

STORMWATER MANAGEMENT REPORT

for

Retail & Residential Development

Prepared for

Princeton Promenade, LLC

Block 34001; Lots 46.01, 56, 57, 77, 78 & 79
NJSH Route 206 & County Route 518
Township of Montgomery
Somerset County, New Jersey

Prepared by

BOHLER //

NJ Certification of Authorization No. 24GA28161700

30 Independence Blvd., Suite 200
Warren, NJ 07059
908-668-8300

B. A. Bohler, P.E.
New Jersey Professional Engineer License No. 47421

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Stormwater Management Report – NJDEP Index Page

Project Name: Montgomery Promenade

Project Location: Montgomery, NJ

The following table summarizes typical additional information as requested by the New Jersey Department of Environmental Protection. Details can be found throughout this Stormwater Management Report, Appendices and Supplemental Reports as indicated.

NJDEP Information	Location of Information
Total Amount of Land Disturbed on Site - +/- 63 acres	Page # 1
Acreage of New Impervious Surfaces - +/- 33 acres	Page # 1
Type of Basin Proposed (Extended Detention & Detention)	Page # 4
Proof that Groundwater Recharge Standards are met	Appendix B
Recharge Worksheet	Appendix B
Proof that Runoff Quantity Standards are met	Appendix A
Proof that Water Quality Standards are met	Appendix B
Low Impact Development Checklist	Appendix B
Spillway Calculations	Appendix B
USGS and HUC-14 Site Location Map	Not Required
Copy of the State Study Plan and Profile (if applicable)	Not Applicable
Permeability Test Locations	Geotechnical Report (Separate Document)
Permeability Test Results	Geotechnical Report (Separate Document)
Boring data at the proposed basin locations (if applicable)	Geotechnical Report (Separate Document)
Location of proposed basin in relation to depth of the seasonal high groundwater table	Geotechnical Report (Separate Document)
Operations and Maintenance Manual	Operations and Maintenance Manual (Separate Document)

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1. Introduction

The intention of this study is to analyze the stormwater drainage conditions that will occur as a result of the proposed site improvements in Montgomery Township, Somerset County, New Jersey. The proposed stormwater management report refers to the previously approved stormwater management report prepared by Bohler Engineering, dated August 2006, last revised February 2007. The site is specifically identified as Block 34001, Lots 46.01, 56, 57, 77, 78, 79 in Montgomery Township, Somerset County, New Jersey. The proposed development disturbs approximately 63 acres and adds approximately 33 acres of new impervious areas. The subject property is bordered to the south by “Princeton Airport.” This study will analyze the combined drainage system of Princeton Airport and the subject property as a result of the proposed site improvements. The scope of the study is limited to the drainage areas affected by the proposed site improvements as shown on the accompanying drainage area maps. The following items shall be addressed within this report:

- Narrative of pre- and post-development conditions with calculations to substantiate derived runoff coefficients.
- Calculations of the pre- and post-development 2, 10, and 100-year design storm peak runoff rates for the development area.
- Calculations for the Water Quality storm for the detention basins and their manufactured treatment devices and infiltration into a surface sand filter, including inflow hydrographs and storage volume versus depth table.
- Calculations of the post-development 2, 10, and 100-year design storm reductions for detention basins as required by Soil Conservation District and New Jersey Department of Environmental Protection.
- Calculations of the proposed stormwater conveyance system sizing and F.E.S. Rip Rap sizing for the 25-year storm using the rational method.

The primary design constraint is that the post-development site runoff rates shall be less than the pre-development runoff conditions for the development area for the 2, 10 and 100-year storm events. In addition, the post-development site runoff rates shall meet the minimum flow reduction percentage as dictated by the Soil Conservation District and New Jersey Department of Environmental Protection for the 2-, 10- and 100-year storm events. Finally, the stormwater systems were designed to meet the New Jersey Department of Environmental Protection Best Management Practice quality standards. An

analysis of the 2, 10, and 100-year storm events has been performed utilizing the Urban Hydrology for Small Watershed TR55 method.

2. Existing Site Conditions

The subject property is located primarily in the Montgomery Township and lies to the southwest of the intersection of County Route 518 and New Jersey State Highway Route 206. The site is situated in the REO-3 (Research, Engineering and Office) Zone, HC (Highway Commercial) Zone and the R-2 (Single-Family Residential) Zone with a Planned Shopping Center overlay zone within Montgomery Township. The site is bordered by residential properties to the north, the Princeton Airport to the south, farmland to the west and commercial properties to the east. For the purpose of this study, the subject property will be analyzed with the combined drainage system of Princeton Airport. All the information pertaining to Princeton Airport has been obtained from the survey entitled “ALTA/ASTM LAND TITLE SURVEY” by Control Point Associates, Inc., dated November 11, 2021; last revised December 14, 2021.

The existing site conditions for the subject property are illustrated on the “Existing Drainage Areas Map” which is included within the Appendix of this report. The existing conditions map is based upon a survey as referenced above. The site consists mainly of row crops (corn and soybean), grass areas, and offsite impervious areas as shown on the existing condition map. The 53.55 acre site has approximately 3.14 Ac. (136,909 sf) of existing impervious area. Furthermore, site mainly consists of two hydrologic type of soil, type “B” and “C”. The existing condition map also shows the separation line between type “B” and type “C” soil which was obtained from Somerset County Soil Survey.

The existing topography divides the site into the following drainage areas, DA-E1, DA-E2, DA-E3, DA-E4, and DA-E5 as depicted on the “Existing Drainage Area Map”. The existing stormwater runoff from the subject site drains via overland flow for all areas. Areas DA-E1 and DA-E2 drain to the south to the Princeton Airport and ultimately discharge into the existing basins located south of the subject property on the Princeton Airport site which is denoted as “Basin #1A” (Reach #1) and “Basin #2A” (Reach #2) on the Existing Drainage Area Map. Area DA-E3 drains to the north to an easterly flowing storm system in County Route 518 (Reach #3). Area DA-E4 drains to the northwest onto County Route 518 in a westerly flowing direction (Reach #4). Drainage area DA-E5 is an offsite area which overland flows towards the existing above ground basin (Basin #1A) located on Princeton Airport Property. This area will remain unchanged after the improvements.

Since the subject development does not propose any site improvements other than some minor grading modification and outlet structure modification for the existing basins (Basin #1A & Basin #2A) located south of the subject property on the Princeton Airport Property, the scope of the study will be limited to the existing discharge points for proposed improvements, in this case Reach# 1, 2, 3 and 4 as shown on the attached drainage area maps.

2.1 Environmental Site Analysis – Per Code Section 16-5.2

The proposed site, as described above and further in this report, lies in a primarily grassy area with some vegetation on what used to be farmland. Per section 16-5.2(b)(3) attention was given to unique and environmentally critical areas on site that provide constraints for development. According to the Natural Resources Conservation Service soil maps the site is split approximately 50% to 50% with Birdsboro silt loam (2-6% slopes) to the north and Royce silt loam (2-6% slopes) to the south. There is also a small section of Lansdowne silt loam (0-2% slopes) in the southwestern portion of the site. The Birdsboro silt loam is considered in the hydrologic soil group ‘B’ and the Royce silt loam is considered in the hydrologic soil group ‘C.’

Per code section 16-5.2 (b)(1) the environmental impact of the proposed development was considered through use of the Township of Montgomery soil maps and critical areas maps, the “Evaluation of Groundwater Resources of Sourland Mountain Region of Central New Jersey” report and the “Stormwater Management Area Evaluation” dated March 27, 2018 prepared by Whitestone Associates Inc. The site falls in the Millstone watershed and has Passaic Formation bedrock beneath the site. The site lies within the Northwest New Jersey sole source aquifer and is a “Rank C” aquifer per the “Evaluation of Groundwater Resources of Sourland Mountain Region of Central New Jersey.” Although Township Mapping shows freshwater wetlands with an associated buffer in the southwest corner of the site, an NJDEP Letter of Interpretation has been provided in the Environmental Impact Statement determining the absence of wetlands on site.

According to the geotechnical report and the test pits provided, all of the site has poorly infiltrating soils. Please refer to the ‘Groundwater Recharge’ section of this report for more information on infiltration. The separate report, “Environmental Impact Statement” prepared by Bohler Engineering, dated October 2017, last revised January 2018, includes extensive site descriptions and mapping. See Appendix C for NRCS soil maps, Township of Montgomery critical area mapping and a Recharge Map as required per code section 16-5.2(b)(2).

3. Proposed Site Conditions

The proposed site conditions consist of proposed retail and residential development with associated site improvements including four (4) aboveground stormwater management systems, public and private roads, sidewalks, landscape areas, and other site improvements, as illustrated on the Site Plans prepared by Bohler Engineering. These stormwater management systems will collect a majority of the stormwater runoff that will be generated by the proposed retail and residential buildings and associated site improvements via overland flow and a stormwater conveyance system and ultimately be collected by the three (3) extended detention basins (Basins #1, 2 & 3), and one (1) detention basin (Basin #4) with a surface sand filter. This system has been designed to maintain/reduce flows for the 2, 10, and 100-year design storms, as well as providing water quality measures for the water quality storm.

The stormwater collection system has been designed to reduce the post-development runoff conditions when compared to the pre-development runoff conditions for the four points of analysis (Reach# 1, 2, 3 and 4). This reduction of the post-development flows for the 2, 10, and 100-year design storm is required by the Soil Conservation District and New Jersey Department of Environmental Protection. The proposed improvements to the site will not significantly affect the existing drainage characteristics of the site.

The proposed buildings and associated site improvements divide the site into the following drainage areas, known as DA-P1, DA-P2, DA-P3, DA-P4, DA-P5, DA-P6, DA-P7, DA-P8 and DA-P9. Area DA-P1 is located south of the subject property and consists of grass area and impervious area of existing runway of Princeton Airport. This area will flow overland and drains to existing Basin #1A located on Princeton Airport Property. Area DA-P2 is located south of the subject property and consists of grass area and impervious area of existing runway of Princeton Airport. This area will flow overland and drains to existing Basin #2A located on Princeton Airport Property. Area DA-P3 is located on the northeast corner of the subject property which mainly consists of combination of onsite and offsite grass areas, woods and existing impervious areas. This area will continue to flow un-detained via overland flow to Reach #3. Area DA-P4 will be eliminated under proposed conditions. Proposed area DA-P5 possesses the same characteristics as existing drainage area DA-E5. As mentioned previously in this report, existing drainage area DA-E5 remains unchanged. However, due to the development, a portion of mainly offsite area becomes part of the proposed drainage area DA-P5 as depicted on the Proposed Drainage Area Map. This area overland flows to the existing Basin #1A south of the subject parcel. Proposed drainage area DA-P6 is located at the northwesterly portion of the site and consists mainly of impervious areas and

grass areas, and runoff generated by this area will be collected by onsite proposed conveyance system and finally discharge into the proposed Basin #1. Proposed DA-P7 is located at the northeasterly portion of the site and consists mainly of impervious areas and grass areas, and runoff generated by this area will be collected by onsite proposed conveyance system and finally discharge into the proposed Basin #2. Proposed drainage area DA-P8 is located on northeast portion of the property which also consists of impervious and grass areas. Some portion of this area will be collected by onsite proposed conveyance system and ultimately discharge into the proposed Basin #3, and the rest of the DA-P8 will overland flow to Basin #4. Proposed drainage area DA-P9 is located in the northeast portion of the property that consists of impervious areas and grass areas. Area DA-P9 will flow to the above ground detention Basin #3 located north of the driveway entrance from NJSH RT 206 via proposed underground conveyance system and finally discharge in to the conveyance network which then flows to the proposed above ground Basin #2 through an outlet control structure.

Refer to the “Proposed Drainage Areas Map” included in the Appendix of this report for the location of these proposed drainage areas. The surface and soil characteristics of each drainage area were considered when developing the hydrologic model and are detailed in the appendix of this report.

3.1 Structural Stormwater Management Facilities

3.1.1 Detention Basin

A detailed description of the detention basins volumes and discharge rates are included within the appendix of this report. To provide maximum stormwater quality, Basin #1 & Basin #2 will provide pre-treatment and extended detention. Basin #4 with surface sand filter will infiltrate the entire water quality storm volume. A proposed emergency spillway has been designed for each basin to accommodate storm events larger than the 100-year storm event, based on the Soil Conservation District calculation method.

The detention basin (Basin #1) at the southwest corner of the site has an approximate bottom of basin elevation of 125.00' with a top of berm elevation of 134.50' which provides 9.50' maximum depth for the detention basin. It is important to note the 100-year storm will reach an elevation of 130.59', providing 3.91' of freeboard to the top of berm. A 100-foot wide emergency spillway has been located at the southwest portion of the basin with a crest elevation set at 132.50'. Since Basin #1 is classified as a Class IV Dam by the NJAC Dam Safety Standards, the emergency spillway was designed in accordance with NJAC 7:20. Design for this

spillway, to ensure compliance with NJAC 7:20, can be found in Appendix B. In the event that the emergency spillway is used, runoff will flow (via sheet flow) off to the south as it does under existing conditions.

The detention basin (Basin #2) in the southern portion of the site has an approximate bottom of basin elevation of 122.05' with a top of berm elevation of 134.50' which provides 12.45' maximum depth for the detention basin. It is important to note the 100-year storm will reach an elevation of 130.54', providing 3.96' of freeboard to the top of berm. A 100-foot wide emergency spillway has been located at the southwest portion of the basin with a crest elevation set at 132.50'. Since Basin #2 is classified as a Class IV Dam by the NJAC Dam Safety Standards, the emergency spillway was designed in accordance with NJAC 7:20. Design for this spillway, to ensure compliance with NJAC 7:20, can be found in Appendix B. In the event that the emergency spillway is used, runoff will flow (via sheet flow) off to the south as it does under existing conditions. Furthermore, these basins (Basin #1 & Basin #2) will act as a one basin during large storm events. A 180' wide weir is provided at an elevation of 129.50' linking these basins. This has been modeled in HydroCAD as a secondary outflow which will not be the flow discharging out of the proposed basins.

The proposed detention basin (Basin #3) north of the proposed driveway entrance off of NJSH RT 206 has an approximate bottom of the basin elevation of 143.72' with an outlet control structure to regulate flow discharging to Basin #2. The grate will be set at an elevation of 146.31' and a 2.5" orifice will facilitate flow out of the basin via a 15" pipe. This basin will ultimately discharge into the proposed underground conveyance system leading to the proposed Basin #2.

The basin (Basin #4) at the northern portion of the site has an approximate bottom of basin elevation (surface sand filter) of approximately 139.00' with a top of berm elevation of 144.50' which provides 5.50' maximum depth for the detention basin with surface sand filter. It is important to note the 100-year storm will reach an elevation of 141.67', providing 2.83' of freeboard to the top of berm. A 40-foot wide emergency spillway has been located at the most northerly portion of the basin with a crest elevation set at 143.00'. In the event that the emergency spillway is used, runoff will flow (via sheet flow) off to the north, into the easterly flowing Route 518 conveyance system, as it does under existing conditions.

4. Methodology

4.1 Water Quality

To provide the required TSS removal for basins #1 and 2, stormwater is routed through a combination of First Defense High Capacity and Downstream Defender Hydro-International water quality units before entering the basins (approved for 50% TSS removal by NJDEP, see Appendix for certifications). To achieve the additional 30% TSS removal, the detention basins were designed to provide extended detention of 24 hours (approved for 60% TSS removal). When the CDS units are used in series with extended detention, the system achieves the NJDEP required 80% TSS removal. The equation found in “New Jersey Stormwater Best Management Practices Manual” was used to calculate the total TSS removal rate for BMP’s in series. The equation is shown below in this section.

Following is the TSS removal rate calculation for a detention basin in series with a Hydro International water quality unit as per the NJDEP BMP Manual.

$$R = A + B - [(A \times B) / 100] \quad (\text{Equation 4-1})$$

Where:

R = Total TSS Removal

A = TSS Removal Rate of the First or Upstream BMP

B = TSS Removal Rate of the Second or Downstream BMP

Therefore, the total removal rate is:

$$R = 50\% + 60\% - [(50\% \times 60\%) / 100] = \mathbf{80\%}$$

This stormwater management system (Basins #1 & 2 + Water Quality units) have been designed to achieve 80% of TSS removal rate. For the detailed calculation, please refer to the “Water Quality Calculations” section of the appendix of this report. Water quality calculation has not been performed for Basin #3 since it is a part of the system tributary to basin #2. As documented in the appendix of this report, Basin #2 provides water quality for the area flowing to it.

To provide the required TSS removal for Basin #4, stormwater is routed through a surface sand filter (approved for 80% TSS removal). Calculations can be found in Appendix B.

4.2 Water Quantity

The hydrologic analysis has been modeled and the proposed detention/infiltration basins have been sized utilizing the TR-55 method. The water quality, 2-, 10-, and 100-year, storm events have been analyzed under pre and post-development conditions.

The rainfall accumulations used for each storm event were obtained from the National Oceanic and Atmospheric Administration, and are as follows:

Storm Event (Return Period)	Accumulation (24-Hour storm, Total Rainfall)
2 Year	3.34"
10 Year	5.01"
100 Year	8.21"

The United States Department of Agriculture, Natural Resource Conservation Service (NRCS) issued a soil survey of Somerset County, New Jersey identifying the various soil types throughout Montgomery Township (as found on <http://websoilsurvey.nrcs.usda.gov/app/>). This site was mapped as having the soil types and SCS hydrologic groups as follows:

Soil Series	Soil Symbols	SCS Hydrologic Group
<i>Birdsboro Silt Loam</i>	BhnB	B
<i>Lansdowne Silt Loam</i>	LbtA	C
<i>Royce Silt Loam</i>	RoyB	C

The following flow reduction requirements as required by the Soil Conservation District and New Jersey Department of Environmental Protection have been applied to all proposed basins:

Storm Event	Required Reduction (NJDEP)
<i>2-year</i>	50%
<i>10-year</i>	25%
<i>100-year</i>	20%

The portion of the site to be developed partially falls within the Birdsboro Silt Loam. Therefore, the runoff curve number was determined using the B soil group characteristics given the Hydrologic condition. The following "CN" coefficients were used to analyze the existing and proposed hydrologic conditions:

Ground Cover	"CN" Curve Number
Impervious	98
Open Space for Soil Group B	61
Wooded Area for Soil Group B	55
Dirt Area for Soil Group B	82
Row Crop Straight Row B	78

The remainder of the site to be developed partially falls within the Lansdowne Silt Loam and Royce Silt Loam. Therefore, the runoff curve number was determined using the C soil group characteristics given the Hydrologic condition. The following "CN" coefficients were used to analyze the existing and proposed hydrologic conditions:

Ground Cover	"CN" Curve Number
Impervious	98
Open Space for Soil Group C	74
Wooded Area for Soil Group C	70
Dirt Area for Soil Group C	87
Row Crop Straight Row C	85

The proposed project has been designed with provisions for safe and efficient control of stormwater runoff in a manner that will impact the existing drainage patterns, adjacent roadways or adjacent parcels. Specifically, the stormwater management system shall reduce peak flow rates for the proposed development area and maintain/reduce the peak flow rates for the 2, 10, and 100-year storm frequencies. Please note, the NJDEP reductions were only applied to the areas disturbed by the construction activities. All offsite undisturbed areas were assumed to have no associated reduction rate. The results of the hydrologic analysis are shown in the following summaries:

Pre-Development vs. Post-Development Summary

Point of Analysis	<u>Pre-Development Flow (cfs)</u>			<u>Post-Development Flow (cfs)</u>		
	2-year storm	10-year storm	100-year storm	2-year storm	10-year storm	100-year storm
Reach 1	45.53	91.75	185.05	22.49	42.92	118.95
Reach 2	33.63	63.52	122.76	10.97	20.83	44.25
Reach 3	18.32	38.16	81.89	10.82	22.85	52.69
Reach 4	1.10	2.67	6.09	0	0	0

The stormwater management system design shall reduce peak flow rates for the proposed development area and meet the minimum percent of peak flow reductions for the 2, 10, and 100-year storm frequencies as dictated by the Soil Conservation District and the New Jersey Department of Environmental Protection. The results of the combined hydrographs are shown in the following summaries:

Pre-Development vs. Post-Development Detailed Analysis Reach #1

<u>Storm</u>	<u>Pre-development Flow(cfs)</u>	<u>Pre-development Flow for reductions calculation(cfs)</u>	<u>Minimum NJDEP Reduction (%) (Disturbed Area)</u>	<u>Reduction Required (cfs)</u>	<u>Maximum allowable Outflow (cfs)</u>	<u>Post-development Flow (cfs)</u>
2-year	45.53	25.95	50	12.98	32.56	22.49
10-year	91.75	53.36	25	13.34	78.41	42.92
100-year	185.05	109.11	20	21.82	163.23	118.95

Pre-Development vs. Post-Development Detailed Analysis Reach #2

<u>Storm</u>	<u>Pre-development Flow(cfs)</u>	<u>Pre-development Flow for reductions calculation(cfs)</u>	<u>Minimum NJDEP Reduction (%) (Disturbed Area)</u>	<u>Reduction Required (cfs)</u>	<u>Maximum allowable Outflow (cfs)</u>	<u>Post-development Flow (cfs)</u>
2-year	33.63	25.81	50	12.91	20.73	10.97
10-year	63.52	48.77	25	12.19	51.33	20.83
100-year	122.76	94.03	20	18.81	103.95	44.25

Pre-Development vs. Post-Development Detailed Analysis Reach #3

<u>Storm</u>	<u>Pre-development Flow(cfs)</u>	<u>Pre-development Flow for reductions calculation(cfs)</u>	<u>Minimum NJDEP Reduction (%) (Disturbed Area)</u>	<u>Reduction Required (cfs)</u>	<u>Maximum allowable Outflow (cfs)</u>	<u>Post-development Flow (cfs)</u>
2-year	18.32	8.85	50	4.43	13.90	10.82
10-year	38.16	18.81	25	4.70	33.46	22.85
100-year	81.89	39.94	20	7.99	73.90	52.69

Pre-Development vs. Post-Development Detailed Analysis Reach #4

<u>Storm</u>	<u>Pre-development Flow(cfs)</u>	<u>Post-development Flow (cfs)</u>
2-year	1.10	0
10-year	2.67	0
100-year	6.09	0

Furthermore, the comparison was made for the discharge rate for the existing basins, Basin #1A and #2A, located on the Princeton Airport property. As a result of these improvements and with consent of the Airport, these basins' outlet structure will be modified to control proposed outflow and meet the

existing discharge rate. The following tables represent the outflow comparison between the existing and proposed conditions for the above mentioned basins.

Pre-Development vs. Post-Development Detailed Analysis Basin #1A

<u>Storm</u>	<u>Pre-development Flow(cfs)</u>	<u>Pre-development Flow for Emergency spillway</u>	<u>Pre-development Peak Elevation</u>	<u>Post-development Flow(cfs)</u>	<u>Post-development Flow for Emergency spillway</u>	<u>Post-development Elevation</u>
2-year	19.11	12.73	125.74	10.40	7.58	125.67
10-year	22.24	53.55	126.13	16.53	23.83	125.87
100-year	25.72	116.51	126.56	25.16	74.78	126.29

Pre-Development vs. Post-Development Detailed Analysis Basin #2A

<u>Storm</u>	<u>Pre-development Flow(cfs)</u>	<u>Pre-development Flow for Emergency spillway</u>	<u>Pre-development Peak Elevation</u>	<u>Post-development Flow(cfs)</u>	<u>Post-development Flow for Emergency spillway</u>	<u>Post-development Elevation</u>
2-year	29.01	-	123.42	9.14	-	122.56
10-year	39.18	-	124.66	12.82	-	123.67
100-year	49.81	-	126.53	32.07	-	125.69

4.3 Groundwater Recharge

The ground water recharge requirement will not be applicable to the subject site due to low on-site permeability rate. Please refer to the geotechnical report prepared by Whitestone Associates, Inc. dated March 27, 2018 for the specific soil properties. Due to these low on-site permeability rates, none of the total post development Annual Recharge Deficit will be attained. Previous approvals for prior tests in Basin #3 allowed for infiltration, however more recent test pits indicated no water would be able to infiltrate.

4.4 Green Infrastructure

Even though NJDEP requirements are met for Reach 1, Reach 2, Reach 3 and Reach 4, several additional practices have been implemented throughout the site in order to further provide green infrastructure measures for the post-development conditions.

4.4.1 Planted Detention Basins

As part of the stormwater management design of the proposed site, detention basins with plantings are proposed to closely act as a bioretention system for Basin #1, Basin #2 and Basin #3. These systems meet some of the minimum bioretention requirements outlined in the New Jersey Stormwater Best Management Practices Manual highlighted in Table 4.4.1, such as providing 18 inches of soil bed depth. The systems will achieve 80% TSS removal based on the 18-inch thick soil layer with the appropriate vegetation.

TABLE 4.4.1

BIORETENTION BASIN DESIGN PARAMETERS		
TSS Removal Rate	Depth of Soil Bed	Vegetation
80%	18 inches	Terrestrial Forested Community
80%	24 inches	Site-Tolerant Grasses
90%	24 inches	Terrestrial Forested Community
Storage Volume	Entire Water Quality Design Storm Volume	
Maximum Contributory Drainage Area	2.5 AC	
Minimum Density of Vegetation	85%	
Appropriate Species Selection	See Chapter 7 of the <i>NJ Stormwater Best Management Practices Manual</i>	
Maximum Design Storm Drain Time	72 Hours	
Permeability Rate Factor of Safety	2	
Minimum Subsoil Design Permeability Rate	0.5 inches/hour	
Soil Testing Requirements	Must be consistent with Appendix E of the <i>NJ Stormwater Best Management Practices Manual</i>	

4.4.2 Sand Filter Basins

As noted above, Basin #4 is the only proposed basin on site which routes stormwater through a surface sand filter (approved for 80% TSS removal) with underdrains to provide the required TSS

removal. Basin #4 has an approximate bottom of basin elevation (surface sand filter) of approximately 139.00' with a top of berm elevation of 144.50' which provides 5.50' maximum depth for the detention basin with surface sand filter. Table 4.4.2 outlines the parameters that are required for sand filters per the New Jersey Stormwater Best Management Practices Manual.

TABLE 4.4.2

SAND FILTERS DESIGN PARAMETERS	
Storage Volume	Entire Water Quality Design Storm Volume
Sand Bed Minimum Thickness	18 inches
Maximum Storage Above Sand Bed	24 inches
Maximum Design Permeability Rate of Sand Bed	2 inches/hour
Minimum Topsoil Permeability Rate (if using optional vegetative cover)	2x the permeability of the subsoil

4.4.3 Pervious Paving Systems

Pervious paving materials have been proposed as part of the overall site design and stormwater management system to reduce the impervious surface on site, provide 80% TSS removal for pervious paved surfaces and their tributary areas, and reduce the peak flows of runoff. The pervious paving systems have been designed to have a maximum ratio of additional inflow area to the pavement surface area of 3:1 or less, a maximum surface slope of 5%, a storage bed that fully contains the Water Quality Design Storm runoff volume, and to discharge the design storm within 72 hours of a rain event.

While infiltration through the bottom of the pervious paving systems is permitted, multiple series of underdrains have been provided for the site to promote faster drain-down times, as geotechnical testing did not support infiltration in these areas, and to convey larger volumes of runoff for larger storm events. The underdrain systems are also designed in conjunction with proposed inlets with grates for maintenance access and to provide overflow relief in the event of a surcharged condition.

4.4.4 Grass Swales

Grass Swales have been proposed as part of the stormwater management system to improve water quality and convey stormwater runoff. The swales have been designed with a bottom width of 2 feet and

a side slope of 4:1. These systems meet some of the minimum grass swale requirements outlined in the New Jersey Stormwater Best Management Practices Manual highlighted in Table 4.4.4. The maximum TSS removal rate is 50%.

TABLE 4.4.4

GRASS SWALE DESIGN PARAMETERS	
Settling	
Minimum Length	50 feet
Manning's n value	0.25 for the Water Quality Design Storm
Vegetative Uptake and Filtration	
Minimum Density of Vegetation	95%
Grass Height	Between 3 and 6 inches
Maximum Longitudinal Slope	10%
Minimum Separation from the Seasonal High Water Table	≥1 ft, when the swale is designed with a slope ≥2% ≥2 ft, when the swale is designed with a slope <2%
Minimum Required Length	For 50% TSS Removal Rate: 50 feet – singular point of inflow 200 feet – continuous inflow along entire length
Flow Characteristics for the Water Quality Design Storm	Maximum 2 inch depth of flow Maximum flow velocity 0.9 feet/second Must fully drain within 72 hours

4.4.5 Emergency Spillways

Basin #1, Basin #2, and Basin #4 are designed to utilize a traditional emergency spillway that cuts into the basin berm and is designed to pass the 100-year storm flow while the outlet structure routing is blocked (to simulate a failing condition). At least one foot of freeboard is provided above the peak water elevation while the emergency spillway is operating.

The emergency spillway designs for the site vary based on the locations and depths of the basins. For Basin #1 and Basin #2, a 100-foot wide emergency spill way has been located at the southwest portion of the basin with a crest elevation set at 132.50'. As mentioned previously, since Basin #1 and Basin #2 are classified as Class IV Dams by the NJAC Dam Safety Standards, the emergency spillways were designed in accordance with NJAC 7:20. The designs for these spillways, to ensure compliance with NJAC 7:20, can be found in Appendix B. In the event that the emergency spillway is used, runoff

will flow (via sheet flow) off to the south as it does under existing conditions. For Basin #4, a 40-foot wide emergency spillway has been located at the most northerly portion of the basin with a crest elevation set at 143.00'. In the event that the emergency spillway is used, runoff will flow (via sheet flow) off to the north, into the easterly flowing Route 518 conveyance system, as it does under existing conditions.

5. Conclusions

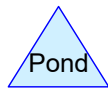
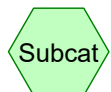
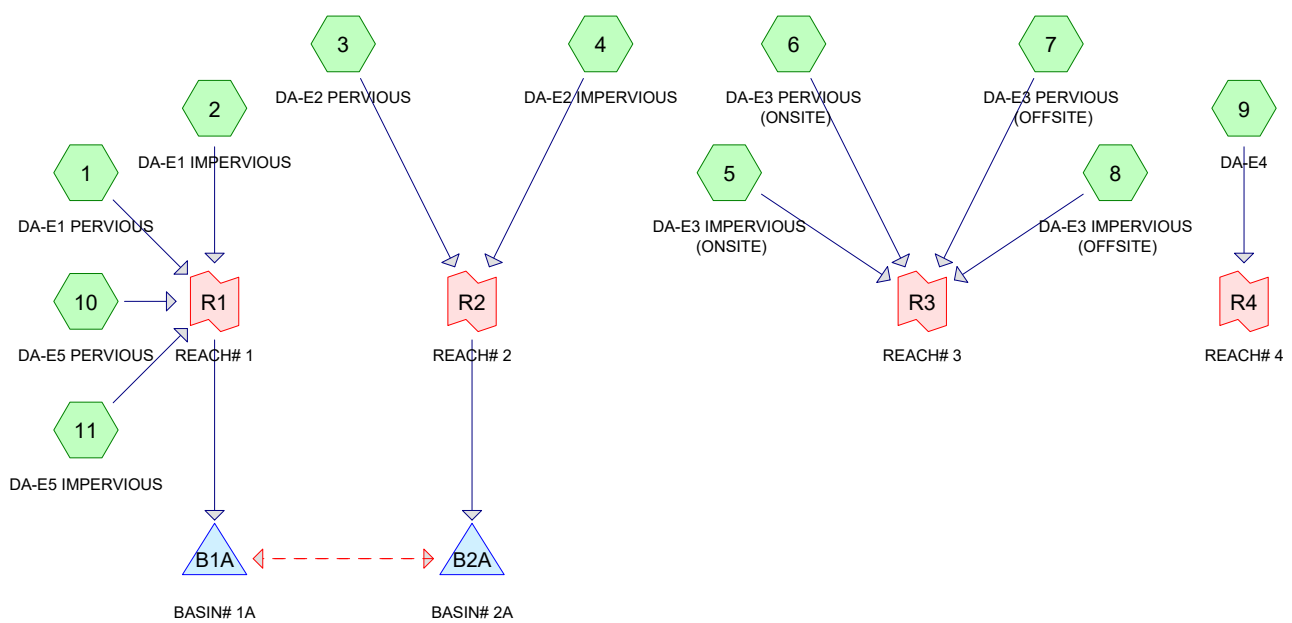
Due to the fact that the proposed development will reduce the peak runoff rates for the 2, 10 and 100-year design storm frequencies and comply with the Soil Conservation District and New Jersey Department of Environmental Protection flow reductions requirements, it is evident that the proposed development will not have a negative impact on the existing stormwater management system or the adjacent properties, in the vicinity of the subject parcel.

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A. PRE- vs. POST-DEVELOPMENT HYDROGRAPHS

- ◆ **Water Quality Storm Event for Pre-Development Conditions**
- ◆ **2-Year Storm Event for Pre-Development Conditions**
- ◆ **10-Year Storm Event for Pre-Development Conditions**
- ◆ **100-Year Storm Event for Pre-Development Conditions**
- ◆ **2-Year Storm Event for Reach #1, #2 & #3**
- ◆ **10-Year Storm Event for Reach #1, #2 & #3**
- ◆ **100-Year Storm Event for Reach #1, #2 & #3**
- ◆ **Water Quality Storm Event for Post-Development Conditions**
- ◆ **2-Year Storm Event for Post-Development Conditions**
- ◆ **10-Year Storm Event for Post-Development Conditions**
- ◆ **25-Year Storm Event for Post-Development Conditions**
- ◆ **100-Year Storm Event for Post-Development Conditions**

Water Quality Storm Event for Pre-Development
Conditions



Routing Diagram for EXISTING 2022-04
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
10.140	61	>75% Grass cover, Good, HSG B (1, 3, 6, 7, 9)
4.998	74	>75% Grass cover, Good, HSG C (1, 3, 10)
0.380	82	Dirt roads, HSG B (1, 3, 6)
0.963	87	Dirt roads, HSG C (1, 3)
0.364	85	Gravel roads, HSG B (6)
6.062	98	Paved parking, HSG B (2, 4, 5, 8, 9)
3.086	98	Paved parking, HSG C (2, 4, 11)
22.953	78	Row crops, straight row, Good, HSG B (1, 3, 6, 10)
36.553	85	Row crops, straight row, Good, HSG C (1, 3, 10)
9.037	55	Woods, Good, HSG B (1, 3, 6, 7)
2.591	70	Woods, Good, HSG C (1, 3, 10)
97.127	78	TOTAL AREA

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NJ DEP 2-hr WQ Rainfall=1.25"

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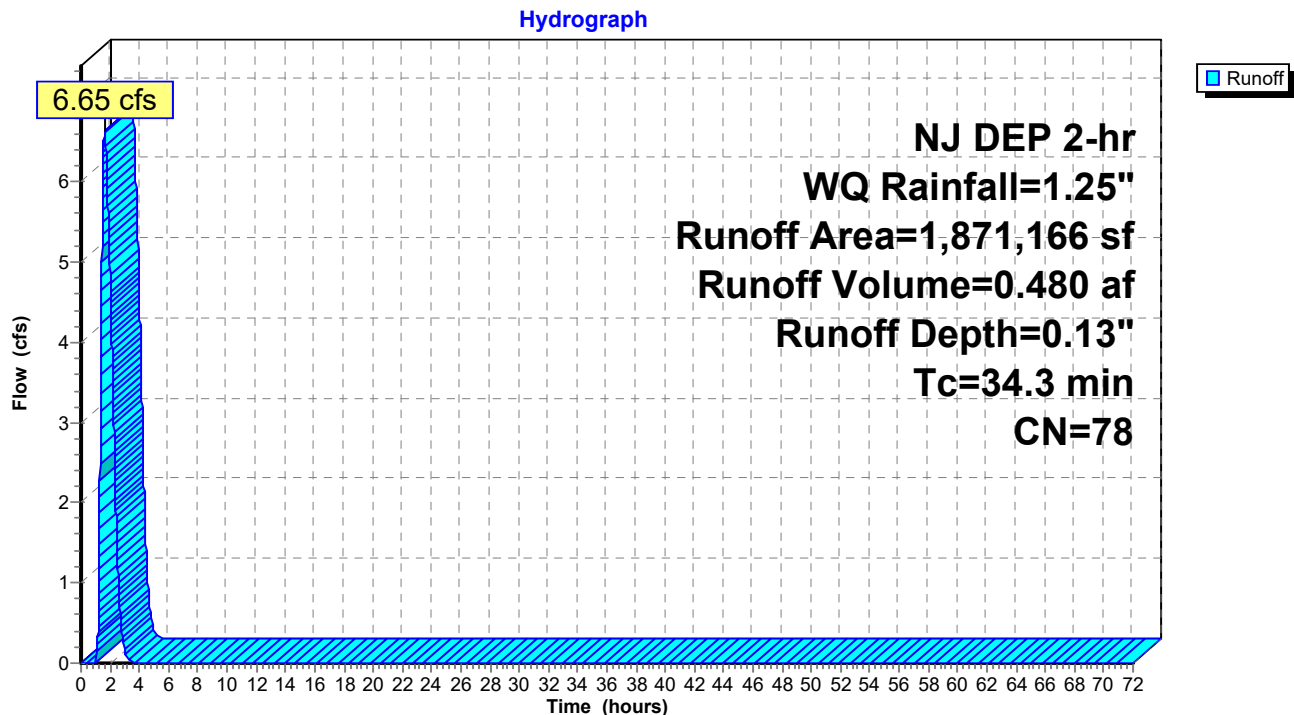
Summary for Subcatchment 1: DA-E1 PERVIOUS

Runoff = 6.65 cfs @ 1.63 hrs, Volume= 0.480 af, Depth= 0.13"

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

Area (sf)	CN	Description
166,165	55	Woods, Good, HSG B
63,858	70	Woods, Good, HSG C
22,000	87	Dirt roads, HSG C
12,148	82	Dirt roads, HSG B
40,999	74	>75% Grass cover, Good, HSG C
790,694	85	Row crops, straight row, Good, HSG C
663,289	78	Row crops, straight row, Good, HSG B
112,013	61	>75% Grass cover, Good, HSG B
1,871,166	78	Weighted Average
1,871,166		100.00% Pervious Area

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

Subcatchment 1: DA-E1 PERVIOUS

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 1: DA-E1 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	0.13	0.00
1.00	0.63	0.00	0.00	54.00	1.25	0.13	0.00
2.00	1.25	0.13	4.83	55.00	1.25	0.13	0.00
3.00	1.25	0.13	0.14	56.00	1.25	0.13	0.00
4.00	1.25	0.13	0.00	57.00	1.25	0.13	0.00
5.00	1.25	0.13	0.00	58.00	1.25	0.13	0.00
6.00	1.25	0.13	0.00	59.00	1.25	0.13	0.00
7.00	1.25	0.13	0.00	60.00	1.25	0.13	0.00
8.00	1.25	0.13	0.00	61.00	1.25	0.13	0.00
9.00	1.25	0.13	0.00	62.00	1.25	0.13	0.00
10.00	1.25	0.13	0.00	63.00	1.25	0.13	0.00
11.00	1.25	0.13	0.00	64.00	1.25	0.13	0.00
12.00	1.25	0.13	0.00	65.00	1.25	0.13	0.00
13.00	1.25	0.13	0.00	66.00	1.25	0.13	0.00
14.00	1.25	0.13	0.00	67.00	1.25	0.13	0.00
15.00	1.25	0.13	0.00	68.00	1.25	0.13	0.00
16.00	1.25	0.13	0.00	69.00	1.25	0.13	0.00
17.00	1.25	0.13	0.00	70.00	1.25	0.13	0.00
18.00	1.25	0.13	0.00	71.00	1.25	0.13	0.00
19.00	1.25	0.13	0.00	72.00	1.25	0.13	0.00
20.00	1.25	0.13	0.00				
21.00	1.25	0.13	0.00				
22.00	1.25	0.13	0.00				
23.00	1.25	0.13	0.00				
24.00	1.25	0.13	0.00				
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26.00	1.25	0.13	0.00				
27.00	1.25	0.13	0.00				
28.00	1.25	0.13	0.00				
29.00	1.25	0.13	0.00				
30.00	1.25	0.13	0.00				
31.00	1.25	0.13	0.00				
32.00	1.25	0.13	0.00				
33.00	1.25	0.13	0.00				
34.00	1.25	0.13	0.00				
35.00	1.25	0.13	0.00				
36.00	1.25	0.13	0.00				
37.00	1.25	0.13	0.00				
38.00	1.25	0.13	0.00				
39.00	1.25	0.13	0.00				
40.00	1.25	0.13	0.00				
41.00	1.25	0.13	0.00				
42.00	1.25	0.13	0.00				
43.00	1.25	0.13	0.00				
44.00	1.25	0.13	0.00				
45.00	1.25	0.13	0.00				
46.00	1.25	0.13	0.00				
47.00	1.25	0.13	0.00				
48.00	1.25	0.13	0.00				
49.00	1.25	0.13	0.00				
50.00	1.25	0.13	0.00				
51.00	1.25	0.13	0.00				
52.00	1.25	0.13	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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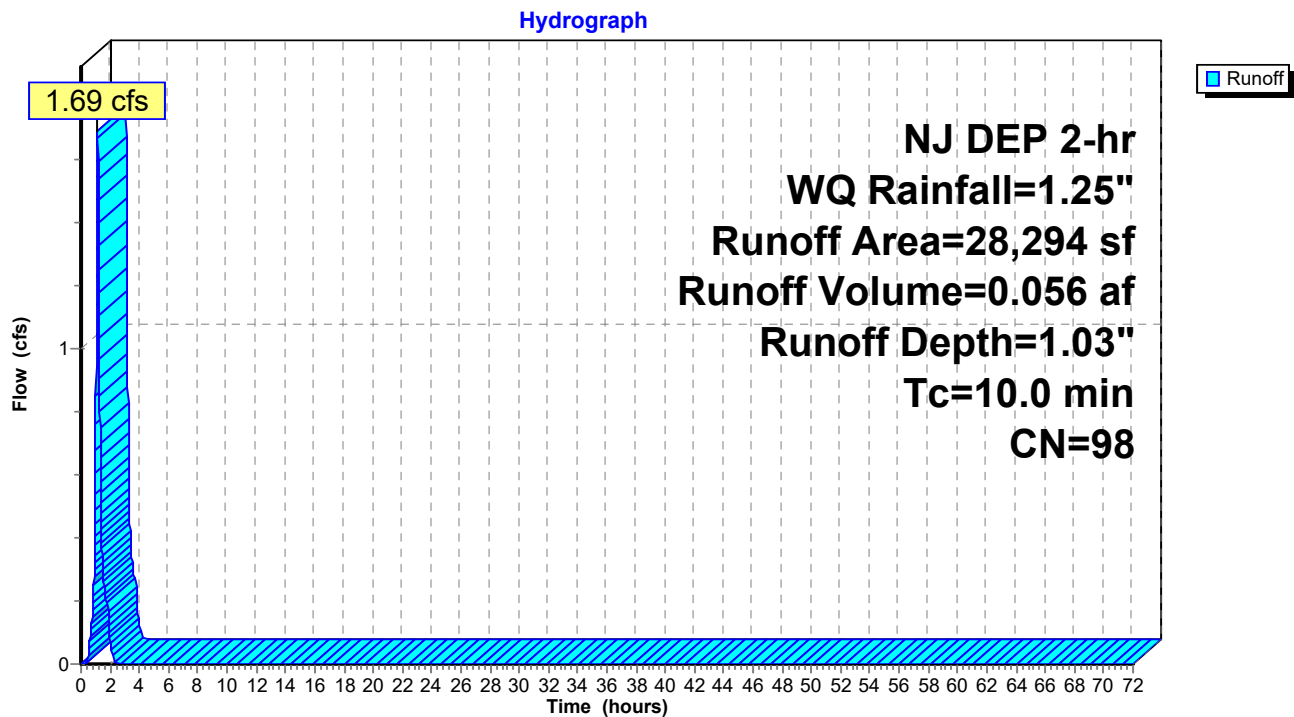
Summary for Subcatchment 2: DA-E1 IMPERVIOUS

Runoff = 1.69 cfs @ 1.15 hrs, Volume= 0.056 af, Depth= 1.03"

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

Area (sf)	CN	Description
4,949	98	Paved parking, HSG B
23,345	98	Paved parking, HSG C
28,294	98	Weighted Average
28,294		100.00% Impervious Area

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

Subcatchment 2: DA-E1 IMPERVIOUS

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 2: DA-E1 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	1.03	0.00
1.00	0.63	0.43	0.68	54.00	1.25	1.03	0.00
2.00	1.25	1.03	0.08	55.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	56.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	57.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	58.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	59.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	60.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
17.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
18.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
19.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
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43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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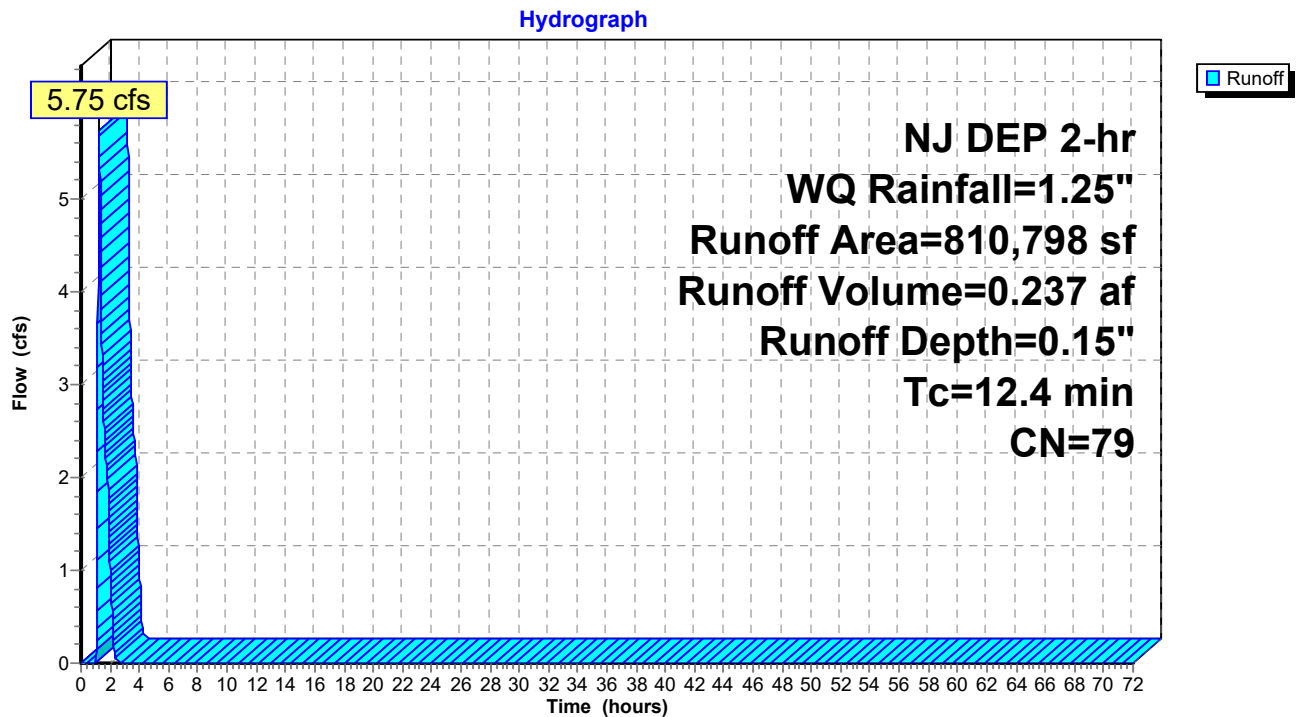
Summary for Subcatchment 3: DA-E2 PERVIOUS

Runoff = 5.75 cfs @ 1.25 hrs, Volume= 0.237 af, Depth= 0.15"

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

Area (sf)	CN	Description
28,328	70	Woods, Good, HSG C
28,191	55	Woods, Good, HSG B
498,060	85	Row crops, straight row, Good, HSG C
70,817	61	>75% Grass cover, Good, HSG B
152,643	74	>75% Grass cover, Good, HSG C
1,080	82	Dirt roads, HSG B
19,958	87	Dirt roads, HSG C
11,721	78	Row crops, straight row, Good, HSG B
810,798	79	Weighted Average
810,798		100.00% Pervious Area

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

Subcatchment 3: DA-E2 PERVIOUS

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 3: DA-E2 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	0.15	0.00
1.00	0.63	0.00	0.00	54.00	1.25	0.15	0.00
2.00	1.25	0.15	0.99	55.00	1.25	0.15	0.00
3.00	1.25	0.15	0.00	56.00	1.25	0.15	0.00
4.00	1.25	0.15	0.00	57.00	1.25	0.15	0.00
5.00	1.25	0.15	0.00	58.00	1.25	0.15	0.00
6.00	1.25	0.15	0.00	59.00	1.25	0.15	0.00
7.00	1.25	0.15	0.00	60.00	1.25	0.15	0.00
8.00	1.25	0.15	0.00	61.00	1.25	0.15	0.00
9.00	1.25	0.15	0.00	62.00	1.25	0.15	0.00
10.00	1.25	0.15	0.00	63.00	1.25	0.15	0.00
11.00	1.25	0.15	0.00	64.00	1.25	0.15	0.00
12.00	1.25	0.15	0.00	65.00	1.25	0.15	0.00
13.00	1.25	0.15	0.00	66.00	1.25	0.15	0.00
14.00	1.25	0.15	0.00	67.00	1.25	0.15	0.00
15.00	1.25	0.15	0.00	68.00	1.25	0.15	0.00
16.00	1.25	0.15	0.00	69.00	1.25	0.15	0.00
17.00	1.25	0.15	0.00	70.00	1.25	0.15	0.00
18.00	1.25	0.15	0.00	71.00	1.25	0.15	0.00
19.00	1.25	0.15	0.00	72.00	1.25	0.15	0.00
20.00	1.25	0.15	0.00				
21.00	1.25	0.15	0.00				
22.00	1.25	0.15	0.00				
23.00	1.25	0.15	0.00				
24.00	1.25	0.15	0.00				
25.00	1.25	0.15	0.00				
26.00	1.25	0.15	0.00				
27.00	1.25	0.15	0.00				
28.00	1.25	0.15	0.00				
29.00	1.25	0.15	0.00				
30.00	1.25	0.15	0.00				
31.00	1.25	0.15	0.00				
32.00	1.25	0.15	0.00				
33.00	1.25	0.15	0.00				
34.00	1.25	0.15	0.00				
35.00	1.25	0.15	0.00				
36.00	1.25	0.15	0.00				
37.00	1.25	0.15	0.00				
38.00	1.25	0.15	0.00				
39.00	1.25	0.15	0.00				
40.00	1.25	0.15	0.00				
41.00	1.25	0.15	0.00				
42.00	1.25	0.15	0.00				
43.00	1.25	0.15	0.00				
44.00	1.25	0.15	0.00				
45.00	1.25	0.15	0.00				
46.00	1.25	0.15	0.00				
47.00	1.25	0.15	0.00				
48.00	1.25	0.15	0.00				
49.00	1.25	0.15	0.00				
50.00	1.25	0.15	0.00				
51.00	1.25	0.15	0.00				
52.00	1.25	0.15	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 4: DA-E2 IMPERVIOUS

Runoff = 8.80 cfs @ 1.15 hrs, Volume= 0.292 af, Depth= 1.03"

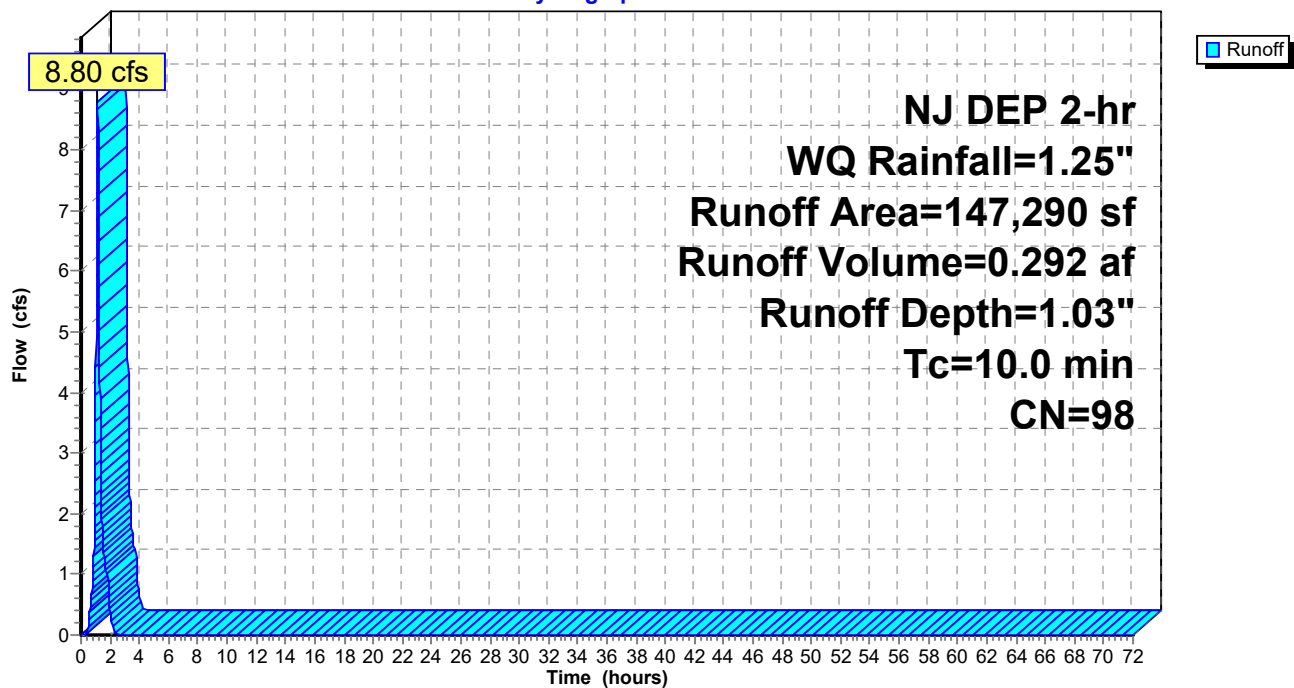
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
98,373	98	Paved parking, HSG C
48,917	98	Paved parking, HSG B
147,290	98	Weighted Average
147,290		100.00% Impervious Area

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

Subcatchment 4: DA-E2 IMPERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 4: DA-E2 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	1.03	0.00
1.00	0.63	0.43	3.53	54.00	1.25	1.03	0.00
2.00	1.25	1.03	0.40	55.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	56.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	57.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	58.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	59.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	60.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
17.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
18.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
19.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
39.00	1.25	1.03	0.00				
40.00	1.25	1.03	0.00				
41.00	1.25	1.03	0.00				
42.00	1.25	1.03	0.00				
43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Runoff = 3.81 cfs @ 1.15 hrs, Volume= 0.126 af, Depth= 1.03"

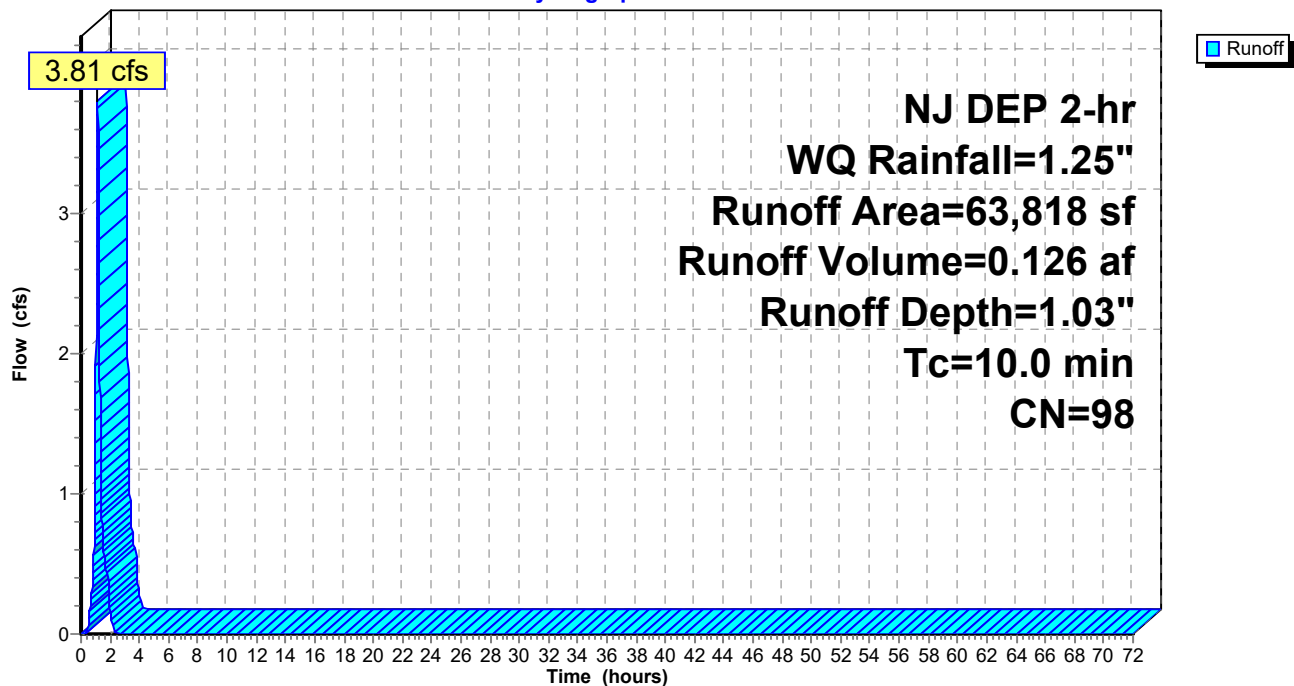
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
63,818	98	Paved parking, HSG B
63,818		100.00% Impervious Area

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

Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	1.03	0.00
1.00	0.63	0.43	1.53	54.00	1.25	1.03	0.00
2.00	1.25	1.03	0.17	55.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	56.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	57.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	58.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	59.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	60.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
17.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
18.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
19.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
39.00	1.25	1.03	0.00				
40.00	1.25	1.03	0.00				
41.00	1.25	1.03	0.00				
42.00	1.25	1.03	0.00				
43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Runoff = 0.36 cfs @ 1.82 hrs, Volume= 0.022 af, Depth= 0.03"

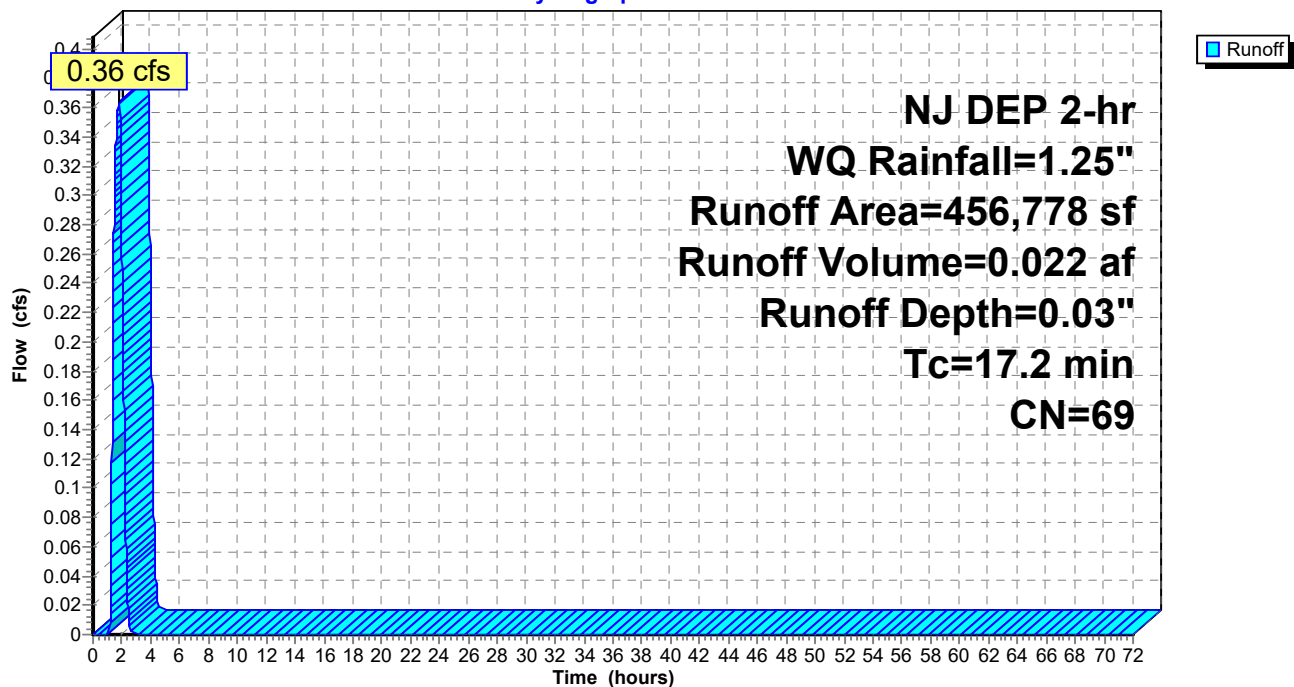
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
3,315	82	Dirt roads, HSG B
15,871	85	Gravel roads, HSG B
131,615	55	Woods, Good, HSG B
227,686	78	Row crops, straight row, Good, HSG B
78,291	61	>75% Grass cover, Good, HSG B
456,778	69	Weighted Average
456,778		100.00% Pervious Area

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

Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	0.03	0.00
1.00	0.63	0.00	0.00	54.00	1.25	0.03	0.00
2.00	1.25	0.03	0.26	55.00	1.25	0.03	0.00
3.00	1.25	0.03	0.00	56.00	1.25	0.03	0.00
4.00	1.25	0.03	0.00	57.00	1.25	0.03	0.00
5.00	1.25	0.03	0.00	58.00	1.25	0.03	0.00
6.00	1.25	0.03	0.00	59.00	1.25	0.03	0.00
7.00	1.25	0.03	0.00	60.00	1.25	0.03	0.00
8.00	1.25	0.03	0.00	61.00	1.25	0.03	0.00
9.00	1.25	0.03	0.00	62.00	1.25	0.03	0.00
10.00	1.25	0.03	0.00	63.00	1.25	0.03	0.00
11.00	1.25	0.03	0.00	64.00	1.25	0.03	0.00
12.00	1.25	0.03	0.00	65.00	1.25	0.03	0.00
13.00	1.25	0.03	0.00	66.00	1.25	0.03	0.00
14.00	1.25	0.03	0.00	67.00	1.25	0.03	0.00
15.00	1.25	0.03	0.00	68.00	1.25	0.03	0.00
16.00	1.25	0.03	0.00	69.00	1.25	0.03	0.00
17.00	1.25	0.03	0.00	70.00	1.25	0.03	0.00
18.00	1.25	0.03	0.00	71.00	1.25	0.03	0.00
19.00	1.25	0.03	0.00	72.00	1.25	0.03	0.00
20.00	1.25	0.03	0.00				
21.00	1.25	0.03	0.00				
22.00	1.25	0.03	0.00				
23.00	1.25	0.03	0.00				
24.00	1.25	0.03	0.00				
25.00	1.25	0.03	0.00				
26.00	1.25	0.03	0.00				
27.00	1.25	0.03	0.00				
28.00	1.25	0.03	0.00				
29.00	1.25	0.03	0.00				
30.00	1.25	0.03	0.00				
31.00	1.25	0.03	0.00				
32.00	1.25	0.03	0.00				
33.00	1.25	0.03	0.00				
34.00	1.25	0.03	0.00				
35.00	1.25	0.03	0.00				
36.00	1.25	0.03	0.00				
37.00	1.25	0.03	0.00				
38.00	1.25	0.03	0.00				
39.00	1.25	0.03	0.00				
40.00	1.25	0.03	0.00				
41.00	1.25	0.03	0.00				
42.00	1.25	0.03	0.00				
43.00	1.25	0.03	0.00				
44.00	1.25	0.03	0.00				
45.00	1.25	0.03	0.00				
46.00	1.25	0.03	0.00				
47.00	1.25	0.03	0.00				
48.00	1.25	0.03	0.00				
49.00	1.25	0.03	0.00				
50.00	1.25	0.03	0.00				
51.00	1.25	0.03	0.00				
52.00	1.25	0.03	0.00				

Summary for Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

[45] Hint: Runoff=Zero

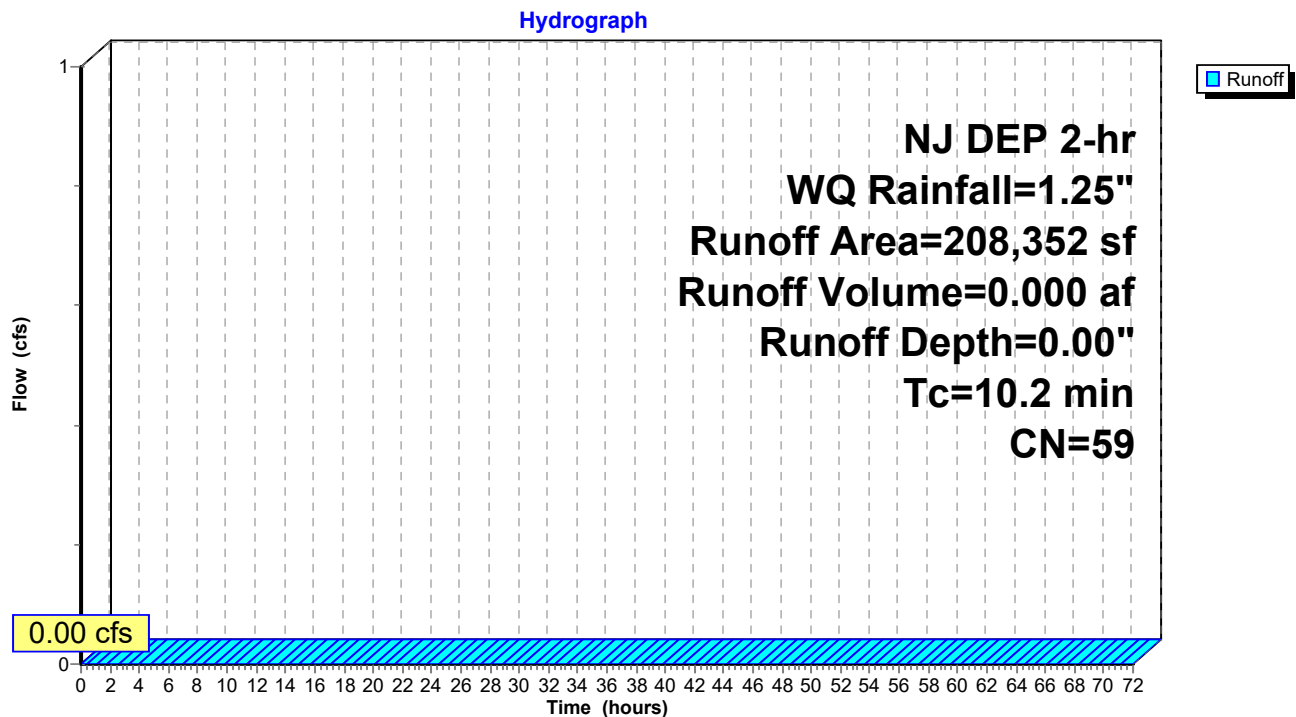
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

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

Area (sf)	CN	Description
67,674	55	Woods, Good, HSG B
140,678	61	>75% Grass cover, Good, HSG B
208,352	59	Weighted Average
208,352		100.00% Pervious Area

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

Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	0.00	0.00
1.00	0.63	0.00	0.00	54.00	1.25	0.00	0.00
2.00	1.25	0.00	0.00	55.00	1.25	0.00	0.00
3.00	1.25	0.00	0.00	56.00	1.25	0.00	0.00
4.00	1.25	0.00	0.00	57.00	1.25	0.00	0.00
5.00	1.25	0.00	0.00	58.00	1.25	0.00	0.00
6.00	1.25	0.00	0.00	59.00	1.25	0.00	0.00
7.00	1.25	0.00	0.00	60.00	1.25	0.00	0.00
8.00	1.25	0.00	0.00	61.00	1.25	0.00	0.00
9.00	1.25	0.00	0.00	62.00	1.25	0.00	0.00
10.00	1.25	0.00	0.00	63.00	1.25	0.00	0.00
11.00	1.25	0.00	0.00	64.00	1.25	0.00	0.00
12.00	1.25	0.00	0.00	65.00	1.25	0.00	0.00
13.00	1.25	0.00	0.00	66.00	1.25	0.00	0.00
14.00	1.25	0.00	0.00	67.00	1.25	0.00	0.00
15.00	1.25	0.00	0.00	68.00	1.25	0.00	0.00
16.00	1.25	0.00	0.00	69.00	1.25	0.00	0.00
17.00	1.25	0.00	0.00	70.00	1.25	0.00	0.00
18.00	1.25	0.00	0.00	71.00	1.25	0.00	0.00
19.00	1.25	0.00	0.00	72.00	1.25	0.00	0.00
20.00	1.25	0.00	0.00				
21.00	1.25	0.00	0.00				
22.00	1.25	0.00	0.00				
23.00	1.25	0.00	0.00				
24.00	1.25	0.00	0.00				
25.00	1.25	0.00	0.00				
26.00	1.25	0.00	0.00				
27.00	1.25	0.00	0.00				
28.00	1.25	0.00	0.00				
29.00	1.25	0.00	0.00				
30.00	1.25	0.00	0.00				
31.00	1.25	0.00	0.00				
32.00	1.25	0.00	0.00				
33.00	1.25	0.00	0.00				
34.00	1.25	0.00	0.00				
35.00	1.25	0.00	0.00				
36.00	1.25	0.00	0.00				
37.00	1.25	0.00	0.00				
38.00	1.25	0.00	0.00				
39.00	1.25	0.00	0.00				
40.00	1.25	0.00	0.00				
41.00	1.25	0.00	0.00				
42.00	1.25	0.00	0.00				
43.00	1.25	0.00	0.00				
44.00	1.25	0.00	0.00				
45.00	1.25	0.00	0.00				
46.00	1.25	0.00	0.00				
47.00	1.25	0.00	0.00				
48.00	1.25	0.00	0.00				
49.00	1.25	0.00	0.00				
50.00	1.25	0.00	0.00				
51.00	1.25	0.00	0.00				
52.00	1.25	0.00	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Runoff = 7.87 cfs @ 1.15 hrs, Volume= 0.261 af, Depth= 1.03"

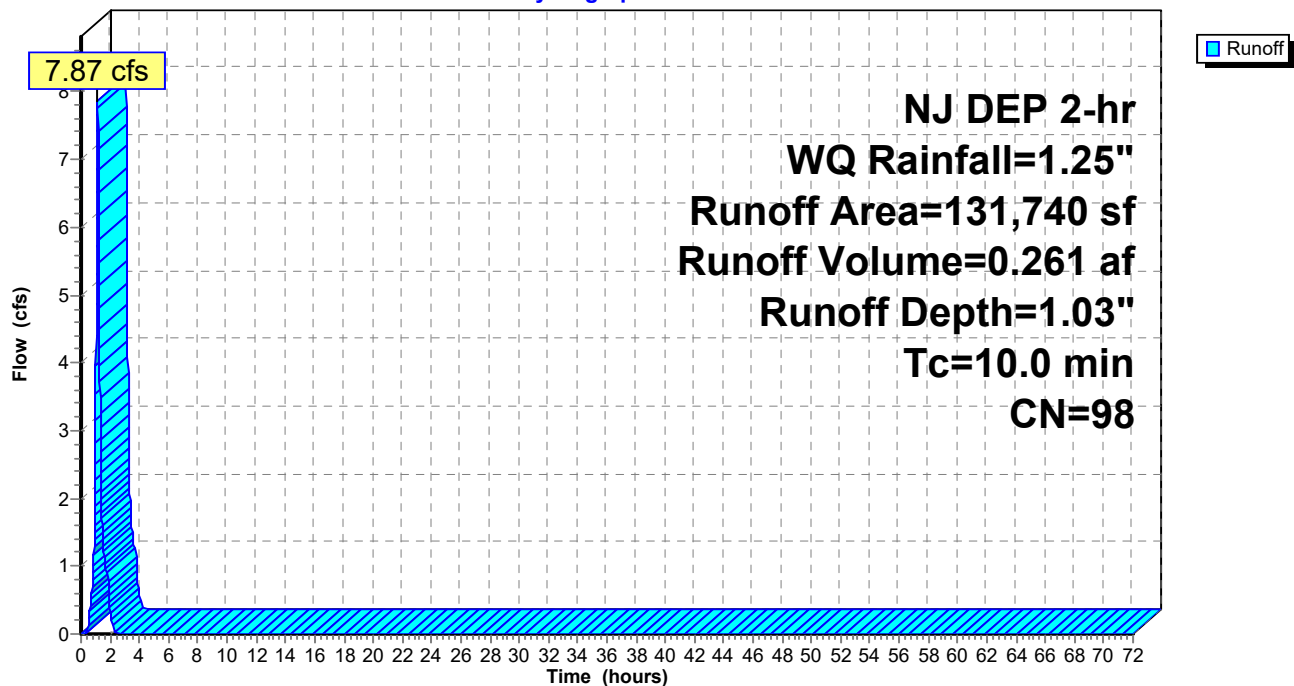
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
131,740	98	Paved parking, HSG B
131,740		100.00% Impervious Area

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

Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	1.03	0.00
1.00	0.63	0.43	3.16	54.00	1.25	1.03	0.00
2.00	1.25	1.03	0.36	55.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	56.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	57.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	58.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	59.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	60.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
17.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
18.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
19.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
39.00	1.25	1.03	0.00				
40.00	1.25	1.03	0.00				
41.00	1.25	1.03	0.00				
42.00	1.25	1.03	0.00				
43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 9: DA-E4

Runoff = 0.08 cfs @ 1.32 hrs, Volume= 0.004 af, Depth= 0.04"

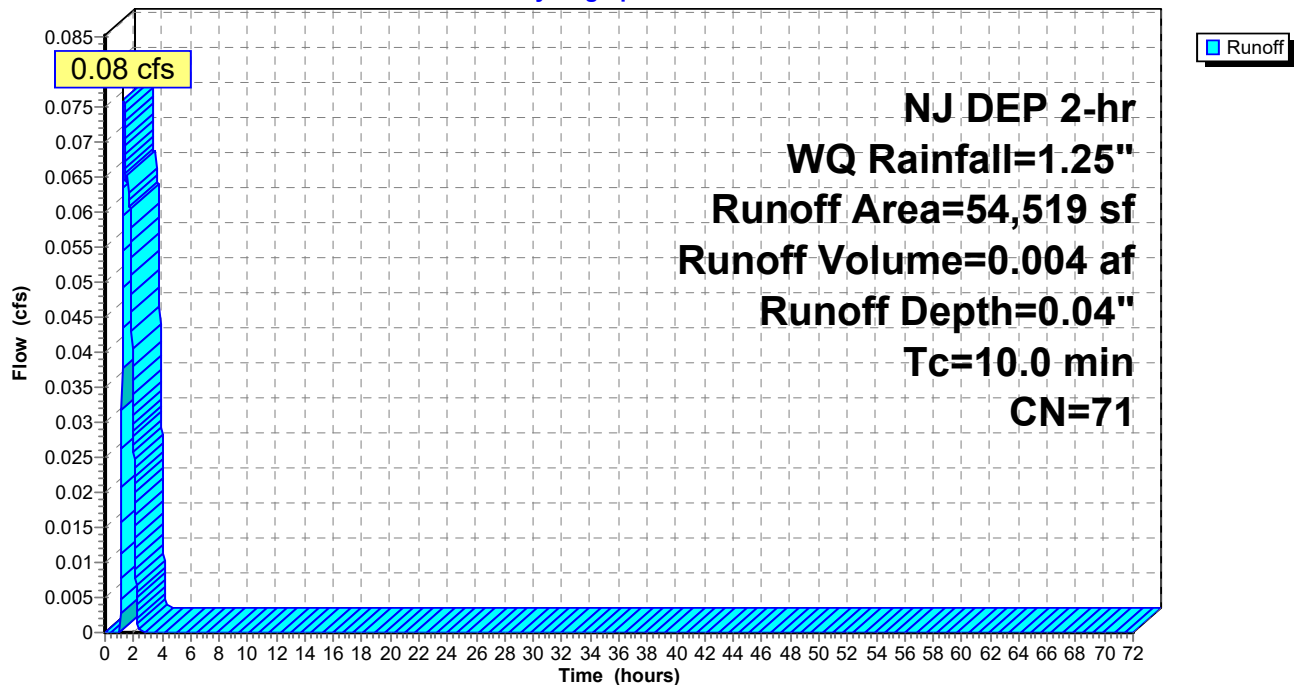
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
14,621	98	Paved parking, HSG B
39,898	61	>75% Grass cover, Good, HSG B
54,519	71	Weighted Average
39,898		73.18% Pervious Area
14,621		26.82% Impervious Area

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

Subcatchment 9: DA-E4

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 9: DA-E4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	0.04	0.00
1.00	0.63	0.00	0.00	54.00	1.25	0.04	0.00
2.00	1.25	0.04	0.03	55.00	1.25	0.04	0.00
3.00	1.25	0.04	0.00	56.00	1.25	0.04	0.00
4.00	1.25	0.04	0.00	57.00	1.25	0.04	0.00
5.00	1.25	0.04	0.00	58.00	1.25	0.04	0.00
6.00	1.25	0.04	0.00	59.00	1.25	0.04	0.00
7.00	1.25	0.04	0.00	60.00	1.25	0.04	0.00
8.00	1.25	0.04	0.00	61.00	1.25	0.04	0.00
9.00	1.25	0.04	0.00	62.00	1.25	0.04	0.00
10.00	1.25	0.04	0.00	63.00	1.25	0.04	0.00
11.00	1.25	0.04	0.00	64.00	1.25	0.04	0.00
12.00	1.25	0.04	0.00	65.00	1.25	0.04	0.00
13.00	1.25	0.04	0.00	66.00	1.25	0.04	0.00
14.00	1.25	0.04	0.00	67.00	1.25	0.04	0.00
15.00	1.25	0.04	0.00	68.00	1.25	0.04	0.00
16.00	1.25	0.04	0.00	69.00	1.25	0.04	0.00
17.00	1.25	0.04	0.00	70.00	1.25	0.04	0.00
18.00	1.25	0.04	0.00	71.00	1.25	0.04	0.00
19.00	1.25	0.04	0.00	72.00	1.25	0.04	0.00
20.00	1.25	0.04	0.00				
21.00	1.25	0.04	0.00				
22.00	1.25	0.04	0.00				
23.00	1.25	0.04	0.00				
24.00	1.25	0.04	0.00				
25.00	1.25	0.04	0.00				
26.00	1.25	0.04	0.00				
27.00	1.25	0.04	0.00				
28.00	1.25	0.04	0.00				
29.00	1.25	0.04	0.00				
30.00	1.25	0.04	0.00				
31.00	1.25	0.04	0.00				
32.00	1.25	0.04	0.00				
33.00	1.25	0.04	0.00				
34.00	1.25	0.04	0.00				
35.00	1.25	0.04	0.00				
36.00	1.25	0.04	0.00				
37.00	1.25	0.04	0.00				
38.00	1.25	0.04	0.00				
39.00	1.25	0.04	0.00				
40.00	1.25	0.04	0.00				
41.00	1.25	0.04	0.00				
42.00	1.25	0.04	0.00				
43.00	1.25	0.04	0.00				
44.00	1.25	0.04	0.00				
45.00	1.25	0.04	0.00				
46.00	1.25	0.04	0.00				
47.00	1.25	0.04	0.00				
48.00	1.25	0.04	0.00				
49.00	1.25	0.04	0.00				
50.00	1.25	0.04	0.00				
51.00	1.25	0.04	0.00				
52.00	1.25	0.04	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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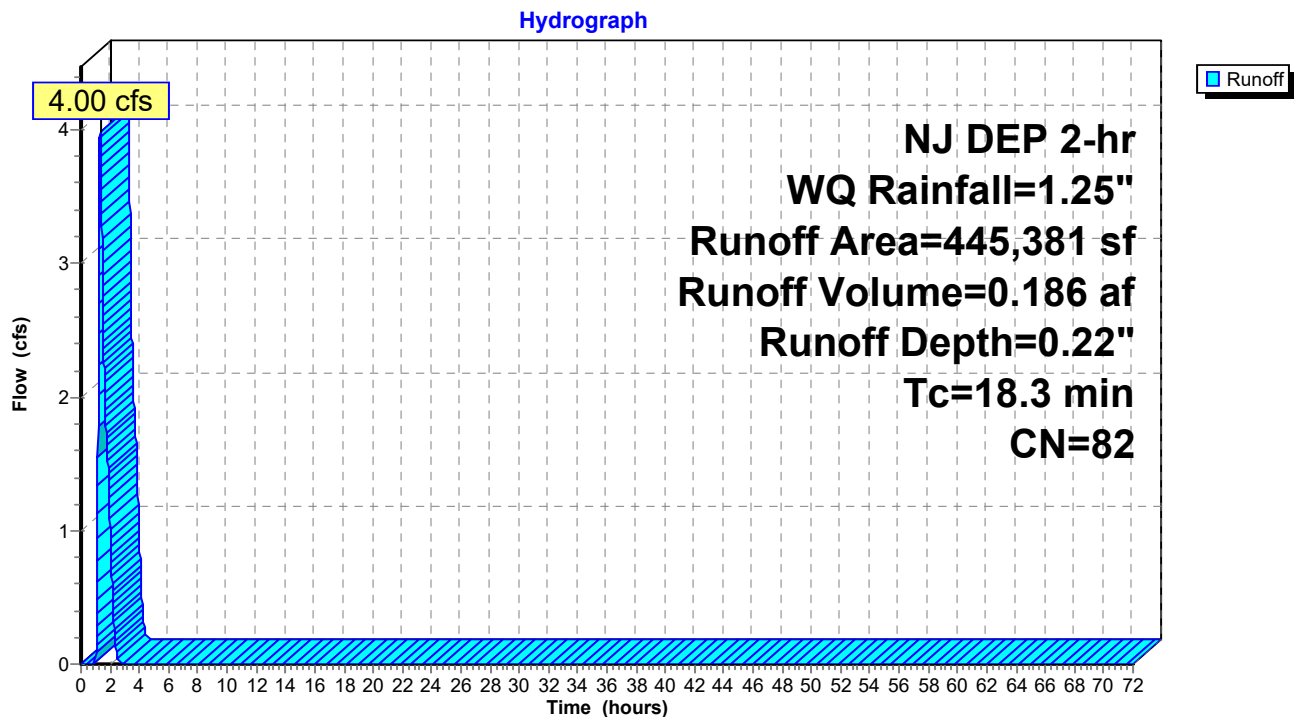
Summary for Subcatchment 10: DA-E5 PERVIOUS

Runoff = 4.00 cfs @ 1.32 hrs, Volume= 0.186 af, Depth= 0.22"

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

Area (sf)	CN	Description
24,074	74	>75% Grass cover, Good, HSG C
20,665	70	Woods, Good, HSG C
97,158	78	Row crops, straight row, Good, HSG B
303,484	85	Row crops, straight row, Good, HSG C
445,381	82	Weighted Average
445,381		100.00% Pervious Area

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

Subcatchment 10: DA-E5 PERVIOUS

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 10: DA-E5 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	0.22	0.00
1.00	0.63	0.01	0.01	54.00	1.25	0.22	0.00
2.00	1.25	0.22	1.00	55.00	1.25	0.22	0.00
3.00	1.25	0.22	0.00	56.00	1.25	0.22	0.00
4.00	1.25	0.22	0.00	57.00	1.25	0.22	0.00
5.00	1.25	0.22	0.00	58.00	1.25	0.22	0.00
6.00	1.25	0.22	0.00	59.00	1.25	0.22	0.00
7.00	1.25	0.22	0.00	60.00	1.25	0.22	0.00
8.00	1.25	0.22	0.00	61.00	1.25	0.22	0.00
9.00	1.25	0.22	0.00	62.00	1.25	0.22	0.00
10.00	1.25	0.22	0.00	63.00	1.25	0.22	0.00
11.00	1.25	0.22	0.00	64.00	1.25	0.22	0.00
12.00	1.25	0.22	0.00	65.00	1.25	0.22	0.00
13.00	1.25	0.22	0.00	66.00	1.25	0.22	0.00
14.00	1.25	0.22	0.00	67.00	1.25	0.22	0.00
15.00	1.25	0.22	0.00	68.00	1.25	0.22	0.00
16.00	1.25	0.22	0.00	69.00	1.25	0.22	0.00
17.00	1.25	0.22	0.00	70.00	1.25	0.22	0.00
18.00	1.25	0.22	0.00	71.00	1.25	0.22	0.00
19.00	1.25	0.22	0.00	72.00	1.25	0.22	0.00
20.00	1.25	0.22	0.00				
21.00	1.25	0.22	0.00				
22.00	1.25	0.22	0.00				
23.00	1.25	0.22	0.00				
24.00	1.25	0.22	0.00				
25.00	1.25	0.22	0.00				
26.00	1.25	0.22	0.00				
27.00	1.25	0.22	0.00				
28.00	1.25	0.22	0.00				
29.00	1.25	0.22	0.00				
30.00	1.25	0.22	0.00				
31.00	1.25	0.22	0.00				
32.00	1.25	0.22	0.00				
33.00	1.25	0.22	0.00				
34.00	1.25	0.22	0.00				
35.00	1.25	0.22	0.00				
36.00	1.25	0.22	0.00				
37.00	1.25	0.22	0.00				
38.00	1.25	0.22	0.00				
39.00	1.25	0.22	0.00				
40.00	1.25	0.22	0.00				
41.00	1.25	0.22	0.00				
42.00	1.25	0.22	0.00				
43.00	1.25	0.22	0.00				
44.00	1.25	0.22	0.00				
45.00	1.25	0.22	0.00				
46.00	1.25	0.22	0.00				
47.00	1.25	0.22	0.00				
48.00	1.25	0.22	0.00				
49.00	1.25	0.22	0.00				
50.00	1.25	0.22	0.00				
51.00	1.25	0.22	0.00				
52.00	1.25	0.22	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 11: DA-E5 IMPERVIOUS

Runoff = 0.76 cfs @ 1.15 hrs, Volume= 0.025 af, Depth= 1.03"

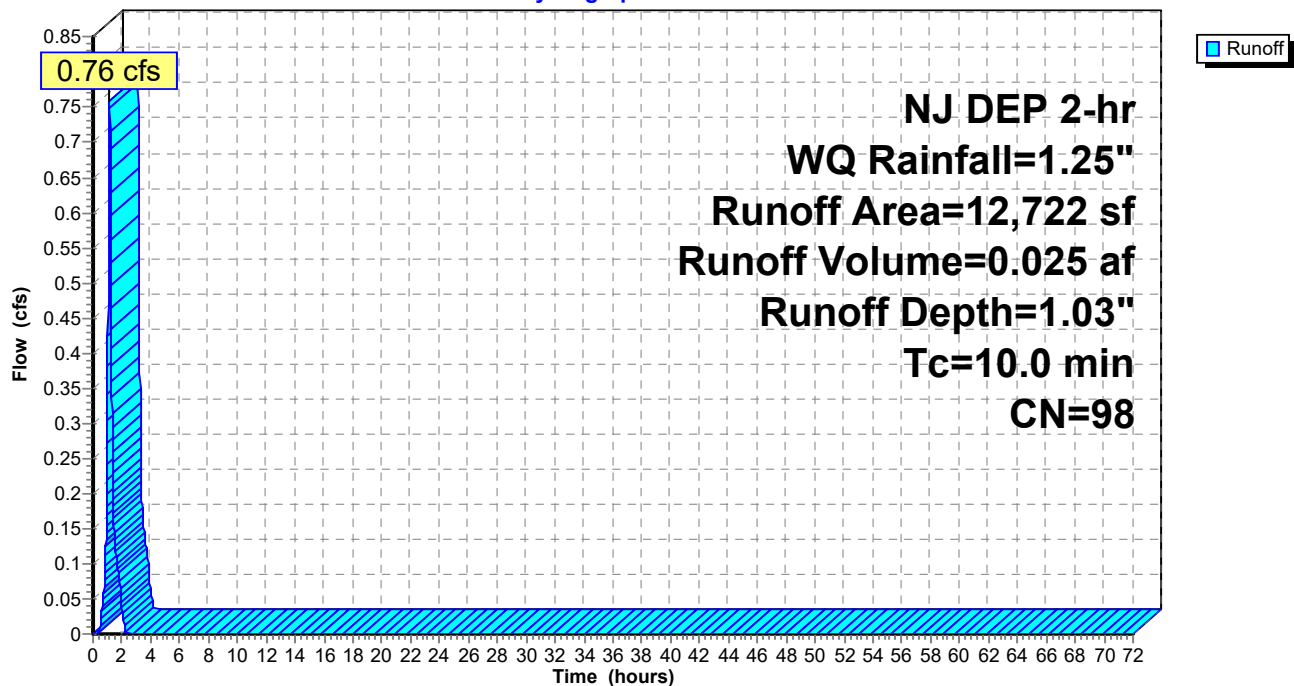
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
12,722	98	Paved parking, HSG C
12,722		100.00% Impervious Area

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

Subcatchment 11: DA-E5 IMPERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 11: DA-E5 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	1.25	1.03	0.00
1.00	0.63	0.43	0.30	54.00	1.25	1.03	0.00
2.00	1.25	1.03	0.03	55.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	56.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	57.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	58.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	59.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	60.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
17.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
18.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
19.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
39.00	1.25	1.03	0.00				
40.00	1.25	1.03	0.00				
41.00	1.25	1.03	0.00				
42.00	1.25	1.03	0.00				
43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Pond B1A: BASIN# 1A

[44] Hint: Outlet device #1 is below defined storage

[86] Warning: Oscillations may require smaller dt (severity=26)

Inflow = 9.22 cfs @ 1.57 hrs, Volume= 0.748 af
 Outflow = 6.27 cfs @ 1.98 hrs, Volume= 0.750 af, Atten= 32%, Lag= 24.8 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 6.27 cfs @ 1.98 hrs, Volume= 0.750 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 124.77' @ 1.98 hrs Surf.Area= 26,149 sf Storage= 11,158 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 25.9 min (128.7 - 102.7)

Volume	Invert	Avail.Storage	Storage Description
#1	123.70'	426,110 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.70	0	0	0
124.00	1,994	299	299
125.00	33,295	17,645	17,944
125.30	49,002	12,345	30,288
126.00	97,778	51,373	81,661
127.00	170,836	134,307	215,968
128.00	249,447	210,142	426,110

Device	Routing	Invert	Outlet Devices
#1	Primary	123.51'	24.0" Round Culvert L= 192.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 123.51' / 123.19' S= 0.0017 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Primary	124.20'	18.0" Round Culvert L= 180.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 124.20' / 122.02' S= 0.0121 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Discarded	125.50'	40.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Discarded	126.50'	60.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=123.70' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Primary OutFlow Max=6.27 cfs @ 1.98 hrs HW=124.77' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 4.67 cfs @ 3.19 fps)

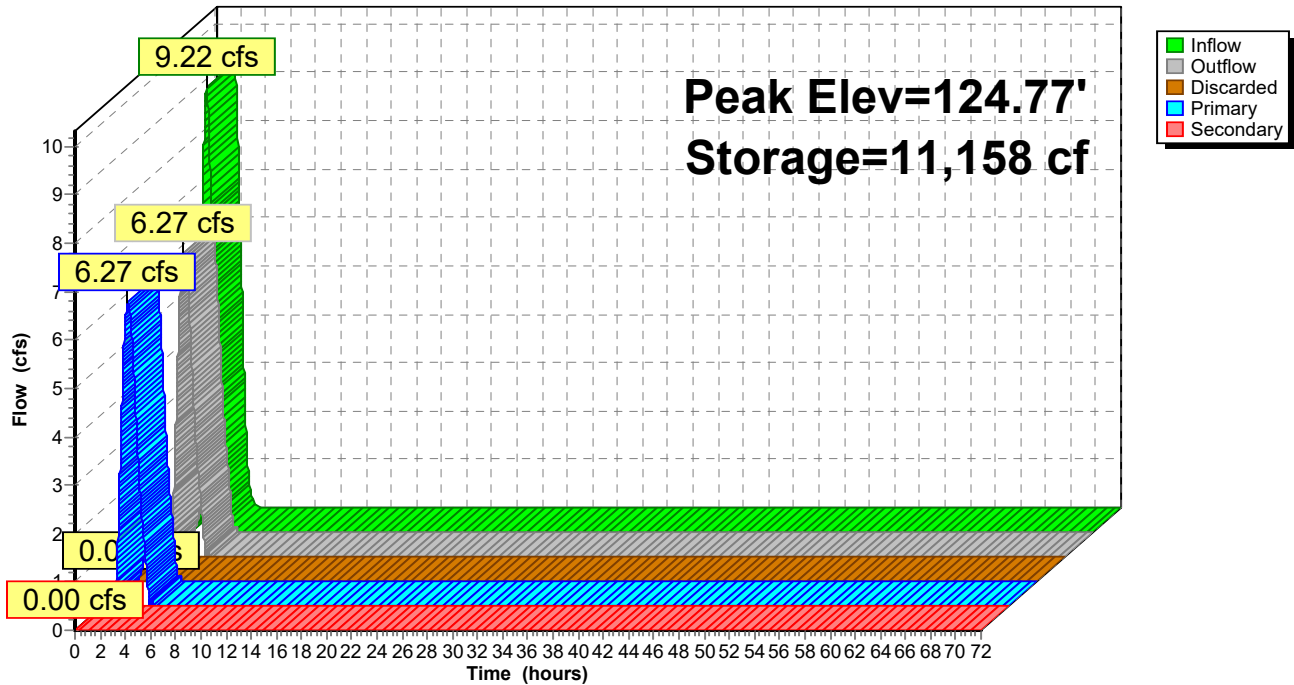
↑ **2=Culvert** (Inlet Controls 1.59 cfs @ 2.57 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=123.70' TW=120.66' (Dynamic Tailwater)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B1A: BASIN# 1A

Hydrograph



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Hydrograph for Pond B1A: BASIN# 1A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	123.70	0.00	0.00	0.00	0.00
2.00	6.04	11,155	124.77	6.26	0.00	6.26	0.00
4.00	0.00	0	123.70	0.00	0.00	0.00	0.00
6.00	0.00	0	123.70	0.00	0.00	0.00	0.00
8.00	0.00	0	123.70	0.00	0.00	0.00	0.00
10.00	0.00	0	123.70	0.00	0.00	0.00	0.00
12.00	0.00	0	123.70	0.00	0.00	0.00	0.00
14.00	0.00	0	123.70	0.00	0.00	0.00	0.00
16.00	0.00	0	123.70	0.00	0.00	0.00	0.00
18.00	0.00	0	123.70	0.00	0.00	0.00	0.00
20.00	0.00	0	123.70	0.00	0.00	0.00	0.00
22.00	0.00	0	123.70	0.00	0.00	0.00	0.00
24.00	0.00	0	123.70	0.00	0.00	0.00	0.00
26.00	0.00	0	123.70	0.00	0.00	0.00	0.00
28.00	0.00	0	123.70	0.00	0.00	0.00	0.00
30.00	0.00	0	123.70	0.00	0.00	0.00	0.00
32.00	0.00	0	123.70	0.00	0.00	0.00	0.00
34.00	0.00	0	123.70	0.00	0.00	0.00	0.00
36.00	0.00	0	123.70	0.00	0.00	0.00	0.00
38.00	0.00	0	123.70	0.00	0.00	0.00	0.00
40.00	0.00	0	123.70	0.00	0.00	0.00	0.00
42.00	0.00	0	123.70	0.00	0.00	0.00	0.00
44.00	0.00	0	123.70	0.00	0.00	0.00	0.00
46.00	0.00	0	123.70	0.00	0.00	0.00	0.00
48.00	0.00	0	123.70	0.00	0.00	0.00	0.00
50.00	0.00	0	123.70	0.00	0.00	0.00	0.00
52.00	0.00	0	123.70	0.00	0.00	0.00	0.00
54.00	0.00	0	123.70	0.00	0.00	0.00	0.00
56.00	0.00	0	123.70	0.00	0.00	0.00	0.00
58.00	0.00	0	123.70	0.00	0.00	0.00	0.00
60.00	0.00	0	123.70	0.00	0.00	0.00	0.00
62.00	0.00	0	123.70	0.00	0.00	0.00	0.00
64.00	0.00	0	123.70	0.00	0.00	0.00	0.00
66.00	0.00	0	123.70	0.00	0.00	0.00	0.00
68.00	0.00	0	123.70	0.00	0.00	0.00	0.00
70.00	0.00	0	123.70	0.00	0.00	0.00	0.00
72.00	0.00	0	123.70	0.00	0.00	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Pond B2A: BASIN# 2A

Inflow = 12.83 cfs @ 1.20 hrs, Volume= 0.529 af
 Outflow = 12.53 cfs @ 1.23 hrs, Volume= 0.529 af, Atten= 2%, Lag= 1.9 min
 Primary = 12.53 cfs @ 1.23 hrs, Volume= 0.529 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 122.14' @ 1.23 hrs Surf.Area= 1,662 sf Storage= 1,023 cf

Plug-Flow detention time= 1.3 min calculated for 0.529 af (100% of inflow)
 Center-of-Mass det. time= 1.0 min (82.5 - 81.5)

Volume	Invert	Avail.Storage	Storage Description
#1	120.66'	294,132 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.66	0	0	0
121.00	102	17	17
123.00	2,840	2,942	2,959
124.00	12,899	7,870	10,829
125.00	29,081	20,990	31,819
125.50	41,742	17,706	49,525
126.00	56,845	24,647	74,171
127.00	101,362	79,104	153,275
128.00	180,352	140,857	294,132

Device	Routing	Invert	Outlet Devices
#1	Primary	120.66'	30.0" Round Culvert L= 212.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 120.66' / 118.50' S= 0.0102 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=12.53 cfs @ 1.23 hrs HW=122.14' (Free Discharge)

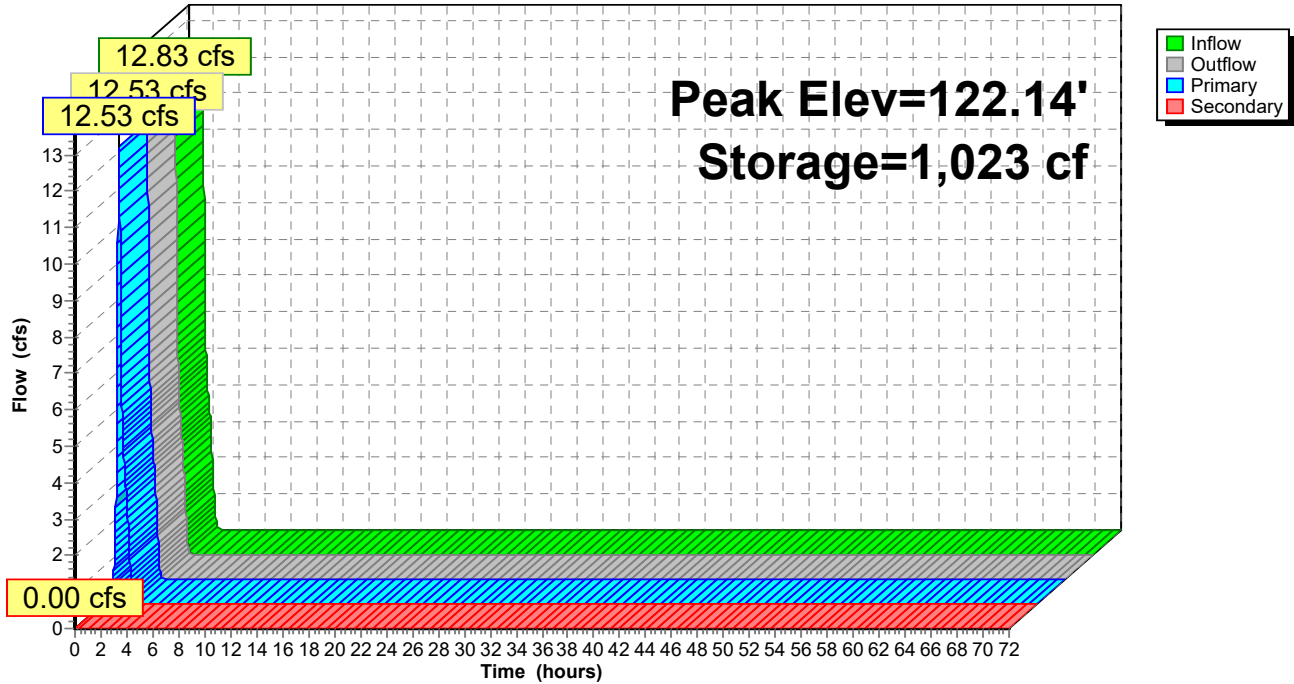
↑**1=Culvert** (Inlet Controls 12.53 cfs @ 4.14 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.66' TW=123.70' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B2A: BASIN# 2A

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Pond B2A: BASIN# 2A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	120.66	0.00	0.00	0.00
2.00	1.44	44	121.13	1.51	1.51	0.00
4.00	0.00	0	120.66	0.00	0.00	0.00
6.00	0.00	0	120.66	0.00	0.00	0.00
8.00	0.00	0	120.66	0.00	0.00	0.00
10.00	0.00	0	120.66	0.00	0.00	0.00
12.00	0.00	0	120.66	0.00	0.00	0.00
14.00	0.00	0	120.66	0.00	0.00	0.00
16.00	0.00	0	120.66	0.00	0.00	0.00
18.00	0.00	0	120.66	0.00	0.00	0.00
20.00	0.00	0	120.66	0.00	0.00	0.00
22.00	0.00	0	120.66	0.00	0.00	0.00
24.00	0.00	0	120.66	0.00	0.00	0.00
26.00	0.00	0	120.66	0.00	0.00	0.00
28.00	0.00	0	120.66	0.00	0.00	0.00
30.00	0.00	0	120.66	0.00	0.00	0.00
32.00	0.00	0	120.66	0.00	0.00	0.00
34.00	0.00	0	120.66	0.00	0.00	0.00
36.00	0.00	0	120.66	0.00	0.00	0.00
38.00	0.00	0	120.66	0.00	0.00	0.00
40.00	0.00	0	120.66	0.00	0.00	0.00
42.00	0.00	0	120.66	0.00	0.00	0.00
44.00	0.00	0	120.66	0.00	0.00	0.00
46.00	0.00	0	120.66	0.00	0.00	0.00
48.00	0.00	0	120.66	0.00	0.00	0.00
50.00	0.00	0	120.66	0.00	0.00	0.00
52.00	0.00	0	120.66	0.00	0.00	0.00
54.00	0.00	0	120.66	0.00	0.00	0.00
56.00	0.00	0	120.66	0.00	0.00	0.00
58.00	0.00	0	120.66	0.00	0.00	0.00
60.00	0.00	0	120.66	0.00	0.00	0.00
62.00	0.00	0	120.66	0.00	0.00	0.00
64.00	0.00	0	120.66	0.00	0.00	0.00
66.00	0.00	0	120.66	0.00	0.00	0.00
68.00	0.00	0	120.66	0.00	0.00	0.00
70.00	0.00	0	120.66	0.00	0.00	0.00
72.00	0.00	0	120.66	0.00	0.00	0.00

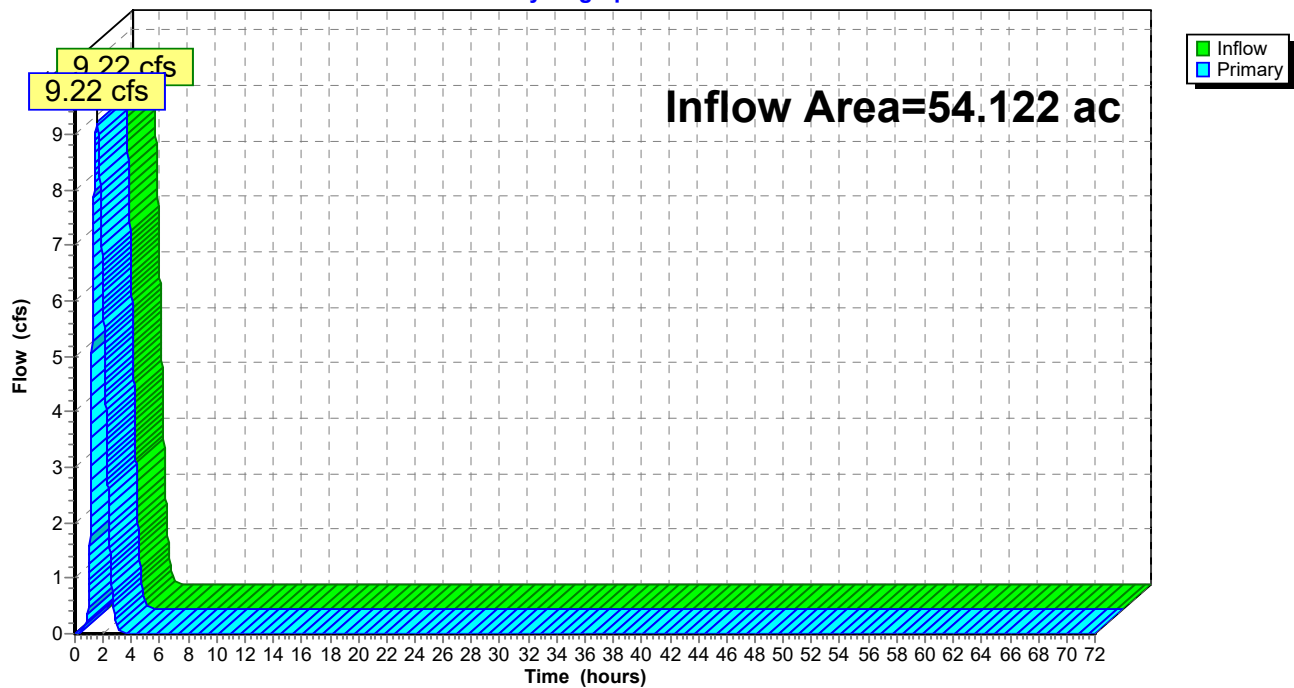
Summary for Link R1: REACH# 1

Inflow Area = 54.122 ac, 1.74% Impervious, Inflow Depth = 0.17" for WQ event
 Inflow = 9.22 cfs @ 1.56 hrs, Volume= 0.748 af
 Primary = 9.22 cfs @ 1.57 hrs, Volume= 0.748 af, Atten= 0%, Lag= 0.6 min

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

Link R1: REACH# 1

Hydrograph



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Hydrograph for Link R1: REACH# 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.99	0.00	0.88	54.00	0.00	0.00	0.00
2.00	5.94	0.00	6.04	55.00	0.00	0.00	0.00
3.00	0.14	0.00	0.15	56.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

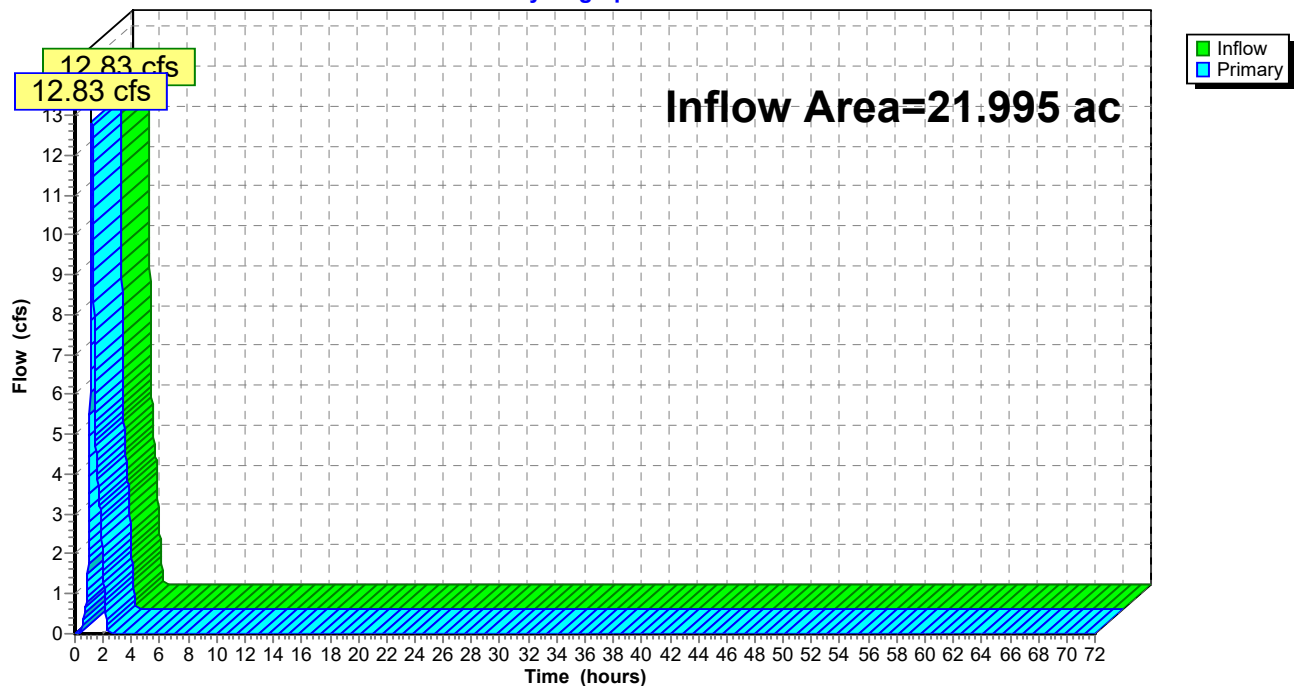
Summary for Link R2: REACH# 2

Inflow Area = 21.995 ac, 15.37% Impervious, Inflow Depth = 0.29" for WQ event
 Inflow = 12.83 cfs @ 1.19 hrs, Volume= 0.529 af
 Primary = 12.83 cfs @ 1.20 hrs, Volume= 0.529 af, Atten= 0%, Lag= 0.6 min

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

Link R2: REACH# 2

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Link R2: REACH# 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	3.53	0.00	3.14	54.00	0.00	0.00	0.00
2.00	1.39	0.00	1.44	55.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

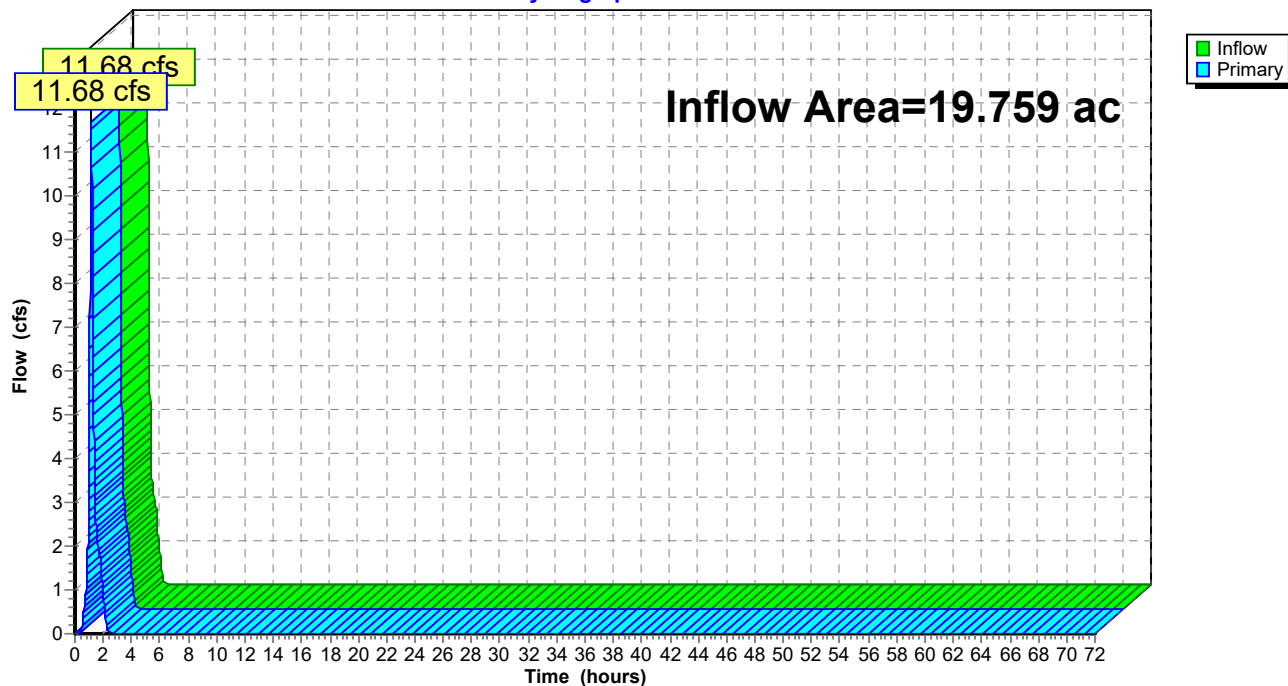
Summary for Link R3: REACH# 3

Inflow Area = 19.759 ac, 22.72% Impervious, Inflow Depth = 0.25" for WQ event
 Inflow = 11.68 cfs @ 1.15 hrs, Volume= 0.409 af
 Primary = 11.68 cfs @ 1.16 hrs, Volume= 0.409 af, Atten= 0%, Lag= 0.6 min

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

Link R3: REACH# 3

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Link R3: REACH# 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	4.68	0.00	4.17	54.00	0.00	0.00	0.00
2.00	0.79	0.00	0.81	55.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

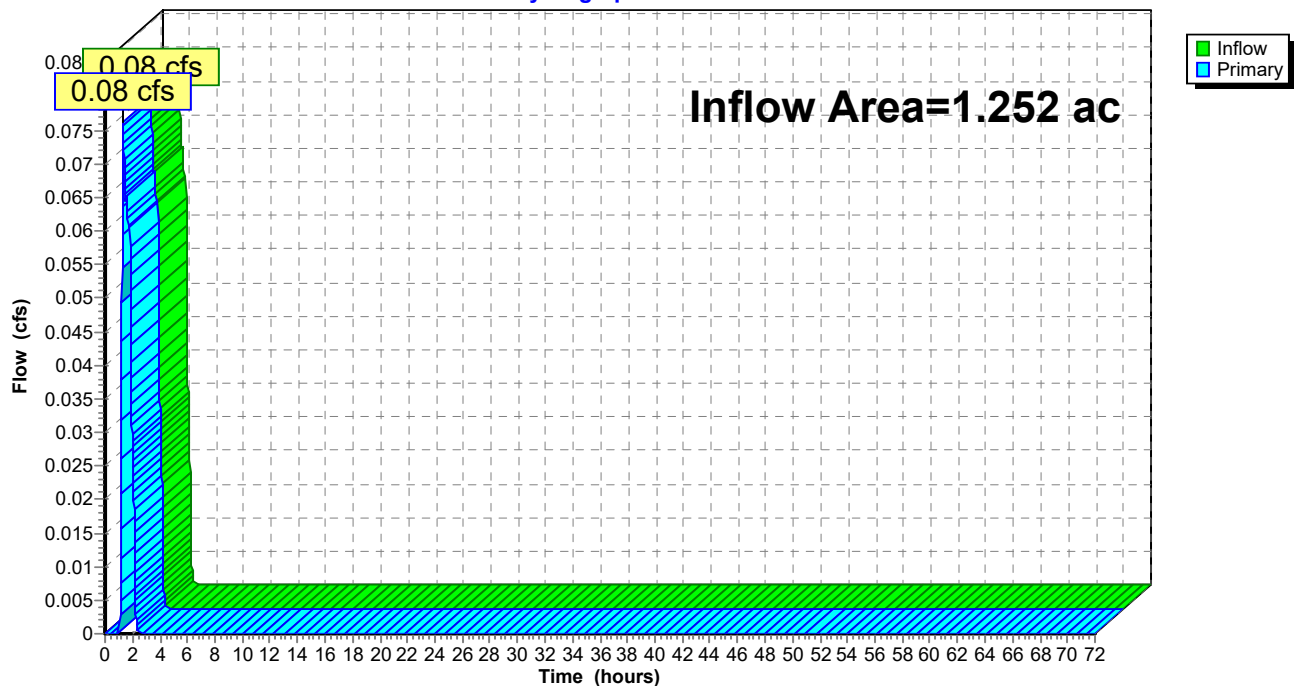
Summary for Link R4: REACH# 4

Inflow Area = 1.252 ac, 26.82% Impervious, Inflow Depth = 0.04" for WQ event
 Inflow = 0.08 cfs @ 1.32 hrs, Volume= 0.004 af
 Primary = 0.08 cfs @ 1.33 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.6 min

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

Link R4: REACH# 4

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

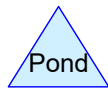
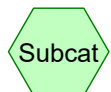
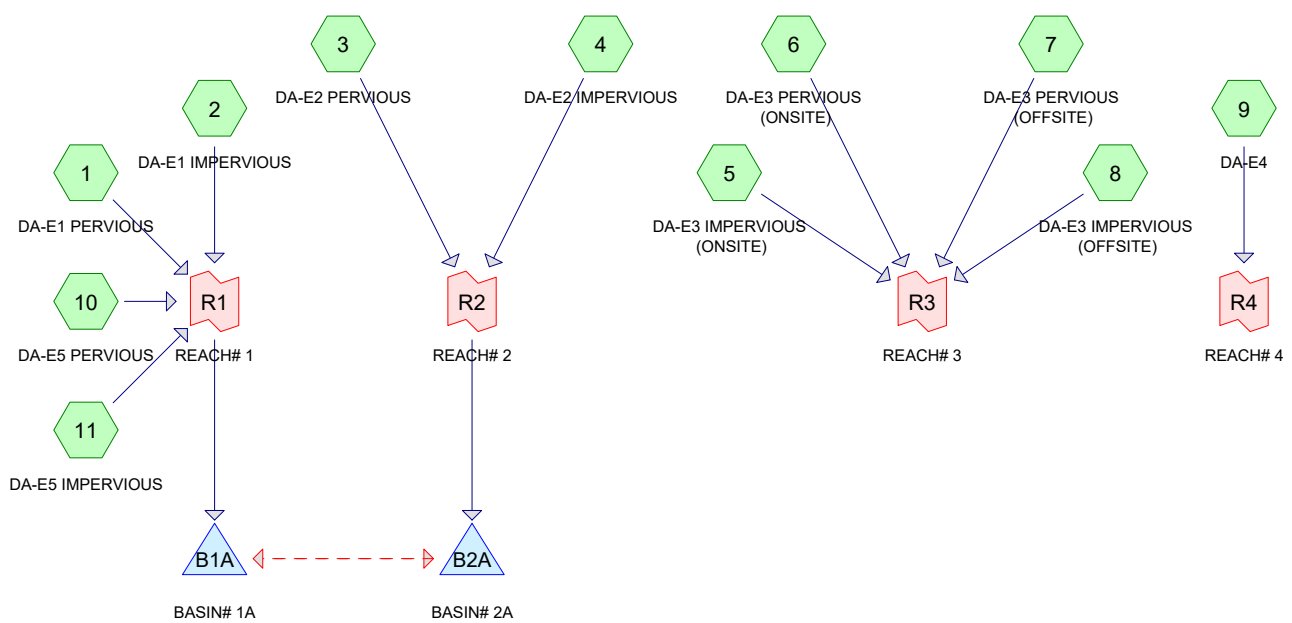
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Hydrograph for Link R4: REACH# 4

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.03	0.00	0.03	55.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

2-Year Storm Event for Pre-Development Conditions



Routing Diagram for EXISTING 2022-04
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
10.140	61	>75% Grass cover, Good, HSG B (1, 3, 6, 7, 9)
4.998	74	>75% Grass cover, Good, HSG C (1, 3, 10)
0.380	82	Dirt roads, HSG B (1, 3, 6)
0.963	87	Dirt roads, HSG C (1, 3)
0.364	85	Gravel roads, HSG B (6)
6.062	98	Paved parking, HSG B (2, 4, 5, 8, 9)
3.086	98	Paved parking, HSG C (2, 4, 11)
22.953	78	Row crops, straight row, Good, HSG B (1, 3, 6, 10)
36.553	85	Row crops, straight row, Good, HSG C (1, 3, 10)
9.037	55	Woods, Good, HSG B (1, 3, 6, 7)
2.591	70	Woods, Good, HSG C (1, 3, 10)
97.127	78	TOTAL AREA

EXISTING 2022-04

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 1: DA-E1 PERVIOUS

Runoff = 35.28 cfs @ 12.50 hrs, Volume= 4.822 af, Depth= 1.35"

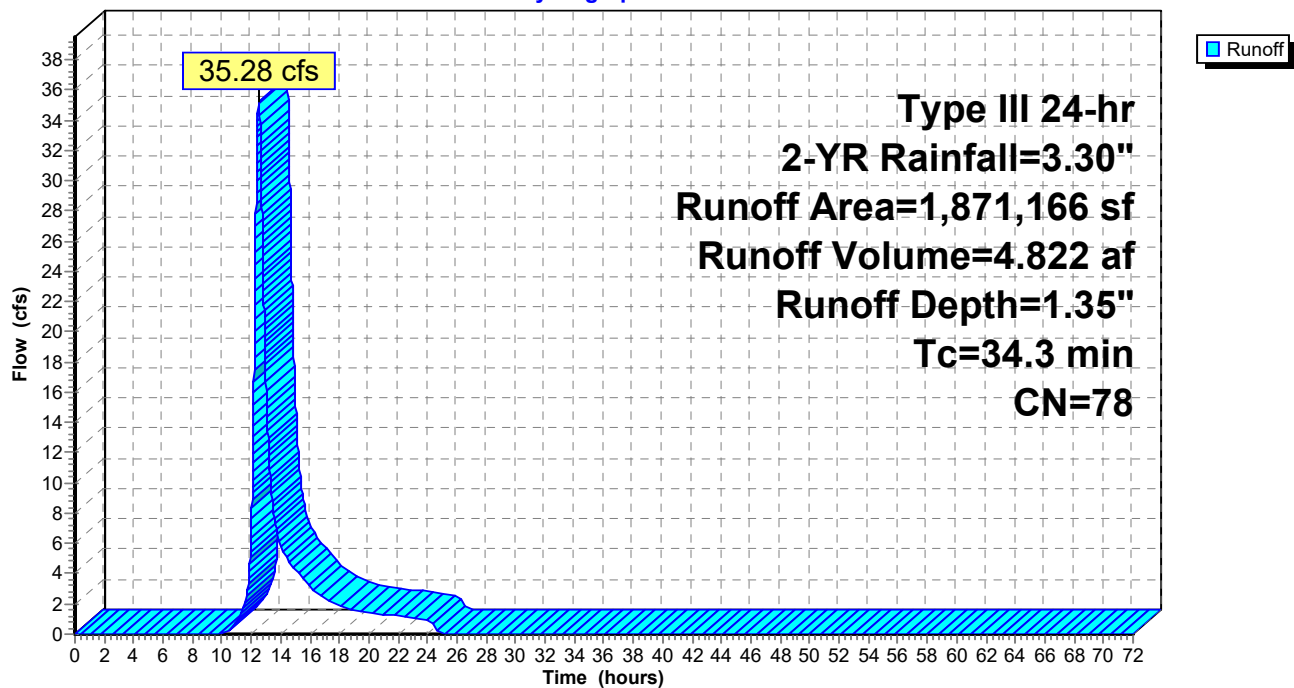
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
166,165	55	Woods, Good, HSG B
63,858	70	Woods, Good, HSG C
22,000	87	Dirt roads, HSG C
12,148	82	Dirt roads, HSG B
40,999	74	>75% Grass cover, Good, HSG C
790,694	85	Row crops, straight row, Good, HSG C
663,289	78	Row crops, straight row, Good, HSG B
112,013	61	>75% Grass cover, Good, HSG B
1,871,166	78	Weighted Average
1,871,166		100.00% Pervious Area

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

Subcatchment 1: DA-E1 PERVIOUS

Hydrograph



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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 1: DA-E1 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	1.35	0.00
1.00	0.03	0.00	0.00	54.00	3.30	1.35	0.00
2.00	0.07	0.00	0.00	55.00	3.30	1.35	0.00
3.00	0.10	0.00	0.00	56.00	3.30	1.35	0.00
4.00	0.14	0.00	0.00	57.00	3.30	1.35	0.00
5.00	0.19	0.00	0.00	58.00	3.30	1.35	0.00
6.00	0.24	0.00	0.00	59.00	3.30	1.35	0.00
7.00	0.30	0.00	0.00	60.00	3.30	1.35	0.00
8.00	0.38	0.00	0.00	61.00	3.30	1.35	0.00
9.00	0.48	0.00	0.00	62.00	3.30	1.35	0.00
10.00	0.62	0.00	0.02	63.00	3.30	1.35	0.00
11.00	0.83	0.02	0.85	64.00	3.30	1.35	0.00
12.00	1.65	0.30	7.12	65.00	3.30	1.35	0.00
13.00	2.47	0.77	16.53	66.00	3.30	1.35	0.00
14.00	2.68	0.90	5.93	67.00	3.30	1.35	0.00
15.00	2.82	1.00	4.26	68.00	3.30	1.35	0.00
16.00	2.92	1.07	3.20	69.00	3.30	1.35	0.00
17.00	3.00	1.13	2.40	70.00	3.30	1.35	0.00
18.00	3.06	1.17	1.91	71.00	3.30	1.35	0.00
19.00	3.11	1.21	1.58	72.00	3.30	1.35	0.00
20.00	3.16	1.24	1.43				
21.00	3.20	1.27	1.30				
22.00	3.24	1.30	1.19				
23.00	3.27	1.32	1.08				
24.00	3.30	1.35	0.96				
25.00	3.30	1.35	0.05				
26.00	3.30	1.35	0.00				
27.00	3.30	1.35	0.00				
28.00	3.30	1.35	0.00				
29.00	3.30	1.35	0.00				
30.00	3.30	1.35	0.00				
31.00	3.30	1.35	0.00				
32.00	3.30	1.35	0.00				
33.00	3.30	1.35	0.00				
34.00	3.30	1.35	0.00				
35.00	3.30	1.35	0.00				
36.00	3.30	1.35	0.00				
37.00	3.30	1.35	0.00				
38.00	3.30	1.35	0.00				
39.00	3.30	1.35	0.00				
40.00	3.30	1.35	0.00				
41.00	3.30	1.35	0.00				
42.00	3.30	1.35	0.00				
43.00	3.30	1.35	0.00				
44.00	3.30	1.35	0.00				
45.00	3.30	1.35	0.00				
46.00	3.30	1.35	0.00				
47.00	3.30	1.35	0.00				
48.00	3.30	1.35	0.00				
49.00	3.30	1.35	0.00				
50.00	3.30	1.35	0.00				
51.00	3.30	1.35	0.00				
52.00	3.30	1.35	0.00				

EXISTING 2022-04

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Type III 24-hr 2-YR Rainfall=3.30"

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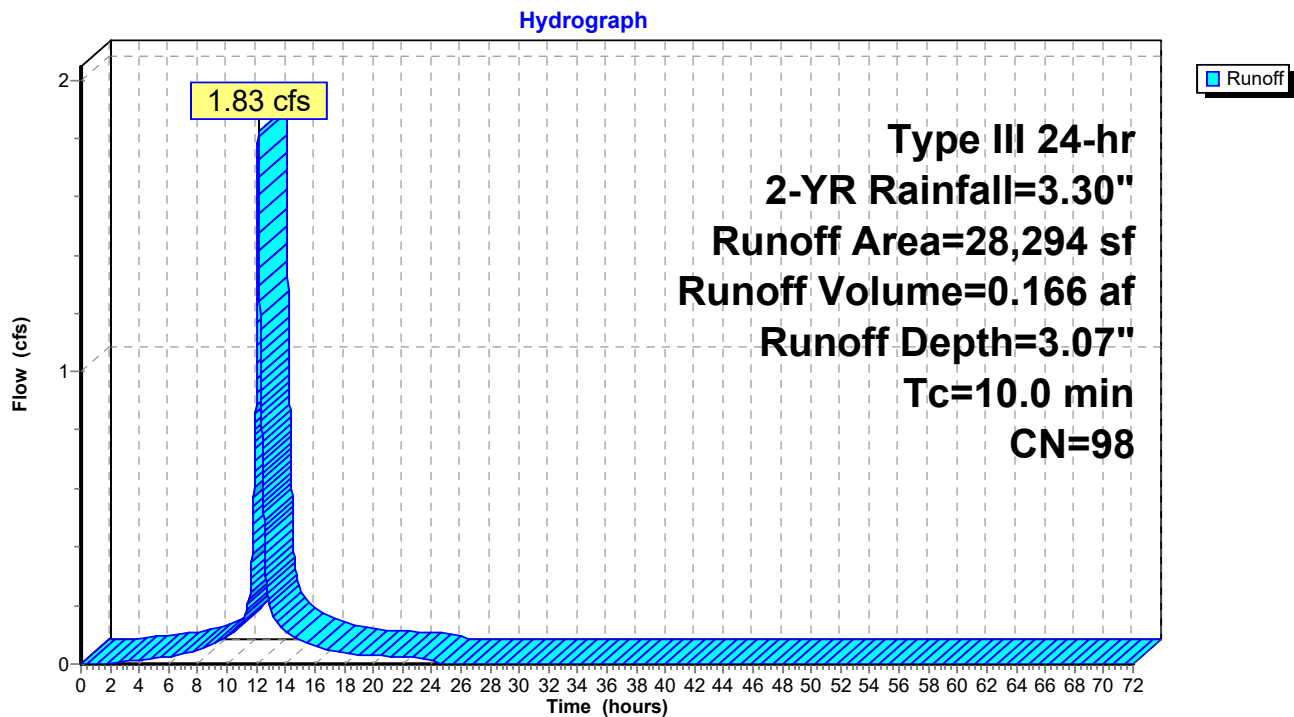
Summary for Subcatchment 2: DA-E1 IMPERVIOUS

Runoff = 1.83 cfs @ 12.13 hrs, Volume= 0.166 af, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
4,949	98	Paved parking, HSG B
23,345	98	Paved parking, HSG C
28,294	98	Weighted Average
28,294		100.00% Impervious Area

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

Subcatchment 2: DA-E1 IMPERVIOUS

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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 2: DA-E1 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	3.07	0.00
1.00	0.03	0.00	0.00	54.00	3.30	3.07	0.00
2.00	0.07	0.00	0.00	55.00	3.30	3.07	0.00
3.00	0.10	0.01	0.01	56.00	3.30	3.07	0.00
4.00	0.14	0.03	0.01	57.00	3.30	3.07	0.00
5.00	0.19	0.06	0.02	58.00	3.30	3.07	0.00
6.00	0.24	0.10	0.02	59.00	3.30	3.07	0.00
7.00	0.30	0.14	0.03	60.00	3.30	3.07	0.00
8.00	0.38	0.21	0.05	61.00	3.30	3.07	0.00
9.00	0.48	0.30	0.07	62.00	3.30	3.07	0.00
10.00	0.62	0.43	0.09	63.00	3.30	3.07	0.00
11.00	0.83	0.62	0.14	64.00	3.30	3.07	0.00
12.00	1.65	1.43	0.98	65.00	3.30	3.07	0.00
13.00	2.47	2.25	0.19	66.00	3.30	3.07	0.00
14.00	2.68	2.45	0.11	67.00	3.30	3.07	0.00
15.00	2.82	2.59	0.08	68.00	3.30	3.07	0.00
16.00	2.92	2.69	0.06	69.00	3.30	3.07	0.00
17.00	3.00	2.77	0.05	70.00	3.30	3.07	0.00
18.00	3.06	2.83	0.04	71.00	3.30	3.07	0.00
19.00	3.11	2.88	0.03	72.00	3.30	3.07	0.00
20.00	3.16	2.93	0.03				
21.00	3.20	2.97	0.03				
22.00	3.24	3.00	0.02				
23.00	3.27	3.04	0.02				
24.00	3.30	3.07	0.02				
25.00	3.30	3.07	0.00				
26.00	3.30	3.07	0.00				
27.00	3.30	3.07	0.00				
28.00	3.30	3.07	0.00				
29.00	3.30	3.07	0.00				
30.00	3.30	3.07	0.00				
31.00	3.30	3.07	0.00				
32.00	3.30	3.07	0.00				
33.00	3.30	3.07	0.00				
34.00	3.30	3.07	0.00				
35.00	3.30	3.07	0.00				
36.00	3.30	3.07	0.00				
37.00	3.30	3.07	0.00				
38.00	3.30	3.07	0.00				
39.00	3.30	3.07	0.00				
40.00	3.30	3.07	0.00				
41.00	3.30	3.07	0.00				
42.00	3.30	3.07	0.00				
43.00	3.30	3.07	0.00				
44.00	3.30	3.07	0.00				
45.00	3.30	3.07	0.00				
46.00	3.30	3.07	0.00				
47.00	3.30	3.07	0.00				
48.00	3.30	3.07	0.00				
49.00	3.30	3.07	0.00				
50.00	3.30	3.07	0.00				
51.00	3.30	3.07	0.00				
52.00	3.30	3.07	0.00				

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 3: DA-E2 PERVIOUS

Runoff = 24.62 cfs @ 12.18 hrs, Volume= 2.191 af, Depth= 1.41"

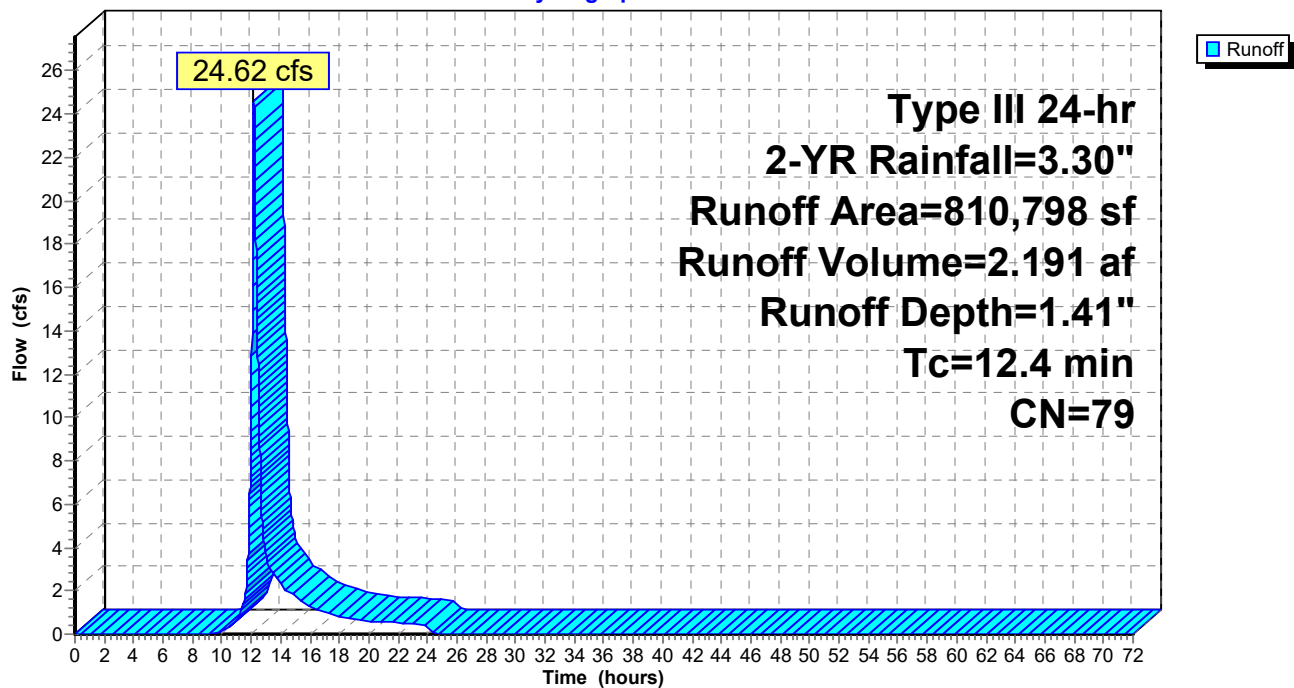
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
28,328	70	Woods, Good, HSG C
28,191	55	Woods, Good, HSG B
498,060	85	Row crops, straight row, Good, HSG C
70,817	61	>75% Grass cover, Good, HSG B
152,643	74	>75% Grass cover, Good, HSG C
1,080	82	Dirt roads, HSG B
19,958	87	Dirt roads, HSG C
11,721	78	Row crops, straight row, Good, HSG B
810,798	79	Weighted Average
810,798		100.00% Pervious Area

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

Subcatchment 3: DA-E2 PERVIOUS

Hydrograph



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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 3: DA-E2 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	1.41	0.00
1.00	0.03	0.00	0.00	54.00	3.30	1.41	0.00
2.00	0.07	0.00	0.00	55.00	3.30	1.41	0.00
3.00	0.10	0.00	0.00	56.00	3.30	1.41	0.00
4.00	0.14	0.00	0.00	57.00	3.30	1.41	0.00
5.00	0.19	0.00	0.00	58.00	3.30	1.41	0.00
6.00	0.24	0.00	0.00	59.00	3.30	1.41	0.00
7.00	0.30	0.00	0.00	60.00	3.30	1.41	0.00
8.00	0.38	0.00	0.00	61.00	3.30	1.41	0.00
9.00	0.48	0.00	0.00	62.00	3.30	1.41	0.00
10.00	0.62	0.00	0.13	63.00	3.30	1.41	0.00
11.00	0.83	0.03	0.70	64.00	3.30	1.41	0.00
12.00	1.65	0.33	9.94	65.00	3.30	1.41	0.00
13.00	2.47	0.82	3.71	66.00	3.30	1.41	0.00
14.00	2.68	0.96	2.29	67.00	3.30	1.41	0.00
15.00	2.82	1.06	1.74	68.00	3.30	1.41	0.00
16.00	2.92	1.13	1.26	69.00	3.30	1.41	0.00
17.00	3.00	1.19	0.99	70.00	3.30	1.41	0.00
18.00	3.06	1.23	0.77	71.00	3.30	1.41	0.00
19.00	3.11	1.27	0.68	72.00	3.30	1.41	0.00
20.00	3.16	1.31	0.61				
21.00	3.20	1.34	0.56				
22.00	3.24	1.36	0.51				
23.00	3.27	1.39	0.46				
24.00	3.30	1.41	0.41				
25.00	3.30	1.41	0.00				
26.00	3.30	1.41	0.00				
27.00	3.30	1.41	0.00				
28.00	3.30	1.41	0.00				
29.00	3.30	1.41	0.00				
30.00	3.30	1.41	0.00				
31.00	3.30	1.41	0.00				
32.00	3.30	1.41	0.00				
33.00	3.30	1.41	0.00				
34.00	3.30	1.41	0.00				
35.00	3.30	1.41	0.00				
36.00	3.30	1.41	0.00				
37.00	3.30	1.41	0.00				
38.00	3.30	1.41	0.00				
39.00	3.30	1.41	0.00				
40.00	3.30	1.41	0.00				
41.00	3.30	1.41	0.00				
42.00	3.30	1.41	0.00				
43.00	3.30	1.41	0.00				
44.00	3.30	1.41	0.00				
45.00	3.30	1.41	0.00				
46.00	3.30	1.41	0.00				
47.00	3.30	1.41	0.00				
48.00	3.30	1.41	0.00				
49.00	3.30	1.41	0.00				
50.00	3.30	1.41	0.00				
51.00	3.30	1.41	0.00				
52.00	3.30	1.41	0.00				

EXISTING 2022-04

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 4: DA-E2 IMPERVIOUS

Runoff = 9.51 cfs @ 12.13 hrs, Volume= 0.864 af, Depth= 3.07"

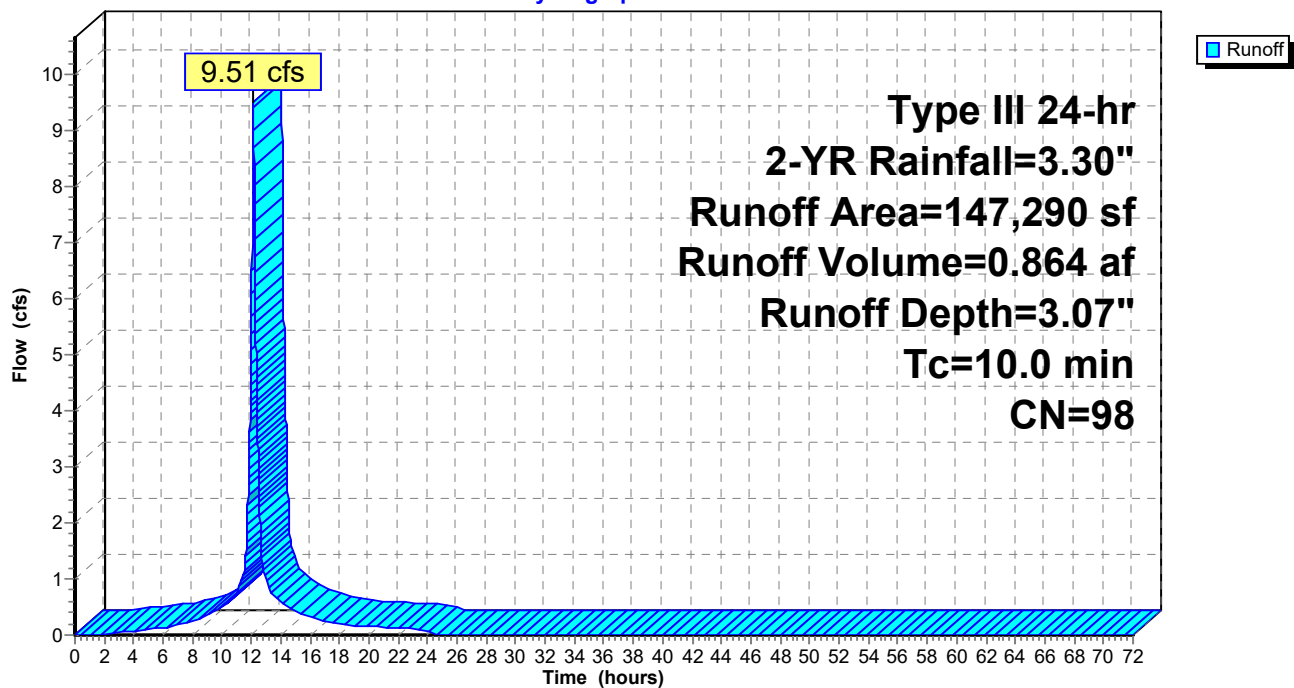
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
98,373	98	Paved parking, HSG C
48,917	98	Paved parking, HSG B
147,290	98	Weighted Average
147,290		100.00% Impervious Area

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

Subcatchment 4: DA-E2 IMPERVIOUS

Hydrograph



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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 4: DA-E2 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	3.07	0.00
1.00	0.03	0.00	0.00	54.00	3.30	3.07	0.00
2.00	0.07	0.00	0.02	55.00	3.30	3.07	0.00
3.00	0.10	0.01	0.05	56.00	3.30	3.07	0.00
4.00	0.14	0.03	0.08	57.00	3.30	3.07	0.00
5.00	0.19	0.06	0.10	58.00	3.30	3.07	0.00
6.00	0.24	0.10	0.13	59.00	3.30	3.07	0.00
7.00	0.30	0.14	0.18	60.00	3.30	3.07	0.00
8.00	0.38	0.21	0.24	61.00	3.30	3.07	0.00
9.00	0.48	0.30	0.36	62.00	3.30	3.07	0.00
10.00	0.62	0.43	0.49	63.00	3.30	3.07	0.00
11.00	0.83	0.62	0.74	64.00	3.30	3.07	0.00
12.00	1.65	1.43	5.08	65.00	3.30	3.07	0.00
13.00	2.47	2.25	0.98	66.00	3.30	3.07	0.00
14.00	2.68	2.45	0.59	67.00	3.30	3.07	0.00
15.00	2.82	2.59	0.44	68.00	3.30	3.07	0.00
16.00	2.92	2.69	0.31	69.00	3.30	3.07	0.00
17.00	3.00	2.77	0.24	70.00	3.30	3.07	0.00
18.00	3.06	2.83	0.19	71.00	3.30	3.07	0.00
19.00	3.11	2.88	0.17	72.00	3.30	3.07	0.00
20.00	3.16	2.93	0.15				
21.00	3.20	2.97	0.14				
22.00	3.24	3.00	0.12				
23.00	3.27	3.04	0.11				
24.00	3.30	3.07	0.10				
25.00	3.30	3.07	0.00				
26.00	3.30	3.07	0.00				
27.00	3.30	3.07	0.00				
28.00	3.30	3.07	0.00				
29.00	3.30	3.07	0.00				
30.00	3.30	3.07	0.00				
31.00	3.30	3.07	0.00				
32.00	3.30	3.07	0.00				
33.00	3.30	3.07	0.00				
34.00	3.30	3.07	0.00				
35.00	3.30	3.07	0.00				
36.00	3.30	3.07	0.00				
37.00	3.30	3.07	0.00				
38.00	3.30	3.07	0.00				
39.00	3.30	3.07	0.00				
40.00	3.30	3.07	0.00				
41.00	3.30	3.07	0.00				
42.00	3.30	3.07	0.00				
43.00	3.30	3.07	0.00				
44.00	3.30	3.07	0.00				
45.00	3.30	3.07	0.00				
46.00	3.30	3.07	0.00				
47.00	3.30	3.07	0.00				
48.00	3.30	3.07	0.00				
49.00	3.30	3.07	0.00				
50.00	3.30	3.07	0.00				
51.00	3.30	3.07	0.00				
52.00	3.30	3.07	0.00				

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Runoff = 4.12 cfs @ 12.13 hrs, Volume= 0.374 af, Depth= 3.07"

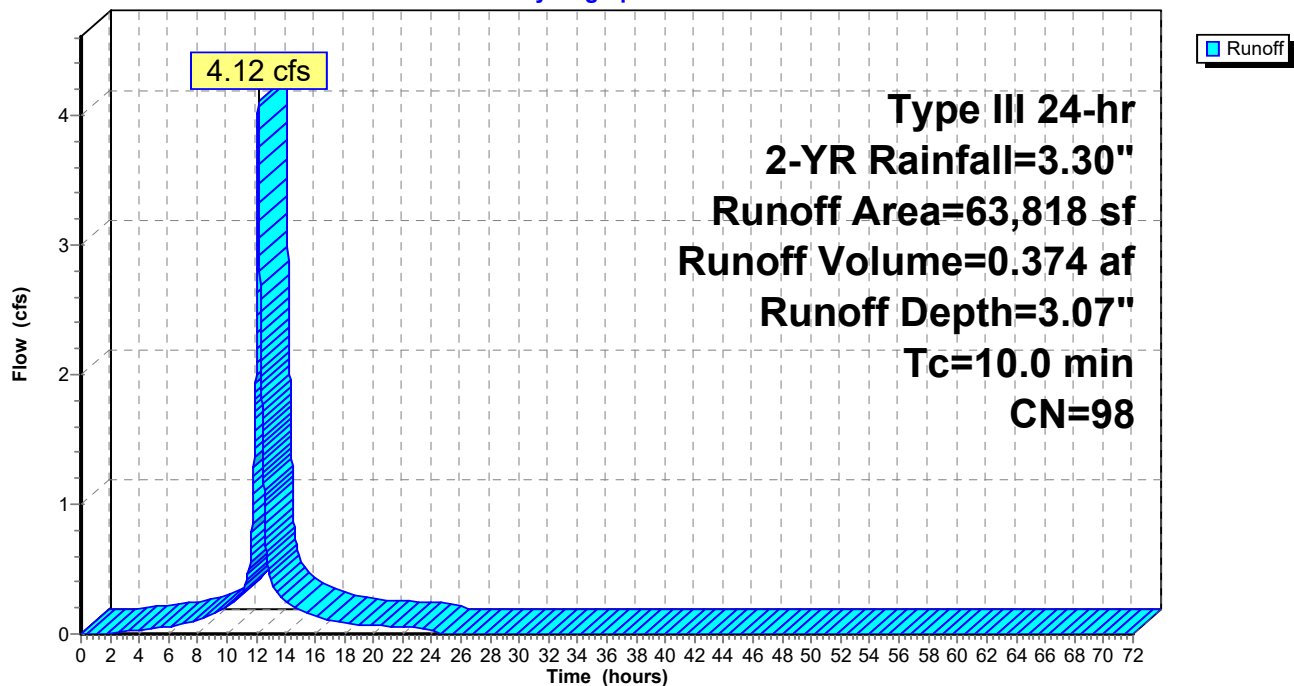
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
63,818	98	Paved parking, HSG B
63,818		100.00% Impervious Area

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

Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Hydrograph



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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	3.07	0.00
1.00	0.03	0.00	0.00	54.00	3.30	3.07	0.00
2.00	0.07	0.00	0.01	55.00	3.30	3.07	0.00
3.00	0.10	0.01	0.02	56.00	3.30	3.07	0.00
4.00	0.14	0.03	0.03	57.00	3.30	3.07	0.00
5.00	0.19	0.06	0.04	58.00	3.30	3.07	0.00
6.00	0.24	0.10	0.06	59.00	3.30	3.07	0.00
7.00	0.30	0.14	0.08	60.00	3.30	3.07	0.00
8.00	0.38	0.21	0.10	61.00	3.30	3.07	0.00
9.00	0.48	0.30	0.16	62.00	3.30	3.07	0.00
10.00	0.62	0.43	0.21	63.00	3.30	3.07	0.00
11.00	0.83	0.62	0.32	64.00	3.30	3.07	0.00
12.00	1.65	1.43	2.20	65.00	3.30	3.07	0.00
13.00	2.47	2.25	0.42	66.00	3.30	3.07	0.00
14.00	2.68	2.45	0.26	67.00	3.30	3.07	0.00
15.00	2.82	2.59	0.19	68.00	3.30	3.07	0.00
16.00	2.92	2.69	0.13	69.00	3.30	3.07	0.00
17.00	3.00	2.77	0.11	70.00	3.30	3.07	0.00
18.00	3.06	2.83	0.08	71.00	3.30	3.07	0.00
19.00	3.11	2.88	0.07	72.00	3.30	3.07	0.00
20.00	3.16	2.93	0.06				
21.00	3.20	2.97	0.06				
22.00	3.24	3.00	0.05				
23.00	3.27	3.04	0.05				
24.00	3.30	3.07	0.04				
25.00	3.30	3.07	0.00				
26.00	3.30	3.07	0.00				
27.00	3.30	3.07	0.00				
28.00	3.30	3.07	0.00				
29.00	3.30	3.07	0.00				
30.00	3.30	3.07	0.00				
31.00	3.30	3.07	0.00				
32.00	3.30	3.07	0.00				
33.00	3.30	3.07	0.00				
34.00	3.30	3.07	0.00				
35.00	3.30	3.07	0.00				
36.00	3.30	3.07	0.00				
37.00	3.30	3.07	0.00				
38.00	3.30	3.07	0.00				
39.00	3.30	3.07	0.00				
40.00	3.30	3.07	0.00				
41.00	3.30	3.07	0.00				
42.00	3.30	3.07	0.00				
43.00	3.30	3.07	0.00				
44.00	3.30	3.07	0.00				
45.00	3.30	3.07	0.00				
46.00	3.30	3.07	0.00				
47.00	3.30	3.07	0.00				
48.00	3.30	3.07	0.00				
49.00	3.30	3.07	0.00				
50.00	3.30	3.07	0.00				
51.00	3.30	3.07	0.00				
52.00	3.30	3.07	0.00				

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Type III 24-hr 2-YR Rainfall=3.30"

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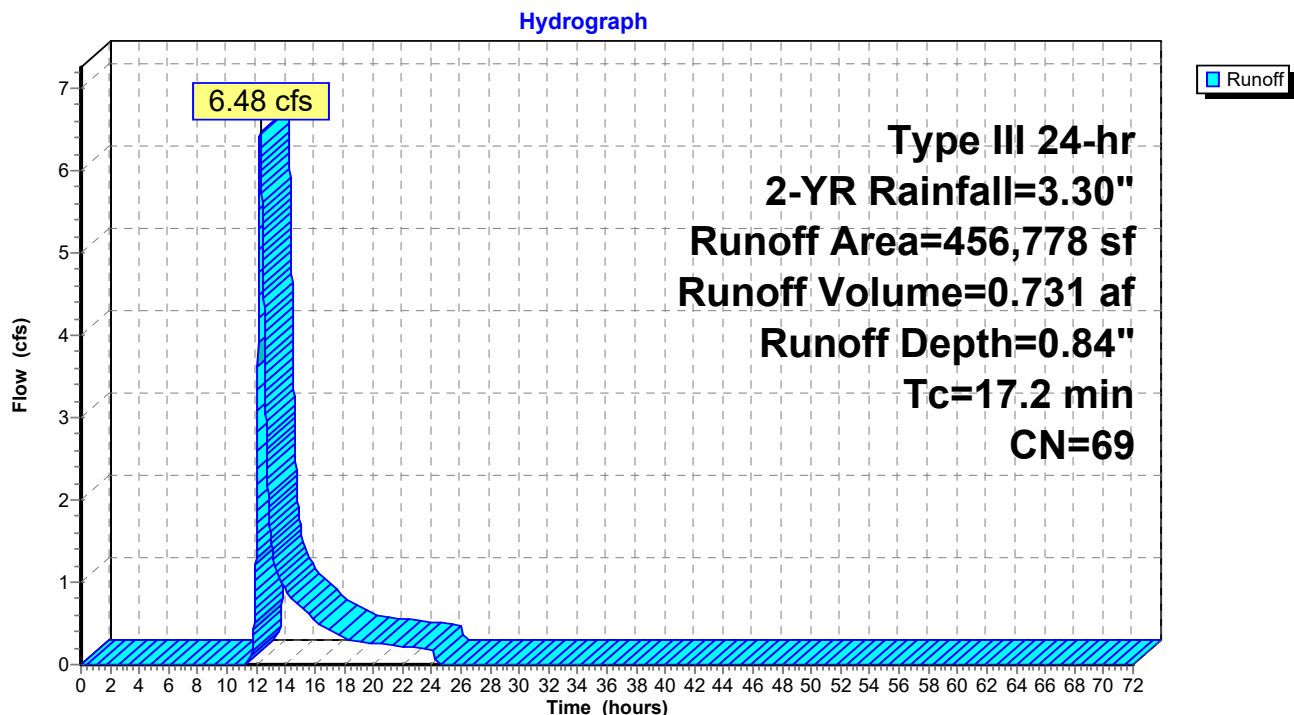
Summary for Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Runoff = 6.48 cfs @ 12.27 hrs, Volume= 0.731 af, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
3,315	82	Dirt roads, HSG B
15,871	85	Gravel roads, HSG B
131,615	55	Woods, Good, HSG B
227,686	78	Row crops, straight row, Good, HSG B
78,291	61	>75% Grass cover, Good, HSG B
456,778	69	Weighted Average
456,778		100.00% Pervious Area

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

Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	0.84	0.00
1.00	0.03	0.00	0.00	54.00	3.30	0.84	0.00
2.00	0.07	0.00	0.00	55.00	3.30	0.84	0.00
3.00	0.10	0.00	0.00	56.00	3.30	0.84	0.00
4.00	0.14	0.00	0.00	57.00	3.30	0.84	0.00
5.00	0.19	0.00	0.00	58.00	3.30	0.84	0.00
6.00	0.24	0.00	0.00	59.00	3.30	0.84	0.00
7.00	0.30	0.00	0.00	60.00	3.30	0.84	0.00
8.00	0.38	0.00	0.00	61.00	3.30	0.84	0.00
9.00	0.48	0.00	0.00	62.00	3.30	0.84	0.00
10.00	0.62	0.00	0.00	63.00	3.30	0.84	0.00
11.00	0.83	0.00	0.00	64.00	3.30	0.84	0.00
12.00	1.65	0.11	1.48	65.00	3.30	0.84	0.00
13.00	2.47	0.41	1.55	66.00	3.30	0.84	0.00
14.00	2.68	0.50	0.93	67.00	3.30	0.84	0.00
15.00	2.82	0.58	0.71	68.00	3.30	0.84	0.00
16.00	2.92	0.63	0.53	69.00	3.30	0.84	0.00
17.00	3.00	0.67	0.42	70.00	3.30	0.84	0.00
18.00	3.06	0.70	0.33	71.00	3.30	0.84	0.00
19.00	3.11	0.73	0.29	72.00	3.30	0.84	0.00
20.00	3.16	0.76	0.26				
21.00	3.20	0.78	0.24				
22.00	3.24	0.80	0.22				
23.00	3.27	0.82	0.20				
24.00	3.30	0.84	0.18				
25.00	3.30	0.84	0.00				
26.00	3.30	0.84	0.00				
27.00	3.30	0.84	0.00				
28.00	3.30	0.84	0.00				
29.00	3.30	0.84	0.00				
30.00	3.30	0.84	0.00				
31.00	3.30	0.84	0.00				
32.00	3.30	0.84	0.00				
33.00	3.30	0.84	0.00				
34.00	3.30	0.84	0.00				
35.00	3.30	0.84	0.00				
36.00	3.30	0.84	0.00				
37.00	3.30	0.84	0.00				
38.00	3.30	0.84	0.00				
39.00	3.30	0.84	0.00				
40.00	3.30	0.84	0.00				
41.00	3.30	0.84	0.00				
42.00	3.30	0.84	0.00				
43.00	3.30	0.84	0.00				
44.00	3.30	0.84	0.00				
45.00	3.30	0.84	0.00				
46.00	3.30	0.84	0.00				
47.00	3.30	0.84	0.00				
48.00	3.30	0.84	0.00				
49.00	3.30	0.84	0.00				
50.00	3.30	0.84	0.00				
51.00	3.30	0.84	0.00				
52.00	3.30	0.84	0.00				

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Runoff = 1.12 cfs @ 12.21 hrs, Volume= 0.164 af, Depth= 0.41"

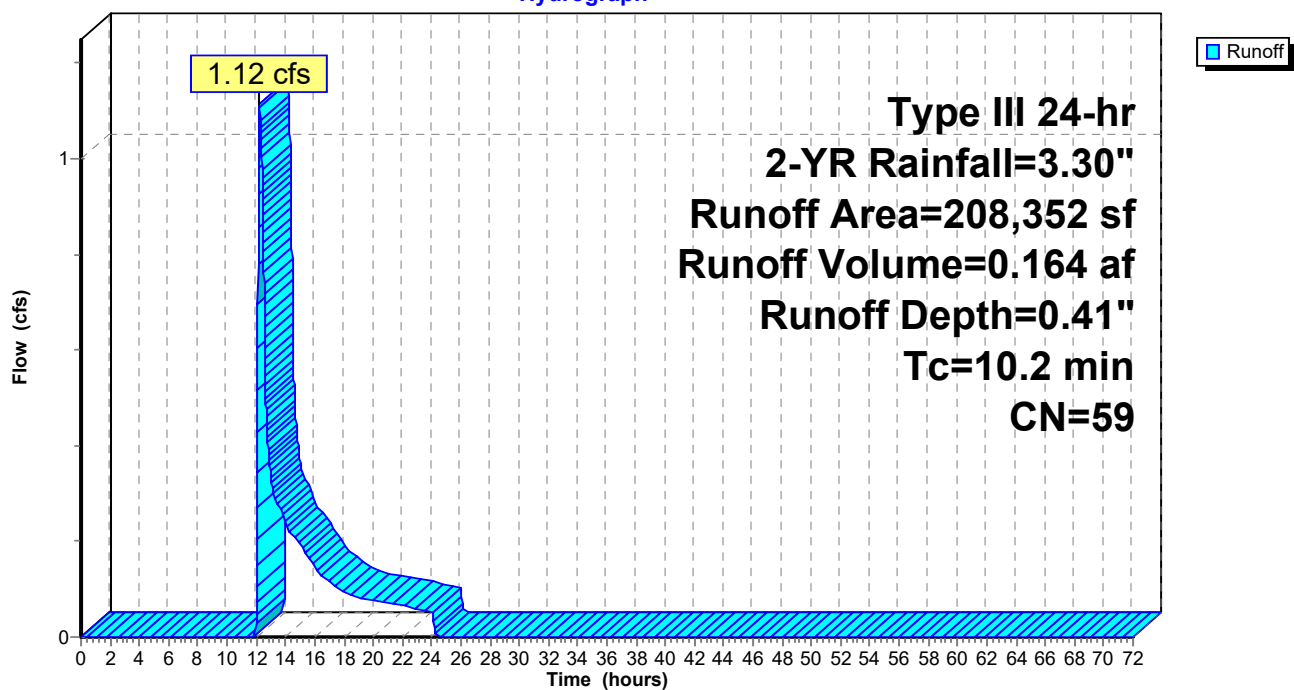
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
67,674	55	Woods, Good, HSG B
140,678	61	>75% Grass cover, Good, HSG B
208,352	59	Weighted Average
208,352		100.00% Pervious Area

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

Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Hydrograph



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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	0.41	0.00
1.00	0.03	0.00	0.00	54.00	3.30	0.41	0.00
2.00	0.07	0.00	0.00	55.00	3.30	0.41	0.00
3.00	0.10	0.00	0.00	56.00	3.30	0.41	0.00
4.00	0.14	0.00	0.00	57.00	3.30	0.41	0.00
5.00	0.19	0.00	0.00	58.00	3.30	0.41	0.00
6.00	0.24	0.00	0.00	59.00	3.30	0.41	0.00
7.00	0.30	0.00	0.00	60.00	3.30	0.41	0.00
8.00	0.38	0.00	0.00	61.00	3.30	0.41	0.00
9.00	0.48	0.00	0.00	62.00	3.30	0.41	0.00
10.00	0.62	0.00	0.00	63.00	3.30	0.41	0.00
11.00	0.83	0.00	0.00	64.00	3.30	0.41	0.00
12.00	1.65	0.01	0.03	65.00	3.30	0.41	0.00
13.00	2.47	0.15	0.34	66.00	3.30	0.41	0.00
14.00	2.68	0.20	0.24	67.00	3.30	0.41	0.00
15.00	2.82	0.24	0.19	68.00	3.30	0.41	0.00
16.00	2.92	0.28	0.14	69.00	3.30	0.41	0.00
17.00	3.00	0.30	0.12	70.00	3.30	0.41	0.00
18.00	3.06	0.32	0.09	71.00	3.30	0.41	0.00
19.00	3.11	0.34	0.08	72.00	3.30	0.41	0.00
20.00	3.16	0.36	0.08				
21.00	3.20	0.37	0.07				
22.00	3.24	0.39	0.07				
23.00	3.27	0.40	0.06				
24.00	3.30	0.41	0.05				
25.00	3.30	0.41	0.00				
26.00	3.30	0.41	0.00				
27.00	3.30	0.41	0.00				
28.00	3.30	0.41	0.00				
29.00	3.30	0.41	0.00				
30.00	3.30	0.41	0.00				
31.00	3.30	0.41	0.00				
32.00	3.30	0.41	0.00				
33.00	3.30	0.41	0.00				
34.00	3.30	0.41	0.00				
35.00	3.30	0.41	0.00				
36.00	3.30	0.41	0.00				
37.00	3.30	0.41	0.00				
38.00	3.30	0.41	0.00				
39.00	3.30	0.41	0.00				
40.00	3.30	0.41	0.00				
41.00	3.30	0.41	0.00				
42.00	3.30	0.41	0.00				
43.00	3.30	0.41	0.00				
44.00	3.30	0.41	0.00				
45.00	3.30	0.41	0.00				
46.00	3.30	0.41	0.00				
47.00	3.30	0.41	0.00				
48.00	3.30	0.41	0.00				
49.00	3.30	0.41	0.00				
50.00	3.30	0.41	0.00				
51.00	3.30	0.41	0.00				
52.00	3.30	0.41	0.00				

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Runoff = 8.51 cfs @ 12.13 hrs, Volume= 0.773 af, Depth= 3.07"

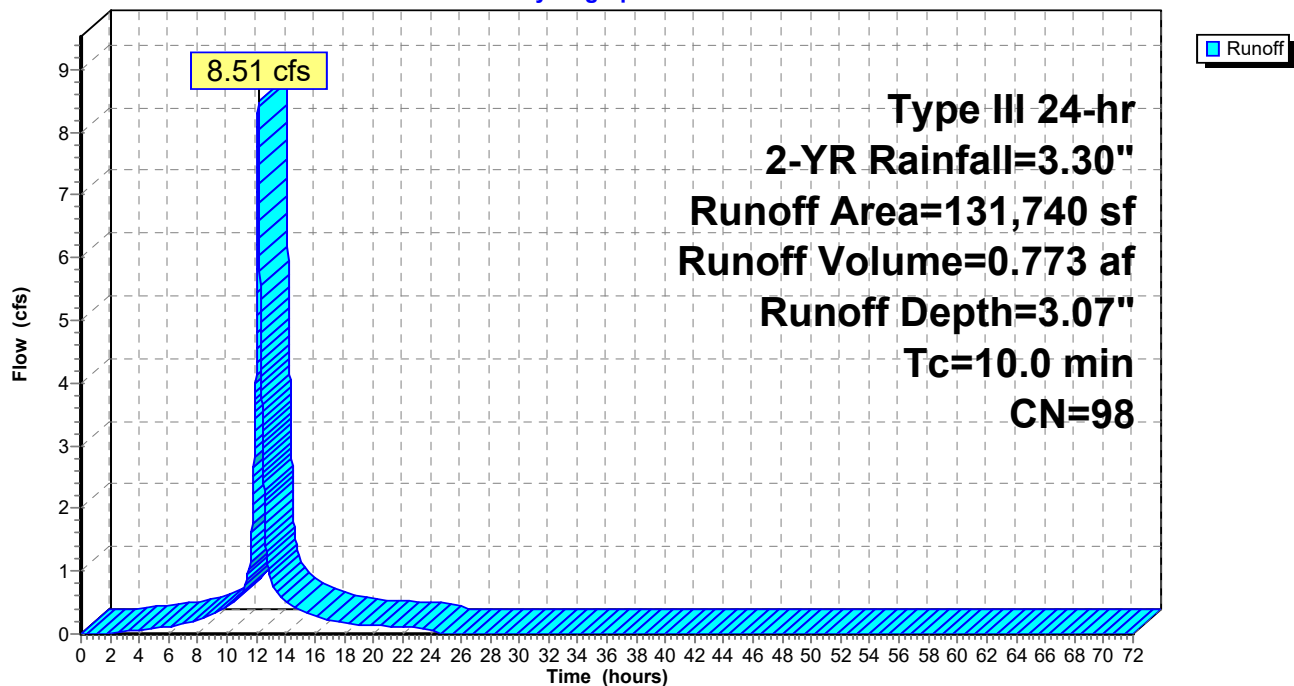
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
131,740	98	Paved parking, HSG B
131,740		100.00% Impervious Area

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

Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Hydrograph



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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	3.07	0.00
1.00	0.03	0.00	0.00	54.00	3.30	3.07	0.00
2.00	0.07	0.00	0.02	55.00	3.30	3.07	0.00
3.00	0.10	0.01	0.04	56.00	3.30	3.07	0.00
4.00	0.14	0.03	0.07	57.00	3.30	3.07	0.00
5.00	0.19	0.06	0.09	58.00	3.30	3.07	0.00
6.00	0.24	0.10	0.12	59.00	3.30	3.07	0.00
7.00	0.30	0.14	0.16	60.00	3.30	3.07	0.00
8.00	0.38	0.21	0.22	61.00	3.30	3.07	0.00
9.00	0.48	0.30	0.32	62.00	3.30	3.07	0.00
10.00	0.62	0.43	0.44	63.00	3.30	3.07	0.00
11.00	0.83	0.62	0.66	64.00	3.30	3.07	0.00
12.00	1.65	1.43	4.54	65.00	3.30	3.07	0.00
13.00	2.47	2.25	0.87	66.00	3.30	3.07	0.00
14.00	2.68	2.45	0.53	67.00	3.30	3.07	0.00
15.00	2.82	2.59	0.39	68.00	3.30	3.07	0.00
16.00	2.92	2.69	0.28	69.00	3.30	3.07	0.00
17.00	3.00	2.77	0.22	70.00	3.30	3.07	0.00
18.00	3.06	2.83	0.17	71.00	3.30	3.07	0.00
19.00	3.11	2.88	0.15	72.00	3.30	3.07	0.00
20.00	3.16	2.93	0.13				
21.00	3.20	2.97	0.12				
22.00	3.24	3.00	0.11				
23.00	3.27	3.04	0.10				
24.00	3.30	3.07	0.09				
25.00	3.30	3.07	0.00				
26.00	3.30	3.07	0.00				
27.00	3.30	3.07	0.00				
28.00	3.30	3.07	0.00				
29.00	3.30	3.07	0.00				
30.00	3.30	3.07	0.00				
31.00	3.30	3.07	0.00				
32.00	3.30	3.07	0.00				
33.00	3.30	3.07	0.00				
34.00	3.30	3.07	0.00				
35.00	3.30	3.07	0.00				
36.00	3.30	3.07	0.00				
37.00	3.30	3.07	0.00				
38.00	3.30	3.07	0.00				
39.00	3.30	3.07	0.00				
40.00	3.30	3.07	0.00				
41.00	3.30	3.07	0.00				
42.00	3.30	3.07	0.00				
43.00	3.30	3.07	0.00				
44.00	3.30	3.07	0.00				
45.00	3.30	3.07	0.00				
46.00	3.30	3.07	0.00				
47.00	3.30	3.07	0.00				
48.00	3.30	3.07	0.00				
49.00	3.30	3.07	0.00				
50.00	3.30	3.07	0.00				
51.00	3.30	3.07	0.00				
52.00	3.30	3.07	0.00				

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 9: DA-E4

Runoff = 1.10 cfs @ 12.15 hrs, Volume= 0.098 af, Depth= 0.94"

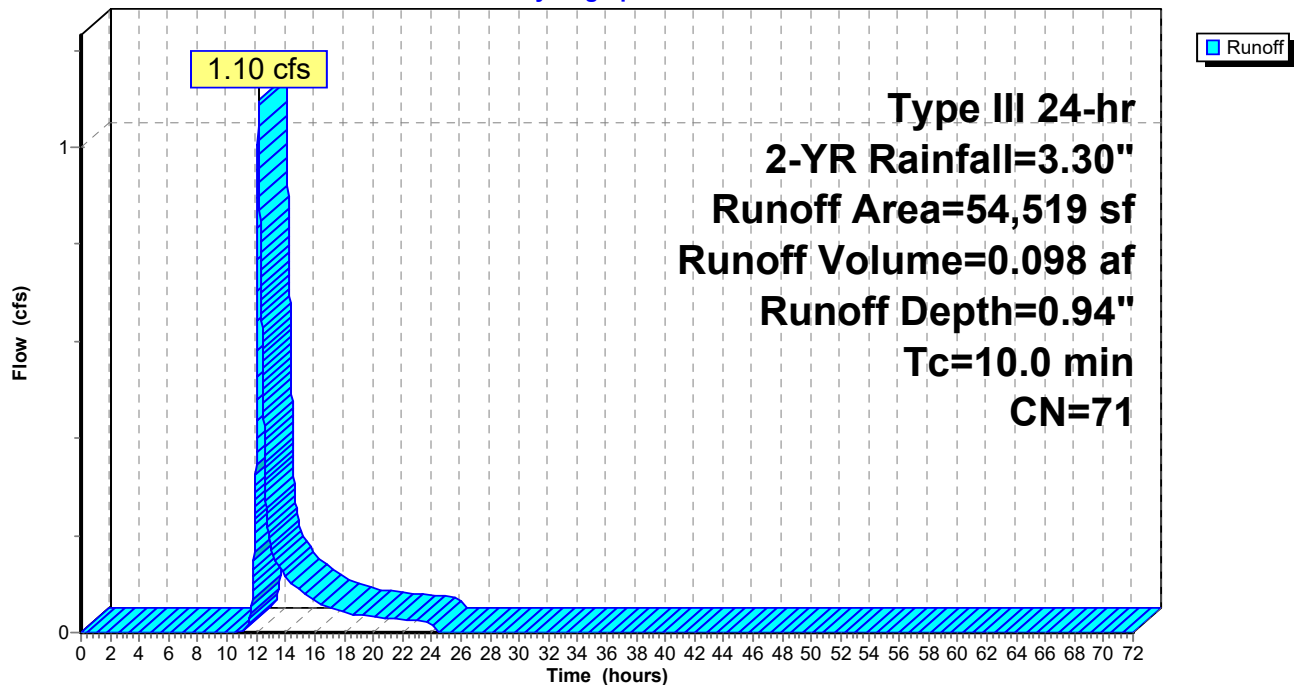
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
14,621	98	Paved parking, HSG B
39,898	61	>75% Grass cover, Good, HSG B
54,519	71	Weighted Average
39,898		73.18% Pervious Area
14,621		26.82% Impervious Area

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

Subcatchment 9: DA-E4

Hydrograph



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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 9: DA-E4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	0.94	0.00
1.00	0.03	0.00	0.00	54.00	3.30	0.94	0.00
2.00	0.07	0.00	0.00	55.00	3.30	0.94	0.00
3.00	0.10	0.00	0.00	56.00	3.30	0.94	0.00
4.00	0.14	0.00	0.00	57.00	3.30	0.94	0.00
5.00	0.19	0.00	0.00	58.00	3.30	0.94	0.00
6.00	0.24	0.00	0.00	59.00	3.30	0.94	0.00
7.00	0.30	0.00	0.00	60.00	3.30	0.94	0.00
8.00	0.38	0.00	0.00	61.00	3.30	0.94	0.00
9.00	0.48	0.00	0.00	62.00	3.30	0.94	0.00
10.00	0.62	0.00	0.00	63.00	3.30	0.94	0.00
11.00	0.83	0.00	0.00	64.00	3.30	0.94	0.00
12.00	1.65	0.14	0.40	65.00	3.30	0.94	0.00
13.00	2.47	0.48	0.18	66.00	3.30	0.94	0.00
14.00	2.68	0.58	0.11	67.00	3.30	0.94	0.00
15.00	2.82	0.66	0.09	68.00	3.30	0.94	0.00
16.00	2.92	0.72	0.07	69.00	3.30	0.94	0.00
17.00	3.00	0.76	0.05	70.00	3.30	0.94	0.00
18.00	3.06	0.80	0.04	71.00	3.30	0.94	0.00
19.00	3.11	0.83	0.04	72.00	3.30	0.94	0.00
20.00	3.16	0.85	0.03				
21.00	3.20	0.88	0.03				
22.00	3.24	0.90	0.03				
23.00	3.27	0.92	0.02				
24.00	3.30	0.94	0.02				
25.00	3.30	0.94	0.00				
26.00	3.30	0.94	0.00				
27.00	3.30	0.94	0.00				
28.00	3.30	0.94	0.00				
29.00	3.30	0.94	0.00				
30.00	3.30	0.94	0.00				
31.00	3.30	0.94	0.00				
32.00	3.30	0.94	0.00				
33.00	3.30	0.94	0.00				
34.00	3.30	0.94	0.00				
35.00	3.30	0.94	0.00				
36.00	3.30	0.94	0.00				
37.00	3.30	0.94	0.00				
38.00	3.30	0.94	0.00				
39.00	3.30	0.94	0.00				
40.00	3.30	0.94	0.00				
41.00	3.30	0.94	0.00				
42.00	3.30	0.94	0.00				
43.00	3.30	0.94	0.00				
44.00	3.30	0.94	0.00				
45.00	3.30	0.94	0.00				
46.00	3.30	0.94	0.00				
47.00	3.30	0.94	0.00				
48.00	3.30	0.94	0.00				
49.00	3.30	0.94	0.00				
50.00	3.30	0.94	0.00				
51.00	3.30	0.94	0.00				
52.00	3.30	0.94	0.00				

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Type III 24-hr 2-YR Rainfall=3.30"

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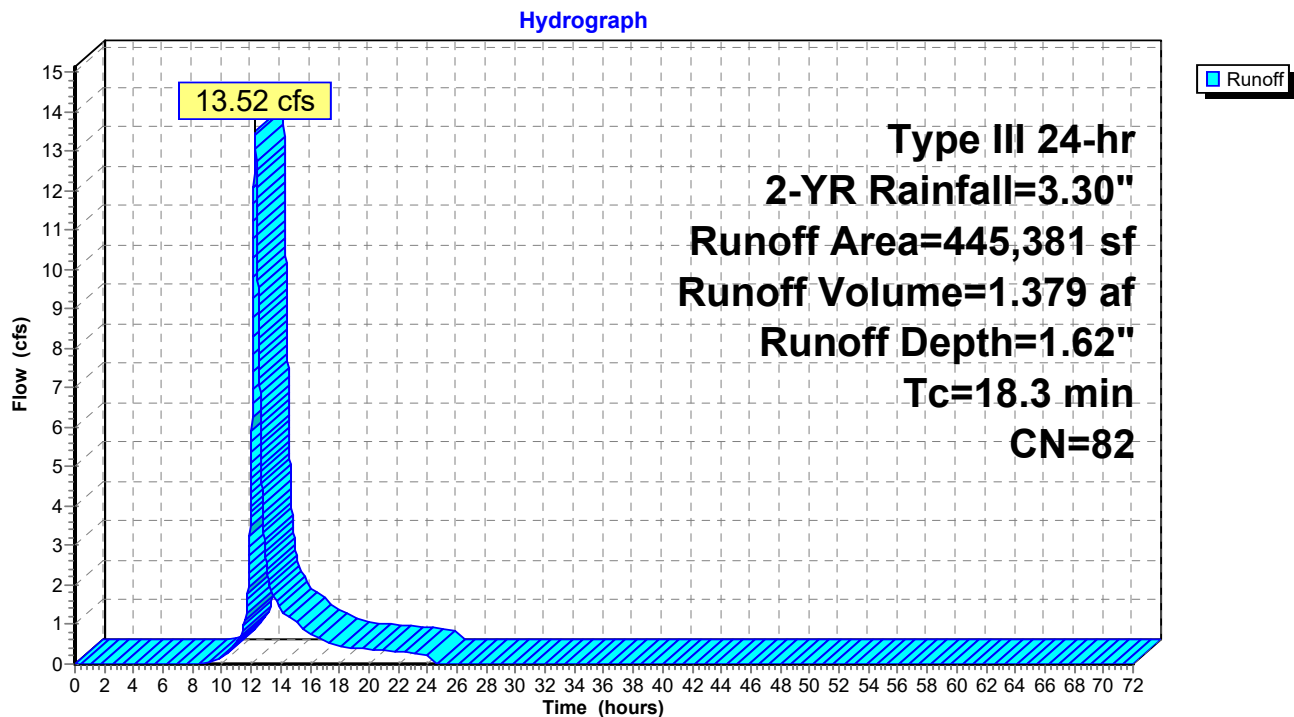
Summary for Subcatchment 10: DA-E5 PERVIOUS

Runoff = 13.52 cfs @ 12.26 hrs, Volume= 1.379 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
24,074	74	>75% Grass cover, Good, HSG C
20,665	70	Woods, Good, HSG C
97,158	78	Row crops, straight row, Good, HSG B
303,484	85	Row crops, straight row, Good, HSG C
445,381	82	Weighted Average
445,381		100.00% Pervious Area

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

Subcatchment 10: DA-E5 PERVIOUS

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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 10: DA-E5 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	1.62	0.00
1.00	0.03	0.00	0.00	54.00	3.30	1.62	0.00
2.00	0.07	0.00	0.00	55.00	3.30	1.62	0.00
3.00	0.10	0.00	0.00	56.00	3.30	1.62	0.00
4.00	0.14	0.00	0.00	57.00	3.30	1.62	0.00
5.00	0.19	0.00	0.00	58.00	3.30	1.62	0.00
6.00	0.24	0.00	0.00	59.00	3.30	1.62	0.00
7.00	0.30	0.00	0.00	60.00	3.30	1.62	0.00
8.00	0.38	0.00	0.00	61.00	3.30	1.62	0.00
9.00	0.48	0.00	0.01	62.00	3.30	1.62	0.00
10.00	0.62	0.01	0.18	63.00	3.30	1.62	0.00
11.00	0.83	0.06	0.54	64.00	3.30	1.62	0.00
12.00	1.65	0.43	4.90	65.00	3.30	1.62	0.00
13.00	2.47	0.98	2.58	66.00	3.30	1.62	0.00
14.00	2.68	1.13	1.42	67.00	3.30	1.62	0.00
15.00	2.82	1.24	1.06	68.00	3.30	1.62	0.00
16.00	2.92	1.32	0.77	69.00	3.30	1.62	0.00
17.00	3.00	1.38	0.60	70.00	3.30	1.62	0.00
18.00	3.06	1.43	0.47	71.00	3.30	1.62	0.00
19.00	3.11	1.47	0.40	72.00	3.30	1.62	0.00
20.00	3.16	1.50	0.37				
21.00	3.20	1.54	0.33				
22.00	3.24	1.57	0.30				
23.00	3.27	1.59	0.27				
24.00	3.30	1.62	0.24				
25.00	3.30	1.62	0.00				
26.00	3.30	1.62	0.00				
27.00	3.30	1.62	0.00				
28.00	3.30	1.62	0.00				
29.00	3.30	1.62	0.00				
30.00	3.30	1.62	0.00				
31.00	3.30	1.62	0.00				
32.00	3.30	1.62	0.00				
33.00	3.30	1.62	0.00				
34.00	3.30	1.62	0.00				
35.00	3.30	1.62	0.00				
36.00	3.30	1.62	0.00				
37.00	3.30	1.62	0.00				
38.00	3.30	1.62	0.00				
39.00	3.30	1.62	0.00				
40.00	3.30	1.62	0.00				
41.00	3.30	1.62	0.00				
42.00	3.30	1.62	0.00				
43.00	3.30	1.62	0.00				
44.00	3.30	1.62	0.00				
45.00	3.30	1.62	0.00				
46.00	3.30	1.62	0.00				
47.00	3.30	1.62	0.00				
48.00	3.30	1.62	0.00				
49.00	3.30	1.62	0.00				
50.00	3.30	1.62	0.00				
51.00	3.30	1.62	0.00				
52.00	3.30	1.62	0.00				

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Summary for Subcatchment 11: DA-E5 IMPERVIOUS

Runoff = 0.82 cfs @ 12.13 hrs, Volume= 0.075 af, Depth= 3.07"

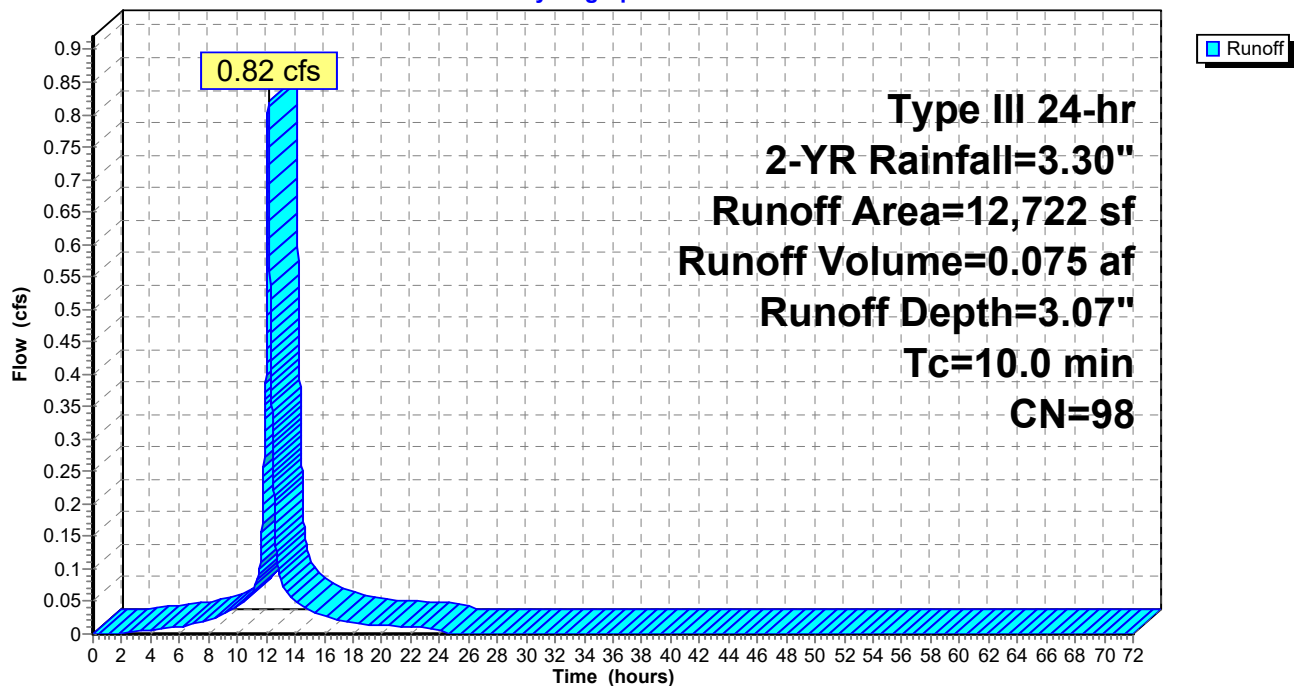
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
12,722	98	Paved parking, HSG C
12,722		100.00% Impervious Area

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

Subcatchment 11: DA-E5 IMPERVIOUS

Hydrograph



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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Subcatchment 11: DA-E5 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.30	3.07	0.00
1.00	0.03	0.00	0.00	54.00	3.30	3.07	0.00
2.00	0.07	0.00	0.00	55.00	3.30	3.07	0.00
3.00	0.10	0.01	0.00	56.00	3.30	3.07	0.00
4.00	0.14	0.03	0.01	57.00	3.30	3.07	0.00
5.00	0.19	0.06	0.01	58.00	3.30	3.07	0.00
6.00	0.24	0.10	0.01	59.00	3.30	3.07	0.00
7.00	0.30	0.14	0.02	60.00	3.30	3.07	0.00
8.00	0.38	0.21	0.02	61.00	3.30	3.07	0.00
9.00	0.48	0.30	0.03	62.00	3.30	3.07	0.00
10.00	0.62	0.43	0.04	63.00	3.30	3.07	0.00
11.00	0.83	0.62	0.06	64.00	3.30	3.07	0.00
12.00	1.65	1.43	0.44	65.00	3.30	3.07	0.00
13.00	2.47	2.25	0.08	66.00	3.30	3.07	0.00
14.00	2.68	2.45	0.05	67.00	3.30	3.07	0.00
15.00	2.82	2.59	0.04	68.00	3.30	3.07	0.00
16.00	2.92	2.69	0.03	69.00	3.30	3.07	0.00
17.00	3.00	2.77	0.02	70.00	3.30	3.07	0.00
18.00	3.06	2.83	0.02	71.00	3.30	3.07	0.00
19.00	3.11	2.88	0.01	72.00	3.30	3.07	0.00
20.00	3.16	2.93	0.01				
21.00	3.20	2.97	0.01				
22.00	3.24	3.00	0.01				
23.00	3.27	3.04	0.01				
24.00	3.30	3.07	0.01				
25.00	3.30	3.07	0.00				
26.00	3.30	3.07	0.00				
27.00	3.30	3.07	0.00				
28.00	3.30	3.07	0.00				
29.00	3.30	3.07	0.00				
30.00	3.30	3.07	0.00				
31.00	3.30	3.07	0.00				
32.00	3.30	3.07	0.00				
33.00	3.30	3.07	0.00				
34.00	3.30	3.07	0.00				
35.00	3.30	3.07	0.00				
36.00	3.30	3.07	0.00				
37.00	3.30	3.07	0.00				
38.00	3.30	3.07	0.00				
39.00	3.30	3.07	0.00				
40.00	3.30	3.07	0.00				
41.00	3.30	3.07	0.00				
42.00	3.30	3.07	0.00				
43.00	3.30	3.07	0.00				
44.00	3.30	3.07	0.00				
45.00	3.30	3.07	0.00				
46.00	3.30	3.07	0.00				
47.00	3.30	3.07	0.00				
48.00	3.30	3.07	0.00				
49.00	3.30	3.07	0.00				
50.00	3.30	3.07	0.00				
51.00	3.30	3.07	0.00				
52.00	3.30	3.07	0.00				

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Pond B1A: BASIN# 1A

[44] Hint: Outlet device #1 is below defined storage

Inflow = 45.53 cfs @ 12.47 hrs, Volume= 6.442 af
 Outflow = 31.84 cfs @ 12.76 hrs, Volume= 6.460 af, Atten= 30%, Lag= 17.5 min
 Discarded = 12.73 cfs @ 12.76 hrs, Volume= 0.582 af
 Primary = 19.11 cfs @ 12.76 hrs, Volume= 5.878 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 125.74' @ 12.76 hrs Surf.Area= 79,757 sf Storage= 58,704 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 29.4 min (893.6 - 864.2)

Volume	Invert	Avail.Storage	Storage Description
#1	123.70'	426,110 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.70	0	0	0
124.00	1,994	299	299
125.00	33,295	17,645	17,944
125.30	49,002	12,345	30,288
126.00	97,778	51,373	81,661
127.00	170,836	134,307	215,968
128.00	249,447	210,142	426,110

Device	Routing	Invert	Outlet Devices
#1	Primary	123.51'	24.0" Round Culvert L= 192.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 123.51' / 123.19' S= 0.0017 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Primary	124.20'	18.0" Round Culvert L= 180.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 124.20' / 122.02' S= 0.0121 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Discarded	125.50'	40.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Discarded	126.50'	60.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Type III 24-hr 2-YR Rainfall=3.30"

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Discarded OutFlow Max=12.73 cfs @ 12.76 hrs HW=125.74' (Free Discharge)

↳ **3=Broad-Crested Rectangular Weir** (Weir Controls 12.73 cfs @ 1.32 fps)

↳ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Primary OutFlow Max=19.11 cfs @ 12.76 hrs HW=125.74' (Free Discharge)

↳ **1=Culvert** (Barrel Controls 11.54 cfs @ 4.11 fps)

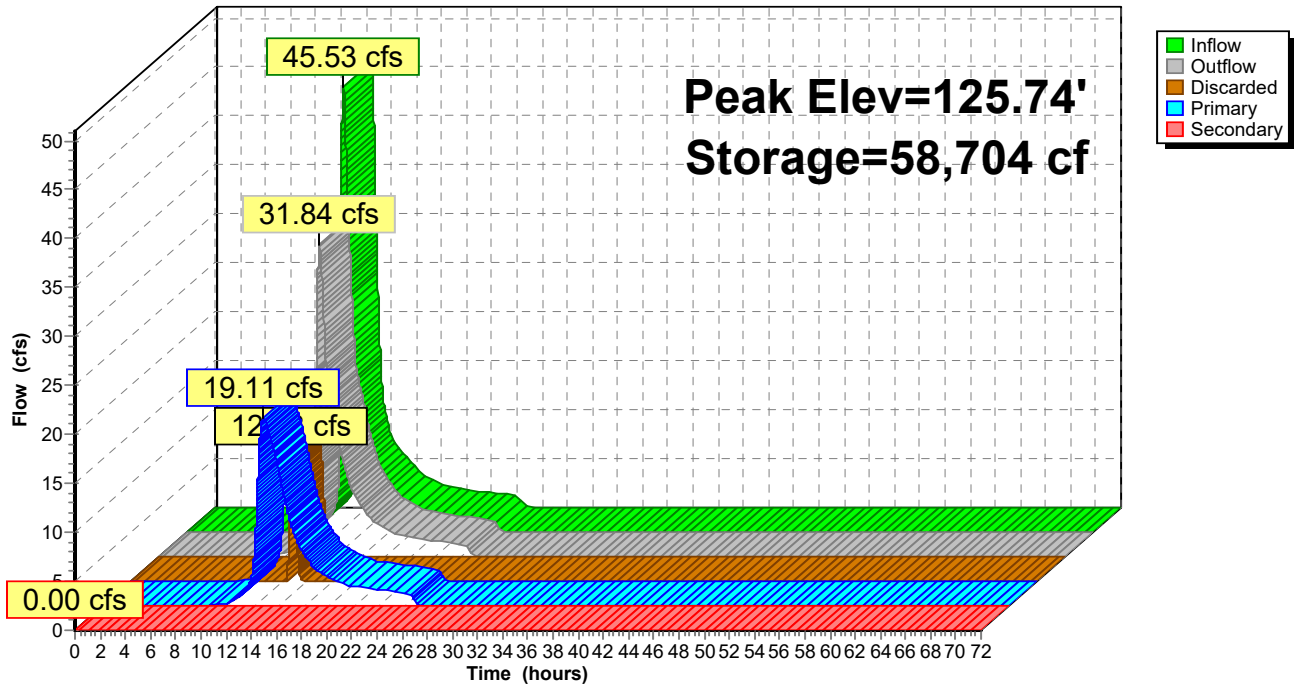
↳ **2=Culvert** (Inlet Controls 7.57 cfs @ 4.28 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=123.70' TW=120.66' (Dynamic Tailwater)

↳ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B1A: BASIN# 1A

Hydrograph



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Hydrograph for Pond B1A: BASIN# 1A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	123.70	0.00	0.00	0.00	0.00
2.00	0.01	0	123.70	0.10	0.00	0.10	0.00
4.00	0.02	1	123.71	0.10	0.00	0.10	0.00
6.00	0.04	1	123.71	0.11	0.00	0.11	0.00
8.00	0.07	0	123.70	0.00	0.00	0.00	0.00
10.00	0.34	57	123.83	0.30	0.00	0.30	0.00
12.00	12.89	7,855	124.63	4.73	0.00	4.73	0.00
14.00	7.55	30,320	125.30	13.46	0.00	13.46	0.00
16.00	4.07	8,966	124.68	5.25	0.00	5.25	0.00
18.00	2.43	3,999	124.43	2.83	0.00	2.83	0.00
20.00	1.84	2,296	124.30	1.96	0.00	1.96	0.00
22.00	1.53	1,622	124.23	1.61	0.00	1.61	0.00
24.00	1.24	1,051	124.16	1.31	0.00	1.31	0.00
26.00	0.00	0	123.70	0.00	0.00	0.00	0.00
28.00	0.00	0	123.70	0.00	0.00	0.00	0.00
30.00	0.00	0	123.70	0.00	0.00	0.00	0.00
32.00	0.00	0	123.70	0.00	0.00	0.00	0.00
34.00	0.00	0	123.70	0.00	0.00	0.00	0.00
36.00	0.00	0	123.70	0.00	0.00	0.00	0.00
38.00	0.00	0	123.70	0.00	0.00	0.00	0.00
40.00	0.00	0	123.70	0.00	0.00	0.00	0.00
42.00	0.00	0	123.70	0.00	0.00	0.00	0.00
44.00	0.00	0	123.70	0.00	0.00	0.00	0.00
46.00	0.00	0	123.70	0.00	0.00	0.00	0.00
48.00	0.00	0	123.70	0.00	0.00	0.00	0.00
50.00	0.00	0	123.70	0.00	0.00	0.00	0.00
52.00	0.00	0	123.70	0.00	0.00	0.00	0.00
54.00	0.00	0	123.70	0.00	0.00	0.00	0.00
56.00	0.00	0	123.70	0.00	0.00	0.00	0.00
58.00	0.00	0	123.70	0.00	0.00	0.00	0.00
60.00	0.00	0	123.70	0.00	0.00	0.00	0.00
62.00	0.00	0	123.70	0.00	0.00	0.00	0.00
64.00	0.00	0	123.70	0.00	0.00	0.00	0.00
66.00	0.00	0	123.70	0.00	0.00	0.00	0.00
68.00	0.00	0	123.70	0.00	0.00	0.00	0.00
70.00	0.00	0	123.70	0.00	0.00	0.00	0.00
72.00	0.00	0	123.70	0.00	0.00	0.00	0.00

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Summary for Pond B2A: BASIN# 2A

Inflow = 33.63 cfs @ 12.17 hrs, Volume= 3.055 af
 Outflow = 29.01 cfs @ 12.25 hrs, Volume= 3.055 af, Atten= 14%, Lag= 4.8 min
 Primary = 29.01 cfs @ 12.25 hrs, Volume= 3.055 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 123.42' @ 12.25 hrs Surf.Area= 7,029 sf Storage= 5,014 cf

Plug-Flow detention time= 1.4 min calculated for 3.055 af (100% of inflow)
 Center-of-Mass det. time= 1.2 min (826.4 - 825.2)

Volume	Invert	Avail.Storage	Storage Description
#1	120.66'	294,132 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.66	0	0	0
121.00	102	17	17
123.00	2,840	2,942	2,959
124.00	12,899	7,870	10,829
125.00	29,081	20,990	31,819
125.50	41,742	17,706	49,525
126.00	56,845	24,647	74,171
127.00	101,362	79,104	153,275
128.00	180,352	140,857	294,132

Device	Routing	Invert	Outlet Devices
#1	Primary	120.66'	30.0" Round Culvert L= 212.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 120.66' / 118.50' S= 0.0102 ' /' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=29.00 cfs @ 12.25 hrs HW=123.42' (Free Discharge)

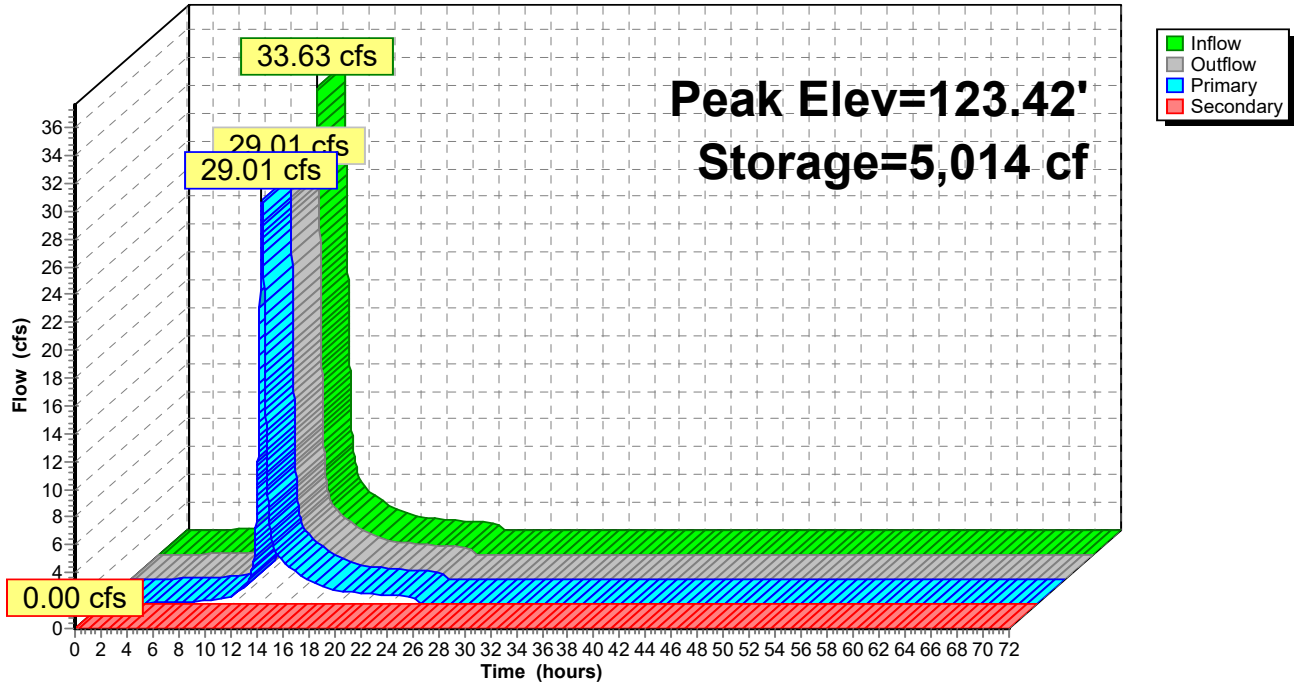
↑**1=Culvert** (Inlet Controls 29.00 cfs @ 5.91 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.66' TW=123.70' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B2A: BASIN# 2A

Hydrograph



EXISTING 2022-04

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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Pond B2A: BASIN# 2A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	120.66	0.00	0.00	0.00
2.00	0.02	1	120.72	0.02	0.02	0.00
4.00	0.08	2	120.77	0.08	0.08	0.00
6.00	0.13	3	120.80	0.13	0.13	0.00
8.00	0.24	5	120.84	0.24	0.24	0.00
10.00	0.62	13	120.96	0.62	0.62	0.00
12.00	14.25	1,032	122.14	12.60	12.60	0.00
14.00	2.89	124	121.33	2.91	2.91	0.00
16.00	1.58	47	121.14	1.58	1.58	0.00
18.00	0.96	22	121.04	0.97	0.97	0.00
20.00	0.76	17	120.99	0.76	0.76	0.00
22.00	0.63	14	120.96	0.64	0.64	0.00
24.00	0.51	11	120.93	0.51	0.51	0.00
26.00	0.00	0	120.66	0.00	0.00	0.00
28.00	0.00	0	120.66	0.00	0.00	0.00
30.00	0.00	0	120.66	0.00	0.00	0.00
32.00	0.00	0	120.66	0.00	0.00	0.00
34.00	0.00	0	120.66	0.00	0.00	0.00
36.00	0.00	0	120.66	0.00	0.00	0.00
38.00	0.00	0	120.66	0.00	0.00	0.00
40.00	0.00	0	120.66	0.00	0.00	0.00
42.00	0.00	0	120.66	0.00	0.00	0.00
44.00	0.00	0	120.66	0.00	0.00	0.00
46.00	0.00	0	120.66	0.00	0.00	0.00
48.00	0.00	0	120.66	0.00	0.00	0.00
50.00	0.00	0	120.66	0.00	0.00	0.00
52.00	0.00	0	120.66	0.00	0.00	0.00
54.00	0.00	0	120.66	0.00	0.00	0.00
56.00	0.00	0	120.66	0.00	0.00	0.00
58.00	0.00	0	120.66	0.00	0.00	0.00
60.00	0.00	0	120.66	0.00	0.00	0.00
62.00	0.00	0	120.66	0.00	0.00	0.00
64.00	0.00	0	120.66	0.00	0.00	0.00
66.00	0.00	0	120.66	0.00	0.00	0.00
68.00	0.00	0	120.66	0.00	0.00	0.00
70.00	0.00	0	120.66	0.00	0.00	0.00
72.00	0.00	0	120.66	0.00	0.00	0.00

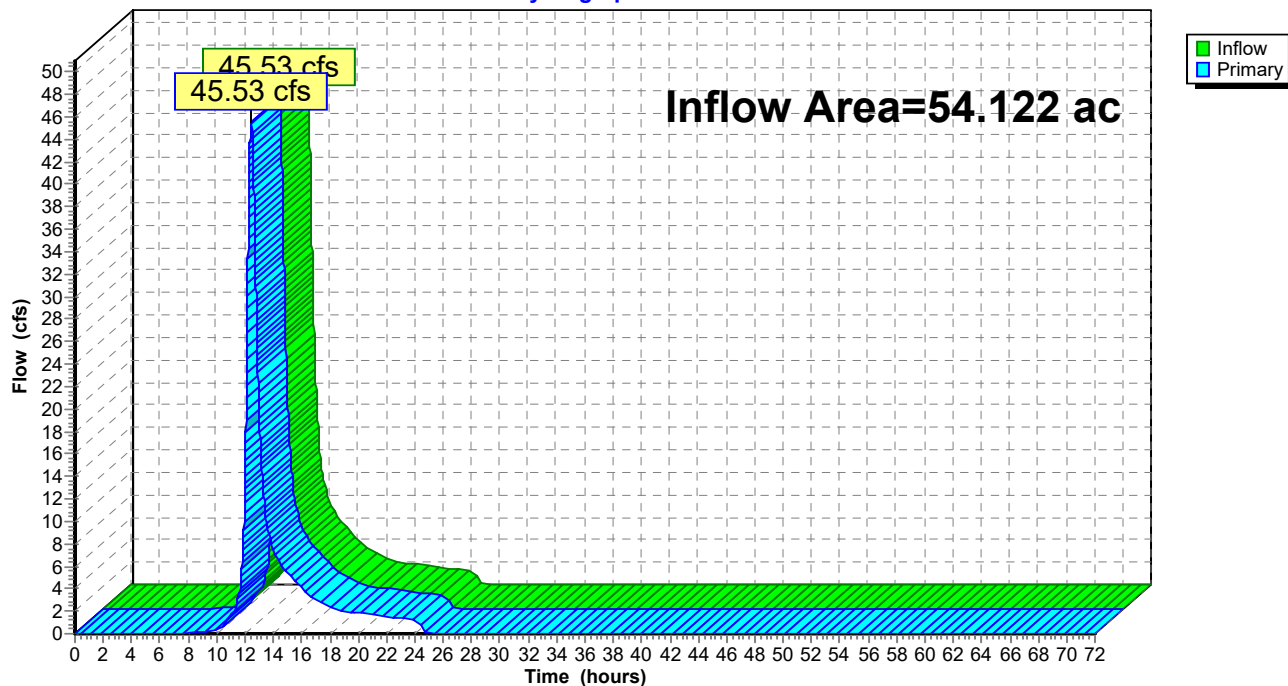
Summary for Link R1: REACH# 1

Inflow Area = 54.122 ac, 1.74% Impervious, Inflow Depth = 1.43" for 2-YR event
 Inflow = 45.53 cfs @ 12.46 hrs, Volume= 6.442 af
 Primary = 45.53 cfs @ 12.47 hrs, Volume= 6.442 af, Atten= 0%, Lag= 0.6 min

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

Link R1: REACH# 1

Hydrograph



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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Link R1: REACH# 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.01	0.00	0.01	55.00	0.00	0.00	0.00
3.00	0.01	0.00	0.01	56.00	0.00	0.00	0.00
4.00	0.02	0.00	0.02	57.00	0.00	0.00	0.00
5.00	0.03	0.00	0.03	58.00	0.00	0.00	0.00
6.00	0.04	0.00	0.04	59.00	0.00	0.00	0.00
7.00	0.05	0.00	0.05	60.00	0.00	0.00	0.00
8.00	0.07	0.00	0.07	61.00	0.00	0.00	0.00
9.00	0.11	0.00	0.11	62.00	0.00	0.00	0.00
10.00	0.34	0.00	0.34	63.00	0.00	0.00	0.00
11.00	1.60	0.00	1.58	64.00	0.00	0.00	0.00
12.00	13.44	0.00	12.89	65.00	0.00	0.00	0.00
13.00	19.38	0.00	19.75	66.00	0.00	0.00	0.00
14.00	7.52	0.00	7.55	67.00	0.00	0.00	0.00
15.00	5.45	0.00	5.46	68.00	0.00	0.00	0.00
16.00	4.06	0.00	4.07	69.00	0.00	0.00	0.00
17.00	3.06	0.00	3.07	70.00	0.00	0.00	0.00
18.00	2.43	0.00	2.43	71.00	0.00	0.00	0.00
19.00	2.03	0.00	2.03	72.00	0.00	0.00	0.00
20.00	1.84	0.00	1.84				
21.00	1.67	0.00	1.68				
22.00	1.53	0.00	1.53				
23.00	1.38	0.00	1.38				
24.00	1.23	0.00	1.24				
25.00	0.05	0.00	0.05				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

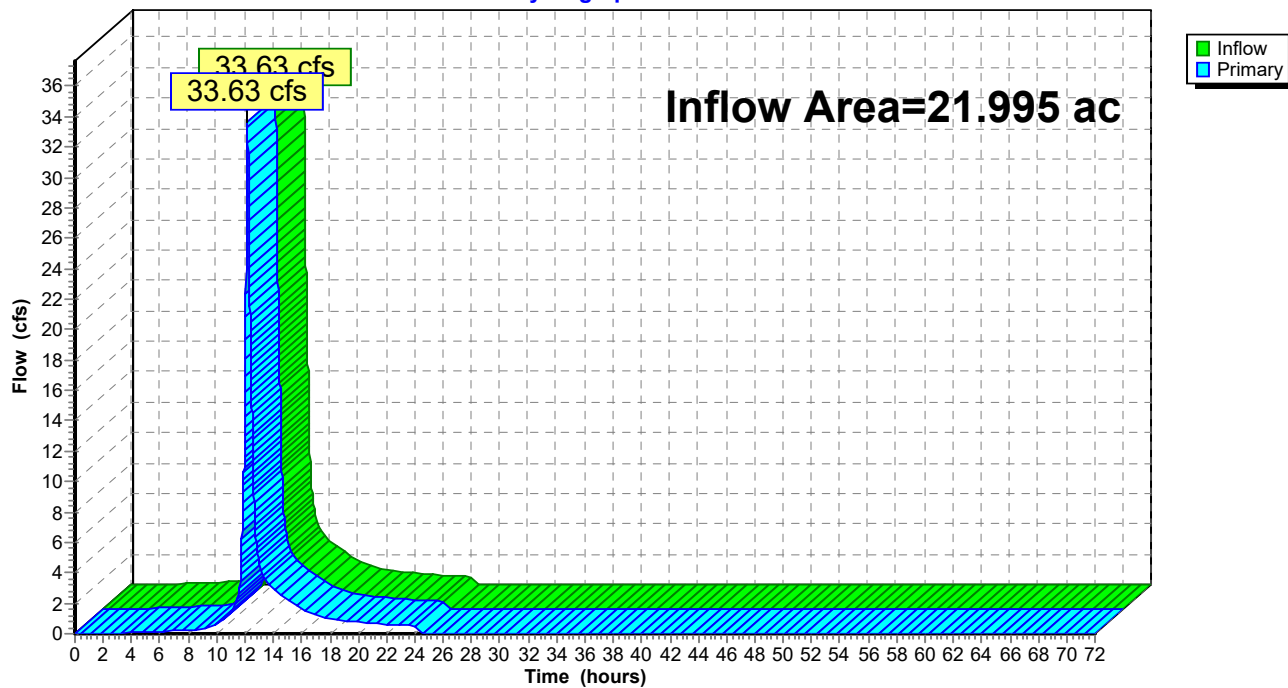
Summary for Link R2: REACH# 2

Inflow Area = 21.995 ac, 15.37% Impervious, Inflow Depth = 1.67" for 2-YR event
 Inflow = 33.63 cfs @ 12.16 hrs, Volume= 3.055 af
 Primary = 33.63 cfs @ 12.17 hrs, Volume= 3.055 af, Atten= 0%, Lag= 0.6 min

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

Link R2: REACH# 2

Hydrograph



EXISTING 2022-04

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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Link R2: REACH# 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.02	0.00	0.02	55.00	0.00	0.00	0.00
3.00	0.05	0.00	0.05	56.00	0.00	0.00	0.00
4.00	0.08	0.00	0.08	57.00	0.00	0.00	0.00
5.00	0.10	0.00	0.10	58.00	0.00	0.00	0.00
6.00	0.13	0.00	0.13	59.00	0.00	0.00	0.00
7.00	0.18	0.00	0.18	60.00	0.00	0.00	0.00
8.00	0.24	0.00	0.24	61.00	0.00	0.00	0.00
9.00	0.36	0.00	0.36	62.00	0.00	0.00	0.00
10.00	0.62	0.00	0.62	63.00	0.00	0.00	0.00
11.00	1.44	0.00	1.43	64.00	0.00	0.00	0.00
12.00	15.01	0.00	14.25	65.00	0.00	0.00	0.00
13.00	4.69	0.00	4.74	66.00	0.00	0.00	0.00
14.00	2.88	0.00	2.89	67.00	0.00	0.00	0.00
15.00	2.18	0.00	2.19	68.00	0.00	0.00	0.00
16.00	1.57	0.00	1.58	69.00	0.00	0.00	0.00
17.00	1.24	0.00	1.24	70.00	0.00	0.00	0.00
18.00	0.96	0.00	0.96	71.00	0.00	0.00	0.00
19.00	0.84	0.00	0.85	72.00	0.00	0.00	0.00
20.00	0.76	0.00	0.76				
21.00	0.70	0.00	0.70				
22.00	0.63	0.00	0.63				
23.00	0.57	0.00	0.57				
24.00	0.51	0.00	0.51				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

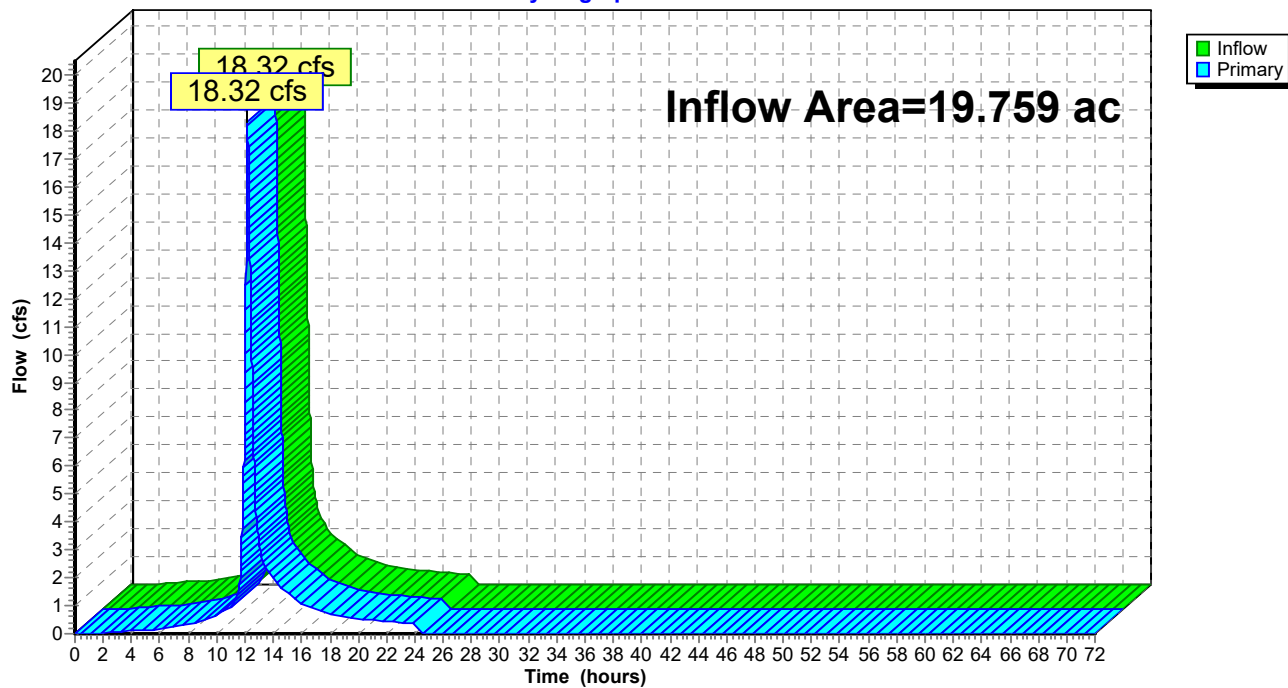
Summary for Link R3: REACH# 3

Inflow Area = 19.759 ac, 22.72% Impervious, Inflow Depth = 1.24" for 2-YR event
 Inflow = 18.32 cfs @ 12.16 hrs, Volume= 2.043 af
 Primary = 18.32 cfs @ 12.17 hrs, Volume= 2.043 af, Atten= 0%, Lag= 0.6 min

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

Link R3: REACH# 3

Hydrograph



EXISTING 2022-04

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Type III 24-hr 2-YR Rainfall=3.30"

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Hydrograph for Link R3: REACH# 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.03	0.00	0.03	55.00	0.00	0.00	0.00
3.00	0.06	0.00	0.06	56.00	0.00	0.00	0.00
4.00	0.10	0.00	0.10	57.00	0.00	0.00	0.00
5.00	0.14	0.00	0.14	58.00	0.00	0.00	0.00
6.00	0.17	0.00	0.17	59.00	0.00	0.00	0.00
7.00	0.24	0.00	0.24	60.00	0.00	0.00	0.00
8.00	0.32	0.00	0.32	61.00	0.00	0.00	0.00
9.00	0.48	0.00	0.48	62.00	0.00	0.00	0.00
10.00	0.65	0.00	0.65	63.00	0.00	0.00	0.00
11.00	0.99	0.00	0.98	64.00	0.00	0.00	0.00
12.00	8.26	0.00	7.83	65.00	0.00	0.00	0.00
13.00	3.18	0.00	3.22	66.00	0.00	0.00	0.00
14.00	1.95	0.00	1.95	67.00	0.00	0.00	0.00
15.00	1.49	0.00	1.49	68.00	0.00	0.00	0.00
16.00	1.09	0.00	1.09	69.00	0.00	0.00	0.00
17.00	0.86	0.00	0.86	70.00	0.00	0.00	0.00
18.00	0.67	0.00	0.67	71.00	0.00	0.00	0.00
19.00	0.59	0.00	0.59	72.00	0.00	0.00	0.00
20.00	0.53	0.00	0.53				
21.00	0.49	0.00	0.49				
22.00	0.45	0.00	0.45				
23.00	0.40	0.00	0.40				
24.00	0.36	0.00	0.36				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

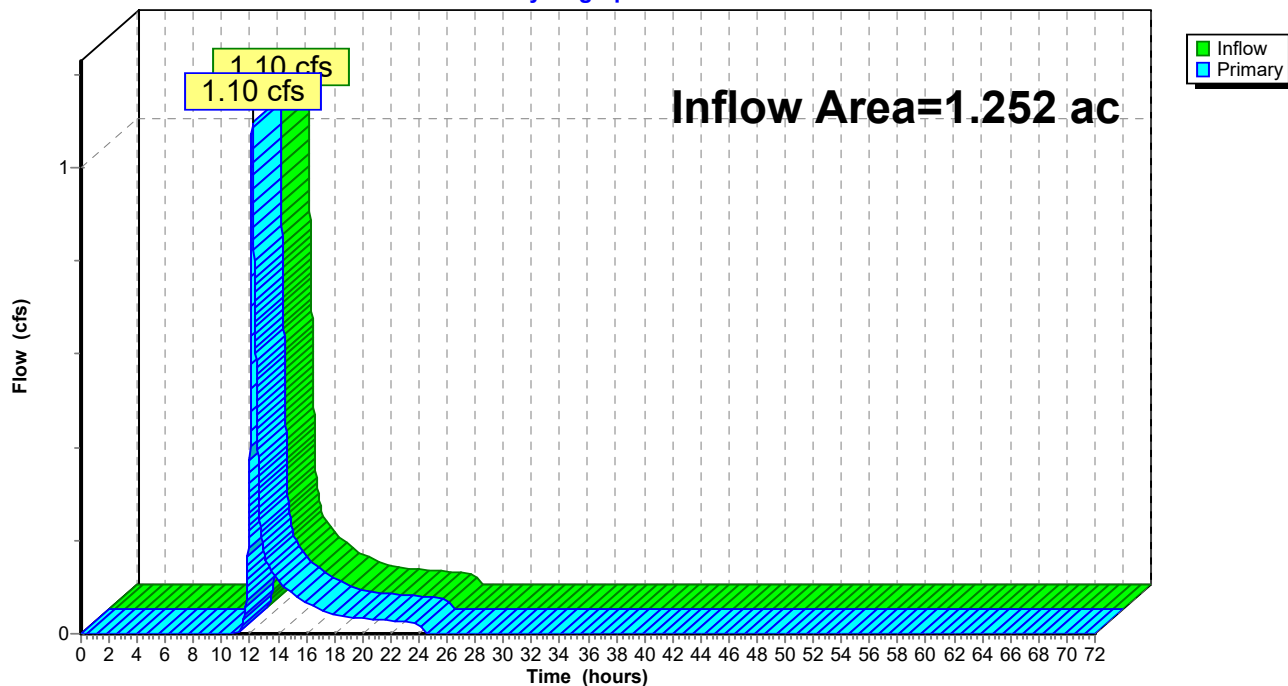
Summary for Link R4: REACH# 4

Inflow Area = 1.252 ac, 26.82% Impervious, Inflow Depth = 0.94" for 2-YR event
 Inflow = 1.10 cfs @ 12.15 hrs, Volume= 0.098 af
 Primary = 1.10 cfs @ 12.16 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.6 min

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

Link R4: REACH# 4

Hydrograph



EXISTING 2022-04

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Type III 24-hr 2-YR Rainfall=3.30"

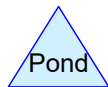
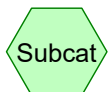
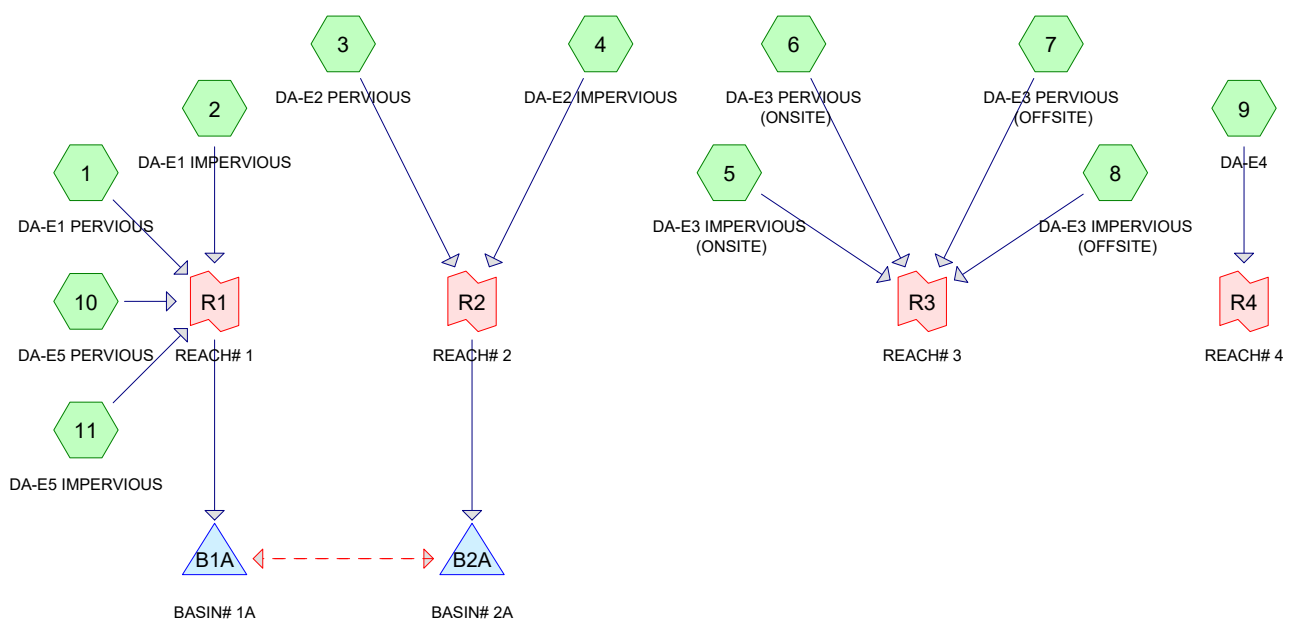
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Hydrograph for Link R4: REACH# 4

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
12.00	0.40	0.00	0.37	65.00	0.00	0.00	0.00
13.00	0.18	0.00	0.18	66.00	0.00	0.00	0.00
14.00	0.11	0.00	0.12	67.00	0.00	0.00	0.00
15.00	0.09	0.00	0.09	68.00	0.00	0.00	0.00
16.00	0.07	0.00	0.07	69.00	0.00	0.00	0.00
17.00	0.05	0.00	0.05	70.00	0.00	0.00	0.00
18.00	0.04	0.00	0.04	71.00	0.00	0.00	0.00
19.00	0.04	0.00	0.04	72.00	0.00	0.00	0.00
20.00	0.03	0.00	0.03				
21.00	0.03	0.00	0.03				
22.00	0.03	0.00	0.03				
23.00	0.02	0.00	0.02				
24.00	0.02	0.00	0.02				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

10-Year Storm Event for Pre-Development Conditions



Routing Diagram for EXISTING 2022-04
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
10.140	61	>75% Grass cover, Good, HSG B (1, 3, 6, 7, 9)
4.998	74	>75% Grass cover, Good, HSG C (1, 3, 10)
0.380	82	Dirt roads, HSG B (1, 3, 6)
0.963	87	Dirt roads, HSG C (1, 3)
0.364	85	Gravel roads, HSG B (6)
6.062	98	Paved parking, HSG B (2, 4, 5, 8, 9)
3.086	98	Paved parking, HSG C (2, 4, 11)
22.953	78	Row crops, straight row, Good, HSG B (1, 3, 6, 10)
36.553	85	Row crops, straight row, Good, HSG C (1, 3, 10)
9.037	55	Woods, Good, HSG B (1, 3, 6, 7)
2.591	70	Woods, Good, HSG C (1, 3, 10)
97.127	78	TOTAL AREA

EXISTING 2022-04

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Type III 24-hr 10-YR Rainfall=5.00"

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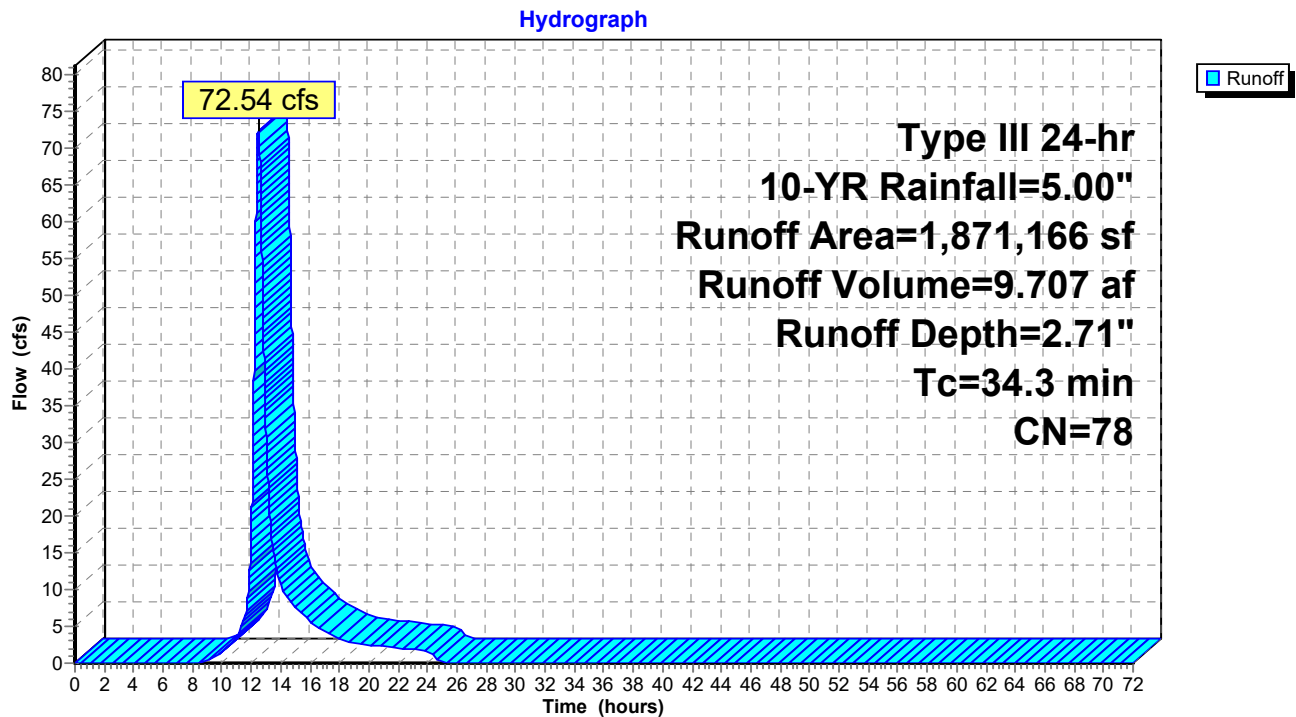
Summary for Subcatchment 1: DA-E1 PERVIOUS

Runoff = 72.54 cfs @ 12.47 hrs, Volume= 9.707 af, Depth= 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
166,165	55	Woods, Good, HSG B
63,858	70	Woods, Good, HSG C
22,000	87	Dirt roads, HSG C
12,148	82	Dirt roads, HSG B
40,999	74	>75% Grass cover, Good, HSG C
790,694	85	Row crops, straight row, Good, HSG C
663,289	78	Row crops, straight row, Good, HSG B
112,013	61	>75% Grass cover, Good, HSG B
1,871,166	78	Weighted Average
1,871,166		100.00% Pervious Area

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

Subcatchment 1: DA-E1 PERVIOUS

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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 1: DA-E1 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	2.71	0.00
1.00	0.05	0.00	0.00	54.00	5.00	2.71	0.00
2.00	0.10	0.00	0.00	55.00	5.00	2.71	0.00
3.00	0.15	0.00	0.00	56.00	5.00	2.71	0.00
4.00	0.22	0.00	0.00	57.00	5.00	2.71	0.00
5.00	0.28	0.00	0.00	58.00	5.00	2.71	0.00
6.00	0.36	0.00	0.00	59.00	5.00	2.71	0.00
7.00	0.45	0.00	0.00	60.00	5.00	2.71	0.00
8.00	0.57	0.00	0.00	61.00	5.00	2.71	0.00
9.00	0.73	0.01	0.36	62.00	5.00	2.71	0.00
10.00	0.95	0.05	1.52	63.00	5.00	2.71	0.00
11.00	1.25	0.13	3.74	64.00	5.00	2.71	0.00
12.00	2.50	0.79	18.17	65.00	5.00	2.71	0.00
13.00	3.75	1.69	31.71	66.00	5.00	2.71	0.00
14.00	4.06	1.93	10.79	67.00	5.00	2.71	0.00
15.00	4.27	2.11	7.64	68.00	5.00	2.71	0.00
16.00	4.43	2.24	5.68	69.00	5.00	2.71	0.00
17.00	4.55	2.33	4.24	70.00	5.00	2.71	0.00
18.00	4.64	2.41	3.35	71.00	5.00	2.71	0.00
19.00	4.72	2.47	2.77	72.00	5.00	2.71	0.00
20.00	4.79	2.53	2.50				
21.00	4.85	2.58	2.27				
22.00	4.90	2.63	2.07				
23.00	4.95	2.67	1.87				
24.00	5.00	2.71	1.67				
25.00	5.00	2.71	0.09				
26.00	5.00	2.71	0.00				
27.00	5.00	2.71	0.00				
28.00	5.00	2.71	0.00				
29.00	5.00	2.71	0.00				
30.00	5.00	2.71	0.00				
31.00	5.00	2.71	0.00				
32.00	5.00	2.71	0.00				
33.00	5.00	2.71	0.00				
34.00	5.00	2.71	0.00				
35.00	5.00	2.71	0.00				
36.00	5.00	2.71	0.00				
37.00	5.00	2.71	0.00				
38.00	5.00	2.71	0.00				
39.00	5.00	2.71	0.00				
40.00	5.00	2.71	0.00				
41.00	5.00	2.71	0.00				
42.00	5.00	2.71	0.00				
43.00	5.00	2.71	0.00				
44.00	5.00	2.71	0.00				
45.00	5.00	2.71	0.00				
46.00	5.00	2.71	0.00				
47.00	5.00	2.71	0.00				
48.00	5.00	2.71	0.00				
49.00	5.00	2.71	0.00				
50.00	5.00	2.71	0.00				
51.00	5.00	2.71	0.00				
52.00	5.00	2.71	0.00				

EXISTING 2022-04

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 2: DA-E1 IMPERVIOUS

Runoff = 2.79 cfs @ 12.13 hrs, Volume= 0.258 af, Depth= 4.76"

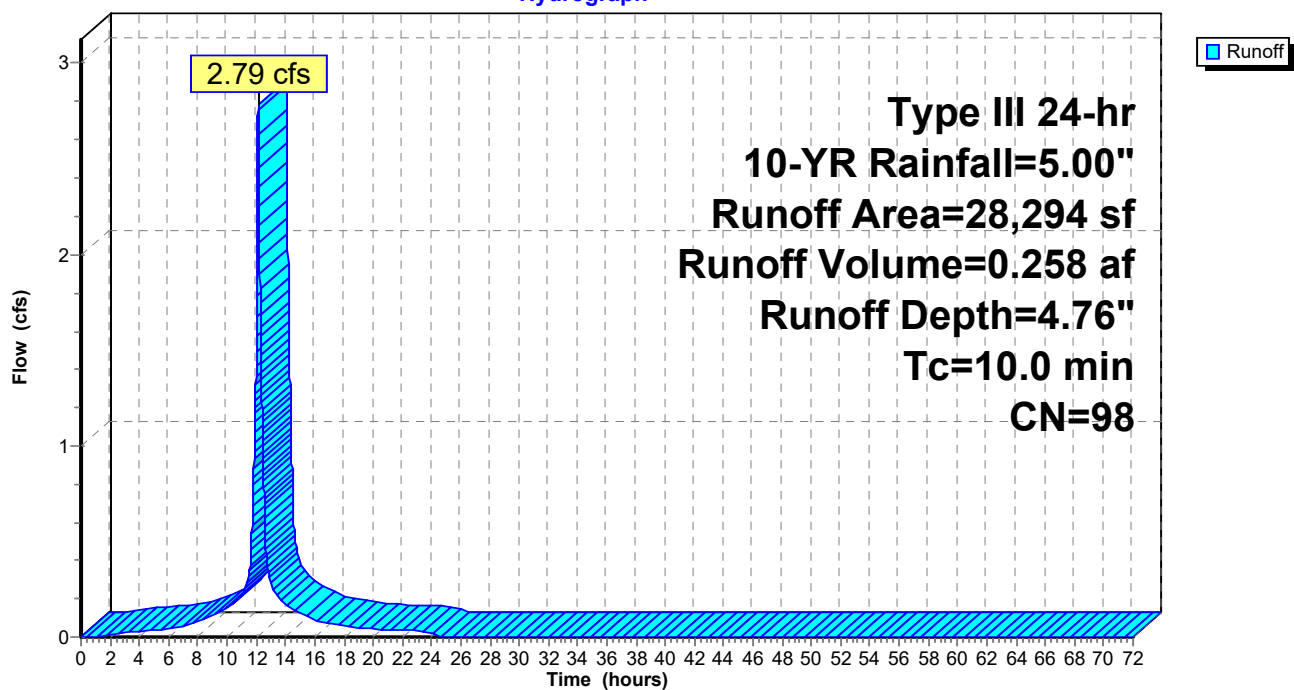
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
4,949	98	Paved parking, HSG B
23,345	98	Paved parking, HSG C
28,294	98	Weighted Average
28,294		100.00% Impervious Area

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

Subcatchment 2: DA-E1 IMPERVIOUS

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 2: DA-E1 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	4.76	0.00
1.00	0.05	0.00	0.00	54.00	5.00	4.76	0.00
2.00	0.10	0.01	0.01	55.00	5.00	4.76	0.00
3.00	0.15	0.04	0.02	56.00	5.00	4.76	0.00
4.00	0.22	0.08	0.03	57.00	5.00	4.76	0.00
5.00	0.28	0.13	0.04	58.00	5.00	4.76	0.00
6.00	0.36	0.19	0.04	59.00	5.00	4.76	0.00
7.00	0.45	0.28	0.06	60.00	5.00	4.76	0.00
8.00	0.57	0.38	0.08	61.00	5.00	4.76	0.00
9.00	0.73	0.53	0.11	62.00	5.00	4.76	0.00
10.00	0.95	0.74	0.15	63.00	5.00	4.76	0.00
11.00	1.25	1.03	0.22	64.00	5.00	4.76	0.00
12.00	2.50	2.27	1.49	65.00	5.00	4.76	0.00
13.00	3.75	3.52	0.28	66.00	5.00	4.76	0.00
14.00	4.06	3.82	0.17	67.00	5.00	4.76	0.00
15.00	4.27	4.04	0.13	68.00	5.00	4.76	0.00
16.00	4.43	4.19	0.09	69.00	5.00	4.76	0.00
17.00	4.55	4.31	0.07	70.00	5.00	4.76	0.00
18.00	4.64	4.40	0.05	71.00	5.00	4.76	0.00
19.00	4.72	4.48	0.05	72.00	5.00	4.76	0.00
20.00	4.79	4.55	0.04				
21.00	4.85	4.61	0.04				
22.00	4.90	4.67	0.04				
23.00	4.95	4.72	0.03				
24.00	5.00	4.76	0.03				
25.00	5.00	4.76	0.00				
26.00	5.00	4.76	0.00				
27.00	5.00	4.76	0.00				
28.00	5.00	4.76	0.00				
29.00	5.00	4.76	0.00				
30.00	5.00	4.76	0.00				
31.00	5.00	4.76	0.00				
32.00	5.00	4.76	0.00				
33.00	5.00	4.76	0.00				
34.00	5.00	4.76	0.00				
35.00	5.00	4.76	0.00				
36.00	5.00	4.76	0.00				
37.00	5.00	4.76	0.00				
38.00	5.00	4.76	0.00				
39.00	5.00	4.76	0.00				
40.00	5.00	4.76	0.00				
41.00	5.00	4.76	0.00				
42.00	5.00	4.76	0.00				
43.00	5.00	4.76	0.00				
44.00	5.00	4.76	0.00				
45.00	5.00	4.76	0.00				
46.00	5.00	4.76	0.00				
47.00	5.00	4.76	0.00				
48.00	5.00	4.76	0.00				
49.00	5.00	4.76	0.00				
50.00	5.00	4.76	0.00				
51.00	5.00	4.76	0.00				
52.00	5.00	4.76	0.00				

EXISTING 2022-04

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Type III 24-hr 10-YR Rainfall=5.00"

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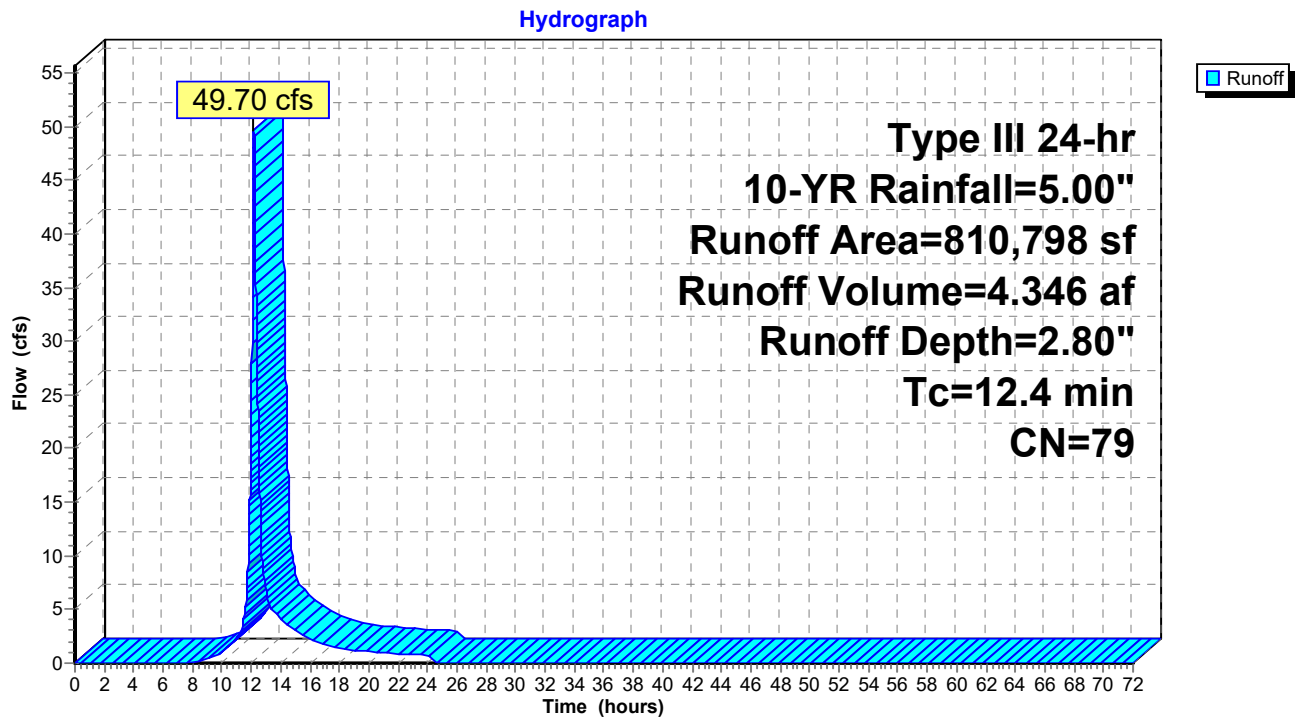
Summary for Subcatchment 3: DA-E2 PERVIOUS

Runoff = 49.70 cfs @ 12.17 hrs, Volume= 4.346 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
28,328	70	Woods, Good, HSG C
28,191	55	Woods, Good, HSG B
498,060	85	Row crops, straight row, Good, HSG C
70,817	61	>75% Grass cover, Good, HSG B
152,643	74	>75% Grass cover, Good, HSG C
1,080	82	Dirt roads, HSG B
19,958	87	Dirt roads, HSG C
11,721	78	Row crops, straight row, Good, HSG B
810,798	79	Weighted Average
810,798		100.00% Pervious Area

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

Subcatchment 3: DA-E2 PERVIOUS

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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 3: DA-E2 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	2.80	0.00
1.00	0.05	0.00	0.00	54.00	5.00	2.80	0.00
2.00	0.10	0.00	0.00	55.00	5.00	2.80	0.00
3.00	0.15	0.00	0.00	56.00	5.00	2.80	0.00
4.00	0.22	0.00	0.00	57.00	5.00	2.80	0.00
5.00	0.28	0.00	0.00	58.00	5.00	2.80	0.00
6.00	0.36	0.00	0.00	59.00	5.00	2.80	0.00
7.00	0.45	0.00	0.00	60.00	5.00	2.80	0.00
8.00	0.57	0.00	0.03	61.00	5.00	2.80	0.00
9.00	0.73	0.01	0.37	62.00	5.00	2.80	0.00
10.00	0.95	0.06	1.00	63.00	5.00	2.80	0.00
11.00	1.25	0.15	2.28	64.00	5.00	2.80	0.00
12.00	2.50	0.84	22.02	65.00	5.00	2.80	0.00
13.00	3.75	1.76	6.75	66.00	5.00	2.80	0.00
14.00	4.06	2.01	4.08	67.00	5.00	2.80	0.00
15.00	4.27	2.19	3.08	68.00	5.00	2.80	0.00
16.00	4.43	2.32	2.21	69.00	5.00	2.80	0.00
17.00	4.55	2.42	1.73	70.00	5.00	2.80	0.00
18.00	4.64	2.49	1.34	71.00	5.00	2.80	0.00
19.00	4.72	2.56	1.18	72.00	5.00	2.80	0.00
20.00	4.79	2.62	1.06				
21.00	4.85	2.67	0.97				
22.00	4.90	2.72	0.88				
23.00	4.95	2.76	0.79				
24.00	5.00	2.80	0.70				
25.00	5.00	2.80	0.00				
26.00	5.00	2.80	0.00				
27.00	5.00	2.80	0.00				
28.00	5.00	2.80	0.00				
29.00	5.00	2.80	0.00				
30.00	5.00	2.80	0.00				
31.00	5.00	2.80	0.00				
32.00	5.00	2.80	0.00				
33.00	5.00	2.80	0.00				
34.00	5.00	2.80	0.00				
35.00	5.00	2.80	0.00				
36.00	5.00	2.80	0.00				
37.00	5.00	2.80	0.00				
38.00	5.00	2.80	0.00				
39.00	5.00	2.80	0.00				
40.00	5.00	2.80	0.00				
41.00	5.00	2.80	0.00				
42.00	5.00	2.80	0.00				
43.00	5.00	2.80	0.00				
44.00	5.00	2.80	0.00				
45.00	5.00	2.80	0.00				
46.00	5.00	2.80	0.00				
47.00	5.00	2.80	0.00				
48.00	5.00	2.80	0.00				
49.00	5.00	2.80	0.00				
50.00	5.00	2.80	0.00				
51.00	5.00	2.80	0.00				
52.00	5.00	2.80	0.00				

EXISTING 2022-04

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 4: DA-E2 IMPERVIOUS

Runoff = 14.51 cfs @ 12.13 hrs, Volume= 1.342 af, Depth= 4.76"

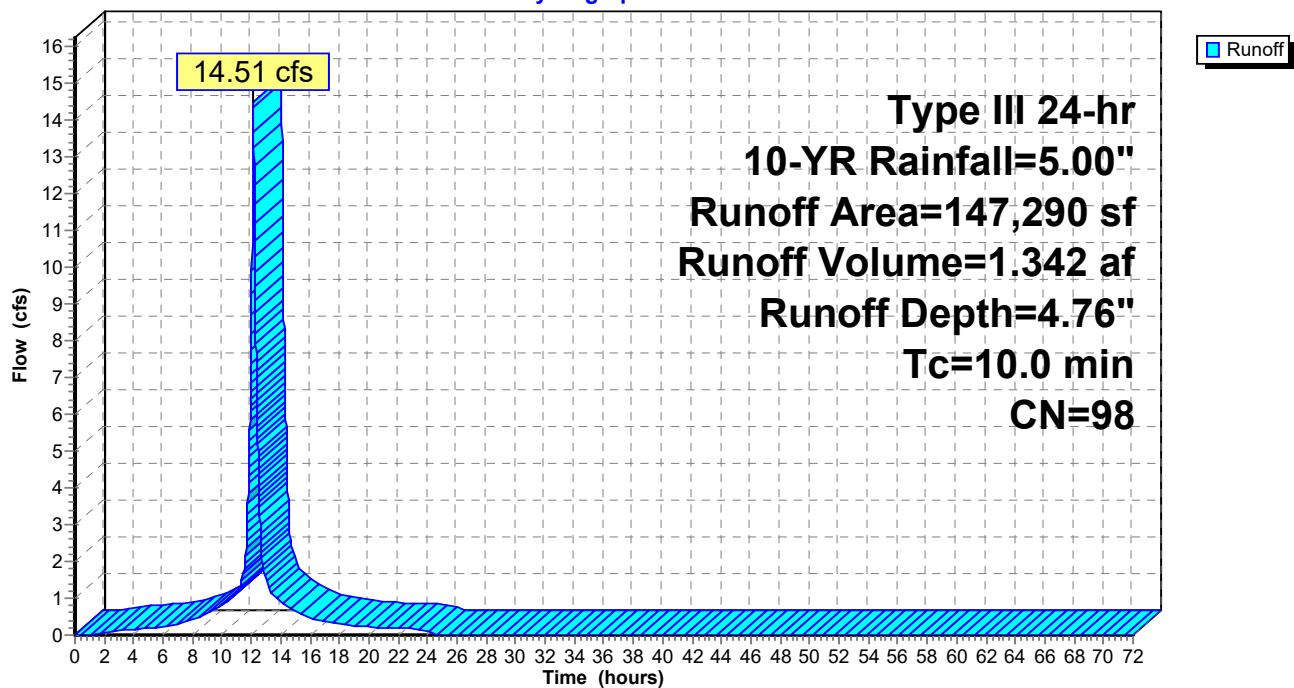
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
98,373	98	Paved parking, HSG C
48,917	98	Paved parking, HSG B
147,290	98	Weighted Average
147,290		100.00% Impervious Area

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

Subcatchment 4: DA-E2 IMPERVIOUS

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 4: DA-E2 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	4.76	0.00
1.00	0.05	0.00	0.00	54.00	5.00	4.76	0.00
2.00	0.10	0.01	0.06	55.00	5.00	4.76	0.00
3.00	0.15	0.04	0.11	56.00	5.00	4.76	0.00
4.00	0.22	0.08	0.15	57.00	5.00	4.76	0.00
5.00	0.28	0.13	0.19	58.00	5.00	4.76	0.00
6.00	0.36	0.19	0.23	59.00	5.00	4.76	0.00
7.00	0.45	0.28	0.30	60.00	5.00	4.76	0.00
8.00	0.57	0.38	0.39	61.00	5.00	4.76	0.00
9.00	0.73	0.53	0.57	62.00	5.00	4.76	0.00
10.00	0.95	0.74	0.78	63.00	5.00	4.76	0.00
11.00	1.25	1.03	1.15	64.00	5.00	4.76	0.00
12.00	2.50	2.27	7.77	65.00	5.00	4.76	0.00
13.00	3.75	3.52	1.48	66.00	5.00	4.76	0.00
14.00	4.06	3.82	0.90	67.00	5.00	4.76	0.00
15.00	4.27	4.04	0.67	68.00	5.00	4.76	0.00
16.00	4.43	4.19	0.47	69.00	5.00	4.76	0.00
17.00	4.55	4.31	0.37	70.00	5.00	4.76	0.00
18.00	4.64	4.40	0.29	71.00	5.00	4.76	0.00
19.00	4.72	4.48	0.25	72.00	5.00	4.76	0.00
20.00	4.79	4.55	0.23				
21.00	4.85	4.61	0.20				
22.00	4.90	4.67	0.19				
23.00	4.95	4.72	0.17				
24.00	5.00	4.76	0.15				
25.00	5.00	4.76	0.00				
26.00	5.00	4.76	0.00				
27.00	5.00	4.76	0.00				
28.00	5.00	4.76	0.00				
29.00	5.00	4.76	0.00				
30.00	5.00	4.76	0.00				
31.00	5.00	4.76	0.00				
32.00	5.00	4.76	0.00				
33.00	5.00	4.76	0.00				
34.00	5.00	4.76	0.00				
35.00	5.00	4.76	0.00				
36.00	5.00	4.76	0.00				
37.00	5.00	4.76	0.00				
38.00	5.00	4.76	0.00				
39.00	5.00	4.76	0.00				
40.00	5.00	4.76	0.00				
41.00	5.00	4.76	0.00				
42.00	5.00	4.76	0.00				
43.00	5.00	4.76	0.00				
44.00	5.00	4.76	0.00				
45.00	5.00	4.76	0.00				
46.00	5.00	4.76	0.00				
47.00	5.00	4.76	0.00				
48.00	5.00	4.76	0.00				
49.00	5.00	4.76	0.00				
50.00	5.00	4.76	0.00				
51.00	5.00	4.76	0.00				
52.00	5.00	4.76	0.00				

EXISTING 2022-04

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Runoff = 6.29 cfs @ 12.13 hrs, Volume= 0.582 af, Depth= 4.76"

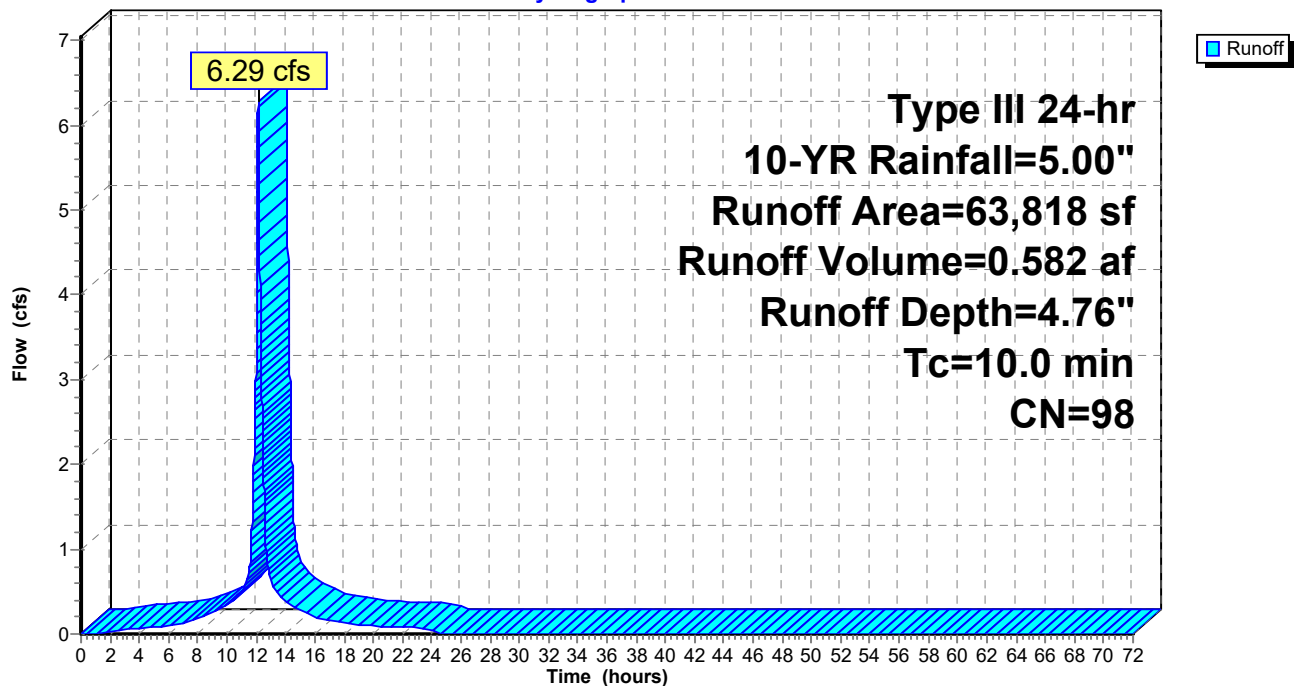
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
63,818	98	Paved parking, HSG B
63,818		100.00% Impervious Area

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

Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	4.76	0.00
1.00	0.05	0.00	0.00	54.00	5.00	4.76	0.00
2.00	0.10	0.01	0.03	55.00	5.00	4.76	0.00
3.00	0.15	0.04	0.05	56.00	5.00	4.76	0.00
4.00	0.22	0.08	0.07	57.00	5.00	4.76	0.00
5.00	0.28	0.13	0.08	58.00	5.00	4.76	0.00
6.00	0.36	0.19	0.10	59.00	5.00	4.76	0.00
7.00	0.45	0.28	0.13	60.00	5.00	4.76	0.00
8.00	0.57	0.38	0.17	61.00	5.00	4.76	0.00
9.00	0.73	0.53	0.25	62.00	5.00	4.76	0.00
10.00	0.95	0.74	0.34	63.00	5.00	4.76	0.00
11.00	1.25	1.03	0.50	64.00	5.00	4.76	0.00
12.00	2.50	2.27	3.37	65.00	5.00	4.76	0.00
13.00	3.75	3.52	0.64	66.00	5.00	4.76	0.00
14.00	4.06	3.82	0.39	67.00	5.00	4.76	0.00
15.00	4.27	4.04	0.29	68.00	5.00	4.76	0.00
16.00	4.43	4.19	0.20	69.00	5.00	4.76	0.00
17.00	4.55	4.31	0.16	70.00	5.00	4.76	0.00
18.00	4.64	4.40	0.12	71.00	5.00	4.76	0.00
19.00	4.72	4.48	0.11	72.00	5.00	4.76	0.00
20.00	4.79	4.55	0.10				
21.00	4.85	4.61	0.09				
22.00	4.90	4.67	0.08				
23.00	4.95	4.72	0.07				
24.00	5.00	4.76	0.06				
25.00	5.00	4.76	0.00				
26.00	5.00	4.76	0.00				
27.00	5.00	4.76	0.00				
28.00	5.00	4.76	0.00				
29.00	5.00	4.76	0.00				
30.00	5.00	4.76	0.00				
31.00	5.00	4.76	0.00				
32.00	5.00	4.76	0.00				
33.00	5.00	4.76	0.00				
34.00	5.00	4.76	0.00				
35.00	5.00	4.76	0.00				
36.00	5.00	4.76	0.00				
37.00	5.00	4.76	0.00				
38.00	5.00	4.76	0.00				
39.00	5.00	4.76	0.00				
40.00	5.00	4.76	0.00				
41.00	5.00	4.76	0.00				
42.00	5.00	4.76	0.00				
43.00	5.00	4.76	0.00				
44.00	5.00	4.76	0.00				
45.00	5.00	4.76	0.00				
46.00	5.00	4.76	0.00				
47.00	5.00	4.76	0.00				
48.00	5.00	4.76	0.00				
49.00	5.00	4.76	0.00				
50.00	5.00	4.76	0.00				
51.00	5.00	4.76	0.00				
52.00	5.00	4.76	0.00				

EXISTING 2022-04

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Runoff = 16.78 cfs @ 12.25 hrs, Volume= 1.710 af, Depth= 1.96"

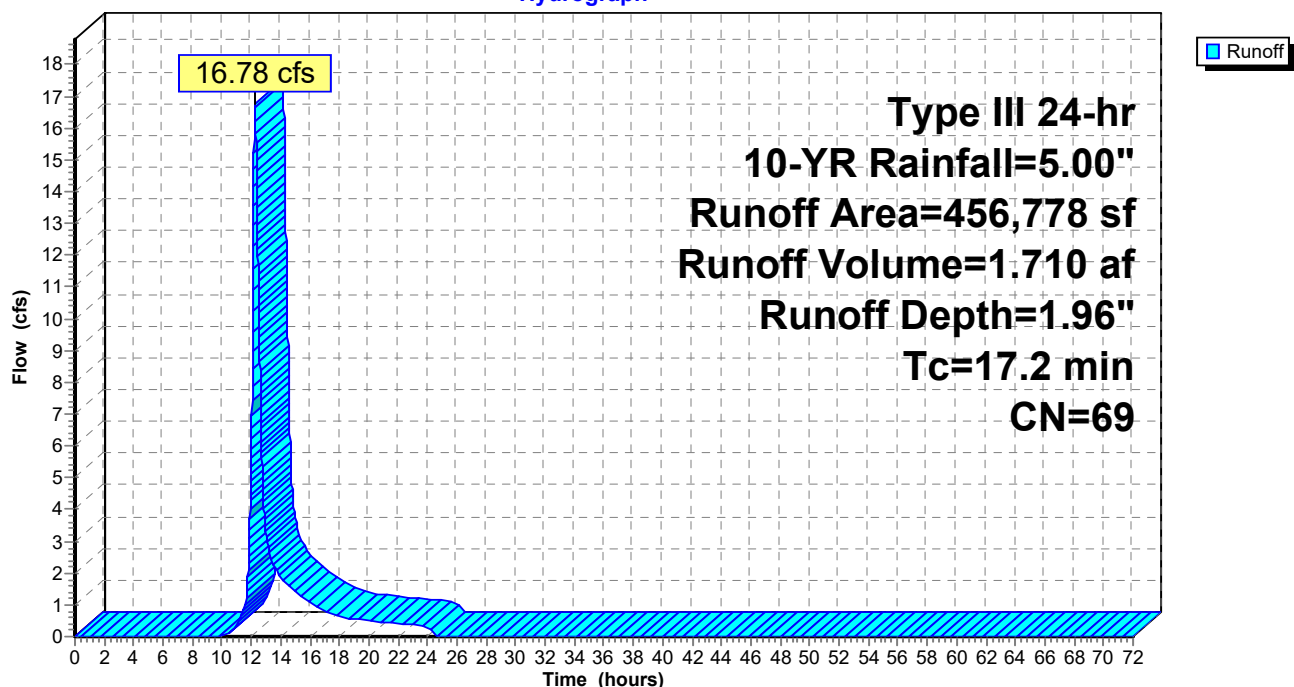
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
3,315	82	Dirt roads, HSG B
15,871	85	Gravel roads, HSG B
131,615	55	Woods, Good, HSG B
227,686	78	Row crops, straight row, Good, HSG B
78,291	61	>75% Grass cover, Good, HSG B
456,778	69	Weighted Average
456,778		100.00% Pervious Area

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

Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	1.96	0.00
1.00	0.05	0.00	0.00	54.00	5.00	1.96	0.00
2.00	0.10	0.00	0.00	55.00	5.00	1.96	0.00
3.00	0.15	0.00	0.00	56.00	5.00	1.96	0.00
4.00	0.22	0.00	0.00	57.00	5.00	1.96	0.00
5.00	0.28	0.00	0.00	58.00	5.00	1.96	0.00
6.00	0.36	0.00	0.00	59.00	5.00	1.96	0.00
7.00	0.45	0.00	0.00	60.00	5.00	1.96	0.00
8.00	0.57	0.00	0.00	61.00	5.00	1.96	0.00
9.00	0.73	0.00	0.00	62.00	5.00	1.96	0.00
10.00	0.95	0.00	0.00	63.00	5.00	1.96	0.00
11.00	1.25	0.03	0.38	64.00	5.00	1.96	0.00
12.00	2.50	0.42	5.61	65.00	5.00	1.96	0.00
13.00	3.75	1.11	3.30	66.00	5.00	1.96	0.00
14.00	4.06	1.30	1.90	67.00	5.00	1.96	0.00
15.00	4.27	1.45	1.44	68.00	5.00	1.96	0.00
16.00	4.43	1.55	1.05	69.00	5.00	1.96	0.00
17.00	4.55	1.64	0.82	70.00	5.00	1.96	0.00
18.00	4.64	1.70	0.64	71.00	5.00	1.96	0.00
19.00	4.72	1.75	0.56	72.00	5.00	1.96	0.00
20.00	4.79	1.80	0.50				
21.00	4.85	1.85	0.46				
22.00	4.90	1.89	0.42				
23.00	4.95	1.92	0.38				
24.00	5.00	1.96	0.34				
25.00	5.00	1.96	0.00				
26.00	5.00	1.96	0.00				
27.00	5.00	1.96	0.00				
28.00	5.00	1.96	0.00				
29.00	5.00	1.96	0.00				
30.00	5.00	1.96	0.00				
31.00	5.00	1.96	0.00				
32.00	5.00	1.96	0.00				
33.00	5.00	1.96	0.00				
34.00	5.00	1.96	0.00				
35.00	5.00	1.96	0.00				
36.00	5.00	1.96	0.00				
37.00	5.00	1.96	0.00				
38.00	5.00	1.96	0.00				
39.00	5.00	1.96	0.00				
40.00	5.00	1.96	0.00				
41.00	5.00	1.96	0.00				
42.00	5.00	1.96	0.00				
43.00	5.00	1.96	0.00				
44.00	5.00	1.96	0.00				
45.00	5.00	1.96	0.00				
46.00	5.00	1.96	0.00				
47.00	5.00	1.96	0.00				
48.00	5.00	1.96	0.00				
49.00	5.00	1.96	0.00				
50.00	5.00	1.96	0.00				
51.00	5.00	1.96	0.00				
52.00	5.00	1.96	0.00				

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Runoff = 5.25 cfs @ 12.16 hrs, Volume= 0.492 af, Depth= 1.23"

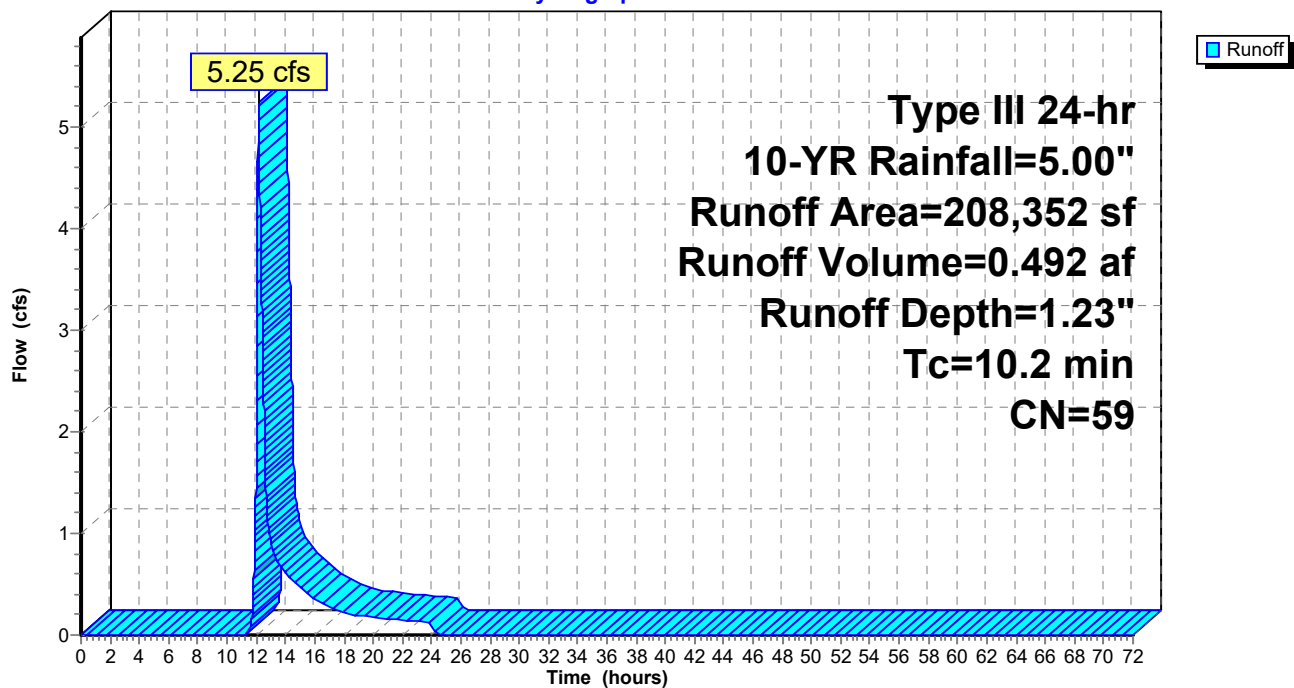
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
67,674	55	Woods, Good, HSG B
140,678	61	>75% Grass cover, Good, HSG B
208,352	59	Weighted Average
208,352		100.00% Pervious Area

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

Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	1.23	0.00
1.00	0.05	0.00	0.00	54.00	5.00	1.23	0.00
2.00	0.10	0.00	0.00	55.00	5.00	1.23	0.00
3.00	0.15	0.00	0.00	56.00	5.00	1.23	0.00
4.00	0.22	0.00	0.00	57.00	5.00	1.23	0.00
5.00	0.28	0.00	0.00	58.00	5.00	1.23	0.00
6.00	0.36	0.00	0.00	59.00	5.00	1.23	0.00
7.00	0.45	0.00	0.00	60.00	5.00	1.23	0.00
8.00	0.57	0.00	0.00	61.00	5.00	1.23	0.00
9.00	0.73	0.00	0.00	62.00	5.00	1.23	0.00
10.00	0.95	0.00	0.00	63.00	5.00	1.23	0.00
11.00	1.25	0.00	0.00	64.00	5.00	1.23	0.00
12.00	2.50	0.15	1.71	65.00	5.00	1.23	0.00
13.00	3.75	0.60	0.92	66.00	5.00	1.23	0.00
14.00	4.06	0.74	0.60	67.00	5.00	1.23	0.00
15.00	4.27	0.84	0.47	68.00	5.00	1.23	0.00
16.00	4.43	0.93	0.34	69.00	5.00	1.23	0.00
17.00	4.55	0.99	0.28	70.00	5.00	1.23	0.00
18.00	4.64	1.04	0.22	71.00	5.00	1.23	0.00
19.00	4.72	1.08	0.19	72.00	5.00	1.23	0.00
20.00	4.79	1.11	0.17				
21.00	4.85	1.15	0.16				
22.00	4.90	1.18	0.15				
23.00	4.95	1.21	0.13				
24.00	5.00	1.23	0.12				
25.00	5.00	1.23	0.00				
26.00	5.00	1.23	0.00				
27.00	5.00	1.23	0.00				
28.00	5.00	1.23	0.00				
29.00	5.00	1.23	0.00				
30.00	5.00	1.23	0.00				
31.00	5.00	1.23	0.00				
32.00	5.00	1.23	0.00				
33.00	5.00	1.23	0.00				
34.00	5.00	1.23	0.00				
35.00	5.00	1.23	0.00				
36.00	5.00	1.23	0.00				
37.00	5.00	1.23	0.00				
38.00	5.00	1.23	0.00				
39.00	5.00	1.23	0.00				
40.00	5.00	1.23	0.00				
41.00	5.00	1.23	0.00				
42.00	5.00	1.23	0.00				
43.00	5.00	1.23	0.00				
44.00	5.00	1.23	0.00				
45.00	5.00	1.23	0.00				
46.00	5.00	1.23	0.00				
47.00	5.00	1.23	0.00				
48.00	5.00	1.23	0.00				
49.00	5.00	1.23	0.00				
50.00	5.00	1.23	0.00				
51.00	5.00	1.23	0.00				
52.00	5.00	1.23	0.00				

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Runoff = 12.98 cfs @ 12.13 hrs, Volume= 1.200 af, Depth= 4.76"

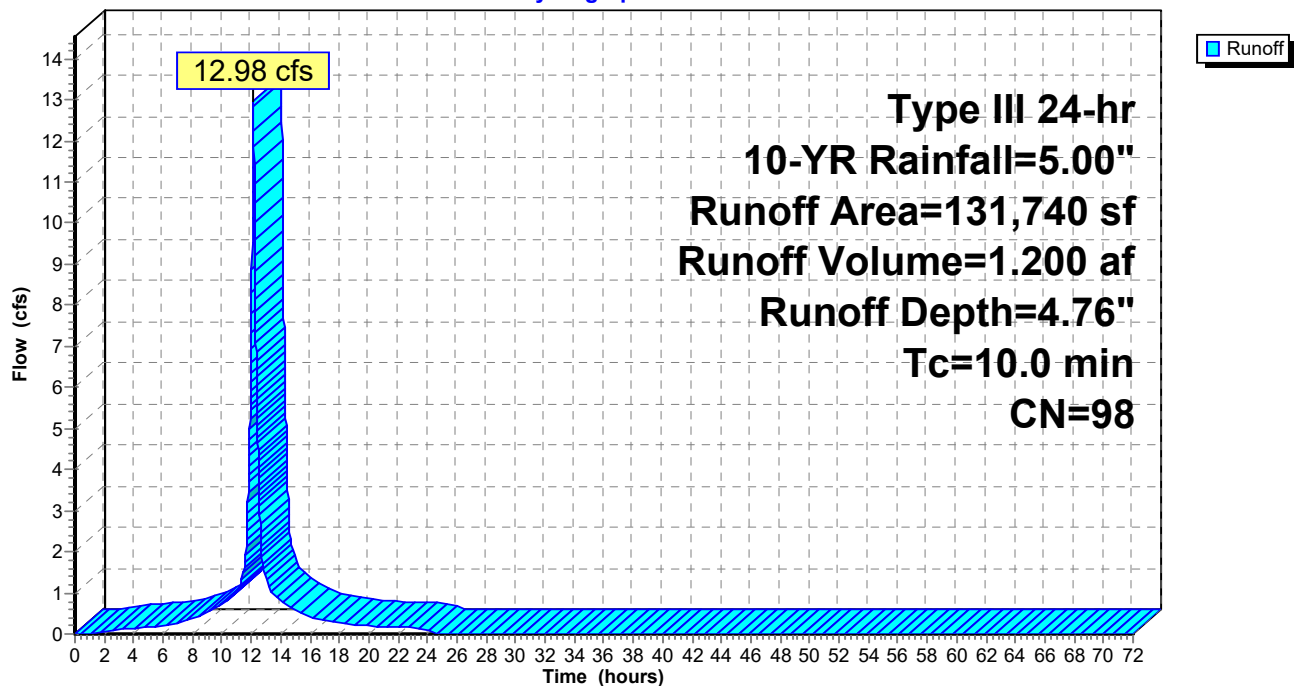
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
131,740	98	Paved parking, HSG B
131,740		100.00% Impervious Area

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

Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	4.76	0.00
1.00	0.05	0.00	0.00	54.00	5.00	4.76	0.00
2.00	0.10	0.01	0.06	55.00	5.00	4.76	0.00
3.00	0.15	0.04	0.10	56.00	5.00	4.76	0.00
4.00	0.22	0.08	0.13	57.00	5.00	4.76	0.00
5.00	0.28	0.13	0.17	58.00	5.00	4.76	0.00
6.00	0.36	0.19	0.20	59.00	5.00	4.76	0.00
7.00	0.45	0.28	0.27	60.00	5.00	4.76	0.00
8.00	0.57	0.38	0.35	61.00	5.00	4.76	0.00
9.00	0.73	0.53	0.51	62.00	5.00	4.76	0.00
10.00	0.95	0.74	0.69	63.00	5.00	4.76	0.00
11.00	1.25	1.03	1.03	64.00	5.00	4.76	0.00
12.00	2.50	2.27	6.95	65.00	5.00	4.76	0.00
13.00	3.75	3.52	1.33	66.00	5.00	4.76	0.00
14.00	4.06	3.82	0.80	67.00	5.00	4.76	0.00
15.00	4.27	4.04	0.60	68.00	5.00	4.76	0.00
16.00	4.43	4.19	0.42	69.00	5.00	4.76	0.00
17.00	4.55	4.31	0.33	70.00	5.00	4.76	0.00
18.00	4.64	4.40	0.26	71.00	5.00	4.76	0.00
19.00	4.72	4.48	0.22	72.00	5.00	4.76	0.00
20.00	4.79	4.55	0.20				
21.00	4.85	4.61	0.18				
22.00	4.90	4.67	0.17				
23.00	4.95	4.72	0.15				
24.00	5.00	4.76	0.13				
25.00	5.00	4.76	0.00				
26.00	5.00	4.76	0.00				
27.00	5.00	4.76	0.00				
28.00	5.00	4.76	0.00				
29.00	5.00	4.76	0.00				
30.00	5.00	4.76	0.00				
31.00	5.00	4.76	0.00				
32.00	5.00	4.76	0.00				
33.00	5.00	4.76	0.00				
34.00	5.00	4.76	0.00				
35.00	5.00	4.76	0.00				
36.00	5.00	4.76	0.00				
37.00	5.00	4.76	0.00				
38.00	5.00	4.76	0.00				
39.00	5.00	4.76	0.00				
40.00	5.00	4.76	0.00				
41.00	5.00	4.76	0.00				
42.00	5.00	4.76	0.00				
43.00	5.00	4.76	0.00				
44.00	5.00	4.76	0.00				
45.00	5.00	4.76	0.00				
46.00	5.00	4.76	0.00				
47.00	5.00	4.76	0.00				
48.00	5.00	4.76	0.00				
49.00	5.00	4.76	0.00				
50.00	5.00	4.76	0.00				
51.00	5.00	4.76	0.00				
52.00	5.00	4.76	0.00				

EXISTING 2022-04

Prepared by Bohler Engineering

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 9: DA-E4

Runoff = 2.67 cfs @ 12.14 hrs, Volume= 0.221 af, Depth= 2.12"

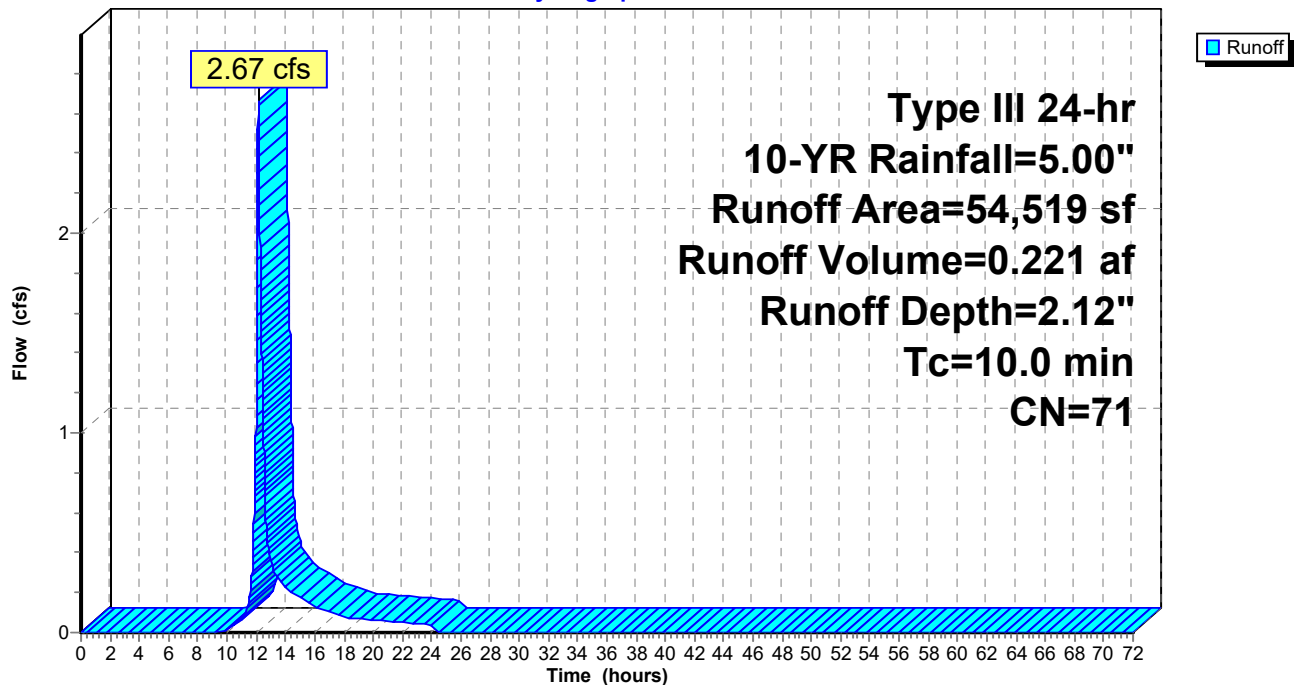
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
14,621	98	Paved parking, HSG B
39,898	61	>75% Grass cover, Good, HSG B
54,519	71	Weighted Average
39,898		73.18% Pervious Area
14,621		26.82% Impervious Area

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

Subcatchment 9: DA-E4

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 9: DA-E4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	2.12	0.00
1.00	0.05	0.00	0.00	54.00	5.00	2.12	0.00
2.00	0.10	0.00	0.00	55.00	5.00	2.12	0.00
3.00	0.15	0.00	0.00	56.00	5.00	2.12	0.00
4.00	0.22	0.00	0.00	57.00	5.00	2.12	0.00
5.00	0.28	0.00	0.00	58.00	5.00	2.12	0.00
6.00	0.36	0.00	0.00	59.00	5.00	2.12	0.00
7.00	0.45	0.00	0.00	60.00	5.00	2.12	0.00
8.00	0.57	0.00	0.00	61.00	5.00	2.12	0.00
9.00	0.73	0.00	0.00	62.00	5.00	2.12	0.00
10.00	0.95	0.00	0.01	63.00	5.00	2.12	0.00
11.00	1.25	0.04	0.07	64.00	5.00	2.12	0.00
12.00	2.50	0.49	1.16	65.00	5.00	2.12	0.00
13.00	3.75	1.23	0.36	66.00	5.00	2.12	0.00
14.00	4.06	1.43	0.23	67.00	5.00	2.12	0.00
15.00	4.27	1.58	0.17	68.00	5.00	2.12	0.00
16.00	4.43	1.70	0.13	69.00	5.00	2.12	0.00
17.00	4.55	1.78	0.10	70.00	5.00	2.12	0.00
18.00	4.64	1.85	0.08	71.00	5.00	2.12	0.00
19.00	4.72	1.90	0.07	72.00	5.00	2.12	0.00
20.00	4.79	1.96	0.06				
21.00	4.85	2.00	0.06				
22.00	4.90	2.04	0.05				
23.00	4.95	2.08	0.05				
24.00	5.00	2.12	0.04				
25.00	5.00	2.12	0.00				
26.00	5.00	2.12	0.00				
27.00	5.00	2.12	0.00				
28.00	5.00	2.12	0.00				
29.00	5.00	2.12	0.00				
30.00	5.00	2.12	0.00				
31.00	5.00	2.12	0.00				
32.00	5.00	2.12	0.00				
33.00	5.00	2.12	0.00				
34.00	5.00	2.12	0.00				
35.00	5.00	2.12	0.00				
36.00	5.00	2.12	0.00				
37.00	5.00	2.12	0.00				
38.00	5.00	2.12	0.00				
39.00	5.00	2.12	0.00				
40.00	5.00	2.12	0.00				
41.00	5.00	2.12	0.00				
42.00	5.00	2.12	0.00				
43.00	5.00	2.12	0.00				
44.00	5.00	2.12	0.00				
45.00	5.00	2.12	0.00				
46.00	5.00	2.12	0.00				
47.00	5.00	2.12	0.00				
48.00	5.00	2.12	0.00				
49.00	5.00	2.12	0.00				
50.00	5.00	2.12	0.00				
51.00	5.00	2.12	0.00				
52.00	5.00	2.12	0.00				

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Type III 24-hr 10-YR Rainfall=5.00"

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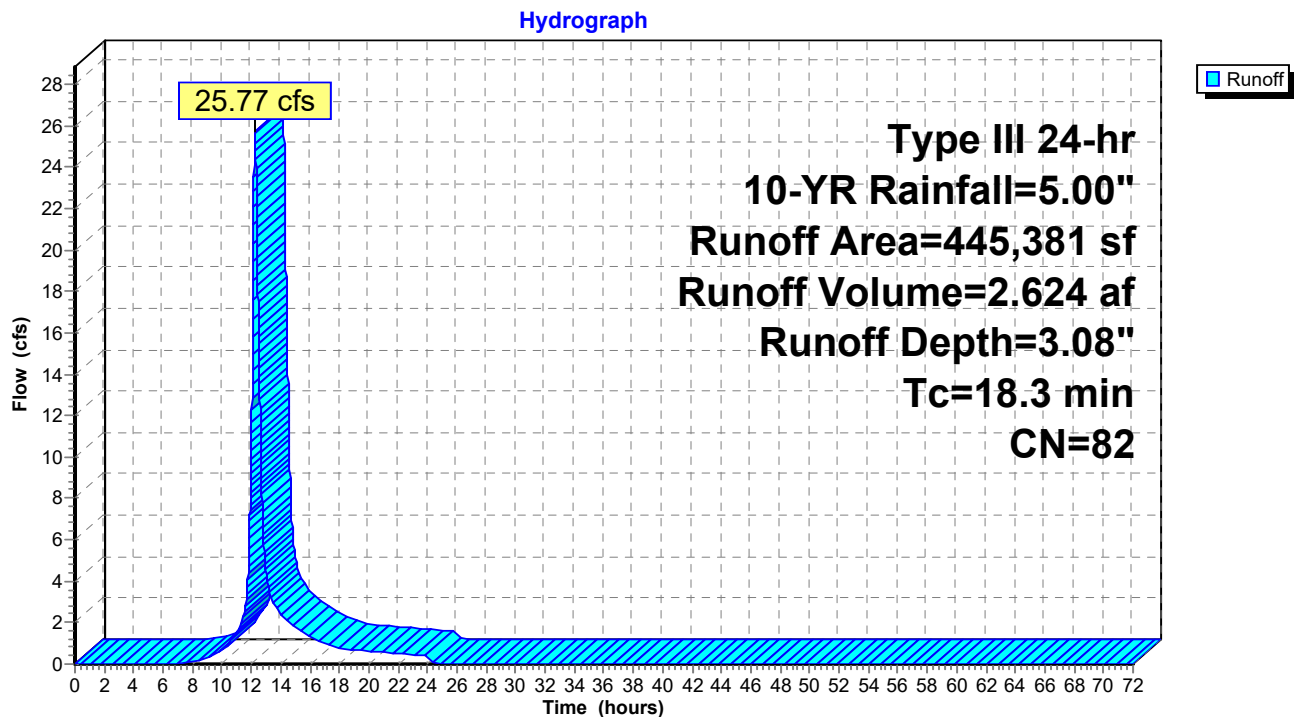
Summary for Subcatchment 10: DA-E5 PERVIOUS

Runoff = 25.77 cfs @ 12.25 hrs, Volume= 2.624 af, Depth= 3.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
24,074	74	>75% Grass cover, Good, HSG C
20,665	70	Woods, Good, HSG C
97,158	78	Row crops, straight row, Good, HSG B
303,484	85	Row crops, straight row, Good, HSG C
445,381	82	Weighted Average
445,381		100.00% Pervious Area

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

Subcatchment 10: DA-E5 PERVIOUS

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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 10: DA-E5 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	3.08	0.00
1.00	0.05	0.00	0.00	54.00	5.00	3.08	0.00
2.00	0.10	0.00	0.00	55.00	5.00	3.08	0.00
3.00	0.15	0.00	0.00	56.00	5.00	3.08	0.00
4.00	0.22	0.00	0.00	57.00	5.00	3.08	0.00
5.00	0.28	0.00	0.00	58.00	5.00	3.08	0.00
6.00	0.36	0.00	0.00	59.00	5.00	3.08	0.00
7.00	0.45	0.00	0.00	60.00	5.00	3.08	0.00
8.00	0.57	0.01	0.10	61.00	5.00	3.08	0.00
9.00	0.73	0.03	0.33	62.00	5.00	3.08	0.00
10.00	0.95	0.09	0.72	63.00	5.00	3.08	0.00
11.00	1.25	0.22	1.47	64.00	5.00	3.08	0.00
12.00	2.50	1.00	10.31	65.00	5.00	3.08	0.00
13.00	3.75	1.99	4.54	66.00	5.00	3.08	0.00
14.00	4.06	2.25	2.45	67.00	5.00	3.08	0.00
15.00	4.27	2.44	1.82	68.00	5.00	3.08	0.00
16.00	4.43	2.57	1.32	69.00	5.00	3.08	0.00
17.00	4.55	2.68	1.01	70.00	5.00	3.08	0.00
18.00	4.64	2.76	0.79	71.00	5.00	3.08	0.00
19.00	4.72	2.83	0.68	72.00	5.00	3.08	0.00
20.00	4.79	2.89	0.61				
21.00	4.85	2.94	0.56				
22.00	4.90	2.99	0.51				
23.00	4.95	3.04	0.46				
24.00	5.00	3.08	0.41				
25.00	5.00	3.08	0.00				
26.00	5.00	3.08	0.00				
27.00	5.00	3.08	0.00				
28.00	5.00	3.08	0.00				
29.00	5.00	3.08	0.00				
30.00	5.00	3.08	0.00				
31.00	5.00	3.08	0.00				
32.00	5.00	3.08	0.00				
33.00	5.00	3.08	0.00				
34.00	5.00	3.08	0.00				
35.00	5.00	3.08	0.00				
36.00	5.00	3.08	0.00				
37.00	5.00	3.08	0.00				
38.00	5.00	3.08	0.00				
39.00	5.00	3.08	0.00				
40.00	5.00	3.08	0.00				
41.00	5.00	3.08	0.00				
42.00	5.00	3.08	0.00				
43.00	5.00	3.08	0.00				
44.00	5.00	3.08	0.00				
45.00	5.00	3.08	0.00				
46.00	5.00	3.08	0.00				
47.00	5.00	3.08	0.00				
48.00	5.00	3.08	0.00				
49.00	5.00	3.08	0.00				
50.00	5.00	3.08	0.00				
51.00	5.00	3.08	0.00				
52.00	5.00	3.08	0.00				

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 11: DA-E5 IMPERVIOUS

Runoff = 1.25 cfs @ 12.13 hrs, Volume= 0.116 af, Depth= 4.76"

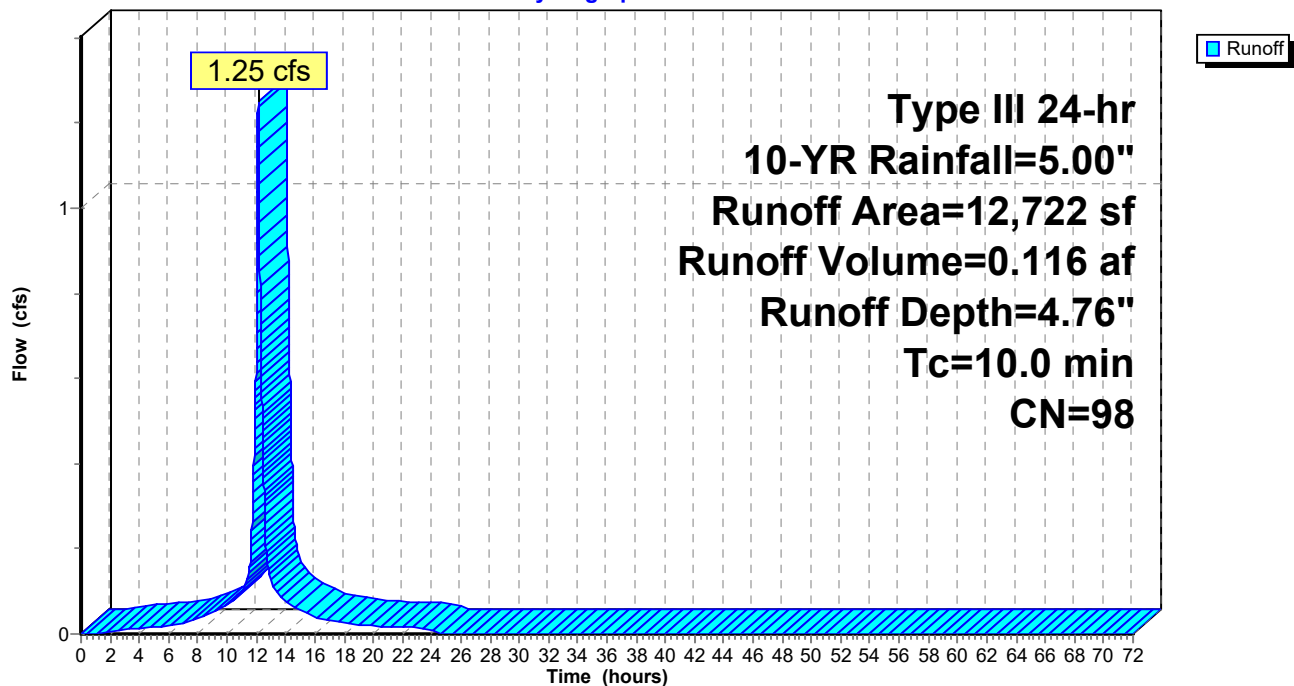
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
12,722	98	Paved parking, HSG C
12,722		100.00% Impervious Area

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

Subcatchment 11: DA-E5 IMPERVIOUS

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Subcatchment 11: DA-E5 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.00	4.76	0.00
1.00	0.05	0.00	0.00	54.00	5.00	4.76	0.00
2.00	0.10	0.01	0.01	55.00	5.00	4.76	0.00
3.00	0.15	0.04	0.01	56.00	5.00	4.76	0.00
4.00	0.22	0.08	0.01	57.00	5.00	4.76	0.00
5.00	0.28	0.13	0.02	58.00	5.00	4.76	0.00
6.00	0.36	0.19	0.02	59.00	5.00	4.76	0.00
7.00	0.45	0.28	0.03	60.00	5.00	4.76	0.00
8.00	0.57	0.38	0.03	61.00	5.00	4.76	0.00
9.00	0.73	0.53	0.05	62.00	5.00	4.76	0.00
10.00	0.95	0.74	0.07	63.00	5.00	4.76	0.00
11.00	1.25	1.03	0.10	64.00	5.00	4.76	0.00
12.00	2.50	2.27	0.67	65.00	5.00	4.76	0.00
13.00	3.75	3.52	0.13	66.00	5.00	4.76	0.00
14.00	4.06	3.82	0.08	67.00	5.00	4.76	0.00
15.00	4.27	4.04	0.06	68.00	5.00	4.76	0.00
16.00	4.43	4.19	0.04	69.00	5.00	4.76	0.00
17.00	4.55	4.31	0.03	70.00	5.00	4.76	0.00
18.00	4.64	4.40	0.02	71.00	5.00	4.76	0.00
19.00	4.72	4.48	0.02	72.00	5.00	4.76	0.00
20.00	4.79	4.55	0.02				
21.00	4.85	4.61	0.02				
22.00	4.90	4.67	0.02				
23.00	4.95	4.72	0.01				
24.00	5.00	4.76	0.01				
25.00	5.00	4.76	0.00				
26.00	5.00	4.76	0.00				
27.00	5.00	4.76	0.00				
28.00	5.00	4.76	0.00				
29.00	5.00	4.76	0.00				
30.00	5.00	4.76	0.00				
31.00	5.00	4.76	0.00				
32.00	5.00	4.76	0.00				
33.00	5.00	4.76	0.00				
34.00	5.00	4.76	0.00				
35.00	5.00	4.76	0.00				
36.00	5.00	4.76	0.00				
37.00	5.00	4.76	0.00				
38.00	5.00	4.76	0.00				
39.00	5.00	4.76	0.00				
40.00	5.00	4.76	0.00				
41.00	5.00	4.76	0.00				
42.00	5.00	4.76	0.00				
43.00	5.00	4.76	0.00				
44.00	5.00	4.76	0.00				
45.00	5.00	4.76	0.00				
46.00	5.00	4.76	0.00				
47.00	5.00	4.76	0.00				
48.00	5.00	4.76	0.00				
49.00	5.00	4.76	0.00				
50.00	5.00	4.76	0.00				
51.00	5.00	4.76	0.00				
52.00	5.00	4.76	0.00				

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Pond B1A: BASIN# 1A

[44] Hint: Outlet device #1 is below defined storage

Inflow = 91.75 cfs @ 12.43 hrs, Volume= 12.704 af
 Outflow = 76.52 cfs @ 12.64 hrs, Volume= 12.716 af, Atten= 17%, Lag= 12.7 min
 Discarded = 53.56 cfs @ 12.64 hrs, Volume= 3.552 af
 Primary = 22.24 cfs @ 12.64 hrs, Volume= 9.157 af
 Secondary = 0.72 cfs @ 12.64 hrs, Volume= 0.008 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 126.13' @ 12.64 hrs Surf.Area= 107,118 sf Storage= 94,759 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 27.9 min (873.6 - 845.7)

Volume	Invert	Avail.Storage	Storage Description
#1	123.70'	426,110 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.70	0	0	0
124.00	1,994	299	299
125.00	33,295	17,645	17,944
125.30	49,002	12,345	30,288
126.00	97,778	51,373	81,661
127.00	170,836	134,307	215,968
128.00	249,447	210,142	426,110

Device	Routing	Invert	Outlet Devices
#1	Primary	123.51'	24.0" Round Culvert L= 192.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 123.51' / 123.19' S= 0.0017 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Primary	124.20'	18.0" Round Culvert L= 180.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 124.20' / 122.02' S= 0.0121 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Discarded	125.50'	40.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Discarded	126.50'	60.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Discarded OutFlow Max=53.55 cfs @ 12.64 hrs HW=126.13' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 53.55 cfs @ 2.13 fps)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Primary OutFlow Max=22.24 cfs @ 12.64 hrs HW=126.13' (Free Discharge)

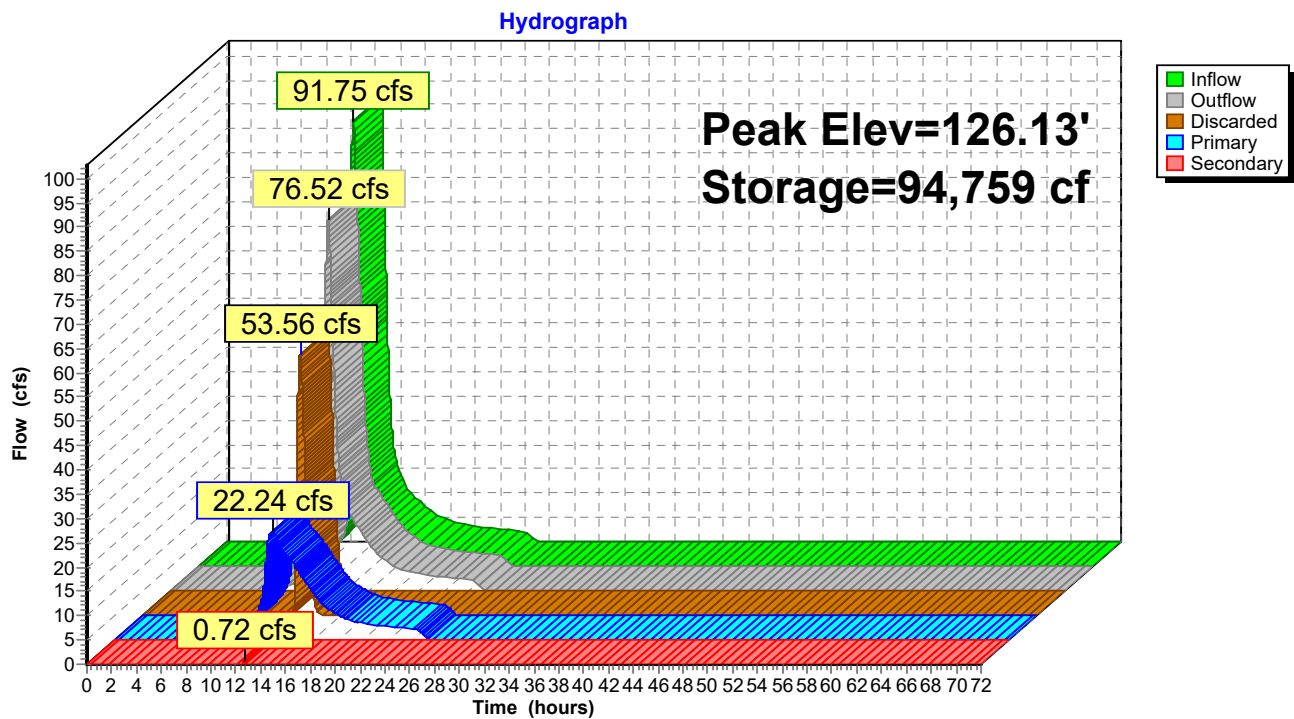
↑ **1=Culvert** (Barrel Controls 13.00 cfs @ 4.16 fps)

↑ **2=Culvert** (Inlet Controls 9.23 cfs @ 5.23 fps)

Secondary OutFlow Max=0.72 cfs @ 12.64 hrs HW=126.13' TW=124.05' (Dynamic Tailwater)

↑ **5=Broad-Crested Rectangular Weir** (Weir Controls 0.72 cfs @ 0.45 fps)

Pond B1A: BASIN# 1A



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Hydrograph for Pond B1A: BASIN# 1A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	123.70	0.00	0.00	0.00	0.00
2.00	0.02	1	123.70	0.10	0.00	0.10	0.00
4.00	0.04	2	123.71	0.11	0.00	0.11	0.00
6.00	0.06	0	123.70	0.00	0.00	0.00	0.00
8.00	0.21	20	123.78	0.20	0.00	0.20	0.00
10.00	2.44	1,783	124.25	1.69	0.00	1.69	0.00
12.00	29.53	23,176	125.14	11.17	0.00	11.17	0.00
14.00	13.56	43,886	125.54	17.53	0.77	16.76	0.00
16.00	7.15	18,956	125.03	9.60	0.00	9.60	0.00
18.00	4.23	8,497	124.66	5.03	0.00	5.03	0.00
20.00	3.18	5,156	124.50	3.41	0.00	3.41	0.00
22.00	2.64	3,898	124.42	2.78	0.00	2.78	0.00
24.00	2.12	2,882	124.35	2.26	0.00	2.26	0.00
26.00	0.00	0	123.70	0.00	0.00	0.00	0.00
28.00	0.00	0	123.70	0.00	0.00	0.00	0.00
30.00	0.00	0	123.70	0.00	0.00	0.00	0.00
32.00	0.00	0	123.70	0.00	0.00	0.00	0.00
34.00	0.00	0	123.70	0.00	0.00	0.00	0.00
36.00	0.00	0	123.70	0.00	0.00	0.00	0.00
38.00	0.00	0	123.70	0.00	0.00	0.00	0.00
40.00	0.00	0	123.70	0.00	0.00	0.00	0.00
42.00	0.00	0	123.70	0.00	0.00	0.00	0.00
44.00	0.00	0	123.70	0.00	0.00	0.00	0.00
46.00	0.00	0	123.70	0.00	0.00	0.00	0.00
48.00	0.00	0	123.70	0.00	0.00	0.00	0.00
50.00	0.00	0	123.70	0.00	0.00	0.00	0.00
52.00	0.00	0	123.70	0.00	0.00	0.00	0.00
54.00	0.00	0	123.70	0.00	0.00	0.00	0.00
56.00	0.00	0	123.70	0.00	0.00	0.00	0.00
58.00	0.00	0	123.70	0.00	0.00	0.00	0.00
60.00	0.00	0	123.70	0.00	0.00	0.00	0.00
62.00	0.00	0	123.70	0.00	0.00	0.00	0.00
64.00	0.00	0	123.70	0.00	0.00	0.00	0.00
66.00	0.00	0	123.70	0.00	0.00	0.00	0.00
68.00	0.00	0	123.70	0.00	0.00	0.00	0.00
70.00	0.00	0	123.70	0.00	0.00	0.00	0.00
72.00	0.00	0	123.70	0.00	0.00	0.00	0.00

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Summary for Pond B2A: BASIN# 2A

Inflow = 63.52 cfs @ 12.17 hrs, Volume= 5.696 af
 Outflow = 39.18 cfs @ 12.36 hrs, Volume= 5.696 af, Atten= 38%, Lag= 11.2 min
 Primary = 39.18 cfs @ 12.36 hrs, Volume= 5.696 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 124.66' @ 12.36 hrs Surf.Area= 23,548 sf Storage= 22,821 cf

Plug-Flow detention time= 3.4 min calculated for 5.696 af (100% of inflow)
 Center-of-Mass det. time= 3.2 min (815.6 - 812.4)

Volume	Invert	Avail.Storage	Storage Description
#1	120.66'	294,132 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.66	0	0	0
121.00	102	17	17
123.00	2,840	2,942	2,959
124.00	12,899	7,870	10,829
125.00	29,081	20,990	31,819
125.50	41,742	17,706	49,525
126.00	56,845	24,647	74,171
127.00	101,362	79,104	153,275
128.00	180,352	140,857	294,132

Device	Routing	Invert	Outlet Devices
#1	Primary	120.66'	30.0" Round Culvert L= 212.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 120.66' / 118.50' S= 0.0102 ' /' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=39.18 cfs @ 12.36 hrs HW=124.66' (Free Discharge)

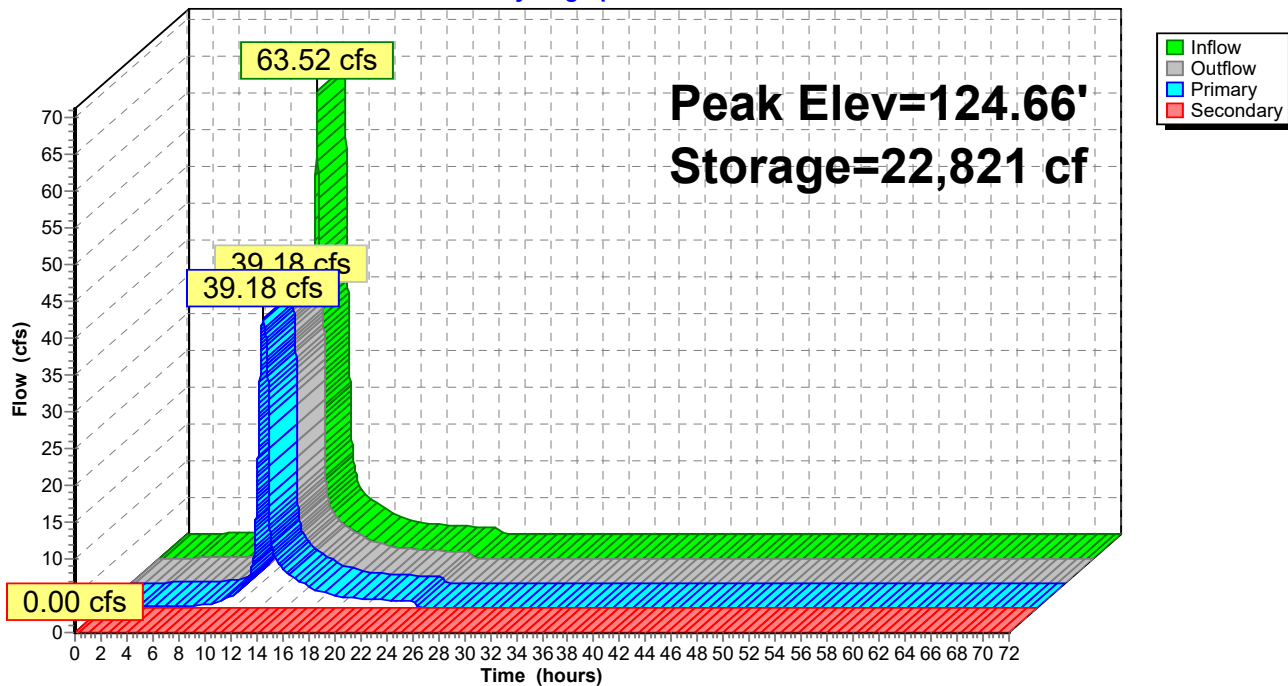
↑ **1=Culvert** (Inlet Controls 39.18 cfs @ 7.98 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.66' TW=123.70' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B2A: BASIN# 2A

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Pond B2A: BASIN# 2A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	120.66	0.00	0.00	0.00
2.00	0.06	2	120.76	0.06	0.06	0.00
4.00	0.15	3	120.81	0.15	0.15	0.00
6.00	0.23	5	120.84	0.23	0.23	0.00
8.00	0.42	9	120.90	0.42	0.42	0.00
10.00	1.77	55	121.17	1.76	1.76	0.00
12.00	28.39	2,751	122.93	23.96	23.96	0.00
14.00	5.00	283	121.55	5.05	5.05	0.00
16.00	2.69	111	121.30	2.71	2.71	0.00
18.00	1.63	50	121.15	1.64	1.64	0.00
20.00	1.29	34	121.10	1.29	1.29	0.00
22.00	1.07	26	121.06	1.07	1.07	0.00
24.00	0.85	19	121.01	0.85	0.85	0.00
26.00	0.00	0	120.66	0.00	0.00	0.00
28.00	0.00	0	120.66	0.00	0.00	0.00
30.00	0.00	0	120.66	0.00	0.00	0.00
32.00	0.00	0	120.66	0.00	0.00	0.00
34.00	0.00	0	120.66	0.00	0.00	0.00
36.00	0.00	0	120.66	0.00	0.00	0.00
38.00	0.00	0	120.66	0.00	0.00	0.00
40.00	0.00	0	120.66	0.00	0.00	0.00
42.00	0.00	0	120.66	0.00	0.00	0.00
44.00	0.00	0	120.66	0.00	0.00	0.00
46.00	0.00	0	120.66	0.00	0.00	0.00
48.00	0.00	0	120.66	0.00	0.00	0.00
50.00	0.00	0	120.66	0.00	0.00	0.00
52.00	0.00	0	120.66	0.00	0.00	0.00
54.00	0.00	0	120.66	0.00	0.00	0.00
56.00	0.00	0	120.66	0.00	0.00	0.00
58.00	0.00	0	120.66	0.00	0.00	0.00
60.00	0.00	0	120.66	0.00	0.00	0.00
62.00	0.00	0	120.66	0.00	0.00	0.00
64.00	0.00	0	120.66	0.00	0.00	0.00
66.00	0.00	0	120.66	0.00	0.00	0.00
68.00	0.00	0	120.66	0.00	0.00	0.00
70.00	0.00	0	120.66	0.00	0.00	0.00
72.00	0.00	0	120.66	0.00	0.00	0.00

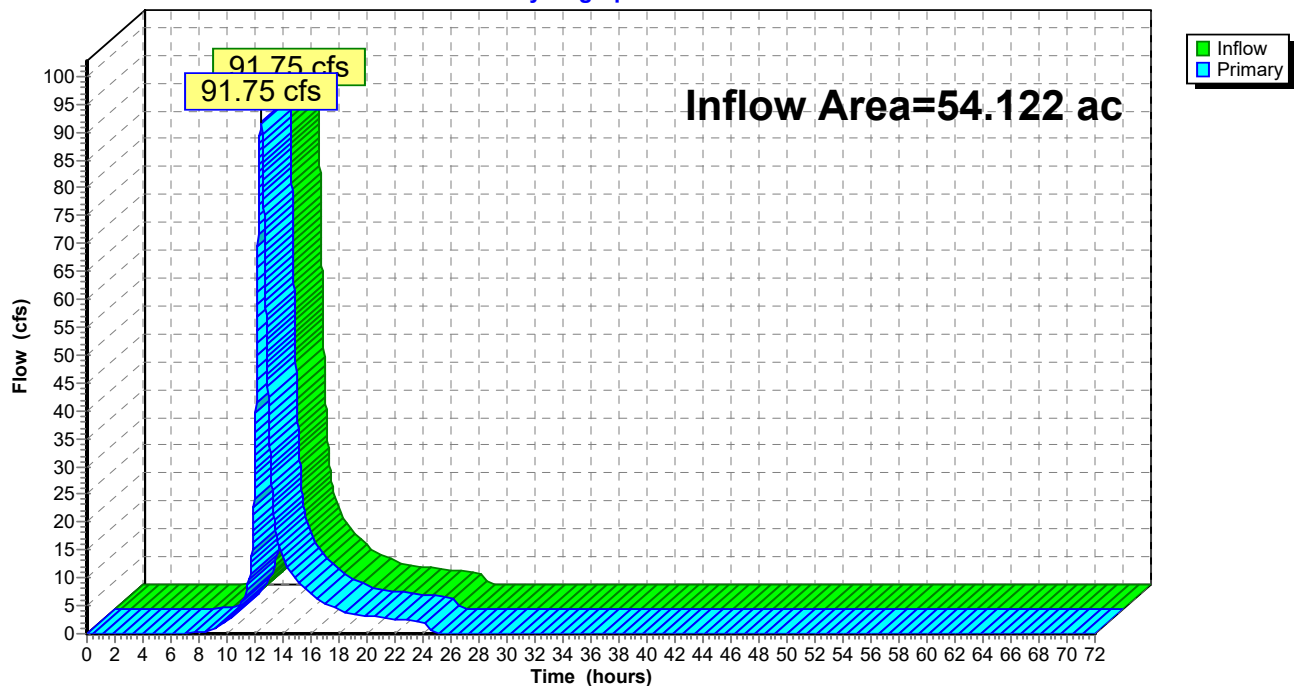
Summary for Link R1: REACH# 1

Inflow Area = 54.122 ac, 1.74% Impervious, Inflow Depth = 2.82" for 10-YR event
 Inflow = 91.75 cfs @ 12.42 hrs, Volume= 12.704 af
 Primary = 91.75 cfs @ 12.43 hrs, Volume= 12.704 af, Atten= 0%, Lag= 0.6 min

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

Link R1: REACH# 1

Hydrograph



EXISTING 2022-04

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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Link R1: REACH# 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.02	0.00	0.02	55.00	0.00	0.00	0.00
3.00	0.03	0.00	0.03	56.00	0.00	0.00	0.00
4.00	0.04	0.00	0.04	57.00	0.00	0.00	0.00
5.00	0.05	0.00	0.05	58.00	0.00	0.00	0.00
6.00	0.06	0.00	0.06	59.00	0.00	0.00	0.00
7.00	0.09	0.00	0.08	60.00	0.00	0.00	0.00
8.00	0.21	0.00	0.21	61.00	0.00	0.00	0.00
9.00	0.86	0.00	0.84	62.00	0.00	0.00	0.00
10.00	2.46	0.00	2.44	63.00	0.00	0.00	0.00
11.00	5.54	0.00	5.49	64.00	0.00	0.00	0.00
12.00	30.65	0.00	29.53	65.00	0.00	0.00	0.00
13.00	36.67	0.00	37.39	66.00	0.00	0.00	0.00
14.00	13.49	0.00	13.56	67.00	0.00	0.00	0.00
15.00	9.64	0.00	9.67	68.00	0.00	0.00	0.00
16.00	7.13	0.00	7.15	69.00	0.00	0.00	0.00
17.00	5.35	0.00	5.37	70.00	0.00	0.00	0.00
18.00	4.22	0.00	4.23	71.00	0.00	0.00	0.00
19.00	3.52	0.00	3.52	72.00	0.00	0.00	0.00
20.00	3.18	0.00	3.18				
21.00	2.89	0.00	2.89				
22.00	2.63	0.00	2.64				
23.00	2.38	0.00	2.38				
24.00	2.12	0.00	2.12				
25.00	0.09	0.00	0.09				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

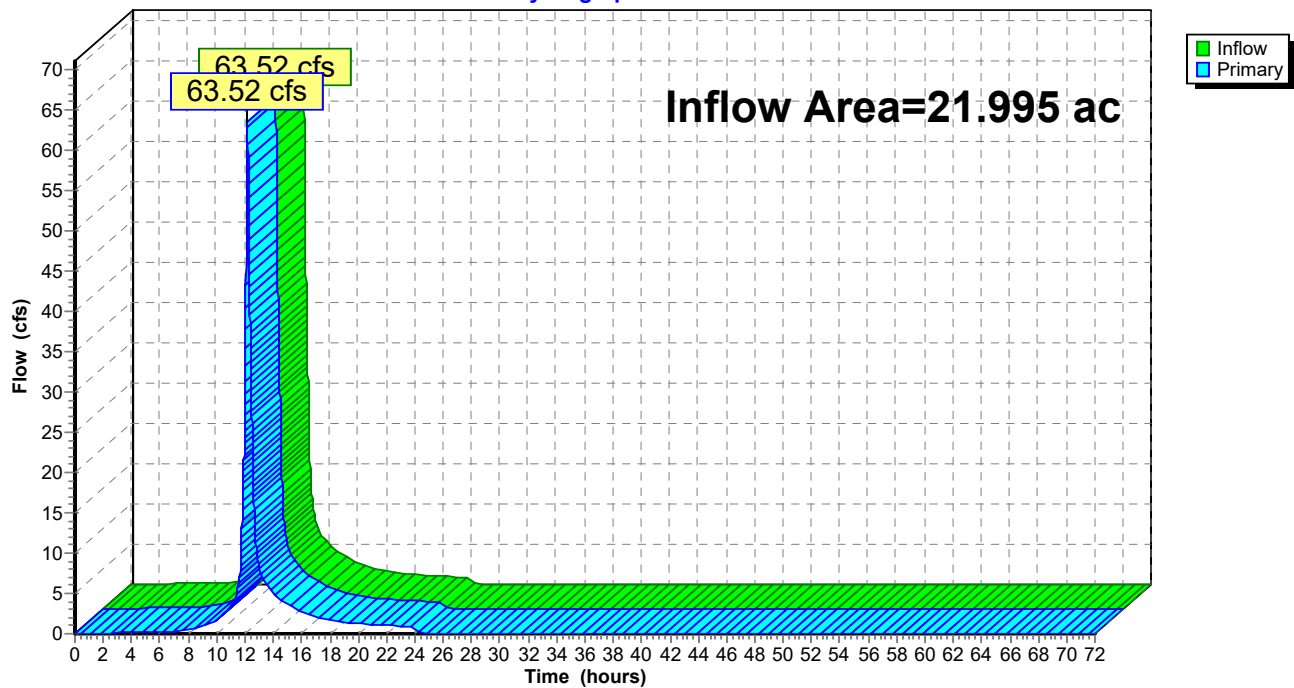
Summary for Link R2: REACH# 2

Inflow Area = 21.995 ac, 15.37% Impervious, Inflow Depth = 3.10" for 10-YR event
 Inflow = 63.52 cfs @ 12.16 hrs, Volume= 5.688 af
 Primary = 63.52 cfs @ 12.17 hrs, Volume= 5.688 af, Atten= 0%, Lag= 0.6 min

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

Link R2: REACH# 2

Hydrograph



EXISTING 2022-04

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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Link R2: REACH# 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.06	0.00	0.06	55.00	0.00	0.00	0.00
3.00	0.11	0.00	0.11	56.00	0.00	0.00	0.00
4.00	0.15	0.00	0.15	57.00	0.00	0.00	0.00
5.00	0.19	0.00	0.19	58.00	0.00	0.00	0.00
6.00	0.23	0.00	0.23	59.00	0.00	0.00	0.00
7.00	0.30	0.00	0.30	60.00	0.00	0.00	0.00
8.00	0.42	0.00	0.42	61.00	0.00	0.00	0.00
9.00	0.95	0.00	0.94	62.00	0.00	0.00	0.00
10.00	1.78	0.00	1.77	63.00	0.00	0.00	0.00
11.00	3.43	0.00	3.41	64.00	0.00	0.00	0.00
12.00	29.79	0.00	28.39	65.00	0.00	0.00	0.00
13.00	8.23	0.00	8.32	66.00	0.00	0.00	0.00
14.00	4.98	0.00	5.00	67.00	0.00	0.00	0.00
15.00	3.74	0.00	3.75	68.00	0.00	0.00	0.00
16.00	2.68	0.00	2.69	69.00	0.00	0.00	0.00
17.00	2.10	0.00	2.11	70.00	0.00	0.00	0.00
18.00	1.63	0.00	1.63	71.00	0.00	0.00	0.00
19.00	1.43	0.00	1.43	72.00	0.00	0.00	0.00
20.00	1.29	0.00	1.29				
21.00	1.17	0.00	1.18				
22.00	1.07	0.00	1.07				
23.00	0.96	0.00	0.96				
24.00	0.85	0.00	0.85				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

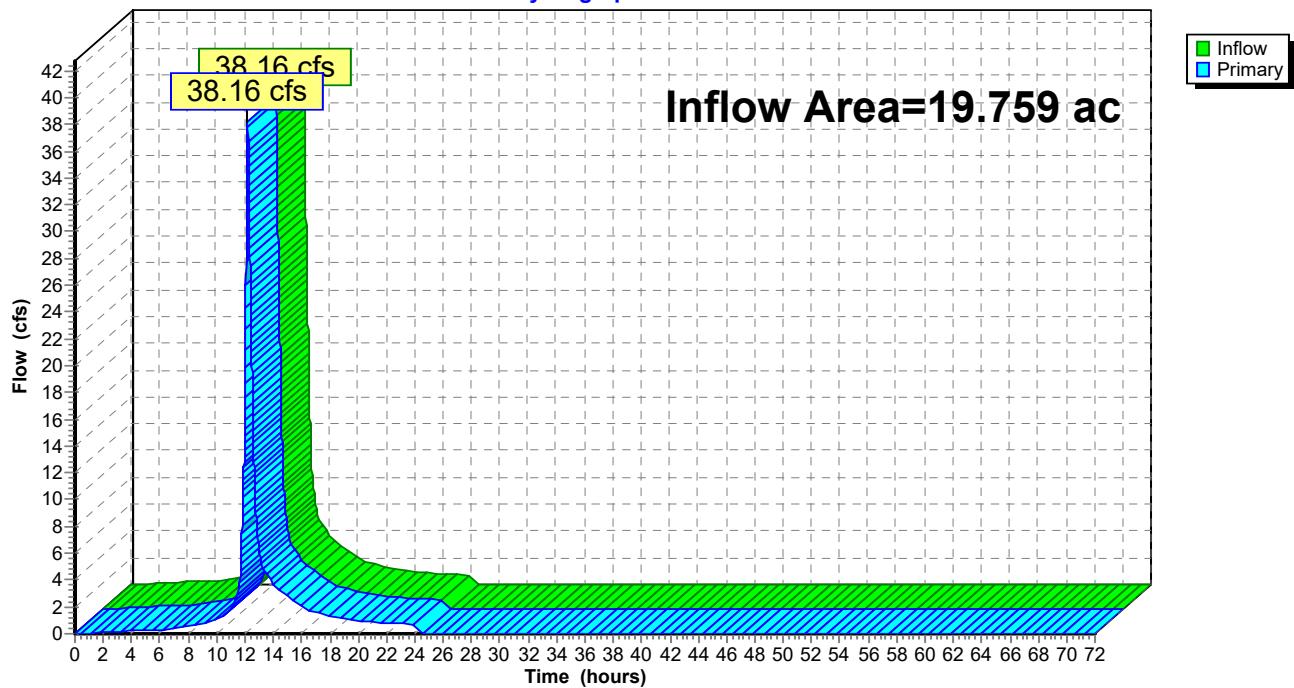
Summary for Link R3: REACH# 3

Inflow Area = 19.759 ac, 22.72% Impervious, Inflow Depth = 2.42" for 10-YR event
 Inflow = 38.16 cfs @ 12.17 hrs, Volume= 3.984 af
 Primary = 38.16 cfs @ 12.18 hrs, Volume= 3.984 af, Atten= 0%, Lag= 0.6 min

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

Link R3: REACH# 3

Hydrograph



EXISTING 2022-04

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Type III 24-hr 10-YR Rainfall=5.00"

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Hydrograph for Link R3: REACH# 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.01	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.08	0.00	0.08	55.00	0.00	0.00	0.00
3.00	0.14	0.00	0.14	56.00	0.00	0.00	0.00
4.00	0.20	0.00	0.20	57.00	0.00	0.00	0.00
5.00	0.25	0.00	0.25	58.00	0.00	0.00	0.00
6.00	0.30	0.00	0.30	59.00	0.00	0.00	0.00
7.00	0.40	0.00	0.40	60.00	0.00	0.00	0.00
8.00	0.52	0.00	0.52	61.00	0.00	0.00	0.00
9.00	0.76	0.00	0.76	62.00	0.00	0.00	0.00
10.00	1.03	0.00	1.03	63.00	0.00	0.00	0.00
11.00	1.91	0.00	1.90	64.00	0.00	0.00	0.00
12.00	17.64	0.00	16.76	65.00	0.00	0.00	0.00
13.00	6.18	0.00	6.26	66.00	0.00	0.00	0.00
14.00	3.69	0.00	3.71	67.00	0.00	0.00	0.00
15.00	2.79	0.00	2.80	68.00	0.00	0.00	0.00
16.00	2.02	0.00	2.03	69.00	0.00	0.00	0.00
17.00	1.59	0.00	1.59	70.00	0.00	0.00	0.00
18.00	1.24	0.00	1.24	71.00	0.00	0.00	0.00
19.00	1.08	0.00	1.08	72.00	0.00	0.00	0.00
20.00	0.98	0.00	0.98				
21.00	0.89	0.00	0.89				
22.00	0.81	0.00	0.82				
23.00	0.73	0.00	0.73				
24.00	0.65	0.00	0.65				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

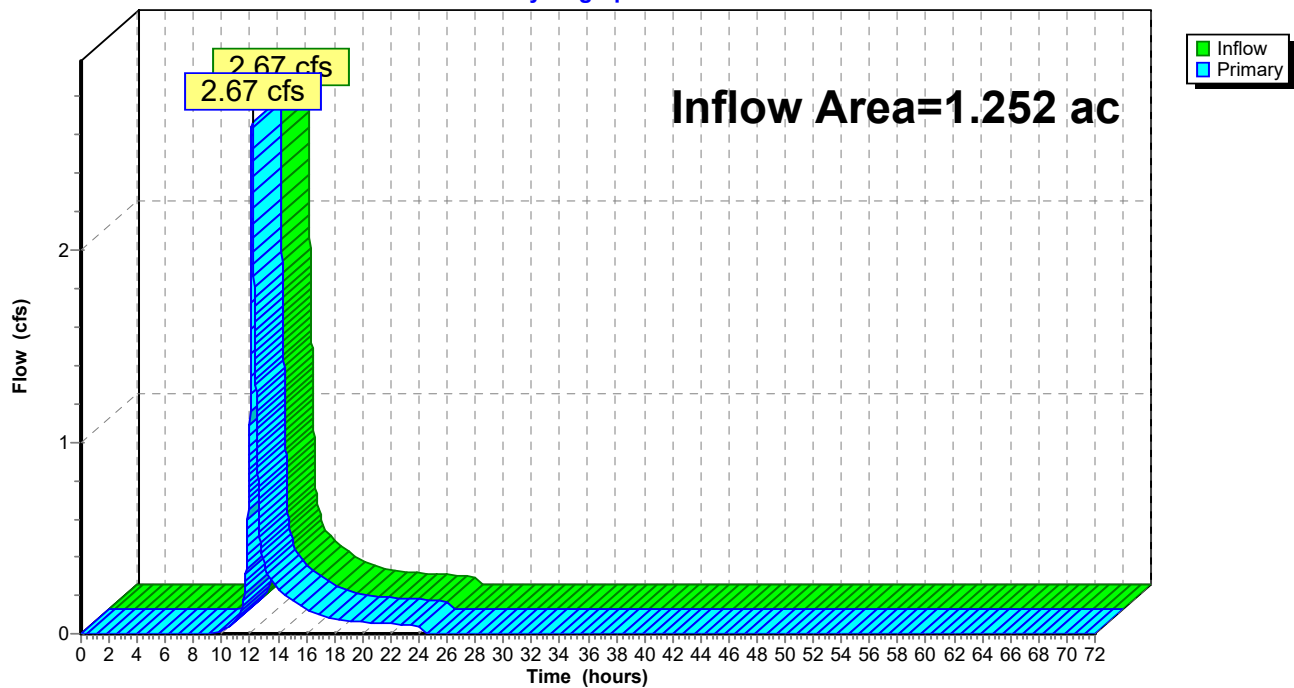
Summary for Link R4: REACH# 4

Inflow Area = 1.252 ac, 26.82% Impervious, Inflow Depth = 2.12" for 10-YR event
 Inflow = 2.67 cfs @ 12.14 hrs, Volume= 0.221 af
 Primary = 2.67 cfs @ 12.15 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.6 min

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

Link R4: REACH# 4

Hydrograph



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Type III 24-hr 10-YR Rainfall=5.00"

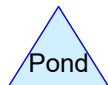
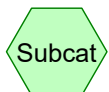
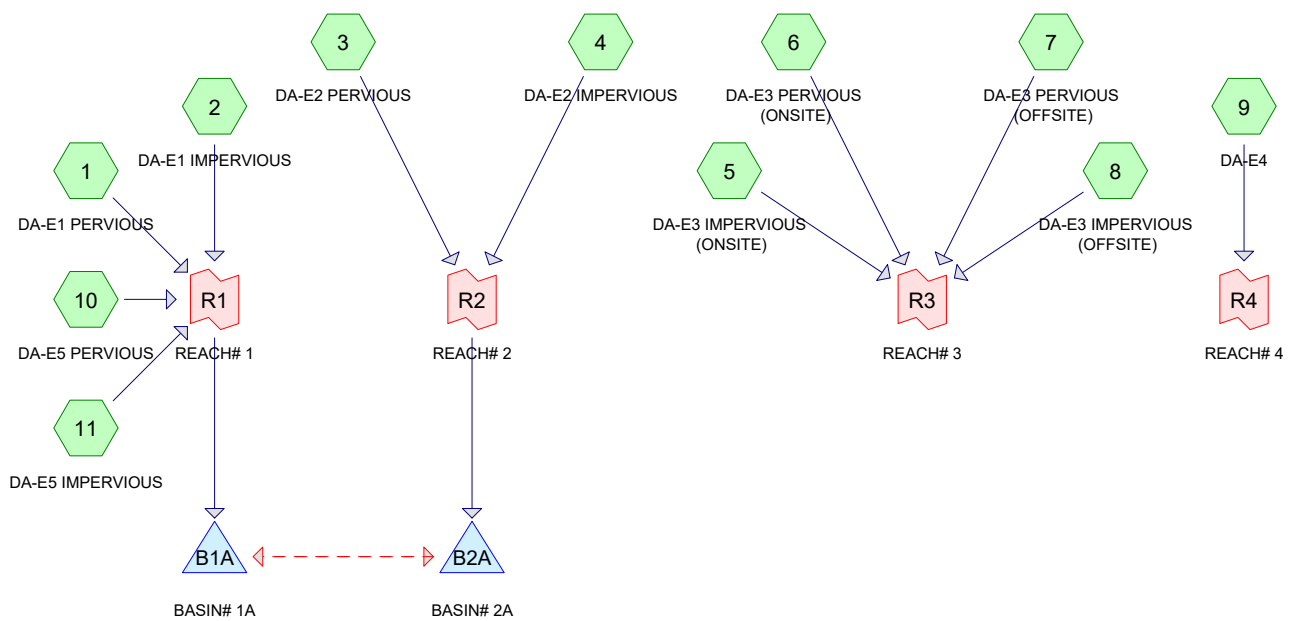
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Hydrograph for Link R4: REACH# 4

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
10.00	0.01	0.00	0.01	63.00	0.00	0.00	0.00
11.00	0.07	0.00	0.07	64.00	0.00	0.00	0.00
12.00	1.16	0.00	1.09	65.00	0.00	0.00	0.00
13.00	0.36	0.00	0.36	66.00	0.00	0.00	0.00
14.00	0.23	0.00	0.23	67.00	0.00	0.00	0.00
15.00	0.17	0.00	0.18	68.00	0.00	0.00	0.00
16.00	0.13	0.00	0.13	69.00	0.00	0.00	0.00
17.00	0.10	0.00	0.10	70.00	0.00	0.00	0.00
18.00	0.08	0.00	0.08	71.00	0.00	0.00	0.00
19.00	0.07	0.00	0.07	72.00	0.00	0.00	0.00
20.00	0.06	0.00	0.06				
21.00	0.06	0.00	0.06				
22.00	0.05	0.00	0.05				
23.00	0.05	0.00	0.05				
24.00	0.04	0.00	0.04				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

100-Year Storm Event for Pre-Development Conditions



Routing Diagram for EXISTING 2022-04
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
10.140	61	>75% Grass cover, Good, HSG B (1, 3, 6, 7, 9)
4.998	74	>75% Grass cover, Good, HSG C (1, 3, 10)
0.380	82	Dirt roads, HSG B (1, 3, 6)
0.963	87	Dirt roads, HSG C (1, 3)
0.364	85	Gravel roads, HSG B (6)
6.062	98	Paved parking, HSG B (2, 4, 5, 8, 9)
3.086	98	Paved parking, HSG C (2, 4, 11)
22.953	78	Row crops, straight row, Good, HSG B (1, 3, 6, 10)
36.553	85	Row crops, straight row, Good, HSG C (1, 3, 10)
9.037	55	Woods, Good, HSG B (1, 3, 6, 7)
2.591	70	Woods, Good, HSG C (1, 3, 10)
97.127	78	TOTAL AREA

EXISTING 2022-04

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Type III 24-hr 100-YR Rainfall=8.20"

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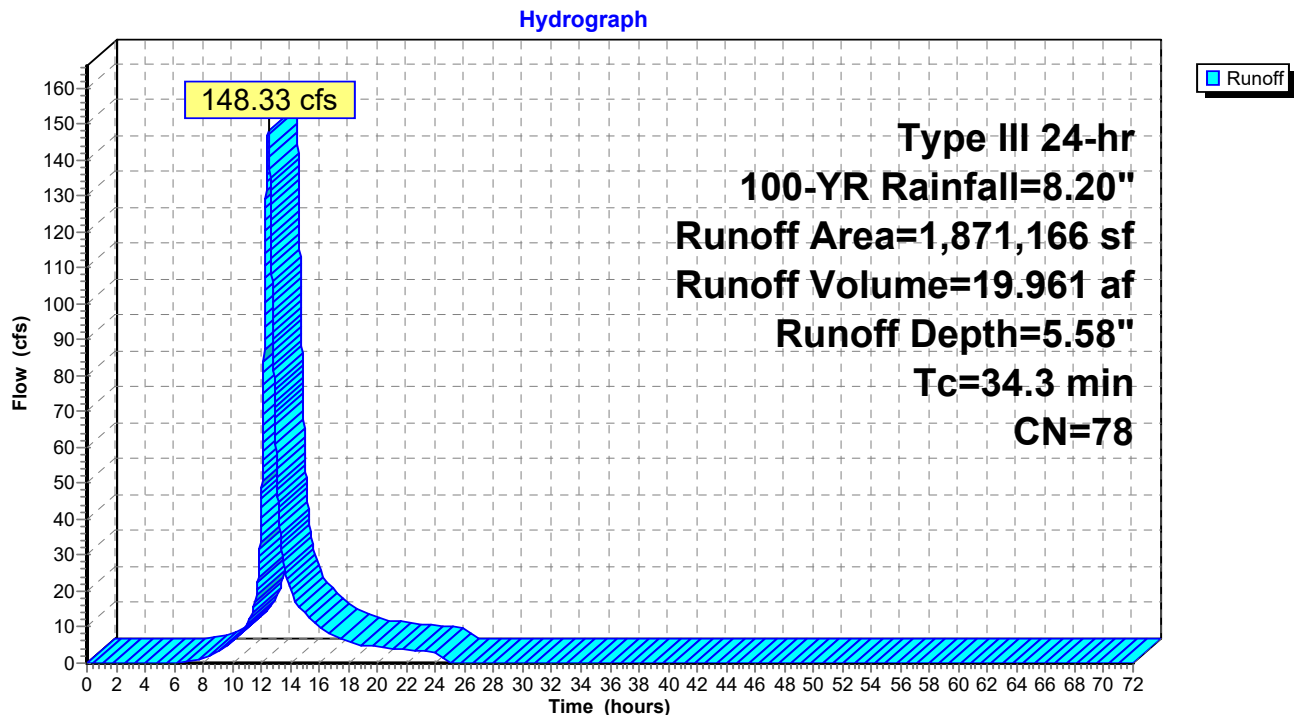
Summary for Subcatchment 1: DA-E1 PERVIOUS

Runoff = 148.33 cfs @ 12.46 hrs, Volume= 19.961 af, Depth= 5.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
166,165	55	Woods, Good, HSG B
63,858	70	Woods, Good, HSG C
22,000	87	Dirt roads, HSG C
12,148	82	Dirt roads, HSG B
40,999	74	>75% Grass cover, Good, HSG C
790,694	85	Row crops, straight row, Good, HSG C
663,289	78	Row crops, straight row, Good, HSG B
112,013	61	>75% Grass cover, Good, HSG B
1,871,166	78	Weighted Average
1,871,166		100.00% Pervious Area

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

Subcatchment 1: DA-E1 PERVIOUS

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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 1: DA-E1 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	5.58	0.00
1.00	0.08	0.00	0.00	54.00	8.20	5.58	0.00
2.00	0.16	0.00	0.00	55.00	8.20	5.58	0.00
3.00	0.25	0.00	0.00	56.00	8.20	5.58	0.00
4.00	0.35	0.00	0.00	57.00	8.20	5.58	0.00
5.00	0.47	0.00	0.00	58.00	8.20	5.58	0.00
6.00	0.59	0.00	0.00	59.00	8.20	5.58	0.00
7.00	0.74	0.01	0.42	60.00	8.20	5.58	0.00
8.00	0.93	0.04	1.37	61.00	8.20	5.58	0.00
9.00	1.20	0.12	3.05	62.00	8.20	5.58	0.00
10.00	1.55	0.26	5.95	63.00	8.20	5.58	0.00
11.00	2.05	0.51	10.95	64.00	8.20	5.58	0.00
12.00	4.10	1.97	42.59	65.00	8.20	5.58	0.00
13.00	6.15	3.71	61.39	66.00	8.20	5.58	0.00
14.00	6.65	4.16	20.03	67.00	8.20	5.58	0.00
15.00	7.00	4.48	14.03	68.00	8.20	5.58	0.00
16.00	7.27	4.72	10.36	69.00	8.20	5.58	0.00
17.00	7.46	4.89	7.70	70.00	8.20	5.58	0.00
18.00	7.61	5.03	6.07	71.00	8.20	5.58	0.00
19.00	7.73	5.15	5.01	72.00	8.20	5.58	0.00
20.00	7.85	5.25	4.52				
21.00	7.95	5.34	4.09				
22.00	8.04	5.43	3.73				
23.00	8.13	5.51	3.36				
24.00	8.20	5.58	2.99				
25.00	8.20	5.58	0.16				
26.00	8.20	5.58	0.00				
27.00	8.20	5.58	0.00				
28.00	8.20	5.58	0.00				
29.00	8.20	5.58	0.00				
30.00	8.20	5.58	0.00				
31.00	8.20	5.58	0.00				
32.00	8.20	5.58	0.00				
33.00	8.20	5.58	0.00				
34.00	8.20	5.58	0.00				
35.00	8.20	5.58	0.00				
36.00	8.20	5.58	0.00				
37.00	8.20	5.58	0.00				
38.00	8.20	5.58	0.00				
39.00	8.20	5.58	0.00				
40.00	8.20	5.58	0.00				
41.00	8.20	5.58	0.00				
42.00	8.20	5.58	0.00				
43.00	8.20	5.58	0.00				
44.00	8.20	5.58	0.00				
45.00	8.20	5.58	0.00				
46.00	8.20	5.58	0.00				
47.00	8.20	5.58	0.00				
48.00	8.20	5.58	0.00				
49.00	8.20	5.58	0.00				
50.00	8.20	5.58	0.00				
51.00	8.20	5.58	0.00				
52.00	8.20	5.58	0.00				

EXISTING 2022-04

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 2: DA-E1 IMPERVIOUS

Runoff = 4.59 cfs @ 12.13 hrs, Volume= 0.431 af, Depth= 7.96"

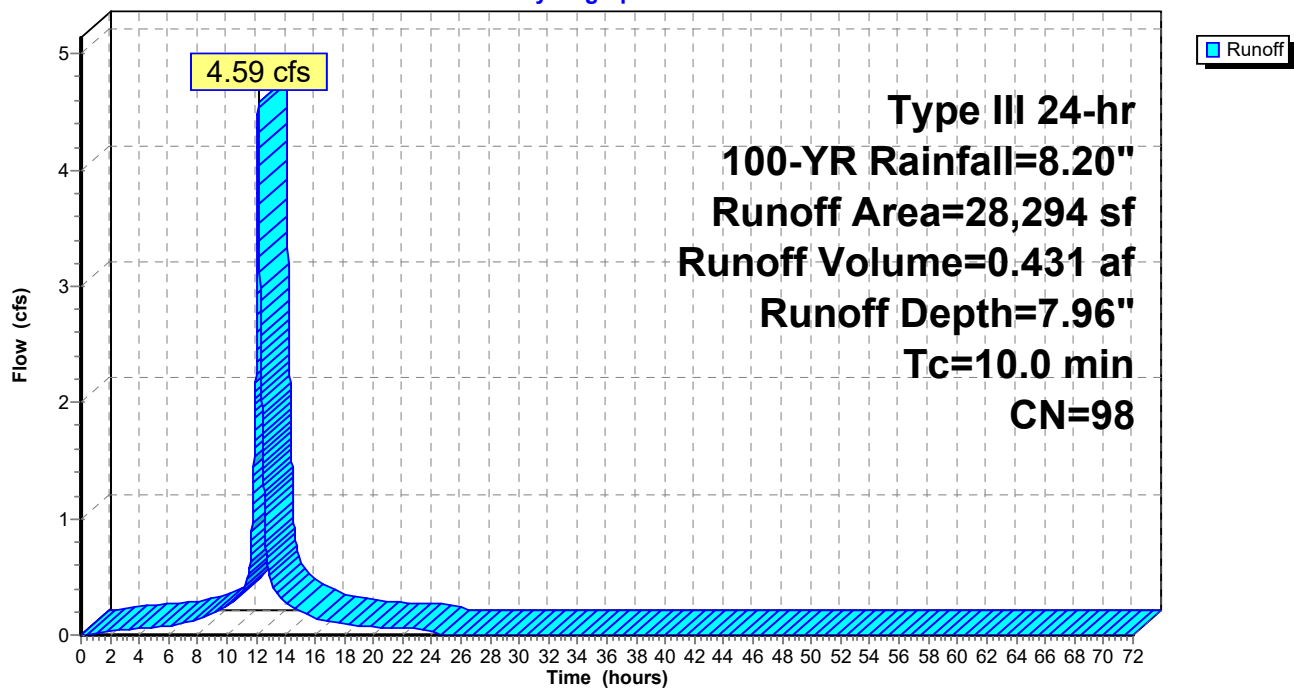
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
4,949	98	Paved parking, HSG B
23,345	98	Paved parking, HSG C
28,294	98	Weighted Average
28,294		100.00% Impervious Area

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

Subcatchment 2: DA-E1 IMPERVIOUS

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 2: DA-E1 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	7.96	0.00
1.00	0.08	0.01	0.01	54.00	8.20	7.96	0.00
2.00	0.16	0.05	0.03	55.00	8.20	7.96	0.00
3.00	0.25	0.11	0.04	56.00	8.20	7.96	0.00
4.00	0.35	0.19	0.06	57.00	8.20	7.96	0.00
5.00	0.47	0.29	0.07	58.00	8.20	7.96	0.00
6.00	0.59	0.40	0.08	59.00	8.20	7.96	0.00
7.00	0.74	0.54	0.10	60.00	8.20	7.96	0.00
8.00	0.93	0.73	0.13	61.00	8.20	7.96	0.00
9.00	1.20	0.98	0.19	62.00	8.20	7.96	0.00
10.00	1.55	1.33	0.25	63.00	8.20	7.96	0.00
11.00	2.05	1.82	0.37	64.00	8.20	7.96	0.00
12.00	4.10	3.86	2.46	65.00	8.20	7.96	0.00
13.00	6.15	5.91	0.47	66.00	8.20	7.96	0.00
14.00	6.65	6.41	0.28	67.00	8.20	7.96	0.00
15.00	7.00	6.77	0.21	68.00	8.20	7.96	0.00
16.00	7.27	7.03	0.15	69.00	8.20	7.96	0.00
17.00	7.46	7.22	0.12	70.00	8.20	7.96	0.00
18.00	7.61	7.37	0.09	71.00	8.20	7.96	0.00
19.00	7.73	7.50	0.08	72.00	8.20	7.96	0.00
20.00	7.85	7.61	0.07				
21.00	7.95	7.71	0.06				
22.00	8.04	7.80	0.06				
23.00	8.13	7.89	0.05				
24.00	8.20	7.96	0.05				
25.00	8.20	7.96	0.00				
26.00	8.20	7.96	0.00				
27.00	8.20	7.96	0.00				
28.00	8.20	7.96	0.00				
29.00	8.20	7.96	0.00				
30.00	8.20	7.96	0.00				
31.00	8.20	7.96	0.00				
32.00	8.20	7.96	0.00				
33.00	8.20	7.96	0.00				
34.00	8.20	7.96	0.00				
35.00	8.20	7.96	0.00				
36.00	8.20	7.96	0.00				
37.00	8.20	7.96	0.00				
38.00	8.20	7.96	0.00				
39.00	8.20	7.96	0.00				
40.00	8.20	7.96	0.00				
41.00	8.20	7.96	0.00				
42.00	8.20	7.96	0.00				
43.00	8.20	7.96	0.00				
44.00	8.20	7.96	0.00				
45.00	8.20	7.96	0.00				
46.00	8.20	7.96	0.00				
47.00	8.20	7.96	0.00				
48.00	8.20	7.96	0.00				
49.00	8.20	7.96	0.00				
50.00	8.20	7.96	0.00				
51.00	8.20	7.96	0.00				
52.00	8.20	7.96	0.00				

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Type III 24-hr 100-YR Rainfall=8.20"

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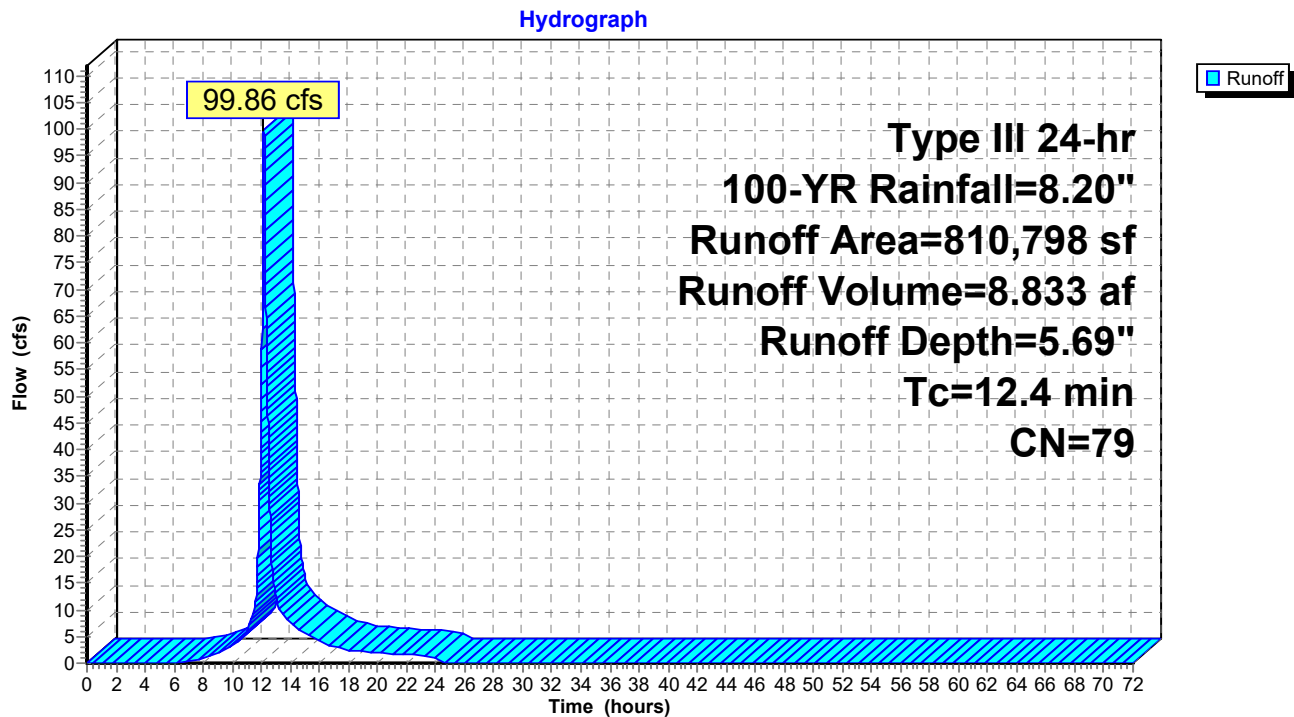
Summary for Subcatchment 3: DA-E2 PERVIOUS

Runoff = 99.86 cfs @ 12.17 hrs, Volume= 8.833 af, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
28,328	70	Woods, Good, HSG C
28,191	55	Woods, Good, HSG B
498,060	85	Row crops, straight row, Good, HSG C
70,817	61	>75% Grass cover, Good, HSG B
152,643	74	>75% Grass cover, Good, HSG C
1,080	82	Dirt roads, HSG B
19,958	87	Dirt roads, HSG C
11,721	78	Row crops, straight row, Good, HSG B
810,798	79	Weighted Average
810,798		100.00% Pervious Area

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

Subcatchment 3: DA-E2 PERVIOUS

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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 3: DA-E2 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	5.69	0.00
1.00	0.08	0.00	0.00	54.00	8.20	5.69	0.00
2.00	0.16	0.00	0.00	55.00	8.20	5.69	0.00
3.00	0.25	0.00	0.00	56.00	8.20	5.69	0.00
4.00	0.35	0.00	0.00	57.00	8.20	5.69	0.00
5.00	0.47	0.00	0.00	58.00	8.20	5.69	0.00
6.00	0.59	0.00	0.06	59.00	8.20	5.69	0.00
7.00	0.74	0.02	0.38	60.00	8.20	5.69	0.00
8.00	0.93	0.05	0.87	61.00	8.20	5.69	0.00
9.00	1.20	0.13	1.83	62.00	8.20	5.69	0.00
10.00	1.55	0.28	3.28	63.00	8.20	5.69	0.00
11.00	2.05	0.55	6.03	64.00	8.20	5.69	0.00
12.00	4.10	2.04	47.23	65.00	8.20	5.69	0.00
13.00	6.15	3.81	12.52	66.00	8.20	5.69	0.00
14.00	6.65	4.27	7.47	67.00	8.20	5.69	0.00
15.00	7.00	4.59	5.59	68.00	8.20	5.69	0.00
16.00	7.27	4.83	3.99	69.00	8.20	5.69	0.00
17.00	7.46	5.01	3.12	70.00	8.20	5.69	0.00
18.00	7.61	5.15	2.41	71.00	8.20	5.69	0.00
19.00	7.73	5.26	2.11	72.00	8.20	5.69	0.00
20.00	7.85	5.37	1.90				
21.00	7.95	5.46	1.73				
22.00	8.04	5.55	1.57				
23.00	8.13	5.63	1.41				
24.00	8.20	5.69	1.25				
25.00	8.20	5.69	0.00				
26.00	8.20	5.69	0.00				
27.00	8.20	5.69	0.00				
28.00	8.20	5.69	0.00				
29.00	8.20	5.69	0.00				
30.00	8.20	5.69	0.00				
31.00	8.20	5.69	0.00				
32.00	8.20	5.69	0.00				
33.00	8.20	5.69	0.00				
34.00	8.20	5.69	0.00				
35.00	8.20	5.69	0.00				
36.00	8.20	5.69	0.00				
37.00	8.20	5.69	0.00				
38.00	8.20	5.69	0.00				
39.00	8.20	5.69	0.00				
40.00	8.20	5.69	0.00				
41.00	8.20	5.69	0.00				
42.00	8.20	5.69	0.00				
43.00	8.20	5.69	0.00				
44.00	8.20	5.69	0.00				
45.00	8.20	5.69	0.00				
46.00	8.20	5.69	0.00				
47.00	8.20	5.69	0.00				
48.00	8.20	5.69	0.00				
49.00	8.20	5.69	0.00				
50.00	8.20	5.69	0.00				
51.00	8.20	5.69	0.00				
52.00	8.20	5.69	0.00				

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 4: DA-E2 IMPERVIOUS

Runoff = 23.89 cfs @ 12.13 hrs, Volume= 2.243 af, Depth= 7.96"

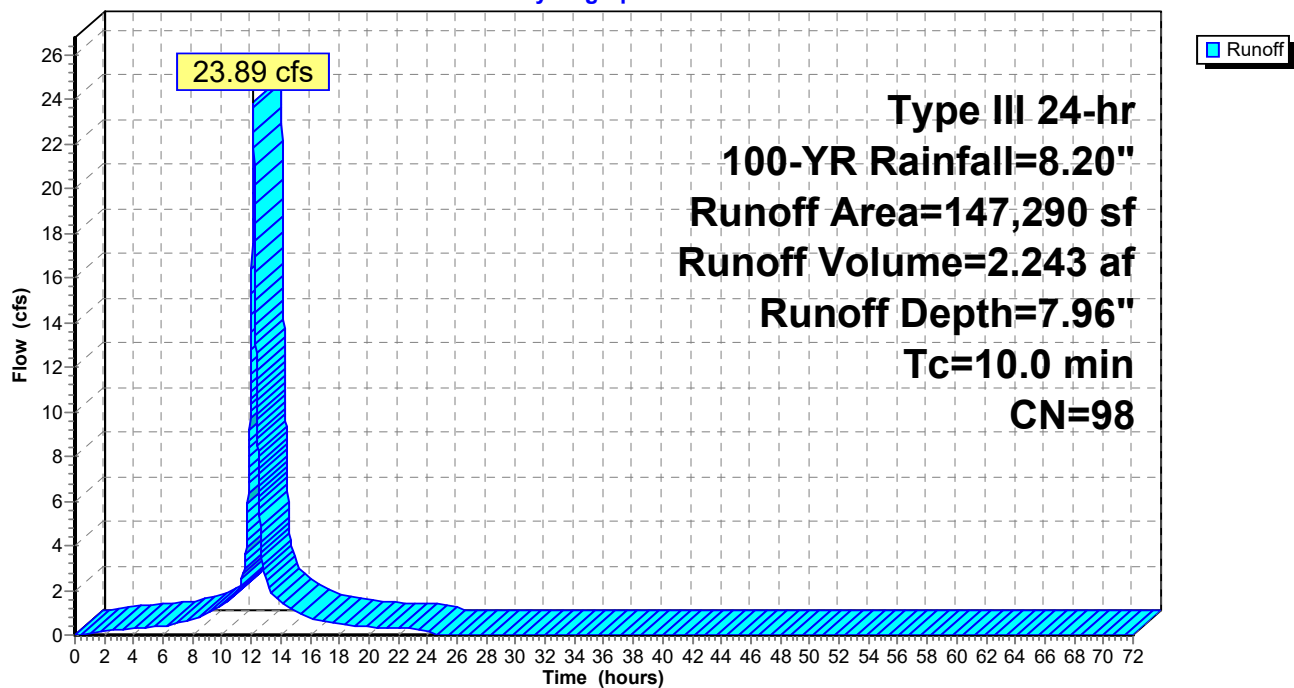
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
98,373	98	Paved parking, HSG C
48,917	98	Paved parking, HSG B
147,290	98	Weighted Average
147,290		100.00% Impervious Area

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

Subcatchment 4: DA-E2 IMPERVIOUS

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 4: DA-E2 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	7.96	0.00
1.00	0.08	0.01	0.06	54.00	8.20	7.96	0.00
2.00	0.16	0.05	0.16	55.00	8.20	7.96	0.00
3.00	0.25	0.11	0.23	56.00	8.20	7.96	0.00
4.00	0.35	0.19	0.30	57.00	8.20	7.96	0.00
5.00	0.47	0.29	0.35	58.00	8.20	7.96	0.00
6.00	0.59	0.40	0.41	59.00	8.20	7.96	0.00
7.00	0.74	0.54	0.53	60.00	8.20	7.96	0.00
8.00	0.93	0.73	0.68	61.00	8.20	7.96	0.00
9.00	1.20	0.98	0.97	62.00	8.20	7.96	0.00
10.00	1.55	1.33	1.30	63.00	8.20	7.96	0.00
11.00	2.05	1.82	1.92	64.00	8.20	7.96	0.00
12.00	4.10	3.86	12.82	65.00	8.20	7.96	0.00
13.00	6.15	5.91	2.44	66.00	8.20	7.96	0.00
14.00	6.65	6.41	1.47	67.00	8.20	7.96	0.00
15.00	7.00	6.77	1.10	68.00	8.20	7.96	0.00
16.00	7.27	7.03	0.78	69.00	8.20	7.96	0.00
17.00	7.46	7.22	0.61	70.00	8.20	7.96	0.00
18.00	7.61	7.37	0.47	71.00	8.20	7.96	0.00
19.00	7.73	7.50	0.41	72.00	8.20	7.96	0.00
20.00	7.85	7.61	0.37				
21.00	7.95	7.71	0.34				
22.00	8.04	7.80	0.31				
23.00	8.13	7.89	0.27				
24.00	8.20	7.96	0.24				
25.00	8.20	7.96	0.00				
26.00	8.20	7.96	0.00				
27.00	8.20	7.96	0.00				
28.00	8.20	7.96	0.00				
29.00	8.20	7.96	0.00				
30.00	8.20	7.96	0.00				
31.00	8.20	7.96	0.00				
32.00	8.20	7.96	0.00				
33.00	8.20	7.96	0.00				
34.00	8.20	7.96	0.00				
35.00	8.20	7.96	0.00				
36.00	8.20	7.96	0.00				
37.00	8.20	7.96	0.00				
38.00	8.20	7.96	0.00				
39.00	8.20	7.96	0.00				
40.00	8.20	7.96	0.00				
41.00	8.20	7.96	0.00				
42.00	8.20	7.96	0.00				
43.00	8.20	7.96	0.00				
44.00	8.20	7.96	0.00				
45.00	8.20	7.96	0.00				
46.00	8.20	7.96	0.00				
47.00	8.20	7.96	0.00				
48.00	8.20	7.96	0.00				
49.00	8.20	7.96	0.00				
50.00	8.20	7.96	0.00				
51.00	8.20	7.96	0.00				
52.00	8.20	7.96	0.00				

Summary for Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Runoff = 10.35 cfs @ 12.13 hrs, Volume= 0.972 af, Depth= 7.96"

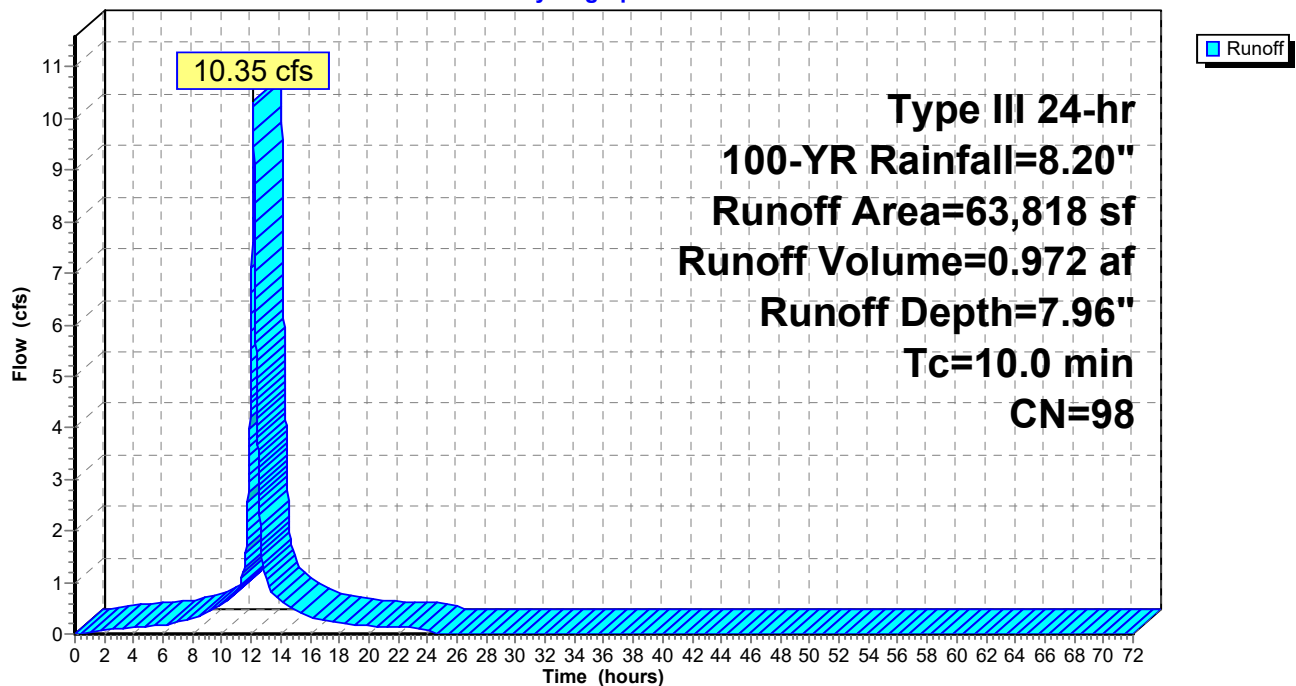
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
63,818	98	Paved parking, HSG B
63,818		100.00% Impervious Area

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

Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 5: DA-E3 IMPERVIOUS (ONSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	7.96	0.00
1.00	0.08	0.01	0.03	54.00	8.20	7.96	0.00
2.00	0.16	0.05	0.07	55.00	8.20	7.96	0.00
3.00	0.25	0.11	0.10	56.00	8.20	7.96	0.00
4.00	0.35	0.19	0.13	57.00	8.20	7.96	0.00
5.00	0.47	0.29	0.15	58.00	8.20	7.96	0.00
6.00	0.59	0.40	0.18	59.00	8.20	7.96	0.00
7.00	0.74	0.54	0.23	60.00	8.20	7.96	0.00
8.00	0.93	0.73	0.29	61.00	8.20	7.96	0.00
9.00	1.20	0.98	0.42	62.00	8.20	7.96	0.00
10.00	1.55	1.33	0.56	63.00	8.20	7.96	0.00
11.00	2.05	1.82	0.83	64.00	8.20	7.96	0.00
12.00	4.10	3.86	5.55	65.00	8.20	7.96	0.00
13.00	6.15	5.91	1.06	66.00	8.20	7.96	0.00
14.00	6.65	6.41	0.64	67.00	8.20	7.96	0.00
15.00	7.00	6.77	0.48	68.00	8.20	7.96	0.00
16.00	7.27	7.03	0.34	69.00	8.20	7.96	0.00
17.00	7.46	7.22	0.26	70.00	8.20	7.96	0.00
18.00	7.61	7.37	0.20	71.00	8.20	7.96	0.00
19.00	7.73	7.50	0.18	72.00	8.20	7.96	0.00
20.00	7.85	7.61	0.16				
21.00	7.95	7.71	0.15				
22.00	8.04	7.80	0.13				
23.00	8.13	7.89	0.12				
24.00	8.20	7.96	0.10				
25.00	8.20	7.96	0.00				
26.00	8.20	7.96	0.00				
27.00	8.20	7.96	0.00				
28.00	8.20	7.96	0.00				
29.00	8.20	7.96	0.00				
30.00	8.20	7.96	0.00				
31.00	8.20	7.96	0.00				
32.00	8.20	7.96	0.00				
33.00	8.20	7.96	0.00				
34.00	8.20	7.96	0.00				
35.00	8.20	7.96	0.00				
36.00	8.20	7.96	0.00				
37.00	8.20	7.96	0.00				
38.00	8.20	7.96	0.00				
39.00	8.20	7.96	0.00				
40.00	8.20	7.96	0.00				
41.00	8.20	7.96	0.00				
42.00	8.20	7.96	0.00				
43.00	8.20	7.96	0.00				
44.00	8.20	7.96	0.00				
45.00	8.20	7.96	0.00				
46.00	8.20	7.96	0.00				
47.00	8.20	7.96	0.00				
48.00	8.20	7.96	0.00				
49.00	8.20	7.96	0.00				
50.00	8.20	7.96	0.00				
51.00	8.20	7.96	0.00				
52.00	8.20	7.96	0.00				

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Runoff = 39.81 cfs @ 12.24 hrs, Volume= 3.950 af, Depth= 4.52"

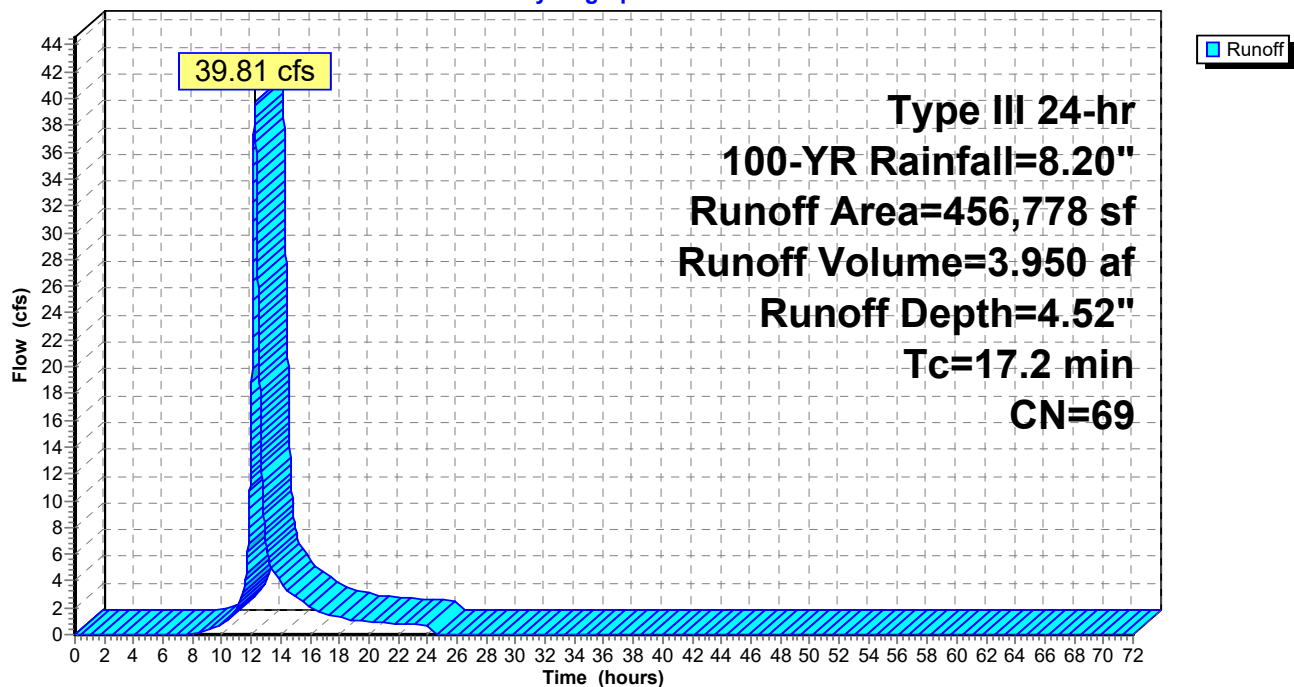
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
3,315	82	Dirt roads, HSG B
15,871	85	Gravel roads, HSG B
131,615	55	Woods, Good, HSG B
227,686	78	Row crops, straight row, Good, HSG B
78,291	61	>75% Grass cover, Good, HSG B
456,778	69	Weighted Average
456,778		100.00% Pervious Area

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

Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 6: DA-E3 PERVIOUS (ONSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	4.52	0.00
1.00	0.08	0.00	0.00	54.00	8.20	4.52	0.00
2.00	0.16	0.00	0.00	55.00	8.20	4.52	0.00
3.00	0.25	0.00	0.00	56.00	8.20	4.52	0.00
4.00	0.35	0.00	0.00	57.00	8.20	4.52	0.00
5.00	0.47	0.00	0.00	58.00	8.20	4.52	0.00
6.00	0.59	0.00	0.00	59.00	8.20	4.52	0.00
7.00	0.74	0.00	0.00	60.00	8.20	4.52	0.00
8.00	0.93	0.00	0.00	61.00	8.20	4.52	0.00
9.00	1.20	0.02	0.27	62.00	8.20	4.52	0.00
10.00	1.55	0.08	0.82	63.00	8.20	4.52	0.00
11.00	2.05	0.23	1.92	64.00	8.20	4.52	0.00
12.00	4.10	1.33	15.64	65.00	8.20	4.52	0.00
13.00	6.15	2.83	6.88	66.00	8.20	4.52	0.00
14.00	6.65	3.23	3.86	67.00	8.20	4.52	0.00
15.00	7.00	3.52	2.88	68.00	8.20	4.52	0.00
16.00	7.27	3.73	2.08	69.00	8.20	4.52	0.00
17.00	7.46	3.89	1.61	70.00	8.20	4.52	0.00
18.00	7.61	4.02	1.26	71.00	8.20	4.52	0.00
19.00	7.73	4.13	1.09	72.00	8.20	4.52	0.00
20.00	7.85	4.22	0.98				
21.00	7.95	4.31	0.90				
22.00	8.04	4.39	0.82				
23.00	8.13	4.46	0.73				
24.00	8.20	4.52	0.65				
25.00	8.20	4.52	0.00				
26.00	8.20	4.52	0.00				
27.00	8.20	4.52	0.00				
28.00	8.20	4.52	0.00				
29.00	8.20	4.52	0.00				
30.00	8.20	4.52	0.00				
31.00	8.20	4.52	0.00				
32.00	8.20	4.52	0.00				
33.00	8.20	4.52	0.00				
34.00	8.20	4.52	0.00				
35.00	8.20	4.52	0.00				
36.00	8.20	4.52	0.00				
37.00	8.20	4.52	0.00				
38.00	8.20	4.52	0.00				
39.00	8.20	4.52	0.00				
40.00	8.20	4.52	0.00				
41.00	8.20	4.52	0.00				
42.00	8.20	4.52	0.00				
43.00	8.20	4.52	0.00				
44.00	8.20	4.52	0.00				
45.00	8.20	4.52	0.00				
46.00	8.20	4.52	0.00				
47.00	8.20	4.52	0.00				
48.00	8.20	4.52	0.00				
49.00	8.20	4.52	0.00				
50.00	8.20	4.52	0.00				
51.00	8.20	4.52	0.00				
52.00	8.20	4.52	0.00				

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Runoff = 16.08 cfs @ 12.15 hrs, Volume= 1.344 af, Depth= 3.37"

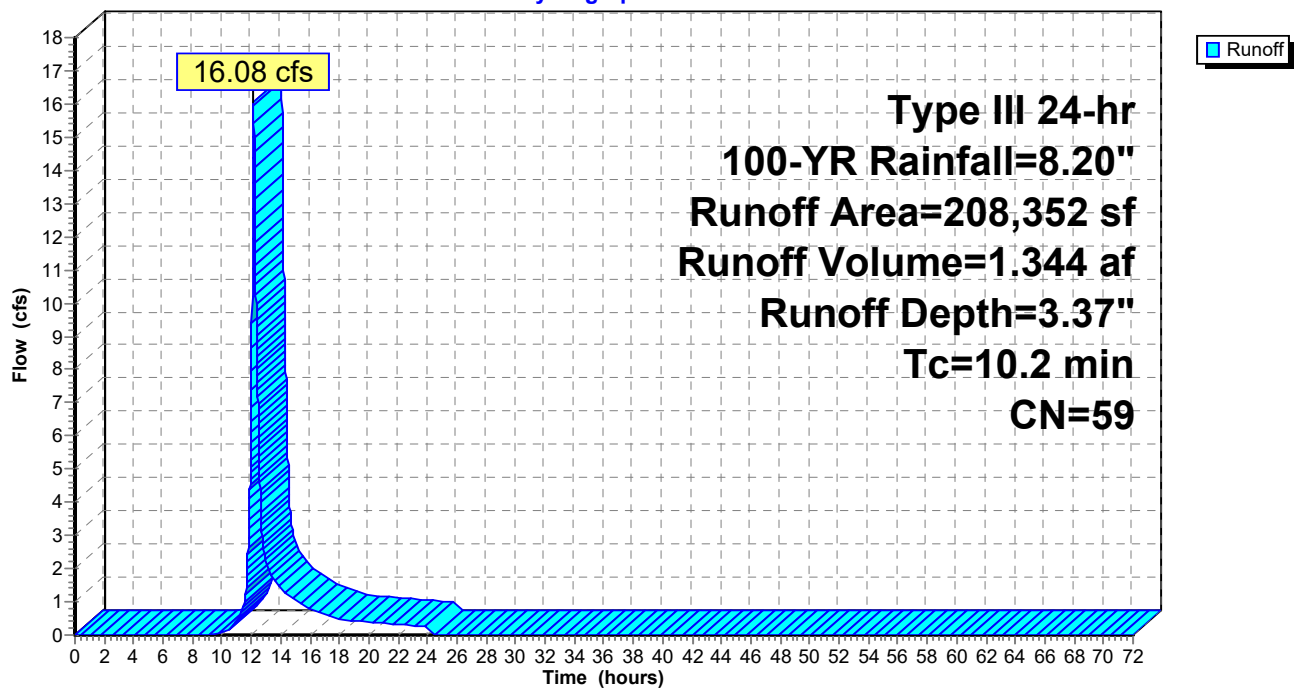
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
67,674	55	Woods, Good, HSG B
140,678	61	>75% Grass cover, Good, HSG B
208,352	59	Weighted Average
208,352		100.00% Pervious Area

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

Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 7: DA-E3 PERVIOUS (OFFSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	3.37	0.00
1.00	0.08	0.00	0.00	54.00	8.20	3.37	0.00
2.00	0.16	0.00	0.00	55.00	8.20	3.37	0.00
3.00	0.25	0.00	0.00	56.00	8.20	3.37	0.00
4.00	0.35	0.00	0.00	57.00	8.20	3.37	0.00
5.00	0.47	0.00	0.00	58.00	8.20	3.37	0.00
6.00	0.59	0.00	0.00	59.00	8.20	3.37	0.00
7.00	0.74	0.00	0.00	60.00	8.20	3.37	0.00
8.00	0.93	0.00	0.00	61.00	8.20	3.37	0.00
9.00	1.20	0.00	0.00	62.00	8.20	3.37	0.00
10.00	1.55	0.00	0.05	63.00	8.20	3.37	0.00
11.00	2.05	0.06	0.40	64.00	8.20	3.37	0.00
12.00	4.10	0.76	6.89	65.00	8.20	3.37	0.00
13.00	6.15	1.94	2.22	66.00	8.20	3.37	0.00
14.00	6.65	2.27	1.40	67.00	8.20	3.37	0.00
15.00	7.00	2.51	1.08	68.00	8.20	3.37	0.00
16.00	7.27	2.69	0.77	69.00	8.20	3.37	0.00
17.00	7.46	2.83	0.61	70.00	8.20	3.37	0.00
18.00	7.61	2.94	0.48	71.00	8.20	3.37	0.00
19.00	7.73	3.03	0.42	72.00	8.20	3.37	0.00
20.00	7.85	3.11	0.38				
21.00	7.95	3.19	0.35				
22.00	8.04	3.25	0.32				
23.00	8.13	3.32	0.29				
24.00	8.20	3.37	0.26				
25.00	8.20	3.37	0.00				
26.00	8.20	3.37	0.00				
27.00	8.20	3.37	0.00				
28.00	8.20	3.37	0.00				
29.00	8.20	3.37	0.00				
30.00	8.20	3.37	0.00				
31.00	8.20	3.37	0.00				
32.00	8.20	3.37	0.00				
33.00	8.20	3.37	0.00				
34.00	8.20	3.37	0.00				
35.00	8.20	3.37	0.00				
36.00	8.20	3.37	0.00				
37.00	8.20	3.37	0.00				
38.00	8.20	3.37	0.00				
39.00	8.20	3.37	0.00				
40.00	8.20	3.37	0.00				
41.00	8.20	3.37	0.00				
42.00	8.20	3.37	0.00				
43.00	8.20	3.37	0.00				
44.00	8.20	3.37	0.00				
45.00	8.20	3.37	0.00				
46.00	8.20	3.37	0.00				
47.00	8.20	3.37	0.00				
48.00	8.20	3.37	0.00				
49.00	8.20	3.37	0.00				
50.00	8.20	3.37	0.00				
51.00	8.20	3.37	0.00				
52.00	8.20	3.37	0.00				

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Runoff = 21.37 cfs @ 12.13 hrs, Volume= 2.006 af, Depth= 7.96"

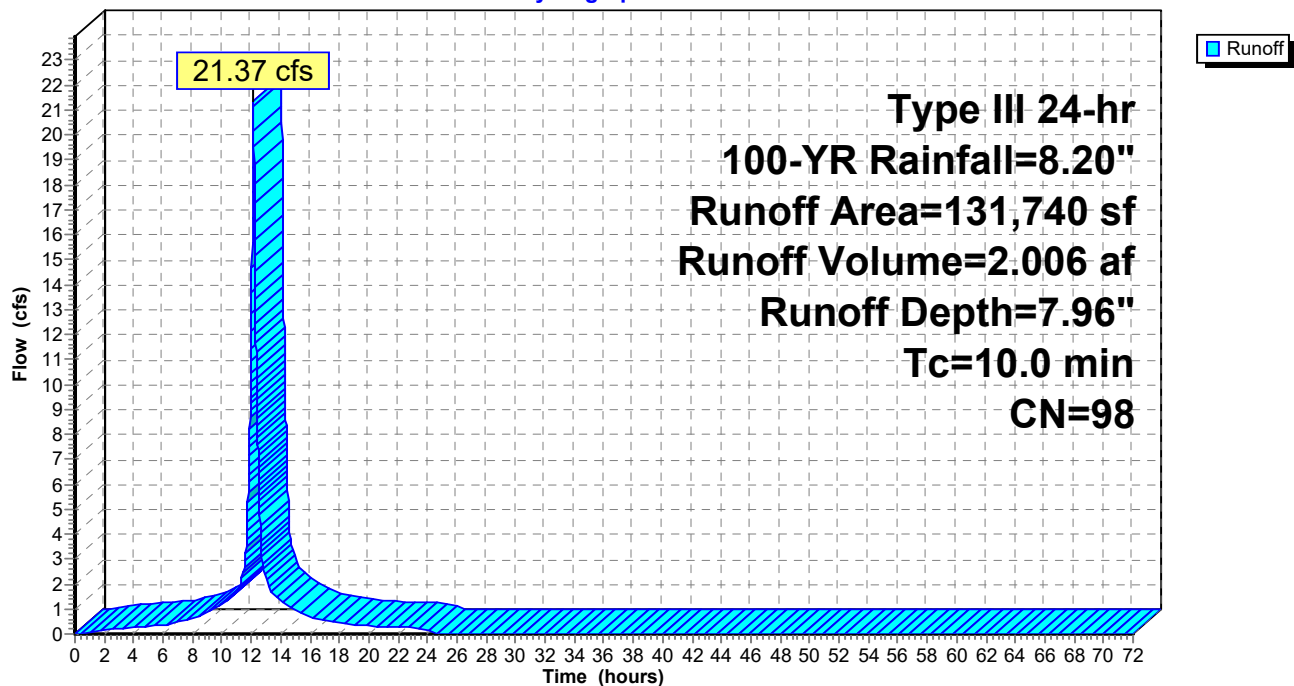
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
131,740	98	Paved parking, HSG B
131,740		100.00% Impervious Area

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

Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 8: DA-E3 IMPERVIOUS (OFFSITE)

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	7.96	0.00
1.00	0.08	0.01	0.06	54.00	8.20	7.96	0.00
2.00	0.16	0.05	0.14	55.00	8.20	7.96	0.00
3.00	0.25	0.11	0.21	56.00	8.20	7.96	0.00
4.00	0.35	0.19	0.27	57.00	8.20	7.96	0.00
5.00	0.47	0.29	0.32	58.00	8.20	7.96	0.00
6.00	0.59	0.40	0.36	59.00	8.20	7.96	0.00
7.00	0.74	0.54	0.48	60.00	8.20	7.96	0.00
8.00	0.93	0.73	0.61	61.00	8.20	7.96	0.00
9.00	1.20	0.98	0.87	62.00	8.20	7.96	0.00
10.00	1.55	1.33	1.16	63.00	8.20	7.96	0.00
11.00	2.05	1.82	1.72	64.00	8.20	7.96	0.00
12.00	4.10	3.86	11.46	65.00	8.20	7.96	0.00
13.00	6.15	5.91	2.18	66.00	8.20	7.96	0.00
14.00	6.65	6.41	1.32	67.00	8.20	7.96	0.00
15.00	7.00	6.77	0.98	68.00	8.20	7.96	0.00
16.00	7.27	7.03	0.69	69.00	8.20	7.96	0.00
17.00	7.46	7.22	0.54	70.00	8.20	7.96	0.00
18.00	7.61	7.37	0.42	71.00	8.20	7.96	0.00
19.00	7.73	7.50	0.37	72.00	8.20	7.96	0.00
20.00	7.85	7.61	0.33				
21.00	7.95	7.71	0.30				
22.00	8.04	7.80	0.27				
23.00	8.13	7.89	0.24				
24.00	8.20	7.96	0.22				
25.00	8.20	7.96	0.00				
26.00	8.20	7.96	0.00				
27.00	8.20	7.96	0.00				
28.00	8.20	7.96	0.00				
29.00	8.20	7.96	0.00				
30.00	8.20	7.96	0.00				
31.00	8.20	7.96	0.00				
32.00	8.20	7.96	0.00				
33.00	8.20	7.96	0.00				
34.00	8.20	7.96	0.00				
35.00	8.20	7.96	0.00				
36.00	8.20	7.96	0.00				
37.00	8.20	7.96	0.00				
38.00	8.20	7.96	0.00				
39.00	8.20	7.96	0.00				
40.00	8.20	7.96	0.00				
41.00	8.20	7.96	0.00				
42.00	8.20	7.96	0.00				
43.00	8.20	7.96	0.00				
44.00	8.20	7.96	0.00				
45.00	8.20	7.96	0.00				
46.00	8.20	7.96	0.00				
47.00	8.20	7.96	0.00				
48.00	8.20	7.96	0.00				
49.00	8.20	7.96	0.00				
50.00	8.20	7.96	0.00				
51.00	8.20	7.96	0.00				
52.00	8.20	7.96	0.00				

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 9: DA-E4

Runoff = 6.09 cfs @ 12.14 hrs, Volume= 0.496 af, Depth= 4.75"

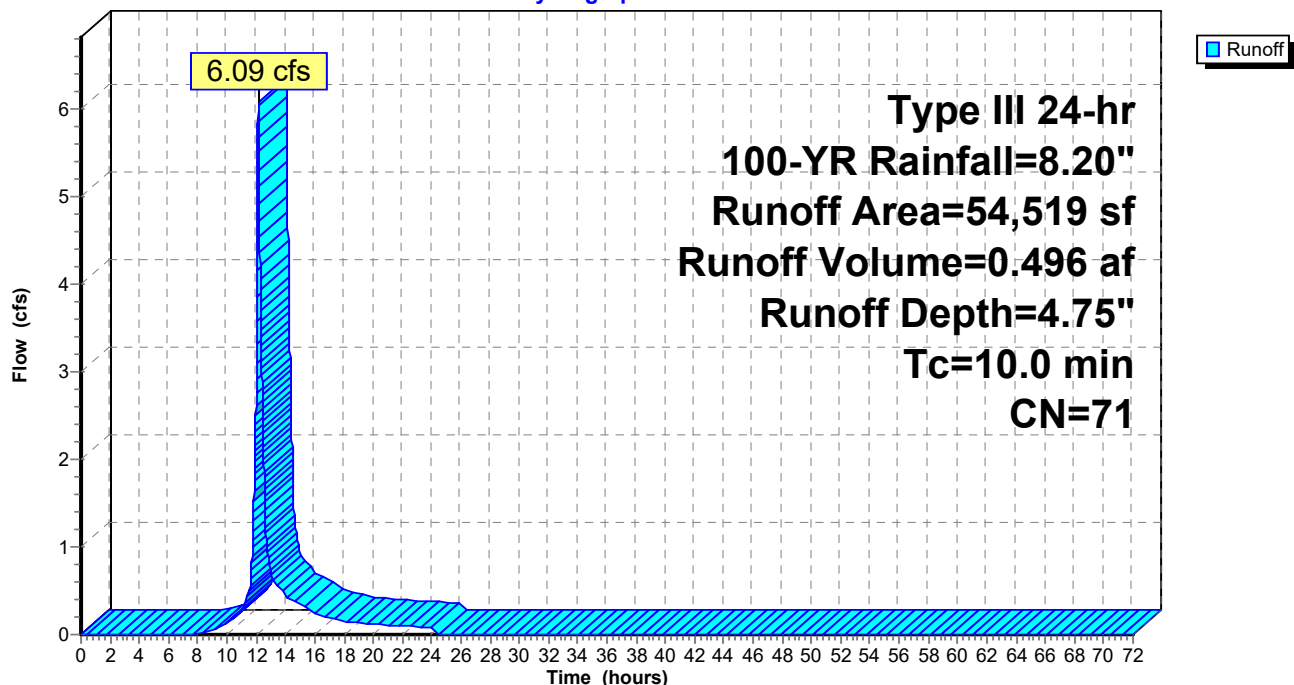
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
14,621	98	Paved parking, HSG B
39,898	61	>75% Grass cover, Good, HSG B
54,519	71	Weighted Average
39,898		73.18% Pervious Area
14,621		26.82% Impervious Area

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

Subcatchment 9: DA-E4

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 9: DA-E4

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	4.75	0.00
1.00	0.08	0.00	0.00	54.00	8.20	4.75	0.00
2.00	0.16	0.00	0.00	55.00	8.20	4.75	0.00
3.00	0.25	0.00	0.00	56.00	8.20	4.75	0.00
4.00	0.35	0.00	0.00	57.00	8.20	4.75	0.00
5.00	0.47	0.00	0.00	58.00	8.20	4.75	0.00
6.00	0.59	0.00	0.00	59.00	8.20	4.75	0.00
7.00	0.74	0.00	0.00	60.00	8.20	4.75	0.00
8.00	0.93	0.00	0.01	61.00	8.20	4.75	0.00
9.00	1.20	0.03	0.05	62.00	8.20	4.75	0.00
10.00	1.55	0.11	0.13	63.00	8.20	4.75	0.00
11.00	2.05	0.29	0.28	64.00	8.20	4.75	0.00
12.00	4.10	1.46	2.91	65.00	8.20	4.75	0.00
13.00	6.15	3.02	0.73	66.00	8.20	4.75	0.00
14.00	6.65	3.43	0.45	67.00	8.20	4.75	0.00
15.00	7.00	3.73	0.34	68.00	8.20	4.75	0.00
16.00	7.27	3.95	0.24	69.00	8.20	4.75	0.00
17.00	7.46	4.11	0.19	70.00	8.20	4.75	0.00
18.00	7.61	4.24	0.15	71.00	8.20	4.75	0.00
19.00	7.73	4.35	0.13	72.00	8.20	4.75	0.00
20.00	7.85	4.45	0.12				
21.00	7.95	4.54	0.11				
22.00	8.04	4.62	0.10				
23.00	8.13	4.69	0.09				
24.00	8.20	4.75	0.08				
25.00	8.20	4.75	0.00				
26.00	8.20	4.75	0.00				
27.00	8.20	4.75	0.00				
28.00	8.20	4.75	0.00				
29.00	8.20	4.75	0.00				
30.00	8.20	4.75	0.00				
31.00	8.20	4.75	0.00				
32.00	8.20	4.75	0.00				
33.00	8.20	4.75	0.00				
34.00	8.20	4.75	0.00				
35.00	8.20	4.75	0.00				
36.00	8.20	4.75	0.00				
37.00	8.20	4.75	0.00				
38.00	8.20	4.75	0.00				
39.00	8.20	4.75	0.00				
40.00	8.20	4.75	0.00				
41.00	8.20	4.75	0.00				
42.00	8.20	4.75	0.00				
43.00	8.20	4.75	0.00				
44.00	8.20	4.75	0.00				
45.00	8.20	4.75	0.00				
46.00	8.20	4.75	0.00				
47.00	8.20	4.75	0.00				
48.00	8.20	4.75	0.00				
49.00	8.20	4.75	0.00				
50.00	8.20	4.75	0.00				
51.00	8.20	4.75	0.00				
52.00	8.20	4.75	0.00				

EXISTING 2022-04

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Type III 24-hr 100-YR Rainfall=8.20"

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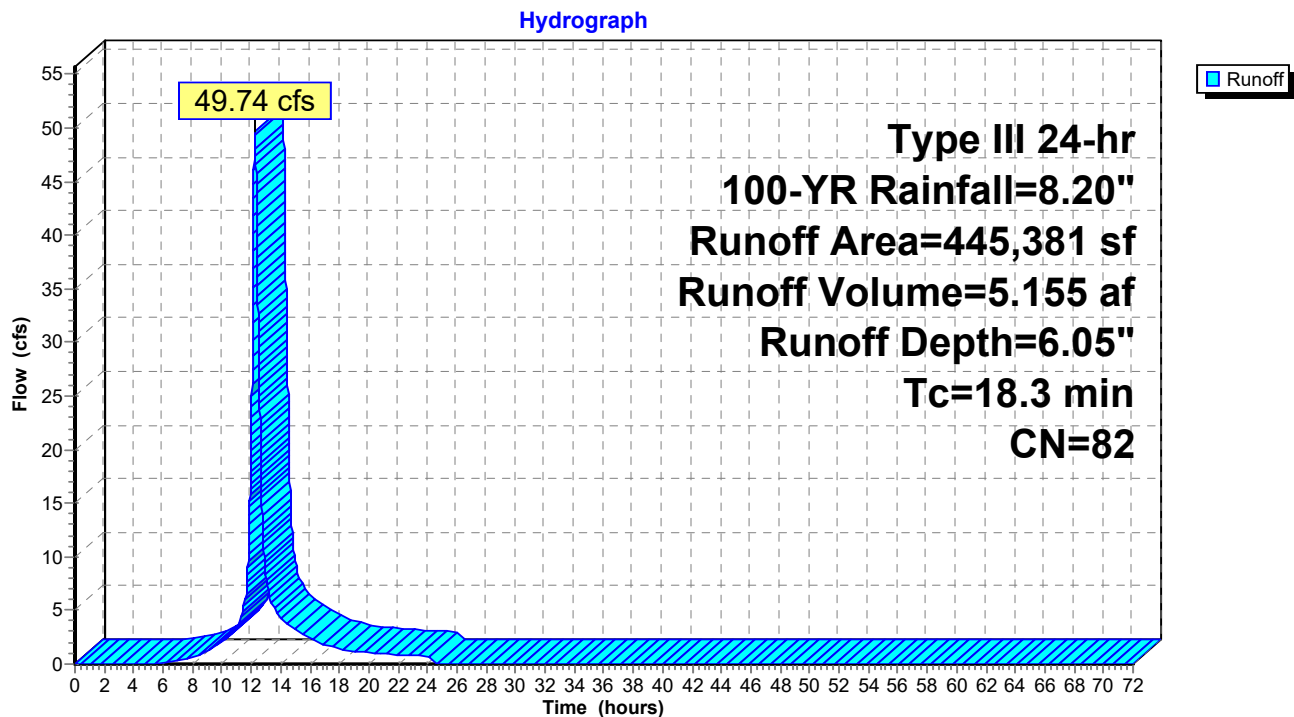
Summary for Subcatchment 10: DA-E5 PERVIOUS

Runoff = 49.74 cfs @ 12.24 hrs, Volume= 5.155 af, Depth= 6.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
24,074	74	>75% Grass cover, Good, HSG C
20,665	70	Woods, Good, HSG C
97,158	78	Row crops, straight row, Good, HSG B
303,484	85	Row crops, straight row, Good, HSG C
445,381	82	Weighted Average
445,381		100.00% Pervious Area

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

Subcatchment 10: DA-E5 PERVIOUS

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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 10: DA-E5 PERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	6.05	0.00
1.00	0.08	0.00	0.00	54.00	8.20	6.05	0.00
2.00	0.16	0.00	0.00	55.00	8.20	6.05	0.00
3.00	0.25	0.00	0.00	56.00	8.20	6.05	0.00
4.00	0.35	0.00	0.00	57.00	8.20	6.05	0.00
5.00	0.47	0.00	0.00	58.00	8.20	6.05	0.00
6.00	0.59	0.01	0.13	59.00	8.20	6.05	0.00
7.00	0.74	0.04	0.33	60.00	8.20	6.05	0.00
8.00	0.93	0.09	0.63	61.00	8.20	6.05	0.00
9.00	1.20	0.19	1.20	62.00	8.20	6.05	0.00
10.00	1.55	0.37	2.04	63.00	8.20	6.05	0.00
11.00	2.05	0.68	3.57	64.00	8.20	6.05	0.00
12.00	4.10	2.29	21.33	65.00	8.20	6.05	0.00
13.00	6.15	4.13	8.23	66.00	8.20	6.05	0.00
14.00	6.65	4.59	4.38	67.00	8.20	6.05	0.00
15.00	7.00	4.92	3.22	68.00	8.20	6.05	0.00
16.00	7.27	5.17	2.33	69.00	8.20	6.05	0.00
17.00	7.46	5.35	1.79	70.00	8.20	6.05	0.00
18.00	7.61	5.49	1.39	71.00	8.20	6.05	0.00
19.00	7.73	5.61	1.19	72.00	8.20	6.05	0.00
20.00	7.85	5.72	1.08				
21.00	7.95	5.81	0.98				
22.00	8.04	5.90	0.89				
23.00	8.13	5.98	0.80				
24.00	8.20	6.05	0.71				
25.00	8.20	6.05	0.00				
26.00	8.20	6.05	0.00				
27.00	8.20	6.05	0.00				
28.00	8.20	6.05	0.00				
29.00	8.20	6.05	0.00				
30.00	8.20	6.05	0.00				
31.00	8.20	6.05	0.00				
32.00	8.20	6.05	0.00				
33.00	8.20	6.05	0.00				
34.00	8.20	6.05	0.00				
35.00	8.20	6.05	0.00				
36.00	8.20	6.05	0.00				
37.00	8.20	6.05	0.00				
38.00	8.20	6.05	0.00				
39.00	8.20	6.05	0.00				
40.00	8.20	6.05	0.00				
41.00	8.20	6.05	0.00				
42.00	8.20	6.05	0.00				
43.00	8.20	6.05	0.00				
44.00	8.20	6.05	0.00				
45.00	8.20	6.05	0.00				
46.00	8.20	6.05	0.00				
47.00	8.20	6.05	0.00				
48.00	8.20	6.05	0.00				
49.00	8.20	6.05	0.00				
50.00	8.20	6.05	0.00				
51.00	8.20	6.05	0.00				
52.00	8.20	6.05	0.00				

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 11: DA-E5 IMPERVIOUS

Runoff = 2.06 cfs @ 12.13 hrs, Volume= 0.194 af, Depth= 7.96"

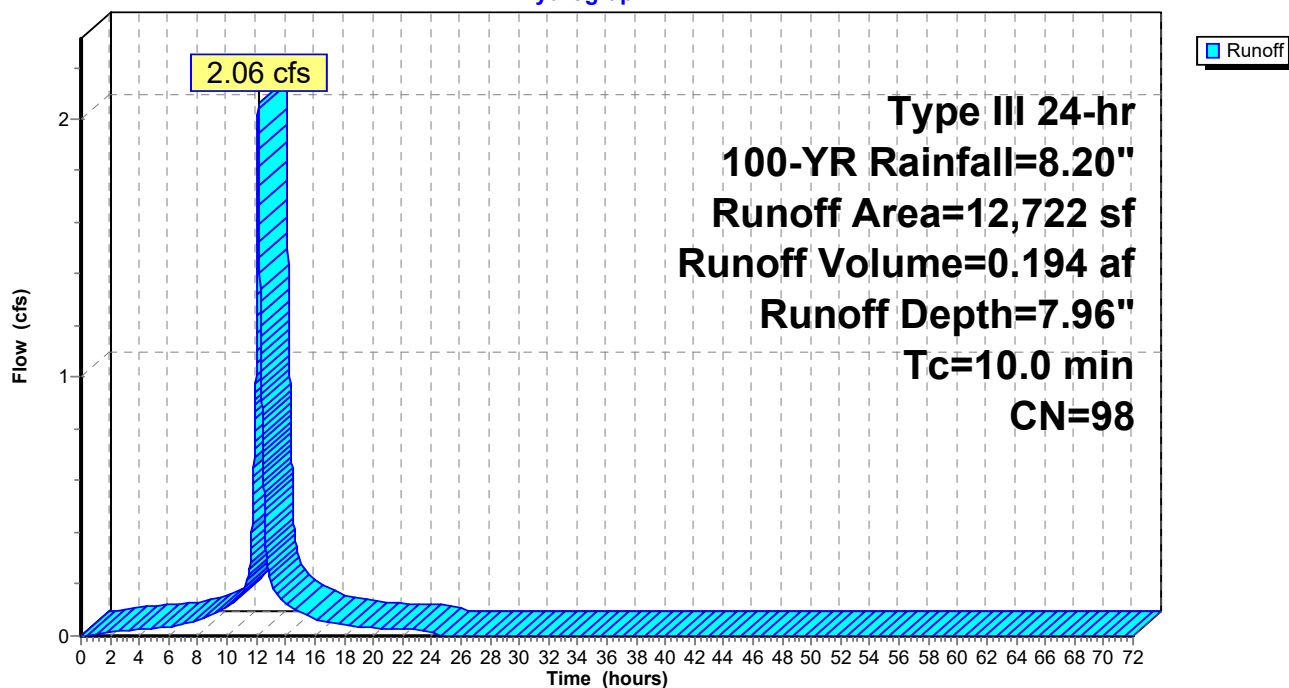
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
12,722	98	Paved parking, HSG C
12,722		100.00% Impervious Area

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

Subcatchment 11: DA-E5 IMPERVIOUS

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Subcatchment 11: DA-E5 IMPERVIOUS

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	8.20	7.96	0.00
1.00	0.08	0.01	0.01	54.00	8.20	7.96	0.00
2.00	0.16	0.05	0.01	55.00	8.20	7.96	0.00
3.00	0.25	0.11	0.02	56.00	8.20	7.96	0.00
4.00	0.35	0.19	0.03	57.00	8.20	7.96	0.00
5.00	0.47	0.29	0.03	58.00	8.20	7.96	0.00
6.00	0.59	0.40	0.04	59.00	8.20	7.96	0.00
7.00	0.74	0.54	0.05	60.00	8.20	7.96	0.00
8.00	0.93	0.73	0.06	61.00	8.20	7.96	0.00
9.00	1.20	0.98	0.08	62.00	8.20	7.96	0.00
10.00	1.55	1.33	0.11	63.00	8.20	7.96	0.00
11.00	2.05	1.82	0.17	64.00	8.20	7.96	0.00
12.00	4.10	3.86	1.11	65.00	8.20	7.96	0.00
13.00	6.15	5.91	0.21	66.00	8.20	7.96	0.00
14.00	6.65	6.41	0.13	67.00	8.20	7.96	0.00
15.00	7.00	6.77	0.09	68.00	8.20	7.96	0.00
16.00	7.27	7.03	0.07	69.00	8.20	7.96	0.00
17.00	7.46	7.22	0.05	70.00	8.20	7.96	0.00
18.00	7.61	7.37	0.04	71.00	8.20	7.96	0.00
19.00	7.73	7.50	0.04	72.00	8.20	7.96	0.00
20.00	7.85	7.61	0.03				
21.00	7.95	7.71	0.03				
22.00	8.04	7.80	0.03				
23.00	8.13	7.89	0.02				
24.00	8.20	7.96	0.02				
25.00	8.20	7.96	0.00				
26.00	8.20	7.96	0.00				
27.00	8.20	7.96	0.00				
28.00	8.20	7.96	0.00				
29.00	8.20	7.96	0.00				
30.00	8.20	7.96	0.00				
31.00	8.20	7.96	0.00				
32.00	8.20	7.96	0.00				
33.00	8.20	7.96	0.00				
34.00	8.20	7.96	0.00				
35.00	8.20	7.96	0.00				
36.00	8.20	7.96	0.00				
37.00	8.20	7.96	0.00				
38.00	8.20	7.96	0.00				
39.00	8.20	7.96	0.00				
40.00	8.20	7.96	0.00				
41.00	8.20	7.96	0.00				
42.00	8.20	7.96	0.00				
43.00	8.20	7.96	0.00				
44.00	8.20	7.96	0.00				
45.00	8.20	7.96	0.00				
46.00	8.20	7.96	0.00				
47.00	8.20	7.96	0.00				
48.00	8.20	7.96	0.00				
49.00	8.20	7.96	0.00				
50.00	8.20	7.96	0.00				
51.00	8.20	7.96	0.00				
52.00	8.20	7.96	0.00				

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Pond B1A: BASIN# 1A

[44] Hint: Outlet device #1 is below defined storage

Inflow = 185.05 cfs @ 12.40 hrs, Volume= 25.740 af
 Outflow = 161.51 cfs @ 12.55 hrs, Volume= 25.746 af, Atten= 13%, Lag= 8.7 min
 Discarded = 116.51 cfs @ 12.61 hrs, Volume= 10.185 af
 Primary = 25.72 cfs @ 12.61 hrs, Volume= 14.432 af
 Secondary = 27.22 cfs @ 12.42 hrs, Volume= 1.130 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 126.56' @ 12.61 hrs Surf.Area= 138,430 sf Storage= 147,379 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 25.4 min (851.8 - 826.4)

Volume	Invert	Avail.Storage	Storage Description
#1	123.70'	426,110 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.70	0	0	0
124.00	1,994	299	299
125.00	33,295	17,645	17,944
125.30	49,002	12,345	30,288
126.00	97,778	51,373	81,661
127.00	170,836	134,307	215,968
128.00	249,447	210,142	426,110

Device	Routing	Invert	Outlet Devices
#1	Primary	123.51'	24.0" Round Culvert L= 192.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 123.51' / 123.19' S= 0.0017 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Primary	124.20'	18.0" Round Culvert L= 180.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 124.20' / 122.02' S= 0.0121 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Discarded	125.50'	40.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Discarded	126.50'	60.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Discarded OutFlow Max=116.50 cfs @ 12.61 hrs HW=126.56' (Free Discharge)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 114.35 cfs @ 2.71 fps)

↑ **4=Broad-Crested Rectangular Weir** (Weir Controls 2.15 cfs @ 0.64 fps)

Primary OutFlow Max=25.72 cfs @ 12.61 hrs HW=126.56' (Free Discharge)

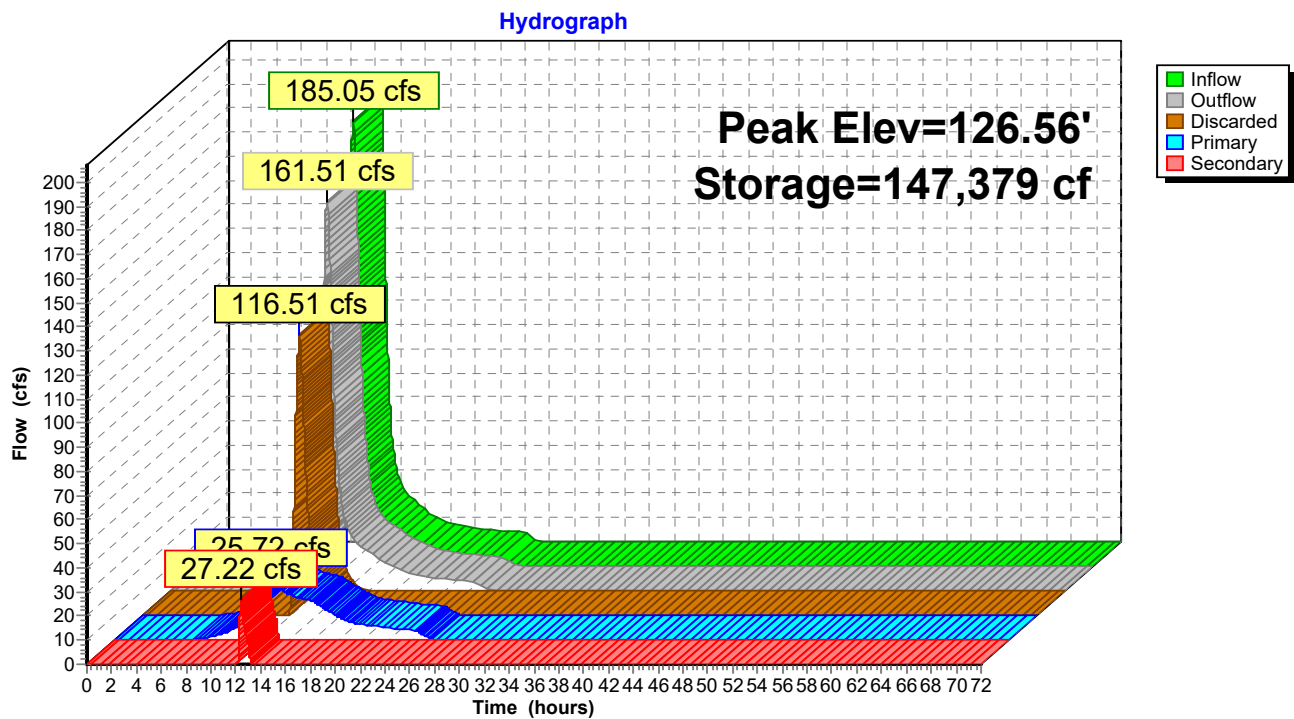
↑ **1=Culvert** (Barrel Controls 14.94 cfs @ 4.75 fps)

↑ **2=Culvert** (Inlet Controls 10.78 cfs @ 6.10 fps)

Secondary OutFlow Max=25.81 cfs @ 12.42 hrs HW=126.47' TW=126.35' (Dynamic Tailwater)

↑ **5=Broad-Crested Rectangular Weir** (Weir Controls 25.81 cfs @ 1.20 fps)

Pond B1A: BASIN# 1A



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Hydrograph for Pond B1A: BASIN# 1A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	123.70	0.00	0.00	0.00	0.00
2.00	0.04	0	123.70	0.00	0.00	0.00	0.00
4.00	0.08	2	123.71	0.11	0.00	0.11	0.00
6.00	0.24	28	123.79	0.22	0.00	0.22	0.00
8.00	2.18	1,579	124.23	1.59	0.00	1.59	0.00
10.00	8.31	10,922	124.76	6.16	0.00	6.16	0.00
12.00	65.22	60,920	125.77	34.38	14.97	19.40	0.00
14.00	24.95	57,037	125.72	29.97	11.09	18.88	0.00
16.00	12.96	39,248	125.46	15.77	0.00	15.77	0.00
18.00	7.61	18,890	125.03	9.58	0.00	9.58	0.00
20.00	5.70	11,008	124.77	6.20	0.00	6.20	0.00
22.00	4.71	8,406	124.66	4.99	0.00	4.99	0.00
24.00	3.77	6,439	124.57	4.04	0.00	4.04	0.00
26.00	0.00	0	123.70	0.00	0.00	0.00	0.00
28.00	0.00	0	123.70	0.00	0.00	0.00	0.00
30.00	0.00	0	123.70	0.00	0.00	0.00	0.00
32.00	0.00	0	123.70	0.00	0.00	0.00	0.00
34.00	0.00	0	123.70	0.00	0.00	0.00	0.00
36.00	0.00	0	123.70	0.00	0.00	0.00	0.00
38.00	0.00	0	123.70	0.00	0.00	0.00	0.00
40.00	0.00	0	123.70	0.00	0.00	0.00	0.00
42.00	0.00	0	123.70	0.00	0.00	0.00	0.00
44.00	0.00	0	123.70	0.00	0.00	0.00	0.00
46.00	0.00	0	123.70	0.00	0.00	0.00	0.00
48.00	0.00	0	123.70	0.00	0.00	0.00	0.00
50.00	0.00	0	123.70	0.00	0.00	0.00	0.00
52.00	0.00	0	123.70	0.00	0.00	0.00	0.00
54.00	0.00	0	123.70	0.00	0.00	0.00	0.00
56.00	0.00	0	123.70	0.00	0.00	0.00	0.00
58.00	0.00	0	123.70	0.00	0.00	0.00	0.00
60.00	0.00	0	123.70	0.00	0.00	0.00	0.00
62.00	0.00	0	123.70	0.00	0.00	0.00	0.00
64.00	0.00	0	123.70	0.00	0.00	0.00	0.00
66.00	0.00	0	123.70	0.00	0.00	0.00	0.00
68.00	0.00	0	123.70	0.00	0.00	0.00	0.00
70.00	0.00	0	123.70	0.00	0.00	0.00	0.00
72.00	0.00	0	123.70	0.00	0.00	0.00	0.00

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Summary for Pond B2A: BASIN# 2A

Inflow = 122.76 cfs @ 12.17 hrs, Volume= 12.206 af
 Outflow = 49.81 cfs @ 12.62 hrs, Volume= 12.206 af, Atten= 59%, Lag= 26.8 min
 Primary = 49.81 cfs @ 12.62 hrs, Volume= 12.206 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 126.53' @ 12.62 hrs Surf.Area= 80,649 sf Storage= 110,932 cf

Plug-Flow detention time= 14.0 min calculated for 12.206 af (100% of inflow)
 Center-of-Mass det. time= 13.8 min (807.4 - 793.6)

Volume	Invert	Avail.Storage	Storage Description
#1	120.66'	294,132 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.66	0	0	0
121.00	102	17	17
123.00	2,840	2,942	2,959
124.00	12,899	7,870	10,829
125.00	29,081	20,990	31,819
125.50	41,742	17,706	49,525
126.00	56,845	24,647	74,171
127.00	101,362	79,104	153,275
128.00	180,352	140,857	294,132

Device	Routing	Invert	Outlet Devices
#1	Primary	120.66'	30.0" Round Culvert L= 212.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 120.66' / 118.50' S= 0.0102 ' /' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=49.80 cfs @ 12.62 hrs HW=126.53' (Free Discharge)

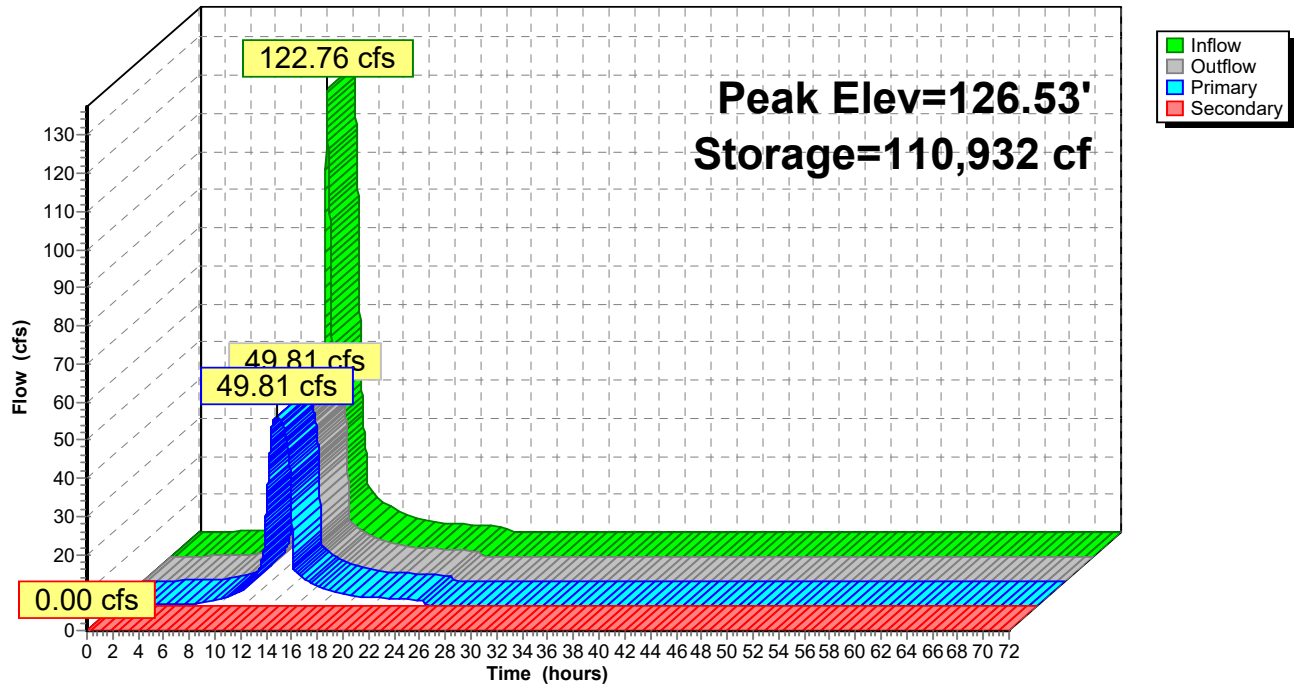
↑**1=Culvert** (Barrel Controls 49.80 cfs @ 10.15 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.66' TW=123.70' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond B2A: BASIN# 2A

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Pond B2A: BASIN# 2A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	120.66	0.00	0.00	0.00
2.00	0.16	4	120.81	0.16	0.16	0.00
4.00	0.30	6	120.87	0.30	0.30	0.00
6.00	0.46	10	120.92	0.46	0.46	0.00
8.00	1.54	45	121.14	1.53	1.53	0.00
10.00	4.56	240	121.50	4.52	4.52	0.00
12.00	57.40	11,394	124.04	34.51	34.51	0.00
14.00	8.99	654	121.89	9.11	9.11	0.00
16.00	4.79	264	121.53	4.83	4.83	0.00
18.00	2.89	123	121.33	2.91	2.91	0.00
20.00	2.27	83	121.24	2.27	2.27	0.00
22.00	1.88	62	121.19	1.88	1.88	0.00
24.00	1.50	43	121.13	1.50	1.50	0.00
26.00	0.00	0	120.66	0.00	0.00	0.00
28.00	0.00	0	120.66	0.00	0.00	0.00
30.00	0.00	0	120.66	0.00	0.00	0.00
32.00	0.00	0	120.66	0.00	0.00	0.00
34.00	0.00	0	120.66	0.00	0.00	0.00
36.00	0.00	0	120.66	0.00	0.00	0.00
38.00	0.00	0	120.66	0.00	0.00	0.00
40.00	0.00	0	120.66	0.00	0.00	0.00
42.00	0.00	0	120.66	0.00	0.00	0.00
44.00	0.00	0	120.66	0.00	0.00	0.00
46.00	0.00	0	120.66	0.00	0.00	0.00
48.00	0.00	0	120.66	0.00	0.00	0.00
50.00	0.00	0	120.66	0.00	0.00	0.00
52.00	0.00	0	120.66	0.00	0.00	0.00
54.00	0.00	0	120.66	0.00	0.00	0.00
56.00	0.00	0	120.66	0.00	0.00	0.00
58.00	0.00	0	120.66	0.00	0.00	0.00
60.00	0.00	0	120.66	0.00	0.00	0.00
62.00	0.00	0	120.66	0.00	0.00	0.00
64.00	0.00	0	120.66	0.00	0.00	0.00
66.00	0.00	0	120.66	0.00	0.00	0.00
68.00	0.00	0	120.66	0.00	0.00	0.00
70.00	0.00	0	120.66	0.00	0.00	0.00
72.00	0.00	0	120.66	0.00	0.00	0.00

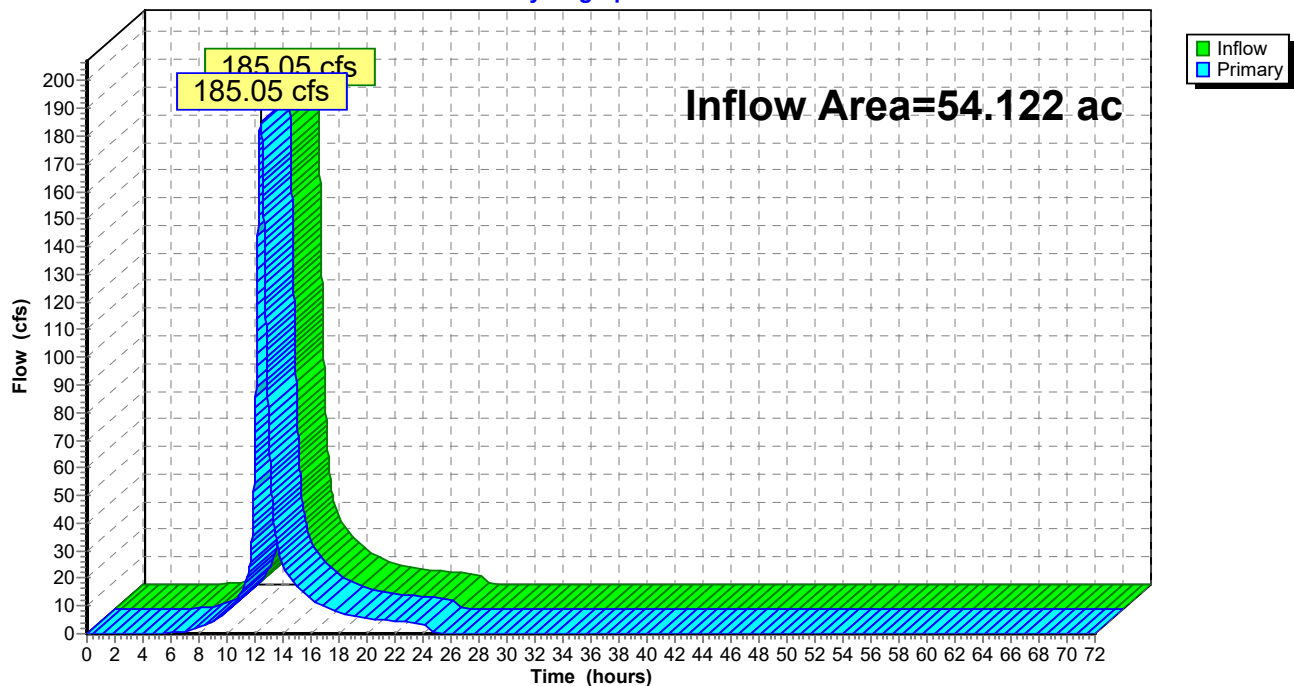
Summary for Link R1: REACH# 1

Inflow Area = 54.122 ac, 1.74% Impervious, Inflow Depth = 5.71" for 100-YR event
 Inflow = 185.05 cfs @ 12.39 hrs, Volume= 25.740 af
 Primary = 185.05 cfs @ 12.40 hrs, Volume= 25.740 af, Atten= 0%, Lag= 0.6 min

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

Link R1: REACH# 1

Hydrograph



EXISTING 2022-04

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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Link R1: REACH# 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.02	0.00	0.02	54.00	0.00	0.00	0.00
2.00	0.05	0.00	0.04	55.00	0.00	0.00	0.00
3.00	0.06	0.00	0.06	56.00	0.00	0.00	0.00
4.00	0.08	0.00	0.08	57.00	0.00	0.00	0.00
5.00	0.10	0.00	0.10	58.00	0.00	0.00	0.00
6.00	0.24	0.00	0.24	59.00	0.00	0.00	0.00
7.00	0.90	0.00	0.89	60.00	0.00	0.00	0.00
8.00	2.19	0.00	2.18	61.00	0.00	0.00	0.00
9.00	4.53	0.00	4.49	62.00	0.00	0.00	0.00
10.00	8.35	0.00	8.31	63.00	0.00	0.00	0.00
11.00	15.05	0.00	14.96	64.00	0.00	0.00	0.00
12.00	67.48	0.00	65.22	65.00	0.00	0.00	0.00
13.00	70.29	0.00	71.72	66.00	0.00	0.00	0.00
14.00	24.82	0.00	24.95	67.00	0.00	0.00	0.00
15.00	17.56	0.00	17.62	68.00	0.00	0.00	0.00
16.00	12.91	0.00	12.96	69.00	0.00	0.00	0.00
17.00	9.65	0.00	9.67	70.00	0.00	0.00	0.00
18.00	7.59	0.00	7.61	71.00	0.00	0.00	0.00
19.00	6.32	0.00	6.32	72.00	0.00	0.00	0.00
20.00	5.69	0.00	5.70				
21.00	5.16	0.00	5.17				
22.00	4.70	0.00	4.71				
23.00	4.24	0.00	4.24				
24.00	3.77	0.00	3.77				
25.00	0.16	0.00	0.16				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

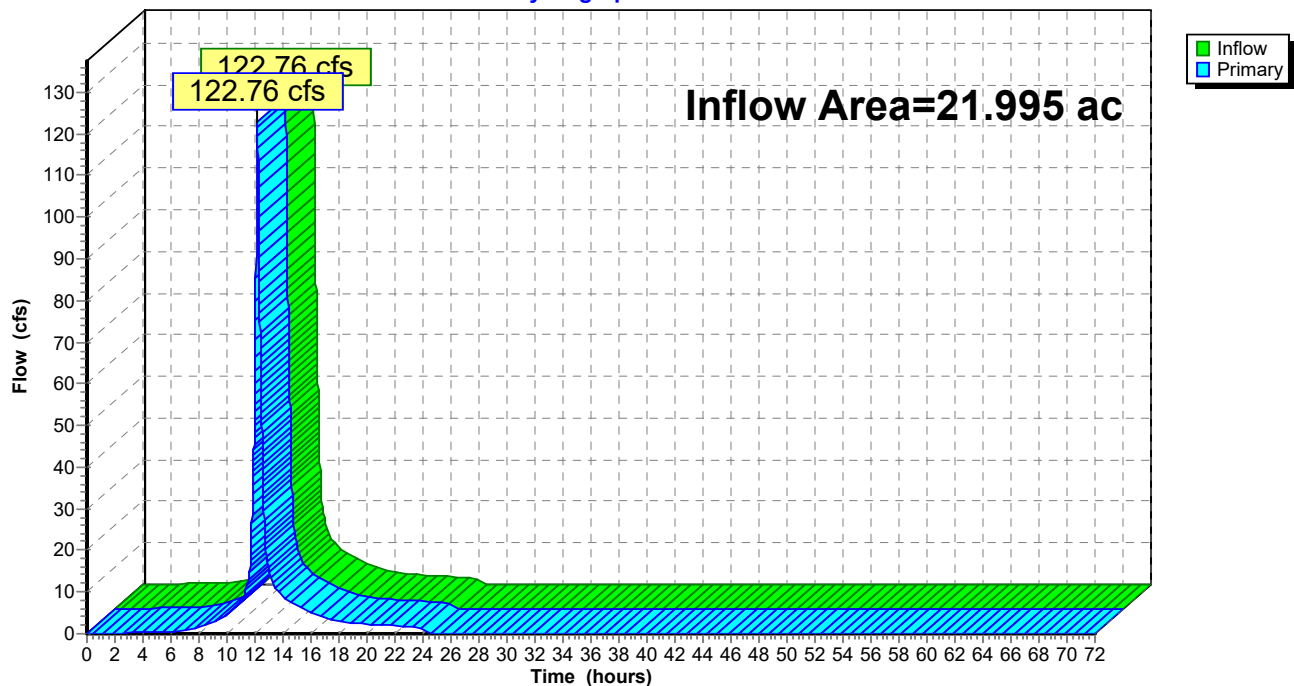
Summary for Link R2: REACH# 2

Inflow Area = 21.995 ac, 15.37% Impervious, Inflow Depth = 6.04" for 100-YR event
 Inflow = 122.76 cfs @ 12.16 hrs, Volume= 11.076 af
 Primary = 122.76 cfs @ 12.17 hrs, Volume= 11.076 af, Atten= 0%, Lag= 0.6 min

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

Link R2: REACH# 2

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

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Hydrograph for Link R2: REACH# 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.06	0.00	0.06	54.00	0.00	0.00	0.00
2.00	0.16	0.00	0.16	55.00	0.00	0.00	0.00
3.00	0.23	0.00	0.23	56.00	0.00	0.00	0.00
4.00	0.30	0.00	0.30	57.00	0.00	0.00	0.00
5.00	0.35	0.00	0.35	58.00	0.00	0.00	0.00
6.00	0.47	0.00	0.46	59.00	0.00	0.00	0.00
7.00	0.91	0.00	0.91	60.00	0.00	0.00	0.00
8.00	1.55	0.00	1.54	61.00	0.00	0.00	0.00
9.00	2.81	0.00	2.79	62.00	0.00	0.00	0.00
10.00	4.58	0.00	4.56	63.00	0.00	0.00	0.00
11.00	7.95	0.00	7.91	64.00	0.00	0.00	0.00
12.00	60.05	0.00	57.40	65.00	0.00	0.00	0.00
13.00	14.96	0.00	15.13	66.00	0.00	0.00	0.00
14.00	8.95	0.00	8.99	67.00	0.00	0.00	0.00
15.00	6.68	0.00	6.70	68.00	0.00	0.00	0.00
16.00	4.77	0.00	4.79	69.00	0.00	0.00	0.00
17.00	3.72	0.00	3.74	70.00	0.00	0.00	0.00
18.00	2.88	0.00	2.89	71.00	0.00	0.00	0.00
19.00	2.52	0.00	2.52	72.00	0.00	0.00	0.00
20.00	2.27	0.00	2.27				
21.00	2.07	0.00	2.07				
22.00	1.88	0.00	1.88				
23.00	1.69	0.00	1.69				
24.00	1.49	0.00	1.50				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

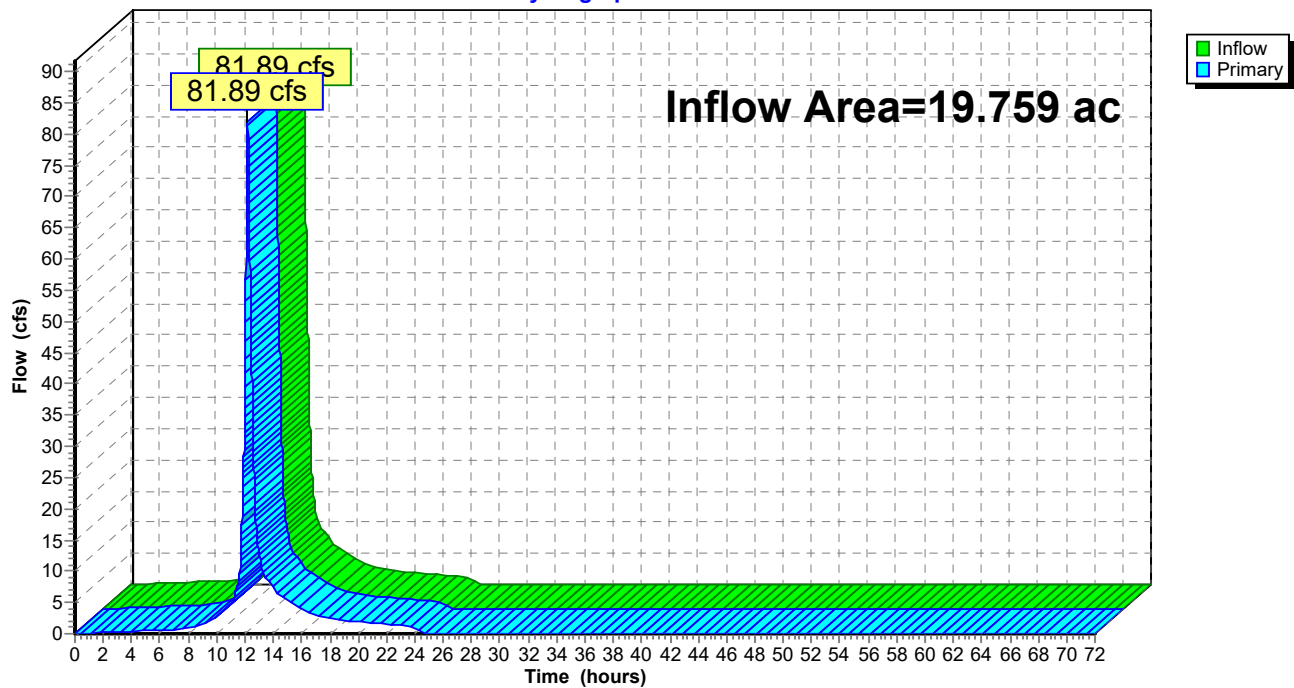
Summary for Link R3: REACH# 3

Inflow Area = 19.759 ac, 22.72% Impervious, Inflow Depth = 5.02" for 100-YR event
 Inflow = 81.89 cfs @ 12.17 hrs, Volume= 8.271 af
 Primary = 81.89 cfs @ 12.18 hrs, Volume= 8.271 af, Atten= 0%, Lag= 0.6 min

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

Link R3: REACH# 3

Hydrograph



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Hydrograph for Link R3: REACH# 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.08	0.00	0.08	54.00	0.00	0.00	0.00
2.00	0.21	0.00	0.21	55.00	0.00	0.00	0.00
3.00	0.31	0.00	0.31	56.00	0.00	0.00	0.00
4.00	0.39	0.00	0.39	57.00	0.00	0.00	0.00
5.00	0.47	0.00	0.47	58.00	0.00	0.00	0.00
6.00	0.54	0.00	0.54	59.00	0.00	0.00	0.00
7.00	0.71	0.00	0.71	60.00	0.00	0.00	0.00
8.00	0.90	0.00	0.90	61.00	0.00	0.00	0.00
9.00	1.57	0.00	1.56	62.00	0.00	0.00	0.00
10.00	2.60	0.00	2.59	63.00	0.00	0.00	0.00
11.00	4.86	0.00	4.84	64.00	0.00	0.00	0.00
12.00	39.55	0.00	37.72	65.00	0.00	0.00	0.00
13.00	12.33	0.00	12.48	66.00	0.00	0.00	0.00
14.00	7.21	0.00	7.24	67.00	0.00	0.00	0.00
15.00	5.41	0.00	5.42	68.00	0.00	0.00	0.00
16.00	3.89	0.00	3.91	69.00	0.00	0.00	0.00
17.00	3.04	0.00	3.04	70.00	0.00	0.00	0.00
18.00	2.36	0.00	2.37	71.00	0.00	0.00	0.00
19.00	2.06	0.00	2.06	72.00	0.00	0.00	0.00
20.00	1.85	0.00	1.86				
21.00	1.69	0.00	1.69				
22.00	1.54	0.00	1.54				
23.00	1.38	0.00	1.39				
24.00	1.23	0.00	1.23				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

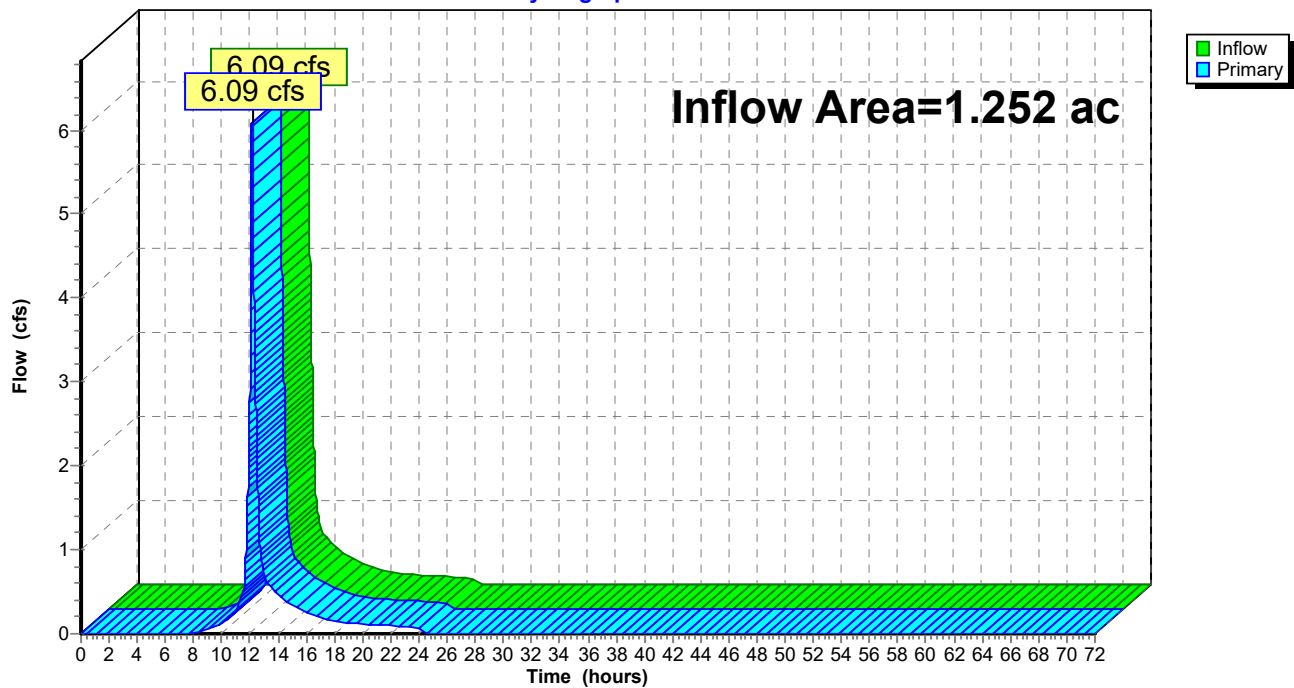
Summary for Link R4: REACH# 4

Inflow Area = 1.252 ac, 26.82% Impervious, Inflow Depth = 4.75" for 100-YR event
 Inflow = 6.09 cfs @ 12.14 hrs, Volume= 0.496 af
 Primary = 6.09 cfs @ 12.15 hrs, Volume= 0.496 af, Atten= 0%, Lag= 0.6 min

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

Link R4: REACH# 4

Hydrograph



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Type III 24-hr 100-YR Rainfall=8.20"

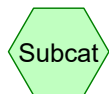
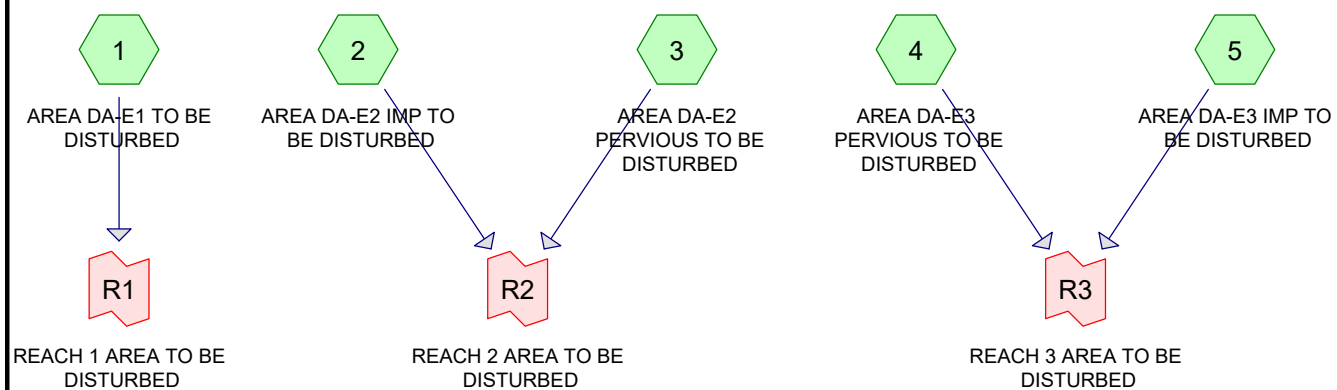
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Hydrograph for Link R4: REACH# 4

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
8.00	0.01	0.00	0.01	61.00	0.00	0.00	0.00
9.00	0.05	0.00	0.05	62.00	0.00	0.00	0.00
10.00	0.13	0.00	0.13	63.00	0.00	0.00	0.00
11.00	0.28	0.00	0.28	64.00	0.00	0.00	0.00
12.00	2.91	0.00	2.75	65.00	0.00	0.00	0.00
13.00	0.73	0.00	0.74	66.00	0.00	0.00	0.00
14.00	0.45	0.00	0.45	67.00	0.00	0.00	0.00
15.00	0.34	0.00	0.34	68.00	0.00	0.00	0.00
16.00	0.24	0.00	0.25	69.00	0.00	0.00	0.00
17.00	0.19	0.00	0.19	70.00	0.00	0.00	0.00
18.00	0.15	0.00	0.15	71.00	0.00	0.00	0.00
19.00	0.13	0.00	0.13	72.00	0.00	0.00	0.00
20.00	0.12	0.00	0.12				
21.00	0.11	0.00	0.11				
22.00	0.10	0.00	0.10				
23.00	0.09	0.00	0.09				
24.00	0.08	0.00	0.08				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				

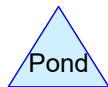
2-Year Storm Event for Reach #1, #2 & #3



Subcat



Reach



Pond



Link

Routing Diagram for FLOW FOR REDUCTION CALCS

Prepared by Bohler Engineering, Printed 4/21/2022

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FLOW FOR REDUCTION CALCS

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 1: AREA DA-E1 TO BE DISTURBED

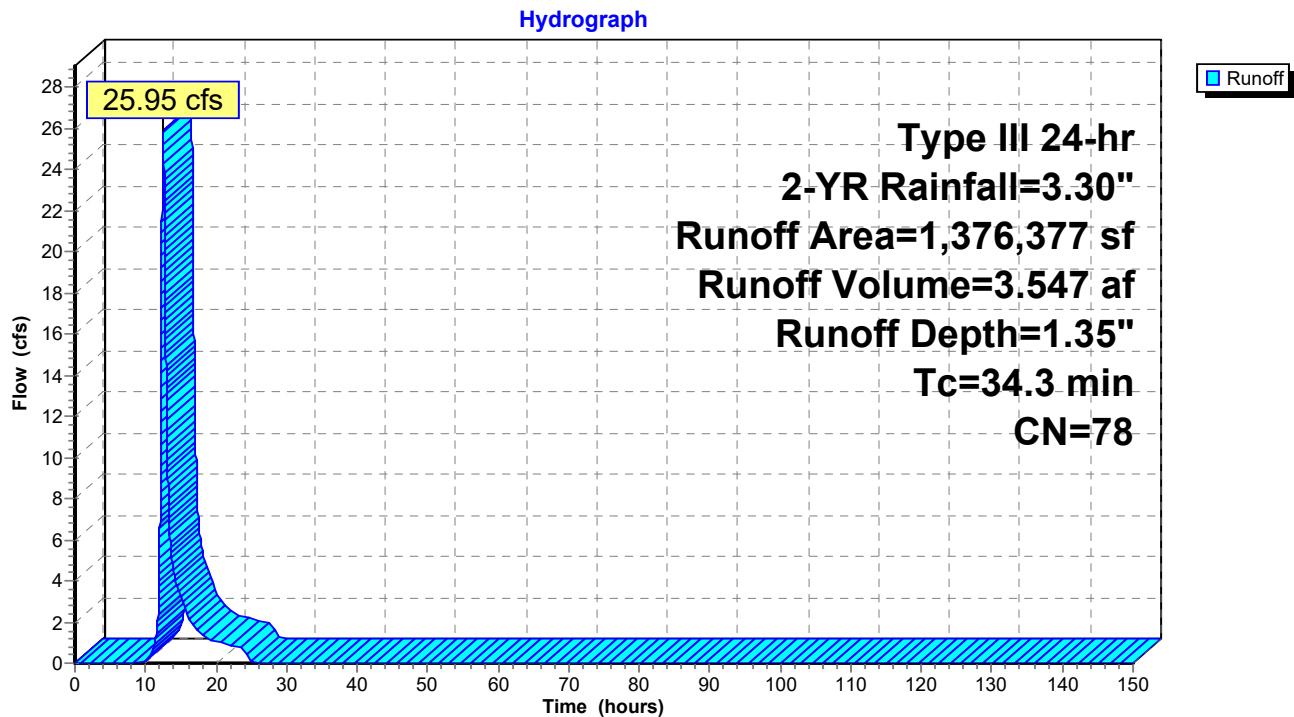
Runoff = 25.95 cfs @ 12.50 hrs, Volume= 3.547 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
101,341	55	Woods, Good, HSG B
54,646	70	Woods, Good, HSG C
10,267	82	Dirt roads, HSG B
19,599	87	Dirt roads, HSG C
134,128	61	>75% Grass cover, Good, HSG B
3,902	74	>75% Grass cover, Good, HSG C
336,623	78	Row crops, straight row, Good, HSG B
715,871	85	Row crops, straight row, Good, HSG C
1,376,377	78	Weighted Average
1,376,377		100.00% Pervious Area

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

Subcatchment 1: AREA DA-E1 TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 2: AREA DA-E2 IMP TO BE DISTURBED

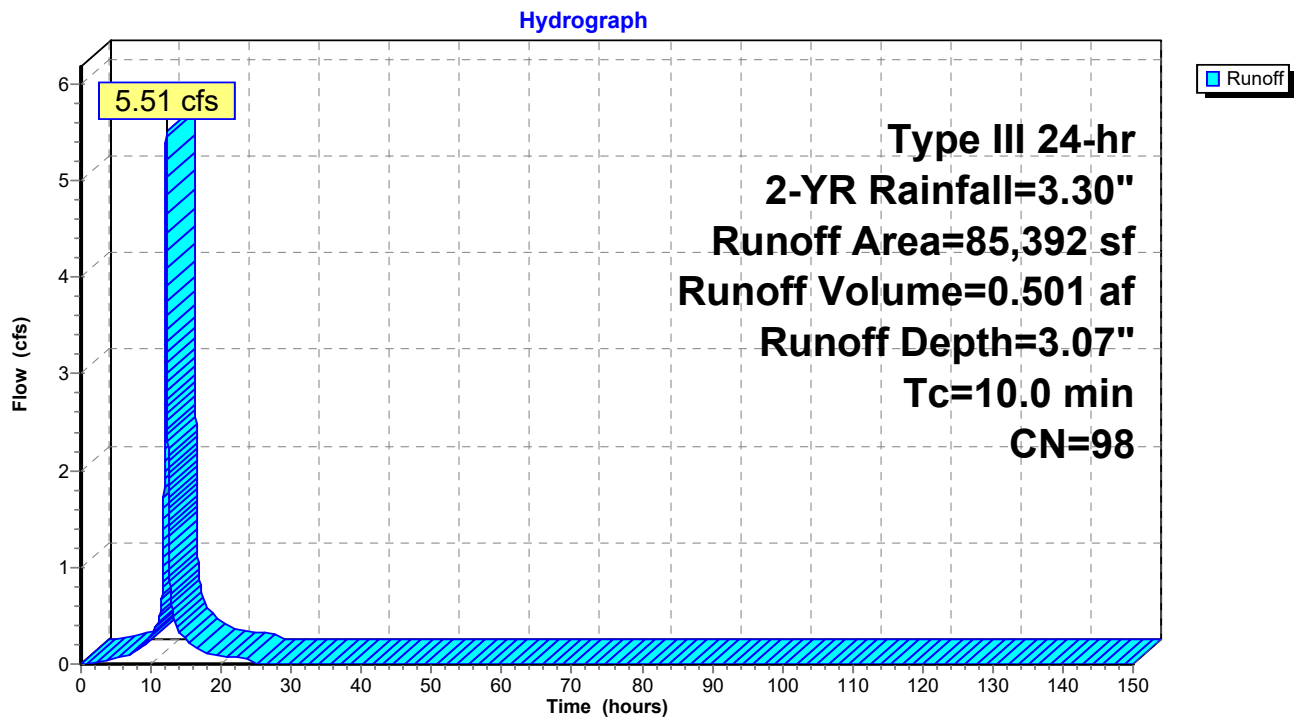
Runoff = 5.51 cfs @ 12.13 hrs, Volume= 0.501 af, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
45,253	98	Paved parking, HSG C
40,139	98	Paved parking, HSG B
85,392	98	Weighted Average
85,392		100.00% Impervious Area

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

Subcatchment 2: AREA DA-E2 IMP TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 3: AREA DA-E2 PERVIOUS TO BE DISTURBED

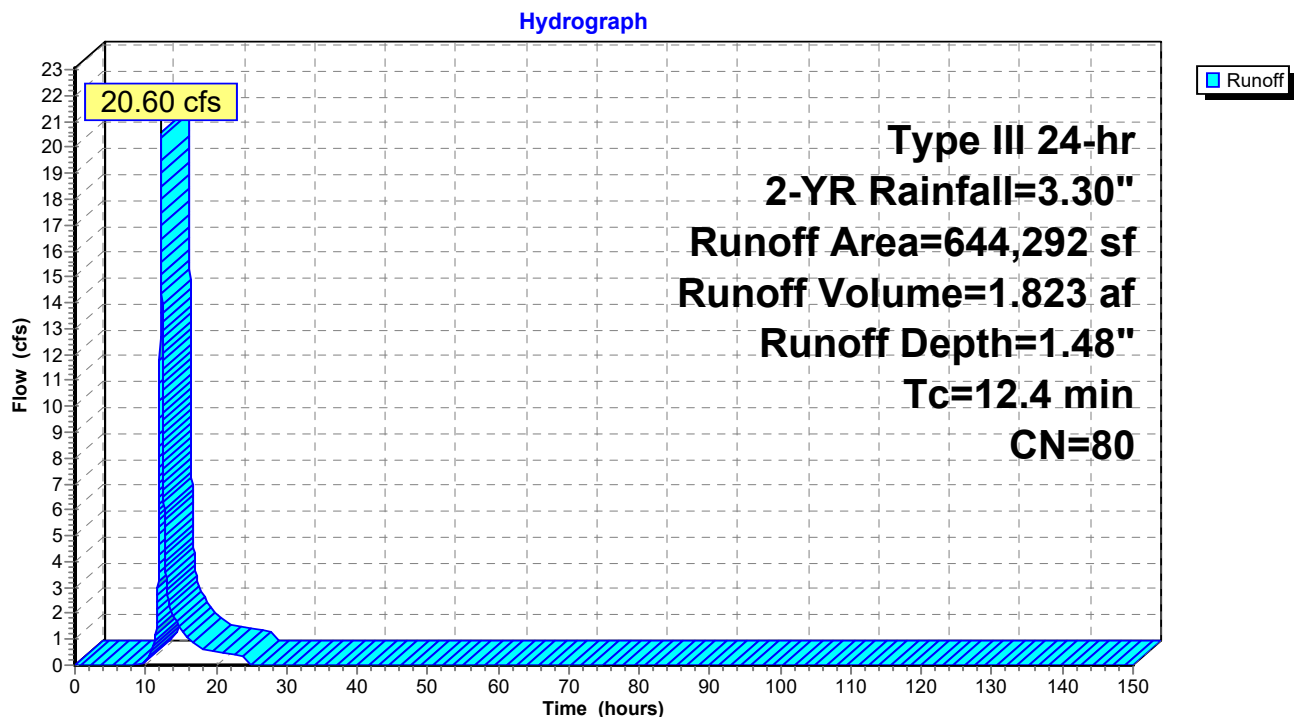
Runoff = 20.60 cfs @ 12.17 hrs, Volume= 1.823 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
28,328	70	Woods, Good, HSG C
28,191	55	Woods, Good, HSG B
437,811	85	Row crops, straight row, Good, HSG C
66,592	61	>75% Grass cover, Good, HSG B
50,611	74	>75% Grass cover, Good, HSG C
1,080	82	Dirt roads, HSG B
19,958	87	Dirt roads, HSG C
11,721	78	Row crops, straight row, Good, HSG B
644,292	80	Weighted Average
644,292		100.00% Pervious Area

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

Subcatchment 3: AREA DA-E2 PERVIOUS TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 4: AREA DA-E3 PERVIOUS TO BE DISTURBED

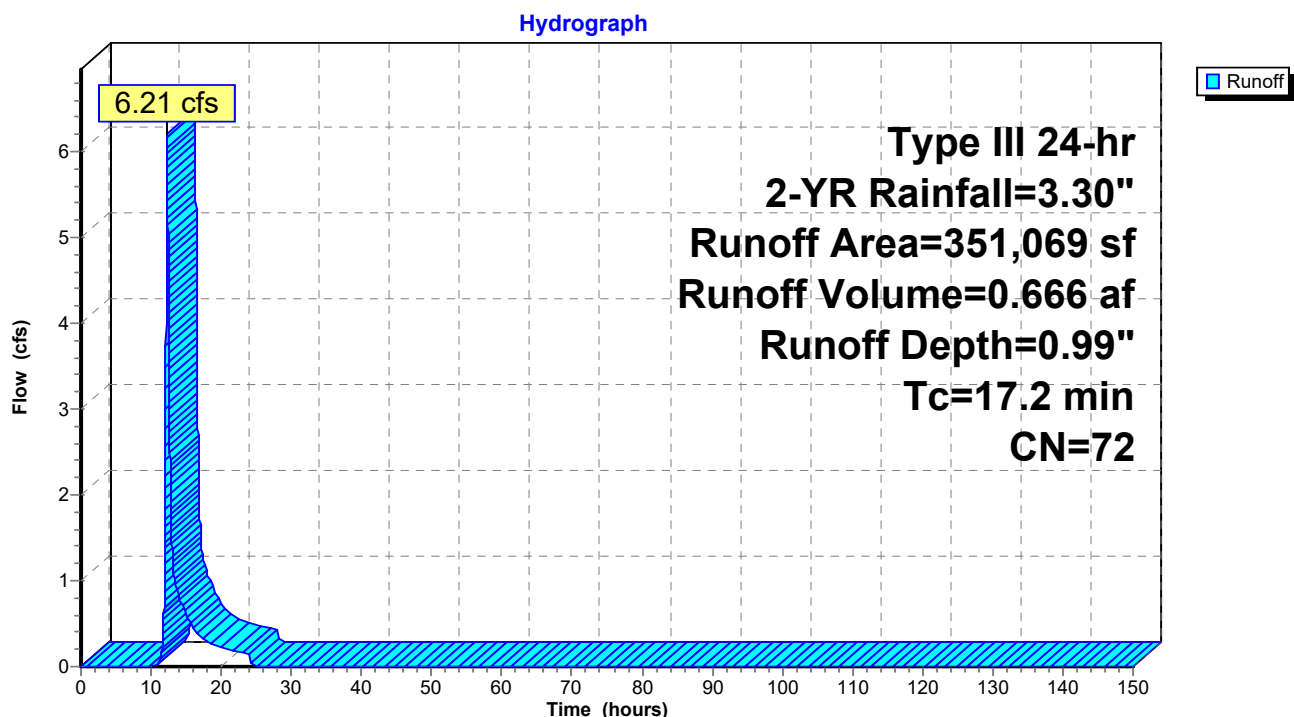
Runoff = 6.21 cfs @ 12.25 hrs, Volume= 0.666 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
65,119	55	Woods, Good, HSG B
3,315	82	Dirt roads, HSG B
10,328	85	Gravel roads, HSG B
227,686	78	Row crops, straight row, Good, HSG B
44,621	61	>75% Grass cover, Good, HSG B
351,069	72	Weighted Average
351,069		100.00% Pervious Area

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

Subcatchment 4: AREA DA-E3 PERVIOUS TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 2-YR Rainfall=3.30"

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Summary for Subcatchment 5: AREA DA-E3 IMP TO BE DISTURBED

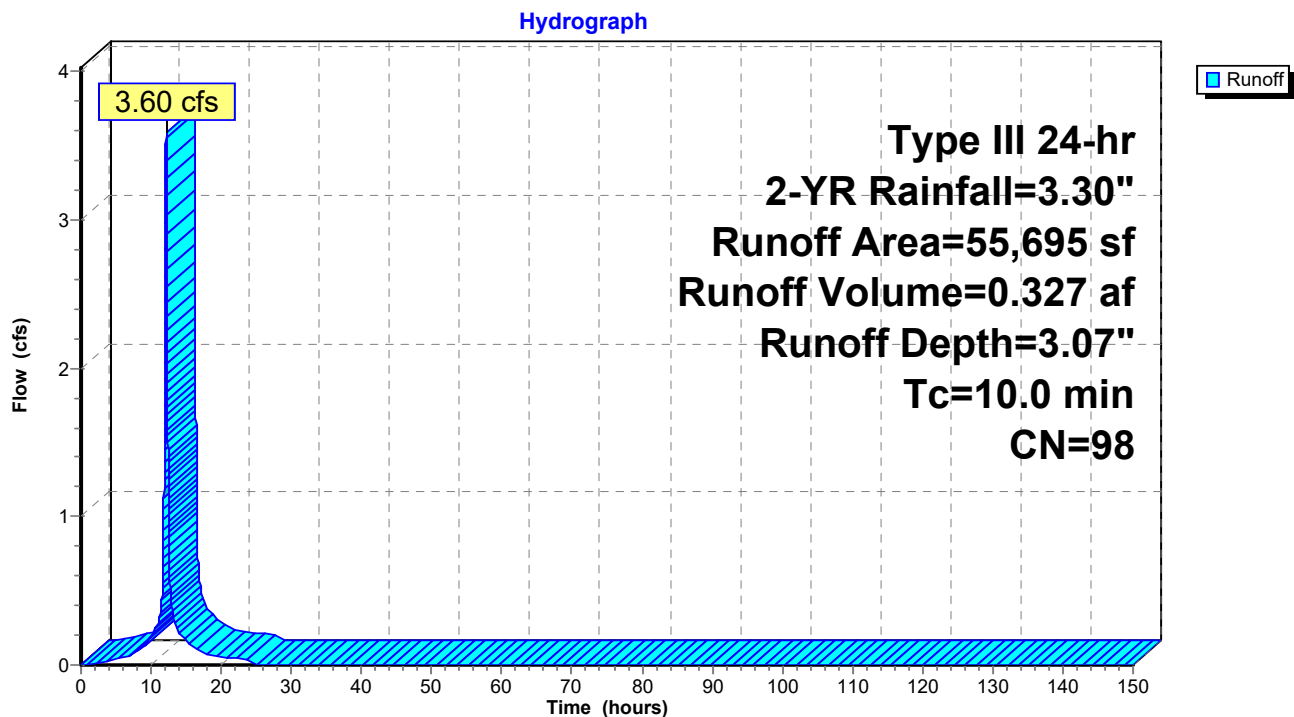
Runoff = 3.60 cfs @ 12.13 hrs, Volume= 0.327 af, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.30"

Area (sf)	CN	Description
55,695	98	Paved parking, HSG B
55,695		100.00% Impervious Area

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

Subcatchment 5: AREA DA-E3 IMP TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 2-YR Rainfall=3.30"

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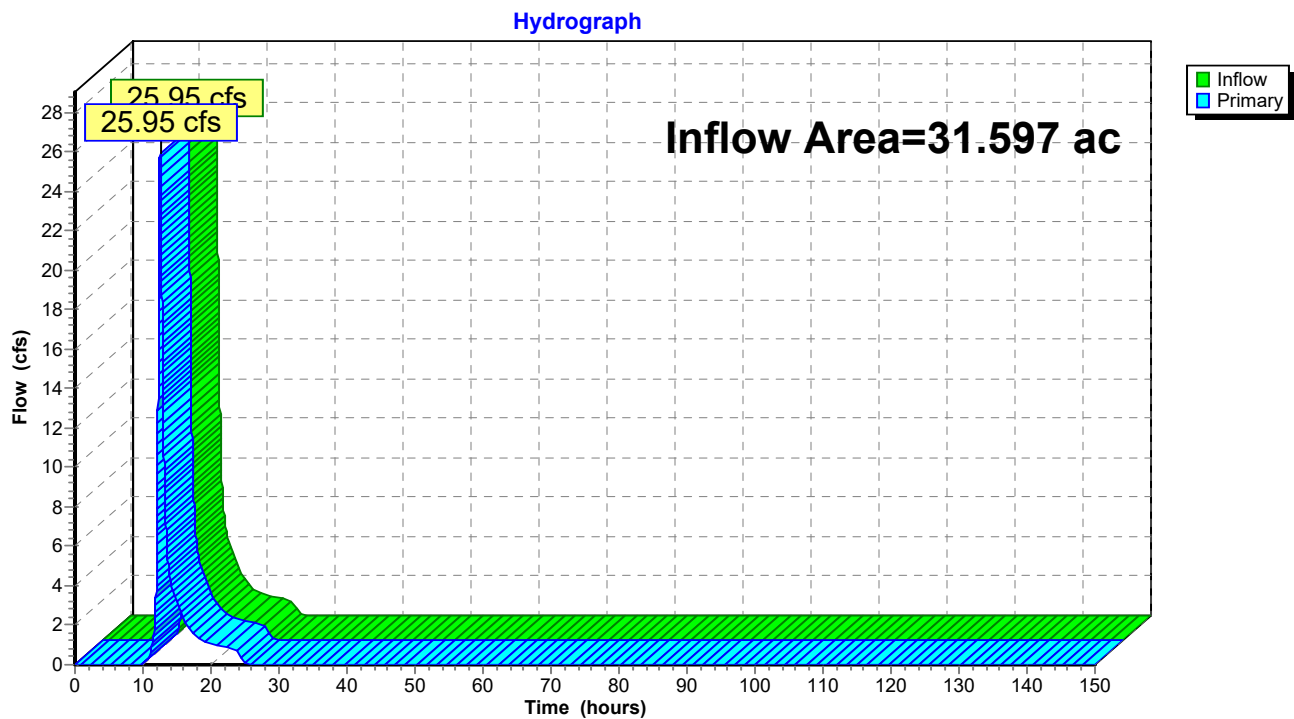
Page 7

Summary for Link R1: REACH 1 AREA TO BE DISTURBED

Inflow Area = 31.597 ac, 0.00% Impervious, Inflow Depth = 1.35" for 2-YR event
Inflow = 25.95 cfs @ 12.50 hrs, Volume= 3.547 af
Primary = 25.95 cfs @ 12.51 hrs, Volume= 3.547 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs

Link R1: REACH 1 AREA TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 2-YR Rainfall=3.30"

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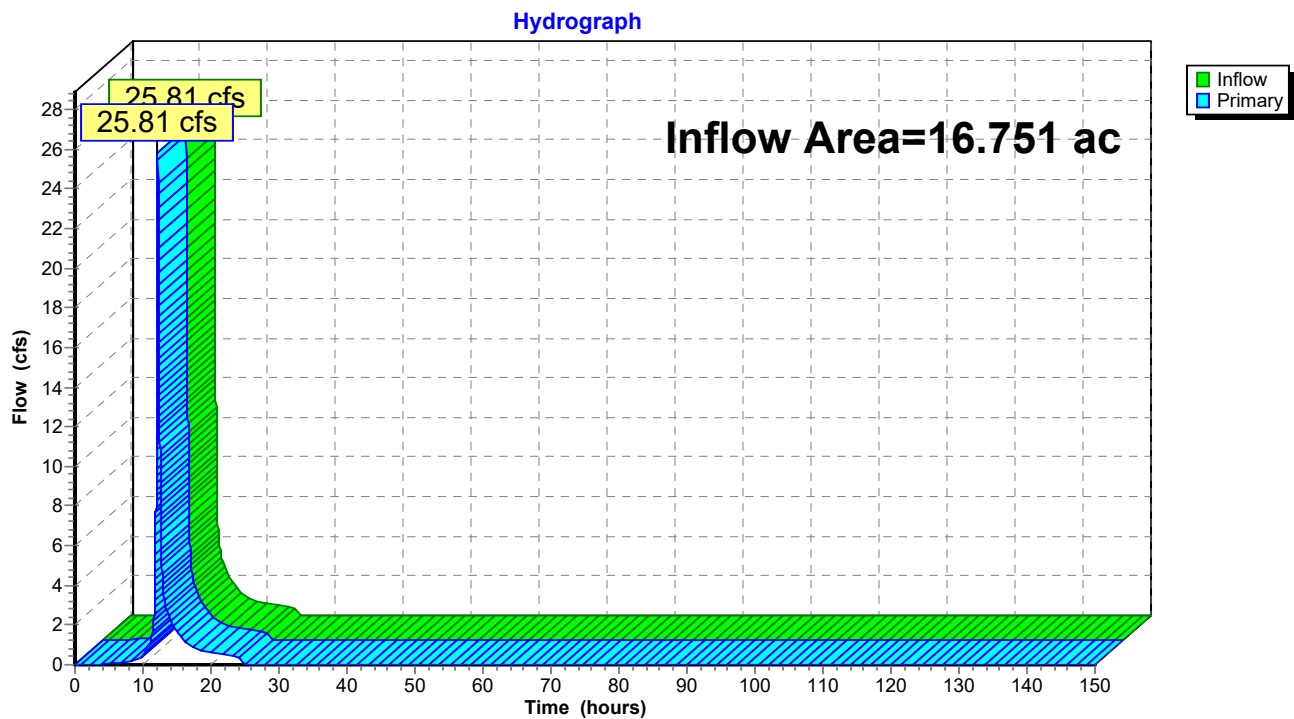
Page 8

Summary for Link R2: REACH 2 AREA TO BE DISTURBED

Inflow Area = 16.751 ac, 11.70% Impervious, Inflow Depth = 1.67" for 2-YR event
Inflow = 25.81 cfs @ 12.17 hrs, Volume= 2.324 af
Primary = 25.81 cfs @ 12.18 hrs, Volume= 2.324 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs

Link R2: REACH 2 AREA TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 2-YR Rainfall=3.30"

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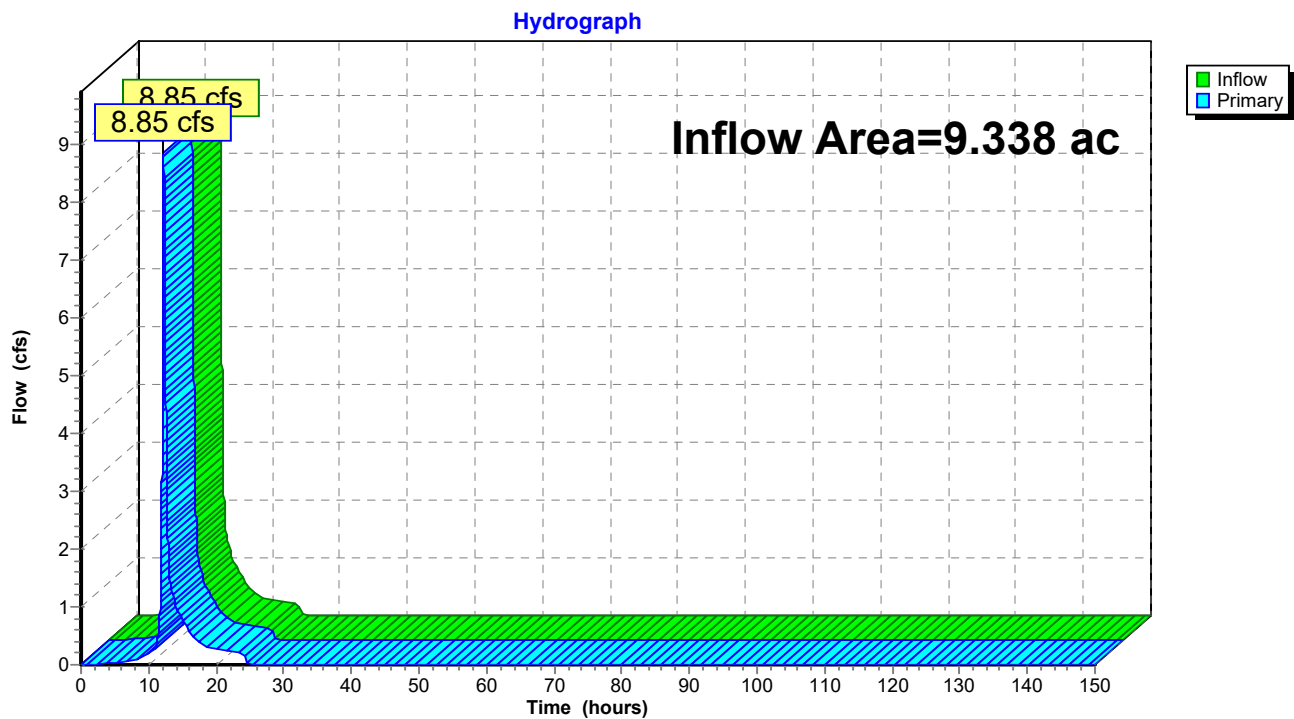
Page 9

Summary for Link R3: REACH 3 AREA TO BE DISTURBED

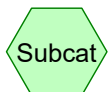
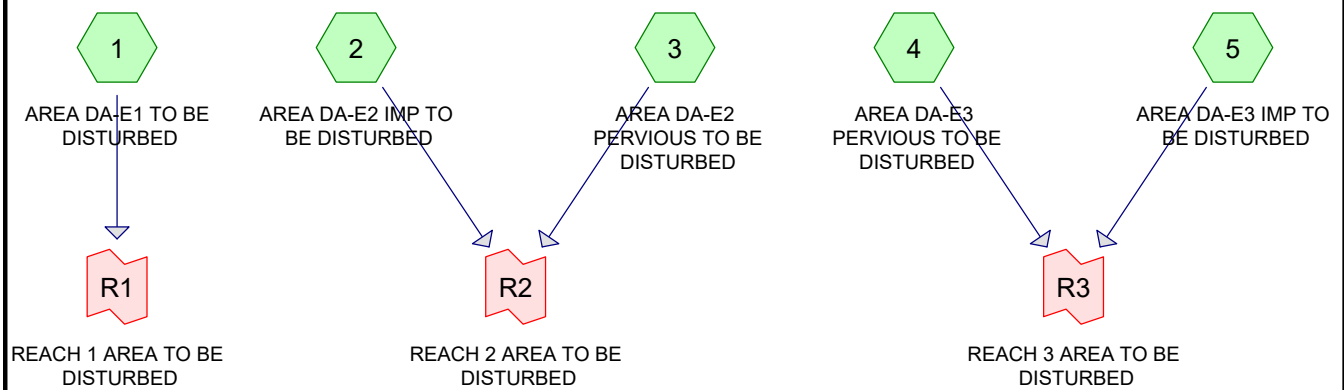
Inflow Area = 9.338 ac, 13.69% Impervious, Inflow Depth = 1.28" for 2-YR event
Inflow = 8.85 cfs @ 12.21 hrs, Volume= 0.993 af
Primary = 8.85 cfs @ 12.22 hrs, Volume= 0.993 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs

Link R3: REACH 3 AREA TO BE DISTURBED



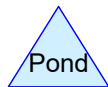
10-Year Storm Event for Reach #1, #2 & #3



Subcat



Reach



Pond



Link

Routing Diagram for FLOW FOR REDUCTION CALCS

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FLOW FOR REDUCTION CALCS

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 1: AREA DA-E1 TO BE DISTURBED

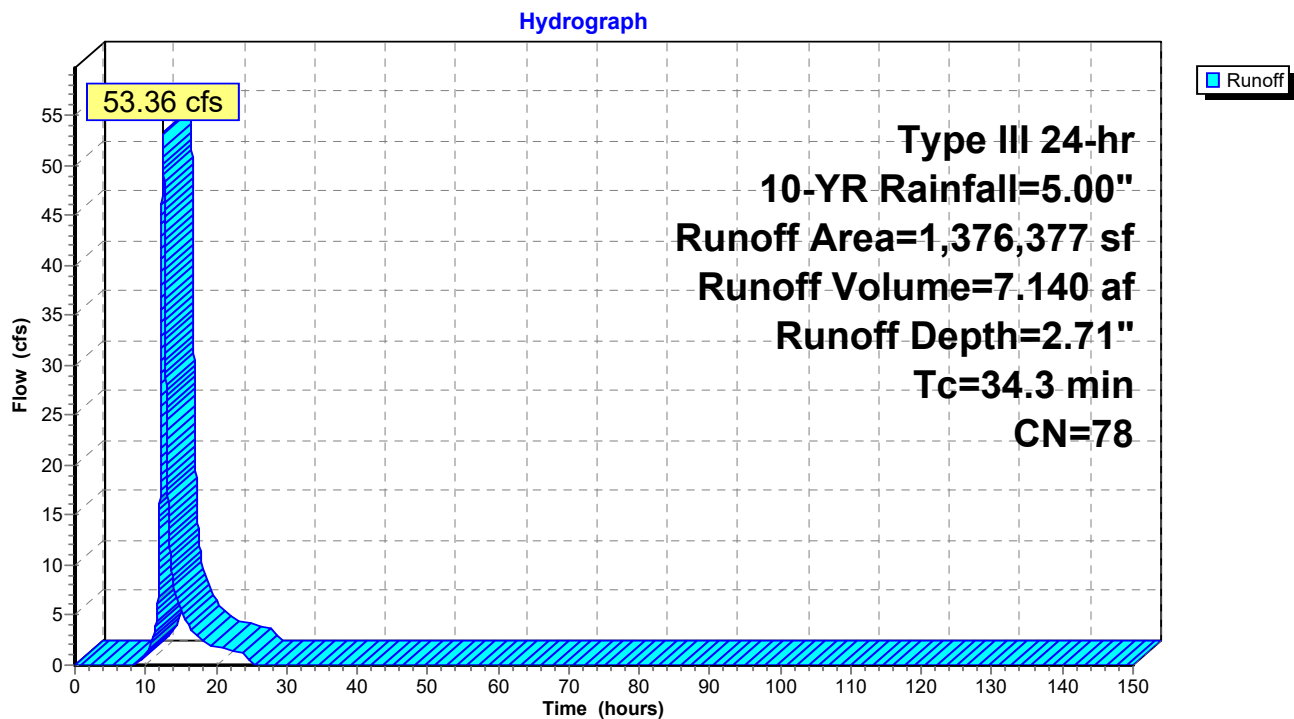
Runoff = 53.36 cfs @ 12.47 hrs, Volume= 7.140 af, Depth= 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
101,341	55	Woods, Good, HSG B
54,646	70	Woods, Good, HSG C
10,267	82	Dirt roads, HSG B
19,599	87	Dirt roads, HSG C
134,128	61	>75% Grass cover, Good, HSG B
3,902	74	>75% Grass cover, Good, HSG C
336,623	78	Row crops, straight row, Good, HSG B
715,871	85	Row crops, straight row, Good, HSG C
1,376,377	78	Weighted Average
1,376,377		100.00% Pervious Area

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

Subcatchment 1: AREA DA-E1 TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 2: AREA DA-E2 IMP TO BE DISTURBED

Runoff = 8.41 cfs @ 12.13 hrs, Volume= 0.778 af, Depth= 4.76"

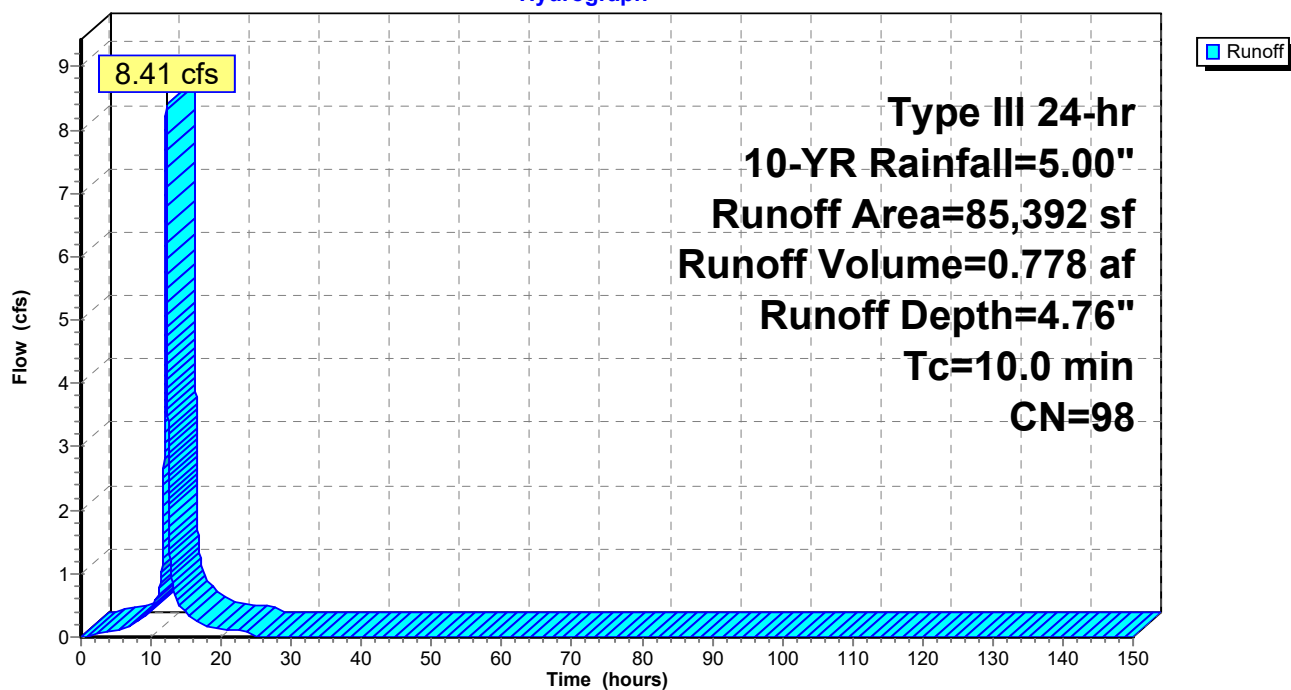
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
45,253	98	Paved parking, HSG C
40,139	98	Paved parking, HSG B
85,392	98	Weighted Average
85,392		100.00% Impervious Area

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

Subcatchment 2: AREA DA-E2 IMP TO BE DISTURBED

Hydrograph



FLOW FOR REDUCTION CALCS

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 3: AREA DA-E2 PERVIOUS TO BE DISTURBED

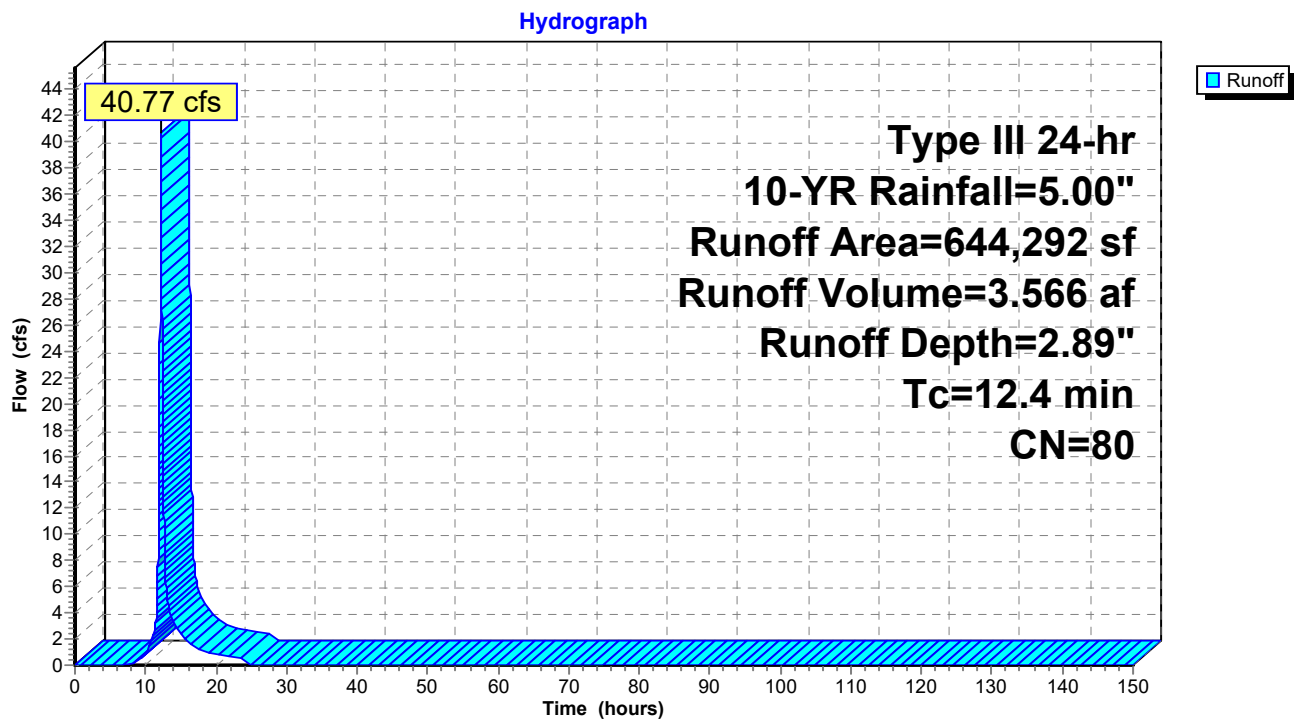
Runoff = 40.77 cfs @ 12.17 hrs, Volume= 3.566 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
28,328	70	Woods, Good, HSG C
28,191	55	Woods, Good, HSG B
437,811	85	Row crops, straight row, Good, HSG C
66,592	61	>75% Grass cover, Good, HSG B
50,611	74	>75% Grass cover, Good, HSG C
1,080	82	Dirt roads, HSG B
19,958	87	Dirt roads, HSG C
11,721	78	Row crops, straight row, Good, HSG B
644,292	80	Weighted Average
644,292		100.00% Pervious Area

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

Subcatchment 3: AREA DA-E2 PERVIOUS TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 4: AREA DA-E3 PERVIOUS TO BE DISTURBED

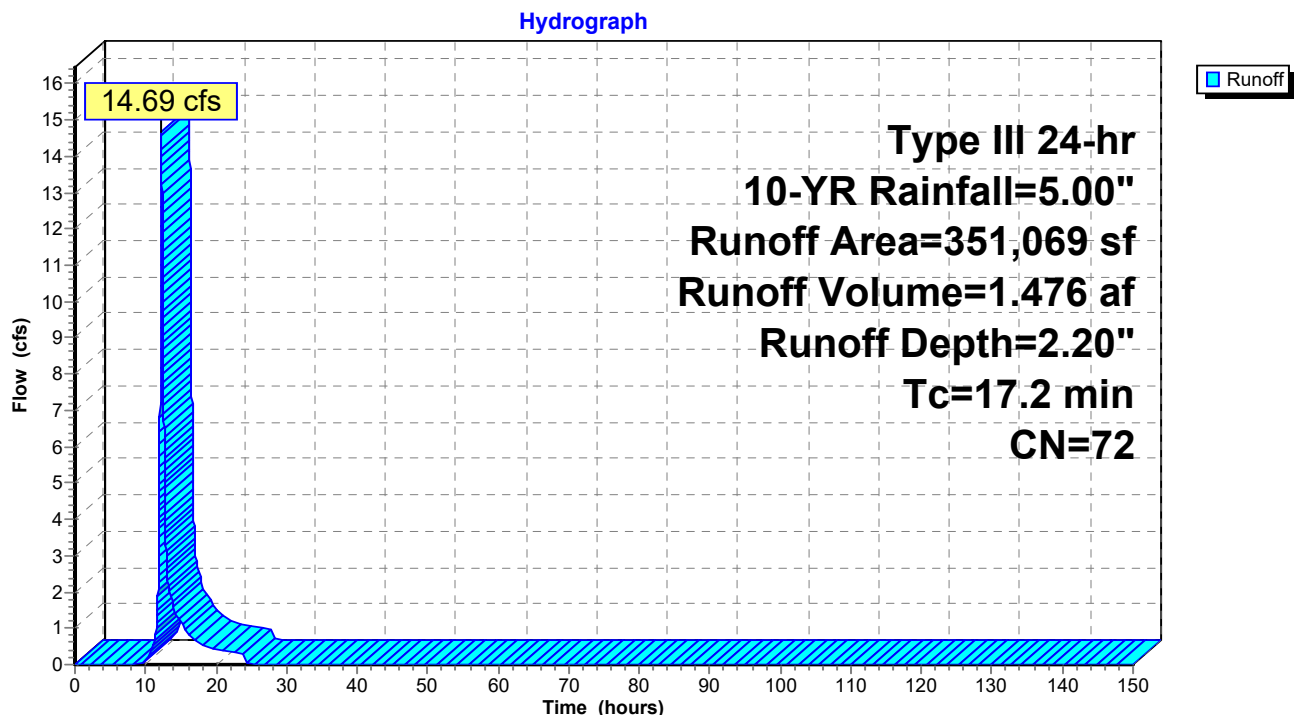
Runoff = 14.69 cfs @ 12.25 hrs, Volume= 1.476 af, Depth= 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
65,119	55	Woods, Good, HSG B
3,315	82	Dirt roads, HSG B
10,328	85	Gravel roads, HSG B
227,686	78	Row crops, straight row, Good, HSG B
44,621	61	>75% Grass cover, Good, HSG B
351,069	72	Weighted Average
351,069		100.00% Pervious Area

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

Subcatchment 4: AREA DA-E3 PERVIOUS TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 10-YR Rainfall=5.00"

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Summary for Subcatchment 5: AREA DA-E3 IMP TO BE DISTURBED

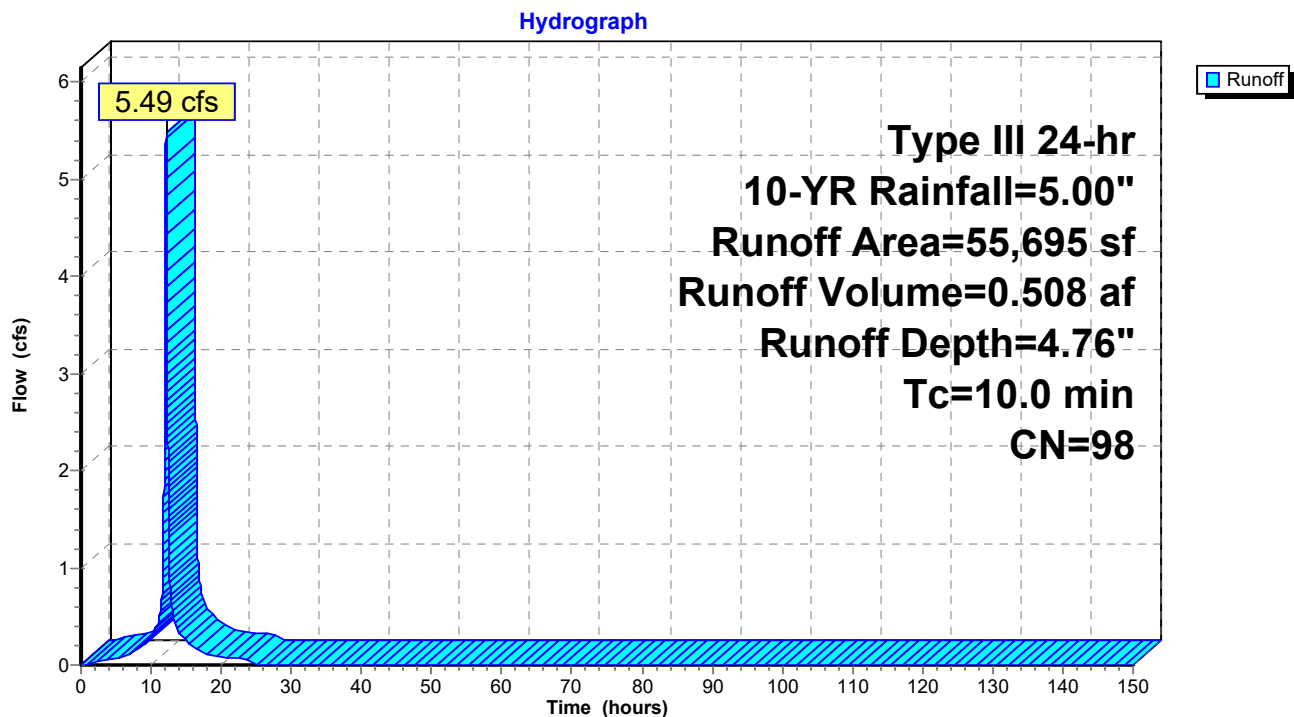
Runoff = 5.49 cfs @ 12.13 hrs, Volume= 0.508 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=5.00"

Area (sf)	CN	Description
55,695	98	Paved parking, HSG B
55,695		100.00% Impervious Area

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

Subcatchment 5: AREA DA-E3 IMP TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 10-YR Rainfall=5.00"

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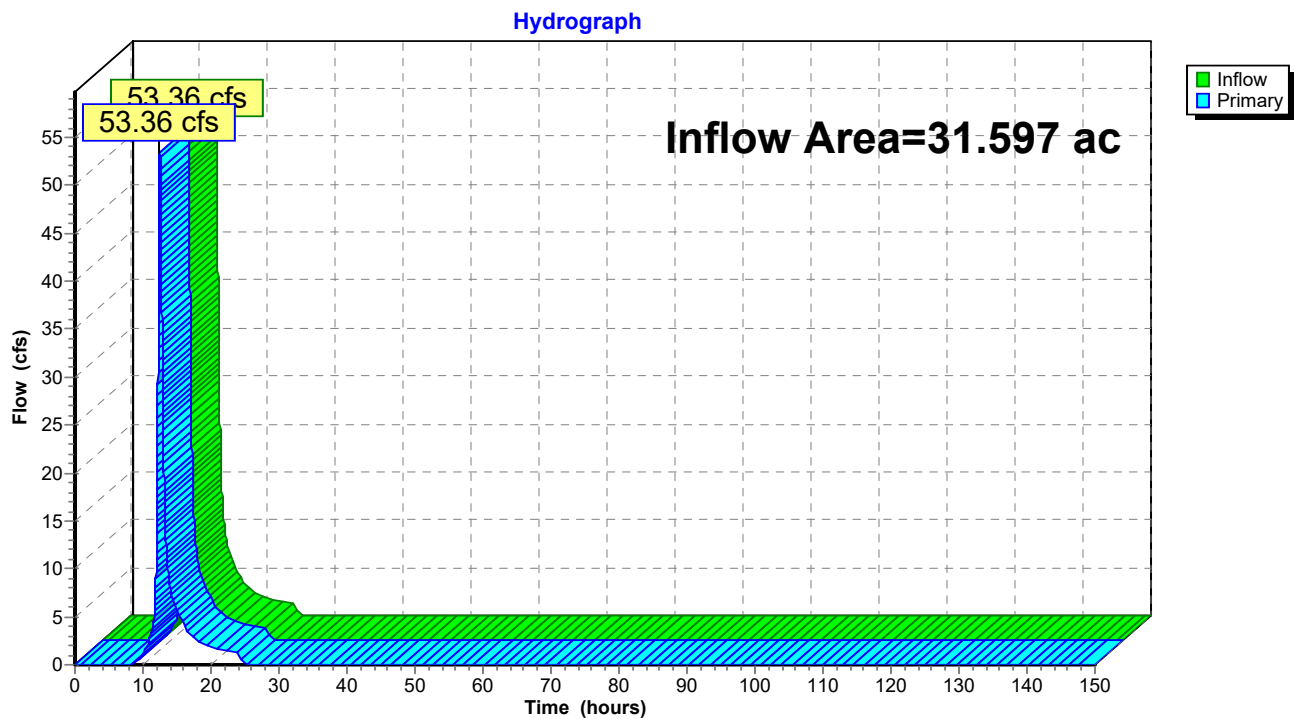
Page 15

Summary for Link R1: REACH 1 AREA TO BE DISTURBED

Inflow Area = 31.597 ac, 0.00% Impervious, Inflow Depth = 2.71" for 10-YR event
Inflow = 53.36 cfs @ 12.47 hrs, Volume= 7.140 af
Primary = 53.36 cfs @ 12.48 hrs, Volume= 7.140 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs

Link R1: REACH 1 AREA TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 10-YR Rainfall=5.00"

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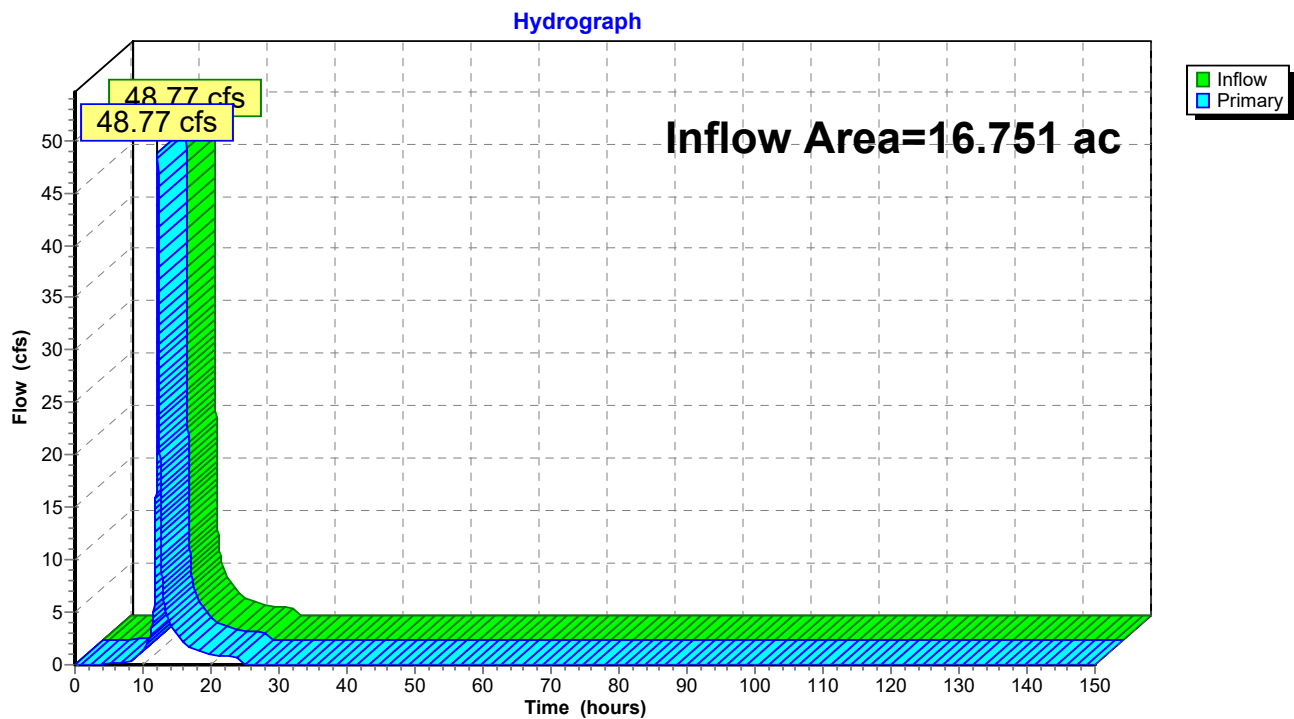
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Summary for Link R2: REACH 2 AREA TO BE DISTURBED

Inflow Area = 16.751 ac, 11.70% Impervious, Inflow Depth = 3.11" for 10-YR event
Inflow = 48.77 cfs @ 12.16 hrs, Volume= 4.344 af
Primary = 48.77 cfs @ 12.17 hrs, Volume= 4.344 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs

Link R2: REACH 2 AREA TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 10-YR Rainfall=5.00"

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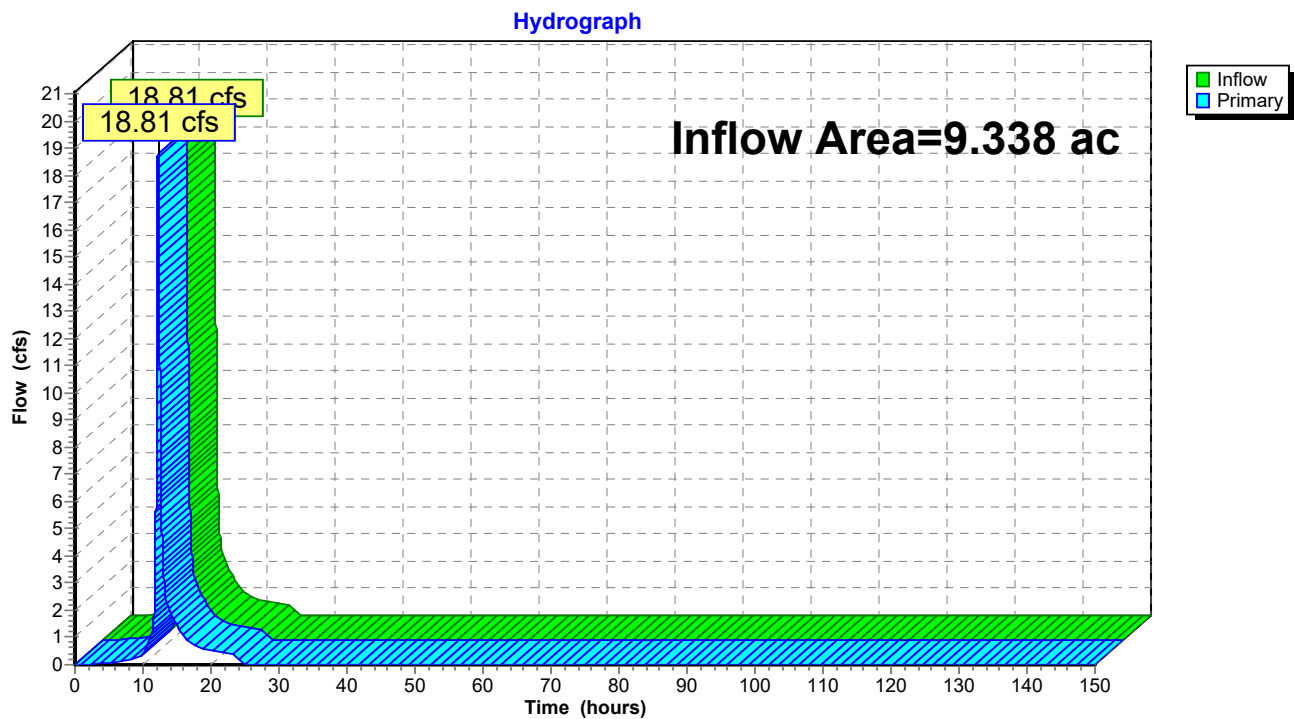
Page 17

Summary for Link R3: REACH 3 AREA TO BE DISTURBED

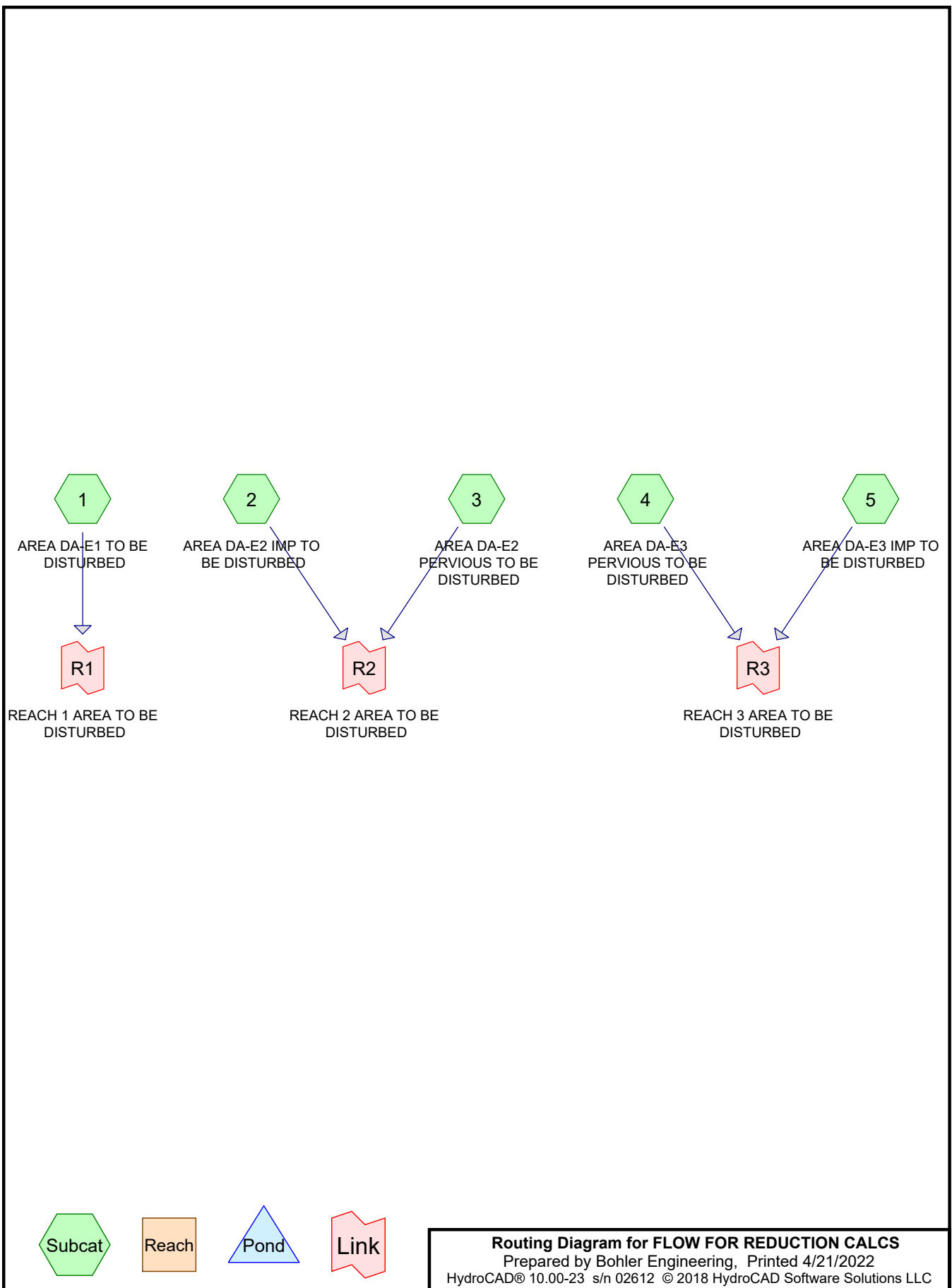
Inflow Area = 9.338 ac, 13.69% Impervious, Inflow Depth = 2.55" for 10-YR event
Inflow = 18.81 cfs @ 12.21 hrs, Volume= 1.984 af
Primary = 18.81 cfs @ 12.22 hrs, Volume= 1.984 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs

Link R3: REACH 3 AREA TO BE DISTURBED



100-Year Storm Event for Reach #1, #2 & #3



FLOW FOR REDUCTION CALCS

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 1: AREA DA-E1 TO BE DISTURBED

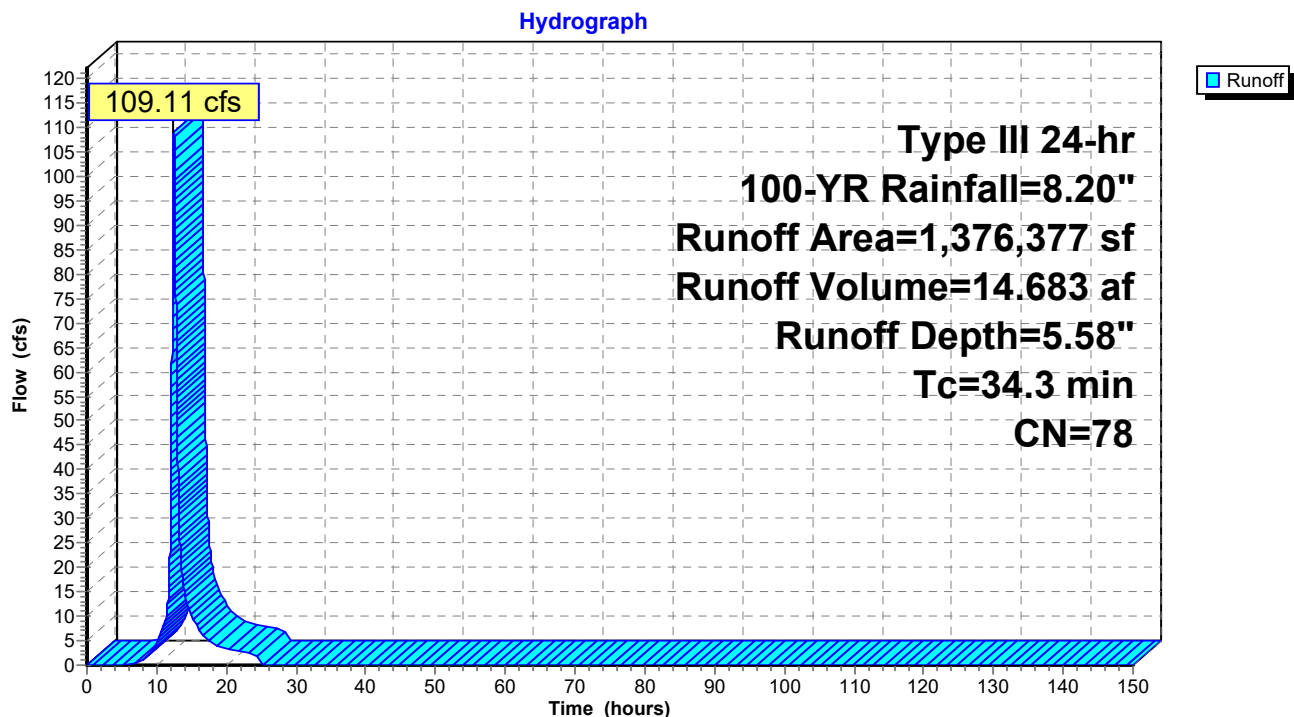
Runoff = 109.11 cfs @ 12.46 hrs, Volume= 14.683 af, Depth= 5.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
101,341	55	Woods, Good, HSG B
54,646	70	Woods, Good, HSG C
10,267	82	Dirt roads, HSG B
19,599	87	Dirt roads, HSG C
134,128	61	>75% Grass cover, Good, HSG B
3,902	74	>75% Grass cover, Good, HSG C
336,623	78	Row crops, straight row, Good, HSG B
715,871	85	Row crops, straight row, Good, HSG C
1,376,377	78	Weighted Average
1,376,377		100.00% Pervious Area

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

Subcatchment 1: AREA DA-E1 TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 2: AREA DA-E2 IMP TO BE DISTURBED

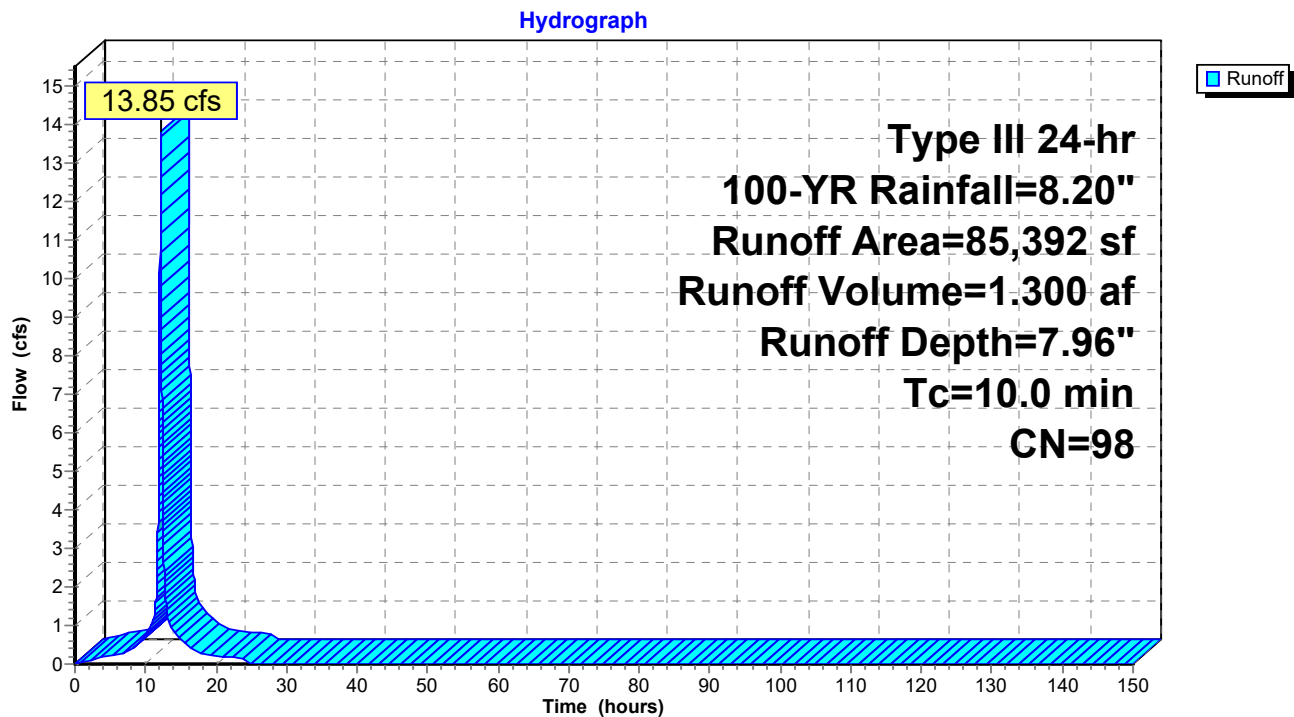
Runoff = 13.85 cfs @ 12.13 hrs, Volume= 1.300 af, Depth= 7.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
45,253	98	Paved parking, HSG C
40,139	98	Paved parking, HSG B
85,392	98	Weighted Average
85,392		100.00% Impervious Area

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

Subcatchment 2: AREA DA-E2 IMP TO BE DISTURBED



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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 3: AREA DA-E2 PERVIOUS TO BE DISTURBED

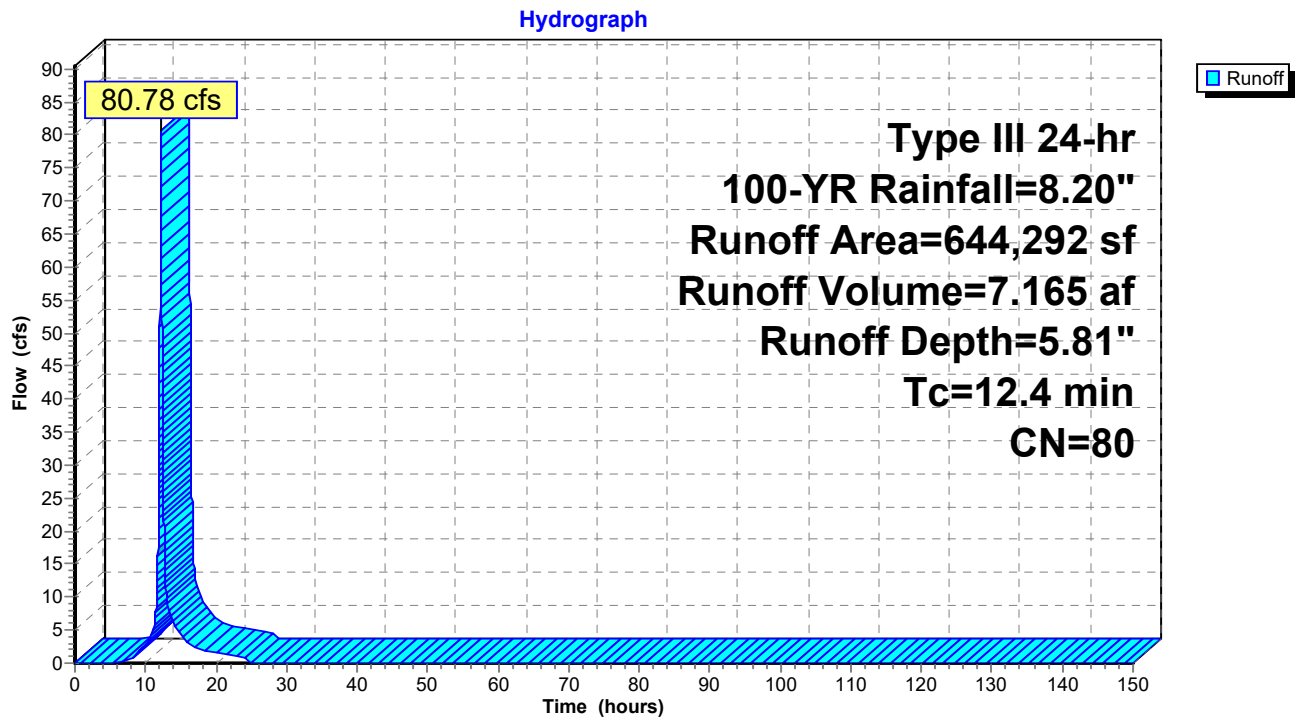
Runoff = 80.78 cfs @ 12.17 hrs, Volume= 7.165 af, Depth= 5.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
28,328	70	Woods, Good, HSG C
28,191	55	Woods, Good, HSG B
437,811	85	Row crops, straight row, Good, HSG C
66,592	61	>75% Grass cover, Good, HSG B
50,611	74	>75% Grass cover, Good, HSG C
1,080	82	Dirt roads, HSG B
19,958	87	Dirt roads, HSG C
11,721	78	Row crops, straight row, Good, HSG B
644,292	80	Weighted Average
644,292		100.00% Pervious Area

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

Subcatchment 3: AREA DA-E2 PERVIOUS TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 4: AREA DA-E3 PERVIOUS TO BE DISTURBED

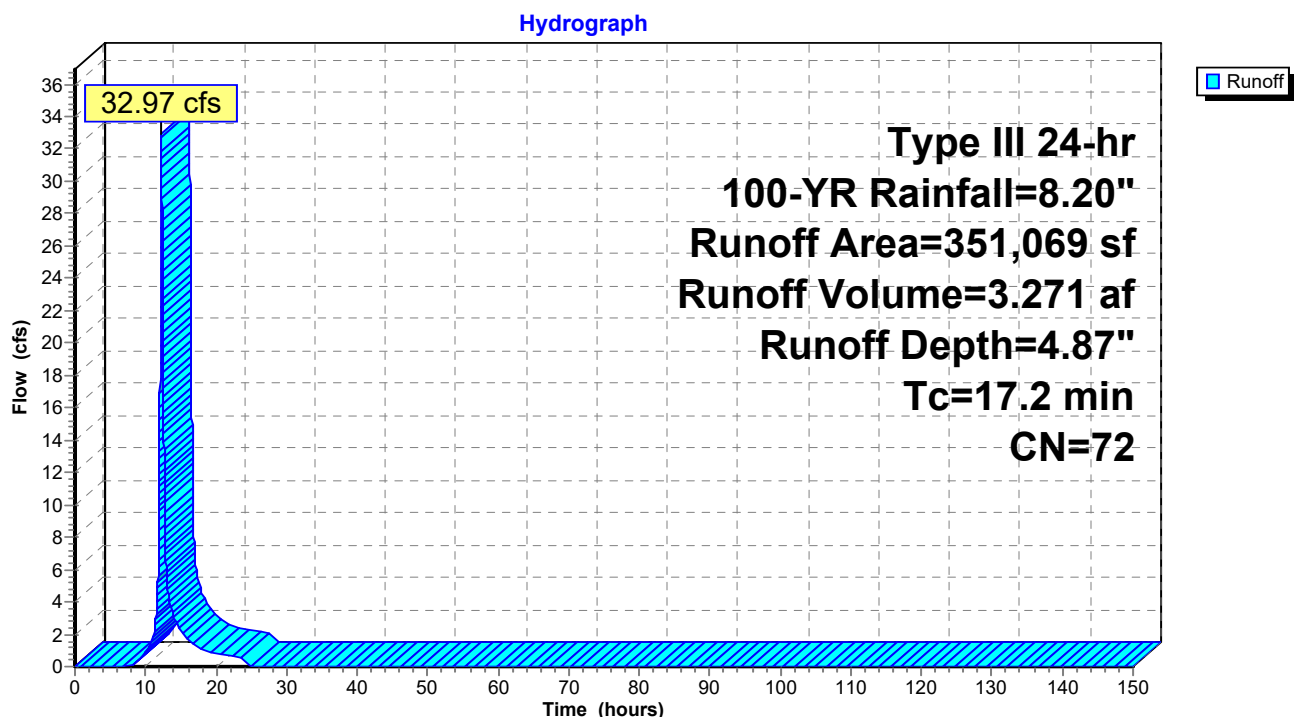
Runoff = 32.97 cfs @ 12.23 hrs, Volume= 3.271 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
65,119	55	Woods, Good, HSG B
3,315	82	Dirt roads, HSG B
10,328	85	Gravel roads, HSG B
227,686	78	Row crops, straight row, Good, HSG B
44,621	61	>75% Grass cover, Good, HSG B
351,069	72	Weighted Average
351,069		100.00% Pervious Area

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

Subcatchment 4: AREA DA-E3 PERVIOUS TO BE DISTURBED



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Type III 24-hr 100-YR Rainfall=8.20"

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Summary for Subcatchment 5: AREA DA-E3 IMP TO BE DISTURBED

Runoff = 9.03 cfs @ 12.13 hrs, Volume= 0.848 af, Depth= 7.96"

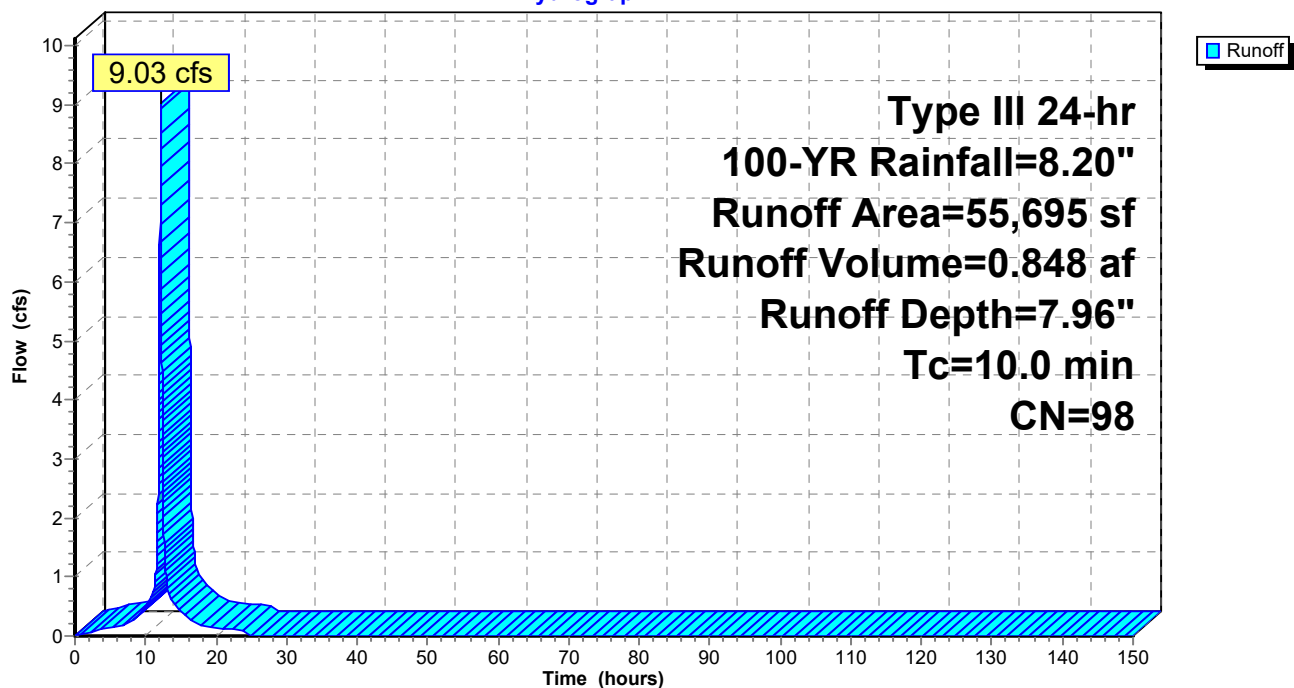
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YR Rainfall=8.20"

Area (sf)	CN	Description
55,695	98	Paved parking, HSG B
55,695		100.00% Impervious Area

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

Subcatchment 5: AREA DA-E3 IMP TO BE DISTURBED

Hydrograph



FLOW FOR REDUCTION CALCS

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Type III 24-hr 100-YR Rainfall=8.20"

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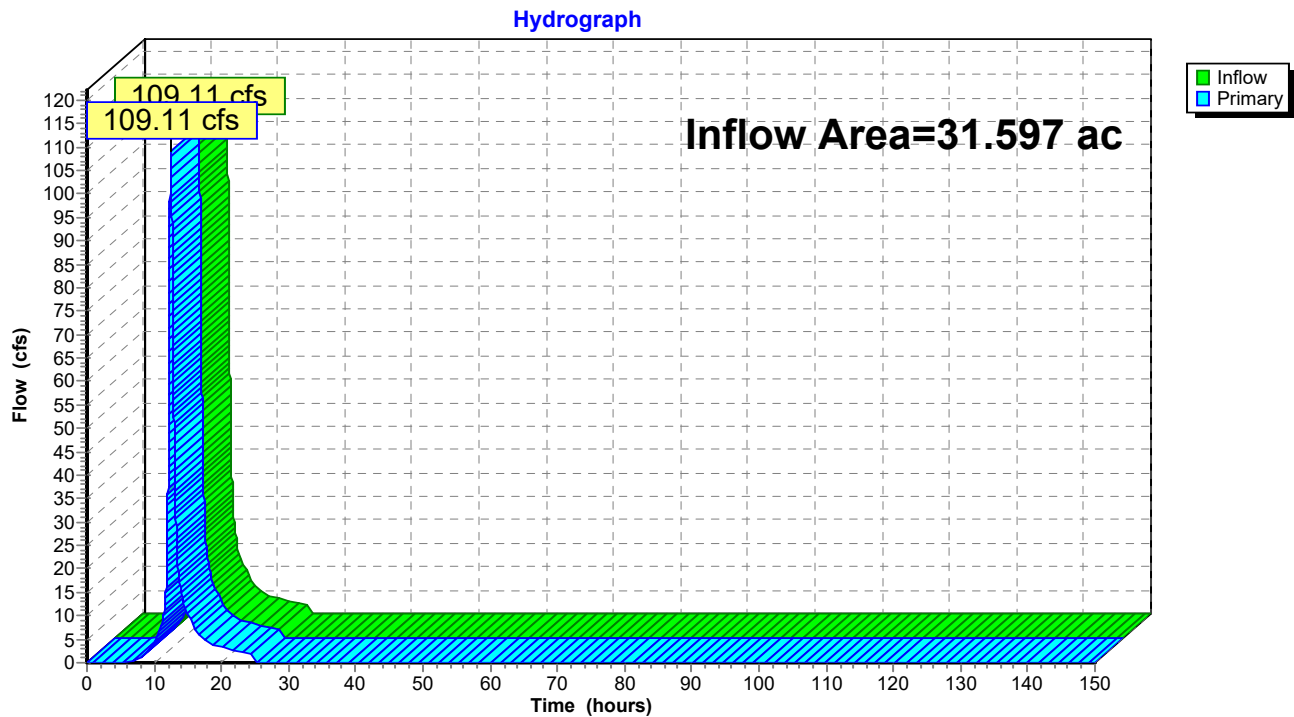
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Summary for Link R1: REACH 1 AREA TO BE DISTURBED

Inflow Area = 31.597 ac, 0.00% Impervious, Inflow Depth = 5.58" for 100-YR event
Inflow = 109.11 cfs @ 12.46 hrs, Volume= 14.683 af
Primary = 109.11 cfs @ 12.47 hrs, Volume= 14.683 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs

Link R1: REACH 1 AREA TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 100-YR Rainfall=8.20"

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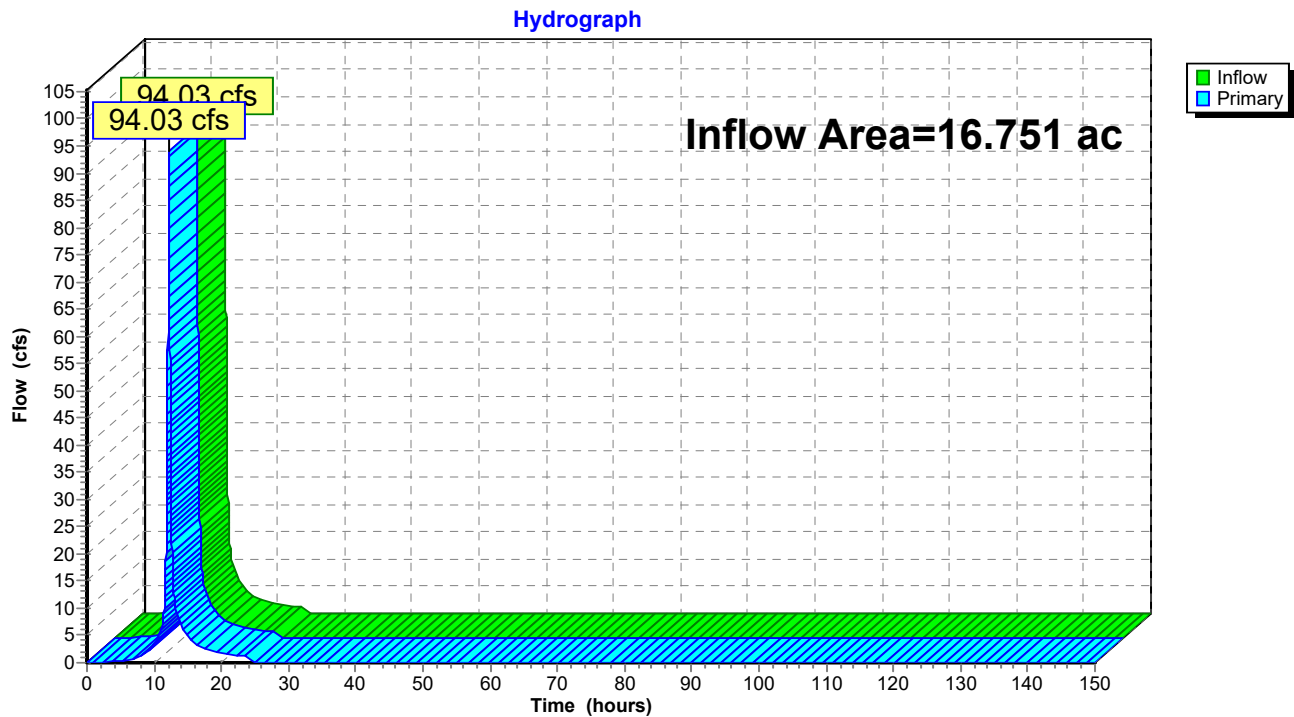
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Summary for Link R2: REACH 2 AREA TO BE DISTURBED

Inflow Area = 16.751 ac, 11.70% Impervious, Inflow Depth = 6.06" for 100-YR event
Inflow = 94.03 cfs @ 12.16 hrs, Volume= 8.465 af
Primary = 94.03 cfs @ 12.17 hrs, Volume= 8.465 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs

Link R2: REACH 2 AREA TO BE DISTURBED



FLOW FOR REDUCTION CALCS

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Type III 24-hr 100-YR Rainfall=8.20"

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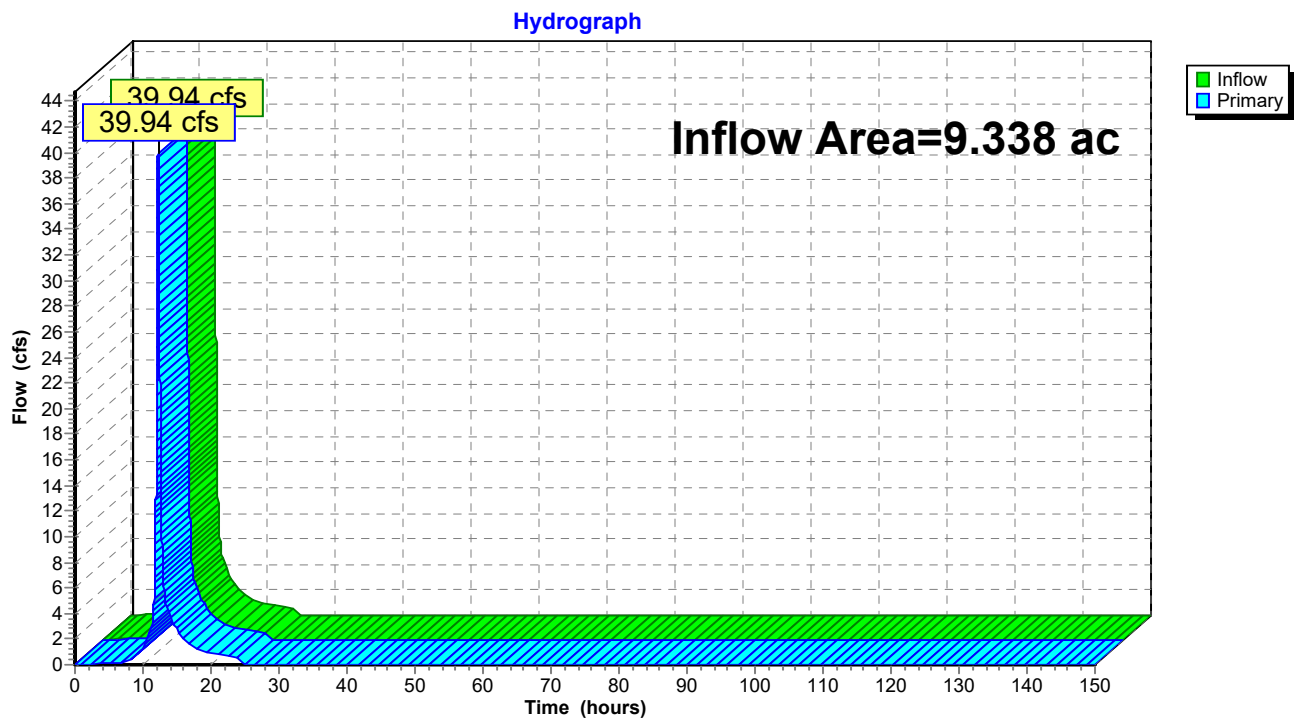
Page 25

Summary for Link R3: REACH 3 AREA TO BE DISTURBED

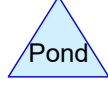
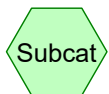
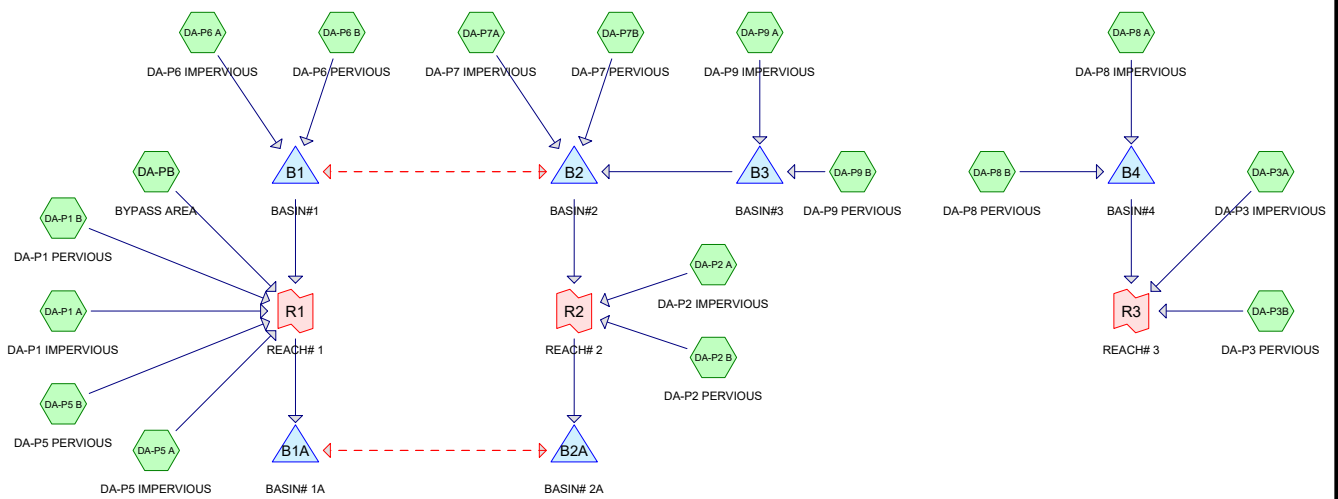
Inflow Area = 9.338 ac, 13.69% Impervious, Inflow Depth = 5.29" for 100-YR event
Inflow = 39.94 cfs @ 12.21 hrs, Volume= 4.119 af
Primary = 39.94 cfs @ 12.22 hrs, Volume= 4.119 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.01 hrs

Link R3: REACH 3 AREA TO BE DISTURBED



Water Quality Storm Event for Post-Development
Conditions



Routing Diagram for PROPOSED 2022-04
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
16.726	61	>75% Grass cover, Good, HSG B (DA-P3B, DA-P6 B, DA-P7B, DA-P8 B, DA-P9 B)
16.083	74	>75% Grass cover, Good, HSG C (DA-P1 B, DA-P2 B, DA-P5 B, DA-P6 B, DA-P7B)
0.044	82	Dirt roads, HSG B (DA-P5 B)
0.036	87	Dirt roads, HSG C (DA-P5 B)
17.558	98	Paved parking, HSG B (DA-P2 A, DA-P3A, DA-P6 A, DA-P7A, DA-P8 A, DA-P9 A)
22.103	98	Paved parking, HSG C (DA-P1 A, DA-P2 A, DA-P5 A, DA-P6 A, DA-P7A)
8.315	78	Row crops, straight row, Good, HSG B (DA-P5 B, DA-PB)
9.051	85	Row crops, straight row, Good, HSG C (DA-P5 B, DA-PB)
5.073	55	Woods, Good, HSG B (DA-P3B, DA-P6 B)
94.988	82	TOTAL AREA

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Runoff = 1.29 cfs @ 1.15 hrs, Volume= 0.043 af, Depth= 1.03"

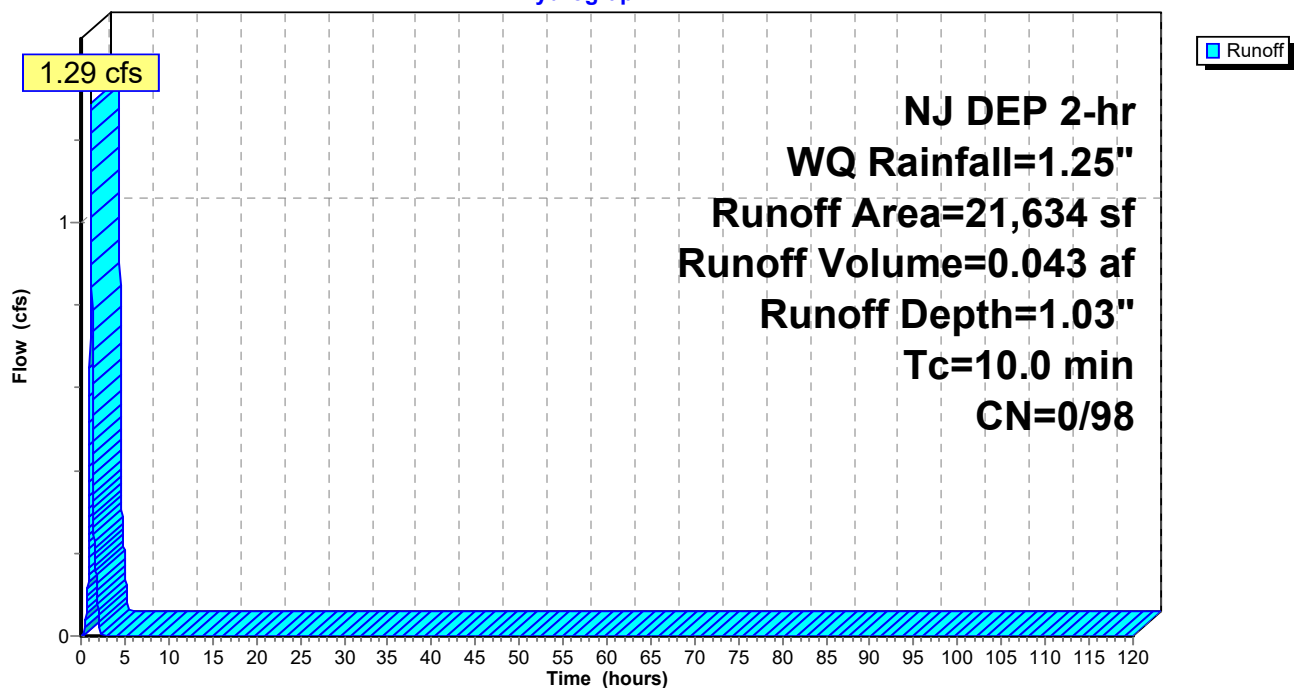
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
21,634	98	Paved parking, HSG C
21,634		100.00% Impervious Area

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

Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
15.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
25.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
35.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
45.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
55.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
65.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
75.00	1.25	0.00	1.03	0.00
80.00	1.25	0.00	1.03	0.00
85.00	1.25	0.00	1.03	0.00
90.00	1.25	0.00	1.03	0.00
95.00	1.25	0.00	1.03	0.00
100.00	1.25	0.00	1.03	0.00
105.00	1.25	0.00	1.03	0.00
110.00	1.25	0.00	1.03	0.00
115.00	1.25	0.00	1.03	0.00
120.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Runoff = 0.29 cfs @ 1.26 hrs, Volume= 0.014 af, Depth= 0.07"

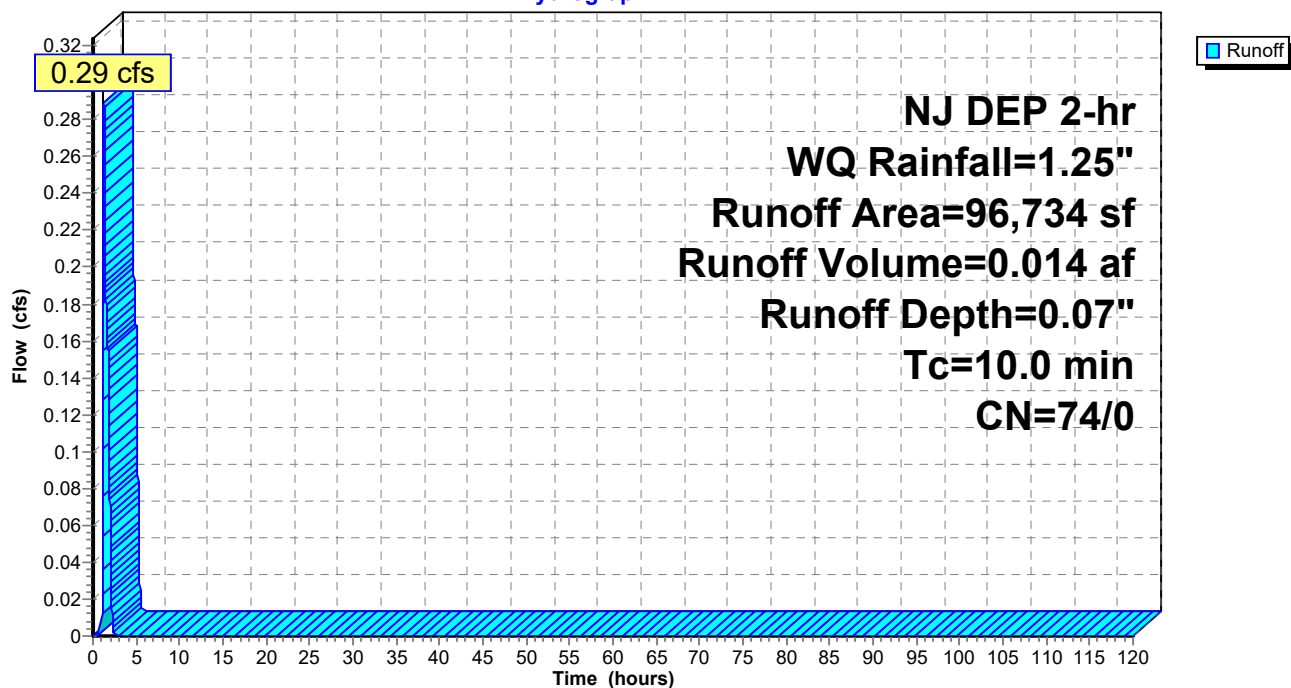
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
96,734	74	>75% Grass cover, Good, HSG C
96,734		100.00% Pervious Area

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

Subcatchment DA-P1 B: DA-P1 PERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.07	0.00	0.00
10.00	1.25	0.07	0.00	0.00
15.00	1.25	0.07	0.00	0.00
20.00	1.25	0.07	0.00	0.00
25.00	1.25	0.07	0.00	0.00
30.00	1.25	0.07	0.00	0.00
35.00	1.25	0.07	0.00	0.00
40.00	1.25	0.07	0.00	0.00
45.00	1.25	0.07	0.00	0.00
50.00	1.25	0.07	0.00	0.00
55.00	1.25	0.07	0.00	0.00
60.00	1.25	0.07	0.00	0.00
65.00	1.25	0.07	0.00	0.00
70.00	1.25	0.07	0.00	0.00
75.00	1.25	0.07	0.00	0.00
80.00	1.25	0.07	0.00	0.00
85.00	1.25	0.07	0.00	0.00
90.00	1.25	0.07	0.00	0.00
95.00	1.25	0.07	0.00	0.00
100.00	1.25	0.07	0.00	0.00
105.00	1.25	0.07	0.00	0.00
110.00	1.25	0.07	0.00	0.00
115.00	1.25	0.07	0.00	0.00
120.00	1.25	0.07	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Runoff = 3.79 cfs @ 1.15 hrs, Volume= 0.125 af, Depth= 1.03"

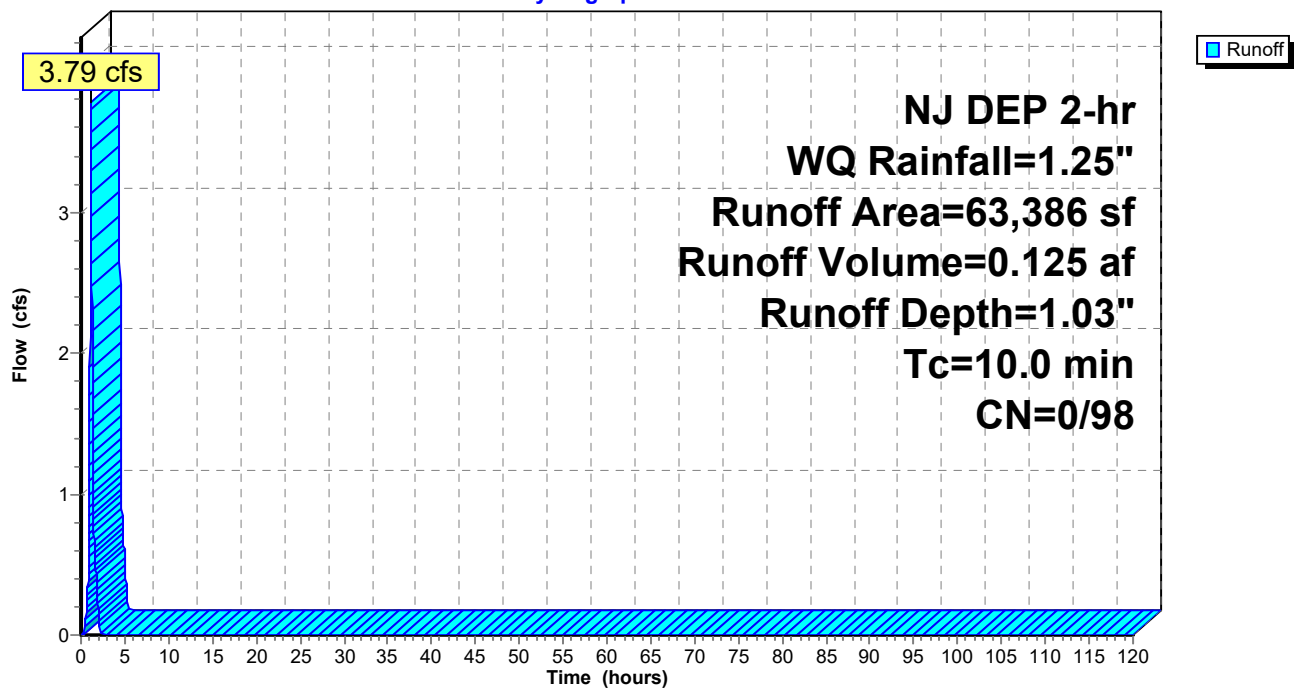
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
4,912	98	Paved parking, HSG B
58,474	98	Paved parking, HSG C
63,386	98	Weighted Average
63,386		100.00% Impervious Area

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

Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
15.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
25.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
35.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
45.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
55.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
65.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
75.00	1.25	0.00	1.03	0.00
80.00	1.25	0.00	1.03	0.00
85.00	1.25	0.00	1.03	0.00
90.00	1.25	0.00	1.03	0.00
95.00	1.25	0.00	1.03	0.00
100.00	1.25	0.00	1.03	0.00
105.00	1.25	0.00	1.03	0.00
110.00	1.25	0.00	1.03	0.00
115.00	1.25	0.00	1.03	0.00
120.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Runoff = 0.74 cfs @ 1.26 hrs, Volume= 0.035 af, Depth= 0.07"

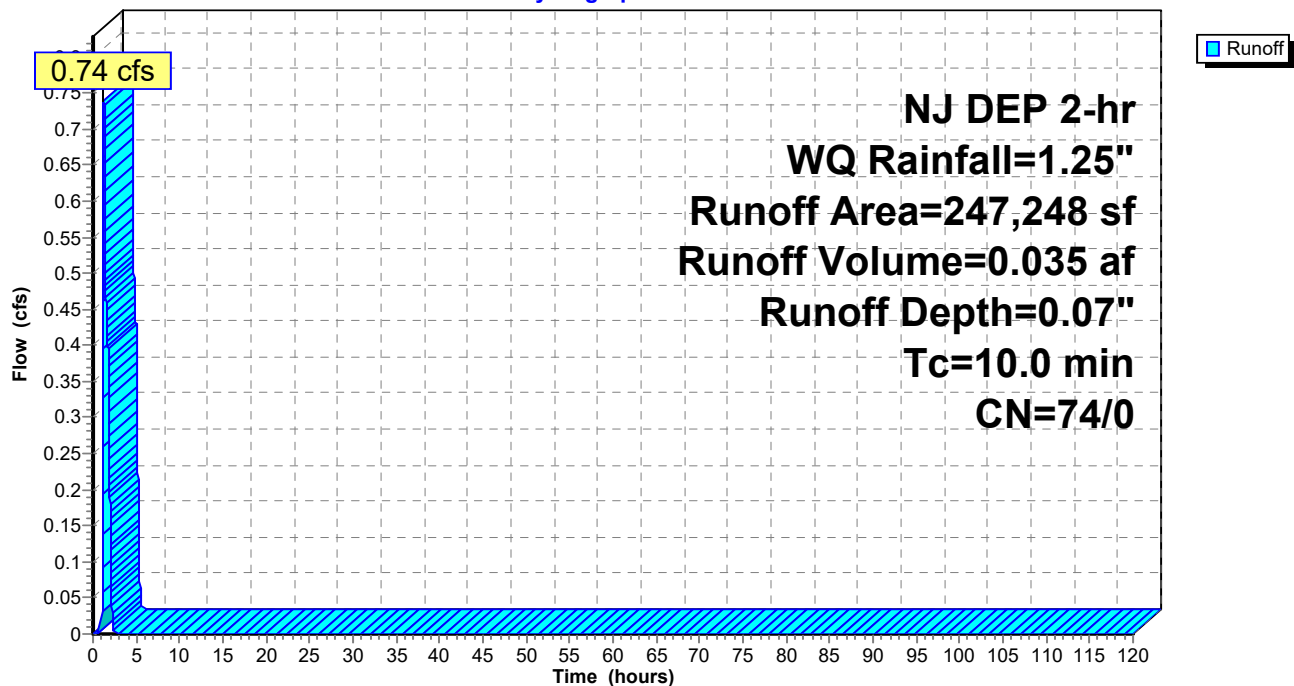
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
247,248	74	>75% Grass cover, Good, HSG C
247,248		100.00% Pervious Area

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

Subcatchment DA-P2 B: DA-P2 PERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.07	0.00	0.00
10.00	1.25	0.07	0.00	0.00
15.00	1.25	0.07	0.00	0.00
20.00	1.25	0.07	0.00	0.00
25.00	1.25	0.07	0.00	0.00
30.00	1.25	0.07	0.00	0.00
35.00	1.25	0.07	0.00	0.00
40.00	1.25	0.07	0.00	0.00
45.00	1.25	0.07	0.00	0.00
50.00	1.25	0.07	0.00	0.00
55.00	1.25	0.07	0.00	0.00
60.00	1.25	0.07	0.00	0.00
65.00	1.25	0.07	0.00	0.00
70.00	1.25	0.07	0.00	0.00
75.00	1.25	0.07	0.00	0.00
80.00	1.25	0.07	0.00	0.00
85.00	1.25	0.07	0.00	0.00
90.00	1.25	0.07	0.00	0.00
95.00	1.25	0.07	0.00	0.00
100.00	1.25	0.07	0.00	0.00
105.00	1.25	0.07	0.00	0.00
110.00	1.25	0.07	0.00	0.00
115.00	1.25	0.07	0.00	0.00
120.00	1.25	0.07	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Runoff = 9.01 cfs @ 1.15 hrs, Volume= 0.299 af, Depth= 1.03"

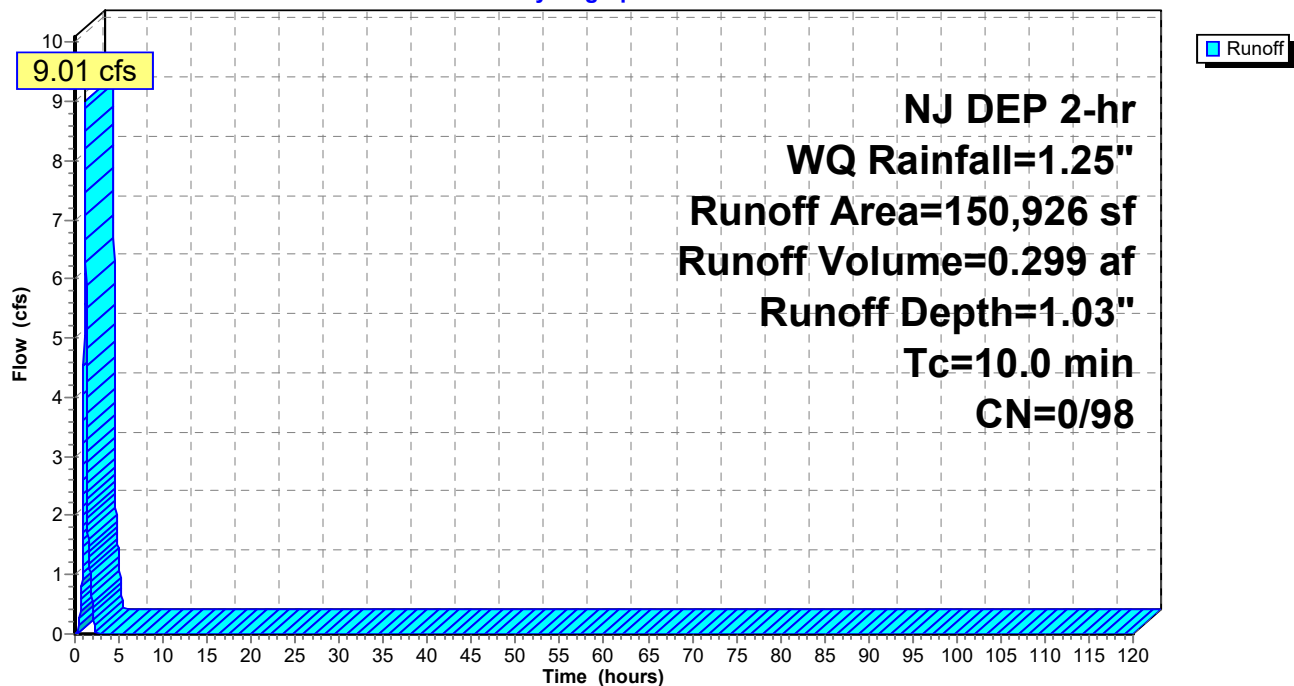
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
150,926	98	Paved parking, HSG B
150,926		100.00% Impervious Area

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

Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
15.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
25.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
35.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
45.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
55.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
65.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
75.00	1.25	0.00	1.03	0.00
80.00	1.25	0.00	1.03	0.00
85.00	1.25	0.00	1.03	0.00
90.00	1.25	0.00	1.03	0.00
95.00	1.25	0.00	1.03	0.00
100.00	1.25	0.00	1.03	0.00
105.00	1.25	0.00	1.03	0.00
110.00	1.25	0.00	1.03	0.00
115.00	1.25	0.00	1.03	0.00
120.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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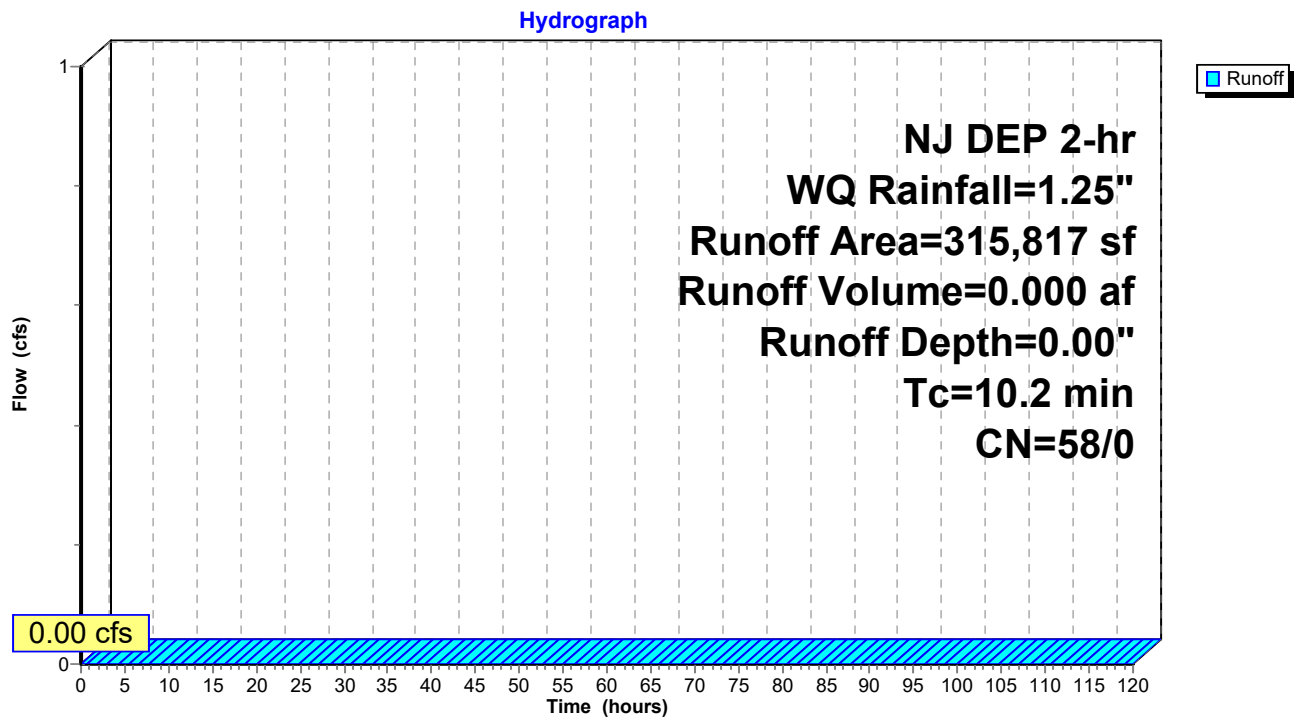
Summary for Subcatchment DA-P3B: DA-P3 PERVIOUS

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
176,919	61	>75% Grass cover, Good, HSG B
138,898	55	Woods, Good, HSG B
315,817	58	Weighted Average
315,817		100.00% Pervious Area

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

Subcatchment DA-P3B: DA-P3 PERVIOUS

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Hydrograph for Subcatchment DA-P3B: DA-P3 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	0.00	0.00
10.00	1.25	0.00	0.00	0.00
15.00	1.25	0.00	0.00	0.00
20.00	1.25	0.00	0.00	0.00
25.00	1.25	0.00	0.00	0.00
30.00	1.25	0.00	0.00	0.00
35.00	1.25	0.00	0.00	0.00
40.00	1.25	0.00	0.00	0.00
45.00	1.25	0.00	0.00	0.00
50.00	1.25	0.00	0.00	0.00
55.00	1.25	0.00	0.00	0.00
60.00	1.25	0.00	0.00	0.00
65.00	1.25	0.00	0.00	0.00
70.00	1.25	0.00	0.00	0.00
75.00	1.25	0.00	0.00	0.00
80.00	1.25	0.00	0.00	0.00
85.00	1.25	0.00	0.00	0.00
90.00	1.25	0.00	0.00	0.00
95.00	1.25	0.00	0.00	0.00
100.00	1.25	0.00	0.00	0.00
105.00	1.25	0.00	0.00	0.00
110.00	1.25	0.00	0.00	0.00
115.00	1.25	0.00	0.00	0.00
120.00	1.25	0.00	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Runoff = 1.09 cfs @ 1.15 hrs, Volume= 0.036 af, Depth= 1.03"

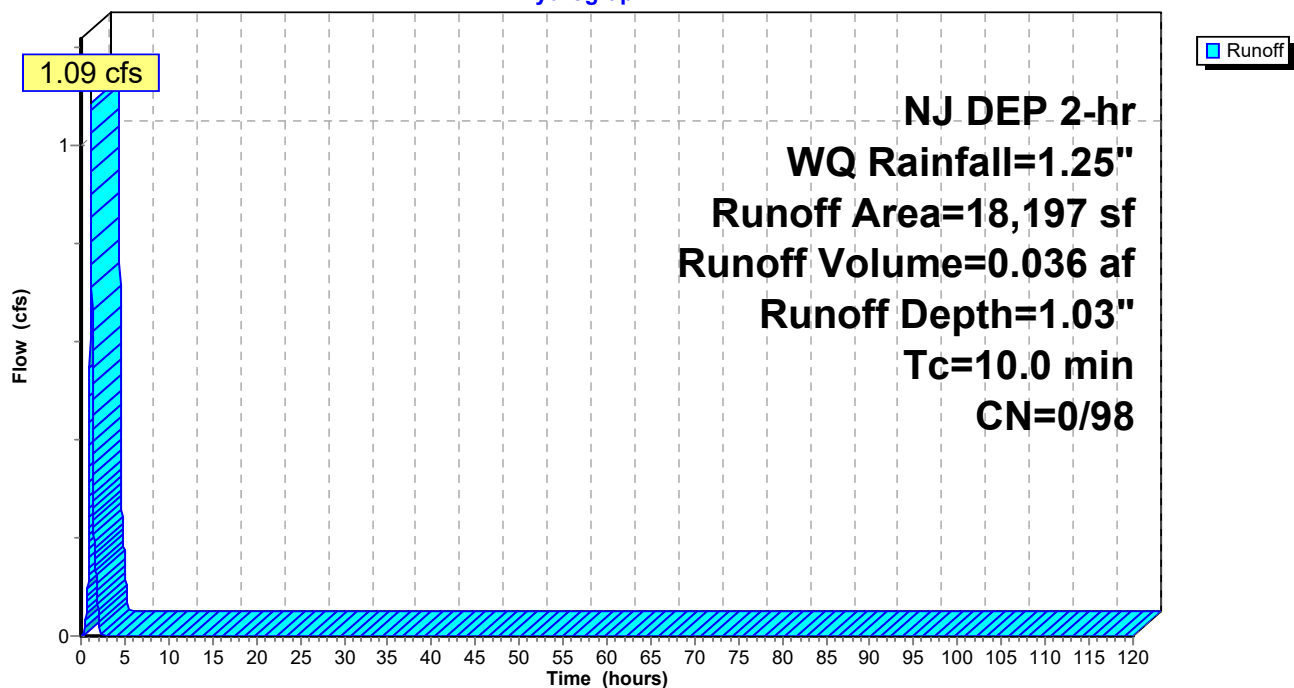
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
18,197	98	Paved parking, HSG C
18,197		100.00% Impervious Area

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

Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
15.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
25.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
35.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
45.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
55.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
65.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
75.00	1.25	0.00	1.03	0.00
80.00	1.25	0.00	1.03	0.00
85.00	1.25	0.00	1.03	0.00
90.00	1.25	0.00	1.03	0.00
95.00	1.25	0.00	1.03	0.00
100.00	1.25	0.00	1.03	0.00
105.00	1.25	0.00	1.03	0.00
110.00	1.25	0.00	1.03	0.00
115.00	1.25	0.00	1.03	0.00
120.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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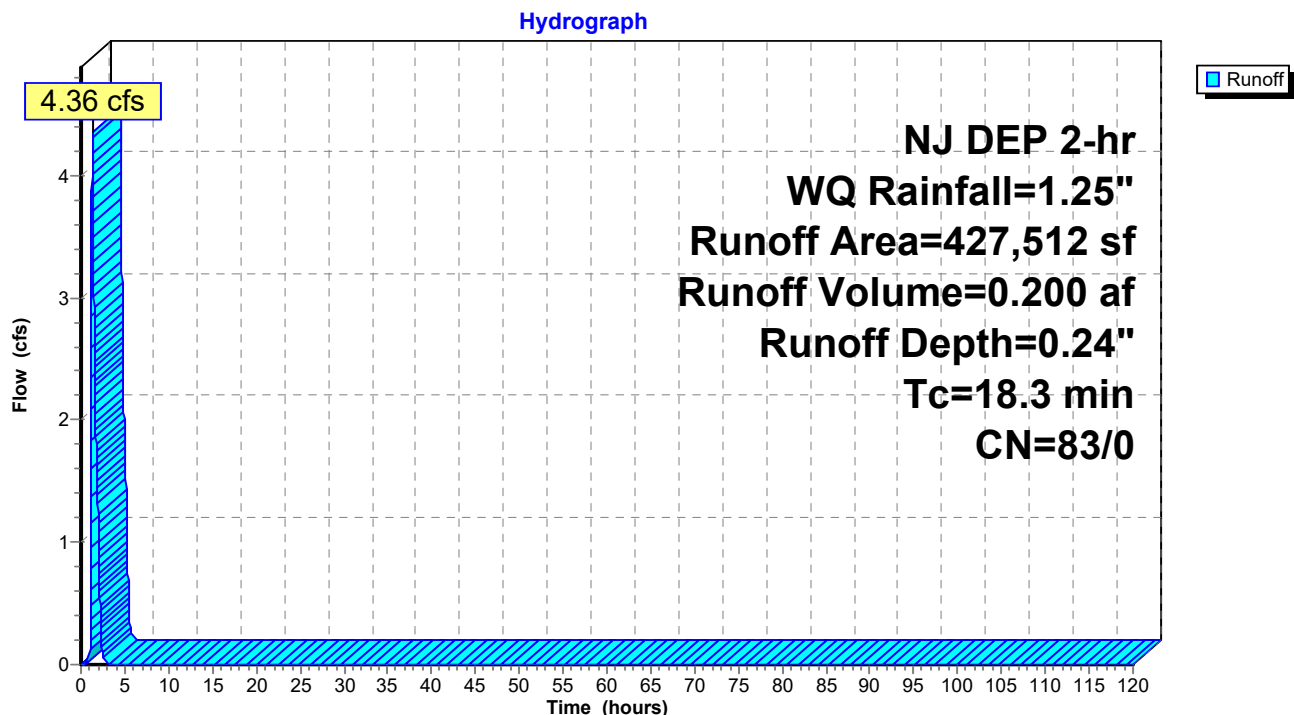
Summary for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Runoff = 4.36 cfs @ 1.32 hrs, Volume= 0.200 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
1,902	82	Dirt roads, HSG B
1,547	87	Dirt roads, HSG C
27,561	74	>75% Grass cover, Good, HSG C
101,474	78	Row crops, straight row, Good, HSG B
295,028	85	Row crops, straight row, Good, HSG C
427,512	83	Weighted Average
427,512		100.00% Pervious Area

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

Subcatchment DA-P5 B: DA-P5 PERVIOUS

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.24	0.00	0.00
10.00	1.25	0.24	0.00	0.00
15.00	1.25	0.24	0.00	0.00
20.00	1.25	0.24	0.00	0.00
25.00	1.25	0.24	0.00	0.00
30.00	1.25	0.24	0.00	0.00
35.00	1.25	0.24	0.00	0.00
40.00	1.25	0.24	0.00	0.00
45.00	1.25	0.24	0.00	0.00
50.00	1.25	0.24	0.00	0.00
55.00	1.25	0.24	0.00	0.00
60.00	1.25	0.24	0.00	0.00
65.00	1.25	0.24	0.00	0.00
70.00	1.25	0.24	0.00	0.00
75.00	1.25	0.24	0.00	0.00
80.00	1.25	0.24	0.00	0.00
85.00	1.25	0.24	0.00	0.00
90.00	1.25	0.24	0.00	0.00
95.00	1.25	0.24	0.00	0.00
100.00	1.25	0.24	0.00	0.00
105.00	1.25	0.24	0.00	0.00
110.00	1.25	0.24	0.00	0.00
115.00	1.25	0.24	0.00	0.00
120.00	1.25	0.24	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Runoff = 23.55 cfs @ 1.15 hrs, Volume= 0.780 af, Depth= 1.03"

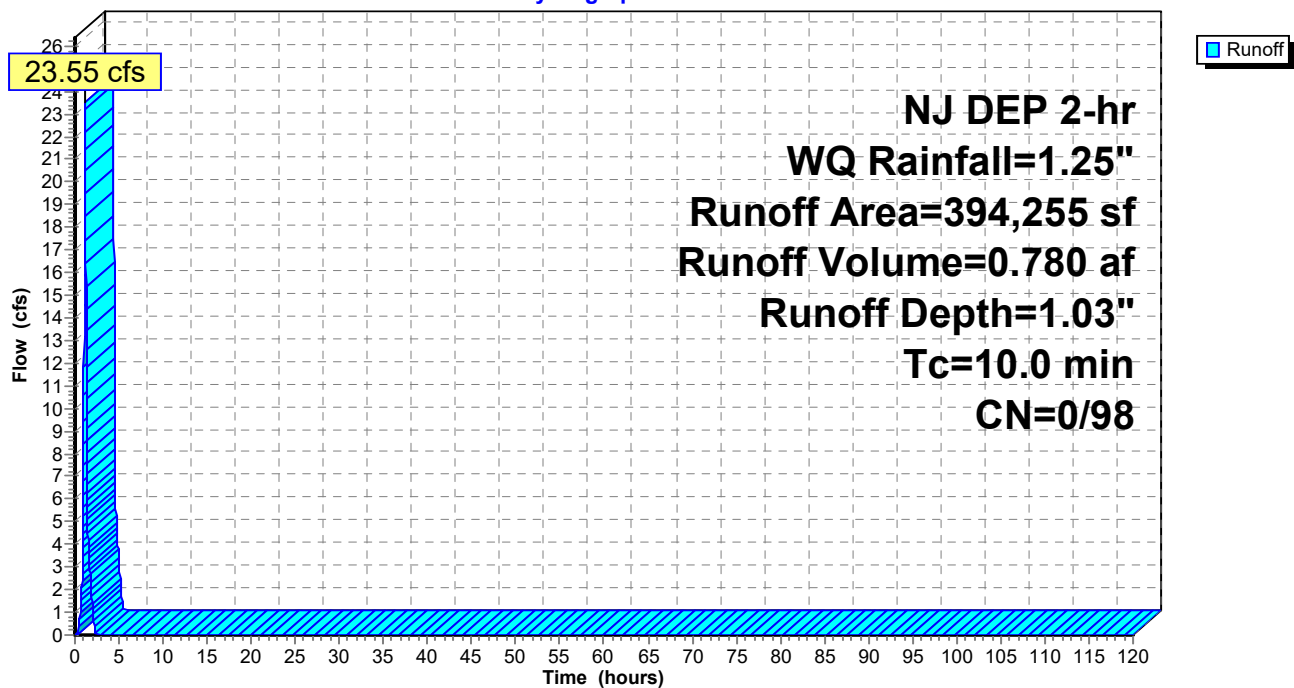
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
139,105	98	Paved parking, HSG B
255,150	98	Paved parking, HSG C
394,255	98	Weighted Average
394,255		100.00% Impervious Area

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

Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
15.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
25.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
35.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
45.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
55.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
65.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
75.00	1.25	0.00	1.03	0.00
80.00	1.25	0.00	1.03	0.00
85.00	1.25	0.00	1.03	0.00
90.00	1.25	0.00	1.03	0.00
95.00	1.25	0.00	1.03	0.00
100.00	1.25	0.00	1.03	0.00
105.00	1.25	0.00	1.03	0.00
110.00	1.25	0.00	1.03	0.00
115.00	1.25	0.00	1.03	0.00
120.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Runoff = 0.03 cfs @ 1.85 hrs, Volume= 0.001 af, Depth= 0.00"

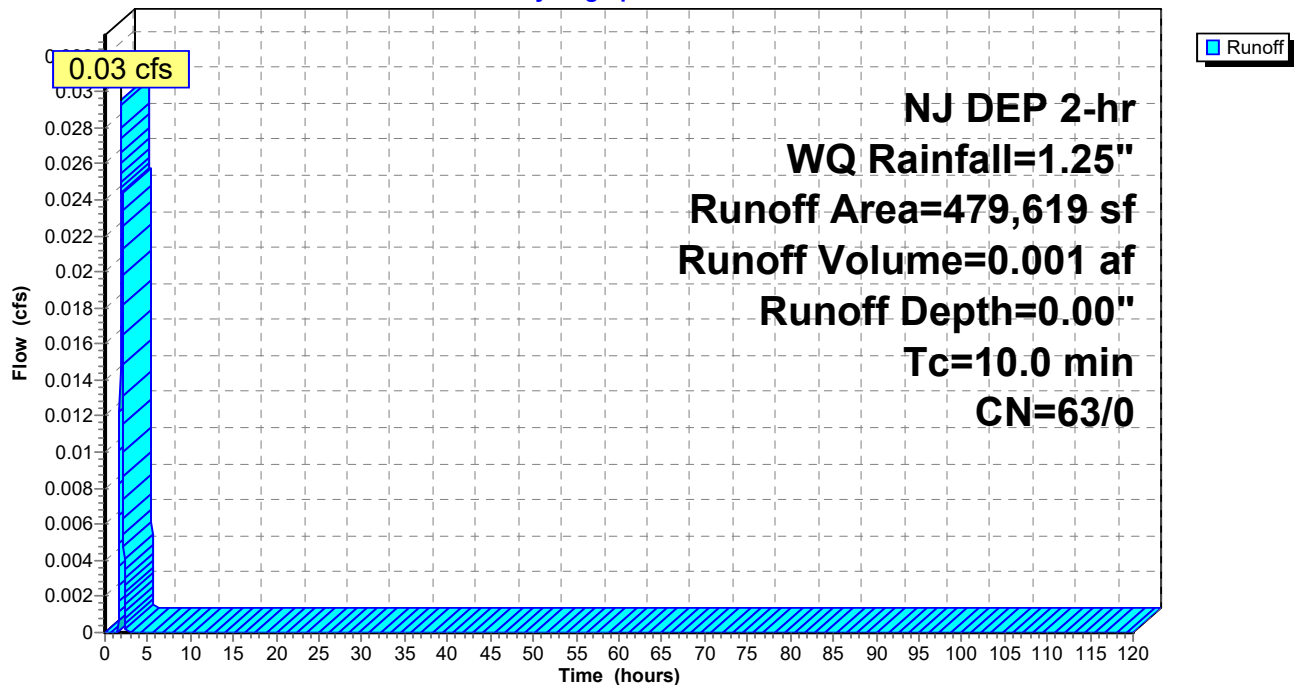
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
285,540	61	>75% Grass cover, Good, HSG B
112,000	74	>75% Grass cover, Good, HSG C
82,079	55	Woods, Good, HSG B
479,619	63	Weighted Average
479,619		100.00% Pervious Area

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

Subcatchment DA-P6 B: DA-P6 PERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	0.00	0.00
10.00	1.25	0.00	0.00	0.00
15.00	1.25	0.00	0.00	0.00
20.00	1.25	0.00	0.00	0.00
25.00	1.25	0.00	0.00	0.00
30.00	1.25	0.00	0.00	0.00
35.00	1.25	0.00	0.00	0.00
40.00	1.25	0.00	0.00	0.00
45.00	1.25	0.00	0.00	0.00
50.00	1.25	0.00	0.00	0.00
55.00	1.25	0.00	0.00	0.00
60.00	1.25	0.00	0.00	0.00
65.00	1.25	0.00	0.00	0.00
70.00	1.25	0.00	0.00	0.00
75.00	1.25	0.00	0.00	0.00
80.00	1.25	0.00	0.00	0.00
85.00	1.25	0.00	0.00	0.00
90.00	1.25	0.00	0.00	0.00
95.00	1.25	0.00	0.00	0.00
100.00	1.25	0.00	0.00	0.00
105.00	1.25	0.00	0.00	0.00
110.00	1.25	0.00	0.00	0.00
115.00	1.25	0.00	0.00	0.00
120.00	1.25	0.00	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Runoff = 50.27 cfs @ 1.15 hrs, Volume= 1.666 af, Depth= 1.03"

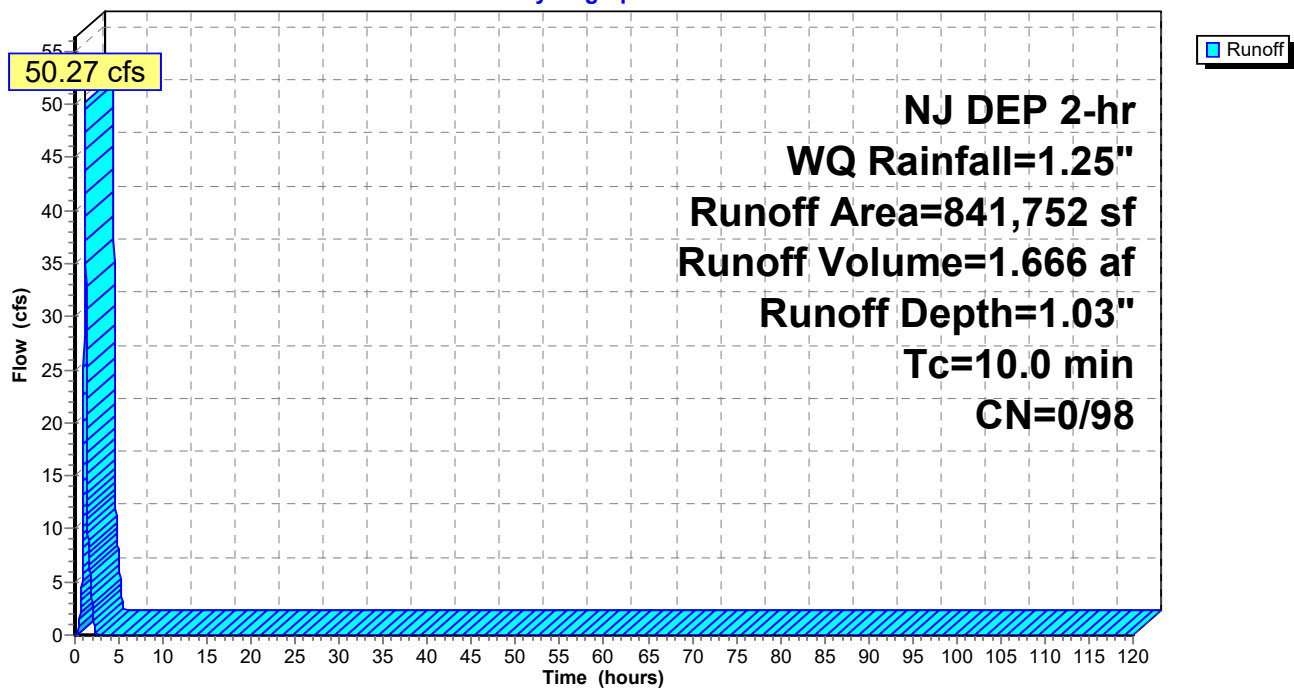
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
232,402	98	Paved parking, HSG B
609,350	98	Paved parking, HSG C
841,752	98	Weighted Average
841,752		100.00% Impervious Area

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

Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
15.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
25.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
35.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
45.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
55.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
65.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
75.00	1.25	0.00	1.03	0.00
80.00	1.25	0.00	1.03	0.00
85.00	1.25	0.00	1.03	0.00
90.00	1.25	0.00	1.03	0.00
95.00	1.25	0.00	1.03	0.00
100.00	1.25	0.00	1.03	0.00
105.00	1.25	0.00	1.03	0.00
110.00	1.25	0.00	1.03	0.00
115.00	1.25	0.00	1.03	0.00
120.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P7B: DA-P7 PERVIOUS

Runoff = 0.26 cfs @ 1.79 hrs, Volume= 0.014 af, Depth= 0.02"

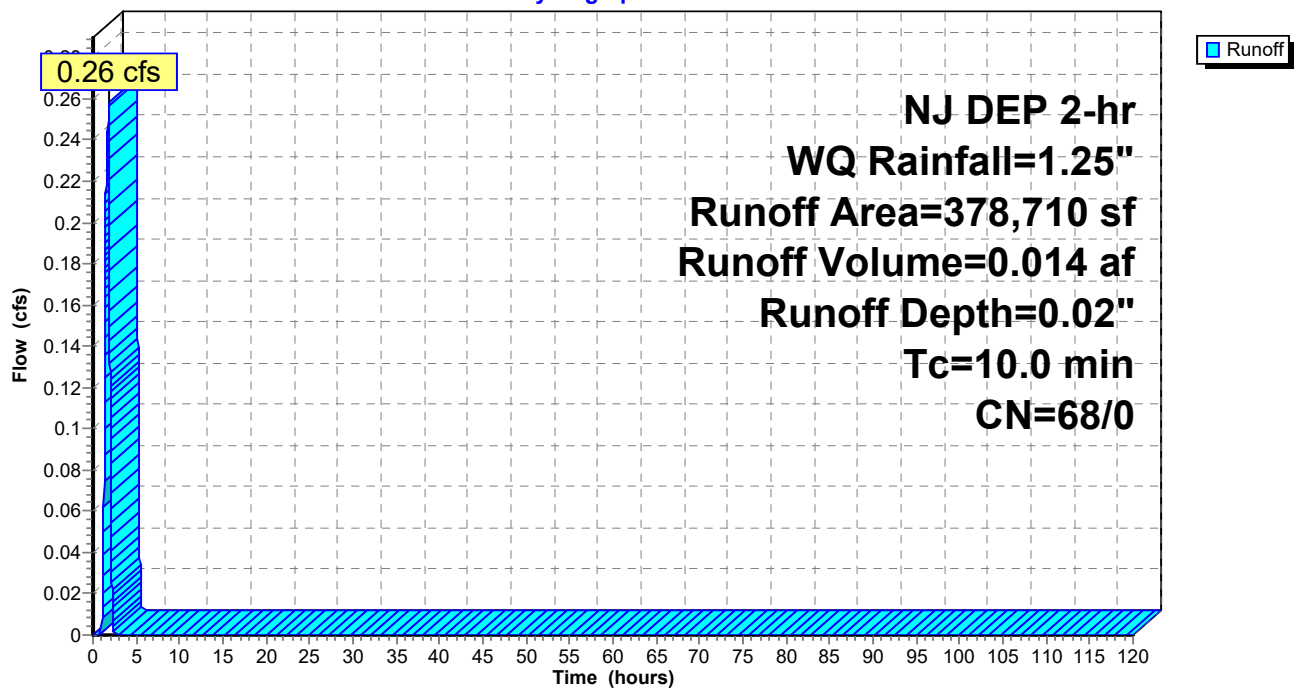
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
161,684	61	>75% Grass cover, Good, HSG B
217,026	74	>75% Grass cover, Good, HSG C
378,710	68	Weighted Average
378,710		100.00% Pervious Area

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

Subcatchment DA-P7B: DA-P7 PERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P7B: DA-P7 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.02	0.00	0.00
10.00	1.25	0.02	0.00	0.00
15.00	1.25	0.02	0.00	0.00
20.00	1.25	0.02	0.00	0.00
25.00	1.25	0.02	0.00	0.00
30.00	1.25	0.02	0.00	0.00
35.00	1.25	0.02	0.00	0.00
40.00	1.25	0.02	0.00	0.00
45.00	1.25	0.02	0.00	0.00
50.00	1.25	0.02	0.00	0.00
55.00	1.25	0.02	0.00	0.00
60.00	1.25	0.02	0.00	0.00
65.00	1.25	0.02	0.00	0.00
70.00	1.25	0.02	0.00	0.00
75.00	1.25	0.02	0.00	0.00
80.00	1.25	0.02	0.00	0.00
85.00	1.25	0.02	0.00	0.00
90.00	1.25	0.02	0.00	0.00
95.00	1.25	0.02	0.00	0.00
100.00	1.25	0.02	0.00	0.00
105.00	1.25	0.02	0.00	0.00
110.00	1.25	0.02	0.00	0.00
115.00	1.25	0.02	0.00	0.00
120.00	1.25	0.02	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Runoff = 4.19 cfs @ 1.15 hrs, Volume= 0.139 af, Depth= 1.03"

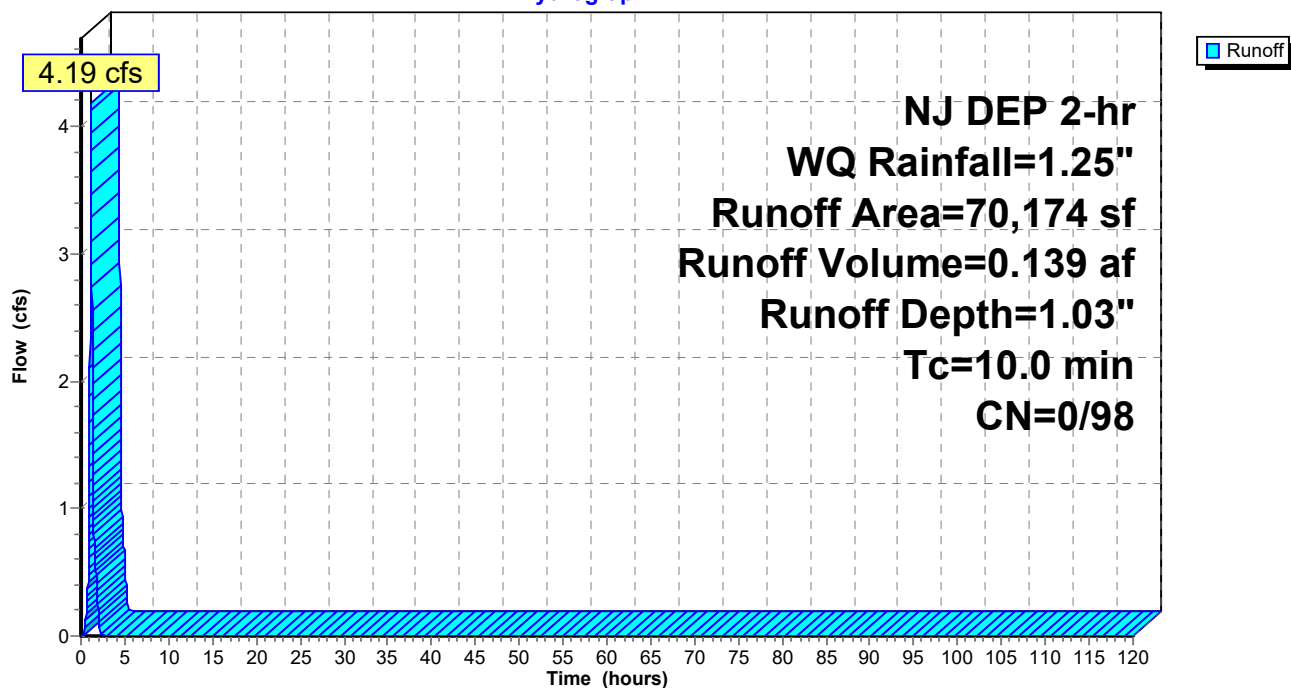
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
70,174	98	Paved parking, HSG B
70,174		100.00% Impervious Area

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

Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
15.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
25.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
35.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
45.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
55.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
65.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
75.00	1.25	0.00	1.03	0.00
80.00	1.25	0.00	1.03	0.00
85.00	1.25	0.00	1.03	0.00
90.00	1.25	0.00	1.03	0.00
95.00	1.25	0.00	1.03	0.00
100.00	1.25	0.00	1.03	0.00
105.00	1.25	0.00	1.03	0.00
110.00	1.25	0.00	1.03	0.00
115.00	1.25	0.00	1.03	0.00
120.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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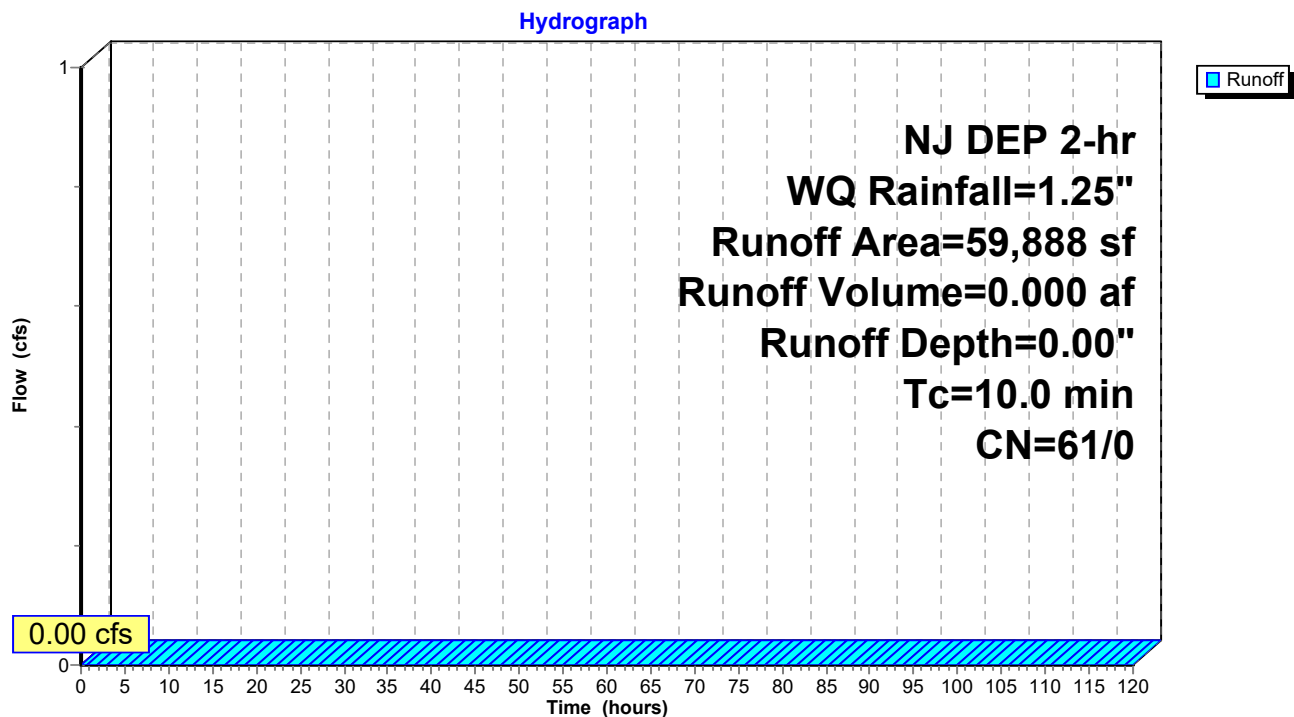
Summary for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
59,888	61	>75% Grass cover, Good, HSG B
59,888		100.00% Pervious Area

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

Subcatchment DA-P8 B: DA-P8 PERVIOUS

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	0.00	0.00
10.00	1.25	0.00	0.00	0.00
15.00	1.25	0.00	0.00	0.00
20.00	1.25	0.00	0.00	0.00
25.00	1.25	0.00	0.00	0.00
30.00	1.25	0.00	0.00	0.00
35.00	1.25	0.00	0.00	0.00
40.00	1.25	0.00	0.00	0.00
45.00	1.25	0.00	0.00	0.00
50.00	1.25	0.00	0.00	0.00
55.00	1.25	0.00	0.00	0.00
60.00	1.25	0.00	0.00	0.00
65.00	1.25	0.00	0.00	0.00
70.00	1.25	0.00	0.00	0.00
75.00	1.25	0.00	0.00	0.00
80.00	1.25	0.00	0.00	0.00
85.00	1.25	0.00	0.00	0.00
90.00	1.25	0.00	0.00	0.00
95.00	1.25	0.00	0.00	0.00
100.00	1.25	0.00	0.00	0.00
105.00	1.25	0.00	0.00	0.00
110.00	1.25	0.00	0.00	0.00
115.00	1.25	0.00	0.00	0.00
120.00	1.25	0.00	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Runoff = 9.99 cfs @ 1.15 hrs, Volume= 0.331 af, Depth= 1.03"

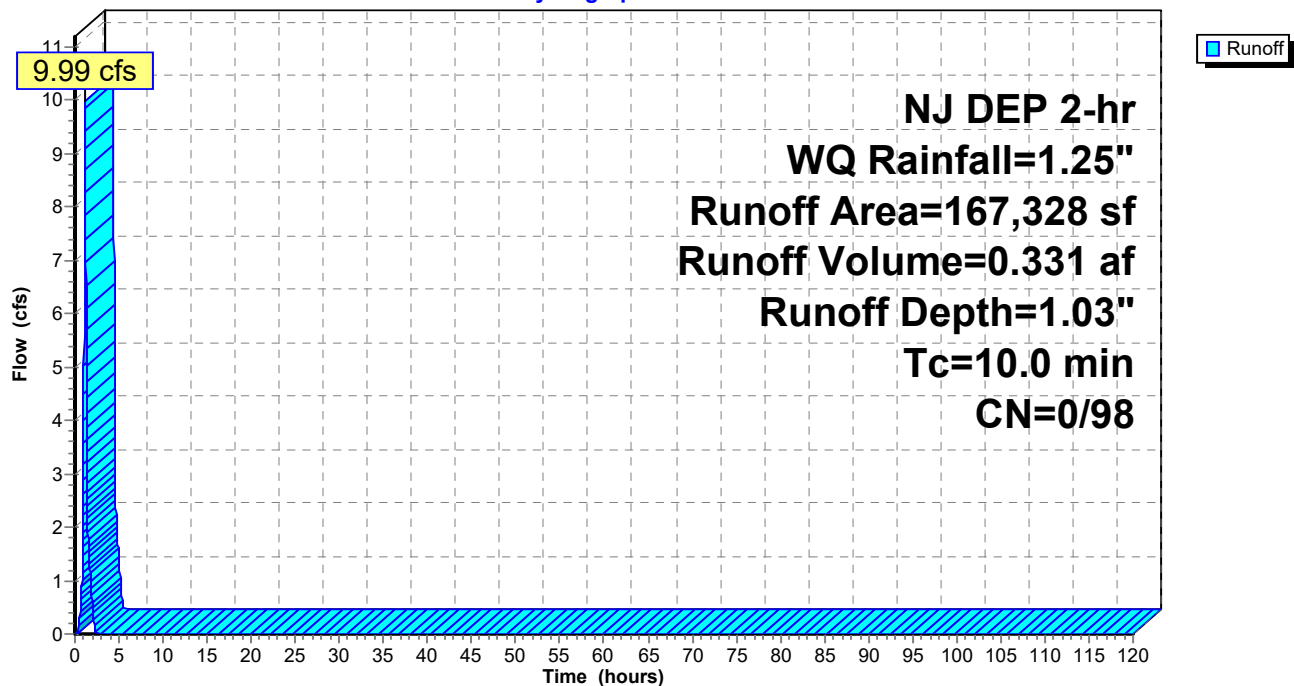
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
167,328	98	Paved parking, HSG B
167,328		100.00% Impervious Area

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

Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
15.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
25.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
35.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
45.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
55.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
65.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
75.00	1.25	0.00	1.03	0.00
80.00	1.25	0.00	1.03	0.00
85.00	1.25	0.00	1.03	0.00
90.00	1.25	0.00	1.03	0.00
95.00	1.25	0.00	1.03	0.00
100.00	1.25	0.00	1.03	0.00
105.00	1.25	0.00	1.03	0.00
110.00	1.25	0.00	1.03	0.00
115.00	1.25	0.00	1.03	0.00
120.00	1.25	0.00	1.03	0.00

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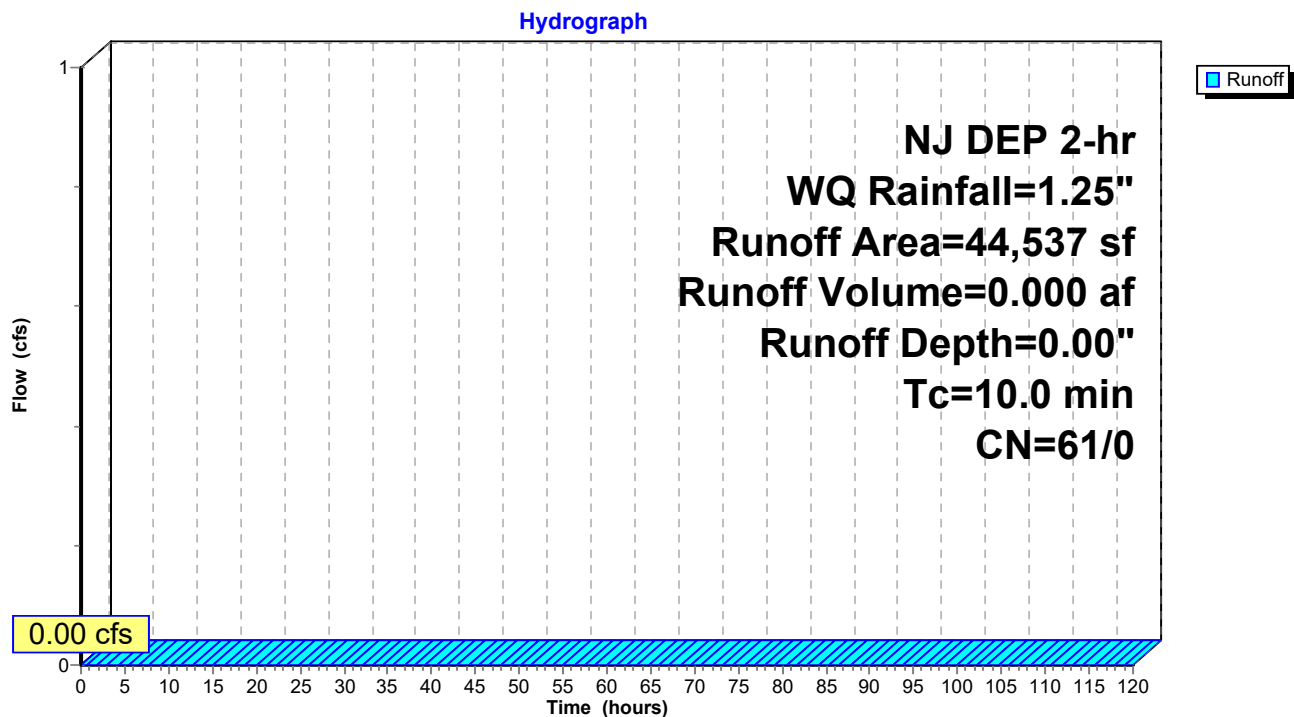
Summary for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
44,537	61	>75% Grass cover, Good, HSG B
44,537		100.00% Pervious Area

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

Subcatchment DA-P9 B: DA-P9 PERVIOUS

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Hydrograph for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.00	0.00	0.00
10.00	1.25	0.00	0.00	0.00
15.00	1.25	0.00	0.00	0.00
20.00	1.25	0.00	0.00	0.00
25.00	1.25	0.00	0.00	0.00
30.00	1.25	0.00	0.00	0.00
35.00	1.25	0.00	0.00	0.00
40.00	1.25	0.00	0.00	0.00
45.00	1.25	0.00	0.00	0.00
50.00	1.25	0.00	0.00	0.00
55.00	1.25	0.00	0.00	0.00
60.00	1.25	0.00	0.00	0.00
65.00	1.25	0.00	0.00	0.00
70.00	1.25	0.00	0.00	0.00
75.00	1.25	0.00	0.00	0.00
80.00	1.25	0.00	0.00	0.00
85.00	1.25	0.00	0.00	0.00
90.00	1.25	0.00	0.00	0.00
95.00	1.25	0.00	0.00	0.00
100.00	1.25	0.00	0.00	0.00
105.00	1.25	0.00	0.00	0.00
110.00	1.25	0.00	0.00	0.00
115.00	1.25	0.00	0.00	0.00
120.00	1.25	0.00	0.00	0.00

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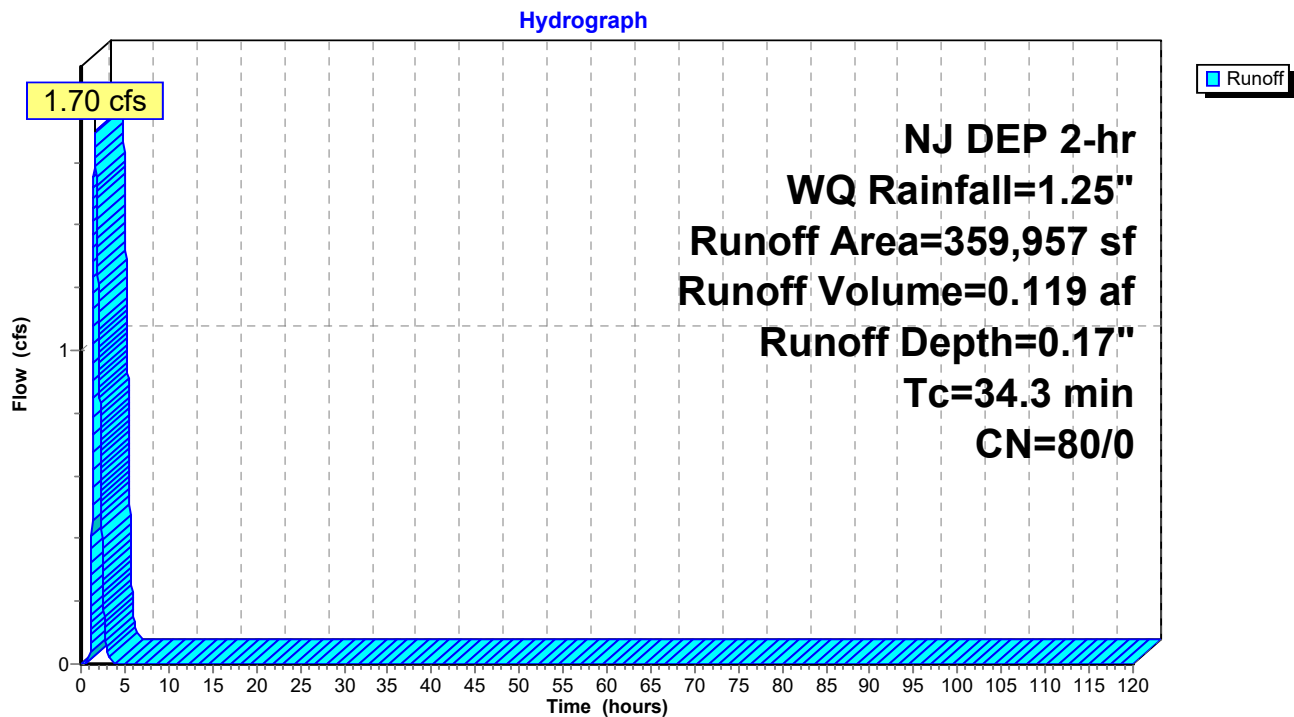
Summary for Subcatchment DA-PB: BYPASS AREA

Runoff = 1.70 cfs @ 1.60 hrs, Volume= 0.119 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
260,735	78	Row crops, straight row, Good, HSG B
99,222	85	Row crops, straight row, Good, HSG C
359,957	80	Weighted Average
359,957		100.00% Pervious Area

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

Subcatchment DA-PB: BYPASS AREA

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Hydrograph for Subcatchment DA-PB: BYPASS AREA

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	1.25	0.17	0.00	0.00
10.00	1.25	0.17	0.00	0.00
15.00	1.25	0.17	0.00	0.00
20.00	1.25	0.17	0.00	0.00
25.00	1.25	0.17	0.00	0.00
30.00	1.25	0.17	0.00	0.00
35.00	1.25	0.17	0.00	0.00
40.00	1.25	0.17	0.00	0.00
45.00	1.25	0.17	0.00	0.00
50.00	1.25	0.17	0.00	0.00
55.00	1.25	0.17	0.00	0.00
60.00	1.25	0.17	0.00	0.00
65.00	1.25	0.17	0.00	0.00
70.00	1.25	0.17	0.00	0.00
75.00	1.25	0.17	0.00	0.00
80.00	1.25	0.17	0.00	0.00
85.00	1.25	0.17	0.00	0.00
90.00	1.25	0.17	0.00	0.00
95.00	1.25	0.17	0.00	0.00
100.00	1.25	0.17	0.00	0.00
105.00	1.25	0.17	0.00	0.00
110.00	1.25	0.17	0.00	0.00
115.00	1.25	0.17	0.00	0.00
120.00	1.25	0.17	0.00	0.00

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Summary for Pond B1: BASIN#1

Inflow = 23.55 cfs @ 1.15 hrs, Volume= 0.781 af
 Outflow = 0.25 cfs @ 2.19 hrs, Volume= 0.781 af, Atten= 99%, Lag= 62.7 min
 Primary = 0.25 cfs @ 2.19 hrs, Volume= 0.781 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 127.49' @ 2.19 hrs Surf.Area= 35,508 sf Storage= 32,689 cf

Plug-Flow detention time= 1,189.2 min calculated for 0.781 af (100% of inflow)
 Center-of-Mass det. time= 1,189.1 min (1,263.1 - 74.0)

Volume	Invert	Avail.Storage	Storage Description
#1	125.00'	468,414 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
125.00	0	0	0
126.00	2,784	1,392	1,392
127.00	28,597	15,691	17,083
128.00	42,791	35,694	52,777
129.00	57,622	50,207	102,983
130.00	61,653	59,638	162,621
131.00	64,456	63,055	225,675
132.00	67,190	65,823	291,498
133.00	69,880	68,535	360,033
134.00	72,596	71,238	431,271
134.50	75,975	37,143	468,414

Device	Routing	Invert	Outlet Devices
#1	Primary	125.00'	30.0" Round Culvert L= 49.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 125.00' / 124.00' S= 0.0204 1' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	125.00'	2.5" Vert. Orifice C= 0.600
#3	Device 1	128.90'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.70'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Primary OutFlow Max=0.25 cfs @ 2.19 hrs HW=127.49' TW=0.00' (Dynamic Tailwater)

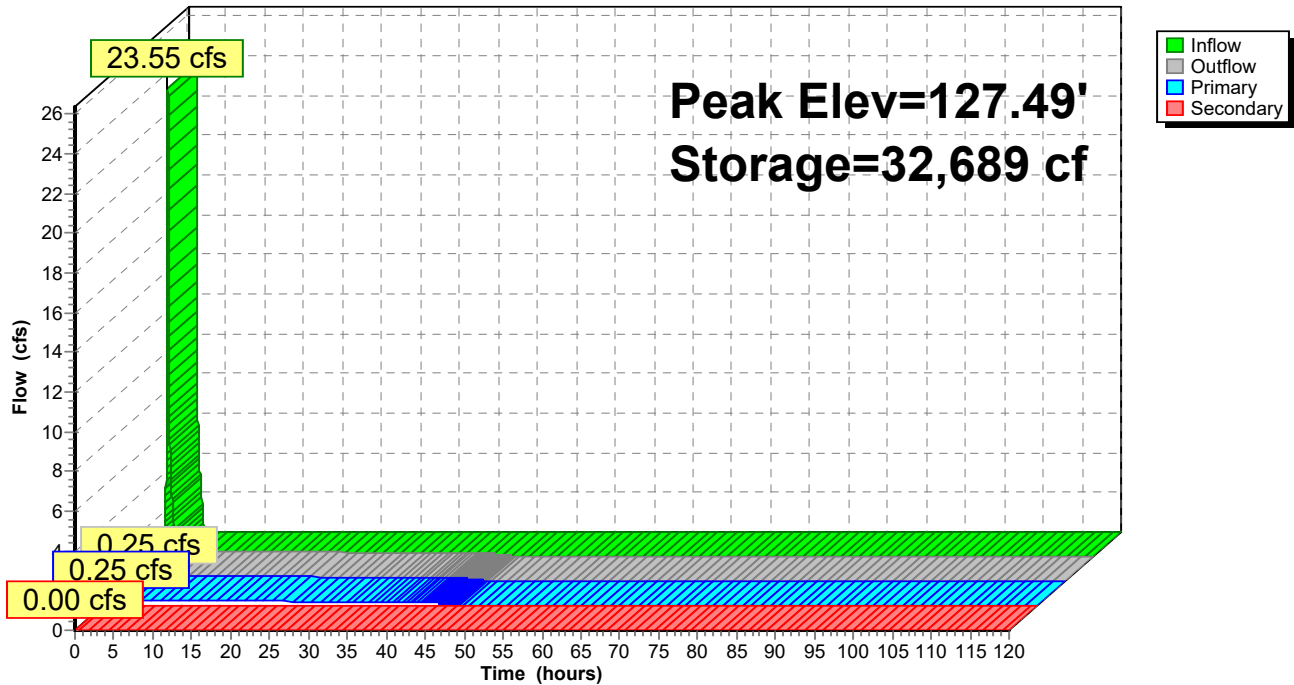
- 1=Culvert (Passes 0.25 cfs of 26.34 cfs potential flow)
- 2=Orifice (Orifice Controls 0.25 cfs @ 7.43 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.00' TW=122.05' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B1: BASIN#1

Hydrograph



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Hydrograph for Pond B1: BASIN#1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	125.00	0.00	0.00	0.00
5.00	0.00	30,213	127.42	0.25	0.25	0.00
10.00	0.00	25,785	127.28	0.24	0.24	0.00
15.00	0.00	21,492	127.15	0.23	0.23	0.00
20.00	0.00	17,340	127.01	0.23	0.23	0.00
25.00	0.00	13,342	126.86	0.22	0.22	0.00
30.00	0.00	9,520	126.69	0.21	0.21	0.00
35.00	0.00	5,912	126.49	0.19	0.19	0.00
40.00	0.00	2,597	126.21	0.17	0.17	0.00
45.00	0.00	102	125.27	0.07	0.07	0.00
50.00	0.00	1	125.00	0.00	0.00	0.00
55.00	0.00	0	125.00	0.00	0.00	0.00
60.00	0.00	0	125.00	0.00	0.00	0.00
65.00	0.00	0	125.00	0.00	0.00	0.00
70.00	0.00	0	125.00	0.00	0.00	0.00
75.00	0.00	0	125.00	0.00	0.00	0.00
80.00	0.00	0	125.00	0.00	0.00	0.00
85.00	0.00	0	125.00	0.00	0.00	0.00
90.00	0.00	0	125.00	0.00	0.00	0.00
95.00	0.00	0	125.00	0.00	0.00	0.00
100.00	0.00	0	125.00	0.00	0.00	0.00
105.00	0.00	0	125.00	0.00	0.00	0.00
110.00	0.00	0	125.00	0.00	0.00	0.00
115.00	0.00	0	125.00	0.00	0.00	0.00
120.00	0.00	0	125.00	0.00	0.00	0.00

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Summary for Pond B1A: BASIN# 1A

Inflow = 6.65 cfs @ 1.33 hrs, Volume= 1.193 af
 Outflow = 2.66 cfs @ 2.00 hrs, Volume= 1.494 af, Atten= 60%, Lag= 40.6 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 2.66 cfs @ 2.00 hrs, Volume= 1.494 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 125.05' @ 2.00 hrs Surf.Area= 15,323 sf Storage= 9,262 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 841.0 min (1,701.1 - 860.1)

Volume	Invert	Avail.Storage	Storage Description
#1	123.70'	259,537 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.70	0	0	0
124.00	2,278	342	342
125.00	13,963	8,121	8,462
125.30	21,434	5,310	13,772
126.00	52,835	25,994	39,766
127.00	111,645	82,240	122,006
128.00	163,418	137,532	259,537

Device	Routing	Invert	Outlet Devices
#1	Primary	123.51'	24.0" Round Culvert L= 192.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 123.51' / 123.19' S= 0.0017 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	123.51'	9.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	124.95'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 2.05 Width (feet) 1.20 1.20 1.20
#4	Device 1	125.60'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.40 Width (feet) 1.80 1.80
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#6	Discarded	125.50'	40.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#7	Discarded	126.50'	60.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#8	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#9	Device 1	124.95'	1.2' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00

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#10	Primary	124.95'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			1.2' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
			Coef. (English)	2.80	2.92	3.08	3.30	3.32
#11	Device 1	125.60'	3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
			Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
#12	Primary	125.60'	3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
			Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=123.70' (Free Discharge)

6=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Primary OutFlow Max=2.66 cfs @ 2.00 hrs HW=125.05' (Free Discharge)

1=Culvert (Passes 2.55 cfs of 6.67 cfs potential flow)

2=Orifice/Grate (Orifice Controls 2.30 cfs @ 5.21 fps)

3=Custom Weir/Orifice (Weir Controls 0.13 cfs @ 1.06 fps)

4=Custom Weir/Orifice (Controls 0.00 cfs)

5=Orifice/Grate (Controls 0.00 cfs)

9=Broad-Crested Rectangular Weir (Weir Controls 0.11 cfs @ 0.91 fps)

11=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

10=Broad-Crested Rectangular Weir (Weir Controls 0.11 cfs @ 0.91 fps)

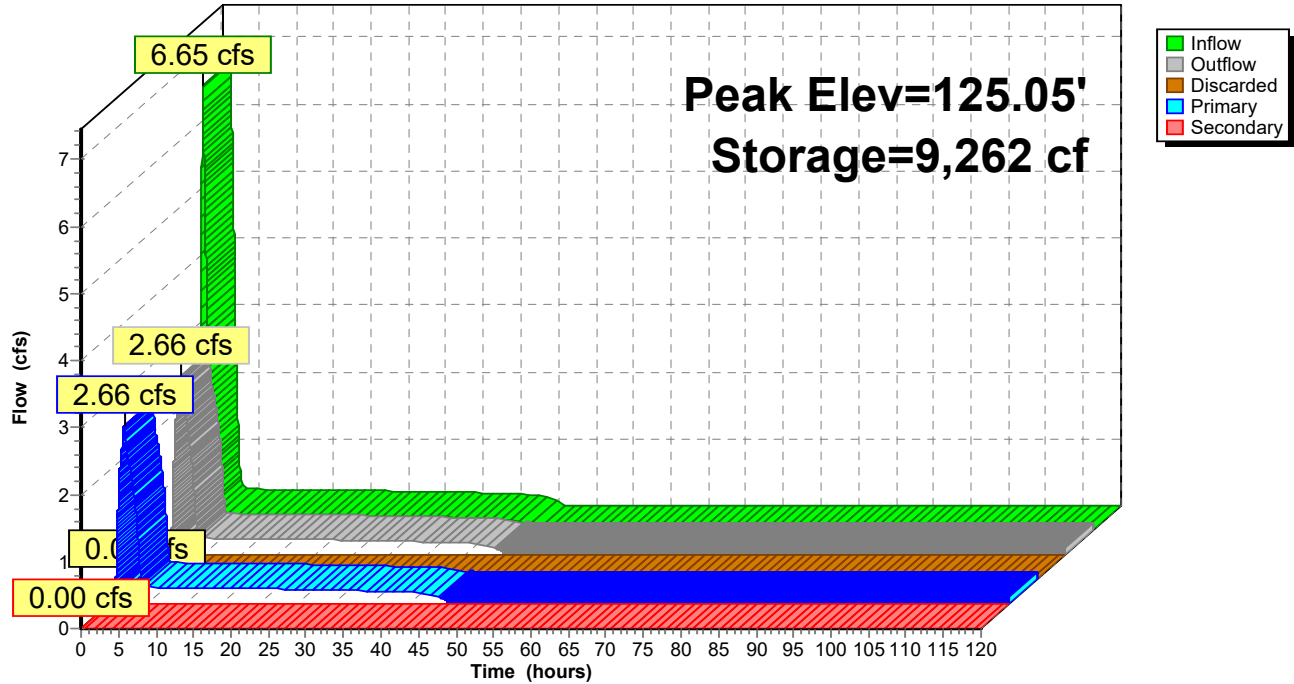
12=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=123.70' TW=120.70' (Dynamic Tailwater)

8=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B1A: BASIN# 1A

Hydrograph



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Hydrograph for Pond B1A: BASIN# 1A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	123.70	0.00	0.00	0.00	0.00
5.00	0.25	44	123.80	0.25	0.00	0.25	0.00
10.00	0.24	40	123.80	0.24	0.00	0.24	0.00
15.00	0.23	37	123.80	0.23	0.00	0.23	0.00
20.00	0.23	33	123.79	0.23	0.00	0.23	0.00
25.00	0.22	28	123.79	0.22	0.00	0.22	0.00
30.00	0.21	25	123.78	0.21	0.00	0.21	0.00
35.00	0.19	21	123.77	0.19	0.00	0.19	0.00
40.00	0.17	15	123.76	0.17	0.00	0.17	0.00
45.00	0.07	1	123.70	0.10	0.00	0.10	0.00
50.00	0.00	0	123.70	0.00	0.00	0.00	0.00
55.00	0.00	0	123.70	0.00	0.00	0.00	0.00
60.00	0.00	0	123.70	0.00	0.00	0.00	0.00
65.00	0.00	0	123.70	0.00	0.00	0.00	0.00
70.00	0.00	0	123.70	0.00	0.00	0.00	0.00
75.00	0.00	0	123.70	0.00	0.00	0.00	0.00
80.00	0.00	0	123.70	0.00	0.00	0.00	0.00
85.00	0.00	0	123.70	0.00	0.00	0.00	0.00
90.00	0.00	0	123.70	0.00	0.00	0.00	0.00
95.00	0.00	0	123.70	0.00	0.00	0.00	0.00
100.00	0.00	0	123.70	0.00	0.00	0.00	0.00
105.00	0.00	0	123.70	0.00	0.00	0.00	0.00
110.00	0.00	0	123.70	0.00	0.00	0.00	0.00
115.00	0.00	0	123.70	0.00	0.00	0.00	0.00
120.00	0.00	0	123.70	0.00	0.00	0.00	0.00

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Summary for Pond B2: BASIN#2

Inflow = 50.47 cfs @ 1.15 hrs, Volume= 2.011 af
 Outflow = 0.78 cfs @ 2.21 hrs, Volume= 2.011 af, Atten= 98%, Lag= 63.9 min
 Primary = 0.78 cfs @ 2.21 hrs, Volume= 2.011 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 125.66' @ 2.21 hrs Surf.Area= 48,724 sf Storage= 71,513 cf

Plug-Flow detention time= 918.7 min calculated for 2.011 af (100% of inflow)
 Center-of-Mass det. time= 918.5 min (1,066.0 - 147.4)

Volume	Invert	Avail.Storage	Storage Description
#1	122.05'	911,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.05	0	0	0
123.00	4,516	2,145	2,145
124.00	17,503	11,010	13,155
125.00	40,514	29,009	42,163
126.00	52,995	46,755	88,918
127.00	66,197	59,596	148,514
128.00	80,616	73,407	221,920
129.00	89,234	84,925	306,845
130.00	97,986	93,610	400,455
131.00	104,847	101,417	501,872
132.00	111,734	108,291	610,162
133.00	118,653	115,194	725,356
134.00	125,598	122,126	847,481
134.50	129,221	63,705	911,186

Device	Routing	Invert	Outlet Devices
#1	Primary	121.38'	30.0" Round Culvert L= 52.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 121.38' / 120.90' S= 0.0092 ' / Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	122.05'	4.0" Vert. Orifice C= 0.600
#3	Device 1	128.50'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.75'	3.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60

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Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.78 cfs @ 2.21 hrs HW=125.66' TW=0.00' (Dynamic Tailwater)

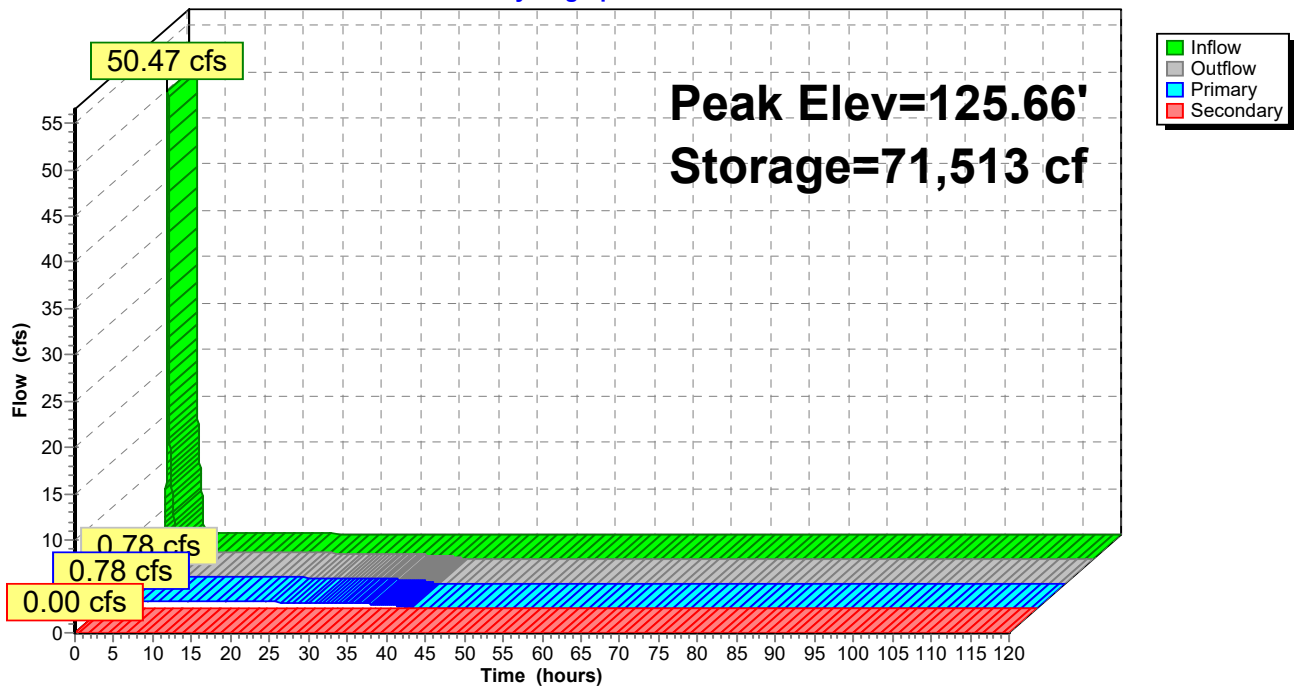
- 1=Culvert (Passes 0.78 cfs of 41.13 cfs potential flow)
- 2=Orifice (Orifice Controls 0.78 cfs @ 8.93 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=122.05' TW=125.00' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B2: BASIN#2

Hydrograph



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Hydrograph for Pond B2: BASIN#2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	122.05	0.00	0.00	0.00
5.00	0.24	66,374	125.55	0.77	0.77	0.00
10.00	0.20	56,774	125.34	0.74	0.74	0.00
15.00	0.16	46,894	125.11	0.72	0.72	0.00
20.00	0.07	36,470	124.85	0.68	0.68	0.00
25.00	0.00	24,817	124.50	0.63	0.63	0.00
30.00	0.00	13,948	124.04	0.57	0.57	0.00
35.00	0.00	4,667	123.36	0.45	0.45	0.00
40.00	0.00	9	122.08	0.00	0.00	0.00
45.00	0.00	2	122.06	0.00	0.00	0.00
50.00	0.00	1	122.05	0.00	0.00	0.00
55.00	0.00	1	122.05	0.00	0.00	0.00
60.00	0.00	0	122.05	0.00	0.00	0.00
65.00	0.00	0	122.05	0.00	0.00	0.00
70.00	0.00	0	122.05	0.00	0.00	0.00
75.00	0.00	0	122.05	0.00	0.00	0.00
80.00	0.00	0	122.05	0.00	0.00	0.00
85.00	0.00	0	122.05	0.00	0.00	0.00
90.00	0.00	0	122.05	0.00	0.00	0.00
95.00	0.00	0	122.05	0.00	0.00	0.00
100.00	0.00	0	122.05	0.00	0.00	0.00
105.00	0.00	0	122.05	0.00	0.00	0.00
110.00	0.00	0	122.05	0.00	0.00	0.00
115.00	0.00	0	122.05	0.00	0.00	0.00
120.00	0.00	0	122.05	0.00	0.00	0.00

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Summary for Pond B2A: BASIN# 2A

Inflow = 4.81 cfs @ 1.18 hrs, Volume= 2.171 af
 Outflow = 4.58 cfs @ 1.22 hrs, Volume= 2.200 af, Atten= 5%, Lag= 2.5 min
 Primary = 4.58 cfs @ 1.22 hrs, Volume= 2.200 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 121.71' @ 1.22 hrs Surf.Area= 1,242 sf Storage= 624 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 52.0 min (1,045.6 - 993.6)

Volume	Invert	Avail.Storage	Storage Description
#1	120.70'	244,647 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.70	0	0	0
123.00	2,840	3,266	3,266
124.00	12,899	7,870	11,135
125.00	29,081	20,990	32,125
125.50	41,742	17,706	49,831
126.00	55,169	24,228	74,059
127.00	82,653	68,911	142,970
128.00	120,701	101,677	244,647

Device	Routing	Invert	Outlet Devices
#1	Primary	120.66'	30.0" Round Culvert L= 212.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 120.66' / 118.50' S= 0.0102 ' /' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	120.66'	18.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	123.65'	1.5' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.58 cfs @ 1.22 hrs HW=121.71' (Free Discharge)

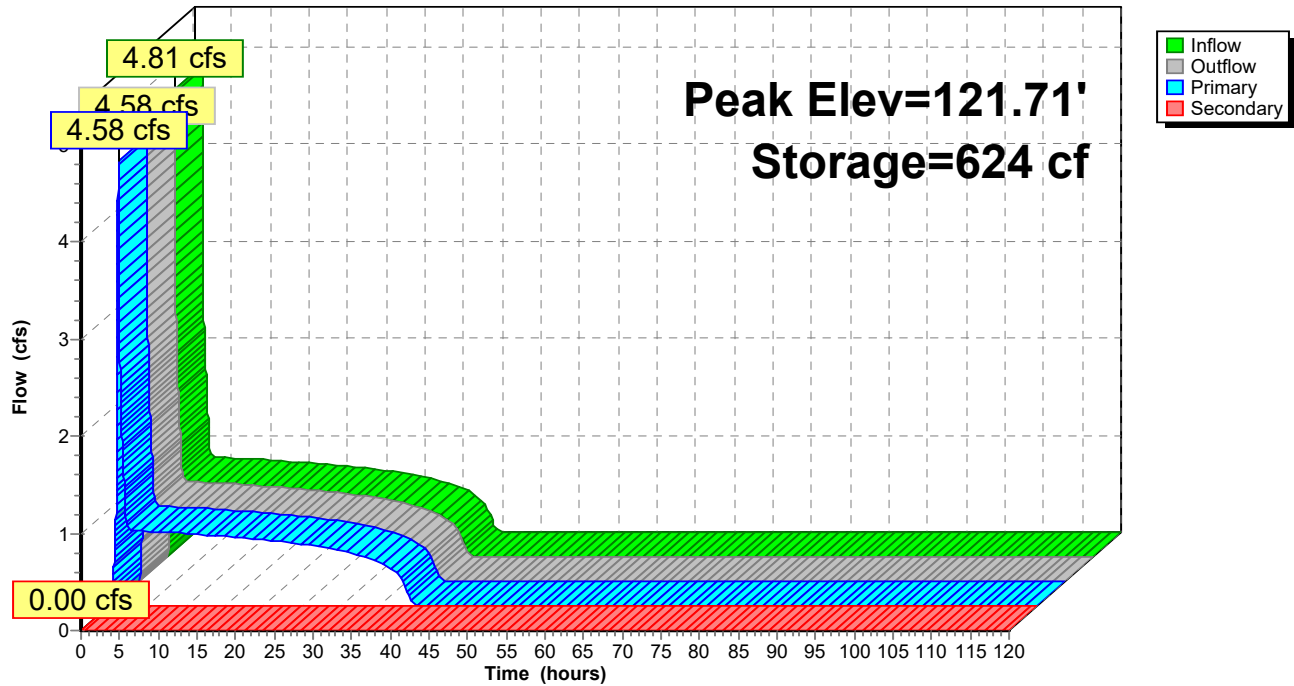
1=Culvert (Passes 4.58 cfs of 6.77 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 4.58 cfs @ 3.48 fps)
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
 5=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.70' TW=123.70' (Dynamic Tailwater)

4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B2A: BASIN# 2A

Hydrograph



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Hydrograph for Pond B2A: BASIN# 2A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	120.70	0.00	0.00	0.00
5.00	0.77	75	121.05	0.77	0.77	0.00
10.00	0.74	73	121.04	0.74	0.74	0.00
15.00	0.72	70	121.03	0.72	0.72	0.00
20.00	0.68	66	121.02	0.68	0.68	0.00
25.00	0.64	60	121.01	0.64	0.64	0.00
30.00	0.57	52	120.99	0.57	0.57	0.00
35.00	0.45	41	120.95	0.45	0.45	0.00
40.00	0.00	0	120.70	0.00	0.00	0.00
45.00	0.00	0	120.70	0.00	0.00	0.00
50.00	0.00	0	120.70	0.00	0.00	0.00
55.00	0.00	0	120.70	0.00	0.00	0.00
60.00	0.00	0	120.70	0.00	0.00	0.00
65.00	0.00	0	120.70	0.00	0.00	0.00
70.00	0.00	0	120.70	0.00	0.00	0.00
75.00	0.00	0	120.70	0.00	0.00	0.00
80.00	0.00	0	120.70	0.00	0.00	0.00
85.00	0.00	0	120.70	0.00	0.00	0.00
90.00	0.00	0	120.70	0.00	0.00	0.00
95.00	0.00	0	120.70	0.00	0.00	0.00
100.00	0.00	0	120.70	0.00	0.00	0.00
105.00	0.00	0	120.70	0.00	0.00	0.00
110.00	0.00	0	120.70	0.00	0.00	0.00
115.00	0.00	0	120.70	0.00	0.00	0.00
120.00	0.00	0	120.70	0.00	0.00	0.00

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Summary for Pond B3: BASIN#3

Inflow Area = 4.864 ac, 78.98% Impervious, Inflow Depth = 0.82" for WQ event
 Inflow = 9.99 cfs @ 1.15 hrs, Volume= 0.331 af
 Outflow = 1.05 cfs @ 1.84 hrs, Volume= 0.331 af, Atten= 90%, Lag= 41.5 min
 Primary = 1.05 cfs @ 1.84 hrs, Volume= 0.331 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 146.37' @ 1.84 hrs Surf.Area= 7,441 sf Storage= 12,484 cf

Plug-Flow detention time= 445.1 min calculated for 0.331 af (100% of inflow)
 Center-of-Mass det. time= 444.9 min (518.9 - 74.0)

Volume	Invert	Avail.Storage	Storage Description
#1	143.72'	58,412 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
143.72	0	0	0
144.00	1,559	218	218
145.00	5,405	3,482	3,700
146.00	6,859	6,132	9,832
147.00	8,428	7,644	17,476
148.00	10,107	9,268	26,743
149.00	11,886	10,997	37,740
150.00	14,319	13,103	50,842
150.50	15,959	7,570	58,412

Device	Routing	Invert	Outlet Devices
#1	Primary	143.72'	15.0" Round Culvert L= 182.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 143.72' / 140.50' S= 0.0177 '/' Cc= 0.900 n= 0.013 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf
#2	Device 1	143.72'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	146.31'	48.0" x 48.0" Horiz. TYPE "E" INLET WITH STOP COCK @ BOTTOM C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.05 cfs @ 1.84 hrs HW=146.37' TW=125.59' (Dynamic Tailwater)

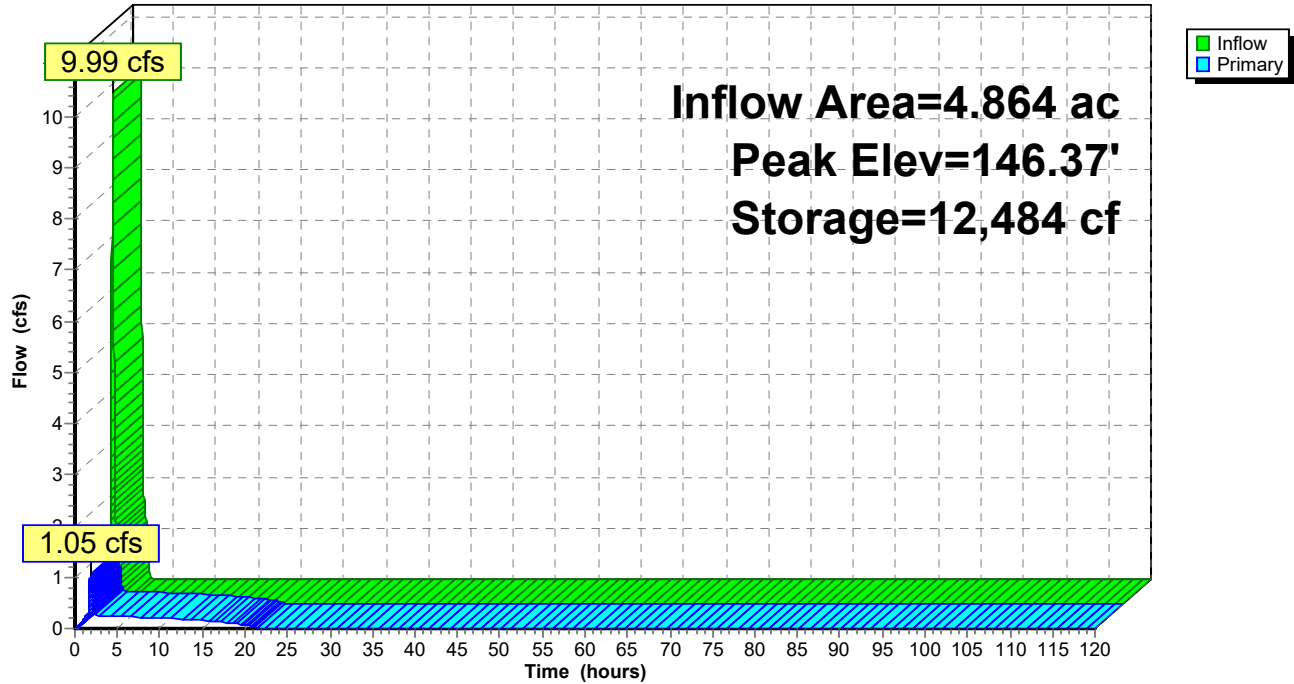
1=Culvert (Passes 1.05 cfs of 8.41 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.26 cfs @ 7.68 fps)

3=TYPE "E" INLET WITH STOP COCK @ BOTTOM(Weir Controls 0.79 cfs @ 0.81 fps)

Pond B3: BASIN#3

Hydrograph



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Hydrograph for Pond B3: BASIN#3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	143.72	0.00
5.00	0.00	9,638	145.97	0.24
10.00	0.00	5,644	145.34	0.20
15.00	0.00	2,394	144.73	0.16
20.00	0.00	227	144.01	0.07
25.00	0.00	1	143.73	0.00
30.00	0.00	1	143.72	0.00
35.00	0.00	0	143.72	0.00
40.00	0.00	0	143.72	0.00
45.00	0.00	0	143.72	0.00
50.00	0.00	0	143.72	0.00
55.00	0.00	0	143.72	0.00
60.00	0.00	0	143.72	0.00
65.00	0.00	0	143.72	0.00
70.00	0.00	0	143.72	0.00
75.00	0.00	0	143.72	0.00
80.00	0.00	0	143.72	0.00
85.00	0.00	0	143.72	0.00
90.00	0.00	0	143.72	0.00
95.00	0.00	0	143.72	0.00
100.00	0.00	0	143.72	0.00
105.00	0.00	0	143.72	0.00
110.00	0.00	0	143.72	0.00
115.00	0.00	0	143.72	0.00
120.00	0.00	0	143.72	0.00

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Summary for Pond B4: BASIN#4

Inflow Area = 2.986 ac, 53.95% Impervious, Inflow Depth = 0.56" for WQ event
 Inflow = 4.19 cfs @ 1.15 hrs, Volume= 0.139 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 Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 139.73' @ 2.57 hrs Surf.Area= 8,996 sf Storage= 6,050 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	139.00'	66,831 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	7,648	0	0
140.00	9,503	8,576	8,576
141.00	10,988	10,246	18,821
142.00	12,367	11,678	30,499
143.00	13,797	13,082	43,581
144.00	15,503	14,650	58,231
144.50	18,900	8,601	66,831

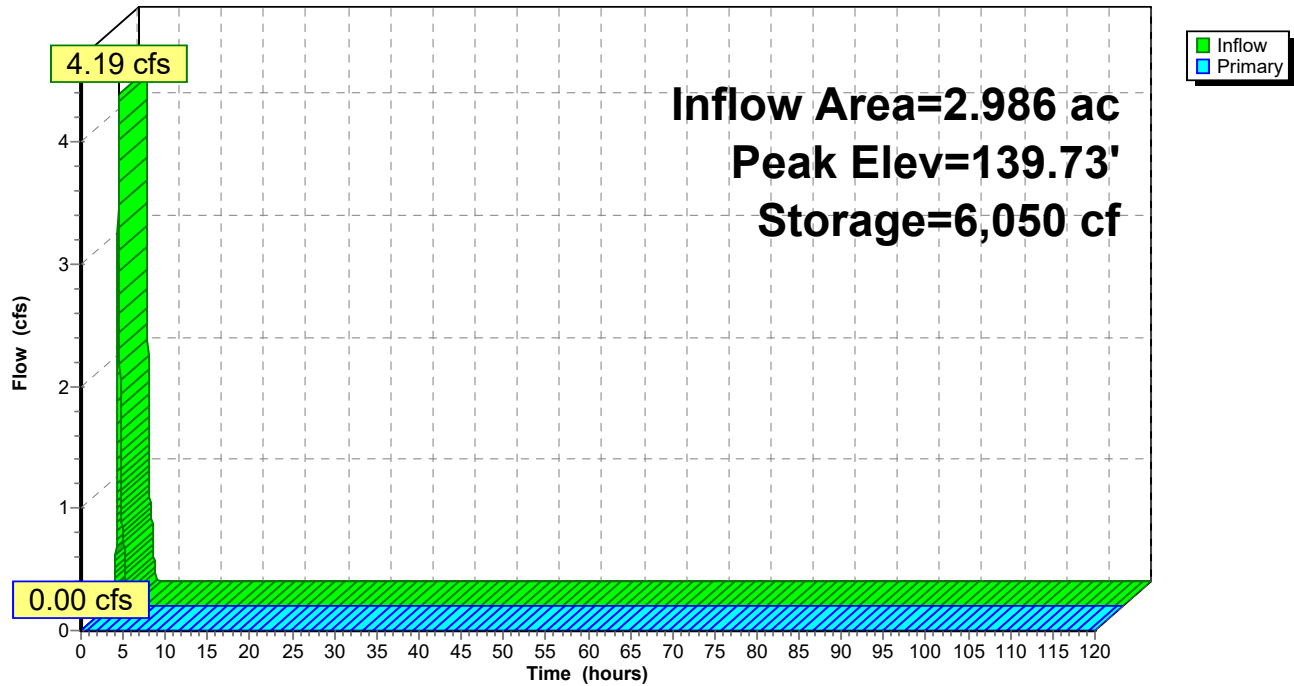
Device	Routing	Invert	Outlet Devices
#1	Primary	136.95'	15.0" Round Culvert L= 47.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 136.95' / 136.71' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	140.20'	1.2' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Device 1	141.50'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#4	Device 1	142.90'	4.0" x 4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	143.00'	40.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=139.00' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 0.00 cfs of 6.23 cfs potential flow)
- 2=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Orifice/Grate (Controls 0.00 cfs)
- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B4: BASIN#4

Hydrograph



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Hydrograph for Pond B4: BASIN#4

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	139.00	0.00
5.00	0.00	6,050	139.73	0.00
10.00	0.00	6,050	139.73	0.00
15.00	0.00	6,050	139.73	0.00
20.00	0.00	6,050	139.73	0.00
25.00	0.00	6,050	139.73	0.00
30.00	0.00	6,050	139.73	0.00
35.00	0.00	6,050	139.73	0.00
40.00	0.00	6,050	139.73	0.00
45.00	0.00	6,050	139.73	0.00
50.00	0.00	6,050	139.73	0.00
55.00	0.00	6,050	139.73	0.00
60.00	0.00	6,050	139.73	0.00
65.00	0.00	6,050	139.73	0.00
70.00	0.00	6,050	139.73	0.00
75.00	0.00	6,050	139.73	0.00
80.00	0.00	6,050	139.73	0.00
85.00	0.00	6,050	139.73	0.00
90.00	0.00	6,050	139.73	0.00
95.00	0.00	6,050	139.73	0.00
100.00	0.00	6,050	139.73	0.00
105.00	0.00	6,050	139.73	0.00
110.00	0.00	6,050	139.73	0.00
115.00	0.00	6,050	139.73	0.00
120.00	0.00	6,050	139.73	0.00

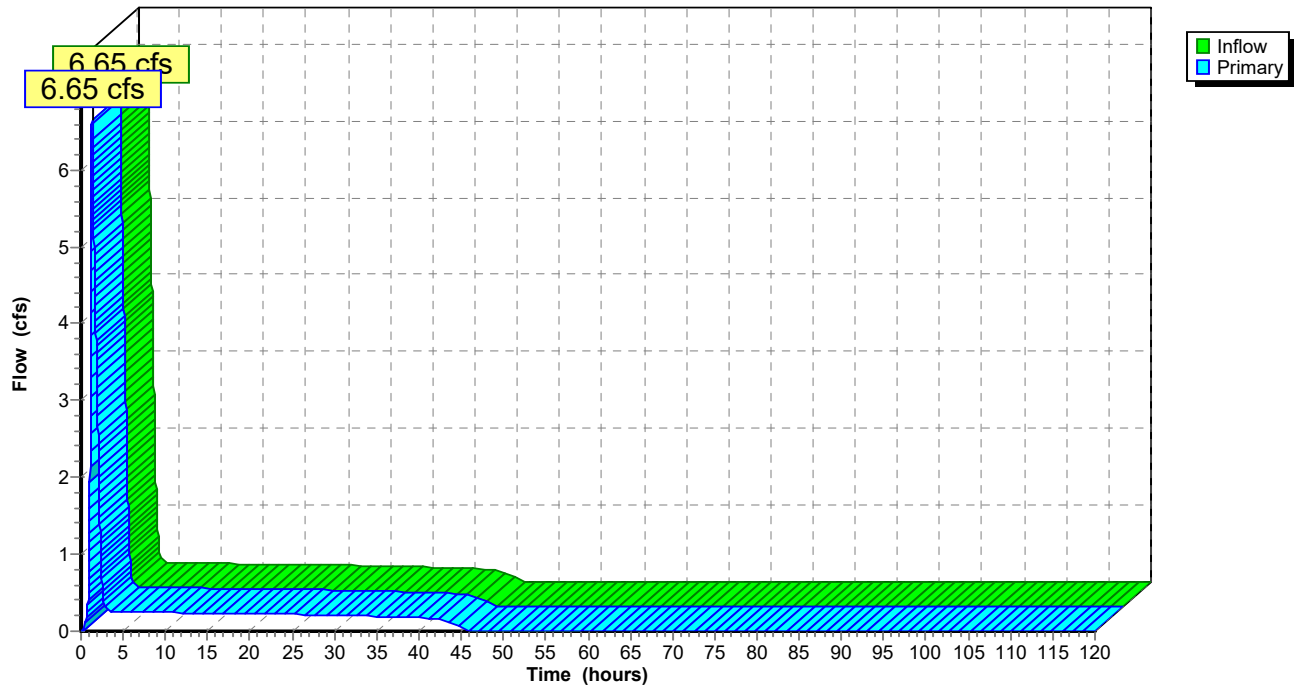
Summary for Link R1: REACH# 1

Inflow = 6.65 cfs @ 1.32 hrs, Volume= 1.193 af
 Primary = 6.65 cfs @ 1.33 hrs, Volume= 1.193 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R1: REACH# 1

Hydrograph



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Hydrograph for Link R1: REACH# 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.00	0.00	0.00
2.00	2.58	0.00	2.64	108.00	0.00	0.00	0.00
4.00	0.25	0.00	0.25	110.00	0.00	0.00	0.00
6.00	0.25	0.00	0.25	112.00	0.00	0.00	0.00
8.00	0.25	0.00	0.25	114.00	0.00	0.00	0.00
10.00	0.24	0.00	0.24	116.00	0.00	0.00	0.00
12.00	0.24	0.00	0.24	118.00	0.00	0.00	0.00
14.00	0.24	0.00	0.24	120.00	0.00	0.00	0.00
16.00	0.23	0.00	0.23				
18.00	0.23	0.00	0.23				
20.00	0.23	0.00	0.23				
22.00	0.22	0.00	0.22				
24.00	0.22	0.00	0.22				
26.00	0.22	0.00	0.22				
28.00	0.21	0.00	0.21				
30.00	0.21	0.00	0.21				
32.00	0.20	0.00	0.20				
34.00	0.20	0.00	0.20				
36.00	0.19	0.00	0.19				
38.00	0.18	0.00	0.18				
40.00	0.17	0.00	0.17				
42.00	0.16	0.00	0.16				
44.00	0.11	0.00	0.11				
46.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
58.00	0.00	0.00	0.00				
60.00	0.00	0.00	0.00				
62.00	0.00	0.00	0.00				
64.00	0.00	0.00	0.00				
66.00	0.00	0.00	0.00				
68.00	0.00	0.00	0.00				
70.00	0.00	0.00	0.00				
72.00	0.00	0.00	0.00				
74.00	0.00	0.00	0.00				
76.00	0.00	0.00	0.00				
78.00	0.00	0.00	0.00				
80.00	0.00	0.00	0.00				
82.00	0.00	0.00	0.00				
84.00	0.00	0.00	0.00				
86.00	0.00	0.00	0.00				
88.00	0.00	0.00	0.00				
90.00	0.00	0.00	0.00				
92.00	0.00	0.00	0.00				
94.00	0.00	0.00	0.00				
96.00	0.00	0.00	0.00				
98.00	0.00	0.00	0.00				
100.00	0.00	0.00	0.00				
102.00	0.00	0.00	0.00				
104.00	0.00	0.00	0.00				

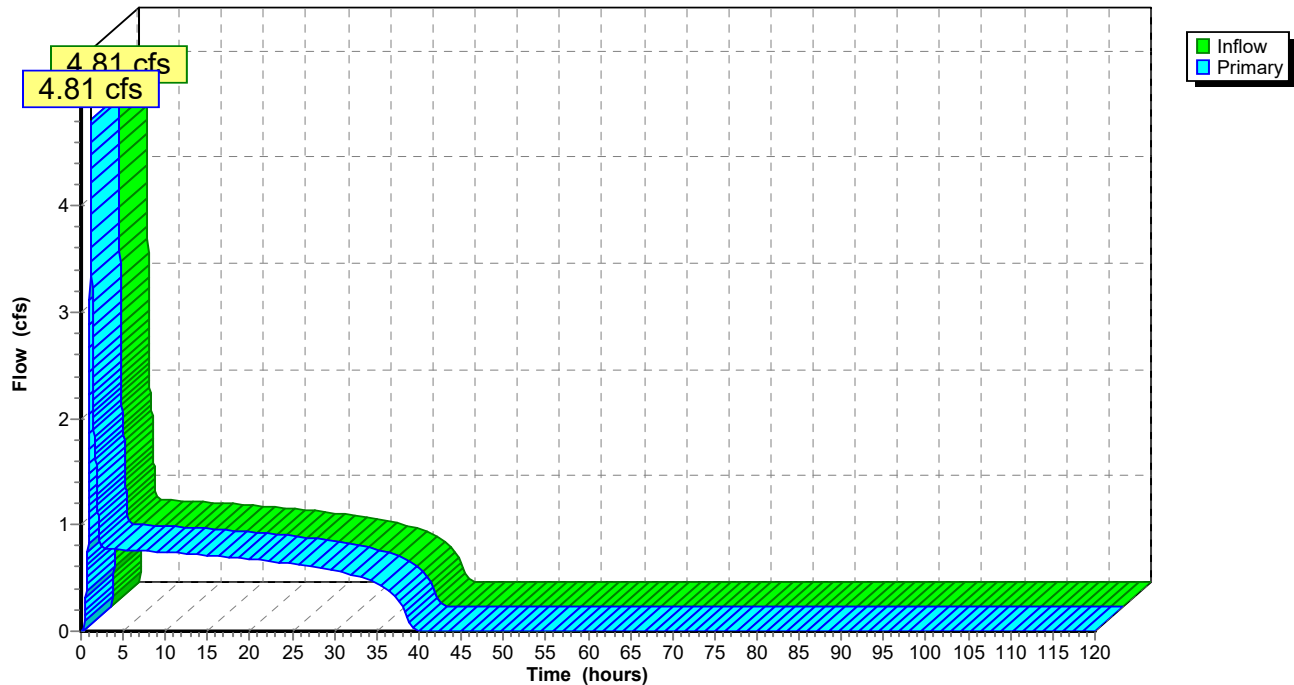
Summary for Link R2: REACH# 2

Inflow = 4.81 cfs @ 1.17 hrs, Volume= 2.171 af
 Primary = 4.81 cfs @ 1.18 hrs, Volume= 2.171 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R2: REACH# 2

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Link R2: REACH# 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.00	0.00	0.00
2.00	1.12	0.00	1.13	108.00	0.00	0.00	0.00
4.00	0.77	0.00	0.77	110.00	0.00	0.00	0.00
6.00	0.76	0.00	0.76	112.00	0.00	0.00	0.00
8.00	0.75	0.00	0.75	114.00	0.00	0.00	0.00
10.00	0.74	0.00	0.74	116.00	0.00	0.00	0.00
12.00	0.73	0.00	0.73	118.00	0.00	0.00	0.00
14.00	0.72	0.00	0.72	120.00	0.00	0.00	0.00
16.00	0.71	0.00	0.71				
18.00	0.70	0.00	0.70				
20.00	0.68	0.00	0.68				
22.00	0.67	0.00	0.67				
24.00	0.65	0.00	0.65				
26.00	0.62	0.00	0.62				
28.00	0.60	0.00	0.60				
30.00	0.57	0.00	0.57				
32.00	0.53	0.00	0.53				
34.00	0.48	0.00	0.48				
36.00	0.41	0.00	0.41				
38.00	0.25	0.00	0.25				
40.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
58.00	0.00	0.00	0.00				
60.00	0.00	0.00	0.00				
62.00	0.00	0.00	0.00				
64.00	0.00	0.00	0.00				
66.00	0.00	0.00	0.00				
68.00	0.00	0.00	0.00				
70.00	0.00	0.00	0.00				
72.00	0.00	0.00	0.00				
74.00	0.00	0.00	0.00				
76.00	0.00	0.00	0.00				
78.00	0.00	0.00	0.00				
80.00	0.00	0.00	0.00				
82.00	0.00	0.00	0.00				
84.00	0.00	0.00	0.00				
86.00	0.00	0.00	0.00				
88.00	0.00	0.00	0.00				
90.00	0.00	0.00	0.00				
92.00	0.00	0.00	0.00				
94.00	0.00	0.00	0.00				
96.00	0.00	0.00	0.00				
98.00	0.00	0.00	0.00				
100.00	0.00	0.00	0.00				
102.00	0.00	0.00	0.00				
104.00	0.00	0.00	0.00				

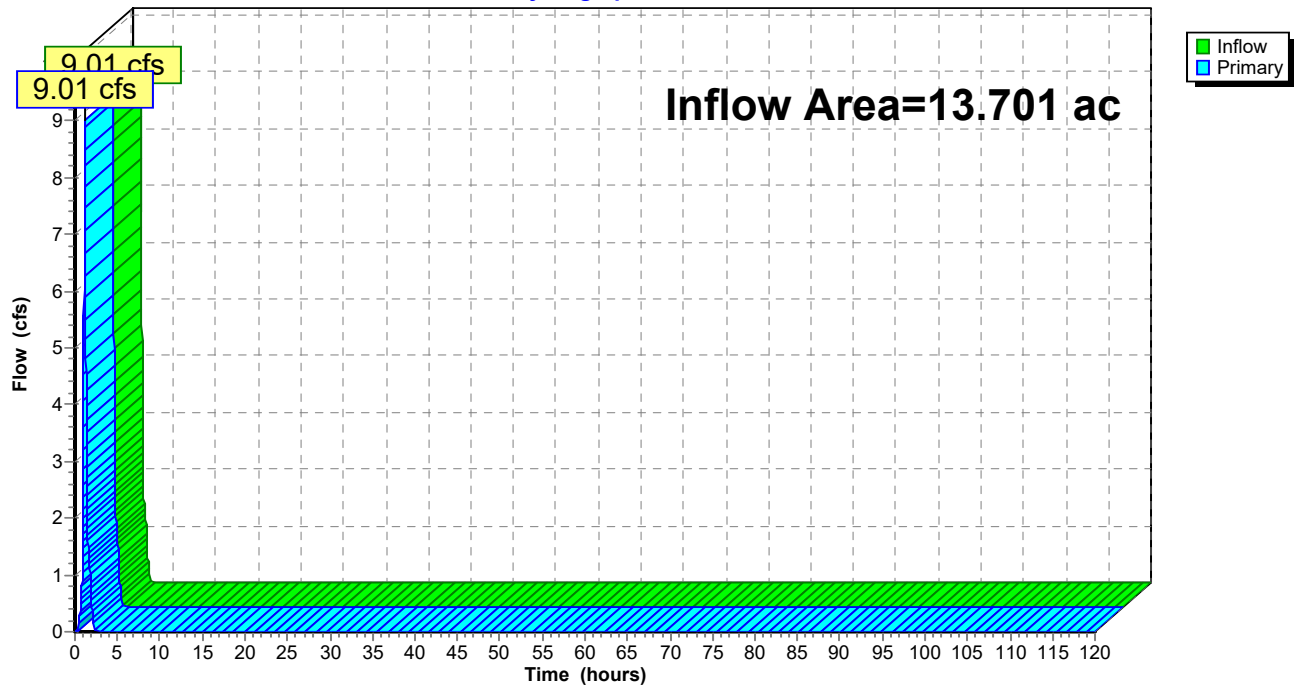
Summary for Link R3: REACH# 3

Inflow Area = 13.701 ac, 37.05% Impervious, Inflow Depth = 0.26" for WQ event
 Inflow = 9.01 cfs @ 1.15 hrs, Volume= 0.299 af
 Primary = 9.01 cfs @ 1.16 hrs, Volume= 0.299 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R3: REACH# 3

Hydrograph



PROPOSED 2022-04

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NJ DEP 2-hr WQ Rainfall=1.25"

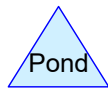
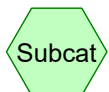
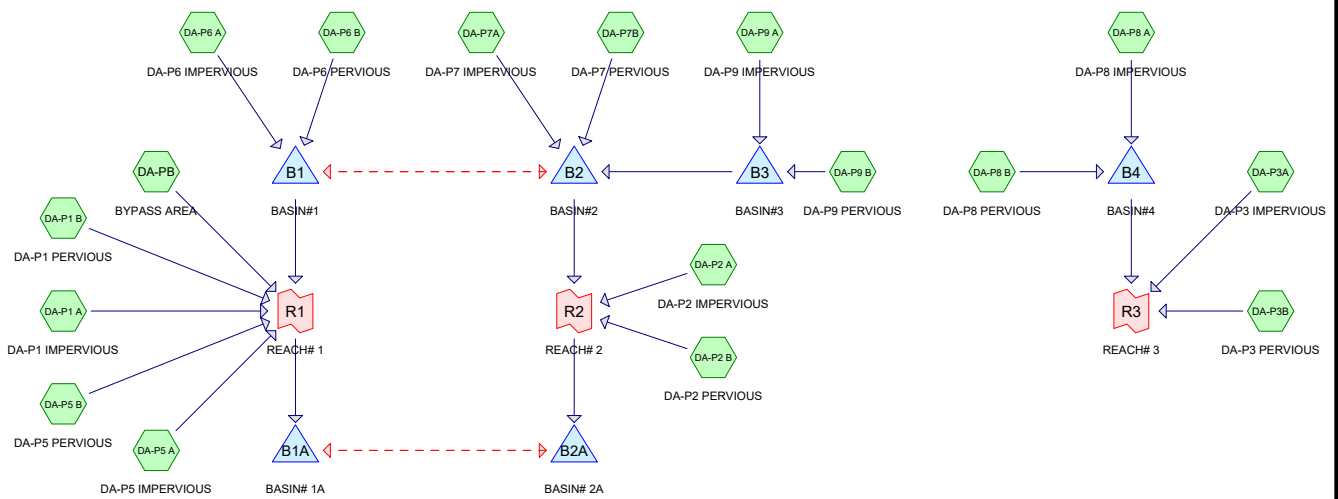
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Hydrograph for Link R3: REACH# 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.00	0.00	0.00
2.00	0.41	0.00	0.42	108.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	110.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	112.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	114.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	116.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	118.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	120.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00				
18.00	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
58.00	0.00	0.00	0.00				
60.00	0.00	0.00	0.00				
62.00	0.00	0.00	0.00				
64.00	0.00	0.00	0.00				
66.00	0.00	0.00	0.00				
68.00	0.00	0.00	0.00				
70.00	0.00	0.00	0.00				
72.00	0.00	0.00	0.00				
74.00	0.00	0.00	0.00				
76.00	0.00	0.00	0.00				
78.00	0.00	0.00	0.00				
80.00	0.00	0.00	0.00				
82.00	0.00	0.00	0.00				
84.00	0.00	0.00	0.00				
86.00	0.00	0.00	0.00				
88.00	0.00	0.00	0.00				
90.00	0.00	0.00	0.00				
92.00	0.00	0.00	0.00				
94.00	0.00	0.00	0.00				
96.00	0.00	0.00	0.00				
98.00	0.00	0.00	0.00				
100.00	0.00	0.00	0.00				
102.00	0.00	0.00	0.00				
104.00	0.00	0.00	0.00				

2-Year Storm Event for Post-Development Conditions



Routing Diagram for PROPOSED 2022-04
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PROPOSED 2022-04

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
16.726	61	>75% Grass cover, Good, HSG B (DA-P3B, DA-P6 B, DA-P7B, DA-P8 B, DA-P9 B)
16.083	74	>75% Grass cover, Good, HSG C (DA-P1 B, DA-P2 B, DA-P5 B, DA-P6 B, DA-P7B)
0.044	82	Dirt roads, HSG B (DA-P5 B)
0.036	87	Dirt roads, HSG C (DA-P5 B)
17.558	98	Paved parking, HSG B (DA-P2 A, DA-P3A, DA-P6 A, DA-P7A, DA-P8 A, DA-P9 A)
22.103	98	Paved parking, HSG C (DA-P1 A, DA-P2 A, DA-P5 A, DA-P6 A, DA-P7A)
8.315	78	Row crops, straight row, Good, HSG B (DA-P5 B, DA-PB)
9.051	85	Row crops, straight row, Good, HSG C (DA-P5 B, DA-PB)
5.073	55	Woods, Good, HSG B (DA-P3B, DA-P6 B)
94.988	82	TOTAL AREA

PROPOSED 2022-04

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Page 3

Summary for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Runoff = 1.40 cfs @ 12.13 hrs, Volume= 0.127 af, Depth= 3.07"

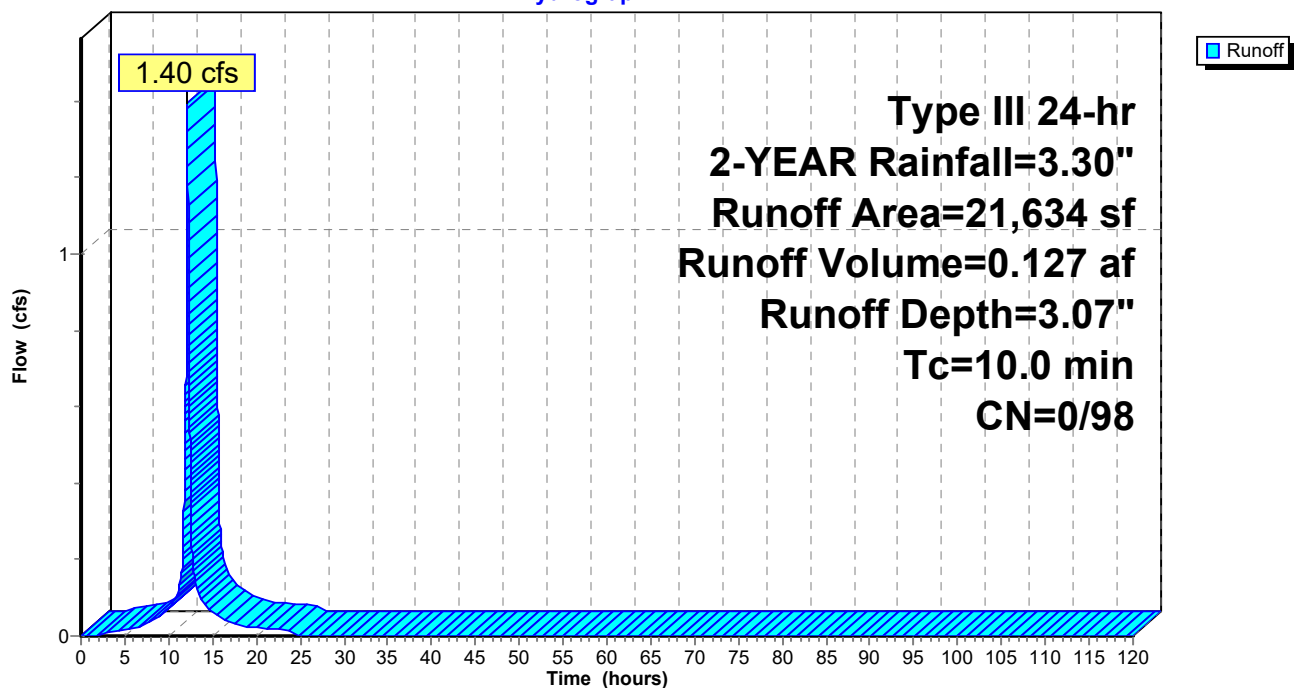
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
21,634	98	Paved parking, HSG C
21,634		100.00% Impervious Area

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

Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.06	0.02
10.00	0.62	0.00	0.43	0.07
15.00	2.82	0.00	2.59	0.06
20.00	3.16	0.00	2.93	0.02
25.00	3.30	0.00	3.07	0.00
30.00	3.30	0.00	3.07	0.00
35.00	3.30	0.00	3.07	0.00
40.00	3.30	0.00	3.07	0.00
45.00	3.30	0.00	3.07	0.00
50.00	3.30	0.00	3.07	0.00
55.00	3.30	0.00	3.07	0.00
60.00	3.30	0.00	3.07	0.00
65.00	3.30	0.00	3.07	0.00
70.00	3.30	0.00	3.07	0.00
75.00	3.30	0.00	3.07	0.00
80.00	3.30	0.00	3.07	0.00
85.00	3.30	0.00	3.07	0.00
90.00	3.30	0.00	3.07	0.00
95.00	3.30	0.00	3.07	0.00
100.00	3.30	0.00	3.07	0.00
105.00	3.30	0.00	3.07	0.00
110.00	3.30	0.00	3.07	0.00
115.00	3.30	0.00	3.07	0.00
120.00	3.30	0.00	3.07	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Runoff = 2.38 cfs @ 12.15 hrs, Volume= 0.204 af, Depth= 1.10"

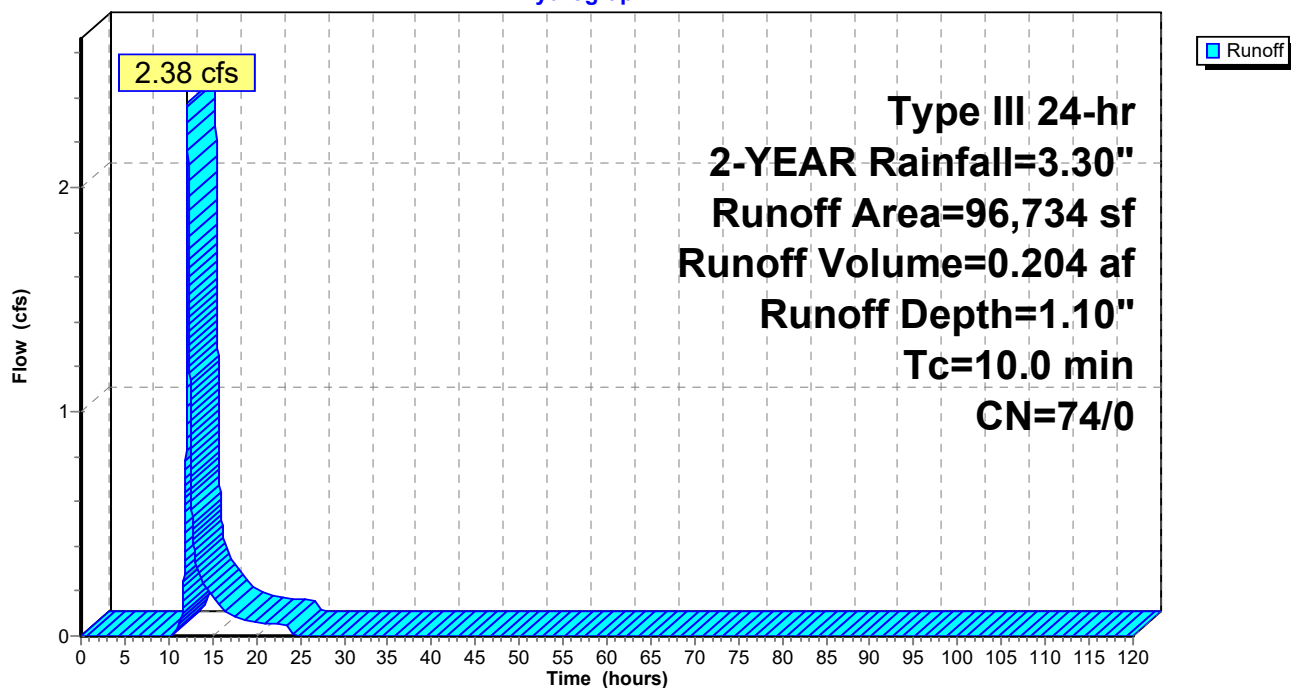
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
96,734	74	>75% Grass cover, Good, HSG C
96,734		100.00% Pervious Area

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

Subcatchment DA-P1 B: DA-P1 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.00	0.00
10.00	0.62	0.00	0.00	0.00
15.00	2.82	0.80	0.00	0.18
20.00	3.16	1.01	0.00	0.06
25.00	3.30	1.10	0.00	0.00
30.00	3.30	1.10	0.00	0.00
35.00	3.30	1.10	0.00	0.00
40.00	3.30	1.10	0.00	0.00
45.00	3.30	1.10	0.00	0.00
50.00	3.30	1.10	0.00	0.00
55.00	3.30	1.10	0.00	0.00
60.00	3.30	1.10	0.00	0.00
65.00	3.30	1.10	0.00	0.00
70.00	3.30	1.10	0.00	0.00
75.00	3.30	1.10	0.00	0.00
80.00	3.30	1.10	0.00	0.00
85.00	3.30	1.10	0.00	0.00
90.00	3.30	1.10	0.00	0.00
95.00	3.30	1.10	0.00	0.00
100.00	3.30	1.10	0.00	0.00
105.00	3.30	1.10	0.00	0.00
110.00	3.30	1.10	0.00	0.00
115.00	3.30	1.10	0.00	0.00
120.00	3.30	1.10	0.00	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Runoff = 4.09 cfs @ 12.13 hrs, Volume= 0.372 af, Depth= 3.07"

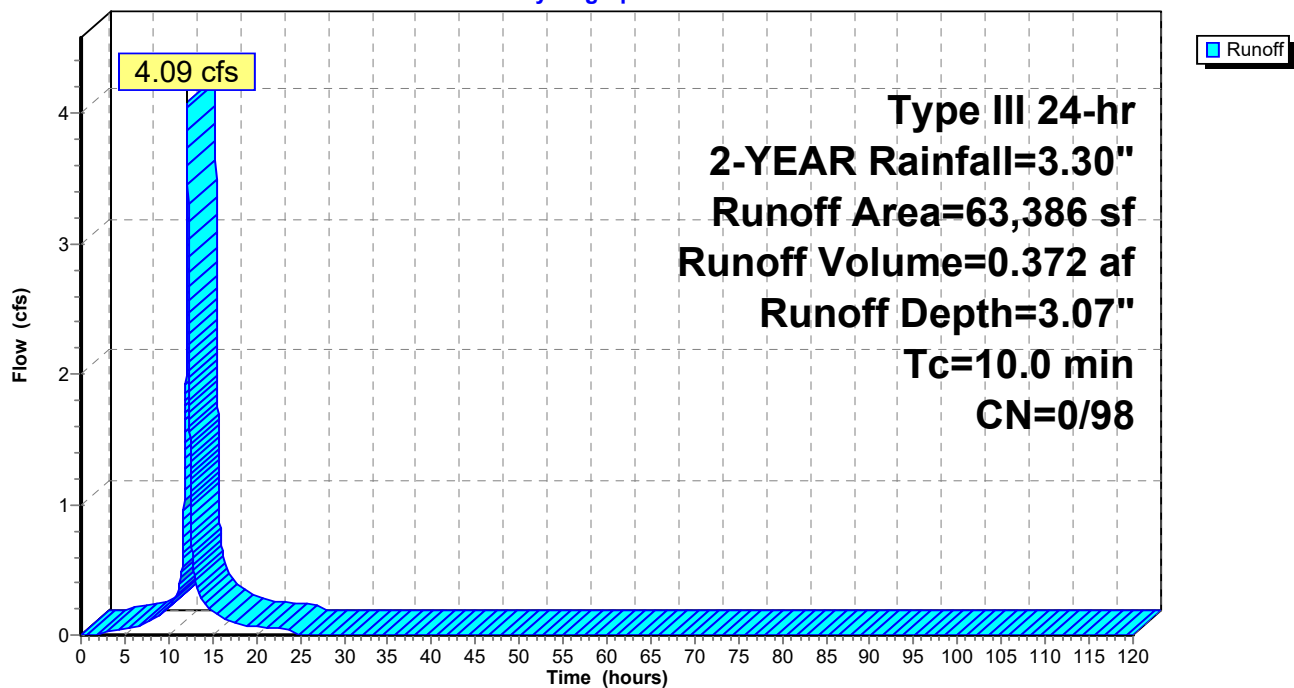
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
4,912	98	Paved parking, HSG B
58,474	98	Paved parking, HSG C
63,386	98	Weighted Average
63,386		100.00% Impervious Area

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

Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.06	0.04
10.00	0.62	0.00	0.43	0.21
15.00	2.82	0.00	2.59	0.19
20.00	3.16	0.00	2.93	0.06
25.00	3.30	0.00	3.07	0.00
30.00	3.30	0.00	3.07	0.00
35.00	3.30	0.00	3.07	0.00
40.00	3.30	0.00	3.07	0.00
45.00	3.30	0.00	3.07	0.00
50.00	3.30	0.00	3.07	0.00
55.00	3.30	0.00	3.07	0.00
60.00	3.30	0.00	3.07	0.00
65.00	3.30	0.00	3.07	0.00
70.00	3.30	0.00	3.07	0.00
75.00	3.30	0.00	3.07	0.00
80.00	3.30	0.00	3.07	0.00
85.00	3.30	0.00	3.07	0.00
90.00	3.30	0.00	3.07	0.00
95.00	3.30	0.00	3.07	0.00
100.00	3.30	0.00	3.07	0.00
105.00	3.30	0.00	3.07	0.00
110.00	3.30	0.00	3.07	0.00
115.00	3.30	0.00	3.07	0.00
120.00	3.30	0.00	3.07	0.00

PROPOSED 2022-04

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Runoff = 6.09 cfs @ 12.15 hrs, Volume= 0.522 af, Depth= 1.10"

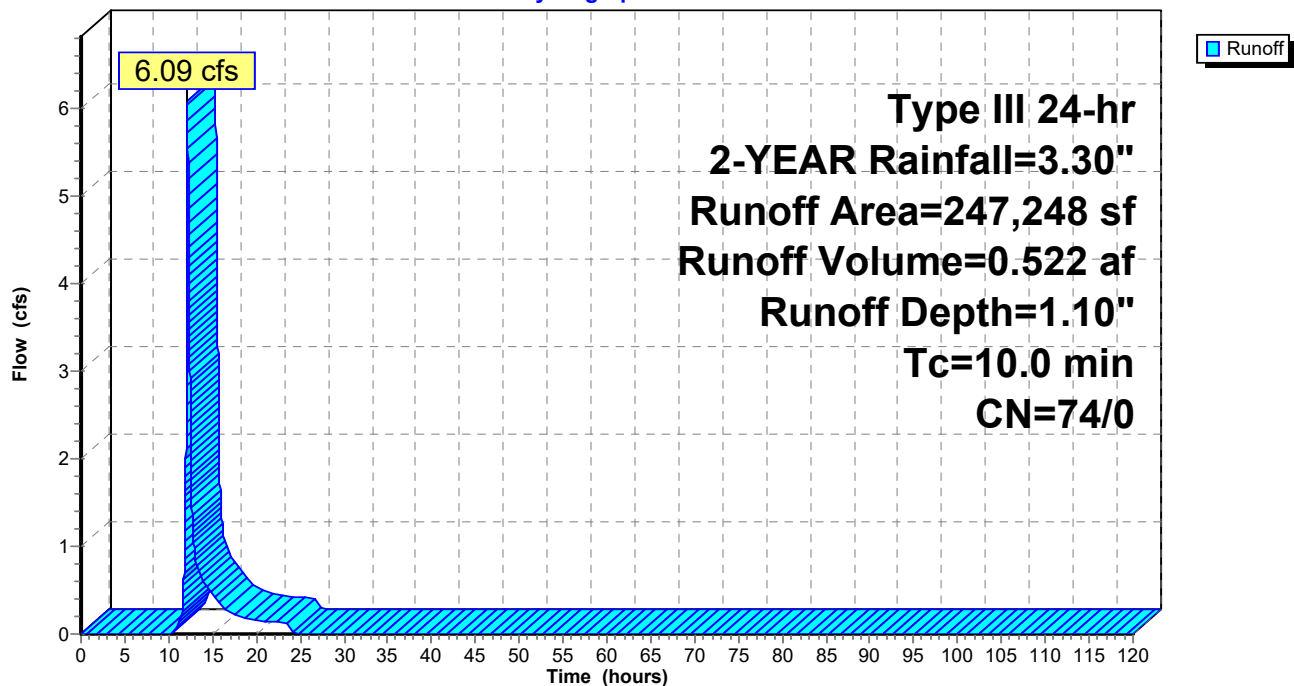
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
247,248	74	>75% Grass cover, Good, HSG C
247,248		100.00% Pervious Area

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

Subcatchment DA-P2 B: DA-P2 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.00	0.00
10.00	0.62	0.00	0.00	0.00
15.00	2.82	0.80	0.00	0.45
20.00	3.16	1.01	0.00	0.16
25.00	3.30	1.10	0.00	0.00
30.00	3.30	1.10	0.00	0.00
35.00	3.30	1.10	0.00	0.00
40.00	3.30	1.10	0.00	0.00
45.00	3.30	1.10	0.00	0.00
50.00	3.30	1.10	0.00	0.00
55.00	3.30	1.10	0.00	0.00
60.00	3.30	1.10	0.00	0.00
65.00	3.30	1.10	0.00	0.00
70.00	3.30	1.10	0.00	0.00
75.00	3.30	1.10	0.00	0.00
80.00	3.30	1.10	0.00	0.00
85.00	3.30	1.10	0.00	0.00
90.00	3.30	1.10	0.00	0.00
95.00	3.30	1.10	0.00	0.00
100.00	3.30	1.10	0.00	0.00
105.00	3.30	1.10	0.00	0.00
110.00	3.30	1.10	0.00	0.00
115.00	3.30	1.10	0.00	0.00
120.00	3.30	1.10	0.00	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Runoff = 9.75 cfs @ 12.13 hrs, Volume= 0.886 af, Depth= 3.07"

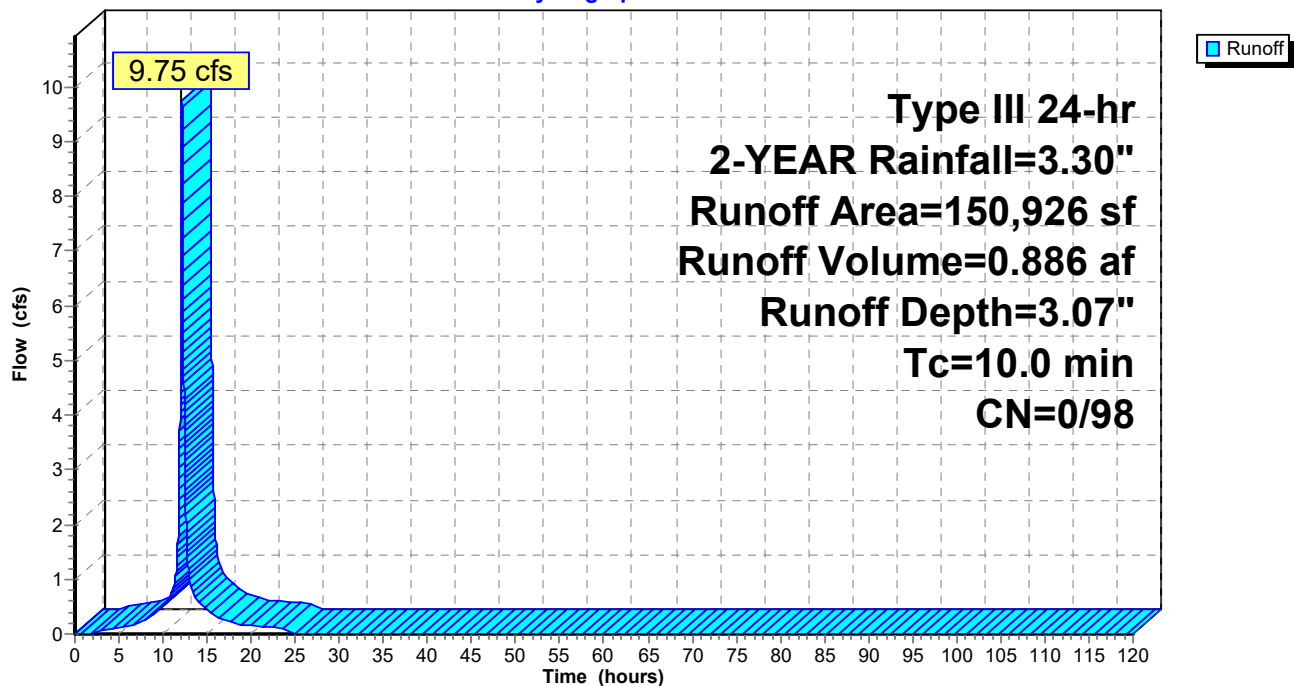
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
150,926	98	Paved parking, HSG B
150,926		100.00% Impervious Area

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

Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.06	0.11
10.00	0.62	0.00	0.43	0.51
15.00	2.82	0.00	2.59	0.45
20.00	3.16	0.00	2.93	0.15
25.00	3.30	0.00	3.07	0.00
30.00	3.30	0.00	3.07	0.00
35.00	3.30	0.00	3.07	0.00
40.00	3.30	0.00	3.07	0.00
45.00	3.30	0.00	3.07	0.00
50.00	3.30	0.00	3.07	0.00
55.00	3.30	0.00	3.07	0.00
60.00	3.30	0.00	3.07	0.00
65.00	3.30	0.00	3.07	0.00
70.00	3.30	0.00	3.07	0.00
75.00	3.30	0.00	3.07	0.00
80.00	3.30	0.00	3.07	0.00
85.00	3.30	0.00	3.07	0.00
90.00	3.30	0.00	3.07	0.00
95.00	3.30	0.00	3.07	0.00
100.00	3.30	0.00	3.07	0.00
105.00	3.30	0.00	3.07	0.00
110.00	3.30	0.00	3.07	0.00
115.00	3.30	0.00	3.07	0.00
120.00	3.30	0.00	3.07	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P3B: DA-P3 PERVIOUS

Runoff = 1.42 cfs @ 12.23 hrs, Volume= 0.228 af, Depth= 0.38"

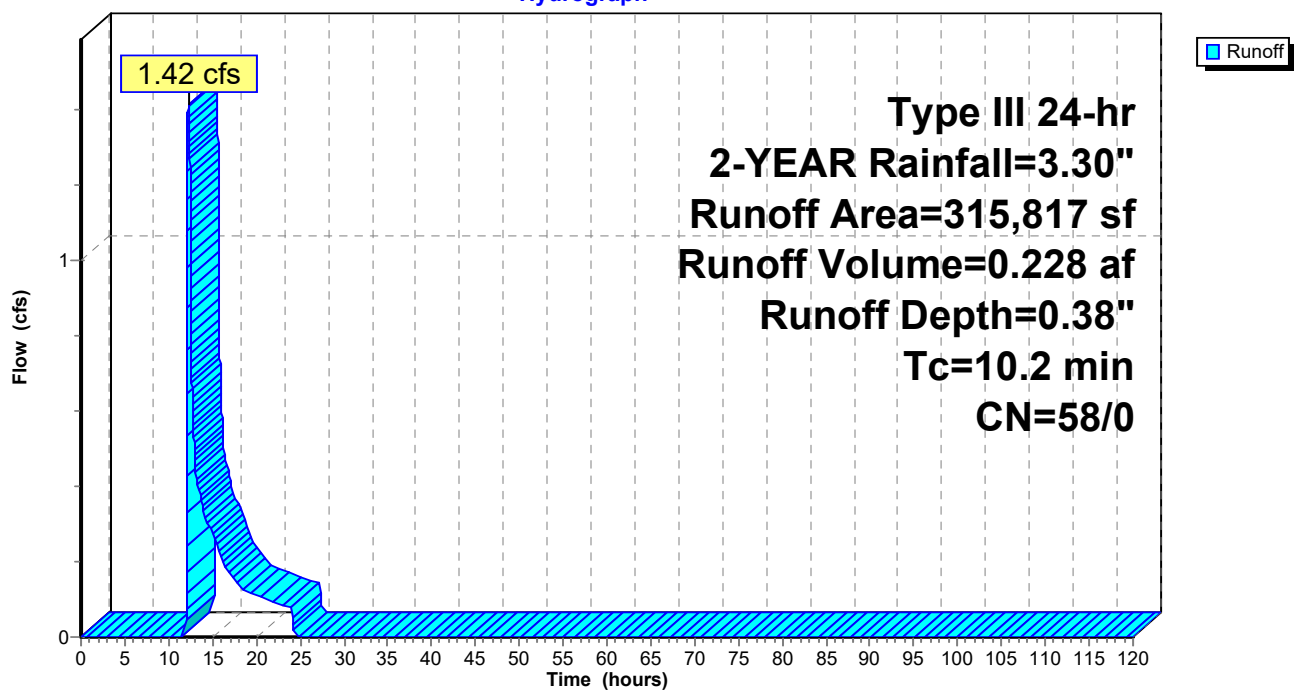
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
176,919	61	>75% Grass cover, Good, HSG B
138,898	55	Woods, Good, HSG B
315,817	58	Weighted Average
315,817		100.00% Pervious Area

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

Subcatchment DA-P3B: DA-P3 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-P3B: DA-P3 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.00	0.00
10.00	0.62	0.00	0.00	0.00
15.00	2.82	0.22	0.00	0.27
20.00	3.16	0.33	0.00	0.11
25.00	3.30	0.38	0.00	0.00
30.00	3.30	0.38	0.00	0.00
35.00	3.30	0.38	0.00	0.00
40.00	3.30	0.38	0.00	0.00
45.00	3.30	0.38	0.00	0.00
50.00	3.30	0.38	0.00	0.00
55.00	3.30	0.38	0.00	0.00
60.00	3.30	0.38	0.00	0.00
65.00	3.30	0.38	0.00	0.00
70.00	3.30	0.38	0.00	0.00
75.00	3.30	0.38	0.00	0.00
80.00	3.30	0.38	0.00	0.00
85.00	3.30	0.38	0.00	0.00
90.00	3.30	0.38	0.00	0.00
95.00	3.30	0.38	0.00	0.00
100.00	3.30	0.38	0.00	0.00
105.00	3.30	0.38	0.00	0.00
110.00	3.30	0.38	0.00	0.00
115.00	3.30	0.38	0.00	0.00
120.00	3.30	0.38	0.00	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Runoff = 1.18 cfs @ 12.13 hrs, Volume= 0.107 af, Depth= 3.07"

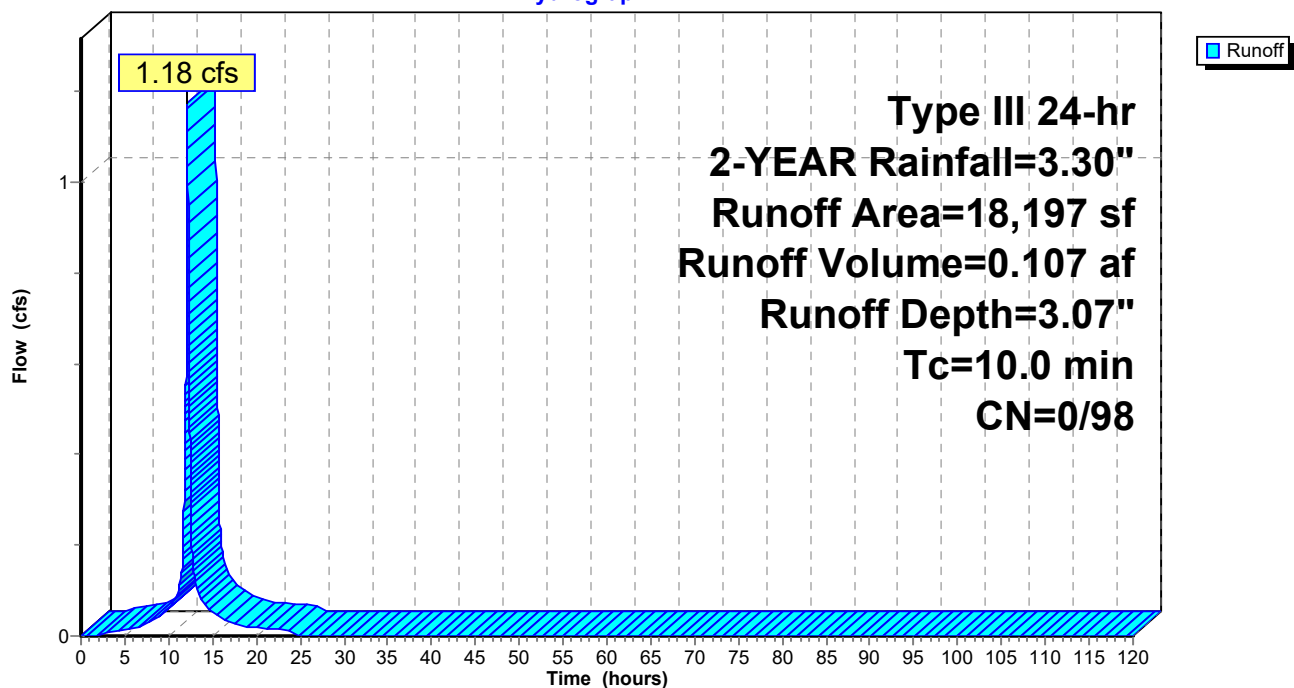
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
18,197	98	Paved parking, HSG C
18,197		100.00% Impervious Area

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

Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.06	0.01
10.00	0.62	0.00	0.43	0.06
15.00	2.82	0.00	2.59	0.05
20.00	3.16	0.00	2.93	0.02
25.00	3.30	0.00	3.07	0.00
30.00	3.30	0.00	3.07	0.00
35.00	3.30	0.00	3.07	0.00
40.00	3.30	0.00	3.07	0.00
45.00	3.30	0.00	3.07	0.00
50.00	3.30	0.00	3.07	0.00
55.00	3.30	0.00	3.07	0.00
60.00	3.30	0.00	3.07	0.00
65.00	3.30	0.00	3.07	0.00
70.00	3.30	0.00	3.07	0.00
75.00	3.30	0.00	3.07	0.00
80.00	3.30	0.00	3.07	0.00
85.00	3.30	0.00	3.07	0.00
90.00	3.30	0.00	3.07	0.00
95.00	3.30	0.00	3.07	0.00
100.00	3.30	0.00	3.07	0.00
105.00	3.30	0.00	3.07	0.00
110.00	3.30	0.00	3.07	0.00
115.00	3.30	0.00	3.07	0.00
120.00	3.30	0.00	3.07	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Runoff = 13.59 cfs @ 12.26 hrs, Volume= 1.384 af, Depth= 1.69"

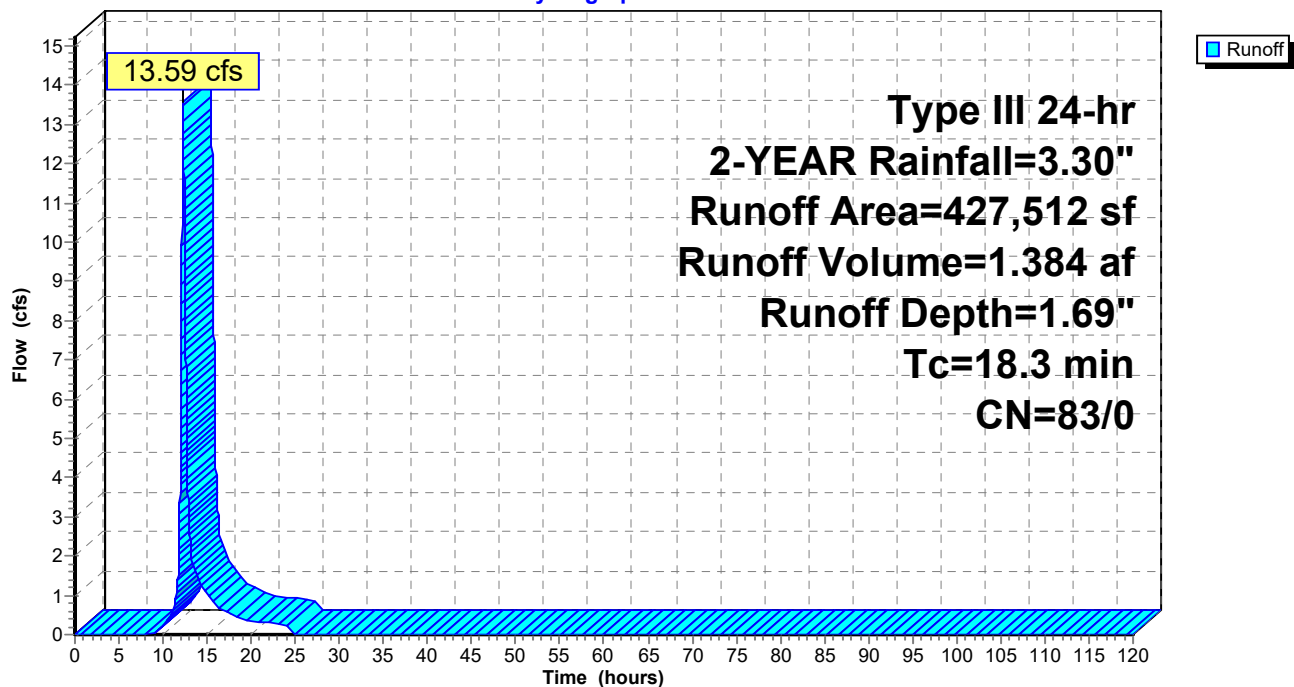
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
1,902	82	Dirt roads, HSG B
1,547	87	Dirt roads, HSG C
27,561	74	>75% Grass cover, Good, HSG C
101,474	78	Row crops, straight row, Good, HSG B
295,028	85	Row crops, straight row, Good, HSG C
427,512	83	Weighted Average
427,512		100.00% Pervious Area

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

Subcatchment DA-P5 B: DA-P5 PERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.00	0.00
10.00	0.62	0.02	0.00	0.22
15.00	2.82	1.30	0.00	1.04
20.00	3.16	1.57	0.00	0.36
25.00	3.30	1.69	0.00	0.00
30.00	3.30	1.69	0.00	0.00
35.00	3.30	1.69	0.00	0.00
40.00	3.30	1.69	0.00	0.00
45.00	3.30	1.69	0.00	0.00
50.00	3.30	1.69	0.00	0.00
55.00	3.30	1.69	0.00	0.00
60.00	3.30	1.69	0.00	0.00
65.00	3.30	1.69	0.00	0.00
70.00	3.30	1.69	0.00	0.00
75.00	3.30	1.69	0.00	0.00
80.00	3.30	1.69	0.00	0.00
85.00	3.30	1.69	0.00	0.00
90.00	3.30	1.69	0.00	0.00
95.00	3.30	1.69	0.00	0.00
100.00	3.30	1.69	0.00	0.00
105.00	3.30	1.69	0.00	0.00
110.00	3.30	1.69	0.00	0.00
115.00	3.30	1.69	0.00	0.00
120.00	3.30	1.69	0.00	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Runoff = 25.46 cfs @ 12.13 hrs, Volume= 2.313 af, Depth= 3.07"

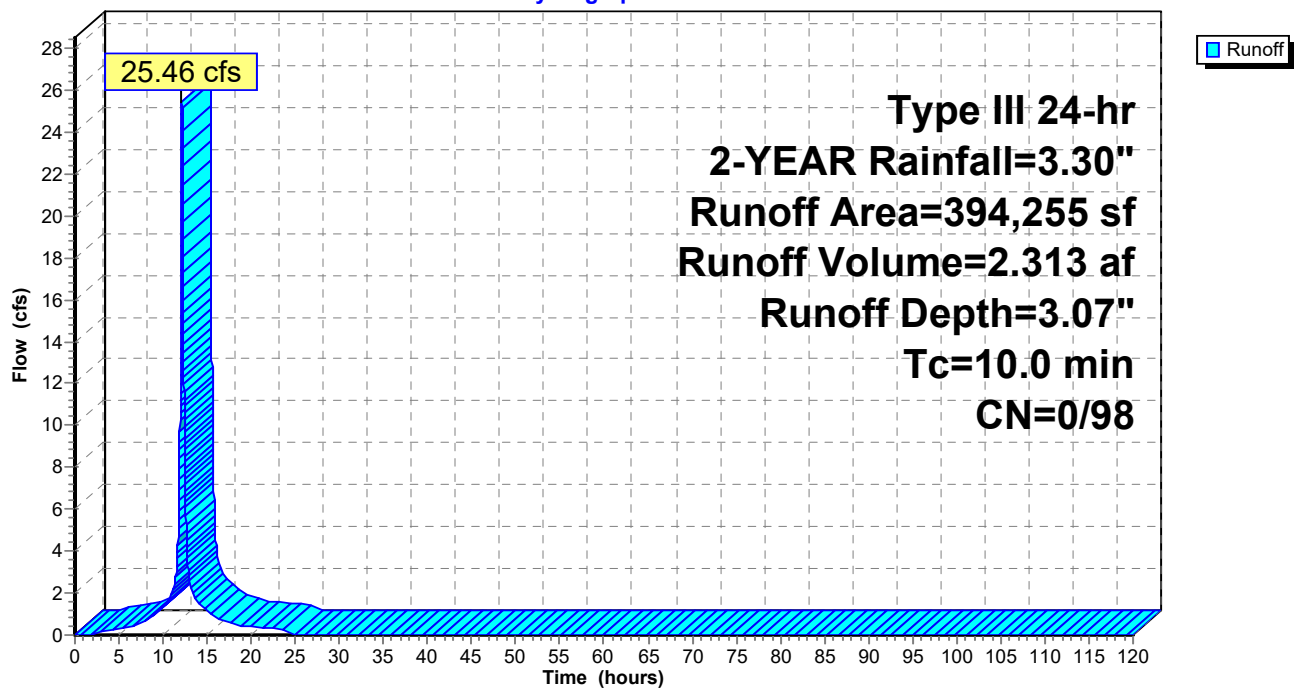
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
139,105	98	Paved parking, HSG B
255,150	98	Paved parking, HSG C
394,255	98	Weighted Average
394,255		100.00% Impervious Area

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

Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.06	0.28
10.00	0.62	0.00	0.43	1.32
15.00	2.82	0.00	2.59	1.18
20.00	3.16	0.00	2.93	0.40
25.00	3.30	0.00	3.07	0.00
30.00	3.30	0.00	3.07	0.00
35.00	3.30	0.00	3.07	0.00
40.00	3.30	0.00	3.07	0.00
45.00	3.30	0.00	3.07	0.00
50.00	3.30	0.00	3.07	0.00
55.00	3.30	0.00	3.07	0.00
60.00	3.30	0.00	3.07	0.00
65.00	3.30	0.00	3.07	0.00
70.00	3.30	0.00	3.07	0.00
75.00	3.30	0.00	3.07	0.00
80.00	3.30	0.00	3.07	0.00
85.00	3.30	0.00	3.07	0.00
90.00	3.30	0.00	3.07	0.00
95.00	3.30	0.00	3.07	0.00
100.00	3.30	0.00	3.07	0.00
105.00	3.30	0.00	3.07	0.00
110.00	3.30	0.00	3.07	0.00
115.00	3.30	0.00	3.07	0.00
120.00	3.30	0.00	3.07	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Runoff = 4.64 cfs @ 12.17 hrs, Volume= 0.518 af, Depth= 0.56"

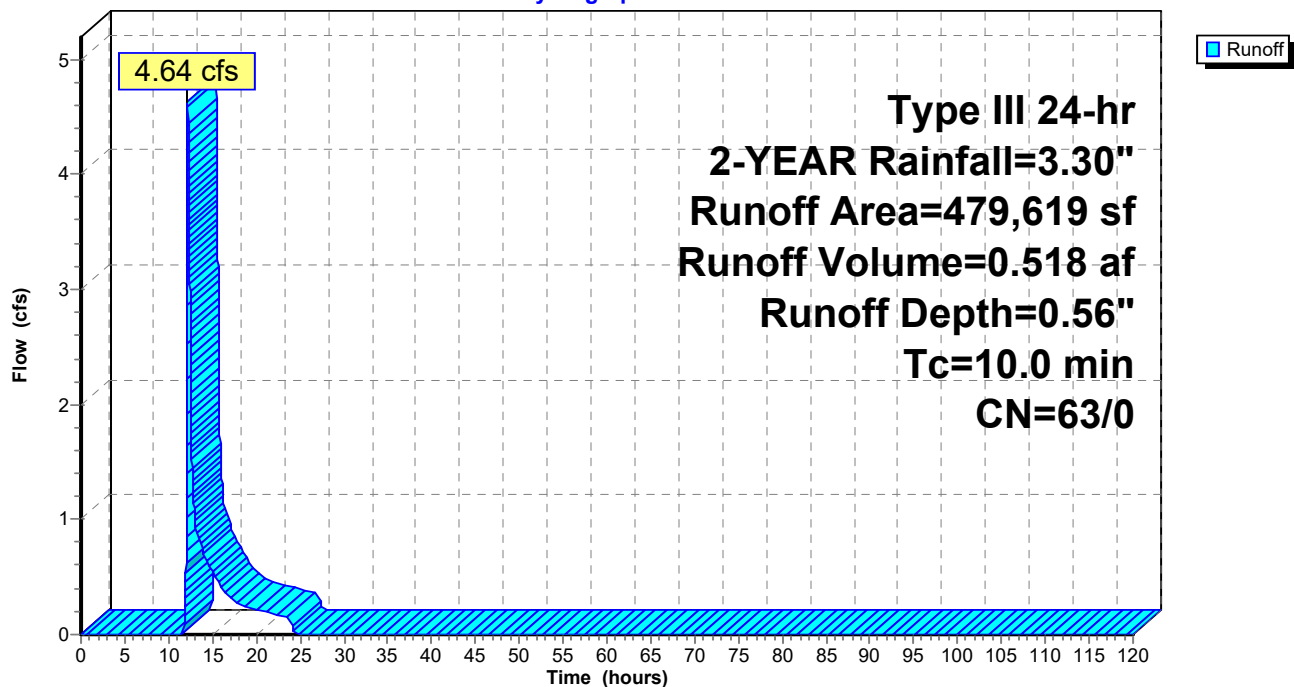
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
285,540	61	>75% Grass cover, Good, HSG B
112,000	74	>75% Grass cover, Good, HSG C
82,079	55	Woods, Good, HSG B
479,619	63	Weighted Average
479,619		100.00% Pervious Area

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

Subcatchment DA-P6 B: DA-P6 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.00	0.00
10.00	0.62	0.00	0.00	0.00
15.00	2.82	0.36	0.00	0.56
20.00	3.16	0.50	0.00	0.21
25.00	3.30	0.56	0.00	0.00
30.00	3.30	0.56	0.00	0.00
35.00	3.30	0.56	0.00	0.00
40.00	3.30	0.56	0.00	0.00
45.00	3.30	0.56	0.00	0.00
50.00	3.30	0.56	0.00	0.00
55.00	3.30	0.56	0.00	0.00
60.00	3.30	0.56	0.00	0.00
65.00	3.30	0.56	0.00	0.00
70.00	3.30	0.56	0.00	0.00
75.00	3.30	0.56	0.00	0.00
80.00	3.30	0.56	0.00	0.00
85.00	3.30	0.56	0.00	0.00
90.00	3.30	0.56	0.00	0.00
95.00	3.30	0.56	0.00	0.00
100.00	3.30	0.56	0.00	0.00
105.00	3.30	0.56	0.00	0.00
110.00	3.30	0.56	0.00	0.00
115.00	3.30	0.56	0.00	0.00
120.00	3.30	0.56	0.00	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Runoff = 54.35 cfs @ 12.13 hrs, Volume= 4.939 af, Depth= 3.07"

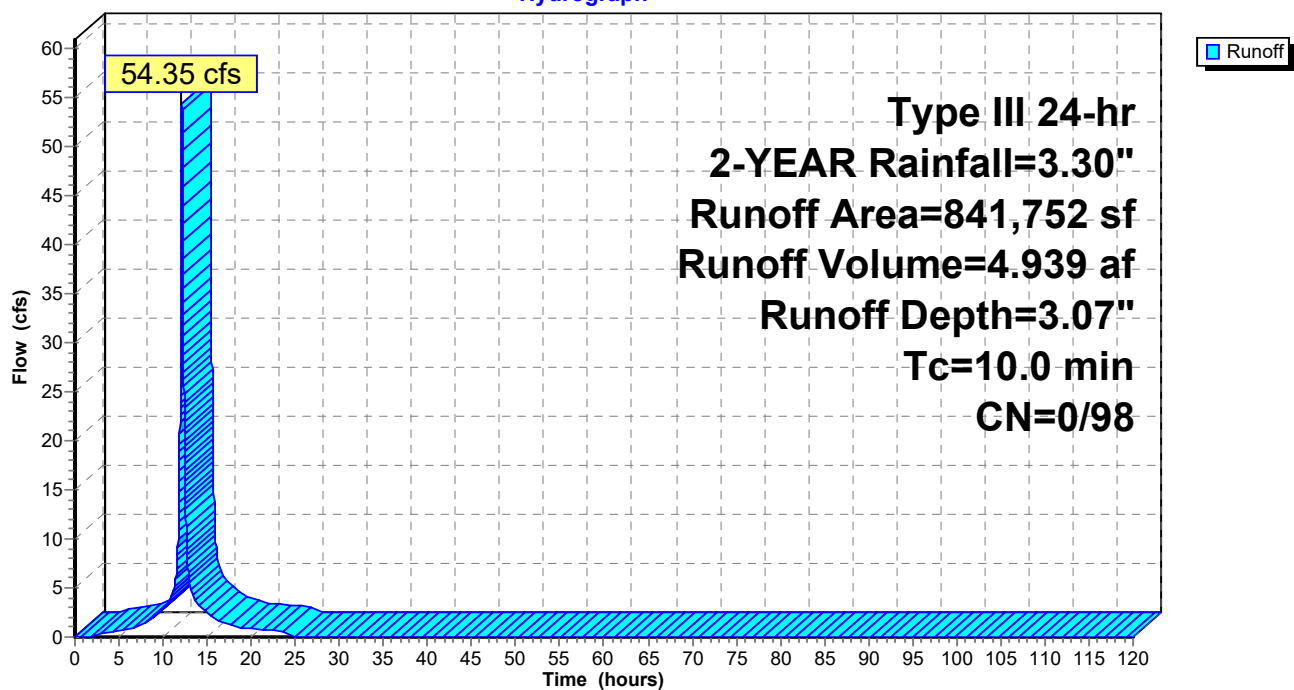
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
232,402	98	Paved parking, HSG B
609,350	98	Paved parking, HSG C
841,752	98	Weighted Average
841,752		100.00% Impervious Area

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

Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.06	0.59
10.00	0.62	0.00	0.43	2.82
15.00	2.82	0.00	2.59	2.51
20.00	3.16	0.00	2.93	0.85
25.00	3.30	0.00	3.07	0.00
30.00	3.30	0.00	3.07	0.00
35.00	3.30	0.00	3.07	0.00
40.00	3.30	0.00	3.07	0.00
45.00	3.30	0.00	3.07	0.00
50.00	3.30	0.00	3.07	0.00
55.00	3.30	0.00	3.07	0.00
60.00	3.30	0.00	3.07	0.00
65.00	3.30	0.00	3.07	0.00
70.00	3.30	0.00	3.07	0.00
75.00	3.30	0.00	3.07	0.00
80.00	3.30	0.00	3.07	0.00
85.00	3.30	0.00	3.07	0.00
90.00	3.30	0.00	3.07	0.00
95.00	3.30	0.00	3.07	0.00
100.00	3.30	0.00	3.07	0.00
105.00	3.30	0.00	3.07	0.00
110.00	3.30	0.00	3.07	0.00
115.00	3.30	0.00	3.07	0.00
120.00	3.30	0.00	3.07	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P7B: DA-P7 PERVIOUS

Runoff = 6.05 cfs @ 12.16 hrs, Volume= 0.571 af, Depth= 0.79"

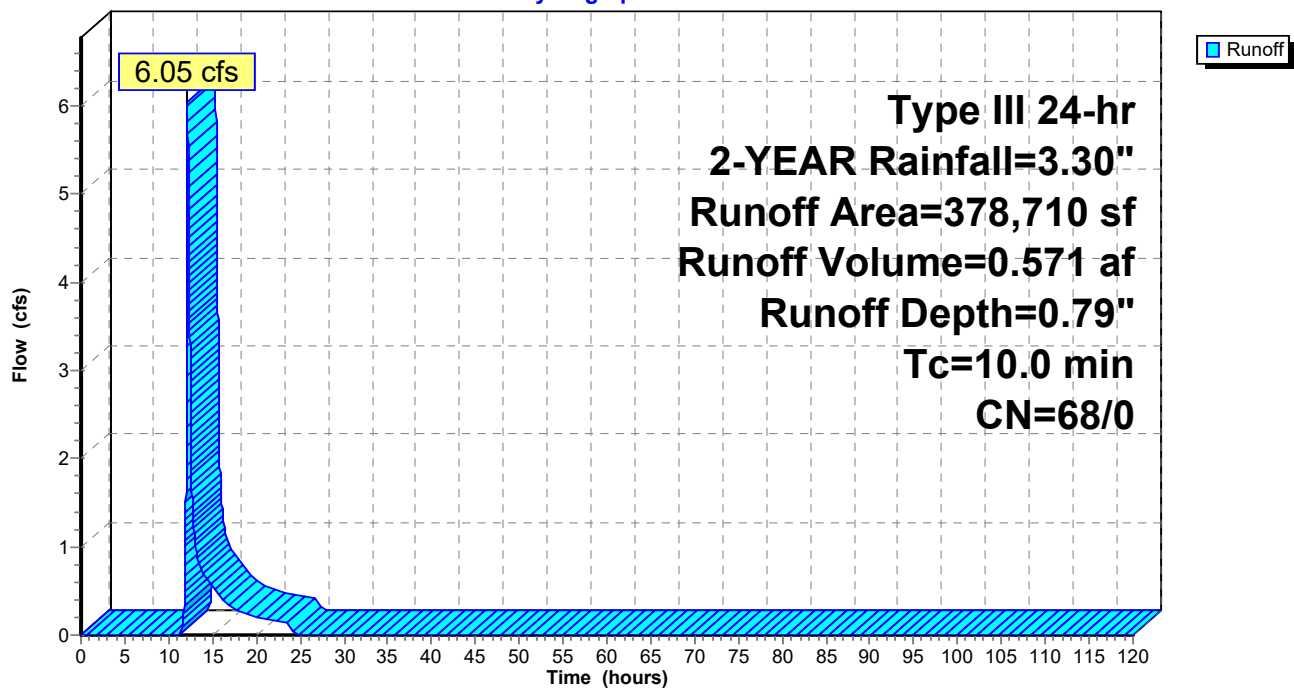
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
161,684	61	>75% Grass cover, Good, HSG B
217,026	74	>75% Grass cover, Good, HSG C
378,710	68	Weighted Average
378,710		100.00% Pervious Area

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

Subcatchment DA-P7B: DA-P7 PERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P7B: DA-P7 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.00	0.00
10.00	0.62	0.00	0.00	0.00
15.00	2.82	0.54	0.00	0.55
20.00	3.16	0.71	0.00	0.21
25.00	3.30	0.79	0.00	0.00
30.00	3.30	0.79	0.00	0.00
35.00	3.30	0.79	0.00	0.00
40.00	3.30	0.79	0.00	0.00
45.00	3.30	0.79	0.00	0.00
50.00	3.30	0.79	0.00	0.00
55.00	3.30	0.79	0.00	0.00
60.00	3.30	0.79	0.00	0.00
65.00	3.30	0.79	0.00	0.00
70.00	3.30	0.79	0.00	0.00
75.00	3.30	0.79	0.00	0.00
80.00	3.30	0.79	0.00	0.00
85.00	3.30	0.79	0.00	0.00
90.00	3.30	0.79	0.00	0.00
95.00	3.30	0.79	0.00	0.00
100.00	3.30	0.79	0.00	0.00
105.00	3.30	0.79	0.00	0.00
110.00	3.30	0.79	0.00	0.00
115.00	3.30	0.79	0.00	0.00
120.00	3.30	0.79	0.00	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Runoff = 4.53 cfs @ 12.13 hrs, Volume= 0.412 af, Depth= 3.07"

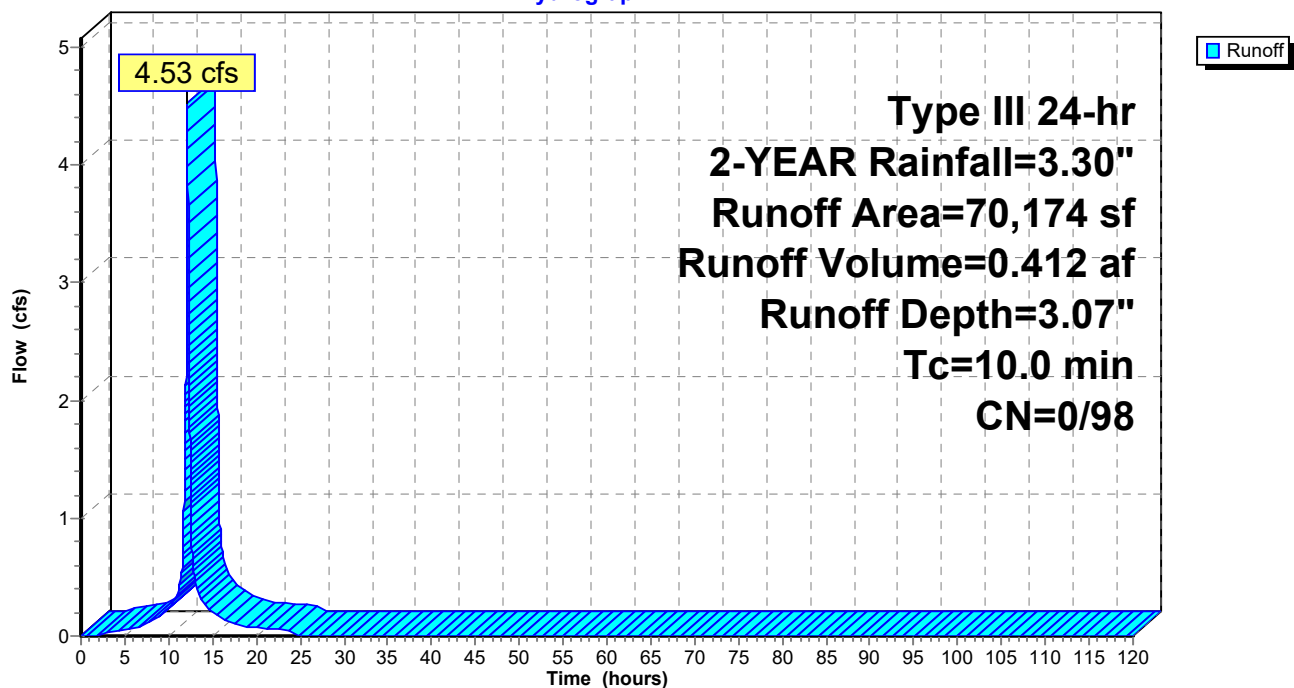
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
70,174	98	Paved parking, HSG B
70,174		100.00% Impervious Area

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

Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.06	0.05
10.00	0.62	0.00	0.43	0.23
15.00	2.82	0.00	2.59	0.21
20.00	3.16	0.00	2.93	0.07
25.00	3.30	0.00	3.07	0.00
30.00	3.30	0.00	3.07	0.00
35.00	3.30	0.00	3.07	0.00
40.00	3.30	0.00	3.07	0.00
45.00	3.30	0.00	3.07	0.00
50.00	3.30	0.00	3.07	0.00
55.00	3.30	0.00	3.07	0.00
60.00	3.30	0.00	3.07	0.00
65.00	3.30	0.00	3.07	0.00
70.00	3.30	0.00	3.07	0.00
75.00	3.30	0.00	3.07	0.00
80.00	3.30	0.00	3.07	0.00
85.00	3.30	0.00	3.07	0.00
90.00	3.30	0.00	3.07	0.00
95.00	3.30	0.00	3.07	0.00
100.00	3.30	0.00	3.07	0.00
105.00	3.30	0.00	3.07	0.00
110.00	3.30	0.00	3.07	0.00
115.00	3.30	0.00	3.07	0.00
120.00	3.30	0.00	3.07	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Runoff = 0.44 cfs @ 12.19 hrs, Volume= 0.056 af, Depth= 0.49"

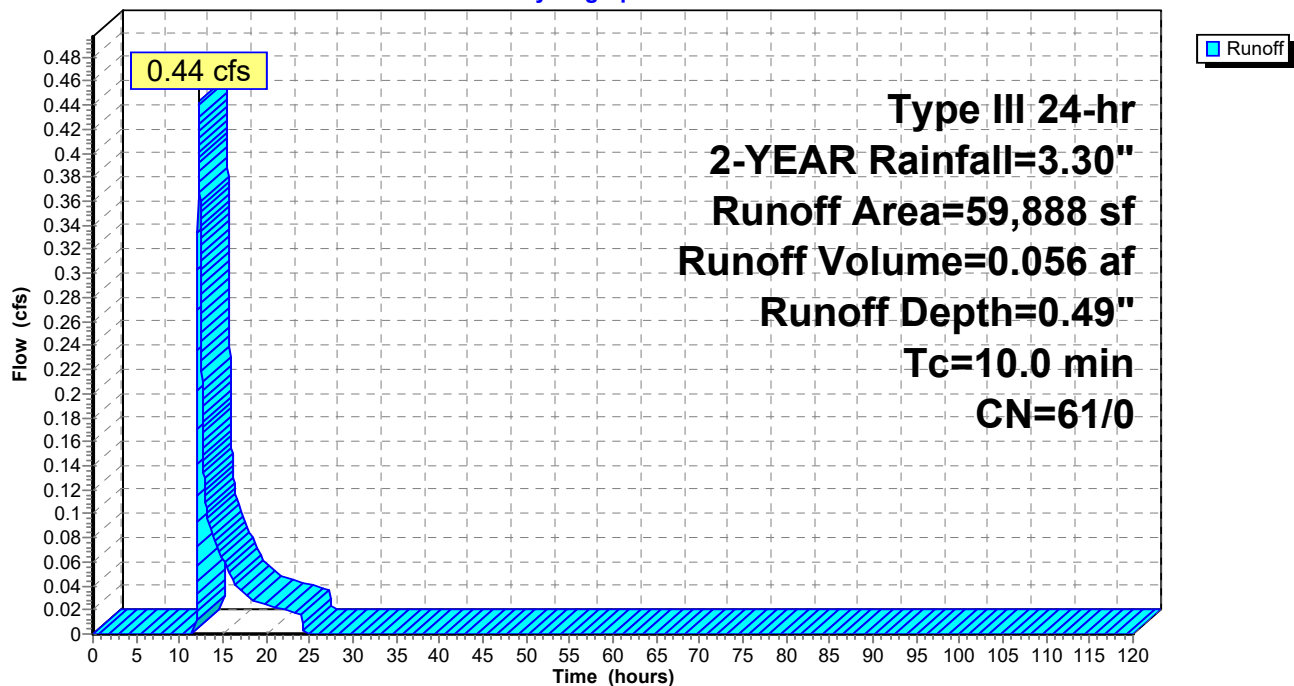
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
59,888	61	>75% Grass cover, Good, HSG B
59,888		100.00% Pervious Area

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

Subcatchment DA-P8 B: DA-P8 PERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.00	0.00
10.00	0.62	0.00	0.00	0.00
15.00	2.82	0.30	0.00	0.06
20.00	3.16	0.43	0.00	0.02
25.00	3.30	0.49	0.00	0.00
30.00	3.30	0.49	0.00	0.00
35.00	3.30	0.49	0.00	0.00
40.00	3.30	0.49	0.00	0.00
45.00	3.30	0.49	0.00	0.00
50.00	3.30	0.49	0.00	0.00
55.00	3.30	0.49	0.00	0.00
60.00	3.30	0.49	0.00	0.00
65.00	3.30	0.49	0.00	0.00
70.00	3.30	0.49	0.00	0.00
75.00	3.30	0.49	0.00	0.00
80.00	3.30	0.49	0.00	0.00
85.00	3.30	0.49	0.00	0.00
90.00	3.30	0.49	0.00	0.00
95.00	3.30	0.49	0.00	0.00
100.00	3.30	0.49	0.00	0.00
105.00	3.30	0.49	0.00	0.00
110.00	3.30	0.49	0.00	0.00
115.00	3.30	0.49	0.00	0.00
120.00	3.30	0.49	0.00	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Runoff = 10.80 cfs @ 12.13 hrs, Volume= 0.982 af, Depth= 3.07"

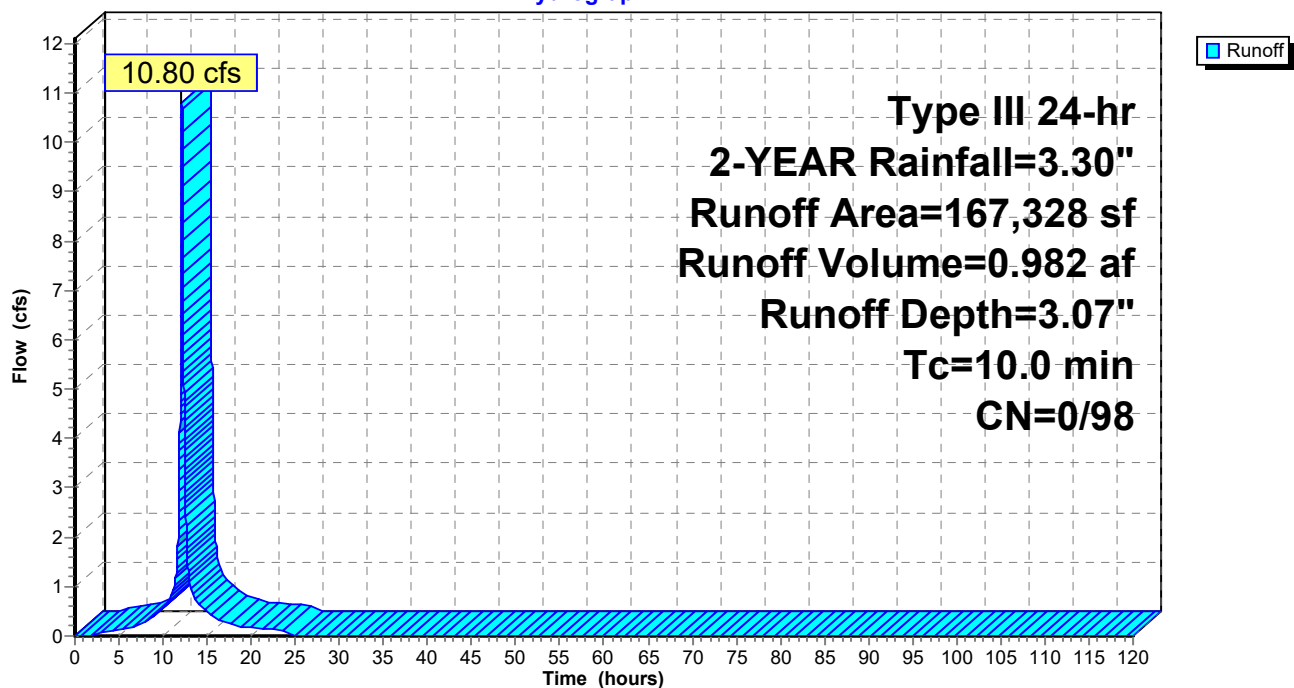
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
167,328	98	Paved parking, HSG B
167,328		100.00% Impervious Area

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

Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.06	0.12
10.00	0.62	0.00	0.43	0.56
15.00	2.82	0.00	2.59	0.50
20.00	3.16	0.00	2.93	0.17
25.00	3.30	0.00	3.07	0.00
30.00	3.30	0.00	3.07	0.00
35.00	3.30	0.00	3.07	0.00
40.00	3.30	0.00	3.07	0.00
45.00	3.30	0.00	3.07	0.00
50.00	3.30	0.00	3.07	0.00
55.00	3.30	0.00	3.07	0.00
60.00	3.30	0.00	3.07	0.00
65.00	3.30	0.00	3.07	0.00
70.00	3.30	0.00	3.07	0.00
75.00	3.30	0.00	3.07	0.00
80.00	3.30	0.00	3.07	0.00
85.00	3.30	0.00	3.07	0.00
90.00	3.30	0.00	3.07	0.00
95.00	3.30	0.00	3.07	0.00
100.00	3.30	0.00	3.07	0.00
105.00	3.30	0.00	3.07	0.00
110.00	3.30	0.00	3.07	0.00
115.00	3.30	0.00	3.07	0.00
120.00	3.30	0.00	3.07	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Runoff = 0.33 cfs @ 12.19 hrs, Volume= 0.041 af, Depth= 0.49"

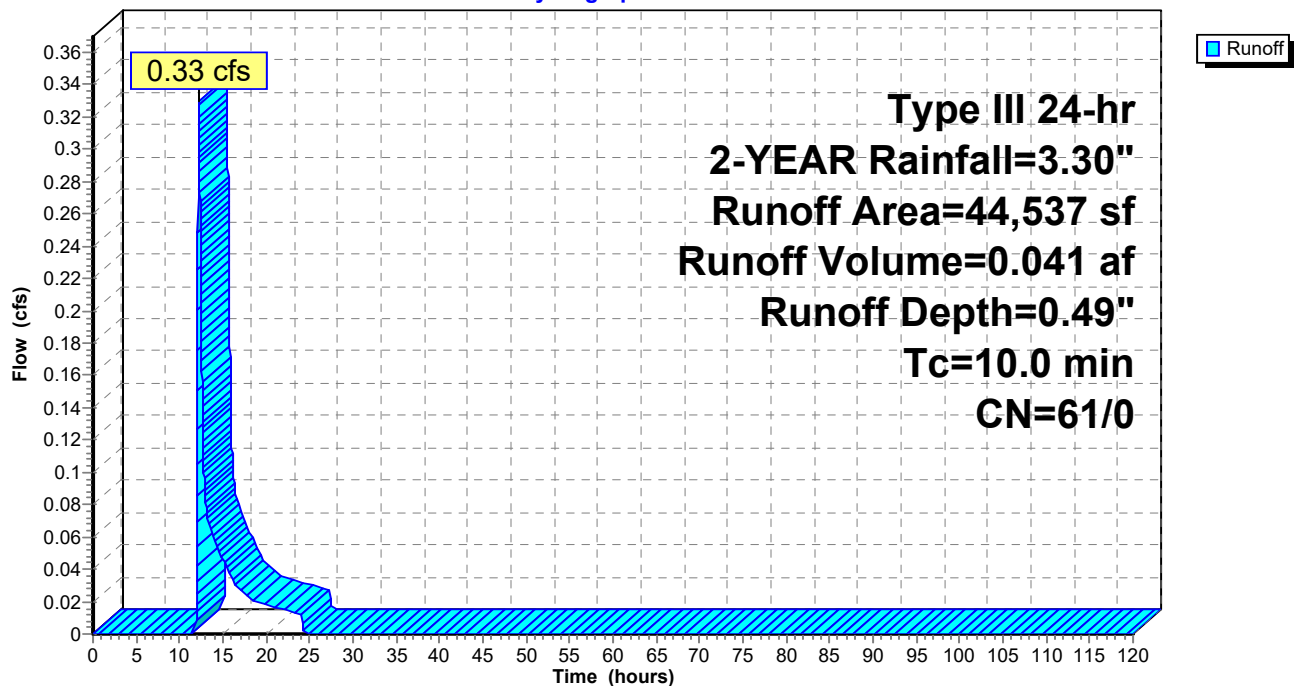
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
44,537	61	>75% Grass cover, Good, HSG B
44,537		100.00% Pervious Area

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

Subcatchment DA-P9 B: DA-P9 PERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.00	0.00
10.00	0.62	0.00	0.00	0.00
15.00	2.82	0.30	0.00	0.05
20.00	3.16	0.43	0.00	0.02
25.00	3.30	0.49	0.00	0.00
30.00	3.30	0.49	0.00	0.00
35.00	3.30	0.49	0.00	0.00
40.00	3.30	0.49	0.00	0.00
45.00	3.30	0.49	0.00	0.00
50.00	3.30	0.49	0.00	0.00
55.00	3.30	0.49	0.00	0.00
60.00	3.30	0.49	0.00	0.00
65.00	3.30	0.49	0.00	0.00
70.00	3.30	0.49	0.00	0.00
75.00	3.30	0.49	0.00	0.00
80.00	3.30	0.49	0.00	0.00
85.00	3.30	0.49	0.00	0.00
90.00	3.30	0.49	0.00	0.00
95.00	3.30	0.49	0.00	0.00
100.00	3.30	0.49	0.00	0.00
105.00	3.30	0.49	0.00	0.00
110.00	3.30	0.49	0.00	0.00
115.00	3.30	0.49	0.00	0.00
120.00	3.30	0.49	0.00	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Subcatchment DA-PB: BYPASS AREA

Runoff = 7.52 cfs @ 12.50 hrs, Volume= 1.019 af, Depth= 1.48"

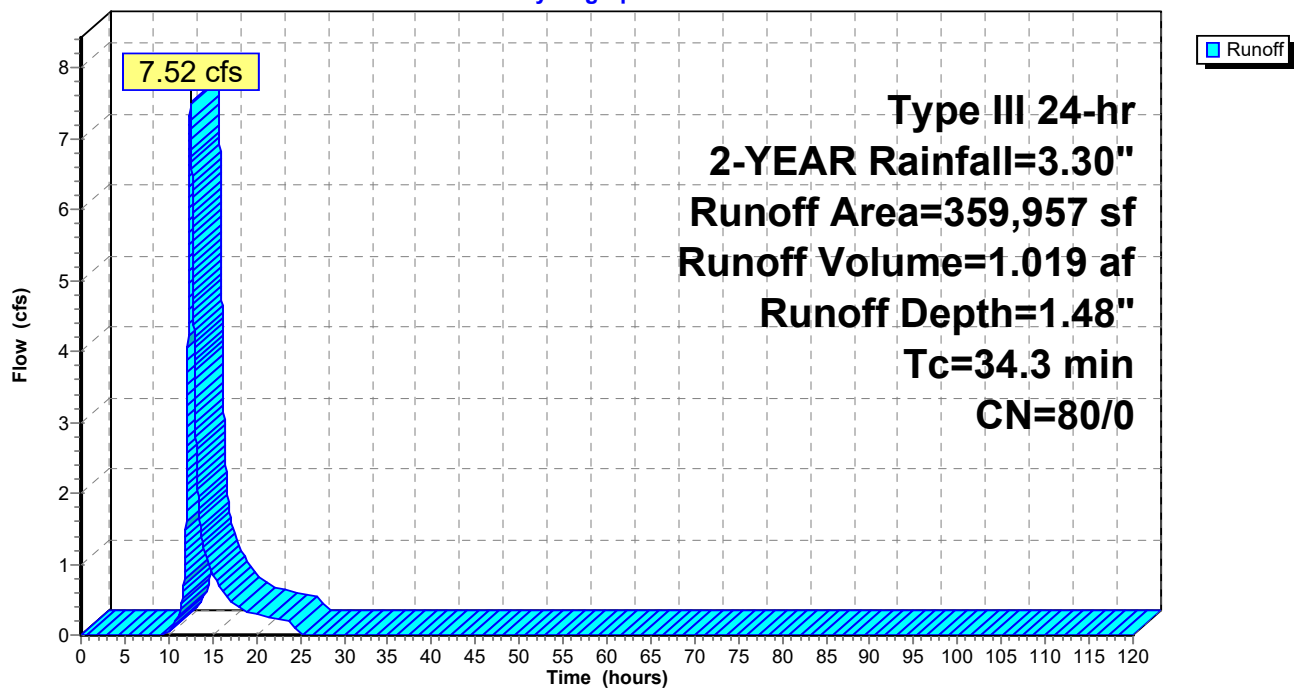
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.30"

Area (sf)	CN	Description
260,735	78	Row crops, straight row, Good, HSG B
99,222	85	Row crops, straight row, Good, HSG C
359,957	80	Weighted Average
359,957		100.00% Pervious Area

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

Subcatchment DA-PB: BYPASS AREA

Hydrograph



PROPOSED 2022-04*Type III 24-hr 2-YEAR Rainfall=3.30"*

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Hydrograph for Subcatchment DA-PB: BYPASS AREA

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.19	0.00	0.00	0.00
10.00	0.62	0.01	0.00	0.04
15.00	2.82	1.12	0.00	0.87
20.00	3.16	1.37	0.00	0.29
25.00	3.30	1.48	0.00	0.01
30.00	3.30	1.48	0.00	0.00
35.00	3.30	1.48	0.00	0.00
40.00	3.30	1.48	0.00	0.00
45.00	3.30	1.48	0.00	0.00
50.00	3.30	1.48	0.00	0.00
55.00	3.30	1.48	0.00	0.00
60.00	3.30	1.48	0.00	0.00
65.00	3.30	1.48	0.00	0.00
70.00	3.30	1.48	0.00	0.00
75.00	3.30	1.48	0.00	0.00
80.00	3.30	1.48	0.00	0.00
85.00	3.30	1.48	0.00	0.00
90.00	3.30	1.48	0.00	0.00
95.00	3.30	1.48	0.00	0.00
100.00	3.30	1.48	0.00	0.00
105.00	3.30	1.48	0.00	0.00
110.00	3.30	1.48	0.00	0.00
115.00	3.30	1.48	0.00	0.00
120.00	3.30	1.48	0.00	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Pond B1: BASIN#1

Inflow = 29.83 cfs @ 12.14 hrs, Volume= 2.832 af
 Outflow = 0.53 cfs @ 21.53 hrs, Volume= 2.682 af, Atten= 98%, Lag= 563.3 min
 Primary = 0.53 cfs @ 21.53 hrs, Volume= 2.682 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 128.95' @ 21.53 hrs Surf.Area= 56,939 sf Storage= 100,345 cf

Plug-Flow detention time= 2,717.9 min calculated for 2.682 af (95% of inflow)
 Center-of-Mass det. time= 2,687.4 min (3,473.5 - 786.1)

Volume	Invert	Avail.Storage	Storage Description
#1	125.00'	468,414 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
125.00	0	0	0
126.00	2,784	1,392	1,392
127.00	28,597	15,691	17,083
128.00	42,791	35,694	52,777
129.00	57,622	50,207	102,983
130.00	61,653	59,638	162,621
131.00	64,456	63,055	225,675
132.00	67,190	65,823	291,498
133.00	69,880	68,535	360,033
134.00	72,596	71,238	431,271
134.50	75,975	37,143	468,414

Device	Routing	Invert	Outlet Devices
#1	Primary	125.00'	30.0" Round Culvert L= 49.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 125.00' / 124.00' S= 0.0204 1' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	125.00'	2.5" Vert. Orifice C= 0.600
#3	Device 1	128.90'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.70'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Primary OutFlow Max=0.53 cfs @ 21.53 hrs HW=128.95' TW=0.00' (Dynamic Tailwater)

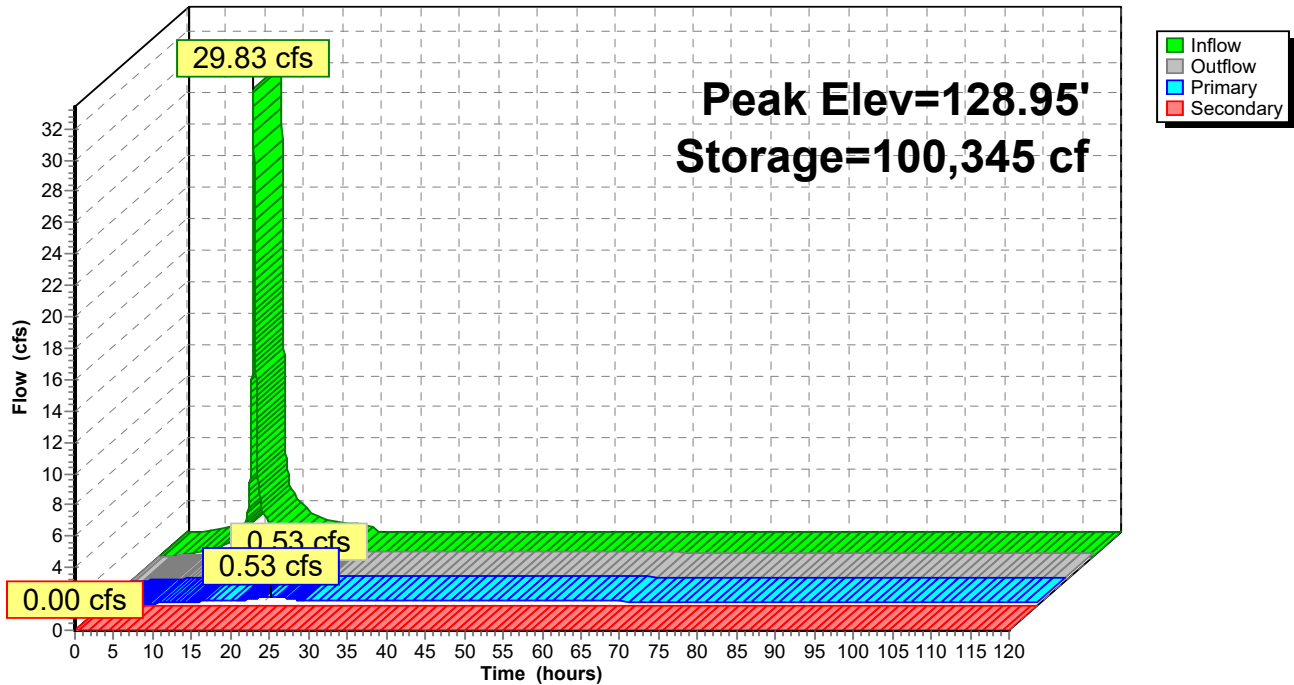
- 1=Culvert (Passes 0.53 cfs of 38.87 cfs potential flow)
- 2=Orifice (Orifice Controls 0.32 cfs @ 9.45 fps)
- 3=Broad-Crested Rectangular Weir (Weir Controls 0.21 cfs @ 0.65 fps)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.00' TW=122.05' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B1: BASIN#1

Hydrograph



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Type III 24-hr 2-YEAR Rainfall=3.30"

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Hydrograph for Pond B1: BASIN#1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	125.00	0.00	0.00	0.00
5.00	0.28	842	125.78	0.13	0.13	0.00
10.00	1.32	9,267	126.68	0.21	0.21	0.00
15.00	1.73	89,439	128.76	0.31	0.31	0.00
20.00	0.61	100,104	128.95	0.51	0.51	0.00
25.00	0.00	98,596	128.92	0.38	0.38	0.00
30.00	0.00	92,776	128.82	0.32	0.32	0.00
35.00	0.00	87,122	128.71	0.31	0.31	0.00
40.00	0.00	81,550	128.61	0.31	0.31	0.00
45.00	0.00	76,062	128.50	0.30	0.30	0.00
50.00	0.00	70,661	128.39	0.30	0.30	0.00
55.00	0.00	65,350	128.28	0.29	0.29	0.00
60.00	0.00	60,132	128.17	0.29	0.29	0.00
65.00	0.00	55,011	128.05	0.28	0.28	0.00
70.00	0.00	49,989	127.93	0.28	0.28	0.00
75.00	0.00	45,072	127.81	0.27	0.27	0.00
80.00	0.00	40,264	127.69	0.26	0.26	0.00
85.00	0.00	35,569	127.57	0.26	0.26	0.00
90.00	0.00	30,993	127.44	0.25	0.25	0.00
95.00	0.00	26,543	127.31	0.24	0.24	0.00
100.00	0.00	22,225	127.17	0.24	0.24	0.00
105.00	0.00	18,049	127.03	0.23	0.23	0.00
110.00	0.00	14,023	126.89	0.22	0.22	0.00
115.00	0.00	10,168	126.72	0.21	0.21	0.00
120.00	0.00	6,520	126.53	0.20	0.20	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Pond B1A: BASIN# 1A

Inflow = 22.49 cfs @ 12.28 hrs, Volume= 5.522 af
 Outflow = 17.99 cfs @ 12.52 hrs, Volume= 5.524 af, Atten= 20%, Lag= 14.8 min
 Discarded = 7.58 cfs @ 12.52 hrs, Volume= 0.292 af
 Primary = 10.40 cfs @ 12.52 hrs, Volume= 5.232 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 125.67' @ 12.52 hrs Surf.Area= 38,080 sf Storage= 24,814 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 21.1 min (2,143.8 - 2,122.6)

Volume	Invert	Avail.Storage	Storage Description
#1	123.70'	259,537 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.70	0	0	0
124.00	2,278	342	342
125.00	13,963	8,121	8,462
125.30	21,434	5,310	13,772
126.00	52,835	25,994	39,766
127.00	111,645	82,240	122,006
128.00	163,418	137,532	259,537

Device	Routing	Invert	Outlet Devices
#1	Primary	123.51'	24.0" Round Culvert L= 192.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 123.51' / 123.19' S= 0.0017 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	123.51'	9.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	124.95'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 2.05 Width (feet) 1.20 1.20 1.20
#4	Device 1	125.60'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.40 Width (feet) 1.80 1.80
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#6	Discarded	125.50'	40.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#7	Discarded	126.50'	60.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#8	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#9	Device 1	124.95'	1.2' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00

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#10	Primary	124.95'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			1.2' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
#11	Device 1	125.60'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
#12	Primary	125.60'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
			Coef. (English)	2.80	2.92	3.08	3.30	3.32

Discarded OutFlow Max=7.58 cfs @ 12.52 hrs HW=125.67' (Free Discharge)

6=Broad-Crested Rectangular Weir (Weir Controls 7.58 cfs @ 1.11 fps)


7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
Primary OutFlow Max=10.40 cfs @ 12.52 hrs HW=125.67' (Free Discharge)

1=Culvert (Passes 7.88 cfs of 11.10 cfs potential flow)


2=Orifice/Grate (Orifice Controls 2.84 cfs @ 6.43 fps)


3=Custom Weir/Orifice (Weir Controls 2.41 cfs @ 2.78 fps)


4=Custom Weir/Orifice (Weir Controls 0.11 cfs @ 0.87 fps)


5=Orifice/Grate (Controls 0.00 cfs)


9=Broad-Crested Rectangular Weir (Weir Controls 2.36 cfs @ 2.73 fps)


11=Broad-Crested Rectangular Weir (Weir Controls 0.16 cfs @ 0.75 fps)

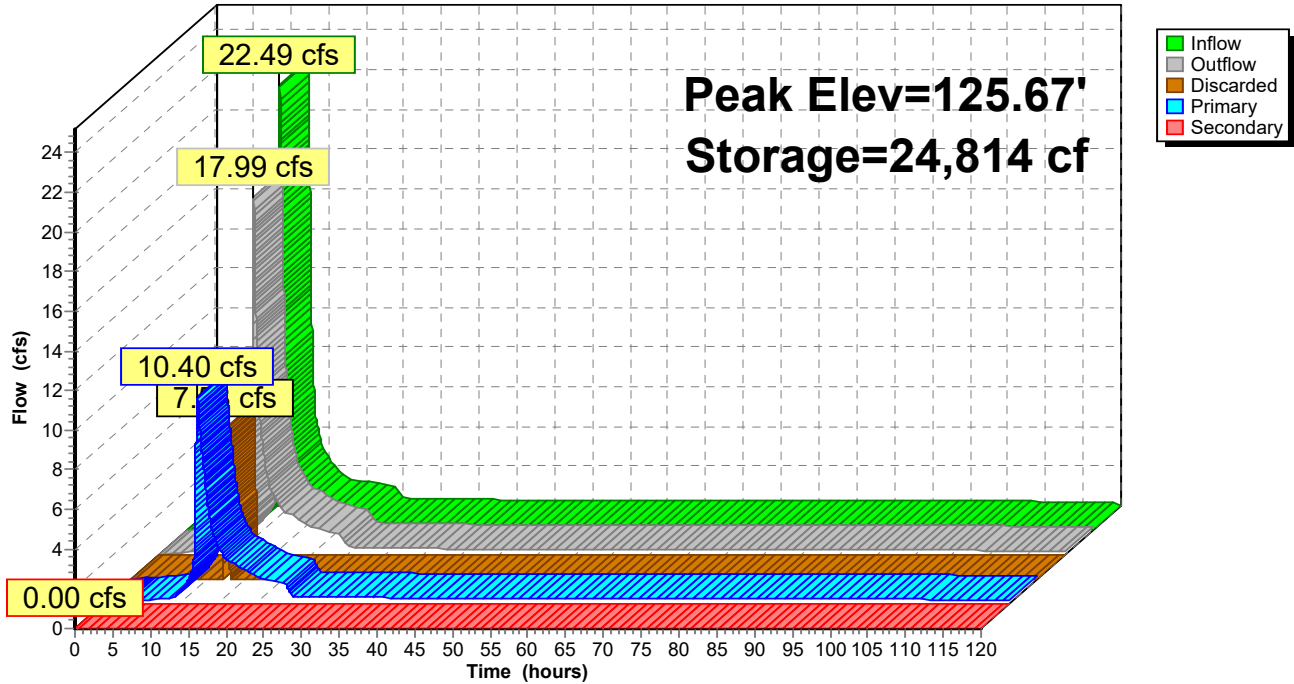

10=Broad-Crested Rectangular Weir (Weir Controls 2.36 cfs @ 2.73 fps)


12=Broad-Crested Rectangular Weir (Weir Controls 0.16 cfs @ 0.75 fps)
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=123.70' TW=120.70' (Dynamic Tailwater)

8=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B1A: BASIN# 1A

Hydrograph



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Hydrograph for Pond B1A: BASIN# 1A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	123.70	0.00	0.00	0.00	0.00
5.00	0.16	10	123.75	0.16	0.00	0.16	0.00
10.00	0.60	209	123.93	0.54	0.00	0.54	0.00
15.00	2.53	10,329	125.12	3.12	0.00	3.12	0.00
20.00	1.26	1,912	124.36	1.46	0.00	1.46	0.00
25.00	0.39	151	123.90	0.45	0.00	0.45	0.00
30.00	0.32	75	123.84	0.32	0.00	0.32	0.00
35.00	0.31	73	123.84	0.31	0.00	0.31	0.00
40.00	0.31	70	123.84	0.31	0.00	0.31	0.00
45.00	0.30	68	123.83	0.30	0.00	0.30	0.00
50.00	0.30	65	123.83	0.30	0.00	0.30	0.00
55.00	0.29	62	123.83	0.29	0.00	0.29	0.00
60.00	0.29	60	123.83	0.29	0.00	0.29	0.00
65.00	0.28	58	123.82	0.28	0.00	0.28	0.00
70.00	0.28	55	123.82	0.28	0.00	0.28	0.00
75.00	0.27	53	123.82	0.27	0.00	0.27	0.00
80.00	0.26	50	123.81	0.26	0.00	0.26	0.00
85.00	0.26	47	123.81	0.26	0.00	0.26	0.00
90.00	0.25	44	123.81	0.25	0.00	0.25	0.00
95.00	0.24	41	123.80	0.24	0.00	0.24	0.00
100.00	0.24	37	123.80	0.24	0.00	0.24	0.00
105.00	0.23	33	123.79	0.23	0.00	0.23	0.00
110.00	0.22	29	123.79	0.22	0.00	0.22	0.00
115.00	0.21	26	123.78	0.21	0.00	0.21	0.00
120.00	0.00	22	123.77	0.20	0.00	0.20	0.00

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Summary for Pond B2: BASIN#2

Inflow = 68.38 cfs @ 12.15 hrs, Volume= 6.533 af
 Outflow = 1.00 cfs @ 23.33 hrs, Volume= 6.533 af, Atten= 99%, Lag= 671.1 min
 Primary = 1.00 cfs @ 23.33 hrs, Volume= 6.533 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 127.92' @ 23.33 hrs Surf.Area= 79,426 sf Storage= 215,318 cf

Plug-Flow detention time= 2,180.3 min calculated for 6.533 af (100% of inflow)

Center-of-Mass det. time= 2,180.3 min (3,000.4 - 820.1)

Volume	Invert	Avail.Storage	Storage Description
#1	122.05'	911,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.05	0	0	0
123.00	4,516	2,145	2,145
124.00	17,503	11,010	13,155
125.00	40,514	29,009	42,163
126.00	52,995	46,755	88,918
127.00	66,197	59,596	148,514
128.00	80,616	73,407	221,920
129.00	89,234	84,925	306,845
130.00	97,986	93,610	400,455
131.00	104,847	101,417	501,872
132.00	111,734	108,291	610,162
133.00	118,653	115,194	725,356
134.00	125,598	122,126	847,481
134.50	129,221	63,705	911,186

Device	Routing	Invert	Outlet Devices
#1	Primary	121.38'	30.0" Round Culvert L= 52.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 121.38' / 120.90' S= 0.0092 ' /' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	122.05'	4.0" Vert. Orifice C= 0.600
#3	Device 1	128.50'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.75'	3.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60

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Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.00 cfs @ 23.33 hrs HW=127.92' TW=0.00' (Dynamic Tailwater)

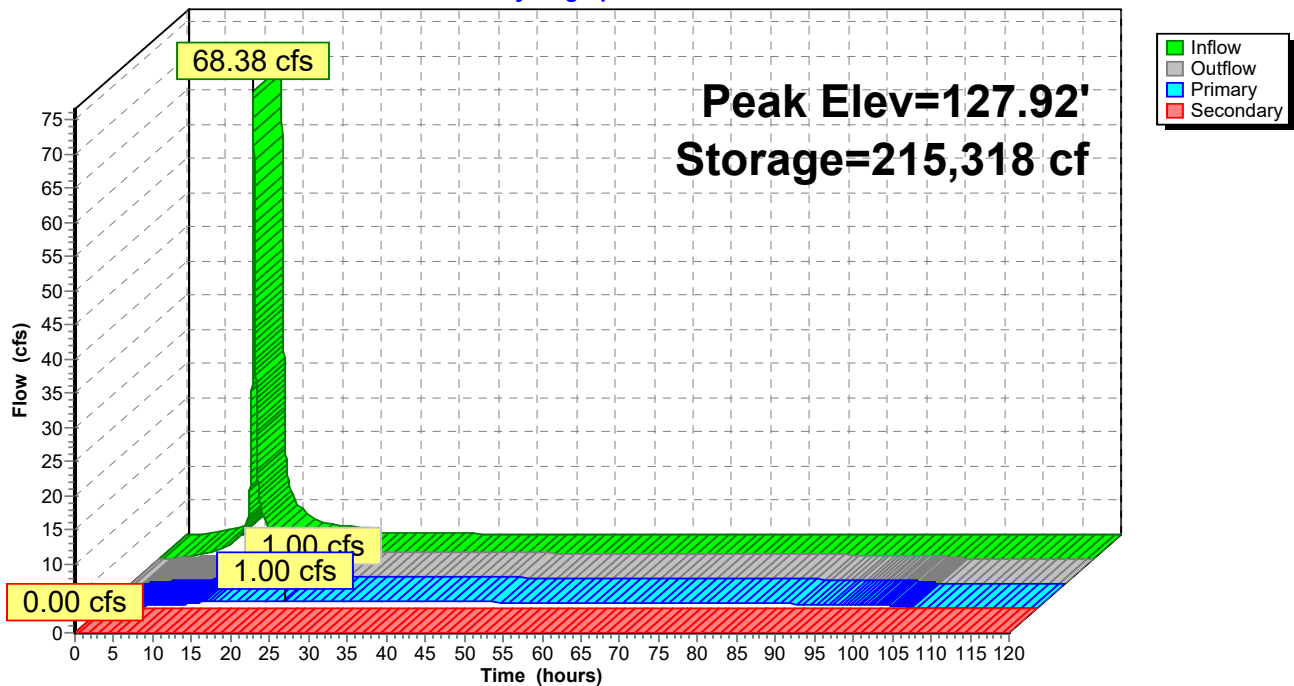
- 1=Culvert (Passes 1.00 cfs of 54.35 cfs potential flow)
- 2=Orifice (Orifice Controls 1.00 cfs @ 11.50 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=122.05' TW=125.00' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B2: BASIN#2

Hydrograph



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Hydrograph for Pond B2: BASIN#2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	122.05	0.00	0.00	0.00
5.00	0.67	1,879	122.94	0.36	0.36	0.00
10.00	2.99	19,983	124.32	0.61	0.61	0.00
15.00	3.63	195,105	127.66	0.98	0.98	0.00
20.00	1.31	213,496	127.89	1.00	1.00	0.00
25.00	0.24	212,916	127.89	1.00	1.00	0.00
30.00	0.20	199,017	127.71	0.98	0.98	0.00
35.00	0.15	184,666	127.52	0.97	0.97	0.00
40.00	0.06	169,534	127.31	0.95	0.95	0.00
45.00	0.00	152,854	127.06	0.93	0.93	0.00
50.00	0.00	136,417	126.81	0.90	0.90	0.00
55.00	0.00	120,429	126.56	0.88	0.88	0.00
60.00	0.00	104,916	126.29	0.85	0.85	0.00
65.00	0.00	89,906	126.02	0.82	0.82	0.00
70.00	0.00	75,433	125.74	0.79	0.79	0.00
75.00	0.00	61,536	125.45	0.76	0.76	0.00
80.00	0.00	48,261	125.15	0.72	0.72	0.00
85.00	0.00	35,664	124.83	0.68	0.68	0.00
90.00	0.00	23,857	124.47	0.63	0.63	0.00
95.00	0.00	13,090	124.00	0.56	0.56	0.00
100.00	0.00	3,994	123.29	0.44	0.44	0.00
105.00	0.00	6	122.07	0.00	0.00	0.00
110.00	0.00	1	122.05	0.00	0.00	0.00
115.00	0.00	1	122.05	0.00	0.00	0.00
120.00	0.00	1	122.05	0.00	0.00	0.00

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Summary for Pond B2A: BASIN# 2A

Inflow = 10.97 cfs @ 12.15 hrs, Volume= 7.427 af
 Outflow = 9.14 cfs @ 12.24 hrs, Volume= 7.433 af, Atten= 17%, Lag= 5.0 min
 Primary = 9.14 cfs @ 12.24 hrs, Volume= 7.433 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 122.56' @ 12.24 hrs Surf.Area= 2,303 sf Storage= 2,147 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 4.7 min (2,743.3 - 2,738.6)

Volume	Invert	Avail.Storage	Storage Description
#1	120.70'	244,647 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.70	0	0	0
123.00	2,840	3,266	3,266
124.00	12,899	7,870	11,135
125.00	29,081	20,990	32,125
125.50	41,742	17,706	49,831
126.00	55,169	24,228	74,059
127.00	82,653	68,911	142,970
128.00	120,701	101,677	244,647

Device	Routing	Invert	Outlet Devices
#1	Primary	120.66'	30.0" Round Culvert L= 212.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 120.66' / 118.50' S= 0.0102 ' S= 0.0102 ' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	120.66'	18.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	123.65'	1.5' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.14 cfs @ 12.24 hrs HW=122.56' (Free Discharge)

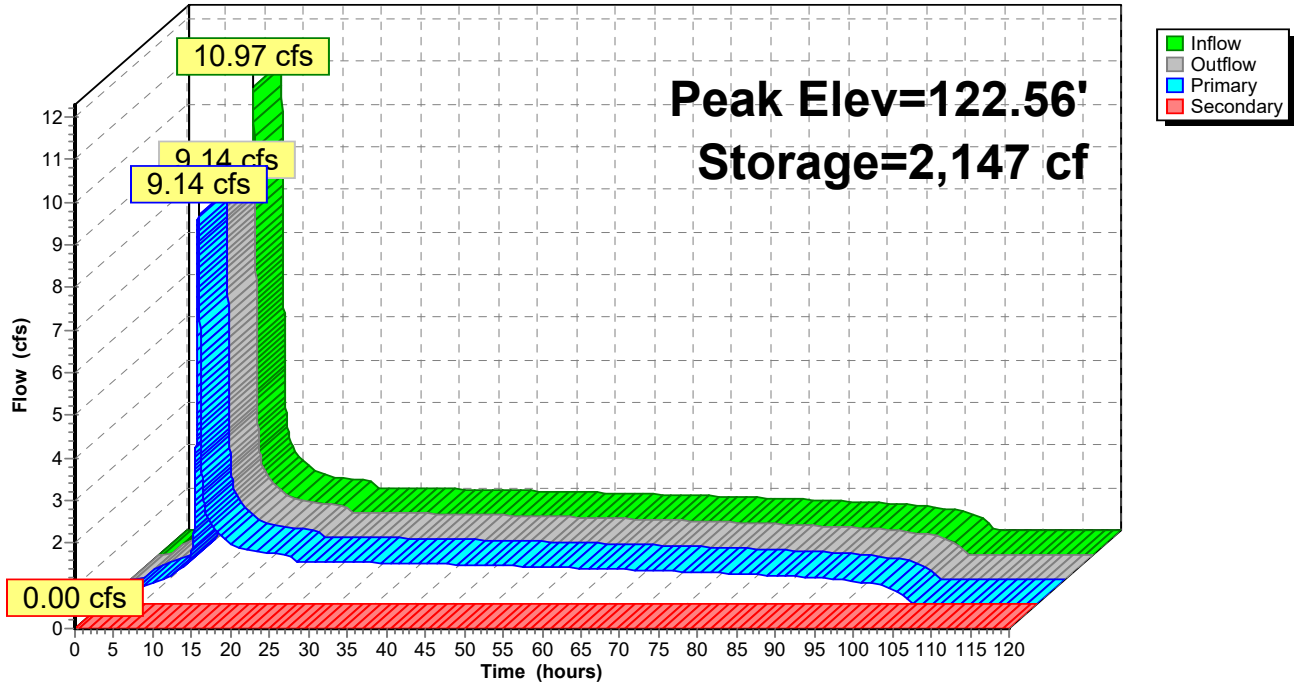
1=Culvert (Passes 9.14 cfs of 18.85 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 9.14 cfs @ 5.17 fps)
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
 5=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.70' TW=123.70' (Dynamic Tailwater)

4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B2A: BASIN# 2A

Hydrograph



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Hydrograph for Pond B2A: BASIN# 2A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	120.70	0.00	0.00	0.00
5.00	0.40	35	120.94	0.40	0.40	0.00
10.00	0.82	81	121.06	0.82	0.82	0.00
15.00	1.62	180	121.24	1.63	1.63	0.00
20.00	1.23	130	121.16	1.23	1.23	0.00
25.00	1.00	103	121.11	1.00	1.00	0.00
30.00	0.98	101	121.10	0.98	0.98	0.00
35.00	0.97	99	121.10	0.97	0.97	0.00
40.00	0.95	96	121.09	0.95	0.95	0.00
45.00	0.93	94	121.09	0.93	0.93	0.00
50.00	0.90	91	121.08	0.90	0.90	0.00
55.00	0.88	87	121.08	0.88	0.88	0.00
60.00	0.85	84	121.07	0.85	0.85	0.00
65.00	0.82	81	121.06	0.82	0.82	0.00
70.00	0.79	77	121.05	0.79	0.79	0.00
75.00	0.76	74	121.04	0.76	0.76	0.00
80.00	0.72	70	121.03	0.72	0.72	0.00
85.00	0.68	66	121.02	0.68	0.68	0.00
90.00	0.63	60	121.01	0.63	0.63	0.00
95.00	0.56	52	120.99	0.56	0.56	0.00
100.00	0.44	39	120.95	0.44	0.44	0.00
105.00	0.00	0	120.70	0.01	0.01	0.00
110.00	0.00	0	120.70	0.01	0.01	0.00
115.00	0.00	0	120.70	0.01	0.01	0.00
120.00	0.00	0	120.70	0.01	0.01	0.00

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Pond B3: BASIN#3

Inflow Area = 4.864 ac, 78.98% Impervious, Inflow Depth = 2.52" for 2-YEAR event
 Inflow = 11.10 cfs @ 12.14 hrs, Volume= 1.023 af
 Outflow = 8.96 cfs @ 12.22 hrs, Volume= 1.023 af, Atten= 19%, Lag= 5.0 min
 Primary = 8.96 cfs @ 12.22 hrs, Volume= 1.023 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 146.64' @ 12.22 hrs Surf.Area= 7,869 sf Storage= 14,572 cf

Plug-Flow detention time= 311.6 min calculated for 1.023 af (100% of inflow)
 Center-of-Mass det. time= 311.4 min (1,077.1 - 765.7)

Volume	Invert	Avail.Storage	Storage Description
#1	143.72'	58,412 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
143.72	0	0	0
144.00	1,559	218	218
145.00	5,405	3,482	3,700
146.00	6,859	6,132	9,832
147.00	8,428	7,644	17,476
148.00	10,107	9,268	26,743
149.00	11,886	10,997	37,740
150.00	14,319	13,103	50,842
150.50	15,959	7,570	58,412

Device	Routing	Invert	Outlet Devices
#1	Primary	143.72'	15.0" Round Culvert L= 182.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 143.72' / 140.50' S= 0.0177 '/' Cc= 0.900 n= 0.013 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf
#2	Device 1	143.72'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	146.31'	48.0" x 48.0" Horiz. TYPE "E" INLET WITH STOP COCK @ BOTTOM C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.96 cfs @ 12.22 hrs HW=146.64' TW=126.32' (Dynamic Tailwater)

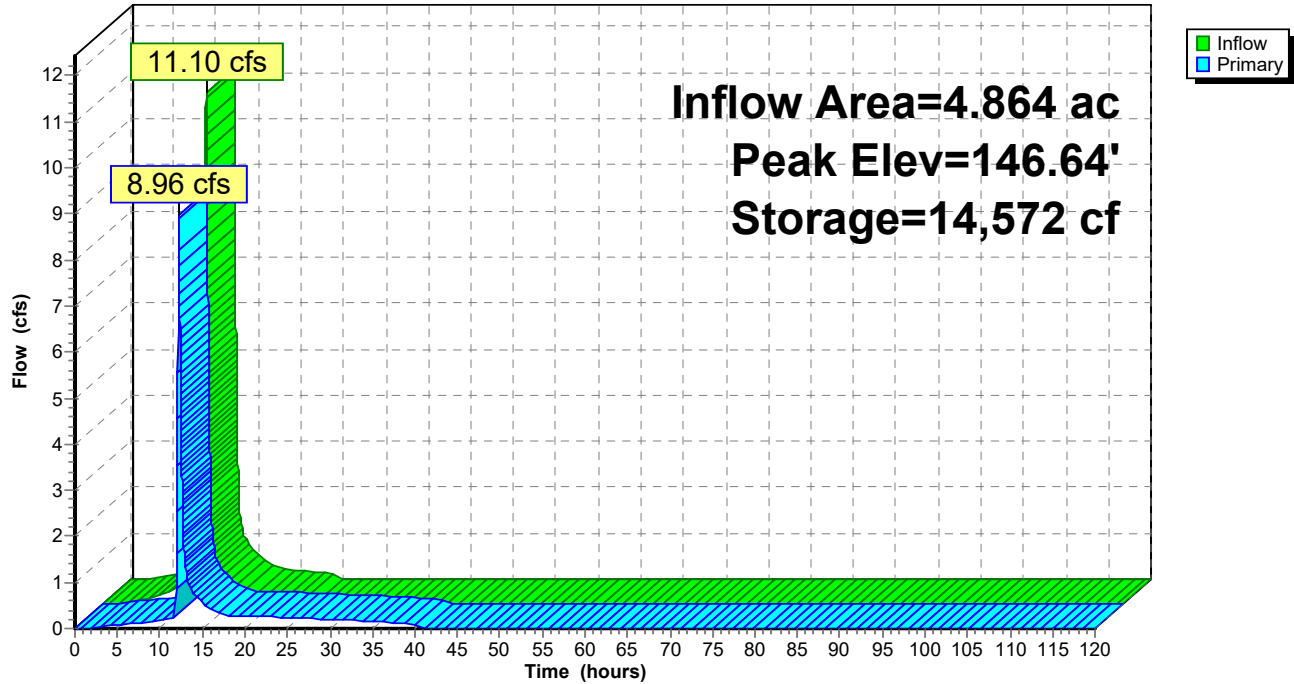
1=Culvert (Inlet Controls 8.96 cfs @ 7.30 fps)

2=Orifice/Grate (Passes < 0.28 cfs potential flow)

3=TYPE "E" INLET WITH STOP COCK @ BOTTOM(Passes < 10.08 cfs potential flow)

Pond B3: BASIN#3

Hydrograph



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Hydrograph for Pond B3: BASIN#3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	143.72	0.00
5.00	0.12	278	144.04	0.08
10.00	0.56	3,065	144.88	0.17
15.00	0.55	12,275	146.34	0.57
20.00	0.19	11,686	146.26	0.26
25.00	0.00	9,484	145.95	0.24
30.00	0.00	5,514	145.32	0.20
35.00	0.00	2,294	144.71	0.15
40.00	0.00	184	143.98	0.06
45.00	0.00	1	143.73	0.00
50.00	0.00	1	143.72	0.00
55.00	0.00	0	143.72	0.00
60.00	0.00	0	143.72	0.00
65.00	0.00	0	143.72	0.00
70.00	0.00	0	143.72	0.00
75.00	0.00	0	143.72	0.00
80.00	0.00	0	143.72	0.00
85.00	0.00	0	143.72	0.00
90.00	0.00	0	143.72	0.00
95.00	0.00	0	143.72	0.00
100.00	0.00	0	143.72	0.00
105.00	0.00	0	143.72	0.00
110.00	0.00	0	143.72	0.00
115.00	0.00	0	143.72	0.00
120.00	0.00	0	143.72	0.00

PROPOSED 2022-04

Type III 24-hr 2-YEAR Rainfall=3.30"

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Summary for Pond B4: BASIN#4

Inflow Area = 2.986 ac, 53.95% Impervious, Inflow Depth = 1.88" for 2-YEAR event
 Inflow = 4.93 cfs @ 12.14 hrs, Volume= 0.467 af
 Outflow = 0.49 cfs @ 13.19 hrs, Volume= 0.226 af, Atten= 90%, Lag= 62.9 min
 Primary = 0.49 cfs @ 13.19 hrs, Volume= 0.226 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 140.45' @ 13.19 hrs Surf.Area= 10,167 sf Storage= 12,973 cf

Plug-Flow detention time= 390.8 min calculated for 0.226 af (48% of inflow)
 Center-of-Mass det. time= 256.1 min (1,034.0 - 777.9)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	66,831 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	7,648	0	0
140.00	9,503	8,576	8,576
141.00	10,988	10,246	18,821
142.00	12,367	11,678	30,499
143.00	13,797	13,082	43,581
144.00	15,503	14,650	58,231
144.50	18,900	8,601	66,831

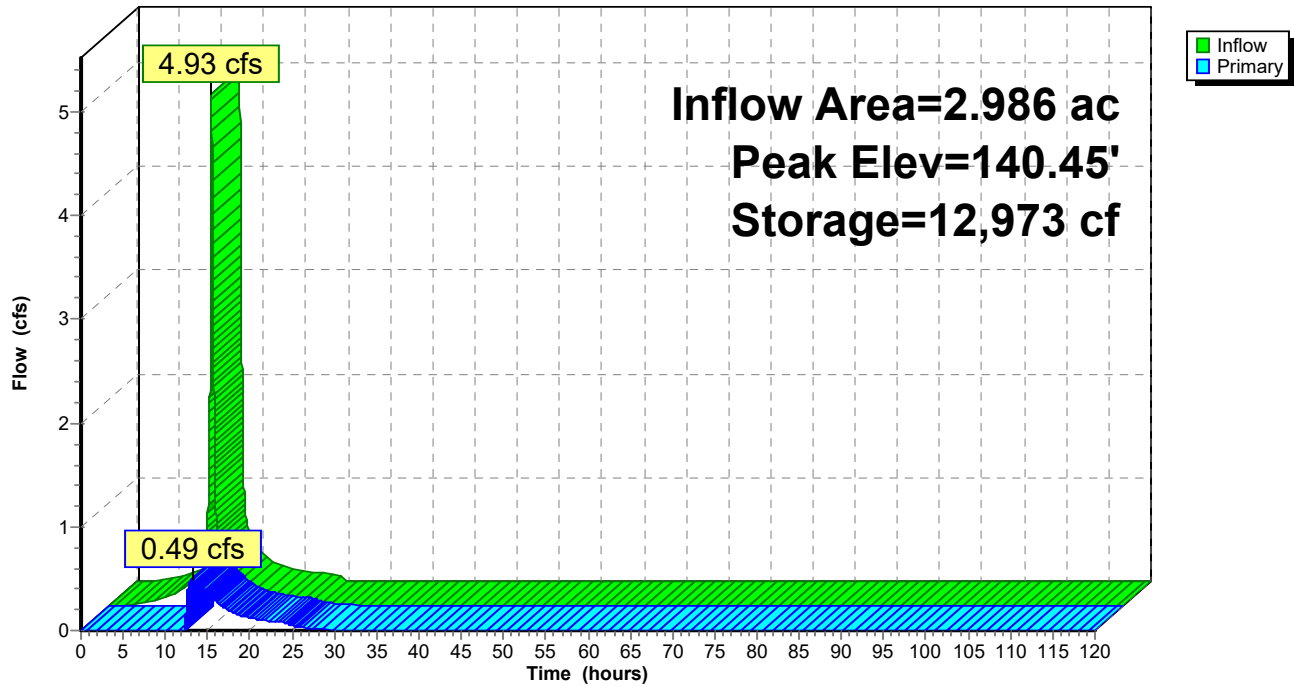
Device	Routing	Invert	Outlet Devices
#1	Primary	136.95'	15.0" Round Culvert L= 47.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 136.95' / 136.71' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	140.20'	1.2' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Device 1	141.50'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#4	Device 1	142.90'	4.0" x 4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	143.00'	40.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.49 cfs @ 13.19 hrs HW=140.45' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 0.49 cfs of 9.64 cfs potential flow)
- 2=Sharp-Crested Rectangular Weir (Weir Controls 0.49 cfs @ 1.72 fps)
- 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Orifice/Grate (Controls 0.00 cfs)
- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B4: BASIN#4

Hydrograph



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Type III 24-hr 2-YEAR Rainfall=3.30"

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Hydrograph for Pond B4: BASIN#4

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	139.00	0.00
5.00	0.05	329	139.04	0.00
10.00	0.23	2,388	139.30	0.00
15.00	0.27	12,499	140.40	0.36
20.00	0.09	11,466	140.30	0.12
25.00	0.00	11,029	140.25	0.05
30.00	0.00	10,662	140.22	0.01
35.00	0.00	10,580	140.21	0.00
40.00	0.00	10,549	140.20	0.00
45.00	0.00	10,534	140.20	0.00
50.00	0.00	10,525	140.20	0.00
55.00	0.00	10,520	140.20	0.00
60.00	0.00	10,517	140.20	0.00
65.00	0.00	10,515	140.20	0.00
70.00	0.00	10,513	140.20	0.00
75.00	0.00	10,512	140.20	0.00
80.00	0.00	10,511	140.20	0.00
85.00	0.00	10,510	140.20	0.00
90.00	0.00	10,510	140.20	0.00
95.00	0.00	10,509	140.20	0.00
100.00	0.00	10,509	140.20	0.00
105.00	0.00	10,508	140.20	0.00
110.00	0.00	10,508	140.20	0.00
115.00	0.00	10,508	140.20	0.00
120.00	0.00	10,508	140.20	0.00

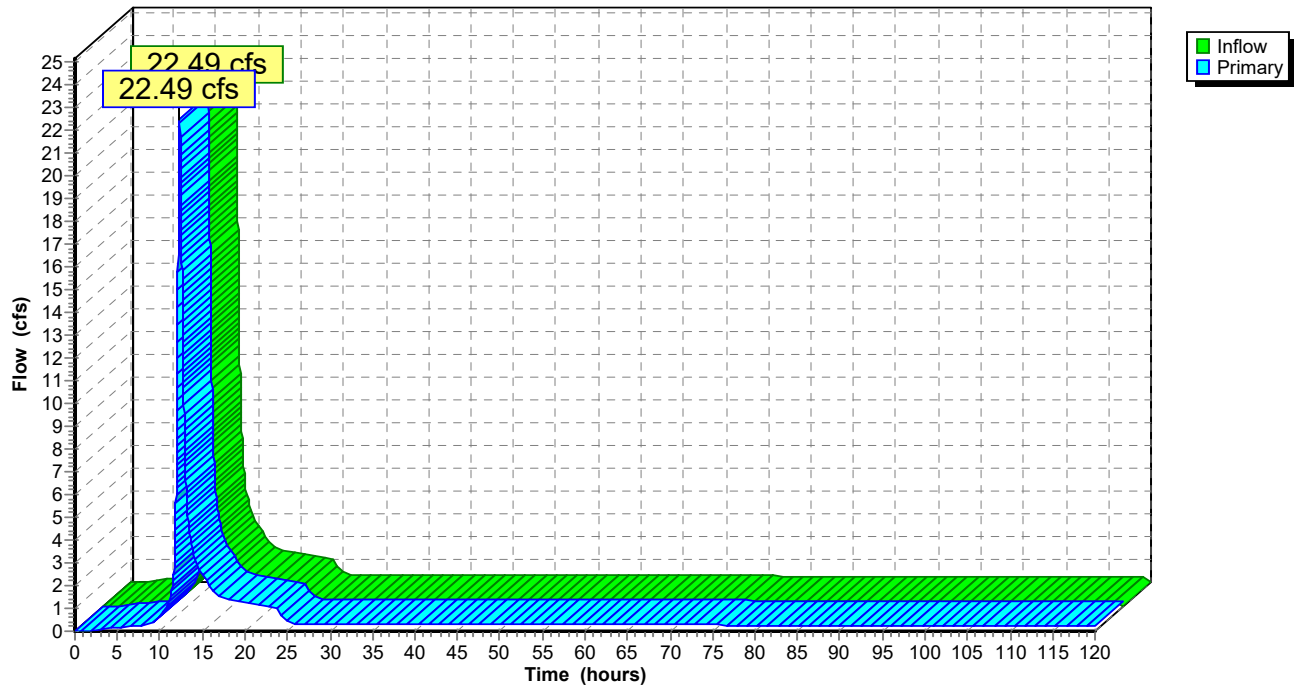
Summary for Link R1: REACH# 1

Inflow = 22.49 cfs @ 12.27 hrs, Volume= 5.522 af
 Primary = 22.49 cfs @ 12.28 hrs, Volume= 5.522 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R1: REACH# 1

Hydrograph



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Type III 24-hr 2-YEAR Rainfall=3.30"

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Hydrograph for Link R1: REACH# 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.23	0.00	0.23
2.00	0.04	0.00	0.04	108.00	0.22	0.00	0.22
4.00	0.13	0.00	0.13	110.00	0.22	0.00	0.22
6.00	0.19	0.00	0.19	112.00	0.22	0.00	0.22
8.00	0.25	0.00	0.25	114.00	0.21	0.00	0.21
10.00	0.60	0.00	0.60	116.00	0.21	0.00	0.21
12.00	9.24	0.00	8.85	118.00	0.20	0.00	0.20
14.00	3.31	0.00	3.33	120.00	0.00	0.00	0.20
16.00	1.94	0.00	1.95				
18.00	1.35	0.00	1.35				
20.00	1.26	0.00	1.26				
22.00	1.15	0.00	1.16				
24.00	0.99	0.00	0.99				
26.00	0.32	0.00	0.32				
28.00	0.32	0.00	0.32				
30.00	0.32	0.00	0.32				
32.00	0.31	0.00	0.31				
34.00	0.31	0.00	0.31				
36.00	0.31	0.00	0.31				
38.00	0.31	0.00	0.31				
40.00	0.31	0.00	0.31				
42.00	0.31	0.00	0.31				
44.00	0.30	0.00	0.30				
46.00	0.30	0.00	0.30				
48.00	0.30	0.00	0.30				
50.00	0.30	0.00	0.30				
52.00	0.30	0.00	0.30				
54.00	0.29	0.00	0.29				
56.00	0.29	0.00	0.29				
58.00	0.29	0.00	0.29				
60.00	0.29	0.00	0.29				
62.00	0.29	0.00	0.29				
64.00	0.28	0.00	0.28				
66.00	0.28	0.00	0.28				
68.00	0.28	0.00	0.28				
70.00	0.28	0.00	0.28				
72.00	0.27	0.00	0.27				
74.00	0.27	0.00	0.27				
76.00	0.27	0.00	0.27				
78.00	0.27	0.00	0.27				
80.00	0.26	0.00	0.26				
82.00	0.26	0.00	0.26				
84.00	0.26	0.00	0.26				
86.00	0.26	0.00	0.26				
88.00	0.25	0.00	0.25				
90.00	0.25	0.00	0.25				
92.00	0.25	0.00	0.25				
94.00	0.25	0.00	0.25				
96.00	0.24	0.00	0.24				
98.00	0.24	0.00	0.24				
100.00	0.24	0.00	0.24				
102.00	0.23	0.00	0.23				
104.00	0.23	0.00	0.23				

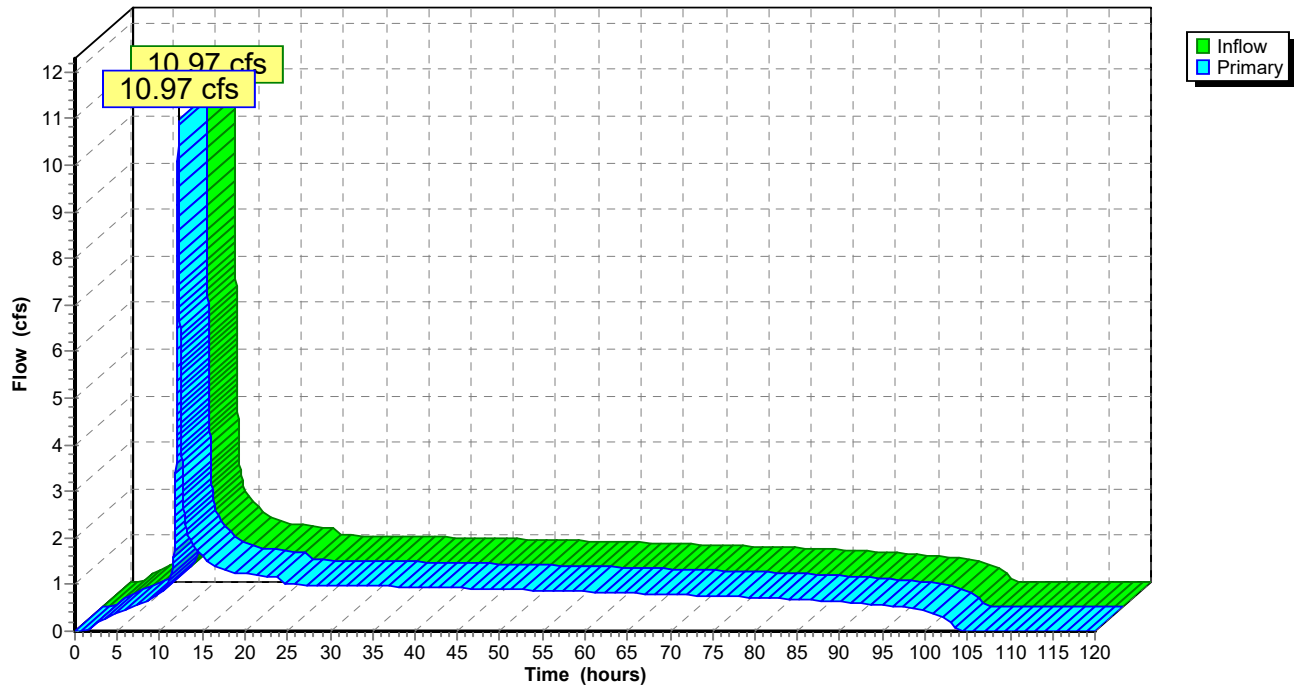
Summary for Link R2: REACH# 2

Inflow = 10.97 cfs @ 12.14 hrs, Volume= 7.427 af
 Primary = 10.97 cfs @ 12.15 hrs, Volume= 7.427 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R2: REACH# 2

Hydrograph



PROPOSED 2022-04

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Type III 24-hr 2-YEAR Rainfall=3.30"

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Hydrograph for Link R2: REACH# 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.00	0.00	0.00
2.00	0.07	0.00	0.07	108.00	0.00	0.00	0.00
4.00	0.32	0.00	0.32	110.00	0.00	0.00	0.00
6.00	0.47	0.00	0.47	112.00	0.00	0.00	0.00
8.00	0.61	0.00	0.61	114.00	0.00	0.00	0.00
10.00	0.82	0.00	0.82	116.00	0.00	0.00	0.00
12.00	5.37	0.00	5.10	118.00	0.00	0.00	0.00
14.00	1.80	0.00	1.81	120.00	0.00	0.00	0.00
16.00	1.45	0.00	1.45				
18.00	1.28	0.00	1.28				
20.00	1.23	0.00	1.23				
22.00	1.19	0.00	1.19				
24.00	1.15	0.00	1.15				
26.00	1.00	0.00	1.00				
28.00	0.99	0.00	0.99				
30.00	0.98	0.00	0.98				
32.00	0.98	0.00	0.98				
34.00	0.97	0.00	0.97				
36.00	0.96	0.00	0.96				
38.00	0.96	0.00	0.96				
40.00	0.95	0.00	0.95				
42.00	0.94	0.00	0.94				
44.00	0.93	0.00	0.93				
46.00	0.92	0.00	0.92				
48.00	0.91	0.00	0.91				
50.00	0.90	0.00	0.90				
52.00	0.89	0.00	0.89				
54.00	0.88	0.00	0.88				
56.00	0.87	0.00	0.87				
58.00	0.86	0.00	0.86				
60.00	0.85	0.00	0.85				
62.00	0.84	0.00	0.84				
64.00	0.83	0.00	0.83				
66.00	0.81	0.00	0.81				
68.00	0.80	0.00	0.80				
70.00	0.79	0.00	0.79				
72.00	0.78	0.00	0.78				
74.00	0.76	0.00	0.76				
76.00	0.75	0.00	0.75				
78.00	0.73	0.00	0.73				
80.00	0.72	0.00	0.72				
82.00	0.70	0.00	0.70				
84.00	0.69	0.00	0.69				
86.00	0.67	0.00	0.67				
88.00	0.65	0.00	0.65				
90.00	0.63	0.00	0.63				
92.00	0.61	0.00	0.61				
94.00	0.58	0.00	0.58				
96.00	0.54	0.00	0.54				
98.00	0.50	0.00	0.50				
100.00	0.44	0.00	0.44				
102.00	0.31	0.00	0.31				
104.00	0.01	0.00	0.01				

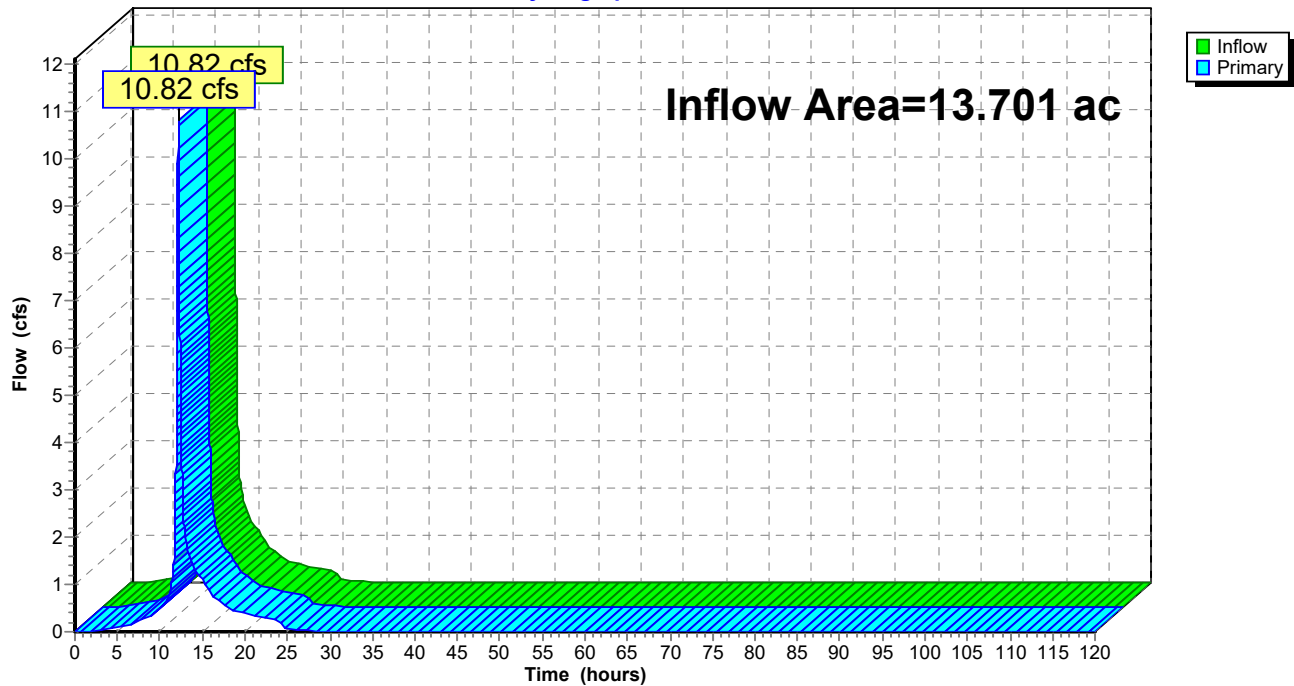
Summary for Link R3: REACH# 3

Inflow Area = 13.701 ac, 37.05% Impervious, Inflow Depth = 1.17" for 2-YEAR event
 Inflow = 10.82 cfs @ 12.14 hrs, Volume= 1.340 af
 Primary = 10.82 cfs @ 12.15 hrs, Volume= 1.340 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R3: REACH# 3

Hydrograph



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Type III 24-hr 2-YEAR Rainfall=3.30"

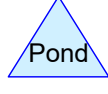
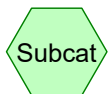
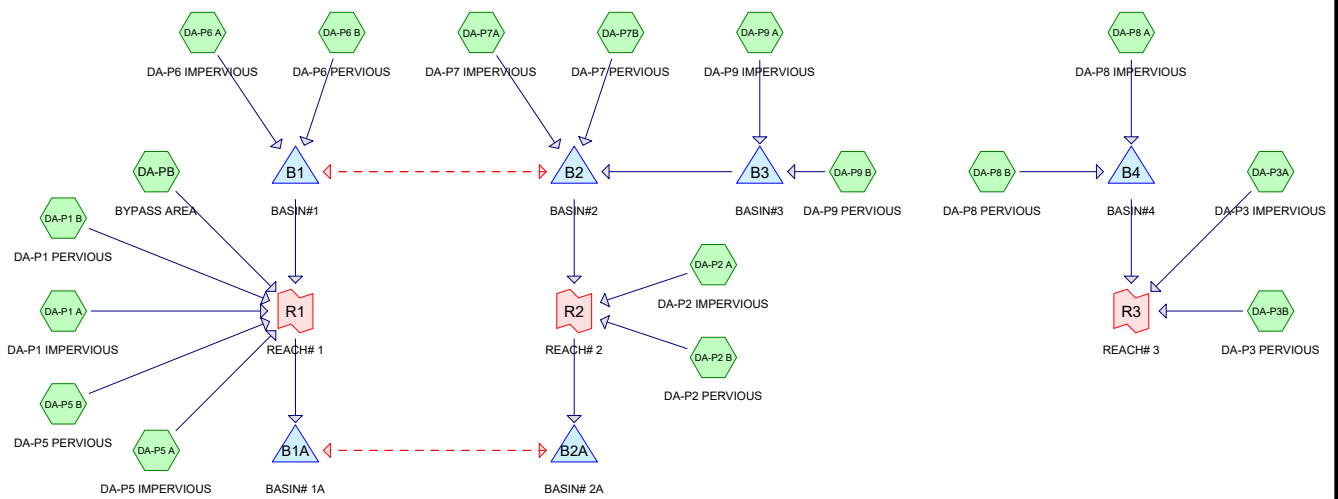
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Hydrograph for Link R3: REACH# 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.00	0.00	0.00
2.00	0.02	0.00	0.02	108.00	0.00	0.00	0.00
4.00	0.08	0.00	0.08	110.00	0.00	0.00	0.00
6.00	0.13	0.00	0.13	112.00	0.00	0.00	0.00
8.00	0.25	0.00	0.25	114.00	0.00	0.00	0.00
10.00	0.51	0.00	0.50	116.00	0.00	0.00	0.00
12.00	5.22	0.00	4.96	118.00	0.00	0.00	0.00
14.00	1.39	0.00	1.39	120.00	0.00	0.00	0.00
16.00	0.80	0.00	0.81				
18.00	0.50	0.00	0.50				
20.00	0.38	0.00	0.38				
22.00	0.31	0.00	0.31				
24.00	0.25	0.00	0.25				
26.00	0.03	0.00	0.03				
28.00	0.01	0.00	0.01				
30.00	0.01	0.00	0.01				
32.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
58.00	0.00	0.00	0.00				
60.00	0.00	0.00	0.00				
62.00	0.00	0.00	0.00				
64.00	0.00	0.00	0.00				
66.00	0.00	0.00	0.00				
68.00	0.00	0.00	0.00				
70.00	0.00	0.00	0.00				
72.00	0.00	0.00	0.00				
74.00	0.00	0.00	0.00				
76.00	0.00	0.00	0.00				
78.00	0.00	0.00	0.00				
80.00	0.00	0.00	0.00				
82.00	0.00	0.00	0.00				
84.00	0.00	0.00	0.00				
86.00	0.00	0.00	0.00				
88.00	0.00	0.00	0.00				
90.00	0.00	0.00	0.00				
92.00	0.00	0.00	0.00				
94.00	0.00	0.00	0.00				
96.00	0.00	0.00	0.00				
98.00	0.00	0.00	0.00				
100.00	0.00	0.00	0.00				
102.00	0.00	0.00	0.00				
104.00	0.00	0.00	0.00				

10-Year Storm Event for Post-Development Conditions



Routing Diagram for PROPOSED 2022-04
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PROPOSED 2022-04

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
16.726	61	>75% Grass cover, Good, HSG B (DA-P3B, DA-P6 B, DA-P7B, DA-P8 B, DA-P9 B)
16.083	74	>75% Grass cover, Good, HSG C (DA-P1 B, DA-P2 B, DA-P5 B, DA-P6 B, DA-P7B)
0.044	82	Dirt roads, HSG B (DA-P5 B)
0.036	87	Dirt roads, HSG C (DA-P5 B)
17.558	98	Paved parking, HSG B (DA-P2 A, DA-P3A, DA-P6 A, DA-P7A, DA-P8 A, DA-P9 A)
22.103	98	Paved parking, HSG C (DA-P1 A, DA-P2 A, DA-P5 A, DA-P6 A, DA-P7A)
8.315	78	Row crops, straight row, Good, HSG B (DA-P5 B, DA-PB)
9.051	85	Row crops, straight row, Good, HSG C (DA-P5 B, DA-PB)
5.073	55	Woods, Good, HSG B (DA-P3B, DA-P6 B)
94.988	82	TOTAL AREA

PROPOSED 2022-04

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Runoff = 2.13 cfs @ 12.13 hrs, Volume= 0.197 af, Depth= 4.76"

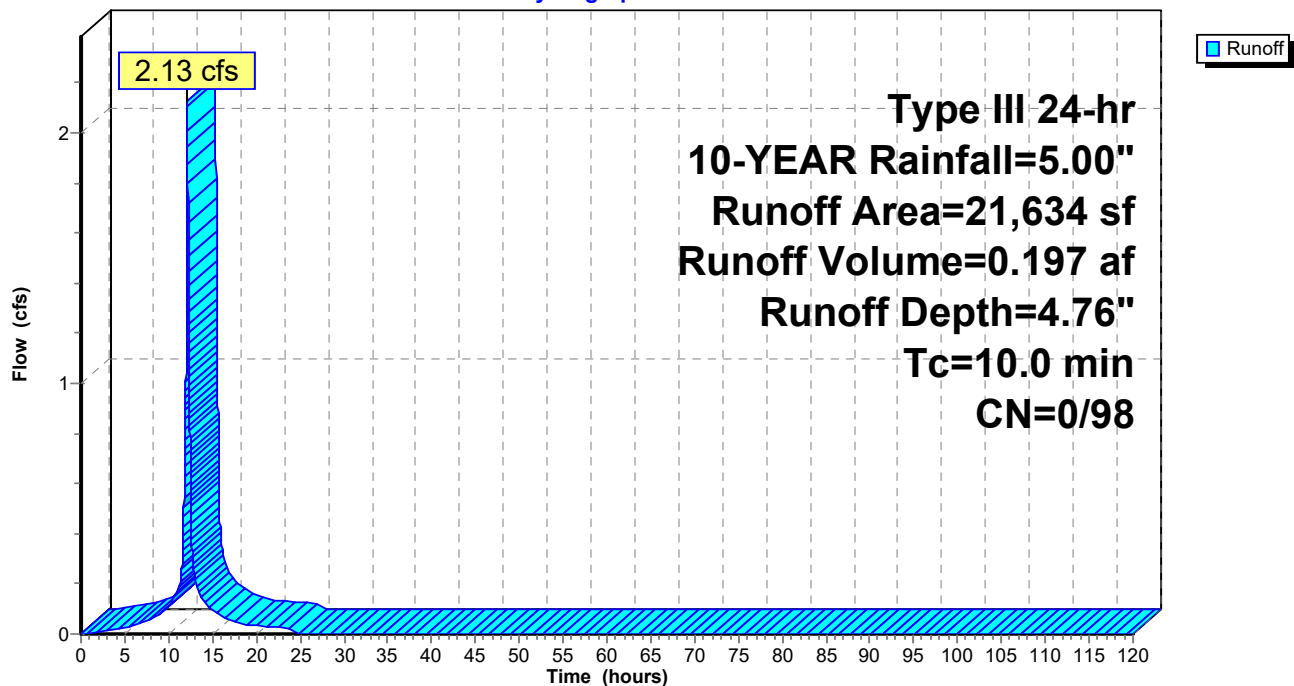
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
21,634	98	Paved parking, HSG C
21,634		100.00% Impervious Area

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

Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.13	0.03
10.00	0.95	0.00	0.74	0.11
15.00	4.27	0.00	4.04	0.10
20.00	4.79	0.00	4.55	0.03
25.00	5.00	0.00	4.76	0.00
30.00	5.00	0.00	4.76	0.00
35.00	5.00	0.00	4.76	0.00
40.00	5.00	0.00	4.76	0.00
45.00	5.00	0.00	4.76	0.00
50.00	5.00	0.00	4.76	0.00
55.00	5.00	0.00	4.76	0.00
60.00	5.00	0.00	4.76	0.00
65.00	5.00	0.00	4.76	0.00
70.00	5.00	0.00	4.76	0.00
75.00	5.00	0.00	4.76	0.00
80.00	5.00	0.00	4.76	0.00
85.00	5.00	0.00	4.76	0.00
90.00	5.00	0.00	4.76	0.00
95.00	5.00	0.00	4.76	0.00
100.00	5.00	0.00	4.76	0.00
105.00	5.00	0.00	4.76	0.00
110.00	5.00	0.00	4.76	0.00
115.00	5.00	0.00	4.76	0.00
120.00	5.00	0.00	4.76	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Runoff = 5.34 cfs @ 12.14 hrs, Volume= 0.438 af, Depth= 2.36"

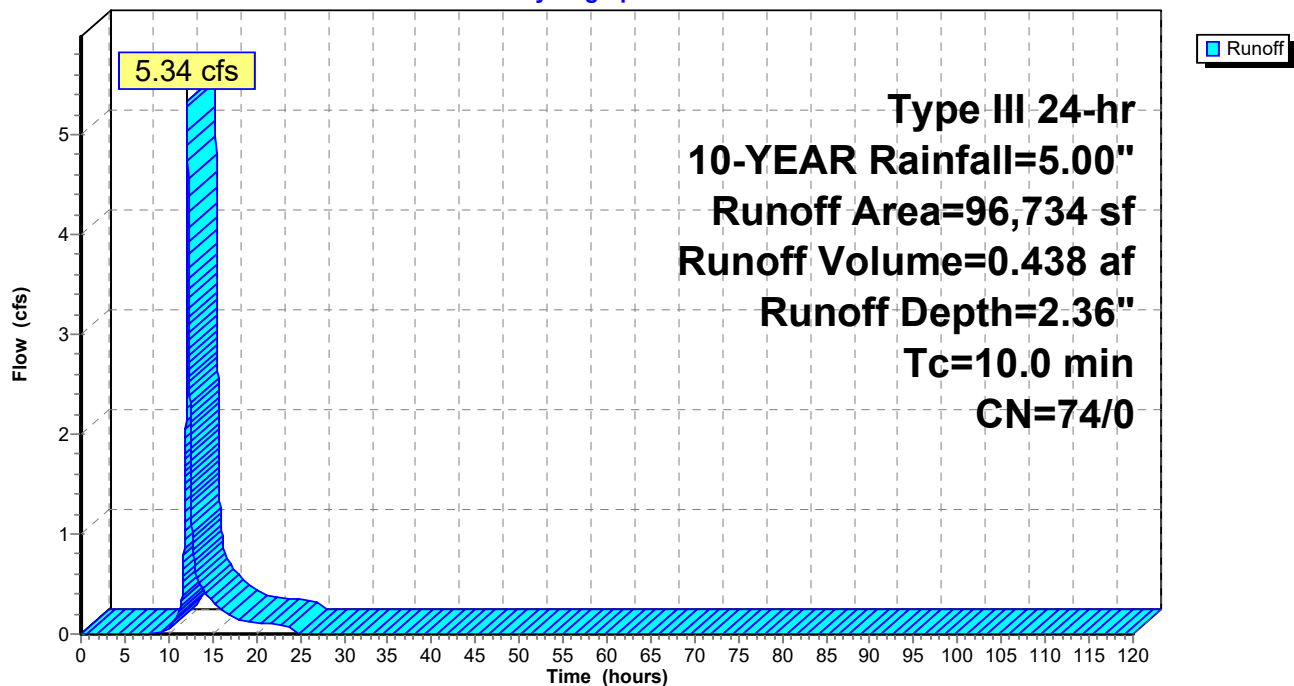
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
96,734	74	>75% Grass cover, Good, HSG C
96,734		100.00% Pervious Area

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

Subcatchment DA-P1 B: DA-P1 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.00	0.00
10.00	0.95	0.02	0.00	0.06
15.00	4.27	1.80	0.00	0.33
20.00	4.79	2.19	0.00	0.12
25.00	5.00	2.36	0.00	0.00
30.00	5.00	2.36	0.00	0.00
35.00	5.00	2.36	0.00	0.00
40.00	5.00	2.36	0.00	0.00
45.00	5.00	2.36	0.00	0.00
50.00	5.00	2.36	0.00	0.00
55.00	5.00	2.36	0.00	0.00
60.00	5.00	2.36	0.00	0.00
65.00	5.00	2.36	0.00	0.00
70.00	5.00	2.36	0.00	0.00
75.00	5.00	2.36	0.00	0.00
80.00	5.00	2.36	0.00	0.00
85.00	5.00	2.36	0.00	0.00
90.00	5.00	2.36	0.00	0.00
95.00	5.00	2.36	0.00	0.00
100.00	5.00	2.36	0.00	0.00
105.00	5.00	2.36	0.00	0.00
110.00	5.00	2.36	0.00	0.00
115.00	5.00	2.36	0.00	0.00
120.00	5.00	2.36	0.00	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Runoff = 6.25 cfs @ 12.13 hrs, Volume= 0.578 af, Depth= 4.76"

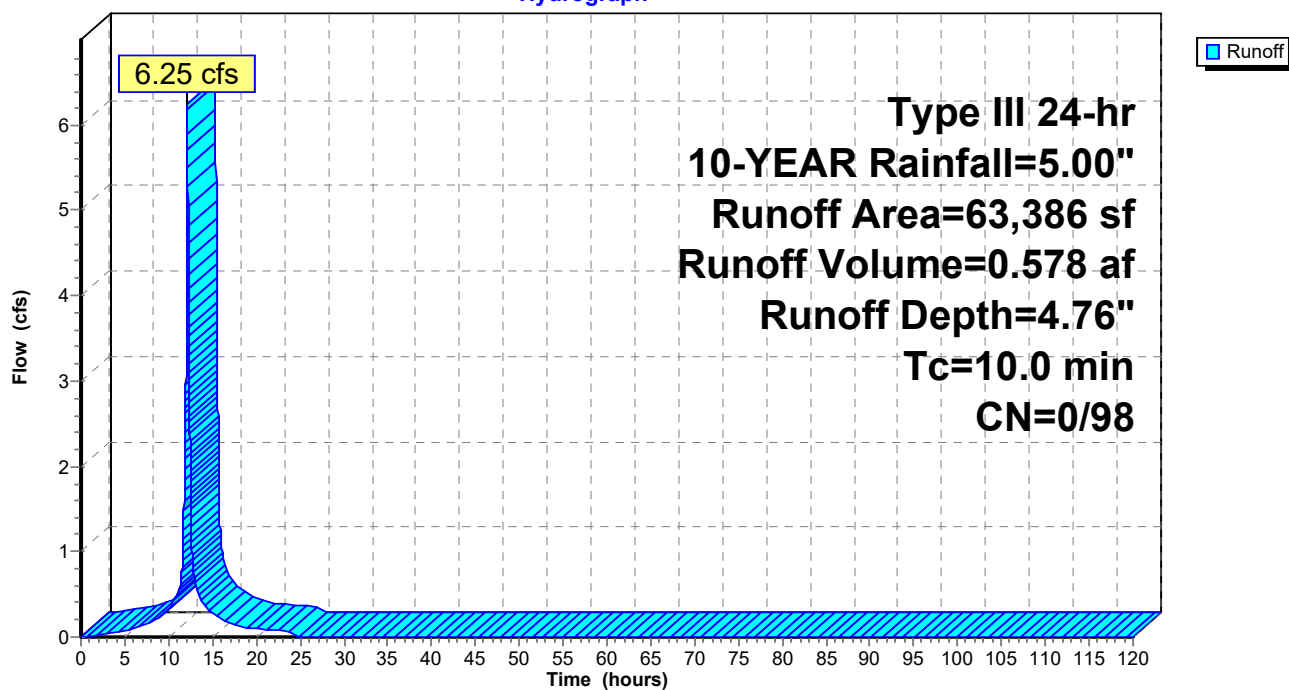
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
4,912	98	Paved parking, HSG B
58,474	98	Paved parking, HSG C
63,386	98	Weighted Average
63,386		100.00% Impervious Area

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

Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.13	0.08
10.00	0.95	0.00	0.74	0.33
15.00	4.27	0.00	4.04	0.29
20.00	4.79	0.00	4.55	0.10
25.00	5.00	0.00	4.76	0.00
30.00	5.00	0.00	4.76	0.00
35.00	5.00	0.00	4.76	0.00
40.00	5.00	0.00	4.76	0.00
45.00	5.00	0.00	4.76	0.00
50.00	5.00	0.00	4.76	0.00
55.00	5.00	0.00	4.76	0.00
60.00	5.00	0.00	4.76	0.00
65.00	5.00	0.00	4.76	0.00
70.00	5.00	0.00	4.76	0.00
75.00	5.00	0.00	4.76	0.00
80.00	5.00	0.00	4.76	0.00
85.00	5.00	0.00	4.76	0.00
90.00	5.00	0.00	4.76	0.00
95.00	5.00	0.00	4.76	0.00
100.00	5.00	0.00	4.76	0.00
105.00	5.00	0.00	4.76	0.00
110.00	5.00	0.00	4.76	0.00
115.00	5.00	0.00	4.76	0.00
120.00	5.00	0.00	4.76	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Runoff = 13.66 cfs @ 12.14 hrs, Volume= 1.118 af, Depth= 2.36"

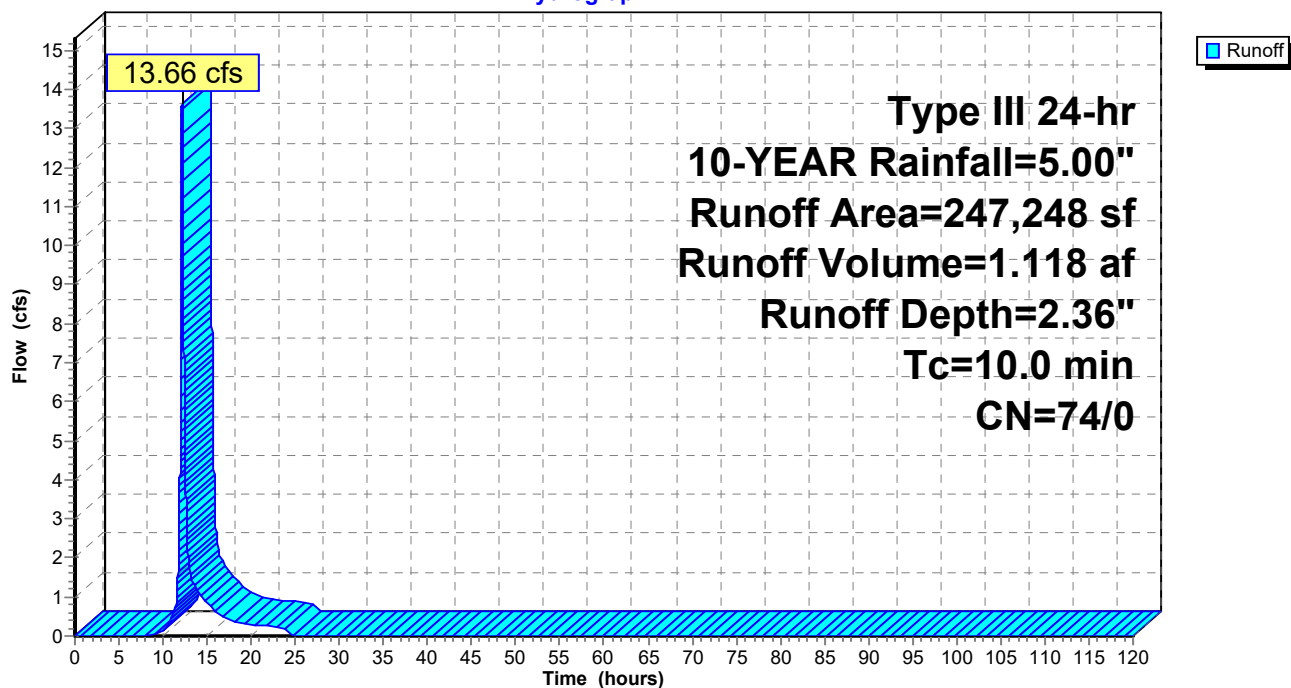
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
247,248	74	>75% Grass cover, Good, HSG C
247,248		100.00% Pervious Area

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

Subcatchment DA-P2 B: DA-P2 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.00	0.00
10.00	0.95	0.02	0.00	0.15
15.00	4.27	1.80	0.00	0.84
20.00	4.79	2.19	0.00	0.30
25.00	5.00	2.36	0.00	0.00
30.00	5.00	2.36	0.00	0.00
35.00	5.00	2.36	0.00	0.00
40.00	5.00	2.36	0.00	0.00
45.00	5.00	2.36	0.00	0.00
50.00	5.00	2.36	0.00	0.00
55.00	5.00	2.36	0.00	0.00
60.00	5.00	2.36	0.00	0.00
65.00	5.00	2.36	0.00	0.00
70.00	5.00	2.36	0.00	0.00
75.00	5.00	2.36	0.00	0.00
80.00	5.00	2.36	0.00	0.00
85.00	5.00	2.36	0.00	0.00
90.00	5.00	2.36	0.00	0.00
95.00	5.00	2.36	0.00	0.00
100.00	5.00	2.36	0.00	0.00
105.00	5.00	2.36	0.00	0.00
110.00	5.00	2.36	0.00	0.00
115.00	5.00	2.36	0.00	0.00
120.00	5.00	2.36	0.00	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Runoff = 14.87 cfs @ 12.13 hrs, Volume= 1.375 af, Depth= 4.76"

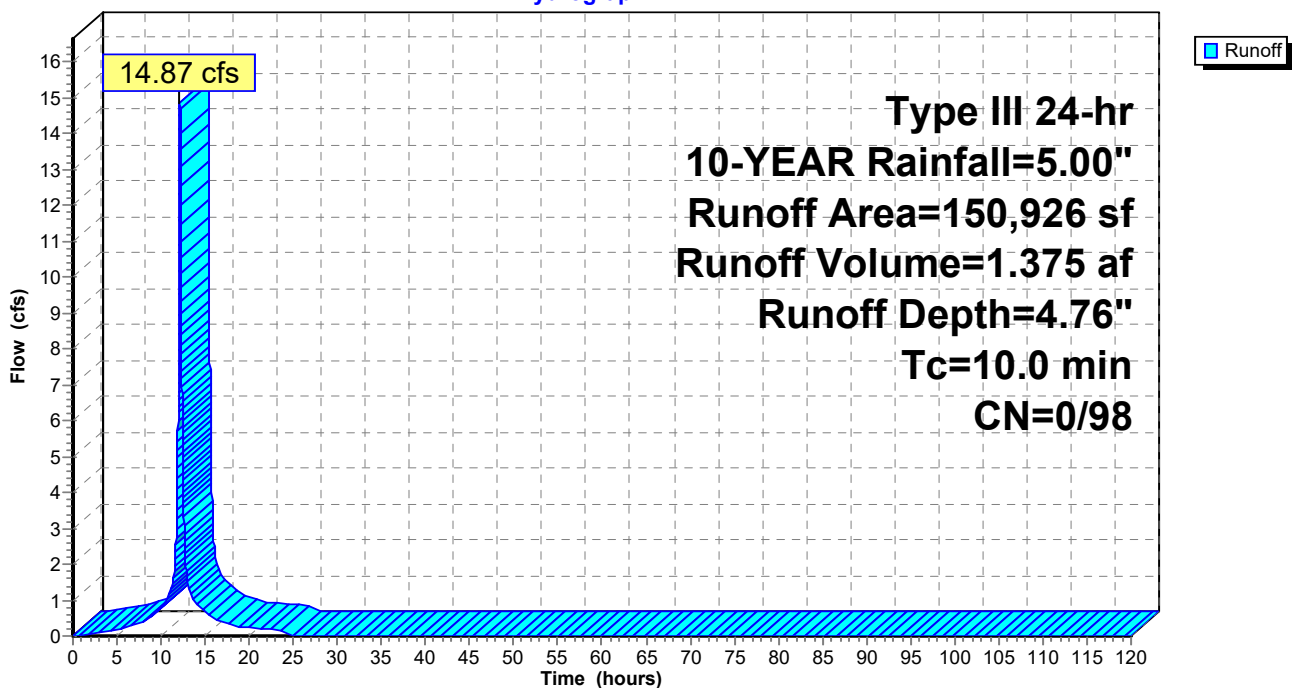
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
150,926	98	Paved parking, HSG B
150,926		100.00% Impervious Area

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

Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.13	0.19
10.00	0.95	0.00	0.74	0.79
15.00	4.27	0.00	4.04	0.68
20.00	4.79	0.00	4.55	0.23
25.00	5.00	0.00	4.76	0.00
30.00	5.00	0.00	4.76	0.00
35.00	5.00	0.00	4.76	0.00
40.00	5.00	0.00	4.76	0.00
45.00	5.00	0.00	4.76	0.00
50.00	5.00	0.00	4.76	0.00
55.00	5.00	0.00	4.76	0.00
60.00	5.00	0.00	4.76	0.00
65.00	5.00	0.00	4.76	0.00
70.00	5.00	0.00	4.76	0.00
75.00	5.00	0.00	4.76	0.00
80.00	5.00	0.00	4.76	0.00
85.00	5.00	0.00	4.76	0.00
90.00	5.00	0.00	4.76	0.00
95.00	5.00	0.00	4.76	0.00
100.00	5.00	0.00	4.76	0.00
105.00	5.00	0.00	4.76	0.00
110.00	5.00	0.00	4.76	0.00
115.00	5.00	0.00	4.76	0.00
120.00	5.00	0.00	4.76	0.00

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Summary for Subcatchment DA-P3B: DA-P3 PERVIOUS

Runoff = 7.38 cfs @ 12.16 hrs, Volume= 0.706 af, Depth= 1.17"

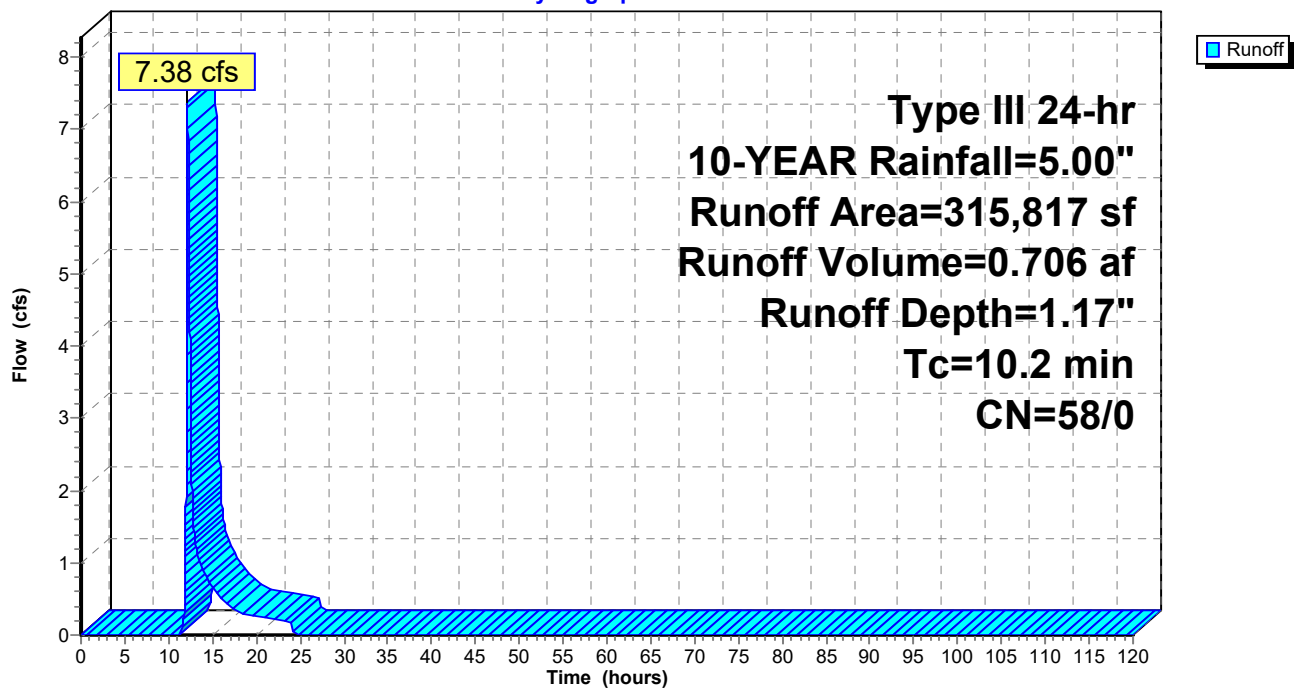
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
176,919	61	>75% Grass cover, Good, HSG B
138,898	55	Woods, Good, HSG B
315,817	58	Weighted Average
315,817		100.00% Pervious Area

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

Subcatchment DA-P3B: DA-P3 PERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P3B: DA-P3 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.00	0.00
10.00	0.95	0.00	0.00	0.00
15.00	4.27	0.79	0.00	0.69
20.00	4.79	1.05	0.00	0.26
25.00	5.00	1.17	0.00	0.00
30.00	5.00	1.17	0.00	0.00
35.00	5.00	1.17	0.00	0.00
40.00	5.00	1.17	0.00	0.00
45.00	5.00	1.17	0.00	0.00
50.00	5.00	1.17	0.00	0.00
55.00	5.00	1.17	0.00	0.00
60.00	5.00	1.17	0.00	0.00
65.00	5.00	1.17	0.00	0.00
70.00	5.00	1.17	0.00	0.00
75.00	5.00	1.17	0.00	0.00
80.00	5.00	1.17	0.00	0.00
85.00	5.00	1.17	0.00	0.00
90.00	5.00	1.17	0.00	0.00
95.00	5.00	1.17	0.00	0.00
100.00	5.00	1.17	0.00	0.00
105.00	5.00	1.17	0.00	0.00
110.00	5.00	1.17	0.00	0.00
115.00	5.00	1.17	0.00	0.00
120.00	5.00	1.17	0.00	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Runoff = 1.79 cfs @ 12.13 hrs, Volume= 0.166 af, Depth= 4.76"

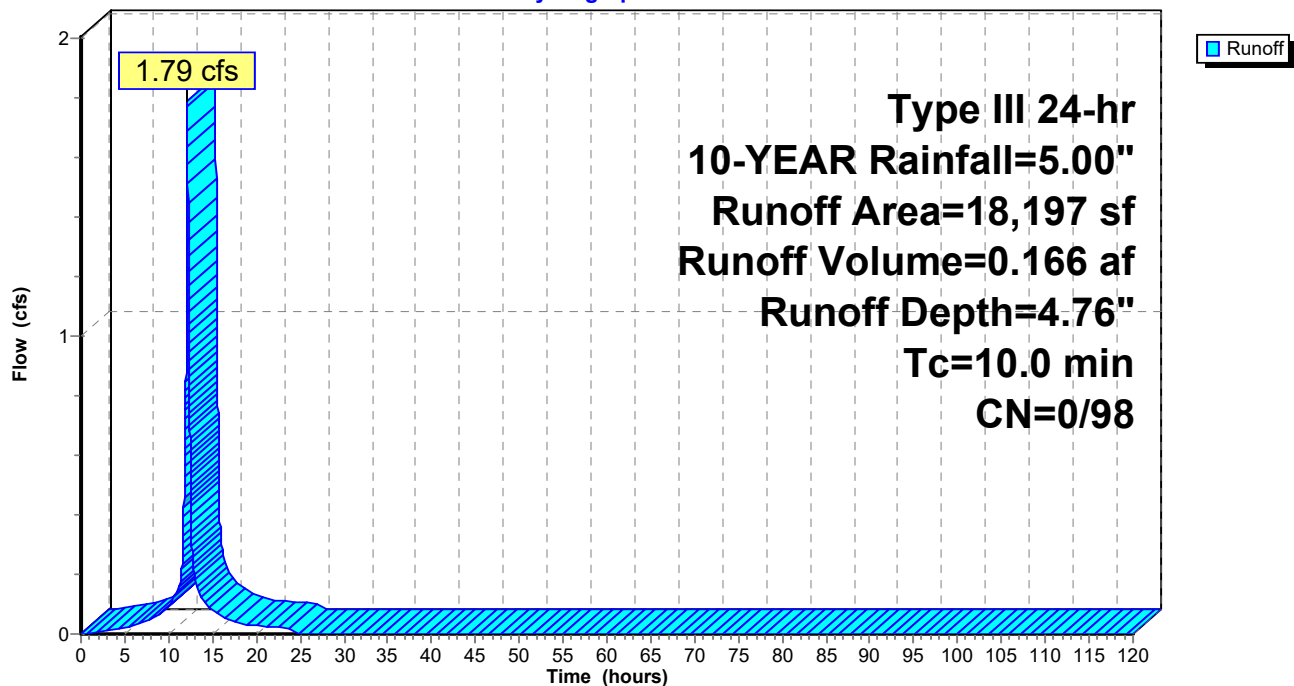
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
18,197	98	Paved parking, HSG C
18,197		100.00% Impervious Area

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

Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.13	0.02
10.00	0.95	0.00	0.74	0.10
15.00	4.27	0.00	4.04	0.08
20.00	4.79	0.00	4.55	0.03
25.00	5.00	0.00	4.76	0.00
30.00	5.00	0.00	4.76	0.00
35.00	5.00	0.00	4.76	0.00
40.00	5.00	0.00	4.76	0.00
45.00	5.00	0.00	4.76	0.00
50.00	5.00	0.00	4.76	0.00
55.00	5.00	0.00	4.76	0.00
60.00	5.00	0.00	4.76	0.00
65.00	5.00	0.00	4.76	0.00
70.00	5.00	0.00	4.76	0.00
75.00	5.00	0.00	4.76	0.00
80.00	5.00	0.00	4.76	0.00
85.00	5.00	0.00	4.76	0.00
90.00	5.00	0.00	4.76	0.00
95.00	5.00	0.00	4.76	0.00
100.00	5.00	0.00	4.76	0.00
105.00	5.00	0.00	4.76	0.00
110.00	5.00	0.00	4.76	0.00
115.00	5.00	0.00	4.76	0.00
120.00	5.00	0.00	4.76	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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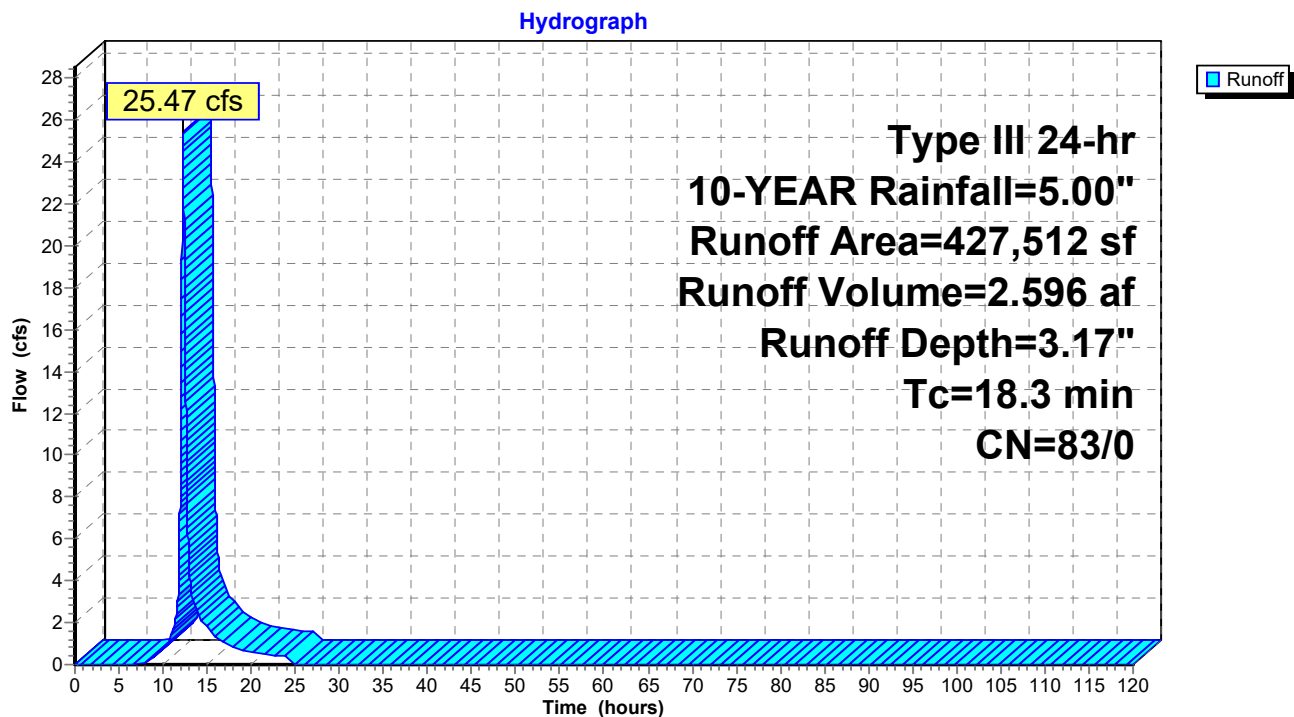
Summary for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Runoff = 25.47 cfs @ 12.25 hrs, Volume= 2.596 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
1,902	82	Dirt roads, HSG B
1,547	87	Dirt roads, HSG C
27,561	74	>75% Grass cover, Good, HSG C
101,474	78	Row crops, straight row, Good, HSG B
295,028	85	Row crops, straight row, Good, HSG C
427,512	83	Weighted Average
427,512		100.00% Pervious Area

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

Subcatchment DA-P5 B: DA-P5 PERVIOUS

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Hydrograph for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.00	0.00
10.00	0.95	0.11	0.00	0.77
15.00	4.27	2.52	0.00	1.77
20.00	4.79	2.98	0.00	0.60
25.00	5.00	3.17	0.00	0.00
30.00	5.00	3.17	0.00	0.00
35.00	5.00	3.17	0.00	0.00
40.00	5.00	3.17	0.00	0.00
45.00	5.00	3.17	0.00	0.00
50.00	5.00	3.17	0.00	0.00
55.00	5.00	3.17	0.00	0.00
60.00	5.00	3.17	0.00	0.00
65.00	5.00	3.17	0.00	0.00
70.00	5.00	3.17	0.00	0.00
75.00	5.00	3.17	0.00	0.00
80.00	5.00	3.17	0.00	0.00
85.00	5.00	3.17	0.00	0.00
90.00	5.00	3.17	0.00	0.00
95.00	5.00	3.17	0.00	0.00
100.00	5.00	3.17	0.00	0.00
105.00	5.00	3.17	0.00	0.00
110.00	5.00	3.17	0.00	0.00
115.00	5.00	3.17	0.00	0.00
120.00	5.00	3.17	0.00	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Runoff = 38.85 cfs @ 12.13 hrs, Volume= 3.593 af, Depth= 4.76"

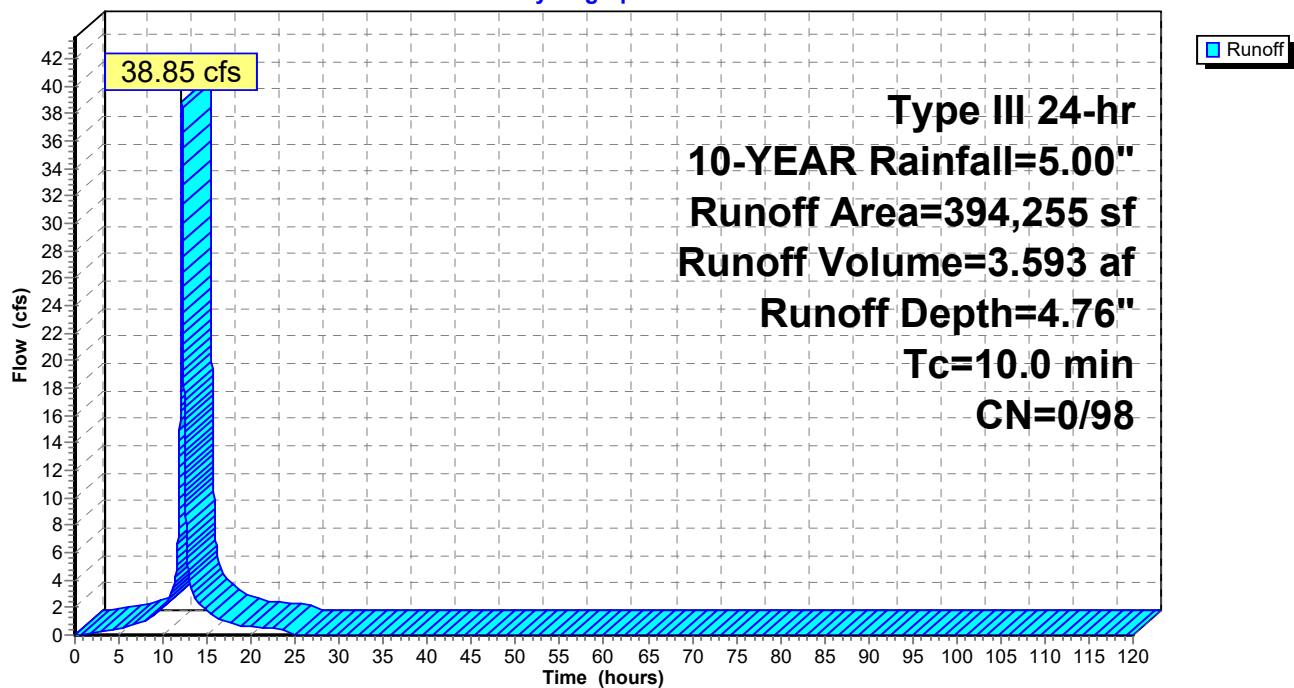
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
139,105	98	Paved parking, HSG B
255,150	98	Paved parking, HSG C
394,255	98	Weighted Average
394,255		100.00% Impervious Area

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

Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.13	0.51
10.00	0.95	0.00	0.74	2.08
15.00	4.27	0.00	4.04	1.79
20.00	4.79	0.00	4.55	0.60
25.00	5.00	0.00	4.76	0.00
30.00	5.00	0.00	4.76	0.00
35.00	5.00	0.00	4.76	0.00
40.00	5.00	0.00	4.76	0.00
45.00	5.00	0.00	4.76	0.00
50.00	5.00	0.00	4.76	0.00
55.00	5.00	0.00	4.76	0.00
60.00	5.00	0.00	4.76	0.00
65.00	5.00	0.00	4.76	0.00
70.00	5.00	0.00	4.76	0.00
75.00	5.00	0.00	4.76	0.00
80.00	5.00	0.00	4.76	0.00
85.00	5.00	0.00	4.76	0.00
90.00	5.00	0.00	4.76	0.00
95.00	5.00	0.00	4.76	0.00
100.00	5.00	0.00	4.76	0.00
105.00	5.00	0.00	4.76	0.00
110.00	5.00	0.00	4.76	0.00
115.00	5.00	0.00	4.76	0.00
120.00	5.00	0.00	4.76	0.00

PROPOSED 2022-04

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Runoff = 15.77 cfs @ 12.15 hrs, Volume= 1.384 af, Depth= 1.51"

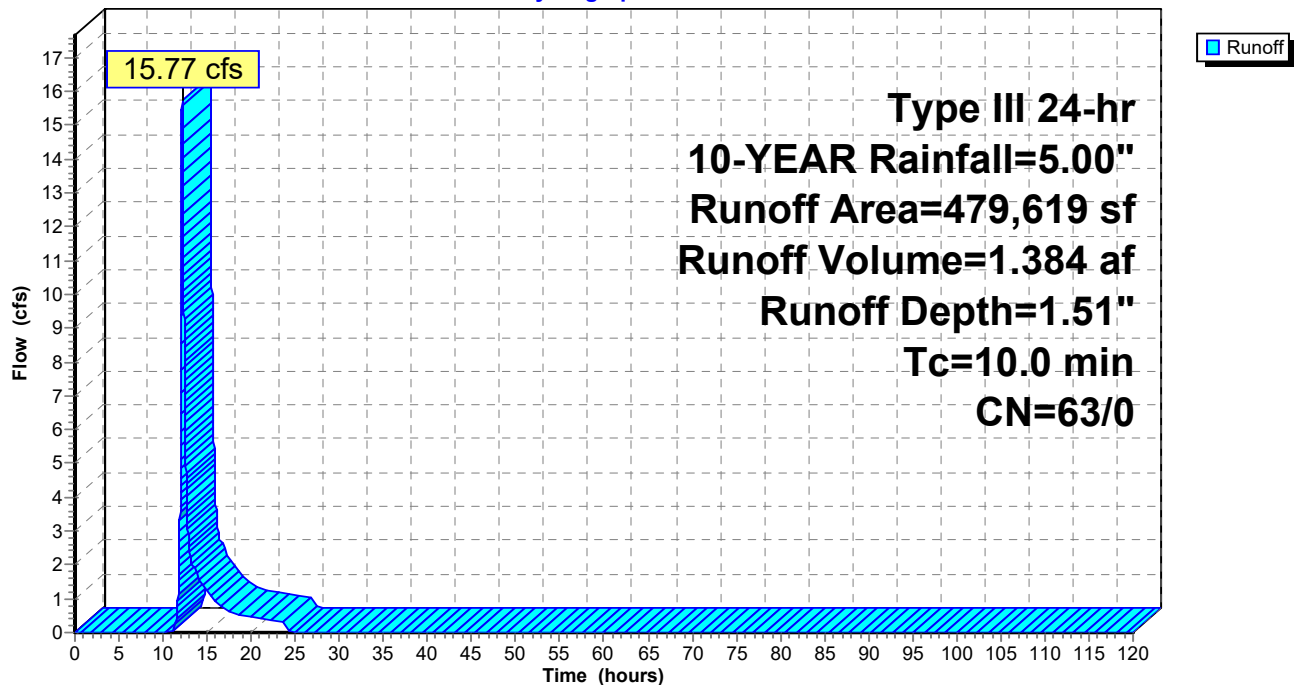
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
285,540	61	>75% Grass cover, Good, HSG B
112,000	74	>75% Grass cover, Good, HSG C
82,079	55	Woods, Good, HSG B
479,619	63	Weighted Average
479,619		100.00% Pervious Area

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

Subcatchment DA-P6 B: DA-P6 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.00	0.00
10.00	0.95	0.00	0.00	0.00
15.00	4.27	1.07	0.00	1.24
20.00	4.79	1.37	0.00	0.45
25.00	5.00	1.51	0.00	0.00
30.00	5.00	1.51	0.00	0.00
35.00	5.00	1.51	0.00	0.00
40.00	5.00	1.51	0.00	0.00
45.00	5.00	1.51	0.00	0.00
50.00	5.00	1.51	0.00	0.00
55.00	5.00	1.51	0.00	0.00
60.00	5.00	1.51	0.00	0.00
65.00	5.00	1.51	0.00	0.00
70.00	5.00	1.51	0.00	0.00
75.00	5.00	1.51	0.00	0.00
80.00	5.00	1.51	0.00	0.00
85.00	5.00	1.51	0.00	0.00
90.00	5.00	1.51	0.00	0.00
95.00	5.00	1.51	0.00	0.00
100.00	5.00	1.51	0.00	0.00
105.00	5.00	1.51	0.00	0.00
110.00	5.00	1.51	0.00	0.00
115.00	5.00	1.51	0.00	0.00
120.00	5.00	1.51	0.00	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Runoff = 82.95 cfs @ 12.13 hrs, Volume= 7.670 af, Depth= 4.76"

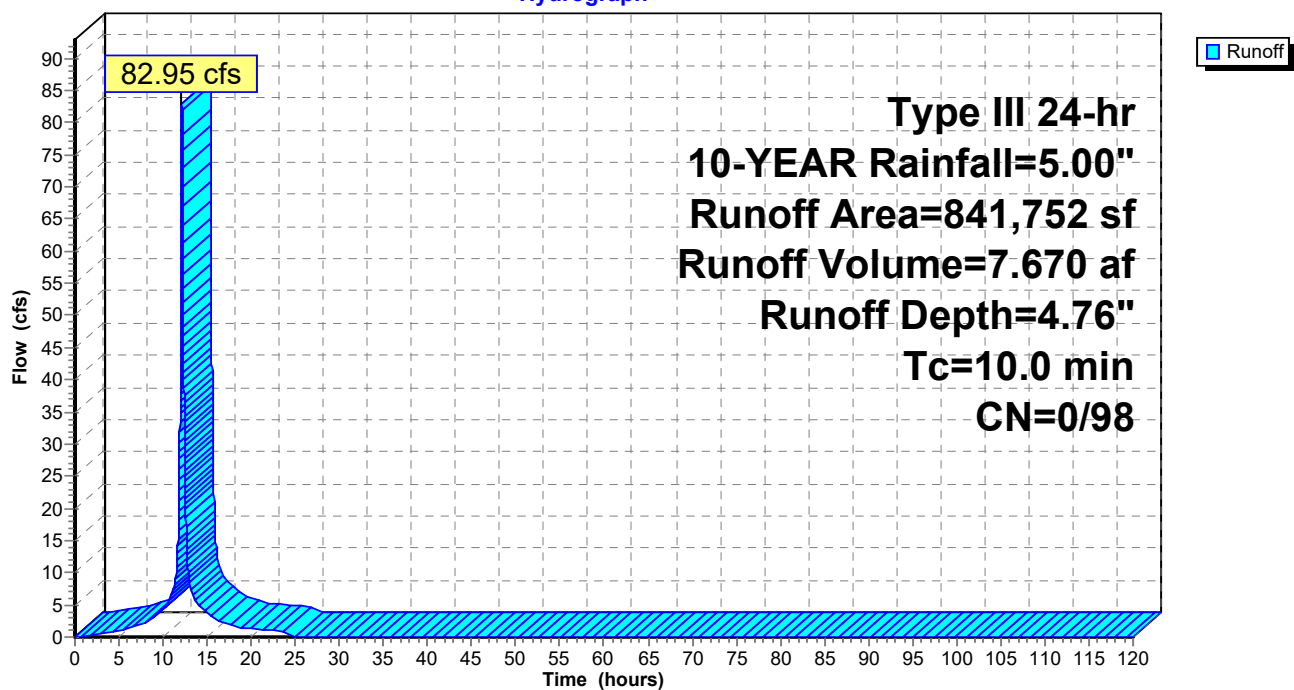
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
232,402	98	Paved parking, HSG B
609,350	98	Paved parking, HSG C
841,752	98	Weighted Average
841,752		100.00% Impervious Area

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

Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.13	1.08
10.00	0.95	0.00	0.74	4.43
15.00	4.27	0.00	4.04	3.82
20.00	4.79	0.00	4.55	1.29
25.00	5.00	0.00	4.76	0.00
30.00	5.00	0.00	4.76	0.00
35.00	5.00	0.00	4.76	0.00
40.00	5.00	0.00	4.76	0.00
45.00	5.00	0.00	4.76	0.00
50.00	5.00	0.00	4.76	0.00
55.00	5.00	0.00	4.76	0.00
60.00	5.00	0.00	4.76	0.00
65.00	5.00	0.00	4.76	0.00
70.00	5.00	0.00	4.76	0.00
75.00	5.00	0.00	4.76	0.00
80.00	5.00	0.00	4.76	0.00
85.00	5.00	0.00	4.76	0.00
90.00	5.00	0.00	4.76	0.00
95.00	5.00	0.00	4.76	0.00
100.00	5.00	0.00	4.76	0.00
105.00	5.00	0.00	4.76	0.00
110.00	5.00	0.00	4.76	0.00
115.00	5.00	0.00	4.76	0.00
120.00	5.00	0.00	4.76	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P7B: DA-P7 PERVIOUS

Runoff = 16.21 cfs @ 12.15 hrs, Volume= 1.362 af, Depth= 1.88"

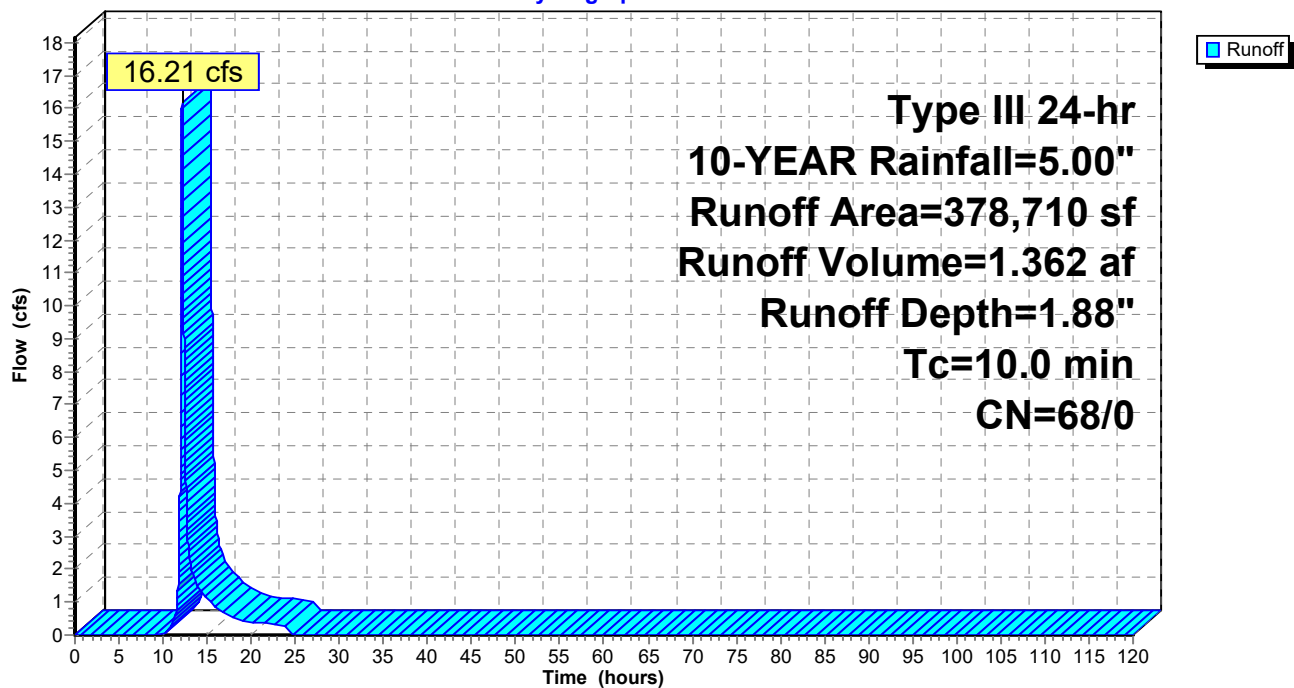
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
161,684	61	>75% Grass cover, Good, HSG B
217,026	74	>75% Grass cover, Good, HSG C
378,710	68	Weighted Average
378,710		100.00% Pervious Area

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

Subcatchment DA-P7B: DA-P7 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P7B: DA-P7 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.00	0.00
10.00	0.95	0.00	0.00	0.00
15.00	4.27	1.38	0.00	1.13
20.00	4.79	1.73	0.00	0.40
25.00	5.00	1.88	0.00	0.00
30.00	5.00	1.88	0.00	0.00
35.00	5.00	1.88	0.00	0.00
40.00	5.00	1.88	0.00	0.00
45.00	5.00	1.88	0.00	0.00
50.00	5.00	1.88	0.00	0.00
55.00	5.00	1.88	0.00	0.00
60.00	5.00	1.88	0.00	0.00
65.00	5.00	1.88	0.00	0.00
70.00	5.00	1.88	0.00	0.00
75.00	5.00	1.88	0.00	0.00
80.00	5.00	1.88	0.00	0.00
85.00	5.00	1.88	0.00	0.00
90.00	5.00	1.88	0.00	0.00
95.00	5.00	1.88	0.00	0.00
100.00	5.00	1.88	0.00	0.00
105.00	5.00	1.88	0.00	0.00
110.00	5.00	1.88	0.00	0.00
115.00	5.00	1.88	0.00	0.00
120.00	5.00	1.88	0.00	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Runoff = 6.92 cfs @ 12.13 hrs, Volume= 0.639 af, Depth= 4.76"

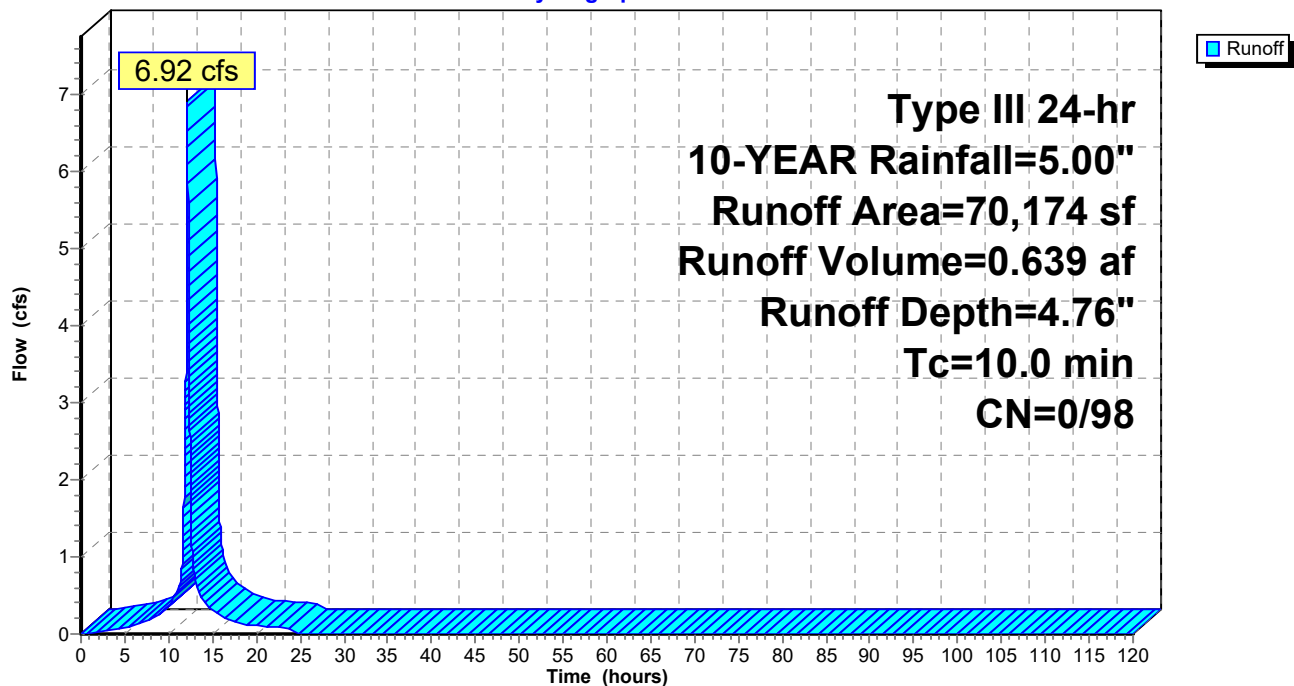
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
70,174	98	Paved parking, HSG B
70,174		100.00% Impervious Area

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

Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.13	0.09
10.00	0.95	0.00	0.74	0.37
15.00	4.27	0.00	4.04	0.32
20.00	4.79	0.00	4.55	0.11
25.00	5.00	0.00	4.76	0.00
30.00	5.00	0.00	4.76	0.00
35.00	5.00	0.00	4.76	0.00
40.00	5.00	0.00	4.76	0.00
45.00	5.00	0.00	4.76	0.00
50.00	5.00	0.00	4.76	0.00
55.00	5.00	0.00	4.76	0.00
60.00	5.00	0.00	4.76	0.00
65.00	5.00	0.00	4.76	0.00
70.00	5.00	0.00	4.76	0.00
75.00	5.00	0.00	4.76	0.00
80.00	5.00	0.00	4.76	0.00
85.00	5.00	0.00	4.76	0.00
90.00	5.00	0.00	4.76	0.00
95.00	5.00	0.00	4.76	0.00
100.00	5.00	0.00	4.76	0.00
105.00	5.00	0.00	4.76	0.00
110.00	5.00	0.00	4.76	0.00
115.00	5.00	0.00	4.76	0.00
120.00	5.00	0.00	4.76	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Runoff = 1.74 cfs @ 12.15 hrs, Volume= 0.157 af, Depth= 1.37"

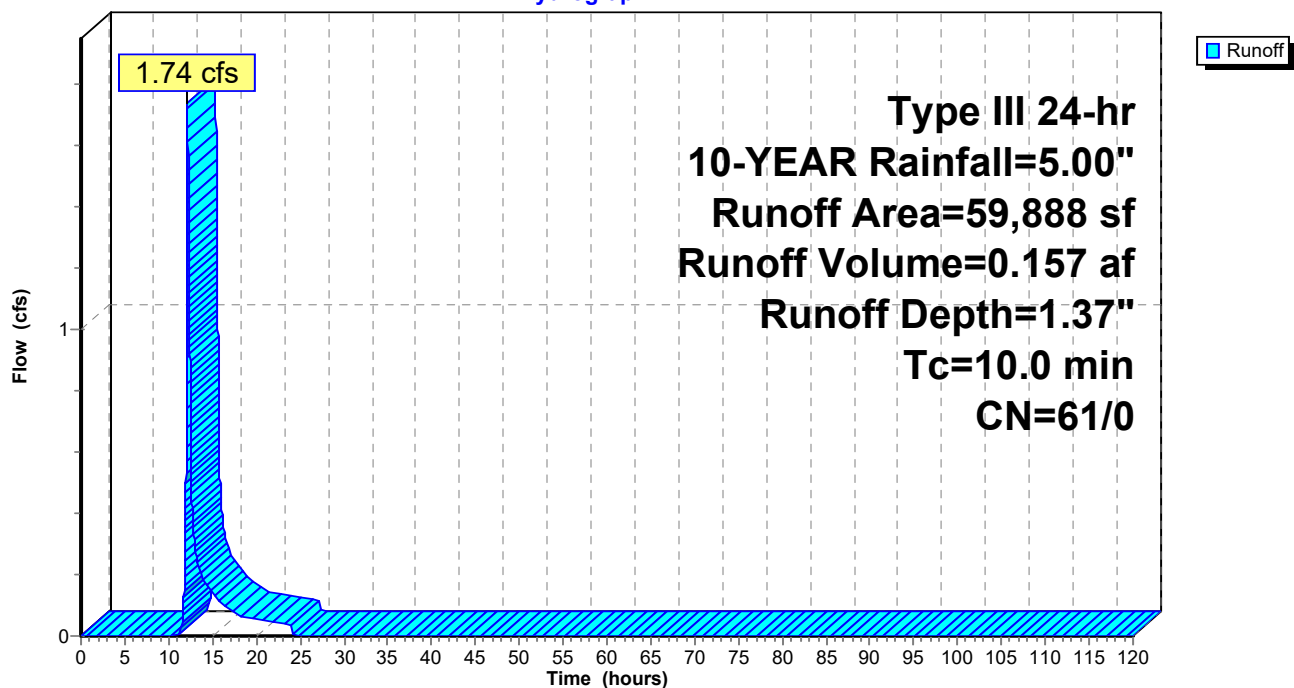
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
59,888	61	>75% Grass cover, Good, HSG B
59,888		100.00% Pervious Area

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

Subcatchment DA-P8 B: DA-P8 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.00	0.00
10.00	0.95	0.00	0.00	0.00
15.00	4.27	0.95	0.00	0.15
20.00	4.79	1.24	0.00	0.05
25.00	5.00	1.37	0.00	0.00
30.00	5.00	1.37	0.00	0.00
35.00	5.00	1.37	0.00	0.00
40.00	5.00	1.37	0.00	0.00
45.00	5.00	1.37	0.00	0.00
50.00	5.00	1.37	0.00	0.00
55.00	5.00	1.37	0.00	0.00
60.00	5.00	1.37	0.00	0.00
65.00	5.00	1.37	0.00	0.00
70.00	5.00	1.37	0.00	0.00
75.00	5.00	1.37	0.00	0.00
80.00	5.00	1.37	0.00	0.00
85.00	5.00	1.37	0.00	0.00
90.00	5.00	1.37	0.00	0.00
95.00	5.00	1.37	0.00	0.00
100.00	5.00	1.37	0.00	0.00
105.00	5.00	1.37	0.00	0.00
110.00	5.00	1.37	0.00	0.00
115.00	5.00	1.37	0.00	0.00
120.00	5.00	1.37	0.00	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Runoff = 16.49 cfs @ 12.13 hrs, Volume= 1.525 af, Depth= 4.76"

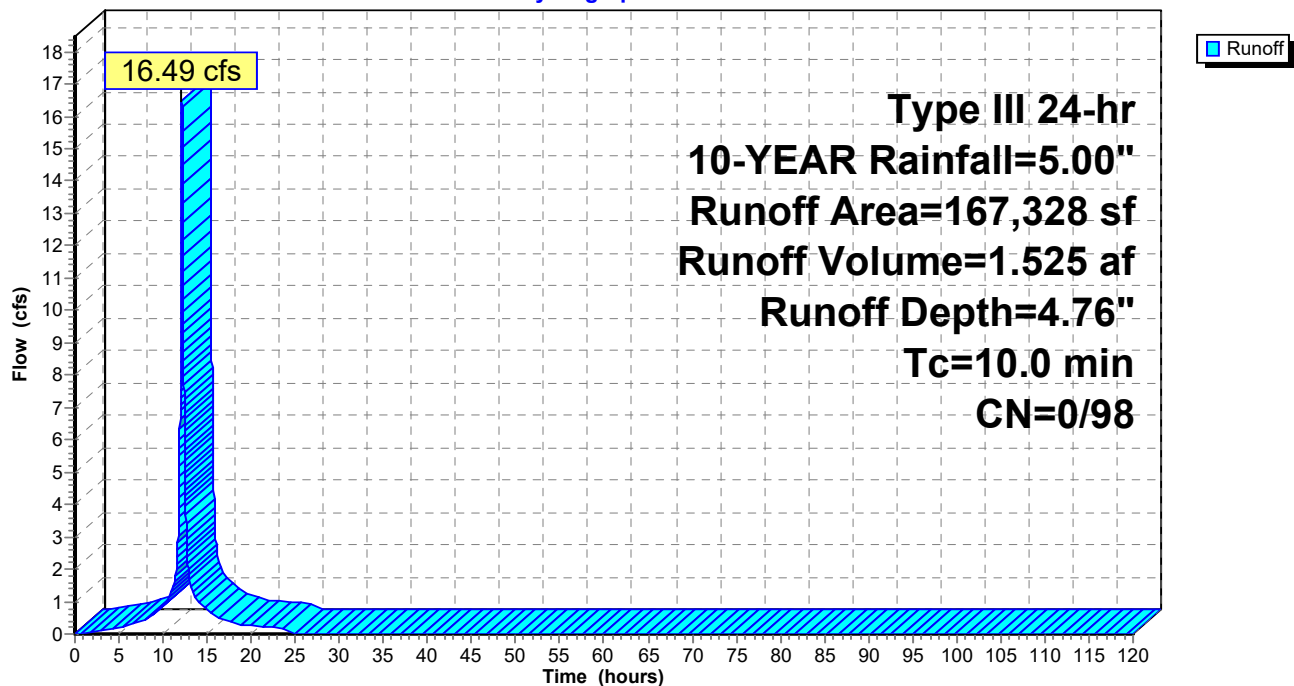
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
167,328	98	Paved parking, HSG B
167,328		100.00% Impervious Area

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

Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.13	0.22
10.00	0.95	0.00	0.74	0.88
15.00	4.27	0.00	4.04	0.76
20.00	4.79	0.00	4.55	0.26
25.00	5.00	0.00	4.76	0.00
30.00	5.00	0.00	4.76	0.00
35.00	5.00	0.00	4.76	0.00
40.00	5.00	0.00	4.76	0.00
45.00	5.00	0.00	4.76	0.00
50.00	5.00	0.00	4.76	0.00
55.00	5.00	0.00	4.76	0.00
60.00	5.00	0.00	4.76	0.00
65.00	5.00	0.00	4.76	0.00
70.00	5.00	0.00	4.76	0.00
75.00	5.00	0.00	4.76	0.00
80.00	5.00	0.00	4.76	0.00
85.00	5.00	0.00	4.76	0.00
90.00	5.00	0.00	4.76	0.00
95.00	5.00	0.00	4.76	0.00
100.00	5.00	0.00	4.76	0.00
105.00	5.00	0.00	4.76	0.00
110.00	5.00	0.00	4.76	0.00
115.00	5.00	0.00	4.76	0.00
120.00	5.00	0.00	4.76	0.00

PROPOSED 2022-04

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Runoff = 1.29 cfs @ 12.15 hrs, Volume= 0.117 af, Depth= 1.37"

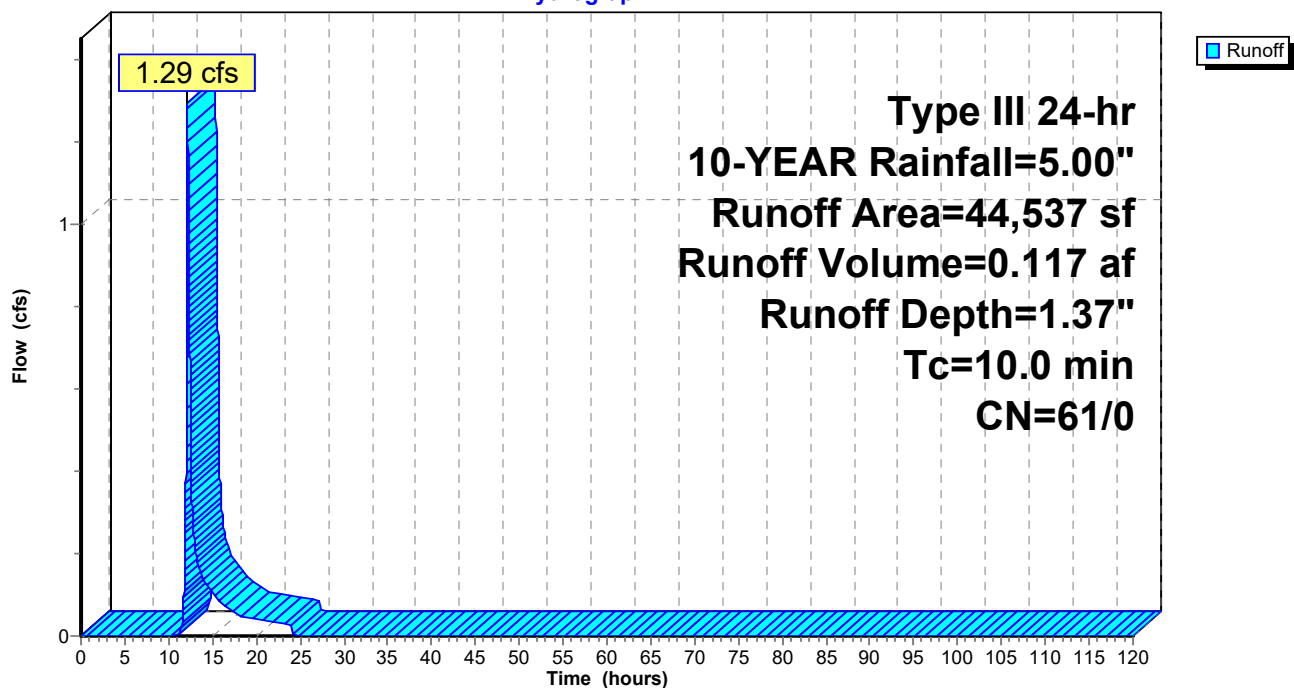
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
44,537	61	>75% Grass cover, Good, HSG B
44,537		100.00% Pervious Area

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

Subcatchment DA-P9 B: DA-P9 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.00	0.00
10.00	0.95	0.00	0.00	0.00
15.00	4.27	0.95	0.00	0.11
20.00	4.79	1.24	0.00	0.04
25.00	5.00	1.37	0.00	0.00
30.00	5.00	1.37	0.00	0.00
35.00	5.00	1.37	0.00	0.00
40.00	5.00	1.37	0.00	0.00
45.00	5.00	1.37	0.00	0.00
50.00	5.00	1.37	0.00	0.00
55.00	5.00	1.37	0.00	0.00
60.00	5.00	1.37	0.00	0.00
65.00	5.00	1.37	0.00	0.00
70.00	5.00	1.37	0.00	0.00
75.00	5.00	1.37	0.00	0.00
80.00	5.00	1.37	0.00	0.00
85.00	5.00	1.37	0.00	0.00
90.00	5.00	1.37	0.00	0.00
95.00	5.00	1.37	0.00	0.00
100.00	5.00	1.37	0.00	0.00
105.00	5.00	1.37	0.00	0.00
110.00	5.00	1.37	0.00	0.00
115.00	5.00	1.37	0.00	0.00
120.00	5.00	1.37	0.00	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Subcatchment DA-PB: BYPASS AREA

Runoff = 14.90 cfs @ 12.47 hrs, Volume= 1.992 af, Depth= 2.89"

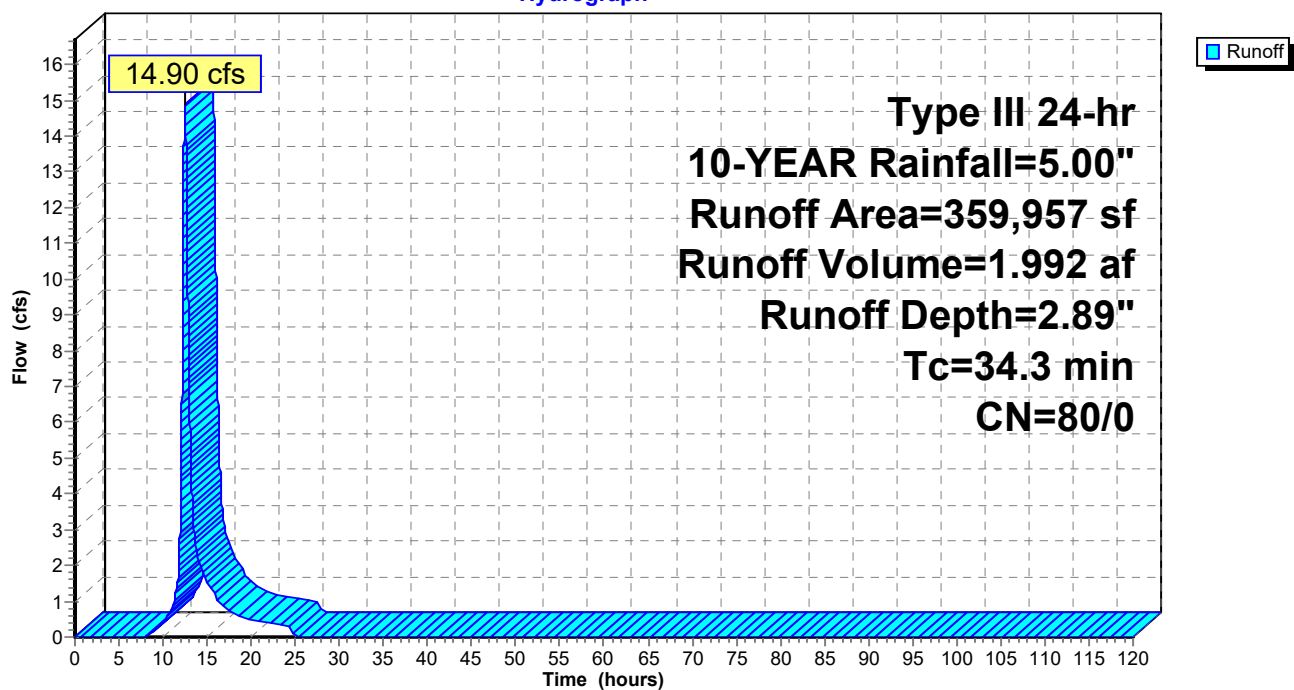
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=5.00"

Area (sf)	CN	Description
260,735	78	Row crops, straight row, Good, HSG B
99,222	85	Row crops, straight row, Good, HSG C
359,957	80	Weighted Average
359,957		100.00% Pervious Area

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

Subcatchment DA-PB: BYPASS AREA

Hydrograph



PROPOSED 2022-04*Type III 24-hr 10-YEAR Rainfall=5.00"*

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Hydrograph for Subcatchment DA-PB: BYPASS AREA

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.28	0.00	0.00	0.00
10.00	0.95	0.07	0.00	0.39
15.00	4.27	2.27	0.00	1.52
20.00	4.79	2.71	0.00	0.50
25.00	5.00	2.89	0.00	0.02
30.00	5.00	2.89	0.00	0.00
35.00	5.00	2.89	0.00	0.00
40.00	5.00	2.89	0.00	0.00
45.00	5.00	2.89	0.00	0.00
50.00	5.00	2.89	0.00	0.00
55.00	5.00	2.89	0.00	0.00
60.00	5.00	2.89	0.00	0.00
65.00	5.00	2.89	0.00	0.00
70.00	5.00	2.89	0.00	0.00
75.00	5.00	2.89	0.00	0.00
80.00	5.00	2.89	0.00	0.00
85.00	5.00	2.89	0.00	0.00
90.00	5.00	2.89	0.00	0.00
95.00	5.00	2.89	0.00	0.00
100.00	5.00	2.89	0.00	0.00
105.00	5.00	2.89	0.00	0.00
110.00	5.00	2.89	0.00	0.00
115.00	5.00	2.89	0.00	0.00
120.00	5.00	2.89	0.00	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Pond B1: BASIN#1

Inflow = 54.47 cfs @ 12.14 hrs, Volume= 4.977 af
 Outflow = 6.17 cfs @ 13.05 hrs, Volume= 4.805 af, Atten= 89%, Lag= 54.4 min
 Primary = 6.17 cfs @ 13.05 hrs, Volume= 4.805 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 129.37' @ 13.05 hrs Surf.Area= 59,128 sf Storage= 124,798 cf

Plug-Flow detention time= 1,602.3 min calculated for 4.805 af (97% of inflow)
 Center-of-Mass det. time= 1,581.9 min (2,366.5 - 784.7)

Volume	Invert	Avail.Storage	Storage Description
#1	125.00'	468,414 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
125.00	0	0	0
126.00	2,784	1,392	1,392
127.00	28,597	15,691	17,083
128.00	42,791	35,694	52,777
129.00	57,622	50,207	102,983
130.00	61,653	59,638	162,621
131.00	64,456	63,055	225,675
132.00	67,190	65,823	291,498
133.00	69,880	68,535	360,033
134.00	72,596	71,238	431,271
134.50	75,975	37,143	468,414

Device	Routing	Invert	Outlet Devices
#1	Primary	125.00'	30.0" Round Culvert L= 49.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 125.00' / 124.00' S= 0.0204 1' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	125.00'	2.5" Vert. Orifice C= 0.600
#3	Device 1	128.90'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.70'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Primary OutFlow Max=6.17 cfs @ 13.05 hrs HW=129.37' TW=0.00' (Dynamic Tailwater)

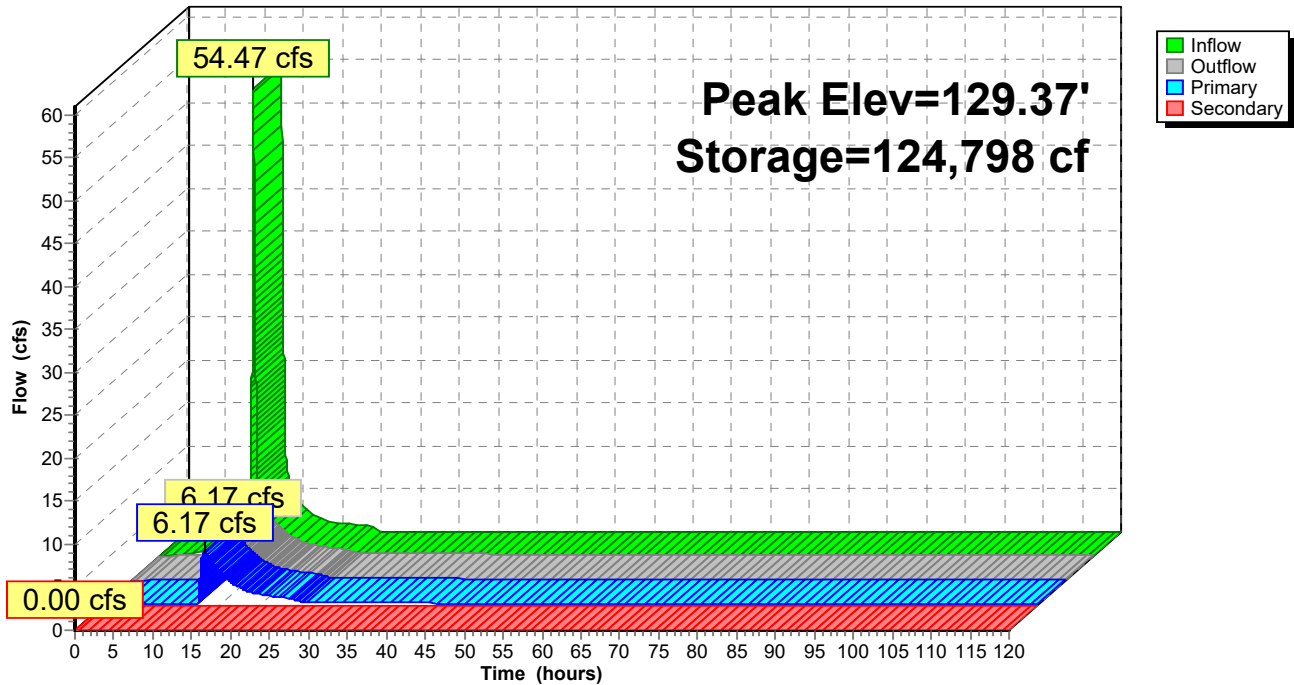
- 1=Culvert (Passes 6.17 cfs of 41.77 cfs potential flow)
- 2=Orifice (Orifice Controls 0.34 cfs @ 9.95 fps)
- 3=Broad-Crested Rectangular Weir (Weir Controls 5.83 cfs @ 2.05 fps)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=125.00' TW=122.05' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B1: BASIN#1

Hydrograph



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Hydrograph for Pond B1: BASIN#1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	125.00	0.00	0.00	0.00
5.00	0.51	2,417	126.19	0.17	0.17	0.00
10.00	2.08	17,836	127.03	0.23	0.23	0.00
15.00	3.03	117,812	129.26	4.01	4.01	0.00
20.00	1.05	106,160	129.05	1.35	1.35	0.00
25.00	0.00	100,883	128.96	0.59	0.59	0.00
30.00	0.00	94,323	128.85	0.32	0.32	0.00
35.00	0.00	88,647	128.74	0.31	0.31	0.00
40.00	0.00	83,053	128.64	0.31	0.31	0.00
45.00	0.00	77,542	128.53	0.30	0.30	0.00
50.00	0.00	72,117	128.42	0.30	0.30	0.00
55.00	0.00	66,781	128.31	0.29	0.29	0.00
60.00	0.00	61,538	128.20	0.29	0.29	0.00
65.00	0.00	56,389	128.08	0.28	0.28	0.00
70.00	0.00	51,340	127.97	0.28	0.28	0.00
75.00	0.00	46,394	127.85	0.27	0.27	0.00
80.00	0.00	41,556	127.72	0.27	0.27	0.00
85.00	0.00	36,830	127.60	0.26	0.26	0.00
90.00	0.00	32,222	127.47	0.25	0.25	0.00
95.00	0.00	27,737	127.34	0.25	0.25	0.00
100.00	0.00	23,383	127.21	0.24	0.24	0.00
105.00	0.00	19,167	127.07	0.23	0.23	0.00
110.00	0.00	15,099	126.93	0.22	0.22	0.00
115.00	0.00	11,195	126.77	0.21	0.21	0.00
120.00	0.00	7,486	126.59	0.20	0.20	0.00

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Summary for Pond B1A: BASIN# 1A

Inflow = 42.92 cfs @ 12.27 hrs, Volume= 10.194 af
 Outflow = 40.36 cfs @ 12.42 hrs, Volume= 10.195 af, Atten= 6%, Lag= 9.0 min
 Discarded = 23.83 cfs @ 12.42 hrs, Volume= 1.836 af
 Primary = 16.53 cfs @ 12.42 hrs, Volume= 8.359 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 125.87' @ 12.42 hrs Surf.Area= 46,798 sf Storage= 33,062 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 26.5 min (1,581.1 - 1,554.6)

Volume	Invert	Avail.Storage	Storage Description
#1	123.70'	259,537 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.70	0	0	0
124.00	2,278	342	342
125.00	13,963	8,121	8,462
125.30	21,434	5,310	13,772
126.00	52,835	25,994	39,766
127.00	111,645	82,240	122,006
128.00	163,418	137,532	259,537

Device	Routing	Invert	Outlet Devices
#1	Primary	123.51'	24.0" Round Culvert L= 192.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 123.51' / 123.19' S= 0.0017 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	123.51'	9.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	124.95'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 2.05 Width (feet) 1.20 1.20 1.20
#4	Device 1	125.60'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.40 Width (feet) 1.80 1.80
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#6	Discarded	125.50'	40.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#7	Discarded	126.50'	60.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#8	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#9	Device 1	124.95'	1.2' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00

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#10	Primary	124.95'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			1.2' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
#11	Device 1	125.60'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
#12	Primary	125.60'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
			Coef. (English)	2.80	2.92	3.08	3.30	3.32

Discarded OutFlow Max=23.83 cfs @ 12.42 hrs HW=125.87' (Free Discharge)

6=Broad-Crested Rectangular Weir (Weir Controls 23.83 cfs @ 1.63 fps)


7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
Primary OutFlow Max=16.53 cfs @ 12.42 hrs HW=125.87' (Free Discharge)

1=Culvert (Passes 11.89 cfs of 12.23 cfs potential flow)


2=Orifice/Grate (Orifice Controls 2.99 cfs @ 6.78 fps)


3=Custom Weir/Orifice (Weir Controls 3.44 cfs @ 3.13 fps)


4=Custom Weir/Orifice (Weir Controls 0.81 cfs @ 1.69 fps)


5=Orifice/Grate (Controls 0.00 cfs)


9=Broad-Crested Rectangular Weir (Weir Controls 3.48 cfs @ 3.17 fps)


11=Broad-Crested Rectangular Weir (Weir Controls 1.16 cfs @ 1.46 fps)

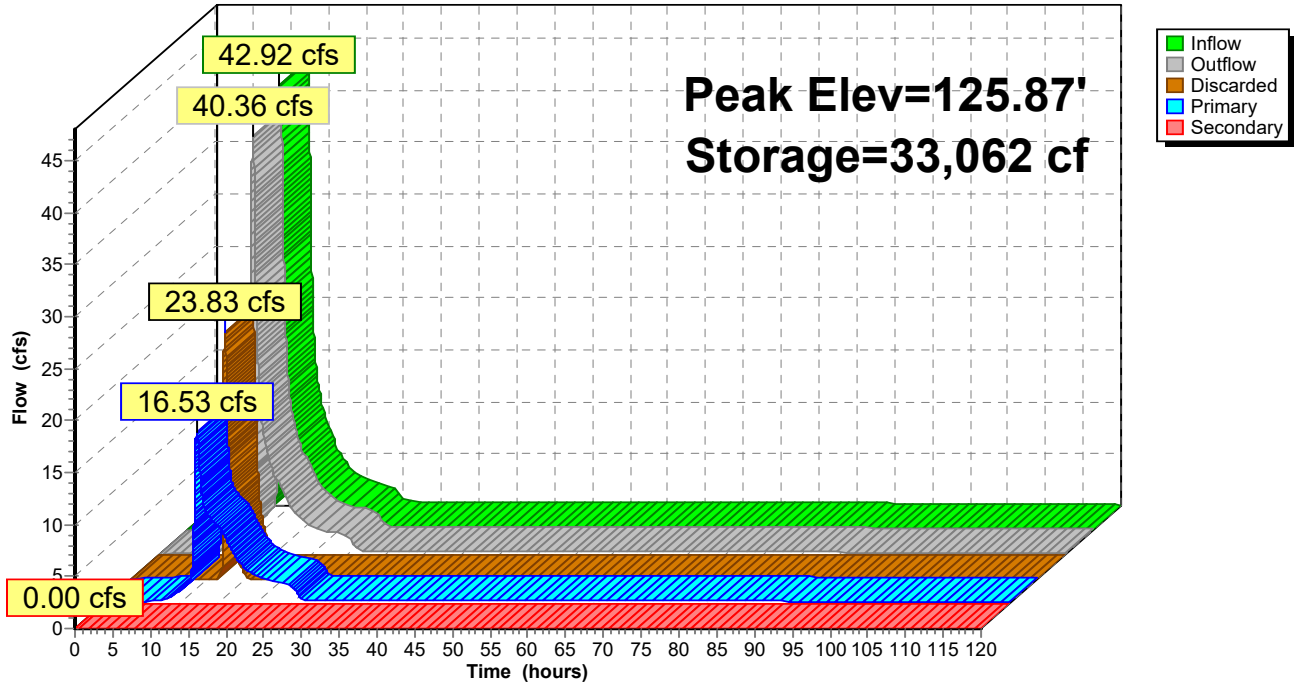

10=Broad-Crested Rectangular Weir (Weir Controls 3.48 cfs @ 3.17 fps)


12=Broad-Crested Rectangular Weir (Weir Controls 1.16 cfs @ 1.46 fps)
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=123.70' TW=120.70' (Dynamic Tailwater)

8=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B1A: BASIN# 1A

Hydrograph



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Hydrograph for Pond B1A: BASIN# 1A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	123.70	0.00	0.00	0.00	0.00
5.00	0.22	29	123.79	0.22	0.00	0.22	0.00
10.00	1.64	1,184	124.23	1.26	0.00	1.26	0.00
15.00	7.83	19,876	125.53	8.24	0.54	7.70	0.00
20.00	2.62	9,771	125.09	2.87	0.00	2.87	0.00
25.00	0.61	3,199	124.53	1.71	0.00	1.71	0.00
30.00	0.32	76	123.84	0.32	0.00	0.32	0.00
35.00	0.31	74	123.84	0.31	0.00	0.31	0.00
40.00	0.31	71	123.84	0.31	0.00	0.31	0.00
45.00	0.30	68	123.83	0.30	0.00	0.30	0.00
50.00	0.30	66	123.83	0.30	0.00	0.30	0.00
55.00	0.29	63	123.83	0.29	0.00	0.29	0.00
60.00	0.29	61	123.83	0.29	0.00	0.29	0.00
65.00	0.28	58	123.82	0.28	0.00	0.28	0.00
70.00	0.28	56	123.82	0.28	0.00	0.28	0.00
75.00	0.27	53	123.82	0.27	0.00	0.27	0.00
80.00	0.27	51	123.81	0.27	0.00	0.27	0.00
85.00	0.26	48	123.81	0.26	0.00	0.26	0.00
90.00	0.25	45	123.81	0.25	0.00	0.25	0.00
95.00	0.25	42	123.80	0.25	0.00	0.25	0.00
100.00	0.24	38	123.80	0.24	0.00	0.24	0.00
105.00	0.23	35	123.79	0.23	0.00	0.23	0.00
110.00	0.22	30	123.79	0.22	0.00	0.22	0.00
115.00	0.21	27	123.78	0.21	0.00	0.21	0.00
120.00	0.00	23	123.78	0.20	0.00	0.20	0.00

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Summary for Pond B2: BASIN#2

Inflow = 108.37 cfs @ 12.14 hrs, Volume= 10.673 af
 Outflow = 4.66 cfs @ 15.71 hrs, Volume= 10.634 af, Atten= 96%, Lag= 214.3 min
 Primary = 4.66 cfs @ 15.71 hrs, Volume= 10.634 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 129.18' @ 15.71 hrs Surf.Area= 90,812 sf Storage= 323,079 cf

Plug-Flow detention time= 2,116.1 min calculated for 10.634 af (100% of inflow)

Center-of-Mass det. time= 2,110.3 min (2,912.1 - 801.8)

Volume	Invert	Avail.Storage	Storage Description
#1	122.05'	911,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.05	0	0	0
123.00	4,516	2,145	2,145
124.00	17,503	11,010	13,155
125.00	40,514	29,009	42,163
126.00	52,995	46,755	88,918
127.00	66,197	59,596	148,514
128.00	80,616	73,407	221,920
129.00	89,234	84,925	306,845
130.00	97,986	93,610	400,455
131.00	104,847	101,417	501,872
132.00	111,734	108,291	610,162
133.00	118,653	115,194	725,356
134.00	125,598	122,126	847,481
134.50	129,221	63,705	911,186

Device	Routing	Invert	Outlet Devices
#1	Primary	121.38'	30.0" Round Culvert L= 52.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 121.38' / 120.90' S= 0.0092 ' /' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	122.05'	4.0" Vert. Orifice C= 0.600
#3	Device 1	128.50'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.75'	3.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60

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Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.66 cfs @ 15.71 hrs HW=129.18' TW=0.00' (Dynamic Tailwater)

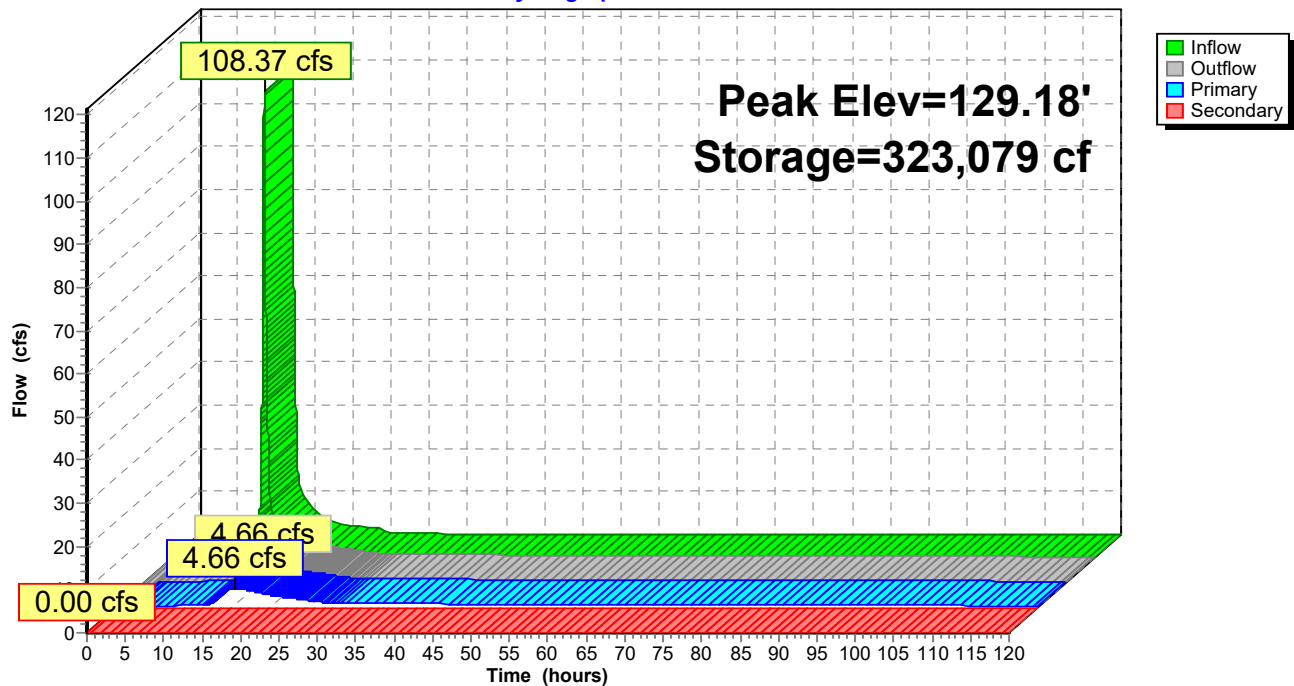
- 1=Culvert (Passes 4.66 cfs of 60.49 cfs potential flow)
- 2=Orifice (Orifice Controls 1.11 cfs @ 12.71 fps)
- 3=Broad-Crested Rectangular Weir (Weir Controls 3.56 cfs @ 2.61 fps)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=122.05' TW=125.00' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B2: BASIN#2

Hydrograph



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Hydrograph for Pond B2: BASIN#2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	122.05	0.00	0.00	0.00
5.00	1.20	5,310	123.43	0.46	0.46	0.00
10.00	4.64	38,276	124.90	0.69	0.69	0.00
15.00	5.84	321,443	129.16	4.50	4.50	0.00
20.00	1.99	306,019	128.99	3.15	3.15	0.00
25.00	0.25	286,434	128.77	1.87	1.87	0.00
30.00	0.21	265,837	128.53	1.08	1.08	0.00
35.00	0.17	250,422	128.35	1.04	1.04	0.00
40.00	0.11	234,411	128.15	1.02	1.02	0.00
45.00	0.00	216,850	127.94	1.00	1.00	0.00
50.00	0.00	198,945	127.71	0.98	0.98	0.00
55.00	0.00	181,412	127.47	0.96	0.96	0.00
60.00	0.00	164,272	127.23	0.94	0.94	0.00
65.00	0.00	147,543	126.99	0.92	0.92	0.00
70.00	0.00	131,247	126.73	0.89	0.89	0.00
75.00	0.00	115,408	126.47	0.87	0.87	0.00
80.00	0.00	100,052	126.20	0.84	0.84	0.00
85.00	0.00	85,210	125.93	0.81	0.81	0.00
90.00	0.00	70,917	125.65	0.78	0.78	0.00
95.00	0.00	57,214	125.35	0.74	0.74	0.00
100.00	0.00	44,149	125.05	0.71	0.71	0.00
105.00	0.00	31,788	124.72	0.66	0.66	0.00
110.00	0.00	20,277	124.33	0.61	0.61	0.00
115.00	0.00	9,947	123.80	0.53	0.53	0.00
120.00	0.00	1,708	122.90	0.35	0.35	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Pond B2A: BASIN# 2A

Inflow = 20.83 cfs @ 12.15 hrs, Volume= 12.330 af
 Outflow = 12.82 cfs @ 12.32 hrs, Volume= 12.330 af, Atten= 38%, Lag= 10.4 min
 Primary = 12.82 cfs @ 12.32 hrs, Volume= 12.330 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 123.67' @ 12.32 hrs Surf.Area= 9,618 sf Storage= 7,463 cf

Plug-Flow detention time= 2.1 min calculated for 12.328 af (100% of inflow)
 Center-of-Mass det. time= 2.0 min (2,625.5 - 2,623.5)

Volume	Invert	Avail.Storage	Storage Description
#1	120.70'	244,647 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.70	0	0	0
123.00	2,840	3,266	3,266
124.00	12,899	7,870	11,135
125.00	29,081	20,990	32,125
125.50	41,742	17,706	49,831
126.00	55,169	24,228	74,059
127.00	82,653	68,911	142,970
128.00	120,701	101,677	244,647

Device	Routing	Invert	Outlet Devices
#1	Primary	120.66'	30.0" Round Culvert L= 212.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 120.66' / 118.50' S= 0.0102 ' /' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	120.66'	18.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	123.65'	1.5' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.82 cfs @ 12.32 hrs HW=123.67' (Free Discharge)

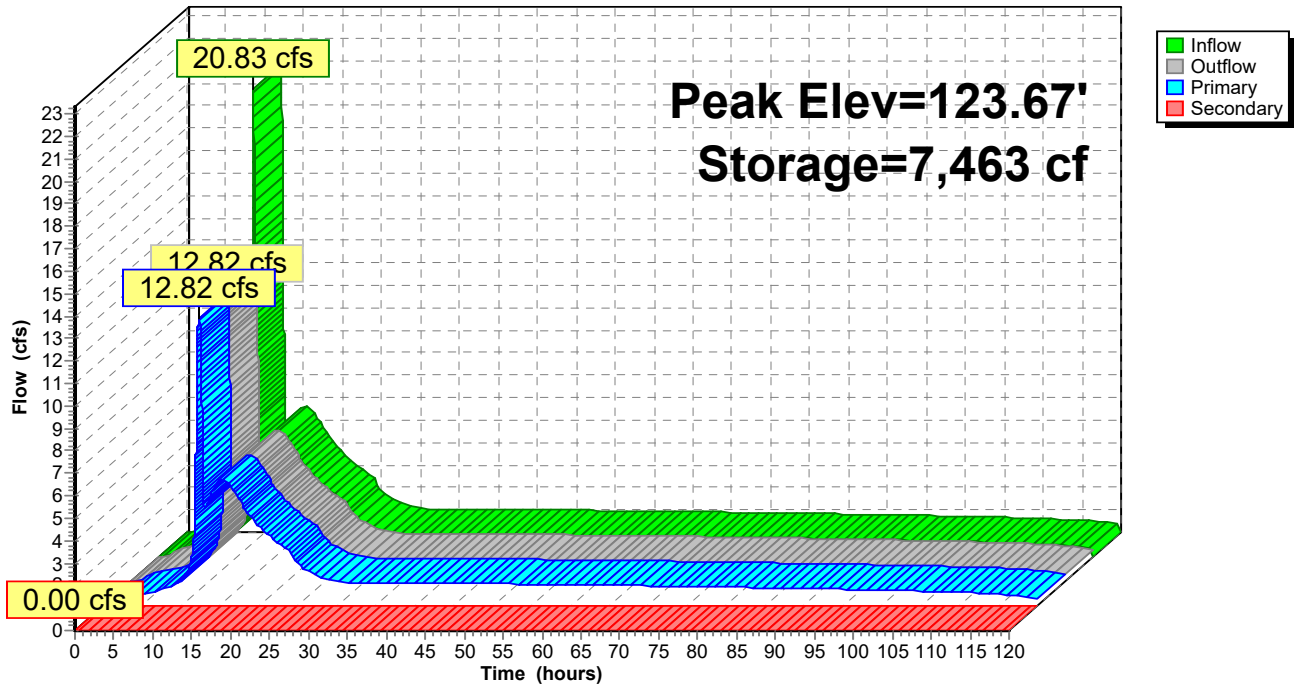
1=Culvert (Passes 12.82 cfs of 31.39 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 12.80 cfs @ 7.24 fps)
 3=Broad-Crested Rectangular Weir (Weir Controls 0.02 cfs @ 0.43 fps)
 5=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.70' TW=123.70' (Dynamic Tailwater)

4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B2A: BASIN# 2A

Hydrograph



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Hydrograph for Pond B2A: BASIN# 2A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	120.70	0.00	0.00	0.00
5.00	0.54	50	120.98	0.54	0.54	0.00
10.00	1.16	120	121.14	1.15	1.15	0.00
15.00	5.63	824	121.86	5.62	5.62	0.00
20.00	3.55	455	121.56	3.56	3.56	0.00
25.00	1.87	212	121.29	1.88	1.88	0.00
30.00	1.09	112	121.13	1.09	1.09	0.00
35.00	1.04	107	121.12	1.04	1.04	0.00
40.00	1.02	105	121.11	1.02	1.02	0.00
45.00	1.00	103	121.11	1.01	1.01	0.00
50.00	0.98	101	121.10	0.98	0.98	0.00
55.00	0.96	98	121.10	0.96	0.96	0.00
60.00	0.94	95	121.09	0.94	0.94	0.00
65.00	0.92	93	121.09	0.92	0.92	0.00
70.00	0.89	90	121.08	0.89	0.89	0.00
75.00	0.87	86	121.07	0.87	0.87	0.00
80.00	0.84	83	121.07	0.84	0.84	0.00
85.00	0.81	80	121.06	0.81	0.81	0.00
90.00	0.78	76	121.05	0.78	0.78	0.00
95.00	0.74	73	121.04	0.74	0.74	0.00
100.00	0.71	69	121.03	0.71	0.71	0.00
105.00	0.66	64	121.02	0.67	0.67	0.00
110.00	0.61	58	121.00	0.61	0.61	0.00
115.00	0.53	49	120.98	0.53	0.53	0.00
120.00	0.00	29	120.92	0.35	0.35	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Pond B3: BASIN#3

Inflow Area = 4.864 ac, 78.98% Impervious, Inflow Depth = 4.05" for 10-YEAR event
 Inflow = 17.76 cfs @ 12.14 hrs, Volume= 1.641 af
 Outflow = 9.61 cfs @ 12.32 hrs, Volume= 1.641 af, Atten= 46%, Lag= 11.3 min
 Primary = 9.61 cfs @ 12.32 hrs, Volume= 1.641 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 147.22' @ 12.32 hrs Surf.Area= 8,802 sf Storage= 19,394 cf

Plug-Flow detention time= 229.8 min calculated for 1.641 af (100% of inflow)
 Center-of-Mass det. time= 229.9 min (990.5 - 760.6)

Volume	Invert	Avail.Storage	Storage Description
#1	143.72'	58,412 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
143.72	0	0	0
144.00	1,559	218	218
145.00	5,405	3,482	3,700
146.00	6,859	6,132	9,832
147.00	8,428	7,644	17,476
148.00	10,107	9,268	26,743
149.00	11,886	10,997	37,740
150.00	14,319	13,103	50,842
150.50	15,959	7,570	58,412

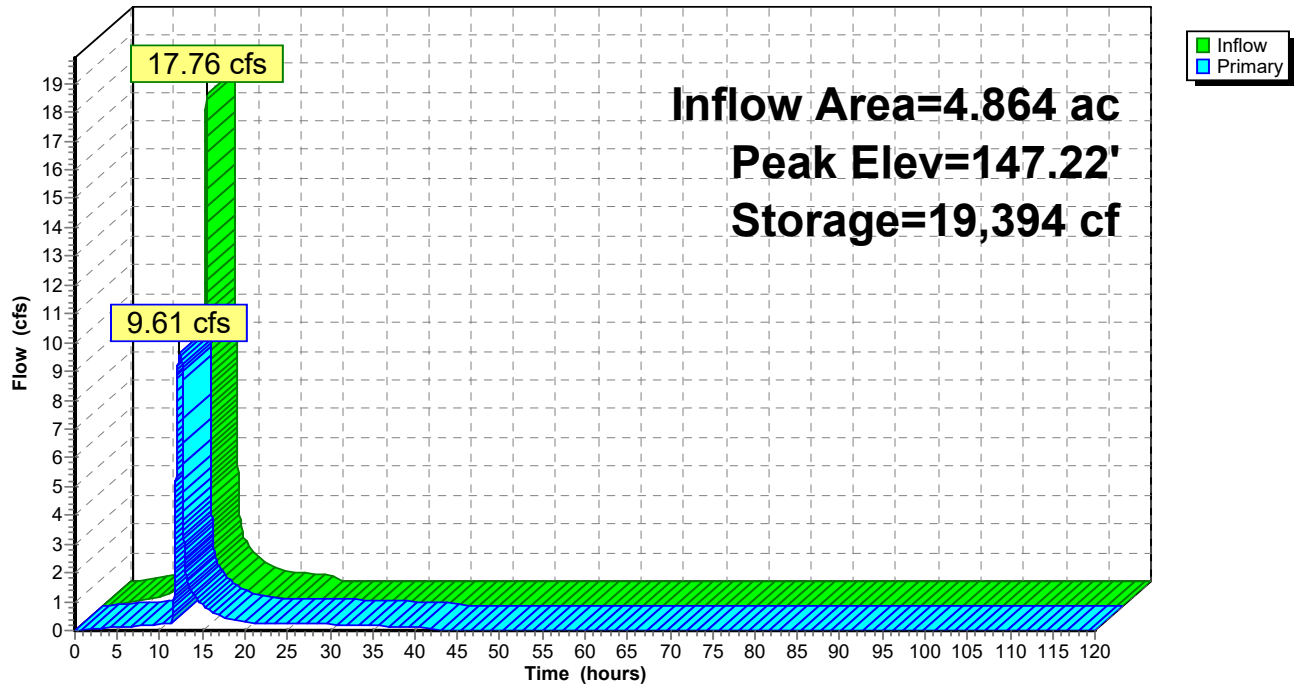
Device	Routing	Invert	Outlet Devices
#1	Primary	143.72'	15.0" Round Culvert L= 182.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 143.72' / 140.50' S= 0.0177 '/' Cc= 0.900 n= 0.013 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf
#2	Device 1	143.72'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	146.31'	48.0" x 48.0" Horiz. TYPE "E" INLET WITH STOP COCK @ BOTTOM C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.61 cfs @ 12.32 hrs HW=147.22' TW=127.94' (Dynamic Tailwater)

- 1=Culvert (Barrel Controls 9.61 cfs @ 7.83 fps)
- 2=Orifice/Grate (Passes < 0.30 cfs potential flow)
- 3=TYPE "E" INLET WITH STOP COCK @ BOTTOM (Passes < 45.61 cfs potential flow)

Pond B3: BASIN#3

Hydrograph



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Hydrograph for Pond B3: BASIN#3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	143.72	0.00
5.00	0.22	797	144.28	0.11
10.00	0.88	6,074	145.42	0.21
15.00	0.87	12,424	146.36	0.90
20.00	0.30	12,101	146.32	0.30
25.00	0.00	10,954	146.16	0.25
30.00	0.00	6,759	145.53	0.21
35.00	0.00	3,274	144.92	0.17
40.00	0.00	705	144.24	0.11
45.00	0.00	2	143.73	0.00
50.00	0.00	1	143.72	0.00
55.00	0.00	0	143.72	0.00
60.00	0.00	0	143.72	0.00
65.00	0.00	0	143.72	0.00
70.00	0.00	0	143.72	0.00
75.00	0.00	0	143.72	0.00
80.00	0.00	0	143.72	0.00
85.00	0.00	0	143.72	0.00
90.00	0.00	0	143.72	0.00
95.00	0.00	0	143.72	0.00
100.00	0.00	0	143.72	0.00
105.00	0.00	0	143.72	0.00
110.00	0.00	0	143.72	0.00
115.00	0.00	0	143.72	0.00
120.00	0.00	0	143.72	0.00

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Type III 24-hr 10-YEAR Rainfall=5.00"

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Summary for Pond B4: BASIN#4

Inflow Area = 2.986 ac, 53.95% Impervious, Inflow Depth = 3.20" for 10-YEAR event
 Inflow = 8.63 cfs @ 12.14 hrs, Volume= 0.796 af
 Outflow = 2.57 cfs @ 12.53 hrs, Volume= 0.555 af, Atten= 70%, Lag= 23.7 min
 Primary = 2.57 cfs @ 12.53 hrs, Volume= 0.555 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 140.94' @ 12.53 hrs Surf.Area= 10,895 sf Storage= 18,134 cf

Plug-Flow detention time= 264.6 min calculated for 0.555 af (70% of inflow)
 Center-of-Mass det. time= 163.0 min (939.2 - 776.2)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	66,831 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	7,648	0	0
140.00	9,503	8,576	8,576
141.00	10,988	10,246	18,821
142.00	12,367	11,678	30,499
143.00	13,797	13,082	43,581
144.00	15,503	14,650	58,231
144.50	18,900	8,601	66,831

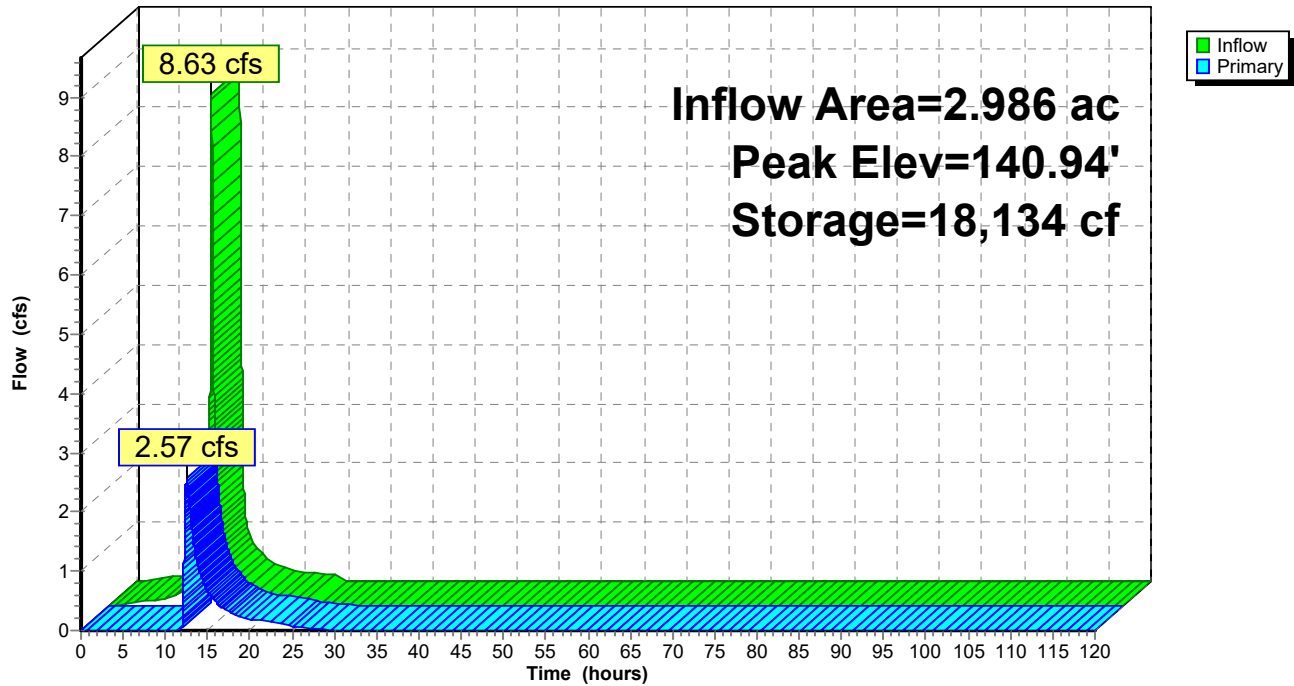
Device	Routing	Invert	Outlet Devices
#1	Primary	136.95'	15.0" Round Culvert L= 47.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 136.95' / 136.71' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	140.20'	1.2' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Device 1	141.50'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#4	Device 1	142.90'	4.0" x 4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	143.00'	40.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.57 cfs @ 12.53 hrs HW=140.94' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 2.57 cfs of 10.55 cfs potential flow)
- 2=Sharp-Crested Rectangular Weir (Weir Controls 2.57 cfs @ 3.31 fps)
- 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Orifice/Grate (Controls 0.00 cfs)
- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B4: BASIN#4

Hydrograph



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Hydrograph for Pond B4: BASIN#4

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	139.00	0.00
5.00	0.09	719	139.09	0.00
10.00	0.37	4,098	139.50	0.00
15.00	0.46	13,508	140.50	0.66
20.00	0.16	11,830	140.33	0.19
25.00	0.00	11,198	140.27	0.07
30.00	0.00	10,687	140.22	0.01
35.00	0.00	10,587	140.21	0.00
40.00	0.00	10,552	140.20	0.00
45.00	0.00	10,535	140.20	0.00
50.00	0.00	10,526	140.20	0.00
55.00	0.00	10,521	140.20	0.00
60.00	0.00	10,517	140.20	0.00
65.00	0.00	10,515	140.20	0.00
70.00	0.00	10,513	140.20	0.00
75.00	0.00	10,512	140.20	0.00
80.00	0.00	10,511	140.20	0.00
85.00	0.00	10,510	140.20	0.00
90.00	0.00	10,510	140.20	0.00
95.00	0.00	10,509	140.20	0.00
100.00	0.00	10,509	140.20	0.00
105.00	0.00	10,508	140.20	0.00
110.00	0.00	10,508	140.20	0.00
115.00	0.00	10,508	140.20	0.00
120.00	0.00	10,508	140.20	0.00

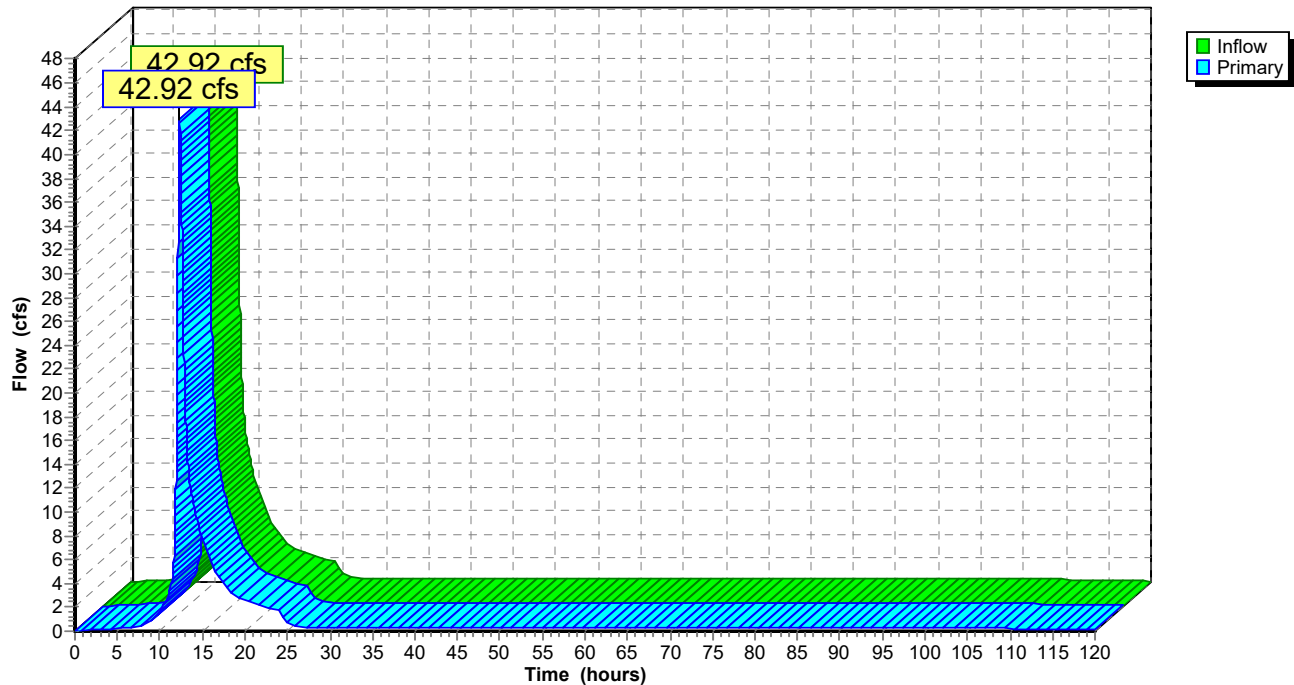
Summary for Link R1: REACH# 1

Inflow = 42.92 cfs @ 12.26 hrs, Volume= 10.194 af
 Primary = 42.92 cfs @ 12.27 hrs, Volume= 10.194 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R1: REACH# 1

Hydrograph



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Hydrograph for Link R1: REACH# 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.23	0.00	0.23
2.00	0.10	0.00	0.10	108.00	0.23	0.00	0.23
4.00	0.20	0.00	0.19	110.00	0.22	0.00	0.22
6.00	0.24	0.00	0.24	112.00	0.22	0.00	0.22
8.00	0.46	0.00	0.45	114.00	0.21	0.00	0.21
10.00	1.65	0.00	1.64	116.00	0.21	0.00	0.21
12.00	18.99	0.00	18.24	118.00	0.20	0.00	0.20
14.00	10.40	0.00	10.43	120.00	0.00	0.00	0.20
16.00	5.88	0.00	5.90				
18.00	3.57	0.00	3.58				
20.00	2.62	0.00	2.62				
22.00	2.12	0.00	2.13				
24.00	1.72	0.00	1.72				
26.00	0.42	0.00	0.42				
28.00	0.32	0.00	0.32				
30.00	0.32	0.00	0.32				
32.00	0.32	0.00	0.32				
34.00	0.31	0.00	0.31				
36.00	0.31	0.00	0.31				
38.00	0.31	0.00	0.31				
40.00	0.31	0.00	0.31				
42.00	0.31	0.00	0.31				
44.00	0.30	0.00	0.30				
46.00	0.30	0.00	0.30				
48.00	0.30	0.00	0.30				
50.00	0.30	0.00	0.30				
52.00	0.30	0.00	0.30				
54.00	0.29	0.00	0.29				
56.00	0.29	0.00	0.29				
58.00	0.29	0.00	0.29				
60.00	0.29	0.00	0.29				
62.00	0.29	0.00	0.29				
64.00	0.28	0.00	0.28				
66.00	0.28	0.00	0.28				
68.00	0.28	0.00	0.28				
70.00	0.28	0.00	0.28				
72.00	0.28	0.00	0.28				
74.00	0.27	0.00	0.27				
76.00	0.27	0.00	0.27				
78.00	0.27	0.00	0.27				
80.00	0.27	0.00	0.27				
82.00	0.26	0.00	0.26				
84.00	0.26	0.00	0.26				
86.00	0.26	0.00	0.26				
88.00	0.26	0.00	0.26				
90.00	0.25	0.00	0.25				
92.00	0.25	0.00	0.25				
94.00	0.25	0.00	0.25				
96.00	0.24	0.00	0.24				
98.00	0.24	0.00	0.24				
100.00	0.24	0.00	0.24				
102.00	0.24	0.00	0.24				
104.00	0.23	0.00	0.23				

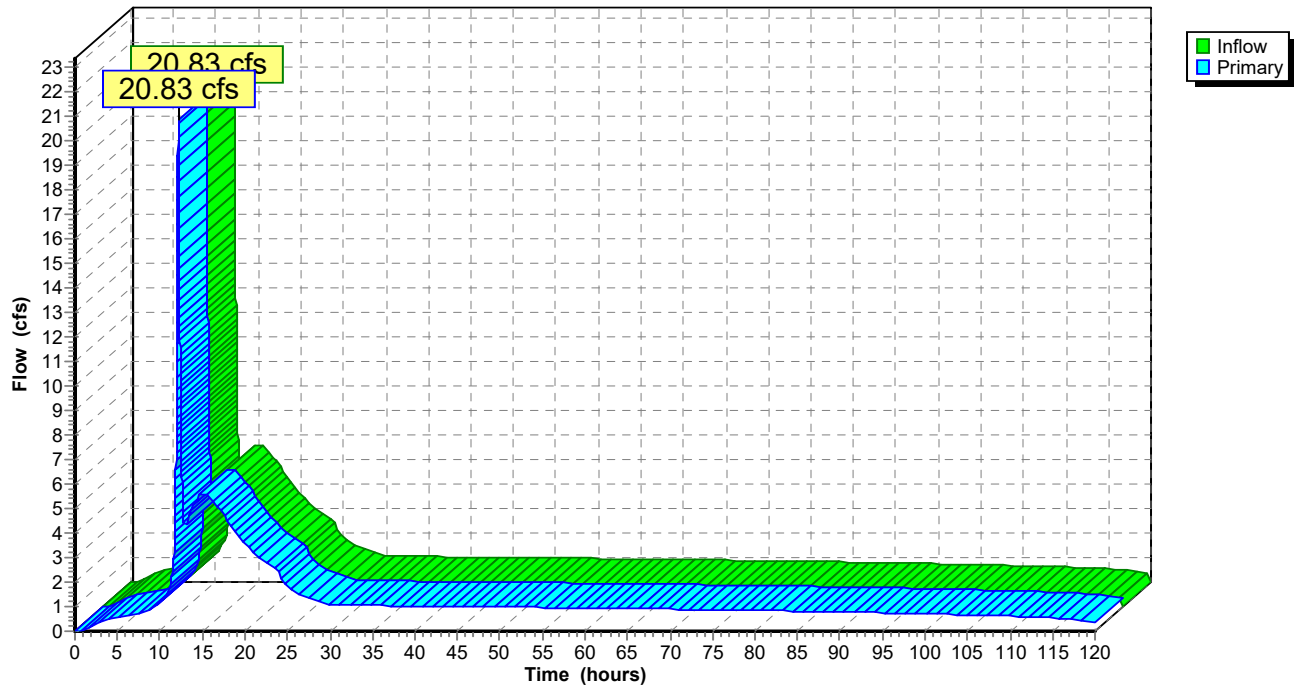
Summary for Link R2: REACH# 2

Inflow = 20.83 cfs @ 12.14 hrs, Volume= 12.330 af
 Primary = 20.83 cfs @ 12.15 hrs, Volume= 12.330 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R2: REACH# 2

Hydrograph



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Hydrograph for Link R2: REACH# 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.66	0.00	0.66
2.00	0.23	0.00	0.23	108.00	0.63	0.00	0.63
4.00	0.47	0.00	0.47	110.00	0.61	0.00	0.61
6.00	0.61	0.00	0.61	112.00	0.58	0.00	0.58
8.00	0.77	0.00	0.77	114.00	0.55	0.00	0.55
10.00	1.17	0.00	1.16	116.00	0.51	0.00	0.51
12.00	10.38	0.00	9.86	118.00	0.45	0.00	0.45
14.00	5.14	0.00	5.14	120.00	0.00	0.00	0.35
16.00	5.45	0.00	5.45				
18.00	4.42	0.00	4.42				
20.00	3.55	0.00	3.55				
22.00	2.93	0.00	2.93				
24.00	2.46	0.00	2.46				
26.00	1.60	0.00	1.60				
28.00	1.26	0.00	1.26				
30.00	1.08	0.00	1.09				
32.00	1.05	0.00	1.05				
34.00	1.04	0.00	1.04				
36.00	1.04	0.00	1.04				
38.00	1.03	0.00	1.03				
40.00	1.02	0.00	1.02				
42.00	1.02	0.00	1.02				
44.00	1.01	0.00	1.01				
46.00	1.00	0.00	1.00				
48.00	0.99	0.00	0.99				
50.00	0.98	0.00	0.98				
52.00	0.98	0.00	0.98				
54.00	0.97	0.00	0.97				
56.00	0.96	0.00	0.96				
58.00	0.95	0.00	0.95				
60.00	0.94	0.00	0.94				
62.00	0.93	0.00	0.93				
64.00	0.92	0.00	0.92				
66.00	0.91	0.00	0.91				
68.00	0.90	0.00	0.90				
70.00	0.89	0.00	0.89				
72.00	0.88	0.00	0.88				
74.00	0.87	0.00	0.87				
76.00	0.86	0.00	0.86				
78.00	0.85	0.00	0.85				
80.00	0.84	0.00	0.84				
82.00	0.83	0.00	0.83				
84.00	0.82	0.00	0.82				
86.00	0.80	0.00	0.80				
88.00	0.79	0.00	0.79				
90.00	0.78	0.00	0.78				
92.00	0.76	0.00	0.76				
94.00	0.75	0.00	0.75				
96.00	0.74	0.00	0.74				
98.00	0.72	0.00	0.72				
100.00	0.71	0.00	0.71				
102.00	0.69	0.00	0.69				
104.00	0.67	0.00	0.67				

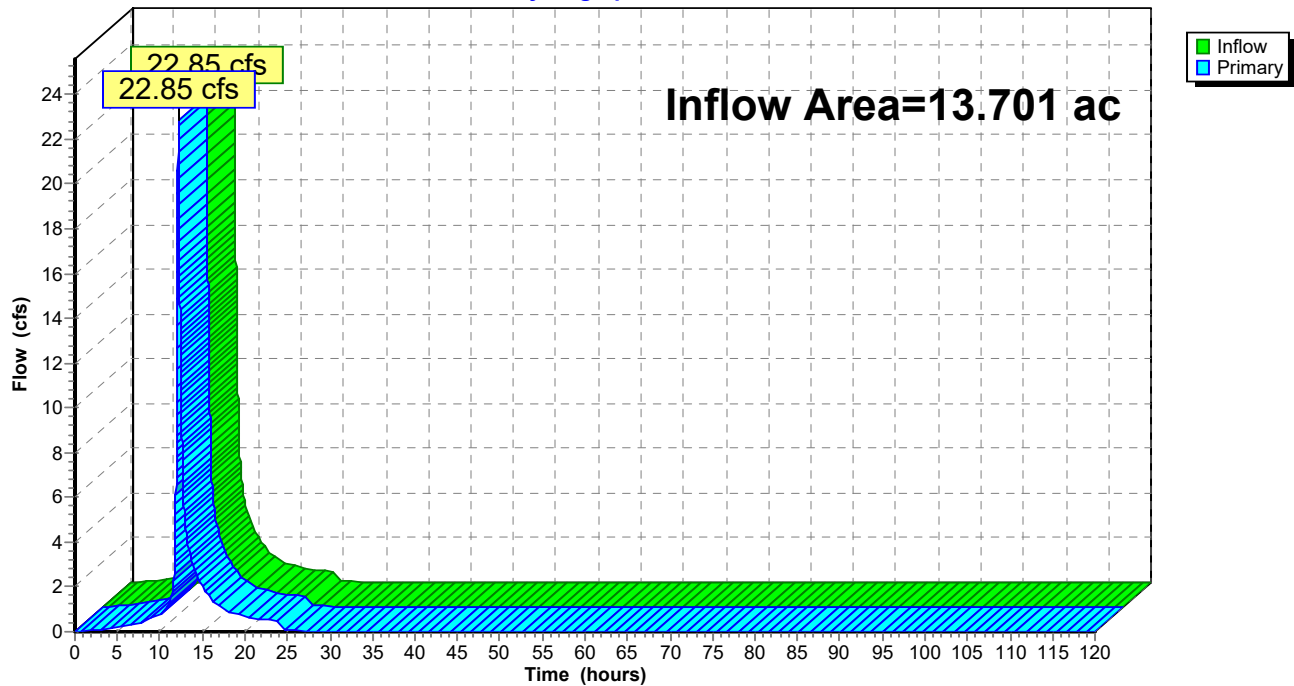
Summary for Link R3: REACH# 3

Inflow Area = 13.701 ac, 37.05% Impervious, Inflow Depth = 2.31" for 10-YEAR event
 Inflow = 22.85 cfs @ 12.15 hrs, Volume= 2.637 af
 Primary = 22.85 cfs @ 12.16 hrs, Volume= 2.637 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R3: REACH# 3

Hydrograph



PROPOSED 2022-04

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Type III 24-hr 10-YEAR Rainfall=5.00"

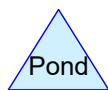
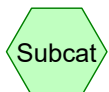
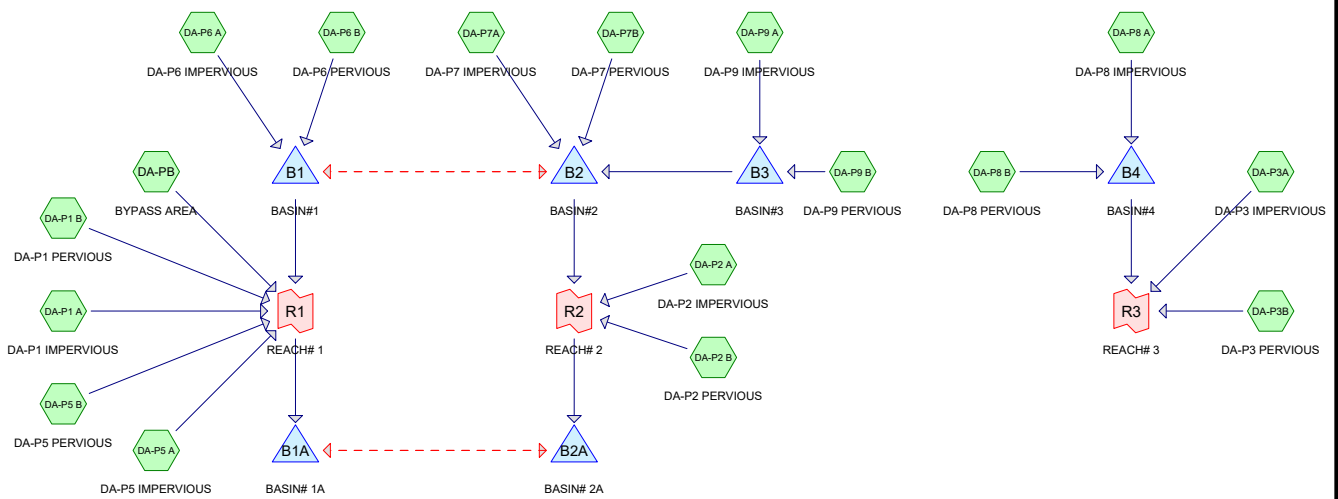
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Hydrograph for Link R3: REACH# 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.00	0.00	0.00
2.00	0.06	0.00	0.06	108.00	0.00	0.00	0.00
4.00	0.15	0.00	0.15	110.00	0.00	0.00	0.00
6.00	0.23	0.00	0.23	112.00	0.00	0.00	0.00
8.00	0.40	0.00	0.40	114.00	0.00	0.00	0.00
10.00	0.79	0.00	0.79	116.00	0.00	0.00	0.00
12.00	10.25	0.00	9.68	118.00	0.00	0.00	0.00
14.00	2.79	0.00	2.81	120.00	0.00	0.00	0.00
16.00	1.46	0.00	1.47				
18.00	0.89	0.00	0.89				
20.00	0.68	0.00	0.68				
22.00	0.56	0.00	0.56				
24.00	0.45	0.00	0.45				
26.00	0.04	0.00	0.04				
28.00	0.02	0.00	0.02				
30.00	0.01	0.00	0.01				
32.00	0.01	0.00	0.01				
34.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
58.00	0.00	0.00	0.00				
60.00	0.00	0.00	0.00				
62.00	0.00	0.00	0.00				
64.00	0.00	0.00	0.00				
66.00	0.00	0.00	0.00				
68.00	0.00	0.00	0.00				
70.00	0.00	0.00	0.00				
72.00	0.00	0.00	0.00				
74.00	0.00	0.00	0.00				
76.00	0.00	0.00	0.00				
78.00	0.00	0.00	0.00				
80.00	0.00	0.00	0.00				
82.00	0.00	0.00	0.00				
84.00	0.00	0.00	0.00				
86.00	0.00	0.00	0.00				
88.00	0.00	0.00	0.00				
90.00	0.00	0.00	0.00				
92.00	0.00	0.00	0.00				
94.00	0.00	0.00	0.00				
96.00	0.00	0.00	0.00				
98.00	0.00	0.00	0.00				
100.00	0.00	0.00	0.00				
102.00	0.00	0.00	0.00				
104.00	0.00	0.00	0.00				

25-Year Storm Event for Post-Development Conditions



Routing Diagram for PROPOSED 2022-04
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
16.726	61	>75% Grass cover, Good, HSG B (DA-P3B, DA-P6 B, DA-P7B, DA-P8 B, DA-P9 B)
16.083	74	>75% Grass cover, Good, HSG C (DA-P1 B, DA-P2 B, DA-P5 B, DA-P6 B, DA-P7B)
0.044	82	Dirt roads, HSG B (DA-P5 B)
0.036	87	Dirt roads, HSG C (DA-P5 B)
17.558	98	Paved parking, HSG B (DA-P2 A, DA-P3A, DA-P6 A, DA-P7A, DA-P8 A, DA-P9 A)
22.103	98	Paved parking, HSG C (DA-P1 A, DA-P2 A, DA-P5 A, DA-P6 A, DA-P7A)
8.315	78	Row crops, straight row, Good, HSG B (DA-P5 B, DA-PB)
9.051	85	Row crops, straight row, Good, HSG C (DA-P5 B, DA-PB)
5.073	55	Woods, Good, HSG B (DA-P3B, DA-P6 B)
94.988	82	TOTAL AREA

PROPOSED 2022-04

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Runoff = 2.65 cfs @ 12.13 hrs, Volume= 0.247 af, Depth= 5.96"

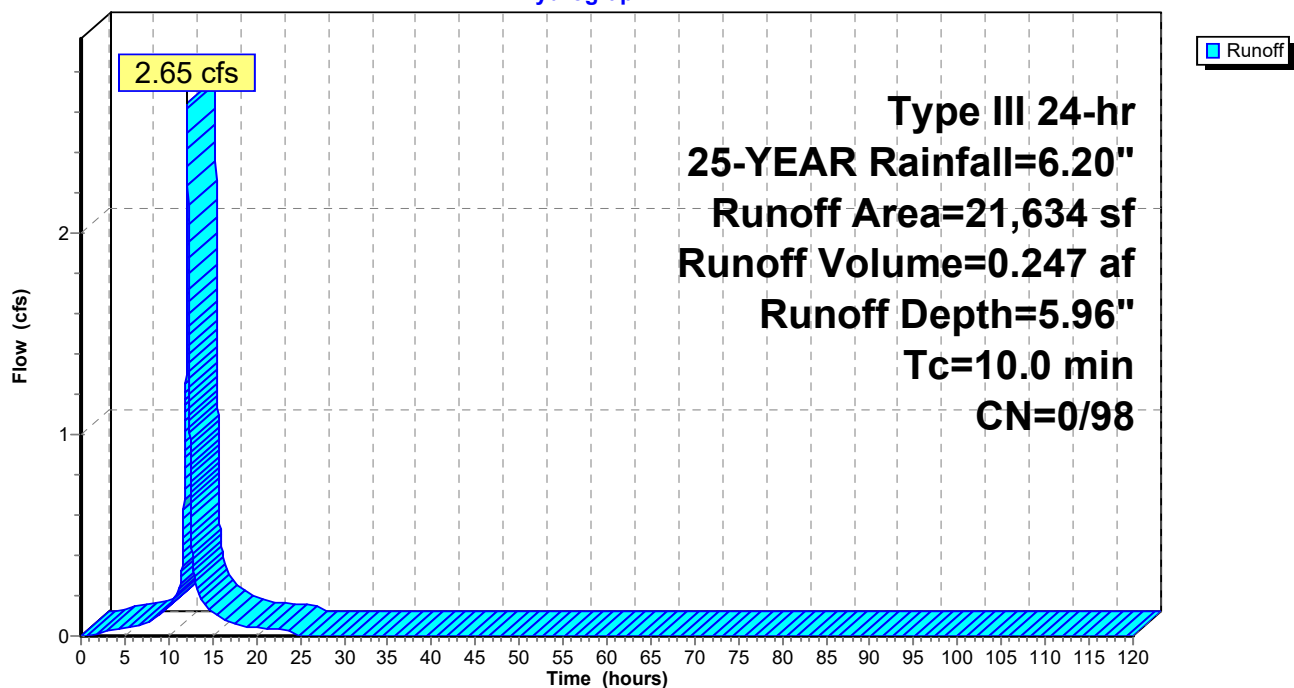
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
21,634	98	Paved parking, HSG C
21,634		100.00% Impervious Area

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

Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.19	0.04
10.00	1.17	0.00	0.96	0.14
15.00	5.30	0.00	5.06	0.12
20.00	5.93	0.00	5.70	0.04
25.00	6.20	0.00	5.96	0.00
30.00	6.20	0.00	5.96	0.00
35.00	6.20	0.00	5.96	0.00
40.00	6.20	0.00	5.96	0.00
45.00	6.20	0.00	5.96	0.00
50.00	6.20	0.00	5.96	0.00
55.00	6.20	0.00	5.96	0.00
60.00	6.20	0.00	5.96	0.00
65.00	6.20	0.00	5.96	0.00
70.00	6.20	0.00	5.96	0.00
75.00	6.20	0.00	5.96	0.00
80.00	6.20	0.00	5.96	0.00
85.00	6.20	0.00	5.96	0.00
90.00	6.20	0.00	5.96	0.00
95.00	6.20	0.00	5.96	0.00
100.00	6.20	0.00	5.96	0.00
105.00	6.20	0.00	5.96	0.00
110.00	6.20	0.00	5.96	0.00
115.00	6.20	0.00	5.96	0.00
120.00	6.20	0.00	5.96	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Runoff = 7.63 cfs @ 12.14 hrs, Volume= 0.621 af, Depth= 3.35"

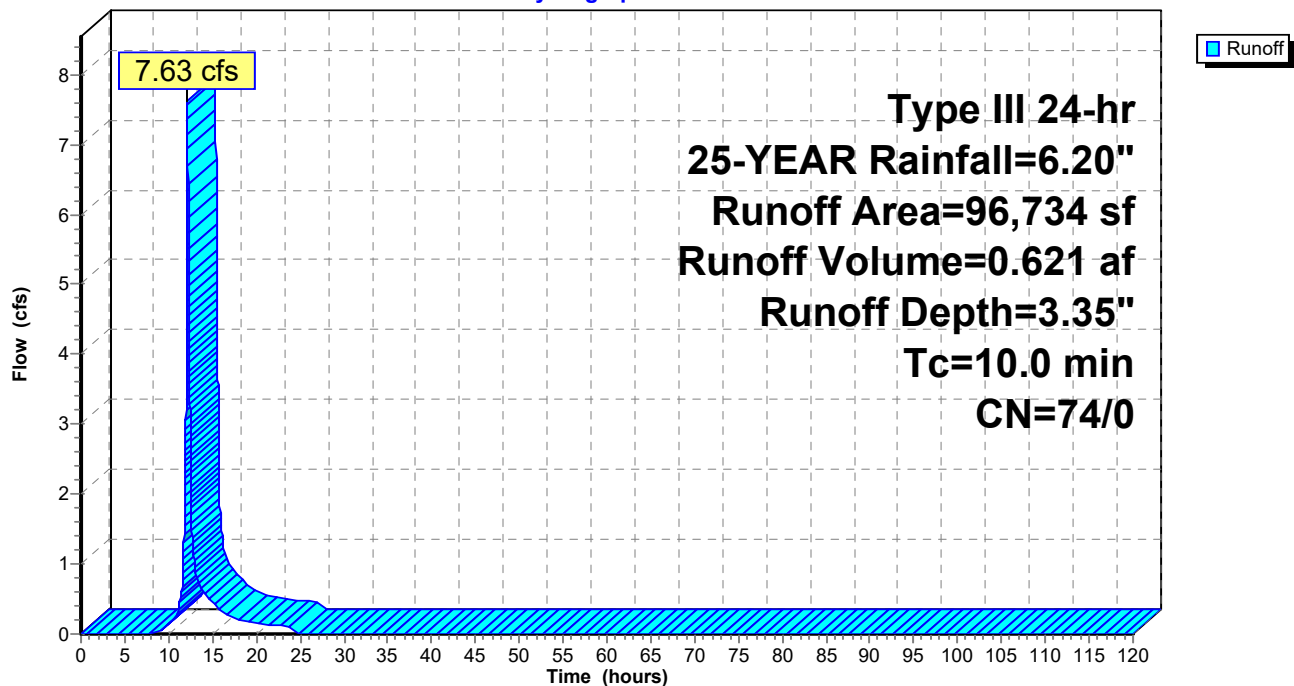
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
96,734	74	>75% Grass cover, Good, HSG C
96,734		100.00% Pervious Area

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

Subcatchment DA-P1 B: DA-P1 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.00	0.00
10.00	1.17	0.06	0.00	0.13
15.00	5.30	2.60	0.00	0.44
20.00	5.93	3.13	0.00	0.15
25.00	6.20	3.35	0.00	0.00
30.00	6.20	3.35	0.00	0.00
35.00	6.20	3.35	0.00	0.00
40.00	6.20	3.35	0.00	0.00
45.00	6.20	3.35	0.00	0.00
50.00	6.20	3.35	0.00	0.00
55.00	6.20	3.35	0.00	0.00
60.00	6.20	3.35	0.00	0.00
65.00	6.20	3.35	0.00	0.00
70.00	6.20	3.35	0.00	0.00
75.00	6.20	3.35	0.00	0.00
80.00	6.20	3.35	0.00	0.00
85.00	6.20	3.35	0.00	0.00
90.00	6.20	3.35	0.00	0.00
95.00	6.20	3.35	0.00	0.00
100.00	6.20	3.35	0.00	0.00
105.00	6.20	3.35	0.00	0.00
110.00	6.20	3.35	0.00	0.00
115.00	6.20	3.35	0.00	0.00
120.00	6.20	3.35	0.00	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Runoff = 7.76 cfs @ 12.13 hrs, Volume= 0.723 af, Depth= 5.96"

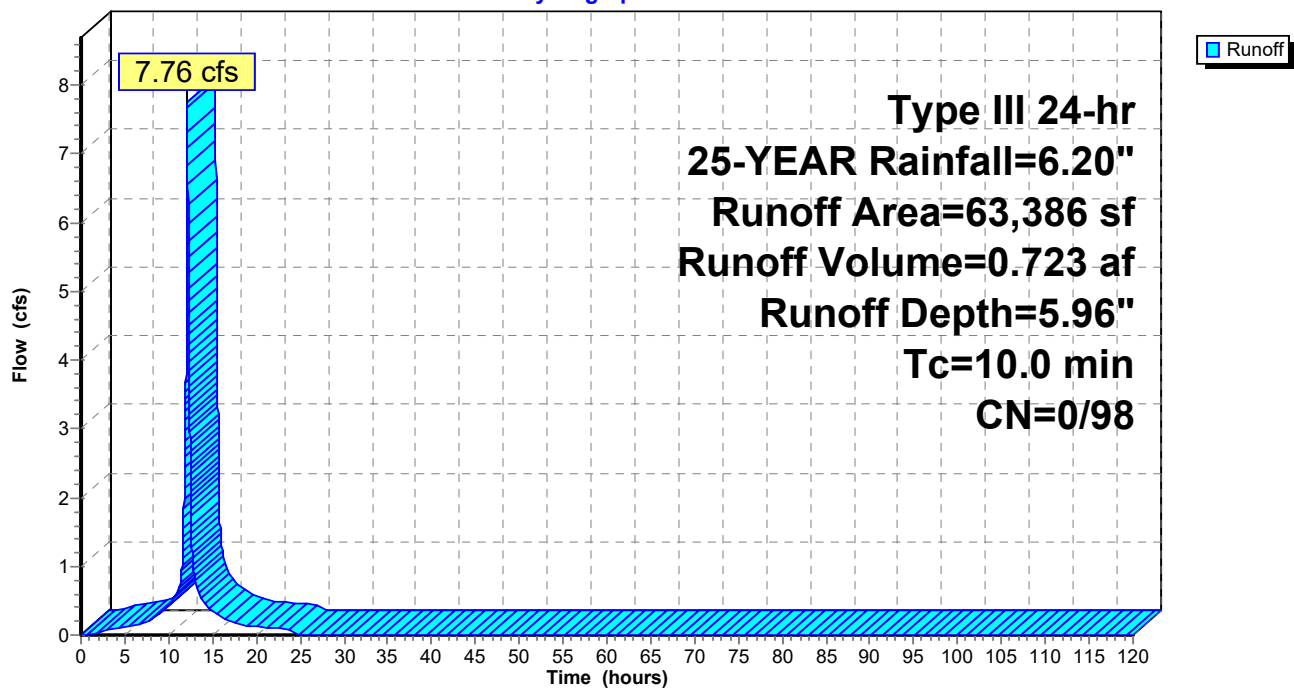
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
4,912	98	Paved parking, HSG B
58,474	98	Paved parking, HSG C
63,386	98	Weighted Average
63,386		100.00% Impervious Area

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

Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.19	0.11
10.00	1.17	0.00	0.96	0.42
15.00	5.30	0.00	5.06	0.36
20.00	5.93	0.00	5.70	0.12
25.00	6.20	0.00	5.96	0.00
30.00	6.20	0.00	5.96	0.00
35.00	6.20	0.00	5.96	0.00
40.00	6.20	0.00	5.96	0.00
45.00	6.20	0.00	5.96	0.00
50.00	6.20	0.00	5.96	0.00
55.00	6.20	0.00	5.96	0.00
60.00	6.20	0.00	5.96	0.00
65.00	6.20	0.00	5.96	0.00
70.00	6.20	0.00	5.96	0.00
75.00	6.20	0.00	5.96	0.00
80.00	6.20	0.00	5.96	0.00
85.00	6.20	0.00	5.96	0.00
90.00	6.20	0.00	5.96	0.00
95.00	6.20	0.00	5.96	0.00
100.00	6.20	0.00	5.96	0.00
105.00	6.20	0.00	5.96	0.00
110.00	6.20	0.00	5.96	0.00
115.00	6.20	0.00	5.96	0.00
120.00	6.20	0.00	5.96	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Runoff = 19.50 cfs @ 12.14 hrs, Volume= 1.586 af, Depth= 3.35"

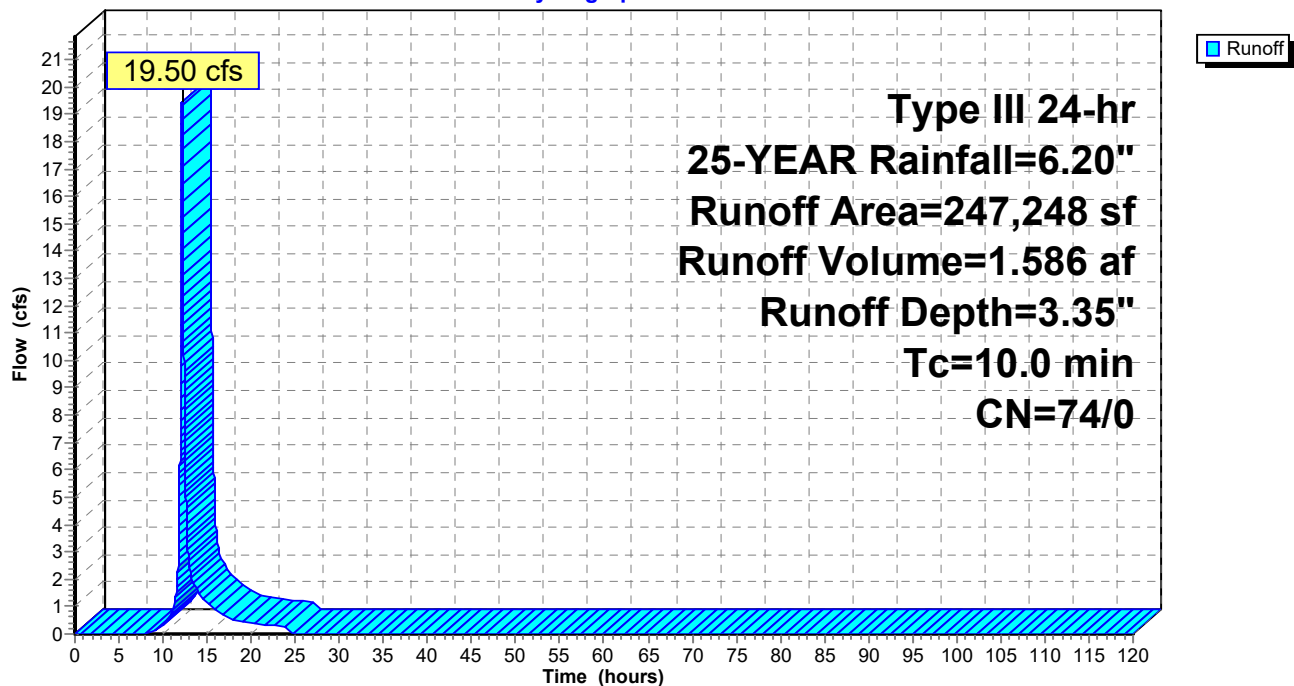
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
247,248	74	>75% Grass cover, Good, HSG C
247,248		100.00% Pervious Area

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

Subcatchment DA-P2 B: DA-P2 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.00	0.00
10.00	1.17	0.06	0.00	0.34
15.00	5.30	2.60	0.00	1.13
20.00	5.93	3.13	0.00	0.39
25.00	6.20	3.35	0.00	0.00
30.00	6.20	3.35	0.00	0.00
35.00	6.20	3.35	0.00	0.00
40.00	6.20	3.35	0.00	0.00
45.00	6.20	3.35	0.00	0.00
50.00	6.20	3.35	0.00	0.00
55.00	6.20	3.35	0.00	0.00
60.00	6.20	3.35	0.00	0.00
65.00	6.20	3.35	0.00	0.00
70.00	6.20	3.35	0.00	0.00
75.00	6.20	3.35	0.00	0.00
80.00	6.20	3.35	0.00	0.00
85.00	6.20	3.35	0.00	0.00
90.00	6.20	3.35	0.00	0.00
95.00	6.20	3.35	0.00	0.00
100.00	6.20	3.35	0.00	0.00
105.00	6.20	3.35	0.00	0.00
110.00	6.20	3.35	0.00	0.00
115.00	6.20	3.35	0.00	0.00
120.00	6.20	3.35	0.00	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Runoff = 18.48 cfs @ 12.13 hrs, Volume= 1.721 af, Depth= 5.96"

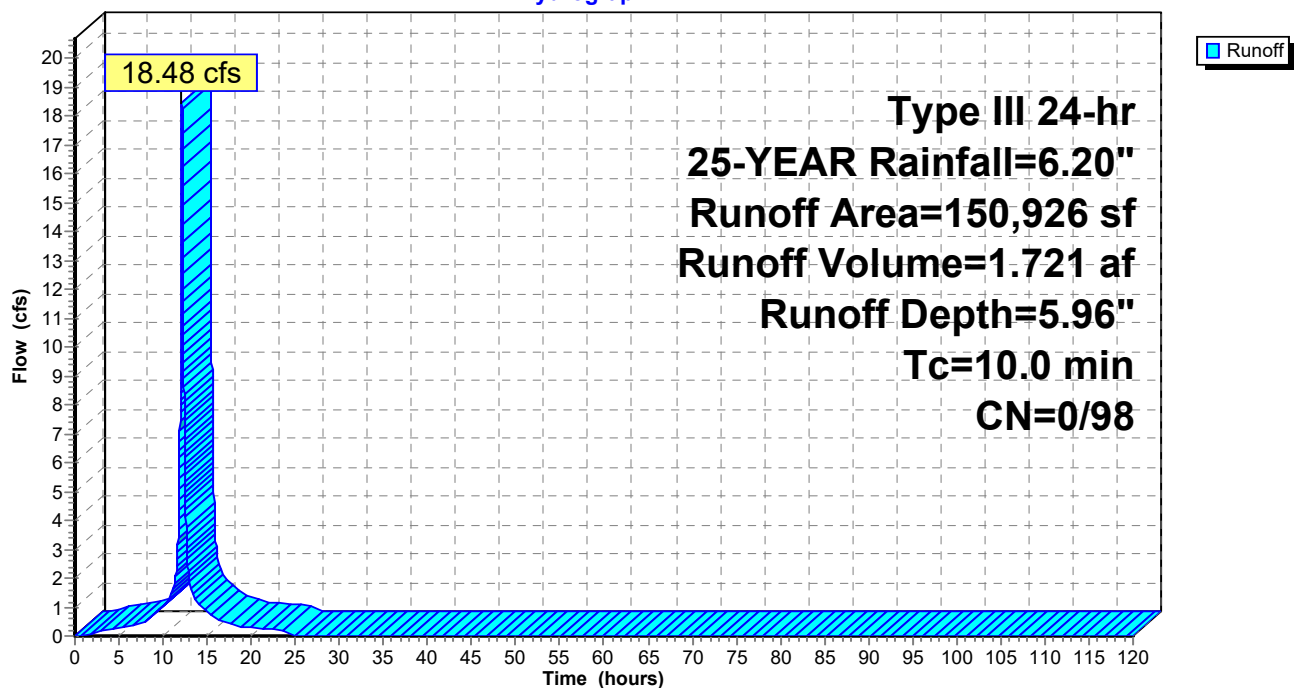
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
150,926	98	Paved parking, HSG B
150,926		100.00% Impervious Area

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

Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.19	0.26
10.00	1.17	0.00	0.96	1.00
15.00	5.30	0.00	5.06	0.85
20.00	5.93	0.00	5.70	0.29
25.00	6.20	0.00	5.96	0.00
30.00	6.20	0.00	5.96	0.00
35.00	6.20	0.00	5.96	0.00
40.00	6.20	0.00	5.96	0.00
45.00	6.20	0.00	5.96	0.00
50.00	6.20	0.00	5.96	0.00
55.00	6.20	0.00	5.96	0.00
60.00	6.20	0.00	5.96	0.00
65.00	6.20	0.00	5.96	0.00
70.00	6.20	0.00	5.96	0.00
75.00	6.20	0.00	5.96	0.00
80.00	6.20	0.00	5.96	0.00
85.00	6.20	0.00	5.96	0.00
90.00	6.20	0.00	5.96	0.00
95.00	6.20	0.00	5.96	0.00
100.00	6.20	0.00	5.96	0.00
105.00	6.20	0.00	5.96	0.00
110.00	6.20	0.00	5.96	0.00
115.00	6.20	0.00	5.96	0.00
120.00	6.20	0.00	5.96	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P3B: DA-P3 PERVIOUS

Runoff = 12.90 cfs @ 12.16 hrs, Volume= 1.137 af, Depth= 1.88"

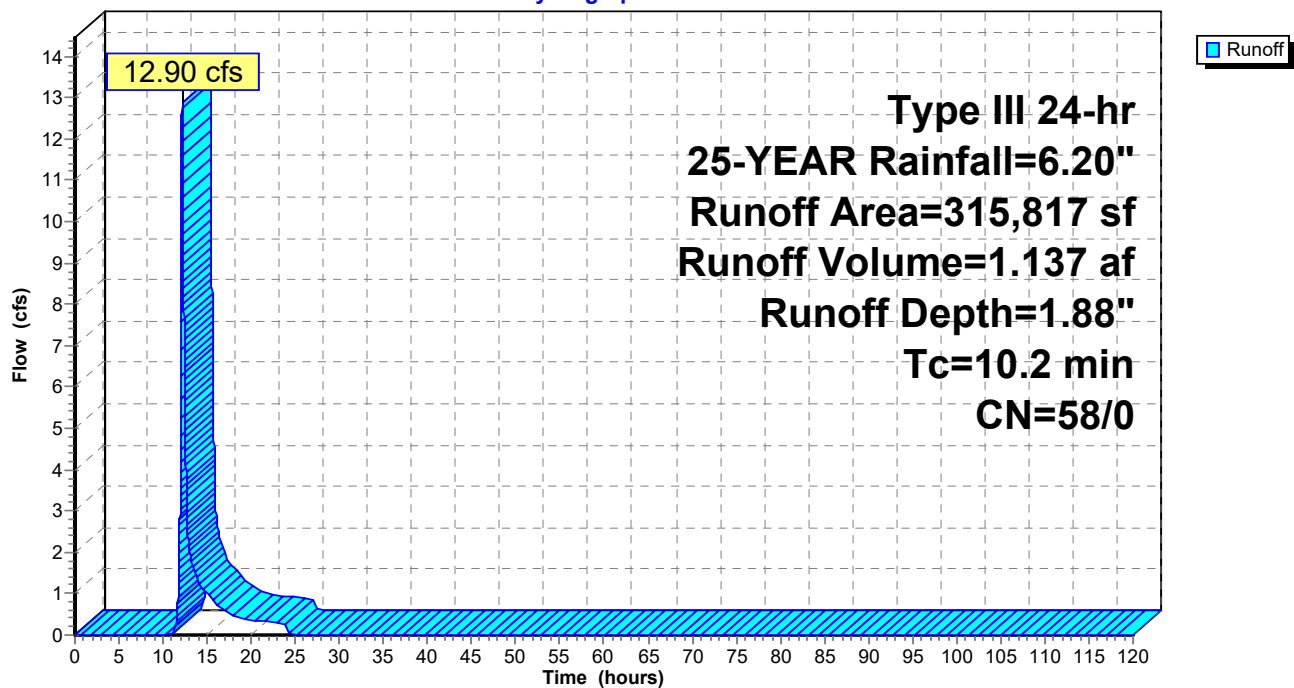
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
176,919	61	>75% Grass cover, Good, HSG B
138,898	55	Woods, Good, HSG B
315,817	58	Weighted Average
315,817		100.00% Pervious Area

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

Subcatchment DA-P3B: DA-P3 PERVIOUS

Hydrograph



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Type III 24-hr 25-YEAR Rainfall=6.20"

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Hydrograph for Subcatchment DA-P3B: DA-P3 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.00	0.00
10.00	1.17	0.00	0.00	0.00
15.00	5.30	1.34	0.00	1.02
20.00	5.93	1.72	0.00	0.37
25.00	6.20	1.88	0.00	0.00
30.00	6.20	1.88	0.00	0.00
35.00	6.20	1.88	0.00	0.00
40.00	6.20	1.88	0.00	0.00
45.00	6.20	1.88	0.00	0.00
50.00	6.20	1.88	0.00	0.00
55.00	6.20	1.88	0.00	0.00
60.00	6.20	1.88	0.00	0.00
65.00	6.20	1.88	0.00	0.00
70.00	6.20	1.88	0.00	0.00
75.00	6.20	1.88	0.00	0.00
80.00	6.20	1.88	0.00	0.00
85.00	6.20	1.88	0.00	0.00
90.00	6.20	1.88	0.00	0.00
95.00	6.20	1.88	0.00	0.00
100.00	6.20	1.88	0.00	0.00
105.00	6.20	1.88	0.00	0.00
110.00	6.20	1.88	0.00	0.00
115.00	6.20	1.88	0.00	0.00
120.00	6.20	1.88	0.00	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Runoff = 2.23 cfs @ 12.13 hrs, Volume= 0.208 af, Depth= 5.96"

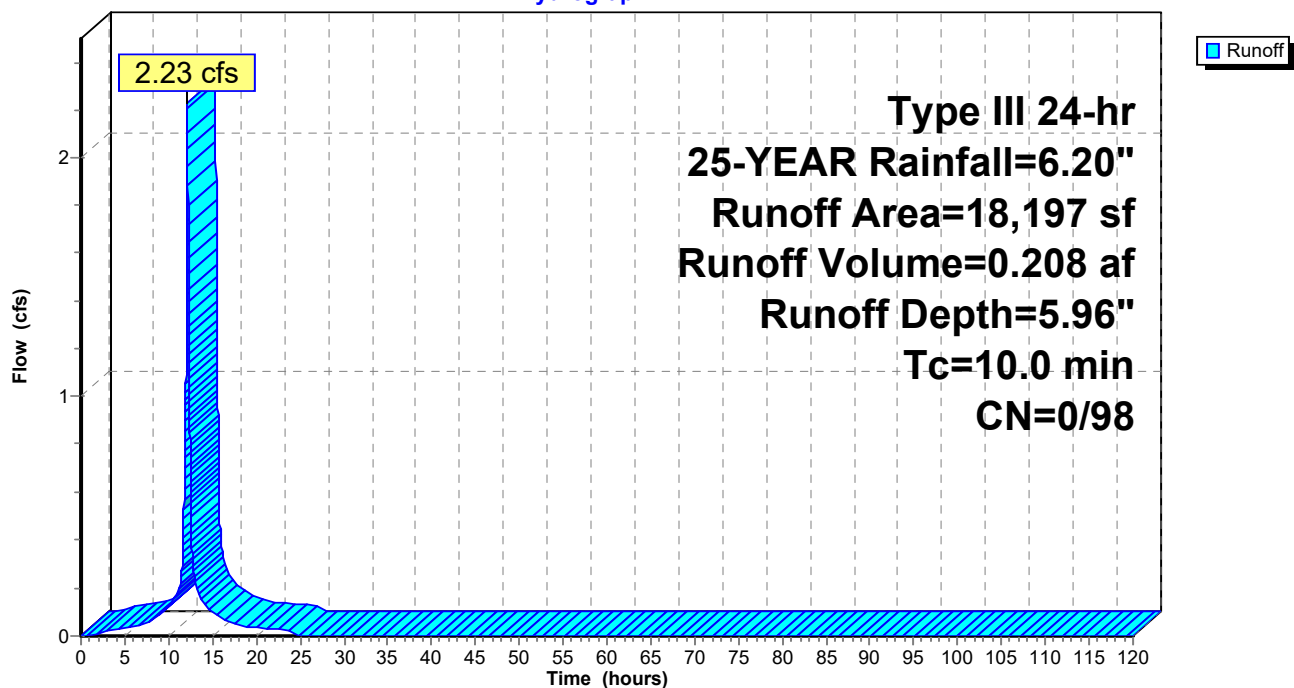
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
18,197	98	Paved parking, HSG C
18,197		100.00% Impervious Area

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

Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.19	0.03
10.00	1.17	0.00	0.96	0.12
15.00	5.30	0.00	5.06	0.10
20.00	5.93	0.00	5.70	0.03
25.00	6.20	0.00	5.96	0.00
30.00	6.20	0.00	5.96	0.00
35.00	6.20	0.00	5.96	0.00
40.00	6.20	0.00	5.96	0.00
45.00	6.20	0.00	5.96	0.00
50.00	6.20	0.00	5.96	0.00
55.00	6.20	0.00	5.96	0.00
60.00	6.20	0.00	5.96	0.00
65.00	6.20	0.00	5.96	0.00
70.00	6.20	0.00	5.96	0.00
75.00	6.20	0.00	5.96	0.00
80.00	6.20	0.00	5.96	0.00
85.00	6.20	0.00	5.96	0.00
90.00	6.20	0.00	5.96	0.00
95.00	6.20	0.00	5.96	0.00
100.00	6.20	0.00	5.96	0.00
105.00	6.20	0.00	5.96	0.00
110.00	6.20	0.00	5.96	0.00
115.00	6.20	0.00	5.96	0.00
120.00	6.20	0.00	5.96	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Runoff = 34.07 cfs @ 12.25 hrs, Volume= 3.498 af, Depth= 4.28"

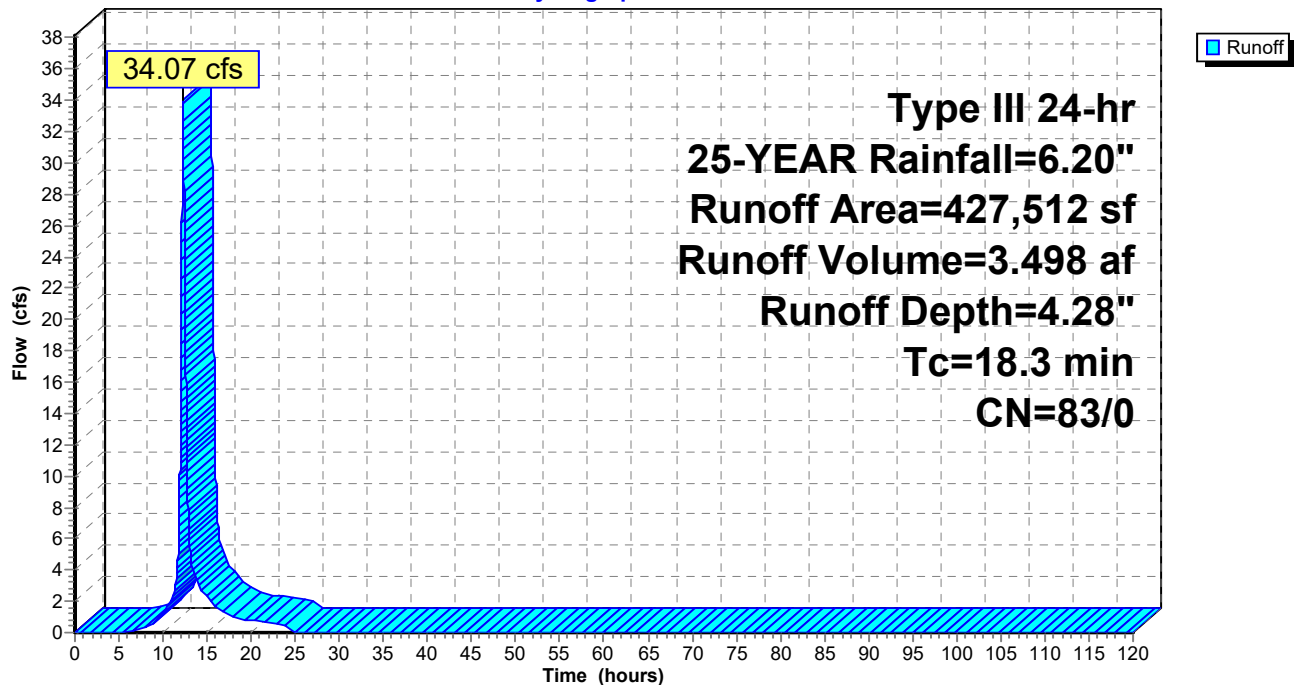
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
1,902	82	Dirt roads, HSG B
1,547	87	Dirt roads, HSG C
27,561	74	>75% Grass cover, Good, HSG C
101,474	78	Row crops, straight row, Good, HSG B
295,028	85	Row crops, straight row, Good, HSG C
427,512	83	Weighted Average
427,512		100.00% Pervious Area

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

Subcatchment DA-P5 B: DA-P5 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.00	0.00
10.00	1.17	0.21	0.00	1.22
15.00	5.30	3.44	0.00	2.28
20.00	5.93	4.03	0.00	0.76
25.00	6.20	4.28	0.00	0.00
30.00	6.20	4.28	0.00	0.00
35.00	6.20	4.28	0.00	0.00
40.00	6.20	4.28	0.00	0.00
45.00	6.20	4.28	0.00	0.00
50.00	6.20	4.28	0.00	0.00
55.00	6.20	4.28	0.00	0.00
60.00	6.20	4.28	0.00	0.00
65.00	6.20	4.28	0.00	0.00
70.00	6.20	4.28	0.00	0.00
75.00	6.20	4.28	0.00	0.00
80.00	6.20	4.28	0.00	0.00
85.00	6.20	4.28	0.00	0.00
90.00	6.20	4.28	0.00	0.00
95.00	6.20	4.28	0.00	0.00
100.00	6.20	4.28	0.00	0.00
105.00	6.20	4.28	0.00	0.00
110.00	6.20	4.28	0.00	0.00
115.00	6.20	4.28	0.00	0.00
120.00	6.20	4.28	0.00	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Runoff = 48.27 cfs @ 12.13 hrs, Volume= 4.496 af, Depth= 5.96"

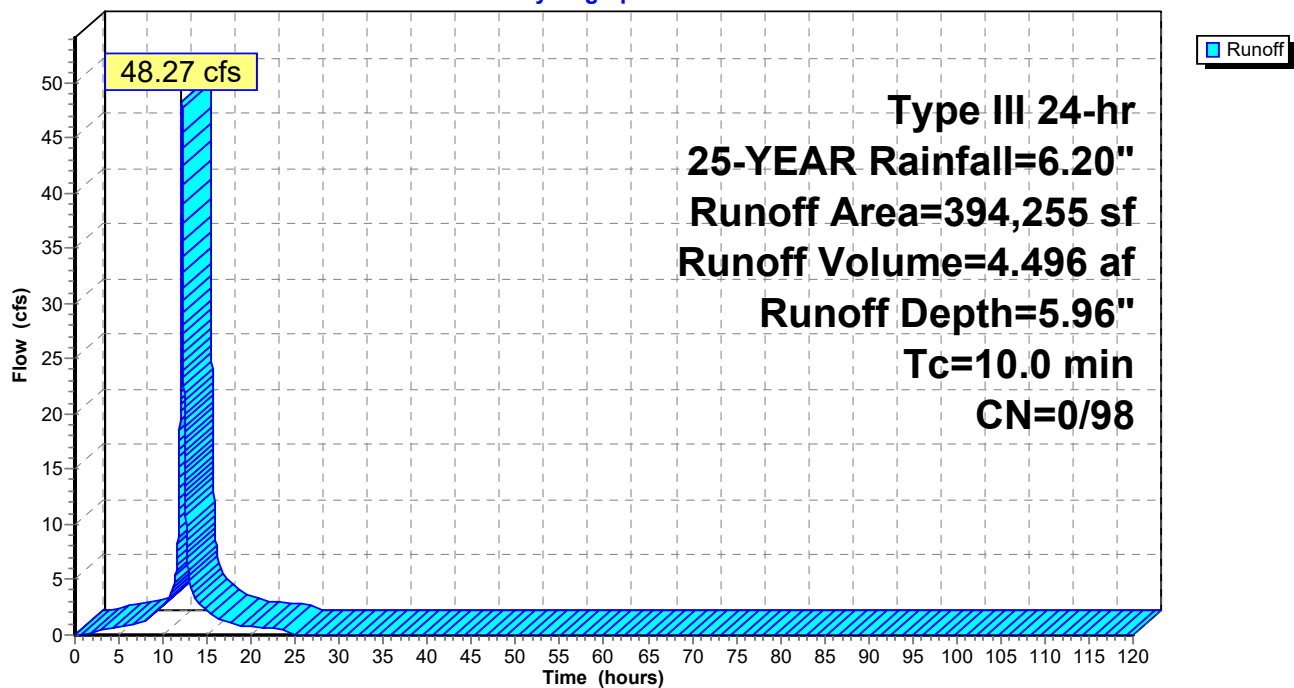
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
139,105	98	Paved parking, HSG B
255,150	98	Paved parking, HSG C
394,255	98	Weighted Average
394,255		100.00% Impervious Area

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

Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.19	0.67
10.00	1.17	0.00	0.96	2.60
15.00	5.30	0.00	5.06	2.22
20.00	5.93	0.00	5.70	0.75
25.00	6.20	0.00	5.96	0.00
30.00	6.20	0.00	5.96	0.00
35.00	6.20	0.00	5.96	0.00
40.00	6.20	0.00	5.96	0.00
45.00	6.20	0.00	5.96	0.00
50.00	6.20	0.00	5.96	0.00
55.00	6.20	0.00	5.96	0.00
60.00	6.20	0.00	5.96	0.00
65.00	6.20	0.00	5.96	0.00
70.00	6.20	0.00	5.96	0.00
75.00	6.20	0.00	5.96	0.00
80.00	6.20	0.00	5.96	0.00
85.00	6.20	0.00	5.96	0.00
90.00	6.20	0.00	5.96	0.00
95.00	6.20	0.00	5.96	0.00
100.00	6.20	0.00	5.96	0.00
105.00	6.20	0.00	5.96	0.00
110.00	6.20	0.00	5.96	0.00
115.00	6.20	0.00	5.96	0.00
120.00	6.20	0.00	5.96	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Runoff = 25.28 cfs @ 12.15 hrs, Volume= 2.126 af, Depth= 2.32"

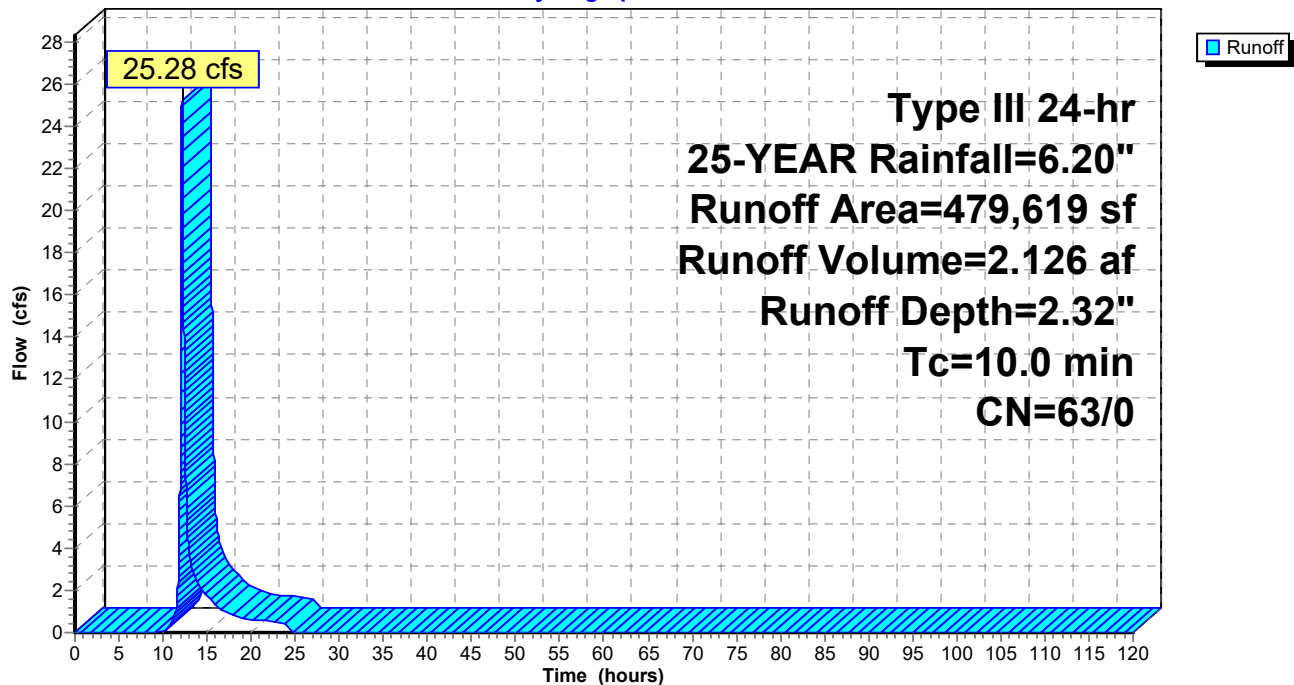
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
285,540	61	>75% Grass cover, Good, HSG B
112,000	74	>75% Grass cover, Good, HSG C
82,079	55	Woods, Good, HSG B
479,619	63	Weighted Average
479,619		100.00% Pervious Area

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

Subcatchment DA-P6 B: DA-P6 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.00	0.00
10.00	1.17	0.00	0.00	0.00
15.00	5.30	1.70	0.00	1.76
20.00	5.93	2.13	0.00	0.63
25.00	6.20	2.32	0.00	0.00
30.00	6.20	2.32	0.00	0.00
35.00	6.20	2.32	0.00	0.00
40.00	6.20	2.32	0.00	0.00
45.00	6.20	2.32	0.00	0.00
50.00	6.20	2.32	0.00	0.00
55.00	6.20	2.32	0.00	0.00
60.00	6.20	2.32	0.00	0.00
65.00	6.20	2.32	0.00	0.00
70.00	6.20	2.32	0.00	0.00
75.00	6.20	2.32	0.00	0.00
80.00	6.20	2.32	0.00	0.00
85.00	6.20	2.32	0.00	0.00
90.00	6.20	2.32	0.00	0.00
95.00	6.20	2.32	0.00	0.00
100.00	6.20	2.32	0.00	0.00
105.00	6.20	2.32	0.00	0.00
110.00	6.20	2.32	0.00	0.00
115.00	6.20	2.32	0.00	0.00
120.00	6.20	2.32	0.00	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Runoff = 103.07 cfs @ 12.13 hrs, Volume= 9.600 af, Depth= 5.96"

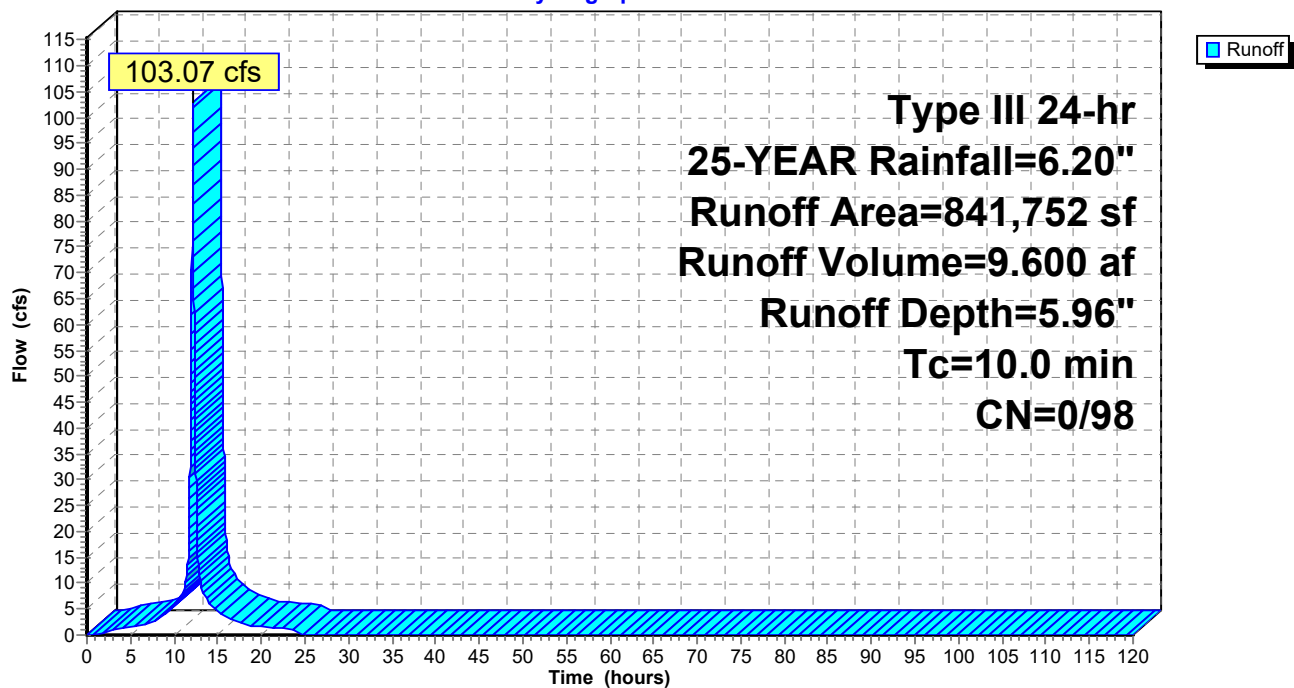
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
232,402	98	Paved parking, HSG B
609,350	98	Paved parking, HSG C
841,752	98	Weighted Average
841,752		100.00% Impervious Area

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

Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.19	1.44
10.00	1.17	0.00	0.96	5.56
15.00	5.30	0.00	5.06	4.74
20.00	5.93	0.00	5.70	1.60
25.00	6.20	0.00	5.96	0.00
30.00	6.20	0.00	5.96	0.00
35.00	6.20	0.00	5.96	0.00
40.00	6.20	0.00	5.96	0.00
45.00	6.20	0.00	5.96	0.00
50.00	6.20	0.00	5.96	0.00
55.00	6.20	0.00	5.96	0.00
60.00	6.20	0.00	5.96	0.00
65.00	6.20	0.00	5.96	0.00
70.00	6.20	0.00	5.96	0.00
75.00	6.20	0.00	5.96	0.00
80.00	6.20	0.00	5.96	0.00
85.00	6.20	0.00	5.96	0.00
90.00	6.20	0.00	5.96	0.00
95.00	6.20	0.00	5.96	0.00
100.00	6.20	0.00	5.96	0.00
105.00	6.20	0.00	5.96	0.00
110.00	6.20	0.00	5.96	0.00
115.00	6.20	0.00	5.96	0.00
120.00	6.20	0.00	5.96	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P7B: DA-P7 PERVIOUS

Runoff = 24.45 cfs @ 12.14 hrs, Volume= 2.011 af, Depth= 2.78"

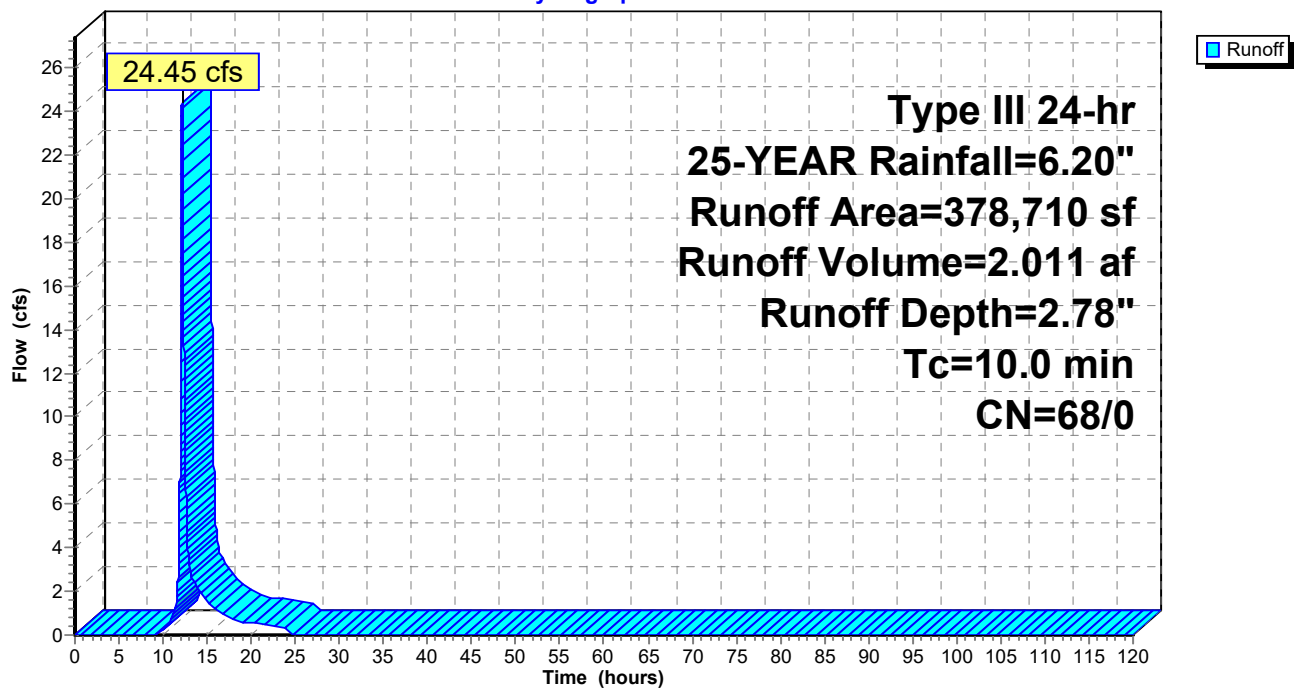
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
161,684	61	>75% Grass cover, Good, HSG B
217,026	74	>75% Grass cover, Good, HSG C
378,710	68	Weighted Average
378,710		100.00% Pervious Area

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

Subcatchment DA-P7B: DA-P7 PERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P7B: DA-P7 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.00	0.00
10.00	1.17	0.01	0.00	0.19
15.00	5.30	2.09	0.00	1.55
20.00	5.93	2.57	0.00	0.55
25.00	6.20	2.78	0.00	0.00
30.00	6.20	2.78	0.00	0.00
35.00	6.20	2.78	0.00	0.00
40.00	6.20	2.78	0.00	0.00
45.00	6.20	2.78	0.00	0.00
50.00	6.20	2.78	0.00	0.00
55.00	6.20	2.78	0.00	0.00
60.00	6.20	2.78	0.00	0.00
65.00	6.20	2.78	0.00	0.00
70.00	6.20	2.78	0.00	0.00
75.00	6.20	2.78	0.00	0.00
80.00	6.20	2.78	0.00	0.00
85.00	6.20	2.78	0.00	0.00
90.00	6.20	2.78	0.00	0.00
95.00	6.20	2.78	0.00	0.00
100.00	6.20	2.78	0.00	0.00
105.00	6.20	2.78	0.00	0.00
110.00	6.20	2.78	0.00	0.00
115.00	6.20	2.78	0.00	0.00
120.00	6.20	2.78	0.00	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Runoff = 8.59 cfs @ 12.13 hrs, Volume= 0.800 af, Depth= 5.96"

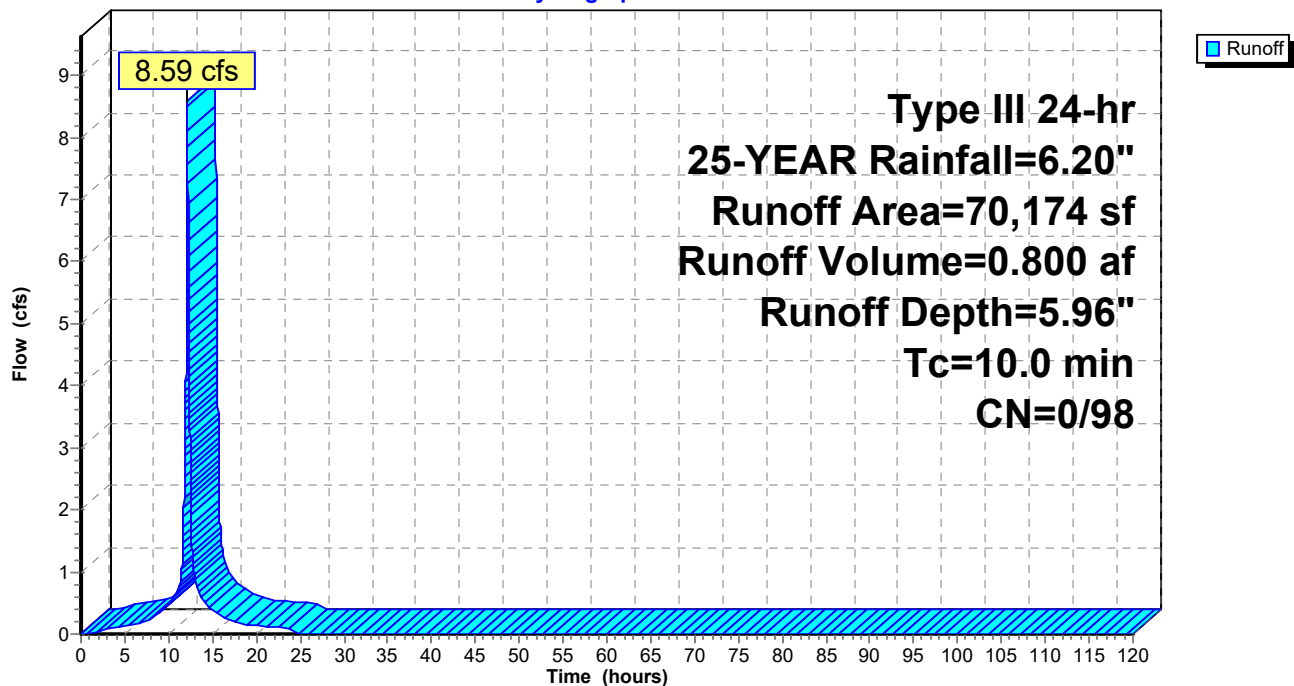
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
70,174	98	Paved parking, HSG B
70,174		100.00% Impervious Area

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

Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.19	0.12
10.00	1.17	0.00	0.96	0.46
15.00	5.30	0.00	5.06	0.39
20.00	5.93	0.00	5.70	0.13
25.00	6.20	0.00	5.96	0.00
30.00	6.20	0.00	5.96	0.00
35.00	6.20	0.00	5.96	0.00
40.00	6.20	0.00	5.96	0.00
45.00	6.20	0.00	5.96	0.00
50.00	6.20	0.00	5.96	0.00
55.00	6.20	0.00	5.96	0.00
60.00	6.20	0.00	5.96	0.00
65.00	6.20	0.00	5.96	0.00
70.00	6.20	0.00	5.96	0.00
75.00	6.20	0.00	5.96	0.00
80.00	6.20	0.00	5.96	0.00
85.00	6.20	0.00	5.96	0.00
90.00	6.20	0.00	5.96	0.00
95.00	6.20	0.00	5.96	0.00
100.00	6.20	0.00	5.96	0.00
105.00	6.20	0.00	5.96	0.00
110.00	6.20	0.00	5.96	0.00
115.00	6.20	0.00	5.96	0.00
120.00	6.20	0.00	5.96	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Runoff = 2.88 cfs @ 12.15 hrs, Volume= 0.245 af, Depth= 2.14"

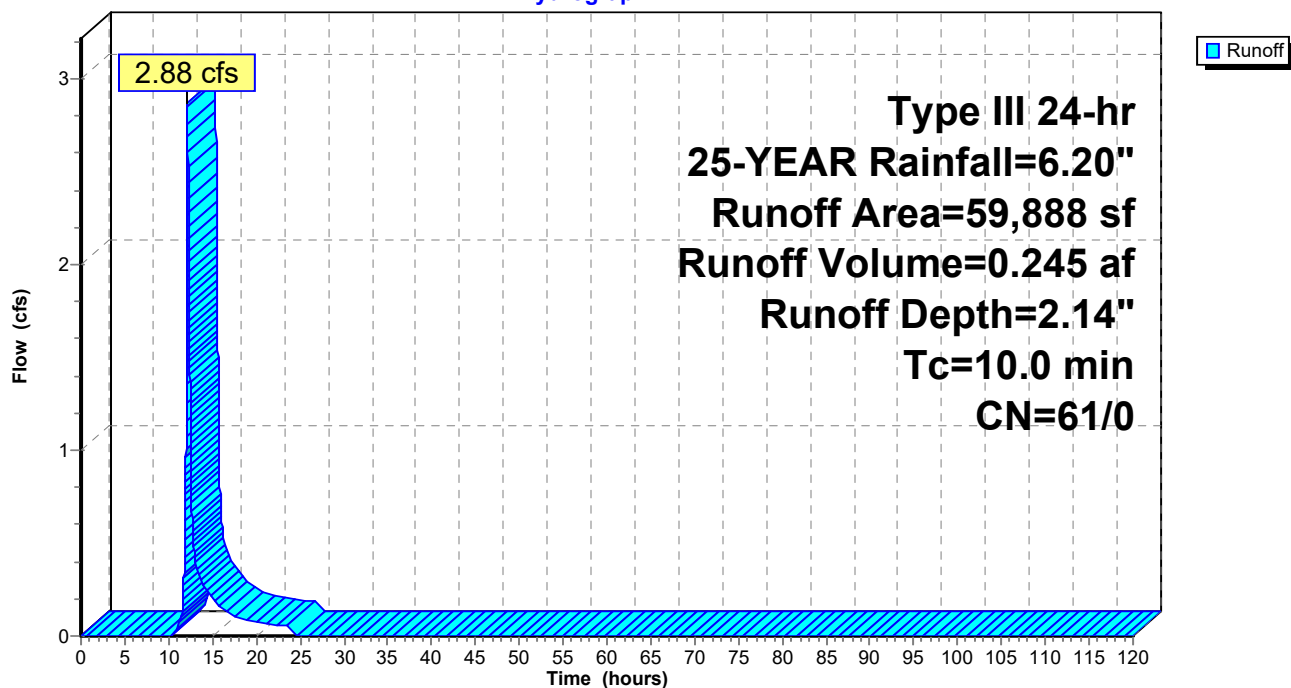
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
59,888	61	>75% Grass cover, Good, HSG B
59,888		100.00% Pervious Area

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

Subcatchment DA-P8 B: DA-P8 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.00	0.00
10.00	1.17	0.00	0.00	0.00
15.00	5.30	1.55	0.00	0.21
20.00	5.93	1.96	0.00	0.08
25.00	6.20	2.14	0.00	0.00
30.00	6.20	2.14	0.00	0.00
35.00	6.20	2.14	0.00	0.00
40.00	6.20	2.14	0.00	0.00
45.00	6.20	2.14	0.00	0.00
50.00	6.20	2.14	0.00	0.00
55.00	6.20	2.14	0.00	0.00
60.00	6.20	2.14	0.00	0.00
65.00	6.20	2.14	0.00	0.00
70.00	6.20	2.14	0.00	0.00
75.00	6.20	2.14	0.00	0.00
80.00	6.20	2.14	0.00	0.00
85.00	6.20	2.14	0.00	0.00
90.00	6.20	2.14	0.00	0.00
95.00	6.20	2.14	0.00	0.00
100.00	6.20	2.14	0.00	0.00
105.00	6.20	2.14	0.00	0.00
110.00	6.20	2.14	0.00	0.00
115.00	6.20	2.14	0.00	0.00
120.00	6.20	2.14	0.00	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Runoff = 20.49 cfs @ 12.13 hrs, Volume= 1.908 af, Depth= 5.96"

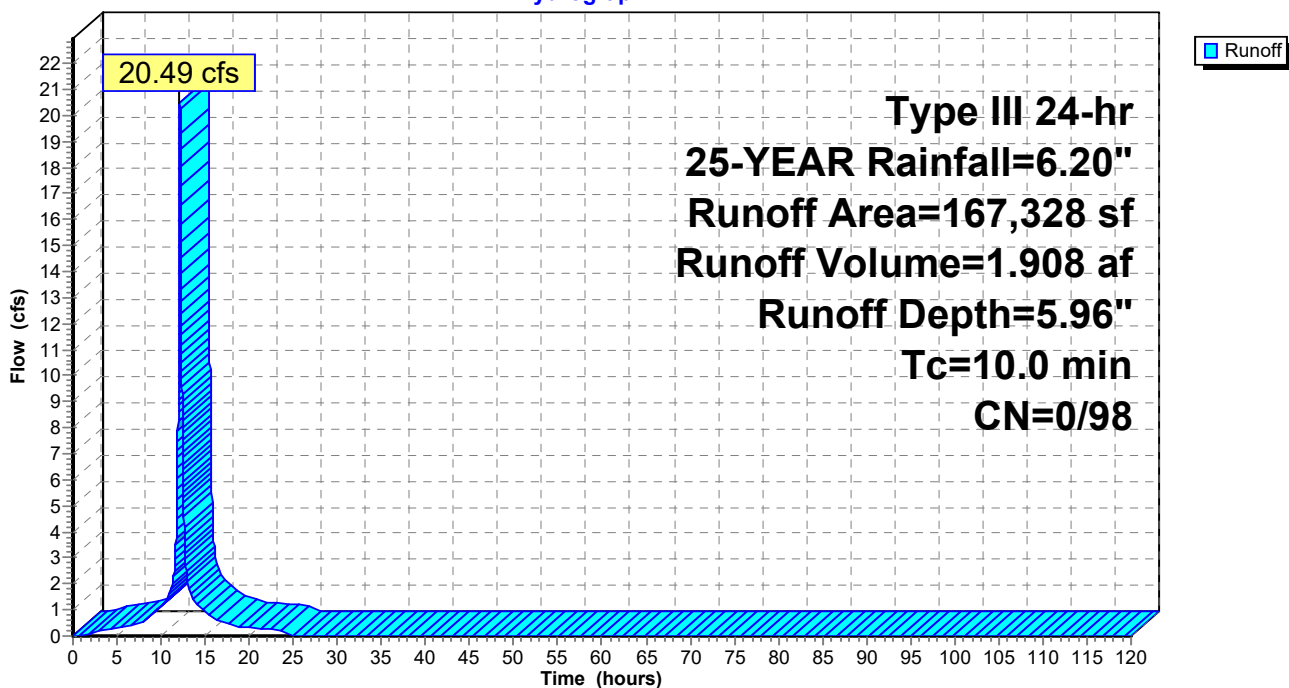
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
167,328	98	Paved parking, HSG B
167,328		100.00% Impervious Area

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

Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.19	0.29
10.00	1.17	0.00	0.96	1.11
15.00	5.30	0.00	5.06	0.94
20.00	5.93	0.00	5.70	0.32
25.00	6.20	0.00	5.96	0.00
30.00	6.20	0.00	5.96	0.00
35.00	6.20	0.00	5.96	0.00
40.00	6.20	0.00	5.96	0.00
45.00	6.20	0.00	5.96	0.00
50.00	6.20	0.00	5.96	0.00
55.00	6.20	0.00	5.96	0.00
60.00	6.20	0.00	5.96	0.00
65.00	6.20	0.00	5.96	0.00
70.00	6.20	0.00	5.96	0.00
75.00	6.20	0.00	5.96	0.00
80.00	6.20	0.00	5.96	0.00
85.00	6.20	0.00	5.96	0.00
90.00	6.20	0.00	5.96	0.00
95.00	6.20	0.00	5.96	0.00
100.00	6.20	0.00	5.96	0.00
105.00	6.20	0.00	5.96	0.00
110.00	6.20	0.00	5.96	0.00
115.00	6.20	0.00	5.96	0.00
120.00	6.20	0.00	5.96	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Runoff = 2.14 cfs @ 12.15 hrs, Volume= 0.182 af, Depth= 2.14"

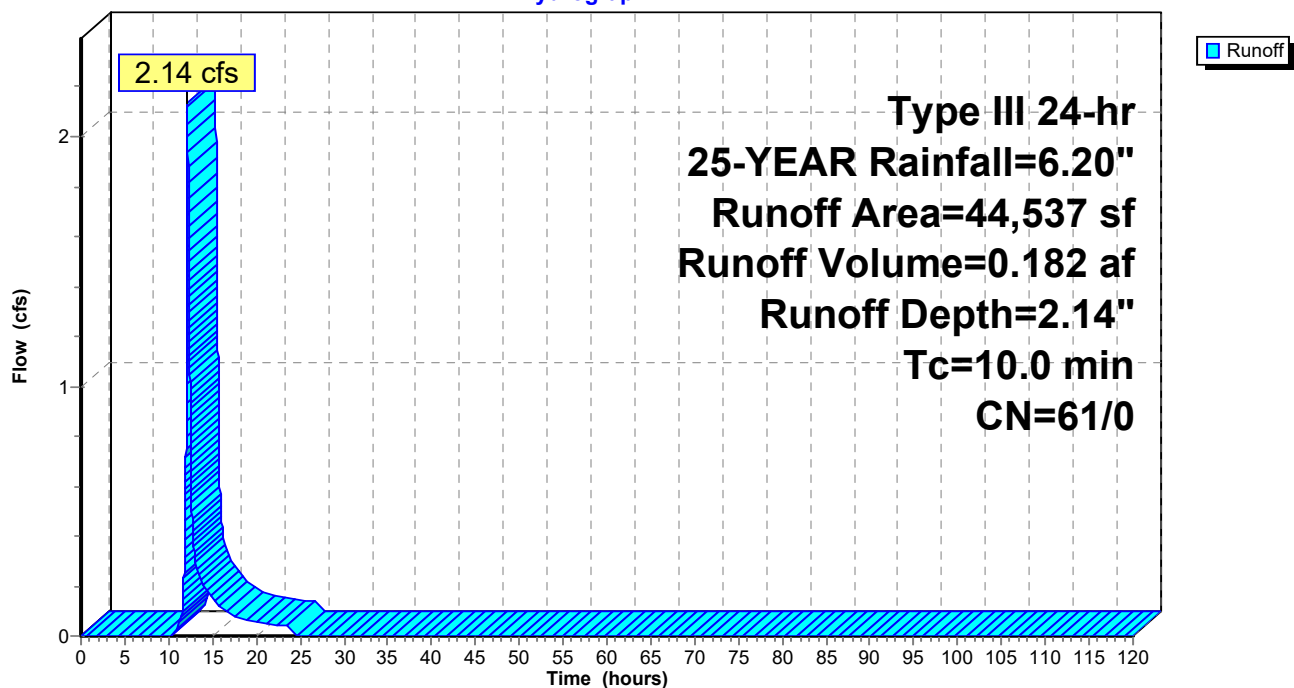
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
44,537	61	>75% Grass cover, Good, HSG B
44,537		100.00% Pervious Area

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

Subcatchment DA-P9 B: DA-P9 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.00	0.00
10.00	1.17	0.00	0.00	0.00
15.00	5.30	1.55	0.00	0.16
20.00	5.93	1.96	0.00	0.06
25.00	6.20	2.14	0.00	0.00
30.00	6.20	2.14	0.00	0.00
35.00	6.20	2.14	0.00	0.00
40.00	6.20	2.14	0.00	0.00
45.00	6.20	2.14	0.00	0.00
50.00	6.20	2.14	0.00	0.00
55.00	6.20	2.14	0.00	0.00
60.00	6.20	2.14	0.00	0.00
65.00	6.20	2.14	0.00	0.00
70.00	6.20	2.14	0.00	0.00
75.00	6.20	2.14	0.00	0.00
80.00	6.20	2.14	0.00	0.00
85.00	6.20	2.14	0.00	0.00
90.00	6.20	2.14	0.00	0.00
95.00	6.20	2.14	0.00	0.00
100.00	6.20	2.14	0.00	0.00
105.00	6.20	2.14	0.00	0.00
110.00	6.20	2.14	0.00	0.00
115.00	6.20	2.14	0.00	0.00
120.00	6.20	2.14	0.00	0.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Subcatchment DA-PB: BYPASS AREA

Runoff = 20.37 cfs @ 12.46 hrs, Volume= 2.728 af, Depth= 3.96"

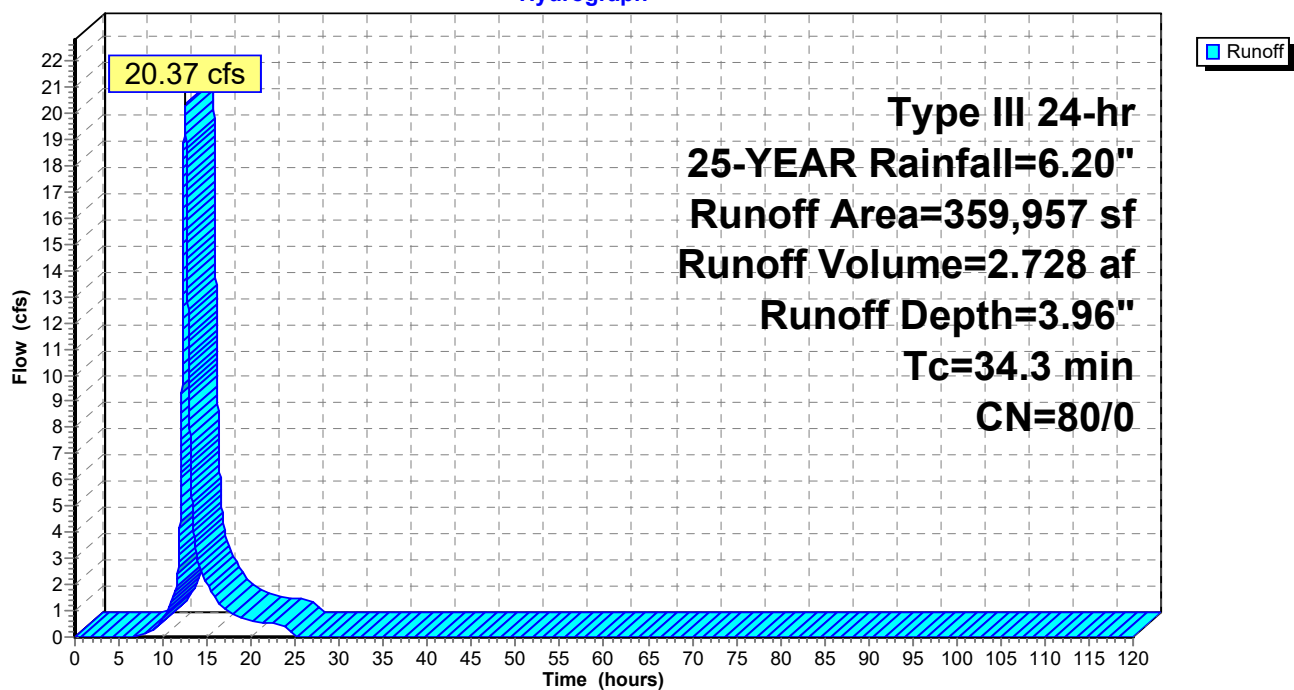
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
260,735	78	Row crops, straight row, Good, HSG B
99,222	85	Row crops, straight row, Good, HSG C
359,957	80	Weighted Average
359,957		100.00% Pervious Area

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

Subcatchment DA-PB: BYPASS AREA

Hydrograph



PROPOSED 2022-04*Type III 24-hr 25-YEAR Rainfall=6.20"*

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Hydrograph for Subcatchment DA-PB: BYPASS AREA

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.35	0.00	0.00	0.00
10.00	1.17	0.14	0.00	0.70
15.00	5.30	3.15	0.00	1.98
20.00	5.93	3.72	0.00	0.64
25.00	6.20	3.96	0.00	0.02
30.00	6.20	3.96	0.00	0.00
35.00	6.20	3.96	0.00	0.00
40.00	6.20	3.96	0.00	0.00
45.00	6.20	3.96	0.00	0.00
50.00	6.20	3.96	0.00	0.00
55.00	6.20	3.96	0.00	0.00
60.00	6.20	3.96	0.00	0.00
65.00	6.20	3.96	0.00	0.00
70.00	6.20	3.96	0.00	0.00
75.00	6.20	3.96	0.00	0.00
80.00	6.20	3.96	0.00	0.00
85.00	6.20	3.96	0.00	0.00
90.00	6.20	3.96	0.00	0.00
95.00	6.20	3.96	0.00	0.00
100.00	6.20	3.96	0.00	0.00
105.00	6.20	3.96	0.00	0.00
110.00	6.20	3.96	0.00	0.00
115.00	6.20	3.96	0.00	0.00
120.00	6.20	3.96	0.00	0.00

PROPOSED 2022-04

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Pond B1: BASIN#1

Inflow = 73.43 cfs @ 12.14 hrs, Volume= 7.596 af
 Outflow = 31.45 cfs @ 12.42 hrs, Volume= 7.417 af, Atten= 57%, Lag= 17.1 min
 Primary = 14.45 cfs @ 13.08 hrs, Volume= 6.947 af
 Secondary = 19.25 cfs @ 12.42 hrs, Volume= 0.471 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 129.70' @ 13.08 hrs Surf.Area= 60,435 sf Storage= 144,170 cf

Plug-Flow detention time= 1,063.4 min calculated for 7.417 af (98% of inflow)
 Center-of-Mass det. time= 1,049.4 min (1,836.0 - 786.7)

Volume	Invert	Avail.Storage	Storage Description
#1	125.00'	468,414 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
125.00	0	0	0
126.00	2,784	1,392	1,392
127.00	28,597	15,691	17,083
128.00	42,791	35,694	52,777
129.00	57,622	50,207	102,983
130.00	61,653	59,638	162,621
131.00	64,456	63,055	225,675
132.00	67,190	65,823	291,498
133.00	69,880	68,535	360,033
134.00	72,596	71,238	431,271
134.50	75,975	37,143	468,414

Device	Routing	Invert	Outlet Devices
#1	Primary	125.00'	30.0" Round Culvert L= 49.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 125.00' / 124.00' S= 0.0204 1' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	125.00'	2.5" Vert. Orifice C= 0.600
#3	Device 1	128.90'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.70'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Primary OutFlow Max=14.41 cfs @ 13.08 hrs HW=129.70' TW=0.00' (Dynamic Tailwater)

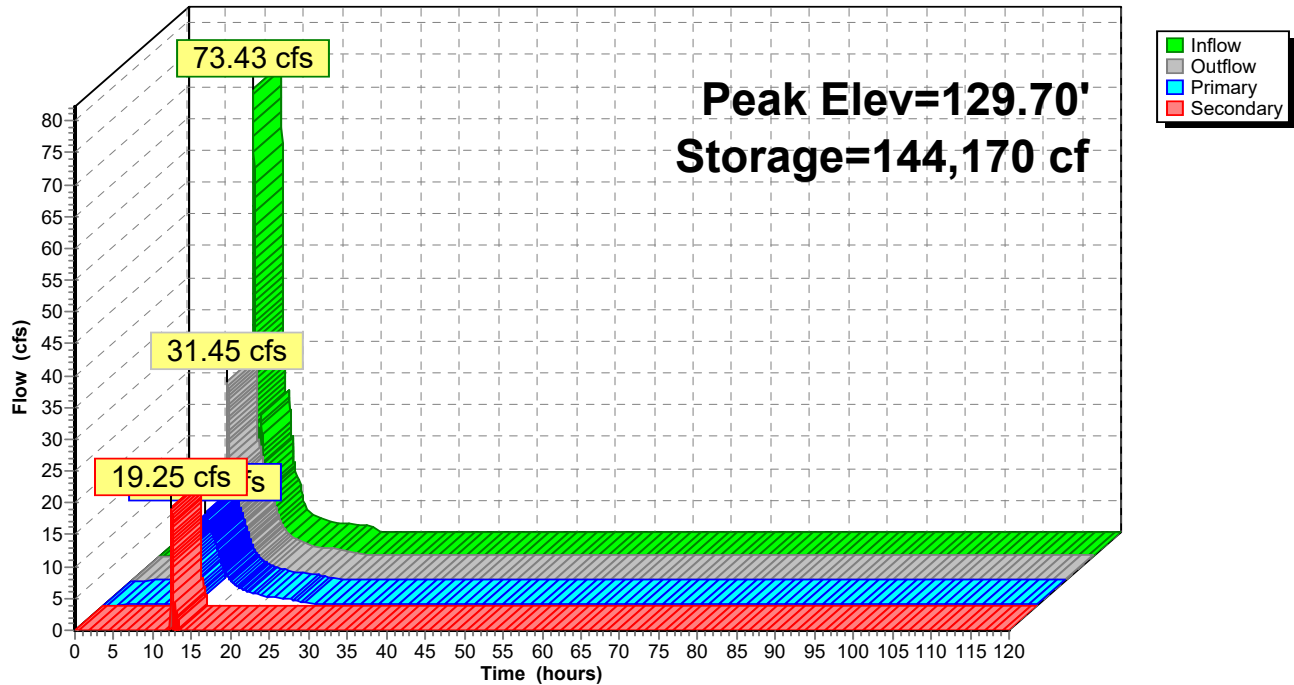
- 1=Culvert (Passes 14.41 cfs of 43.88 cfs potential flow)
- 2=Orifice (Orifice Controls 0.35 cfs @ 10.32 fps)
- 3=Broad-Crested Rectangular Weir (Weir Controls 14.06 cfs @ 2.94 fps)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=19.24 cfs @ 12.42 hrs HW=129.62' TW=129.10' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Weir Controls 19.24 cfs @ 0.87 fps)

Pond B1: BASIN#1

Hydrograph



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Type III 24-hr 25-YEAR Rainfall=6.20"

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Hydrograph for Pond B1: BASIN#1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	125.00	0.00	0.00	0.00
5.00	0.67	3,851	126.34	0.18	0.18	0.00
10.00	2.60	24,266	127.24	0.24	0.24	0.00
15.00	4.57	129,387	129.45	7.81	7.81	0.00
20.00	1.38	108,219	129.09	1.73	1.73	0.00
25.00	0.00	101,946	128.98	0.72	0.72	0.00
30.00	0.00	94,842	128.86	0.32	0.32	0.00
35.00	0.00	89,159	128.75	0.31	0.31	0.00
40.00	0.00	83,557	128.65	0.31	0.31	0.00
45.00	0.00	78,038	128.54	0.30	0.30	0.00
50.00	0.00	72,606	128.43	0.30	0.30	0.00
55.00	0.00	67,262	128.32	0.29	0.29	0.00
60.00	0.00	62,009	128.21	0.29	0.29	0.00
65.00	0.00	56,853	128.09	0.28	0.28	0.00
70.00	0.00	51,794	127.98	0.28	0.28	0.00
75.00	0.00	46,839	127.86	0.27	0.27	0.00
80.00	0.00	41,991	127.74	0.27	0.27	0.00
85.00	0.00	37,254	127.61	0.26	0.26	0.00
90.00	0.00	32,635	127.49	0.25	0.25	0.00
95.00	0.00	28,139	127.35	0.25	0.25	0.00
100.00	0.00	23,772	127.22	0.24	0.24	0.00
105.00	0.00	19,543	127.08	0.23	0.23	0.00
110.00	0.00	15,461	126.94	0.22	0.22	0.00
115.00	0.00	11,542	126.78	0.21	0.21	0.00
120.00	0.00	7,813	126.61	0.20	0.20	0.00

PROPOSED 2022-04

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Type III 24-hr 25-YEAR Rainfall=6.20"

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Summary for Pond B1A: BASIN# 1A

Inflow = 66.58 cfs @ 12.33 hrs, Volume= 14.248 af
 Outflow = 62.21 cfs @ 12.44 hrs, Volume= 14.249 af, Atten= 7%, Lag= 6.9 min
 Discarded = 42.27 cfs @ 12.44 hrs, Volume= 4.142 af
 Primary = 19.94 cfs @ 12.44 hrs, Volume= 10.107 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 126.04' @ 12.44 hrs Surf.Area= 54,897 sf Storage= 41,655 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 23.6 min (1,376.1 - 1,352.5)

Volume	Invert	Avail.Storage	Storage Description
#1	123.70'	259,537 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.70	0	0	0
124.00	2,278	342	342
125.00	13,963	8,121	8,462
125.30	21,434	5,310	13,772
126.00	52,835	25,994	39,766
127.00	111,645	82,240	122,006
128.00	163,418	137,532	259,537

Device	Routing	Invert	Outlet Devices
#1	Primary	123.51'	24.0" Round Culvert L= 192.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 123.51' / 123.19' S= 0.0017 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	123.51'	9.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	124.95'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 2.05 Width (feet) 1.20 1.20 1.20
#4	Device 1	125.60'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.40 Width (feet) 1.80 1.80
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#6	Discarded	125.50'	40.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#7	Discarded	126.50'	60.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#8	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#9	Device 1	124.95'	1.2' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00

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Type III 24-hr 25-YEAR Rainfall=6.20"

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#10	Primary	124.95'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			1.2' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
#11	Device 1	125.60'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
#12	Primary	125.60'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
			Coef. (English)	2.80	2.92	3.08	3.30	3.32

Discarded OutFlow Max=42.27 cfs @ 12.44 hrs HW=126.04' (Free Discharge)

6=Broad-Crested Rectangular Weir (Weir Controls 42.27 cfs @ 1.97 fps)


7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
Primary OutFlow Max=19.94 cfs @ 12.44 hrs HW=126.04' (Free Discharge)

1=Culvert (Barrel Controls 12.90 cfs @ 4.19 fps)


2=Orifice/Grate (Passes < 3.12 cfs potential flow)


3=Custom Weir/Orifice (Passes < 4.44 cfs potential flow)


4=Custom Weir/Orifice (Passes < 1.69 cfs potential flow)


5=Orifice/Grate (Controls 0.00 cfs)


9=Broad-Crested Rectangular Weir (Passes < 4.50 cfs potential flow)


11=Broad-Crested Rectangular Weir (Passes < 2.54 cfs potential flow)

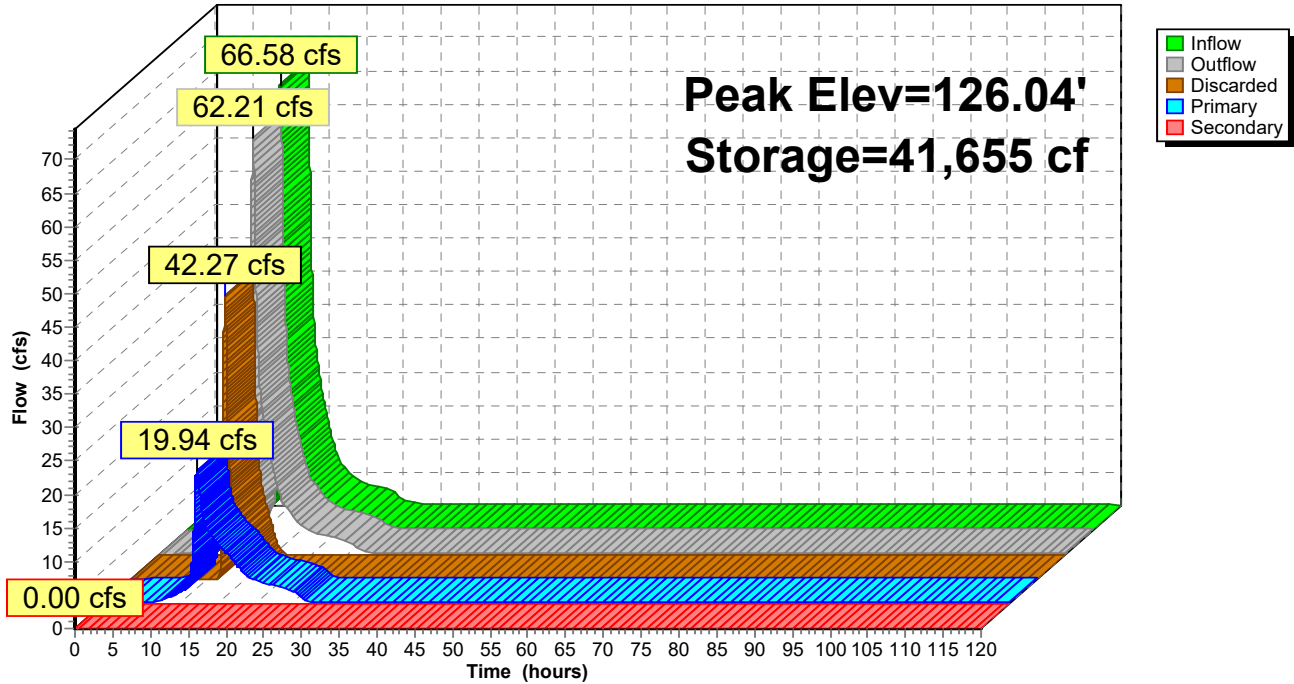

10=Broad-Crested Rectangular Weir (Weir Controls 4.50 cfs @ 3.46 fps)


12=Broad-Crested Rectangular Weir (Weir Controls 2.54 cfs @ 1.94 fps)
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=123.70' TW=120.70' (Dynamic Tailwater)

8=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B1A: BASIN# 1A

Hydrograph



PROPOSED 2022-04

Type III 24-hr 25-YEAR Rainfall=6.20"

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Hydrograph for Pond B1A: BASIN# 1A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	123.70	0.00	0.00	0.00	0.00
5.00	0.25	42	123.80	0.25	0.00	0.25	0.00
10.00	2.55	2,942	124.50	1.67	0.00	1.67	0.00
15.00	12.79	22,877	125.62	13.51	4.37	9.14	0.00
20.00	3.36	11,501	125.19	3.66	0.00	3.66	0.00
25.00	0.74	5,416	124.76	1.99	0.00	1.99	0.00
30.00	0.32	76	123.84	0.32	0.00	0.32	0.00
35.00	0.31	74	123.84	0.31	0.00	0.31	0.00
40.00	0.31	71	123.84	0.31	0.00	0.31	0.00
45.00	0.30	69	123.83	0.30	0.00	0.30	0.00
50.00	0.30	66	123.83	0.30	0.00	0.30	0.00
55.00	0.29	63	123.83	0.29	0.00	0.29	0.00
60.00	0.29	61	123.83	0.29	0.00	0.29	0.00
65.00	0.28	58	123.82	0.28	0.00	0.28	0.00
70.00	0.28	56	123.82	0.28	0.00	0.28	0.00
75.00	0.27	54	123.82	0.27	0.00	0.27	0.00
80.00	0.27	51	123.81	0.27	0.00	0.27	0.00
85.00	0.26	48	123.81	0.26	0.00	0.26	0.00
90.00	0.25	45	123.81	0.25	0.00	0.25	0.00
95.00	0.25	42	123.80	0.25	0.00	0.25	0.00
100.00	0.24	39	123.80	0.24	0.00	0.24	0.00
105.00	0.23	35	123.79	0.23	0.00	0.23	0.00
110.00	0.22	31	123.79	0.22	0.00	0.22	0.00
115.00	0.21	27	123.78	0.21	0.00	0.21	0.00
120.00	0.00	23	123.78	0.20	0.00	0.20	0.00

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Summary for Pond B2: BASIN#2

Inflow = 136.98 cfs @ 12.14 hrs, Volume= 14.172 af
 Outflow = 24.86 cfs @ 13.10 hrs, Volume= 14.108 af, Atten= 82%, Lag= 58.0 min
 Primary = 9.87 cfs @ 13.05 hrs, Volume= 13.134 af
 Secondary = 15.01 cfs @ 13.10 hrs, Volume= 0.974 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 129.70' @ 13.05 hrs Surf.Area= 95,351 sf Storage= 371,355 cf

Plug-Flow detention time= 1,650.1 min calculated for 14.108 af (100% of inflow)

Center-of-Mass det. time= 1,643.0 min (2,435.3 - 792.3)

Volume	Invert	Avail.Storage	Storage Description
#1	122.05'	911,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.05	0	0	0
123.00	4,516	2,145	2,145
124.00	17,503	11,010	13,155
125.00	40,514	29,009	42,163
126.00	52,995	46,755	88,918
127.00	66,197	59,596	148,514
128.00	80,616	73,407	221,920
129.00	89,234	84,925	306,845
130.00	97,986	93,610	400,455
131.00	104,847	101,417	501,872
132.00	111,734	108,291	610,162
133.00	118,653	115,194	725,356
134.00	125,598	122,126	847,481
134.50	129,221	63,705	911,186

Device	Routing	Invert	Outlet Devices
#1	Primary	121.38'	30.0" Round Culvert L= 52.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 121.38' / 120.90' S= 0.0092 ' / ' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	122.05'	4.0" Vert. Orifice C= 0.600
#3	Device 1	128.50'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.75'	3.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60

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Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=9.86 cfs @ 13.05 hrs HW=129.70' TW=0.00' (Dynamic Tailwater)

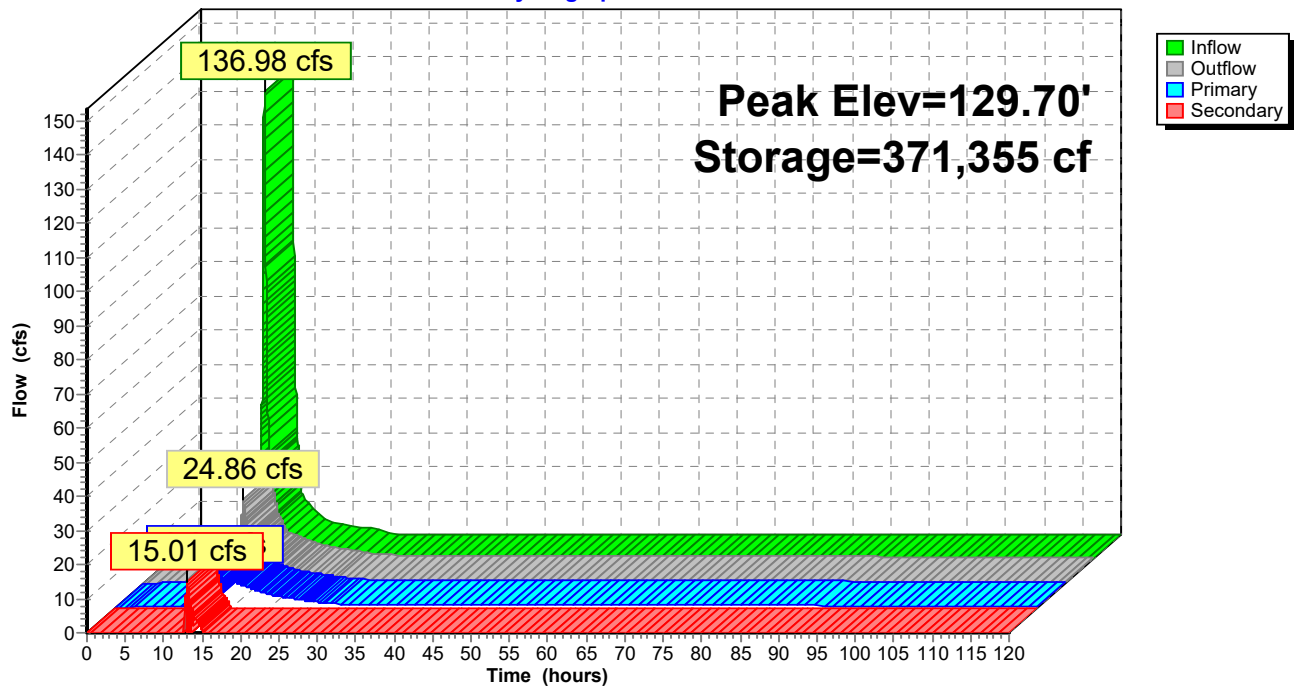
- 1=Culvert (Passes 9.86 cfs of 62.84 cfs potential flow)
- 2=Orifice (Orifice Controls 1.15 cfs @ 13.17 fps)
- 3=Broad-Crested Rectangular Weir (Weir Controls 8.71 cfs @ 3.63 fps)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=13.19 cfs @ 13.10 hrs HW=129.70' TW=129.69' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Weir Controls 13.19 cfs @ 0.37 fps)

Pond B2: BASIN#2

Hydrograph



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Hydrograph for Pond B2: BASIN#2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	122.05	0.00	0.00	0.00
5.00	1.57	8,397	123.69	0.51	0.51	0.00
10.00	5.98	52,245	125.24	0.73	0.73	0.00
15.00	7.42	353,683	129.51	8.49	7.90	0.59
20.00	2.53	317,642	129.12	4.13	4.13	0.00
25.00	0.25	292,704	128.84	2.23	2.23	0.00
30.00	0.22	268,938	128.57	1.15	1.15	0.00
35.00	0.17	253,317	128.38	1.04	1.04	0.00
40.00	0.11	237,329	128.19	1.03	1.03	0.00
45.00	0.00	219,843	127.97	1.01	1.01	0.00
50.00	0.00	201,877	127.75	0.99	0.99	0.00
55.00	0.00	184,282	127.51	0.97	0.97	0.00
60.00	0.00	167,075	127.27	0.94	0.94	0.00
65.00	0.00	150,277	127.03	0.92	0.92	0.00
70.00	0.00	133,908	126.77	0.90	0.90	0.00
75.00	0.00	117,991	126.52	0.87	0.87	0.00
80.00	0.00	102,554	126.25	0.84	0.84	0.00
85.00	0.00	87,625	125.98	0.81	0.81	0.00
90.00	0.00	73,239	125.69	0.78	0.78	0.00
95.00	0.00	59,435	125.40	0.75	0.75	0.00
100.00	0.00	46,261	125.10	0.71	0.71	0.00
105.00	0.00	33,776	124.78	0.67	0.67	0.00
110.00	0.00	22,110	124.40	0.62	0.62	0.00
115.00	0.00	11,545	123.90	0.55	0.55	0.00
120.00	0.00	2,826	123.12	0.40	0.40	0.00

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Summary for Pond B2A: BASIN# 2A

Inflow = 28.25 cfs @ 12.15 hrs, Volume= 15.443 af
 Outflow = 15.69 cfs @ 12.42 hrs, Volume= 15.442 af, Atten= 44%, Lag= 16.5 min
 Primary = 15.69 cfs @ 12.42 hrs, Volume= 15.442 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 124.15' @ 12.42 hrs Surf.Area= 15,350 sf Storage= 13,275 cf

Plug-Flow detention time= 3.7 min calculated for 15.441 af (100% of inflow)
 Center-of-Mass det. time= 3.5 min (2,297.9 - 2,294.4)

Volume	Invert	Avail.Storage	Storage Description
#1	120.70'	244,647 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.70	0	0	0
123.00	2,840	3,266	3,266
124.00	12,899	7,870	11,135
125.00	29,081	20,990	32,125
125.50	41,742	17,706	49,831
126.00	55,169	24,228	74,059
127.00	82,653	68,911	142,970
128.00	120,701	101,677	244,647

Device	Routing	Invert	Outlet Devices
#1	Primary	120.66'	30.0" Round Culvert L= 212.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 120.66' / 118.50' S= 0.0102 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	120.66'	18.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	123.65'	1.5' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=15.69 cfs @ 12.42 hrs HW=124.15' (Free Discharge)

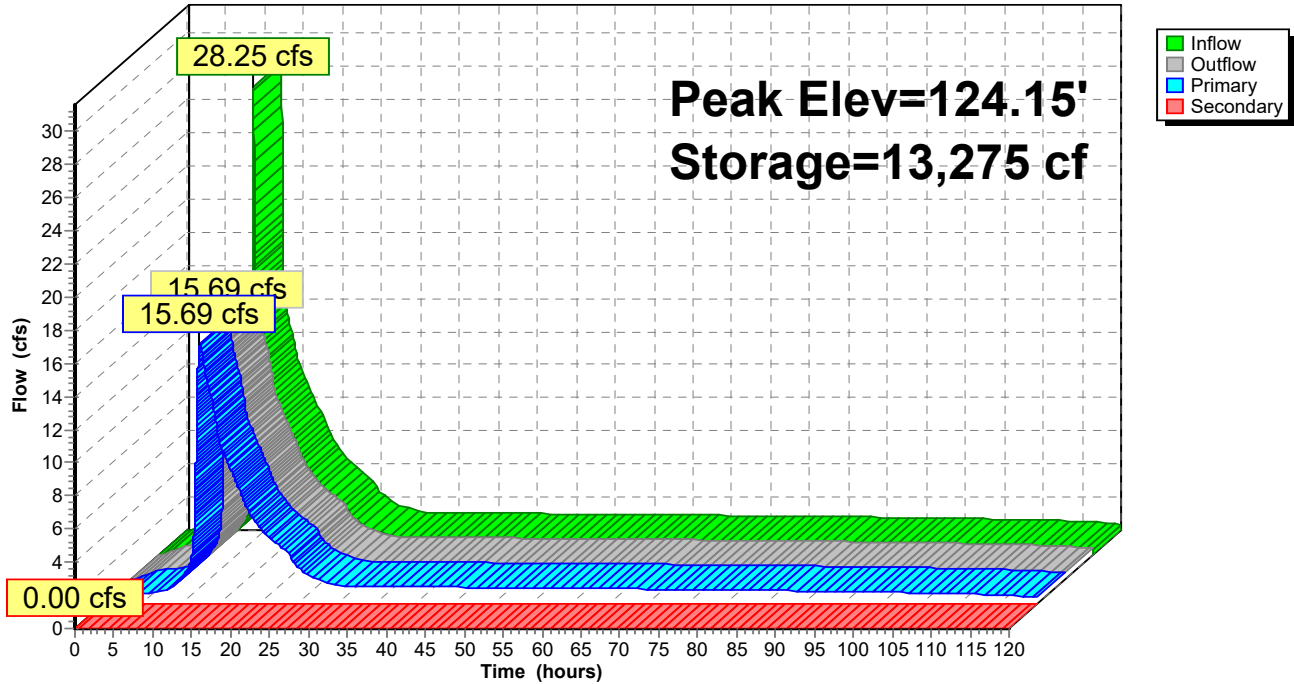
1=Culvert (Passes 15.69 cfs of 35.39 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 14.09 cfs @ 7.97 fps)
 3=Broad-Crested Rectangular Weir (Weir Controls 1.60 cfs @ 2.13 fps)
 5=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.70' TW=123.70' (Dynamic Tailwater)

4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B2A: BASIN# 2A

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Hydrograph for Pond B2A: BASIN# 2A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	120.70	0.00	0.00	0.00
5.00	0.62	58	121.01	0.62	0.62	0.00
10.00	1.49	159	121.21	1.47	1.47	0.00
15.00	9.39	2,471	122.70	9.66	9.66	0.00
20.00	4.65	643	121.72	4.68	4.68	0.00
25.00	2.23	261	121.35	2.25	2.25	0.00
30.00	1.15	121	121.14	1.16	1.16	0.00
35.00	1.04	107	121.12	1.04	1.04	0.00
40.00	1.03	106	121.11	1.03	1.03	0.00
45.00	1.01	103	121.11	1.01	1.01	0.00
50.00	0.99	101	121.10	0.99	0.99	0.00
55.00	0.97	99	121.10	0.97	0.97	0.00
60.00	0.94	96	121.09	0.94	0.94	0.00
65.00	0.92	93	121.09	0.92	0.92	0.00
70.00	0.90	90	121.08	0.90	0.90	0.00
75.00	0.87	87	121.07	0.87	0.87	0.00
80.00	0.84	84	121.07	0.84	0.84	0.00
85.00	0.81	80	121.06	0.81	0.81	0.00
90.00	0.78	77	121.05	0.78	0.78	0.00
95.00	0.75	73	121.04	0.75	0.75	0.00
100.00	0.71	69	121.03	0.71	0.71	0.00
105.00	0.67	65	121.02	0.67	0.67	0.00
110.00	0.62	59	121.01	0.62	0.62	0.00
115.00	0.55	50	120.98	0.55	0.55	0.00
120.00	0.00	35	120.94	0.40	0.40	0.00

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Summary for Pond B3: BASIN#3

Inflow Area = 4.864 ac, 78.98% Impervious, Inflow Depth = 5.16" for 25-YEAR event
 Inflow = 22.61 cfs @ 12.14 hrs, Volume= 2.091 af
 Outflow = 10.05 cfs @ 12.39 hrs, Volume= 2.091 af, Atten= 56%, Lag= 15.3 min
 Primary = 10.05 cfs @ 12.39 hrs, Volume= 2.091 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 147.73' @ 12.39 hrs Surf.Area= 9,652 sf Storage= 24,063 cf

Plug-Flow detention time= 193.5 min calculated for 2.091 af (100% of inflow)
 Center-of-Mass det. time= 193.6 min (951.9 - 758.3)

Volume	Invert	Avail.Storage	Storage Description
#1	143.72'	58,412 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
143.72	0	0	0
144.00	1,559	218	218
145.00	5,405	3,482	3,700
146.00	6,859	6,132	9,832
147.00	8,428	7,644	17,476
148.00	10,107	9,268	26,743
149.00	11,886	10,997	37,740
150.00	14,319	13,103	50,842
150.50	15,959	7,570	58,412

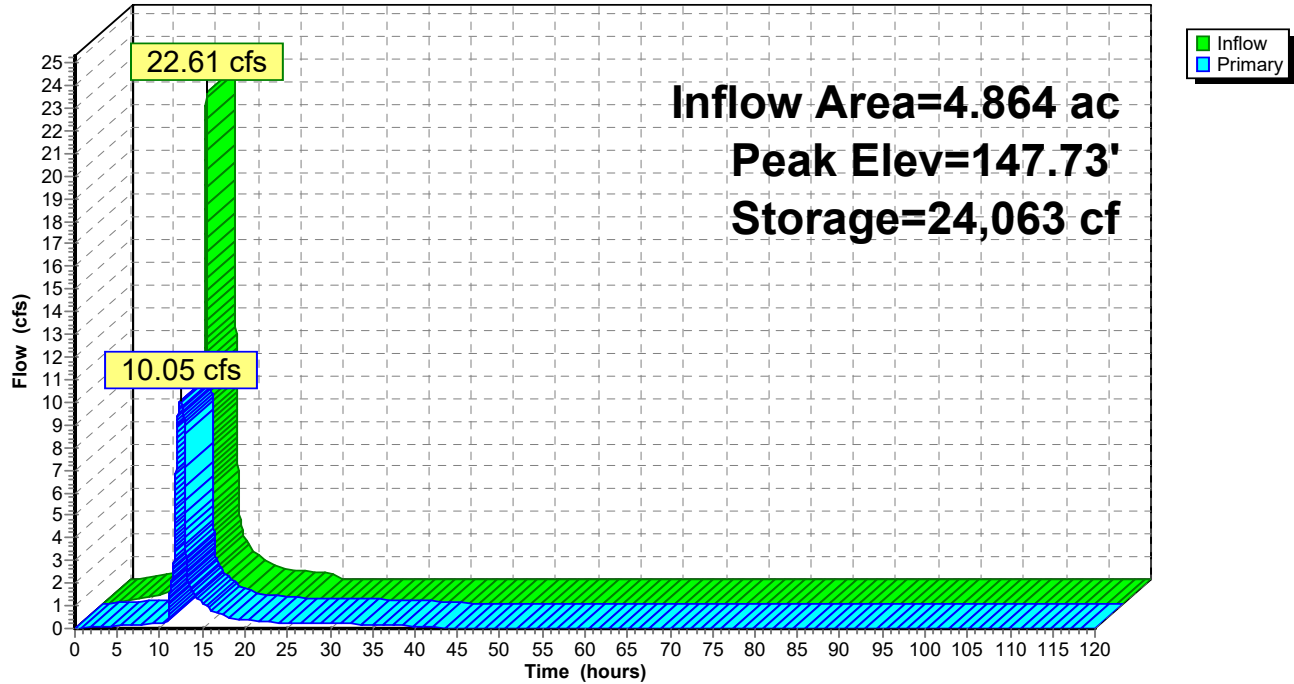
Device	Routing	Invert	Outlet Devices
#1	Primary	143.72'	15.0" Round Culvert L= 182.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 143.72' / 140.50' S= 0.0177 '/' Cc= 0.900 n= 0.013 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf
#2	Device 1	143.72'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	146.31'	48.0" x 48.0" Horiz. TYPE "E" INLET WITH STOP COCK @ BOTTOM C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.05 cfs @ 12.39 hrs HW=147.73' TW=129.00' (Dynamic Tailwater)

- 1=Culvert (Barrel Controls 10.05 cfs @ 8.19 fps)
- 2=Orifice/Grate (Passes < 0.32 cfs potential flow)
- 3=TYPE "E" INLET WITH STOP COCK @ BOTTOM (Passes < 88.41 cfs potential flow)

Pond B3: BASIN#3

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Hydrograph for Pond B3: BASIN#3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	143.72	0.00
5.00	0.29	1,285	144.44	0.13
10.00	1.11	8,411	145.79	0.23
15.00	1.10	12,516	146.38	1.13
20.00	0.37	12,164	146.33	0.38
25.00	0.00	11,258	146.20	0.25
30.00	0.00	7,020	145.57	0.22
35.00	0.00	3,483	144.96	0.17
40.00	0.00	836	144.29	0.11
45.00	0.00	3	143.73	0.00
50.00	0.00	1	143.72	0.00
55.00	0.00	0	143.72	0.00
60.00	0.00	0	143.72	0.00
65.00	0.00	0	143.72	0.00
70.00	0.00	0	143.72	0.00
75.00	0.00	0	143.72	0.00
80.00	0.00	0	143.72	0.00
85.00	0.00	0	143.72	0.00
90.00	0.00	0	143.72	0.00
95.00	0.00	0	143.72	0.00
100.00	0.00	0	143.72	0.00
105.00	0.00	0	143.72	0.00
110.00	0.00	0	143.72	0.00
115.00	0.00	0	143.72	0.00
120.00	0.00	0	143.72	0.00

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Summary for Pond B4: BASIN#4

Inflow Area = 2.986 ac, 53.95% Impervious, Inflow Depth = 4.20" for 25-YEAR event
 Inflow = 11.45 cfs @ 12.14 hrs, Volume= 1.046 af
 Outflow = 4.38 cfs @ 12.46 hrs, Volume= 0.804 af, Atten= 62%, Lag= 19.1 min
 Primary = 4.38 cfs @ 12.46 hrs, Volume= 0.804 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 141.25' @ 12.46 hrs Surf.Area= 11,334 sf Storage= 21,623 cf

Plug-Flow detention time= 226.1 min calculated for 0.804 af (77% of inflow)
 Center-of-Mass det. time= 138.6 min (913.6 - 775.0)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	66,831 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	7,648	0	0
140.00	9,503	8,576	8,576
141.00	10,988	10,246	18,821
142.00	12,367	11,678	30,499
143.00	13,797	13,082	43,581
144.00	15,503	14,650	58,231
144.50	18,900	8,601	66,831

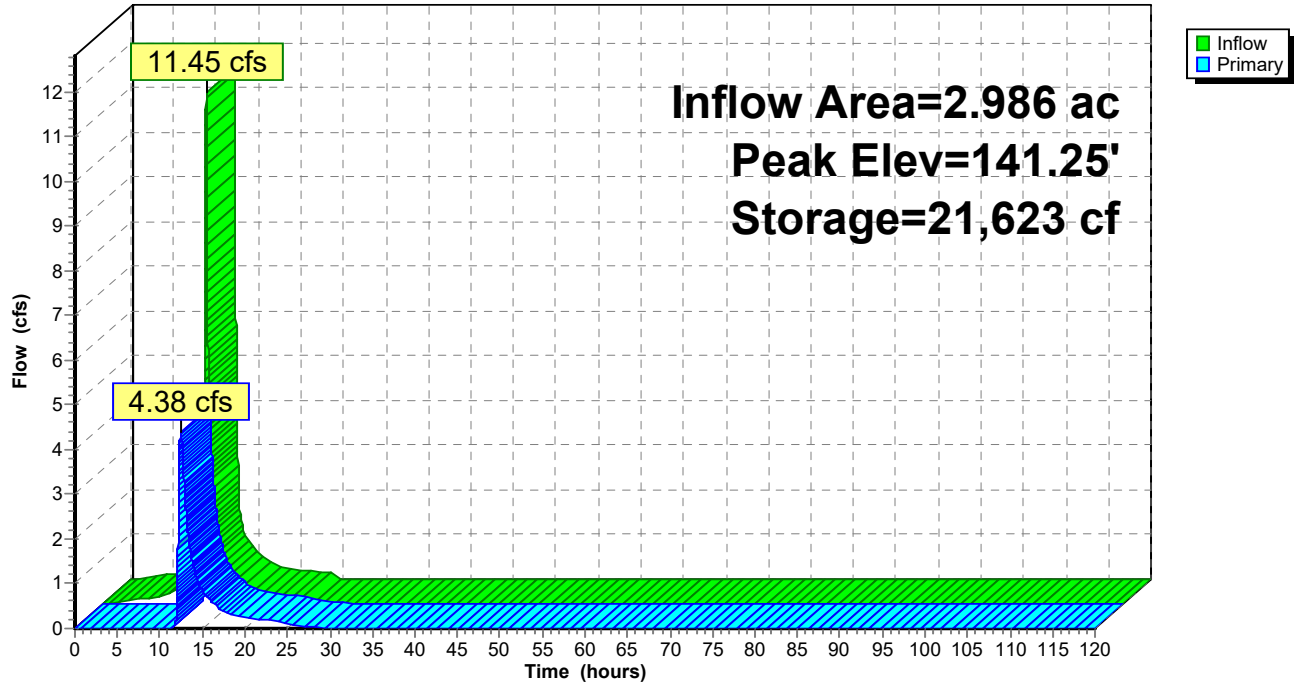
Device	Routing	Invert	Outlet Devices
#1	Primary	136.95'	15.0" Round Culvert L= 47.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 136.95' / 136.71' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	140.20'	1.2' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Device 1	141.50'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#4	Device 1	142.90'	4.0" x 4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	143.00'	40.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.38 cfs @ 12.46 hrs HW=141.25' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 4.38 cfs of 11.09 cfs potential flow)
- 2=Sharp-Crested Rectangular Weir (Weir Controls 4.38 cfs @ 4.21 fps)
- 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Orifice/Grate (Controls 0.00 cfs)
- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B4: BASIN#4

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Hydrograph for Pond B4: BASIN#4

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	139.00	0.00
5.00	0.12	1,029	139.13	0.00
10.00	0.46	5,333	139.65	0.00
15.00	0.60	14,058	140.55	0.84
20.00	0.21	12,063	140.36	0.25
25.00	0.00	11,300	140.28	0.09
30.00	0.00	10,700	140.22	0.01
35.00	0.00	10,591	140.21	0.00
40.00	0.00	10,554	140.20	0.00
45.00	0.00	10,536	140.20	0.00
50.00	0.00	10,527	140.20	0.00
55.00	0.00	10,521	140.20	0.00
60.00	0.00	10,518	140.20	0.00
65.00	0.00	10,515	140.20	0.00
70.00	0.00	10,513	140.20	0.00
75.00	0.00	10,512	140.20	0.00
80.00	0.00	10,511	140.20	0.00
85.00	0.00	10,510	140.20	0.00
90.00	0.00	10,510	140.20	0.00
95.00	0.00	10,509	140.20	0.00
100.00	0.00	10,509	140.20	0.00
105.00	0.00	10,508	140.20	0.00
110.00	0.00	10,508	140.20	0.00
115.00	0.00	10,508	140.20	0.00
120.00	0.00	10,508	140.20	0.00

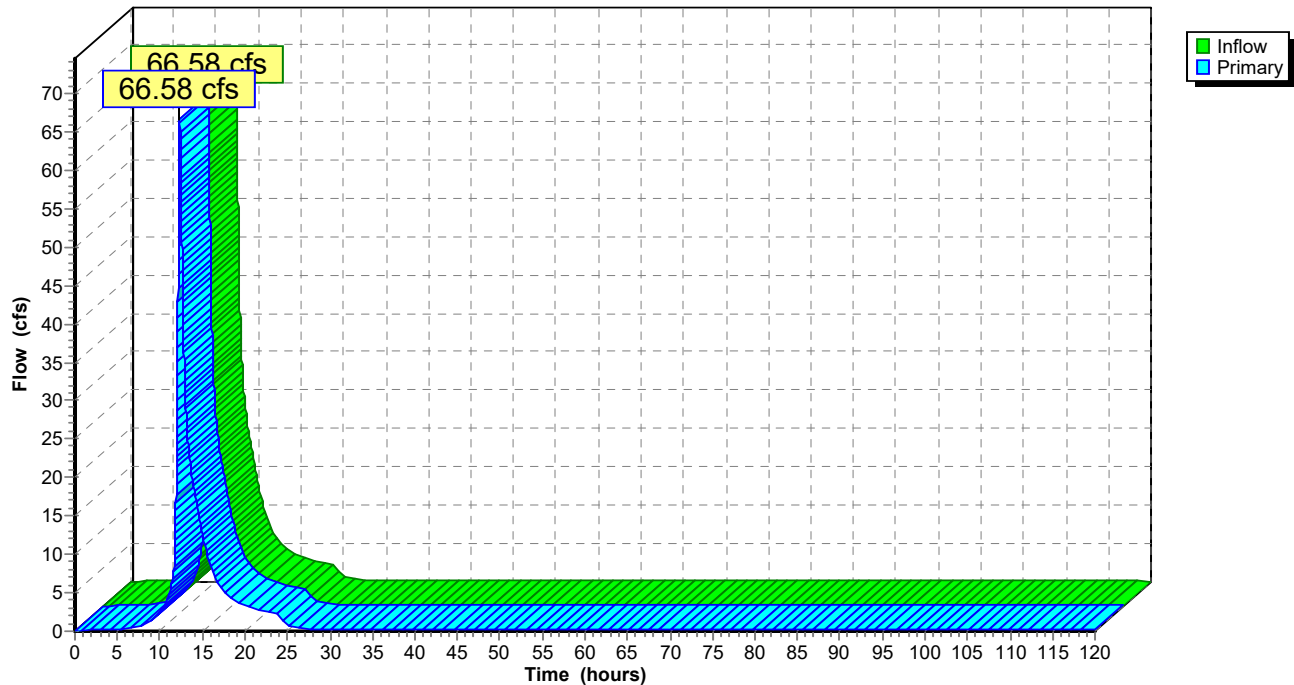
Summary for Link R1: REACH# 1

Inflow = 66.58 cfs @ 12.32 hrs, Volume= 14.248 af
 Primary = 66.58 cfs @ 12.33 hrs, Volume= 14.248 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R1: REACH# 1

Hydrograph



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Hydrograph for Link R1: REACH# 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.23	0.00	0.23
2.00	0.13	0.00	0.13	108.00	0.23	0.00	0.23
4.00	0.23	0.00	0.22	110.00	0.22	0.00	0.22
6.00	0.28	0.00	0.28	112.00	0.22	0.00	0.22
8.00	0.78	0.00	0.77	114.00	0.21	0.00	0.21
10.00	2.56	0.00	2.55	116.00	0.21	0.00	0.21
12.00	26.39	0.00	25.37	118.00	0.21	0.00	0.21
14.00	18.47	0.00	18.54	120.00	0.00	0.00	0.20
16.00	8.28	0.00	8.32				
18.00	4.65	0.00	4.66				
20.00	3.36	0.00	3.36				
22.00	2.72	0.00	2.72				
24.00	2.20	0.00	2.20				
26.00	0.48	0.00	0.48				
28.00	0.32	0.00	0.32				
30.00	0.32	0.00	0.32				
32.00	0.32	0.00	0.32				
34.00	0.31	0.00	0.31				
36.00	0.31	0.00	0.31				
38.00	0.31	0.00	0.31				
40.00	0.31	0.00	0.31				
42.00	0.31	0.00	0.31				
44.00	0.31	0.00	0.31				
46.00	0.30	0.00	0.30				
48.00	0.30	0.00	0.30				
50.00	0.30	0.00	0.30				
52.00	0.30	0.00	0.30				
54.00	0.30	0.00	0.30				
56.00	0.29	0.00	0.29				
58.00	0.29	0.00	0.29				
60.00	0.29	0.00	0.29				
62.00	0.29	0.00	0.29				
64.00	0.28	0.00	0.28				
66.00	0.28	0.00	0.28				
68.00	0.28	0.00	0.28				
70.00	0.28	0.00	0.28				
72.00	0.28	0.00	0.28				
74.00	0.27	0.00	0.27				
76.00	0.27	0.00	0.27				
78.00	0.27	0.00	0.27				
80.00	0.27	0.00	0.27				
82.00	0.26	0.00	0.26				
84.00	0.26	0.00	0.26				
86.00	0.26	0.00	0.26				
88.00	0.26	0.00	0.26				
90.00	0.25	0.00	0.25				
92.00	0.25	0.00	0.25				
94.00	0.25	0.00	0.25				
96.00	0.24	0.00	0.24				
98.00	0.24	0.00	0.24				
100.00	0.24	0.00	0.24				
102.00	0.24	0.00	0.24				
104.00	0.23	0.00	0.23				

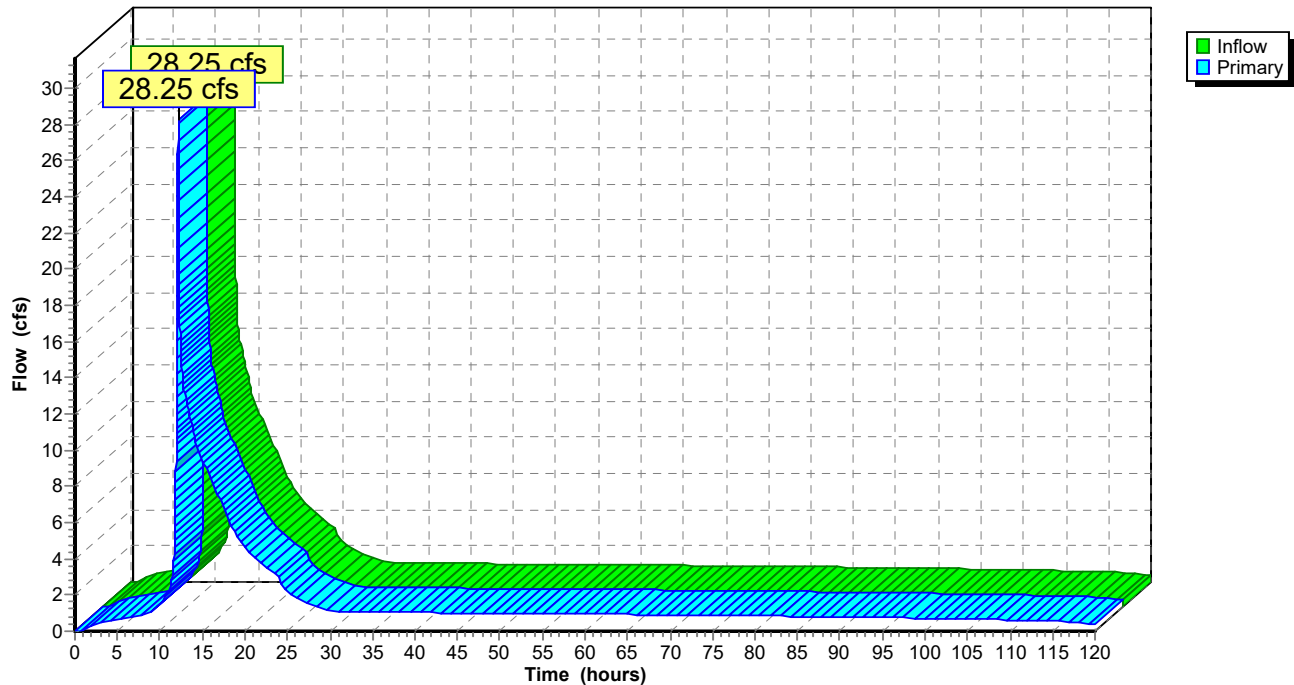
Summary for Link R2: REACH# 2

Inflow = 28.25 cfs @ 12.14 hrs, Volume= 15.443 af
 Primary = 28.25 cfs @ 12.15 hrs, Volume= 15.443 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R2: REACH# 2

Hydrograph



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Hydrograph for Link R2: REACH# 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.66	0.00	0.66
2.00	0.32	0.00	0.31	108.00	0.64	0.00	0.64
4.00	0.55	0.00	0.54	110.00	0.62	0.00	0.62
6.00	0.68	0.00	0.68	112.00	0.60	0.00	0.60
8.00	0.85	0.00	0.85	114.00	0.56	0.00	0.56
10.00	1.49	0.00	1.49	116.00	0.53	0.00	0.53
12.00	14.24	0.00	13.53	118.00	0.48	0.00	0.48
14.00	10.85	0.00	10.88	120.00	0.00	0.00	0.40
16.00	8.42	0.00	8.43				
18.00	6.25	0.00	6.26				
20.00	4.65	0.00	4.65				
22.00	3.71	0.00	3.72				
24.00	3.03	0.00	3.04				
26.00	1.86	0.00	1.86				
28.00	1.40	0.00	1.40				
30.00	1.15	0.00	1.15				
32.00	1.05	0.00	1.05				
34.00	1.05	0.00	1.05				
36.00	1.04	0.00	1.04				
38.00	1.03	0.00	1.03				
40.00	1.03	0.00	1.03				
42.00	1.02	0.00	1.02				
44.00	1.01	0.00	1.01				
46.00	1.00	0.00	1.00				
48.00	1.00	0.00	1.00				
50.00	0.99	0.00	0.99				
52.00	0.98	0.00	0.98				
54.00	0.97	0.00	0.97				
56.00	0.96	0.00	0.96				
58.00	0.95	0.00	0.95				
60.00	0.94	0.00	0.94				
62.00	0.94	0.00	0.94				
64.00	0.93	0.00	0.93				
66.00	0.92	0.00	0.92				
68.00	0.91	0.00	0.91				
70.00	0.90	0.00	0.90				
72.00	0.89	0.00	0.89				
74.00	0.88	0.00	0.88				
76.00	0.87	0.00	0.87				
78.00	0.85	0.00	0.85				
80.00	0.84	0.00	0.84				
82.00	0.83	0.00	0.83				
84.00	0.82	0.00	0.82				
86.00	0.81	0.00	0.81				
88.00	0.80	0.00	0.80				
90.00	0.78	0.00	0.78				
92.00	0.77	0.00	0.77				
94.00	0.76	0.00	0.76				
96.00	0.74	0.00	0.74				
98.00	0.73	0.00	0.73				
100.00	0.71	0.00	0.71				
102.00	0.70	0.00	0.70				
104.00	0.68	0.00	0.68				

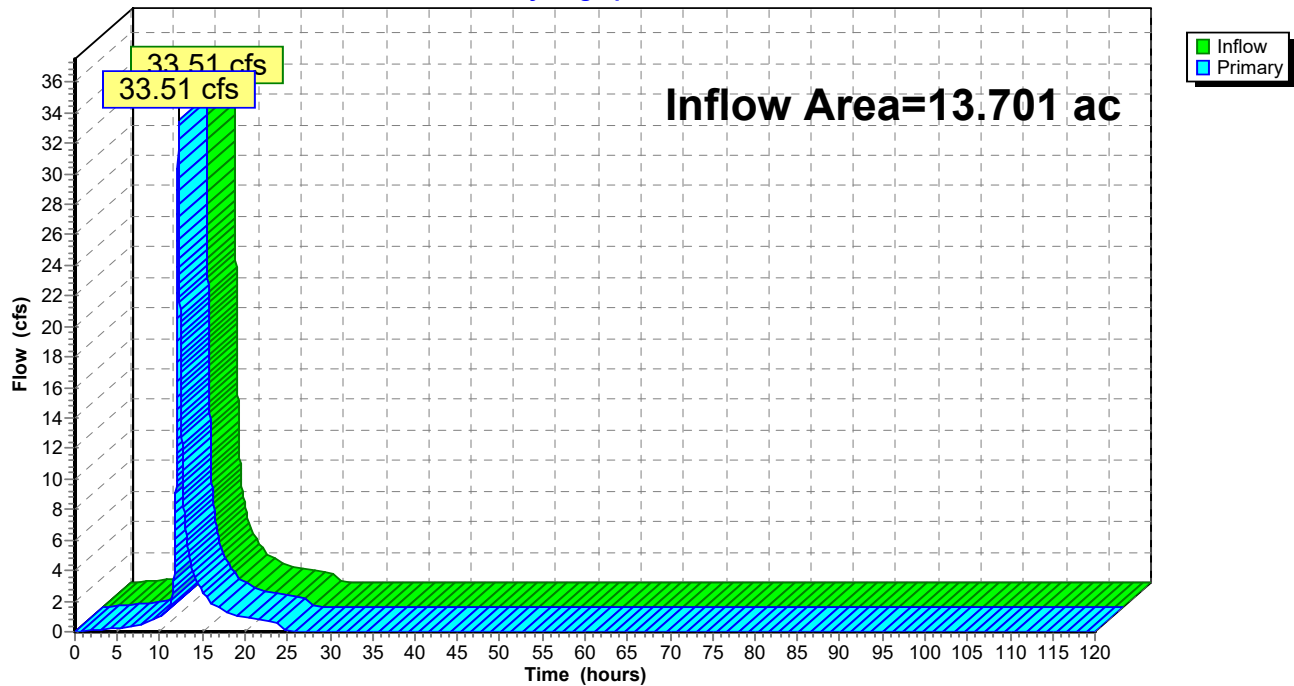
Summary for Link R3: REACH# 3

Inflow Area = 13.701 ac, 37.05% Impervious, Inflow Depth = 3.21" for 25-YEAR event
 Inflow = 33.51 cfs @ 12.15 hrs, Volume= 3.663 af
 Primary = 33.51 cfs @ 12.16 hrs, Volume= 3.663 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R3: REACH# 3

Hydrograph



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Hydrograph for Link R3: REACH# 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.00	0.00	0.00
2.00	0.10	0.00	0.10	108.00	0.00	0.00	0.00
4.00	0.21	0.00	0.21	110.00	0.00	0.00	0.00
6.00	0.30	0.00	0.30	112.00	0.00	0.00	0.00
8.00	0.51	0.00	0.51	114.00	0.00	0.00	0.00
10.00	1.00	0.00	1.00	116.00	0.00	0.00	0.00
12.00	15.43	0.00	14.56	118.00	0.00	0.00	0.00
14.00	3.77	0.00	3.79	120.00	0.00	0.00	0.00
16.00	1.94	0.00	1.95				
18.00	1.18	0.00	1.18				
20.00	0.90	0.00	0.90				
22.00	0.75	0.00	0.75				
24.00	0.60	0.00	0.60				
26.00	0.05	0.00	0.05				
28.00	0.02	0.00	0.02				
30.00	0.01	0.00	0.01				
32.00	0.01	0.00	0.01				
34.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
58.00	0.00	0.00	0.00				
60.00	0.00	0.00	0.00				
62.00	0.00	0.00	0.00				
64.00	0.00	0.00	0.00				
66.00	0.00	0.00	0.00				
68.00	0.00	0.00	0.00				
70.00	0.00	0.00	0.00				
72.00	0.00	0.00	0.00				
74.00	0.00	0.00	0.00				
76.00	0.00	0.00	0.00				
78.00	0.00	0.00	0.00				
80.00	0.00	0.00	0.00				
82.00	0.00	0.00	0.00				
84.00	0.00	0.00	0.00				
86.00	0.00	0.00	0.00				
88.00	0.00	0.00	0.00				
90.00	0.00	0.00	0.00				
92.00	0.00	0.00	0.00				
94.00	0.00	0.00	0.00				
96.00	0.00	0.00	0.00				
98.00	0.00	0.00	0.00				
100.00	0.00	0.00	0.00				
102.00	0.00	0.00	0.00				
104.00	0.00	0.00	0.00				

100-Year Storm Event for Post-Development Conditions

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
16.726	61	>75% Grass cover, Good, HSG B (DA-P3B, DA-P6 B, DA-P7B, DA-P8 B, DA-P9 B)
16.083	74	>75% Grass cover, Good, HSG C (DA-P1 B, DA-P2 B, DA-P5 B, DA-P6 B, DA-P7B)
0.044	82	Dirt roads, HSG B (DA-P5 B)
0.036	87	Dirt roads, HSG C (DA-P5 B)
17.558	98	Paved parking, HSG B (DA-P2 A, DA-P3A, DA-P6 A, DA-P7A, DA-P8 A, DA-P9 A)
22.103	98	Paved parking, HSG C (DA-P1 A, DA-P2 A, DA-P5 A, DA-P6 A, DA-P7A)
8.315	78	Row crops, straight row, Good, HSG B (DA-P5 B, DA-PB)
9.051	85	Row crops, straight row, Good, HSG C (DA-P5 B, DA-PB)
5.073	55	Woods, Good, HSG B (DA-P3B, DA-P6 B)
94.988	82	TOTAL AREA

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Runoff = 3.51 cfs @ 12.13 hrs, Volume= 0.329 af, Depth= 7.96"

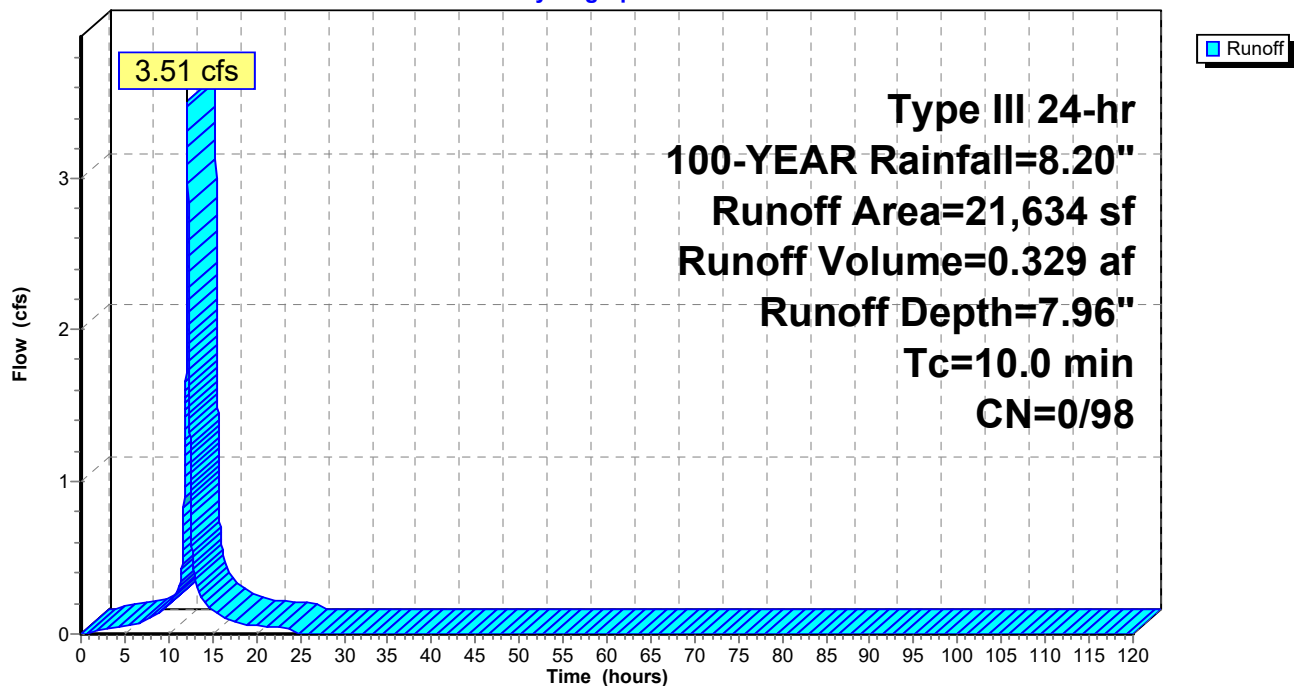
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
21,634	98	Paved parking, HSG C
21,634		100.00% Impervious Area

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

Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P1 A: DA-P1 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.29	0.05
10.00	1.55	0.00	1.33	0.19
15.00	7.00	0.00	6.77	0.16
20.00	7.85	0.00	7.61	0.05
25.00	8.20	0.00	7.96	0.00
30.00	8.20	0.00	7.96	0.00
35.00	8.20	0.00	7.96	0.00
40.00	8.20	0.00	7.96	0.00
45.00	8.20	0.00	7.96	0.00
50.00	8.20	0.00	7.96	0.00
55.00	8.20	0.00	7.96	0.00
60.00	8.20	0.00	7.96	0.00
65.00	8.20	0.00	7.96	0.00
70.00	8.20	0.00	7.96	0.00
75.00	8.20	0.00	7.96	0.00
80.00	8.20	0.00	7.96	0.00
85.00	8.20	0.00	7.96	0.00
90.00	8.20	0.00	7.96	0.00
95.00	8.20	0.00	7.96	0.00
100.00	8.20	0.00	7.96	0.00
105.00	8.20	0.00	7.96	0.00
110.00	8.20	0.00	7.96	0.00
115.00	8.20	0.00	7.96	0.00
120.00	8.20	0.00	7.96	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Runoff = 11.58 cfs @ 12.14 hrs, Volume= 0.945 af, Depth= 5.10"

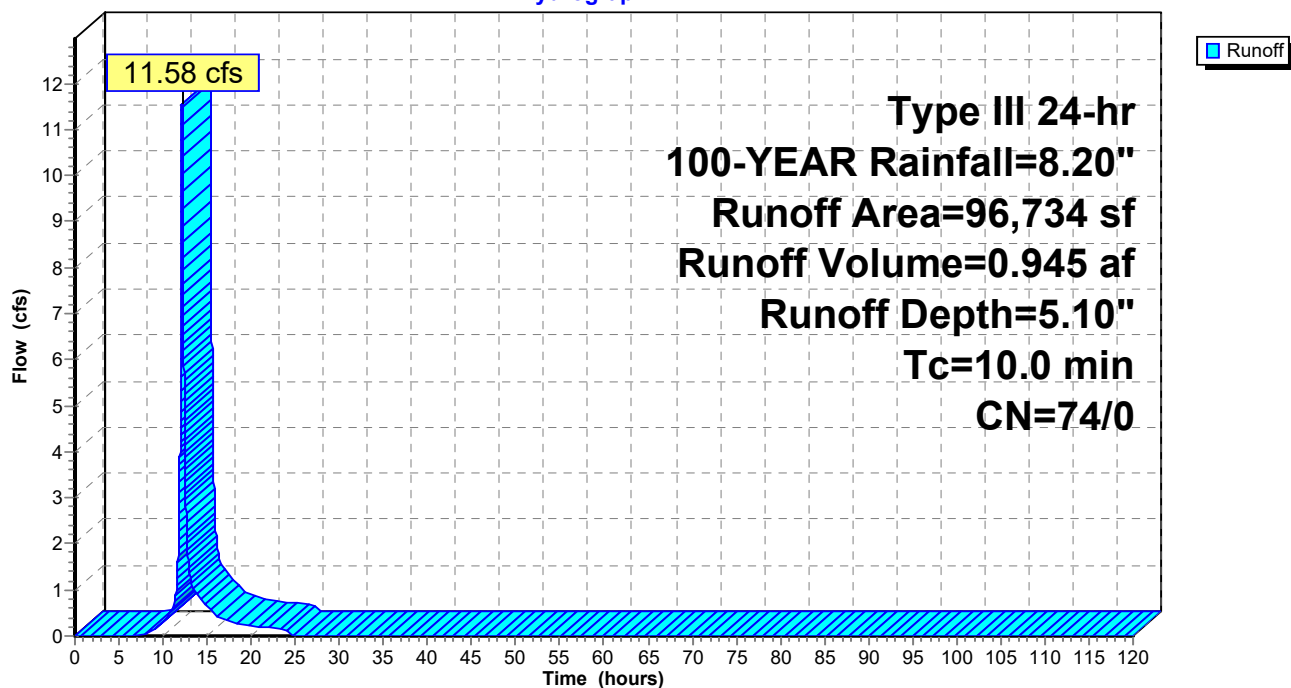
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
96,734	74	>75% Grass cover, Good, HSG C
96,734		100.00% Pervious Area

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

Subcatchment DA-P1 B: DA-P1 PERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P1 B: DA-P1 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.00	0.00
10.00	1.55	0.16	0.00	0.29
15.00	7.00	4.05	0.00	0.63
20.00	7.85	4.79	0.00	0.22
25.00	8.20	5.10	0.00	0.00
30.00	8.20	5.10	0.00	0.00
35.00	8.20	5.10	0.00	0.00
40.00	8.20	5.10	0.00	0.00
45.00	8.20	5.10	0.00	0.00
50.00	8.20	5.10	0.00	0.00
55.00	8.20	5.10	0.00	0.00
60.00	8.20	5.10	0.00	0.00
65.00	8.20	5.10	0.00	0.00
70.00	8.20	5.10	0.00	0.00
75.00	8.20	5.10	0.00	0.00
80.00	8.20	5.10	0.00	0.00
85.00	8.20	5.10	0.00	0.00
90.00	8.20	5.10	0.00	0.00
95.00	8.20	5.10	0.00	0.00
100.00	8.20	5.10	0.00	0.00
105.00	8.20	5.10	0.00	0.00
110.00	8.20	5.10	0.00	0.00
115.00	8.20	5.10	0.00	0.00
120.00	8.20	5.10	0.00	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Runoff = 10.28 cfs @ 12.13 hrs, Volume= 0.965 af, Depth= 7.96"

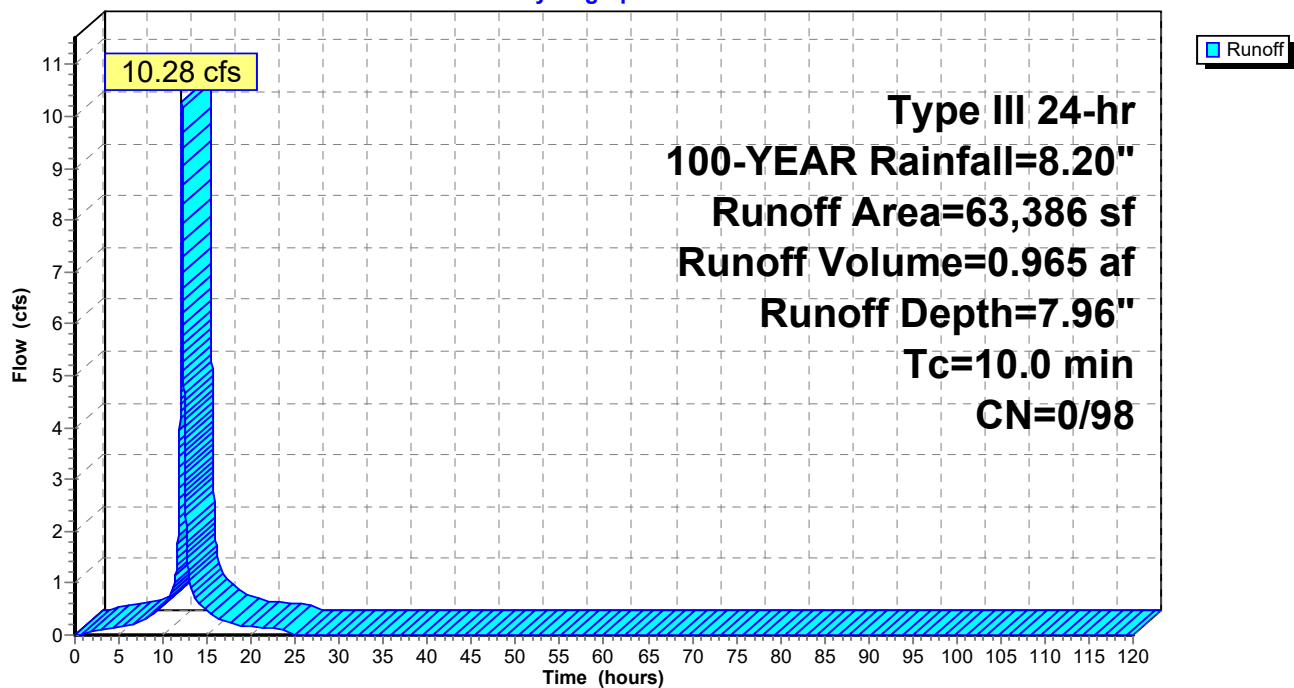
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
4,912	98	Paved parking, HSG B
58,474	98	Paved parking, HSG C
63,386	98	Weighted Average
63,386		100.00% Impervious Area

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

Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P2 A: DA-P2 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.29	0.15
10.00	1.55	0.00	1.33	0.56
15.00	7.00	0.00	6.77	0.47
20.00	7.85	0.00	7.61	0.16
25.00	8.20	0.00	7.96	0.00
30.00	8.20	0.00	7.96	0.00
35.00	8.20	0.00	7.96	0.00
40.00	8.20	0.00	7.96	0.00
45.00	8.20	0.00	7.96	0.00
50.00	8.20	0.00	7.96	0.00
55.00	8.20	0.00	7.96	0.00
60.00	8.20	0.00	7.96	0.00
65.00	8.20	0.00	7.96	0.00
70.00	8.20	0.00	7.96	0.00
75.00	8.20	0.00	7.96	0.00
80.00	8.20	0.00	7.96	0.00
85.00	8.20	0.00	7.96	0.00
90.00	8.20	0.00	7.96	0.00
95.00	8.20	0.00	7.96	0.00
100.00	8.20	0.00	7.96	0.00
105.00	8.20	0.00	7.96	0.00
110.00	8.20	0.00	7.96	0.00
115.00	8.20	0.00	7.96	0.00
120.00	8.20	0.00	7.96	0.00

PROPOSED 2022-04

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Runoff = 29.61 cfs @ 12.14 hrs, Volume= 2.415 af, Depth= 5.10"

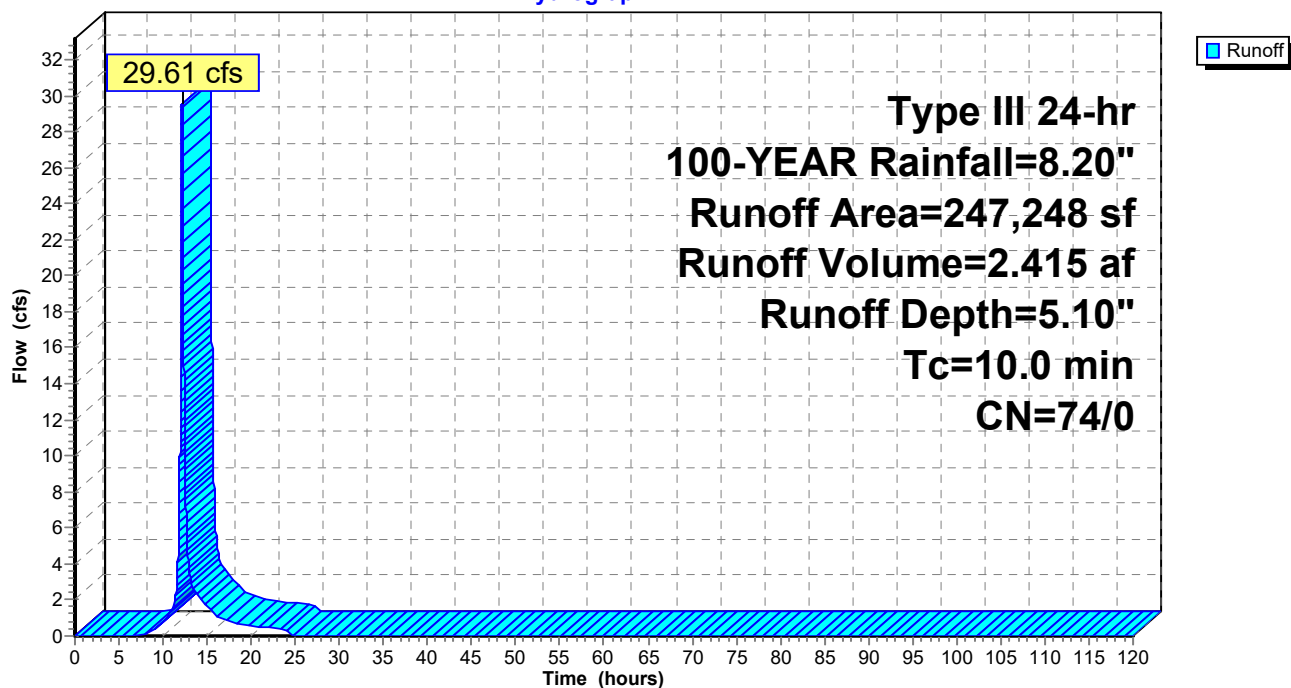
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
247,248	74	>75% Grass cover, Good, HSG C
247,248		100.00% Pervious Area

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

Subcatchment DA-P2 B: DA-P2 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 100-YEAR Rainfall=8.20"*

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Hydrograph for Subcatchment DA-P2 B: DA-P2 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.00	0.00
10.00	1.55	0.16	0.00	0.74
15.00	7.00	4.05	0.00	1.60
20.00	7.85	4.79	0.00	0.55
25.00	8.20	5.10	0.00	0.00
30.00	8.20	5.10	0.00	0.00
35.00	8.20	5.10	0.00	0.00
40.00	8.20	5.10	0.00	0.00
45.00	8.20	5.10	0.00	0.00
50.00	8.20	5.10	0.00	0.00
55.00	8.20	5.10	0.00	0.00
60.00	8.20	5.10	0.00	0.00
65.00	8.20	5.10	0.00	0.00
70.00	8.20	5.10	0.00	0.00
75.00	8.20	5.10	0.00	0.00
80.00	8.20	5.10	0.00	0.00
85.00	8.20	5.10	0.00	0.00
90.00	8.20	5.10	0.00	0.00
95.00	8.20	5.10	0.00	0.00
100.00	8.20	5.10	0.00	0.00
105.00	8.20	5.10	0.00	0.00
110.00	8.20	5.10	0.00	0.00
115.00	8.20	5.10	0.00	0.00
120.00	8.20	5.10	0.00	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Runoff = 24.48 cfs @ 12.13 hrs, Volume= 2.298 af, Depth= 7.96"

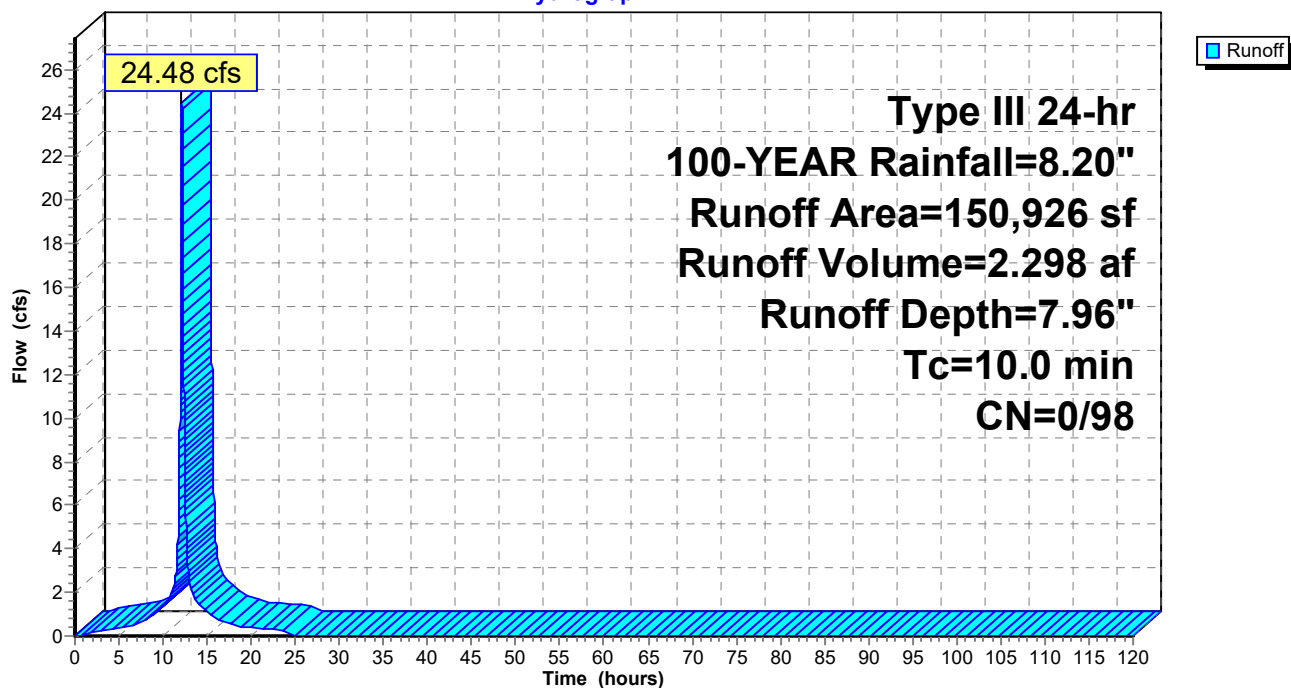
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
150,926	98	Paved parking, HSG B
150,926		100.00% Impervious Area

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

Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 100-YEAR Rainfall=8.20"*

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Hydrograph for Subcatchment DA-P3A: DA-P3 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.29	0.36
10.00	1.55	0.00	1.33	1.33
15.00	7.00	0.00	6.77	1.12
20.00	7.85	0.00	7.61	0.38
25.00	8.20	0.00	7.96	0.00
30.00	8.20	0.00	7.96	0.00
35.00	8.20	0.00	7.96	0.00
40.00	8.20	0.00	7.96	0.00
45.00	8.20	0.00	7.96	0.00
50.00	8.20	0.00	7.96	0.00
55.00	8.20	0.00	7.96	0.00
60.00	8.20	0.00	7.96	0.00
65.00	8.20	0.00	7.96	0.00
70.00	8.20	0.00	7.96	0.00
75.00	8.20	0.00	7.96	0.00
80.00	8.20	0.00	7.96	0.00
85.00	8.20	0.00	7.96	0.00
90.00	8.20	0.00	7.96	0.00
95.00	8.20	0.00	7.96	0.00
100.00	8.20	0.00	7.96	0.00
105.00	8.20	0.00	7.96	0.00
110.00	8.20	0.00	7.96	0.00
115.00	8.20	0.00	7.96	0.00
120.00	8.20	0.00	7.96	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P3B: DA-P3 PERVIOUS

Runoff = 23.45 cfs @ 12.15 hrs, Volume= 1.968 af, Depth= 3.26"

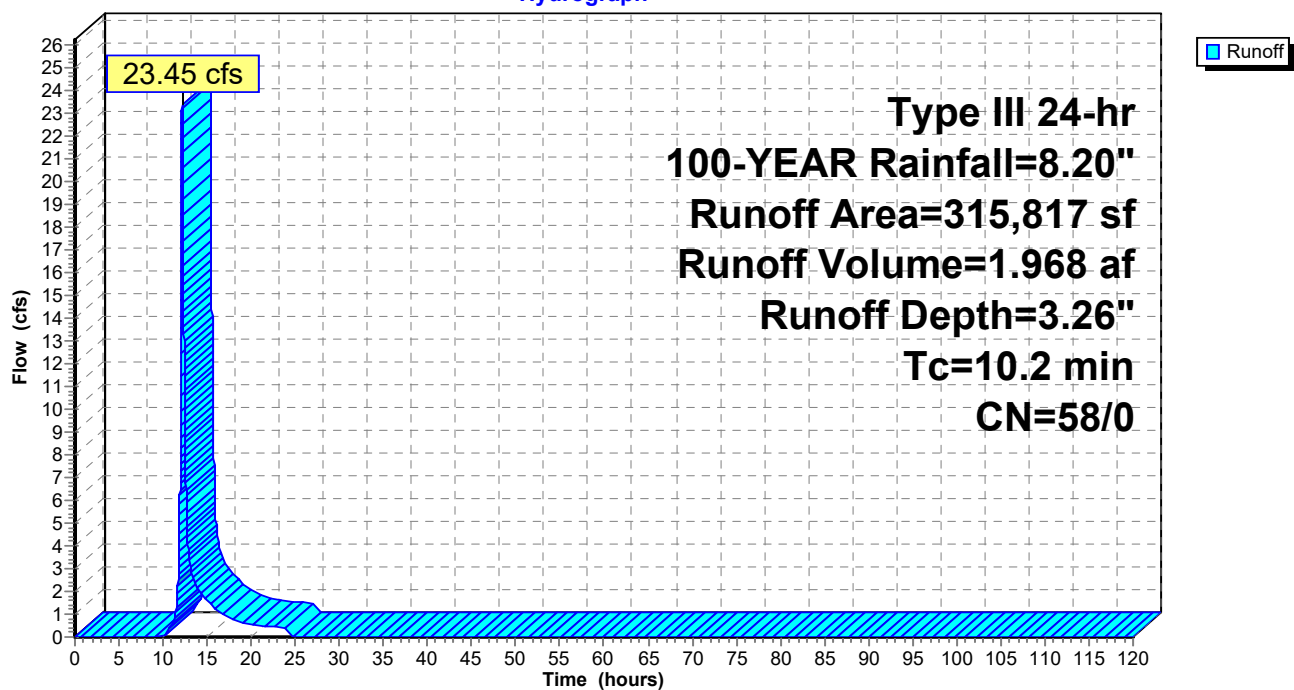
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
176,919	61	>75% Grass cover, Good, HSG B
138,898	55	Woods, Good, HSG B
315,817	58	Weighted Average
315,817		100.00% Pervious Area

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

Subcatchment DA-P3B: DA-P3 PERVIOUS

Hydrograph



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Type III 24-hr 100-YEAR Rainfall=8.20"

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Hydrograph for Subcatchment DA-P3B: DA-P3 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.00	0.00
10.00	1.55	0.00	0.00	0.03
15.00	7.00	2.41	0.00	1.60
20.00	7.85	3.00	0.00	0.57
25.00	8.20	3.26	0.00	0.00
30.00	8.20	3.26	0.00	0.00
35.00	8.20	3.26	0.00	0.00
40.00	8.20	3.26	0.00	0.00
45.00	8.20	3.26	0.00	0.00
50.00	8.20	3.26	0.00	0.00
55.00	8.20	3.26	0.00	0.00
60.00	8.20	3.26	0.00	0.00
65.00	8.20	3.26	0.00	0.00
70.00	8.20	3.26	0.00	0.00
75.00	8.20	3.26	0.00	0.00
80.00	8.20	3.26	0.00	0.00
85.00	8.20	3.26	0.00	0.00
90.00	8.20	3.26	0.00	0.00
95.00	8.20	3.26	0.00	0.00
100.00	8.20	3.26	0.00	0.00
105.00	8.20	3.26	0.00	0.00
110.00	8.20	3.26	0.00	0.00
115.00	8.20	3.26	0.00	0.00
120.00	8.20	3.26	0.00	0.00

Summary for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Runoff = 2.95 cfs @ 12.13 hrs, Volume= 0.277 af, Depth= 7.96"

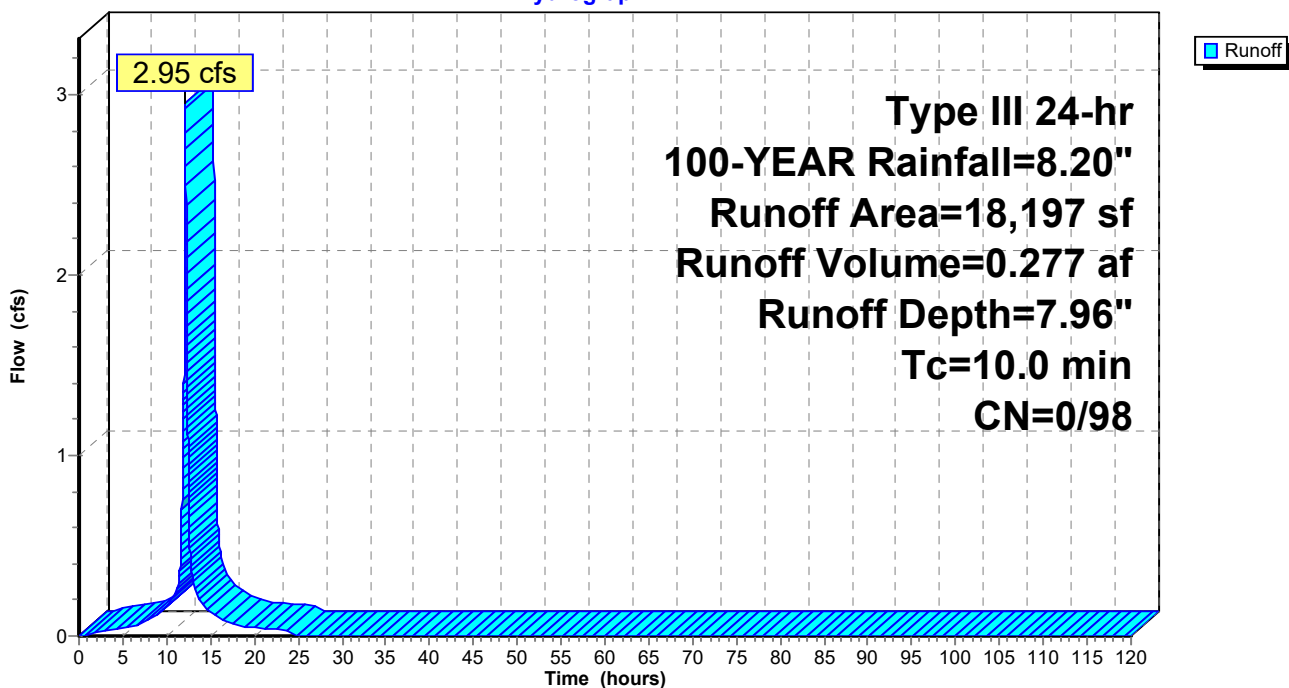
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
18,197	98	Paved parking, HSG C
18,197		100.00% Impervious Area

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

Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P5 A: DA-P5 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.29	0.04
10.00	1.55	0.00	1.33	0.16
15.00	7.00	0.00	6.77	0.14
20.00	7.85	0.00	7.61	0.05
25.00	8.20	0.00	7.96	0.00
30.00	8.20	0.00	7.96	0.00
35.00	8.20	0.00	7.96	0.00
40.00	8.20	0.00	7.96	0.00
45.00	8.20	0.00	7.96	0.00
50.00	8.20	0.00	7.96	0.00
55.00	8.20	0.00	7.96	0.00
60.00	8.20	0.00	7.96	0.00
65.00	8.20	0.00	7.96	0.00
70.00	8.20	0.00	7.96	0.00
75.00	8.20	0.00	7.96	0.00
80.00	8.20	0.00	7.96	0.00
85.00	8.20	0.00	7.96	0.00
90.00	8.20	0.00	7.96	0.00
95.00	8.20	0.00	7.96	0.00
100.00	8.20	0.00	7.96	0.00
105.00	8.20	0.00	7.96	0.00
110.00	8.20	0.00	7.96	0.00
115.00	8.20	0.00	7.96	0.00
120.00	8.20	0.00	7.96	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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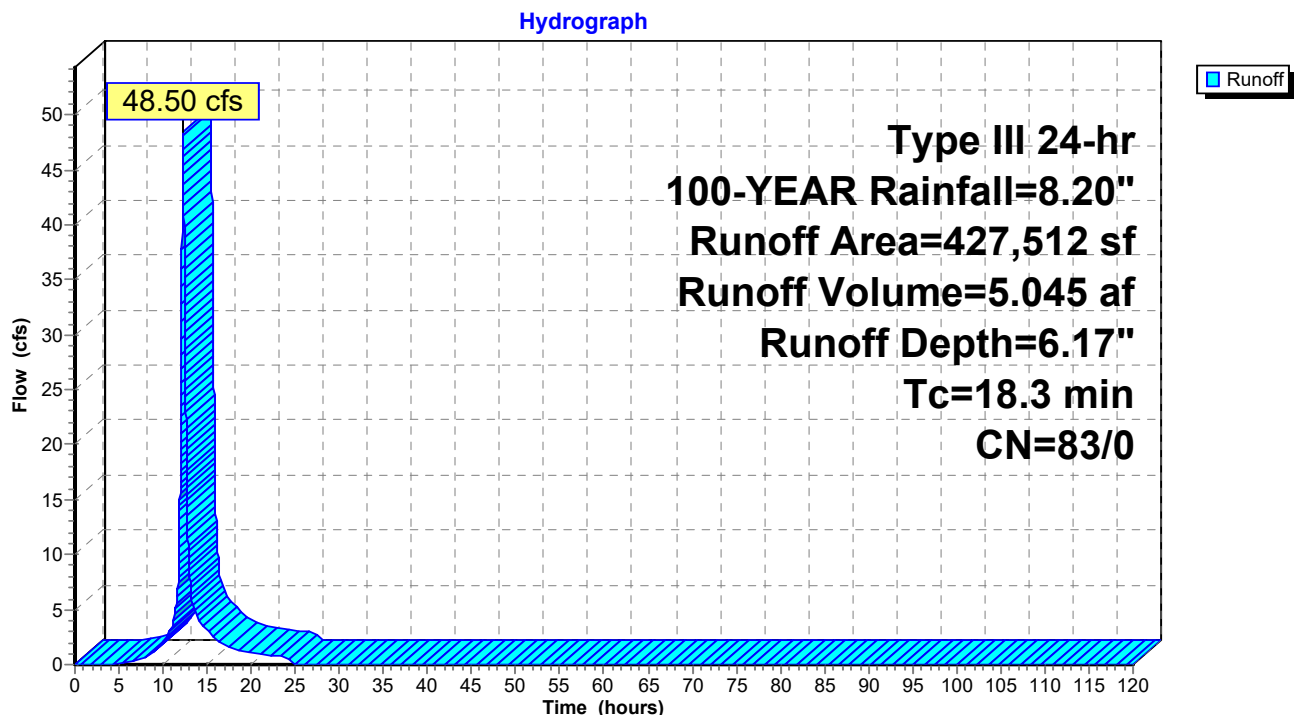
Summary for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Runoff = 48.50 cfs @ 12.24 hrs, Volume= 5.045 af, Depth= 6.17"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
1,902	82	Dirt roads, HSG B
1,547	87	Dirt roads, HSG C
27,561	74	>75% Grass cover, Good, HSG C
101,474	78	Row crops, straight row, Good, HSG B
295,028	85	Row crops, straight row, Good, HSG C
427,512	83	Weighted Average
427,512		100.00% Pervious Area

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

Subcatchment DA-P5 B: DA-P5 PERVIOUS

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Hydrograph for Subcatchment DA-P5 B: DA-P5 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.00	0.03
10.00	1.55	0.41	0.00	2.07
15.00	7.00	5.03	0.00	3.12
20.00	7.85	5.83	0.00	1.04
25.00	8.20	6.17	0.00	0.00
30.00	8.20	6.17	0.00	0.00
35.00	8.20	6.17	0.00	0.00
40.00	8.20	6.17	0.00	0.00
45.00	8.20	6.17	0.00	0.00
50.00	8.20	6.17	0.00	0.00
55.00	8.20	6.17	0.00	0.00
60.00	8.20	6.17	0.00	0.00
65.00	8.20	6.17	0.00	0.00
70.00	8.20	6.17	0.00	0.00
75.00	8.20	6.17	0.00	0.00
80.00	8.20	6.17	0.00	0.00
85.00	8.20	6.17	0.00	0.00
90.00	8.20	6.17	0.00	0.00
95.00	8.20	6.17	0.00	0.00
100.00	8.20	6.17	0.00	0.00
105.00	8.20	6.17	0.00	0.00
110.00	8.20	6.17	0.00	0.00
115.00	8.20	6.17	0.00	0.00
120.00	8.20	6.17	0.00	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Runoff = 63.96 cfs @ 12.13 hrs, Volume= 6.004 af, Depth= 7.96"

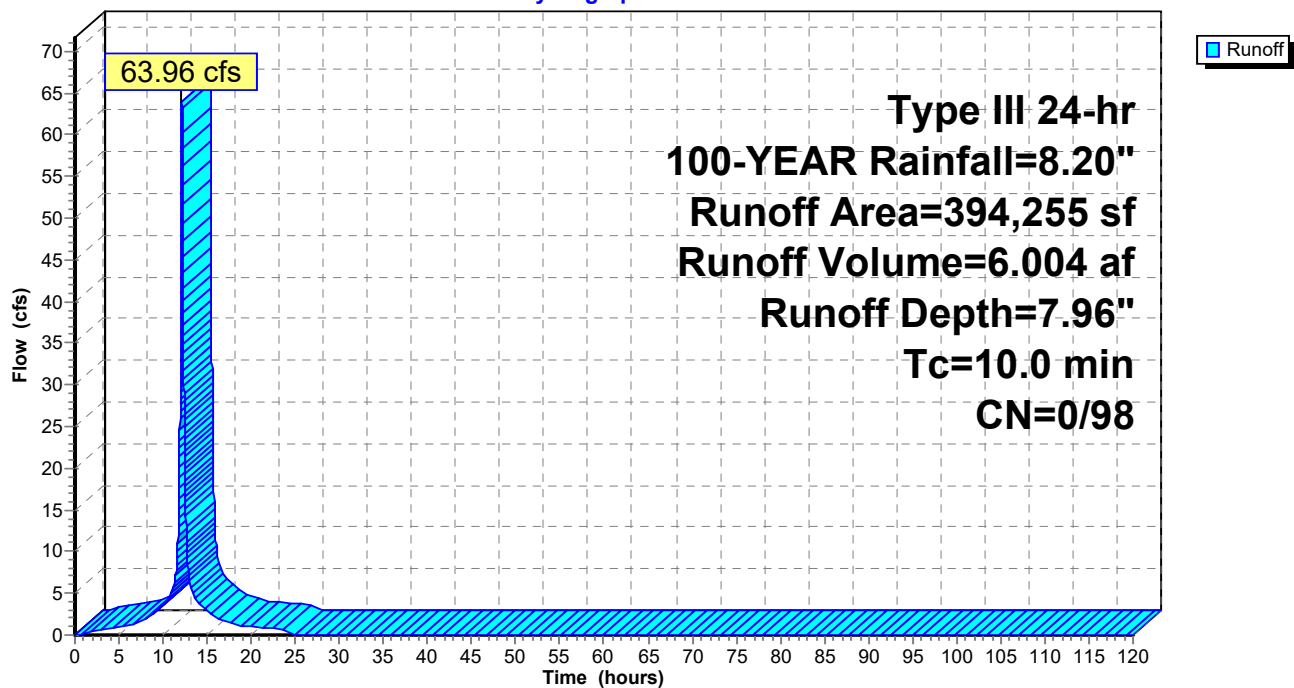
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
139,105	98	Paved parking, HSG B
255,150	98	Paved parking, HSG C
394,255	98	Weighted Average
394,255		100.00% Impervious Area

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

Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 100-YEAR Rainfall=8.20"*

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Hydrograph for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.29	0.95
10.00	1.55	0.00	1.33	3.48
15.00	7.00	0.00	6.77	2.94
20.00	7.85	0.00	7.61	0.99
25.00	8.20	0.00	7.96	0.00
30.00	8.20	0.00	7.96	0.00
35.00	8.20	0.00	7.96	0.00
40.00	8.20	0.00	7.96	0.00
45.00	8.20	0.00	7.96	0.00
50.00	8.20	0.00	7.96	0.00
55.00	8.20	0.00	7.96	0.00
60.00	8.20	0.00	7.96	0.00
65.00	8.20	0.00	7.96	0.00
70.00	8.20	0.00	7.96	0.00
75.00	8.20	0.00	7.96	0.00
80.00	8.20	0.00	7.96	0.00
85.00	8.20	0.00	7.96	0.00
90.00	8.20	0.00	7.96	0.00
95.00	8.20	0.00	7.96	0.00
100.00	8.20	0.00	7.96	0.00
105.00	8.20	0.00	7.96	0.00
110.00	8.20	0.00	7.96	0.00
115.00	8.20	0.00	7.96	0.00
120.00	8.20	0.00	7.96	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Runoff = 42.85 cfs @ 12.14 hrs, Volume= 3.511 af, Depth= 3.83"

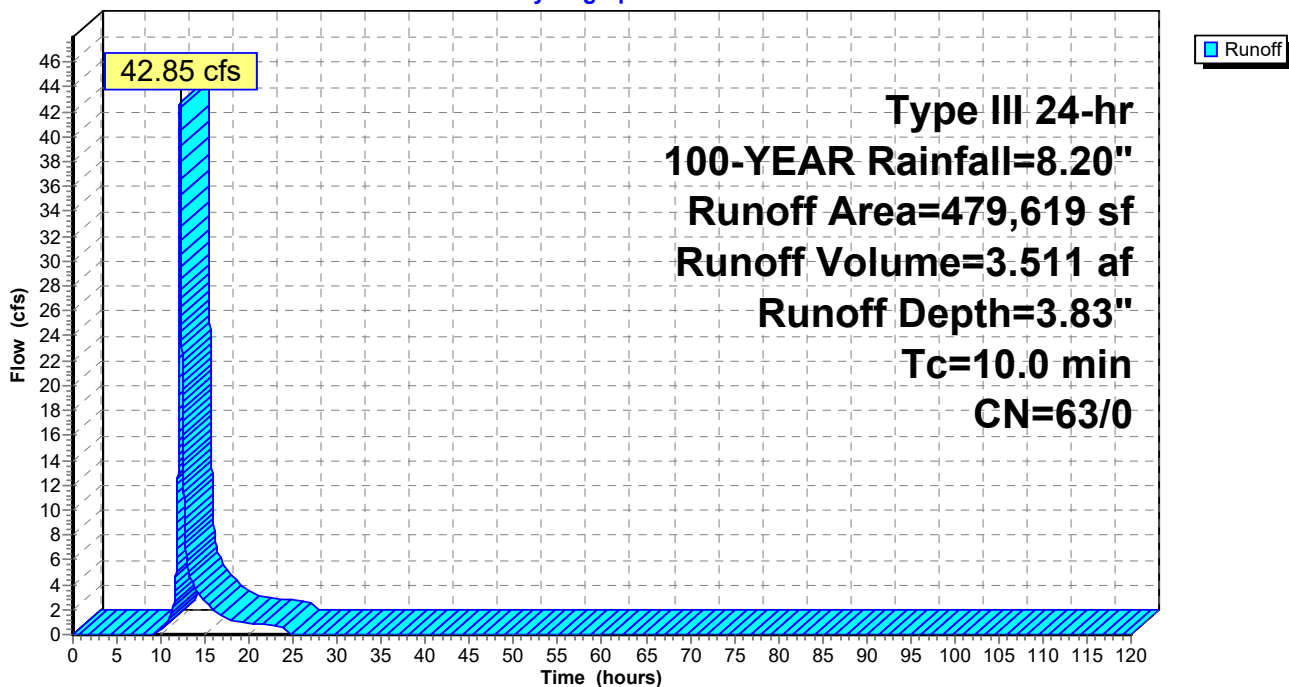
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
285,540	61	>75% Grass cover, Good, HSG B
112,000	74	>75% Grass cover, Good, HSG C
82,079	55	Woods, Good, HSG B
479,619	63	Weighted Average
479,619		100.00% Pervious Area

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

Subcatchment DA-P6 B: DA-P6 PERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P6 B: DA-P6 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.00	0.00
10.00	1.55	0.02	0.00	0.43
15.00	7.00	2.90	0.00	2.67
20.00	7.85	3.55	0.00	0.94
25.00	8.20	3.83	0.00	0.00
30.00	8.20	3.83	0.00	0.00
35.00	8.20	3.83	0.00	0.00
40.00	8.20	3.83	0.00	0.00
45.00	8.20	3.83	0.00	0.00
50.00	8.20	3.83	0.00	0.00
55.00	8.20	3.83	0.00	0.00
60.00	8.20	3.83	0.00	0.00
65.00	8.20	3.83	0.00	0.00
70.00	8.20	3.83	0.00	0.00
75.00	8.20	3.83	0.00	0.00
80.00	8.20	3.83	0.00	0.00
85.00	8.20	3.83	0.00	0.00
90.00	8.20	3.83	0.00	0.00
95.00	8.20	3.83	0.00	0.00
100.00	8.20	3.83	0.00	0.00
105.00	8.20	3.83	0.00	0.00
110.00	8.20	3.83	0.00	0.00
115.00	8.20	3.83	0.00	0.00
120.00	8.20	3.83	0.00	0.00

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Summary for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Runoff = 136.55 cfs @ 12.13 hrs, Volume= 12.818 af, Depth= 7.96"

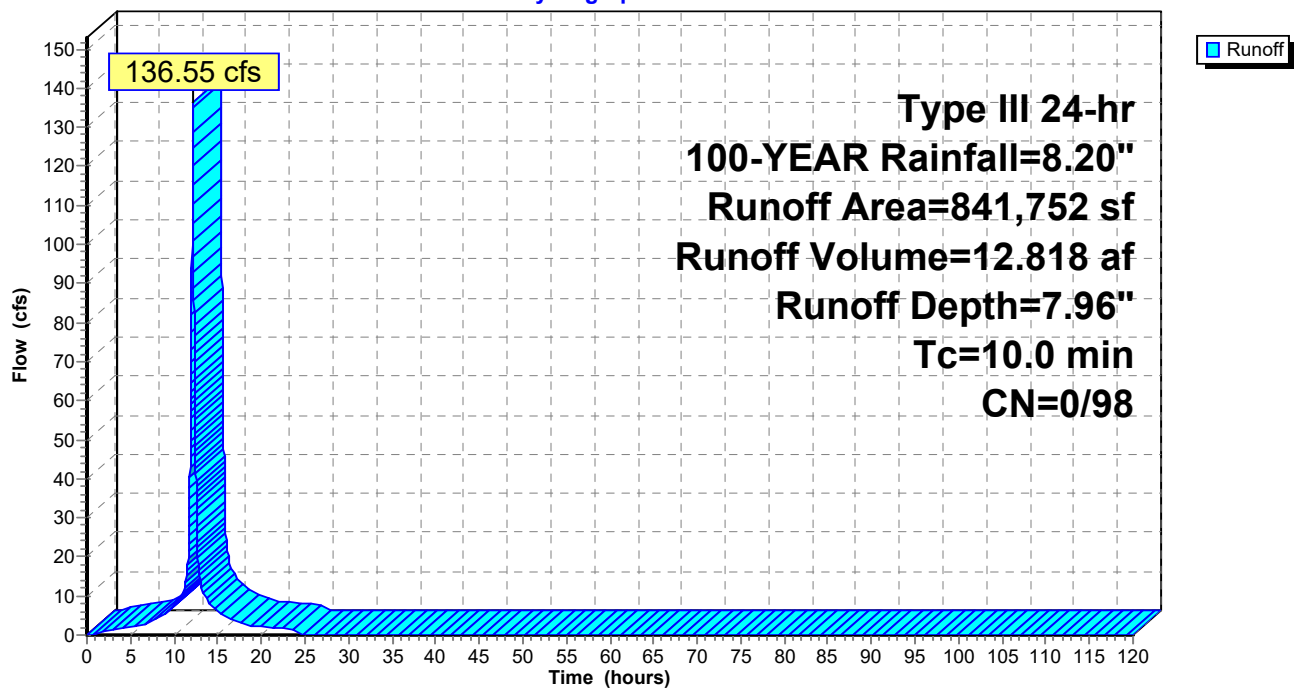
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
232,402	98	Paved parking, HSG B
609,350	98	Paved parking, HSG C
841,752	98	Weighted Average
841,752		100.00% Impervious Area

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

Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.29	2.02
10.00	1.55	0.00	1.33	7.43
15.00	7.00	0.00	6.77	6.27
20.00	7.85	0.00	7.61	2.11
25.00	8.20	0.00	7.96	0.00
30.00	8.20	0.00	7.96	0.00
35.00	8.20	0.00	7.96	0.00
40.00	8.20	0.00	7.96	0.00
45.00	8.20	0.00	7.96	0.00
50.00	8.20	0.00	7.96	0.00
55.00	8.20	0.00	7.96	0.00
60.00	8.20	0.00	7.96	0.00
65.00	8.20	0.00	7.96	0.00
70.00	8.20	0.00	7.96	0.00
75.00	8.20	0.00	7.96	0.00
80.00	8.20	0.00	7.96	0.00
85.00	8.20	0.00	7.96	0.00
90.00	8.20	0.00	7.96	0.00
95.00	8.20	0.00	7.96	0.00
100.00	8.20	0.00	7.96	0.00
105.00	8.20	0.00	7.96	0.00
110.00	8.20	0.00	7.96	0.00
115.00	8.20	0.00	7.96	0.00
120.00	8.20	0.00	7.96	0.00

PROPOSED 2022-04

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P7B: DA-P7 PERVIOUS

Runoff = 39.21 cfs @ 12.14 hrs, Volume= 3.191 af, Depth= 4.40"

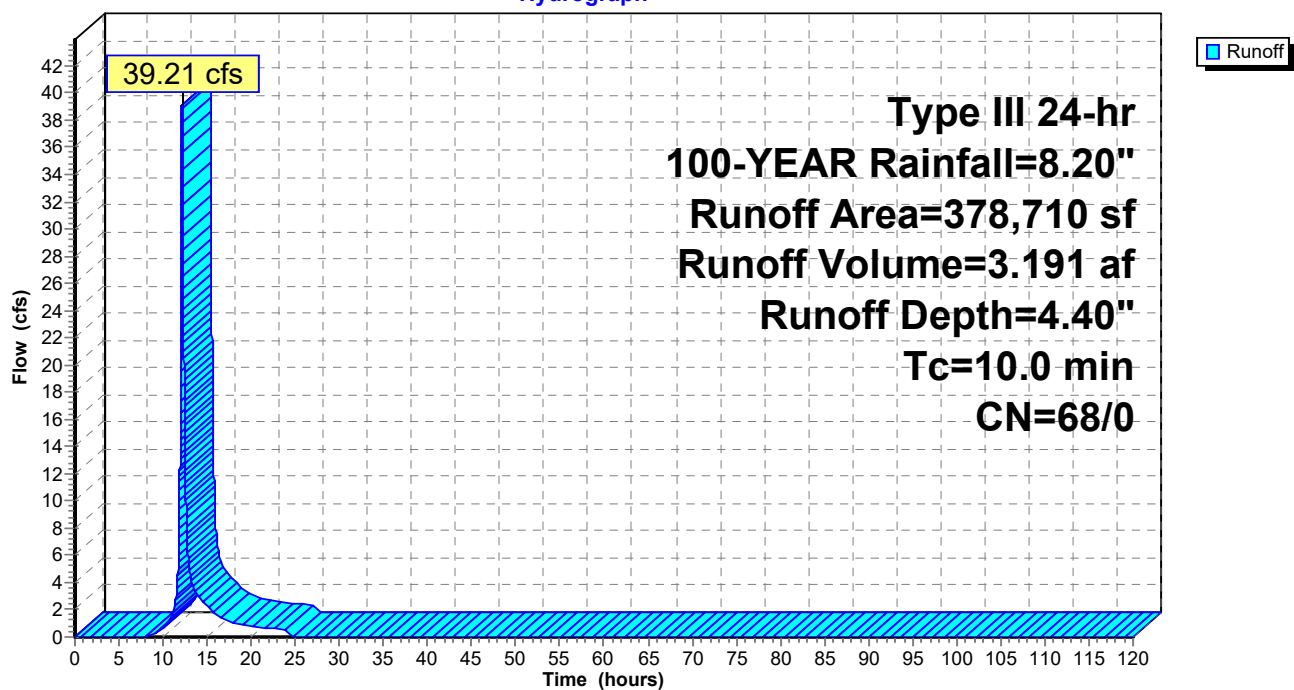
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
161,684	61	>75% Grass cover, Good, HSG B
217,026	74	>75% Grass cover, Good, HSG C
378,710	68	Weighted Average
378,710		100.00% Pervious Area

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

Subcatchment DA-P7B: DA-P7 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 100-YEAR Rainfall=8.20"*

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Hydrograph for Subcatchment DA-P7B: DA-P7 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.00	0.00
10.00	1.55	0.07	0.00	0.67
15.00	7.00	3.41	0.00	2.28
20.00	7.85	4.11	0.00	0.79
25.00	8.20	4.40	0.00	0.00
30.00	8.20	4.40	0.00	0.00
35.00	8.20	4.40	0.00	0.00
40.00	8.20	4.40	0.00	0.00
45.00	8.20	4.40	0.00	0.00
50.00	8.20	4.40	0.00	0.00
55.00	8.20	4.40	0.00	0.00
60.00	8.20	4.40	0.00	0.00
65.00	8.20	4.40	0.00	0.00
70.00	8.20	4.40	0.00	0.00
75.00	8.20	4.40	0.00	0.00
80.00	8.20	4.40	0.00	0.00
85.00	8.20	4.40	0.00	0.00
90.00	8.20	4.40	0.00	0.00
95.00	8.20	4.40	0.00	0.00
100.00	8.20	4.40	0.00	0.00
105.00	8.20	4.40	0.00	0.00
110.00	8.20	4.40	0.00	0.00
115.00	8.20	4.40	0.00	0.00
120.00	8.20	4.40	0.00	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Runoff = 11.38 cfs @ 12.13 hrs, Volume= 1.069 af, Depth= 7.96"

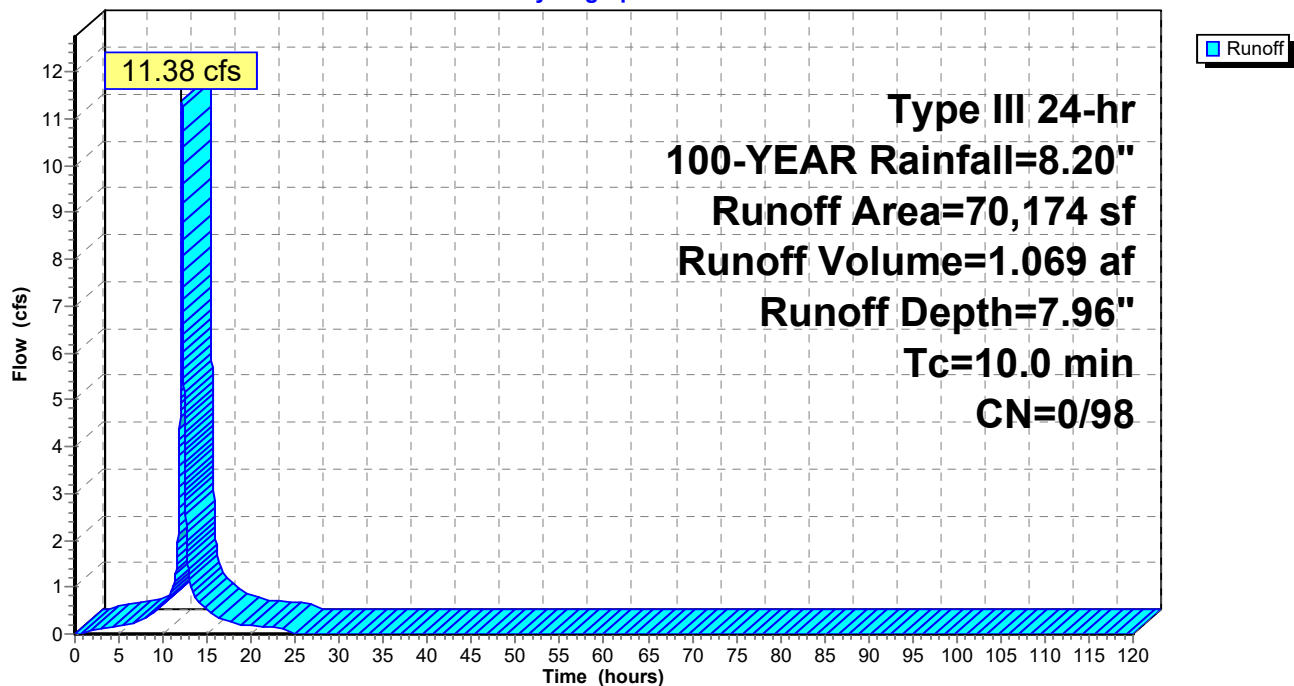
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
70,174	98	Paved parking, HSG B
70,174		100.00% Impervious Area

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

Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 100-YEAR Rainfall=8.20"*

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Hydrograph for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.29	0.17
10.00	1.55	0.00	1.33	0.62
15.00	7.00	0.00	6.77	0.52
20.00	7.85	0.00	7.61	0.18
25.00	8.20	0.00	7.96	0.00
30.00	8.20	0.00	7.96	0.00
35.00	8.20	0.00	7.96	0.00
40.00	8.20	0.00	7.96	0.00
45.00	8.20	0.00	7.96	0.00
50.00	8.20	0.00	7.96	0.00
55.00	8.20	0.00	7.96	0.00
60.00	8.20	0.00	7.96	0.00
65.00	8.20	0.00	7.96	0.00
70.00	8.20	0.00	7.96	0.00
75.00	8.20	0.00	7.96	0.00
80.00	8.20	0.00	7.96	0.00
85.00	8.20	0.00	7.96	0.00
90.00	8.20	0.00	7.96	0.00
95.00	8.20	0.00	7.96	0.00
100.00	8.20	0.00	7.96	0.00
105.00	8.20	0.00	7.96	0.00
110.00	8.20	0.00	7.96	0.00
115.00	8.20	0.00	7.96	0.00
120.00	8.20	0.00	7.96	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Runoff = 5.00 cfs @ 12.14 hrs, Volume= 0.412 af, Depth= 3.60"

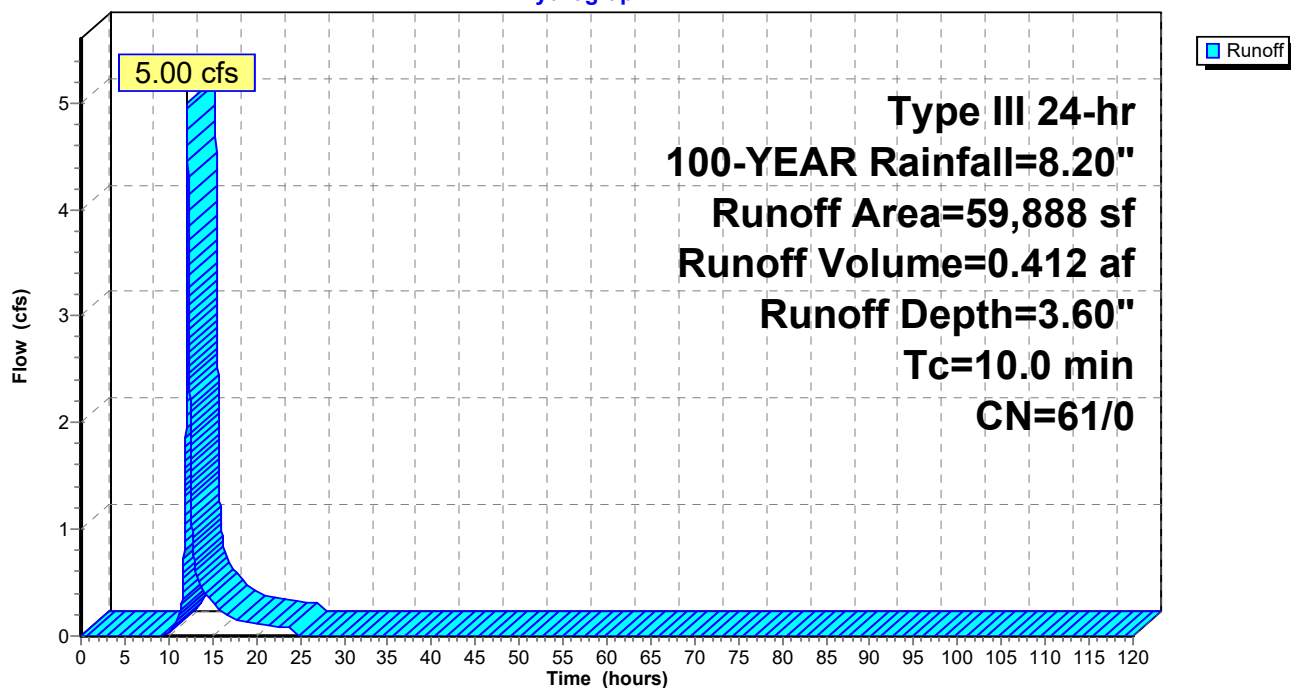
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
59,888	61	>75% Grass cover, Good, HSG B
59,888		100.00% Pervious Area

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

Subcatchment DA-P8 B: DA-P8 PERVIOUS

Hydrograph



PROPOSED 2022-04*Type III 24-hr 100-YEAR Rainfall=8.20"*

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Hydrograph for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.00	0.00
10.00	1.55	0.01	0.00	0.03
15.00	7.00	2.71	0.00	0.32
20.00	7.85	3.33	0.00	0.11
25.00	8.20	3.60	0.00	0.00
30.00	8.20	3.60	0.00	0.00
35.00	8.20	3.60	0.00	0.00
40.00	8.20	3.60	0.00	0.00
45.00	8.20	3.60	0.00	0.00
50.00	8.20	3.60	0.00	0.00
55.00	8.20	3.60	0.00	0.00
60.00	8.20	3.60	0.00	0.00
65.00	8.20	3.60	0.00	0.00
70.00	8.20	3.60	0.00	0.00
75.00	8.20	3.60	0.00	0.00
80.00	8.20	3.60	0.00	0.00
85.00	8.20	3.60	0.00	0.00
90.00	8.20	3.60	0.00	0.00
95.00	8.20	3.60	0.00	0.00
100.00	8.20	3.60	0.00	0.00
105.00	8.20	3.60	0.00	0.00
110.00	8.20	3.60	0.00	0.00
115.00	8.20	3.60	0.00	0.00
120.00	8.20	3.60	0.00	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Runoff = 27.14 cfs @ 12.13 hrs, Volume= 2.548 af, Depth= 7.96"

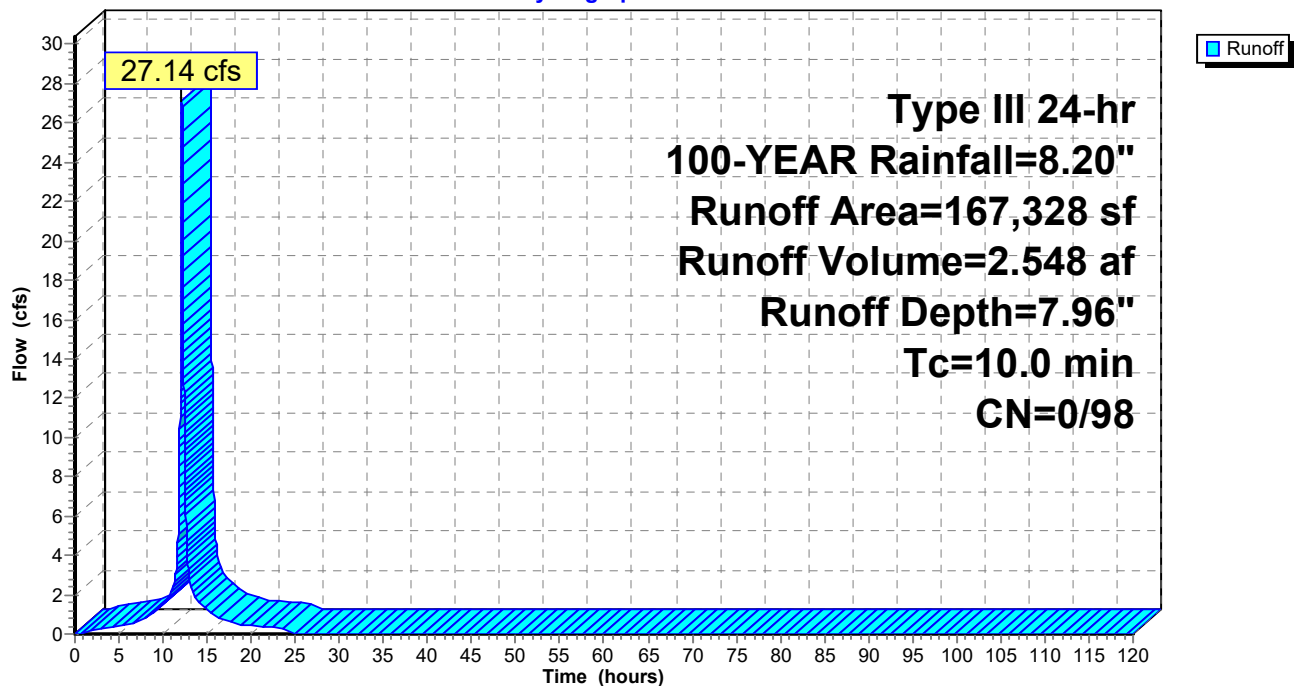
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
167,328	98	Paved parking, HSG B
167,328		100.00% Impervious Area

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

Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.29	0.40
10.00	1.55	0.00	1.33	1.48
15.00	7.00	0.00	6.77	1.25
20.00	7.85	0.00	7.61	0.42
25.00	8.20	0.00	7.96	0.00
30.00	8.20	0.00	7.96	0.00
35.00	8.20	0.00	7.96	0.00
40.00	8.20	0.00	7.96	0.00
45.00	8.20	0.00	7.96	0.00
50.00	8.20	0.00	7.96	0.00
55.00	8.20	0.00	7.96	0.00
60.00	8.20	0.00	7.96	0.00
65.00	8.20	0.00	7.96	0.00
70.00	8.20	0.00	7.96	0.00
75.00	8.20	0.00	7.96	0.00
80.00	8.20	0.00	7.96	0.00
85.00	8.20	0.00	7.96	0.00
90.00	8.20	0.00	7.96	0.00
95.00	8.20	0.00	7.96	0.00
100.00	8.20	0.00	7.96	0.00
105.00	8.20	0.00	7.96	0.00
110.00	8.20	0.00	7.96	0.00
115.00	8.20	0.00	7.96	0.00
120.00	8.20	0.00	7.96	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Runoff = 3.72 cfs @ 12.14 hrs, Volume= 0.307 af, Depth= 3.60"

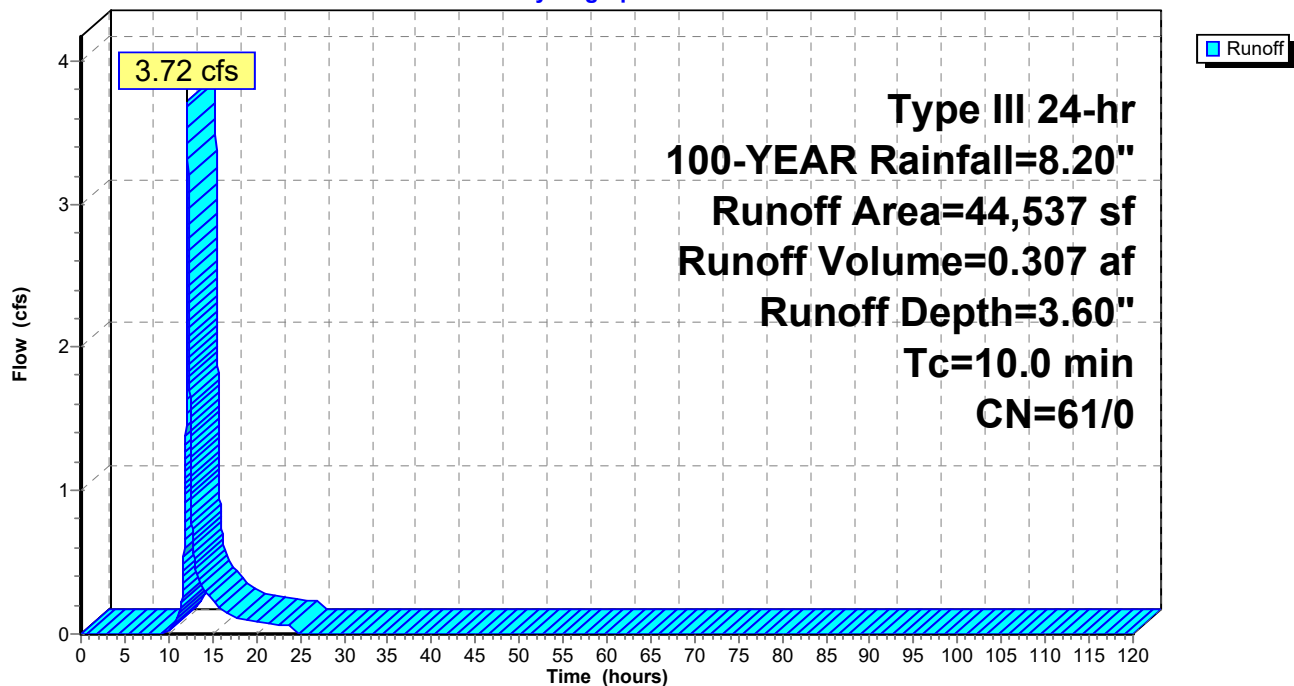
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
44,537	61	>75% Grass cover, Good, HSG B
44,537		100.00% Pervious Area

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

Subcatchment DA-P9 B: DA-P9 PERVIOUS

Hydrograph



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Hydrograph for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.00	0.00
10.00	1.55	0.01	0.00	0.03
15.00	7.00	2.71	0.00	0.24
20.00	7.85	3.33	0.00	0.08
25.00	8.20	3.60	0.00	0.00
30.00	8.20	3.60	0.00	0.00
35.00	8.20	3.60	0.00	0.00
40.00	8.20	3.60	0.00	0.00
45.00	8.20	3.60	0.00	0.00
50.00	8.20	3.60	0.00	0.00
55.00	8.20	3.60	0.00	0.00
60.00	8.20	3.60	0.00	0.00
65.00	8.20	3.60	0.00	0.00
70.00	8.20	3.60	0.00	0.00
75.00	8.20	3.60	0.00	0.00
80.00	8.20	3.60	0.00	0.00
85.00	8.20	3.60	0.00	0.00
90.00	8.20	3.60	0.00	0.00
95.00	8.20	3.60	0.00	0.00
100.00	8.20	3.60	0.00	0.00
105.00	8.20	3.60	0.00	0.00
110.00	8.20	3.60	0.00	0.00
115.00	8.20	3.60	0.00	0.00
120.00	8.20	3.60	0.00	0.00

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-PB: BYPASS AREA

Runoff = 29.60 cfs @ 12.46 hrs, Volume= 4.003 af, Depth= 5.81"

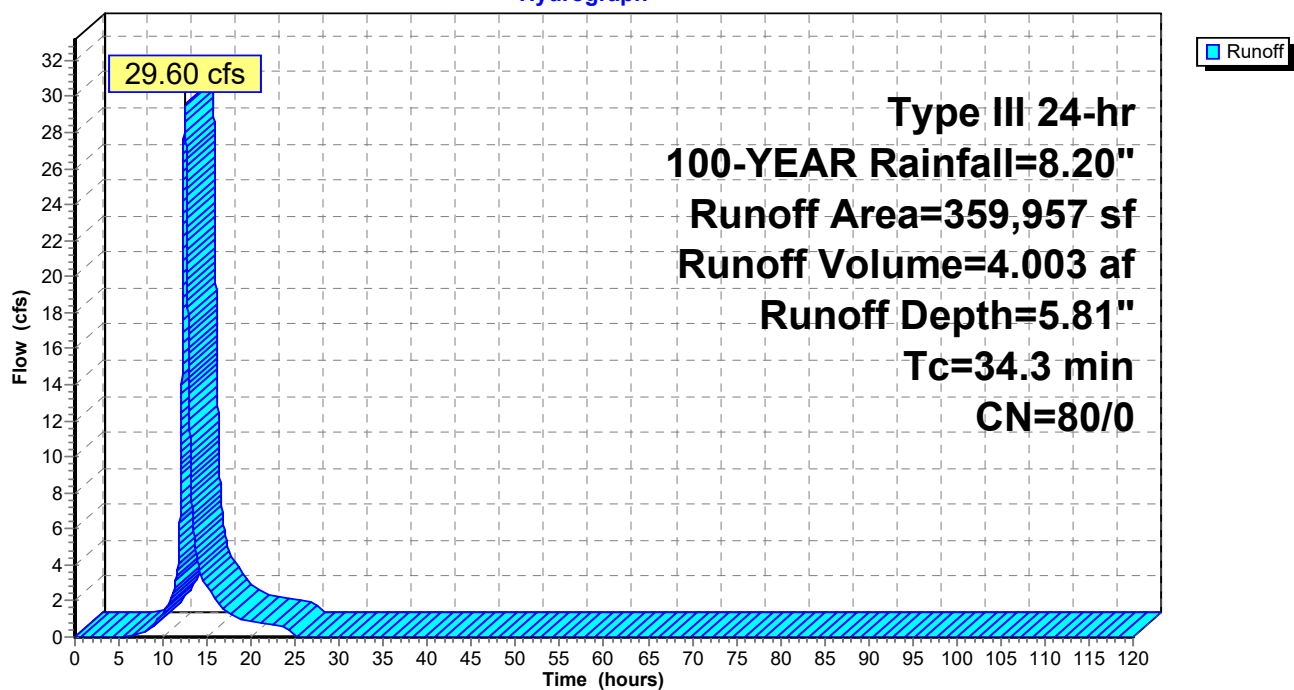
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
260,735	78	Row crops, straight row, Good, HSG B
99,222	85	Row crops, straight row, Good, HSG C
359,957	80	Weighted Average
359,957		100.00% Pervious Area

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

Subcatchment DA-PB: BYPASS AREA

Hydrograph



PROPOSED 2022-04*Type III 24-hr 100-YEAR Rainfall=8.20"*

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Hydrograph for Subcatchment DA-PB: BYPASS AREA

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
5.00	0.47	0.00	0.00	0.00
10.00	1.55	0.31	0.00	1.30
15.00	7.00	4.70	0.00	2.75
20.00	7.85	5.48	0.00	0.88
25.00	8.20	5.81	0.00	0.03
30.00	8.20	5.81	0.00	0.00
35.00	8.20	5.81	0.00	0.00
40.00	8.20	5.81	0.00	0.00
45.00	8.20	5.81	0.00	0.00
50.00	8.20	5.81	0.00	0.00
55.00	8.20	5.81	0.00	0.00
60.00	8.20	5.81	0.00	0.00
65.00	8.20	5.81	0.00	0.00
70.00	8.20	5.81	0.00	0.00
75.00	8.20	5.81	0.00	0.00
80.00	8.20	5.81	0.00	0.00
85.00	8.20	5.81	0.00	0.00
90.00	8.20	5.81	0.00	0.00
95.00	8.20	5.81	0.00	0.00
100.00	8.20	5.81	0.00	0.00
105.00	8.20	5.81	0.00	0.00
110.00	8.20	5.81	0.00	0.00
115.00	8.20	5.81	0.00	0.00
120.00	8.20	5.81	0.00	0.00

PROPOSED 2022-04

Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Pond B1: BASIN#1

Inflow = 323.11 cfs @ 12.54 hrs, Volume= 21.837 af
 Outflow = 334.74 cfs @ 12.56 hrs, Volume= 21.649 af, Atten= 0%, Lag= 1.0 min
 Primary = 49.21 cfs @ 12.60 hrs, Volume= 12.239 af
 Secondary = 285.61 cfs @ 12.56 hrs, Volume= 9.410 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 130.59' @ 12.60 hrs Surf.Area= 63,294 sf Storage= 199,189 cf

Plug-Flow detention time= 377.9 min calculated for 21.647 af (99% of inflow)
 Center-of-Mass det. time= 373.0 min (1,156.2 - 783.2)

Volume	Invert	Avail.Storage	Storage Description
#1	125.00'	468,414 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
125.00	0	0	0
126.00	2,784	1,392	1,392
127.00	28,597	15,691	17,083
128.00	42,791	35,694	52,777
129.00	57,622	50,207	102,983
130.00	61,653	59,638	162,621
131.00	64,456	63,055	225,675
132.00	67,190	65,823	291,498
133.00	69,880	68,535	360,033
134.00	72,596	71,238	431,271
134.50	75,975	37,143	468,414

Device	Routing	Invert	Outlet Devices
#1	Primary	125.00'	30.0" Round Culvert L= 49.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 125.00' / 124.00' S= 0.0204 1' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	125.00'	2.5" Vert. Orifice C= 0.600
#3	Device 1	128.90'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.70'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 3.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Primary OutFlow Max=49.15 cfs @ 12.60 hrs HW=130.57' TW=0.00' (Dynamic Tailwater)

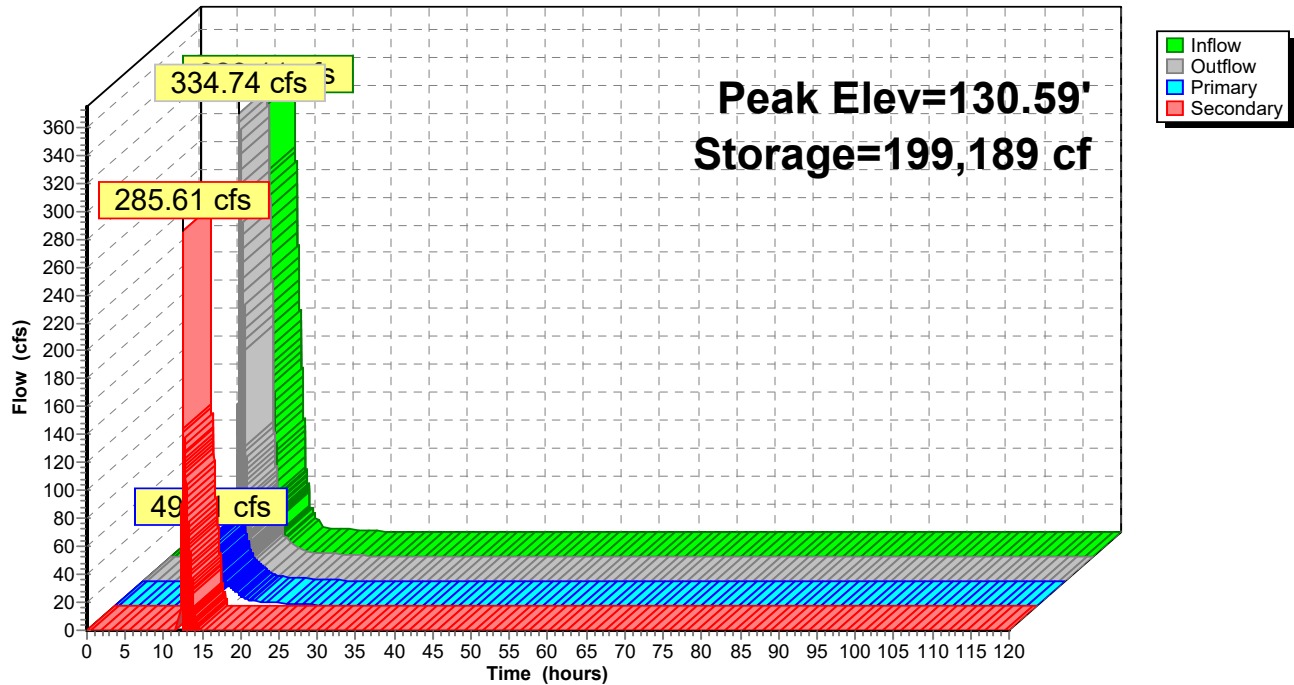
- 1=Culvert (Inlet Controls 49.15 cfs @ 10.01 fps)
- 2=Orifice (Passes < 0.38 cfs potential flow)
- 3=Broad-Crested Rectangular Weir (Passes < 43.17 cfs potential flow)
- 4=Broad-Crested Rectangular Weir (Passes < 16.23 cfs potential flow)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=290.54 cfs @ 12.56 hrs HW=130.55' TW=130.39' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Weir Controls 290.54 cfs @ 1.54 fps)

Pond B1: BASIN#1

Hydrograph



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Type III 24-hr 100-YEAR Rainfall=8.20"

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Hydrograph for Pond B1: BASIN#1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	125.00	0.00	0.00	0.00
5.00	0.95	6,583	126.53	0.20	0.20	0.00
10.00	3.90	35,959	127.58	0.26	0.26	0.00
15.00	5.60	142,664	129.67	13.68	13.68	0.00
20.00	1.93	111,236	129.14	2.35	2.35	0.00
25.00	0.00	103,428	129.01	0.92	0.92	0.00
30.00	0.00	95,421	128.87	0.32	0.32	0.00
35.00	0.00	89,730	128.76	0.31	0.31	0.00
40.00	0.00	84,120	128.66	0.31	0.31	0.00
45.00	0.00	78,593	128.55	0.30	0.30	0.00
50.00	0.00	73,152	128.44	0.30	0.30	0.00
55.00	0.00	67,798	128.33	0.29	0.29	0.00
60.00	0.00	62,537	128.22	0.29	0.29	0.00
65.00	0.00	57,370	128.11	0.28	0.28	0.00
70.00	0.00	52,302	127.99	0.28	0.28	0.00
75.00	0.00	47,336	127.87	0.27	0.27	0.00
80.00	0.00	42,476	127.75	0.27	0.27	0.00
85.00	0.00	37,728	127.62	0.26	0.26	0.00
90.00	0.00	33,097	127.50	0.25	0.25	0.00
95.00	0.00	28,588	127.37	0.25	0.25	0.00
100.00	0.00	24,208	127.23	0.24	0.24	0.00
105.00	0.00	19,965	127.10	0.23	0.23	0.00
110.00	0.00	15,867	126.96	0.22	0.22	0.00
115.00	0.00	11,930	126.80	0.21	0.21	0.00
120.00	0.00	8,181	126.62	0.20	0.20	0.00

PROPOSED 2022-04

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Summary for Pond B1A: BASIN# 1A

Inflow = 118.95 cfs @ 12.41 hrs, Volume= 22.838 af
 Outflow = 113.34 cfs @ 12.46 hrs, Volume= 22.839 af, Atten= 5%, Lag= 3.3 min
 Discarded = 74.83 cfs @ 12.46 hrs, Volume= 9.496 af
 Primary = 25.17 cfs @ 12.46 hrs, Volume= 12.889 af
 Secondary = 13.34 cfs @ 12.46 hrs, Volume= 0.453 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 126.29' @ 12.46 hrs Surf.Area= 70,156 sf Storage= 57,877 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 19.2 min (1,173.8 - 1,154.6)

Volume	Invert	Avail.Storage	Storage Description
#1	123.70'	259,537 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
123.70	0	0	0
124.00	2,278	342	342
125.00	13,963	8,121	8,462
125.30	21,434	5,310	13,772
126.00	52,835	25,994	39,766
127.00	111,645	82,240	122,006
128.00	163,418	137,532	259,537

Device	Routing	Invert	Outlet Devices
#1	Primary	123.51'	24.0" Round Culvert L= 192.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 123.51' / 123.19' S= 0.0017 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	123.51'	9.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	124.95'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.00 2.05 Width (feet) 1.20 1.20 1.20
#4	Device 1	125.60'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 1.40 Width (feet) 1.80 1.80
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#6	Discarded	125.50'	40.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#7	Discarded	126.50'	60.0' long x 180.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#8	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#9	Device 1	124.95'	1.2' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00

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#10	Primary	124.95'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			1.2' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
#11	Device 1	125.60'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
#12	Primary	125.60'	Coef. (English)	2.80	2.92	3.08	3.30	3.32
			3.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
			Head (feet)	0.20	0.40	0.60	0.80	1.00
			Coef. (English)	2.80	2.92	3.08	3.30	3.32

Discarded OutFlow Max=74.78 cfs @ 12.46 hrs HW=126.29' (Free Discharge)

6=Broad-Crested Rectangular Weir (Weir Controls 74.78 cfs @ 2.35 fps)

7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
Primary OutFlow Max=25.16 cfs @ 12.46 hrs HW=126.29' (Free Discharge)

1=Culvert (Barrel Controls 13.43 cfs @ 4.27 fps)

2=Orifice/Grate (Passes < 3.30 cfs potential flow)

3=Custom Weir/Orifice (Passes < 6.12 cfs potential flow)

4=Custom Weir/Orifice (Passes < 3.41 cfs potential flow)

5=Orifice/Grate (Controls 0.00 cfs)

9=Broad-Crested Rectangular Weir (Passes < 6.21 cfs potential flow)

11=Broad-Crested Rectangular Weir (Passes < 5.52 cfs potential flow)

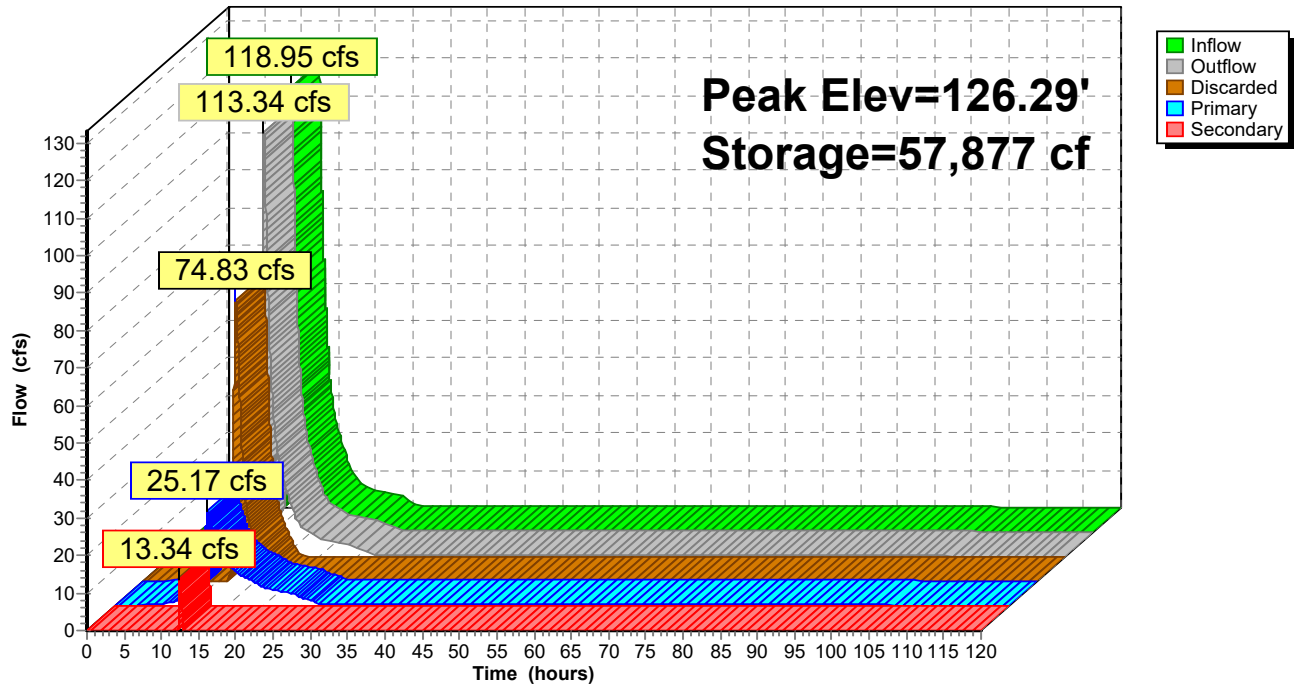
10=Broad-Crested Rectangular Weir (Weir Controls 6.21 cfs @ 3.85 fps)

12=Broad-Crested Rectangular Weir (Weir Controls 5.52 cfs @ 2.65 fps)
Secondary OutFlow Max=13.29 cfs @ 12.46 hrs HW=126.29' TW=125.31' (Dynamic Tailwater)

8=Broad-Crested Rectangular Weir (Weir Controls 13.29 cfs @ 1.18 fps)

Pond B1A: BASIN# 1A

Hydrograph



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Hydrograph for Pond B1A: BASIN# 1A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	123.70	0.00	0.00	0.00	0.00
5.00	0.32	67	123.83	0.30	0.00	0.30	0.00
10.00	4.25	8,098	124.97	2.26	0.00	2.26	0.00
15.00	20.54	26,127	125.70	21.25	9.92	11.33	0.00
20.00	4.60	14,230	125.32	5.01	0.00	5.01	0.00
25.00	0.95	7,243	124.91	2.15	0.00	2.15	0.00
30.00	0.32	77	123.84	0.32	0.00	0.32	0.00
35.00	0.31	74	123.84	0.31	0.00	0.31	0.00
40.00	0.31	72	123.84	0.31	0.00	0.31	0.00
45.00	0.30	69	123.83	0.30	0.00	0.30	0.00
50.00	0.30	66	123.83	0.30	0.00	0.30	0.00
55.00	0.29	63	123.83	0.30	0.00	0.30	0.00
60.00	0.29	61	123.83	0.29	0.00	0.29	0.00
65.00	0.28	59	123.82	0.28	0.00	0.28	0.00
70.00	0.28	56	123.82	0.28	0.00	0.28	0.00
75.00	0.27	54	123.82	0.27	0.00	0.27	0.00
80.00	0.27	51	123.81	0.27	0.00	0.27	0.00
85.00	0.26	48	123.81	0.26	0.00	0.26	0.00
90.00	0.25	45	123.81	0.25	0.00	0.25	0.00
95.00	0.25	42	123.80	0.25	0.00	0.25	0.00
100.00	0.24	39	123.80	0.24	0.00	0.24	0.00
105.00	0.23	35	123.79	0.23	0.00	0.23	0.00
110.00	0.22	31	123.79	0.22	0.00	0.22	0.00
115.00	0.21	27	123.78	0.21	0.00	0.21	0.00
120.00	0.00	24	123.78	0.20	0.00	0.20	0.00

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Summary for Pond B2: BASIN#2

Inflow = 341.38 cfs @ 12.52 hrs, Volume= 28.273 af
 Outflow = 321.71 cfs @ 12.58 hrs, Volume= 28.184 af, Atten= 6%, Lag= 3.8 min
 Primary = 27.53 cfs @ 12.58 hrs, Volume= 15.862 af
 Secondary = 294.75 cfs @ 12.58 hrs, Volume= 12.322 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 130.54' @ 12.58 hrs Surf.Area= 101,701 sf Storage= 454,520 cf

Plug-Flow detention time= 852.1 min calculated for 28.184 af (100% of inflow)

Center-of-Mass det. time= 847.4 min (1,628.4 - 780.9)

Volume	Invert	Avail.Storage	Storage Description
#1	122.05'	911,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.05	0	0	0
123.00	4,516	2,145	2,145
124.00	17,503	11,010	13,155
125.00	40,514	29,009	42,163
126.00	52,995	46,755	88,918
127.00	66,197	59,596	148,514
128.00	80,616	73,407	221,920
129.00	89,234	84,925	306,845
130.00	97,986	93,610	400,455
131.00	104,847	101,417	501,872
132.00	111,734	108,291	610,162
133.00	118,653	115,194	725,356
134.00	125,598	122,126	847,481
134.50	129,221	63,705	911,186

Device	Routing	Invert	Outlet Devices
#1	Primary	121.38'	30.0" Round Culvert L= 52.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 121.38' / 120.90' S= 0.0092 ' /' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	122.05'	4.0" Vert. Orifice C= 0.600
#3	Device 1	128.50'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.75'	3.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 1	131.00'	48.0" x 48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60

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Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=27.36 cfs @ 12.58 hrs HW=130.54' TW=0.00' (Dynamic Tailwater)

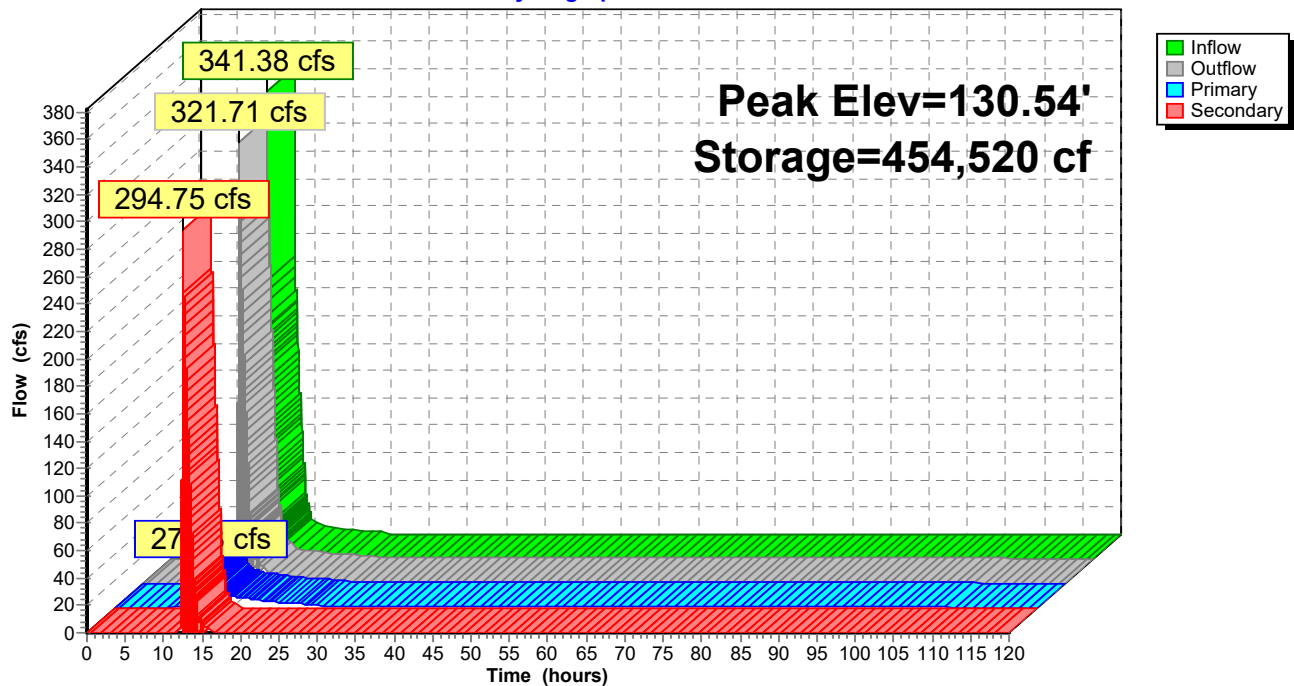
- 1=Culvert (Passes 27.36 cfs of 66.46 cfs potential flow)
- 2=Orifice (Orifice Controls 1.21 cfs @ 13.89 fps)
- 3=Broad-Crested Rectangular Weir (Weir Controls 19.28 cfs @ 4.74 fps)
- 4=Broad-Crested Rectangular Weir (Weir Controls 6.86 cfs @ 2.91 fps)
- 5=Grate (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=253.69 cfs @ 12.58 hrs HW=130.50' TW=130.37' (Dynamic Tailwater)

- 6=Broad-Crested Rectangular Weir (Weir Controls 253.69 cfs @ 1.40 fps)

Pond B2: BASIN#2

Hydrograph



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Hydrograph for Pond B2: BASIN#2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	122.05	0.00	0.00	0.00
5.00	2.18	14,235	124.06	0.57	0.57	0.00
10.00	9.02	77,614	125.78	0.79	0.79	0.00
15.00	10.07	368,805	129.67	9.57	9.57	0.00
20.00	3.42	327,214	129.23	5.09	5.09	0.00
25.00	0.25	299,749	128.92	2.69	2.69	0.00
30.00	0.22	272,011	128.60	1.24	1.24	0.00
35.00	0.18	255,931	128.41	1.05	1.05	0.00
40.00	0.11	239,918	128.22	1.03	1.03	0.00
45.00	0.00	222,422	128.01	1.01	1.01	0.00
50.00	0.00	204,405	127.78	0.99	0.99	0.00
55.00	0.00	186,756	127.55	0.97	0.97	0.00
60.00	0.00	169,493	127.31	0.95	0.95	0.00
65.00	0.00	152,636	127.06	0.92	0.92	0.00
70.00	0.00	136,204	126.81	0.90	0.90	0.00
75.00	0.00	120,222	126.55	0.87	0.87	0.00
80.00	0.00	104,715	126.29	0.85	0.85	0.00
85.00	0.00	89,712	126.01	0.82	0.82	0.00
90.00	0.00	75,246	125.73	0.79	0.79	0.00
95.00	0.00	61,358	125.44	0.75	0.75	0.00
100.00	0.00	48,091	125.14	0.72	0.72	0.00
105.00	0.00	35,503	124.83	0.68	0.68	0.00
110.00	0.00	23,708	124.46	0.63	0.63	0.00
115.00	0.00	12,958	123.99	0.56	0.56	0.00
120.00	0.00	3,892	123.28	0.43	0.43	0.00

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Summary for Pond B2A: BASIN# 2A

Inflow = 53.57 cfs @ 12.47 hrs, Volume= 19.695 af
 Outflow = 32.07 cfs @ 12.84 hrs, Volume= 19.695 af, Atten= 40%, Lag= 22.4 min
 Primary = 32.07 cfs @ 12.84 hrs, Volume= 19.695 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 125.69' @ 12.84 hrs Surf.Area= 46,743 sf Storage= 58,070 cf

Plug-Flow detention time= 8.9 min calculated for 19.693 af (100% of inflow)
 Center-of-Mass det. time= 8.8 min (2,002.3 - 1,993.5)

Volume	Invert	Avail.Storage	Storage Description
#1	120.70'	244,647 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
120.70	0	0	0
123.00	2,840	3,266	3,266
124.00	12,899	7,870	11,135
125.00	29,081	20,990	32,125
125.50	41,742	17,706	49,831
126.00	55,169	24,228	74,059
127.00	82,653	68,911	142,970
128.00	120,701	101,677	244,647

Device	Routing	Invert	Outlet Devices
#1	Primary	120.66'	30.0" Round Culvert L= 212.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 120.66' / 118.50' S= 0.0102 ' /' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	120.66'	18.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	123.65'	1.5' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Secondary	126.10'	58.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Device 1	127.00'	48.0" x 48.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=32.06 cfs @ 12.84 hrs HW=125.69' (Free Discharge)

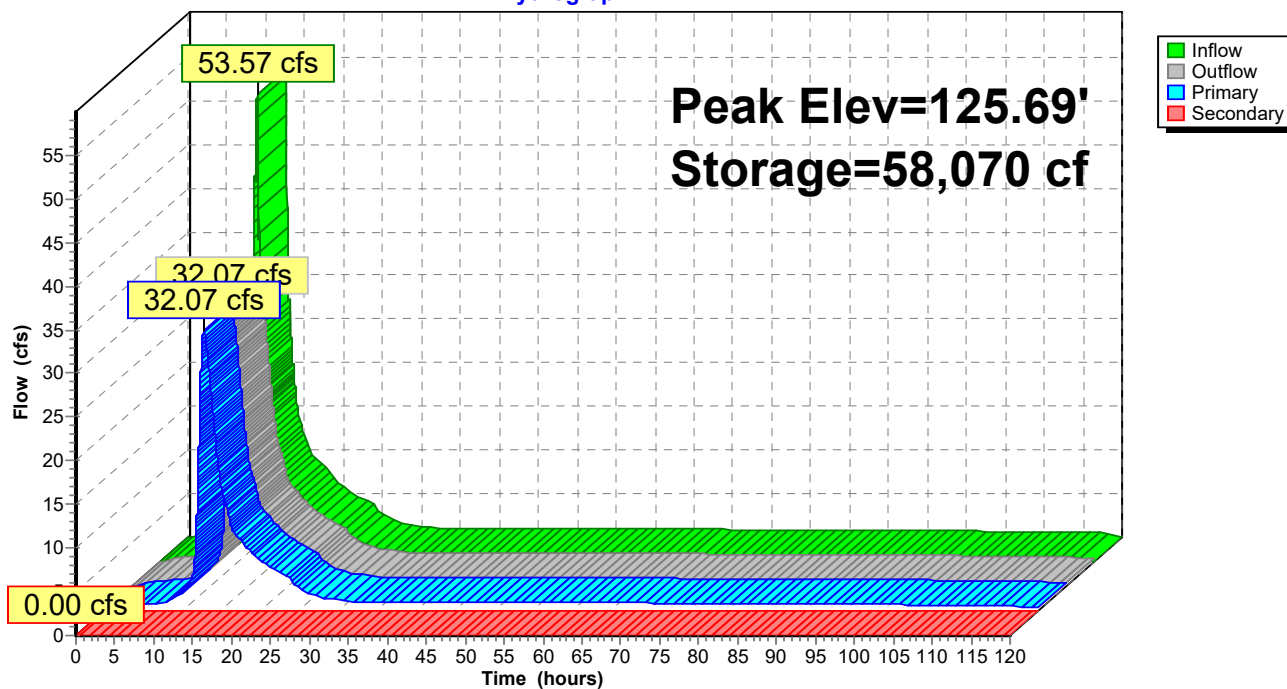
1=Culvert (Passes 32.06 cfs of 45.83 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 17.60 cfs @ 9.96 fps)
 3=Broad-Crested Rectangular Weir (Weir Controls 14.47 cfs @ 4.74 fps)
 5=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=120.70' TW=123.70' (Dynamic Tailwater)

4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B2A: BASIN# 2A

Hydrograph



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Hydrograph for Pond B2A: BASIN# 2A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	120.70	0.00	0.00	0.00
5.00	0.72	70	121.03	0.72	0.72	0.00
10.00	2.08	236	121.32	2.06	2.06	0.00
15.00	11.68	11,013	123.99	14.53	14.53	0.00
20.00	5.81	875	121.89	5.85	5.85	0.00
25.00	2.69	327	121.43	2.72	2.72	0.00
30.00	1.24	132	121.16	1.25	1.25	0.00
35.00	1.05	108	121.12	1.05	1.05	0.00
40.00	1.03	106	121.11	1.03	1.03	0.00
45.00	1.01	104	121.11	1.01	1.01	0.00
50.00	0.99	101	121.10	0.99	0.99	0.00
55.00	0.97	99	121.10	0.97	0.97	0.00
60.00	0.95	96	121.09	0.95	0.95	0.00
65.00	0.92	94	121.09	0.93	0.93	0.00
70.00	0.90	91	121.08	0.90	0.90	0.00
75.00	0.87	87	121.08	0.88	0.88	0.00
80.00	0.85	84	121.07	0.85	0.85	0.00
85.00	0.82	81	121.06	0.82	0.82	0.00
90.00	0.79	77	121.05	0.79	0.79	0.00
95.00	0.75	74	121.04	0.76	0.76	0.00
100.00	0.72	70	121.03	0.72	0.72	0.00
105.00	0.68	65	121.02	0.68	0.68	0.00
110.00	0.63	60	121.01	0.63	0.63	0.00
115.00	0.56	52	120.99	0.56	0.56	0.00
120.00	0.00	39	120.95	0.43	0.43	0.00

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Summary for Pond B3: BASIN#3

Inflow Area = 4.864 ac, 78.98% Impervious, Inflow Depth = 7.04" for 100-YEAR event
 Inflow = 30.85 cfs @ 12.13 hrs, Volume= 2.855 af
 Outflow = 10.80 cfs @ 12.47 hrs, Volume= 2.855 af, Atten= 65%, Lag= 20.0 min
 Primary = 10.80 cfs @ 12.47 hrs, Volume= 2.855 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 148.65' @ 12.47 hrs Surf.Area= 11,269 sf Storage= 33,722 cf

Plug-Flow detention time= 155.6 min calculated for 2.854 af (100% of inflow)
 Center-of-Mass det. time= 155.7 min (911.3 - 755.5)

Volume	Invert	Avail.Storage	Storage Description
#1	143.72'	58,412 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
143.72	0	0	0
144.00	1,559	218	218
145.00	5,405	3,482	3,700
146.00	6,859	6,132	9,832
147.00	8,428	7,644	17,476
148.00	10,107	9,268	26,743
149.00	11,886	10,997	37,740
150.00	14,319	13,103	50,842
150.50	15,959	7,570	58,412

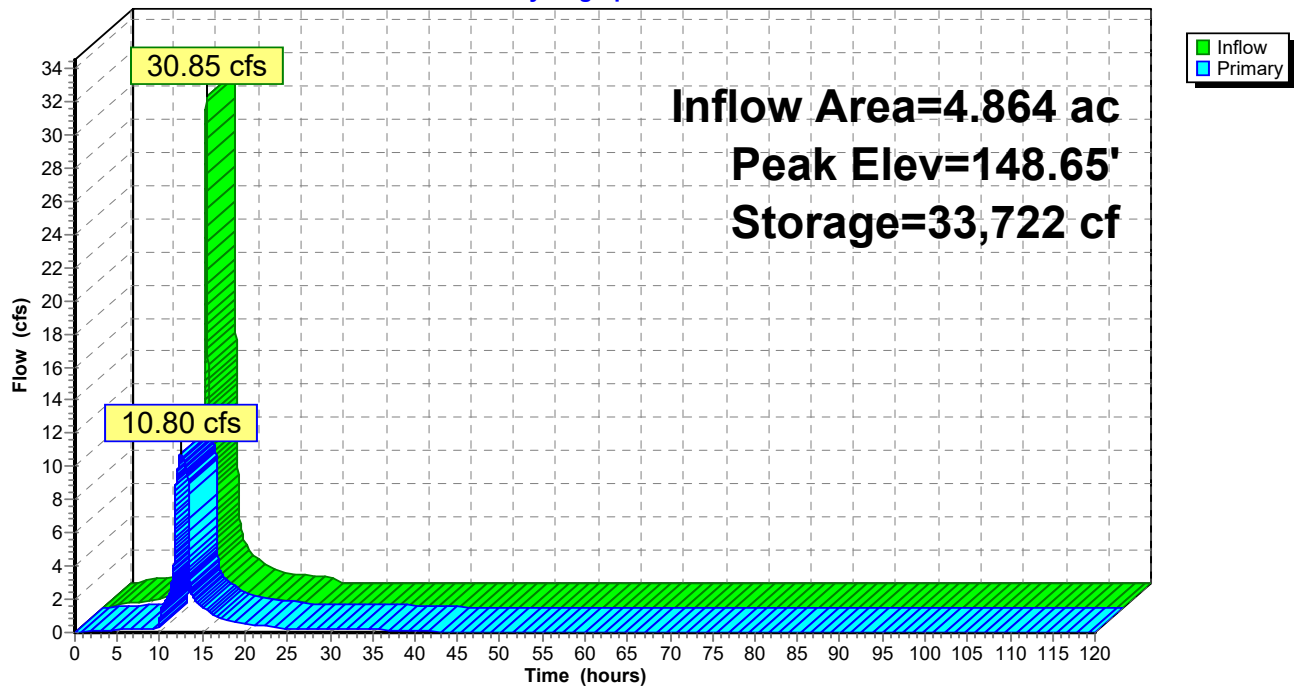
Device	Routing	Invert	Outlet Devices
#1	Primary	143.72'	15.0" Round Culvert L= 182.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 143.72' / 140.50' S= 0.0177 '/ Cc= 0.900 n= 0.013 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf
#2	Device 1	143.72'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	146.31'	48.0" x 48.0" Horiz. TYPE "E" INLET WITH STOP COCK @ BOTTOM C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.80 cfs @ 12.47 hrs HW=148.65' TW=130.40' (Dynamic Tailwater)

1=Culvert (Barrel Controls 10.80 cfs @ 8.80 fps)
 2=Orifice/Grate (Passes < 0.36 cfs potential flow)
 3=TYPE "E" INLET WITH STOP COCK @ BOTTOM(Passes < 117.92 cfs potential flow)

Pond B3: BASIN#3

Hydrograph



PROPOSED 2022-04*Type III 24-hr 100-YEAR Rainfall=8.20"*

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Hydrograph for Pond B3: BASIN#3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	143.72	0.00
5.00	0.40	2,250	144.70	0.15
10.00	1.50	12,436	146.36	0.93
15.00	1.48	12,653	146.39	1.52
20.00	0.50	12,245	146.34	0.51
25.00	0.00	11,349	146.22	0.25
30.00	0.00	7,097	145.58	0.22
35.00	0.00	3,546	144.97	0.18
40.00	0.00	877	144.31	0.11
45.00	0.00	3	143.73	0.00
50.00	0.00	1	143.72	0.00
55.00	0.00	0	143.72	0.00
60.00	0.00	0	143.72	0.00
65.00	0.00	0	143.72	0.00
70.00	0.00	0	143.72	0.00
75.00	0.00	0	143.72	0.00
80.00	0.00	0	143.72	0.00
85.00	0.00	0	143.72	0.00
90.00	0.00	0	143.72	0.00
95.00	0.00	0	143.72	0.00
100.00	0.00	0	143.72	0.00
105.00	0.00	0	143.72	0.00
110.00	0.00	0	143.72	0.00
115.00	0.00	0	143.72	0.00
120.00	0.00	0	143.72	0.00

PROPOSED 2022-04

Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Pond B4: BASIN#4

Inflow Area = 2.986 ac, 53.95% Impervious, Inflow Depth = 5.95" for 100-YEAR event
 Inflow = 16.37 cfs @ 12.14 hrs, Volume= 1.481 af
 Outflow = 8.14 cfs @ 12.36 hrs, Volume= 1.240 af, Atten= 50%, Lag= 13.4 min
 Primary = 8.14 cfs @ 12.36 hrs, Volume= 1.240 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 141.67' @ 12.36 hrs Surf.Area= 11,914 sf Storage= 26,507 cf

Plug-Flow detention time= 186.7 min calculated for 1.240 af (84% of inflow)
 Center-of-Mass det. time= 116.0 min (889.0 - 772.9)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	66,831 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	7,648	0	0
140.00	9,503	8,576	8,576
141.00	10,988	10,246	18,821
142.00	12,367	11,678	30,499
143.00	13,797	13,082	43,581
144.00	15,503	14,650	58,231
144.50	18,900	8,601	66,831

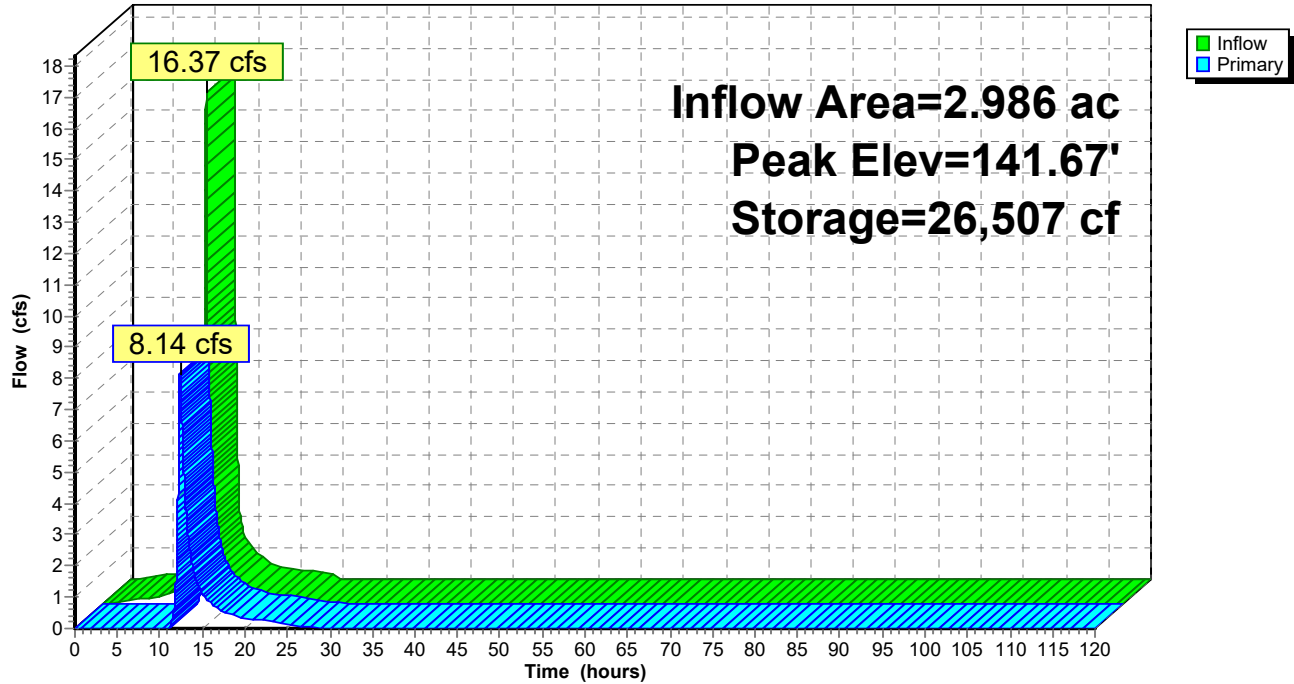
Device	Routing	Invert	Outlet Devices
#1	Primary	136.95'	15.0" Round Culvert L= 47.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 136.95' / 136.71' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	140.20'	1.2' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#3	Device 1	141.50'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height
#4	Device 1	142.90'	4.0" x 4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	143.00'	40.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=8.14 cfs @ 12.36 hrs HW=141.67' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 8.14 cfs of 11.77 cfs potential flow)
- 2=Sharp-Crested Rectangular Weir (Weir Controls 7.19 cfs @ 5.39 fps)
- 3=Sharp-Crested Rectangular Weir (Weir Controls 0.96 cfs @ 1.41 fps)
- 4=Orifice/Grate (Controls 0.00 cfs)
- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B4: BASIN#4

Hydrograph



PROPOSED 2022-04*Type III 24-hr 100-YEAR Rainfall=8.20"*

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Hydrograph for Pond B4: BASIN#4

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	139.00	0.00
5.00	0.17	1,579	139.20	0.00
10.00	0.65	7,446	139.88	0.00
15.00	0.84	14,854	140.63	1.13
20.00	0.29	12,418	140.39	0.34
25.00	0.00	11,449	140.30	0.12
30.00	0.00	10,716	140.22	0.01
35.00	0.00	10,596	140.21	0.00
40.00	0.00	10,556	140.21	0.00
45.00	0.00	10,537	140.20	0.00
50.00	0.00	10,528	140.20	0.00
55.00	0.00	10,522	140.20	0.00
60.00	0.00	10,518	140.20	0.00
65.00	0.00	10,515	140.20	0.00
70.00	0.00	10,514	140.20	0.00
75.00	0.00	10,512	140.20	0.00
80.00	0.00	10,511	140.20	0.00
85.00	0.00	10,510	140.20	0.00
90.00	0.00	10,510	140.20	0.00
95.00	0.00	10,509	140.20	0.00
100.00	0.00	10,509	140.20	0.00
105.00	0.00	10,508	140.20	0.00
110.00	0.00	10,508	140.20	0.00
115.00	0.00	10,508	140.20	0.00
120.00	0.00	10,508	140.20	0.00

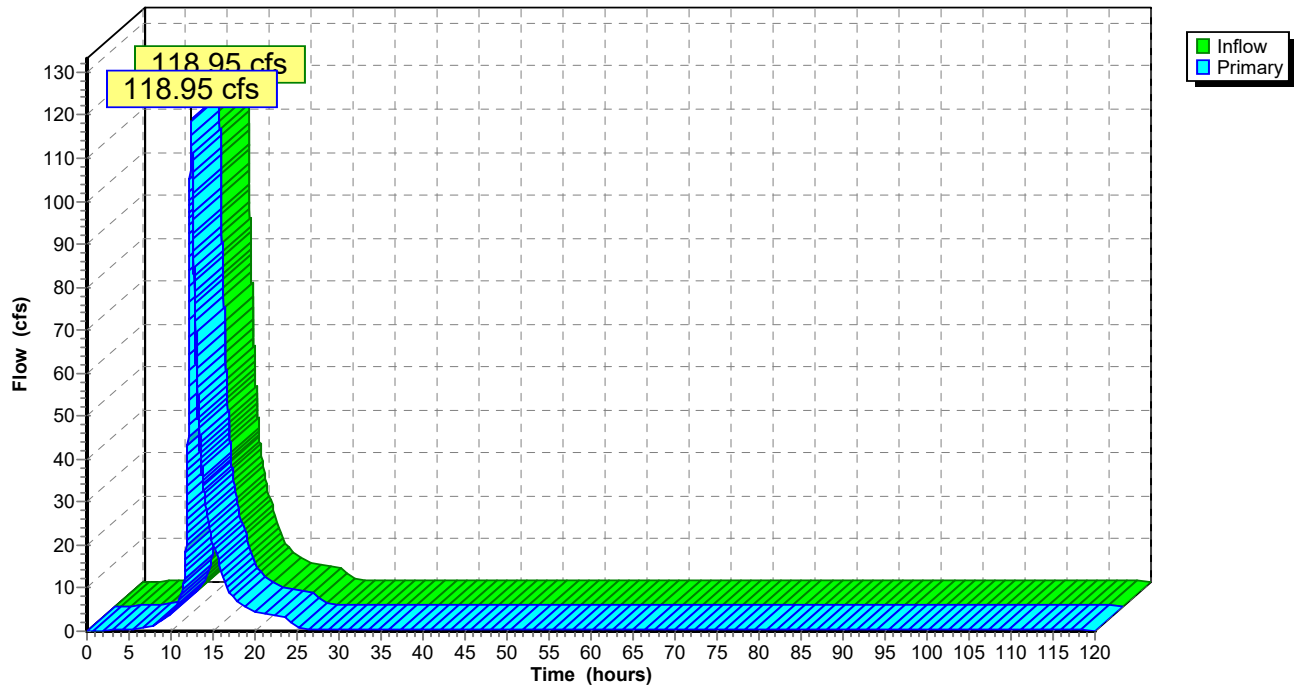
Summary for Link R1: REACH# 1

Inflow = 118.95 cfs @ 12.40 hrs, Volume= 22.838 af
 Primary = 118.95 cfs @ 12.41 hrs, Volume= 22.838 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R1: REACH# 1

Hydrograph



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Type III 24-hr 100-YEAR Rainfall=8.20"

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Hydrograph for Link R1: REACH# 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.23	0.00	0.23
2.00	0.18	0.00	0.18	108.00	0.23	0.00	0.23
4.00	0.26	0.00	0.26	110.00	0.22	0.00	0.22
6.00	0.50	0.00	0.50	112.00	0.22	0.00	0.22
8.00	1.48	0.00	1.48	114.00	0.22	0.00	0.22
10.00	4.27	0.00	4.25	116.00	0.21	0.00	0.21
12.00	41.02	0.00	39.19	118.00	0.21	0.00	0.21
14.00	31.94	0.00	31.46	120.00	0.00	0.00	0.20
16.00	13.99	0.00	14.06				
18.00	6.52	0.00	6.54				
20.00	4.59	0.00	4.60				
22.00	3.71	0.00	3.71				
24.00	3.00	0.00	3.00				
26.00	0.58	0.00	0.58				
28.00	0.33	0.00	0.33				
30.00	0.32	0.00	0.32				
32.00	0.32	0.00	0.32				
34.00	0.31	0.00	0.31				
36.00	0.31	0.00	0.31				
38.00	0.31	0.00	0.31				
40.00	0.31	0.00	0.31				
42.00	0.31	0.00	0.31				
44.00	0.31	0.00	0.31				
46.00	0.30	0.00	0.30				
48.00	0.30	0.00	0.30				
50.00	0.30	0.00	0.30				
52.00	0.30	0.00	0.30				
54.00	0.30	0.00	0.30				
56.00	0.29	0.00	0.29				
58.00	0.29	0.00	0.29				
60.00	0.29	0.00	0.29				
62.00	0.29	0.00	0.29				
64.00	0.29	0.00	0.29				
66.00	0.28	0.00	0.28				
68.00	0.28	0.00	0.28				
70.00	0.28	0.00	0.28				
72.00	0.28	0.00	0.28				
74.00	0.27	0.00	0.27				
76.00	0.27	0.00	0.27				
78.00	0.27	0.00	0.27				
80.00	0.27	0.00	0.27				
82.00	0.26	0.00	0.26				
84.00	0.26	0.00	0.26				
86.00	0.26	0.00	0.26				
88.00	0.26	0.00	0.26				
90.00	0.25	0.00	0.25				
92.00	0.25	0.00	0.25				
94.00	0.25	0.00	0.25				
96.00	0.25	0.00	0.25				
98.00	0.24	0.00	0.24				
100.00	0.24	0.00	0.24				
102.00	0.24	0.00	0.24				
104.00	0.23	0.00	0.23				

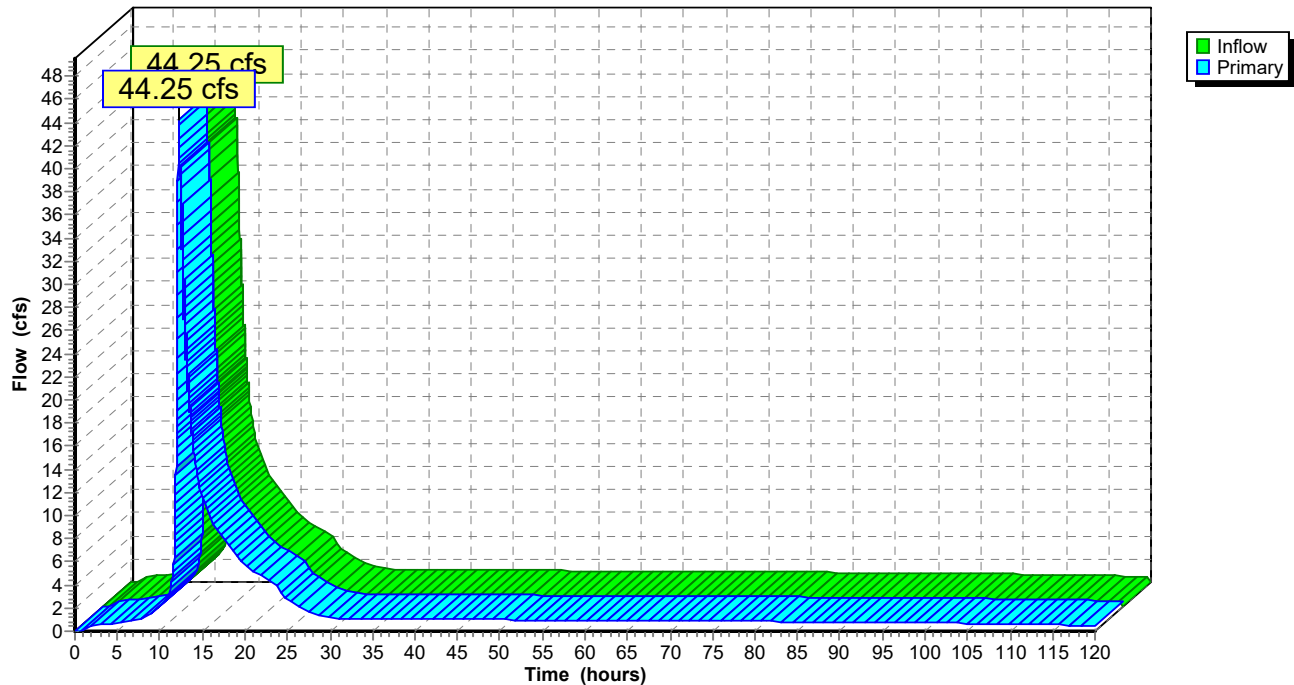
Summary for Link R2: REACH# 2

Inflow = 44.25 cfs @ 12.17 hrs, Volume= 19.242 af
 Primary = 44.25 cfs @ 12.18 hrs, Volume= 19.242 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R2: REACH# 2

Hydrograph



PROPOSED 2022-04

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Hydrograph for Link R2: REACH# 2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.67	0.00	0.67
2.00	0.43	0.00	0.43	108.00	0.65	0.00	0.65
4.00	0.65	0.00	0.64	110.00	0.63	0.00	0.63
6.00	0.79	0.00	0.79	112.00	0.61	0.00	0.61
8.00	1.11	0.00	1.11	114.00	0.58	0.00	0.58
10.00	2.09	0.00	2.08	116.00	0.54	0.00	0.54
12.00	20.97	0.00	19.93	118.00	0.49	0.00	0.49
14.00	15.19	0.00	15.42	120.00	0.00	0.00	0.43
16.00	9.52	0.00	9.54				
18.00	7.52	0.00	7.53				
20.00	5.80	0.00	5.81				
22.00	4.66	0.00	4.66				
24.00	3.83	0.00	3.83				
26.00	2.18	0.00	2.18				
28.00	1.57	0.00	1.57				
30.00	1.24	0.00	1.24				
32.00	1.07	0.00	1.08				
34.00	1.05	0.00	1.05				
36.00	1.04	0.00	1.04				
38.00	1.04	0.00	1.04				
40.00	1.03	0.00	1.03				
42.00	1.02	0.00	1.02				
44.00	1.01	0.00	1.01				
46.00	1.01	0.00	1.01				
48.00	1.00	0.00	1.00				
50.00	0.99	0.00	0.99				
52.00	0.98	0.00	0.98				
54.00	0.97	0.00	0.97				
56.00	0.97	0.00	0.97				
58.00	0.96	0.00	0.96				
60.00	0.95	0.00	0.95				
62.00	0.94	0.00	0.94				
64.00	0.93	0.00	0.93				
66.00	0.92	0.00	0.92				
68.00	0.91	0.00	0.91				
70.00	0.90	0.00	0.90				
72.00	0.89	0.00	0.89				
74.00	0.88	0.00	0.88				
76.00	0.87	0.00	0.87				
78.00	0.86	0.00	0.86				
80.00	0.85	0.00	0.85				
82.00	0.84	0.00	0.84				
84.00	0.82	0.00	0.82				
86.00	0.81	0.00	0.81				
88.00	0.80	0.00	0.80				
90.00	0.79	0.00	0.79				
92.00	0.77	0.00	0.78				
94.00	0.76	0.00	0.76				
96.00	0.75	0.00	0.75				
98.00	0.73	0.00	0.73				
100.00	0.72	0.00	0.72				
102.00	0.70	0.00	0.70				
104.00	0.69	0.00	0.69				

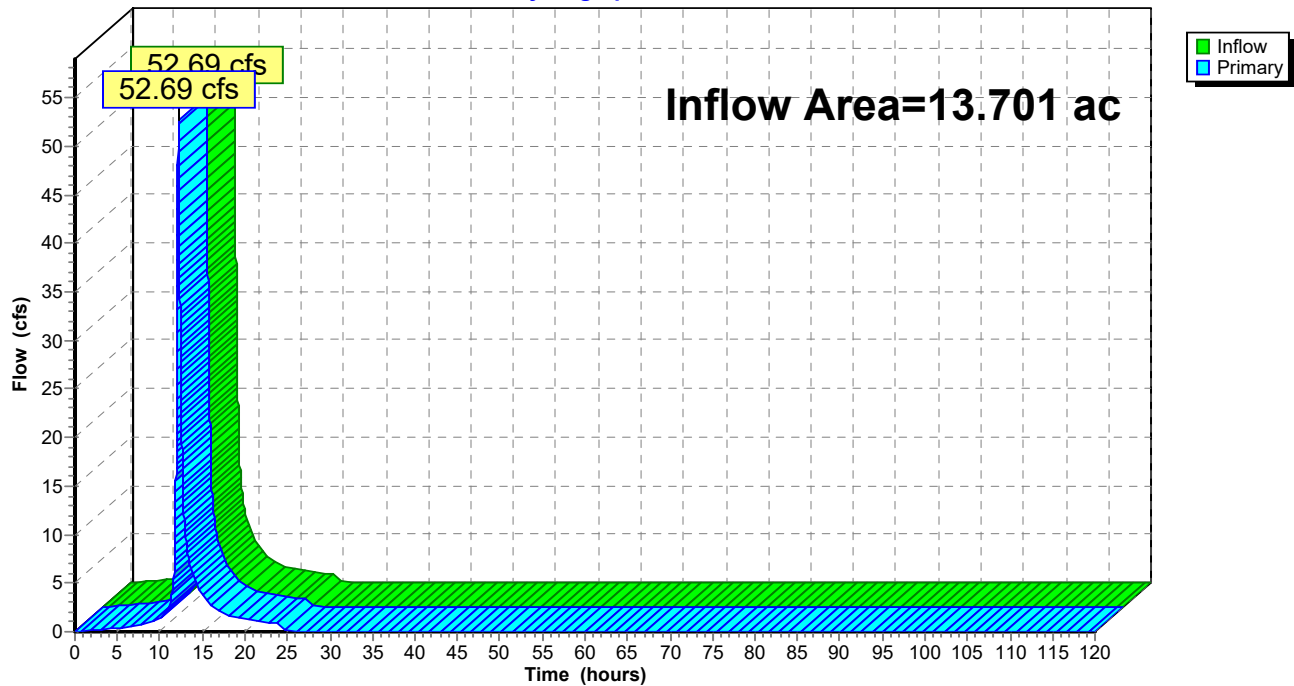
Summary for Link R3: REACH# 3

Inflow Area = 13.701 ac, 37.05% Impervious, Inflow Depth = 4.82" for 100-YEAR event
 Inflow = 52.69 cfs @ 12.15 hrs, Volume= 5.506 af
 Primary = 52.69 cfs @ 12.16 hrs, Volume= 5.506 af, Atten= 0%, Lag= 0.6 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Link R3: REACH# 3

Hydrograph



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Hydrograph for Link R3: REACH# 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	106.00	0.00	0.00	0.00
2.00	0.17	0.00	0.17	108.00	0.00	0.00	0.00
4.00	0.30	0.00	0.30	110.00	0.00	0.00	0.00
6.00	0.42	0.00	0.42	112.00	0.00	0.00	0.00
8.00	0.70	0.00	0.70	114.00	0.00	0.00	0.00
10.00	1.36	0.00	1.36	116.00	0.00	0.00	0.00
12.00	25.41	0.00	24.07	118.00	0.00	0.00	0.00
14.00	5.38	0.00	5.41	120.00	0.00	0.00	0.00
16.00	2.76	0.00	2.77				
18.00	1.67	0.00	1.67				
20.00	1.28	0.00	1.28				
22.00	1.06	0.00	1.06				
24.00	0.85	0.00	0.85				
26.00	0.06	0.00	0.06				
28.00	0.03	0.00	0.03				
30.00	0.01	0.00	0.01				
32.00	0.01	0.00	0.01				
34.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
58.00	0.00	0.00	0.00				
60.00	0.00	0.00	0.00				
62.00	0.00	0.00	0.00				
64.00	0.00	0.00	0.00				
66.00	0.00	0.00	0.00				
68.00	0.00	0.00	0.00				
70.00	0.00	0.00	0.00				
72.00	0.00	0.00	0.00				
74.00	0.00	0.00	0.00				
76.00	0.00	0.00	0.00				
78.00	0.00	0.00	0.00				
80.00	0.00	0.00	0.00				
82.00	0.00	0.00	0.00				
84.00	0.00	0.00	0.00				
86.00	0.00	0.00	0.00				
88.00	0.00	0.00	0.00				
90.00	0.00	0.00	0.00				
92.00	0.00	0.00	0.00				
94.00	0.00	0.00	0.00				
96.00	0.00	0.00	0.00				
98.00	0.00	0.00	0.00				
100.00	0.00	0.00	0.00				
102.00	0.00	0.00	0.00				
104.00	0.00	0.00	0.00				

B. DESIGN CALCULATIONS

- ◆ **Time of Concentration**
- ◆ **Water Quality Calculations**
- ◆ **Water Quality Details**
- ◆ **Extended Detention Basin Drain Time**
- ◆ **Sand filter Design**
- ◆ **Emergency Spillway**
- ◆ **Inlet Area Summary & Pipe Sizing**
- ◆ **Rip Rap**
- ◆ **Low Impact Development Checklist**
- ◆ **Recharge Worksheet**
- ◆ **Sediment Basin Design**
- ◆ **Major Development Stormwater Summary Form**

Time of Concentration



30 Independence Blvd., Suite 200, Warren, NJ 07059

(908) 668-8300

Time of Concentration Table

Project: SJC Ventures Partners LLC
Job #: JS210927
Location: Montgomery, NJ

Computed By:
Checked By:
Date:

TD/BB
KM
4/19/2022

(P2yr)	Length	Slope	Assumed	Roughness	Time, T
3.30 "	L (ft)	So (%)	R,*	ns/n	(minutes)

$$T = \frac{0.42(n_s L)^{0.8}}{(\sqrt{P_2})(S_o)^{0.4}} \quad \text{For Sheet Flow}$$

$$T = \frac{L}{60(1.49/n)R^{2/3}\sqrt{S_o}} \quad \text{For Other}$$

Existing Drainage Area E-1

Section	AB	50	1.20%	0.00	0.050	2.82
Section	BC	610	1.28%	0.10	0.040	11.20
Section	CD	80	1.13%	0.10	0.050	1.95
Section	DE	450	2.43%	0.10	0.040	6.00
Section	EF	546	1.78%	0.10	0.040	8.50
Section	EG	222	2.03%	0.10	0.040	3.24
Section	GH	101	0.16%	0.40	0.012	0.62
TC						34.3

Existing Drainage Area E-2

Section	AB	50	2.00%	0.00	0.050	2.30
Section	BC	36	2.80%	0.10	0.040	0.45
Section	CD	59	4.20%	0.10	0.050	0.75
Section	DE	353	3.40%	0.10	0.030	2.98
Section	EF	440	2.40%	0.10	0.030	4.42
Section	FG	132	3.41%	0.10	0.030	1.11
Section	GH	34	8.80%	0.10	0.030	0.18
Section	HI	107	2.30%	0.40	0.012	0.17
TC						12.4

Existing Drainage Area E-3 (Onsite)

Section	AB	50	1.40%	0.00	0.050	2.65
Section	BC	431	0.93%	0.10	0.040	9.28
Section	CD	350	3.54%	0.10	0.050	4.83
Section	DE	50	3.60%	0.10	0.030	0.41
TC						17.2

Existing Drainage Area E-3 (Offsite) & P-3

Section	AB	14	1.40%	0.00	0.150	2.31
Section	BC	353	0.90%	0.10	0.040	7.73
Section	CD	15	29.30%	0.10	0.040	0.06
Section	DE	56	1.00%	0.40	0.012	0.14
TC						10.2

Existing Drainage Area E-5 & P-5

Section	AB	50	0.80%	0.00	0.050	3.32
Section	BC	230	3.10%	0.10	0.040	2.71
Section	CD	324	4.30%	0.10	0.040	3.24
Section	DE	296	0.68%	0.10	0.040	7.45
Section	EF	91	1.10%	0.10	0.030	1.35
Section	FG	91	1.20%	0.40	0.012	0.21
TC						18.3

R = 0.2 for Intermittent Channel Flow (at the beginning of channels)

R = 0.4 for Channel Flow (continuous stream)

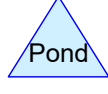
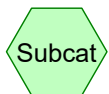
Roughness Values Table

Sheet flow "ns" values			
Type of Area	"ns"	Type of Area	"ns"
Smooth Surfaces	0.011	Dense grasses	0.24
Fallow fields or loose soil surface (no residue)	0.05	Bermuda grass	0.41
Cultivated soil with residue cover (s<= 0.02 ft/ft)	0.06	Range (natural)	0.13
Cultivated soil with residue cover (s> 0.02 ft/ft)	0.17	Woods or forest with light underbrush	0.40
Short Prairie grass and lawns	0.15	Woods or forest with dense underbrush	0.80

If the Time of Concentration is less than 10 minutes, assume TC= 10 minutes

Mannings "n" Table			
	"n"		"n"
Forest drainage course / ravine with defined channel bedwith heavy ground litter and meadows			0.05
Forest with heavy ground litter and meadows	0.1	Rock-lined waterway	0.035
Fallow or minimum tillage cultivation	0.04	Earth-lined waterway	0.025
High grass	0.035	Cmp pipe	0.024
Short grass, pasture and lawns	0.030	Concrete pipe	0.012
Nearly bare ground	0.025	Meandering stream with some pools	0.040
Paved and gravel areas	0.012		

Water Quality Calculations



Routing Diagram for PROPOSED 2022-04 Water Quality Flows

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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 8S: Impervious

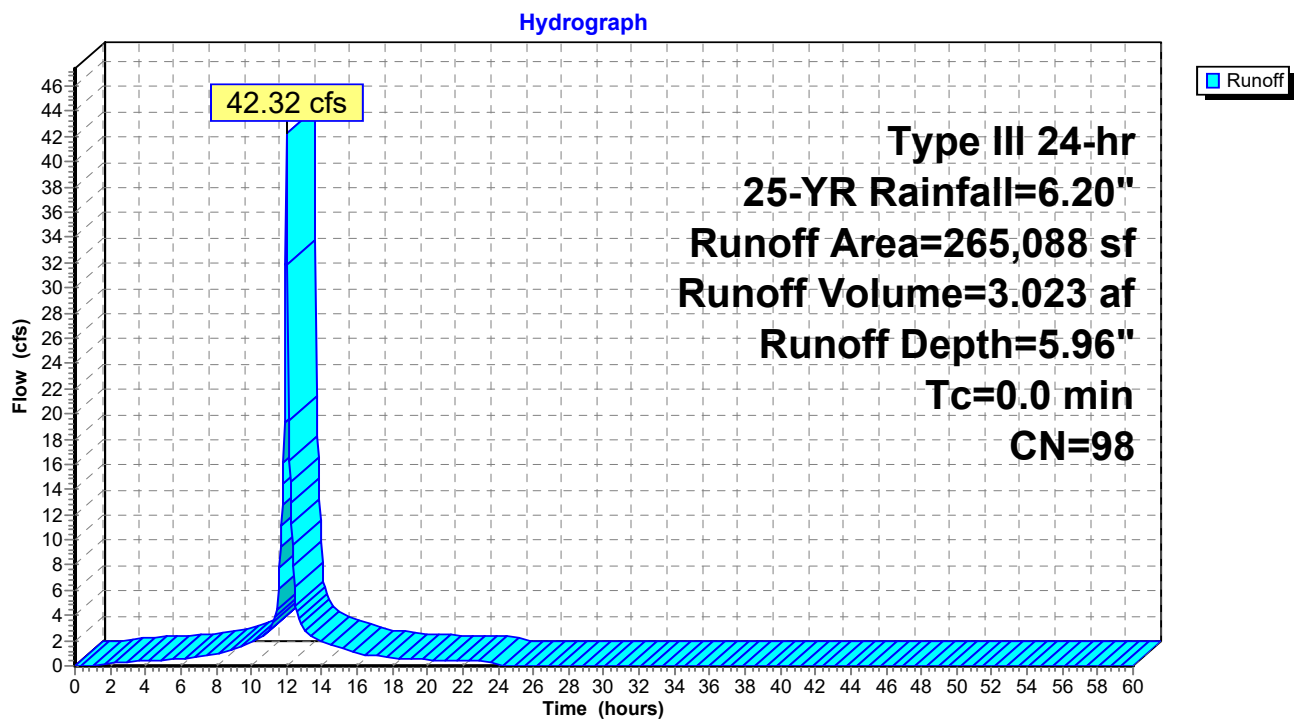
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 42.32 cfs @ 12.00 hrs, Volume= 3.023 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
265,088	98	Paved parking, HSG B
265,088		100.00% Impervious Area

Subcatchment 8S: Impervious



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Summary for Subcatchment 9S: Pervious

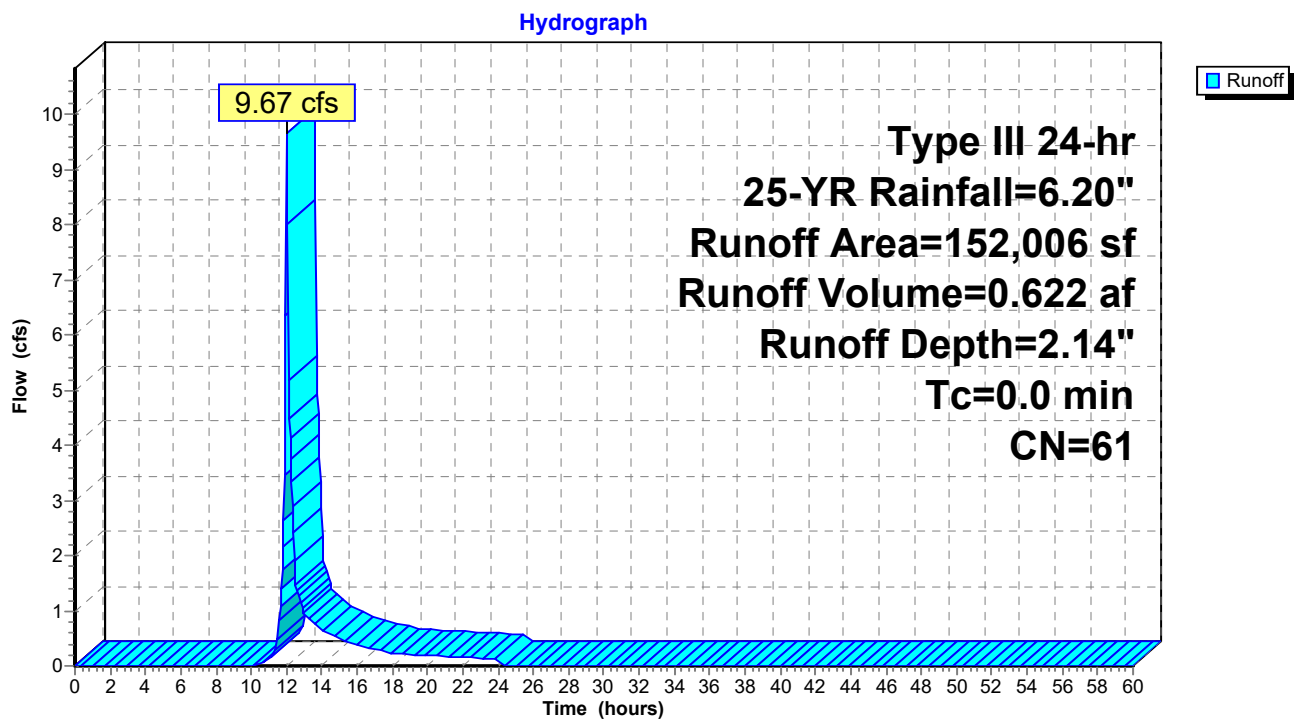
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 9.67 cfs @ 12.01 hrs, Volume= 0.622 af, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
152,006	61	>75% Grass cover, Good, HSG B
152,006		100.00% Pervious Area

Subcatchment 9S: Pervious



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Link 10L: Outfall B (B1)

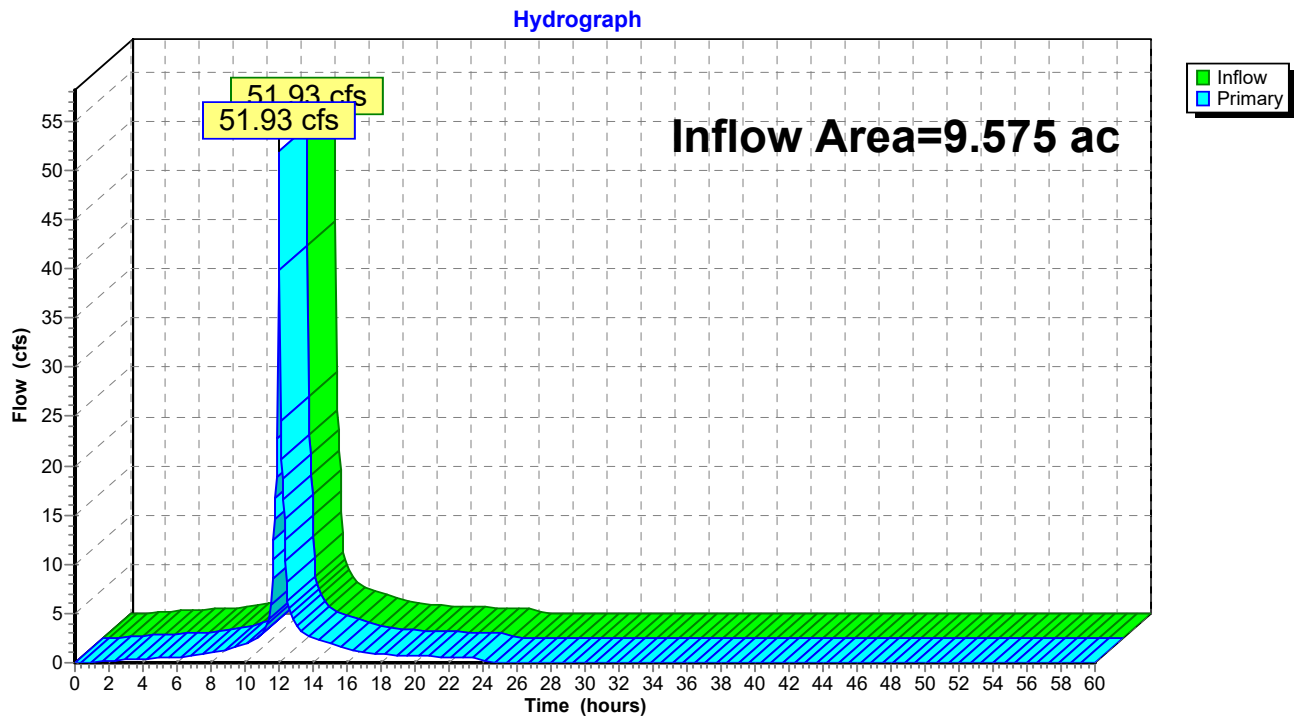
Inflow Area = 9.575 ac, 63.56% Impervious, Inflow Depth = 4.57" for 25-YR event

Inflow = 51.93 cfs @ 12.00 hrs, Volume= 3.646 af

Primary = 51.93 cfs @ 12.00 hrs, Volume= 3.646 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 10L: Outfall B (B1)



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 11S: Impervious

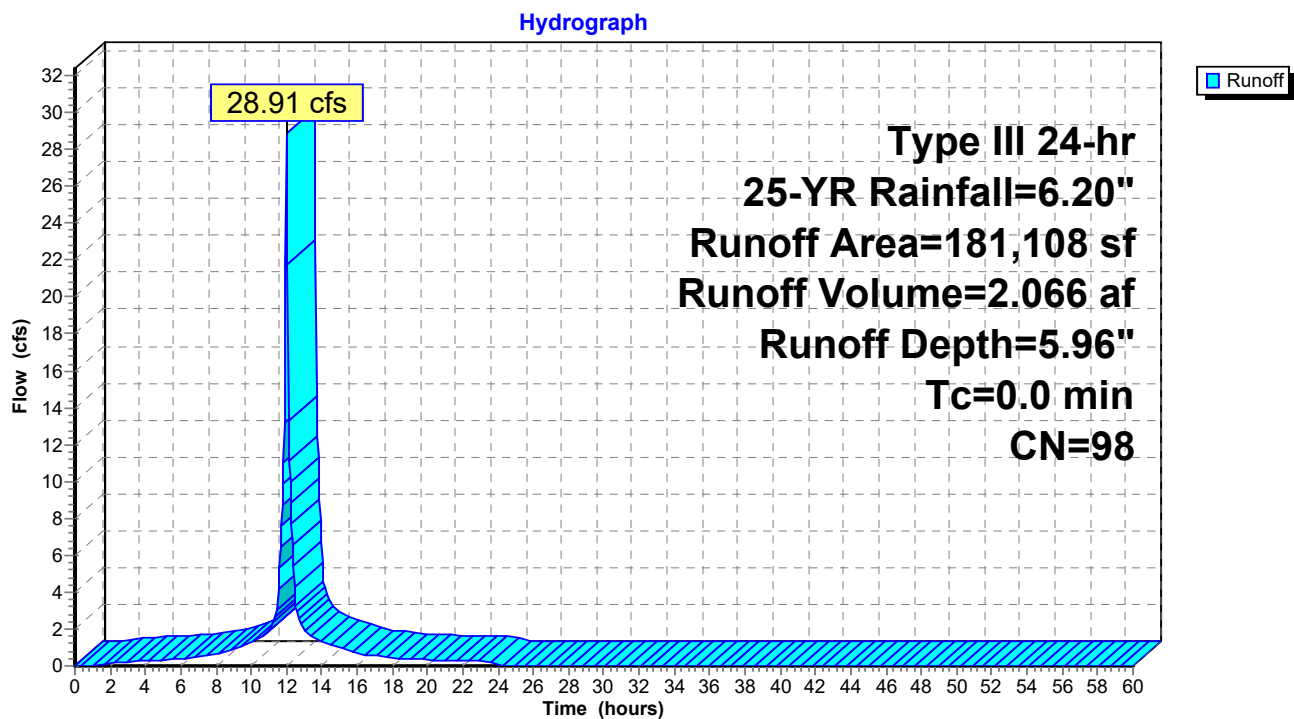
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 28.91 cfs @ 12.00 hrs, Volume= 2.066 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
181,108	98	Paved parking, HSG B
181,108		100.00% Impervious Area

Subcatchment 11S: Impervious



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 12S: Pervious

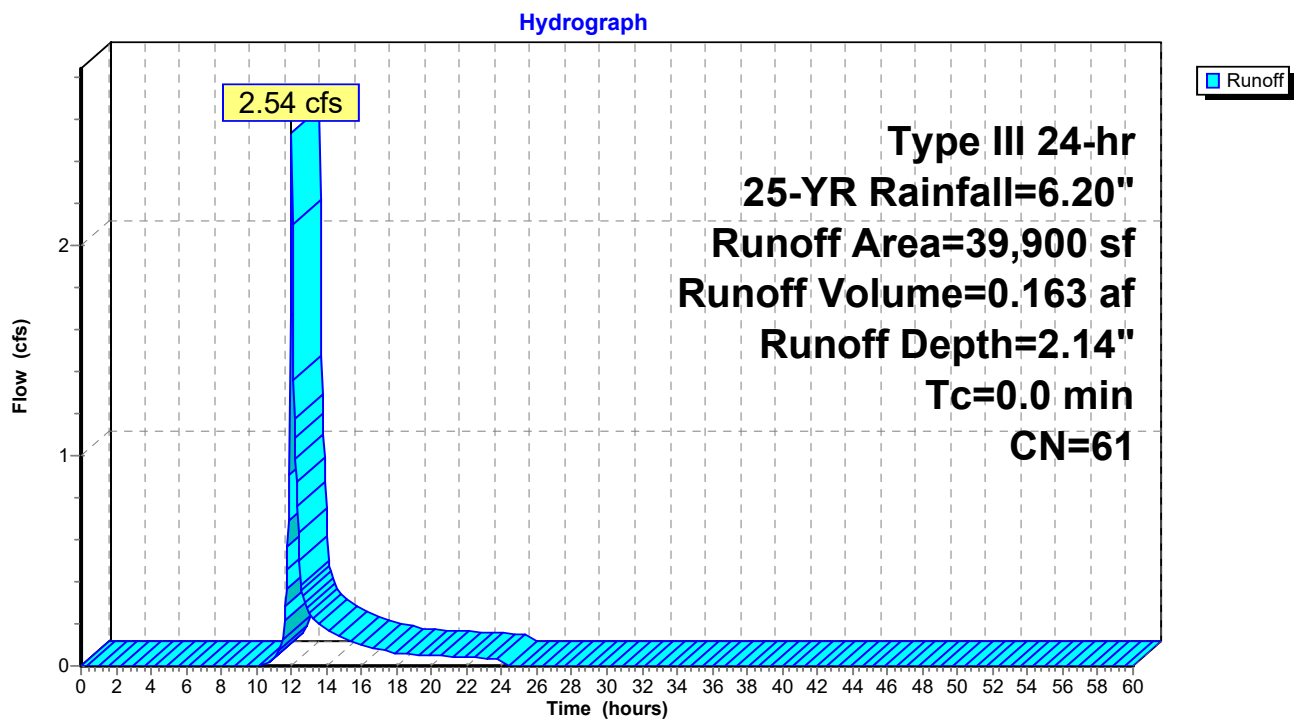
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 2.54 cfs @ 12.01 hrs, Volume= 0.163 af, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
39,900	61	>75% Grass cover, Good, HSG B
39,900		100.00% Pervious Area

Subcatchment 12S: Pervious



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Link 13L: Outfall C

Inflow Area = 5.074 ac, 81.95% Impervious, Inflow Depth = 5.27" for 25-YR event

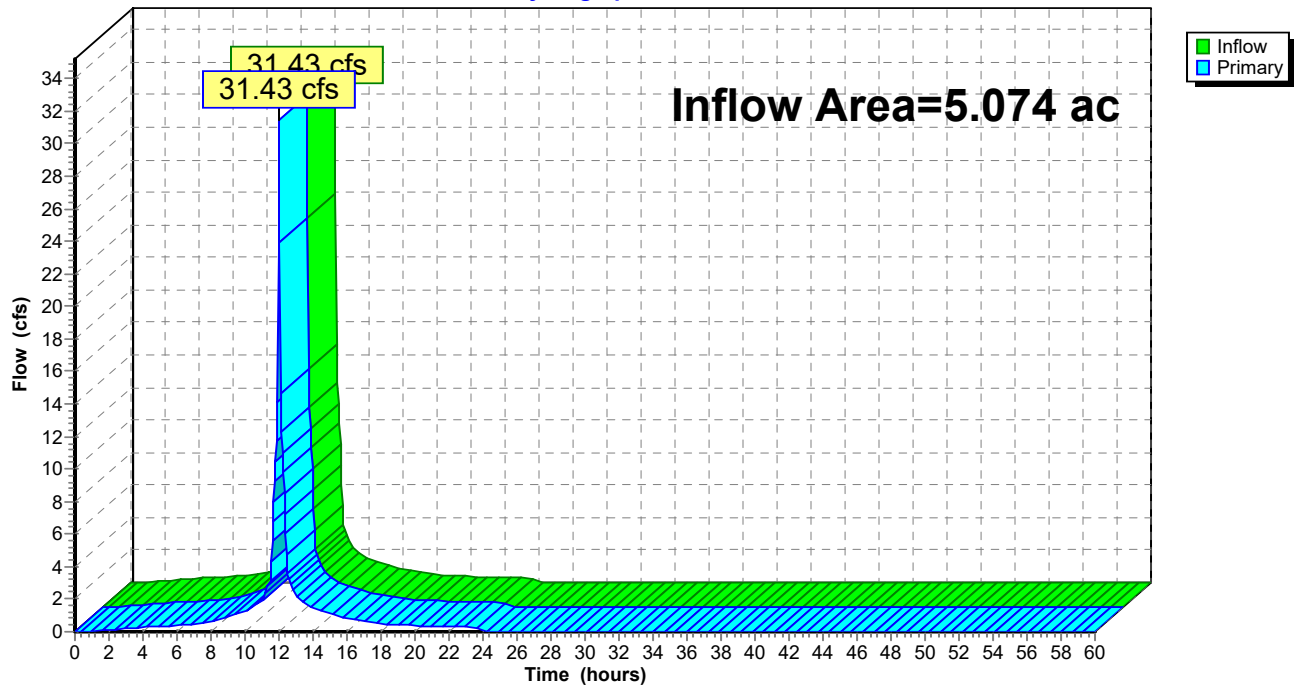
Inflow = 31.43 cfs @ 12.00 hrs, Volume= 2.229 af

Primary = 31.43 cfs @ 12.00 hrs, Volume= 2.229 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 13L: Outfall C

Hydrograph



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 14S: Impervious

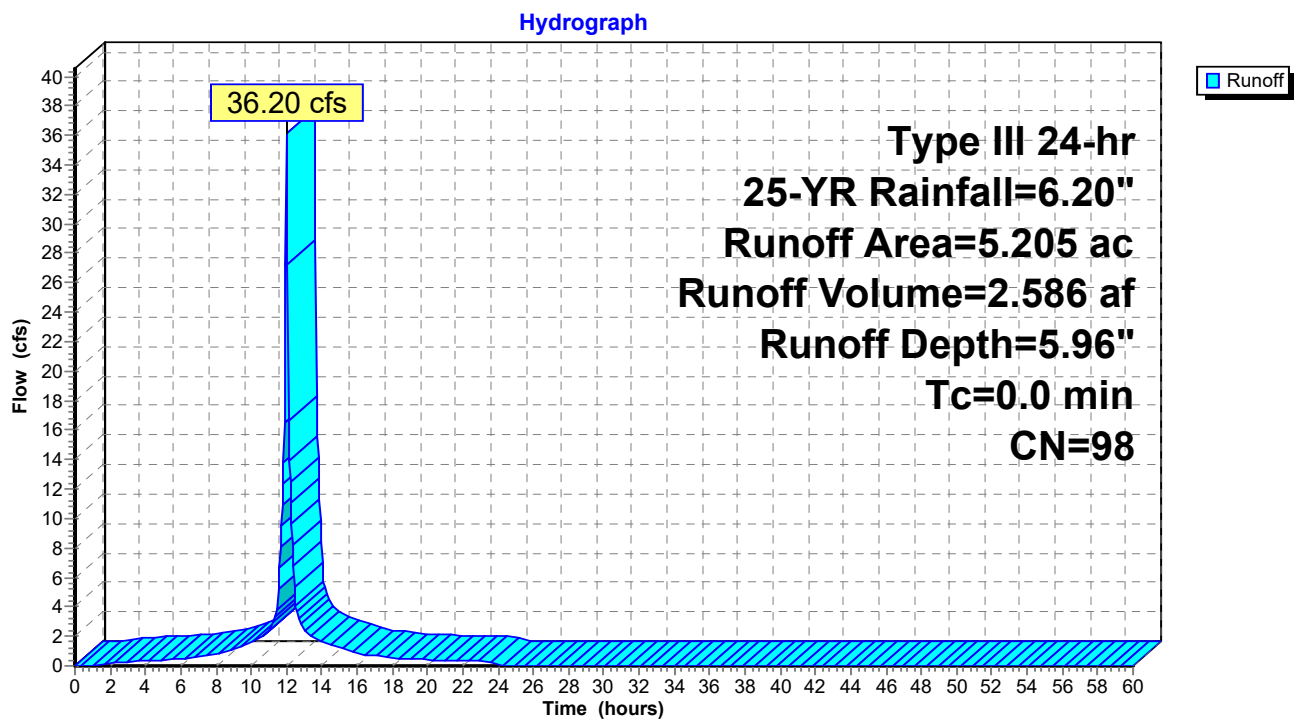
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 36.20 cfs @ 12.00 hrs, Volume= 2.586 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
5.205	98	Paved parking, HSG B
5.205		100.00% Impervious Area

Subcatchment 14S: Impervious



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Summary for Subcatchment 15S: Pervious

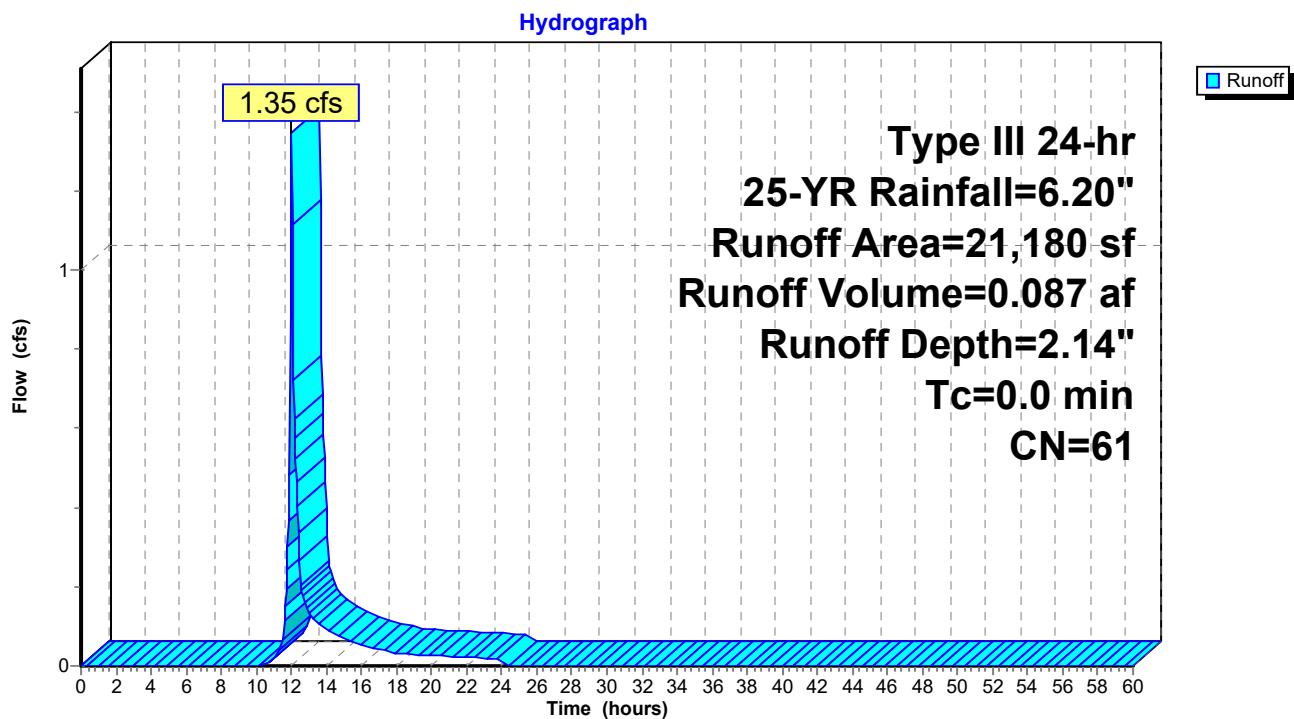
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.35 cfs @ 12.01 hrs, Volume= 0.087 af, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
21,180	61	>75% Grass cover, Good, HSG B
21,180		100.00% Pervious Area

Subcatchment 15S: Pervious



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Summary for Link 16L: Outfall B (B3)

Inflow Area = 5.691 ac, 91.46% Impervious, Inflow Depth = 5.64" for 25-YR event

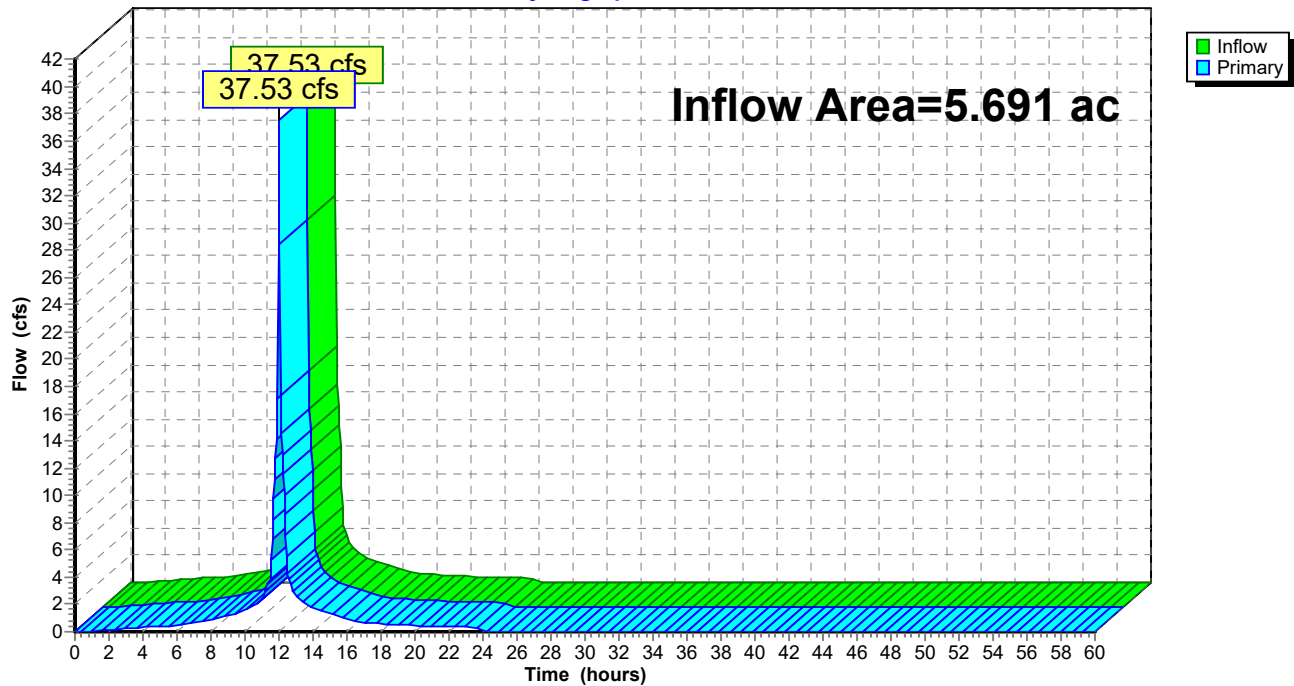
Inflow = 37.53 cfs @ 12.00 hrs, Volume= 2.673 af

Primary = 37.53 cfs @ 12.00 hrs, Volume= 2.673 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 16L: Outfall B (B3)

Hydrograph



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 17S: Roof Area

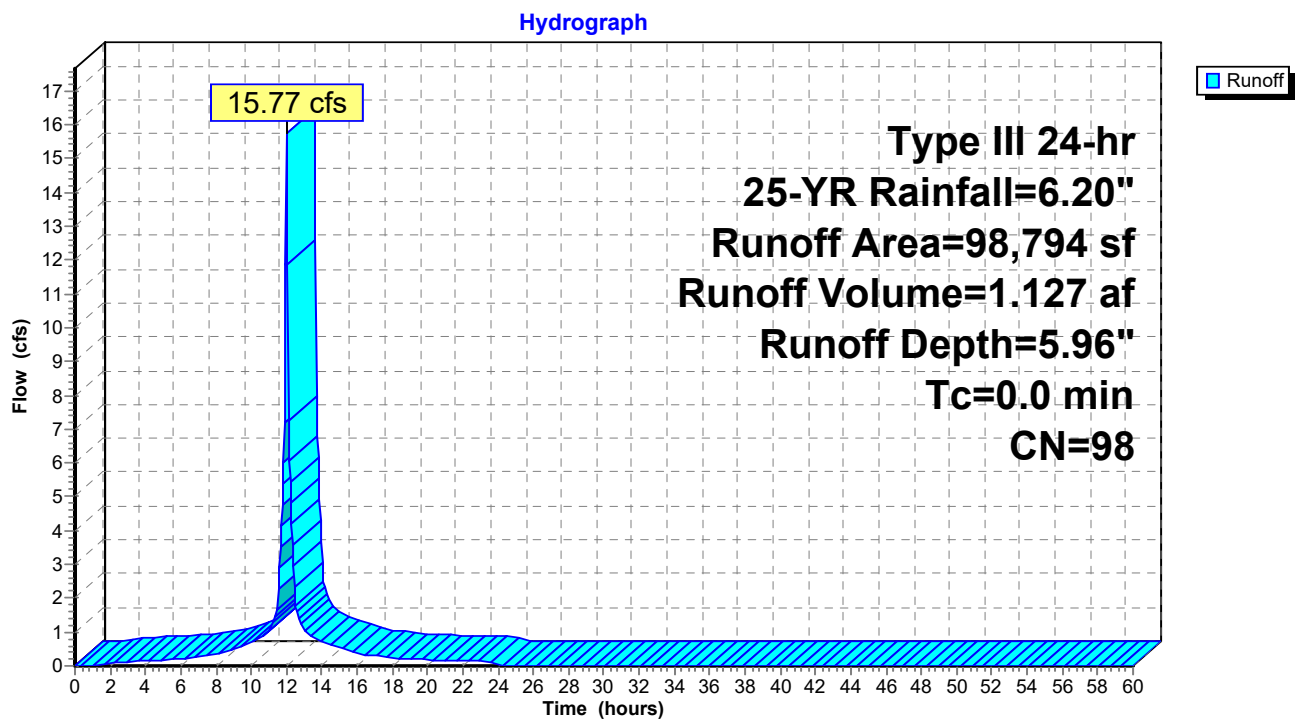
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 15.77 cfs @ 12.00 hrs, Volume= 1.127 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
98,794	98	Roofs, HSG B
98,794		100.00% Impervious Area

Subcatchment 17S: Roof Area



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Type III 24-hr 25-YR Rainfall=6.20"

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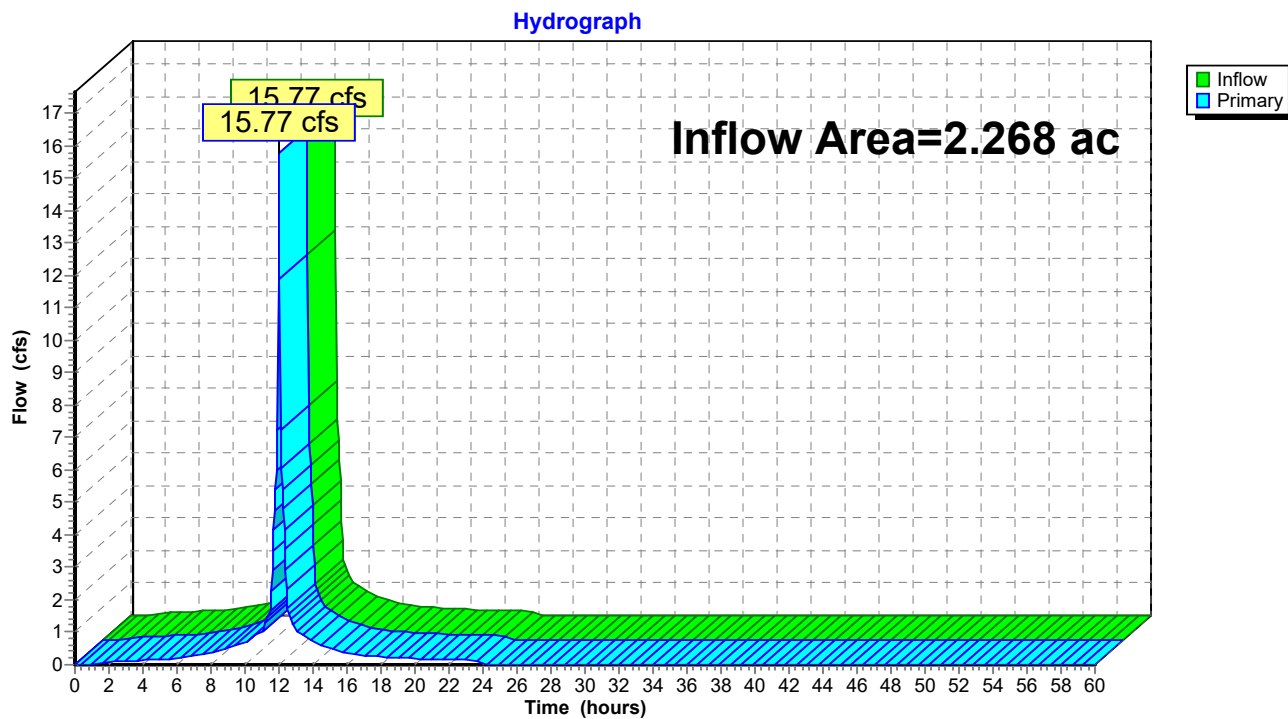
Page 12

Summary for Link 19L: Post WQ Discharge (B1)

Inflow Area = 2.268 ac, 100.00% Impervious, Inflow Depth = 5.96" for 25-YR event
Inflow = 15.77 cfs @ 12.00 hrs, Volume= 1.127 af
Primary = 15.77 cfs @ 12.00 hrs, Volume= 1.127 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 19L: Post WQ Discharge (B1)



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 20S: Impervious

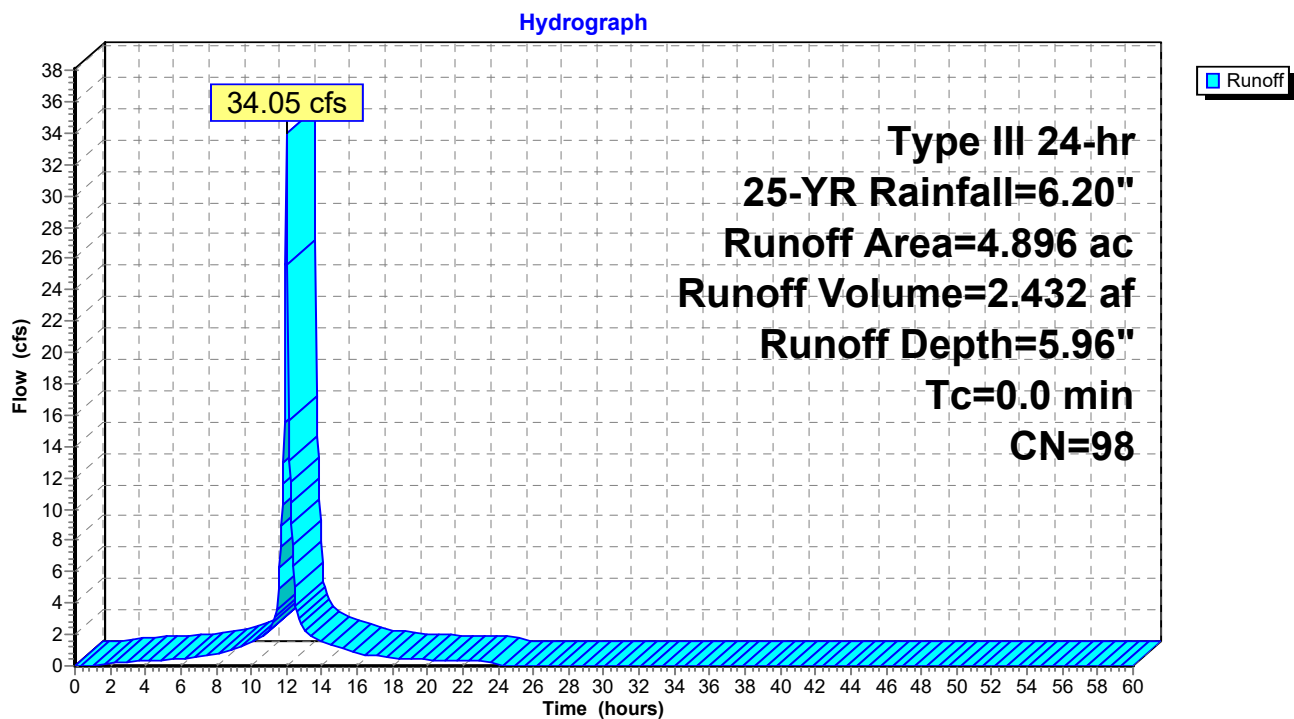
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 34.05 cfs @ 12.00 hrs, Volume= 2.432 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
4.896	98	Paved parking, HSG B
4.896		100.00% Impervious Area

Subcatchment 20S: Impervious



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 21S: Pervious

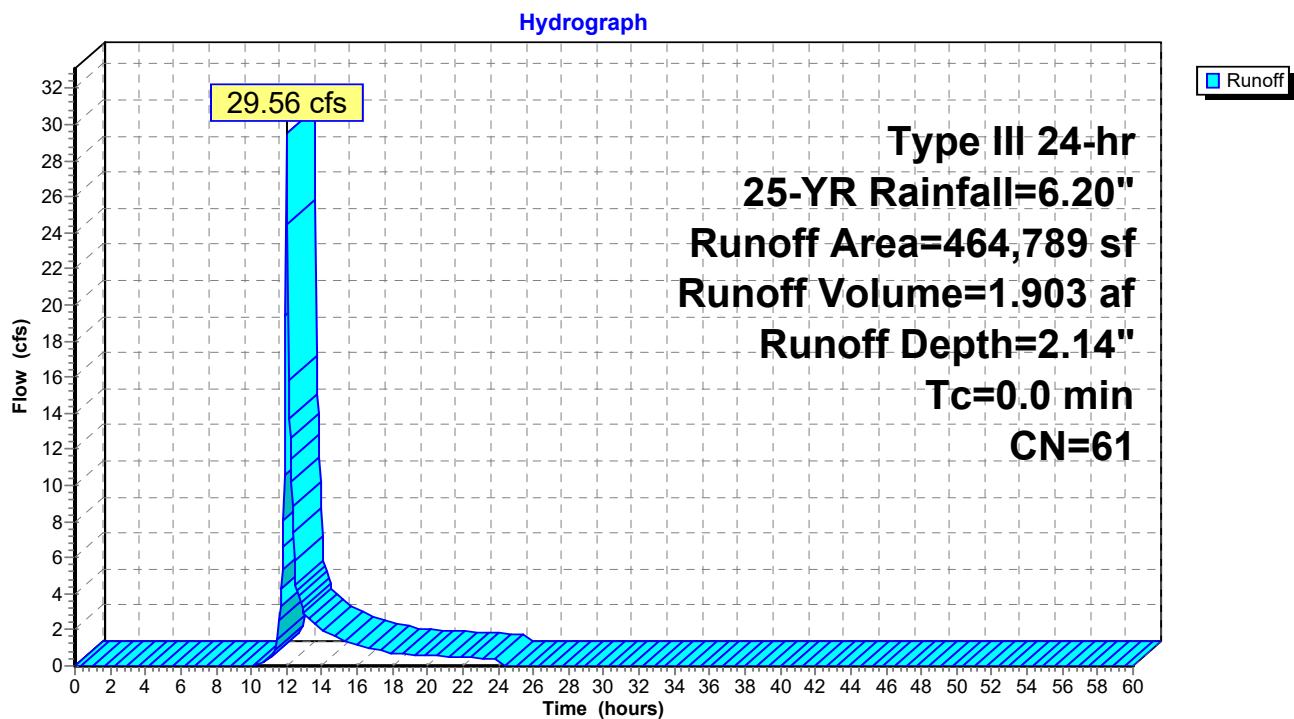
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 29.56 cfs @ 12.01 hrs, Volume= 1.903 af, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
464,789	61	>75% Grass cover, Good, HSG B
464,789		100.00% Pervious Area

Subcatchment 21S: Pervious



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Link 22L: Outfall A (A1)

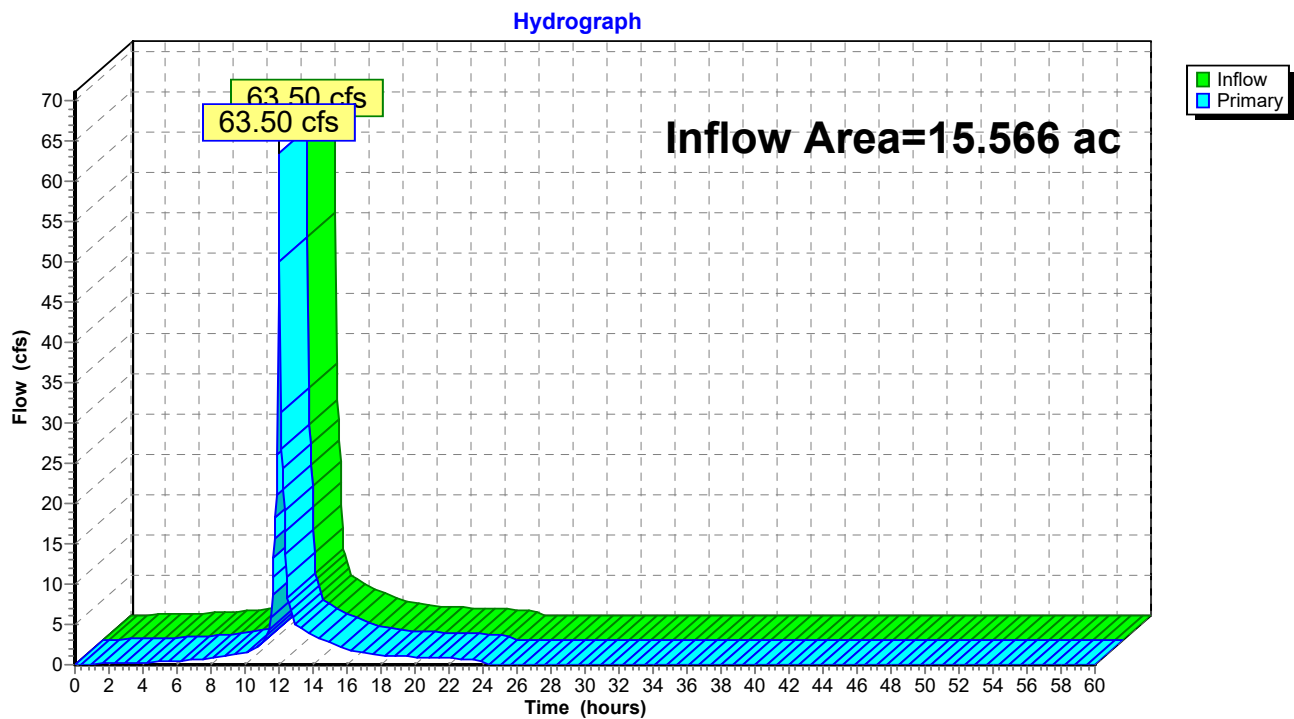
Inflow Area = 15.566 ac, 31.45% Impervious, Inflow Depth = 3.34" for 25-YR event

Inflow = 63.50 cfs @ 12.00 hrs, Volume= 4.336 af

Primary = 63.50 cfs @ 12.00 hrs, Volume= 4.336 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 22L: Outfall A (A1)



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 23S: Impervious

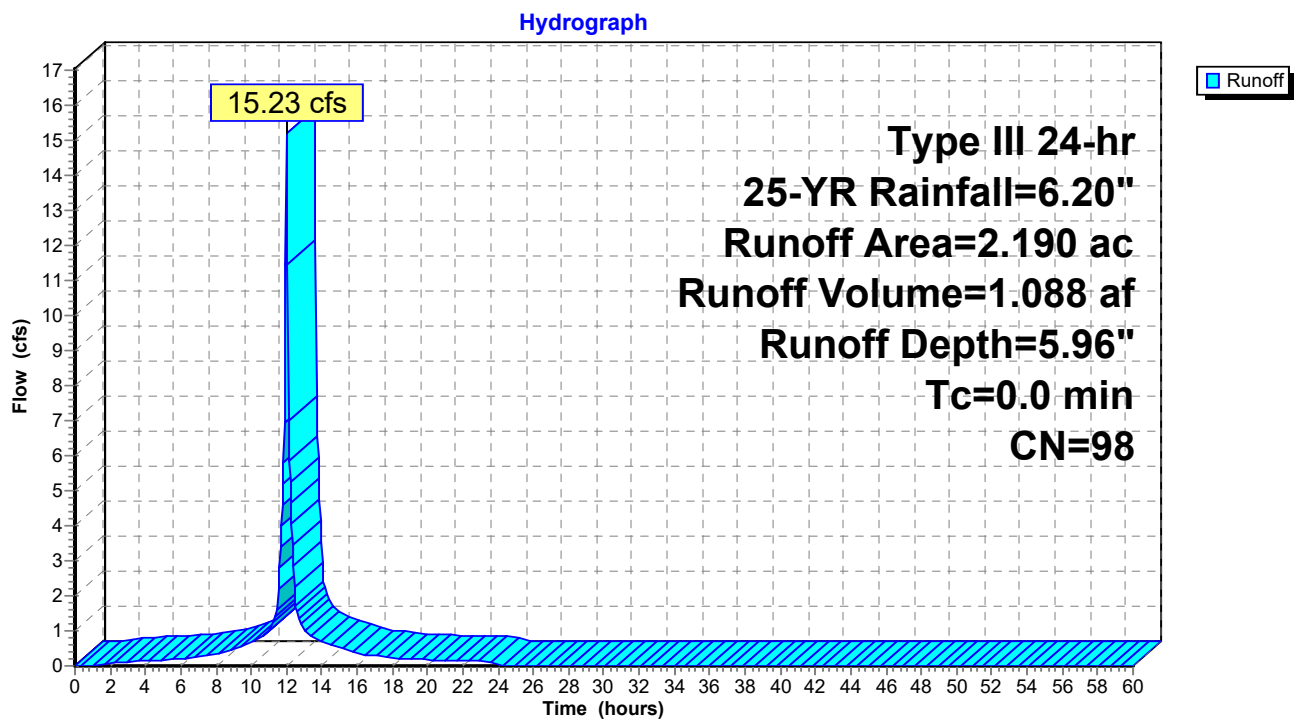
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 15.23 cfs @ 12.00 hrs, Volume= 1.088 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
2.190	98	Paved parking, HSG B
2.190		100.00% Impervious Area

Subcatchment 23S: Impervious



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 24S: Pervious

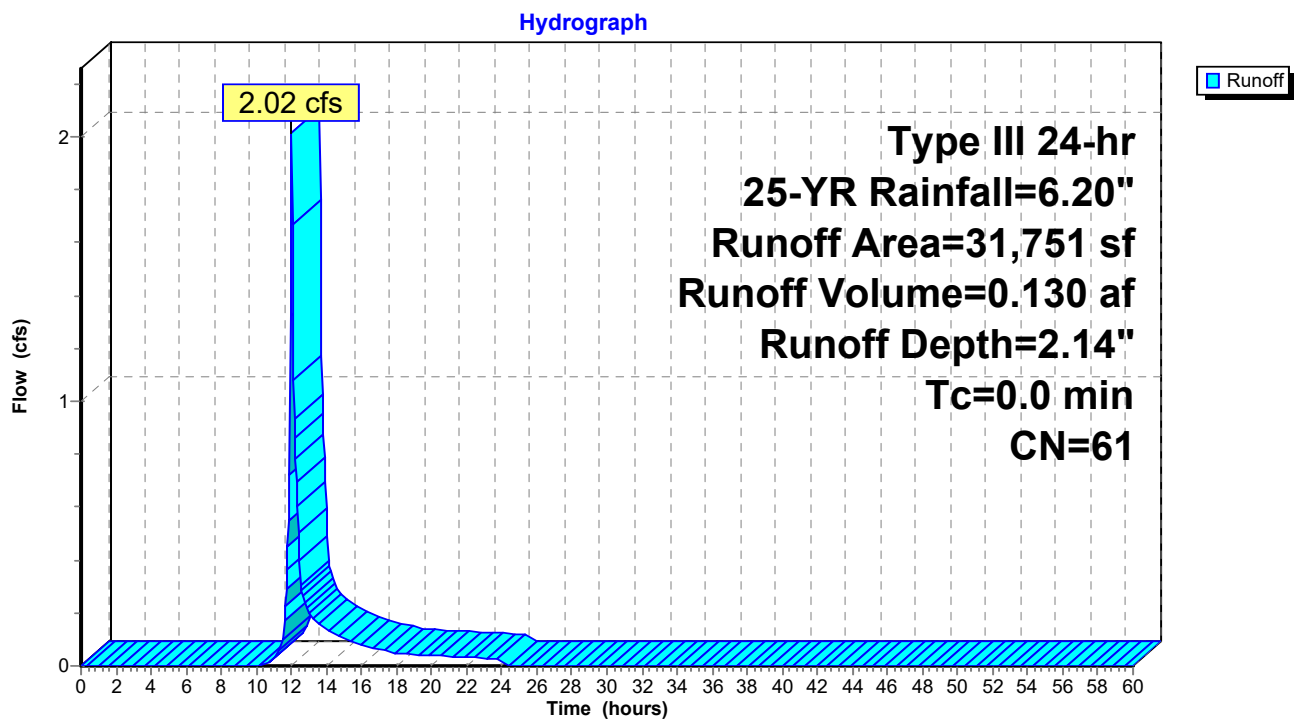
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.02 cfs @ 12.01 hrs, Volume= 0.130 af, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
31,751	61	>75% Grass cover, Good, HSG B
31,751		100.00% Pervious Area

Subcatchment 24S: Pervious



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Summary for Link 25L: Outfall A (A2)

Inflow Area = 2.919 ac, 75.03% Impervious, Inflow Depth = 5.01" for 25-YR event

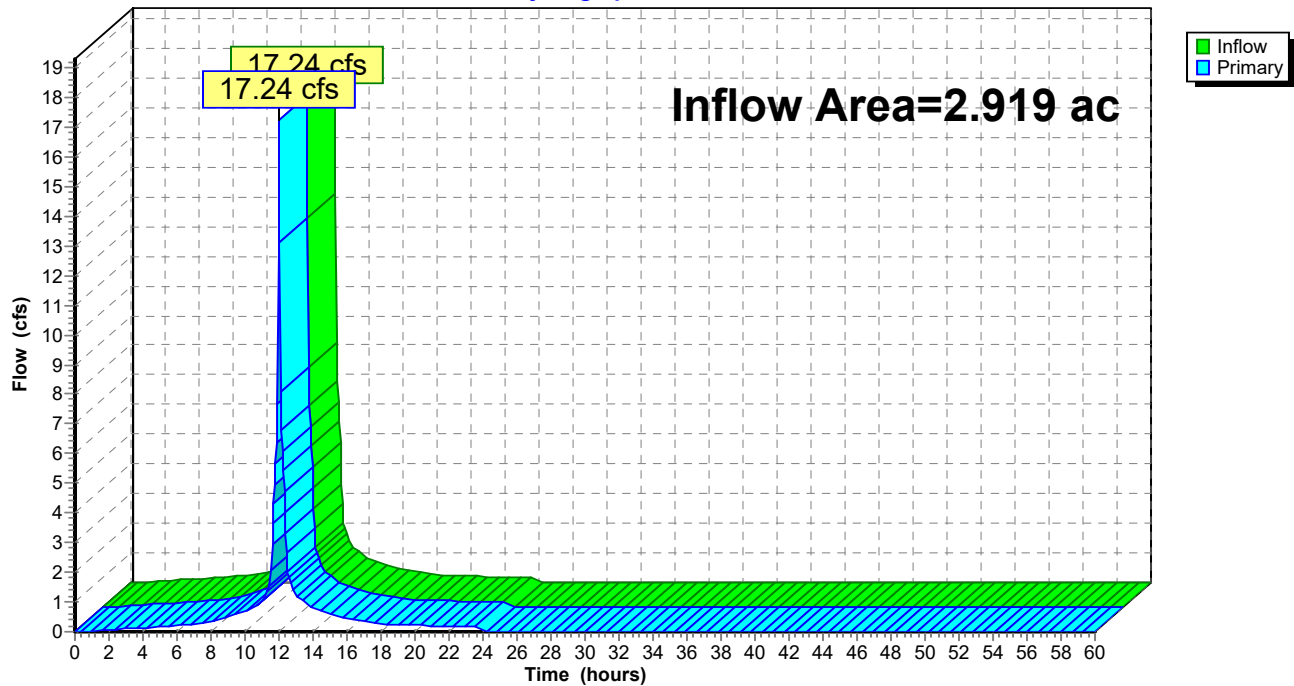
Inflow = 17.24 cfs @ 12.00 hrs, Volume= 1.218 af

Primary = 17.24 cfs @ 12.00 hrs, Volume= 1.218 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 25L: Outfall A (A2)

Hydrograph



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Summary for Subcatchment 26S: Impervious

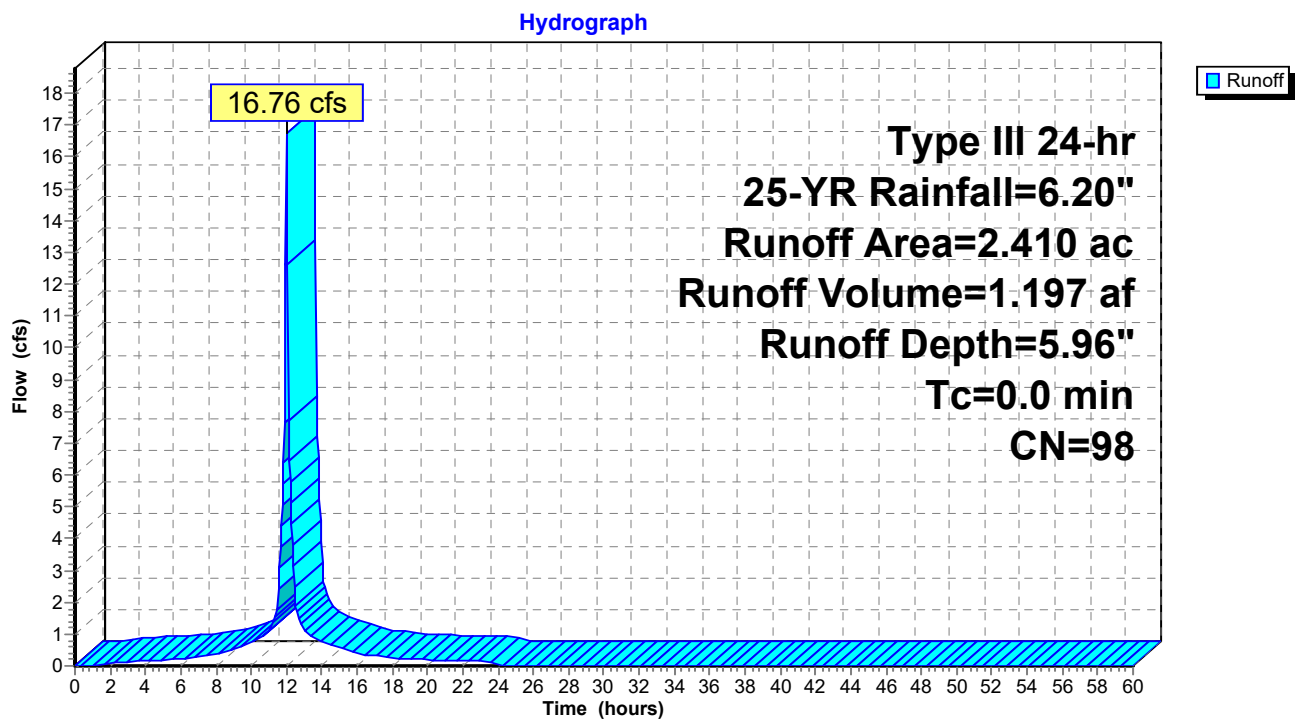
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 16.76 cfs @ 12.00 hrs, Volume= 1.197 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
2.410	98	Paved parking, HSG B
2.410		100.00% Impervious Area

Subcatchment 26S: Impervious



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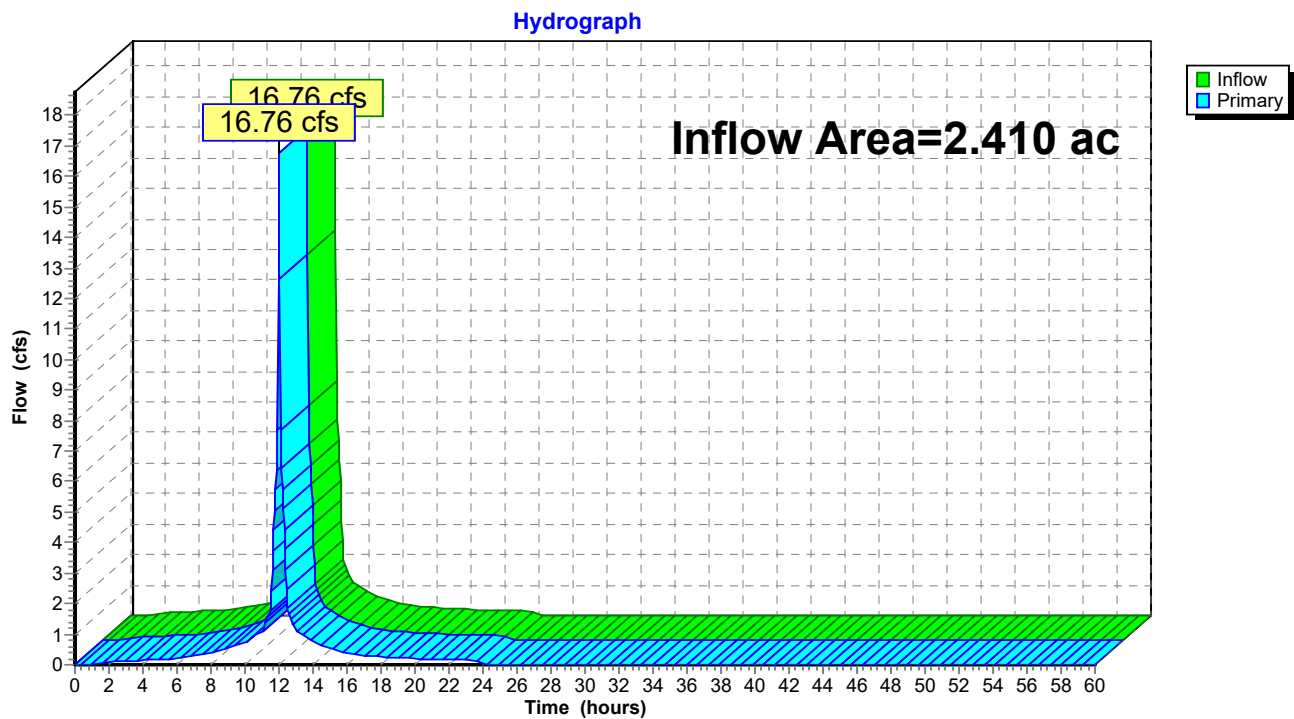
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Summary for Link 27L: Outfall B (B2)

Inflow Area = 2.410 ac, 100.00% Impervious, Inflow Depth = 5.96" for 25-YR event
Inflow = 16.76 cfs @ 12.00 hrs, Volume= 1.197 af
Primary = 16.76 cfs @ 12.00 hrs, Volume= 1.197 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 27L: Outfall B (B2)



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Summary for Subcatchment 28S: Roof Area

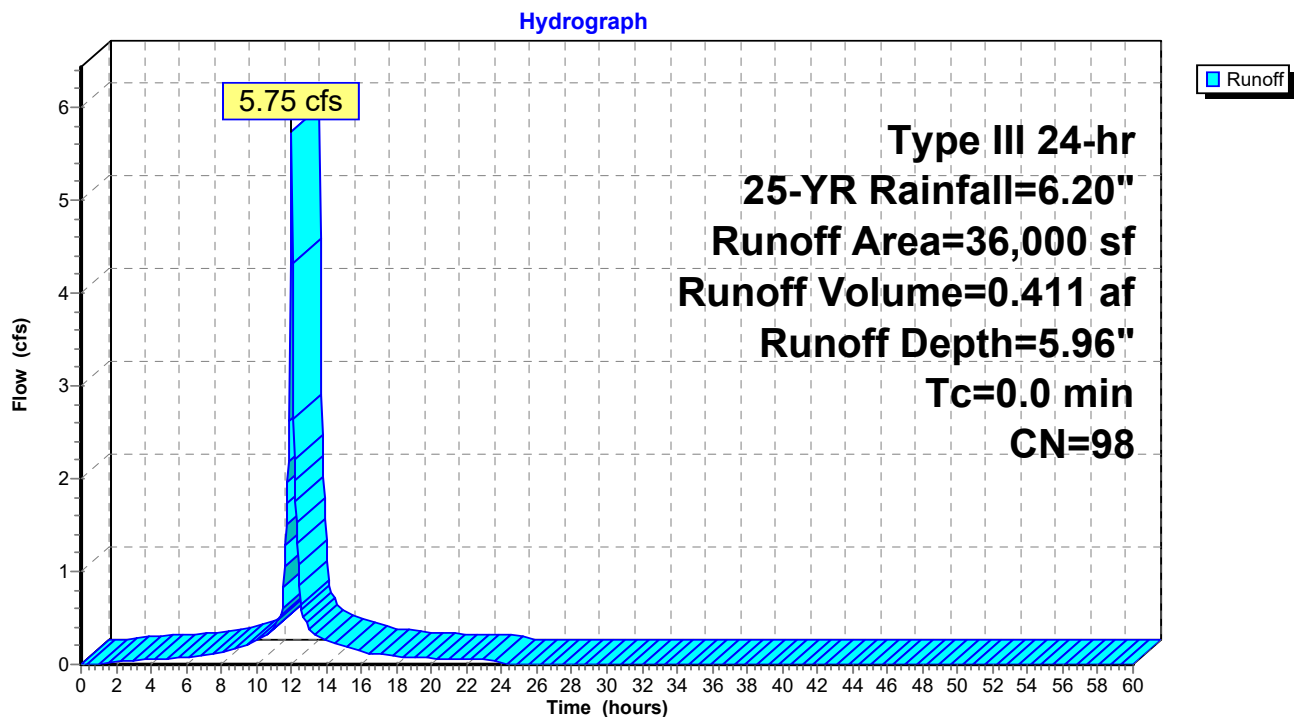
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 5.75 cfs @ 12.00 hrs, Volume= 0.411 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
36,000	98	Unconnected roofs, HSG C
36,000		100.00% Impervious Area
36,000		100.00% Unconnected

Subcatchment 28S: Roof Area



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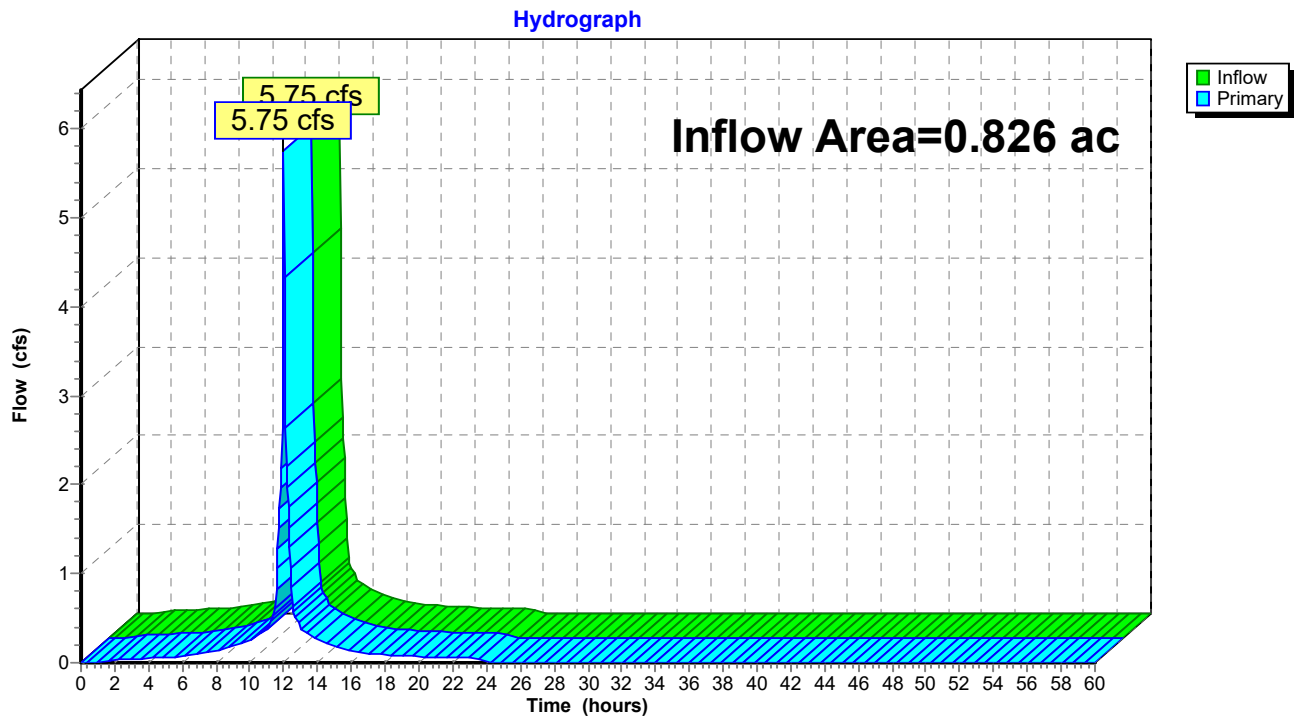
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Summary for Link 29L: Post WQ Discharge (B3)

Inflow Area = 0.826 ac, 100.00% Impervious, Inflow Depth = 5.96" for 25-YR event
Inflow = 5.75 cfs @ 12.00 hrs, Volume= 0.411 af
Primary = 5.75 cfs @ 12.00 hrs, Volume= 0.411 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 29L: Post WQ Discharge (B3)



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Summary for Subcatchment 30S: Impervious

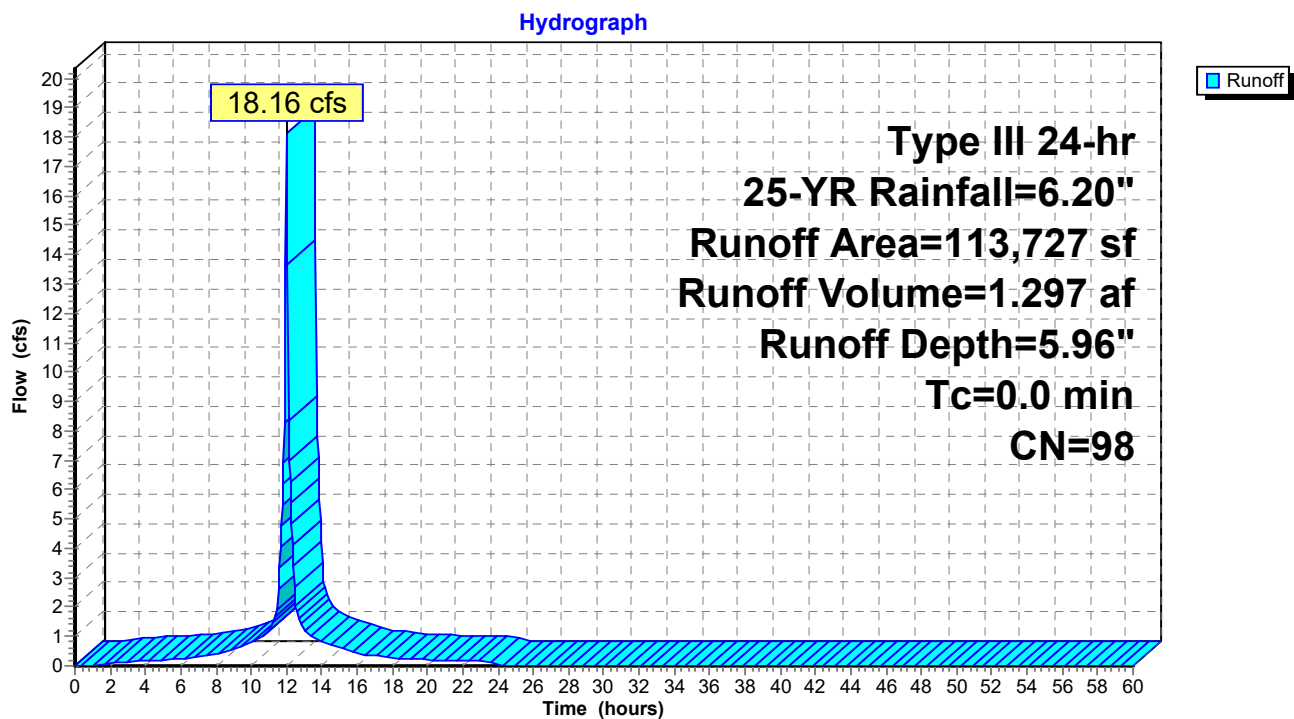
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 18.16 cfs @ 12.00 hrs, Volume= 1.297 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
113,727	98	Water Surface, HSG C
113,727		100.00% Impervious Area

Subcatchment 30S: Impervious



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 31S: Pervious

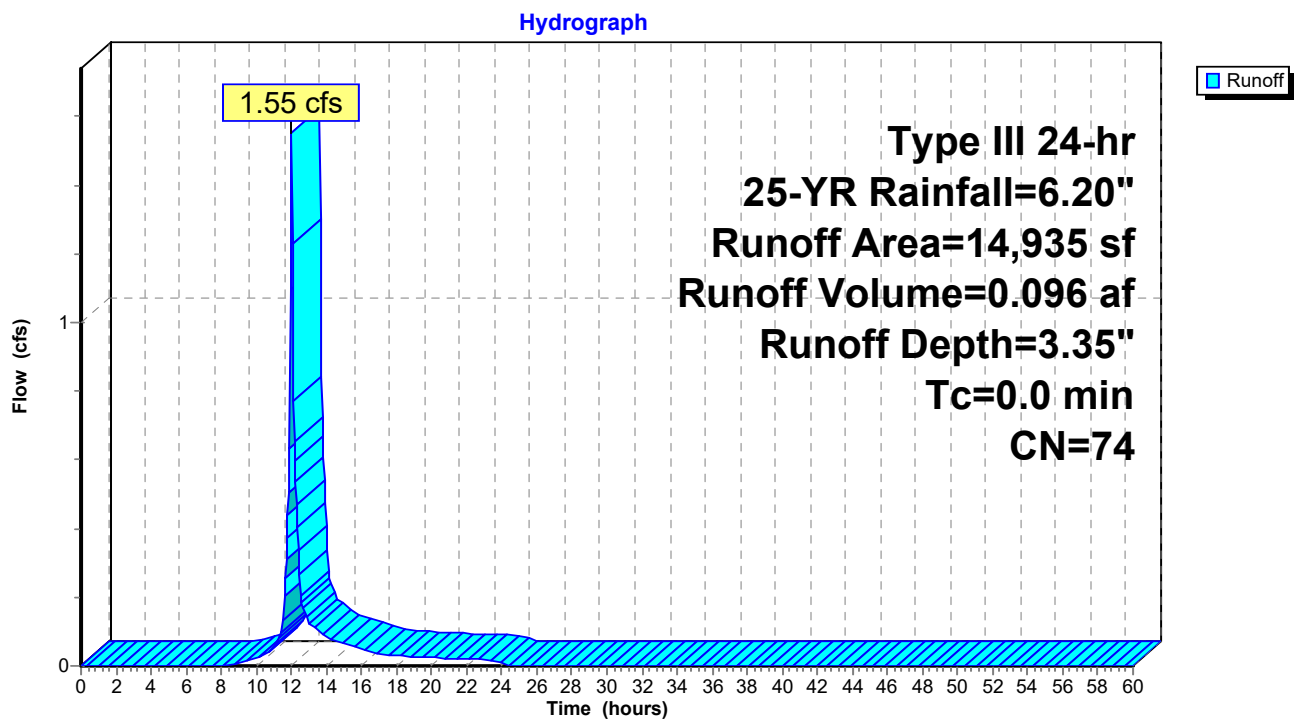
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 1.55 cfs @ 12.00 hrs, Volume= 0.096 af, Depth= 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
14,935	74	>75% Grass cover, Good, HSG C
14,935		100.00% Pervious Area

Subcatchment 31S: Pervious



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Summary for Link 32L: Outfall D (FES 4)

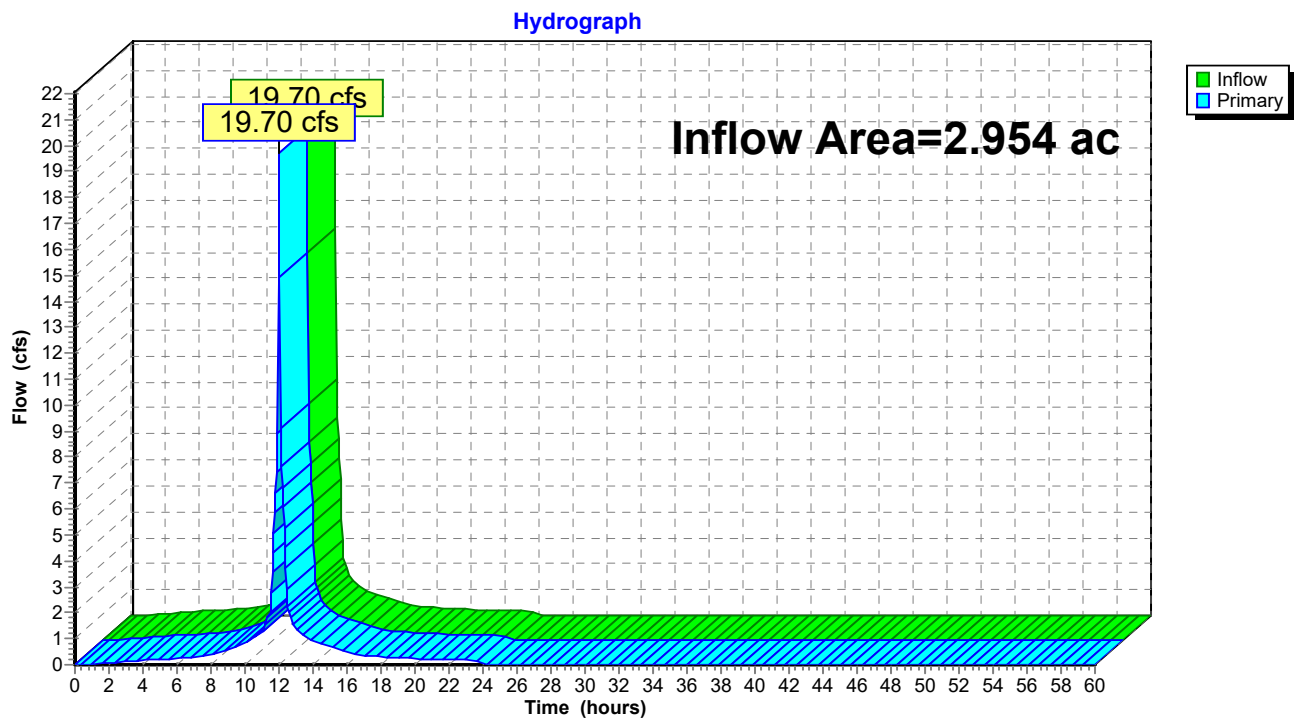
Inflow Area = 2.954 ac, 88.39% Impervious, Inflow Depth = 5.66" for 25-YR event

Inflow = 19.70 cfs @ 12.00 hrs, Volume= 1.393 af

Primary = 19.70 cfs @ 12.00 hrs, Volume= 1.393 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 32L: Outfall D (FES 4)



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 33S: Impervious

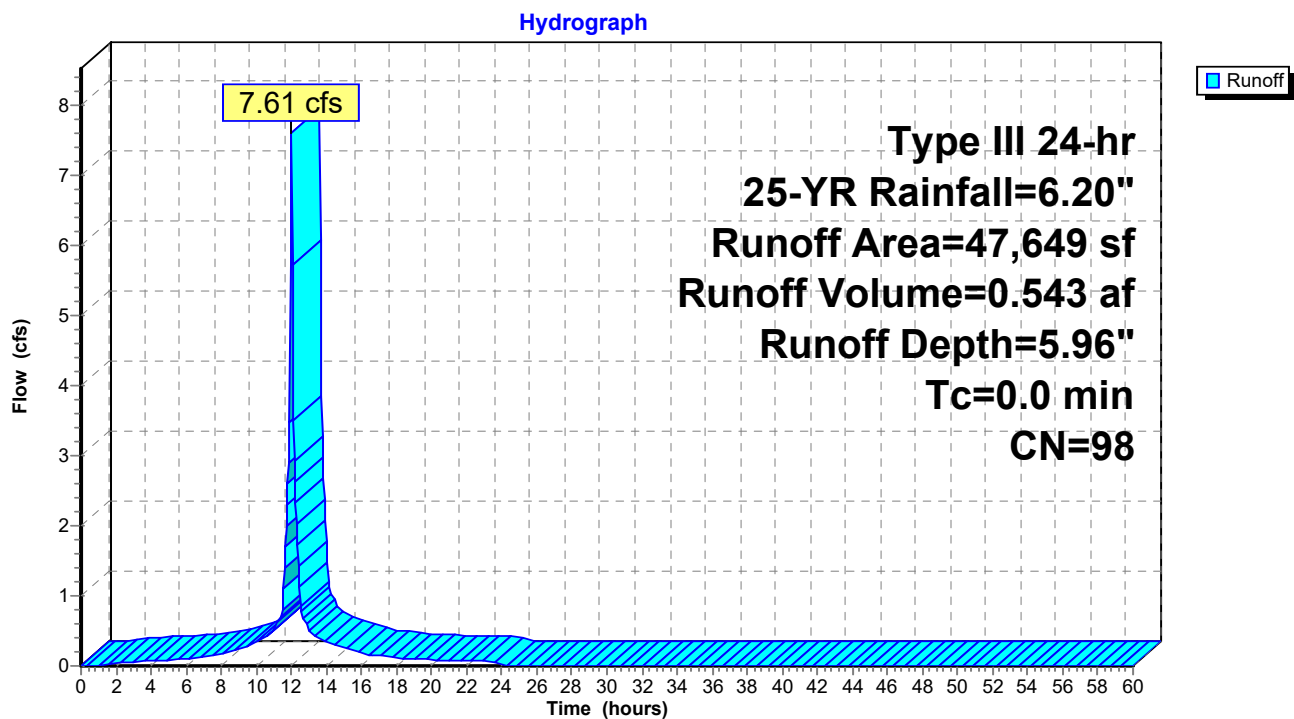
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 7.61 cfs @ 12.00 hrs, Volume= 0.543 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
47,649	98	Paved parking, HSG C
47,649		100.00% Impervious Area

Subcatchment 33S: Impervious



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 34S: Pervious

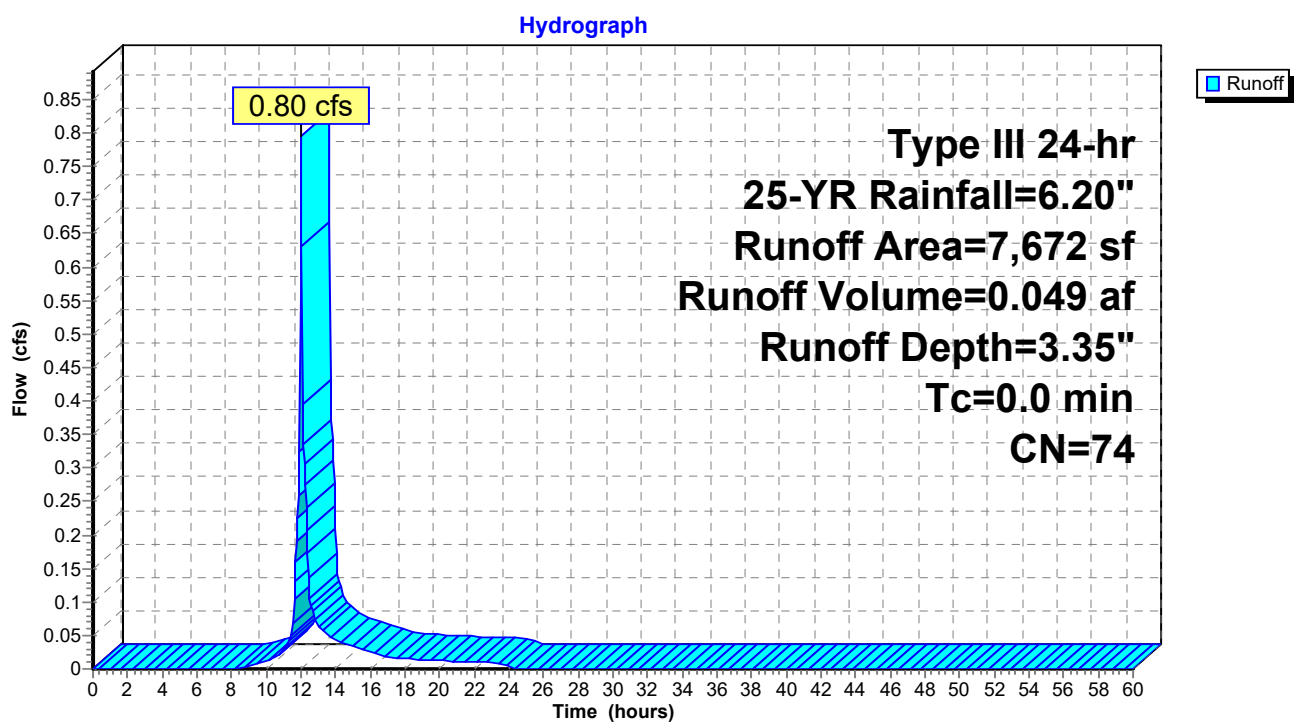
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 0.80 cfs @ 12.00 hrs, Volume= 0.049 af, Depth= 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (sf)	CN	Description
7,672	74	>75% Grass cover, Good, HSG C
7,672		100.00% Pervious Area

Subcatchment 34S: Pervious



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Type III 24-hr 25-YR Rainfall=6.20"

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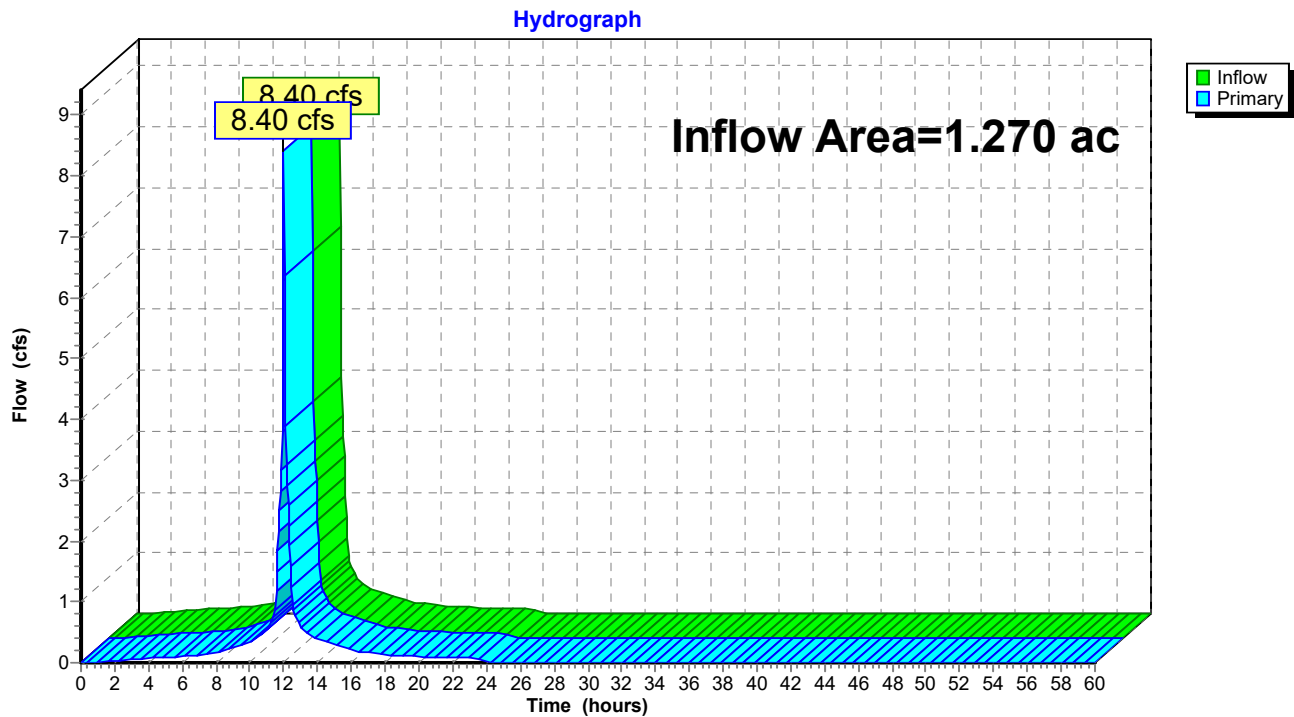
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Summary for Link 35L: Outfall D (FES 5)

Inflow Area = 1.270 ac, 86.13% Impervious, Inflow Depth = 5.60" for 25-YR event
Inflow = 8.40 cfs @ 12.00 hrs, Volume= 0.593 af
Primary = 8.40 cfs @ 12.00 hrs, Volume= 0.593 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 35L: Outfall D (FES 5)



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Type III 24-hr 25-YR Rainfall=6.20"

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Summary for Subcatchment 36S: Impervious

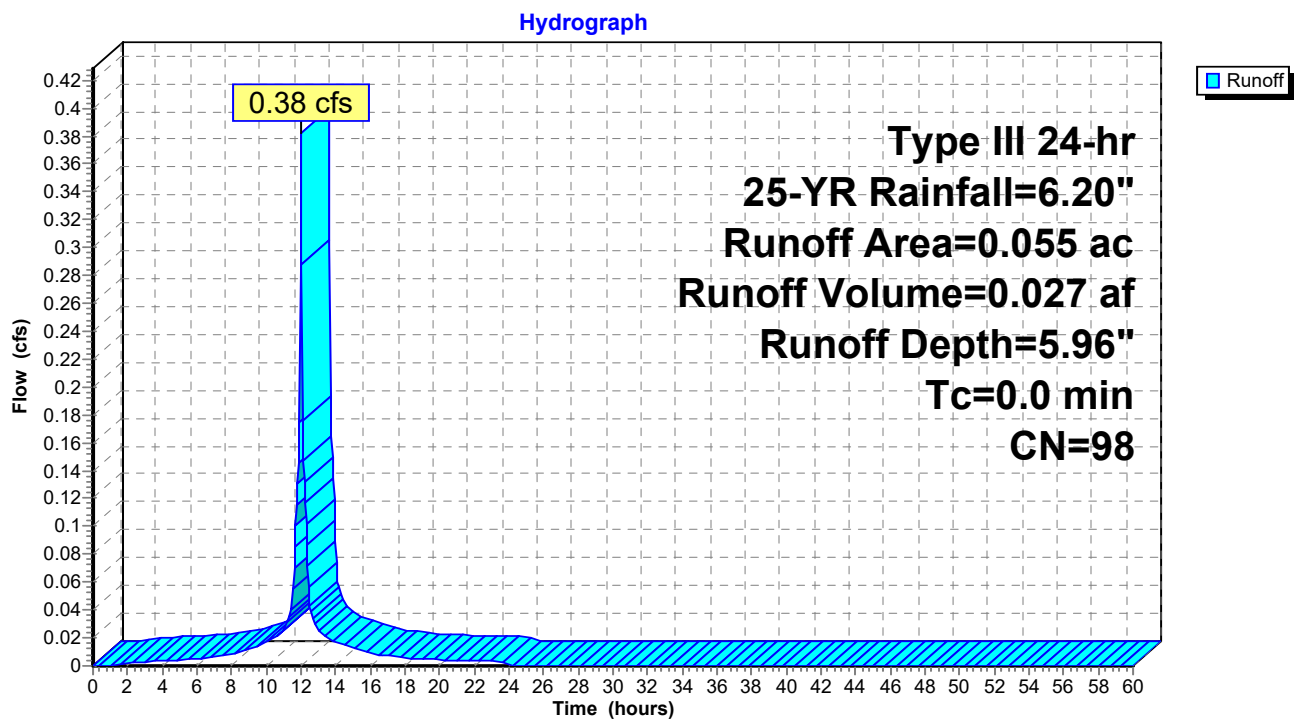
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 0.38 cfs @ 12.00 hrs, Volume= 0.027 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
Type III 24-hr 25-YR Rainfall=6.20"

Area (ac)	CN	Description
0.055	98	Water Surface, HSG C
0.055		100.00% Impervious Area

Subcatchment 36S: Impervious



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Type III 24-hr 25-YR Rainfall=6.20"

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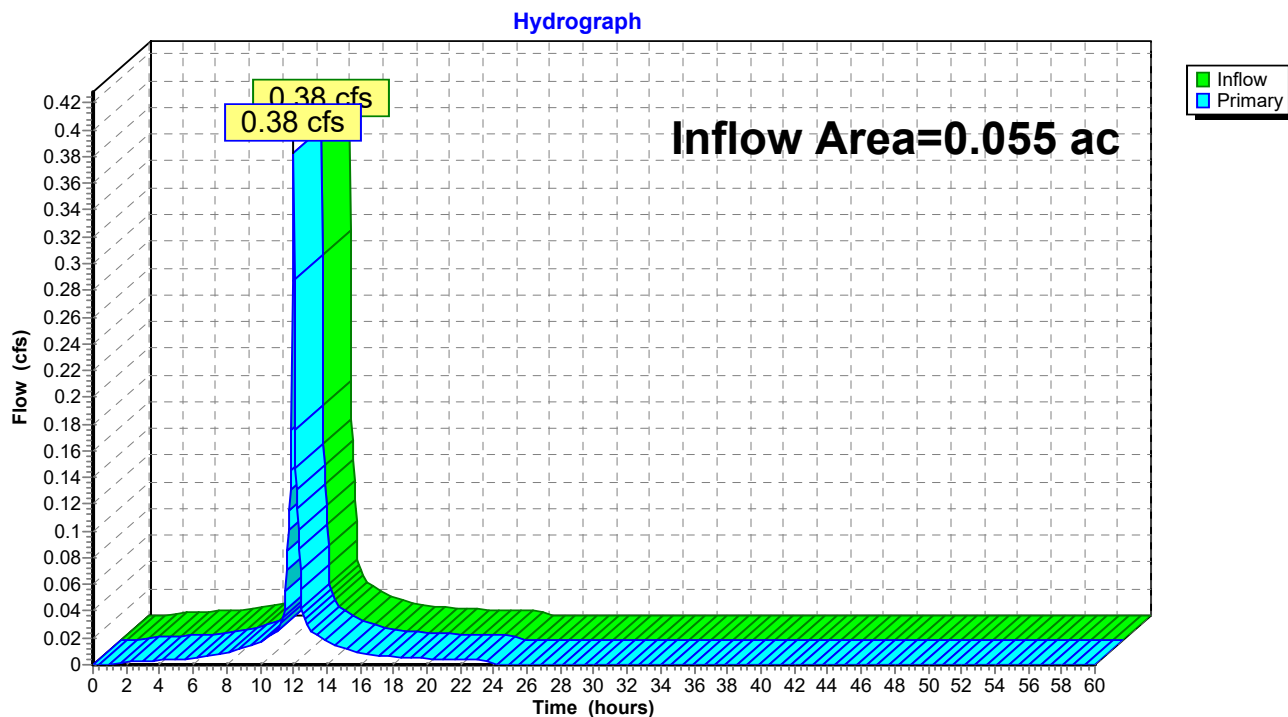
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Summary for Link 38L: Outfall D3 (From road)

Inflow Area = 0.055 ac, 100.00% Impervious, Inflow Depth = 5.96" for 25-YR event
Inflow = 0.38 cfs @ 12.00 hrs, Volume= 0.027 af
Primary = 0.38 cfs @ 12.00 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 38L: Outfall D3 (From road)



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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 8S: Impervious

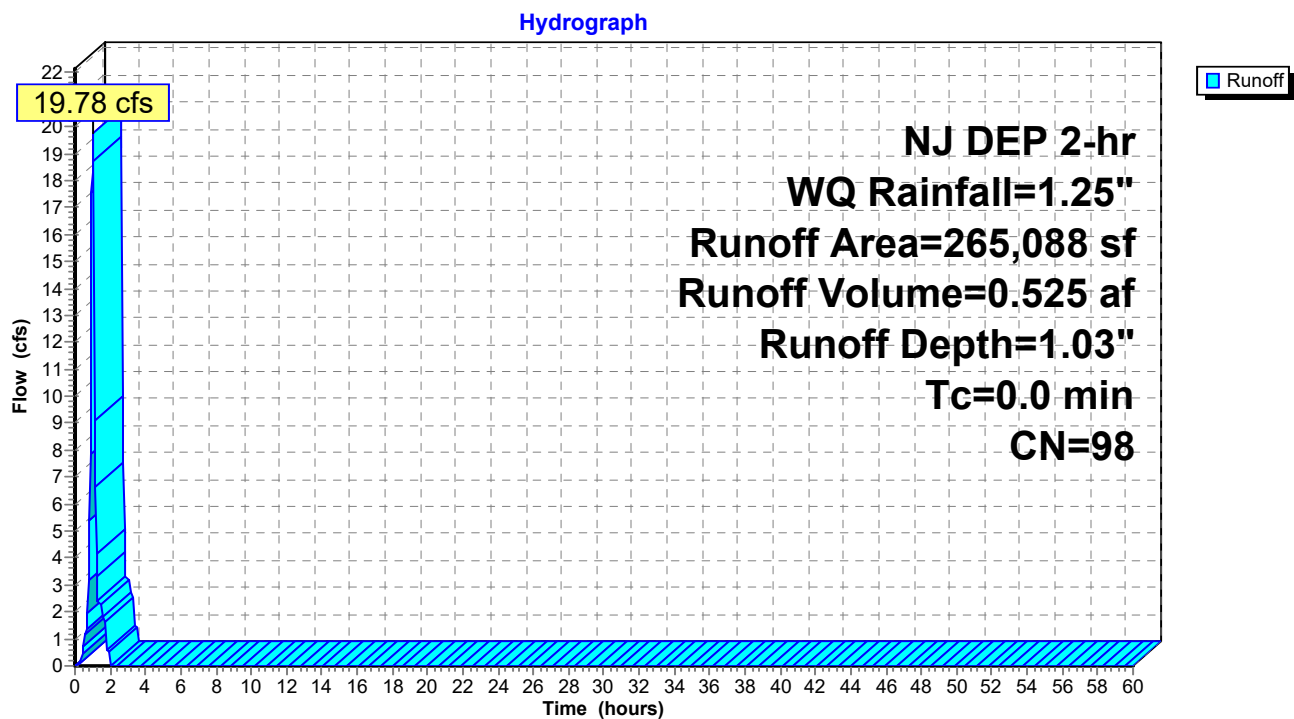
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 19.78 cfs @ 1.03 hrs, Volume= 0.525 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
265,088	98	Paved parking, HSG B
265,088		100.00% Impervious Area

Subcatchment 8S: Impervious



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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 9S: Pervious

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

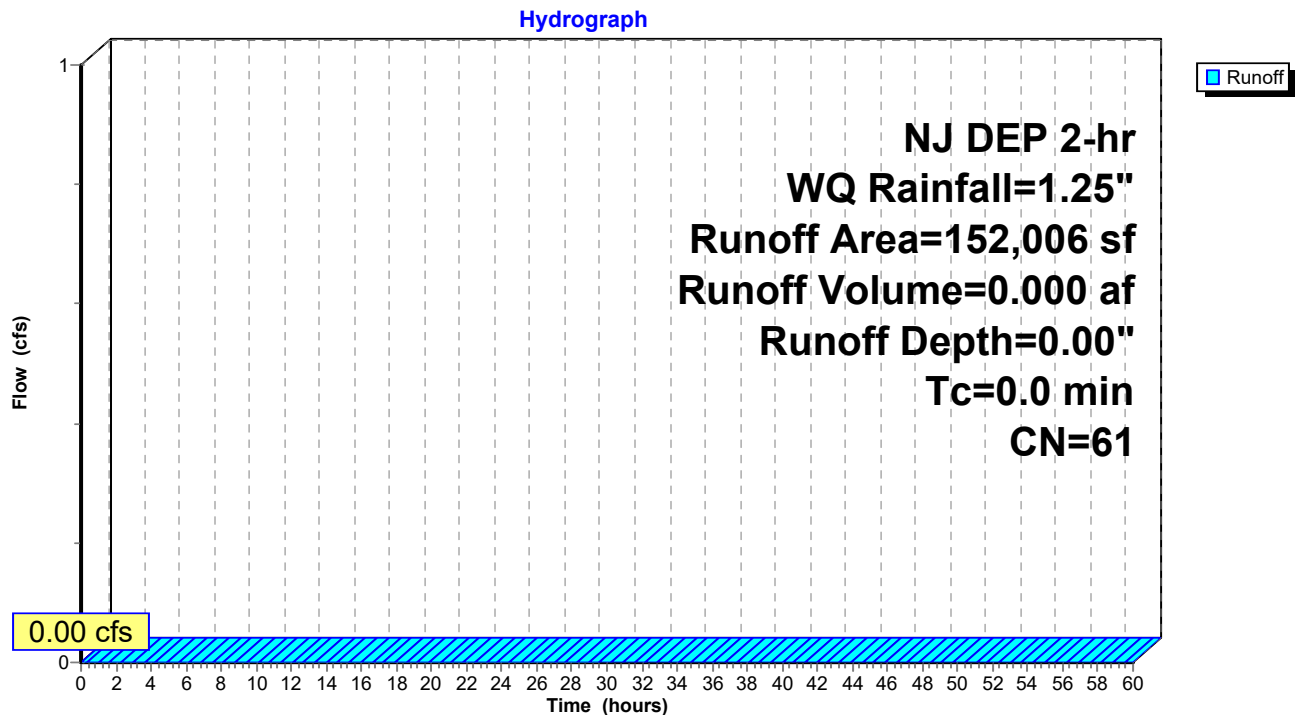
[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
152,006	61	>75% Grass cover, Good, HSG B
152,006		100.00% Pervious Area

Subcatchment 9S: Pervious



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NJ DEP 2-hr WQ Rainfall=1.25"

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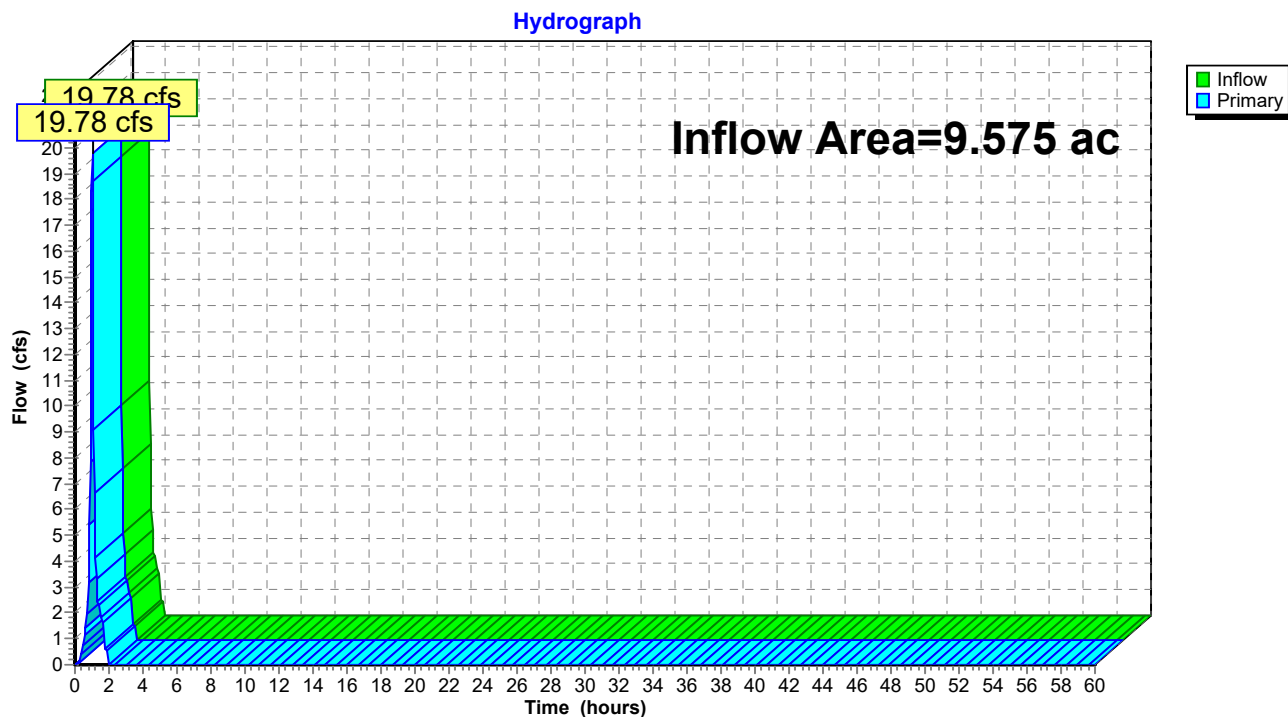
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Summary for Link 10L: Outfall B (B1)

Inflow Area = 9.575 ac, 63.56% Impervious, Inflow Depth = 0.66" for WQ event
Inflow = 19.78 cfs @ 1.03 hrs, Volume= 0.525 af
Primary = 19.78 cfs @ 1.03 hrs, Volume= 0.525 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 10L: Outfall B (B1)



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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 11S: Impervious

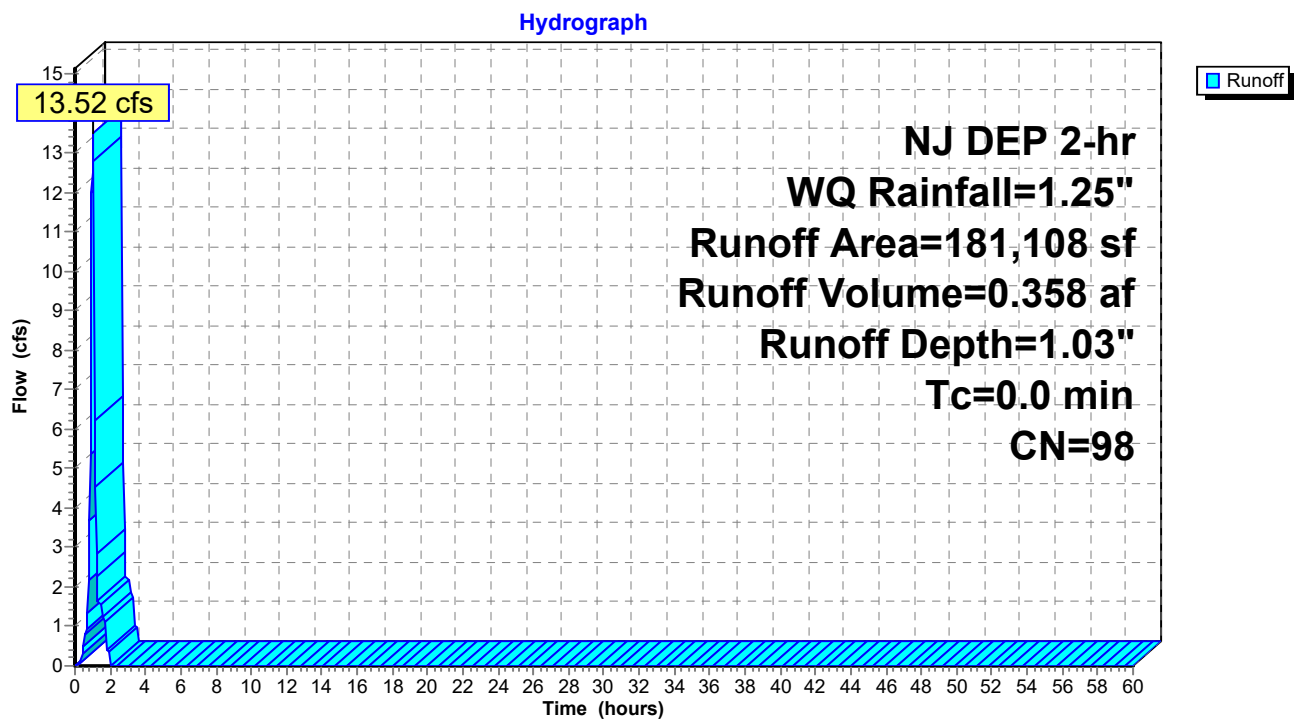
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 13.52 cfs @ 1.03 hrs, Volume= 0.358 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
181,108	98	Paved parking, HSG B
181,108		100.00% Impervious Area

Subcatchment 11S: Impervious



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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 12S: Pervious

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

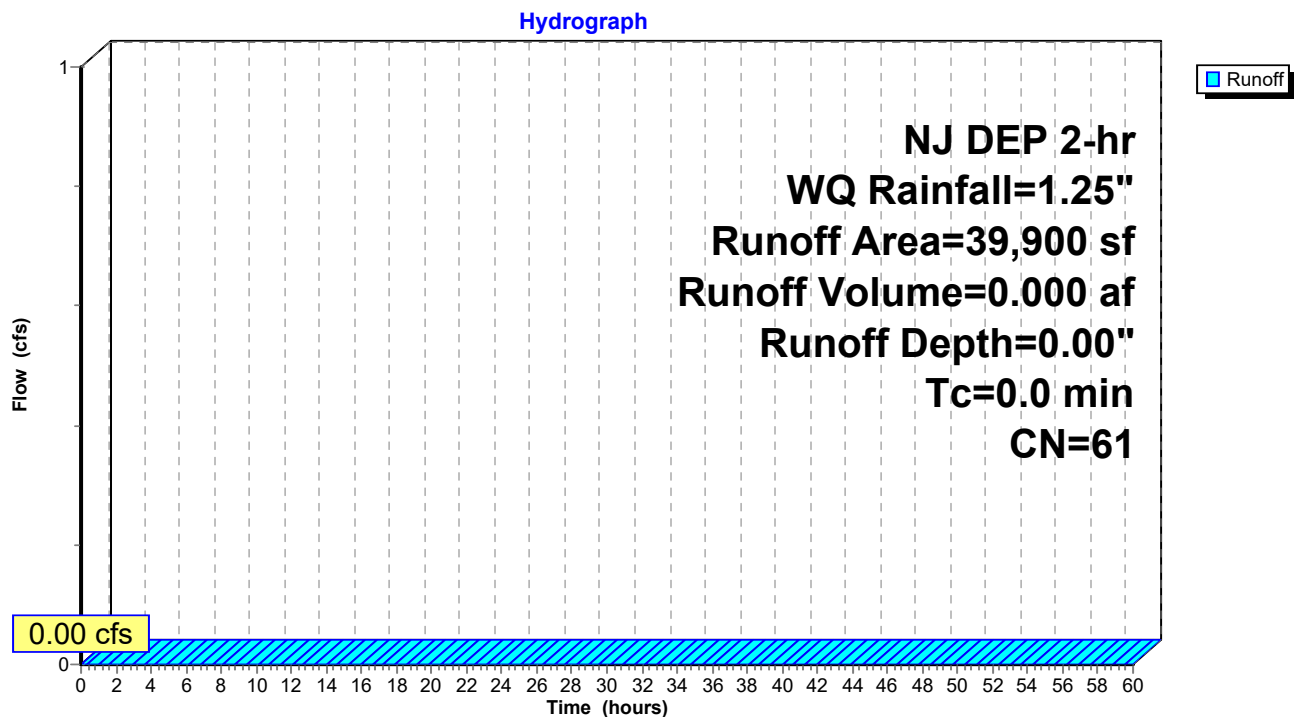
[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
39,900	61	>75% Grass cover, Good, HSG B
39,900		100.00% Pervious Area

Subcatchment 12S: Pervious



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NJ DEP 2-hr WQ Rainfall=1.25"

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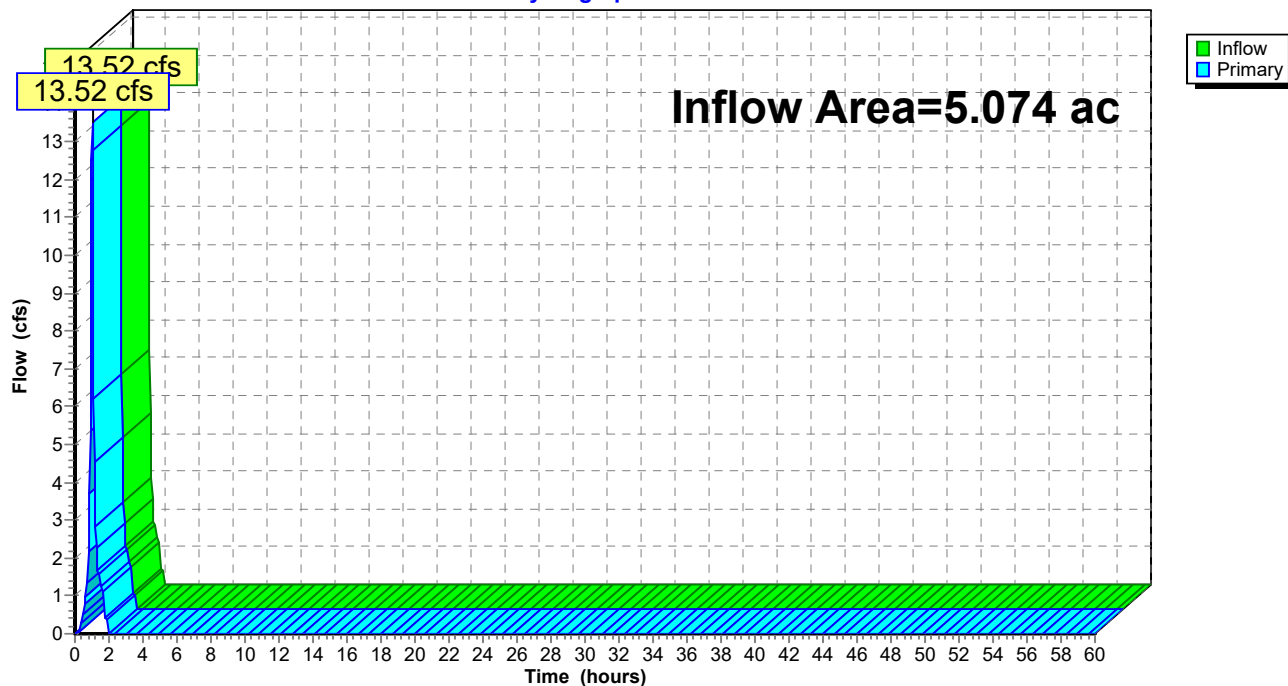
Summary for Link 13L: Outfall C

Inflow Area = 5.074 ac, 81.95% Impervious, Inflow Depth = 0.85" for WQ event
Inflow = 13.52 cfs @ 1.03 hrs, Volume= 0.358 af
Primary = 13.52 cfs @ 1.03 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 13L: Outfall C

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 14S: Impervious

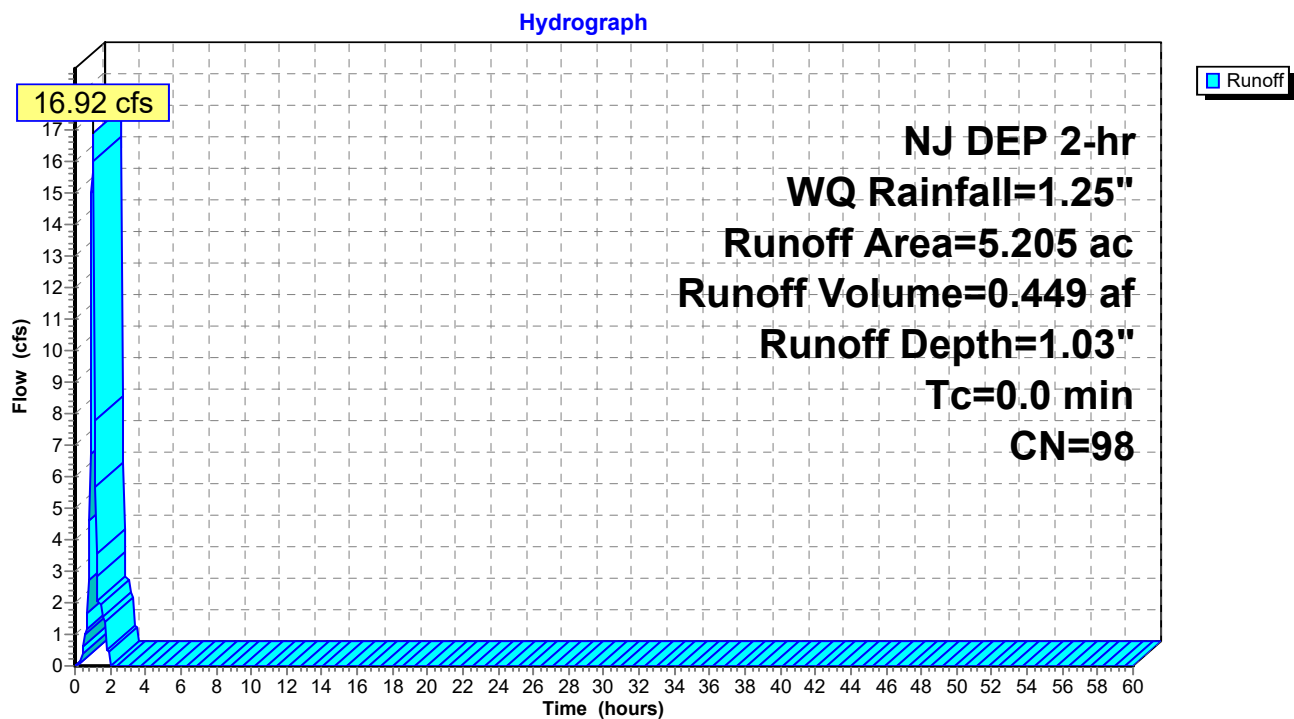
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 16.92 cfs @ 1.03 hrs, Volume= 0.449 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (ac)	CN	Description
5.205	98	Paved parking, HSG B
5.205		100.00% Impervious Area

Subcatchment 14S: Impervious



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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 15S: Pervious

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

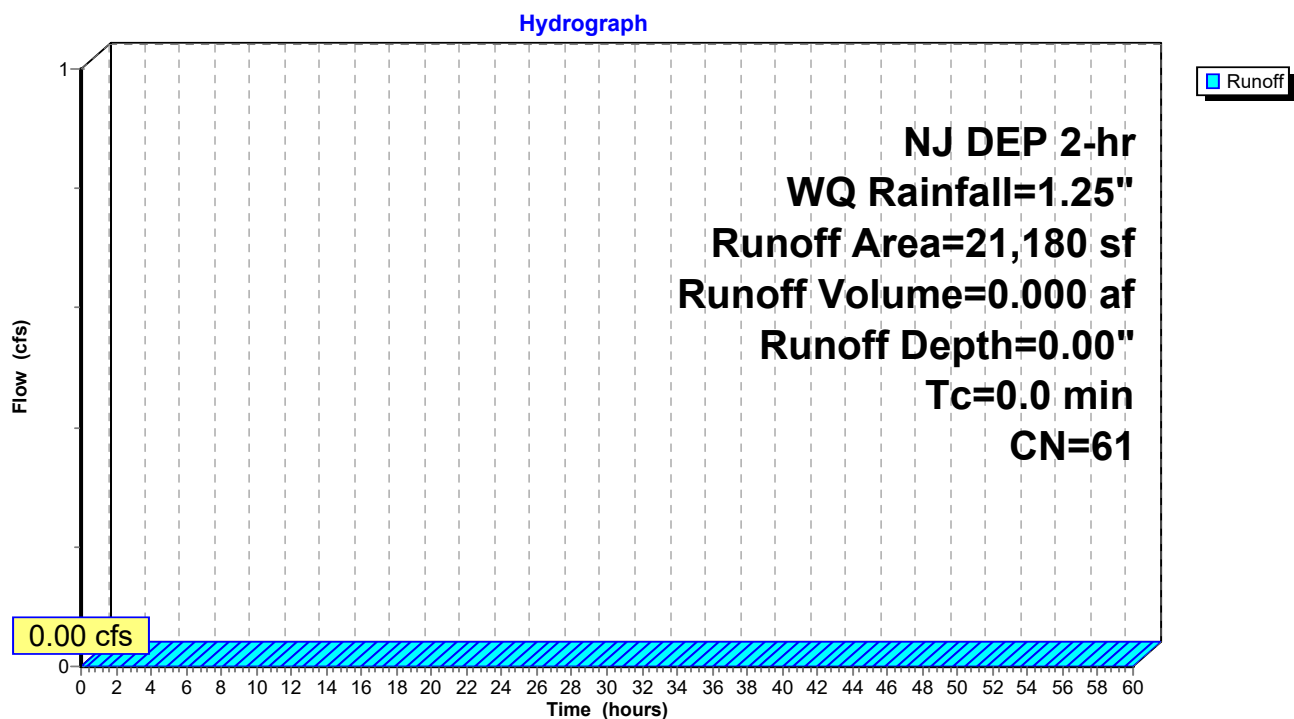
[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
21,180	61	>75% Grass cover, Good, HSG B
21,180		100.00% Pervious Area

Subcatchment 15S: Pervious



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NJ DEP 2-hr WQ Rainfall=1.25"

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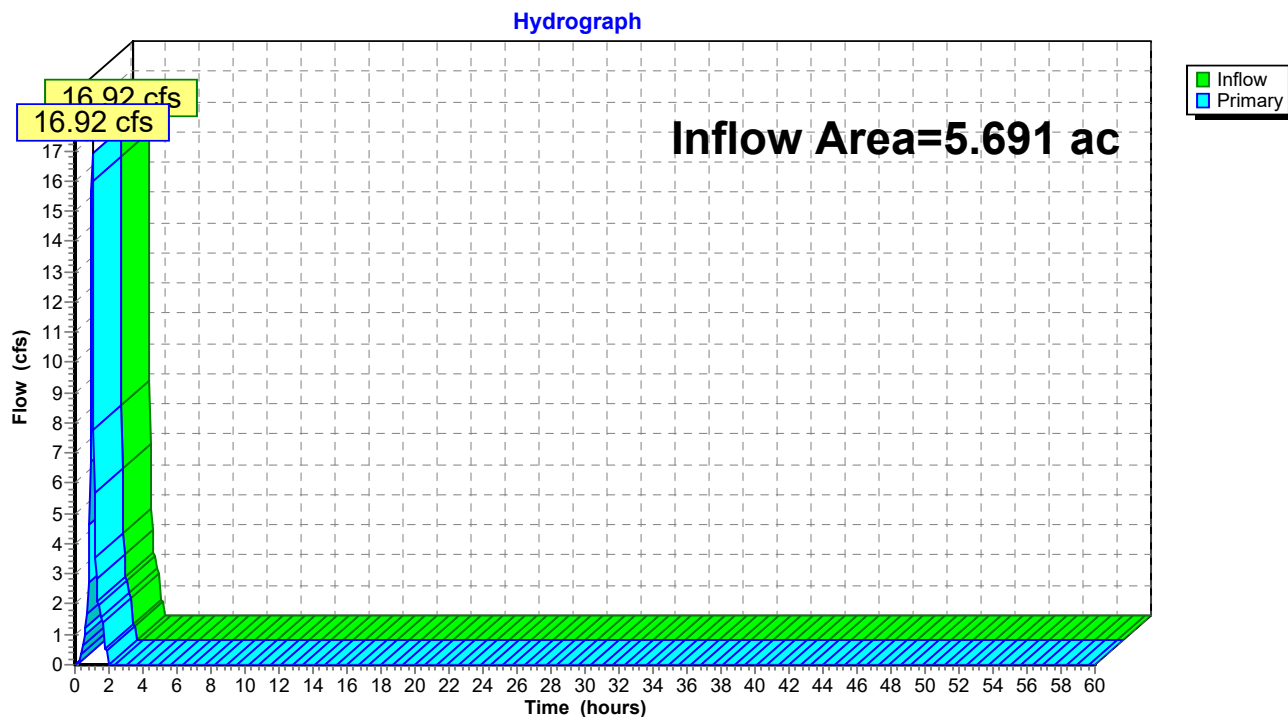
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Summary for Link 16L: Outfall B (B3)

Inflow Area = 5.691 ac, 91.46% Impervious, Inflow Depth = 0.95" for WQ event
Inflow = 16.92 cfs @ 1.03 hrs, Volume= 0.449 af
Primary = 16.92 cfs @ 1.03 hrs, Volume= 0.449 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 16L: Outfall B (B3)



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Summary for Subcatchment 17S: Roof Area

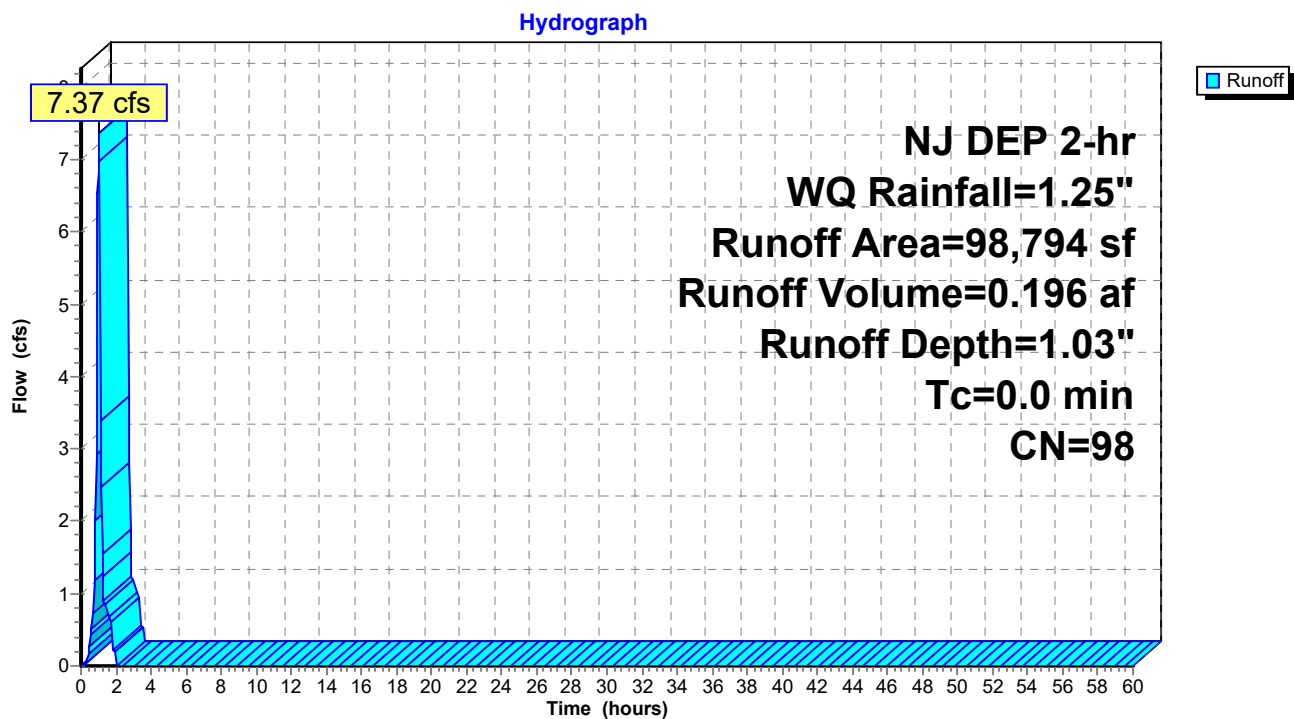
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 7.37 cfs @ 1.03 hrs, Volume= 0.196 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
98,794	98	Roofs, HSG B
98,794		100.00% Impervious Area

Subcatchment 17S: Roof Area



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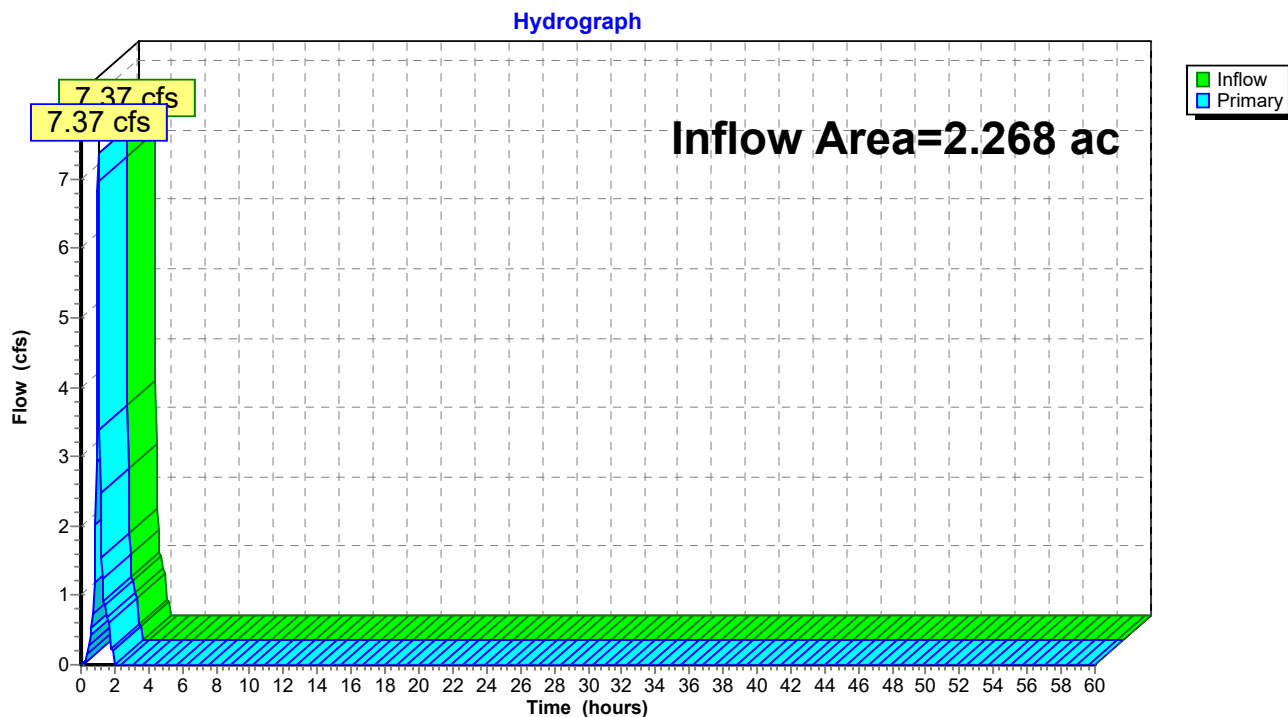
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Summary for Link 19L: Post WQ Discharge (B1)

Inflow Area = 2.268 ac, 100.00% Impervious, Inflow Depth = 1.03" for WQ event
Inflow = 7.37 cfs @ 1.03 hrs, Volume= 0.196 af
Primary = 7.37 cfs @ 1.03 hrs, Volume= 0.196 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 19L: Post WQ Discharge (B1)



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Summary for Subcatchment 20S: Impervious

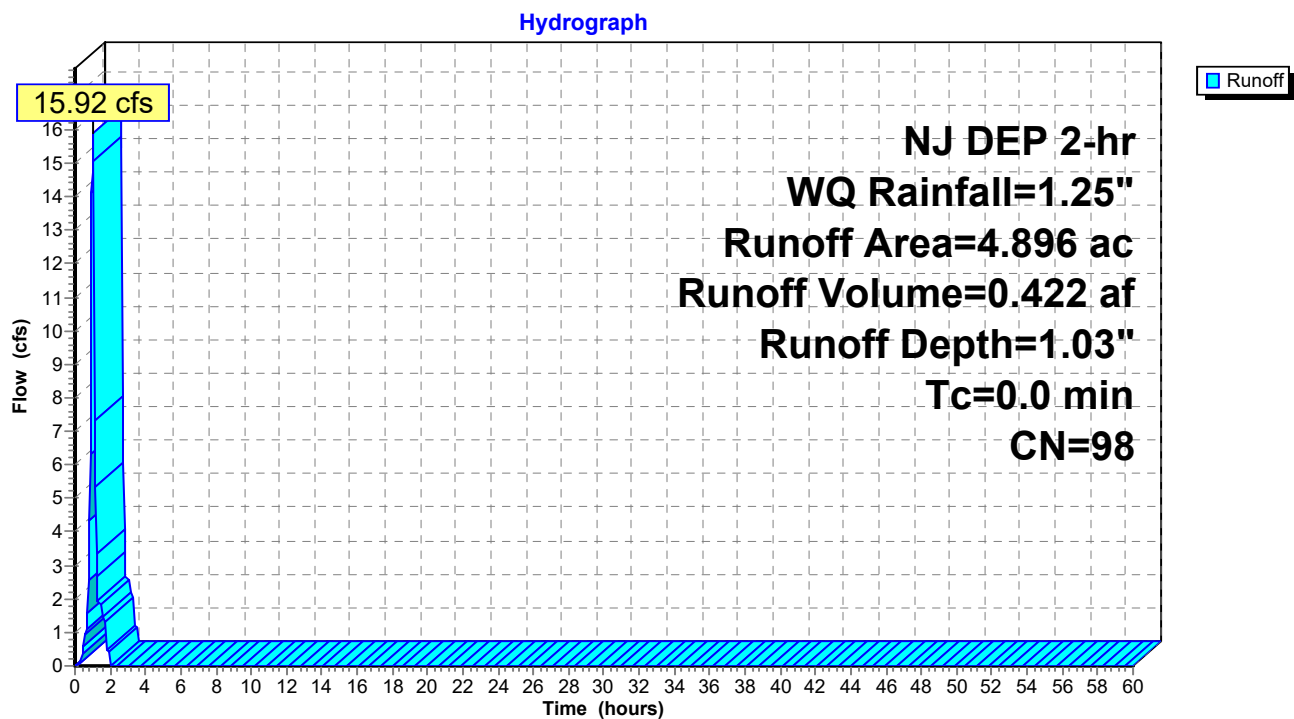
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 15.92 cfs @ 1.03 hrs, Volume= 0.422 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (ac)	CN	Description
4.896	98	Paved parking, HSG B
4.896		100.00% Impervious Area

Subcatchment 20S: Impervious



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Summary for Subcatchment 21S: Pervious

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

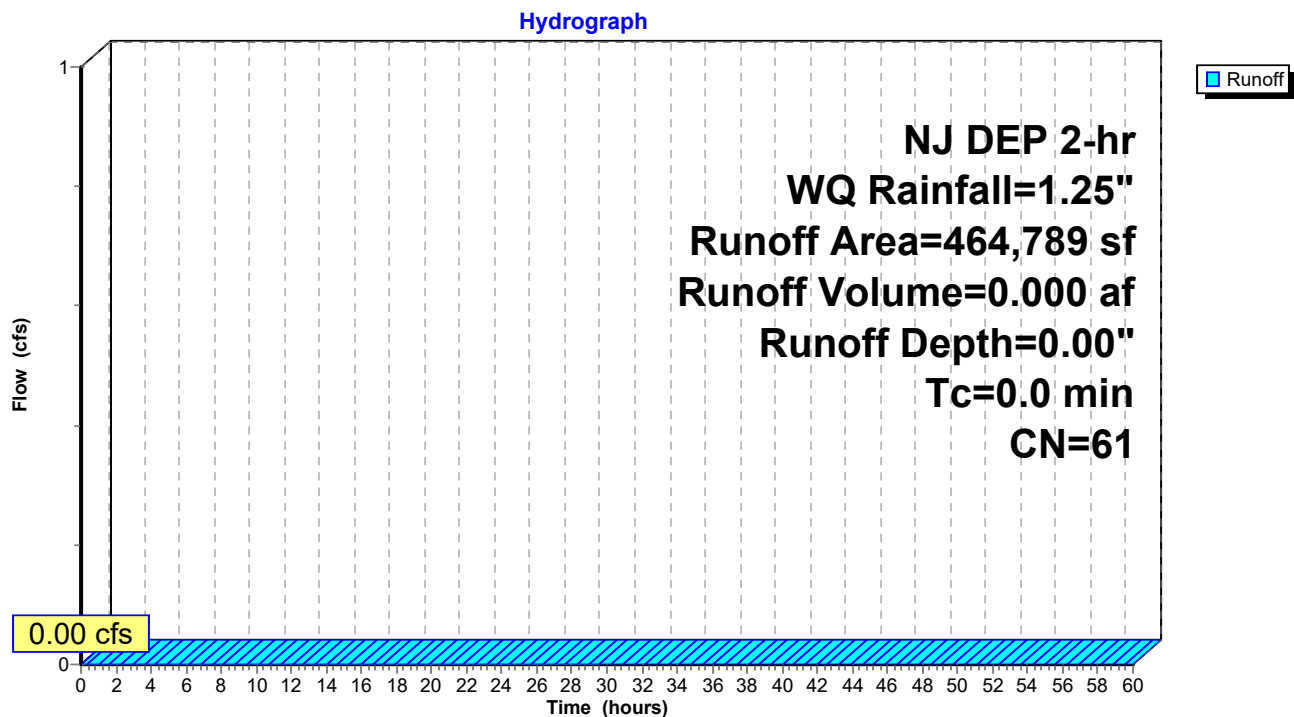
[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
464,789	61	>75% Grass cover, Good, HSG B
464,789		100.00% Pervious Area

Subcatchment 21S: Pervious



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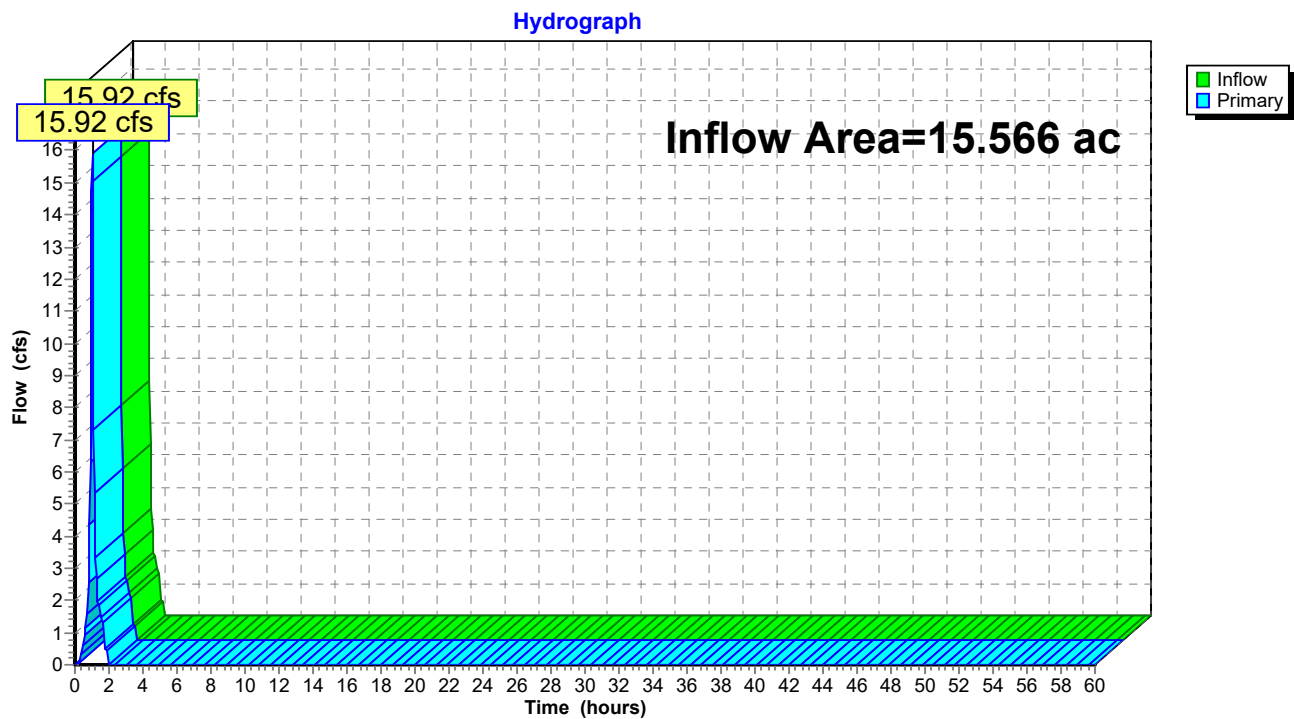
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Summary for Link 22L: Outfall A (A1)

Inflow Area = 15.566 ac, 31.45% Impervious, Inflow Depth = 0.33" for WQ event
Inflow = 15.92 cfs @ 1.03 hrs, Volume= 0.422 af
Primary = 15.92 cfs @ 1.03 hrs, Volume= 0.422 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 22L: Outfall A (A1)



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Summary for Subcatchment 23S: Impervious

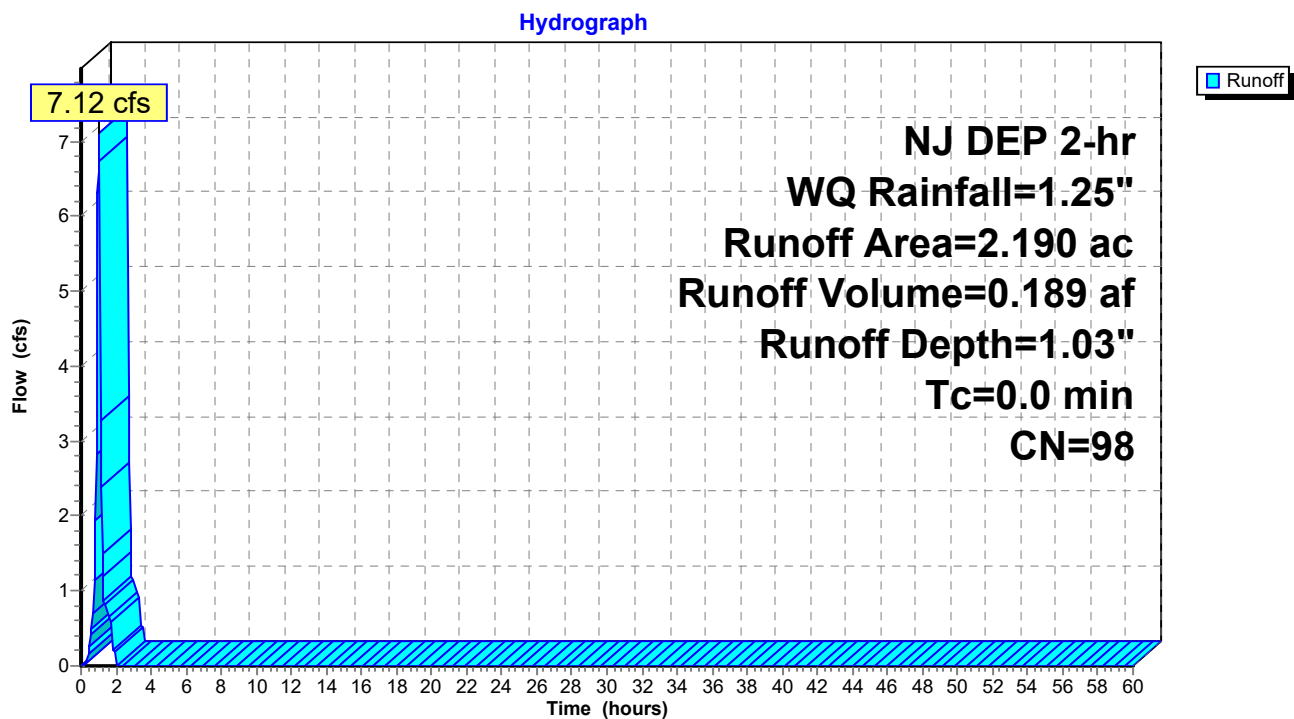
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 7.12 cfs @ 1.03 hrs, Volume= 0.189 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (ac)	CN	Description
2.190	98	Paved parking, HSG B
2.190		100.00% Impervious Area

Subcatchment 23S: Impervious



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Summary for Subcatchment 24S: Pervious

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

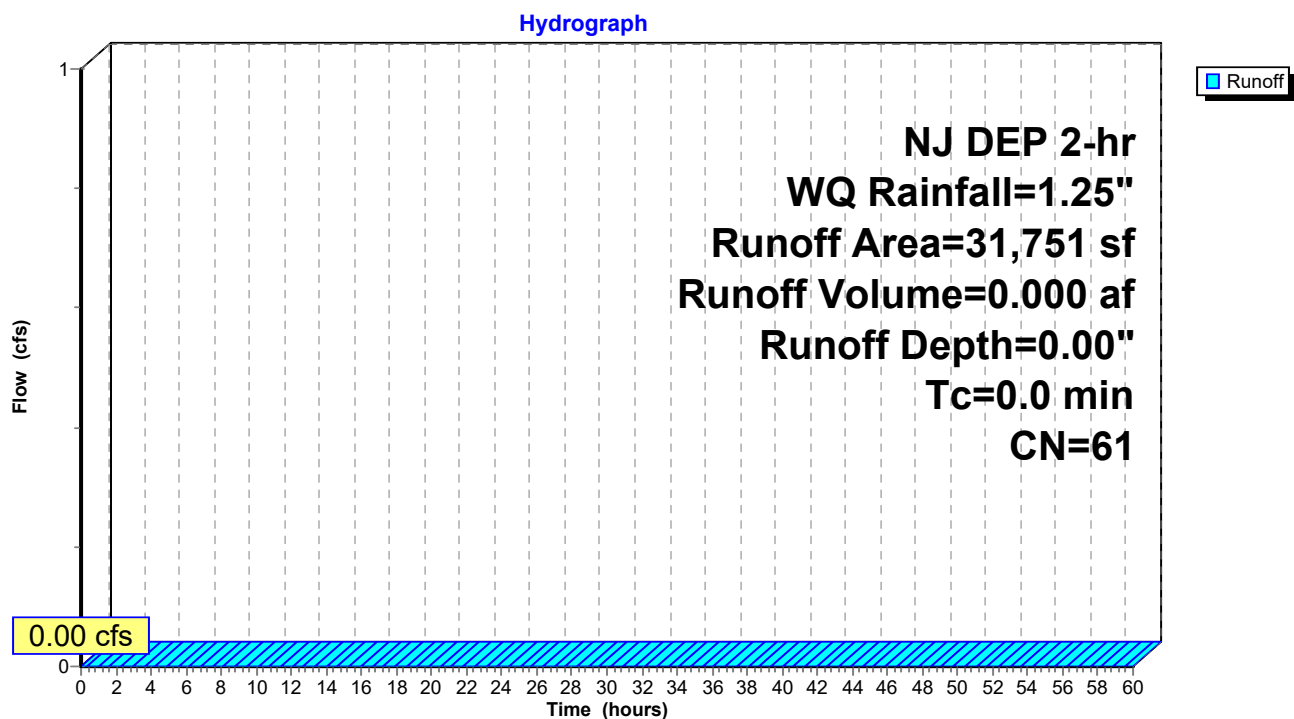
[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
31,751	61	>75% Grass cover, Good, HSG B
31,751		100.00% Pervious Area

Subcatchment 24S: Pervious



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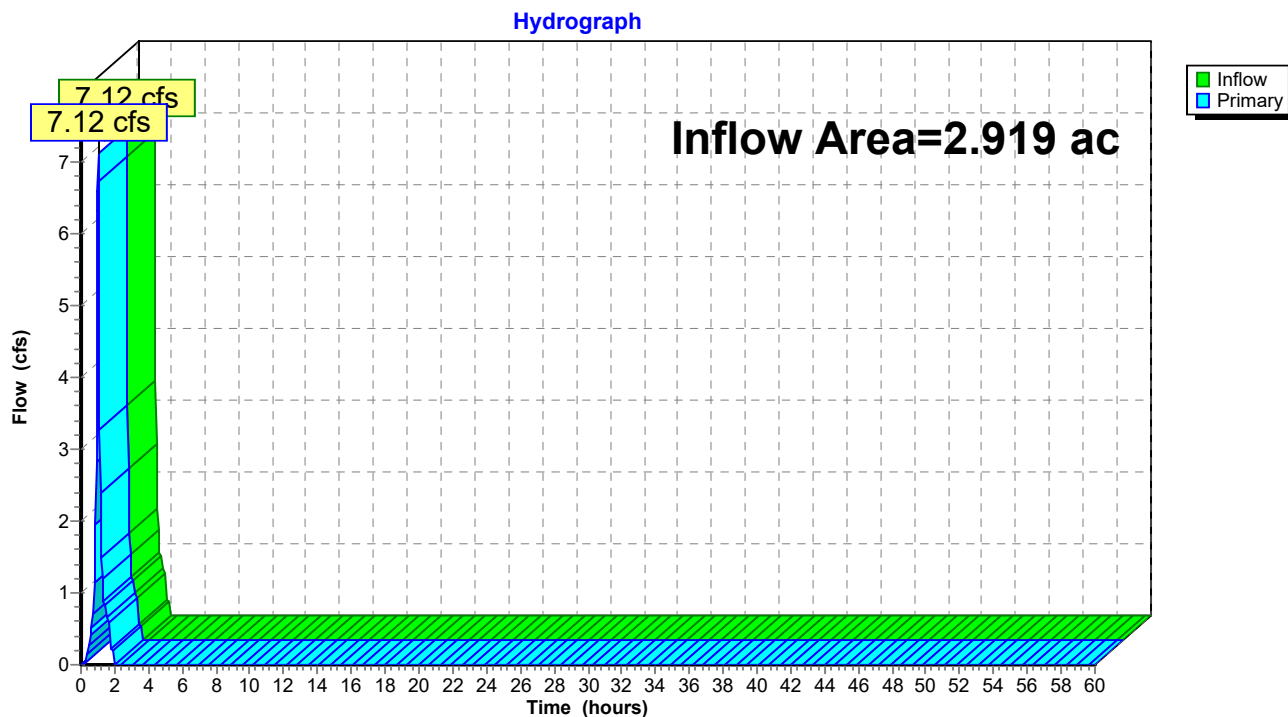
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Summary for Link 25L: Outfall A (A2)

Inflow Area = 2.919 ac, 75.03% Impervious, Inflow Depth = 0.78" for WQ event
Inflow = 7.12 cfs @ 1.03 hrs, Volume= 0.189 af
Primary = 7.12 cfs @ 1.03 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 25L: Outfall A (A2)



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Summary for Subcatchment 26S: Impervious

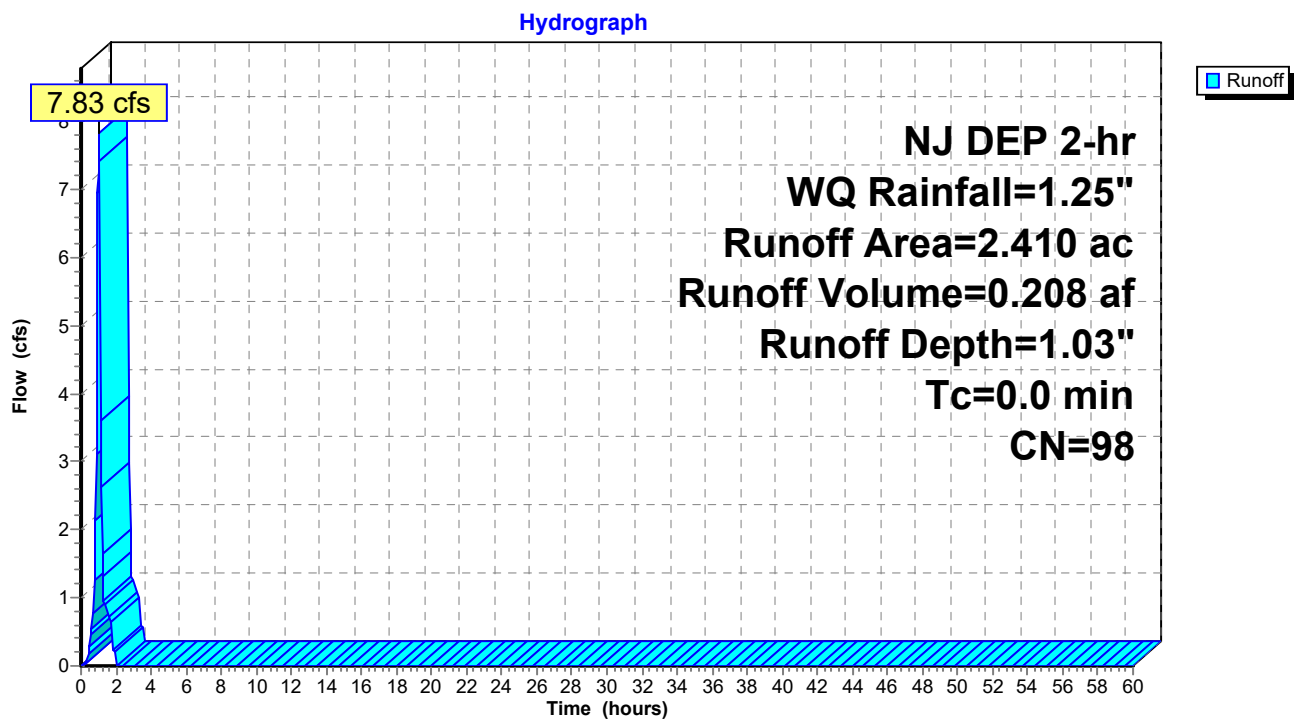
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 7.83 cfs @ 1.03 hrs, Volume= 0.208 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (ac)	CN	Description
2.410	98	Paved parking, HSG B
2.410		100.00% Impervious Area

Subcatchment 26S: Impervious



PROPOSED 2022-04 Water Quality Flows

Prepared by Bohler Engineering

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NJ DEP 2-hr WQ Rainfall=1.25"

Printed 4/21/2022

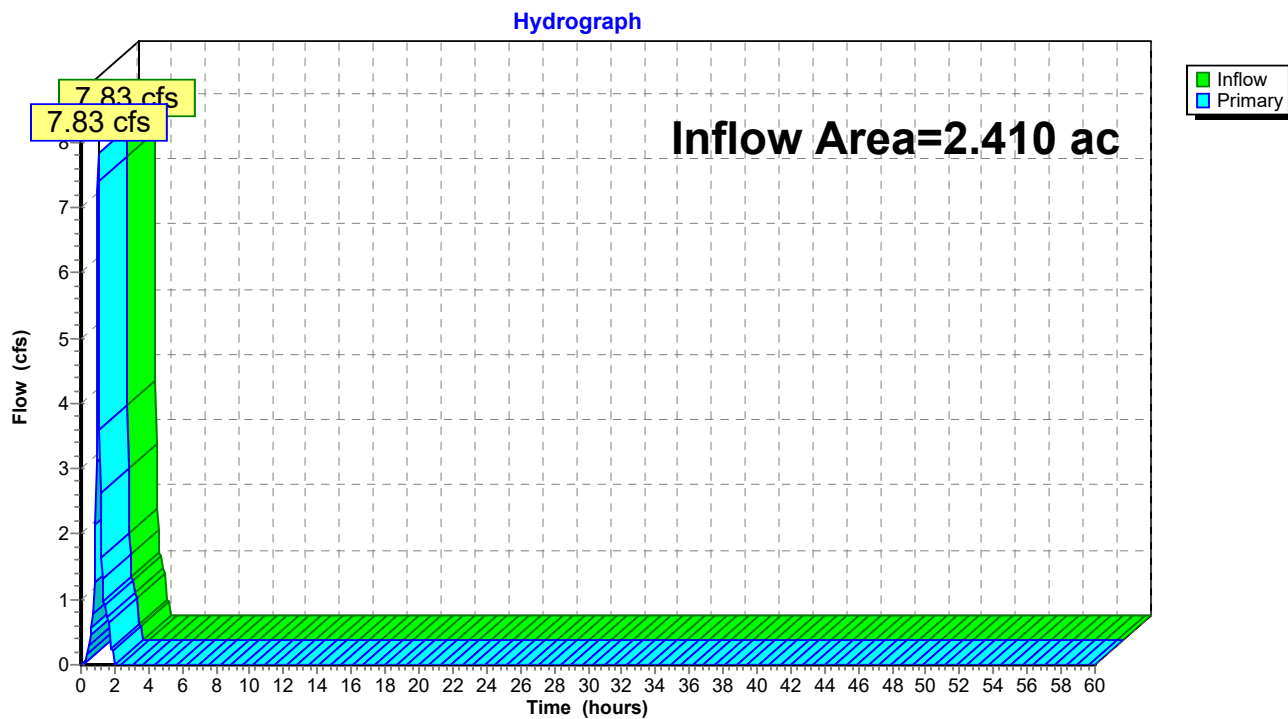
Page 49

Summary for Link 27L: Outfall B (B2)

Inflow Area = 2.410 ac, 100.00% Impervious, Inflow Depth = 1.03" for WQ event
Inflow = 7.83 cfs @ 1.03 hrs, Volume= 0.208 af
Primary = 7.83 cfs @ 1.03 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 27L: Outfall B (B2)



PROPOSED 2022-04 Water Quality Flows

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 28S: Roof Area

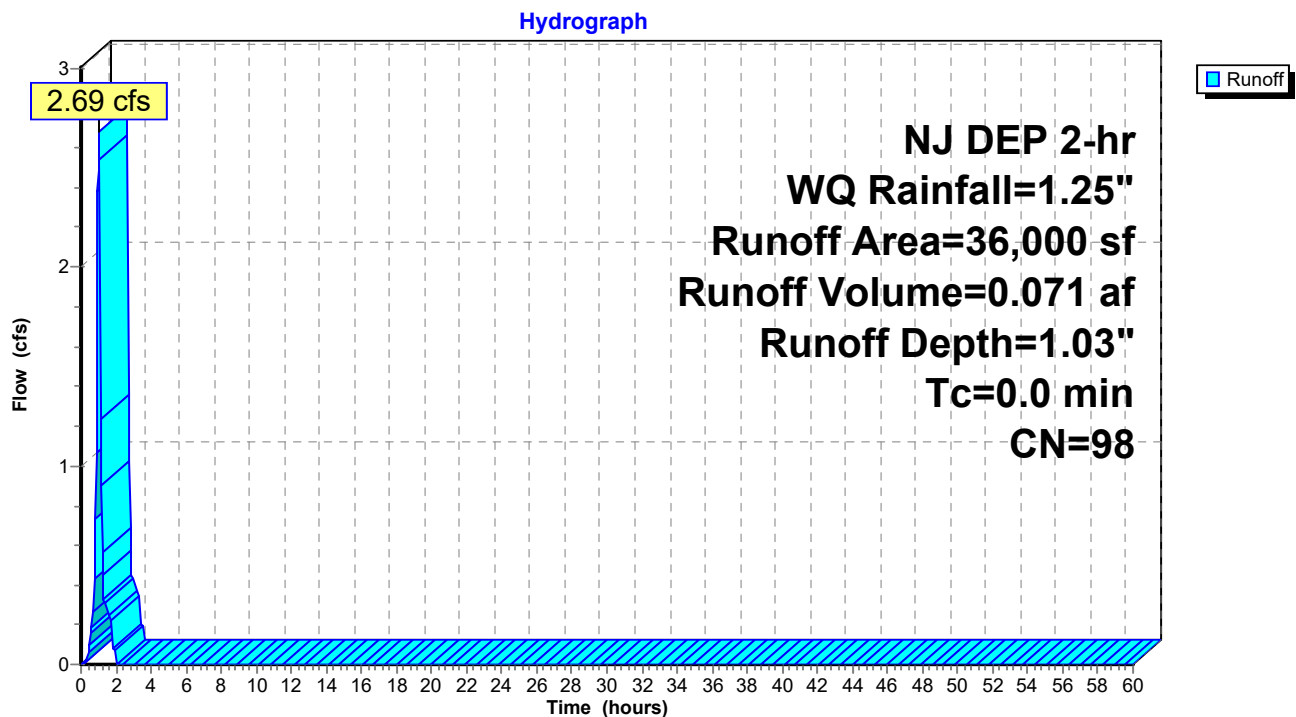
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 2.69 cfs @ 1.03 hrs, Volume= 0.071 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
36,000	98	Unconnected roofs, HSG C
36,000		100.00% Impervious Area
36,000		100.00% Unconnected

Subcatchment 28S: Roof Area



PROPOSED 2022-04 Water Quality Flows

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NJ DEP 2-hr WQ Rainfall=1.25"

Printed 4/21/2022

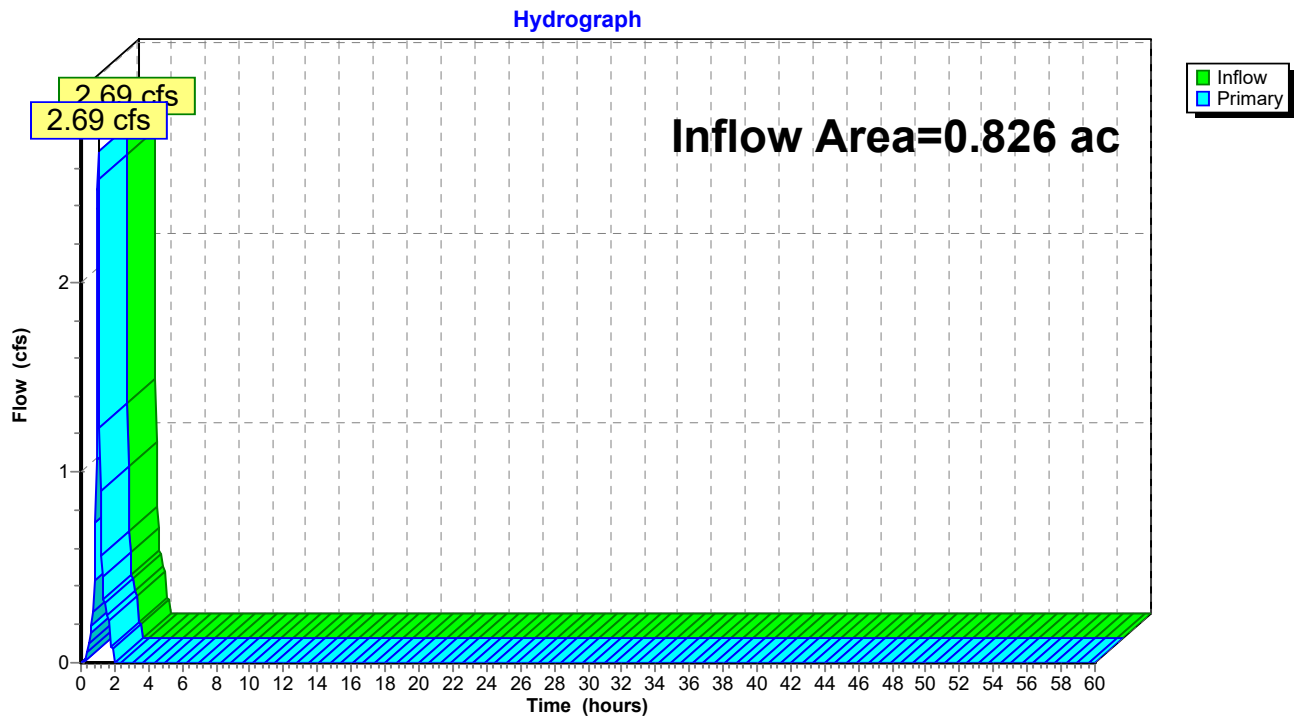
Page 51

Summary for Link 29L: Post WQ Discharge (B3)

Inflow Area = 0.826 ac, 100.00% Impervious, Inflow Depth = 1.03" for WQ event
Inflow = 2.69 cfs @ 1.03 hrs, Volume= 0.071 af
Primary = 2.69 cfs @ 1.03 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 29L: Post WQ Discharge (B3)



PROPOSED 2022-04 Water Quality Flows

Prepared by Bohler Engineering

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 30S: Impervious

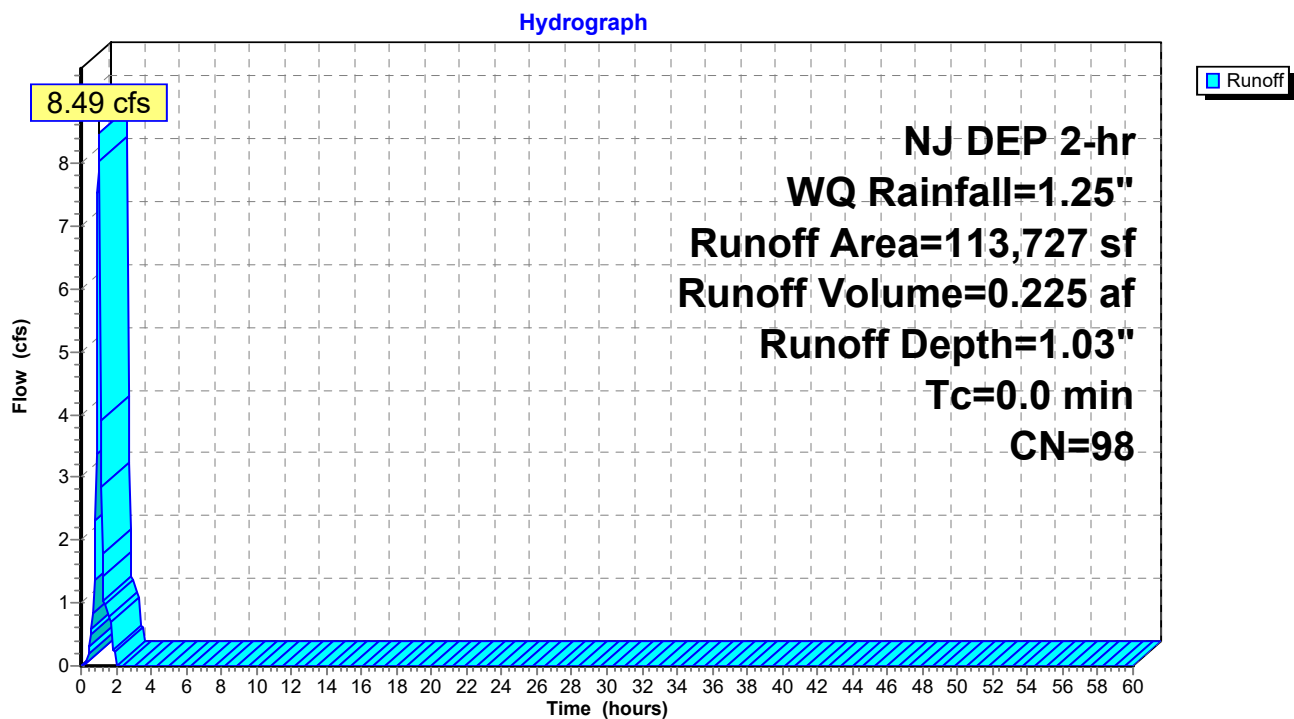
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 8.49 cfs @ 1.03 hrs, Volume= 0.225 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
113,727	98	Water Surface, HSG C
113,727		100.00% Impervious Area

Subcatchment 30S: Impervious



PROPOSED 2022-04 Water Quality Flows

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 31S: Pervious

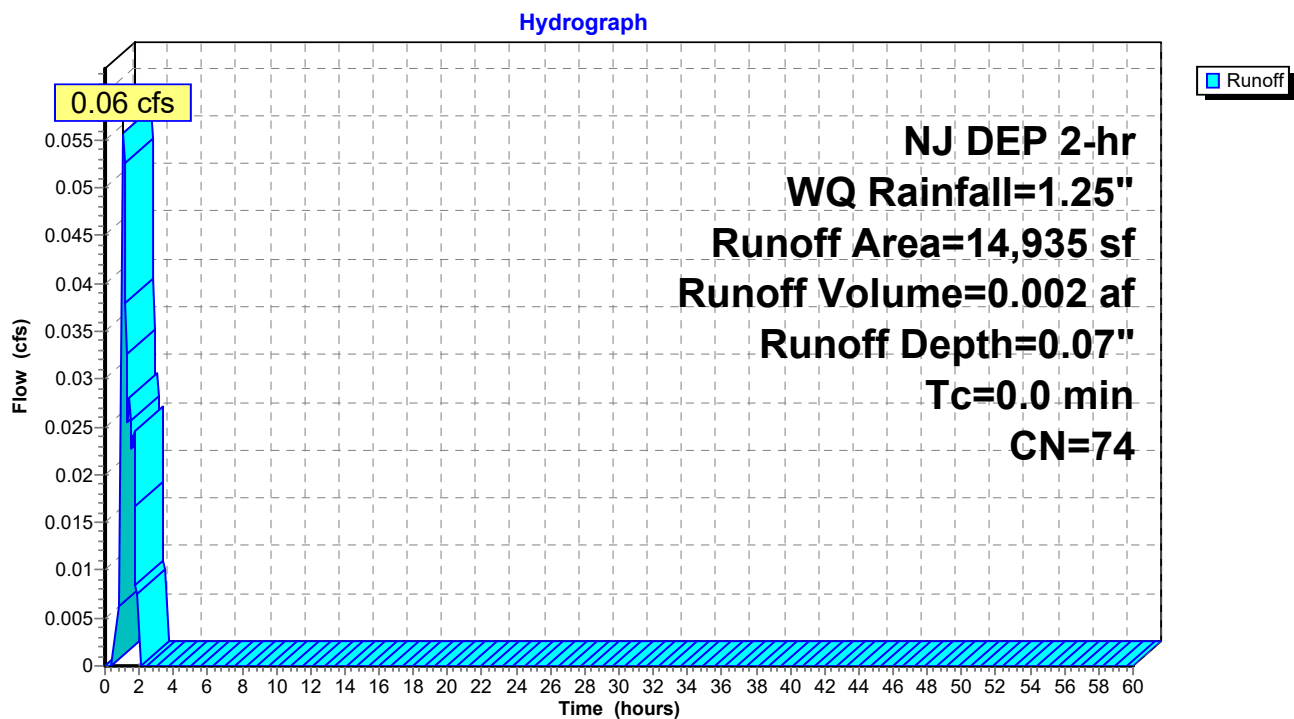
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 0.06 cfs @ 1.11 hrs, Volume= 0.002 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
14,935	74	>75% Grass cover, Good, HSG C
14,935		100.00% Pervious Area

Subcatchment 31S: Pervious



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NJ DEP 2-hr WQ Rainfall=1.25"

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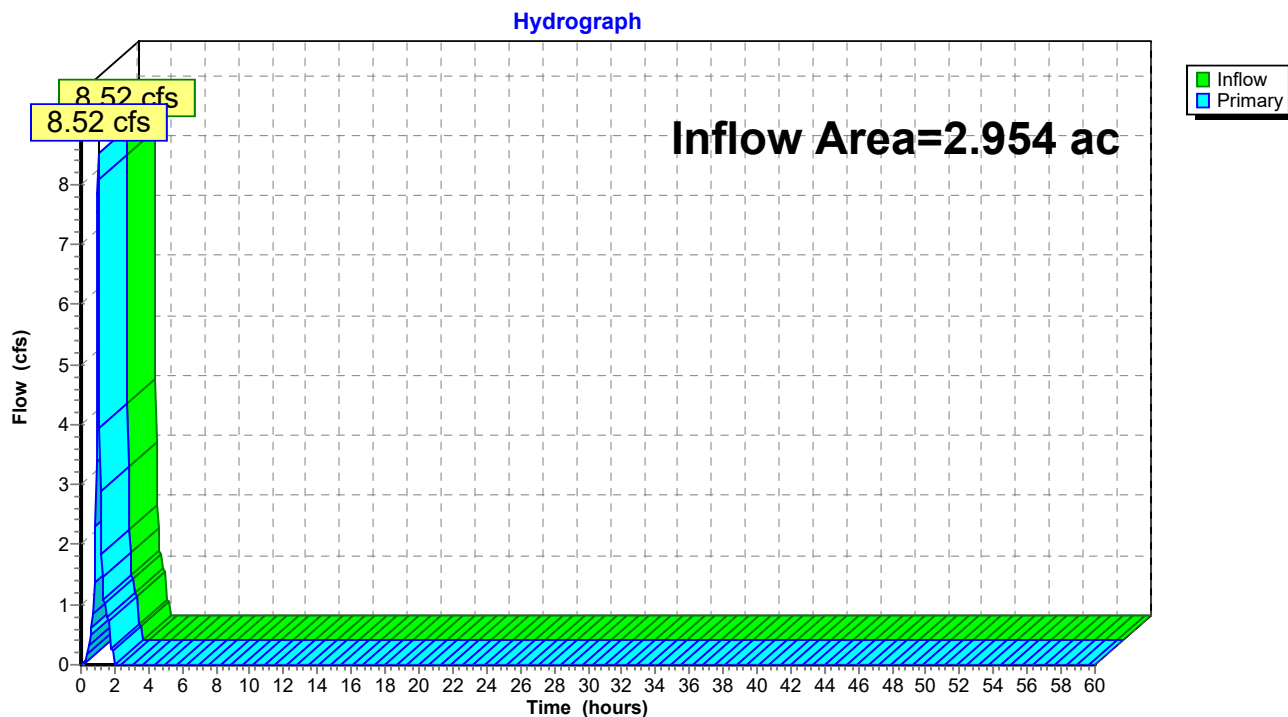
Page 54

Summary for Link 32L: Outfall D (FES 4)

Inflow Area = 2.954 ac, 88.39% Impervious, Inflow Depth = 0.92" for WQ event
Inflow = 8.52 cfs @ 1.03 hrs, Volume= 0.227 af
Primary = 8.52 cfs @ 1.03 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 32L: Outfall D (FES 4)



PROPOSED 2022-04 Water Quality Flows

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 33S: Impervious

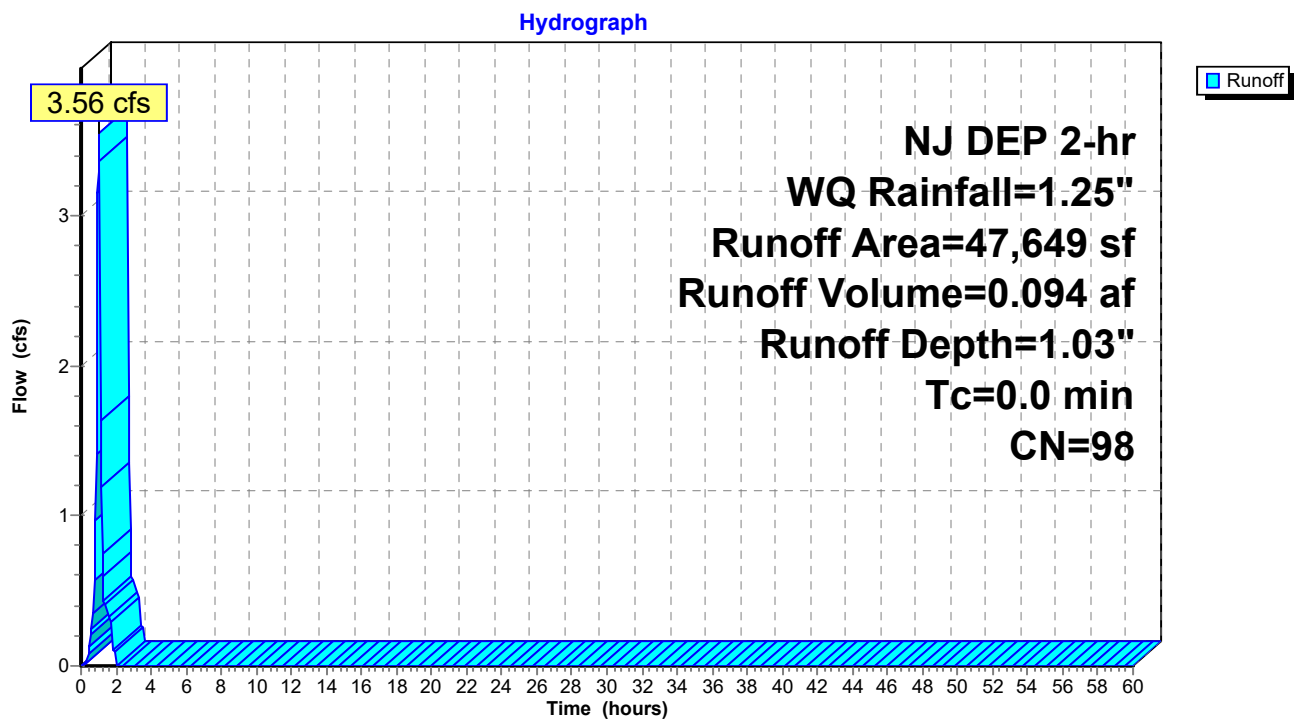
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 3.56 cfs @ 1.03 hrs, Volume= 0.094 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
47,649	98	Paved parking, HSG C
47,649		100.00% Impervious Area

Subcatchment 33S: Impervious



PROPOSED 2022-04 Water Quality Flows

Prepared by Bohler Engineering

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NJ DEP 2-hr WQ Rainfall=1.25"

Printed 4/21/2022

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Summary for Subcatchment 34S: Pervious

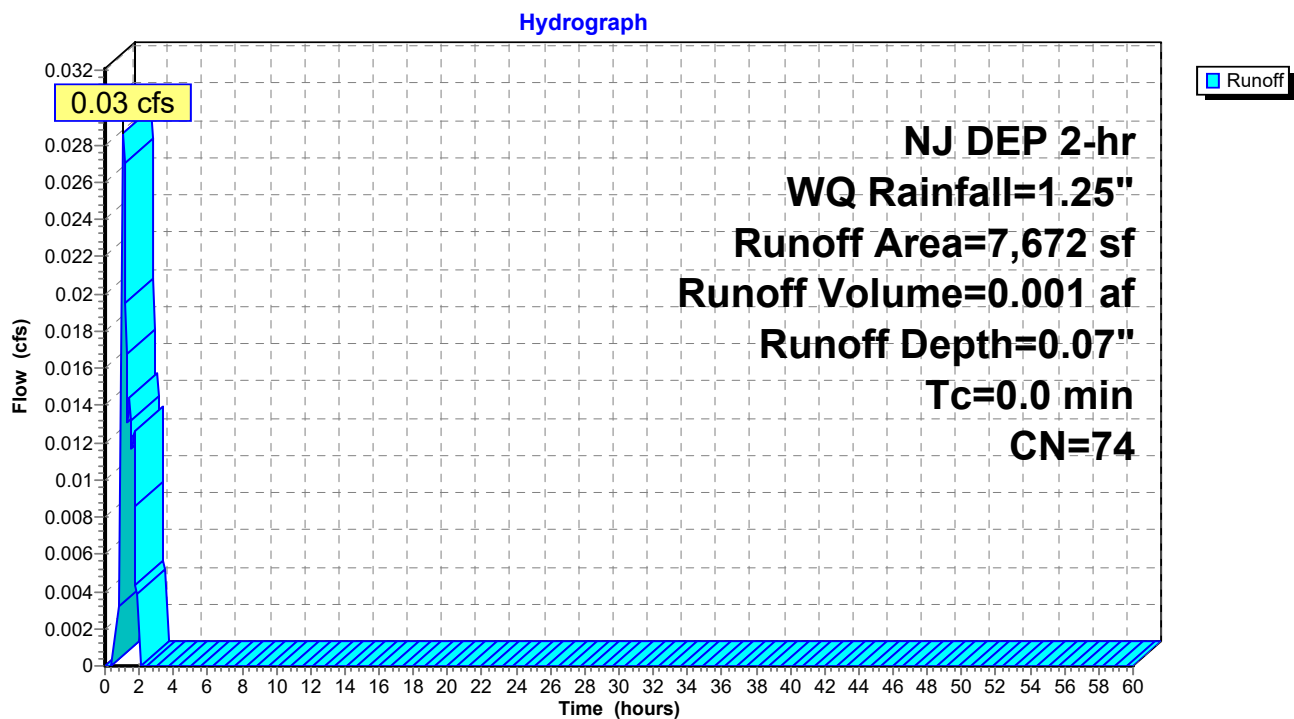
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 0.03 cfs @ 1.11 hrs, Volume= 0.001 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
7,672	74	>75% Grass cover, Good, HSG C
7,672		100.00% Pervious Area

Subcatchment 34S: Pervious



PROPOSED 2022-04 Water Quality Flows

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NJ DEP 2-hr WQ Rainfall=1.25"

Printed 4/21/2022

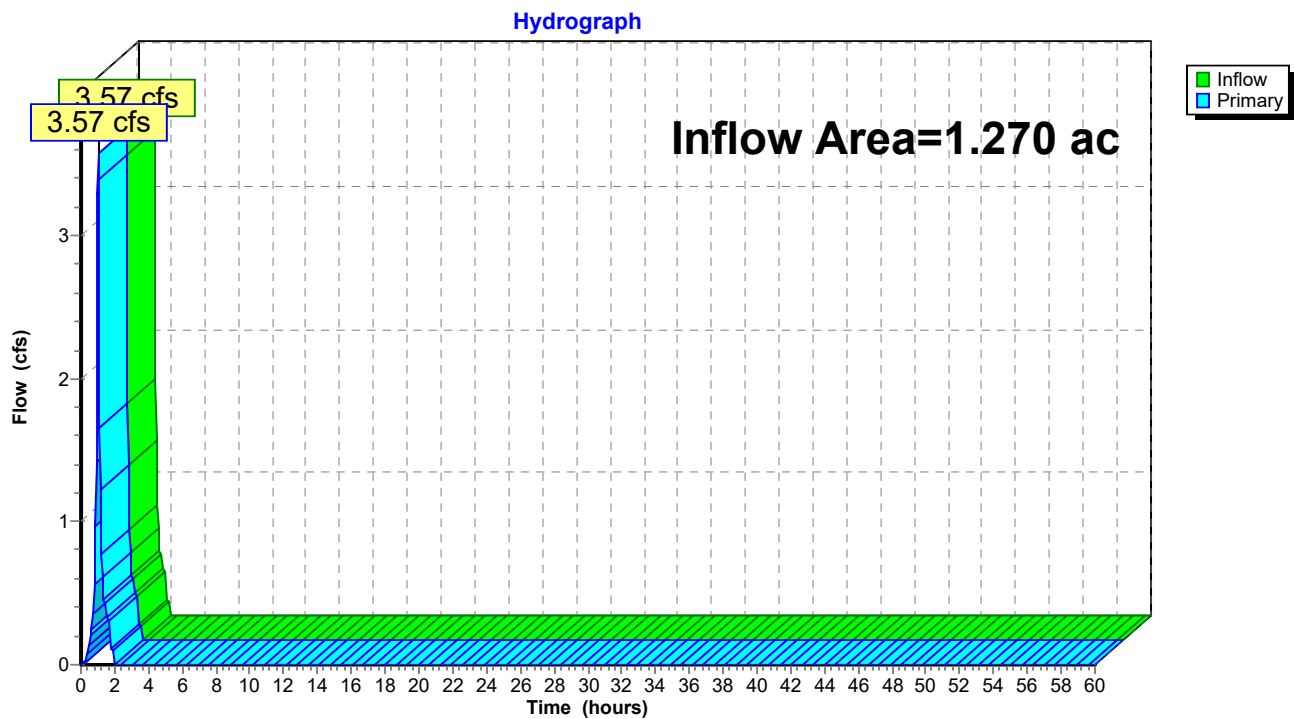
Page 57

Summary for Link 35L: Outfall D (FES 5)

Inflow Area = 1.270 ac, 86.13% Impervious, Inflow Depth = 0.90" for WQ event
Inflow = 3.57 cfs @ 1.03 hrs, Volume= 0.095 af
Primary = 3.57 cfs @ 1.03 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 35L: Outfall D (FES 5)



PROPOSED 2022-04 Water Quality Flows

Prepared by Bohler Engineering

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment 36S: Impervious

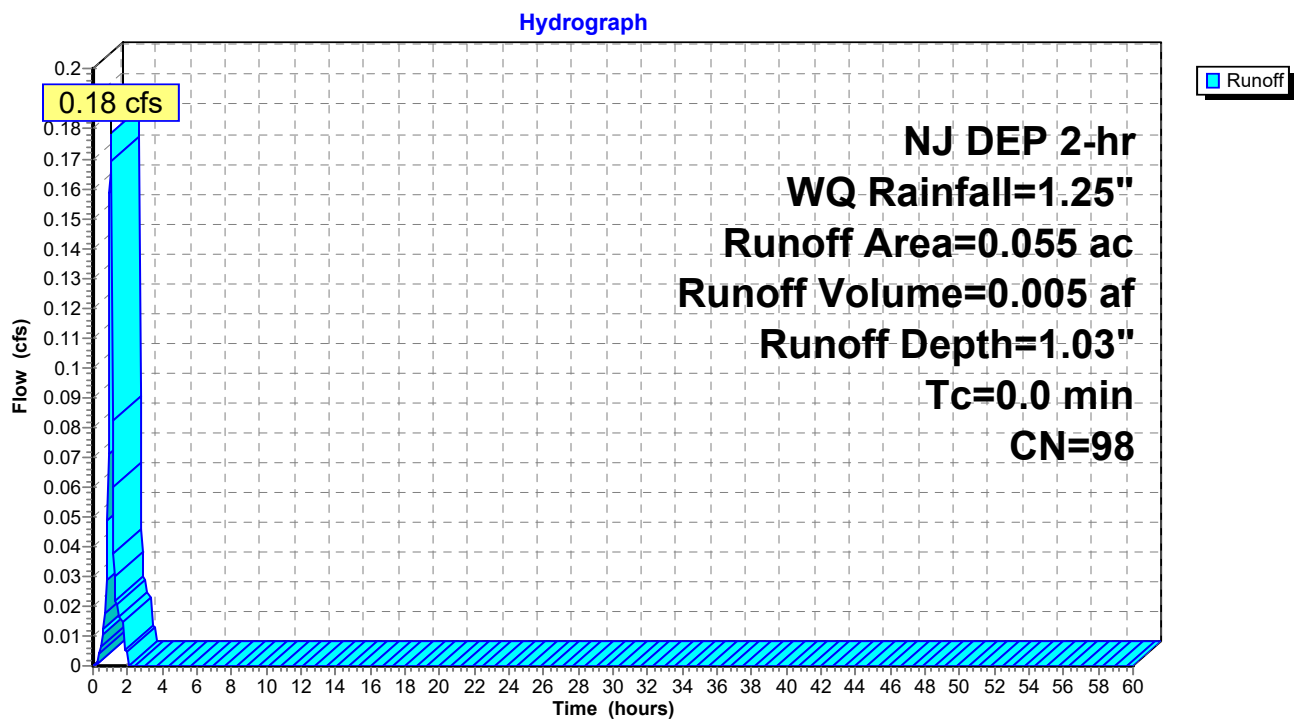
[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 0.18 cfs @ 1.03 hrs, Volume= 0.005 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, $dt=0.05$ hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (ac)	CN	Description
0.055	98	Water Surface, HSG C
0.055		100.00% Impervious Area

Subcatchment 36S: Impervious



PROPOSED 2022-04 Water Quality Flows

Prepared by Bohler Engineering

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NJ DEP 2-hr WQ Rainfall=1.25"

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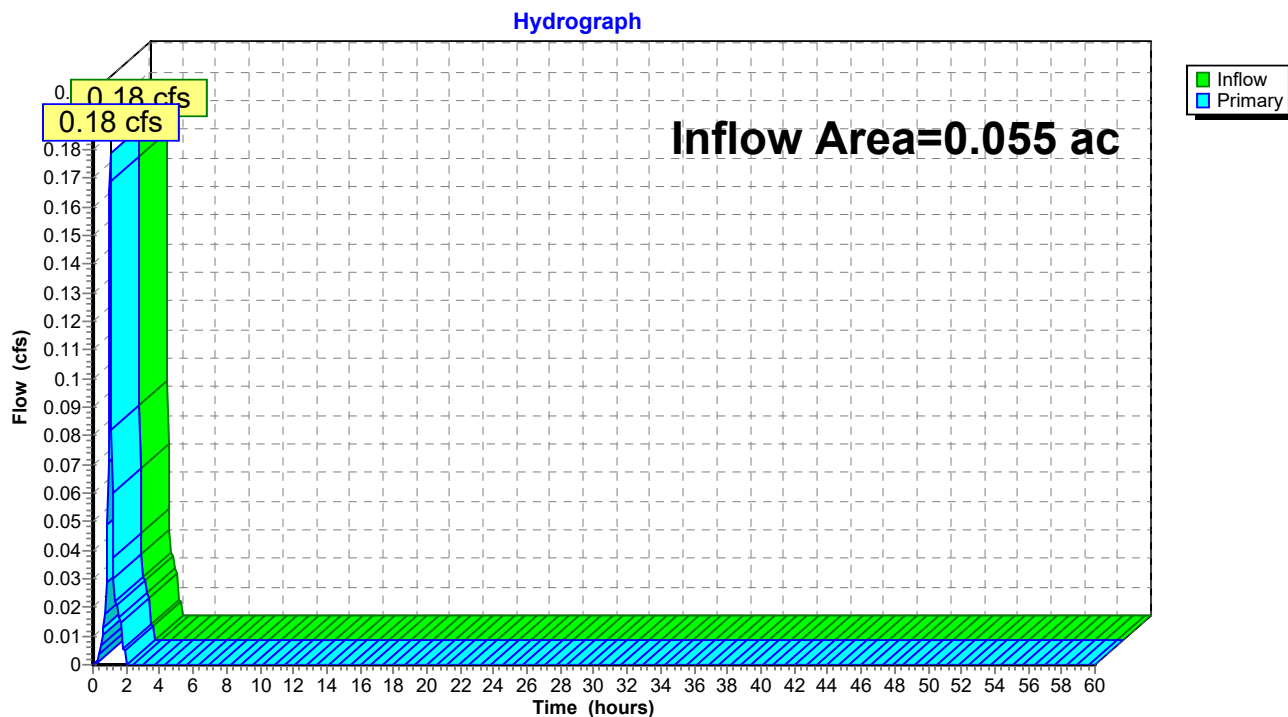
Page 59

Summary for Link 38L: Outfall D3 (From road)

Inflow Area = 0.055 ac, 100.00% Impervious, Inflow Depth = 1.03" for WQ event
Inflow = 0.18 cfs @ 1.03 hrs, Volume= 0.005 af
Primary = 0.18 cfs @ 1.03 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

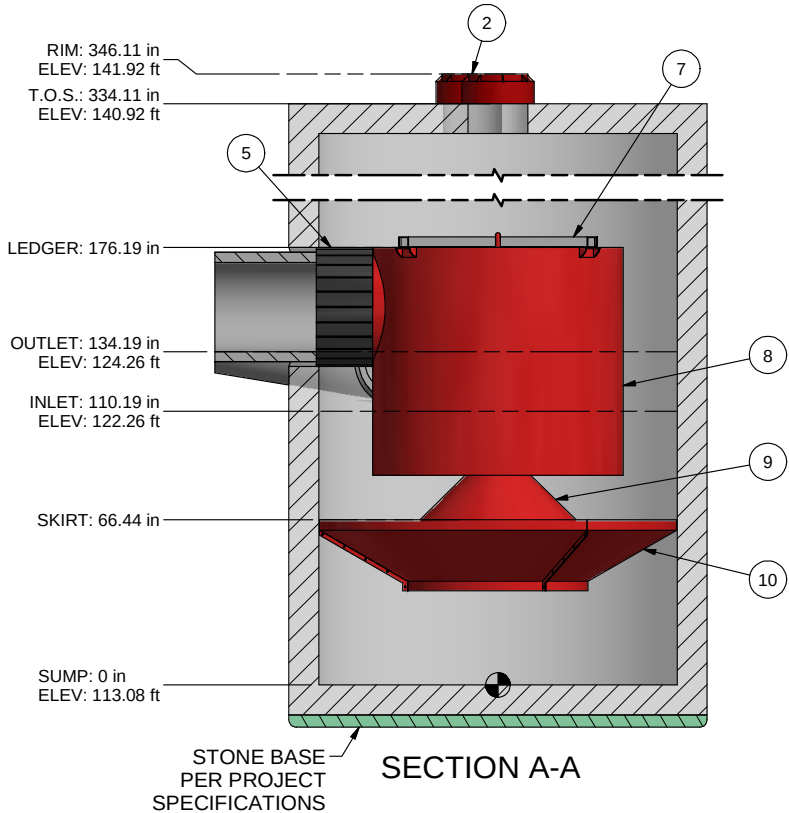
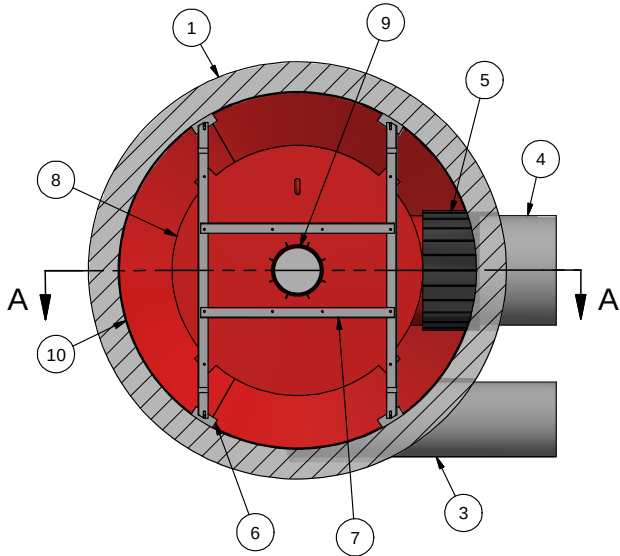
Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.05 hrs

Link 38L: Outfall D3 (From road)



Water Quality Details

PIPE DETAILS					
PIPE	MATERIAL	LENGTH	INV IN	INV OUT	SLOPE
INLET	24" RCP	12 LF	124.26	122.26	16.7 %
OUTLET	36" RCP	5 LF	124.26	124.26	0 %



COMMENTS:

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

REVISION HISTORY			
REV	BY	DESCRIPTION	DATE
-	-	FIRST RELEASE	
DATE:		SCALE: VARIES	
DRAWN BY: KDO		CHECKED BY:	APPROVED BY:

Title
12-ft DIAMETER
DOWNSTREAM DEFENDER

WQU-C1
MONTGOMERY PROMENADE
MONTGOMERY, NJ

Hydro
International

94 Hutchins Drive
Portland, ME 04102
Tel: +1 (207) 756-6200
Fax: +1 (207) 756-6212
hydro-int.com

PARTS LIST		
ITEM	DESCRIPTION	SIZE (in)
1	DD PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	144
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	24
4	OUTLET PIPE (BY OTHERS)	36
5	PIPE COUPLING (BY OTHERS)	
6	LEDGER ANGLE	
7	SUPPORT FRAME	
8	DIP PLATE	
9	CENTER SHAFT AND CONE	
10	BENCHING SKIRT	

EQUIPMENT PERFORMANCE

The stormwater treatment unit shall adhere to the hydraulic parameters given in the chart below and provide the removal efficiencies and storage capacities as follows:

1. Performance objectives: The unit shall be capable of treating the peak flow rate listed below.
2. Peak Treatment Flow: 38.0 cfs (1076 l/s)
3. Sediment Storage Capacity: 14.70 cu. yd. (11.24 cu. m.)
4. Continuous Oil Storage Capacity: 1770 gal. (6700 liters)
5. Sediment shall be stored in a zone that is isolated from the main flow path and protected from reentrainment by a benching skirt.

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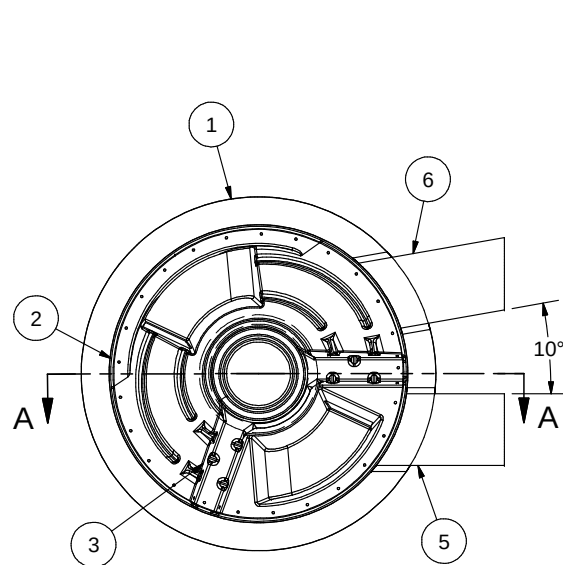
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DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

FRACTIONS ± 1/16
DECIMALS ± .06
ANGLES ± 1°

APPROX WEIGHT:	MATERIAL:	
N/A		
NEXT ASSEMBLY:		
17_12_2049-NEXT ASSY		
DRAWING NO.:		
17_12_2049-DD GA		
SHEET SIZE:	SHEET:	Rev:
B	1 OF 4	-



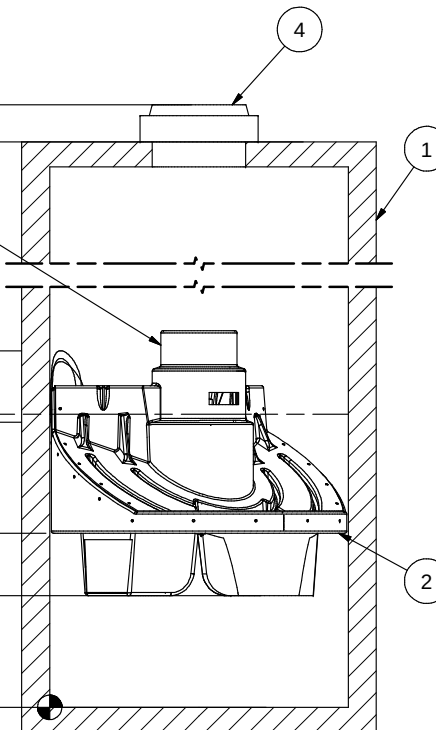
RIM: 300 3/4 in [25.06 ft]
ELEV: 141.92 ft
T.O.S.: 288 3/4 in [24.06 ft]
ELEV: 140.92 ft

PIPE INVERTS: 94 3/8 in [7.87 ft]
ELEV: 124.26 ft

PREASSEMBLY REFERENCE: 56 1/16 in [4.67 ft]

BOTTOM OF INTERNALS: 35 15/16 in [3.00 ft]

SUMP: 0 in [.00 ft]
ELEV: 116.86 ft



SECTION A-A



COMMENTS:
1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

REVISION HISTORY			
REV	BY	DESCRIPTION	DATE
-	-	FIRST RELEASE	-
DATE:		SCALE:	
		NTS	
DRAWN BY:		CHECKED BY:	APPROVED BY:
KDO			

Title
8-ft DIAMETER
FIRST DEFENSE HIGH CAPACITY

WQU-C1
MONTGOMERY PROMENADE
MONTGOMERY, NJ

CAPACITIES:

1. PEAK HYDRAULIC FLOW: 50.0 cfs (1415 l/s)
2. SEDIMENT STORAGE CAPACITY: 2.8 cu. yd. (2.1 cu. m.)
3. OIL STORAGE CAPACITY: 1002 gal. (3793 liters)
4. MAXIMUM INLET/OUTLET PIPE DIAMETERS: 48 in. (1200 mm)

PRODUCT SPECIFICATIONS:

- A. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
B. The treatment system shall fit within the limits of excavation (area and depth) as shown in the project plans and will not exceed the dimensions for the design flow rates specified herein.
C. The treatment system shall convey the Peak On-line Flow Rates of up to 32 cfs without causing upstream surcharge conditions. Full-scale independent laboratory scour testing shall demonstrate effluent control of less than or equal to 5 mg/L for all flows up to 200% of MTFR-106.
D. The treatment system shall be capable of capturing and retaining fine silt and sand size particles. Analysis of captured sediment from full-scale field installations shall demonstrate particle sizes predominately in the 20-micron range

PARTS LIST				
ITEM	QTY	SIZE (in)	DESCRIPTION	TYPE
1	1	96	HYDRO PRECAST MANHOLE(BY OTHERS)	
2	1		LEDGER SUPPORT	
3	1		SEPARATION MODULE	
4	1	30	FRAME AND COVER (ROUND)	
5	1	18	OUTLET PIPE (BY OTHERS)	RCP
6	1	18	INLET PIPE (BY OTHERS)	RCP

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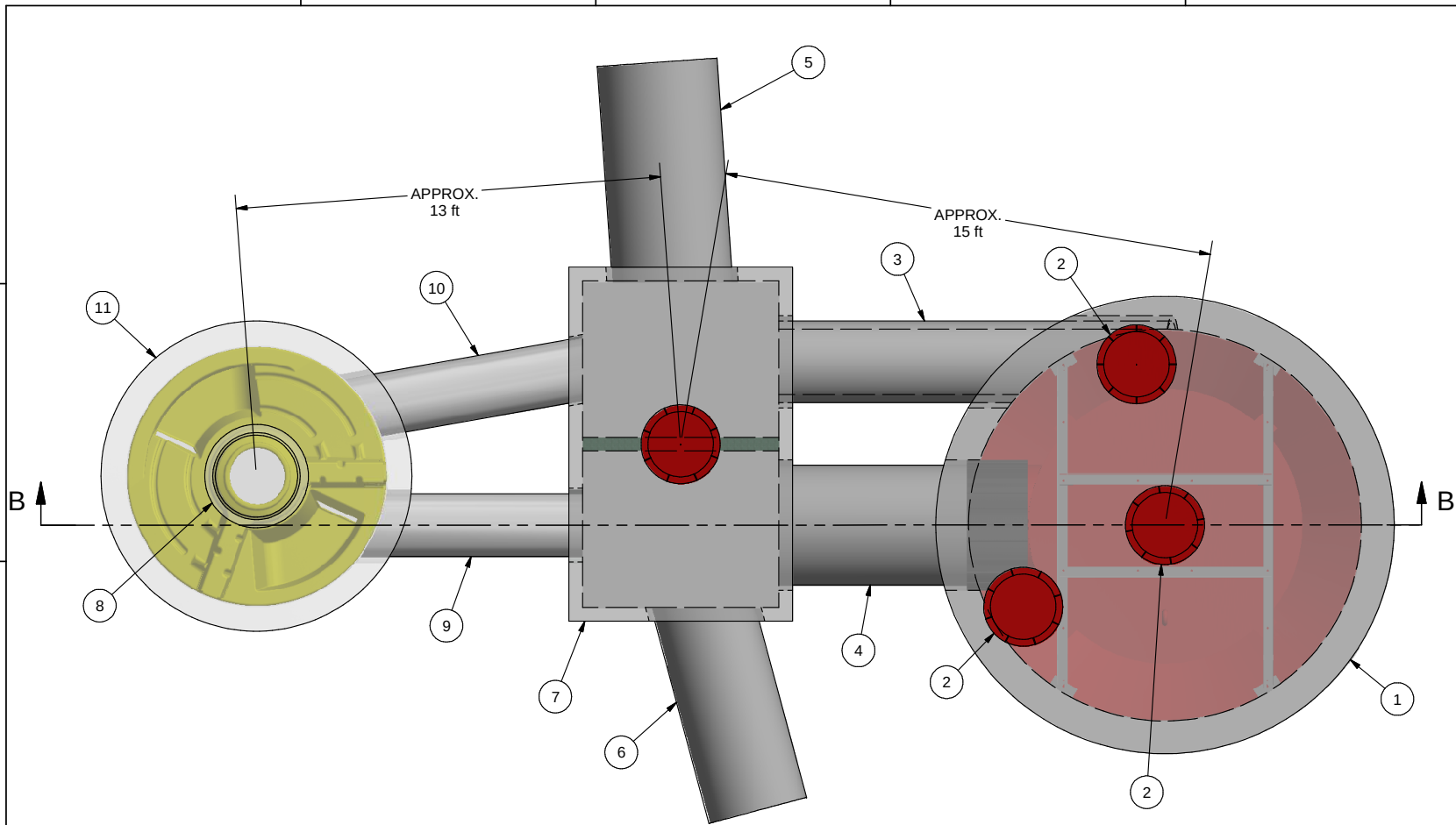
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FRACTIONS ± 1/16
DECIMALS ± .06
ANGLES ± 1°

Hydro International

94 Hutchins Drive
Portland, ME 04102
Tel: +1 (207) 756-6200
Fax: +1 (207) 756-6212
hydro-int.com

APPROX WEIGHT:	N/A	
MATERIAL:		
NEXT ASSEMBLY:	17_12_2049-NEXT ASSY	
DRAWING NO.:	17_12_2049-FDHC GA	
SHEET SIZE:	SHEET:	Rev:
B	2 OF 4	-



COMMENTS:

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

DATE: SCALE: VARIES

DRAWN BY: KDO CHECKED BY: APPROVED BY:

Title
12-ft DIAMETER
DOWNSTREAM DEFENDER
& 8-ft DIAMETER FDHC

WQU-C1
MONTGOMERY PROMENADE
MONTGOMERY, NJ

Hydro
International

94 Hutchins Drive
Portland, ME 04102
Tel: +1 (207) 756-6200
Fax: +1 (207) 756-6212
hydro-int.com

PARTS LIST		
ITEM	DESCRIPTION	SIZE (in)
1	DD PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	144
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	24
4	OUTLET PIPE (BY OTHERS)	36
5	MAIN PIPE (BY OTHERS)	36
6	BYPASS PIPE (BY OTHERS)	30
7	UPSTREAM STRUCTURE (BY OTHERS)	
8	FRAME AND COVER (ROUND)	30
9	OUTLET PIPE (BY OTHERS)	18
10	INLET PIPE (BY OTHERS)	18
11	FDHC PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	96

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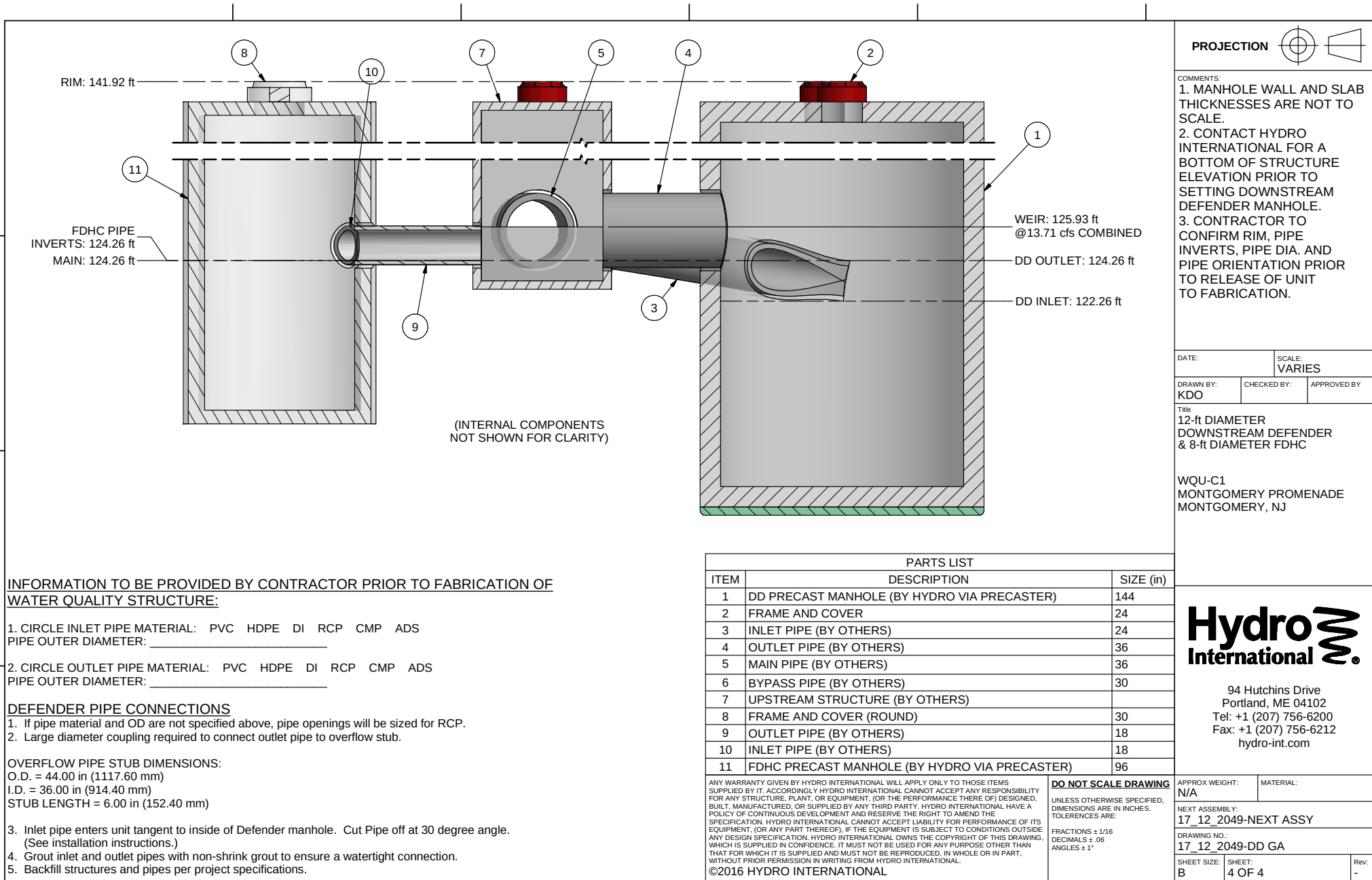
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DECIMALS $\pm .06$
ANGLES $\pm 1^\circ$

APPROX WEIGHT: N/A MATERIAL:

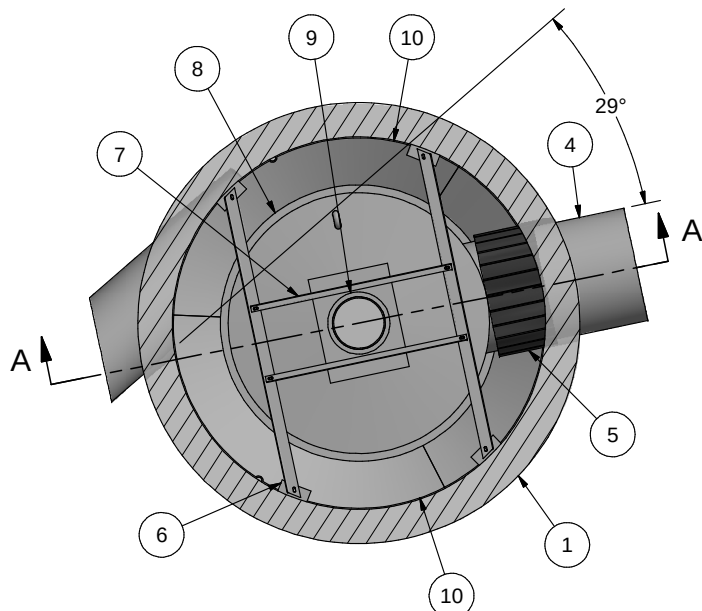
NEXT ASSEMBLY:
17_12_2049-NEXT ASSY

DRAWING NO.:
17_12_2049-DD GA

SHEET SIZE: B SHEET: 3 OF 4 Rev: -



PIPE DETAILS					
PIPE	MATERIAL	LENGTH	INV IN	INV OUT	SLOPE
INLET	24" RCP	24 LF	130.99	128.86	4.7 %
OUTLET	30" RCP	8 LF	130.86	130.79	0.9 %



RIM: 211.77 in
ELEV: 139.07 ft
T.O.S.: 199.77 in
ELEV: 138.07 ft

LEDGER: 150.75 in

OUTLET: 113.25 in
ELEV: 130.86 ft
INLET: 89.25 in
ELEV: 128.86 ft

SKIRT: 56.75 in

SUMP: 0 in
ELEV: 121.42 ft

STONE BASE
PER PROJECT
SPECIFICATIONS

SECTION A-A

PARTS LIST		
ITEM	DESCRIPTION	SIZE (in)
1	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	120
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	24
4	OUTLET PIPE (BY OTHERS)	30
5	PIPE COUPLING (BY OTHERS)	
6	LEDGER ANGLE	
7	SUPPORT FRAME	
8	DIP PLATE	
9	CENTER SHAFT AND CONE	
10	BENCHING SKIRT	
11	PIPE COLLAR	

EQUIPMENT PERFORMANCE

The stormwater treatment unit shall adhere to the hydraulic parameters given in the chart below and provide the removal efficiencies and storage capacities as follows:

- Performance objectives: The unit shall be capable of treating the peak flow rate listed below.
- Peak Treatment Flow: 25.0 cfs (708 l/s)
- Sediment Storage Capacity: 8.70 cu. yd. (6.65 cu. m.)
- Continuous Oil Storage Capacity: 1050 gal. (3975 liters)
- Sediment shall be stored in a zone that is isolated from the main flow path and protected from reentrainment by a benching skirt.

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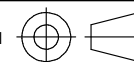
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DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

FRACTIONS ± 1/16
DECIMALS ± .06
ANGLES ± 1°

PROJECTION



COMMENTS:

- MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
- CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.
- CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

REVISION HISTORY

REV	BY	DESCRIPTION	DATE
-	-	FIRST RELEASE	-

DATE: 9/28/2017 SCALE: VARIES

DRAWN BY: KDO CHECKED BY: APPROVED BY:

Title
10-ft DIAMETER
DOWNSTREAM DEFENDER

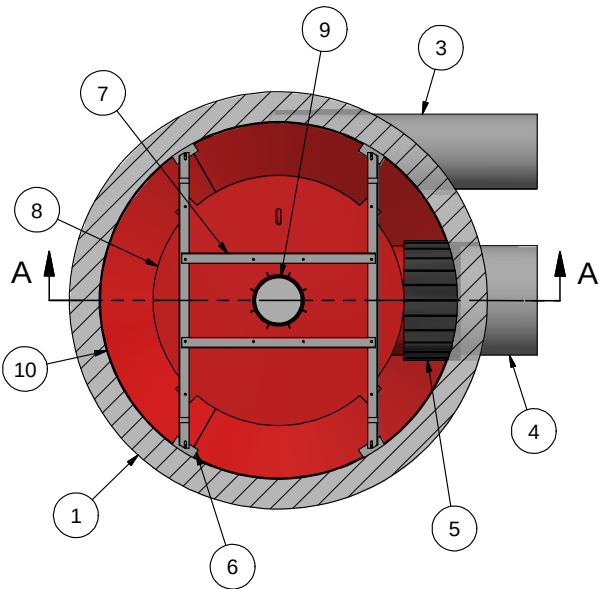
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MONTGOMERY, NJ

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Fax: +1 (207) 756-6212
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APPROX WEIGHT: N/A	MATERIAL:
NEXT ASSEMBLY: 17_12_2049-NEXT ASSY	
DRAWING NO.: 17_12_2049-DD GA	
SHEET SIZE: B	SHEET: 1 OF 3
Rev: -	

PIPE DETAILS					
PIPE	MATERIAL	LENGTH	INV IN	INV OUT	SLOPE
INLET	24" RCP	12 LF	124.42	122.42	16.7 %
OUTLET	36" RCP	5 LF	124.42	124.42	0.0 %

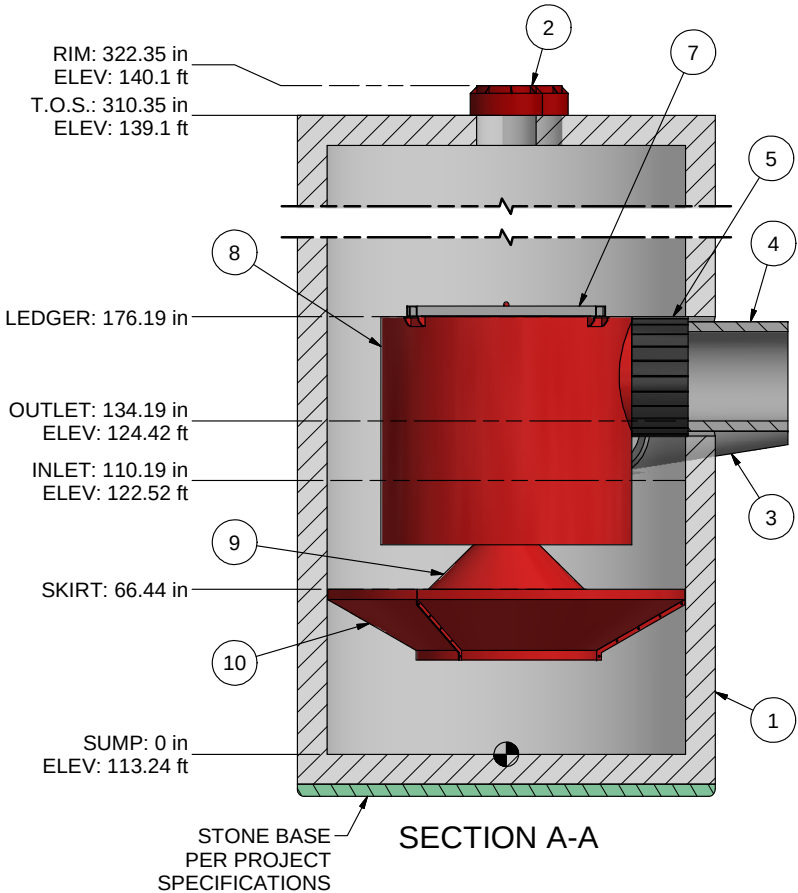


PARTS LIST		
ITEM	DESCRIPTION	SIZE (in)
1	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	144
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	24
4	OUTLET PIPE (BY OTHERS)	36
5	PIPE COUPLING (BY OTHERS)	
6	LEDGER ANGLE	
7	SUPPORT FRAME	
8	DIP PLATE	
9	CENTER SHAFT AND CONE	
10	BENCHING SKIRT	

EQUIPMENT PERFORMANCE

The stormwater treatment unit shall adhere to the hydraulic parameters given in the chart below and provide the removal efficiencies and storage capacities as follows:

1. Performance objectives: The unit shall be capable of treating the peak flow rate listed below.
2. Peak Treatment Flow: 38.0 cfs (1076 l/s)
3. Sediment Storage Capacity: 14.70 cu. yd. (11.24 cu. m.)
4. Continuous Oil Storage Capacity: 1770 gal. (6700 liters)
5. Sediment shall be stored in a zone that is isolated from the main flow path and protected from reentrainment by a benching skirt.



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REVISION HISTORY			
REV	BY	DESCRIPTION	DATE
-		FIRST RELEASE	
DATE:		SCALE: VARIES	
DRAWN BY:	CHECKED BY:	APPROVED BY:	
KDO			

Title
12-ft DIAMETER
DOWNSTREAM DEFENDER

WQU-B2
MONTGOMERY PROMENADE
MONTGOMERY, NJ

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International

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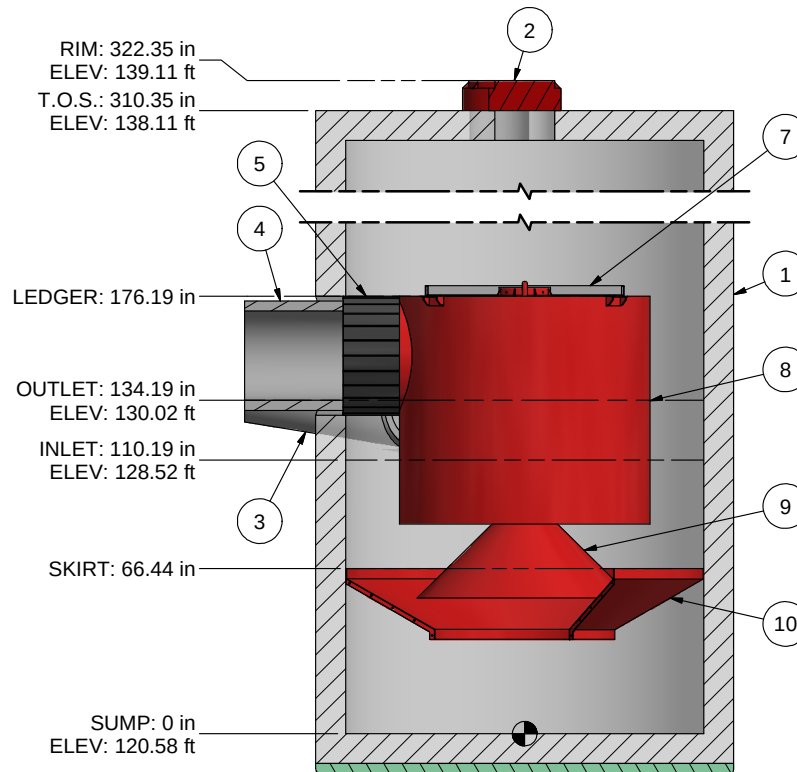
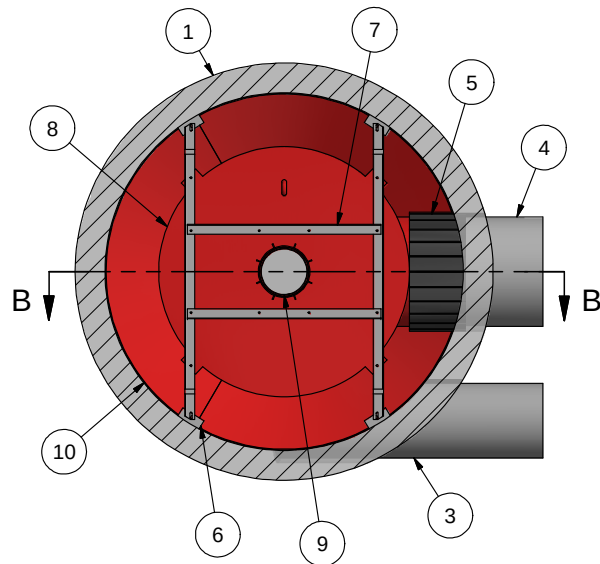
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DECIMALS $\pm .06$
ANGLES $\pm 1^\circ$

APPROX WEIGHT: N/A	MATERIAL:
NEXT ASSEMBLY: 17_12_2049-NEXT ASSY	
DRAWING NO.: 17_12_2049-DD GA	
SHEET SIZE: B	SHEET: 1 OF 4
	Rev: -

PIPE DETAILS					
PIPE	MATERIAL	LENGTH	INV IN	INV OUT	SLOPE
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SECTION B-B

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DATE: SCALE: VARIES

DRAWN BY: KDO CHECKED BY: APPROVED BY:

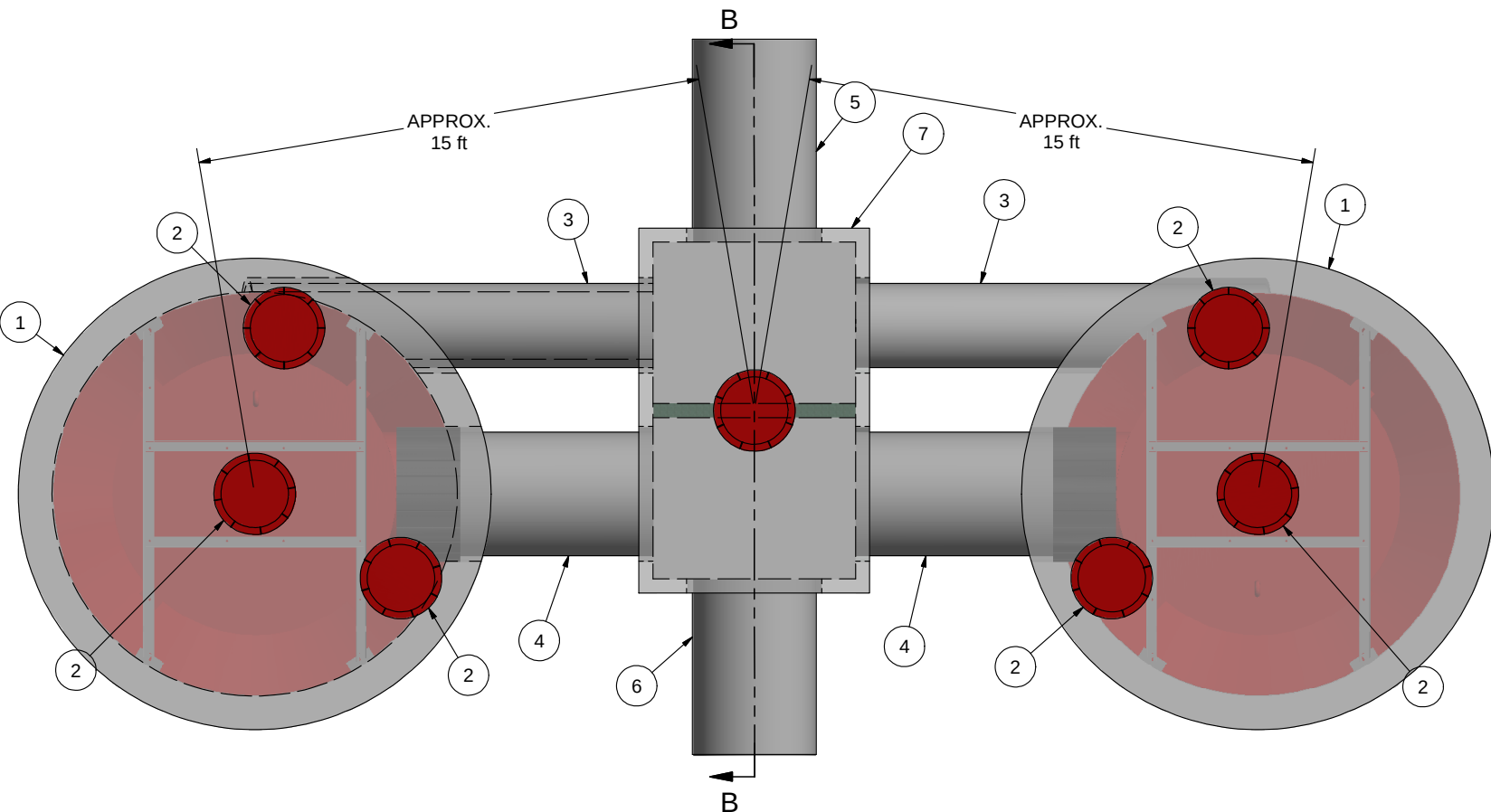
Title
12-ft DIAMETER
DOWNSTREAM DEFENDER

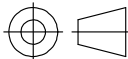
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APPROX WEIGHT: N/A MATERIAL:
NEXT ASSEMBLY:
17_12_2049-NEXT ASSY
DRAWING NO.:
17_12_2049-DD GA
SHEET SIZE: B SHEET: 2 OF 4 Rev: -



PROJECTION 

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DATE: SCALE: VARIES

DRAWN BY: KDO CHECKED BY: APPROVED BY:

Title
12-ft DIAMETER
DOWNSTREAM DEFENDER

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MONTGOMERY PROMENADE
MONTGOMERY, NJ

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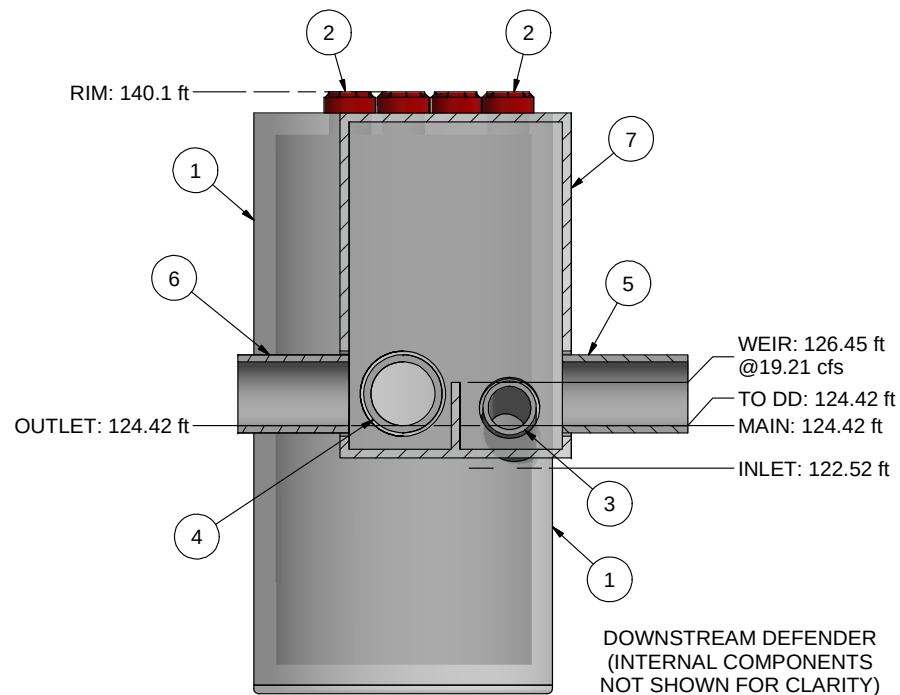
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PARTS LIST		
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5	MAIN PIPE (BY OTHERS)	36
6	BYPASS PIPE (BY OTHERS)	36
7	UPSTREAM STRUCTURE (BY OTHERS)	

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DECIMALS ± .06
ANGLES ± 1°

APPROX WEIGHT: N/A MATERIAL:
NEXT ASSEMBLY: 17_12_2049-NEXT ASSY
DRAWING NO.: 17_12_2049-DD GA
SHEET SIZE: B SHEET: 3 OF 4 Rev: -



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DATE: SCALE: VARIES

DRAWN BY: KDO CHECKED BY: APPROVED BY:

Title
12-ft DIAMETER
DOWNSTREAM DEFENDER

WQU-B2
MONTGOMERY PROMENADE
MONTGOMERY, NJ

INFORMATION TO BE PROVIDED BY CONTRACTOR PRIOR TO FABRICATION OF WATER QUALITY STRUCTURE:

1. CIRCLE INLET PIPE MATERIAL: PVC HDPE DI RCP CMP ADS

PIPE OUTER DIAMETER: _____

2. CIRCLE OUTLET PIPE MATERIAL: PVC HDPE DI RCP CMP ADS

PIPE OUTER DIAMETER: _____

DEFENDER PIPE CONNECTIONS

1. If pipe material and OD are not specified above, pipe openings will be sized for RCP.
2. Large diameter coupling required to connect outlet pipe to overflow stub.

OVERFLOW PIPE STUB DIMENSIONS:

O.D. = 44.00 in (1117.60 mm)

I.D. = 36.00 in (914.40 mm)

STUB LENGTH = 6.00 in (152.40 mm)

3. Inlet pipe enters unit tangent to inside of Defender manhole. Cut Pipe off at 30 degree angle. (See installation instructions.)
4. Grout inlet and outlet pipes with non-shrink grout to ensure a watertight connection.
5. Backfill structures and pipes per project specifications.

PARTS LIST

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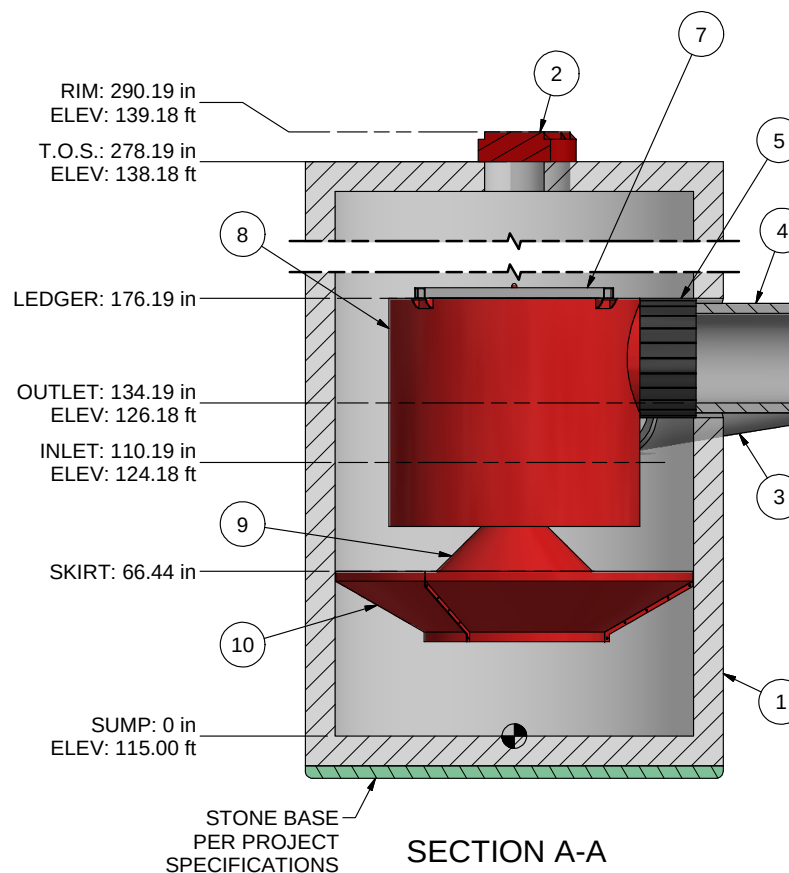
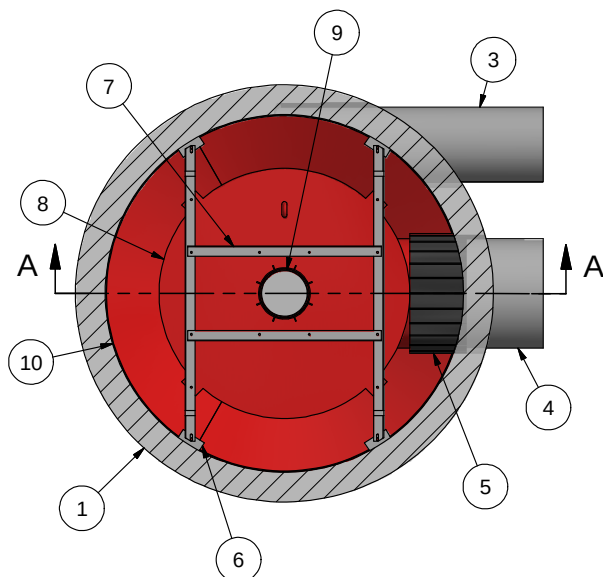
APPROX WEIGHT: N/A MATERIAL:

NEXT ASSEMBLY:
2_2049-NEXT ASSY

DRAWING NO.:
17_12_2049-DD GA

SHEET SIZE: B SHEET: 4 OF 4 Rev: -

PIPE DETAILS					
PIPE	MATERIAL	LENGTH	INV IN	INV OUT	SLOPE
INLET	24" RCP	12 LF	126.18	124.18	16.7 %
OUTLET	36" RCP	5 LF	126.18	126.18	0.0 %



COMMENTS:

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REVISION HISTORY			
REV	BY	DESCRIPTION	DATE
-		FIRST RELEASE	
DATE:		SCALE: VARIES	
DRAWN BY: KDO		CHECKED BY:	APPROVED BY:

Title
12-ft DIAMETER
DOWNSTREAM DEFENDER

WQU-B1
MONTGOMERY PROMENADE
MONTGOMERY, NJ

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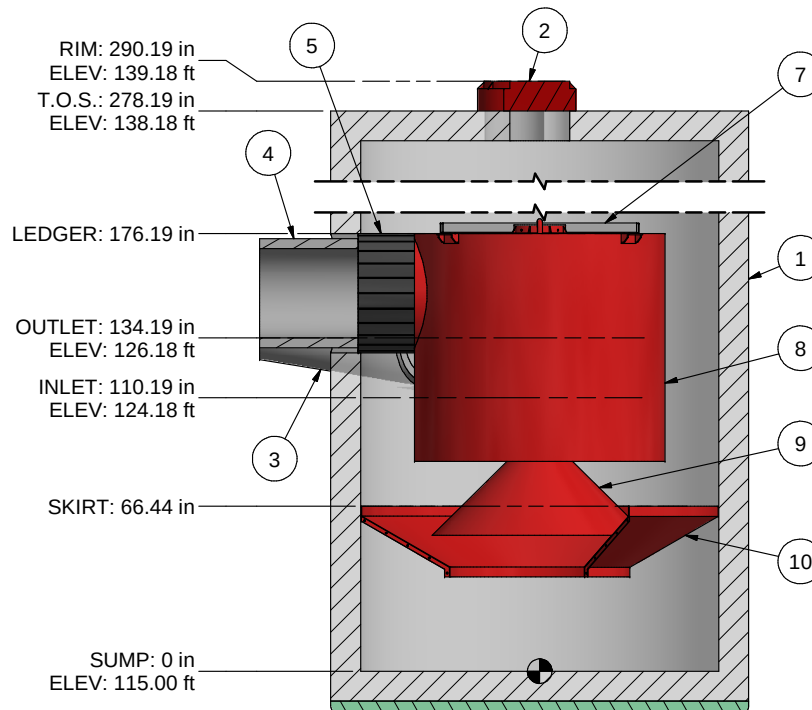
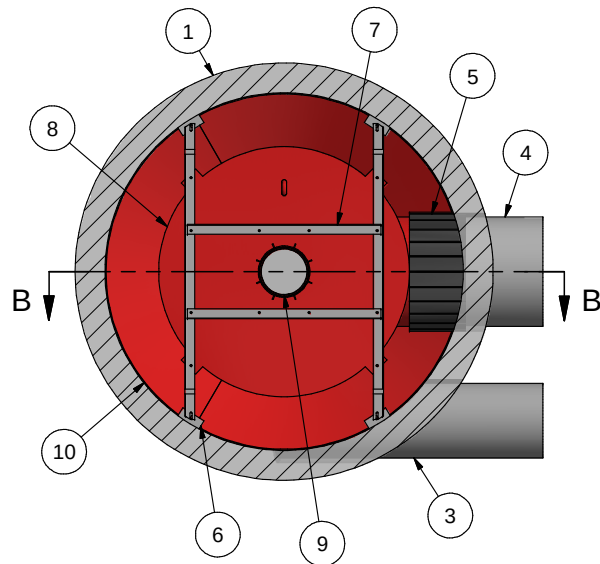
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ANGLES ± 1°

G	APPROX WEIGHT: N/A	MATERIAL:
	NEXT ASSEMBLY: 17_12_2049-NEXT ASSY	
	DRAWING NO.: 17_12_2049-DD GA	
	SHEET SIZE: B	SHEET: 1 OF 4
		Re

PIPE DETAILS					
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SECTION B-B

PARTS LIST		
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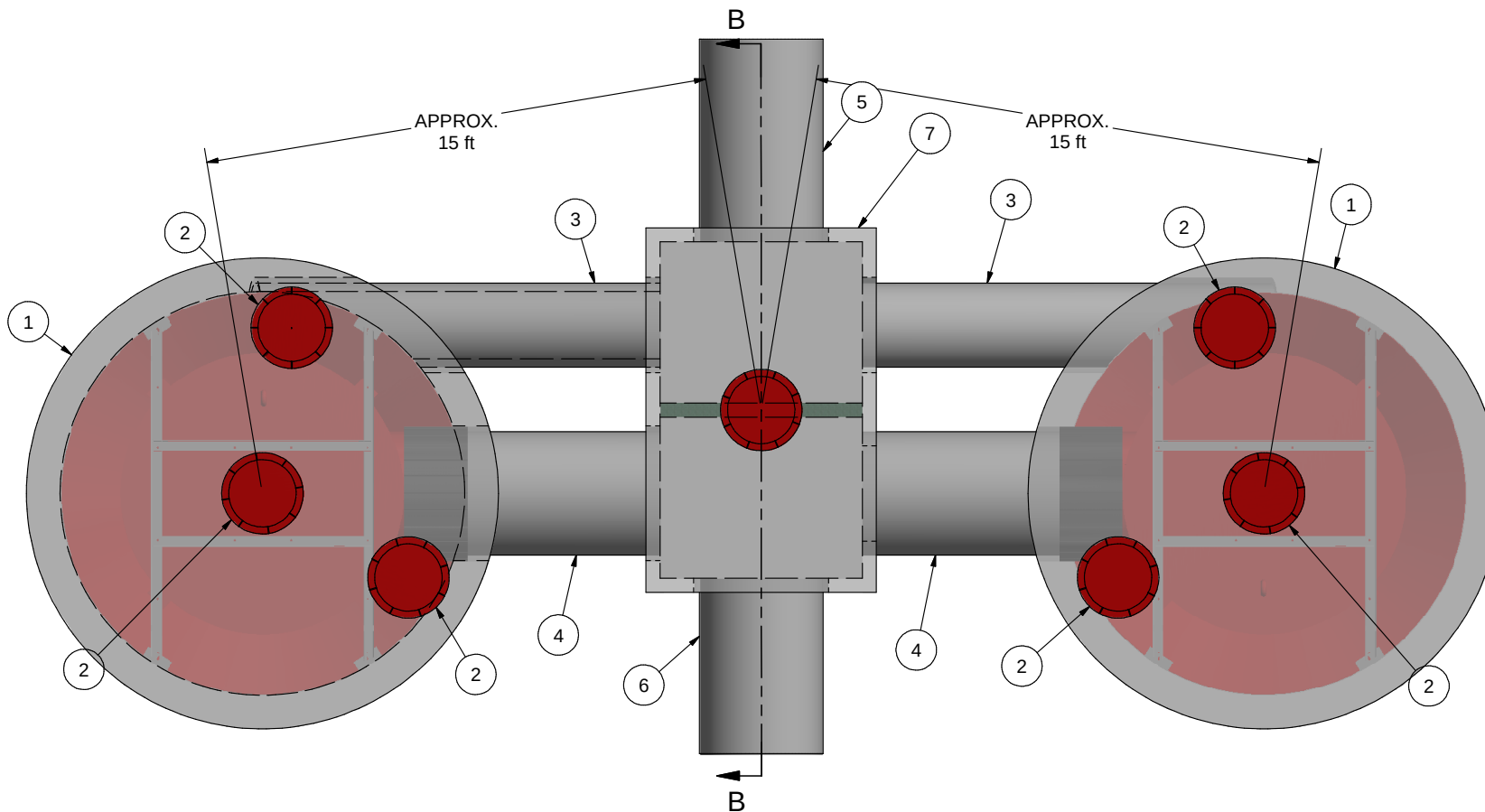
Title
12-ft DIAMETER
DOWNSTREAM DEFENDER

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MONTGOMERY, NJ

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Fax: +1 (207) 756-6212
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APPROX WEIGHT: MATERIAL:
N/A
NEXT ASSEMBLY:
17_12_2049-NEXT ASSY
DRAWING NO.:
17_12_2049-DD GA
SHEET SIZE: B SHEET: 2 OF 4 Rev: -



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1	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	144
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	24
4	OUTLET PIPE (BY OTHERS)	36
5	MAIN PIPE (BY OTHERS)	36
6	BYPASS PIPE (BY OTHERS)	36
7	UPSTREAM STRUCTURE (BY OTHERS)	

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UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

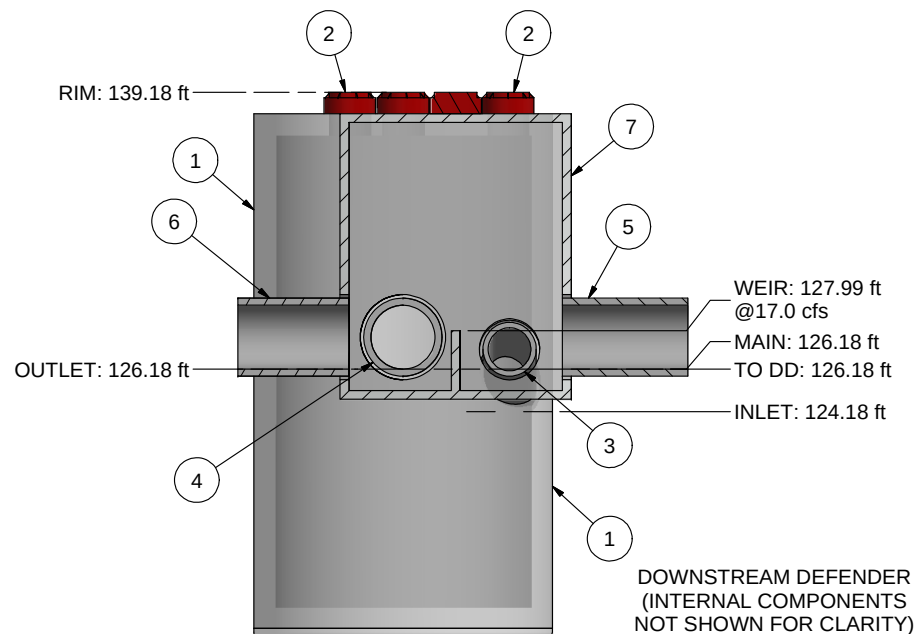
FRACTIONS $\pm 1/16$
DECIMALS $\pm .06$
ANGLES $\pm 1^\circ$

APPROX WEIGHT: N/A MATERIAL:

NEXT ASSEMBLY:
17_12_2049-NEXT ASSY

DRAWING NO.:
17_12_2049-DD GA

SHEET SIZE: B SHEET: 3 OF 4 Rev: -



COMMENTS:

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

DATE: SCALE: VARIES
 DRAWN BY: KDO CHECKED BY: APPROVED BY:

Title
 12-ft DIAMETER
 DOWNSTREAM DEFENDER

WQU-B1
 MONTGOMERY PROMENADE
 MONTGOMERY, NJ

INFORMATION TO BE PROVIDED BY CONTRACTOR PRIOR TO FABRICATION OF WATER QUALITY STRUCTURE:

1. CIRCLE INLET PIPE MATERIAL: PVC HDPE DI RCP CMP ADS
 PIPE OUTER DIAMETER: _____

2. CIRCLE OUTLET PIPE MATERIAL: PVC HDPE DI RCP CMP ADS
 PIPE OUTER DIAMETER: _____

DEFENDER PIPE CONNECTIONS

1. If pipe material and OD are not specified above, pipe openings will be sized for RCP.
2. Large diameter coupling required to connect outlet pipe to overflow stub.

OVERFLOW PIPE STUB DIMENSIONS:

O.D. = 44.00 in (1117.60 mm)

I.D. = 36.00 in (914.40 mm)

STUB LENGTH = 6.00 in (152.40 mm)

3. Inlet pipe enters unit tangent to inside of Defender manhole. Cut Pipe off at 30 degree angle. (See installation instructions.)
4. Grout inlet and outlet pipes with non-shrink grout to ensure a watertight connection.
5. Backfill structures and pipes per project specifications.

PARTS LIST		
ITEM	DESCRIPTION	SIZE (in)
1	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	144
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	24
4	OUTLET PIPE (BY OTHERS)	36
5	MAIN PIPE (BY OTHERS)	36
6	BYPASS PIPE (BY OTHERS)	36
7	UPSTREAM STRUCTURE (BY OTHERS)	

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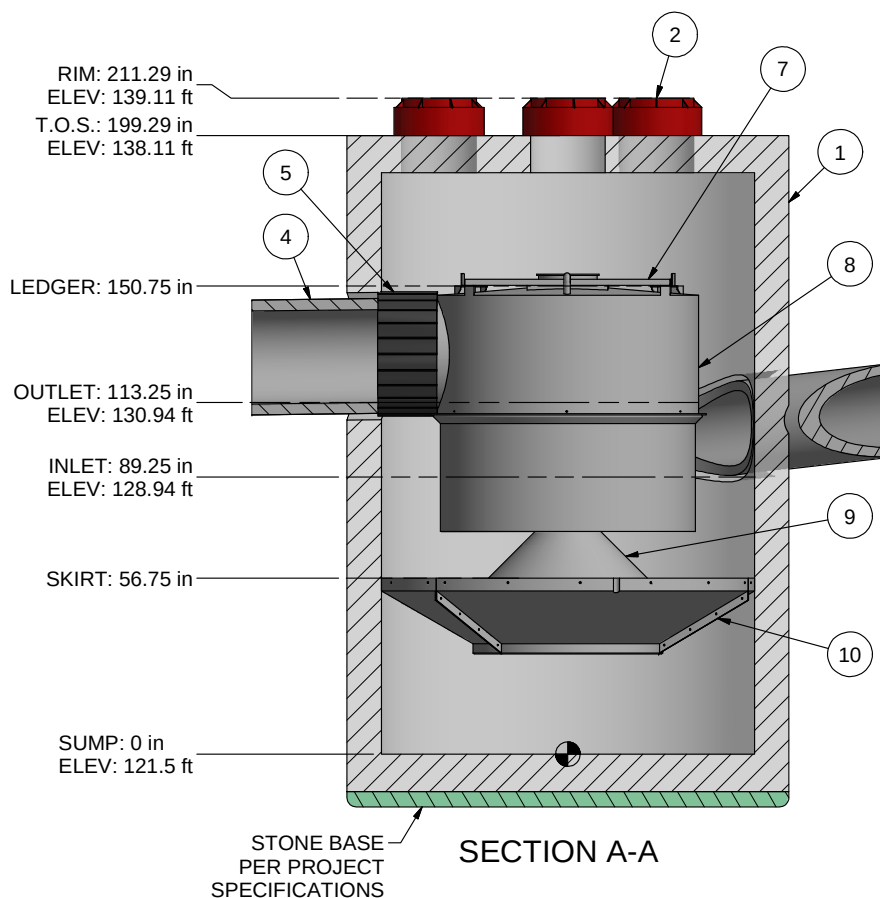
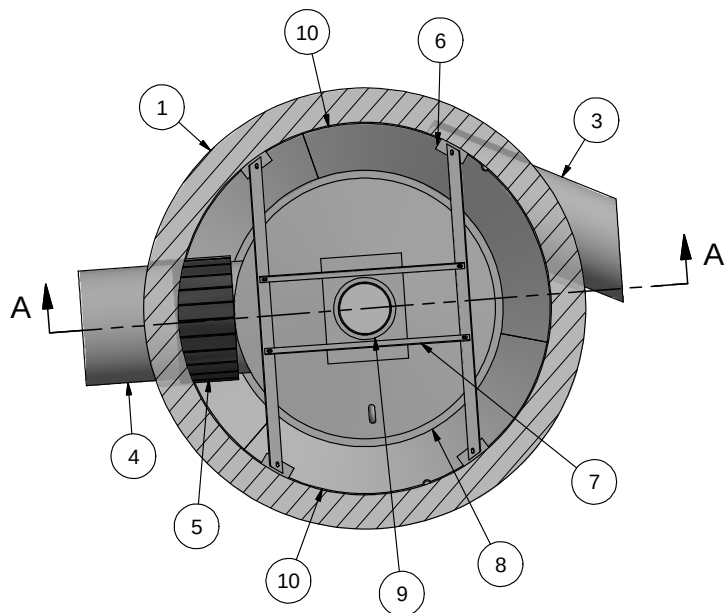
FRACTIONS ± 1/16
 DECIMALS ± .06
 ANGLES ± 1°

Hydro International

94 Hutchins Drive
 Portland, ME 04102
 Tel: +1 (207) 756-6200
 Fax: +1 (207) 756-6212
 hydro-int.com

APPROX WEIGHT: N/A MATERIAL:
 NEXT ASSEMBLY: 17_12_2049-NEXT ASSY
 DRAWING NO.: 17_12_2049-DD GA
 SHEET SIZE: B SHEET: 4 OF 4 Rev: -

PIPE DETAILS					
PIPE	MATERIAL	LENGTH	INV IN	INV OUT	SLOPE
INLET	24" RCP	22 LF	131.18	128.94	10.2 %
OUTLET	30" RCP	32 LF	130.94	130.55	1.2 %



PARTS LIST		
ITEM	DESCRIPTION	SIZE (in)
1	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	120
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	24
4	OUTLET PIPE (BY OTHERS)	30
5	PIPE COUPLING (BY OTHERS)	
6	LEDGER ANGLE	
7	SUPPORT FRAME	
8	DIP PLATE	
9	CENTER SHAFT AND CONE	
10	BENCHING SKIRT	
11	PIPE COLLAR	

EQUIPMENT PERFORMANCE

The stormwater treatment unit shall adhere to the hydraulic parameters given in the chart below and provide the removal efficiencies and storage capacities as follows:

- Performance objectives: The unit shall be capable of treating the peak flow rate listed below.
- Peak Treatment Flow: 25.0 cfs (708 l/s)
- Sediment Storage Capacity: 8.70 cu. yd. (6.65 cu. m.)
- Continuous Oil Storage Capacity: 1050 gal. (3975 liters)
- Sediment shall be stored in a zone that is isolated from the main flow path and protected from reentrainment by a benching skirt.

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FRACTIONS ± 1/16
DECIMALS ± .06
ANGLES ± 1°



COMMENTS:

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- CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.
- CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

REVISION HISTORY			
REV	BY	DESCRIPTION	DATE
-	-	FIRST RELEASE	-

DATE: 9/21/2017
SCALE: VARIES

DRAWN BY: KO
CHECKED BY:
APPROVED BY:

Title
10-ft DIAMETER
DOWNSTREAM DEFENDER

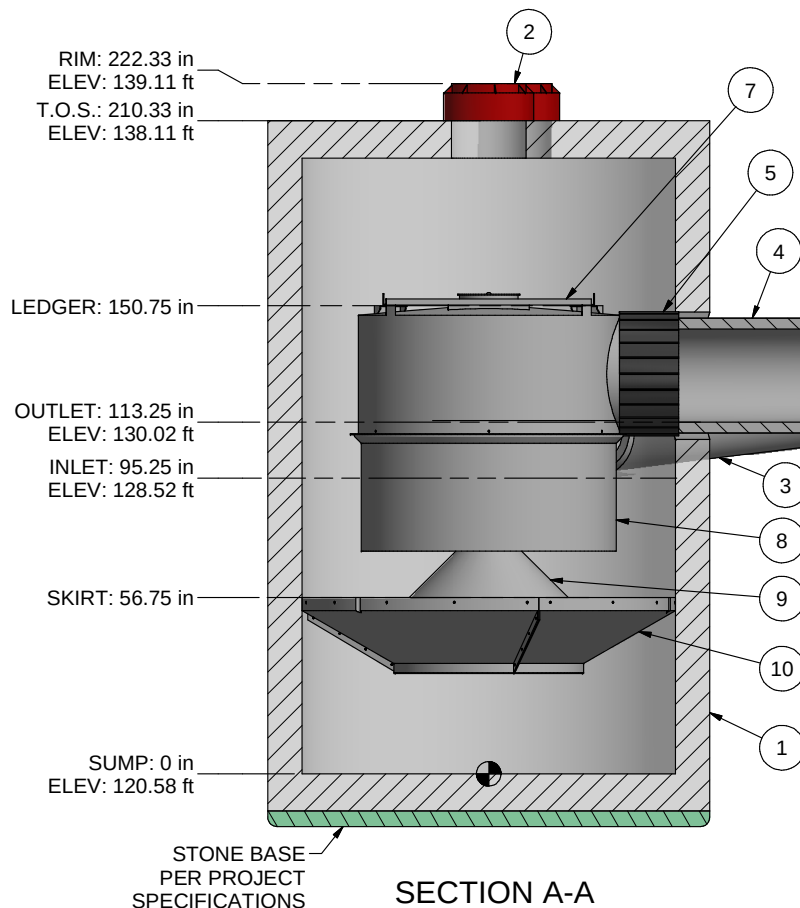
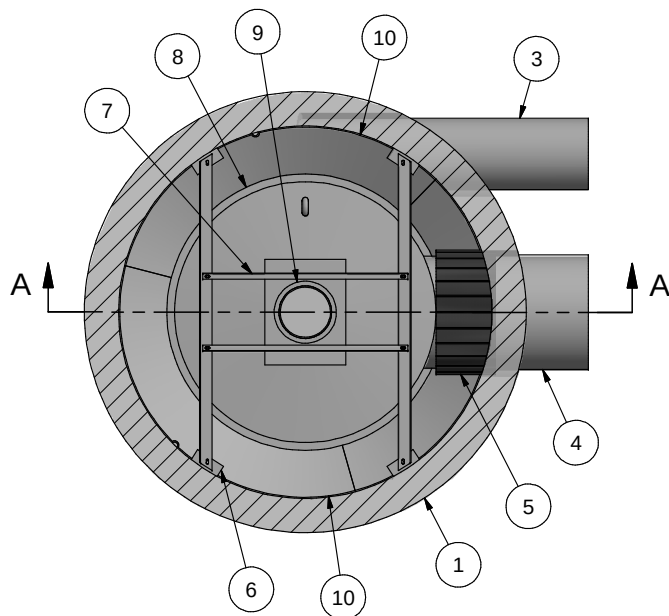
WQU-A2
MONTGOMERY PROMENADE
MONTGOMERY, NJ

Hydro International

94 Hutchins Drive
Portland, ME 04102
Tel: +1 (207) 756-6200
Fax: +1 (207) 756-6212
hydro-int.com

APPROX WEIGHT: N/A	MATERIAL:
NEXT ASSEMBLY: 17_12_2049-NEXT ASSY	
DRAWING NO.: 17_12_2049-DD GA	
SHEET SIZE: B	SHEET: 1 OF 1
Rev: -	

PIPE DETAILS					
PIPE	MATERIAL	LENGTH	INV IN	INV OUT	SLOPE
INLET	30" RCP	12 LF	130.02	128.52	12.5 %
OUTLET	18" RCP	6 LF	130.02	130.02	0.0 %



PARTS LIST		
ITEM	DESCRIPTION	SIZE (in)
1	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	120
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	18
4	OUTLET PIPE (BY OTHERS)	30
5	PIPE COUPLING (BY OTHERS)	
6	LEDGER ANGLE	
7	SUPPORT FRAME	
8	DIP PLATE	
9	CENTER SHAFT AND CONE	
10	BENCHING SKIRT	

EQUIPMENT PERFORMANCE

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FRACTIONS: $\pm 1/16$
DECIMALS: $\pm .06$
ANGLES: $\pm 1^\circ$



COMMENTS:

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3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

REVISION HISTORY			
REV	BY	DESCRIPTION	DATE
-	-	FIRST RELEASE	-
DATE:		SCALE:	
9/22/2017		VARIES	
DRAWN BY:		CHECKED BY:	APPROVED BY:
KDO			

Title
10-ft DIAMETER
DOWNSTREAM DEFENDER

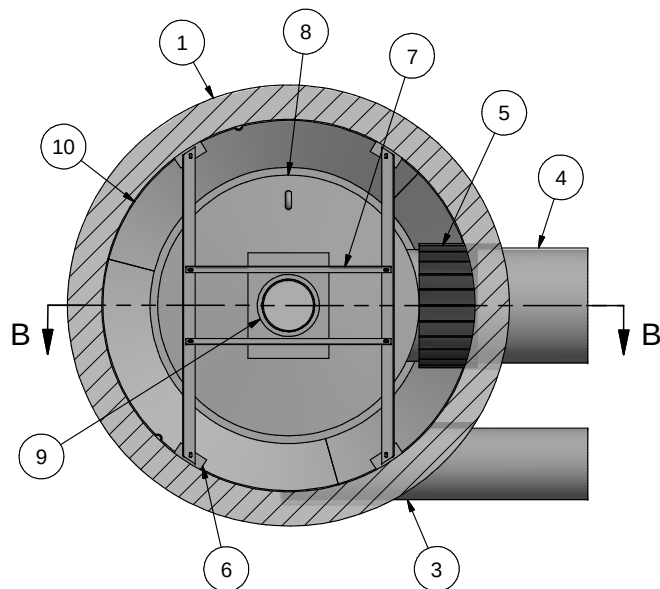
WQU-A1
MONTGOMERY PROMENADE
MONTGOMERY, NJ

Hydro
International

94 Hutchins Drive
Portland, ME 04102
Tel: +1 (207) 756-6200
Fax: +1 (207) 756-6212
hydro-int.com

G	APPROX WEIGHT: N/A	MATERIAL:
	NEXT ASSEMBLY: 17_12_2049-NEXT ASSY	
	DRAWING NO.: 17_12_2049-DD GA	
	SHEET SIZE: B	SHEET: 1 OF 4
		Re

PIPE DETAILS					
PIPE	MATERIAL	LENGTH	INV IN	INV OUT	SLOPE
INLET	30" RCP	12 LF	130.02	128.52	12.5 %
OUTLET	18" RCP	6 LF	130.02	130.02	0.0 %



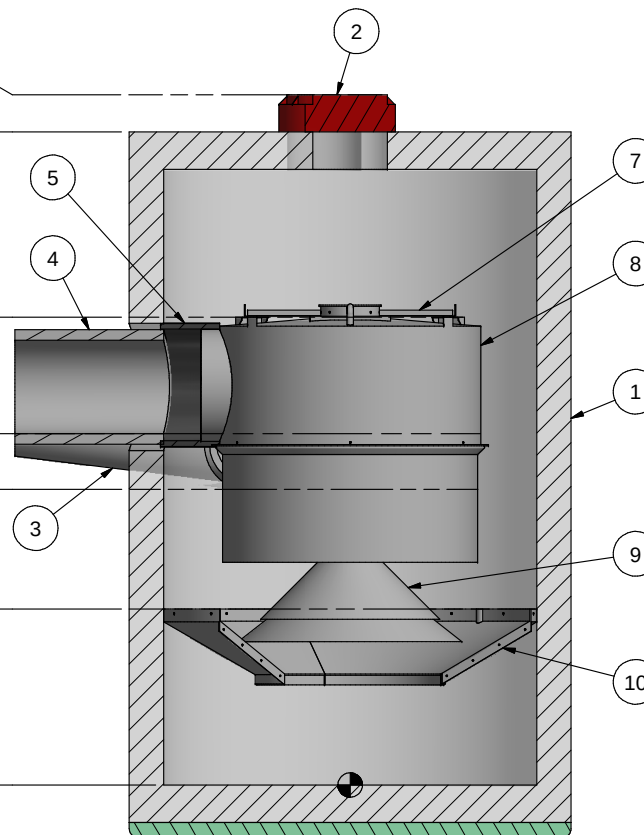
RIM: 222.33 in
ELEV: 139.11 ft
T.O.S.: 210.33 in
ELEV: 138.11 ft

LEDGER: 150.75 in

OUTLET: 113.25 in
ELEV: 130.02 ft
INLET: 95.25 in
ELEV: 128.52 ft

SKIRT: 56.75 in

SUMP: 0 in
ELEV: 120.58 ft



SECTION B-B

PARTS LIST		
ITEM	DESCRIPTION	SIZE (in)
1	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	120
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	18
4	OUTLET PIPE (BY OTHERS)	30
5	PIPE COUPLING (BY OTHERS)	
6	LEDGER ANGLE	
7	SUPPORT FRAME	
8	DIP PLATE	
9	CENTER SHAFT AND CONE	
10	BENCHING SKIRT	

EQUIPMENT PERFORMANCE

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4. Continuous Oil Storage Capacity: 1050 gal. (3975 liters)
5. Sediment shall be stored in a zone that is isolated from the main flow path and protected from reentrainment by a benching skirt.

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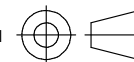
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FRACTIONS: ± 1/16
DECIMALS: ± .06
ANGLES: ± 1°

PROJECTION



COMMENTS:

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

DATE:
9/22/2017

SCALE:
VARIES

DRAWN BY:
KDO

CHECKED BY:

APPROVED BY:

Title
10-ft DIAMETER
DOWNSTREAM DEFENDER

WQU-A1
MONTGOMERY PROMENADE
MONTGOMERY, NJ

Hydro
International

94 Hutchins Drive
Portland, ME 04102
Tel: +1 (207) 756-6200
Fax: +1 (207) 756-6212
hydro-int.com

APPROX WEIGHT:
N/A

MATERIAL:

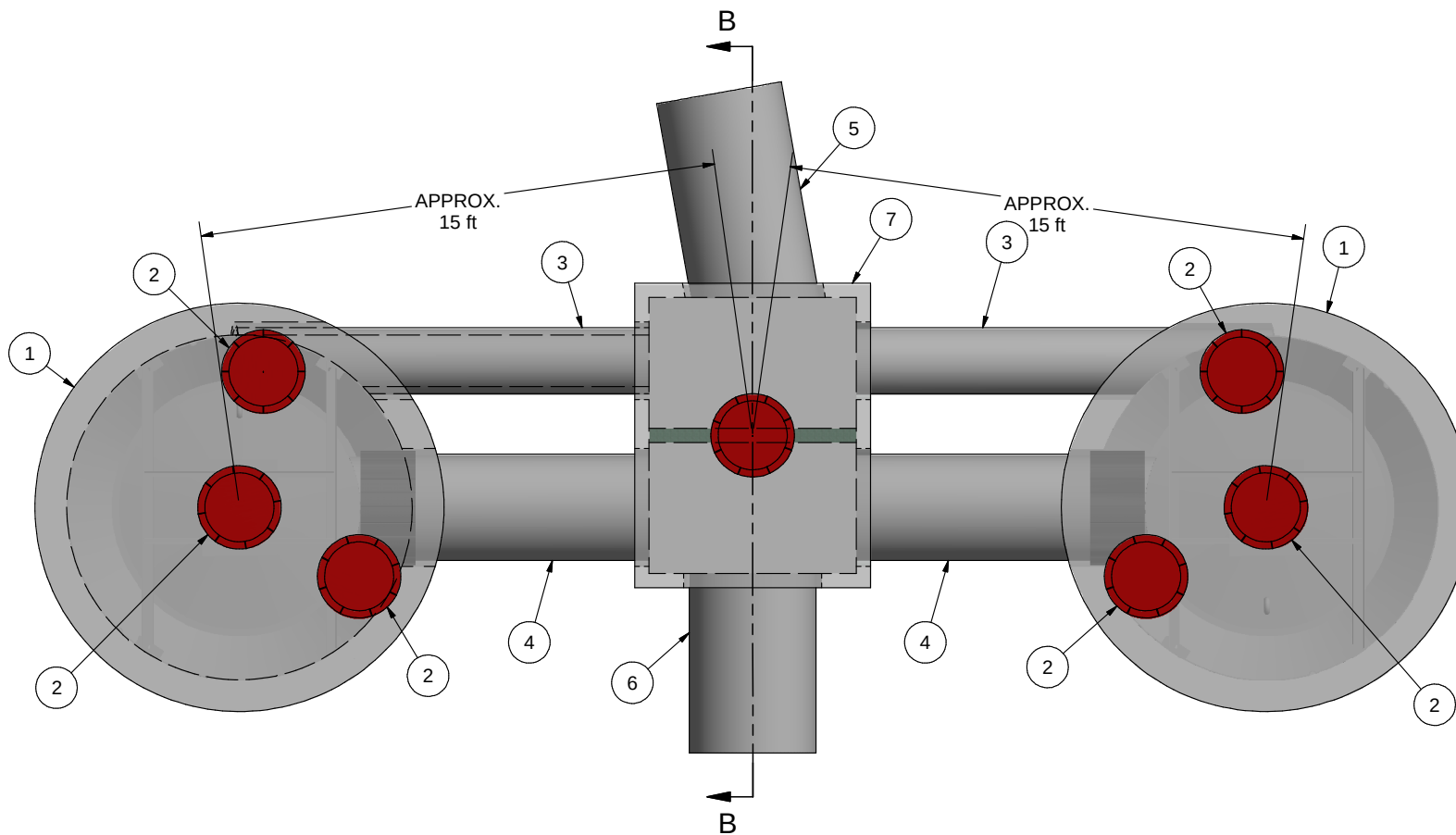
NEXT ASSEMBLY:
17_12_2049-NEXT ASSY

DRAWING NO.:
17_12_2049-DD GA

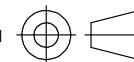
SHEET SIZE:
B

SHEET:
2 OF 4

Rev:
-



PROJECTION



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DATE:
9/22/2017

SCALE:
VARIES

DRAWN BY:
KDO

CHECKED BY:

APPROVED BY:

Title
10-ft DIAMETER
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MONTGOMERY, NJ

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PARTS LIST

ITEM	DESCRIPTION	SIZE (in)
1	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	120
2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	18
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5	MAIN PIPE (BY OTHERS)	36
6	BYPASS PIPE (BY OTHERS)	36
7	UPSTREAM STRUCTURE (BY OTHERS)	

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FRACTIONS $\pm 1/16$
DECIMALS $\pm .06$
ANGLES $\pm 1^\circ$

APPROX WEIGHT:

N/A

MATERIAL:

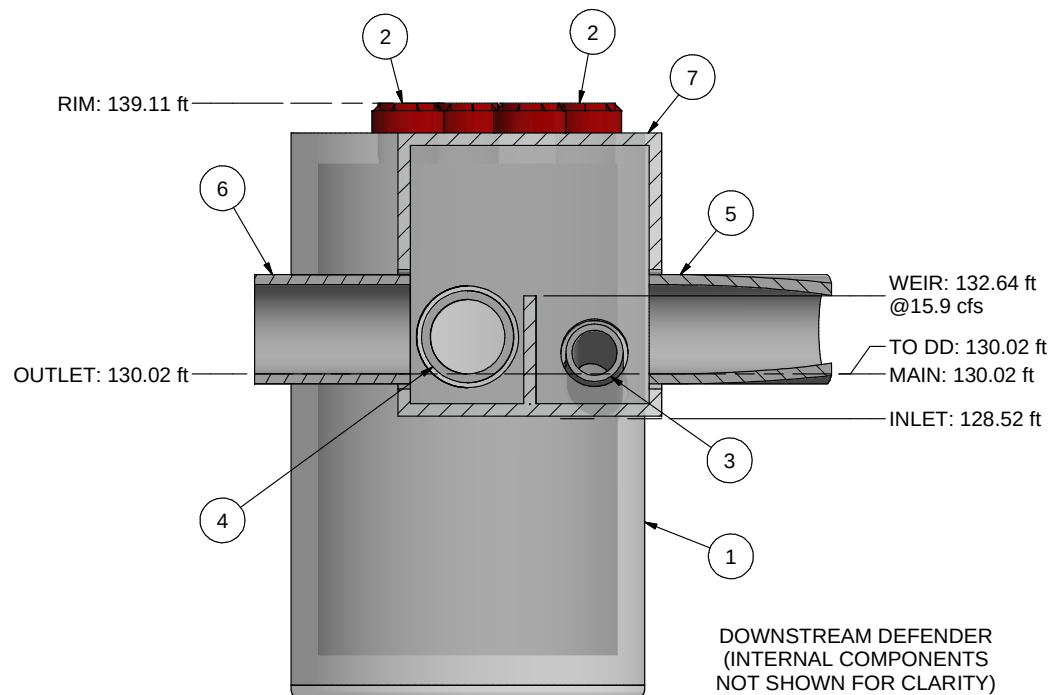
NEXT ASSEMBLY:
17_12_2049-NEXT ASSY

DRAWING NO.:
17_12_2049-DD GA

SHEET SIZE:
B

SHEET:
3 OF 4

Rev:
-



COMMENTS:

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DATE: 9/22/2017 SCALE: VARIES

DRAWN BY: KDO CHECKED BY: APPROVED BY:

Title
10-ft DIAMETER
DOWNSTREAM DEFENDER

WQU-A1
MONTGOMERY PROMENADE
MONTGOMERY, NJ

INFORMATION TO BE PROVIDED BY CONTRACTOR PRIOR TO FABRICATION OF WATER QUALITY STRUCTURE:

1. CIRCLE INLET PIPE MATERIAL: PVC HDPE DI RCP CMP ADS
PIPE OUTER DIAMETER: _____

2. CIRCLE OUTLET PIPE MATERIAL: PVC HDPE DI RCP CMP ADS
PIPE OUTER DIAMETER: _____

DEFENDER PIPE CONNECTIONS

1. If pipe material and OD are not specified above, pipe openings will be sized for RCP.
2. Large diameter coupling required to connect outlet pipe to overflow stub.

OVERFLOW PIPE STUB DIMENSIONS:

O.D. = 36.00 in (914.40 mm)

I.D. = 30.00 in (762.00 mm)

STUB LENGTH = 6.00 in (152.40 mm)

3. Inlet pipe enters unit tangent to inside of Defender manhole. Cut Pipe off at 30 degree angle. (See installation instructions.)
4. Grout inlet and outlet pipes with non-shrink grout to ensure a watertight connection.
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PARTS LIST		
ITEM	DESCRIPTION	SIZE (in)
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2	FRAME AND COVER	24
3	INLET PIPE (BY OTHERS)	18
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International

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Portland, ME 04102
Tel: +1 (207) 756-6200
Fax: +1 (207) 756-6212
hydro-int.com

APPROX WEIGHT: N/A MATERIAL:

NEXT ASSEMBLY:
17_12_2049-NEXT ASSY

DRAWING NO.:
17_12_2049-DD GA

SHEET SIZE: B SHEET: 4 OF 4 Rev: -

Extended Detention Basin Drain Time

PROPOSED 2022-04

NJ DEP 2-hr WQ Rainfall=1.25"

Prepared by Bohler Engineering

Printed 4/21/2022

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Page 1

Hydrograph for Pond B1: BASIN#1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	125.00	0.00	0.00	0.00
0.50	0.38	55	125.20	0.05	0.05	0.00
1.00	9.44	4,224	126.37	0.18	0.18	0.00
1.50	4.08	27,978	127.35	0.25	0.25	0.00
2.00	1.10	32,359	127.48	0.25	0.25	0.00
2.50	0.00	32,475	127.48	0.25	0.25	0.00
3.00	0.00	32,020	127.47	0.25	0.25	0.00
3.50	0.00	31,566	127.45	0.25	0.25	0.00
4.00	0.00	31,114	127.44	0.25	0.25	0.00
4.50	0.00	30,663	127.43	0.25	0.25	0.00
5.00	0.00	30,213	127.42	0.25	0.25	0.00
5.50	0.00	29,765	127.40	0.25	0.25	0.00
6.00	0.00	29,317	127.39	0.25	0.25	0.00
6.50	0.00	28,871	127.38	0.25	0.25	0.00
7.00	0.00	28,427	127.36	0.25	0.25	0.00
7.50	0.00	27,983	127.35	0.25	0.25	0.00
8.00	0.00	27,541	127.34	0.25	0.25	0.00
8.50	0.00	27,100	127.32	0.24	0.24	0.00
9.00	0.00	26,661	127.31	0.24	0.24	0.00
9.50	0.00	26,222	127.30	0.24	0.24	0.00
10.00	0.00	25,785	127.28	0.24	0.24	0.00
10.50	0.00	25,350	127.27	0.24	0.24	0.00
11.00	0.00	24,916	127.26	0.24	0.24	0.00
11.50	0.00	24,483	127.24	0.24	0.24	0.00
12.00	0.00	24,051	127.23	0.24	0.24	0.00
12.50	0.00	23,621	127.22	0.24	0.24	0.00
13.00	0.00	23,193	127.20	0.24	0.24	0.00
13.50	0.00	22,765	127.19	0.24	0.24	0.00
14.00	0.00	22,339	127.18	0.24	0.24	0.00
14.50	0.00	21,915	127.16	0.24	0.24	0.00
15.00	0.00	21,492	127.15	0.23	0.23	0.00
15.50	0.00	21,070	127.13	0.23	0.23	0.00
16.00	0.00	20,650	127.12	0.23	0.23	0.00
16.50	0.00	20,231	127.11	0.23	0.23	0.00
17.00	0.00	19,813	127.09	0.23	0.23	0.00
17.50	0.00	19,397	127.08	0.23	0.23	0.00
18.00	0.00	18,983	127.07	0.23	0.23	0.00
18.50	0.00	18,570	127.05	0.23	0.23	0.00
19.00	0.00	18,159	127.04	0.23	0.23	0.00
19.50	0.00	17,749	127.02	0.23	0.23	0.00
20.00	0.00	17,340	127.01	0.23	0.23	0.00
20.50	0.00	16,933	126.99	0.23	0.23	0.00
21.00	0.00	16,528	126.98	0.22	0.22	0.00
21.50	0.00	16,124	126.97	0.22	0.22	0.00
22.00	0.00	15,721	126.95	0.22	0.22	0.00
22.50	0.00	15,321	126.94	0.22	0.22	0.00
23.00	0.00	14,922	126.92	0.22	0.22	0.00
23.50	0.00	14,524	126.91	0.22	0.22	0.00
24.00	0.00	14,129	126.89	0.22	0.22	0.00
24.50	0.00	13,735	126.88	0.22	0.22	0.00
25.00	0.00	13,342	126.86	0.22	0.22	0.00
25.50	0.00	12,952	126.84	0.22	0.22	0.00
26.00	0.00	12,563	126.83	0.22	0.22	0.00

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Hydrograph for Pond B1: BASIN#1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
26.50	0.00	12,176	126.81	0.21	0.21	0.00
27.00	0.00	11,791	126.80	0.21	0.21	0.00
27.50	0.00	11,407	126.78	0.21	0.21	0.00
28.00	0.00	11,026	126.76	0.21	0.21	0.00
28.50	0.00	10,647	126.74	0.21	0.21	0.00
29.00	0.00	10,269	126.73	0.21	0.21	0.00
29.50	0.00	9,894	126.71	0.21	0.21	0.00
30.00	0.00	9,520	126.69	0.21	0.21	0.00
30.50	0.00	9,149	126.67	0.21	0.21	0.00
31.00	0.00	8,780	126.65	0.20	0.20	0.00
31.50	0.00	8,413	126.64	0.20	0.20	0.00
32.00	0.00	8,048	126.62	0.20	0.20	0.00
32.50	0.00	7,686	126.60	0.20	0.20	0.00
33.00	0.00	7,326	126.58	0.20	0.20	0.00
33.50	0.00	6,969	126.56	0.20	0.20	0.00
34.00	0.00	6,614	126.54	0.20	0.20	0.00
34.50	0.00	6,262	126.52	0.19	0.19	0.00
35.00	0.00	5,912	126.49	0.19	0.19	0.00
35.50	0.00	5,566	126.47	0.19	0.19	0.00
36.00	0.00	5,222	126.45	0.19	0.19	0.00
36.50	0.00	4,881	126.42	0.19	0.19	0.00
37.00	0.00	4,543	126.40	0.19	0.19	0.00
37.50	0.00	4,209	126.37	0.18	0.18	0.00
38.00	0.00	3,879	126.34	0.18	0.18	0.00
38.50	0.00	3,552	126.31	0.18	0.18	0.00
39.00	0.00	3,229	126.28	0.18	0.18	0.00
39.50	0.00	2,910	126.25	0.18	0.18	0.00
40.00	0.00	2,597	126.21	0.17	0.17	0.00
40.50	0.00	2,288	126.17	0.17	0.17	0.00
41.00	0.00	1,985	126.13	0.17	0.17	0.00
41.50	0.00	1,690	126.07	0.16	0.16	0.00
42.00	0.00	1,404	126.00	0.16	0.16	0.00
42.50	0.00	1,132	125.90	0.15	0.15	0.00
43.00	0.00	877	125.79	0.14	0.14	0.00
43.50	0.00	642	125.68	0.12	0.12	0.00
44.00	0.00	430	125.55	0.11	0.11	0.00
44.50	0.00	247	125.42	0.09	0.09	0.00
45.00	0.00	102	125.27	0.07	0.07	0.00
45.50	0.00	20	125.11	0.02	0.02	0.00
46.00	0.00	4	125.03	0.00	0.00	0.00
46.50	0.00	2	125.02	0.00	0.00	0.00
47.00	0.00	2	125.01	0.00	0.00	0.00
47.50	0.00	1	125.01	0.00	0.00	0.00
48.00	0.00	1	125.01	0.00	0.00	0.00
48.50	0.00	1	125.01	0.00	0.00	0.00
49.00	0.00	1	125.01	0.00	0.00	0.00
49.50	0.00	1	125.00	0.00	0.00	0.00
50.00	0.00	1	125.00	0.00	0.00	0.00
50.50	0.00	0	125.00	0.00	0.00	0.00
51.00	0.00	0	125.00	0.00	0.00	0.00
51.50	0.00	0	125.00	0.00	0.00	0.00
52.00	0.00	0	125.00	0.00	0.00	0.00
52.50	0.00	0	125.00	0.00	0.00	0.00

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Hydrograph for Pond B1: BASIN#1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
53.00	0.00	0	125.00	0.00	0.00	0.00
53.50	0.00	0	125.00	0.00	0.00	0.00
54.00	0.00	0	125.00	0.00	0.00	0.00
54.50	0.00	0	125.00	0.00	0.00	0.00
55.00	0.00	0	125.00	0.00	0.00	0.00
55.50	0.00	0	125.00	0.00	0.00	0.00
56.00	0.00	0	125.00	0.00	0.00	0.00
56.50	0.00	0	125.00	0.00	0.00	0.00
57.00	0.00	0	125.00	0.00	0.00	0.00
57.50	0.00	0	125.00	0.00	0.00	0.00
58.00	0.00	0	125.00	0.00	0.00	0.00
58.50	0.00	0	125.00	0.00	0.00	0.00
59.00	0.00	0	125.00	0.00	0.00	0.00
59.50	0.00	0	125.00	0.00	0.00	0.00
60.00	0.00	0	125.00	0.00	0.00	0.00
60.50	0.00	0	125.00	0.00	0.00	0.00
61.00	0.00	0	125.00	0.00	0.00	0.00
61.50	0.00	0	125.00	0.00	0.00	0.00
62.00	0.00	0	125.00	0.00	0.00	0.00
62.50	0.00	0	125.00	0.00	0.00	0.00
63.00	0.00	0	125.00	0.00	0.00	0.00
63.50	0.00	0	125.00	0.00	0.00	0.00
64.00	0.00	0	125.00	0.00	0.00	0.00
64.50	0.00	0	125.00	0.00	0.00	0.00
65.00	0.00	0	125.00	0.00	0.00	0.00
65.50	0.00	0	125.00	0.00	0.00	0.00
66.00	0.00	0	125.00	0.00	0.00	0.00
66.50	0.00	0	125.00	0.00	0.00	0.00
67.00	0.00	0	125.00	0.00	0.00	0.00
67.50	0.00	0	125.00	0.00	0.00	0.00
68.00	0.00	0	125.00	0.00	0.00	0.00
68.50	0.00	0	125.00	0.00	0.00	0.00
69.00	0.00	0	125.00	0.00	0.00	0.00
69.50	0.00	0	125.00	0.00	0.00	0.00
70.00	0.00	0	125.00	0.00	0.00	0.00
70.50	0.00	0	125.00	0.00	0.00	0.00
71.00	0.00	0	125.00	0.00	0.00	0.00
71.50	0.00	0	125.00	0.00	0.00	0.00
72.00	0.00	0	125.00	0.00	0.00	0.00
72.50	0.00	0	125.00	0.00	0.00	0.00
73.00	0.00	0	125.00	0.00	0.00	0.00
73.50	0.00	0	125.00	0.00	0.00	0.00
74.00	0.00	0	125.00	0.00	0.00	0.00
74.50	0.00	0	125.00	0.00	0.00	0.00
75.00	0.00	0	125.00	0.00	0.00	0.00
75.50	0.00	0	125.00	0.00	0.00	0.00
76.00	0.00	0	125.00	0.00	0.00	0.00
76.50	0.00	0	125.00	0.00	0.00	0.00
77.00	0.00	0	125.00	0.00	0.00	0.00
77.50	0.00	0	125.00	0.00	0.00	0.00
78.00	0.00	0	125.00	0.00	0.00	0.00
78.50	0.00	0	125.00	0.00	0.00	0.00
79.00	0.00	0	125.00	0.00	0.00	0.00

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Hydrograph for Pond B1: BASIN#1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
79.50	0.00	0	125.00	0.00	0.00	0.00
80.00	0.00	0	125.00	0.00	0.00	0.00
80.50	0.00	0	125.00	0.00	0.00	0.00
81.00	0.00	0	125.00	0.00	0.00	0.00
81.50	0.00	0	125.00	0.00	0.00	0.00
82.00	0.00	0	125.00	0.00	0.00	0.00
82.50	0.00	0	125.00	0.00	0.00	0.00
83.00	0.00	0	125.00	0.00	0.00	0.00
83.50	0.00	0	125.00	0.00	0.00	0.00
84.00	0.00	0	125.00	0.00	0.00	0.00
84.50	0.00	0	125.00	0.00	0.00	0.00
85.00	0.00	0	125.00	0.00	0.00	0.00
85.50	0.00	0	125.00	0.00	0.00	0.00
86.00	0.00	0	125.00	0.00	0.00	0.00
86.50	0.00	0	125.00	0.00	0.00	0.00
87.00	0.00	0	125.00	0.00	0.00	0.00
87.50	0.00	0	125.00	0.00	0.00	0.00
88.00	0.00	0	125.00	0.00	0.00	0.00
88.50	0.00	0	125.00	0.00	0.00	0.00
89.00	0.00	0	125.00	0.00	0.00	0.00
89.50	0.00	0	125.00	0.00	0.00	0.00
90.00	0.00	0	125.00	0.00	0.00	0.00
90.50	0.00	0	125.00	0.00	0.00	0.00
91.00	0.00	0	125.00	0.00	0.00	0.00
91.50	0.00	0	125.00	0.00	0.00	0.00
92.00	0.00	0	125.00	0.00	0.00	0.00
92.50	0.00	0	125.00	0.00	0.00	0.00
93.00	0.00	0	125.00	0.00	0.00	0.00
93.50	0.00	0	125.00	0.00	0.00	0.00
94.00	0.00	0	125.00	0.00	0.00	0.00
94.50	0.00	0	125.00	0.00	0.00	0.00
95.00	0.00	0	125.00	0.00	0.00	0.00
95.50	0.00	0	125.00	0.00	0.00	0.00
96.00	0.00	0	125.00	0.00	0.00	0.00
96.50	0.00	0	125.00	0.00	0.00	0.00
97.00	0.00	0	125.00	0.00	0.00	0.00
97.50	0.00	0	125.00	0.00	0.00	0.00
98.00	0.00	0	125.00	0.00	0.00	0.00
98.50	0.00	0	125.00	0.00	0.00	0.00
99.00	0.00	0	125.00	0.00	0.00	0.00
99.50	0.00	0	125.00	0.00	0.00	0.00
100.00	0.00	0	125.00	0.00	0.00	0.00
100.50	0.00	0	125.00	0.00	0.00	0.00
101.00	0.00	0	125.00	0.00	0.00	0.00
101.50	0.00	0	125.00	0.00	0.00	0.00
102.00	0.00	0	125.00	0.00	0.00	0.00
102.50	0.00	0	125.00	0.00	0.00	0.00
103.00	0.00	0	125.00	0.00	0.00	0.00
103.50	0.00	0	125.00	0.00	0.00	0.00
104.00	0.00	0	125.00	0.00	0.00	0.00
104.50	0.00	0	125.00	0.00	0.00	0.00
105.00	0.00	0	125.00	0.00	0.00	0.00
105.50	0.00	0	125.00	0.00	0.00	0.00

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Hydrograph for Pond B1: BASIN#1 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
106.00	0.00	0	125.00	0.00	0.00	0.00
106.50	0.00	0	125.00	0.00	0.00	0.00
107.00	0.00	0	125.00	0.00	0.00	0.00
107.50	0.00	0	125.00	0.00	0.00	0.00
108.00	0.00	0	125.00	0.00	0.00	0.00
108.50	0.00	0	125.00	0.00	0.00	0.00
109.00	0.00	0	125.00	0.00	0.00	0.00
109.50	0.00	0	125.00	0.00	0.00	0.00
110.00	0.00	0	125.00	0.00	0.00	0.00
110.50	0.00	0	125.00	0.00	0.00	0.00
111.00	0.00	0	125.00	0.00	0.00	0.00
111.50	0.00	0	125.00	0.00	0.00	0.00
112.00	0.00	0	125.00	0.00	0.00	0.00
112.50	0.00	0	125.00	0.00	0.00	0.00
113.00	0.00	0	125.00	0.00	0.00	0.00
113.50	0.00	0	125.00	0.00	0.00	0.00
114.00	0.00	0	125.00	0.00	0.00	0.00
114.50	0.00	0	125.00	0.00	0.00	0.00
115.00	0.00	0	125.00	0.00	0.00	0.00
115.50	0.00	0	125.00	0.00	0.00	0.00
116.00	0.00	0	125.00	0.00	0.00	0.00
116.50	0.00	0	125.00	0.00	0.00	0.00
117.00	0.00	0	125.00	0.00	0.00	0.00
117.50	0.00	0	125.00	0.00	0.00	0.00
118.00	0.00	0	125.00	0.00	0.00	0.00
118.50	0.00	0	125.00	0.00	0.00	0.00
119.00	0.00	0	125.00	0.00	0.00	0.00
119.50	0.00	0	125.00	0.00	0.00	0.00
120.00	0.00	0	125.00	0.00	0.00	0.00

Time to Peak Elevation: 2.50 hours

Peak Storage Volume for WQ Design Storm = 32,475 cubic feet

10% of Peak Storage Volume = 3,248 cubic feet

Time to 10% of WQ Volume = 39.00 hours

Detention Time used = 39.00-2.50 = 36.50 hours

% TSS Removal = 60%

PROPOSED 2022-04

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Hydrograph for Pond B2: BASIN#2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	122.05	0.00	0.00	0.00
0.50	0.83	122	122.27	0.10	0.10	0.00
1.00	20.30	9,056	123.74	0.52	0.52	0.00
1.50	9.18	59,953	125.41	0.75	0.75	0.00
2.00	3.14	70,529	125.64	0.78	0.78	0.00
2.50	0.26	71,087	125.65	0.78	0.78	0.00
3.00	0.25	70,149	125.63	0.78	0.78	0.00
3.50	0.25	69,208	125.61	0.77	0.77	0.00
4.00	0.25	68,266	125.59	0.77	0.77	0.00
4.50	0.24	67,321	125.57	0.77	0.77	0.00
5.00	0.24	66,374	125.55	0.77	0.77	0.00
5.50	0.24	65,425	125.53	0.76	0.76	0.00
6.00	0.23	64,474	125.51	0.76	0.76	0.00
6.50	0.23	63,520	125.49	0.76	0.76	0.00
7.00	0.23	62,564	125.47	0.76	0.76	0.00
7.50	0.22	61,605	125.45	0.76	0.76	0.00
8.00	0.22	60,644	125.43	0.75	0.75	0.00
8.50	0.21	59,680	125.41	0.75	0.75	0.00
9.00	0.21	58,714	125.39	0.75	0.75	0.00
9.50	0.21	57,745	125.36	0.75	0.75	0.00
10.00	0.20	56,774	125.34	0.74	0.74	0.00
10.50	0.20	55,799	125.32	0.74	0.74	0.00
11.00	0.19	54,822	125.30	0.74	0.74	0.00
11.50	0.19	53,842	125.28	0.73	0.73	0.00
12.00	0.19	52,859	125.25	0.73	0.73	0.00
12.50	0.18	51,873	125.23	0.73	0.73	0.00
13.00	0.18	50,885	125.21	0.73	0.73	0.00
13.50	0.17	49,892	125.19	0.72	0.72	0.00
14.00	0.17	48,897	125.16	0.72	0.72	0.00
14.50	0.16	47,897	125.14	0.72	0.72	0.00
15.00	0.16	46,894	125.11	0.72	0.72	0.00
15.50	0.15	45,886	125.09	0.71	0.71	0.00
16.00	0.14	44,872	125.07	0.71	0.71	0.00
16.50	0.14	43,853	125.04	0.71	0.71	0.00
17.00	0.13	42,827	125.02	0.70	0.70	0.00
17.50	0.12	41,794	124.99	0.70	0.70	0.00
18.00	0.12	40,753	124.96	0.70	0.70	0.00
18.50	0.11	39,702	124.94	0.69	0.69	0.00
19.00	0.10	38,639	124.91	0.69	0.69	0.00
19.50	0.08	37,563	124.88	0.69	0.69	0.00
20.00	0.07	36,470	124.85	0.68	0.68	0.00
20.50	0.05	35,356	124.82	0.68	0.68	0.00
21.00	0.03	34,210	124.79	0.67	0.67	0.00
21.50	0.01	33,030	124.76	0.67	0.67	0.00
22.00	0.00	31,838	124.72	0.67	0.67	0.00
22.50	0.00	30,647	124.69	0.66	0.66	0.00
23.00	0.00	29,464	124.65	0.66	0.66	0.00
23.50	0.00	28,289	124.61	0.65	0.65	0.00
24.00	0.00	27,122	124.58	0.65	0.65	0.00
24.50	0.00	25,965	124.54	0.64	0.64	0.00
25.00	0.00	24,817	124.50	0.63	0.63	0.00
25.50	0.00	23,680	124.46	0.63	0.63	0.00
26.00	0.00	22,552	124.42	0.62	0.62	0.00

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Hydrograph for Pond B2: BASIN#2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
26.50	0.00	21,435	124.38	0.62	0.62	0.00
27.00	0.00	20,328	124.33	0.61	0.61	0.00
27.50	0.00	19,233	124.29	0.61	0.61	0.00
28.00	0.00	18,150	124.24	0.60	0.60	0.00
28.50	0.00	17,079	124.20	0.59	0.59	0.00
29.00	0.00	16,021	124.15	0.58	0.58	0.00
29.50	0.00	14,977	124.10	0.58	0.58	0.00
30.00	0.00	13,948	124.04	0.57	0.57	0.00
30.50	0.00	12,933	123.99	0.56	0.56	0.00
31.00	0.00	11,935	123.93	0.55	0.55	0.00
31.50	0.00	10,954	123.87	0.54	0.54	0.00
32.00	0.00	9,992	123.80	0.53	0.53	0.00
32.50	0.00	9,049	123.74	0.52	0.52	0.00
33.00	0.00	8,125	123.67	0.51	0.51	0.00
33.50	0.00	7,224	123.60	0.49	0.49	0.00
34.00	0.00	6,346	123.53	0.48	0.48	0.00
34.50	0.00	5,493	123.45	0.47	0.47	0.00
35.00	0.00	4,667	123.36	0.45	0.45	0.00
35.50	0.00	3,873	123.27	0.43	0.43	0.00
36.00	0.00	3,114	123.17	0.41	0.41	0.00
36.50	0.00	2,399	123.05	0.38	0.38	0.00
37.00	0.00	1,738	122.90	0.35	0.35	0.00
37.50	0.00	1,148	122.74	0.30	0.30	0.00
38.00	0.00	646	122.57	0.25	0.25	0.00
38.50	0.00	262	122.38	0.17	0.17	0.00
39.00	0.00	64	122.21	0.05	0.05	0.00
39.50	0.00	17	122.11	0.01	0.01	0.00
40.00	0.00	9	122.08	0.00	0.00	0.00
40.50	0.00	6	122.07	0.00	0.00	0.00
41.00	0.00	5	122.07	0.00	0.00	0.00
41.50	0.00	4	122.06	0.00	0.00	0.00
42.00	0.00	3	122.06	0.00	0.00	0.00
42.50	0.00	3	122.06	0.00	0.00	0.00
43.00	0.00	2	122.06	0.00	0.00	0.00
43.50	0.00	2	122.06	0.00	0.00	0.00
44.00	0.00	2	122.06	0.00	0.00	0.00
44.50	0.00	2	122.06	0.00	0.00	0.00
45.00	0.00	2	122.06	0.00	0.00	0.00
45.50	0.00	1	122.05	0.00	0.00	0.00
46.00	0.00	1	122.05	0.00	0.00	0.00
46.50	0.00	1	122.05	0.00	0.00	0.00
47.00	0.00	1	122.05	0.00	0.00	0.00
47.50	0.00	1	122.05	0.00	0.00	0.00
48.00	0.00	1	122.05	0.00	0.00	0.00
48.50	0.00	1	122.05	0.00	0.00	0.00
49.00	0.00	1	122.05	0.00	0.00	0.00
49.50	0.00	1	122.05	0.00	0.00	0.00
50.00	0.00	1	122.05	0.00	0.00	0.00
50.50	0.00	1	122.05	0.00	0.00	0.00
51.00	0.00	1	122.05	0.00	0.00	0.00
51.50	0.00	1	122.05	0.00	0.00	0.00
52.00	0.00	1	122.05	0.00	0.00	0.00
52.50	0.00	1	122.05	0.00	0.00	0.00

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Hydrograph for Pond B2: BASIN#2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
53.00	0.00	1	122.05	0.00	0.00	0.00
53.50	0.00	1	122.05	0.00	0.00	0.00
54.00	0.00	1	122.05	0.00	0.00	0.00
54.50	0.00	1	122.05	0.00	0.00	0.00
55.00	0.00	1	122.05	0.00	0.00	0.00
55.50	0.00	1	122.05	0.00	0.00	0.00
56.00	0.00	1	122.05	0.00	0.00	0.00
56.50	0.00	1	122.05	0.00	0.00	0.00
57.00	0.00	1	122.05	0.00	0.00	0.00
57.50	0.00	1	122.05	0.00	0.00	0.00
58.00	0.00	1	122.05	0.00	0.00	0.00
58.50	0.00	1	122.05	0.00	0.00	0.00
59.00	0.00	0	122.05	0.00	0.00	0.00
59.50	0.00	0	122.05	0.00	0.00	0.00
60.00	0.00	0	122.05	0.00	0.00	0.00
60.50	0.00	0	122.05	0.00	0.00	0.00
61.00	0.00	0	122.05	0.00	0.00	0.00
61.50	0.00	0	122.05	0.00	0.00	0.00
62.00	0.00	0	122.05	0.00	0.00	0.00
62.50	0.00	0	122.05	0.00	0.00	0.00
63.00	0.00	0	122.05	0.00	0.00	0.00
63.50	0.00	0	122.05	0.00	0.00	0.00
64.00	0.00	0	122.05	0.00	0.00	0.00
64.50	0.00	0	122.05	0.00	0.00	0.00
65.00	0.00	0	122.05	0.00	0.00	0.00
65.50	0.00	0	122.05	0.00	0.00	0.00
66.00	0.00	0	122.05	0.00	0.00	0.00
66.50	0.00	0	122.05	0.00	0.00	0.00
67.00	0.00	0	122.05	0.00	0.00	0.00
67.50	0.00	0	122.05	0.00	0.00	0.00
68.00	0.00	0	122.05	0.00	0.00	0.00
68.50	0.00	0	122.05	0.00	0.00	0.00
69.00	0.00	0	122.05	0.00	0.00	0.00
69.50	0.00	0	122.05	0.00	0.00	0.00
70.00	0.00	0	122.05	0.00	0.00	0.00
70.50	0.00	0	122.05	0.00	0.00	0.00
71.00	0.00	0	122.05	0.00	0.00	0.00
71.50	0.00	0	122.05	0.00	0.00	0.00
72.00	0.00	0	122.05	0.00	0.00	0.00
72.50	0.00	0	122.05	0.00	0.00	0.00
73.00	0.00	0	122.05	0.00	0.00	0.00
73.50	0.00	0	122.05	0.00	0.00	0.00
74.00	0.00	0	122.05	0.00	0.00	0.00
74.50	0.00	0	122.05	0.00	0.00	0.00
75.00	0.00	0	122.05	0.00	0.00	0.00
75.50	0.00	0	122.05	0.00	0.00	0.00
76.00	0.00	0	122.05	0.00	0.00	0.00
76.50	0.00	0	122.05	0.00	0.00	0.00
77.00	0.00	0	122.05	0.00	0.00	0.00
77.50	0.00	0	122.05	0.00	0.00	0.00
78.00	0.00	0	122.05	0.00	0.00	0.00
78.50	0.00	0	122.05	0.00	0.00	0.00
79.00	0.00	0	122.05	0.00	0.00	0.00

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Hydrograph for Pond B2: BASIN#2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
79.50	0.00	0	122.05	0.00	0.00	0.00
80.00	0.00	0	122.05	0.00	0.00	0.00
80.50	0.00	0	122.05	0.00	0.00	0.00
81.00	0.00	0	122.05	0.00	0.00	0.00
81.50	0.00	0	122.05	0.00	0.00	0.00
82.00	0.00	0	122.05	0.00	0.00	0.00
82.50	0.00	0	122.05	0.00	0.00	0.00
83.00	0.00	0	122.05	0.00	0.00	0.00
83.50	0.00	0	122.05	0.00	0.00	0.00
84.00	0.00	0	122.05	0.00	0.00	0.00
84.50	0.00	0	122.05	0.00	0.00	0.00
85.00	0.00	0	122.05	0.00	0.00	0.00
85.50	0.00	0	122.05	0.00	0.00	0.00
86.00	0.00	0	122.05	0.00	0.00	0.00
86.50	0.00	0	122.05	0.00	0.00	0.00
87.00	0.00	0	122.05	0.00	0.00	0.00
87.50	0.00	0	122.05	0.00	0.00	0.00
88.00	0.00	0	122.05	0.00	0.00	0.00
88.50	0.00	0	122.05	0.00	0.00	0.00
89.00	0.00	0	122.05	0.00	0.00	0.00
89.50	0.00	0	122.05	0.00	0.00	0.00
90.00	0.00	0	122.05	0.00	0.00	0.00
90.50	0.00	0	122.05	0.00	0.00	0.00
91.00	0.00	0	122.05	0.00	0.00	0.00
91.50	0.00	0	122.05	0.00	0.00	0.00
92.00	0.00	0	122.05	0.00	0.00	0.00
92.50	0.00	0	122.05	0.00	0.00	0.00
93.00	0.00	0	122.05	0.00	0.00	0.00
93.50	0.00	0	122.05	0.00	0.00	0.00
94.00	0.00	0	122.05	0.00	0.00	0.00
94.50	0.00	0	122.05	0.00	0.00	0.00
95.00	0.00	0	122.05	0.00	0.00	0.00
95.50	0.00	0	122.05	0.00	0.00	0.00
96.00	0.00	0	122.05	0.00	0.00	0.00
96.50	0.00	0	122.05	0.00	0.00	0.00
97.00	0.00	0	122.05	0.00	0.00	0.00
97.50	0.00	0	122.05	0.00	0.00	0.00
98.00	0.00	0	122.05	0.00	0.00	0.00
98.50	0.00	0	122.05	0.00	0.00	0.00
99.00	0.00	0	122.05	0.00	0.00	0.00
99.50	0.00	0	122.05	0.00	0.00	0.00
100.00	0.00	0	122.05	0.00	0.00	0.00
100.50	0.00	0	122.05	0.00	0.00	0.00
101.00	0.00	0	122.05	0.00	0.00	0.00
101.50	0.00	0	122.05	0.00	0.00	0.00
102.00	0.00	0	122.05	0.00	0.00	0.00
102.50	0.00	0	122.05	0.00	0.00	0.00
103.00	0.00	0	122.05	0.00	0.00	0.00
103.50	0.00	0	122.05	0.00	0.00	0.00
104.00	0.00	0	122.05	0.00	0.00	0.00
104.50	0.00	0	122.05	0.00	0.00	0.00
105.00	0.00	0	122.05	0.00	0.00	0.00
105.50	0.00	0	122.05	0.00	0.00	0.00

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Hydrograph for Pond B2: BASIN#2 (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
106.00	0.00	0	122.05	0.00	0.00	0.00
106.50	0.00	0	122.05	0.00	0.00	0.00
107.00	0.00	0	122.05	0.00	0.00	0.00
107.50	0.00	0	122.05	0.00	0.00	0.00
108.00	0.00	0	122.05	0.00	0.00	0.00
108.50	0.00	0	122.05	0.00	0.00	0.00
109.00	0.00	0	122.05	0.00	0.00	0.00
109.50	0.00	0	122.05	0.00	0.00	0.00
110.00	0.00	0	122.05	0.00	0.00	0.00
110.50	0.00	0	122.05	0.00	0.00	0.00
111.00	0.00	0	122.05	0.00	0.00	0.00
111.50	0.00	0	122.05	0.00	0.00	0.00
112.00	0.00	0	122.05	0.00	0.00	0.00
112.50	0.00	0	122.05	0.00	0.00	0.00
113.00	0.00	0	122.05	0.00	0.00	0.00
113.50	0.00	0	122.05	0.00	0.00	0.00
114.00	0.00	0	122.05	0.00	0.00	0.00
114.50	0.00	0	122.05	0.00	0.00	0.00
115.00	0.00	0	122.05	0.00	0.00	0.00
115.50	0.00	0	122.05	0.00	0.00	0.00
116.00	0.00	0	122.05	0.00	0.00	0.00
116.50	0.00	0	122.05	0.00	0.00	0.00
117.00	0.00	0	122.05	0.00	0.00	0.00
117.50	0.00	0	122.05	0.00	0.00	0.00
118.00	0.00	0	122.05	0.00	0.00	0.00
118.50	0.00	0	122.05	0.00	0.00	0.00
119.00	0.00	0	122.05	0.00	0.00	0.00
119.50	0.00	0	122.05	0.00	0.00	0.00
120.00	0.00	0	122.05	0.00	0.00	0.00

Time to Peak Elevation: 2.50 hours

Peak Storage Volume for WQ Design Storm = 71,087 cubic feet

10% of Peak Storage Volume = 7,109 cubic feet

Time to 10% of WQ Volume = 34.00 hours

Detention Time used = 34.00-2.50 = 31.50 hours

% TSS Removal = 60%

Sand filter Design

Design of Stormwater Filtering System

1. Calculate the Water Quality Volume (V_{Qs})

See attached Printout Sheet (Hydrograph Plot)

$$V_{QS} = 8,237 \text{ ft}^3$$

2. Size of Sand Filter Bed Surface Area (A_s)

$$A_s = (V_{QS}) (TH_s) / [(k) (D_{ST}/2 + TH_s) (T_D)]$$

A_s = Minimum Sand Bed Surface Area (in square feet)

V_{QS} = Runoff Volume from Stormwater Quality Design Storm (in cubic feet)

TH_s = Thickness of Sand in Sand Bed (in feet)

k = Sand Bed Design Permeability (in feet per day)

D_{ST} = Maximum Temporary sand Bed Depth (in feet)

T_D = Sand Bed Drain Time (in days)

$$V_{QS} = 8,237 \text{ ft}^3$$

From Table 9.9.-1 Typical Sand Filter Design Parameters

$$TH_s = 1.5 \text{ ft}$$

$$k = 4 \text{ feet per day}$$

$$T_D = 1.5 \text{ days}$$

$$n = 0.3$$

Using

$$D_{ST} = 1.5 \text{ ft}$$

Solve for

$$\text{Required } A_s = 915.2 \text{ ft}^2$$

$$\text{**** } A_s \text{ Provided} = 2,403.0 \text{ ft}^2 \text{ ****}$$

3. Size of Sand Filter Bed Volume (V_{ST})

$$V_{ST} \text{ (Required)} = (0.5) (V_{QS})$$

$$V_{ST} \text{ (Required)} = 4,118.5 \text{ ft}^3$$

$$V_{ST} \text{ (Provided)} = (A_s) (D_{ST}) + (A_s) (TH_s) (n)$$

V_{ST} = Temporary Sand Bed Storage Volume (in cubic feet)

A_s = Minimum Sand Bed Surface Area (in square feet)

D_{ST} = Maximum Temporary sand Bed Depth (in feet)

TH_s = Thickness of Sand IN Sand Bed (in feet)

n = Sand Bed Design Porosity

$$V_{ST} \text{ (Provided)} = 4,686 \text{ ft}^3$$

$$\text{**** } V_{ST} \text{ Provided} = 4,686 \text{ ft}^3 \text{ ****}$$

4. Size of Forebay

Approximate Temporary Forebay Volume (V_{FT}) = $0.5(V_{QS})$

$$V_{FT} = 4,118.5 \text{ ft}^3$$

$$\text{****} V_{FT} \text{ Provided} = 10,020 \text{ ft}^3 \text{ ****}$$

Minimum Forebay Surface Area (A_F) = $0.05(V_{QS})$

$$A_F = 411.9 \text{ ft}^2$$

$$\text{****} A_F \text{ Provided} = 5,010 \text{ ft}^2 \text{ ****}$$

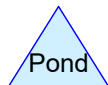
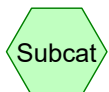
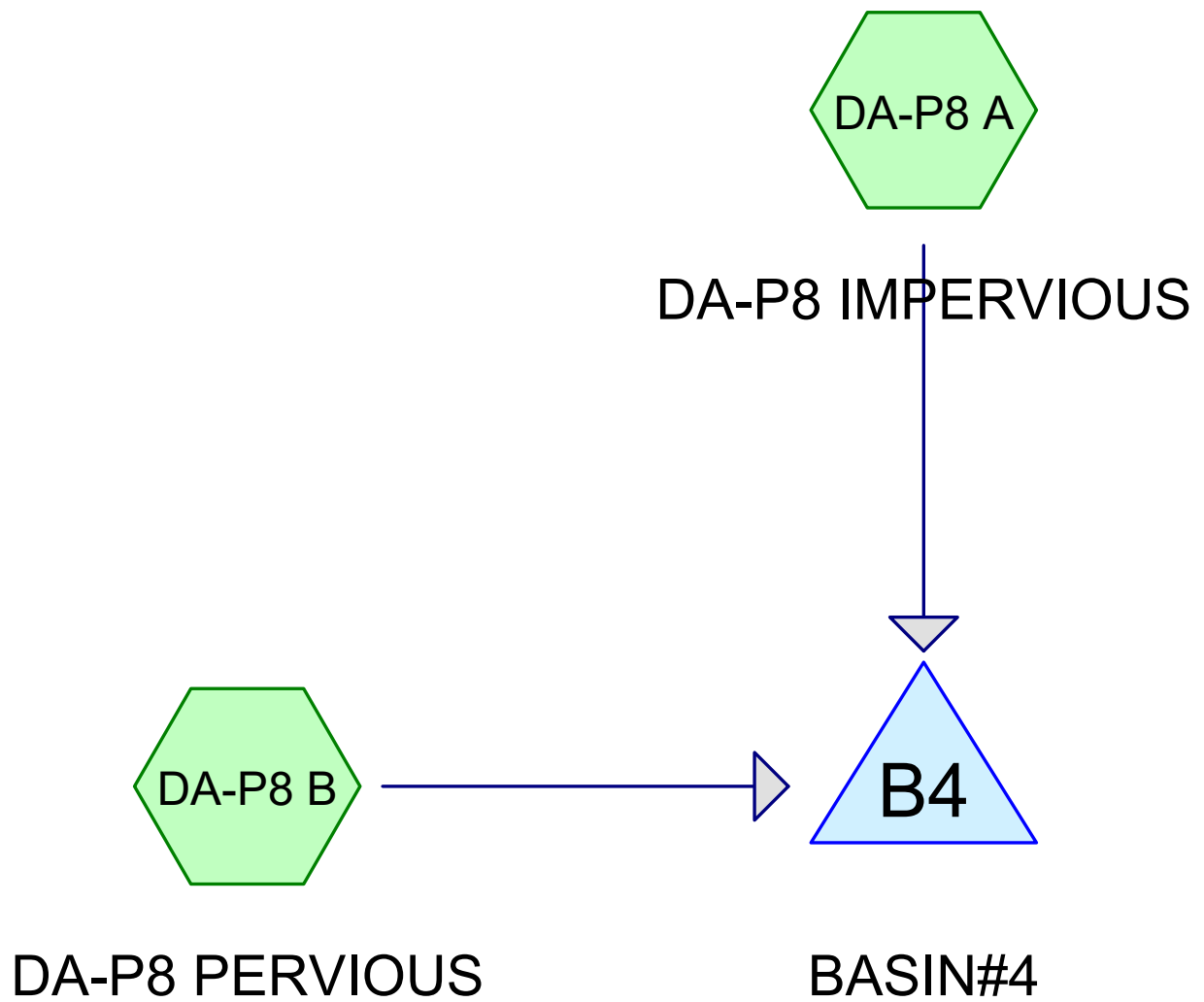
Minimum Temporary Forebay Depth (D_{FT}) = 2 Feet

$$\text{****} D_{FT} \text{ Provided} = 2 \text{ ft} \text{ ****}$$

5. Design Calculations for water quality pipe to sand filter

See attached Printout Sheet (Hydrograph Plot) for peak runoff amount through pipe

Emergency Spillway



PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Pond B4: BASIN#4

Inflow Area = 2.986 ac, 53.95% Impervious, Inflow Depth = 5.95" for 100-YEAR event
Inflow = 16.37 cfs @ 12.14 hrs, Volume= 1.481 af
Outflow = 1.49 cfs @ 13.26 hrs, Volume= 0.480 af, Atten= 91%, Lag= 67.6 min
Primary = 1.49 cfs @ 13.26 hrs, Volume= 0.480 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Peak Elev= 143.06' @ 13.26 hrs Surf.Area= 13,896 sf Storage= 44,382 cf

Plug-Flow detention time= 408.1 min calculated for 0.480 af (32% of inflow)
Center-of-Mass det. time= 228.6 min (1,001.6 - 772.9)

Volume	Invert	Avail.Storage	Storage Description
#1	139.00'	66,831 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
139.00	7,648	0	0
140.00	9,503	8,576	8,576
141.00	10,988	10,246	18,821
142.00	12,367	11,678	30,499
143.00	13,797	13,082	43,581
144.00	15,503	14,650	58,231
144.50	18,900	8,601	66,831

Device	Routing	Invert	Outlet Devices
#1	Primary	136.95'	15.0" Round Culvert X 0.00 L= 47.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 136.95' / 136.71' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	140.20'	1.2' long Sharp-Crested Rectangular Weir X 0.00 2 End Contraction(s) 0.5' Crest Height
#3	Device 1	141.50'	4.0' long Sharp-Crested Rectangular Weir X 0.00 2 End Contraction(s) 0.5' Crest Height
#4	Device 1	142.90'	4.0" x 4.0" Horiz. Orifice/Grate X 0.00 C= 0.600 in 4.0" Grate (0% open area) Limited to weir flow at low heads
#5	Primary	143.00'	40.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.49 cfs @ 13.26 hrs HW=143.06' (Free Discharge)

- 1=Culvert (Controls 0.00 cfs)
- 2=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- 3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Orifice/Grate (Controls 0.00 cfs)
- 5=Broad-Crested Rectangular Weir (Weir Controls 1.49 cfs @ 0.64 fps)

Assuming the outlet control structure fails and the 100 year storm is drained via the emergency spillway only, the velocity at the emergency spillway is 0.64 fps < 2.0 fps. Therefore, a gabion mattress is not required however one is provided.

PROPOSED 2022-04 Spillway Calcs

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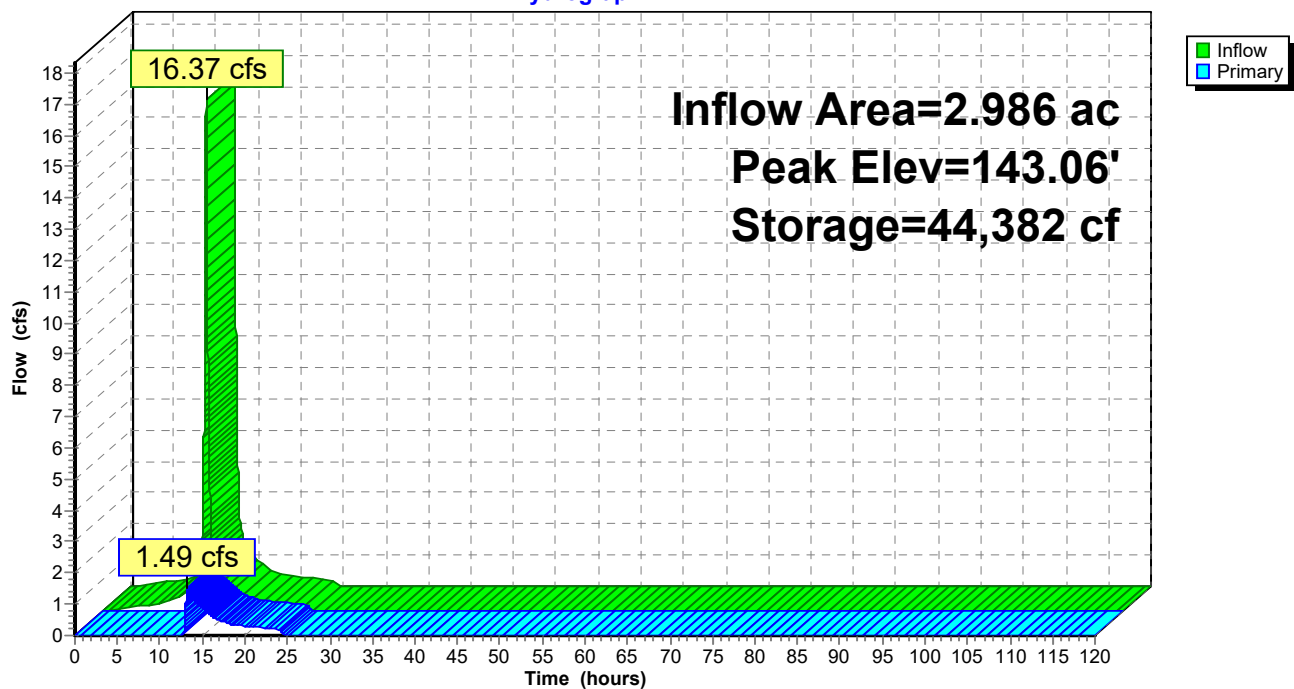
Type III 24-hr 100-YEAR Rainfall=8.20"

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Pond B4: BASIN#4

Hydrograph



PROPOSED 2022-04 Spillway Calcs

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Runoff = 11.38 cfs @ 12.13 hrs, Volume= 1.069 af, Depth= 7.96"

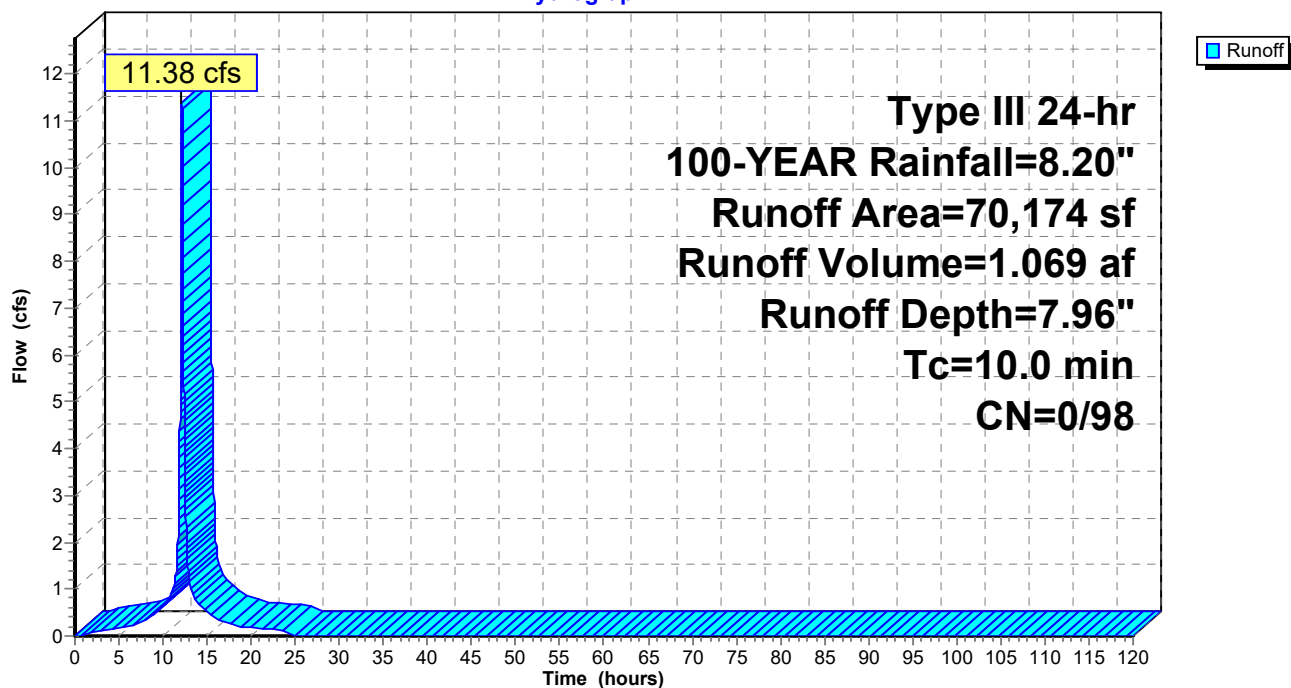
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

Area (sf)	CN	Description
70,174	98	Paved parking, HSG B
70,174		100.00% Impervious Area

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

Subcatchment DA-P8 A: DA-P8 IMPERVIOUS

Hydrograph



PROPOSED 2022-04 Spillway Calcs

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Type III 24-hr 100-YEAR Rainfall=8.20"

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Summary for Subcatchment DA-P8 B: DA-P8 PERVIOUS

Runoff = 5.00 cfs @ 12.14 hrs, Volume= 0.412 af, Depth= 3.60"

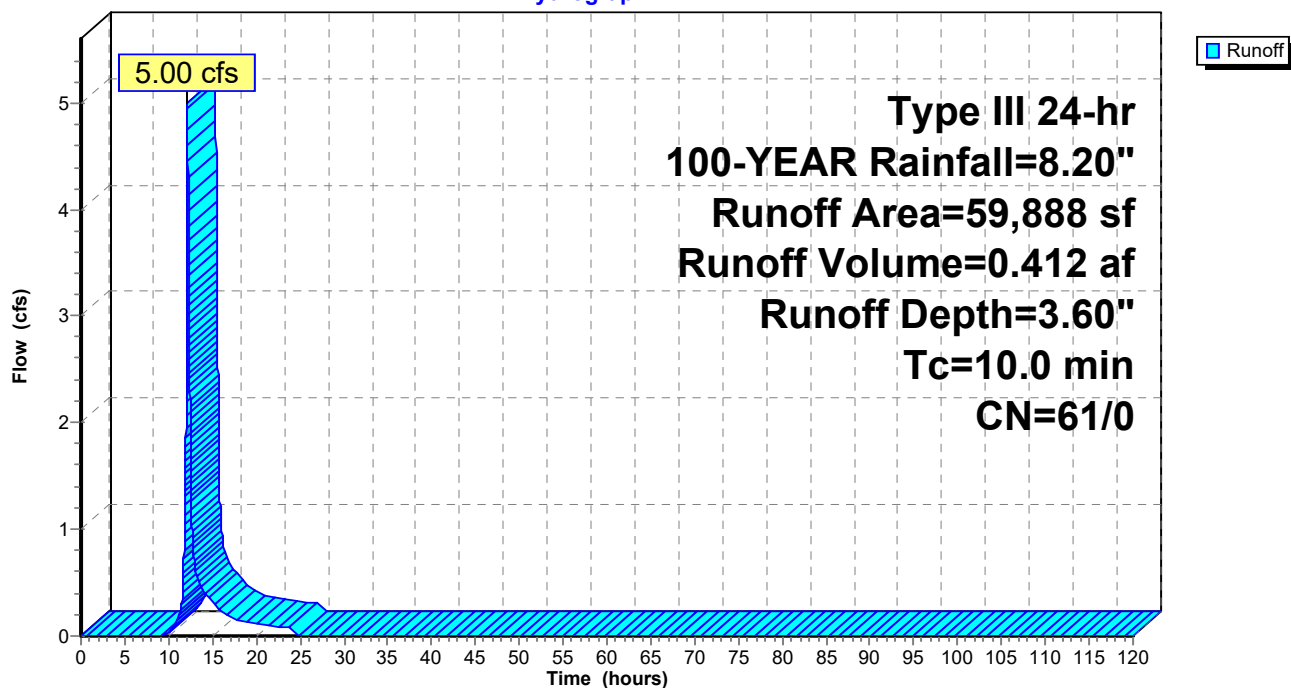
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=8.20"

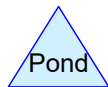
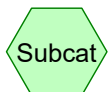
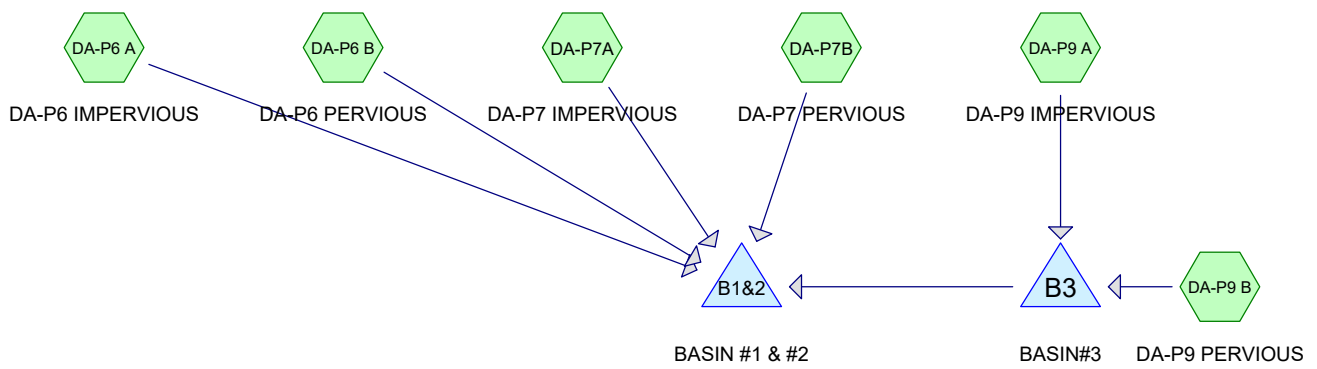
Area (sf)	CN	Description
59,888	61	>75% Grass cover, Good, HSG B
59,888		100.00% Pervious Area

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

Subcatchment DA-P8 B: DA-P8 PERVIOUS

Hydrograph





Routing Diagram for PROPOSED 2022-04 Spillway Calcs
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PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Page 1

Summary for Pond B1&2: BASIN #1 & #2

Inflow Area = 52.943 ac, 60.85% Impervious, Inflow Depth = 10.31" for 150% of 100-YEAR event
 Inflow = 465.12 cfs @ 12.14 hrs, Volume= 45.467 af
 Outflow = 177.64 cfs @ 12.46 hrs, Volume= 22.687 af, Atten= 62%, Lag= 19.4 min
 Primary = 177.64 cfs @ 12.46 hrs, Volume= 22.687 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs

Peak Elev= 132.98' @ 12.46 hrs Surf.Area= 188,308 sf Storage= 1,080,969 cf

Top of Berm = 134.50
 12" min. freeboard
 provided

Plug-Flow detention time= 291.2 min calculated for 22.687 af (50% of inflow)

Center-of-Mass det. time= 153.6 min (928.6 - 775.0)

Volume	Invert	Avail.Storage	Storage Description
#1	122.05'	911,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2	125.00'	468,414 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		1,379,600 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.05	0	0	0
123.00	4,516	2,145	2,145
124.00	17,503	11,010	13,155
125.00	40,514	29,009	42,163
126.00	52,995	46,755	88,918
127.00	66,197	59,596	148,514
128.00	80,616	73,407	221,920
129.00	89,234	84,925	306,845
130.00	97,986	93,610	400,455
131.00	104,847	101,417	501,872
132.00	111,734	108,291	610,162
133.00	118,653	115,194	725,356
134.00	125,598	122,126	847,481
134.50	129,221	63,705	911,186

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
125.00	0	0	0
126.00	2,784	1,392	1,392
127.00	28,597	15,691	17,083
128.00	42,791	35,694	52,777
129.00	57,622	50,207	102,983
130.00	61,653	59,638	162,621
131.00	64,456	63,055	225,675
132.00	67,190	65,823	291,498
133.00	69,880	68,535	360,033
134.00	72,596	71,238	431,271
134.50	75,975	37,143	468,414

PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Device	Routing	Invert	Outlet Devices
#1	Primary	121.38'	30.0" Round Culvert X 0.00 L= 52.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 121.38' / 120.90' S= 0.0092 ' S= 0.0092 ' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	122.05'	4.0" Vert. Orifice X 0.00 C= 0.600
#3	Device 1	128.50'	2.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 0.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	129.75'	3.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 0.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#5	Device 2	131.00'	48.0" W x 48.0" H Vert. Grate X 0.00 C= 0.600
#6	Secondary	129.50'	180.0' long x 10.0' breadth Broad-Crested Rectangular Weir X 0.00 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#7	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#8	Primary	132.50'	100.0' long x 15.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=177.62 cfs @ 12.46 hrs HW=132.98' (Free Discharge)

1=Culvert (Controls 0.00 cfs)
 2=Orifice (Controls 0.00 cfs)
 5=Grate (Controls 0.00 cfs)
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
 7=Broad-Crested Rectangular Weir (Weir Controls 88.81 cfs @ 1.86 fps)
 8=Broad-Crested Rectangular Weir (Weir Controls 88.81 cfs @ 1.86 fps)

Velocity over spill way
is less than 2 fps,
gabion mattress is not
required, but is
provided

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=122.05' (Free Discharge)

6=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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#8	Primary	132.50'	Coef. (English)	2.68	2.70	2.70	2.64	2.63	2.64	2.64	2.63
			100.0' long x 15.0' breadth Broad-Crested Rectangular Weir								
			Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60
			Coef. (English)	2.68	2.70	2.70	2.64	2.63	2.64	2.64	2.63

Primary OutFlow Max=417.57 cfs @ 12.19 hrs HW=133.36' (Free Discharge)

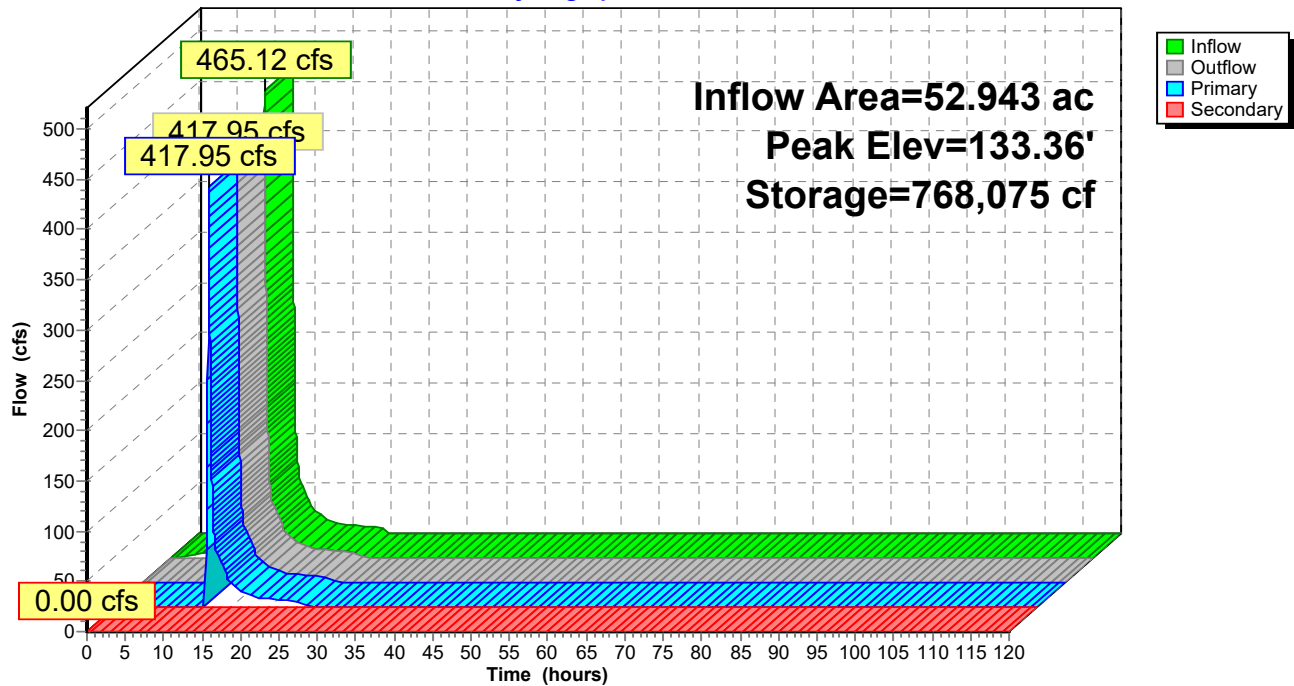
- 1=Culvert (Controls 0.00 cfs)
- 2=Orifice (Controls 0.00 cfs)
- 5=Grate (Controls 0.00 cfs)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
- 7=Broad-Crested Rectangular Weir (Weir Controls 208.78 cfs @ 2.44 fps)
- 8=Broad-Crested Rectangular Weir (Weir Controls 208.78 cfs @ 2.44 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=122.05' (Free Discharge)

- 6=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond B1&2: BASIN #1 & #2

Hydrograph



PROPOSED 2022-04 Spillway Calcs

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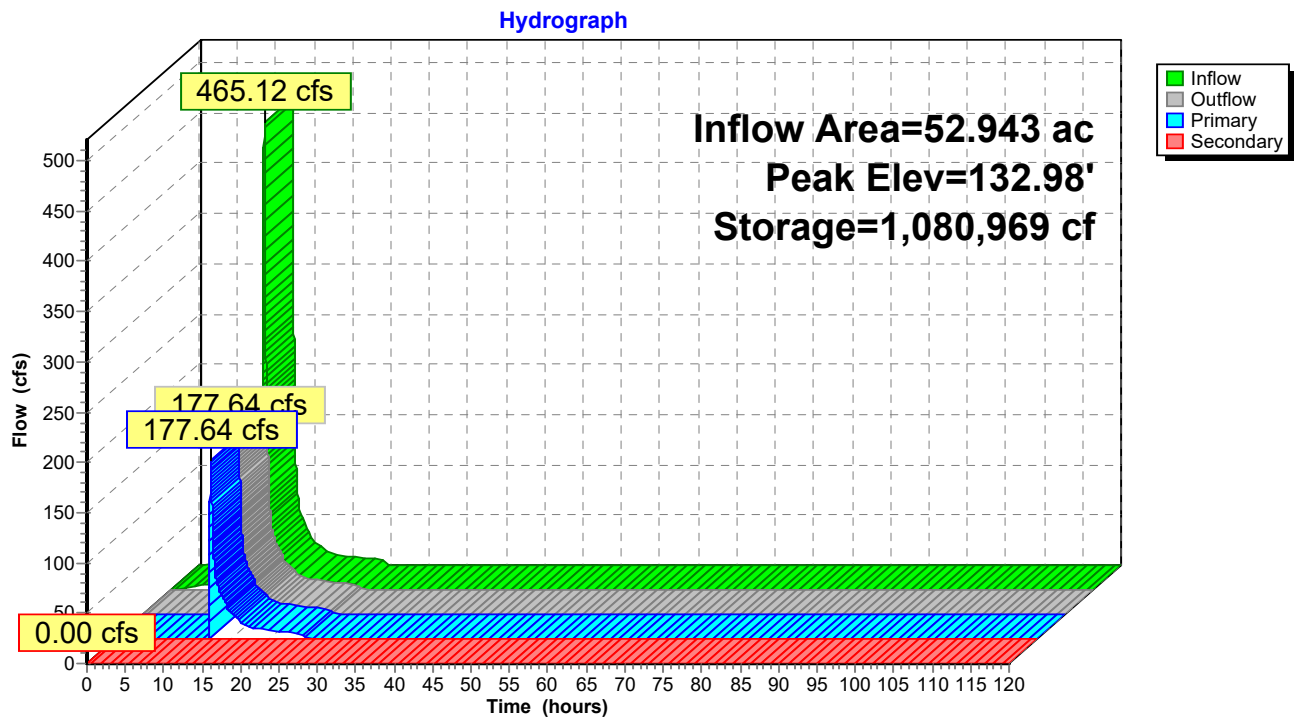
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Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Pond B1&2: BASIN #1 & #2



PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Summary for Pond B3: BASIN#3

Inflow Area = 4.864 ac, 78.98% Impervious, Inflow Depth = 10.99" for 150% of 100-YEAR event
 Inflow = 48.06 cfs @ 12.13 hrs, Volume= 4.454 af
 Outflow = 12.11 cfs @ 12.56 hrs, Volume= 4.454 af, Atten= 75%, Lag= 25.3 min
 Primary = 12.11 cfs @ 12.56 hrs, Volume= 4.454 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
 Peak Elev= 150.44' @ 12.56 hrs Surf.Area= 15,750 sf Storage= 57,400 cf

Plug-Flow detention time= 121.8 min calculated for 4.454 af (100% of inflow)
 Center-of-Mass det. time= 121.6 min (873.5 - 751.9)

Volume	Invert	Avail.Storage	Storage Description
#1	143.72'	58,412 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
143.72	0	0	0
144.00	1,559	218	218
145.00	5,405	3,482	3,700
146.00	6,859	6,132	9,832
147.00	8,428	7,644	17,476
148.00	10,107	9,268	26,743
149.00	11,886	10,997	37,740
150.00	14,319	13,103	50,842
150.50	15,959	7,570	58,412

Device	Routing	Invert	Outlet Devices
#1	Primary	143.72'	15.0" Round Culvert L= 182.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 143.72' / 140.50' S= 0.0177 '/ Cc= 0.900 n= 0.013 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf
#2	Device 1	143.72'	2.5" Vert. Orifice/Grate C= 0.600
#3	Device 1	146.31'	48.0" x 48.0" Horiz. TYPE "E" INLET WITH STOP COCK @ BOTTOM C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.11 cfs @ 12.56 hrs HW=150.44' TW=132.94' (Dynamic Tailwater)

- 1=Culvert (Barrel Controls 12.11 cfs @ 9.87 fps)
- 2=Orifice/Grate (Passes < 0.42 cfs potential flow)
- 3=TYPE "E" INLET WITH STOP COCK @ BOTTOM(Passes < 156.49 cfs potential flow)

PROPOSED 2022-04 Spillway Calcs

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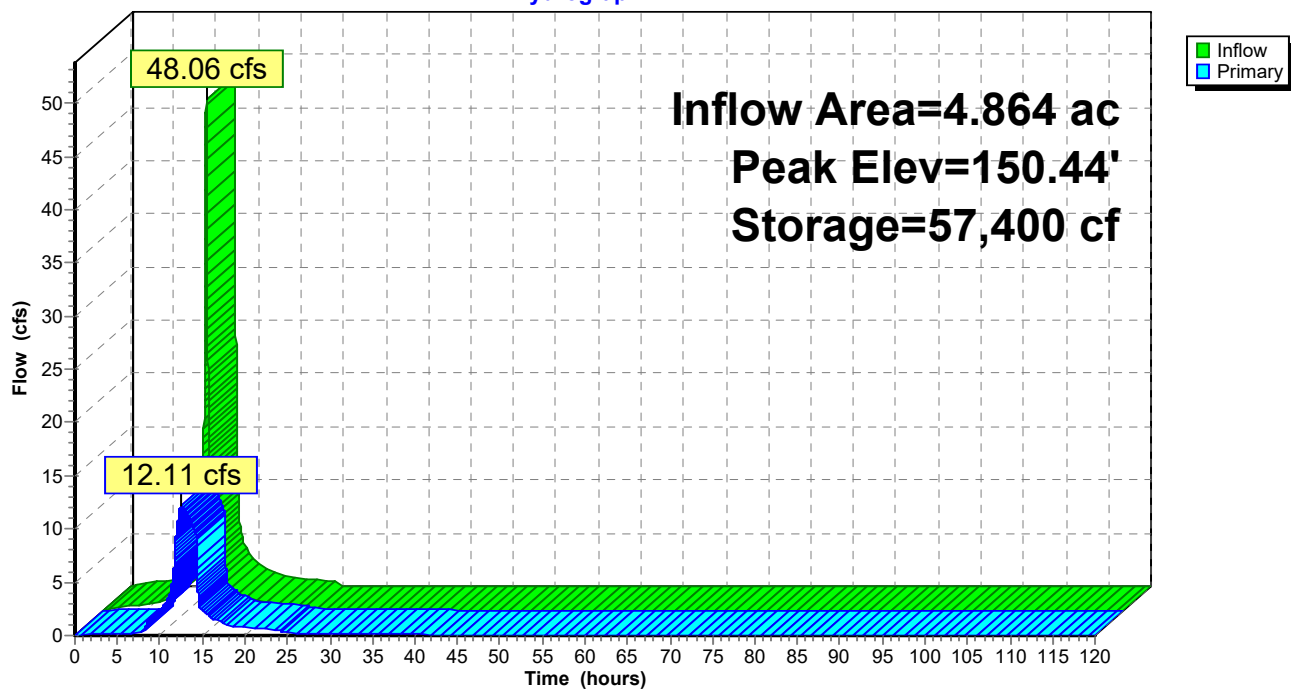
Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Pond B3: BASIN#3

Hydrograph



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Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Summary for Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

all imp of p11
all imp of p5 type "b"
all imp of p10 type "b"
all imp of p10 type "c"

Runoff = 96.06 cfs @ 12.13 hrs, Volume= 9.095 af, Depth=12.06"

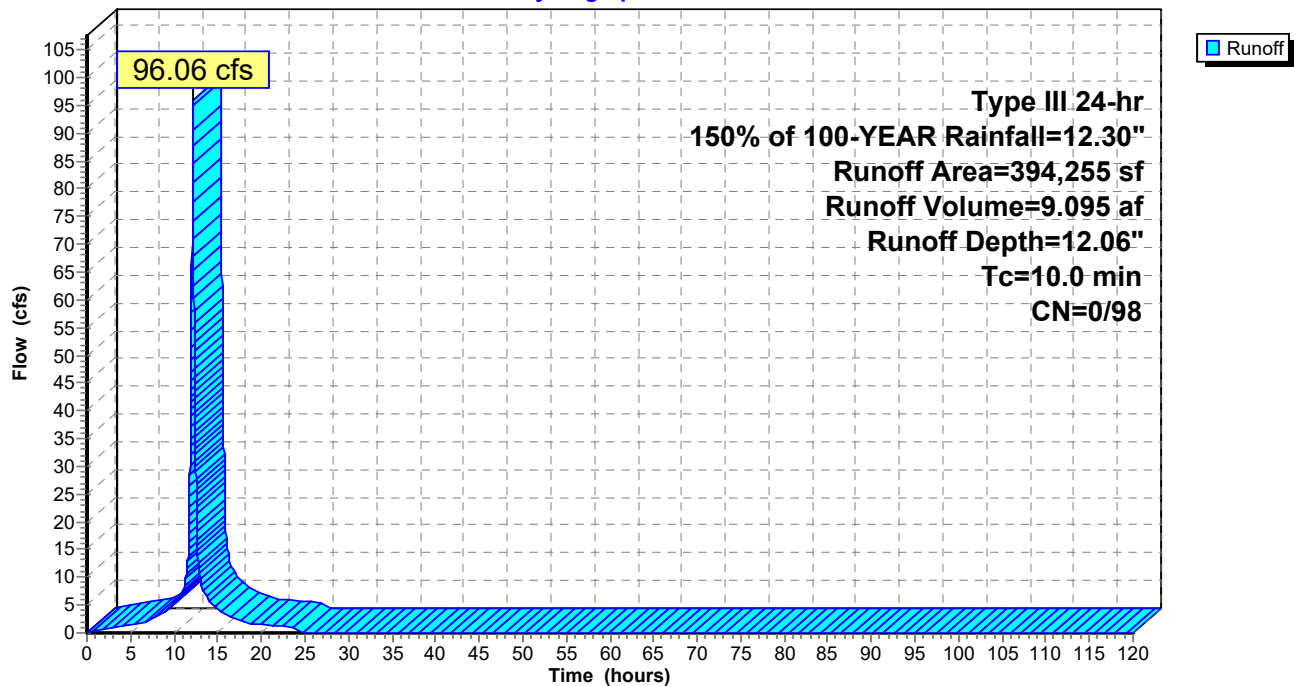
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

Area (sf)	CN	Description
139,105	98	Paved parking, HSG B
255,150	98	Paved parking, HSG C
394,255	98	Weighted Average
394,255		100.00% Impervious Area

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

Subcatchment DA-P6 A: DA-P6 IMPERVIOUS

Hydrograph



PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Summary for Subcatchment DA-P6 B: DA-P6 PERVIOUS

3.0 ac of p5 type "c"
all pervious p5 type "b"
all of pervious p5 offsite
0.75 acres of basin area

Runoff = 82.09 cfs @ 12.14 hrs, Volume= 6.681 af, Depth= 7.28"

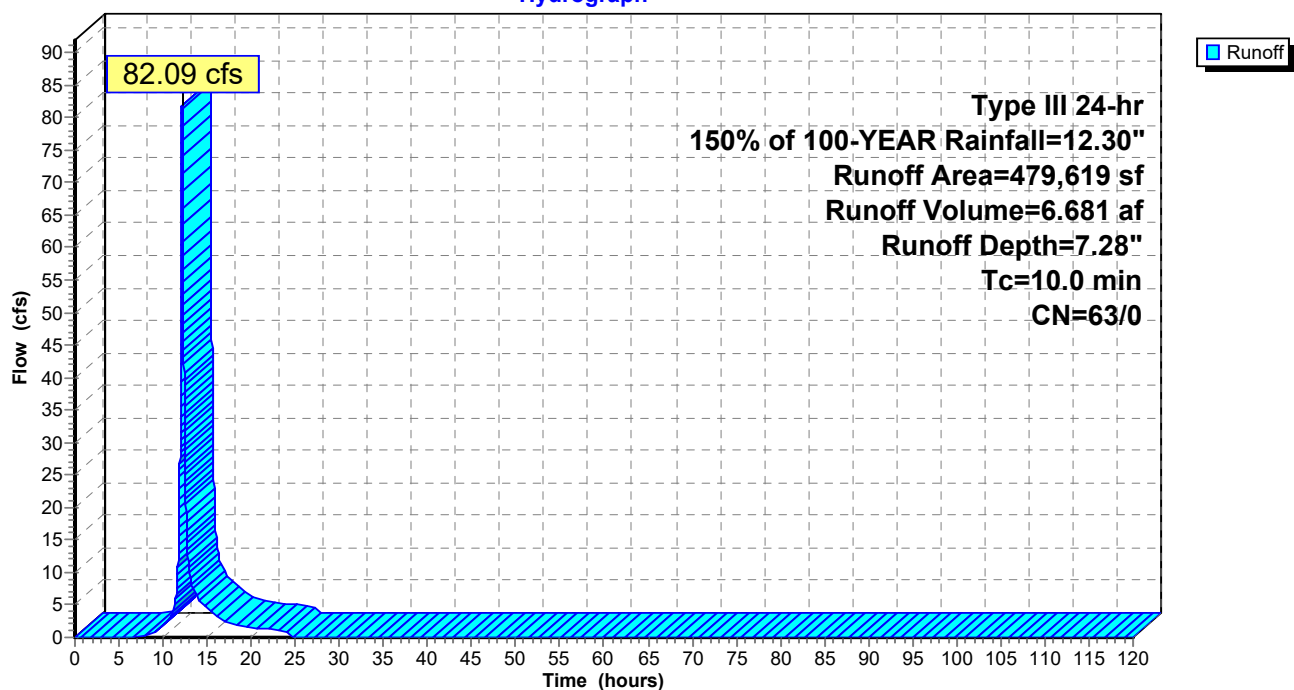
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

Area (sf)	CN	Description
285,540	61	>75% Grass cover, Good, HSG B
112,000	74	>75% Grass cover, Good, HSG C
82,079	55	Woods, Good, HSG B
479,619	63	Weighted Average
479,619		100.00% Pervious Area

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

Subcatchment DA-P6 B: DA-P6 PERVIOUS

Hydrograph



PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Summary for Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Runoff = 205.09 cfs @ 12.13 hrs, Volume= 19.418 af, Depth=12.06"

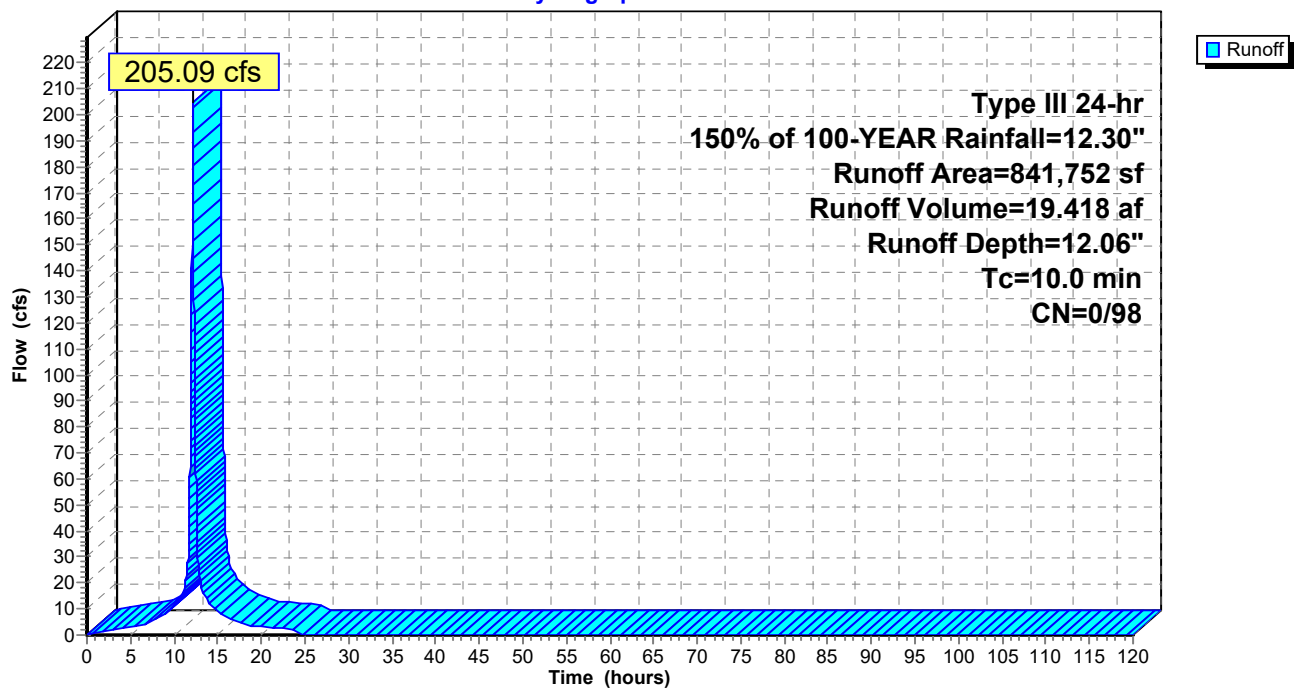
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

Area (sf)	CN	Description
232,402	98	Paved parking, HSG B
609,350	98	Paved parking, HSG C
841,752	98	Weighted Average
841,752		100.00% Impervious Area

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

Subcatchment DA-P7A: DA-P7 IMPERVIOUS

Hydrograph



PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Summary for Subcatchment DA-P7B: DA-P7 PERVIOUS

Runoff = 71.12 cfs @ 12.14 hrs, Volume= 5.819 af, Depth= 8.03"

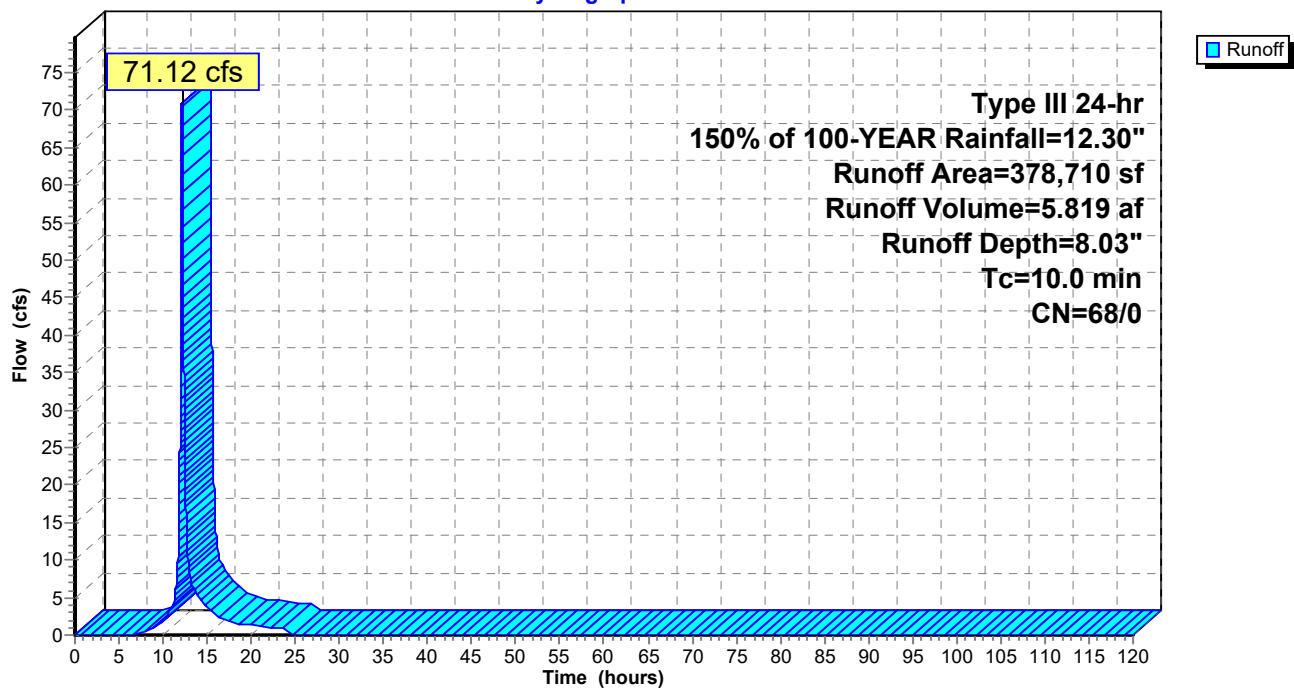
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

Area (sf)	CN	Description
161,684	61	>75% Grass cover, Good, HSG B
217,026	74	>75% Grass cover, Good, HSG C
378,710	68	Weighted Average
378,710		100.00% Pervious Area

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

Subcatchment DA-P7B: DA-P7 PERVIOUS

Hydrograph



PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Summary for Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Runoff = 40.77 cfs @ 12.13 hrs, Volume= 3.860 af, Depth=12.06"

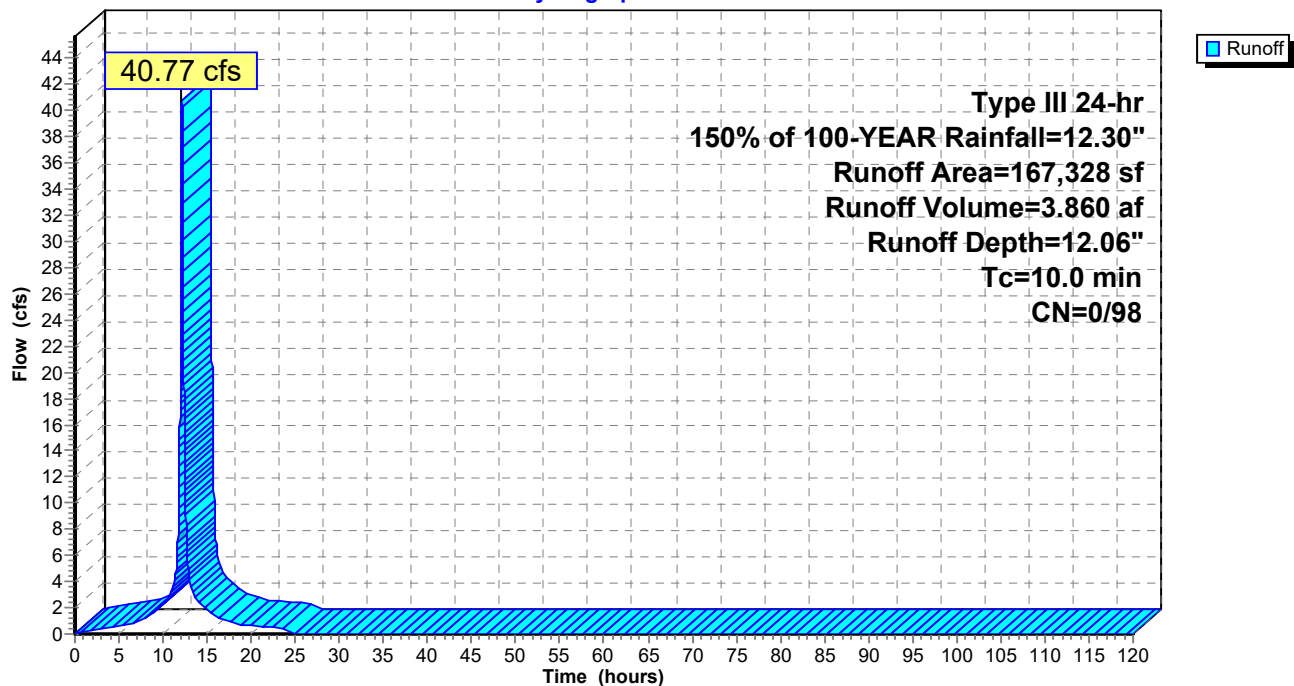
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

Area (sf)	CN	Description
167,328	98	Paved parking, HSG B
167,328		100.00% Impervious Area

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

Subcatchment DA-P9 A: DA-P9 IMPERVIOUS

Hydrograph



PROPOSED 2022-04 Spillway Calcs

Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

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Summary for Subcatchment DA-P9 B: DA-P9 PERVIOUS

Runoff = 7.31 cfs @ 12.14 hrs, Volume= 0.594 af, Depth= 6.98"

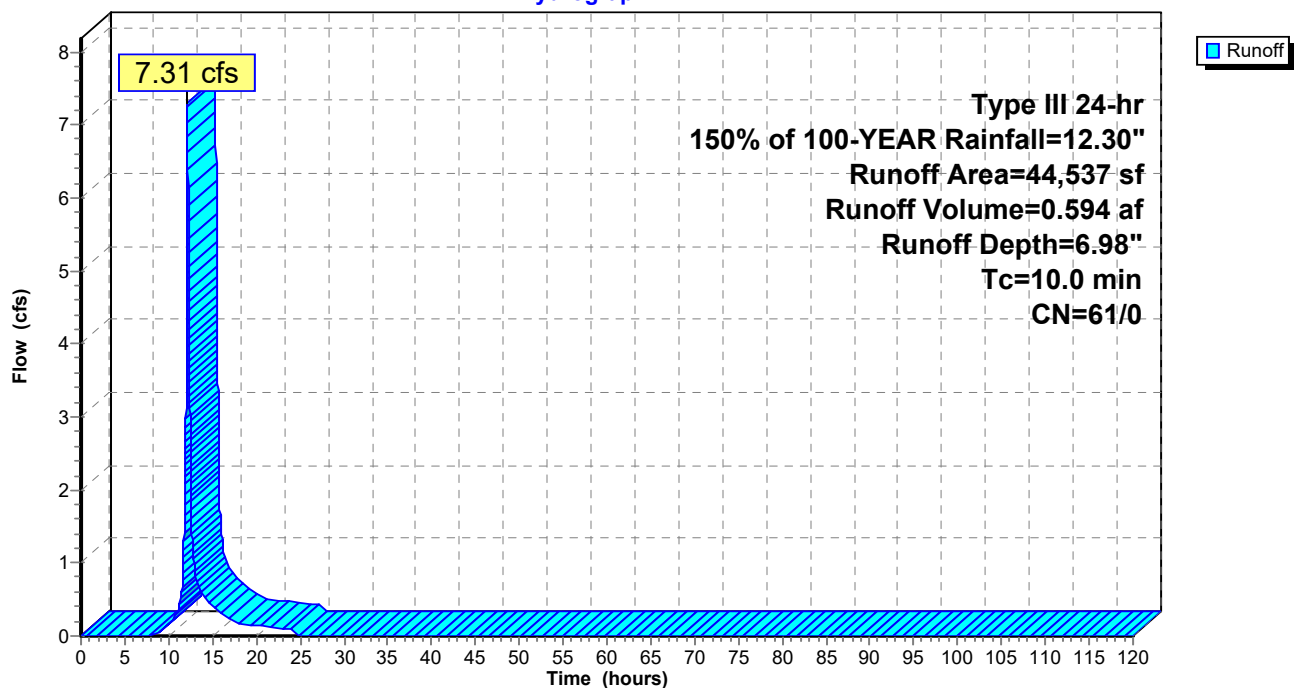
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-120.00 hrs, dt= 0.01 hrs
Type III 24-hr 150% of 100-YEAR Rainfall=12.30"

Area (sf)	CN	Description
44,537	61	>75% Grass cover, Good, HSG B
44,537		100.00% Pervious Area

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

Subcatchment DA-P9 B: DA-P9 PERVIOUS

Hydrograph



Inlet Area Summary & Pipe Sizing

DATE: 04/12/2022

PROJECT: JS210927
LOCATION: "A" System Inlets

$$Q = C \times I \times A$$

$$I = 7.7$$

$$I = 9.1$$

25 year

100 year

Calculation of "C" value:

Inlet Area 1				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	19745.80	93.2%	0.95	0.89
Grass	1444.20	6.8%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	21190	100.0%	"C" compos. =	0.91
21,190.0	0.49 Acres			

Inlet Area 2				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	15912.00	68.7%	0.95	0.65
Grass	7238.00	31.3%	0.35	0.11
Wooded	0.00	0.0%	0.35	0.00
Total:	23150	100.0%	"C" compos. =	0.76
23,150.0	0.53 Acres			

Inlet Area 3				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	25296.00	75.0%	0.95	0.71
Grass	8420.00	25.0%	0.35	0.09
Wooded	0.00	0.0%	0.35	0.00
Total:	33716	100.0%	"C" compos. =	0.80
33,716.0	0.77 Acres			

Inlet Area 4				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	21481.00	79.8%	0.95	0.76
Grass	5451.00	20.2%	0.35	0.07
Wooded	0.00	0.0%	0.35	0.00
Total:	26932	100.0%	"C" compos. =	0.83
26,932.0	0.62 Acres			

Inlet Area 5

	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	15479.00	73.8%	0.95	0.70
Grass	5489.00	26.2%	0.35	0.09
Wooded	0.00	0.0%	0.35	0.00
Total:	20968	100.0%	"C" compos. =	0.79
20,968.0	0.48 Acres			

Inlet Area 6				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	9421.00	63.8%	0.95	0.61
Grass	5343.00	36.2%	0.35	0.13
Wooded	0.00	0.0%	0.35	0.00
Total:	14764	100.0%	"C" compos. =	0.73
14,764.0	0.34 Acres			

Manhole 7				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	0.00	0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
	0.00 Acres			

Inlet Area 8				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4960.00	72.5%	0.95	0.69
Grass	1880.00	27.5%	0.35	0.10
Wooded		0.0%	0.35	0.00
Total:	6840	100.0%	"C" compos. =	0.79
6,840.0	0.16 Acres			

Inlet Area 9				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	18844.00	45.6%	0.95	0.43
Grass	22499.00	54.4%	0.35	0.19
Wooded	0.00	0.0%	0.35	0.00
Total:	41343	100.0%	"C" compos. =	0.62
41,343.0	0.95 Acres			

Inlet Area 10				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	9920.00	78.7%	0.95	0.75
Grass	2685.00	21.3%	0.35	0.07
Wooded	0.00	0.0%	0.35	0.00
Total:	12605	100.0%	"C" compos. =	0.82
12,605.0	0.29 Acres			

Inlet Area 11				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3132.00	74.3%	0.95	0.71
Grass	1086.00	25.7%	0.35	0.09
Wooded	0.00	0.0%	0.35	0.00
Total:	4218	100.0%	"C" compos. =	0.80
4,218.0	0.10 Acres			

Inlet Area 12				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	6276.00	51.5%	0.95	0.49
Grass	5912.00	48.5%	0.35	0.17
Wooded	0.00	0.0%	0.35	0.00
Total:	12188	100.0%	"C" compos. =	0.66
12,188.0	0.28 Acres			

Inlet Area 13				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4628.80	68.0%	0.95	0.65
Grass	2177.20	32.0%	0.35	0.11
Wooded	0.00	0.0%	0.35	0.00
Total:	6806	100.0%	"C" compos. =	0.76
6,806.0	0.16 Acres			

Inlet Area 14				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	6327.00	89.4%	0.95	0.85
Grass	750.00	10.6%	0.35	0.04
Wooded	0.00	0.0%	0.35	0.00
Total:	7077	100.0%	"C" compos. =	0.89
7,077.0	0.16 Acres			

Inlet Area 15				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2777.40	48.4%	0.95	0.46
Grass	2964.60	51.6%	0.35	0.18
Wooded	0.00	0.0%	0.35	0.00
Total:	5742	100.0%	"C" compos. =	0.64
5,742.0	0.13 Acres			

Existing Inlet Areas				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	17362.00	45.4%	0.95	0.43
Grass	20912.00	54.6%	0.35	0.19
Wooded	0.00	0.0%	0.35	0.00
Total:	38274	100.0%	"C" compos. =	0.62
38,274.0	0.88 Acres			

Inlet Area 16				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2991.00	15.4%	0.95	0.15
Grass	16490.00	84.6%	0.35	0.30
Wooded	0.00	0.0%	0.35	0.00
Total:	19481	100.0%	"C" compos. =	0.44
19,481.0	0.45 Acres			

Inlet Area 17				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	7160.00	65.4%	0.95	0.62
Grass	3786.00	34.6%	0.35	0.12
Wooded	0.00	0.0%	0.35	0.00
Total:	10946	100.0%	"C" compos. =	0.74
10,946.0	0.25 Acres			

Inlet Area 18				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	6460.40	11.3%	0.95	0.11
Grass	50527.60	88.7%	0.35	0.31
Wooded	0.00	0.0%	0.35	0.00
Total:	56988	100.0%	"C" compos. =	0.42
56,988.0	1.31 Acres			

Inlet Area 19				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	8652.10	8.0%	0.95	0.08
Grass	98853.90	92.0%	0.35	0.32
Wooded	0.00	0.0%	0.35	0.00
Total:	107506	100.0%	"C" compos. =	0.40
107,506.0	2.47 Acres			

Inlet Area 20a				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3806.60	26.2%	0.95	0.25
Grass	10734.40	73.8%	0.35	0.26
Wooded	0.00	0.0%	0.35	0.00
Total:	14541	100.0%	"C" compos. =	0.51
14,541.0	0.33 Acres			

Inlet Area 20				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4728.40	13.5%	0.95	0.13
Grass	30322.60	86.5%	0.35	0.30
Wooded	0.00	0.0%	0.35	0.00
Total:	35051	100.0%	"C" compos. =	0.43
35,051.0	0.80 Acres			

Inlet Area 21				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	6388.50	6.8%	0.95	0.06
Grass	88247.50	93.2%	0.35	0.33
Wooded	0.00	0.0%	0.35	0.00
Total:	94636	100.0%	"C" compos. =	0.39
94,636.0	2.17 Acres			

Inlet Area 22				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	6082.55	13.9%	0.95	0.13
Grass	37821.45	86.1%	0.35	0.30
Wooded	0.00	0.0%	0.35	0.00
Total:	43904	100.0%	"C" compos. =	0.43
43,904.0	1.01 Acres			

Manhole 23				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	0.00	0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
	0.00 Acres			

Inlet Area 24				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	9152.00	50.0%	0.95	0.47
Grass	9154.00	50.0%	0.35	0.18
Wooded	0.00	0.0%	0.35	0.00
Total:	18306	100.0%	"C" compos. =	0.65
18,306.0	0.42 Acres			

Inlet Area 25				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	22091.99	87.9%	0.95	0.83
Grass	3044.01	12.1%	0.35	0.04
Wooded	0.00	0.0%	0.35	0.00
Total:	25136	100.0%	"C" compos. =	0.88
25,136.0	0.58 Acres			

Inlet Area 26				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5799.10	86.1%	0.95	0.82
Grass	937.90	13.9%	0.35	0.05
Wooded	0.00	0.0%	0.35	0.00
Total:	6737	100.0%	"C" compos. =	0.87
6,737.0	0.15 Acres			

Inlet Area 27				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2627.20	93.6%	0.95	0.89
Grass	179.80	6.4%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	2807	100.0%	"C" compos. =	0.91
2,807.0	0.06 Acres			

Inlet Area 28				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4195.80	72.2%	0.95	0.69
Grass	1614.20	27.8%	0.35	0.10
Wooded	0.00	0.0%	0.35	0.00
Total:	5810	100.0%	"C" compos. =	0.78
5,810.0	0.13 Acres			

Inlet Area 29				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2867.00	82.5%	0.95	0.78
Grass	608.00	17.5%	0.35	0.06
Wooded	0.00	0.0%	0.35	0.00
Total:	3475	100.0%	"C" compos. =	0.85
3,475.0	0.08 Acres			

Inlet Area 30				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3109.00	83.2%	0.95	0.79
Grass	630.00	16.8%	0.35	0.06
Wooded	0.00	0.0%	0.35	0.00
Total:	3739	100.0%	"C" compos. =	0.85
3,739.0	0.09 Acres			

Inlet Area 31				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	6176.96	92.7%	0.95	0.88
Grass	488.04	7.3%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	6665	100.0%	"C" compos. =	0.91
6,665.0	0.15 Acres			

Inlet Area 32				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	18358.00	86.0%	0.95	0.82
Grass	3000.00	14.0%	0.35	0.05
Wooded	0.00	0.0%	0.35	0.00
Total:	21358	100.0%	"C" compos. =	0.87
21,358.0	0.49 Acres			

Inlet Area 33				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	16277.00	94.1%	0.95	0.89
Grass	1017.00	5.9%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	17294	100.0%	"C" compos. =	0.91
17,294.0	0.40 Acres			

Inlet Area 34				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	1613.90	99.7%	0.95	0.95
Grass	4.10	0.3%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	1618	100.0%	"C" compos. =	0.95
1,618.0	0.04 Acres			

Inlet Area 35				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4525.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	4525	100.0%	"C" compos. =	0.95
4,525.0	0.10 Acres			

Inlet Area 36				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4347.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	4347	100.0%	"C" compos. =	0.95
4,347.0	0.10 Acres			

Inlet Area 37				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	9308.00	79.3%	0.95	0.75
Grass	2430.00	20.7%	0.35	0.07
Wooded	0.00	0.0%	0.35	0.00
Total:	11738	100.0%	"C" compos. =	0.83
11,738.0	0.27 Acres			

Inlet Area 38				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	9308.00	84.9%	0.95	0.81
Grass	1660.00	15.1%	0.35	0.05
Wooded	0.00	0.0%	0.35	0.00
Total:	10968	100.0%	"C" compos. =	0.86
10,968.0	0.25 Acres			

Inlet Area 39				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4231.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	4231	100.0%	"C" compos. =	0.95
4,231.0	0.10 Acres			

Inlet Area 40				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4705.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	4705	100.0%	"C" compos. =	0.95
4,705.0	0.11 Acres			

Inlet Area 41				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	14886.90	91.7%	0.95	0.87
Grass	1352.10	8.3%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	16239	100.0%	"C" compos. =	0.90
16,239.0	0.37 Acres			

Inlet Area 42				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	12650.20	80.8%	0.95	0.77
Grass	3003.80	19.2%	0.35	0.07
Wooded	0.00	0.0%	0.35	0.00
Total:	15654	100.0%	"C" compos. =	0.83
15,654.0	0.36 Acres			

Inlet Area 43				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5553.00	89.1%	0.95	0.85
Grass	678.00	10.9%	0.35	0.04
Wooded	0.00	0.0%	0.35	0.00
Total:	6231	100.0%	"C" compos. =	0.88
6,231.0	0.14 Acres			

Inlet Area 44				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4754.20	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	4754.2	100.0%	"C" compos. =	0.95
4,883.0	0.11 Acres			

DATE: 04/12/2022

PROJECT: JS210927
LOCATION: "B" System Inlets

$$Q = C \times I \times A$$

$$I = 7.7$$

$$I = 9.1$$

25 year

100 year

Calculation of "C" value:

Manhole 1				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
	0.00 Acres			

Inlet Area 2				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	23713.77	88.8%	0.95	0.84
Grass	2992.23	11.2%	0.35	0.04
Wooded	0.00	0.0%	0.35	0.00
Total:	26706	100.0%	"C" compos. =	0.88
26,706.0	0.61 Acres			

Inlet Area 3				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5649.00	82.8%	0.95	0.79
Grass	1177.00	17.2%	0.35	0.06
Wooded	0.00	0.0%	0.35	0.00
Total:	6826	100.0%	"C" compos. =	0.85
6,826.0	0.16 Acres			

Inlet Area 4				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	13193.60	98.7%	0.95	0.94
Grass	167.40	1.3%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	13361	100.0%	"C" compos. =	0.94
13,361.0	0.31 Acres			

Manhole 5

	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	0.00	0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
29,650.0	0.00 Acres			

Inlet Area 6				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	29176.00	94.6%	0.95	0.90
Grass	1678.00	5.4%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	30854	100.0%	"C" compos. =	0.92
31,725.0	0.71 Acres			

Inlet Area 7				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	33668.00	95.0%	0.95	0.90
Grass	1754.00	5.0%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	35422	100.0%	"C" compos. =	0.92
35,422.0	0.81 Acres			

Inlet Area 8				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3705.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded		0.0%	0.35	0.00
Total:	3705	100.0%	"C" compos. =	0.95
3,705.0	0.09 Acres			

Inlet Area 9				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2712.00	100.0%	0.95	0.95
Grass	1.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	2713	100.0%	"C" compos. =	0.95
2,713.0	0.06 Acres			

Inlet Area 10				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3821.00	101.8%	0.95	0.97
Grass	-69.00	-1.8%	0.35	-0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	3752	100.0%	"C" compos. =	0.96
3,752.0	0.09 Acres			

Inlet Area 11				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	14416.00	89.8%	0.95	0.85
Grass	1636.00	10.2%	0.35	0.04
Wooded	0.00	0.0%	0.35	0.00
Total:	16052	100.0%	"C" compos. =	0.89
16,052.0	0.37 Acres			

Inlet Area 12				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	27993.00	64.2%	0.95	0.61
Grass	15623.00	35.8%	0.35	0.13
Wooded	0.00	0.0%	0.35	0.00
Total:	43616	100.0%	"C" compos. =	0.74
43,616.0	1.00 Acres			

Inlet Area 13				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3834.10	82.6%	0.95	0.78
Grass	807.90	17.4%	0.35	0.06
Wooded	0.00	0.0%	0.35	0.00
Total:	4642	100.0%	"C" compos. =	0.85
4,642.0	0.11 Acres			

Inlet Area 14				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2268.10	90.4%	0.95	0.86
Grass	241.90	9.6%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	2510	100.0%	"C" compos. =	0.89
2,510.0	0.06 Acres			

Inlet Area 15				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	31570.00	92.7%	0.95	0.88
Grass	2500.00	7.3%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	34070	100.0%	"C" compos. =	0.91
34,070.0	0.78 Acres			

Inlet Area 16				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5243.15	97.5%	0.95	0.93
Grass	131.85	2.5%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	5375	100.0%	"C" compos. =	0.94
5,375.0	0.12 Acres			

Inlet Area 17				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	7624.78	92.7%	0.95	0.88
Grass	599.22	7.3%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	8224	100.0%	"C" compos. =	0.91
8,224.0	0.19 Acres			

Inlet Area 18				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	13076.56	96.8%	0.95	0.92
Grass	429.44	3.2%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	13506	100.0%	"C" compos. =	0.93
13,506.0	0.31 Acres			

Inlet Area 19				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	6031.97	97.1%	0.95	0.92
Grass	178.03	2.9%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	6210	100.0%	"C" compos. =	0.93
6,210.0	0.14 Acres			

Inlet Area 20				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	7613.00	93.9%	0.95	0.89
Grass	492.00	6.1%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	8105	100.0%	"C" compos. =	0.91
8,105.0	0.19 Acres			

Inlet Area 21				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	21700.00	96.3%	0.95	0.91
Grass	839.00	3.7%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	22539	100.0%	"C" compos. =	0.93
22,539.0	0.52 Acres			

Inlet Area 22				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	12118.00	98.2%	0.95	0.93
Grass	216.00	1.8%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	12334	100.0%	"C" compos. =	0.94
12,726.0	0.28 Acres			

Inlet Area 23				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	12346.00	98.4%	0.95	0.93
Grass	205.00	1.6%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	12551	100.0%	"C" compos. =	0.94
13,931.4	0.29 Acres			

Inlet Area 24				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	10072.90	93.0%	0.95	0.88
Grass	753.25	7.0%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	10826.15	100.0%	"C" compos. =	0.91
10,826.2	0.25 Acres			

Inlet Area 25				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	28473.00	97.2%	0.95	0.92
Grass	808.00	2.8%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	29281	100.0%	"C" compos. =	0.93
29,281.0	0.67 Acres			

Inlet Area 26				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	13353.50	92.7%	0.95	0.88
Grass	1055.50	7.3%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	14409	100.0%	"C" compos. =	0.91
14,409.0	0.33 Acres			

Inlet Area 27				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	15254.60	97.8%	0.95	0.93
Grass	335.40	2.2%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	15590	100.0%	"C" compos. =	0.94
15,590.0	0.36 Acres			

Manhole 28				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	0.00	0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
0.0	0.00 Acres			

Inlet Area 29				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4920.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	4920	100.0%	"C" compos. =	0.95
4,920.0	0.11 Acres			

Inlet Area 30				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3017.70	99.2%	0.95	0.94
Grass	25.30	0.8%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	3043	100.0%	"C" compos. =	0.95
3,043.0	0.07 Acres			

Inlet Area 31				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2162.15	96.4%	0.95	0.92
Grass	81.85	3.6%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	2244	100.0%	"C" compos. =	0.93
2,244.0	0.05 Acres			

Inlet Area 32				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5778.00	88.1%	0.95	0.84
Grass	783.00	11.9%	0.35	0.04
Wooded	0.00	0.0%	0.35	0.00
Total:	6561	100.0%	"C" compos. =	0.88
6,561.0	0.15 Acres			

Inlet Area 33				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	23666.17	90.3%	0.95	0.86
Grass	2545.83	9.7%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	26212	100.0%	"C" compos. =	0.89
26,212.0	0.60 Acres			

Inlet Area 34				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	42613.00	89.4%	0.95	0.85
Grass	5051.00	10.6%	0.35	0.04
Wooded	0.00	0.0%	0.35	0.00
Total:	47664	100.0%	"C" compos. =	0.89
47,664.0	1.09 Acres			

Inlet Area 35				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	21993.00	87.8%	0.95	0.83
Grass	3050.00	12.2%	0.35	0.04
Wooded	0.00	0.0%	0.35	0.00
Total:	25043	100.0%	"C" compos. =	0.88
25,043.0	0.57 Acres			

Inlet Area 36				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5844.46	80.9%	0.95	0.77
Grass	1375.54	19.1%	0.35	0.07
Wooded	0.00	0.0%	0.35	0.00
Total:	7220	100.0%	"C" compos. =	0.84
7,220.0	0.17 Acres			

Inlet Area 37				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	19214.00	44.3%	0.95	0.42
Grass	24124.00	55.7%	0.35	0.19
Wooded	0.00	0.0%	0.35	0.00
Total:	43338	100.0%	"C" compos. =	0.62
43,338.0	0.99 Acres			

Inlet Area 38				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	7920.00	90.3%	0.95	0.86
Grass	847.00	9.7%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	8767	100.0%	"C" compos. =	0.89
8,767.0	0.20 Acres			

Inlet Area 39				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5086.27	84.7%	0.95	0.80
Grass	920.73	15.3%	0.35	0.05
Wooded	0.00	0.0%	0.35	0.00
Total:	6007	100.0%	"C" compos. =	0.86
6,007.0	0.14 Acres			

Inlet Area 40				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	8249.00	46.8%	0.95	0.44
Grass	9381.00	53.2%	0.35	0.19
Wooded	0.00	0.0%	0.35	0.00
Total:	17630	100.0%	"C" compos. =	0.63
17,630.0	0.40 Acres			

Inlet Area 41				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4769.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	4769	100.0%	"C" compos. =	0.95
4,769.0	0.11 Acres			

Inlet Area 42				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	52951.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	52951	100.0%	"C" compos. =	0.95
52,951.0	1.22 Acres			

Inlet Area 43				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5550.11	14.8%	0.95	0.14
Grass	31857.89	85.2%	0.35	0.30
Wooded	0.00	0.0%	0.35	0.00
Total:	37408	100.0%	"C" compos. =	0.44
37,408.0	0.86 Acres			

Inlet Area 44				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	8345.00	14.2%	0.95	0.13
Grass	50419.00	85.8%	0.35	0.30
Wooded	0.00	0.0%	0.35	0.00
Total:	58764	100.0%	"C" compos. =	0.44
58,764.0	1.35 Acres			

Yard Inlet 4				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	3918.00	100.0%	0.35	0.35
Wooded	0.00	0.0%	0.35	0.00
Total:	3918	100.0%	"C" compos. =	0.35
3,918.0	0.09 Acres			

Yard Inlet 5				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	4126.00	100.0%	0.35	0.35
Wooded	0.00	0.0%	0.35	0.00
Total:	4126	100.0%	"C" compos. =	0.35
4,126.0	0.09 Acres			

Yard Inlet 6				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	4793.00	100.0%	0.35	0.35
Wooded	0.00	0.0%	0.35	0.00
Total:	4793	100.0%	"C" compos. =	0.35
4,793.0	0.11 Acres			

Yard Inlet 7				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	3811.00	100.0%	0.35	0.35
Wooded	0.00	0.0%	0.35	0.00
Total:	3811	100.0%	"C" compos. =	0.35
3,811.0	0.09 Acres			

Yard Inlet 8				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	1347.00	100.0%	0.35	0.35
Wooded	0.00	0.0%	0.35	0.00
Total:	1347	100.0%	"C" compos. =	0.35
1,347.0	0.03 Acres			

Yard Inlet 9				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	4208.00	100.0%	0.35	0.35
Wooded	0.00	0.0%	0.35	0.00
Total:	4208	100.0%	"C" compos. =	0.35
4,208.0	0.10 Acres			

Area Drain 1				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	802.00	100.0%	0.95	0.95
Grass		0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	802	100.0%	"C" compos. =	0.95
802.0	0.02 Acres			

Area Drain 2				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	1084.00	100.0%	0.95	0.95
Grass		0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	1084	100.0%	"C" compos. =	0.95
1,084.0	0.02 Acres			

Area Drain 3				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	708.00	100.0%	0.95	0.95
Grass		0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	708	100.0%	"C" compos. =	0.95
708.0	0.02 Acres			

Area Drain 4				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	545.00	100.0%	0.95	0.95
Grass		0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	545	100.0%	"C" compos. =	0.95
545.0	0.01 Acres			

Area Drain 5				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	435.00	100.0%	0.95	0.95
Grass		0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	435	100.0%	"C" compos. =	0.95
435.0	0.01 Acres			

Area Drain 6				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	336.00	100.0%	0.95	0.95
Grass		0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	336	100.0%	"C" compos. =	0.95
336.0	0.01 Acres			

Area Drain 7				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	0.00	0.0%	0.95	0.00
Grass	2488.00	100.0%	0.35	0.35
Wooded	0.00	0.0%	0.35	0.00
Total:	2488	100.0%	"C" compos. =	0.35
2,488.0	0.06 Acres			

DATE: 04/12/2022

PROJECT: JS210927
LOCATION: "C" System Inlets

$$Q = C \times I \times A$$

$$I = 7.7$$

$$I = 9.1$$

25 year

100 year

Calculation of "C" value:

Manhole 1				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
	0.00 Acres			

Inlet Area 2				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5047.80	97.8%	0.95	0.93
Grass	115.20	2.2%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	5163	100.0%	"C" compos. =	0.94
5,163.0	0.12 Acres			

Manhole 3				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
	0.00 Acres			

Inlet Area 4				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4972.00	91.6%	0.95	0.87
Grass	455.00	8.4%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	5427	100.0%	"C" compos. =	0.90
5,427.0	0.12 Acres			

Inlet Area 5				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5572.00	91.0%	0.95	0.86
Grass	549.00	9.0%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	6121	100.0%	"C" compos. =	0.90
6,121.0	0.14 Acres			

Inlet Area 6				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	18982.96	99.0%	0.95	0.94
Grass	186.13	1.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	19169.09	100.0%	"C" compos. =	0.94
19,169.1	0.44 Acres			

Inlet Area 7				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	10602.63	87.0%	0.95	0.83
Grass	1583.37	13.0%	0.35	0.05
Wooded	0.00	0.0%	0.35	0.00
Total:	12186	100.0%	"C" compos. =	0.87
12,186.0	0.28 Acres			

Inlet Area 8				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	18637.00	96.0%	0.95	0.91
Grass	779.00	4.0%	0.35	0.01
Wooded		0.0%	0.35	0.00
Total:	19416	100.0%	"C" compos. =	0.93
19,416.0	0.45 Acres			

Inlet Area 9				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	9965.00	79.9%	0.95	0.76
Grass	2506.00	20.1%	0.35	0.07
Wooded	0.00	0.0%	0.35	0.00
Total:	12471	100.0%	"C" compos. =	0.83
12,471.0	0.29 Acres			

Inlet Area 10				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	16724.24	81.9%	0.95	0.78
Grass	3685.58	18.1%	0.35	0.06
Wooded	0.00	0.0%	0.35	0.00
Total:	20409.82	100.0%	"C" compos. =	0.84
20,409.8	0.47 Acres			

Inlet Area 11				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	13623.95	95.2%	0.95	0.90
Grass	687.28	4.8%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	14311.23	100.0%	"C" compos. =	0.92
14,311.2	0.33 Acres			

Inlet Area 12				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	21776.00	76.5%	0.95	0.73
Grass	6694.00	23.5%	0.35	0.08
Wooded	0.00	0.0%	0.35	0.00
Total:	28470	100.0%	"C" compos. =	0.81
28,470.0	0.65 Acres			

Inlet Area 13				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	6960.00	83.6%	0.95	0.79
Grass	1361.00	16.4%	0.35	0.06
Wooded	0.00	0.0%	0.35	0.00
Total:	8321	100.0%	"C" compos. =	0.85
8,321.0	0.19 Acres			

Inlet Area 14				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	7380.00	71.1%	0.95	0.68
Grass	3000.00	28.9%	0.35	0.10
Wooded	0.00	0.0%	0.35	0.00
Total:	10380	100.0%	"C" compos. =	0.78
10,380.0	0.24 Acres			

Inlet Area 15				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	22515.00	70.5%	0.95	0.67
Grass	9400.00	29.5%	0.35	0.10
Wooded	0.00	0.0%	0.35	0.00
Total:	31915	100.0%	"C" compos. =	0.77
31,915.0	0.73 Acres			

Inlet Area 16				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3190.00	90.1%	0.95	0.86
Grass	352.00	9.9%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	3542	100.0%	"C" compos. =	0.89
3,542.0	0.08 Acres			

Inlet Area 16A				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5163.00	89.3%	0.95	0.85
Grass	617.00	10.7%	0.35	0.04
Wooded	0.00	0.0%	0.35	0.00
Total:	5780	100.0%	"C" compos. =	0.89
5,780.0	0.13 Acres			

Manhole 17				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	0.00	0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
0.0	0.00 Acres			

Inlet Area 18				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	19703.00	82.7%	0.95	0.79
Grass	4116.00	17.3%	0.35	0.06
Wooded	0.00	0.0%	0.35	0.00
Total:	23819	100.0%	"C" compos. =	0.85
23,819.0	0.55 Acres			

DATE: 03/28/2022

PROJECT: JS210927
LOCATION: "D" System Inlets

$$Q = C \times I \times A$$

$$I = 7.7$$

$$I = 9.1$$

25 year

100 year

Calculation of "C" value:

Inlet Area 1				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	11213.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	11213	100.0%	"C" compos. =	0.95
11,213.0	0.26 Acres			

Inlet Area 2				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	8688.00	54.4%	0.95	0.52
Grass	7275.00	45.6%	0.35	0.16
Wooded	0.00	0.0%	0.35	0.00
Total:	15963	100.0%	"C" compos. =	0.68
15,963.0	0.37 Acres			

Inlet Area 3				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2419.00	86.4%	0.95	0.82
Grass	381.00	13.6%	0.35	0.05
Wooded	0.00	0.0%	0.35	0.00
Total:	2800	100.0%	"C" compos. =	0.87
2,800.0	0.06 Acres			

Inlet Area 4				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	16913.00	90.4%	0.95	0.86
Grass	1805.00	9.6%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	18718	100.0%	"C" compos. =	0.89
18,718.0	0.43 Acres			

Inlet Area 5

	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	29158.00	96.8%	0.95	0.92
Grass	952.00	3.2%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	30110	100.0%	"C" compos. =	0.93
30,110.0	0.69 Acres			

Inlet Area 6				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	12006.00	92.6%	0.95	0.88
Grass	960.00	7.4%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00
Total:	12966	100.0%	"C" compos. =	0.91
12,966.0	0.30 Acres			

Inlet Area 7				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	33786.00	95.4%	0.95	0.91
Grass	1626.00	4.6%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	35412	100.0%	"C" compos. =	0.92
35,412.0	0.81 Acres			

Inlet Area 8 - N/A				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	0.00	#DIV/0!	0.95	#DIV/0!
Grass	0.00	#DIV/0!	0.35	#DIV/0!
Wooded		#DIV/0!	0.35	#DIV/0!
Total:	0	#DIV/0!	"C" compos. =	#DIV/0!
0.0	0.00 Acres			

Inlet Area 9				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	7900.00	97.9%	0.95	0.93
Grass	170.00	2.1%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	8070	100.0%	"C" compos. =	0.94
8,070.0	0.19 Acres			

Inlet Area 10				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	7890.00	86.2%	0.95	0.82
Grass	1261.00	13.8%	0.35	0.05
Wooded	0.00	0.0%	0.35	0.00
Total:	9151	100.0%	"C" compos. =	0.87
9,151.0	0.21 Acres			

Inlet Area 11				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	1640.00	95.3%	0.95	0.91
Grass	80.00	4.7%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	1720	100.0%	"C" compos. =	0.92
1,720.0	0.04 Acres			

Inlet Area 12				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3098.00	96.0%	0.95	0.91
Grass	130.00	4.0%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	3228	100.0%	"C" compos. =	0.93
3,228.0	0.07 Acres			

Inlet Area 13				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	4930.00	80.9%	0.95	0.77
Grass	1162.00	19.1%	0.35	0.07
Wooded	0.00	0.0%	0.35	0.00
Total:	6092	100.0%	"C" compos. =	0.84
6,092.0	0.14 Acres			

Inlet Area 14				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	8207.00	86.9%	0.95	0.83
Grass	1237.00	13.1%	0.35	0.05
Wooded	0.00	0.0%	0.35	0.00
Total:	9444	100.0%	"C" compos. =	0.87
9,444.0	0.22 Acres			

Inlet Area 15				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2461.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	2461	100.0%	"C" compos. =	0.95
2,461.0	0.06 Acres			

Inlet Area 16				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	3962.00	80.2%	0.95	0.76
Grass	980.00	19.8%	0.35	0.07
Wooded	0.00	0.0%	0.35	0.00
Total:	4942	100.0%	"C" compos. =	0.83
4,942.0	0.11 Acres			

Inlet Area 17				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	1683.00	67.2%	0.95	0.64
Grass	823.00	32.8%	0.35	0.11
Wooded	0.00	0.0%	0.35	0.00
Total:	2506	100.0%	"C" compos. =	0.75
2,506.0	0.06 Acres			

Inlet Area 18				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	8447.00	93.6%	0.95	0.89
Grass	580.00	6.4%	0.35	0.02
Wooded	0.00	0.0%	0.35	0.00
Total:	9027	100.0%	"C" compos. =	0.91
9,027.0	0.21 Acres			

Inlet Area 19				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2717.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	2717	100.0%	"C" compos. =	0.95
2,717.0	0.06 Acres			

DATE: 03/28/2022

PROJECT: JS210927
LOCATION: "E" System Inlets

$$Q = C \times I \times A$$

$$I = 7.7$$

$$I = 9.1$$

25 year

100 year

Calculation of "C" value:

Manhole 1				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	0.00	0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
0.0	0.00 Acres			

Yard Inlet 1				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	335.00	8.9%	0.95	0.08
Grass	3426.00	91.1%	0.35	0.32
Wooded	0.00	0.0%	0.35	0.00
Total:	3761	100.0%	"C" compos. =	0.40
3,761.0	0.09 Acres			

Yard Inlet 2				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	225.00	9.6%	0.95	0.09
Grass	2108.00	90.4%	0.35	0.32
Wooded	0.00	0.0%	0.35	0.00
Total:	2333	100.0%	"C" compos. =	0.41
2,333.0	0.05 Acres			

Yard Inlet 3				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	384.90	18.1%	0.95	0.17
Grass	1740.10	81.9%	0.35	0.29
Wooded	0.00	0.0%	0.35	0.00
Total:	2125	100.0%	"C" compos. =	0.46
2,125.0	0.05 Acres			

Inlet Area 4				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	23333.00	91.4%	0.95	0.87
Grass	2187.00	8.6%	0.35	0.03
Wooded	0.00	0.0%	0.35	0.00

Total:	25520	100.0%	"C" compos. =	0.90
25,520.0	0.59	Acres		

Inlet Area 5				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	9247.00	69.5%	0.95	0.66
Grass	4059.00	30.5%	0.35	0.11
Wooded	0.00	0.0%	0.35	0.00
Total:	13306	100.0%	"C" compos. =	0.77
13,306.0	0.31	Acres		

Inlet Area 6				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2889.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	2889	100.0%	"C" compos. =	0.95
2,889.0	0.07	Acres		

Inlet Area 7				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	2850.00	28.2%	0.95	0.27
Grass	7265.00	71.8%	0.35	0.25
Wooded	0.00	0.0%	0.35	0.00
Total:	10115	100.0%	"C" compos. =	0.52
10,115.0	0.23	Acres		

Inlet Area 8				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5068.00	83.4%	0.95	0.79
Grass	1010.00	16.6%	0.35	0.06
Wooded		0.0%	0.35	0.00
Total:	6078	100.0%	"C" compos. =	0.85
6,078.0	0.14	Acres		

Inlet Area 9

	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	17938.00	97.9%	0.95	0.93
Grass	386.00	2.1%	0.35	0.01
Wooded	0.00	0.0%	0.35	0.00
Total:	18324	100.0%	"C" compos. =	0.94
18,324.0	0.42 Acres			

Inlet Area 10				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	5935.00	100.0%	0.95	0.95
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	5935	100.0%	"C" compos. =	0.95
5,935.0	0.14 Acres			

DATE: 04/12/2022

PROJECT: JS210927
LOCATION: "F" System Inlets

$$Q = C \times I \times A$$

$$I = 7.7$$

$$I = 9.1$$

25 year

100 year

Calculation of "C" value:

Manhole 1				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	0.00	0.0%	0.95	0.00
Grass	0.00	0.0%	0.35	0.00
Wooded	0.00	0.0%	0.35	0.00
Total:	0	0.0%	"C" compos. =	0.00
	0.00 Acres			

Inlet Area 2				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	917.00	27.8%	0.95	0.26
Grass	2377.00	72.2%	0.35	0.25
Wooded	0.00	0.0%	0.35	0.00
Total:	3294	100.0%	"C" compos. =	0.52
3,294.0	0.08 Acres			

Inlet Area 3				
	Area (sf)	%	C Value	Fract. Comp.
Asphalt/Concrete/Building	12648.00	74.9%	0.95	0.71
Grass	4233.00	25.1%	0.35	0.09
Wooded	0.00	0.0%	0.35	0.00
Total:	16881	100.0%	"C" compos. =	0.80
16,881.0	0.39 Acres			

DATE: 04/12/2022

PROJECT: JS210927
LOCATION: Bypass System Inlets

$$Q = C \times I \times A$$

$$I = 7.7$$

$$I = 9.1$$

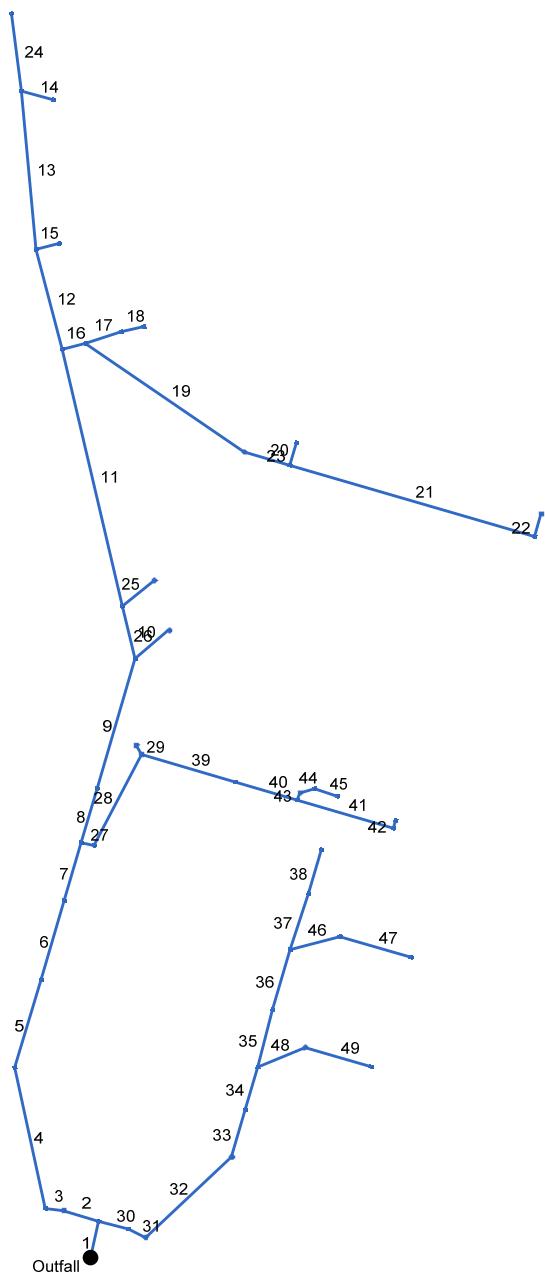
25 year

100 year

Calculation of "C" value:

	Inlet Area 1		C Value	Fract. Comp.
	Area (sf)	%		
Asphalt/Concrete/Building		0.0%	0.95	0.00
Grass	315630.00	100.0%	0.35	0.35
Wooded	0.00	0.0%	0.35	0.00
Total:	315630	100.0%	"C" compos. =	0.35
315,630.0	7.25 Acres			

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr (min)	Total (min)	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	47.000	0.00	18.45	0.00	0.00	10.91	10.0	16.1	5.9	63.97	66.69	10.33	36	1.00	129.00	129.47	131.36	132.04	132.83	139.14	Pipe - (174)
2	1	46.993	0.00	16.04	0.00	0.00	8.80	10.0	16.0	5.9	51.73	47.66	7.32	36	0.51	129.78	130.02	132.78	133.02	139.14	138.99	Pipe - (240)
3	2	22.515	0.49	16.04	0.92	0.45	8.80	10.0	15.9	5.9	51.79	46.62	7.33	36	0.49	130.02	130.13	133.20	133.34	138.99	138.70	Pipe - (9)
4	3	182.989	0.28	15.55	0.59	0.17	8.35	10.0	15.5	5.9	49.68	47.03	7.03	36	0.50	130.23	131.14	134.53	135.55	138.70	141.19	Pipe - (8)
5	4	116.311	0.33	15.27	0.61	0.20	8.19	10.0	15.2	6.0	49.05	47.10	6.94	36	0.50	131.24	131.82	136.17	136.80	141.19	141.31	Pipe - (7)
6	5	104.268	0.23	14.94	0.62	0.14	7.98	10.0	15.0	6.0	48.15	47.10	6.81	36	0.50	131.93	132.45	137.17	137.72	141.31	141.29	Pipe - (6)
7	6	76.549	0.19	14.71	0.54	0.10	7.84	10.0	14.8	6.1	47.53	46.99	6.72	36	0.50	132.55	132.93	138.08	138.47	141.29	141.53	Pipe - (5)
8	7	71.813	0.18	12.53	0.55	0.10	6.04	10.0	14.6	6.1	36.85	66.78	5.21	36	1.00	135.22	135.94	139.52	139.74	141.53	141.53	Pipe - (4) (1)
9	8	171.037	0.00	12.35	0.00	0.00	5.94	10.0	14.0	6.2	36.77	66.69	5.40	36	1.00	136.04	137.75	139.95	140.38	141.53	145.02	Pipe - (4)
10	9	68.543	0.29	12.19	0.82	0.24	5.81	10.0	13.8	6.2	36.15	57.53	6.33	36	0.74	137.85	138.36	140.67	140.31	145.02	146.50	Pipe - (157)
11	10	334.140	0.10	10.95	0.80	0.08	4.98	10.0	12.7	6.4	31.95	47.15	7.02	36	0.50	138.46	140.13	140.31	141.96	146.50	149.77	Pipe - (3)
12	11	131.121	0.16	1.59	0.76	0.12	1.03	10.0	11.3	6.7	6.87	6.45	5.92	15	1.00	141.51	142.82	142.63	143.94	149.77	151.28	Pipe - (2)
13	12	201.393	0.14	1.15	0.86	0.12	0.75	10.0	10.5	6.8	5.12	6.45	4.48	15	1.00	142.92	144.93	144.76	145.95	151.28	153.14	Pipe - (159)
14	13	41.769	0.13	0.13	0.64	0.08	0.08	10.0	10.0	6.9	0.58	6.48	2.93	15	1.01	149.43	149.85	149.68	150.15	153.14	153.14	Pipe - (56)
15	12	30.000	0.28	0.28	0.57	0.16	0.16	10.0	10.0	6.9	1.11	4.57	3.06	15	0.50	147.42	147.57	147.84	147.99	151.28	151.28	Pipe - (158)
16	11	29.932	0.45	9.26	0.44	0.20	3.87	10.0	12.7	6.4	24.87	16.01	7.92	24	0.50	140.23	140.38	142.23	142.59	149.77	149.77	Pipe - (128)
17	16	47.672	0.25	1.55	0.75	0.19	0.73	10.0	10.1	6.9	5.08	6.81	5.68	15	1.11	146.41	146.94	147.21	147.85	149.77	150.85	Pipe - (25)
18	17	29.170	1.30	1.30	0.42	0.55	0.55	10.0	10.0	6.9	3.79	6.44	4.58	15	0.99	147.04	147.33	147.85	148.12	150.85	150.86	Pipe - (23)
19	16	243.016	0.33	7.26	0.51	0.17	2.94	10.0	12.0	6.5	19.25	16.03	6.13	24	0.50	140.38	141.60	143.75	145.51	149.77	148.58	Pipe - (186)
20	19	60.277	0.80	6.93	0.43	0.34	2.77	10.0	11.8	6.6	18.24	15.69	5.81	24	0.48	141.60	141.89	145.83	146.22	148.58	148.28	Pipe - (185)
21	20	321.940	1.01	3.66	0.43	0.43	1.44	10.0	10.1	6.9	9.97	16.04	3.17	24	0.50	142.00	143.62	147.01	147.63	148.28	148.53	Pipe - (184)
22	21	29.981	2.65	2.65	0.38	1.01	1.01	10.0	10.0	6.9	6.99	7.43	3.96	18	0.50	145.10	145.25	147.87	148.00	148.53	148.53	Pipe - (59)
Project File: System A.stm																Number of lines: 49				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Tabulation

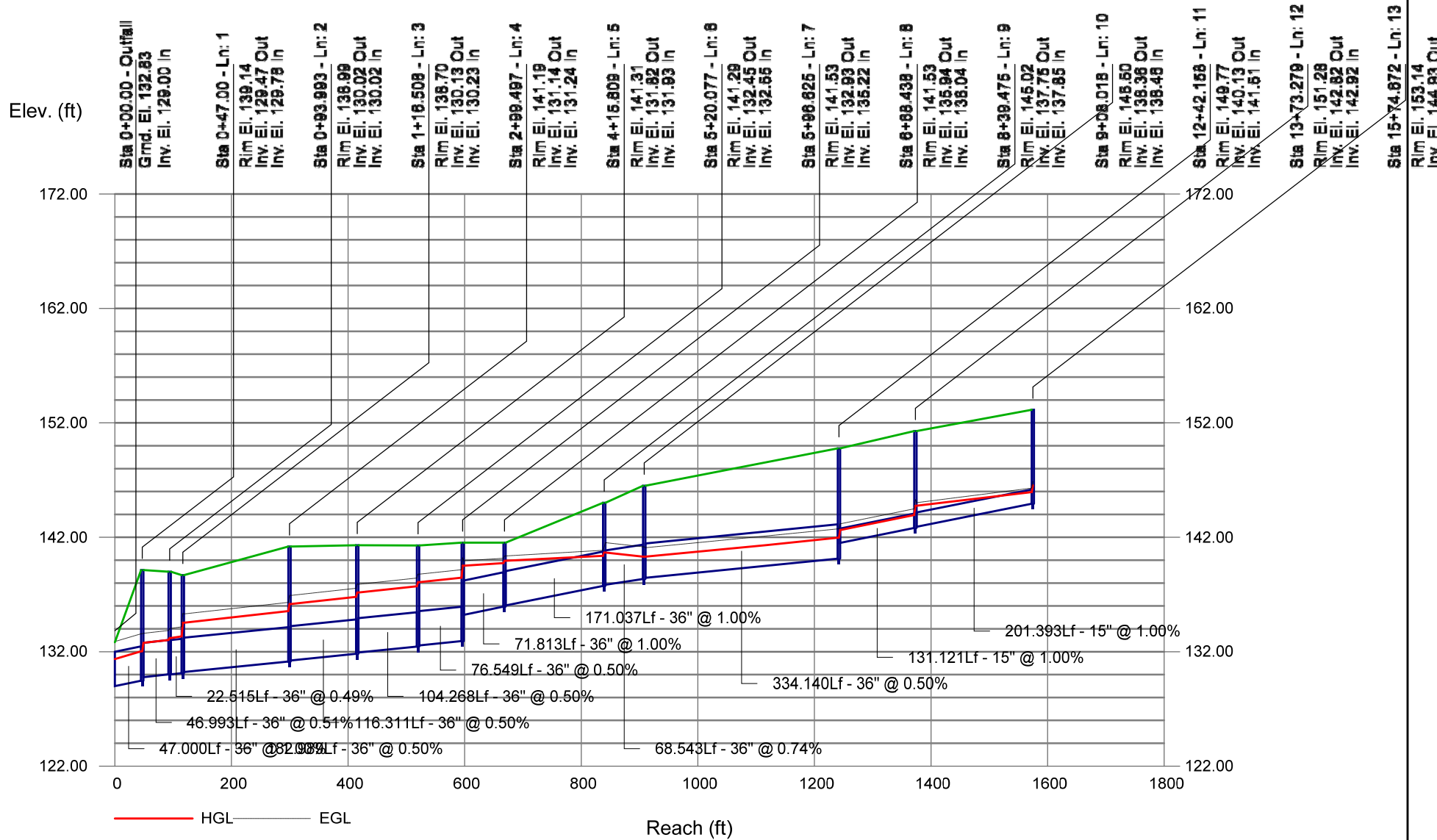
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
23	20	30.000	2.47	2.47	0.40	0.99	0.99	10.0	10.0	6.9	6.86	7.43	3.88	18	0.50	144.95	145.10	147.01	147.14	148.28	148.28	Pipe - (58)
24	13	99.020	0.88	0.88	0.62	0.55	0.55	10.0	10.0	6.9	3.79	7.02	3.88	15	1.18	145.03	146.20	146.55	146.99	153.14	154.05	Pipe - (250)
25	10	52.023	0.95	0.95	0.62	0.59	0.59	10.0	10.0	6.9	4.09	10.50	5.01	18	1.00	142.48	143.00	143.13	143.77	146.50	146.60	Pipe - (55)
26	9	55.154	0.16	0.16	0.84	0.13	0.13	10.0	10.0	6.9	0.93	6.45	3.36	15	1.00	142.45	143.00	142.77	143.38	145.02	146.73	Pipe - (166)
27	7	16.596	0.00	1.99	0.00	0.00	1.70	10.0	13.8	6.2	10.54	28.47	2.15	30	0.48	134.11	134.19	139.52	139.53	141.53	141.85	Pipe - (63)
28	27	130.230	0.30	1.99	0.75	0.23	1.70	10.0	13.2	6.3	10.73	15.98	3.42	24	0.50	134.70	135.35	139.60	139.90	141.85	141.06	Pipe - (20)
29	28	13.162	0.58	0.58	0.88	0.51	0.51	10.0	10.0	6.9	3.54	10.44	2.01	18	0.99	137.87	138.00	140.16	140.18	141.06	141.27	Pipe - (62)
30	1	38.922	0.00	2.41	0.00	0.00	2.11	10.0	12.6	6.4	13.56	22.64	5.78	24	1.00	130.55	130.94	132.04	132.26	139.14	139.11	Pipe - (241)
31	30	24.319	0.40	2.41	0.91	0.36	2.11	10.0	12.6	6.4	13.59	22.47	6.15	24	0.99	130.94	131.18	132.26	132.51	139.11	138.71	Pipe - (15)
32	31	148.783	0.04	2.01	0.95	0.04	1.75	10.0	12.2	6.5	11.37	10.51	6.43	18	1.00	131.28	132.77	132.78	134.52	138.71	141.06	Pipe - (14)
33	32	62.817	0.10	1.97	0.95	0.10	1.71	10.0	12.0	6.5	11.18	10.52	6.32	18	1.00	132.87	133.50	135.07	135.78	141.06	141.10	Pipe - (13) (1)
34	33	55.950	0.10	1.87	0.95	0.10	1.61	10.0	11.9	6.6	10.60	10.51	6.00	18	1.00	133.60	134.16	136.09	136.66	141.10	141.08	Pipe - (13)
35	34	75.115	0.10	1.29	0.95	0.10	1.10	10.0	11.6	6.6	7.27	10.49	4.11	18	1.00	134.26	135.01	137.34	137.70	141.08	141.18	Pipe - (12)
36	35	79.230	0.11	1.19	0.95	0.10	1.00	10.0	11.2	6.7	6.71	10.49	3.80	18	1.00	135.11	135.90	137.83	138.16	141.18	141.17	Pipe - (11)
37	36	74.936	0.14	0.35	0.91	0.13	0.27	10.0	10.5	6.8	1.82	6.46	1.73	15	1.00	136.87	137.62	138.45	138.50	141.17	141.11	Pipe - (10) (1)
38	37	58.000	0.21	0.21	0.66	0.14	0.14	10.0	10.0	6.9	0.96	6.46	2.07	15	1.00	137.72	138.30	138.53	138.69	141.11	141.11	Pipe - (10)
39	28	122.926	0.15	1.11	0.87	0.13	0.96	10.0	12.1	6.5	6.25	16.06	1.99	24	0.50	135.45	136.07	140.16	140.26	141.06	141.37	Pipe - (19)
40	39	81.581	0.06	0.96	0.91	0.05	0.83	10.0	11.7	6.6	5.47	7.44	3.10	18	0.50	136.17	136.58	140.29	140.51	141.37	141.69	Pipe - (18)
41	40	126.835	0.15	0.60	0.91	0.14	0.52	10.0	10.1	6.9	3.62	7.46	2.05	18	0.50	136.67	137.31	140.73	140.88	141.69	140.50	Pipe - (17)
42	41	10.259	0.45	0.45	0.86	0.39	0.39	10.0	10.0	6.9	2.69	7.33	1.52	18	0.49	137.41	137.46	140.98	140.99	140.50	140.50	Pipe - (16)
43	40	9.786	0.13	0.30	0.78	0.10	0.25	10.0	11.6	6.6	1.66	4.13	1.36	15	0.41	136.68	136.72	140.73	140.74	141.69	141.99	Pipe - (61) (1)
44	43	19.052	0.08	0.17	0.95	0.08	0.15	10.0	11.2	6.7	1.00	4.68	0.82	15	0.52	136.82	136.92	140.77	140.78	141.99	142.22	Pipe - (61)
Project File: System A.stm																Number of lines: 49				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Tabulation

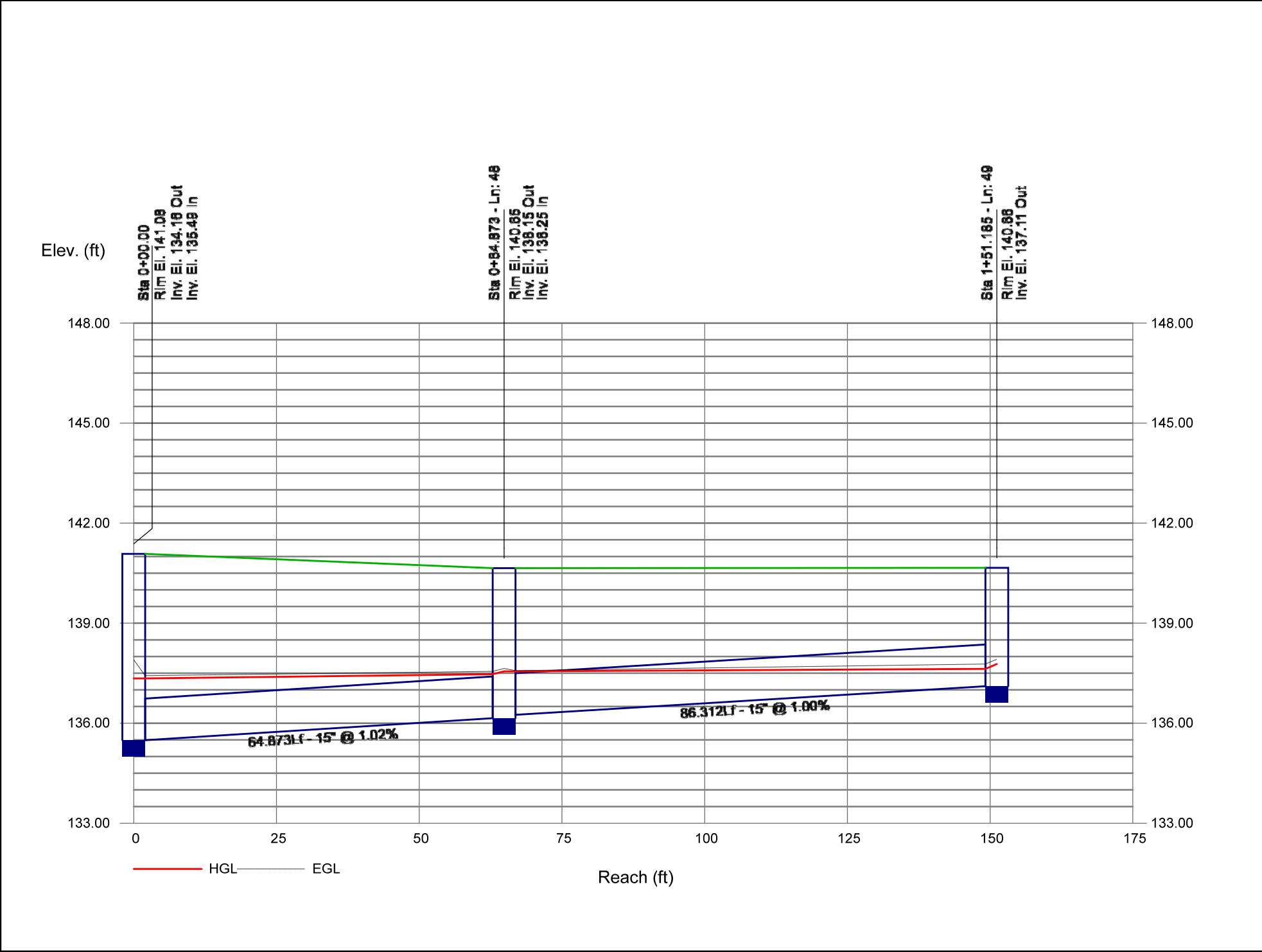
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
45	44	30.009	0.09	0.09	0.82	0.07	0.07	10.0	10.0	6.9	0.51	4.57	0.42	15	0.50	137.02	137.17	140.79	140.79	142.22	142.22	Pipe - (60)
46	36	64.945	0.37	0.73	0.90	0.33	0.63	10.0	10.9	6.8	4.27	6.31	3.48	15	0.95	136.15	136.77	138.45	138.74	141.17	140.65	Pipe - (67)
47	46	93.365	0.36	0.36	0.83	0.30	0.30	10.0	10.0	6.9	2.08	6.44	1.71	15	1.00	136.87	137.80	138.90	138.99	140.65	140.66	Pipe - (66)
48	34	64.873	0.24	0.48	0.88	0.21	0.42	10.0	10.7	6.8	2.87	6.51	2.34	15	1.02	135.49	136.15	137.34	137.47	141.08	140.65	Pipe - (65)
49	48	86.312	0.24	0.24	0.88	0.21	0.21	10.0	10.0	6.9	1.47	6.45	2.12	15	1.00	136.25	137.11	137.56	137.63	140.65	140.66	Pipe - (64)
Project File: System A.stm																Number of lines: 49				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Profile

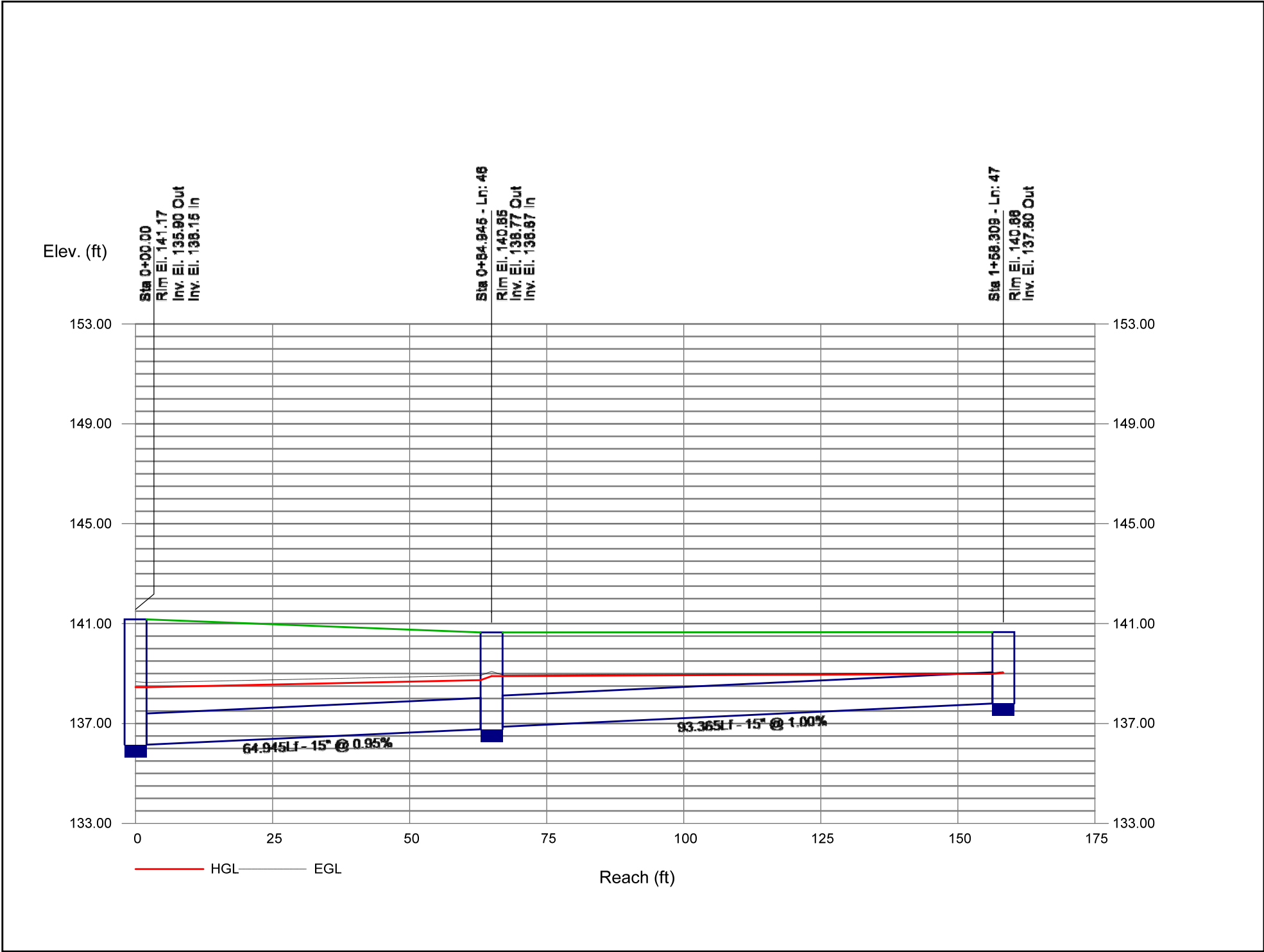
Proj. file: System A.stm



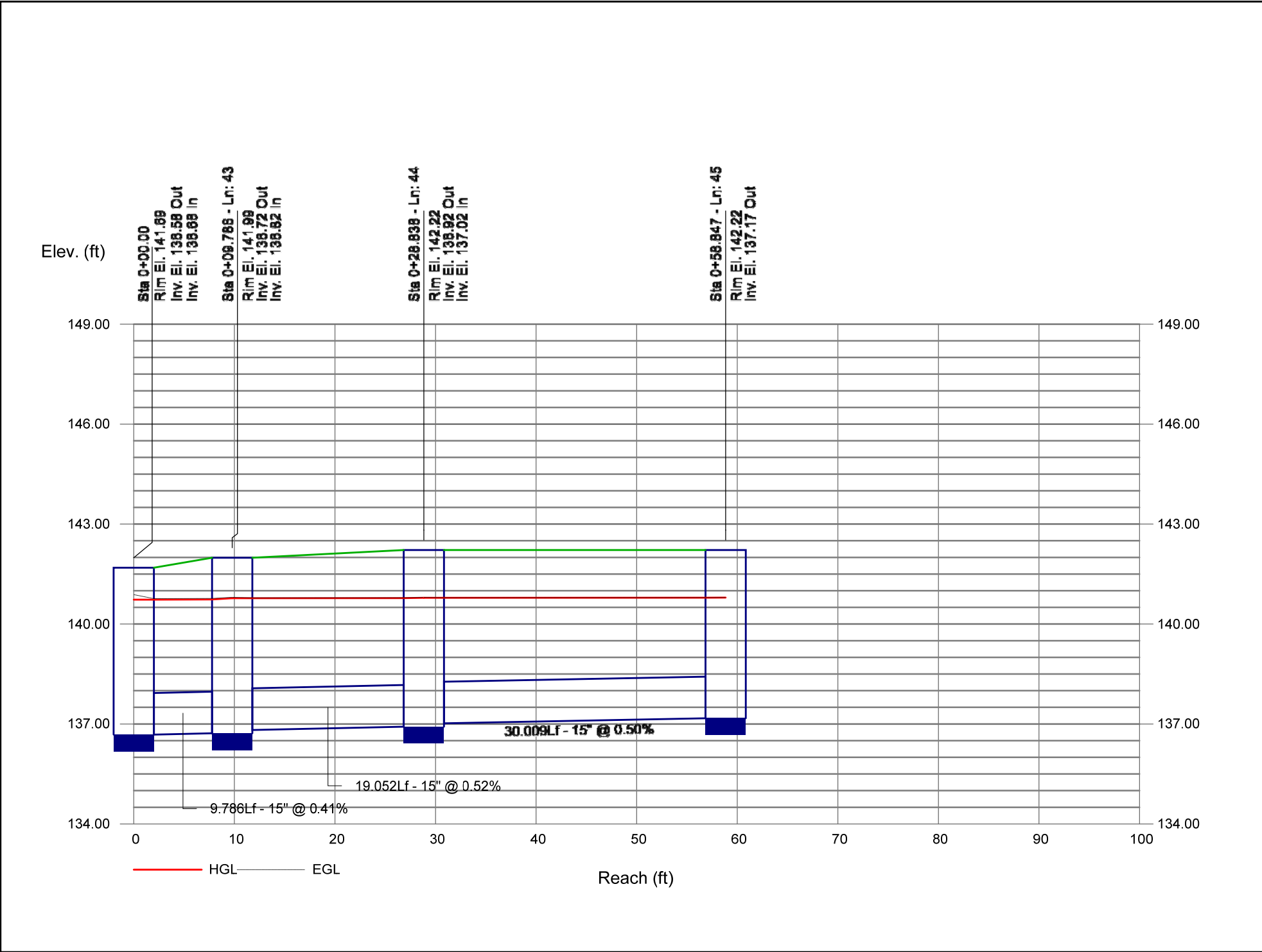
Storm Sewer Profile



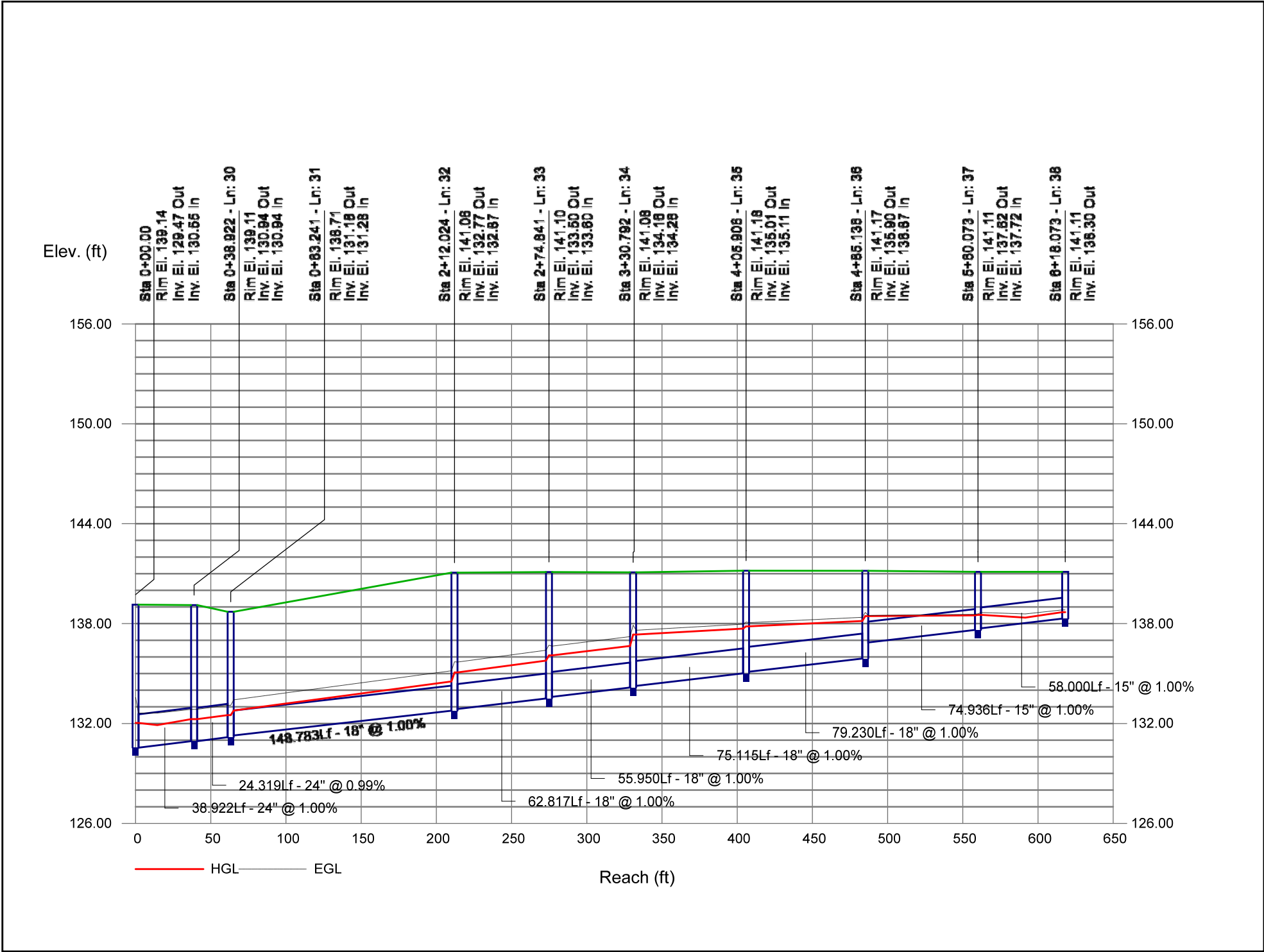
Storm Sewer Profile



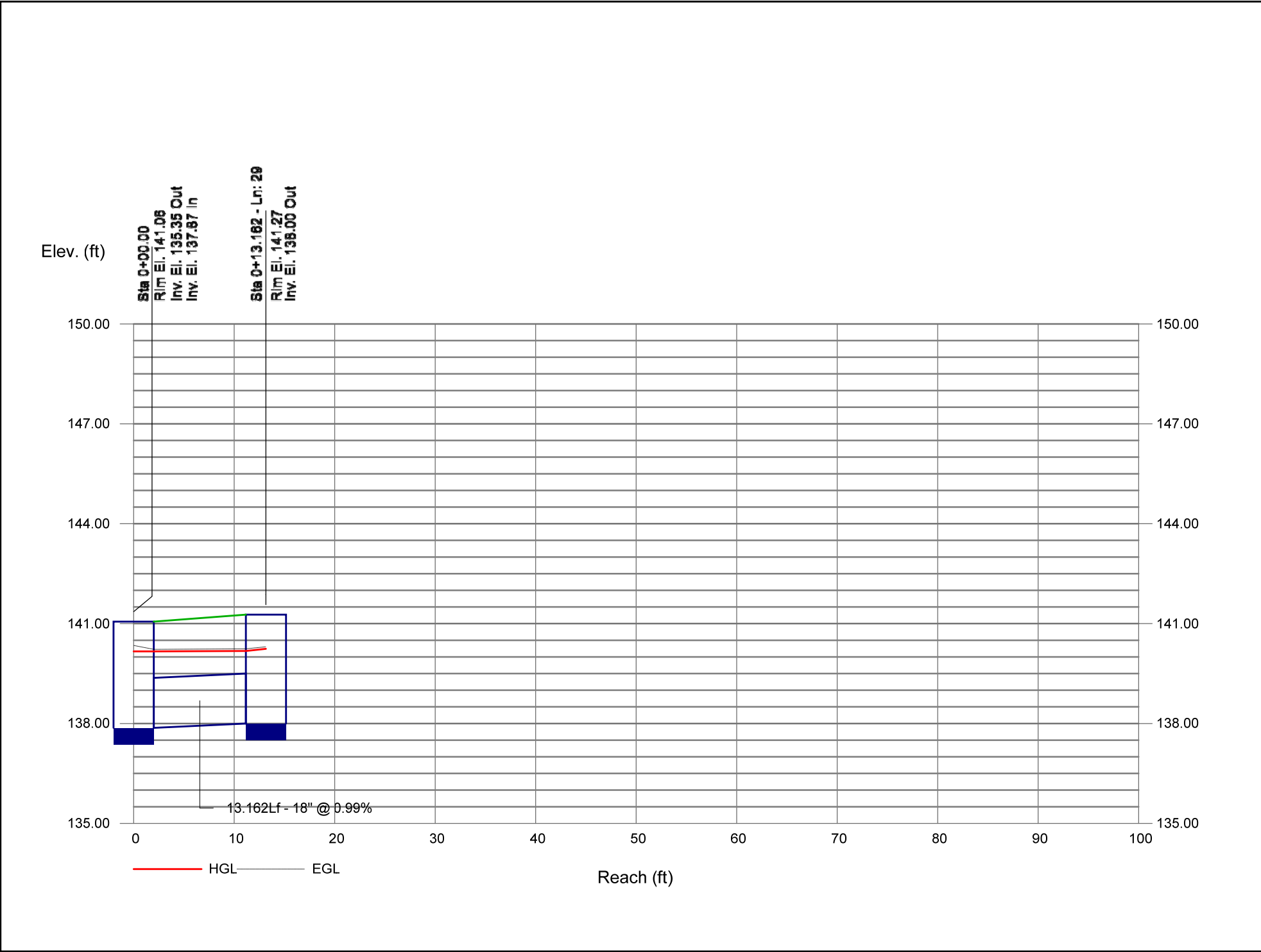
Storm Sewer Profile



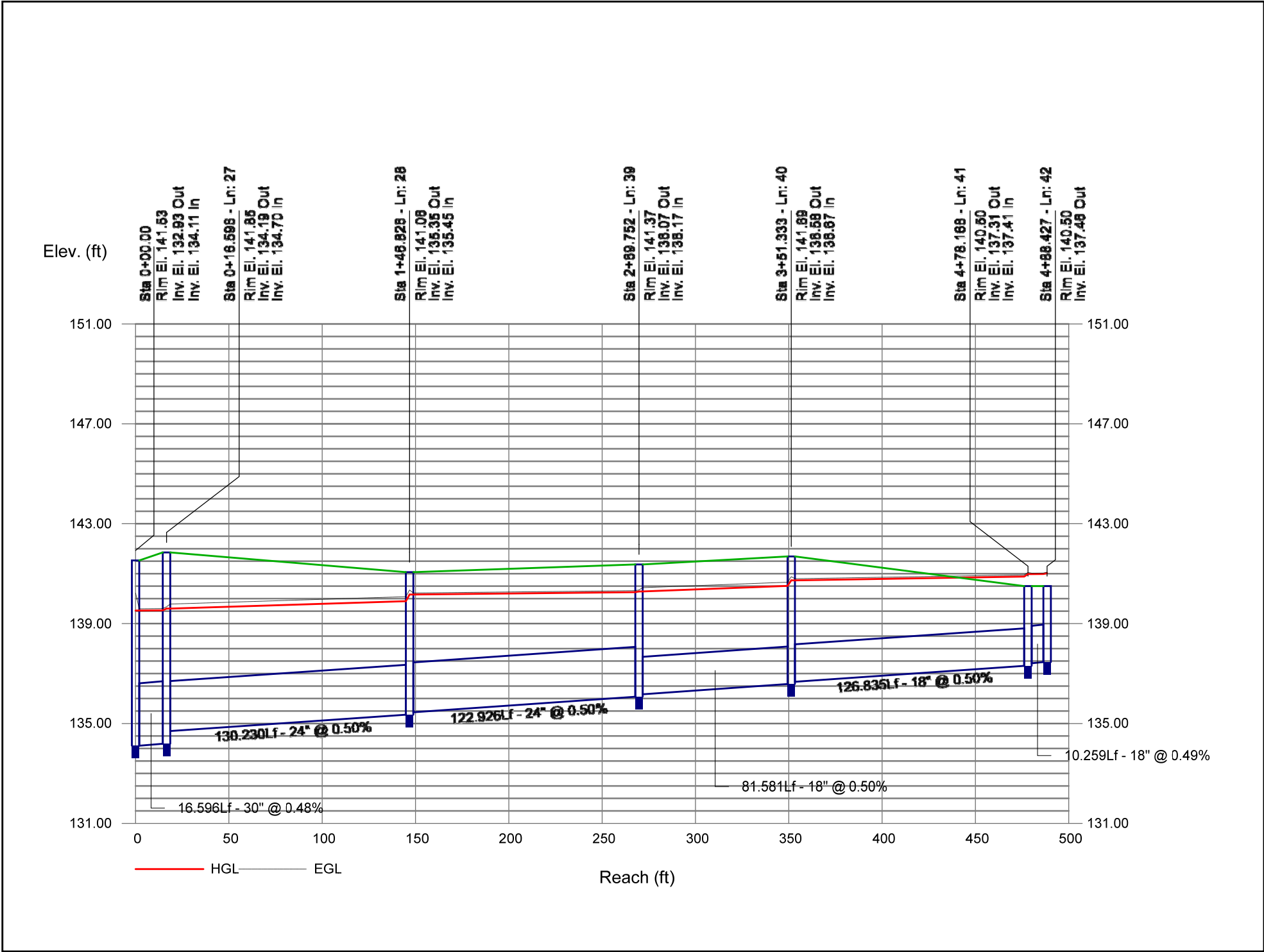
Storm Sewer Profile



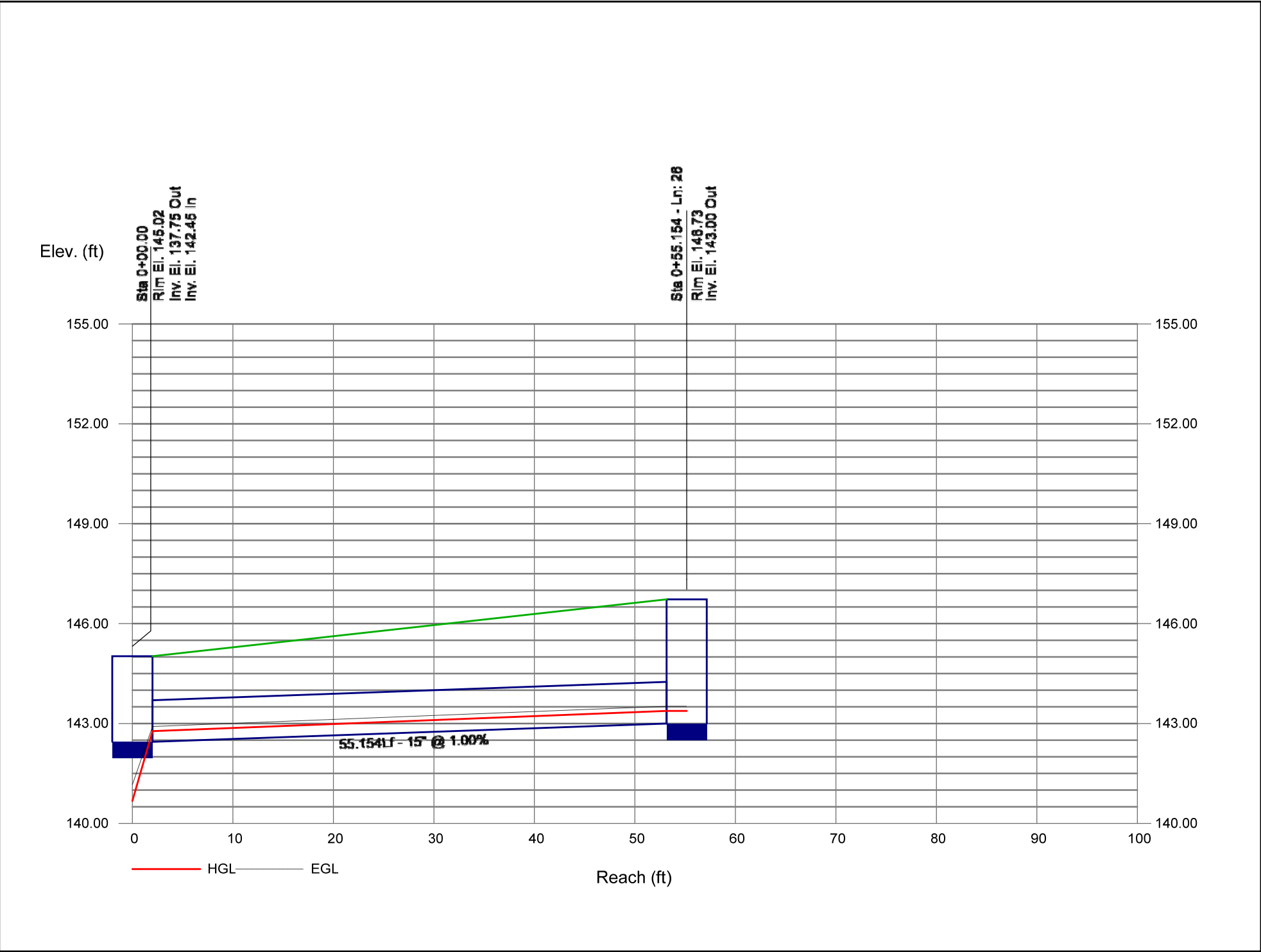
Storm Sewer Profile



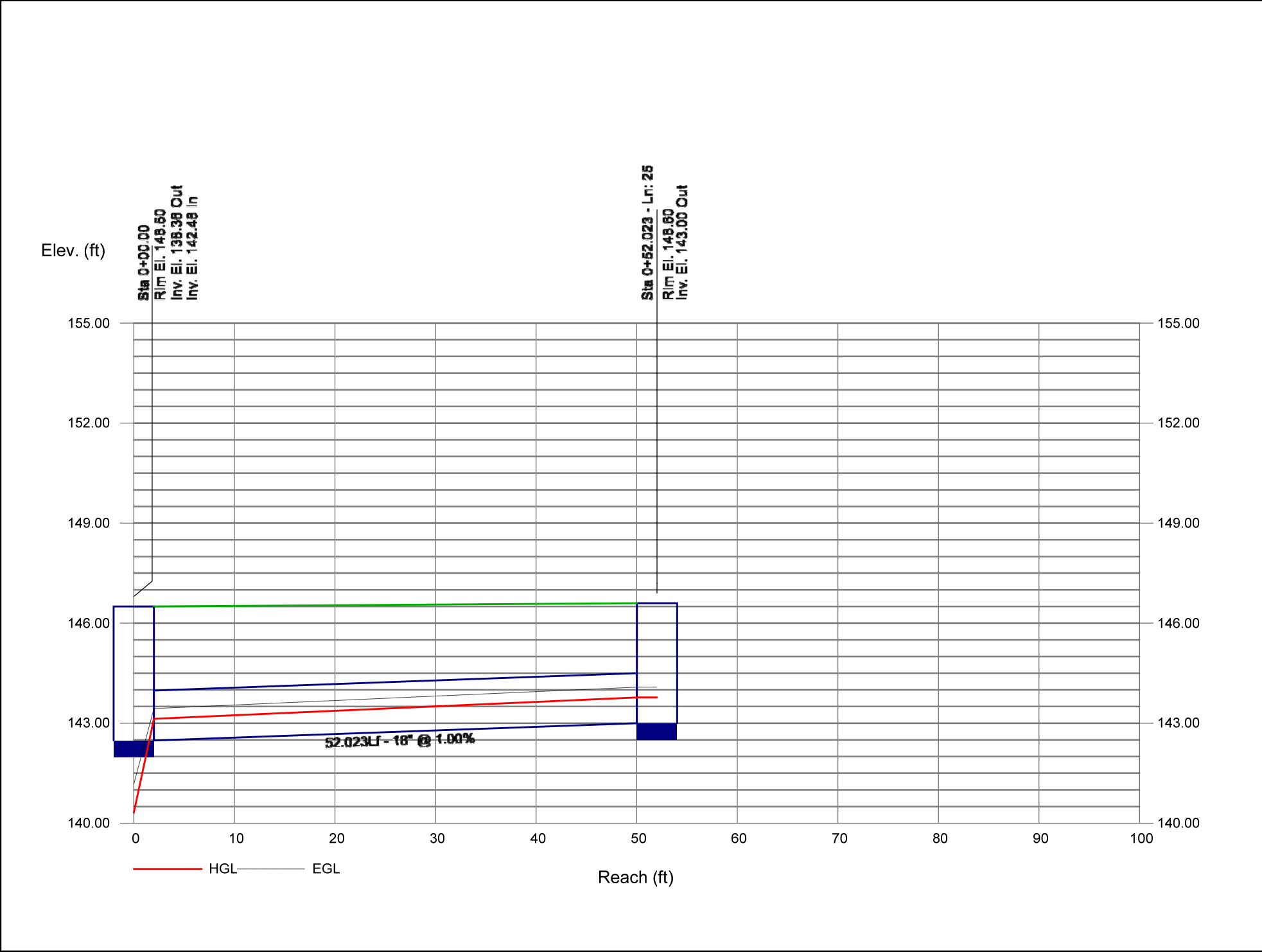
Storm Sewer Profile



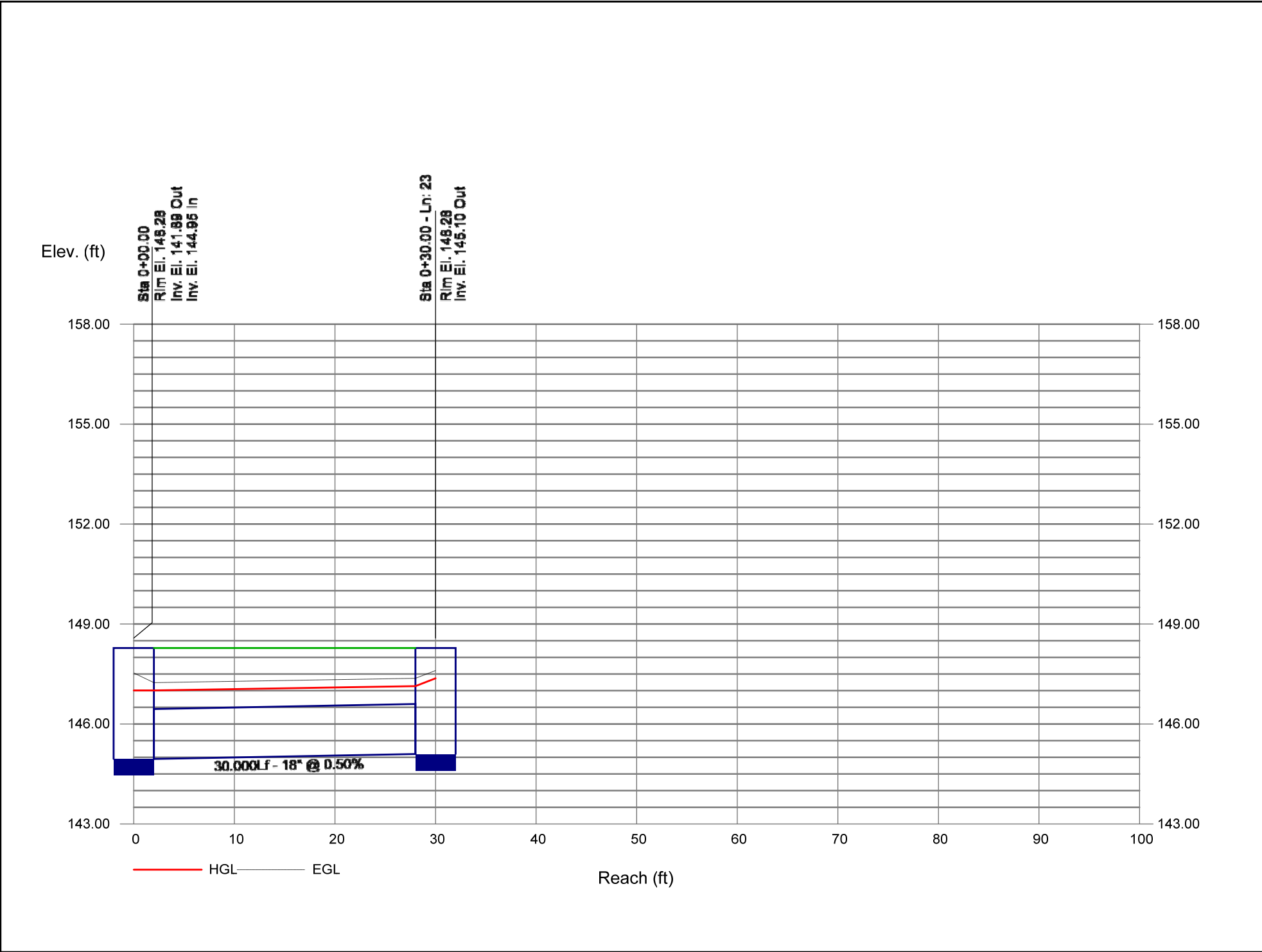
Storm Sewer Profile



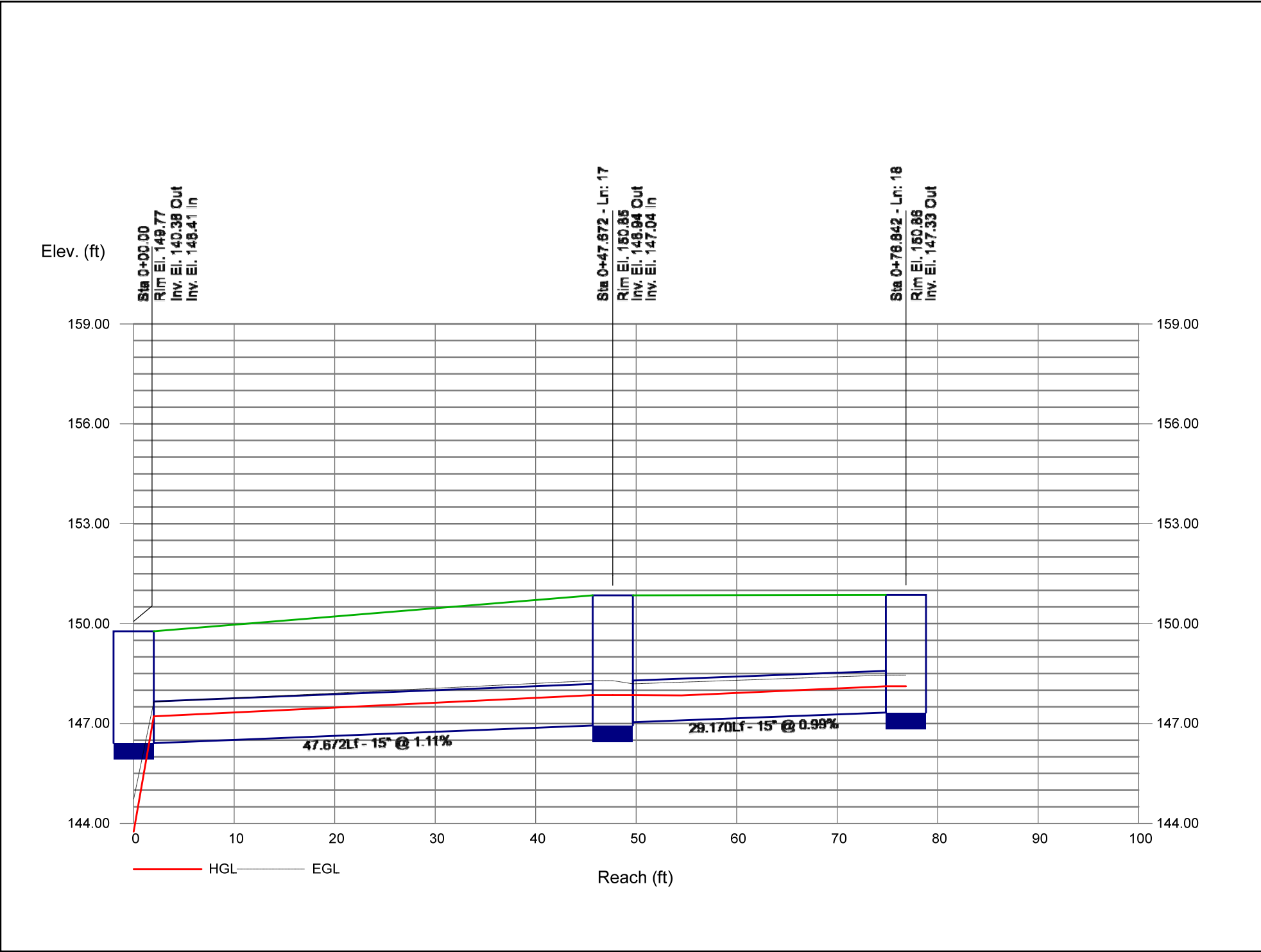
Storm Sewer Profile



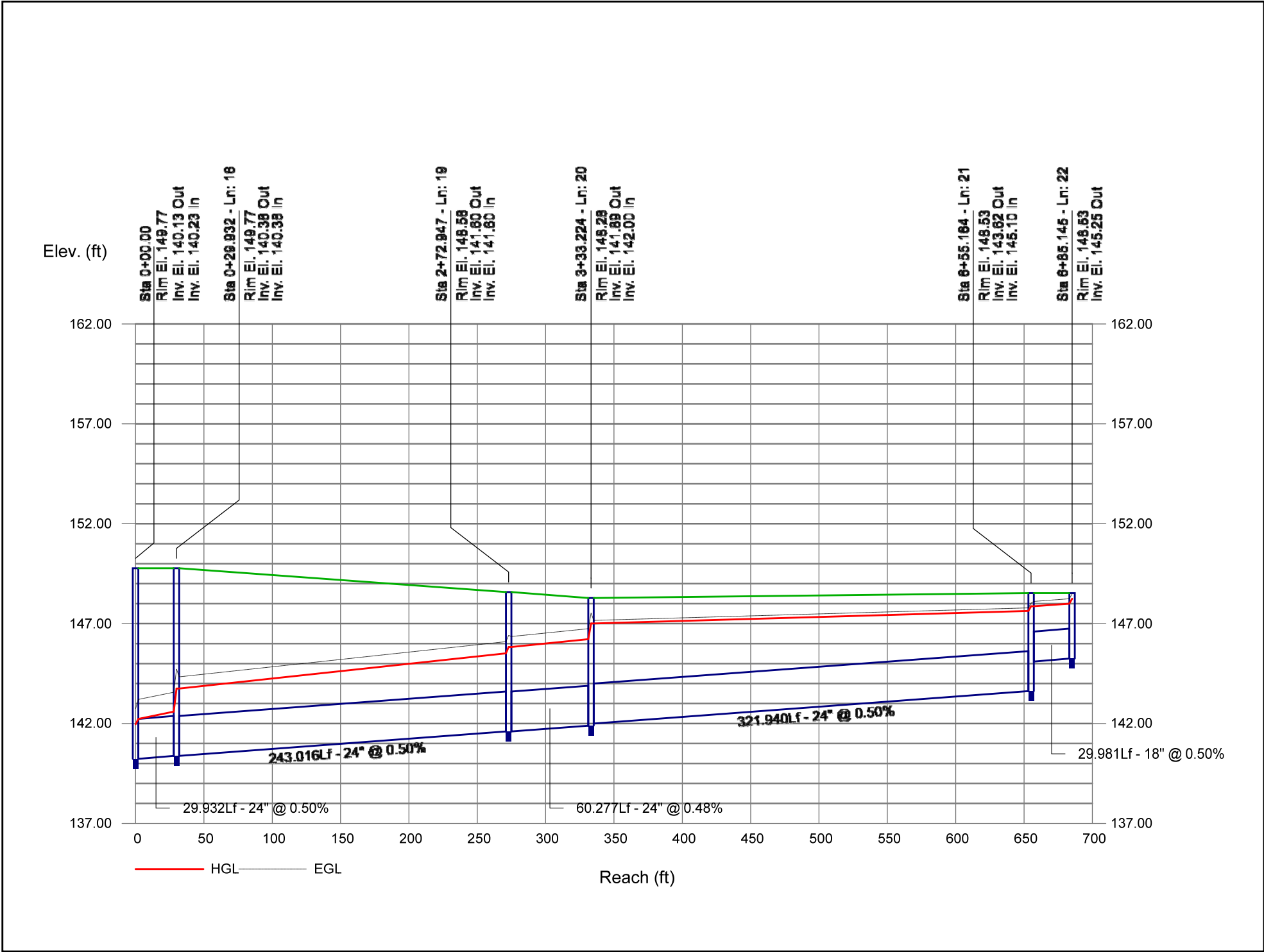
Storm Sewer Profile



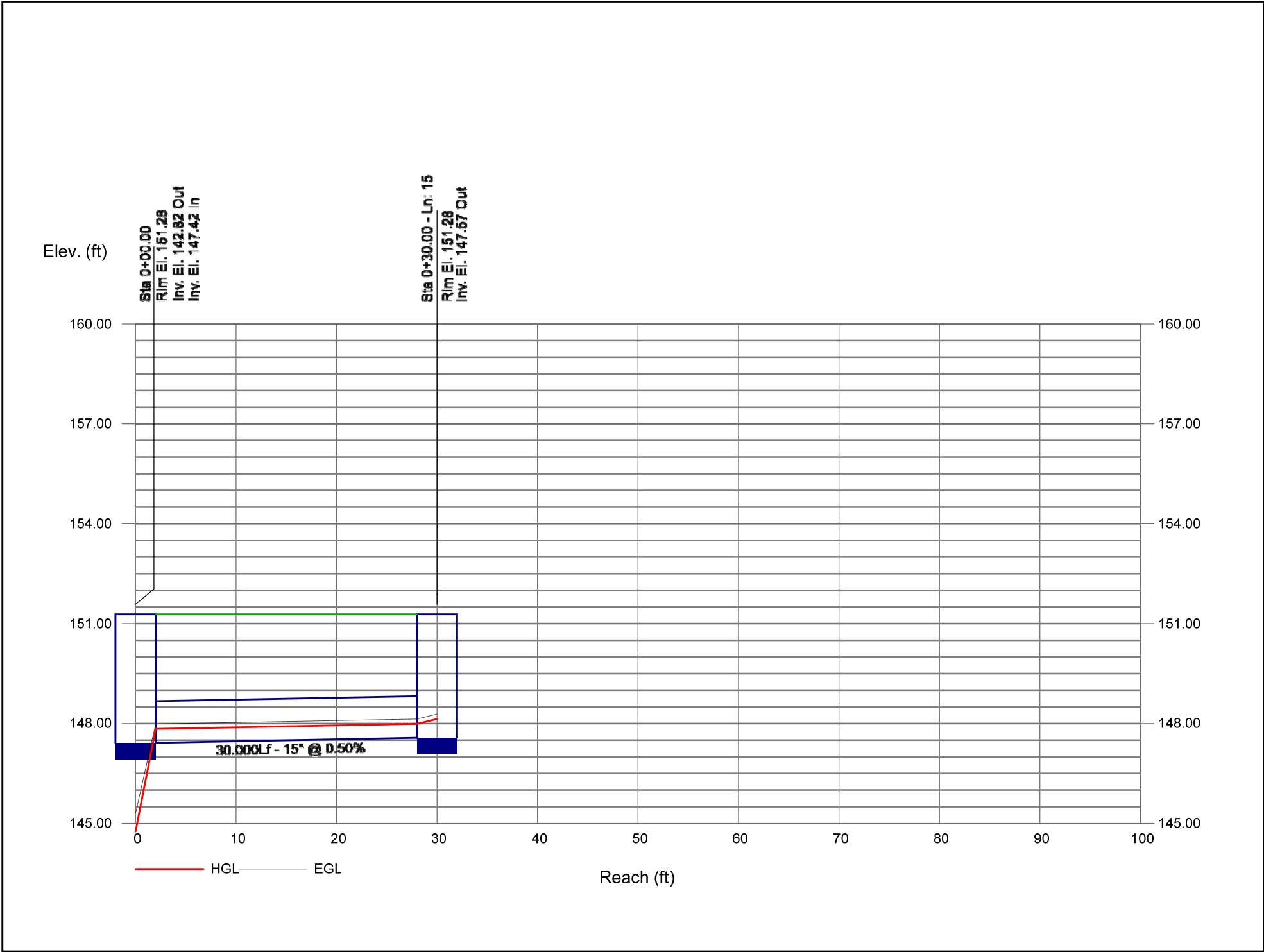
Storm Sewer Profile



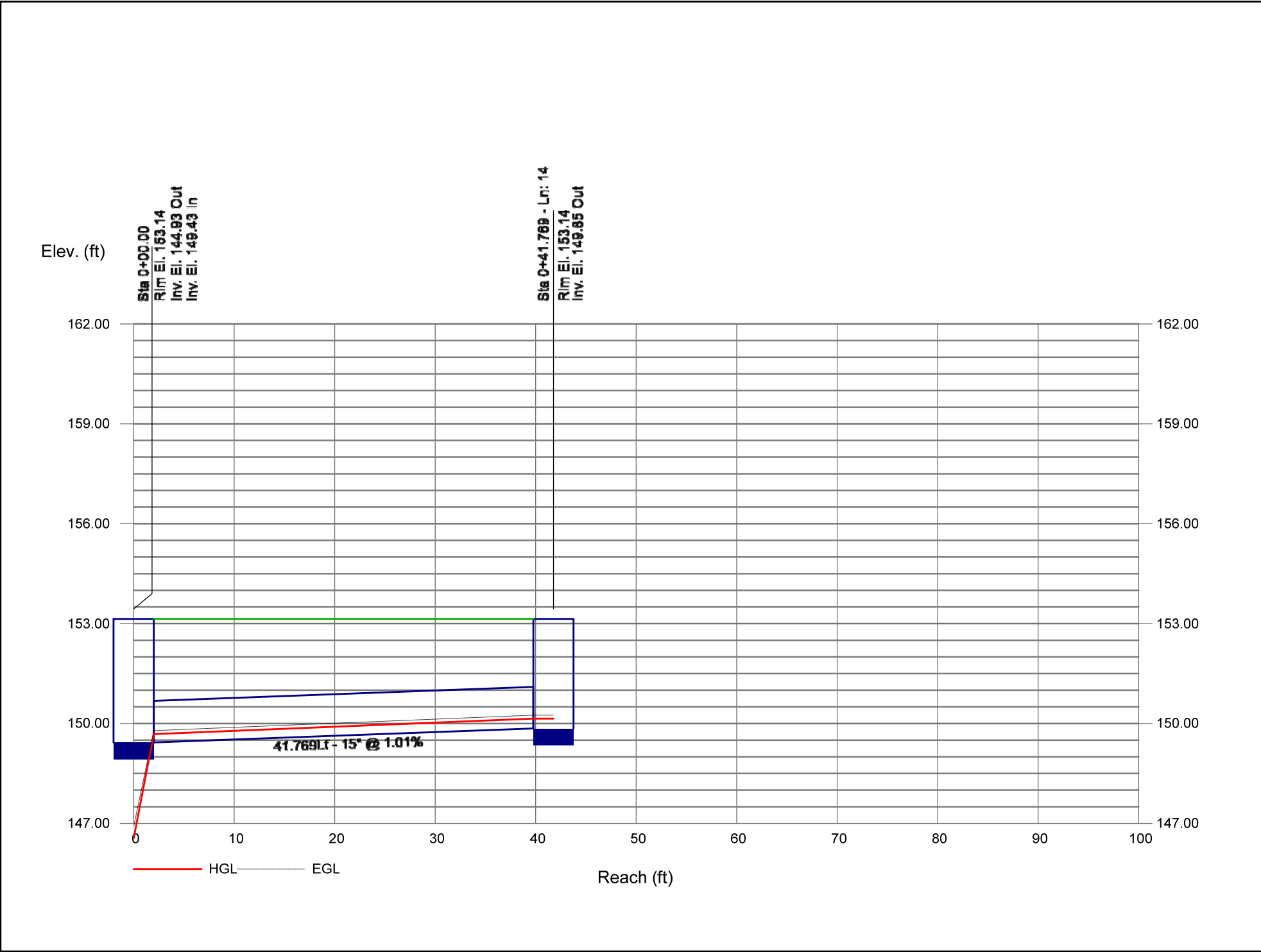
Storm Sewer Profile



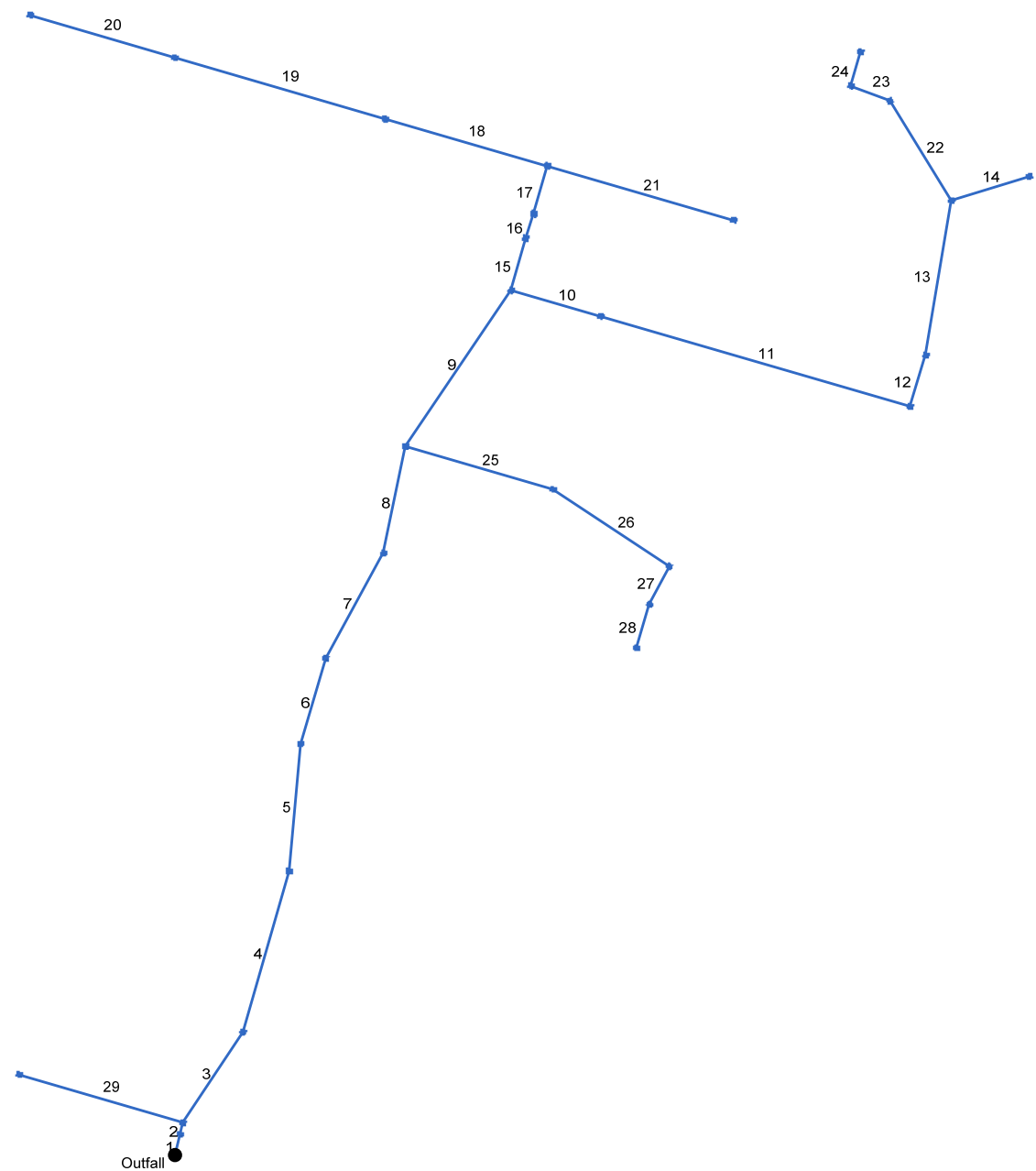
Storm Sewer Profile



Storm Sewer Profile



Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Tabulation

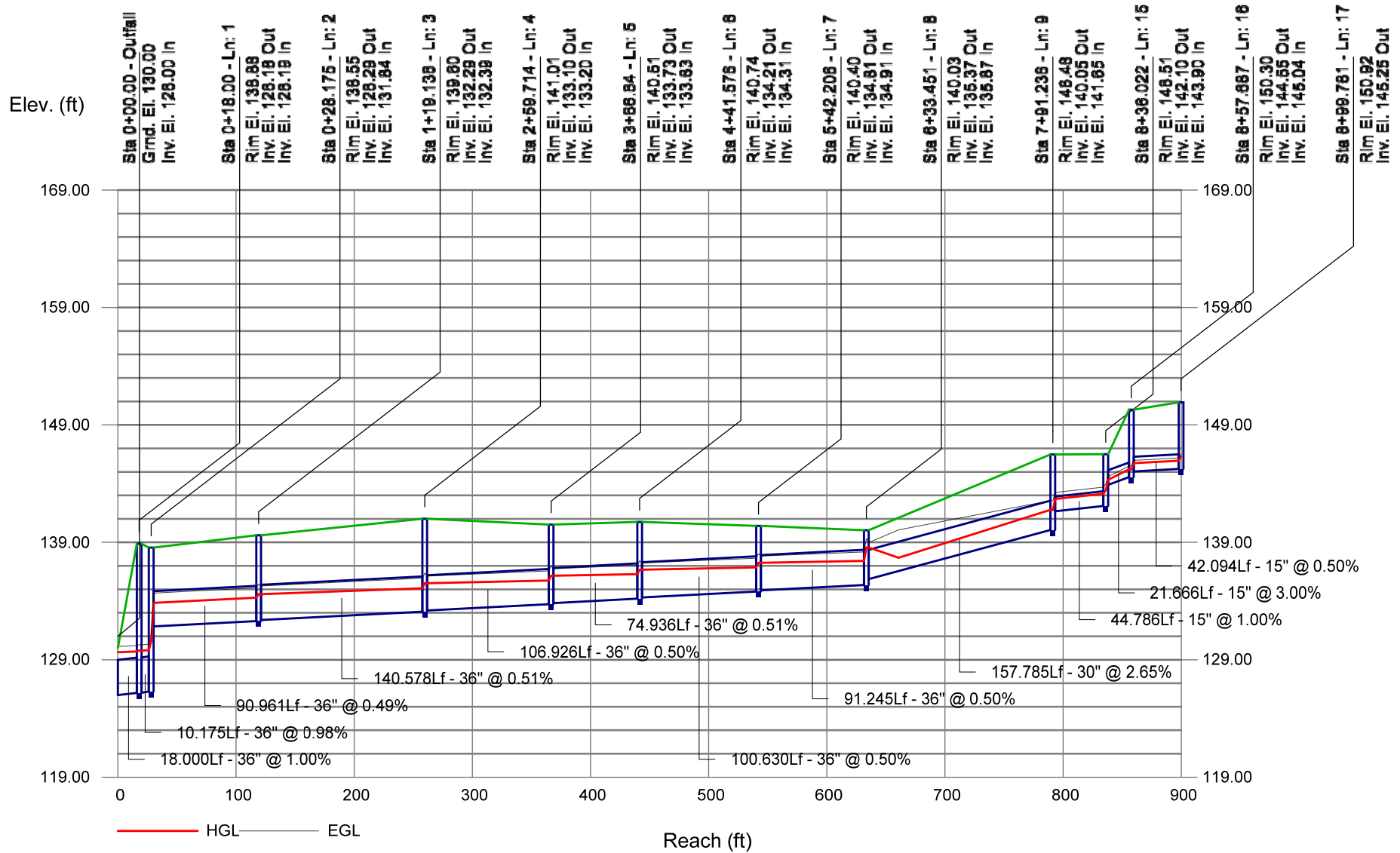
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	18.000	0.00	10.37	0.00	0.00	7.29	10.0	18.7	5.5	40.08	66.69	5.67	36	1.00	126.00	126.18	129.64	129.71	130.00	138.88	Pipe - (239) (1)
2	1	10.175	0.31	10.37	0.94	0.29	7.29	10.0	18.7	5.5	40.11	66.12	5.67	36	0.98	126.19	126.29	129.78	129.82	138.88	138.55	Pipe - (239)
3	2	90.961	0.00	9.70	0.00	0.00	6.66	10.0	18.5	5.5	36.82	46.91	7.35	36	0.49	131.84	132.29	133.84	134.29	138.55	139.60	Pipe - (220)
4	3	140.578	0.12	9.70	0.87	0.10	6.66	10.0	18.1	5.6	37.11	47.40	7.08	36	0.51	132.39	133.10	134.58	135.09	139.60	141.01	Pipe - (221)
5	4	106.926	0.07	9.58	0.95	0.07	6.56	10.0	17.9	5.6	36.76	46.95	6.76	36	0.50	133.20	133.73	135.52	135.75	141.01	140.51	Pipe - (222)
6	5	74.936	0.05	9.51	0.93	0.05	6.49	10.0	17.7	5.6	36.55	47.49	6.60	36	0.51	133.83	134.21	136.16	136.29	140.51	140.74	Pipe - (43)
7	6	100.630	0.15	9.46	0.88	0.13	6.44	10.0	17.4	5.7	36.51	47.01	6.60	36	0.50	134.31	134.81	136.67	136.87	140.74	140.40	Pipe - (42) (1)
8	7	91.245	0.60	9.31	0.89	0.53	6.31	10.0	17.2	5.7	35.97	47.35	6.52	36	0.50	134.91	135.37	137.26	137.42	140.40	140.03	Pipe - (42)
9	8	157.785	0.17	6.99	0.81	0.14	4.20	10.0	14.7	6.1	25.50	66.75	6.14	30	2.65	135.87	140.05	138.56	141.77	140.03	146.48	Pipe - (40)
10	9	78.202	0.20	4.51	0.89	0.18	2.98	10.0	12.1	6.5	19.46	28.96	6.05	30	0.50	140.15	140.54	141.77	142.04	146.48	147.25	Pipe - (39) (1)
11	10	269.259	0.14	4.31	0.86	0.12	2.81	10.0	11.3	6.7	18.72	28.93	5.74	30	0.50	140.64	141.98	142.35	143.45	147.25	149.96	Pipe - (39)
12	11	45.287	0.40	4.17	0.58	0.23	2.69	10.0	11.2	6.7	17.99	16.12	5.73	24	0.51	142.08	142.31	144.08	144.37	149.96	149.96	Pipe - (38)
13	12	131.115	0.34	3.77	0.95	0.32	2.45	10.0	10.8	6.8	16.64	16.05	5.30	24	0.50	142.41	143.07	144.62	145.33	149.96	150.00	Pipe - (140)
14	13	68.371	1.22	1.22	0.95	1.16	1.16	10.0	10.0	6.9	8.05	4.55	6.56	15	0.50	147.00	147.34	148.25	149.31	150.00	152.10	Pipe - (141)
15	9	44.786	0.99	2.31	0.62	0.61	1.08	10.0	14.6	6.1	6.56	6.47	6.01	15	1.00	141.65	142.10	142.69	143.14	146.48	146.51	Pipe - (138)
16	15	21.666	0.03	1.32	0.35	0.01	0.46	10.0	14.5	6.1	2.82	11.18	5.88	15	3.00	143.90	144.55	144.33	145.22	146.51	150.30	Pipe - (137)
17	16	42.094	0.90	1.29	0.35	0.32	0.45	10.0	14.3	6.1	2.77	4.56	3.90	15	0.50	145.04	145.25	145.74	145.95	150.30	150.92	Pipe - (136)
18	17	140.971	0.11	0.29	0.35	0.04	0.10	10.0	12.6	6.4	0.65	4.55	1.35	15	0.50	145.35	146.05	146.31	146.43	150.92	150.94	Pipe - (135)
19	18	183.178	0.09	0.18	0.35	0.03	0.06	10.0	11.1	6.7	0.42	4.58	2.06	15	0.50	146.15	147.07	146.47	147.32	150.94	150.94	Pipe - (134)
20	19	126.324	0.09	0.09	0.35	0.03	0.03	10.0	10.0	6.9	0.22	4.56	1.91	15	0.50	147.17	147.80	147.36	147.99	150.94	150.94	Pipe - (133)
21	17	162.089	0.10	0.10	0.35	0.04	0.04	10.0	10.0	6.9	0.24	4.56	1.98	15	0.50	146.99	147.80	147.19	148.00	150.92	150.94	Pipe - (139)
22	13	98.173	0.00	2.21	0.00	0.00	0.97	10.0	10.4	6.9	6.68	7.42	3.78	18	0.50	143.17	143.66	146.02	146.42	150.00	149.84	Pipe - (36)
Project File: System B1.stm																Number of lines: 29				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Tabulation

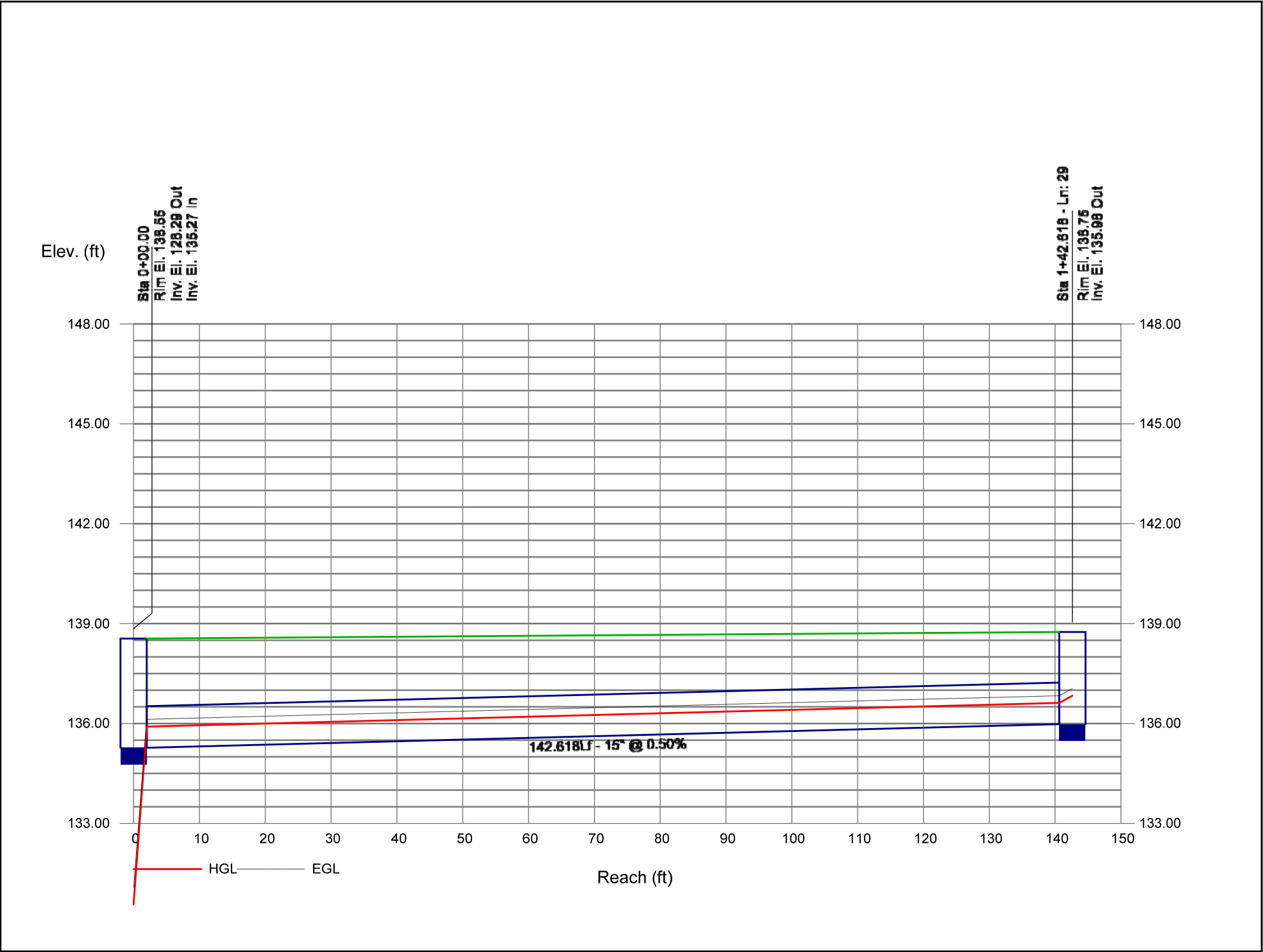
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
23	22	35.144	0.86	2.21	0.44	0.38	0.97	10.0	10.2	6.9	6.71	7.52	3.80	18	0.51	143.76	143.94	146.57	146.71	149.84	148.10	Pipe - (251)
24	23	29.551	1.35	1.35	0.44	0.59	0.59	10.0	10.0	6.9	4.13	7.23	2.33	18	0.47	144.04	144.18	147.05	147.09	148.10	148.10	Pipe - (35)
25	8	128.500	1.10	1.72	0.92	1.01	1.58	10.0	16.8	5.8	9.08	7.41	5.14	18	0.50	136.52	137.16	138.56	139.52	140.03	140.04	Pipe - (41)
26	25	117.084	0.58	0.62	0.91	0.53	0.57	10.0	15.8	5.9	3.34	7.45	1.89	18	0.50	137.26	137.85	139.74	139.85	140.04	142.03	Pipe - (173)
27	26	36.028	0.02	0.04	0.95	0.02	0.04	10.0	13.8	6.2	0.24	2.73	0.30	12	0.50	138.35	138.53	139.94	139.94	142.03	141.82	Pipe - (244)
28	27	38.042	0.02	0.02	0.95	0.02	0.02	10.0	10.0	6.9	0.13	2.73	0.17	12	0.50	138.63	138.82	139.94	139.94	141.82	141.82	Pipe - (245)
29	2	142.618	0.36	0.36	0.94	0.34	0.34	10.0	10.0	6.9	2.35	4.56	3.74	15	0.50	135.27	135.98	135.91	136.62	138.55	138.75	Pipe - (26)
Project File: System B1.stm																Number of lines: 29				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Profile

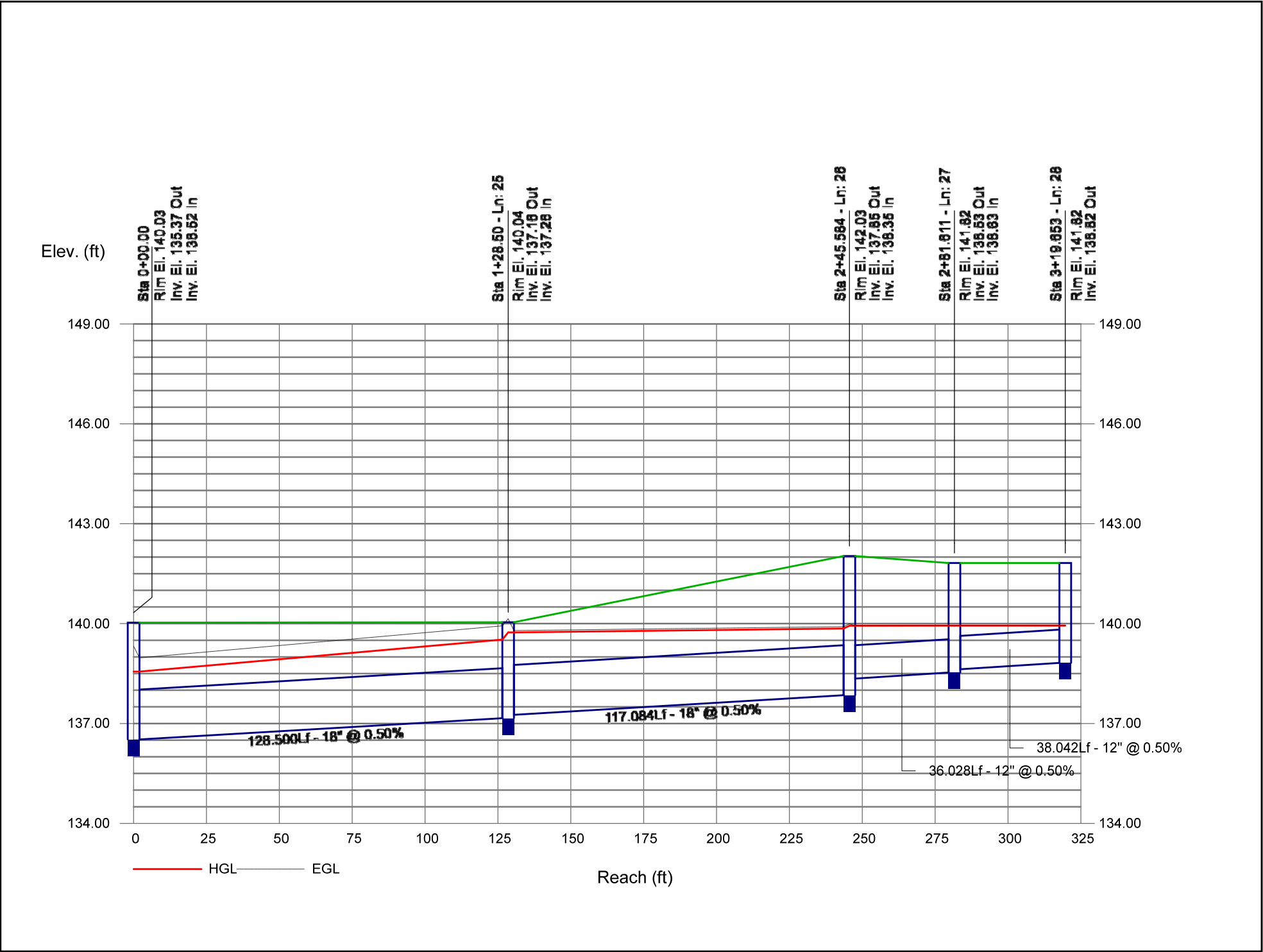
Proj. file: System B1.stm



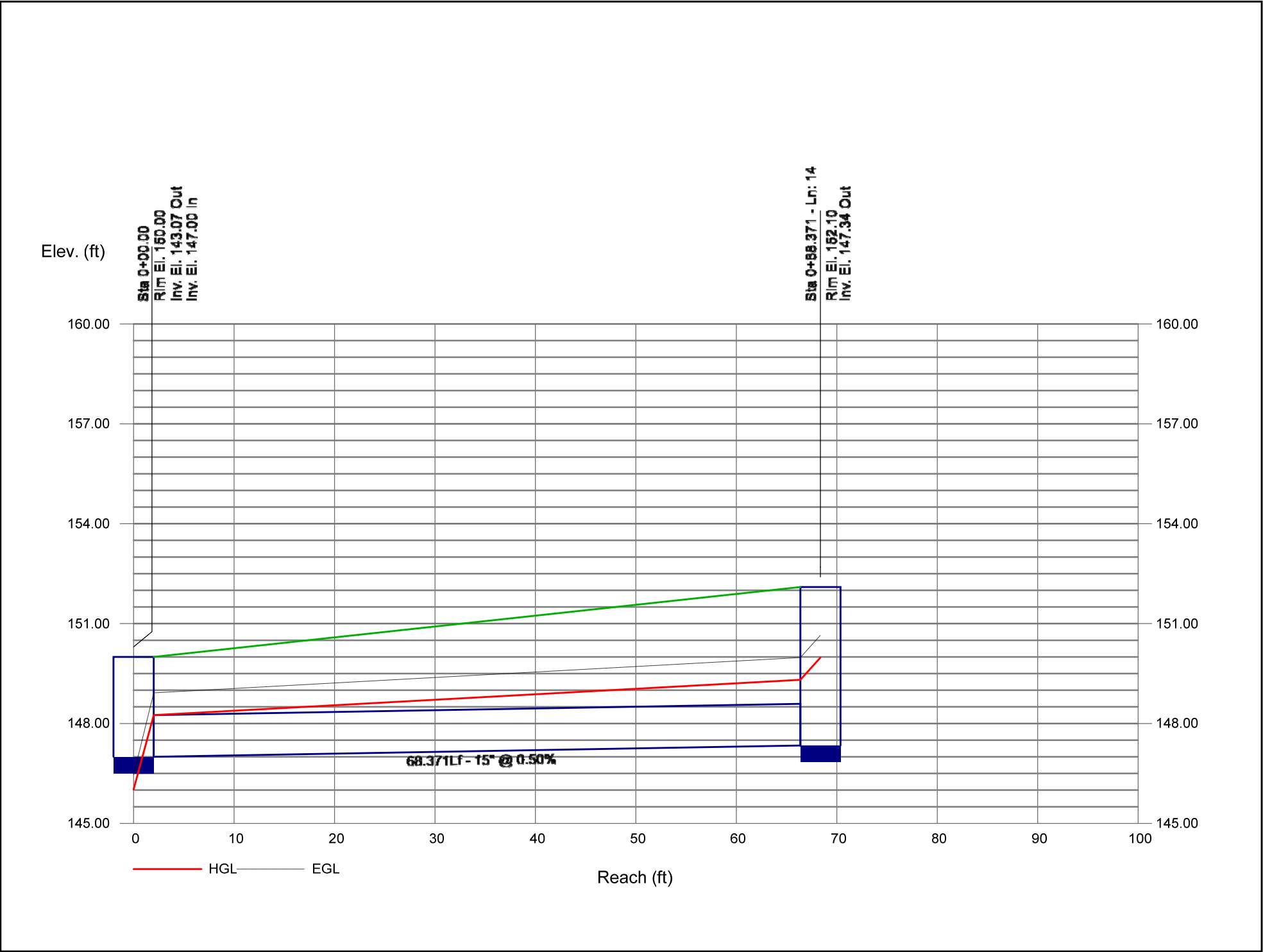
Storm Sewer Profile



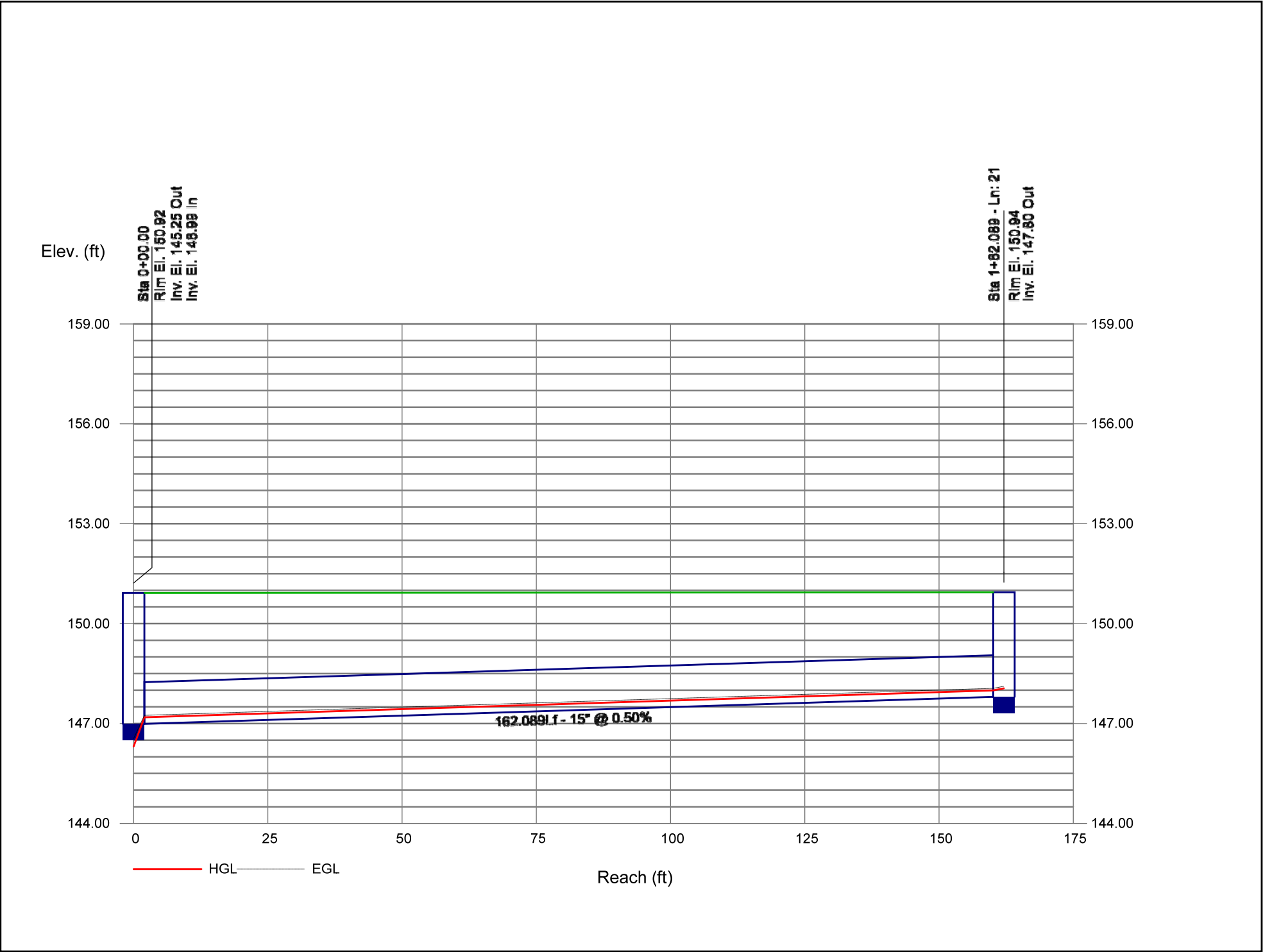
Storm Sewer Profile



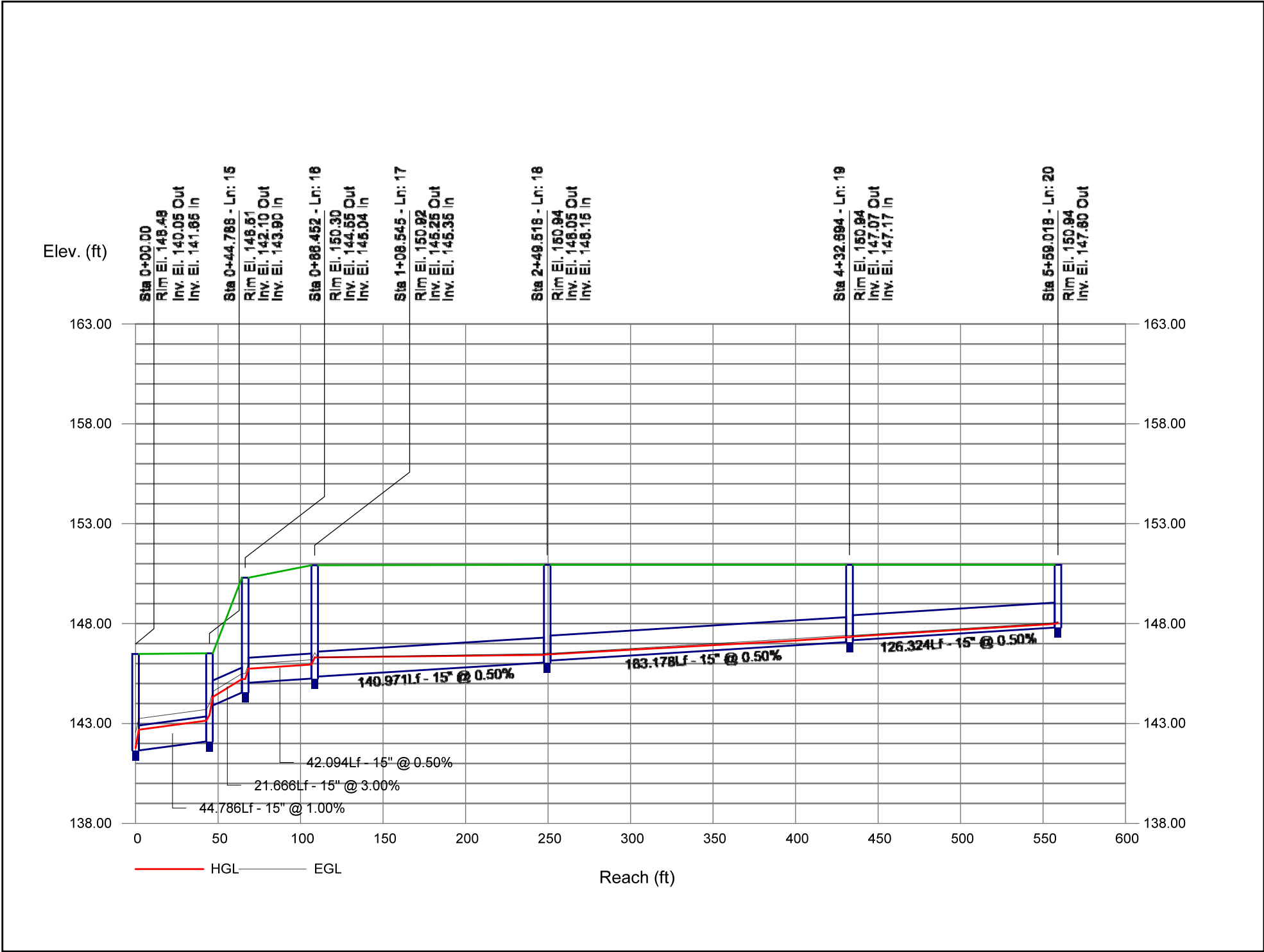
Storm Sewer Profile



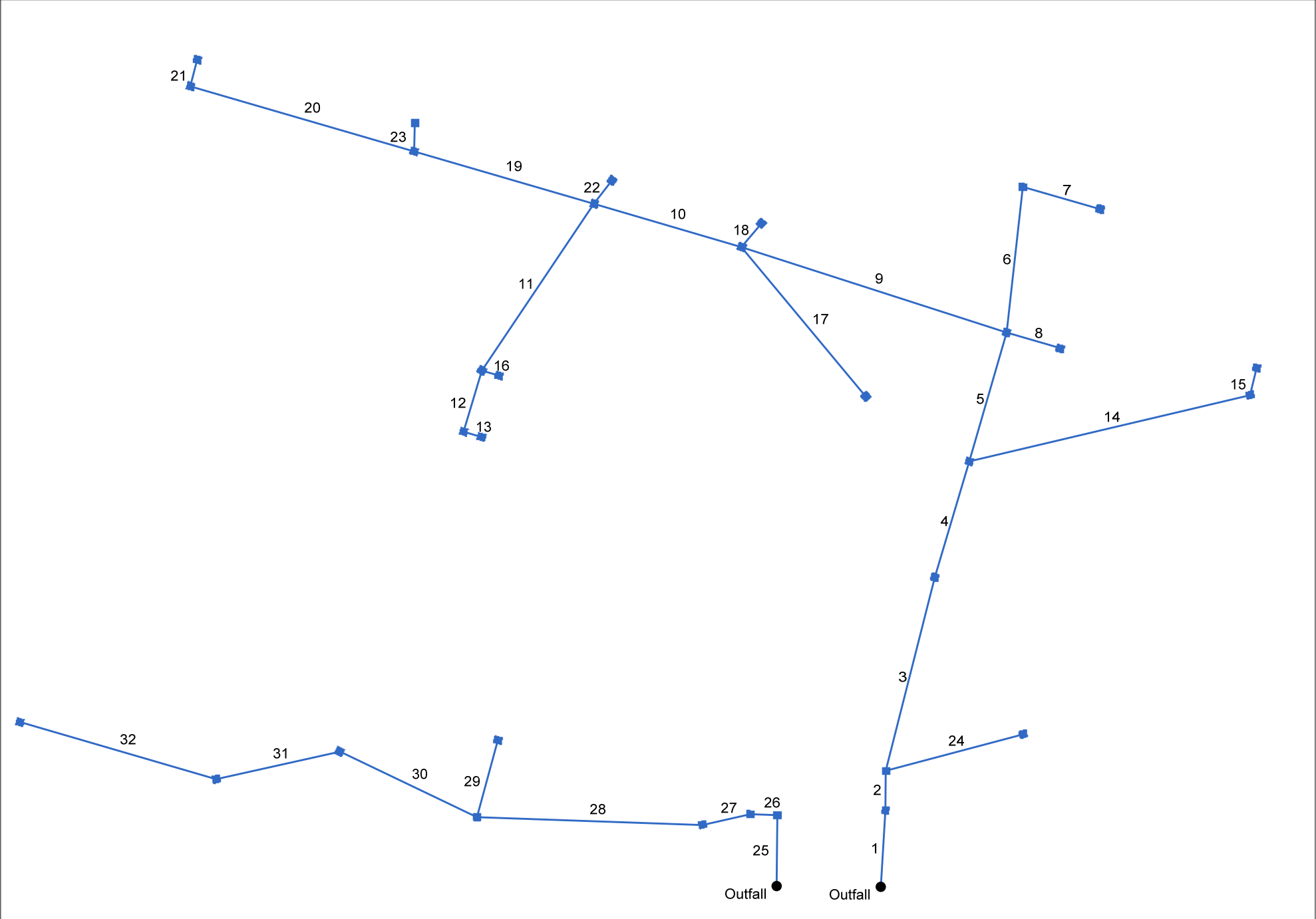
Storm Sewer Profile



Storm Sewer Profile



Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: System B2.stm	Number of lines: 32	Date: 4/21/2022
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Storm Sewer Tabulation

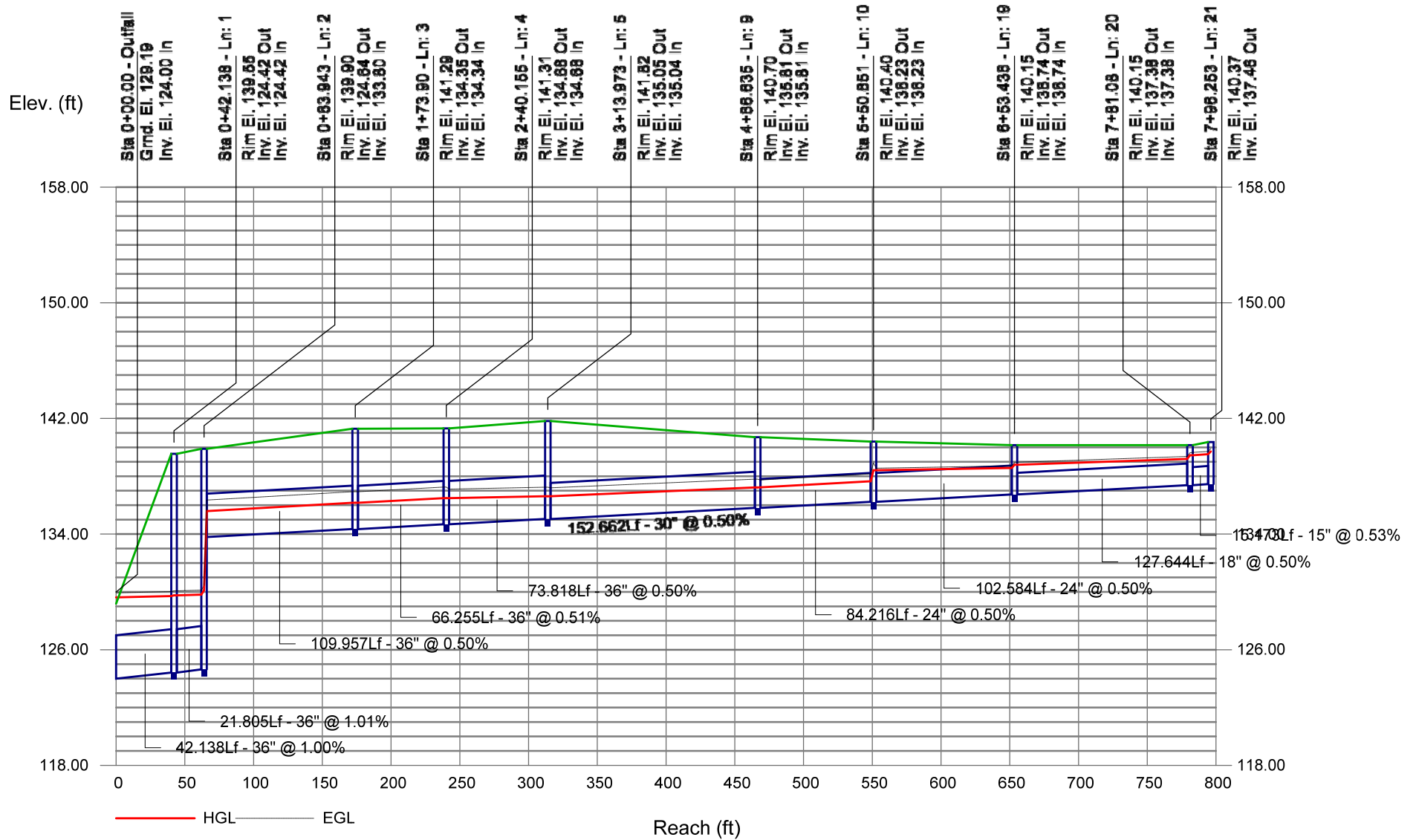
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	42.138	0.00	5.57	0.00	0.00	5.00	10.0	13.2	6.3	31.62	66.58	4.47	36	1.00	124.00	124.42	129.62	129.71	129.19	139.55	Pipe - (175) (1)
2	1	21.805	0.00	5.57	0.00	0.00	5.00	10.0	13.1	6.3	31.69	66.99	4.48	36	1.01	124.42	124.64	129.76	129.81	139.55	139.90	Pipe - (175)
3	2	109.957	0.06	5.48	0.95	0.06	4.91	10.0	12.8	6.4	31.38	47.17	7.08	36	0.50	133.80	134.35	135.59	136.16	139.90	141.29	Pipe - (51)
4	3	66.255	0.09	5.42	0.96	0.09	4.85	10.0	12.7	6.4	31.15	47.78	6.96	36	0.51	134.34	134.68	136.16	136.49	141.29	141.31	Pipe - (50)
5	4	73.818	0.11	3.96	0.85	0.09	3.67	10.0	12.5	6.5	23.71	47.22	5.84	36	0.50	134.68	135.05	136.49	136.62	141.31	141.82	Pipe - (49)
6	5	80.619	0.78	0.90	0.95	0.74	0.85	10.0	10.2	6.9	5.89	6.47	5.84	15	1.00	138.78	139.59	139.72	140.57	141.82	143.62	Pipe - (171)
7	6	44.000	0.12	0.12	0.94	0.11	0.11	10.0	10.0	6.9	0.78	6.46	3.19	15	1.00	140.58	141.02	140.87	141.37	143.62	144.00	Pipe - (172)
8	5	30.500	0.06	0.06	0.89	0.05	0.05	10.0	10.0	6.9	0.37	6.40	2.57	15	0.98	138.52	138.82	138.72	139.06	141.82	141.82	Pipe - (48)
9	5	152.662	0.19	2.89	0.91	0.17	2.67	10.0	12.0	6.5	17.47	29.13	5.73	30	0.50	135.04	135.81	136.62	137.22	141.82	140.70	Pipe - (47) (1)
10	9	84.216	0.19	2.25	0.91	0.17	2.08	10.0	11.8	6.6	13.70	15.97	5.72	24	0.50	135.81	136.23	137.24	137.65	140.70	140.40	Pipe - (47)
11	10	110.328	0.02	0.05	0.95	0.02	0.05	10.0	10.5	6.8	0.33	2.72	1.40	12	0.50	137.63	138.18	138.42	138.41	140.40	141.85	Pipe - (249)
12	11	35.148	0.01	0.02	0.95	0.01	0.02	10.0	10.1	6.9	0.13	2.76	1.79	12	0.51	138.28	138.46	138.43	138.61	141.85	141.85	Pipe - (247)
13	12	10.143	0.01	0.01	0.95	0.01	0.01	10.0	10.0	6.9	0.07	2.71	1.33	12	0.49	138.56	138.61	138.68	138.72	141.85	141.85	Pipe - (248)
14	4	157.997	0.37	1.37	0.93	0.34	1.09	10.0	10.1	6.9	7.58	7.43	4.78	18	0.50	137.17	137.96	138.43	139.22	141.31	141.00	Pipe - (69)
15	14	15.244	1.00	1.00	0.75	0.75	0.75	10.0	10.0	6.9	5.21	8.59	4.25	15	1.77	138.23	138.50	139.70	139.80	141.00	141.75	Pipe - (68)
16	11	9.673	0.01	0.01	0.95	0.01	0.01	10.0	10.0	6.9	0.07	2.77	1.26	12	0.52	138.28	138.33	138.41	138.44	141.85	141.90	Pipe - (246)
17	9	106.612	0.14	0.14	0.93	0.13	0.13	10.0	10.0	6.9	0.90	6.47	3.33	15	1.00	136.93	138.00	137.25	138.37	140.70	141.10	Pipe - (188)
18	9	16.869	0.31	0.31	0.93	0.29	0.29	10.0	10.0	6.9	2.00	6.48	4.19	15	1.01	137.33	137.50	137.81	138.06	140.70	140.71	Pipe - (170)
19	10	102.584	0.28	1.49	0.94	0.26	1.39	10.0	10.7	6.8	9.42	15.95	3.06	24	0.50	136.23	136.74	138.42	138.57	140.40	140.15	Pipe - (46)
20	19	127.644	0.25	0.92	0.91	0.23	0.85	10.0	10.1	6.9	5.89	7.44	3.34	18	0.50	136.74	137.38	138.80	139.20	140.15	140.15	Pipe - (45)
21	20	15.173	0.67	0.67	0.93	0.62	0.62	10.0	10.0	6.9	4.33	4.69	3.53	15	0.53	137.38	137.46	139.46	139.53	140.15	140.37	Pipe - (44)
22	10	16.097	0.52	0.52	0.91	0.47	0.47	10.0	10.0	6.9	3.29	6.44	3.67	15	0.99	137.34	137.50	138.42	138.23	140.40	140.70	Pipe - (53)
Project File: System B2.stm																Number of lines: 32				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Tabulation

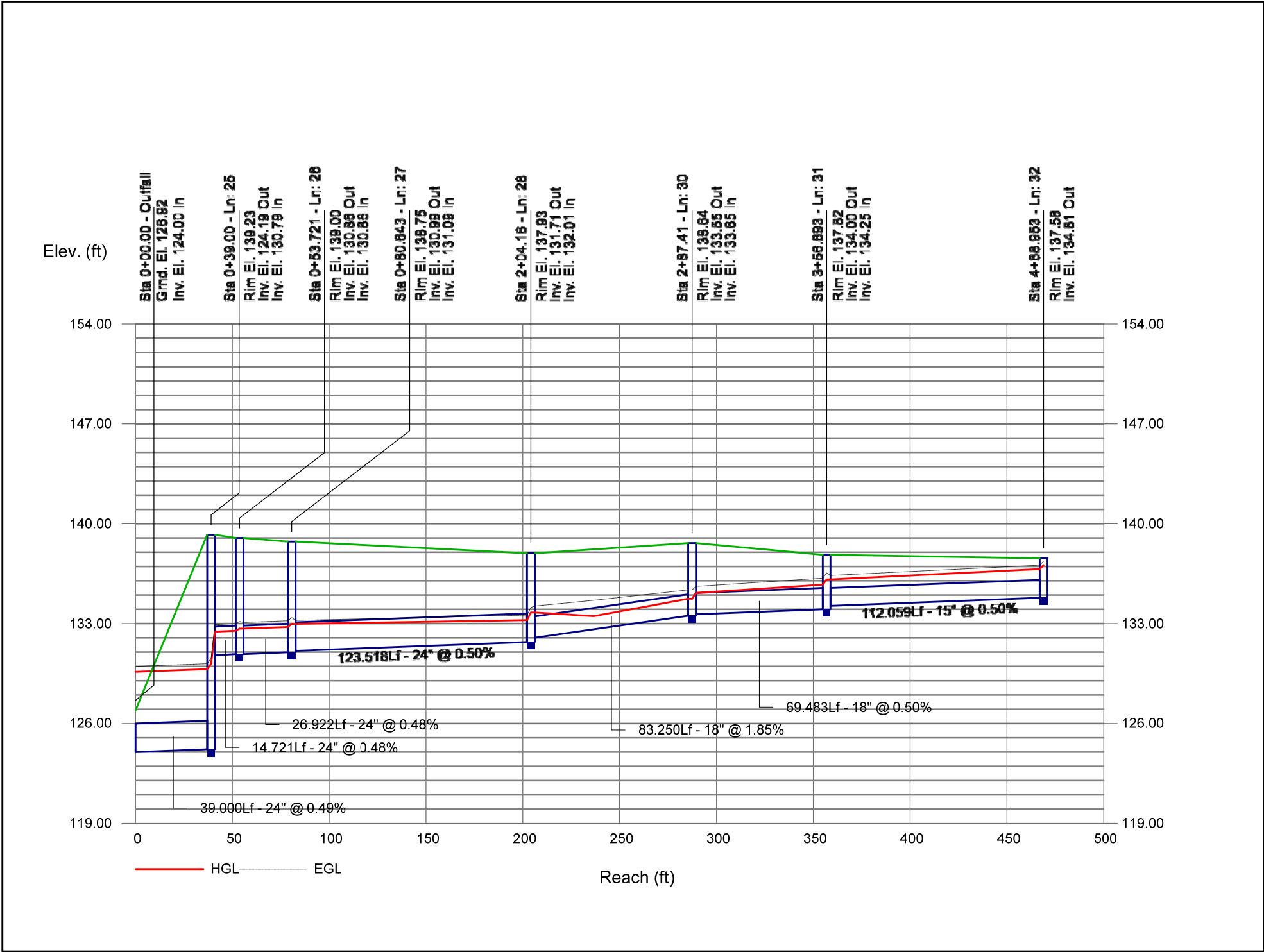
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
23	19	15.744	0.29	0.29	0.94	0.27	0.27	10.0	10.0	6.9	1.89	6.51	1.54	15	1.02	136.84	137.00	138.80	138.81	140.15	140.38	Pipe - (54)
24	2	78.010	0.09	0.09	0.95	0.09	0.09	10.0	10.0	6.9	0.59	7.91	3.20	15	1.50	136.66	137.83	136.89	138.13	139.90	141.53	Pipe - (127)
25	End	39.000	0.00	2.60	0.00	0.00	2.35	10.0	11.5	6.6	15.60	15.79	4.97	24	0.49	124.00	124.19	129.62	129.81	126.92	139.23	Pipe - (243)
26	25	14.721	0.00	2.60	0.00	0.00	2.35	10.0	11.4	6.6	15.62	15.60	5.66	24	0.48	130.79	130.86	132.43	132.50	139.23	139.00	Pipe - (242)
27	26	26.922	0.61	2.60	0.88	0.54	2.35	10.0	11.4	6.7	15.66	15.72	5.30	24	0.48	130.86	130.99	132.65	132.76	139.00	138.75	Pipe - (34)
28	27	123.518	0.16	1.99	0.77	0.12	1.81	10.0	10.9	6.8	12.25	16.02	4.37	24	0.50	131.09	131.71	132.98	133.24	138.75	137.93	Pipe - (155)
29	28	44.011	0.31	0.31	0.94	0.29	0.29	10.0	10.0	6.9	2.02	6.46	4.20	15	1.00	135.16	135.60	135.64	136.17	137.93	138.78	Pipe - (154)
30	28	83.250	0.00	1.52	0.00	0.00	1.40	10.0	10.7	6.8	9.52	14.28	5.86	18	1.85	132.01	133.55	133.78	134.74	137.93	138.64	Pipe - (33)
31	30	69.483	0.71	1.52	0.92	0.65	1.40	10.0	10.4	6.9	9.58	7.45	5.42	18	0.50	133.65	134.00	135.15	135.73	138.64	137.82	Pipe - (30)
32	31	112.059	0.81	0.81	0.92	0.75	0.75	10.0	10.0	6.9	5.18	4.56	4.22	15	0.50	134.25	134.81	136.10	136.82	137.82	137.58	Pipe - (29)
Project File: System B2.stm																Number of lines: 32				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Profile

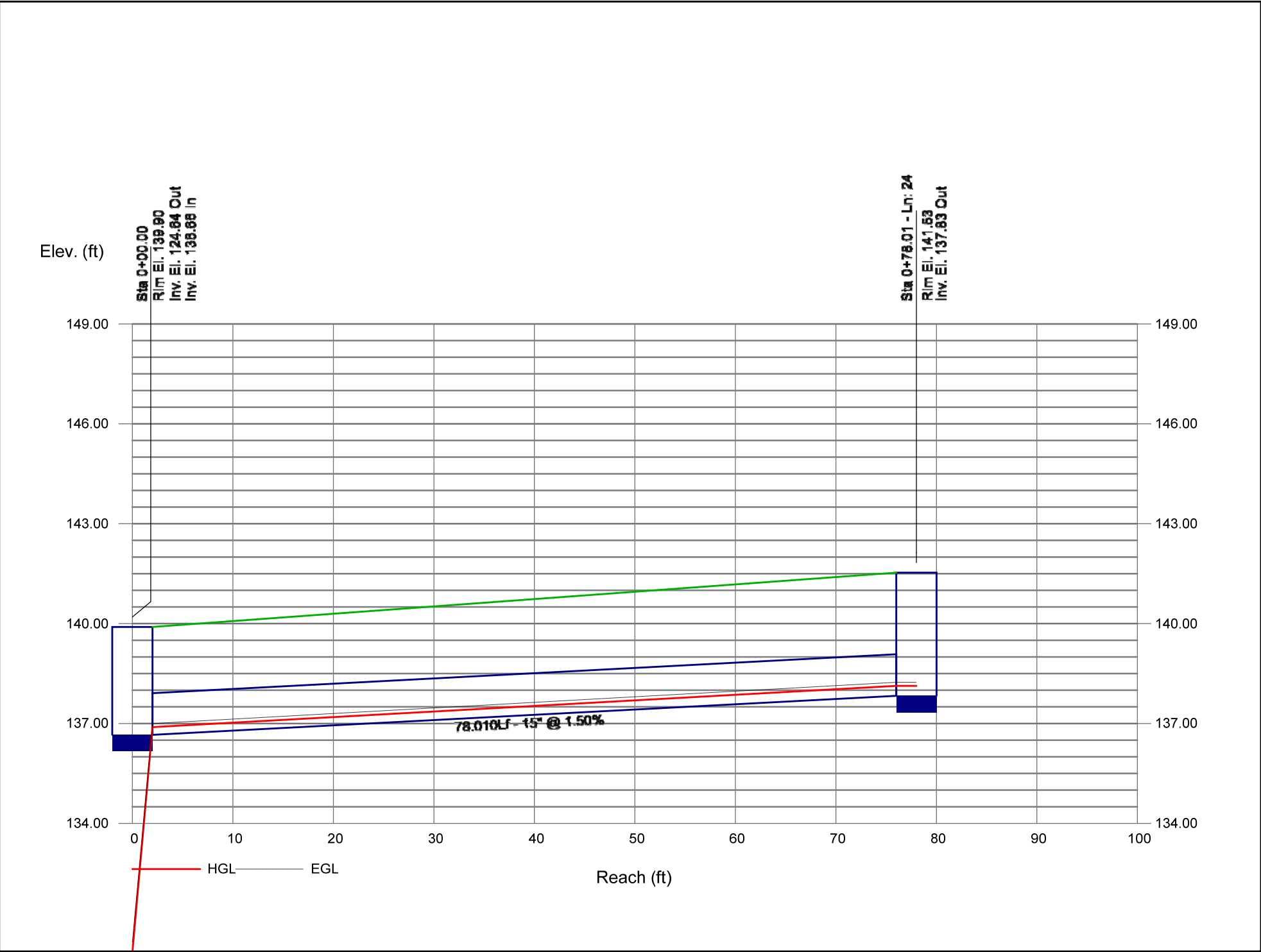
Proj. file: System B2.stm



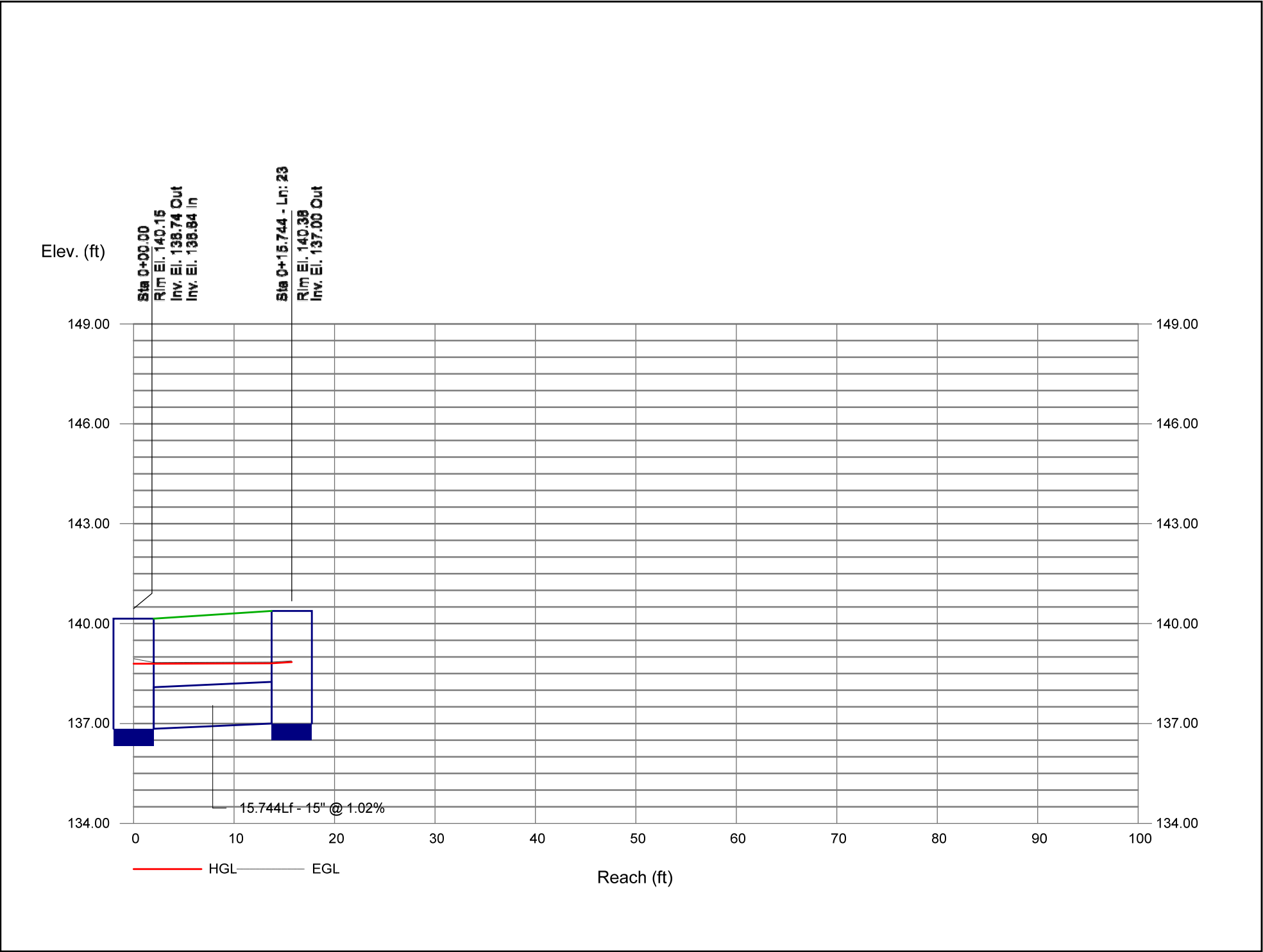
Storm Sewer Profile



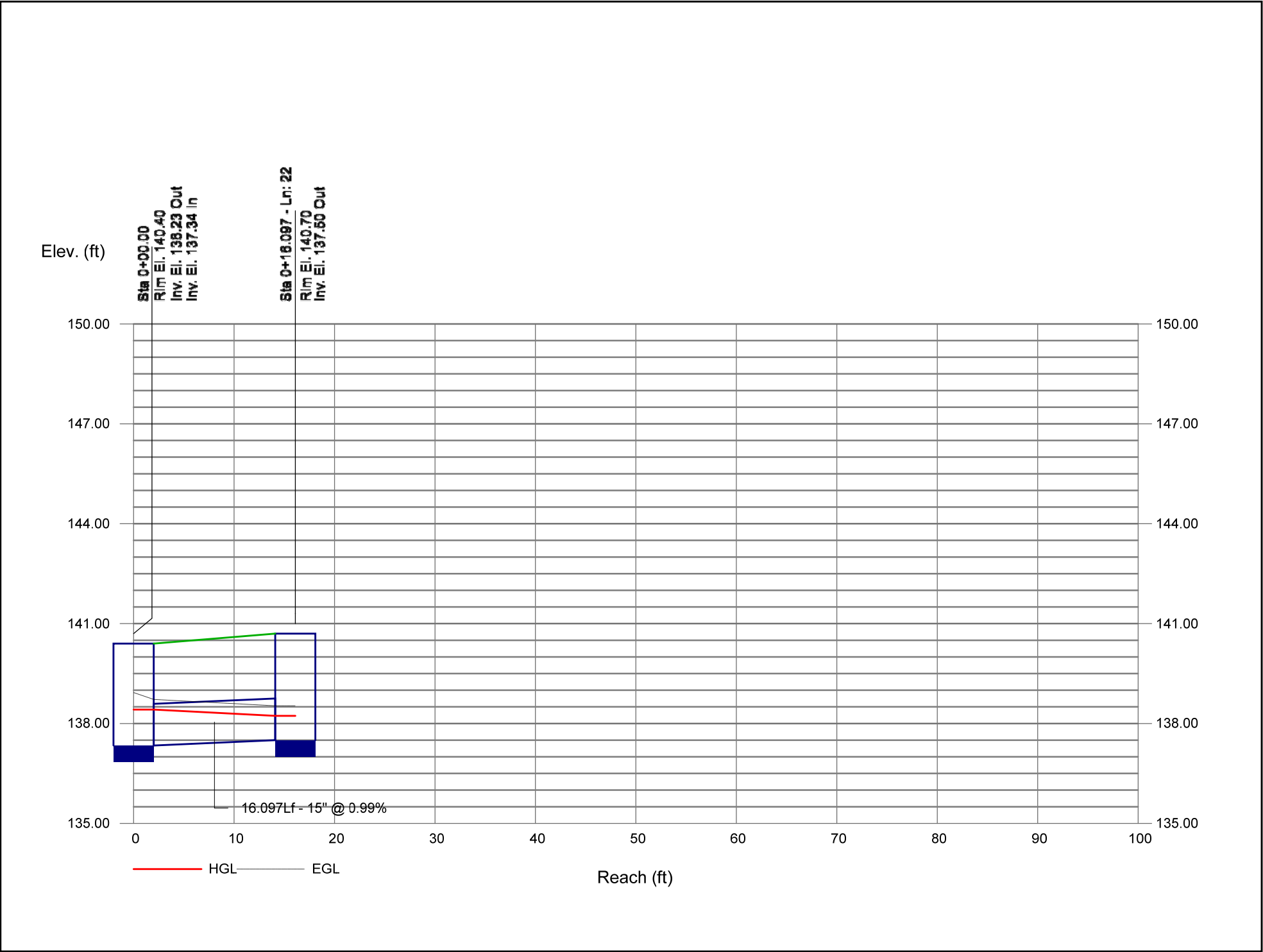
Storm Sewer Profile



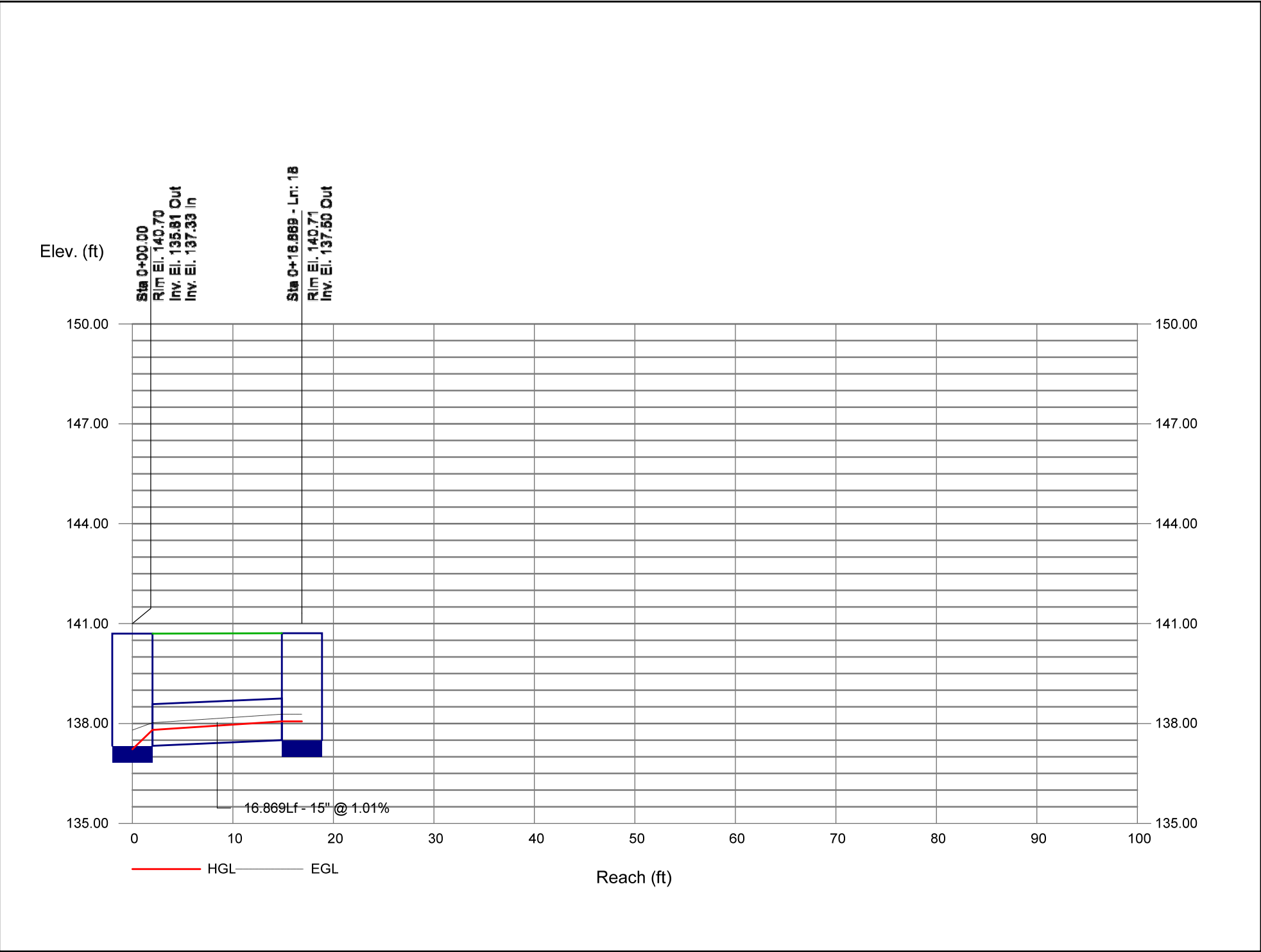
Storm Sewer Profile



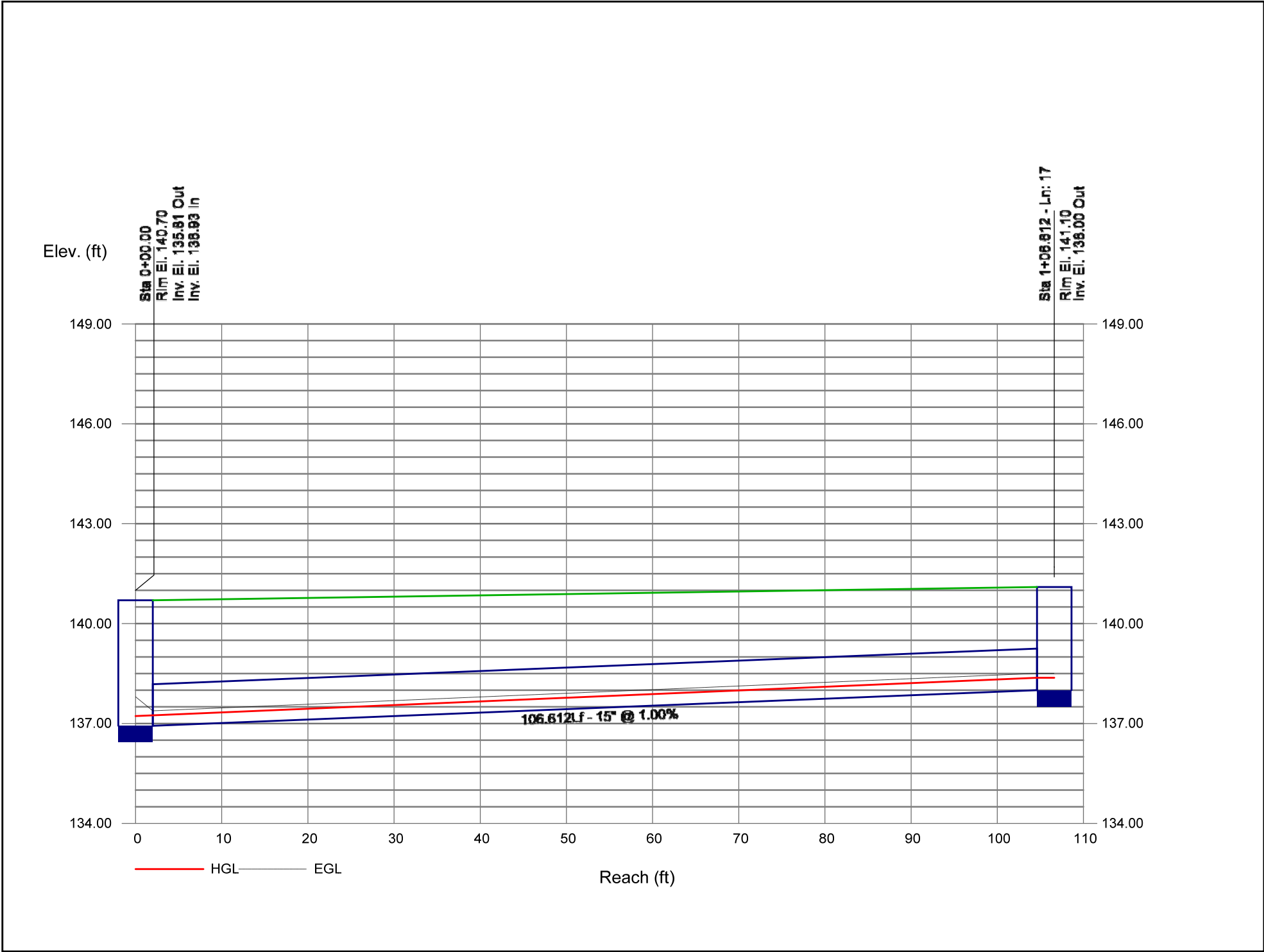
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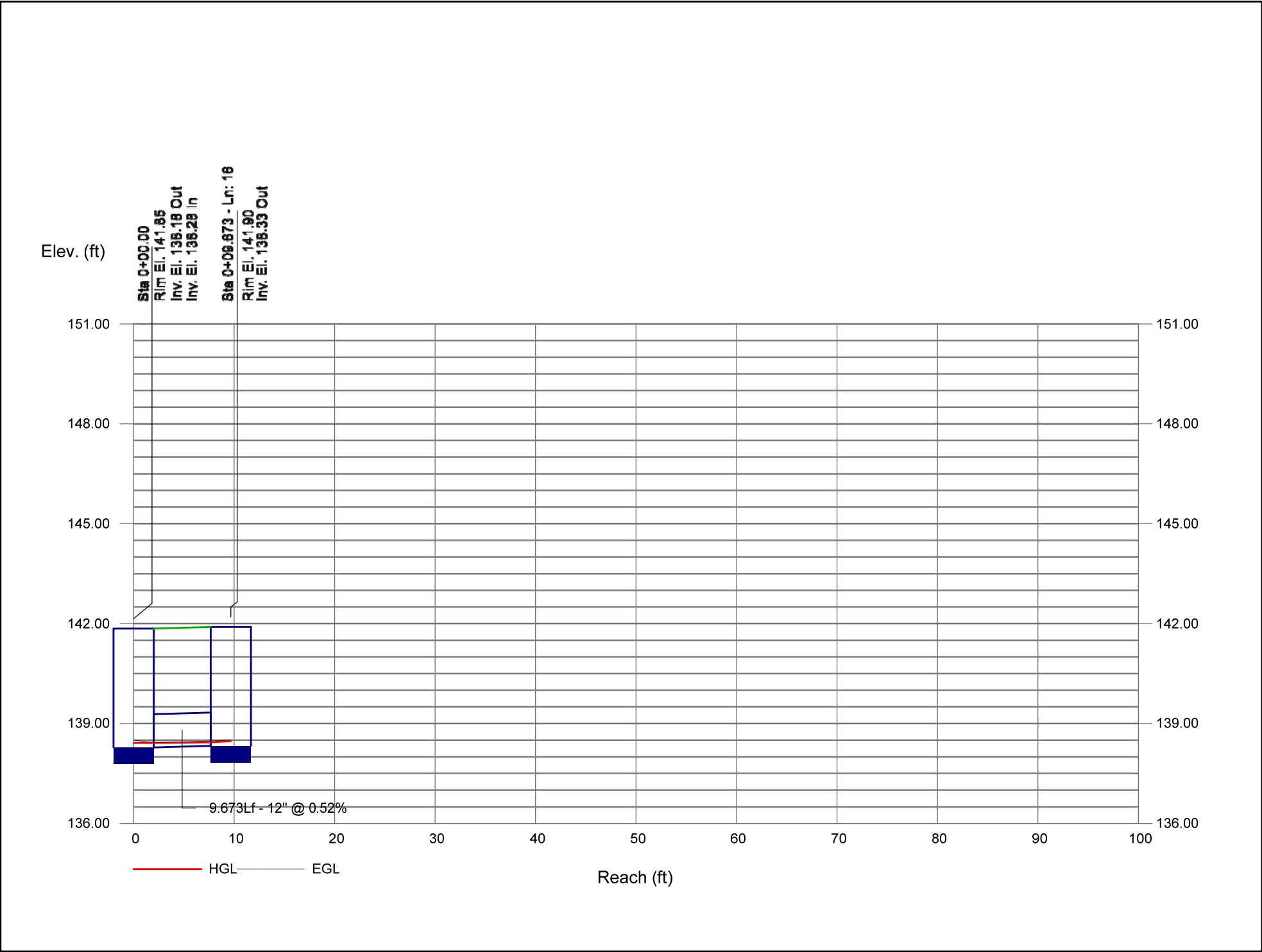
Storm Sewer Profile



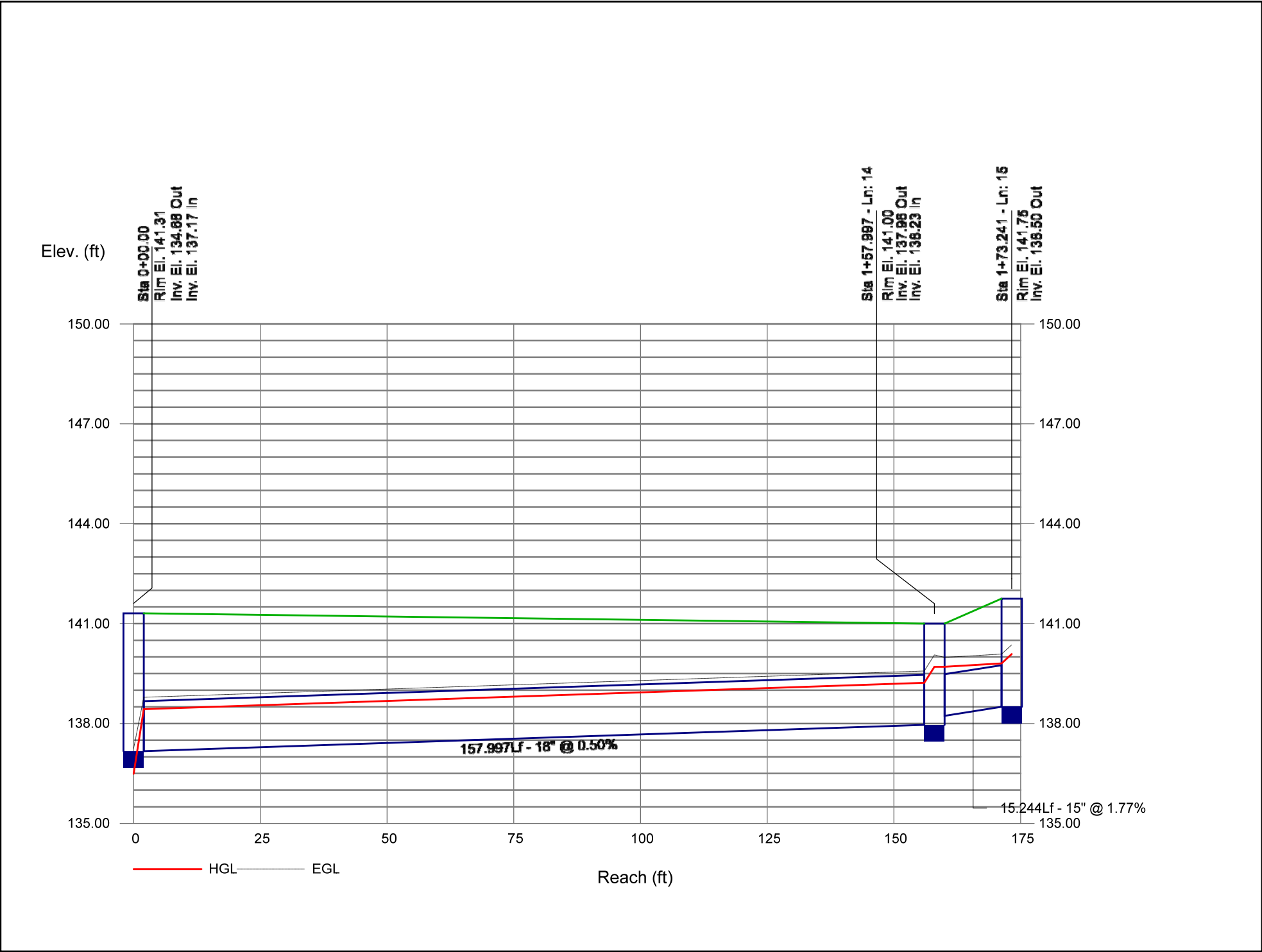
Storm Sewer Profile



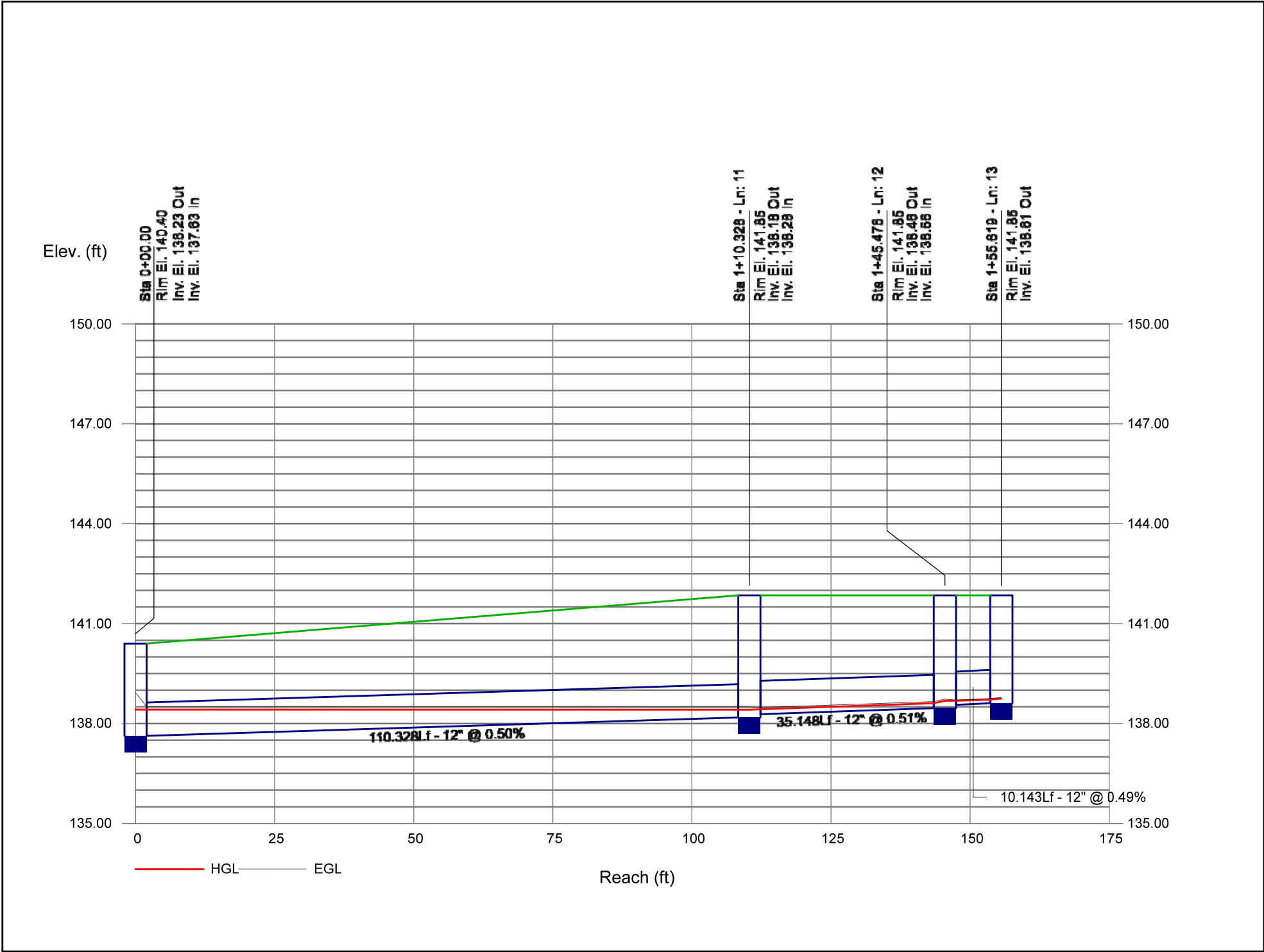
Storm Sewer Profile



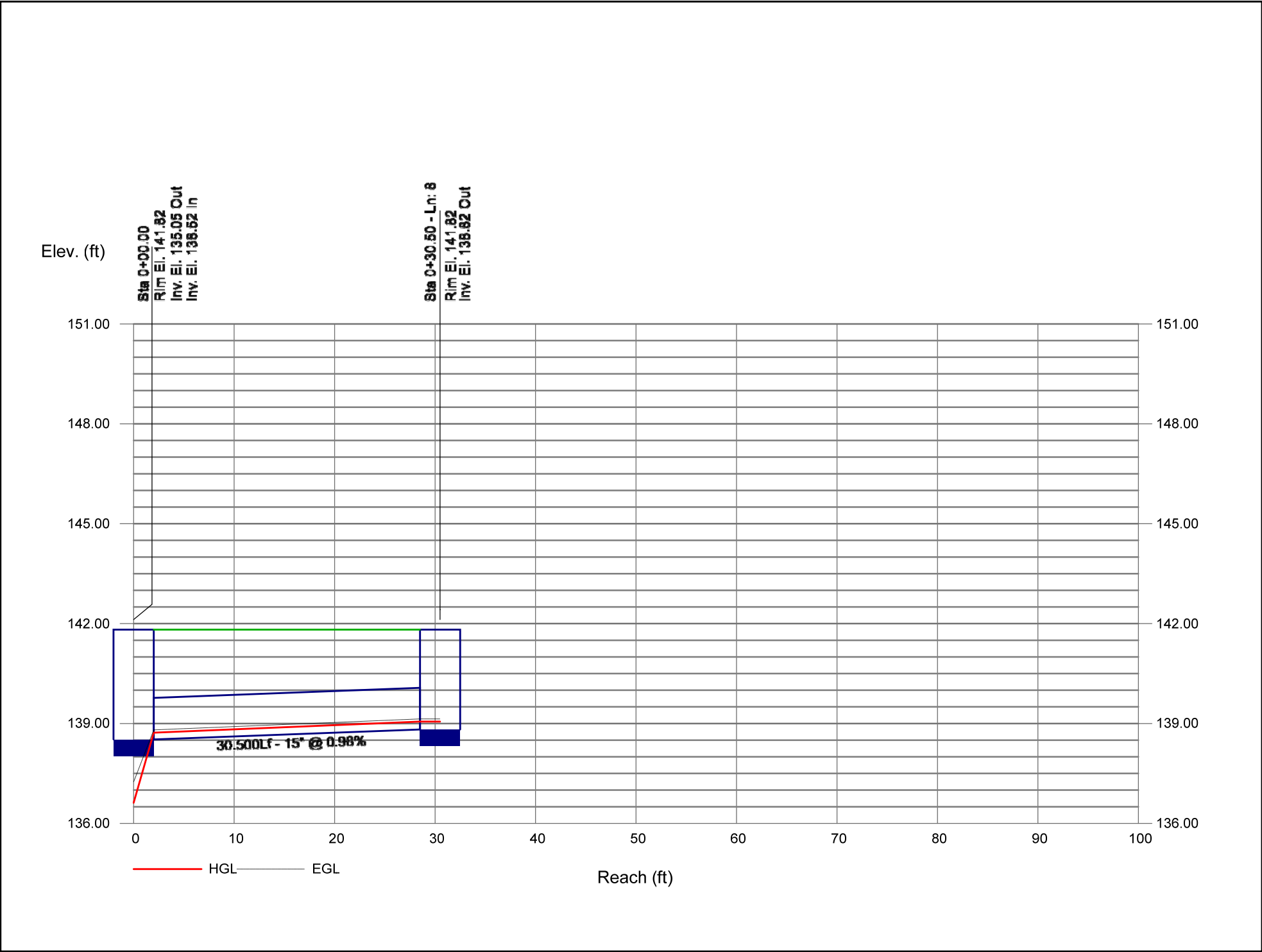
Storm Sewer Profile



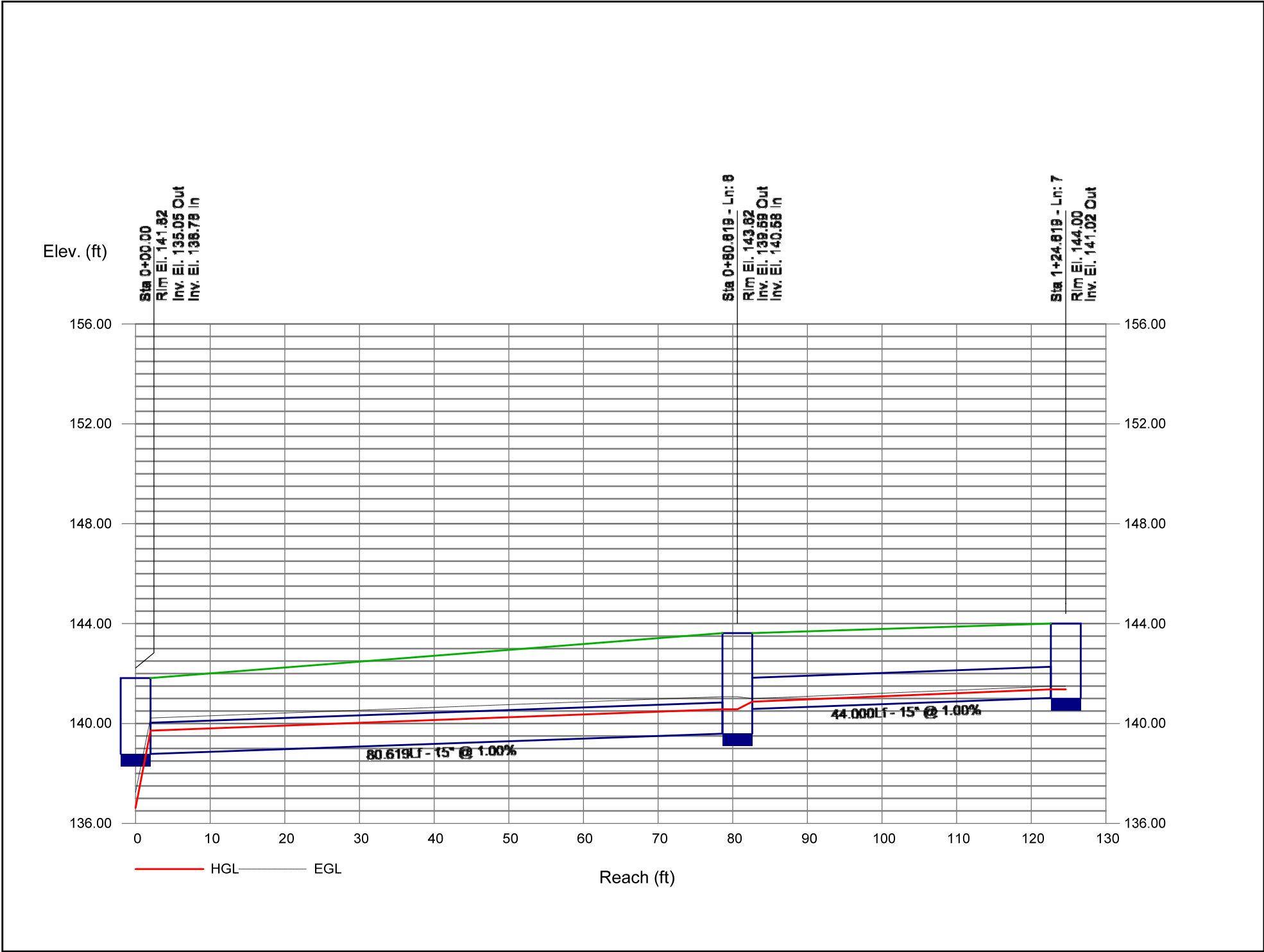
Storm Sewer Profile



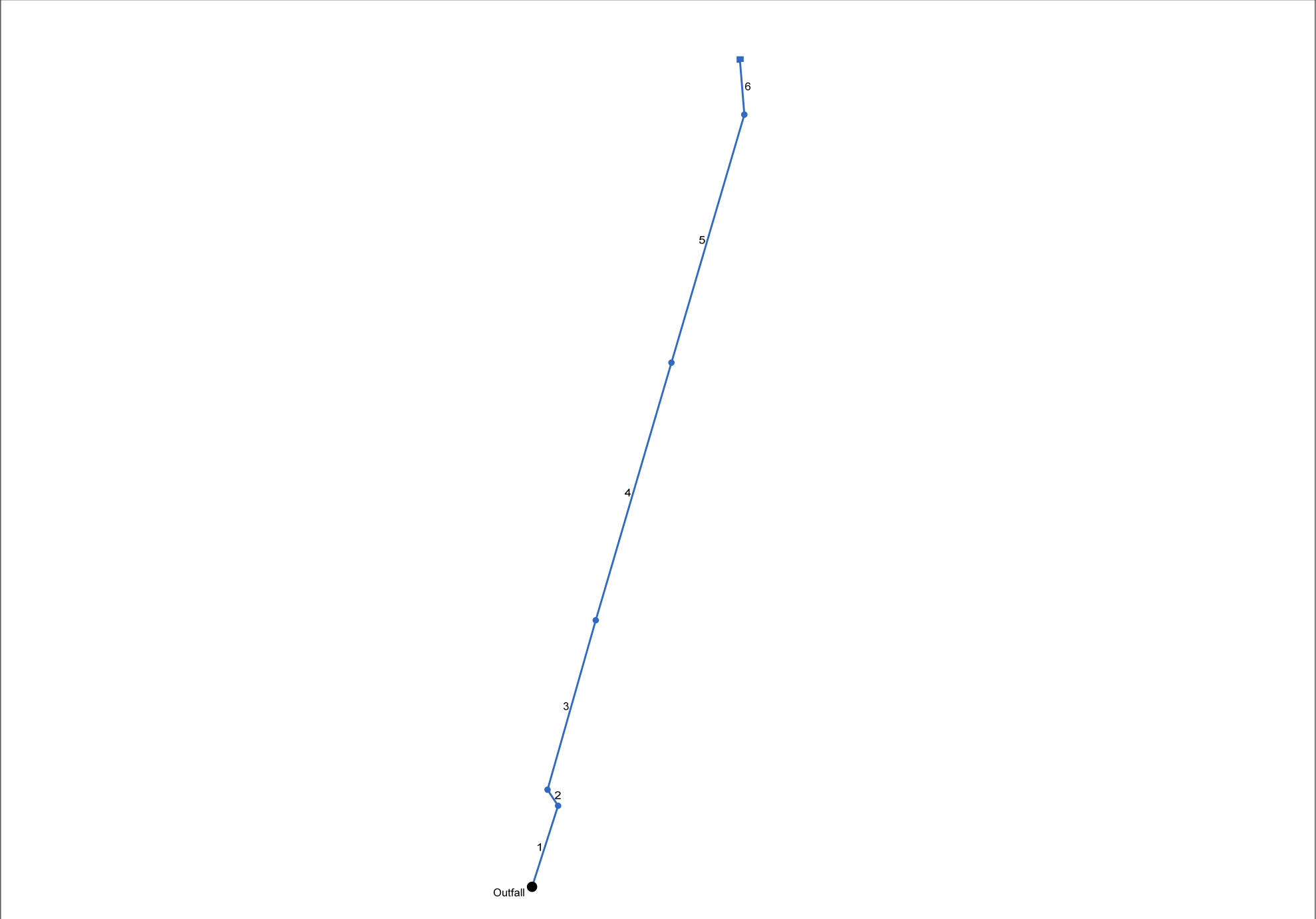
Storm Sewer Profile



Storm Sewer Profile



Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



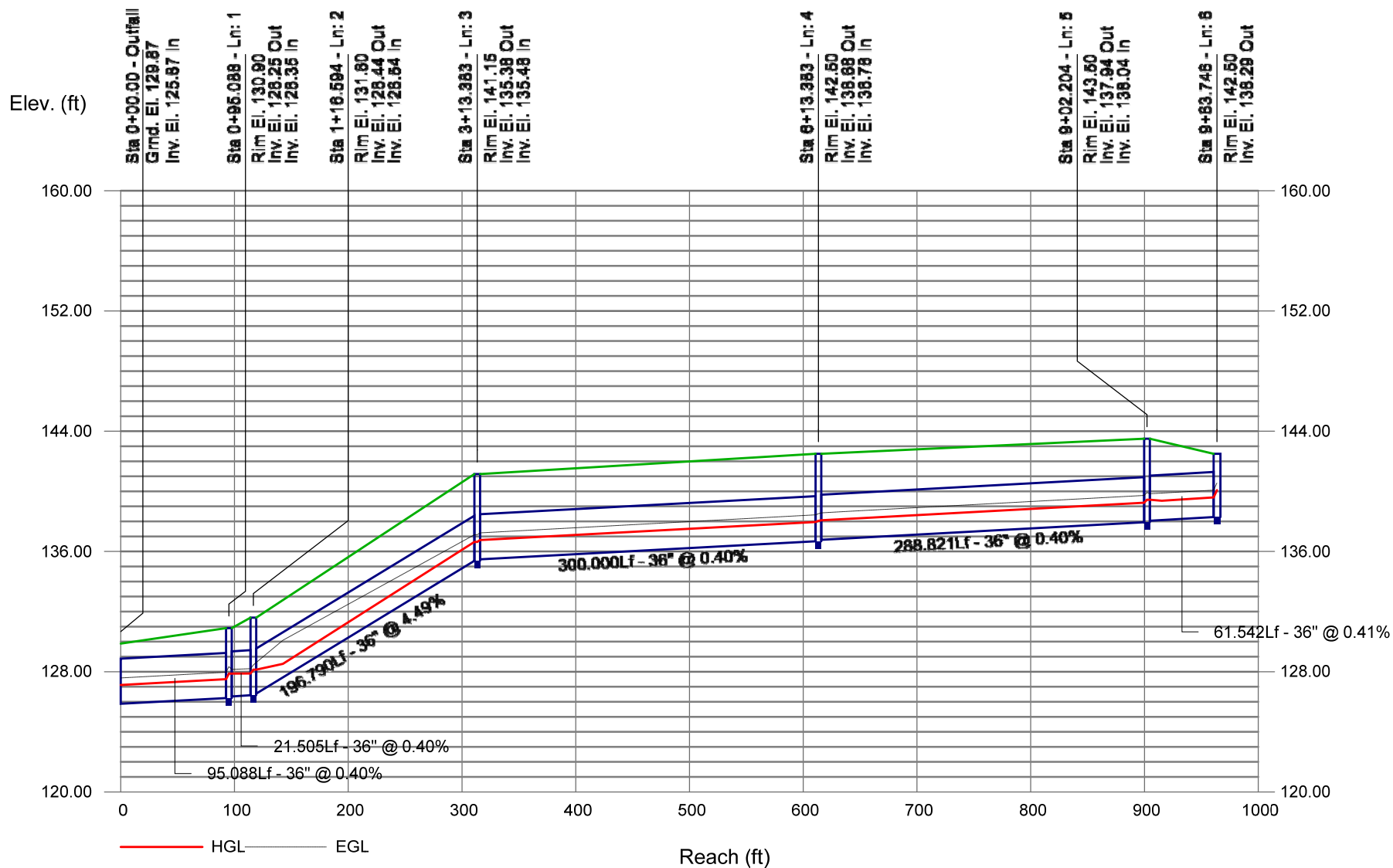
Project File: Bypass.stm	Number of lines: 6	Date: 4/21/2022
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Storm Sewer Tabulation

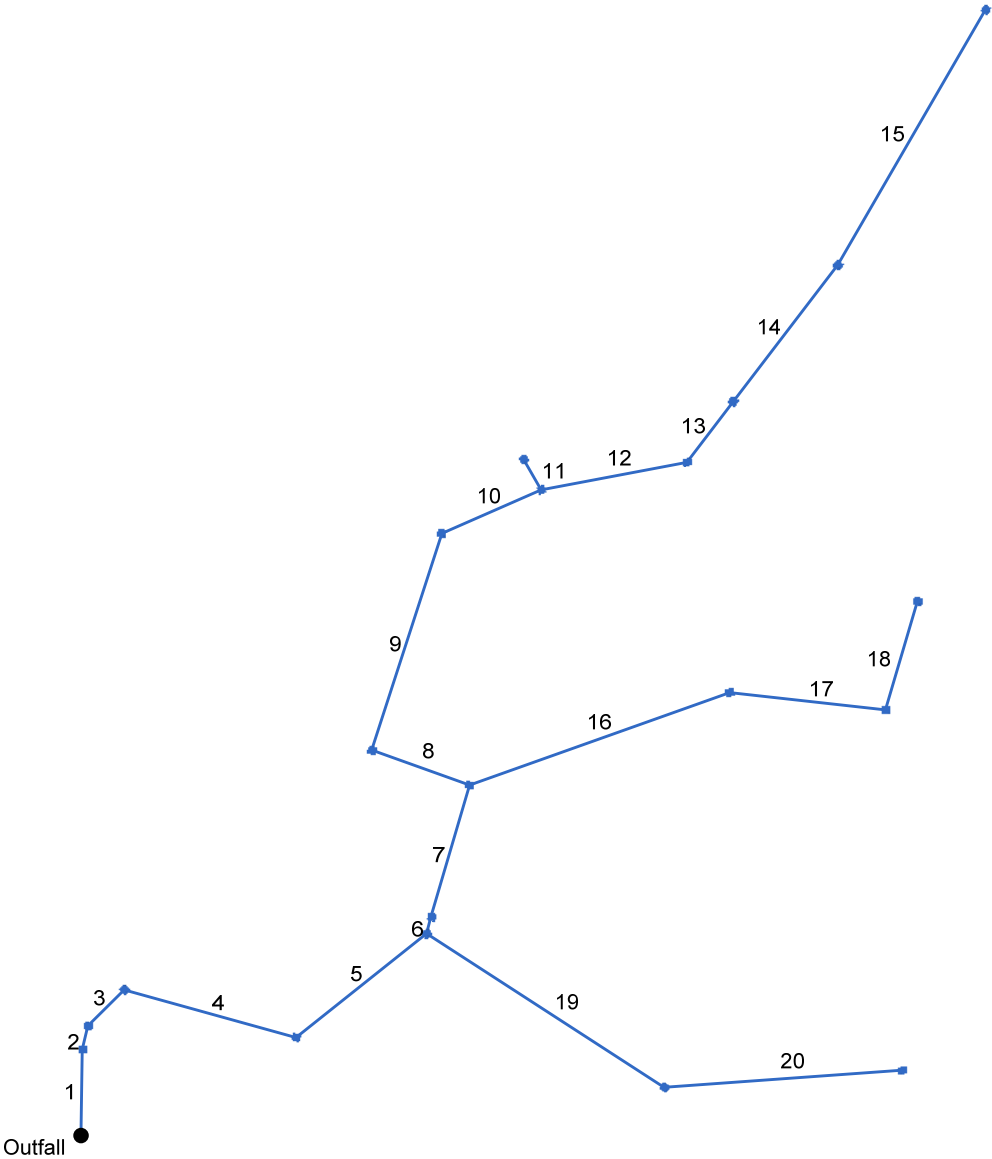
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	95.088	0.00	6.79	0.00	0.00	2.38	0.0	12.7	6.4	15.23	42.11	5.48	36	0.40	125.87	126.25	127.11	127.50	129.87	130.90	Pipe - (181)
2	1	21.505	0.00	6.79	0.00	0.00	2.38	0.0	12.6	6.4	15.27	42.18	4.38	36	0.40	126.35	126.44	127.88	127.88	130.90	131.60	Pipe - (180)
3	2	196.790	0.00	6.79	0.00	0.00	2.38	0.0	12.0	6.6	15.57	141.4	4.81	36	4.49	126.54	135.38	128.13	136.64	131.60	141.15	Pipe - (179)
4	3	300.000	0.00	6.79	0.00	0.00	2.38	0.0	11.1	6.7	15.99	42.18	5.55	36	0.40	135.48	136.68	136.76	137.96	141.15	142.50	Pipe - (178)
5	4	288.821	0.00	6.79	0.00	0.00	2.38	0.0	10.2	6.9	16.41	42.27	5.59	36	0.40	136.78	137.94	138.08	139.24	142.50	143.50	Pipe - (177)
6	5	61.542	6.79	6.79	0.35	2.38	2.38	10.0	10.0	6.9	16.51	42.51	5.35	36	0.41	138.04	138.29	139.44	139.59	143.50	142.50	Pipe - (176)
Project File: Bypass.stm																Number of lines: 6				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Profile

Proj. file: Bypass.stm



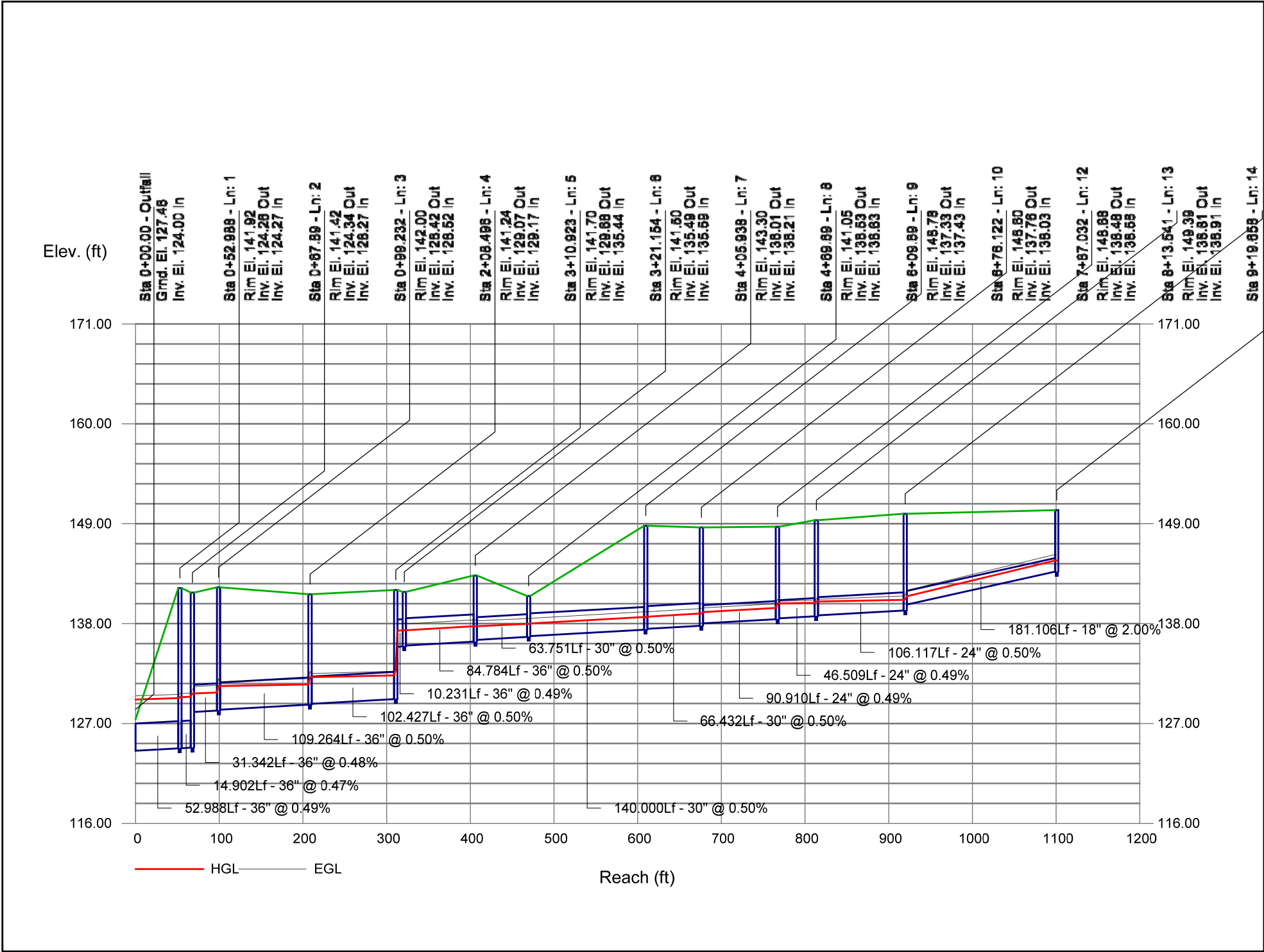
Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



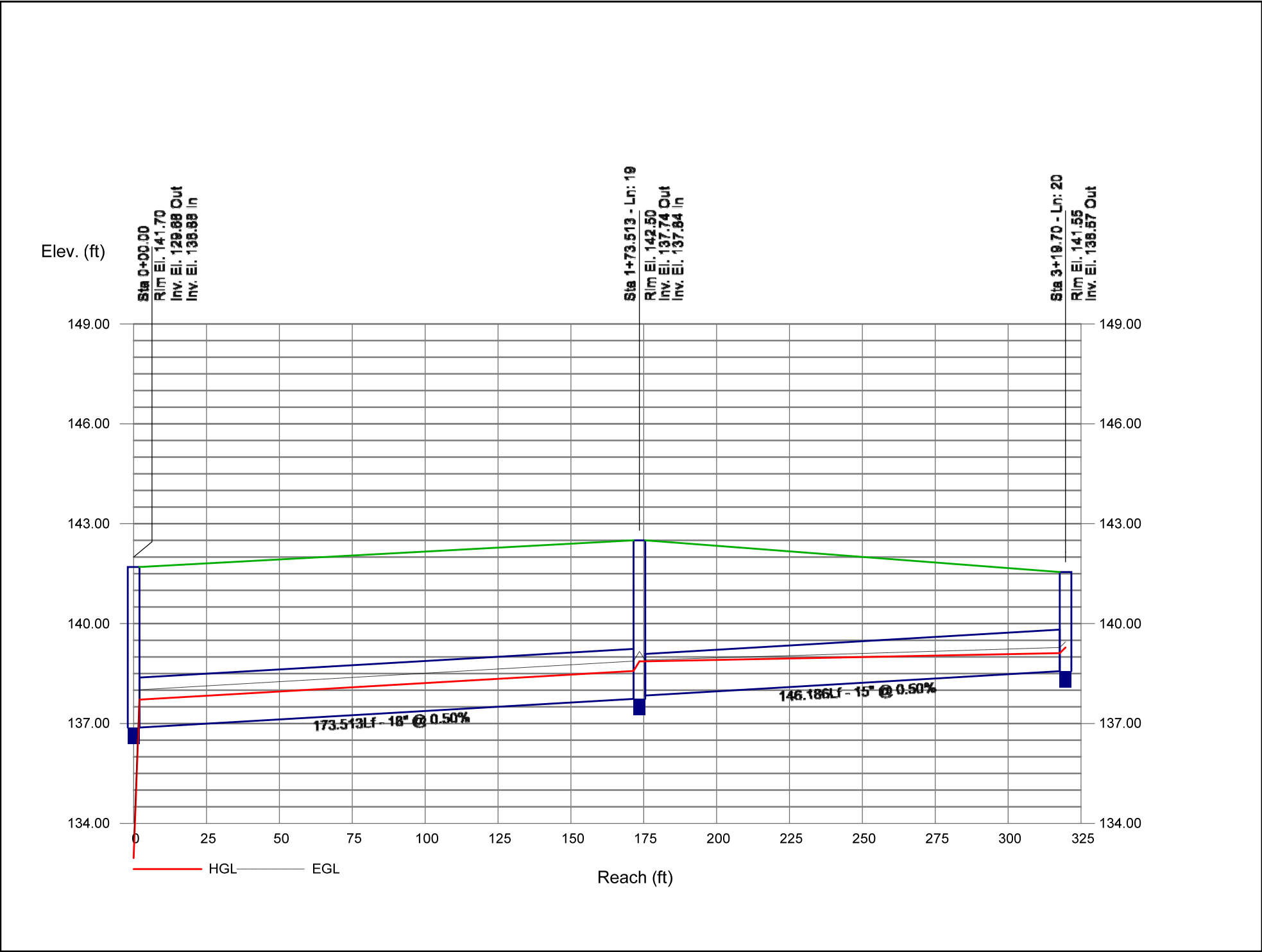
Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	52.988	0.00	5.28	0.00	0.00	4.47	10.0	13.1	6.3	38.42	46.72	5.44	36	0.49	124.00	124.26	129.64	129.82	127.46	141.92	Pipe - (182) (2)
2	1	14.902	0.12	5.28	0.94	0.11	4.47	10.0	13.1	6.3	38.46	45.71	5.44	36	0.47	124.27	124.34	129.93	129.98	141.92	141.42	Pipe - (183)
3	2	31.342	0.00	5.16	0.00	0.00	4.36	10.0	13.0	6.4	37.80	46.14	7.16	36	0.48	128.27	128.42	130.39	130.50	141.42	142.00	Pipe - (169)
4	3	109.264	0.12	5.16	0.90	0.11	4.36	10.0	12.7	6.4	38.04	47.32	6.00	36	0.50	128.52	129.07	131.22	131.45	142.00	141.24	Pipe - (168)
5	4	102.427	0.14	5.04	0.90	0.13	4.25	10.0	12.4	6.5	37.59	47.06	5.38	36	0.50	129.17	129.68	132.23	132.52	141.24	141.70	Pipe - (211)
6	5	10.231	0.44	4.18	0.93	0.41	3.47	10.0	12.3	6.5	32.54	46.63	7.12	36	0.49	135.44	135.49	137.29	137.34	141.70	141.50	Pipe - (237)
7	6	84.784	0.29	3.74	0.84	0.24	3.06	10.0	12.1	6.5	30.00	46.94	6.96	36	0.50	135.59	136.01	137.34	137.78	141.50	143.30	Pipe - (238)
8	7	63.751	0.19	2.00	0.84	0.16	1.59	10.0	12.0	6.5	20.48	29.06	6.37	30	0.50	136.21	136.53	137.78	138.07	143.30	141.05	Pipe - (218)
9	8	140.000	0.24	1.81	0.68	0.16	1.43	10.0	11.5	6.6	19.58	29.00	4.44	30	0.50	136.63	137.33	139.04	139.25	141.05	148.78	Pipe - (76)
10	9	66.432	0.73	1.57	0.77	0.56	1.26	10.0	11.2	6.7	18.55	28.91	5.11	30	0.50	137.43	137.76	139.68	139.22	148.78	150.62	Pipe - (75)
11	10	21.320	0.63	0.63	0.85	0.54	0.54	10.0	10.0	6.9	3.72	6.56	5.07	15	1.03	148.00	148.22	148.67	149.00	150.62	149.66	Pipe - (260)
12	10	90.910	0.08	0.21	0.79	0.06	0.17	10.0	11.0	6.7	11.22	15.91	5.49	24	0.49	138.03	138.48	139.27	139.72	150.62	148.68	Pipe - (74)
13	12	46.509	0.13	0.13	0.80	0.10	0.10	0.0	10.8	6.8	10.80	15.91	4.13	24	0.49	138.58	138.81	140.22	140.28	148.68	149.39	Pipe - (152)
14	13	106.117	0.00	0.00	0.00	0.00	0.00	10.0	10.4	0.0	10.09	15.98	4.60	24	0.50	138.91	139.44	140.43	140.62	149.39	150.10	Pipe - (152)(2)
15	14	181.106	0.00	0.00	0.00	0.00	0.00	10.0	10.0	0.0	10.09	14.85	7.79	18	2.00	140.10	143.72	141.01	144.94	150.10	150.50	Pipe - (153)
16	7	169.205	0.47	1.45	0.84	0.39	1.22	10.0	10.6	6.8	8.36	10.49	6.25	18	1.00	137.92	139.61	138.93	140.73	143.30	142.75	Pipe - (215)
17	16	95.988	0.33	0.98	0.92	0.30	0.83	10.0	10.2	6.9	5.72	10.82	4.75	18	1.06	139.71	140.73	140.73	141.65	142.75	146.08	Pipe - (214)
18	17	69.350	0.65	0.65	0.81	0.53	0.53	10.0	10.0	6.9	3.66	6.44	5.00	15	0.99	142.41	143.10	143.08	143.87	146.08	146.08	Pipe - (84)
19	5	173.513	0.44	0.72	0.94	0.41	0.66	10.0	11.0	6.7	4.43	7.39	4.37	18	0.50	136.88	137.74	137.72	138.58	141.70	142.50	Pipe - (212)
20	19	146.186	0.28	0.28	0.87	0.24	0.24	10.0	10.0	6.9	1.69	4.56	2.43	15	0.50	137.84	138.57	138.87	139.11	142.50	141.55	Pipe - (213)
Project File: System C.stm																Number of lines: 20				Run Date: 4/26/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

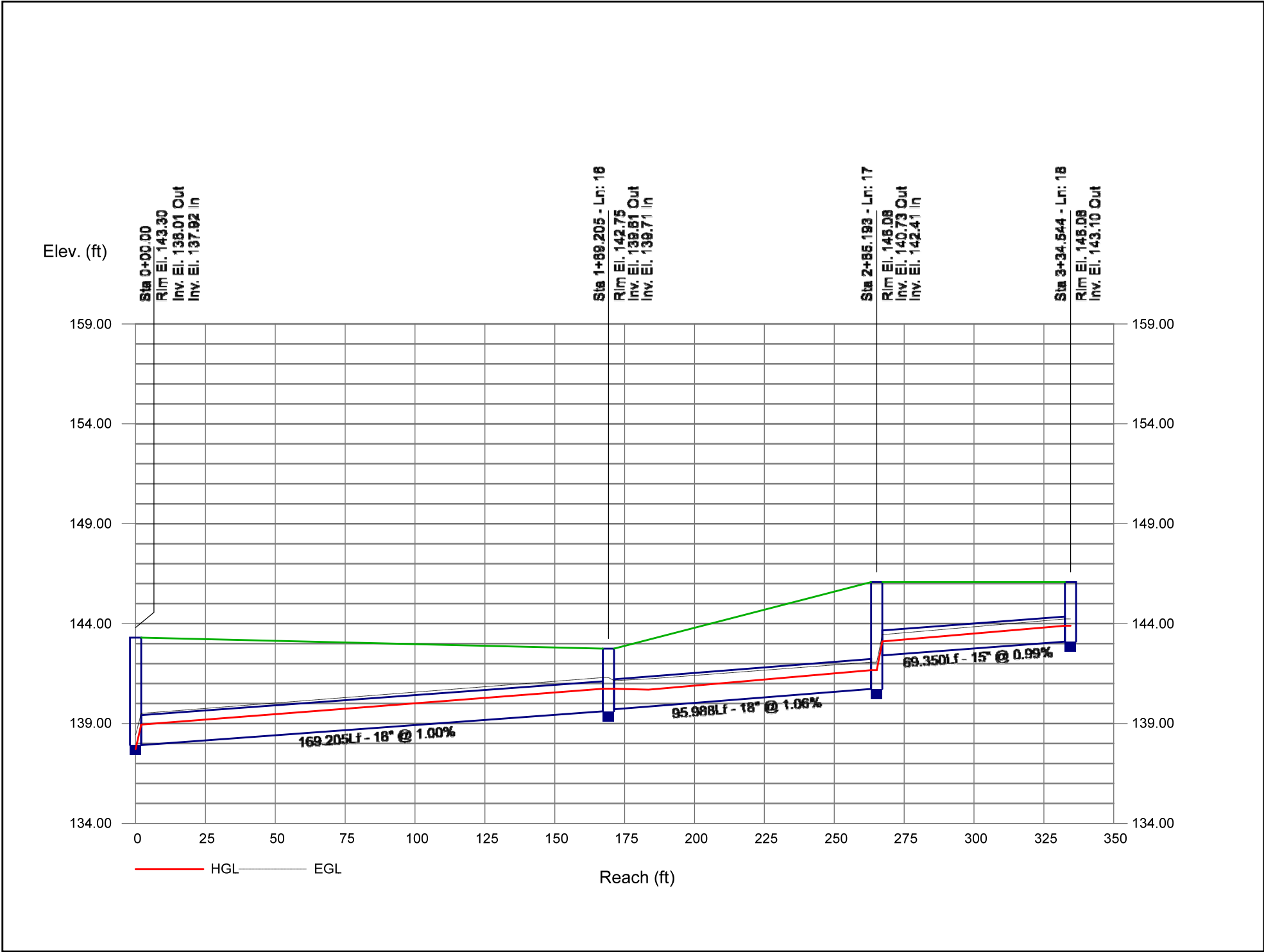
Storm Sewer Profile



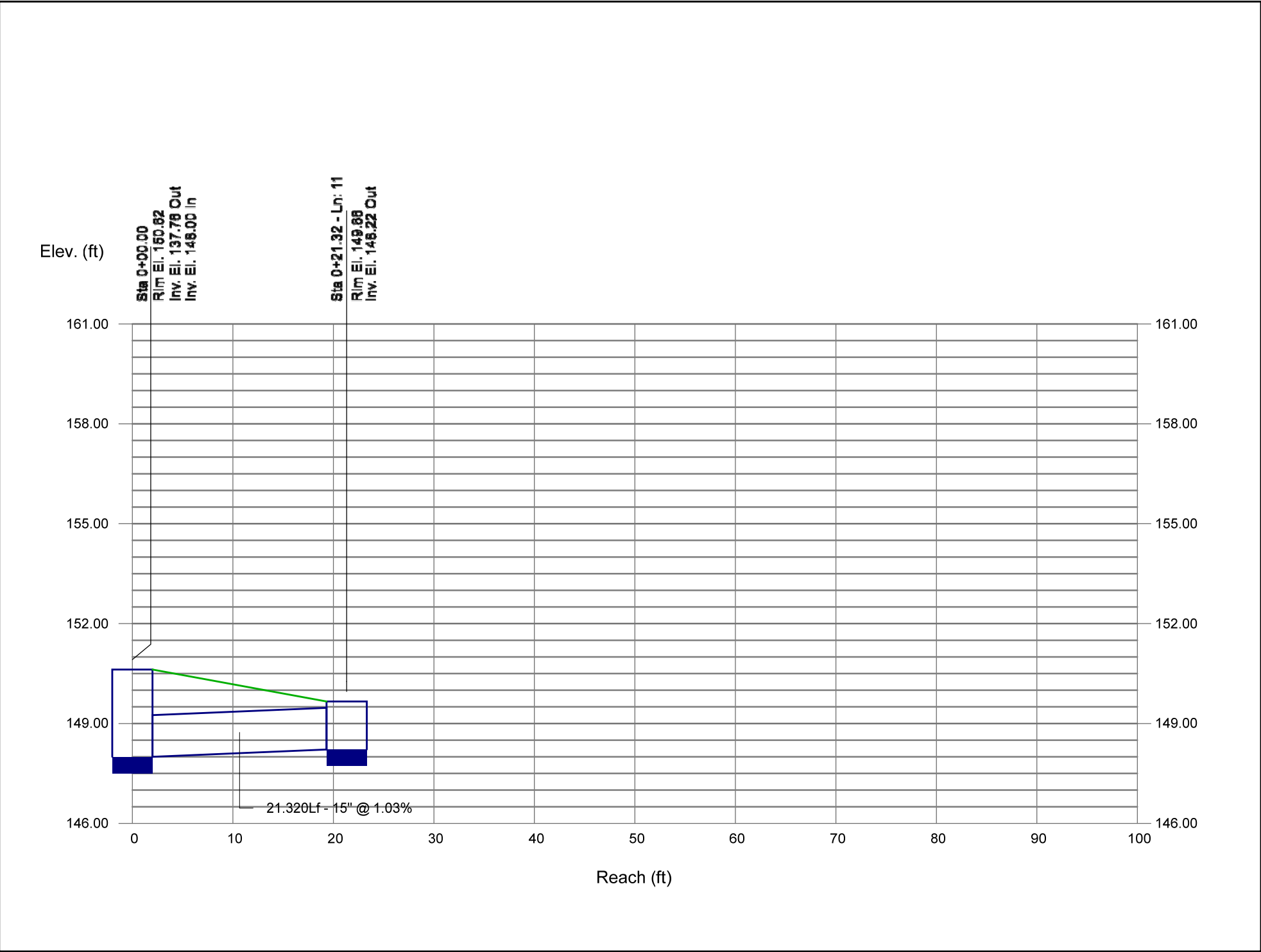
Storm Sewer Profile



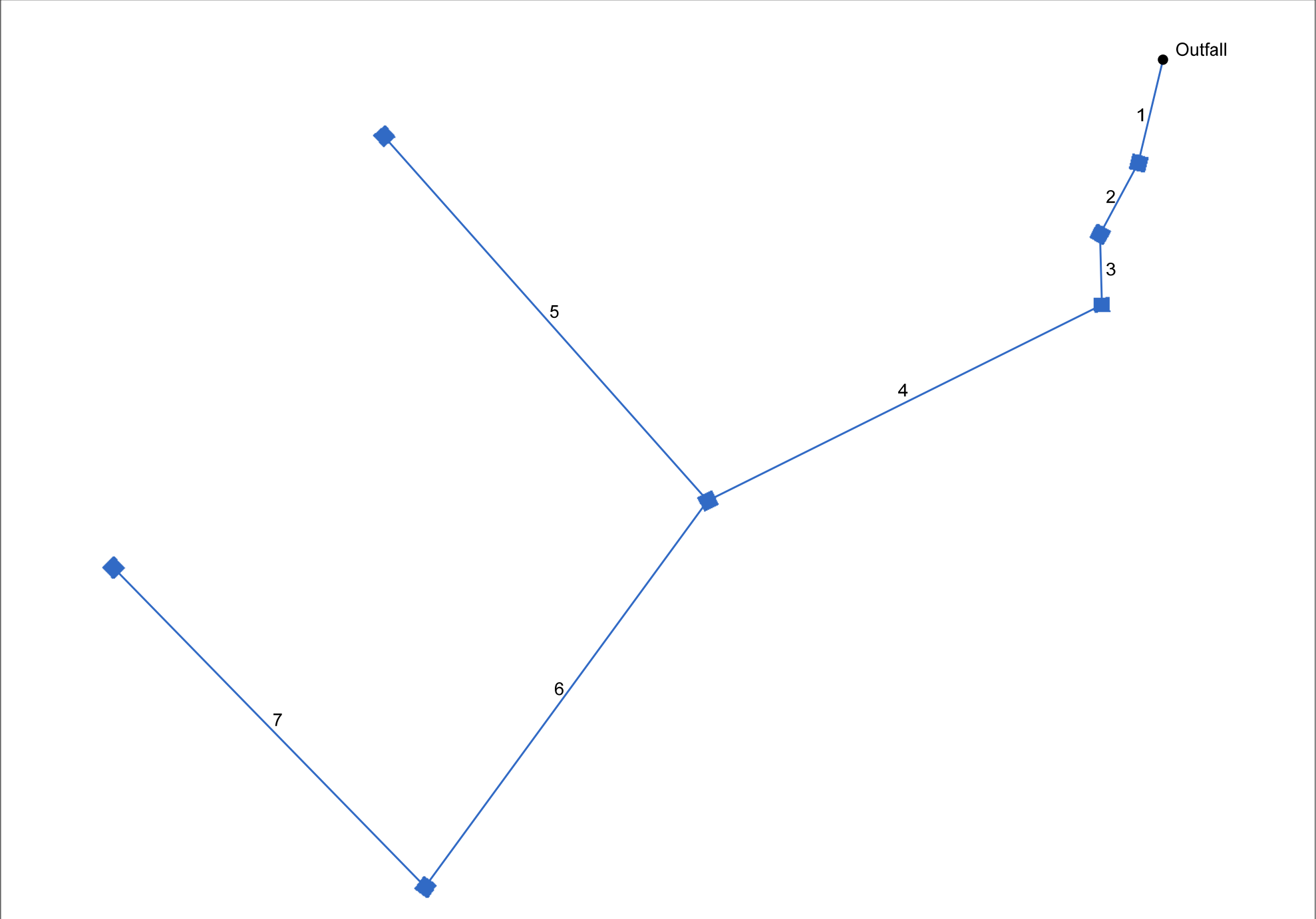
Storm Sewer Profile



Storm Sewer Profile



Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan

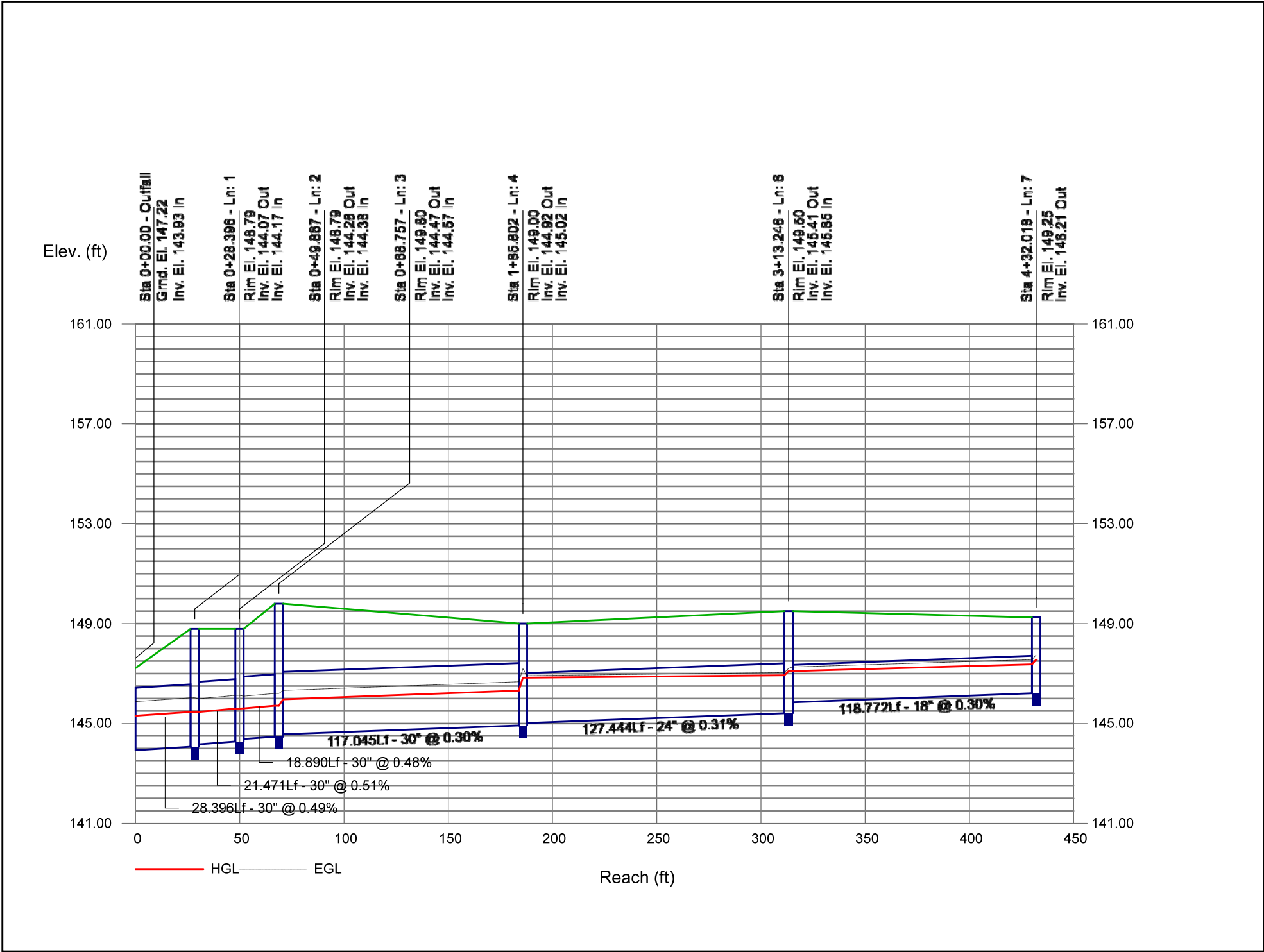


Project File: System D1.stm	Number of lines: 7	Date: 4/21/2022
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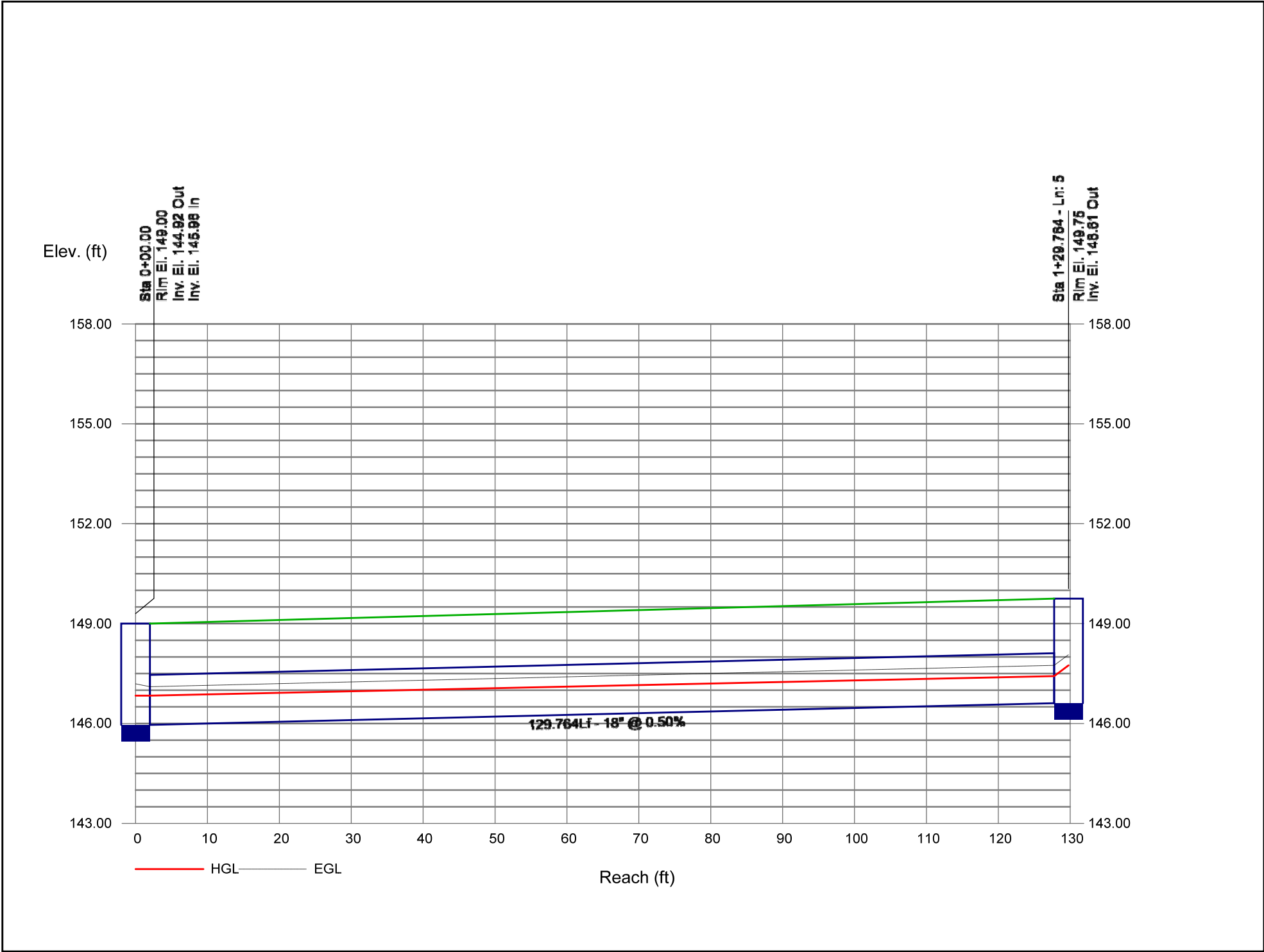
Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	28.396	0.29	2.95	0.88	0.26	2.59	10.0	12.0	6.5	16.98	28.80	6.07	30	0.49	143.93	144.07	145.31	145.46	147.22	148.79	Pipe - (190)
2	1	21.471	0.37	2.66	0.69	0.26	2.34	10.0	11.9	6.6	15.34	29.36	5.91	30	0.51	144.17	144.28	145.46	145.60	148.79	148.79	Pipe - (71)
3	2	18.890	0.06	2.29	0.87	0.05	2.08	10.0	11.8	6.6	13.68	28.31	5.66	30	0.48	144.38	144.47	145.61	145.71	148.79	149.80	Pipe - (72)
4	3	117.045	0.43	2.23	0.88	0.38	2.03	10.0	11.4	6.7	13.50	22.43	4.78	30	0.30	144.57	144.92	145.97	146.32	149.80	149.00	Pipe - (252)
5	4	129.764	0.69	0.69	0.93	0.64	0.64	10.0	10.0	6.9	4.46	7.43	4.36	18	0.50	145.96	146.61	146.84	147.42	149.00	149.75	Pipe - (253)
6	4	127.444	0.30	1.11	0.91	0.27	1.01	10.0	10.6	6.8	6.89	12.51	2.50	24	0.31	145.02	145.41	146.84	146.93	149.00	149.50	Pipe - (254)
7	6	118.772	0.81	0.81	0.91	0.74	0.74	10.0	10.0	6.9	5.12	5.78	3.38	18	0.30	145.85	146.21	147.10	147.37	149.50	149.25	Pipe - (255)
Project File: System D1.stm																Number of lines: 7				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

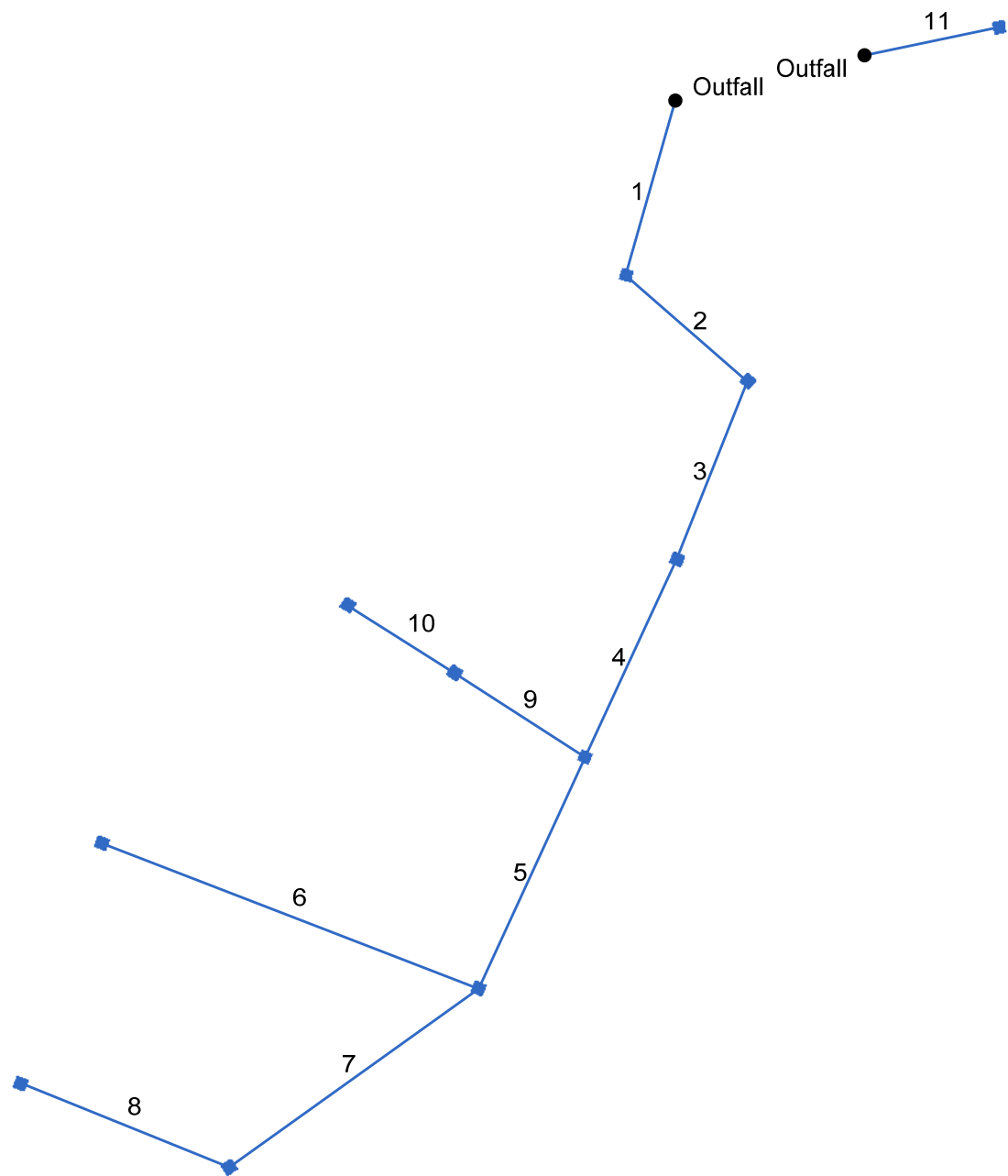
Storm Sewer Profile



Storm Sewer Profile



Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan

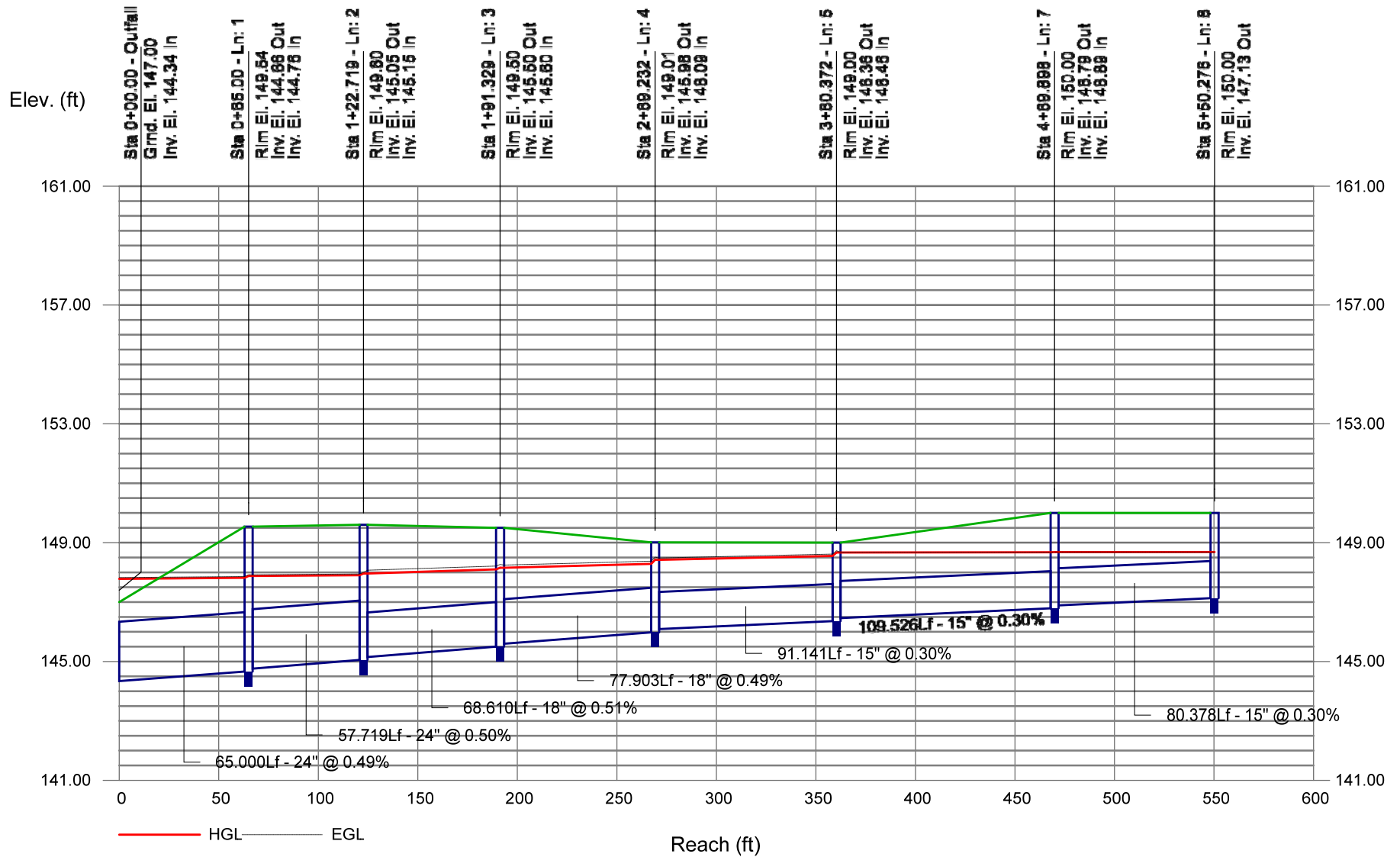


Storm Sewer Tabulation

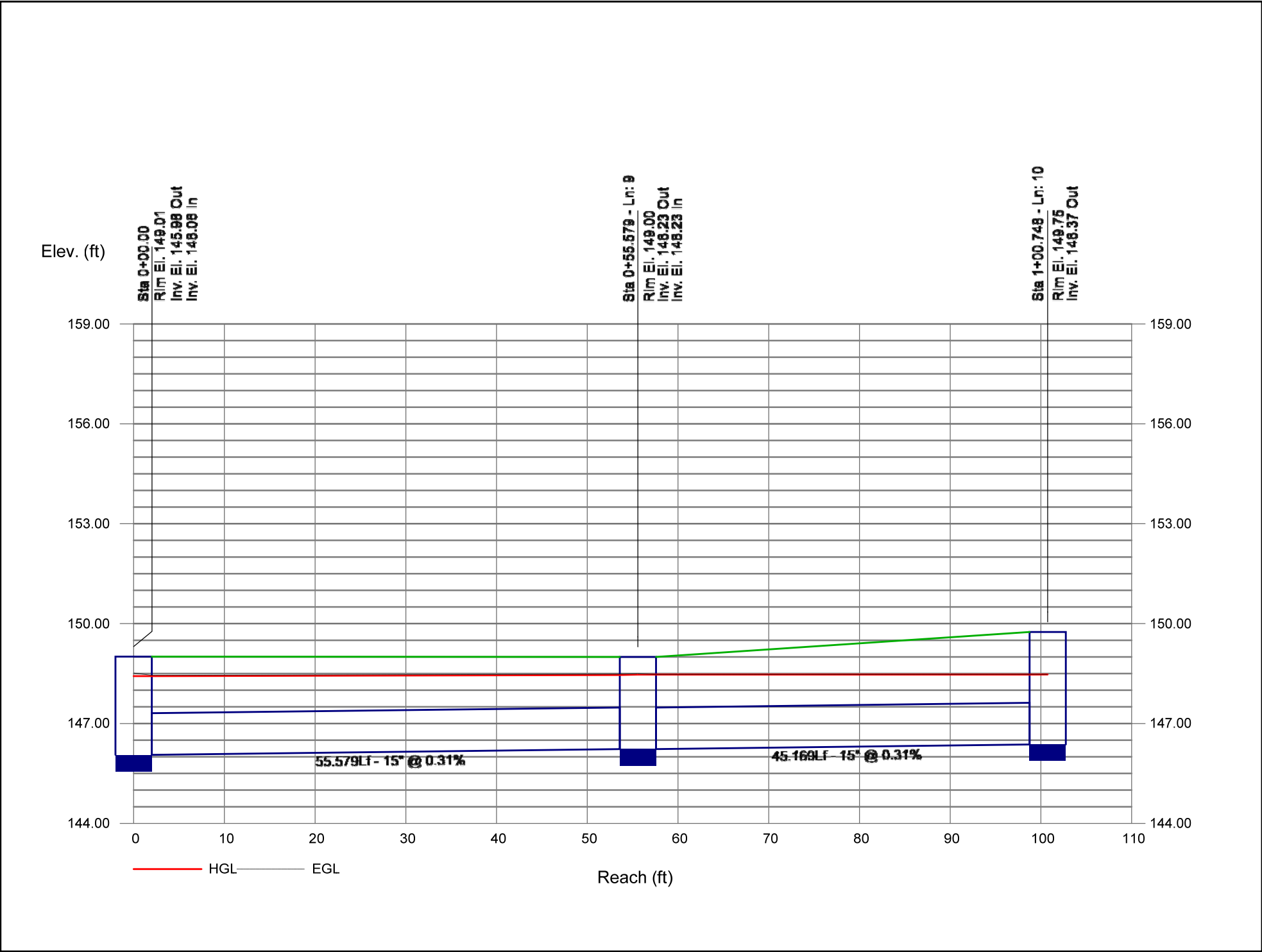
Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr (min)	Total (min)	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	65.000	0.11	1.20	0.80	0.09	1.05	10.0	22.5	5.1	5.32	15.87	1.70	24	0.49	144.34	144.66	147.78	147.82	147.00	149.54	Pipe - (97)
2	1	57.719	0.06	1.09	0.75	0.05	0.96	10.0	21.9	5.1	4.93	16.03	1.57	24	0.50	144.76	145.05	147.88	147.91	149.54	149.60	Pipe - (96)
3	2	68.610	0.11	1.03	0.88	0.10	0.92	10.0	21.5	5.2	4.74	7.50	2.68	18	0.51	145.15	145.50	147.96	148.10	149.60	149.50	Pipe - (95)
4	3	77.903	0.14	0.92	0.84	0.12	0.82	10.0	21.0	5.2	4.29	7.33	2.43	18	0.49	145.60	145.98	148.16	148.29	149.50	149.01	Pipe - (94)
5	4	91.141	0.21	0.51	0.86	0.18	0.46	10.0	20.2	5.3	2.45	3.51	2.00	15	0.30	146.09	146.36	148.42	148.55	149.01	149.00	Pipe - (204)
6	5	144.084	0.19	0.19	0.94	0.18	0.18	10.0	10.0	6.9	1.24	3.53	1.01	15	0.30	146.46	146.89	148.67	148.72	149.00	150.00	Pipe - (203)
7	5	109.526	0.07	0.11	0.93	0.07	0.10	10.0	16.4	5.8	0.59	3.54	0.48	15	0.30	146.46	146.79	148.67	148.68	149.00	150.00	Pipe - (256)
8	7	80.378	0.04	0.04	0.92	0.04	0.04	10.0	10.0	6.9	0.26	3.53	0.21	15	0.30	146.89	147.13	148.68	148.68	150.00	150.00	Pipe - (200)
9	4	55.579	0.21	0.27	0.88	0.18	0.24	10.0	12.3	6.5	1.57	3.57	1.28	15	0.31	146.06	146.23	148.42	148.46	149.01	149.00	Pipe - (258)
10	9	45.169	0.06	0.06	0.95	0.06	0.06	10.0	10.0	6.9	0.40	3.60	0.32	15	0.31	146.23	146.37	148.47	148.47	149.00	149.75	Pipe - (257)
11	End	49.000	0.11	0.11	0.95	0.10	0.10	10.0	10.0	6.9	0.73	6.46	0.59	15	1.00	144.51	145.00	148.65	148.66	146.36	148.85	Pipe - (206)
Project File: System D2.stm																Number of lines: 11				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Profile

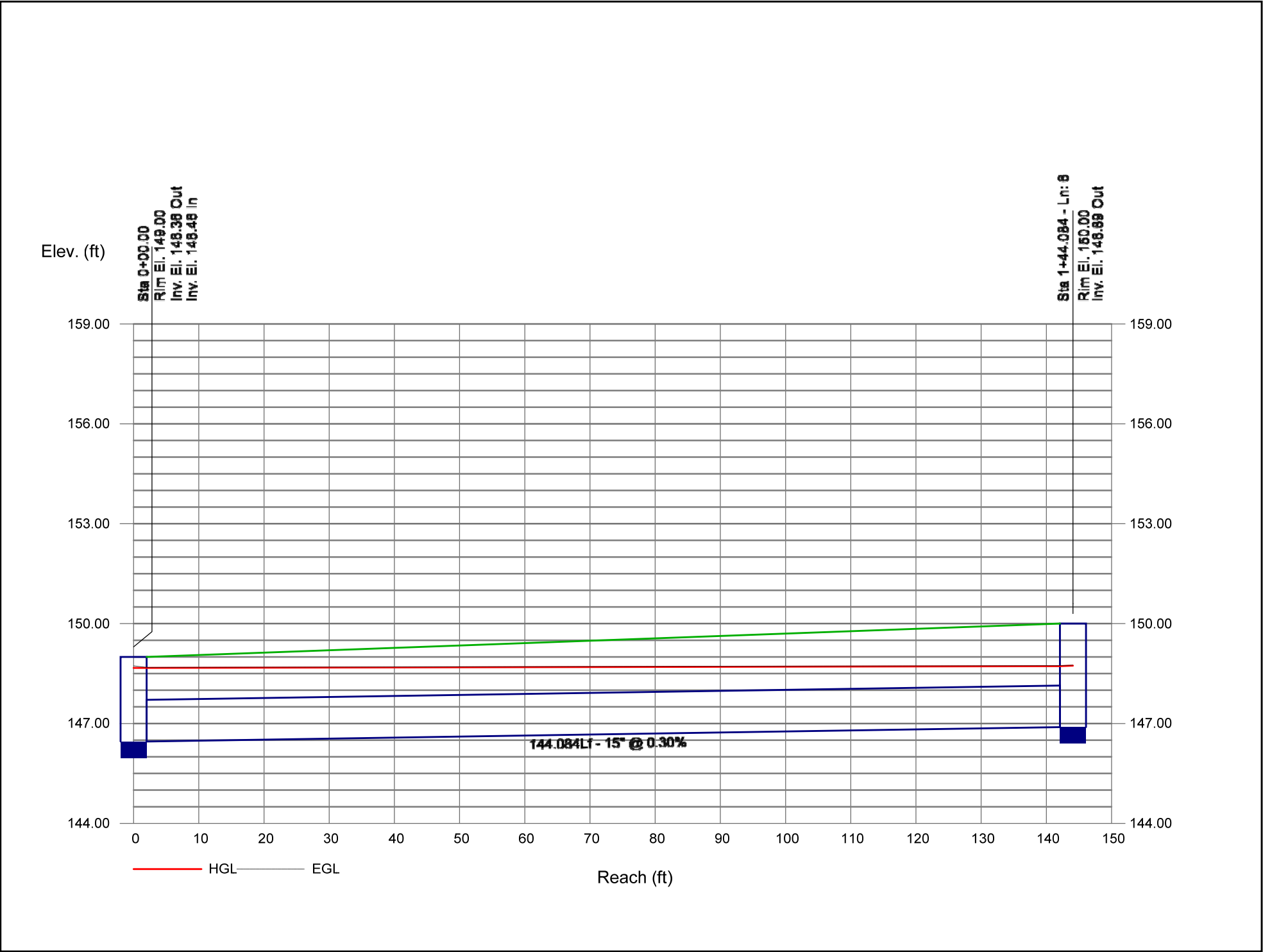
Proj. file: System D2.stm



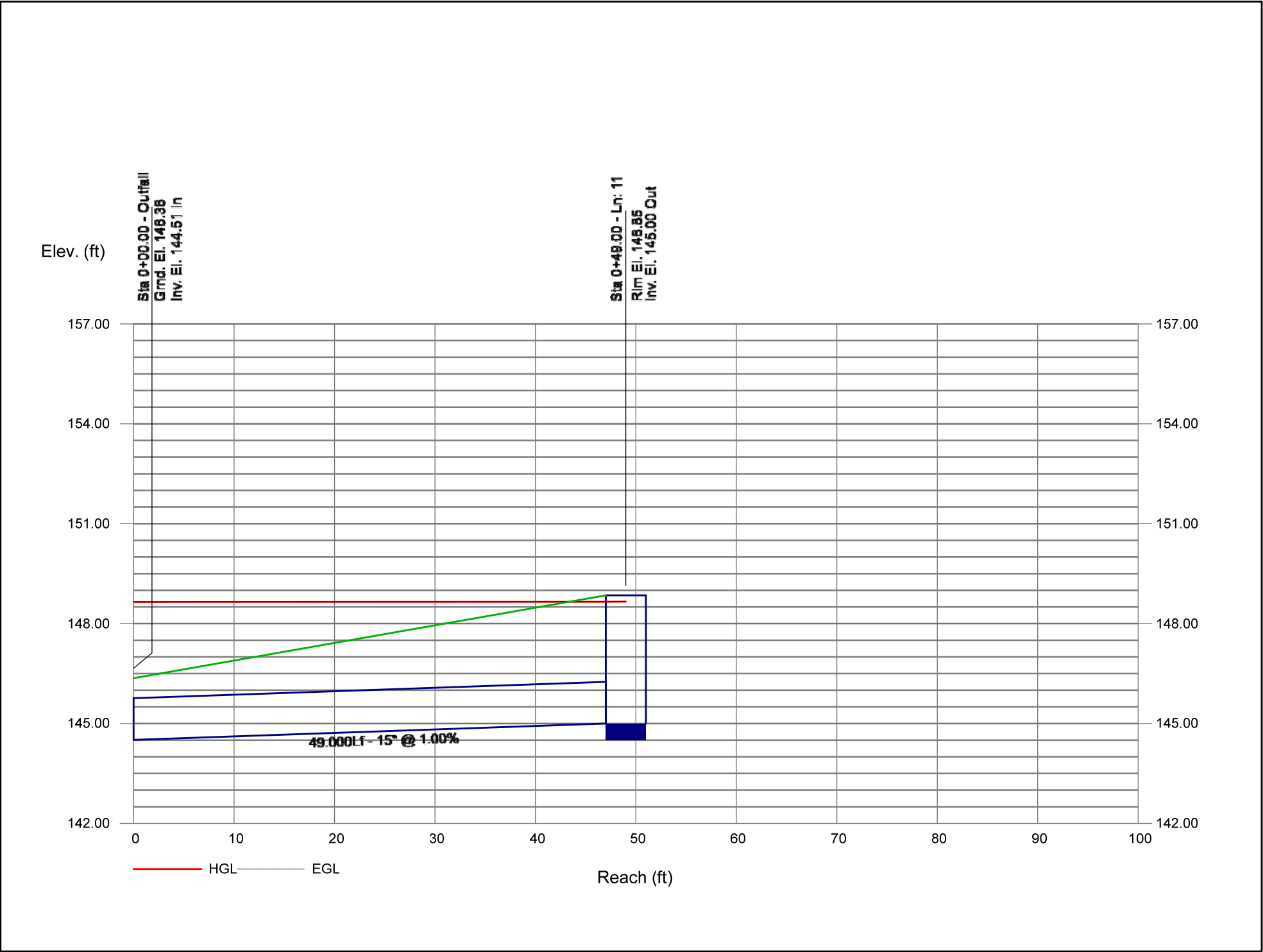
Storm Sewer Profile



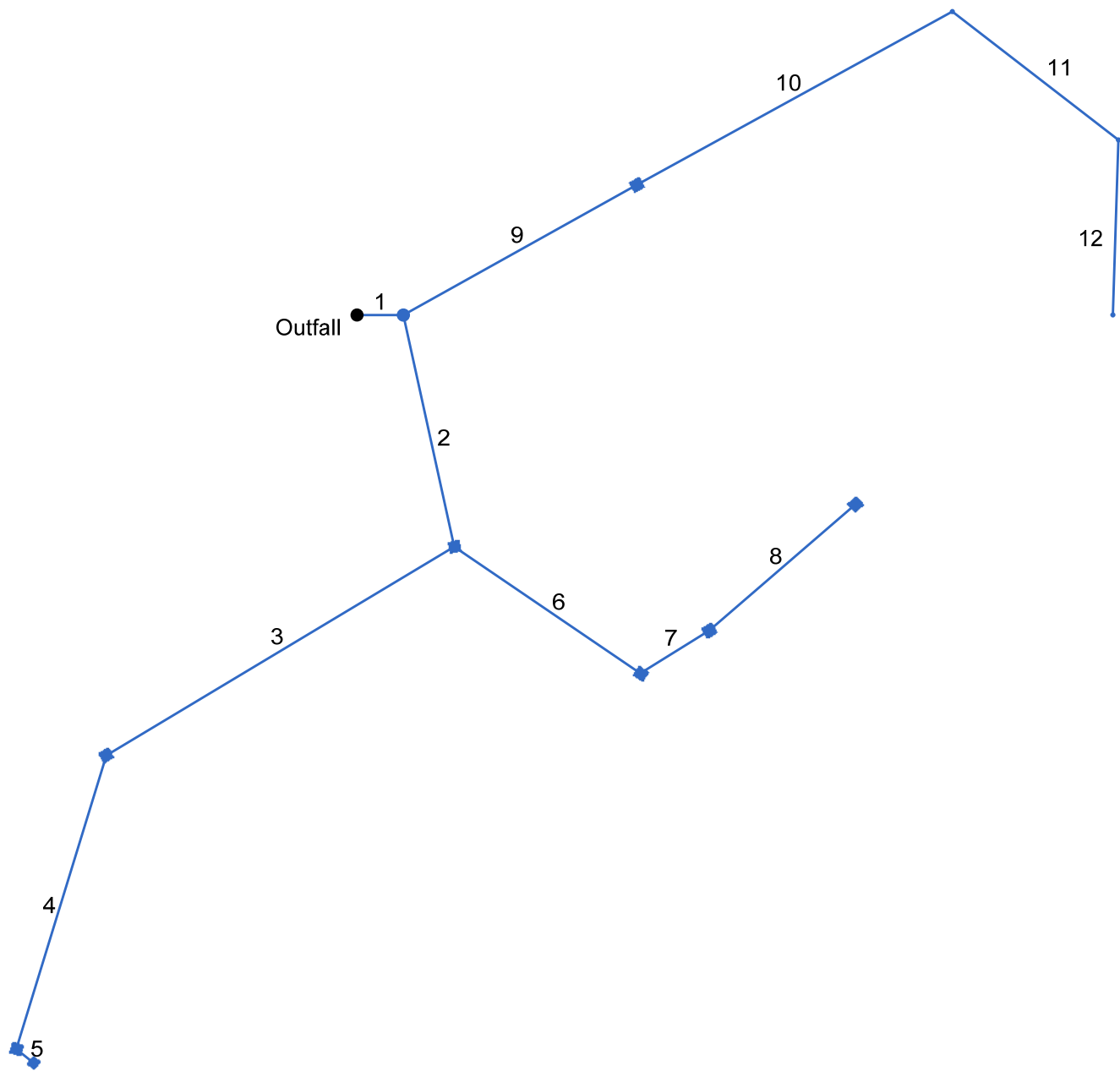
Storm Sewer Profile



Storm Sewer Profile



Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan

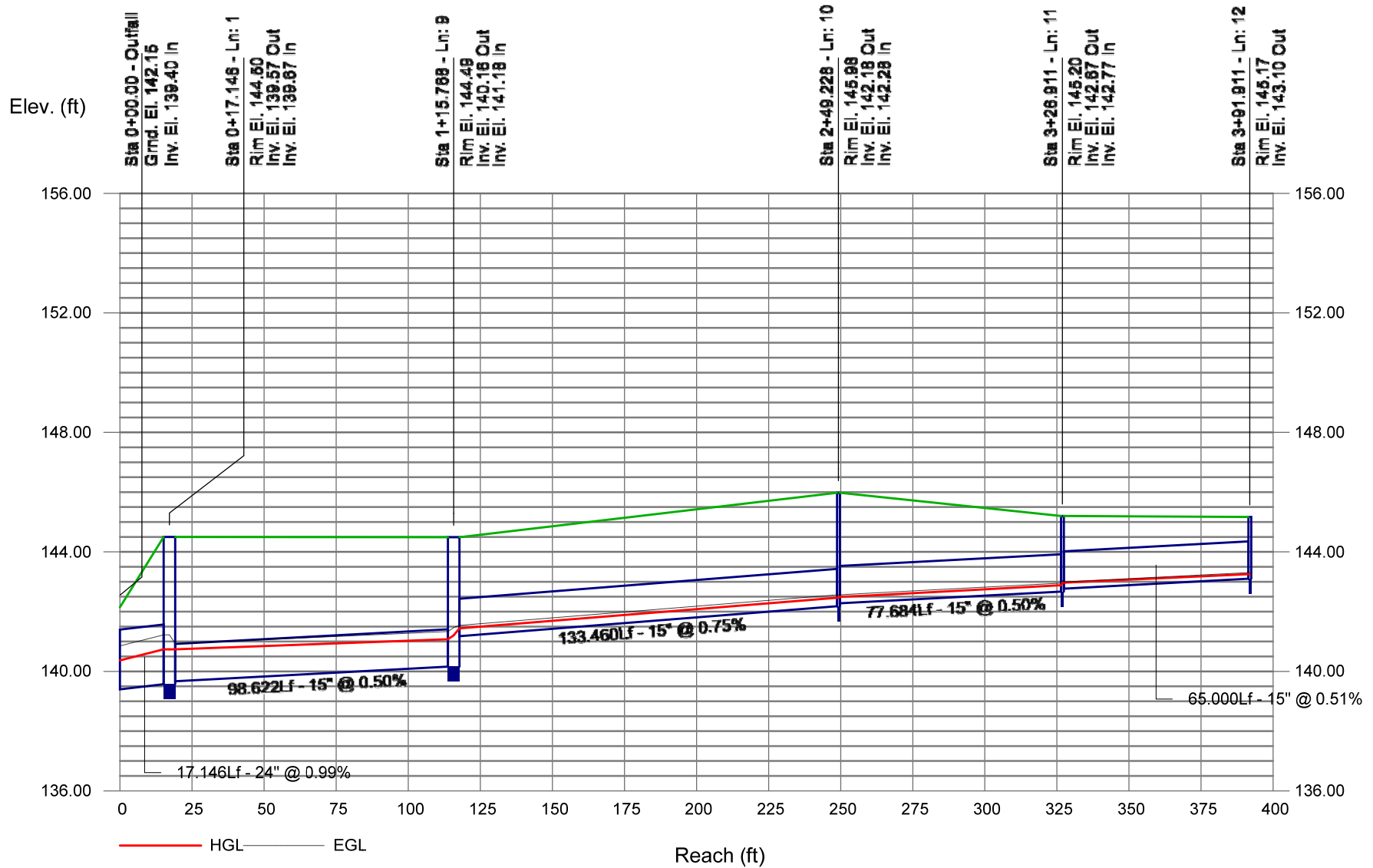


Storm Sewer Tabulation

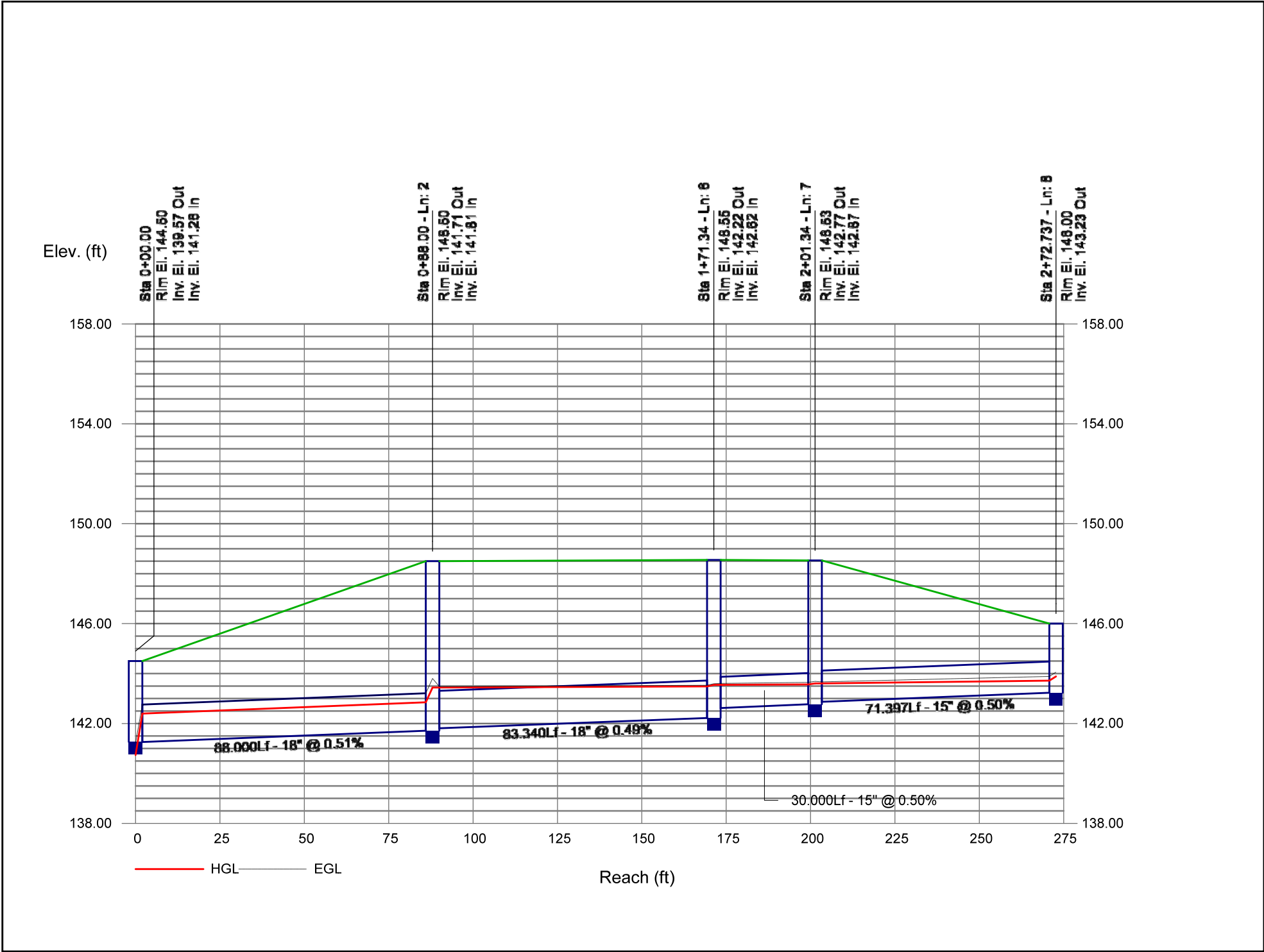
Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	17.146	0.00	2.05	0.95	0.00	1.65	10.0	12.6	6.4	10.63	22.52	6.31	24	0.99	139.40	139.57	140.37	140.74	142.15	144.50	Pipe - (189)
2	1	88.000	0.42	1.27	0.95	0.40	1.05	10.0	11.6	6.6	6.94	7.51	4.82	18	0.51	141.26	141.71	142.40	142.85	144.50	148.50	Pipe - (107)
3	2	150.129	0.14	0.28	0.85	0.12	0.25	10.0	10.8	6.8	1.71	6.45	4.00	15	1.00	145.40	146.90	145.84	147.42	148.50	151.25	Pipe - (129)
4	3	113.920	0.07	0.14	0.95	0.07	0.13	10.0	10.1	6.9	0.92	2.52	2.95	12	0.50	147.23	147.80	147.65	148.22	151.25	152.95	Pipe - (261)
5	4	8.229	0.07	0.07	0.95	0.07	0.07	10.0	10.0	6.9	0.46	0.00	1.05	12	0.00	147.80	147.80	148.35	148.35	152.95	149.80	Pipe - (262)
6	2	83.340	0.23	0.57	0.52	0.12	0.40	10.0	10.7	6.8	2.70	7.37	1.61	18	0.49	141.81	142.22	143.44	143.49	148.50	148.55	Pipe - (105)
7	6	30.000	0.07	0.34	0.95	0.07	0.28	10.0	10.5	6.8	1.90	4.57	2.12	15	0.50	142.62	142.77	143.55	143.57	148.55	148.53	Pipe - (123)
8	7	71.397	0.27	0.27	0.78	0.21	0.21	10.0	10.0	6.9	1.46	4.59	2.62	15	0.50	142.87	143.23	143.61	143.72	148.53	146.00	Pipe - (235)
9	1	98.622	0.59	0.78	0.89	0.53	0.60	10.0	12.1	6.5	3.94	4.55	3.81	15	0.50	139.67	140.16	140.74	141.07	144.50	144.49	Pipe - (119)
10	9	133.460	0.09	0.19	0.40	0.04	0.08	10.0	11.3	6.7	0.53	5.59	2.70	15	0.75	141.18	142.18	141.44	142.46	144.49	145.98	Pipe - (116)
11	10	77.684	0.05	0.10	0.41	0.02	0.04	10.0	10.7	6.8	0.30	4.58	2.10	15	0.50	142.28	142.67	142.50	142.89	145.98	145.20	Pipe - (115)
12	11	65.000	0.05	0.05	0.46	0.02	0.02	10.0	10.0	6.9	0.16	4.60	1.55	15	0.51	142.77	143.10	142.97	143.25	145.20	145.17	Pipe - (114)
Project File: System E.stm																Number of lines: 12				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Profile

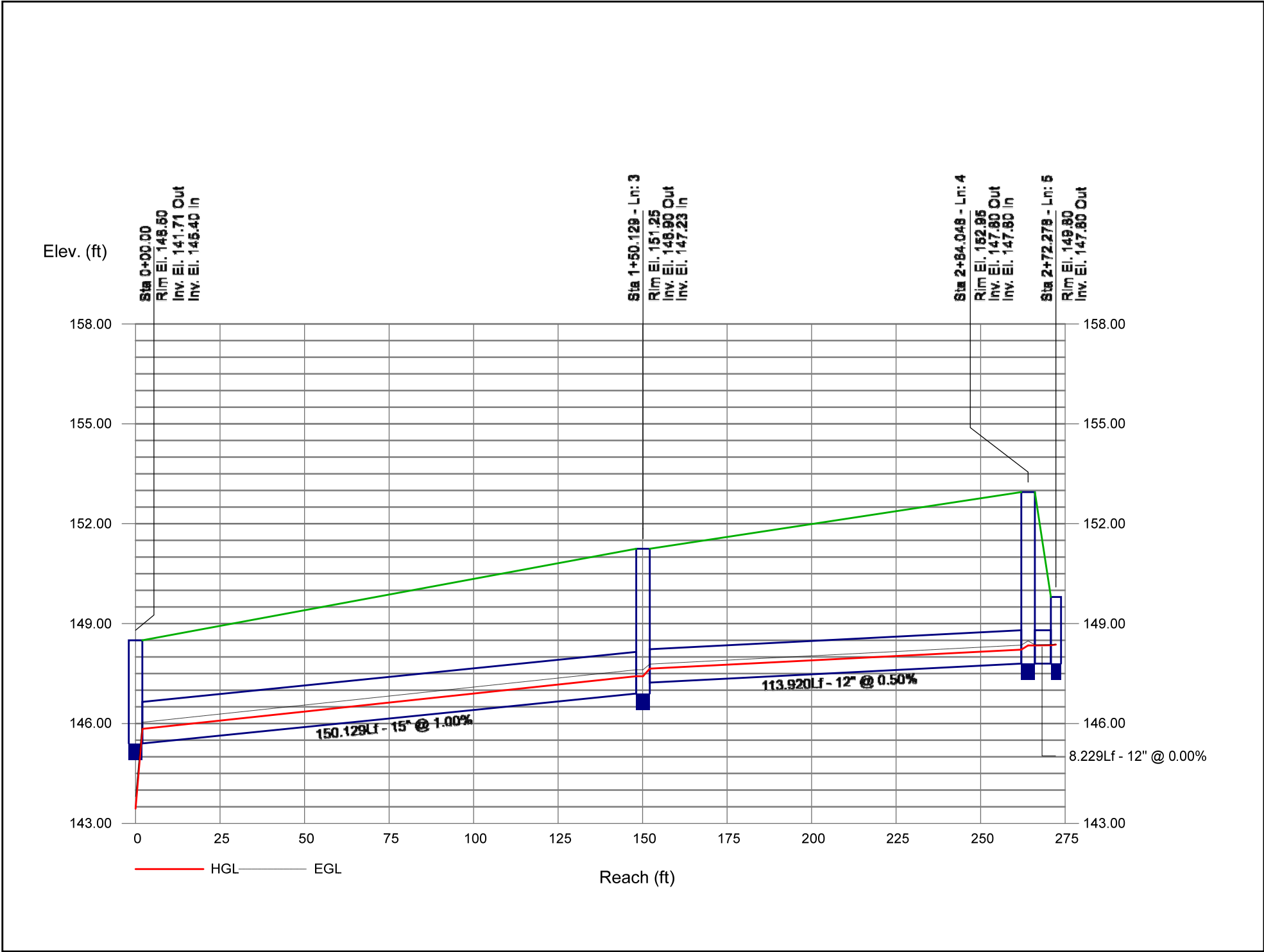
Proj. file: System E.stm



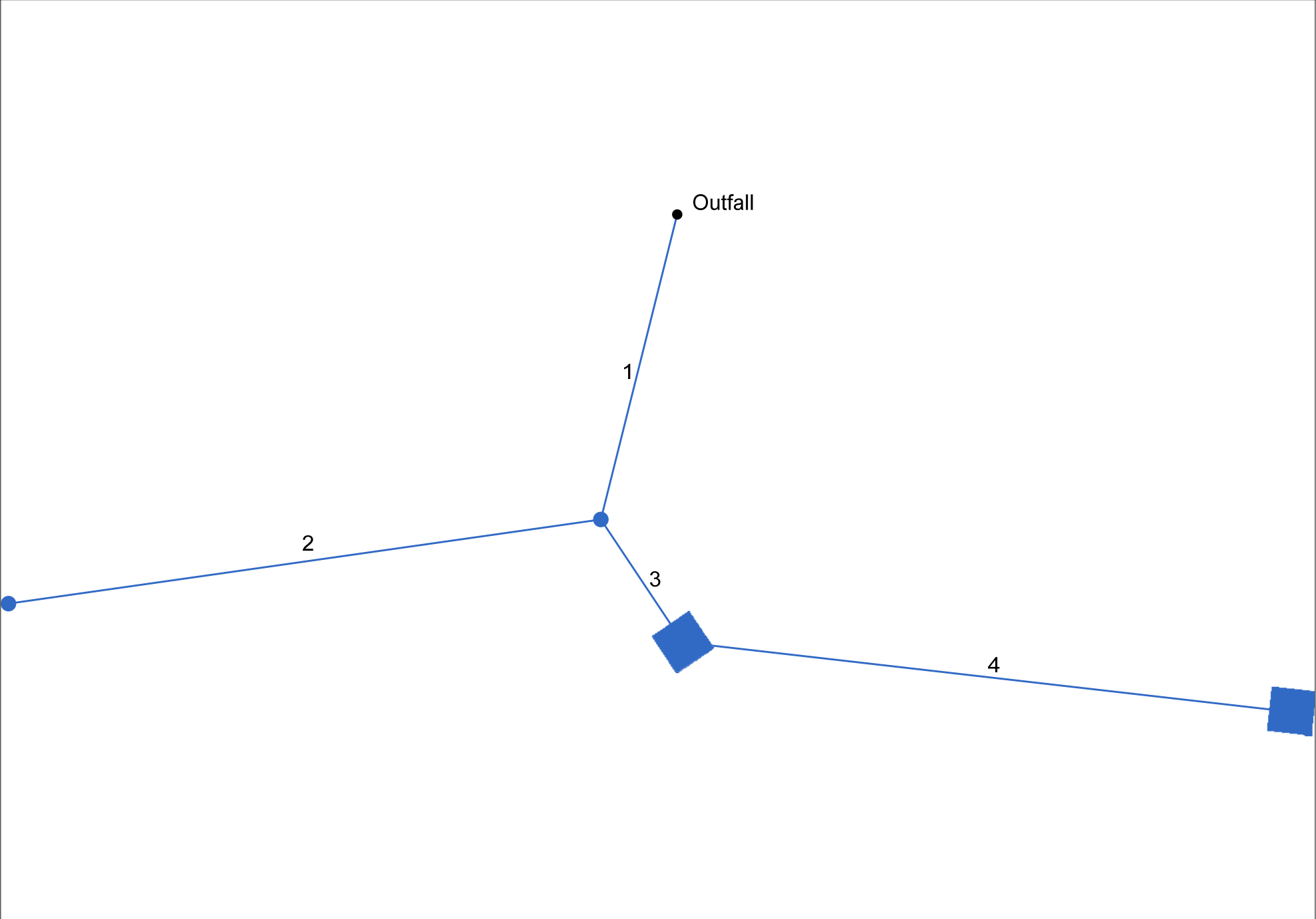
Storm Sewer Profile



Storm Sewer Profile



Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan

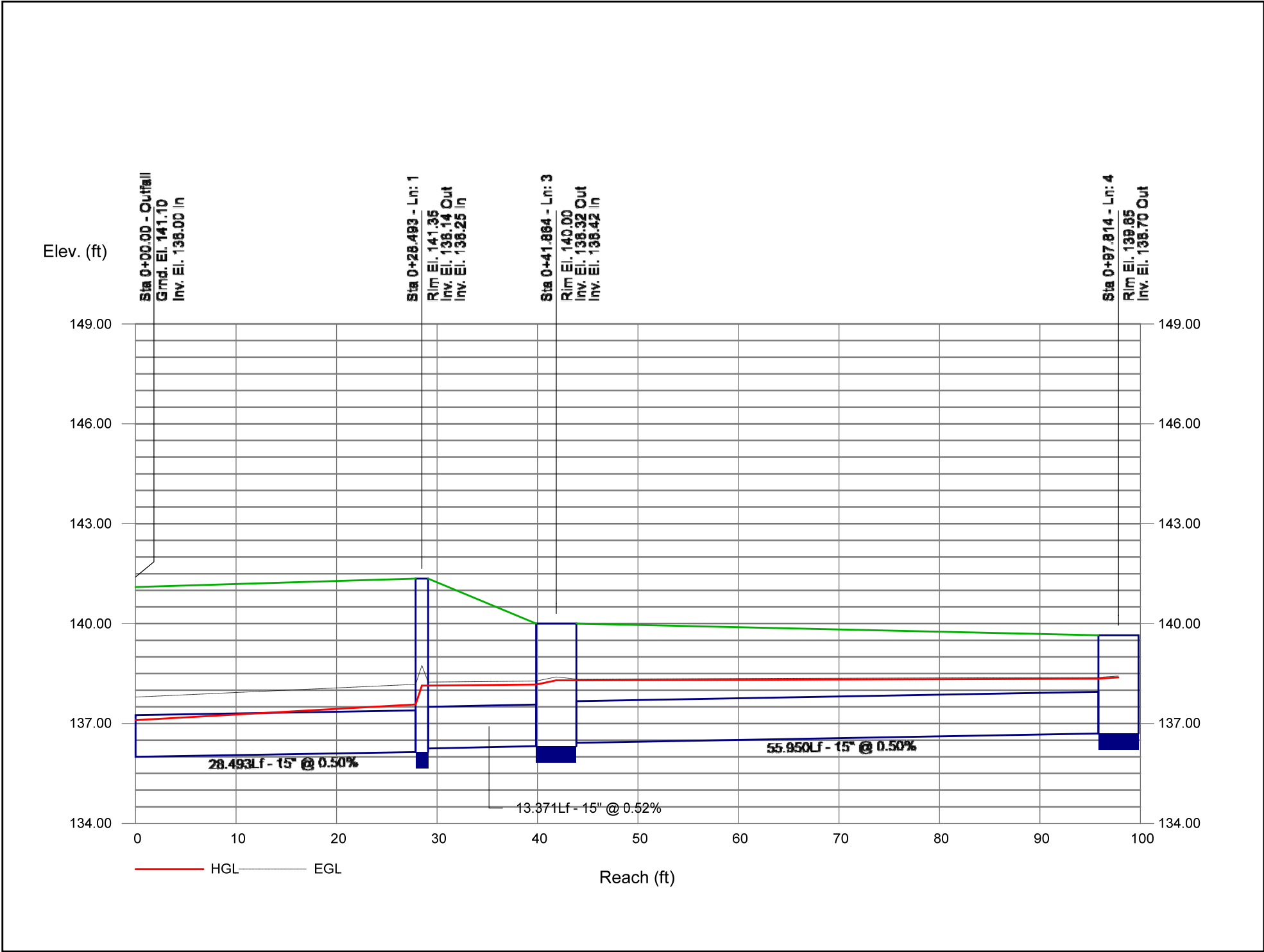


Project File: System F.stm	Number of lines: 4	Date: 4/21/2022
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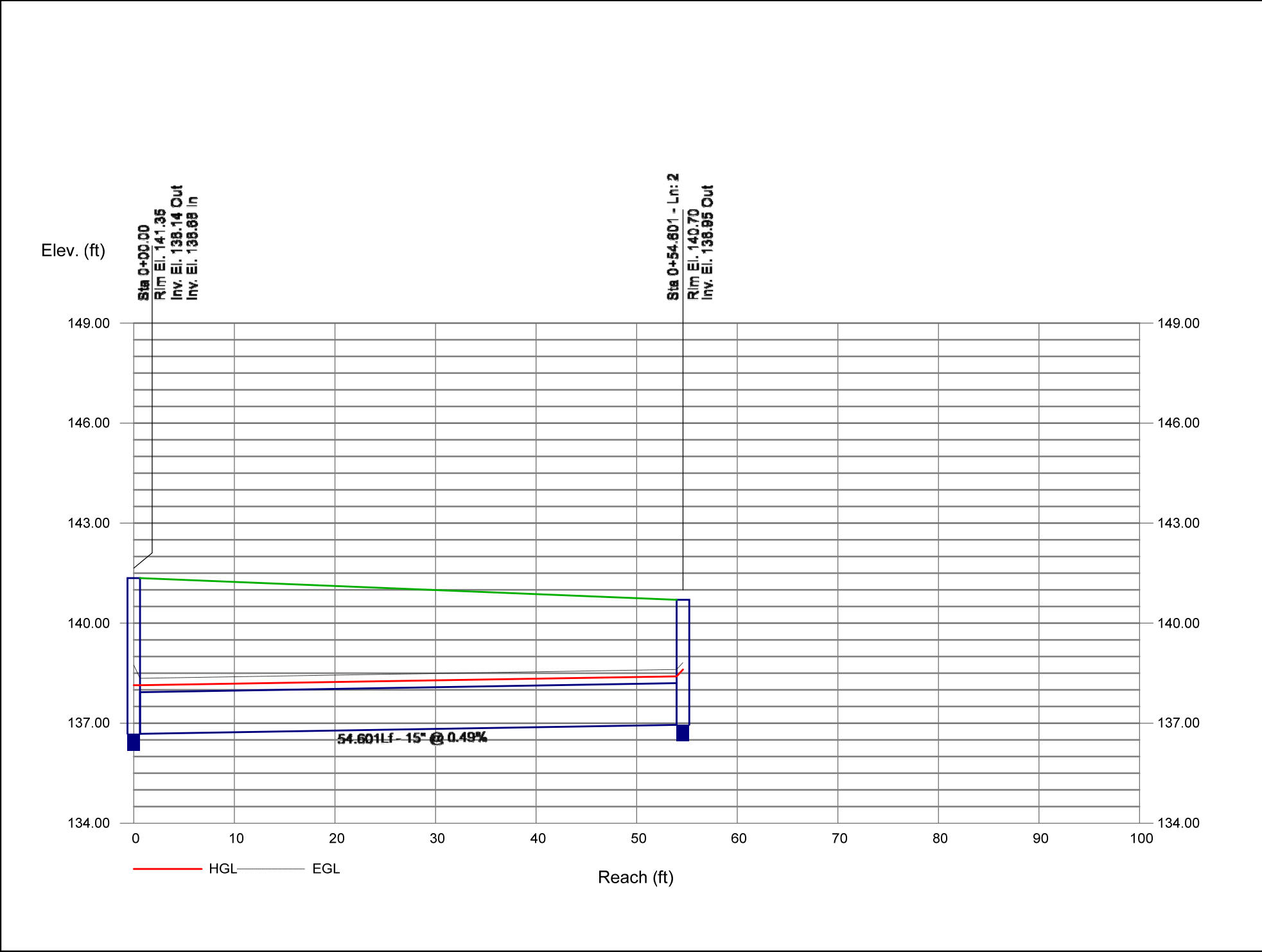
Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	28.493	0.00	0.53	0.00	0.00	0.46	0.0	10.7	6.8	7.65	4.57	6.46	15	0.50	136.00	136.14	137.10	137.57	141.10	141.35	Pipe - (193)
2	1	54.601	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.49	4.54	3.66	15	0.49	136.68	136.95	138.14	138.40	141.35	140.70	Pipe - (194)
3	1	13.371	0.20	0.53	0.92	0.18	0.46	10.0	10.6	6.8	3.17	4.67	2.58	15	0.52	136.25	136.32	138.14	138.17	141.35	140.00	Pipe - (192)
4	3	55.950	0.33	0.33	0.85	0.28	0.28	10.0	10.0	6.9	1.95	4.57	1.59	15	0.50	136.42	136.70	138.30	138.35	140.00	139.65	Pipe - (191)
Project File: System F.stm																Number of lines: 4				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

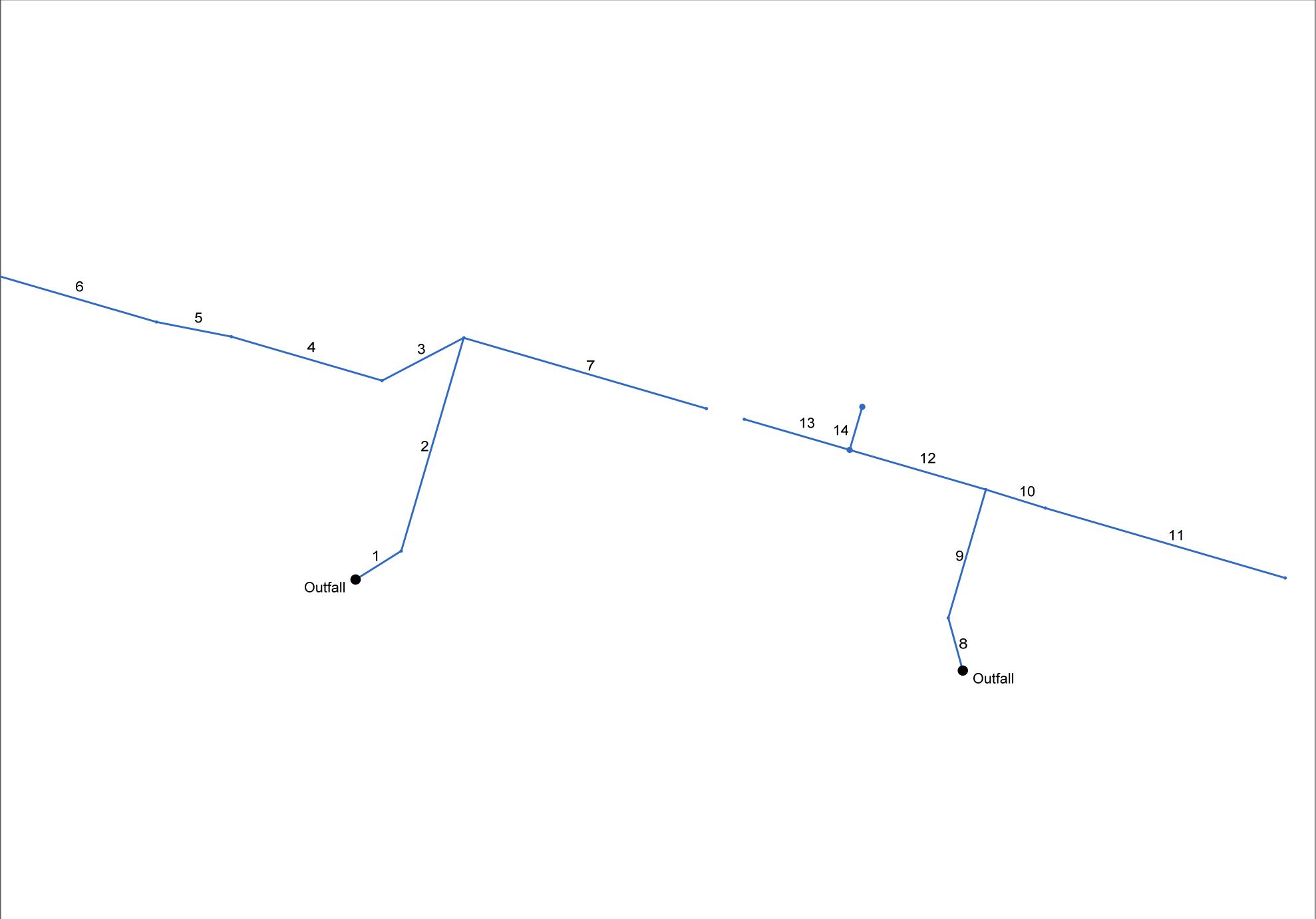
Storm Sewer Profile



Storm Sewer Profile



Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



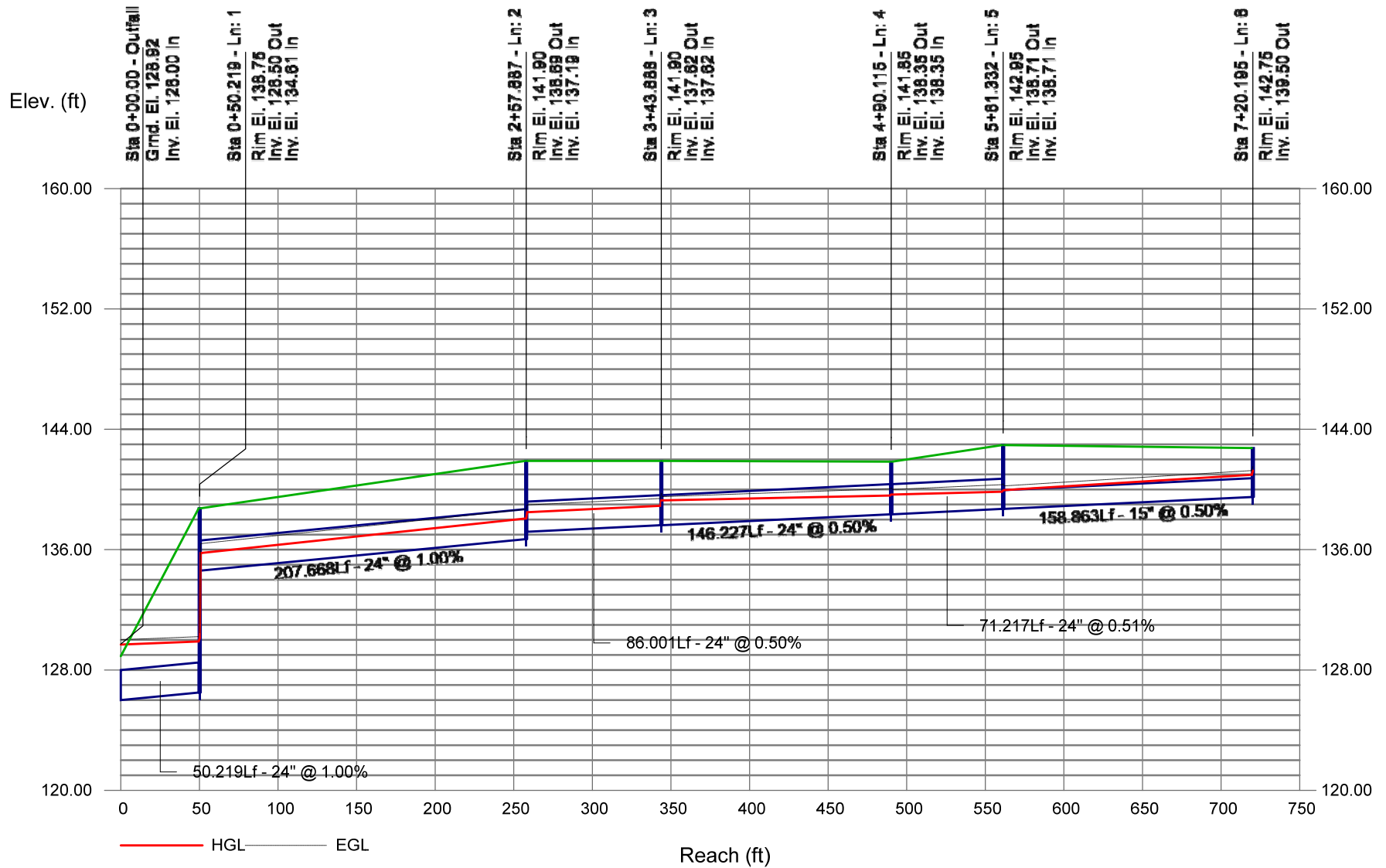
Project File: Roof Leaders.stm	Number of lines: 14	Date: 4/21/2022
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Storm Sewer Tabulation

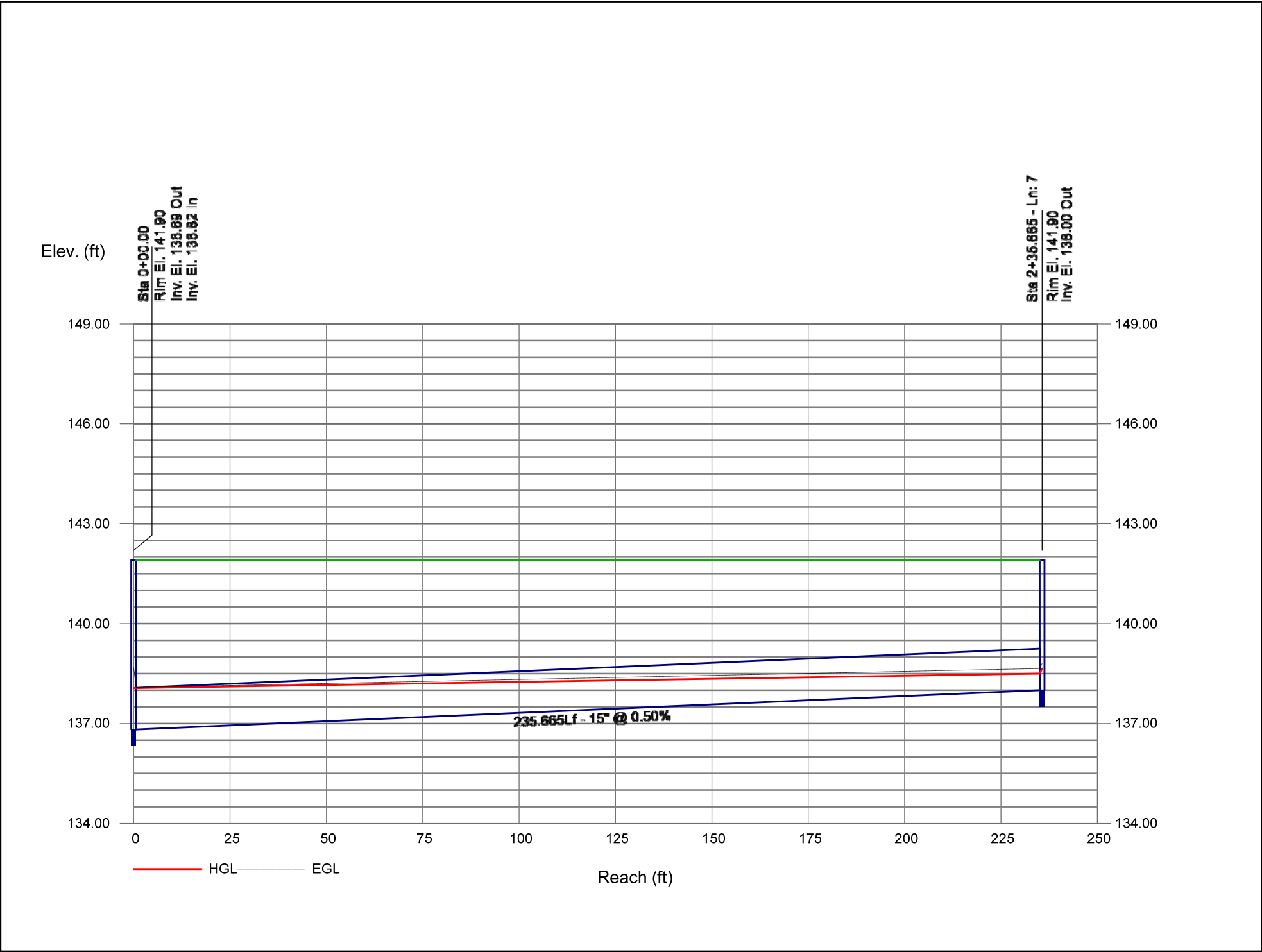
Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr (min)	Total (min)	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	50.219	0.00	2.26	0.50	0.00	2.21	10.0	12.3	6.5	14.35	22.57	4.57	24	1.00	126.00	126.50	129.69	129.89	128.92	138.75	Pipe - (228)
2	1	207.668	0.21	2.26	0.98	0.21	2.21	10.0	11.8	6.6	14.56	22.64	6.99	24	1.00	134.61	136.69	135.78	138.06	138.75	141.90	Pipe - (227)
3	2	86.001	0.16	1.84	0.98	0.16	1.80	10.0	11.4	6.7	12.01	15.99	5.59	24	0.50	137.19	137.62	138.48	138.91	141.90	141.90	Pipe - (226)
4	3	146.227	0.16	1.68	0.98	0.16	1.65	10.0	10.9	6.8	11.14	15.98	4.72	24	0.50	137.62	138.35	139.27	139.59	141.90	141.85	Pipe - (225)
5	4	71.217	0.76	1.52	0.98	0.74	1.49	10.0	10.6	6.8	10.15	16.08	5.05	24	0.51	138.35	138.71	139.66	139.85	141.85	142.95	Pipe - (224)
6	5	158.863	0.76	0.76	0.98	0.74	0.74	10.0	10.0	6.9	5.17	4.55	4.22	15	0.50	138.71	139.50	139.96	140.98	142.95	142.75	Pipe - (223)
7	2	235.665	0.21	0.21	0.98	0.21	0.21	10.0	10.0	6.9	1.43	4.57	2.14	15	0.50	136.82	138.00	138.06	138.50	141.90	141.90	Pipe - (229)
8	End	51.067	0.00	0.90	0.50	0.00	0.88	10.0	12.4	6.5	5.67	10.49	3.21	18	1.00	124.00	124.51	129.69	129.84	127.59	139.42	Pipe - (232)
9	8	125.000	0.21	0.90	0.98	0.21	0.88	10.0	12.0	6.5	5.74	7.46	4.65	18	0.50	136.20	136.83	137.19	137.82	139.42	141.97	Pipe - (231)
10	9	58.071	0.21	0.42	0.98	0.21	0.41	10.0	11.5	6.6	2.74	4.56	3.89	15	0.50	138.72	139.01	139.42	139.71	141.97	142.90	Pipe - (234)
11	10	232.925	0.21	0.21	0.98	0.21	0.21	10.0	10.0	6.9	1.43	4.56	2.65	15	0.50	139.02	140.18	139.74	140.65	142.90	142.20	Pipe - (233)
12	9	132.328	0.00	0.27	0.00	0.00	0.26	0.0	10.7	6.8	1.77	4.20	1.70	15	0.42	136.83	137.39	138.15	138.25	141.97	141.94	Pipe - (230)
13	12	102.282	0.21	0.21	0.98	0.21	0.21	10.0	10.0	6.9	1.43	4.99	2.42	15	0.60	137.39	138.00	138.31	138.47	141.94	141.90	Pipe - (230)(2)
14	12	42.000	0.06	0.06	0.90	0.05	0.05	10.0	10.0	6.9	0.38	2.73	1.48	12	0.50	137.49	137.70	138.31	137.95	141.94	0.00	(275)
Project File: Roof Leaders.stm																Number of lines: 14				Run Date: 4/21/2022		
NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box																						

Storm Sewer Profile

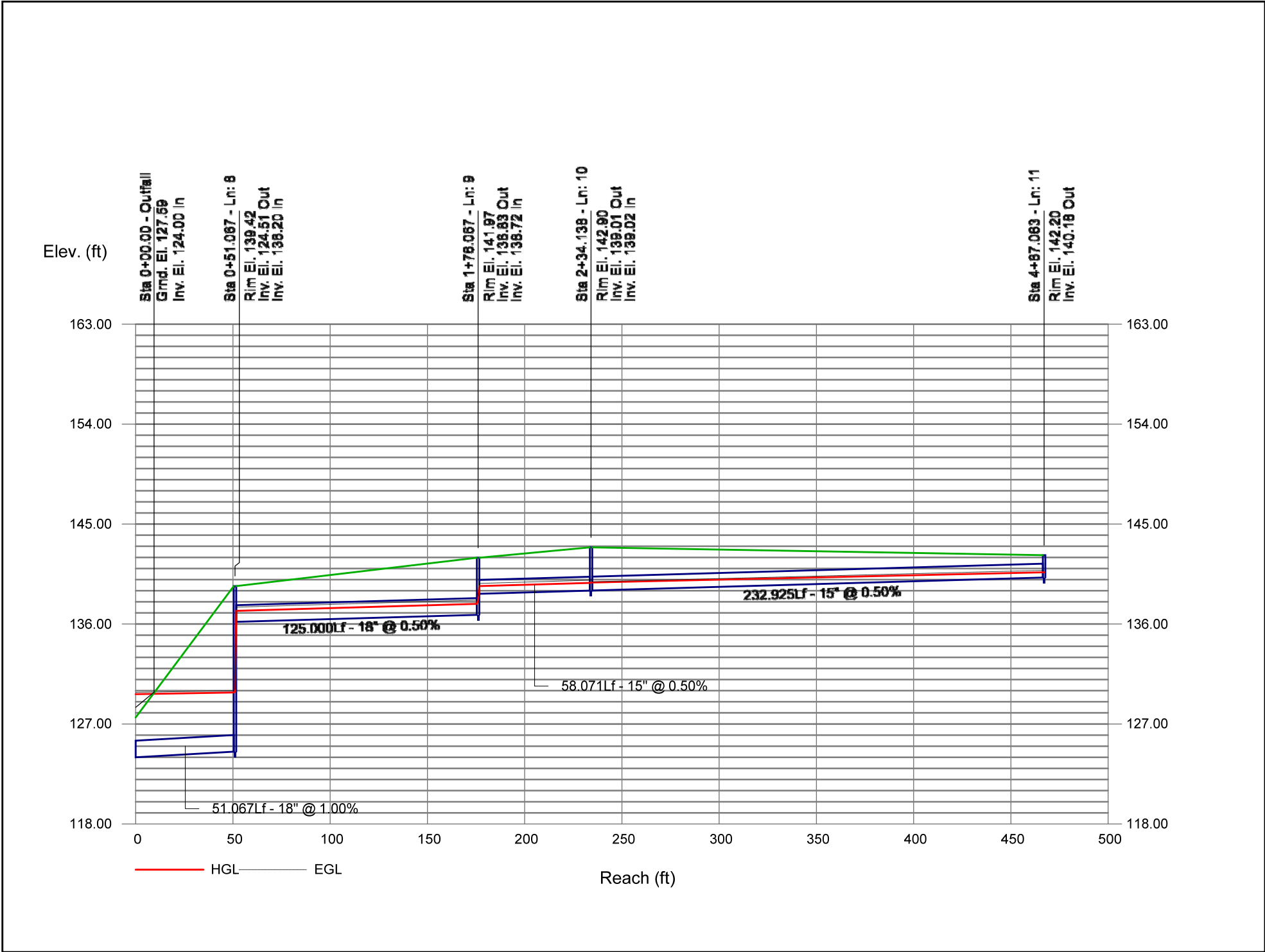
Proj. file: Roof Leaders.stm



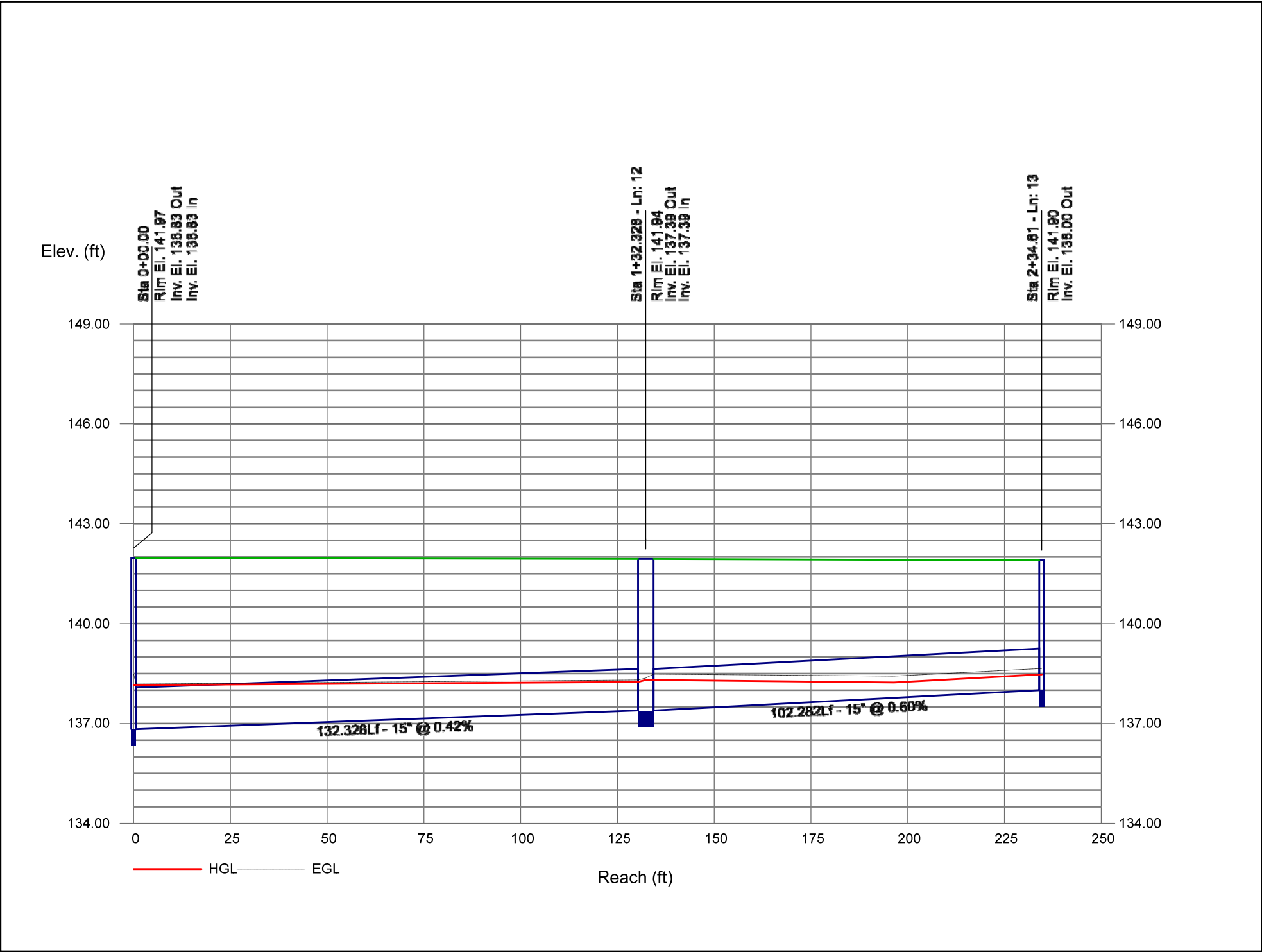
Storm Sewer Profile



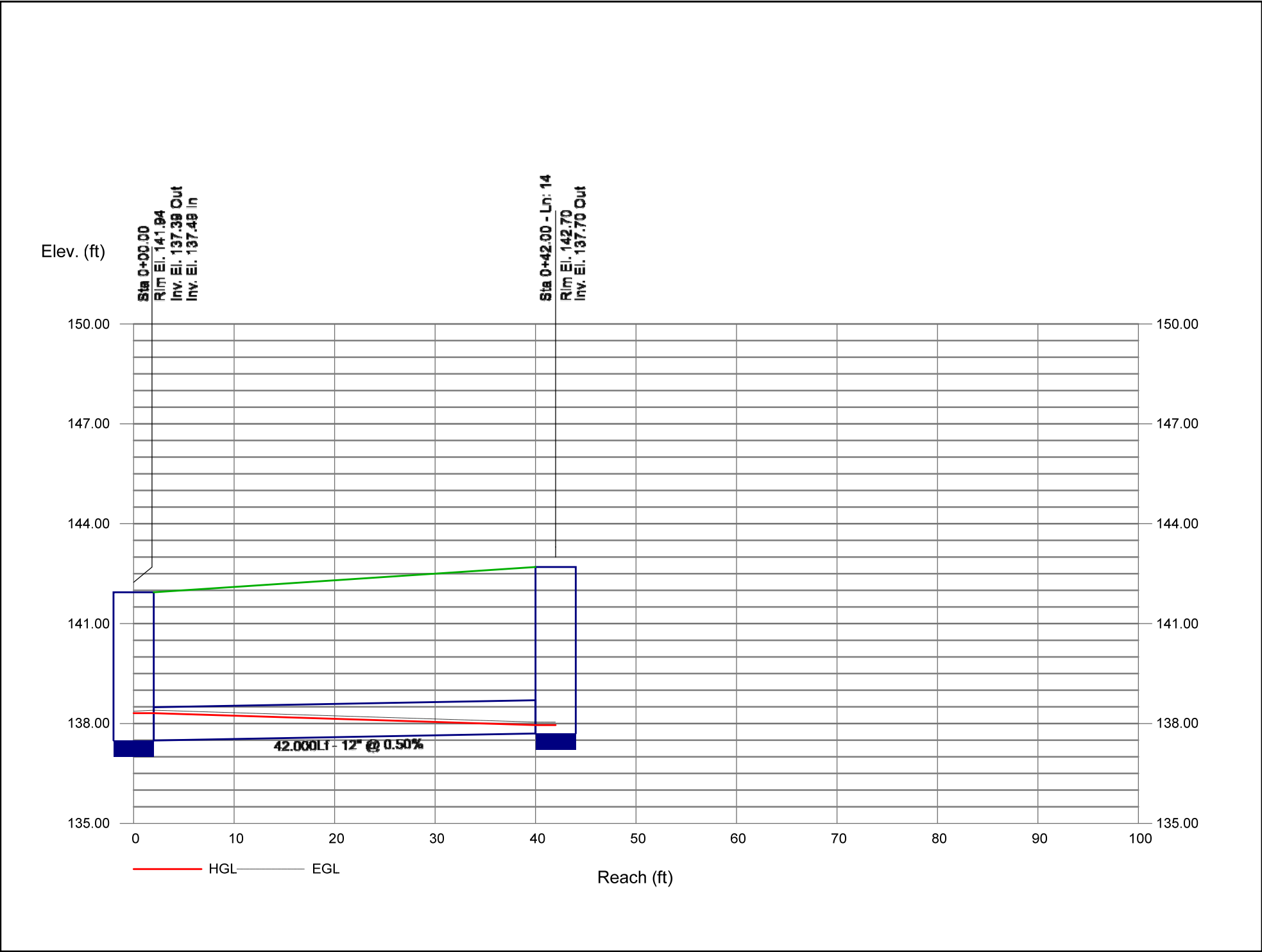
Storm Sewer Profile



Storm Sewer Profile



Storm Sewer Profile



Rip Rap

Conduit Outlet Protection Calculations

Rip Rap Pad # 1

Design Parameters:

Design Storm Flow for 25 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

63.97 cfs
36 in
36 in
4.64 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 21.32$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

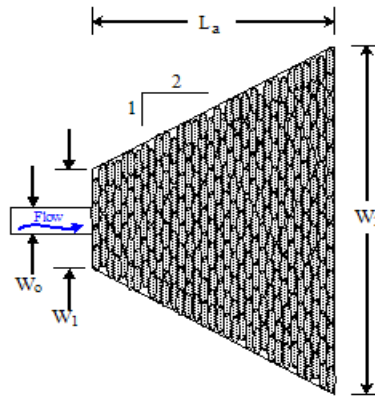
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 36.93 \text{ ft}$$

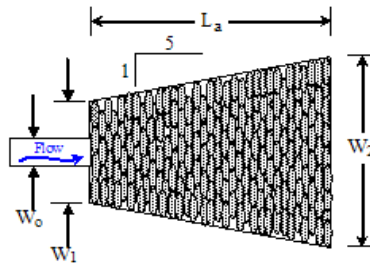
$$\text{Width, } W_1 = 3W_o = 9 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 23.77 \text{ ft}$$

or $L_a = 37 \text{ ft}$

or $W_1 = 9 \text{ ft}$

or $W_2 = 24 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 21.32$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 2.42 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Rip Rap Pad # 2

Design Parameters:

Design Storm Flow for 25 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

40.08 cfs
36 in
36 in
3.64 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 13.36$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

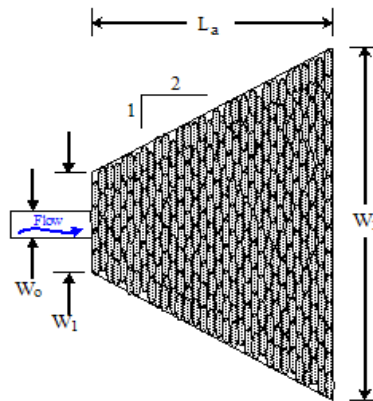
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 23.14 \text{ ft}$$

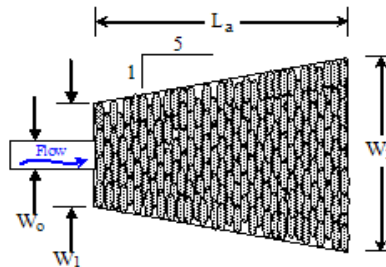
$$\text{Width, } W_1 = 3W_o = 9 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 18.26 \text{ ft}$$

or $L_a = 24 \text{ ft}$

or $W_1 = 9 \text{ ft}$

or $W_2 = 19 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 13.36$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 1.66 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Rip Rap Pad # 3

Design Parameters:

Design Storm Flow for 25 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

15.60 cfs
24 in
24 in
5.64 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 7.80$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

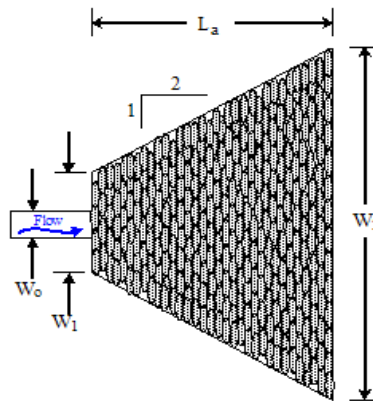
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 16.55 \text{ ft}$$

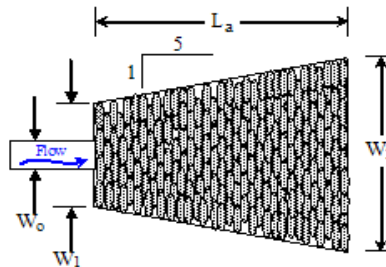
$$\text{Width, } W_1 = 3W_o = 6 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 12.62 \text{ ft}$$

or $L_a = 17 \text{ ft}$

or $W_1 = 6 \text{ ft}$

or $W_2 = 13 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 7.80$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 0.52 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Rip Rap Pad # 4

Design Parameters:

Design Storm Flow for 25 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

37.29 cfs
30 in
30 in
5.64 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 14.92$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

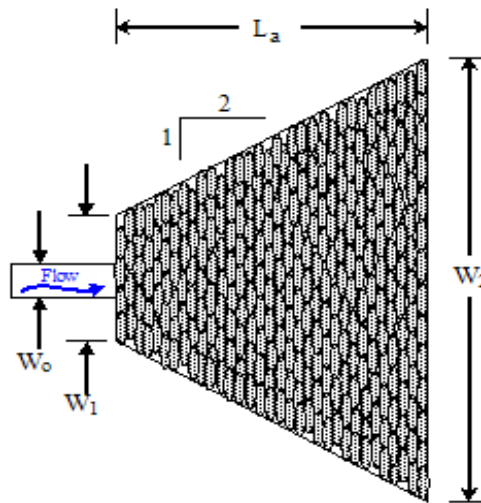
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$$L_a =$$

$$W_1 =$$

$$W_2 =$$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 28.3 \text{ ft}$$

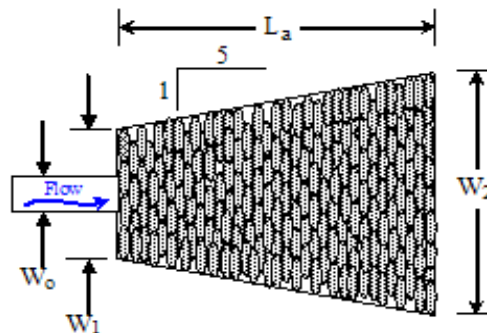
$$\text{Width, } W_1 = 3W_o = 7.5 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 18.82 \text{ ft}$$

$$\text{or } L_a = 29 \text{ ft}$$

$$\text{or } W_1 = 8 \text{ ft}$$

$$\text{or } W_2 = 19 \text{ ft}$$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 14.92$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 1.24 \text{ in}$$

$$d_{50} = 6 \text{ in}$$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Rip Rap Pad # 5

Design Parameters:

Design Storm Flow for 25 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

36.35 cfs
30 in
30 in
5.64 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 14.54$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

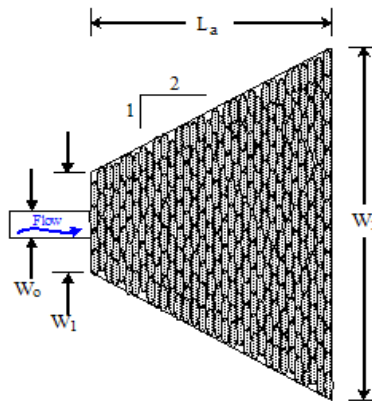
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 27.59 \text{ ft}$$

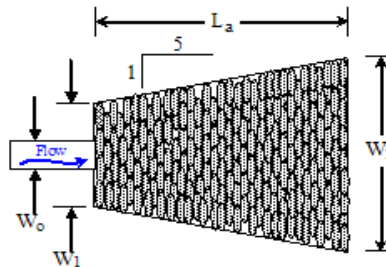
$$\text{Width, } W_1 = 3W_o = 7.5 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 18.54 \text{ ft}$$

or $L_a = 28 \text{ ft}$

or $W_1 = 8 \text{ ft}$

or $W_2 = 19 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 14.54$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 1.20 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Rip Rap Pad # 6

Design Parameters:

Design Storm Flow for 25 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

5.32 cfs
24 in
24 in
3.44 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 2.66$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

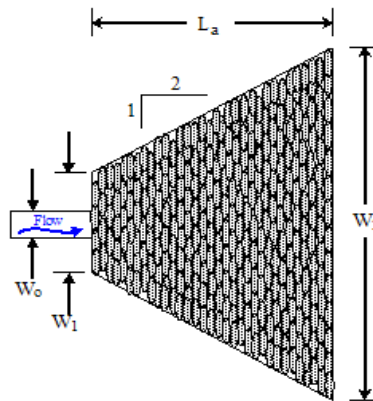
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 5.64 \text{ ft}$$

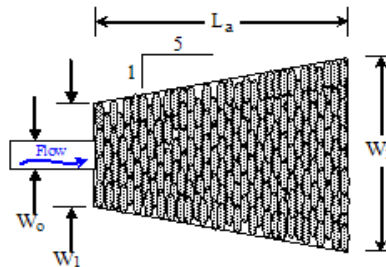
$$\text{Width, } W_1 = 3W_o = 6 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 8.26 \text{ ft}$$

or $L_a = 6 \text{ ft}$

or $W_1 = 6 \text{ ft}$

or $W_2 = 9 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 2.66$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 0.21 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Rip Rap Pad # 7

Design Parameters:

Design Storm Flow for 25 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

16.98 cfs
30 in
30 in
3.85 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 6.79$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

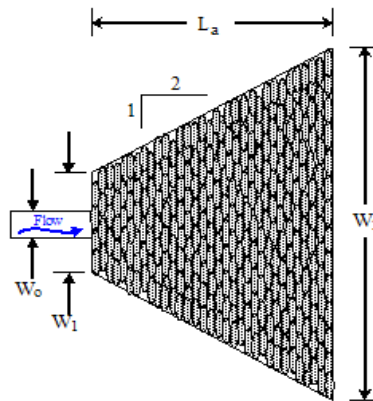
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 12.89 \text{ ft}$$

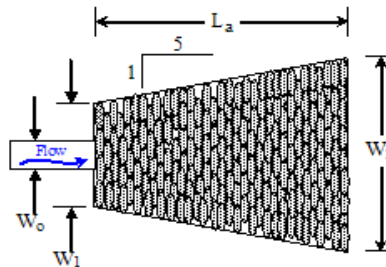
$$\text{Width, } W_1 = 3W_o = 7.5 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 12.65 \text{ ft}$$

or $L_a = 13 \text{ ft}$

or $W_1 = 8 \text{ ft}$

or $W_2 = 13 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 6.79$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 0.64 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Rip Rap Pad # 8

Design Parameters:

Design Storm Flow for 25 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

10.63 cfs
24 in
24 in
1.83 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 5.32$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

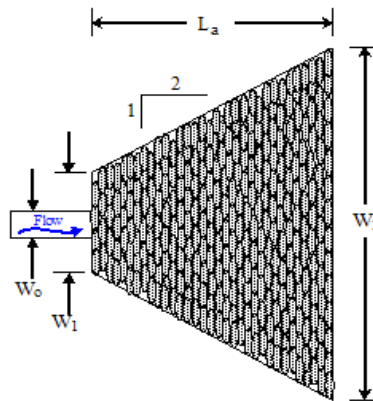
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 11.27 \text{ ft}$$

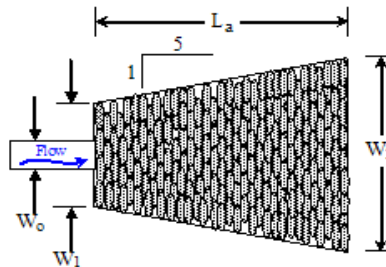
$$\text{Width, } W_1 = 3W_o = 6 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 10.51 \text{ ft}$$

or $L_a = 12 \text{ ft}$

or $W_1 = 6 \text{ ft}$

or $W_2 = 11 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 5.32$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 0.97 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Scour Hole # 9

Design Parameters:

Design Storm Flow for 25 Year, Q	15.23 cfs
Vertical Dimension of Outlet Pipe, D_o	36 in
Horizontal Dimension of Outlet Pipe, W_o	36 in
Tailwater Depth, TW^1	0.60 ft
Scour Hole Depth, y ($1/2 D_o$ or D_o)	12 in

Apron Dimension Calculations:

Minimum Bottom Width, $W_1 = 2W_o$	$W_1 = 6.00$ ft
Minimum Bottom Length, $L_1 = 3D_o$	$L_1 = 9.00$ ft
Minimum Top Width (max side slope of 3:1), W_2	$W_2 = 12.00$ ft
Minimum Top Length (max side slope of 3:1), L_2	$L_2 = 15.00$ ft

Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 5.08$ cfs per foot

• **Case I: $y = 1/2 D_o$**

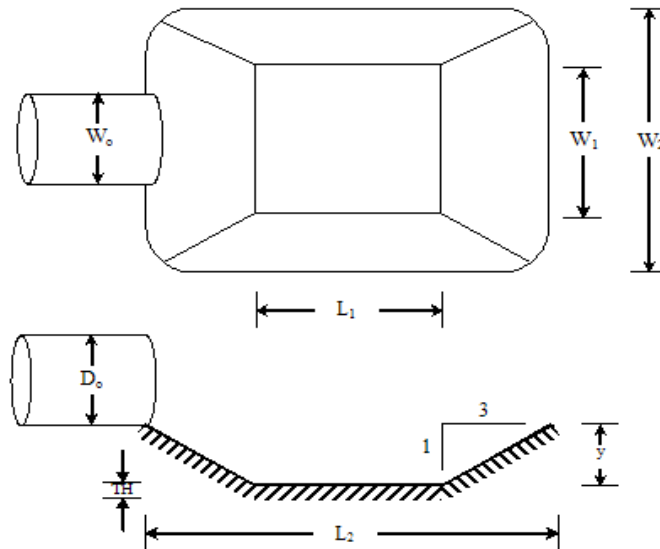
$$\text{Median Stone, } d_{50} = \frac{0.0125 q^{1.33}}{TW} =$$

Apron Thickness, $TH = 2 \times d_{50}$ with filter fabric

• **Case II: $y = D_o$**

$$\text{Median Stone, } d_{50} = \frac{0.0082 q^{1.33}}{TW} =$$

Apron Thickness, $TH = 2 \times d_{50}$ with filter fabric



Notes:

1. The side slopes shall be 3:1 or flatter.
2. The bottom grade shall be 0.0% (level).
3. There shall be no overfall at the end of the apron or at the end of the culvert.
4. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50} . The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
5. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
6. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
7. Where the scour hole is to be placed within an existing or proposed waterway:
 - a. The scour hole sidewalls should be eliminated to maintain a smooth hydraulic line along the waterway bottom to avoid inviting turbulent flow from a sudden depression in the waterway.
 - b. If the flow in the waterway is greater than the flow from the proposed outlet, the rip-rap used to construct the scour hole should be sized based on the greater flow value according to the standard rip-rap.

Footnote:

1. Tailwater depth shall be the 2 year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.

Conduit Outlet Protection Calculations

Rip Rap Pad # 10

Design Parameters:

Design Storm Flow for 25 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

0.73 cfs
15 in
15 in
3.27 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 0.58$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

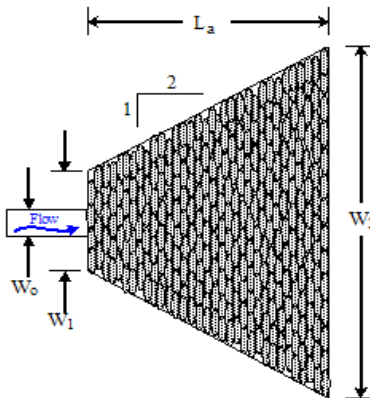
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 1.57 \text{ ft}$$

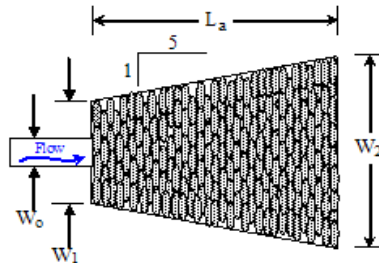
$$\text{Width, } W_1 = 3W_o = 3.75 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 4.38 \text{ ft}$$

or $L_a = 6 \text{ ft}$

or $W_1 = 6 \text{ ft}$

or $W_2 = 6 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 0.58$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 0.03 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Rip Rap Pad # 11

Design Parameters:

Design Storm Flow for 100 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

49.15 cfs
30 in
30 in
2.00 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 19.66$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

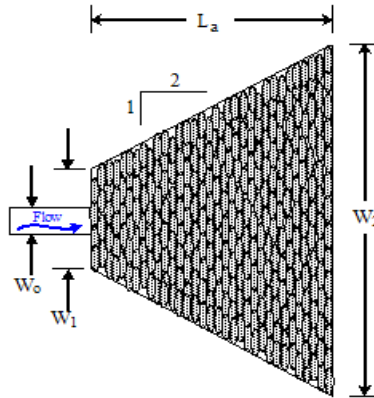
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 37.3 \text{ ft}$$

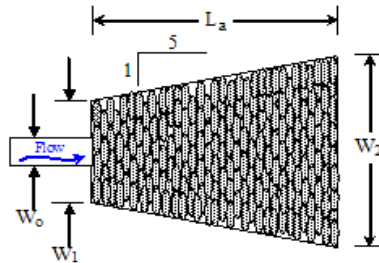
$$\text{Width, } W_1 = 3W_o = 7.5 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 22.42 \text{ ft}$$

or $L_a = 38 \text{ ft}$

or $W_1 = 8 \text{ ft}$

or $W_2 = 23 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 19.66$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 5.04 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Conduit Outlet Protection Calculations

Rip Rap Pad # 12

Design Parameters:

Design Storm Flow for 100 Year, Q
Vertical Dimension of Outlet Pipe, D_o
Horizontal Dimension of Outlet Pipe, W_o
Tailwater Depth, TW^1

27.36 cfs
30 in
30 in
3.14 ft

Apron Dimension Calculations:

Unit Discharge, $q = Q/W_o = 10.94$ cfs per foot

• Case I: $TW < 1/2 D_o$

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

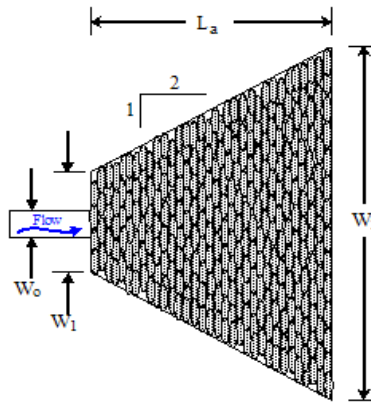
$$\text{Width, } W_1 = 3W_o =$$

$$\text{Width, } W_2 = 3W_o + L_a =$$

$L_a =$

$W_1 =$

$W_2 =$



• Case II: $TW \geq 1/2 D_o$

$$\text{Apron Length, } L_a = \frac{3q}{D_o^{1/2}} = 20.76 \text{ ft}$$

$$\text{Width, } W_1 = 3W_o = 7.5 \text{ ft}$$

$$\text{Width, } W_2 = 3W_o + 0.4L_a = 15.81 \text{ ft}$$

or

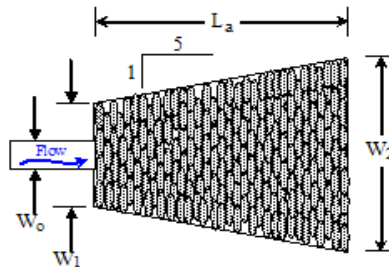
$L_a = 21 \text{ ft}$

or

$W_1 = 8 \text{ ft}$

or

$W_2 = 16 \text{ ft}$



Rip Rap Stone Size Calculations:

Unit Discharge, $q = Q/D_o = 10.94$ cfs per foot

$$\text{Median Stone, } d_{50} = \frac{0.016q^{1.33}}{TW} = 1.47 \text{ in}$$

$d_{50} = 6 \text{ in}$

Notes:

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

Footnote:

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

Low Impact Development Checklist

New Jersey Stormwater Best Management Practices Manual

February 2004

A P P E N D I X A

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

According to the NJDEP Stormwater Management Rules at N.J.A.C. 7:8, the groundwater recharge, stormwater quality, and stormwater quantity standards established by the Rules for major land development projects must be met by incorporating nine specific nonstructural stormwater management strategies into the project's design to the maximum extent practicable.

To accomplish this, the Rules require an applicant seeking land development approval from a regulatory board or agency to identify those nonstructural strategies that have been incorporated into the project's design. In addition, if an applicant contends that it is not feasible to incorporate any of the specific strategies into the project's design, particularly for engineering, environmental, or safety reasons, the Rules further require that the applicant provide a basis for that contention.

This checklist has been prepared to assist applicants, site designers, and regulatory boards and agencies in ensuring that the nonstructural stormwater management requirements of the Rules are met. It provides an applicant with a means to identify both the nonstructural strategies incorporated into the development's design and the specific low impact development BMPs (LID-BMPs) that have been used to do so. It can also help an applicant explain the engineering, environmental, and/or safety reasons that a specific nonstructural strategy could not be incorporated into the development's design.

The checklist can also assist municipalities and other land development review agencies in the development of specific requirements for both nonstructural strategies and LID-BMPs in zoning and/or land use ordinances and regulations. As such, where requirements consistent with the Rules have been adopted, they may supersede this checklist.

Finally, the checklist can be used during a pre-design meeting between an applicant and pertinent review personnel to discuss local nonstructural strategies and LID-BMPs requirements in order to optimize the development's nonstructural stormwater management design.

Since this checklist is intended to promote the use of nonstructural stormwater management strategies and provide guidance in their incorporation in land development projects, municipalities are permitted to revise it as necessary to meet the goals and objectives of their specific stormwater management program and plan within the limits of N.J.A.C. 7:8.

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

Municipality: Township of Montgomery

County: Somerset Date: October 5, 2017

Review board or agency: Township of Montgomery

Proposed land development name: Proposed Retail & Residential Development

Lot(s): 46.01, 56, 57, 77, 78 & 79 Block(s): 34001

Project or application number: _____

Applicant's name: MM/PG Montgomery Properties, LLC

Applicant's address: 300 Cookman Avenue

Asbury Park, NJ 07712

Telephone: (732) 897-6512 Fax: _____

Email address: steven.lidster@madisonmarquette.com

Designer's name: Bradford A. Bohler, P.E. of Bohler Engineering NJ, LLC

Designer's address: 35 Technology Drive

Warren, NJ 07059

Telephone: (908) 668-8300 Fax: (908) 754-4401

Email address: bbohler@bohlereng.com

Part 1: Description of Nonstructural Approach to Site Design

In narrative form, provide an overall description of the nonstructural stormwater management approach and strategies incorporated into the proposed site's design. Attach additional pages as necessary. Details of each nonstructural strategy are provided in Part 3 below.

The site provides four (4) above ground stormwater management basins

to provide adequate reductions in flow & meet NJDEP water quality standards.

Silt fencing, tree protection, inlet protection devices and sediment basins

have been proposed throughout the proposed development.

The limit of disturbance will be clearly defined during construction.

In addition, the contractors are instructed to minimize

and strictly regulate construction areas, access roads, material and

equipment storage areas. The curbed catch basins grates will be N-eco

type and trash racks will be provided at entrances and exits of the stormwater

management facilities. These measures will provide preventative source

control to ensure that larger pollutants do not make their way into

the stormwater drainage systems.

Part 2: Review of Local Stormwater Management Regulations

Title and date of stormwater management regulations used in development design:

Stormwater Management Regulations NJAC 7:8 dated 2/2/04 & NJ Best Management Practices

Do regulations include nonstructural requirements? Yes: X No: _____

If yes, briefly describe: There is a vegetated swale proposed on-site.

List LID-BMPs prohibited by local regulations: N/A

Pre-design meeting held? Yes: _____ Date: _____ No: X

Meeting held with: _____

Pre-design site walk held? Yes: X Date: July 2016 No: _____

Site walk held with: Site visits held in July 2016 by Bohler Engineering.

Other agencies with stormwater review jurisdiction:

Name: Town of Montgomery Planning Board

Required approval: Planning Board Approval

Name: Somerset County Planning Board

Required approval: Planning Board Approval

Name: Somerset-Union County SCD

Required approval: Soil Erosion Certificate

(continued on the next page)

Part 2: Review of Local Stormwater Management Regulations

Title and date of stormwater management regulations used in development design:

Do regulations include nonstructural requirements? Yes: _____ No: _____

If yes, briefly describe: _____

List LID-BMPs prohibited by local regulations: _____

Pre-design meeting held? Yes: _____ Date: _____ No: _____

Meeting held with: _____

Pre-design site walk held? Yes: _____ Date: _____ No: _____

Site walk held with: _____

Other agencies with stormwater review jurisdiction: (continued from previous page)

Name: Delaware & Raritan Canal Commission

Required approval: DRCC Approval

Name: New Jersey Department of Transportation

Required approval: NJDOT Access Permit

Name: _____

Required approval: _____

Part 3: Nonstructural Strategies and LID-BMPs in Design

3.1 Vegetation and Landscaping

Effective management of both existing and proposed site vegetation can reduce a development's adverse impacts on groundwater recharges and runoff quality and quantity. This section of the checklist helps identify the vegetation and landscaping strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to help maintain existing recharge rates and/or minimize or prevent increases in runoff quantity and pollutant loading.

A. Has an inventory of existing site vegetation been performed? Yes: X No:

If yes, was this inventory a factor in the site's layout and design? Yes: X No:

B. Does the site design utilize any of the following nonstructural LID-BMPs?

Preservation of natural areas? Yes: X No: If yes, specify % of site: 37.5%

Native ground cover? Yes: X No: If yes, specify % of site: 37.5%

Vegetated buffers? Yes: X No: If yes, specify % of site: 8%

C. Do the land development regulations require these nonstructural LID-BMPs?

Preservation of natural areas? Yes: No: X If yes, specify % of site:

Native ground cover? Yes: No: X If yes, specify % of site:

Vegetated buffers? Yes: No: X If yes, specify % of site:

D. If vegetated filter strips or buffers are utilized, specify their functions:

Reduce runoff volume increases through lower runoff coefficient: Yes: No: X

Reduce runoff pollutant loads through runoff treatment: Yes: No: X

Maintain groundwater recharge by preserving natural areas: Yes: No: X

Minimizing land disturbance is a nonstructural LID-BMP that can be applied during both the development's construction and post-construction phases. This section of the checklist helps identify those land disturbance strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to minimize land disturbance and the resultant change in the site's hydrologic character.

If yes, were these inventories factors in the site's layout and design? Yes: X No:

Restrict permanent site disturbance by land owners? Yes: _____ No: X

If yes, how: _____

If yes, how: Utilize fencing to protect undisturbed areas.

If yes, how: The existing slopes were maintained to the maximum degree possible, infiltration basins were omitted due to poor tested soil infiltration.

D. Specify percentage of cleared areas done so for buildings: ± 12.5%

For driveways and parking: ± 26.3% For roadways: ± 14.2%

E. What design criteria and/or site changes would be required to reduce the percentages in C and D above?

Reduction of the building area and parking.

F. Specify site's hydrologic soil group (HSG) percentages:

HSG A: N/A HSG B: 48.8% HSG C: 51.2% HSG D: N/A

G. Specify percentage of each HSG that will be permanently disturbed:

HSG A: N/A HSG B: 100% HSG C: 100% HSG D: N/A

H. Locating site disturbance within areas with less permeable soils (HSG C and D) and minimizing disturbance within areas with greater permeable soils (HSG A and B) can help maintain groundwater recharge rates and reduce runoff volume increases. In light of the HSG percentages in F and G above, what other practical measures if any can be taken to achieve this?

Soils have been used to the maximum extent feasible. The site is
limited by environmental restrictions.

I. Does the site include Karst topography?

Yes: _____ No: X

If yes, discuss measures taken to limit Karst impacts:

N/A

3.3 Impervious Area Management

New impervious surfaces at a development site can have the greatest adverse effect on groundwater recharge and stormwater quality and quantity. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into a proposed development's design to comprehensively manage the extent and impacts of new impervious surfaces.

A. Specify impervious cover at site: Existing: ± 3 acres Proposed: ± 34 acres

B. Specify maximum site impervious coverage allowed by regulations: N/A

C. Compare proposed street cartway widths with those required by regulations:

Type of Street	Proposed Cartway Width (feet)	Required Cartway Width (feet)
Residential access – low intensity	30'	25'
Residential access – medium intensity		
Residential access – high intensity with parking		
Residential access – high intensity without parking		
Neighborhood		
Minor collector – low intensity without parking		
Minor collector – with one parking lane	18'	20'
Minor collector – with two parking lanes	24'	24'
Minor collector – without parking	30' - 45'	25' - 35'
Major collector		

D. Compare proposed parking space dimensions with those required by regulations:

Proposed: 9' x 20' Regulations: 9' x 20' (town)

E. Compare proposed number of parking spaces with those required by regulations:

Proposed: 1,499 Regulations: 1,499

F. Specify percentage of total site impervious cover created by buildings: 12.5%
By driveways and parking: ± 26.3% By roadways: ± 14.2%

G. What design criteria and/or site changes would be required to reduce the percentages in F above?

Reduction in building and parking areas.

H. Specify percentage of total impervious area that will be unconnected:

Total site: 0 Buildings: 0 Driveways and parking: 0 Roads: 0

I. Specify percentage of total impervious area that will be porous:

Total site: N/A Buildings: N/A Driveways and parking: N/A Roads: N/A

J. Specify percentage of total building roof area that will be vegetated: N/A 0%

K. Specify percentage of total parking area located beneath buildings: N/A 0%

L. Specify percentage of total parking located within multi-level parking deck: N/A 0%

3.4 Time of Concentration Modifications

Decreasing a site's time of concentration (Tc) can lead directly to increased site runoff rates which, in turn, can create new and/or aggravate existing erosion and flooding problems downstream. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to effectively minimize such Tc decreases.

When reviewing Tc modification strategies, it is important to remember that a drainage area's Tc should reflect the general conditions throughout the area. As a result, Tc modifications must generally be applied throughout a drainage area, not just along a specific Tc route.

A. Specify percentage of site's total stormwater conveyance system length that will be:

Storm sewer: ± 83% Vegetated swale: ± 17% Natural channel: 0

Stormwater management facility: 0 Other: 0

Note: the total length of the stormwater conveyance system should be measured from the site's downstream property line to the downstream limit of sheet flow at the system's headwaters.

B. What design criteria and/or site changes would be required to reduce the storm sewer percentages and increase the vegetated swale and natural channel percentages in A above?

Additional swales would require a reduction in the total development.

The parking and building area would need to be reduced.

C. In conveyance system subareas that have overland or sheet flow over impervious surfaces or turf grass, what practical and effective site changes can be made to:

Decrease overland flow slope: Decreasing slopes further would increase the
likelihood of ponding, which may negatively affect site safety.

Increase overland flow roughness: Due to the size of this site, this would not
impact runoff rates.

3.5 Preventative Source Controls

The most effective way to address water quality concerns is by pollution prevention. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to reduce the exposure of pollutants to prevent their release into the stormwater runoff.

A. Trash Receptacles

Specify the number of trash receptacles provided: 8

Specify the spacing between the trash receptacles: Avg = ± 150'

Compare trash receptacles proposed with those required by regulations:

Proposed: 8 Regulations: 17

B. Pet Waste Stations

Specify the number of pet waste stations provided: 2

Specify the spacing between the pet waste stations: 100'

Compare pet waste stations proposed with those required by regulations:

Proposed: 2 Regulations: N/A

C. Inlets, Trash Racks, and Other Devices that Prevent Discharge of Large Trash and Debris

Specify percentage of total inlets that comply with the NJPDES storm drain inlet criteria: 100%

D. Maintenance

Specify the frequency of the following maintenance activities:

Street sweeping: Proposed: As needed Regulations: None

Litter collection: Proposed: As needed Regulations: None

Identify other stormwater management measures on the site that prevent discharge of large trash and debris:

Trash racks on all outlet control structures.

E. Prevention and Containment of Spills

Identify locations where pollutants are located on the site, and the features that prevent these pollutants from being exposed to stormwater runoff:

Pollutant: None Location: N/A

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Part 4: Compliance with Nonstructural Requirements of NJDEP Stormwater Management Rules

1. Based upon the checklist responses above, indicate which nonstructural strategies have been incorporated into the proposed development's design in accordance with N.J.A.C. 7:8-5.3(b):

No.	Nonstructural Strategy	Yes	No
1.	Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.	X	
2.	Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.	X	
3.	Maximize the protection of natural drainage features and vegetation.	X	
4.	Minimize the decrease in the pre-construction time of concentration.	X	
5.	Minimize land disturbance including clearing and grading.	X	
6.	Minimize soil compaction.	X	
7.	Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.	X	
8.	Provide vegetated open-channel conveyance systems discharge into and through stable vegetated areas.	X	
9.	Provide preventative source controls.	X	

2. For those strategies that have not been incorporated into the proposed development's design, provide engineering, environmental, and/or safety reasons. Attached additional pages as necessary.

N/A

Recharge Worksheet

Annual Groundwater Recharge Analysis (based on GSR-32)

Select Township ↓	Average Annual P (in)	Climatic Factor
SOMERSET CO., MONTGOMERY TWP	46.0	1.50

Project Name: SJC Ventures Partners LLC

Description: Proposed Retail & Residential

Analysis Date: 04/20/22

Pre-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	4.735	Woods	Birdsboro	14.7	252,492
2	0.744	Gravel, dirt	Birdsboro	8.7	23,429
3	14.023	Row Crop	Birdsboro	12.7	644,947
4	4.516	Open space	Birdsboro	14.5	237,454
5	2.112	Impervious areas	Birdsboro	0.0	-
6	1.916	Woods	Royce	12.5	87,078
7	0.94	Gravel, dirt	Royce	6.5	22,196
8	22.409	Row Crop	Royce	9.9	804,906
9	1.118	Open space	Royce	12.3	49,938
10	1.031	Impervious areas	Royce	0.0	-
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	53.5			Total Annual Recharge (in)	Total Annual Recharge (cu-ft)
				10.9	2,122,440

Post-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	12.957	Open space	Birdsboro	14.5	681,286
2	13.173	Impervious areas	Birdsboro	0.0	-
3	7.079	Open space	Royce	12.3	316,199
4	20.335	Impervious areas	Royce	0.0	-
5	0				
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	53.5			Total Annual Recharge (in)	Total Annual Recharge (cu.ft)

Annual Recharge Requirements Calculation ↓

% of Pre-Developed Annual Recharge to Preserve =	100%	Total Impervious Area (sq.ft)	1,459,608
--	------	-------------------------------	-----------

Post-Development Annual Recharge Deficit= 1,124,955 (cubic feet)

Recharge Efficiency Parameters Calculations (area averages)

RWC= #N/A	(in)	DRWC= #N/A	(in)
ERWC= #N/A	(in)	EDRWC= #N/A	(in)

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.

Total Post Development Recharge Deficit = 1,124,955 CF
Although on-site soils are classified by USDA as belonging to hydrologic soil group (HSG) B and C, subsurface geotechnical investigation conducted by Whitestone Associates Inc. verifies that the existing on-site soils are highly resistant to recharge and display characteristics of HSG type D soils. Therefore, compliance with the specific recharge standards of N.J.A.C. 7:45-8.5 is not required for this project.

Sediment Basin Design



30 Independence Blvd., Suite 200, Warren, NJ 07059
(908) 668-8300

Date: 4/19/2022
Project: Montgomery, NJ
Project No: JS210927

Calculated By: AO
Checked By: BB

Sediment Storage Capacity Calculations

Sediment Basin # 1

TRAP EFFICIENCY METHOD:

Sediment type:		Clay-Silt
Trap efficiency value:		80%
Curve used:	(see Curve 26-1)	Median Grained Curve
Ratio of capacity to annual inflow (C/I):	(see Curve 26-1)	0.0600
Average annual surface runoff (R):	(see Figure 26-1)	22.0 in
Watershed area (A):		28.80 Ac.
Average annual surface runoff, $I = \frac{R \times A}{12}$ =		52.80 Ac ft
Total capacity, $C = I \times C/I$ =		3.17 Ac ft

SEDIMENT STORAGE CAPACITY METHOD:

1. DETERMINE VOLUME FOR SEDIMENT STORAGE USING METHOD 2

a. Determine drainage area, DA, and average annual erosion, A:

Drainage area, (DA):	28.80 Ac.
Land use type:	Construction areas
Average annual erosion, (A):	50.0 ton/ac/yr
$(DA) \times (A) =$	1,440 tons/yr

b. Determine delivery rate, DR:

Watershed area (A):	0.05 sq mi
Sediment delivery ratio:	(refer to Curve 26-2)
DR =	(refer to Curve 26-2)
	81%

c. Determine sediment density, γ :

Soil texture:	(refer to Table 26-1)
$\gamma =$	Clay-silt mixture, aerated
	75.0 lbs/cf

d. Determine the minimum volume for sediment storage for the planned life of the structure:

$$V = (DA) (A) (DR) (TE) (1/\gamma) (2,000 \text{ lbs/ton}) (1/43,560 \text{ sf/ac}) = 0.569 \text{ Ac ft}$$

2. Determine the minimum volume for temporary floodway storage:

2-year, 24 hour Rainfall intensity:	Somerset County	3.3 inches
Soil type:		Birdsboro
Soil group:		C
CN:		98-imp; 67 perv
Volume 2-yr design storm:	100,345 CF	2.304 Ac ft
Total volume required (including sediment):		2.873 Ac ft

DETERMINE THE LARGER VOLUME OF THE TWO METHODS:

TOTAL VOLUME REQUIRED:

3.168 Ac ft
or 137,998 CF

DEWATERING:

Trap efficiency value:

50%

Curve:

(refer to Curve 26-1)

Median Grained Curve

Ratio of capacity to annual inflow, (C/I):

(refer to Curve 26-1)

0.0135

Average annual surface runoff, (R):

(refer to Figure 26-1)

22.0 in

Watershed area, (A):

28.80 Ac.

Average annual surface runoff, $I = \frac{R \times A}{12} =$

52.80 Ac ft

Total capacity, $C = I \times C/I =$

0.71 Ac ft
or 31,050 CF

SEDIMENT BASIN BOTTOM ELEVATION:

125.00

ELEVATION OF SEDIMENT STORAGE:

130.00

THE TOTAL VOLUME FROM 125.00 to 130.00 :

3.73 Ac ft
or 162,621 CF

ELEVATION OF EMERGENCY SPILLWAY:

132.50

THE TOTAL VOLUME FROM 130.00 to 132.50 :

7.02 Ac ft
or 305,793 CF

TOTAL VOLUME OF THE SEDIMENTAL BASIN

10.75 Ac ft
or 468,414 CF

ELEVATION OF 4" DEWATERING ORFICE:

130.00

ELEVATION TOP OF RISER:

131.50

SEDIMENT BASIN # 1

<u>ELEVATION</u>	<u>AREA (SF)</u>	<u>INCR. VOL. (CF)</u>	<u>TOTAL VOLUME (CF)</u>
125.00	0		
126	2784	1392	1392
127	28597	15691	17083
128	42719	35658	52741
129	57622	50171	102911
130	61653	59638	162549
131	64456	63055	225603
132	67190	65823	291426
133	69880	68535	359961
134	72596	71238	431199
134.50	75975	37143	468342



30 Independence Blvd., Suite 200, Warren, NJ 07059
(908) 668-8300

Date: 4/19/2022
Project: Montgomery, NJ
Project No: JS210927

Calculated By: AO
Checked By: BB

Sediment Storage Capacity Calculations

Sediment Basin # 2

TRAP EFFICIENCY METHOD:

Sediment type:		Clay-Silt
Trap efficiency value:		80%
Curve used:	(see Curve 26-1)	Median Grained Curve
Ratio of capacity to annual inflow (C/I):	(see Curve 26-1)	0.0600
Average annual surface runoff (R):	(see Figure 26-1)	22.0 in
Watershed area (A):		28.02 Ac.
Average annual surface runoff, $I = \frac{R \times A}{12}$ =		51.37 Ac ft
Total capacity, $C = I \times C/I$ =		3.08 Ac ft

SEDIMENT STORAGE CAPACITY METHOD:

1. DETERMINE VOLUME FOR SEDIMENT STORAGE USING METHOD 2

a. Determine drainage area, DA, and average annual erosion, A:

Drainage area, (DA):	28.02 Ac.
Land use type:	Construction areas
Average annual erosion, (A):	50.0 ton/ac/yr
$(DA) \times (A) =$	1,401 tons/yr

b. Determine delivery rate, DR:

Watershed area (A):	0.04 sq mi
Sediment delivery ratio:	(refer to Curve 26-2)
DR =	(refer to Curve 26-2)
	81%

c. Determine sediment density, γ :

Soil texture:	(refer to Table 26-1)
$\gamma =$	Clay-silt mixture, aerated
	75.0 lbs/cf

d. Determine the minimum volume for sediment storage for the planned life of the structure:

$$V = (DA) (A) (DR) (TE) (1/\gamma) (2,000 \text{ lbs/ton}) (1/43,560 \text{ sf/ac}) = 0.555 \text{ Ac ft}$$

2. Determine the minimum volume for temporary floodway storage:

2-year, 24 hour Rainfall intensity:	Somerset County	3.3 inches
Soil type:		Birdsboro
Soil group:		C
CN:		98-imp; 71 perv
Volume 2-yr design storm:	215,318 CF	4.943 Ac ft
Total volume required (including sediment):		5.498 Ac ft

DETERMINE THE LARGER VOLUME OF THE TWO METHODS:

TOTAL VOLUME REQUIRED:

5.498 Ac ft
or 239,512 CF

DEWATERING:

Trap efficiency value:

50%

Curve:

(refer to Curve 26-1)

Median Grained Curve

Ratio of capacity to annual inflow, (C/I):

(refer to Curve 26-1)

0.0135

Average annual surface runoff, (R):

(refer to Figure 26-1)

22.0 in

Watershed area, (A):

28.02 Ac.

Average annual surface runoff, $I = \frac{R \times A}{12} =$

51.37 Ac ft

Total capacity, $C = I \times C/I =$

0.69 Ac ft
or 30,209 CF

SEDIMENT BASIN BOTTOM ELEVATION:

122.05

ELEVATION OF SEDIMENT STORAGE:

128.50

THE TOTAL VOLUME FROM 122.05 to 128.50 :

5.97 Ac ft
or 260,000 CF

ELEVATION OF EMERGENCY SPILLWAY:

132.50

THE TOTAL VOLUME FROM 128.50 to 132.50 :

14.95 Ac ft
or 651,186 CF

TOTAL VOLUME OF THE SEDIMENTAL BASIN

20.92 Ac ft
or 911,186 CF

ELEVATION OF 4" DEWATERING ORFICE:

128.50

ELEVATION TOP OF RISER:

131.50

SEDIMENT BASIN # 2

<u>ELEVATION</u>	<u>AREA (SF)</u>	<u>INCR. VOL. (CF)</u>	<u>TOTAL VOLUME (CF)</u>
122.05	0		
123	4516	2145	2145
124	17503	11010	13155
125	40514	29009	42163
126	52995	46755	88918
127	66197	59596	148514
128	80616	73407	221920
129	89234	84925	306845
130	97986	93610	400455
131	104847	101417	501872
132	111734	108291	610162
133	118653	115194	725356
134	125598	122126	847481
134.50	129221	63705	911186



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(908) 668-8300

Date: 4/19/2022
Project: Montgomery, NJ
Project No: JS210927

Calculated By: AO
Checked By: BB

Sediment Storage Capacity Calculations

Sediment Basin # 4

TRAP EFFICIENCY METHOD:

Sediment type:		Clay-Silt
Trap efficiency value:		80%
Curve used:	(see Curve 26-1)	Median Grained Curve
Ratio of capacity to annual inflow (C/I):	(see Curve 26-1)	0.0600
Average annual surface runoff (R):	(see Figure 26-1)	22.0 in
Watershed area (A):		2.99 Ac.
Average annual surface runoff, $I = \frac{R \times A}{12}$ =		5.48 Ac ft
Total capacity, $C = I \times C/I$ =		0.33 Ac ft

SEDIMENT STORAGE CAPACITY METHOD:

1. DETERMINE VOLUME FOR SEDIMENT STORAGE USING METHOD 2

a. Determine drainage area, DA, and average annual erosion, A:

Drainage area, (DA):	2.99 Ac.
Land use type:	Construction areas
Average annual erosion, (A):	50.0 ton/ac/yr
$(DA) \times (A) =$	150 tons/yr

b. Determine delivery rate, DR:

Watershed area (A):	0.00 sq mi
Sediment delivery ratio:	(refer to Curve 26-2)
DR =	(refer to Curve 26-2)
	98%

c. Determine sediment density, γ :

Soil texture:	(refer to Table 26-1)
$\gamma =$	Clay-silt mixture, aerated
	75.0 lbs/cf

d. Determine the minimum volume for sediment storage for the planned life of the structure:

$$V = (DA) (A) (DR) (TE) (1/\gamma) (2,000 \text{ lbs/ton}) (1/43,560 \text{ sf/ac}) = 0.072 \text{ Ac ft}$$

2. Determine the minimum volume for temporary floodway storage:

2-year, 24 hour Rainfall intensity:	Somerset County	3.3 inches
Soil type:		Birdsboro
Soil group:		C
CN:		98-imp; 59 perv
Volume 2-yr design storm:	12,973 CF	0.298 Ac ft
Total volume required (including sediment):		0.370 Ac ft

DETERMINE THE LARGER VOLUME OF THE TWO METHODS:

TOTAL VOLUME REQUIRED:

0.370 Ac ft
or 16,109 CF

DEWATERING:

Trap efficiency value:

50%

Curve:

(refer to Curve 26-1)

Median Grained Curve

Ratio of capacity to annual inflow, (C/I):

(refer to Curve 26-1)

0.0135

Average annual surface runoff, (R):

(refer to Figure 26-1)

22.0 in

Watershed area, (A):

2.99 Ac.

Average annual surface runoff, $I = \frac{R \times A}{12} =$

5.48 Ac ft

Total capacity, $C = I \times C/I =$

0.07 Ac ft
or 3,224 CF

SEDIMENT BASIN BOTTOM ELEVATION:

139.00

ELEVATION OF SEDIMENT STORAGE:

141.00

THE TOTAL VOLUME FROM 139.00 to 141.00 :

0.43 Ac ft
or 18,821 CF

ELEVATION OF EMERGENCY SPILLWAY:

144.50

THE TOTAL VOLUME FROM 141.00 to 144.50 :

1.10 Ac ft
or 48,010 CF

TOTAL VOLUME OF THE SEDIMENTAL BASIN

1.53 Ac ft
or 66,831 CF

ELEVATION OF 4" DEWATERING ORFICE:

141.00

ELEVATION TOP OF RISER:

143.50

SEDIMENT BASIN # 4

<u>ELEVATION</u>	<u>AREA (SF)</u>	<u>INCR. VOL. (CF)</u>	<u>TOTAL VOLUME (CF)</u>
139.00	7648		
140	9503	8576	8576
141	10988	10246	18821
142	12367	11678	30499
143	13797	13082	43581
144	15503	14650	58231
144.50	18900	8601	66831

Attachment D – Major Development Stormwater Summary

General Information			
1. Project Name: Montgomery Promenade			
2. Municipality: Township of Montgomery	County: Somerset	Block(s): 34001	Lot(s): 46.01, 56, 57, 77, 78, 7
3. Site Location (State Plane Coordinates – NAD83): E: 449,108		N: 571,350	
4. Date of Final Approval for Construction by Municipality: Date of Certificate of Occupancy:			
5. Project Type (check all that apply): Residential ☒ Commercial ☒ Industrial ☐ Other (please specify) _____			
6. Soil Conservation District Project Number:			
7. Did project require an NJDEP Land Use Permit? Yes ☐ No ☒ Land Use Permit #:			
8. Did project require the use of any mitigation measures? Yes ☐ No ☒ If yes, which standard was mitigated? _____			

Site Design Specifications	
1. Area of Disturbance (acres): 63	Area of Proposed Impervious (acres): 33
2. List all Hydrologic Soil Groups: Birdsboro Silt Loam, Lansdowne silt loam, Royce Silt Loam	
3. Please Identify the Amount of Each Best Management Practices (BMPs) Utilized in Design Below: Bioretention Systems _____ Constructed Wetlands _____ Dry Wells _____ Extended Detention Basins ³ _____ (planted) Infiltration Basins _____ Combination Infiltration/Detention Basins _____ Manufactured Treatment Devices _____ Pervious Paving Systems ⁴ _____ Sand Filters ¹ _____ Vegetative Filter Strips _____ Wet Ponds _____ Grass Swales _____ Subsurface Gravel Wetlands _____ Other _____	

Storm Event Information	
Storm Event - Rainfall (inches and duration):	2 yr.: 3.30" - 24 hours 10 yr.: 5.00" - 24 hours 100 yr.: 8.20" - 24 hours WQDS: 1.25" - 2 hours
Runoff Computation Method: NRCS: Dimensionless Unit Hydrograph ☒ NRCS: Delmarva Unit Hydrograph ☐ Rational ☐ Modified Rational ☐ Other: _____	

Basin Specifications (answer all that apply) *If more than one basin, attach multiple sheets*	
1. Type of Basin: Extended detention basin #1	Surface/Subsurface (select one): Surface ☒ Subsurface ☐
2. Owner (select one): ☐ Public ☒ Private: If so, Name: Princeton Promenade, LLC Phone number: 770-692-8300	
3. Basin Construction Completion Date:	
4. Drain Down Time (hr.): 36.50	
5. Design Soil Permeability (in./hr.): <0.2 in/hr	
6. Seasonal High Water Table Depth from Bottom of Basin (ft.): 3.75	Date Obtained: 02/27/2018
7. Groundwater Recharge Methodology (select one): 2 Year Difference ☐ NJGRS ☐ Other ☐ NA ☒	
8. Groundwater Mounding Analysis (select one): Yes ☐ No ☒ If, Yes Methodology Used:	
9. Maintenance Plan Submitted: Yes ☒ No ☐ Is the Basin Deed Restricted: Yes ☐ No ☒	

Comments: Basin was design to meet extended detention basin requirements for water quantity component. Landscape design was incorporated to act as "bioretention basin"

Name of Person Filling Out This Form: James Thaon, P.E.

Signature: _____

Title: Associate, Branch Manager

Date: 04/27/2021

2/2/2018

Basin Specifications (answer all that apply)

If more than one basin, attach multiple sheets

1. Type of Basin:	Extended detention basin #2	Surface/Subsurface (select one):	Surface ☒	Subsurface ☐
2. Owner (select one):	☐ Public ☒ Private: If so, Name: Princeton Promenade, LLC Phone number: 770-692-8300			
3. Basin Construction Completion Date:				
4. Drain Down Time (hr.):	37.00			
5. Design Soil Permeability (in./hr.):	<0.2 in/hr			
6. Seasonal High Water Table Depth from Bottom of Basin (ft.):	6.55	Date Obtained:	02/27/2018	
7. Groundwater Recharge Methodology (select one):	2 Year Difference ☐ NJGRS ☐ Other ☐ NA ☒			
8. Groundwater Mounding Analysis (select one):	Yes ☐ No ☒ If, Yes Methodology Used:			
9. Maintenance Plan Submitted:	Yes ☒ No ☐ Is the Basin Deed Restricted: Yes ☐ No ☒			

Basin Specifications (answer all that apply)

If more than one basin, attach multiple sheets

1. Type of Basin:	Detention basin #3	Surface/Subsurface (select one):	Surface ☒	Subsurface ☐
2. Owner (select one):	☐ Public ☒ Private: If so, Name: Princeton Promenade, LLC Phone number: 770-692-8300			
3. Basin Construction Completion Date:				
4. Drain Down Time (hr.):	20			
5. Design Soil Permeability (in./hr.):	0 in/hr			
6. Seasonal High Water Table Depth from Bottom of Basin (ft.):	NE	Date Obtained:	02/27/2018	
7. Groundwater Recharge Methodology (select one):	2 Year Difference ☐ NJGRS ☐ Other ☐ NA ☒			
8. Groundwater Mounding Analysis (select one):	Yes ☐ No ☒ If, Yes Methodology Used:			
9. Maintenance Plan Submitted:	Yes ☒ No ☐ Is the Basin Deed Restricted: Yes ☐ No ☒			

Basin Specifications (answer all that apply)

If more than one basin, attach multiple sheets

1. Type of Basin:	Detention basin (sand filter) #4	Surface/Subsurface (select one):	Surface ☒	Subsurface ☐
2. Owner (select one):	☐ Public ☒ Private: If so, Name: Princeton Promenade, LLC Phone number: 770-692-8300			
3. Basin Construction Completion Date:				
4. Drain Down Time (hr.):	3.5			
5. Design Soil Permeability (in./hr.):	0 in/hr			
6. Seasonal High Water Table Depth from Bottom of Basin (ft.):	3.5	Date Obtained:	02.27/2018	
7. Groundwater Recharge Methodology (select one):	2 Year Difference ☐ NJGRS ☐ Other ☐ NA ☒			
8. Groundwater Mounding Analysis (select one):	Yes ☐ No ☒ If, Yes Methodology Used:			
9. Maintenance Plan Submitted:	Yes ☒ No ☐ Is the Basin Deed Restricted: Yes ☐ No ☐			

Name of Person Filling Out This Form: James Thaon, P.E.

Signature: _____

Title: Associate, Branch Manager

Date: 04/27/2021

2/2/2018

C. MAPS

- ◆ **NRCS Soil Map**
- ◆ **Township of Montgomery Critical Area Mapping**
- ◆ **Drainage Area Maps**
 - **Existing Drainage Area Map**
 - **Proposed Drainage Area Map**
- ◆ **Inlet Area Map**

Hydrologic Soil Group—Somerset County, New Jersey



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

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

Political Features

 Cities

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

MAP INFORMATION

Map Scale: 1:6,020 if printed on A size (8.5" × 11") sheet.

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 accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 18N NAD83

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

Soil Survey Area: Somerset County, New Jersey

Survey Area Data: Version 10, Sep 7, 2010

Date(s) aerial images were photographed: 8/5/2006

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

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Somerset County, New Jersey (NJ035)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BhnB	Birdsboro silt loam, 2 to 6 percent slopes	B	63.3	53.1%
LbtA	Lansdowne silt loam, 0 to 2 percent slopes	C	1.8	1.5%
RoyB	Royce silt loam, 2 to 6 percent slopes	C	54.1	45.4%
Totals for Area of Interest			119.3	100.0%

Description

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

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

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

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

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

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

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

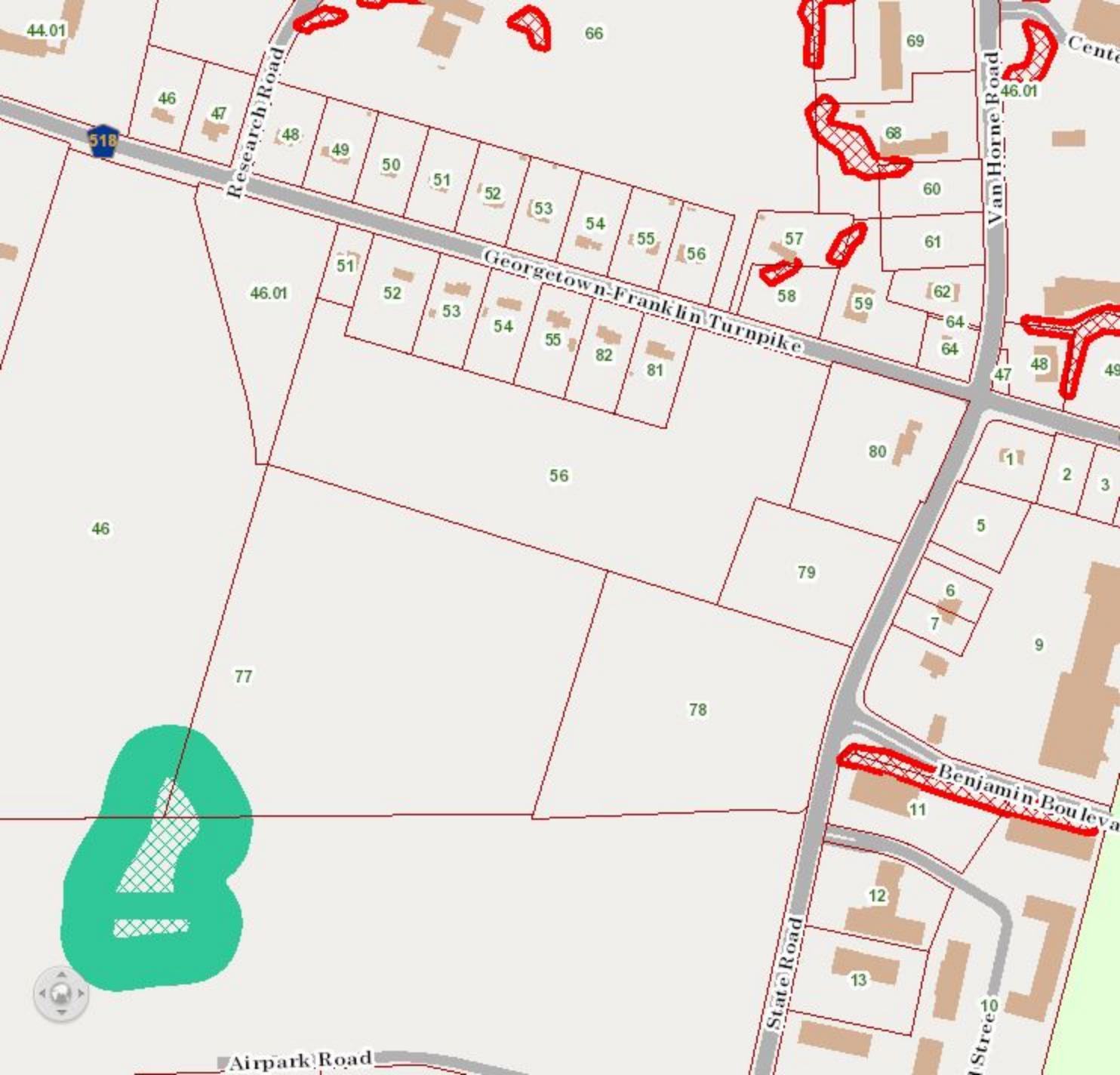
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

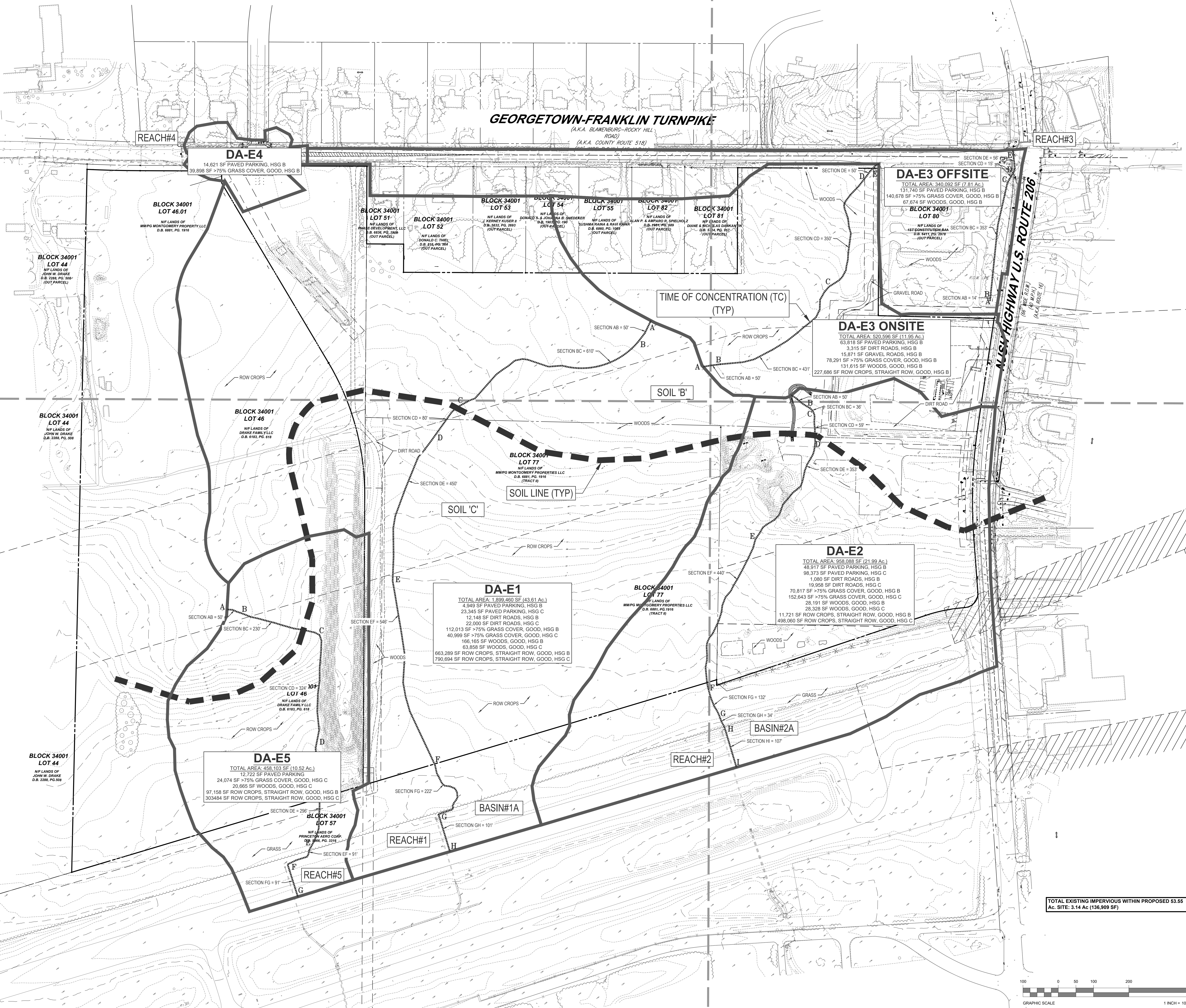
Township of Montgomery Critical Area Mapping

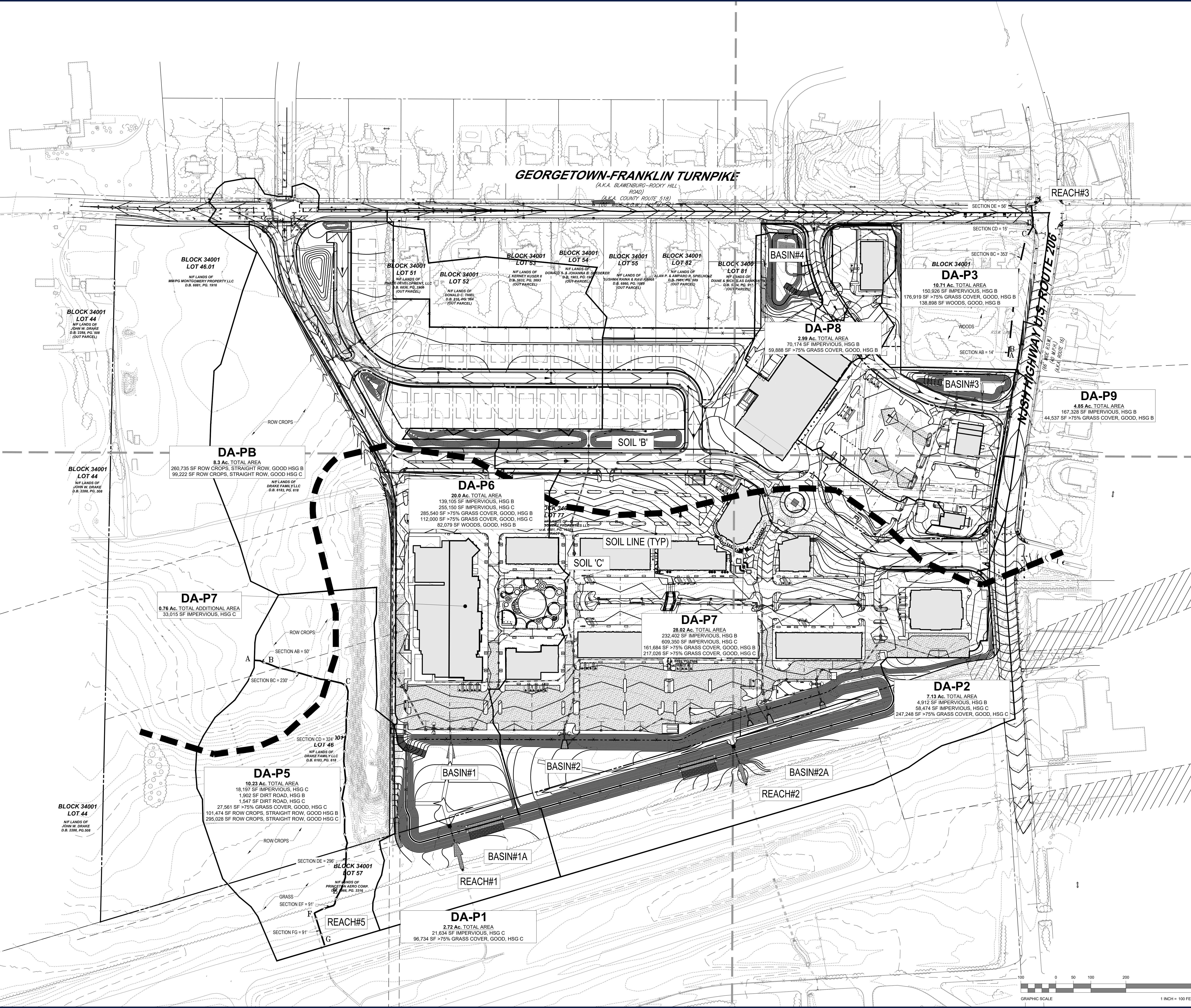


LEGEND

Critical Areas	 Ponds
 Parcels	 Streams
Roads	 Stream Areas
+ Railroad	 Stream Corridor
 Buildings and Structures	 20' Stream Corridor Buffer
 FEMA Special Flood Hazard Area (2016)	 Wetlands
 Critical Soils	 150' Wetlands Buffer
 20' Critical Soils Buffer	 Adjacent Counties
 Critical Slopes (>15%)	 Adjacent Municipalities
 20' Critical Slopes Buffer	 New Jersey Counties
 Roadway Area	 Montgomery Township Background

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GEORGETOWN-FRANKLIN TURNPIKE

(A.K.A. BLAUBURG-ROCKY HILL ROAD)
(A.K.A. COUNTY ROUTE 518)
(66' WIDE R.O.W.) (45 M.P.H.)

GEORGETOWN-FRANKLIN TURNPIKE

N.J.S. HIGHWAY U.S. ROUTE 206
(66' WIDE R.O.W.) (40 M.P.H.)
(A.K.A. ROUTE 16)

NEW JERSEY STATE HIGHWAY U.S. ROUTE 206

BLOCK 34001
LOT 46.01
N.P. LANDS OF
MMPG MONTGOMERY PROPERTY LLC
D.B. 6881, PG. 1916

BLOCK 34001
LOT 51
N.P. LANDS OF
CHASE DEVELOPMENT
D.B. 6854, PG. 1909
(OUT PARCEL)

BLOCK 34001
LOT 52
N.P. LANDS OF
DONALD S. & JOHANNA B. SNEIDER
D.B. 1903, PG. 1909
(OUT PARCEL)

BLOCK 34001
LOT 53
N.P. LANDS OF
J. KENNEY KUSHER II
D.B. 6532, PG. 1903
(OUT PARCEL)

BLOCK 34001
LOT 55
N.P. LANDS OF
SUSANNA RAINA & RAYANNA
D.B. 6860, PG. 1865
(OUT PARCEL)

BLOCK 34001
LOT 82
N.P. LANDS OF
ALAN P. & AMANDA R. SPIELHOLZ
D.B. 1991, PG. 1908
(OUT PARCEL)

BLOCK 34001
LOT 81
N.P. LANDS OF
DIANE & NICHOLAS DAMANY
D.B. 1974, PG. 817
(OUT PARCEL)

BLOCK 34001
LOT 80
N.P. LANDS OF
1ST CONSTITUTION BANK
D.B. 6411, PG. 2818
(OUT PARCEL)

BLOCK 34001
LOT 46
N.P. LANDS OF
DRAKE FAMILY LLC
D.B. 6163, PG. 618

BLOCK 34001
LOT 46
N.P. LANDS OF
DRAKE FAMILY LLC
D.B. 6163, PG. 618

BLOCK 34001
LOT 57
N.P. LANDS OF
PRINCETON PARK AND CORP.
D.B. 6944, PG. 3316

INLET SIZING CALCULATION FOR PROPOSED INLET B34

Q = CIA
WHEN CA = 1.01 AC.; I = 6.6 IN/M
Q = 6.67 AC."IN / M = 0.00185 AC."IN / M = 6.72 FT³ / S

PER FIGURE 7 RATE OF FLOW FOR CURB TYPE CATCH BASINS WITH A D.A. GRATES FLOW
CHART PER CAMPBELL FOUNDRY ROUGHLY 33.1" OF HEAD AT WORST INLET.

REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	11/04/2016	REV. PER TOWNSHIP COMMENTS	OTI/ADCO
2	09/28/2017	REV. PER TOWNSHIP COMMENTS	LM
3	11/07/2017	REV. PER TOWNSHIP COMMENTS	ADK/CF
4	01/02/2018	REV. PER TOWNSHIP COMMENTS	BB
5	03/02/2018	REV. PER TOWNSHIP COMMENTS	ADK/CF
6	09/18/2018	REV. PER CLIENT COMMENTS	BB
7	10/19/2018	REV. PER CLIENT COMMENTS	BB
8	04/29/2022	REV. PER CLIENT COMMENTS	ECW/DGR

811

Know what's below.
Call before you dig.
NEW JERSEY
YOU MUST CALL 811 BEFORE ANY EXCAVATION
WHETHER IT'S ON PRIVATE OR PUBLIC LAND.
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PROJECT:

DRAINAGE AREA MAPS

FOR

PRINCETON PROMENADE, LLC

PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT

MAP: 61 [BLK: 34001] [LOTS: 46.01, 55, 57, 77, 78 & 79]

TOWNSHIP OF MONTGOMERY

SOMERSET COUNTY, NEW JERSEY

BOHLER

BOHLER ENGINEERING, LLC
30 INDEPENDENCE BLVD., SUITE 200
WARREN, NJ 07059
PHONE: (908) 1658-5300
FAX: (908) 754-4401
www.BohlerEngineering.com
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PROPOSED INLET AREA MAP

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3

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