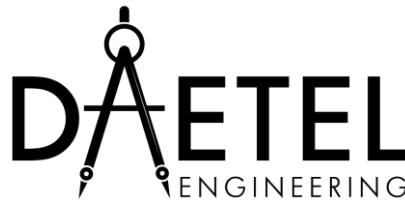


Stormwater Management Report

Prepared For

**Single Family Home Subdivision
62 Glenn Ave.
Block 2008, Lot 22
Lawrence, Mercer County,
New Jersey**

Prepared by:



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***May 03, 2024
Revised September 2, 2024***

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Project Name: Single Family Home Subdivision

Project Location: Lawrence, Mercer County, NJ

The following table summarizes typical additional information as required by the New Jersey Department of Environmental Protection Division of Land Use Regulation. Details can be found throughout this Stormwater Management Report, Appendices and Supplemental Reports at the places indicated below.

Drainage Report Information	Location of Information
Total Amount of Land Disturbed on Site – 0.507 Acres	Page #3
Acreage of New Impervious Surfaces – 0.28 Acres	Page #3
Type of Basin Proposed (Pervious Pavement System)	Page #4
Proof that Groundwater Recharge Standards are met	Appendix B
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Proof that Runoff Quantity Standards are met	Appendix A
Proof that Water Quality Standards are met	Appendix A
Location of proposed basin in relation to depth of the seasonal high groundwater table	Page #7

Introduction

The purpose of this report is to analyze the stormwater drainage conditions that will occur as a result of the subdivision of lot 22 to create a total of three (3) Proposed Lots 12.01 (EDA-1 / PDA-1), 12.02 (EDA-2 / PDA-2) & 12.03 (EDA-3 / PDA-3) and construct a 2 - story Single Family Homes on each of the new lots, in the Township of Lawrence, Mercer County, New Jersey. At this time the proposed site build-out includes Two New Proposed 2 - story Single Family Homes, asphalt driveway, Roadway extension to provide access to the homes (EDA-4 / PDA-4) , as well as landscaping areas, stormwater management facility, utilities, and related site improvements. Each site has an underground Stormwater Management System (Drywell) adequately sized for each site. Additionally, we have analyzed the stormwater of the proposed roadway which has been designed to be collected by Pervious Paving System.

The site is located at block 2008, lot 22 of Lawrence, Mercer County, New Jersey. The site currently has a single family home and applicant proposes to maintain the existing home and subdivide the property to create two new lots with each with a new single family home. The proposed development does not disturb more than one Acre nor increase the impervious coverage by a quarter acre or more. According to the NJDEP State regulations the project is exempt from the water quality, water quantity and ground water discharge.

In an effort to improve the stormwater conditions of the proposed development, the applicant has chosen to reduce the generated water quantity flows by the proposed development to prevent runoff from affecting surrounding properties and to increase the ground water recharge by proposing an underground stormwater facility to recharge the roof runoff. Calculations documenting the design of the stormwater management system, as illustrated on the Site Plan drawing documents, prepared by DAETEL ENGINEERING, LLC which are accompanying this report.

2. Existing Site Conditions

The existing site conditions for the subject project are illustrated on the “Existing Drainage Area Map” which is included within Appendix of this report. The “Existing Drainage Area Map” is based on boundary & topography survey information shown hereon is taken from boundary & topography survey, prepared by RWC surveying by John J. Hanlon, Lic No. GS37589, L.S. dated 03/17/24. Existing stormwater runoff conditions were analyzed based on the site conditions from the survey, field inspection,

soil conditions as found in the UdstB Soil Survey for Mercer County, Under original conditions, the Site was contains one single family residential home on lot(s) 22

Topography

The topography of the site can be described as “mild” with slopes ranging from about Two (2) to ten (10) percent. The general topography of the site drains towards the Southeast of the site towards wetland.

Drainage

Under existing conditions, the site contains four (4) drainage areas, labeled as EDA-1, EDA-2, EDA-3, EDA-4 and consists of approximately 0.23 acres, 0.17 acres, 0.23 acres and 0.15 acres (study area) as illustrated on the accompanying “Existing Drainage Area Map” included within Appendix C.

- **Drainage Area EDA-1 (on-site):** This area encompasses approximately 0.23 Acres which contains an existing single family residential home which ultimately sheet flows onto the unimproved road draining to the existing wetland located at the end of the unimproved road.
- **Drainage Area EDA-2 (on-site):** This area encompasses approximately 0.17 Acres which contains a proposed single family residential home which ultimately sheet flows onto the unimproved road draining to the existing wetland located at the end of the unimproved road.
- **Drainage Area EDA-3 (on-site):** This area encompasses approximately 0.23 Acres which contains a proposed single family residential home which ultimately sheet flows onto the unimproved road draining to the existing wetland located at the end of the unimproved road.
- **Drainage Area EDA-4 (off-site):** This area encompasses approximately 0.15 Acres which the unimproved road draining to the existing wetland located at the end of the unimproved road.

Site Soils

Based on the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (and as shown on the Soil Survey Map located in Appendix C the soils within the overall drainage area are Udorthents Complex (UdstB), 0% to 8% slopes as shown on the Soil Map for Mercer County and classified as hydrologic soil group D.

3. Proposed Site Conditions

Post Development Conditions

Surface Cover/Development

Under proposed conditions, the developed area will require the disturbance of 0.507 Acres; and additional (new) impervious surfaces of 0.28 Acres. The runoff from the proposed impervious areas as well as the runoff from the proposed roof area of the two houses (clean) will be directed the proposed drywells in the rear of the house. The Site has been designed to maintain similar to existing drainage patterns as the water will continue to drain in the Southeast direction towards the Wetlands as it does under existing conditions.

Drainage

The stormwater management facilities for the proposed development have been designed to maintain the natural, existing drainage patterns to the fullest extent possible and to meet appropriate regulatory requirements with respect to groundwater recharge, water quality, and peak flow reductions. Under post-development conditions, Four (4) main drainage areas are proposed as depicted on the accompanying Proposed Drainage Area Plans included in Appendix C and are as follows:

- **Drainage Area (PDA-1, 2 & 3) (on-site):**

Based on evaluating the Volume of the Difference from Proposed to Pre-Existing, conservative we the stormwater management design for this project consists of a series of one (1) precast concrete seepage pits (Drywell) for each site to fully detain the roof runoff generated by the 100 year- 60 minutes duration storm (Larger Volume). In case of system failure, the design proposes an emergency overflow through the slotted clean-out of the Roof drain system which will flow towards the rear of the property which will ultimately drain down to the existing wetlands which mimics existing drainage patterns.

- **Drainage Area PDA-4 (Pervious Paving System – Roadway Drainage):**

The stormwater and grading plan for the Site has been designed to include a Proposed Roadway which sheet flows the Pervious Paving System which control and collect stormwater runoff. The purpose of the Pervious Paving System is to achieve low impact development by providing non-structural stormwater control techniques per the New Jersey Stormwater Best Management Practices Manual. The Pervious Paving System minimize the impervious surface, while

increasing the time of concentration and providing opportunities for runoff treatment, runoff infiltration, and groundwater discharge.

Approximately 0.15 Acre of Impervious Paving System are proposed as part of the Site design. Please see Appendix C for Pervious Paving System calculations.

Green Infrastructure Stormwater Management Facilities

Pervious Paving Systems

To meet the various design parameters established by the jurisdictional authorities above, the construction of stormwater management facilities is proposed for this Site. According to the Stormwater Management Rules (N.J.A.C. 7:8-5.3), there are six (6) types of green infrastructure that may be used to satisfy the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards. According to Table 5-1, Pervious Paving System meet all the requirements laid out in the BMP manual. Specifically, the Pervious Paving System has designed to detain the runoff from a majority of the Site, while infiltrating the water quality storm and reducing the rates of runoff leaving the Site. The bottom elevation of the proposed Basins is 59.90' msl which is at least 1' above the seasonal high ground water table (SHWT). The stormwater runoff from the home will be collected via an 6" proposed HDPE Pipe which will be conveyed to the proposed on-site dry wells. The majority of the remaining lawn areas will sheet flow directly to the Pervious Pavement System.

To provide the required reduction for the 2, 10 and 100-year storm events, the retention basins are designed to meet the NJDEP peak flow attenuation requirements from the developed area. The proposed lawn areas and driveway runoff will sheet flow towards the Pervious Paving System (4P). Additionally the Also the Pervious Paving System (4P) is designed to accommodate the proposed roadway extension.

The Pervious Paving System will have a series of 8" perforated underdrains that will be connected to a common outlet control structure from where the controlled discharge will leave the site. The proposed outlet pipe will discharge to existing grade with Rip Rap at the outlet point to safely control the concentrated runoff.

Outlet Control Structure

In order to control the outflow from the basins 4'x4' (interior dimensions) outlet structures are proposed. The outlet structure at the bottom of the Pervious Paving System (4P) has a 2.5 feet

long rectangular weir set at elevation 61.50' msl and a eight (8") inch orifice, set at elevation 60.55' msl, which ultimately drain to the municipal conveyance system via a 15" RCP Pipe Culvert which is set at 59.90' msl. At the top of the outlet structure is a 4'x4' grate, set at elevation 61.55' msl which is above the routing elevation of the 100-year storm event and below the emergency spillway elevation (61.90' low point of roadway).

4. Methodology

The stormwater management facilities have been designed in accordance with the local, county, and State requirements mentioned above.

Calculation Software

The calculations included within this report were performed using hydrologic software, HydroCAD (Version 8.00) by HydroCAD Software Solutions, LLC. The HydroCAD software was used to develop runoff hydrographs, outlet structure configurations, and detention basin routings using the SCS TR-20 methodology. Times of concentration calculations for the pre-development and post-development calculations were generated utilizing the SCS Method. All storm data for this project was generated using standard NRCS unit hydrographs.

Runoff "CN" Values

As described above, soil classifications for use with runoff curve numbers (CN) were taken from the NRCS Web Soil Survey (see Appendix A). Evaluation of this data indicates that soils within the existing and proposed drainage areas consisted of hydrologic soil groups "D" as defined within the United States Soil Conservation Service Manual "*Urban Hydrology for Small Watersheds*", v. 1986.

Runoff CN values for the soil groups were assigned to various surfaces as follows:

Group D

<u>Ground Cover</u>	<u>CN Value</u>
Open Space (Poor)	89
Impervious/Building Areas	98

Runoff CN value calculations for pre-developed and post-developed basin were generated using HydroCad software and are included within Appendix A of this report.

Time of Concentration

The time of concentration and travel time (TC) calculations have been completed in accordance with Chapter 3 of the SCS Technical Release 55 Manual. The time of concentration is defined as the time for runoff to travel from the hydraulically most distant point of the watershed to a point of interest. Values of the time of concentration were determined for existing and proposed conditions based on land cover and slope of the flow path. Based on the size of the Project a Minimum TC of 10 Min has been assumed for the Roadway. Please refer to the Hydrograph Calculations included within Appendix A of this report.

Infiltration Rates

Infiltration rates were assumed the soil conditions in that the soils are classified as hydrologic soil groups "D" which are poor drained soils. Therefore, conservatively analyzed in the design we utilized no infiltration rate which will be field verified during construction. For the purposes of this design, a safety factor of at least two (2) was utilized in conjunction with the Darcy Equation $Q=KIA$, as set forth in the NJDEP Stormwater BMP Manual.

Seasonal Groundwater

Seasonal groundwater was assumed based on the subsurface conditions of the neighboring areas and conditions. As required, a one (1') foot minimum clearance has been proposed between the seasonal high-water elevation and the bottom of the retention basin and to be verified during construction and if unable to be maintained, contractor is notified to inform engineer of record.

Water Quality

Water quality for the proposed development is achieved by the NJDEP 1.25"/2-Hour water quality storm being routed through the retention basin. The enclosed calculations also show that the basins will drain in less than 72 hours as required by the Lawrence Township and NJDEP.

Groundwater Recharge

Groundwater recharge is be promoted by a Porous Pavement System and the overland relief of the runoff to the wetlands. The total area in the worksheet is the surface area of the basin. Based on the annual Ground Water Recharge Analysis (GSR-32 worksheet) and Soil Type the Project is exempt from Annual Recharge (Appendix B), We utilized the limit of disturbance for this analysis.

Water Quantity Reductions

The 2-, 10- and 100-year storm events will be detained and controlled by an proposed concrete weir, reducing the pre-existing runoff rates substantially and meeting the required reduction rates. The quantity reduction for post-construction development as detailed in the new NJDEP Stormwater Management.

For an area where the post-development runoff hydrograph is below the pre-development hydrograph, then both the proposed site peak runoff and runoff volume should not exceed the existing.

Regulations includes a 50% reduction for the 2-year storm, 25% reduction for the 10-year storm and 20% reduction for the 100-year storm per N.J.A.C. 7:8-5.6 (b) (3)

The following tables show the comparison between the pre-development and the post-development stormwater runoff rates for various discharge points and demonstrate that the site design meets the Peak Flow Rate Reduction Requirement by NJDEP.

Table 1: Pre-Development vs. Post-Development Runoff Rate Comparison

Point of Analysis (Link 5L vs. Link 6L)

Per NJAC 7:8-5.6 (b) (1)

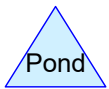
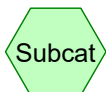
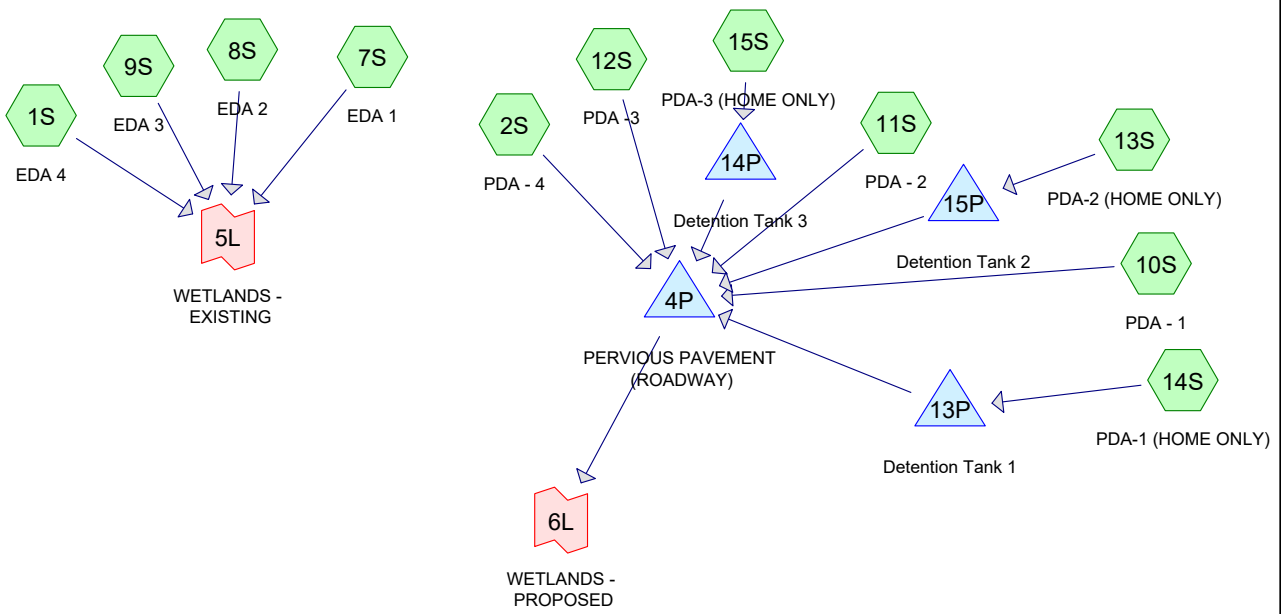
Design Storm	Pre-Development Runoff Rate (cfs)	Allowable (cfs)	Post-Development Runoff Rate (cfs)	Reduction Achieved
2-year	1.77	0.885	0.670	Y
10-year	2.98	2.235	2.070	Y
100-year	5.31	4.248	4.240	Y

5. Conclusion

In summary, the proposed development and stormwater management system illustrated on the drawings prepared Daetel Engineering, Inc. meets the requirements set forth by the current NJDEP Stormwater Management Regulations. The storm water management system for the project is designed to minimize the impacts of the developed areas on the downstream discharge points in accordance with the Lawrence Township, Mercer County and NJDEP regulations. The proposed development has been designed with provisions for safe and efficient control of stormwater runoff in a manner which will not adversely affect the existing drainage patterns found in the surrounding areas. The proposed development satisfies the NJDEP criteria for peak runoff rates for the 2-, 10-, and 100-year design storm frequencies and meets NJDEP criteria for water quality, groundwater recharge and TSS removal. It is evident that the proposed development will not adversely impact the existing drainage system.

A. PRE- vs. POST-DEVELOPMENT HYDROGRAPHS

- ◆ **2-Year Storm Event**
- ◆ **10-Year Storm Event**
- ◆ **25-Year Storm Event**
- ◆ **100-Year Storm Event**
- ◆ **Water Quality Storm Event**



Drainage Diagram for 62 GLEN AVE-PERVIOUS PAVEMENT_082824

Prepared by {enter your company name here} 8/29/2024
 HydroCAD® 8.00 s/n 002612 © 2006 HydroCAD Software Solutions LLC

62 GLEN AVE-PERVIOUS PAVEMENT_082824

Prepared by {enter your company name here}

HydroCAD® 8.00 s/n 002612 © 2006 HydroCAD Software Solutions LLC

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8/29/2024

Area Listing (selected nodes)

<u>Area (acres)</u>	<u>CN</u>	<u>Description (subcats)</u>
1.154	89	<50% Grass cover, Poor, HSG D (1S,7S,8S,9S,10S,11S,12S)
0.105	98	(13S,14S,15S)
0.301	98	Paved parking & roofs (2S,7S,10S,11S,12S)
<hr/>		
1.560		

2-Year Storm Event

62 GLEN AVE-PERVIOUS PAVEMENT_082824

Type III 24-hr 2 Year Rainfall=3.31"

Prepared by Daetel Engineering

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9/7/2024

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 9

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EDA 4	Runoff Area=0.150 ac Runoff Depth=2.18" Tc=10.0 min CN=89 Runoff=0.33 cfs 0.027 af
Subcatchment 2S: PDA - 4	Runoff Area=0.150 ac Runoff Depth=3.08" Tc=10.0 min CN=98 Runoff=0.42 cfs 0.038 af
Subcatchment 7S: EDA 1	Runoff Area=0.230 ac Runoff Depth=2.36" Tc=10.0 min CN=91 Runoff=0.55 cfs 0.045 af
Subcatchment 8S: EDA 2	Runoff Area=0.170 ac Runoff Depth=2.18" Tc=10.0 min CN=89 Runoff=0.38 cfs 0.031 af
Subcatchment 9S: EDA 3	Runoff Area=0.230 ac Runoff Depth=2.18" Tc=10.0 min CN=89 Runoff=0.51 cfs 0.042 af
Subcatchment 10S: PDA - 1	Runoff Area=0.209 ac Runoff Depth=2.36" Tc=10.0 min CN=91 Runoff=0.50 cfs 0.041 af
Subcatchment 11S: PDA - 2	Runoff Area=0.130 ac Runoff Depth=2.36" Tc=10.0 min CN=91 Runoff=0.31 cfs 0.026 af
Subcatchment 12S: PDA -3	Runoff Area=0.186 ac Runoff Depth=2.27" Tc=10.0 min CN=90 Runoff=0.43 cfs 0.035 af
Subcatchment 13S: PDA-2 (HOME ONLY)	Runoff Area=0.040 ac Runoff Depth=3.08" Tc=10.0 min CN=98 Runoff=0.11 cfs 0.010 af
Subcatchment 14S: PDA-1 (HOME ONLY)	Runoff Area=0.021 ac Runoff Depth=3.08" Tc=10.0 min CN=98 Runoff=0.06 cfs 0.005 af
Subcatchment 15S: PDA-3 (HOME ONLY)	Runoff Area=0.044 ac Runoff Depth=3.08" Tc=10.0 min CN=98 Runoff=0.12 cfs 0.011 af
Pond 4P: PERVIOUS PAVEMENT (ROADWAY)	Peak Elev=61.05' Storage=2,867 cf Inflow=1.66 cfs 0.140 af Outflow=0.67 cfs 0.103 af
Pond 13P: Detention Tank 1	Peak Elev=61.21' Storage=235 cf Inflow=0.06 cfs 0.005 af Outflow=0.00 cfs 0.000 af
Pond 14P: Detention Tank 3	Peak Elev=61.32' Storage=491 cf Inflow=0.12 cfs 0.011 af Outflow=0.00 cfs 0.000 af
Pond 15P: Detention Tank 2	Peak Elev=61.93' Storage=447 cf Inflow=0.11 cfs 0.010 af Outflow=0.00 cfs 0.000 af

62 GLEN AVE-PERVIOUS PAVEMENT_082824

Type III 24-hr 2 Year Rainfall=3.31"

Prepared by Daetel Engineering

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Link 5L: WETLANDS - EXISTING

Inflow=1.77 cfs 0.145 af

Primary=1.77 cfs 0.145 af

Link 6L: WETLANDS - PROPOSED

Inflow=0.67 cfs 0.103 af

Primary=0.67 cfs 0.103 af

Total Runoff Area = 1.560 ac Runoff Volume = 0.313 af Average Runoff Depth = 2.40"
73.97% Pervious Area = 1.154 ac 26.03% Impervious Area = 0.406 ac

Subcatchment 1S: EDA 4

Runoff = 0.33 cfs @ 12.14 hrs, Volume= 0.027 af, Depth= 2.18"

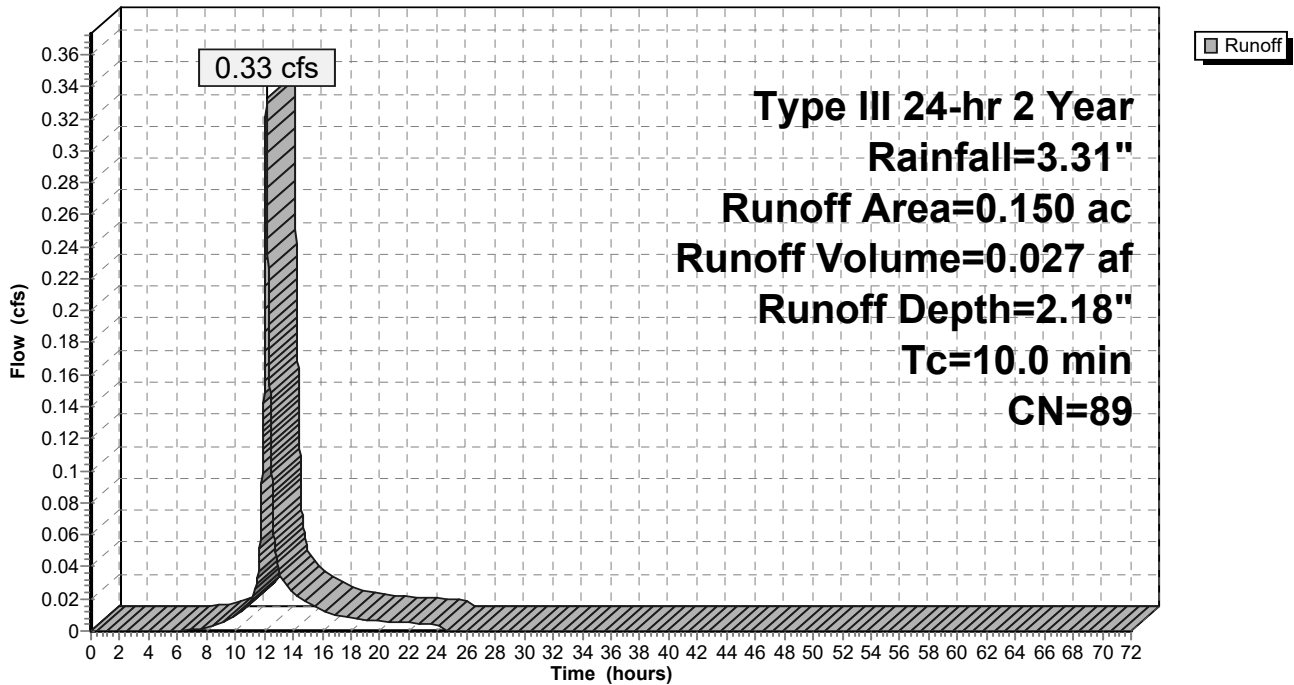
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.150	89	<50% Grass cover, Poor, HSG D
0.150		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 1S: EDA 4

Hydrograph



Subcatchment 2S: PDA - 4

Runoff = 0.42 cfs @ 12.13 hrs, Volume= 0.038 af, Depth= 3.08"

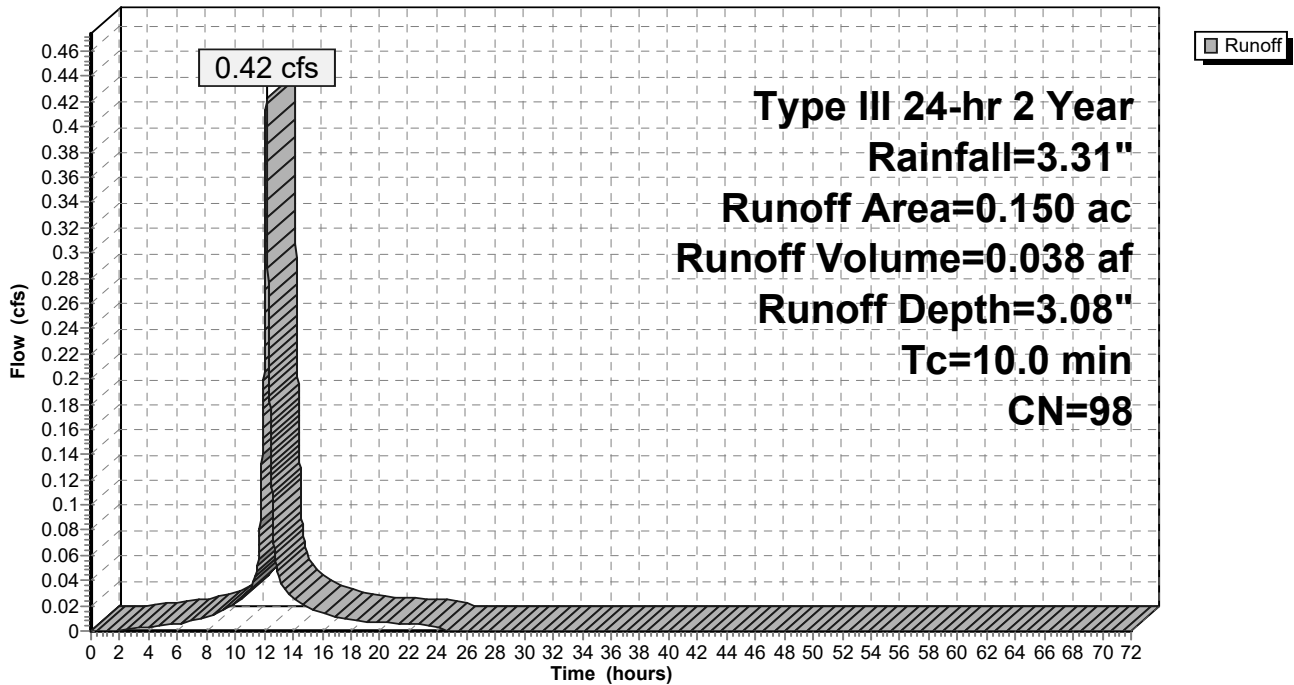
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.150	98	Paved parking & roofs
0.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 2S: PDA - 4

Hydrograph



Subcatchment 7S: EDA 1

Runoff = 0.55 cfs @ 12.14 hrs, Volume= 0.045 af, Depth= 2.36"

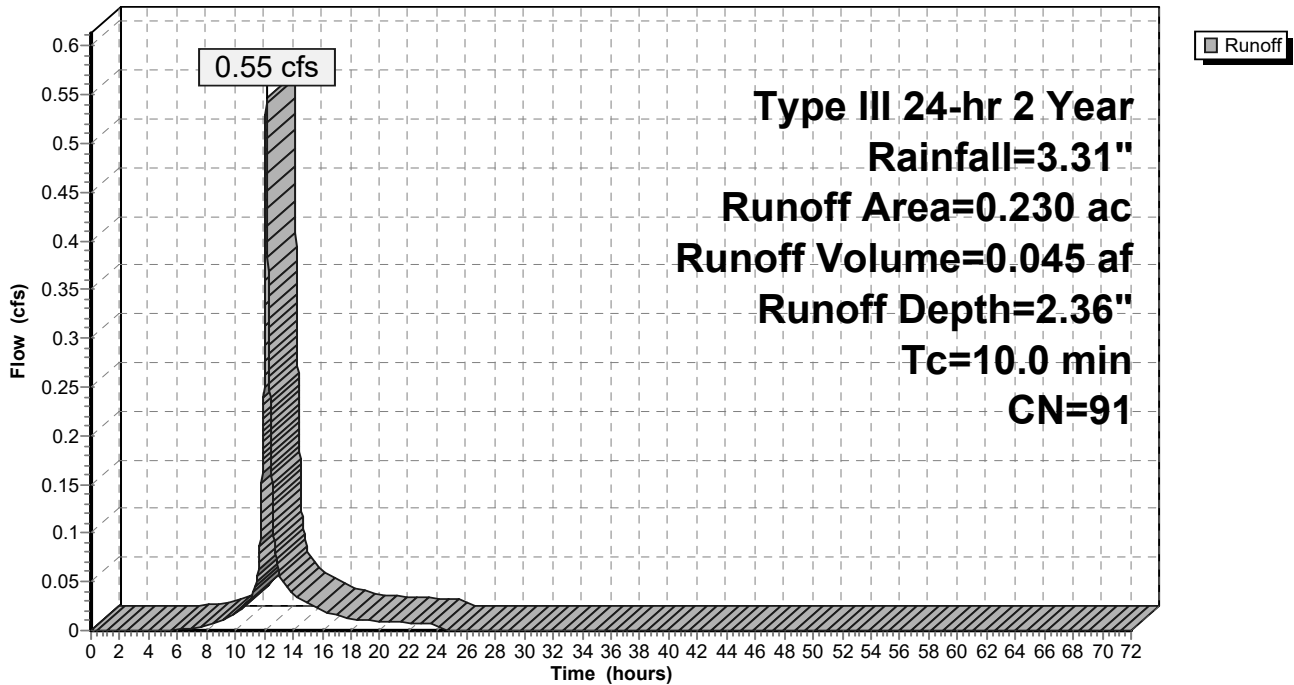
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.060	98	Paved parking & roofs
0.230	91	Weighted Average
0.170		Pervious Area
0.060		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7S: EDA 1

Hydrograph



Subcatchment 8S: EDA 2

Runoff = 0.38 cfs @ 12.14 hrs, Volume= 0.031 af, Depth= 2.18"

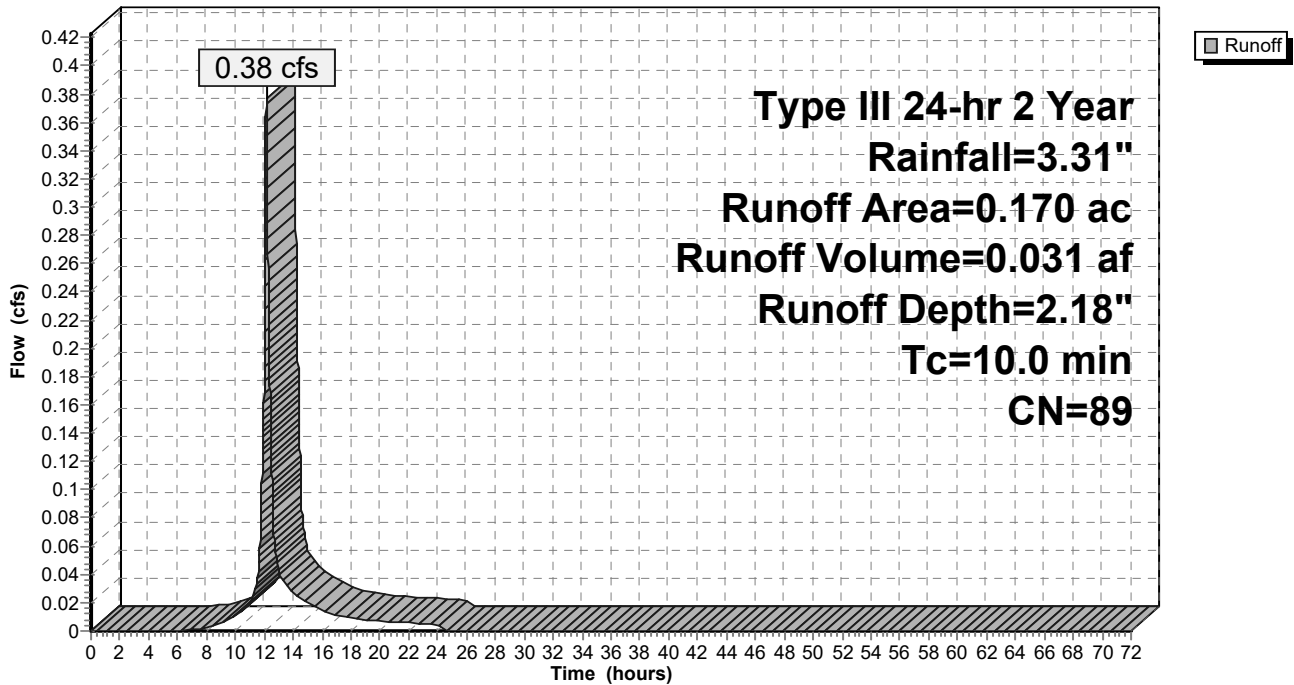
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.170		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8S: EDA 2

Hydrograph



Subcatchment 9S: EDA 3

Runoff = 0.51 cfs @ 12.14 hrs, Volume= 0.042 af, Depth= 2.18"

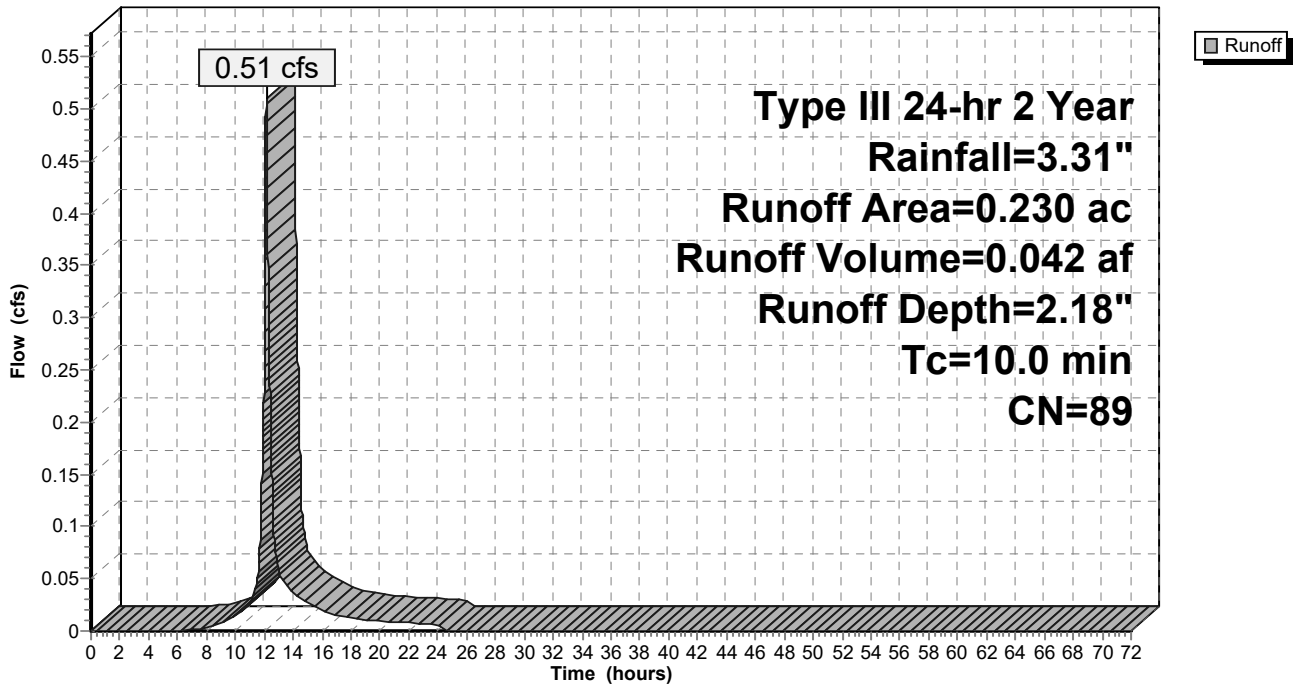
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.230	89	<50% Grass cover, Poor, HSG D
0.230		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 9S: EDA 3

Hydrograph



Subcatchment 10S: PDA - 1

Runoff = 0.50 cfs @ 12.14 hrs, Volume= 0.041 af, Depth= 2.36"

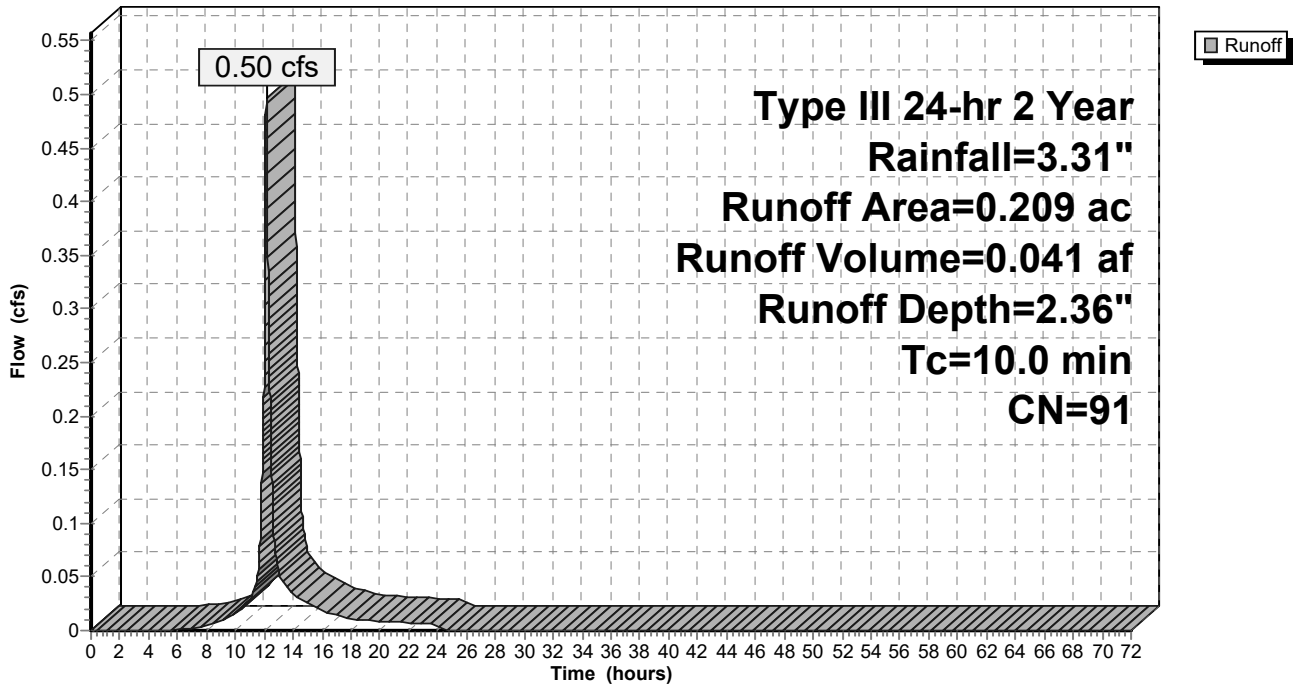
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.039	98	Paved parking & roofs
0.170	89	<50% Grass cover, Poor, HSG D
0.209	91	Weighted Average
0.170		Pervious Area
0.039		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 10S: PDA - 1

Hydrograph



Subcatchment 11S: PDA - 2

Runoff = 0.31 cfs @ 12.14 hrs, Volume= 0.026 af, Depth= 2.36"

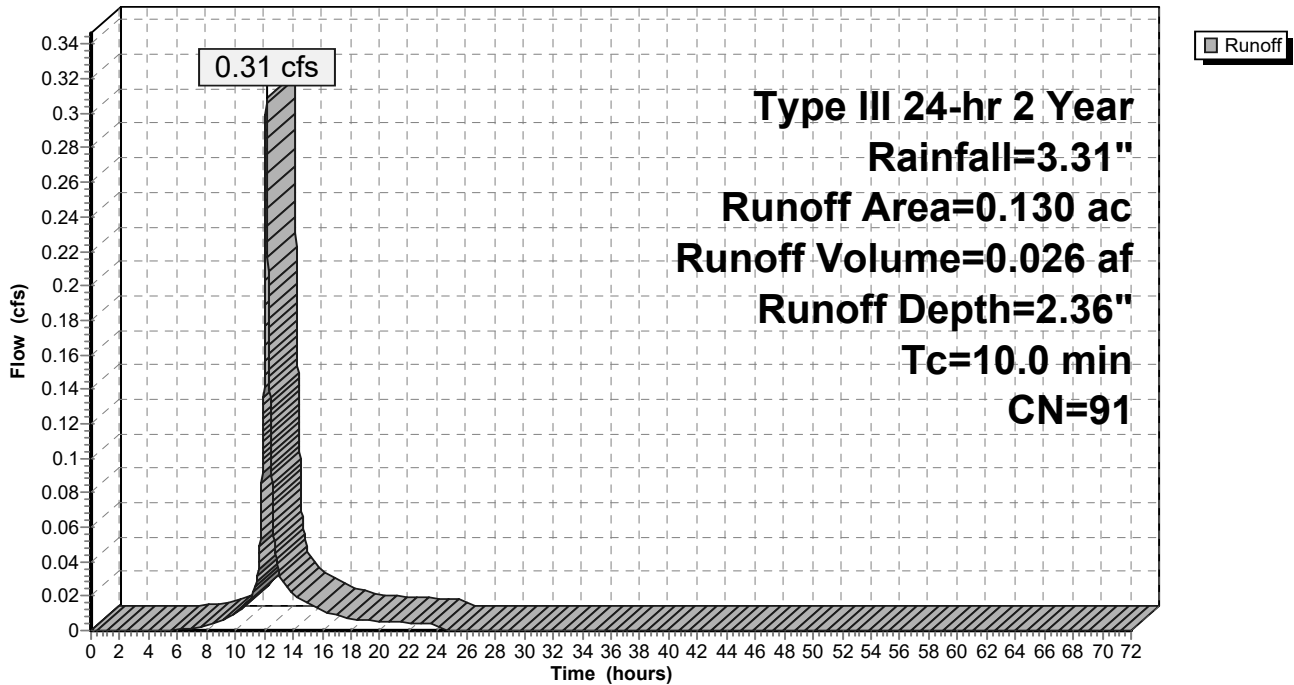
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.027	98	Paved parking & roofs
0.103	89	<50% Grass cover, Poor, HSG D
0.130	91	Weighted Average
0.103		Pervious Area
0.027		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11S: PDA - 2

Hydrograph



Subcatchment 12S: PDA -3

Runoff = 0.43 cfs @ 12.14 hrs, Volume= 0.035 af, Depth= 2.27"

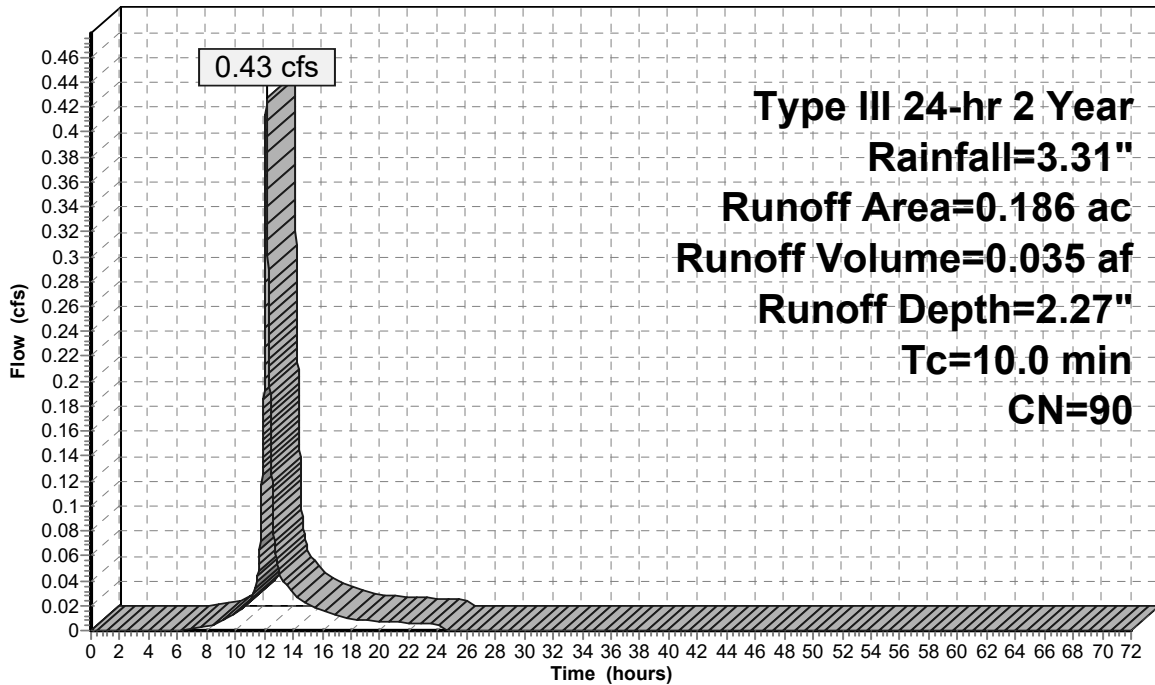
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.025	98	Paved parking & roofs
0.161	89	<50% Grass cover, Poor, HSG D
0.186	90	Weighted Average
0.161		Pervious Area
0.025		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 12S: PDA -3

Hydrograph



Subcatchment 13S: PDA-2 (HOME ONLY)

Runoff = 0.11 cfs @ 12.13 hrs, Volume= 0.010 af, Depth= 3.08"

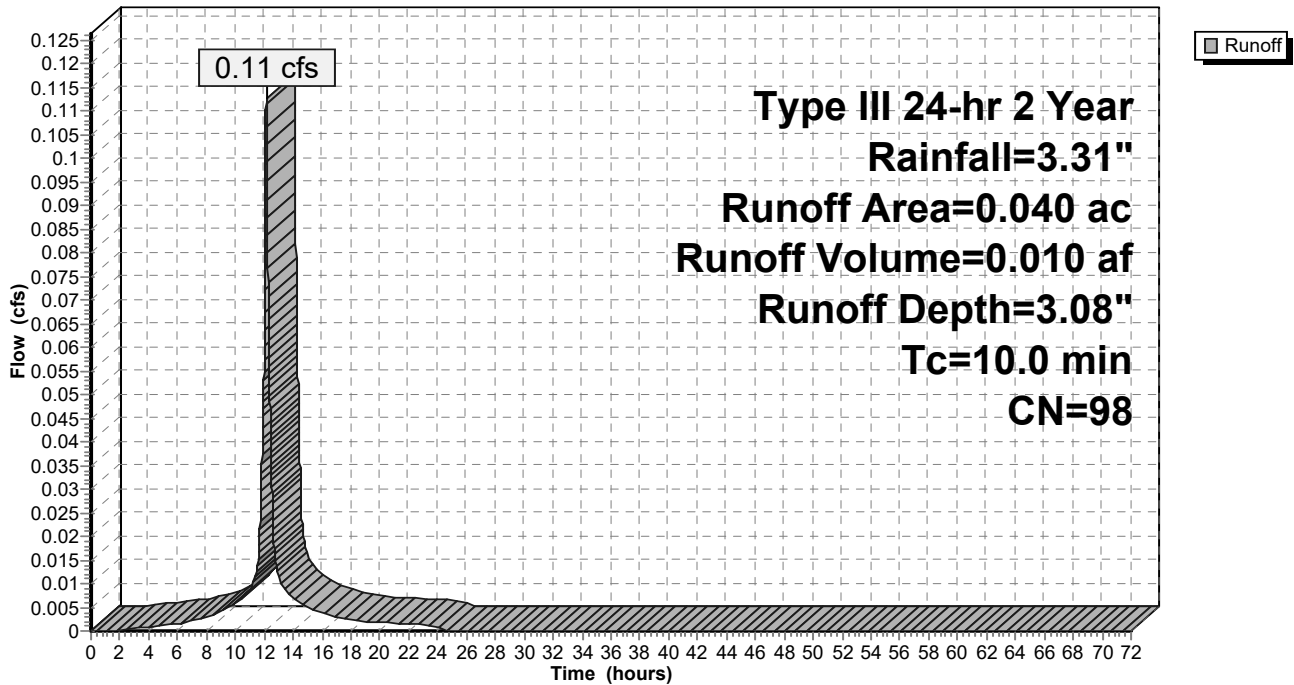
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.040	98	
0.040		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 13S: PDA-2 (HOME ONLY)

Hydrograph



Subcatchment 14S: PDA-1 (HOME ONLY)

Runoff = 0.06 cfs @ 12.13 hrs, Volume= 0.005 af, Depth= 3.08"

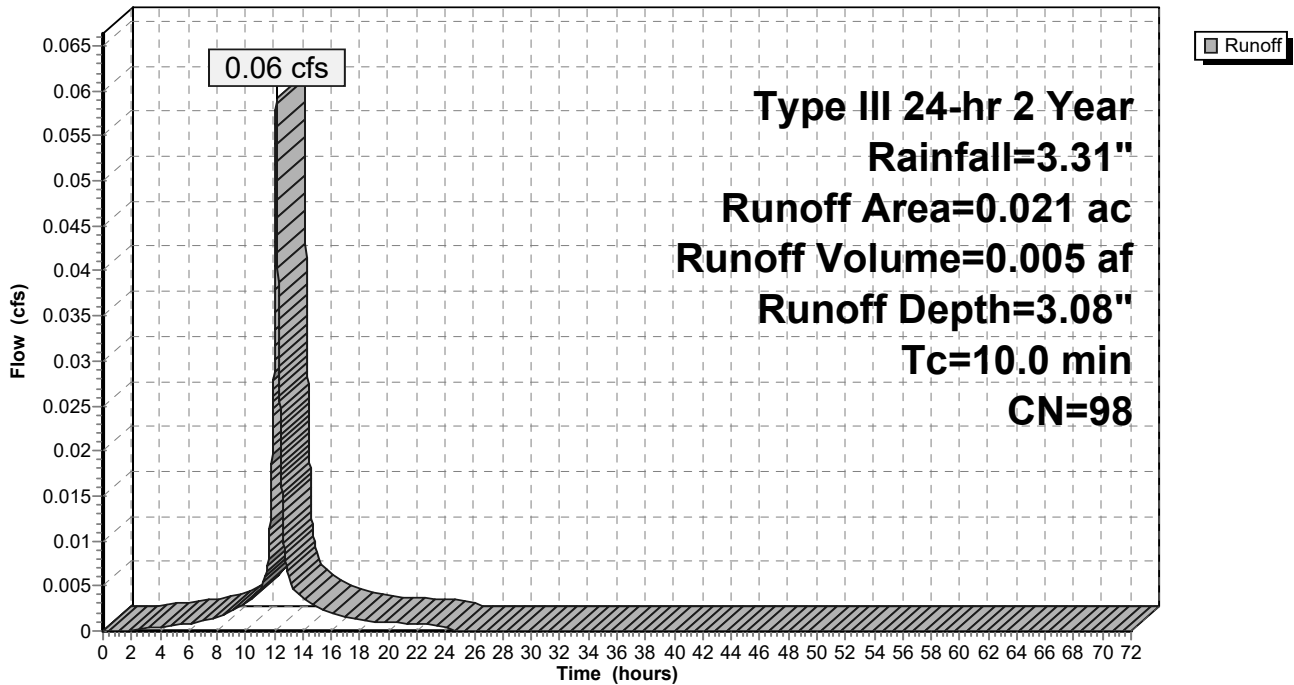
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.021	98	
0.021		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 14S: PDA-1 (HOME ONLY)

Hydrograph



Subcatchment 15S: PDA-3 (HOME ONLY)

Runoff = 0.12 cfs @ 12.13 hrs, Volume= 0.011 af, Depth= 3.08"

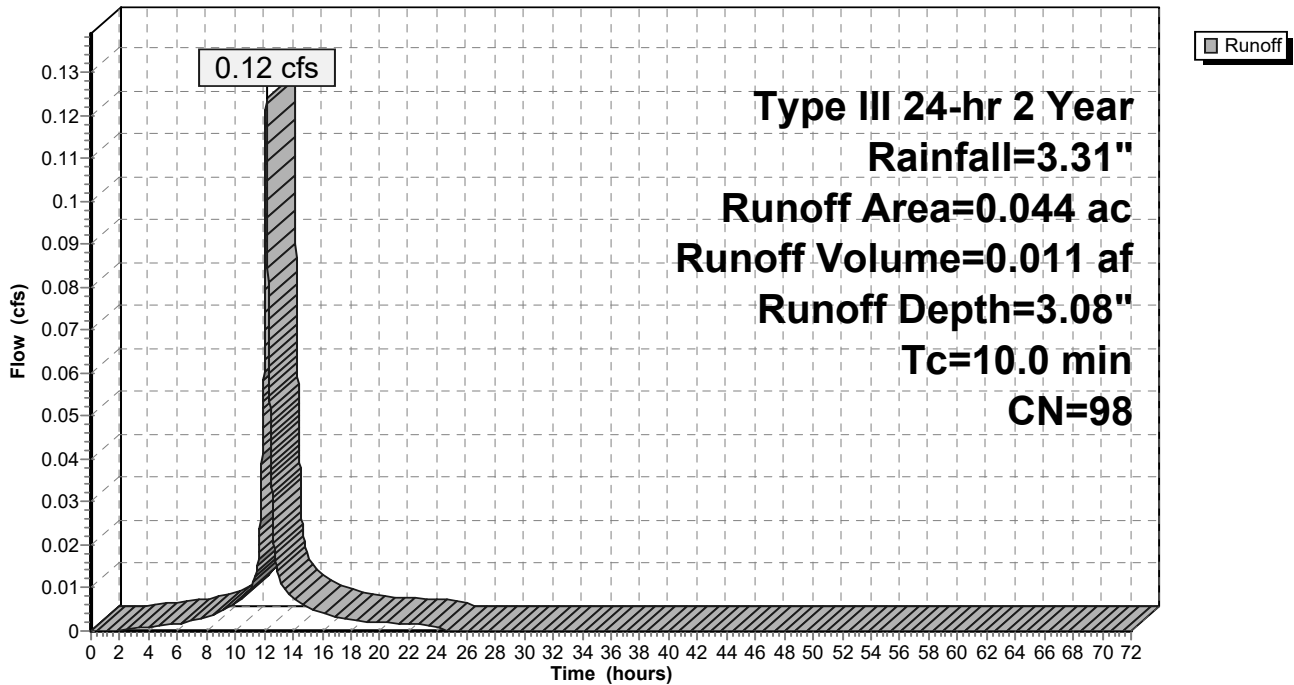
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2 Year Rainfall=3.31"

Area (ac)	CN	Description
0.044	98	
0.044		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 15S: PDA-3 (HOME ONLY)

Hydrograph



Pond 4P: PERVIOUS PAVEMENT (ROADWAY)

Inflow Area = 0.780 ac, Inflow Depth = 2.16" for 2 Year event
 Inflow = 1.66 cfs @ 12.14 hrs, Volume= 0.140 af
 Outflow = 0.67 cfs @ 12.43 hrs, Volume= 0.103 af, Atten= 60%, Lag= 17.4 min
 Primary = 0.67 cfs @ 12.43 hrs, Volume= 0.103 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 61.05' @ 12.43 hrs Surf.Area= 6,254 sf Storage= 2,867 cf

Plug-Flow detention time= 219.6 min calculated for 0.103 af (73% of inflow)
 Center-of-Mass det. time= 131.3 min (924.9 - 793.6)

Volume	Invert	Avail.Storage	Storage Description
#1	59.90'	5,003 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 12,508 cf Overall x 40.0% Voids

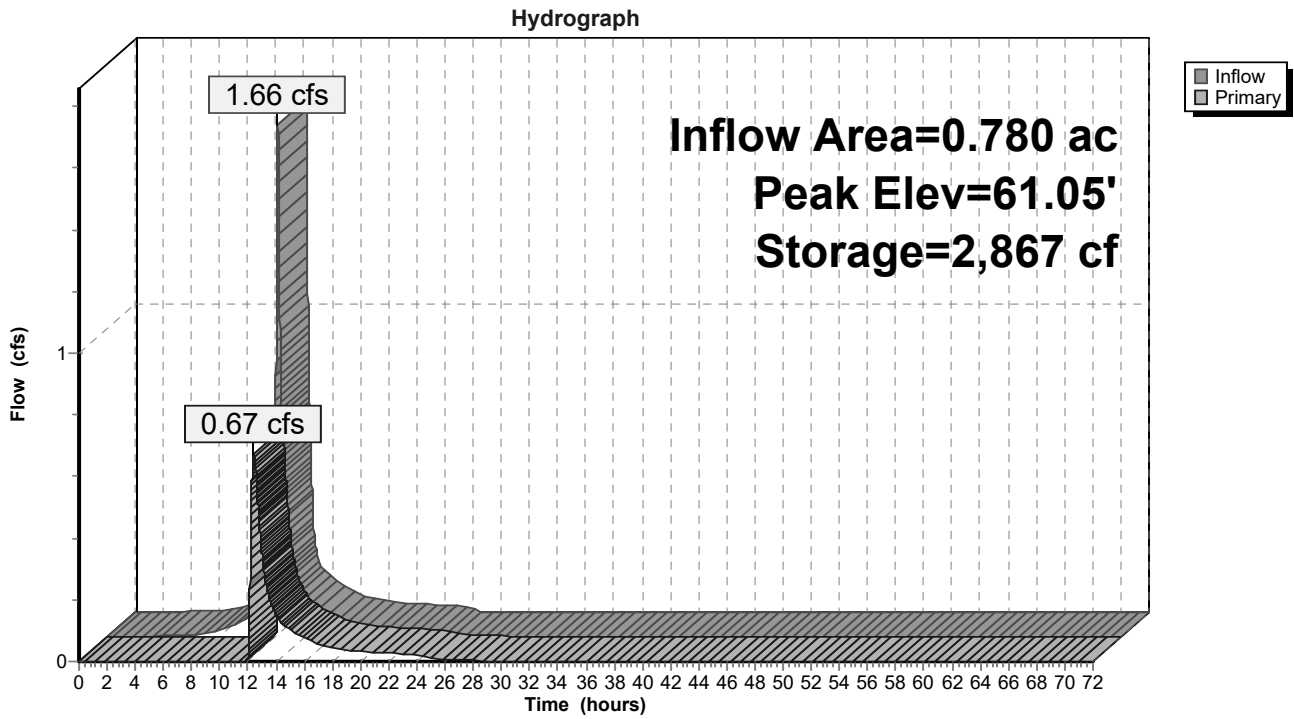
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.90	6,254	0	0
61.90	6,254	12,508	12,508

Device	Routing	Invert	Outlet Devices
#1	Device 3	60.55'	8.0" Vert. Orifice/Grate C= 0.600
#2	Device 3	61.05'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Primary	59.90'	15.0" x 5.0' long Culvert RCP, rounded edge headwall, Ke= 0.100 Outlet Invert= 59.85' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean
#4	Device 3	61.55'	4.00' x 4.00' Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.67 cfs @ 12.43 hrs HW=61.05' TW=0.00' (Dynamic Tailwater)

- ↑ **3=Culvert** (Passes 0.67 cfs of 3.88 cfs potential flow)
- ↑ **1=Orifice/Grate** (Orifice Controls 0.67 cfs @ 2.40 fps)
- ↑ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
- ↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: PERVIOUS PAVEMENT (ROADWAY)



Pond 13P: Detention Tank 1

Inflow Area = 0.021 ac, Inflow Depth = 3.08" for 2 Year event
 Inflow = 0.06 cfs @ 12.13 hrs, Volume= 0.005 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 61.21' @ 24.57 hrs Surf.Area= 113 sf Storage= 235 cf

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

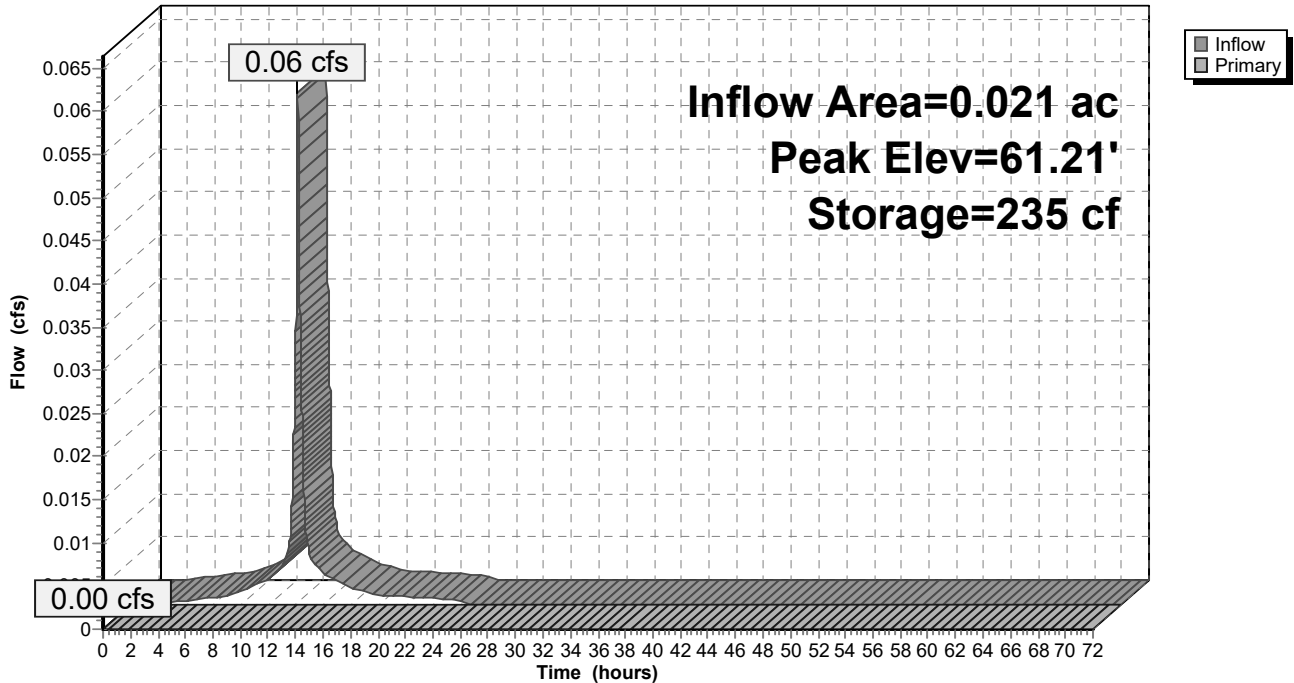
Volume	Invert	Avail.Storage	Storage Description
#1	58.40'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	57.90'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=57.90' TW=59.90' (Dynamic Tailwater)
 1=Orifice/Grate (Controls 0.00 cfs)

Pond 13P: Detention Tank 1

Hydrograph



Pond 14P: Detention Tank 3

Inflow Area = 0.044 ac, Inflow Depth = 3.08" for 2 Year event
 Inflow = 0.12 cfs @ 12.13 hrs, Volume= 0.011 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 61.32' @ 24.57 hrs Surf.Area= 113 sf Storage= 491 cf

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

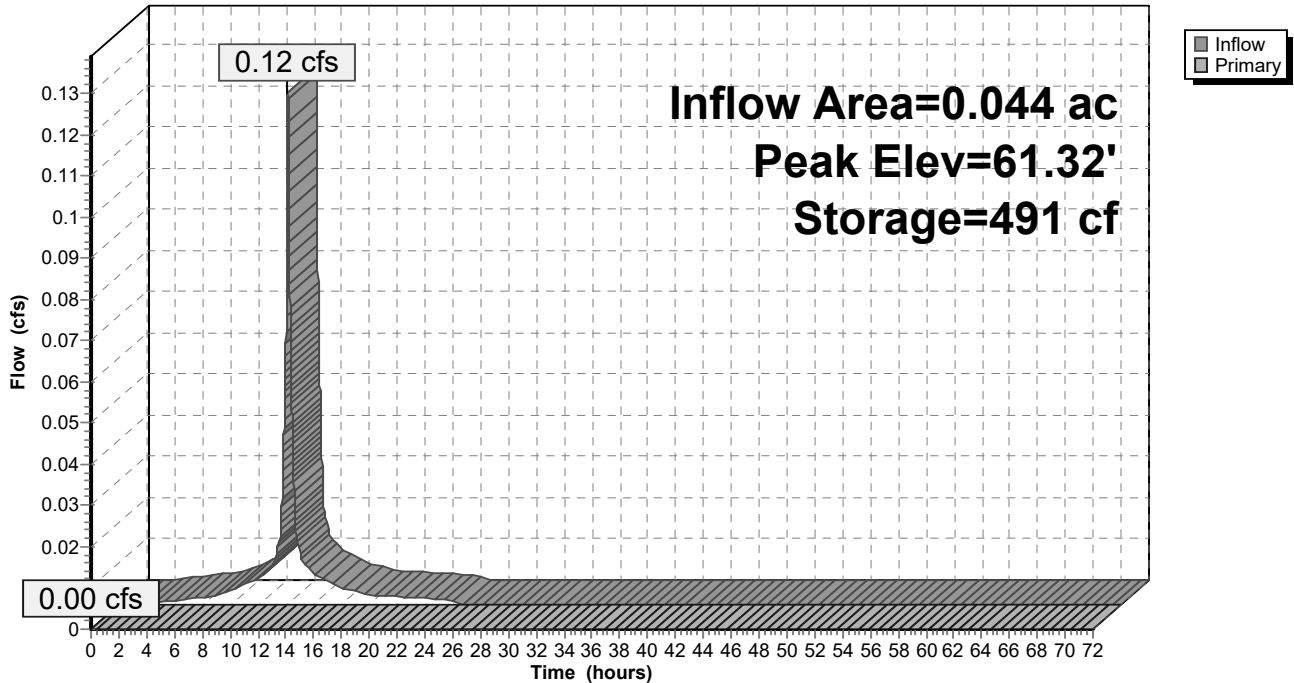
Volume	Invert	Avail.Storage	Storage Description
#1	55.10'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	54.60'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	65.10'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=54.60' TW=59.90' (Dynamic Tailwater)
 ←1=Orifice/Grate (Controls 0.00 cfs)

Pond 14P: Detention Tank 3

Hydrograph



Pond 15P: Detention Tank 2

Inflow Area = 0.040 ac, Inflow Depth = 3.08" for 2 Year event
 Inflow = 0.11 cfs @ 12.13 hrs, Volume= 0.010 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 61.93' @ 24.57 hrs Surf.Area= 113 sf Storage= 447 cf

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

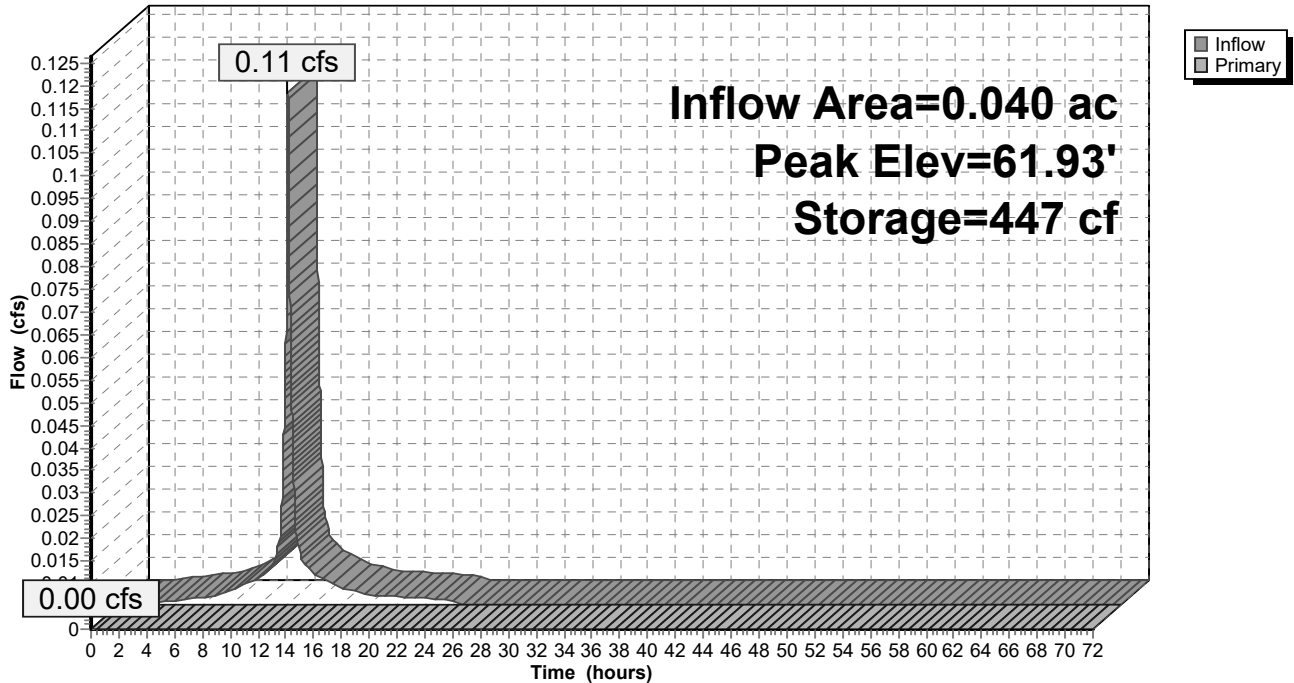
Volume	Invert	Avail.Storage	Storage Description
#1	56.30'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	55.80'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	66.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.80' TW=59.90' (Dynamic Tailwater)
 1=Orifice/Grate (Controls 0.00 cfs)

Pond 15P: Detention Tank 2

Hydrograph

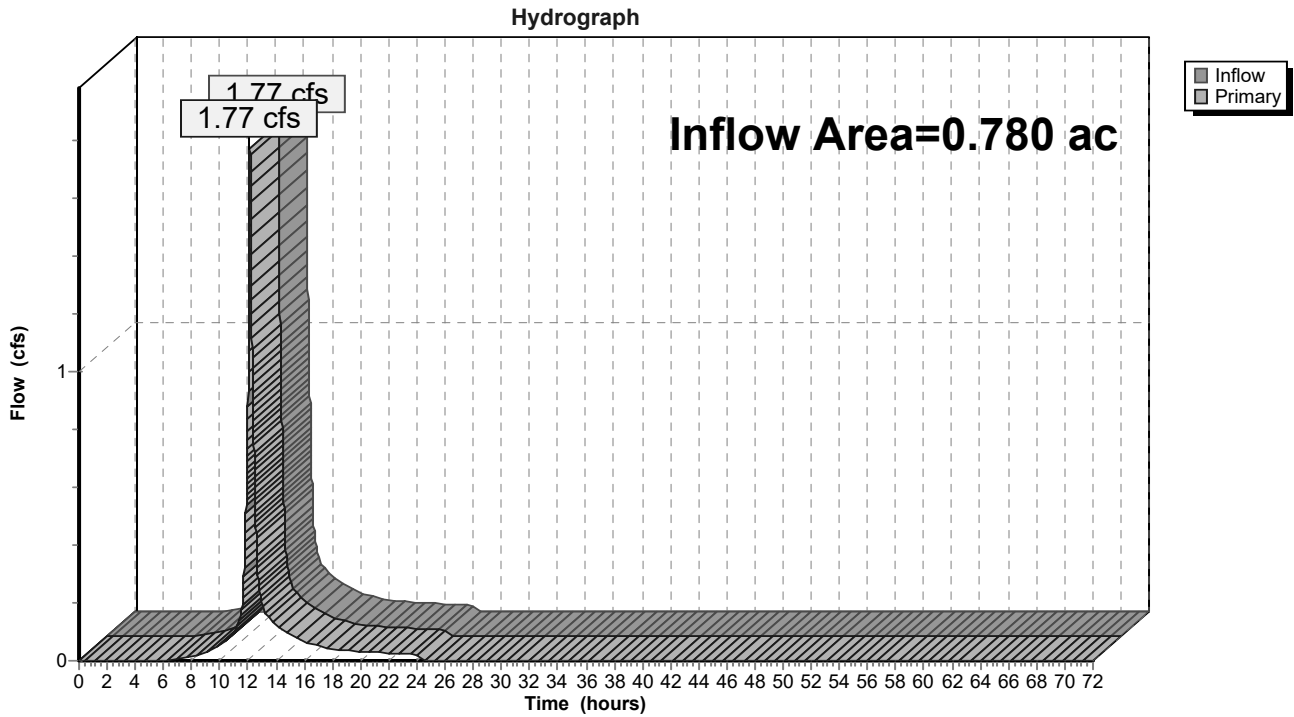


Link 5L: WETLANDS - EXISTING

Inflow Area = 0.780 ac, Inflow Depth = 2.24" for 2 Year event
Inflow = 1.77 cfs @ 12.14 hrs, Volume= 0.145 af
Primary = 1.77 cfs @ 12.14 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 5L: WETLANDS - EXISTING



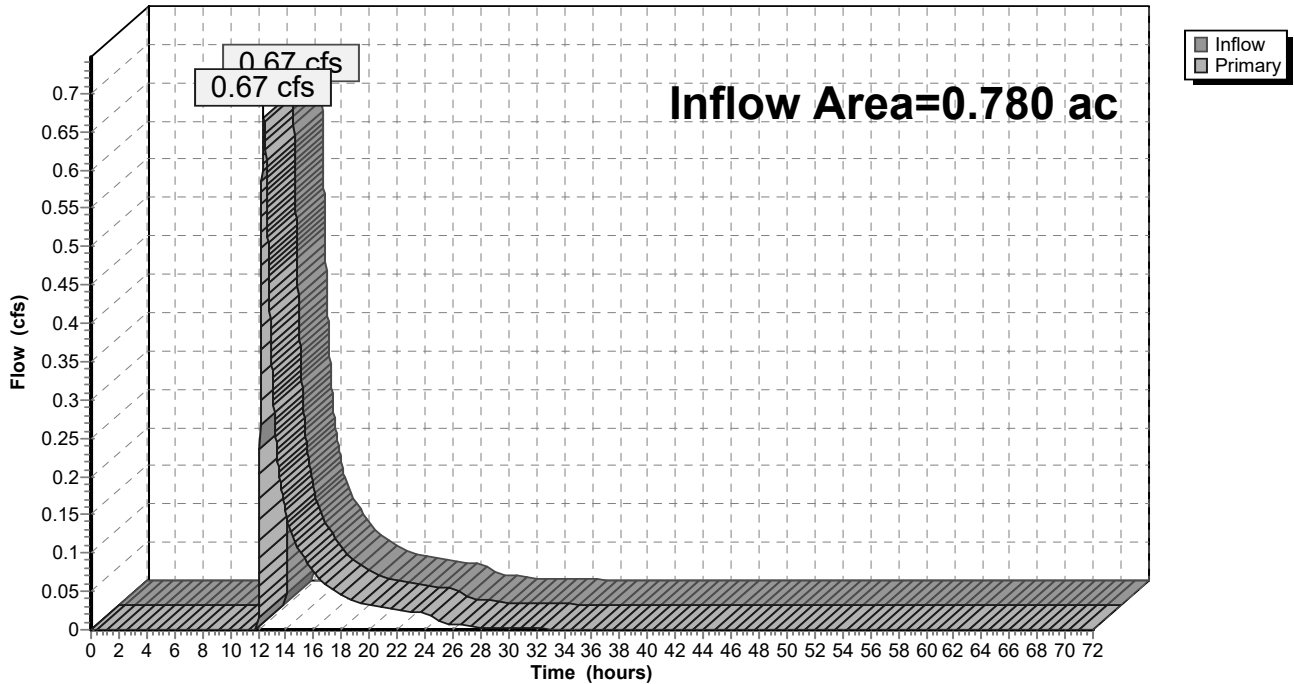
Link 6L: WETLANDS - PROPOSED

Inflow Area = 0.780 ac, Inflow Depth = 1.58" for 2 Year event
Inflow = 0.67 cfs @ 12.43 hrs, Volume= 0.103 af
Primary = 0.67 cfs @ 12.43 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 6L: WETLANDS - PROPOSED

Hydrograph



10-Year Storm Event

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 9

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EDA 4 Runoff Area=0.150 ac Runoff Depth=3.78"
Tc=10.0 min CN=89 Runoff=0.57 cfs 0.047 af

Subcatchment 2S: PDA - 4 Runoff Area=0.150 ac Runoff Depth=4.77"
Tc=10.0 min CN=98 Runoff=0.65 cfs 0.060 af

Subcatchment 7S: EDA 1 Runoff Area=0.230 ac Runoff Depth=3.99"
Tc=10.0 min CN=91 Runoff=0.90 cfs 0.077 af

Subcatchment 8S: EDA 2 Runoff Area=0.170 ac Runoff Depth=3.78"
Tc=10.0 min CN=89 Runoff=0.64 cfs 0.054 af

Subcatchment 9S: EDA 3 Runoff Area=0.230 ac Runoff Depth=3.78"
Tc=10.0 min CN=89 Runoff=0.87 cfs 0.072 af

Subcatchment 10S: PDA - 1 Runoff Area=0.209 ac Runoff Depth=3.99"
Tc=10.0 min CN=91 Runoff=0.82 cfs 0.070 af

Subcatchment 11S: PDA - 2 Runoff Area=0.130 ac Runoff Depth=3.99"
Tc=10.0 min CN=91 Runoff=0.51 cfs 0.043 af

Subcatchment 12S: PDA -3 Runoff Area=0.186 ac Runoff Depth=3.89"
Tc=10.0 min CN=90 Runoff=0.72 cfs 0.060 af

Subcatchment 13S: PDA-2 (HOME ONLY) Runoff Area=0.040 ac Runoff Depth=4.77"
Tc=10.0 min CN=98 Runoff=0.17 cfs 0.016 af

Subcatchment 14S: PDA-1 (HOME ONLY) Runoff Area=0.021 ac Runoff Depth=4.77"
Tc=10.0 min CN=98 Runoff=0.09 cfs 0.008 af

Subcatchment 15S: PDA-3 (HOME ONLY) Runoff Area=0.044 ac Runoff Depth=4.77"
Tc=10.0 min CN=98 Runoff=0.19 cfs 0.018 af

Pond 4P: PERVIOUS PAVEMENT (ROADWAY) Peak Elev=61.29' Storage=3,477 cf Inflow=2.69 cfs 0.237 af
Outflow=2.07 cfs 0.200 af

Pond 13P: Detention Tank 1 Peak Elev=62.93' Storage=364 cf Inflow=0.09 cfs 0.008 af
Outflow=0.00 cfs 0.000 af

Pond 14P: Detention Tank 3 Peak Elev=65.11' Storage=626 cf Inflow=0.19 cfs 0.018 af
Outflow=0.02 cfs 0.003 af

Pond 15P: Detention Tank 2 Peak Elev=66.40' Storage=626 cf Inflow=0.17 cfs 0.016 af
Outflow=0.00 cfs 0.002 af

62 GLEN AVE-PERVIOUS PAVEMENT_082824

Type III 24-hr 10 Year Rainfall=5.01"

Prepared by Daetel Engineering

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9/7/2024

Link 5L: WETLANDS - EXISTING

Inflow=2.98 cfs 0.250 af

Primary=2.98 cfs 0.250 af

Link 6L: WETLANDS - PROPOSED

Inflow=2.07 cfs 0.200 af

Primary=2.07 cfs 0.200 af

Total Runoff Area = 1.560 ac Runoff Volume = 0.524 af Average Runoff Depth = 4.03"
73.97% Pervious Area = 1.154 ac 26.03% Impervious Area = 0.406 ac

Subcatchment 1S: EDA 4

Runoff = 0.57 cfs @ 12.14 hrs, Volume= 0.047 af, Depth= 3.78"

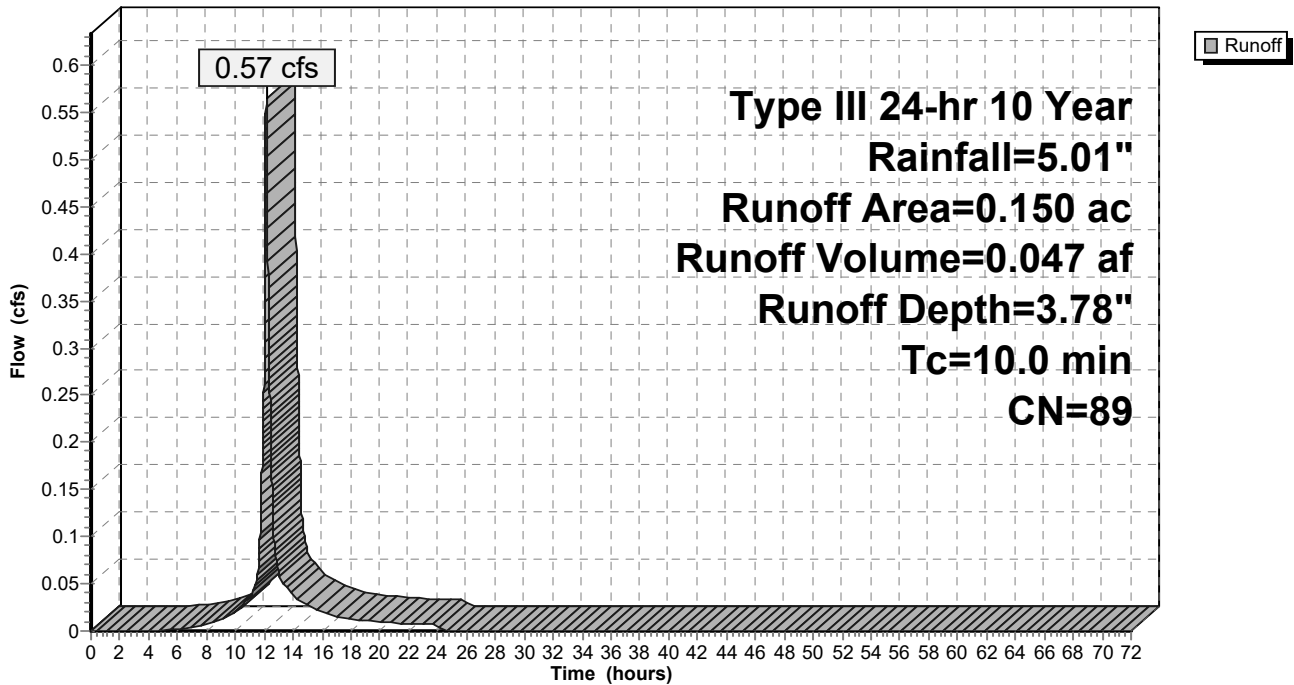
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.150	89	<50% Grass cover, Poor, HSG D
0.150		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 1S: EDA 4

Hydrograph



Subcatchment 2S: PDA - 4

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 0.060 af, Depth= 4.77"

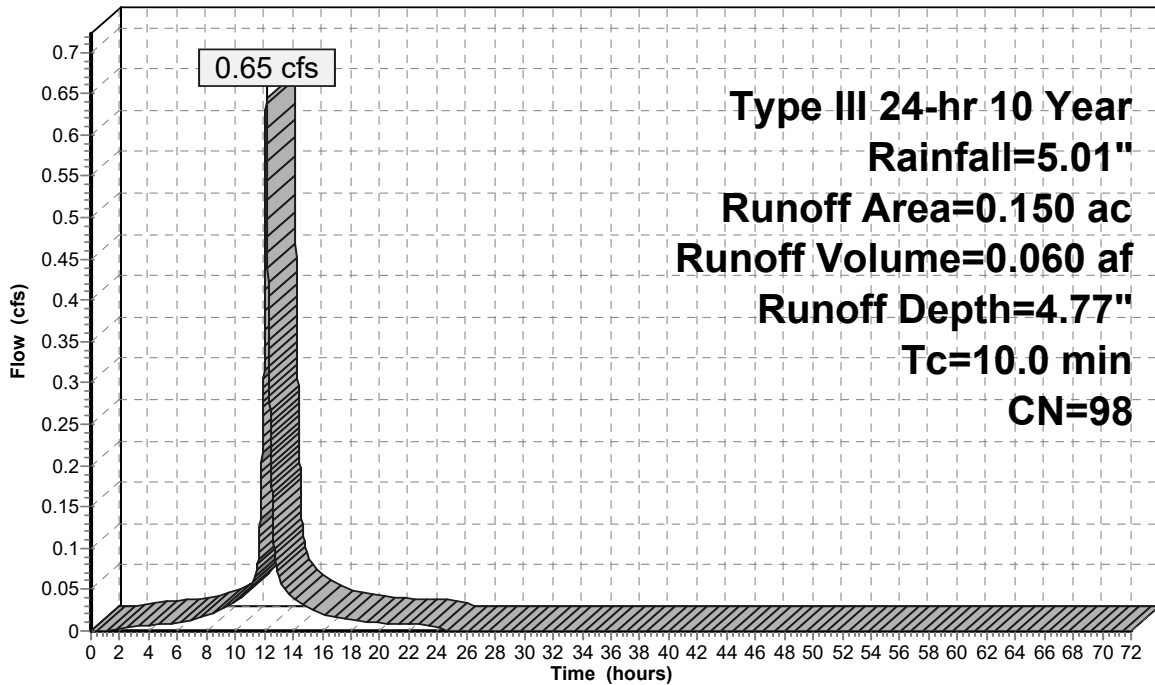
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.150	98	Paved parking & roofs
0.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 2S: PDA - 4

Hydrograph



Subcatchment 7S: EDA 1

Runoff = 0.90 cfs @ 12.14 hrs, Volume= 0.077 af, Depth= 3.99"

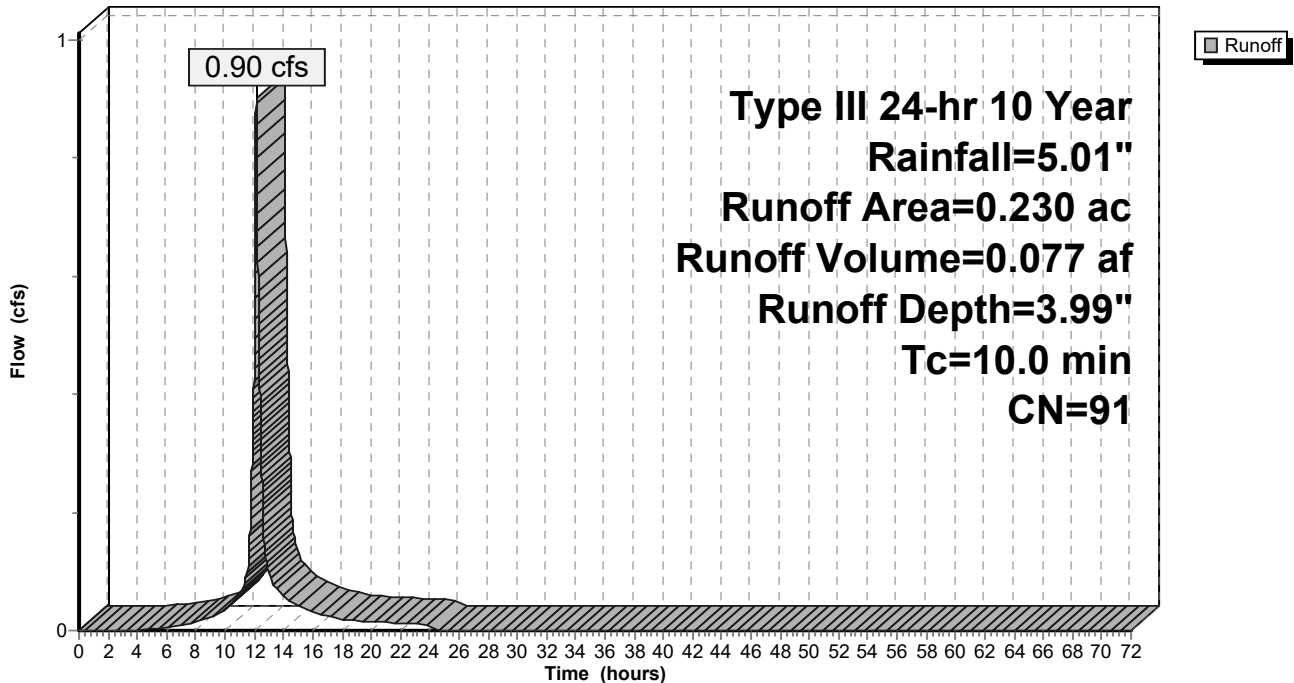
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.060	98	Paved parking & roofs
0.230	91	Weighted Average
0.170		Pervious Area
0.060		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7S: EDA 1

Hydrograph



Subcatchment 8S: EDA 2

Runoff = 0.64 cfs @ 12.14 hrs, Volume= 0.054 af, Depth= 3.78"

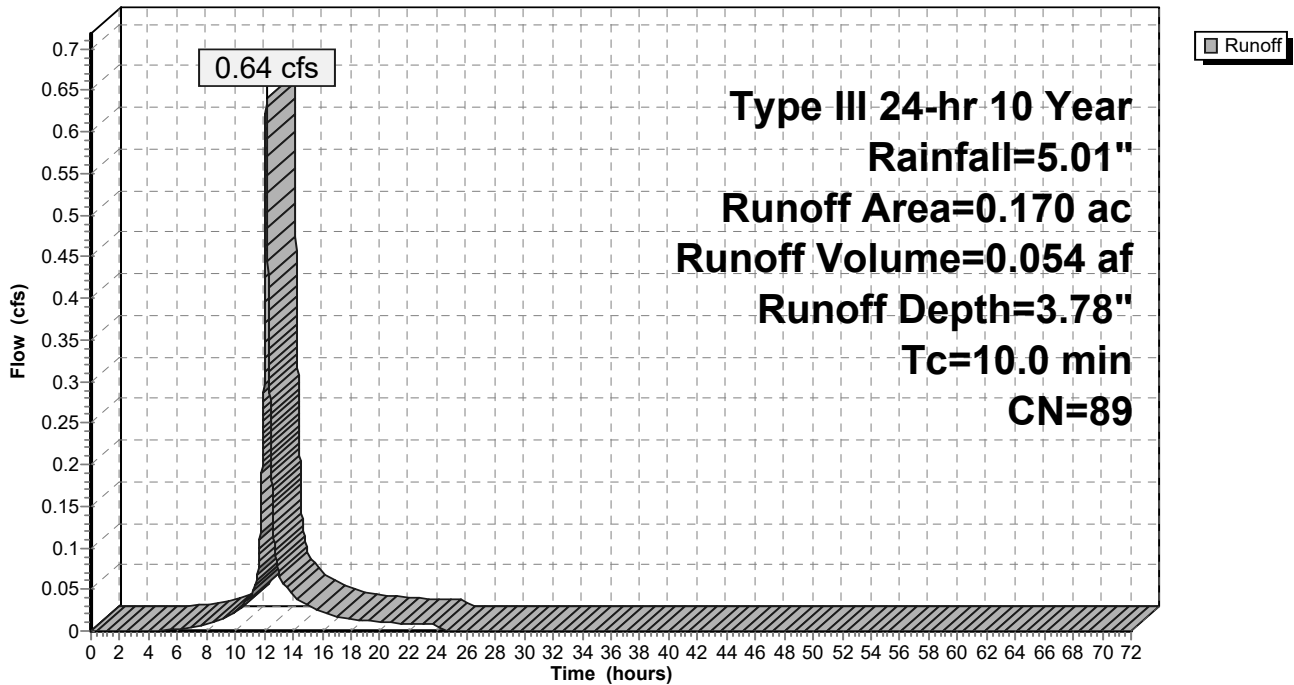
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.170		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8S: EDA 2

Hydrograph



Subcatchment 9S: EDA 3

Runoff = 0.87 cfs @ 12.14 hrs, Volume= 0.072 af, Depth= 3.78"

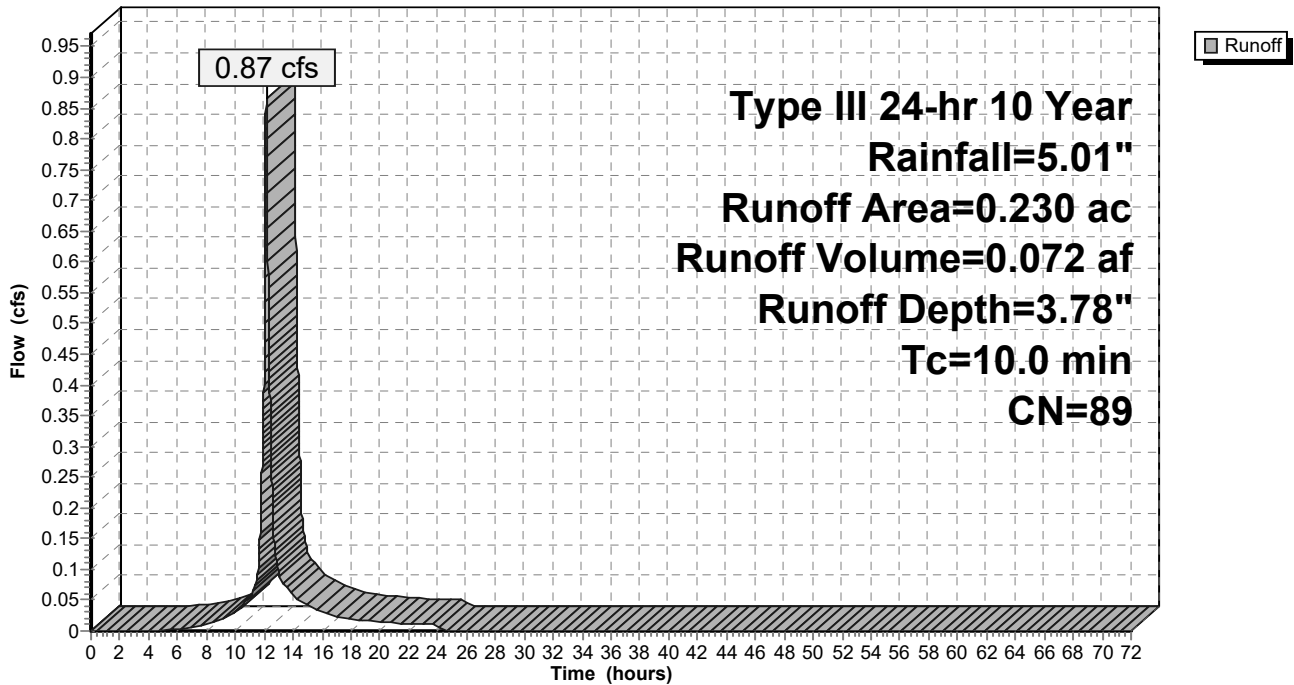
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.230	89	<50% Grass cover, Poor, HSG D
0.230		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 9S: EDA 3

Hydrograph



Subcatchment 10S: PDA - 1

Runoff = 0.82 cfs @ 12.14 hrs, Volume= 0.070 af, Depth= 3.99"

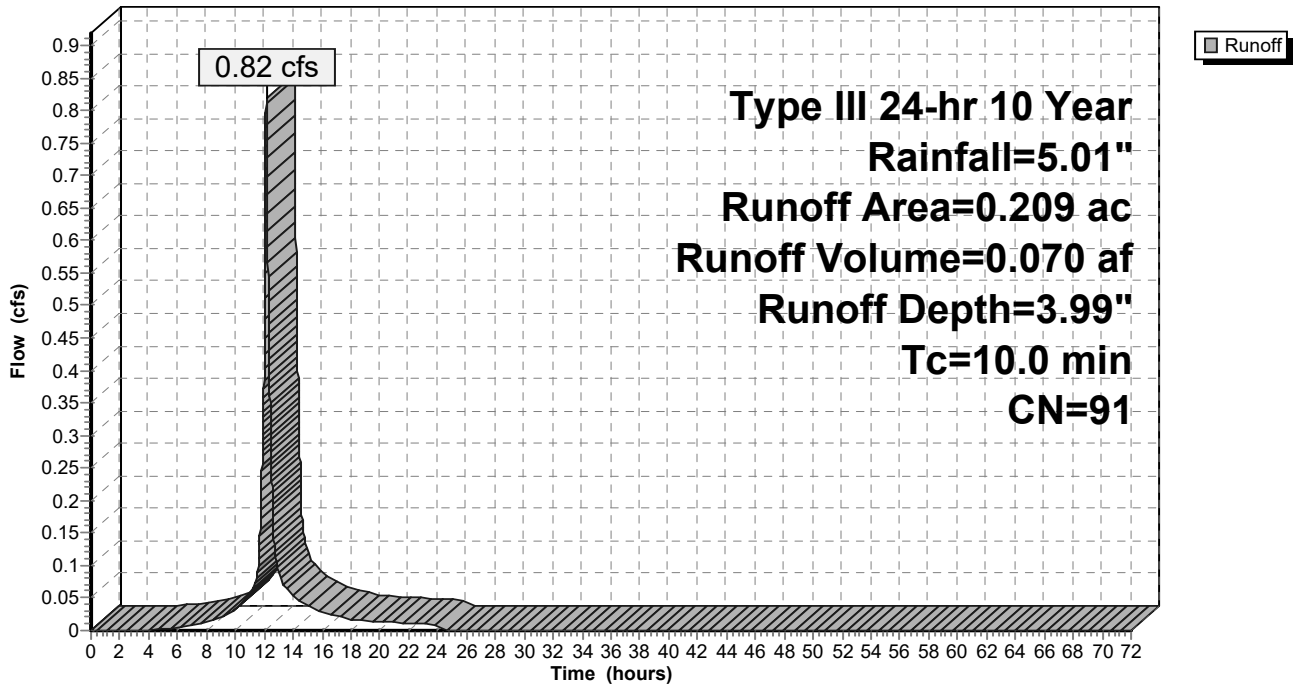
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.039	98	Paved parking & roofs
0.170	89	<50% Grass cover, Poor, HSG D
0.209	91	Weighted Average
0.170		Pervious Area
0.039		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 10S: PDA - 1

Hydrograph



Subcatchment 11S: PDA - 2

Runoff = 0.51 cfs @ 12.14 hrs, Volume= 0.043 af, Depth= 3.99"

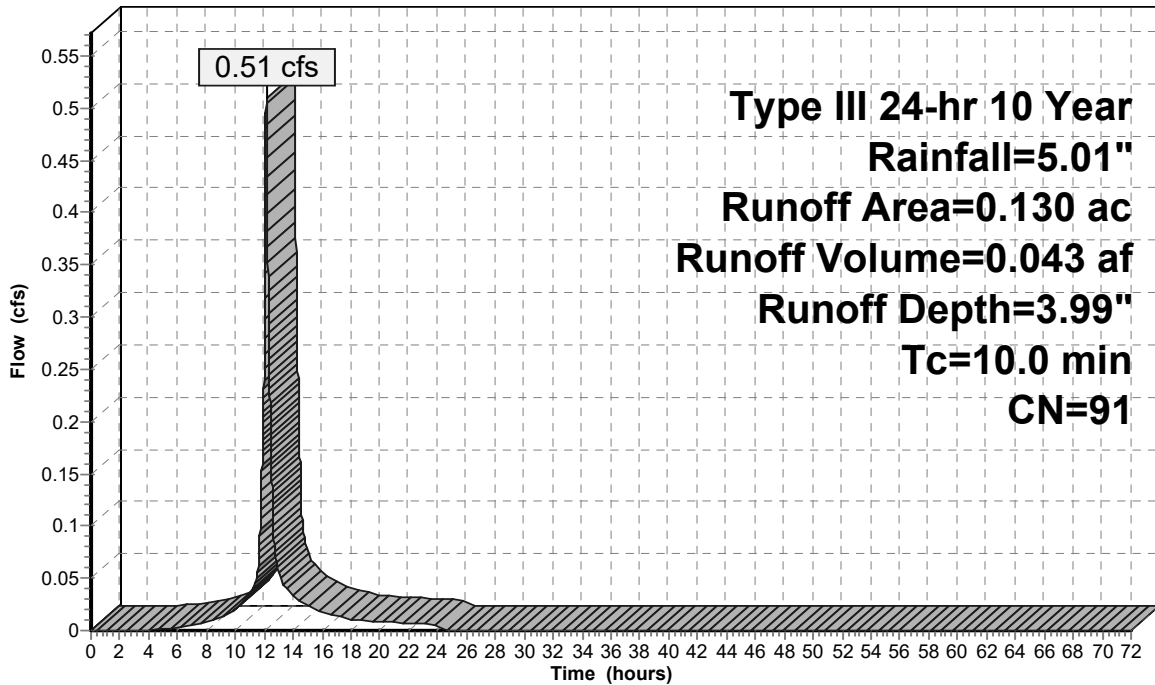
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.027	98	Paved parking & roofs
0.103	89	<50% Grass cover, Poor, HSG D
0.130	91	Weighted Average
0.103		Pervious Area
0.027		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11S: PDA - 2

Hydrograph



Subcatchment 12S: PDA -3

Runoff = 0.72 cfs @ 12.14 hrs, Volume= 0.060 af, Depth= 3.89"

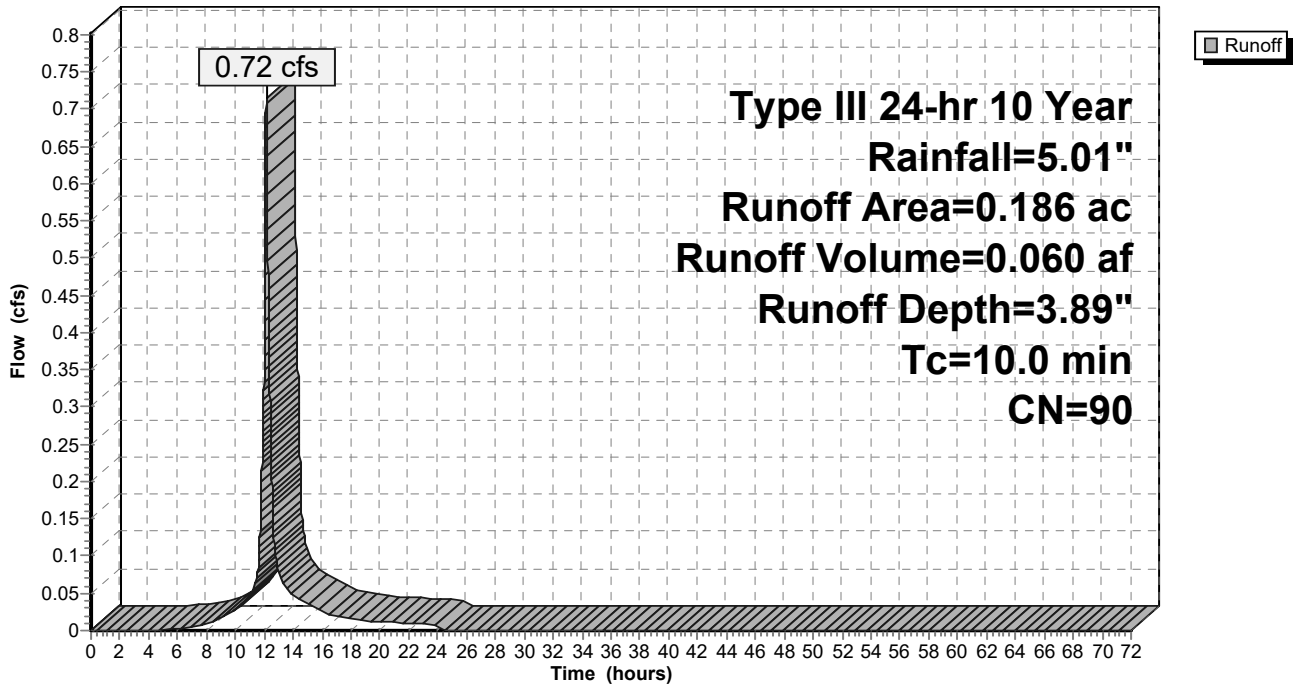
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.025	98	Paved parking & roofs
0.161	89	<50% Grass cover, Poor, HSG D
0.186	90	Weighted Average
0.161		Pervious Area
0.025		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 12S: PDA -3

Hydrograph



Subcatchment 13S: PDA-2 (HOME ONLY)

Runoff = 0.17 cfs @ 12.13 hrs, Volume= 0.016 af, Depth= 4.77"

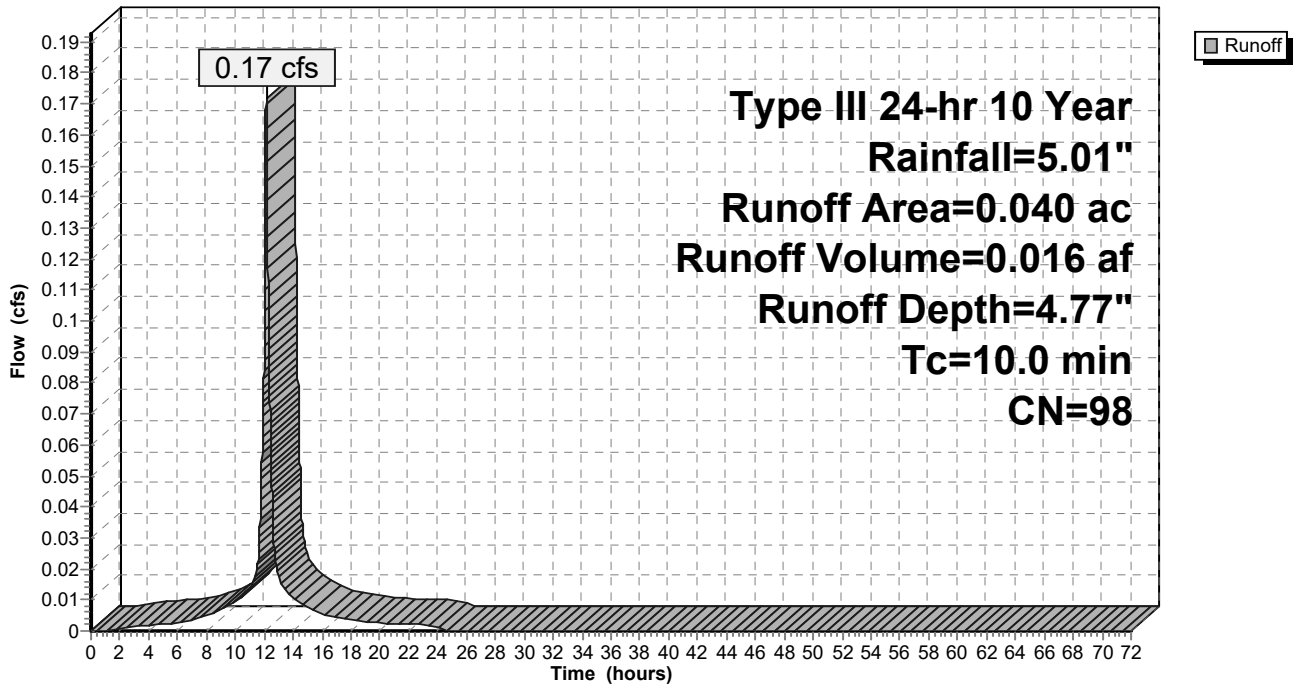
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.040	98	
0.040		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 13S: PDA-2 (HOME ONLY)

Hydrograph



Subcatchment 14S: PDA-1 (HOME ONLY)

Runoff = 0.09 cfs @ 12.13 hrs, Volume= 0.008 af, Depth= 4.77"

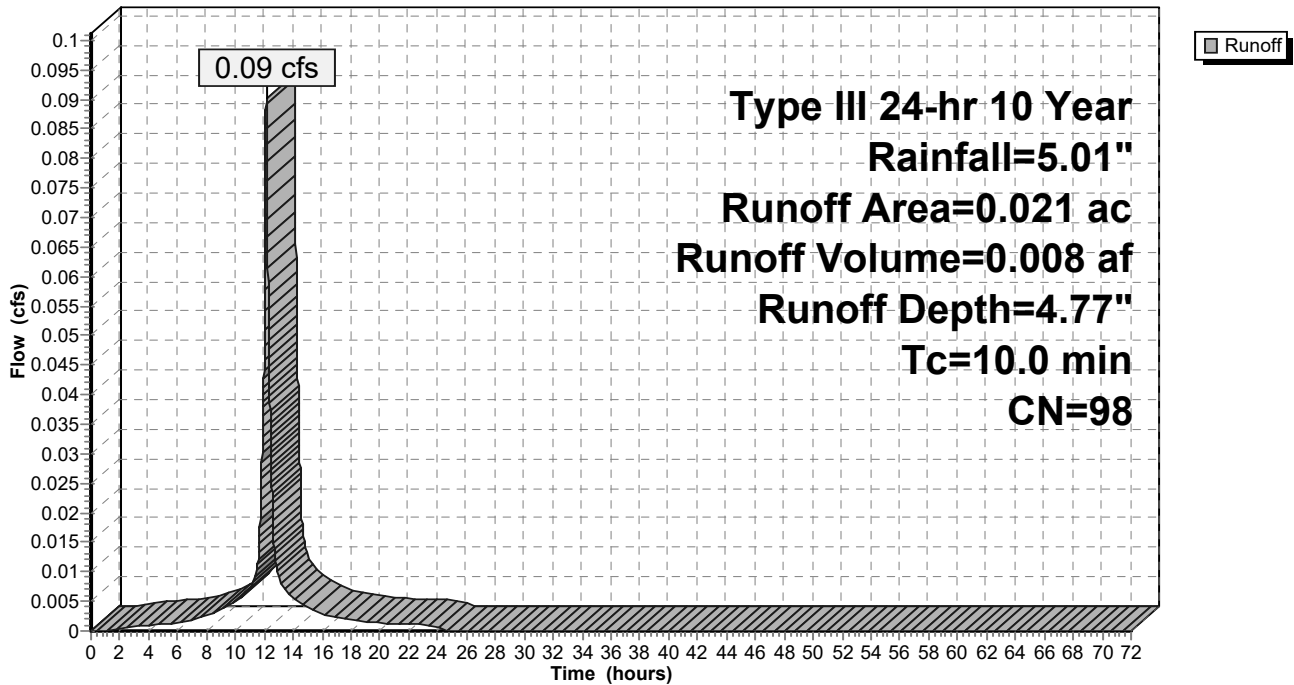
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.021	98	
0.021		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 14S: PDA-1 (HOME ONLY)

Hydrograph



Subcatchment 15S: PDA-3 (HOME ONLY)

Runoff = 0.19 cfs @ 12.13 hrs, Volume= 0.018 af, Depth= 4.77"

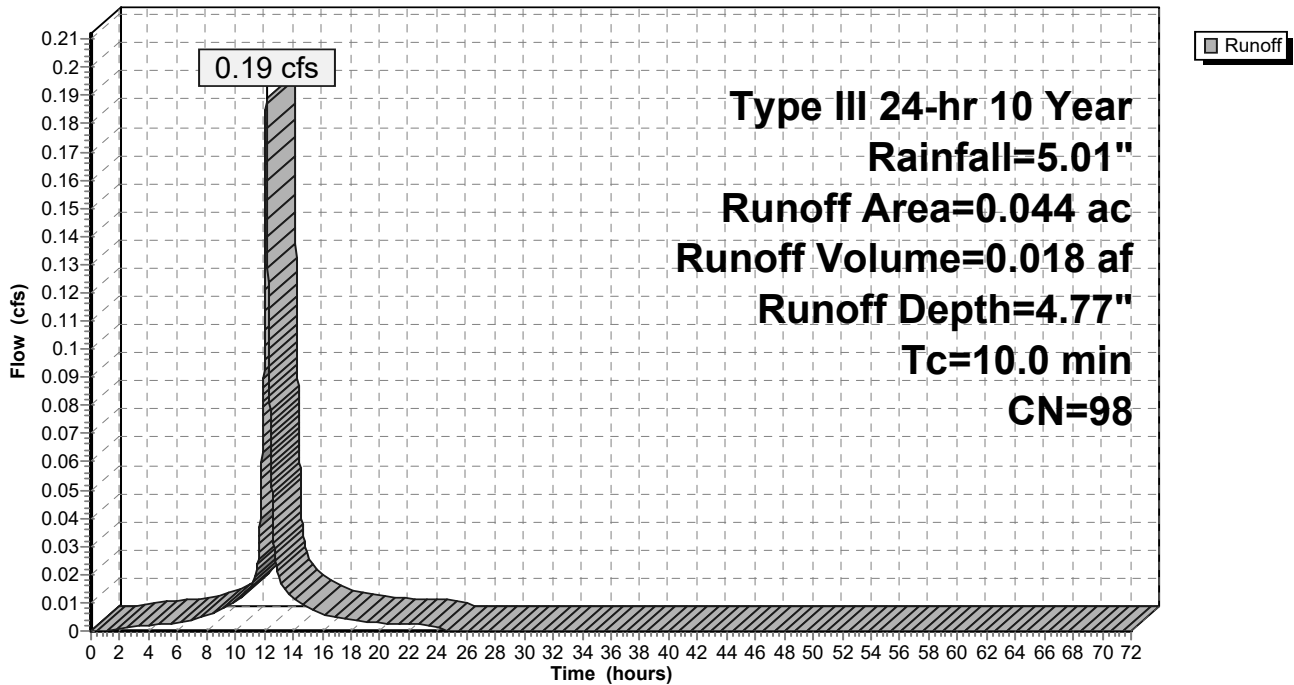
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 Year Rainfall=5.01"

Area (ac)	CN	Description
0.044	98	
0.044		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 15S: PDA-3 (HOME ONLY)

Hydrograph



Pond 4P: PERVIOUS PAVEMENT (ROADWAY)

Inflow Area = 0.780 ac, Inflow Depth = 3.65" for 10 Year event
 Inflow = 2.69 cfs @ 12.14 hrs, Volume= 0.237 af
 Outflow = 2.07 cfs @ 12.22 hrs, Volume= 0.200 af, Atten= 23%, Lag= 5.3 min
 Primary = 2.07 cfs @ 12.22 hrs, Volume= 0.200 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 61.29' @ 12.22 hrs Surf.Area= 6,254 sf Storage= 3,477 cf

Plug-Flow detention time= 163.7 min calculated for 0.200 af (84% of inflow)
 Center-of-Mass det. time= 95.3 min (883.6 - 788.3)

Volume	Invert	Avail.Storage	Storage Description
#1	59.90'	5,003 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 12,508 cf Overall x 40.0% Voids

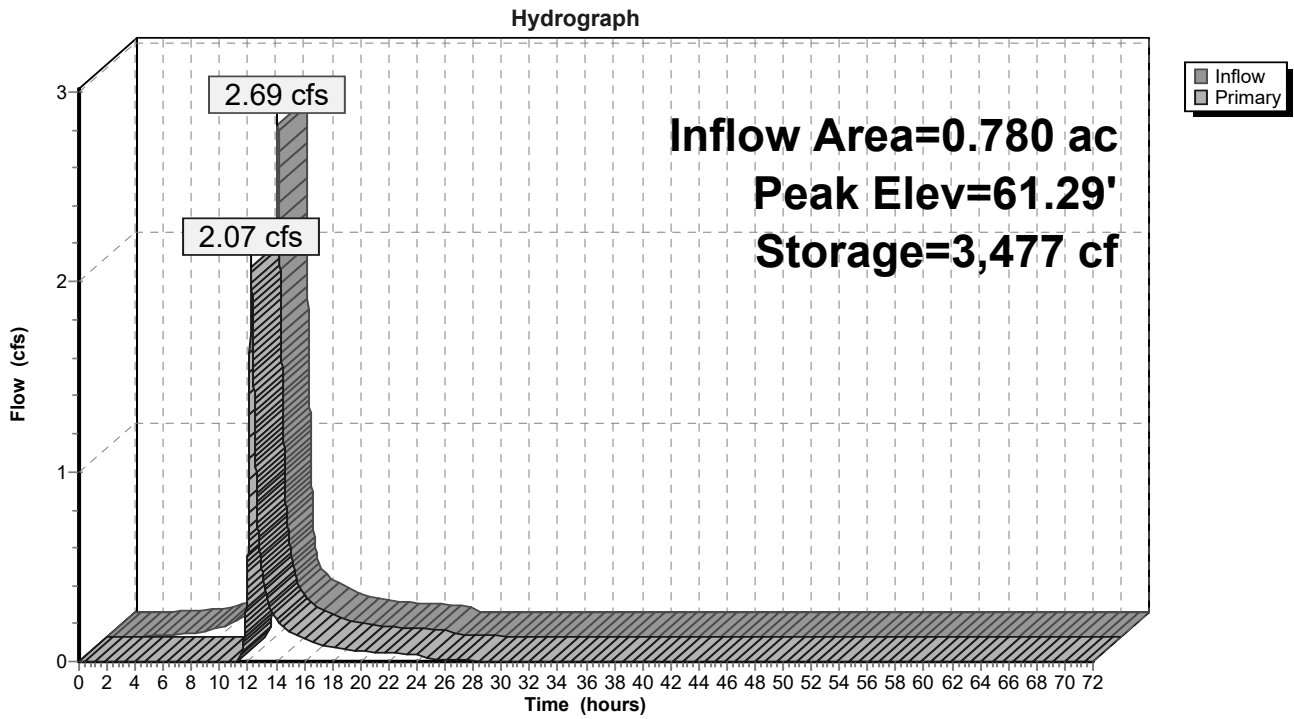
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.90	6,254	0	0
61.90	6,254	12,508	12,508

Device	Routing	Invert	Outlet Devices
#1	Device 3	60.55'	8.0" Vert. Orifice/Grate C= 0.600
#2	Device 3	61.05'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Primary	59.90'	15.0" x 5.0' long Culvert RCP, rounded edge headwall, Ke= 0.100 Outlet Invert= 59.85' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean
#4	Device 3	61.55'	4.00' x 4.00' Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=2.07 cfs @ 12.22 hrs HW=61.29' TW=0.00' (Dynamic Tailwater)

- ↑ **3=Culvert** (Passes 2.07 cfs of 5.13 cfs potential flow)
- ↑ **1=Orifice/Grate** (Orifice Controls 1.07 cfs @ 3.07 fps)
- ↑ **2=Sharp-Crested Rectangular Weir** (Weir Controls 1.00 cfs @ 1.70 fps)
- ↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: PERVIOUS PAVEMENT (ROADWAY)



Pond 13P: Detention Tank 1

Inflow Area = 0.021 ac, Inflow Depth = 4.77" for 10 Year event
 Inflow = 0.09 cfs @ 12.13 hrs, Volume= 0.008 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 62.93' @ 24.57 hrs Surf.Area= 113 sf Storage= 364 cf

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

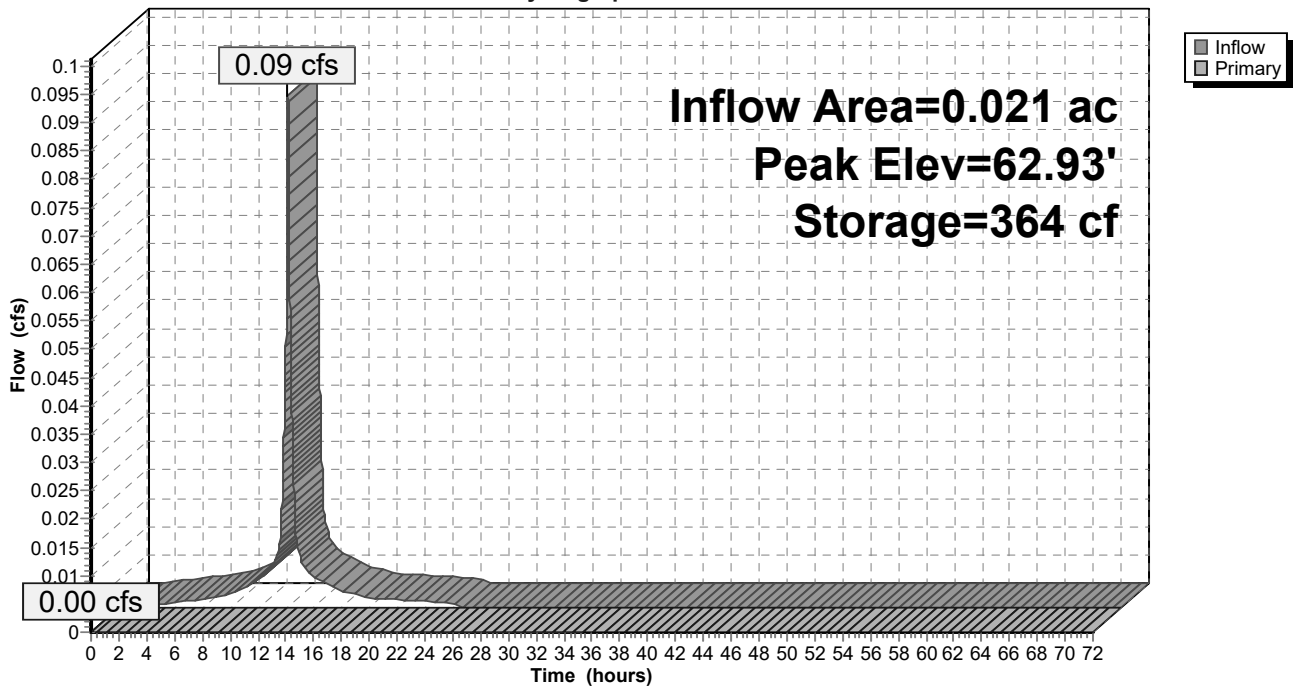
Volume	Invert	Avail.Storage	Storage Description
#1	58.40'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	57.90'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=57.90' TW=59.90' (Dynamic Tailwater)
 ←1=Orifice/Grate (Controls 0.00 cfs)

Pond 13P: Detention Tank 1

Hydrograph



Pond 14P: Detention Tank 3

[93] Warning: Storage range exceeded by 2.01'

[87] Warning: Oscillations may require Finer Routing or smaller dt

Inflow Area = 0.044 ac, Inflow Depth = 4.77" for 10 Year event
 Inflow = 0.19 cfs @ 12.13 hrs, Volume= 0.018 af
 Outflow = 0.02 cfs @ 14.55 hrs, Volume= 0.003 af, Atten= 90%, Lag= 145.0 min
 Primary = 0.02 cfs @ 14.55 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 65.11' @ 14.55 hrs Surf.Area= 113 sf Storage= 626 cf

Plug-Flow detention time= 613.5 min calculated for 0.003 af (18% of inflow)
 Center-of-Mass det. time= 332.3 min (1,084.0 - 751.7)

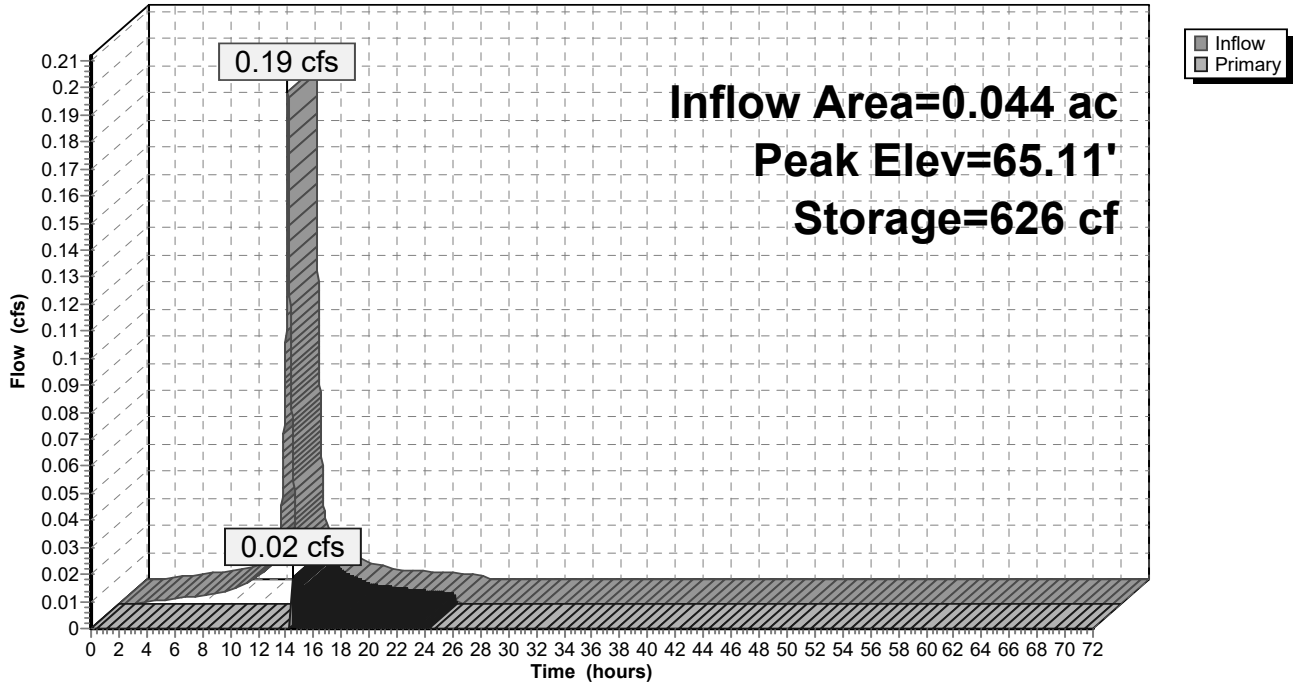
Volume	Invert	Avail.Storage	Storage Description
#1	55.10'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	54.60'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
		626 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	65.10'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.02 cfs @ 14.55 hrs HW=65.11' TW=60.78' (Dynamic Tailwater)
 ↑**1=Orifice/Grate** (Weir Controls 0.02 cfs @ 0.32 fps)

Pond 14P: Detention Tank 3

Hydrograph



Pond 15P: Detention Tank 2

[93] Warning: Storage range exceeded by 2.10'

[87] Warning: Oscillations may require Finer Routing or smaller dt

Inflow Area = 0.040 ac, Inflow Depth = 4.77" for 10 Year event
 Inflow = 0.17 cfs @ 12.13 hrs, Volume= 0.016 af
 Outflow = 0.00 cfs @ 17.07 hrs, Volume= 0.002 af, Atten= 97%, Lag= 296.2 min
 Primary = 0.00 cfs @ 17.07 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9

Peak Elev= 66.40' @ 17.07 hrs Surf.Area= 113 sf Storage= 626 cf

Plug-Flow detention time= 834.0 min calculated for 0.002 af (10% of inflow)

Center-of-Mass det. time= 455.6 min (1,207.3 - 751.7)

Volume	Invert	Avail.Storage	Storage Description
#1	56.30'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	55.80'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
		626 cf	Total Available Storage

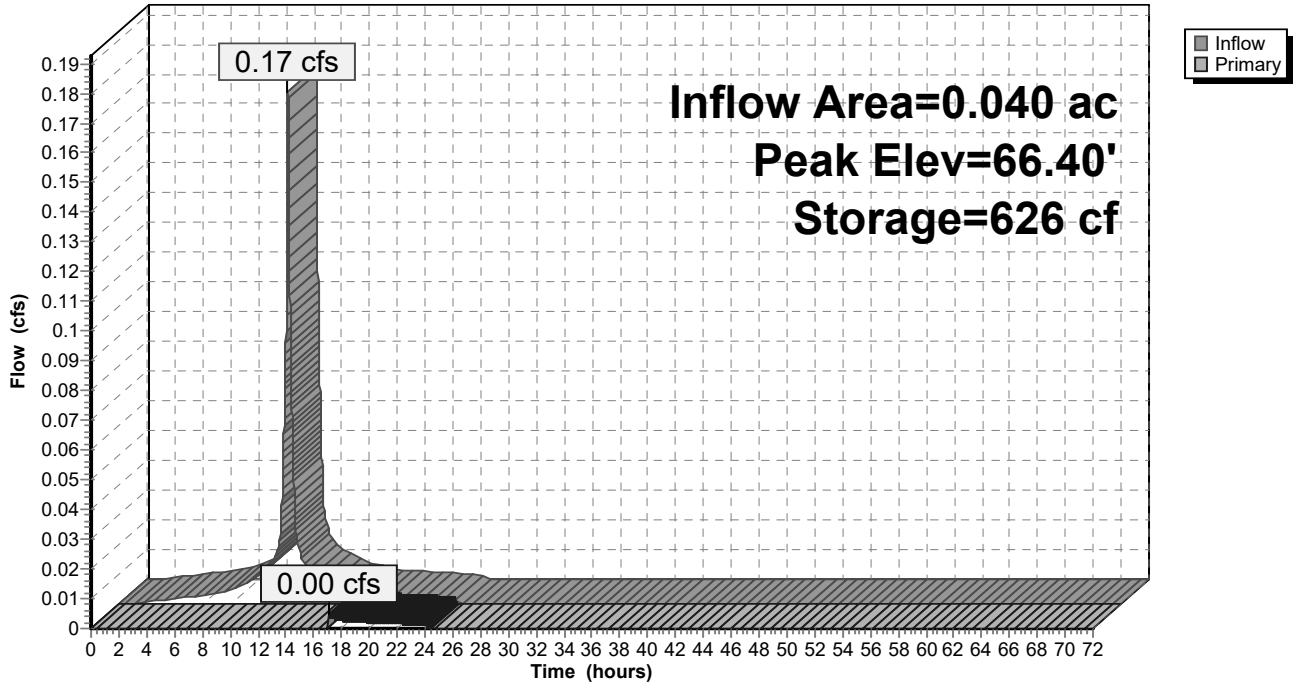
Device	Routing	Invert	Outlet Devices
#1	Primary	66.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 17.07 hrs HW=66.40' TW=60.71' (Dynamic Tailwater)

↑**1=Orifice/Grate** (Weir Controls 0.00 cfs @ 0.20 fps)

Pond 15P: Detention Tank 2

Hydrograph



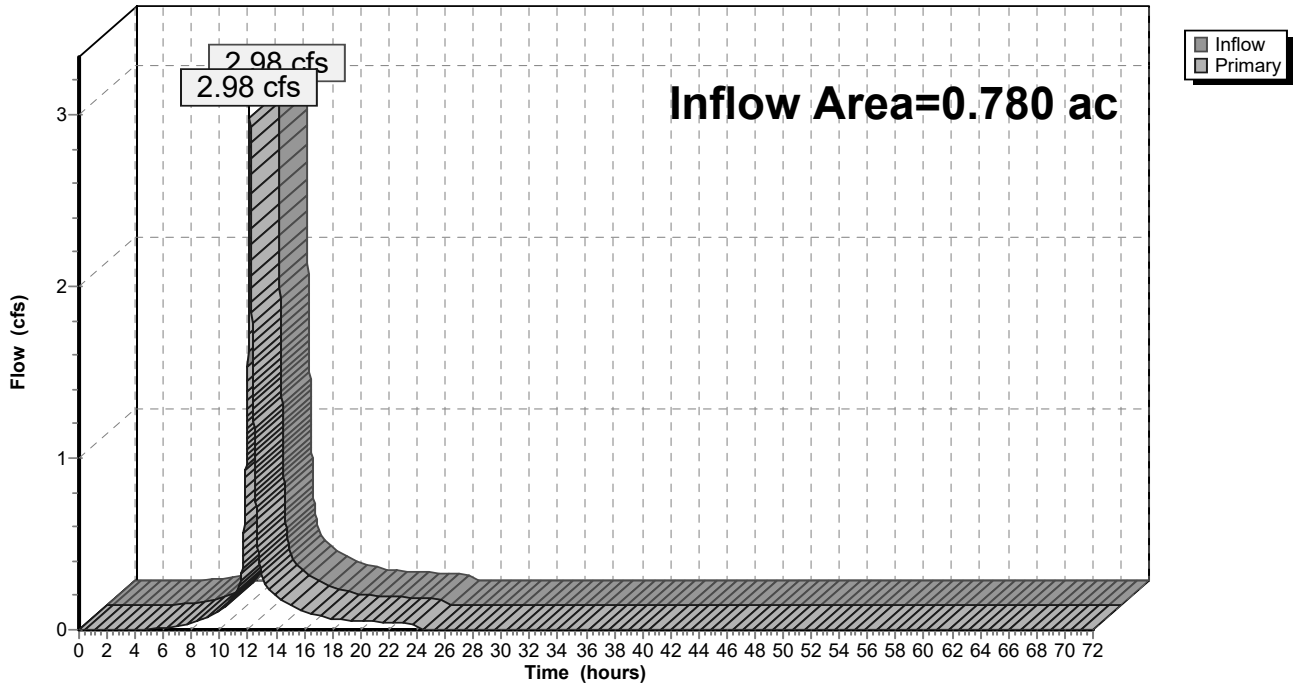
Link 5L: WETLANDS - EXISTING

Inflow Area = 0.780 ac, Inflow Depth = 3.84" for 10 Year event
Inflow = 2.98 cfs @ 12.14 hrs, Volume= 0.250 af
Primary = 2.98 cfs @ 12.14 hrs, Volume= 0.250 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 5L: WETLANDS - EXISTING

Hydrograph

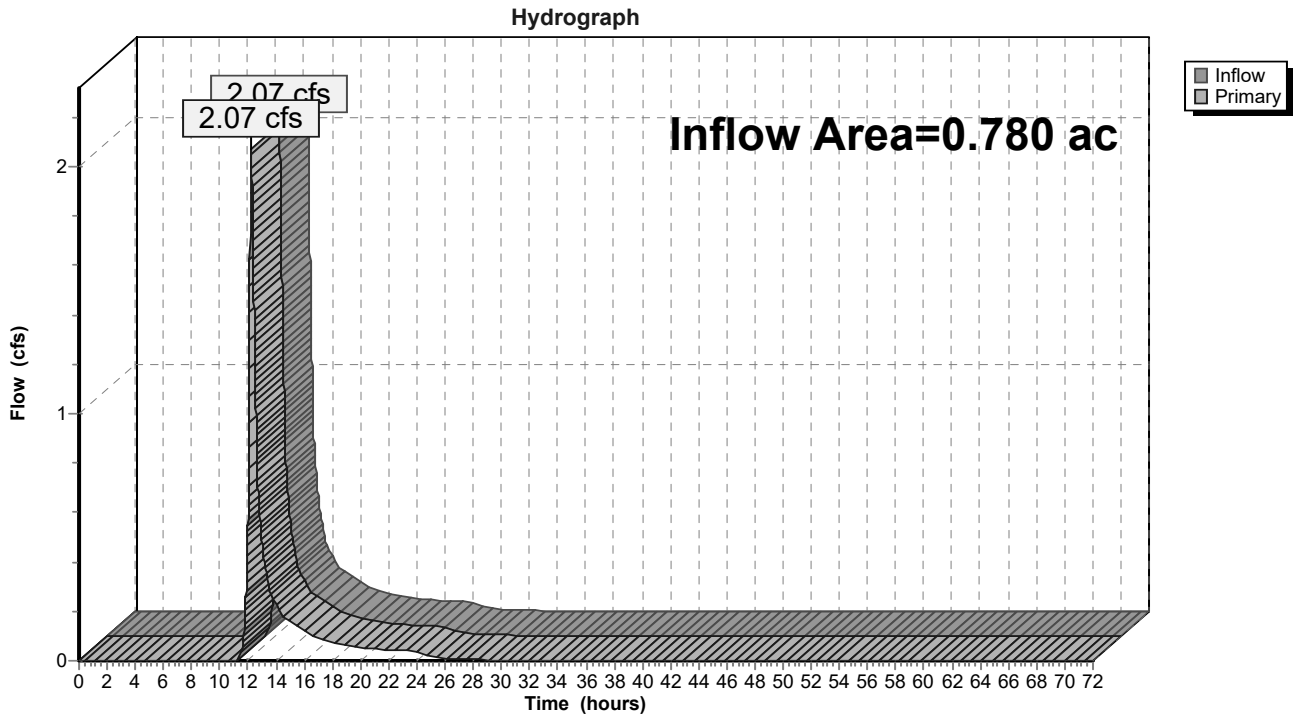


Link 6L: WETLANDS - PROPOSED

Inflow Area = 0.780 ac, Inflow Depth = 3.07" for 10 Year event
Inflow = 2.07 cfs @ 12.22 hrs, Volume= 0.200 af
Primary = 2.07 cfs @ 12.22 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 6L: WETLANDS - PROPOSED



25-Year Storm Event

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 9

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EDA 4 Runoff Area=0.150 ac Runoff Depth=4.92"
Tc=10.0 min CN=89 Runoff=0.73 cfs 0.061 af

Subcatchment 2S: PDA - 4 Runoff Area=0.150 ac Runoff Depth=5.95"
Tc=10.0 min CN=98 Runoff=0.80 cfs 0.074 af

Subcatchment 7S: EDA 1 Runoff Area=0.230 ac Runoff Depth=5.14"
Tc=10.0 min CN=91 Runoff=1.15 cfs 0.099 af

Subcatchment 8S: EDA 2 Runoff Area=0.170 ac Runoff Depth=4.92"
Tc=10.0 min CN=89 Runoff=0.82 cfs 0.070 af

Subcatchment 9S: EDA 3 Runoff Area=0.230 ac Runoff Depth=4.92"
Tc=10.0 min CN=89 Runoff=1.11 cfs 0.094 af

Subcatchment 10S: PDA - 1 Runoff Area=0.209 ac Runoff Depth=5.14"
Tc=10.0 min CN=91 Runoff=1.04 cfs 0.090 af

Subcatchment 11S: PDA - 2 Runoff Area=0.130 ac Runoff Depth=5.14"
Tc=10.0 min CN=91 Runoff=0.65 cfs 0.056 af

Subcatchment 12S: PDA -3 Runoff Area=0.186 ac Runoff Depth=5.03"
Tc=10.0 min CN=90 Runoff=0.91 cfs 0.078 af

Subcatchment 13S: PDA-2 (HOME ONLY) Runoff Area=0.040 ac Runoff Depth=5.95"
Tc=10.0 min CN=98 Runoff=0.21 cfs 0.020 af

Subcatchment 14S: PDA-1 (HOME ONLY) Runoff Area=0.021 ac Runoff Depth=5.95"
Tc=10.0 min CN=98 Runoff=0.11 cfs 0.010 af

Subcatchment 15S: PDA-3 (HOME ONLY) Runoff Area=0.044 ac Runoff Depth=5.95"
Tc=10.0 min CN=98 Runoff=0.23 cfs 0.022 af

Pond 4P: PERVIOUS PAVEMENT (ROADWAY) Peak Elev=61.38' Storage=3,709 cf Inflow=3.40 cfs 0.311 af
Outflow=2.84 cfs 0.273 af

Pond 13P: Detention Tank 1 Peak Elev=64.12' Storage=454 cf Inflow=0.11 cfs 0.010 af
Outflow=0.00 cfs 0.000 af

Pond 14P: Detention Tank 3 Peak Elev=65.13' Storage=626 cf Inflow=0.23 cfs 0.022 af
Outflow=0.11 cfs 0.007 af

Pond 15P: Detention Tank 2 Peak Elev=66.41' Storage=626 cf Inflow=0.21 cfs 0.020 af
Outflow=0.03 cfs 0.005 af

62 GLEN AVE-PERVIOUS PAVEMENT_082824

Type III 24-hr 25 Year Rainfall=6.19"

Prepared by Daetel Engineering

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9/7/2024

Link 5L: WETLANDS - EXISTING

Inflow=3.81 cfs 0.324 af

Primary=3.81 cfs 0.324 af

Link 6L: WETLANDS - PROPOSED

Inflow=2.84 cfs 0.273 af

Primary=2.84 cfs 0.273 af

Total Runoff Area = 1.560 ac Runoff Volume = 0.674 af Average Runoff Depth = 5.18"
73.97% Pervious Area = 1.154 ac 26.03% Impervious Area = 0.406 ac

Subcatchment 1S: EDA 4

Runoff = 0.73 cfs @ 12.14 hrs, Volume= 0.061 af, Depth= 4.92"

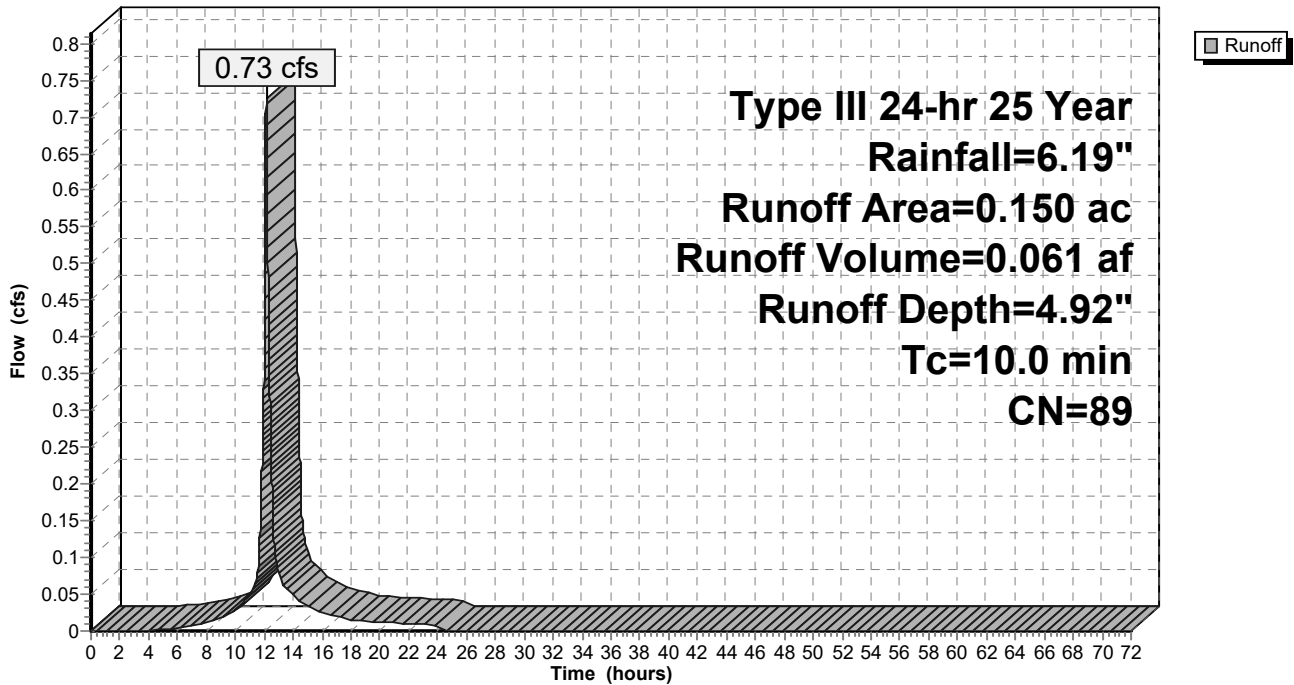
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.150	89	<50% Grass cover, Poor, HSG D
0.150		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 1S: EDA 4

Hydrograph



Subcatchment 2S: PDA - 4

Runoff = 0.80 cfs @ 12.13 hrs, Volume= 0.074 af, Depth= 5.95"

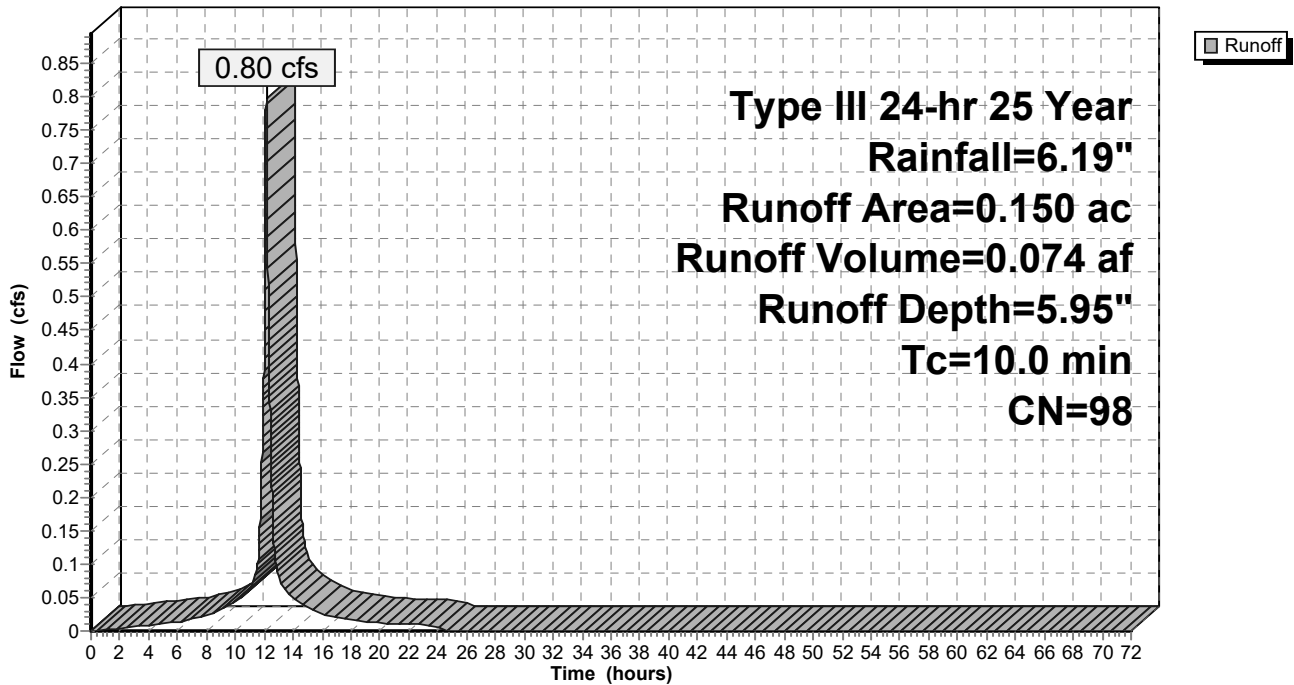
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.150	98	Paved parking & roofs
0.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 2S: PDA - 4

Hydrograph



Subcatchment 7S: EDA 1

Runoff = 1.15 cfs @ 12.13 hrs, Volume= 0.099 af, Depth= 5.14"

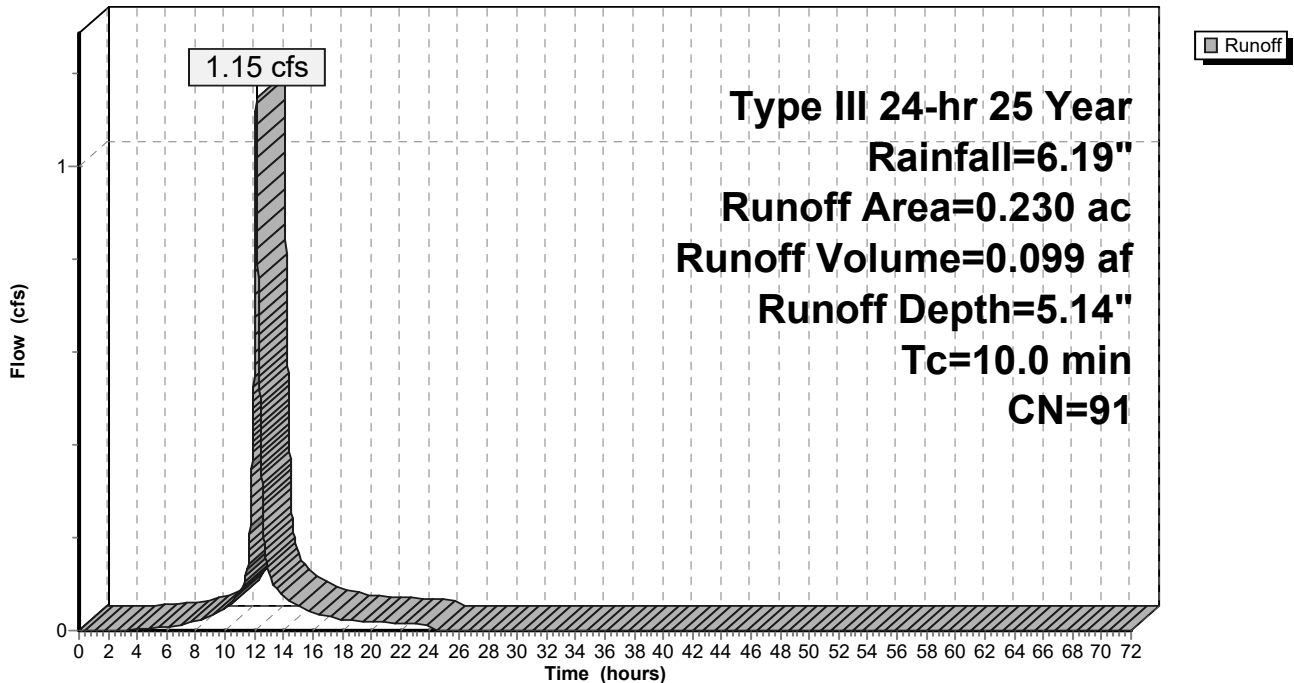
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.060	98	Paved parking & roofs
0.230	91	Weighted Average
0.170		Pervious Area
0.060		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7S: EDA 1

Hydrograph



Subcatchment 8S: EDA 2

Runoff = 0.82 cfs @ 12.14 hrs, Volume= 0.070 af, Depth= 4.92"

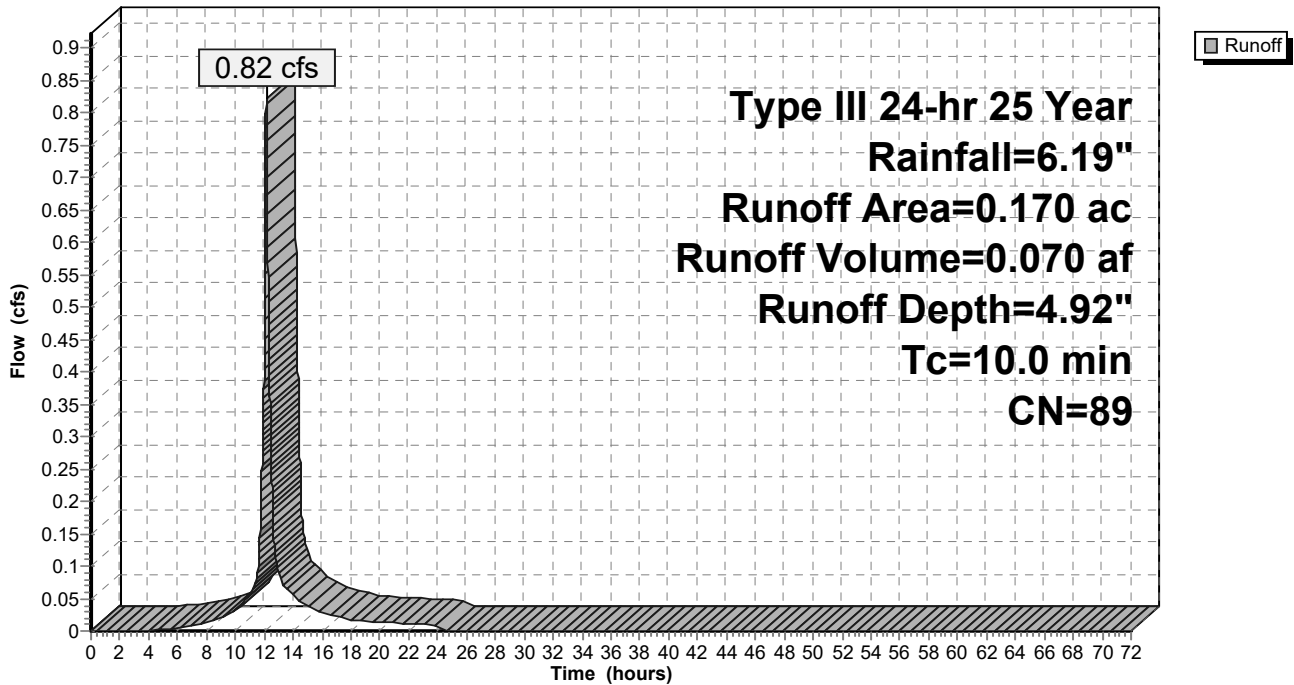
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.170		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8S: EDA 2

Hydrograph



Subcatchment 9S: EDA 3

Runoff = 1.11 cfs @ 12.14 hrs, Volume= 0.094 af, Depth= 4.92"

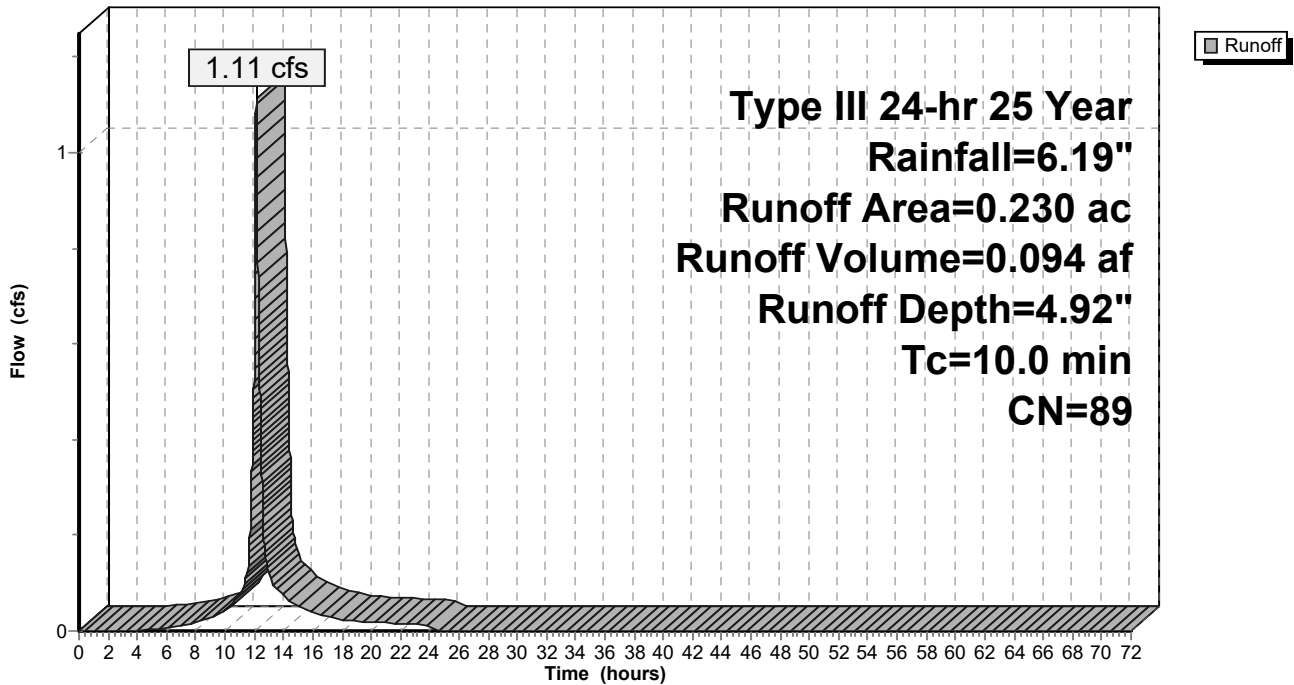
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.230	89	<50% Grass cover, Poor, HSG D
0.230		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 9S: EDA 3

Hydrograph



Subcatchment 10S: PDA - 1

Runoff = 1.04 cfs @ 12.13 hrs, Volume= 0.090 af, Depth= 5.14"

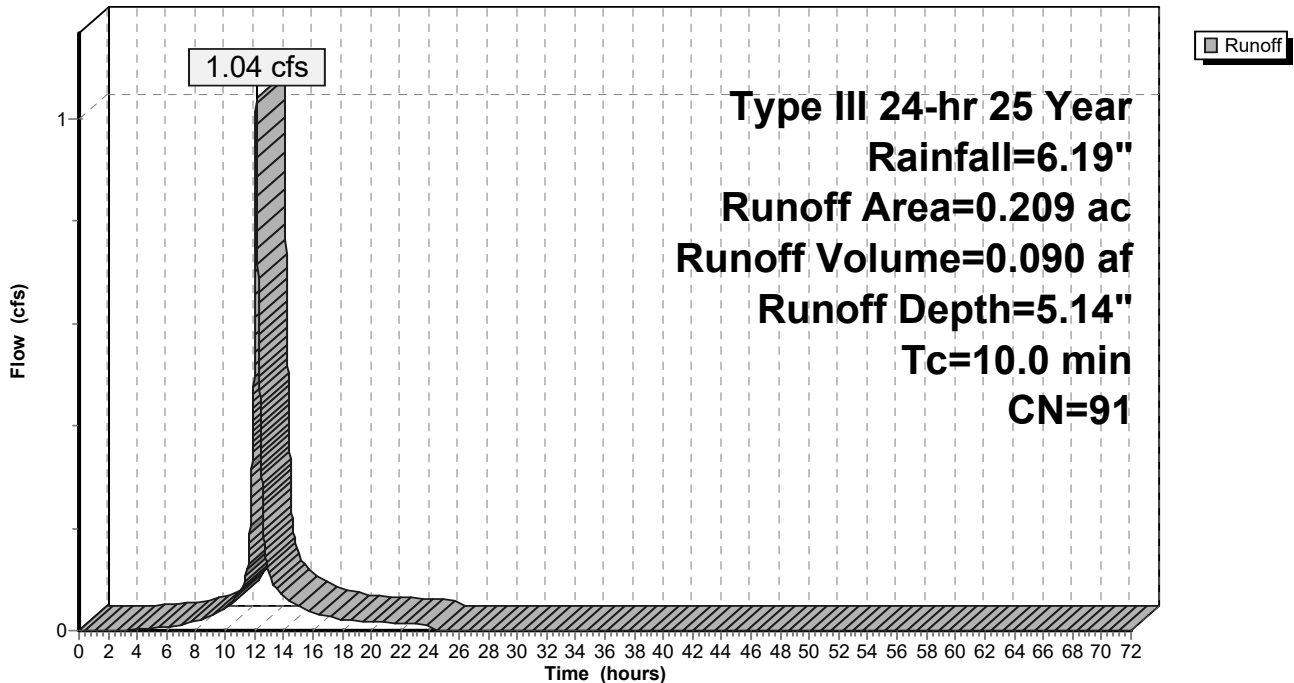
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.039	98	Paved parking & roofs
0.170	89	<50% Grass cover, Poor, HSG D
0.209	91	Weighted Average
0.170		Pervious Area
0.039		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 10S: PDA - 1

Hydrograph



Subcatchment 11S: PDA - 2

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 0.056 af, Depth= 5.14"

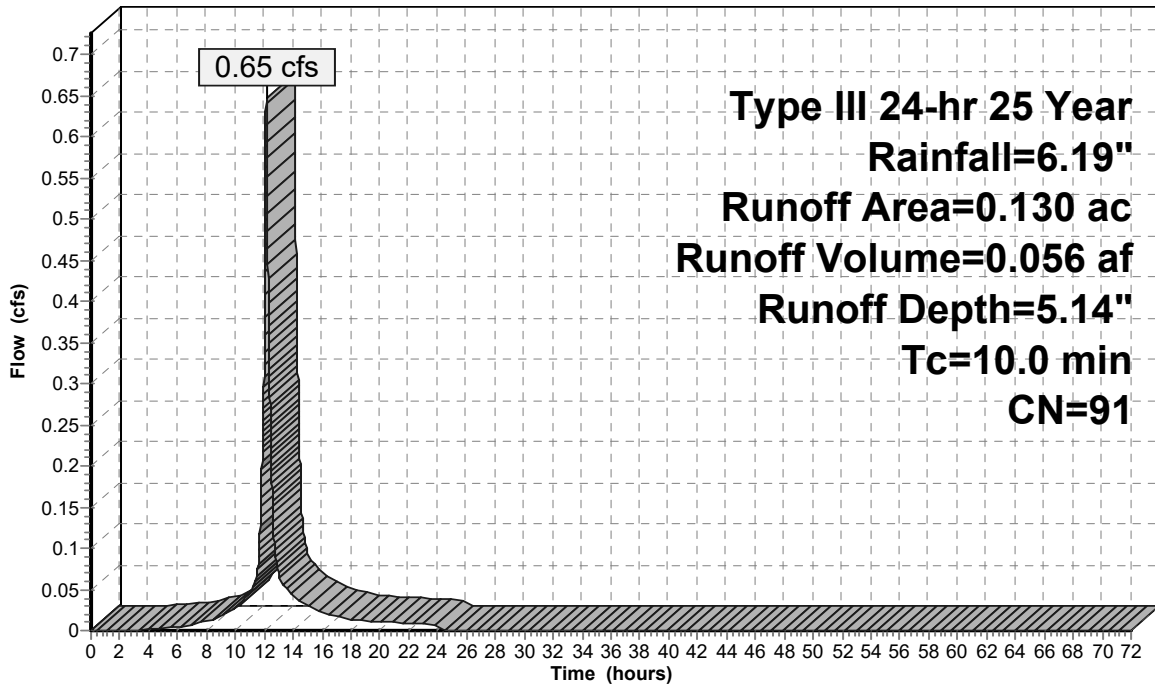
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.027	98	Paved parking & roofs
0.103	89	<50% Grass cover, Poor, HSG D
0.130	91	Weighted Average
0.103		Pervious Area
0.027		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11S: PDA - 2

Hydrograph



Subcatchment 12S: PDA -3

Runoff = 0.91 cfs @ 12.14 hrs, Volume= 0.078 af, Depth= 5.03"

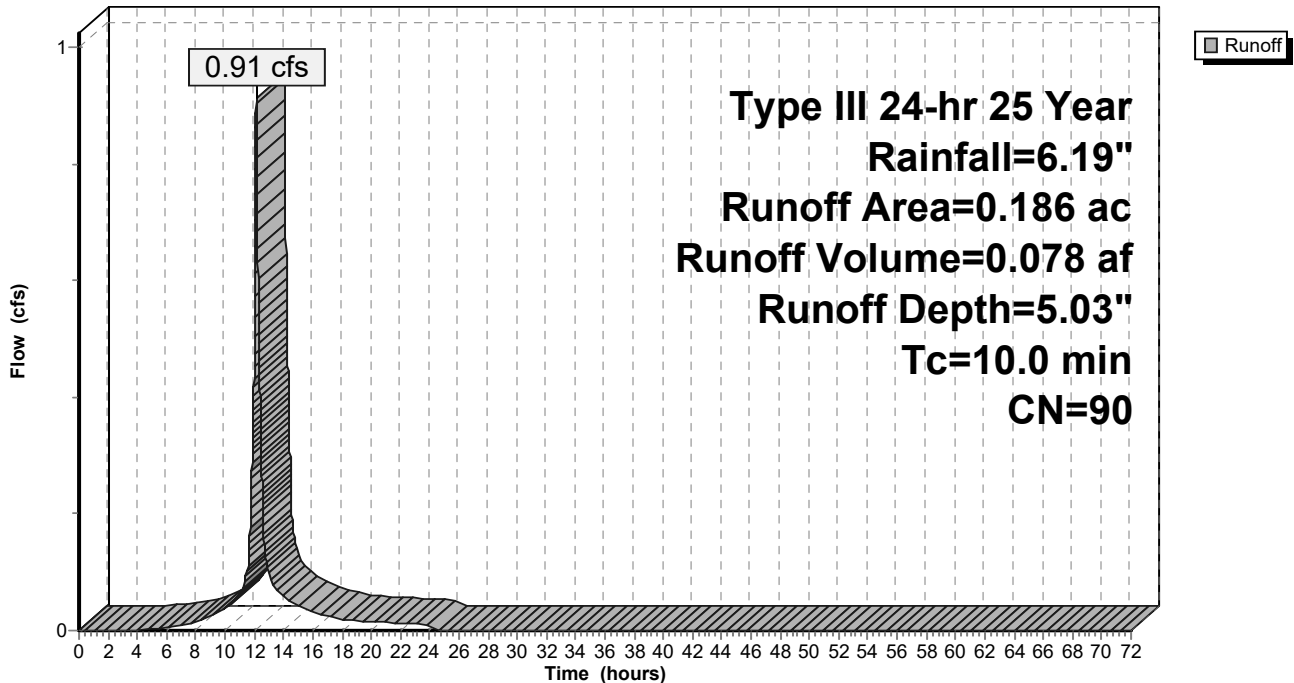
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.025	98	Paved parking & roofs
0.161	89	<50% Grass cover, Poor, HSG D
0.186	90	Weighted Average
0.161		Pervious Area
0.025		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 12S: PDA -3

Hydrograph



Subcatchment 13S: PDA-2 (HOME ONLY)

Runoff = 0.21 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 5.95"

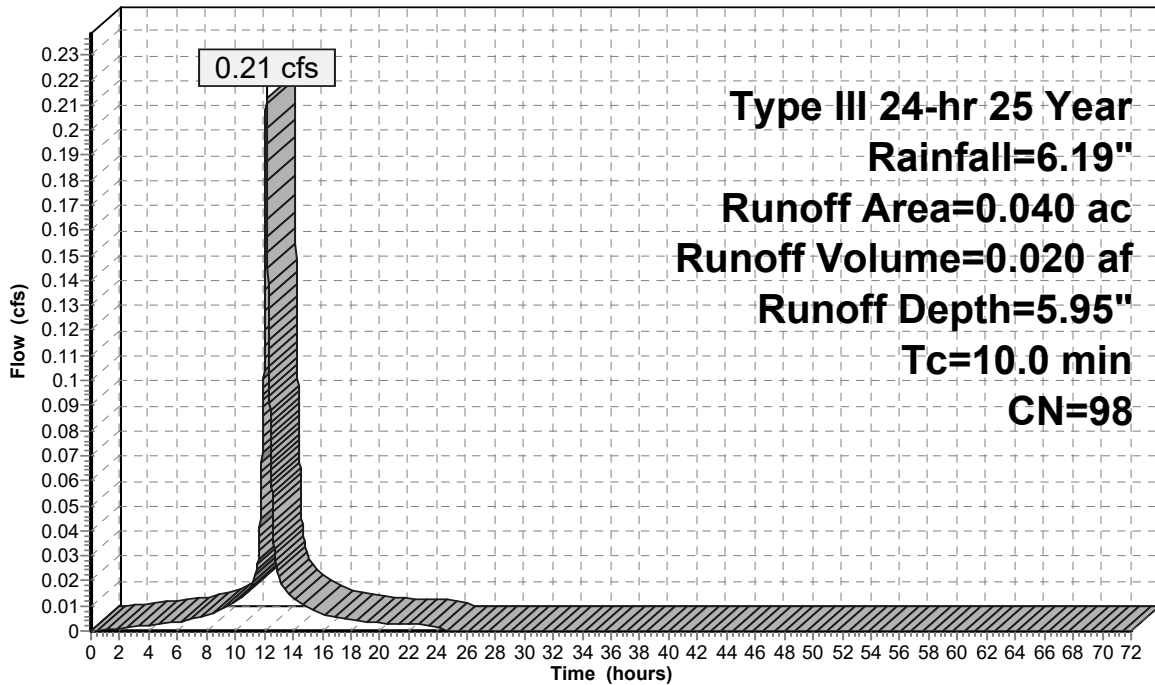
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.040	98	
0.040		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 13S: PDA-2 (HOME ONLY)

Hydrograph



Subcatchment 14S: PDA-1 (HOME ONLY)

Runoff = 0.11 cfs @ 12.13 hrs, Volume= 0.010 af, Depth= 5.95"

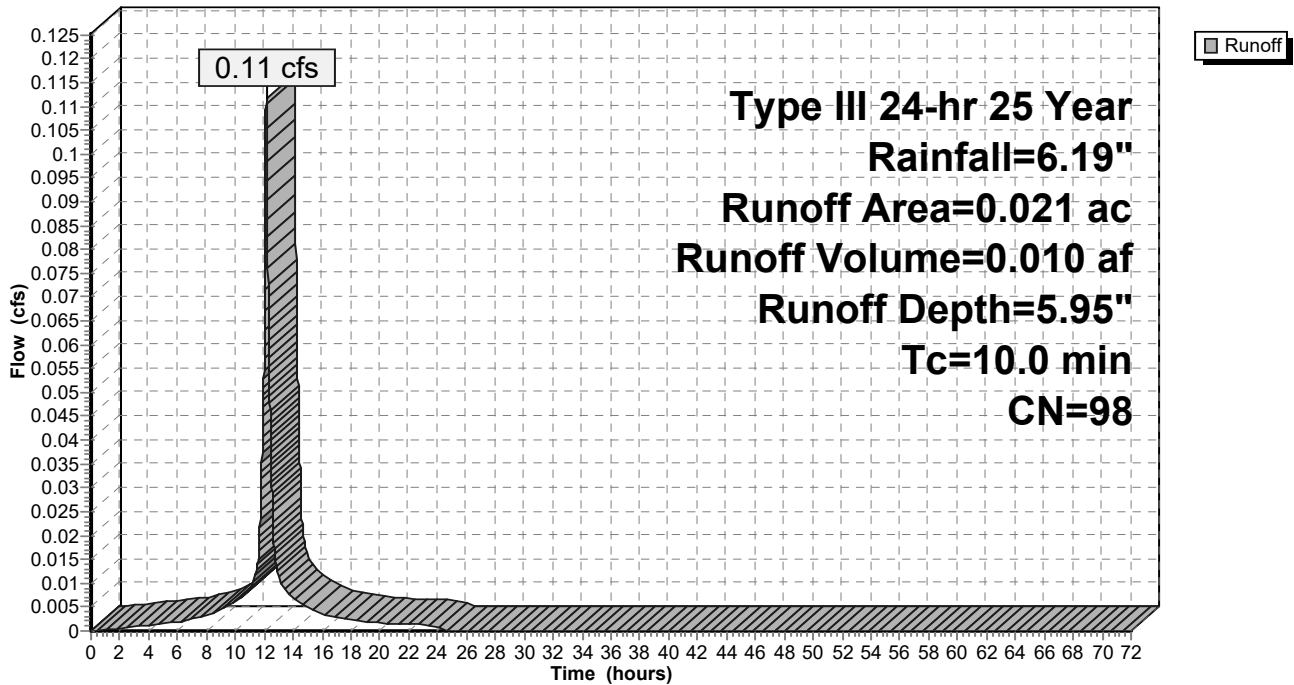
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.021	98	
0.021		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 14S: PDA-1 (HOME ONLY)

Hydrograph



Subcatchment 15S: PDA-3 (HOME ONLY)

Runoff = 0.23 cfs @ 12.13 hrs, Volume= 0.022 af, Depth= 5.95"

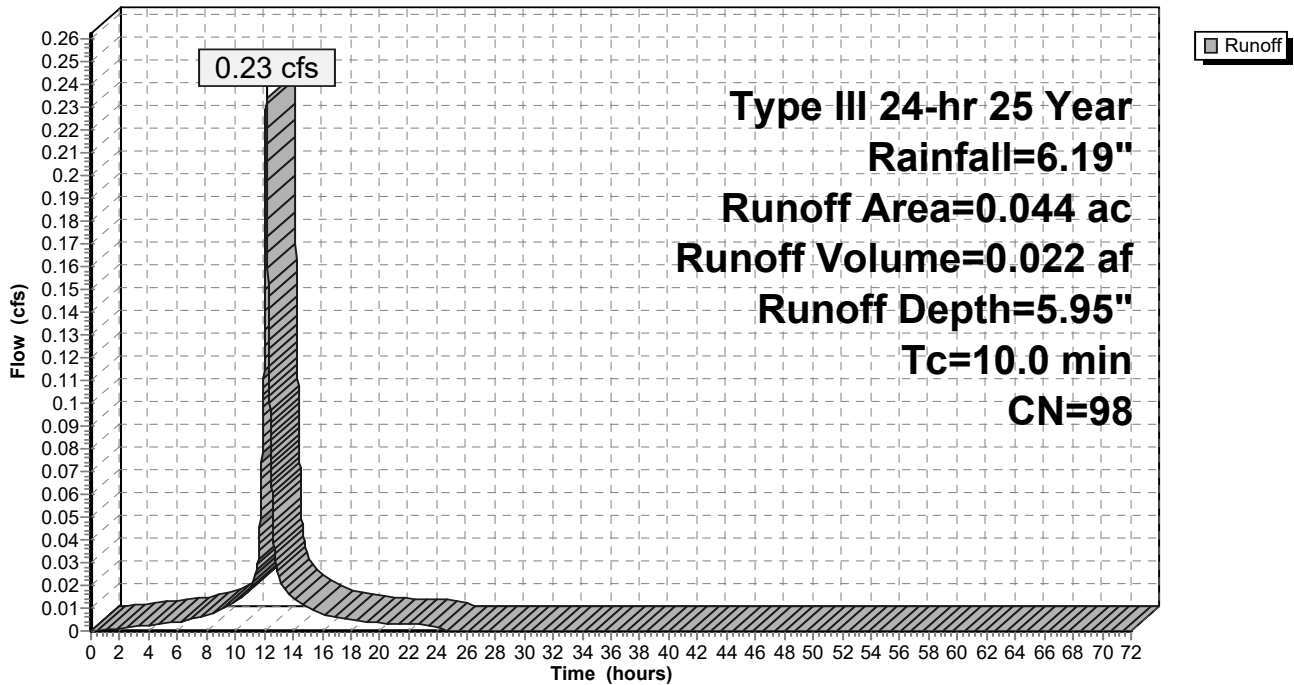
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25 Year Rainfall=6.19"

Area (ac)	CN	Description
0.044	98	
0.044		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 15S: PDA-3 (HOME ONLY)

Hydrograph



Pond 4P: PERVIOUS PAVEMENT (ROADWAY)

Inflow Area = 0.780 ac, Inflow Depth = 4.78" for 25 Year event
 Inflow = 3.40 cfs @ 12.13 hrs, Volume= 0.311 af
 Outflow = 2.84 cfs @ 12.20 hrs, Volume= 0.273 af, Atten= 17%, Lag= 4.2 min
 Primary = 2.84 cfs @ 12.20 hrs, Volume= 0.273 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 61.38' @ 12.20 hrs Surf.Area= 6,254 sf Storage= 3,709 cf

Plug-Flow detention time= 139.0 min calculated for 0.273 af (88% of inflow)
 Center-of-Mass det. time= 82.5 min (866.2 - 783.8)

Volume	Invert	Avail.Storage	Storage Description
#1	59.90'	5,003 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 12,508 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.90	6,254	0	0
61.90	6,254	12,508	12,508

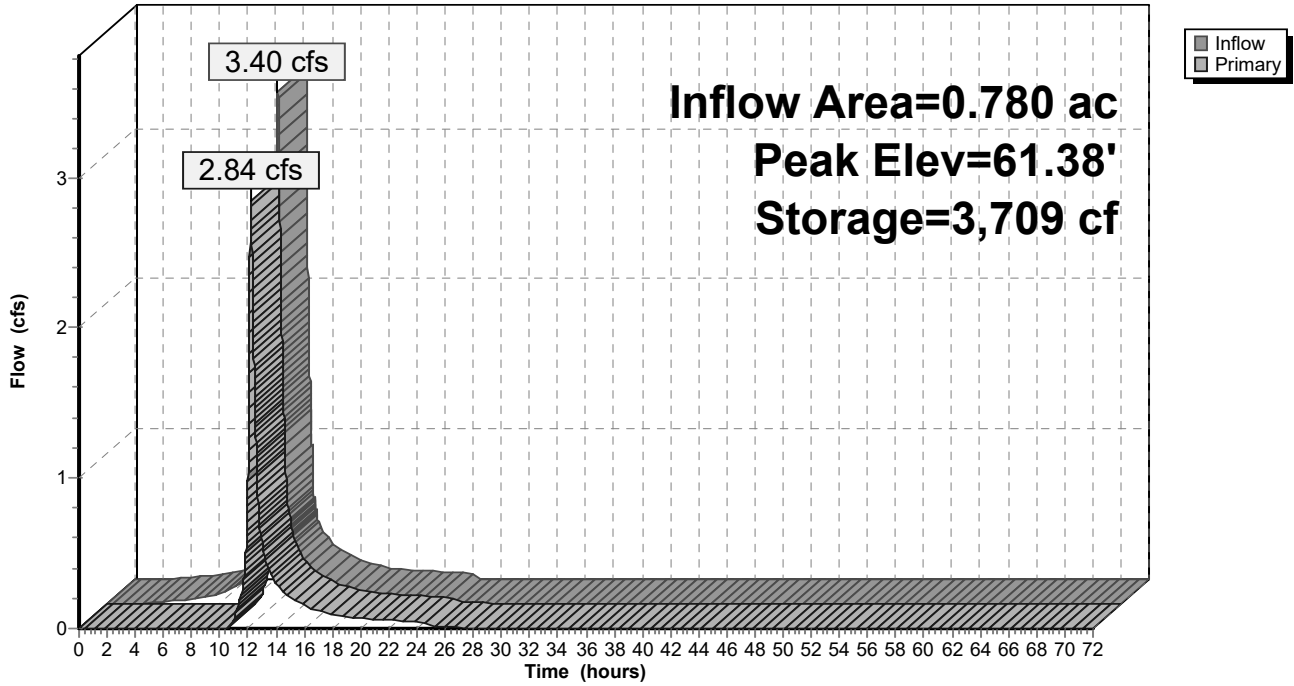
Device	Routing	Invert	Outlet Devices
#1	Device 3	60.55'	8.0" Vert. Orifice/Grate C= 0.600
#2	Device 3	61.05'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Primary	59.90'	15.0" x 5.0' long Culvert RCP, rounded edge headwall, Ke= 0.100 Outlet Invert= 59.85' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean
#4	Device 3	61.55'	4.00' x 4.00' Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=2.84 cfs @ 12.20 hrs HW=61.38' TW=0.00' (Dynamic Tailwater)

- 3=Culvert (Passes 2.84 cfs of 5.56 cfs potential flow)
- 1=Orifice/Grate (Orifice Controls 1.19 cfs @ 3.40 fps)
- 2=Sharp-Crested Rectangular Weir (Weir Controls 1.65 cfs @ 2.04 fps)
- 4=Orifice/Grate (Controls 0.00 cfs)

Pond 4P: PERVIOUS PAVEMENT (ROADWAY)

Hydrograph



Pond 13P: Detention Tank 1

Inflow Area = 0.021 ac, Inflow Depth = 5.95" for 25 Year event
 Inflow = 0.11 cfs @ 12.13 hrs, Volume= 0.010 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 64.12' @ 24.57 hrs Surf.Area= 113 sf Storage= 454 cf

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

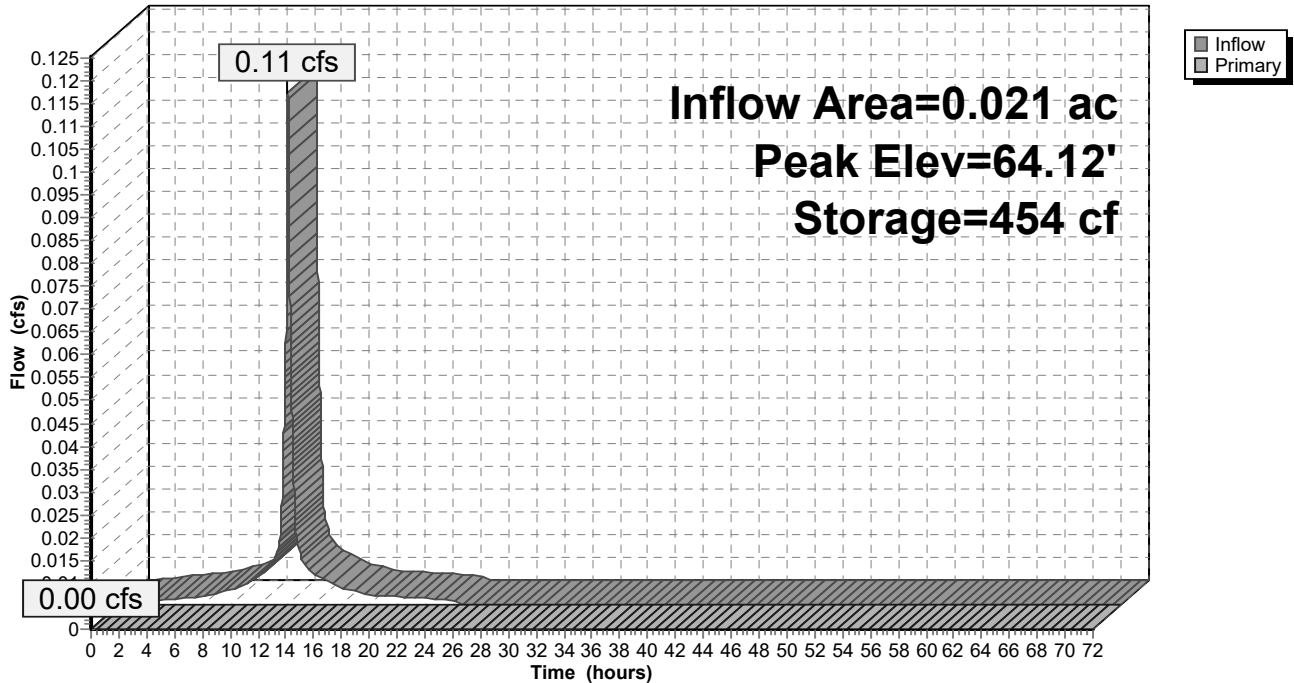
Volume	Invert	Avail.Storage	Storage Description
#1	58.40'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	57.90'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=57.90' TW=59.90' (Dynamic Tailwater)
 ←1=Orifice/Grate (Controls 0.00 cfs)

Pond 13P: Detention Tank 1

Hydrograph



Pond 14P: Detention Tank 3

[93] Warning: Storage range exceeded by 2.03'

[87] Warning: Oscillations may require Finer Routing or smaller dt

Inflow Area = 0.044 ac, Inflow Depth = 5.95" for 25 Year event
 Inflow = 0.23 cfs @ 12.13 hrs, Volume= 0.022 af
 Outflow = 0.11 cfs @ 12.51 hrs, Volume= 0.007 af, Atten= 51%, Lag= 22.6 min
 Primary = 0.11 cfs @ 12.51 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9

Peak Elev= 65.13' @ 12.51 hrs Surf.Area= 113 sf Storage= 626 cf

Plug-Flow detention time= 379.2 min calculated for 0.007 af (34% of inflow)

Center-of-Mass det. time= 197.6 min (946.0 - 748.4)

Volume	Invert	Avail.Storage	Storage Description
#1	55.10'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	54.60'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
		626 cf	Total Available Storage

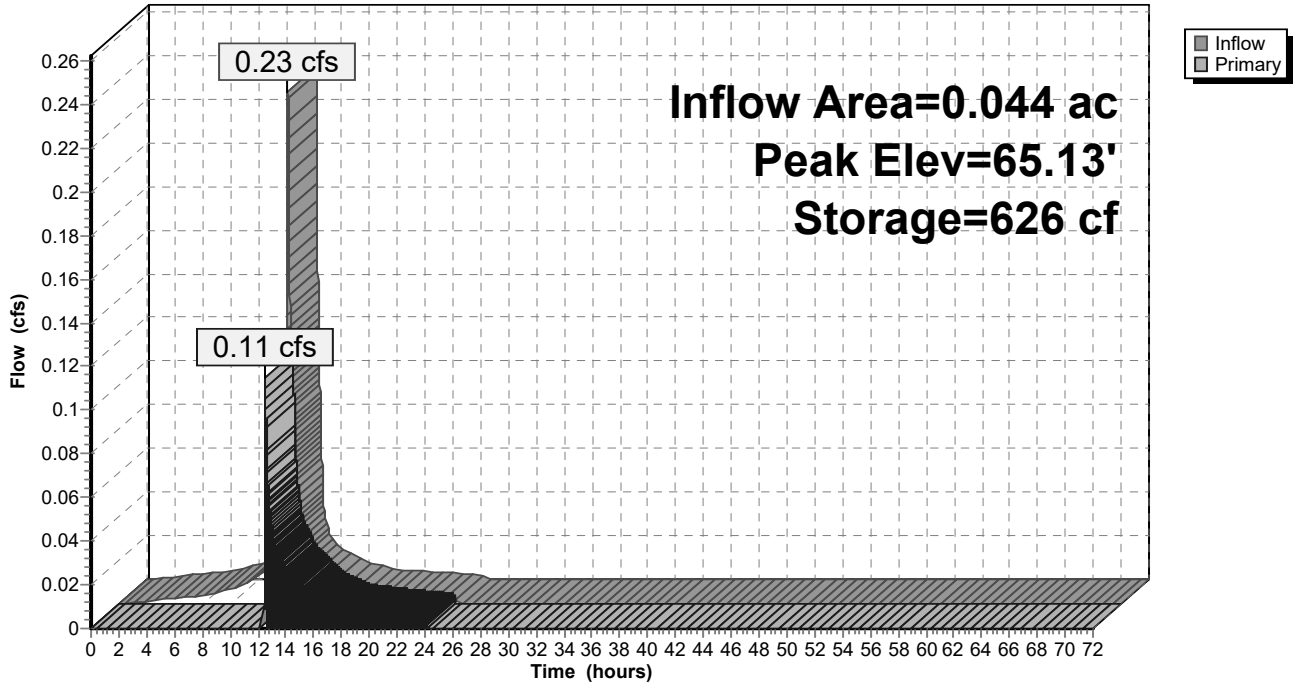
Device	Routing	Invert	Outlet Devices
#1	Primary	65.10'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.11 cfs @ 12.51 hrs HW=65.13' TW=61.20' (Dynamic Tailwater)

↑**1=Orifice/Grate** (Weir Controls 0.11 cfs @ 0.58 fps)

Pond 14P: Detention Tank 3

Hydrograph



Pond 15P: Detention Tank 2

[93] Warning: Storage range exceeded by 2.11'

[87] Warning: Oscillations may require Finer Routing or smaller dt

Inflow Area = 0.040 ac, Inflow Depth = 5.95" for 25 Year event
 Inflow = 0.21 cfs @ 12.13 hrs, Volume= 0.020 af
 Outflow = 0.03 cfs @ 12.98 hrs, Volume= 0.005 af, Atten= 86%, Lag= 50.8 min
 Primary = 0.03 cfs @ 12.98 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 66.41' @ 12.98 hrs Surf.Area= 113 sf Storage= 626 cf

Plug-Flow detention time= 457.2 min calculated for 0.005 af (28% of inflow)
 Center-of-Mass det. time= 241.6 min (990.0 - 748.4)

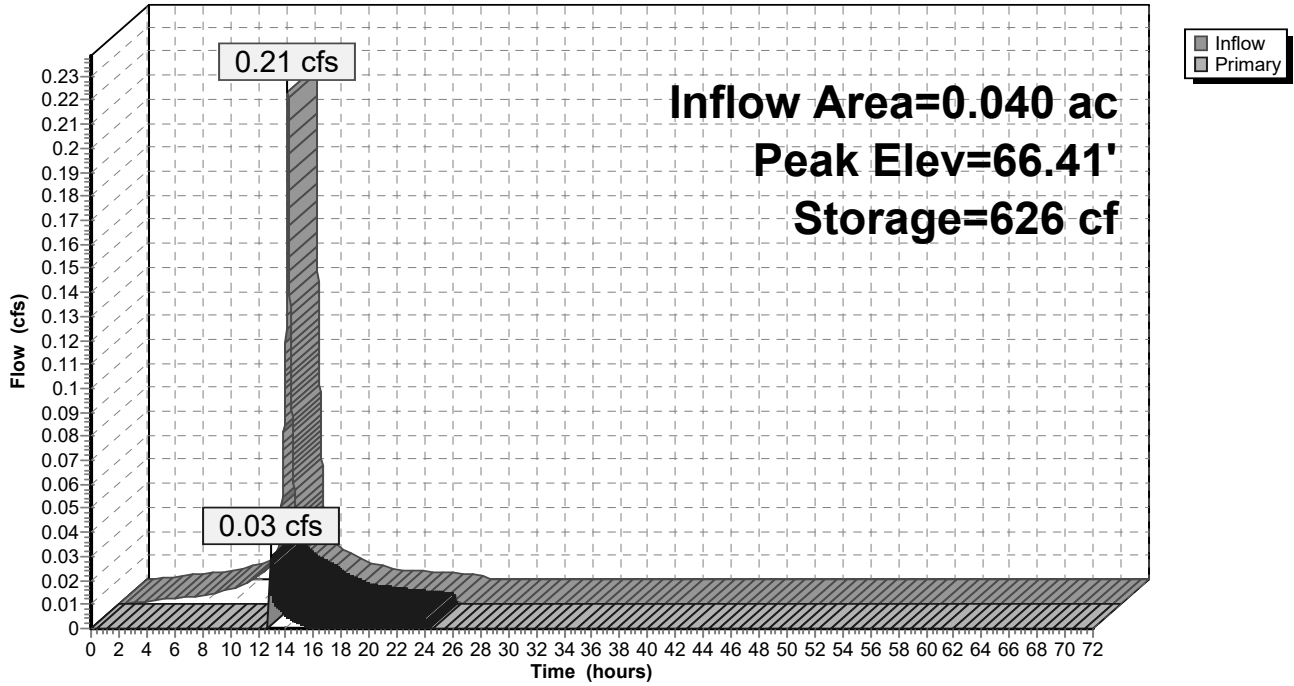
Volume	Invert	Avail.Storage	Storage Description
#1	56.30'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	55.80'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
		626 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	66.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.03 cfs @ 12.98 hrs HW=66.41' TW=61.01' (Dynamic Tailwater)
 ↑**1=Orifice/Grate** (Weir Controls 0.03 cfs @ 0.37 fps)

Pond 15P: Detention Tank 2

Hydrograph



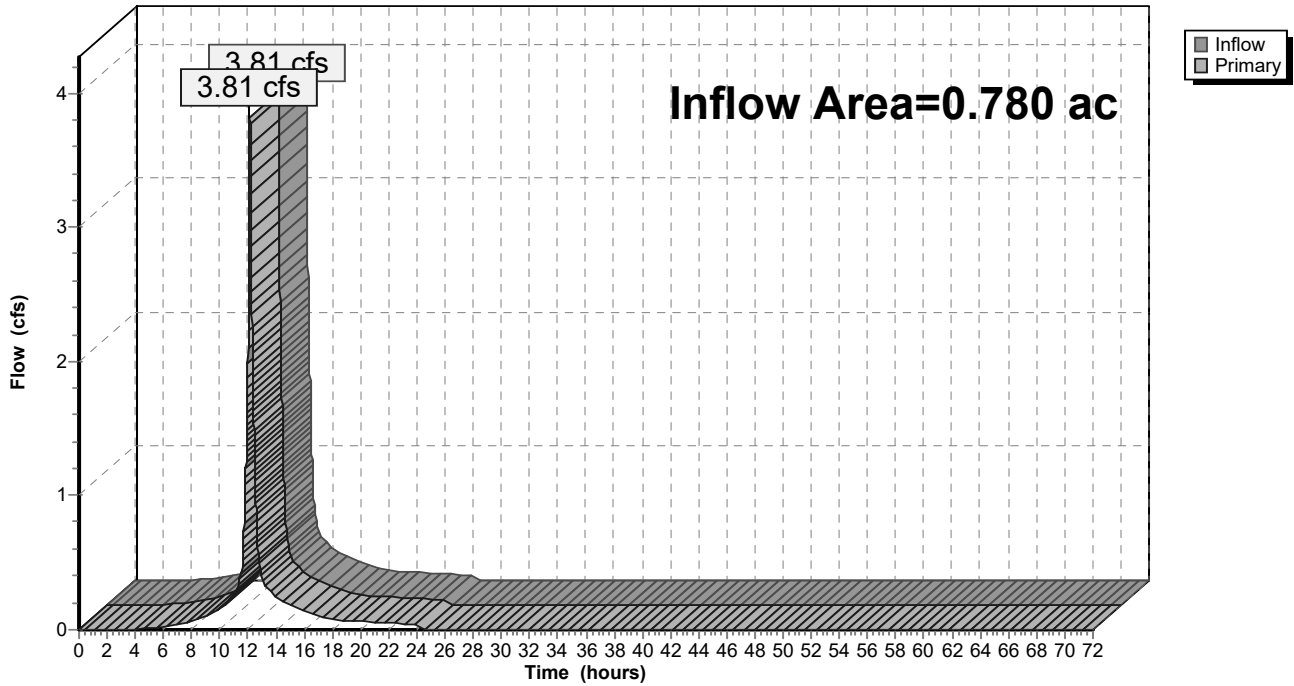
Link 5L: WETLANDS - EXISTING

Inflow Area = 0.780 ac, Inflow Depth = 4.99" for 25 Year event
Inflow = 3.81 cfs @ 12.14 hrs, Volume= 0.324 af
Primary = 3.81 cfs @ 12.14 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 5L: WETLANDS - EXISTING

Hydrograph

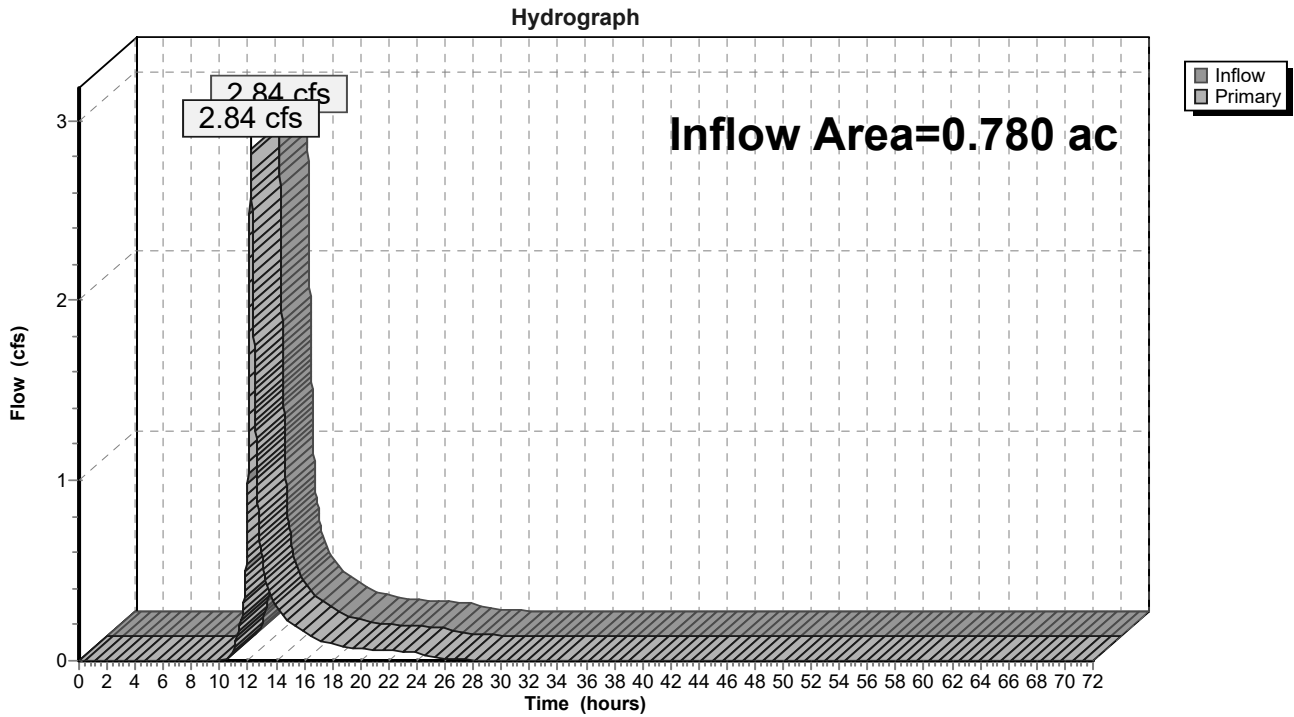


Link 6L: WETLANDS - PROPOSED

Inflow Area = 0.780 ac, Inflow Depth = 4.20" for 25 Year event
Inflow = 2.84 cfs @ 12.20 hrs, Volume= 0.273 af
Primary = 2.84 cfs @ 12.20 hrs, Volume= 0.273 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 6L: WETLANDS - PROPOSED



100-Year Storm Event

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 9

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EDA 4 Runoff Area=0.150 ac Runoff Depth=7.01"
Tc=10.0 min CN=89 Runoff=1.01 cfs 0.088 af

Subcatchment 2S: PDA - 4 Runoff Area=0.150 ac Runoff Depth=8.09"
Tc=10.0 min CN=98 Runoff=1.08 cfs 0.101 af

Subcatchment 7S: EDA 1 Runoff Area=0.230 ac Runoff Depth=7.25"
Tc=10.0 min CN=91 Runoff=1.59 cfs 0.139 af

Subcatchment 8S: EDA 2 Runoff Area=0.170 ac Runoff Depth=7.01"
Tc=10.0 min CN=89 Runoff=1.15 cfs 0.099 af

Subcatchment 9S: EDA 3 Runoff Area=0.230 ac Runoff Depth=7.01"
Tc=10.0 min CN=89 Runoff=1.56 cfs 0.134 af

Subcatchment 10S: PDA - 1 Runoff Area=0.209 ac Runoff Depth=7.25"
Tc=10.0 min CN=91 Runoff=1.44 cfs 0.126 af

Subcatchment 11S: PDA - 2 Runoff Area=0.130 ac Runoff Depth=7.25"
Tc=10.0 min CN=91 Runoff=0.90 cfs 0.079 af

Subcatchment 12S: PDA -3 Runoff Area=0.186 ac Runoff Depth=7.13"
Tc=10.0 min CN=90 Runoff=1.27 cfs 0.111 af

Subcatchment 13S: PDA-2 (HOME ONLY) Runoff Area=0.040 ac Runoff Depth=8.09"
Tc=10.0 min CN=98 Runoff=0.29 cfs 0.027 af

Subcatchment 14S: PDA-1 (HOME ONLY) Runoff Area=0.021 ac Runoff Depth=8.09"
Tc=10.0 min CN=98 Runoff=0.15 cfs 0.014 af

Subcatchment 15S: PDA-3 (HOME ONLY) Runoff Area=0.044 ac Runoff Depth=8.09"
Tc=10.0 min CN=98 Runoff=0.32 cfs 0.030 af

Pond 4P: PERVIOUS PAVEMENT (ROADWAY) Peak Elev=61.53' Storage=4,070 cf Inflow=5.05 cfs 0.444 af
Outflow=4.24 cfs 0.407 af

Pond 13P: Detention Tank 1 Peak Elev=66.28' Storage=617 cf Inflow=0.15 cfs 0.014 af
Outflow=0.00 cfs 0.000 af

Pond 14P: Detention Tank 3 Peak Elev=65.18' Storage=626 cf Inflow=0.32 cfs 0.030 af
Outflow=0.50 cfs 0.015 af

Pond 15P: Detention Tank 2 Peak Elev=66.47' Storage=626 cf Inflow=0.29 cfs 0.027 af
Outflow=0.38 cfs 0.013 af

62 GLEN AVE-PERVIOUS PAVEMENT_082824

Type III 24-hr 100 Year Rainfall=8.33"

Prepared by Daetel Engineering

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9/7/2024

Link 5L: WETLANDS - EXISTING

Inflow=5.31 cfs 0.460 af

Primary=5.31 cfs 0.460 af

Link 6L: WETLANDS - PROPOSED

Inflow=4.24 cfs 0.407 af

Primary=4.24 cfs 0.407 af

Total Runoff Area = 1.560 ac Runoff Volume = 0.948 af Average Runoff Depth = 7.29"
73.97% Pervious Area = 1.154 ac 26.03% Impervious Area = 0.406 ac

Subcatchment 1S: EDA 4

Runoff = 1.01 cfs @ 12.13 hrs, Volume= 0.088 af, Depth= 7.01"

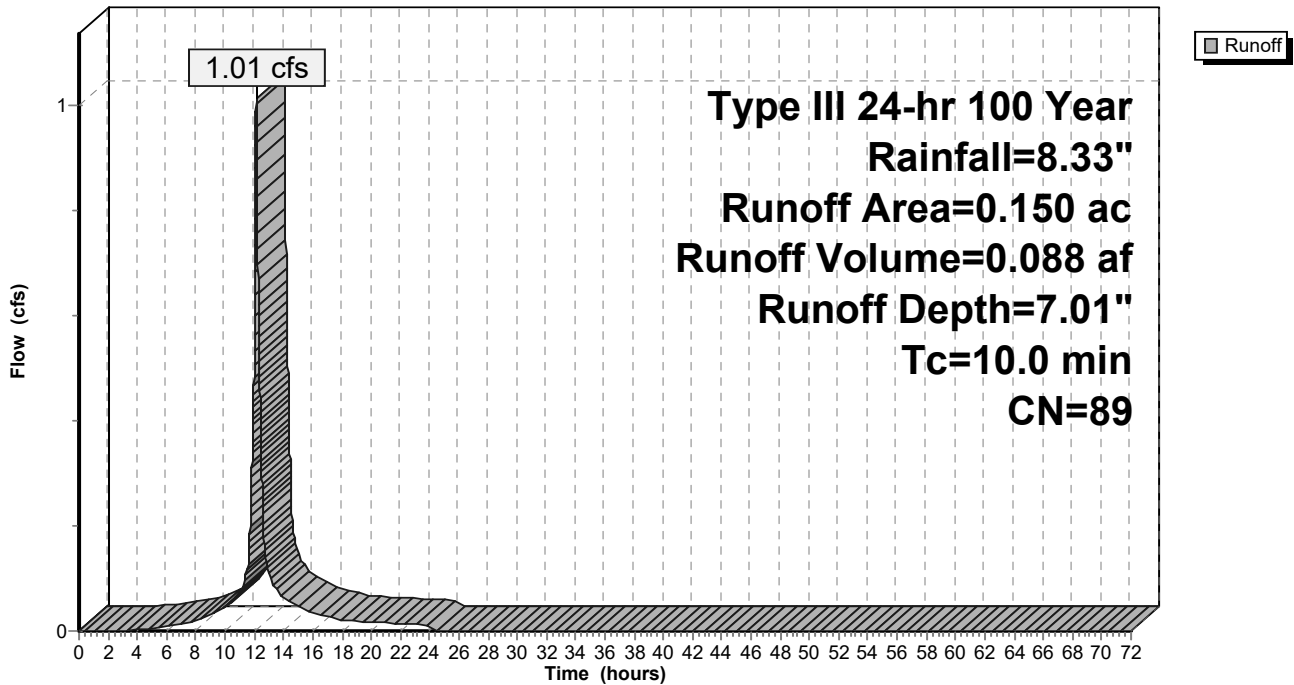
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.150	89	<50% Grass cover, Poor, HSG D
0.150		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 1S: EDA 4

Hydrograph



Subcatchment 2S: PDA - 4

Runoff = 1.08 cfs @ 12.13 hrs, Volume= 0.101 af, Depth= 8.09"

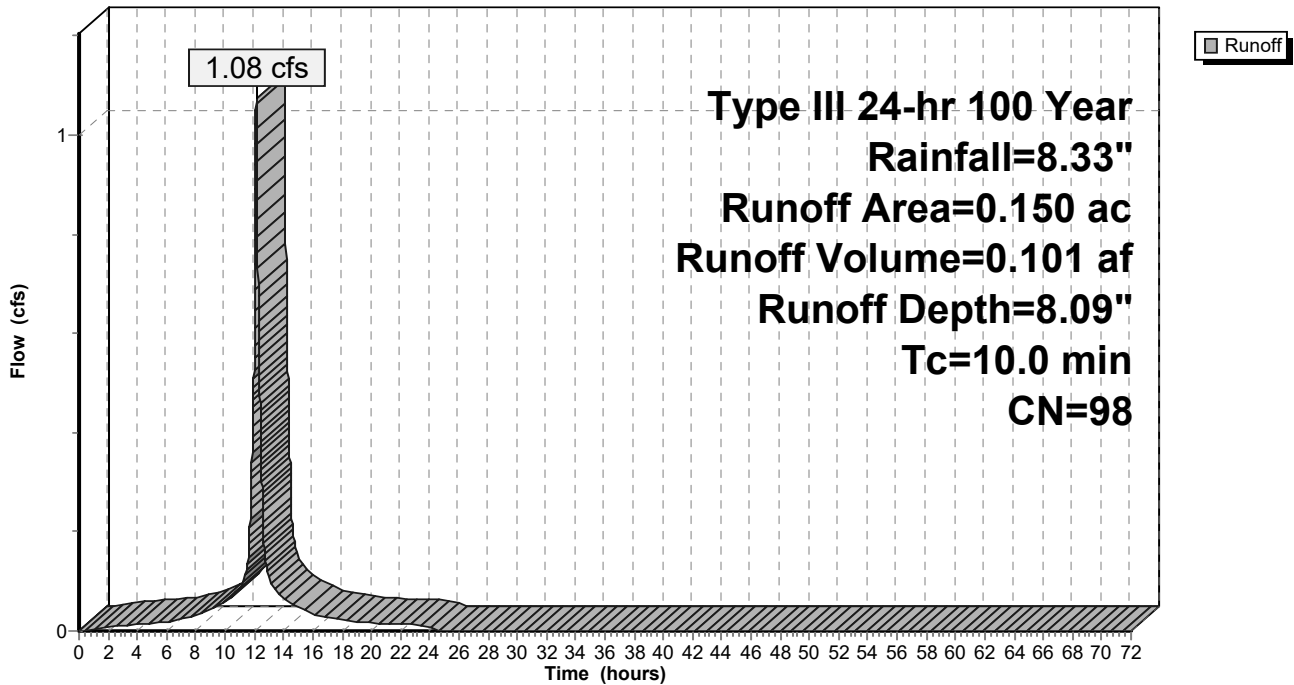
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.150	98	Paved parking & roofs
0.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 2S: PDA - 4

Hydrograph



Subcatchment 7S: EDA 1

Runoff = 1.59 cfs @ 12.13 hrs, Volume= 0.139 af, Depth= 7.25"

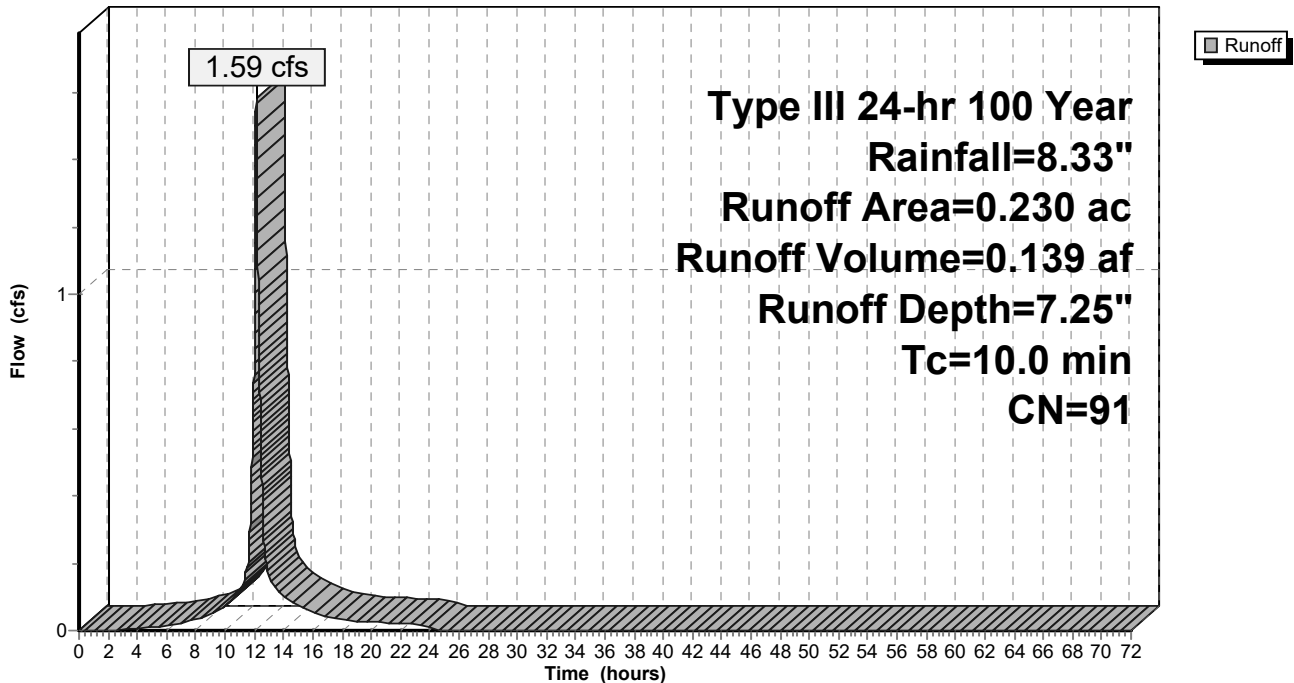
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.060	98	Paved parking & roofs
0.230	91	Weighted Average
0.170		Pervious Area
0.060		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7S: EDA 1

Hydrograph



Subcatchment 8S: EDA 2

Runoff = 1.15 cfs @ 12.13 hrs, Volume= 0.099 af, Depth= 7.01"

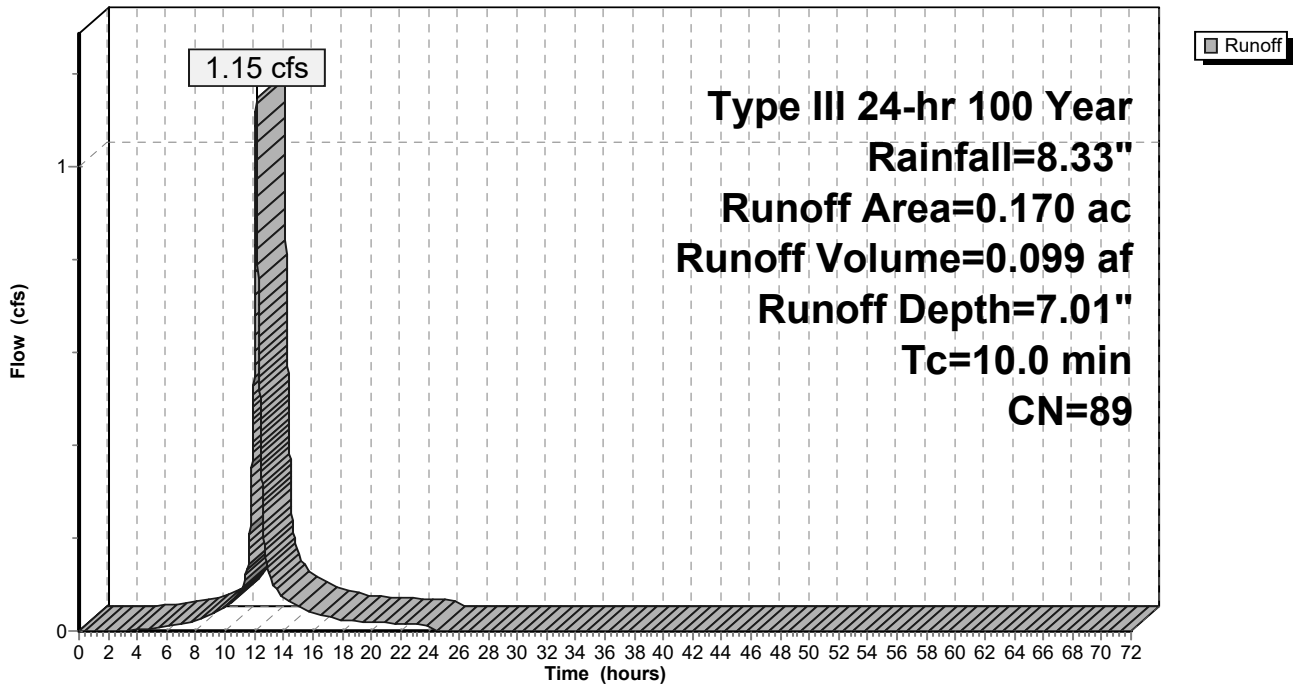
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.170		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8S: EDA 2

Hydrograph



Subcatchment 9S: EDA 3

Runoff = 1.56 cfs @ 12.13 hrs, Volume= 0.134 af, Depth= 7.01"

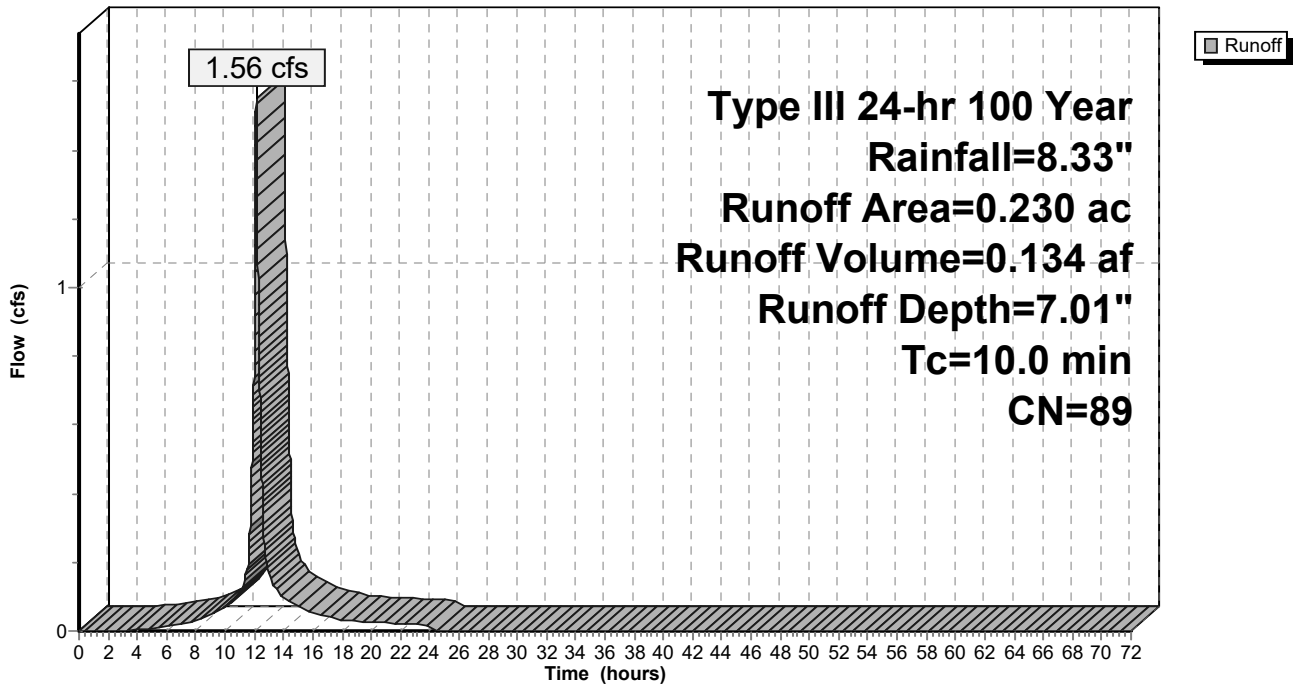
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.230	89	<50% Grass cover, Poor, HSG D
0.230		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 9S: EDA 3

Hydrograph



Subcatchment 10S: PDA - 1

Runoff = 1.44 cfs @ 12.13 hrs, Volume= 0.126 af, Depth= 7.25"

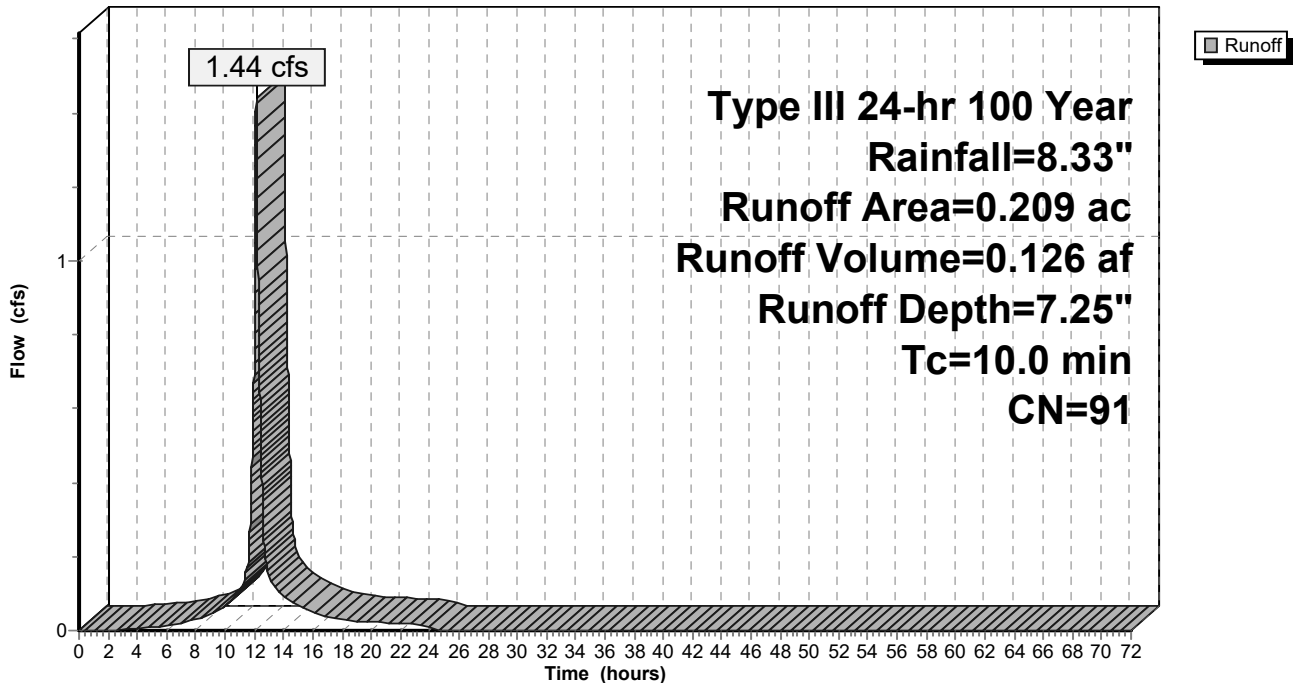
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.039	98	Paved parking & roofs
0.170	89	<50% Grass cover, Poor, HSG D
0.209	91	Weighted Average
0.170		Pervious Area
0.039		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 10S: PDA - 1

Hydrograph



Subcatchment 11S: PDA - 2

Runoff = 0.90 cfs @ 12.13 hrs, Volume= 0.079 af, Depth= 7.25"

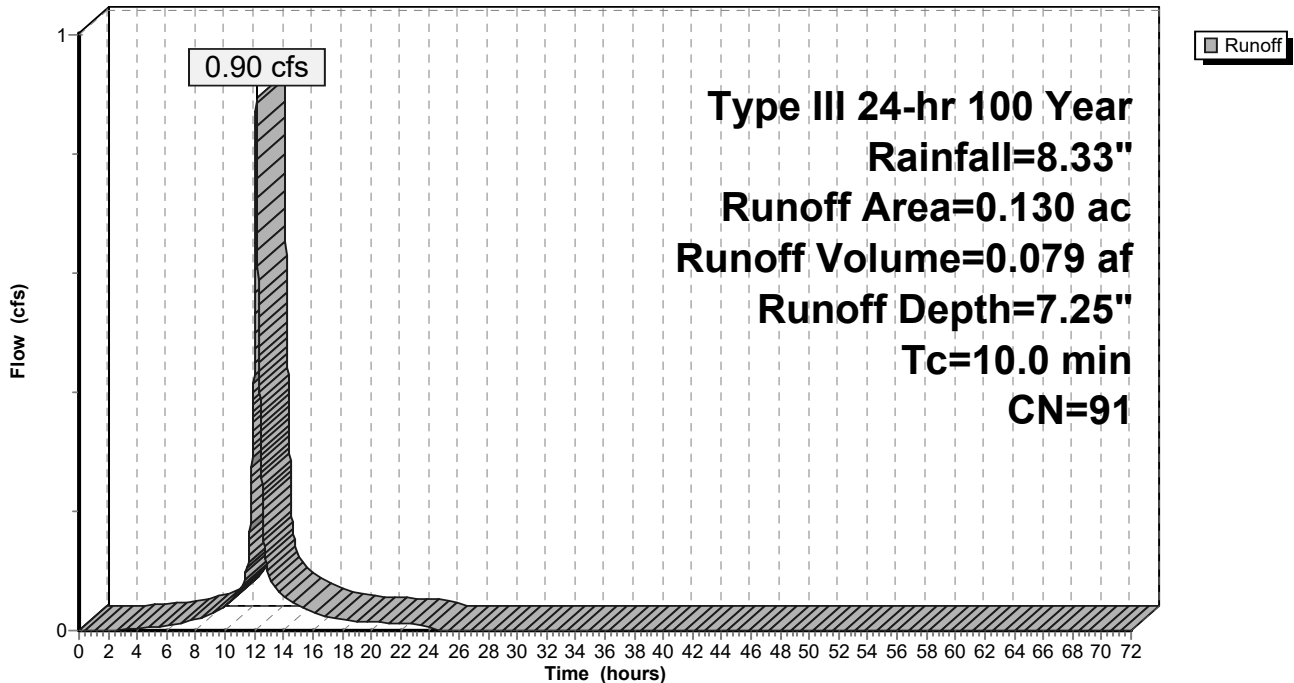
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.027	98	Paved parking & roofs
0.103	89	<50% Grass cover, Poor, HSG D
0.130	91	Weighted Average
0.103		Pervious Area
0.027		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11S: PDA - 2

Hydrograph



Subcatchment 12S: PDA -3

Runoff = 1.27 cfs @ 12.13 hrs, Volume= 0.111 af, Depth= 7.13"

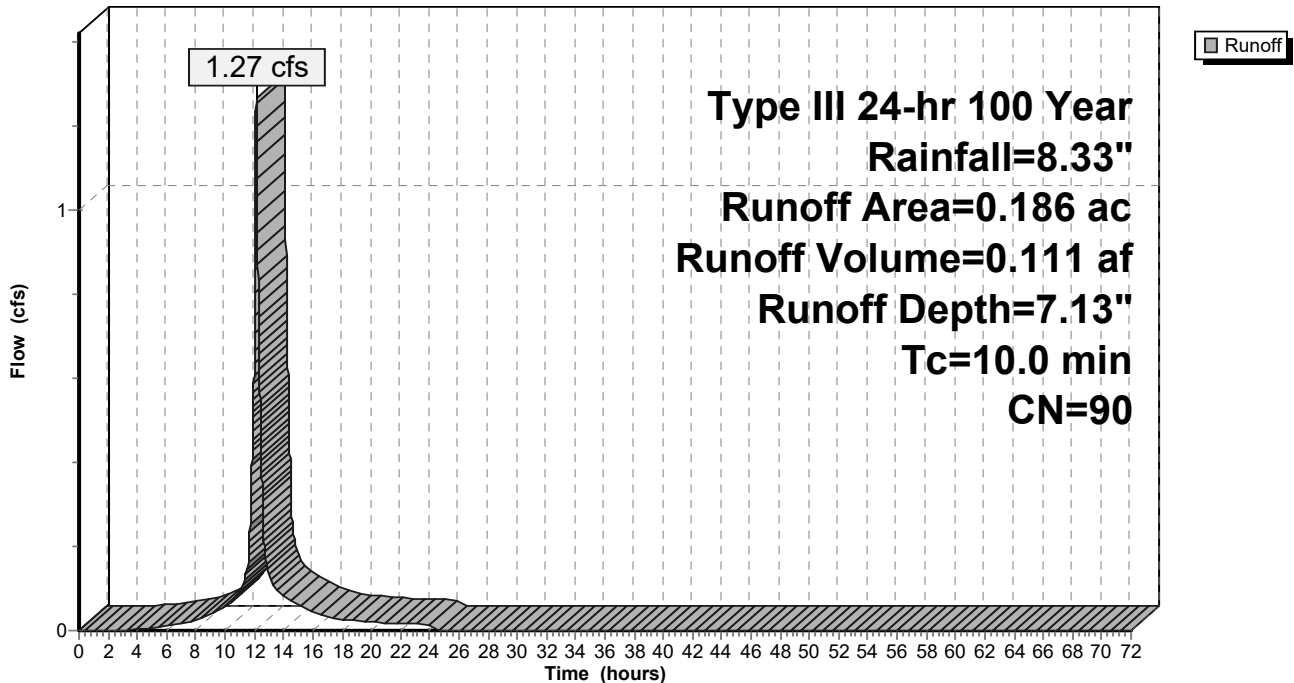
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.025	98	Paved parking & roofs
0.161	89	<50% Grass cover, Poor, HSG D
0.186	90	Weighted Average
0.161		Pervious Area
0.025		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 12S: PDA -3

Hydrograph



Subcatchment 13S: PDA-2 (HOME ONLY)

Runoff = 0.29 cfs @ 12.13 hrs, Volume= 0.027 af, Depth= 8.09"

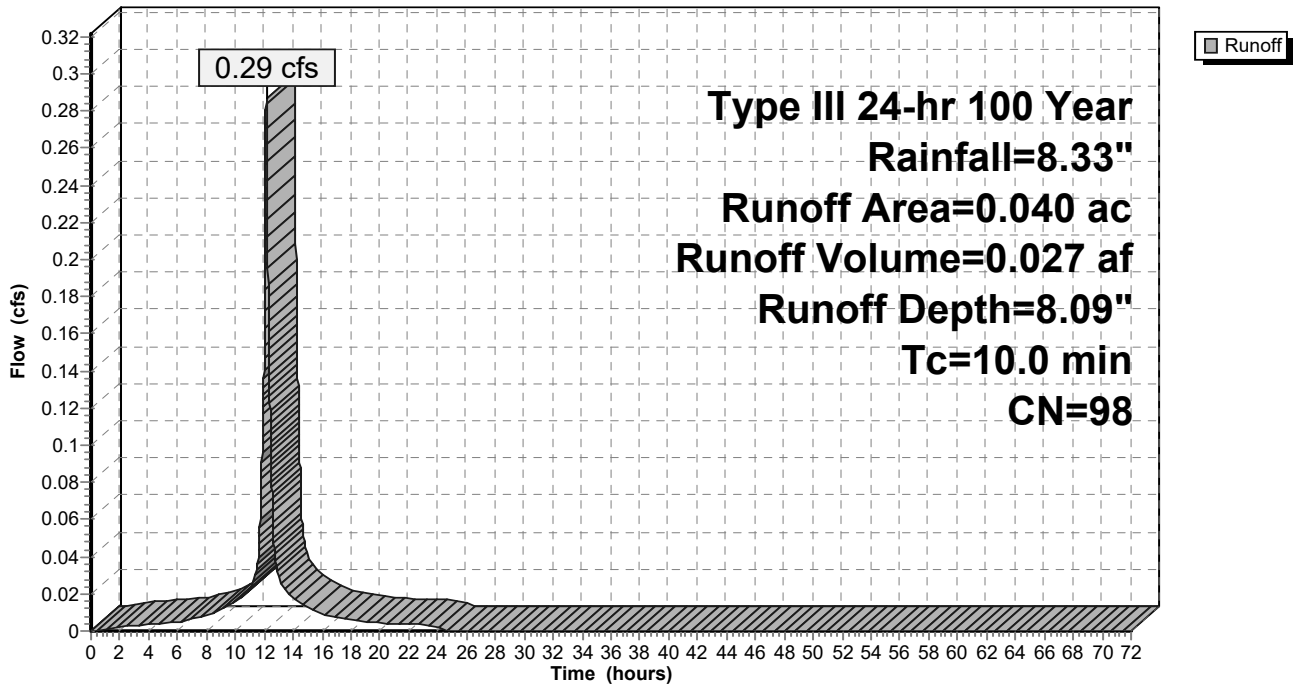
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.040	98	
0.040		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 13S: PDA-2 (HOME ONLY)

Hydrograph



Subcatchment 14S: PDA-1 (HOME ONLY)

Runoff = 0.15 cfs @ 12.13 hrs, Volume= 0.014 af, Depth= 8.09"

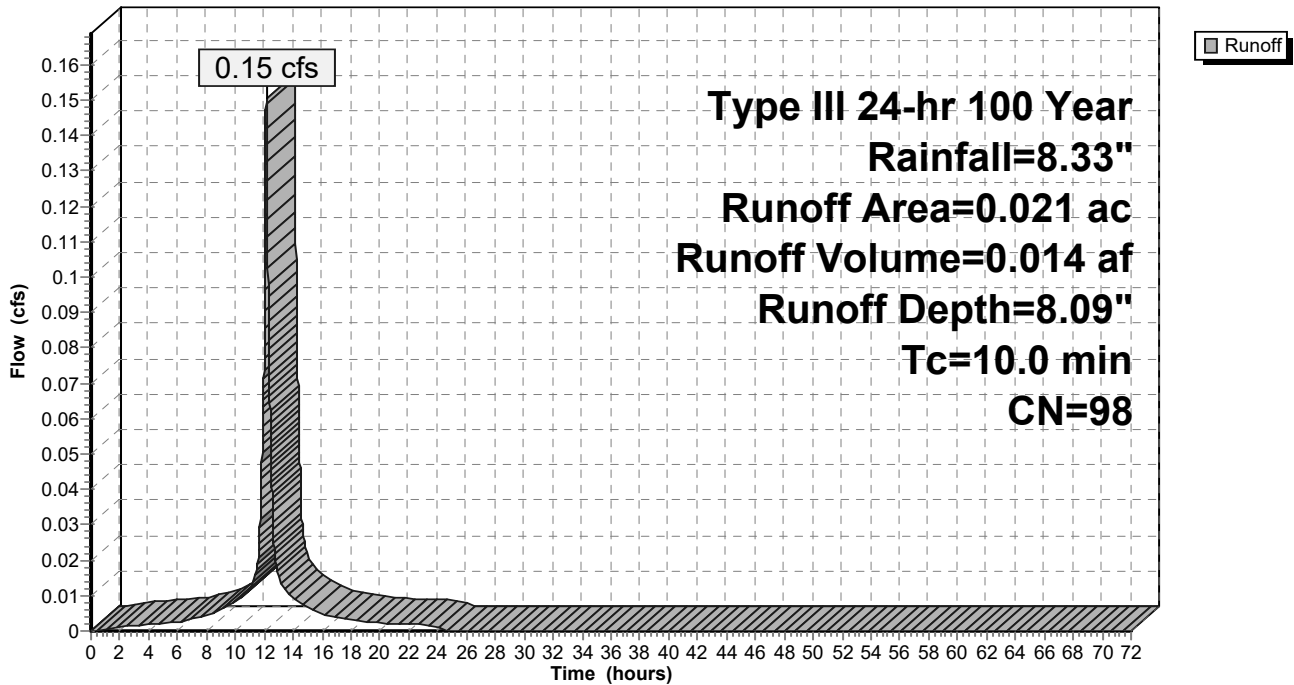
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.021	98	
0.021		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 14S: PDA-1 (HOME ONLY)

Hydrograph



Subcatchment 15S: PDA-3 (HOME ONLY)

Runoff = 0.32 cfs @ 12.13 hrs, Volume= 0.030 af, Depth= 8.09"

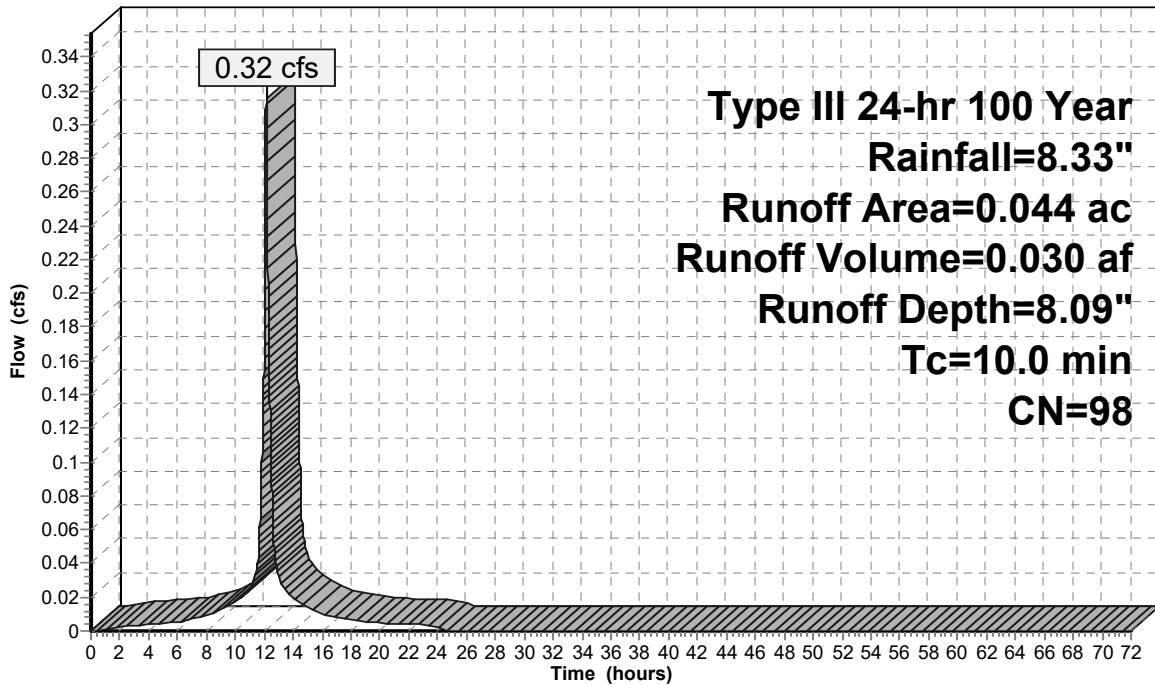
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 Year Rainfall=8.33"

Area (ac)	CN	Description
0.044	98	
0.044		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 15S: PDA-3 (HOME ONLY)

Hydrograph



Pond 4P: PERVIOUS PAVEMENT (ROADWAY)

Inflow Area = 0.780 ac, Inflow Depth = 6.84" for 100 Year event
 Inflow = 5.05 cfs @ 12.16 hrs, Volume= 0.444 af
 Outflow = 4.24 cfs @ 12.20 hrs, Volume= 0.407 af, Atten= 16%, Lag= 2.6 min
 Primary = 4.24 cfs @ 12.20 hrs, Volume= 0.407 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 61.53' @ 12.20 hrs Surf.Area= 6,254 sf Storage= 4,070 cf

Plug-Flow detention time= 112.0 min calculated for 0.407 af (92% of inflow)
 Center-of-Mass det. time= 68.2 min (843.8 - 775.6)

Volume	Invert	Avail.Storage	Storage Description
#1	59.90'	5,003 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 12,508 cf Overall x 40.0% Voids

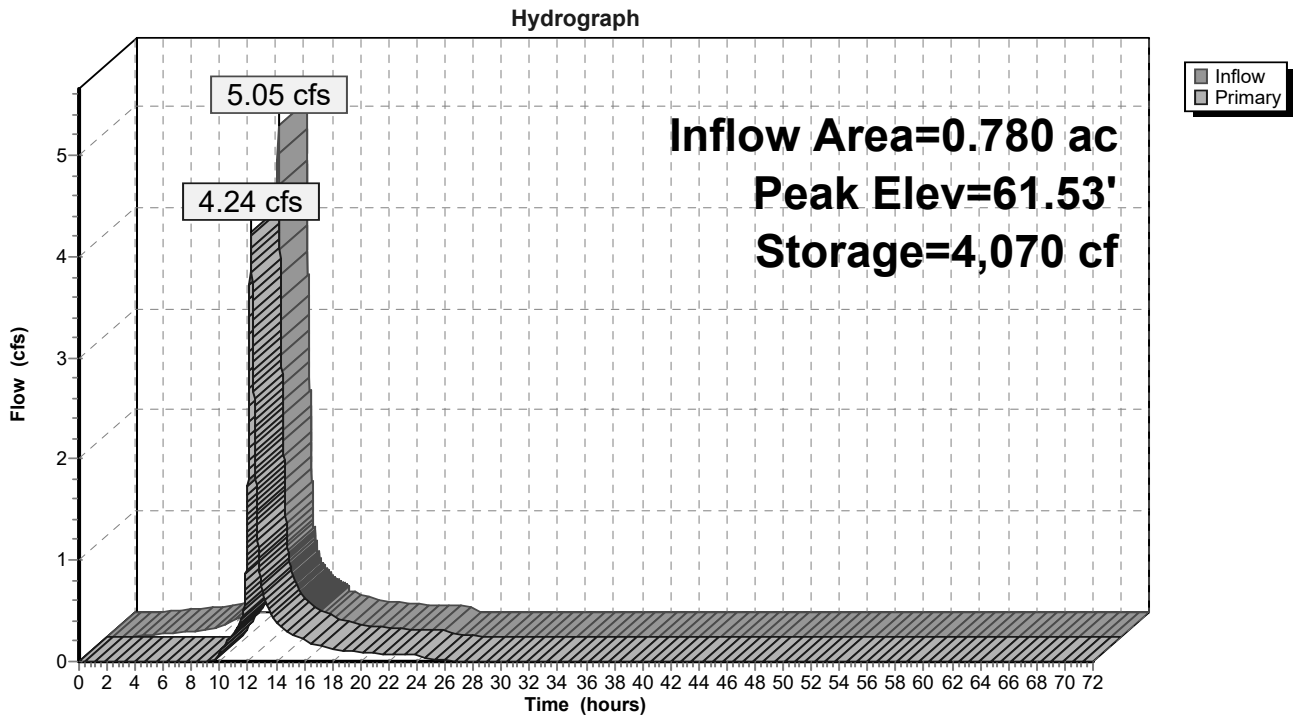
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.90	6,254	0	0
61.90	6,254	12,508	12,508

Device	Routing	Invert	Outlet Devices
#1	Device 3	60.55'	8.0" Vert. Orifice/Grate C= 0.600
#2	Device 3	61.05'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Primary	59.90'	15.0" x 5.0' long Culvert RCP, rounded edge headwall, Ke= 0.100 Outlet Invert= 59.85' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean
#4	Device 3	61.55'	4.00' x 4.00' Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=4.24 cfs @ 12.20 hrs HW=61.53' TW=0.00' (Dynamic Tailwater)

- ↑ **3=Culvert** (Passes 4.24 cfs of 6.11 cfs potential flow)
- ↑ **1=Orifice/Grate** (Orifice Controls 1.35 cfs @ 3.86 fps)
- ↑ **2=Sharp-Crested Rectangular Weir** (Weir Controls 2.89 cfs @ 2.52 fps)
- ↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: PERVIOUS PAVEMENT (ROADWAY)



Pond 13P: Detention Tank 1

Inflow Area = 0.021 ac, Inflow Depth = 8.09" for 100 Year event
 Inflow = 0.15 cfs @ 12.13 hrs, Volume= 0.014 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 66.28' @ 24.57 hrs Surf.Area= 113 sf Storage= 617 cf

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

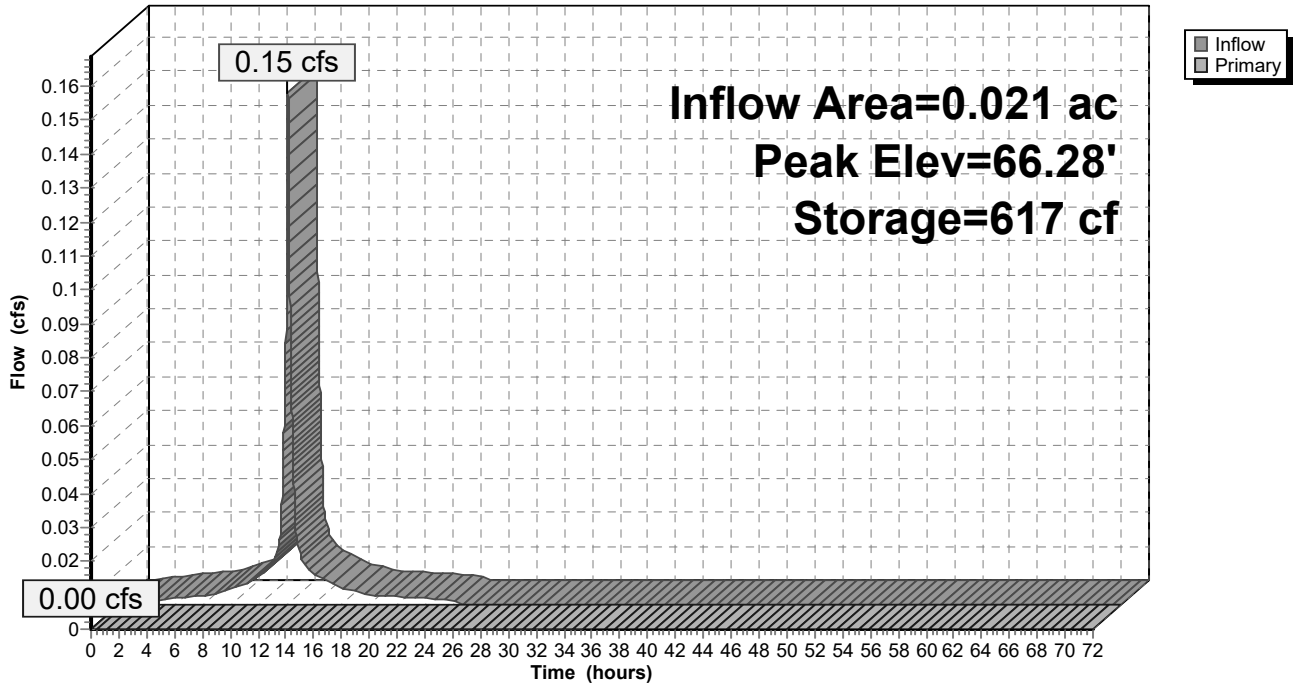
Volume	Invert	Avail.Storage	Storage Description
#1	58.40'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	57.90'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=57.90' TW=59.90' (Dynamic Tailwater)
 1=Orifice/Grate (Controls 0.00 cfs)

Pond 13P: Detention Tank 1

Hydrograph



Pond 14P: Detention Tank 3

[93] Warning: Storage range exceeded by 2.08'

[90] Warning: Qout>Qin may require Finer Routing or smaller dt

[87] Warning: Oscillations may require Finer Routing or smaller dt

Inflow Area = 0.044 ac, Inflow Depth = 8.09" for 100 Year event
 Inflow = 0.32 cfs @ 12.13 hrs, Volume= 0.030 af
 Outflow = 0.50 cfs @ 12.16 hrs, Volume= 0.015 af, Atten= 0%, Lag= 1.6 min
 Primary = 0.50 cfs @ 12.16 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 65.18' @ 12.16 hrs Surf.Area= 113 sf Storage= 626 cf

Plug-Flow detention time= 260.5 min calculated for 0.015 af (52% of inflow)
 Center-of-Mass det. time= 129.9 min (874.3 - 744.4)

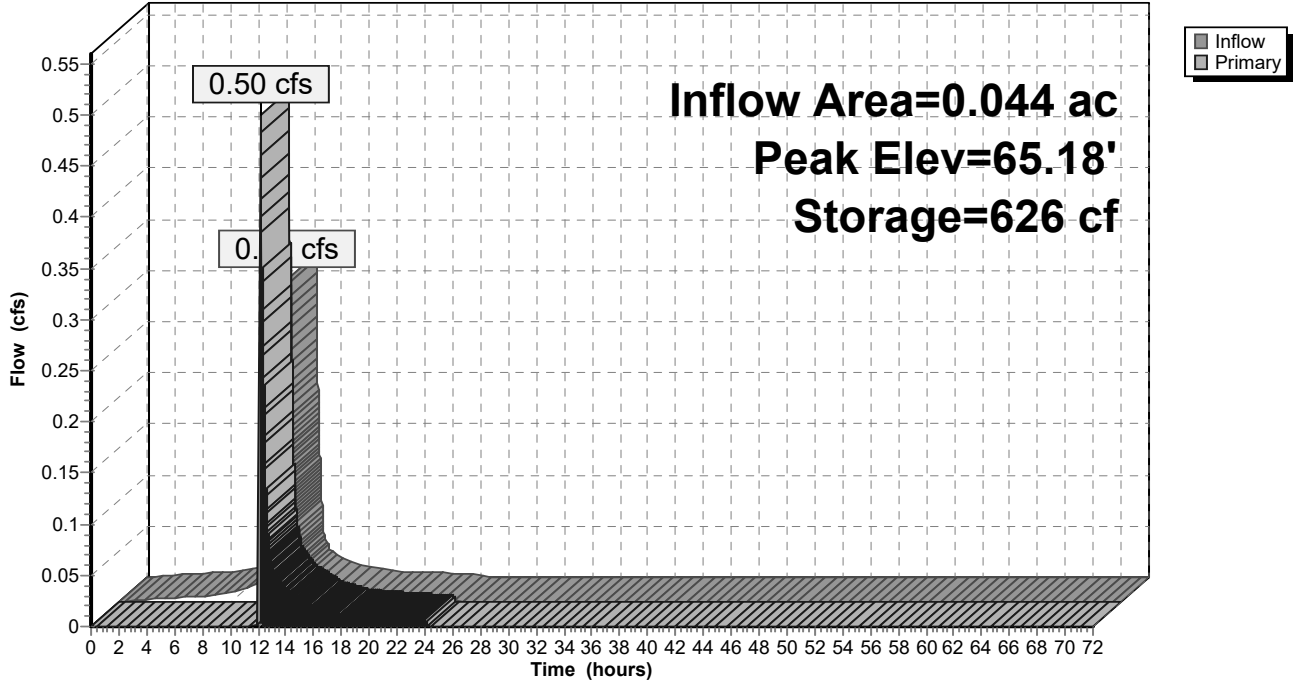
Volume	Invert	Avail.Storage	Storage Description
#1	55.10'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	54.60'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	65.10'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.50 cfs @ 12.16 hrs HW=65.18' TW=61.50' (Dynamic Tailwater)
 ↑1=Orifice/Grate (Weir Controls 0.50 cfs @ 0.95 fps)

Pond 14P: Detention Tank 3

Hydrograph



Pond 15P: Detention Tank 2

[93] Warning: Storage range exceeded by 2.17'

[90] Warning: Qout>Qin may require Finer Routing or smaller dt

[87] Warning: Oscillations may require Finer Routing or smaller dt

Inflow Area = 0.040 ac, Inflow Depth = 8.09" for 100 Year event
 Inflow = 0.29 cfs @ 12.13 hrs, Volume= 0.027 af
 Outflow = 0.38 cfs @ 12.22 hrs, Volume= 0.013 af, Atten= 0%, Lag= 5.2 min
 Primary = 0.38 cfs @ 12.22 hrs, Volume= 0.013 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 66.47' @ 12.22 hrs Surf.Area= 113 sf Storage= 626 cf

Plug-Flow detention time= 287.4 min calculated for 0.013 af (47% of inflow)
 Center-of-Mass det. time= 144.7 min (889.2 - 744.4)

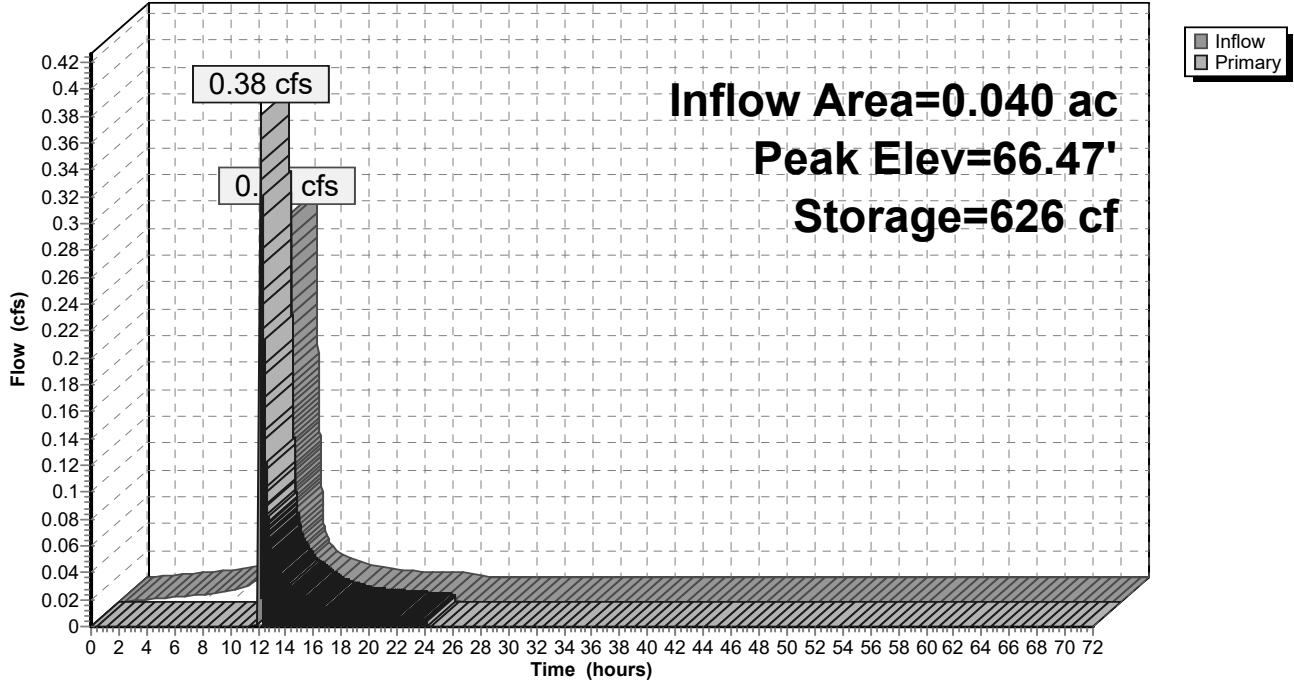
Volume	Invert	Avail.Storage	Storage Description
#1	56.30'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	55.80'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
		626 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	66.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.38 cfs @ 12.22 hrs HW=66.47' TW=61.53' (Dynamic Tailwater)
 ↑1=Orifice/Grate (Weir Controls 0.38 cfs @ 0.87 fps)

Pond 15P: Detention Tank 2

Hydrograph



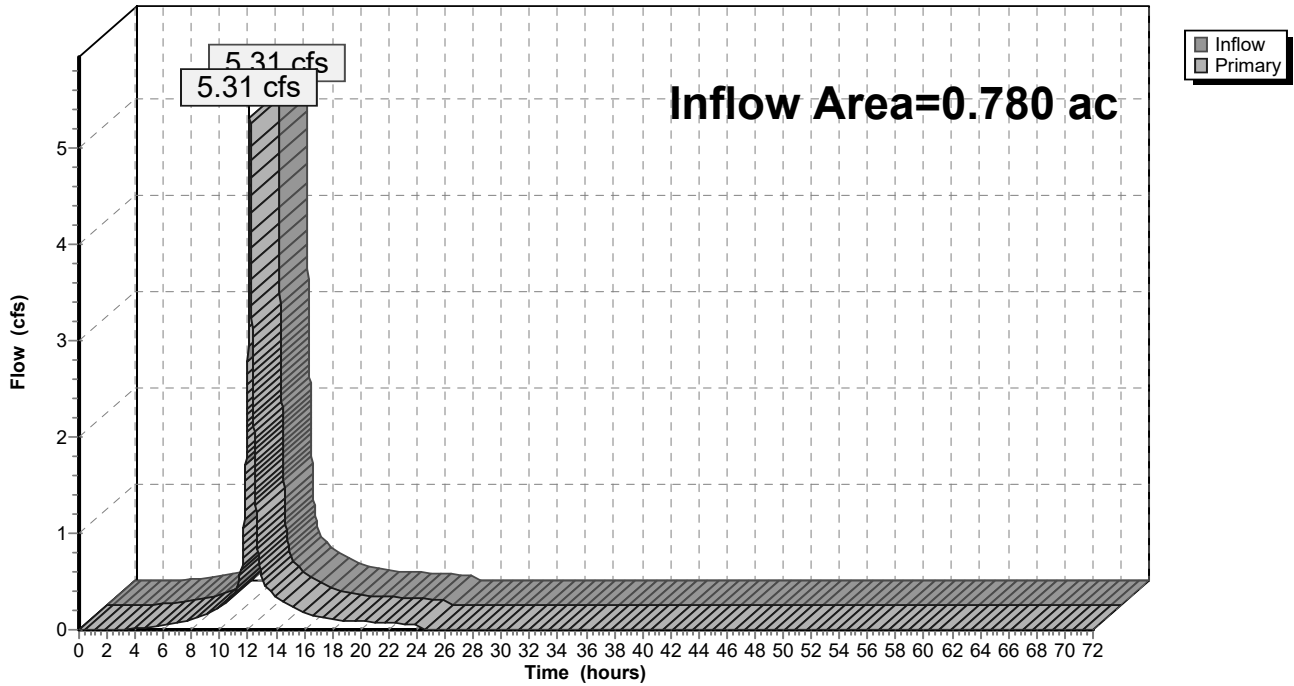
Link 5L: WETLANDS - EXISTING

Inflow Area = 0.780 ac, Inflow Depth = 7.08" for 100 Year event
Inflow = 5.31 cfs @ 12.13 hrs, Volume= 0.460 af
Primary = 5.31 cfs @ 12.13 hrs, Volume= 0.460 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 5L: WETLANDS - EXISTING

Hydrograph

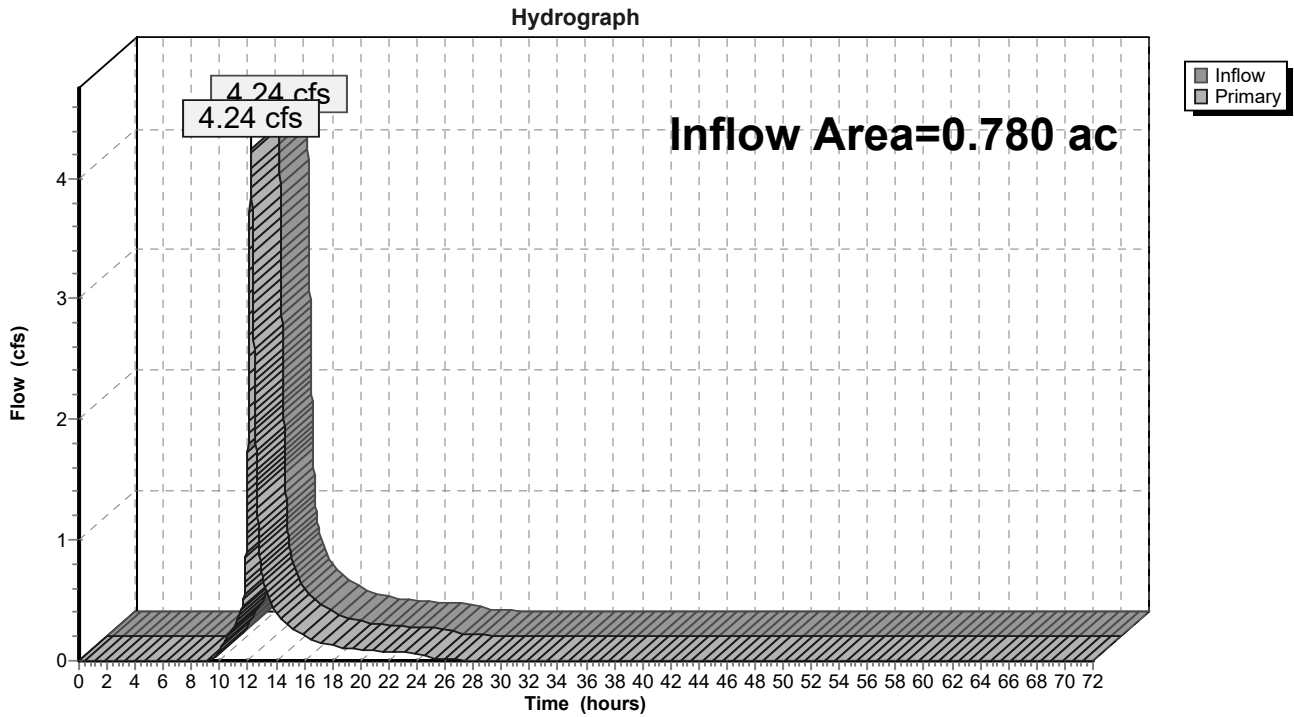


Link 6L: WETLANDS - PROPOSED

Inflow Area = 0.780 ac, Inflow Depth = 6.26" for 100 Year event
Inflow = 4.24 cfs @ 12.20 hrs, Volume= 0.407 af
Primary = 4.24 cfs @ 12.20 hrs, Volume= 0.407 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 6L: WETLANDS - PROPOSED



Water Quality Storm Event

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points x 9

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: EDA 4 Runoff Area=0.150 ac Runoff Depth=0.45"
Tc=10.0 min CN=89 Runoff=0.18 cfs 0.006 af

Subcatchment 2S: PDA - 4 Runoff Area=0.150 ac Runoff Depth=1.03"
Tc=10.0 min CN=98 Runoff=0.39 cfs 0.013 af

Subcatchment 7S: EDA 1 Runoff Area=0.230 ac Runoff Depth=0.54"
Tc=10.0 min CN=91 Runoff=0.33 cfs 0.010 af

Subcatchment 8S: EDA 2 Runoff Area=0.170 ac Runoff Depth=0.45"
Tc=10.0 min CN=89 Runoff=0.20 cfs 0.006 af

Subcatchment 9S: EDA 3 Runoff Area=0.230 ac Runoff Depth=0.45"
Tc=10.0 min CN=89 Runoff=0.27 cfs 0.009 af

Subcatchment 10S: PDA - 1 Runoff Area=0.209 ac Runoff Depth=0.54"
Tc=10.0 min CN=91 Runoff=0.30 cfs 0.009 af

Subcatchment 11S: PDA - 2 Runoff Area=0.130 ac Runoff Depth=0.54"
Tc=10.0 min CN=91 Runoff=0.19 cfs 0.006 af

Subcatchment 12S: PDA -3 Runoff Area=0.186 ac Runoff Depth=0.49"
Tc=10.0 min CN=90 Runoff=0.24 cfs 0.008 af

Subcatchment 13S: PDA-2 (HOME ONLY) Runoff Area=0.040 ac Runoff Depth=1.03"
Tc=10.0 min CN=98 Runoff=0.10 cfs 0.003 af

Subcatchment 14S: PDA-1 (HOME ONLY) Runoff Area=0.021 ac Runoff Depth=1.03"
Tc=10.0 min CN=98 Runoff=0.05 cfs 0.002 af

Subcatchment 15S: PDA-3 (HOME ONLY) Runoff Area=0.044 ac Runoff Depth=1.03"
Tc=10.0 min CN=98 Runoff=0.11 cfs 0.004 af

Pond 4P: PERVIOUS PAVEMENT (ROADWAY) Peak Elev=60.53' Storage=1,564 cf Inflow=1.12 cfs 0.036 af
Outflow=0.00 cfs 0.000 af

Pond 13P: Detention Tank 1 Peak Elev=59.15' Storage=79 cf Inflow=0.05 cfs 0.002 af
Outflow=0.00 cfs 0.000 af

Pond 14P: Detention Tank 3 Peak Elev=56.99' Storage=165 cf Inflow=0.11 cfs 0.004 af
Outflow=0.00 cfs 0.000 af

Pond 15P: Detention Tank 2 Peak Elev=57.99' Storage=150 cf Inflow=0.10 cfs 0.003 af
Outflow=0.00 cfs 0.000 af

62 GLEN AVE-PERVIOUS PAVEMENT_082824

NJ DEP 2-hr W.Q. Rainfall=1.25"

Prepared by Daetel Engineering

Page 90

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9/7/2024

Link 5L: WETLANDS - EXISTING

Inflow=0.99 cfs 0.031 af

Primary=0.99 cfs 0.031 af

Link 6L: WETLANDS - PROPOSED

Inflow=0.00 cfs 0.000 af

Primary=0.00 cfs 0.000 af

Total Runoff Area = 1.560 ac Runoff Volume = 0.076 af Average Runoff Depth = 0.58"
73.97% Pervious Area = 1.154 ac 26.03% Impervious Area = 0.406 ac

Subcatchment 1S: EDA 4

Runoff = 0.18 cfs @ 1.17 hrs, Volume= 0.006 af, Depth= 0.45"

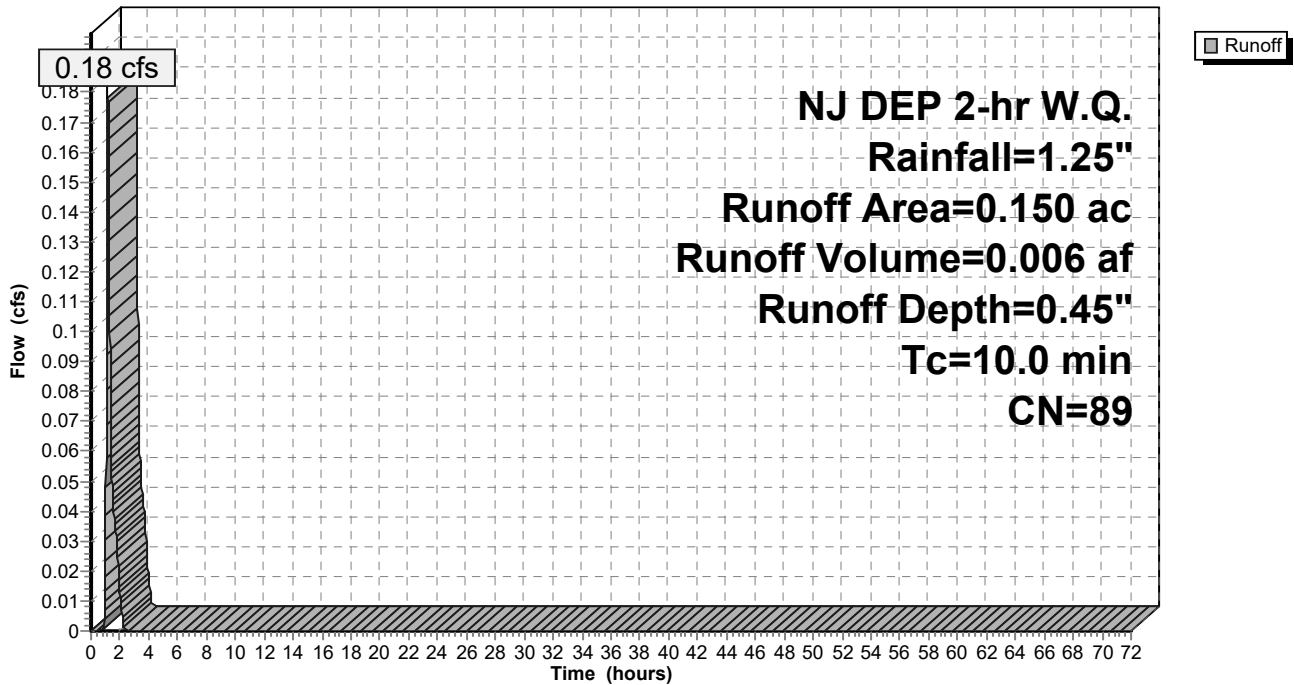
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.150	89	<50% Grass cover, Poor, HSG D
0.150		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 1S: EDA 4

Hydrograph



Subcatchment 2S: PDA - 4

Runoff = 0.39 cfs @ 1.15 hrs, Volume= 0.013 af, Depth= 1.03"

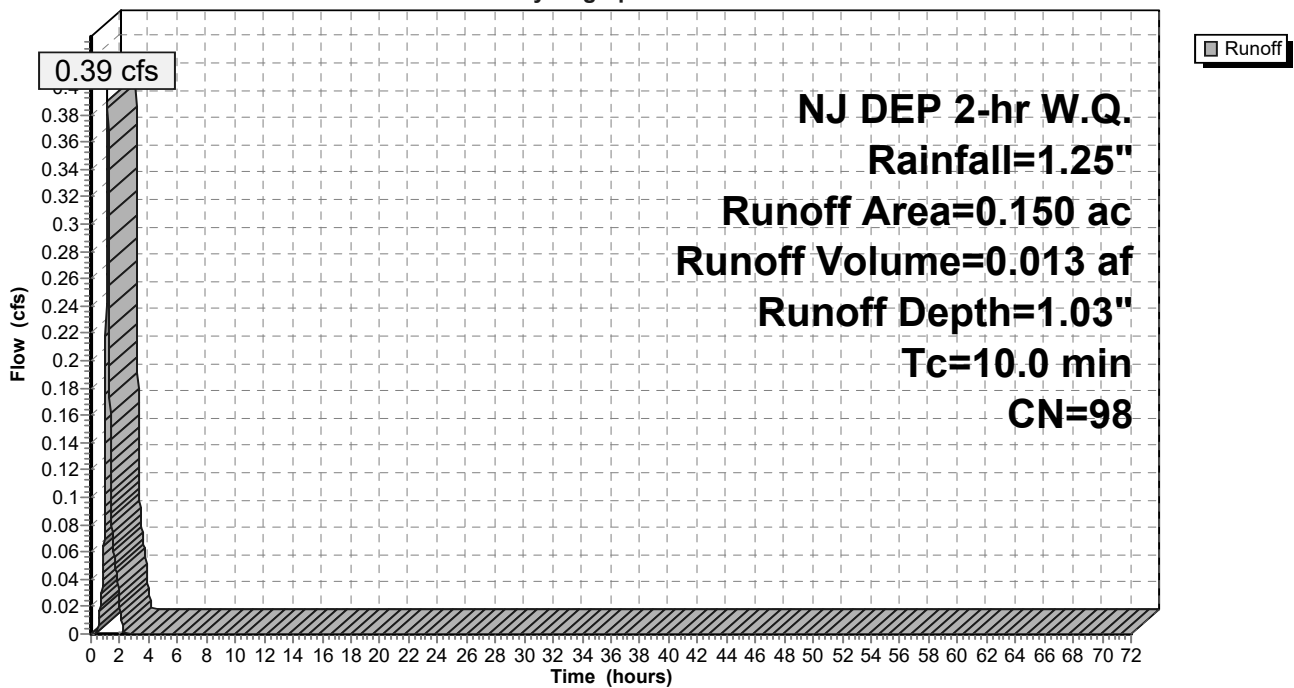
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.150	98	Paved parking & roofs
0.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 2S: PDA - 4

Hydrograph



Subcatchment 7S: EDA 1

Runoff = 0.33 cfs @ 1.17 hrs, Volume= 0.010 af, Depth= 0.54"

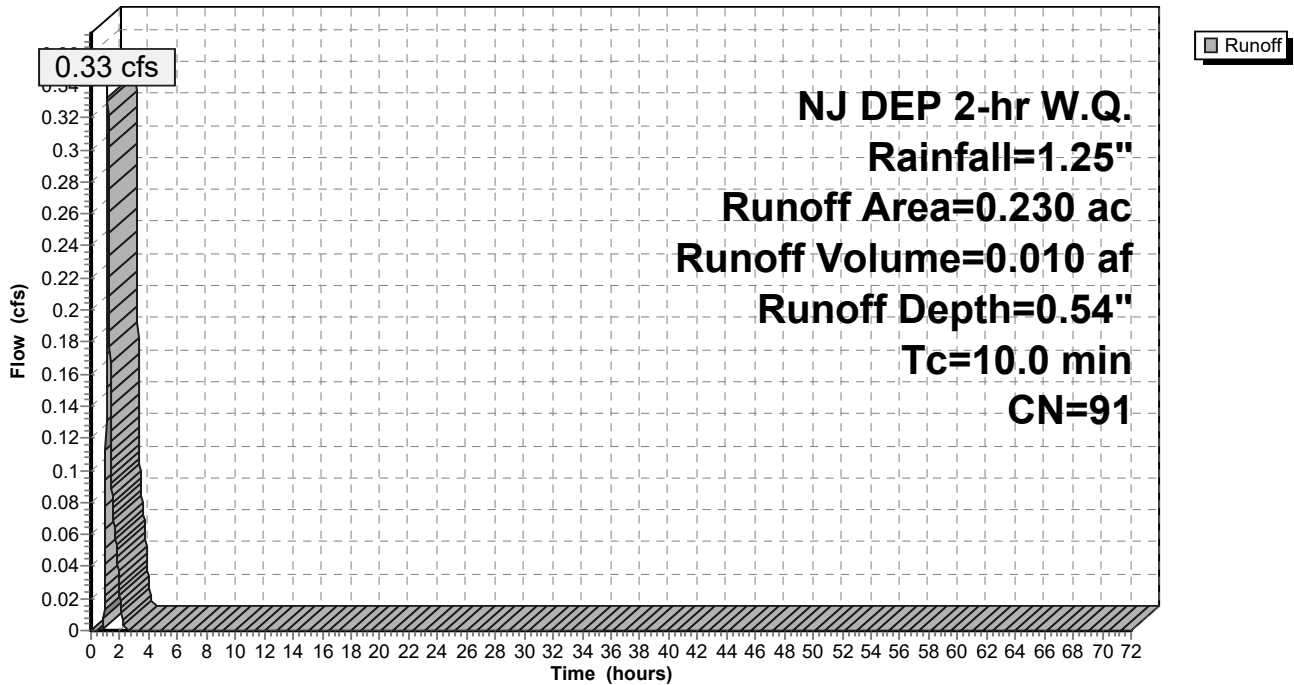
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.060	98	Paved parking & roofs
0.230	91	Weighted Average
0.170		Pervious Area
0.060		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 7S: EDA 1

Hydrograph



Subcatchment 8S: EDA 2

Runoff = 0.20 cfs @ 1.17 hrs, Volume= 0.006 af, Depth= 0.45"

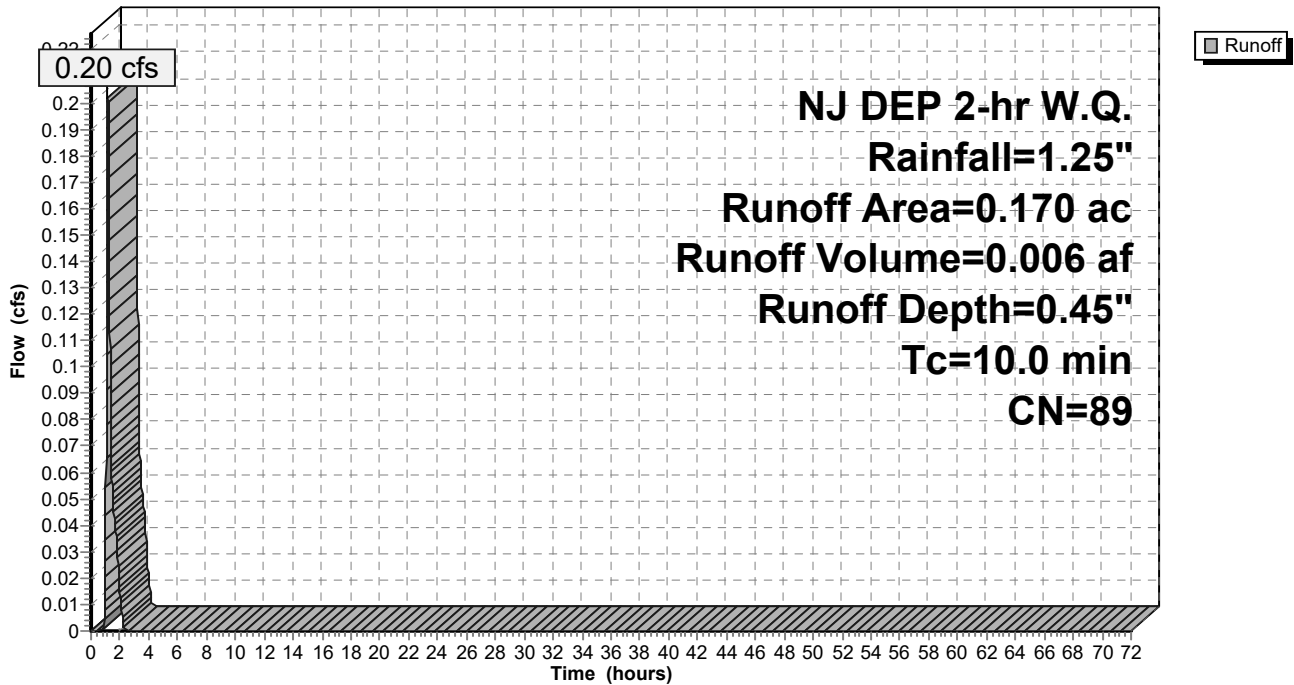
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.170	89	<50% Grass cover, Poor, HSG D
0.170		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8S: EDA 2

Hydrograph



Subcatchment 9S: EDA 3

Runoff = 0.27 cfs @ 1.17 hrs, Volume= 0.009 af, Depth= 0.45"

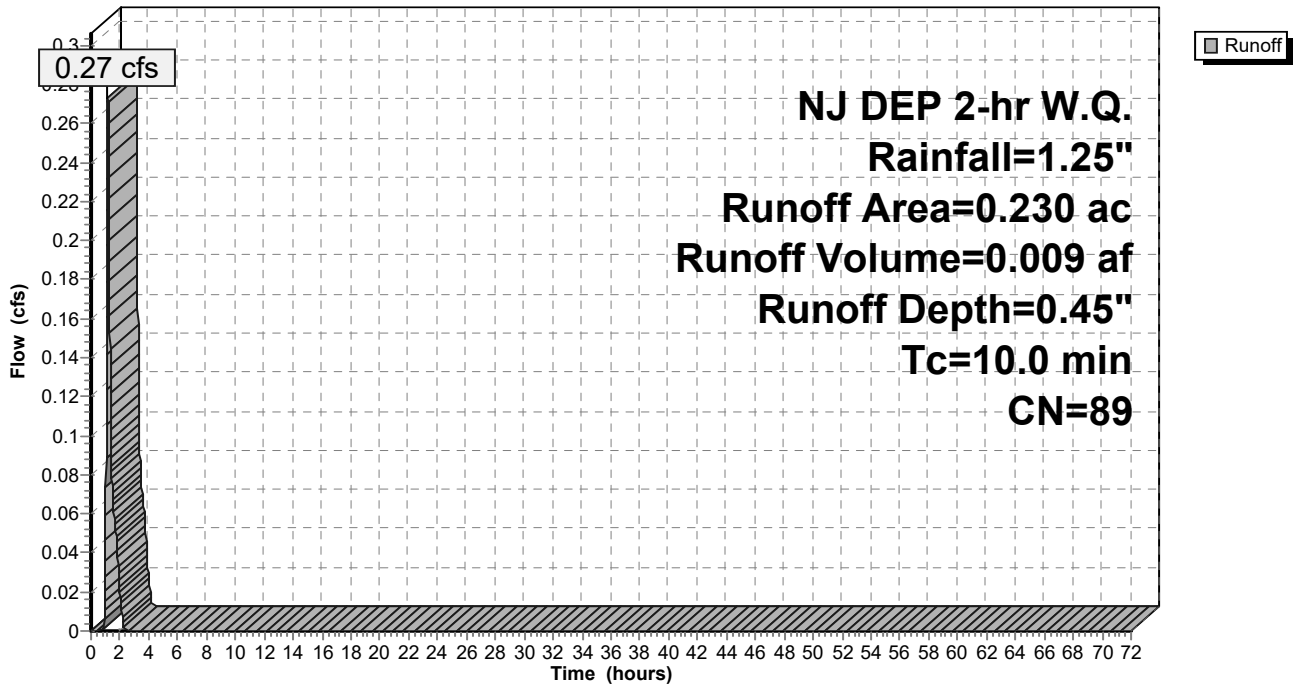
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.230	89	<50% Grass cover, Poor, HSG D
0.230		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 9S: EDA 3

Hydrograph



Subcatchment 10S: PDA - 1

Runoff = 0.30 cfs @ 1.17 hrs, Volume= 0.009 af, Depth= 0.54"

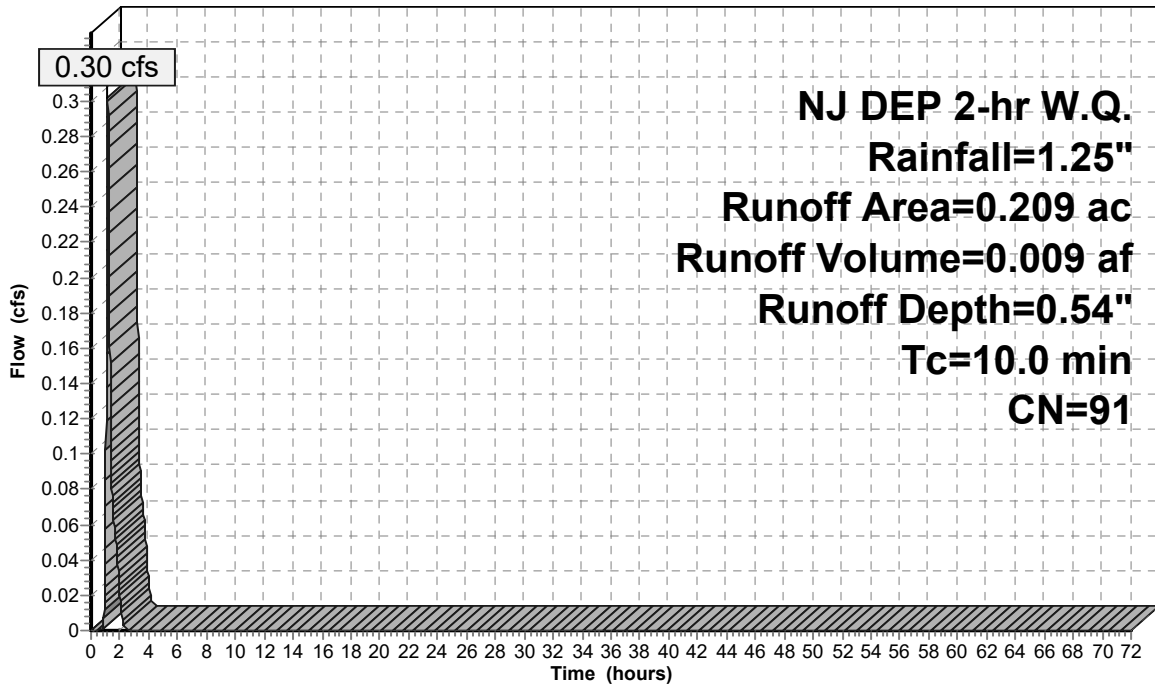
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.039	98	Paved parking & roofs
0.170	89	<50% Grass cover, Poor, HSG D
0.209	91	Weighted Average
0.170		Pervious Area
0.039		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 10S: PDA - 1

Hydrograph



Runoff

Subcatchment 11S: PDA - 2

Runoff = 0.19 cfs @ 1.17 hrs, Volume= 0.006 af, Depth= 0.54"

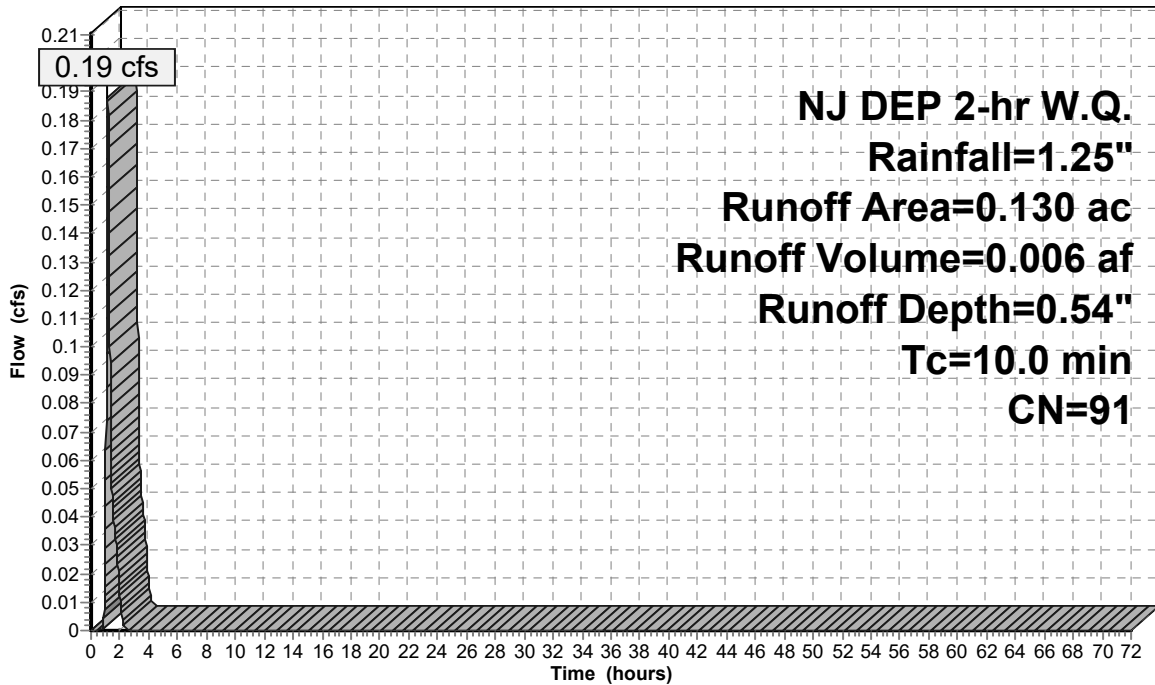
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.027	98	Paved parking & roofs
0.103	89	<50% Grass cover, Poor, HSG D
0.130	91	Weighted Average
0.103		Pervious Area
0.027		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11S: PDA - 2

Hydrograph



Runoff

Subcatchment 12S: PDA -3

Runoff = 0.24 cfs @ 1.17 hrs, Volume= 0.008 af, Depth= 0.49"

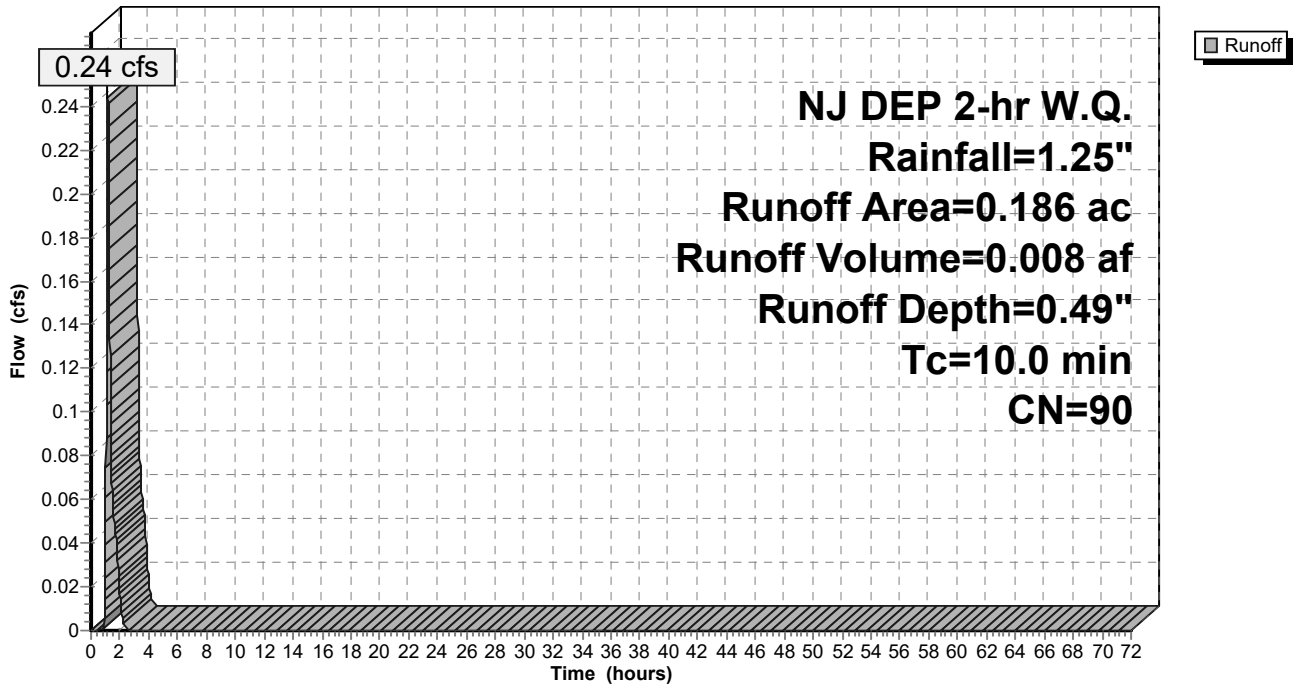
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.025	98	Paved parking & roofs
0.161	89	<50% Grass cover, Poor, HSG D
0.186	90	Weighted Average
0.161		Pervious Area
0.025		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 12S: PDA -3

Hydrograph



Subcatchment 13S: PDA-2 (HOME ONLY)

Runoff = 0.10 cfs @ 1.15 hrs, Volume= 0.003 af, Depth= 1.03"

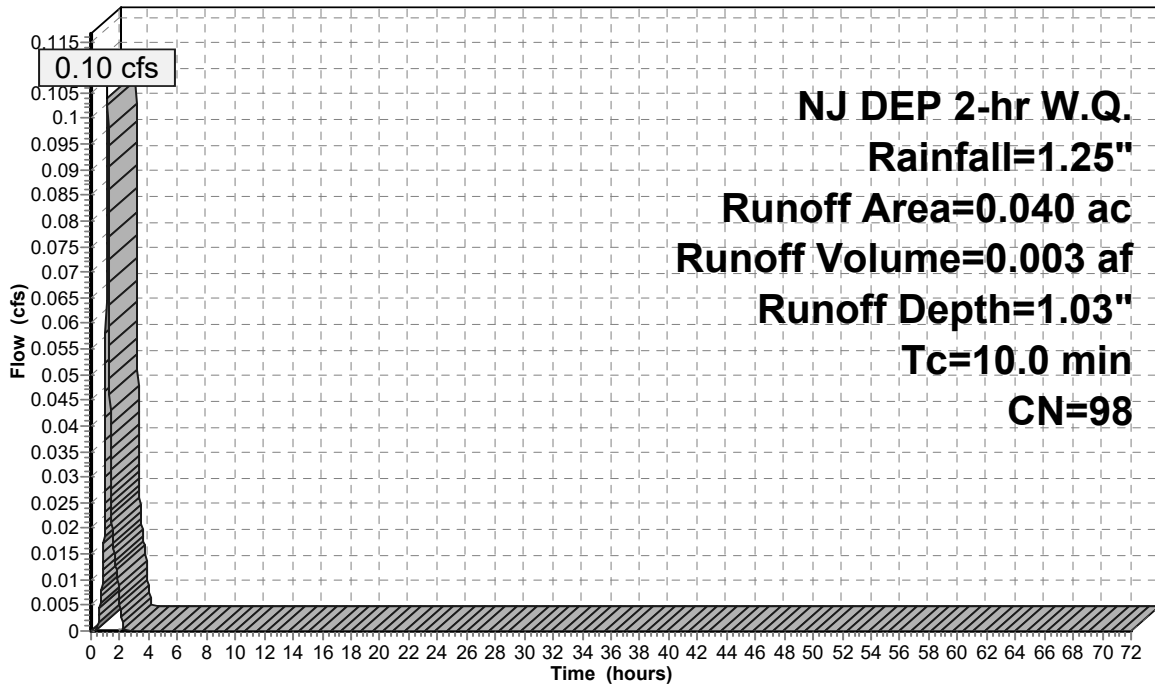
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.040	98	
0.040		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 13S: PDA-2 (HOME ONLY)

Hydrograph



Runoff

Subcatchment 14S: PDA-1 (HOME ONLY)

Runoff = 0.05 cfs @ 1.15 hrs, Volume= 0.002 af, Depth= 1.03"

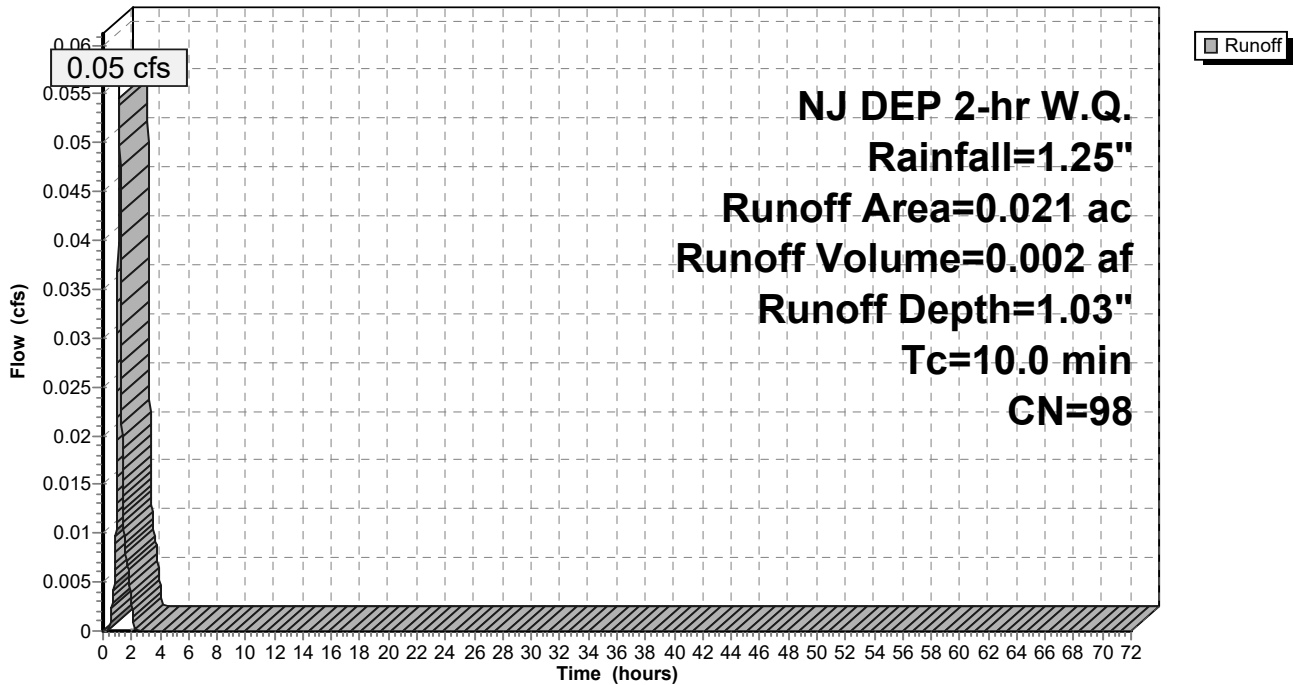
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.021	98	
0.021		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 14S: PDA-1 (HOME ONLY)

Hydrograph



Subcatchment 15S: PDA-3 (HOME ONLY)

Runoff = 0.11 cfs @ 1.15 hrs, Volume= 0.004 af, Depth= 1.03"

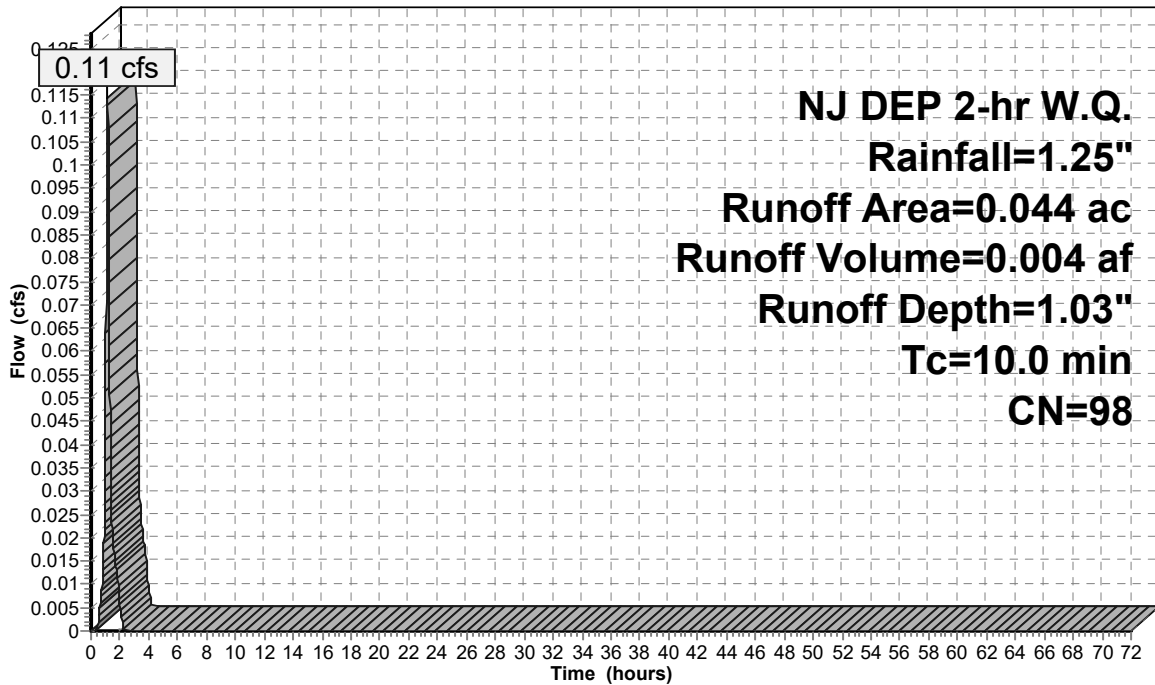
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NJ DEP 2-hr W.Q. Rainfall=1.25"

Area (ac)	CN	Description
0.044	98	
0.044		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 15S: PDA-3 (HOME ONLY)

Hydrograph



Runoff

Pond 4P: PERVIOUS PAVEMENT (ROADWAY)

Inflow Area = 0.780 ac, Inflow Depth = 0.55" for W.Q. event
 Inflow = 1.12 cfs @ 1.16 hrs, Volume= 0.036 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 60.53' @ 2.57 hrs Surf.Area= 6,254 sf Storage= 1,564 cf

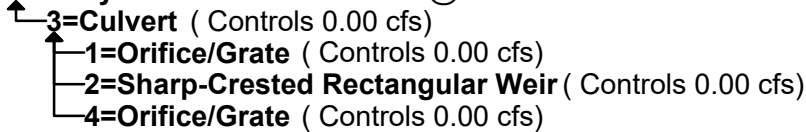
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	59.90'	5,003 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 12,508 cf Overall x 40.0% Voids

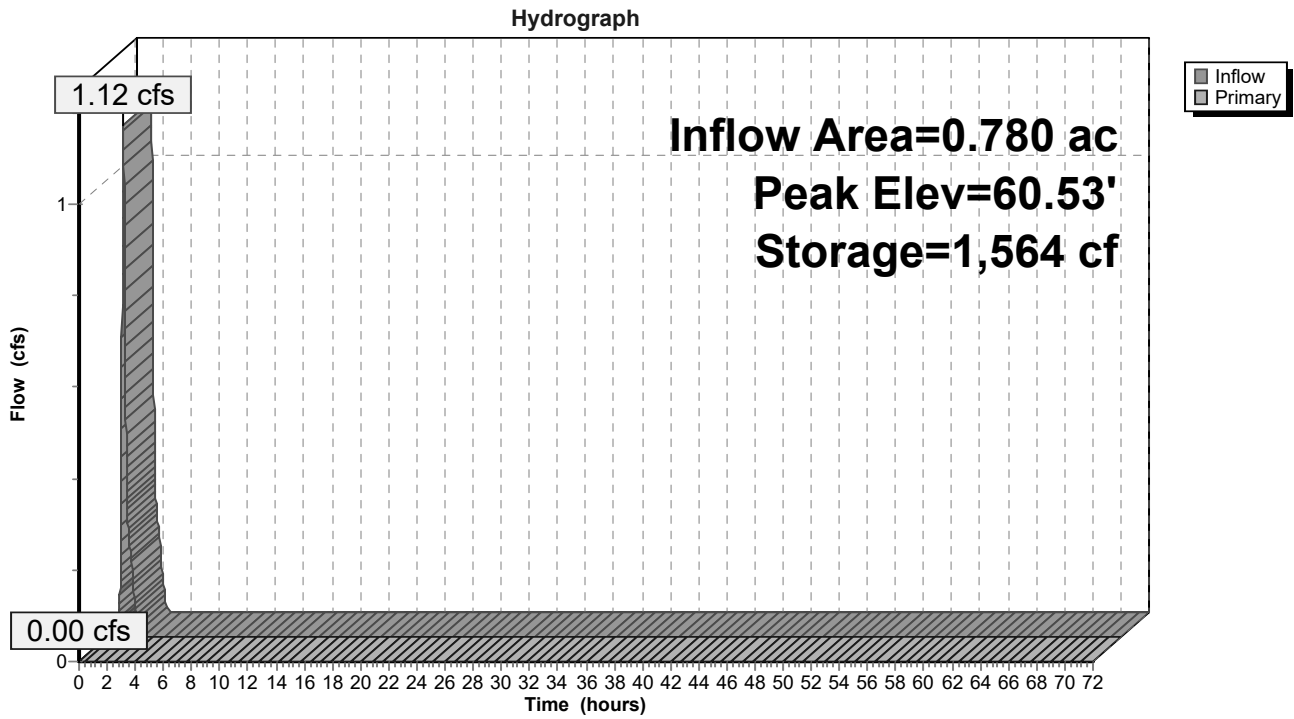
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.90	6,254	0	0
61.90	6,254	12,508	12,508

Device	Routing	Invert	Outlet Devices
#1	Device 3	60.55'	8.0" Vert. Orifice/Grate C= 0.600
#2	Device 3	61.05'	2.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Primary	59.90'	15.0" x 5.0' long Culvert RCP, rounded edge headwall, Ke= 0.100 Outlet Invert= 59.85' S= 0.0100 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean
#4	Device 3	61.55'	4.00' x 4.00' Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=59.90' TW=0.00' (Dynamic Tailwater)



Pond 4P: PERVIOUS PAVEMENT (ROADWAY)



Pond 13P: Detention Tank 1

Inflow Area = 0.021 ac, Inflow Depth = 1.03" for W.Q. event
 Inflow = 0.05 cfs @ 1.15 hrs, Volume= 0.002 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 59.15' @ 2.57 hrs Surf.Area= 113 sf Storage= 79 cf

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

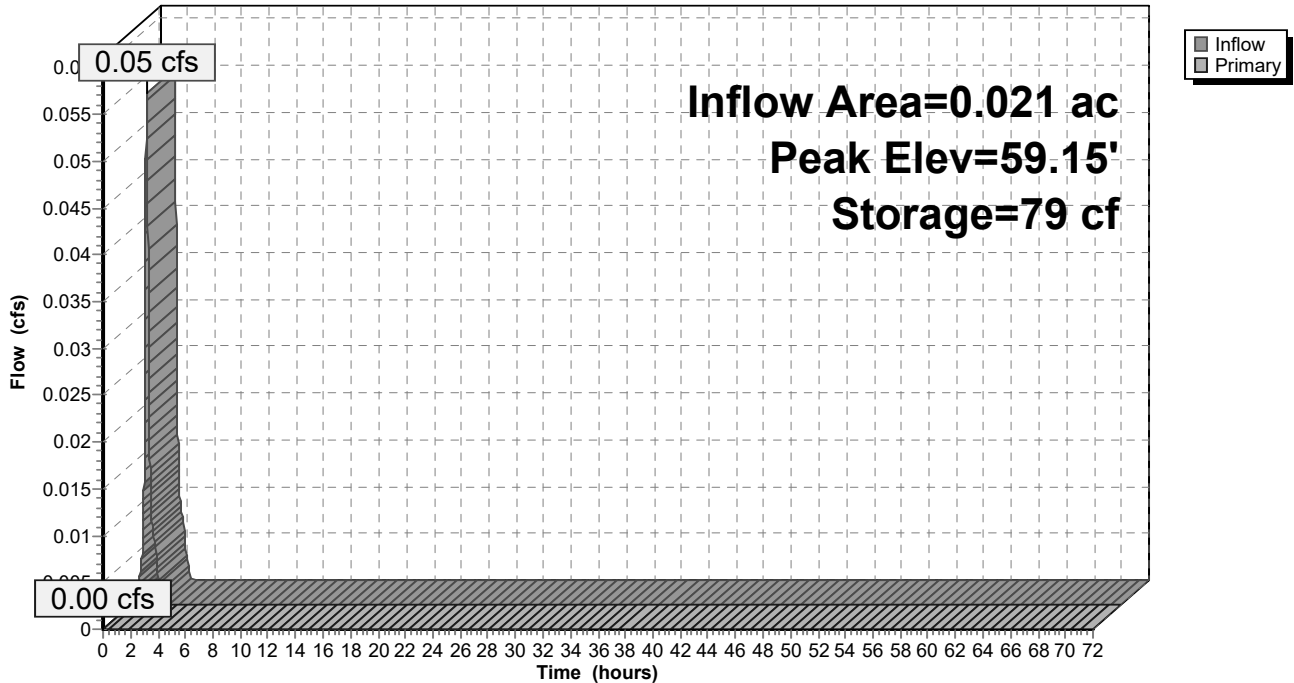
Volume	Invert	Avail.Storage	Storage Description
#1	58.40'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	57.90'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=57.90' TW=59.90' (Dynamic Tailwater)
 ←1=Orifice/Grate (Controls 0.00 cfs)

Pond 13P: Detention Tank 1

Hydrograph



Pond 14P: Detention Tank 3

Inflow Area = 0.044 ac, Inflow Depth = 1.03" for W.Q. event
 Inflow = 0.11 cfs @ 1.15 hrs, Volume= 0.004 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 56.99' @ 2.57 hrs Surf.Area= 113 sf Storage= 165 cf

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

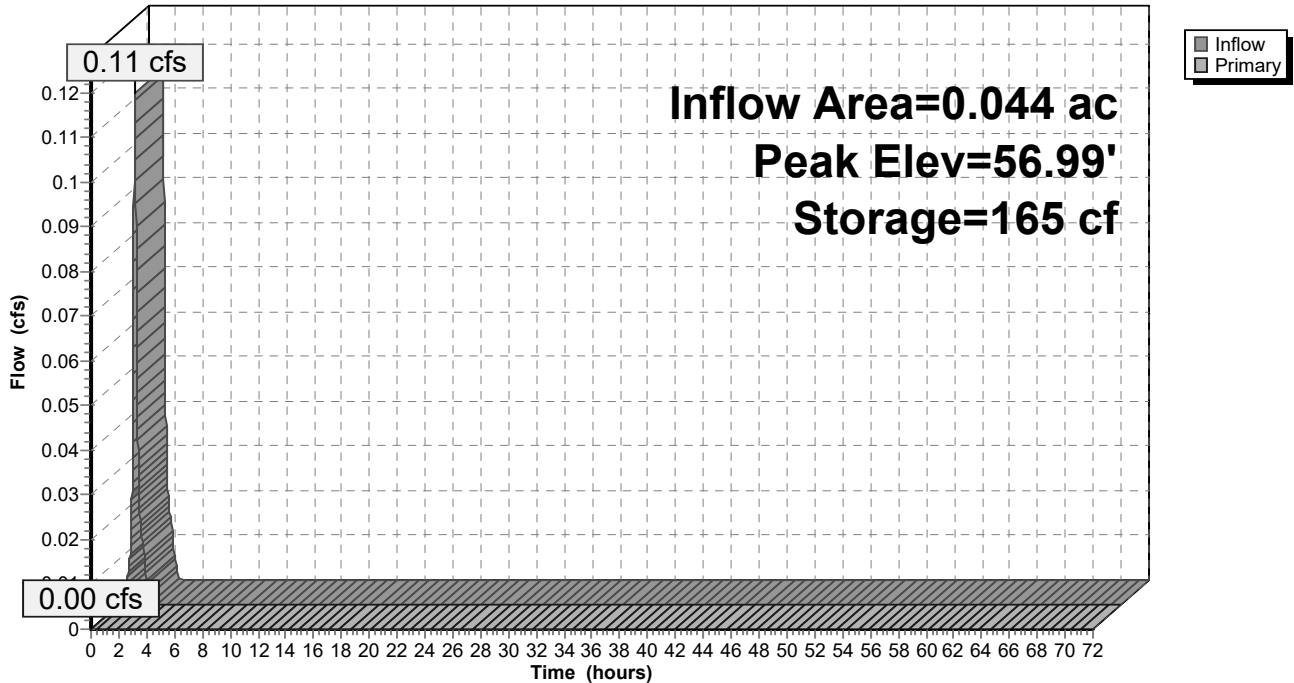
Volume	Invert	Avail.Storage	Storage Description
#1	55.10'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	54.60'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	65.10'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=54.60' TW=59.90' (Dynamic Tailwater)
 ←1=Orifice/Grate (Controls 0.00 cfs)

Pond 14P: Detention Tank 3

Hydrograph



Pond 15P: Detention Tank 2

Inflow Area = 0.040 ac, Inflow Depth = 1.03" for W.Q. event
 Inflow = 0.10 cfs @ 1.15 hrs, Volume= 0.003 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 9
 Peak Elev= 57.99' @ 2.57 hrs Surf.Area= 113 sf Storage= 150 cf

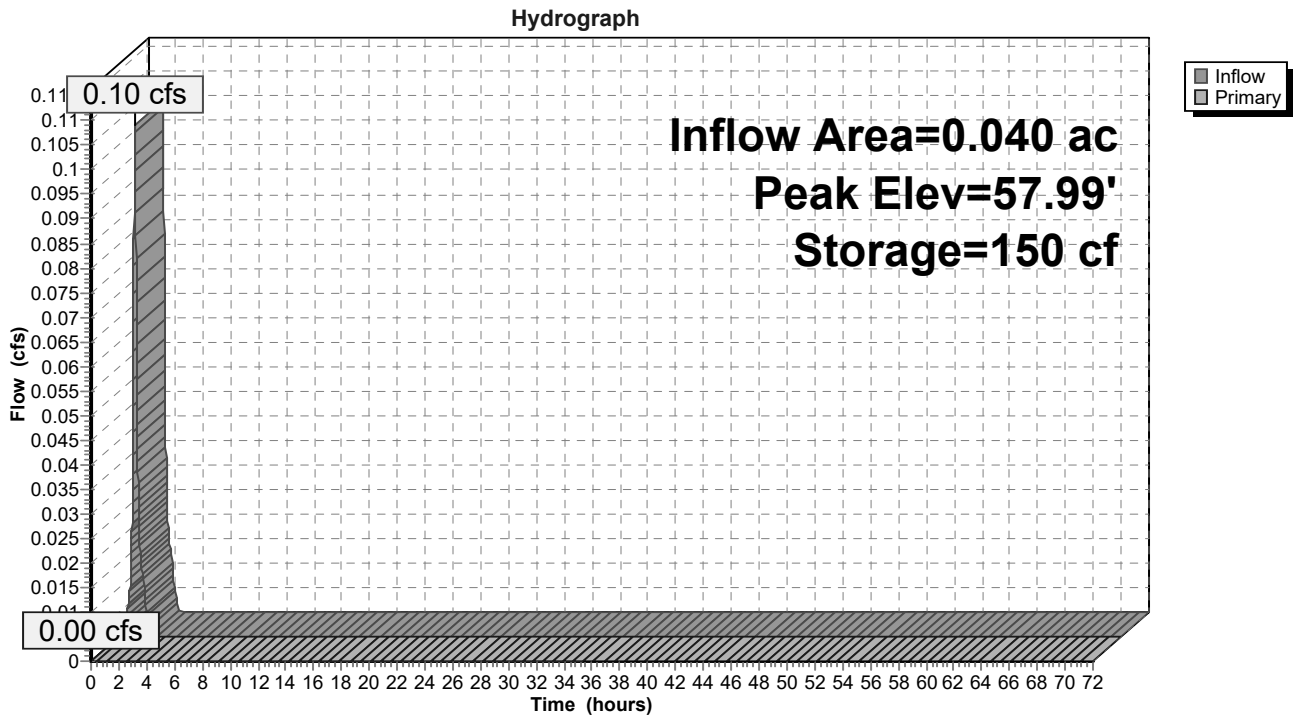
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	56.30'	402 cf	8.00'D x 8.00'H Vertical Cone/Cylinder Inside #2
#2	55.80'	224 cf	12.00'D x 8.50'H Vertical Cone/Cylinder
			961 cf Overall - 402 cf Embedded = 559 cf x 40.0% Voids
			626 cf Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	66.40'	24.0" Horiz. Orifice/Grate Limited to weir flow C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=55.80' TW=59.90' (Dynamic Tailwater)
 ←1=Orifice/Grate (Controls 0.00 cfs)

Pond 15P: Detention Tank 2



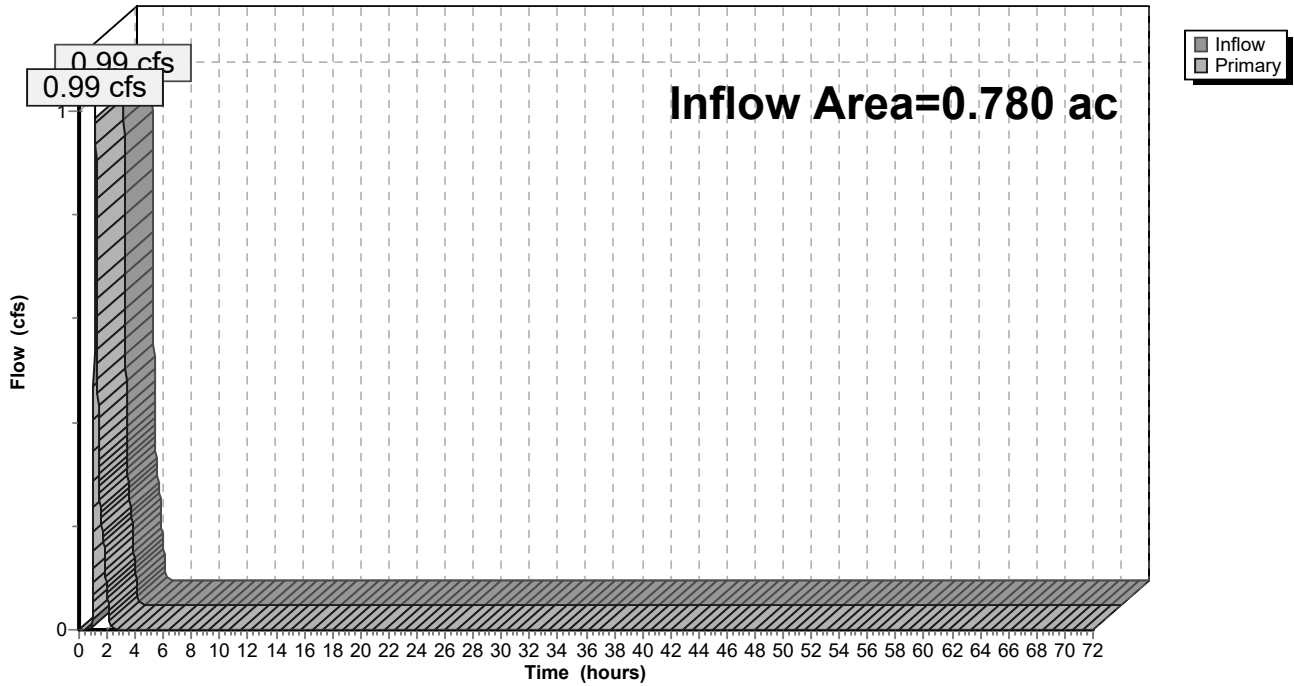
Link 5L: WETLANDS - EXISTING

Inflow Area = 0.780 ac, Inflow Depth = 0.48" for W.Q. event
Inflow = 0.99 cfs @ 1.17 hrs, Volume= 0.031 af
Primary = 0.99 cfs @ 1.17 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 5L: WETLANDS - EXISTING

Hydrograph

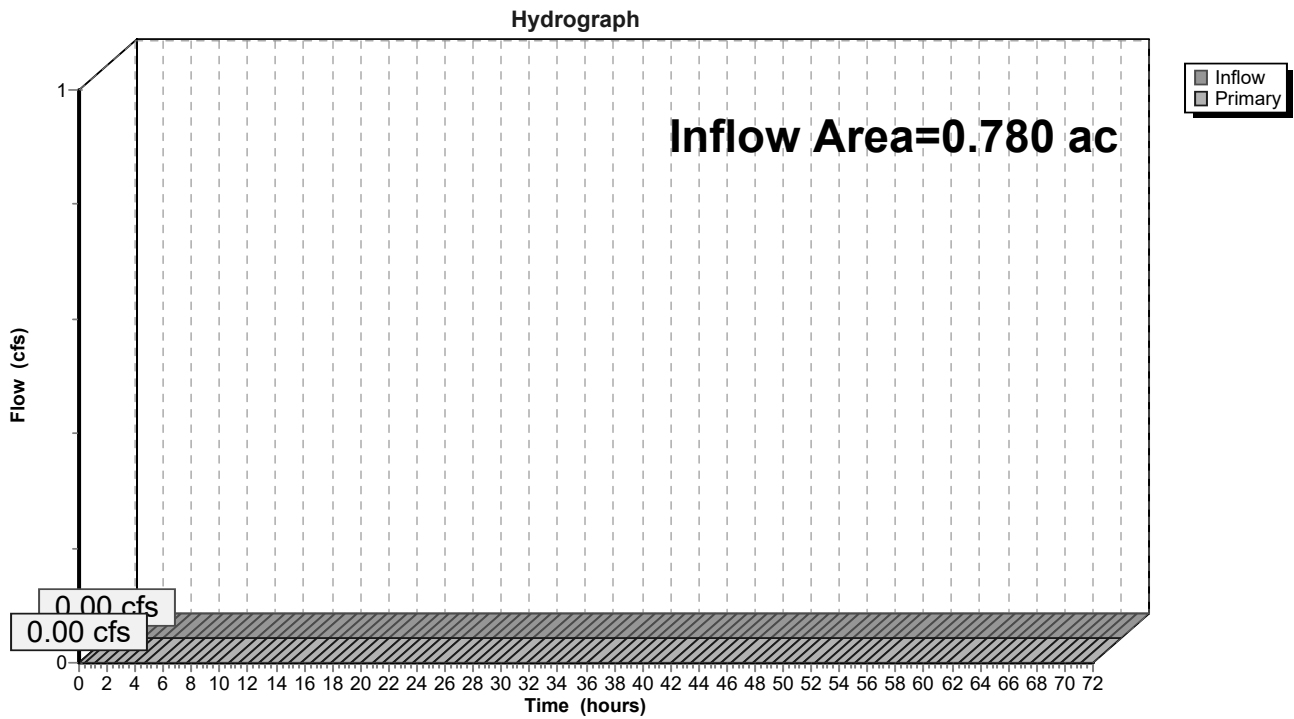


Link 6L: WETLANDS - PROPOSED

Inflow Area = 0.780 ac, Inflow Depth = 0.00" for W.Q. event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 6L: WETLANDS - PROPOSED



B. DESIGN CALCULATIONS

- ◆ **NOAA Rainfall Intensities**
- ◆ **Pervious Pavement Drain Time Calculations**
- ◆ **Ground Water Recharge Analysis (GSR-32 worksheet)**

NOAA Rainfall Intensities

NEW JERSEY 24 HOUR RAINFALL FREQUENCY DATA

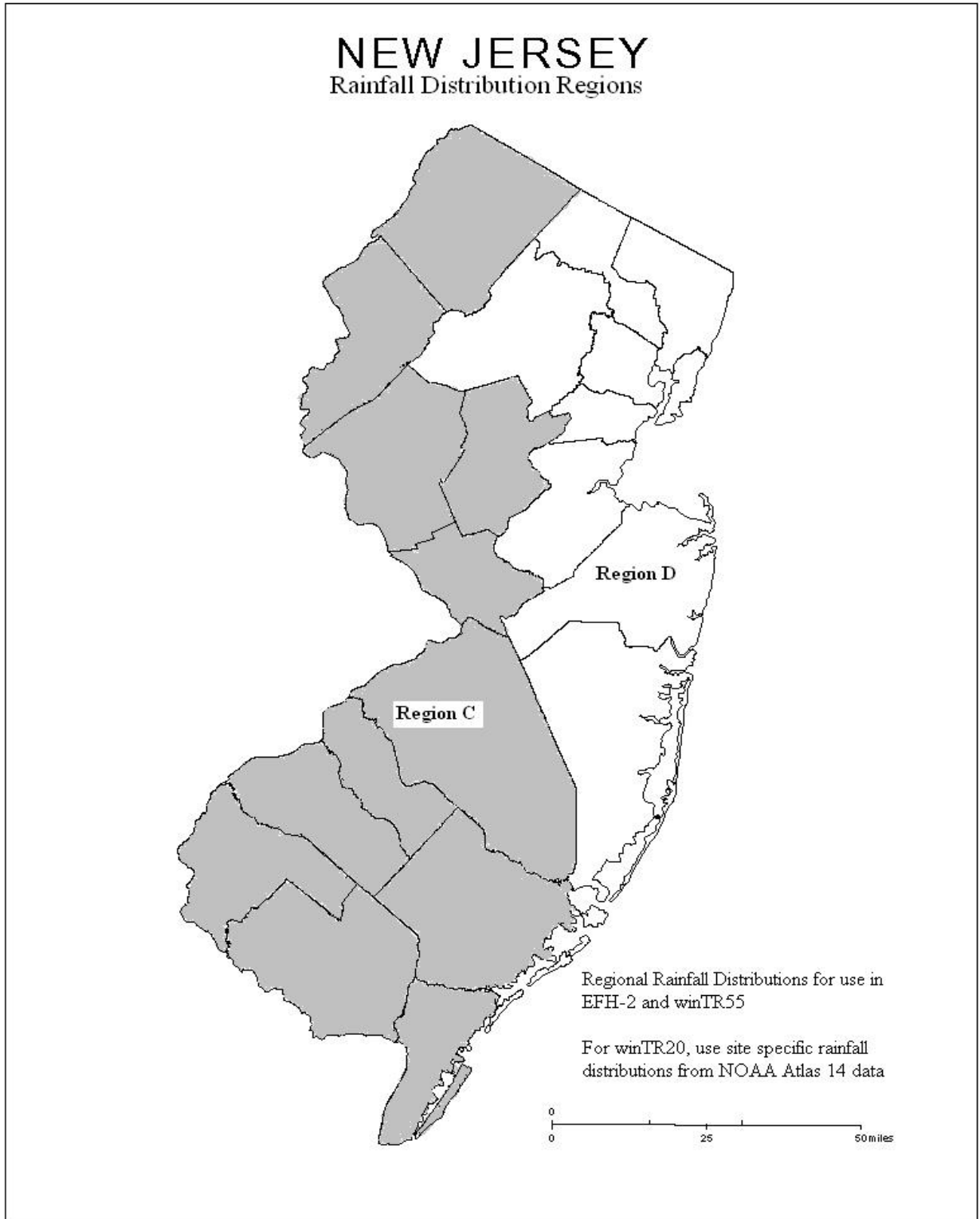
Rainfall amounts in Inches

County	1 year	2 year	5 year	10 year	25 year	50 year	100 year
Atlantic	2.72	3.31	4.30	5.16	6.46	7.61	8.90
Bergen	2.75	3.34	4.27	5.07	6.28	7.32	8.47
Burlington	2.77	3.36	4.34	5.18	6.45	7.56	8.81
Camden	2.73	3.31	4.25	5.06	6.28	7.34	8.52
Cape May	2.67	3.25	4.22	5.07	6.34	7.47	8.73
Cumberland	2.69	3.27	4.25	5.09	6.37	7.49	8.76
Essex	2.85	3.44	4.40	5.22	6.44	7.49	8.66
Gloucester	2.71	3.29	4.24	5.05	6.29	7.36	8.55
Hudson	2.73	3.31	4.23	5.02	6.19	7.20	8.31
Hunterdon	2.80	3.38	4.26	5.00	6.09	7.02	8.03
Mercer	2.74	3.31	4.23	5.01	6.19	7.20	8.33
Middlesex	2.76	3.35	4.30	5.12	6.36	7.43	8.63
Monmouth	2.79	3.38	4.38	5.23	6.53	7.66	8.94
Morris	2.94	3.54	4.47	5.24	6.37	7.32	8.35
Ocean	2.81	3.42	4.45	5.33	6.68	7.87	9.20
Passaic	2.87	3.47	4.42	5.23	6.43	7.47	8.62
Salem	2.69	3.26	4.20	5.00	6.22	7.28	8.45
Somerset	2.76	3.34	4.25	5.01	6.15	7.13	8.21
Sussex	2.68	3.22	4.02	4.70	5.72	6.60	7.58
Union	2.80	3.39	4.35	5.17	6.42	7.49	8.69
Warren	2.78	3.34	4.18	4.89	5.93	6.83	7.82

Notes: The average point rainfall amounts listed above were developed from data contained in NOAA Atlas 14 Volume 2.

Point rainfall estimates for specific locations may be obtained from the Precipitation Frequency Data Server located at <http://www.nws.noaa.gov/ohd/hdsc/>

For most hydrologic design procedures, the rainfall amounts listed above may be rounded to the nearest tenth of an inch.



Pervious Paving System Drain Time Calculations

62 GLEN AVE-PERVIOUS PAVEMENT_082824

Type III 24-hr 100 Year Rainfall=8.33"

Prepared by Daetel Engineering

HydroCAD® 8.00 s/n 002612 © 2006 HydroCAD Software Solutions LLC

9/7/2024

Hydrograph for Pond 4P: PERVIOUS PAVEMENT (ROADWAY)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	59.90	0.00
2.00	0.01	22	59.91	0.00
4.00	0.03	128	59.95	0.00
6.00	0.05	402	60.06	0.00
8.00	0.10	940	60.28	0.00
10.00	0.23	2,023	60.71	0.09
12.00	2.48	3,360	61.24	1.72
14.00	0.37	2,529	60.91	0.39
16.00	0.19	2,257	60.80	0.21
18.00	0.12	2,105	60.74	0.12
20.00	0.09	2,032	60.71	0.09
22.00	0.08	1,992	60.70	0.07
24.00	0.06	1,955	60.68	0.06
26.00	0.00	1,772	60.61	0.01
28.00	0.00	1,717	60.59	0.00
30.00	0.00	1,692	60.58	0.00
32.00	0.00	1,677	60.57	0.00
34.00	0.00	1,668	60.57	0.00
36.00	0.00	1,662	60.56	0.00
38.00	0.00	1,657	60.56	0.00
40.00	0.00	1,654	60.56	0.00
42.00	0.00	1,651	60.56	0.00
44.00	0.00	1,648	60.56	0.00
46.00	0.00	1,646	60.56	0.00
48.00	0.00	1,645	60.56	0.00
50.00	0.00	1,643	60.56	0.00
52.00	0.00	1,642	60.56	0.00
54.00	0.00	1,641	60.56	0.00
56.00	0.00	1,640	60.56	0.00
58.00	0.00	1,639	60.56	0.00
60.00	0.00	1,639	60.56	0.00
62.00	0.00	1,638	60.55	0.00
64.00	0.00	1,637	60.55	0.00
66.00	0.00	1,637	60.55	0.00
68.00	0.00	1,636	60.55	0.00
70.00	0.00	1,636	60.55	0.00
72.00	0.00	1,636	60.55	0.00

Basin fully Drains
in 28 hrs <72 hours
CONFORMS

Ground Water Recharge Analysis (GSR-32 worksheet)

New Jersey
Groundwater
Recharge
Spreadsheet
Version 2.0
November 2003

Annual Groundwater Recharge Analysis (based on GSR-32)

Project Name: 62 GLENN AVE

Description: Site - Limit Of Disturbance

Analysis Date: 06/24/24

Select Township ↓	Average Annual P (in)	Climatic Factor
MERCER CO., LAWRENCE TWP	44.9	1.43

Pre-Developed Conditions					
Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	0.454	Open space	Udorthents	0.0	-
2	0				
3	0				
4	0				
5	0				
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	0.5			Total Annual Recharge (in)	Total Annual Recharge (cu-ft)
				0.0	-

Post-Developed Conditions					
Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	0.454	Impervious areas	Udorthents	0.0	-
2					
3	0				
4	0				
5	0				
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	0.5			Total Annual Recharge (in)	Total Annual Recharge (cu.ft)
				0.0	-

Procedure to fill the Pre-Development and Post-Development Conditions Tables

For each land segment, first enter the area, then select TR-55 Land Cover, then select Soil. Start from the top of the table and proceed downward. Don't leave blank rows (with A=0) in between your segment entries. Rows with A=0 will not be displayed or used in calculations. For impervious areas outside of standard lots select "Impervious Areas" as the Land Cover. Soil type for impervious areas are only required if an infiltration facility will be built within these areas.

Annual Recharge Requirements Calculation ↓		Total Annual Recharge (in)	0.0	Total Annual Recharge (cu.ft)	-
% of Pre-Developed Annual Recharge to Preserve =	100%	Total Impervious Area (sq.ft)		19,776	
Post-Development Annual Recharge Deficit=			0	(cubic feet)	
Recharge Efficiency Parameters Calculations (area averages)					
RWC=	#N/A	(in)	DRWC=	#N/A	(in)
ERWC=	#N/A	(in)	EDRWC=	#N/A	(in)

C. MAPS

- ◆ **Soil Map**
- ◆ **Drainage Area Maps**
 - **Existing Drainage Area Map**
 - **Proposed Drainage Area Map**

Soil Map

Custom Soil Resource Report Soil Map



Map Scale: 1:554 if printed on A landscape (11" x 8.5") sheet.




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




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Mercer County, New Jersey
 Survey Area Data: Version 19, Aug 29, 2023

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UdstB	Udorthefts, stratified substratum, 0 to 8 percent slopes	1.0	100.0%
Totals for Area of Interest		1.0	100.0%

Map Unit Descriptions

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

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

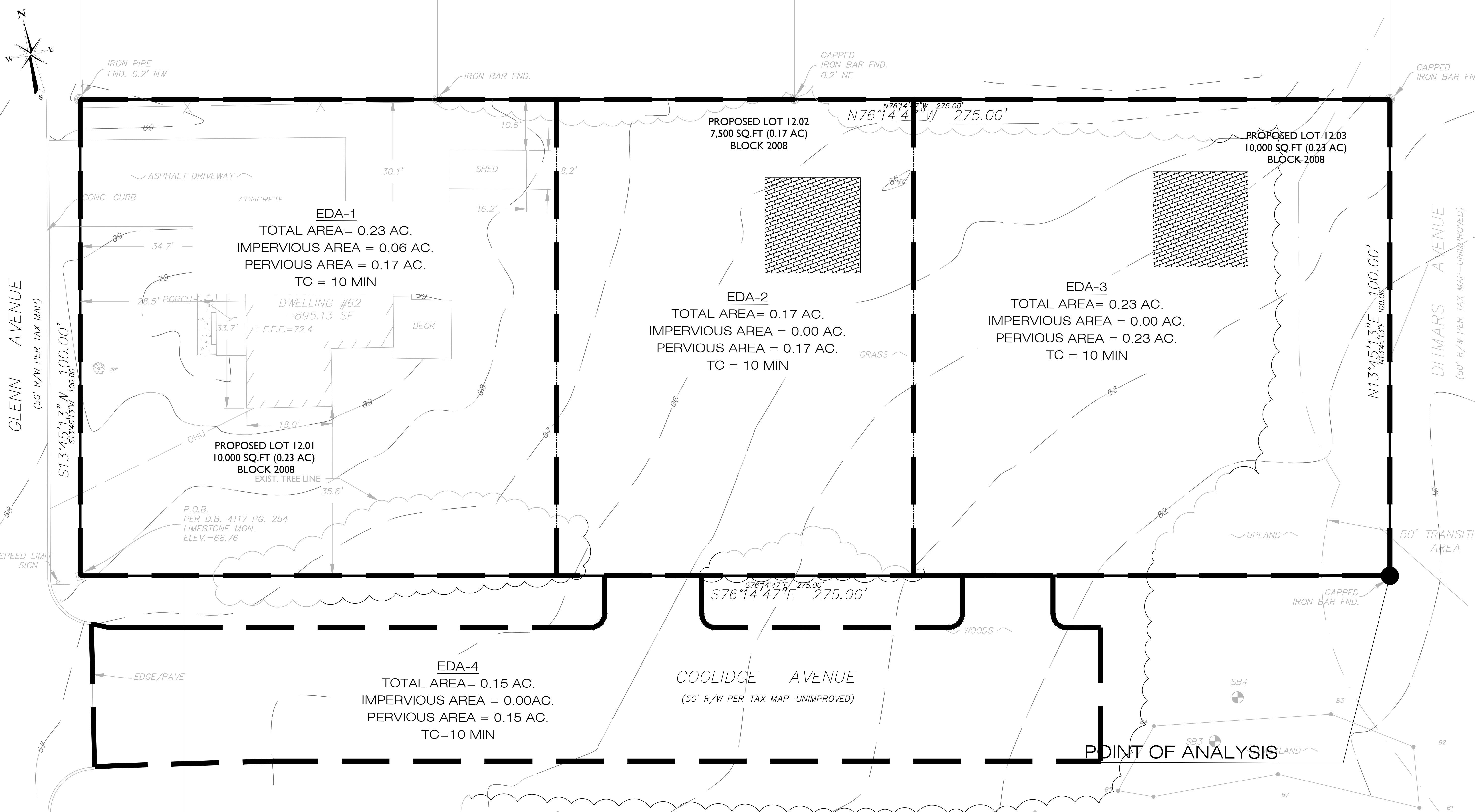
Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however,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

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

Drainage Area Maps

Existing Drainage Area Map

Proposed Drainage Area Map



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1	05/21/24	REV. PER ENGINEER COMMENTS	MTY	ABK
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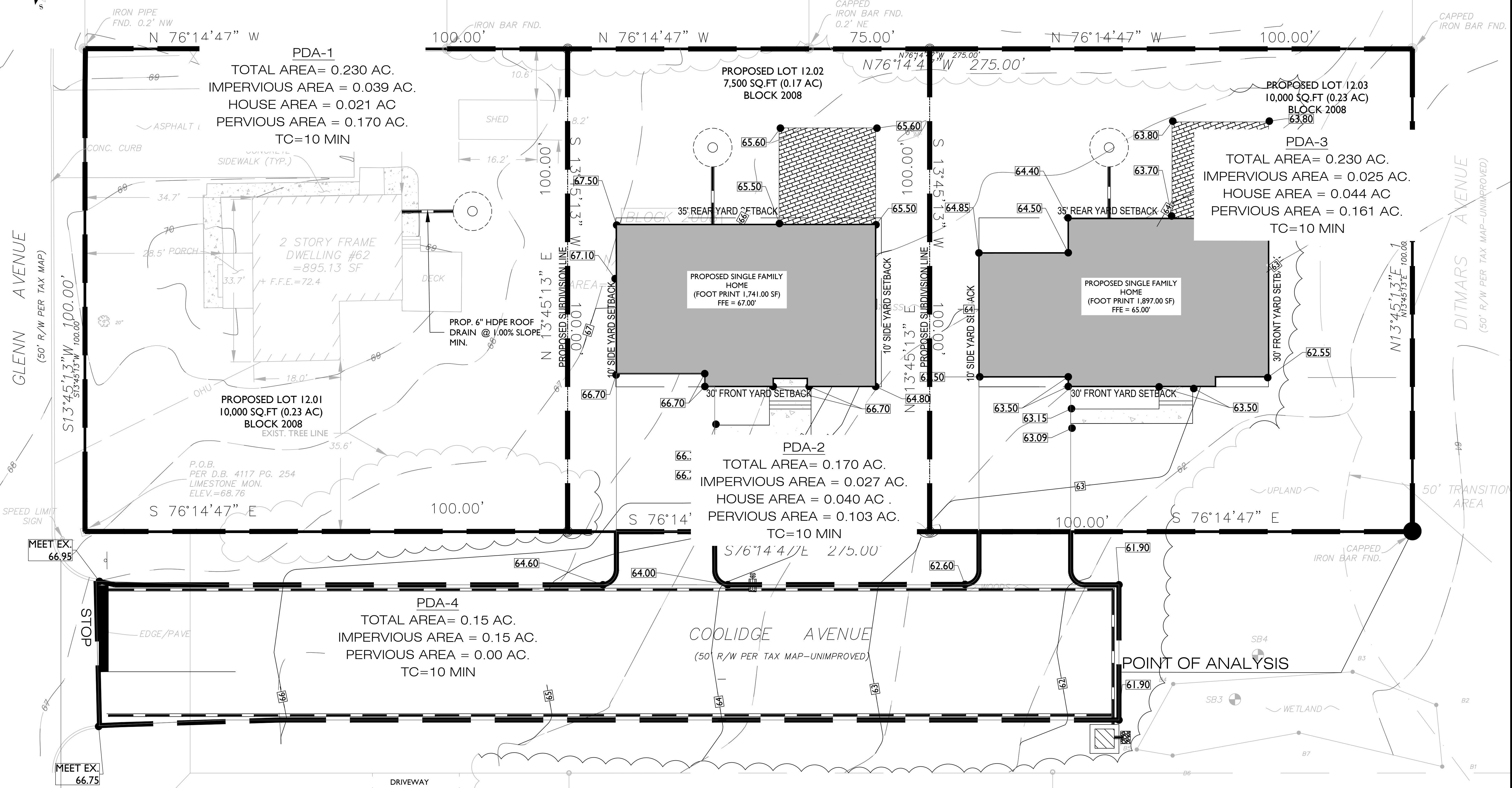
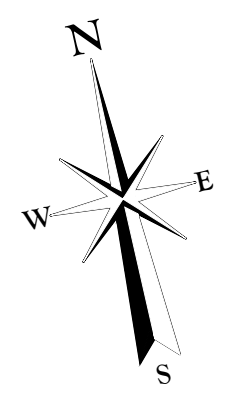
62 GLENN AVENUE,
LAWRENCE TOWNSHIP, MERCER
COUNTY
LOT: 22 BLOCK: 2008

SHEET TITLE:
EXISTING DRAINAGE
AREA MAP

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