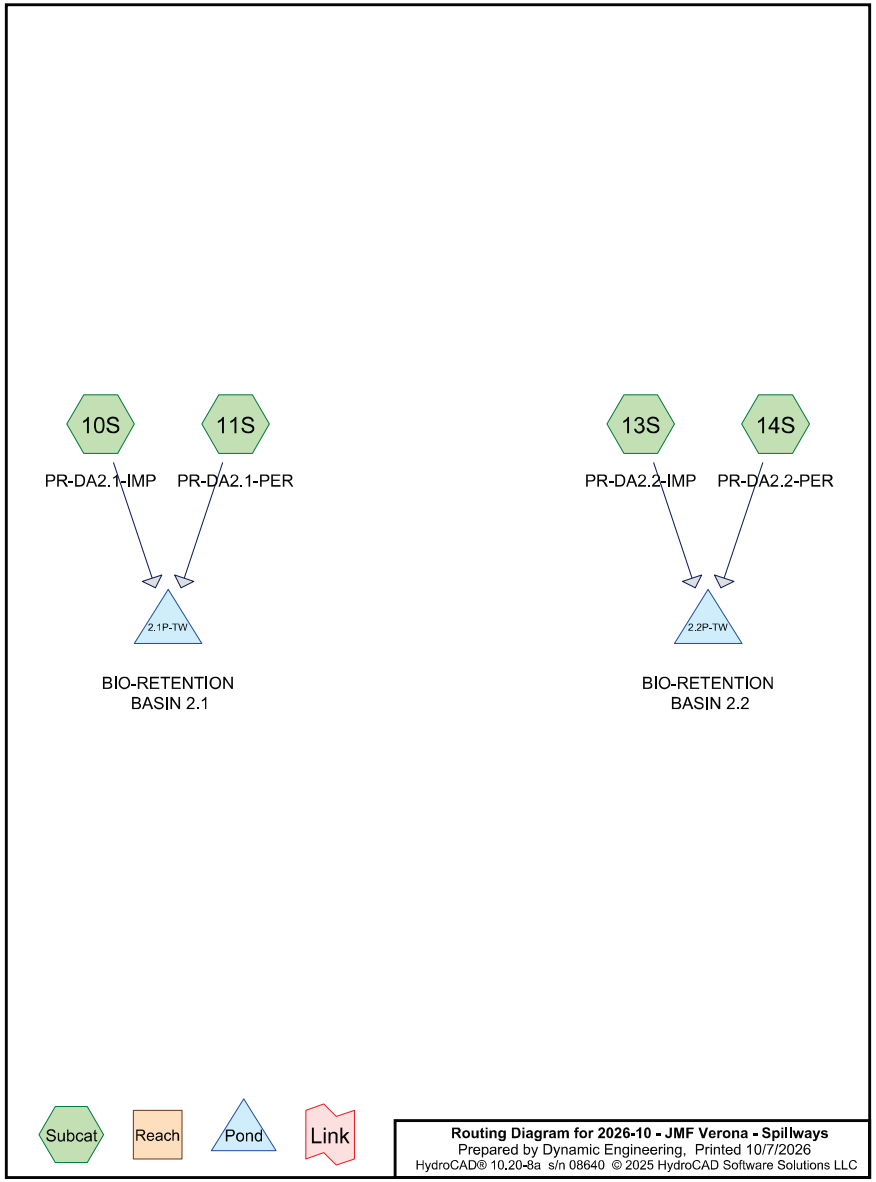
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
319.00	5,025	0	0
320.00	6,054	5,540	5,540
320.85	7,063	5,575	11,114

Device	Routing	Invert	Outlet Devices
#1	Primary	316.42'	**24.0" Round Culvert** L= 31.0' Ke= 0.500 Inlet / Outlet Invert= 316.42' / 316.27' S= 0.0048 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Device 1	319.63'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	319.63'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 1	319.77'	**6.0" x 2.0" Horiz. Orifice/Grate X 10.00 columns** X 27 rows C= 0.600 in 72.0" x 72.0" Grate (63% open area) Limited to weir flow at low heads
#5	Device 1	319.77'	**6.0" x 2.0" Horiz. Orifice/Grate X 10.00 columns** X 27 rows C= 0.600 in 72.0" x 72.0" Grate (63% open area) Limited to weir flow at low heads

Primary OutFlow Max=15.02 cfs @ 12.13 hrs HW=319.97' TW=318.50' (Fixed TW Elev= 318.50')
- **1=Culvert** (Passes 15.02 cfs of 18.36 cfs potential flow)
  - **2=Sharp-Crested Rectangular Weir** (Weir Controls 0.28 cfs @ 1.92 fps)
  - **3=Sharp-Crested Rectangular Weir** (Weir Controls 0.28 cfs @ 1.92 fps)
  - **4=Orifice/Grate** (Weir Controls 7.23 cfs @ 1.48 fps)
  - **5=Orifice/Grate** (Weir Controls 7.23 cfs @ 1.48 fps)

Pond 22P-TW: BIO-RETENTION BASIN 2.2





Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC	P2 (inches)
1	100-Year-Projected	NOAA 24-hr	D	Default	24.00	1	11.52	2	4.09

Summary for Pond 2.1P-TW: BIO-RETENTION BASIN 2.1

Inflow Area = 97,762 sf, 80.25% Impervious, Inflow Depth = 10.66" for 100-Year-Projected event
Inflow = 23.44 cfs @ 12.12 hrs, Volume= 86,876 cf
Outflow = 23.11 cfs @ 12.14 hrs, Volume= 86,876 cf, Atten= 1%, Lag= 1.2 min
Primary = 23.11 cfs @ 12.14 hrs, Volume= 86,876 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 321.26' Surf.Area= 8,628 sf Storage= 13,042 cf
Peak Elev= 321.48' @ 12.14 hrs Surf.Area= 8,937 sf Storage= 14,983 cf (1,942 cf above start)

Plug-Flow detention time= 139.1 min calculated for 73,835 cf (85% of inflow)
Center-of-Mass det. time= 3.1 min (751.2 - 748.0)

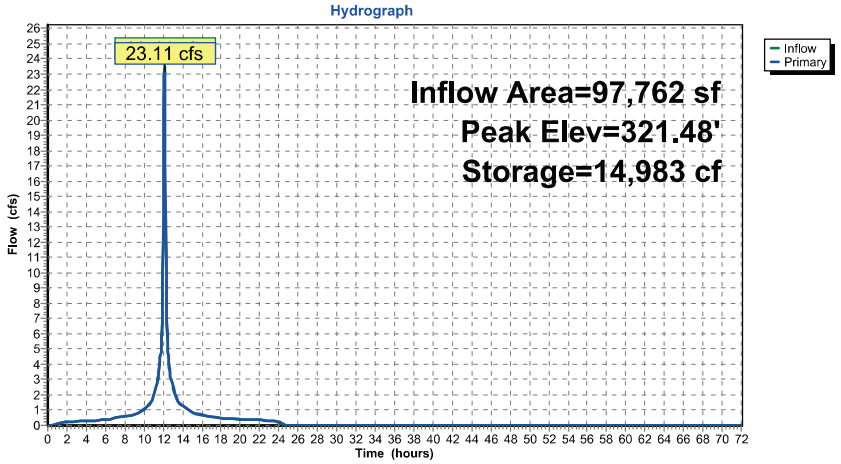
Volume	Invert	Avail.Storage	Storage Description
#1	319.50'	24,117 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
319.50	6,217	0	0
320.50	7,562	6,890	6,890
321.50	8,964	8,263	15,153
322.50	8,964	8,964	24,117

Device	Routing	Invert	Outlet Devices
#1	Primary	321.26'	**91.0' long + 3.0 '/' SideZ x 7.8' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.42 2.53 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.67 2.68 2.71 2.75

Primary OutFlow Max=22.36 cfs @ 12.14 hrs HW=321.48' TW=318.50' (Fixed TW Elev= 318.50')
└**1=Broad-Crested Rectangular Weir** (Weir Controls 22.36 cfs @ 1.13 fps)

Pond 2.1P-TW: BIO-RETENTION BASIN 2.1



Summary for Pond 2.2P-TW: BIO-RETENTION BASIN 2.2

Inflow Area = 68,403 sf, 53.69% Impervious, Inflow Depth = 9.84" for 100-Year-Projected event
Inflow = 16.14 cfs @ 12.11 hrs, Volume= 56,073 cf
Outflow = 15.79 cfs @ 12.13 hrs, Volume= 56,073 cf, Atten= 2%, Lag= 1.0 min
Primary = 15.79 cfs @ 12.13 hrs, Volume= 56,073 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 320.01' Surf.Area= 6,066 sf Storage= 5,600 cf
Peak Elev= 320.15' @ 12.13 hrs Surf.Area= 6,230 sf Storage= 6,452 cf (852 cf above start)

Plug-Flow detention time= 99.9 min calculated for 50,473 cf (90% of inflow)
Center-of-Mass det. time= 2.0 min (766.0 - 764.0)

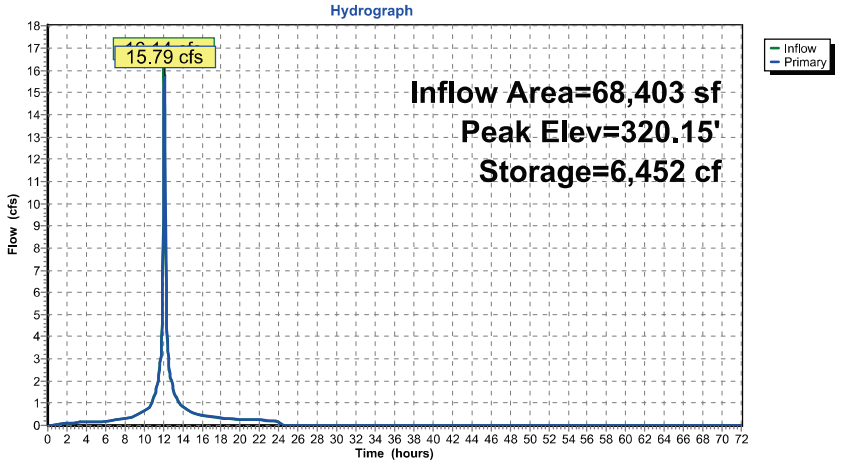
Volume	Invert	Avail.Storage	Storage Description
#1	319.00'	11,114 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
319.00	5,025	0	0
320.00	6,054	5,540	5,540
320.85	7,063	5,575	11,114

Device	Routing	Invert	Outlet Devices
#1	Primary	320.01'	**123.0' long + 3.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=15.12 cfs @ 12.13 hrs HW=320.14' TW=318.50' (Fixed TW Elev= 318.50')
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 15.12 cfs @ 0.91 fps)

Pond 2.2P-TW: BIO-RETENTION BASIN 2.2



Summary for Subcatchment 10S: PR-DA2.1-IMP

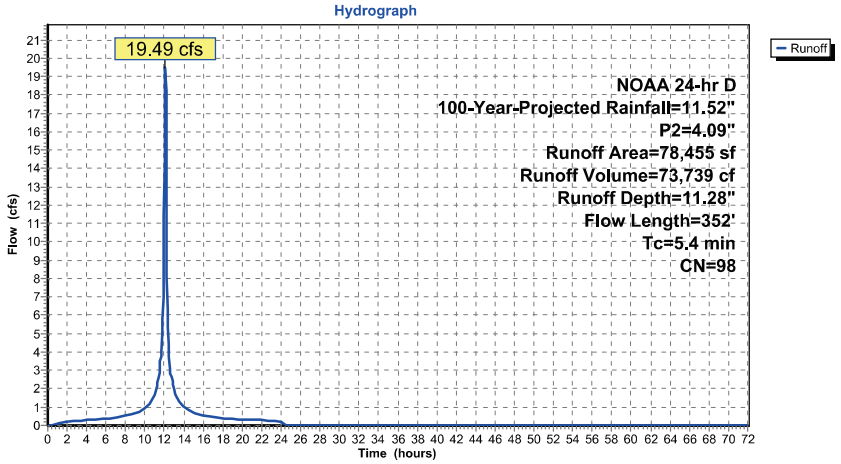
Runoff = 19.49 cfs @ 12.12 hrs, Volume= 73,739 cf, Depth=11.28"
Routed to Pond 2.1P-TW : BIO-RETENTION BASIN 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	78,455	98	IMPERVIOUS
	78,455		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0150	0.91		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
3.1	15	0.0150	0.08		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.6	56	0.0220	1.44		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.3	96	0.0100	5.70	7.00	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.2	30	0.0333	2.94		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
5.4	352	Total			

Subcatchment 10S: PR-DA2.1-IMP



Summary for Subcatchment 11S: PR-DA2.1-PER

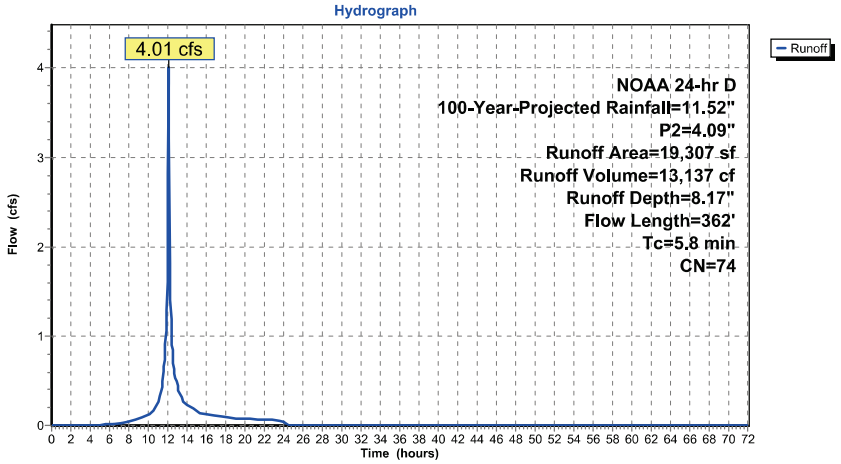
Runoff = 4.01 cfs @ 12.13 hrs, Volume= 13,137 cf, Depth= 8.17"
Routed to Pond 2.1P-TW : BIO-RETENTION BASIN 2.1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
19,307	74	>75% Grass cover, Good, HSG C
19,307		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	18	0.0200	0.09		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.4	30	0.0200	1.22		**Sheet Flow, B-C** Smooth surfaces n= 0.011 P2= 4.09"
0.6	33	0.0102	0.95		**Sheet Flow, C-D** Smooth surfaces n= 0.011 P2= 4.09"
0.1	12	0.0102	2.05		**Shallow Concentrated Flow, D-E** Paved Kv= 20.3 fps
0.3	96	0.0100	5.70	7.00	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.0	23	0.0175	8.52	15.05	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
5.8	362	Total			

Subcatchment 11S: PR-DA2.1-PER



Summary for Subcatchment 13S: PR-DA2.2-IMP

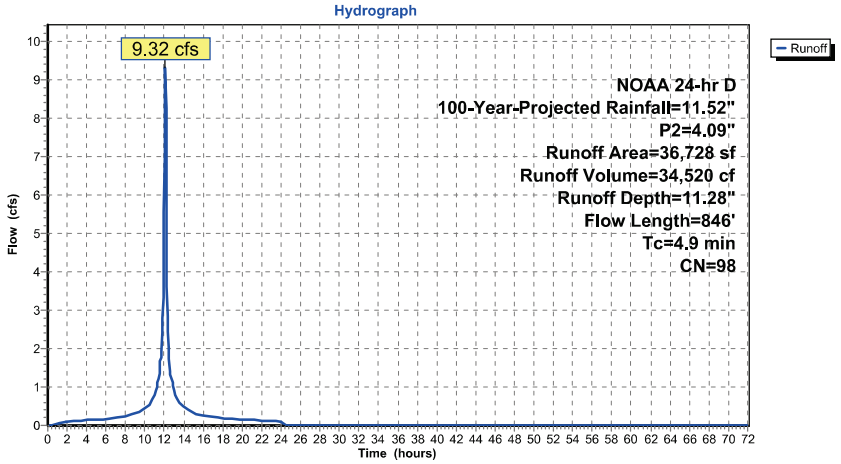
Runoff = 9.32 cfs @ 12.11 hrs, Volume= 34,520 cf, Depth=11.28"
Routed to Pond 2.2P-TW : BIO-RETENTION BASIN 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
*	36,728	98	IMPERVIOUS
	36,728		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.98		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 4.09"
1.2	8	0.0433	0.11		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, E-F** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, H-I** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, J-K** Unpaved Kv= 16.1 fps
4.9	846	Total			

Subcatchment 13S: PR-DA2.2-IMP



Summary for Subcatchment 14S: PR-DA2.2-PER

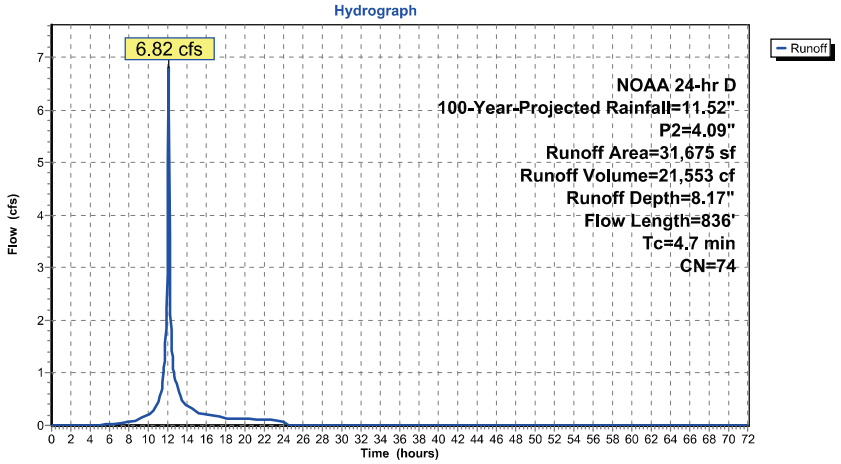
Runoff = 6.82 cfs @ 12.11 hrs, Volume= 21,553 cf, Depth= 8.17"
Routed to Pond 2.2P-TW : BIO-RETENTION BASIN 2.2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year-Projected Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
31,675	74	>75% Grass cover, Good, HSG C
31,675		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	8	0.0433	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 4.09"
0.2	69	0.0090	5.41	6.64	**Pipe Channel, B-C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	107	0.0194	7.94	9.75	**Pipe Channel, C-D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	146	0.0097	5.62	6.89	**Pipe Channel, D-E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	71	0.0092	6.18	10.92	**Pipe Channel, E-F** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.2	59	0.0092	6.18	10.92	**Pipe Channel, F-G** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.1	226	0.0030	3.53	6.23	**Pipe Channel, G-H** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
1.0	120	0.0150	1.97		**Shallow Concentrated Flow, H-I** Unpaved Kv= 16.1 fps
0.2	30	0.0330	2.92		**Shallow Concentrated Flow, I-J** Unpaved Kv= 16.1 fps
4.7	836	Total			

Subcatchment 14S: PR-DA2.2-PER



PIPE SIZING CALCULATIONS

Report

Line No.	Line ID	Inlet ID	Drng Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Inlet Time (min)	Tc (min)	i Sys (in/hr)	Line Size (in)	Line Length (ft)	Line Slope (%)	Line Type	Capac Full (cfs)	Flow Rate (cfs)	Vel Ave (ft/s)	
1	229 TO 228	229	0.00	0.00	0.00	1.55	2.0	8.5	7.29	18	23.426	1.75	Cir	15.21	11.31	8.16	
2	230 TO 229	230	0.16	0.94	0.15	1.11	6.0	8.2	7.37	18	95.547	1.00	Cir	11.40	8.17	5.91	
3	231 TO 230	231	0.00	0.00	0.00	0.50	6.0	7.5	7.53	15	121.269	0.90	Cir	6.61	3.79	4.12	
4	RL101 TO 231	RL101	0.00	0.00	0.00	0.25	6.0	7.3	7.58	10	7.246	0.97	Cir	2.27	1.90	4.59	
5	231A TO RL101	231A	0.00	0.00	0.00	0.22	6.0	7.1	7.64	10	47.438	1.01	Cir	2.32	1.66	4.00	
6	RL104 TO 231A	RL104	0.00	0.00	0.00	0.16	6.0	6.9	7.70	8	47.893	1.00	Cir	1.31	1.22	4.21	
7	RL106 TO RL104	RL106	0.00	0.00	0.00	0.10	6.0	6.5	7.80	8	47.968	1.00	Cir	1.31	0.77	3.00	
8	RL108 TO RL106	RL108	0.00	0.00	0.00	0.04	6.0	6.0	7.94	6	48.890	0.98	Cir	0.60	0.31	2.27	
9	RL109 TO RL108	RL109	0.04	0.99	0.04	0.04	2.0	2.0	8.25	6	6.962	2.01	Cir	0.86	0.33	2.81	
10	217 TO 216	217	0.23	0.87	0.20	0.40	0.0	35.5	3.99	15	226.350	0.30	Cir	3.83	1.60	3.01	
11	218 TO 217	218	0.00	0.00	0.00	0.20	6.0	34.7	4.04	15	59.489	0.92	Cir	6.73	0.82	2.18	
12	219 TO 218	219	0.19	0.63	0.12	0.20	6.0	33.7	4.11	15	71.097	0.91	Cir	6.69	0.83	3.29	
13	220 TO 219	220	0.08	0.63	0.05	0.08	6.0	29.0	4.46	15	146.437	0.97	Cir	6.86	0.37	1.42	
14	221 TO 220	221	0.03	0.63	0.02	0.03	6.0	20.2	5.32	15	106.611	1.94	Cir	9.71	0.17	2.12	
15	222 TO 221	222	0.02	0.63	0.01	0.01	6.0	6.0	7.94	15	69.467	0.89	Cir	6.59	0.10	1.80	
16	RL107 TO RL106	RL107	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	7.931	2.02	Cir	0.86	0.49	3.04	
17	RL201 TO 231	RL201	0.00	0.00	0.00	0.25	6.0	7.5	7.54	10	7.973	0.88	Cir	2.16	1.90	4.49	
18	RL204 TO RL201	RL204	0.00	0.00	0.00	0.22	6.0	7.2	7.61	10	46.987	0.85	Cir	2.13	1.66	4.00	
19	231B TO RL204	231B	0.00	0.00	0.00	0.16	6.0	6.9	7.70	10	49.059	0.75	Cir	2.06	1.22	3.33	
20	RL206 TO RL204	RL206	0.00	0.00	0.00	0.10	6.0	6.5	7.80	8	47.976	0.75	Cir	1.13	0.77	3.06	
21	RL208 TO RL206	RL208	0.00	0.00	0.00	0.04	6.0	6.0	7.94	6	48.671	0.76	Cir	0.53	0.31	2.27	
22	RL209 TO RL208	RL209	0.04	0.99	0.04	0.04	2.0	2.0	8.25	6	6.843	0.73	Cir	0.52	0.33	2.78	
23	RL105 TO RL104	RL105	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	10.202	1.96	Cir	0.85	0.49	2.88	

Project File: 2026-10 Pipe Sizing.stm | Number of lines: 82 | Date: 10/1/2026

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82 -- Return period = 25 Yrs. ; ** Critical depth

Report

Line No.	Line ID	Inlet ID	Drng Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Inlet Time (min)	Tc (min)	i Sys (in/hr)	Line Size (in)	Line Length (ft)	Line Slope (%)	Line Type	Capac Full (cfs)	Flow Rate (cfs)	Vel Ave (ft/s)	
24	RL207 TO RL206	RL207	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	7.084	1.98	Cir	0.85	0.49	3.04	
25	RL103 TO 231A	RL103	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	10.006	2.00	Cir	0.86	0.49	3.89	
26	RL203 TO RL204	RL203	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	10.871	2.02	Cir	0.86	0.49	3.90	
27	RL205 TO 231B	RL205	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	10.617	1.41	Cir	0.72	0.49	3.15	
28	232 TO 230	232	0.15	0.99	0.15	0.46	6.0	7.5	7.54	15	80.393	1.00	Cir	6.95	3.43	4.83	
29	233 TO 232	233	0.15	0.99	0.15	0.31	6.0	6.9	7.69	15	67.887	1.00	Cir	6.98	2.36	3.81	
30	234 TO 233	234	0.16	0.99	0.16	0.16	6.0	6.0	7.94	15	55.389	1.01	Cir	7.01	1.26	2.94	
31	RL102 TO RL101	RL102	0.03	0.99	0.03	0.03	1.0	1.0	8.25	6	8.794	5.00	Cir	1.36	0.28	2.02	
32	RL202 TO RL201	RL202	0.03	0.99	0.03	0.03	1.0	1.0	8.25	6	9.335	3.00	Cir	1.05	0.28	1.70	
33	213 TO 212	213	0.00	0.00	0.00	0.32	6.0	8.5	7.29	15	23.195	0.99	Cir	6.94	2.31	3.90	
34	RL402 TO 213	RL402	0.00	0.00	0.00	0.29	6.0	8.2	7.36	12	47.935	1.00	Cir	3.99	2.11	4.57	
35	214 TO RL402	214	0.00	0.00	0.00	0.23	6.0	7.8	7.45	12	48.248	0.99	Cir	3.98	1.70	3.54	
36	RL405 TO 214	RL405	0.00	0.00	0.00	0.17	6.0	7.5	7.54	10	48.999	1.00	Cir	2.31	1.27	4.06	
37	215 TO RL405	215	0.00	0.00	0.00	0.13	6.0	7.1	7.65	10	47.159	1.02	Cir	2.33	0.98	3.13	
38	RL302 TO 215	RL302	0.00	0.00	0.00	0.09	6.0	6.7	7.75	8	47.806	0.98	Cir	1.30	0.69	3.51	
39	RL304 TO RL302	RL304	0.00	0.00	0.00	0.03	6.0	6.0	7.94	6	48.566	1.01	Cir	0.61	0.24	1.95	
40	RL305 TO RL304	RL305	0.03	0.99	0.03	0.03	2.0	2.0	8.25	6	7.013	1.00	Cir	0.61	0.24	2.54	
41	RL303 TO RL302	RL303	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	7.384	0.95	Cir	0.59	0.49	3.12	
42	RL601 TO 229	RL601	0.00	0.00	0.00	0.25	6.0	7.7	7.50	10	7.592	1.05	Cir	2.37	1.88	3.53	
43	RL603 TO RL601	RL603	0.00	0.00	0.00	0.22	6.0	7.4	7.56	10	47.246	0.99	Cir	2.30	1.65	3.08	
44	RL605 TO RL603	RL605	0.00	0.00	0.00	0.16	6.0	7.1	7.65	10	48.142	1.00	Cir	2.31	1.21	2.27	
45	229A TO RL605	229A	0.00	0.00	0.00	0.10	6.0	6.5	7.80	10	47.880	1.00	Cir	2.31	0.77	2.03	
46	RL608 TO 229A	RL608	0.00	0.00	0.00	0.04	6.0	6.0	7.94	6	48.886	1.00	Cir	0.61	0.31	2.17	

Project File: 2026-10 Pipe Sizing.stm | Number of lines: 82 | Date: 10/1/2026

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82 -- Return period = 25 Yrs. ; ** Critical depth

Report

Line No.	Line ID	Inlet ID	Drng Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Inlet Time (min)	Tc (min)	i Sys (in/hr)	Line Size (in)	Line Length (ft)	Line Slope (%)	Line Type	Capac Full (cfs)	Flow Rate (cfs)	Vel Ave (ft/s)	
47	RL609 TO RL608	RL609	0.04	0.99	0.04	0.04	2.0	2.0	8.25	6	6.854	1.90	Cir	0.84	0.33	2.81	
48	RL501 TO 229	RL501	0.00	0.00	0.00	0.19	6.0	7.2	7.61	10	7.597	1.05	Cir	2.37	1.46	2.74	
49	229B TO RL501	229B	0.00	0.00	0.00	0.16	6.0	6.9	7.71	10	47.371	0.99	Cir	2.30	1.22	2.75	
50	RL504 TO 229B	RL504	0.00	0.00	0.00	0.10	6.0	6.5	7.80	8	48.092	1.00	Cir	1.31	0.77	3.19	
51	RL506 TO RL504	RL506	0.00	0.00	0.00	0.04	6.0	6.0	7.94	6	47.380	0.99	Cir	0.61	0.31	2.27	
52	RL507 TO RL506	RL507	0.04	0.99	0.04	0.04	2.0	2.0	8.25	6	9.279	2.05	Cir	0.87	0.33	2.81	
53	RL301 to 215	RL301	0.04	0.99	0.04	0.04	2.0	2.0	8.25	6	8.513	1.06	Cir	0.62	0.33	2.99	
54	RL607 TO 229A	RL607	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	10.985	2.00	Cir	0.86	0.49	2.88	
55	RL505 TO RL504	RL505	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	8.491	2.00	Cir	0.86	0.49	3.04	
56	RL503 TO 229B	RL503	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	10.639	1.97	Cir	0.85	0.49	3.88	
57	RL606 TO RL605	RL606	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	10.714	1.96	Cir	0.85	0.49	2.50	
58	RL406 TO RL405	RL406	0.04	0.99	0.04	0.04	2.0	2.0	8.25	6	8.723	1.03	Cir	0.62	0.33	1.74	
59	RL404 TO 214	RL404	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	11.359	0.97	Cir	0.60	0.49	3.33	
60	101 TO 100	101	0.13	0.83	0.11	0.38	6.0	14.7	6.07	15	22.010	1.04	Cir	7.13	2.31	3.90	
61	102 TO 101	102	0.00	0.00	0.00	0.11	6.0	7.4	7.55	15	316.936	1.00	Cir	6.97	0.85	2.36	
62	103 TO 102	103	0.13	0.87	0.11	0.11	6.0	6.0	7.94	15	63.722	0.99	Cir	6.93	0.90	3.42	
63	RL604 TO RL603	RL604	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	7.634	1.96	Cir	0.85	0.49	2.50	
64	RL502 TO RL501	RL502	0.03	0.99	0.03	0.03	1.0	1.0	8.25	6	7.576	2.51	Cir	0.96	0.28	1.41	
65	RL602 TO RL601	RL602	0.03	0.99	0.03	0.03	1.0	1.0	8.25	6	7.048	3.55	Cir	1.14	0.28	1.41	
66	226 TO 225	226	0.00	0.00	0.00	0.37	6.0	6.7	7.75	15	49.344	0.30	Cir	3.86	2.84	3.75	
67	227 TO 226	227	0.39	0.94	0.37	0.37	6.0	6.0	7.94	15	98.243	0.30	Cir	3.80	2.91	3.00	
68	RL401 TO 213	RL401	0.03	0.99	0.03	0.03	2.0	2.0	8.25	6	9.017	1.00	Cir	0.61	0.24	2.72	
69	RL403 TO RL402	RL403	0.06	0.99	0.06	0.06	2.0	2.0	8.25	6	8.959	1.00	Cir	0.61	0.49	2.50	

Project File: 2026-10 Pipe Sizing.stm | Number of lines: 82 | Date: 10/1/2026

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82 -- Return period = 25 Yrs. ; ** Critical depth

Report

Line No.	Line ID	Inlet ID	Drng Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Inlet Time (min)	Tc (min)	i Sys (in/hr)	Line Size (in)	Line Length (ft)	Line Slope (%)	Line Type	Capac Full (cfs)	Flow Rate (cfs)	Vel Ave (ft/s)	
70	201 TO 200	201	0.03	0.56	0.02	0.17	6.0	17.7	5.63	15	105.888	0.30	Cir	3.83	0.98	2.65	
71	202 TO 201	202	0.03	0.56	0.02	0.16	6.0	17.0	5.73	15	43.301	0.95	Cir	6.78	0.90	2.70	
72	203 TO 202	203	0.04	0.56	0.02	0.14	6.0	16.2	5.84	15	40.111	1.02	Cir	7.05	0.82	3.35	
73	204 TO 203	204	0.08	0.56	0.04	0.12	6.0	15.0	6.03	15	54.874	0.49	Cir	4.89	0.71	2.80	
74	205 TO 204	205	0.06	0.56	0.03	0.07	6.0	11.4	6.65	15	98.584	2.00	Cir	9.85	0.48	2.81	
75	206 TO 205	206	0.07	0.56	0.04	0.04	6.0	6.0	7.94	15	82.890	1.99	Cir	9.83	0.31	2.65	
76	104 TO 101	104	0.20	0.80	0.16	0.16	6.0	6.0	7.94	15	29.010	1.00	Cir	6.97	1.27	2.99	
77	208 TO 207	208	0.00	0.00	0.00	0.00	0.0	6.4	0.00	30	20.328	0.30	Cir	24.14	21.76	6.12	
78	223 TO 208	223	0.00	0.00	0.00	0.00	6.0	6.1	0.00	24	62.416	0.61	Cir	19.12	13.24	4.21	
79	224 TO 223	224	0.00	0.00	0.00	0.00	6.0	6.0	0.00	24	34.074	0.62	Cir	19.24	13.24	4.21	
80	210 TO 208	210	0.00	0.00	0.00	0.00	6.0	6.1	0.00	18	14.223	0.28	Cir	6.10	4.26	2.39	
81	211 TO 210	211	0.00	0.00	0.00	0.00	6.0	6.0	0.00	18	16.665	0.30	Cir	6.30	4.26	2.39	
82	209 TO 208	209	0.00	0.00	0.00	0.00	6.0	6.0	0.00	18	16.389	0.55	Cir	8.52	4.26	2.39	

Project File: 2026-10 Pipe Sizing.stm | Number of lines: 82 | Date: 10/1/2026

NOTES: Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82 -- Return period = 25 Yrs. ; ** Critical depth

CONDUIT OUTLET PROTECTION CALCULATIONS (RIP-RAPS AND RIP-RAP LINED CHUTES)

DYNAMIC ENGINEERING

Date: 10/1/2026
Project: Grove Street Developers
Project No: 0922 25-03663

Calculated By: DMS
Checked By: NPL

Conduit Outlet Protection Calculations

Rip Rap Pad # 200

Design Parameters:

Design Storm Flow for 25 Year, Q	0.98	cfs
Vertical Dimension of Outlet Pipe, D_o	15	in
Horizontal Dimension of Outlet Pipe, W_o	15	in
Tailwater Depth, TW[1] (In Basins: TW = (2-yr storm elevation) - (pipe invert); For others: TW= 0.2 x (pipe diameter))	0.25	ft

Apron Dimension Calculations:

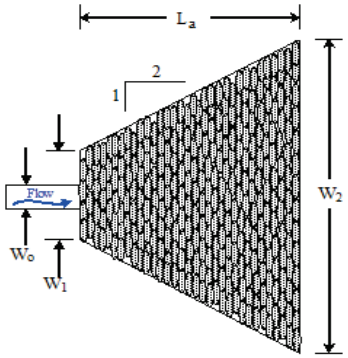
Unit Dicharge, $q = Q/D_o$ = 0.78 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 10.01 ft or L_a = **11 ft**

Width, $W_1 = 3W_o$ = 3.75 ft or W_1 = **4 ft**

Width, $W_2 = 3W_o + L_a$ = 13.76 ft or W_2 = **14 ft**

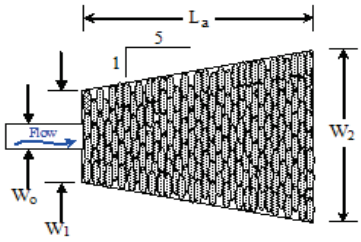


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = L_a =

Width, $W_1 = 3W_o$ = W_1 =

Width, $W_2 = 3W_o + 0.4L_a$ = W_2 =



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 0.69 in d_{50} = **6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

DYNAMIC ENGINEERING

Date: 10/1/2026
Project: Grove Street Developers
Project No: 0922 25-03663

Calculated By: DMS
Checked By: NPL

Conduit Outlet Protection Calculations

Rip Rap Pad # 207

Design Parameters:

Design Storm Flow for 25 Year, Q	21.76	cfs
Vertical Dimension of Outlet Pipe, D_o	30	in
Horizontal Dimension of Outlet Pipe, W_o	30	in
Tailwater Depth, TW[1] (In Basins: TW = (2-yr storm elevation) - (pipe invert); For others: TW= 0.2 x (pipe diameter))	0.50	ft

Apron Dimension Calculations:

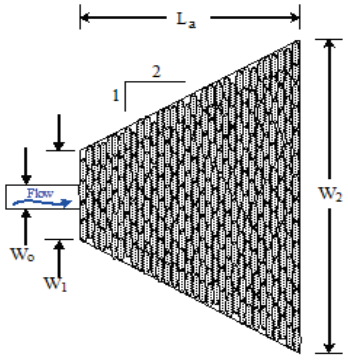
Unit Dicharge, $q = Q/D_o$ = 8.70 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

  Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 27.41 ft or **L_a = 28 ft**

  Width, $W_1 = 3W_o$ = 7.5 ft or **W_1 = 8 ft**

  Width, $W_2 = 3W_o + L_a$ = 34.91 ft or **W_2 = 35 ft**

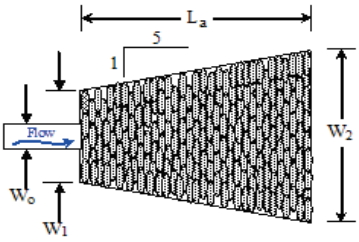


- **Case II: $TW \geq 1/2\ D_o$**

  Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = **L_a =**

  Width, $W_1 = 3W_o$ = **W_1 =**

  Width, $W_2 = 3W_o + 0.4L_a$ = **W_2 =**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 8.53 in **d_{50} = 9 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

DYNAMIC ENGINEERING

Date: 10/1/2026
Project: Grove Street Developers
Project No: 0922 25-03663

Calculated By: DMS
Checked By: NPL

Conduit Outlet Protection Calculations

Rip Rap Pad # 212

Design Parameters:

Design Storm Flow for 25 Year, Q	2.31	cfs
Vertical Dimension of Outlet Pipe, D_o	15	in
Horizontal Dimension of Outlet Pipe, W_o	15	in
Tailwater Depth, TW[1] (In Basins: TW = (2-yr storm elevation) - (pipe invert); For others: TW= 0.2 x (pipe diameter))	1.06	ft

Apron Dimension Calculations:

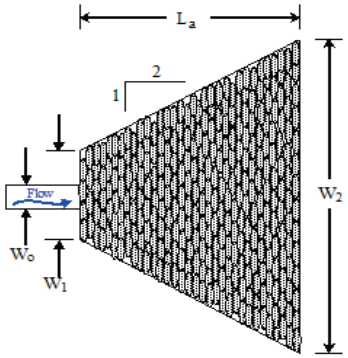
Unit Dicharge, $q = Q/D_o$ = 1.85 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

  Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = L_a =

  Width, $W_1 = 3W_o$ = W_1 =

  Width, $W_2 = 3W_o + L_a$ = W_2 =

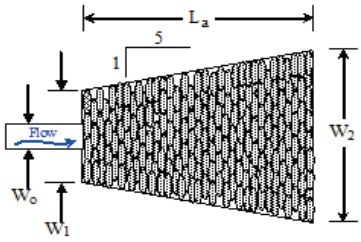


- **Case II: $TW \geq 1/2\ D_o$**

  Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = 4.96 ft or L_a = **6 ft**

  Width, $W_1 = 3W_o$ = 3.75 ft or W_1 = **4 ft**

  Width, $W_2 = 3W_o + 0.4L_a$ = 5.73 ft or W_2 = **6 ft**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 0.51 in d_{50} = **6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4\,W_o$.

DYNAMIC ENGINEERING

Date: 10/1/2026
Project: Grove Street Developers
Project No: 0922 25-03663

Calculated By: DMS
Checked By: NPL

Conduit Outlet Protection Calculations

Rip Rap Pad # 216

Design Parameters:

Design Storm Flow for 25 Year, Q	1.60	cfs
Vertical Dimension of Outlet Pipe, D_o	15	in
Horizontal Dimension of Outlet Pipe, W_o	15	in
Tailwater Depth, TW[1] (In Basins: TW = (2-yr storm elevation) - (pipe invert); For others: TW= 0.2 x (pipe diameter))	1.06	ft

Apron Dimension Calculations:

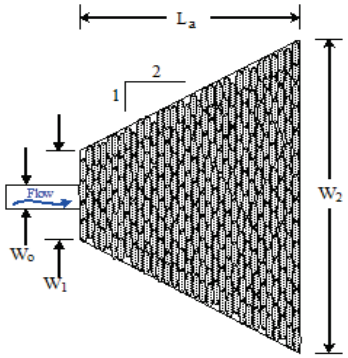
Unit Dicharge, $q = Q/D_o$ = 1.28 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

  Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = L_a =

  Width, $W_1 = 3W_o$ = W_1 =

  Width, $W_2 = 3W_o + L_a$ = W_2 =

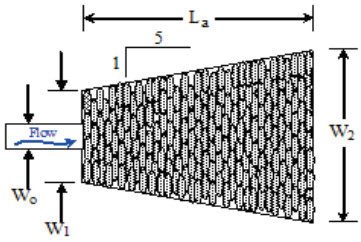


- **Case II: $TW \geq 1/2\ D_o$**

  Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = 3.43 ft or L_a = **6 ft**

  Width, $W_1 = 3W_o$ = 3.75 ft or W_1 = **4 ft**

  Width, $W_2 = 3W_o + 0.4L_a$ = 5.12 ft or W_2 = **6 ft**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 0.31 in d_{50} = **6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4\,W_o$.

DYNAMIC ENGINEERING

Date: 10/1/2026
Project: Grove Street Developers
Project No: 0922 25-03663

Calculated By: DMS
Checked By: NPL

Conduit Outlet Protection Calculations

Rip Rap Pad # 225

Design Parameters:

Design Storm Flow for 25 Year, Q	2.84	cfs
Vertical Dimension of Outlet Pipe, D_o	15	in
Horizontal Dimension of Outlet Pipe, W_o	15	in
Tailwater Depth, TW[1] (In Basins: TW = (2-yr storm elevation) - (pipe invert); For others: TW= 0.2 x (pipe diameter))	1.86	ft
	7	

Apron Dimension Calculations:

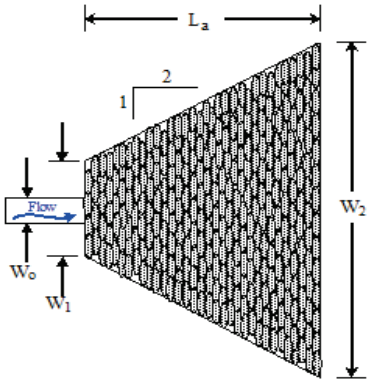
Unit Dicharge, $q = Q/D_o$ = 2.27 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = L_a =

Width, $W_1 = 3W_o$ = W_1 =

Width, $W_2 = 3W_o + L_a$ = W_2 =

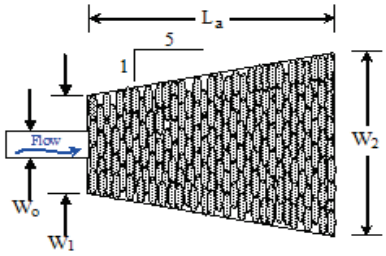


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = 6.1 ft or L_a = **7 ft**

Width, $W_1 = 3W_o$ = 3.75 ft or W_1 = **4 ft**

Width, $W_2 = 3W_o + 0.4L_a$ = 6.19 ft or W_2 = **7 ft**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 0.38 in d_{50} = **6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

DYNAMIC ENGINEERING

Date: 10/1/2026
Project: Grove Street Developers
Project No: 0922 25-03663

Calculated By: DMS
Checked By: NPL

Conduit Outlet Protection Calculations

Rip Rap Pad # 228

Design Parameters:

Design Storm Flow for 25 Year, Q	11.31	cfs
Vertical Dimension of Outlet Pipe, D_o	18	in
Horizontal Dimension of Outlet Pipe, W_o	18	in
Tailwater Depth, TW[1] (In Basins: TW = (2-yr storm elevation) - (pipe invert); For others: TW= 0.2 x (pipe diameter))	1.86	ft

Apron Dimension Calculations:

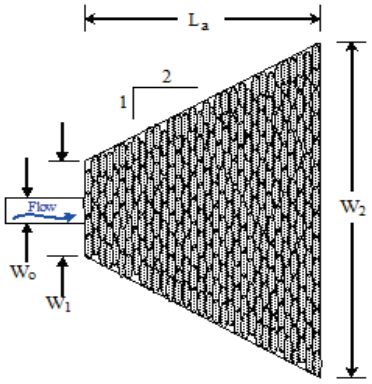
Unit Dicharge, $q = Q/D_o$ = 7.54 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

  Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = L_a =

  Width, $W_1 = 3W_o$ = W_1 =

  Width, $W_2 = 3W_o + L_a$ = W_2 =

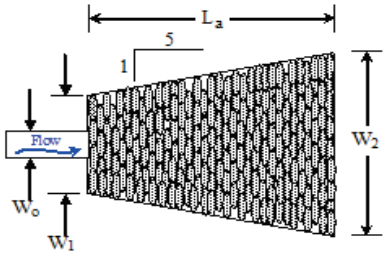


- **Case II: $TW \geq 1/2\ D_o$**

  Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = 18.47 ft or L_a = **19 ft**

  Width, $W_1 = 3W_o$ = 4.5 ft or W_1 = **5 ft**

  Width, $W_2 = 3W_o + 0.4L_a$ = 11.89 ft or W_2 = **12 ft**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 1.89 in d_{50} = **6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

DYNAMIC ENGINEERING

Date:	10/1/2026
Project:	Grove Street Developers
Project No:	0922 25-03663
Calculated By:	DMS
Checked By:	NPL

Rip-Rap Lined Chute Slope Protection Calculations

Rip-Rap Lined Chute # 1

Design Parameters:

Design Storm Flow for 25-Year Storm, *Q*	2.77	cfs
Bed Slope, S	0.33	ft/ft
Flow Depth, z	0.178	ft
Bottom Width, b	3.00	ft
Unit discharge, q	0.92	cfs/ft
Median Stone Size, D_{50}	6.00	in
Radius of Top of Slope Curve, $40D_{50}$	20.00	ft
Rock Layer Thickness, $2D_{50}$	12.00	in
Horizontal Outlet Reach Length, $15D_{50}$	7.50	ft

Chute Dimension Calculations:

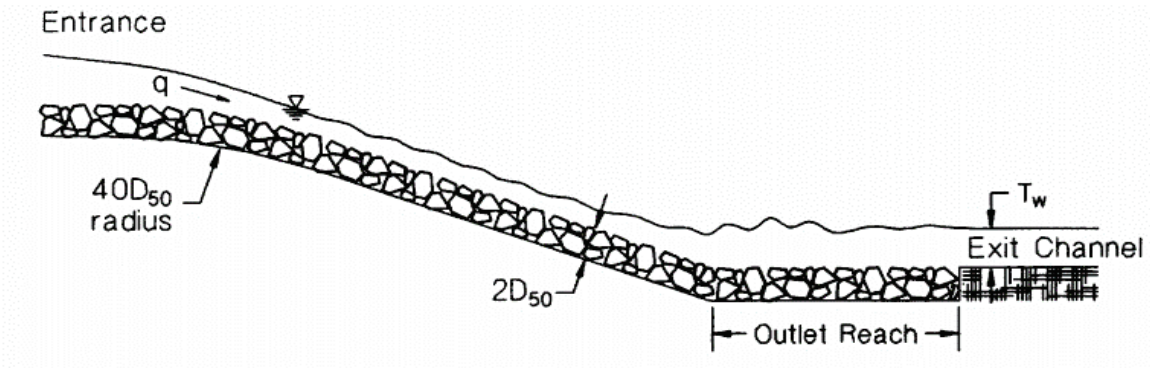
Median Stone Size, D_{50}: For bed slopes between 2% and 10%: $D_{50} = [q\ (S)^{1.5}/4.75(10)^{-3}]^{1/1.89}$

For bed slopes between 10% and 40%: $D_{50} = [q\ (S)^{0.58}/3.93(10)^{-2}]^{1/1.89}$

Unit discharge, $q = Q/b$

Flow depth, $z = [n(q)/1.486(S)^{0.50}]^{3/5}$

where $n = 0.047(D_{50}S)^{0.147}$



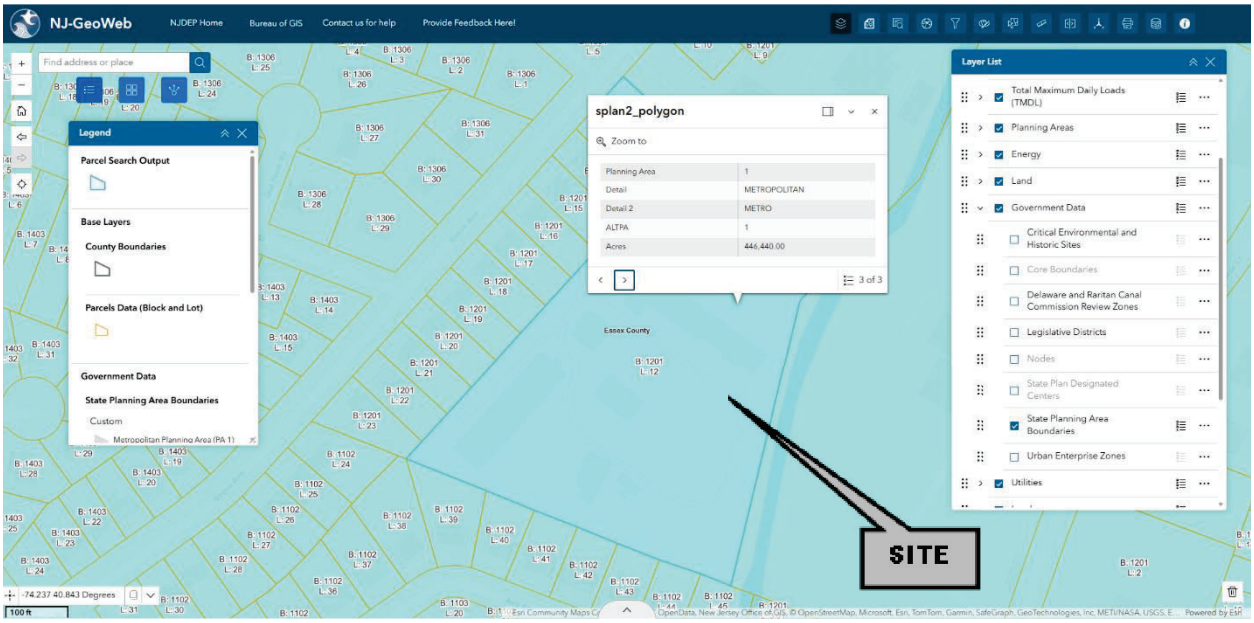
Notes:

1. Except for short transition sections, flow in the range of 0.7 to 1.3 the critical slope must be avoided unless the channel is straight. Velocities exceeding critical velocity shall be restricted to straight reaches.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the chute.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap chute may be two (2) times the median stone diameter
7. The radius of the curve at the top of the chute may be forty (40) times the median stone diameter.
8. The length of the horizontal outlet reach shall be fifteen (15) times the median stone diameter.
9. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
10. This method is suitable for channels having gradients between 2 percent and 40 percent.

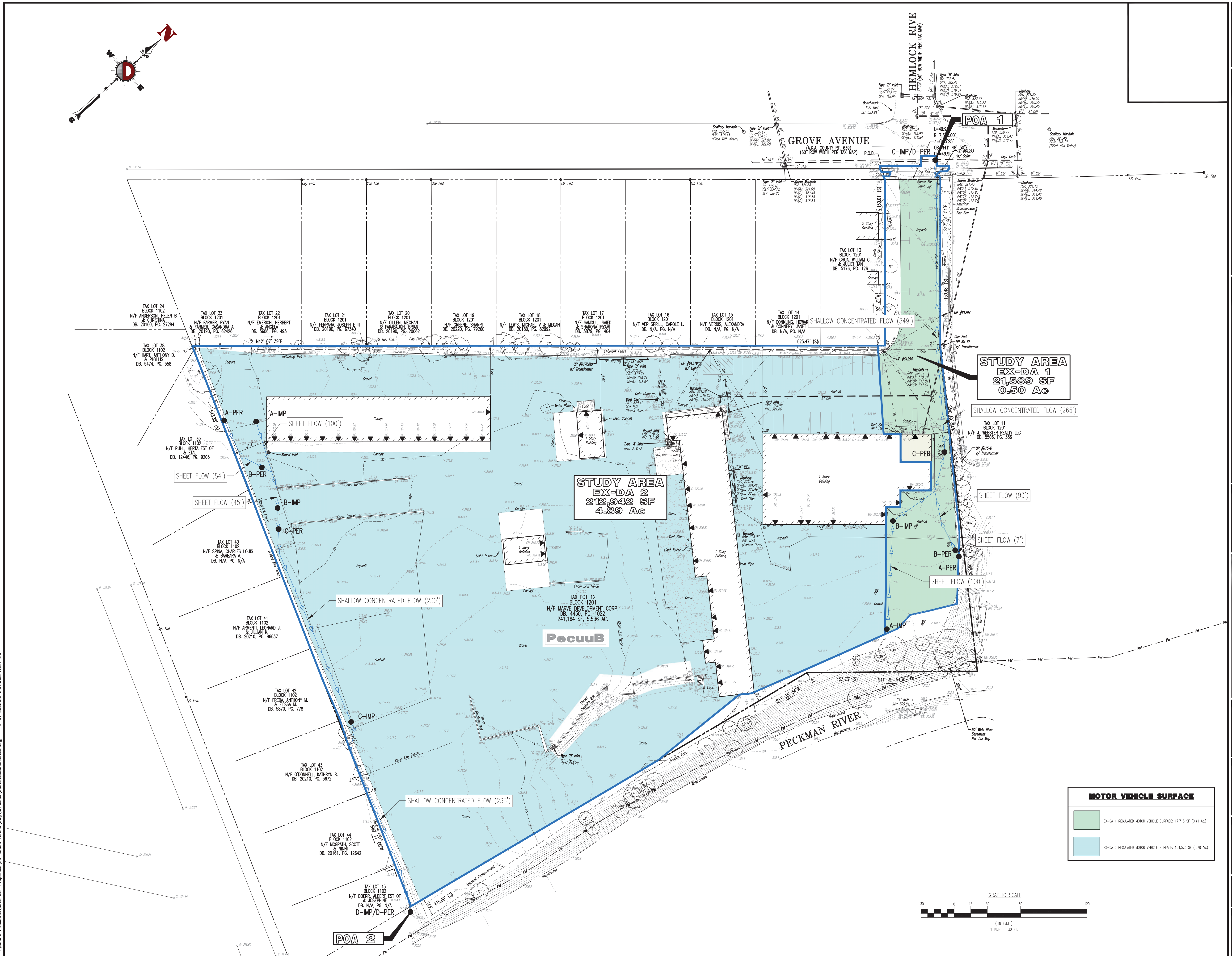
NJDEP GEOWEB STATE PLANNING AREA

DYNAMIC
ENGINEERING EARTH SURVEY TRAFFIC

NJGeoWeb State Planning Area



DRAINAGE AREA MAPS



Plotted: 10/02/26 – 12:01 PM, By: dsundberg, – Product Ver: 25.1
File: P:\DECPC PROJECTS\0922 JMF Properties\25-03663 Verona\Dwg\DA Maps\D0922250363EDAM3.dwg, ---> 01 EXISTING DRAINAGE AREA MAP

REV.	DATE	COMMENTS	BY
3	10/02/26	REVISED PER MUNICIPAL COMMENTS	DMS
2	06/09/26	REVISED PER NJDEP COMMENTS	ASD
1	06/02/26	REVISED PER MUNICIPAL SUBMISSION	EMF

THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

DRAWN BY: JGK
DESIGNED BY: MGS
CHECKED BY: DTS
CHECKED BY:

PROJECT: GROVE STREET DEVELOPERS LLC
PROPOSED TOWNHOUSE DEVELOPMENT
BLOCK 1201, LOT 12
251 GROVE AVENUE
TOWNSHIP OF VERONA, ESSEX COUNTY, NEW JERSEY

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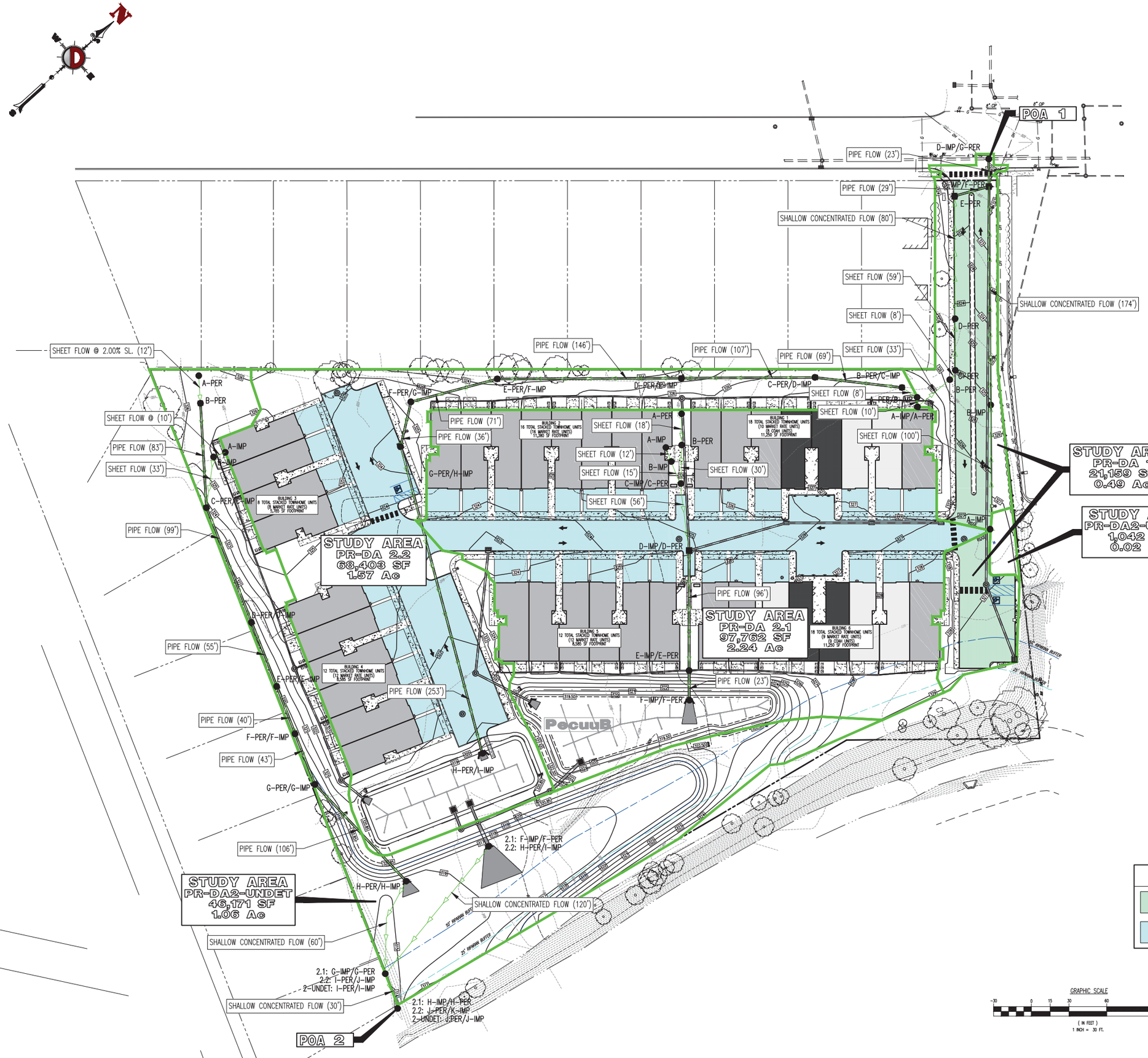
BRETT W. SKAPINETZ
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 41985

DANIEL T. SEHNAL
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 53572

TITLE:
EXISTING DRAINAGE AREA MAP

SCALE: (H) 1"=30' (V)
DATE: 05/01/2026
PROJECT No: 0922-25-03663
SHEET No: 1 OF 3
Rev. #: 3

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REV.	DATE	COMMENTS	BY
3	10/02/26	REVISED PER MUNICIPAL COMMENTS	DMS
2	08/01/26	REVISED PER MUNICIPAL COMMENTS	AND
1	06/02/26	REVISED PER MUNICIPAL SUBMISSION	DMS

THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

DRAWN BY: JCK | DESIGNED BY: MKS | CHECKED BY: DTS | CHECKED BY:

PROJECT: GROVE STREET DEVELOPERS LLC
PROPOSED TOWNHOUSE DEVELOPMENT
BLOCK 1201, LOT 12
GROVE STREET
TOWNSHIP OF VERONA, ESSEX COUNTY, NEW JERSEY

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BRETT W. SKAPINETZ
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 41985

DANIEL T. SEHNAL
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 53572

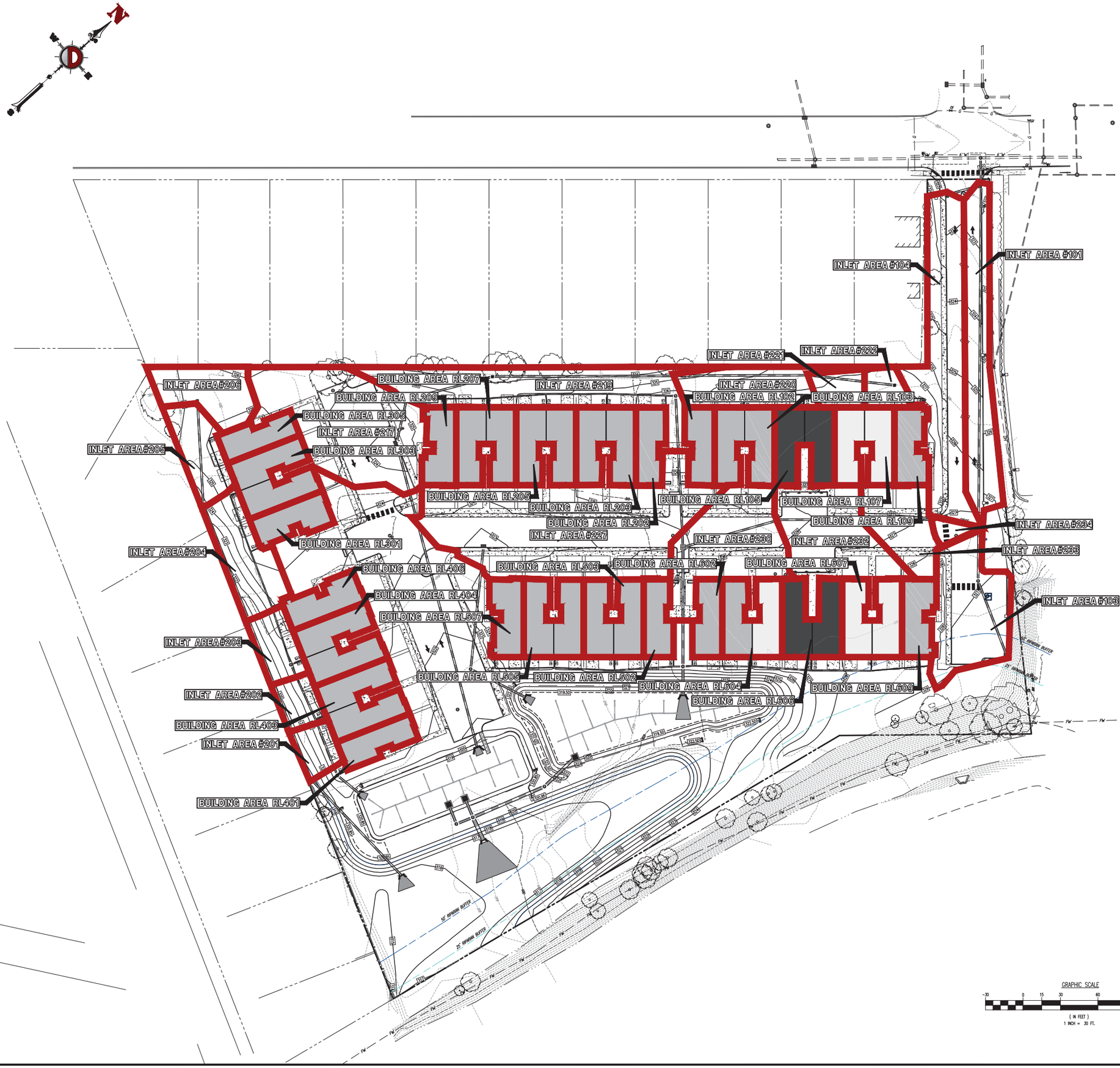
TITLE:
PROPOSED DRAINAGE AREA MAP

SCALE: (H) 1" = 30' (V)
DATE: 05/01/2026
PROJECT No: 0922-25-03663

SHEET No: 2 OF 3
Rev. #: 3

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Plotted: 10/14/26 – 5:50 PM, By: dsundberg, — Product Ver: 25.1
File: P:\DOCS PROJECTS\0922 Properties\25-03663 Verona\Dwg\04 Maps\09222503663PDA03.dwg, ---> 02 PROPOSED DRAINAGE AREA MAP



Plotted: 10/14/25 - 5:48 PM, By: daundberg - Product Ver: 25.1
File: P:\0922-25-03663\Project\0922-25-03663 Proposed\25-03663 Townhouse.dwg [A1 Mono\09222503663PMAS.dwg, ---> 03 PROPOSED INLET AREA MAP

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REV.	DATE	COMMENTS	BY
3	10/02/25	REVISED PER MUNICIPAL COMMENTS	DMS
2	08/01/25	REVISED PER MUNICIPAL COMMENTS	DMS
1	04/02/25	REVISED PER MUNICIPAL SUBMISSION	DMS

THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

DRAWN BY: DMS | CHECKED BY: MKS | CHECKED BY: DTS | CHECKED BY:

PROJECT: GROVE STREET DEVELOPERS LLC
PROPOSED TOWNHOUSE DEVELOPMENT
BLOCK 1201, LOT 12
211 GROVE STREET
TOWNSHIP OF VERONA, ESSEX COUNTY, NEW JERSEY

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TITLE:
PROPOSED INLET AREA MAP

SCALE: (H) 1"=30' (V) | DATE: 05/01/2026
PROJECT No: 0922-25-03663

SHEET No: 3 OF 3 | Rev. #: 3