



Stormwater Management Plan

Hingham Center for Active Living

EDM Studio, Inc.

45 South Main Street, 2nd Floor
Unionville, Connecticut 06085

Prepared by:

SLR International Corporation

67 Hunt Street, Suite 203-C, Agawam, Massachusetts, 01001

SLR Project No.: 141.21840.00004

December 9, 2025

Stormwater Management Plan

Hingham Center for Active Living

Prepared for:
EDM Studio, Inc.
45 South Main Street, 2nd Floor
Unionville, Connecticut 06085

This document has been prepared by SLR International Corporation (SLR). The material and data in this report were prepared under the supervision and direction of the undersigned.



A handwritten signature in blue ink that reads "Michael R. Gagnon".

Michael R. Gagnon, PE
Principal Civil Engineer



Table of Contents

Stormwater Management Plan	ii
Acronyms and Abbreviations	v
1.0 Project Overview	1
2.0 Site Description	3
2.1 Existing Conditions	3
2.2 Environmental Resources	3
2.2.1 Wetland Resource Areas	3
2.2.2 Natural Heritage and Endangered Species (NHESP)	4
2.2.3 Federal Emergency Management Agency (FEMA)	4
2.2.4 Soil Survey	4
3.0 Project Description	7
3.1 Proposed Conditions	7
3.1.1 General Project Improvements	7
3.1.2 Stormwater Controls and Best Management Practices	7
3.2 Erosion and Sedimentation Control	7
3.3 Construction Sequence and Schedule	7
4.0 Stormwater Management	9
4.1 Existing Conditions	9
4.2 Proposed Conditions	9
4.3 Hydrologic Analysis	9
4.4 Peak-Flow Attenuation	10
4.5 MassDEP Stormwater Management Guidelines	10
5.0 Water Quality Management	12
6.0 Erosion and Sediment Control Plan	13
6.1 Erosion and Sediment Controls	13
6.2 Temporary Stabilization	13
6.3 Permanent Stabilization	13
6.4 Sediment Tracking	13
6.5 Maintenance of Controls	13
7.0 Stormwater Construction Waste Management Plan	15
7.1 Contact Information/Responsible Parties	15
7.2 Waste Management	15
7.3 Staff Training Program	15



7.4 Spill Prevention and Control Plan 15
7.4.1 Good Housekeeping..... 15
7.4.2 Hazardous Products..... 16
7.4.3 Product-Specific Practices..... 16
7.4.4 Spill Control Practices 16
7.5 Non-Stormwater Discharges 16

Tables in Text

Table 4-1: Peak-Flow Rates at Analysis Point (cfs)..... 10

Figures in Text

Figure 1: USGS Location Map 2
Figure 2: Environmental Resources Map 5
Figure 3: FEMA Flood Rate Insurance Map 6

Appendices

- Appendix A Watershed Maps
- Appendix B NRCS Web Soil Survey
- Appendix C Test Boring Logs
- Appendix D Storm Drainage Computations
- Appendix E Water Quality Computations
- Appendix F TSS Removal
- Appendix G Hydrology Model Output

Attachments

Postconstruction Stormwater Management Operation and Maintenance Plan
Project Plans



Acronyms and Abbreviations

AP	Analysis Point
BVW	Bordering Vegetated Wetlands
E&S	Erosion and Sedimentation
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GP	Construction Stormwater General Permit
HSG	Hydrologic Soil Group
MassDEP	Massachusetts Department of Environmental Protection
NHESP	Natural Heritage and Endangered Species Program
NRCS	Natural Resources Conservation Service
O&M	Operation and Maintenance
OO	Official & Open Space Zoning District
SLR	SLR International Corporation
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey



1.0 Project Overview

EDM Studio, Inc. (EDM) has retained SLR International Corporation (SLR) for the preparation of this Stormwater Management Plan for the Center for Active Living for the community of Hingham, Massachusetts. The project is located within a portion of Bare Cove Park, located north of Bare Cove Park Drive, owned by the town of Hingham. The parcel in which the proposed improvements are located is within the Official & Open Space (OO) Zoning District.

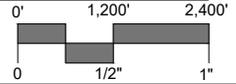
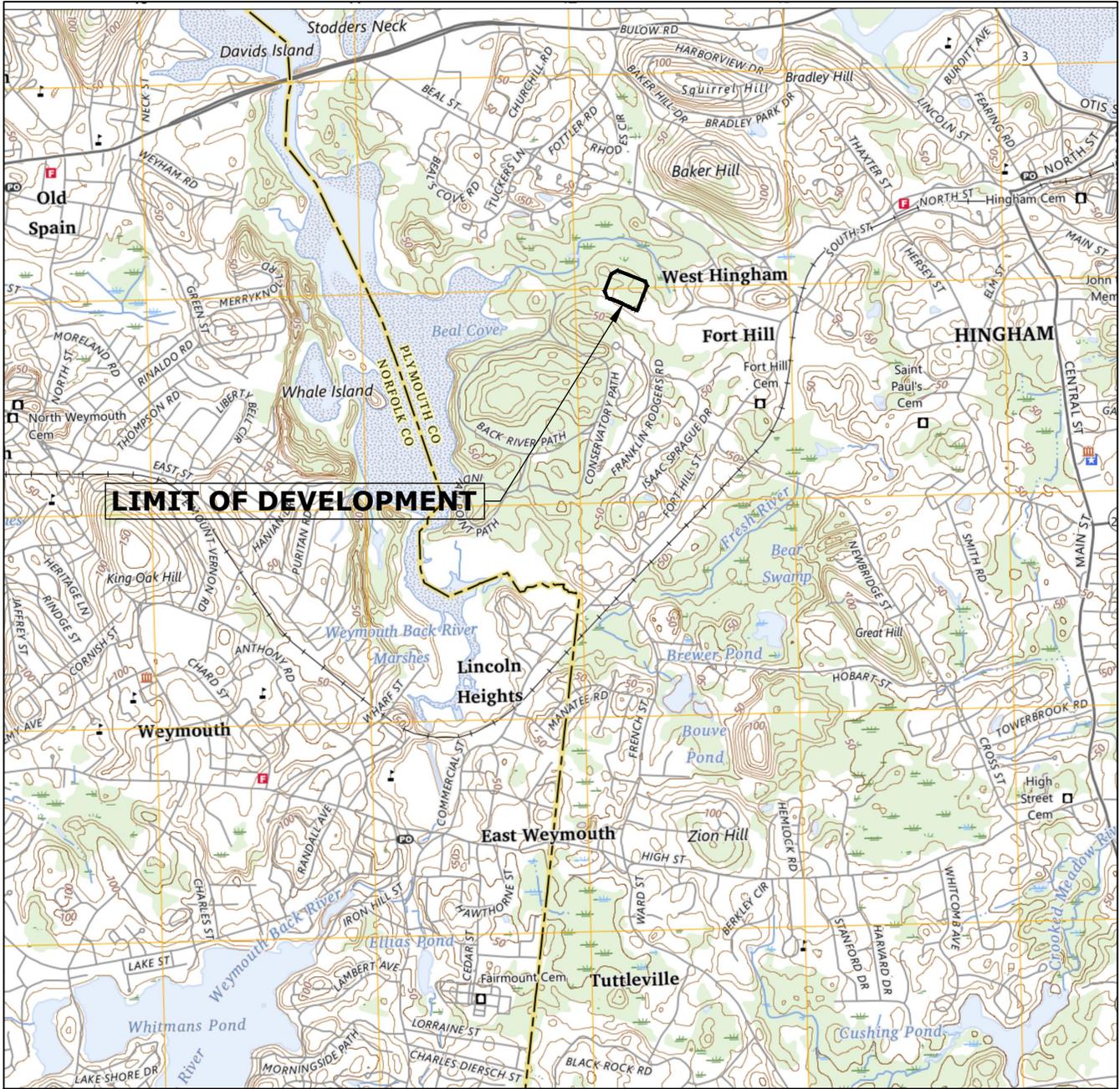
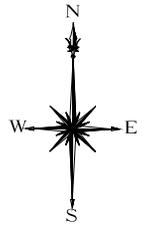
The project involves the construction of a 26,000 square foot (SF) one-story building and site improvements to accommodate a new home for the Center for Active Living. Site work will include construction of the new building, parking lot, sidewalks, drainage, utility tie-ins and general landscape improvements connecting the Center with the park it resides in. Stormwater improvements include the installation of stormwater infiltration basins, gravel trenches, a rain garden and a subsurface infiltration system to provide water quality treatment and peak-flow attenuation.

This project is considered a new development pursuant to the definitions in the *Massachusetts Stormwater Handbook*. As a new development, the proposed drainage improvements as listed above were designed to provide the following:

- Peak-flow attenuation through the construction of the subsurface infiltration system, rain garden, gravel trenches and infiltration basins to ensure that post-development off-site runoff does not exceed the pre-development runoff rates. The stormwater measures were designed to completely infiltrate the peak flows for the site for the 2, 10, 25, 50 and 100-year storm events as a result of drainage improvements.
- Enhance water quality measures and provide 80% total suspended solids (TSS) removal through the use of a rain garden, infiltration basins, the subsurface infiltration system and elevated outlet structures. Site drainage improvements will provide the required water quality volume due to the construction of approximately 3.07 acres of new impervious area.
- Enhance annual recharge to groundwater through the installation of a subsurface infiltration system, rain garden and infiltration basins.

The project site is shown on the United States Geological Survey (USGS) Location Map, Figure 1.





67 HUNT STREET, SUITE 203-C
 AGAWAM, MA
 413.241.6920
 SLRCONSULTING.COM

USGS QUADRANGLE MAP, QUAD NO. 139
HINGHAM CENTER FOR ACTIVE LIVING

BARE COVE PARK DRIVE
HINGHAM, MASSACHUSETTS

PROJECT PHASE:

REV: ---

DATE December 9, 2025		
SCALE 1"=2,400'		
PROJ. NO. 21840.00004		
DESIGNED ---	DRAWN JLS	CHECKED ---

DRAWING NAME:
FIG. 1

2.0 Site Description

2.1 Existing Conditions

The existing 5.26-acre site can be accessed from Bare Cove Park Drive, south of the property. The project site is proposed in the northeast portion of the 484-acre Bare Cove Park, in parcel 77-0-1 which consists of an existing abandoned building, gravel area, mulch, dirt, wooded area, and pavement. An approximately 9,100 SF warehouse building resides in the northeast portion of the site. Freshwater forested bordering vegetated wetlands (BVW) were found east and north of the site limits. The area east of the site consists of the Bare Cove Fire Museum (45 Bare Cove Park Drive). The Bare Cove Park parcel and parcels within the vicinity of the site were historically developed for use as the Hingham Naval Ammunition Depot. Several old cart paths and roads and ground disturbances were observed west of the site limits. The site is surrounded by land included in the Bare Cove Park parcel on all sides.

Slopes are generally mild and consist of topographic high points to the north and south with a saddle centrally located on the project site. Existing drainage patterns show that runoff from the site drains overland from the central area and discharges in all directions along the project limit of development. The discharge off site drains to the wetland areas that lead to Nashoba Brook and ultimately discharges to the Weymouth Back River.

On July 7 to 11, 2025, a total of fifteen test borings were dug on the site. Test borings were dug to a depth ranging from 4 feet to 17 feet below the surface. The test borings indicated that the soils encountered in the explorations primarily consist of forest mat over dense sand and gravel deposits. No evidence of groundwater was found in any of the test borings. The test boring logs and a map of their locations are included in the Appendix.

Additional test pits will be dug prior to construction throughout the site at each proposed infiltration BMP location.

2.2 Environmental Resources

2.2.1 Wetland Resource Areas

On July 29, 2025, SLR soil scientists completed a wetland delineation at the project site. Inland wetlands and watercourses within the project area were delineated in accordance with the Massachusetts Wetland Protection Act (310 CMR 10.00), Section 404 of the Clean Water Act, and the Town of Hingham Wetlands Protection Bylaw. Wetlands and watercourses in the study area were delineated using the methodology provided in the United States Army Corps of Engineers (USACE) Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region as well as wetland resource area definitions set forth in 310 CMR 10.00.

The following Massachusetts Department of Environmental Protection (MassDEP) Wetland Resource Areas were identified in the vicinity of the project:

- Bordering Vegetated Wetland (BVW) – The areas where groundwater discharges to the surface, or where surface water discharges to groundwater. BVWs were delineated along the perennial watercourse and occupy land outside of the limit of development. The project will not impact any BVW.



2.2.2 Natural Heritage and Endangered Species (NHESP)

Based on Massachusetts Geographic Information System (*MassGIS*) data layer information and the Natural Heritage Atlas (15th Edition), no part of the project parcel is located within the mapped area of the Natural Heritage and Endangered Species Program (NHESP) Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife. No review by NHESP will be required since the project is outside of any mapped NHESP regulated areas (see Figure 2, Environmental Resources Map).

2.2.3 Federal Emergency Management Agency (FEMA)

According to the most recent FEMA mapping, effective February 9, 2023, no special flood hazard areas occur onsite (see Figure 3, FEMA FIRMette).

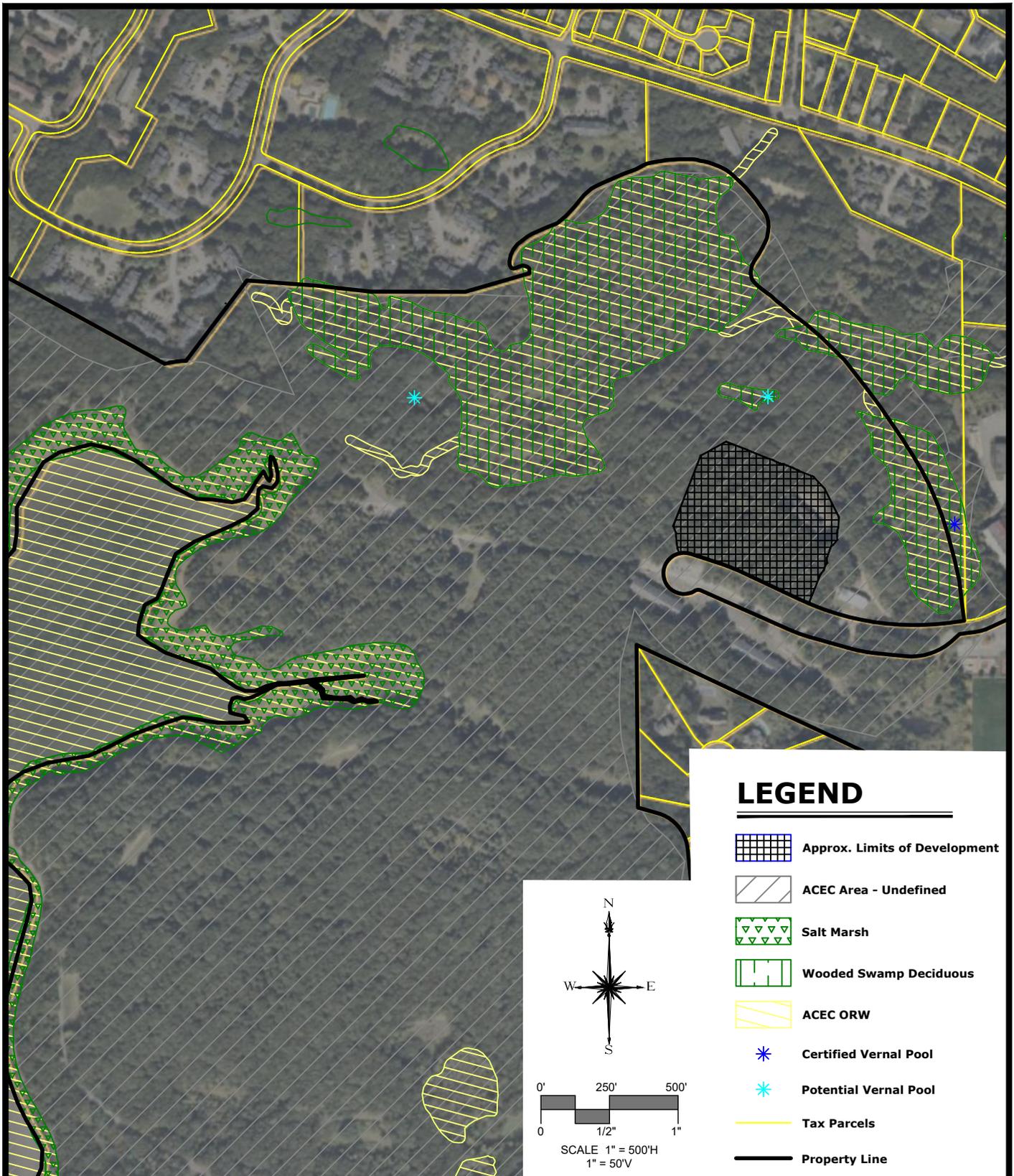
2.2.4 Soil Survey

As part of the geotechnical engineering study, an examination of the soils was observed by a SLR geotechnical engineer. Geospatial data were accessed via the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) web soil survey mapping. The soil survey mapping is included in the attached Geotechnical Engineering Report. The survey identifies the following soil mapping units with associated NRCS map number in the project area:

- Udorthents, 0 to 8 percent slopes (659B) – Moderately well to well drained
- Quonset sandy loam, 15 to 35 percent slopes (262C) – well to excessively drained

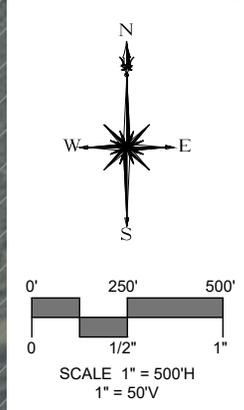
The test borings were drilled using a standard hollow stem auger technique and Standard Penetration Tests (SPTs) were performed in each test boring. Field investigations generally confirmed the NRCS mapping of moderately well to well drained and well to excessively drained soils within the area mapped as soil unit 659B and 262C, respectively. Please note that SLR did not delineate the wetland boundaries beyond the influence of proposed work, nor were upland soil types fully delineated within the project parcels.





LEGEND

-  Approx. Limits of Development
-  ACEC Area - Undefined
-  Salt Marsh
-  Wooded Swamp Deciduous
-  ACEC ORW
-  Certified Vernal Pool
-  Potential Vernal Pool
-  Tax Parcels
-  Property Line



Environmental Resources Map

Hingham Center for Active Living

Bare Cove Park Drive
Hingham, Massachusetts

PROJECT PHASE: --- REV: ---

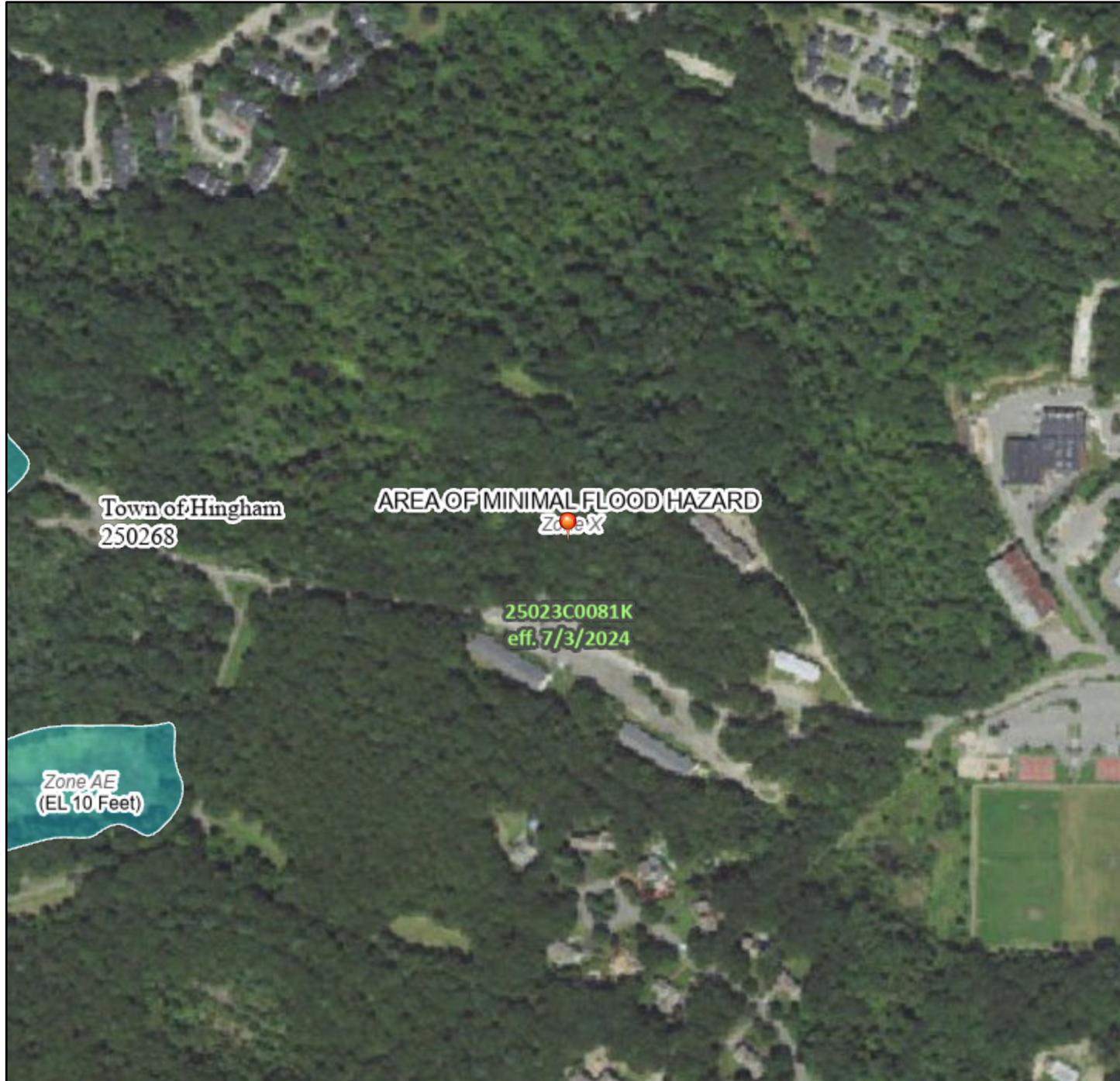
DATE	December 9, 2025	
SCALE	1"=400'	
PROJ. NO.	21840.00004	
DESIGNED	DRAWN	CHECKED
JLS	JLS	MRG

DRAWING NAME:
FIG. 2

National Flood Hazard Layer FIRMMette



70°55'5"W 42°14'31"N



1:6,000

70°54'28"W 42°14'5"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
MAP PANELS		Coastal Transect
		Base Flood Elevation Line (BFE)
OTHER FEATURES		Limit of Study
		Jurisdiction Boundary
OTHER FEATURES		Coastal Transect Baseline
		Profile Baseline
OTHER FEATURES		Hydrographic Feature
		Digital Data Available
MAP PANELS		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **10/6/2025 at 7:07 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

3.0 Project Description

3.1 Proposed Conditions

3.1.1 General Project Improvements

Site Improvements include:

- Demolishing the existing building and replacing it with the proposed Center for Active Living facility with recreation areas.
- Construction of a new paved parking lot with paved access/egress drives.
- Installation of accessible sidewalks around the Center, and additional ADA measures throughout the site.
- Installation of site service utilities (water, sanitary, and storm)
- Installation of stormwater infiltration basins, a rain garden, gravel trenches, and a subsurface infiltration system to provide water quality improvements and peak-flow attenuation.
- Addition of landscaping elements

There will be an increase of approximately 3.07 acres of impervious area as a result of the new Center building and site development.

3.1.2 Stormwater Controls and Best Management Practices

Stormwater management Best Management Practices (BMPs) will consist of a rain garden, infiltration basins, a subsurface infiltration system, and gravel trenches to promote infiltration throughout the site. The deep sump catch basins, sediment forebays, isolator row and the hydrodynamic separators will provide water quality treatment. Runoff from the new impervious area will drain to the water quality treatment measures and discharge to a rain garden, infiltration basins or the subsurface infiltration system to provide peak-flow attenuation. The infiltration basins and the rain garden include outlet structures elevated to provide water quality volume and groundwater infiltration. All disturbed slopes will be stabilized with topsoil, seed, native plantings.

3.2 Erosion and Sedimentation Control

Erosion and sedimentation (E&S) controls will be installed and maintained throughout construction in accordance with local, state, and federal requirements, including implementation of a construction-phase Stormwater Pollution and Prevention Plan (SWPPP) (done by others) under the Environmental Protection Agency (EPA) Construction Stormwater General Permit (CGP). E&S controls will be installed and maintained as shown on the drawings to protect resource areas from the adjacent work. All disturbed slopes will be stabilized with topsoil and seed.

3.3 Construction Sequence and Schedule

Construction is anticipated to commence in summer 2025 and be completed by winter 2025. The general sequence of construction is as follows:

1. Stake out the limit of work. No disturbance is to take place beyond the limits of work shown on the drawings.



2. Install E&S controls as shown in the drawings.
3. Construct stormwater management features and controls.
4. Construct new Center for Active Living, parking lot, and additional site improvements.
5. Loam and seed all disturbed areas.
6. Remove E&S controls once all disturbed areas have been stabilized.



4.0 Stormwater Management

4.1 Existing Conditions

The site is currently comprised of wooded area with an abandoned building and a gravel entry in the northeastern corner of the site within Bare Cove Park. East of the project area includes the Bare Cove Firehouse Museum and a gravel drive that connects to the one onsite. No existing stormwater management is currently onsite. The existing drainage patterns consist of overland flow to drain outside of the limit of development and discharge to the wetlands to the north and east of the site.

4.2 Proposed Conditions

Existing site drainage patterns will generally be maintained under proposed conditions. Discharge from the new impervious area will be directed to one of the deep sump catch basins that discharge to a sediment forebay or hydrodynamic separator to receive adequate pre-treatment before discharging to one of the infiltration measures on site. These infiltration measures include a rain garden, a subsurface infiltration system and infiltration basins that will provide peak-flow attenuation. Runoff from the lawn area and impervious amenities at the back of the proposed center building will be directed to stormwater management basins with elevated outlets that discharge to the subsurface infiltration system which includes an isolator row for pre-treatment, taking care of peak-flow attenuation and water quality measures for that portion of the site. Grassed areas along the north, west, and east of the site drain to the perimeter of the project limit of development and infiltrate entirely through the implementation of gravel trenches to provide peak-flow attenuation and prevent runoff offsite. The stormwater management for the site will heavily rely on infiltration and storage to achieve peak flow reduction for all storm intensities. Refer to the following information within the Report for a more detailed precondition and postcondition hydrologic analysis of the site.

4.3 Hydrologic Analysis

A hydrologic analysis was conducted to analyze predevelopment versus post-development peak-flow rates from the project site and to demonstrate peak-flow attenuation in accordance with Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards. In order to analyze the peak rates of runoff from the site, analysis points were chosen based on drainage patterns that drain toward similar points for existing and proposed conditions.

Watershed areas encompassing the project site were used to determine the peak-flow rates based on the topography and drainage patterns to develop the existing conditions hydrology model. Similar drainage areas were used for the proposed conditions model and were modified to reflect the proposed land cover, grading, and the stormwater management system. The total drainage area is similar under both existing and proposed conditions. A drainage area map for both existing and proposed conditions is included in the Appendix.

Peak flows were determined using the NRCS hydrologic method. The *HydroCAD* computer program was used to conduct watershed modeling. Schematic watershed diagrams are provided for the hydrologic model as shown in the Appendix of this report. The *HydroCAD* computer program forecasts the rate of surface water runoff and runoff volume based upon several factors. The input data includes information on land use, hydrologic soil group, vegetative cover, contributing watershed area, time of concentration, rainfall data, storage volumes, and the



hydraulic capacity of structures. The computer model predicts the amount of runoff as a function of time with the ability to include the attenuation effect due to natural storage effects. The input data for rainfall events with statistical recurrence frequencies of 2, 10, 25, 50, and 100 years was obtained from the Hydrometeorological Design Studies Center of the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS). It released updated precipitation frequency estimates for the northeastern states, including Massachusetts, on September 30, 2015. The precipitation frequency estimates are published in NOAA Atlas 14, Volume 10: *Precipitation-Frequency Atlas of the United States, Northeastern States*. The NOAA Atlas 14 precipitation frequency estimates supersede the estimates published in *NWS HYDRO-35 (1977)*, *Technical Paper No. 40 (1961)*, *Technical Paper No. 49 (1964)*, and *General Memorandum No. 14-04 "Interim 24-hour Precipitation Rates."* For analysis in Plymouth County, Massachusetts, the Type III rainfall pattern with a 24-hour duration is appropriate.

Land use and coverage for the analysis under existing and proposed conditions were determined from project base mapping and review of orthophotos of the project area. Land use types used in the analysis included wooded area, pavement, building, gravel, mulch, dirt, and open space. Soil types in the watershed were obtained from the NRCS Web Soil Survey for Plymouth County, Massachusetts. For this analysis, the study area was determined to contain Quonset sandy loam, 8 to 15 percent slopes with an HSG rating of "A"; and Udorthents, 0 to 8 percent slopes, gravelly with an HSG rating of "B".

Peak rates of runoff were obtained from the hydrologic model results at the site analysis points (AP) as follows:

Table 4-1: Peak-Flow Rates at Analysis Point (cfs)

Storm Frequency (Years)	2-Year	10-Year	25-Year	50-Year	100-Year
Predevelopment	0.01	0.55	1.72	3.04	4.87
Post development	0.0	0.0	0.0	0.0	0.0
Change in Peak-Flow Rate	100%	100%	100%	100%	100%

4.4 Peak-Flow Attenuation

The results of the hydrologic analysis show a reduction in peak flows from the project site that can be anticipated at the Analysis Point for all storm events modeled, which meets the requirements of the Massachusetts Stormwater Management Standards for a new development project. The hydrologic design for the site was intended to have complete retention and infiltration of stormwater for the storm intensities modelled (2-, 10-, 25-, 50-, and 100-year storms) to prevent runoff discharge to the surrounding critical areas. Peak-flow attenuation is mainly attributed to the installation of a rain garden, infiltration basins and a subsurface infiltration system to attenuate runoff from the newly impervious area.

4.5 MassDEP Stormwater Management Guidelines

In accordance with the *Massachusetts Stormwater Handbook*, the project will meet the following standards to the maximum extent possible for a new development project:

Standard #1: Untreated Stormwater



No new untreated stormwater will discharge directly to adjacent wetland resource areas.

Standard #2: Post development Peak Discharge Rates

Existing site drainage patterns will be similar under proposed conditions. Proposed peak discharge rates offsite will be reduced as a result of the installation of a subsurface infiltration system, rain garden, infiltration basins, and gravel trenches. Refer to the attached Stormwater Report for a more detailed precondition and postcondition hydrologic analysis of the site.

Standard #3: Recharge to Groundwater

Use of infiltration basins, a rain garden and a subsurface infiltration system will promote recharge to groundwater. Refer to Appendix E for groundwater recharge computations.

Standard #4: 80 Percent Total Suspended Solids (TSS) Removal

Infiltration basins, a rain garden, a hydrodynamic separator, sediment forebays, deep sump catch basins and an isolator row will be utilized to provide TSS removal on the site. The new impervious area associated with the parking lot will not be sanded or treated with de-icing agents during the winter months. Refer to Appendix F for TSS removal computations.

Standard #5: Higher Potential Pollutant Loads

There is no high potential pollutant loads within the project area.

Standard #6: Protection of Critical Areas

Bare Cove Park is located in an Area of Environmental Concern (ACEC), but no ACEC delineated area is shown within the limits of development for this project.

Standard #7: Redevelopment Projects

This project is not a redevelopment project according to the *Massachusetts Stormwater Handbook*.

Standard #8: Erosion and Sedimentation Controls

E&S controls will be installed and maintained for the duration of construction and/or until all disturbed areas have been stabilized. Controls will be installed and maintained in accordance with local, state, and federal requirements. The attached permitting drawings show the location and construction details of all S&E control measures including a narrative description of inspection and maintenance procedures.

Standard #9: Operation and Maintenance Plan

Refer to the attached Postconstruction Stormwater Management Operation and Maintenance Plan (under separate cover) for a description of postconstruction maintenance.

Standard #10: Illicit Discharges to Stormwater Management Systems

There are no known illicit discharges within the project site.



5.0 Water Quality Management

Water quality measures are included in the stormwater management design to maintain water quality both during construction and after completion of the project. Water quality Best Management Practices (BMPs) include three infiltration basins and a rain garden with elevated outlets, and a subsurface infiltration system to provide water quality volume. A combination of deep sump catch basins, sediment forebays, elevated outlets, hydrodynamic separators and an isolator row prior to the infiltration basins, rain garden and subsurface infiltration system will promote removal of total suspended solids before infiltrating on the site. Fertilizer nutrient composition shall comply with the requirements of the 2012 Massachusetts *An Act Relative to the Regulation of Plant Nutrients*.

An Operation and Maintenance (O&M) Plan (under separate cover) for postconstruction maintenance of BMPs that describes the required frequency of inspections and maintenance procedures to sustain long-term functionality. Implementation of these measures will enhance protection of areas downgradient of the site. An E&S Control Plan is included in this report that details the measures to mitigate the short-term impacts of the development during construction.



6.0 Erosion and Sediment Control Plan

6.1 Erosion and Sediment Controls

An E&S Control Plan has been developed to mitigate the short-term impacts of the site improvements during construction. The E&S Control Plan includes descriptive specifications concerning land grading, topsoiling, temporary vegetative cover, permanent vegetative cover, vegetative cover selection and mulching, and erosion checks. Details have been provided for all erosion controls with corresponding labels on the E&S control site plan. In all cases, the E&S Control Plan shall be implemented in accordance with the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas* and the *Massachusetts Stormwater Handbook*.

6.2 Temporary Stabilization

Sediment controls shall be installed on the site as shown on the drawings. Compost filter tubes shall be tamped in place to ensure good contact with soil surface and shall be staked or leaned against supports as required. Where necessary, stakes shall be located as required to secure tubes in place up to 5 feet apart. Inlet protection shall be added at each catch basin to prevent sediment from entering the stormwater system. Prior to commencing any earthwork, a stabilized construction entrance shall be installed at the existing entrance into the site. This entrance shall be utilized as the exclusive construction entrance.

6.3 Permanent Stabilization

Disturbed areas of the project site where construction activities permanently cease shall be stabilized with permanent seed no later than 7 days after the last construction activity. The permanent seed mix shall be in accordance with the project specifications and plans. Construction and maintenance of erosion and siltation control measures are in accordance with the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas*.

6.4 Sediment Tracking

A stabilized construction entrance shall be installed and maintained as necessary to help reduce vehicular tracking of sediment onto adjacent streets. The entrance shall be cleaned of sediment and redressed when voids in the crushed stone become filled and vehicular tracking of sediment is occurring. Dump trucks hauling materials to and from the construction project area shall be covered with a tarpaulin to reduce dust. Any sediment and debris tracked from the work area along roadways adjacent to the project shall be immediately removed with a street sweeper or equivalent sweeping method. The project engineer and contracting officer will establish inspection and removal protocols at the beginning of construction to ensure all materials tracked onto the roadway are removed daily for the duration of the project.

6.5 Maintenance of Controls

E&S controls will be installed and maintained throughout the construction in accordance with local, state, and federal requirements.

The E&S control measures shall be constructed prior to clearing or grading of any portion of the project. Once construction activity ceases permanently in an area, that area shall be stabilized with permanent measures. Any accumulated sediment shall be disposed of on site in a location away from any wetlands and watercourses, in a stable vegetated area, and permanently



stabilized. Erosion control devices shall remain in place until disturbed areas are permanently stabilized.

If site inspections identify BMPs that are not operating effectively, maintenance must be performed as soon as possible and before the next storm event, whenever practicable, to maintain the continued effectiveness of stormwater controls. If existing BMPs need to be modified or if additional BMPs are necessary, implementation must be completed before the next storm event, whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented, and alternative BMPs must be implemented as soon as possible.



7.0 Stormwater Construction Waste Management Plan

7.1 Contact Information/Responsible Parties

Operator(s):

The Town of Hingham Public Works
25 Bare Cove Park Drive
Hingham MA, 02043

Project Manager(s) or Site Supervisor(s):

To be determined.

7.2 Waste Management

Waste Materials – Foreign waste materials shall be collected and stored in a secured area until removal and disposal by a licensed solid waste management company. All trash and construction debris from the project area shall be disposed of in a portable container unit. No foreign waste materials shall be buried within the project area. All personnel shall be instructed regarding the correct procedure for waste disposal. Notices stating these practices shall be posted in the project trailer, and the operator will be responsible for seeing that these procedures are followed.

Hazardous Waste – All hazardous waste materials shall be disposed of in a manner specified by local or state regulations or by the manufacturer. Project personnel shall be instructed in these practices, and the operator shall be responsible for seeing that these practices are followed.

Sanitary Waste – Any sanitary waste from portable units shall be collected from the portable units by a licensed sanitary waste management contractor as required by MassDEP regulations.

7.3 Staff Training Program

- 7.3.1 Personnel should meet the minimum training requirements to conduct the respective operation and maintenance tasks.
- 7.3.2 Personnel should have the required training to effectively carry out the responsibilities of their positions.

7.4 Spill Prevention and Control Plan

The following are the material management practices that shall be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

7.4.1 Good Housekeeping

The following good housekeeping practices shall be followed within project areas during construction:

- An effort shall be made to store only enough products required to do the job.
- All materials stored within project areas shall be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products shall be kept in their original containers with the original manufacturer's label.



- Substances shall not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product shall be used up before disposing of the container.
- Manufacturers' recommendations for proper use and disposal shall be followed.
- The project superintendent shall inspect daily to ensure proper use and disposal of materials.

7.4.2 Hazardous Products

The following practices are used to reduce the risks associated with hazardous materials:

- Products shall be kept in original containers unless they are not resealable.
- Original labels and Material Safety Data Sheets shall be retained.
- If surplus product must be disposed of, manufacturers' or local-/state-recommended methods of proper disposal shall be followed.
- Material Safety Data Sheets for all hazardous products shall be available within the project area for the duration of construction.

7.4.3 Product-Specific Practices

The following product-specific practices shall be followed within the project areas:

Petroleum products – All project-related vehicles shall be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly sealed containers that are clearly labeled. Fuel tanks should not be stored within 100 feet of any watercourse or wetland.

Fertilizers – Fertilizers used shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizers shall be worked into the soil to limit exposure to stormwater runoff and shall be stored in a covered or other contained area.

7.4.4 Spill Control Practices

The contractor will be responsible for preparing a project-area-specific spill control plan in accordance with local and MassDEP regulations. The plan should describe procedures and practices for controlling fuel and hydraulic fluid spills. A spill kit consisting of absorbent materials should be available on site in a predesignated location during all phases of construction. At a minimum, this plan should do the following:

- Reduce stormwater contact if there is a spill.
- Contain the spill.
- Stop the source of the spill.
- Dispose of contaminated material in accordance with manufacturer's procedures and MassDEP regulations.
- Identify responsible and trained personnel.
- Ensure that the spill area is well ventilated.

7.5 Non-Stormwater Discharges

Allowable non-stormwater discharges that could occur during construction on this project include the following:

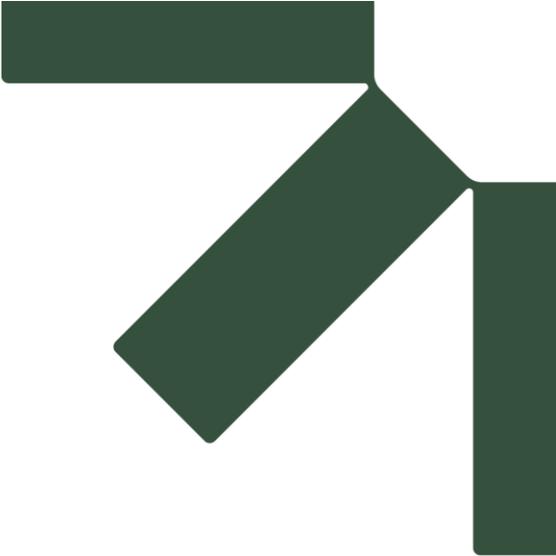
1. Discharges from firefighting activities



2. Water used to control, to the extent practicable, off-site vehicle tracking of sediments onto paved surfaces and the generation of dust
3. Uncontaminated air conditioning or compressor condensate
4. Uncontaminated groundwater or spring water
5. Foundation or footing drains where flows are not contaminated with process materials such as solvents
6. Uncontaminated excavation dewatering
7. Landscape irrigation

No other stormwater discharges are expected to exit the project area during construction.





Appendix A Watershed Maps

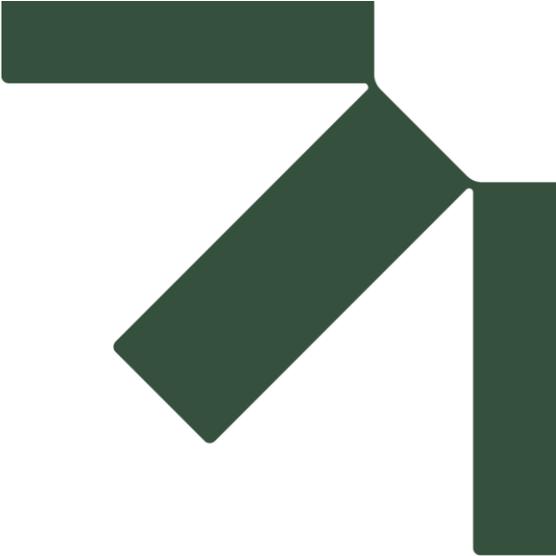
Stormwater Management Plan

Hingham Center for Active Living

EDM Studio, Inc.

SLR Project No.: 141.21840.00004

December 9, 2025



Appendix B NRCS Web Soil Survey

Stormwater Management Plan

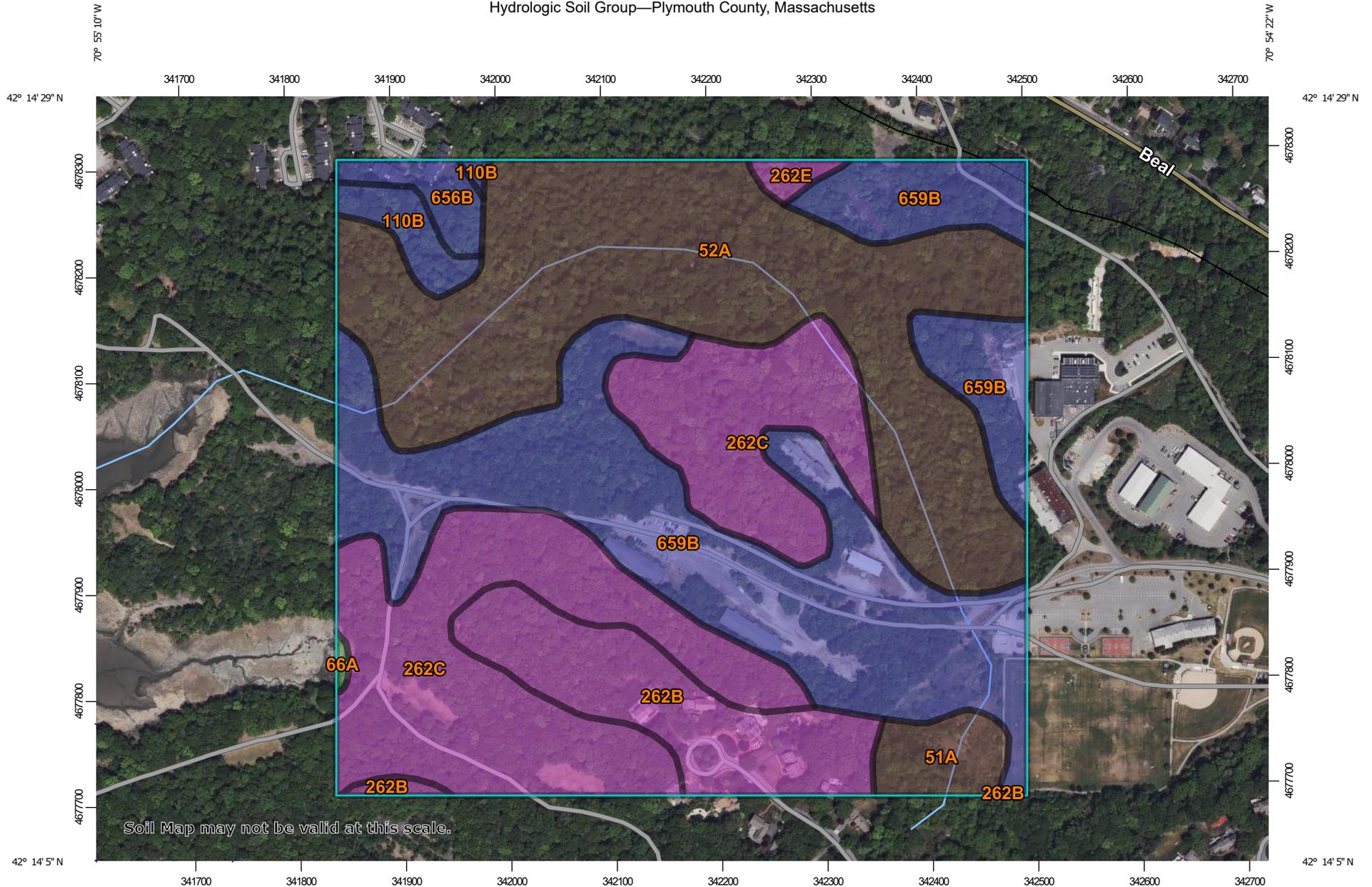
Hingham Center for Active Living

EDM Studio, Inc.

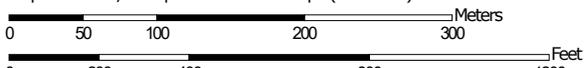
SLR Project No.: 141.21840.00004

December 9, 2025

Hydrologic Soil Group—Plymouth County, Massachusetts



Map Scale: 1:5,090 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Plymouth County, Massachusetts
 Survey Area Data: Version 18, Sep 5, 2025

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

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
51A	Swansea muck, 0 to 1 percent slopes	B/D	2.2	2.3%
52A	Freetown muck, 0 to 1 percent slopes	B/D	29.0	29.7%
66A	Ipswich - Pawcatuck - Matunuck complex, 0 to 2 percent slopes, very frequently flooded	A/D	0.1	0.1%
110B	Canton-Chatfield-Rock outcrop complex, 0 to 8 percent slopes, very stony	B	1.7	1.7%
262B	Quonset sandy loam, 3 to 8 percent slopes	A	8.7	8.9%
262C	Quonset sandy loam, 8 to 15 percent slopes	A	24.5	25.1%
262E	Quonset sandy loam, 15 to 35 percent slopes	A	0.5	0.6%
656B	Udorthents - Urban land complex, 0 to 8 percent slopes	B	1.5	1.5%
659B	Udorthents, 0 to 8 percent slopes, gravelly	B	29.3	30.0%
Totals for Area of Interest			97.6	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.

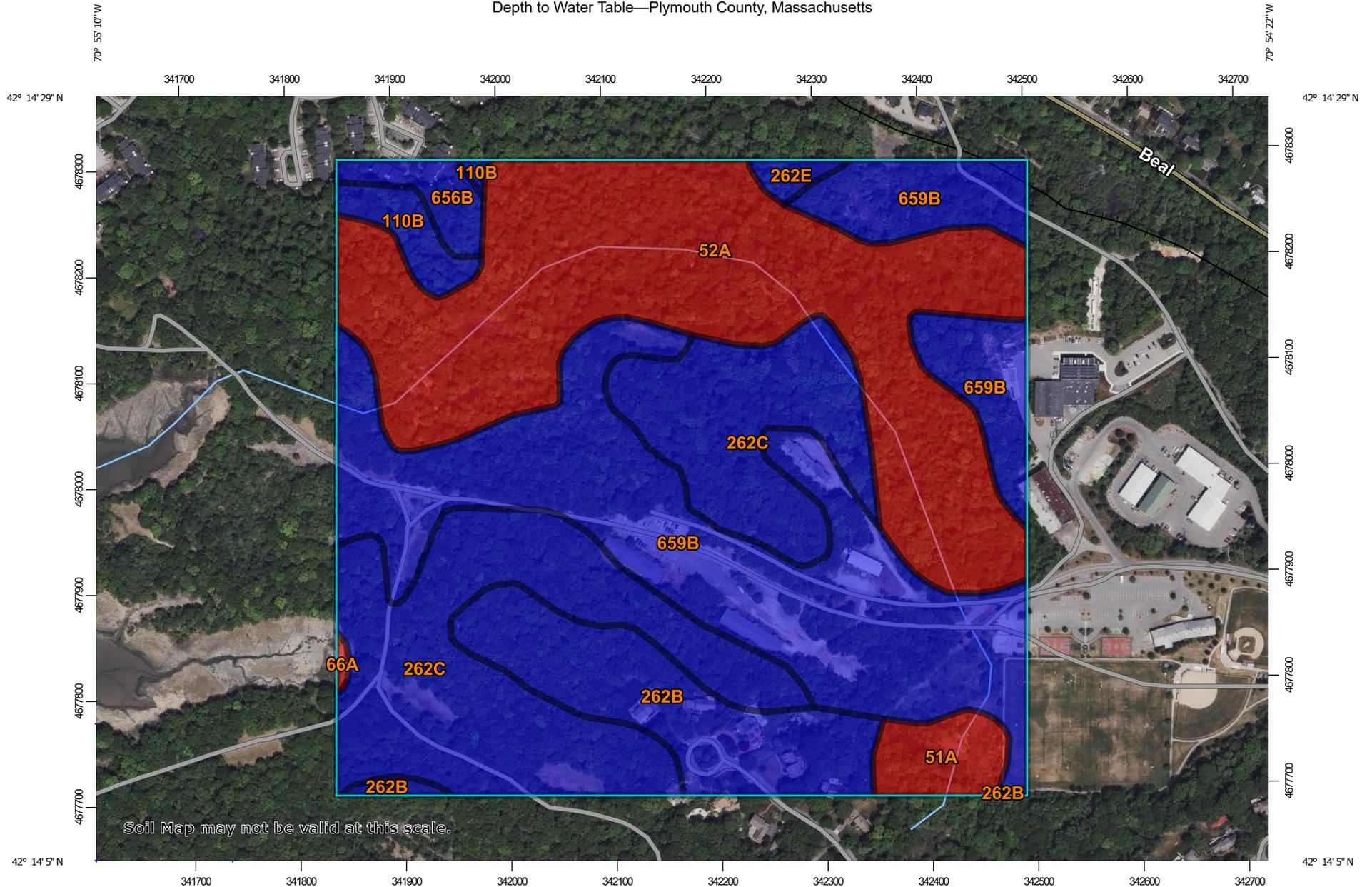
Rating Options

Aggregation Method: Dominant Condition

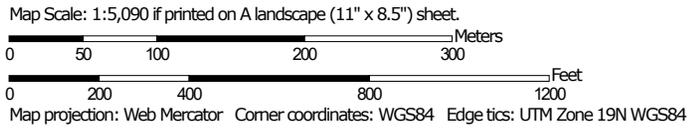
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

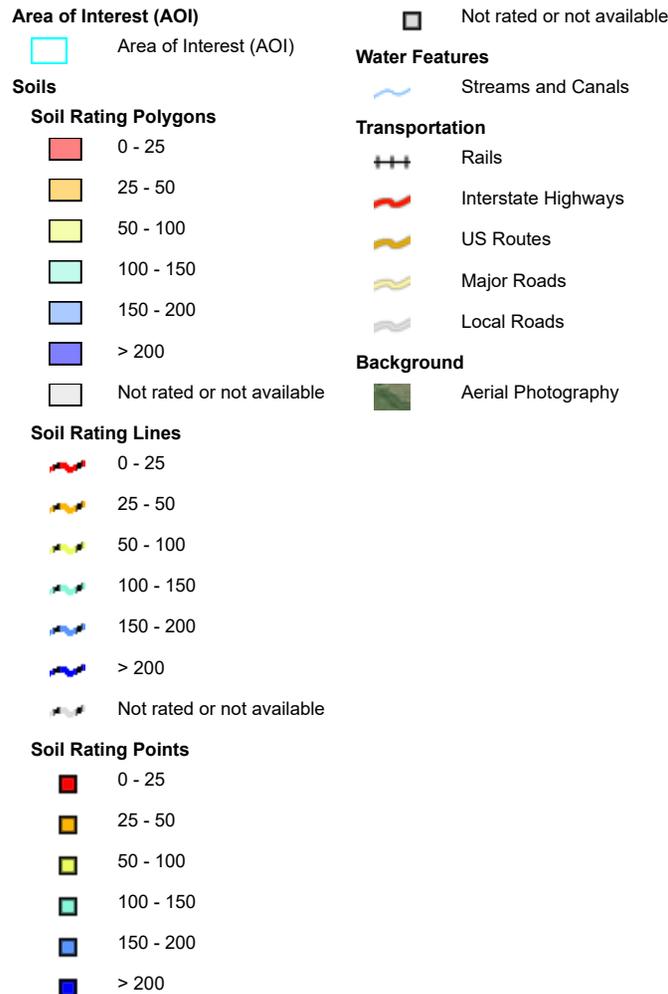
Depth to Water Table—Plymouth County, Massachusetts



Soil Map may not be valid at this scale.



MAP LEGEND



MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Plymouth County, Massachusetts
 Survey Area Data: Version 18, Sep 5, 2025

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

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

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

Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
51A	Swansea muck, 0 to 1 percent slopes	0	2.2	2.3%
52A	Freetown muck, 0 to 1 percent slopes	0	29.0	29.7%
66A	Ipswich - Pawcatuck - Matunuck complex, 0 to 2 percent slopes, very frequently flooded	0	0.1	0.1%
110B	Canton-Chatfield-Rock outcrop complex, 0 to 8 percent slopes, very stony	>200	1.7	1.7%
262B	Quonset sandy loam, 3 to 8 percent slopes	>200	8.7	8.9%
262C	Quonset sandy loam, 8 to 15 percent slopes	>200	24.5	25.1%
262E	Quonset sandy loam, 15 to 35 percent slopes	>200	0.5	0.6%
656B	Udorthents - Urban land complex, 0 to 8 percent slopes	>200	1.5	1.5%
659B	Udorthents, 0 to 8 percent slopes, gravelly	>200	29.3	30.0%
Totals for Area of Interest			97.6	100.0%

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

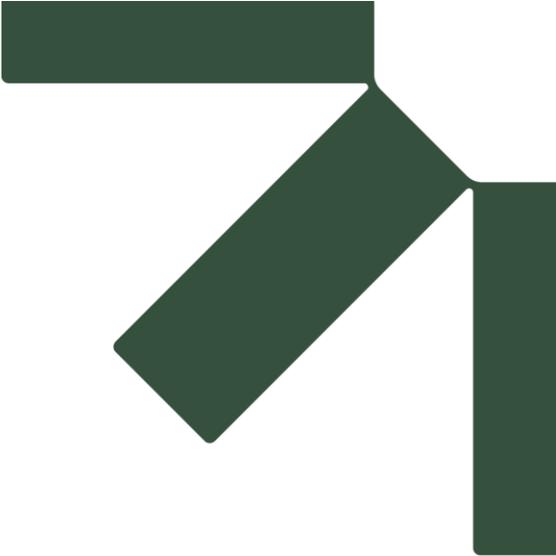
Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December



Appendix C Test Boring Logs

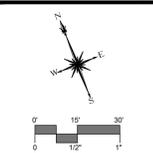
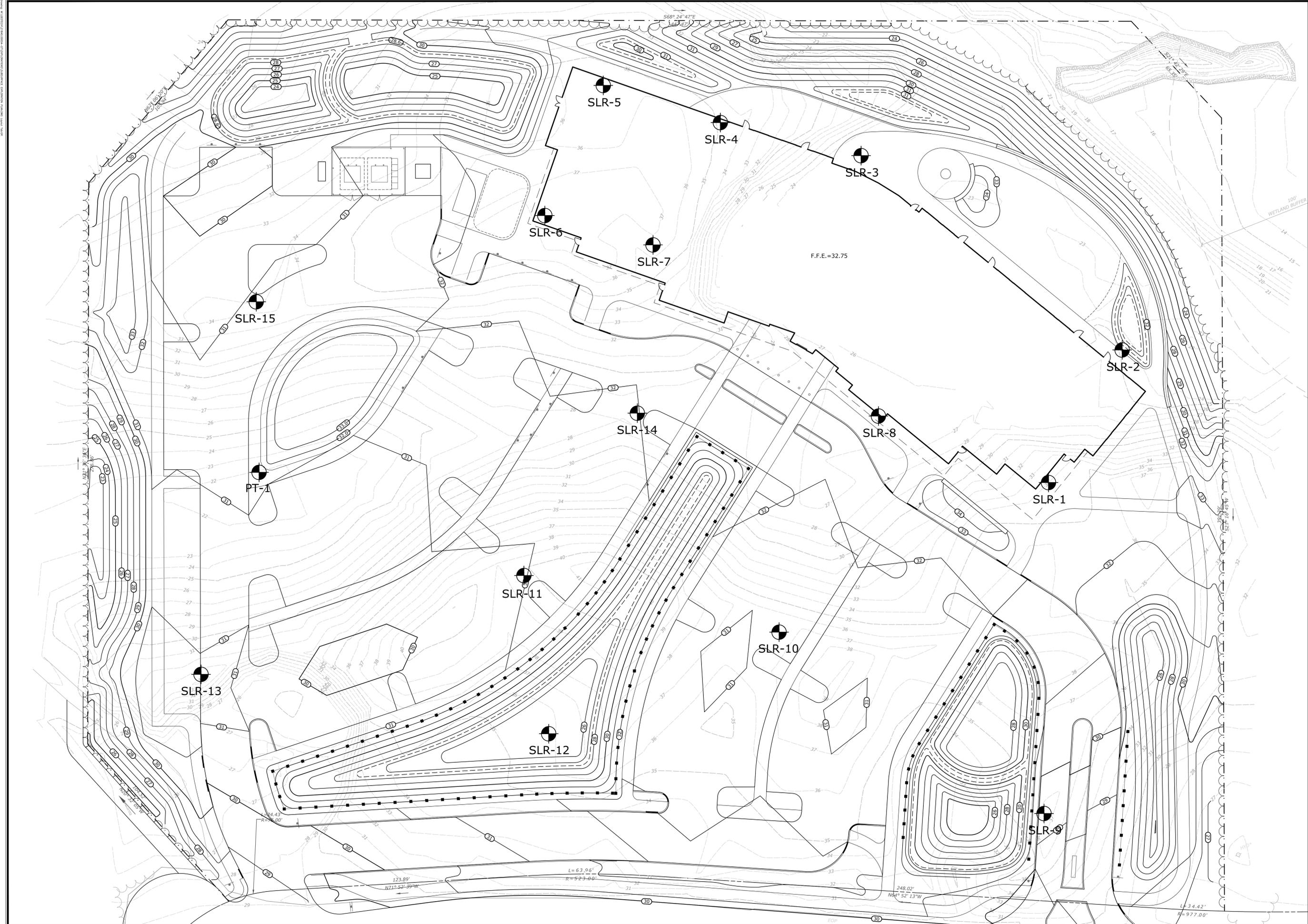
Stormwater Management Plan

Hingham Center for Active Living

EDM Studio, Inc.

SLR Project No.: 141.21840.00004

December 9, 2025



SLR
 2 COMMERCIAL DRIVE, SUITE 110
 BOSTON, MA 02110
 617.668.1654
 SLRCONSULTING.COM

DESCRIPTION	DATE	BY

SUBSURFACE EXPLORATION PLAN
HINGHAM CENTER FOR ACTIVE LIVING
 BARE COVE PARK DRIVE
 HINGHAM, MA

DESIGNED	DRAWN	CHECKED
SCALE: 1"=30'		
DATE: JULY 2025		
PROJECT NO.: 21840.00004		
SHEET NO.: 1 OF 1		
BO-1		

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-1	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 9, 2025	GROUND SURFACE ELEVATION: 34'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	7	2	4" brown, rooted Forest Mat	FOREST MAT SUBSOIL	1.5
			2	Loose medium brown fine to medium SAND, little Silt, some Gravel, trace organics, dry.		
			2			
2	S2	12	8	Very dense gray fine to coarse SAND and Gravel, little Silt, no odor, dry. Rock Fragments	SAND & GRAVEL	
			12			
			24			
			39			
3			44			
5	S3	7	8	Very dense gray fine to coarse SAND and Gravel, little Silt, no odor, dry. Rock Fragments		
			39			
			54/2"			
7				Auger action indicates dense material, cobbles ±6' to ±8'		
8						
9				Auger refusal at ±9.5', probable bedrock		9.5
10				Bottom of Exploration at ±9.5'	BEDROCK	
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS	COHESIVE SOILS	SAMPLE TYPE	PROPORTIONS
	N = 0 - 4 = VERY LOOSE	N = 0 - 2 = VERY SOFT	C = ROCK CORE	trace = 0% - 10%
	4 - 10 = LOOSE	2 - 4 = SOFT	S = SPLIT SPOON	little = 10% - 20%
	10 - 30 = MEDIUM	4 - 8 = MEDIUM	UP = UNDISTURBED PISTON	some = 20% - 35%
	30 - 50 = DENSE	8 - 15 = STIFF	UT = UNDISTURBED THINWALL	and = 35% - 50%
50 + = VERY DENSE	30 + = HARD			

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-2	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 11, 2025	GROUND SURFACE ELEVATION: 24.5'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	17	21	Dense gray-brown fine to coarse GRAVEL, some Sand, trace Silt, no odor, moist. Rock Fragments.	SAND & GRAVEL	
			24			
2			18			
			29			
3	S2	13	38	Auger action indicates dense material, gravel ±1.5' to ±2.5' Very dense gray-brown fine to coarse GRAVEL, some Sand, little Silt, no odor, dry. Rock Fragments.		
			41			
4			74			
			50/3"	Auger grinding ±3.5'+. Auger refusal at ±4', probable bedrock		12
				Bottom of Exploration at ±4'	BEDROCK	
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS N = 0 - 4 = VERY LOOSE 4-10 = LOOSE 10-30 = MEDIUM 30-50 = DENSE 50 + = VERY DENSE	COHESIVE SOILS N = 0 - 2 = VERY SOFT 2 - 4 = SOFT 4 - 8 = MEDIUM 8 - 15 = STIFF 30 + = HARD	SAMPLE TYPE C = ROCK CORE S = SPLIT SPOON UP = UNDISTURBED PISTON UT = UNDISTURBED THINWALL	PROPORTIONS trace = 0% - 10% little = 10% - 20% some = 20% - 35% and = 35% - 50%
FILE: ia\WAFS-JOBS\Geotech\21840.00004-GT\Explorations\Boring Logs.xls				

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-3	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 11, 2025	GROUND SURFACE ELEVATION: 24'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> FIELD TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> LABORATORY TESTING
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/> PID SCREENING

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	7	10	Loose brown fine to coarse Sand, trace Silt, no odor, moist.	FILL SAND & GRAVEL	
			26			
2	S2	15	12	Dense gray-brown fine to coarse GRAVEL and Sand, trace Silt, no odor, moist.		
			12			
3	S2	15	31	Very dense gray-brown fine to coarse GRAVEL and Sand, little Silt, no odor, moist.		
			46			
4	S2	15	46	Auger action indicates dense material, gravel ±2.5' to ±4'		
			43			
5	S3	13	43	Auger action indicates dense material, gravel ±4.5' to ±5'		
			21			
6	S3	13	30	Very dense gray-brown fine to coarse GRAVEL and Sand, little Silt, no odor, moist. Rock Fragments.		
			44			
7	S4	24	46	Very dense gray-brown fine to coarse GRAVEL and Sand, trace Silt, no odor, dry. Rock Fragments.		
			52			
8	S4	24	39	Layers of olive-gray fine SAND and Gravel, little Silt, no odor, moist.		
			33			
9	S4	24	41	Auger action indicates dense material, gravel ±5' to ±10'		
			37			
10	S5	6	44/3"	Very dense gray-brown fine to coarse GRAVEL, some Sand, trace Silt, moist. Rock Fragments. Layers of little Silt.		
			37			
11				Auger grinding ±10.5'+. Auger refusal at ±12', probable bedrock	BEDROCK	12
12				Bottom of Exploration at ±12'		
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS N = 0 - 4 = VERY LOOSE 4-10 = LOOSE 10-30 = MEDIUM 30-50 = DENSE 50 + = VERY DENSE	COHESIVE SOILS N = 0 - 2 = VERY SOFT 2 - 4 = SOFT 4 - 8 = MEDIUM 8 - 15 = STIFF 30 + = HARD	SAMPLE TYPE C = ROCK CORE S = SPLIT SPOON UP = UNDISTURBED PISTON UT = UNDISTURBED THINWALL	PROPORTIONS trace = 0% - 10% little = 10% - 20% some = 20% - 35% and = 35% - 50%
FILE: \\a\WAFS-JOBS\Geotech\21840.00004-GT\Explorations\Boring Logs.xls				

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-4	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 10, 2025	GROUND SURFACE ELEVATION: 34.5'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	5	1	4" brown, rooted Forest Mat	FOREST MAT SUBSOIL	1.5
			1	Loose medium brown fine SAND, trace Silt, trace organics, no odor, moist.		
2	S2	12	2	Medium dense brown fine to medium SAND, some Gravel, trace Silt, no odor, moist.	SAND & GRAVEL	
			5			
3			8	Medium dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, moist. Rock Fragments in sample.		
			9			
4			9	Auger action indicates dense material, cobbles ±4' to ±5'		
5	S3	5	3	Medium dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, slightly moist. Rock Fragments in sample.		
			7			
6			13			
			22			
7	S4	6	28	Very dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, slightly moist. Rock Fragments in sample.		
			40			
8			55			
			50			
9				Auger action indicates cobbles ±8' to ±9.5'		
10	S5	7	43	Very dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, dry. Light brown fine SAND, some Silt, no odor, dry, in tip.		
			52/4"			
11				Auger refusal at ±11', probable bedrock. Bottom of Exploration at ±11'	BEDROCK	11
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS	COHESIVE SOILS	SAMPLE TYPE	PROPORTIONS
	N = 0 - 4 = VERY LOOSE	N = 0 - 2 = VERY SOFT	C = ROCK CORE	trace = 0% - 10%
	4 - 10 = LOOSE	2 - 4 = SOFT	S = SPLIT SPOON	little = 10% - 20%
	10 - 30 = MEDIUM	4 - 8 = MEDIUM	UP = UNDISTURBED PISTON	some = 20% - 35%
	30 - 50 = DENSE	8 - 15 = STIFF	UT = UNDISTURBED THINWALL	and = 35% - 50%
50 + = VERY DENSE	30 + = HARD			

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-5	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 10, 2025	GROUND SURFACE ELEVATION: 35.5'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	5	1	3" brown Forest Mat	FOREST MAT SUBSOIL	
			1	Loose medium brown fine SAND, little Silt, trace organics, no odor, moist.		
2	S2	11	3	Medium dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, moist.	SAND & GRAVEL	
			7			
3	S3	10	14	Medium dense gray- brown fine to coarse SAND and Gravel, trace Silt, no odor, moist. Layers of little Silt.		
			13			
4			60/4"	Auger refusal at ±4', offset ±5' south.		
5						
6	S3	10	18	Very dense gray- brown fine to coarse SAND and Gravel, trace Silt, no odor, moist.		
			31			
7			69/5"	Auger refusal at ±7', probable bedrock		7
8				Bottom of Exploration at ±7'	BEDROCK	
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS N = 0 - 4 = VERY LOOSE 4-10 = LOOSE 10-30 = MEDIUM 30-50 = DENSE 50 + = VERY DENSE	COHESIVE SOILS N = 0 - 2 = VERY SOFT 2 - 4 = SOFT 4 - 8 = MEDIUM 8 - 15 = STIFF 30 + = HARD	SAMPLE TYPE C = ROCK CORE S = SPLIT SPOON UP = UNDISTURBED PISTON UT = UNDISTURBED THINWALL	PROPORTIONS trace = 0% - 10% little = 10% - 20% some = 20% - 35% and = 35% - 50%
FILE: ia\WAFS-JOBS\Geotech\21840.00004-GT\Explorations\[Boring Logs.xls]				

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-6	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 10, 2025	GROUND SURFACE ELEVATION: 37'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	5	WOH	5" brown Forest Mat	FOREST MAT SUBSOIL	
			1	Loose medium brown fine SAND, little Silt, trace Gravel, trace organics, moist.		
2	S2	12	2	Medium dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, moist.	SAND & GRAVEL	
			5			
3	S3	10	7	Dense gray- brown fine to coarse SAND and Gravel, trace Silt, no odor, moist. Layers of Rock Fragments.		
			17			
4			21	Very dense gray- brown fine to coarse SAND and Gravel, trace Silt, no odor, moist.		
			28			
5			8	Rock fragments and stone dust in tip.		
			43			
6			50/3"	Auger refusal at ±7', probable bedrock		
7				Bottom of Exploration at ±7'	BEDROCK	7
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS N = 0 - 4 = VERY LOOSE 4-10 = LOOSE 10-30 = MEDIUM 30-50 = DENSE 50 + = VERY DENSE	COHESIVE SOILS N = 0 - 2 = VERY SOFT 2 - 4 = SOFT 4 - 8 = MEDIUM 8 - 15 = STIFF 30 + = HARD	SAMPLE TYPE C = ROCK CORE S = SPLIT SPOON UP = UNDISTURBED PISTON UT = UNDISTURBED THINWALL	PROPORTIONS trace = 0% - 10% little = 10% - 20% some = 20% - 35% and = 35% - 50%
FILE: ia\WAFS-JOBS\Geotech\21840.00004-GT\Explorations\[Boring Logs.xls]				

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-7	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 10, 2025	GROUND SURFACE ELEVATION: 36.5'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	15	1	4" brown, rooted Forest Mat	FOREST MAT SUBSOIL	
			2	Loose brown fine to coarse SAND and Gravel, trace Silt, trace organics, moist.		
2	S2	6	3	Medium dense gray-brown fine to coarse SAND and Gravel, trace Silt, dry. Rock Fragments.	SAND & GRAVEL	
			5			
3			11	Auger grinding at ±3'. Auger refusal at ±4'. Offset ±20' West		
			50/5"			
4				Very dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, dry. Stone dust in tip		
5	S3	8	10	Auger refusal at ±6.25', probable bedrock		6.25
			50/4"			
6				Bottom of Exploration at ±6.25'	BEDROCK	
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS N = 0 - 4 = VERY LOOSE 4-10 = LOOSE 10-30 = MEDIUM 30-50 = DENSE 50 + = VERY DENSE	COHESIVE SOILS N = 0 - 2 = VERY SOFT 2 - 4 = SOFT 4 - 8 = MEDIUM 8 - 15 = STIFF 30 + = HARD	SAMPLE TYPE C = ROCK CORE S = SPLIT SPOON UP = UNDISTURBED PISTON UT = UNDISTURBED THINWALL	PROPORTIONS trace = 0% - 10% little = 10% - 20% some = 20% - 35% and = 35% - 50%
FILE: ia\WAFS-JOBS\Geotech\21840.00004-GT\Explorations\Boring Logs.xls				

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-8	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 9, 2025	GROUND SURFACE ELEVATION: 26'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	8	3	3" brown, rooted Forest Mat	FOREST MAT SUBSOIL	
			8	Loose medium brown fine SAND, some Silt, trace organics, dry.		
2	--	0	11	Medium dense light gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, dry.	SAND & GRAVEL	
			4	No Recovery.		
3			5			
4			12			
5			18			
6			30	Auger action indicates dense material, gravel ±2.5' to ±4'		
7	S2	9	6	Very dense light gray fine to coarse GRAVEL and Sand, trace Silt, no odor, dry. Rock Fragments.		
8			28			
9			65			
10			49			
11	S3	18	64	Very dense light gray-brown fine to coarse GRAVEL and Sand, trace Silt, no odor, dry. Rock Fragments.		
12			56			
13			51			
14			67	Auger action indicates dense material, cobbles ±5.5' to ±9.5'		
15						
16	S4	9	13	Dense gray-brown fine to coarse GRAVEL and Sand, trace Silt, no odor, dry. Rock Fragments		
17			15			
18			35			
19			38			
20				Auger action indicates cobbles ±12.5' to ±14'		
21						
22	S5	1	8	Rock Fragments.		
			40/1"	Auger refusal at ±15.75', probable bedrock		15.75'
				Bottom of Exploration at ±15.75'	BEDROCK	

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS	COHESIVE SOILS	SAMPLE TYPE	PROPORTIONS
	N = 0 - 4 = VERY LOOSE	N = 0 - 2 = VERY SOFT	C = ROCK CORE	trace = 0% - 10%
	4-10 = LOOSE	2 - 4 = SOFT	S = SPLIT SPOON	little = 10% - 20%
	10-30 = MEDIUM	4 - 8 = MEDIUM	UP = UNDISTURBED PISTON	some = 20% - 35%
30-50 = DENSE	8 - 15 = STIFF	UT = UNDISTURBED THINWALL	and = 35% - 50%	
50 + = VERY DENSE	30 + = HARD			

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-9	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 9, 2025	GROUND SURFACE ELEVATION: 37'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	14	2	5" brown, rooted Forest Mat	FOREST MAT SUBSOIL	1.5
			3	Loose medium brown fine SAND, trace Silt, trace organics, no odor, moist.		
			4			
2	S2	13	5	Very dense light gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, dry.	SAND & GRAVEL	
			23			
			28			
3			35	Auger action indicates dense material, cobbles ±2.5' to ±5'		
			41			
4	S3	8	5	Medium dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, dry.		
			4			
			24			
5	S4	8	48	Very dense light gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, dry.		
			67			
			55/4"			
6				Auger action indicates cobbles ±7.5' to ±9'		
7				Auger grinding at ±9'+. Auger refusal at ±10', probable bedrock	BEDROCK	10
8				Bottom of Exploration at ±10'		
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS N = 0 - 4 = VERY LOOSE 4-10 = LOOSE 10-30 = MEDIUM 30-50 = DENSE 50 + = VERY DENSE	COHESIVE SOILS N = 0 - 2 = VERY SOFT 2 - 4 = SOFT 4 - 8 = MEDIUM 8 - 15 = STIFF 30 + = HARD	SAMPLE TYPE C = ROCK CORE S = SPLIT SPOON UP = UNDISTURBED PISTON UT = UNDISTURBED THINWALL	PROPORTIONS trace = 0% - 10% little = 10% - 20% some = 20% - 35% and = 35% - 50%
FILE: ia\WAFS-JOBS\Geotech\21840.00004-GT\Explorations\[Boring Logs.xls]				

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-10	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 9, 2025	GROUND SURFACE ELEVATION: 36.5'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	6	1	4" brown, rooted Forest Mat	FOREST MAT SUBSOIL	
			2	Loose medium brown fine SAND, little Silt, trace Gravel, trace organics, moist.		
2	S2	7	5	Medium dense light gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, dry.	SAND & GRAVEL	
			6			
3	S3	8	8	Dense light gray-brown fine to medium SAND and Gravel, trace Silt, no odor, dry.		
			16			
4	S4	13	23	Auger action indicates dense material, gravel ±2' to ±5'		
5	S5	10	7	Dense light gray-brown fine to medium SAND and Gravel, trace Silt, no odor, dry.		
			13			
6	S6	11	22	Very dense light gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, dry.		
			25			
7	S7	13	48	Auger grinding ±6.5' to ±9.5'		
			39	Auger action indicates dense material, gravel ±9' to ±10'		
8	S8	10	53	Medium dense gray-brown fine to coarse GRAVEL and Sand, little Silt, no odor, dry. Rock Fragments		
			40			
9	S9	11	10	Auger action indicates cobbles ±13.5' to ±14.5'		
			11			
10	S10	11	13	Very dense light gray-brown fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, no odor, dry.		
			20			
11	S11	11	18	Bottom of Exploration at ±17'		
			39			
12	S12	11	34			
			48			
13	S13	11				
14	S14	11				
15	S15	11				
16	S16	11				
17	S17	11				
18	S18	11				
19	S19	11				
20	S20	11				
21	S21	11				
22	S22	11				

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS	COHESIVE SOILS	SAMPLE TYPE	PROPORTIONS
	N = 0 - 4 = VERY LOOSE	N = 0 - 2 = VERY SOFT	C = ROCK CORE	trace = 0% - 10%
	4 - 10 = LOOSE	2 - 4 = SOFT	S = SPLIT SPOON	little = 10% - 20%
	10 - 30 = MEDIUM	4 - 8 = MEDIUM	UP = UNDISTURBED PISTON	some = 20% - 35%
	30 - 50 = DENSE	8 - 15 = STIFF	UT = UNDISTURBED THINWALL	and = 35% - 50%
50 + = VERY DENSE	30 + = HARD			

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-11	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 11, 2025	GROUND SURFACE ELEVATION: 39.5'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> FIELD TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> LABORATORY TESTING
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/> PID SCREENING

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	5	3	4" brown, rooted Forest Mat	FOREST MAT SUBSOIL	
			3	Loose medium brown fine SAND, some Silt, some Gravel, trace organics, moist.		
2	S2	16	4	Dense gray-brown fine to coarse GRAVEL and Sand, little Silt, no odor, moist. Rock Fragments	SAND & GRAVEL	
			5			
			13			
			18			
3			22			
			24			
			32			
			27			
4			30	Very dense gray-brown fine to coarse GRAVEL and Sand, little Silt, no odor, dry to moist. Rock Fragments.		
			28			
			30			
			30			
5	S3	13	39	Very dense gray-brown fine to coarse GRAVEL and Sand, little Silt, no odor, dry to moist. Rock Fragments.		
			30			
			30			
			30			
6			39	Very dense gray-brown fine to coarse GRAVEL and Sand, little Silt, no odor, dry to moist. Rock Fragments.		
			30			
			30			
			30			
7	S4	19	39	Auger action indicates dense material, gravel ±5' to ±10'		
			30			
			30			
			30			
8			39	Very dense gray-brown fine to medium SAND and Gravel, little Silt, no odor, dry to moist. Rock Fragments.		
			30			
			30			
			30			
9	S5	14	39	Auger grinding ±10.5'+. Auger refusal at ±12.25', probable bedrock		
			30			
			30			
			30			
10			39	Bottom of Exploration at ±12.25'	BEDROCK	12.25
			30			
			30			
			30			
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto Note: Surface elevation estimated from MassMapper. FILE: \\WAFS-JOBS\Geotech\21840.00004-GT\Explorations\Boring Logs.xls	COHESIONLESS SOILS N = 0 - 4 = VERY LOOSE 4-10 = LOOSE 10-30 = MEDIUM 30-50 = DENSE 50 + = VERY DENSE	COHESIVE SOILS N = 0 - 2 = VERY SOFT 2 - 4 = SOFT 4 - 8 = MEDIUM 8 - 15 = STIFF 30 + = HARD	SAMPLE TYPE C = ROCK CORE S = SPLIT SPOON UP = UNDISTURBED PISTON UT = UNDISTURBED THINWALL	PROPORTIONS trace = 0% - 10% little = 10% - 20% some = 20% - 35% and = 35% - 50%
--	---	---	--	---

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-12	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 9, 2025	GROUND SURFACE ELEVATION: 36.0'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	7	1	5" brown, rooted Forest Mat	FOREST MAT SUBSOIL	
			1	Very loose medium brown fine SAND, some Silt, trace organics, dry.		
			2			
			4			
2	S2	6	9	Dense light gray fine to coarse GRAVEL and Sand, trace Silt, no odor dry.	SAND & GRAVEL	2
			12			
			23			
			33	Auger action indicates dense material, gravel ±3.5' to ±5'		
5	S3	10	7	Medium dense light gray-brown fine to coarse GRAVEL and Sand, trace Silt, no odor, dry.		
			6			
			17			
			29			
10	S4	12	17	Very light gray-brown fine to coarse GRAVEL and Sand, trace Silt, no odor, dry. Rock Fragments.		
			31	Auger action indicates dense material, gravel ±10.5' to ±12'		
			46	Auger refusal at ±12', probable bedrock		
			31	Bottom of Exploration at ±12'		
12					BEDROCK	12
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS N = 0 - 4 = VERY LOOSE 4-10 = LOOSE 10-30 = MEDIUM 30-50 = DENSE 50 + = VERY DENSE	COHESIVE SOILS N = 0 - 2 = VERY SOFT 2 - 4 = SOFT 4 - 8 = MEDIUM 8 - 15 = STIFF 30 + = HARD	SAMPLE TYPE C = ROCK CORE S = SPLIT SPOON UP = UNDISTURBED PISTON UT = UNDISTURBED THINWALL	PROPORTIONS trace = 0% - 10% little = 10% - 20% some = 20% - 35% and = 35% - 50%
FILE: ia\WAFS-JOBS\Geotech\21840.00004-GT\Explorations\Boring Logs.xls				

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-13	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 11, 2025	GROUND SURFACE ELEVATION: 33.5'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	7	3	5" brown, rooted Forest Mat	FOREST MAT SUBSOIL	
			3	Loose medium brown fine SAND, some Silt, trace organics, moist.		
2	S2	16	4	Medium dense brown fine to coarse SAND and Gravel, little Silt, no odor, moist.	SAND & GRAVEL	
			11			
3			13	Very dense gray-brown fine to coarse GRAVEL, some fine to coarse Sand, little Silt, no odor, moist. Rock Fragments		
			21			
4			30	Auger action indicates dense material, gravel ±2' to ±5'		
			35			
5	S3	5	25	Very dense dark gray and light gray rock fragments and stone dust.		
			65/4"			
6				Auger grinding ±5.5' to ±7'		
7				Auger action indicates dense material, cobbles ±9' to ±10'		
8	S4	10	19	Very dense white Rock Fragments and stone dust.		
			40			
9			34	Very dense brown Rock Fragments, some fine to coarse Sand, trace Silt, dry.		
			26			
10				Auger grinding ±10.5'+. Auger refusal at ±12.5', probable bedrock		12.5
11				Bottom of Exploration at ±12.5'	BEDROCK	
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS	COHESIVE SOILS	SAMPLE TYPE	PROPORTIONS
	N = 0 - 4 = VERY LOOSE	N = 0 - 2 = VERY SOFT	C = ROCK CORE	trace = 0% - 10%
	4-10 = LOOSE	2 - 4 = SOFT	S = SPLIT SPOON	little = 10% - 20%
	10-30 = MEDIUM	4 - 8 = MEDIUM	UP = UNDISTURBED PISTON	some = 20% - 35%
	30-50 = DENSE	8 - 15 = STIFF	UT = UNDISTURBED THINWALL	and = 35% - 50%
50 + = VERY DENSE	30 + = HARD			

TEST BORING LOG



2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-14	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 10, 2025	GROUND SURFACE ELEVATION: 28.5'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	12	WOH	4" brown, rooted Forest Mat	FOREST MAT SUBSOIL	
			1	Loose medium brown fine SAND, little Silt, trace Gravel, trace organics, moist.		
2	S2	14	4	Medium dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, moist.	SAND & GRAVEL	
			11			
			12			
3	S3	13	20	Dense gray-brown fine to coarse SAND and Gravel, trace Silt, no odor, moist.	SAND & GRAVEL	
			16			
			19			
4	S4	11		Auger action indicates dense material, gravel ±2' to ±5'	SAND & GRAVEL	
			9			
			29			
5	S5	13	45	Very dense gray rock fragments, some fine to medium Sand, trace Silt, no odor, dry.	SAND & GRAVEL	
			44			
			55			
6	S6	12	66	Very dense gray rock fragments, some fine to medium Sand, trace Silt, no odor, dry. Layers of gray-brown fine to coarse SAND and Gravel.	SAND & GRAVEL	
			60/4"			
7	S7	11		Auger grinding ±6.5' to ±9.5'	SAND & GRAVEL	
8	S8	13	17	Very dense gray-brown fine to coarse GRAVEL and Sand, little Silt, no odor, moist. Layers of some Silt.	SAND & GRAVEL	
			24			
			28			
9	S9	12	26	Very dense light gray fine to coarse GRAVEL, little fine to coarse SAND, little Silt.	SAND & GRAVEL	
10	S10	12	30	Bottom of Exploration at ±17'	SAND & GRAVEL	17
			20			
			37			
11	S11	12	22		SAND & GRAVEL	
12	S12	12			SAND & GRAVEL	
13	S13	12			SAND & GRAVEL	
14	S14	12			SAND & GRAVEL	
15	S15	12			SAND & GRAVEL	
16	S16	12			SAND & GRAVEL	
17	S17	12			SAND & GRAVEL	
18	S18	12			SAND & GRAVEL	
19	S19	12			SAND & GRAVEL	
20	S20	12			SAND & GRAVEL	
21	S21	12			SAND & GRAVEL	
22	S22	12			SAND & GRAVEL	

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS N = 0 - 4 = VERY LOOSE 4-10 = LOOSE 10-30 = MEDIUM 30-50 = DENSE 50 + = VERY DENSE	COHESIVE SOILS N = 0 - 2 = VERY SOFT 2 - 4 = SOFT 4 - 8 = MEDIUM 8 - 15 = STIFF 30 + = HARD	SAMPLE TYPE C = ROCK CORE S = SPLIT SPOON UP = UNDISTURBED PISTON UT = UNDISTURBED THINWALL	PROPORTIONS trace = 0% - 10% little = 10% - 20% some = 20% - 35% and = 35% - 50%
FILE: ia\WAFS-JOBS\Geotech\21840.00004-GT\Explorations\[Boring Logs.xls]				

TEST BORING LOG



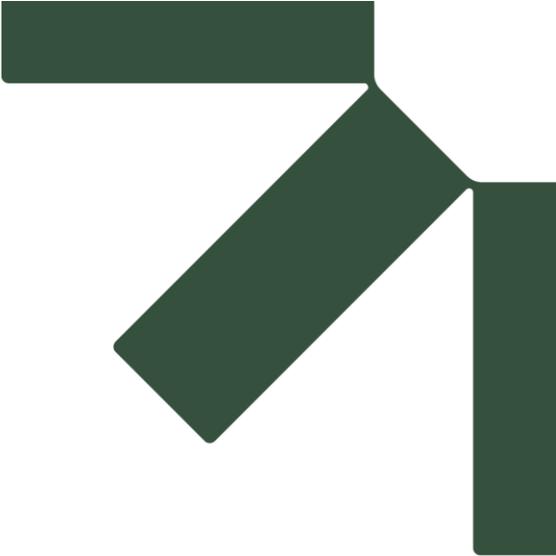
2 Commerce Drive; Suite 110
Bedford, New Hampshire 03110
603-668-1654

PROJECT: Hingham Senior Center	BORING NO.: SLR-15	SHEET: 1 of 1
LOCATION: 45 Bare Cove Park Drive	CONTRACTOR: Drilex Environmental	
PROJ. NO: 141.051021.00001	FOREMAN: J. Hastings	
CLIENT: EDM Studio, Inc.	INSPECTOR: J. Carrier	
DATE: July 11, 2025	GROUND SURFACE ELEVATION: 34.0'±	

EQUIPMENT:	AUGER	CASING	SAMPLER	COREBRL.	GROUNDWATER OBSERVATIONS	<input type="checkbox"/> FIELD TESTING
TYPE	HSA	--	S	--	ELAPSED TIME (HR)	<input type="checkbox"/> LABORATORY TESTING
SIZE ID (IN)	4 1/4	--	1 3/8	--	CASING AT (FT)	<input type="checkbox"/> MONITORING WELL INSTALLED
HAMMER WT (LB)	--	--	140	--	DEPTH (FT)	<input type="checkbox"/> PID SCREENING
HAMMER FALL (IN)	--	--	30	--	<input checked="" type="checkbox"/> NO GROUNDWATER ENCOUNTERED	<input type="checkbox"/>

Depth (FT)	SAMPLE NUMBER	RECOVERY (IN)	BLOWS PER 6"	SOIL AND ROCK CLASSIFICATION-DESCRIPTION BURMISTER SYSTEM (SOIL) U.S. CORPS OF ENGINEERS SYSTEM (ROCK)	STRATUM CHANGE DESCRIPTION	PID (PPM)
1	S1	8	1	4" brown, rooted Forest Mat	FOREST MAT SUBSOIL	1.5
			1	Loose medium brown fine SAND, some Silt, some Gravel, trace organics, moist.		
2	S2	12	2	Very dense gray-brown fine to coarse SAND and Gravel, little Silt, no odor, moist. Rock Fragments	SAND & GRAVEL	
			4			
			9			
			28			
3			42	Auger grinding ±3' to ±4.25'		
			60/4"			
4				Very dense dark gray-brown fine to coarse GRAVEL, little fine to coarse Sand, trace Silt, no odor, moist. Rock Fragments		
5	S3	6	59			
			40/1"			
6				Auger grinding ±5' to ±8'		
7				Auger refusal at ±8', probable bedrock		
8				Bottom of Exploration at ±8'	BEDROCK	8
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

Notes: 1) TYPE OF RIG: CME-55 Track Mounted 2) HAMMER/HOIST TYPE: Auto	COHESIONLESS SOILS	COHESIVE SOILS	SAMPLE TYPE	PROPORTIONS
	N = 0 - 4 = VERY LOOSE	N = 0 - 2 = VERY SOFT	C = ROCK CORE	trace = 0% - 10%
	4 - 10 = LOOSE	2 - 4 = SOFT	S = SPLIT SPOON	little = 10% - 20%
	10 - 30 = MEDIUM	4 - 8 = MEDIUM	UP = UNDISTURBED PISTON	some = 20% - 35%
30 - 50 = DENSE	8 - 15 = STIFF	UT = UNDISTURBED THINWALL	and = 35% - 50%	
50 + = VERY DENSE	30 + = HARD			



Appendix D Storm Drainage Computations

Stormwater Management Plan

Hingham Center for Active Living

EDM Studio, Inc.

SLR Project No.: 141.21840.00004

December 9, 2025

Rational Method Individual Basin Calculations

Project: Hingham Center for Active Living
 Location: Bare Cove Park Drive, Hingham, MA

By: JLS

Date: 12/8/25

Basin Name	Impervious Area C=0.9 (sf)	Grassed Area C=0.3 (sf)	Wooded Area C=0.2 (sf)	Total Area (sf)	Total Area (ac)	Weighted C	Tc (min)
System 2							
CB 9	8158	3006	780	11944	0.27	0.70	5.0
CB 10	6821	3399	610	10830	0.25	0.67	5.0
System 3							
CB 13	7047	2095	4	9146	0.21	0.76	5.0
CB 14	4768	146	0	4914	0.11	0.88	5.0
CB 17	10027	1026	0	11053	0.25	0.84	5.0
CB 18	10338	1582	0	11920	0.27	0.82	5.0
CB 20	6354	816	22	7192	0.17	0.83	5.0
CB 21	7471	1737	0	9208	0.21	0.79	5.0
CB 22	3699	2072	0	5771	0.13	0.68	5.0
System 4							
CB 29	6795	1271	0	8066	0.19	0.81	5.0
CB 30	4664	788	0	5452	0.13	0.81	5.0
CB 32	9420	1966	0	11386	0.26	0.80	5.0
CB 33	6163	563	0	6726	0.15	0.85	5.0
CB 37	3032	2809	0	5841	0.13	0.61	5.0
CB 38	4735	2797	0	7532	0.17	0.68	5.0

Rational Method Roof Drain System Calculations

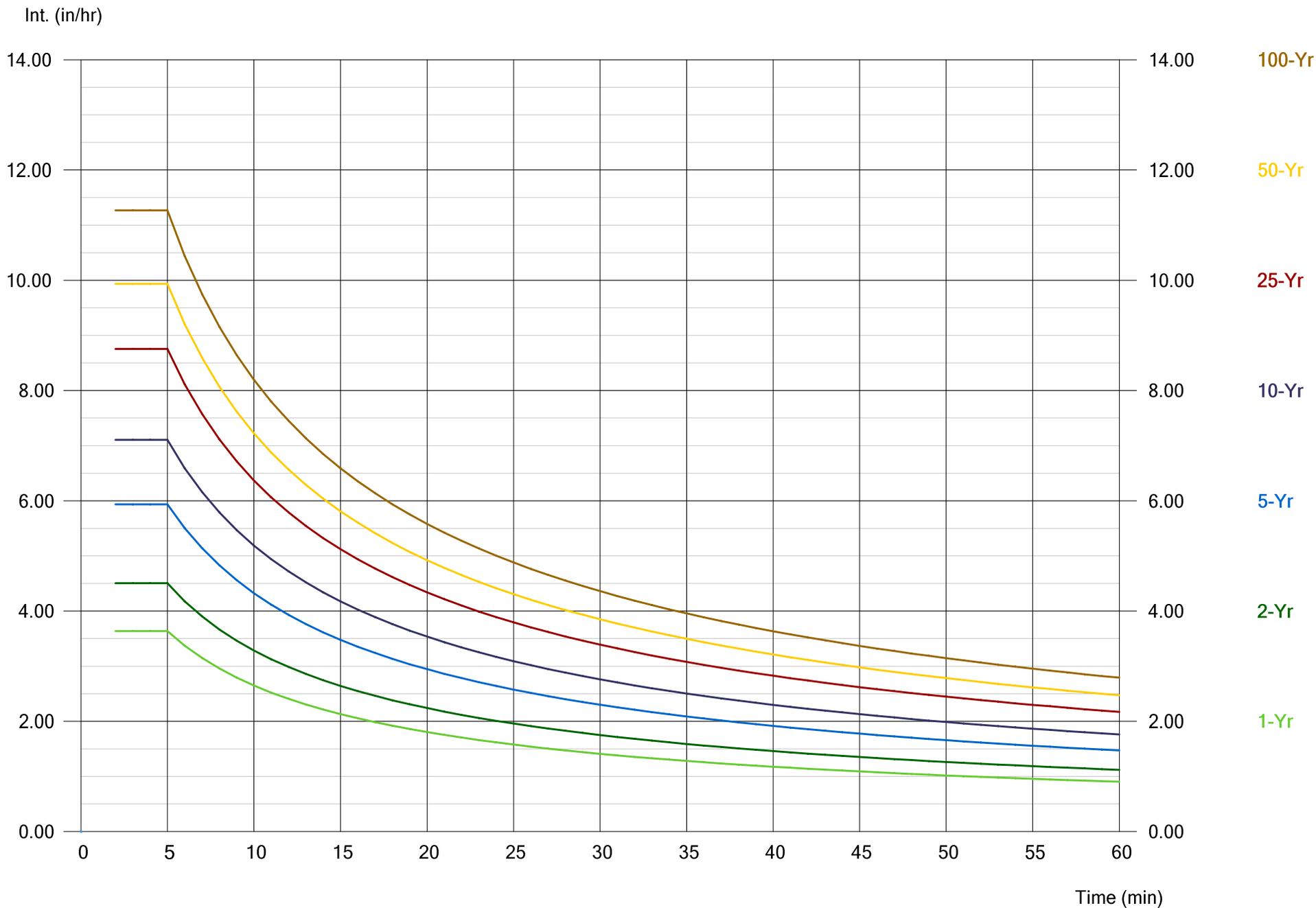
Project: Hingham Center for Active Living
Location: Bare Cove Park Drive, Hingham, Massachusetts

Total Roof Runoff to Proposed Storm Drainage System

	Roof Area RA-1	Roof Area RA-2	Roof Area RA-3	Roof Area RA-4
C	0.90	0.90	0.90	0.90
I	7.13	7.13	7.13	7.13
A	0.13	0.14	0.19	0.19
Q	0.83	0.89	1.24	1.20

Storm Sewer IDF Curves

IDF file: Hingham IDF.IDF





NOAA Atlas 14, Volume 10, Version 3
 Location name: Hingham, Massachusetts, USA*
 Latitude: 42.2382°, Longitude: -70.9068°
 Elevation: 45 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	3.65 (2.87-4.57)	4.52 (3.55-5.68)	5.95 (4.66-7.49)	7.13 (5.56-9.05)	8.76 (6.61-11.8)	9.97 (7.37-13.7)	11.3 (8.11-16.3)	12.8 (8.64-18.9)	15.2 (9.83-23.3)	17.1 (10.8-26.9)
10-min	2.59 (2.03-3.24)	3.20 (2.51-4.02)	4.21 (3.30-5.30)	5.05 (3.93-6.40)	6.20 (4.68-8.33)	7.06 (5.22-9.74)	7.99 (5.75-11.5)	9.08 (6.13-13.4)	10.7 (6.97-16.5)	12.1 (7.69-19.0)
15-min	2.03 (1.60-2.54)	2.51 (1.97-3.15)	3.30 (2.59-4.16)	3.96 (3.09-5.03)	4.87 (3.67-6.53)	5.54 (4.10-7.64)	6.26 (4.51-9.05)	7.12 (4.80-10.5)	8.42 (5.46-12.9)	9.52 (6.03-14.9)
30-min	1.41 (1.11-1.77)	1.75 (1.37-2.19)	2.30 (1.80-2.90)	2.76 (2.15-3.50)	3.39 (2.55-4.55)	3.85 (2.85-5.31)	4.36 (3.14-6.30)	4.96 (3.35-7.31)	5.88 (3.81-9.01)	6.66 (4.21-10.4)
60-min	0.903 (0.710-1.13)	1.12 (0.879-1.40)	1.47 (1.15-1.85)	1.76 (1.37-2.24)	2.17 (1.64-2.91)	2.47 (1.83-3.41)	2.79 (2.01-4.04)	3.18 (2.14-4.68)	3.77 (2.44-5.79)	4.28 (2.71-6.71)
2-hr	0.572 (0.453-0.712)	0.721 (0.570-0.898)	0.964 (0.759-1.21)	1.17 (0.913-1.47)	1.44 (1.10-1.93)	1.65 (1.23-2.26)	1.87 (1.36-2.69)	2.14 (1.45-3.13)	2.56 (1.67-3.89)	2.92 (1.86-4.54)
3-hr	0.441 (0.351-0.547)	0.557 (0.442-0.692)	0.747 (0.590-0.931)	0.904 (0.710-1.13)	1.12 (0.853-1.49)	1.28 (0.956-1.75)	1.45 (1.06-2.08)	1.67 (1.13-2.42)	1.99 (1.30-3.01)	2.28 (1.45-3.50)
6-hr	0.290 (0.232-0.358)	0.362 (0.289-0.447)	0.479 (0.382-0.594)	0.577 (0.456-0.718)	0.710 (0.544-0.935)	0.809 (0.607-1.09)	0.917 (0.670-1.30)	1.05 (0.713-1.50)	1.24 (0.814-1.86)	1.42 (0.903-2.16)
12-hr	0.189 (0.152-0.231)	0.231 (0.186-0.283)	0.300 (0.240-0.368)	0.356 (0.284-0.441)	0.435 (0.334-0.566)	0.493 (0.371-0.658)	0.555 (0.406-0.774)	0.629 (0.431-0.893)	0.740 (0.486-1.09)	0.834 (0.534-1.26)
24-hr	0.115 (0.093-0.140)	0.141 (0.114-0.172)	0.183 (0.147-0.223)	0.218 (0.174-0.268)	0.266 (0.206-0.343)	0.301 (0.228-0.399)	0.339 (0.250-0.470)	0.385 (0.265-0.541)	0.455 (0.299-0.663)	0.514 (0.330-0.764)
2-day	0.065 (0.053-0.078)	0.081 (0.066-0.098)	0.107 (0.087-0.130)	0.129 (0.104-0.158)	0.159 (0.124-0.205)	0.181 (0.138-0.239)	0.205 (0.153-0.284)	0.235 (0.162-0.328)	0.282 (0.186-0.407)	0.323 (0.208-0.474)
3-day	0.047 (0.039-0.057)	0.059 (0.048-0.071)	0.078 (0.063-0.094)	0.093 (0.076-0.114)	0.115 (0.090-0.148)	0.131 (0.100-0.172)	0.148 (0.111-0.204)	0.170 (0.118-0.235)	0.204 (0.135-0.293)	0.234 (0.151-0.342)
4-day	0.038 (0.031-0.046)	0.047 (0.039-0.057)	0.062 (0.051-0.075)	0.074 (0.060-0.090)	0.091 (0.071-0.116)	0.103 (0.079-0.135)	0.117 (0.087-0.160)	0.134 (0.092-0.184)	0.160 (0.106-0.228)	0.183 (0.118-0.266)
7-day	0.026 (0.022-0.032)	0.032 (0.026-0.038)	0.041 (0.033-0.049)	0.048 (0.039-0.058)	0.058 (0.045-0.073)	0.065 (0.050-0.084)	0.073 (0.055-0.099)	0.083 (0.058-0.113)	0.098 (0.065-0.139)	0.111 (0.072-0.160)
10-day	0.021 (0.018-0.026)	0.025 (0.021-0.030)	0.032 (0.026-0.038)	0.037 (0.030-0.044)	0.044 (0.035-0.055)	0.049 (0.038-0.064)	0.055 (0.041-0.074)	0.062 (0.043-0.084)	0.072 (0.048-0.102)	0.081 (0.053-0.116)
20-day	0.015 (0.012-0.018)	0.017 (0.014-0.020)	0.020 (0.017-0.024)	0.023 (0.019-0.028)	0.027 (0.021-0.034)	0.030 (0.023-0.038)	0.033 (0.025-0.043)	0.037 (0.026-0.049)	0.041 (0.028-0.057)	0.045 (0.029-0.064)
30-day	0.012 (0.010-0.014)	0.014 (0.011-0.016)	0.016 (0.013-0.019)	0.018 (0.015-0.022)	0.021 (0.016-0.026)	0.023 (0.018-0.029)	0.025 (0.019-0.033)	0.027 (0.019-0.036)	0.030 (0.020-0.042)	0.033 (0.021-0.046)
45-day	0.010 (0.008-0.012)	0.011 (0.009-0.013)	0.013 (0.011-0.015)	0.014 (0.012-0.017)	0.016 (0.013-0.020)	0.018 (0.014-0.022)	0.019 (0.014-0.025)	0.021 (0.014-0.027)	0.023 (0.015-0.031)	0.024 (0.015-0.033)
60-day	0.009 (0.007-0.010)	0.009 (0.008-0.011)	0.011 (0.009-0.013)	0.012 (0.010-0.014)	0.013 (0.011-0.016)	0.015 (0.011-0.018)	0.016 (0.012-0.020)	0.017 (0.012-0.022)	0.018 (0.012-0.025)	0.019 (0.012-0.027)

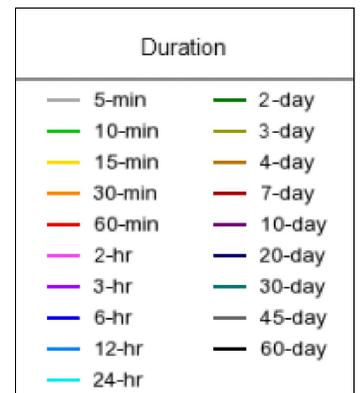
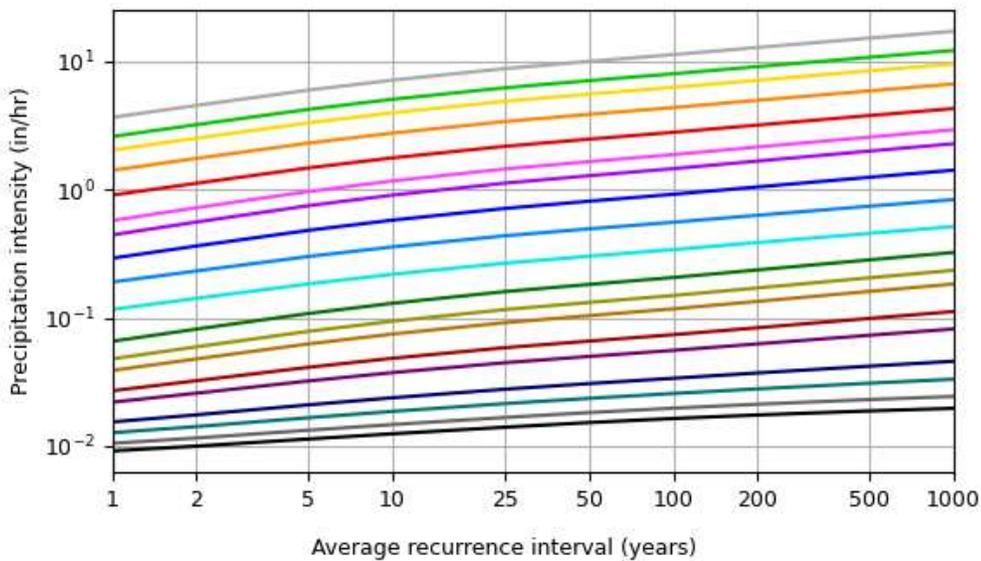
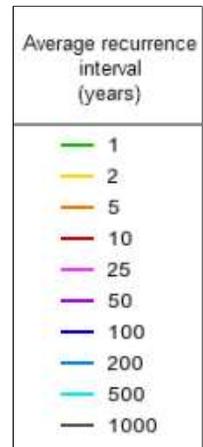
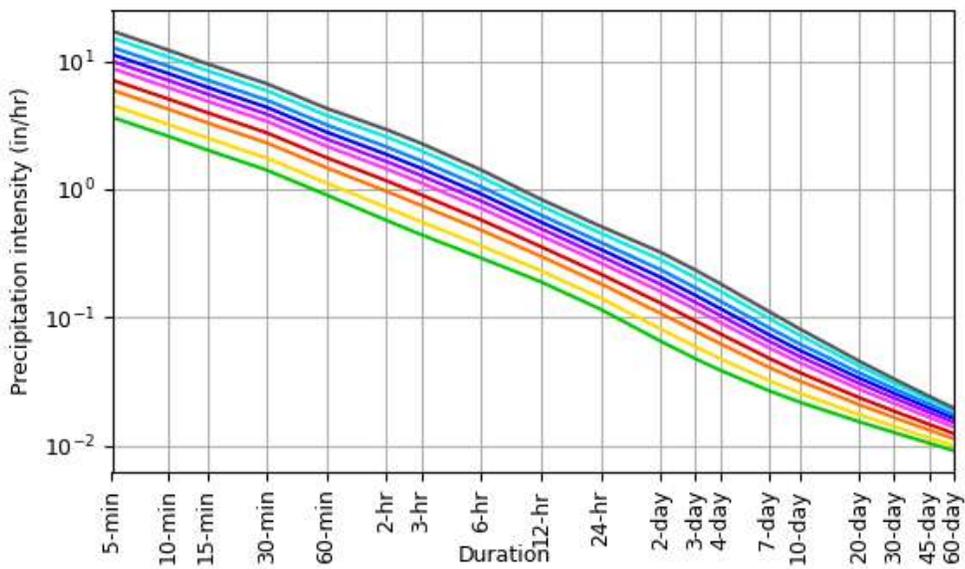
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical

PDS-based intensity-duration-frequency (IDF) curves

Latitude: 42.2382°, Longitude: -70.9068°



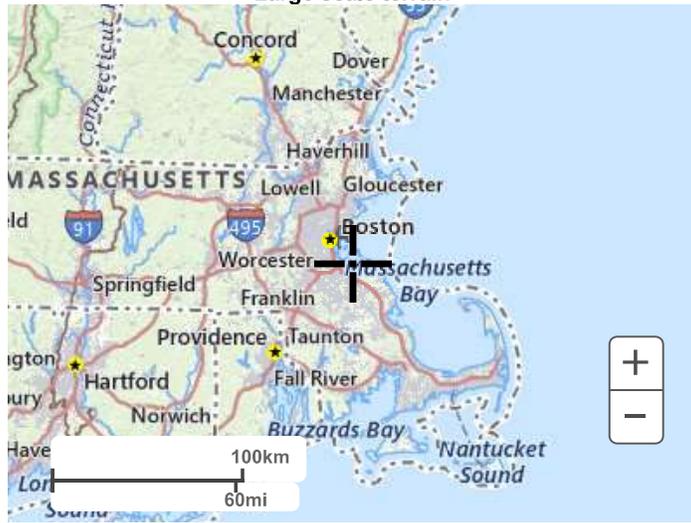
[Back to Top](#)

Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

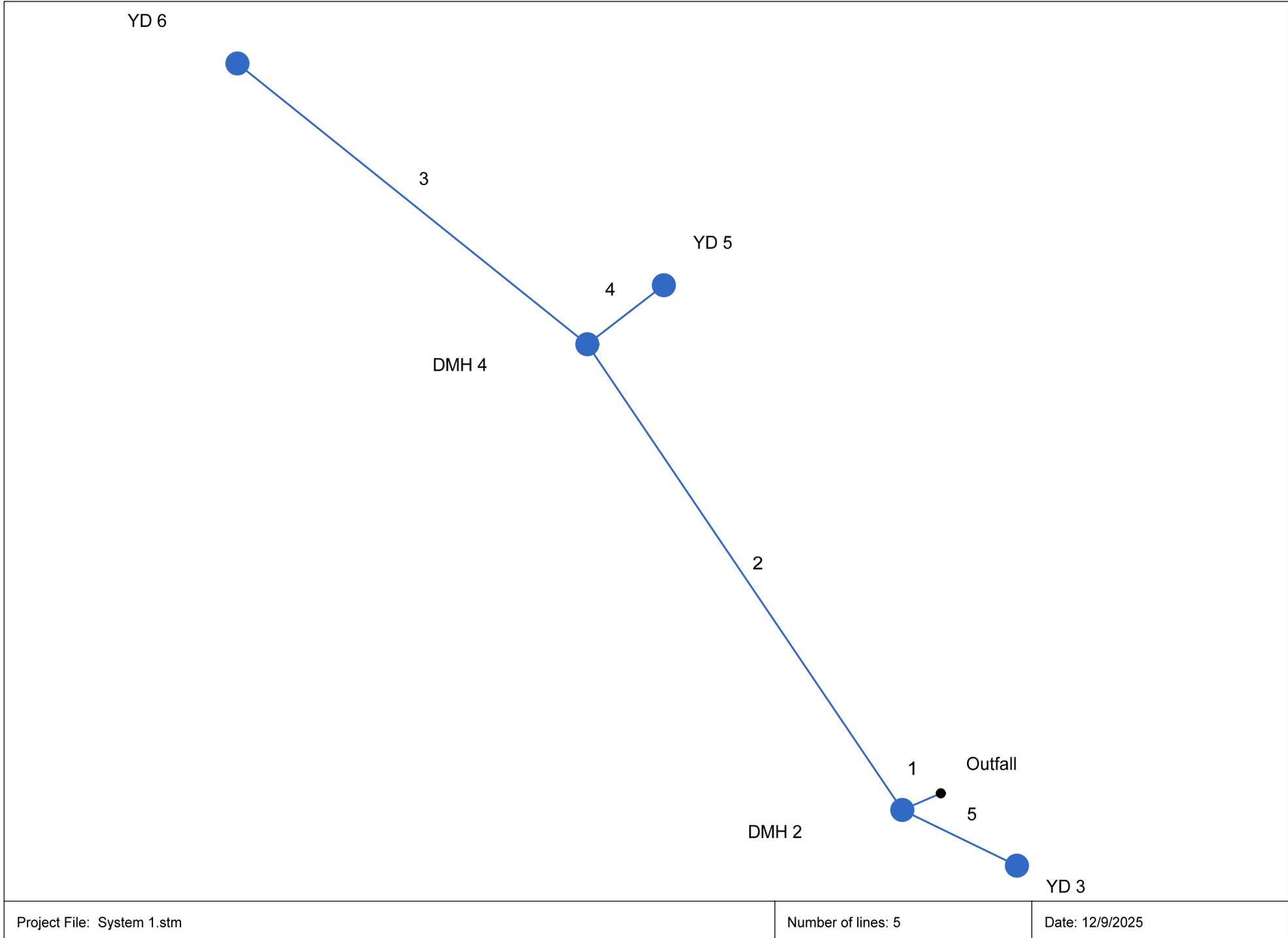


[Back to Top](#)

[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	8.000	150.437	MH	0.89	0.00	0.00	5.0	25.64	1.00	25.72	12	Cir	0.012	1.00	32.73	DMH 1 - DMH 2
2	1	119.000	91.152	MH	0.83	0.00	0.00	5.0	25.72	1.00	26.91	12	Cir	0.012	0.97	32.60	DMH 2 - DMH 4
3	2	89.000	-16.624	DrGrt	0.06	0.00	0.00	5.0	26.91	1.00	27.80	12	Cir	0.012	1.00	30.96	DMH 4 - YD 6
4	2	19.000	74.790	DrGrt	0.67	0.00	0.00	5.0	26.91	1.00	27.10	12	Cir	0.012	1.00	30.37	DMH 4 - YD 5
5	1	24.000	-119.585	DrGrt	0.68	0.00	0.00	5.0	25.72	1.00	25.96	12	Cir	0.012	1.00	30.88	DMH 2 - YD-3

Project File: System 1.stm

Number of lines: 5

Date: 12/9/2025

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (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	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	8000	0.00	0.00	0.00	0.00	0.00	5.0	24.1	0.0	3.13	3.86	3.99	12	1.00	25.64	25.72	28.06	28.11	32.35	32.73	DMH 1 -
2	1119	000	0.00	0.00	0.00	0.00	0.00	5.0	23.1	0.0	1.56	3.86	1.99	12	1.00	25.72	26.91	28.36	28.55	32.73	32.60	DMH 2 -
3	289	000	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.06	3.86	0.08	12	1.00	26.91	27.80	28.61	28.61	32.60	30.96	DMH 4 -
4	219	000	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.67	3.86	0.85	12	1.00	26.91	27.10	28.61	28.62	32.60	30.37	DMH 4 -
5	124	000	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.68	3.86	0.87	12	1.00	25.72	25.96	28.36	28.37	32.73	30.88	DMH 2 -

Project File: System 1.stm

Number of lines: 5

Run Date: 12/9/2025

NOTES: Intensity = 33.90 / (Inlet time + 4.00) ^ 0.71; Return period = Yrs. 10 ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	12	3.13	25.64	28.06	1.00	0.79	3.99	0.25	28.31	0.658	8.000	25.72	28.11	1.00	0.79	3.99	0.25	28.36	0.658	0.658	0.053	1.00	0.25
2	12	1.56	25.72	28.36	1.00	0.79	1.99	0.06	28.42	0.164	119.000	26.91	28.55	1.00	0.79	1.99	0.06	28.62	0.164	0.164	0.195	0.97	0.06
3	12	0.06	26.91	28.61	1.00	0.79	0.08	0.00	28.61	0.000	89.000	27.80	28.61	0.81	0.69	0.09	0.00	28.61	0.000	0.000	0.000	1.00	0.00
4	12	0.67	26.91	28.61	1.00	0.79	0.85	0.01	28.63	0.030	19.000	27.10	28.62	1.00	0.79	0.85	0.01	28.63	0.030	0.030	0.006	1.00	0.01
5	12	0.68	25.72	28.36	1.00	0.79	0.87	0.01	28.37	0.031	24.000	25.96	28.37	1.00	0.79	0.87	0.01	28.38	0.031	0.031	0.007	1.00	0.01

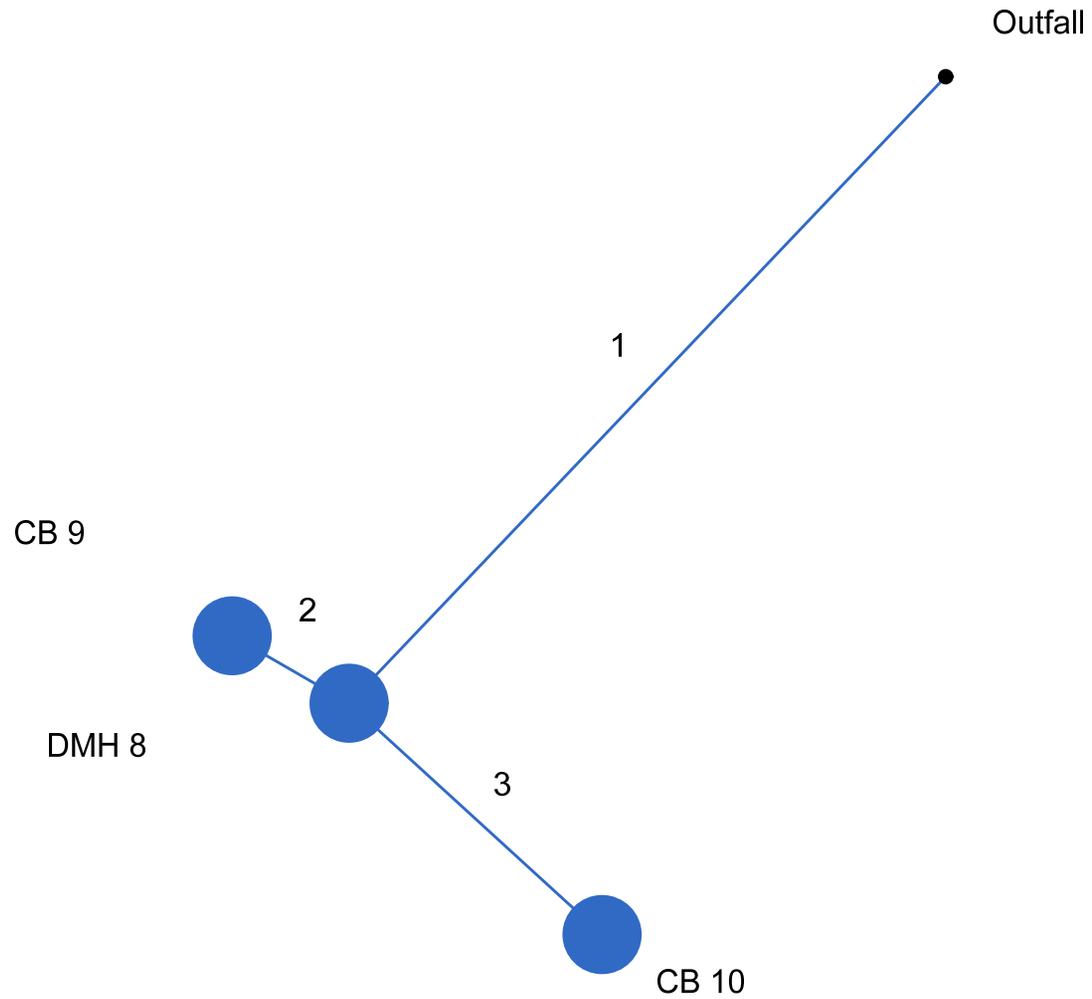
Project File: System 1.stm

Number of lines: 5

Run Date: 12/9/2025

; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	45.000	133.983	MH	0.00	0.00	0.00	5.0	25.00	1.00	25.45	12	Cir	0.012	1.00	29.90	FES 7 - DMH 8
2	1	7.000	74.975	Grate	0.00	0.27	0.70	5.0	26.73	1.00	26.80	12	Cir	0.012	1.00	29.80	DMH 8 - CB 9
3	1	18.000	-91.304	Grate	0.00	0.25	0.67	5.0	26.73	1.00	26.91	12	Cir	0.012	1.00	30.40	DMH 8 - CB 10

Project File: System 2.stm

Number of lines: 3

Date: 12/9/2025

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (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	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	45000	0.00	0.52	0.00	0.00	0.36	5.0	5.2	7.0	2.49	3.86	3.18	12	1.00	25.00	25.45	28.06	28.25	26.25	29.90	FES 7 -
2	1	7000	0.27	0.27	0.70	0.19	0.19	5.0	5.0	7.1	1.34	3.86	1.71	12	1.00	26.73	26.80	28.40	28.41	29.90	29.80	DMH 8 -
3	1	18000	0.25	0.25	0.67	0.17	0.17	5.0	5.0	7.1	1.19	3.86	1.52	12	1.00	26.73	26.91	28.40	28.42	29.90	30.40	DMH 8 -

Project File: System 2.stm

Number of lines: 3

Run Date: 12/9/2025

NOTES: Intensity = $33.90 / (\text{Inlet time} + 4.00)^{0.71}$; Return period = Yrs. 10 ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	12	2.49	25.00	28.06	1.00	0.79	3.18	0.16	28.22	0.418	45.000	25.45	28.25	1.00	0.79	3.18	0.16	28.40	0.418	0.418	0.188	1.00	0.16
2	12	1.34	26.73	28.40	1.00	0.79	1.71	0.05	28.45	0.121	7.000	26.80	28.41	1.00	0.79	1.71	0.05	28.46	0.121	0.121	0.008	1.00	0.05
3	12	1.19	26.73	28.40	1.00	0.79	1.52	0.04	28.44	0.095	18.000	26.91	28.42	1.00	0.79	1.52	0.04	28.46	0.095	0.095	0.017	1.00	0.04

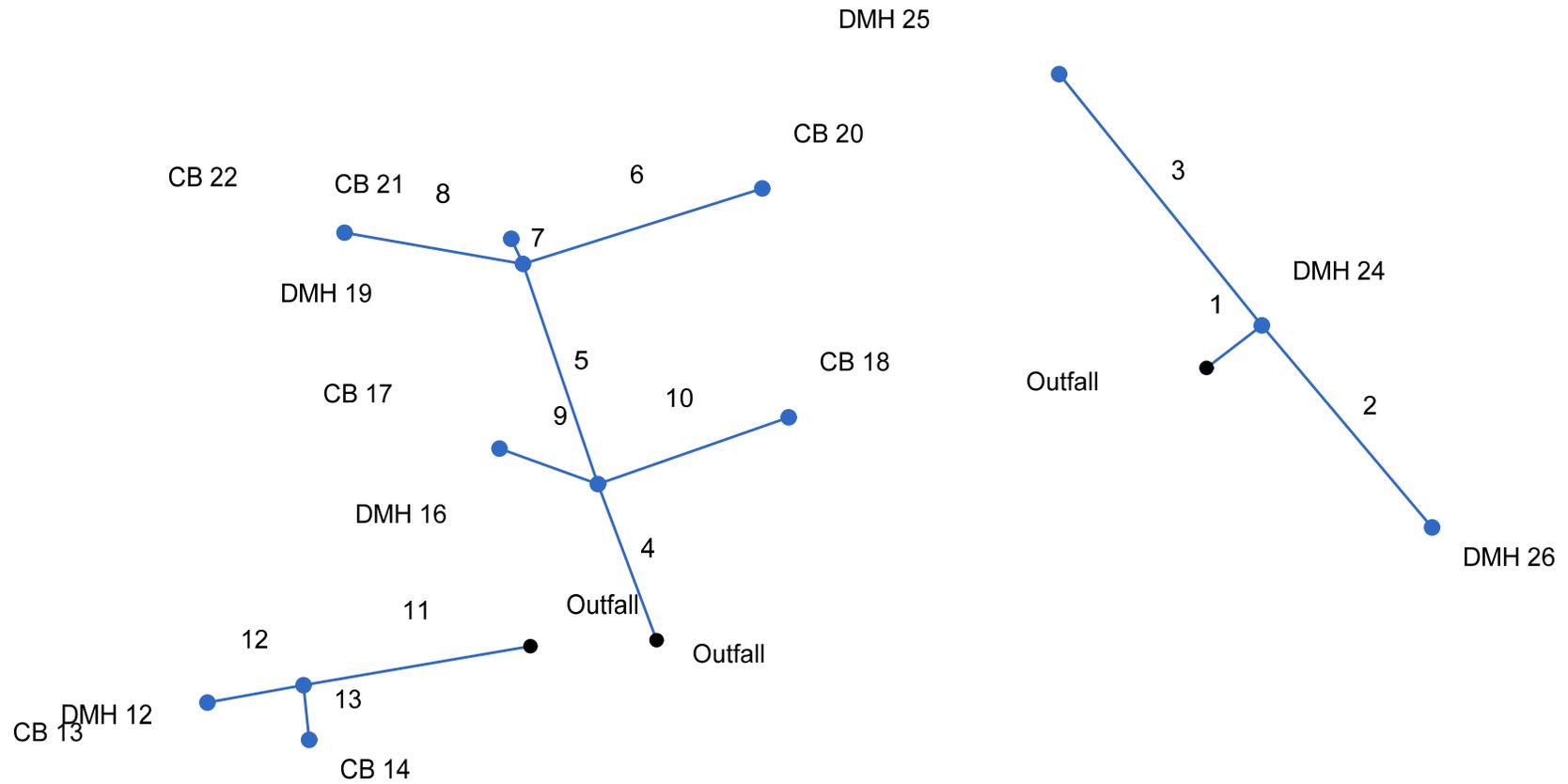
Project File: System 2.stm

Number of lines: 3

Run Date: 12/9/2025

; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	20.000	-37.425	MH	0.00	0.00	0.00	5.0	27.50	1.00	27.70	12	Cir	0.012	1.00	32.30	FES 23 - DMH 24
2	1	76.000	87.470	MH	1.20	0.00	0.00	5.0	28.47	1.00	29.23	12	Cir	0.012	1.00	32.55	DMH 24 - DMH 26
3	1	93.000	-91.291	MH	1.24	0.00	0.00	5.0	28.47	1.00	29.40	12	Cir	0.012	1.00	32.40	DMH 24 - DMH 25
4	End	48.000	-110.509	MH	0.00	0.00	0.00	5.0	26.01	1.00	26.49	15	Cir	0.012	1.00	30.00	FES 15 - DMH 16
5	4	67.000	1.801	MH	0.00	0.00	0.00	5.0	26.49	1.00	27.16	12	Cir	0.012	1.00	30.30	DMH 16 - DMH 19
6	5	72.000	91.150	Grate	0.00	0.17	0.83	5.0	27.16	0.50	27.52	12	Cir	0.012	1.00	31.10	DMH 19 - CB 20
7	5	8.000	-6.134	Grate	0.00	0.21	0.79	5.0	27.16	0.50	27.20	12	Cir	0.012	1.00	30.20	DMH 19 - CB 21
8	5	52.000	-61.221	Grate	0.00	0.13	0.68	5.0	27.16	0.50	27.42	12	Cir	0.012	1.00	30.60	DMH 19 - CB 22
9	4	30.000	-49.720	Grate	0.00	0.25	0.84	5.0	26.49	0.50	26.64	12	Cir	0.012	1.00	29.80	DMH 16 - CB 17
10	4	58.000	91.082	Grate	0.00	0.27	0.82	5.0	26.49	0.50	26.78	12	Cir	0.012	1.00	30.70	DMH 16 - CB 18
11	End	66.000	170.258	MH	0.00	0.00	0.00	5.0	26.19	0.50	26.52	12	Cir	0.012	1.00	30.10	FES 11 - DMH 12
12	11	28.000	-0.467	Grate	0.00	0.21	0.76	5.0	26.52	0.50	26.66	12	Cir	0.013	1.00	28.90	DMH 12 - CB 13
13	11	16.000	-86.037	Grate	0.00	0.11	0.88	5.0	26.52	0.50	26.60	12	Cir	0.012	1.00	29.60	DMH 12 - CB 14

Project File: System 3.stm

Number of lines: 13

Date: 12/9/2025

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (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	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	En20	000	0.00	0.00	0.00	0.00	0.00	5.0	5.4	0.0	2.44	3.86	4.77	12	1.00	27.50	27.70	28.08	28.37	28.50	32.30	FES 23 -
2	1 76	000	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	1.20	3.86	3.86	12	1.00	28.47	29.23	28.85	29.69	32.30	32.55	DMH 24
3	1 93	000	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	1.24	3.86	3.90	12	1.00	28.47	29.40	28.86	29.87	32.30	32.40	DMH 24
4	En48	000	0.00	1.03	0.00	0.00	0.83	5.0	5.8	6.7	5.54	7.00	5.56	15	1.00	26.01	26.49	26.95	27.44	27.59	30.00	FES 15 -
5	4 67	000	0.00	0.51	0.00	0.00	0.40	5.0	5.5	6.8	2.70	3.86	4.04	12	1.00	26.49	27.16	27.44	27.86	30.00	30.30	DMH 16
6	5 72	000	0.17	0.17	0.83	0.14	0.14	5.0	5.0	7.1	1.00	2.73	2.45	12	0.50	27.16	27.52	27.86	27.94	30.30	31.10	DMH 19
7	5 8	000	0.21	0.21	0.79	0.17	0.17	5.0	5.0	7.1	1.18	2.73	2.05	12	0.50	27.16	27.20	27.86	27.87	30.30	30.20	DMH 19
8	5 52	000	0.13	0.13	0.68	0.09	0.09	5.0	5.0	7.1	0.63	2.73	1.92	12	0.50	27.16	27.42	27.86	27.75	30.30	30.60	DMH 19
9	4 30	000	0.25	0.25	0.84	0.21	0.21	5.0	5.0	7.1	1.49	2.73	2.03	12	0.50	26.49	26.64	27.44	27.47	30.00	29.80	DMH 16
10	4 58	000	0.27	0.27	0.82	0.22	0.22	5.0	5.0	7.1	1.57	2.73	2.30	12	0.50	26.49	26.78	27.44	27.51	30.00	30.70	DMH 16
11	En66	000	0.00	0.32	0.00	0.00	0.26	5.0	5.3	7.0	1.78	2.73	2.81	12	0.50	26.19	26.52	27.08	27.19	27.19	30.10	FES 11 -
12	1128	000	0.21	0.21	0.76	0.16	0.16	5.0	5.0	7.1	1.13	2.52	1.78	12	0.50	26.52	26.66	27.35	27.36	30.10	28.90	DMH 12
13	1116	000	0.11	0.11	0.88	0.10	0.10	5.0	5.0	7.1	0.69	2.73	1.92	12	0.50	26.52	26.60	27.35	26.95	30.10	29.60	DMH 12

Project File: System 3.stm

Number of lines: 13

Run Date: 12/9/2025

NOTES: Intensity = 33.90 / (Inlet time + 4.00) ^ 0.71; Return period = Yrs. 10 ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	12	2.44	27.50	28.08	0.58	0.47	5.17	0.30	28.38	0.000	20.000	27.70	28.37	0.67**	0.56	4.37	0.30	28.67	0.000	0.000	n/a	1.00	0.30
2	12	1.20	28.47	28.85	0.38*	0.28	4.33	0.18	29.03	0.000	76.000	29.23	29.69	0.46**	0.35	3.39	0.18	29.87	0.000	0.000	n/a	1.00	0.18
3	12	1.24	28.47	28.86	0.39*	0.28	4.37	0.18	29.04	0.000	93.000	29.40	29.87	0.47**	0.36	3.42	0.18	30.05	0.000	0.000	n/a	1.00	0.18
4	15	5.54	26.01	26.95	0.94	0.99	5.60	0.47	27.42	0.000	48.000	26.49	27.44	0.95**	1.00	5.52	0.47	27.92	0.000	0.000	n/a	1.00	n/a
5	12	2.70	26.49	27.44	0.95	0.59	3.50	0.33	27.77	0.000	67.000	27.16	27.86 j	0.70**	0.59	4.57	0.33	28.19	0.000	0.000	n/a	1.00	n/a
6	12	1.00	27.16	27.86	0.70	0.31	1.70	0.16	28.02	0.000	72.000	27.52	27.94 j	0.42**	0.31	3.20	0.16	28.10	0.000	0.000	n/a	1.00	n/a
7	12	1.18	27.16	27.86	0.70	0.59	1.99	0.06	27.93	0.131	8.000	27.20	27.87	0.67	0.56	2.11	0.07	27.94	0.151	0.141	0.011	1.00	0.07
8	12	0.63	27.16	27.86	0.70	0.23	1.06	0.12	27.98	0.000	52.000	27.42	27.75	0.33**	0.23	2.78	0.12	27.87	0.000	0.000	n/a	1.00	0.12
9	12	1.49	26.49	27.44	0.95	0.77	1.93	0.06	27.50	0.130	30.000	26.64	27.47	0.83	0.70	2.14	0.07	27.54	0.146	0.138	0.041	1.00	0.07
10	12	1.57	26.49	27.44	0.95	0.77	2.04	0.06	27.51	0.144	58.000	26.78	27.51	0.73	0.61	2.56	0.10	27.61	0.213	0.179	0.104	1.00	0.10
11	12	1.78	26.19	27.08	0.89	0.74	2.42	0.09	27.17	0.190	66.000	26.52	27.19	0.67	0.56	3.20	0.16	27.35	0.347	0.269	0.177	1.00	0.16
12	12	1.13	26.52	27.35	0.83	0.69	1.63	0.04	27.39	0.100	28.000	26.66	27.36	0.70	0.59	1.92	0.06	27.42	0.142	0.121	0.034	1.00	0.06
13	12	0.69	26.52	27.35	0.83	0.24	0.99	0.13	27.47	0.000	16.000	26.60	26.95	0.35**	0.24	2.86	0.13	27.07	0.000	0.000	n/a	1.00	0.13

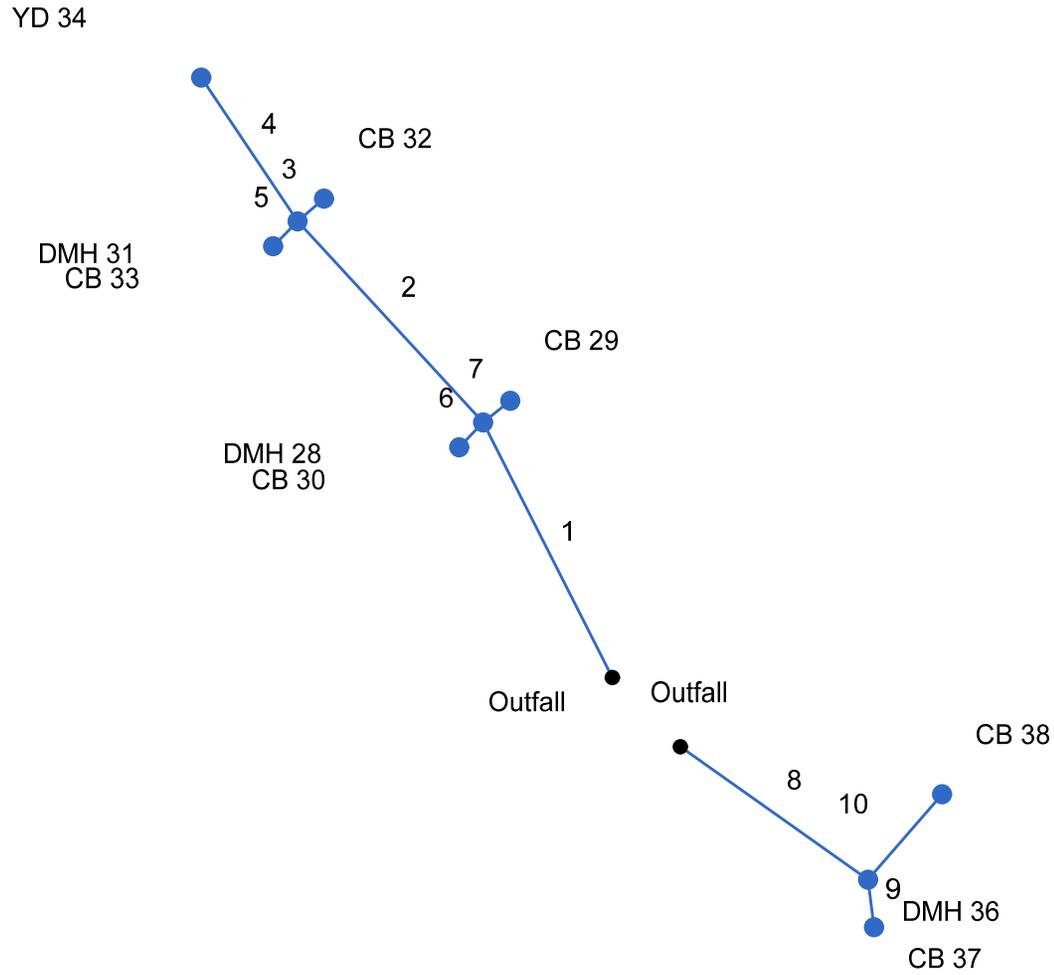
Project File: System 3.stm

Number of lines: 13

Run Date: 12/9/2025

Notes: * depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	66.000	-116.717	MH	0.00	0.00	0.00	5.0	25.20	1.00	25.86	12	Cir	0.012	1.00	31.00	FES 27 - DMH 28
2	1	63.000	-15.899	MH	0.00	0.00	0.00	5.0	25.86	1.00	26.49	12	Cir	0.012	1.00	31.00	DMH 28 - DMH 31
3	2	8.000	91.776	Grate	0.00	0.26	0.80	5.0	26.49	1.00	26.57	12	Cir	0.012	1.00	30.90	DMH 31 - CB 32
4	2	40.000	9.003	DrGrt	0.19	0.00	0.00	5.0	26.49	1.00	26.89	12	Cir	0.012	1.00	30.93	DMH 31 - YD 34
5	2	8.000	-92.604	Grate	0.00	0.15	0.85	5.0	26.49	1.00	26.57	12	Cir	0.012	1.00	30.90	DMH 31 - CB 33
6	1	8.000	-109.779	Grate	0.00	0.13	0.81	5.0	25.86	1.00	25.94	12	Cir	0.012	1.00	30.90	DMH 28 - CB 30
7	1	8.000	78.076	Grate	0.00	0.19	0.81	5.0	25.86	1.00	25.94	12	Cir	0.012	1.00	30.90	DMH 28 - CB 29
8	End	53.000	35.588	MH	0.00	0.00	0.00	5.0	25.16	1.00	25.69	12	Cir	0.012	1.00	28.90	FES 35 - DMH 36
9	8	11.000	47.178	Grate	0.00	0.13	0.61	5.0	25.69	1.00	25.80	12	Cir	0.012	1.00	28.80	DMH 36 - CB 37
10	8	26.000	-84.758	Grate	0.00	0.17	0.68	5.0	25.69	1.00	25.95	12	Cir	0.012	1.00	29.00	DMH 36 - CB 38

Project File: System 4.stm

Number of lines: 10

Date: 12/9/2025

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (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	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	En6	6000	0.00	0.73	0.00	0.00	0.59	5.0	8.1	5.7	3.61	3.86	4.59	12	1.00	25.20	25.86	28.06	28.64	26.20	31.00	FES 27 -
2	1 63	6000	0.00	0.41	0.00	0.00	0.34	5.0	7.8	5.9	2.16	3.86	2.75	12	1.00	25.86	26.49	28.96	29.16	31.00	31.00	DMH 28
3	2 8	8000	0.26	0.26	0.80	0.21	0.21	5.0	5.0	7.1	1.48	3.86	1.88	12	1.00	26.49	26.57	29.28	29.29	31.00	30.90	DMH 31
4	2 40	4000	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.19	3.86	0.24	12	1.00	26.49	26.89	29.28	29.28	31.00	30.93	DMH 31
5	2 8	8000	0.15	0.15	0.85	0.13	0.13	5.0	5.0	7.1	0.91	3.86	1.15	12	1.00	26.49	26.57	29.28	29.28	31.00	30.90	DMH 31
6	1 8	8000	0.13	0.13	0.81	0.11	0.11	5.0	5.0	7.1	0.75	3.86	0.95	12	1.00	25.86	25.94	28.96	28.97	31.00	30.90	DMH 28
7	1 8	8000	0.19	0.19	0.81	0.15	0.15	5.0	5.0	7.1	1.09	3.86	1.39	12	1.00	25.86	25.94	28.96	28.97	31.00	30.90	DMH 28
8	En53	3000	0.00	0.30	0.00	0.00	0.19	5.0	5.4	6.9	1.34	3.86	1.71	12	1.00	25.16	25.69	27.88	27.94	26.16	28.90	FES 35 -
9	8 11	1000	0.13	0.13	0.61	0.08	0.08	5.0	5.0	7.1	0.56	3.86	0.72	12	1.00	25.69	25.80	27.99	27.99	28.90	28.80	DMH 36
10	8 26	6000	0.17	0.17	0.68	0.12	0.12	5.0	5.0	7.1	0.82	3.86	1.05	12	1.00	25.69	25.95	27.99	28.00	28.90	29.00	DMH 36

Project File: System 4.stm

Number of lines: 10

Run Date: 12/9/2025

NOTES: Intensity = 33.90 / (Inlet time + 4.00) ^ 0.71; Return period = Yrs. 10 ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	12	3.61	25.20	28.06	1.00	0.79	4.59	0.33	28.39	0.874	66.000	25.86	28.64	1.00	0.79	4.59	0.33	28.96	0.873	0.873	0.576	1.00	0.33
2	12	2.16	25.86	28.96	1.00	0.79	2.75	0.12	29.08	0.314	63.000	26.49	29.16	1.00	0.79	2.75	0.12	29.28	0.314	0.314	0.198	1.00	0.12
3	12	1.48	26.49	29.28	1.00	0.79	1.88	0.06	29.33	0.147	8.000	26.57	29.29	1.00	0.79	1.88	0.06	29.35	0.147	0.147	0.012	1.00	0.06
4	12	0.19	26.49	29.28	1.00	0.79	0.24	0.00	29.28	0.002	40.000	26.89	29.28	1.00	0.79	0.24	0.00	29.28	0.002	0.002	0.001	1.00	0.00
5	12	0.91	26.49	29.28	1.00	0.79	1.15	0.02	29.30	0.055	8.000	26.57	29.28	1.00	0.79	1.15	0.02	29.30	0.055	0.055	0.004	1.00	0.02
6	12	0.75	25.86	28.96	1.00	0.79	0.95	0.01	28.98	0.038	8.000	25.94	28.97	1.00	0.79	0.95	0.01	28.98	0.038	0.038	0.003	1.00	0.01
7	12	1.09	25.86	28.96	1.00	0.79	1.39	0.03	28.99	0.080	8.000	25.94	28.97	1.00	0.79	1.39	0.03	29.00	0.080	0.080	0.006	1.00	0.03
8	12	1.34	25.16	27.88	1.00	0.79	1.71	0.05	27.93	0.121	53.000	25.69	27.94	1.00	0.79	1.71	0.05	27.99	0.121	0.121	0.064	1.00	0.05
9	12	0.56	25.69	27.99	1.00	0.79	0.72	0.01	28.00	0.021	11.000	25.80	27.99	1.00	0.79	0.72	0.01	28.00	0.021	0.021	0.002	1.00	0.01
10	12	0.82	25.69	27.99	1.00	0.79	1.05	0.02	28.01	0.045	26.000	25.95	28.00	1.00	0.79	1.05	0.02	28.02	0.045	0.045	0.012	1.00	0.02

Project File: System 4.stm

Number of lines: 10

Run Date: 12/9/2025

; c = cir e = ellip b = box

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan

YD 40



1

Outfall

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	58.000	-168.267	DrGrt	0.20	0.00	0.00	5.0	26.38	1.00	26.96	12	Cir	0.012	1.00	29.79	FES 39 - YD 40

Project File: System 5.stm

Number of lines: 1

Date: 12/9/2025

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (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	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	En	8000	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.20	3.86	0.25	12	1.00	26.38	26.96	28.06	28.06	27.38	29.79	FES 39 -

Project File: System 5.stm

Number of lines: 1

Run Date: 12/9/2025

NOTES: Intensity = $33.90 / (\text{Inlet time} + 4.00)^{0.71}$; Return period = Yrs. 10 ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

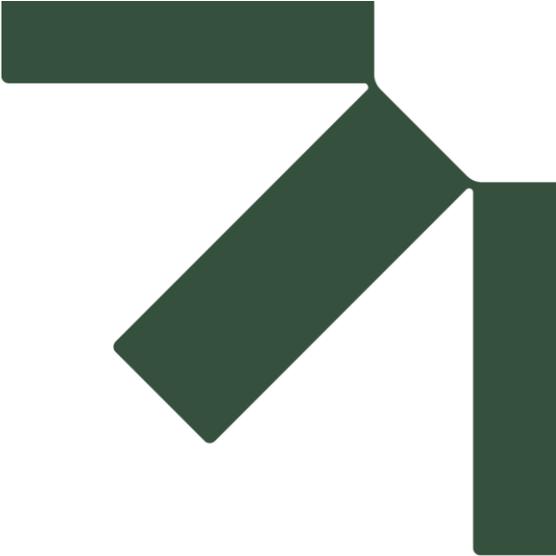
Line	Size (in)	Q (cfs)	Downstream								Len (ft)	Upstream								Check		JL coeff (K)	Minor loss (ft)
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
1	12	0.20	26.38	28.06	1.00	0.79	0.25	0.00	28.06	0.003	58.000	26.96	28.06	1.00	0.79	0.25	0.00	28.06	0.003	0.003	0.002	1.00	0.00

Project File: System 5.stm

Number of lines: 1

Run Date: 12/9/2025

; c = cir e = ellip b = box



Appendix E Water Quality Computations

Stormwater Management Plan

Hingham Center for Active Living

EDM Studio, Inc.

SLR Project No.: 141.21840.00004

December 9, 2025

Hingham Center for Active Living
Bare Cove Park Drive
Hingham, Massachusetts
SLR #21840.00004
December 8, 2025

Existing Conditions

Total Area	=	229201 sf
Impervious Area	=	18378 sf
Percent Impervious	=	8%

Proposed Conditions

Total Area	=	229201 sf
Impervious Area	=	133676 sf
Percent Impervious	=	58%

Compliance with MA Stormwater Management Standard-3
Groundwater Recharge Volume

1. Required Recharge Volume

$$Rv = FI$$

TO SUBSURFACE INFILTRATION SYSTEM UG-1:

	HSG A		HSG B
<i>F</i>	0.6 In	<i>F</i>	0.35 In
<i>I</i>	0.11 Ac	<i>I</i>	0.31 Ac
<i>Rv</i>	0.006 Ac-Ft	<i>Rv</i>	0.009 Ac-Ft

<i>Rv</i>	0.015 Ac-Ft
-----------	-------------

TO INFILTRATION BASIN IB-1:

	HSG A
<i>F</i>	0.6 In
<i>I</i>	0.37 Ac
<i>Rv</i>	0.018 Ac-Ft

<i>Rv</i>	0.018 Ac-Ft
-----------	-------------

TO RAIN GARDEN RG-1:

	HSG A		HSG B
<i>F</i>	0.6 In	<i>F</i>	0.35 In
<i>I</i>	0.95 Ac	<i>I</i>	0.50 Ac
<i>Rv</i>	0.048 Ac-Ft	<i>Rv</i>	0.015 Ac-Ft

<i>Rv</i>	0.062 Ac-Ft
-----------	-------------

TO INFILTRATION BASIN IB-2:

	HSG A		HSG B
<i>F</i>	0.6 In	<i>F</i>	0.35 In
<i>I</i>	0.75 Ac	<i>I</i>	0.04 Ac
<i>Rv</i>	0.038 Ac-Ft	<i>Rv</i>	0.001 Ac-Ft

<i>Rv</i>	0.039 Ac-Ft
-----------	-------------

TO INFILTRATION BASIN IB-3:

	HSG A		HSG B
<i>F</i>	0.6 In	<i>F</i>	0.35 In
<i>I</i>	0.02 Ac	<i>I</i>	0.01 Ac
<i>Rv</i>	0.001 Ac-Ft	<i>Rv</i>	0.000 Ac-Ft

<i>Rv</i>	0.001 Ac-Ft
-----------	-------------

TO GRAVEL INFILTRATION TRENCH GT-2:

HSG A	
F	0.6 In
I	0.001 Ac
Rv	0.000 Ac-Ft

Rv	0.000 Ac-Ft
----	-------------

TO GRAVEL INFILTRATION TRENCH GT-5:

HSG B	
F	0.35 In
I	0.017 Ac
Rv	0.000 Ac-Ft

Rv	0.000 Ac-Ft
----	-------------

TO GRAVEL INFILTRATION TRENCH GT-6:

HSG A	
F	0.6 In
I	0.005 Ac
Rv	0.000 Ac-Ft

HSG B	
F	0.35 In
I	0.001 Ac
Rv	0.000 Ac-Ft

Rv	0.000 Ac-Ft
----	-------------

*Note: Gt-1, GT-3 & GT-4 do not receive runoff from impervious area, therefore no recharge is necessary.

2. Static Method

UG-1:

Available Storage (cf) 7,884
Storage (Ac-Ft) OK

IB-1:

Available Storage (cf) 8,448
Storage (Ac-Ft) OK

RG-1:

Available Storage (cf) 39,265
Storage (Ac-Ft) OK

IB-2:

Available Storage (cf) 6,788
Storage (Ac-Ft) OK

IB-3:

Available Storage (cf)	4,615
Storage (Ac-Ft)	0.106 OK

GT-2:

Available Storage (cf)	151
Storage (Ac-Ft)	0.003 OK

GT-5:

Available Storage (cf)	1,024
Storage (Ac-Ft)	0.024 OK

GT-6:

Available Storage (cf)	252
Storage (Ac-Ft)	0.006 OK

3. Simple Dynamic Method - Formula

UG-1:

$A=Rv/(D+KT)$	
D	3.75 Ft
K	2.41 Saturated hydraulic conductivity (In/Hr)
T	2 Hrs
A	152 SF
Required Storage (Ac-Ft)	0.013

IB-1:

$A=Rv/(D+KT)$	
D	4 Ft
K	2.41 Saturated hydraulic conductivity (In/Hr)
T	2 Hrs
A	183 SF
Required Storage (Ac-Ft)	0.017

RG-1:

$A=Rv/(D+KT)$	
D	6 Ft
K	2.41 Saturated hydraulic conductivity (In/Hr)
T	2 Hrs
A	422 SF
Required Storage (Ac-Ft)	0.058

IB-2:

$A=Rv/(D+KT)$	
D	4.5 Ft
K	8.27 Saturated hydraulic conductivity (In/Hr)
T	2 Hrs

A	287	SF
Required Storage (Ac-Ft)	0.030	

IB-3:

$A=Rv/(D+KT)$		
D	3	Ft
K	8.27	Saturated hydraulic conductivity (In/Hr)
T	2	Hrs
A	11	SF
Required Storage (Ac-Ft)	0.001	

GT-2:

$A=Rv/(D+KT)$		
D	1.5	Ft
K	2.41	Saturated hydraulic conductivity (In/Hr)
T	2	Hrs
A	1	SF
Required Storage (Ac-Ft)	0.000	

GT-5:

$A=Rv/(D+KT)$		
D	4	Ft
K	8.27	Saturated hydraulic conductivity (In/Hr)
T	2	Hrs
A	4	SF
Required Storage (Ac-Ft)	0.000	

GT-6:

$A=Rv/(D+KT)$		
D	3	Ft
K	2.41	Saturated hydraulic conductivity (In/Hr)
T	2	Hrs
A	3	SF
Required Storage (Ac-Ft)	0.000	

4. Simple Dynamic Method - NRCS TR20 Model

Refer to analysis in appendix

UG-1:

Required Storage from TR20 Model (Ac-Ft)	0.015
--	-------

IB-1:

Required Storage from TR20 Model (Ac-Ft)	0.018
--	-------

RG-1:

Required Storage from TR20 Model (Ac-Ft)	0.062
--	-------

IB-2:

Required Storage from TR20 Model (Ac-Ft)

IB-3:

Required Storage from TR20 Model (Ac-Ft)

GT-2:

Required Storage from TR20 Model (Ac-Ft)

GT-5:

Required Storage from TR20 Model (Ac-Ft)

GT-6:

Required Storage from TR20 Model (Ac-Ft)

HSC-Recharge_Simple Dyn.

Type III 24-hr RECHARGE Rainfall=4.00"

Prepared by SLR International Corporation

Printed 12/9/2025

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Page 1

Summary for Pond UG-1:

Inflow Area = 0.418 ac, 100.00% Impervious, Inflow Depth > 0.75" for RECHARGE event
 Inflow = 0.98 cfs @ 12.00 hrs, Volume= 0.026 af
 Outflow = 0.12 cfs @ 11.30 hrs, Volume= 0.010 af, Atten= 87%, Lag= 0.0 min
 Discarded = 0.12 cfs @ 11.30 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 11.00-12.00 hrs, dt= 0.05 hrs
 Peak Elev= 23.38' @ 12.00 hrs Surf.Area= 0.054 ac Storage= 0.015 af

Plug-Flow detention time= 10.7 min calculated for 0.009 af (34% of inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.69'	0.076 af	37.08'W x 63.06'L x 5.50'H Field A 0.295 af Overall - 0.104 af Embedded = 0.191 af x 40.0% Voids
#2A	23.44'	0.104 af	ADS_StormTech MC-3500 d +Cap x 40 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 40 Chambers in 5 Rows Cap Storage= 14.9 cf x 2 x 5 rows = 149.0 cf
		0.181 af	Total Available Storage

Storage Group A created with Chamber Wizard

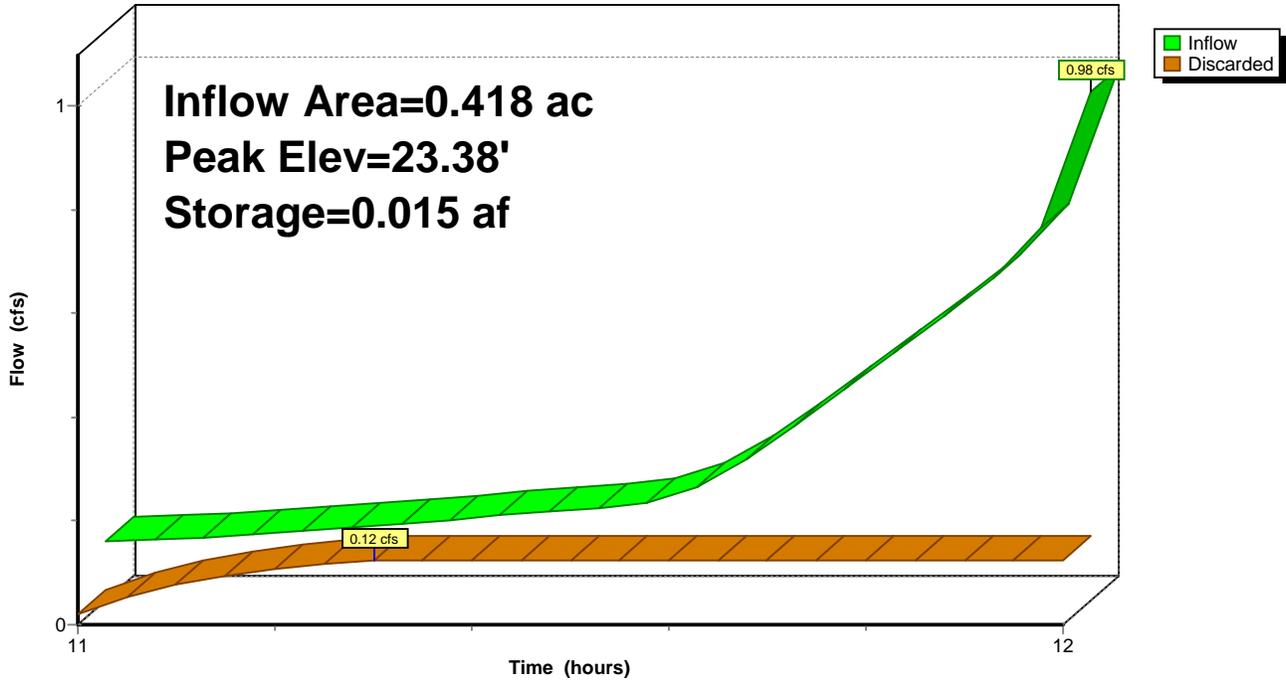
Device	Routing	Invert	Outlet Devices
#1	Discarded	22.69'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 11.30 hrs HW=22.75' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.12 cfs)

Pond UG-1:

Hydrograph



HSC-Recharge_Simple Dyn.

Type III 24-hr RECHARGE Rainfall=3.43"

Prepared by SLR International Corporation

Printed 12/9/2025

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Page 1

Summary for Pond IB-1:

Inflow Area = 0.368 ac, 100.00% Impervious, Inflow Depth > 0.67" for RECHARGE event
 Inflow = 0.78 cfs @ 12.00 hrs, Volume= 0.020 af
 Outflow = 0.01 cfs @ 12.00 hrs, Volume= 0.000 af, Atten= 99%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 12.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 11.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 11.00-12.00 hrs, dt= 0.05 hrs
 Peak Elev= 25.62' @ 12.00 hrs Surf.Area= 1,416 sf Storage= 805 cf

Plug-Flow detention time= 54.2 min calculated for 0.000 af (1% of inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	8,279 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	23.00'	170 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
		424 cf Overall x 40.0% Voids	
		8,448 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	858	0	0
26.00	1,419	1,139	1,139
27.00	2,033	1,726	2,865
28.00	2,694	2,364	5,228
28.60	3,109	1,741	6,969
29.00	3,440	1,310	8,279

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	212	0	0
24.00	212	212	212
25.00	212	212	424

Device	Routing	Invert	Outlet Devices
#1	Secondary	28.60'	10.0' long + 2.0 ' SideZ x 4.2' breadth Overflow Riprap Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.53 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.67 2.71 2.72 2.74 2.77 2.85 3.01 3.23
#2	Discarded	23.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.00 hrs HW=25.62' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Secondary OutFlow Max=0.00 cfs @ 11.00 hrs HW=23.09' (Free Discharge)
 ↳ **1=Overflow Riprap Spillway** (Controls 0.00 cfs)

HSC-Recharge_Simple Dyn.

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

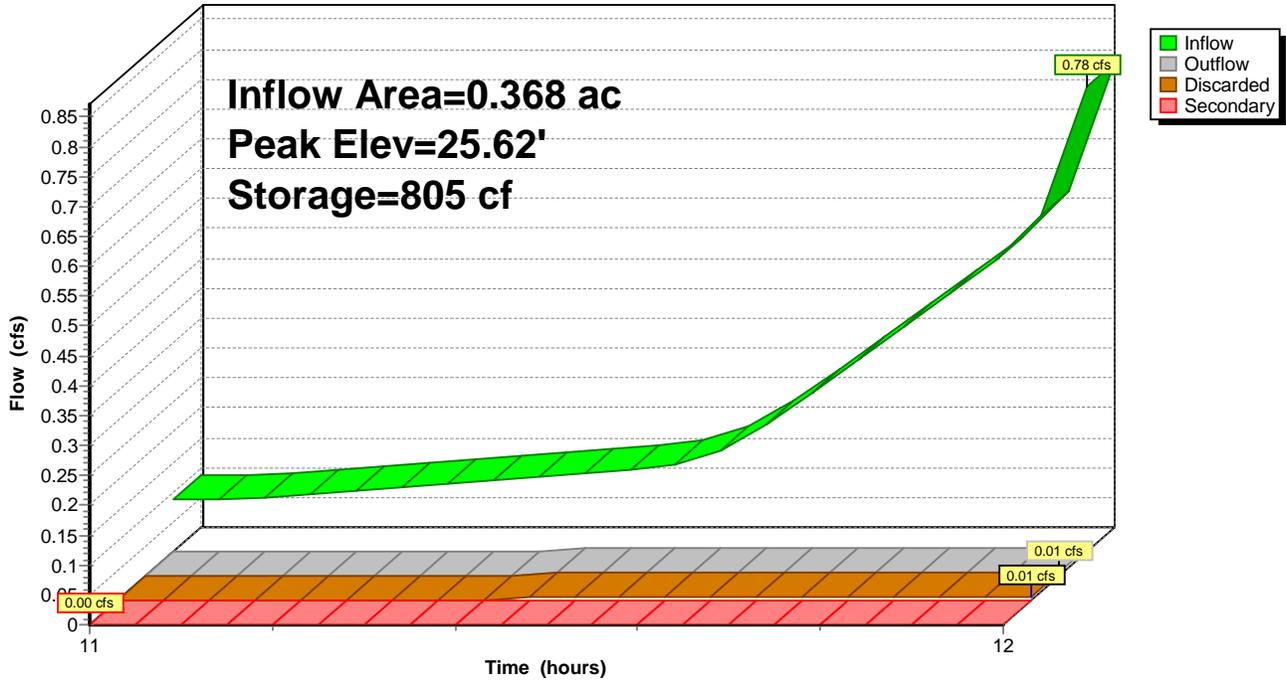
Type III 24-hr RECHARGE Rainfall=3.43"

Printed 12/9/2025

Page 2

Pond IB-1:

Hydrograph



HSC-Recharge_Simple Dyn.

Type III 24-hr RECHARGE Rainfall=3.09"

Prepared by SLR International Corporation

Printed 12/9/2025

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Page 1

Summary for Pond RG-1:

Inflow Area = 1.521 ac, 100.00% Impervious, Inflow Depth > 0.58" for RECHARGE event
 Inflow = 2.76 cfs @ 12.00 hrs, Volume= 0.073 af
 Outflow = 0.17 cfs @ 12.00 hrs, Volume= 0.006 af, Atten= 94%, Lag= 0.0 min
 Discarded = 0.17 cfs @ 12.00 hrs, Volume= 0.006 af
 Primary = 0.00 cfs @ 11.00 hrs, Volume= 0.000 af
 Routed to Pond IB-2 :
 Secondary = 0.00 cfs @ 11.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 11.00-12.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.60' @ 12.00 hrs Surf.Area= 3,231 sf Storage= 2,702 cf

Plug-Flow detention time= 37.1 min calculated for 0.005 af (7% of inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	37,288 cf	Rain Garden Stage Storage (Prismatic) Listed below (Recalc)
#2	22.00'	1,512 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			3,780 cf Overall x 40.0% Voids
		38,800 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	1,696	0	0
27.00	2,683	2,190	2,190
27.50	3,497	1,545	3,735
28.00	4,266	1,941	5,675
29.00	6,024	5,145	10,820
30.00	7,856	6,940	17,760
31.00	9,743	8,800	26,560
32.00	11,713	10,728	37,288

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	945	0	0
23.00	945	945	945
24.00	945	945	1,890
25.00	945	945	2,835
26.00	945	945	3,780

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	392.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	22.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	26.89'	12.0" Round 12" HDPE Pipe L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 26.89' / 26.49' S= 0.0100 '/ Cc= 0.900

HSC-Recharge_Simple Dyn.

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr RECHARGE Rainfall=3.09"

Printed 12/9/2025

Page 2

#4 Device 3 30.93' n= 0.012, Flow Area= 0.79 sf
3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns
X 14 rows C= 0.600 in 18.0" Grate (71% open area)
Limited to weir flow at low heads

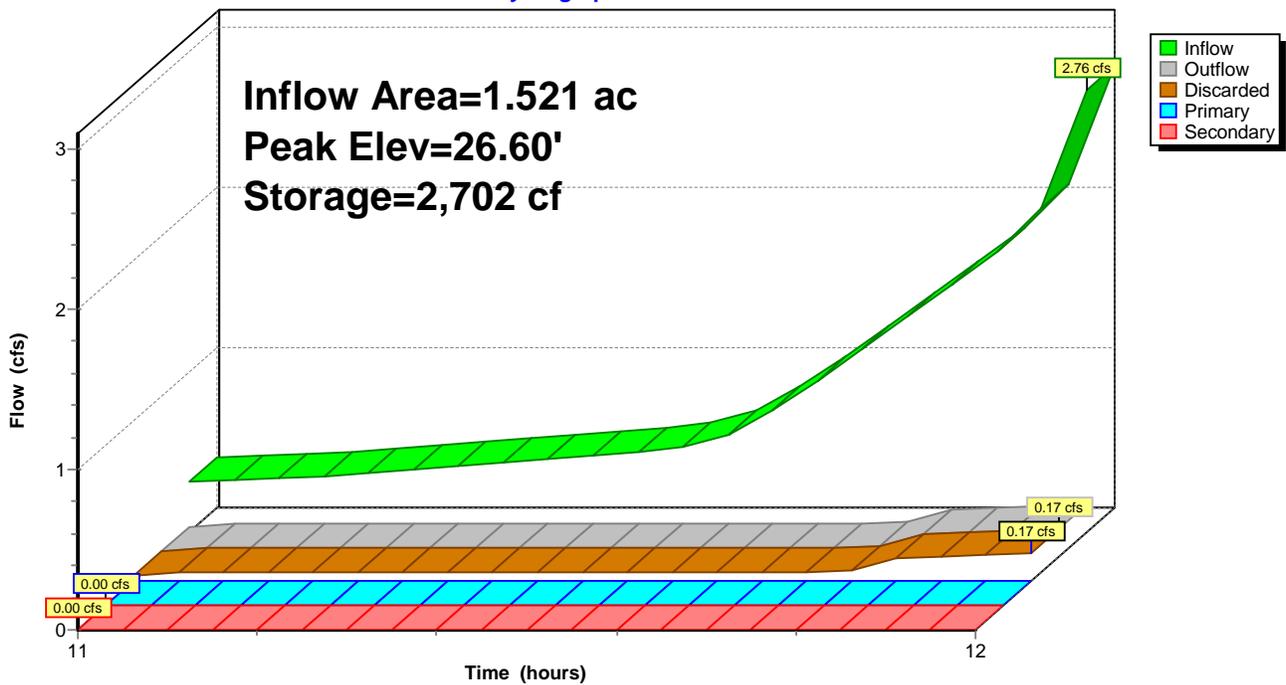
Discarded OutFlow Max=0.17 cfs @ 12.00 hrs HW=26.60' (Free Discharge)
↳ **2=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=0.00 cfs @ 11.00 hrs HW=22.07' (Free Discharge)
↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 11.00 hrs HW=22.07' (Free Discharge)
↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond RG-1:

Hydrograph



HSC-Recharge_Simple Dyn.

Type III 24-hr RECHARGE Rainfall=5.69"

Prepared by SLR International Corporation

Printed 12/9/2025

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Page 1

Summary for Pond IB-2:

Inflow Area = 2.320 ac, 100.00% Impervious, Inflow Depth > 0.38" for RECHARGE event
 Inflow = 2.74 cfs @ 12.00 hrs, Volume= 0.073 af
 Outflow = 0.48 cfs @ 12.00 hrs, Volume= 0.030 af, Atten= 82%, Lag= 0.0 min
 Discarded = 0.48 cfs @ 12.00 hrs, Volume= 0.030 af
 Primary = 0.00 cfs @ 11.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :
 Secondary = 0.00 cfs @ 11.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :

Routing by Stor-Ind method, Time Span= 11.00-12.00 hrs, dt= 0.05 hrs
 Peak Elev= 29.18' @ 12.00 hrs Surf.Area= 1,738 sf Storage= 1,700 cf

Plug-Flow detention time= 10.6 min calculated for 0.028 af (38% of inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	5,261 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	25.00'	115 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
		288 cf Overall x 40.0% Voids	
		5,376 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	1,104	0	0
29.00	1,514	1,309	1,309
30.00	1,966	1,740	3,049
30.70	2,305	1,495	4,544
31.00	2,475	717	5,261

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	144	0	0
26.00	144	144	144
27.00	144	144	288

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	100.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area
#3	Primary	26.96'	12.0" Round 12" HDPE Pipe L= 36.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 26.96' / 26.60' S= 0.0100 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	29.79'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

HSC-Recharge_Simple Dyn.

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr RECHARGE Rainfall=5.69"

Printed 12/9/2025

Page 2

Discarded OutFlow Max=0.48 cfs @ 12.00 hrs HW=29.18' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.48 cfs)

Primary OutFlow Max=0.00 cfs @ 11.00 hrs HW=25.43' (Free Discharge)

↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)

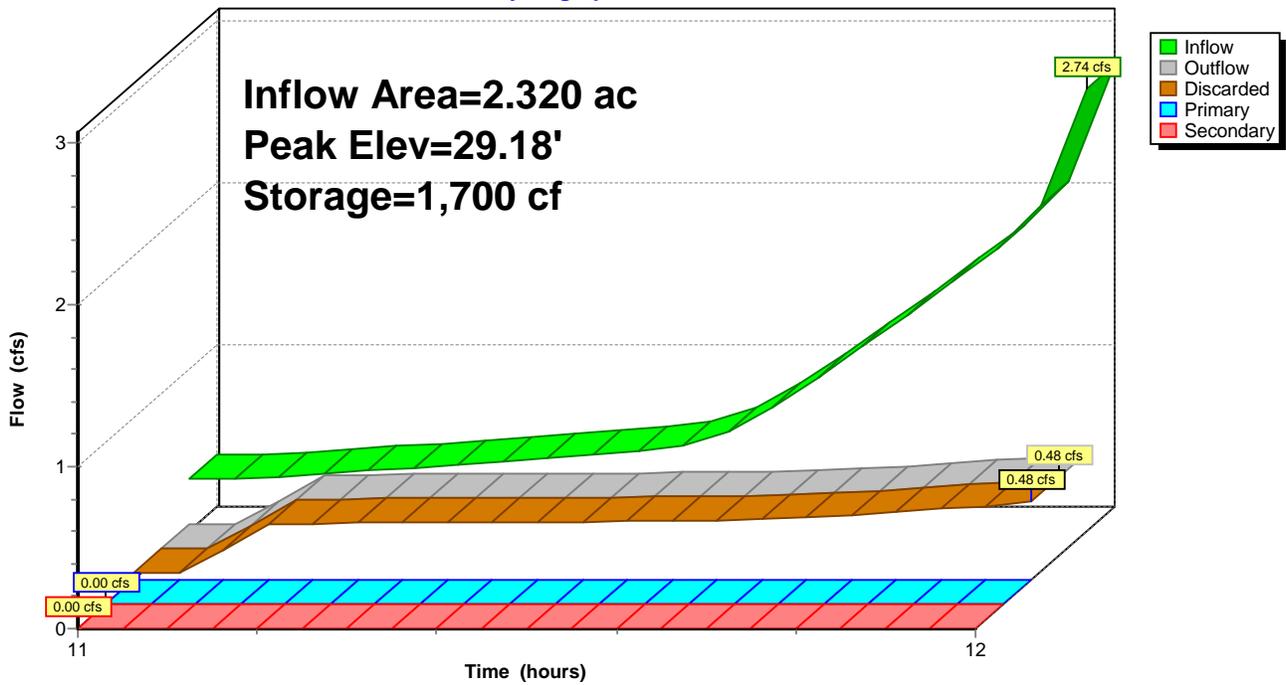
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 11.00 hrs HW=25.43' (Free Discharge)

↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond IB-2:

Hydrograph



HSC-Recharge_Simple Dyn.

Type III 24-hr RECHARGE Rainfall=8.41"

Prepared by SLR International Corporation

Printed 12/9/2025

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Page 1

Summary for Pond IB-3:

Inflow Area = 2.345 ac, 100.00% Impervious, Inflow Depth > 0.03" for RECHARGE event
 Inflow = 0.57 cfs @ 12.00 hrs, Volume= 0.005 af
 Outflow = 0.13 cfs @ 12.00 hrs, Volume= 0.003 af, Atten= 77%, Lag= 0.0 min
 Discarded = 0.13 cfs @ 12.00 hrs, Volume= 0.003 af
 Secondary = 0.00 cfs @ 11.00 hrs, Volume= 0.000 af
 Routed to Pond GT-6 :

Routing by Stor-Ind method, Time Span= 11.00-12.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.12' @ 12.00 hrs Surf.Area= 470 sf Storage= 49 cf

Plug-Flow detention time= 2.0 min calculated for 0.003 af (58% of inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	4,615 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	385	0	0
27.00	1,121	753	753
28.00	1,917	1,519	2,272
29.00	2,768	2,343	4,615

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	309.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	26.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.13 cfs @ 12.00 hrs HW=26.12' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Secondary OutFlow Max=0.00 cfs @ 11.00 hrs HW=26.00' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Recharge_Simple Dyn.

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

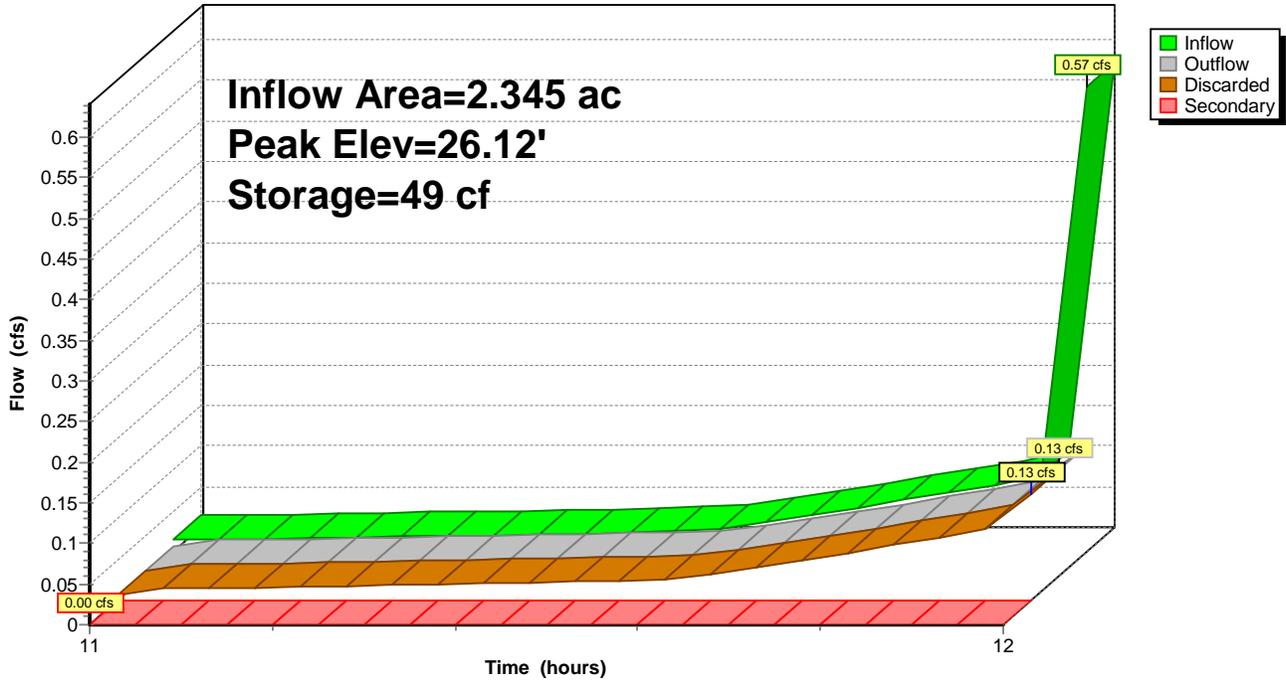
Type III 24-hr RECHARGE Rainfall=8.41"

Printed 12/9/2025

Page 2

Pond IB-3:

Hydrograph



HSC-Recharge_Simple Dyn.

Type III 24-hr RECHARGE Rainfall=4.00"

Prepared by SLR International Corporation

Printed 12/9/2025

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Page 1

Summary for Pond GT-2:

Inflow Area = 0.001 ac, 100.00% Impervious, Inflow Depth > 0.57" for RECHARGE event
 Inflow = 0.00 cfs @ 12.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 12.00 hrs, Volume= 0.000 af, Atten= 51%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 12.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 11.00 hrs, Volume= 0.000 af
 Routed to nonexistent node AP

Routing by Stor-Ind method, Time Span= 11.00-12.00 hrs, dt= 0.05 hrs
 Peak Elev= 23.51' @ 12.00 hrs Surf.Area= 251 sf Storage= 1 cf

Plug-Flow detention time= 16.7 min calculated for 0.000 af (50% of inflow)
 Center-of-Mass det. time= 1.4 min (701.4 - 700.0)

Volume	Invert	Avail.Storage	Storage Description
#1	23.50'	151 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 377 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.50	251	0	0
24.00	251	126	126
25.00	251	251	377

Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	65.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	23.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.00 hrs HW=23.51' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 11.00 hrs HW=23.50' (Free Discharge)
 ↑1=Top of Trench (Overflow) (Controls 0.00 cfs)

HSC-Recharge_Simple Dyn.

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

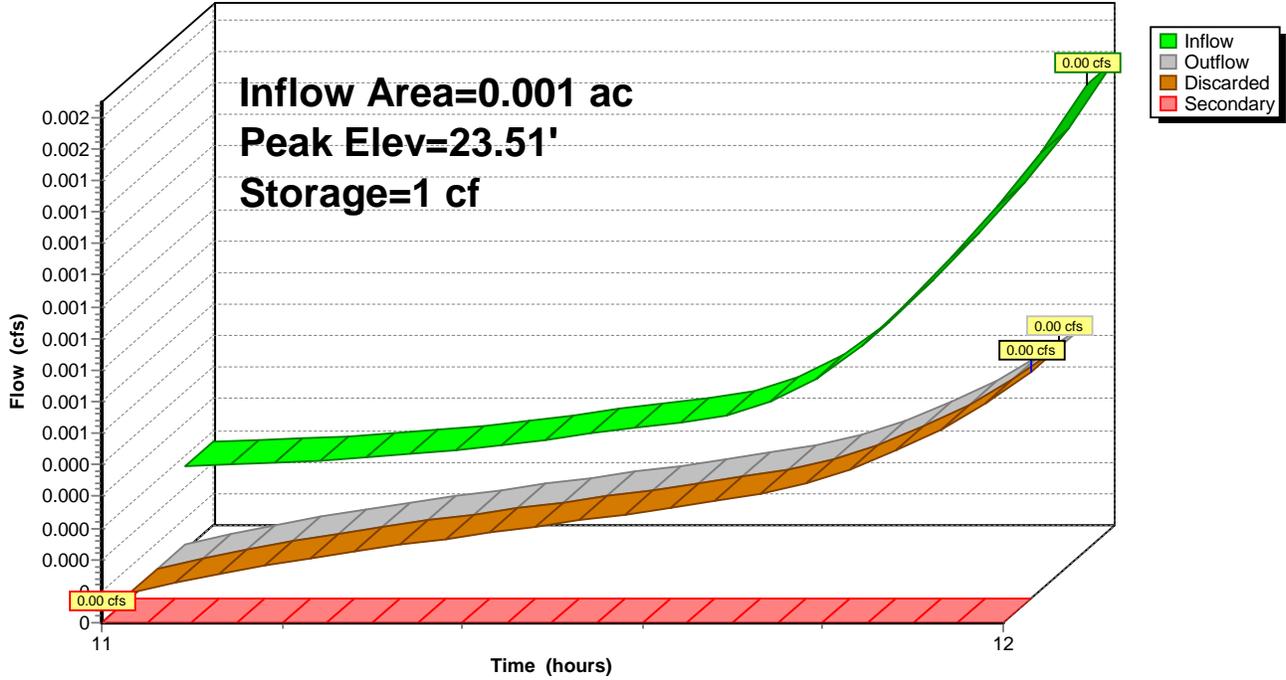
Type III 24-hr RECHARGE Rainfall=4.00"

Printed 12/9/2025

Page 2

Pond GT-2:

Hydrograph



HSC-Recharge Simple Dyn.

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr RECHARGE Rainfall=0.40"

Printed 12/9/2025

Page 1

Summary for Subcatchment PR-29:

Runoff = 0.01 cfs @ 12.00 hrs, Volume= 0.000 af, Depth> 0.04"

Routed to Pond GT-5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 11.00-12.00 hrs, dt= 0.05 hrs

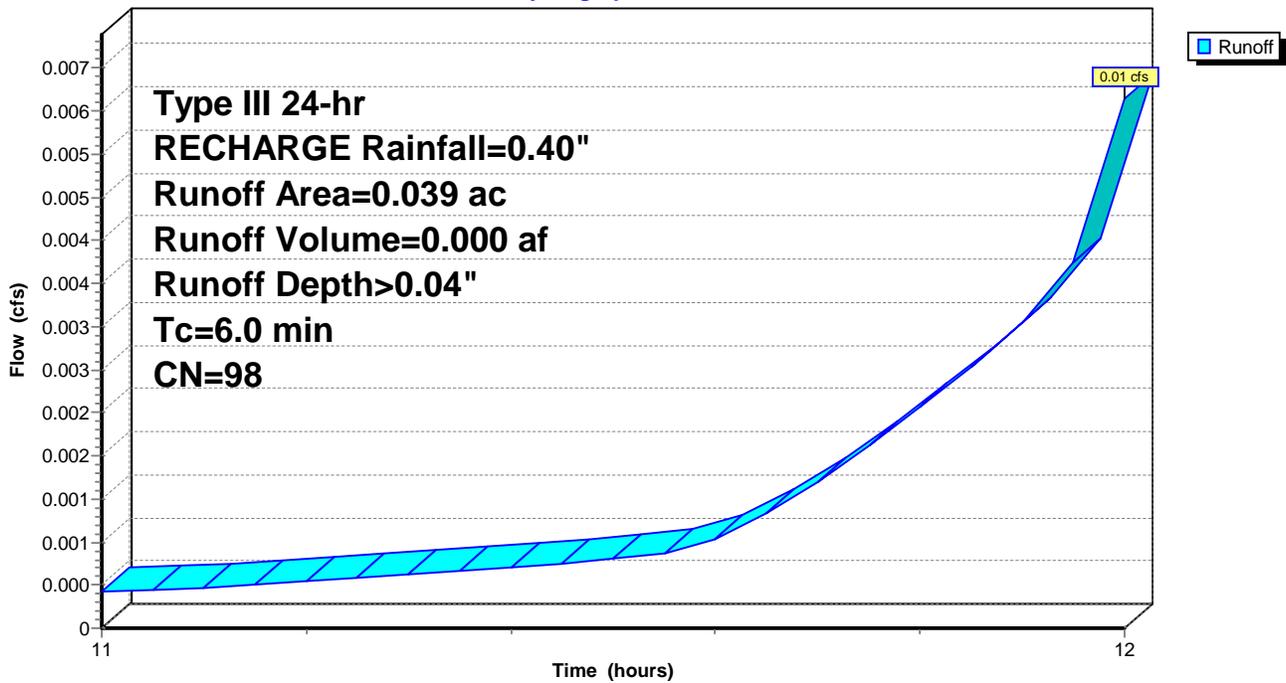
Type III 24-hr RECHARGE Rainfall=0.40"

Area (ac)	CN	Description
* 0.039	98	Paved
0.039		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-29:

Hydrograph



HSC-Recharge_Simple Dyn.

Type III 24-hr RECHARGE Rainfall=3.00"

Prepared by SLR International Corporation

Printed 12/9/2025

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Page 1

Summary for Pond GT-6:

Inflow Area = 0.016 ac, 100.00% Impervious, Inflow Depth > 0.47" for RECHARGE event
 Inflow = 0.02 cfs @ 12.00 hrs, Volume= 0.001 af
 Outflow = 0.02 cfs @ 12.00 hrs, Volume= 0.001 af, Atten= 4%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 12.00 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 11.00 hrs, Volume= 0.000 af
 Routed to nonexistent node AP

Routing by Stor-Ind method, Time Span= 11.00-12.00 hrs, dt= 0.05 hrs
 Peak Elev= 24.51' @ 12.00 hrs Surf.Area= 252 sf Storage= 1 cf

Plug-Flow detention time= 0.8 min calculated for 0.001 af (92% of inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	24.50'	252 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 630 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.50	252	0	0
25.00	252	126	126
26.00	252	252	378
27.00	252	252	630

Device	Routing	Invert	Outlet Devices
#1	Secondary	27.00'	78.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	24.50'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 12.00 hrs HW=24.51' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Secondary OutFlow Max=0.00 cfs @ 11.00 hrs HW=24.50' (Free Discharge)
 ↑ **1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Recharge_Simple Dyn.

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

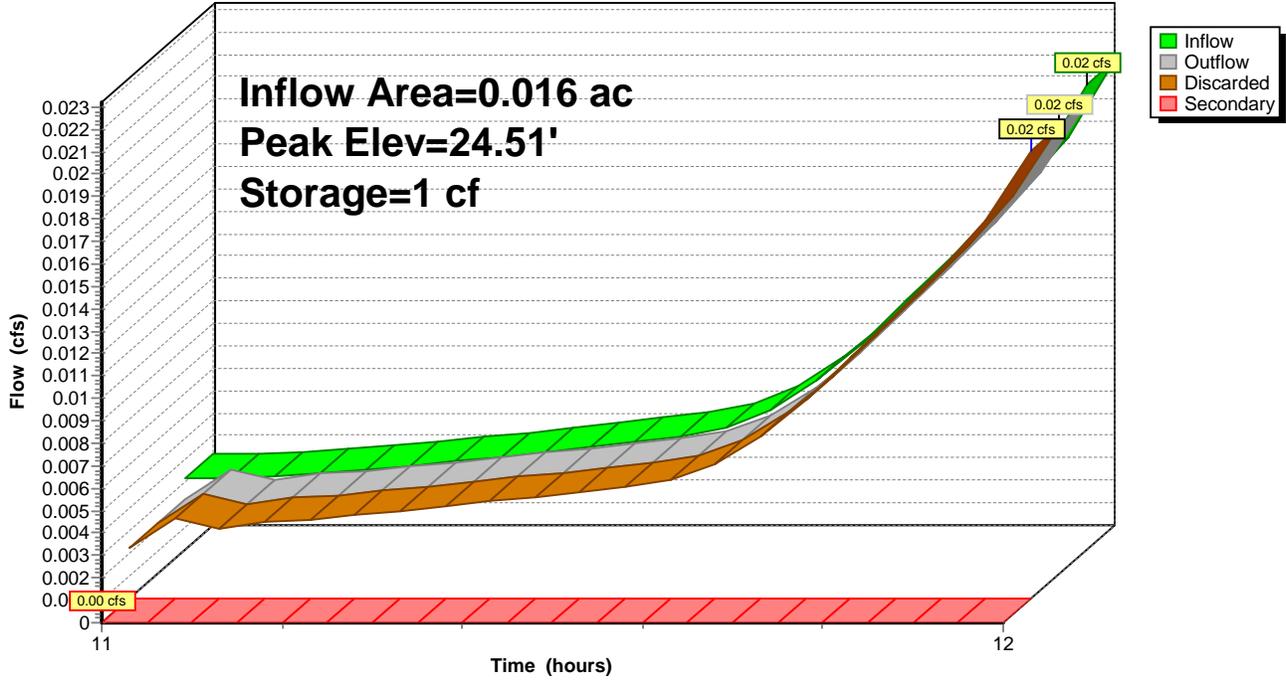
Type III 24-hr RECHARGE Rainfall=3.00"

Printed 12/9/2025

Page 2

Pond GT-6:

Hydrograph



Compliance with MA Stormwater Management Standard-3
 72-Hour Drawdown Analysis

$$Time_{drawdown} = \frac{Rv}{(K)(Bottom\ Area)}$$

Stormwater Management Basin SWB-1

Rv=	614	CF
² K=	2.41	in/hr
Bottom Area=	60	SF
Time _{drawdown} =	50.94	OK-Drawdown time is less than 72 hours

Stormwater Management Basin SWB-2

Rv=	1050	CF
² K=	2.41	in/hr
Bottom Area=	236	SF
Time _{drawdown} =	22.16	OK-Drawdown time is less than 72 hours

Stormwater Management Basin SWB-3

Rv=	866	CF
² K=	2.41	in/hr
Bottom Area=	182	SF
Time _{drawdown} =	23.68	OK-Drawdown time is less than 72 hours

Subsurface Infiltration System UG-1

Rv=	6914	CF
² K=	2.41	in/hr
Bottom Area=	2,338	SF
Time _{drawdown} =	14.73	OK-Drawdown time is less than 72 hours

Infiltration Basin IB-1

Rv=	4590	CF
² K=	2.41	in/hr
Bottom Area=	858	SF
Time _{drawdown} =	26.64	OK-Drawdown time is less than 72 hours

Rain Garden RG-1

Rv=	29372	CF
² K=	2.41	in/hr
Bottom Area=	2,232	SF
Time _{drawdown} =	65.53	OK-Drawdown time is less than 72 hours

Infiltration Basin IB-2

Rv=	12762	CF
² K=	8.27	in/hr
Bottom Area=	589	SF
Time _{drawdown} =	31.44 OK-Drawdown time is less than 72 hours	

Infiltration Basin IB-3

Rv=	570	CF
² K=	8.27	in/hr
Bottom Area=	385	SF
Time _{drawdown} =	2.15 OK-Drawdown time is less than 72 hours	

Gravel Trench GT-1

Rv=	0	CF
² K=	2.41	in/hr
Bottom Area=	862	SF
Time _{drawdown} =	0.00 OK-Drawdown time is less than 72 hours	

Gravel Trench GT-2

Rv=	14	CF
² K=	2.41	in/hr
Bottom Area=	251	SF
Time _{drawdown} =	0.29 OK-Drawdown time is less than 72 hours	

Gravel Trench GT-3

Rv=	0	CF
² K=	2.41	in/hr
Bottom Area=	94	SF
Time _{drawdown} =	0.00 OK-Drawdown time is less than 72 hours	

Gravel Trench GT-4

Rv=	0	CF
² K=	2.41	in/hr
Bottom Area=	405	SF
Time _{drawdown} =	0.00 OK-Drawdown time is less than 72 hours	

Gravel Trench GT-5

Rv=	218	CF
² K=	2.41	in/hr
Bottom Area=	640	SF
Time _{drawdown} =	1.69 OK-Drawdown time is less than 72 hours	

Gravel Trench GT-6

Rv=	137	CF
² K=	8.27	in/hr
Bottom Area=	252	SF
Time _{drawdown} =	0.79	OK-Drawdown time is less than 72 hours

Notes:

- 1 MA Stormwater Handbook, Volume 3 Chap 1
- 2 MA Stormwater Handbook, Table 2.3.3 Rawls Rates

MA Stormwater Management Standards
Standard 4 - Water Quality Volume (WQV) Computations

$$V_{WQ} = (D_{WQ} / 12) A_{IMP}$$

$$Q_{avg} = V_{WQ} / 24$$

$$D_{WQ} = 1 \text{ IN}$$

Contributing Water Quality Volume (WQV)

$$A_{IMP} = 3.07 \text{ AC}$$

$$V_{WQ} = 11,140 \text{ CF}$$

$$Q_{avg} = 0.129 \text{ CFS}$$

Orifice Area

$$a = \frac{Q_{avg}}{C \sqrt{2gh}}$$

$$0.0189 \text{ SF}$$

Orifice Dia

$$d = \sqrt{\frac{4a}{\pi}}$$

$$1.86 \text{ IN}$$

Subsurface Infiltration System UG-1 - WQV Provided

$$\text{Basin Stage Elev at } V_{WQ} = 27.2 \text{ FT}$$

$$V_{WQ} \text{ Provided} = 7,884 \text{ CF}$$

$$Q_{avg} = 0.091 \text{ CFS}$$

Infiltration Basin IB-1 - WQV Provided

$$\text{Basin Stage Elev at } V_{WQ} = 28.0 \text{ FT}$$

$$V_{WQ} \text{ Provided} = 6,969 \text{ CF}$$

$$Q_{avg} = 0.081 \text{ CFS}$$

Rain Garden RG-1 - WQV Provided

$$\text{Basin Stage Elev at } V_{WQ} = 31.0 \text{ FT}$$

$$V_{WQ} \text{ Provided} = 26,560 \text{ CF}$$

$$Q_{avg} = 0.307 \text{ CFS}$$

Infiltration Basin IB-2 - WQV Provided

$$\text{Basin Stage Elev at } V_{WQ} = 30.0 \text{ FT}$$

$$V_{WQ} \text{ Provided} = 3,049 \text{ CF}$$

$$Q_{avg} = 0.035 \text{ CFS}$$

Infiltration Basin IB-3 - WQV Provided

<i>Basin Stage Elev at V_{wQ}</i> =	28.0	FT
<i>V_{wQ} Provided</i> =	2,272	CF
<i>Q_{avg}</i> =	0.026	CFS

Total V_{wQ} Provided = 46,734 CF

OK-Min WQV Provided

Development of composite flood hydrograph

This section describes the procedure for developing the peak discharge and selected discharge values of a composite flood hydrograph.

Selecting T_c and T_t

First, use worksheet 5a to develop a summary of basic watershed data by subarea. Then use worksheet 5b to develop a tabular hydrograph discharge summary; this summary displays the effect of individual subarea hydrographs as routed to the watershed point of

interest. Use $\sum T_t$ for each subarea as the total reach travel time from that subarea through the watershed to the point of interest. Compute the hydrograph coordinates for selected $\sum T_t$'s using the appropriate sheets in exhibit 5. The flow at any time is:

$$q = q_t A_m Q \quad \text{[eq. 5-1]}$$

where:

- q = hydrograph coordinate (cfs) at hydrograph time t
- q_t = tabular hydrograph unit discharge from exhibit 5 (csm/in)
- A_m = drainage area of individual subarea (mi²)
- Q = runoff (in)

Table 5-1 I_a values for runoff curve numbers

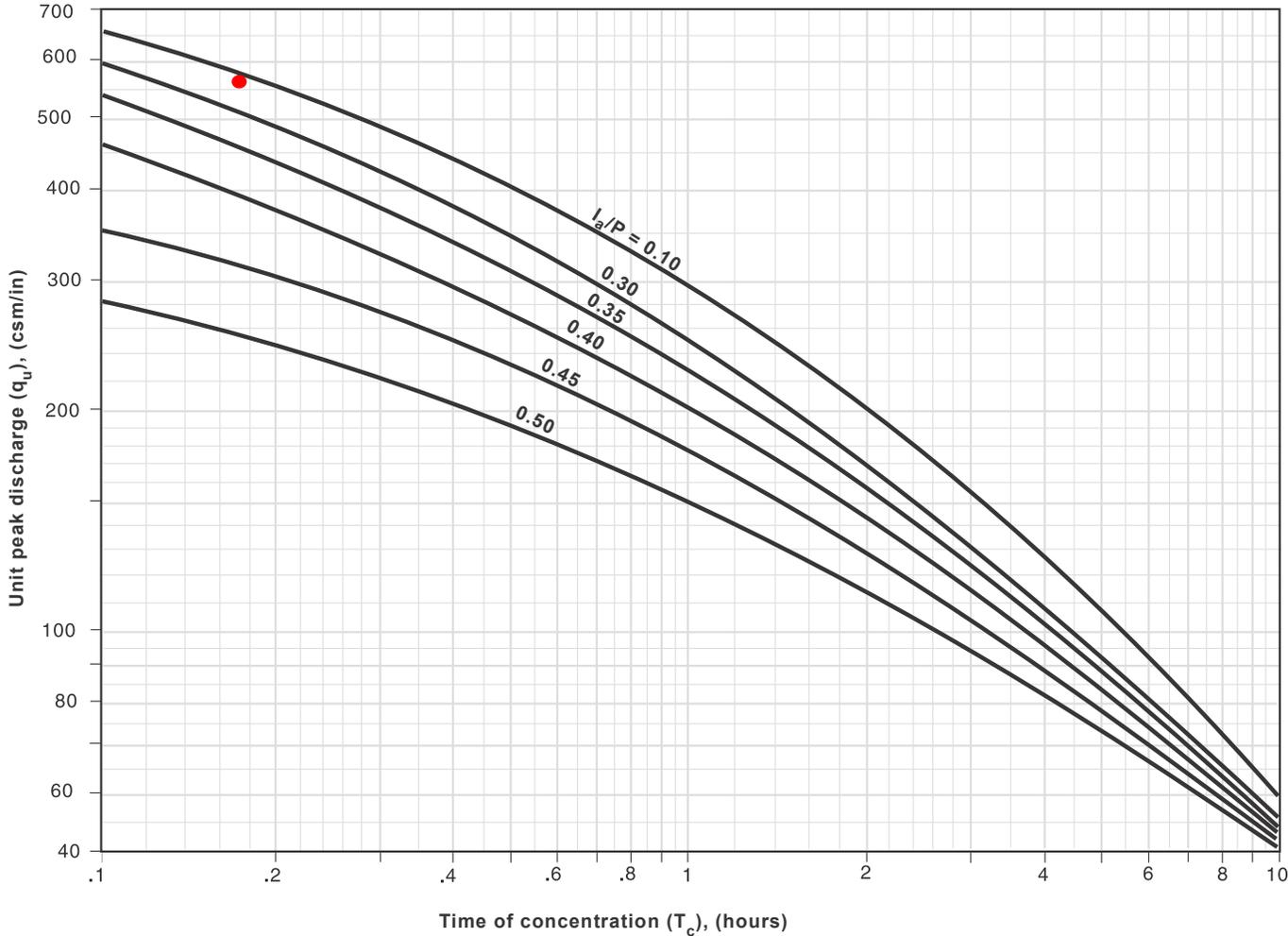
Curve number	I_a (in)	Curve number	I_a (in)
40	3.000	70	0.857
41	2.878	71	0.817
42	2.762	72	0.778
43	2.651	73	0.740
44	2.545	74	0.703
45	2.444	75	0.667
46	2.348	76	0.632
47	2.255	77	0.597
48	2.167	78	0.564
49	2.082	79	0.532
50	2.000	80	0.500
51	1.922	81	0.469
52	1.846	82	0.439
53	1.774	83	0.410
54	1.704	84	0.381
55	1.636	85	0.353
56	1.571	86	0.326
57	1.509	87	0.299
58	1.448	88	0.273
59	1.390	89	0.247
60	1.333	90	0.222
61	1.279	91	0.198
62	1.226	92	0.174
63	1.175	93	0.151
64	1.125	94	0.128
65	1.077	95	0.105
66	1.030	96	0.083
67	0.985	97	0.062
68	0.941	98	0.041
69	0.899		

Since the timing of peak discharge changes with T_c and T_t , interpolation of peak discharge for T_c and T_t values for use in exhibit 5 is not recommended. Interpolation may result in an estimate of peak discharge that would be invalid because it would be lower than either of the hydrographs. Therefore, round the actual values of T_c and T_t to values presented in exhibit 5. Perform this rounding so that the sum of the selected table values is close to the sum of actual T_c and T_t . An acceptable procedure is to select the results of one of three rounding operations:

1. Round T_c and T_t separately to the nearest table value and sum,
2. Round T_c down and T_t up to nearest table value and sum,
3. Round T_c up and T_t down to nearest table value and sum.

From these three alternatives, choose the pair of rounded T_c and T_t values whose sum is closest to the sum of the actual T_c and T_t . If two rounding methods produce sums equally close to the actual sum, use the combination in which rounded T_c is closest to actual T_c . An illustration of the rounding procedure is as follows:

Exhibit 4-III Unit peak discharge (q_u) for NRCS (SCS) type III rainfall distribution



Product Flow Rates

CASCADE

Model	Treatment Rate (cfs)	Sediment Capacity ¹ (CF)
CS-4	2.00	19
CS-5	3.50	29
CS-6	5.60	42
CS-8	12.00	75
CS-10	18.00	118

CDS

Model	Treatment Rate ² (cfs)	Sediment Capacity ¹ (CF)
1515-3	1.00	14
2015-4	1.40	25
2015-5	1.40	39
2015-6	1.40	57
2020-5	2.20	39
2020-6	2.20	57
2025-5	3.20	39
2025-6	3.20	57
3020-6	3.90	57
3025-6	5.00	57
3030-6	5.70	57
3035-6	6.50	57
4030-8	7.50	151
4040-8	9.50	151

VORTECHS

Model	Treatment Rate (cfs)	Sediment Capacity ³ (CF)
1000	1.60	16
2000	2.80	32
3000	4.50	49
4000	6.00	65
5000	8.50	86
7000	11.00	108
9000	14.00	130
11000	17.5	151
16000	25	192

STORMCEPTOR STC

Model	Treatment Rate (cfs)	Sediment Capacity ¹ (CF)
STC 450i	0.40	46
STC 900	0.89	89
STC 2400	1.58	205
STC 4800	2.47	543
STC 7200	3.56	839
STC 11000	4.94	1086
STC 16000	7.12	1677

1 Additional sediment storage capacity available – Check with your local representative for information.

2 Treatment Capacity is based on laboratory testing using OK-110 (average D50 particle size of approximately 100 microns) and a 2400 micron screen.

3 Maintenance recommended when sediment depth has accumulated to within 12-18 inches of the dry weather water surface elevation.



NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT WWW.CONTECHES.COM/COS) FOR MORE INFORMATION.



Get social with us: [f](#) [in](#) [t](#) [v](#)

800-338-1122 | www.ContechES.com

		SLR Consulting			Project	21840.00004	
		COMPUTATION SHEET - WATER QUALITY FLOW (WQF)			Made By:	JLS	
Subject:	Hingham Center for Active Living				Date:	12/8/2025	
CDS Unit - DMH 12							
Contributing Basins			Imperv. Area (acres)	Total Area (acres)			
Total			0.27	0.32			
$V_{WQ} = [D_{WQ}/12(\text{inches/foot})] * [A_{IMP}]$							
Where:							
$V_{WQ} =$	Required water quality volume (cubic feet)			492.29	cubic feet =	0.0113015	acre-feet
$D_{WQ} =$	Water Quality Depth (inches)			0.500	inches		
$A_{IMP} =$	Impervius Area (acres)			0.27	acres =	0.0004	miles ²
$Q = \text{runoff depth (in watershed inches)} = [WQV(\text{acrefeet})] * [12(\text{inches/foot})] / \text{drainage area (acres)}$							
			$Q =$	0.420			
$CN = 1000 / [10 + 5D_{WQ} + 10Q - 10(Q^2 + 1.25QD_{WQ})^{0.5}] =$							
				99			
Where:							
$Q = \text{runoff depth (in watershed inches)}$							
			$t_c =$	0.167	hours		
Type III Rainfall Distribution:							
From Table 4-1, $I_a =$	0.041		$I_a/P =$	0.1512			
(TR-55)							
From Exhibit 4-III, $q_u =$	560	csm/in.					
(TR-55)							
$WQF = (q_u)(A)(Q) =$	0.10	cfs			Stormceptor STC 450i Flow= 0.40 cfs OK		

Development of composite flood hydrograph

This section describes the procedure for developing the peak discharge and selected discharge values of a composite flood hydrograph.

Selecting T_c and T_t

First, use worksheet 5a to develop a summary of basic watershed data by subarea. Then use worksheet 5b to develop a tabular hydrograph discharge summary; this summary displays the effect of individual subarea hydrographs as routed to the watershed point of

interest. Use $\sum T_t$ for each subarea as the total reach travel time from that subarea through the watershed to the point of interest. Compute the hydrograph coordinates for selected $\sum T_t$'s using the appropriate sheets in exhibit 5. The flow at any time is:

$$q = q_t A_m Q \quad \text{[eq. 5-1]}$$

where:

- q = hydrograph coordinate (cfs) at hydrograph time t
- q_t = tabular hydrograph unit discharge from exhibit 5 (csm/in)
- A_m = drainage area of individual subarea (mi²)
- Q = runoff (in)

Table 5-1 I_a values for runoff curve numbers

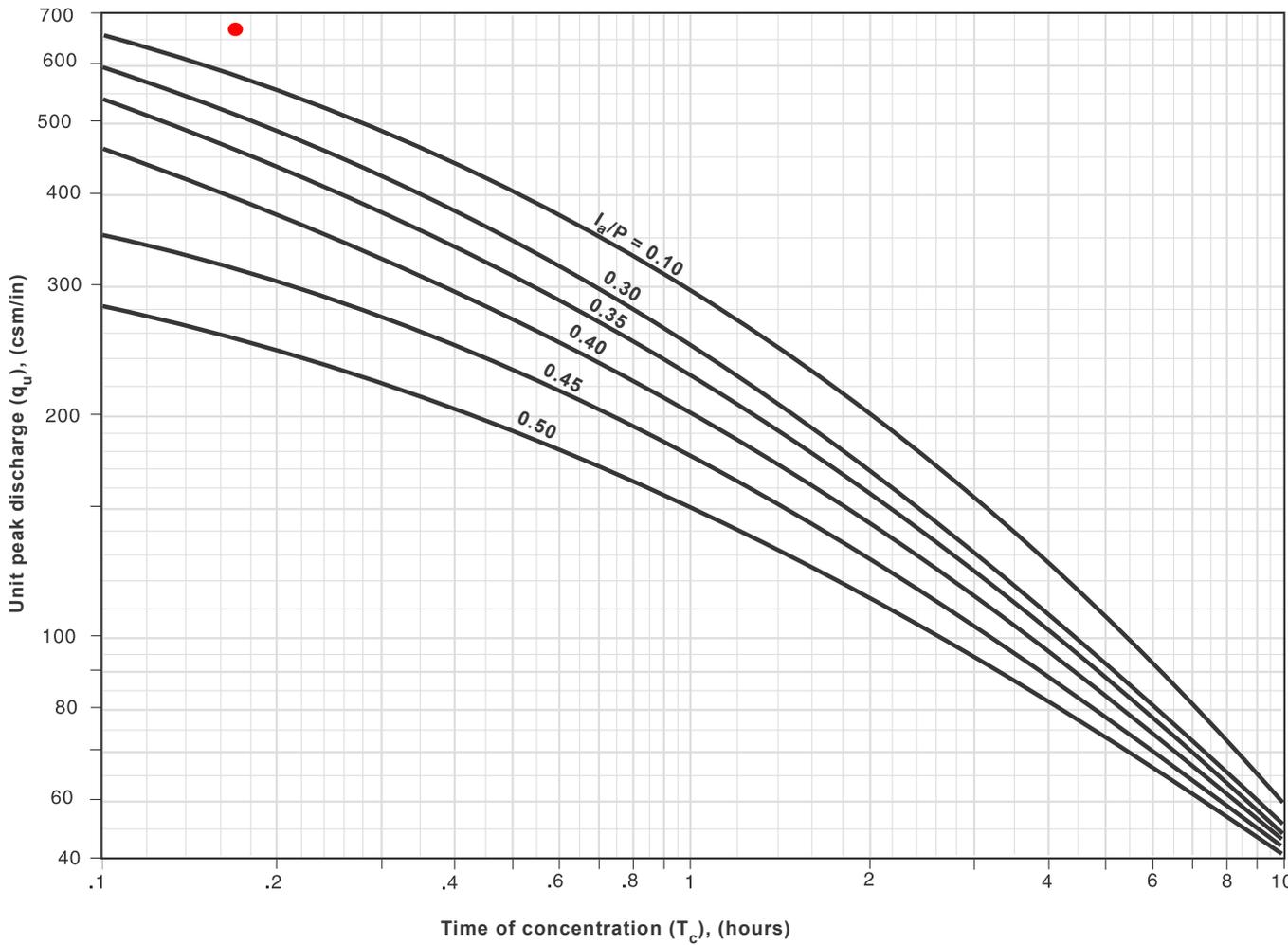
Curve number	I_a (in)	Curve number	I_a (in)
40	3.000	70	0.857
41	2.878	71	0.817
42	2.762	72	0.778
43	2.651	73	0.740
44	2.545	74	0.703
45	2.444	75	0.667
46	2.348	76	0.632
47	2.255	77	0.597
48	2.167	78	0.564
49	2.082	79	0.532
50	2.000	80	0.500
51	1.922	81	0.469
52	1.846	82	0.439
53	1.774	83	0.410
54	1.704	84	0.381
55	1.636	85	0.353
56	1.571	86	0.326
57	1.509	87	0.299
58	1.448	88	0.273
59	1.390	89	0.247
60	1.333	90	0.222
61	1.279	91	0.198
62	1.226	92	0.174
63	1.175	93	0.151
64	1.125	94	0.128
65	1.077	95	0.105
66	1.030	96	0.083
67	0.985	97	0.062
68	0.941	98	0.041
69	0.899		

Since the timing of peak discharge changes with T_c and T_t , interpolation of peak discharge for T_c and T_t values for use in exhibit 5 is not recommended. Interpolation may result in an estimate of peak discharge that would be invalid because it would be lower than either of the hydrographs. Therefore, round the actual values of T_c and T_t to values presented in exhibit 5. Perform this rounding so that the sum of the selected table values is close to the sum of actual T_c and T_t . An acceptable procedure is to select the results of one of three rounding operations:

1. Round T_c and T_t separately to the nearest table value and sum,
2. Round T_c down and T_t up to nearest table value and sum,
3. Round T_c up and T_t down to nearest table value and sum.

From these three alternatives, choose the pair of rounded T_c and T_t values whose sum is closest to the sum of the actual T_c and T_t . If two rounding methods produce sums equally close to the actual sum, use the combination in which rounded T_c is closest to actual T_c . An illustration of the rounding procedure is as follows:

Exhibit 4-III Unit peak discharge (q_u) for NRCS (SCS) type III rainfall distribution



Product Flow Rates

CASCADE

Model	Treatment Rate (cfs)	Sediment Capacity ¹ (CF)
CS-4	2.00	19
CS-5	3.50	29
CS-6	5.60	42
CS-8	12.00	75
CS-10	18.00	118

CDS

Model	Treatment Rate ² (cfs)	Sediment Capacity ¹ (CF)
1515-3	1.00	14
2015-4	1.40	25
2015-5	1.40	39
2015-6	1.40	57
2020-5	2.20	39
2020-6	2.20	57
2025-5	3.20	39
2025-6	3.20	57
3020-6	3.90	57
3025-6	5.00	57
3030-6	5.70	57
3035-6	6.50	57
4030-8	7.50	151
4040-8	9.50	151

VORTECHS

Model	Treatment Rate (cfs)	Sediment Capacity ³ (CF)
1000	1.60	16
2000	2.80	32
3000	4.50	49
4000	6.00	65
5000	8.50	86
7000	11.00	108
9000	14.00	130
11000	17.5	151
16000	25	192

STORMCEPTOR STC

Model	Treatment Rate (cfs)	Sediment Capacity ¹ (CF)
STC 450i	0.40	46
STC 900	0.89	89
STC 2400	1.58	205
STC 4800	2.47	543
STC 7200	3.56	839
STC 11000	4.94	1086
STC 16000	7.12	1677

1 Additional sediment storage capacity available – Check with your local representative for information.

2 Treatment Capacity is based on laboratory testing using OK-110 (average D50 particle size of approximately 100 microns) and a 2400 micron screen.

3 Maintenance recommended when sediment depth has accumulated to within 12-18 inches of the dry weather water surface elevation.



NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT WWW.CONTECHES.COM/COS) FOR MORE INFORMATION.



Get social with us: [f](#) [in](#) [t](#) [v](#)

800-338-1122 | www.ContechES.com

		SLR Consulting			Project	21840.00004
		COMPUTATION SHEET - WATER QUALITY FLOW (WQF)			Made By:	JLS
Subject:	Hingham Center for Active Living			Date:	12/8/2025	
CDS Unit - DMH 16						
Contributing Basins		Imperv. Area (acres)	Total Area (acres)			
Total		0.87	1.04			
$V_{WQ} = [D_{WQ}/12(\text{inches/foot})] * [A_{IMP}]$						
Where:						
$V_{WQ} =$	Required water quality volume (cubic feet)			1578.7 cubic feet =	0.0362422	acre-feet
$D_{WQ} =$	Water Quality Depth (inches)			0.500 inches		
$A_{IMP} =$	Impervius Area (acres)			0.87 acres =	0.0014	miles ²
$Q = \text{runoff depth (in watershed inches)} = [WQV(\text{acrefeet})] * [12(\text{inches/foot})] / \text{drainage area (acres)}$						
		$Q =$	0.420			
$CN = 1000 / [10 + 5D_{WQ} + 10Q - 10(Q^2 + 1.25QD_{WQ})^{0.5}] =$						
			99			
Where:						
$Q = \text{runoff depth (in watershed inches)}$						
		$t_c =$	0.167 hours			
Type III Rainfall Distribution:						
From Table 4-1, $I_a =$	0.041	$I_a/P =$	0.0471			
(TR-55)						
From Exhibit 4-III, $q_u =$	670 csm/in.					
(TR-55)						
WQF = $(q_u)(A)(Q) =$	0.38 cfs			Stormceptor STC 450i Flow= 0.40 cfs OK		

Stormceptor[®] STC
Operation and Maintenance Guide



Stormceptor Design Notes

- Only the STC 450i is adaptable to function with a catch basin inlet and/or inline pipes.
- Only the Stormceptor models STC 450i to STC 7200 may accommodate multiple inlet pipes.

Inlet and outlet invert elevation differences are as follows:

Inlet and Outlet Pipe Invert Elevations Differences			
Inlet Pipe Configuration	STC 450i	STC 900 to STC 7200	STC 11000 to STC 16000
Single inlet pipe	3 in. (75 mm)	1 in. (25 mm)	3 in. (75 mm)
Multiple inlet pipes	3 in. (75 mm)	3 in. (75 mm)	Only one inlet pipe.

Maximum inlet and outlet pipe diameters:

Inlet/Outlet Configuration	Inlet Unit STC 450i	In-Line Unit STC 900 to STC 7200	Series* STC 11000 to STC 16000
Straight Through	24 inch (600 mm)	42 inch (1050 mm)	60 inch (1500 mm)
Bend (90 degrees)	18 inch (450 mm)	33 inch (825 mm)	33 inch (825 mm)

- The inlet and in-line Stormceptor units can accommodate turns to a maximum of 90 degrees.
- Minimum distance from top of grade to crown is 2 feet (0.6 m)
- Submerged conditions. A unit is submerged when the standing water elevation at the proposed location of the Stormceptor unit is greater than the outlet invert elevation during zero flow conditions. In these cases, please contact your local Stormceptor representative and provide the following information:
 - Top of grade elevation
 - Stormceptor inlet and outlet pipe diameters and invert elevations
 - Standing water elevation
 - Stormceptor head loss, $K = 1.3$ (for submerged condition, $K = 4$)



OPERATION AND MAINTENANCE GUIDE

Table of Content

1. About Stormceptor	4
2. Stormceptor Design Overview	4
3. Key Operation Features	6
4. Stormceptor Product Line.....	7
5. Sizing the Stormceptor System.....	10
6. Spill Controls.....	12
7. Stormceptor Options.....	14
8. Comparing Technologies	17
9. Testing.....	18
10. Installation	18
11. Stormceptor Construction Sequence.....	18
12. Maintenance	19

1. About Stormceptor

The Stormceptor® STC (Standard Treatment Cell) was developed by Imbrium™ Systems to address the growing need to remove and isolate pollution from the storm drain system before it enters the environment. The Stormceptor STC targets hydrocarbons and total suspended solids (TSS) in stormwater runoff. It improves water quality by removing contaminants through the gravitational settling of fine sediments and floatation of hydrocarbons while preventing the re-suspension or scour of previously captured pollutants.

The development of the Stormceptor STC revolutionized stormwater treatment, and created an entirely new category of environmental technology. Protecting thousands of waterways around the world, the Stormceptor System has set the standard for effective stormwater treatment.

1.1. Patent Information

The Stormceptor technology is protected by the following patents:

- Australia Patent No. 693,164 • 693,164 • 707,133 • 729,096 • 779401
- Austrian Patent No. 289647
- Canadian Patent No 2,009,208 • 2,137,942 • 2,175,277 • 2,180,305 • 2,180,383 • 2,206,338 • 2,327,768 (Pending)
- China Patent No 1168439
- Denmark DK 711879
- German DE 69534021
- Indonesian Patent No 16688
- Japan Patent No 9-11476 (Pending)
- Korea 10-2000-0026101 (Pending)
- Malaysia Patent No PI9701737 (Pending)
- New Zealand Patent No 314646
- United States Patent No 4,985,148 • 5,498,331 • 5,725,760 • 5,753,115 • 5,849,181 • 6,068,765 • 6,371,690
- Stormceptor OSR Patent Pending • Stormceptor LCS Patent Pending

2. Stormceptor Design Overview

2.1. Design Philosophy

The patented Stormceptor System has been designed to focus on the environmental objective of providing long-term pollution control. The unique and innovative Stormceptor design allows for continuous positive treatment of runoff during all rainfall events, while ensuring that all captured pollutants are retained within the system, even during intense storm events.

An integral part of the Stormceptor design is PCSWMM for Stormceptor - sizing software developed in conjunction with Computational Hydraulics Inc. (CHI) and internationally acclaimed expert, Dr. Bill James. Using local historical rainfall data and continuous simulation modeling, this software allows a Stormceptor unit to be designed for each individual site and the corresponding water quality objectives.

By using PCSWMM for Stormceptor, the Stormceptor System can be designed to remove a wide range of particles (typically from 20 to 2,000 microns), and can also be customized to remove a specific particle size distribution (PSD). The specified PSD should accurately reflect what is in the stormwater runoff to ensure the device is achieving the desired water quality objective. Since stormwater runoff contains small particles (less than 75 microns), it is important to design a treatment system to remove smaller particles in addition to coarse particles.

2.2. Benefits

The Stormceptor System removes free oil and suspended solids from stormwater, preventing spills and non-point source pollution from entering downstream lakes and rivers. The key benefits, capabilities and applications of the Stormceptor System are as follows:

- Provides continuous positive treatment during all rainfall events
- Can be designed to remove over 80% of the annual sediment load
- Removes a wide range of particles
- Can be designed to remove a specific particle size distribution (PSD)
- Captures free oil from stormwater
- Prevents scouring or re-suspension of trapped pollutants
- Pre-treatment to reduce maintenance costs for downstream treatment measures (ponds, swales, detention basins, filters)
- Groundwater recharge protection
- Spills capture and mitigation
- Simple to design and specify
- Designed to your local watershed conditions
- Small footprint to allow for easy retrofit installations
- Easy to maintain (vacuum truck)
- Multiple inlets can connect to a single unit
- Suitable as a bend structure
- Pre-engineered for traffic loading (minimum AASHTO HS-20)
- Minimal elevation drop between inlet and outlet pipes
- Small head loss
- Additional protection provided by an 18" (457 mm) fiberglass skirt below the top of the insert, for the containment of hydrocarbons in the event of a spill.

2.3. Environmental Benefit

Freshwater resources are vital to the health and welfare of their surrounding communities. There is increasing public awareness, government regulations and corporate commitment to reducing the pollution entering our waterways. A major source of this pollution originates from stormwater runoff from urban areas. Rainfall runoff carries oils, sediment and other contaminants from roads and parking lots discharging directly into our streams, lakes and coastal waterways.

The Stormceptor System is designed to isolate contaminants from getting into the natural environment. The Stormceptor technology provides protection for the environment from spills that occur at service stations and vehicle accident sites, while also removing contaminated sediment in runoff that washes from roads and parking lots.

3. Key Operation Features

3.1. Scour Prevention

A key feature of the Stormceptor System is its patented scour prevention technology. This innovation ensures pollutants are captured and retained during all rainfall events, even extreme storms. The Stormceptor System provides continuous positive treatment for all rainfall events, including intense storms. Stormceptor slows incoming runoff, controlling and reducing velocities in the lower chamber to create a non-turbulent environment that promotes free oils and floatable debris to rise and sediment to settle.

The patented scour prevention technology, the fiberglass insert, regulates flows into the lower chamber through a combination of a weir and orifice while diverting high energy flows away through the upper chamber to prevent scouring. Laboratory testing demonstrated no scouring when tested up to 125% of the unit's operating rate, with the unit loaded to 100% sediment capacity (NJDEP, 2005). Second, the depth of the lower chamber ensures the sediment storage zone is adequately separated from the path of flow in the lower chamber to prevent scouring.

3.2. Operational Hydraulic Loading Rate

Designers and regulators need to evaluate the treatment capacity and performance of manufactured stormwater treatment systems. A commonly used parameter is the "operational hydraulic loading rate" which originated as a design methodology for wastewater treatment devices.

Operational hydraulic loading rate may be calculated by dividing the flow rate into a device by its settling area. This represents the critical settling velocity that is the prime determinant to quantify the influent particle size and density captured by the device. PCSWMM for Stormceptor uses a similar parameter that is calculated by dividing the hydraulic detention time in the device by the fall distance of the sediment.

$$v_{sc} = \frac{H}{\theta_H} = \frac{Q}{A_s}$$

Where:

v_{sc} = critical settling velocity, ft/s (m/s)

H = tank depth, ft (m)

θ_H = hydraulic detention time, ft/s (m/s)

Q = volumetric flow rate, ft³/s (m³/s)

A_s = surface area, ft² (m²)

(Tchobanoglous, G. and Schroeder, E.D. 1987. Water Quality. Addison Wesley.)

Unlike designing typical wastewater devices, stormwater systems are designed for highly variable flow rates including intense peak flows. PCSWMM for Stormceptor incorporates all of the flows into its calculations, ensuring that the operational hydraulic loading rate is considered not only for one flow rate, but for all flows including extreme events.

3.3. Double Wall Containment

The Stormceptor System was conceived as a pollution identifier to assist with identifying illicit discharges. The fiberglass insert has a continuous skirt that lines the concrete barrel wall for a depth of 18 inches (457 mm) that provides double wall containment for hydrocarbons storage. This protective barrier ensures that toxic floatables do not migrate through the concrete wall into the surrounding soils.

4. Stormceptor Product Line

4.1. Stormceptor Models

A summary of Stormceptor models and capacities are listed in Table 1.

Table 1. Stormceptor Models

Stormceptor Model	Total Storage Volume U.S. Gal (L)	Hydrocarbon Storage Capacity U.S. Gal (L)	Maximum Sediment Capacity ft ³ (L)
STC 450i	470 (1,780)	86 (330)	46 (1,302)
STC 900	952 (3,600)	251 (950)	89 (2,520)
STC 1200	1,234 (4,670)	251 (950)	127 (3,596)
STC 1800	1,833 (6,940)	251 (950)	207 (5,861)
STC 2400	2,462 (9,320)	840 (3,180)	205 (5,805)
STC 3600	3,715 (1,406)	840 (3,180)	373 (10,562)
STC 4800	5,059 (1,950)	909 (3,440)	543 (15,376)
STC 6000	6,136 (23,230)	909 (3,440)	687 (19,453)
STC 7200	7,420 (28,090)	1,059 (4,010)	839 (23,757)
STC 11000	11,194 (42,370)	2,797 (10, 590)	1,086 (30,752)
STC 13000	13,348 (50,530)	2,797 (10, 590)	1,374 (38,907)
STC 16000	15,918 (60,260)	3,055 (11, 560)	1,677 (47,487)

NOTE: Storage volumes may vary slightly from region to region. For detailed information, contact your local Stormceptor representative.

4.2. Inline Stormceptor

The Inline Stormceptor, Figure 1, is the standard design for most stormwater treatment applications. The patented Stormceptor design allows the Inline unit to maintain continuous positive treatment of total suspended solids (TSS) year-round, regardless of flow rate. The Inline Stormceptor is composed of a precast concrete tank with a fiberglass insert situated at the invert of the storm sewer pipe, creating an upper chamber above the insert and a lower chamber below the insert.

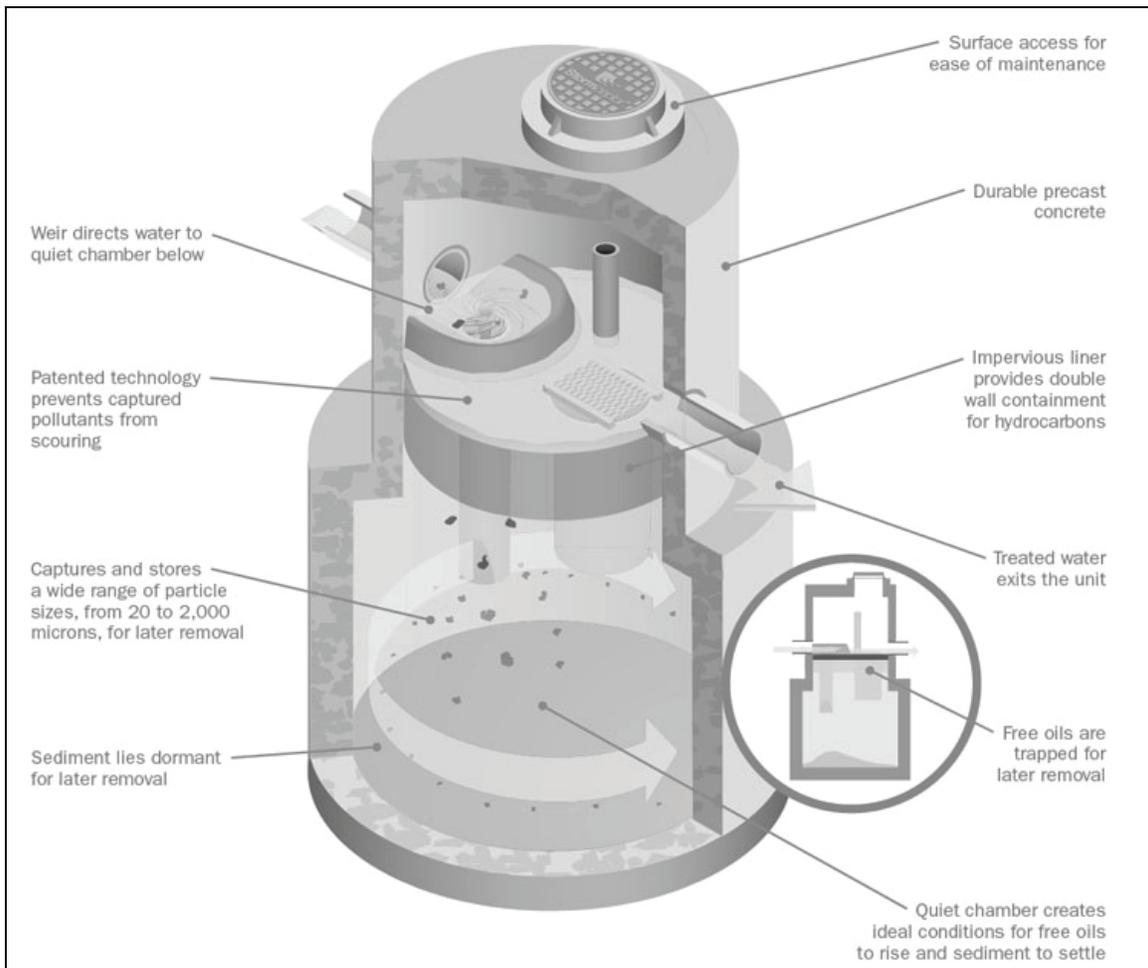


Figure 1. Inline Stormceptor

Operation

As water flows into the Stormceptor unit, it is slowed and directed to the lower chamber by a weir and drop tee. The stormwater enters the lower chamber, a non-turbulent environment, allowing free oils to rise and sediment to settle. The oil is captured underneath the fiberglass insert and shielded from exposure to the concrete walls by a fiberglass skirt. After the pollutants separate, treated water continues up a riser pipe, and exits the lower chamber on the downstream side of the weir before leaving the unit. During high flow events, the Stormceptor System's patented scour prevention technology ensures continuous pollutant removal and prevents re-suspension of previously captured pollutants.

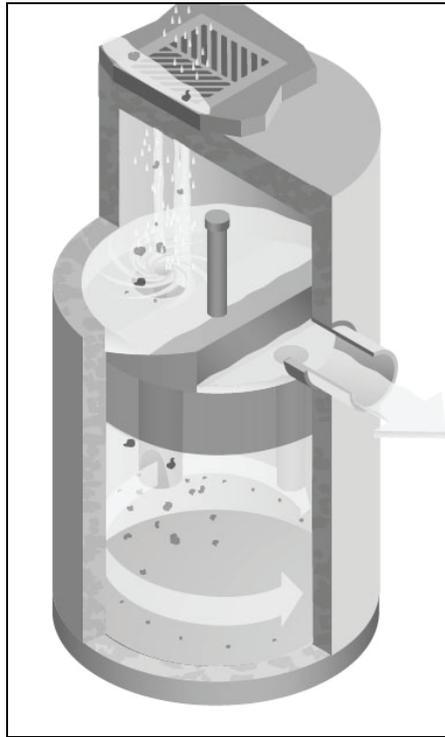


Figure 2. Inlet Stormceptor

4.3. Inlet Stormceptor

The Inlet Stormceptor System, Figure 2, was designed to provide protection for parking lots, loading bays, gas stations and other spill-prone areas. The Inlet Stormceptor is designed to remove sediment from stormwater introduced through a grated inlet, a storm sewer pipe, or both.

The Inlet Stormceptor design operates in the same manner as the Inline unit, providing continuous positive treatment, and ensuring that captured material is not re-suspended.

4.4. Series Stormceptor

Designed to treat larger drainage areas, the Series Stormceptor System, Figure 3, consists of two adjacent Stormceptor models that function in parallel. This design eliminates the need for additional structures and piping to reduce installation costs.

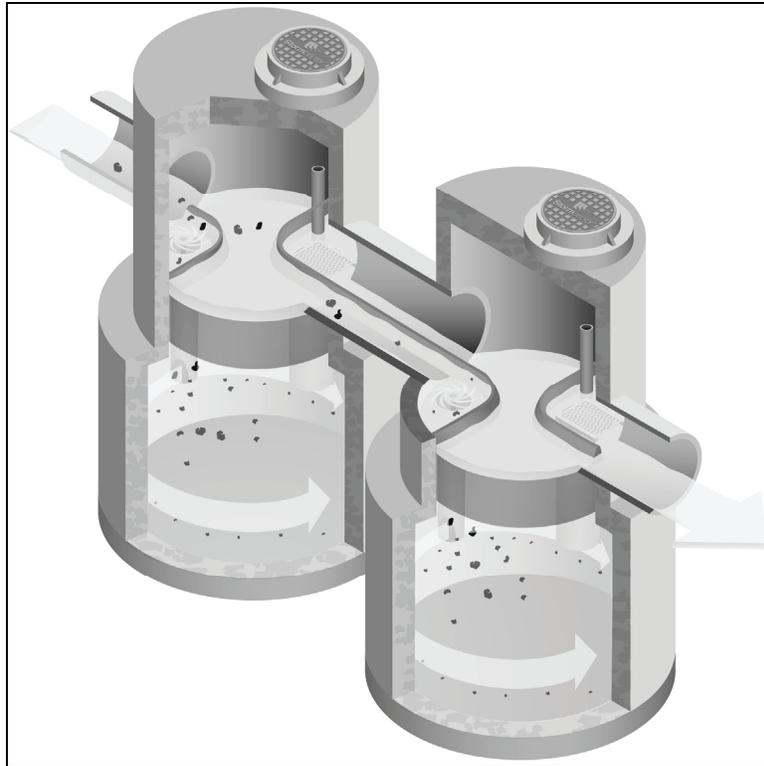


Figure 3. Series System

The Series Stormceptor design operates in the same manner as the Inline unit, providing continuous positive treatment, and ensuring that captured material is not re-suspended.

5. Sizing the Stormceptor System

The Stormceptor System is a versatile product that can be used for many different aspects of water quality improvement. While addressing these needs, there are conditions that the designer needs to be aware of in order to size the Stormceptor model to meet the demands of each individual site in an efficient and cost-effective manner.

PCSWMM for Stormceptor is the support tool used for identifying the appropriate Stormceptor model. In order to size a unit, it is recommended the user follow the seven design steps in the program. The steps are as follows:

STEP 1 – Project Details

The first step prior to sizing the Stormceptor System is to clearly identify the water quality objective for the development. It is recommended that a level of annual sediment (TSS) removal be identified and defined by a particle size distribution.

STEP 2 – Site Details

Identify the site development by the drainage area and the level of imperviousness. It is recommended that imperviousness be calculated based on the actual area of imperviousness based on paved surfaces, sidewalks and rooftops.

STEP 3 – Upstream Attenuation

The Stormceptor System is designed as a water quality device and is sometimes used in conjunction with onsite water quantity control devices such as ponds or underground detention systems. When possible, a greater benefit is typically achieved when installing a Stormceptor unit upstream of a detention facility. By placing the Stormceptor unit upstream of a detention structure, a benefit of less maintenance of the detention facility is realized.

STEP 4 – Particle Size Distribution

It is critical that the PSD be defined as part of the water quality objective. PSD is critical for the design of treatment system for a unit process of gravity settling and governs the size of a treatment system. A range of particle sizes has been provided and it is recommended that clays and silt-sized particles be considered in addition to sand and gravel-sized particles. Options and sample PSDs are provided in PCSWMM for Stormceptor. The default particle size distribution is the Fine Distribution, Table 2, option.

Table 2. Fine Distribution

Particle Size	Distribution	Specific Gravity
20	20%	1.3
60	20%	1.8
150	20%	2.2
400	20%	2.65
2000	20%	2.65

If the objective is the long-term removal of 80% of the total suspended solids on a given site, the PSD should be representative of the expected sediment on the site. For example, a system designed to remove 80% of coarse particles (greater than 75 microns) would provide relatively poor removal efficiency of finer particles that may be naturally prevalent in runoff from the site.

Since the small particle fraction contributes a disproportionately large amount of the total available particle surface area for pollutant adsorption, a system designed primarily for coarse particle capture will compromise water quality objectives.

STEP 5 – Rainfall Records

Local historical rainfall has been acquired from the U.S. National Oceanic and Atmospheric Administration, Environment Canada and regulatory agencies across North America. The rainfall data provided with PCSMM for Stormceptor provides an accurate estimation of small storm hydrology by modeling actual historical storm events including duration, intensities and peaks.

STEP 6 – Summary

At this point, the program may be executed to predict the level of TSS removal from the site. Once the simulation has completed, a table shall be generated identifying the TSS removal of each Stormceptor unit.

STEP 7 – Sizing Summary

Performance estimates of all Stormceptor units for the given site parameters will be displayed in a tabular format. The unit that meets the water quality objective, identified in Step 1, will be highlighted.

5.1. PCSWMM for Stormceptor

The Stormceptor System has been developed in conjunction with PCSWMM for Stormceptor as a technological solution to achieve water quality goals. Together, these two innovations model, simulate, predict and calculate the water quality objectives desired by a design engineer for TSS removal.

PCSWMM for Stormceptor is a proprietary sizing program which uses site specific inputs to a computer model to simulate sediment accumulation, hydrology and long-term total suspended solids removal. The model has been calibrated to field monitoring results from Stormceptor units that have been monitored in North America. The sizing methodology can be described by three processes:

1. Determination of real time hydrology
2. Buildup and wash off of TSS from impervious land areas
3. TSS transport through the Stormceptor (settling and discharge). The use of a calibrated model is the preferred method for sizing stormwater quality structures for the following reasons:
 - » The hydrology of the local area is properly and accurately incorporated in the sizing (distribution of flows, flow rate ranges and peaks, back-to-back storms, inter-event times)
 - » The distribution of TSS with the hydrology is properly and accurately considered in the sizing
 - » Particle size distribution is properly considered in the sizing
 - » The sizing can be optimized for TSS removal
 - » The cost benefit of alternate TSS removal criteria can be easily assessed
 - » The program assesses the performance of all Stormceptor models. Sizing may be selected based on a specific water quality outcome or based on the Maximum Extent Practicable

For more information regarding PCSWMM for Stormceptor, contact your local Stormceptor representative, or visit www.imbriumsystems.com to download a free copy of the program.

5.2. Sediment Loading Characteristics

The way in which sediment is transferred to stormwater can have a considerable effect on which type of system is implemented. On typical impervious surfaces (e.g. parking lots) sediment will build over time and wash off with the next rainfall. When rainfall patterns are examined, a short intense storm will have a higher concentration of sediment than a long slow drizzle. Together with rainfall data representing the site's typical rainfall patterns, sediment loading characteristics play a part in the correct sizing of a stormwater quality device.

Typical Sites

For standard site design of the Stormceptor System, PCSWMM for Stormceptor is utilized to accurately assess the unit's performance. As an integral part of the product's design, the program can be used to meet local requirements for total suspended solid removal. Typical installations of manufactured stormwater treatment devices would occur on areas such as paved parking lots or paved roads. These are considered "stable" surfaces which have non – erodible surfaces.

Unstable Sites

While standard sites consist of stable concrete or asphalt surfaces, sites such as gravel parking lots, or maintenance yards with stockpiles of sediment would be classified as "unstable". These types of sites do not exhibit first flush characteristics, are highly erodible and exhibit atypical sediment loading characteristics and must therefore be sized more carefully. Contact your local Stormceptor representative for assistance in selecting a proper unit sized for such unstable sites.

6. Spill Controls

When considering the removal of total petroleum hydrocarbons (TPH) from a storm sewer system there are two functions of the system: oil removal, and spill capture.

'Oil Removal' describes the capture of the minute volumes of free oil mobilized from impervious surfaces. In this instance relatively low concentrations, volumes and flow rates are considered. While the Stormceptor unit will still provide an appreciable oil removal function during higher flow events and/or with higher TPH concentrations, desired effluent limits may be exceeded under these conditions.

'Spill Capture' describes a manner of TPH removal more appropriate to recovery of a relatively high volume of a single phase deleterious liquid that is introduced to the storm sewer system over a relatively short duration. The two design criteria involved when considering this manner of introduction are overall volume and the specific gravity of the material. A standard Stormceptor unit will be able to capture and retain a maximum spill volume and a minimum specific gravity.

For spill characteristics that fall outside these limits, unit modifications are required. Contact your local Stormceptor Representative for more information.

One of the key features of the Stormceptor technology is its ability to capture and retain spills. While the standard Stormceptor System provides excellent protection for spill control, there are additional options to enhance spill protection if desired.

6.1. Oil Level Alarm

The oil level alarm is an electronic monitoring system designed to trigger a visual and audible alarm when a pre-set level of oil is reached within the lower chamber. As a standard, the oil

level alarm is designed to trigger at approximately 85% of the unit's available depth level for oil capture. The feature acts as a safeguard against spills caused by exceeding the oil storage capacity of the separator and eliminates the need for manual oil level inspection.

The oil level alarm installed on the Stormceptor insert is illustrated in Figure 4.

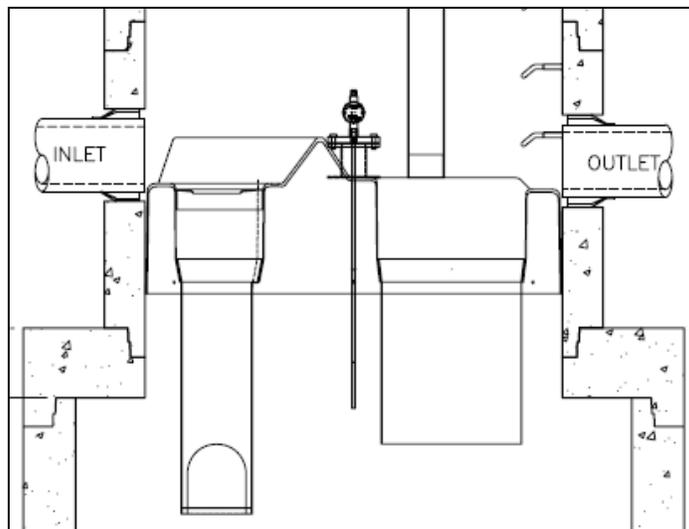


Figure 4. Oil level alarm

6.2. Increased Volume Storage Capacity

The Stormceptor unit may be modified to store a greater spill volume than is typically available. Under such a scenario, instead of installing a larger than required unit, modifications can be made to the recommended Stormceptor model to accommodate larger volumes. Contact your local Stormceptor representative for additional information and assistance for modifications.

7. Stormceptor Options

The Stormceptor System allows flexibility to incorporate to existing and new storm drainage infrastructure. The following section identifies considerations that should be reviewed when installing the system into a drainage network. For conditions that fall outside of the recommendations in this section, please contact your local Stormceptor representative for further guidance.

7.1. Installation Depth Minimum Cover

The minimum distance from the top of grade to the crown of the inlet pipe is 24 inches (600 mm). For situations that have a lower minimum distance, contact your local Stormceptor representative.

7.2. Maximum Inlet and Outlet Pipe Diameters

Maximum inlet and outlet pipe diameters are illustrated in Figure 5. Contact your local Stormceptor representative for larger pipe diameters

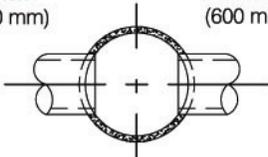
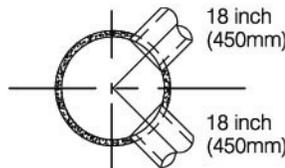
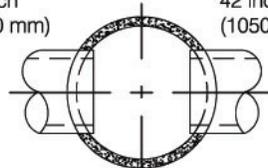
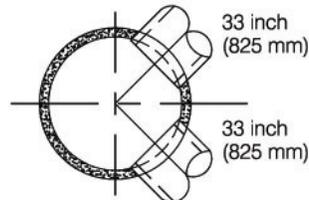
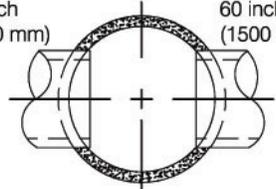
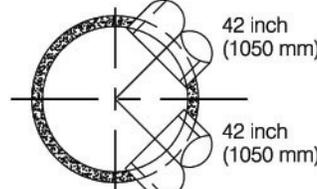
Upper Chamber Diameter	Maximum Pipe Diameters for Straight Through and 90° Bends (Based on Concrete Pipe)	
Inlet Stormceptor	24 inch (600 mm)  24 inch (600 mm)	 18 inch (450mm) 18 inch (450mm)
Inline Stormceptor	42 inch (1050 mm)  42 inch (1050 mm)	 33 inch (825 mm) 33 inch (825 mm)
Inline Stormceptor or Series Stormceptor	60 inch (1500 mm)  60 inch (1500 mm)	 42 inch (1050 mm) 42 inch (1050 mm)

Figure 5. Maximum pipe diameters for straight through and bend applications

*The bend should only be incorporated into the second structure (downstream structure) of the Series Stormceptor System

7.3. Bends

The Stormceptor System can be used to change horizontal alignment in the storm drain network up to a maximum of 90 degrees. Figure 6 illustrates the typical bend situations of the Stormceptor System. Bends should only be applied to the second structure (downstream structure) of the Series Stormceptor System.

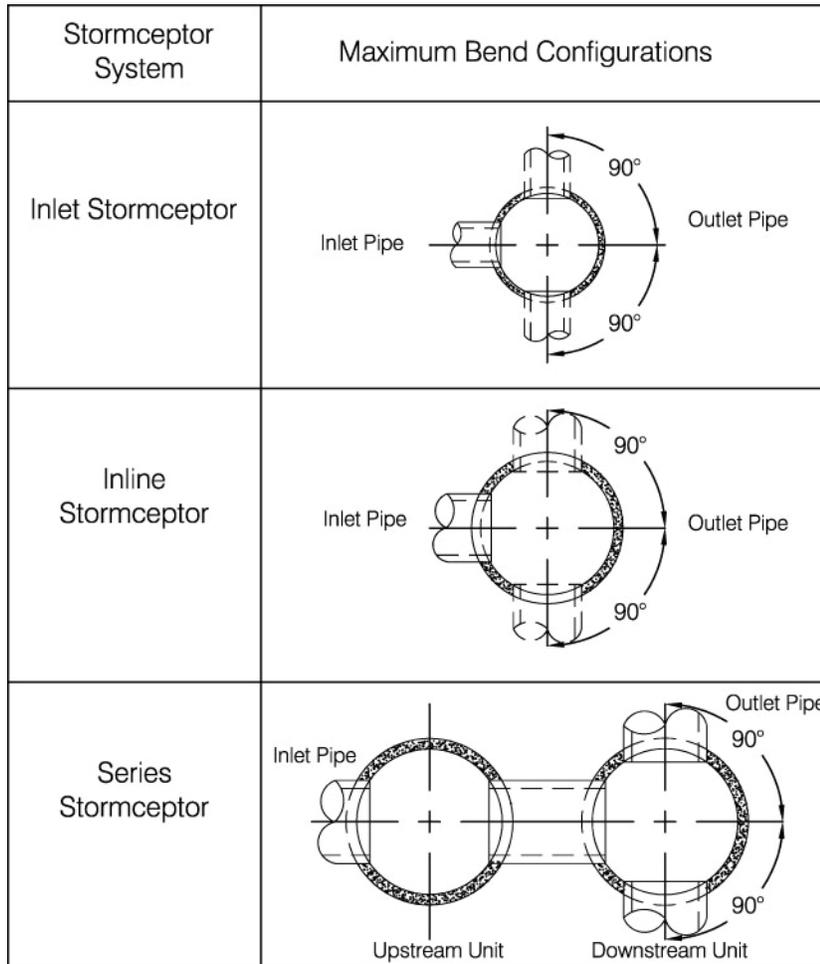


Figure 6. Maximum bend angles

7.4. Multiple Inlet Pipes

The Inlet and Inline Stormceptor System can accommodate two or more inlet pipes. The maximum number of inlet pipes that can be accommodated into a Stormceptor unit is a function of the number, alignment and diameter of the pipes and its effects on the structural integrity of the precast concrete. When multiple inlet pipes are used for new developments, each inlet pipe shall have an invert elevation 3 inches (75 mm) higher than the outlet pipe invert elevation.

7.5. Inlet/Outlet Pipe Invert Elevations

Recommended inlet and outlet pipe invert differences are listed in Table 3.

Table 3. Recommended Drops Between Inlet and Outlet Pipe Inverts

Number of Inlet Pipes	Inlet System	In-Line System	Series System
1	3 inches (75 mm)	1 inch (25 mm)	3 inches (75 mm)
>1	3 inches (75 mm)	3 inches (75 mm)	Not Applicable

7.6. Shallow Stormceptor

In cases where there may be restrictions to the depth of burial of storm sewer systems. In this situation, for selected Stormceptor models, the lower chamber components may be increased in diameter to reduce the overall depth of excavation required.

7.7. Customized Live Load

The Stormceptor system is typically designed for local highway truck loading (AASHTO HS- 20). When the project requires live loads greater than HS-20, the Stormceptor System may be customized structurally for a pre-specified live load. Contact your local Stormceptor representative for customized loading conditions.

7.8. Pre-treatment

The Stormceptor System may be sized to remove sediment and for spills control in conjunction with other stormwater BMPs to meet the water quality objective. For pretreatment applications, the Stormceptor System should be the first unit in a treatment train. The benefits of pre-treatment include the extension of the operational life (extension of maintenance frequency) of large stormwater management facilities, prevention of spills and lower total life-cycle maintenance cost.

7.9. Head loss

The head loss through the Stormceptor System is similar to a 60 degree bend at a manhole. The K value for calculating minor losses is approximately 1.3 (minor loss = $k \cdot 1.3v^2/2g$).

However, when a Submerged modification is applied to a Stormceptor unit, the corresponding K value is 4.

7.10. Submerged

The Submerged modification, Figure 7, allows the Stormceptor System to operate in submerged or partially submerged storm sewers. This configuration can be installed on all models of the Stormceptor System by modifying the fiberglass insert. A customized weir height and a secondary drop tee are added.

Submerged instances are defined as standing water in the storm drain system during zero flow conditions. In these instances, the following information is necessary for the proper design and application of submerged modifications:

- Stormceptor top of grade elevation
- Stormceptor outlet pipe invert elevation
- Standing water elevation

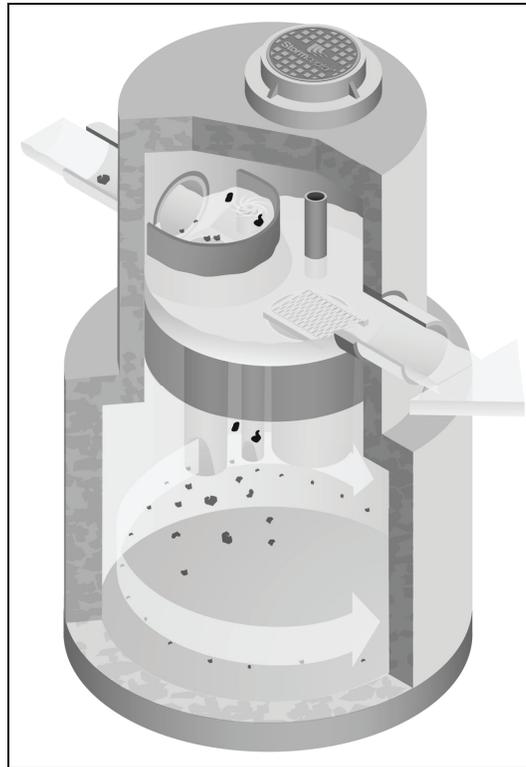


Figure 7. Submerged Stormceptor

8. Comparing Technologies

Designers have many choices available to achieve water quality goals in the treatment of stormwater runoff. Since many alternatives are available for use in stormwater quality treatment it is important to consider how to make an appropriate comparison between “approved alternatives”. The following is a guide to assist with the accurate comparison of differing technologies and performance claims.

8.1. Particle Size Distribution (PSD)

The most sensitive parameter to the design of a stormwater quality device is the selection of the design particle size. While it is recommended that the actual particle size distribution (PSD) for sites be measured prior to sizing, alternative values for particle size should be selected to represent what is likely to occur naturally on the site. A reasonable estimate of a particle size distribution likely to be found on parking lots or other impervious surfaces should consist of a wide range of particles such as 20 microns to 2,000 microns (Ontario MOE, 1994).

There is no absolute right particle size distribution or specific gravity and the user is cautioned to review the site location, characteristics, material handling practices and regulatory requirements when selecting a particle size distribution. When comparing technologies, designs using different PSDs will result in incomparable TSS removal efficiencies. The PSD of the TSS removed needs to be standard between two products to allow for an accurate comparison.

8.2. Scour Prevention

In order to accurately predict the performance of a manufactured treatment device, there must be confidence that it will perform under all conditions. Since rainfall patterns cannot be predicted, stormwater quality devices placed in storm sewer systems must be able to withstand extreme events, and ensure that all pollutants previously captured are retained in the system.

In order to have confidence in a system’s performance under extreme conditions, independent validation of scour prevention is essential when examining different technologies. Lack of independent verification of scour prevention should make a designer wary of accepting any product’s performance claims.

8.3. Hydraulics

Full scale laboratory testing has been used to confirm the hydraulics of the Stormceptor System. Results of lab testing have been used to physically design the Stormceptor System and the sewer pipes entering and leaving the unit. Key benefits of Stormceptor are:

- Low head loss (typical k value of 1.3)
- Minimal inlet/outlet invert elevation drop across the structure
- Use as a bend structure
- Accommodates multiple inlets

The adaptability of the treatment device to the storm sewer design infrastructure can affect the overall performance and cost of the site.

8.4. Hydrology

Stormwater quality treatment technologies need to perform under varying climatic conditions. These can vary from long low intensity rainfall to short duration, high intensity storms. Since a treatment device is expected to perform under all these conditions, it makes sense that any system’s design should accommodate those conditions as well.

Long-term continuous simulation evaluates the performance of a technology under the varying conditions expected in the climate of the subject site. Single, peak event design does not provide this information and is not equivalent to long-term simulation. Designers should request long-term simulation performance to ensure the technology can meet the long-term water quality objective.

9. Testing

The Stormceptor System has been the most widely monitored stormwater treatment technology in the world. Performance verification and monitoring programs are completed to the strictest standards and integrity. Since its introduction in 1990, numerous independent field tests and studies detailing the effectiveness of the Stormceptor System have been completed.

- Coventry University, UK – 97% removal of oil, 83% removal of sand and 73% removal of peat
- National Water Research Institute, Canada, - scaled testing for the development of the Stormceptor System identifying both TSS removal and scour prevention.
- New Jersey TARP Program – full scale testing of an STC 900 demonstrating 75% TSS removal of particles from 1 to 1000 microns. Scour testing completed demonstrated that the system does not scour. The New Jersey Department of Environmental Protection was followed.
- City of Indianapolis – full scale testing of an STC 900 demonstrating over 80% TSS removal of particles from 50 microns to 300 microns at 130% of the unit's operating rate. Scour testing completed demonstrated that the system does not scour.
- Westwood Massachusetts (1997), demonstrated >80% TSS removal
- Como Park (1997), demonstrated 76% TSS removal
- Ontario MOE SWAMP Program – 57% removal of 1 to 25 micron particles
- Laval Quebec – 50% removal of 1 to 25 micron particles

10. Installation

The installation of the concrete Stormceptor should conform in general to state highway, or local specifications for the installation of manholes. Selected sections of a general specification that are applicable are summarized in the following sections.

10.1. Excavation

Excavation for the installation of the Stormceptor should conform to state highway, or local specifications. Topsoil removed during the excavation for the Stormceptor should be stockpiled in designated areas and should not be mixed with subsoil or other materials.

Topsoil stockpiles and the general site preparation for the installation of the Stormceptor should conform to state highway or local specifications.

The Stormceptor should not be installed on frozen ground. Excavation should extend a minimum of 12 inches (300 mm) from the precast concrete surfaces plus an allowance for shoring and bracing where required. If the bottom of the excavation provides an unsuitable foundation additional excavation may be required.

In areas with a high water table, continuous dewatering may be required to ensure that the excavation is stable and free of water.

10.2. Backfilling

Backfill material should conform to state highway or local specifications. Backfill material should be placed in uniform layers not exceeding 12 inches (300mm) in depth and compacted to state highway or local specifications.

11. Stormceptor Construction Sequence

The concrete Stormceptor is installed in sections in the following sequence:

1. Aggregate base
2. Base slab
3. Lower chamber sections
4. Upper chamber section with fiberglass insert
5. Connect inlet and outlet pipes
6. Assembly of fiberglass insert components (drop tee, riser pipe, oil cleanout port and orifice plate)
7. Remainder of upper chamber
8. Frame and access cover

The precast base should be placed level at the specified grade. The entire base should be in contact with the underlying compacted granular material. Subsequent sections, complete with joint seals, should be installed in accordance with the precast concrete manufacturer's recommendations.

Adjustment of the Stormceptor can be performed by lifting the upper sections free of the excavated area, re-leveling the base and re-installing the sections. Damaged sections and gaskets should be repaired or replaced as necessary. Once the Stormceptor has been constructed, any lift holes must be plugged with mortar.

12. Maintenance

12.1. Health and Safety

The Stormceptor System has been designed considering safety first. It is recommended that confined space entry protocols be followed if entry to the unit is required. In addition, the fiberglass insert has the following health and safety features:

- Designed to withstand the weight of personnel
- A safety grate is located over the 24 inch (600 mm) riser pipe opening
- Ladder rungs can be provided for entry into the unit, if required

12.2. Maintenance Procedures

Maintenance of the Stormceptor system is performed using vacuum trucks. No entry into the unit is required for maintenance (in most cases). The vacuum service industry is a well-established sector of the service industry that cleans underground tanks, sewers and catch basins. Costs to clean a Stormceptor will vary based on the size of unit and transportation distances.

The need for maintenance can be determined easily by inspecting the unit from the surface. The depth of oil in the unit can be determined by inserting a dipstick in the oil inspection/cleanout port.

Similarly, the depth of sediment can be measured from the surface without entry into the Stormceptor via a dipstick tube equipped with a ball valve. This tube would be inserted through the riser pipe. Maintenance should be performed once the sediment depth exceeds the guideline values provided in the Table 4.

Table 4. Sediment Depths Indicating Required Servicing*

Particle Size	Specific Gravity
Model	Sediment Depth inches (mm)
450i	8 (200)
900	8 (200)
1200	10 (250)
1800	15 (381)
2400	12 (300)
3600	17 (430)
4800	15 (380)
6000	18 (460)
7200	15 (381)
11000	17 (380)
13000	20 (500)
16000	17 (380)
* based on 15% of the Stormceptor unit's total storage	

Although annual servicing is recommended, the frequency of maintenance may need to be increased or reduced based on local conditions (i.e. if the unit is filling up with sediment more quickly than projected, maintenance may be required semi-annually; conversely once the site has stabilized maintenance may only be required every two or three years).

Oil is removed through the oil inspection/cleanout port and sediment is removed through the riser pipe. Alternatively oil could be removed from the 24 inches (600 mm) opening if water is removed from the lower chamber to lower the oil level below the drop pipes.

The following procedures should be taken when cleaning out Stormceptor:

1. Check for oil through the oil cleanout port
2. Remove any oil separately using a small portable pump
3. Decant the water from the unit to the sanitary sewer, if permitted by the local regulating authority, or into a separate containment tank
4. Remove the sludge from the bottom of the unit using the vacuum truck
5. Re-fill Stormceptor with water where required by the local jurisdiction

12.3. Submerged Stormceptor

Careful attention should be paid to maintenance of the Submerged Stormceptor System. In cases where the storm drain system is submerged, there is a requirement to plug both the inlet and outlet pipes to economically clean out the unit.

12.4. Hydrocarbon Spills

The Stormceptor is often installed in areas where the potential for spills is great. The Stormceptor System should be cleaned immediately after a spill occurs by a licensed liquid waste hauler.

12.5. Disposal

Requirements for the disposal of material from the Stormceptor System are similar to that of any other stormwater Best Management Practice (BMP) where permitted. Disposal options for the sediment may range from disposal in a sanitary trunk sewer upstream of a sewage treatment plant, to disposal in a sanitary landfill site. Petroleum waste products collected in the Stormceptor (free oil/chemical/fuel spills) should be removed by a licensed waste management company.

12.6. Oil Sheens

With a steady influx of water with high concentrations of oil, a sheen may be noticeable at the Stormceptor outlet. This may occur because a rainbow or sheen can be seen at very small oil concentrations (<10 mg/L). Stormceptor will remove over 98% of all free oil spills from storm sewer systems for dry weather or frequently occurring runoff events.

The appearance of a sheen at the outlet with high influent oil concentrations does not mean the unit is not working to this level of removal. In addition, if the influent oil is emulsified the Stormceptor will not be able to remove it. The Stormceptor is designed for free oil removal and not emulsified conditions.



SUPPORT

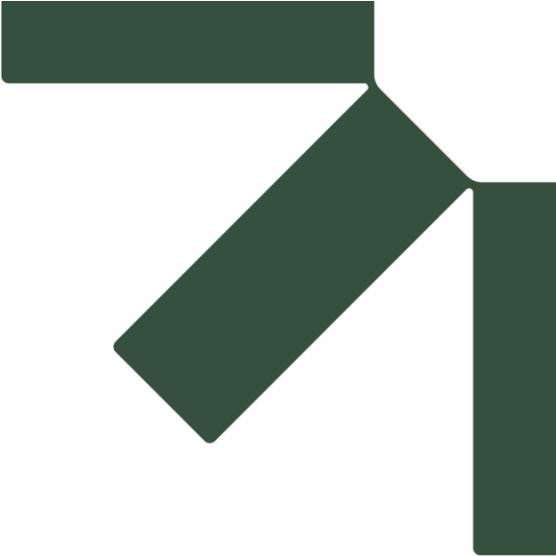
Drawings and specifications are available at www.ContechES.com.

Site-specific design support is available from our engineers.

©2020 Contech Engineered Solutions LLC, a QUIKRETE Company

Contech Engineered Solutions LLC provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, stormwater, and earth stabilization products. For information, visit www.ContechES.com or call 800.338.1122

NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT WWW.CONTECHES.COM/COS) FOR MORE INFORMATION.



Appendix F TSS Removal

Stormwater Management Plan

Hingham Center for Active Living

EDM Studio, Inc.

SLR Project No.: 141.21840.00004

December 9, 2025

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

	B	C	D	E	F
	BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
TSS Removal Calculation Worksheet	Proprietary Treatment Practice	0.80	1.00	0.80	0.20
	Subsurface Infiltration Structure	0.80	0.20	0.16	0.04
		0.00	0.04	0.00	0.04
		0.00	0.04	0.00	0.04
		0.00	0.04	0.00	0.04

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

TSS Removal Calculation Worksheet

B	C	D	E	F
BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
Sediment Forebay	0.25	0.75	0.19	0.56
Infiltration Basin	0.80	0.56	0.45	0.11
	0.00	0.11	0.00	0.11
	0.00	0.11	0.00	0.11

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

TSS Removal Calculation Worksheet

B	C	D	E	F
BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
Proprietary Treatment Practice	0.80	0.75	0.60	0.15
Rain Garden	0.90	0.15	0.135	0.015
	0.00	0.015	0.00	0.015
	0.00	0.015	0.00	0.015

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

TSS Removal Calculation Worksheet

B	C	D	E	F
BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
Sediment Forebay	0.25	0.75	0.19	0.56
Infiltration Basin	0.80	0.56	0.45	0.11
	0.00	0.11	0.00	0.11
	0.00	0.11	0.00	0.11

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

TSS Removal Calculation Worksheet

B BMP ¹	C TSS Removal Rate ¹	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Infiltration Basin	0.80	1.00	0.80	0.20
	0.00	0.20	0.00	0.20
	0.00	0.20	0.00	0.20
	0.00	0.20	0.00	0.20
	0.00	0.20	0.00	0.20

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

	B	C	D	E	F
	BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
TSS Removal Calculation Worksheet	Infiltration Trench	0.80	1.00	0.80	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

	B	C	D	E	F
	BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
TSS Removal Calculation Worksheet	Infiltration Trench	0.80	1.00	0.80	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

	B	C	D	E	F
	BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
TSS Removal Calculation Worksheet	Infiltration Trench	0.80	1.00	0.80	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

	B	C	D	E	F
	BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
TSS Removal Calculation Worksheet	Infiltration Trench	0.80	1.00	0.80	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

	B	C	D	E	F
	BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
TSS Removal Calculation Worksheet	Infiltration Trench	0.80	1.00	0.80	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20
		0.00	0.20	0.00	0.20

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP

INSTRUCTIONS:

1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location:

TSS Removal Calculation Worksheet

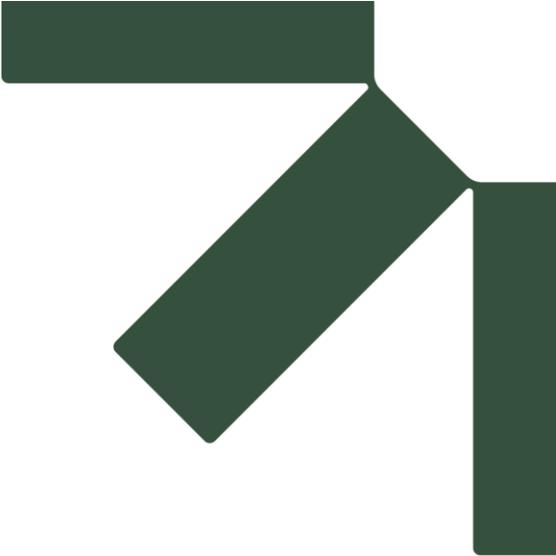
B BMP ¹	C TSS Removal Rate ¹	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Infiltration Trench	0.80	1.00	0.80	0.20
	0.00	0.20	0.00	0.20
	0.00	0.20	0.00	0.20
	0.00	0.20	0.00	0.20
	0.00	0.20	0.00	0.20

Total TSS Removal =

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
 Prepared By:
 Date:

*Equals remaining load from previous BMP (E) which enters the BMP



Appendix G Hydrology Model Output

Stormwater Management Plan

Hingham Center for Active Living

EDM Studio, Inc.

SLR Project No.: 141.21840.00004

December 9, 2025

Storm Event	2yr		10yr		25yr		50yr		100yr	
	Exist	Prop								
Analysis Point AP-1	0.01	0.00	0.55	0.00	1.72	0.00	3.04	0.00	4.87	0.00
SWB-1 Peak Elev. (ft.) Top of Berm Elev. = 32.0	---	30.18	---	30.57	---	30.78	---	30.93	---	30.98
SWB-2 Peak Elev. (ft.) Top of Berm Elev. = 31.0	---	30.42	---	30.45	---	30.47	---	30.48	---	30.49
SWB-3 Peak Elev. (ft.) Top of Berm Elev. = 32.0	---	30.92	---	30.96	---	30.98	---	30.99	---	31.00
UG-1 Peak Elev. (ft.) Top of Chamber Elev. = 27.19	---	23.72	---	24.58	---	25.25	---	25.84	---	26.64
FB-1 Peak 10-yr Elev. (ft.) Forebay Berm Elev. = 28.6	---	27.02	---	28.57	---	28.61	---	28.62	---	28.66
IB-1 Peak Elev. (ft.) Top of Berm Elev. = 29.0	---	23.02	---	23.41	---	26.37	---	27.16	---	27.87
RG-1 Peak Elev. (ft.) Top of Berm Elev. = 32.0	---	28.31	---	29.53	---	30.17	---	30.60	---	30.98
FB-2 Peak Elev. (ft.) Forebay Berm Elev. = 30.7	---	28.56	---	30.13	---	30.73	---	30.78	---	30.80
IB-2 Peak Elev. (ft.) Top of Berm Elev. = 31.0	---	25.00	---	25.00	---	28.17	---	29.03	---	29.84
IB-3 Peak Elev. (ft.) Top of Berm Elev. = 29.0	---	26.00	---	26.01	---	26.03	---	26.13	---	26.32
GT-1 Peak Elev. (ft.) Top of Trench Elev. = 22.0	---	20.00	---	20.01	---	20.07	---	20.31	---	20.75
GT-2 Peak Elev. (ft.) Top of Trench Elev. = 25.0	---	23.50	---	23.51	---	23.61	---	23.99	---	24.54
GT-3 Peak Elev. (ft.) Top of Trench Elev. = 29.0	---	27.50	---	27.50	---	27.56	---	27.90	---	28.44
GT-4 Peak Elev. (ft.) Top of Trench Elev. = 23.0	---	20.50	---	20.60	---	21.22	---	21.87	---	22.71
GT-5 Peak Elev. (ft.) Top of Trench Elev. = 25.0	---	21.41	---	22.45	---	23.31	---	24.03	---	24.88
GT-6 Peak Elev. (ft.) Top of Trench Elev. = 27.0	---	24.50	---	24.57	---	25.13	---	25.77	---	26.59

Study Area **Description**
AP **Surrounding Wetlands**

Summary of Peak Flow Rates (cfs)

	2-Year	10-Year	25-Year	50-Year	100-Year
Existing	0.01	0.55	1.72	3.04	4.87
Proposed	0.00	0.00	0.00	0.00	0.00
Change	-0.01	-0.55	-1.72	-3.04	-4.87
Percent Change	-100%	-100%	-100%	-100%	-100%





NOAA Atlas 14, Volume 10, Version 3
 Location name: Hingham, Massachusetts, USA*
 Latitude: 42.2382°, Longitude: -70.9068°
 Elevation: 45 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.304 (0.239-0.381)	0.377 (0.296-0.473)	0.496 (0.388-0.624)	0.594 (0.463-0.754)	0.730 (0.551-0.980)	0.831 (0.614-1.14)	0.939 (0.676-1.36)	1.07 (0.720-1.57)	1.26 (0.819-1.94)	1.43 (0.904-2.24)
10-min	0.431 (0.339-0.540)	0.534 (0.419-0.670)	0.702 (0.550-0.884)	0.842 (0.655-1.07)	1.03 (0.780-1.39)	1.18 (0.870-1.62)	1.33 (0.958-1.92)	1.51 (1.02-2.23)	1.79 (1.16-2.75)	2.02 (1.28-3.18)
15-min	0.507 (0.399-0.635)	0.628 (0.493-0.788)	0.826 (0.647-1.04)	0.991 (0.772-1.26)	1.22 (0.918-1.63)	1.38 (1.02-1.91)	1.56 (1.13-2.26)	1.78 (1.20-2.62)	2.10 (1.36-3.23)	2.38 (1.51-3.74)
30-min	0.705 (0.555-0.883)	0.874 (0.686-1.10)	1.15 (0.901-1.45)	1.38 (1.07-1.75)	1.69 (1.28-2.27)	1.93 (1.42-2.66)	2.18 (1.57-3.15)	2.48 (1.67-3.65)	2.94 (1.90-4.51)	3.33 (2.11-5.22)
60-min	0.903 (0.710-1.13)	1.12 (0.879-1.40)	1.47 (1.15-1.85)	1.76 (1.37-2.24)	2.17 (1.64-2.91)	2.47 (1.83-3.41)	2.79 (2.01-4.04)	3.18 (2.14-4.68)	3.77 (2.44-5.79)	4.28 (2.71-6.71)
2-hr	1.14 (0.907-1.42)	1.44 (1.14-1.80)	1.93 (1.52-2.41)	2.33 (1.83-2.94)	2.89 (2.19-3.85)	3.30 (2.46-4.52)	3.74 (2.72-5.39)	4.29 (2.90-6.26)	5.13 (3.33-7.78)	5.85 (3.71-9.07)
3-hr	1.33 (1.06-1.64)	1.68 (1.33-2.08)	2.24 (1.77-2.80)	2.72 (2.13-3.40)	3.36 (2.56-4.47)	3.84 (2.87-5.25)	4.36 (3.18-6.25)	5.00 (3.40-7.26)	5.99 (3.90-9.03)	6.84 (4.35-10.5)
6-hr	1.74 (1.39-2.14)	2.17 (1.74-2.68)	2.87 (2.29-3.56)	3.46 (2.73-4.30)	4.26 (3.26-5.60)	4.85 (3.64-6.55)	5.49 (4.01-7.77)	6.27 (4.27-9.00)	7.46 (4.88-11.1)	8.48 (5.41-12.9)
12-hr	2.29 (1.84-2.80)	2.79 (2.24-3.42)	3.62 (2.90-4.44)	4.30 (3.42-5.32)	5.24 (4.03-6.83)	5.94 (4.48-7.93)	6.69 (4.90-9.33)	7.59 (5.19-10.8)	8.92 (5.86-13.1)	10.1 (6.44-15.1)
24-hr	2.78 (2.26-3.38)	3.40 (2.75-4.13)	4.40 (3.55-5.37)	5.24 (4.20-6.43)	6.39 (4.94-8.25)	7.24 (5.49-9.59)	8.16 (6.00-11.3)	9.26 (6.36-13.0)	10.9 (7.19-15.9)	12.3 (7.92-18.4)
2-day	3.14 (2.56-3.79)	3.91 (3.19-4.73)	5.18 (4.20-6.27)	6.22 (5.02-7.59)	7.66 (5.98-9.86)	8.72 (6.67-11.5)	9.89 (7.35-13.6)	11.3 (7.81-15.8)	13.6 (8.96-19.6)	15.5 (9.99-22.8)
3-day	3.44 (2.81-4.13)	4.27 (3.49-5.14)	5.63 (4.59-6.80)	6.77 (5.48-8.22)	8.32 (6.52-10.7)	9.47 (7.26-12.4)	10.7 (8.01-14.7)	12.3 (8.50-17.0)	14.7 (9.76-21.1)	16.9 (10.9-24.6)
4-day	3.72 (3.06-4.46)	4.58 (3.76-5.50)	6.00 (4.90-7.22)	7.16 (5.82-8.67)	8.78 (6.89-11.2)	9.96 (7.66-13.0)	11.3 (8.42-15.4)	12.9 (8.92-17.7)	15.4 (10.2-21.9)	17.6 (11.4-25.5)
7-day	4.52 (3.73-5.39)	5.42 (4.47-6.47)	6.90 (5.66-8.25)	8.12 (6.62-9.77)	9.80 (7.72-12.4)	11.0 (8.51-14.3)	12.4 (9.27-16.7)	14.0 (9.76-19.1)	16.6 (11.0-23.4)	18.8 (12.2-27.0)
10-day	5.26 (4.36-6.25)	6.19 (5.12-7.36)	7.70 (6.35-9.18)	8.96 (7.33-10.7)	10.7 (8.44-13.4)	12.0 (9.24-15.4)	13.4 (9.98-17.8)	15.0 (10.5-20.3)	17.5 (11.7-24.5)	19.6 (12.7-28.0)
20-day	7.39 (6.16-8.71)	8.39 (6.99-9.91)	10.0 (8.33-11.9)	11.4 (9.40-13.6)	13.3 (10.5-16.4)	14.7 (11.4-18.6)	16.2 (12.0-21.1)	17.8 (12.5-23.8)	20.1 (13.5-27.8)	22.0 (14.3-31.0)
30-day	9.13 (7.65-10.7)	10.2 (8.53-12.0)	12.0 (9.96-14.1)	13.4 (11.1-15.9)	15.4 (12.2-18.9)	16.9 (13.1-21.2)	18.5 (13.7-23.8)	20.1 (14.1-26.7)	22.2 (15.0-30.5)	23.9 (15.6-33.4)
45-day	11.3 (9.52-13.2)	12.5 (10.5-14.6)	14.3 (12.0-16.8)	15.9 (13.2-18.7)	18.0 (14.3-21.9)	19.7 (15.2-24.3)	21.3 (15.8-27.1)	22.9 (16.2-30.1)	24.8 (16.8-33.8)	26.3 (17.2-36.5)
60-day	13.2 (11.1-15.3)	14.4 (12.1-16.8)	16.3 (13.7-19.1)	17.9 (14.9-21.1)	20.2 (16.1-24.4)	21.9 (17.0-27.0)	23.6 (17.5-29.7)	25.1 (17.8-32.9)	27.0 (18.3-36.6)	28.3 (18.5-39.1)

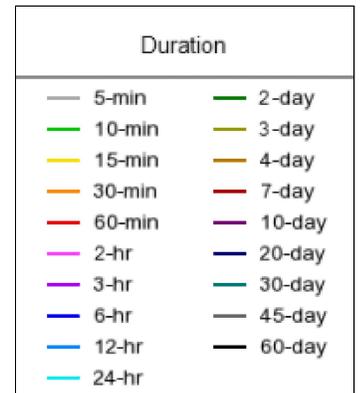
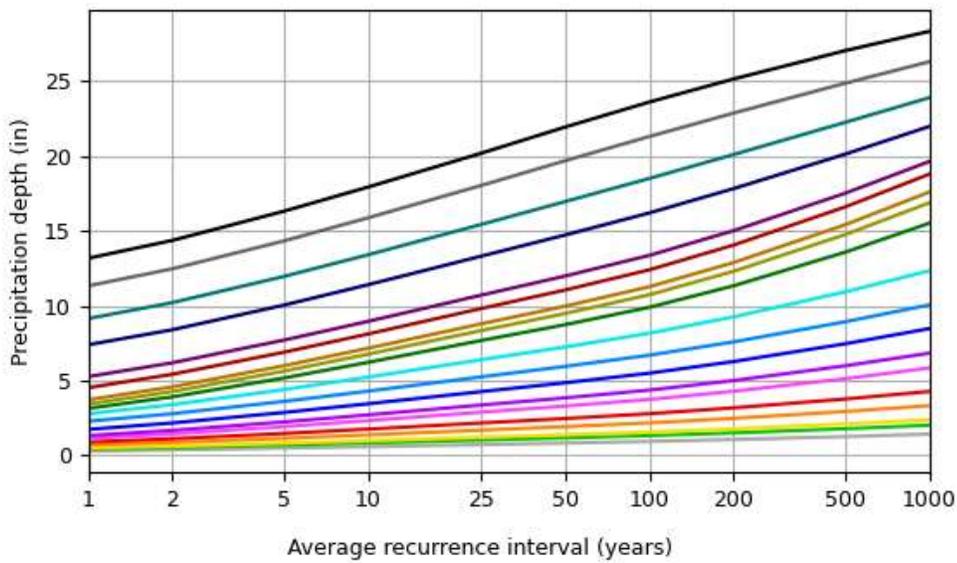
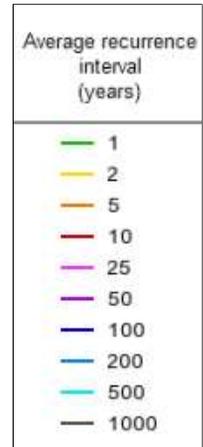
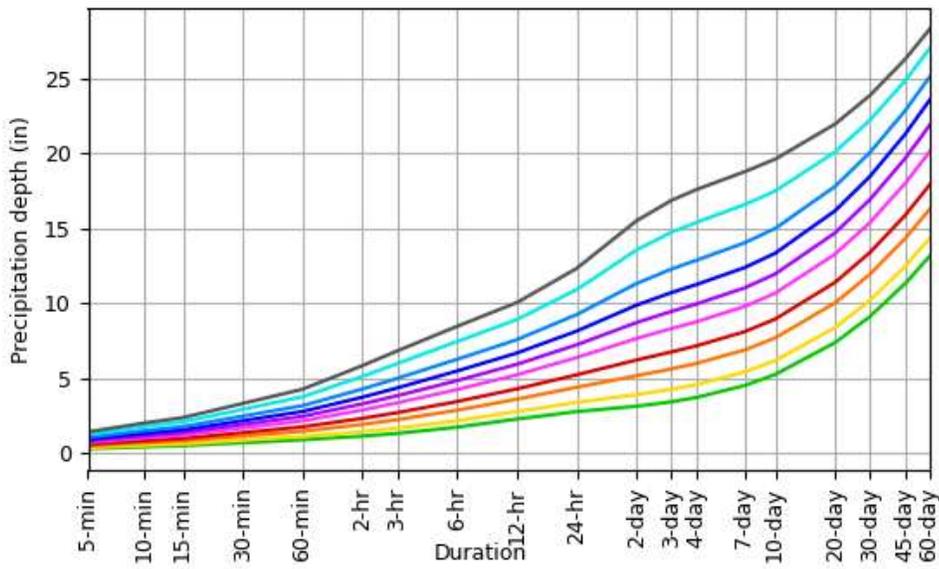
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves

Latitude: 42.2382°, Longitude: -70.9068°



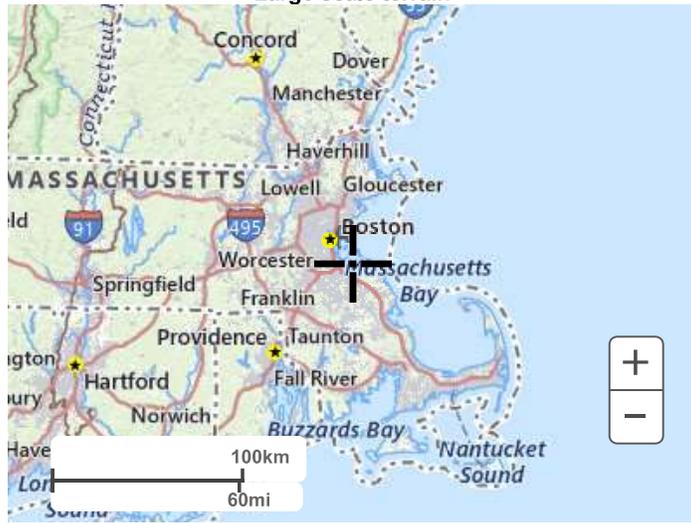
[Back to Top](#)

Maps & aeriels

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

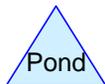
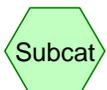
[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)



Surrounding Wetlands

Site Drainage Area -
Flow Discharge to
Surrounding Wetlands



HSC-Existing_Hydrology_Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 2

Summary for Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands

Runoff = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af, Depth> 0.01"

Routed to Pond AP : Surrounding Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
3.956	30	Woods, Good, HSG A
0.758	55	Woods, Good, HSG B
0.003	39	>75% Grass cover, Good, HSG A
0.164	61	>75% Grass cover, Good, HSG B
* 0.000	66	Mulch, HSG A
* 0.006	77	Mulch, HSG B
0.014	82	Dirt roads, HSG B
* 0.287	98	Paved
* 0.224	98	Roofs
5.412	41	Weighted Average
4.901		90.56% Pervious Area
0.511		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0910	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
4.7	228	0.0260	0.81		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
16.1	328	Total			

HSC-Existing_Hydrology_Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

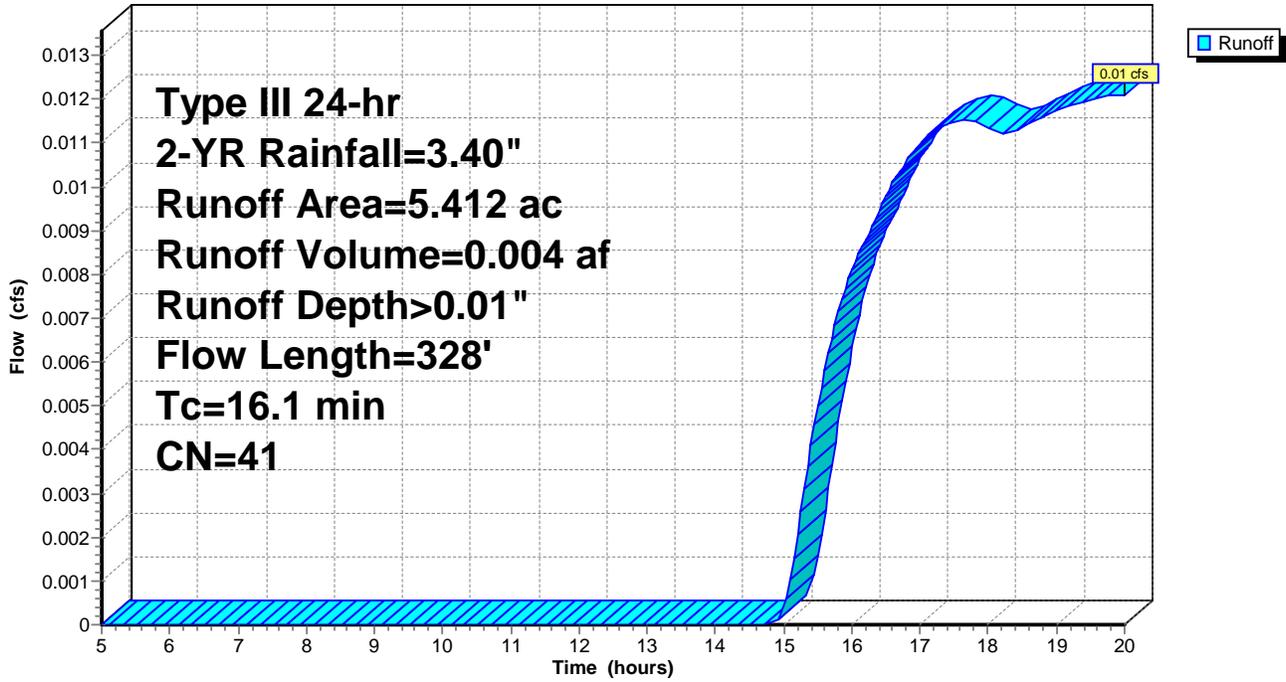
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 3

Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands

Hydrograph



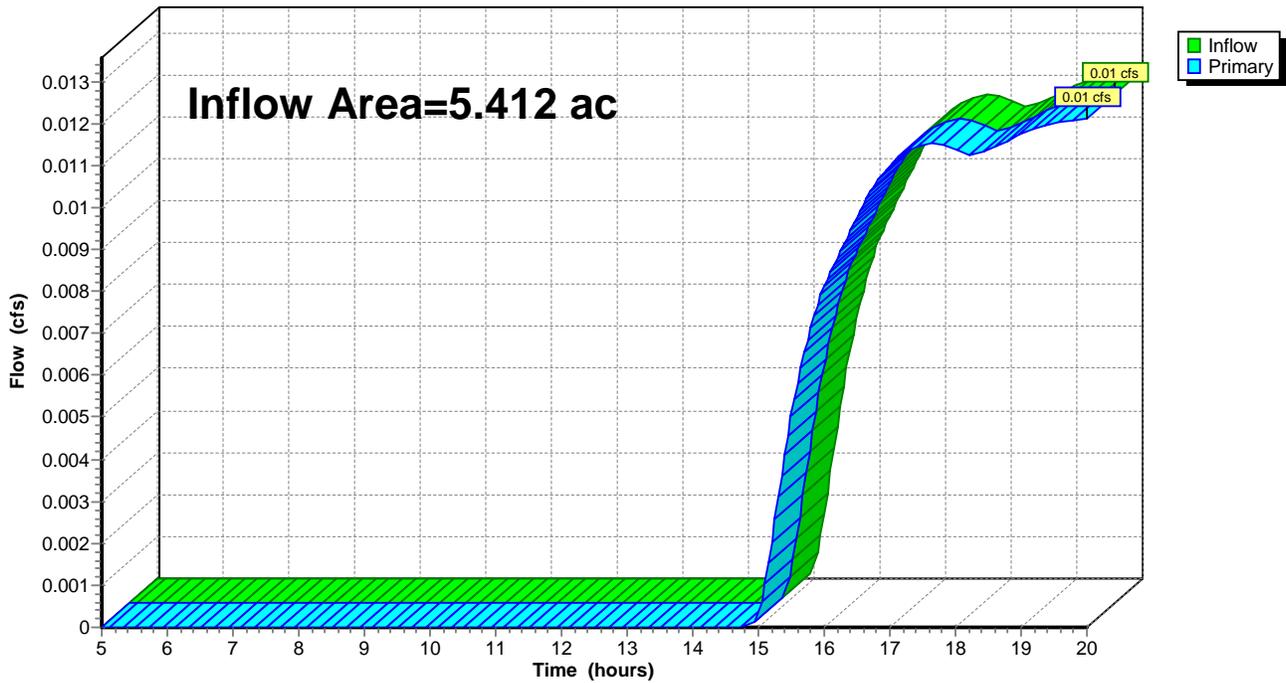
Summary for Pond AP: Surrounding Wetlands

Inflow Area = 5.412 ac, 9.44% Impervious, Inflow Depth > 0.01" for 2-YR event
Inflow = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af
Primary = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands

Hydrograph



HSC-Existing_Hydrology_Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 5

Summary for Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands

Runoff = 0.55 cfs @ 12.53 hrs, Volume= 0.123 af, Depth> 0.27"

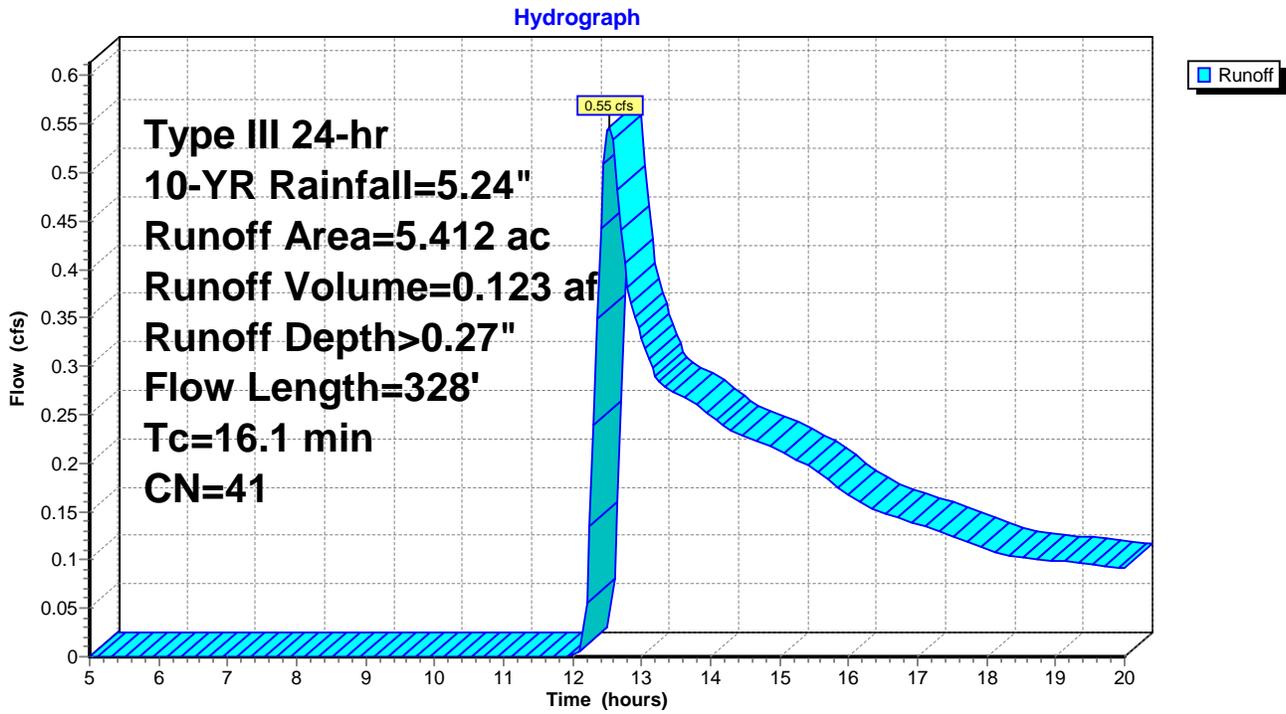
Routed to Pond AP : Surrounding Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
3.956	30	Woods, Good, HSG A
0.758	55	Woods, Good, HSG B
0.003	39	>75% Grass cover, Good, HSG A
0.164	61	>75% Grass cover, Good, HSG B
* 0.000	66	Mulch, HSG A
* 0.006	77	Mulch, HSG B
0.014	82	Dirt roads, HSG B
* 0.287	98	Paved
* 0.224	98	Roofs
5.412	41	Weighted Average
4.901		90.56% Pervious Area
0.511		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0910	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
4.7	228	0.0260	0.81		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
16.1	328	Total			

Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands



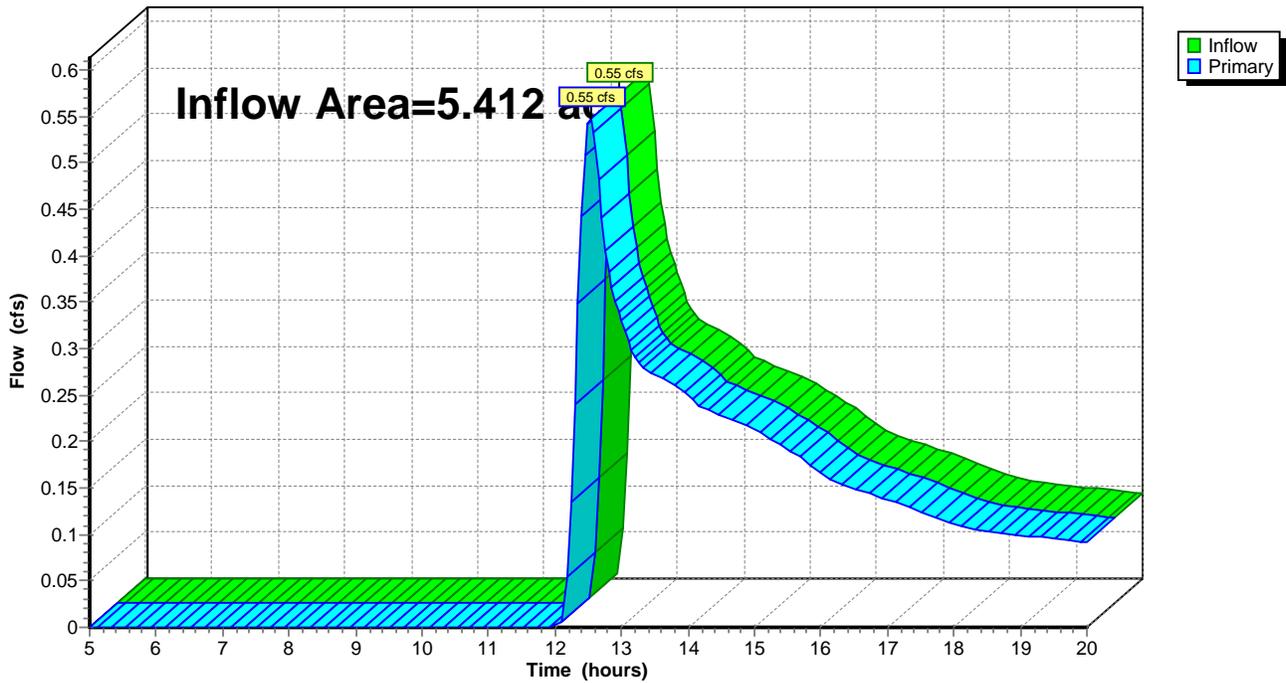
Summary for Pond AP: Surrounding Wetlands

Inflow Area = 5.412 ac, 9.44% Impervious, Inflow Depth > 0.27" for 10-YR event
Inflow = 0.55 cfs @ 12.53 hrs, Volume= 0.123 af
Primary = 0.55 cfs @ 12.53 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands

Hydrograph



HSC-Existing_Hydrology_Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 8

Summary for Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands

Runoff = 1.72 cfs @ 12.41 hrs, Volume= 0.265 af, Depth> 0.59"

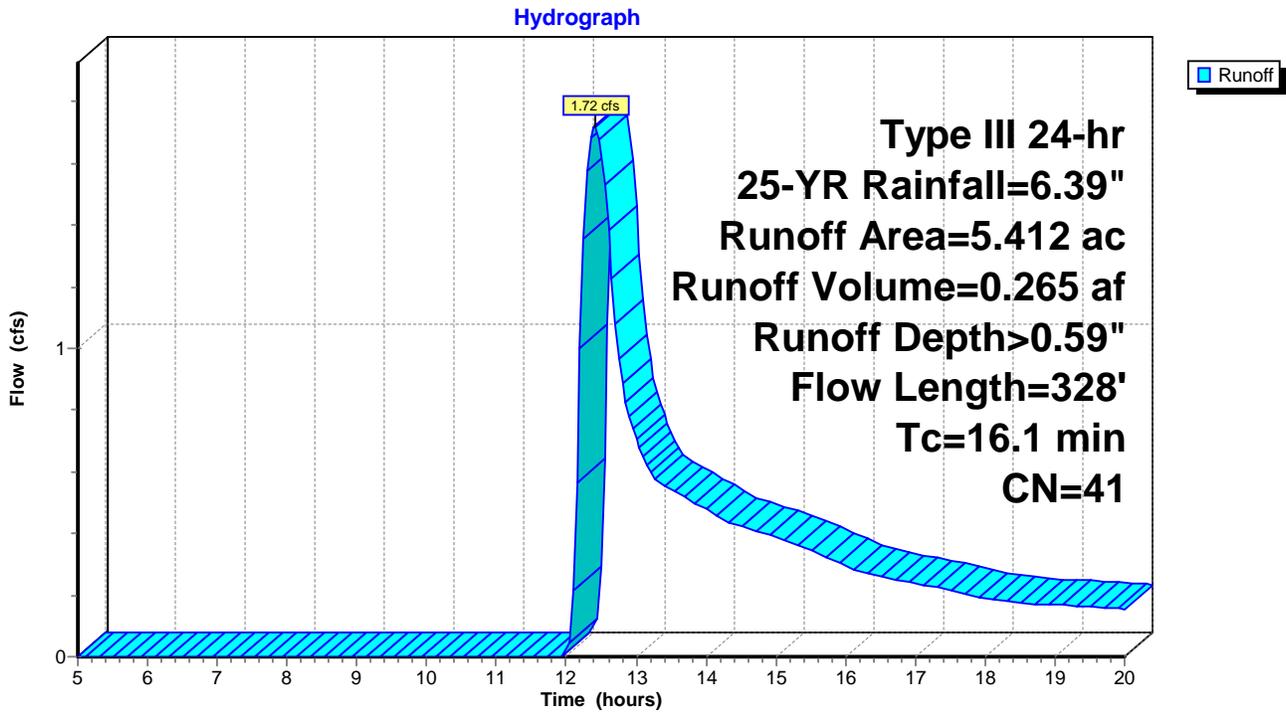
Routed to Pond AP : Surrounding Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
3.956	30	Woods, Good, HSG A
0.758	55	Woods, Good, HSG B
0.003	39	>75% Grass cover, Good, HSG A
0.164	61	>75% Grass cover, Good, HSG B
* 0.000	66	Mulch, HSG A
* 0.006	77	Mulch, HSG B
0.014	82	Dirt roads, HSG B
* 0.287	98	Paved
* 0.224	98	Roofs
5.412	41	Weighted Average
4.901		90.56% Pervious Area
0.511		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0910	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
4.7	228	0.0260	0.81		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
16.1	328	Total			

Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands

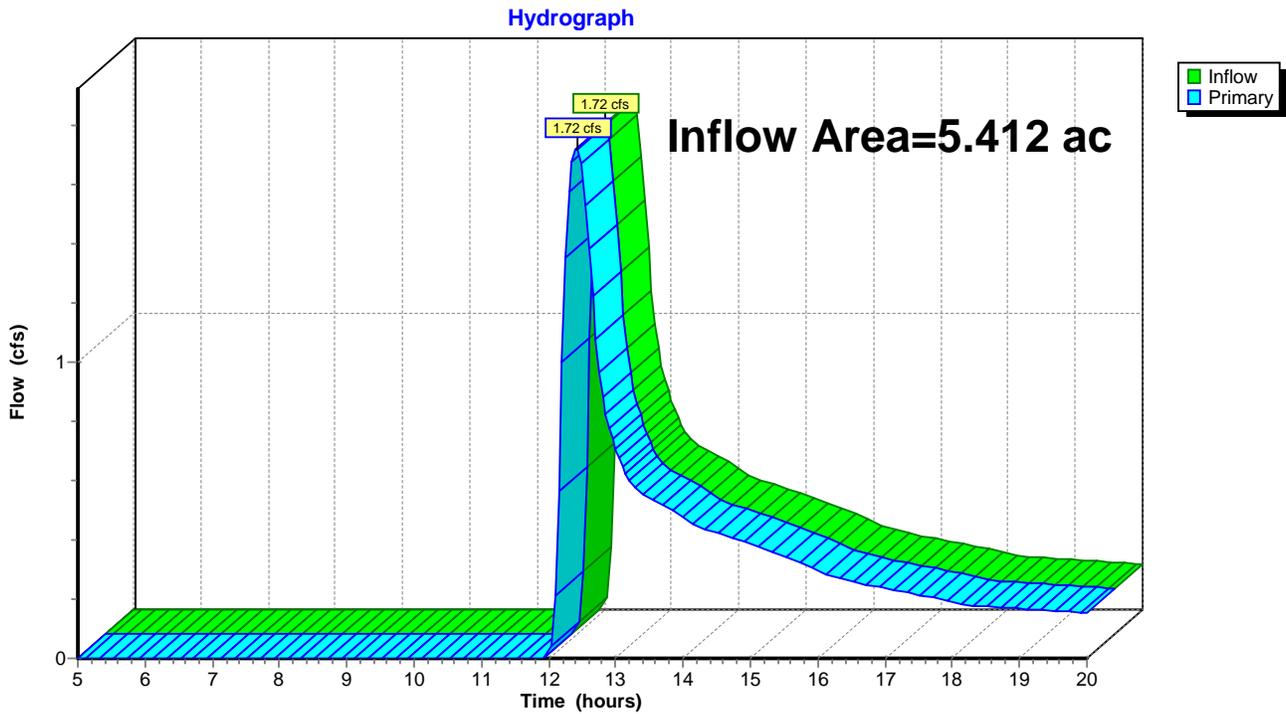


Summary for Pond AP: Surrounding Wetlands

Inflow Area = 5.412 ac, 9.44% Impervious, Inflow Depth > 0.59" for 25-YR event
Inflow = 1.72 cfs @ 12.41 hrs, Volume= 0.265 af
Primary = 1.72 cfs @ 12.41 hrs, Volume= 0.265 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands



HSC-Existing_Hydrology_Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 11

Summary for Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands

Runoff = 3.04 cfs @ 12.32 hrs, Volume= 0.398 af, Depth> 0.88"

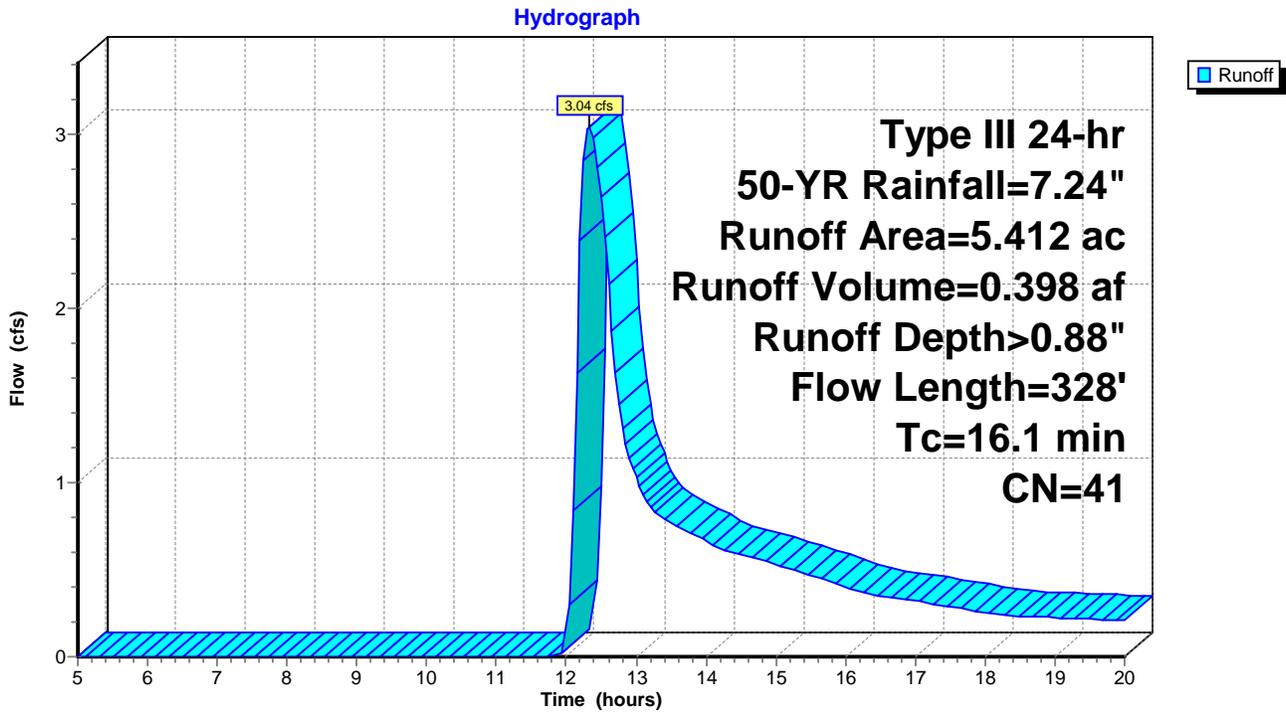
Routed to Pond AP : Surrounding Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
3.956	30	Woods, Good, HSG A
0.758	55	Woods, Good, HSG B
0.003	39	>75% Grass cover, Good, HSG A
0.164	61	>75% Grass cover, Good, HSG B
* 0.000	66	Mulch, HSG A
* 0.006	77	Mulch, HSG B
0.014	82	Dirt roads, HSG B
* 0.287	98	Paved
* 0.224	98	Roofs
5.412	41	Weighted Average
4.901		90.56% Pervious Area
0.511		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0910	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
4.7	228	0.0260	0.81		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
16.1	328	Total			

Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands

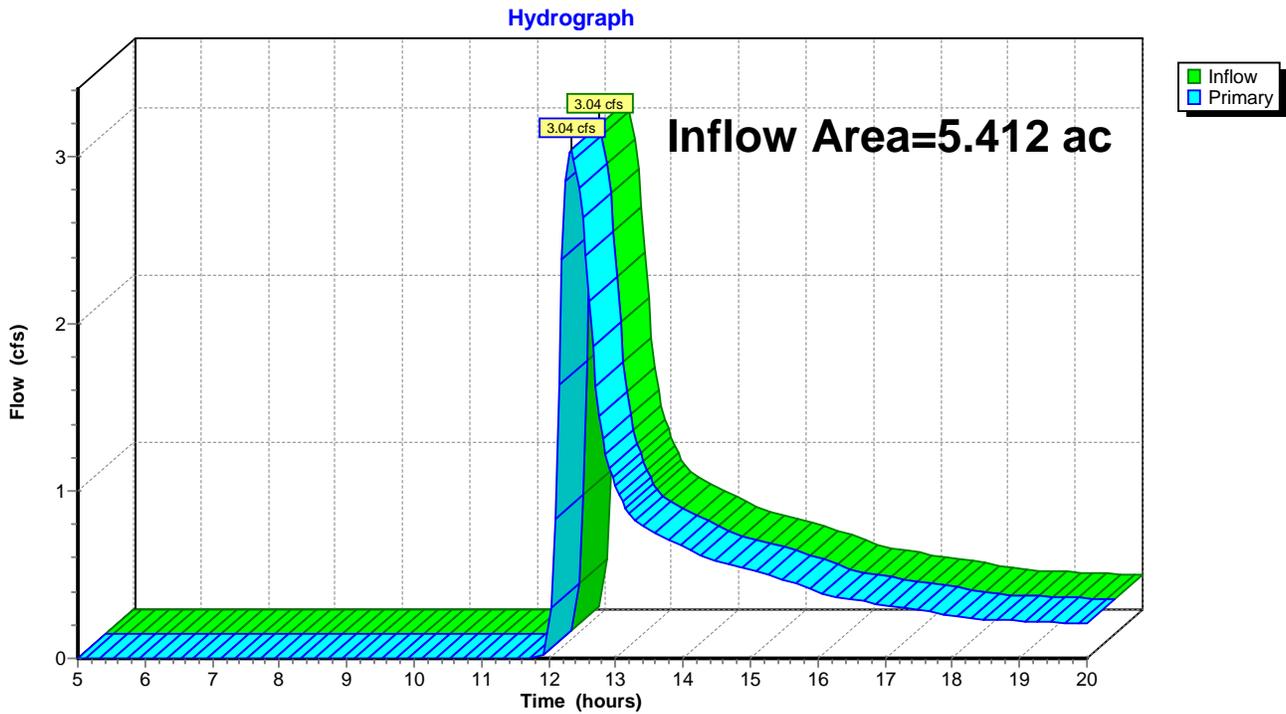


Summary for Pond AP: Surrounding Wetlands

Inflow Area = 5.412 ac, 9.44% Impervious, Inflow Depth > 0.88" for 50-YR event
Inflow = 3.04 cfs @ 12.32 hrs, Volume= 0.398 af
Primary = 3.04 cfs @ 12.32 hrs, Volume= 0.398 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands



HSC-Existing_Hydrology_Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 14

Summary for Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands

Runoff = 4.87 cfs @ 12.29 hrs, Volume= 0.563 af, Depth> 1.25"

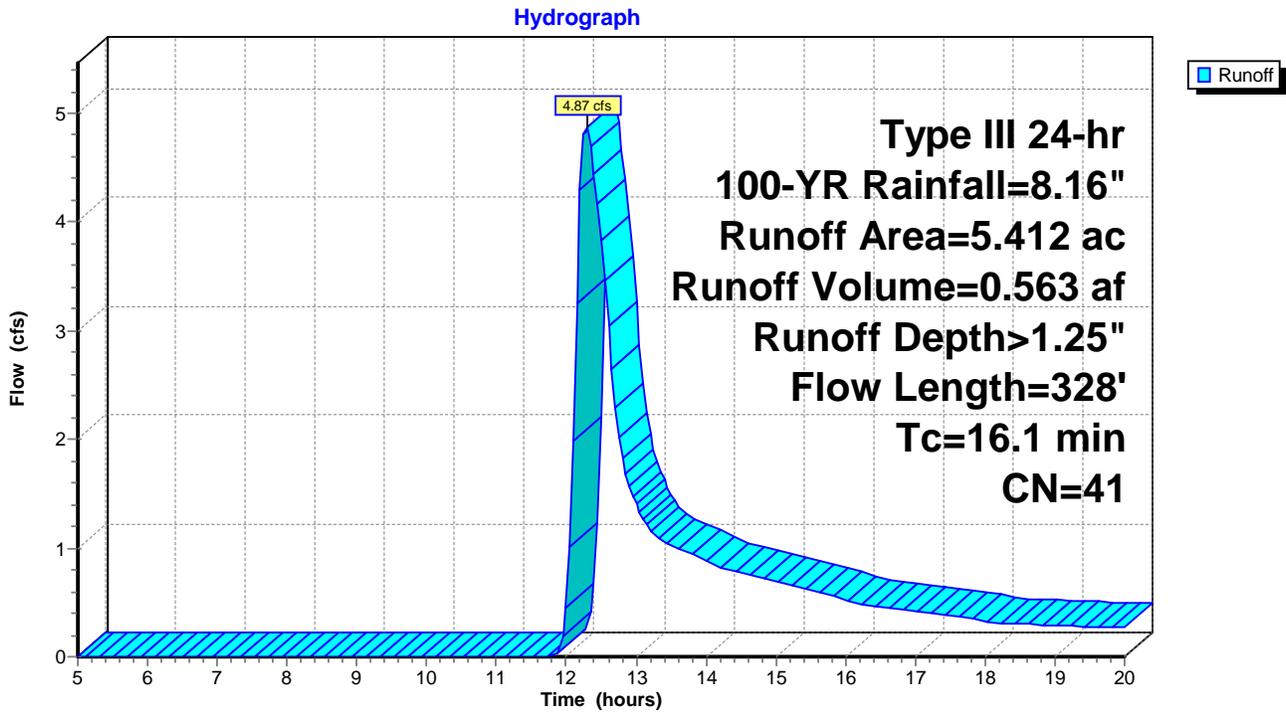
Routed to Pond AP : Surrounding Wetlands

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
3.956	30	Woods, Good, HSG A
0.758	55	Woods, Good, HSG B
0.003	39	>75% Grass cover, Good, HSG A
0.164	61	>75% Grass cover, Good, HSG B
* 0.000	66	Mulch, HSG A
* 0.006	77	Mulch, HSG B
0.014	82	Dirt roads, HSG B
* 0.287	98	Paved
* 0.224	98	Roofs
5.412	41	Weighted Average
4.901		90.56% Pervious Area
0.511		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0910	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
4.7	228	0.0260	0.81		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
16.1	328	Total			

Subcatchment EX-1: Site Drainage Area - Flow Discharge to Surrounding Wetlands

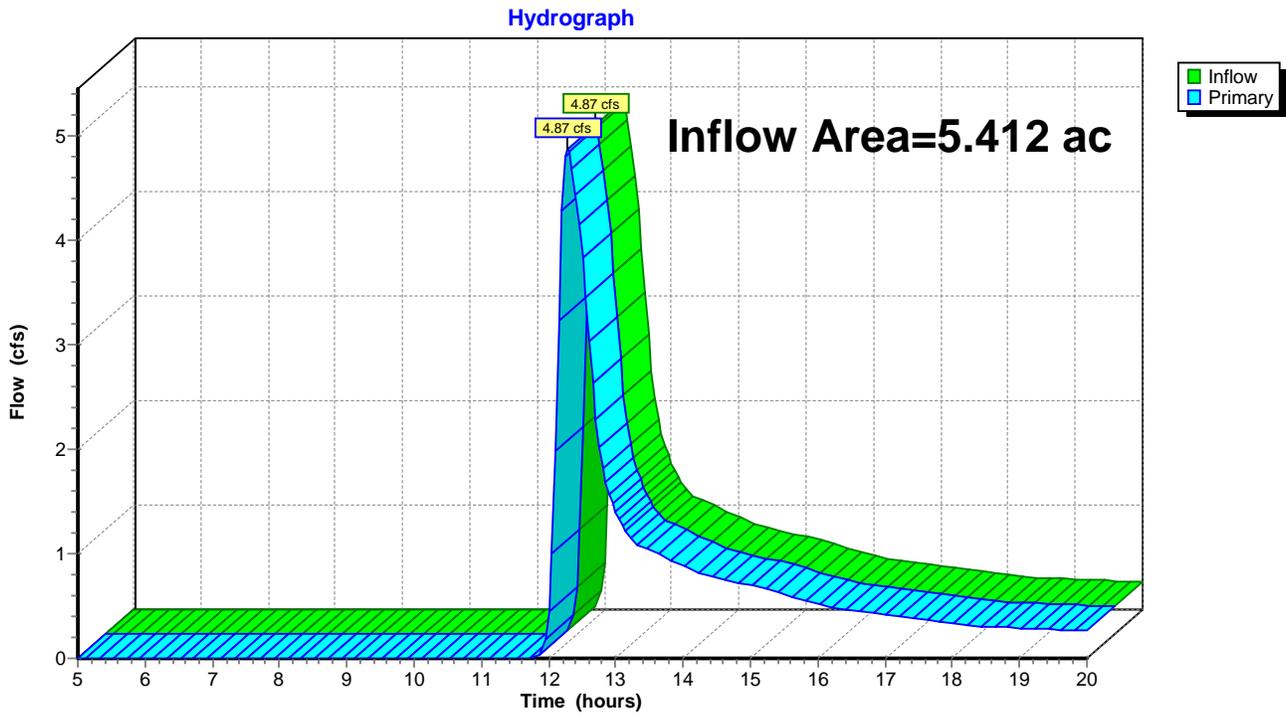


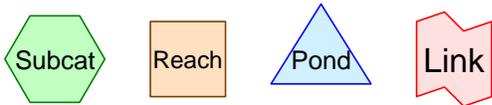
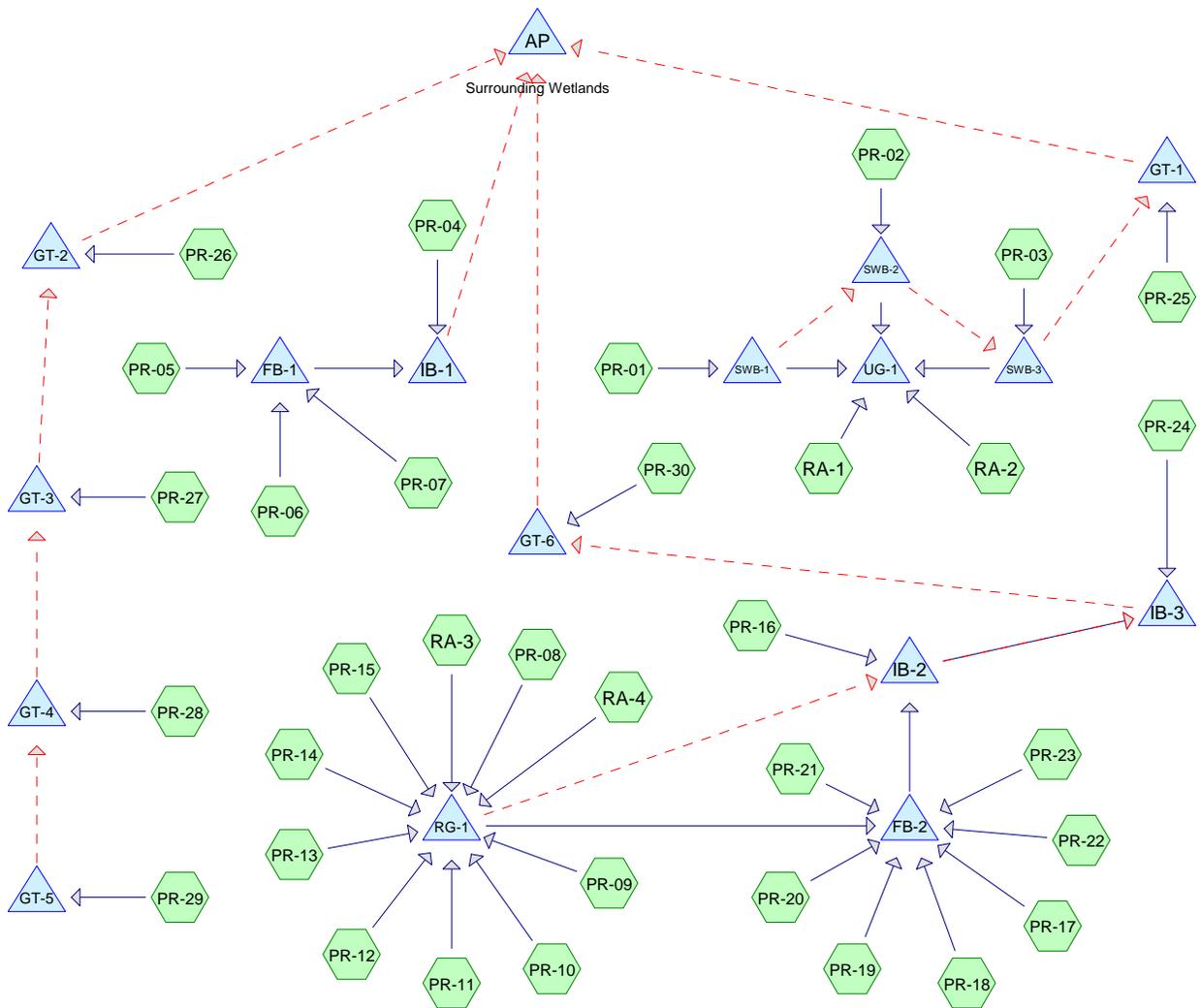
Summary for Pond AP: Surrounding Wetlands

Inflow Area = 5.412 ac, 9.44% Impervious, Inflow Depth > 1.25" for 100-YR event
Inflow = 4.87 cfs @ 12.29 hrs, Volume= 0.563 af
Primary = 4.87 cfs @ 12.29 hrs, Volume= 0.563 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands





Routing Diagram for HSC-Proposed Hydrology Model
 Prepared by SLR International Corporation, Printed 12/9/2025
 HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 2

Summary for Subcatchment PR-01:

Runoff = 0.02 cfs @ 12.12 hrs, Volume= 0.002 af, Depth> 0.43"
Routed to Pond SWB-1 :

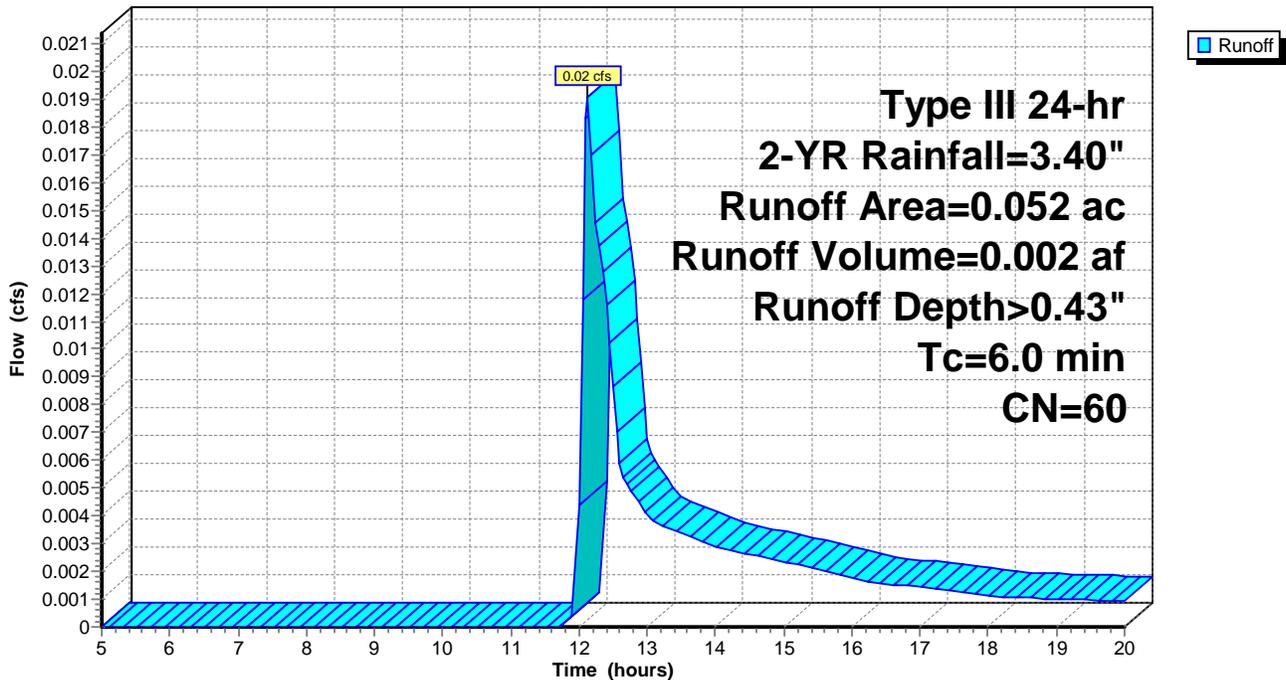
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.029	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.052	60	Weighted Average
0.029		55.77% Pervious Area
0.023		44.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-01:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 3

Summary for Subcatchment PR-02:

Runoff = 0.21 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 1.72"
Routed to Pond SWB-2 :

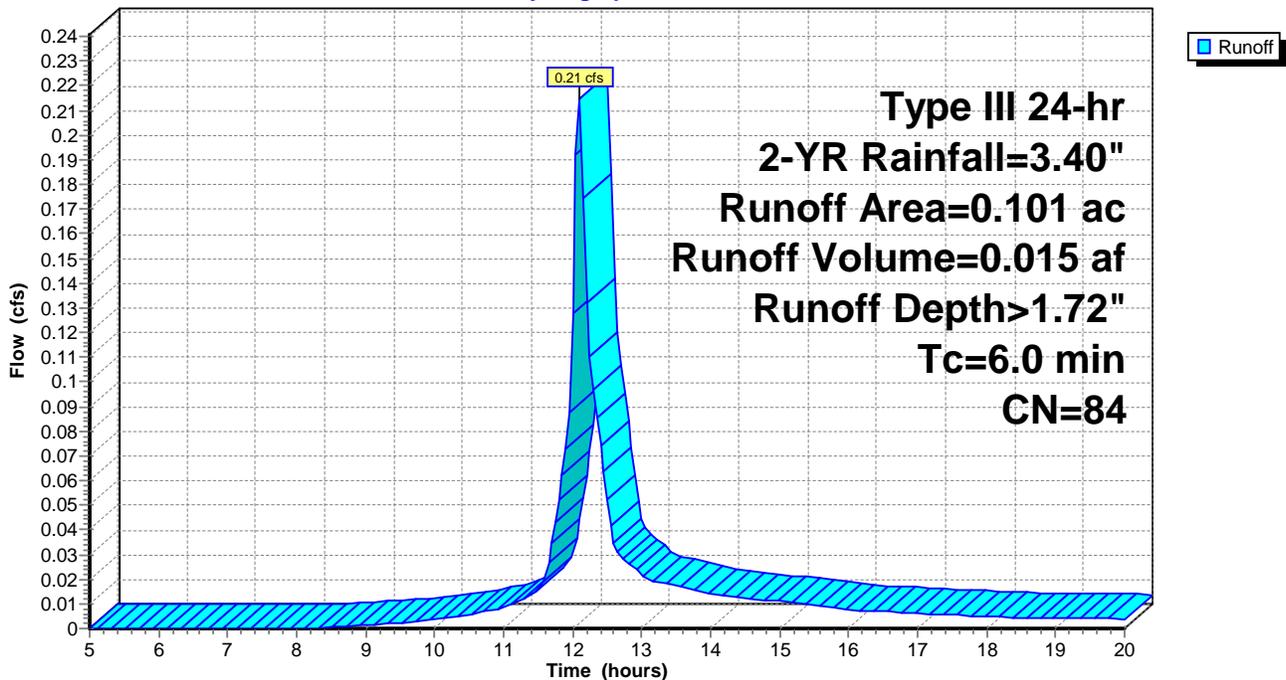
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.009	30	Meadow, non-grazed, HSG A
0.019	58	Meadow, non-grazed, HSG B
0.001	61	>75% Grass cover, Good, HSG B
* 0.072	98	Paved
0.101	84	Weighted Average
0.029		28.71% Pervious Area
0.072		71.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-02:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 4

Summary for Subcatchment PR-03:

Runoff = 0.15 cfs @ 12.22 hrs, Volume= 0.014 af, Depth> 1.07"
 Routed to Pond SWB-3 :

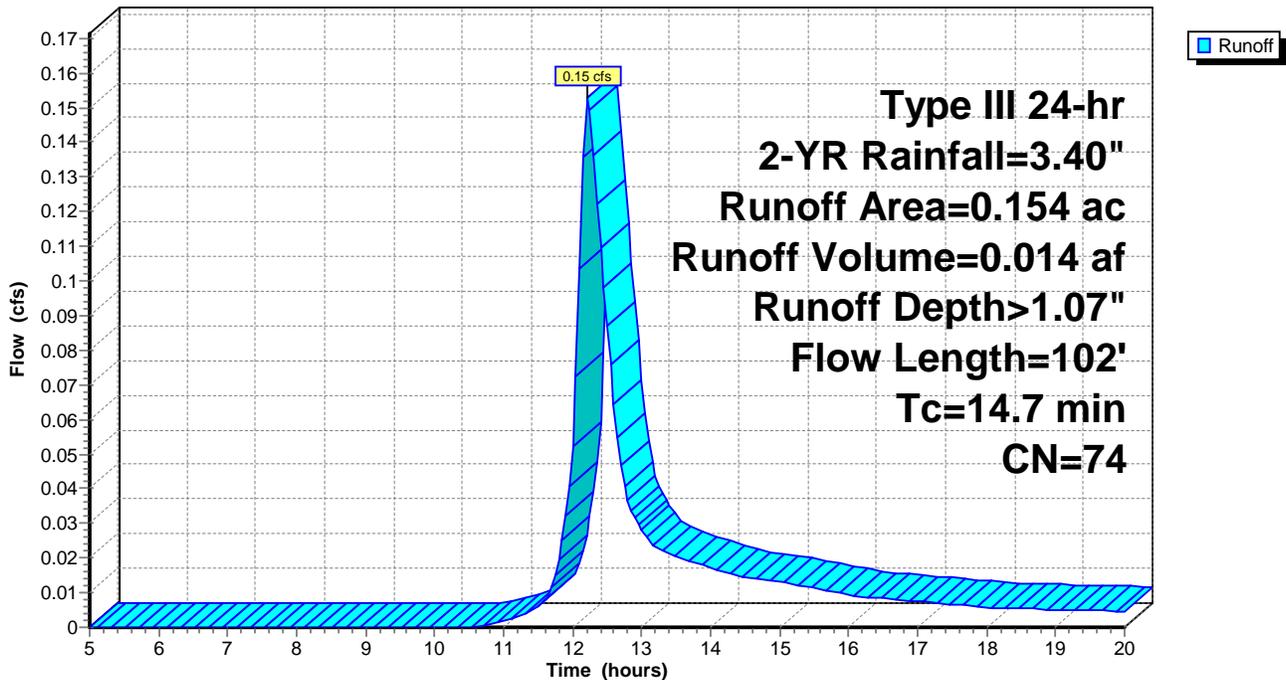
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.099	61	>75% Grass cover, Good, HSG B
* 0.055	98	Paved
0.154	74	Weighted Average
0.099		64.29% Pervious Area
0.055		35.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	83	0.0050	0.10		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.4	19	0.0130	0.80		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.7	102	Total			

Subcatchment PR-03:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 5

Summary for Subcatchment PR-04:

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth> 0.01"
 Routed to Pond IB-1 :

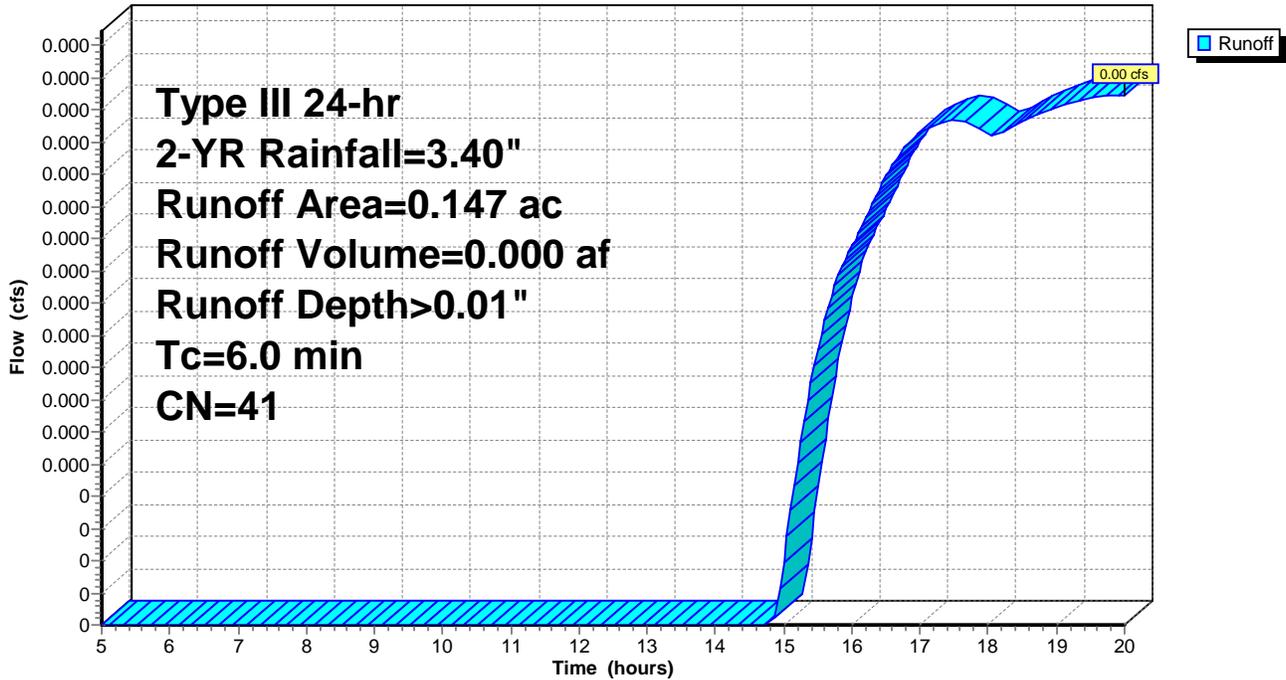
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.124	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.147	41	Weighted Average
0.124		84.35% Pervious Area
0.023		15.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-04:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 6

Summary for Subcatchment PR-05:

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Pond FB-1 :

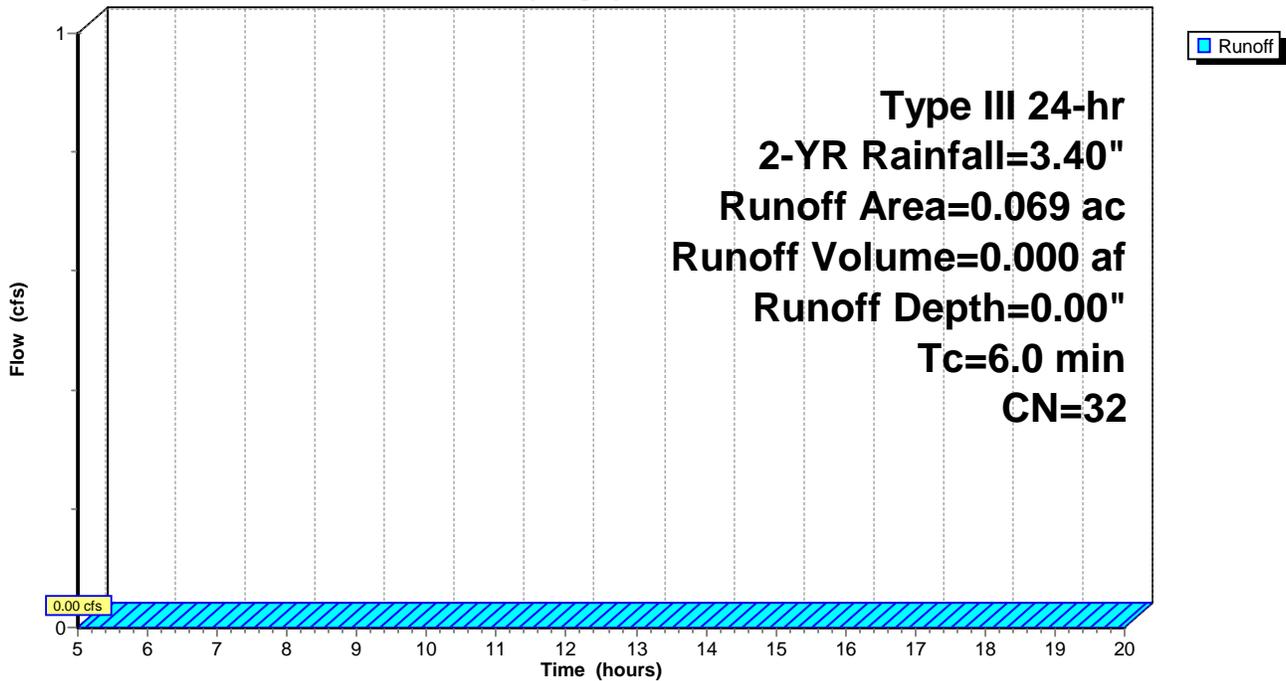
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.060	30	Meadow, non-grazed, HSG A
0.008	39	>75% Grass cover, Good, HSG A
* 0.001	98	Paved
0.069	32	Weighted Average
0.068		98.55% Pervious Area
0.001		1.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-05:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 7

Summary for Subcatchment PR-06:

Runoff = 0.46 cfs @ 12.10 hrs, Volume= 0.031 af, Depth> 1.37"
Routed to Pond FB-1 :

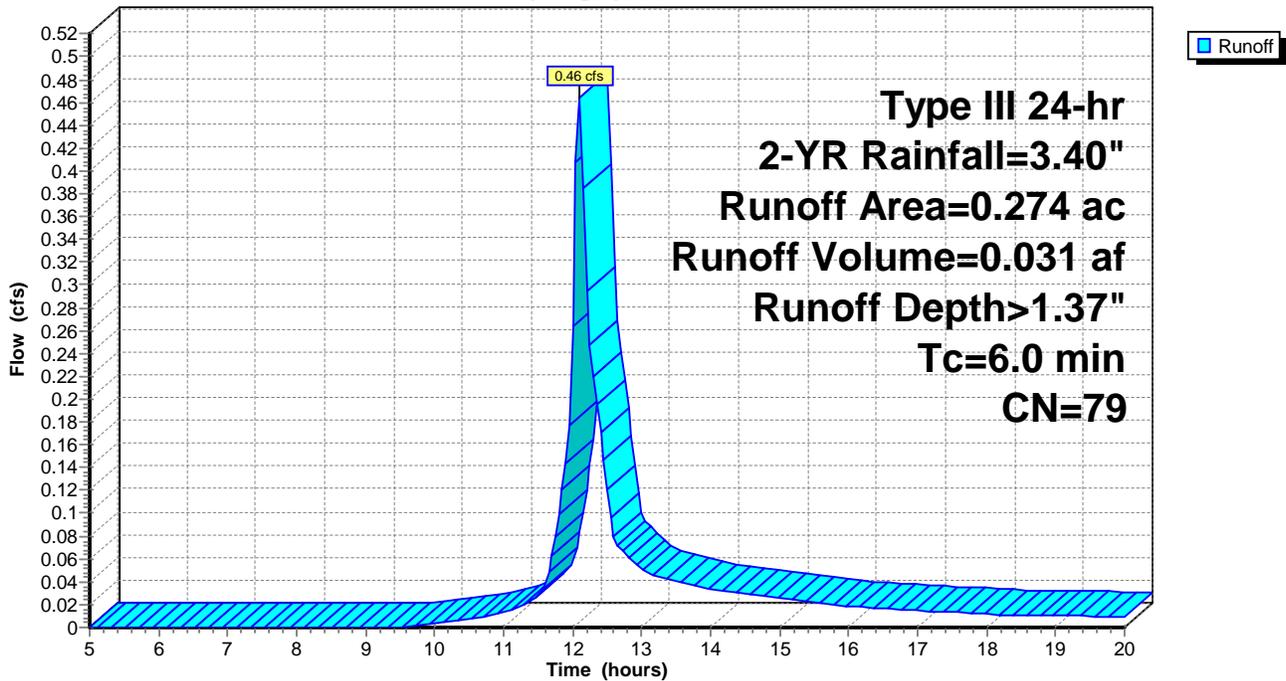
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.018	30	Meadow, non-grazed, HSG A
* 0.187	98	Paved
0.274	79	Weighted Average
0.087		31.75% Pervious Area
0.187		68.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-06:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 8

Summary for Subcatchment PR-07:

Runoff = 0.36 cfs @ 12.10 hrs, Volume= 0.025 af, Depth> 1.19"

Routed to Pond FB-1 :

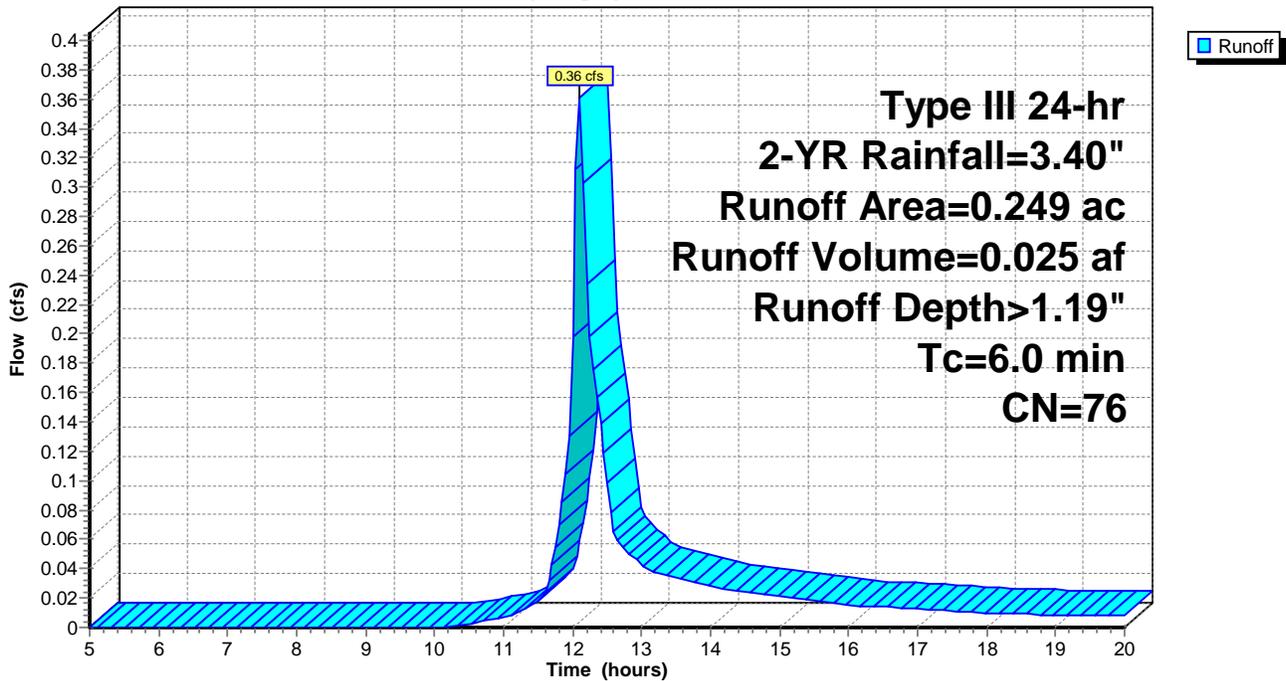
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.014	30	Meadow, non-grazed, HSG A
0.078	39	>75% Grass cover, Good, HSG A
* 0.157	98	Paved
0.249	76	Weighted Average
0.092		36.95% Pervious Area
0.157		63.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-07:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 9

Summary for Subcatchment PR-08:

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Pond RG-1 :

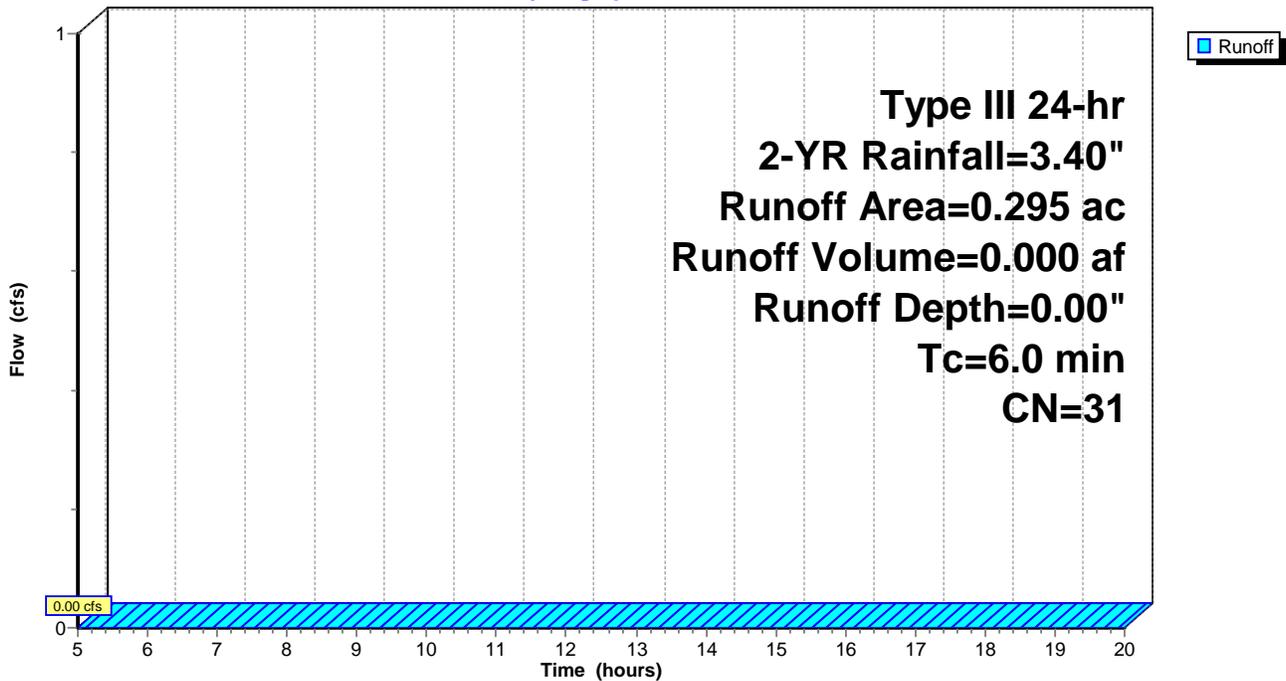
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.283	30	Brush, Good, HSG A
0.012	48	Brush, Good, HSG B
0.295	31	Weighted Average
0.295		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-08:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 10

Summary for Subcatchment PR-09:

Runoff = 0.42 cfs @ 12.19 hrs, Volume= 0.036 af, Depth> 2.04"
 Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.031	61	>75% Grass cover, Good, HSG B
0.000	58	Meadow, non-grazed, HSG B
* 0.162	98	Paved
0.211	88	Weighted Average
0.049		23.22% Pervious Area
0.162		76.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.0140	0.15		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.7	87	0.0150	0.86		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.0	9	0.0220	3.01		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	18	0.0310	1.23		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
0.2	39	0.0310	3.57		Shallow Concentrated Flow, E-F
					Paved Kv= 20.3 fps
0.1	28	0.0050	3.21	2.52	Pipe Channel, F-G
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.3	60	0.0050	3.47	2.73	Pipe Channel, G-H
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
13.5	341	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

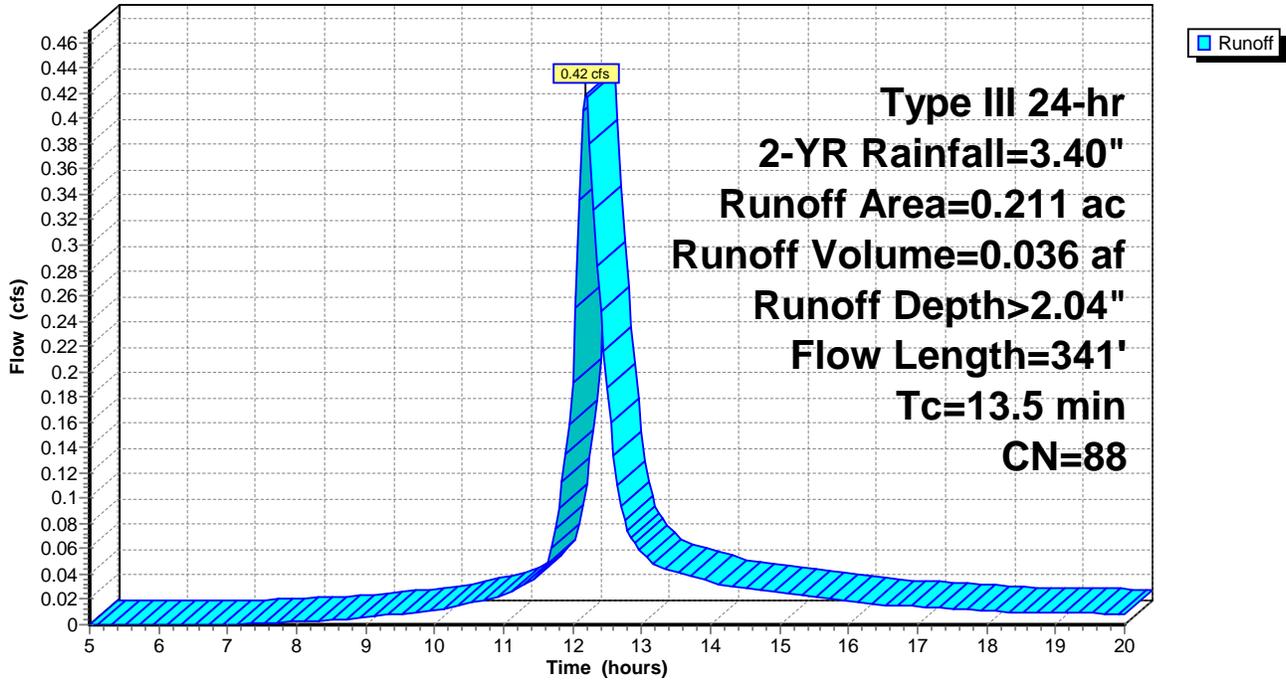
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 11

Subcatchment PR-09:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 12

Summary for Subcatchment PR-10:

Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.026 af, Depth> 2.78"
 Routed to Pond RG-1 :

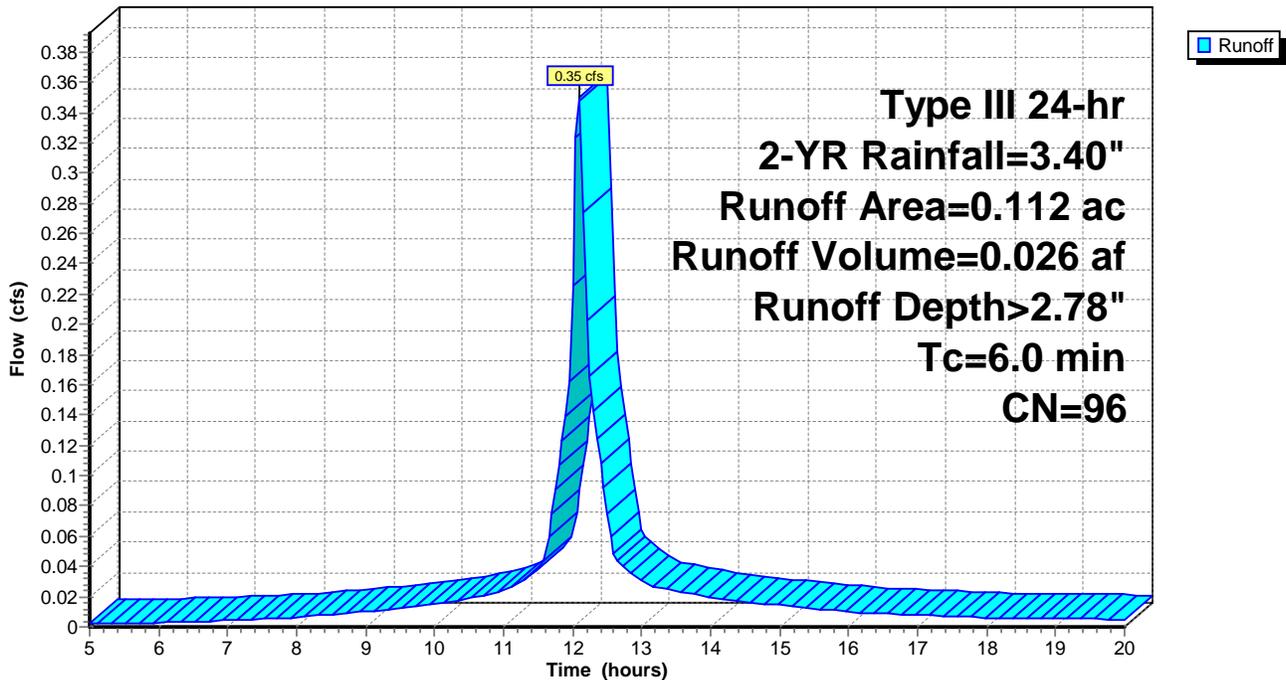
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.003	39	>75% Grass cover, Good, HSG A
* 0.109	98	Paved
0.112	96	Weighted Average
0.003		2.68% Pervious Area
0.109		97.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-10:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 13

Summary for Subcatchment PR-11:

Runoff = 0.75 cfs @ 12.09 hrs, Volume= 0.051 af, Depth> 2.13"
 Routed to Pond RG-1 :

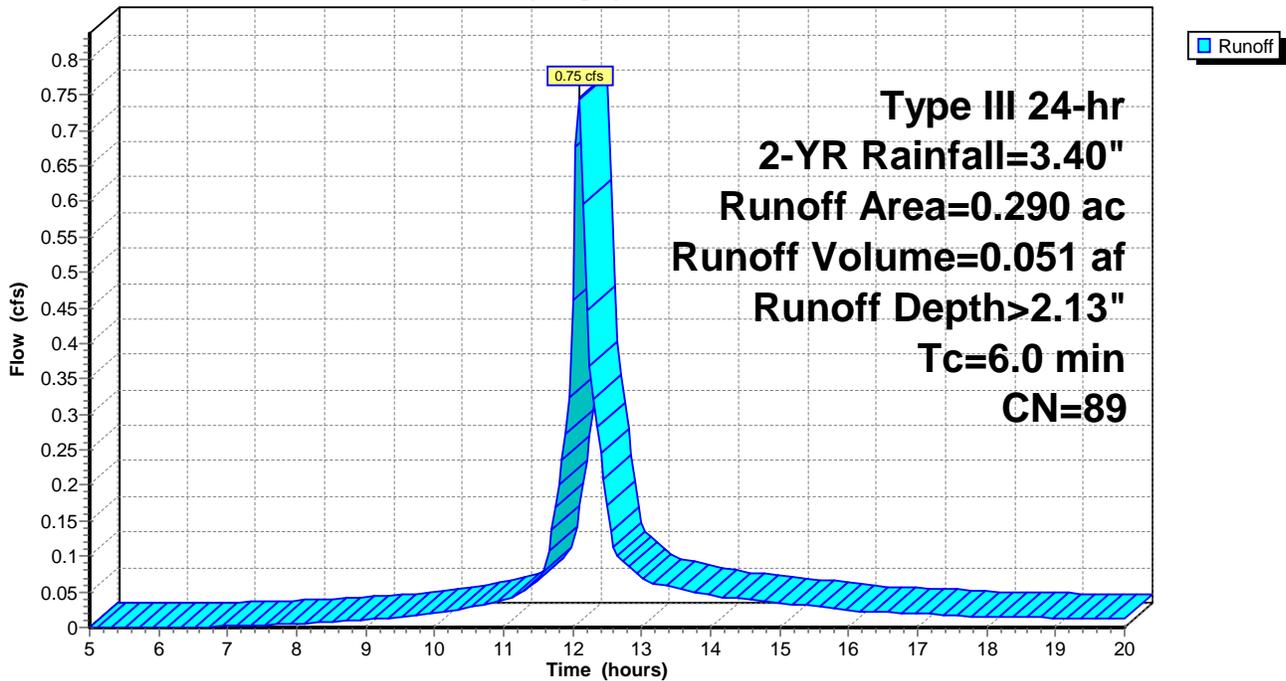
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.020	39	>75% Grass cover, Good, HSG A
0.040	61	>75% Grass cover, Good, HSG B
* 0.230	98	Paved
0.290	89	Weighted Average
0.060		20.69% Pervious Area
0.230		79.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-11:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 14

Summary for Subcatchment PR-12:

Runoff = 0.75 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 2.31"
 Routed to Pond RG-1 :

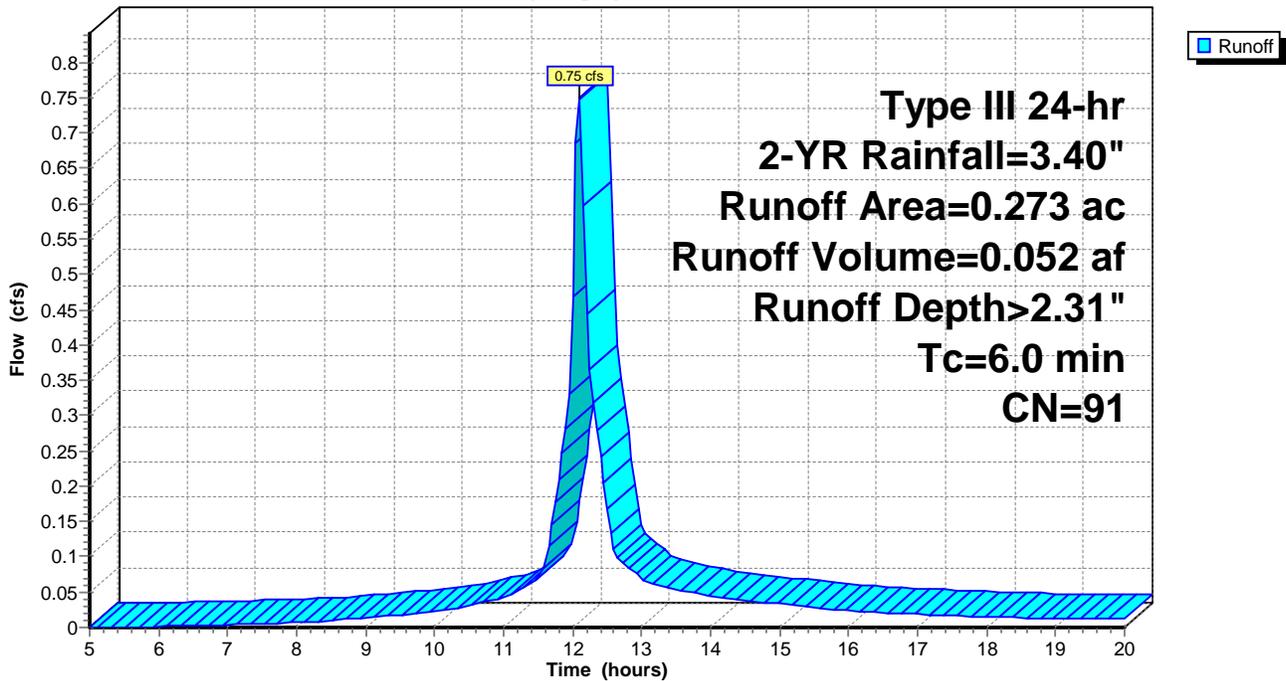
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.008	61	>75% Grass cover, Good, HSG B
* 0.237	98	Paved
0.273	91	Weighted Average
0.036		13.19% Pervious Area
0.237		86.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-12:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 15

Summary for Subcatchment PR-13:

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.032 af, Depth> 2.31"
 Routed to Pond RG-1 :

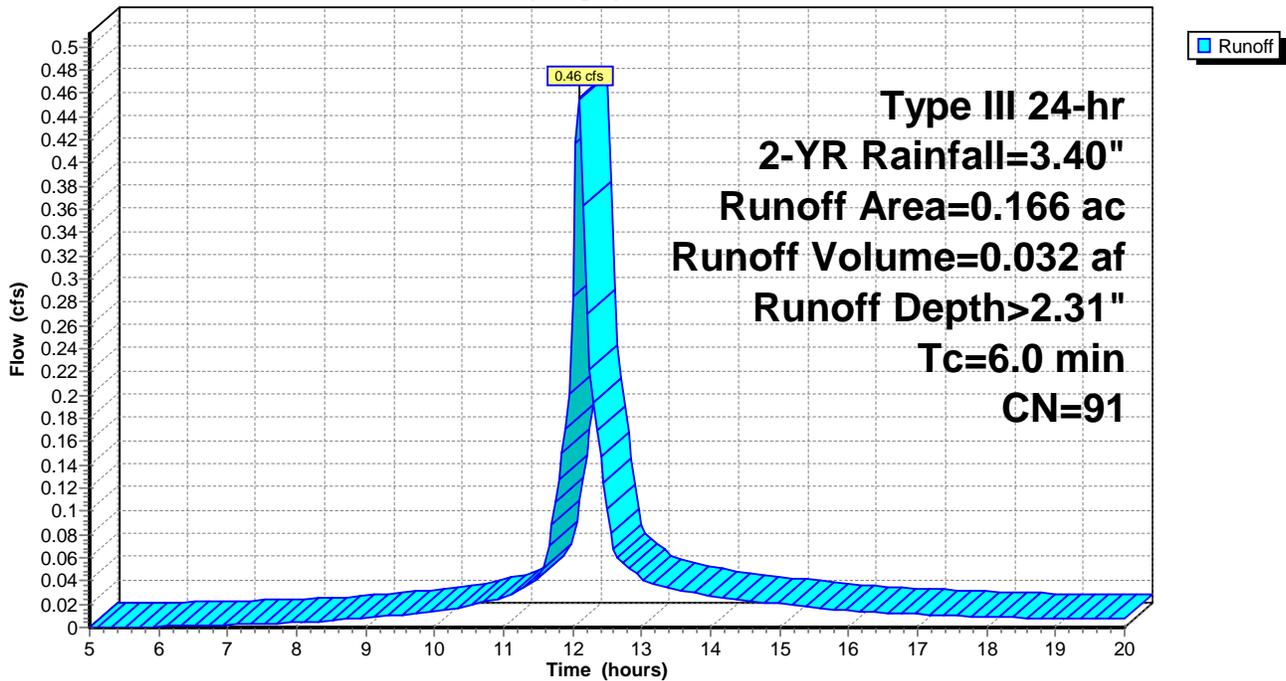
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.019	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
* 0.146	98	Paved
0.166	91	Weighted Average
0.020		12.05% Pervious Area
0.146		87.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-13:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 16

Summary for Subcatchment PR-14:

Runoff = 0.51 cfs @ 12.09 hrs, Volume= 0.035 af, Depth> 1.96"
 Routed to Pond RG-1 :

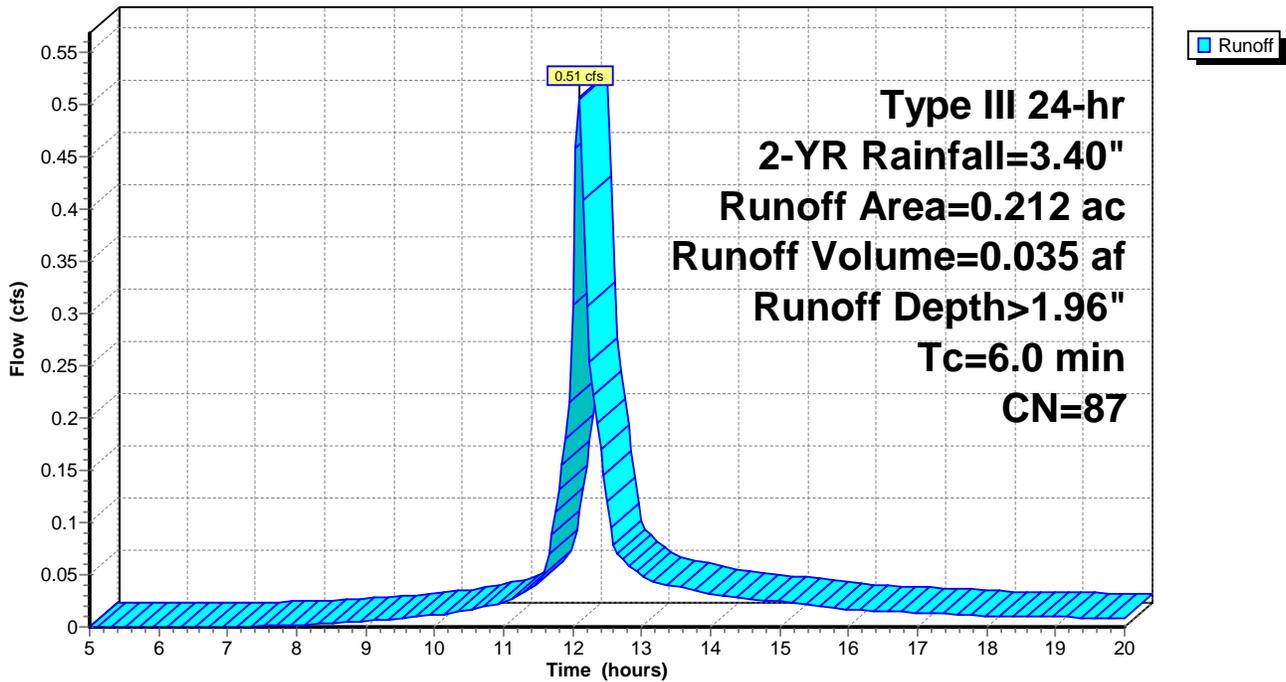
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.040	39	>75% Grass cover, Good, HSG A
* 0.172	98	Paved
0.212	87	Weighted Average
0.040		18.87% Pervious Area
0.172		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-14:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 17

Summary for Subcatchment PR-15:

Runoff = 0.23 cfs @ 12.11 hrs, Volume= 0.016 af, Depth> 1.44"

Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.030	39	>75% Grass cover, Good, HSG A
0.018	61	>75% Grass cover, Good, HSG B
* 0.085	98	Paved
0.133	80	Weighted Average
0.048		36.09% Pervious Area
0.085		63.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	62	0.0200	0.16		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.0	5	0.0200	2.87		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	52	0.0500	10.99	8.63	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	67	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.1	48	0.0100	5.70	7.00	Pipe Channel, E-F 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
6.9	234	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

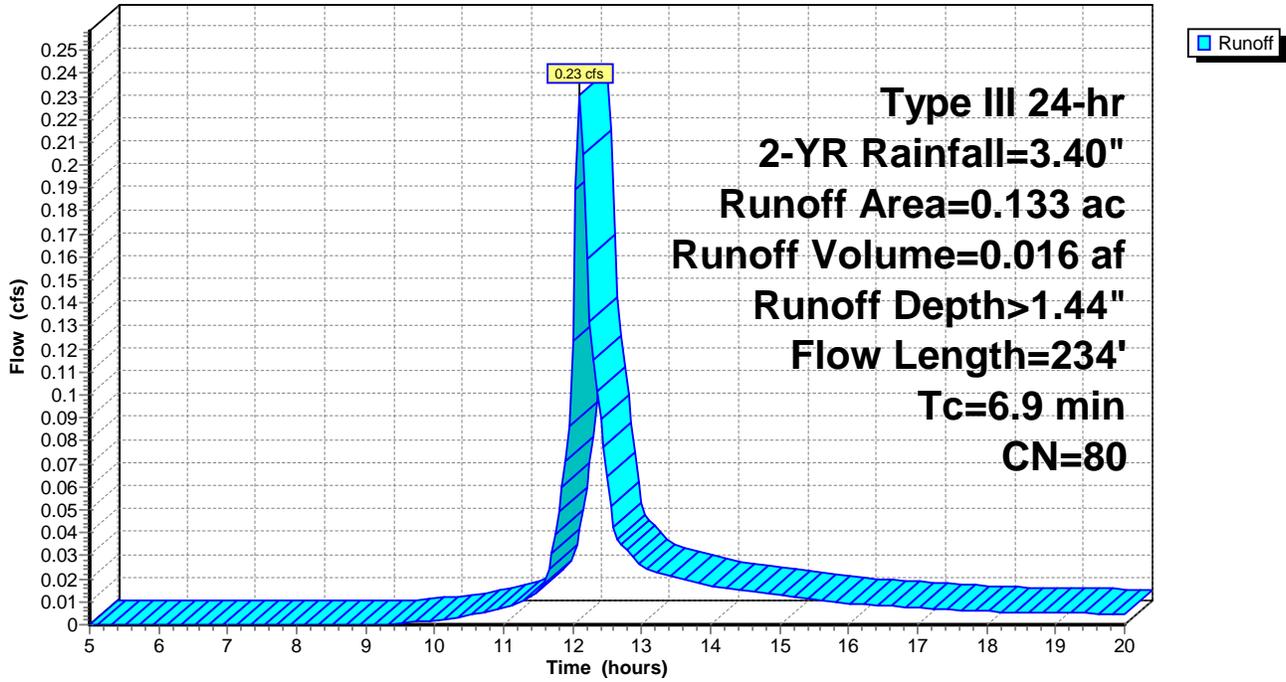
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 18

Subcatchment PR-15:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 19

Summary for Subcatchment PR-16:

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Pond IB-2 :

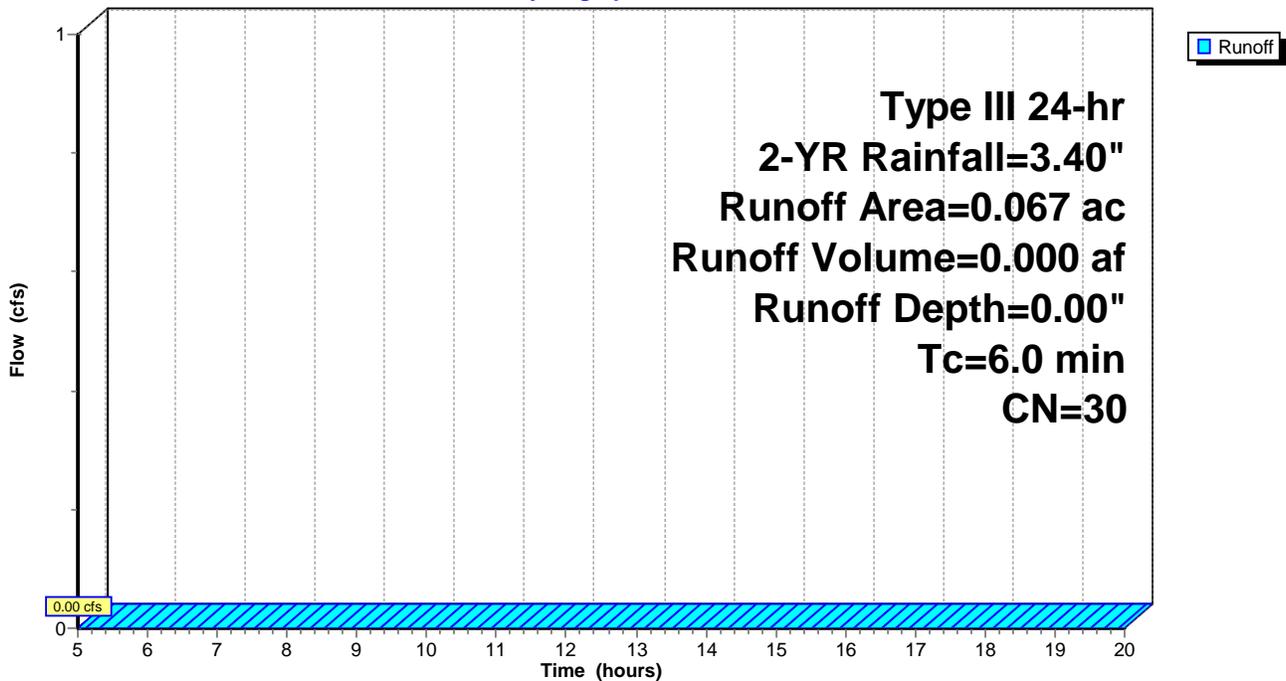
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.067	30	Brush, Good, HSG A
0.067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-16:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 20

Summary for Subcatchment PR-17:

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Pond FB-2 :

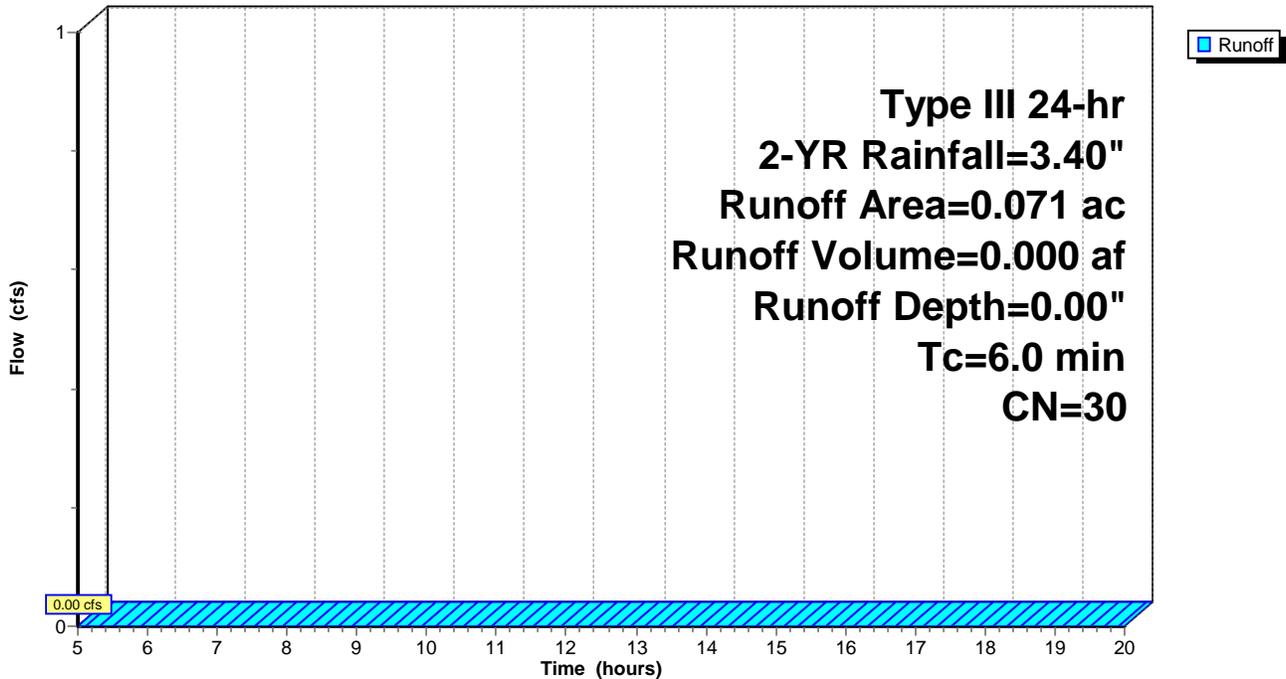
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.071	30	Brush, Good, HSG A
0.071		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-17:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 21

Summary for Subcatchment PR-18:

Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.033 af, Depth> 2.13"
 Routed to Pond FB-2 :

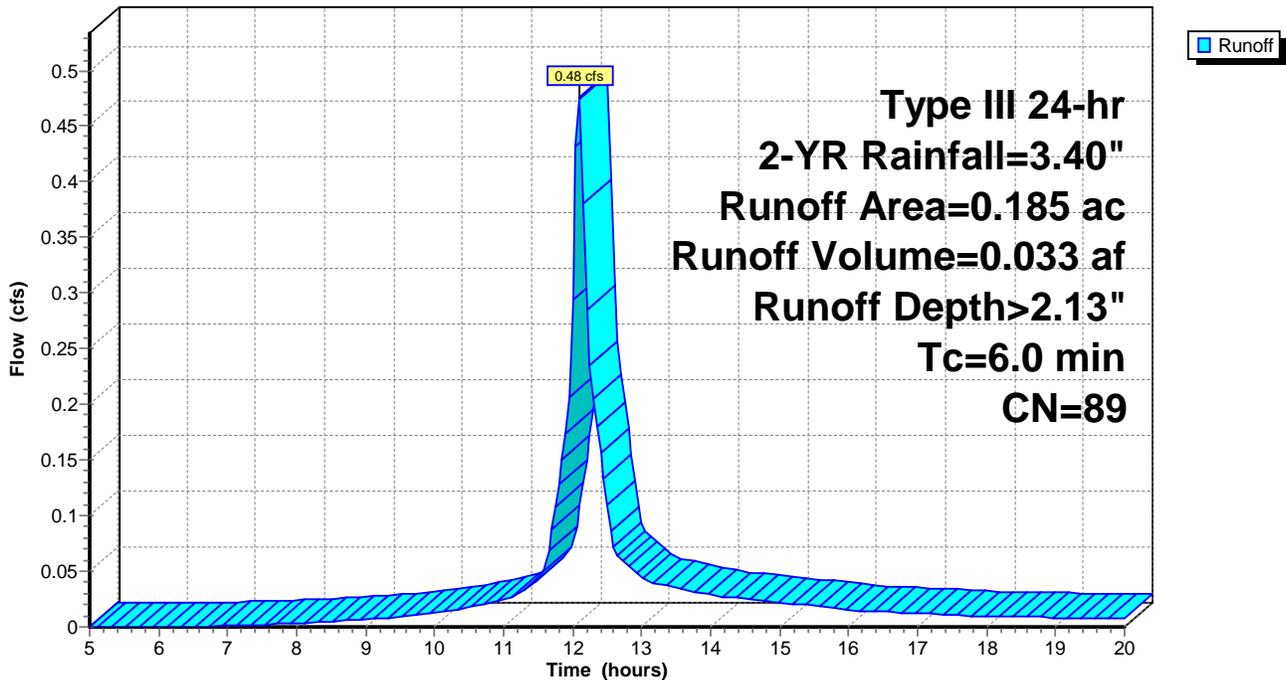
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.029	39	>75% Grass cover, Good, HSG A
* 0.156	98	Paved
0.185	89	Weighted Average
0.029		15.68% Pervious Area
0.156		84.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-18:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 22

Summary for Subcatchment PR-19:

Runoff = 0.33 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 2.22"

Routed to Pond FB-2 :

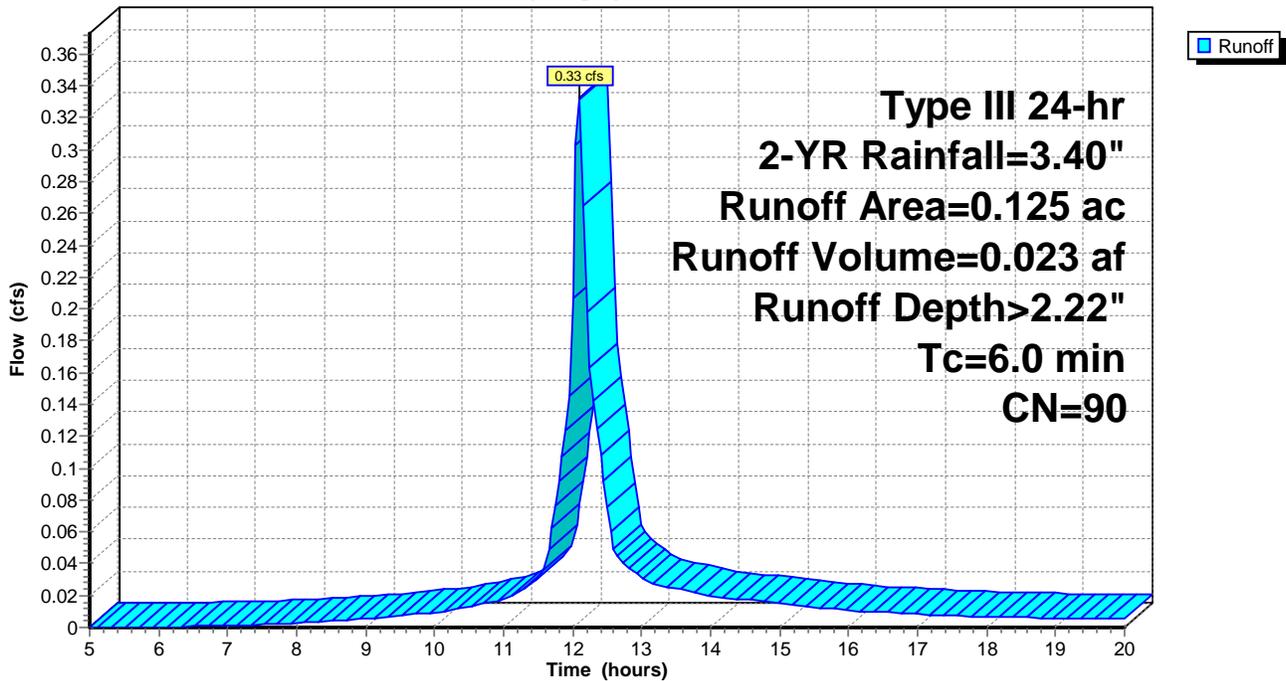
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.002	61	>75% Grass cover, Good, HSG B
* 0.107	98	Paved
0.125	90	Weighted Average
0.018		14.40% Pervious Area
0.107		85.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-19:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 23

Summary for Subcatchment PR-20:

Runoff = 0.65 cfs @ 12.09 hrs, Volume= 0.044 af, Depth> 2.04"

Routed to Pond FB-2 :

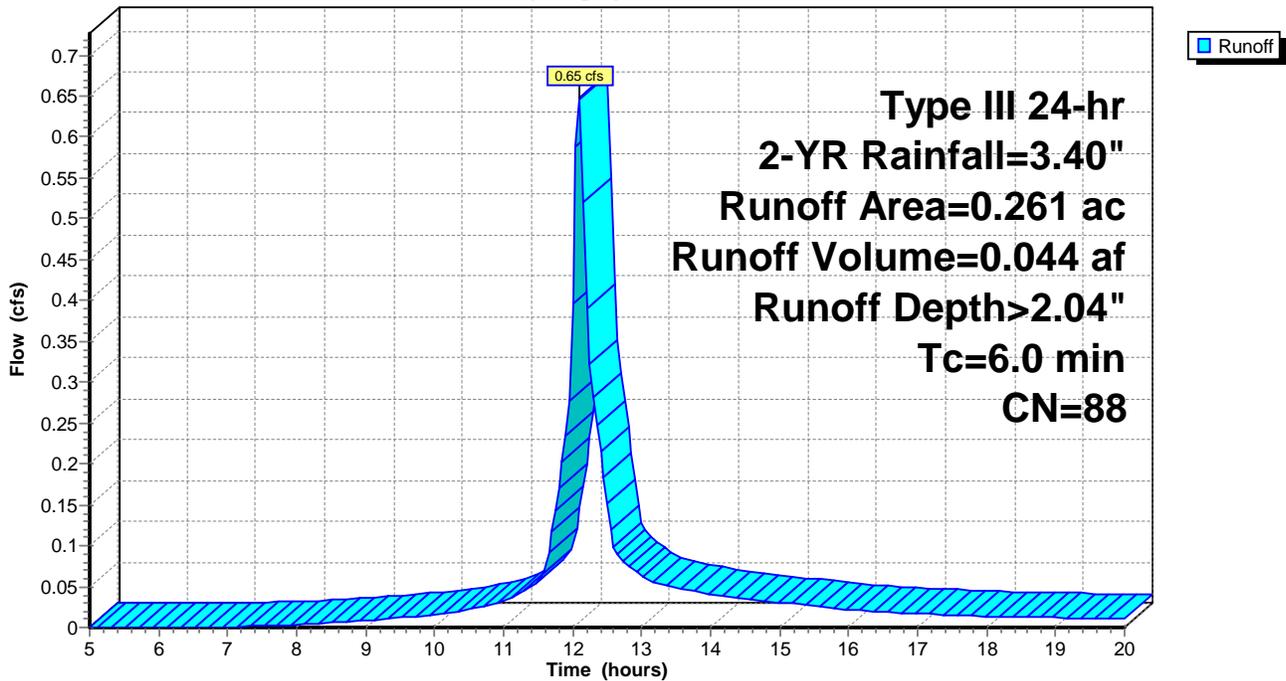
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.041	39	>75% Grass cover, Good, HSG A
0.004	61	>75% Grass cover, Good, HSG B
* 0.216	98	Paved
0.261	88	Weighted Average
0.045		17.24% Pervious Area
0.216		82.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-20:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 24

Summary for Subcatchment PR-21:

Runoff = 0.45 cfs @ 12.09 hrs, Volume= 0.032 af, Depth> 2.49"
 Routed to Pond FB-2 :

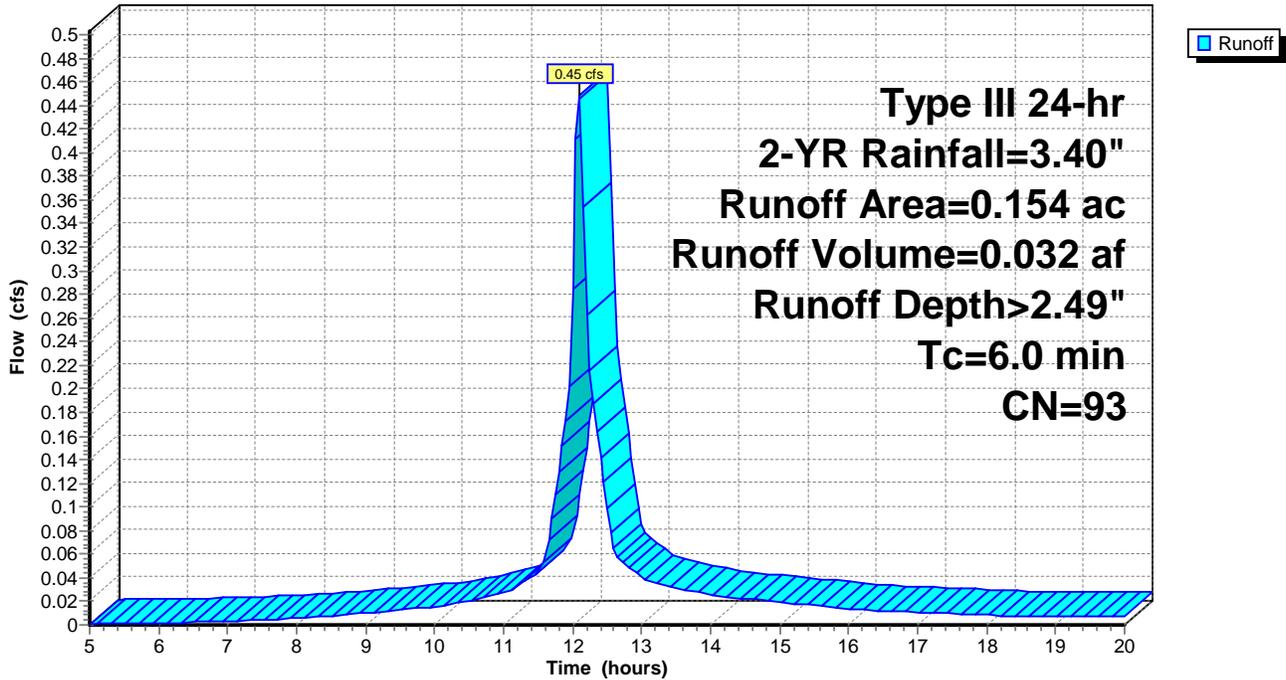
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.013	39	>75% Grass cover, Good, HSG A
* 0.141	98	Paved
0.154	93	Weighted Average
0.013		8.44% Pervious Area
0.141		91.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-21:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 25

Summary for Subcatchment PR-22:

Runoff = 0.18 cfs @ 12.10 hrs, Volume= 0.012 af, Depth> 1.19"

Routed to Pond FB-2 :

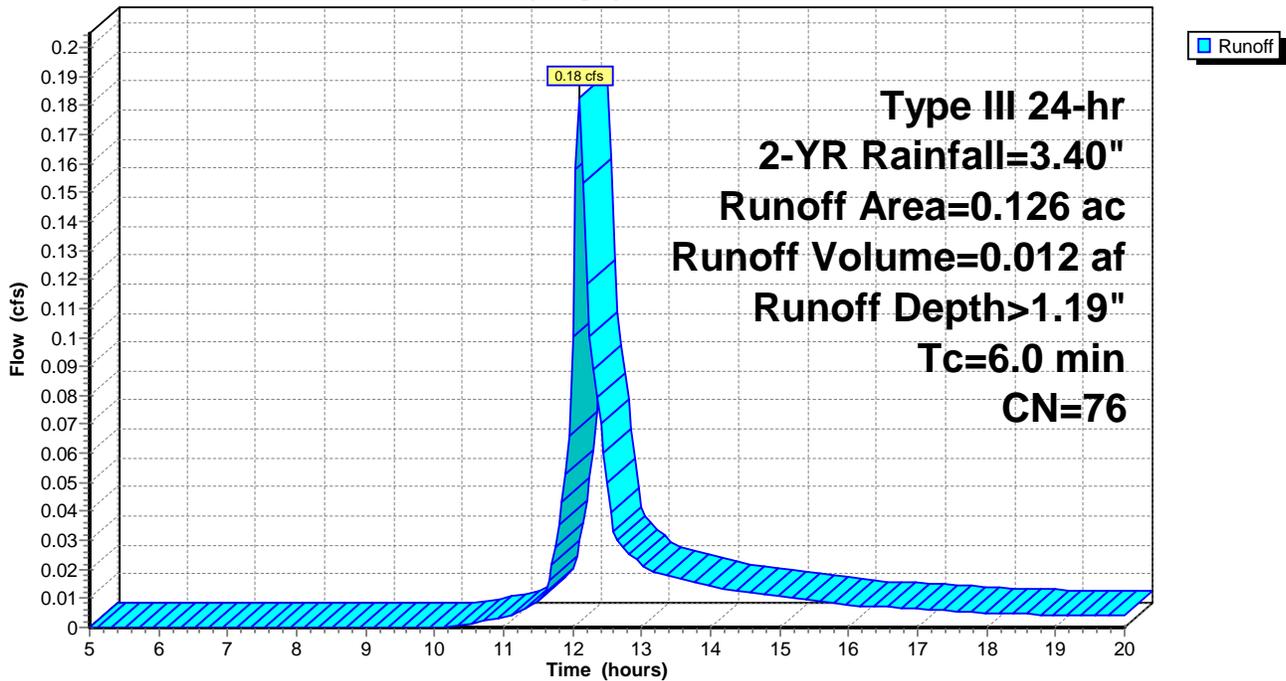
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.034	39	>75% Grass cover, Good, HSG A
0.022	61	>75% Grass cover, Good, HSG B
* 0.070	98	Paved
0.126	76	Weighted Average
0.056		44.44% Pervious Area
0.070		55.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-22:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 26

Summary for Subcatchment PR-23:

Runoff = 0.27 cfs @ 12.14 hrs, Volume= 0.021 af, Depth> 1.44"

Routed to Pond FB-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.035	39	>75% Grass cover, Good, HSG A
0.029	61	>75% Grass cover, Good, HSG B
* 0.109	98	Paved
0.173	80	Weighted Average
0.064		36.99% Pervious Area
0.109		63.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	71	0.0130	0.14		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.7	124	0.0240	3.14		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	27	0.0100	4.91	3.86	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	52	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.6	274	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

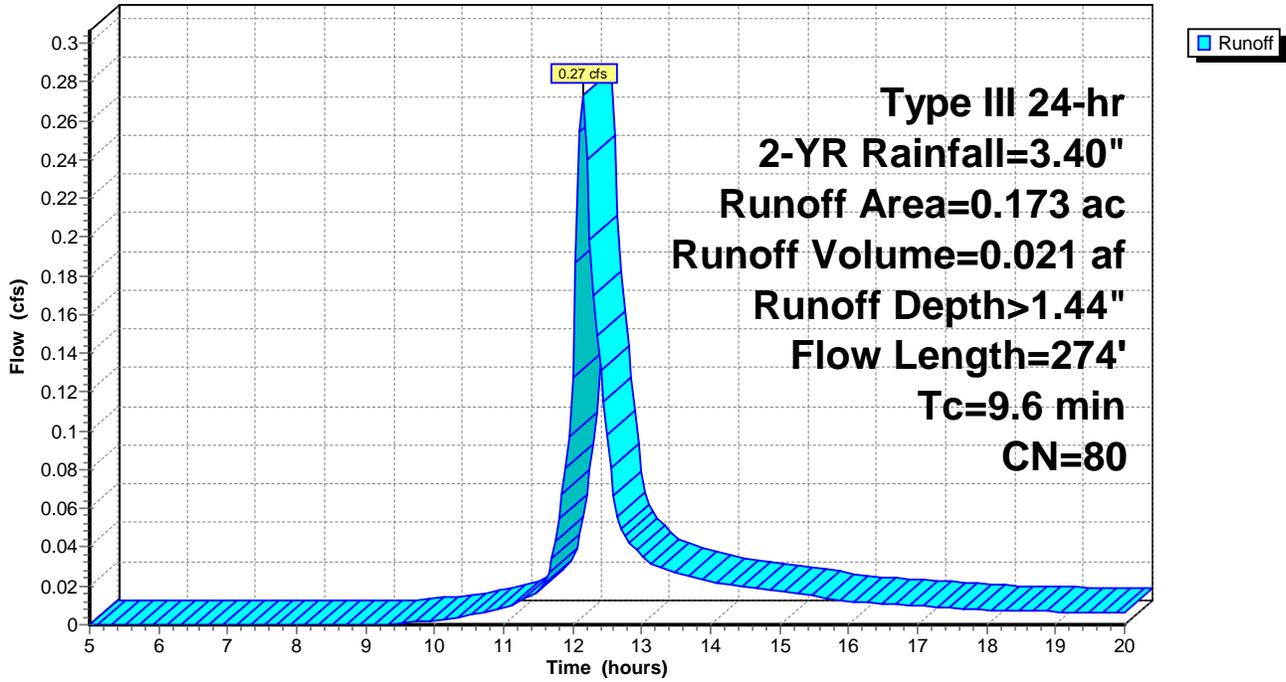
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 27

Subcatchment PR-23:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 30

Summary for Subcatchment PR-26:

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Pond GT-2 :

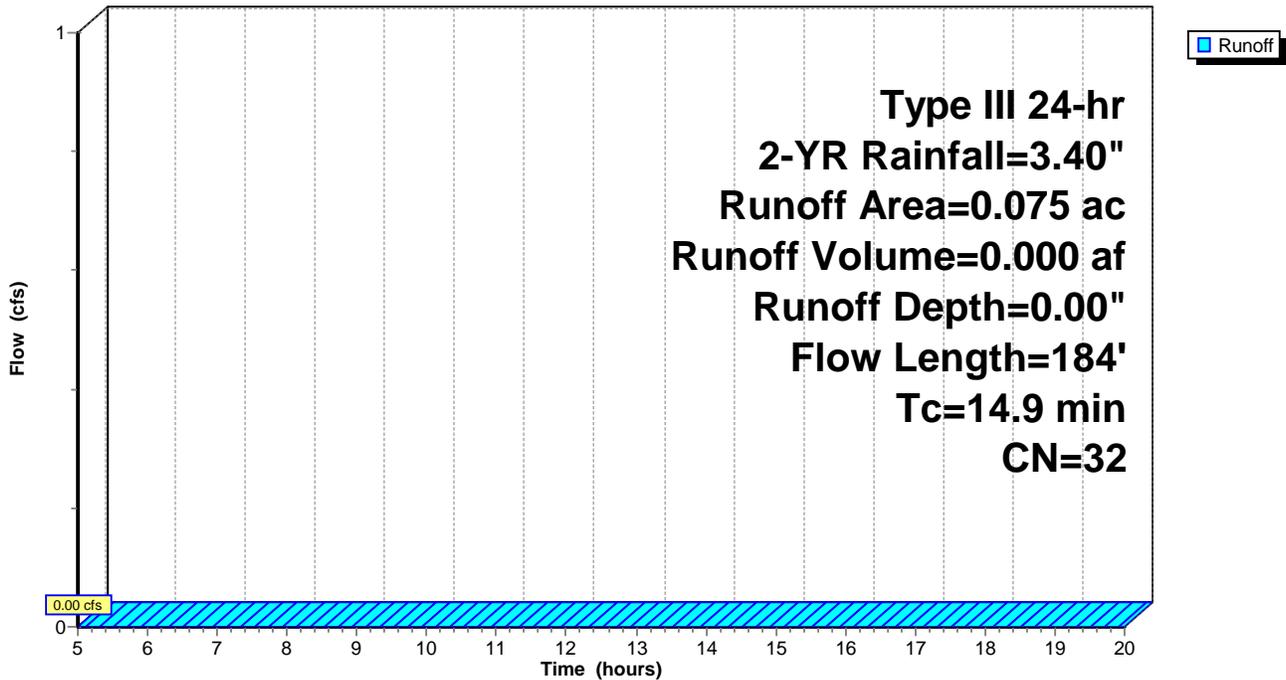
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.013	39	>75% Grass cover, Good, HSG A
0.061	30	Meadow, non-grazed, HSG A
* 0.001	98	Paved
0.075	32	Weighted Average
0.074		98.67% Pervious Area
0.001		1.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0190	0.12		Sheet Flow, A-B
					Grass: Dense n= 0.240 P2= 3.40"
0.8	84	0.0590	1.70		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.9	184	Total			

Subcatchment PR-26:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 31

Summary for Subcatchment PR-27:

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Pond GT-3 :

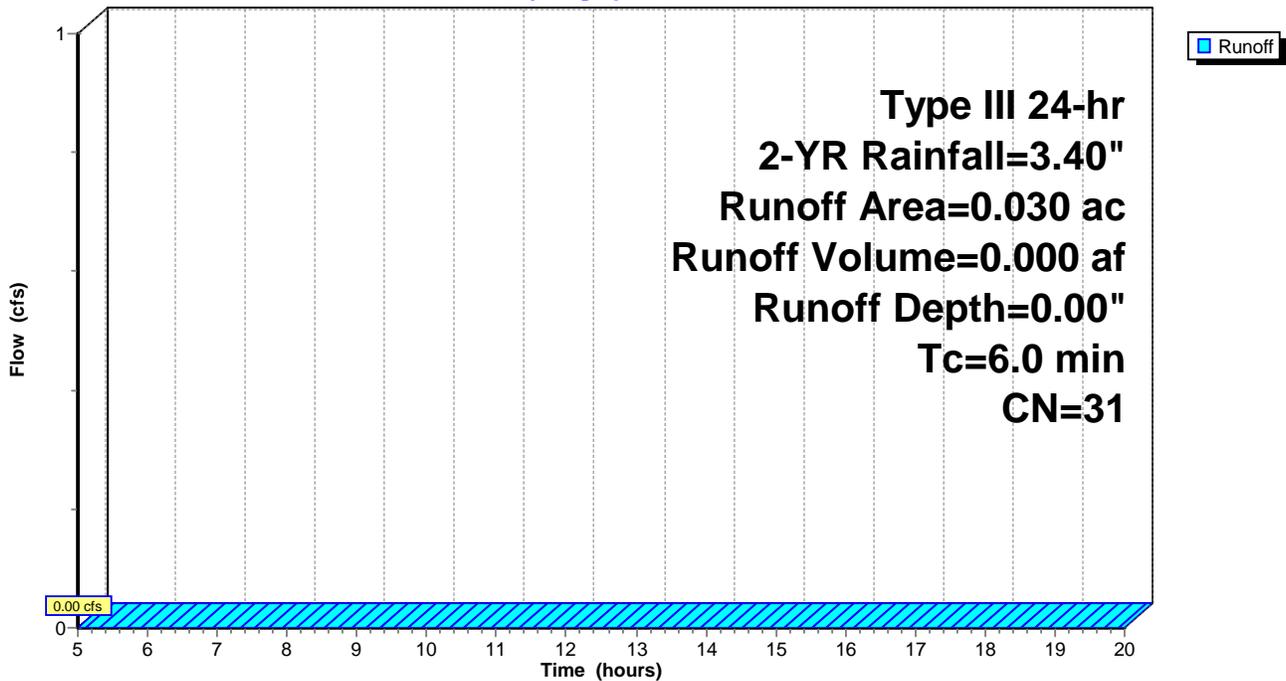
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.026	30	Meadow, non-grazed, HSG A
0.030	31	Weighted Average
0.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-27:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 32

Summary for Subcatchment PR-28:

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Routed to Pond GT-4 :

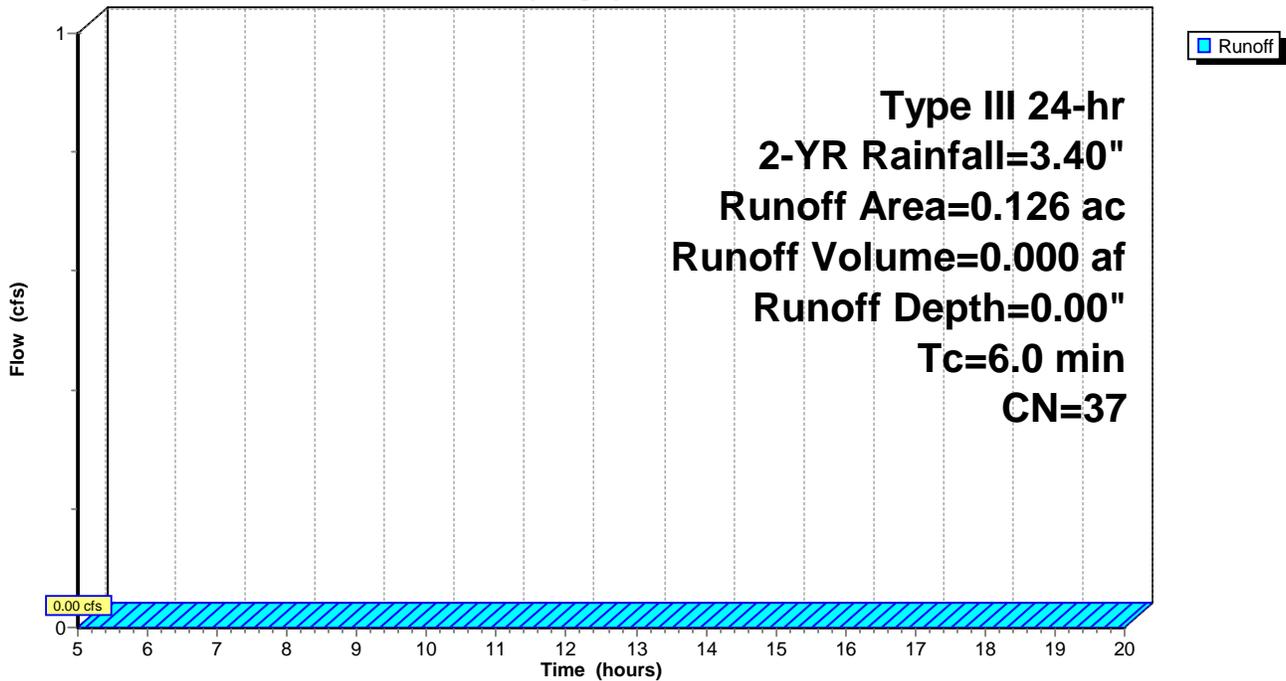
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.031	39	>75% Grass cover, Good, HSG A
0.004	61	>75% Grass cover, Good, HSG B
0.074	30	Meadow, non-grazed, HSG A
0.017	58	Meadow, non-grazed, HSG B
0.126	37	Weighted Average
0.126		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-28:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 33

Summary for Subcatchment PR-29:

Runoff = 0.14 cfs @ 12.10 hrs, Volume= 0.010 af, Depth> 1.02"
 Routed to Pond GT-5 :

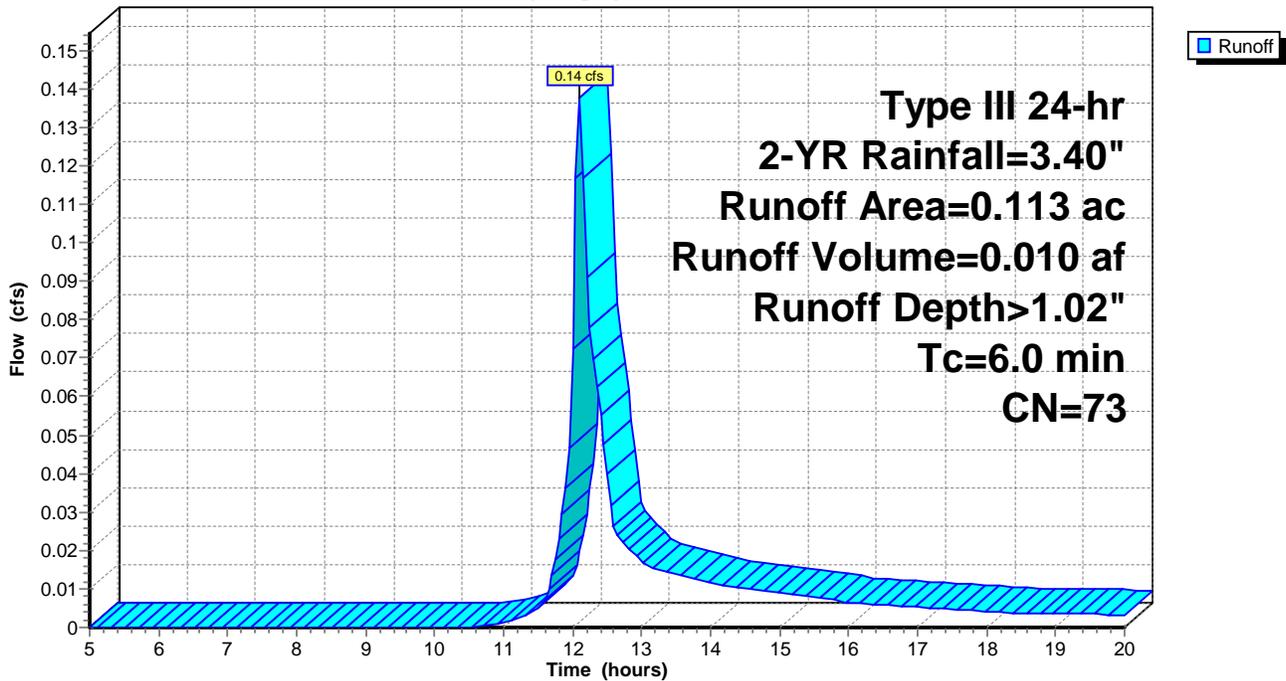
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.031	61	>75% Grass cover, Good, HSG B
0.043	58	Meadow, non-grazed, HSG B
* 0.039	98	Paved
0.113	73	Weighted Average
0.074		65.49% Pervious Area
0.039		34.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-29:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 34

Summary for Subcatchment PR-30:

Runoff = 0.01 cfs @ 12.38 hrs, Volume= 0.002 af, Depth> 0.26"
 Routed to Pond GT-6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
0.001	30	Woods, Good, HSG A
0.008	55	Woods, Good, HSG B
0.011	39	>75% Grass cover, Good, HSG A
0.021	61	>75% Grass cover, Good, HSG B
0.026	30	Meadow, non-grazed, HSG A
0.010	58	Meadow, non-grazed, HSG B
* 0.016	98	Paved
0.093	55	Weighted Average
0.077		82.80% Pervious Area
0.016		17.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0380	0.16		Sheet Flow, A-B
					Grass: Dense n= 0.240 P2= 3.40"
0.4	40	0.0550	1.64		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
11.1	140	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

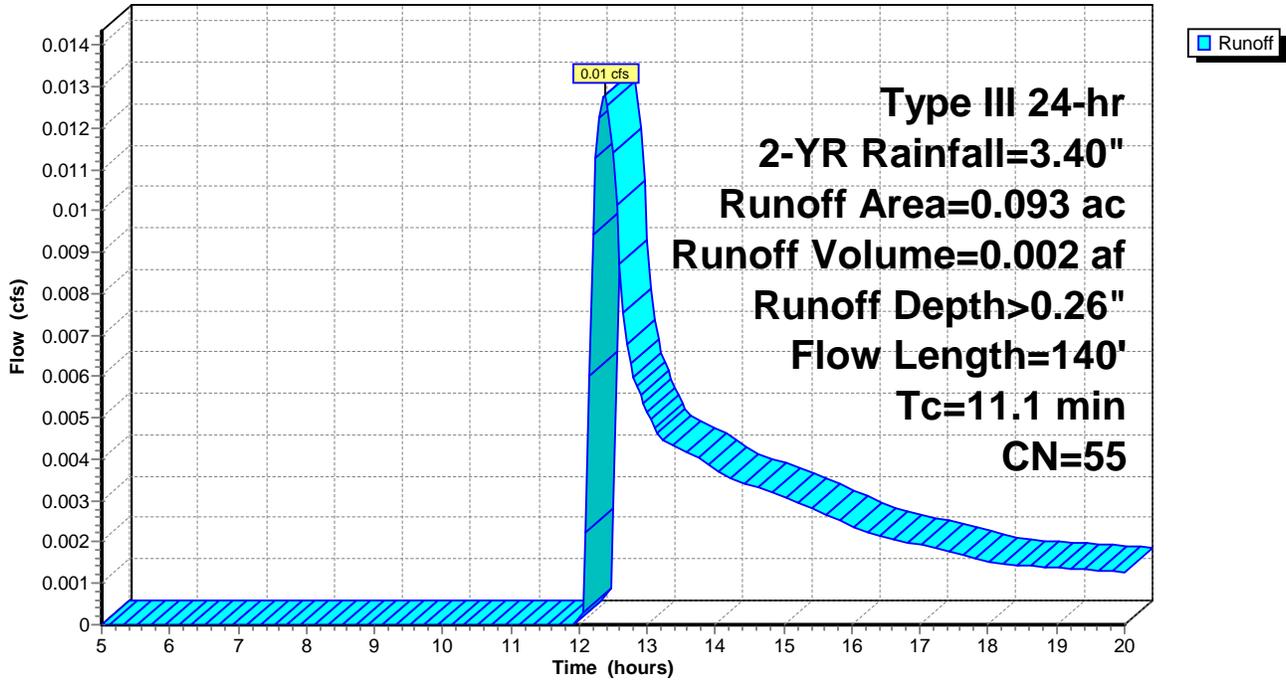
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 35

Subcatchment PR-30:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 36

Summary for Subcatchment RA-1:

Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.032 af, Depth> 2.96"
Routed to Pond UG-1 :

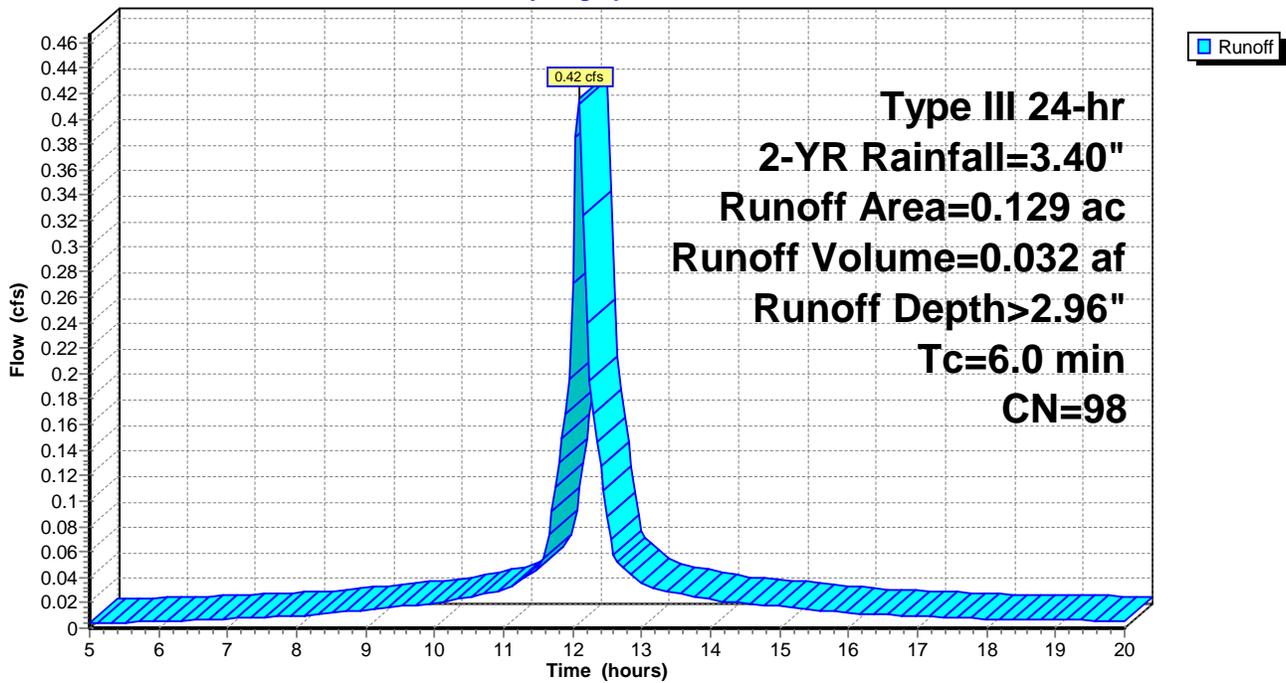
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
* 0.129	98	Roof
0.129		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 37

Summary for Subcatchment RA-2:

Runoff = 0.45 cfs @ 12.09 hrs, Volume= 0.034 af, Depth> 2.96"
Routed to Pond UG-1 :

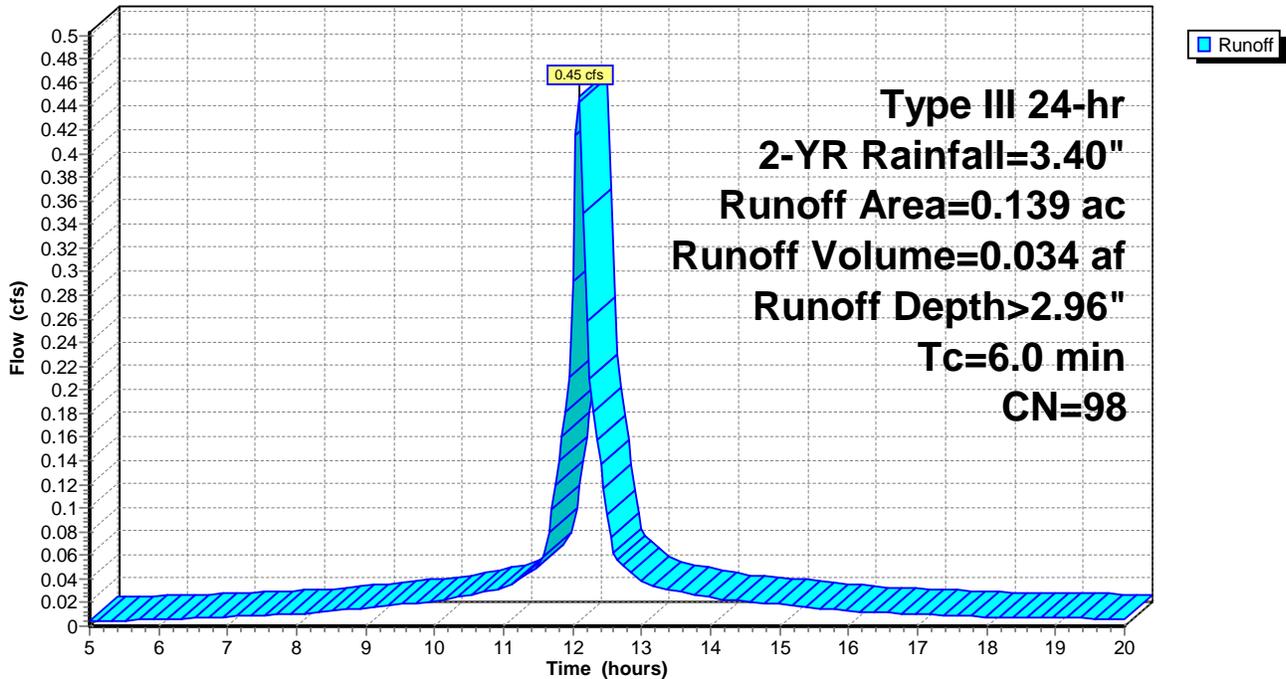
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
* 0.139	98	Roof
0.139		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 38

Summary for Subcatchment RA-3:

Runoff = 0.62 cfs @ 12.09 hrs, Volume= 0.048 af, Depth> 2.96"

Routed to Pond RG-1 :

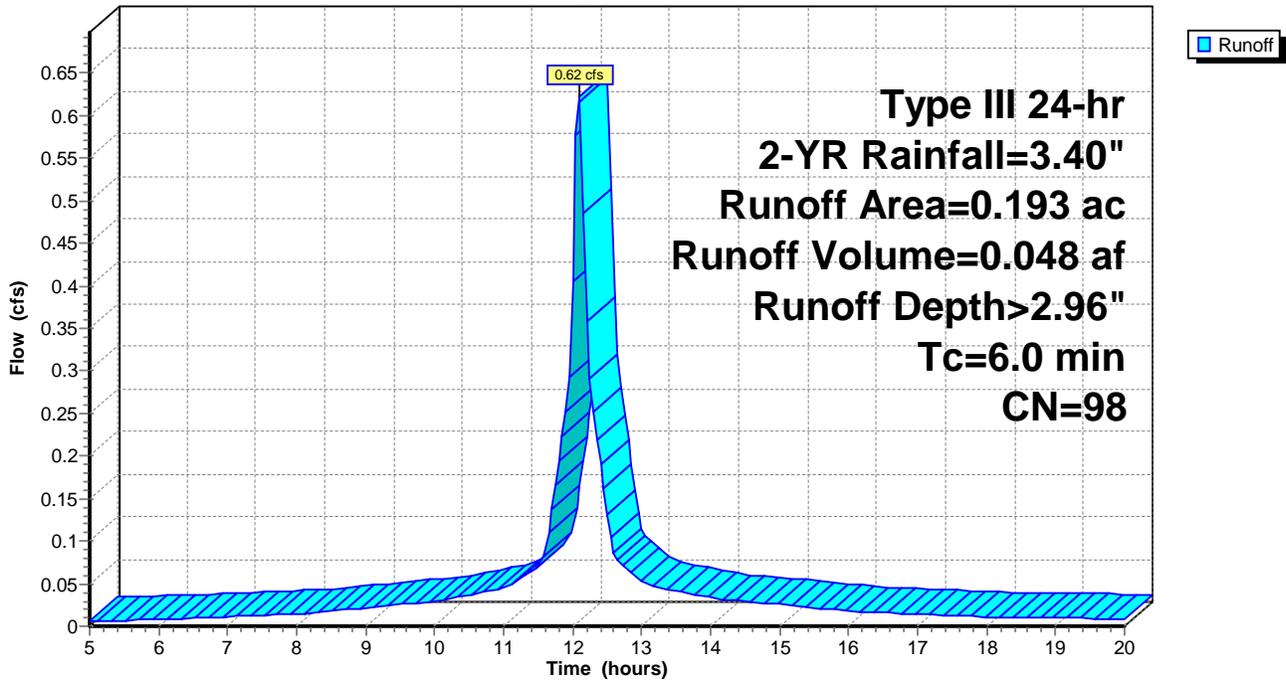
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
* 0.193	98	Roof
0.193		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 39

Summary for Subcatchment RA-4:

Runoff = 0.60 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 2.96"

Routed to Pond RG-1 :

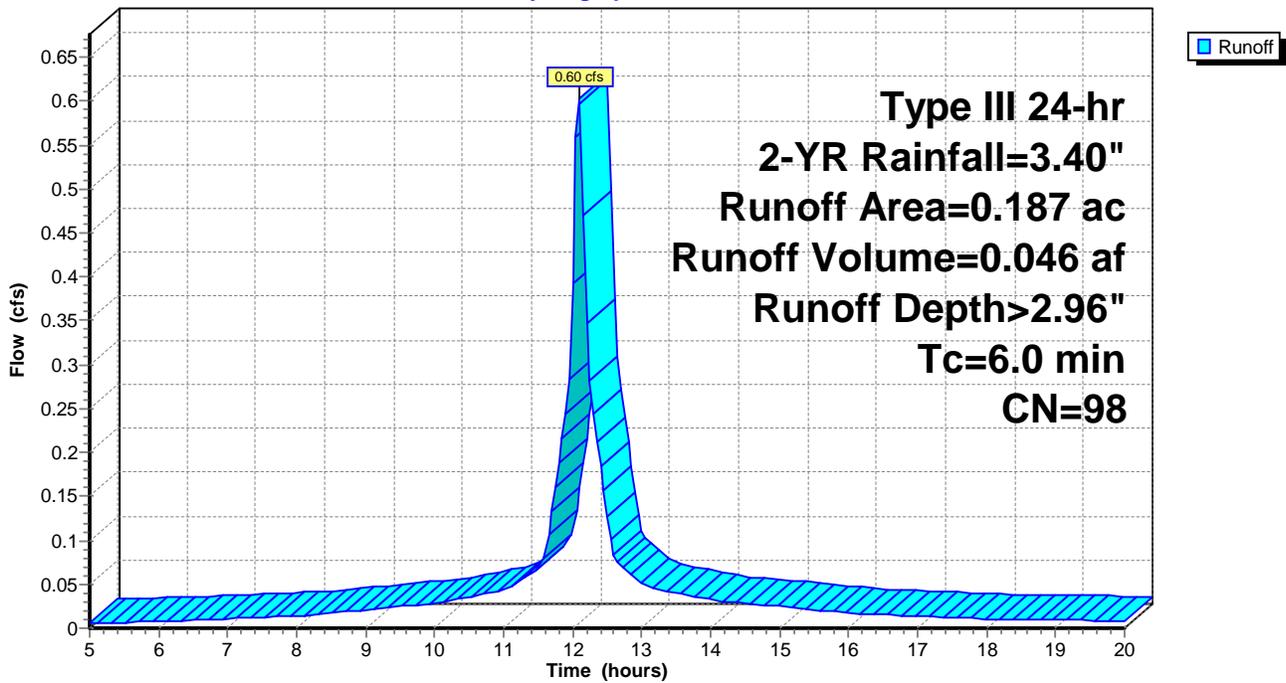
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.40"

Area (ac)	CN	Description
* 0.187	98	Roof
0.187		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

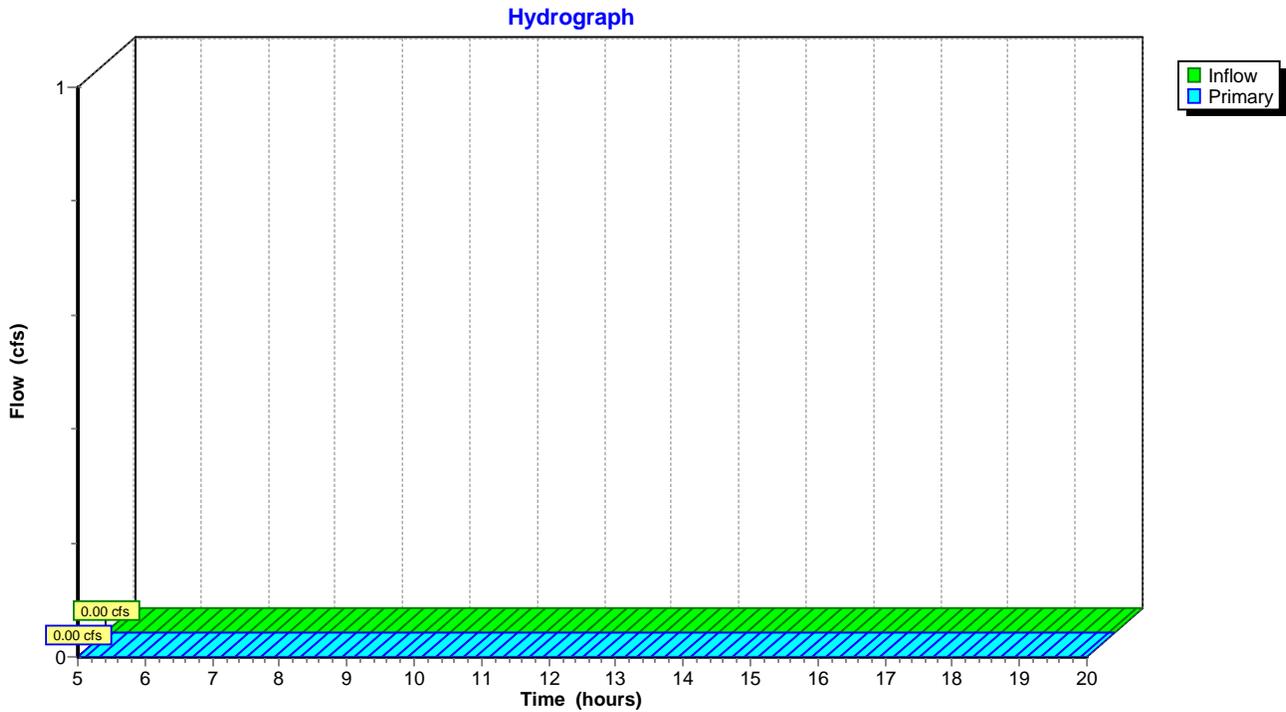
Page 40

Summary for Pond AP: Surrounding Wetlands

Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 41

Summary for Pond FB-1:

Inflow Area = 0.592 ac, 58.28% Impervious, Inflow Depth > 1.14" for 2-YR event
 Inflow = 0.83 cfs @ 12.10 hrs, Volume= 0.056 af
 Outflow = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af, Atten= 99%, Lag= 474.2 min
 Discarded = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routed to Pond IB-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 27.02' @ 20.00 hrs Surf.Area= 1,289 sf Storage= 2,275 cf

Plug-Flow detention time= 278.7 min calculated for 0.004 af (7% of inflow)
 Center-of-Mass det. time= 148.5 min (955.4 - 806.8)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	5,755 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	299	0	0
25.00	566	433	433
26.00	891	729	1,161
27.00	1,279	1,085	2,246
28.00	1,736	1,508	3,754
28.60	2,049	1,136	4,889
29.00	2,283	866	5,755

Device	Routing	Invert	Outlet Devices
#1	Primary	28.60'	44.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	24.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 20.00 hrs HW=27.02' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=24.00' (Free Discharge)
 ↑**1=Forebay Berm (Weir Outlet)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

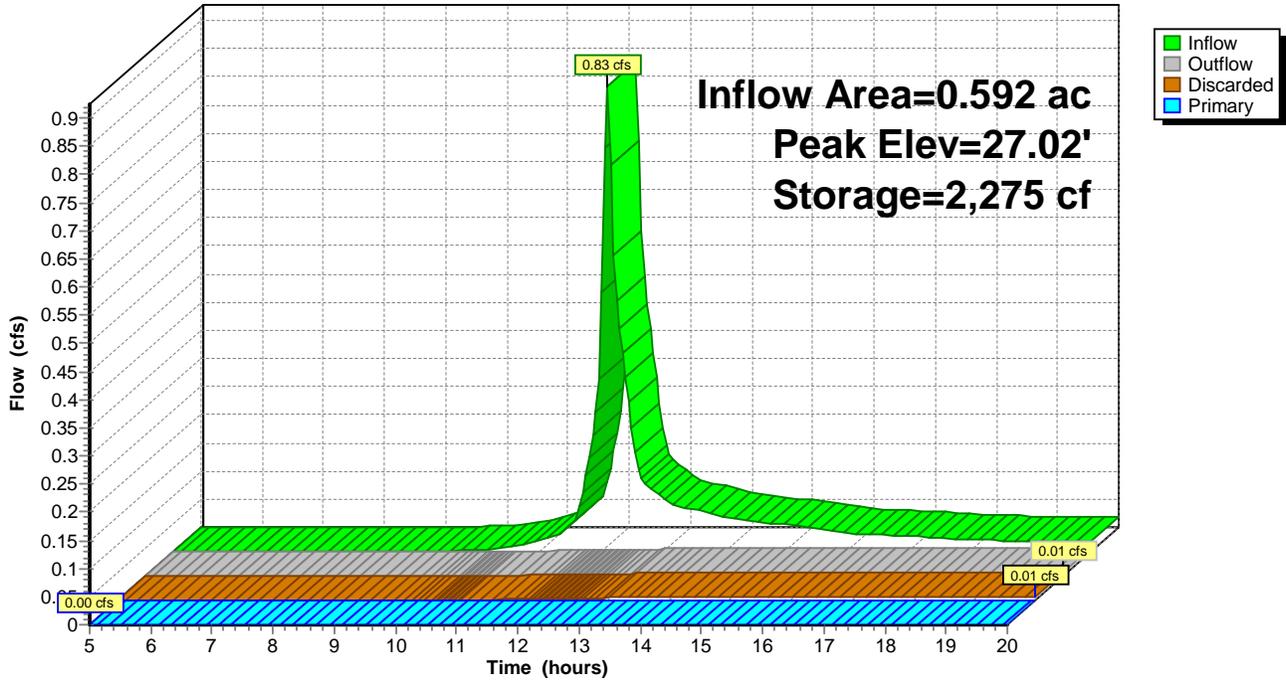
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 42

Pond FB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 43

Summary for Pond FB-2:

Inflow Area = 3.167 ac, 73.26% Impervious, Inflow Depth > 0.63" for 2-YR event
 Inflow = 2.34 cfs @ 12.09 hrs, Volume= 0.166 af
 Outflow = 0.40 cfs @ 12.60 hrs, Volume= 0.165 af, Atten= 83%, Lag= 30.2 min
 Discarded = 0.40 cfs @ 12.60 hrs, Volume= 0.165 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.56' @ 12.60 hrs Surf.Area= 1,416 sf Storage= 2,788 cf

Plug-Flow detention time= 76.4 min calculated for 0.165 af (100% of inflow)
 Center-of-Mass det. time= 75.9 min (855.5 - 779.6)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	7,733 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	291	0	0
26.00	520	406	406
27.00	811	666	1,071
28.00	1,172	992	2,063
29.00	1,608	1,390	3,453
30.00	2,121	1,865	5,317
30.70	2,530	1,628	6,945
31.00	2,723	788	7,733

Device	Routing	Invert	Outlet Devices
#1	Primary	30.70'	59.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.40 cfs @ 12.60 hrs HW=28.56' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.40 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)
 ↑ **1=Forebay Berm (Weir Outlet)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

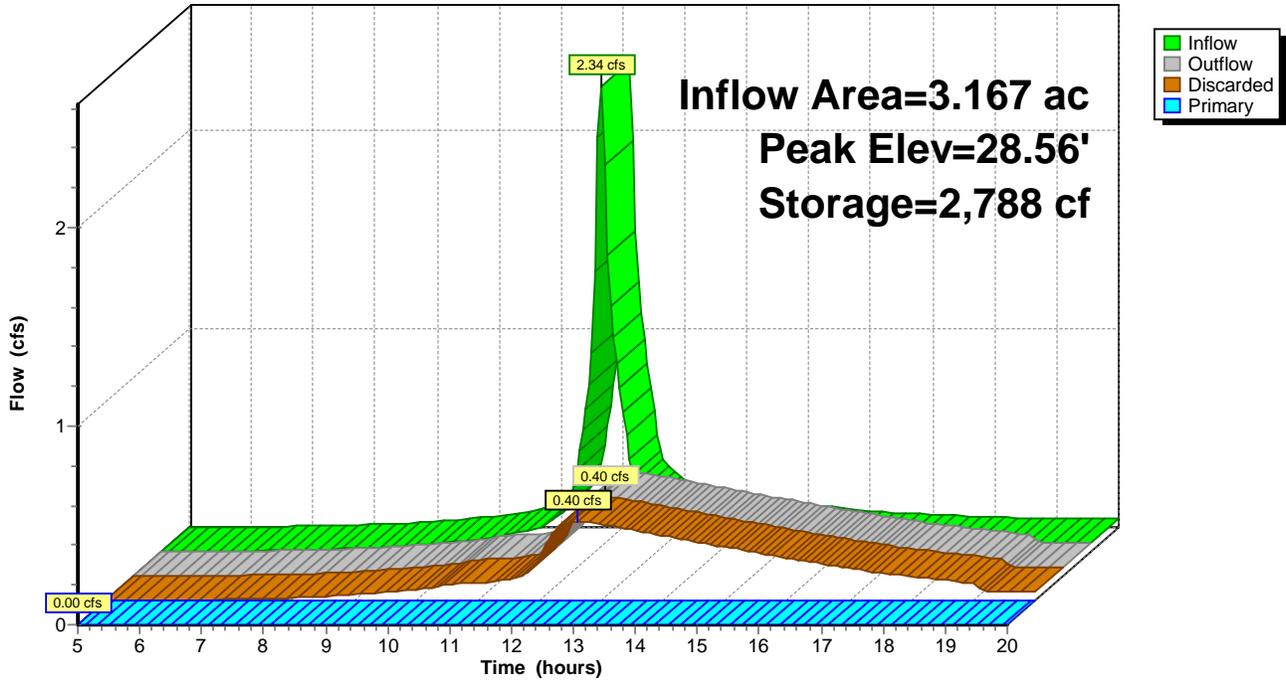
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 44

Pond FB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 45

Summary for Pond GT-1:

Inflow Area = 0.252 ac, 0.00% Impervious, Inflow Depth > 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 1%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 20.00' @ 20.00 hrs Surf.Area= 862 sf Storage= 0 cf

Plug-Flow detention time= 2.5 min calculated for 0.000 af (97% of inflow)
 Center-of-Mass det. time= 0.9 min (1,150.9 - 1,150.0)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	690 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,724 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.00	862	0	0
21.00	862	862	862
22.00	862	862	1,724

Device	Routing	Invert	Outlet Devices
#1	Secondary	22.00'	590.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 20.00 hrs HW=20.00' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

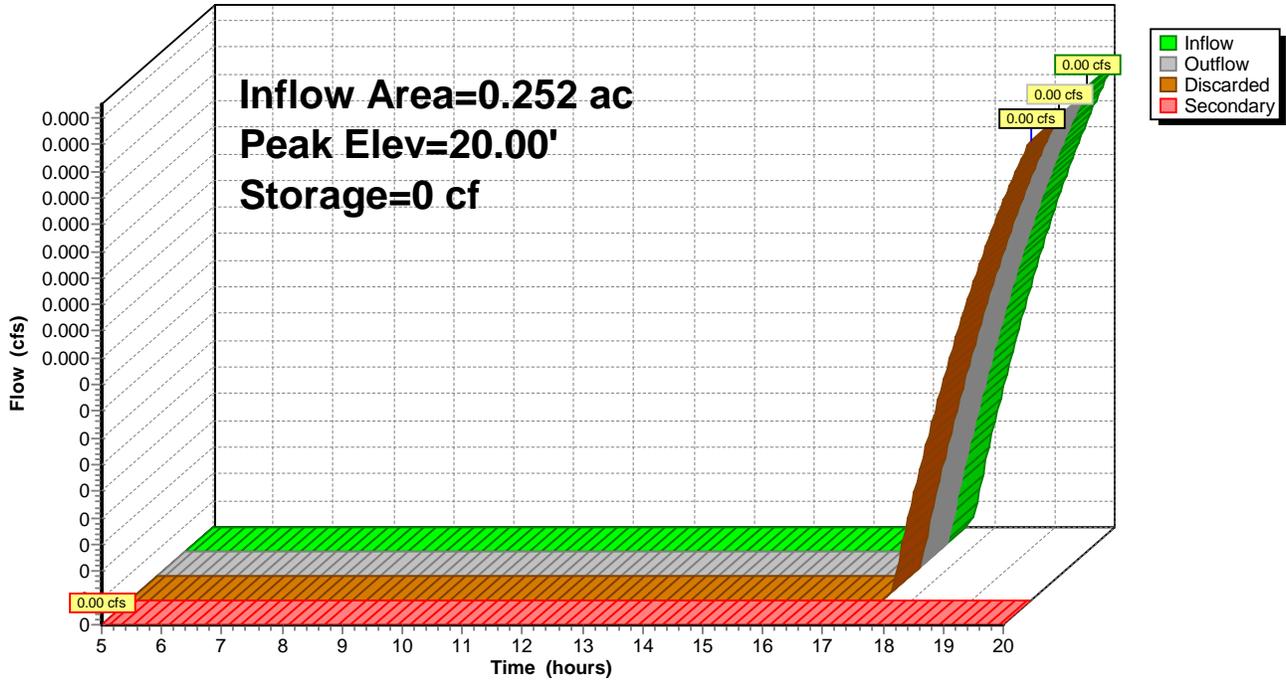
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 46

Pond GT-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 47

Summary for Pond GT-2:

Inflow Area = 0.075 ac, 1.33% Impervious, Inflow Depth = 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 23.50' @ 5.00 hrs Surf.Area= 251 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	23.50'	151 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 377 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.50	251	0	0
24.00	251	126	126
25.00	251	251	377

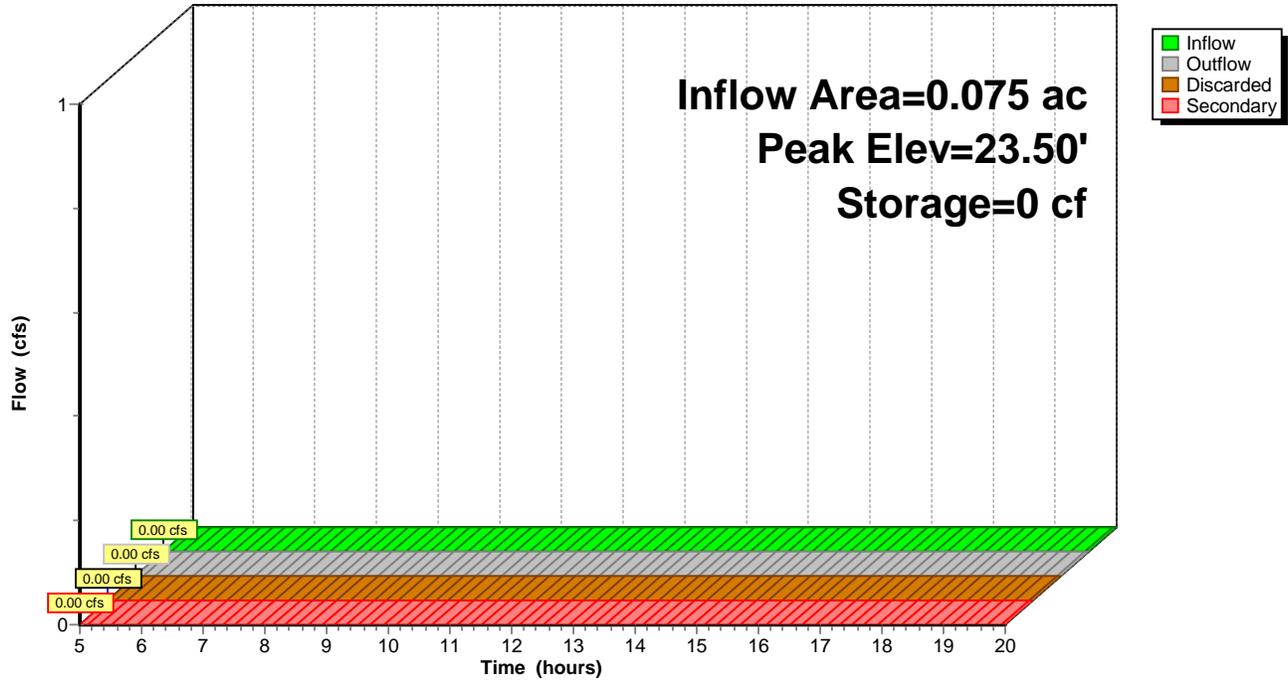
Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	65.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	23.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.50' (Free Discharge)
 ↑2=Exfiltration (Passes 0.00 cfs of 0.00 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.50' (Free Discharge)
 ↑1=Top of Trench (Overflow) (Controls 0.00 cfs)

Pond GT-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 49

Summary for Pond GT-3:

Inflow Area = 0.030 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 27.50' @ 5.00 hrs Surf.Area= 94 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	27.50'	56 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 141 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.50	94	0	0
28.00	94	47	47
29.00	94	94	141

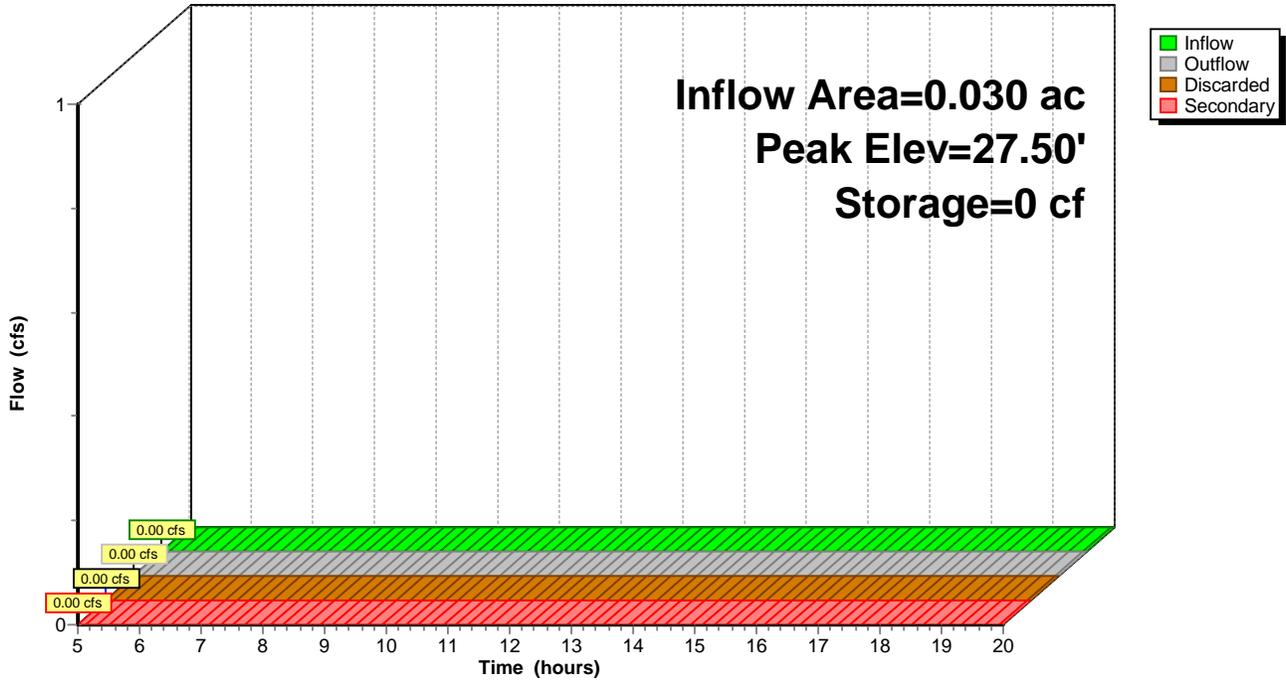
Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	30.0' long + 3.0' /' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	27.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.50' (Free Discharge)
 ↑**2=Exfiltration** (Passes 0.00 cfs of 0.00 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

Pond GT-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 51

Summary for Pond GT-4:

Inflow Area = 0.126 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 20.50' @ 5.00 hrs Surf.Area= 405 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	20.50'	405 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,013 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.50	405	0	0
21.00	405	203	203
22.00	405	405	608
23.00	405	405	1,013

Device	Routing	Invert	Outlet Devices
#1	Secondary	23.00'	74.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.50' (Free Discharge)
 ↑**2=Exfiltration** (Passes 0.00 cfs of 0.00 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

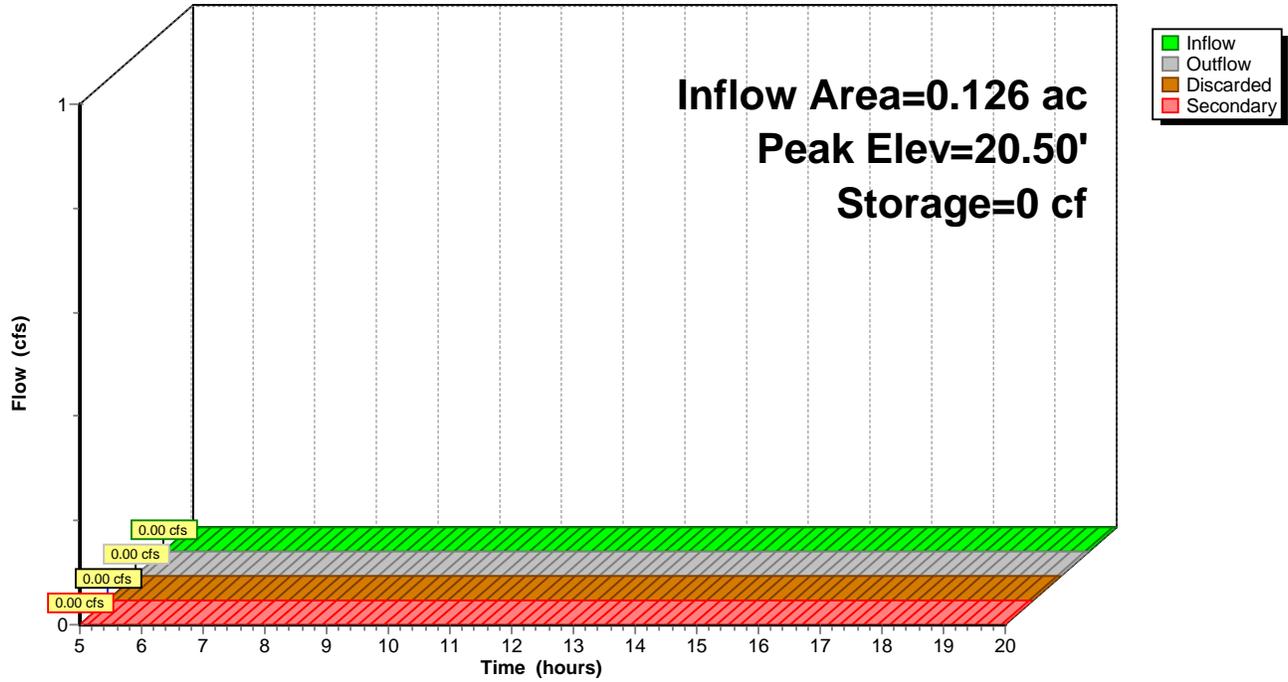
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 52

Pond GT-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 53

Summary for Pond GT-5:

Inflow Area = 0.113 ac, 34.51% Impervious, Inflow Depth > 1.02" for 2-YR event
 Inflow = 0.14 cfs @ 12.10 hrs, Volume= 0.010 af
 Outflow = 0.03 cfs @ 12.00 hrs, Volume= 0.010 af, Atten= 76%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 12.00 hrs, Volume= 0.010 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-4 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 21.41' @ 12.54 hrs Surf.Area= 640 sf Storage= 104 cf

Plug-Flow detention time= 21.8 min calculated for 0.010 af (99% of inflow)
 Center-of-Mass det. time= 20.8 min (838.7 - 817.9)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	1,024 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 2,560 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	640	0	0
22.00	640	640	640
23.00	640	640	1,280
24.00	640	640	1,920
25.00	640	640	2,560

Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	136.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	21.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.00 hrs HW=21.06' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=21.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

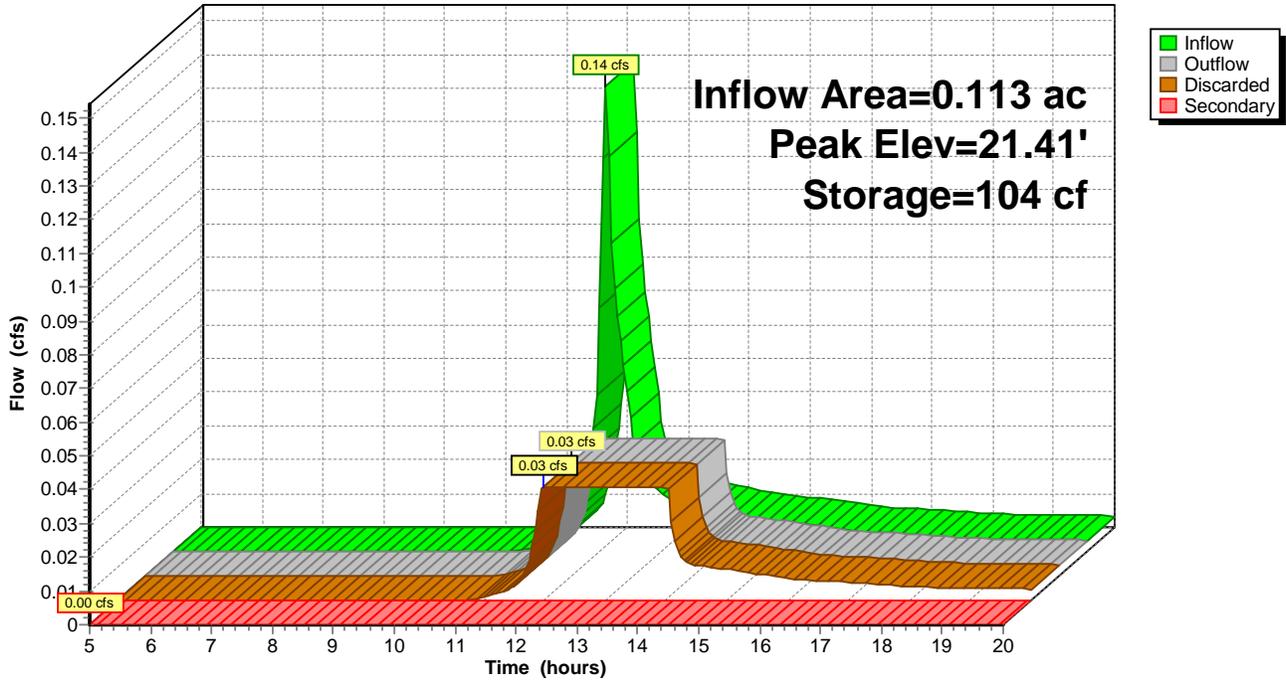
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 54

Pond GT-5:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 55

Summary for Pond GT-6:

Inflow Area = 0.093 ac, 17.20% Impervious, Inflow Depth > 0.26" for 2-YR event
 Inflow = 0.01 cfs @ 12.38 hrs, Volume= 0.002 af
 Outflow = 0.01 cfs @ 12.39 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.6 min
 Discarded = 0.01 cfs @ 12.39 hrs, Volume= 0.002 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 24.50' @ 12.39 hrs Surf.Area= 252 sf Storage= 0 cf

Plug-Flow detention time= 0.6 min calculated for 0.002 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (881.9 - 881.4)

Volume	Invert	Avail.Storage	Storage Description
#1	24.50'	252 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 630 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.50	252	0	0
25.00	252	126	126
26.00	252	252	378
27.00	252	252	630

Device	Routing	Invert	Outlet Devices
#1	Secondary	27.00'	78.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	24.50'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 12.39 hrs HW=24.50' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=24.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

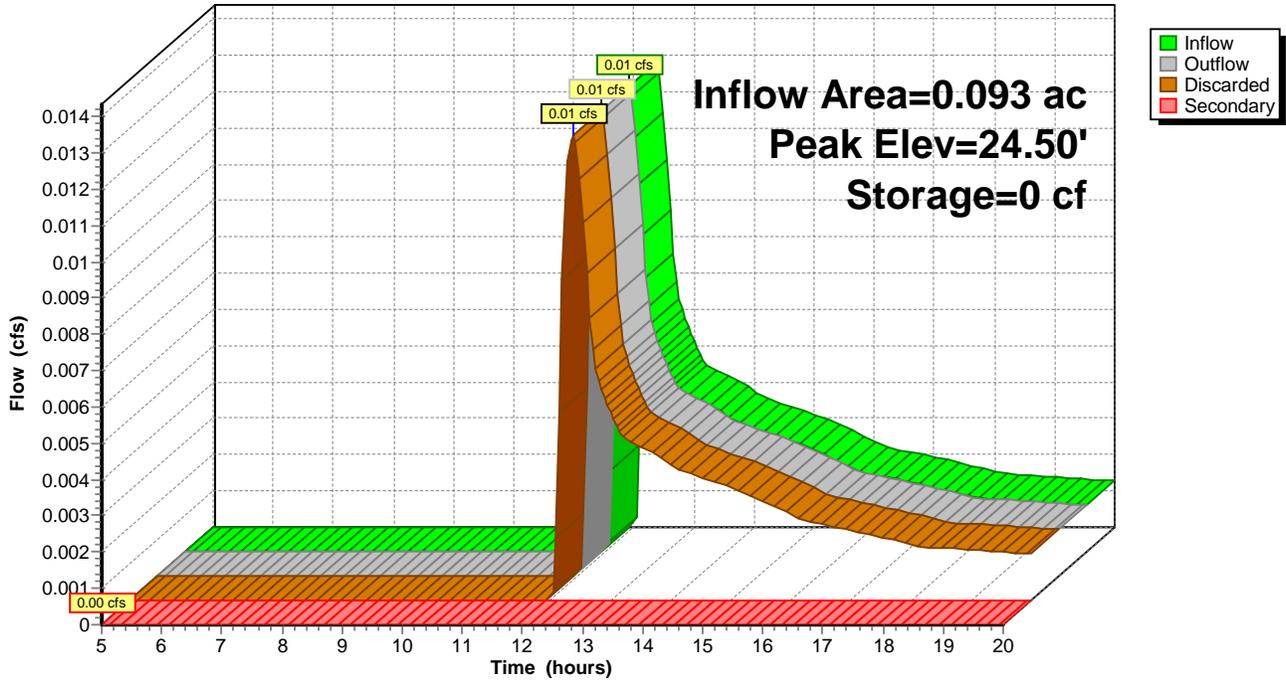
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 56

Pond GT-6:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 57

Summary for Pond IB-1:

Inflow Area = 0.739 ac, 49.80% Impervious, Inflow Depth > 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 8%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 23.02' @ 20.00 hrs Surf.Area= 212 sf Storage= 2 cf

Plug-Flow detention time= 68.5 min calculated for 0.000 af (68% of inflow)
 Center-of-Mass det. time= 25.3 min (1,092.9 - 1,067.6)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	8,279 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	23.00'	170 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
		424 cf Overall x 40.0% Voids	
		8,448 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	858	0	0
26.00	1,419	1,139	1,139
27.00	2,033	1,726	2,865
28.00	2,694	2,364	5,228
28.60	3,109	1,741	6,969
29.00	3,440	1,310	8,279

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	212	0	0
24.00	212	212	212
25.00	212	212	424

Device	Routing	Invert	Outlet Devices
#1	Secondary	28.60'	10.0' long + 2.0 ' SideZ x 4.2' breadth Overflow Riprap Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.53 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.67 2.71 2.72 2.74 2.77 2.85 3.01 3.23
#2	Discarded	23.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 20.00 hrs HW=23.02' (Free Discharge)
 ↳2=Exfiltration (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.00' (Free Discharge)
 ↳1=Overflow Riprap Spillway (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 59

Summary for Pond IB-2:

Inflow Area = 3.234 ac, 71.74% Impervious, Inflow Depth = 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 25.00' @ 5.00 hrs Surf.Area= 144 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	5,261 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	25.00'	115 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
		288 cf Overall x 40.0% Voids	
		5,376 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	1,104	0	0
29.00	1,514	1,309	1,309
30.00	1,966	1,740	3,049
30.70	2,305	1,495	4,544
31.00	2,475	717	5,261

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	144	0	0
26.00	144	144	144
27.00	144	144	288

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	100.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area
#3	Primary	26.96'	12.0" Round 12" HDPE Pipe L= 36.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 26.96' / 26.60' S= 0.0100 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	29.79'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 60

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **2=Exfiltration** (Passes 0.00 cfs of 0.04 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)

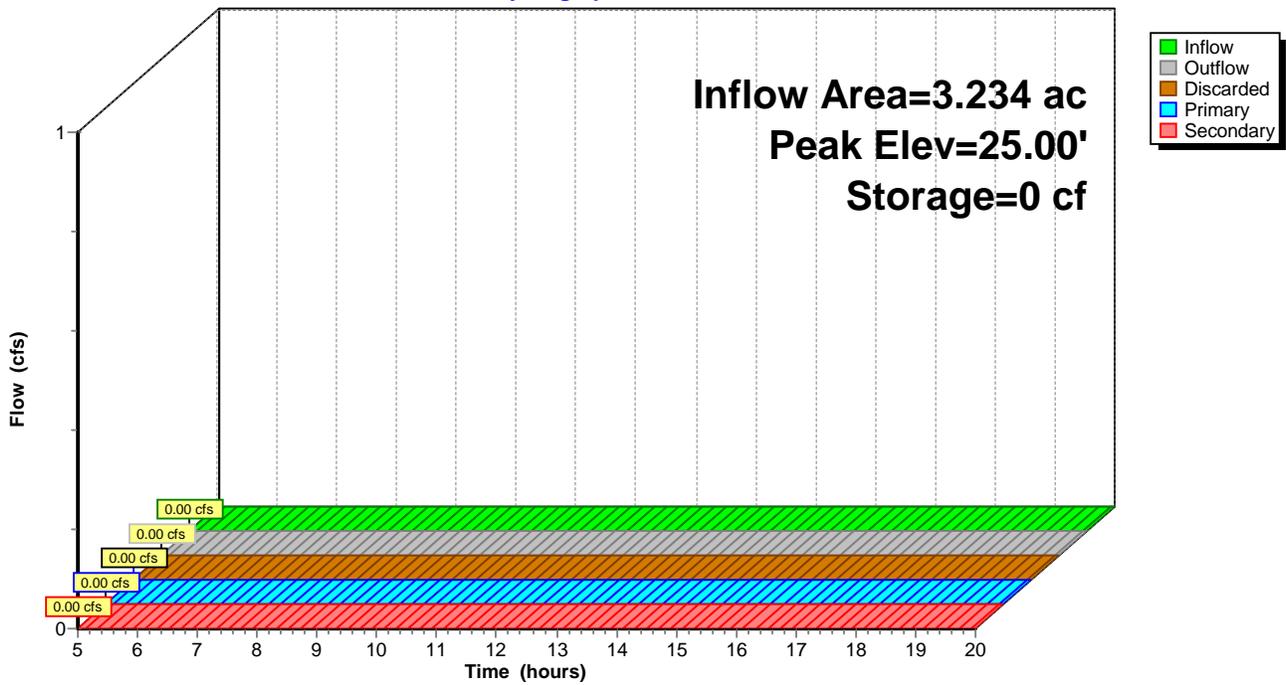
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond IB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 61

Summary for Pond IB-3:

Inflow Area = 3.433 ac, 68.31% Impervious, Inflow Depth > 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 15.20 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 15.23 hrs, Volume= 0.001 af, Atten= 0%, Lag= 1.7 min
 Discarded = 0.00 cfs @ 15.23 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-6 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.00' @ 15.23 hrs Surf.Area= 385 sf Storage= 0 cf

Plug-Flow detention time= 1.7 min calculated for 0.001 af (99% of inflow)
 Center-of-Mass det. time= 1.0 min (993.9 - 992.9)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	4,615 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	385	0	0
27.00	1,121	753	753
28.00	1,917	1,519	2,272
29.00	2,768	2,343	4,615

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	309.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	26.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.11 cfs @ 15.23 hrs HW=26.00' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.11 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=26.00' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

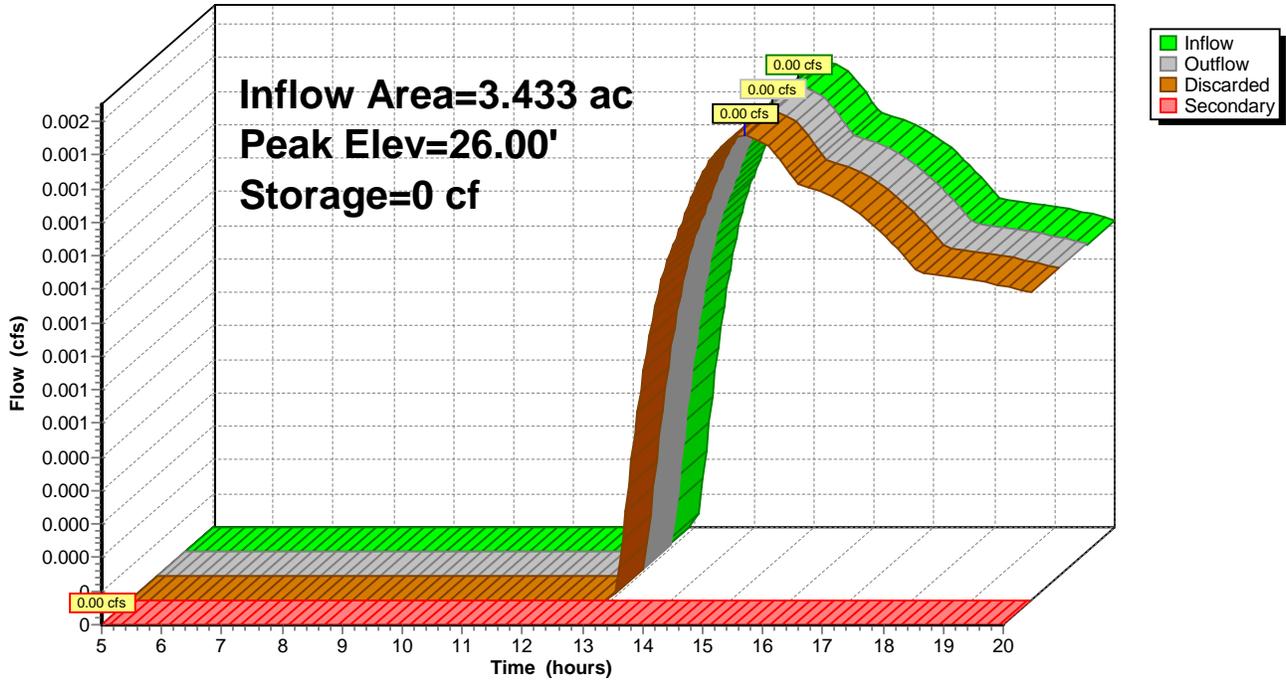
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 62

Pond IB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 63

Summary for Pond RG-1:

Inflow Area = 2.072 ac, 73.41% Impervious, Inflow Depth > 1.98" for 2-YR event
 Inflow = 4.59 cfs @ 12.09 hrs, Volume= 0.342 af
 Outflow = 0.30 cfs @ 13.86 hrs, Volume= 0.213 af, Atten= 93%, Lag= 106.2 min
 Discarded = 0.30 cfs @ 13.86 hrs, Volume= 0.213 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond FB-2 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.31' @ 13.86 hrs Surf.Area= 5,761 sf Storage= 8,608 cf

Plug-Flow detention time= 216.4 min calculated for 0.213 af (62% of inflow)
 Center-of-Mass det. time= 141.3 min (905.8 - 764.5)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	37,288 cf	Rain Garden Stage Storage (Prismatic) Listed below (Recalc)
#2	22.00'	1,512 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			3,780 cf Overall x 40.0% Voids
		38,800 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	1,696	0	0
27.00	2,683	2,190	2,190
27.50	3,497	1,545	3,735
28.00	4,266	1,941	5,675
29.00	6,024	5,145	10,820
30.00	7,856	6,940	17,760
31.00	9,743	8,800	26,560
32.00	11,713	10,728	37,288

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	945	0	0
23.00	945	945	945
24.00	945	945	1,890
25.00	945	945	2,835
26.00	945	945	3,780

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	392.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	22.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	26.89'	12.0" Round 12" HDPE Pipe L= 40.0' CMP, projecting, no headwall, Ke= 0.900

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 64

Inlet / Outlet Invert= 26.89' / 26.49' S= 0.0100 ' / ' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf
#4 Device 3 30.93' **3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns**
X 14 rows C= 0.600 in 18.0" Grate (71% open area)
Limited to weir flow at low heads

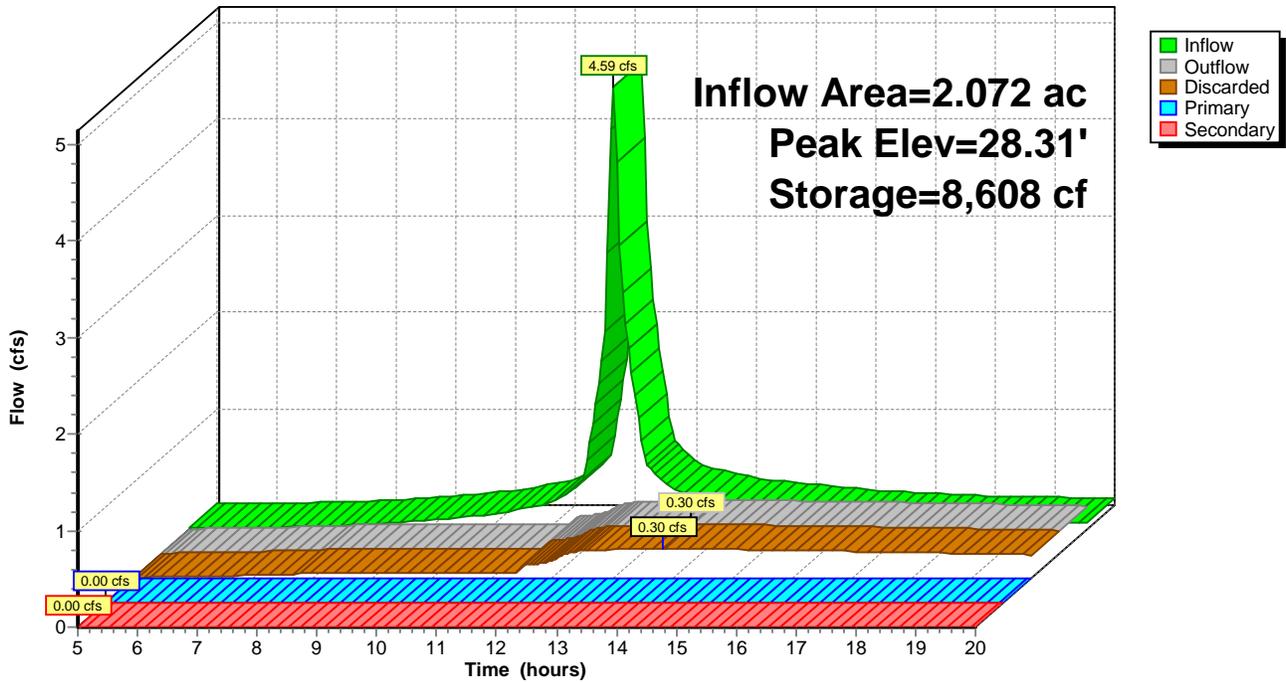
Discarded OutFlow Max=0.30 cfs @ 13.86 hrs HW=28.31' (Free Discharge)
↳ **2=Exfiltration** (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.00' (Free Discharge)
↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.00' (Free Discharge)
↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond RG-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 65

Summary for Pond SWB-1:

Inflow Area = 0.052 ac, 44.23% Impervious, Inflow Depth > 0.43" for 2-YR event
 Inflow = 0.02 cfs @ 12.12 hrs, Volume= 0.002 af
 Outflow = 0.01 cfs @ 12.59 hrs, Volume= 0.002 af, Atten= 68%, Lag= 28.1 min
 Discarded = 0.01 cfs @ 12.59 hrs, Volume= 0.002 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.18' @ 12.59 hrs Surf.Area= 117 sf Storage= 16 cf

Plug-Flow detention time= 22.3 min calculated for 0.002 af (99% of inflow)
 Center-of-Mass det. time= 20.8 min (875.9 - 855.1)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	896 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	60	0	0
30.50	219	70	70
31.00	423	161	230
32.00	908	666	896

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	168.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.80'	12.0" Round 12" HDPE Pipe L= 89.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.80' / 26.91' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.96'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.59 hrs HW=30.18' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.00 cfs of 3.89 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

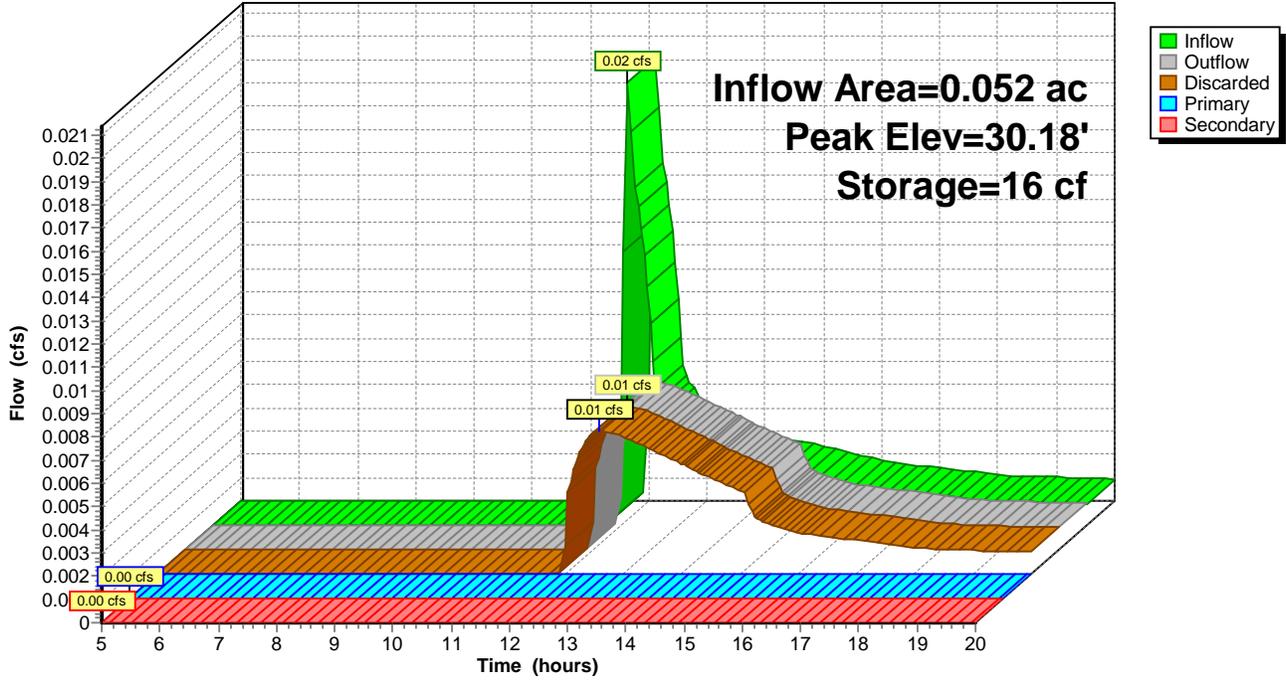
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 66

Pond SWB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 67

Summary for Pond SWB-2:

Inflow Area = 0.101 ac, 71.29% Impervious, Inflow Depth > 1.72" for 2-YR event
 Inflow = 0.21 cfs @ 12.09 hrs, Volume= 0.015 af
 Outflow = 0.20 cfs @ 12.15 hrs, Volume= 0.015 af, Atten= 7%, Lag= 3.5 min
 Discarded = 0.02 cfs @ 12.15 hrs, Volume= 0.010 af
 Primary = 0.18 cfs @ 12.15 hrs, Volume= 0.004 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.42' @ 12.15 hrs Surf.Area= 365 sf Storage= 121 cf

Plug-Flow detention time= 42.1 min calculated for 0.015 af (100% of inflow)
 Center-of-Mass det. time= 41.6 min (832.7 - 791.1)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	410 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	210	0	0
30.50	394	151	151
31.00	640	259	410

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	159.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.10'	12.0" Round 12" HDPE Pipe L= 19.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.10' / 26.91' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.37'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.15 hrs HW=30.42' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.18 cfs @ 12.15 hrs HW=30.42' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.18 cfs of 5.01 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Weir Controls 0.18 cfs @ 0.74 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

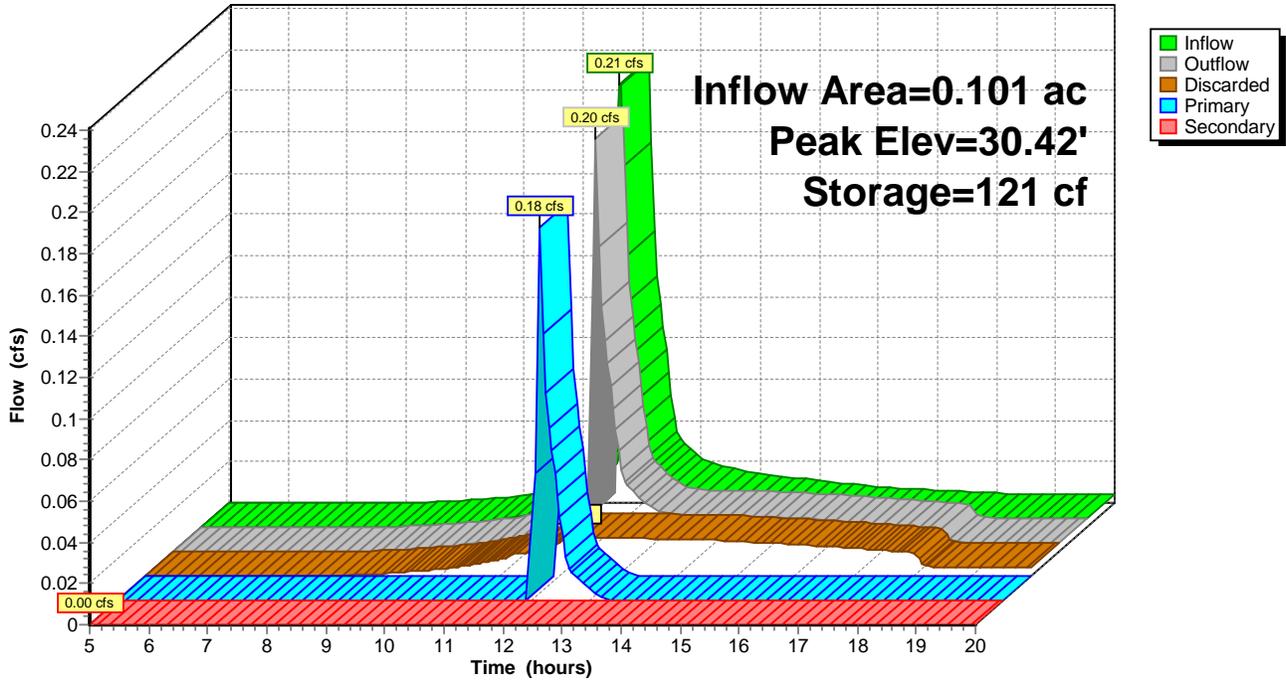
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 68

Pond SWB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 69

Summary for Pond SWB-3:

Inflow Area = 0.154 ac, 35.71% Impervious, Inflow Depth > 1.07" for 2-YR event
 Inflow = 0.15 cfs @ 12.22 hrs, Volume= 0.014 af
 Outflow = 0.17 cfs @ 12.22 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.2 min
 Discarded = 0.01 cfs @ 12.20 hrs, Volume= 0.008 af
 Primary = 0.16 cfs @ 12.22 hrs, Volume= 0.006 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.92' @ 12.20 hrs Surf.Area= 257 sf Storage= 71 cf

Plug-Flow detention time= 34.4 min calculated for 0.014 af (99% of inflow)
 Center-of-Mass det. time= 33.5 min (855.7 - 822.2)

Volume	Invert	Avail.Storage	Storage Description
#1	30.60'	510 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.60	182	0	0
31.00	274	91	91
31.50	412	172	263
32.00	576	247	510

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	114.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.60'	2.270 in/hr Exfiltration over Surface area
#3	Primary	25.96'	12.0" Round 12" HDPE Pipe L= 24.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 25.96' / 25.72' S= 0.0100 ' / Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.88'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.20 hrs HW=30.92' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.14 cfs @ 12.22 hrs HW=30.92' (Free Discharge)
 ↑**3=12" HDPE Pipe** (Passes 0.14 cfs of 6.31 cfs potential flow)
 ↑**4=18" Nyloplast Drain Grate** (Weir Controls 0.14 cfs @ 0.68 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.60' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

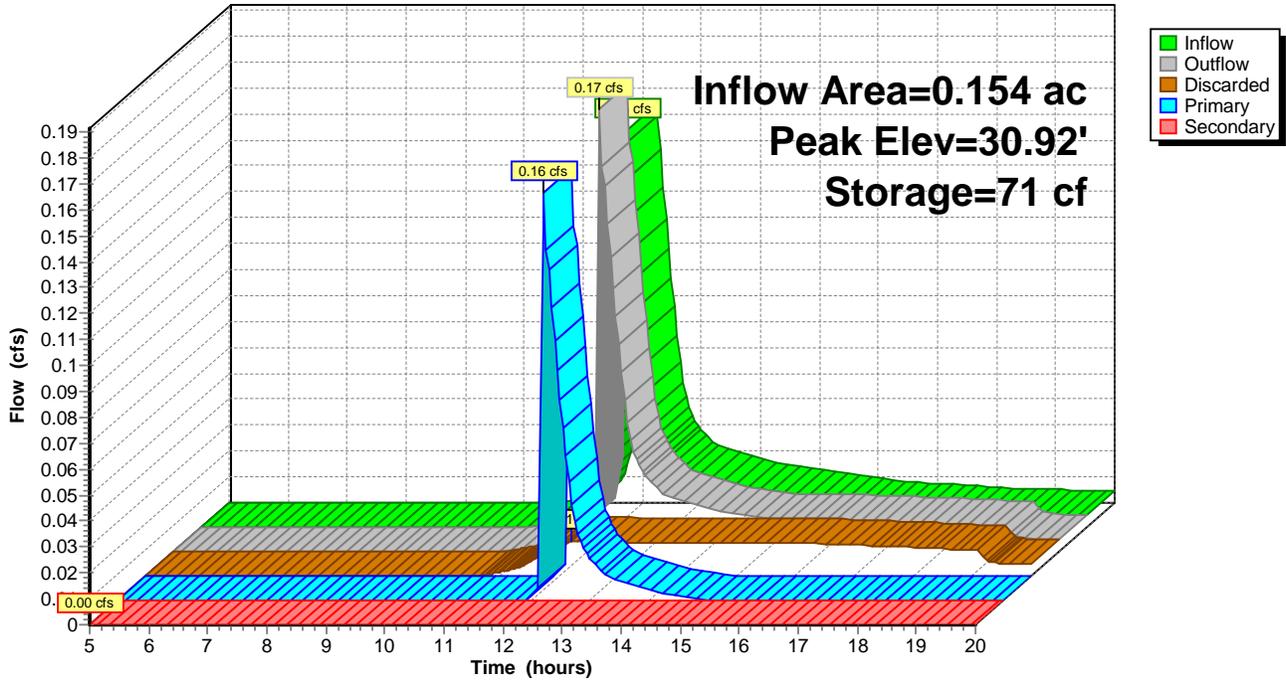
Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 70

Pond SWB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.40"

Printed 12/9/2025

Page 71

Summary for Pond UG-1:

Inflow Area = 0.575 ac, 72.70% Impervious, Inflow Depth > 1.58" for 2-YR event
 Inflow = 0.98 cfs @ 12.11 hrs, Volume= 0.076 af
 Outflow = 0.12 cfs @ 11.70 hrs, Volume= 0.076 af, Atten= 87%, Lag= 0.0 min
 Discarded = 0.12 cfs @ 11.70 hrs, Volume= 0.076 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 23.72' @ 12.82 hrs Surf.Area= 0.054 ac Storage= 0.029 af

Plug-Flow detention time= 75.3 min calculated for 0.075 af (99% of inflow)
 Center-of-Mass det. time= 74.2 min (813.6 - 739.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.69'	0.076 af	37.08'W x 63.06'L x 5.50'H Field A 0.295 af Overall - 0.104 af Embedded = 0.191 af x 40.0% Voids
#2A	23.44'	0.104 af	ADS_StormTech MC-3500 d +Cap x 40 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 40 Chambers in 5 Rows Cap Storage= 14.9 cf x 2 x 5 rows = 149.0 cf
		0.181 af	Total Available Storage

Storage Group A created with Chamber Wizard

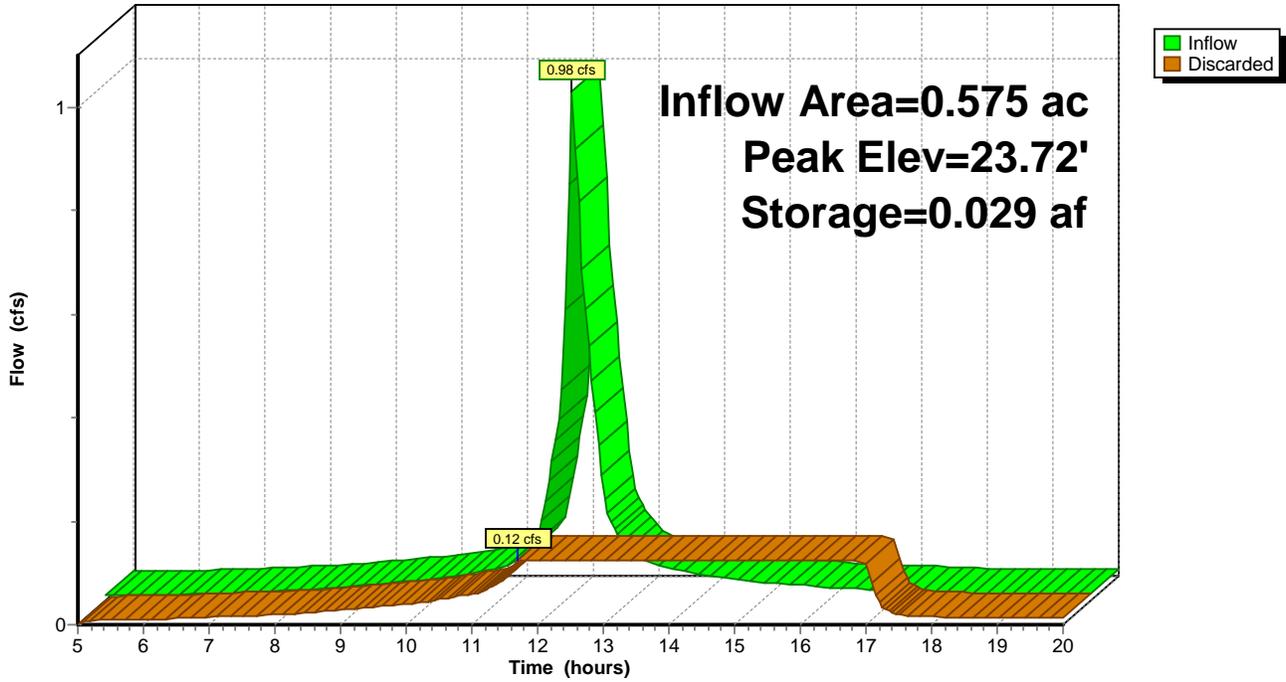
Device	Routing	Invert	Outlet Devices
#1	Discarded	22.69'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 11.70 hrs HW=22.75' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.12 cfs)

Pond UG-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 73

Summary for Subcatchment PR-01:

Runoff = 0.08 cfs @ 12.10 hrs, Volume= 0.006 af, Depth> 1.31"
Routed to Pond SWB-1 :

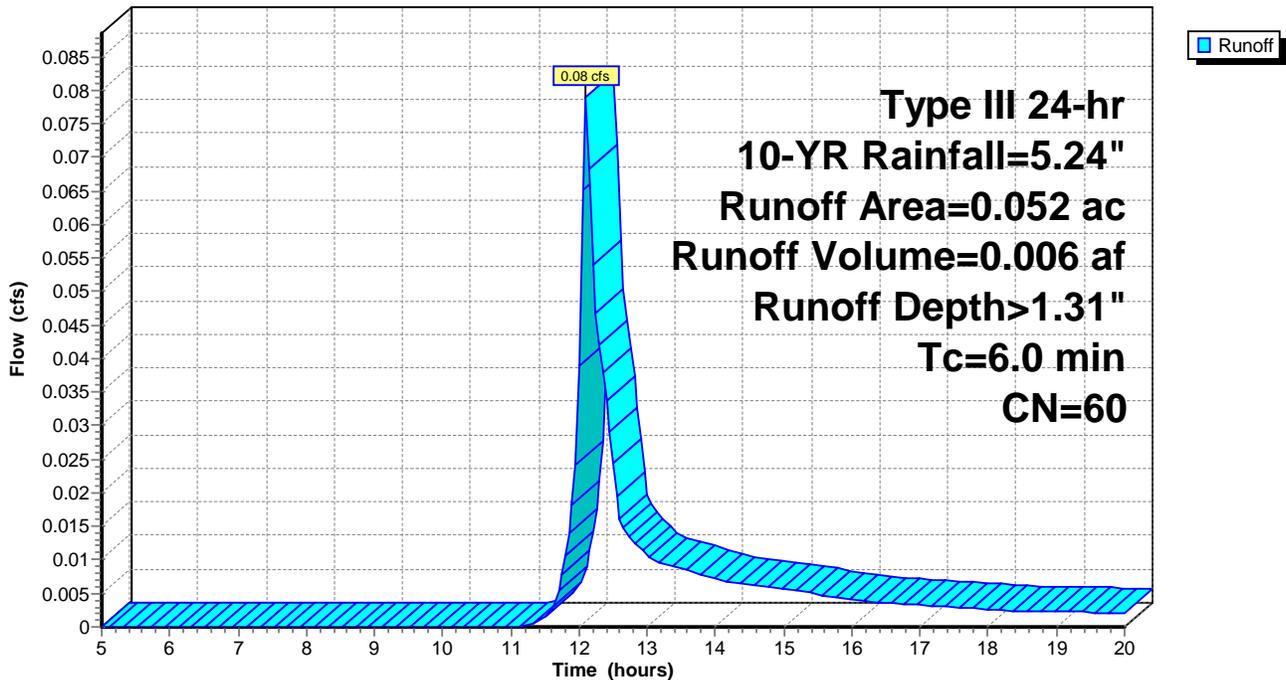
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.029	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.052	60	Weighted Average
0.029		55.77% Pervious Area
0.023		44.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-01:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 74

Summary for Subcatchment PR-02:

Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.028 af, Depth> 3.28"
 Routed to Pond SWB-2 :

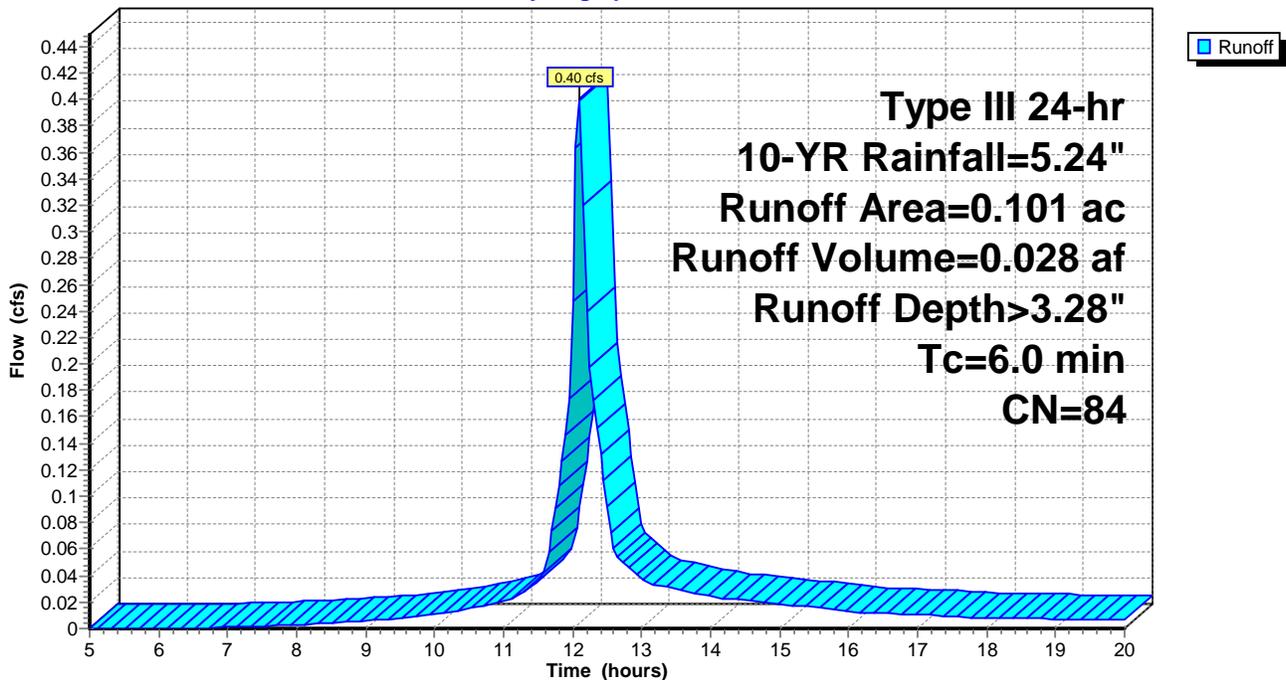
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.009	30	Meadow, non-grazed, HSG A
0.019	58	Meadow, non-grazed, HSG B
0.001	61	>75% Grass cover, Good, HSG B
* 0.072	98	Paved
0.101	84	Weighted Average
0.029		28.71% Pervious Area
0.072		71.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-02:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 75

Summary for Subcatchment PR-03:

Runoff = 0.35 cfs @ 12.21 hrs, Volume= 0.030 af, Depth> 2.36"
 Routed to Pond SWB-3 :

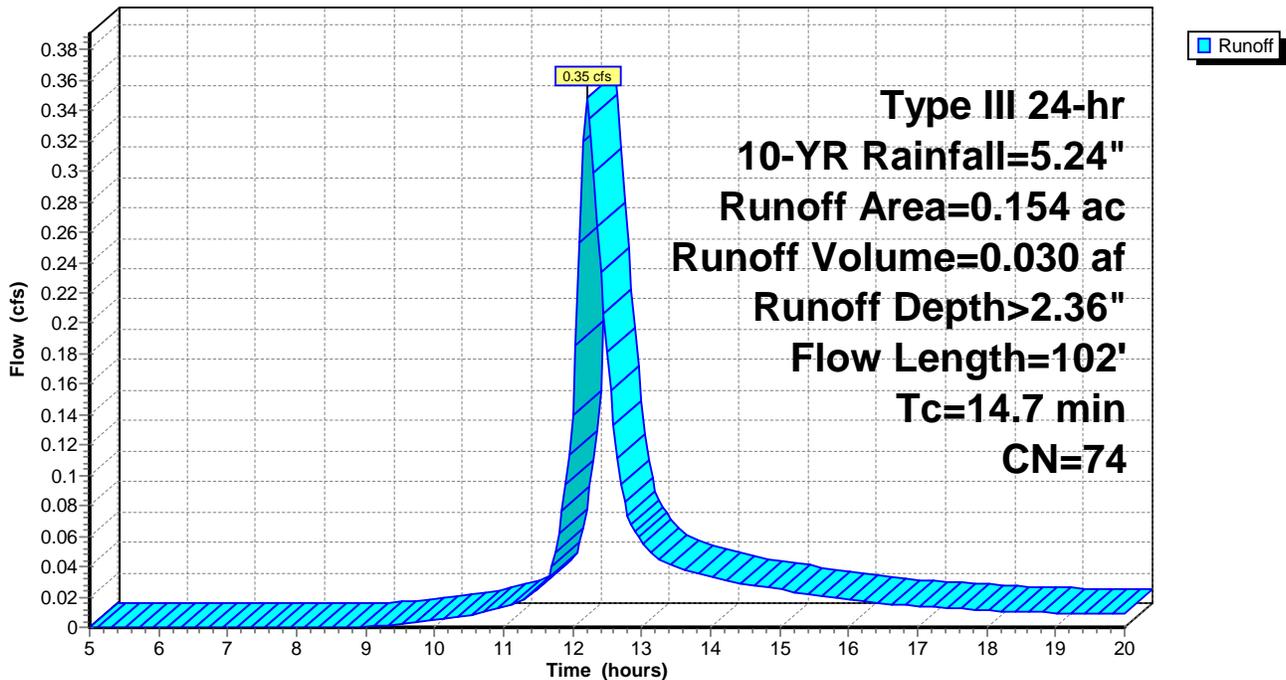
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.099	61	>75% Grass cover, Good, HSG B
* 0.055	98	Paved
0.154	74	Weighted Average
0.099		64.29% Pervious Area
0.055		35.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	83	0.0050	0.10		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.4	19	0.0130	0.80		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.7	102	Total			

Subcatchment PR-03:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 76

Summary for Subcatchment PR-04:

Runoff = 0.02 cfs @ 12.38 hrs, Volume= 0.003 af, Depth> 0.28"
Routed to Pond IB-1 :

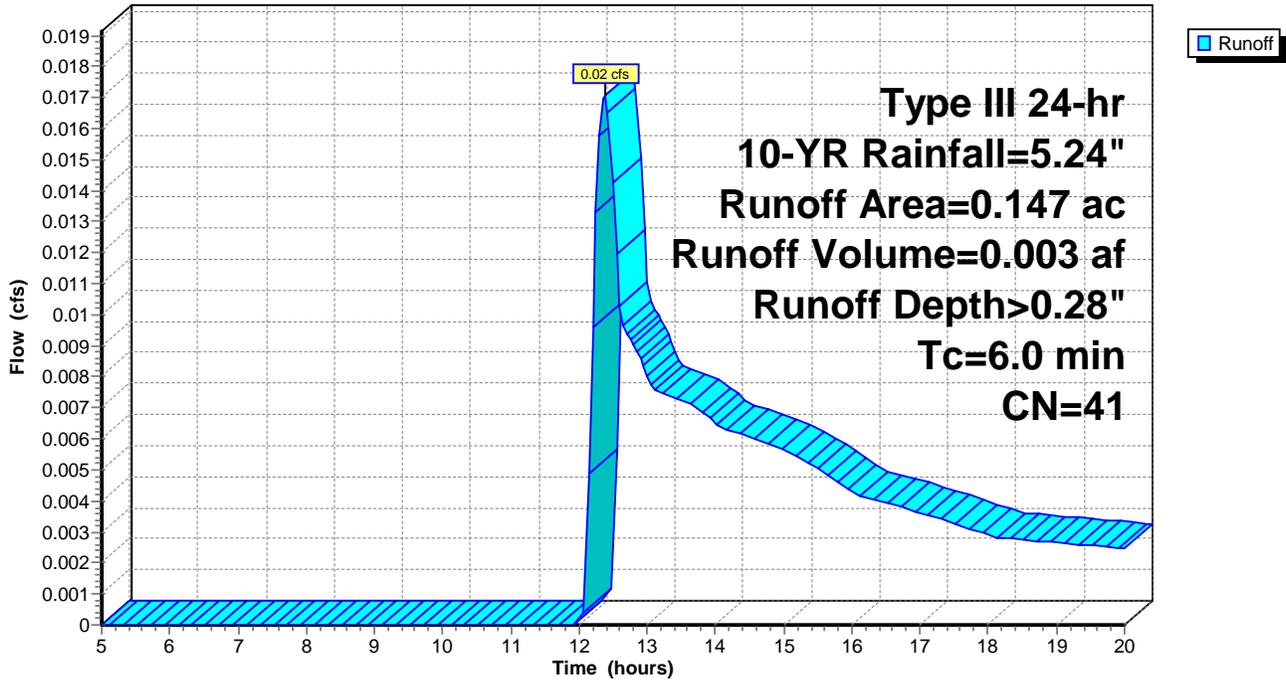
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.124	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.147	41	Weighted Average
0.124		84.35% Pervious Area
0.023		15.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-04:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 77

Summary for Subcatchment PR-05:

Runoff = 0.00 cfs @ 16.88 hrs, Volume= 0.000 af, Depth> 0.03"

Routed to Pond FB-1 :

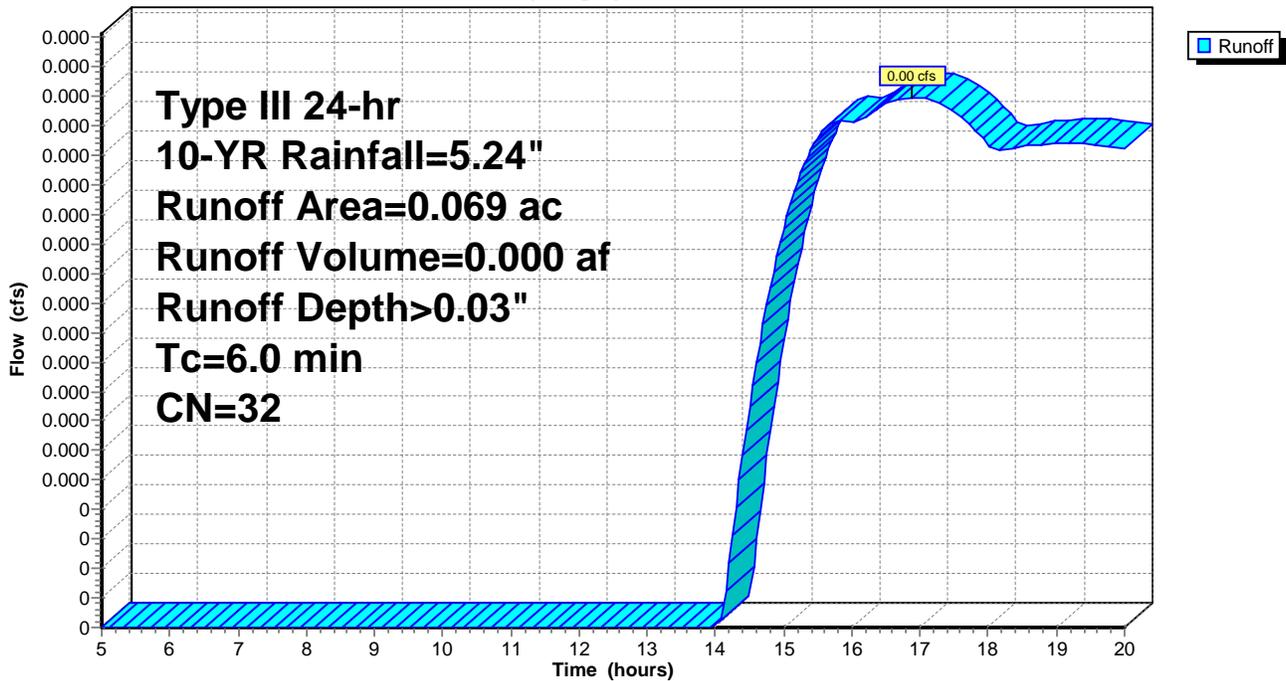
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.060	30	Meadow, non-grazed, HSG A
0.008	39	>75% Grass cover, Good, HSG A
* 0.001	98	Paved
0.069	32	Weighted Average
0.068		98.55% Pervious Area
0.001		1.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-05:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 78

Summary for Subcatchment PR-06:

Runoff = 0.95 cfs @ 12.09 hrs, Volume= 0.064 af, Depth> 2.81"
 Routed to Pond FB-1 :

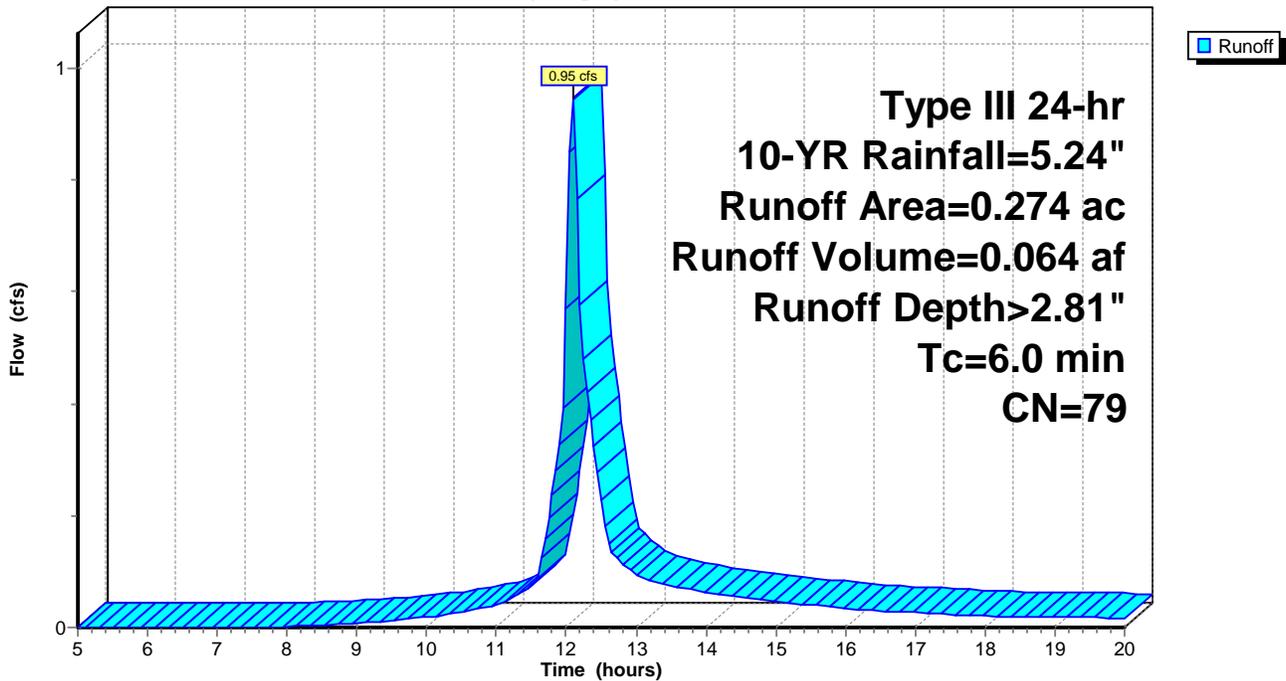
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.018	30	Meadow, non-grazed, HSG A
* 0.187	98	Paved
0.274	79	Weighted Average
0.087		31.75% Pervious Area
0.187		68.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-06:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 79

Summary for Subcatchment PR-07:

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.053 af, Depth> 2.54"

Routed to Pond FB-1 :

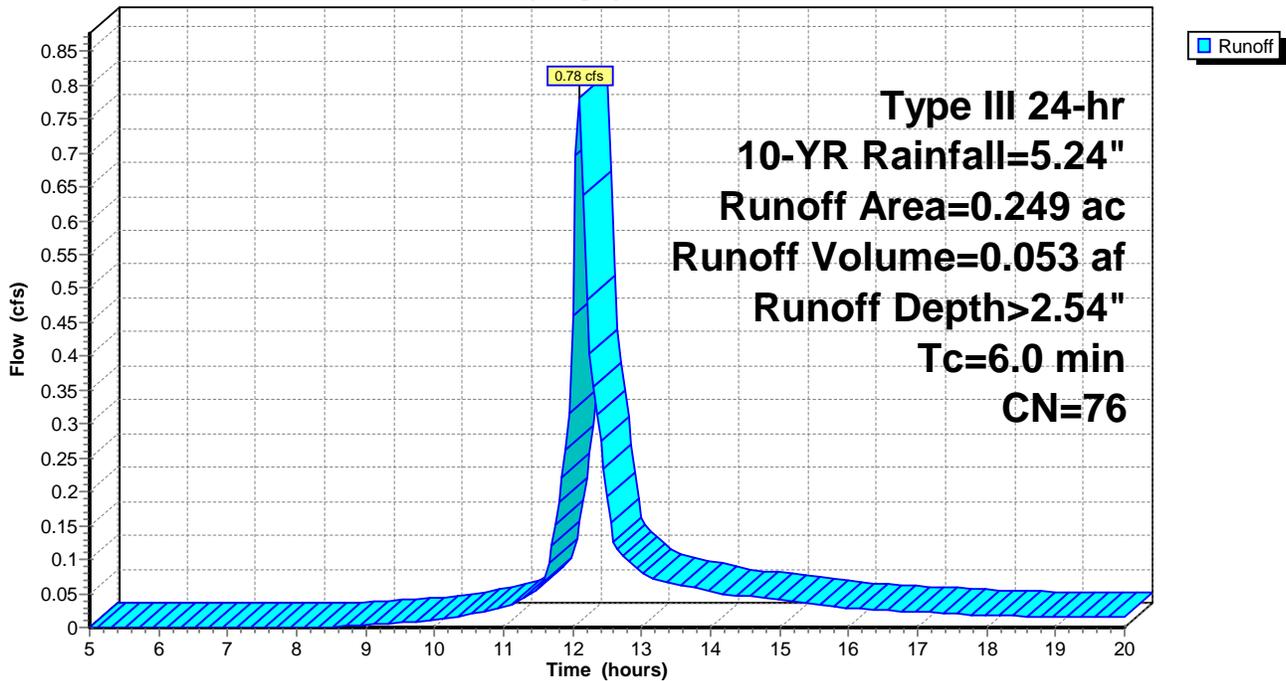
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.014	30	Meadow, non-grazed, HSG A
0.078	39	>75% Grass cover, Good, HSG A
* 0.157	98	Paved
0.249	76	Weighted Average
0.092		36.95% Pervious Area
0.157		63.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-07:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 80

Summary for Subcatchment PR-08:

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth> 0.01"

Routed to Pond RG-1 :

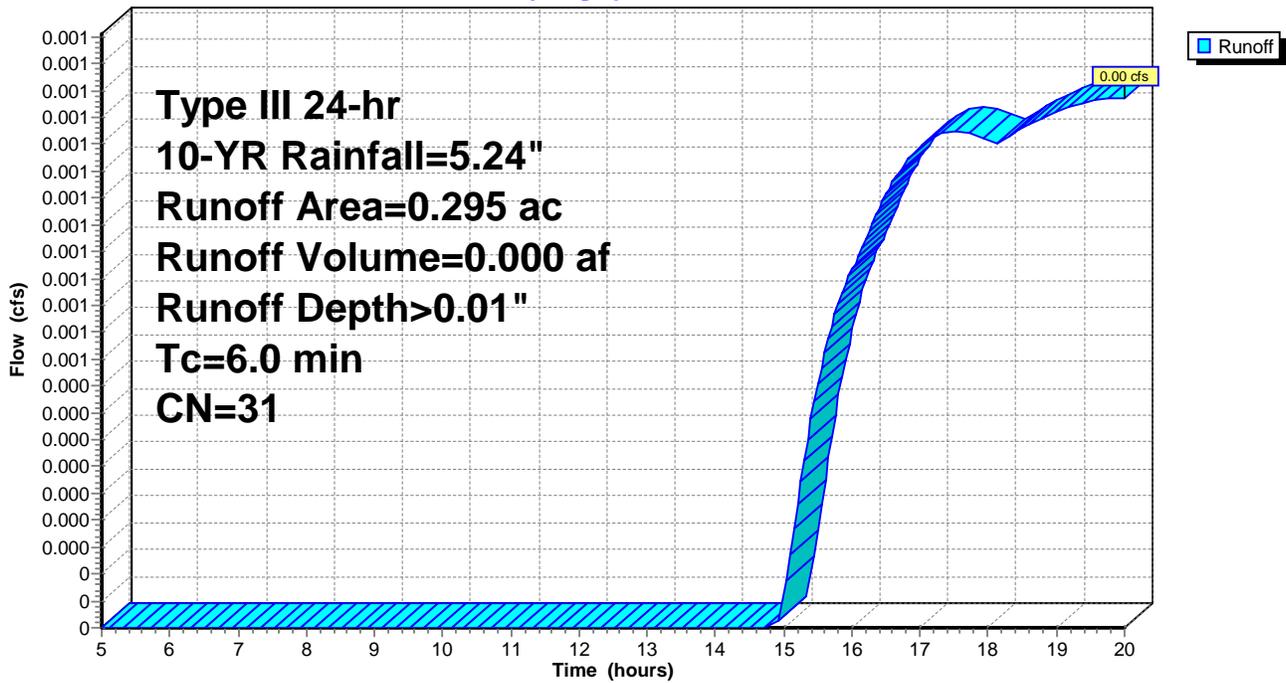
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.283	30	Brush, Good, HSG A
0.012	48	Brush, Good, HSG B
0.295	31	Weighted Average
0.295		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-08:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 81

Summary for Subcatchment PR-09:

Runoff = 0.74 cfs @ 12.18 hrs, Volume= 0.065 af, Depth> 3.67"
 Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.031	61	>75% Grass cover, Good, HSG B
0.000	58	Meadow, non-grazed, HSG B
* 0.162	98	Paved
0.211	88	Weighted Average
0.049		23.22% Pervious Area
0.162		76.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.0140	0.15		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.7	87	0.0150	0.86		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.0	9	0.0220	3.01		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	18	0.0310	1.23		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
0.2	39	0.0310	3.57		Shallow Concentrated Flow, E-F
					Paved Kv= 20.3 fps
0.1	28	0.0050	3.21	2.52	Pipe Channel, F-G
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.013
0.3	60	0.0050	3.47	2.73	Pipe Channel, G-H
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.012
13.5	341	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

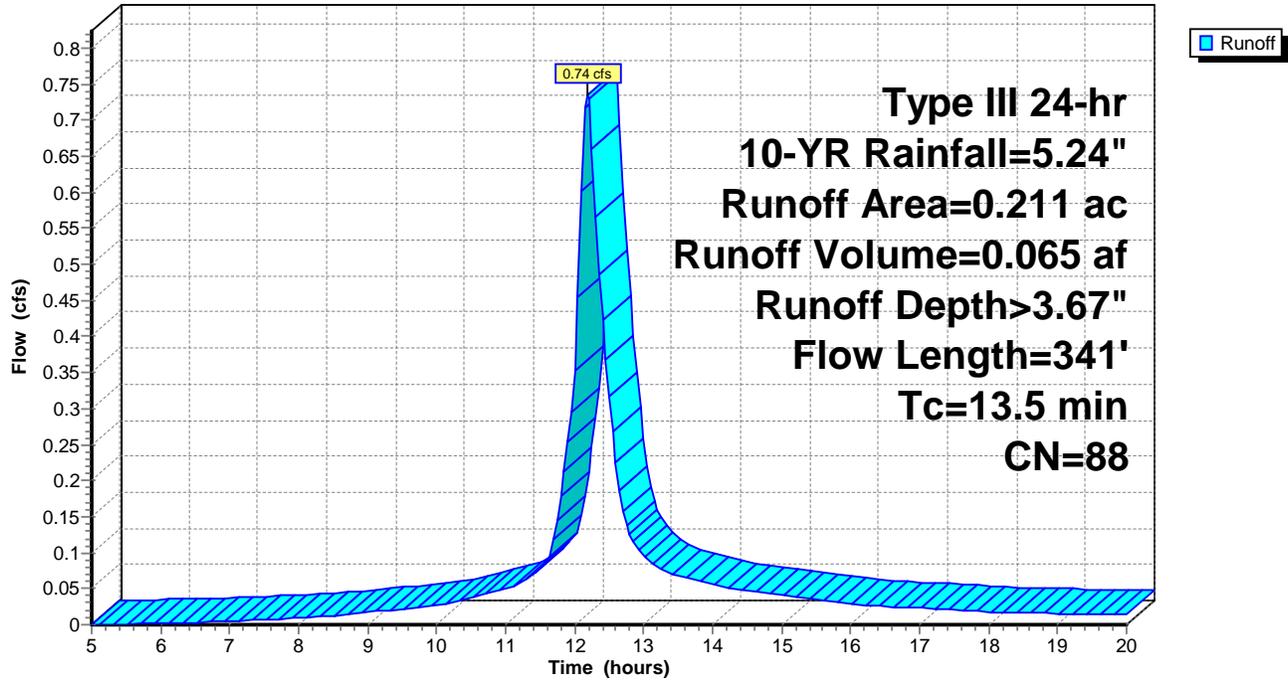
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 82

Subcatchment PR-09:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 83

Summary for Subcatchment PR-10:

Runoff = 0.55 cfs @ 12.09 hrs, Volume= 0.042 af, Depth> 4.47"
 Routed to Pond RG-1 :

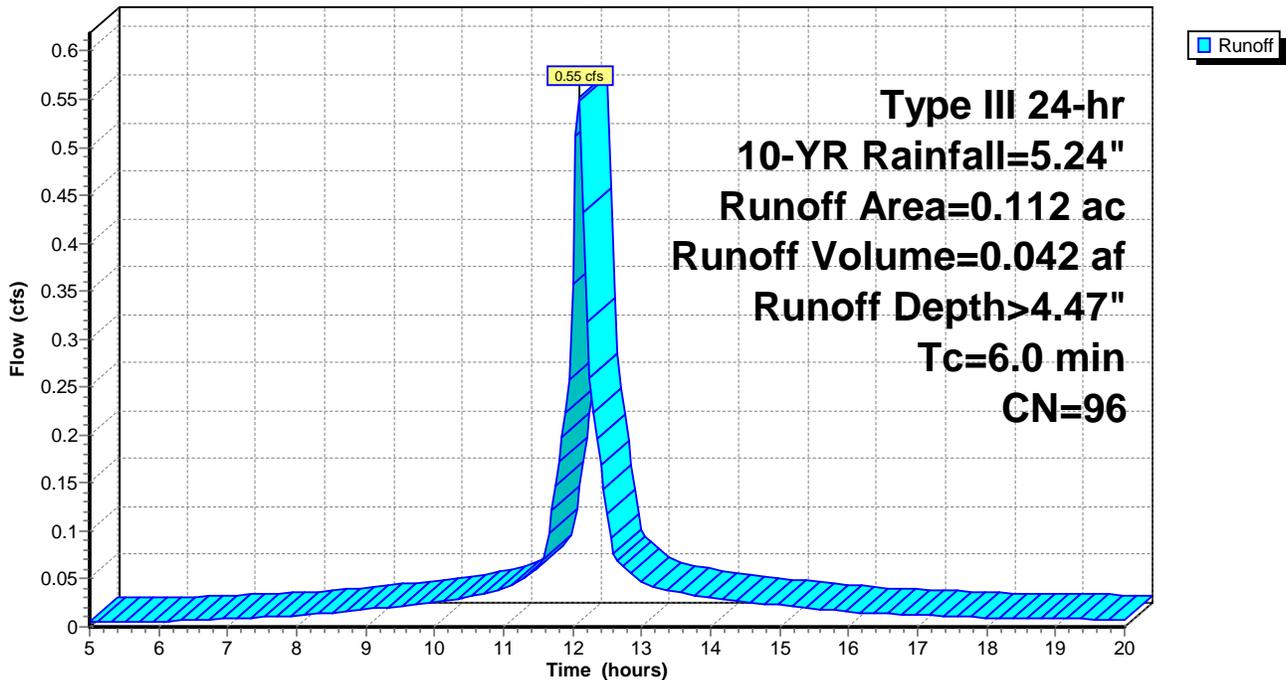
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.003	39	>75% Grass cover, Good, HSG A
* 0.109	98	Paved
0.112	96	Weighted Average
0.003		2.68% Pervious Area
0.109		97.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-10:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 84

Summary for Subcatchment PR-11:

Runoff = 1.29 cfs @ 12.09 hrs, Volume= 0.091 af, Depth> 3.78"

Routed to Pond RG-1 :

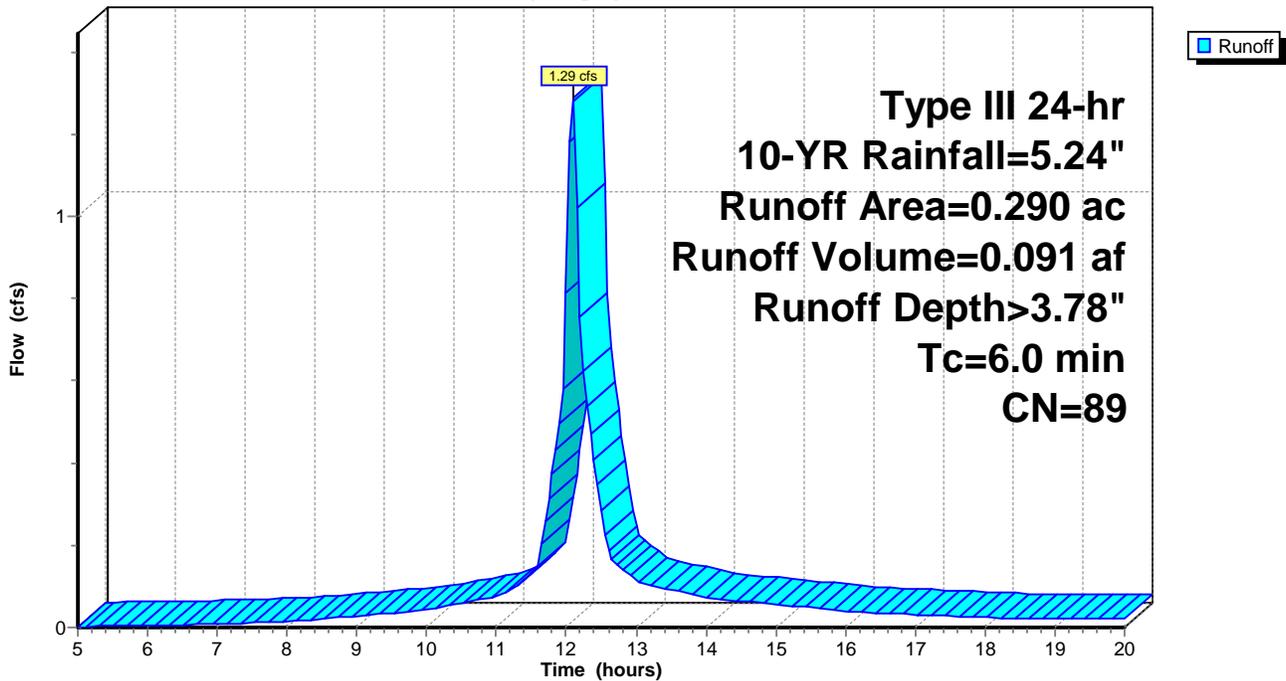
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.020	39	>75% Grass cover, Good, HSG A
0.040	61	>75% Grass cover, Good, HSG B
* 0.230	98	Paved
0.290	89	Weighted Average
0.060		20.69% Pervious Area
0.230		79.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-11:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 85

Summary for Subcatchment PR-12:

Runoff = 1.26 cfs @ 12.09 hrs, Volume= 0.091 af, Depth> 3.98"
 Routed to Pond RG-1 :

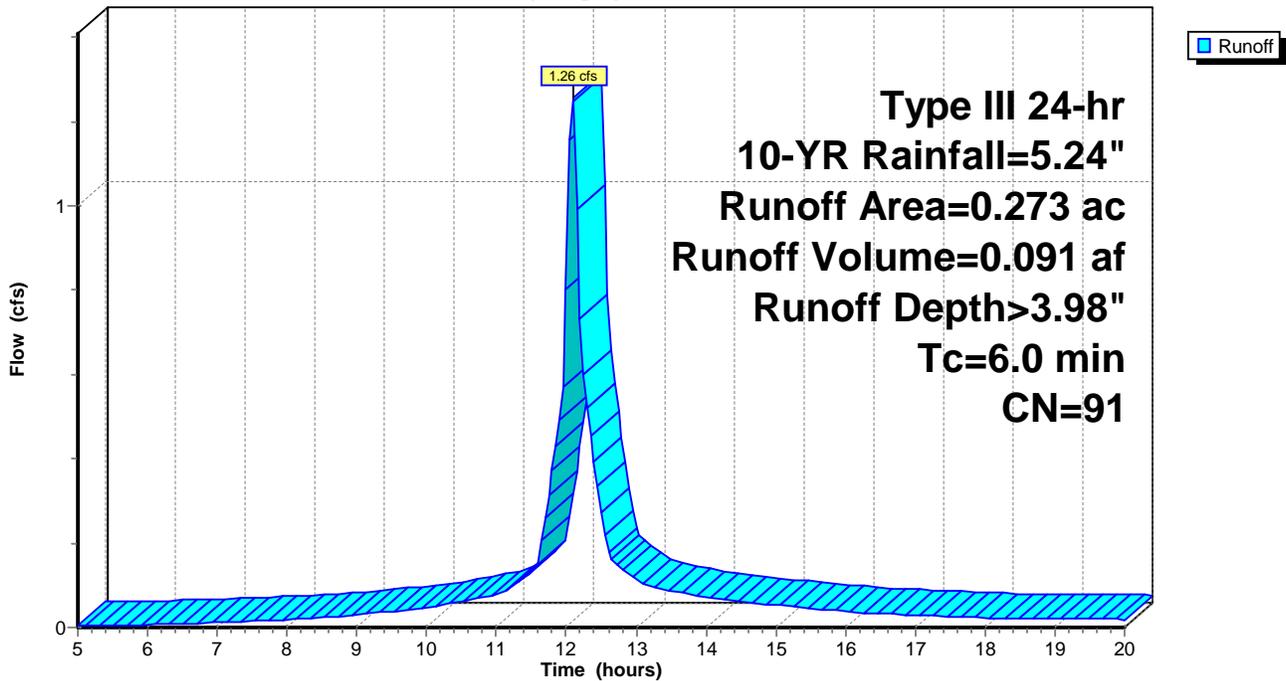
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.008	61	>75% Grass cover, Good, HSG B
* 0.237	98	Paved
0.273	91	Weighted Average
0.036		13.19% Pervious Area
0.237		86.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-12:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 86

Summary for Subcatchment PR-13:

Runoff = 0.77 cfs @ 12.09 hrs, Volume= 0.055 af, Depth> 3.98"
 Routed to Pond RG-1 :

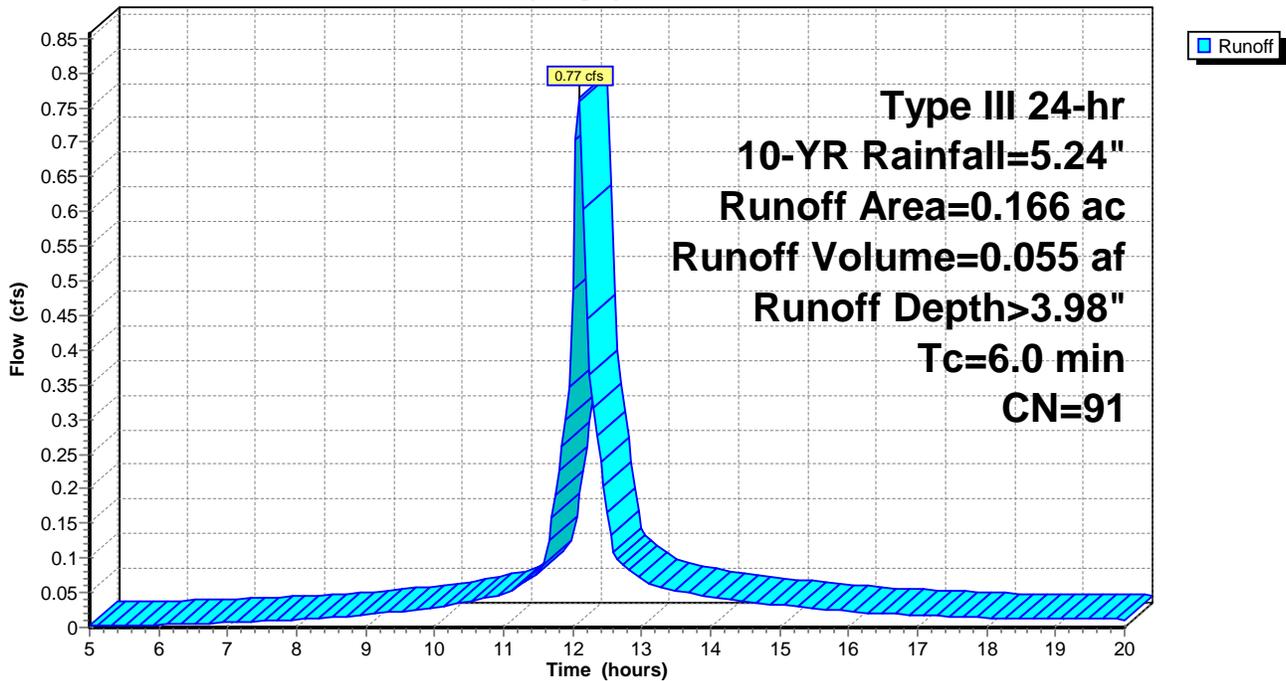
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.019	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
* 0.146	98	Paved
0.166	91	Weighted Average
0.020		12.05% Pervious Area
0.146		87.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-13:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 87

Summary for Subcatchment PR-14:

Runoff = 0.90 cfs @ 12.09 hrs, Volume= 0.063 af, Depth> 3.58"
Routed to Pond RG-1 :

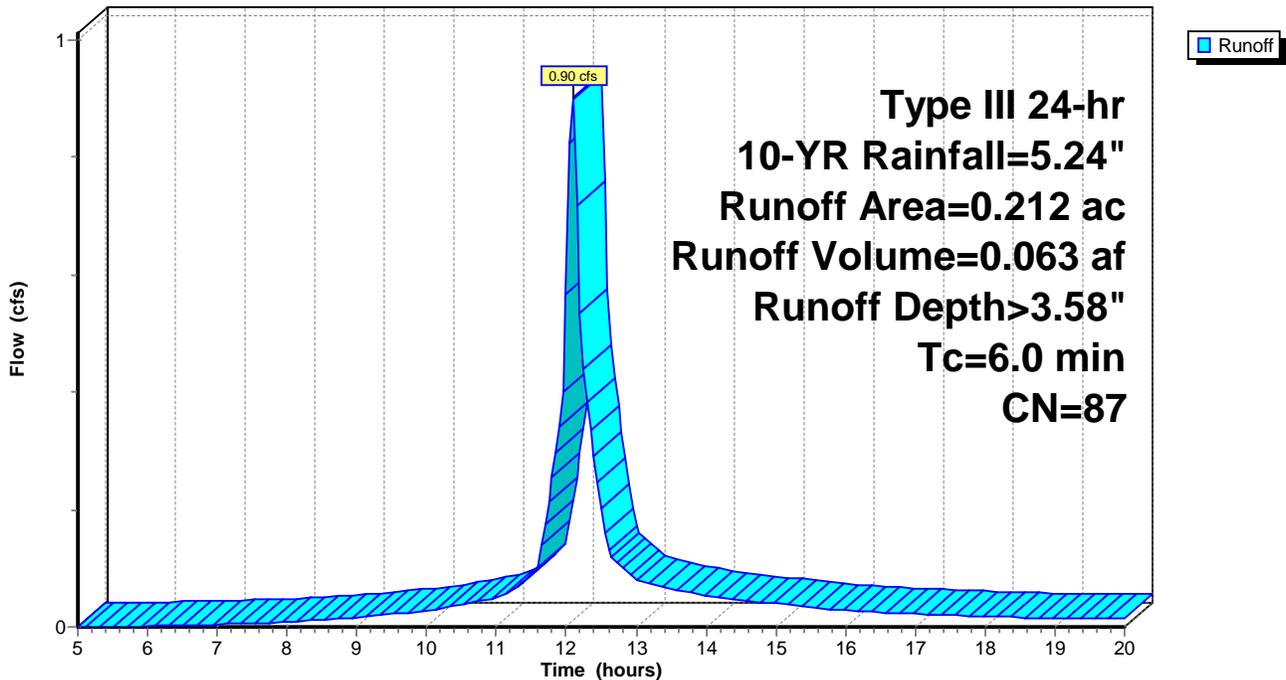
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.040	39	>75% Grass cover, Good, HSG A
* 0.172	98	Paved
0.212	87	Weighted Average
0.040		18.87% Pervious Area
0.172		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-14:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 88

Summary for Subcatchment PR-15:

Runoff = 0.46 cfs @ 12.10 hrs, Volume= 0.032 af, Depth> 2.90"
 Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.030	39	>75% Grass cover, Good, HSG A
0.018	61	>75% Grass cover, Good, HSG B
* 0.085	98	Paved
0.133	80	Weighted Average
0.048		36.09% Pervious Area
0.085		63.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	62	0.0200	0.16		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.0	5	0.0200	2.87		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	52	0.0500	10.99	8.63	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	67	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.1	48	0.0100	5.70	7.00	Pipe Channel, E-F 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
6.9	234	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

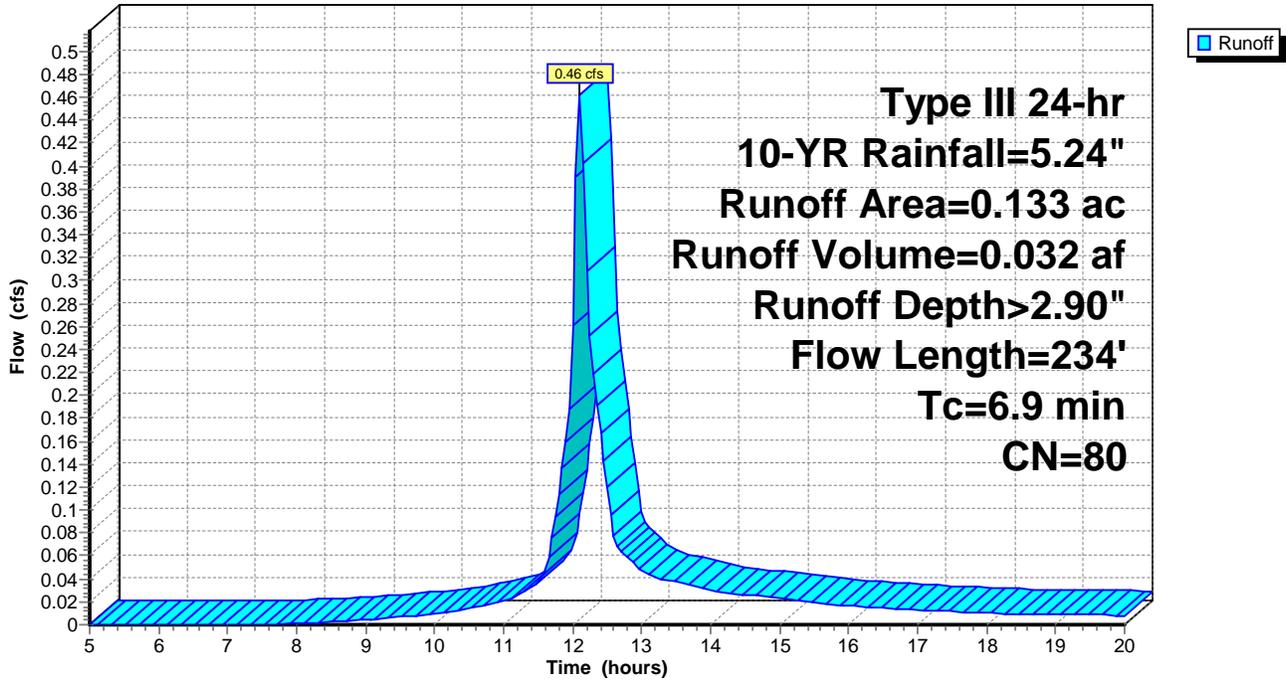
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 89

Subcatchment PR-15:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 90

Summary for Subcatchment PR-16:

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth> 0.00"

Routed to Pond IB-2 :

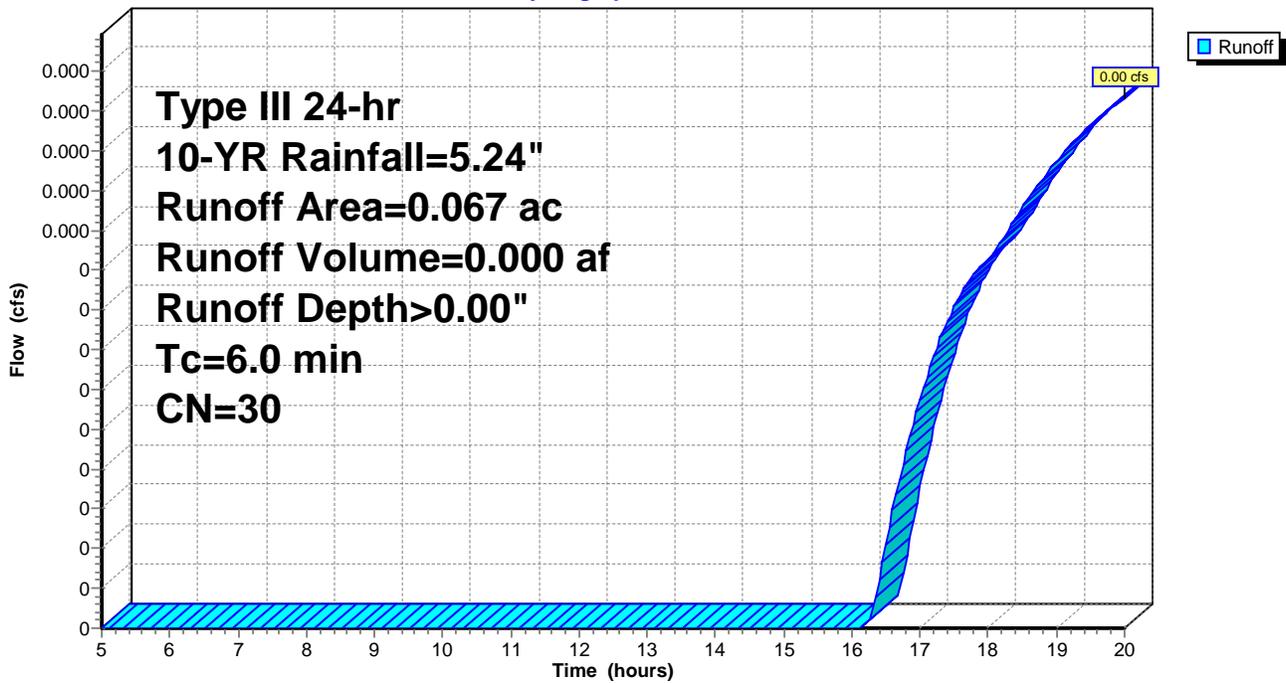
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.067	30	Brush, Good, HSG A
0.067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-16:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 92

Summary for Subcatchment PR-18:

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.058 af, Depth> 3.78"
 Routed to Pond FB-2 :

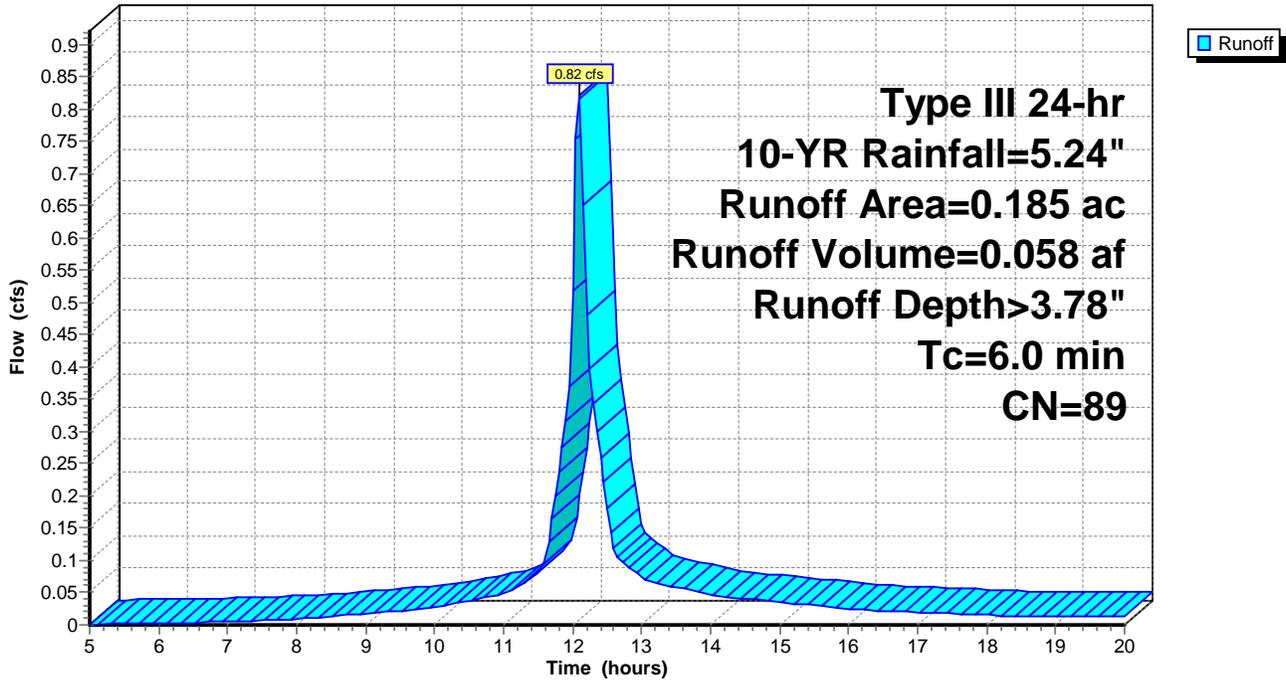
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.029	39	>75% Grass cover, Good, HSG A
* 0.156	98	Paved
0.185	89	Weighted Average
0.029		15.68% Pervious Area
0.156		84.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-18:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 93

Summary for Subcatchment PR-19:

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 3.88"
 Routed to Pond FB-2 :

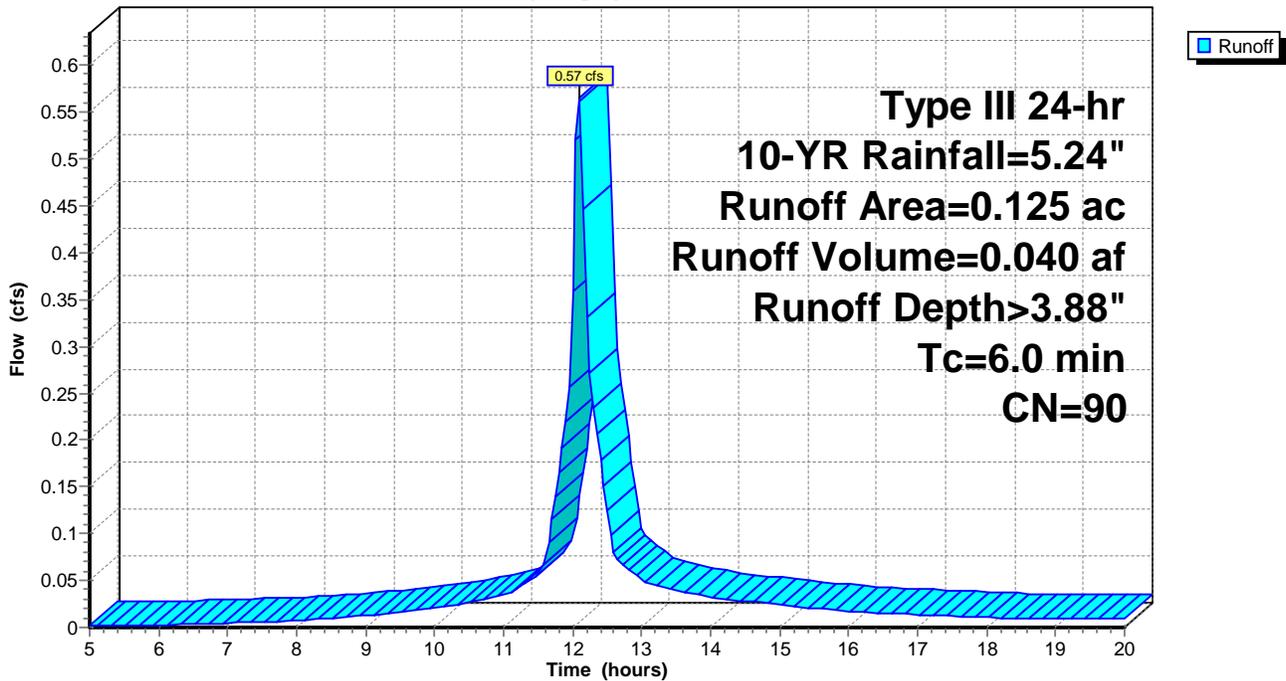
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.002	61	>75% Grass cover, Good, HSG B
* 0.107	98	Paved
0.125	90	Weighted Average
0.018		14.40% Pervious Area
0.107		85.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-19:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 94

Summary for Subcatchment PR-20:

Runoff = 1.14 cfs @ 12.09 hrs, Volume= 0.080 af, Depth> 3.68"

Routed to Pond FB-2 :

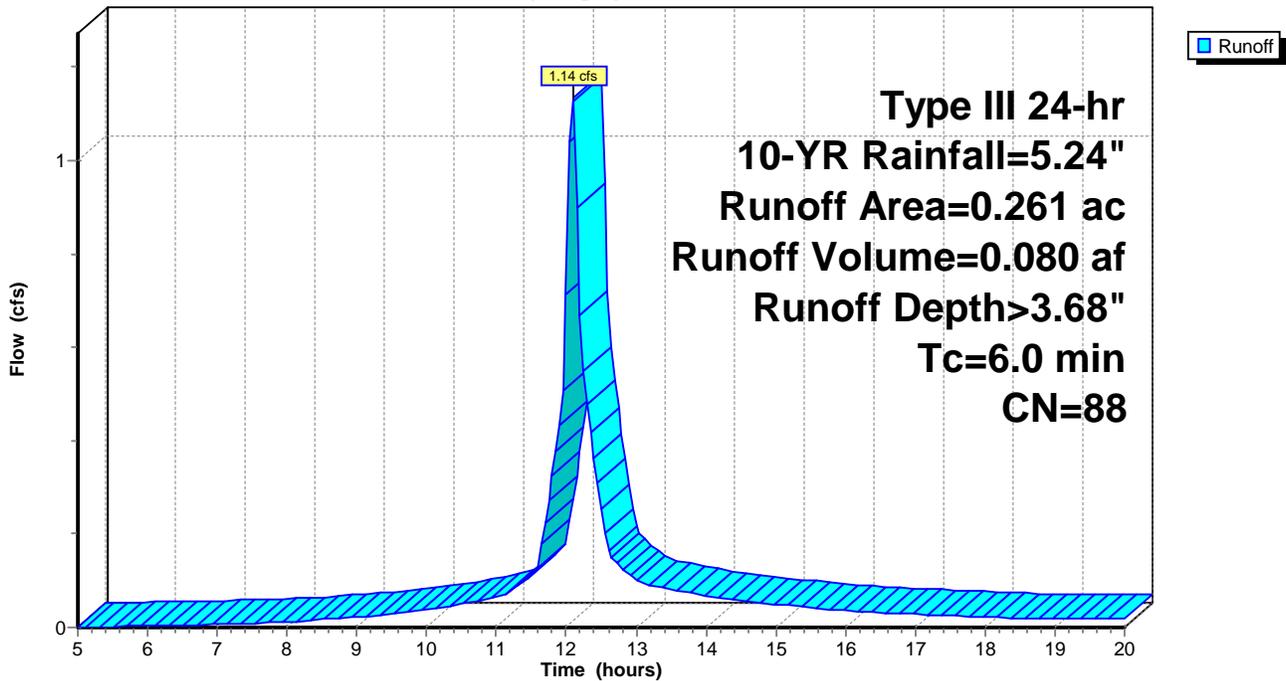
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.041	39	>75% Grass cover, Good, HSG A
0.004	61	>75% Grass cover, Good, HSG B
* 0.216	98	Paved
0.261	88	Weighted Average
0.045		17.24% Pervious Area
0.216		82.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-20:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 95

Summary for Subcatchment PR-21:

Runoff = 0.73 cfs @ 12.09 hrs, Volume= 0.054 af, Depth> 4.19"
Routed to Pond FB-2 :

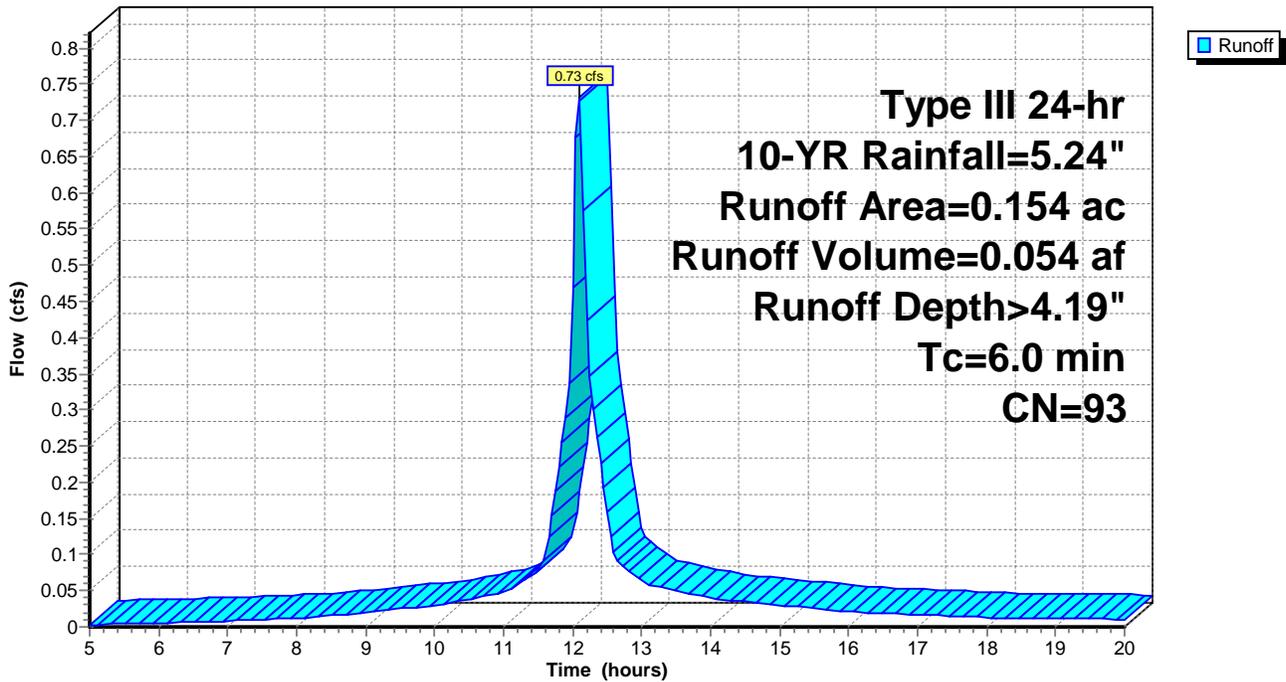
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.013	39	>75% Grass cover, Good, HSG A
* 0.141	98	Paved
0.154	93	Weighted Average
0.013		8.44% Pervious Area
0.141		91.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-21:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 96

Summary for Subcatchment PR-22:

Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.027 af, Depth> 2.54"

Routed to Pond FB-2 :

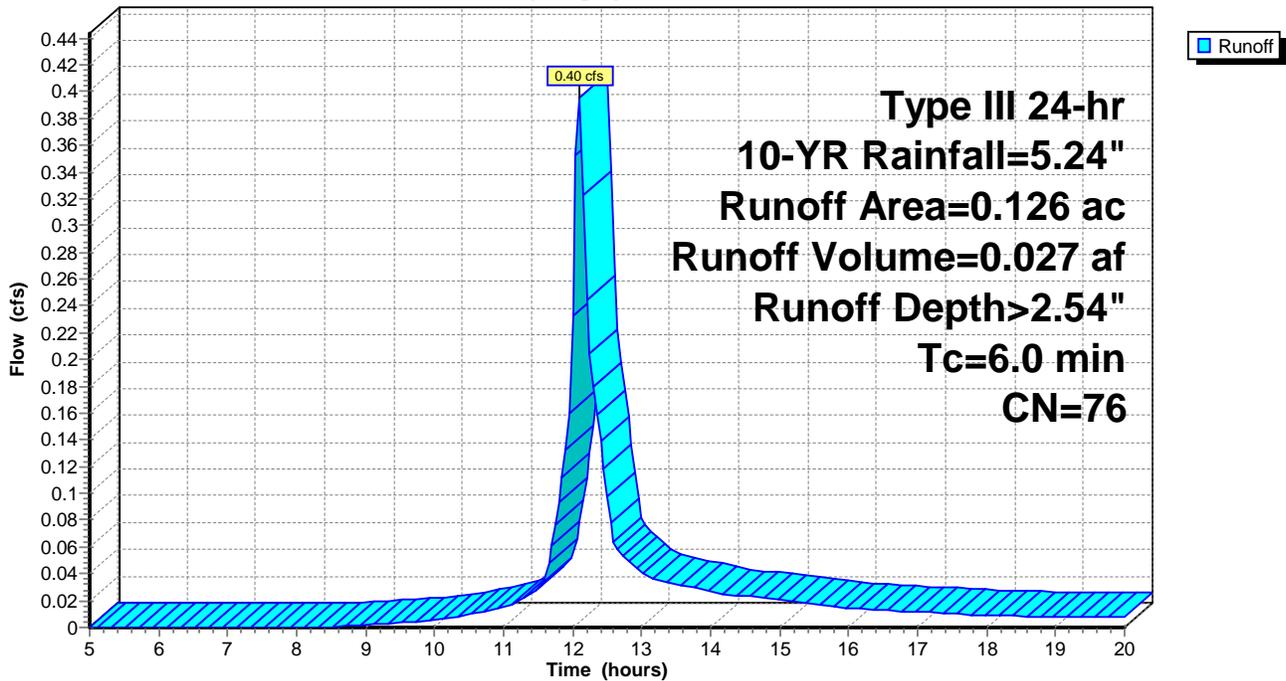
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.034	39	>75% Grass cover, Good, HSG A
0.022	61	>75% Grass cover, Good, HSG B
* 0.070	98	Paved
0.126	76	Weighted Average
0.056		44.44% Pervious Area
0.070		55.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-22:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 97

Summary for Subcatchment PR-23:

Runoff = 0.55 cfs @ 12.14 hrs, Volume= 0.042 af, Depth> 2.90"

Routed to Pond FB-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.035	39	>75% Grass cover, Good, HSG A
0.029	61	>75% Grass cover, Good, HSG B
* 0.109	98	Paved
0.173	80	Weighted Average
0.064		36.99% Pervious Area
0.109		63.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	71	0.0130	0.14		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.7	124	0.0240	3.14		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	27	0.0100	4.91	3.86	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	52	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.6	274	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

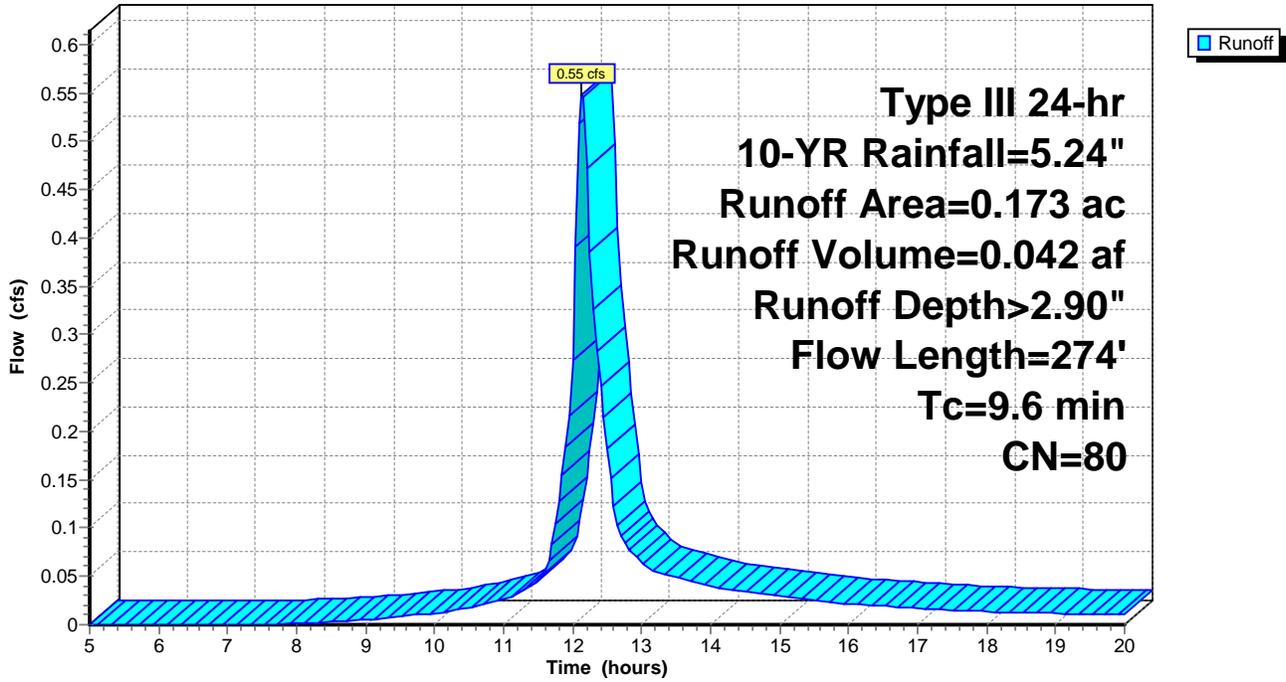
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 98

Subcatchment PR-23:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 99

Summary for Subcatchment PR-24:

Runoff = 0.04 cfs @ 12.30 hrs, Volume= 0.007 af, Depth> 0.40"
 Routed to Pond IB-3 :

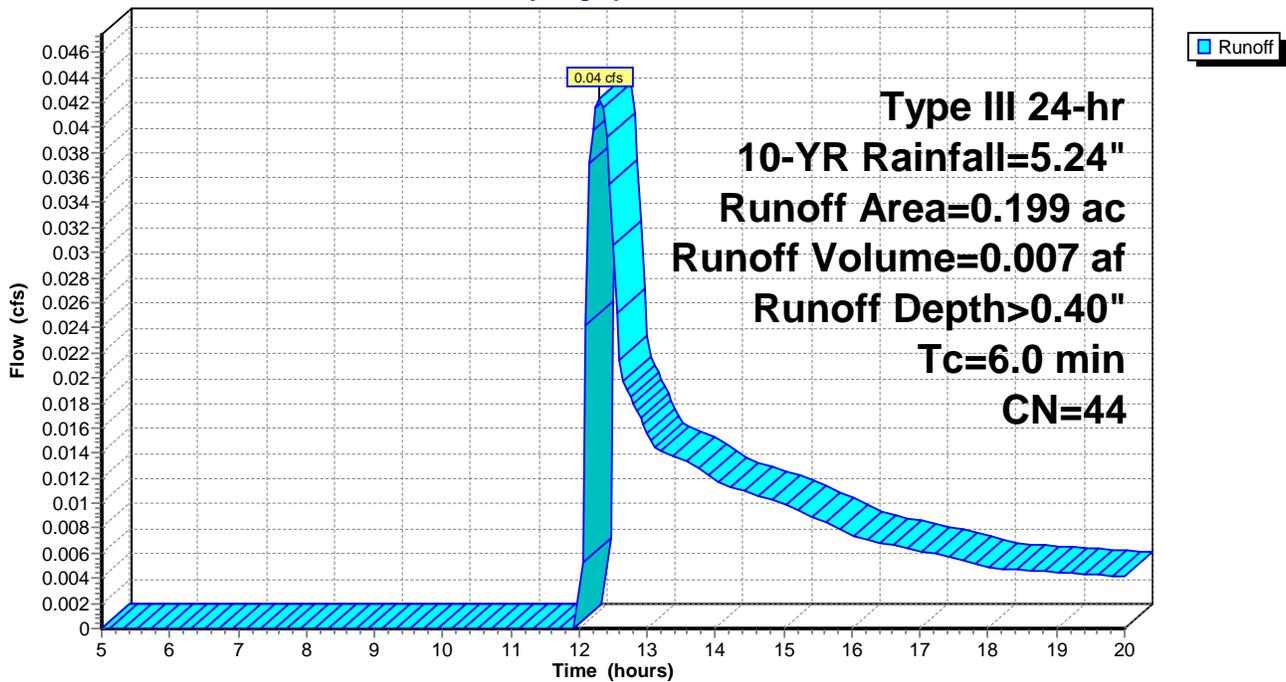
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.071	39	>75% Grass cover, Good, HSG A
0.013	61	>75% Grass cover, Good, HSG B
0.090	30	Meadow, non-grazed, HSG A
* 0.025	98	Paved
0.199	44	Weighted Average
0.174		87.44% Pervious Area
0.025		12.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-24:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 100

Summary for Subcatchment PR-25:

Runoff = 0.02 cfs @ 12.44 hrs, Volume= 0.004 af, Depth> 0.20"
Routed to Pond GT-1 :

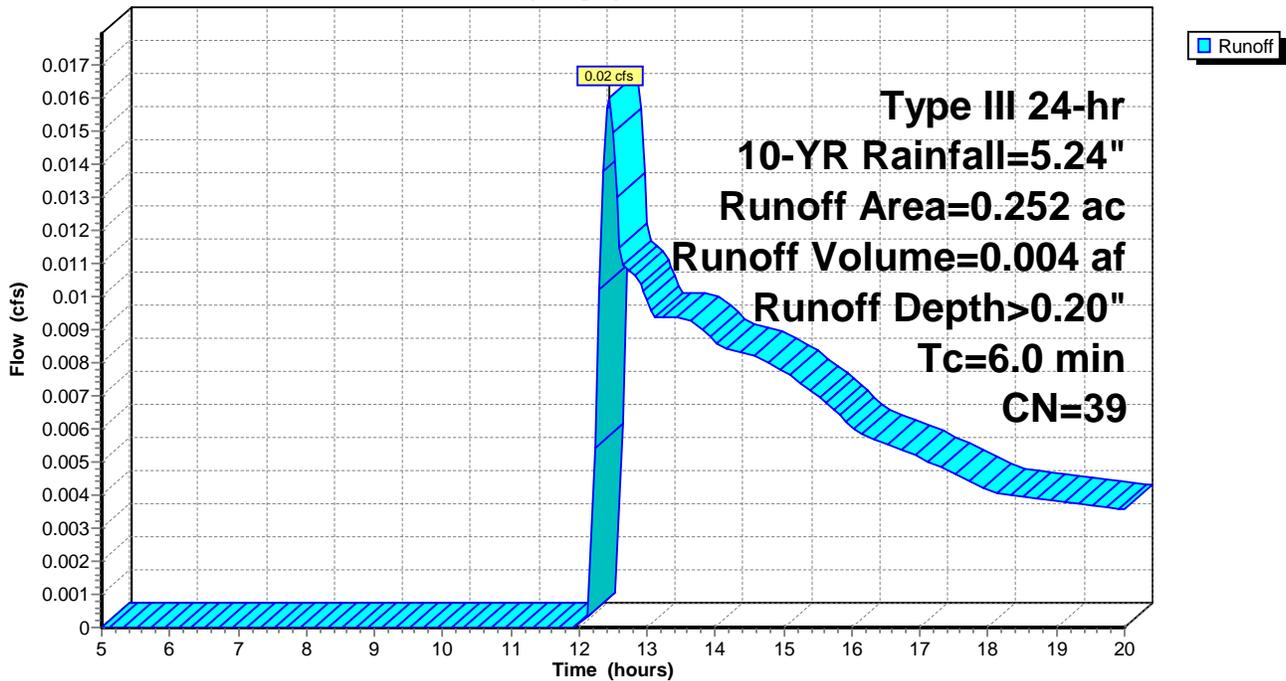
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.016	61	>75% Grass cover, Good, HSG B
0.156	30	Meadow, non-grazed, HSG A
0.052	58	Meadow, non-grazed, HSG B
0.252	39	Weighted Average
0.252		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-25:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 104

Summary for Subcatchment PR-29:

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.022 af, Depth> 2.29"
 Routed to Pond GT-5 :

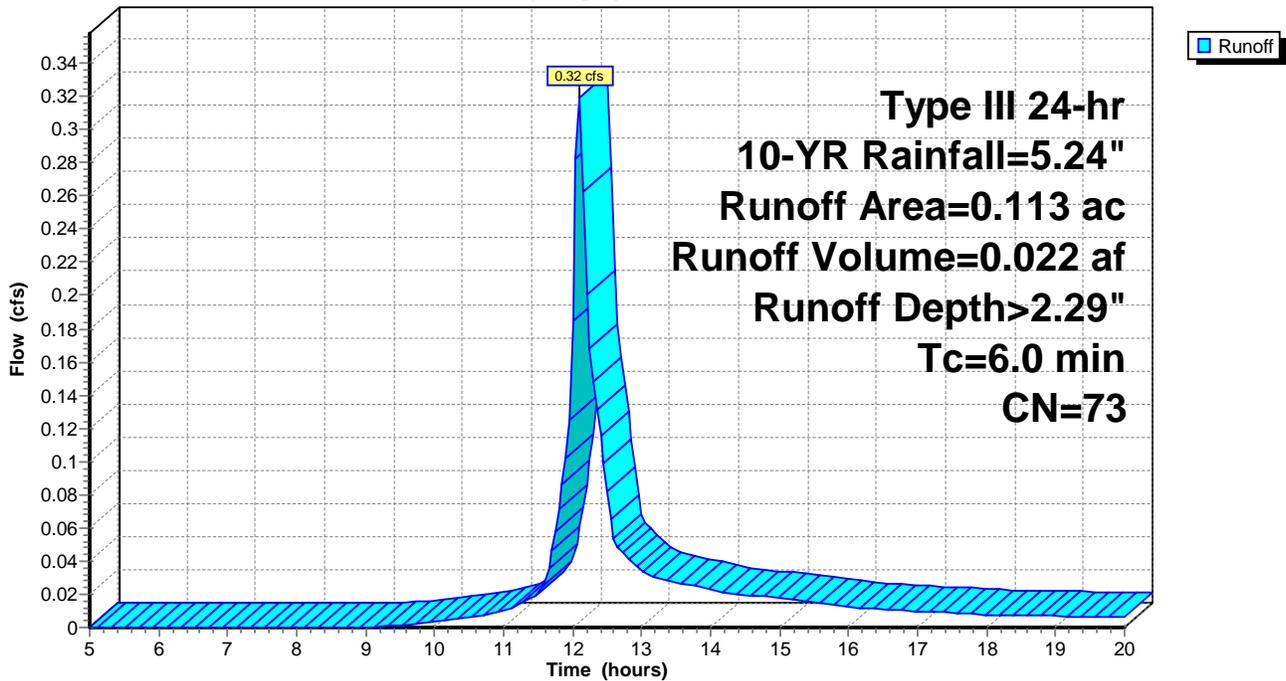
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.031	61	>75% Grass cover, Good, HSG B
0.043	58	Meadow, non-grazed, HSG B
* 0.039	98	Paved
0.113	73	Weighted Average
0.074		65.49% Pervious Area
0.039		34.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-29:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 105

Summary for Subcatchment PR-30:

Runoff = 0.08 cfs @ 12.19 hrs, Volume= 0.008 af, Depth> 0.98"
 Routed to Pond GT-6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
0.001	30	Woods, Good, HSG A
0.008	55	Woods, Good, HSG B
0.011	39	>75% Grass cover, Good, HSG A
0.021	61	>75% Grass cover, Good, HSG B
0.026	30	Meadow, non-grazed, HSG A
0.010	58	Meadow, non-grazed, HSG B
* 0.016	98	Paved
0.093	55	Weighted Average
0.077		82.80% Pervious Area
0.016		17.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0380	0.16		Sheet Flow, A-B
					Grass: Dense n= 0.240 P2= 3.40"
0.4	40	0.0550	1.64		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
11.1	140	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

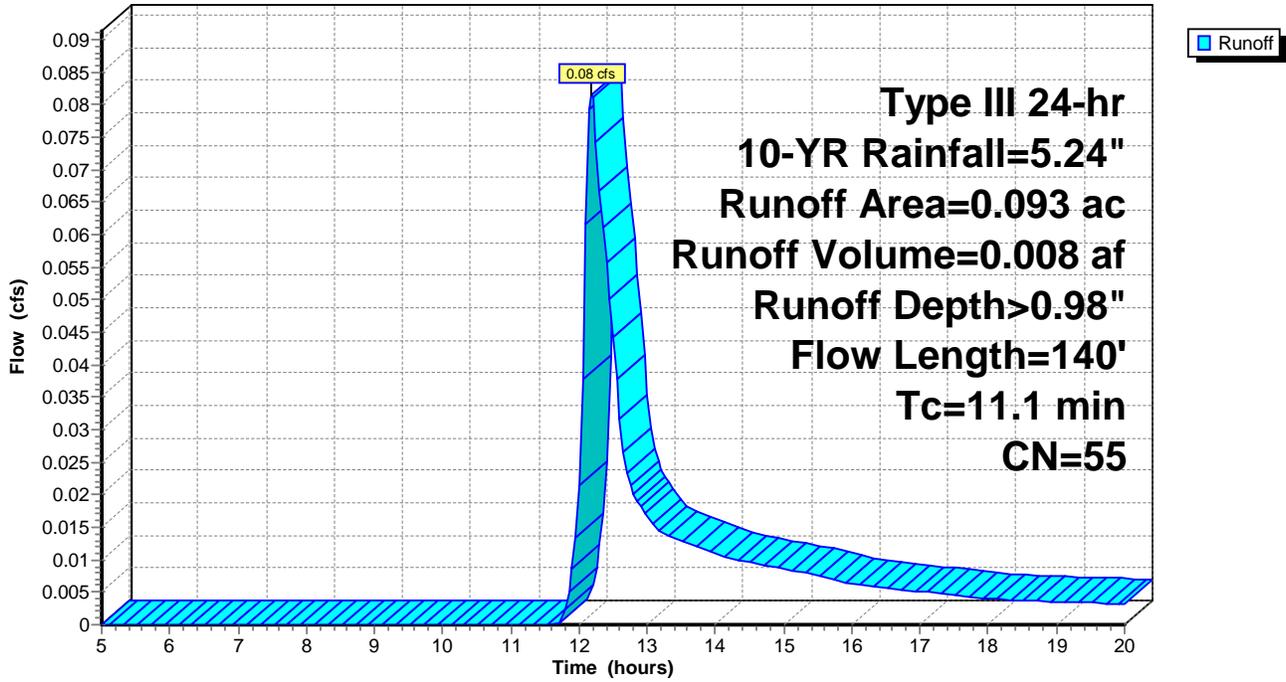
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 106

Subcatchment PR-30:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 107

Summary for Subcatchment RA-1:

Runoff = 0.65 cfs @ 12.09 hrs, Volume= 0.050 af, Depth> 4.64"
Routed to Pond UG-1 :

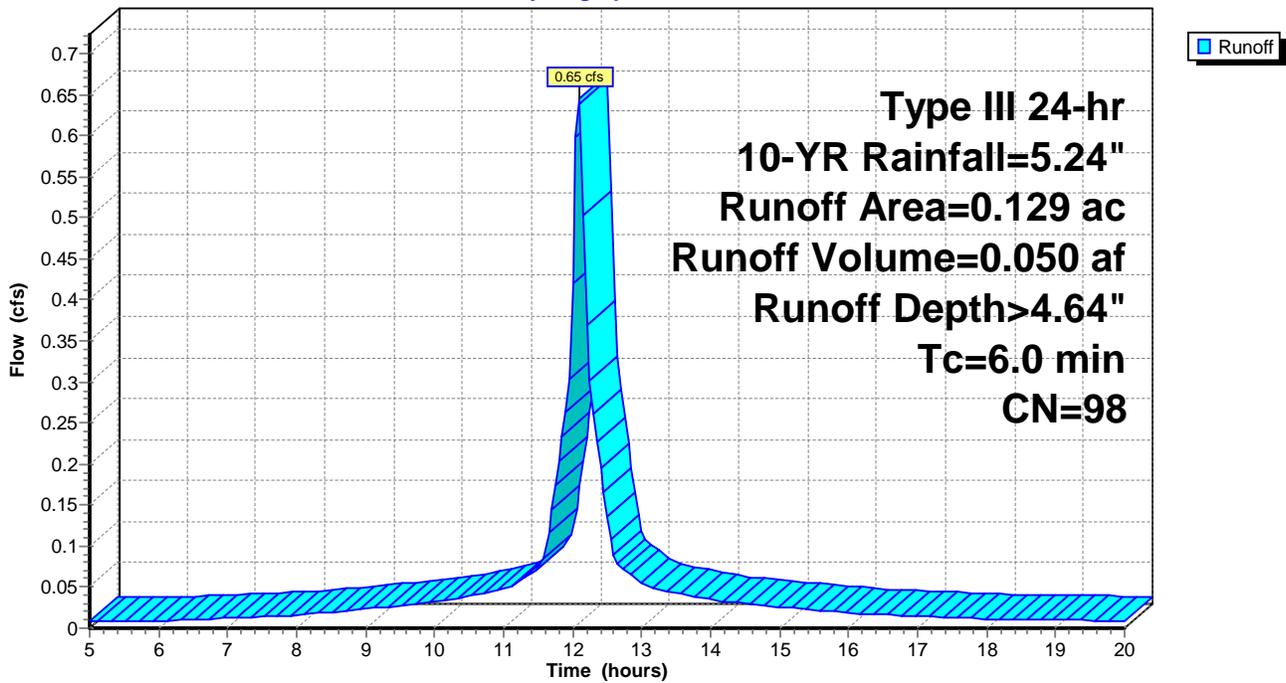
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
* 0.129	98	Roof
0.129		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 108

Summary for Subcatchment RA-2:

Runoff = 0.70 cfs @ 12.09 hrs, Volume= 0.054 af, Depth> 4.64"
Routed to Pond UG-1 :

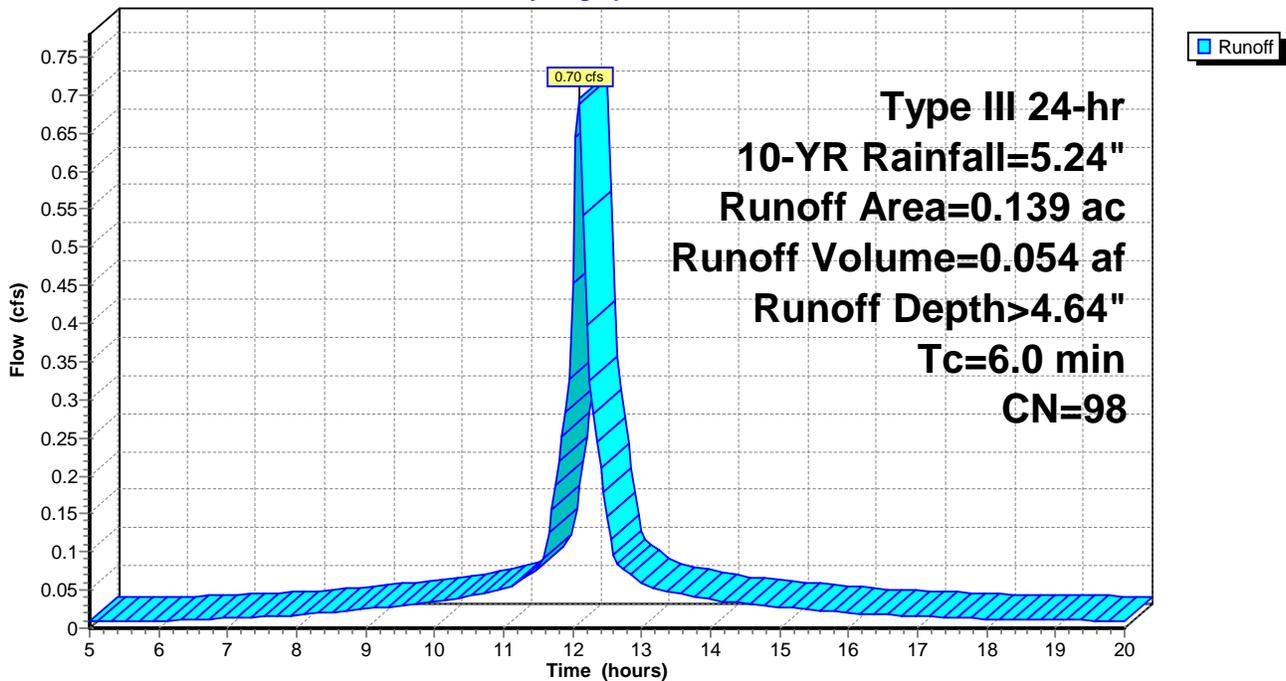
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
* 0.139	98	Roof
0.139		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 109

Summary for Subcatchment RA-3:

Runoff = 0.97 cfs @ 12.09 hrs, Volume= 0.075 af, Depth> 4.64"

Routed to Pond RG-1 :

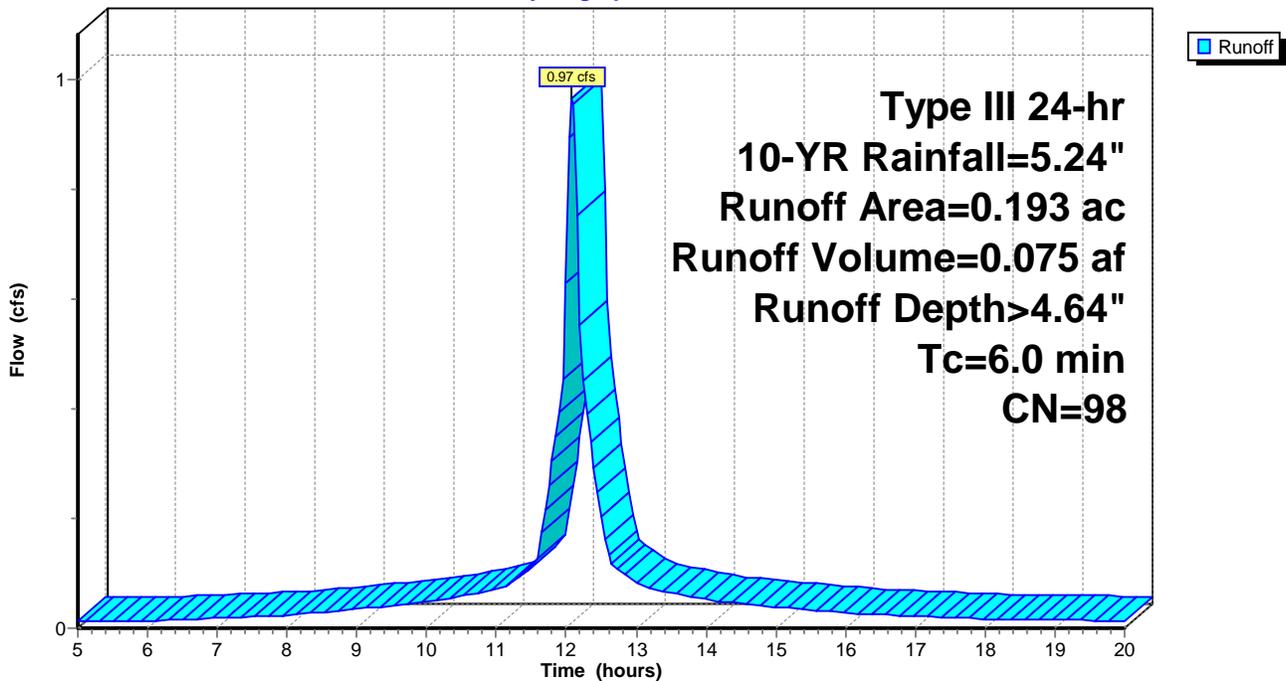
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
* 0.193	98	Roof
0.193		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 110

Summary for Subcatchment RA-4:

Runoff = 0.94 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 4.64"
Routed to Pond RG-1 :

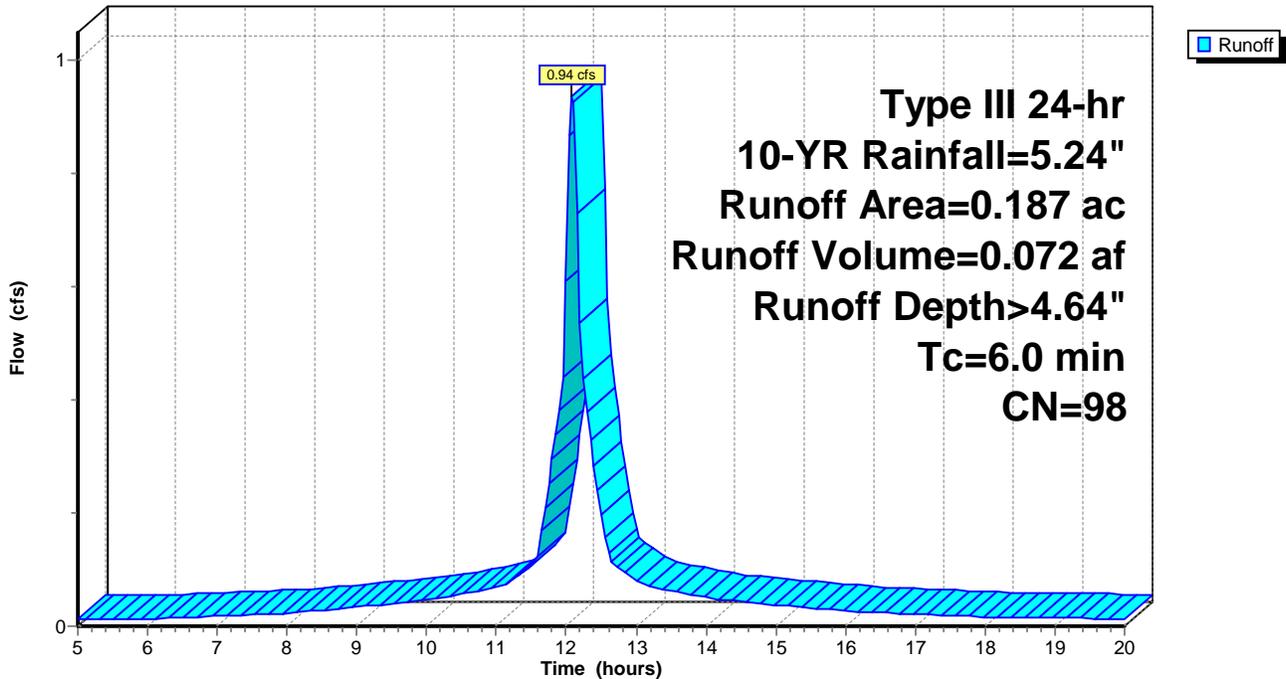
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.24"

Area (ac)	CN	Description
* 0.187	98	Roof
0.187		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

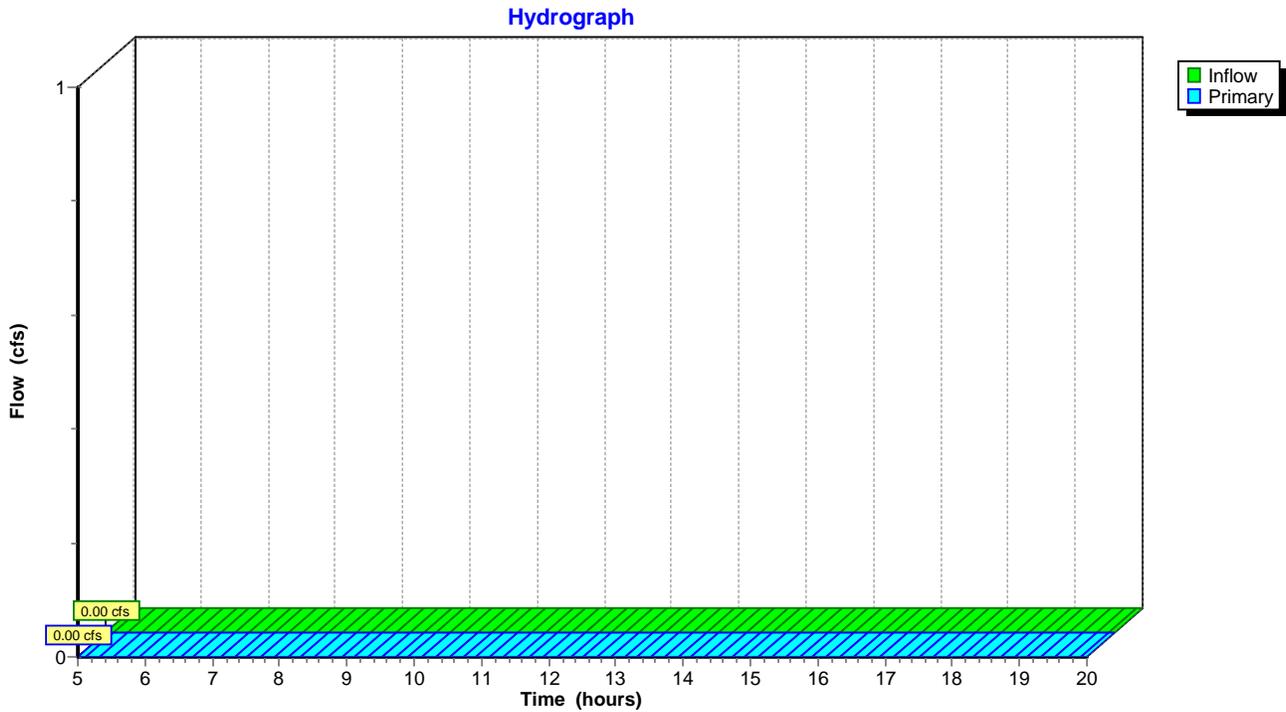
Page 111

Summary for Pond AP: Surrounding Wetlands

Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 112

Summary for Pond FB-1:

Inflow Area = 0.592 ac, 58.28% Impervious, Inflow Depth > 2.37" for 10-YR event
 Inflow = 1.73 cfs @ 12.09 hrs, Volume= 0.117 af
 Outflow = 0.01 cfs @ 20.00 hrs, Volume= 0.006 af, Atten= 99%, Lag= 474.4 min
 Discarded = 0.01 cfs @ 20.00 hrs, Volume= 0.006 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routed to Pond IB-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.57' @ 20.00 hrs Surf.Area= 2,034 sf Storage= 4,831 cf

Plug-Flow detention time= 331.6 min calculated for 0.006 af (5% of inflow)
 Center-of-Mass det. time= 152.4 min (943.1 - 790.6)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	5,755 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	299	0	0
25.00	566	433	433
26.00	891	729	1,161
27.00	1,279	1,085	2,246
28.00	1,736	1,508	3,754
28.60	2,049	1,136	4,889
29.00	2,283	866	5,755

Device	Routing	Invert	Outlet Devices
#1	Primary	28.60'	44.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	24.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 20.00 hrs HW=28.57' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=24.00' (Free Discharge)
 ↑**1=Forebay Berm (Weir Outlet)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

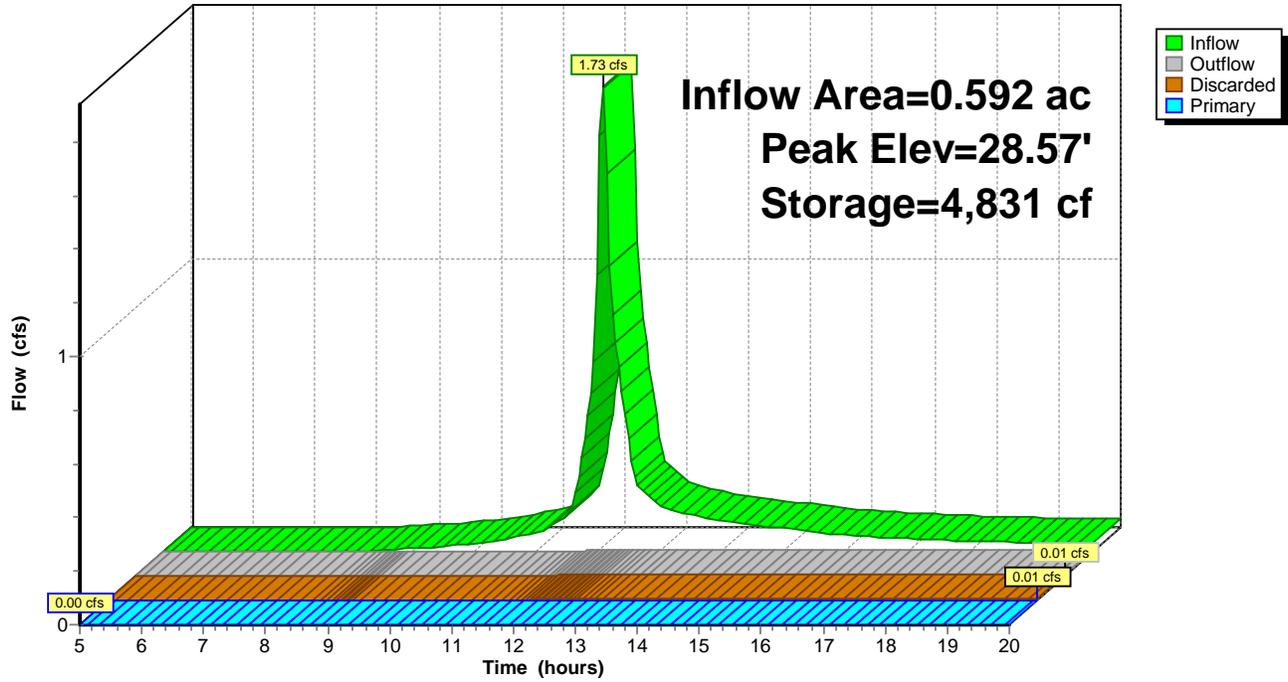
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 113

Pond FB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 114

Summary for Pond FB-2:

Inflow Area = 3.167 ac, 73.26% Impervious, Inflow Depth > 1.14" for 10-YR event
 Inflow = 4.16 cfs @ 12.09 hrs, Volume= 0.301 af
 Outflow = 0.61 cfs @ 12.63 hrs, Volume= 0.293 af, Atten= 85%, Lag= 32.1 min
 Discarded = 0.61 cfs @ 12.63 hrs, Volume= 0.293 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.13' @ 12.63 hrs Surf.Area= 2,196 sf Storage= 5,594 cf

Plug-Flow detention time= 107.8 min calculated for 0.293 af (97% of inflow)
 Center-of-Mass det. time= 96.7 min (863.8 - 767.1)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	7,733 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	291	0	0
26.00	520	406	406
27.00	811	666	1,071
28.00	1,172	992	2,063
29.00	1,608	1,390	3,453
30.00	2,121	1,865	5,317
30.70	2,530	1,628	6,945
31.00	2,723	788	7,733

Device	Routing	Invert	Outlet Devices
#1	Primary	30.70'	59.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.61 cfs @ 12.63 hrs HW=30.13' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.61 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)
 ↑**1=Forebay Berm (Weir Outlet)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

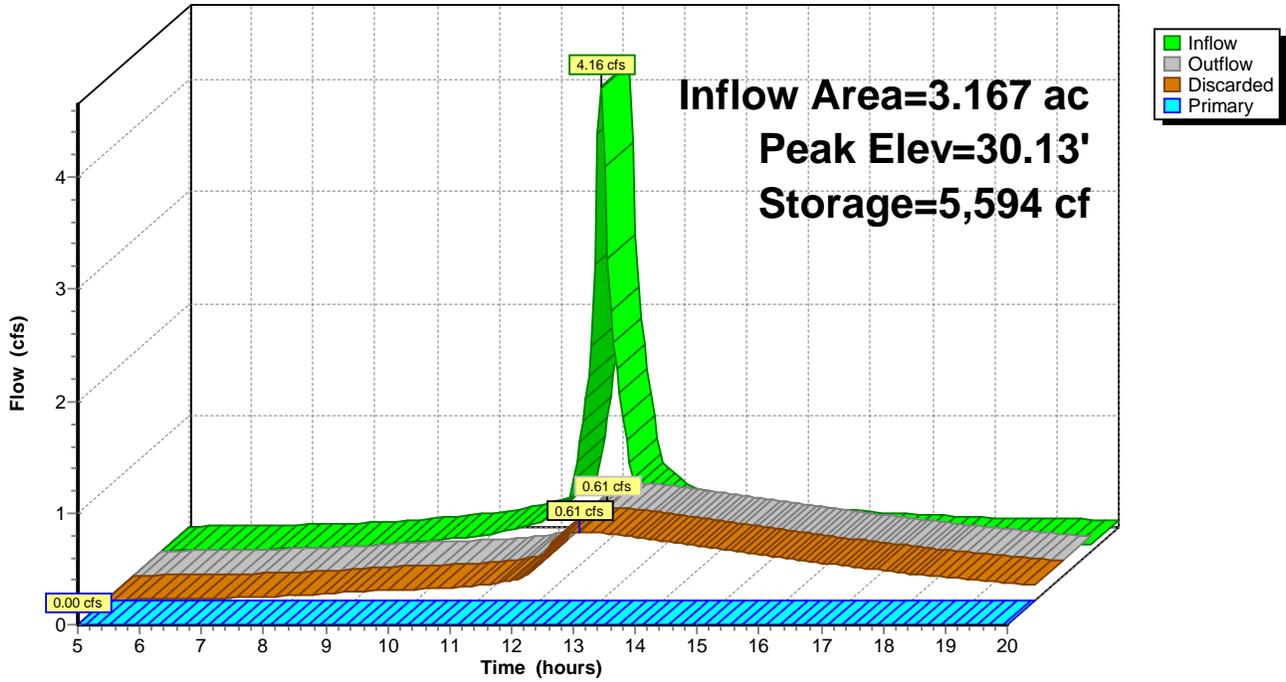
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 115

Pond FB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 116

Summary for Pond GT-1:

Inflow Area = 0.252 ac, 0.00% Impervious, Inflow Depth > 0.20" for 10-YR event
 Inflow = 0.02 cfs @ 12.44 hrs, Volume= 0.004 af
 Outflow = 0.02 cfs @ 12.48 hrs, Volume= 0.004 af, Atten= 3%, Lag= 2.7 min
 Discarded = 0.02 cfs @ 12.48 hrs, Volume= 0.004 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 20.01' @ 12.48 hrs Surf.Area= 862 sf Storage= 2 cf

Plug-Flow detention time= 2.5 min calculated for 0.004 af (99% of inflow)
 Center-of-Mass det. time= 1.7 min (918.3 - 916.6)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	690 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,724 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.00	862	0	0
21.00	862	862	862
22.00	862	862	1,724

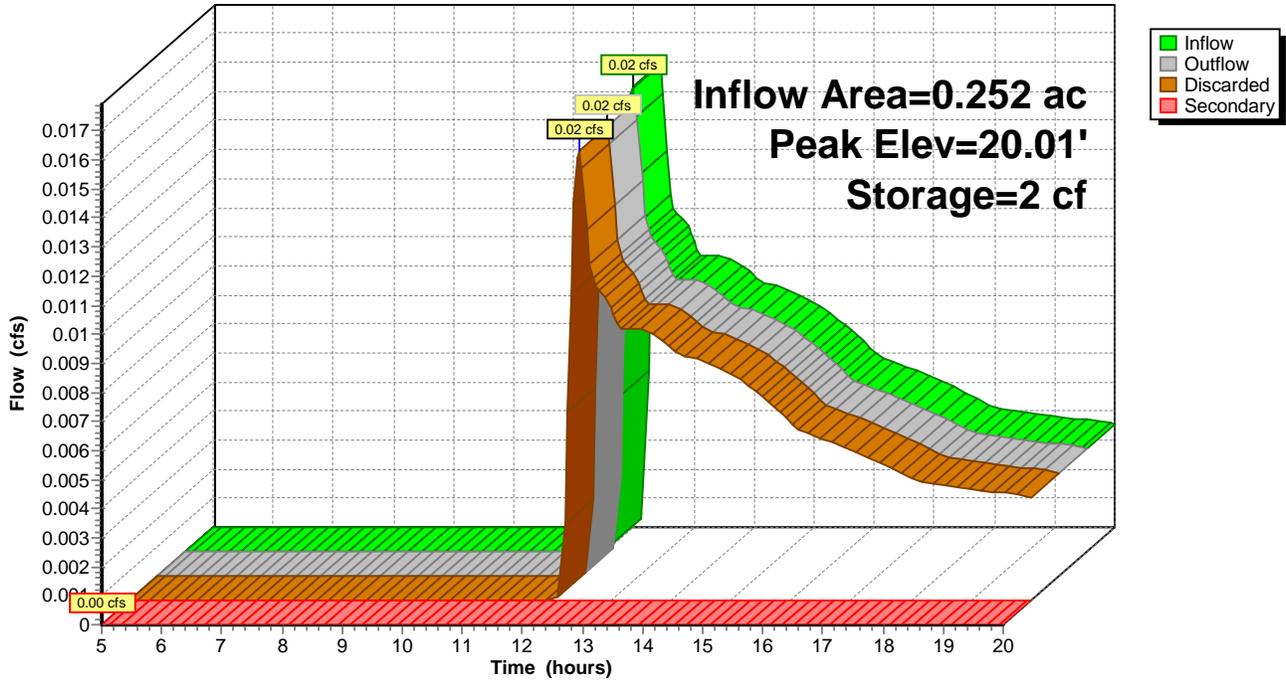
Device	Routing	Invert	Outlet Devices
#1	Secondary	22.00'	590.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 12.48 hrs HW=20.01' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

Pond GT-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 118

Summary for Pond GT-2:

Inflow Area = 0.075 ac, 1.33% Impervious, Inflow Depth > 0.03" for 10-YR event
 Inflow = 0.00 cfs @ 17.04 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 17.36 hrs, Volume= 0.000 af, Atten= 1%, Lag= 19.6 min
 Discarded = 0.00 cfs @ 17.36 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 23.51' @ 17.36 hrs Surf.Area= 251 sf Storage= 1 cf

Plug-Flow detention time= 21.0 min calculated for 0.000 af (93% of inflow)
 Center-of-Mass det. time= 10.4 min (1,051.7 - 1,041.4)

Volume	Invert	Avail.Storage	Storage Description
#1	23.50'	151 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 377 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.50	251	0	0
24.00	251	126	126
25.00	251	251	377

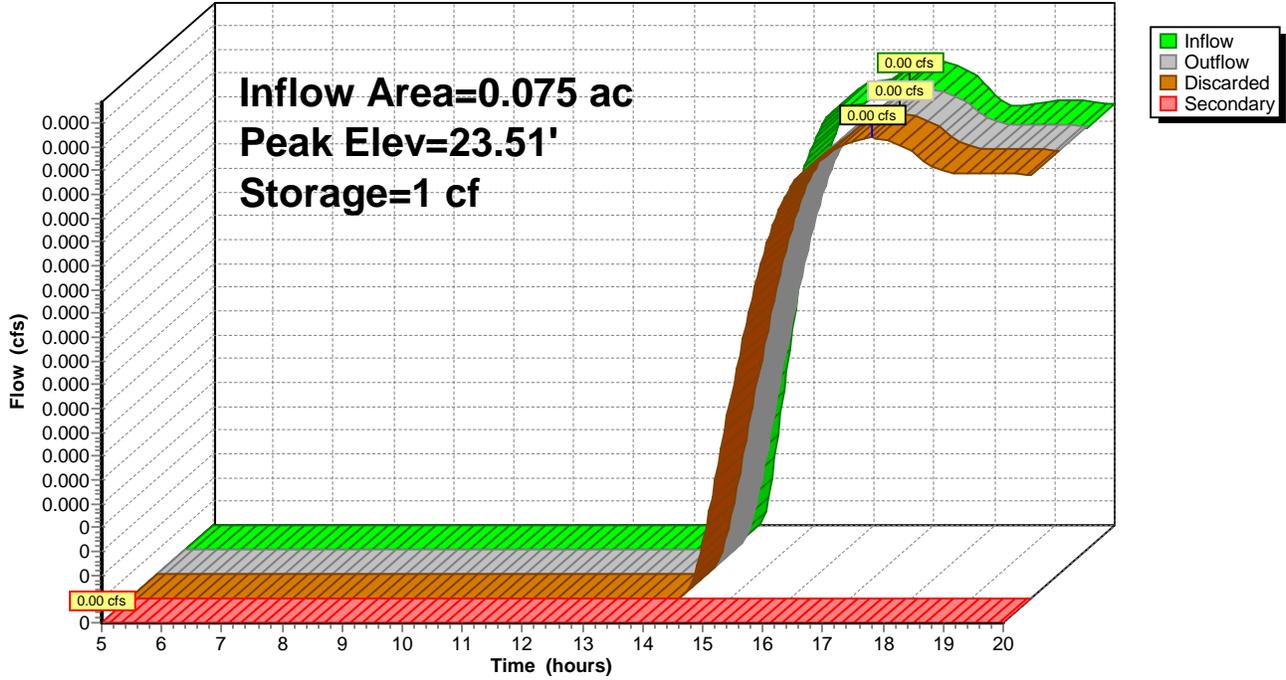
Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	65.0' long + 3.0' /' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	23.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 17.36 hrs HW=23.51' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

Pond GT-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 120

Summary for Pond GT-3:

Inflow Area = 0.030 ac, 0.00% Impervious, Inflow Depth > 0.01" for 10-YR event
 Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 1%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 27.50' @ 20.00 hrs Surf.Area= 94 sf Storage= 0 cf

Plug-Flow detention time= 20.8 min calculated for 0.000 af (91% of inflow)
 Center-of-Mass det. time= 9.2 min (1,079.7 - 1,070.5)

Volume	Invert	Avail.Storage	Storage Description
#1	27.50'	56 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 141 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.50	94	0	0
28.00	94	47	47
29.00	94	94	141

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	30.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	27.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 20.00 hrs HW=27.50' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.50' (Free Discharge)
 ↑1=Top of Trench (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 122

Summary for Pond GT-4:

Inflow Area = 0.126 ac, 0.00% Impervious, Inflow Depth > 0.14" for 10-YR event
 Inflow = 0.00 cfs @ 13.66 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 13.05 hrs, Volume= 0.001 af, Atten= 41%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 13.05 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 20.60' @ 17.48 hrs Surf.Area= 405 sf Storage= 17 cf

Plug-Flow detention time= 94.3 min calculated for 0.001 af (78% of inflow)
 Center-of-Mass det. time= 41.4 min (980.6 - 939.2)

Volume	Invert	Avail.Storage	Storage Description
#1	20.50'	405 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,013 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.50	405	0	0
21.00	405	203	203
22.00	405	405	608
23.00	405	405	1,013

Device	Routing	Invert	Outlet Devices
#1	Secondary	23.00'	74.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 13.05 hrs HW=20.53' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

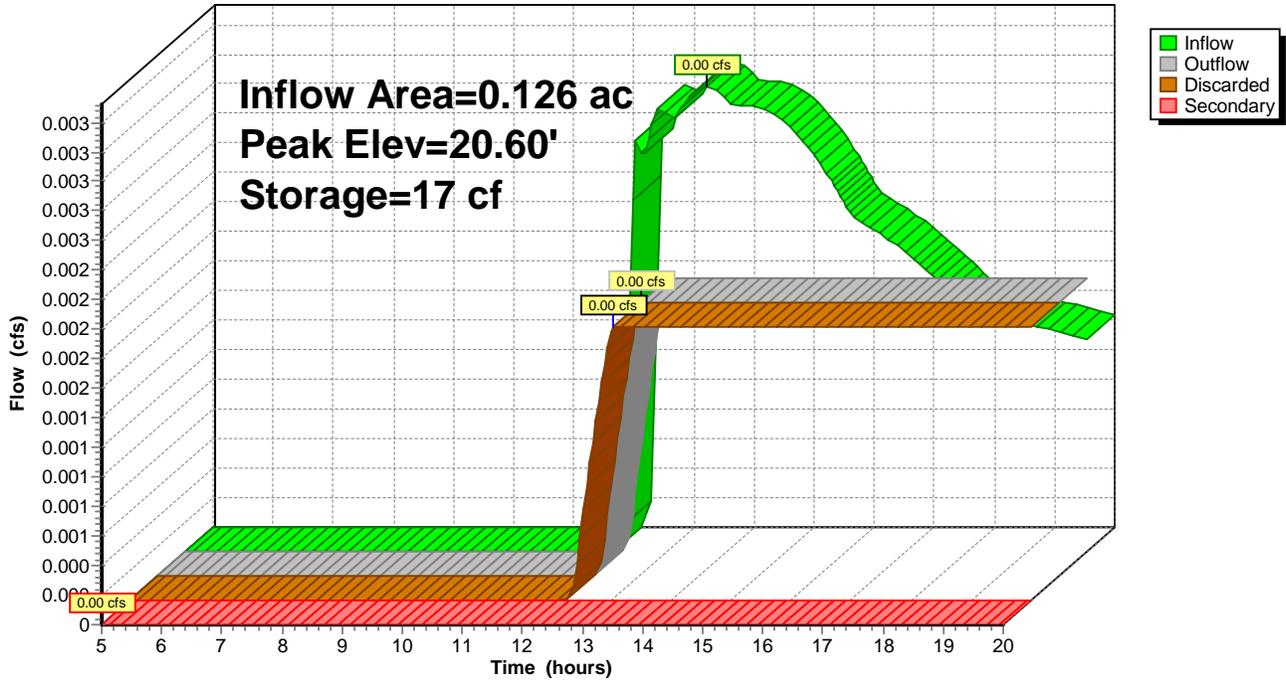
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 123

Pond GT-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 124

Summary for Pond GT-5:

Inflow Area = 0.113 ac, 34.51% Impervious, Inflow Depth > 2.29" for 10-YR event
 Inflow = 0.32 cfs @ 12.09 hrs, Volume= 0.022 af
 Outflow = 0.03 cfs @ 11.75 hrs, Volume= 0.022 af, Atten= 89%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.75 hrs, Volume= 0.022 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-4 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 22.45' @ 13.02 hrs Surf.Area= 640 sf Storage= 372 cf

Plug-Flow detention time= 102.7 min calculated for 0.021 af (99% of inflow)
 Center-of-Mass det. time= 101.6 min (901.3 - 799.7)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	1,024 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 2,560 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	640	0	0
22.00	640	640	640
23.00	640	640	1,280
24.00	640	640	1,920
25.00	640	640	2,560

Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	136.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	21.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.75 hrs HW=21.05' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=21.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

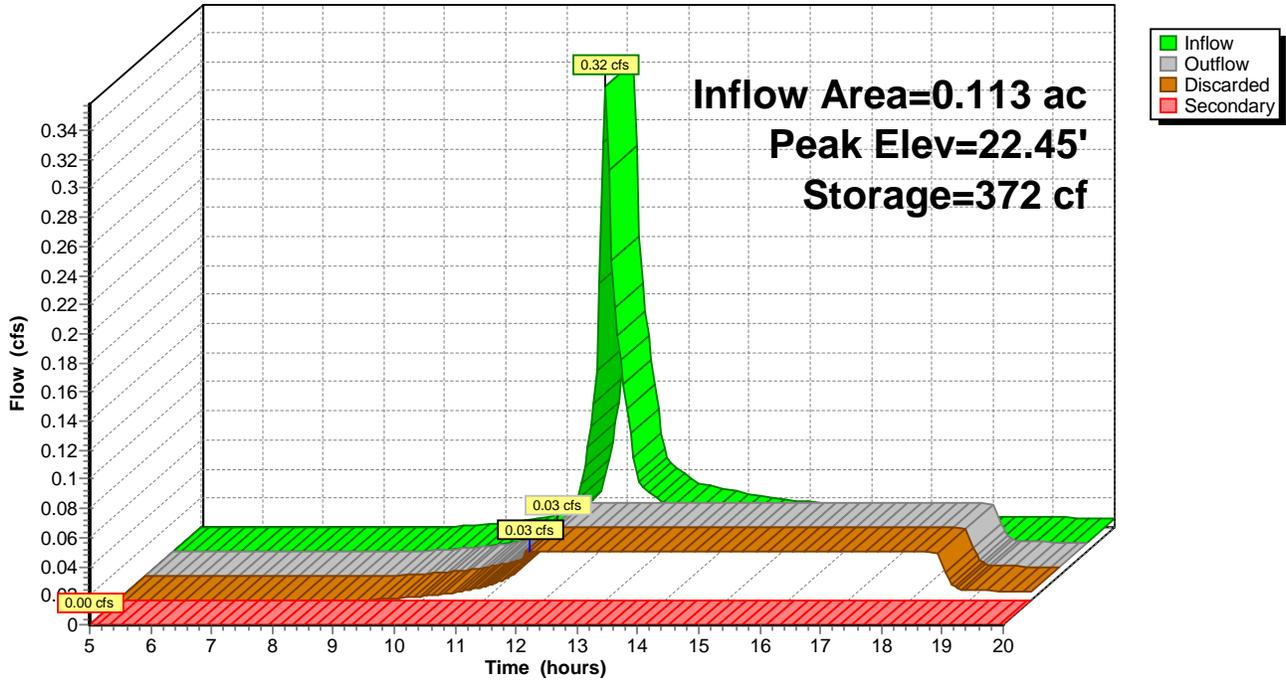
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 125

Pond GT-5:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 126

Summary for Pond GT-6:

Inflow Area = 0.093 ac, 17.20% Impervious, Inflow Depth > 0.98" for 10-YR event
 Inflow = 0.08 cfs @ 12.19 hrs, Volume= 0.008 af
 Outflow = 0.07 cfs @ 12.15 hrs, Volume= 0.008 af, Atten= 14%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 12.15 hrs, Volume= 0.008 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 24.57' @ 12.28 hrs Surf.Area= 252 sf Storage= 7 cf

Plug-Flow detention time= 0.7 min calculated for 0.008 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (841.9 - 841.3)

Volume	Invert	Avail.Storage	Storage Description
#1	24.50'	252 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 630 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.50	252	0	0
25.00	252	126	126
26.00	252	252	378
27.00	252	252	630

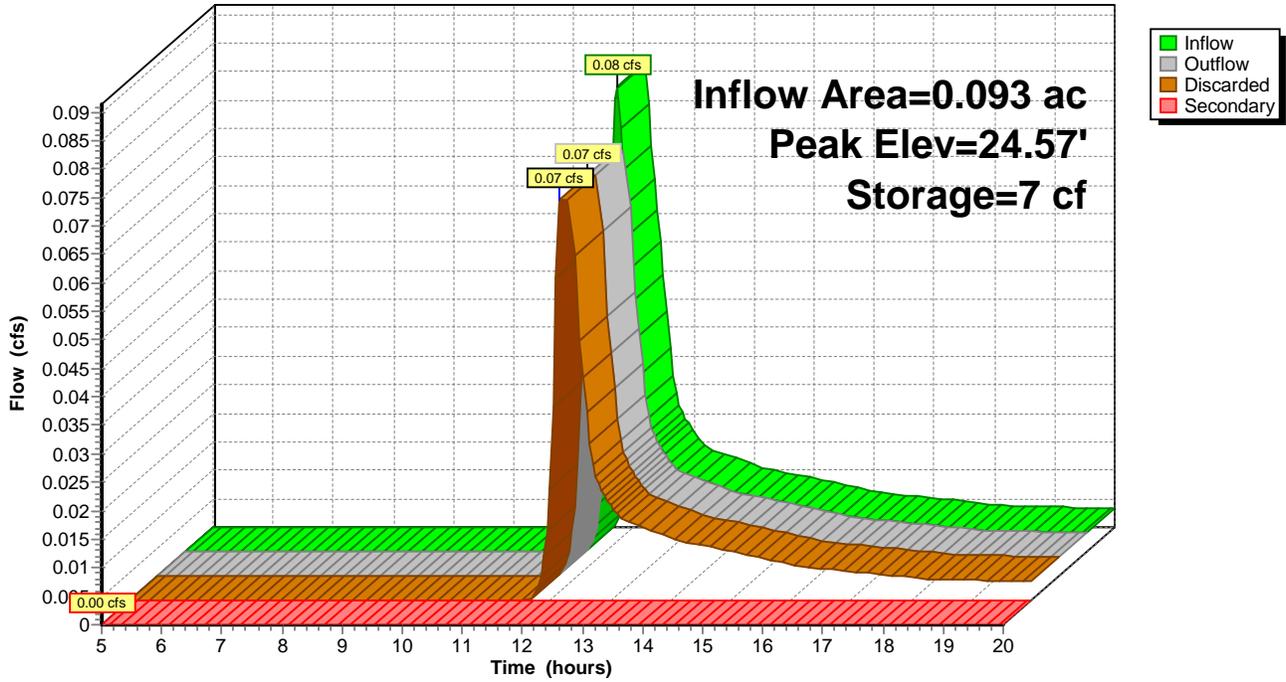
Device	Routing	Invert	Outlet Devices
#1	Secondary	27.00'	78.0' long + 3.0' /' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	24.50'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 12.15 hrs HW=24.53' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=24.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

Pond GT-6:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 128

Summary for Pond IB-1:

Inflow Area = 0.739 ac, 49.80% Impervious, Inflow Depth > 0.05" for 10-YR event
 Inflow = 0.02 cfs @ 12.38 hrs, Volume= 0.003 af
 Outflow = 0.00 cfs @ 12.30 hrs, Volume= 0.001 af, Atten= 94%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 12.30 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 24.41' @ 20.00 hrs Surf.Area= 212 sf Storage= 119 cf

Plug-Flow detention time= 220.8 min calculated for 0.001 af (19% of inflow)
 Center-of-Mass det. time= 68.0 min (967.1 - 899.2)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	8,279 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	23.00'	170 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			424 cf Overall x 40.0% Voids
		8,448 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	858	0	0
26.00	1,419	1,139	1,139
27.00	2,033	1,726	2,865
28.00	2,694	2,364	5,228
28.60	3,109	1,741	6,969
29.00	3,440	1,310	8,279

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	212	0	0
24.00	212	212	212
25.00	212	212	424

Device	Routing	Invert	Outlet Devices
#1	Secondary	28.60'	10.0' long + 2.0 ' SideZ x 4.2' breadth Overflow Riprap Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.53 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.67 2.71 2.72 2.74 2.77 2.85 3.01 3.23
#2	Discarded	23.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.30 hrs HW=23.07' (Free Discharge)
 ↳2=Exfiltration (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.00' (Free Discharge)
 ↳1=Overflow Riprap Spillway (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

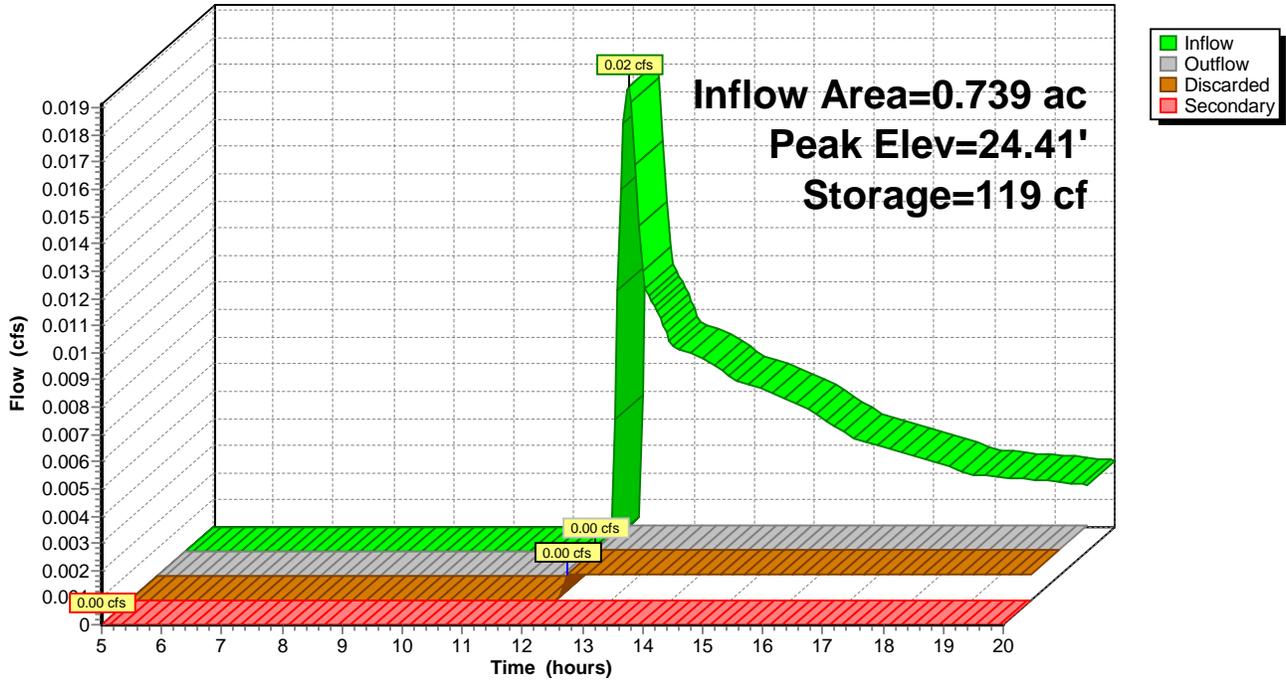
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 129

Pond IB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 130

Summary for Pond IB-2:

Inflow Area = 3.234 ac, 71.74% Impervious, Inflow Depth > 0.00" for 10-YR event
 Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 25.00' @ 20.00 hrs Surf.Area= 144 sf Storage= 0 cf

Plug-Flow detention time= 1.4 min calculated for 0.000 af (99% of inflow)
 Center-of-Mass det. time= 0.6 min (1,113.9 - 1,113.3)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	5,261 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	25.00'	115 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
		288 cf Overall x 40.0% Voids	
		5,376 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	1,104	0	0
29.00	1,514	1,309	1,309
30.00	1,966	1,740	3,049
30.70	2,305	1,495	4,544
31.00	2,475	717	5,261

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	144	0	0
26.00	144	144	144
27.00	144	144	288

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	100.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area
#3	Primary	26.96'	12.0" Round 12" HDPE Pipe L= 36.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 26.96' / 26.60' S= 0.0100 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	29.79'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 131

Discarded OutFlow Max=0.04 cfs @ 20.00 hrs HW=25.00' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)

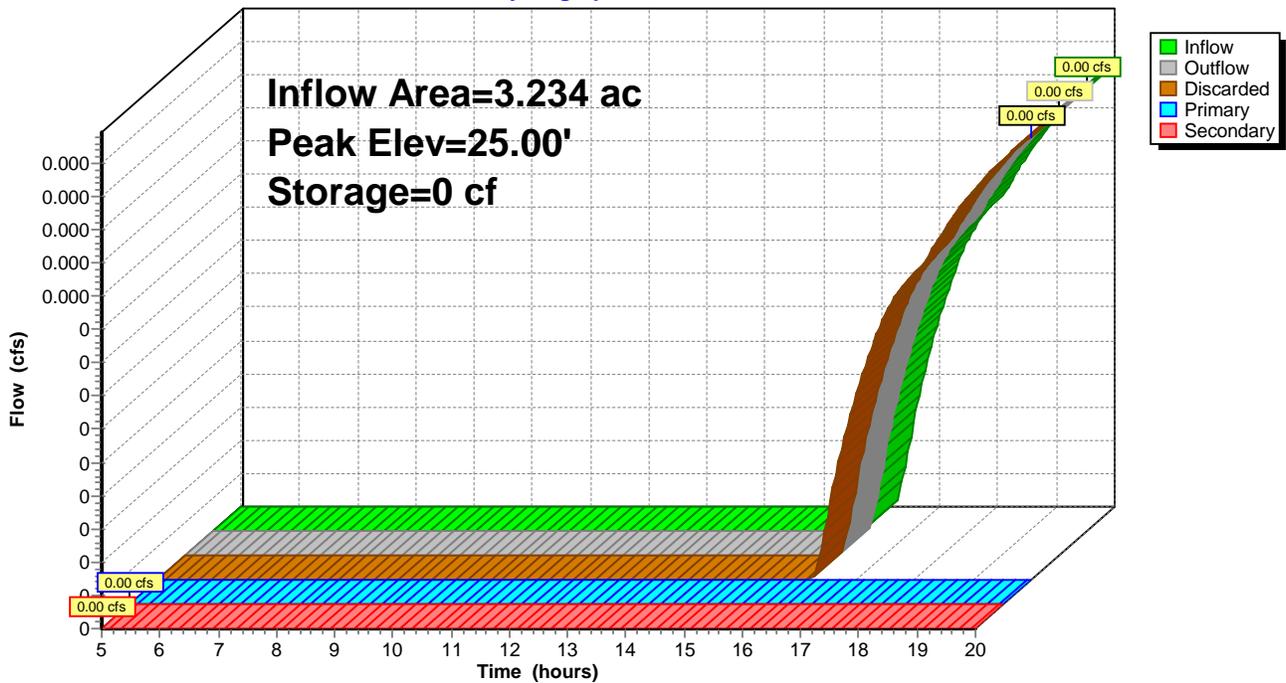
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond IB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 132

Summary for Pond IB-3:

Inflow Area = 3.433 ac, 68.31% Impervious, Inflow Depth > 0.02" for 10-YR event
 Inflow = 0.04 cfs @ 12.30 hrs, Volume= 0.007 af
 Outflow = 0.04 cfs @ 12.33 hrs, Volume= 0.007 af, Atten= 1%, Lag= 1.7 min
 Discarded = 0.04 cfs @ 12.33 hrs, Volume= 0.007 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-6 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.01' @ 12.33 hrs Surf.Area= 393 sf Storage= 4 cf

Plug-Flow detention time= 1.7 min calculated for 0.007 af (100% of inflow)
 Center-of-Mass det. time= 1.3 min (880.6 - 879.3)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	4,615 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	385	0	0
27.00	1,121	753	753
28.00	1,917	1,519	2,272
29.00	2,768	2,343	4,615

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	309.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	26.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.11 cfs @ 12.33 hrs HW=26.01' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.11 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=26.00' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

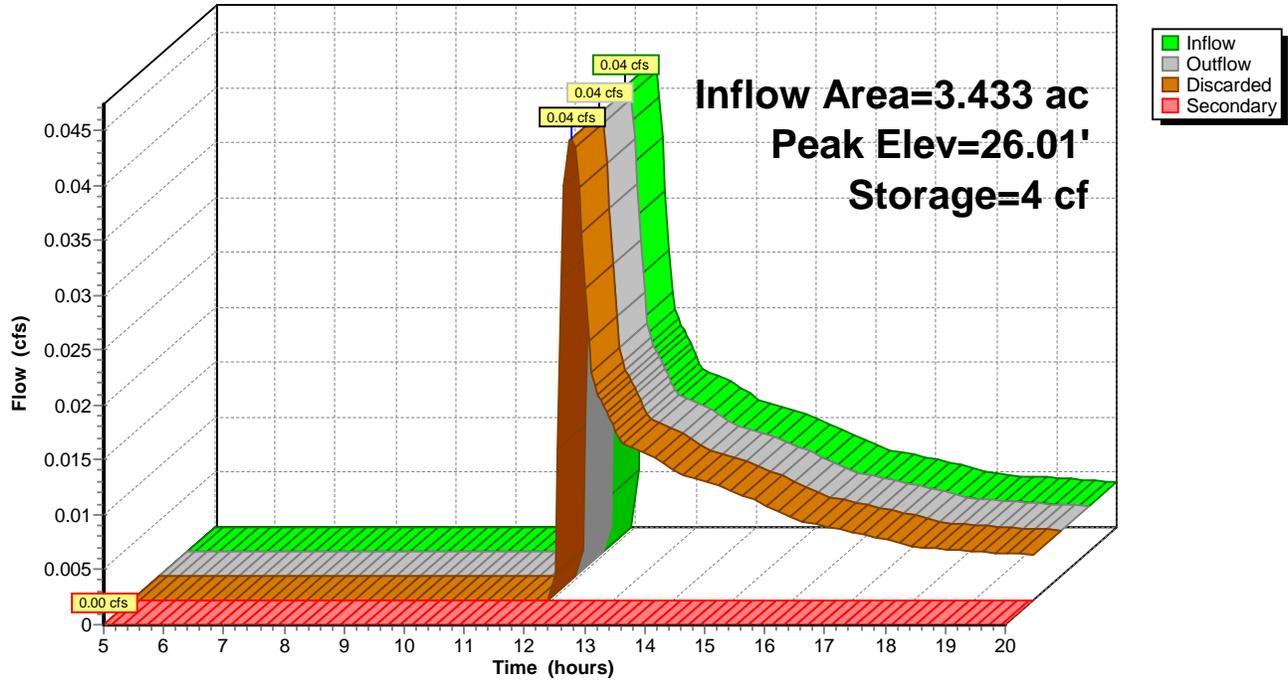
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 133

Pond IB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 134

Summary for Pond RG-1:

Inflow Area = 2.072 ac, 73.41% Impervious, Inflow Depth > 3.39" for 10-YR event
 Inflow = 7.70 cfs @ 12.09 hrs, Volume= 0.586 af
 Outflow = 0.42 cfs @ 14.31 hrs, Volume= 0.309 af, Atten= 95%, Lag= 133.1 min
 Discarded = 0.42 cfs @ 14.31 hrs, Volume= 0.309 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond FB-2 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 29.53' @ 14.31 hrs Surf.Area= 7,945 sf Storage= 15,803 cf

Plug-Flow detention time= 231.9 min calculated for 0.309 af (53% of inflow)
 Center-of-Mass det. time= 146.1 min (901.7 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	37,288 cf	Rain Garden Stage Storage (Prismatic) Listed below (Recalc)
#2	22.00'	1,512 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			3,780 cf Overall x 40.0% Voids
		38,800 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	1,696	0	0
27.00	2,683	2,190	2,190
27.50	3,497	1,545	3,735
28.00	4,266	1,941	5,675
29.00	6,024	5,145	10,820
30.00	7,856	6,940	17,760
31.00	9,743	8,800	26,560
32.00	11,713	10,728	37,288

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	945	0	0
23.00	945	945	945
24.00	945	945	1,890
25.00	945	945	2,835
26.00	945	945	3,780

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	392.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	22.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	26.89'	12.0" Round 12" HDPE Pipe L= 40.0' CMP, projecting, no headwall, Ke= 0.900

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 135

Inlet / Outlet Invert= 26.89' / 26.49' S= 0.0100 ' /' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf
#4 Device 3 30.93' **3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns**
X 14 rows C= 0.600 in 18.0" Grate (71% open area)
Limited to weir flow at low heads

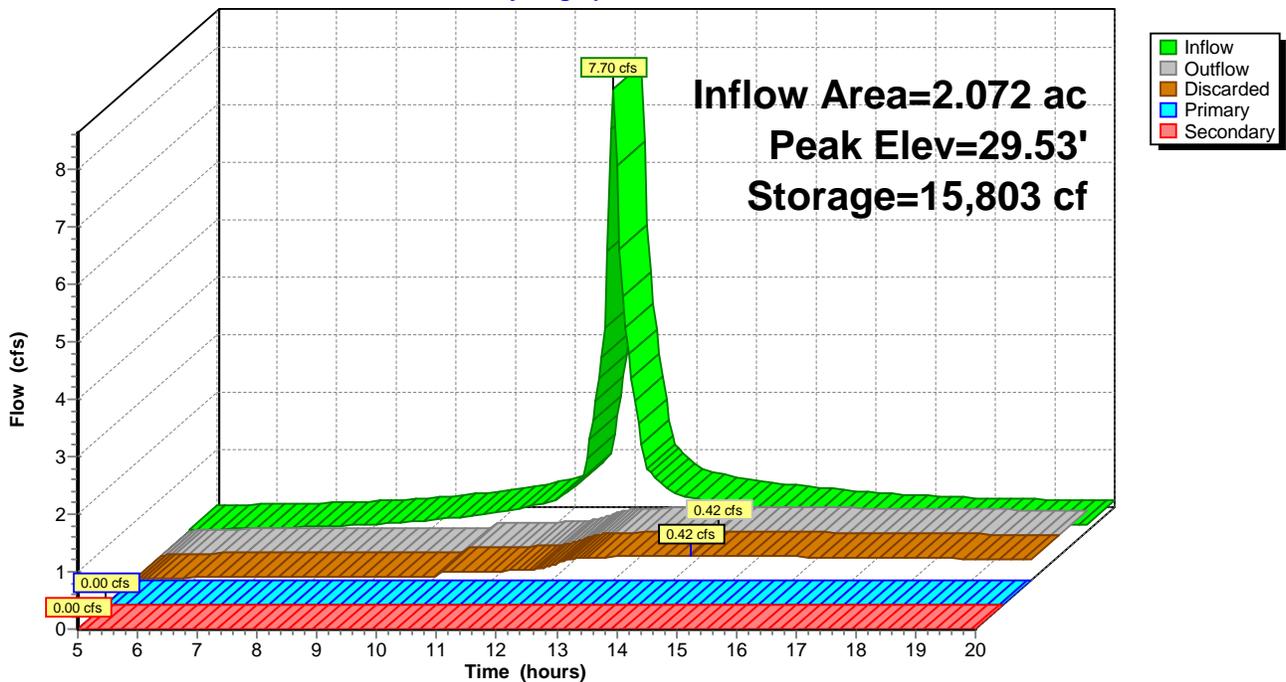
Discarded OutFlow Max=0.42 cfs @ 14.31 hrs HW=29.53' (Free Discharge)
↳ **2=Exfiltration** (Exfiltration Controls 0.42 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.01' (Free Discharge)
↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.01' (Free Discharge)
↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond RG-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 136

Summary for Pond SWB-1:

Inflow Area = 0.052 ac, 44.23% Impervious, Inflow Depth > 1.31" for 10-YR event
 Inflow = 0.08 cfs @ 12.10 hrs, Volume= 0.006 af
 Outflow = 0.01 cfs @ 12.78 hrs, Volume= 0.006 af, Atten= 84%, Lag= 40.5 min
 Discarded = 0.01 cfs @ 12.78 hrs, Volume= 0.006 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.57' @ 12.78 hrs Surf.Area= 248 sf Storage= 86 cf

Plug-Flow detention time= 78.0 min calculated for 0.006 af (99% of inflow)
 Center-of-Mass det. time= 76.6 min (902.2 - 825.6)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	896 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	60	0	0
30.50	219	70	70
31.00	423	161	230
32.00	908	666	896

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	168.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.80'	12.0" Round 12" HDPE Pipe L= 89.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.80' / 26.91' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.96'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.78 hrs HW=30.57' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.00 cfs of 3.89 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

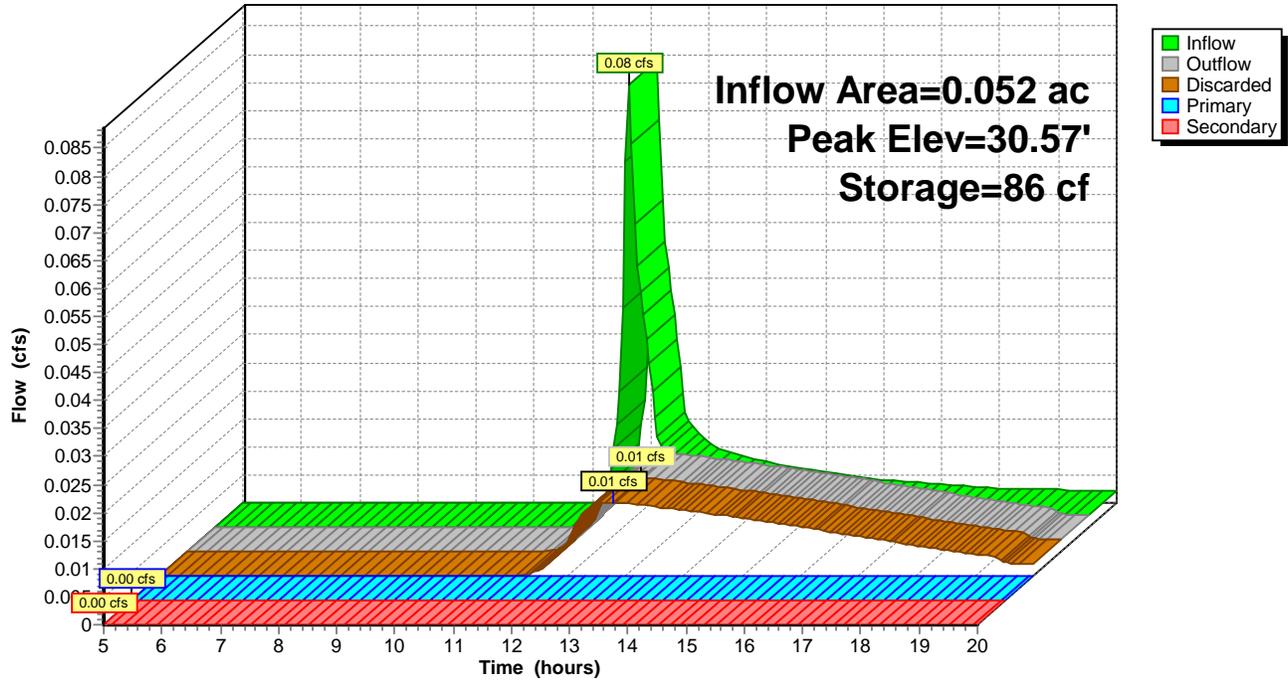
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 137

Pond SWB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 138

Summary for Pond SWB-2:

Inflow Area = 0.101 ac, 71.29% Impervious, Inflow Depth > 3.28" for 10-YR event
 Inflow = 0.40 cfs @ 12.09 hrs, Volume= 0.028 af
 Outflow = 0.40 cfs @ 12.11 hrs, Volume= 0.027 af, Atten= 1%, Lag= 1.0 min
 Discarded = 0.02 cfs @ 12.11 hrs, Volume= 0.014 af
 Primary = 0.38 cfs @ 12.11 hrs, Volume= 0.013 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.45' @ 12.11 hrs Surf.Area= 377 sf Storage= 133 cf

Plug-Flow detention time= 34.6 min calculated for 0.027 af (99% of inflow)
 Center-of-Mass det. time= 32.4 min (808.5 - 776.1)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	410 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	210	0	0
30.50	394	151	151
31.00	640	259	410

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	159.0' long + 3.0' /' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.10'	12.0" Round 12" HDPE Pipe L= 19.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.10' / 26.91' S= 0.0100 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.37'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.11 hrs HW=30.45' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.37 cfs @ 12.11 hrs HW=30.45' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.37 cfs of 5.04 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Weir Controls 0.37 cfs @ 0.94 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

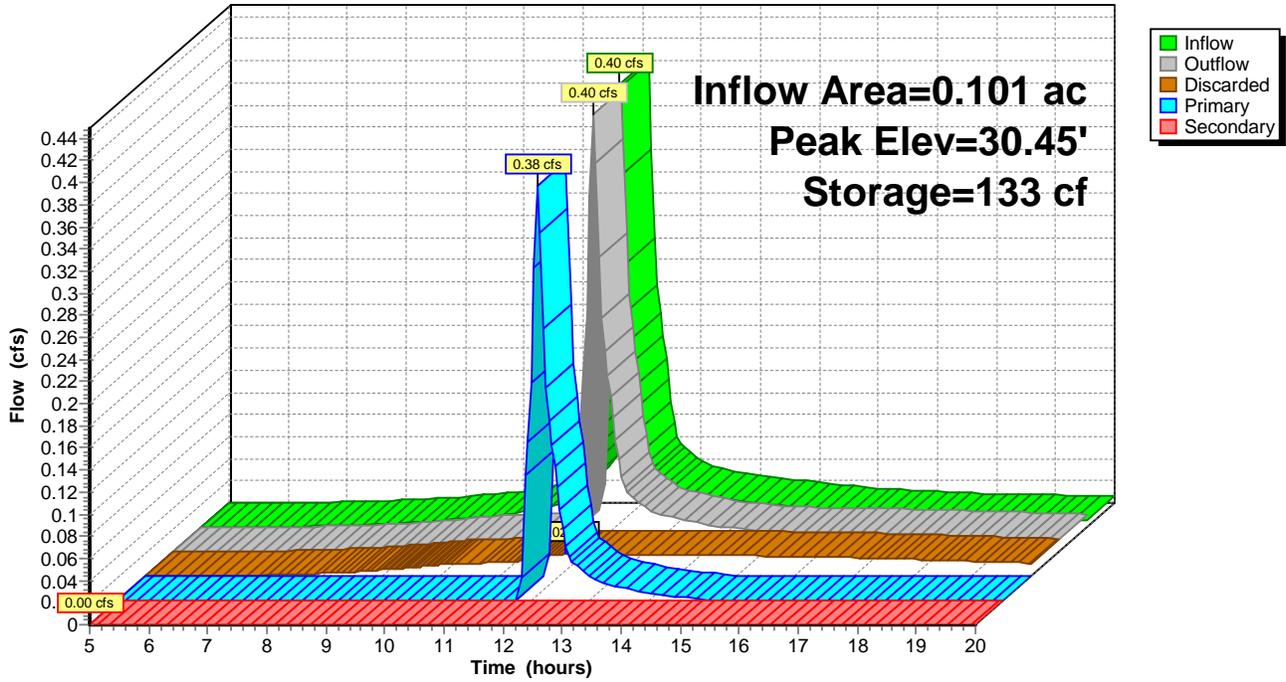
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 139

Pond SWB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 140

Summary for Pond SWB-3:

Inflow Area = 0.154 ac, 35.71% Impervious, Inflow Depth > 2.36" for 10-YR event
 Inflow = 0.35 cfs @ 12.21 hrs, Volume= 0.030 af
 Outflow = 0.35 cfs @ 12.22 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.6 min
 Discarded = 0.01 cfs @ 12.22 hrs, Volume= 0.010 af
 Primary = 0.33 cfs @ 12.22 hrs, Volume= 0.019 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.96' @ 12.22 hrs Surf.Area= 264 sf Storage= 80 cf

Plug-Flow detention time= 22.4 min calculated for 0.029 af (97% of inflow)
 Center-of-Mass det. time= 12.0 min (816.5 - 804.5)

Volume	Invert	Avail.Storage	Storage Description
#1	30.60'	510 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.60	182	0	0
31.00	274	91	91
31.50	412	172	263
32.00	576	247	510

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	114.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.60'	2.270 in/hr Exfiltration over Surface area
#3	Primary	25.96'	12.0" Round 12" HDPE Pipe L= 24.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 25.96' / 25.72' S= 0.0100 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.88'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.22 hrs HW=30.96' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.33 cfs @ 12.22 hrs HW=30.96' (Free Discharge)
 ↑**3=12" HDPE Pipe** (Passes 0.33 cfs of 6.33 cfs potential flow)
 ↑**4=18" Nyloplast Drain Grate** (Weir Controls 0.33 cfs @ 0.91 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.60' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

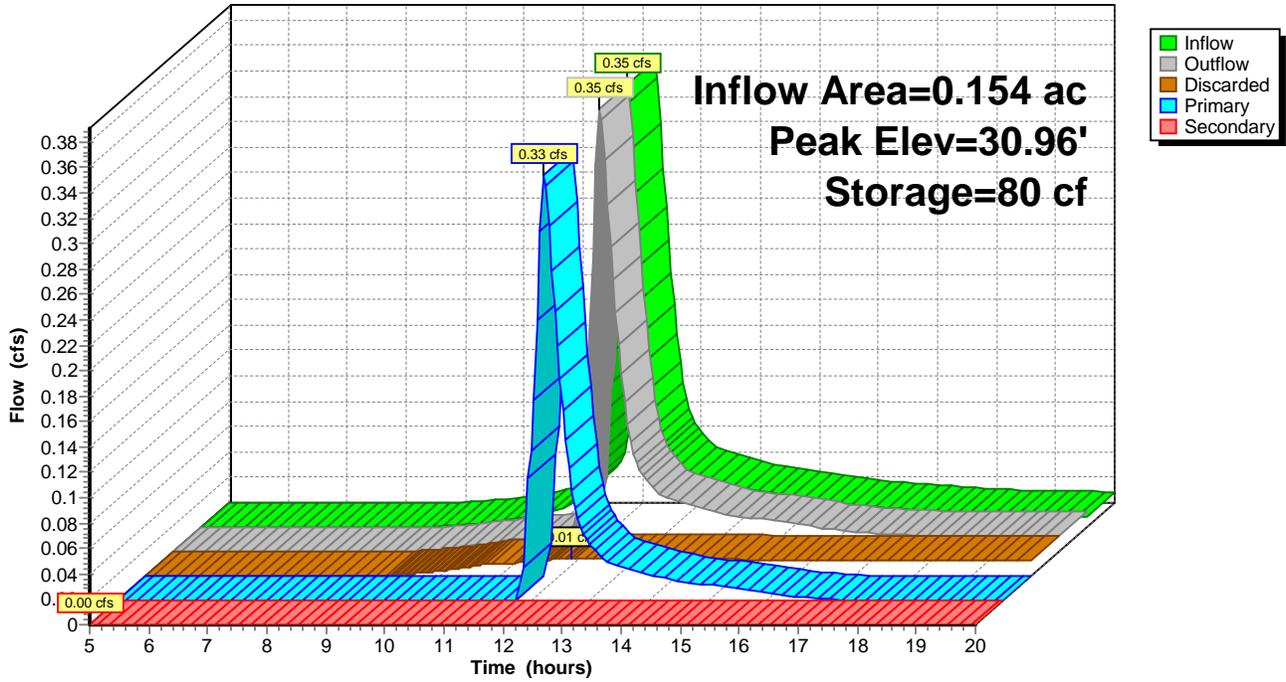
Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 141

Pond SWB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 142

Summary for Pond UG-1:

Inflow Area = 0.575 ac, 72.70% Impervious, Inflow Depth > 2.84" for 10-YR event
Inflow = 1.92 cfs @ 12.10 hrs, Volume= 0.136 af
Outflow = 0.12 cfs @ 11.40 hrs, Volume= 0.111 af, Atten= 94%, Lag= 0.0 min
Discarded = 0.12 cfs @ 11.40 hrs, Volume= 0.111 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 24.58' @ 13.60 hrs Surf.Area= 0.054 ac Storage= 0.067 af

Plug-Flow detention time= 166.3 min calculated for 0.111 af (82% of inflow)
Center-of-Mass det. time= 121.4 min (861.5 - 740.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.69'	0.076 af	37.08'W x 63.06'L x 5.50'H Field A 0.295 af Overall - 0.104 af Embedded = 0.191 af x 40.0% Voids
#2A	23.44'	0.104 af	ADS_StormTech MC-3500 d +Cap x 40 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 40 Chambers in 5 Rows Cap Storage= 14.9 cf x 2 x 5 rows = 149.0 cf
		0.181 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.69'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 11.40 hrs HW=22.75' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.12 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

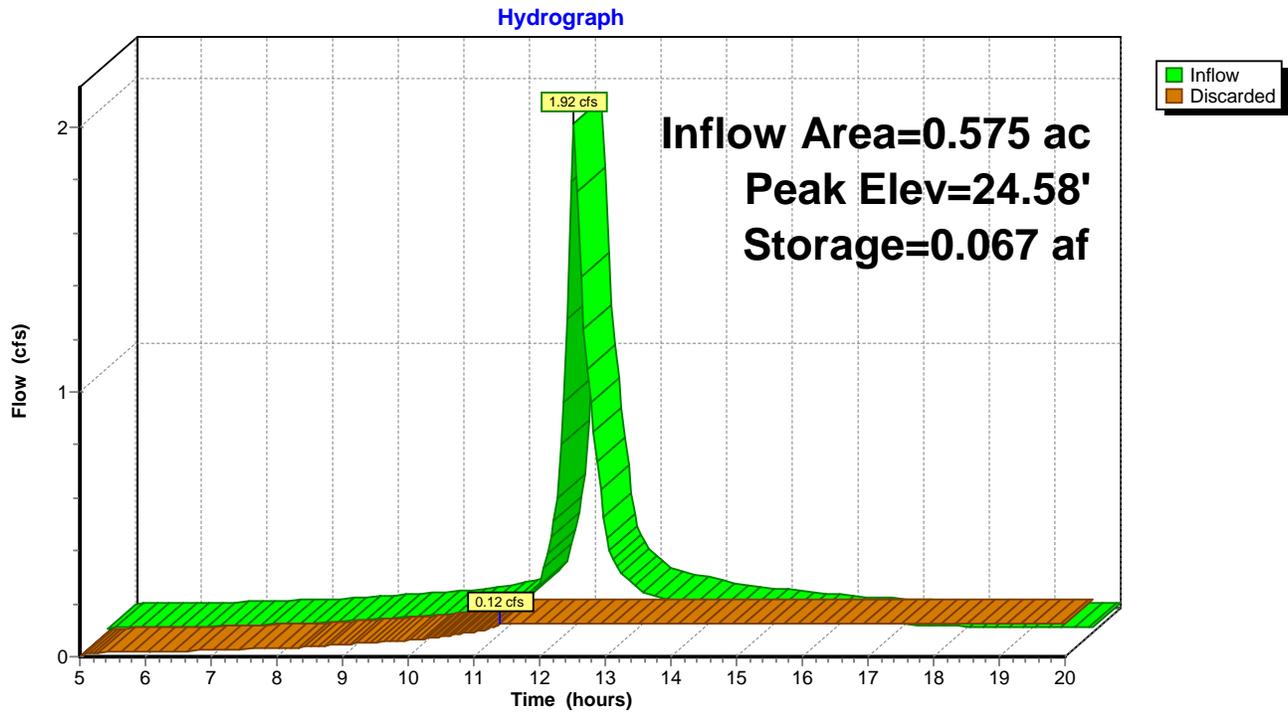
HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=5.24"

Printed 12/9/2025

Page 143

Pond UG-1:



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 144

Summary for Subcatchment PR-01:

Runoff = 0.13 cfs @ 12.10 hrs, Volume= 0.009 af, Depth> 1.99"
 Routed to Pond SWB-1 :

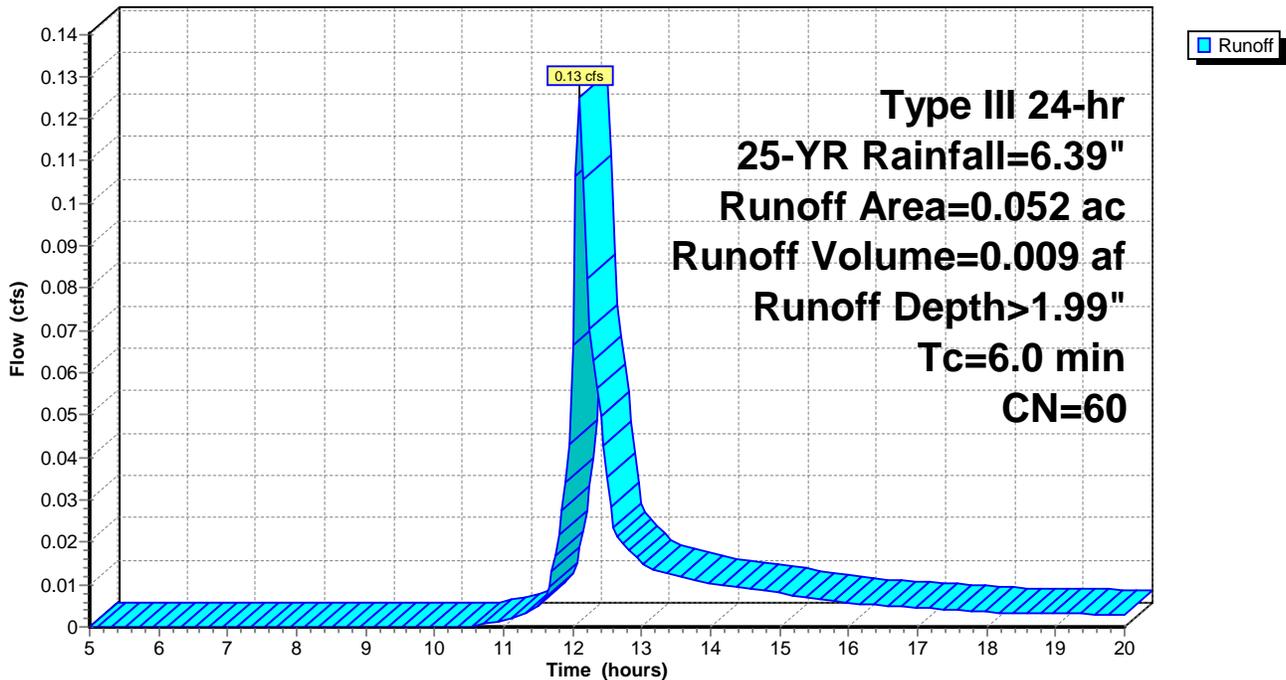
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.029	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.052	60	Weighted Average
0.029		55.77% Pervious Area
0.023		44.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-01:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 145

Summary for Subcatchment PR-02:

Runoff = 0.52 cfs @ 12.09 hrs, Volume= 0.036 af, Depth> 4.30"
 Routed to Pond SWB-2 :

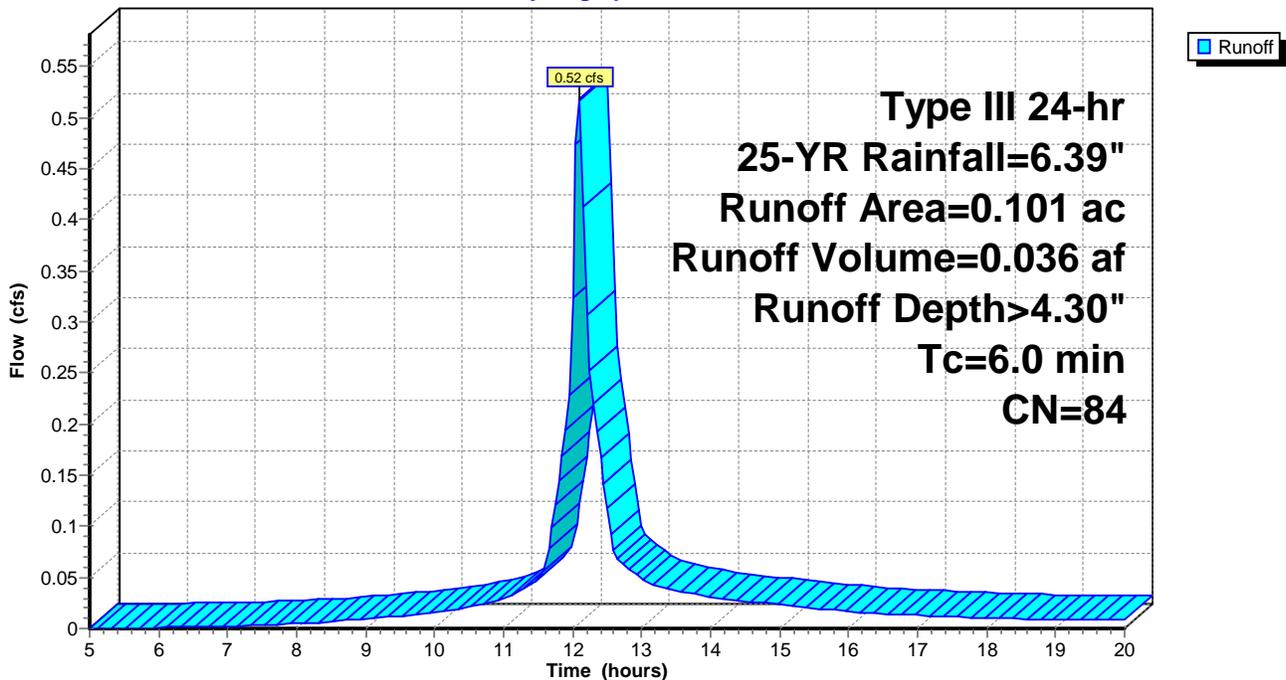
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.009	30	Meadow, non-grazed, HSG A
0.019	58	Meadow, non-grazed, HSG B
0.001	61	>75% Grass cover, Good, HSG B
* 0.072	98	Paved
0.101	84	Weighted Average
0.029		28.71% Pervious Area
0.072		71.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-02:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 146

Summary for Subcatchment PR-03:

Runoff = 0.48 cfs @ 12.21 hrs, Volume= 0.042 af, Depth> 3.27"
 Routed to Pond SWB-3 :

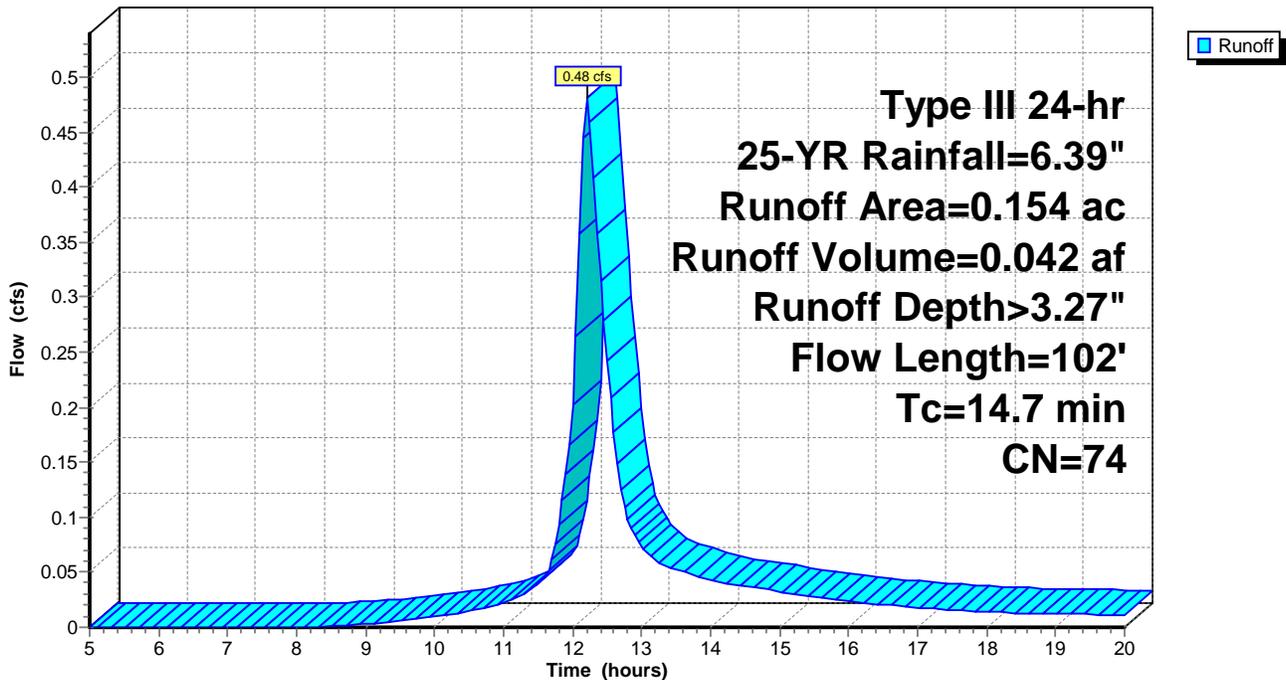
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.099	61	>75% Grass cover, Good, HSG B
* 0.055	98	Paved
0.154	74	Weighted Average
0.099		64.29% Pervious Area
0.055		35.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	83	0.0050	0.10		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.4	19	0.0130	0.80		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.7	102	Total			

Subcatchment PR-03:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 147

Summary for Subcatchment PR-04:

Runoff = 0.06 cfs @ 12.16 hrs, Volume= 0.007 af, Depth> 0.59"
Routed to Pond IB-1 :

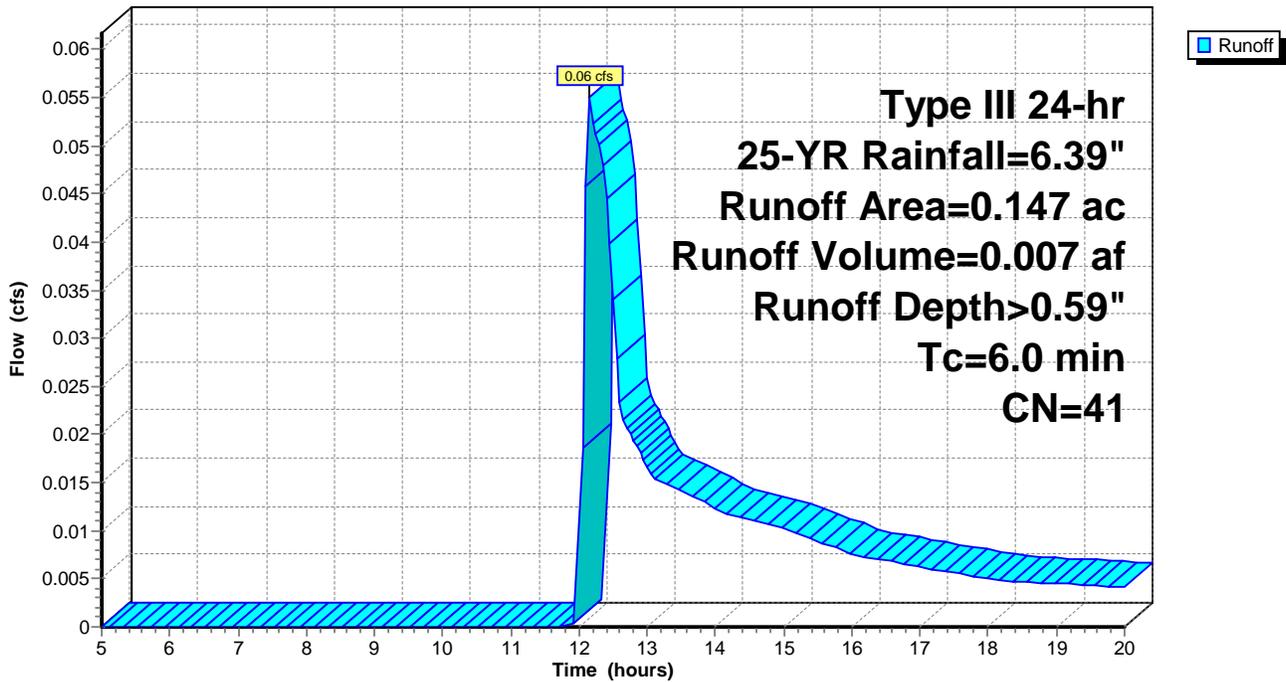
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.124	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.147	41	Weighted Average
0.124		84.35% Pervious Area
0.023		15.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-04:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 149

Summary for Subcatchment PR-06:

Runoff = 1.26 cfs @ 12.09 hrs, Volume= 0.086 af, Depth> 3.78"

Routed to Pond FB-1 :

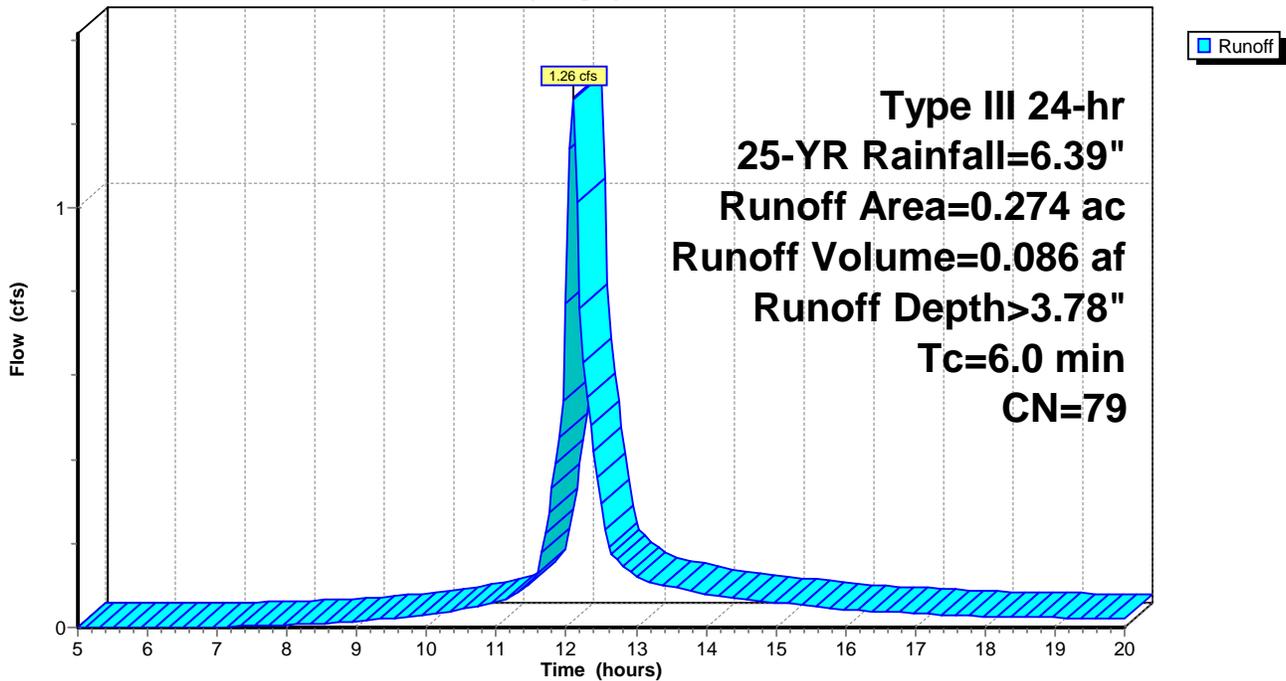
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.018	30	Meadow, non-grazed, HSG A
* 0.187	98	Paved
0.274	79	Weighted Average
0.087		31.75% Pervious Area
0.187		68.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-06:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 150

Summary for Subcatchment PR-07:

Runoff = 1.06 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 3.47"

Routed to Pond FB-1 :

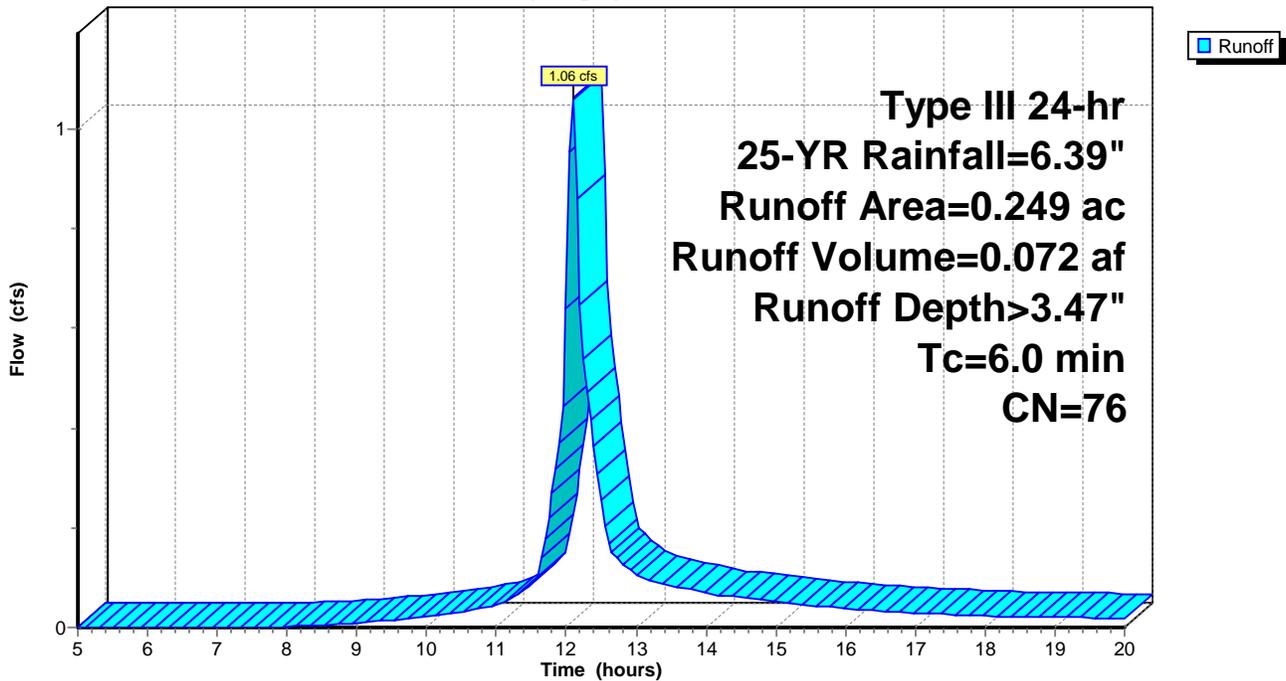
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.014	30	Meadow, non-grazed, HSG A
0.078	39	>75% Grass cover, Good, HSG A
* 0.157	98	Paved
0.249	76	Weighted Average
0.092		36.95% Pervious Area
0.157		63.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-07:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 151

Summary for Subcatchment PR-08:

Runoff = 0.01 cfs @ 14.72 hrs, Volume= 0.003 af, Depth> 0.11"

Routed to Pond RG-1 :

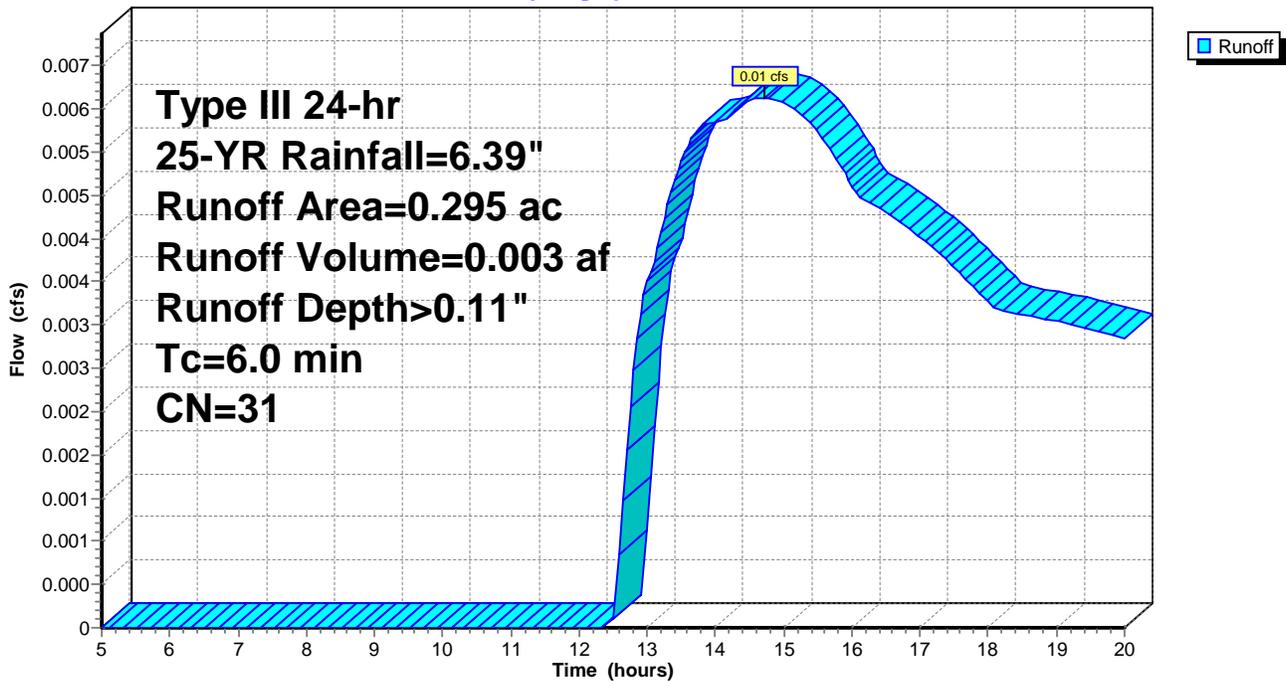
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.283	30	Brush, Good, HSG A
0.012	48	Brush, Good, HSG B
0.295	31	Weighted Average
0.295		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-08:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 152

Summary for Subcatchment PR-09:

Runoff = 0.93 cfs @ 12.18 hrs, Volume= 0.083 af, Depth> 4.72"
 Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.031	61	>75% Grass cover, Good, HSG B
0.000	58	Meadow, non-grazed, HSG B
* 0.162	98	Paved
0.211	88	Weighted Average
0.049		23.22% Pervious Area
0.162		76.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.0140	0.15		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.7	87	0.0150	0.86		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.0	9	0.0220	3.01		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	18	0.0310	1.23		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
0.2	39	0.0310	3.57		Shallow Concentrated Flow, E-F
					Paved Kv= 20.3 fps
0.1	28	0.0050	3.21	2.52	Pipe Channel, F-G
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.013
0.3	60	0.0050	3.47	2.73	Pipe Channel, G-H
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.012
13.5	341	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

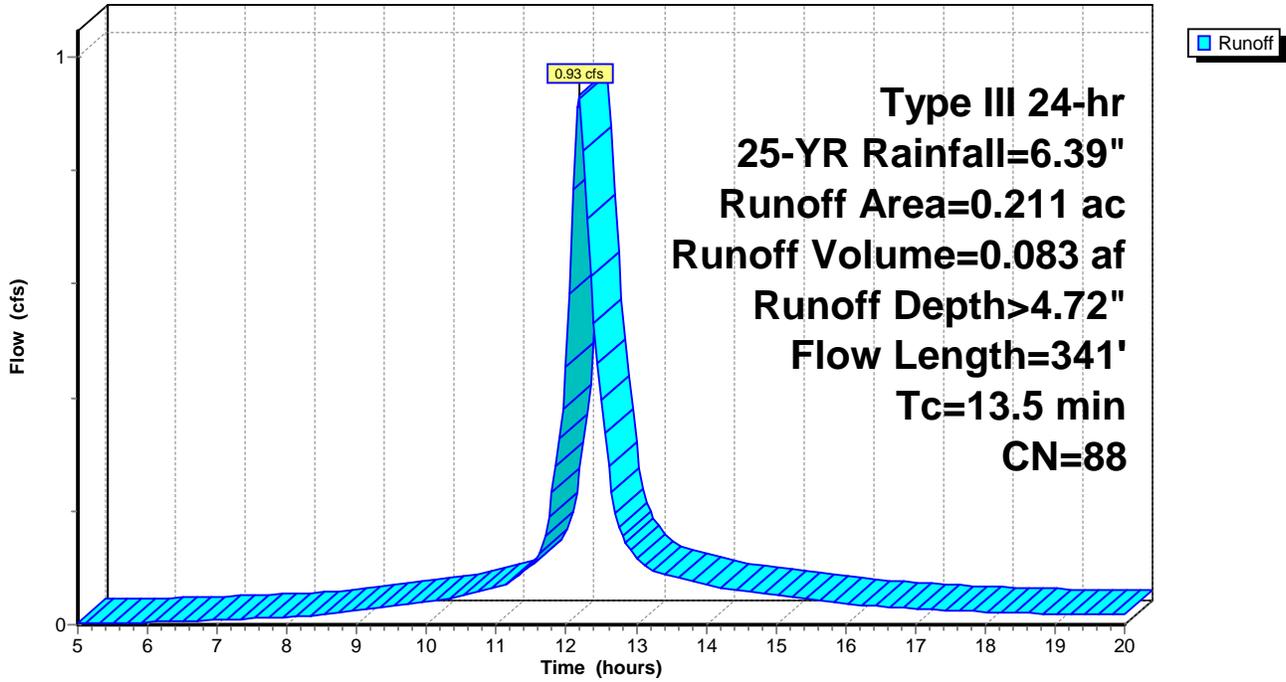
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 153

Subcatchment PR-09:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 154

Summary for Subcatchment PR-10:

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 5.53"
 Routed to Pond RG-1 :

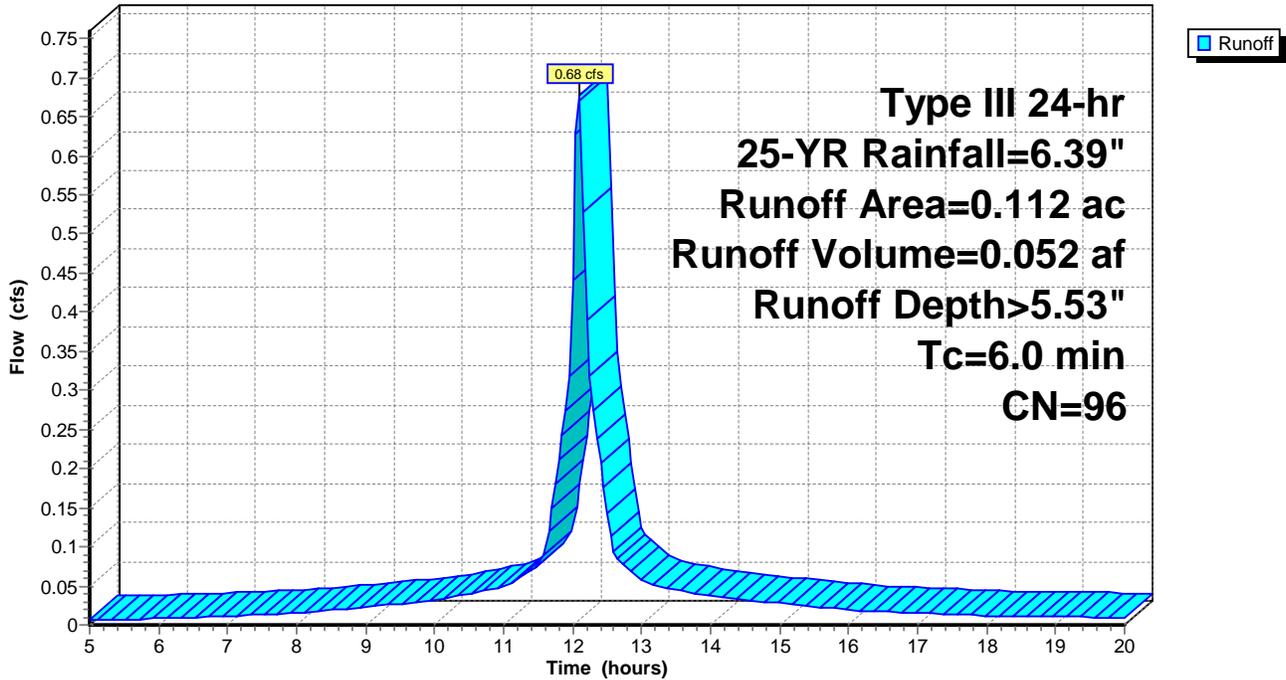
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.003	39	>75% Grass cover, Good, HSG A
* 0.109	98	Paved
0.112	96	Weighted Average
0.003		2.68% Pervious Area
0.109		97.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-10:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 155

Summary for Subcatchment PR-11:

Runoff = 1.62 cfs @ 12.09 hrs, Volume= 0.117 af, Depth> 4.83"

Routed to Pond RG-1 :

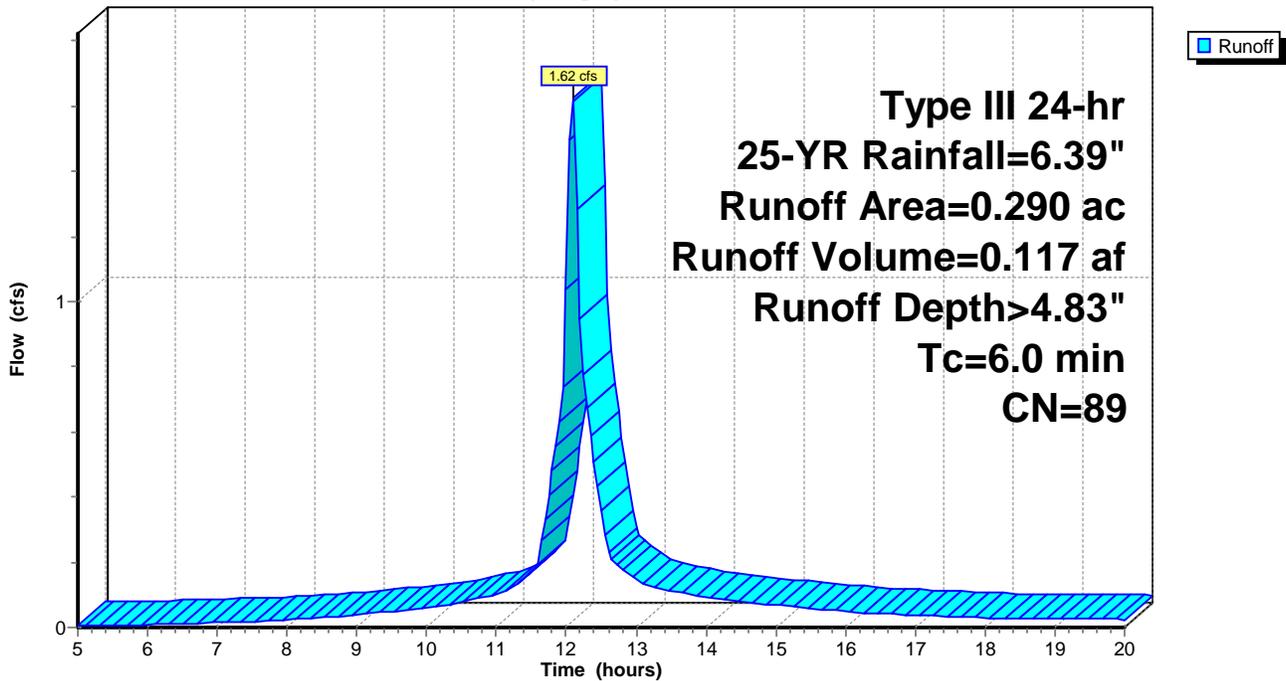
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.020	39	>75% Grass cover, Good, HSG A
0.040	61	>75% Grass cover, Good, HSG B
* 0.230	98	Paved
0.290	89	Weighted Average
0.060		20.69% Pervious Area
0.230		79.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-11:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 156

Summary for Subcatchment PR-12:

Runoff = 1.57 cfs @ 12.09 hrs, Volume= 0.115 af, Depth> 5.04"
 Routed to Pond RG-1 :

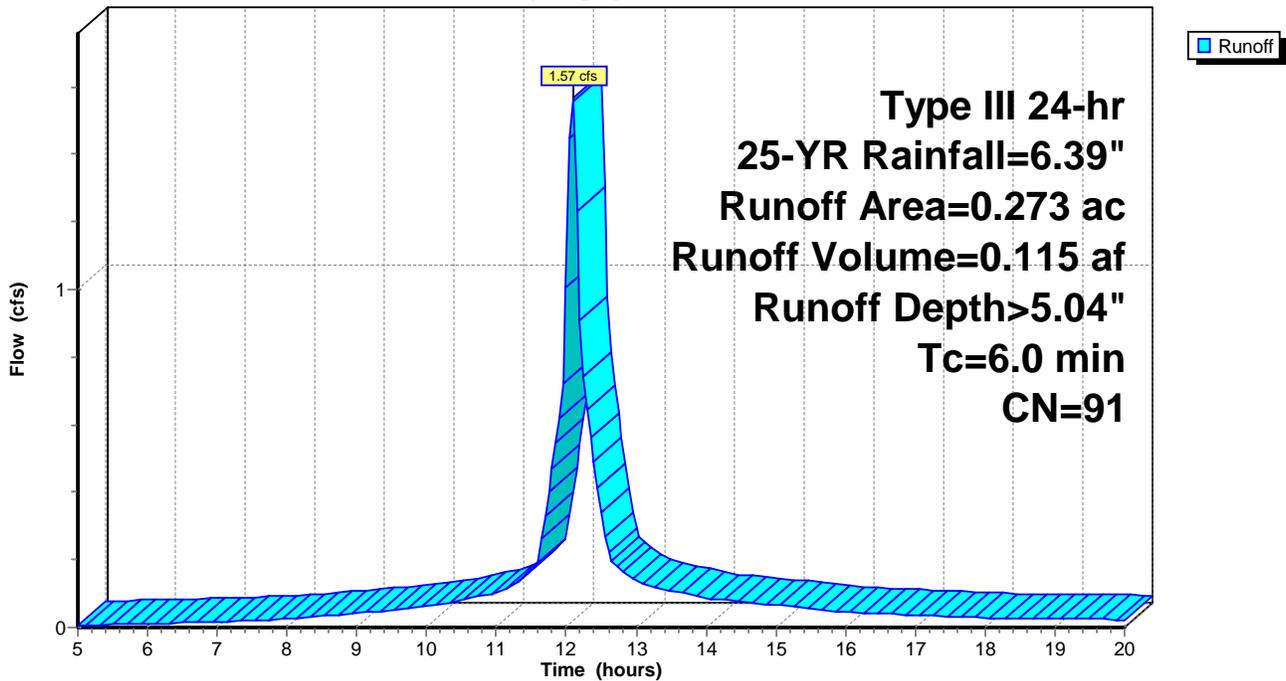
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.008	61	>75% Grass cover, Good, HSG B
* 0.237	98	Paved
0.273	91	Weighted Average
0.036		13.19% Pervious Area
0.237		86.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-12:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 157

Summary for Subcatchment PR-13:

Runoff = 0.96 cfs @ 12.09 hrs, Volume= 0.070 af, Depth> 5.04"

Routed to Pond RG-1 :

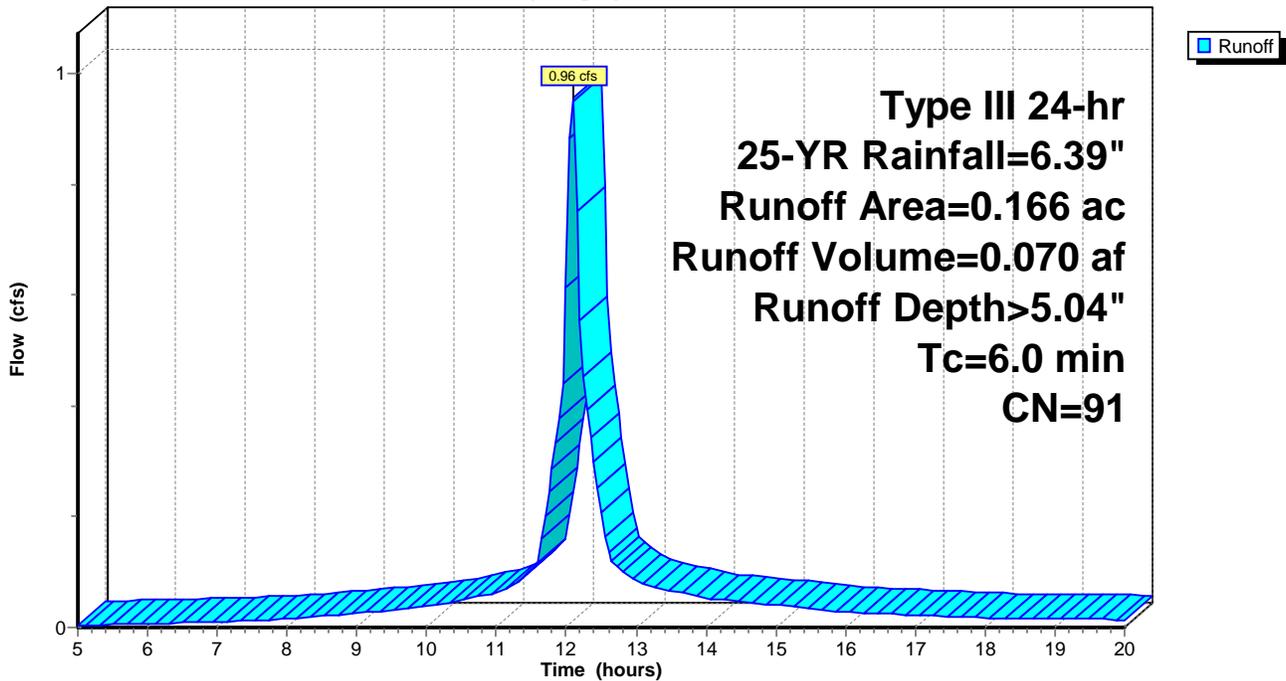
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.019	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
* 0.146	98	Paved
0.166	91	Weighted Average
0.020		12.05% Pervious Area
0.146		87.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-13:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 158

Summary for Subcatchment PR-14:

Runoff = 1.15 cfs @ 12.09 hrs, Volume= 0.082 af, Depth> 4.62"
Routed to Pond RG-1 :

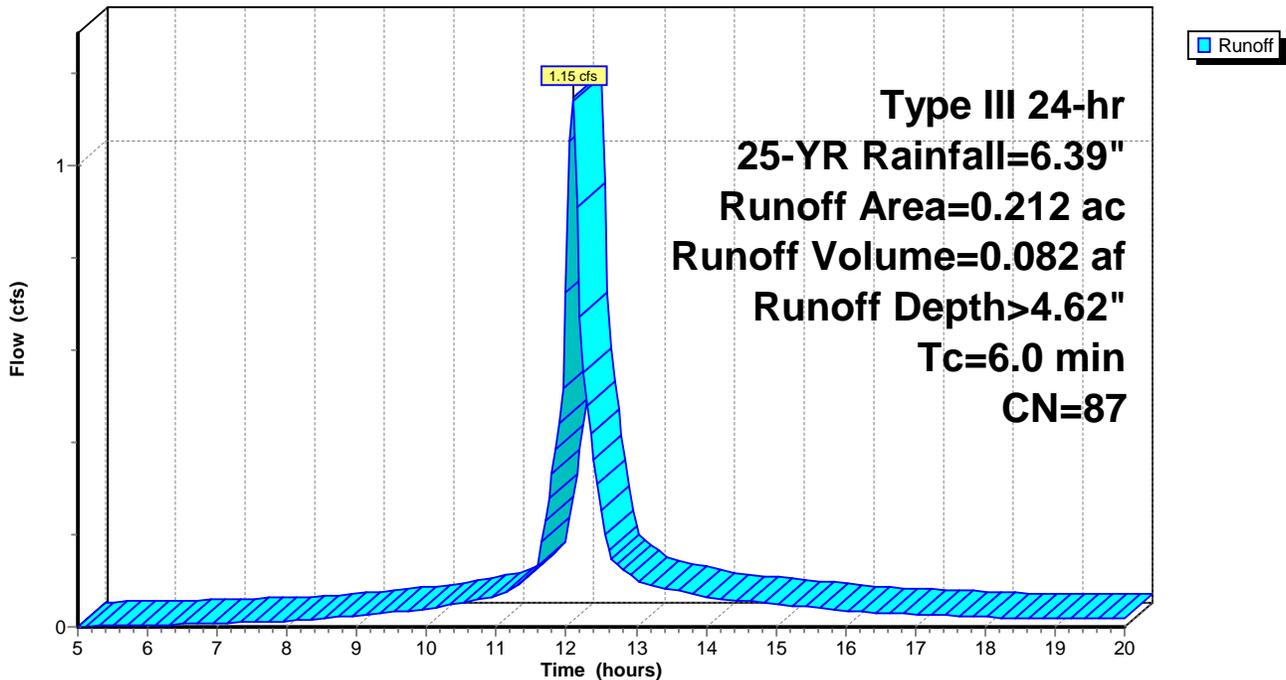
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.040	39	>75% Grass cover, Good, HSG A
* 0.172	98	Paved
0.212	87	Weighted Average
0.040		18.87% Pervious Area
0.172		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-14:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 159

Summary for Subcatchment PR-15:

Runoff = 0.61 cfs @ 12.10 hrs, Volume= 0.043 af, Depth> 3.88"

Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.030	39	>75% Grass cover, Good, HSG A
0.018	61	>75% Grass cover, Good, HSG B
* 0.085	98	Paved
0.133	80	Weighted Average
0.048		36.09% Pervious Area
0.085		63.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	62	0.0200	0.16		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.0	5	0.0200	2.87		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	52	0.0500	10.99	8.63	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	67	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.1	48	0.0100	5.70	7.00	Pipe Channel, E-F 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
6.9	234	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

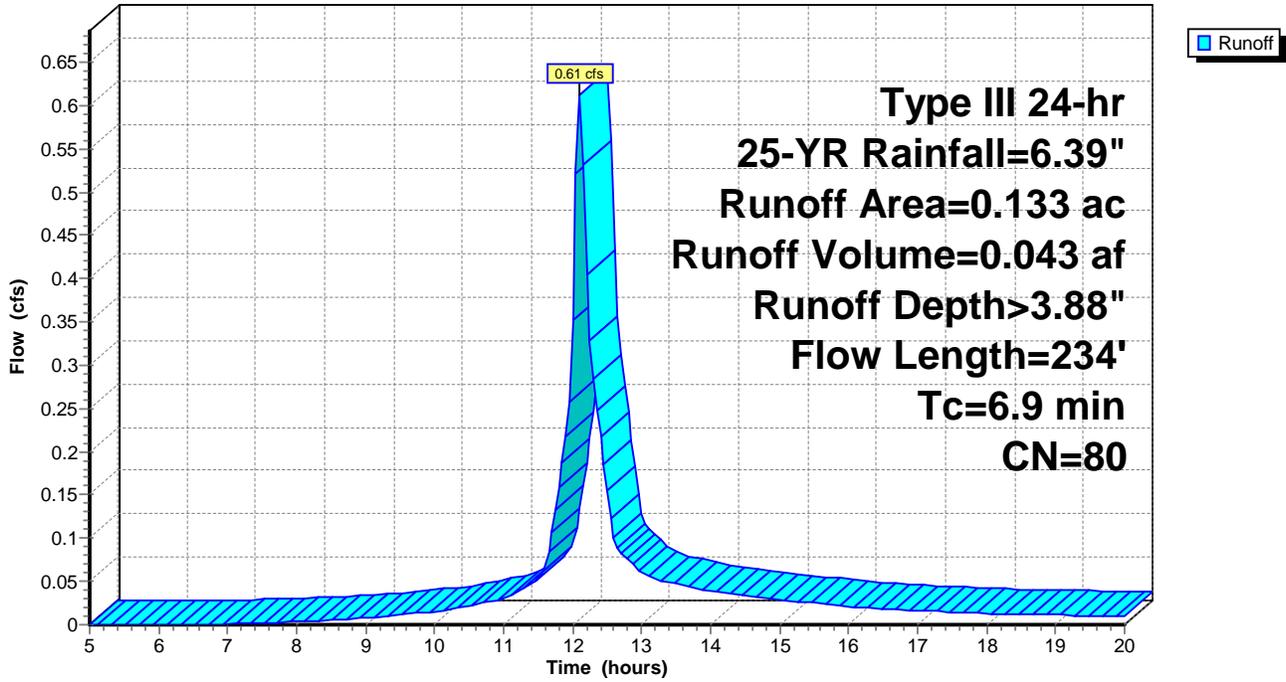
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 160

Subcatchment PR-15:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 162

Summary for Subcatchment PR-17:

Runoff = 0.00 cfs @ 15.02 hrs, Volume= 0.000 af, Depth> 0.08"

Routed to Pond FB-2 :

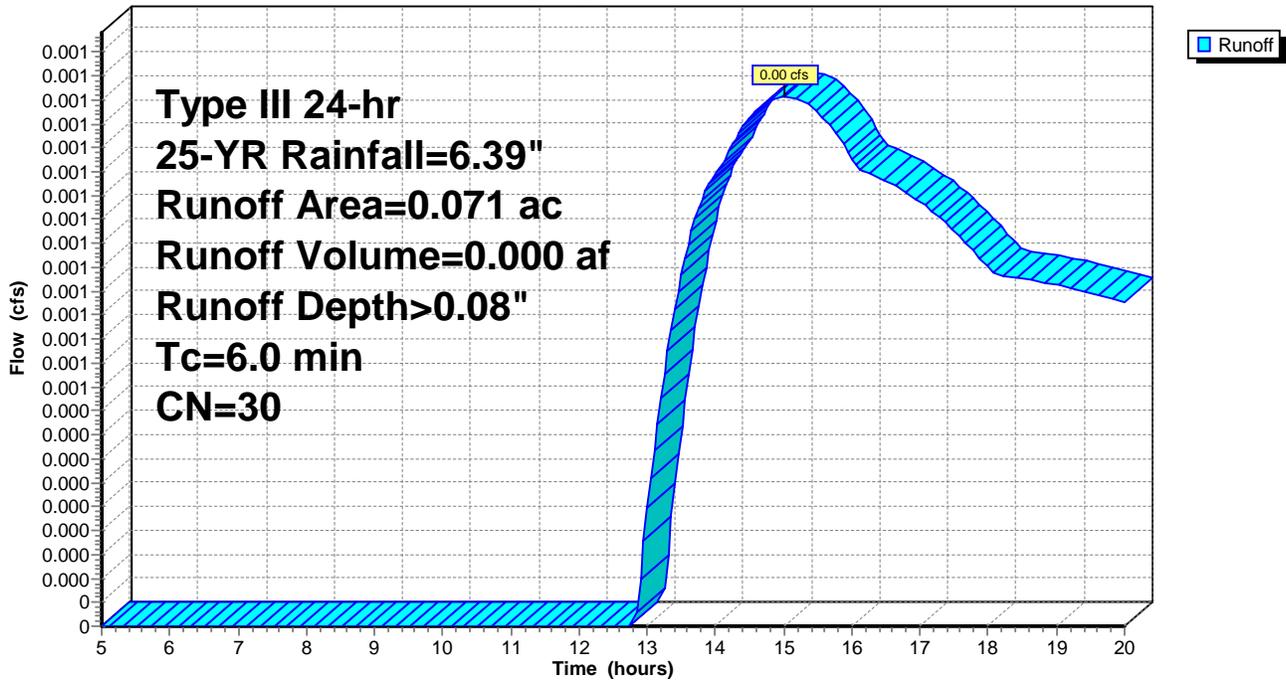
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.071	30	Brush, Good, HSG A
0.071		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-17:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 163

Summary for Subcatchment PR-18:

Runoff = 1.04 cfs @ 12.09 hrs, Volume= 0.075 af, Depth> 4.83"
Routed to Pond FB-2 :

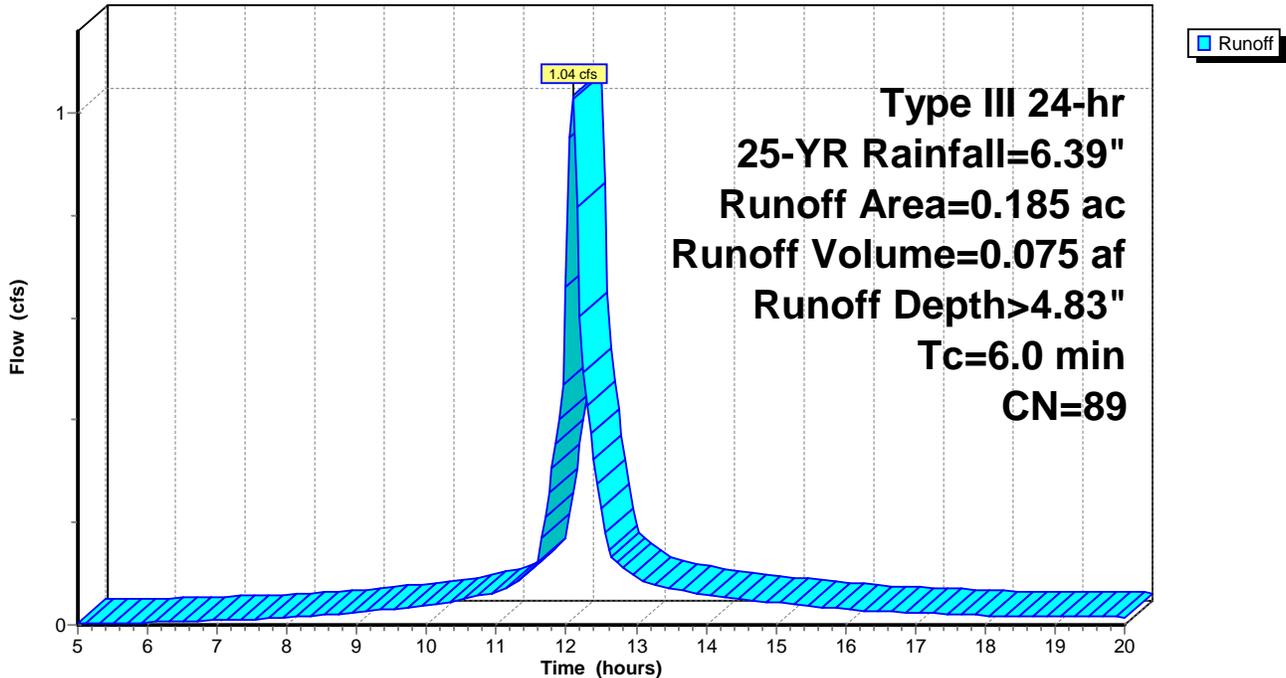
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.029	39	>75% Grass cover, Good, HSG A
* 0.156	98	Paved
0.185	89	Weighted Average
0.029		15.68% Pervious Area
0.156		84.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-18:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 164

Summary for Subcatchment PR-19:

Runoff = 0.71 cfs @ 12.09 hrs, Volume= 0.051 af, Depth> 4.94"

Routed to Pond FB-2 :

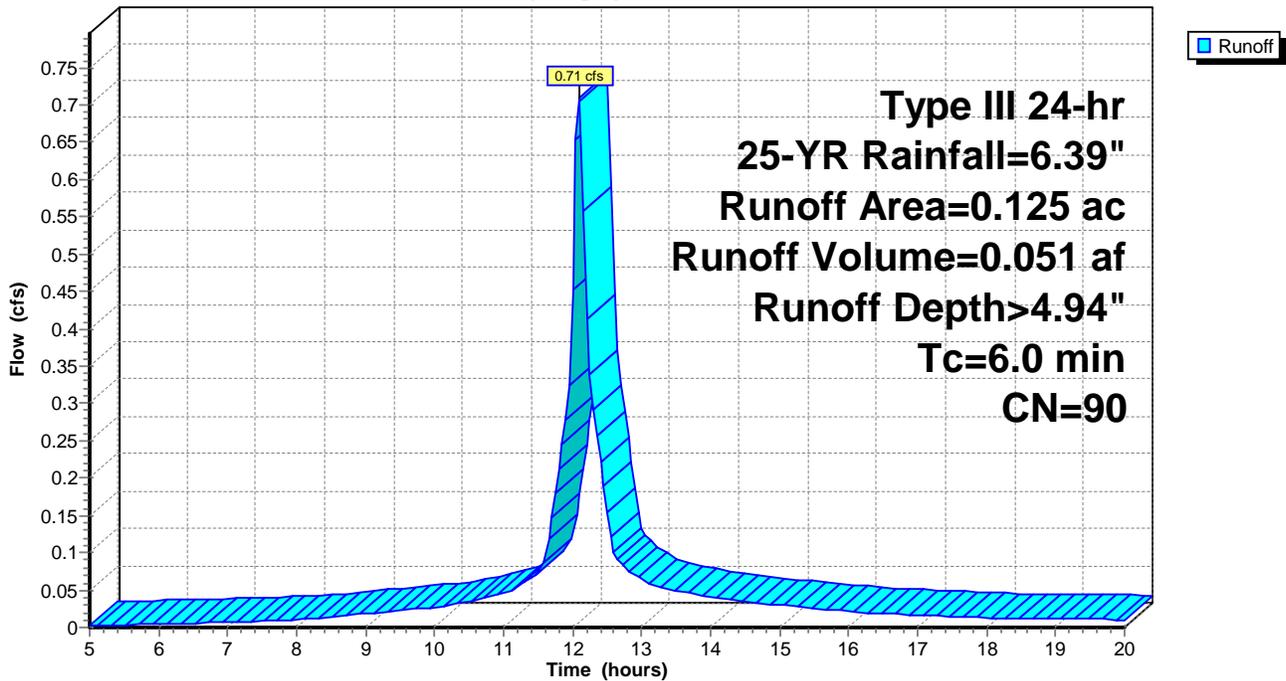
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.002	61	>75% Grass cover, Good, HSG B
* 0.107	98	Paved
0.125	90	Weighted Average
0.018		14.40% Pervious Area
0.107		85.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-19:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 165

Summary for Subcatchment PR-20:

Runoff = 1.44 cfs @ 12.09 hrs, Volume= 0.103 af, Depth> 4.73"

Routed to Pond FB-2 :

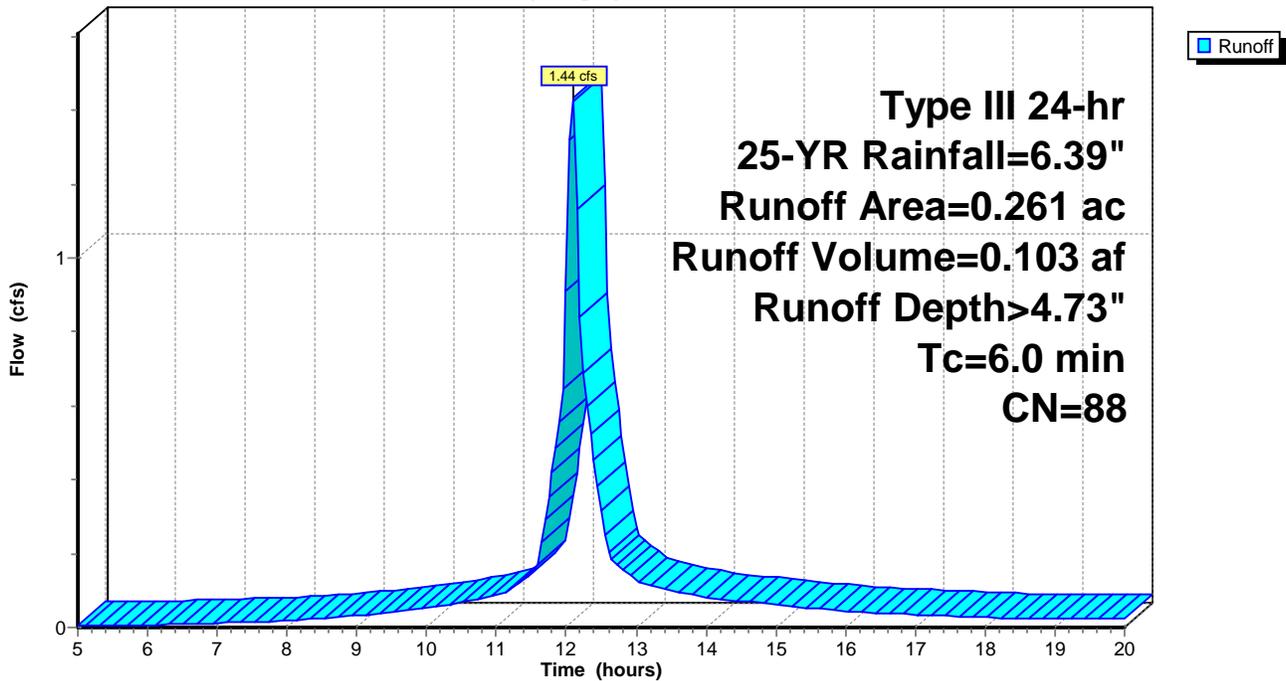
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.041	39	>75% Grass cover, Good, HSG A
0.004	61	>75% Grass cover, Good, HSG B
* 0.216	98	Paved
0.261	88	Weighted Average
0.045		17.24% Pervious Area
0.216		82.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-20:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 166

Summary for Subcatchment PR-21:

Runoff = 0.91 cfs @ 12.09 hrs, Volume= 0.067 af, Depth> 5.25"

Routed to Pond FB-2 :

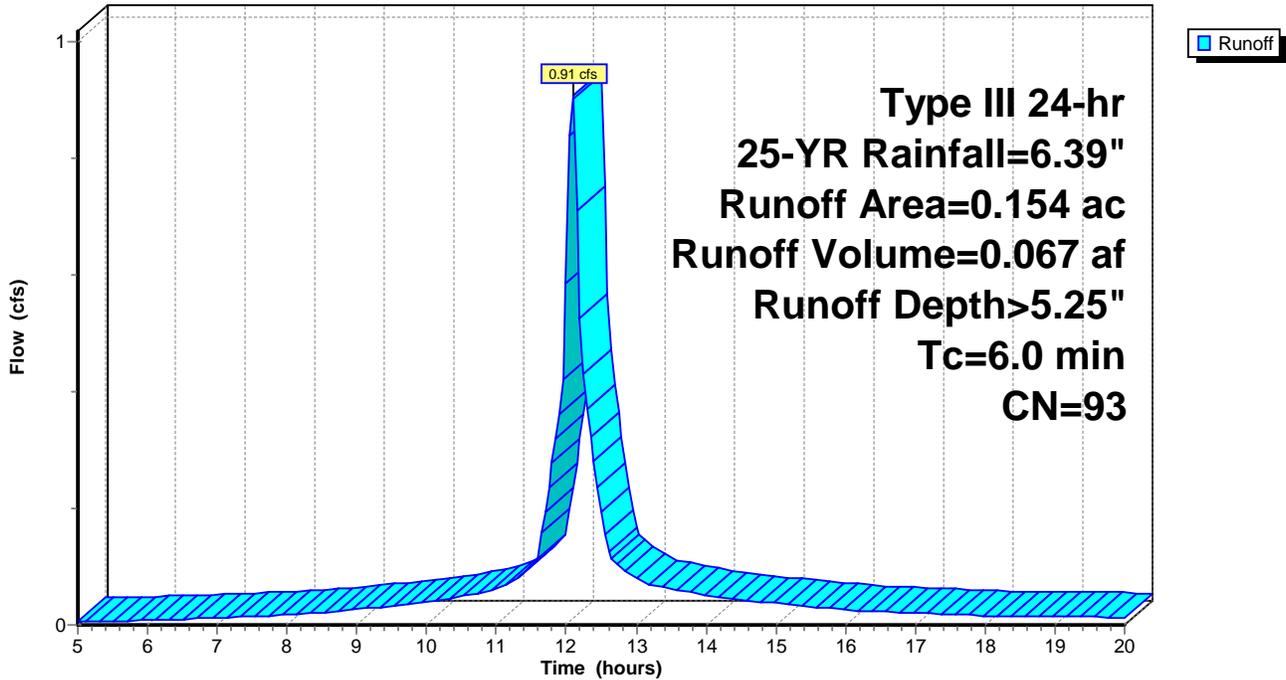
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.013	39	>75% Grass cover, Good, HSG A
* 0.141	98	Paved
0.154	93	Weighted Average
0.013		8.44% Pervious Area
0.141		91.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-21:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 167

Summary for Subcatchment PR-22:

Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.036 af, Depth> 3.47"
 Routed to Pond FB-2 :

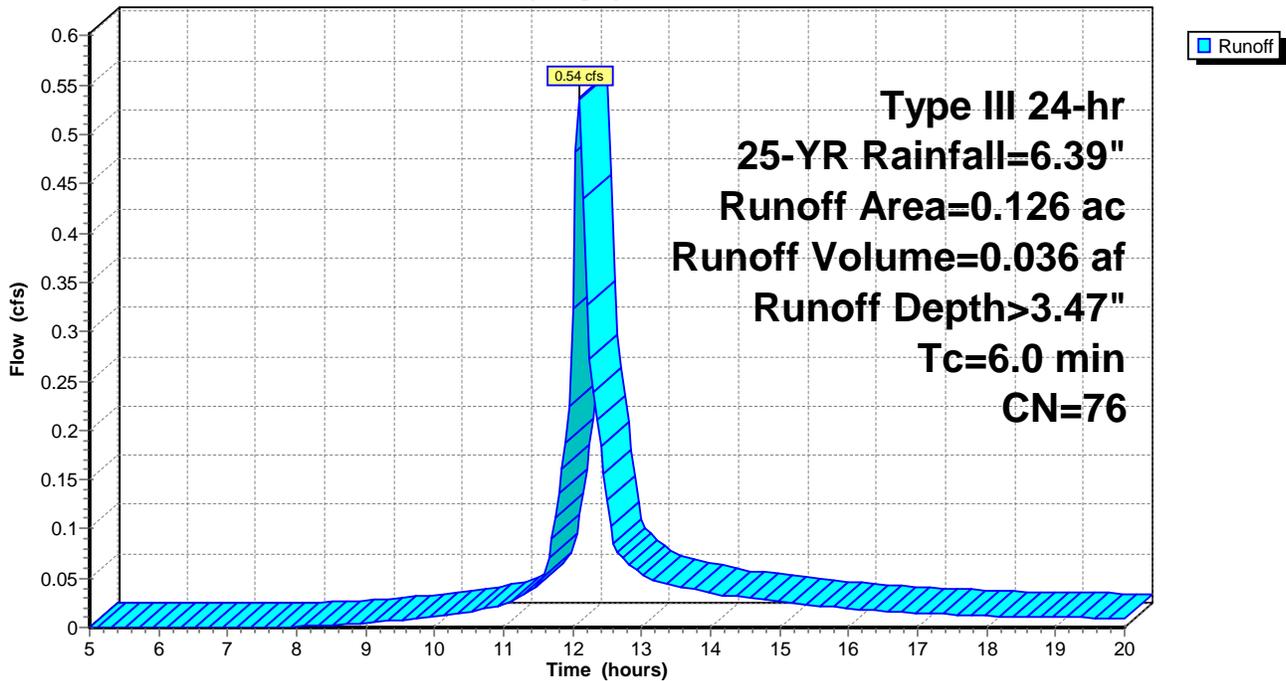
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.034	39	>75% Grass cover, Good, HSG A
0.022	61	>75% Grass cover, Good, HSG B
* 0.070	98	Paved
0.126	76	Weighted Average
0.056		44.44% Pervious Area
0.070		55.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-22:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 168

Summary for Subcatchment PR-23:

Runoff = 0.73 cfs @ 12.14 hrs, Volume= 0.056 af, Depth> 3.88"

Routed to Pond FB-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.035	39	>75% Grass cover, Good, HSG A
0.029	61	>75% Grass cover, Good, HSG B
* 0.109	98	Paved
0.173	80	Weighted Average
0.064		36.99% Pervious Area
0.109		63.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	71	0.0130	0.14		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.7	124	0.0240	3.14		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	27	0.0100	4.91	3.86	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	52	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.6	274	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

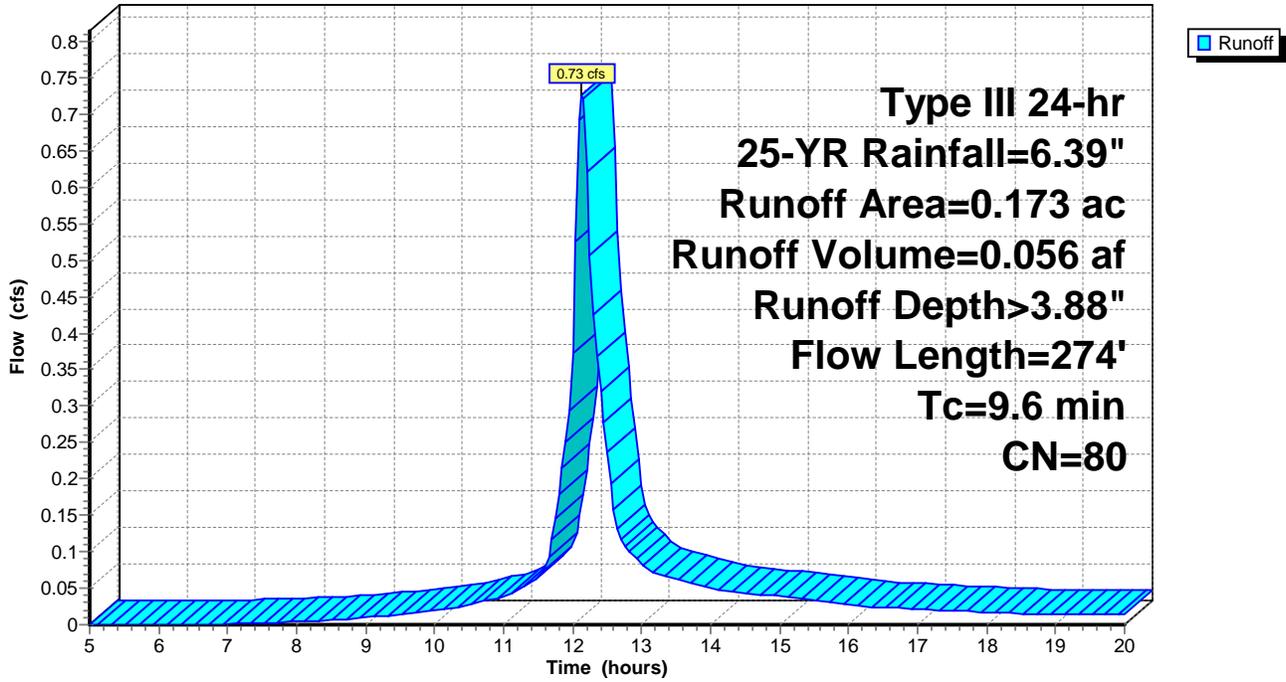
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 169

Subcatchment PR-23:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 170

Summary for Subcatchment PR-24:

Runoff = 0.13 cfs @ 12.13 hrs, Volume= 0.013 af, Depth> 0.78"
 Routed to Pond IB-3 :

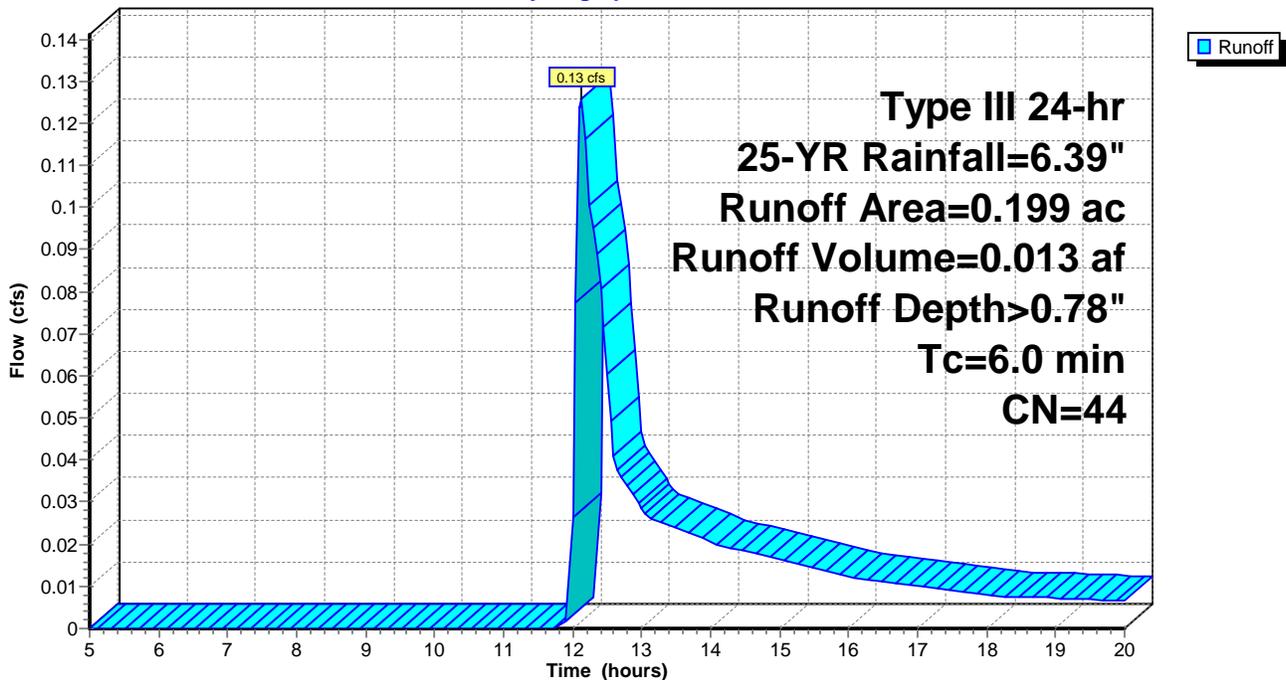
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.071	39	>75% Grass cover, Good, HSG A
0.013	61	>75% Grass cover, Good, HSG B
0.090	30	Meadow, non-grazed, HSG A
* 0.025	98	Paved
0.199	44	Weighted Average
0.174		87.44% Pervious Area
0.025		12.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-24:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 171

Summary for Subcatchment PR-25:

Runoff = 0.06 cfs @ 12.31 hrs, Volume= 0.010 af, Depth> 0.48"
 Routed to Pond GT-1 :

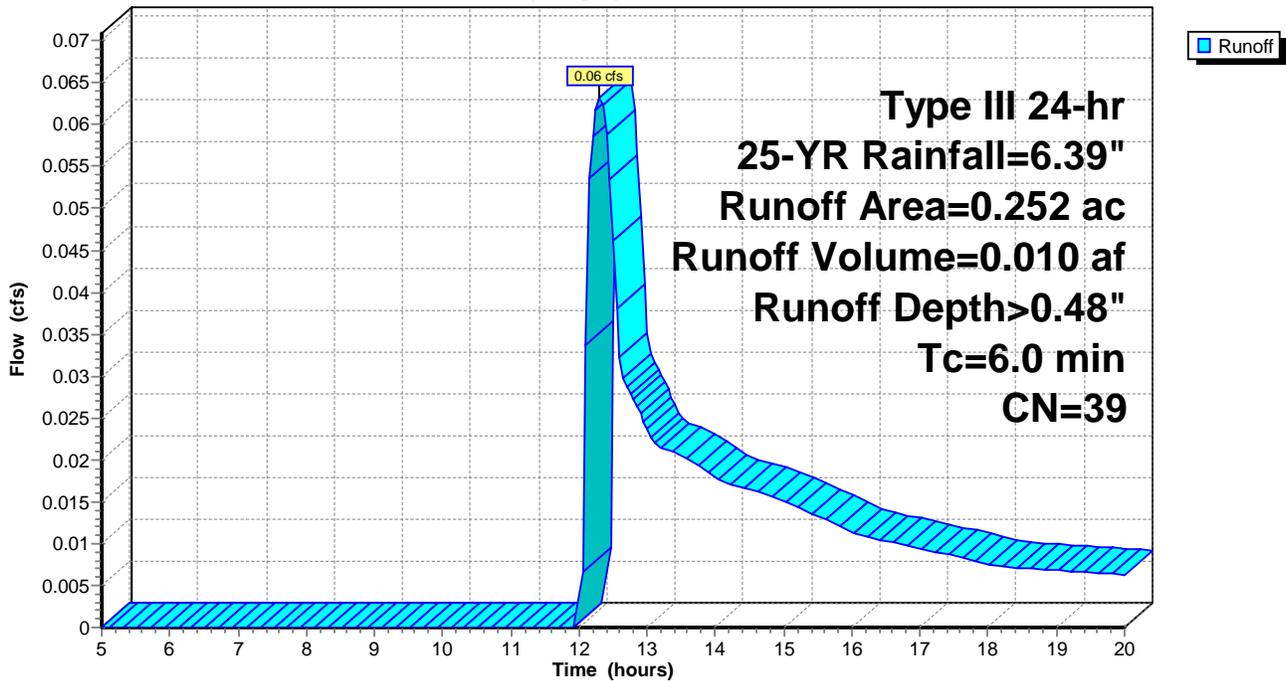
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.016	61	>75% Grass cover, Good, HSG B
0.156	30	Meadow, non-grazed, HSG A
0.052	58	Meadow, non-grazed, HSG B
0.252	39	Weighted Average
0.252		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-25:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 173

Summary for Subcatchment PR-27:

Runoff = 0.00 cfs @ 14.72 hrs, Volume= 0.000 af, Depth> 0.11"

Routed to Pond GT-3 :

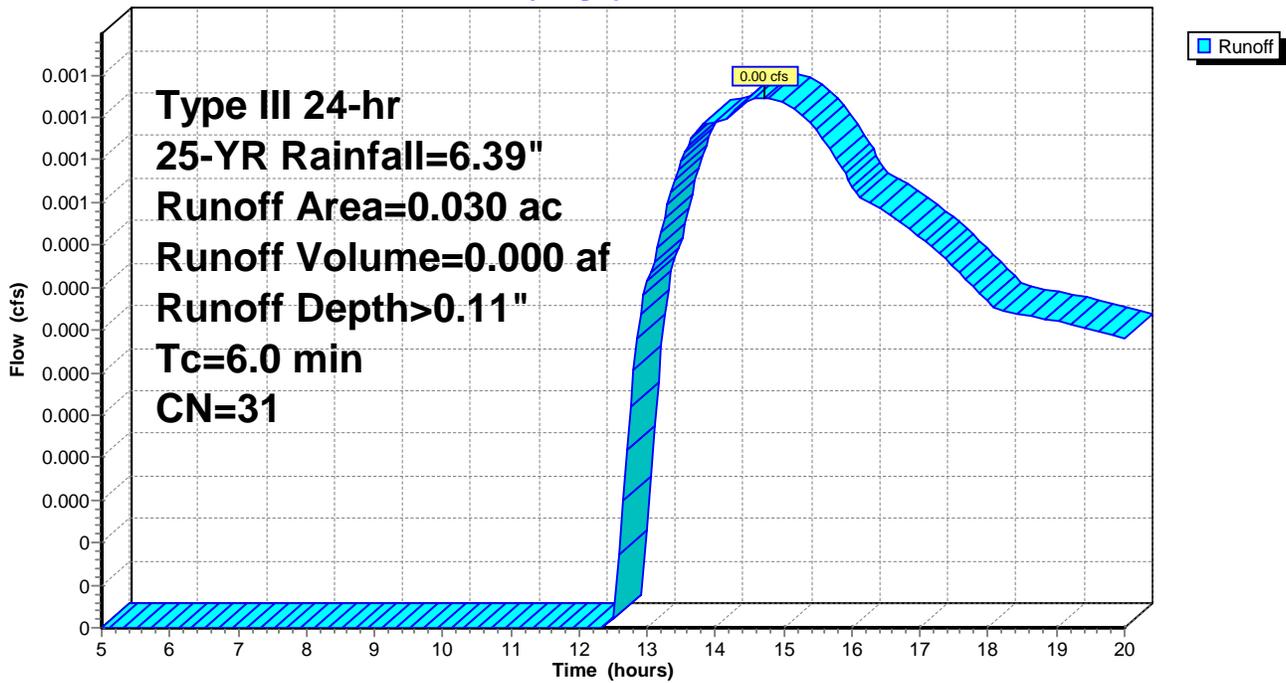
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.026	30	Meadow, non-grazed, HSG A
0.030	31	Weighted Average
0.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-27:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 174

Summary for Subcatchment PR-28:

Runoff = 0.02 cfs @ 12.36 hrs, Volume= 0.004 af, Depth> 0.37"
 Routed to Pond GT-4 :

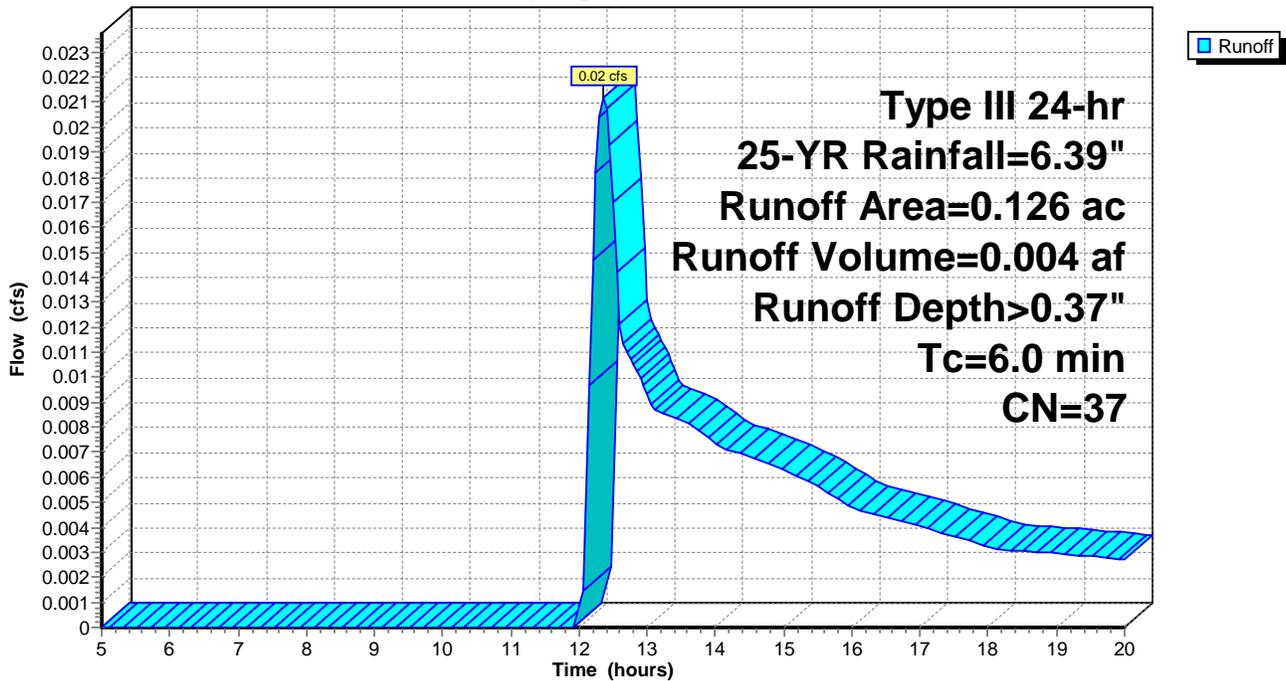
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.031	39	>75% Grass cover, Good, HSG A
0.004	61	>75% Grass cover, Good, HSG B
0.074	30	Meadow, non-grazed, HSG A
0.017	58	Meadow, non-grazed, HSG B
0.126	37	Weighted Average
0.126		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-28:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 175

Summary for Subcatchment PR-29:

Runoff = 0.44 cfs @ 12.09 hrs, Volume= 0.030 af, Depth> 3.18"
 Routed to Pond GT-5 :

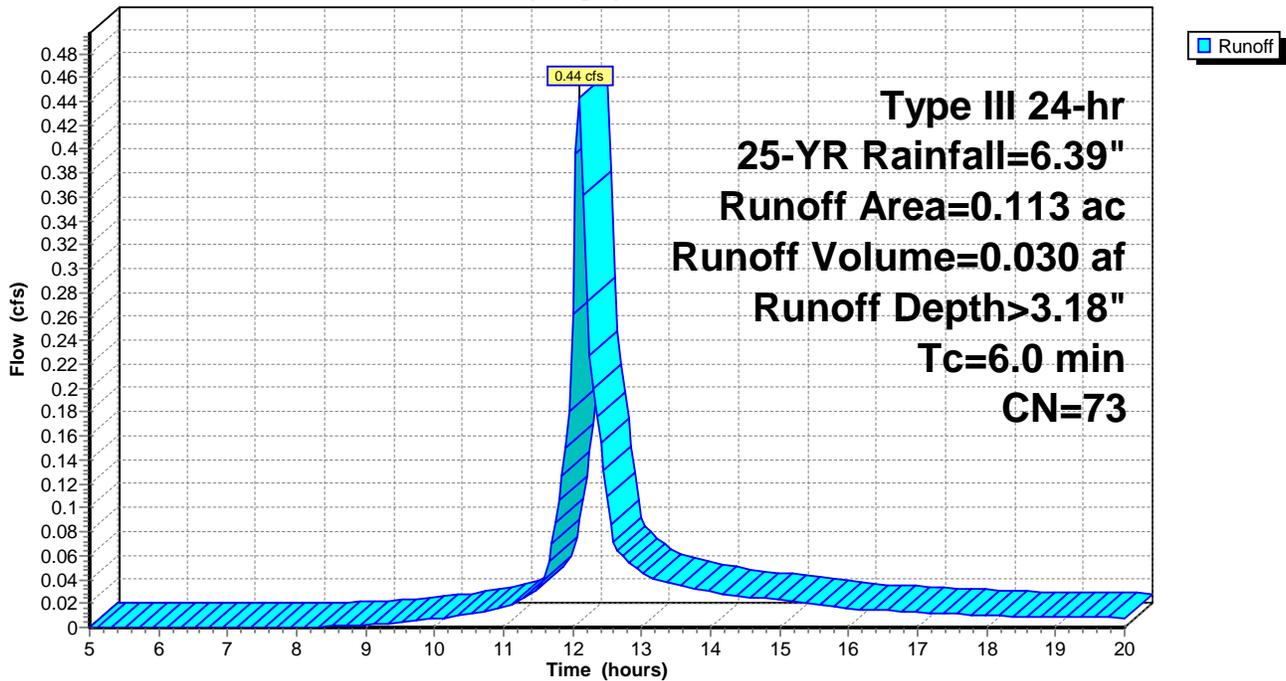
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.031	61	>75% Grass cover, Good, HSG B
0.043	58	Meadow, non-grazed, HSG B
* 0.039	98	Paved
0.113	73	Weighted Average
0.074		65.49% Pervious Area
0.039		34.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-29:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 176

Summary for Subcatchment PR-30:

Runoff = 0.14 cfs @ 12.17 hrs, Volume= 0.012 af, Depth> 1.58"

Routed to Pond GT-6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
0.001	30	Woods, Good, HSG A
0.008	55	Woods, Good, HSG B
0.011	39	>75% Grass cover, Good, HSG A
0.021	61	>75% Grass cover, Good, HSG B
0.026	30	Meadow, non-grazed, HSG A
0.010	58	Meadow, non-grazed, HSG B
* 0.016	98	Paved
0.093	55	Weighted Average
0.077		82.80% Pervious Area
0.016		17.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0380	0.16		Sheet Flow, A-B
					Grass: Dense n= 0.240 P2= 3.40"
0.4	40	0.0550	1.64		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
11.1	140	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

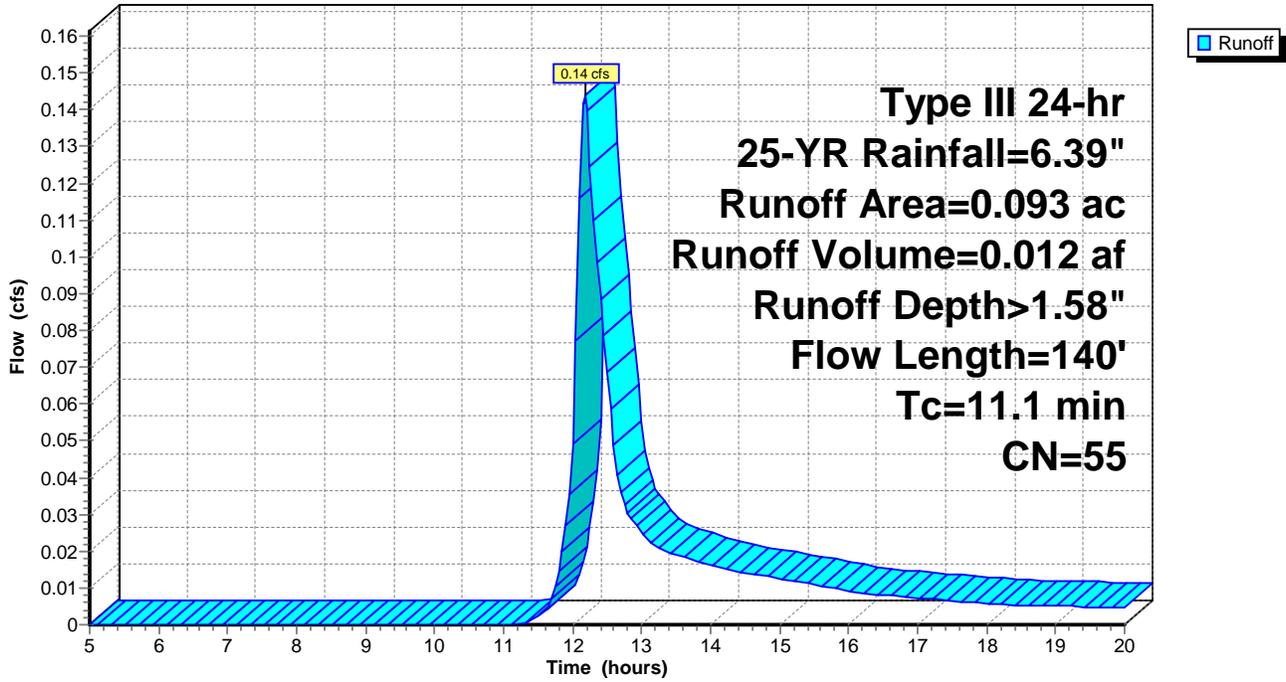
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 177

Subcatchment PR-30:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 178

Summary for Subcatchment RA-1:

Runoff = 0.79 cfs @ 12.09 hrs, Volume= 0.061 af, Depth> 5.68"

Routed to Pond UG-1 :

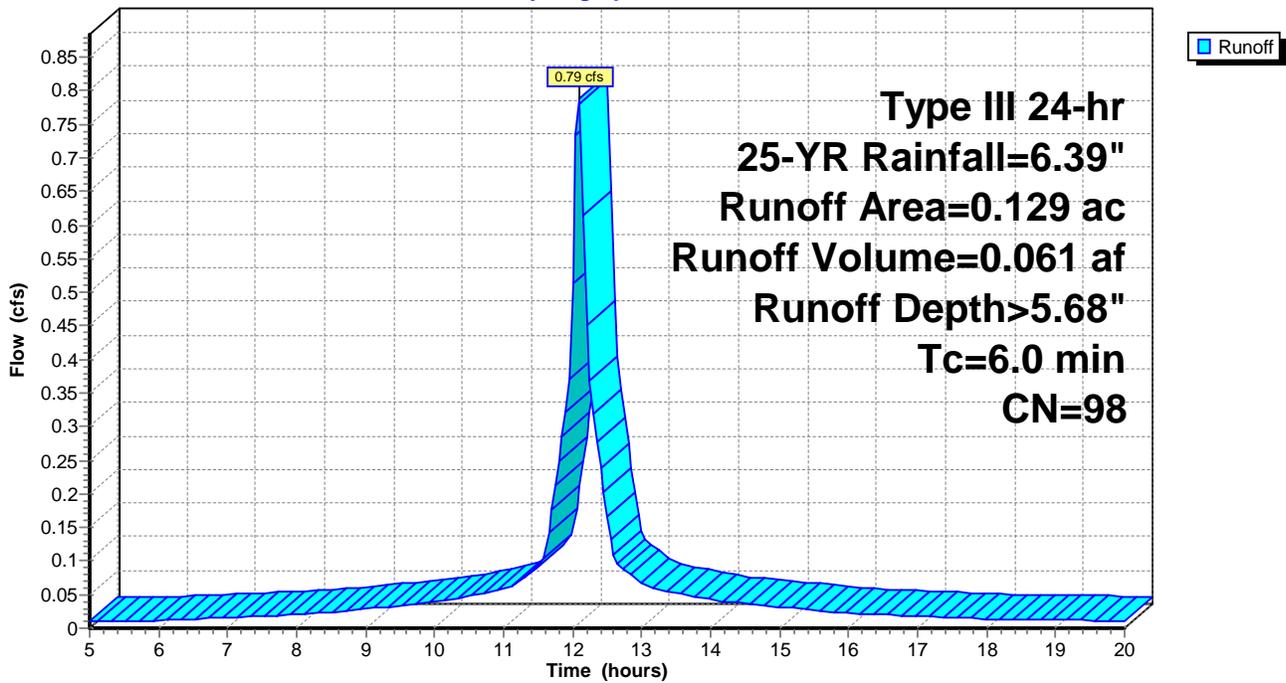
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
* 0.129	98	Roof
0.129		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 179

Summary for Subcatchment RA-2:

Runoff = 0.85 cfs @ 12.09 hrs, Volume= 0.066 af, Depth> 5.68"
Routed to Pond UG-1 :

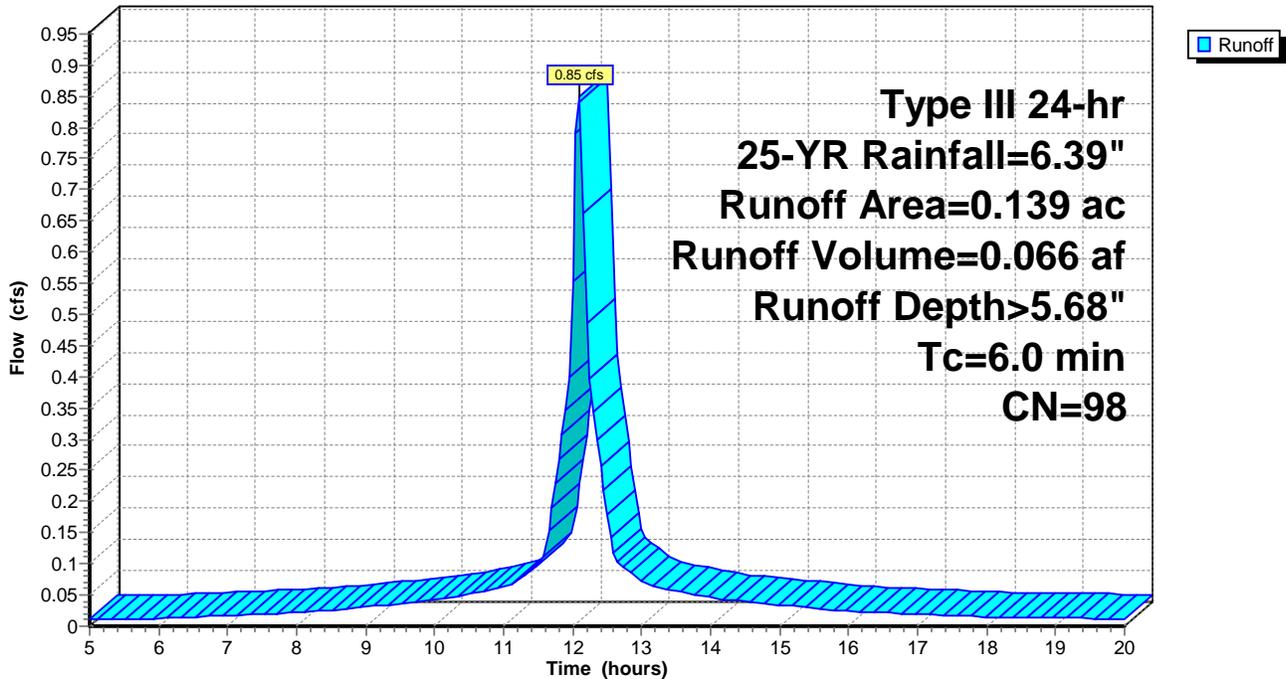
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
* 0.139	98	Roof
0.139		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 180

Summary for Subcatchment RA-3:

Runoff = 1.18 cfs @ 12.09 hrs, Volume= 0.091 af, Depth> 5.68"

Routed to Pond RG-1 :

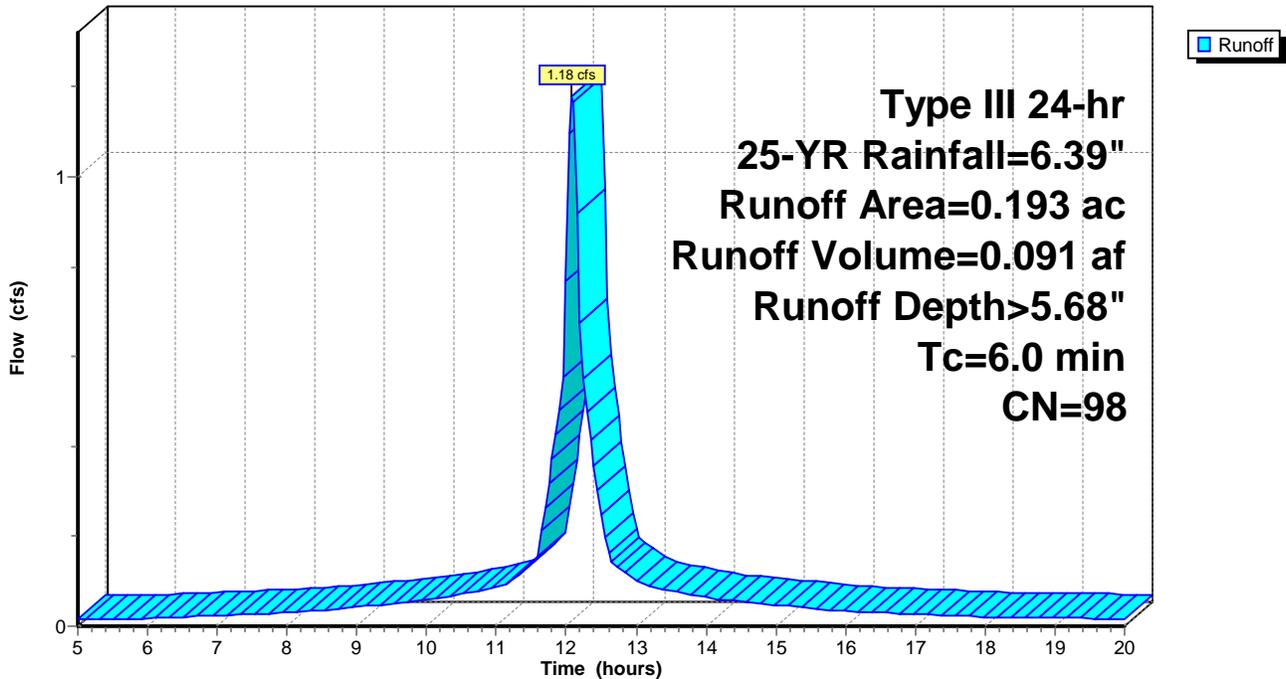
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
* 0.193	98	Roof
0.193		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 181

Summary for Subcatchment RA-4:

Runoff = 1.14 cfs @ 12.09 hrs, Volume= 0.089 af, Depth> 5.68"

Routed to Pond RG-1 :

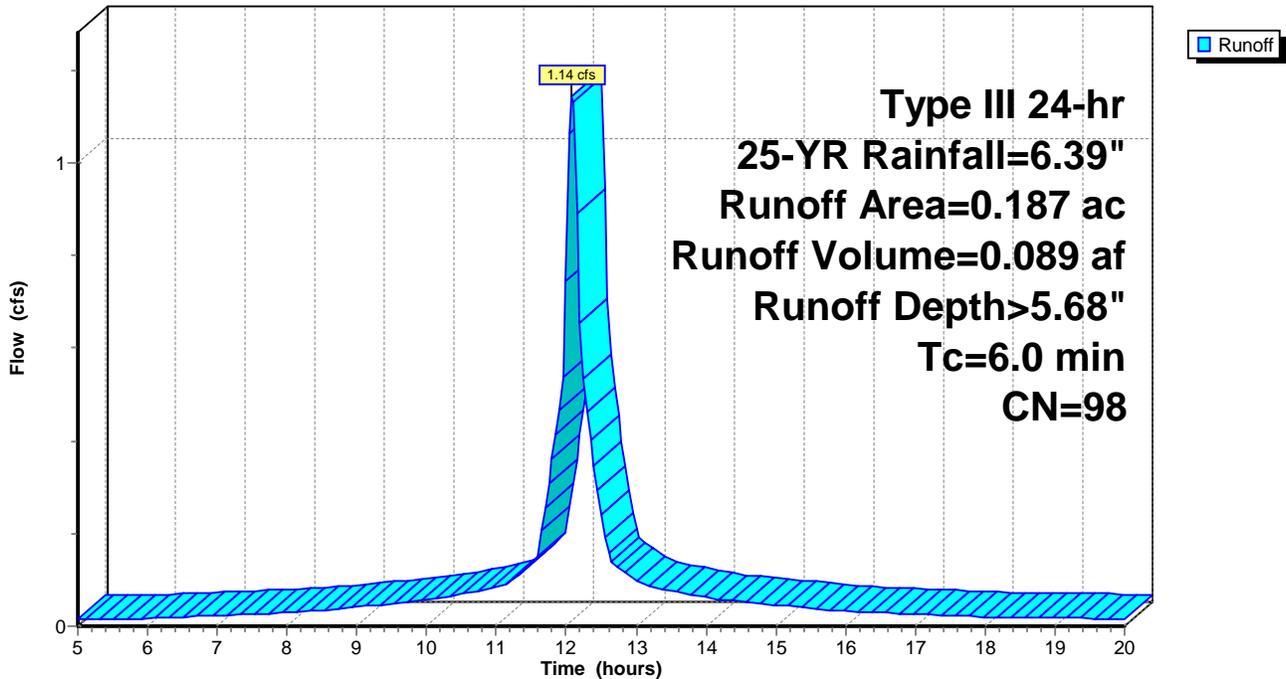
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.39"

Area (ac)	CN	Description
* 0.187	98	Roof
0.187		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 182

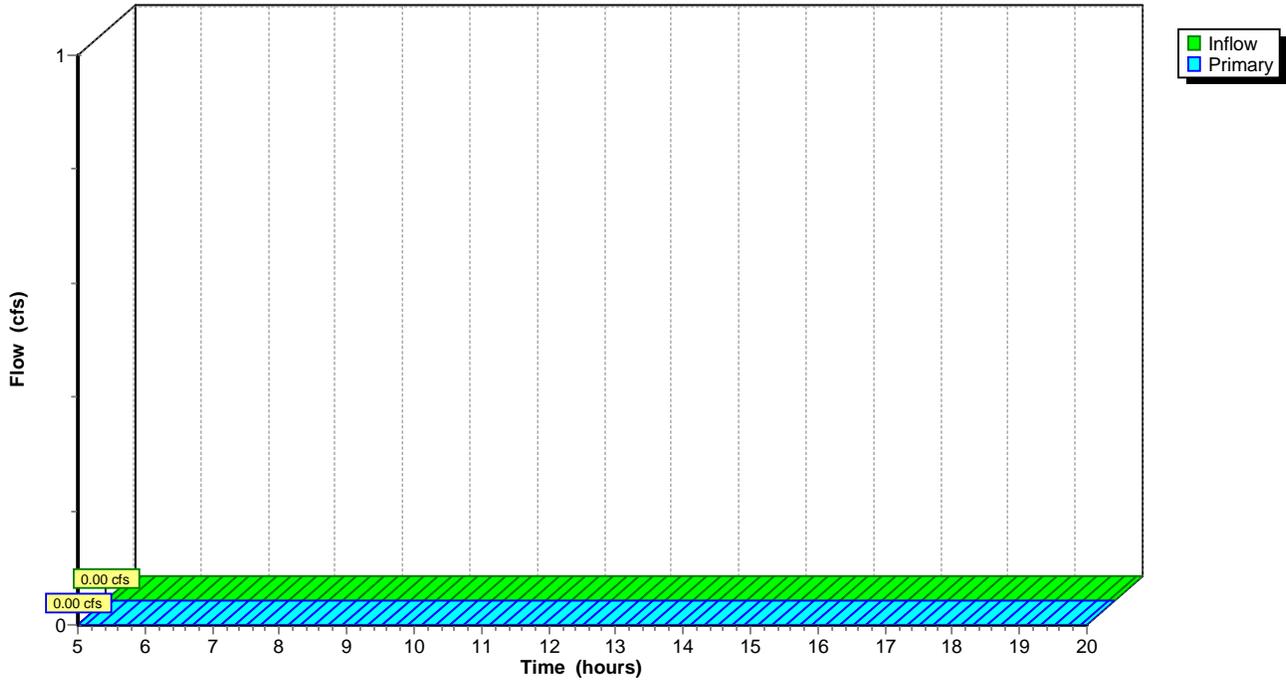
Summary for Pond AP: Surrounding Wetlands

Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 183

Summary for Pond FB-1:

Inflow Area = 0.592 ac, 58.28% Impervious, Inflow Depth > 3.23" for 25-YR event
 Inflow = 2.33 cfs @ 12.09 hrs, Volume= 0.159 af
 Outflow = 0.21 cfs @ 13.47 hrs, Volume= 0.047 af, Atten= 91%, Lag= 82.8 min
 Discarded = 0.01 cfs @ 13.45 hrs, Volume= 0.007 af
 Primary = 0.20 cfs @ 13.47 hrs, Volume= 0.040 af

Routed to Pond IB-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.61' @ 13.45 hrs Surf.Area= 2,053 sf Storage= 4,904 cf

Plug-Flow detention time= 259.0 min calculated for 0.047 af (29% of inflow)
 Center-of-Mass det. time= 156.5 min (940.7 - 784.2)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	5,755 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	299	0	0
25.00	566	433	433
26.00	891	729	1,161
27.00	1,279	1,085	2,246
28.00	1,736	1,508	3,754
28.60	2,049	1,136	4,889
29.00	2,283	866	5,755

Device	Routing	Invert	Outlet Devices
#1	Primary	28.60'	44.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	24.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 13.45 hrs HW=28.61' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.07 cfs @ 13.47 hrs HW=28.61' (Free Discharge)
 ↑**1=Forebay Berm (Weir Outlet)** (Weir Controls 0.07 cfs @ 0.21 fps)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

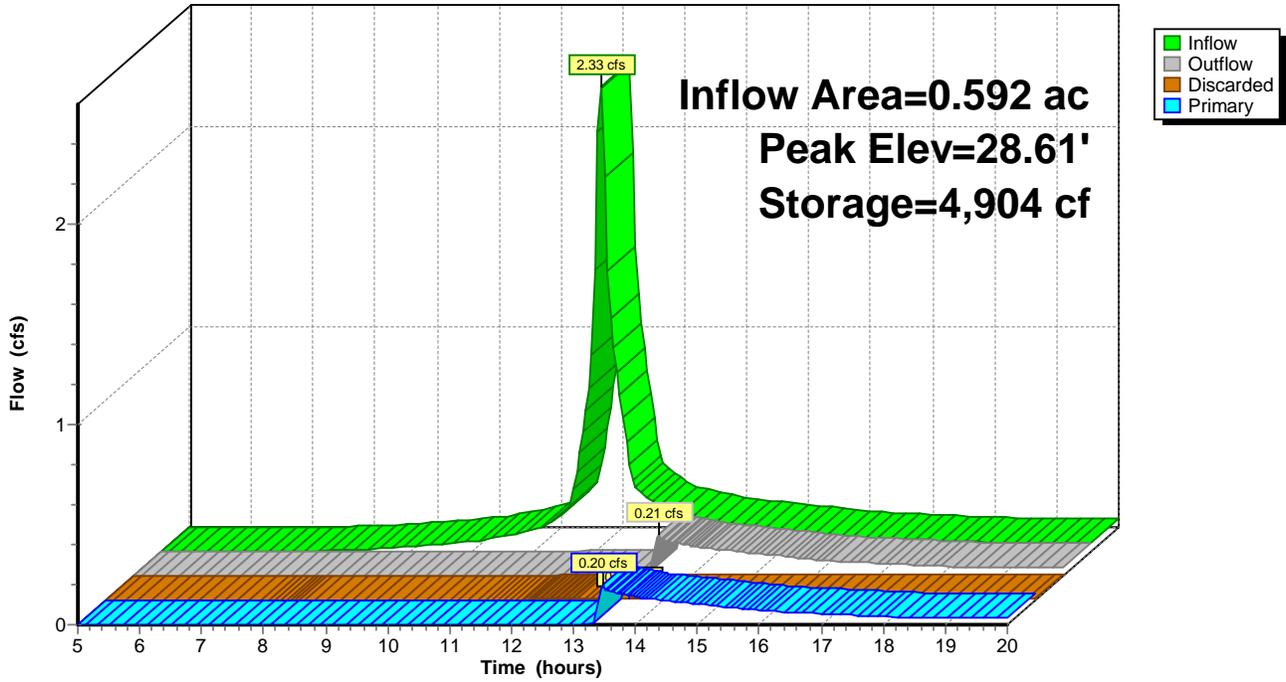
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 184

Pond FB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 185

Summary for Pond FB-2:

Inflow Area = 3.167 ac, 73.26% Impervious, Inflow Depth > 1.47" for 25-YR event
 Inflow = 5.30 cfs @ 12.09 hrs, Volume= 0.389 af
 Outflow = 1.68 cfs @ 12.43 hrs, Volume= 0.372 af, Atten= 68%, Lag= 20.5 min
 Discarded = 0.71 cfs @ 12.43 hrs, Volume= 0.359 af
 Primary = 0.97 cfs @ 12.43 hrs, Volume= 0.013 af

Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.73' @ 12.43 hrs Surf.Area= 2,547 sf Storage= 7,012 cf

Plug-Flow detention time= 114.4 min calculated for 0.372 af (96% of inflow)
 Center-of-Mass det. time= 97.5 min (859.8 - 762.2)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	7,733 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	291	0	0
26.00	520	406	406
27.00	811	666	1,071
28.00	1,172	992	2,063
29.00	1,608	1,390	3,453
30.00	2,121	1,865	5,317
30.70	2,530	1,628	6,945
31.00	2,723	788	7,733

Device	Routing	Invert	Outlet Devices
#1	Primary	30.70'	59.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.71 cfs @ 12.43 hrs HW=30.73' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.71 cfs)

Primary OutFlow Max=0.60 cfs @ 12.43 hrs HW=30.73' (Free Discharge)
 ↑1=Forebay Berm (Weir Outlet) (Weir Controls 0.60 cfs @ 0.40 fps)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

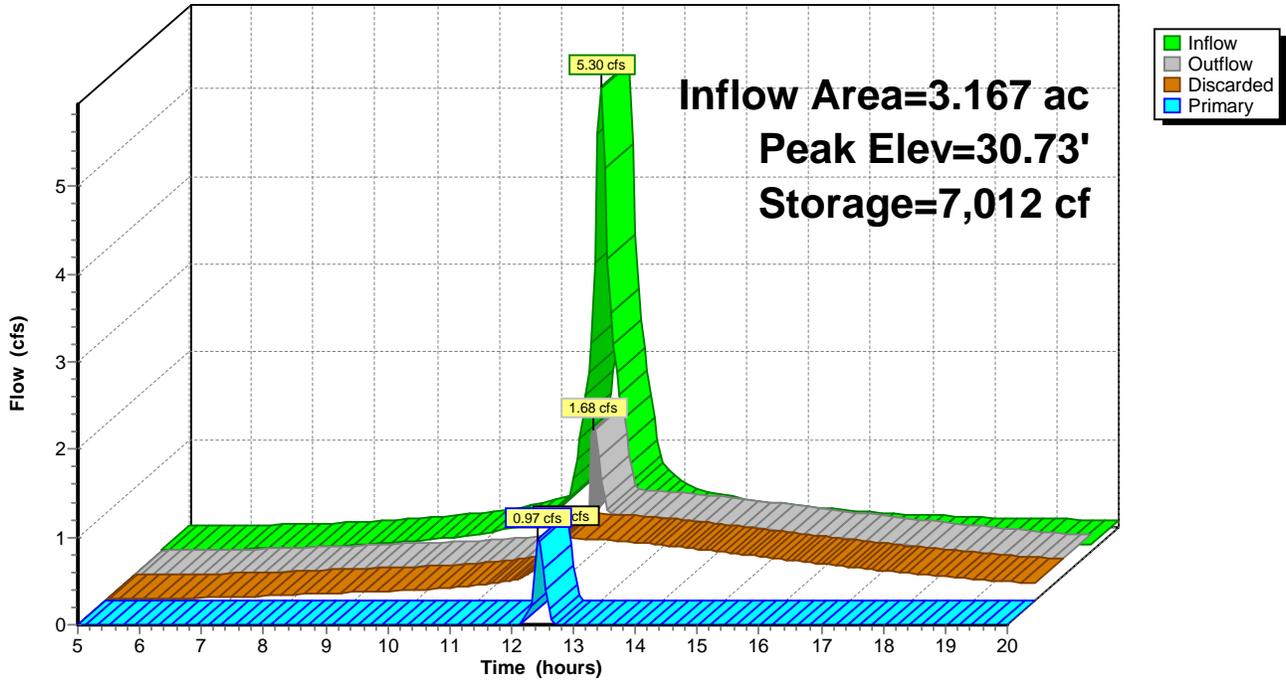
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 186

Pond FB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 187

Summary for Pond GT-1:

Inflow Area = 0.252 ac, 0.00% Impervious, Inflow Depth > 0.48" for 25-YR event
 Inflow = 0.06 cfs @ 12.31 hrs, Volume= 0.010 af
 Outflow = 0.05 cfs @ 12.20 hrs, Volume= 0.010 af, Atten= 28%, Lag= 0.0 min
 Discarded = 0.05 cfs @ 12.20 hrs, Volume= 0.010 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 20.07' @ 12.50 hrs Surf.Area= 862 sf Storage= 23 cf

Plug-Flow detention time= 3.4 min calculated for 0.010 af (99% of inflow)
 Center-of-Mass det. time= 2.7 min (883.1 - 880.4)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	690 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,724 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.00	862	0	0
21.00	862	862	862
22.00	862	862	1,724

Device	Routing	Invert	Outlet Devices
#1	Secondary	22.00'	590.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 12.20 hrs HW=20.02' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

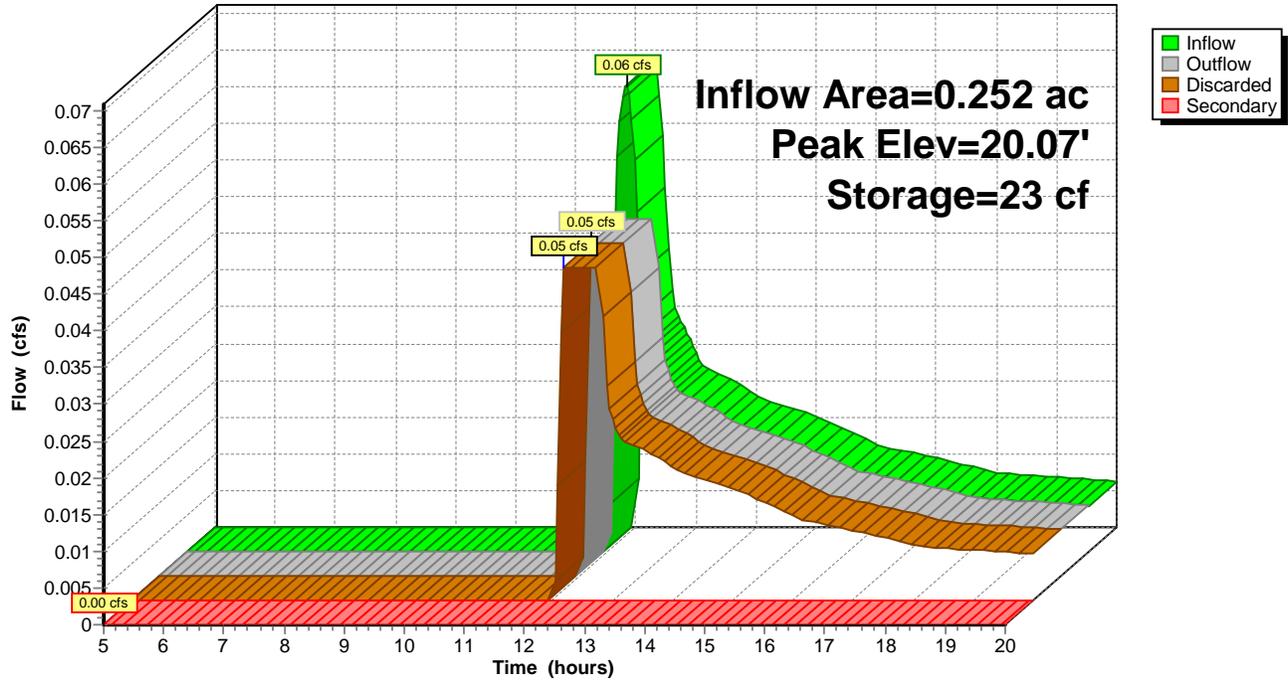
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 188

Pond GT-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 189

Summary for Pond GT-2:

Inflow Area = 0.075 ac, 1.33% Impervious, Inflow Depth > 0.15" for 25-YR event
 Inflow = 0.00 cfs @ 13.90 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 13.10 hrs, Volume= 0.001 af, Atten= 42%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 13.10 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 23.61' @ 18.01 hrs Surf.Area= 251 sf Storage= 11 cf

Plug-Flow detention time= 90.1 min calculated for 0.001 af (74% of inflow)
 Center-of-Mass det. time= 32.7 min (984.3 - 951.6)

Volume	Invert	Avail.Storage	Storage Description
#1	23.50'	151 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 377 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.50	251	0	0
24.00	251	126	126
25.00	251	251	377

Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	65.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	23.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 13.10 hrs HW=23.52' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

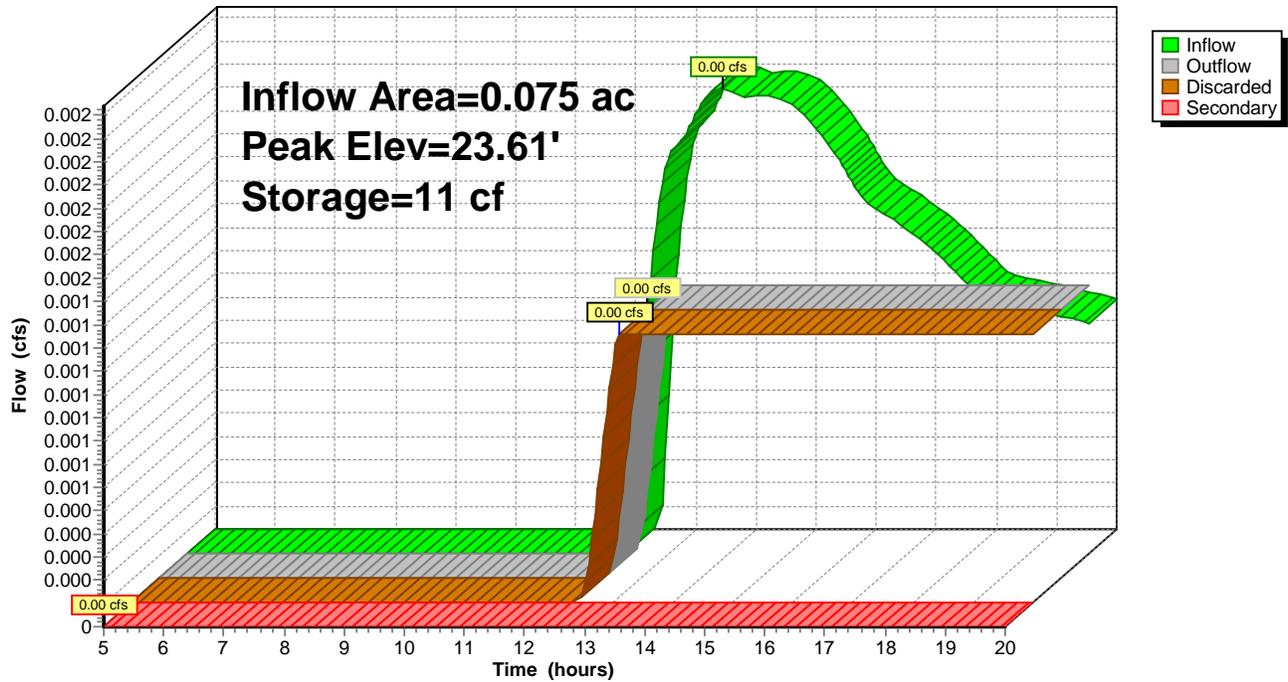
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 190

Pond GT-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 191

Summary for Pond GT-3:

Inflow Area = 0.030 ac, 0.00% Impervious, Inflow Depth > 0.11" for 25-YR event
 Inflow = 0.00 cfs @ 14.72 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 13.55 hrs, Volume= 0.000 af, Atten= 31%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 13.55 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 27.56' @ 17.42 hrs Surf.Area= 94 sf Storage= 2 cf

Plug-Flow detention time= 59.3 min calculated for 0.000 af (86% of inflow)
 Center-of-Mass det. time= 28.8 min (991.4 - 962.6)

Volume	Invert	Avail.Storage	Storage Description
#1	27.50'	56 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 141 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.50	94	0	0
28.00	94	47	47
29.00	94	94	141

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	30.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	27.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 13.55 hrs HW=27.52' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 193

Summary for Pond GT-4:

Inflow Area = 0.126 ac, 0.00% Impervious, Inflow Depth > 0.37" for 25-YR event
 Inflow = 0.02 cfs @ 12.36 hrs, Volume= 0.004 af
 Outflow = 0.00 cfs @ 12.25 hrs, Volume= 0.001 af, Atten= 91%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 12.25 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 21.22' @ 20.00 hrs Surf.Area= 405 sf Storage= 117 cf

Plug-Flow detention time= 209.1 min calculated for 0.001 af (31% of inflow)
 Center-of-Mass det. time= 71.9 min (965.7 - 893.7)

Volume	Invert	Avail.Storage	Storage Description
#1	20.50'	405 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,013 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.50	405	0	0
21.00	405	203	203
22.00	405	405	608
23.00	405	405	1,013

Device	Routing	Invert	Outlet Devices
#1	Secondary	23.00'	74.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.25 hrs HW=20.54' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

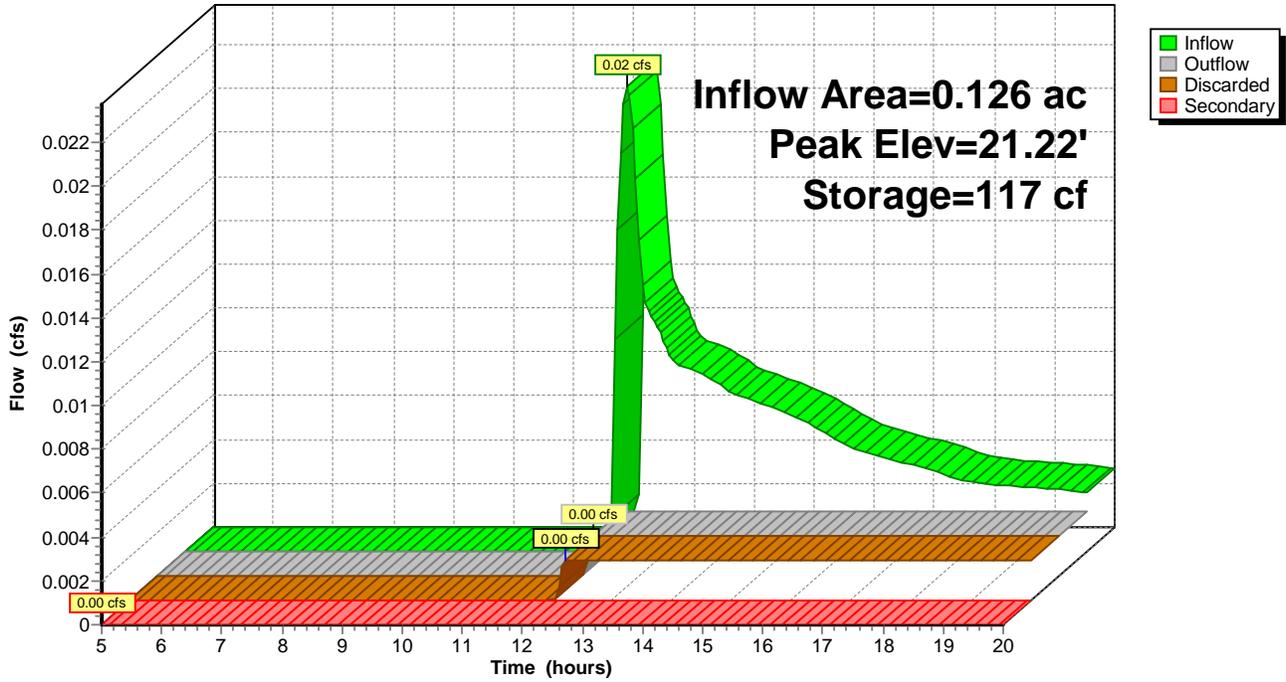
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 194

Pond GT-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 195

Summary for Pond GT-5:

Inflow Area = 0.113 ac, 34.51% Impervious, Inflow Depth > 3.18" for 25-YR event
 Inflow = 0.44 cfs @ 12.09 hrs, Volume= 0.030 af
 Outflow = 0.03 cfs @ 11.60 hrs, Volume= 0.026 af, Atten= 92%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.60 hrs, Volume= 0.026 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-4 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 23.31' @ 13.69 hrs Surf.Area= 640 sf Storage= 591 cf

Plug-Flow detention time= 169.3 min calculated for 0.026 af (86% of inflow)
 Center-of-Mass det. time= 128.1 min (920.3 - 792.3)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	1,024 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 2,560 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	640	0	0
22.00	640	640	640
23.00	640	640	1,280
24.00	640	640	1,920
25.00	640	640	2,560

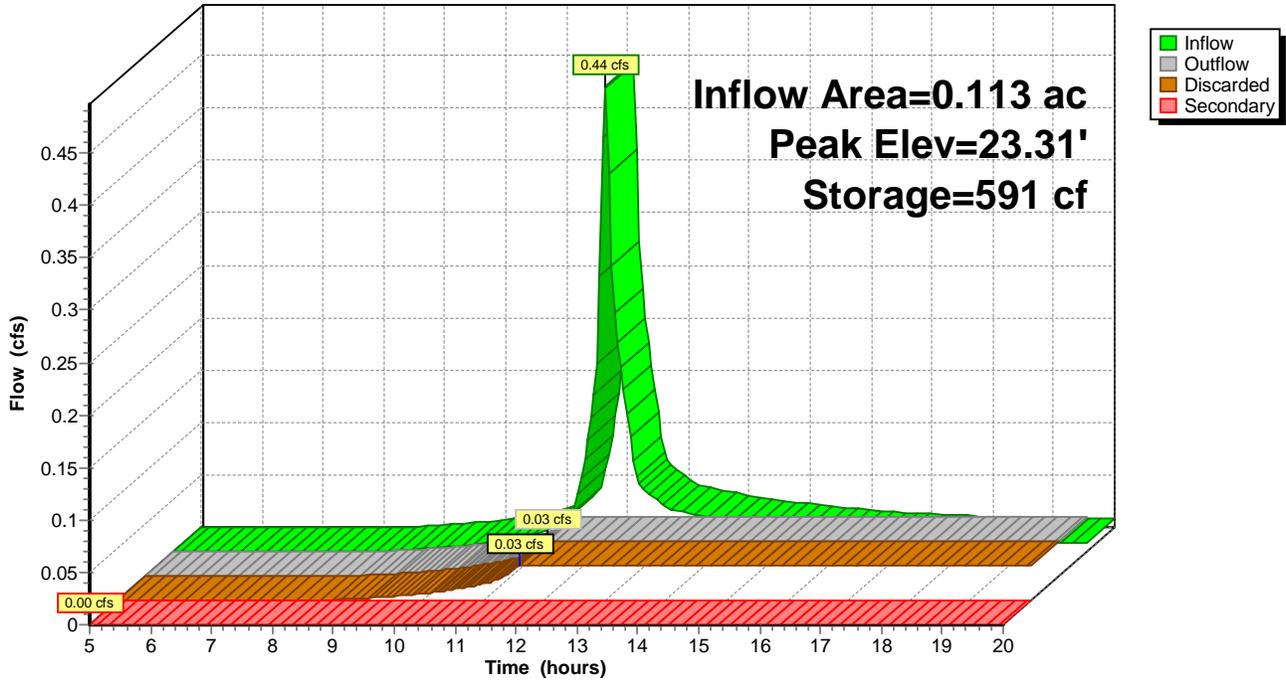
Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	136.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	21.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.60 hrs HW=21.04' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=21.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

Pond GT-5:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 197

Summary for Pond GT-6:

Inflow Area = 0.093 ac, 17.20% Impervious, Inflow Depth > 1.58" for 25-YR event
 Inflow = 0.14 cfs @ 12.17 hrs, Volume= 0.012 af
 Outflow = 0.07 cfs @ 12.05 hrs, Volume= 0.012 af, Atten= 51%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 12.05 hrs, Volume= 0.012 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 25.13' @ 12.49 hrs Surf.Area= 252 sf Storage= 63 cf

Plug-Flow detention time= 4.6 min calculated for 0.012 af (100% of inflow)
 Center-of-Mass det. time= 4.5 min (834.3 - 829.8)

Volume	Invert	Avail.Storage	Storage Description
#1	24.50'	252 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 630 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.50	252	0	0
25.00	252	126	126
26.00	252	252	378
27.00	252	252	630

Device	Routing	Invert	Outlet Devices
#1	Secondary	27.00'	78.0' long + 3.0' /' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	24.50'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 12.05 hrs HW=24.53' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=24.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

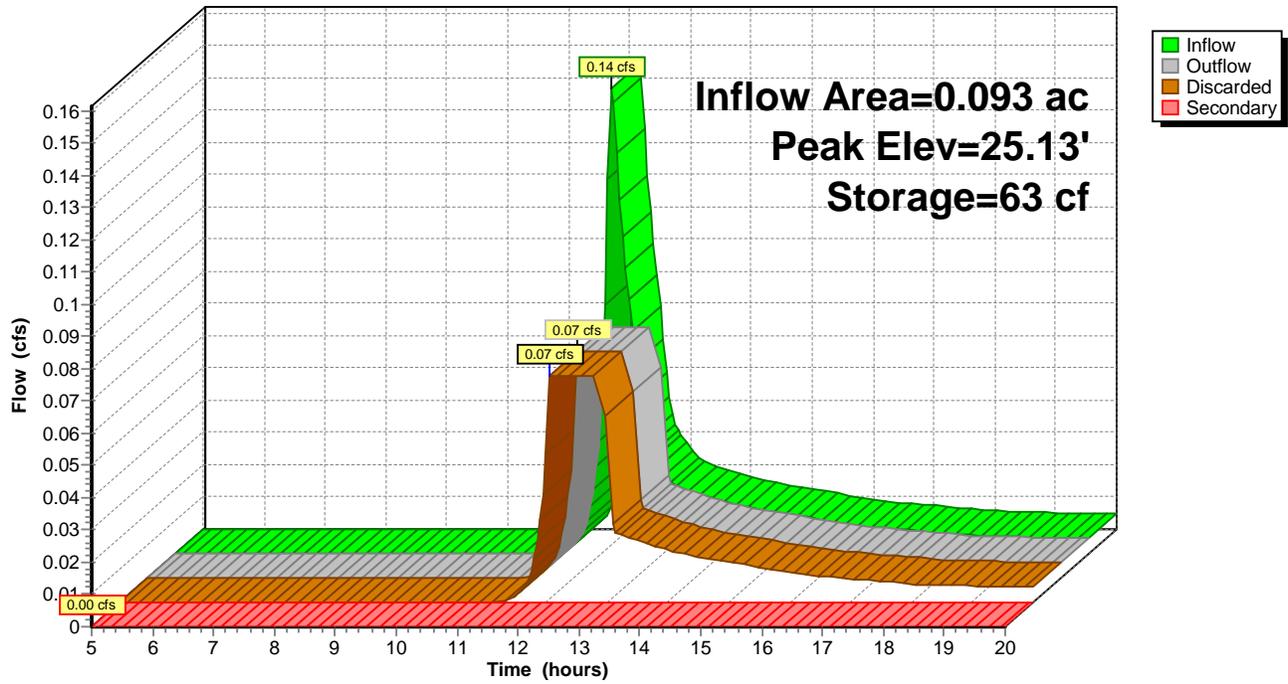
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 198

Pond GT-6:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 199

Summary for Pond IB-1:

Inflow Area = 0.739 ac, 49.80% Impervious, Inflow Depth > 0.77" for 25-YR event
 Inflow = 0.21 cfs @ 13.47 hrs, Volume= 0.047 af
 Outflow = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af, Atten= 96%, Lag= 391.7 min
 Discarded = 0.01 cfs @ 20.00 hrs, Volume= 0.004 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.37' @ 20.00 hrs Surf.Area= 1,859 sf Storage= 1,878 cf

Plug-Flow detention time= 245.8 min calculated for 0.004 af (9% of inflow)
 Center-of-Mass det. time= 79.7 min (1,011.7 - 932.0)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	8,279 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	23.00'	170 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			424 cf Overall x 40.0% Voids
		8,448 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	858	0	0
26.00	1,419	1,139	1,139
27.00	2,033	1,726	2,865
28.00	2,694	2,364	5,228
28.60	3,109	1,741	6,969
29.00	3,440	1,310	8,279

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	212	0	0
24.00	212	212	212
25.00	212	212	424

Device	Routing	Invert	Outlet Devices
#1	Secondary	28.60'	10.0' long + 2.0 ' SideZ x 4.2' breadth Overflow Riprap Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.53 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.67 2.71 2.72 2.74 2.77 2.85 3.01 3.23
#2	Discarded	23.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 20.00 hrs HW=26.37' (Free Discharge)
 ↳2=Exfiltration (Exfiltration Controls 0.01 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.00' (Free Discharge)
 ↳1=Overflow Riprap Spillway (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

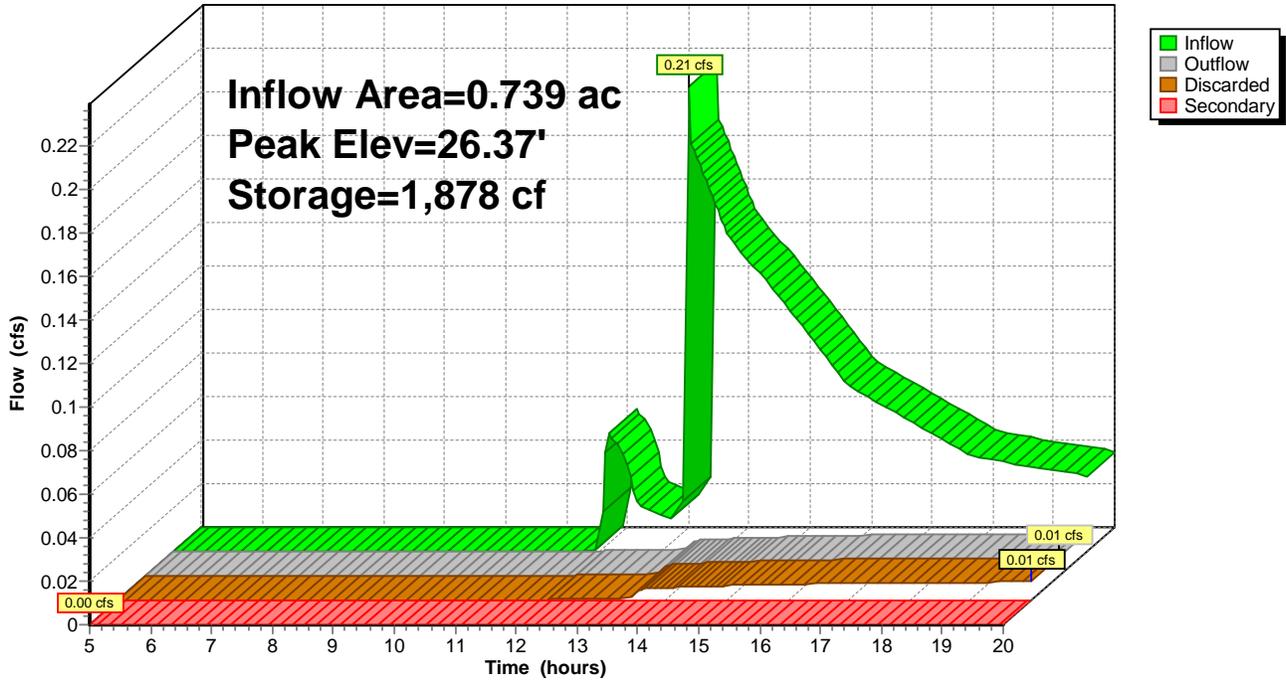
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 200

Pond IB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 201

Summary for Pond IB-2:

Inflow Area = 3.234 ac, 71.74% Impervious, Inflow Depth > 0.05" for 25-YR event
 Inflow = 0.97 cfs @ 12.43 hrs, Volume= 0.013 af
 Outflow = 0.37 cfs @ 12.56 hrs, Volume= 0.013 af, Atten= 62%, Lag= 7.4 min
 Discarded = 0.37 cfs @ 12.56 hrs, Volume= 0.013 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.17' @ 12.56 hrs Surf.Area= 1,318 sf Storage= 310 cf

Plug-Flow detention time= 12.4 min calculated for 0.013 af (100% of inflow)
 Center-of-Mass det. time= 12.4 min (768.9 - 756.5)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	5,261 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	25.00'	115 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
		288 cf Overall x 40.0% Voids	
		5,376 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	1,104	0	0
29.00	1,514	1,309	1,309
30.00	1,966	1,740	3,049
30.70	2,305	1,495	4,544
31.00	2,475	717	5,261

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	144	0	0
26.00	144	144	144
27.00	144	144	288

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	100.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area
#3	Primary	26.96'	12.0" Round 12" HDPE Pipe L= 36.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 26.96' / 26.60' S= 0.0100 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	29.79'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 202

Discarded OutFlow Max=0.37 cfs @ 12.56 hrs HW=28.17' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.37 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)

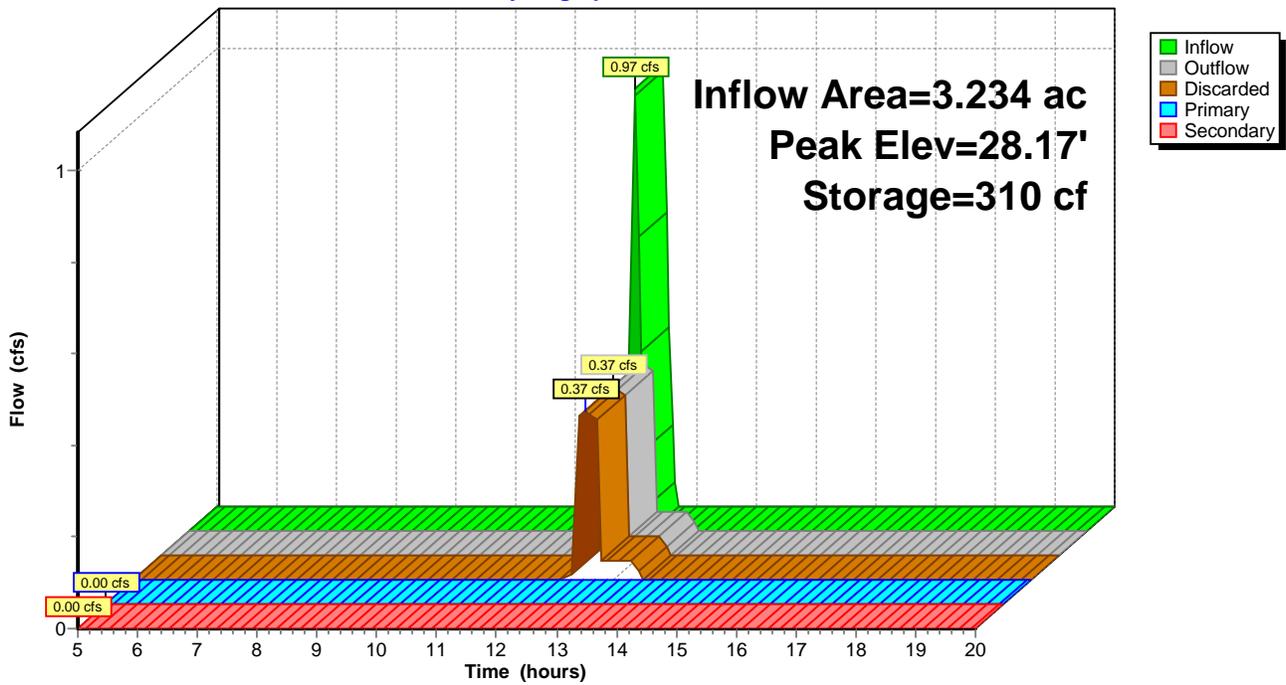
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond IB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 203

Summary for Pond IB-3:

Inflow Area = 3.433 ac, 68.31% Impervious, Inflow Depth > 0.05" for 25-YR event
 Inflow = 0.13 cfs @ 12.13 hrs, Volume= 0.013 af
 Outflow = 0.11 cfs @ 12.18 hrs, Volume= 0.013 af, Atten= 9%, Lag= 3.4 min
 Discarded = 0.11 cfs @ 12.18 hrs, Volume= 0.013 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-6 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.03' @ 12.18 hrs Surf.Area= 411 sf Storage= 14 cf

Plug-Flow detention time= 1.8 min calculated for 0.013 af (100% of inflow)
 Center-of-Mass det. time= 1.3 min (857.9 - 856.6)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	4,615 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	385	0	0
27.00	1,121	753	753
28.00	1,917	1,519	2,272
29.00	2,768	2,343	4,615

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	309.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	26.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.11 cfs @ 12.18 hrs HW=26.03' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.11 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=26.00' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

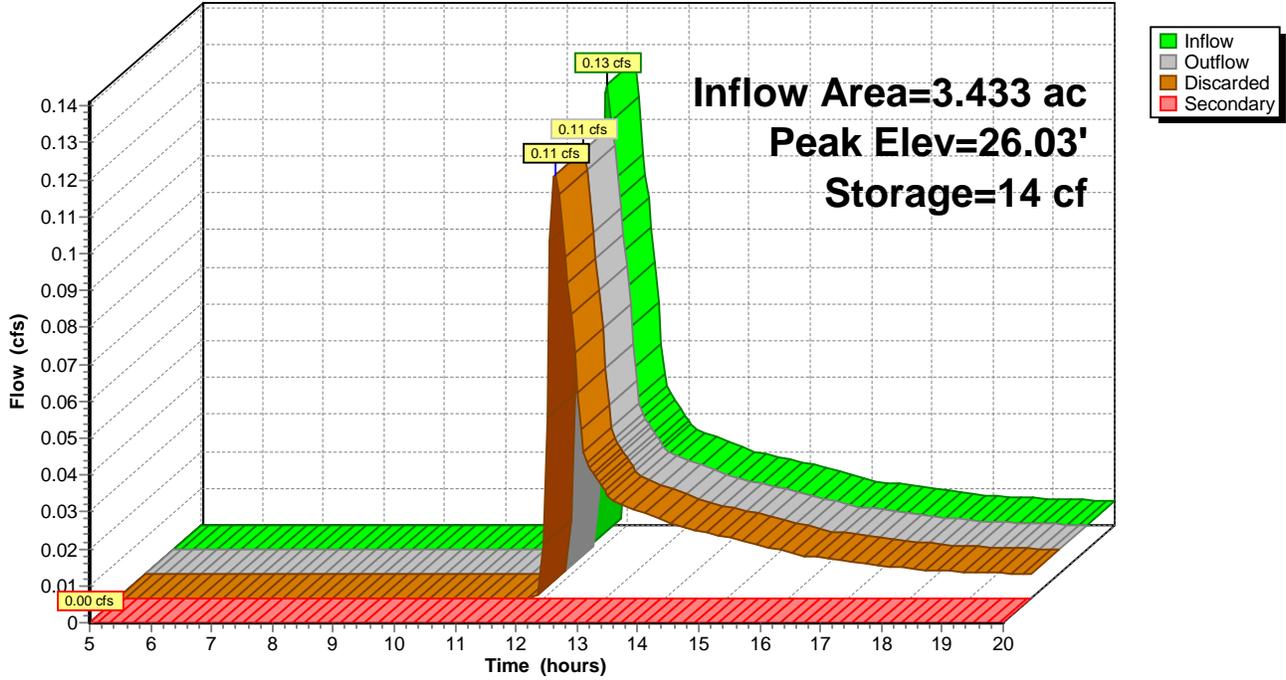
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 204

Pond IB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 205

Summary for Pond RG-1:

Inflow Area = 2.072 ac, 73.41% Impervious, Inflow Depth > 4.31" for 25-YR event
 Inflow = 9.65 cfs @ 12.09 hrs, Volume= 0.743 af
 Outflow = 0.48 cfs @ 14.65 hrs, Volume= 0.362 af, Atten= 95%, Lag= 153.5 min
 Discarded = 0.48 cfs @ 14.65 hrs, Volume= 0.362 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond FB-2 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.17' @ 14.65 hrs Surf.Area= 9,122 sf Storage= 20,635 cf

Plug-Flow detention time= 239.7 min calculated for 0.360 af (48% of inflow)
 Center-of-Mass det. time= 147.8 min (900.4 - 752.6)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	37,288 cf	Rain Garden Stage Storage (Prismatic) Listed below (Recalc)
#2	22.00'	1,512 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			3,780 cf Overall x 40.0% Voids
		38,800 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	1,696	0	0
27.00	2,683	2,190	2,190
27.50	3,497	1,545	3,735
28.00	4,266	1,941	5,675
29.00	6,024	5,145	10,820
30.00	7,856	6,940	17,760
31.00	9,743	8,800	26,560
32.00	11,713	10,728	37,288

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	945	0	0
23.00	945	945	945
24.00	945	945	1,890
25.00	945	945	2,835
26.00	945	945	3,780

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	392.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	22.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	26.89'	12.0" Round 12" HDPE Pipe L= 40.0' CMP, projecting, no headwall, Ke= 0.900

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 206

Inlet / Outlet Invert= 26.89' / 26.49' S= 0.0100 '/ Cc= 0.900
n= 0.012, Flow Area= 0.79 sf
#4 Device 3 30.93' **3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns**
X 14 rows C= 0.600 in 18.0" Grate (71% open area)
Limited to weir flow at low heads

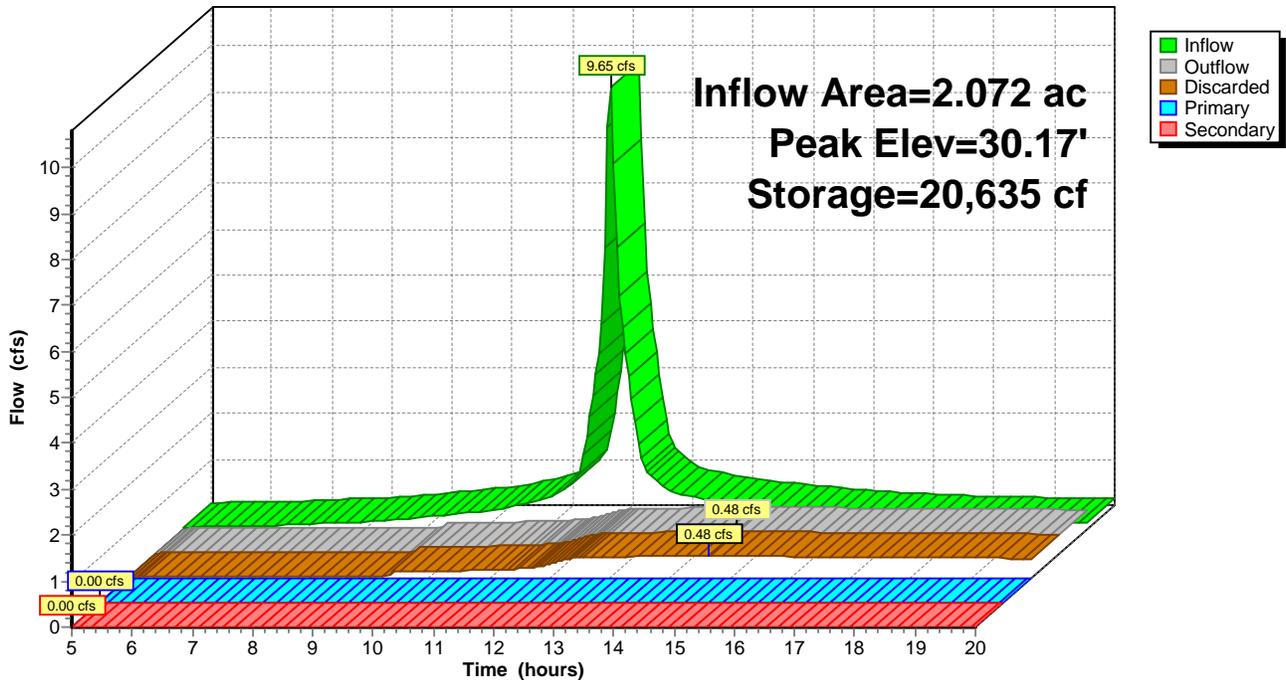
Discarded OutFlow Max=0.48 cfs @ 14.65 hrs HW=30.17' (Free Discharge)
↳ **2=Exfiltration** (Exfiltration Controls 0.48 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.01' (Free Discharge)
↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.01' (Free Discharge)
↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond RG-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 207

Summary for Pond SWB-1:

Inflow Area = 0.052 ac, 44.23% Impervious, Inflow Depth > 1.99" for 25-YR event
 Inflow = 0.13 cfs @ 12.10 hrs, Volume= 0.009 af
 Outflow = 0.02 cfs @ 12.86 hrs, Volume= 0.008 af, Atten= 86%, Lag= 45.7 min
 Discarded = 0.02 cfs @ 12.86 hrs, Volume= 0.008 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.78' @ 12.86 hrs Surf.Area= 334 sf Storage= 148 cf

Plug-Flow detention time= 105.5 min calculated for 0.008 af (97% of inflow)
 Center-of-Mass det. time= 94.8 min (910.8 - 816.0)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	896 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	60	0	0
30.50	219	70	70
31.00	423	161	230
32.00	908	666	896

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	168.0' long + 3.0' /' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.80'	12.0" Round 12" HDPE Pipe L= 89.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.80' / 26.91' S= 0.0100 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.96'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.86 hrs HW=30.78' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑**3=12" HDPE Pipe** (Passes 0.00 cfs of 3.89 cfs potential flow)
 ↑**4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

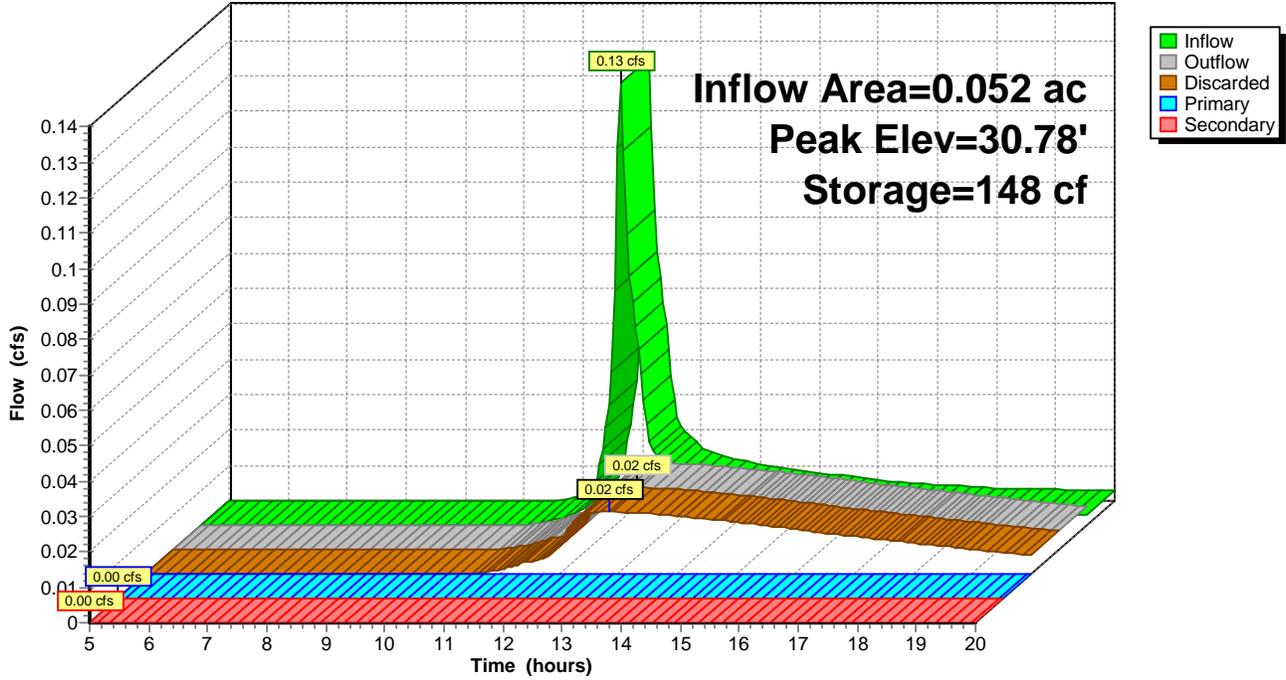
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 208

Pond SWB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 209

Summary for Pond SWB-2:

Inflow Area = 0.101 ac, 71.29% Impervious, Inflow Depth > 4.30" for 25-YR event
 Inflow = 0.52 cfs @ 12.09 hrs, Volume= 0.036 af
 Outflow = 0.51 cfs @ 12.10 hrs, Volume= 0.036 af, Atten= 1%, Lag= 0.9 min
 Discarded = 0.02 cfs @ 12.10 hrs, Volume= 0.016 af
 Primary = 0.49 cfs @ 12.10 hrs, Volume= 0.020 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.47' @ 12.10 hrs Surf.Area= 383 sf Storage= 140 cf

Plug-Flow detention time= 31.2 min calculated for 0.036 af (98% of inflow)
 Center-of-Mass det. time= 23.9 min (793.6 - 769.6)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	410 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	210	0	0
30.50	394	151	151
31.00	640	259	410

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	159.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.10'	12.0" Round 12" HDPE Pipe L= 19.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.10' / 26.91' S= 0.0100 ' / Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.37'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.10 hrs HW=30.47' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.49 cfs @ 12.10 hrs HW=30.47' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.49 cfs of 5.06 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Weir Controls 0.49 cfs @ 1.03 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

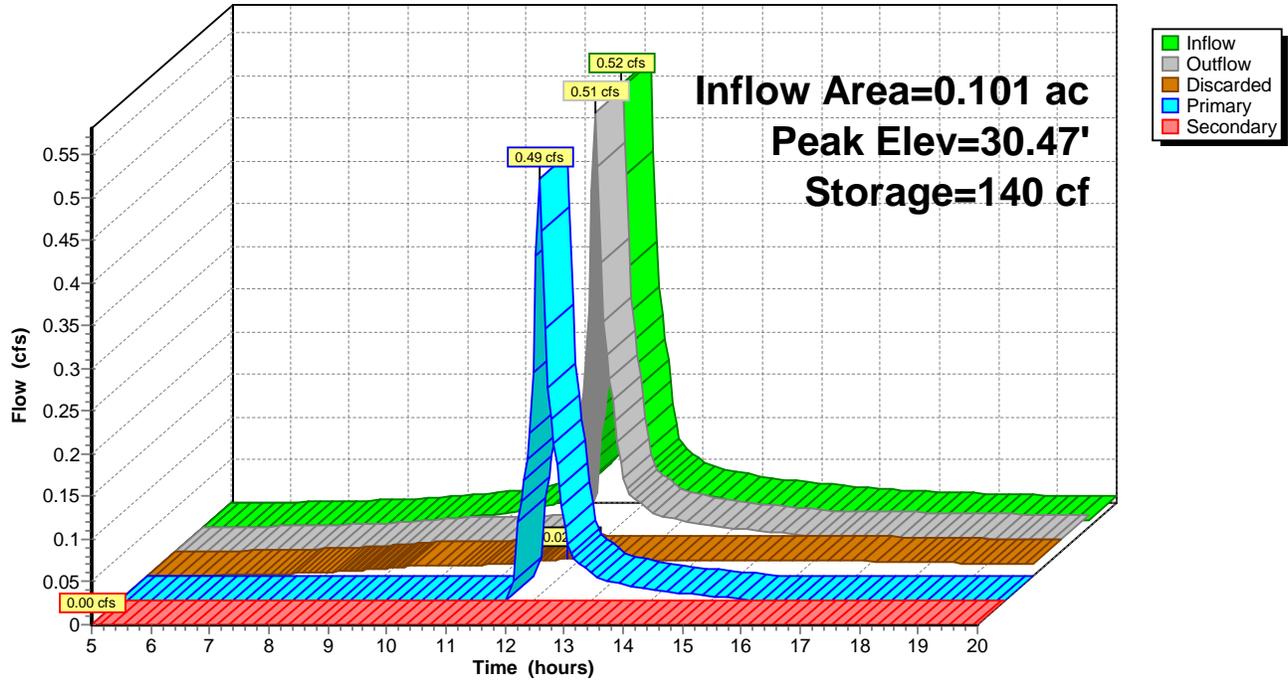
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 210

Pond SWB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 211

Summary for Pond SWB-3:

Inflow Area = 0.154 ac, 35.71% Impervious, Inflow Depth > 3.27" for 25-YR event
 Inflow = 0.48 cfs @ 12.21 hrs, Volume= 0.042 af
 Outflow = 0.48 cfs @ 12.22 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.6 min
 Discarded = 0.01 cfs @ 12.22 hrs, Volume= 0.011 af
 Primary = 0.47 cfs @ 12.22 hrs, Volume= 0.030 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.98' @ 12.22 hrs Surf.Area= 269 sf Storage= 85 cf

Plug-Flow detention time= 17.9 min calculated for 0.041 af (97% of inflow)
 Center-of-Mass det. time= 6.5 min (803.7 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1	30.60'	510 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.60	182	0	0
31.00	274	91	91
31.50	412	172	263
32.00	576	247	510

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	114.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.60'	2.270 in/hr Exfiltration over Surface area
#3	Primary	25.96'	12.0" Round 12" HDPE Pipe L= 24.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 25.96' / 25.72' S= 0.0100 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.88'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.22 hrs HW=30.98' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.46 cfs @ 12.22 hrs HW=30.98' (Free Discharge)
 ↑**3=12" HDPE Pipe** (Passes 0.46 cfs of 6.34 cfs potential flow)
 ↑**4=18" Nyloplast Drain Grate** (Weir Controls 0.46 cfs @ 1.01 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.60' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

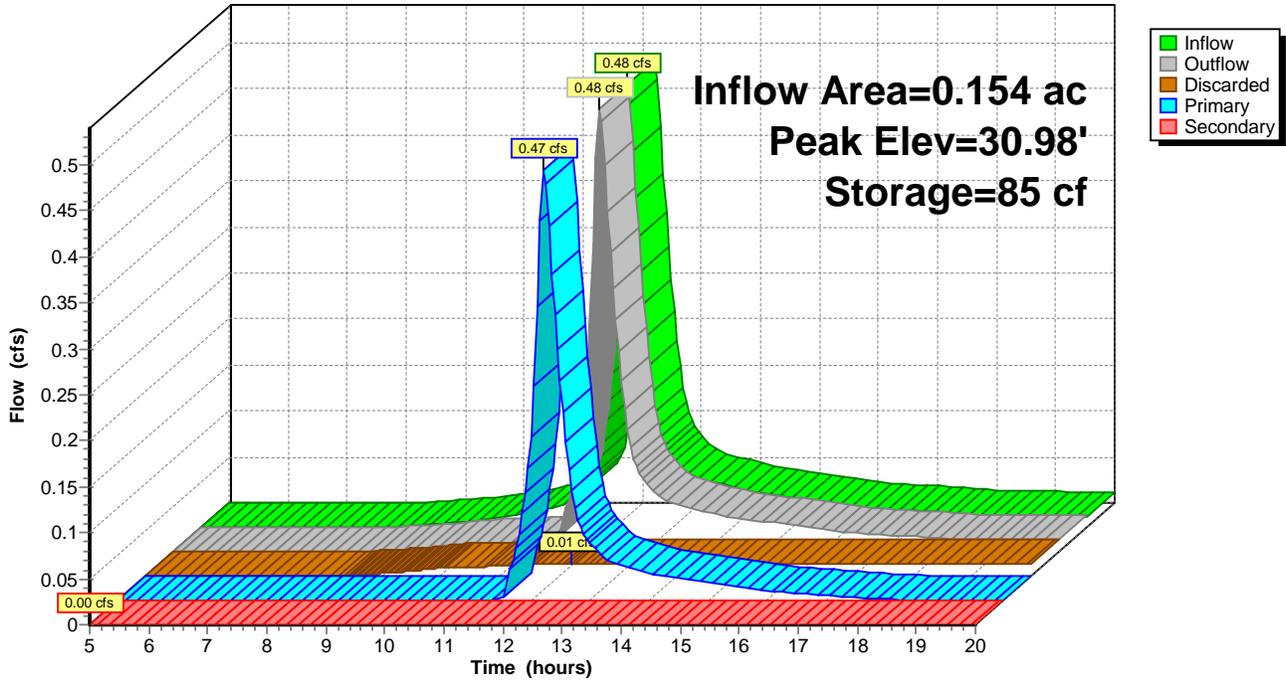
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 212

Pond SWB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 213

Summary for Pond UG-1:

Inflow Area = 0.575 ac, 72.70% Impervious, Inflow Depth > 3.68" for 25-YR event
 Inflow = 2.44 cfs @ 12.10 hrs, Volume= 0.176 af
 Outflow = 0.12 cfs @ 11.15 hrs, Volume= 0.116 af, Atten= 95%, Lag= 0.0 min
 Discarded = 0.12 cfs @ 11.15 hrs, Volume= 0.116 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 25.25' @ 14.15 hrs Surf.Area= 0.054 ac Storage= 0.095 af

Plug-Flow detention time= 167.7 min calculated for 0.116 af (66% of inflow)
 Center-of-Mass det. time= 105.7 min (847.0 - 741.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.69'	0.076 af	37.08'W x 63.06'L x 5.50'H Field A 0.295 af Overall - 0.104 af Embedded = 0.191 af x 40.0% Voids
#2A	23.44'	0.104 af	ADS_StormTech MC-3500 d +Cap x 40 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 40 Chambers in 5 Rows Cap Storage= 14.9 cf x 2 x 5 rows = 149.0 cf
		0.181 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.69'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 11.15 hrs HW=22.75' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.12 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

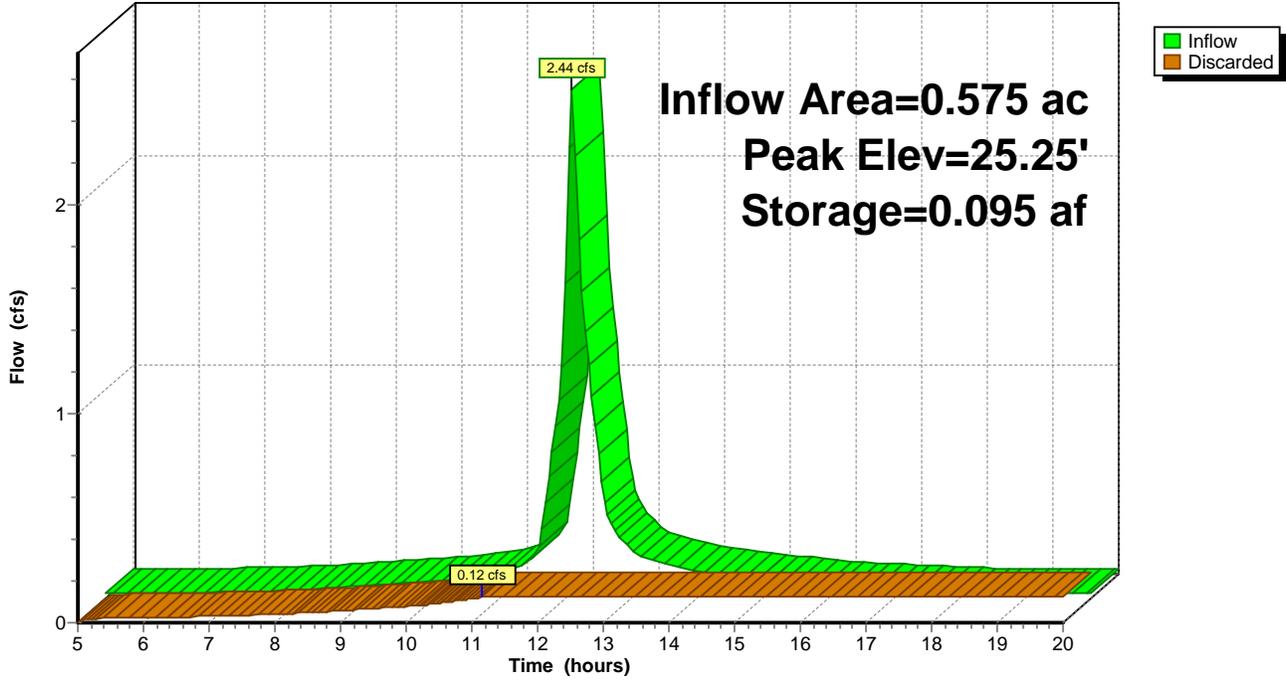
Type III 24-hr 25-YR Rainfall=6.39"

Printed 12/9/2025

Page 214

Pond UG-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 215

Summary for Subcatchment PR-01:

Runoff = 0.16 cfs @ 12.10 hrs, Volume= 0.011 af, Depth> 2.55"
Routed to Pond SWB-1 :

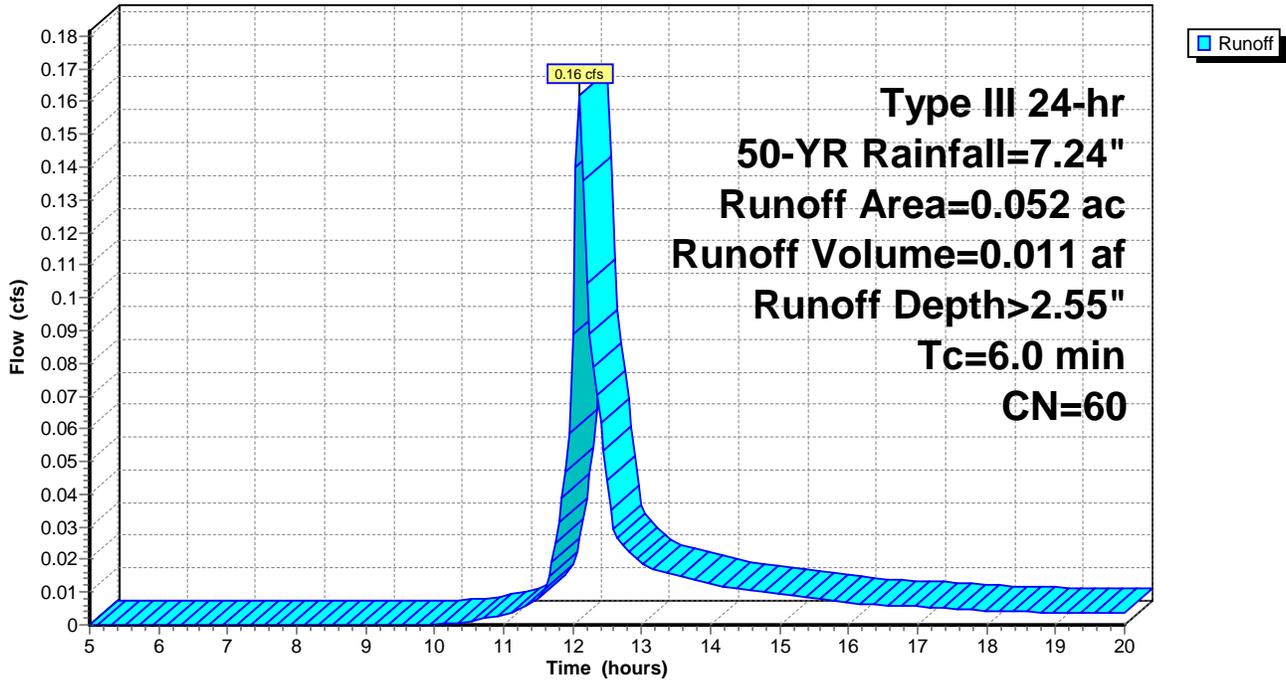
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.029	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.052	60	Weighted Average
0.029		55.77% Pervious Area
0.023		44.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-01:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 216

Summary for Subcatchment PR-02:

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.043 af, Depth> 5.07"
 Routed to Pond SWB-2 :

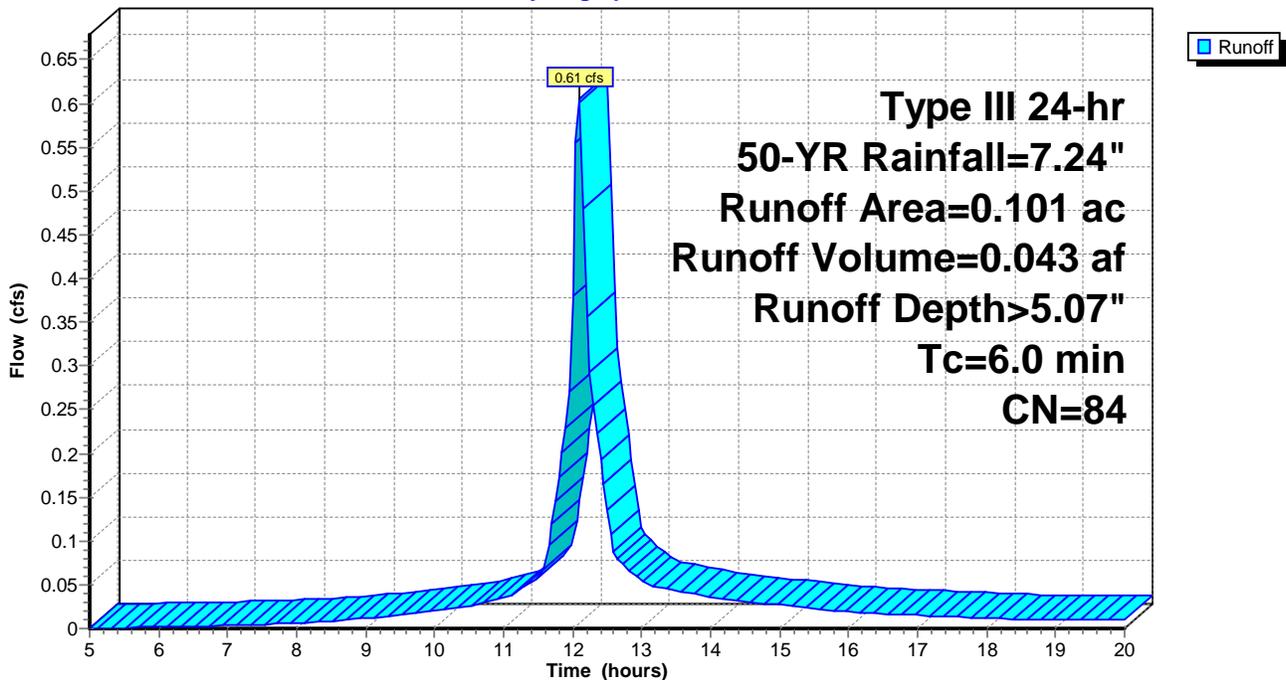
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.009	30	Meadow, non-grazed, HSG A
0.019	58	Meadow, non-grazed, HSG B
0.001	61	>75% Grass cover, Good, HSG B
* 0.072	98	Paved
0.101	84	Weighted Average
0.029		28.71% Pervious Area
0.072		71.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-02:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 217

Summary for Subcatchment PR-03:

Runoff = 0.58 cfs @ 12.20 hrs, Volume= 0.051 af, Depth> 3.96"
 Routed to Pond SWB-3 :

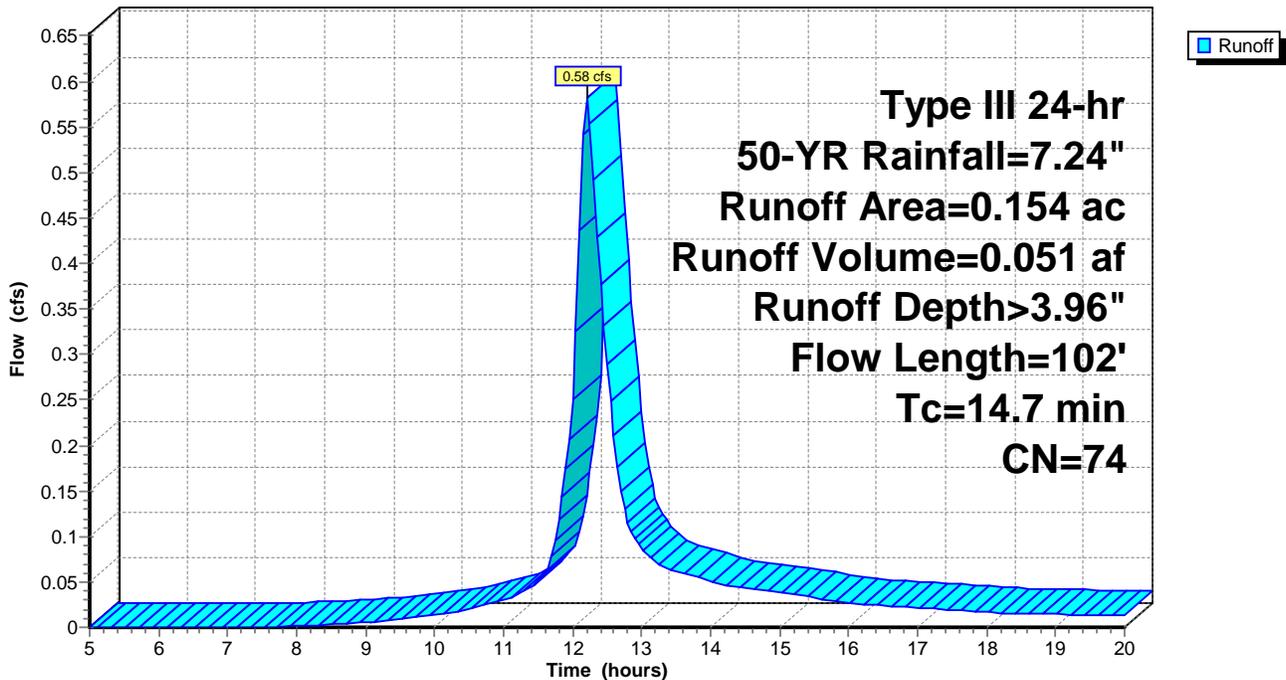
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.099	61	>75% Grass cover, Good, HSG B
* 0.055	98	Paved
0.154	74	Weighted Average
0.099		64.29% Pervious Area
0.055		35.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	83	0.0050	0.10		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.4	19	0.0130	0.80		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.7	102	Total			

Subcatchment PR-03:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 218

Summary for Subcatchment PR-04:

Runoff = 0.11 cfs @ 12.13 hrs, Volume= 0.011 af, Depth> 0.89"
 Routed to Pond IB-1 :

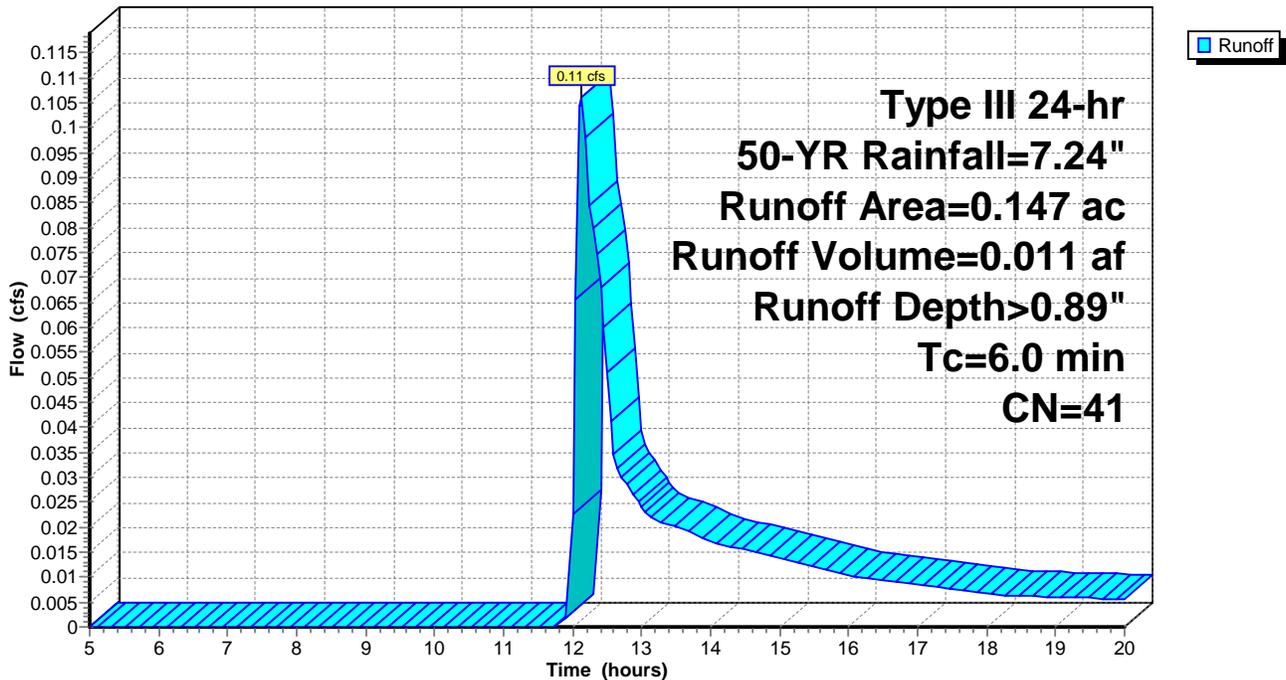
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.124	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.147	41	Weighted Average
0.124		84.35% Pervious Area
0.023		15.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-04:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 219

Summary for Subcatchment PR-05:

Runoff = 0.01 cfs @ 12.42 hrs, Volume= 0.002 af, Depth> 0.30"
 Routed to Pond FB-1 :

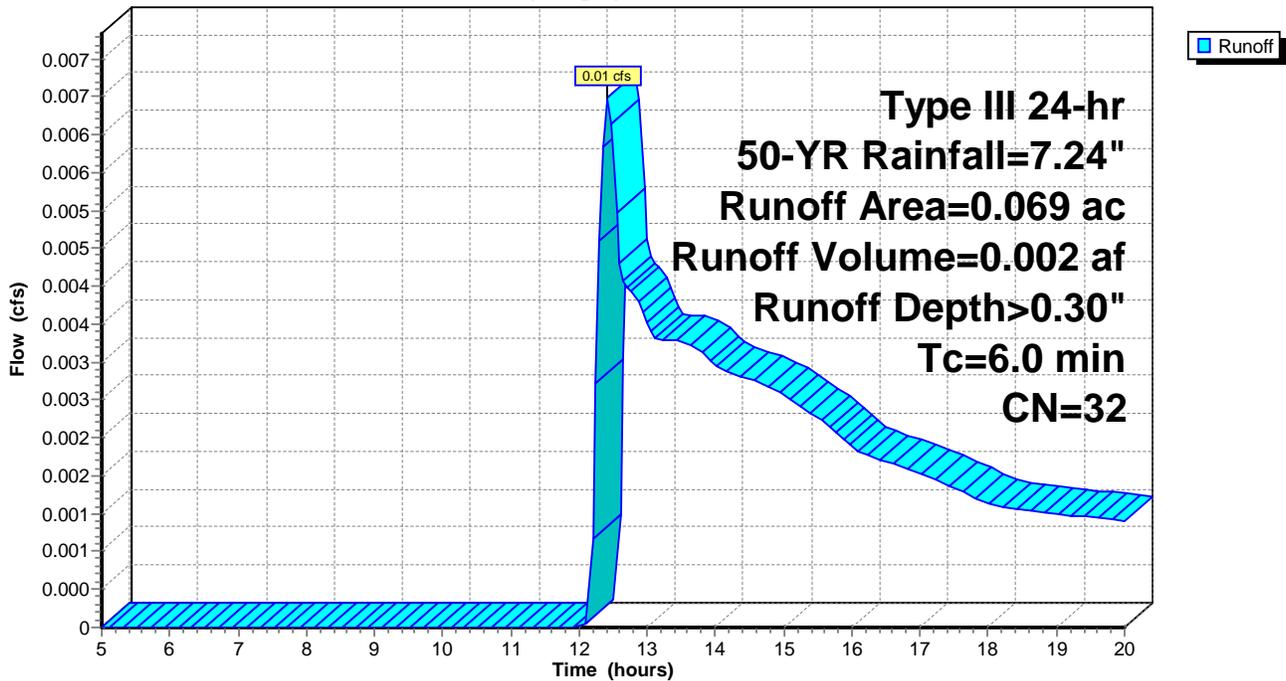
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.060	30	Meadow, non-grazed, HSG A
0.008	39	>75% Grass cover, Good, HSG A
* 0.001	98	Paved
0.069	32	Weighted Average
0.068		98.55% Pervious Area
0.001		1.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-05:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 220

Summary for Subcatchment PR-06:

Runoff = 1.50 cfs @ 12.09 hrs, Volume= 0.103 af, Depth> 4.51"
 Routed to Pond FB-1 :

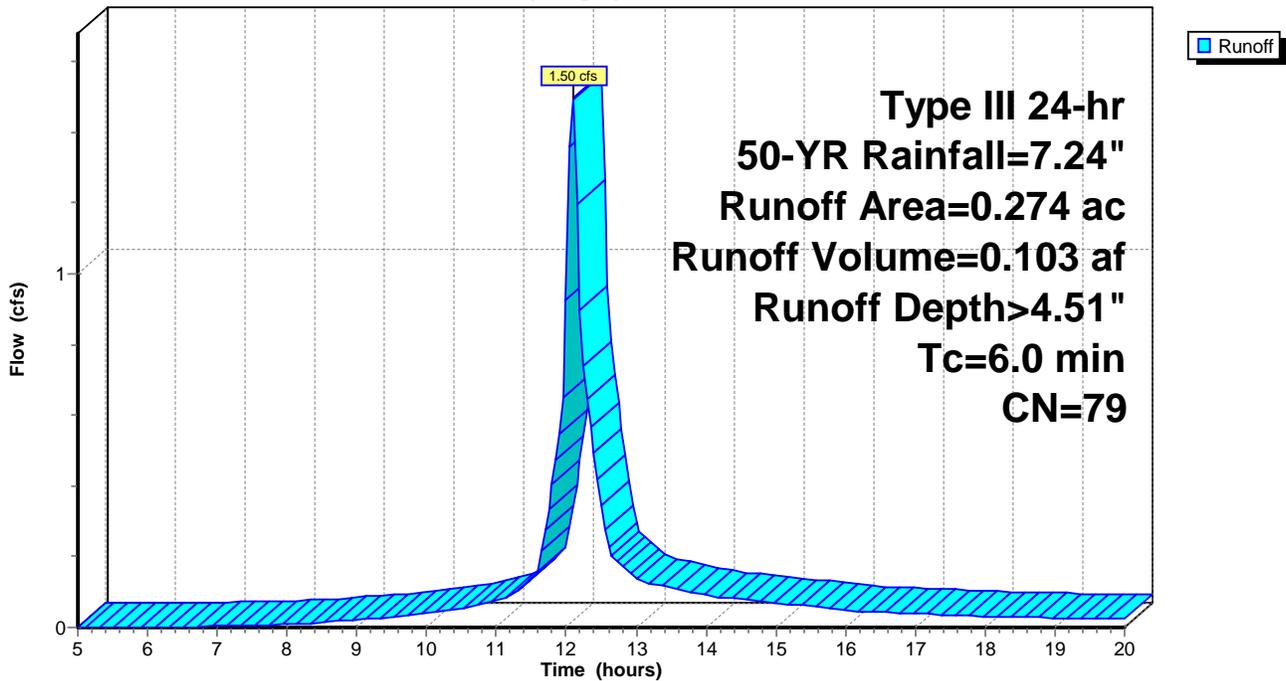
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.018	30	Meadow, non-grazed, HSG A
* 0.187	98	Paved
0.274	79	Weighted Average
0.087		31.75% Pervious Area
0.187		68.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-06:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 221

Summary for Subcatchment PR-07:

Runoff = 1.27 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 4.19"
 Routed to Pond FB-1 :

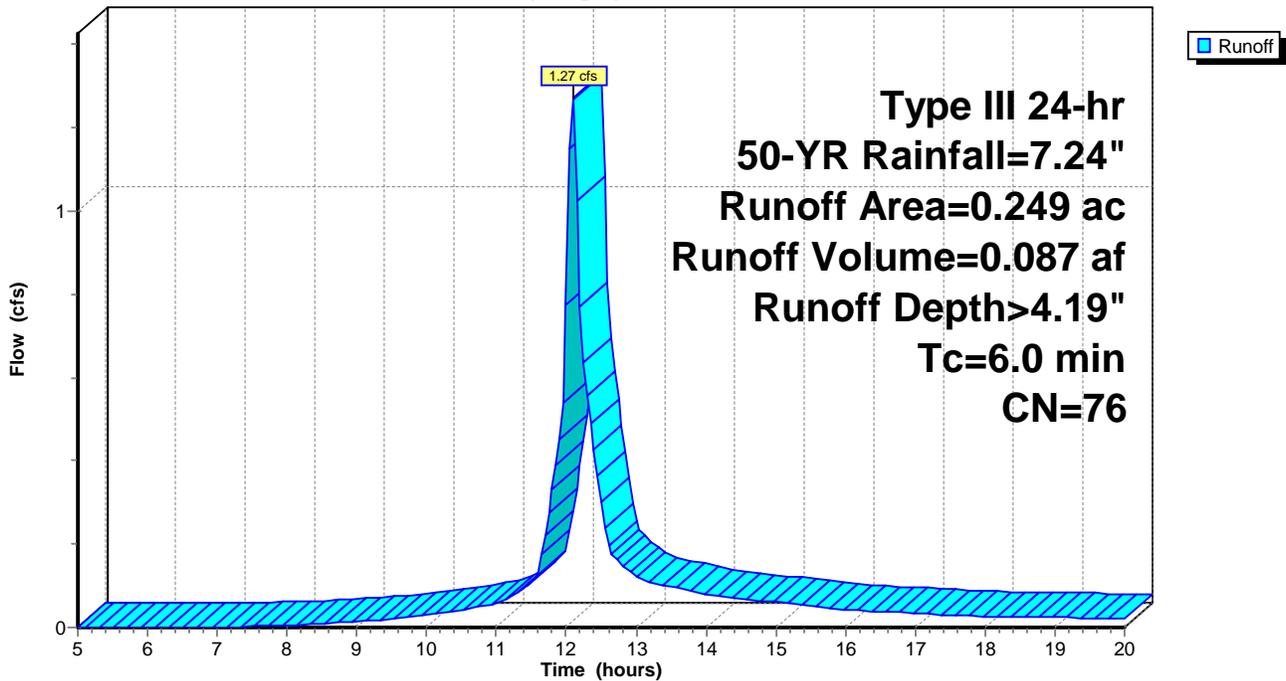
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.014	30	Meadow, non-grazed, HSG A
0.078	39	>75% Grass cover, Good, HSG A
* 0.157	98	Paved
0.249	76	Weighted Average
0.092		36.95% Pervious Area
0.157		63.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-07:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 222

Summary for Subcatchment PR-08:

Runoff = 0.02 cfs @ 12.46 hrs, Volume= 0.006 af, Depth> 0.25"

Routed to Pond RG-1 :

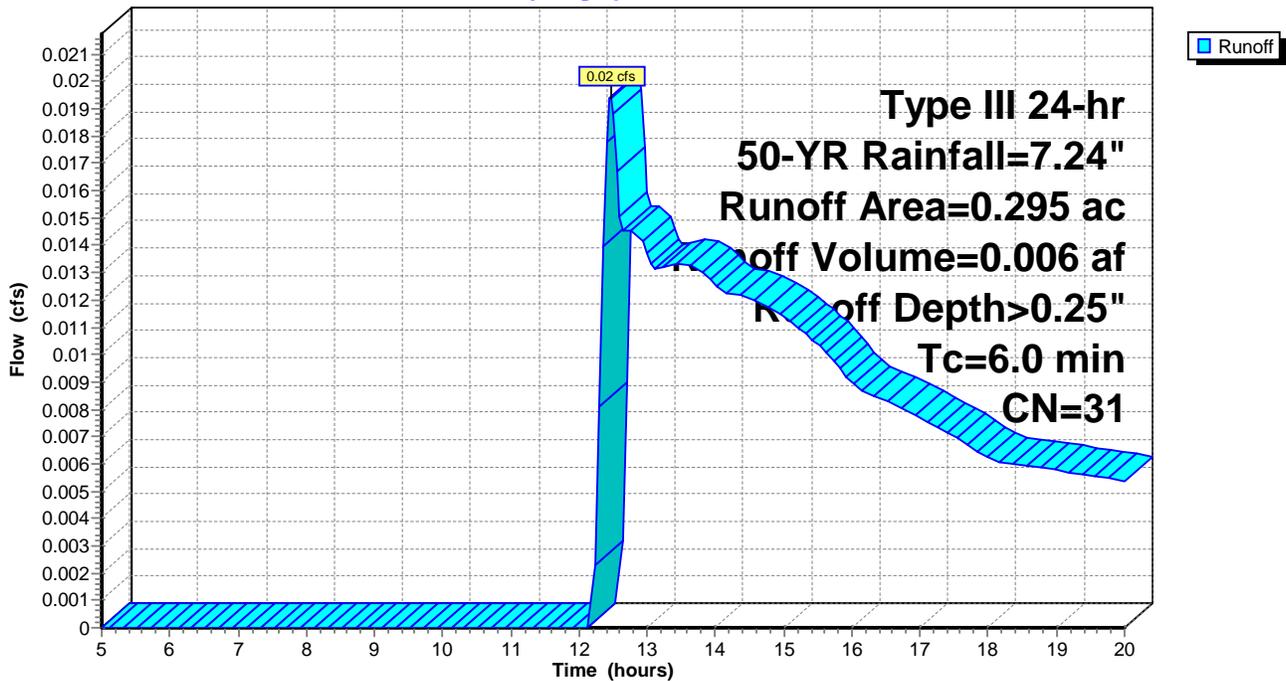
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.283	30	Brush, Good, HSG A
0.012	48	Brush, Good, HSG B
0.295	31	Weighted Average
0.295		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-08:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 223

Summary for Subcatchment PR-09:

Runoff = 1.08 cfs @ 12.18 hrs, Volume= 0.097 af, Depth> 5.50"
 Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.031	61	>75% Grass cover, Good, HSG B
0.000	58	Meadow, non-grazed, HSG B
* 0.162	98	Paved
0.211	88	Weighted Average
0.049		23.22% Pervious Area
0.162		76.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.0140	0.15		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.7	87	0.0150	0.86		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.0	9	0.0220	3.01		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	18	0.0310	1.23		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
0.2	39	0.0310	3.57		Shallow Concentrated Flow, E-F
					Paved Kv= 20.3 fps
0.1	28	0.0050	3.21	2.52	Pipe Channel, F-G
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.013
0.3	60	0.0050	3.47	2.73	Pipe Channel, G-H
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.012
13.5	341	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

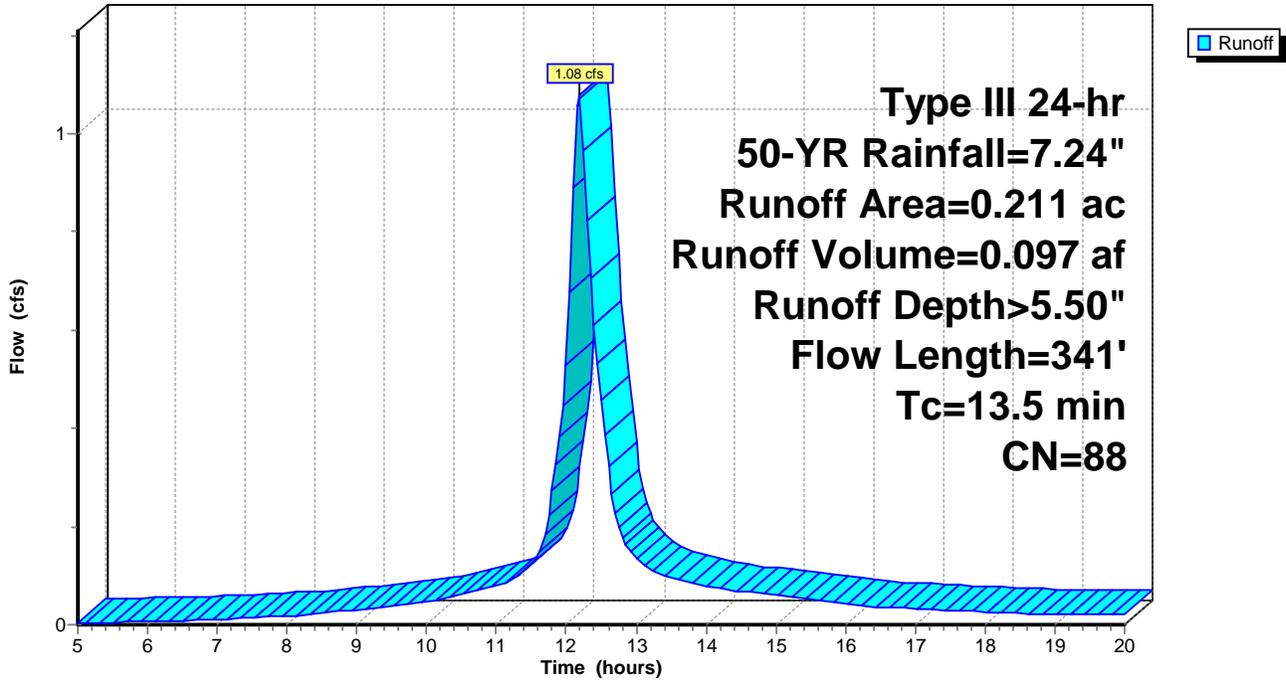
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 224

Subcatchment PR-09:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 225

Summary for Subcatchment PR-10:

Runoff = 0.77 cfs @ 12.09 hrs, Volume= 0.059 af, Depth> 6.31"

Routed to Pond RG-1 :

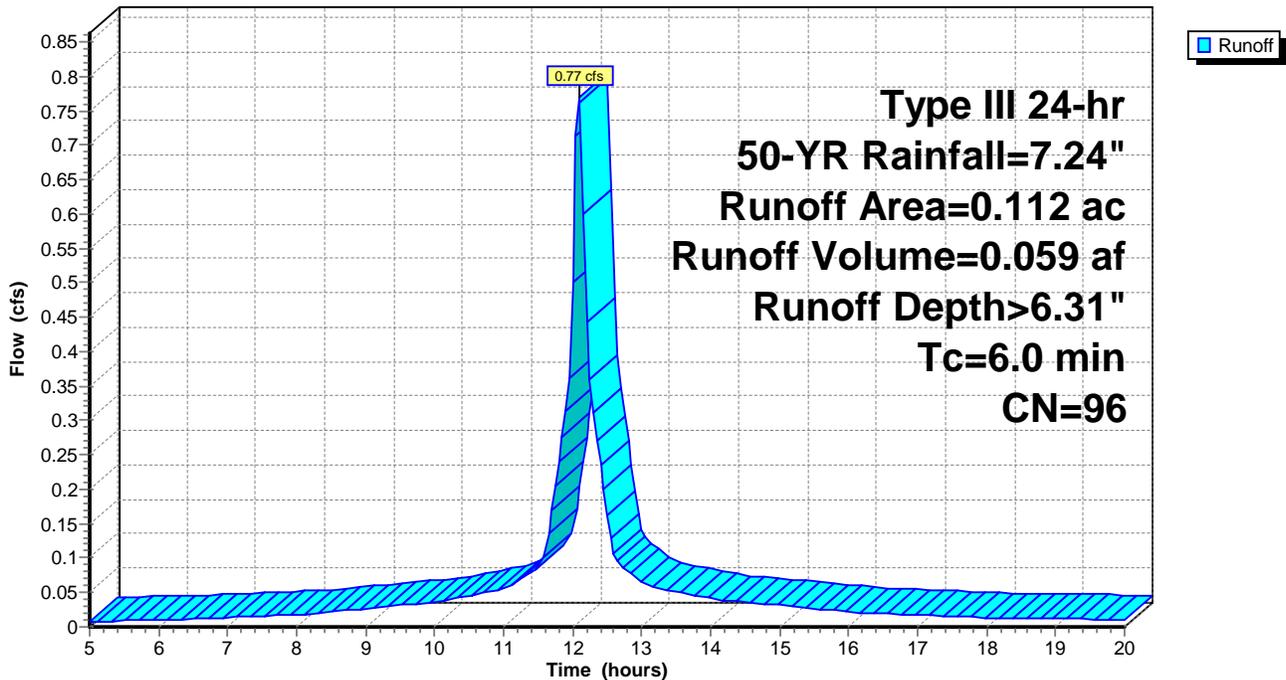
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.003	39	>75% Grass cover, Good, HSG A
* 0.109	98	Paved
0.112	96	Weighted Average
0.003		2.68% Pervious Area
0.109		97.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-10:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 226

Summary for Subcatchment PR-11:

Runoff = 1.87 cfs @ 12.09 hrs, Volume= 0.136 af, Depth> 5.62"

Routed to Pond RG-1 :

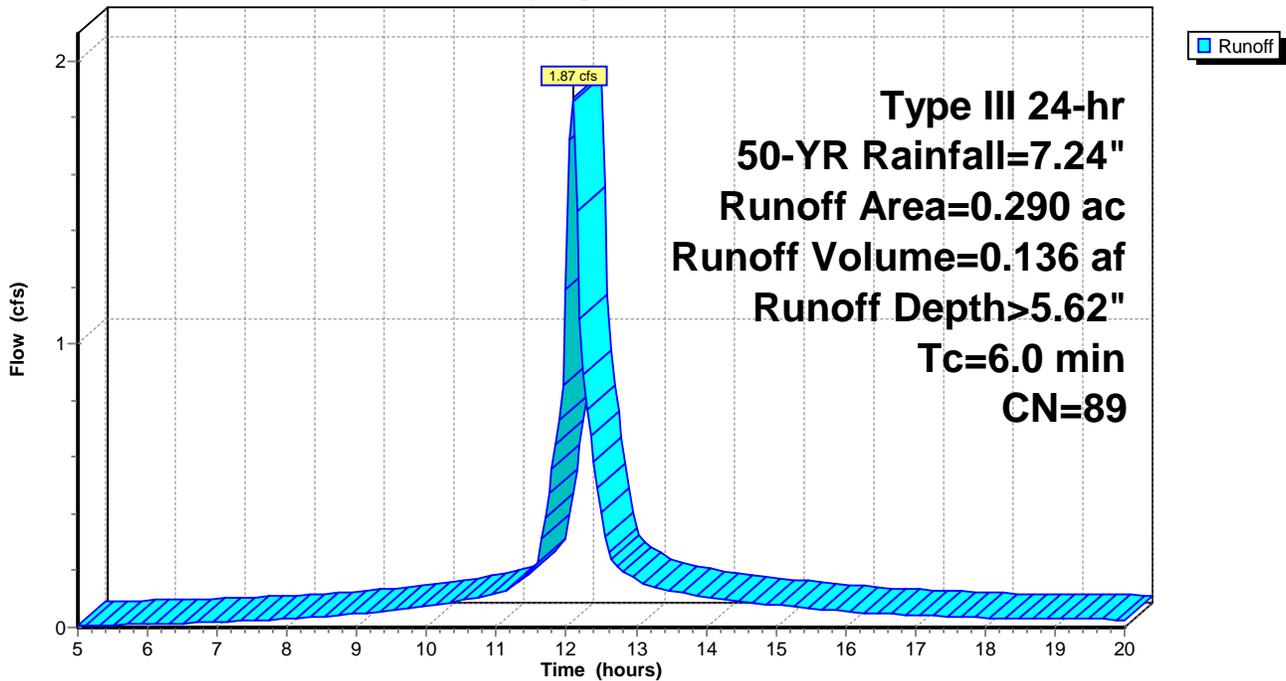
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.020	39	>75% Grass cover, Good, HSG A
0.040	61	>75% Grass cover, Good, HSG B
* 0.230	98	Paved
0.290	89	Weighted Average
0.060		20.69% Pervious Area
0.230		79.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-11:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 227

Summary for Subcatchment PR-12:

Runoff = 1.80 cfs @ 12.09 hrs, Volume= 0.133 af, Depth> 5.83"

Routed to Pond RG-1 :

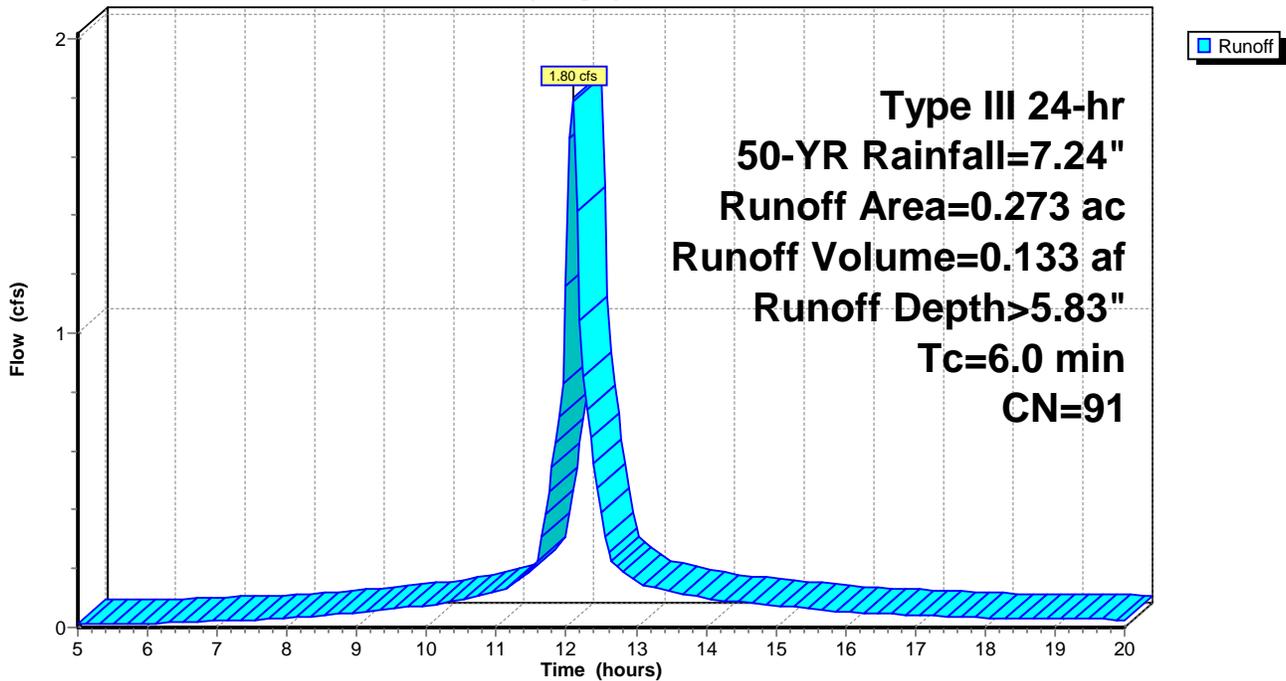
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.008	61	>75% Grass cover, Good, HSG B
* 0.237	98	Paved
0.273	91	Weighted Average
0.036		13.19% Pervious Area
0.237		86.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-12:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 228

Summary for Subcatchment PR-13:

Runoff = 1.10 cfs @ 12.09 hrs, Volume= 0.081 af, Depth> 5.83"
 Routed to Pond RG-1 :

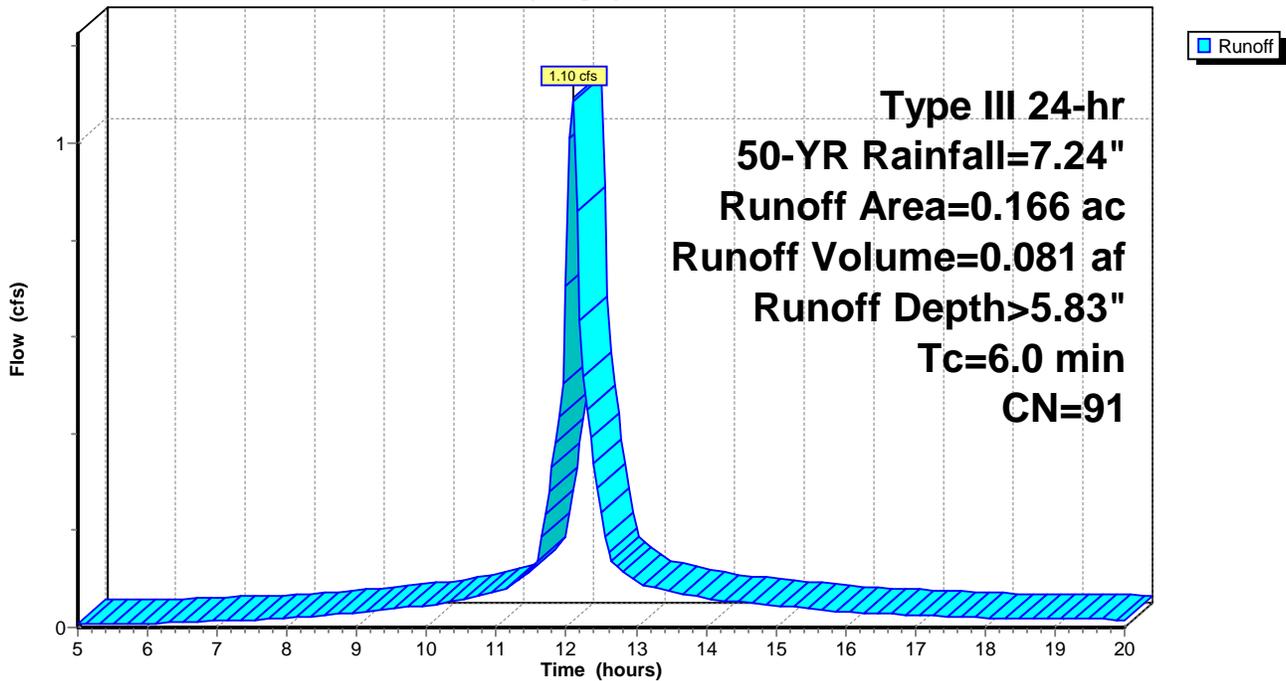
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.019	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
* 0.146	98	Paved
0.166	91	Weighted Average
0.020		12.05% Pervious Area
0.146		87.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-13:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 229

Summary for Subcatchment PR-14:

Runoff = 1.33 cfs @ 12.09 hrs, Volume= 0.095 af, Depth> 5.40"
Routed to Pond RG-1 :

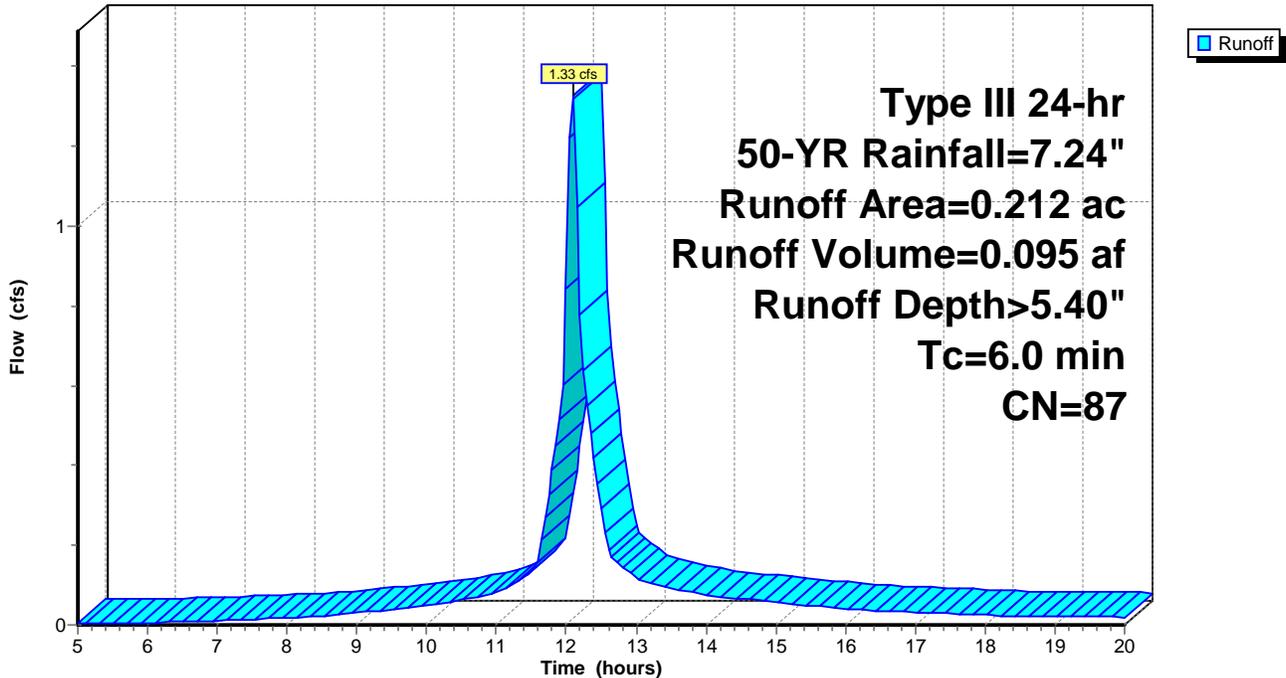
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.040	39	>75% Grass cover, Good, HSG A
* 0.172	98	Paved
0.212	87	Weighted Average
0.040		18.87% Pervious Area
0.172		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-14:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 230

Summary for Subcatchment PR-15:

Runoff = 0.72 cfs @ 12.10 hrs, Volume= 0.051 af, Depth> 4.62"

Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.030	39	>75% Grass cover, Good, HSG A
0.018	61	>75% Grass cover, Good, HSG B
* 0.085	98	Paved
0.133	80	Weighted Average
0.048		36.09% Pervious Area
0.085		63.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	62	0.0200	0.16		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.0	5	0.0200	2.87		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	52	0.0500	10.99	8.63	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	67	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.1	48	0.0100	5.70	7.00	Pipe Channel, E-F 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
6.9	234	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

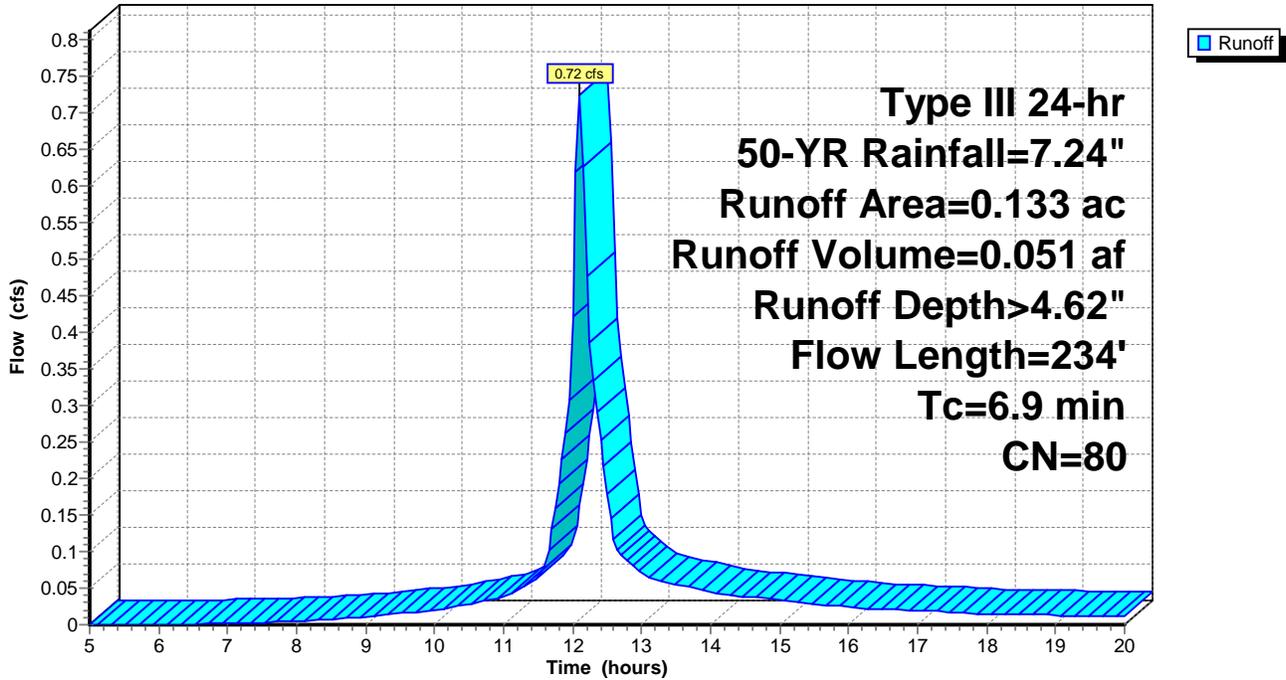
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 231

Subcatchment PR-15:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 233

Summary for Subcatchment PR-17:

Runoff = 0.00 cfs @ 13.63 hrs, Volume= 0.001 af, Depth > 0.20"

Routed to Pond FB-2 :

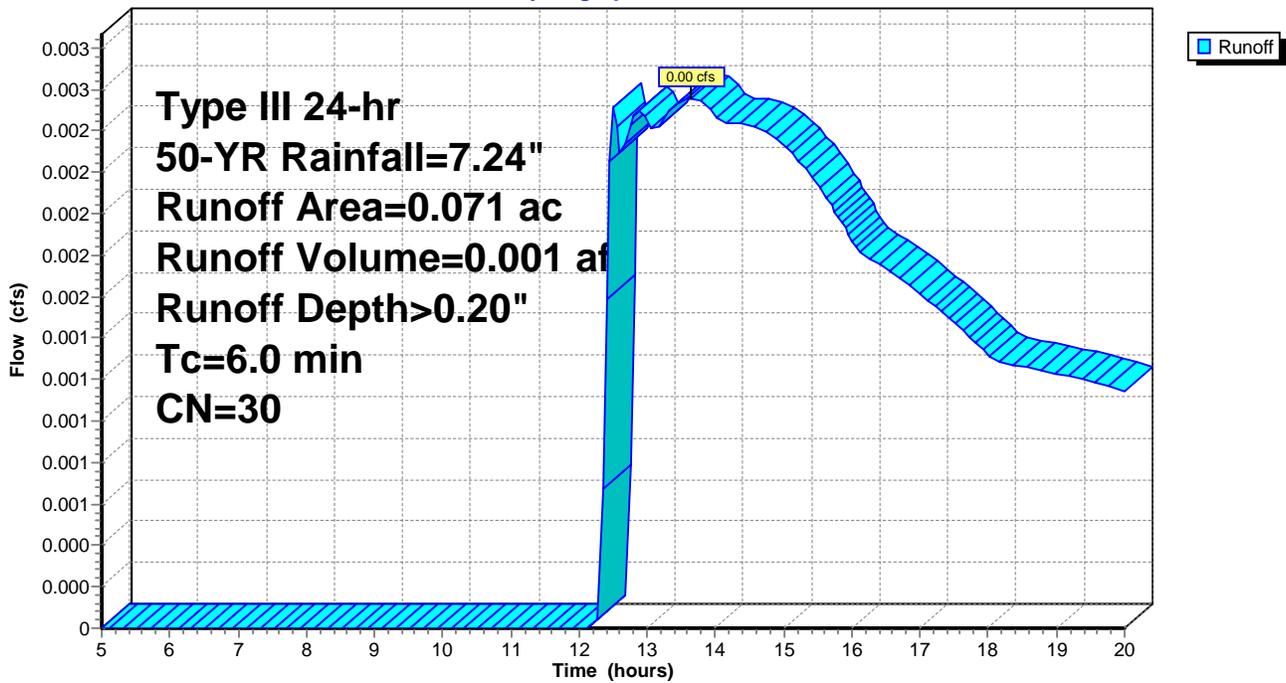
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.071	30	Brush, Good, HSG A
0.071		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-17:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 234

Summary for Subcatchment PR-18:

Runoff = 1.19 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 5.62"

Routed to Pond FB-2 :

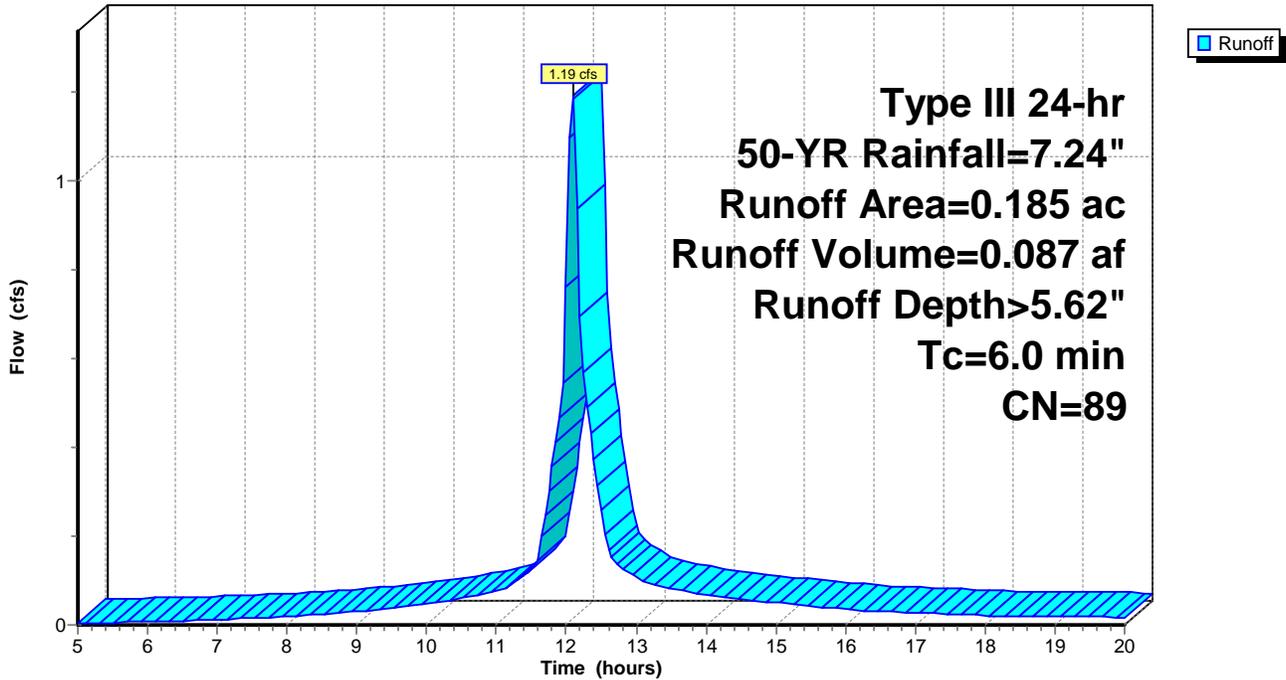
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.029	39	>75% Grass cover, Good, HSG A
* 0.156	98	Paved
0.185	89	Weighted Average
0.029		15.68% Pervious Area
0.156		84.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-18:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 235

Summary for Subcatchment PR-19:

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.060 af, Depth> 5.72"
Routed to Pond FB-2 :

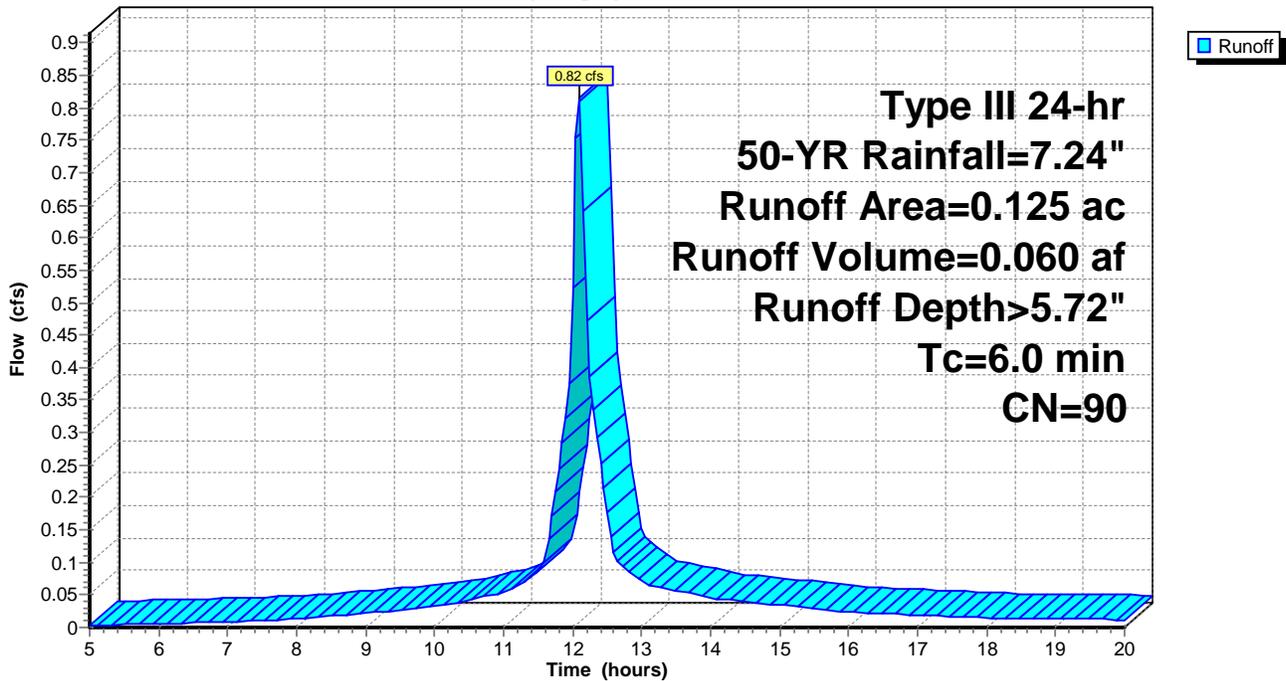
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.002	61	>75% Grass cover, Good, HSG B
* 0.107	98	Paved
0.125	90	Weighted Average
0.018		14.40% Pervious Area
0.107		85.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-19:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 236

Summary for Subcatchment PR-20:

Runoff = 1.66 cfs @ 12.09 hrs, Volume= 0.120 af, Depth> 5.51"

Routed to Pond FB-2 :

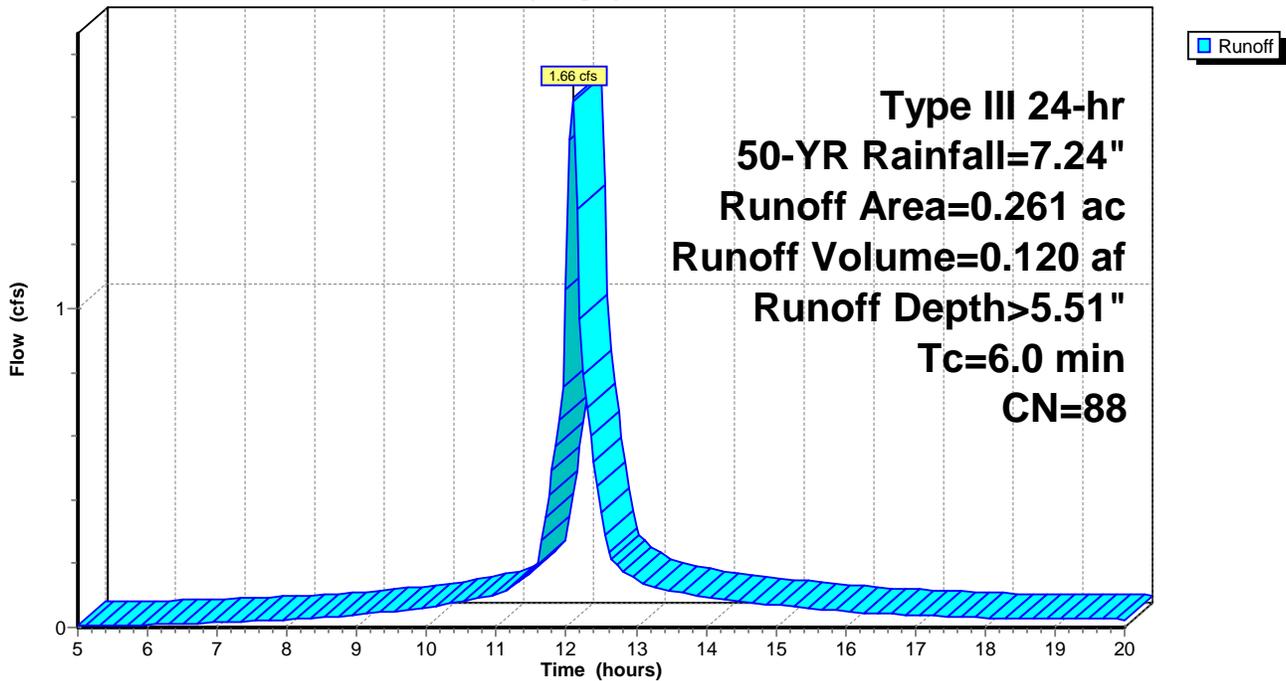
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.041	39	>75% Grass cover, Good, HSG A
0.004	61	>75% Grass cover, Good, HSG B
* 0.216	98	Paved
0.261	88	Weighted Average
0.045		17.24% Pervious Area
0.216		82.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-20:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 237

Summary for Subcatchment PR-21:

Runoff = 1.04 cfs @ 12.09 hrs, Volume= 0.077 af, Depth> 6.03"

Routed to Pond FB-2 :

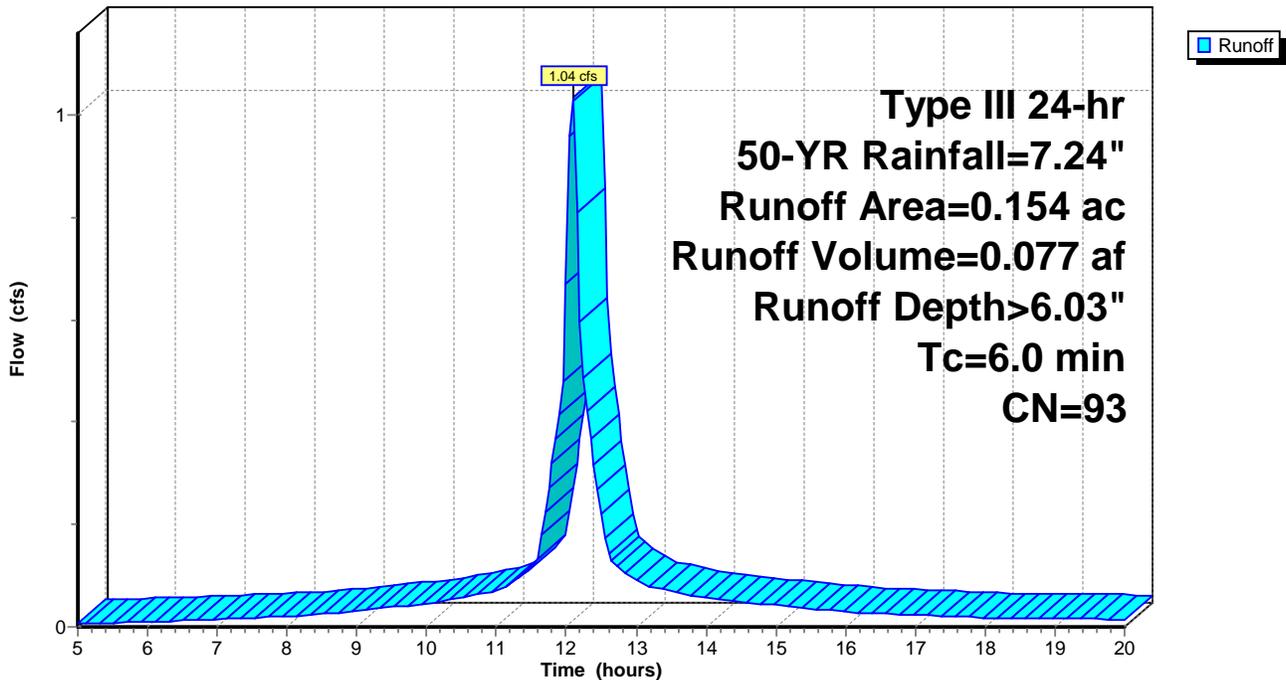
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.013	39	>75% Grass cover, Good, HSG A
* 0.141	98	Paved
0.154	93	Weighted Average
0.013		8.44% Pervious Area
0.141		91.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-21:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 238

Summary for Subcatchment PR-22:

Runoff = 0.65 cfs @ 12.09 hrs, Volume= 0.044 af, Depth> 4.19"
 Routed to Pond FB-2 :

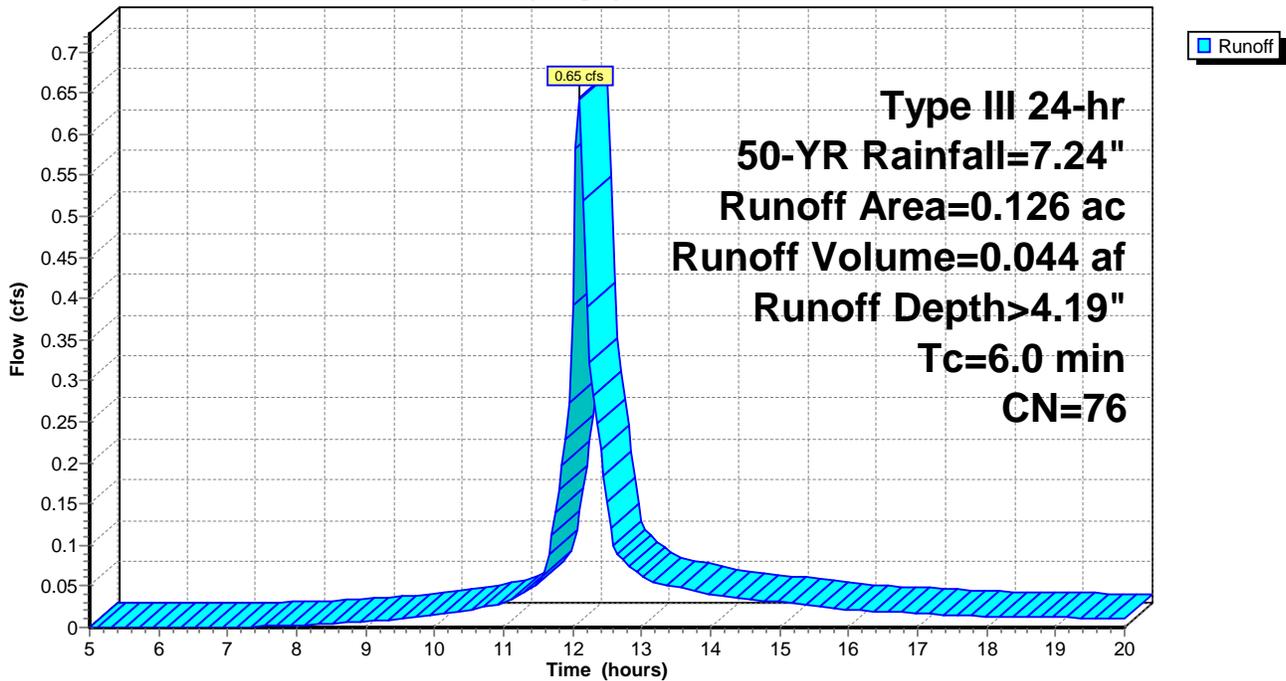
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.034	39	>75% Grass cover, Good, HSG A
0.022	61	>75% Grass cover, Good, HSG B
* 0.070	98	Paved
0.126	76	Weighted Average
0.056		44.44% Pervious Area
0.070		55.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-22:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 239

Summary for Subcatchment PR-23:

Runoff = 0.86 cfs @ 12.14 hrs, Volume= 0.067 af, Depth> 4.62"

Routed to Pond FB-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.035	39	>75% Grass cover, Good, HSG A
0.029	61	>75% Grass cover, Good, HSG B
* 0.109	98	Paved
0.173	80	Weighted Average
0.064		36.99% Pervious Area
0.109		63.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	71	0.0130	0.14		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.7	124	0.0240	3.14		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	27	0.0100	4.91	3.86	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	52	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.6	274	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

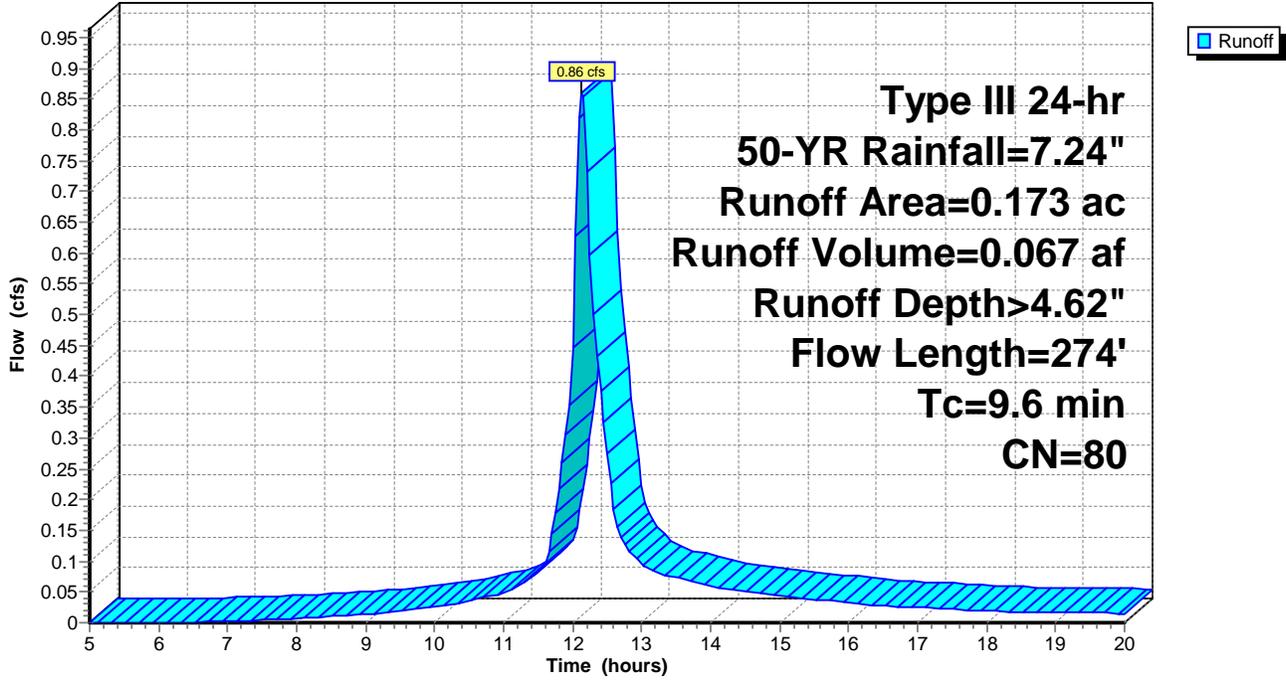
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 240

Subcatchment PR-23:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 241

Summary for Subcatchment PR-24:

Runoff = 0.22 cfs @ 12.12 hrs, Volume= 0.019 af, Depth> 1.12"
 Routed to Pond IB-3 :

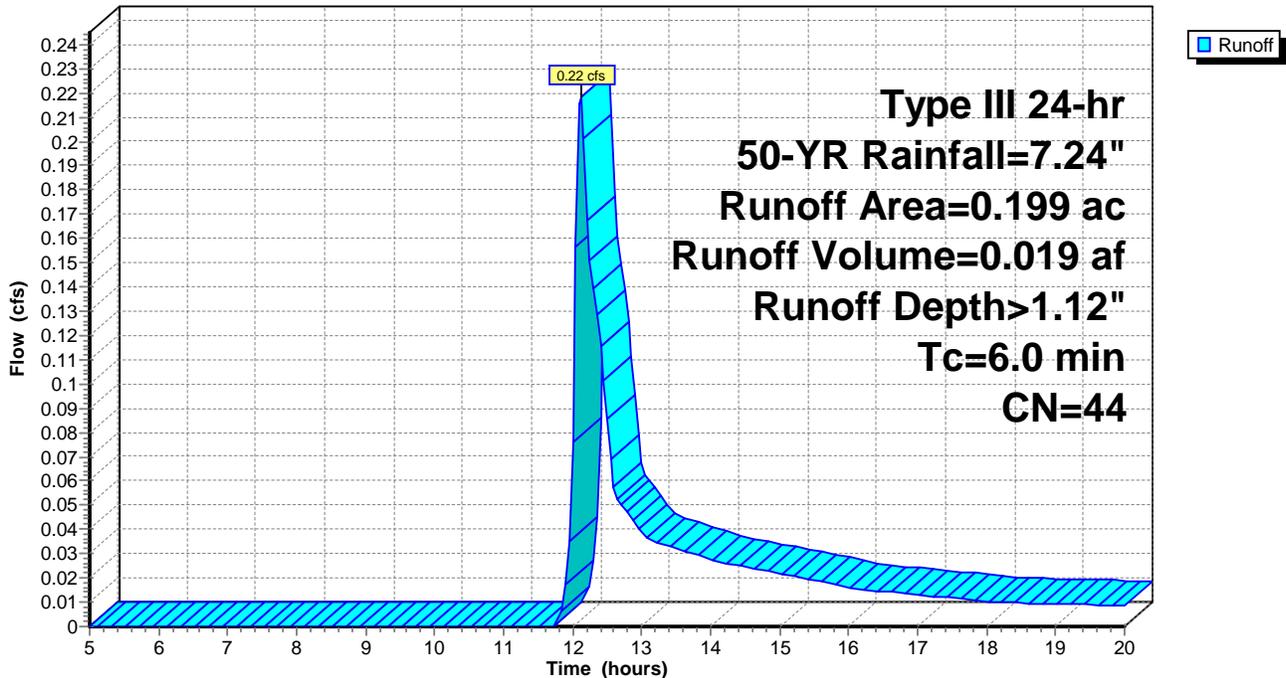
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.071	39	>75% Grass cover, Good, HSG A
0.013	61	>75% Grass cover, Good, HSG B
0.090	30	Meadow, non-grazed, HSG A
* 0.025	98	Paved
0.199	44	Weighted Average
0.174		87.44% Pervious Area
0.025		12.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-24:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 242

Summary for Subcatchment PR-25:

Runoff = 0.13 cfs @ 12.15 hrs, Volume= 0.016 af, Depth> 0.74"
Routed to Pond GT-1 :

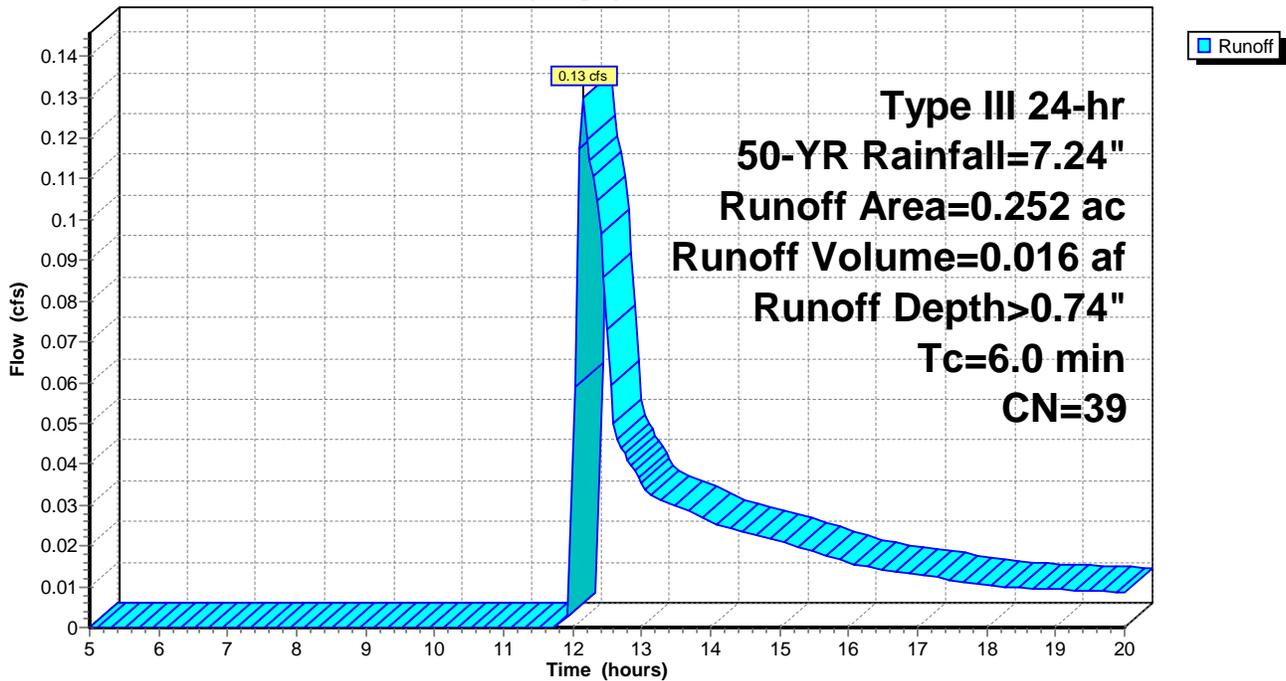
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.016	61	>75% Grass cover, Good, HSG B
0.156	30	Meadow, non-grazed, HSG A
0.052	58	Meadow, non-grazed, HSG B
0.252	39	Weighted Average
0.252		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-25:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 243

Summary for Subcatchment PR-26:

Runoff = 0.01 cfs @ 12.56 hrs, Volume= 0.002 af, Depth> 0.30"
 Routed to Pond GT-2 :

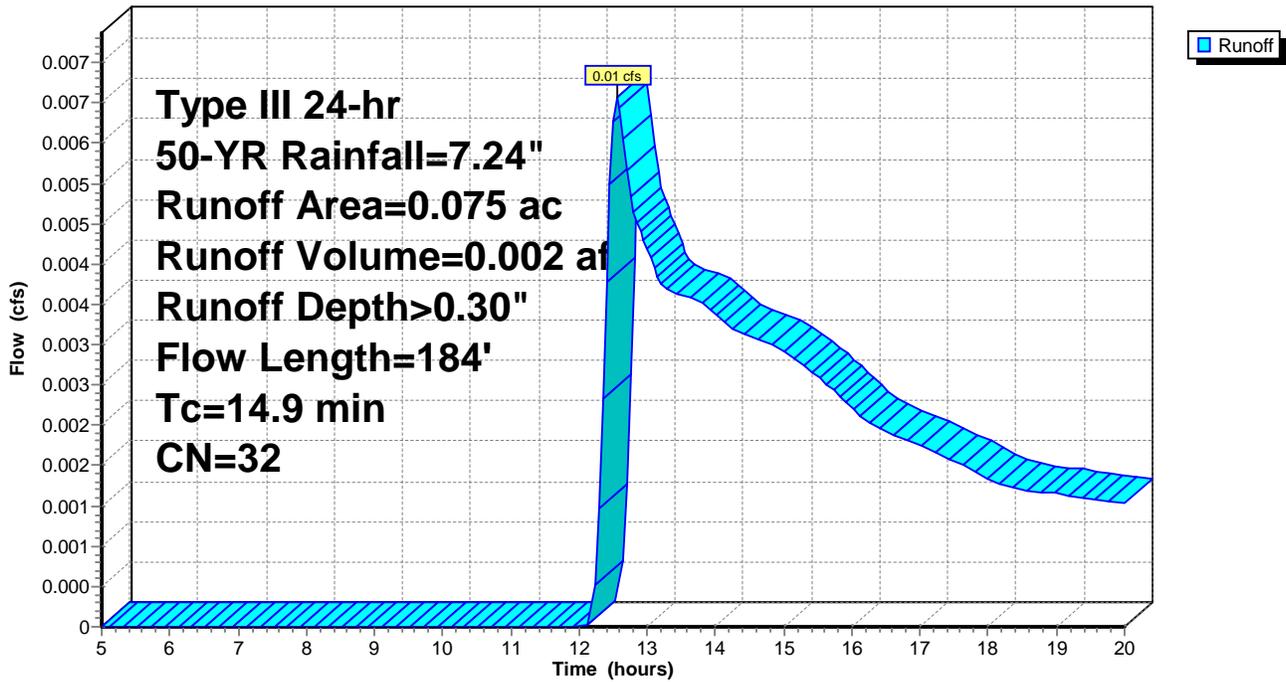
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.013	39	>75% Grass cover, Good, HSG A
0.061	30	Meadow, non-grazed, HSG A
* 0.001	98	Paved
0.075	32	Weighted Average
0.074		98.67% Pervious Area
0.001		1.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0190	0.12		Sheet Flow, A-B
					Grass: Dense n= 0.240 P2= 3.40"
0.8	84	0.0590	1.70		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.9	184	Total			

Subcatchment PR-26:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 245

Summary for Subcatchment PR-28:

Runoff = 0.04 cfs @ 12.28 hrs, Volume= 0.006 af, Depth> 0.60"
 Routed to Pond GT-4 :

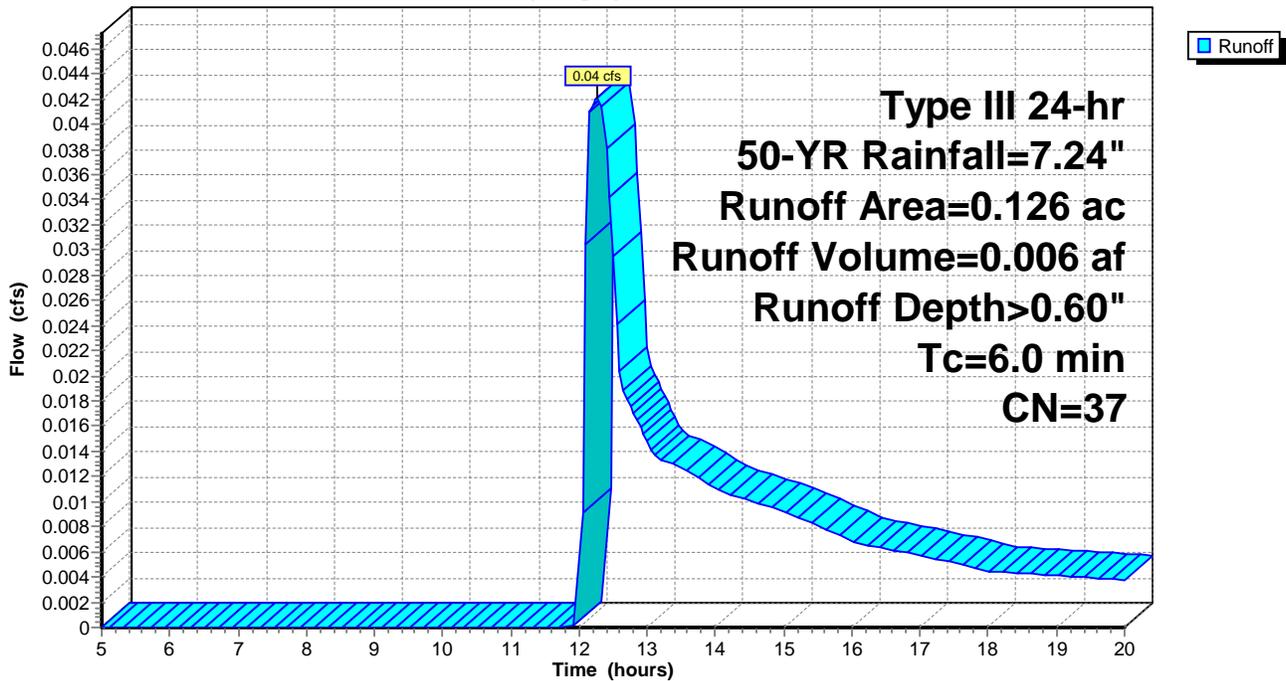
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.031	39	>75% Grass cover, Good, HSG A
0.004	61	>75% Grass cover, Good, HSG B
0.074	30	Meadow, non-grazed, HSG A
0.017	58	Meadow, non-grazed, HSG B
0.126	37	Weighted Average
0.126		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-28:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 246

Summary for Subcatchment PR-29:

Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.036 af, Depth> 3.87"
 Routed to Pond GT-5 :

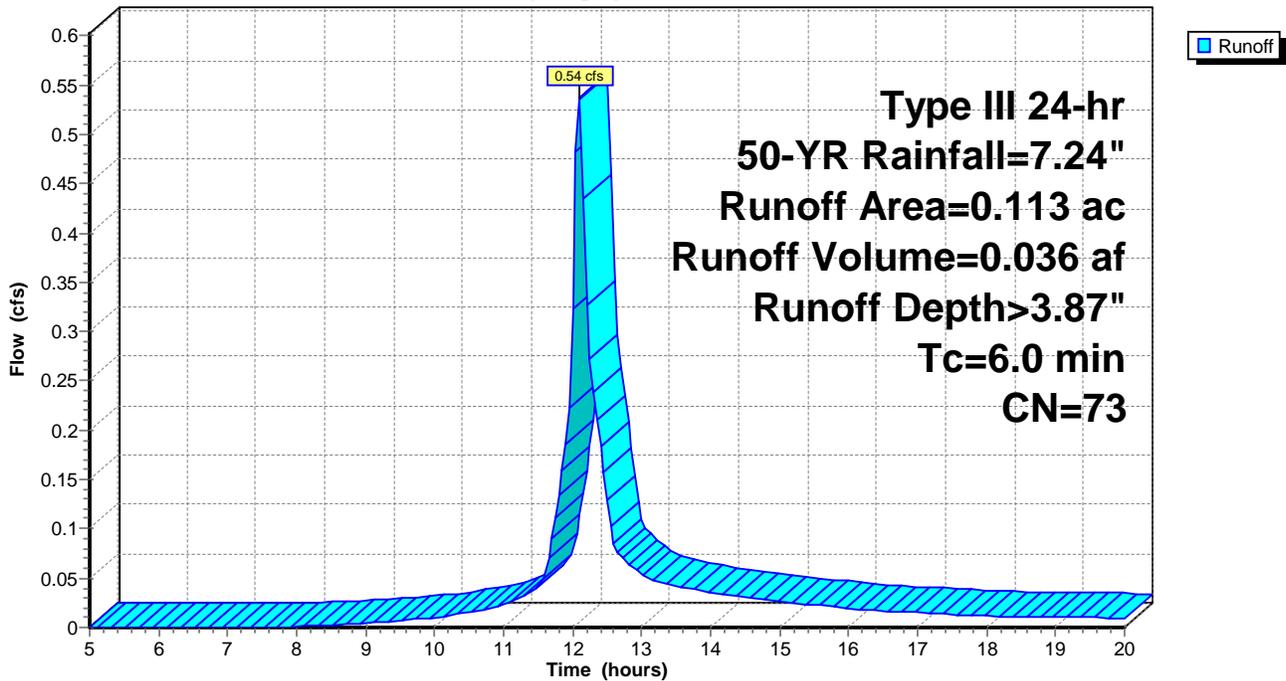
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.031	61	>75% Grass cover, Good, HSG B
0.043	58	Meadow, non-grazed, HSG B
* 0.039	98	Paved
0.113	73	Weighted Average
0.074		65.49% Pervious Area
0.039		34.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-29:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 247

Summary for Subcatchment PR-30:

Runoff = 0.19 cfs @ 12.17 hrs, Volume= 0.016 af, Depth> 2.07"
Routed to Pond GT-6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
0.001	30	Woods, Good, HSG A
0.008	55	Woods, Good, HSG B
0.011	39	>75% Grass cover, Good, HSG A
0.021	61	>75% Grass cover, Good, HSG B
0.026	30	Meadow, non-grazed, HSG A
0.010	58	Meadow, non-grazed, HSG B
* 0.016	98	Paved
0.093	55	Weighted Average
0.077		82.80% Pervious Area
0.016		17.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0380	0.16		Sheet Flow, A-B
					Grass: Dense n= 0.240 P2= 3.40"
0.4	40	0.0550	1.64		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
11.1	140	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

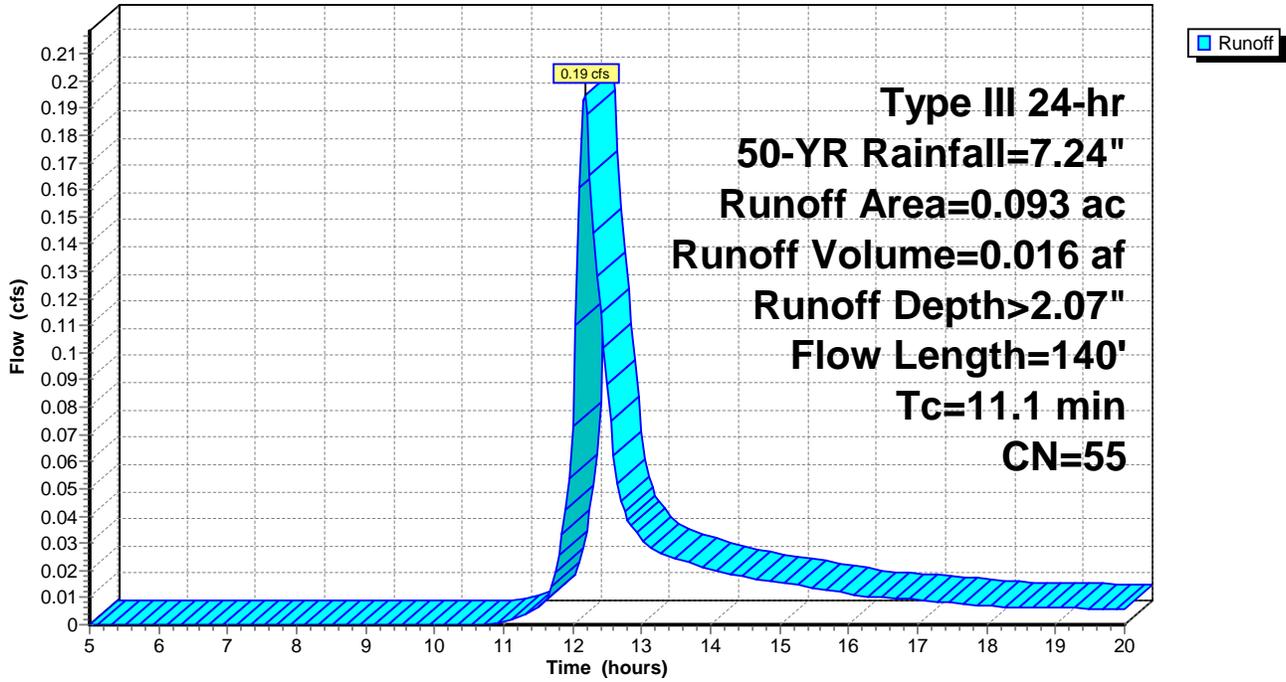
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 248

Subcatchment PR-30:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 249

Summary for Subcatchment RA-1:

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.069 af, Depth> 6.46"

Routed to Pond UG-1 :

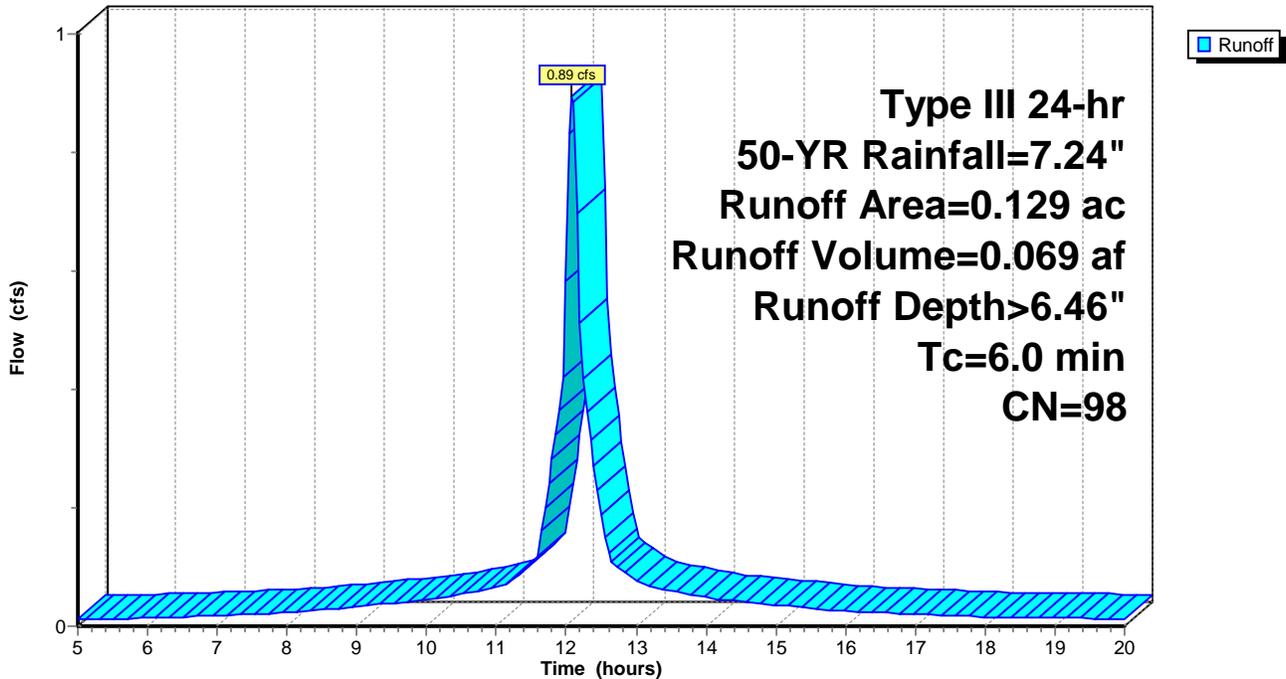
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
* 0.129	98	Roof
0.129		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 250

Summary for Subcatchment RA-2:

Runoff = 0.96 cfs @ 12.09 hrs, Volume= 0.075 af, Depth> 6.46"

Routed to Pond UG-1 :

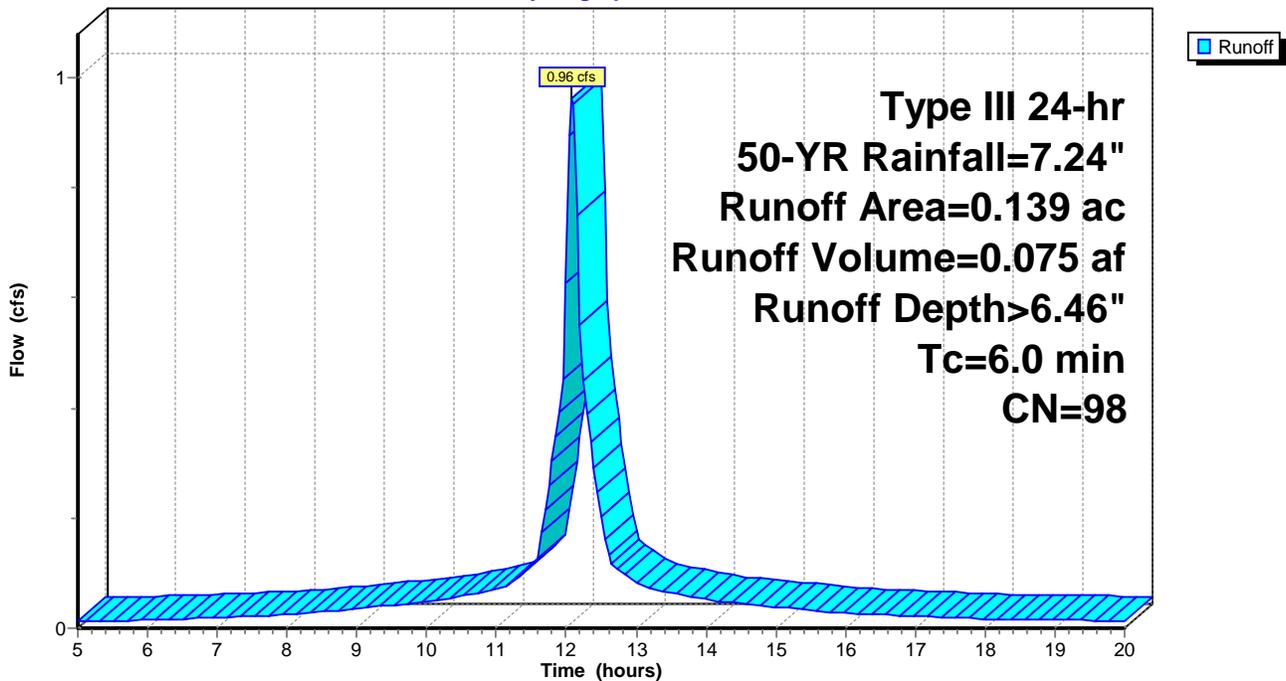
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
* 0.139	98	Roof
0.139		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 251

Summary for Subcatchment RA-3:

Runoff = 1.34 cfs @ 12.09 hrs, Volume= 0.104 af, Depth> 6.46"

Routed to Pond RG-1 :

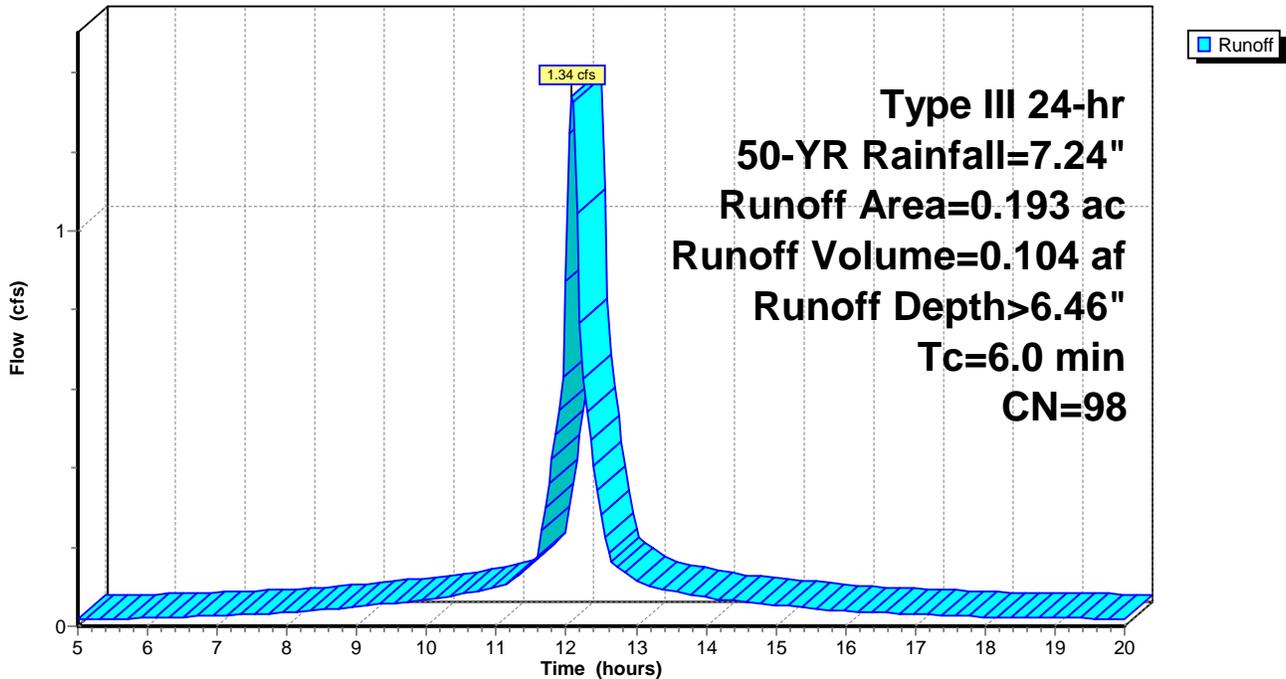
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
* 0.193	98	Roof
0.193		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 252

Summary for Subcatchment RA-4:

Runoff = 1.30 cfs @ 12.09 hrs, Volume= 0.101 af, Depth> 6.46"

Routed to Pond RG-1 :

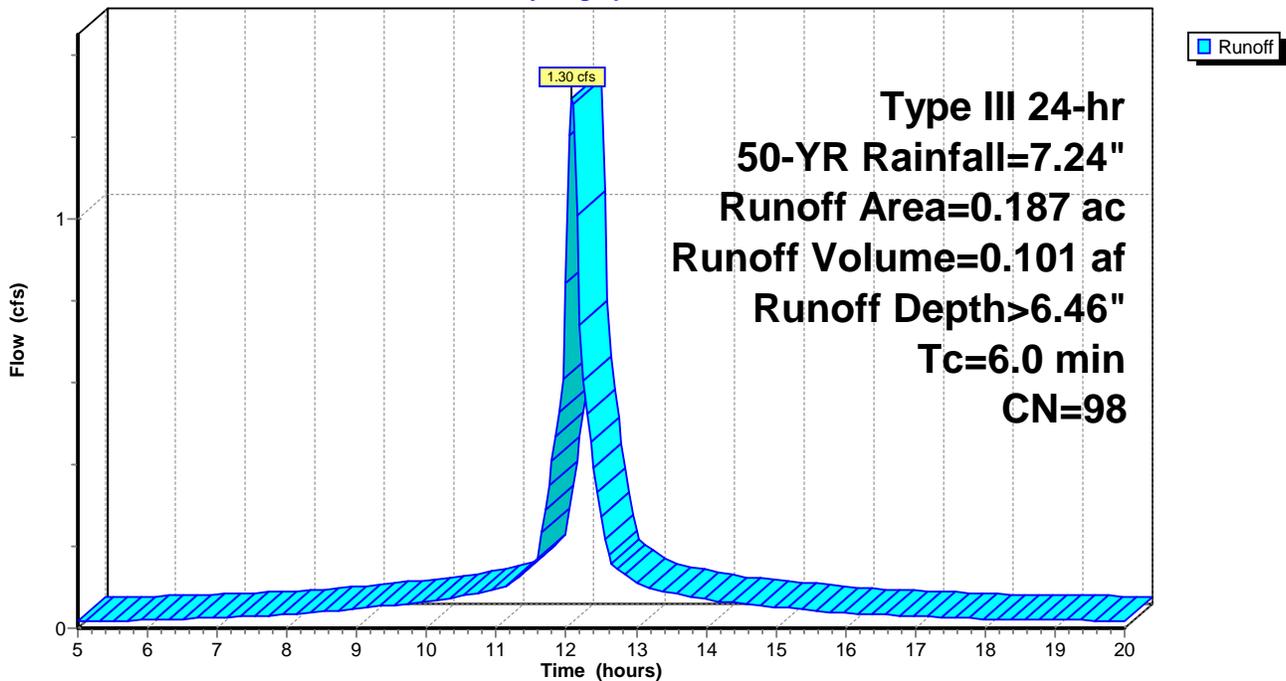
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=7.24"

Area (ac)	CN	Description
* 0.187	98	Roof
0.187		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

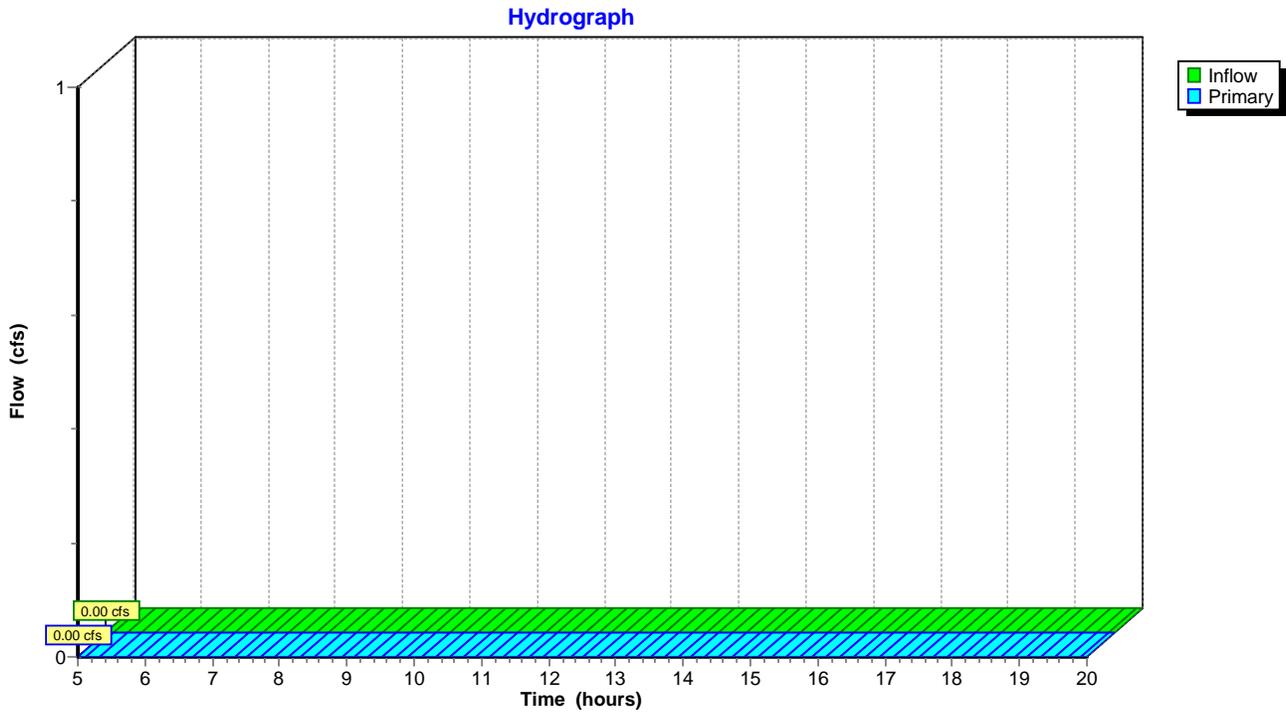
Page 253

Summary for Pond AP: Surrounding Wetlands

Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 254

Summary for Pond FB-1:

Inflow Area = 0.592 ac, 58.28% Impervious, Inflow Depth > 3.89" for 50-YR event
 Inflow = 2.77 cfs @ 12.09 hrs, Volume= 0.192 af
 Outflow = 0.59 cfs @ 12.54 hrs, Volume= 0.079 af, Atten= 79%, Lag= 27.2 min
 Discarded = 0.01 cfs @ 12.54 hrs, Volume= 0.007 af
 Primary = 0.58 cfs @ 12.54 hrs, Volume= 0.072 af

Routed to Pond IB-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.62' @ 12.54 hrs Surf.Area= 2,063 sf Storage= 4,937 cf

Plug-Flow detention time= 198.9 min calculated for 0.079 af (41% of inflow)
 Center-of-Mass det. time= 108.2 min (888.5 - 780.3)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	5,755 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	299	0	0
25.00	566	433	433
26.00	891	729	1,161
27.00	1,279	1,085	2,246
28.00	1,736	1,508	3,754
28.60	2,049	1,136	4,889
29.00	2,283	866	5,755

Device	Routing	Invert	Outlet Devices
#1	Primary	28.60'	44.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	24.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.54 hrs HW=28.62' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.38 cfs @ 12.54 hrs HW=28.62' (Free Discharge)
 ↑**1=Forebay Berm (Weir Outlet)** (Weir Controls 0.38 cfs @ 0.38 fps)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

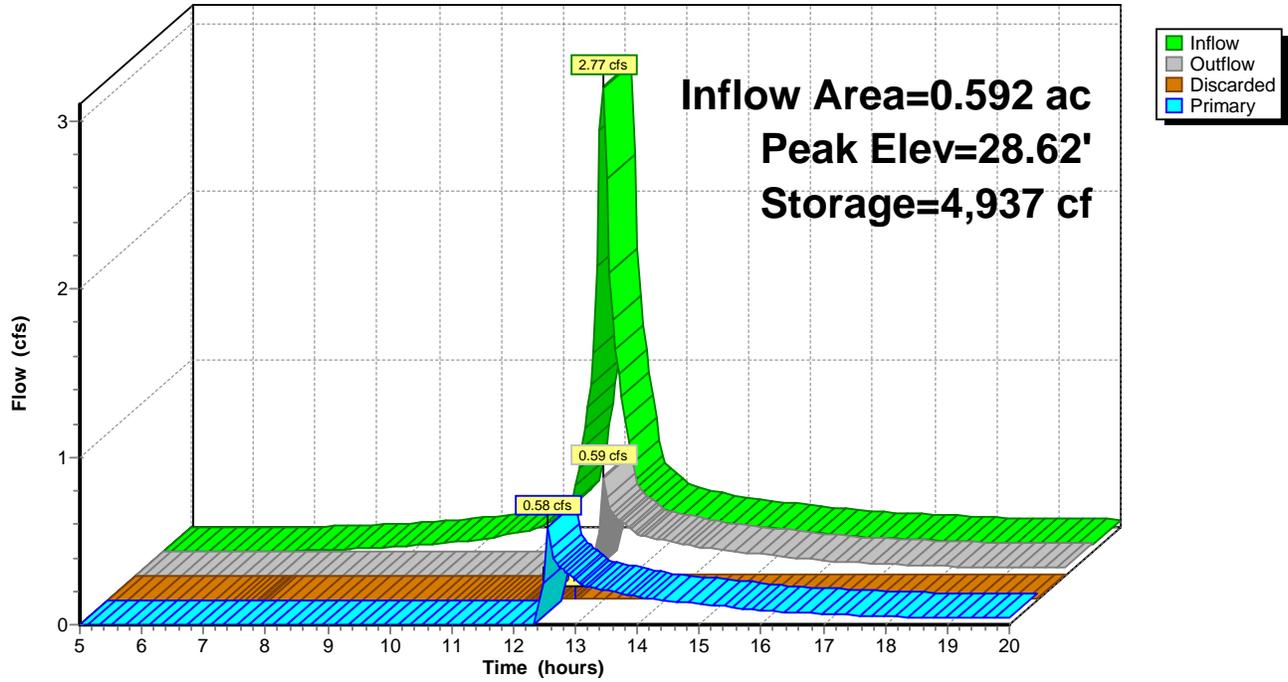
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 255

Pond FB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 256

Summary for Pond FB-2:

Inflow Area = 3.167 ac, 73.26% Impervious, Inflow Depth > 1.72" for 50-YR event
 Inflow = 6.15 cfs @ 12.09 hrs, Volume= 0.455 af
 Outflow = 4.15 cfs @ 12.26 hrs, Volume= 0.434 af, Atten= 33%, Lag= 10.0 min
 Discarded = 0.72 cfs @ 12.26 hrs, Volume= 0.385 af
 Primary = 3.43 cfs @ 12.26 hrs, Volume= 0.049 af

Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.78' @ 12.26 hrs Surf.Area= 2,581 sf Storage= 7,149 cf

Plug-Flow detention time= 106.2 min calculated for 0.432 af (95% of inflow)
 Center-of-Mass det. time= 88.1 min (847.6 - 759.5)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	7,733 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	291	0	0
26.00	520	406	406
27.00	811	666	1,071
28.00	1,172	992	2,063
29.00	1,608	1,390	3,453
30.00	2,121	1,865	5,317
30.70	2,530	1,628	6,945
31.00	2,723	788	7,733

Device	Routing	Invert	Outlet Devices
#1	Primary	30.70'	59.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.72 cfs @ 12.26 hrs HW=30.77' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.72 cfs)

Primary OutFlow Max=2.92 cfs @ 12.26 hrs HW=30.77' (Free Discharge)
 ↑**1=Forebay Berm (Weir Outlet)** (Weir Controls 2.92 cfs @ 0.68 fps)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

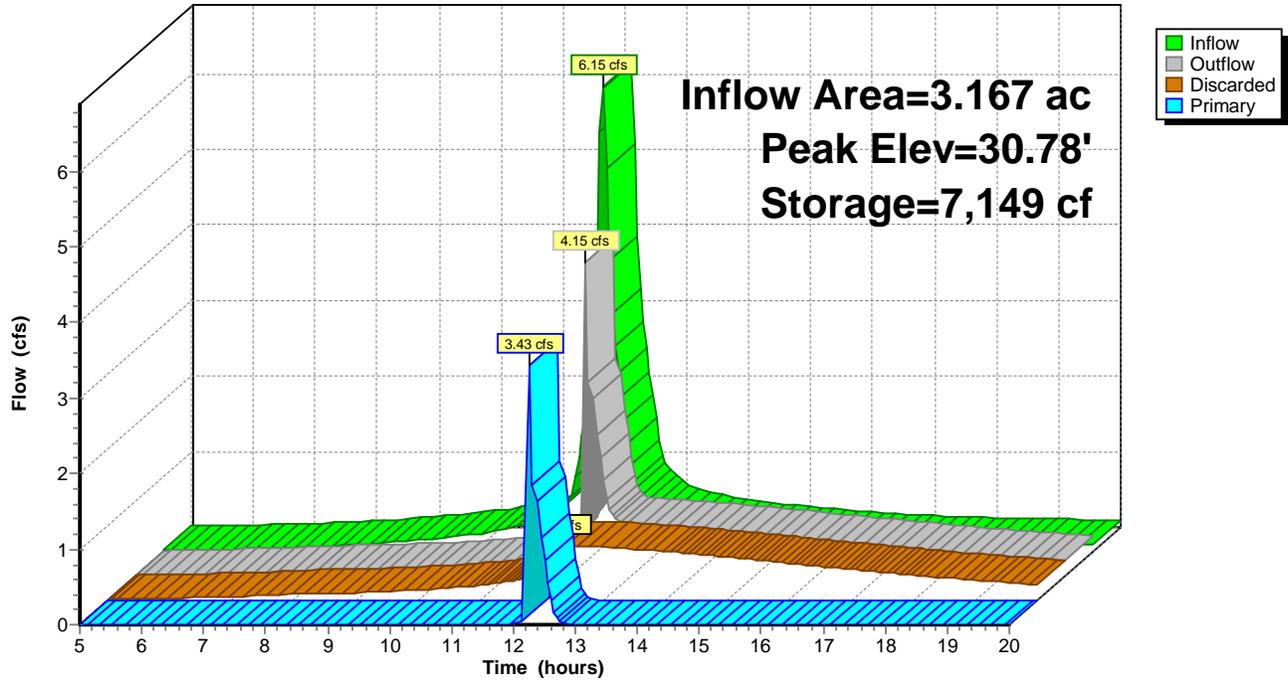
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 257

Pond FB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 258

Summary for Pond GT-1:

Inflow Area = 0.252 ac, 0.00% Impervious, Inflow Depth > 0.74" for 50-YR event
 Inflow = 0.13 cfs @ 12.15 hrs, Volume= 0.016 af
 Outflow = 0.05 cfs @ 12.10 hrs, Volume= 0.016 af, Atten= 65%, Lag= 0.0 min
 Discarded = 0.05 cfs @ 12.10 hrs, Volume= 0.016 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 20.31' @ 12.67 hrs Surf.Area= 862 sf Storage= 108 cf

Plug-Flow detention time= 16.1 min calculated for 0.016 af (100% of inflow)
 Center-of-Mass det. time= 15.5 min (880.3 - 864.8)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	690 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,724 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.00	862	0	0
21.00	862	862	862
22.00	862	862	1,724

Device	Routing	Invert	Outlet Devices
#1	Secondary	22.00'	590.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 12.10 hrs HW=20.04' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

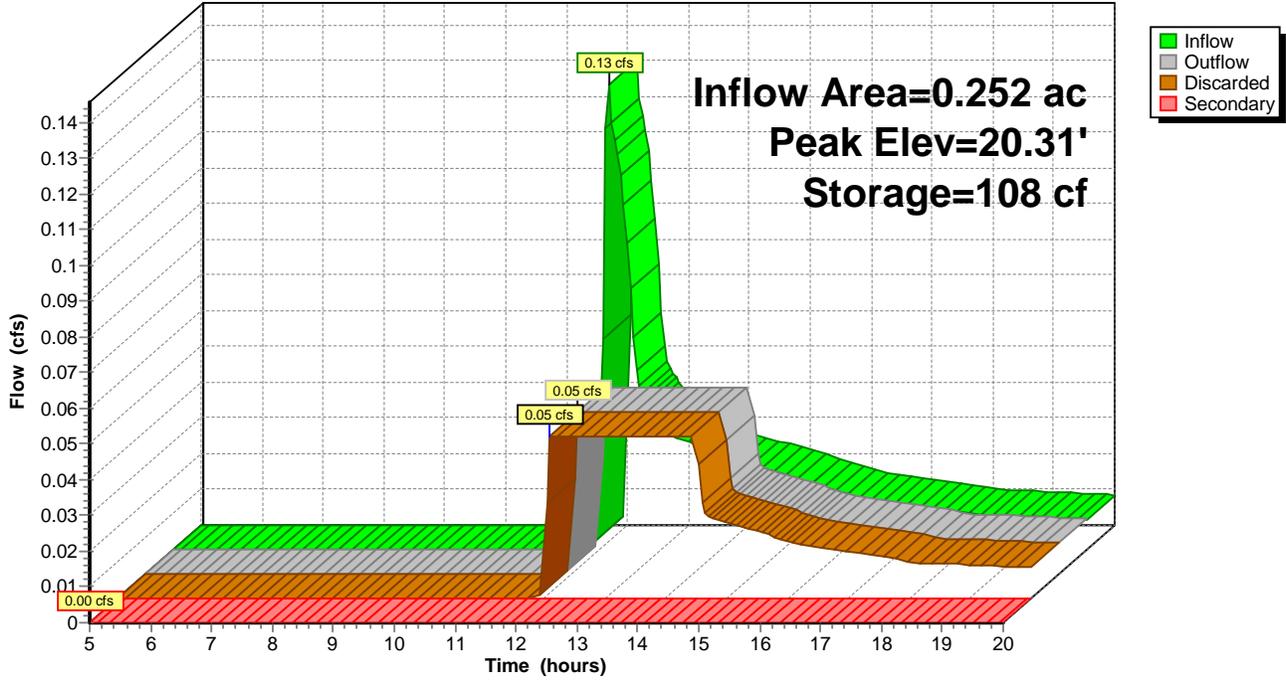
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 259

Pond GT-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 260

Summary for Pond GT-2:

Inflow Area = 0.075 ac, 1.33% Impervious, Inflow Depth > 0.30" for 50-YR event
 Inflow = 0.01 cfs @ 12.56 hrs, Volume= 0.002 af
 Outflow = 0.00 cfs @ 12.45 hrs, Volume= 0.001 af, Atten= 83%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 12.45 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 23.99' @ 20.00 hrs Surf.Area= 251 sf Storage= 49 cf

Plug-Flow detention time= 178.7 min calculated for 0.001 af (39% of inflow)
 Center-of-Mass det. time= 53.2 min (971.6 - 918.3)

Volume	Invert	Avail.Storage	Storage Description
#1	23.50'	151 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 377 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.50	251	0	0
24.00	251	126	126
25.00	251	251	377

Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	65.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	23.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.45 hrs HW=23.52' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

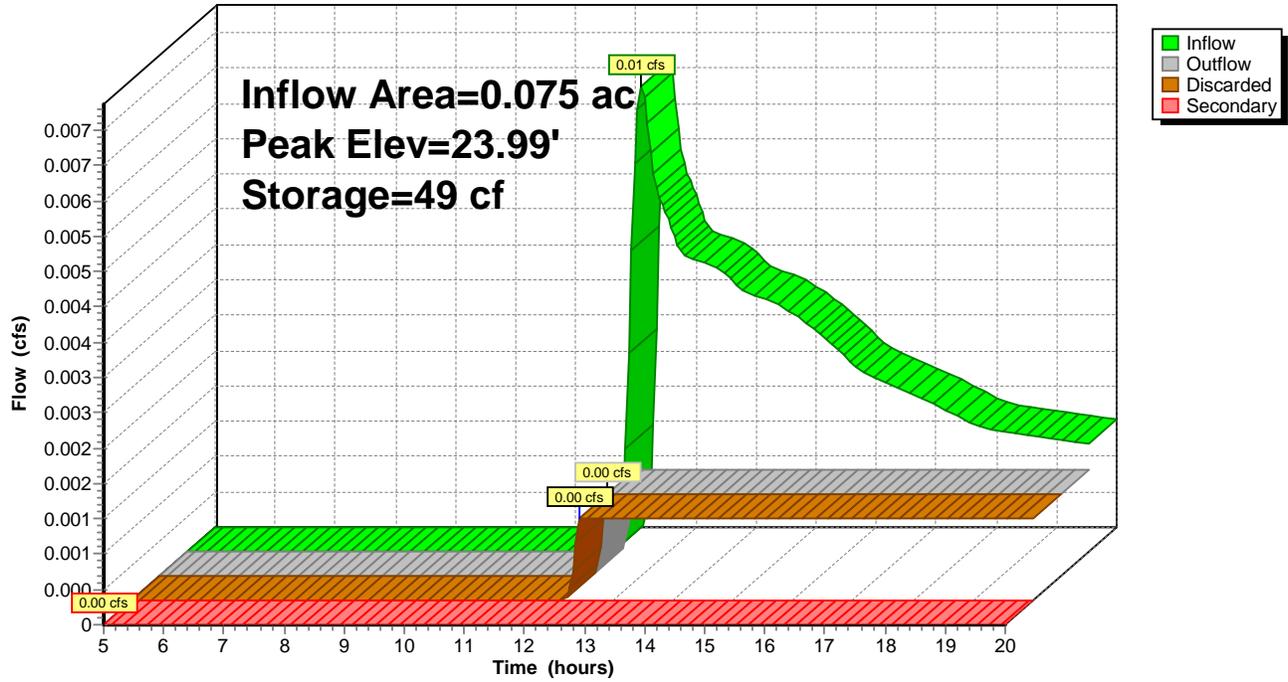
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 261

Pond GT-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 262

Summary for Pond GT-3:

Inflow Area = 0.030 ac, 0.00% Impervious, Inflow Depth > 0.25" for 50-YR event
 Inflow = 0.00 cfs @ 12.46 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 12.45 hrs, Volume= 0.000 af, Atten= 78%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 12.45 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 27.90' @ 20.00 hrs Surf.Area= 94 sf Storage= 15 cf

Plug-Flow detention time= 165.2 min calculated for 0.000 af (44% of inflow)
 Center-of-Mass det. time= 47.2 min (971.0 - 923.8)

Volume	Invert	Avail.Storage	Storage Description
#1	27.50'	56 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 141 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.50	94	0	0
28.00	94	47	47
29.00	94	94	141

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	30.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	27.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.45 hrs HW=27.52' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

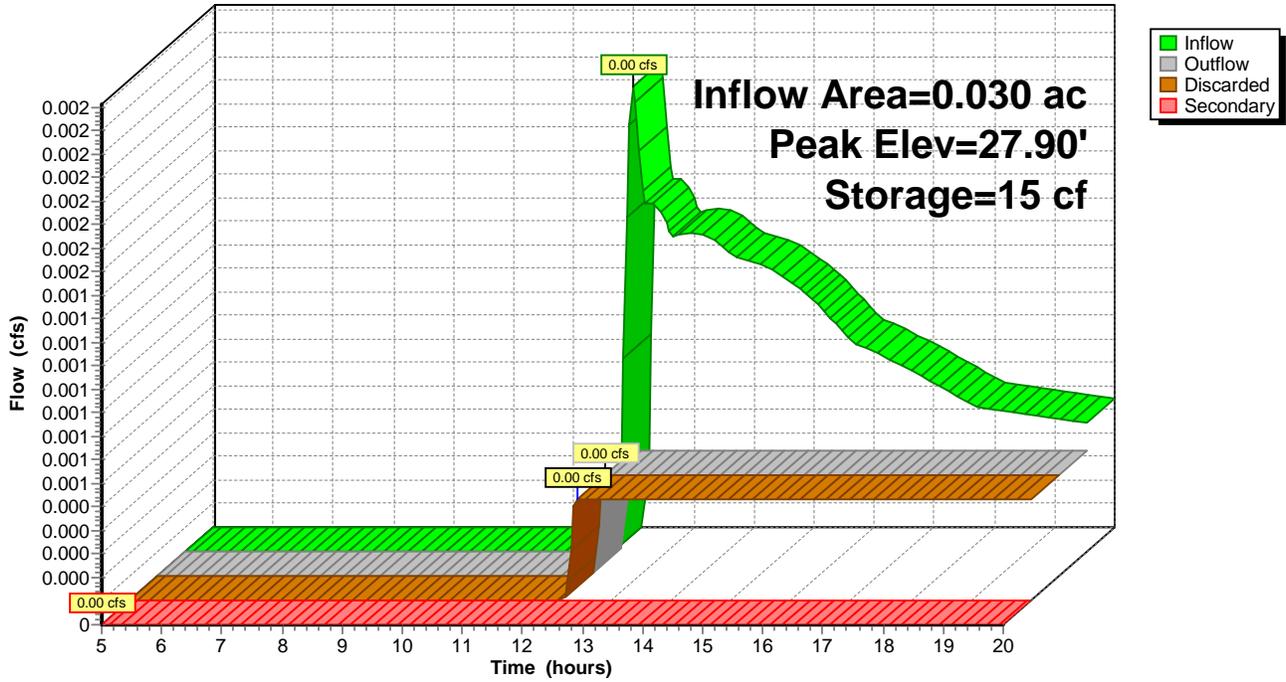
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 263

Pond GT-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 264

Summary for Pond GT-4:

Inflow Area = 0.126 ac, 0.00% Impervious, Inflow Depth > 0.60" for 50-YR event
 Inflow = 0.04 cfs @ 12.28 hrs, Volume= 0.006 af
 Outflow = 0.00 cfs @ 12.10 hrs, Volume= 0.001 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 12.10 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 21.87' @ 20.00 hrs Surf.Area= 405 sf Storage= 222 cf

Plug-Flow detention time= 227.4 min calculated for 0.001 af (19% of inflow)
 Center-of-Mass det. time= 87.7 min (962.7 - 875.0)

Volume	Invert	Avail.Storage	Storage Description
#1	20.50'	405 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,013 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.50	405	0	0
21.00	405	203	203
22.00	405	405	608
23.00	405	405	1,013

Device	Routing	Invert	Outlet Devices
#1	Secondary	23.00'	74.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.10 hrs HW=20.53' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

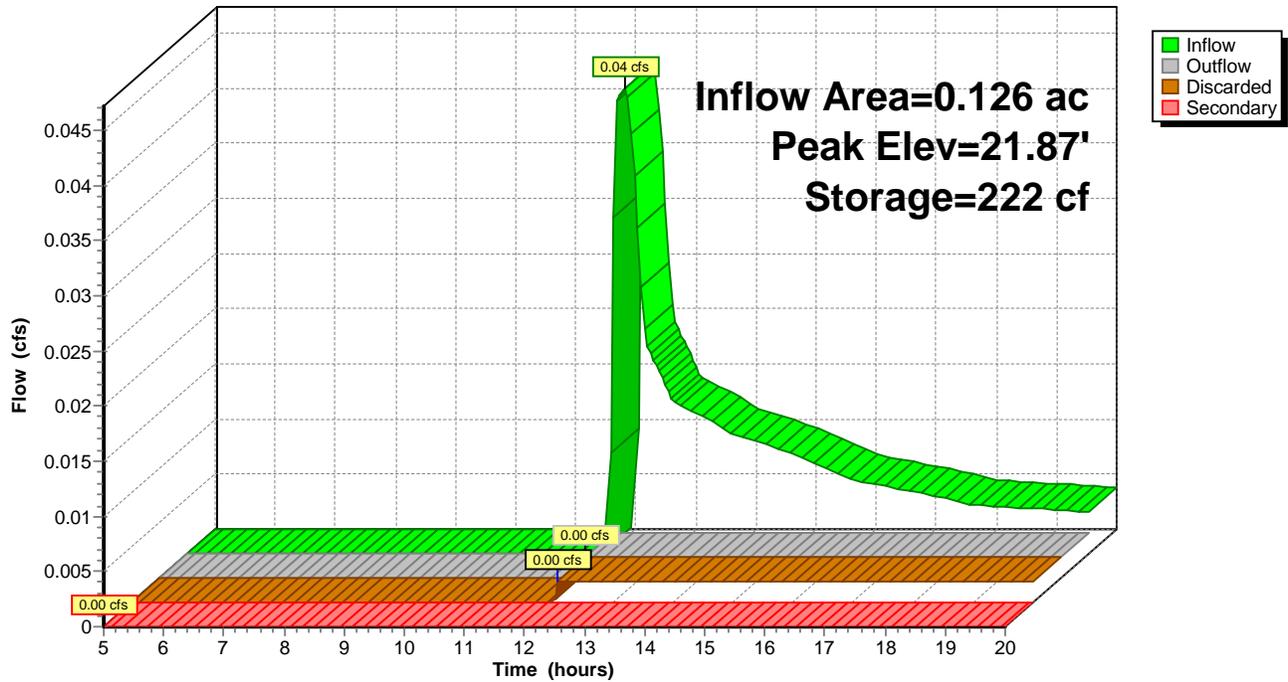
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 265

Pond GT-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 266

Summary for Pond GT-5:

Inflow Area = 0.113 ac, 34.51% Impervious, Inflow Depth > 3.87" for 50-YR event
 Inflow = 0.54 cfs @ 12.09 hrs, Volume= 0.036 af
 Outflow = 0.03 cfs @ 11.45 hrs, Volume= 0.027 af, Atten= 94%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.45 hrs, Volume= 0.027 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-4 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 24.03' @ 14.08 hrs Surf.Area= 640 sf Storage= 775 cf

Plug-Flow detention time= 184.2 min calculated for 0.027 af (73% of inflow)
 Center-of-Mass det. time= 122.0 min (909.7 - 787.8)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	1,024 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 2,560 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	640	0	0
22.00	640	640	640
23.00	640	640	1,280
24.00	640	640	1,920
25.00	640	640	2,560

Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	136.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	21.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.45 hrs HW=21.04' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=21.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

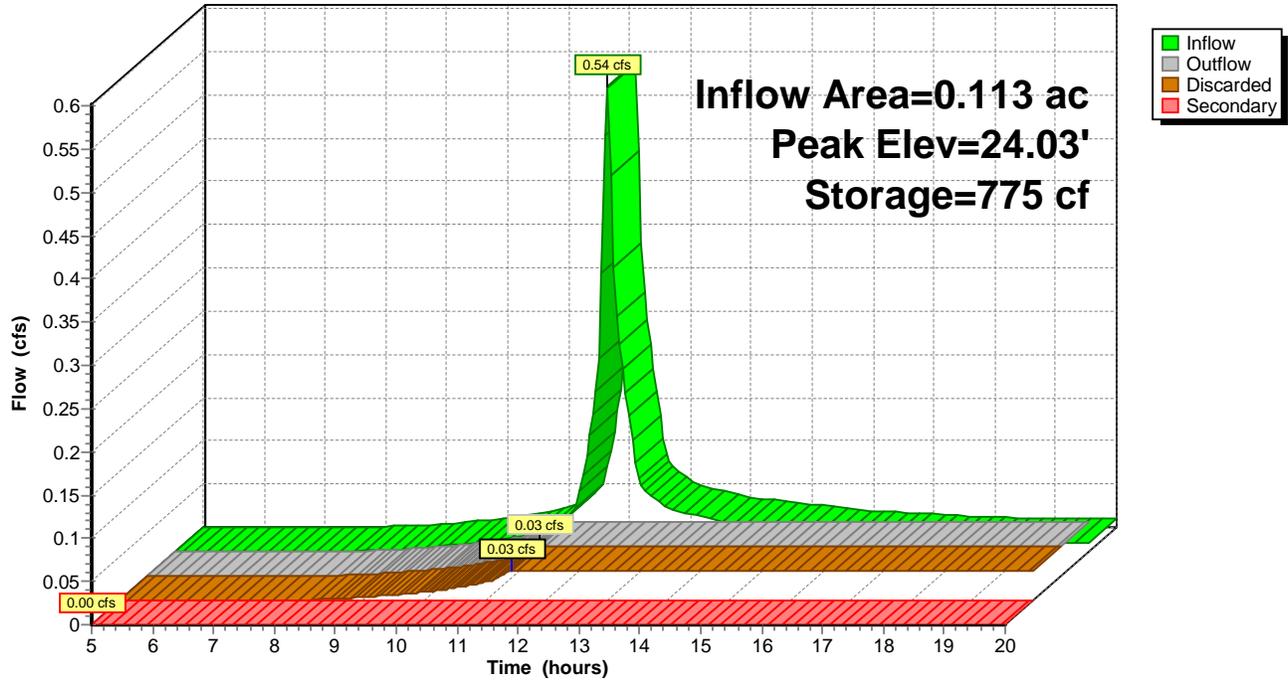
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 267

Pond GT-5:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 268

Summary for Pond GT-6:

Inflow Area = 0.093 ac, 17.20% Impervious, Inflow Depth > 2.07" for 50-YR event
 Inflow = 0.19 cfs @ 12.17 hrs, Volume= 0.016 af
 Outflow = 0.07 cfs @ 12.05 hrs, Volume= 0.016 af, Atten= 64%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 12.05 hrs, Volume= 0.016 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 25.77' @ 12.57 hrs Surf.Area= 252 sf Storage= 128 cf

Plug-Flow detention time= 10.1 min calculated for 0.016 af (100% of inflow)
 Center-of-Mass det. time= 10.0 min (833.6 - 823.6)

Volume	Invert	Avail.Storage	Storage Description
#1	24.50'	252 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 630 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.50	252	0	0
25.00	252	126	126
26.00	252	252	378
27.00	252	252	630

Device	Routing	Invert	Outlet Devices
#1	Secondary	27.00'	78.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	24.50'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 12.05 hrs HW=24.56' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=24.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

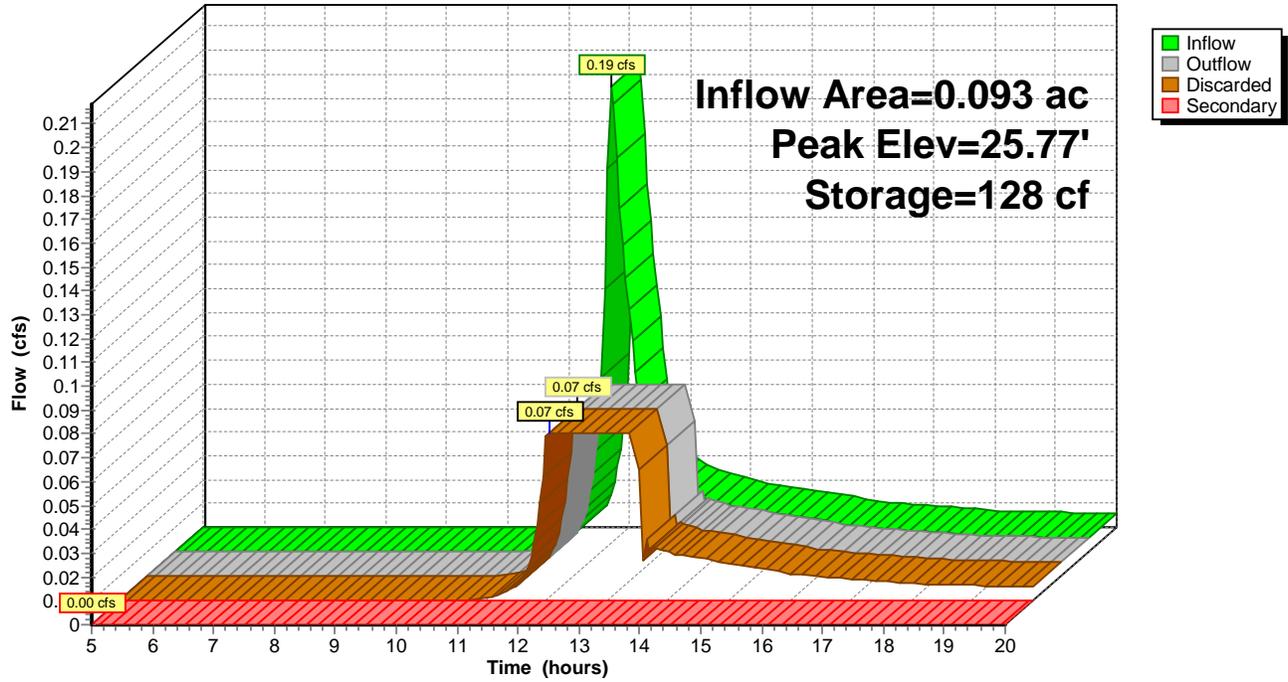
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 269

Pond GT-6:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 270

Summary for Pond IB-1:

Inflow Area = 0.739 ac, 49.80% Impervious, Inflow Depth > 1.35" for 50-YR event
 Inflow = 0.62 cfs @ 12.54 hrs, Volume= 0.083 af
 Outflow = 0.01 cfs @ 20.00 hrs, Volume= 0.006 af, Atten= 98%, Lag= 447.5 min
 Discarded = 0.01 cfs @ 20.00 hrs, Volume= 0.006 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 27.16' @ 20.00 hrs Surf.Area= 2,349 sf Storage= 3,363 cf

Plug-Flow detention time= 249.9 min calculated for 0.006 af (7% of inflow)
 Center-of-Mass det. time= 109.3 min (991.3 - 882.0)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	8,279 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	23.00'	170 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			424 cf Overall x 40.0% Voids
		8,448 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	858	0	0
26.00	1,419	1,139	1,139
27.00	2,033	1,726	2,865
28.00	2,694	2,364	5,228
28.60	3,109	1,741	6,969
29.00	3,440	1,310	8,279

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	212	0	0
24.00	212	212	212
25.00	212	212	424

Device	Routing	Invert	Outlet Devices
#1	Secondary	28.60'	10.0' long + 2.0 ' SideZ x 4.2' breadth Overflow Riprap Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.53 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.67 2.71 2.72 2.74 2.77 2.85 3.01 3.23
#2	Discarded	23.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 20.00 hrs HW=27.16' (Free Discharge)
 ↳2=Exfiltration (Exfiltration Controls 0.01 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.00' (Free Discharge)
 ↳1=Overflow Riprap Spillway (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

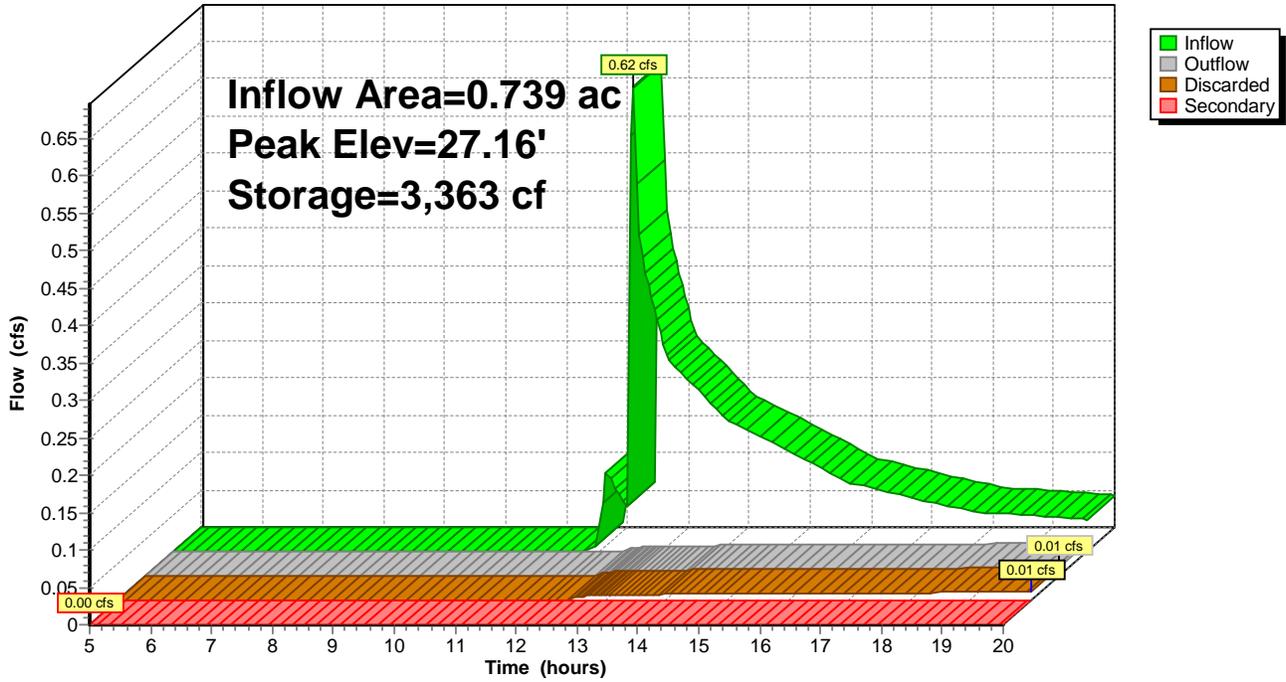
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 271

Pond IB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 272

Summary for Pond IB-2:

Inflow Area = 3.234 ac, 71.74% Impervious, Inflow Depth > 0.19" for 50-YR event
 Inflow = 3.43 cfs @ 12.26 hrs, Volume= 0.050 af
 Outflow = 0.47 cfs @ 12.57 hrs, Volume= 0.050 af, Atten= 86%, Lag= 18.7 min
 Discarded = 0.47 cfs @ 12.57 hrs, Volume= 0.050 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 29.03' @ 12.57 hrs Surf.Area= 1,671 sf Storage= 1,466 cf

Plug-Flow detention time= 33.6 min calculated for 0.050 af (100% of inflow)
 Center-of-Mass det. time= 33.6 min (779.7 - 746.2)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	5,261 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	25.00'	115 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
		288 cf Overall x 40.0% Voids	
		5,376 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	1,104	0	0
29.00	1,514	1,309	1,309
30.00	1,966	1,740	3,049
30.70	2,305	1,495	4,544
31.00	2,475	717	5,261

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	144	0	0
26.00	144	144	144
27.00	144	144	288

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	100.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area
#3	Primary	26.96'	12.0" Round 12" HDPE Pipe L= 36.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 26.96' / 26.60' S= 0.0100 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	29.79'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 273

Discarded OutFlow Max=0.47 cfs @ 12.57 hrs HW=29.02' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.47 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)

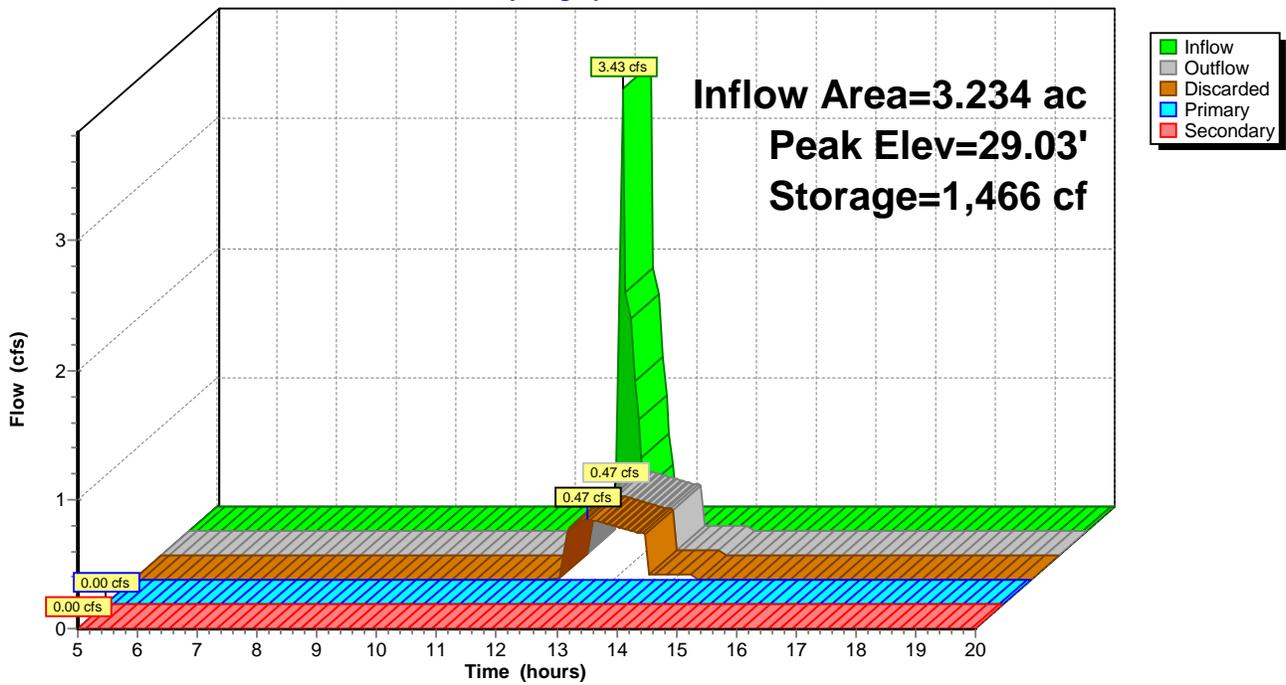
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond IB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 274

Summary for Pond IB-3:

Inflow Area = 3.433 ac, 68.31% Impervious, Inflow Depth > 0.06" for 50-YR event
 Inflow = 0.22 cfs @ 12.12 hrs, Volume= 0.019 af
 Outflow = 0.13 cfs @ 12.32 hrs, Volume= 0.019 af, Atten= 39%, Lag= 12.6 min
 Discarded = 0.13 cfs @ 12.32 hrs, Volume= 0.019 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-6 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.13' @ 12.32 hrs Surf.Area= 481 sf Storage= 57 cf

Plug-Flow detention time= 3.0 min calculated for 0.018 af (100% of inflow)
 Center-of-Mass det. time= 2.6 min (848.6 - 846.0)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	4,615 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	385	0	0
27.00	1,121	753	753
28.00	1,917	1,519	2,272
29.00	2,768	2,343	4,615

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	309.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	26.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.13 cfs @ 12.32 hrs HW=26.13' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.13 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=26.00' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

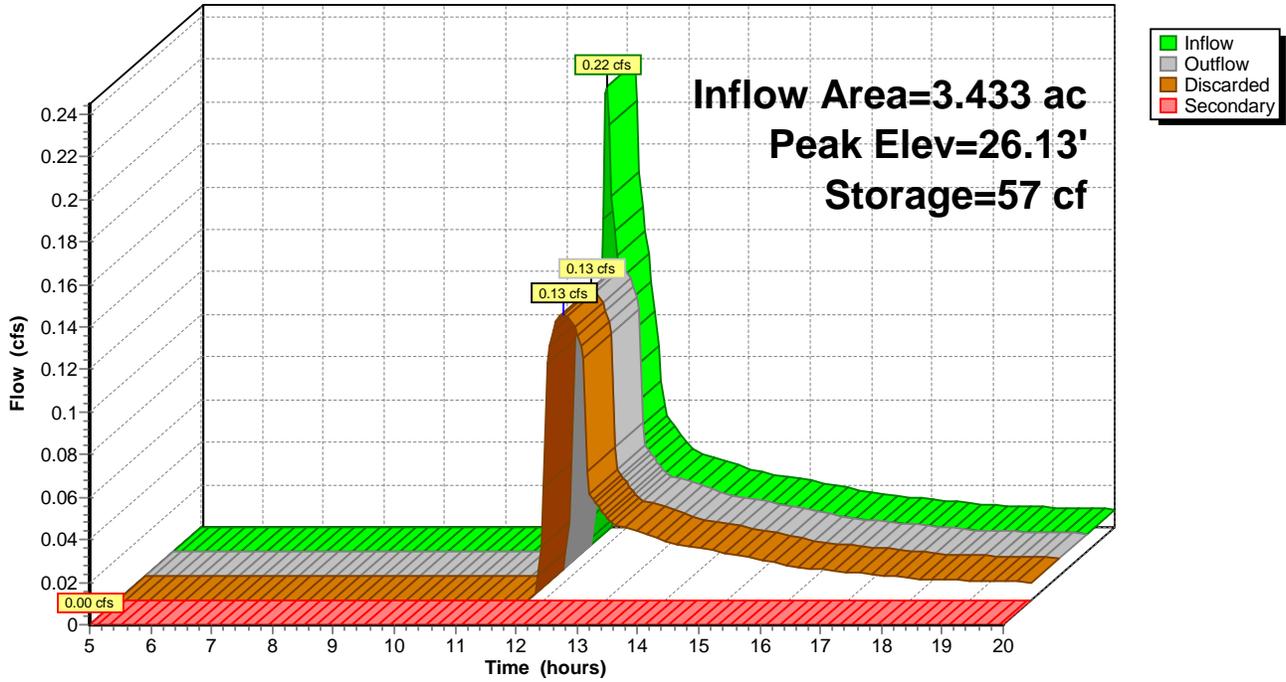
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 275

Pond IB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 276

Summary for Pond RG-1:

Inflow Area = 2.072 ac, 73.41% Impervious, Inflow Depth > 4.99" for 50-YR event
 Inflow = 11.08 cfs @ 12.09 hrs, Volume= 0.862 af
 Outflow = 0.52 cfs @ 14.85 hrs, Volume= 0.398 af, Atten= 95%, Lag= 165.5 min
 Discarded = 0.52 cfs @ 14.85 hrs, Volume= 0.398 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond FB-2 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.60' @ 14.85 hrs Surf.Area= 9,940 sf Storage= 24,360 cf

Plug-Flow detention time= 245.3 min calculated for 0.396 af (46% of inflow)
 Center-of-Mass det. time= 148.7 min (899.6 - 750.8)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	37,288 cf	Rain Garden Stage Storage (Prismatic) Listed below (Recalc)
#2	22.00'	1,512 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			3,780 cf Overall x 40.0% Voids
		38,800 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	1,696	0	0
27.00	2,683	2,190	2,190
27.50	3,497	1,545	3,735
28.00	4,266	1,941	5,675
29.00	6,024	5,145	10,820
30.00	7,856	6,940	17,760
31.00	9,743	8,800	26,560
32.00	11,713	10,728	37,288

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	945	0	0
23.00	945	945	945
24.00	945	945	1,890
25.00	945	945	2,835
26.00	945	945	3,780

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	392.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	22.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	26.89'	12.0" Round 12" HDPE Pipe L= 40.0' CMP, projecting, no headwall, Ke= 0.900

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 277

#4 Device 3 30.93' Inlet / Outlet Invert= 26.89' / 26.49' S= 0.0100 ' /' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf
3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns
X 14 rows C= 0.600 in 18.0" Grate (71% open area)
Limited to weir flow at low heads

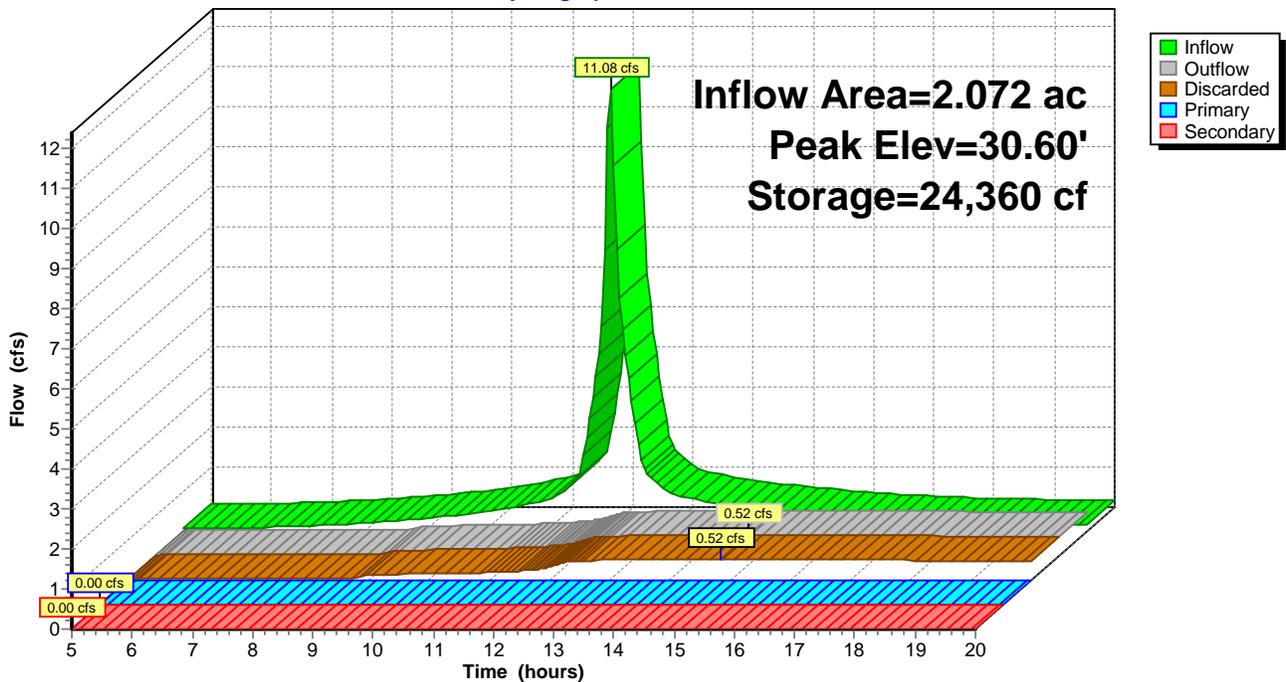
Discarded OutFlow Max=0.52 cfs @ 14.85 hrs HW=30.60' (Free Discharge)
↳ **2=Exfiltration** (Exfiltration Controls 0.52 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.01' (Free Discharge)
↳ **3=12" HDPE Pipe** (Controls 0.00 cfs)
↳ **4=18" Nyloplast Drain Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.01' (Free Discharge)
↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond RG-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 278

Summary for Pond SWB-1:

Inflow Area = 0.052 ac, 44.23% Impervious, Inflow Depth > 2.55" for 50-YR event
 Inflow = 0.16 cfs @ 12.10 hrs, Volume= 0.011 af
 Outflow = 0.02 cfs @ 12.91 hrs, Volume= 0.010 af, Atten= 87%, Lag= 49.0 min
 Discarded = 0.02 cfs @ 12.91 hrs, Volume= 0.010 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.93' @ 12.91 hrs Surf.Area= 393 sf Storage= 200 cf

Plug-Flow detention time= 122.3 min calculated for 0.010 af (94% of inflow)
 Center-of-Mass det. time= 103.1 min (913.5 - 810.5)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	896 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	60	0	0
30.50	219	70	70
31.00	423	161	230
32.00	908	666	896

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	168.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.80'	12.0" Round 12" HDPE Pipe L= 89.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.80' / 26.91' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.96'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.91 hrs HW=30.93' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.00 cfs of 3.89 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

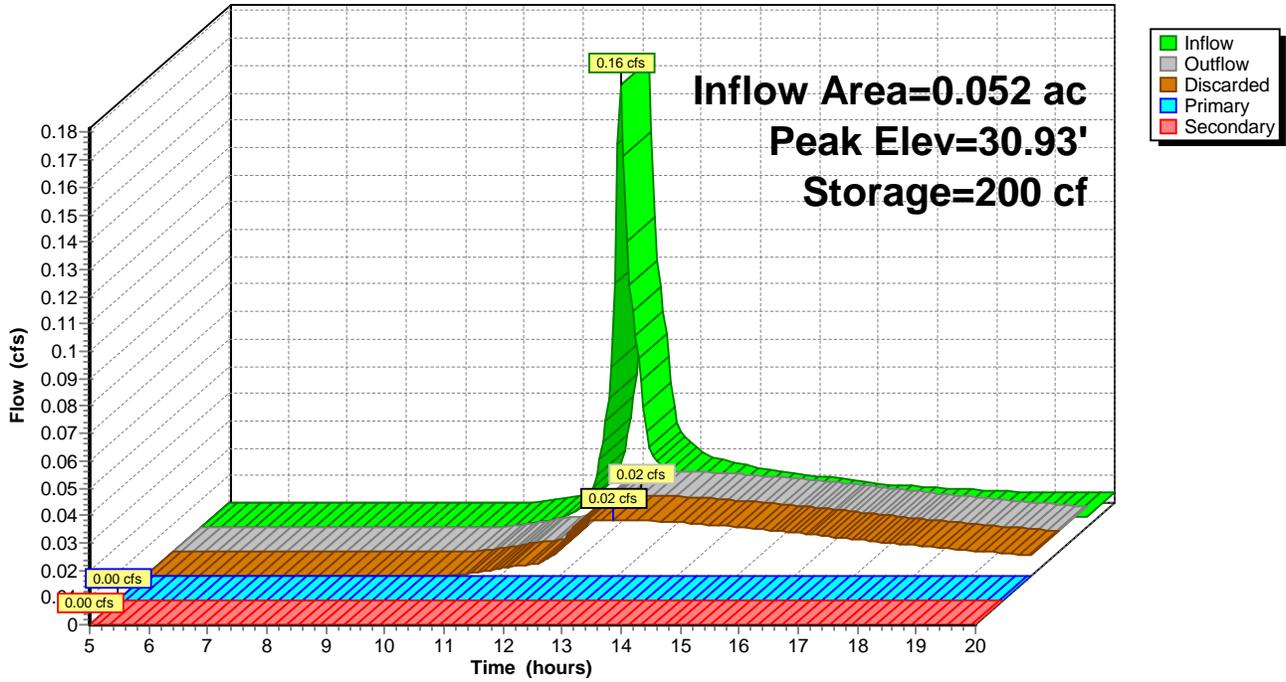
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 279

Pond SWB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 280

Summary for Pond SWB-2:

Inflow Area = 0.101 ac, 71.29% Impervious, Inflow Depth > 5.07" for 50-YR event
 Inflow = 0.61 cfs @ 12.09 hrs, Volume= 0.043 af
 Outflow = 0.60 cfs @ 12.10 hrs, Volume= 0.042 af, Atten= 1%, Lag= 0.9 min
 Discarded = 0.02 cfs @ 12.10 hrs, Volume= 0.017 af
 Primary = 0.58 cfs @ 12.10 hrs, Volume= 0.025 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.48' @ 12.10 hrs Surf.Area= 387 sf Storage= 144 cf

Plug-Flow detention time= 28.8 min calculated for 0.042 af (97% of inflow)
 Center-of-Mass det. time= 19.7 min (785.4 - 765.7)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	410 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	210	0	0
30.50	394	151	151
31.00	640	259	410

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	159.0' long + 3.0' /' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.10'	12.0" Round 12" HDPE Pipe L= 19.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.10' / 26.91' S= 0.0100 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.37'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.10 hrs HW=30.48' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.57 cfs @ 12.10 hrs HW=30.48' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.57 cfs of 5.07 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Weir Controls 0.57 cfs @ 1.09 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

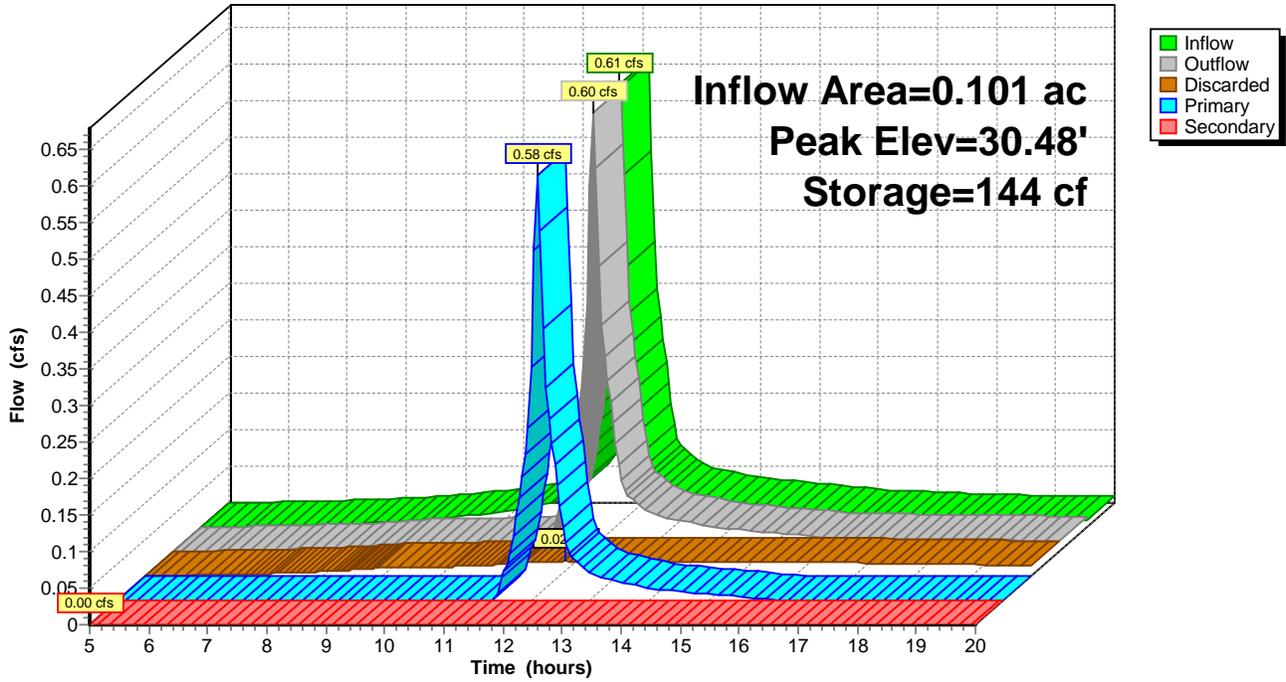
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 281

Pond SWB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 282

Summary for Pond SWB-3:

Inflow Area = 0.154 ac, 35.71% Impervious, Inflow Depth > 3.96" for 50-YR event
 Inflow = 0.58 cfs @ 12.20 hrs, Volume= 0.051 af
 Outflow = 0.58 cfs @ 12.21 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.6 min
 Discarded = 0.01 cfs @ 12.21 hrs, Volume= 0.012 af
 Primary = 0.57 cfs @ 12.21 hrs, Volume= 0.038 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.99' @ 12.21 hrs Surf.Area= 272 sf Storage= 89 cf

Plug-Flow detention time= 15.5 min calculated for 0.049 af (97% of inflow)
 Center-of-Mass det. time= 5.3 min (798.1 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	30.60'	510 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.60	182	0	0
31.00	274	91	91
31.50	412	172	263
32.00	576	247	510

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	114.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.60'	2.270 in/hr Exfiltration over Surface area
#3	Primary	25.96'	12.0" Round 12" HDPE Pipe L= 24.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 25.96' / 25.72' S= 0.0100 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.88'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.21 hrs HW=30.99' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.56 cfs @ 12.21 hrs HW=30.99' (Free Discharge)
 ↑**3=12" HDPE Pipe** (Passes 0.56 cfs of 6.35 cfs potential flow)
 ↑**4=18" Nyloplast Drain Grate** (Weir Controls 0.56 cfs @ 1.08 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.60' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

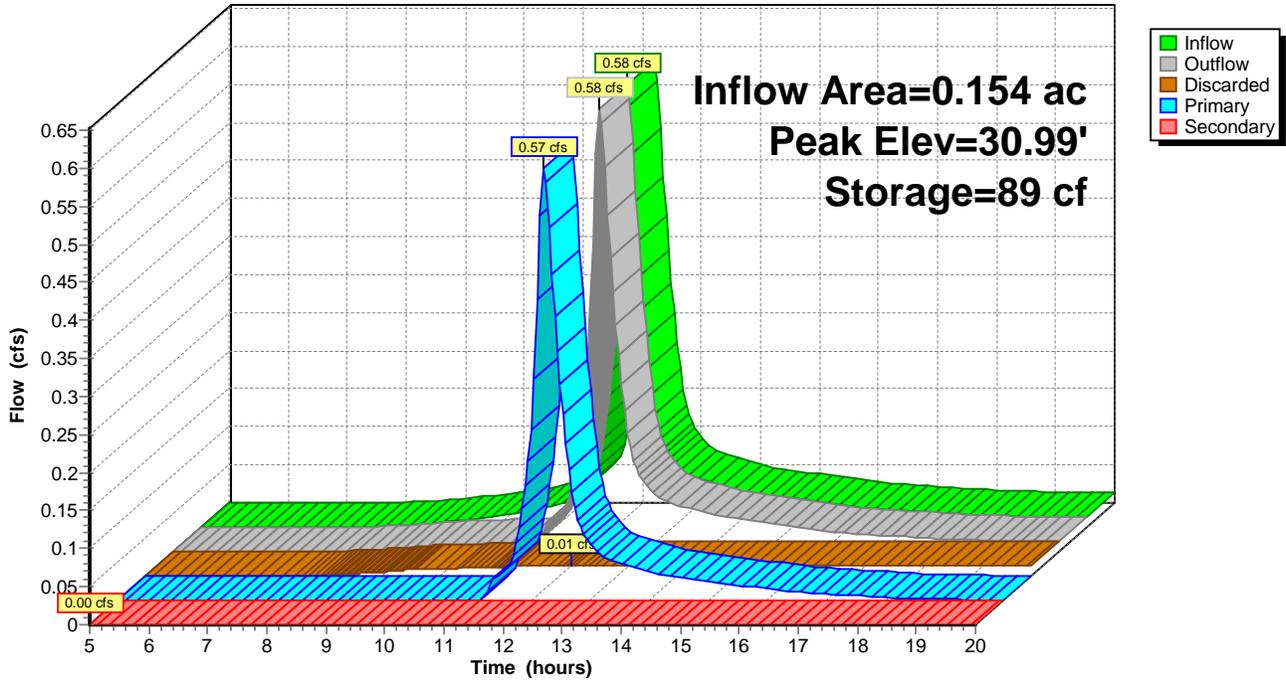
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 283

Pond SWB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 284

Summary for Pond UG-1:

Inflow Area = 0.575 ac, 72.70% Impervious, Inflow Depth > 4.32" for 50-YR event
 Inflow = 2.82 cfs @ 12.10 hrs, Volume= 0.207 af
 Outflow = 0.12 cfs @ 10.85 hrs, Volume= 0.120 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.12 cfs @ 10.85 hrs, Volume= 0.120 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 25.84' @ 14.67 hrs Surf.Area= 0.054 ac Storage= 0.118 af

Plug-Flow detention time= 165.2 min calculated for 0.119 af (58% of inflow)
 Center-of-Mass det. time= 95.4 min (837.7 - 742.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.69'	0.076 af	37.08'W x 63.06'L x 5.50'H Field A 0.295 af Overall - 0.104 af Embedded = 0.191 af x 40.0% Voids
#2A	23.44'	0.104 af	ADS_StormTech MC-3500 d +Cap x 40 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 40 Chambers in 5 Rows Cap Storage= 14.9 cf x 2 x 5 rows = 149.0 cf
		0.181 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.69'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 10.85 hrs HW=22.75' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.12 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

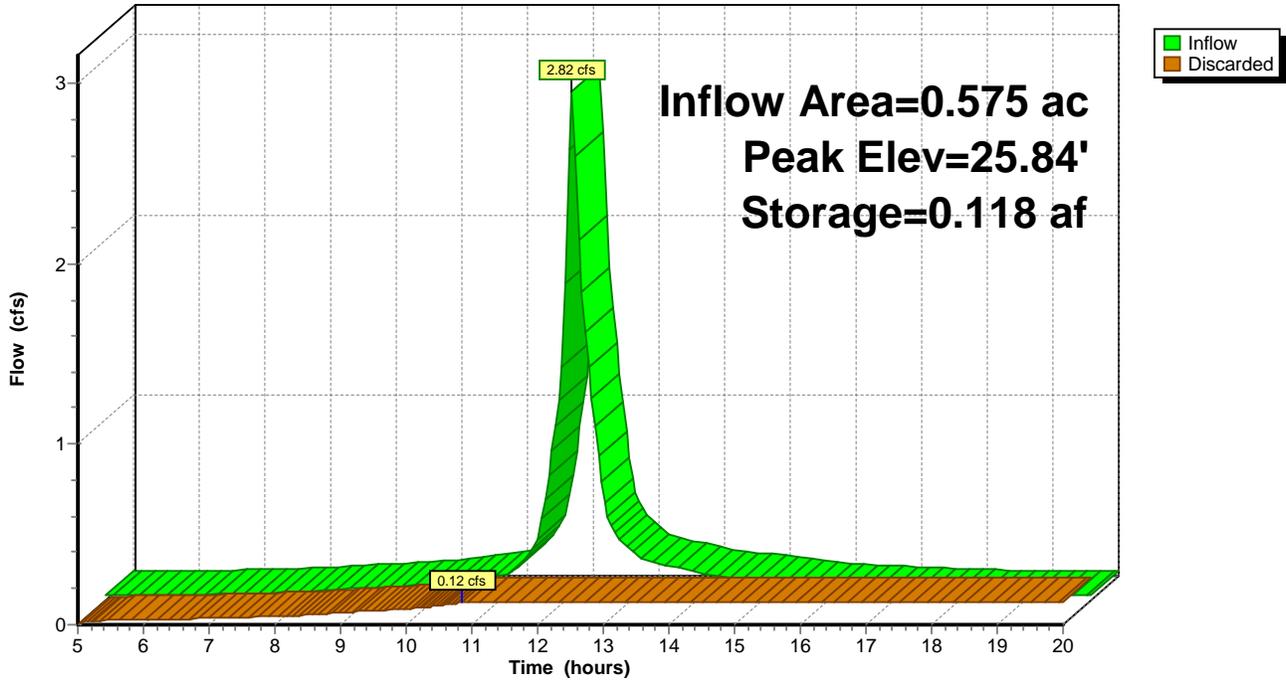
Type III 24-hr 50-YR Rainfall=7.24"

Printed 12/9/2025

Page 285

Pond UG-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 286

Summary for Subcatchment PR-01:

Runoff = 0.20 cfs @ 12.10 hrs, Volume= 0.014 af, Depth> 3.19"
Routed to Pond SWB-1 :

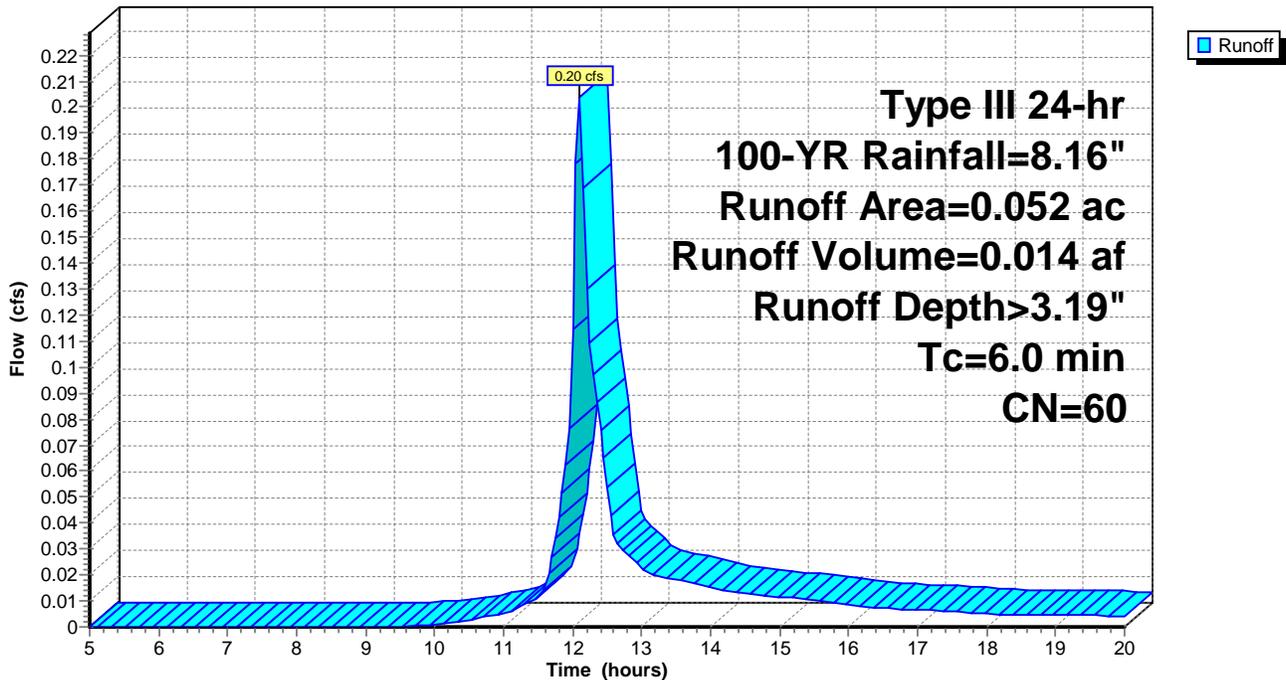
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.029	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.052	60	Weighted Average
0.029		55.77% Pervious Area
0.023		44.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-01:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 287

Summary for Subcatchment PR-02:

Runoff = 0.70 cfs @ 12.09 hrs, Volume= 0.050 af, Depth> 5.90"
 Routed to Pond SWB-2 :

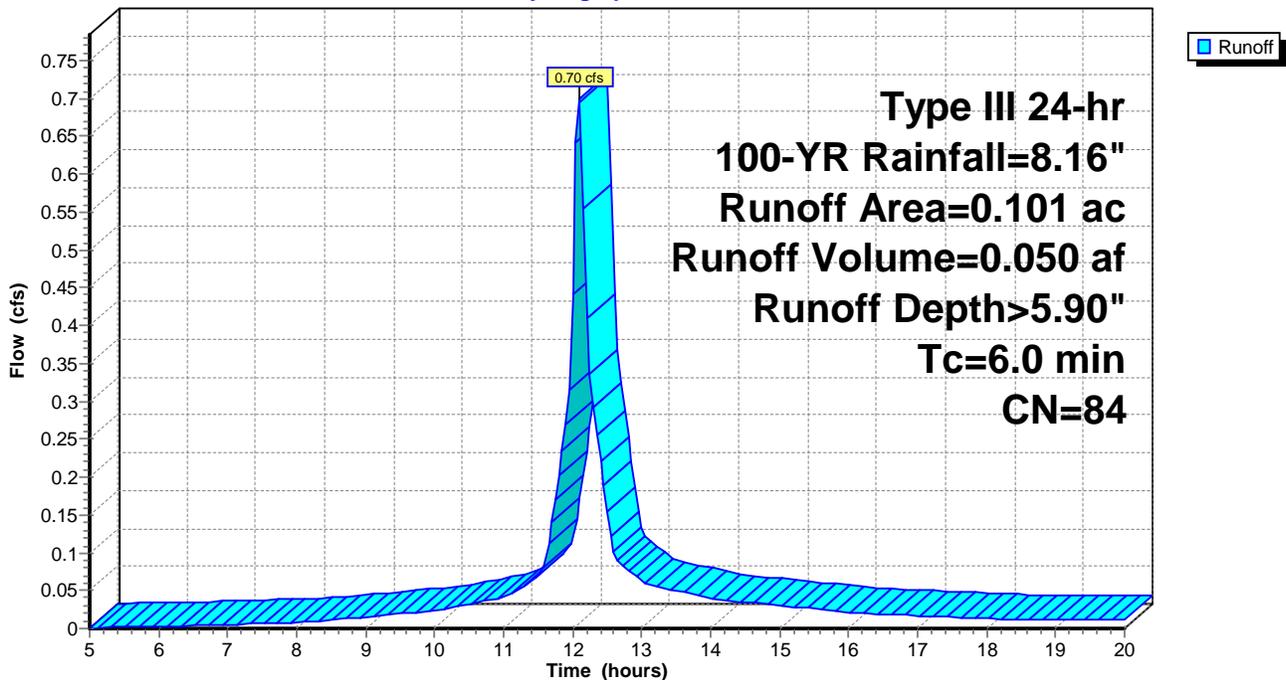
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.009	30	Meadow, non-grazed, HSG A
0.019	58	Meadow, non-grazed, HSG B
0.001	61	>75% Grass cover, Good, HSG B
* 0.072	98	Paved
0.101	84	Weighted Average
0.029		28.71% Pervious Area
0.072		71.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-02:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 288

Summary for Subcatchment PR-03:

Runoff = 0.69 cfs @ 12.20 hrs, Volume= 0.061 af, Depth> 4.74"
 Routed to Pond SWB-3 :

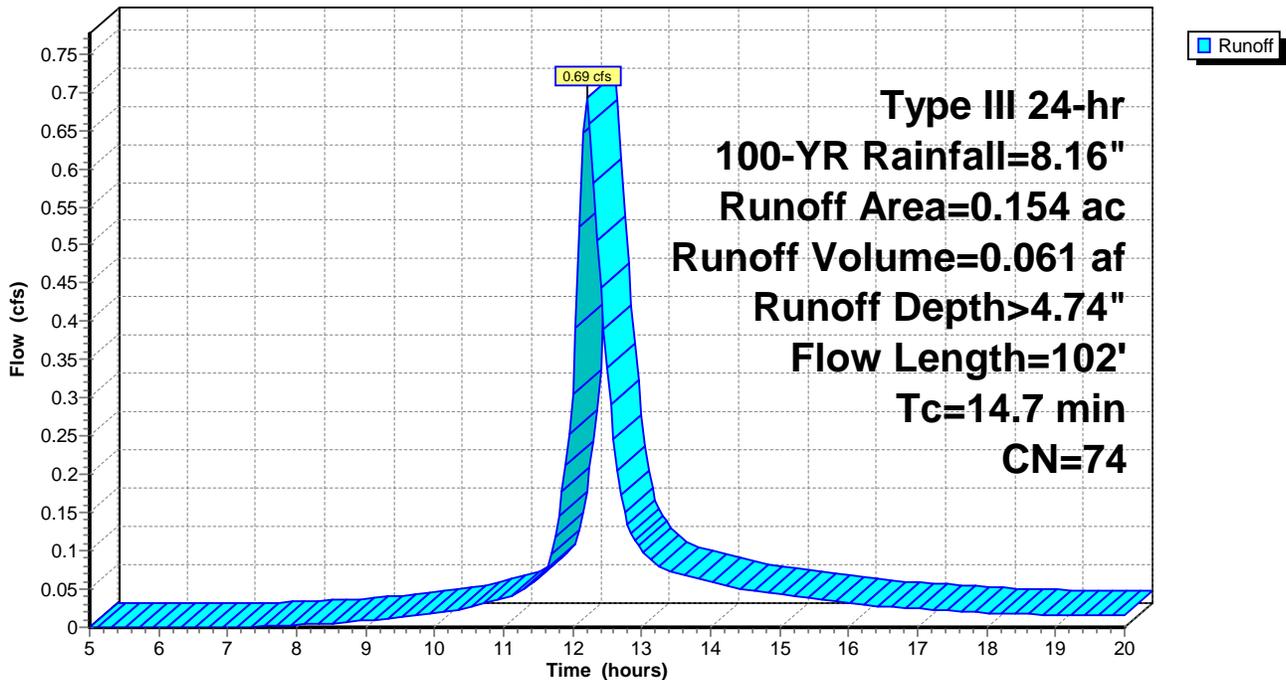
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.099	61	>75% Grass cover, Good, HSG B
* 0.055	98	Paved
0.154	74	Weighted Average
0.099		64.29% Pervious Area
0.055		35.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	83	0.0050	0.10		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.4	19	0.0130	0.80		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
14.7	102	Total			

Subcatchment PR-03:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 289

Summary for Subcatchment PR-04:

Runoff = 0.18 cfs @ 12.12 hrs, Volume= 0.015 af, Depth> 1.26"
Routed to Pond IB-1 :

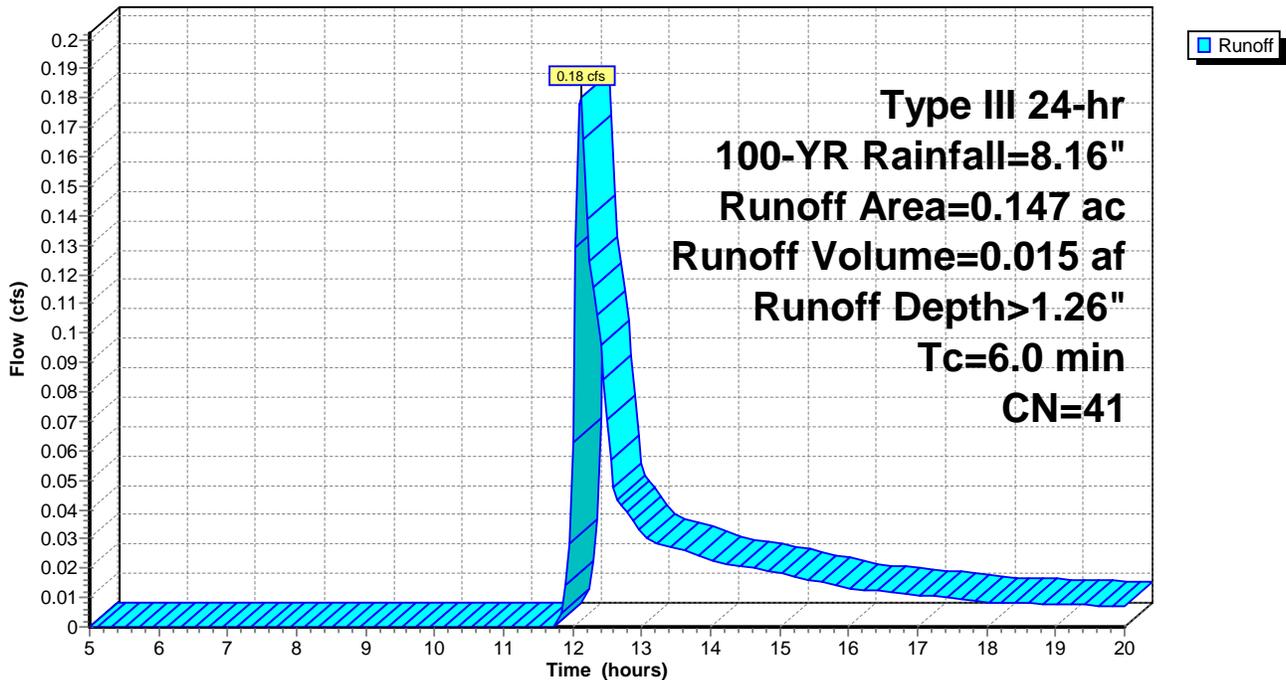
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.124	30	Meadow, non-grazed, HSG A
* 0.023	98	Paved
0.147	41	Weighted Average
0.124		84.35% Pervious Area
0.023		15.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-04:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 290

Summary for Subcatchment PR-05:

Runoff = 0.02 cfs @ 12.34 hrs, Volume= 0.003 af, Depth> 0.51"
 Routed to Pond FB-1 :

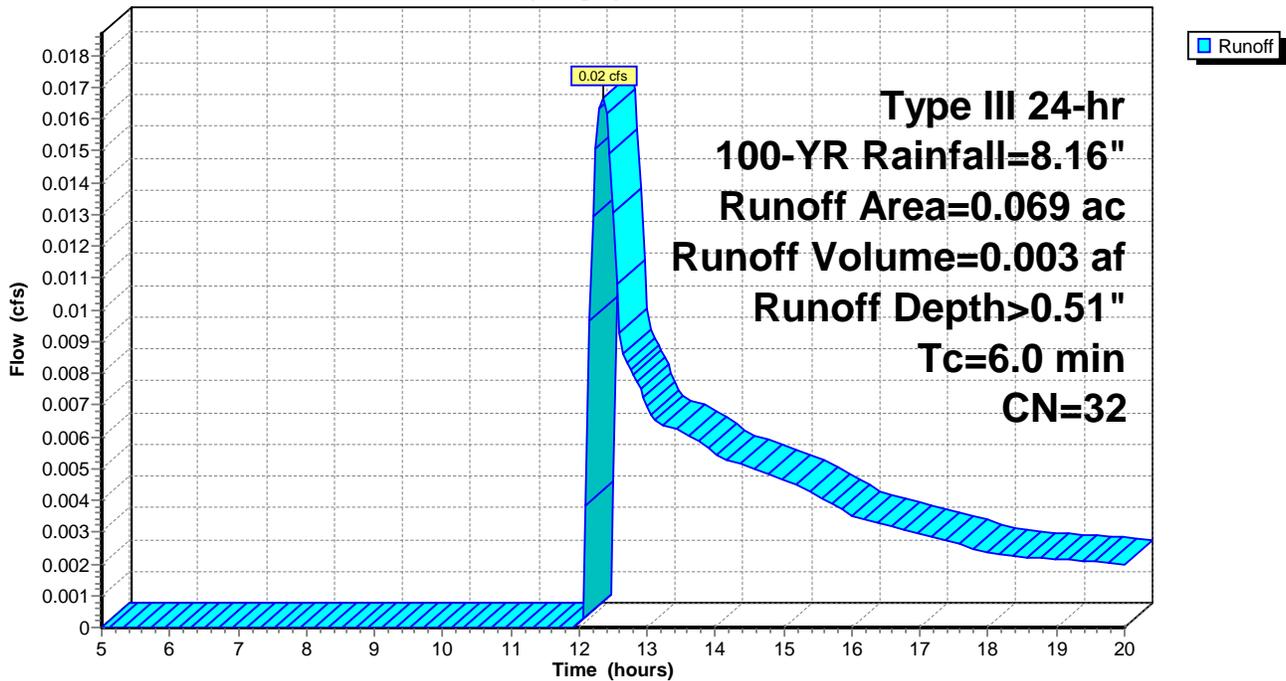
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.060	30	Meadow, non-grazed, HSG A
0.008	39	>75% Grass cover, Good, HSG A
* 0.001	98	Paved
0.069	32	Weighted Average
0.068		98.55% Pervious Area
0.001		1.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-05:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 291

Summary for Subcatchment PR-06:

Runoff = 1.75 cfs @ 12.09 hrs, Volume= 0.122 af, Depth> 5.32"

Routed to Pond FB-1 :

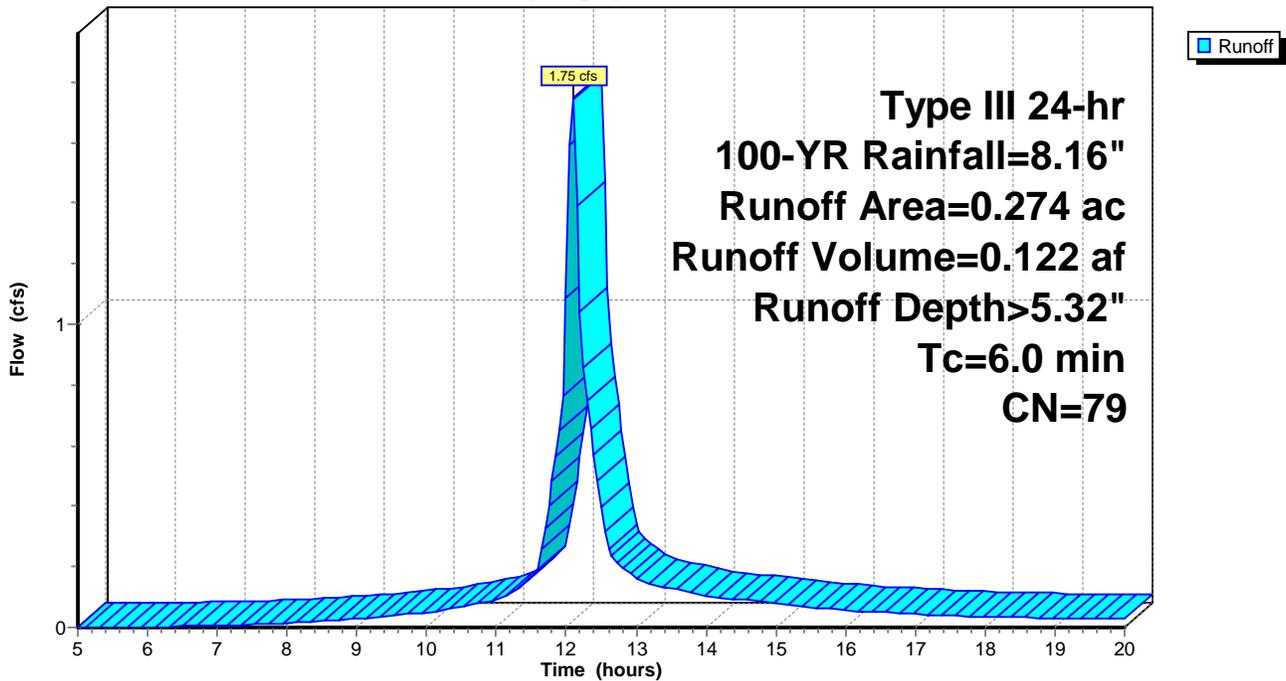
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.069	39	>75% Grass cover, Good, HSG A
0.018	30	Meadow, non-grazed, HSG A
* 0.187	98	Paved
0.274	79	Weighted Average
0.087		31.75% Pervious Area
0.187		68.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-06:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 292

Summary for Subcatchment PR-07:

Runoff = 1.51 cfs @ 12.09 hrs, Volume= 0.103 af, Depth> 4.98"

Routed to Pond FB-1 :

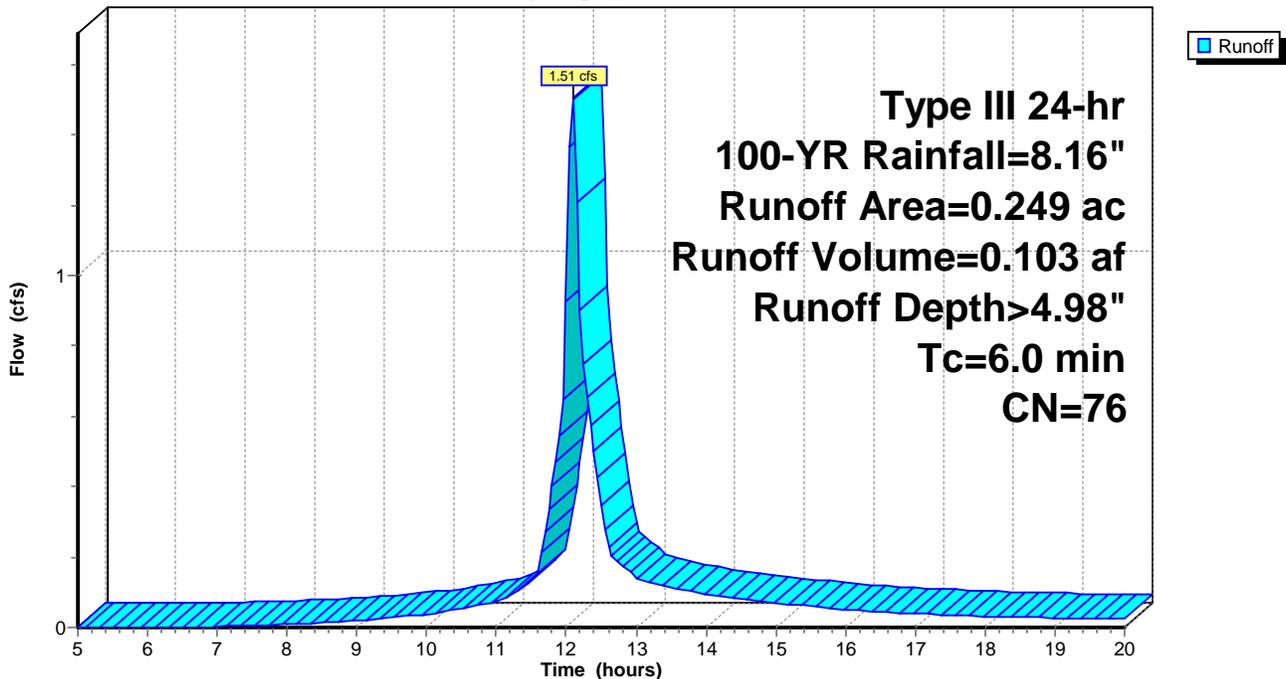
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.014	30	Meadow, non-grazed, HSG A
0.078	39	>75% Grass cover, Good, HSG A
* 0.157	98	Paved
0.249	76	Weighted Average
0.092		36.95% Pervious Area
0.157		63.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-07:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 293

Summary for Subcatchment PR-08:

Runoff = 0.06 cfs @ 12.37 hrs, Volume= 0.011 af, Depth> 0.44"
Routed to Pond RG-1 :

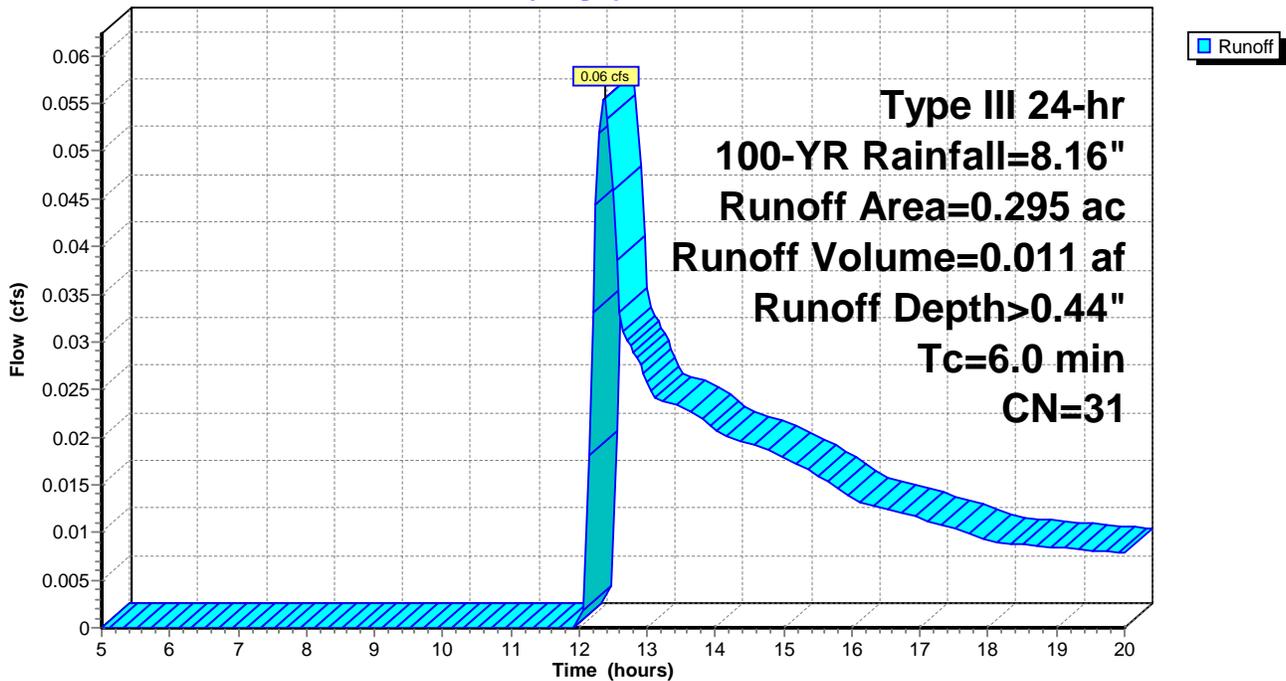
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.283	30	Brush, Good, HSG A
0.012	48	Brush, Good, HSG B
0.295	31	Weighted Average
0.295		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-08:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 294

Summary for Subcatchment PR-09:

Runoff = 1.24 cfs @ 12.18 hrs, Volume= 0.112 af, Depth> 6.34"
 Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.031	61	>75% Grass cover, Good, HSG B
0.000	58	Meadow, non-grazed, HSG B
* 0.162	98	Paved
0.211	88	Weighted Average
0.049		23.22% Pervious Area
0.162		76.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.0140	0.15		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.7	87	0.0150	0.86		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.0	9	0.0220	3.01		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	18	0.0310	1.23		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
0.2	39	0.0310	3.57		Shallow Concentrated Flow, E-F
					Paved Kv= 20.3 fps
0.1	28	0.0050	3.21	2.52	Pipe Channel, F-G
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.013
0.3	60	0.0050	3.47	2.73	Pipe Channel, G-H
					12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25'
					n= 0.012
13.5	341	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

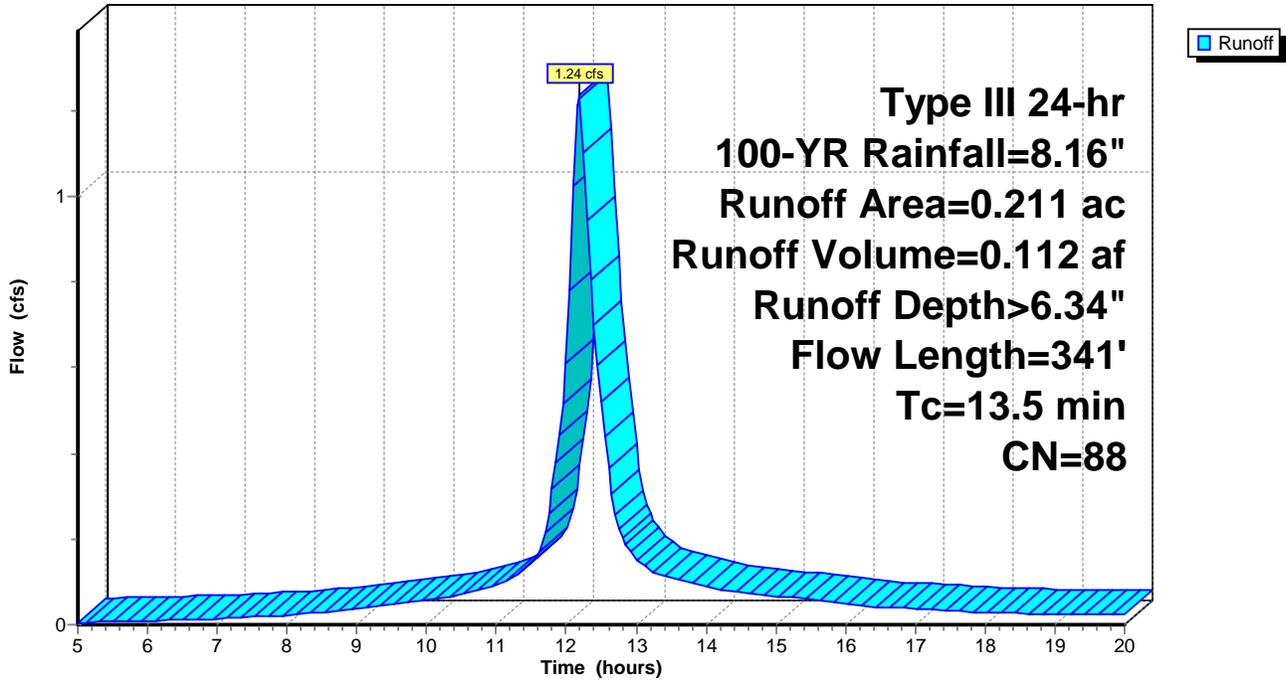
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 295

Subcatchment PR-09:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 296

Summary for Subcatchment PR-10:

Runoff = 0.87 cfs @ 12.09 hrs, Volume= 0.067 af, Depth> 7.15"
 Routed to Pond RG-1 :

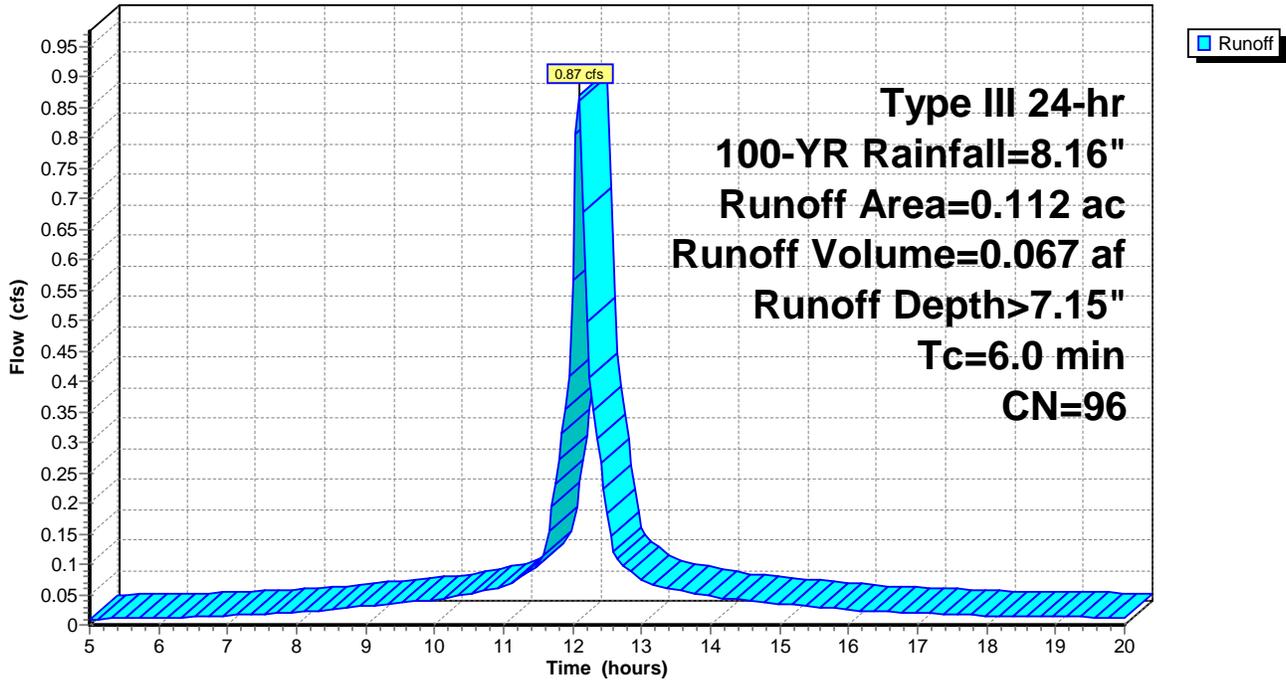
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.003	39	>75% Grass cover, Good, HSG A
* 0.109	98	Paved
0.112	96	Weighted Average
0.003		2.68% Pervious Area
0.109		97.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-10:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 297

Summary for Subcatchment PR-11:

Runoff = 2.14 cfs @ 12.09 hrs, Volume= 0.156 af, Depth> 6.46"
 Routed to Pond RG-1 :

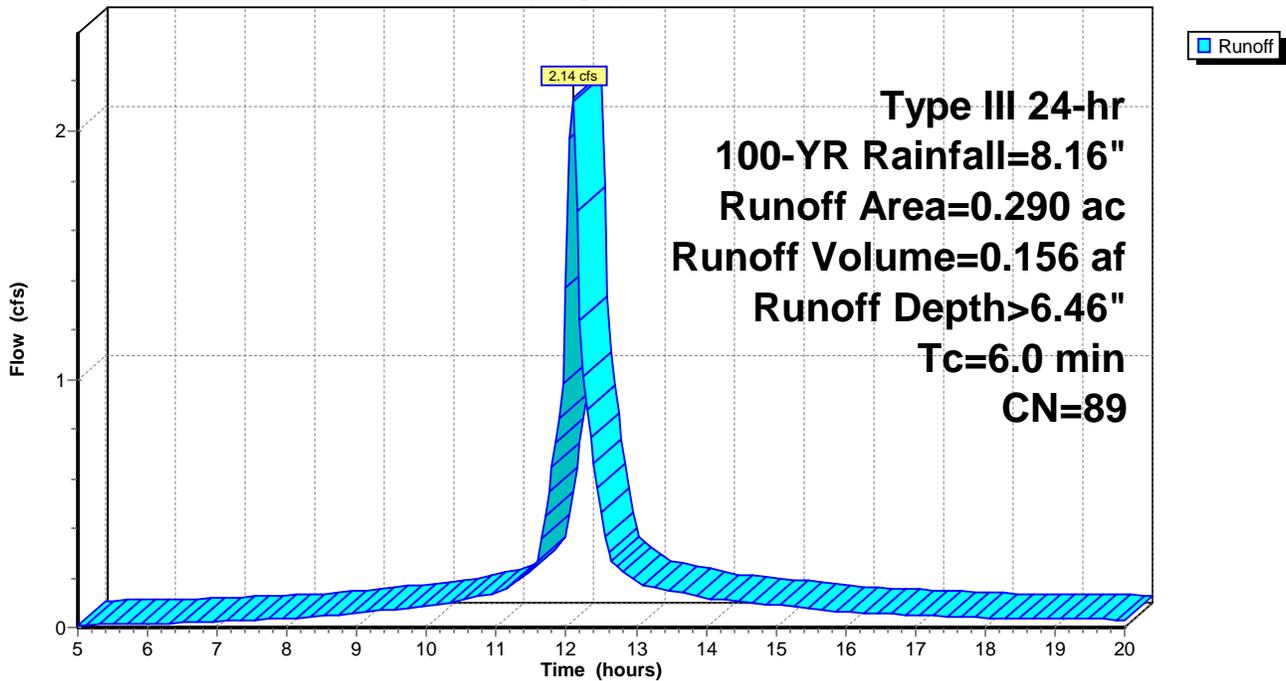
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.020	39	>75% Grass cover, Good, HSG A
0.040	61	>75% Grass cover, Good, HSG B
* 0.230	98	Paved
0.290	89	Weighted Average
0.060		20.69% Pervious Area
0.230		79.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-11:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 298

Summary for Subcatchment PR-12:

Runoff = 2.05 cfs @ 12.09 hrs, Volume= 0.152 af, Depth> 6.68"
 Routed to Pond RG-1 :

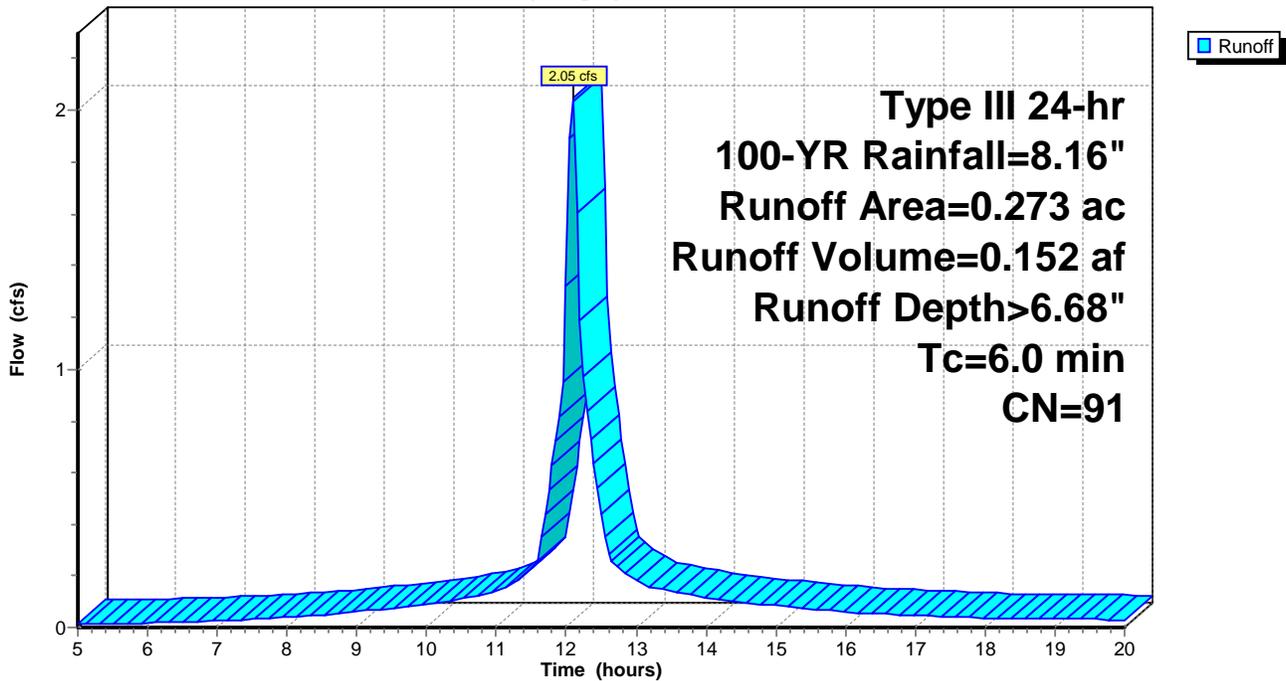
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.008	61	>75% Grass cover, Good, HSG B
* 0.237	98	Paved
0.273	91	Weighted Average
0.036		13.19% Pervious Area
0.237		86.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-12:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 299

Summary for Subcatchment PR-13:

Runoff = 1.25 cfs @ 12.09 hrs, Volume= 0.092 af, Depth> 6.68"

Routed to Pond RG-1 :

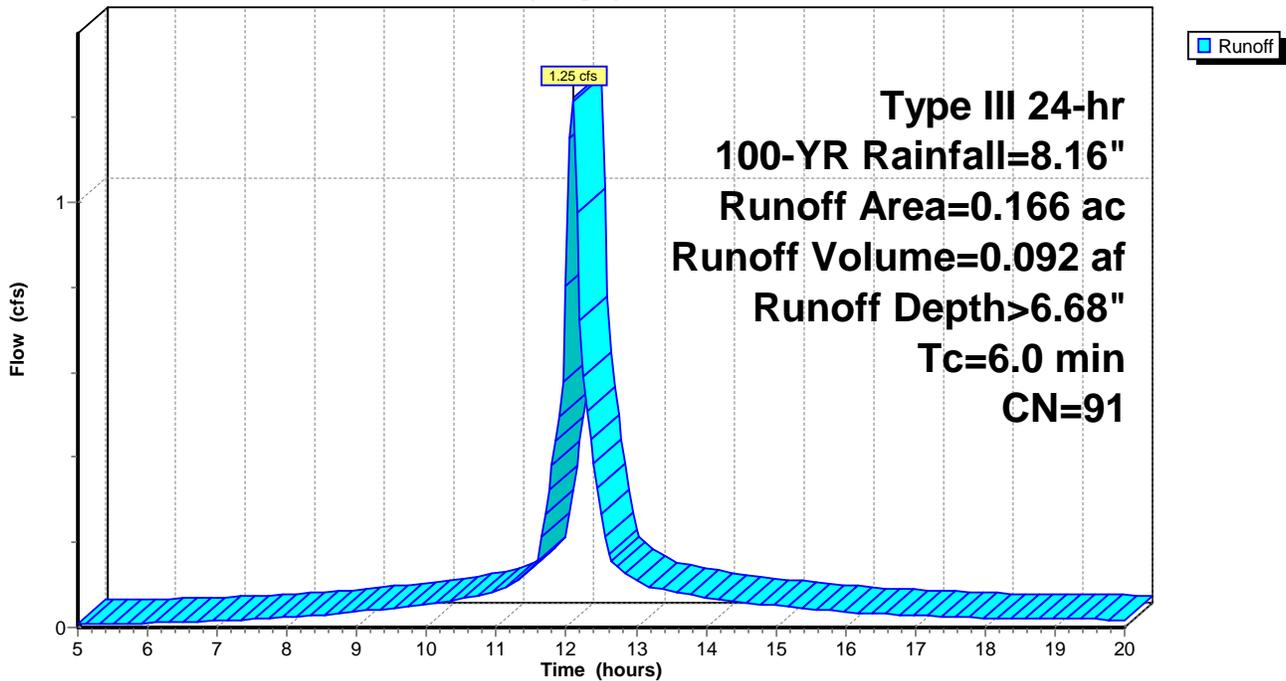
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.019	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
* 0.146	98	Paved
0.166	91	Weighted Average
0.020		12.05% Pervious Area
0.146		87.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-13:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 300

Summary for Subcatchment PR-14:

Runoff = 1.53 cfs @ 12.09 hrs, Volume= 0.110 af, Depth> 6.24"
 Routed to Pond RG-1 :

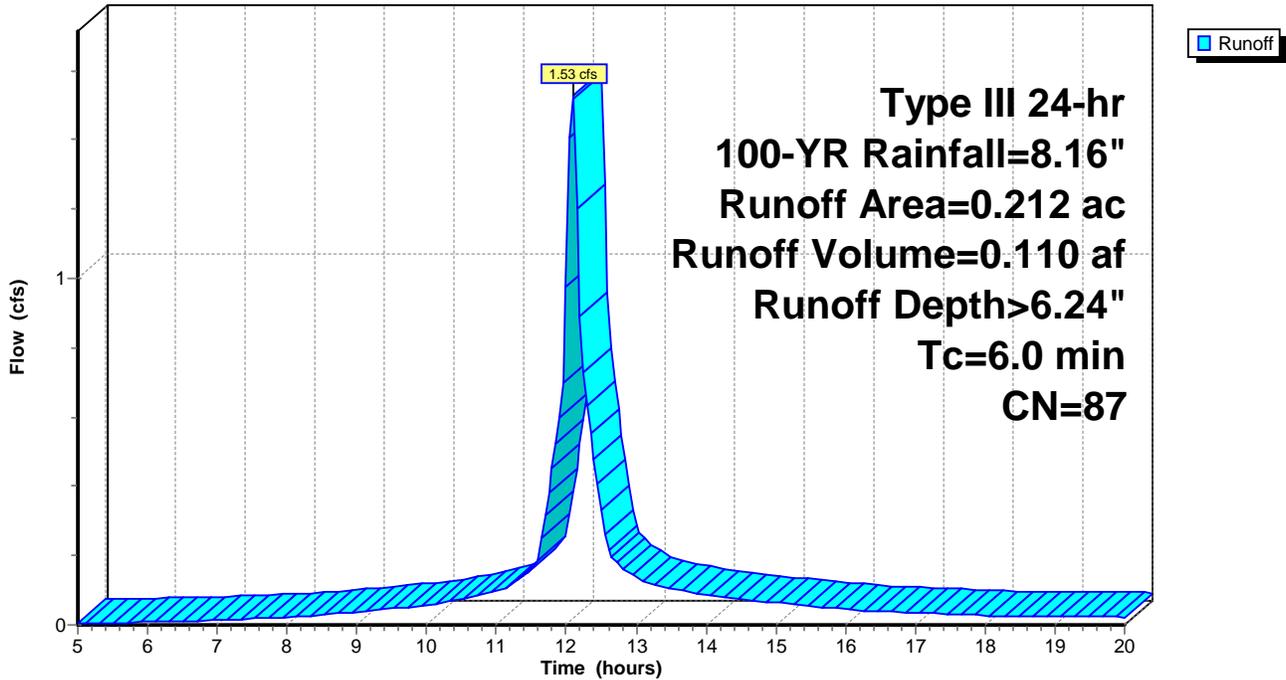
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.040	39	>75% Grass cover, Good, HSG A
* 0.172	98	Paved
0.212	87	Weighted Average
0.040		18.87% Pervious Area
0.172		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-14:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 301

Summary for Subcatchment PR-15:

Runoff = 0.85 cfs @ 12.10 hrs, Volume= 0.060 af, Depth> 5.44"
 Routed to Pond RG-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.030	39	>75% Grass cover, Good, HSG A
0.018	61	>75% Grass cover, Good, HSG B
* 0.085	98	Paved
0.133	80	Weighted Average
0.048		36.09% Pervious Area
0.085		63.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	62	0.0200	0.16		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.0	5	0.0200	2.87		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	52	0.0500	10.99	8.63	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	67	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.1	48	0.0100	5.70	7.00	Pipe Channel, E-F 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
6.9	234	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

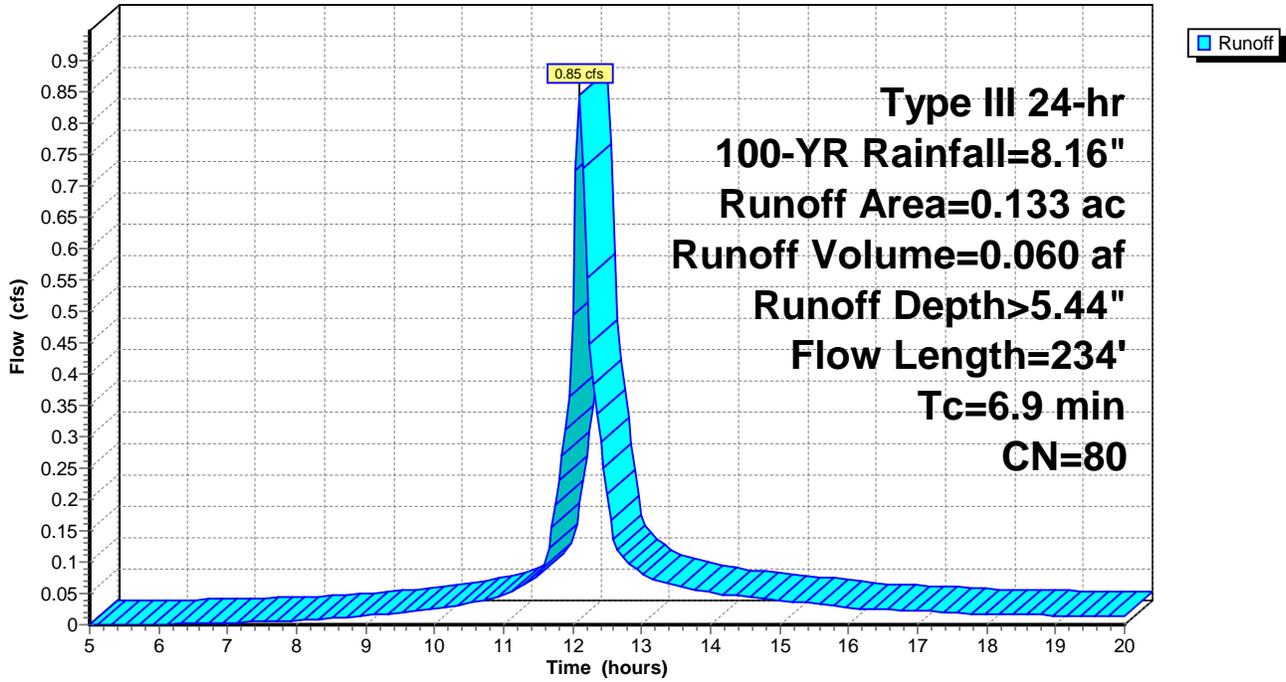
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 302

Subcatchment PR-15:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 303

Summary for Subcatchment PR-16:

Runoff = 0.01 cfs @ 12.40 hrs, Volume= 0.002 af, Depth> 0.37"

Routed to Pond IB-2 :

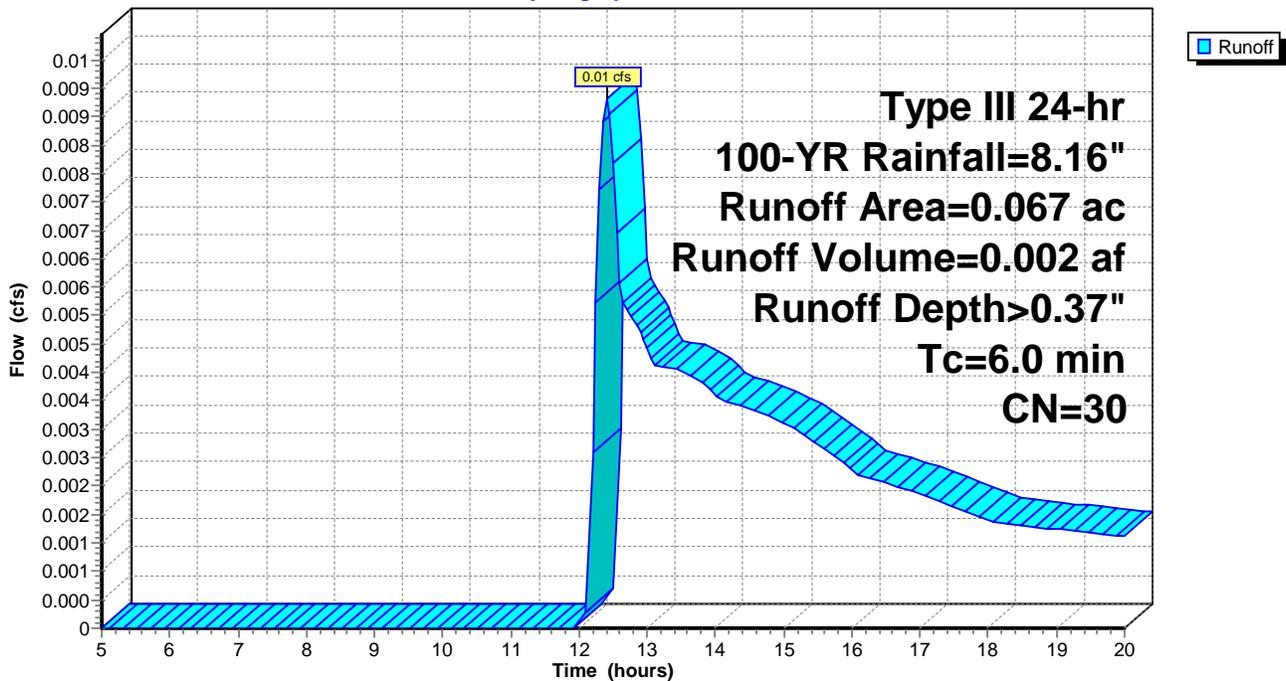
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.067	30	Brush, Good, HSG A
0.067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-16:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 304

Summary for Subcatchment PR-17:

Runoff = 0.01 cfs @ 12.40 hrs, Volume= 0.002 af, Depth> 0.37"

Routed to Pond FB-2 :

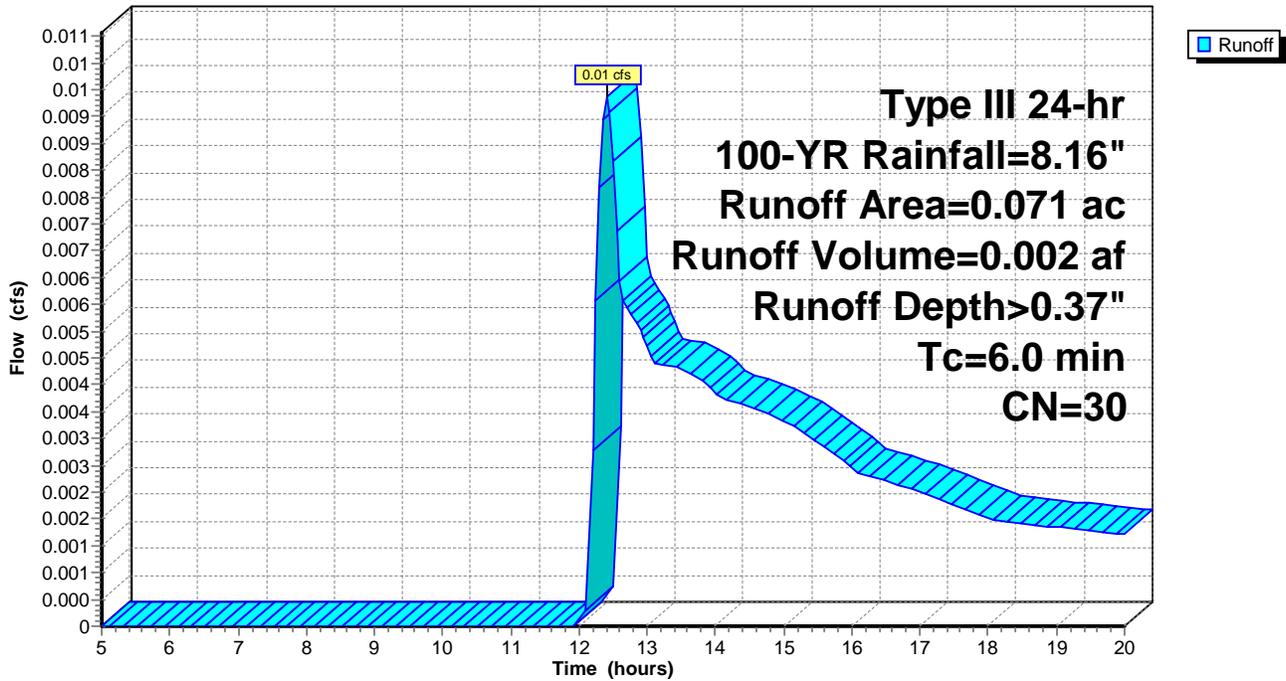
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.071	30	Brush, Good, HSG A
0.071		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-17:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 305

Summary for Subcatchment PR-18:

Runoff = 1.36 cfs @ 12.09 hrs, Volume= 0.100 af, Depth> 6.46"
 Routed to Pond FB-2 :

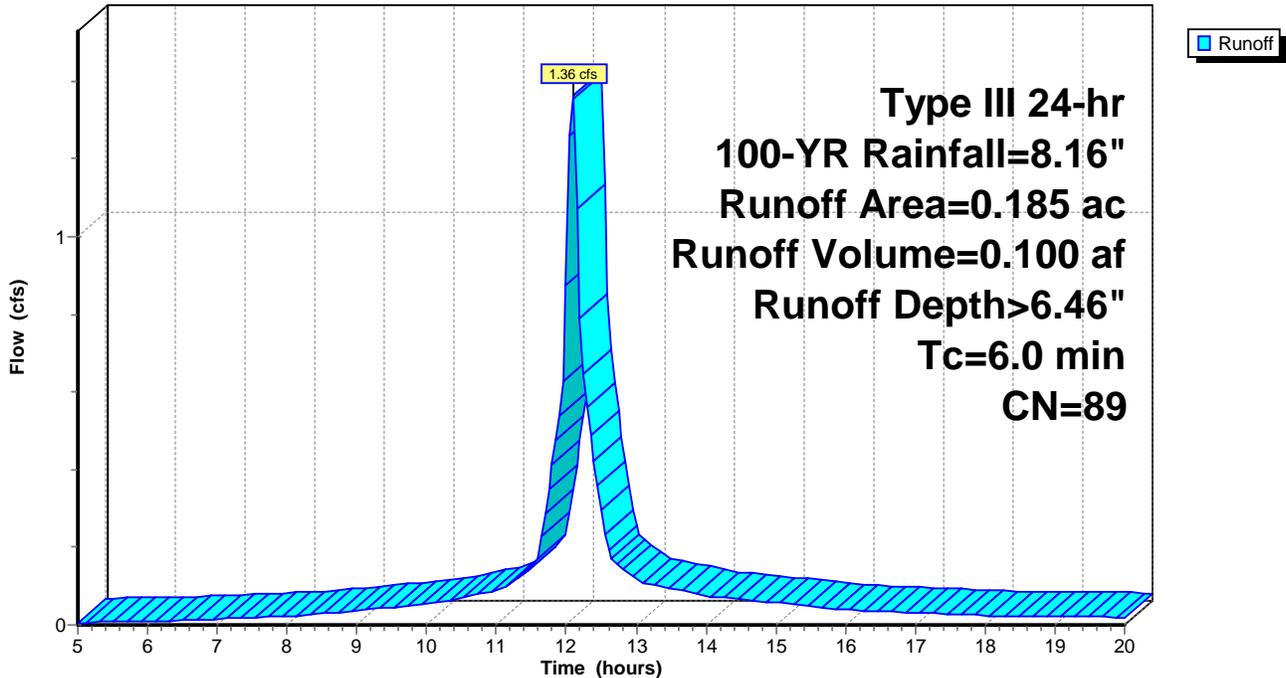
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.029	39	>75% Grass cover, Good, HSG A
* 0.156	98	Paved
0.185	89	Weighted Average
0.029		15.68% Pervious Area
0.156		84.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-18:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 306

Summary for Subcatchment PR-19:

Runoff = 0.93 cfs @ 12.09 hrs, Volume= 0.068 af, Depth> 6.57"

Routed to Pond FB-2 :

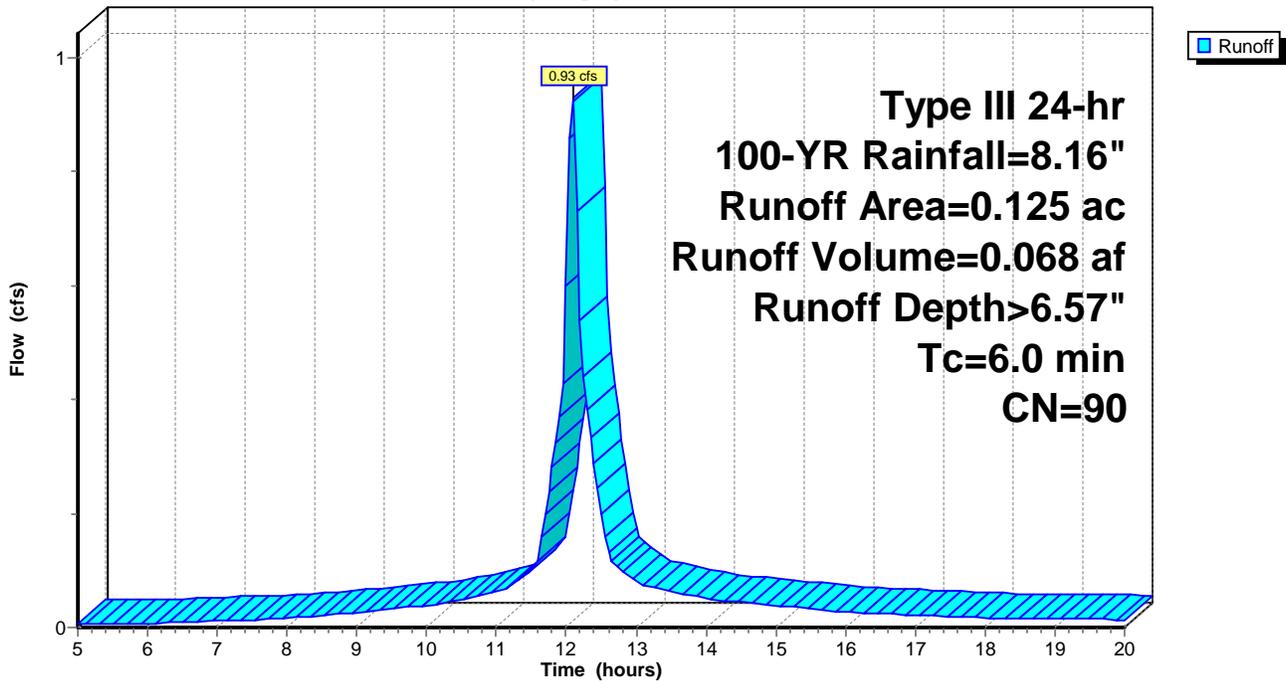
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.002	61	>75% Grass cover, Good, HSG B
* 0.107	98	Paved
0.125	90	Weighted Average
0.018		14.40% Pervious Area
0.107		85.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-19:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 307

Summary for Subcatchment PR-20:

Runoff = 1.90 cfs @ 12.09 hrs, Volume= 0.138 af, Depth> 6.35"

Routed to Pond FB-2 :

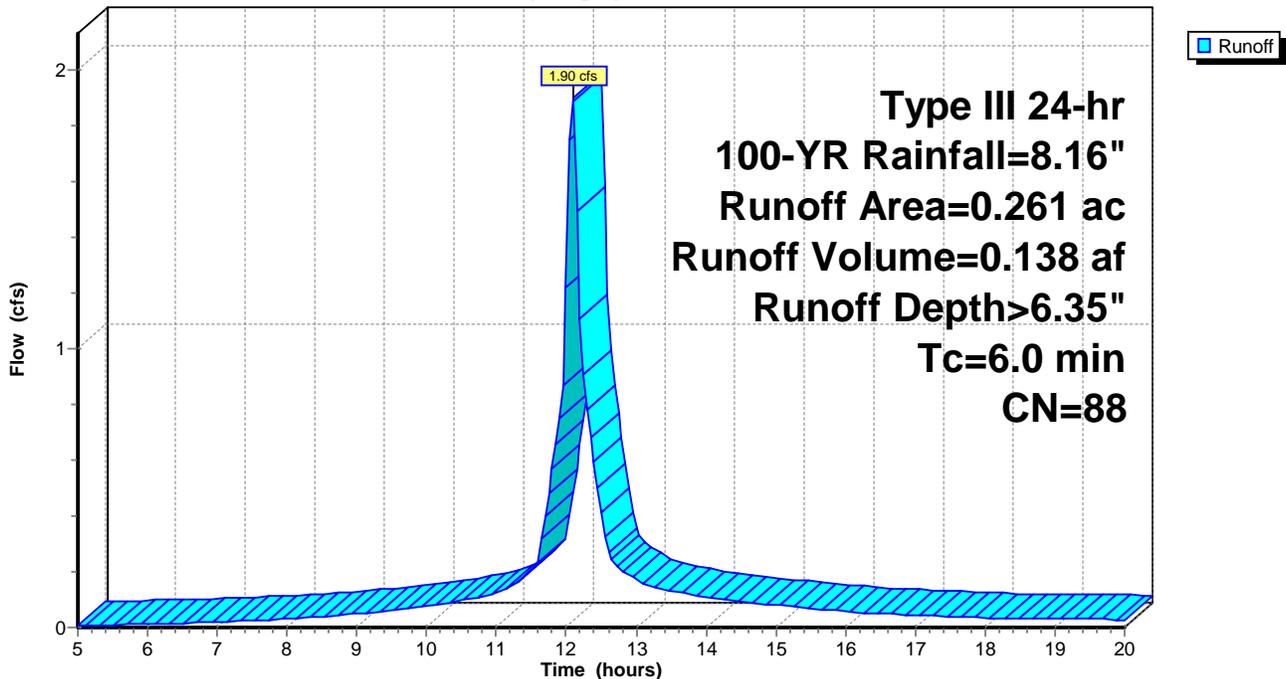
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.041	39	>75% Grass cover, Good, HSG A
0.004	61	>75% Grass cover, Good, HSG B
* 0.216	98	Paved
0.261	88	Weighted Average
0.045		17.24% Pervious Area
0.216		82.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-20:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 308

Summary for Subcatchment PR-21:

Runoff = 1.18 cfs @ 12.09 hrs, Volume= 0.088 af, Depth> 6.88"
Routed to Pond FB-2 :

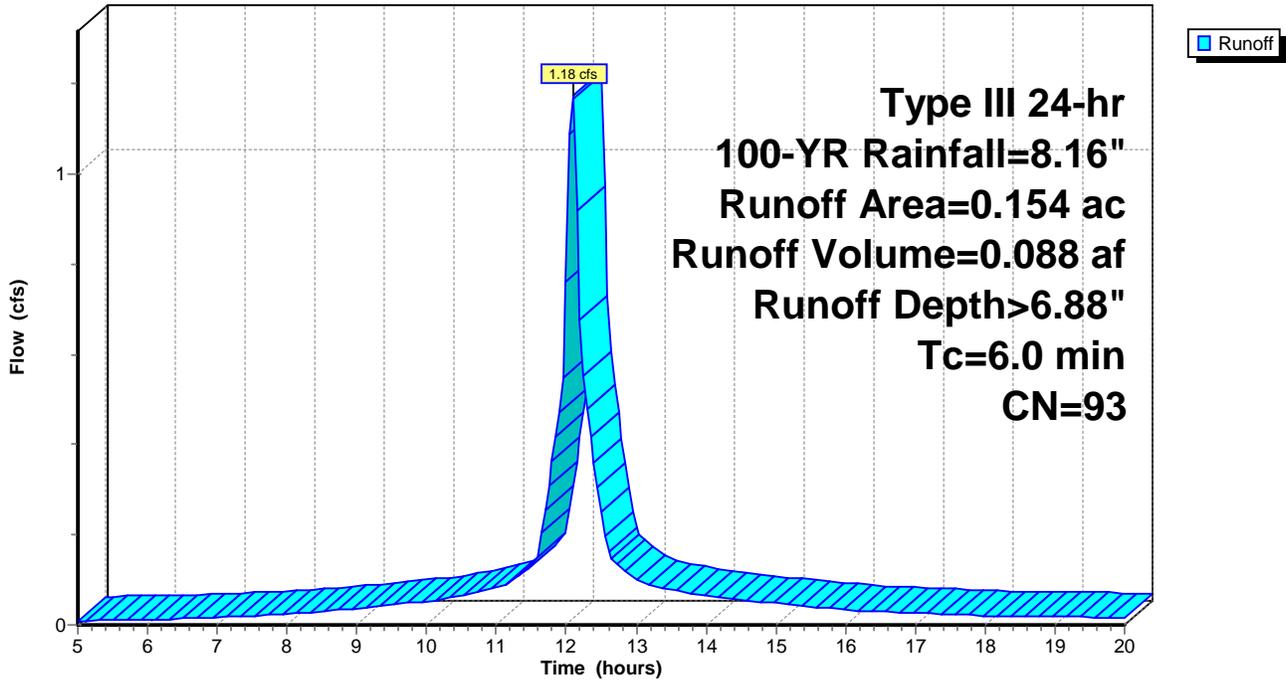
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.013	39	>75% Grass cover, Good, HSG A
* 0.141	98	Paved
0.154	93	Weighted Average
0.013		8.44% Pervious Area
0.141		91.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-21:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 309

Summary for Subcatchment PR-22:

Runoff = 0.76 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 4.98"
 Routed to Pond FB-2 :

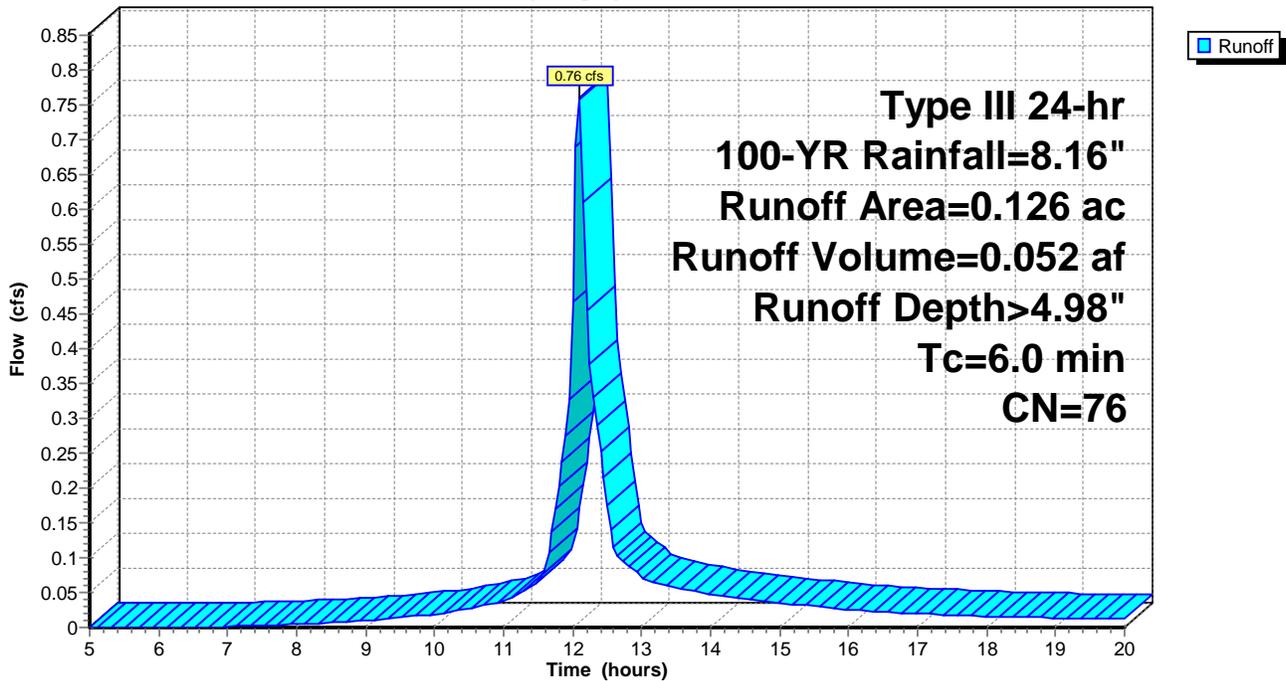
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.034	39	>75% Grass cover, Good, HSG A
0.022	61	>75% Grass cover, Good, HSG B
* 0.070	98	Paved
0.126	76	Weighted Average
0.056		44.44% Pervious Area
0.070		55.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-22:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 310

Summary for Subcatchment PR-23:

Runoff = 1.00 cfs @ 12.13 hrs, Volume= 0.078 af, Depth> 5.43"

Routed to Pond FB-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.035	39	>75% Grass cover, Good, HSG A
0.029	61	>75% Grass cover, Good, HSG B
* 0.109	98	Paved
0.173	80	Weighted Average
0.064		36.99% Pervious Area
0.109		63.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	71	0.0130	0.14		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.7	124	0.0240	3.14		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.1	27	0.0100	4.91	3.86	Pipe Channel, C-D 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.2	52	0.0100	4.91	3.86	Pipe Channel, D-E 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
9.6	274	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

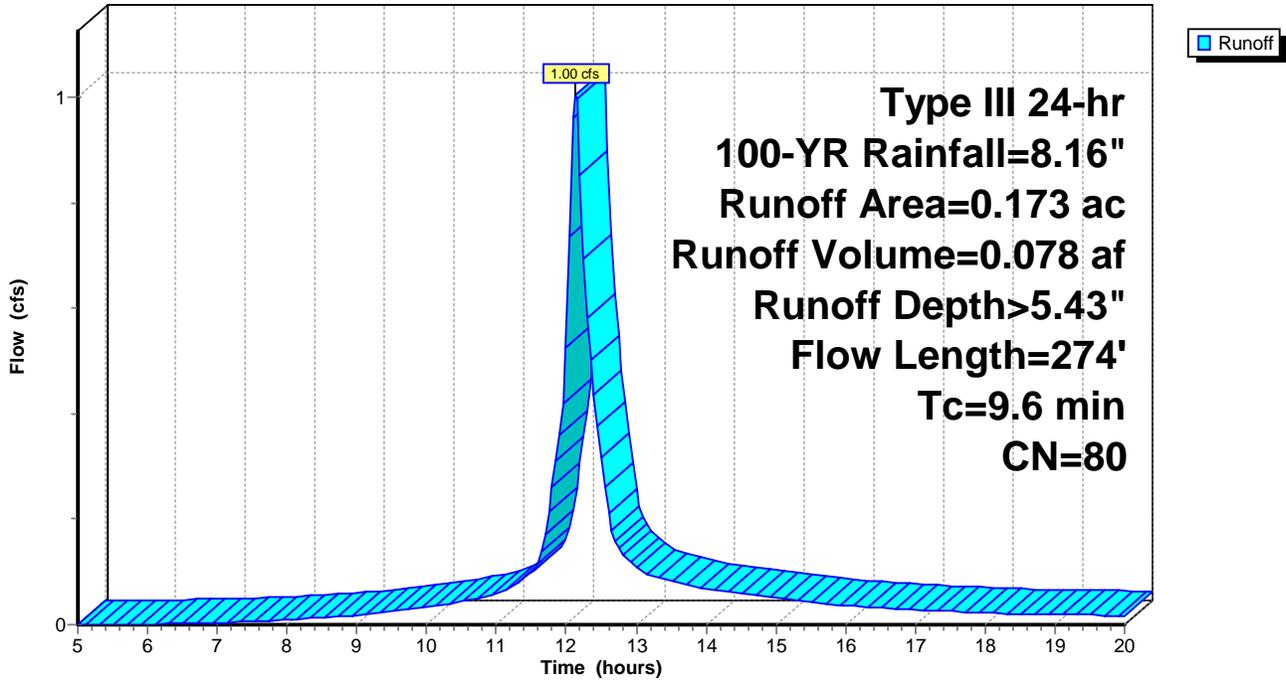
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 311

Subcatchment PR-23:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 312

Summary for Subcatchment PR-24:

Runoff = 0.33 cfs @ 12.11 hrs, Volume= 0.025 af, Depth> 1.54"
 Routed to Pond IB-3 :

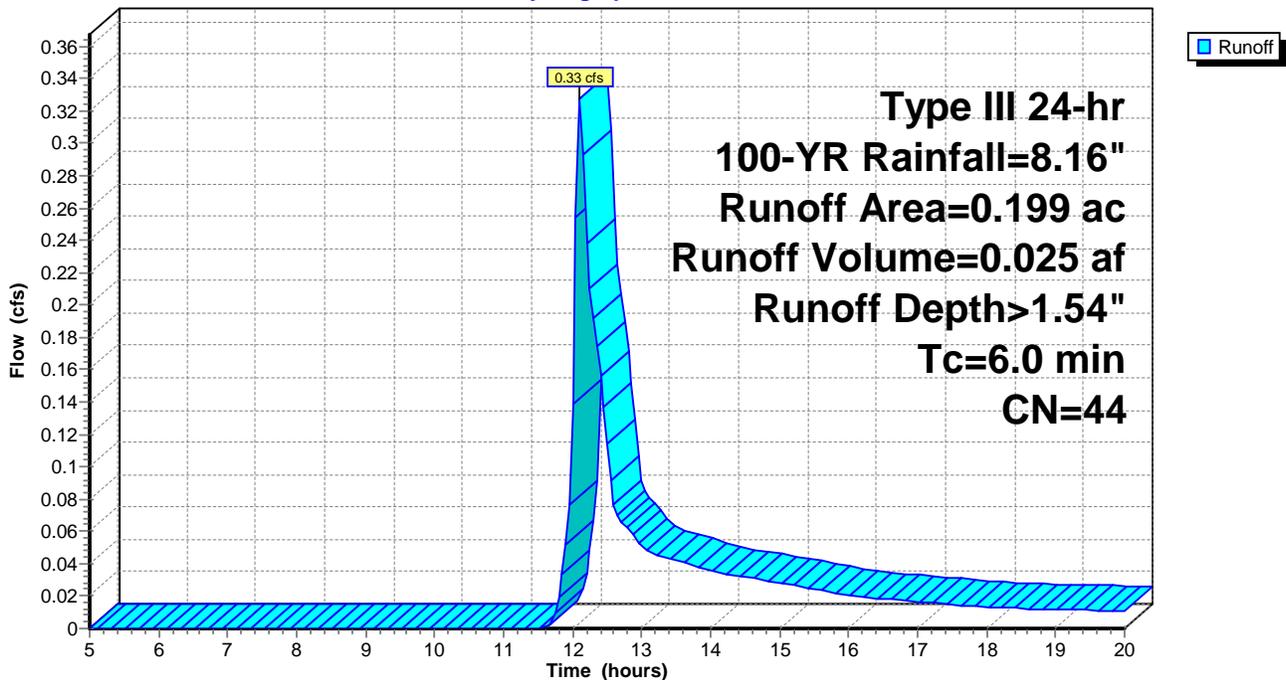
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.071	39	>75% Grass cover, Good, HSG A
0.013	61	>75% Grass cover, Good, HSG B
0.090	30	Meadow, non-grazed, HSG A
* 0.025	98	Paved
0.199	44	Weighted Average
0.174		87.44% Pervious Area
0.025		12.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-24:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 313

Summary for Subcatchment PR-25:

Runoff = 0.24 cfs @ 12.12 hrs, Volume= 0.023 af, Depth> 1.08"
Routed to Pond GT-1 :

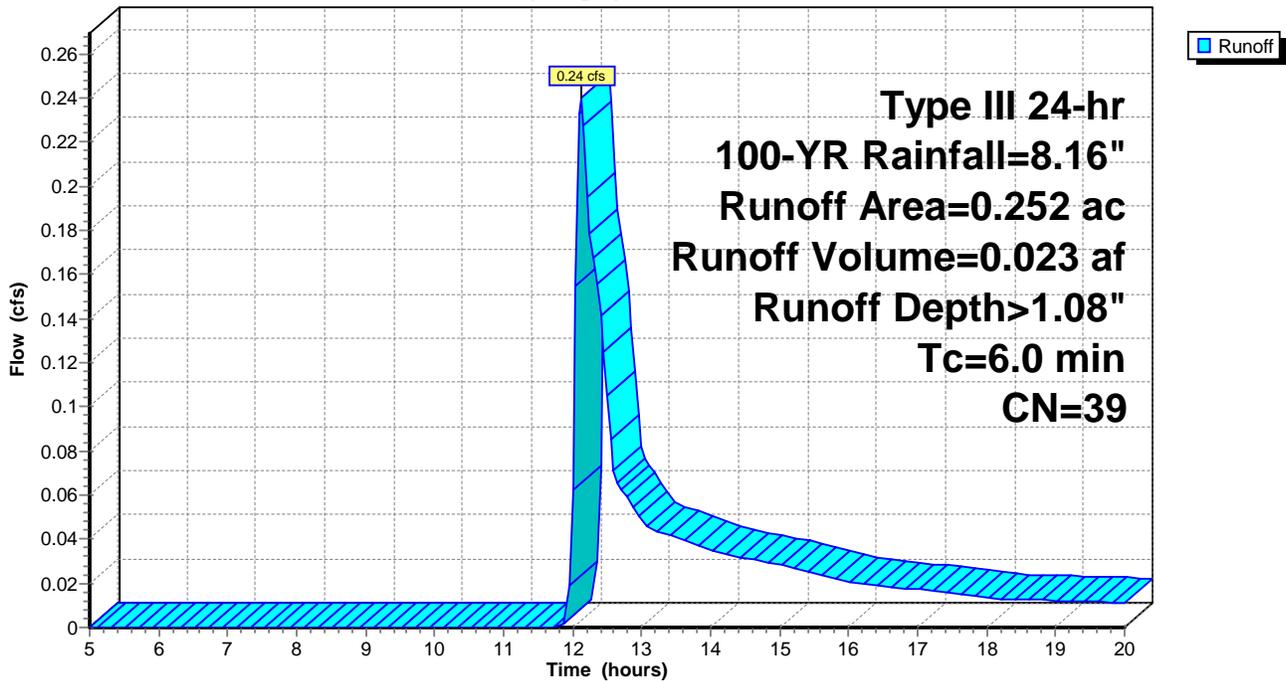
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.016	61	>75% Grass cover, Good, HSG B
0.156	30	Meadow, non-grazed, HSG A
0.052	58	Meadow, non-grazed, HSG B
0.252	39	Weighted Average
0.252		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-25:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 314

Summary for Subcatchment PR-26:

Runoff = 0.02 cfs @ 12.48 hrs, Volume= 0.003 af, Depth> 0.50"
 Routed to Pond GT-2 :

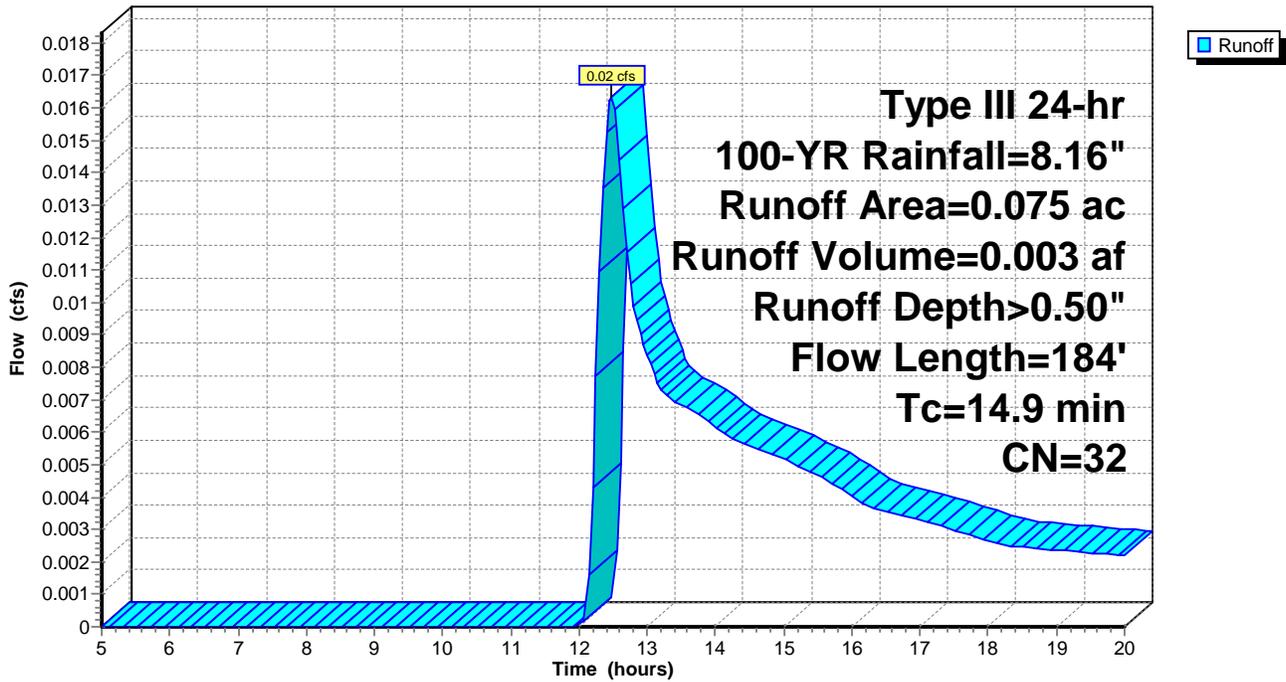
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.013	39	>75% Grass cover, Good, HSG A
0.061	30	Meadow, non-grazed, HSG A
* 0.001	98	Paved
0.075	32	Weighted Average
0.074		98.67% Pervious Area
0.001		1.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	100	0.0190	0.12		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.40"
0.8	84	0.0590	1.70		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
14.9	184	Total			

Subcatchment PR-26:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 315

Summary for Subcatchment PR-27:

Runoff = 0.01 cfs @ 12.37 hrs, Volume= 0.001 af, Depth> 0.44"
 Routed to Pond GT-3 :

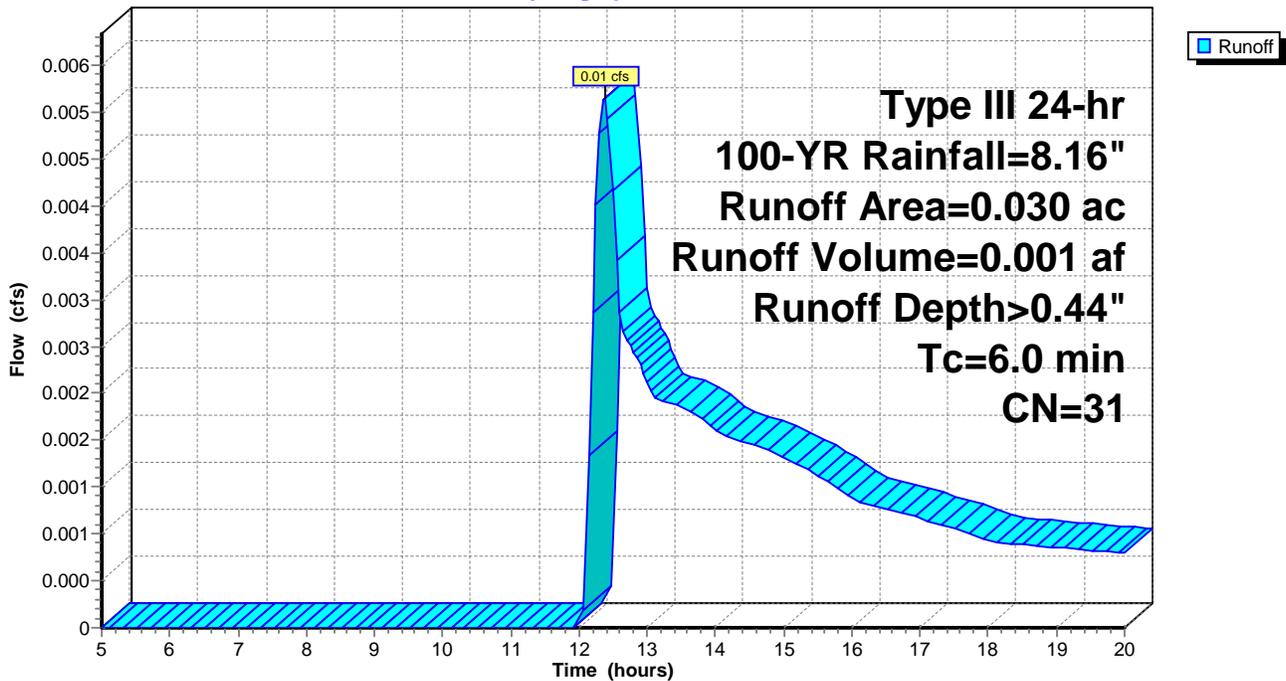
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.026	30	Meadow, non-grazed, HSG A
0.030	31	Weighted Average
0.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-27:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 316

Summary for Subcatchment PR-28:

Runoff = 0.08 cfs @ 12.14 hrs, Volume= 0.009 af, Depth> 0.90"
 Routed to Pond GT-4 :

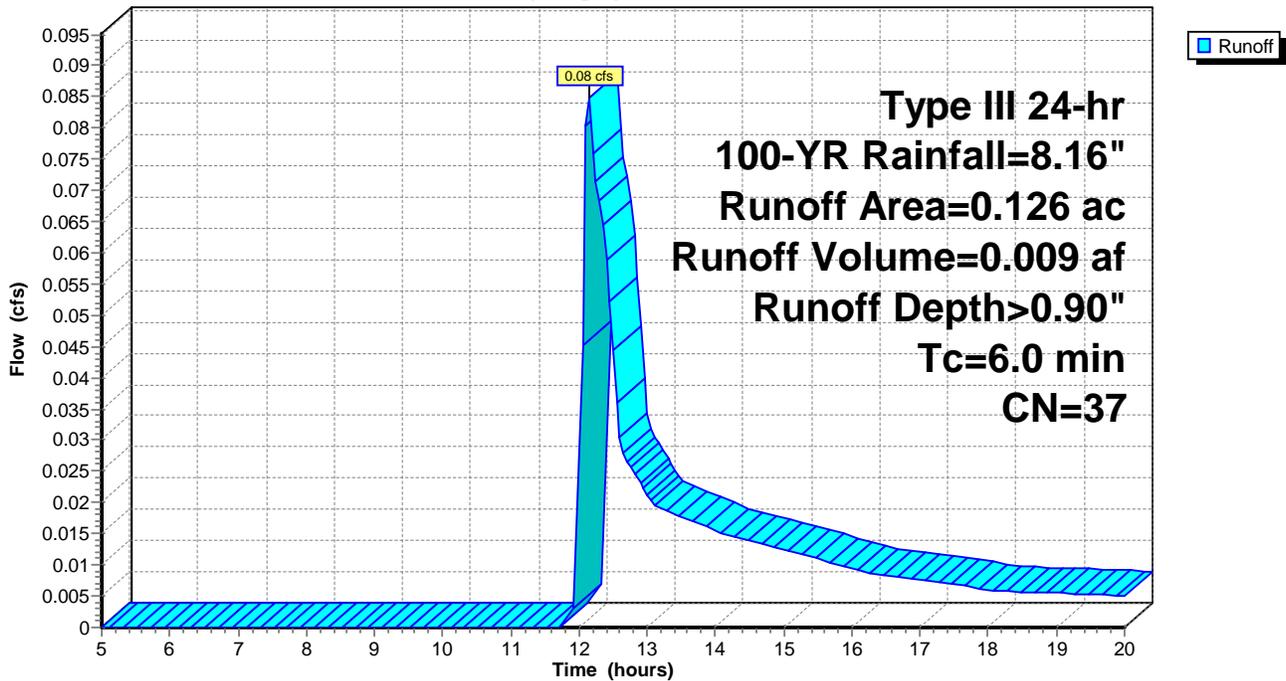
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.031	39	>75% Grass cover, Good, HSG A
0.004	61	>75% Grass cover, Good, HSG B
0.074	30	Meadow, non-grazed, HSG A
0.017	58	Meadow, non-grazed, HSG B
0.126	37	Weighted Average
0.126		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-28:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 317

Summary for Subcatchment PR-29:

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 0.044 af, Depth> 4.63"
 Routed to Pond GT-5 :

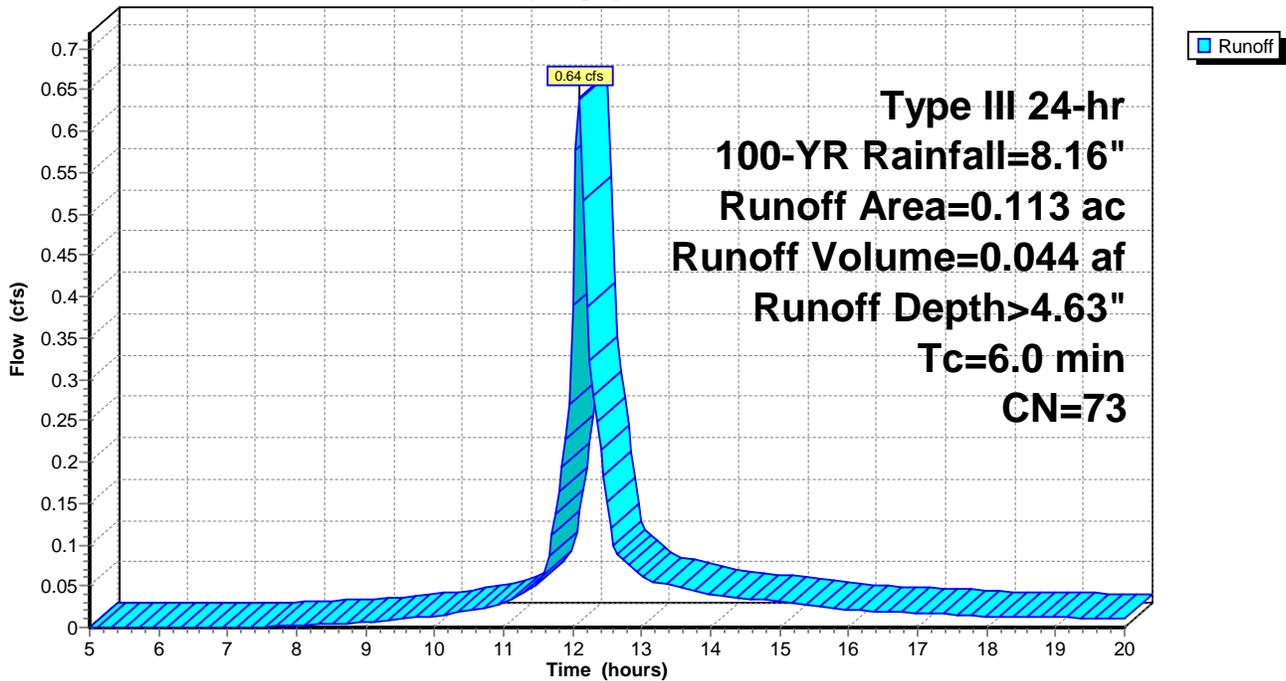
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.031	61	>75% Grass cover, Good, HSG B
0.043	58	Meadow, non-grazed, HSG B
* 0.039	98	Paved
0.113	73	Weighted Average
0.074		65.49% Pervious Area
0.039		34.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment PR-29:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 318

Summary for Subcatchment PR-30:

Runoff = 0.25 cfs @ 12.17 hrs, Volume= 0.020 af, Depth> 2.64"
 Routed to Pond GT-6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
0.001	30	Woods, Good, HSG A
0.008	55	Woods, Good, HSG B
0.011	39	>75% Grass cover, Good, HSG A
0.021	61	>75% Grass cover, Good, HSG B
0.026	30	Meadow, non-grazed, HSG A
0.010	58	Meadow, non-grazed, HSG B
* 0.016	98	Paved
0.093	55	Weighted Average
0.077		82.80% Pervious Area
0.016		17.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0380	0.16		Sheet Flow, A-B
					Grass: Dense n= 0.240 P2= 3.40"
0.4	40	0.0550	1.64		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
11.1	140	Total			

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

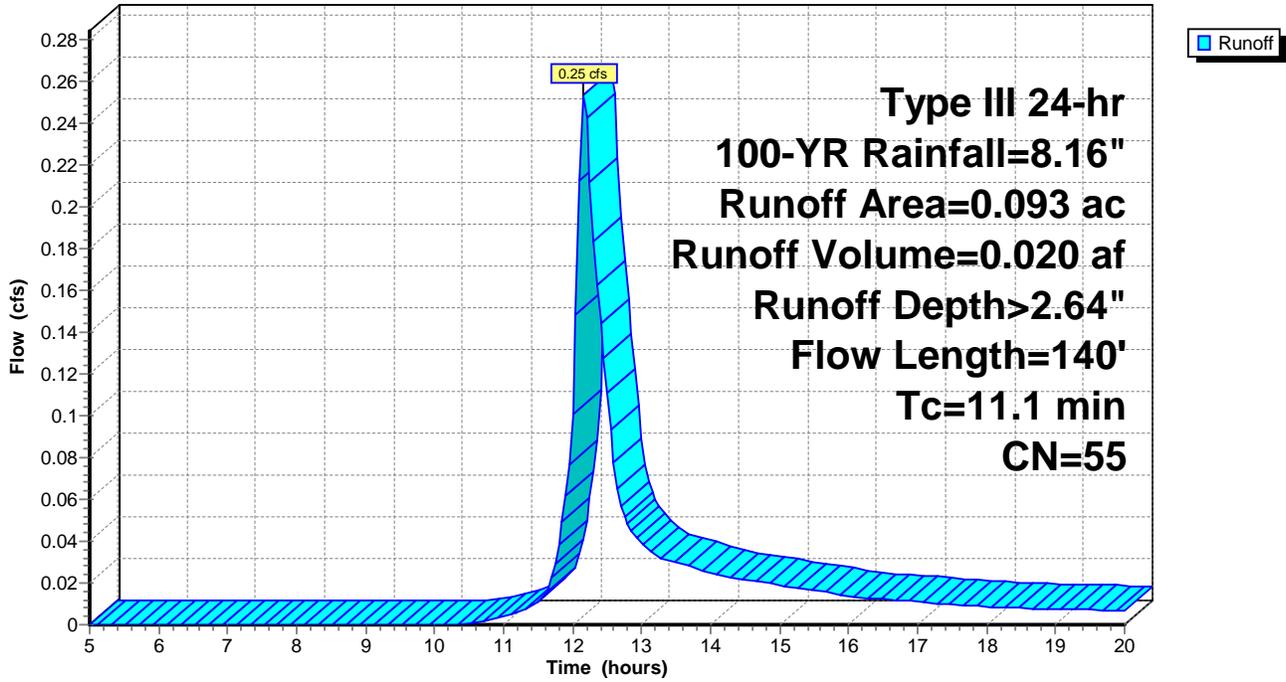
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 319

Subcatchment PR-30:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 320

Summary for Subcatchment RA-1:

Runoff = 1.01 cfs @ 12.09 hrs, Volume= 0.078 af, Depth> 7.29"

Routed to Pond UG-1 :

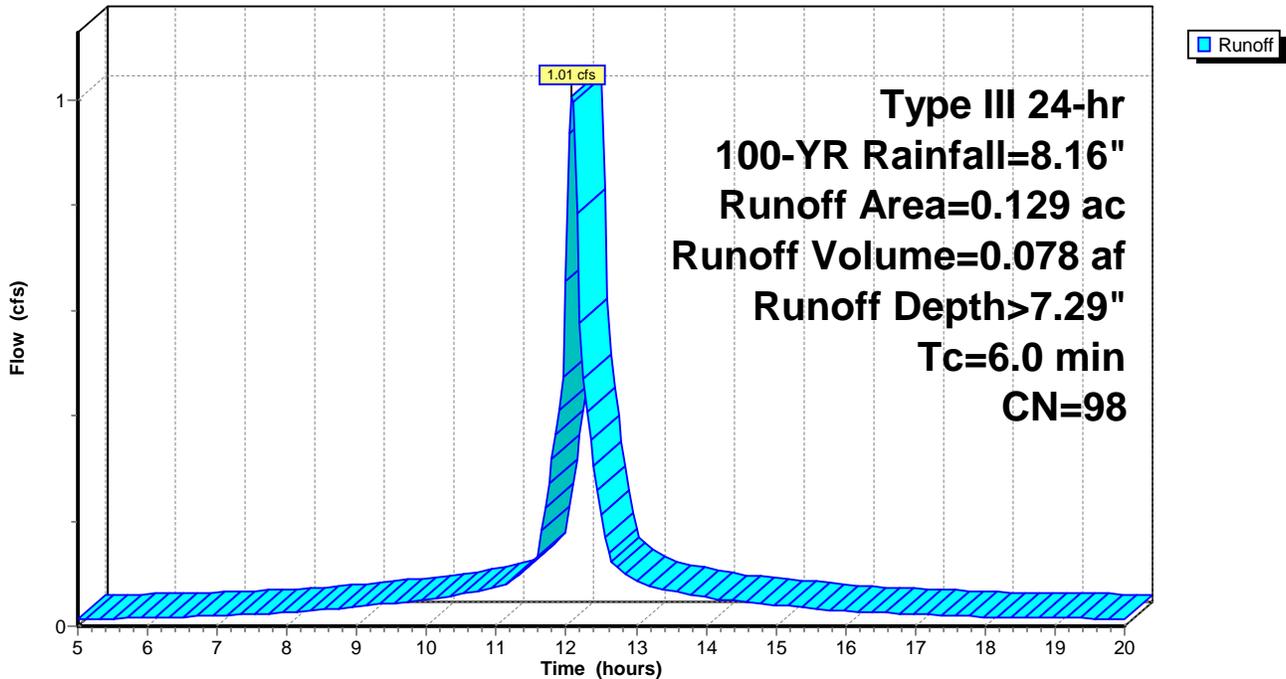
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
* 0.129	98	Roof
0.129		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 321

Summary for Subcatchment RA-2:

Runoff = 1.09 cfs @ 12.09 hrs, Volume= 0.084 af, Depth> 7.29"
Routed to Pond UG-1 :

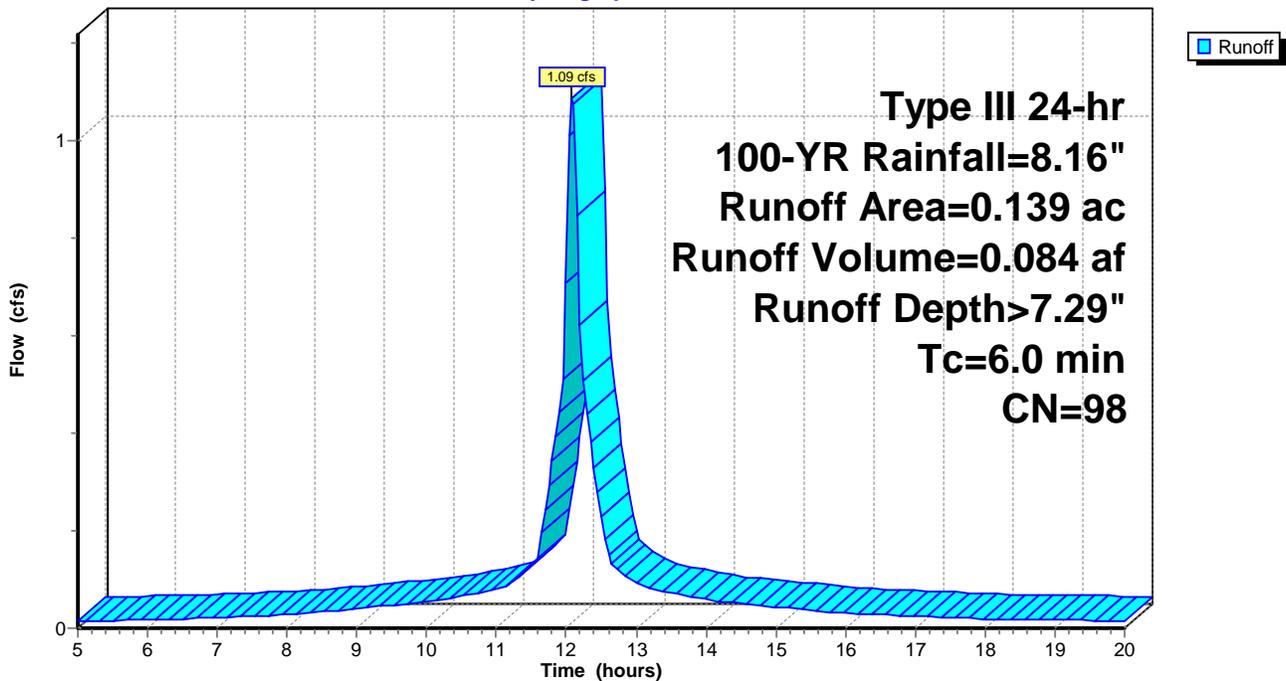
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
* 0.139	98	Roof
0.139		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 322

Summary for Subcatchment RA-3:

Runoff = 1.51 cfs @ 12.09 hrs, Volume= 0.117 af, Depth > 7.29"

Routed to Pond RG-1 :

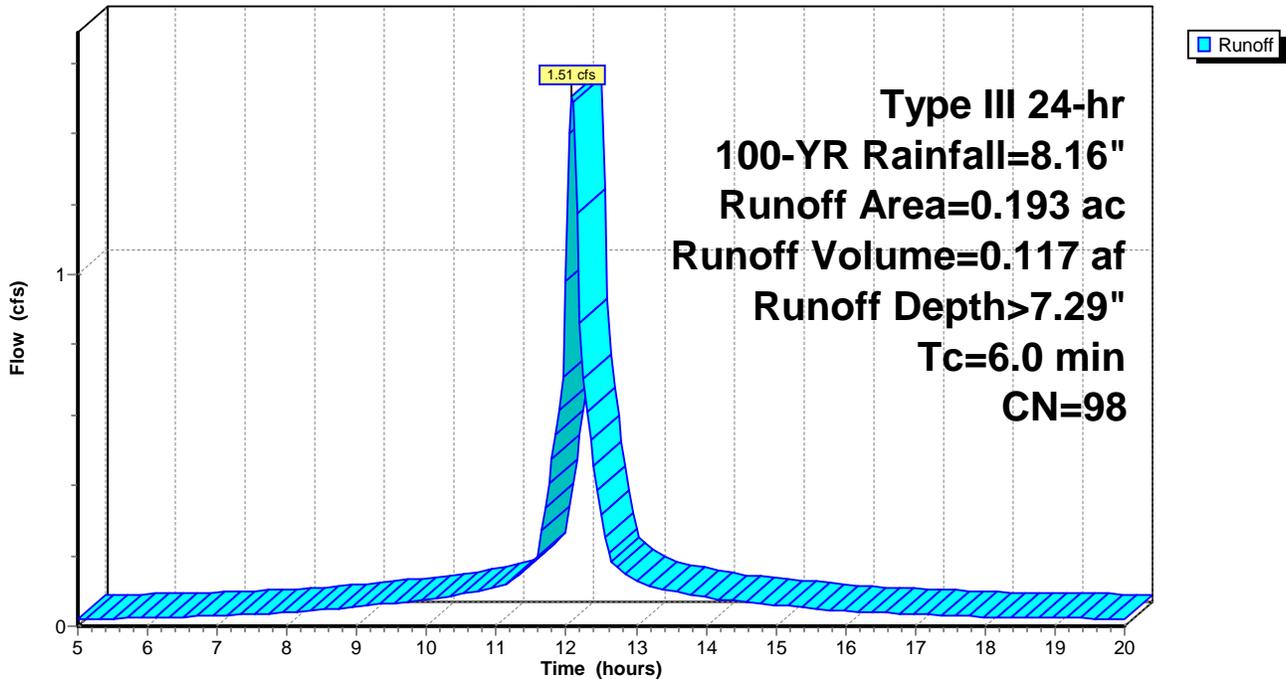
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
* 0.193	98	Roof
0.193		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 323

Summary for Subcatchment RA-4:

Runoff = 1.46 cfs @ 12.09 hrs, Volume= 0.114 af, Depth> 7.29"

Routed to Pond RG-1 :

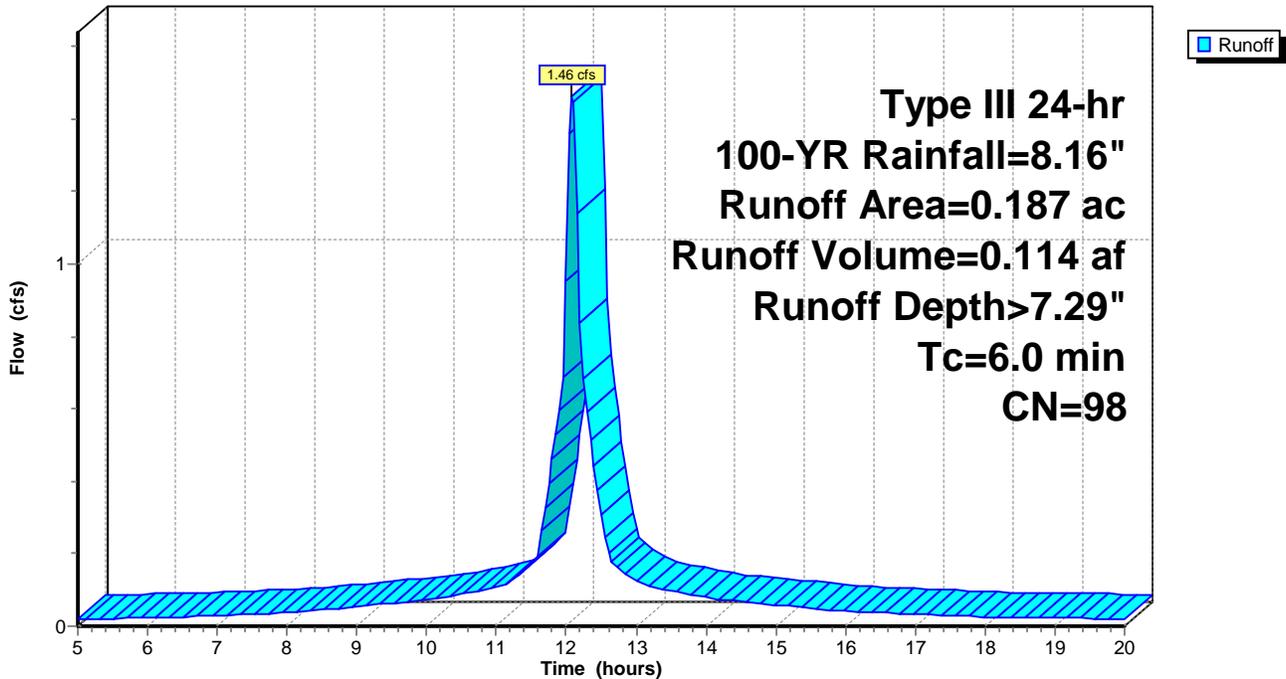
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=8.16"

Area (ac)	CN	Description
* 0.187	98	Roof
0.187		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Assumed Min.

Subcatchment RA-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 324

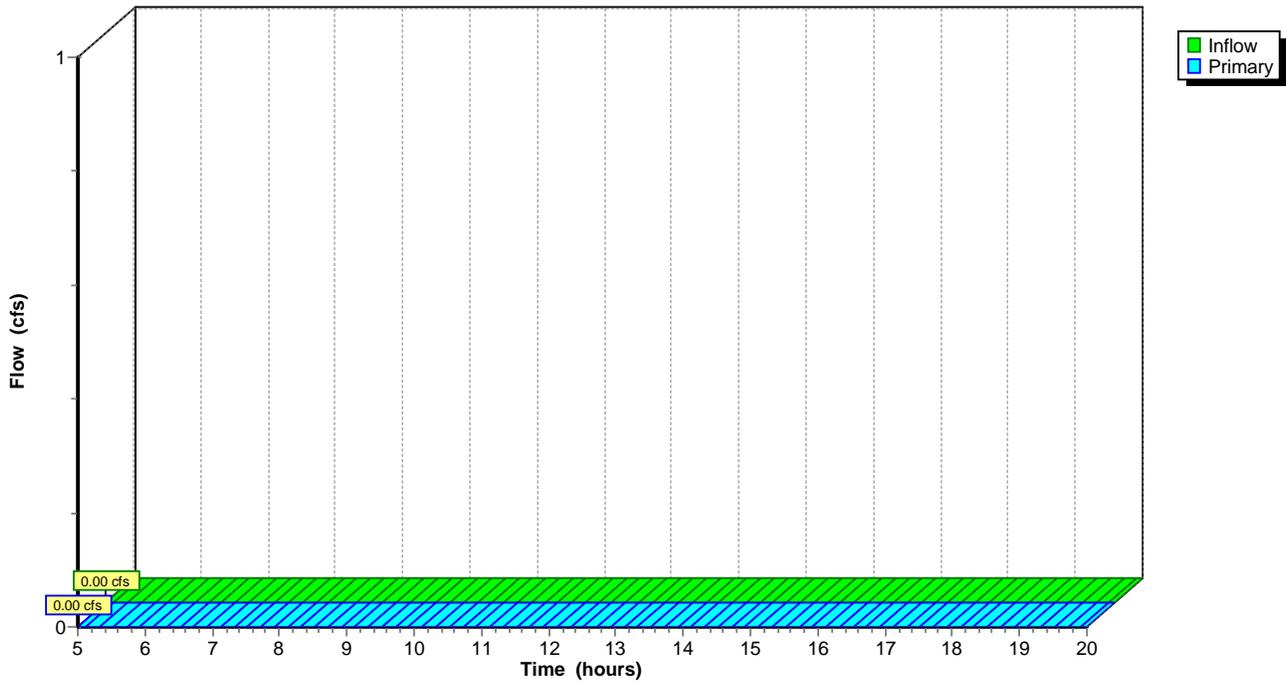
Summary for Pond AP: Surrounding Wetlands

Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Pond AP: Surrounding Wetlands

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 325

Summary for Pond FB-1:

Inflow Area = 0.592 ac, 58.28% Impervious, Inflow Depth > 4.62" for 100-YR event
 Inflow = 3.26 cfs @ 12.09 hrs, Volume= 0.228 af
 Outflow = 1.70 cfs @ 12.31 hrs, Volume= 0.115 af, Atten= 48%, Lag= 13.3 min
 Discarded = 0.01 cfs @ 12.32 hrs, Volume= 0.007 af
 Primary = 1.69 cfs @ 12.31 hrs, Volume= 0.108 af

Routed to Pond IB-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.66' @ 12.32 hrs Surf.Area= 2,085 sf Storage= 5,015 cf

Plug-Flow detention time= 165.3 min calculated for 0.115 af (51% of inflow)
 Center-of-Mass det. time= 81.9 min (858.5 - 776.6)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	5,755 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	299	0	0
25.00	566	433	433
26.00	891	729	1,161
27.00	1,279	1,085	2,246
28.00	1,736	1,508	3,754
28.60	2,049	1,136	4,889
29.00	2,283	866	5,755

Device	Routing	Invert	Outlet Devices
#1	Primary	28.60'	44.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	24.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.32 hrs HW=28.66' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=1.49 cfs @ 12.31 hrs HW=28.66' (Free Discharge)
 ↑**1=Forebay Berm (Weir Outlet)** (Weir Controls 1.49 cfs @ 0.60 fps)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

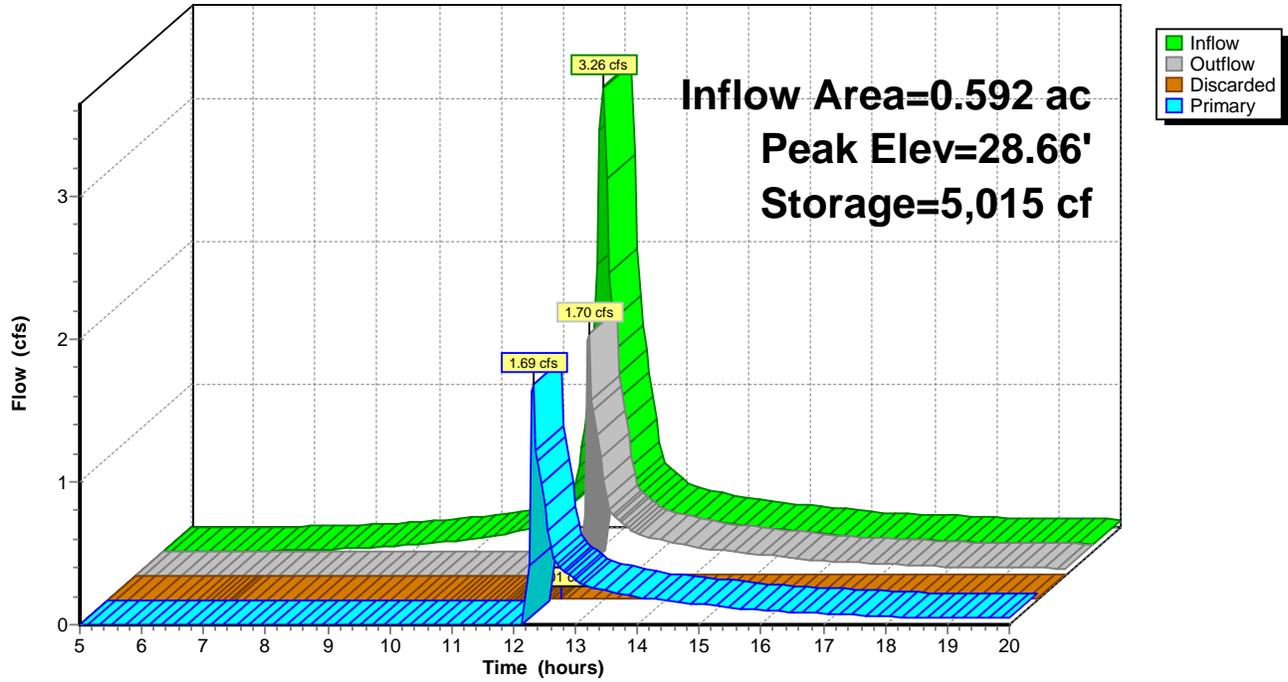
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 326

Pond FB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 327

Summary for Pond FB-2:

Inflow Area = 3.167 ac, 73.26% Impervious, Inflow Depth > 2.09" for 100-YR event
 Inflow = 7.07 cfs @ 12.09 hrs, Volume= 0.551 af
 Outflow = 5.55 cfs @ 12.20 hrs, Volume= 0.520 af, Atten= 22%, Lag= 6.2 min
 Discarded = 0.72 cfs @ 12.20 hrs, Volume= 0.429 af
 Primary = 4.82 cfs @ 12.20 hrs, Volume= 0.091 af

Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.80' @ 12.20 hrs Surf.Area= 2,594 sf Storage= 7,198 cf

Plug-Flow detention time= 101.7 min calculated for 0.519 af (94% of inflow)
 Center-of-Mass det. time= 81.4 min (842.7 - 761.3)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	7,733 cf	Forebay Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	291	0	0
26.00	520	406	406
27.00	811	666	1,071
28.00	1,172	992	2,063
29.00	1,608	1,390	3,453
30.00	2,121	1,865	5,317
30.70	2,530	1,628	6,945
31.00	2,723	788	7,733

Device	Routing	Invert	Outlet Devices
#1	Primary	30.70'	59.0' long + 2.0 ' SideZ x 2.0' breadth Forebay Berm (Weir Outlet) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.72 cfs @ 12.20 hrs HW=30.80' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.72 cfs)

Primary OutFlow Max=4.50 cfs @ 12.20 hrs HW=30.80' (Free Discharge)
 ↑**1=Forebay Berm (Weir Outlet)** (Weir Controls 4.50 cfs @ 0.79 fps)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

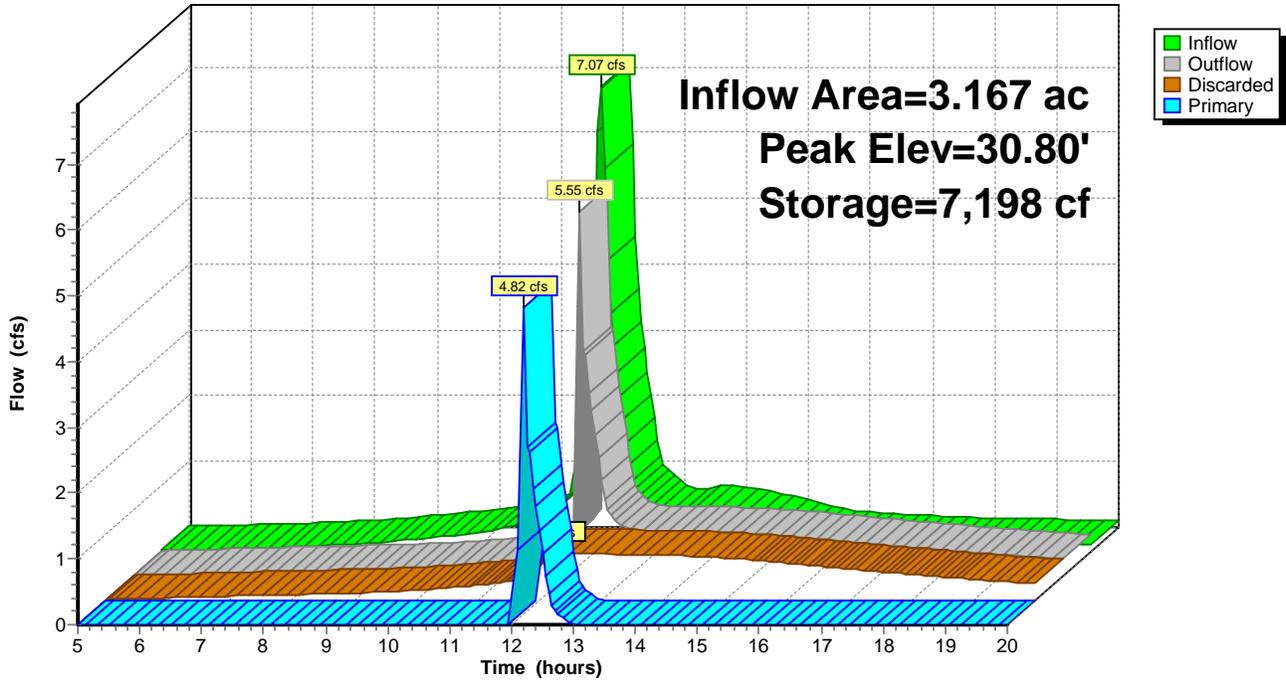
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 328

Pond FB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 329

Summary for Pond GT-1:

Inflow Area = 0.252 ac, 0.00% Impervious, Inflow Depth > 1.08" for 100-YR event
 Inflow = 0.24 cfs @ 12.12 hrs, Volume= 0.023 af
 Outflow = 0.05 cfs @ 12.05 hrs, Volume= 0.023 af, Atten= 81%, Lag= 0.0 min
 Discarded = 0.05 cfs @ 12.05 hrs, Volume= 0.023 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 20.75' @ 13.11 hrs Surf.Area= 862 sf Storage= 258 cf

Plug-Flow detention time= 54.4 min calculated for 0.023 af (100% of inflow)
 Center-of-Mass det. time= 53.8 min (906.9 - 853.1)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	690 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,724 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.00	862	0	0
21.00	862	862	862
22.00	862	862	1,724

Device	Routing	Invert	Outlet Devices
#1	Secondary	22.00'	590.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 12.05 hrs HW=20.05' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

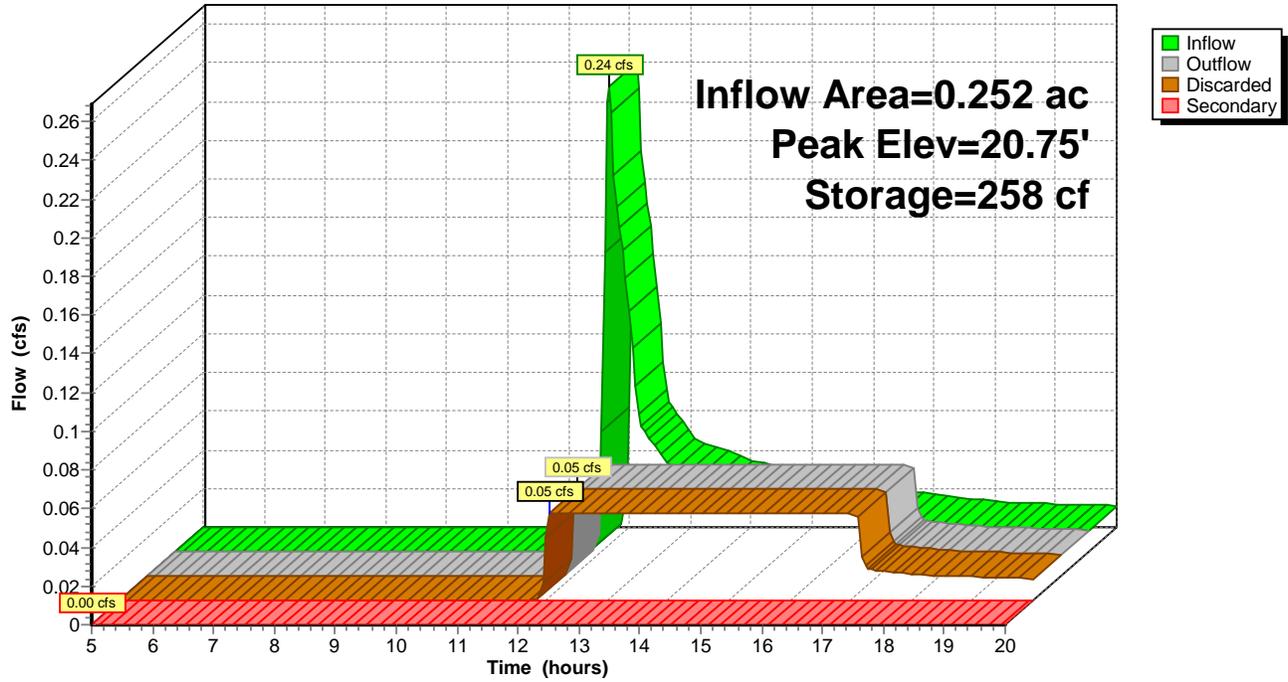
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 330

Pond GT-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 331

Summary for Pond GT-2:

Inflow Area = 0.075 ac, 1.33% Impervious, Inflow Depth > 0.50" for 100-YR event
 Inflow = 0.02 cfs @ 12.48 hrs, Volume= 0.003 af
 Outflow = 0.00 cfs @ 12.25 hrs, Volume= 0.001 af, Atten= 93%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 12.25 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 24.54' @ 20.00 hrs Surf.Area= 251 sf Storage= 105 cf

Plug-Flow detention time= 213.7 min calculated for 0.001 af (24% of inflow)
 Center-of-Mass det. time= 70.9 min (966.6 - 895.7)

Volume	Invert	Avail.Storage	Storage Description
#1	23.50'	151 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 377 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.50	251	0	0
24.00	251	126	126
25.00	251	251	377

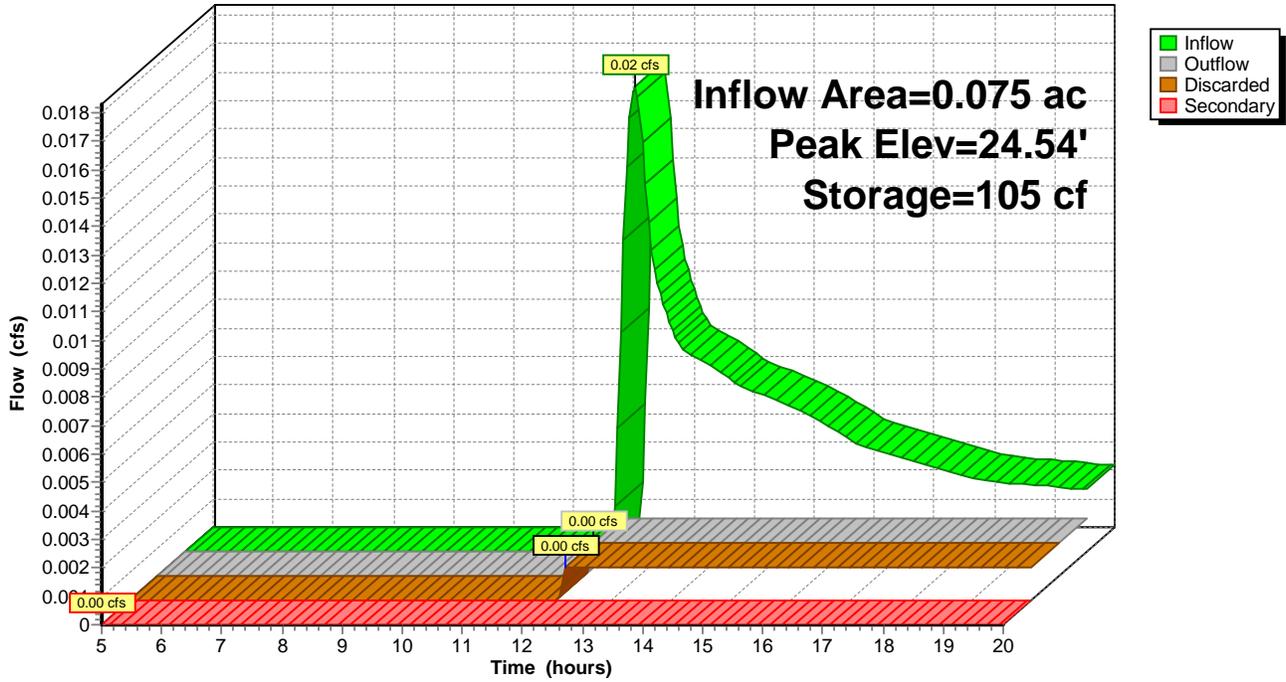
Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	65.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	23.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.25 hrs HW=23.52' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

Pond GT-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 333

Summary for Pond GT-3:

Inflow Area = 0.030 ac, 0.00% Impervious, Inflow Depth > 0.44" for 100-YR event
 Inflow = 0.01 cfs @ 12.37 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 12.20 hrs, Volume= 0.000 af, Atten= 92%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 12.20 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.44' @ 20.00 hrs Surf.Area= 94 sf Storage= 35 cf

Plug-Flow detention time= 212.9 min calculated for 0.000 af (26% of inflow)
 Center-of-Mass det. time= 67.5 min (965.4 - 897.9)

Volume	Invert	Avail.Storage	Storage Description
#1	27.50'	56 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 141 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.50	94	0	0
28.00	94	47	47
29.00	94	94	141

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	30.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	27.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.20 hrs HW=27.52' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.50' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

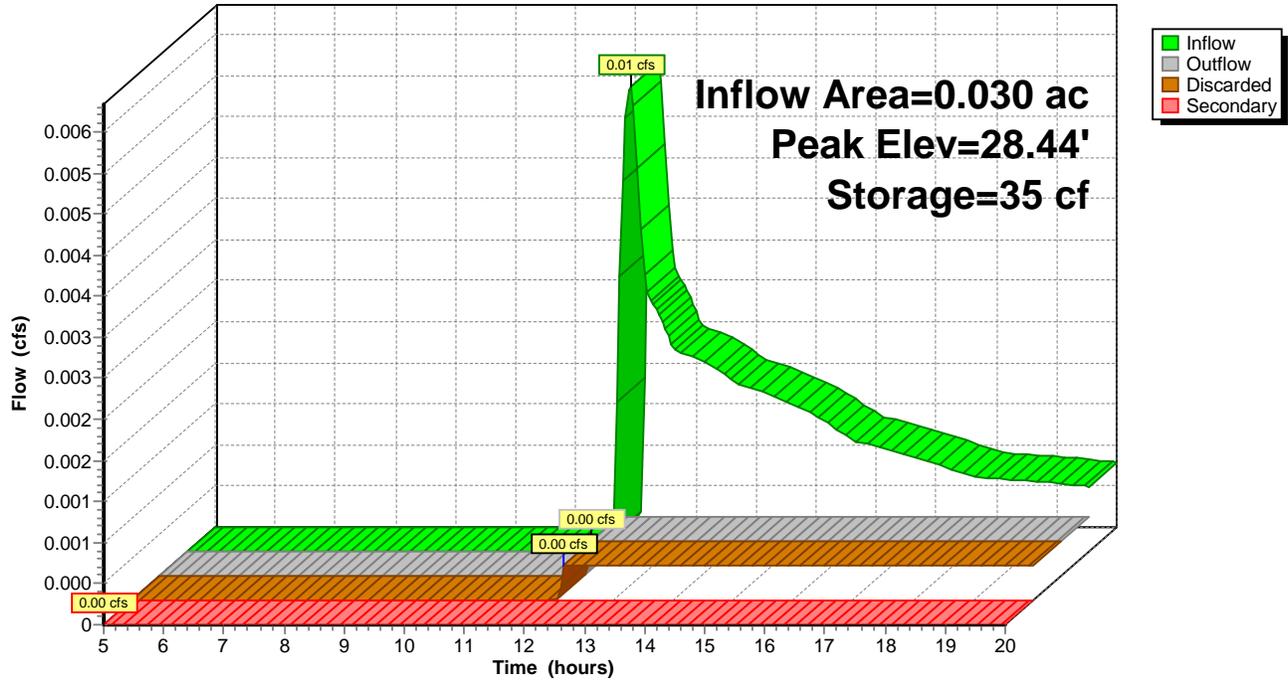
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 334

Pond GT-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 335

Summary for Pond GT-4:

Inflow Area = 0.126 ac, 0.00% Impervious, Inflow Depth > 0.90" for 100-YR event
 Inflow = 0.08 cfs @ 12.14 hrs, Volume= 0.009 af
 Outflow = 0.00 cfs @ 12.05 hrs, Volume= 0.001 af, Atten= 98%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 12.05 hrs, Volume= 0.001 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 22.71' @ 20.00 hrs Surf.Area= 405 sf Storage= 359 cf

Plug-Flow detention time= 233.4 min calculated for 0.001 af (13% of inflow)
 Center-of-Mass det. time= 99.9 min (961.1 - 861.2)

Volume	Invert	Avail.Storage	Storage Description
#1	20.50'	405 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 1,013 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.50	405	0	0
21.00	405	203	203
22.00	405	405	608
23.00	405	405	1,013

Device	Routing	Invert	Outlet Devices
#1	Secondary	23.00'	74.0' long + 3.0' /' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	20.50'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 12.05 hrs HW=20.54' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=20.50' (Free Discharge)
 ↑ **1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

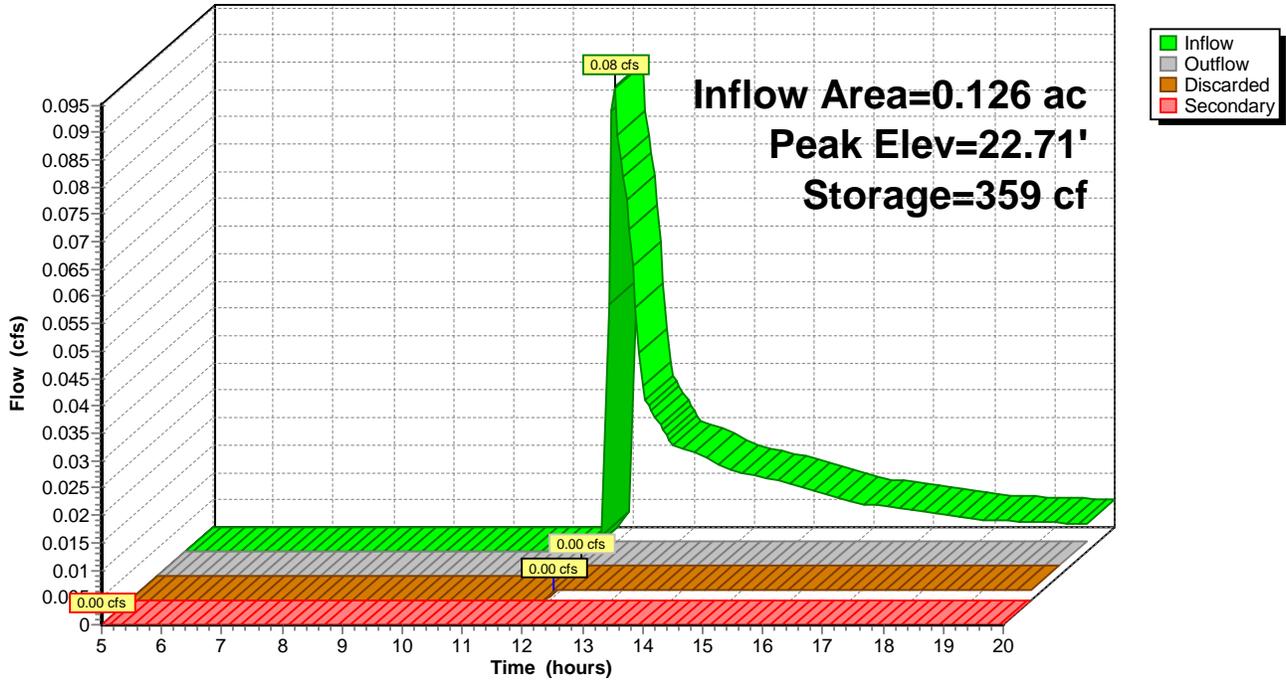
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 336

Pond GT-4:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 337

Summary for Pond GT-5:

Inflow Area = 0.113 ac, 34.51% Impervious, Inflow Depth > 4.63" for 100-YR event
 Inflow = 0.64 cfs @ 12.09 hrs, Volume= 0.044 af
 Outflow = 0.03 cfs @ 11.25 hrs, Volume= 0.028 af, Atten= 95%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.25 hrs, Volume= 0.028 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-4 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 24.88' @ 14.69 hrs Surf.Area= 640 sf Storage= 993 cf

Plug-Flow detention time= 187.6 min calculated for 0.028 af (64% of inflow)
 Center-of-Mass det. time= 114.9 min (898.5 - 783.6)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	1,024 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 2,560 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	640	0	0
22.00	640	640	640
23.00	640	640	1,280
24.00	640	640	1,920
25.00	640	640	2,560

Device	Routing	Invert	Outlet Devices
#1	Secondary	25.00'	136.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	21.00'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.25 hrs HW=21.04' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=21.00' (Free Discharge)
 ↑**1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

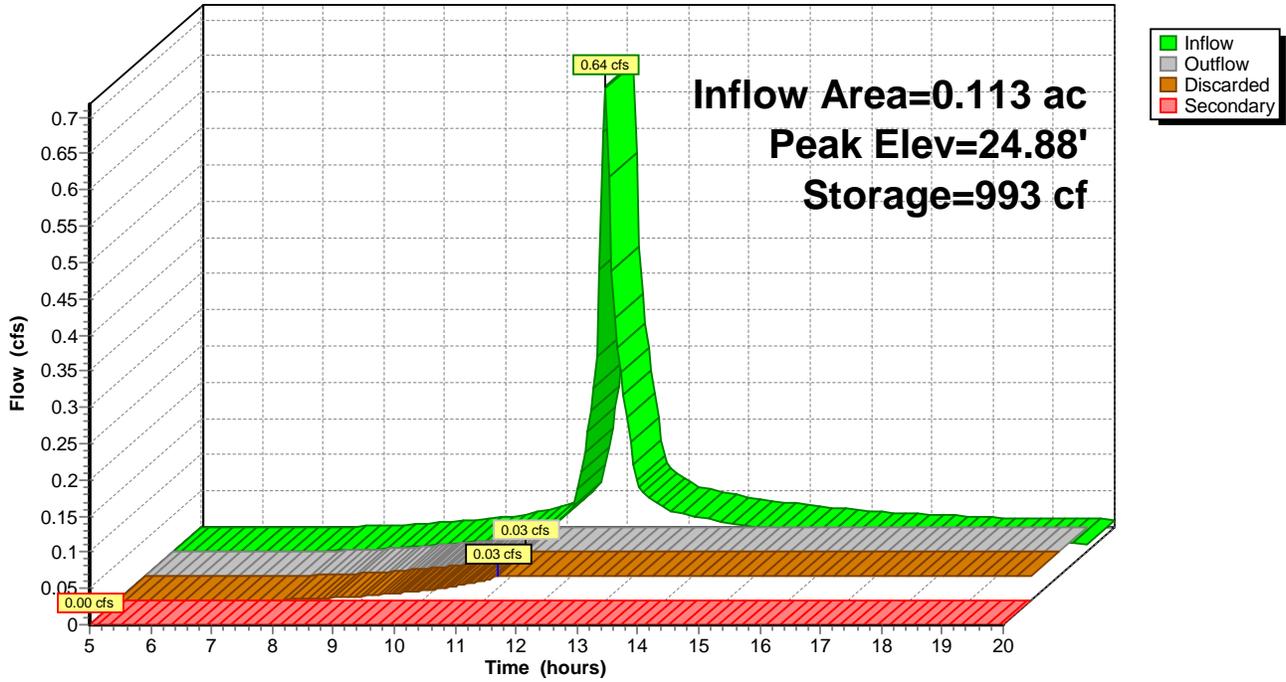
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 338

Pond GT-5:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 339

Summary for Pond GT-6:

Inflow Area = 0.093 ac, 17.20% Impervious, Inflow Depth > 2.64" for 100-YR event
 Inflow = 0.25 cfs @ 12.17 hrs, Volume= 0.020 af
 Outflow = 0.07 cfs @ 11.95 hrs, Volume= 0.020 af, Atten= 72%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 11.95 hrs, Volume= 0.020 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.59' @ 12.63 hrs Surf.Area= 252 sf Storage= 211 cf

Plug-Flow detention time= 18.8 min calculated for 0.020 af (100% of inflow)
 Center-of-Mass det. time= 18.6 min (836.7 - 818.1)

Volume	Invert	Avail.Storage	Storage Description
#1	24.50'	252 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc) 630 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.50	252	0	0
25.00	252	126	126
26.00	252	252	378
27.00	252	252	630

Device	Routing	Invert	Outlet Devices
#1	Secondary	27.00'	78.0' long + 3.0 ' SideZ x 3.0' breadth Top of Trench (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	24.50'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 11.95 hrs HW=24.53' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=24.50' (Free Discharge)
 ↑ **1=Top of Trench (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

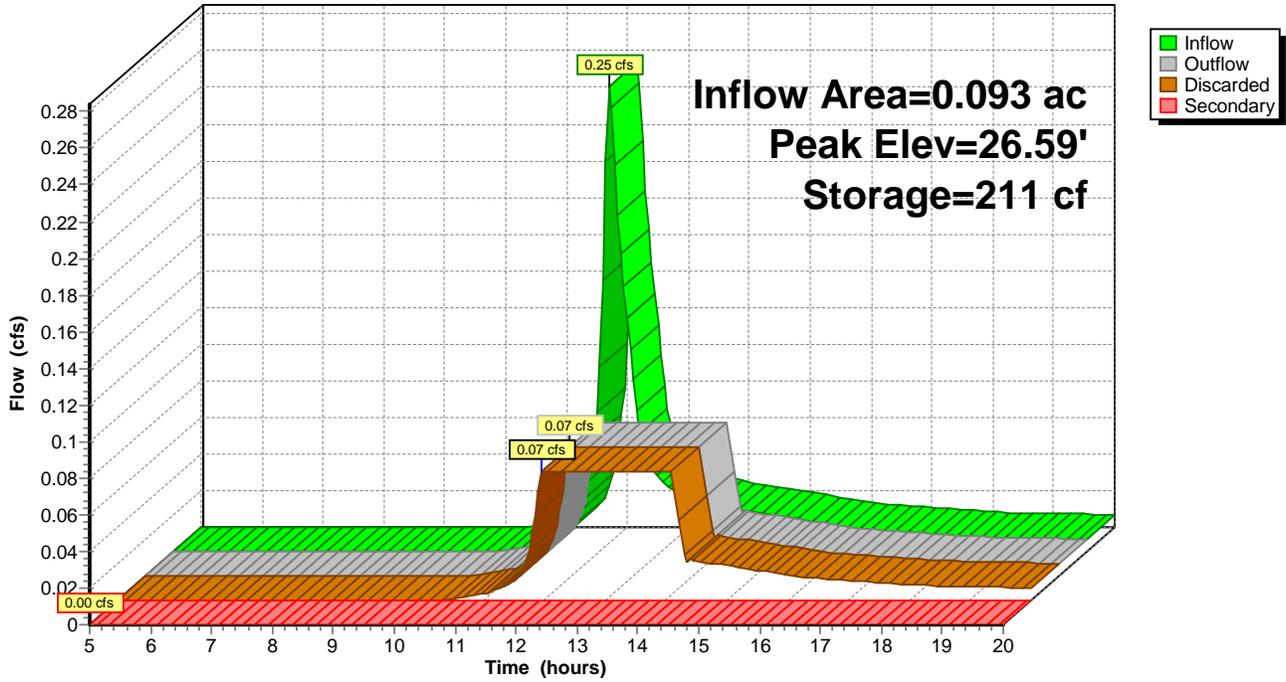
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 340

Pond GT-6:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 341

Summary for Pond IB-1:

Inflow Area = 0.739 ac, 49.80% Impervious, Inflow Depth > 2.01" for 100-YR event
 Inflow = 1.80 cfs @ 12.31 hrs, Volume= 0.124 af
 Outflow = 0.01 cfs @ 20.00 hrs, Volume= 0.007 af, Atten= 99%, Lag= 461.3 min
 Discarded = 0.01 cfs @ 20.00 hrs, Volume= 0.007 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond AP : Surrounding Wetlands

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 27.87' @ 20.00 hrs Surf.Area= 2,821 sf Storage= 5,057 cf

Plug-Flow detention time= 251.5 min calculated for 0.007 af (6% of inflow)
 Center-of-Mass det. time= 130.0 min (984.1 - 854.1)

Volume	Invert	Avail.Storage	Storage Description
#1	25.00'	8,279 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	23.00'	170 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
		424 cf Overall x 40.0% Voids	
		8,448 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	858	0	0
26.00	1,419	1,139	1,139
27.00	2,033	1,726	2,865
28.00	2,694	2,364	5,228
28.60	3,109	1,741	6,969
29.00	3,440	1,310	8,279

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	212	0	0
24.00	212	212	212
25.00	212	212	424

Device	Routing	Invert	Outlet Devices
#1	Secondary	28.60'	10.0' long + 2.0 ' SideZ x 4.2' breadth Overflow Riprap Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.53 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.67 2.71 2.72 2.74 2.77 2.85 3.01 3.23
#2	Discarded	23.00'	0.198 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 20.00 hrs HW=27.87' (Free Discharge)
 ↳2=Exfiltration (Exfiltration Controls 0.01 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=23.00' (Free Discharge)
 ↳1=Overflow Riprap Spillway (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

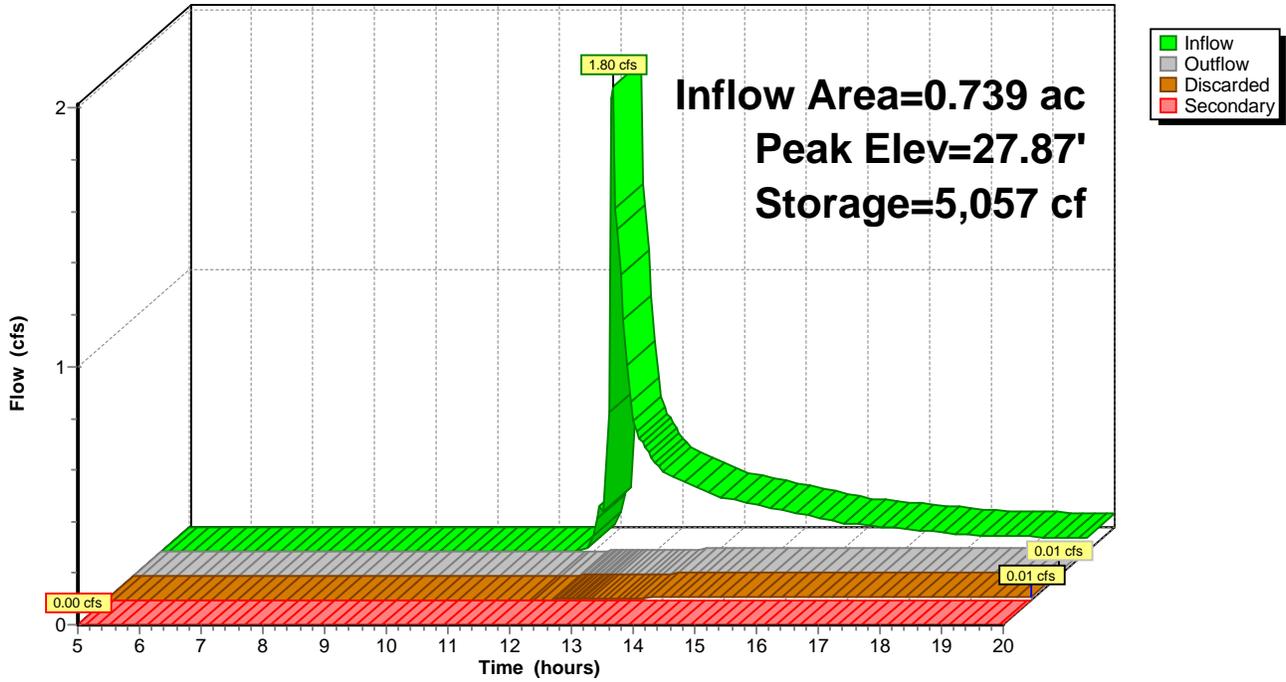
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 342

Pond IB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 343

Summary for Pond IB-2:

Inflow Area = 3.234 ac, 71.74% Impervious, Inflow Depth > 0.35" for 100-YR event
 Inflow = 4.82 cfs @ 12.20 hrs, Volume= 0.093 af
 Outflow = 0.77 cfs @ 12.56 hrs, Volume= 0.093 af, Atten= 84%, Lag= 21.6 min
 Discarded = 0.57 cfs @ 12.56 hrs, Volume= 0.091 af
 Primary = 0.20 cfs @ 12.56 hrs, Volume= 0.002 af
 Routed to Pond IB-3 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 29.84' @ 12.56 hrs Surf.Area= 2,038 sf Storage= 2,857 cf

Plug-Flow detention time= 52.6 min calculated for 0.093 af (100% of inflow)
 Center-of-Mass det. time= 52.6 min (795.2 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	5,261 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
#2	25.00'	115 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			288 cf Overall x 40.0% Voids
		5,376 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	1,104	0	0
29.00	1,514	1,309	1,309
30.00	1,966	1,740	3,049
30.70	2,305	1,495	4,544
31.00	2,475	717	5,261

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.00	144	0	0
26.00	144	144	144
27.00	144	144	288

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	100.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	25.00'	12.049 in/hr Exfiltration over Surface area
#3	Primary	26.96'	12.0" Round 12" HDPE Pipe L= 36.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 26.96' / 26.60' S= 0.0100 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	29.79'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 344

Discarded OutFlow Max=0.57 cfs @ 12.56 hrs HW=29.84' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.57 cfs)

Primary OutFlow Max=0.17 cfs @ 12.56 hrs HW=29.84' (Free Discharge)

↳ **3=12" HDPE Pipe** (Passes 0.17 cfs of 4.61 cfs potential flow)

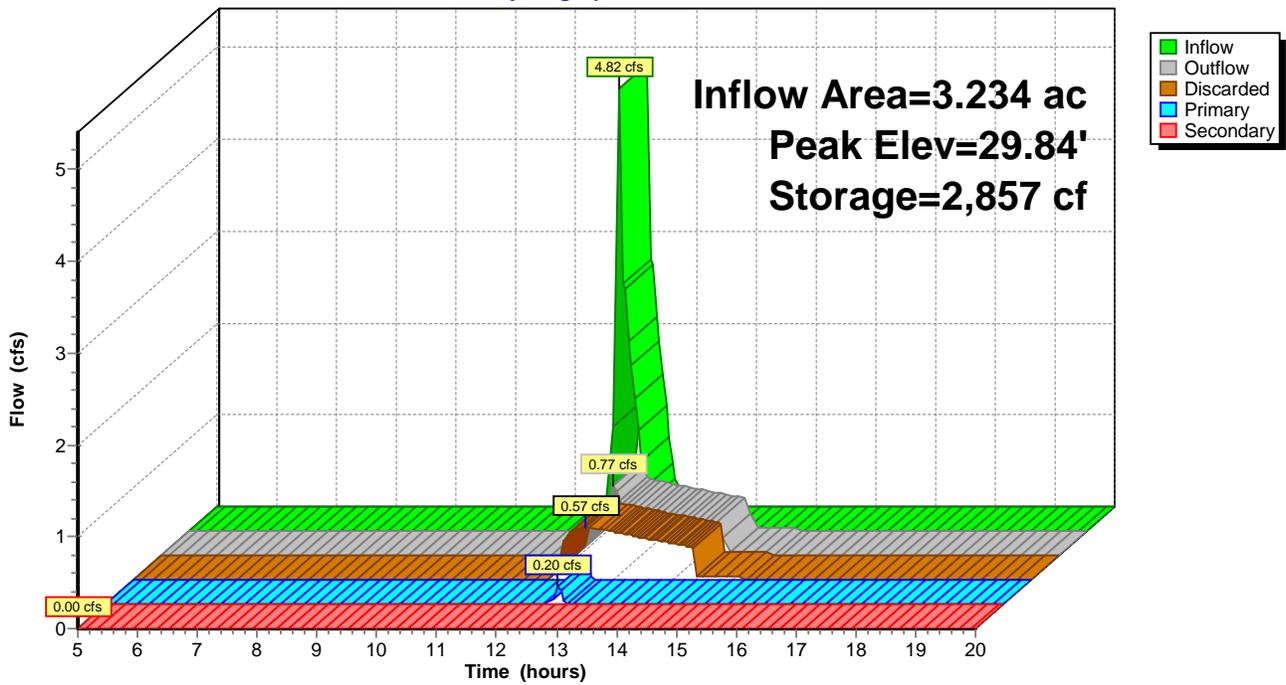
↳ **4=18" Nyloplast Drain Grate** (Weir Controls 0.17 cfs @ 0.73 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=25.00' (Free Discharge)

↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond IB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 345

Summary for Pond IB-3:

Inflow Area = 3.433 ac, 68.31% Impervious, Inflow Depth > 0.10" for 100-YR event
 Inflow = 0.33 cfs @ 12.11 hrs, Volume= 0.027 af
 Outflow = 0.17 cfs @ 12.62 hrs, Volume= 0.027 af, Atten= 47%, Lag= 30.5 min
 Discarded = 0.17 cfs @ 12.62 hrs, Volume= 0.027 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-6 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.32' @ 12.62 hrs Surf.Area= 624 sf Storage= 164 cf

Plug-Flow detention time= 6.5 min calculated for 0.027 af (100% of inflow)
 Center-of-Mass det. time= 6.1 min (837.5 - 831.4)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	4,615 cf	Infiltration Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	385	0	0
27.00	1,121	753	753
28.00	1,917	1,519	2,272
29.00	2,768	2,343	4,615

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.00'	309.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	26.00'	12.049 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.17 cfs @ 12.62 hrs HW=26.32' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.17 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=26.00' (Free Discharge)
 ↑**1=Top of Berm (Overflow)** (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

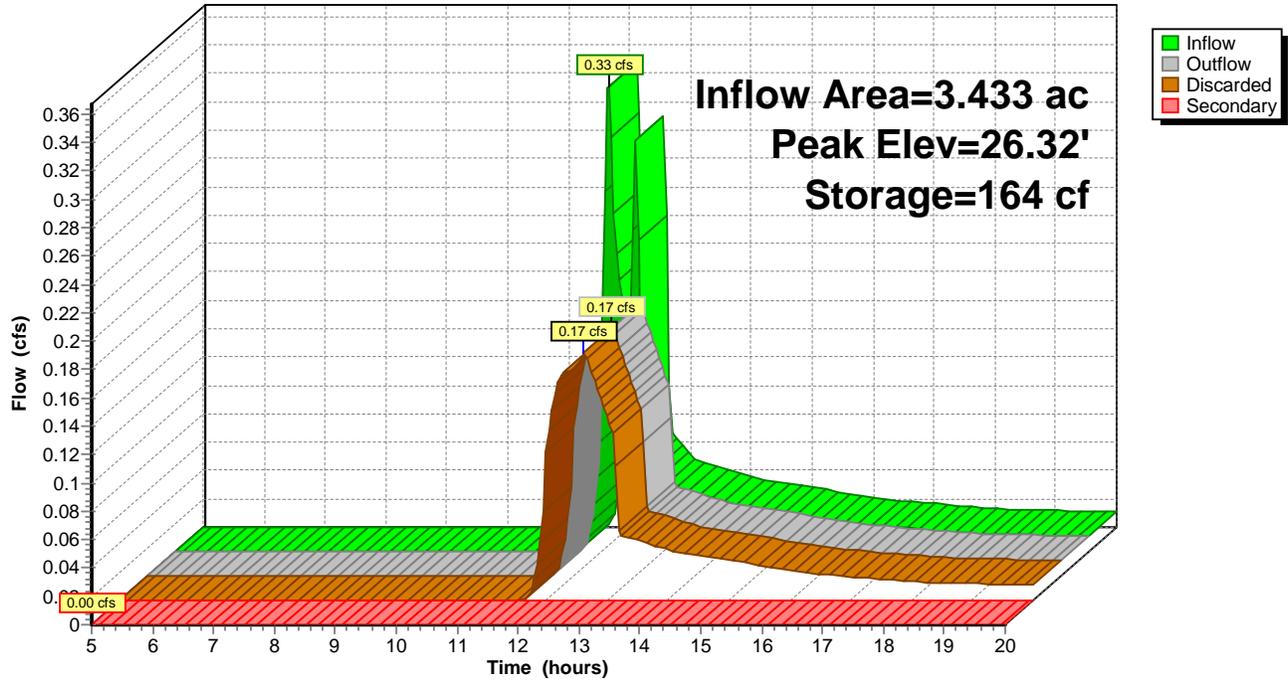
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 346

Pond IB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 347

Summary for Pond RG-1:

Inflow Area = 2.072 ac, 73.41% Impervious, Inflow Depth > 5.74" for 100-YR event
 Inflow = 12.63 cfs @ 12.09 hrs, Volume= 0.991 af
 Outflow = 0.75 cfs @ 14.02 hrs, Volume= 0.454 af, Atten= 94%, Lag= 115.4 min
 Discarded = 0.56 cfs @ 14.02 hrs, Volume= 0.430 af
 Primary = 0.19 cfs @ 14.02 hrs, Volume= 0.024 af
 Routed to Pond FB-2 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond IB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.98' @ 14.02 hrs Surf.Area= 10,645 sf Storage= 27,851 cf

Plug-Flow detention time= 244.1 min calculated for 0.452 af (46% of inflow)
 Center-of-Mass det. time= 146.0 min (895.3 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	26.00'	37,288 cf	Rain Garden Stage Storage (Prismatic) Listed below (Recalc)
#2	22.00'	1,512 cf	Gravel Trench Stage Storage (Prismatic) Listed below (Recalc)
			3,780 cf Overall x 40.0% Voids
			38,800 cf Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
26.00	1,696	0	0
27.00	2,683	2,190	2,190
27.50	3,497	1,545	3,735
28.00	4,266	1,941	5,675
29.00	6,024	5,145	10,820
30.00	7,856	6,940	17,760
31.00	9,743	8,800	26,560
32.00	11,713	10,728	37,288

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	945	0	0
23.00	945	945	945
24.00	945	945	1,890
25.00	945	945	2,835
26.00	945	945	3,780

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	392.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	22.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	26.89'	12.0" Round 12" HDPE Pipe L= 40.0' CMP, projecting, no headwall, Ke= 0.900

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 348

#4 Device 3 30.93' Inlet / Outlet Invert= 26.89' / 26.49' S= 0.0100 '/ Cc= 0.900
n= 0.012, Flow Area= 0.79 sf
3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns
X 14 rows C= 0.600 in 18.0" Grate (71% open area)
Limited to weir flow at low heads

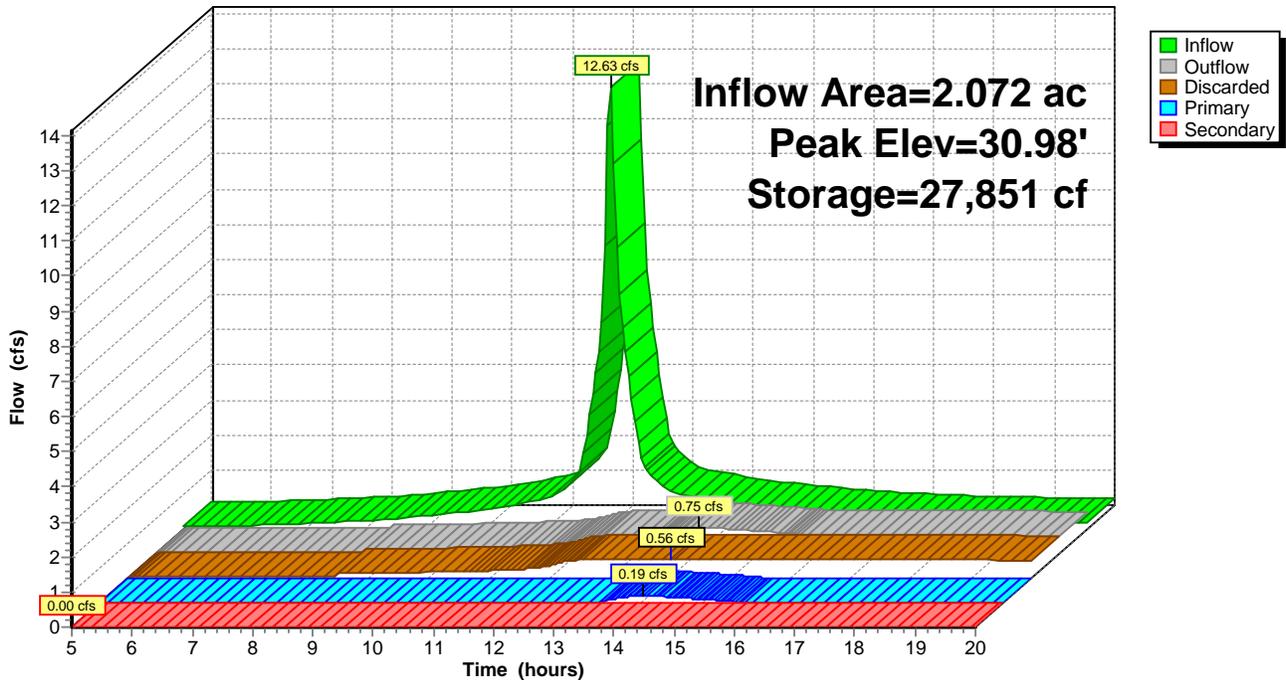
Discarded OutFlow Max=0.56 cfs @ 14.02 hrs HW=30.98' (Free Discharge)
↳ **2=Exfiltration** (Exfiltration Controls 0.56 cfs)

Primary OutFlow Max=0.16 cfs @ 14.02 hrs HW=30.98' (Free Discharge)
↳ **3=12" HDPE Pipe** (Passes 0.16 cfs of 5.65 cfs potential flow)
↳ **4=18" Nyloplast Drain Grate** (Weir Controls 0.16 cfs @ 0.71 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=22.02' (Free Discharge)
↳ **1=Top of Berm (Overflow)** (Controls 0.00 cfs)

Pond RG-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 349

Summary for Pond SWB-1:

Inflow Area = 0.052 ac, 44.23% Impervious, Inflow Depth > 3.19" for 100-YR event
 Inflow = 0.20 cfs @ 12.10 hrs, Volume= 0.014 af
 Outflow = 0.08 cfs @ 12.41 hrs, Volume= 0.013 af, Atten= 62%, Lag= 19.0 min
 Discarded = 0.02 cfs @ 12.42 hrs, Volume= 0.012 af
 Primary = 0.06 cfs @ 12.41 hrs, Volume= 0.001 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-2 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.98' @ 12.42 hrs Surf.Area= 416 sf Storage= 223 cf

Plug-Flow detention time= 115.8 min calculated for 0.013 af (93% of inflow)
 Center-of-Mass det. time= 92.7 min (898.2 - 805.5)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	896 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	60	0	0
30.50	219	70	70
31.00	423	161	230
32.00	908	666	896

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	168.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.80'	12.0" Round 12" HDPE Pipe L= 89.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.80' / 26.91' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.96'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.42 hrs HW=30.98' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.05 cfs @ 12.41 hrs HW=30.98' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.05 cfs of 4.89 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Weir Controls 0.05 cfs @ 0.49 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

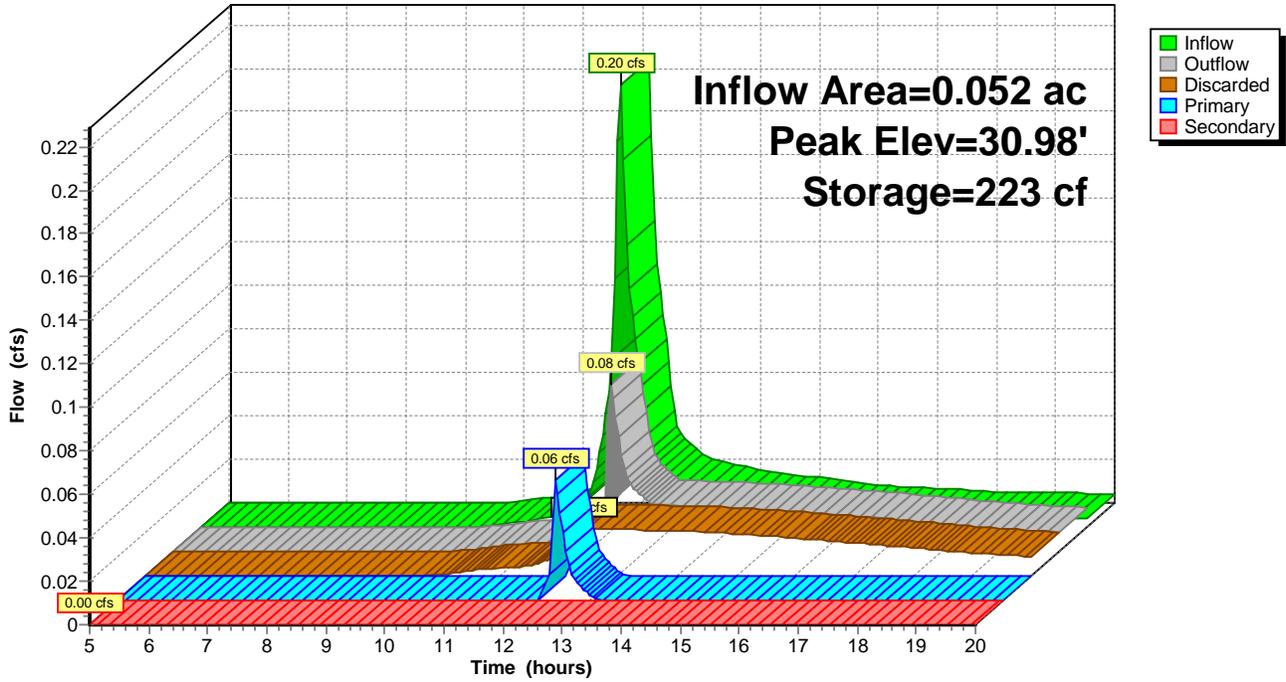
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 350

Pond SWB-1:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 351

Summary for Pond SWB-2:

Inflow Area = 0.101 ac, 71.29% Impervious, Inflow Depth > 5.90" for 100-YR event
 Inflow = 0.70 cfs @ 12.09 hrs, Volume= 0.050 af
 Outflow = 0.69 cfs @ 12.10 hrs, Volume= 0.048 af, Atten= 1%, Lag= 0.9 min
 Discarded = 0.02 cfs @ 12.10 hrs, Volume= 0.018 af
 Primary = 0.67 cfs @ 12.10 hrs, Volume= 0.031 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond SWB-3 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.49' @ 12.10 hrs Surf.Area= 392 sf Storage= 149 cf

Plug-Flow detention time= 26.7 min calculated for 0.048 af (97% of inflow)
 Center-of-Mass det. time= 16.2 min (778.4 - 762.2)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	410 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	210	0	0
30.50	394	151	151
31.00	640	259	410

Device	Routing	Invert	Outlet Devices
#1	Secondary	31.00'	159.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.00'	2.270 in/hr Exfiltration over Surface area
#3	Primary	27.10'	12.0" Round 12" HDPE Pipe L= 19.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 27.10' / 26.91' S= 0.0100 ' / Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.37'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.10 hrs HW=30.49' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.67 cfs @ 12.10 hrs HW=30.49' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.67 cfs of 5.08 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Weir Controls 0.67 cfs @ 1.15 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

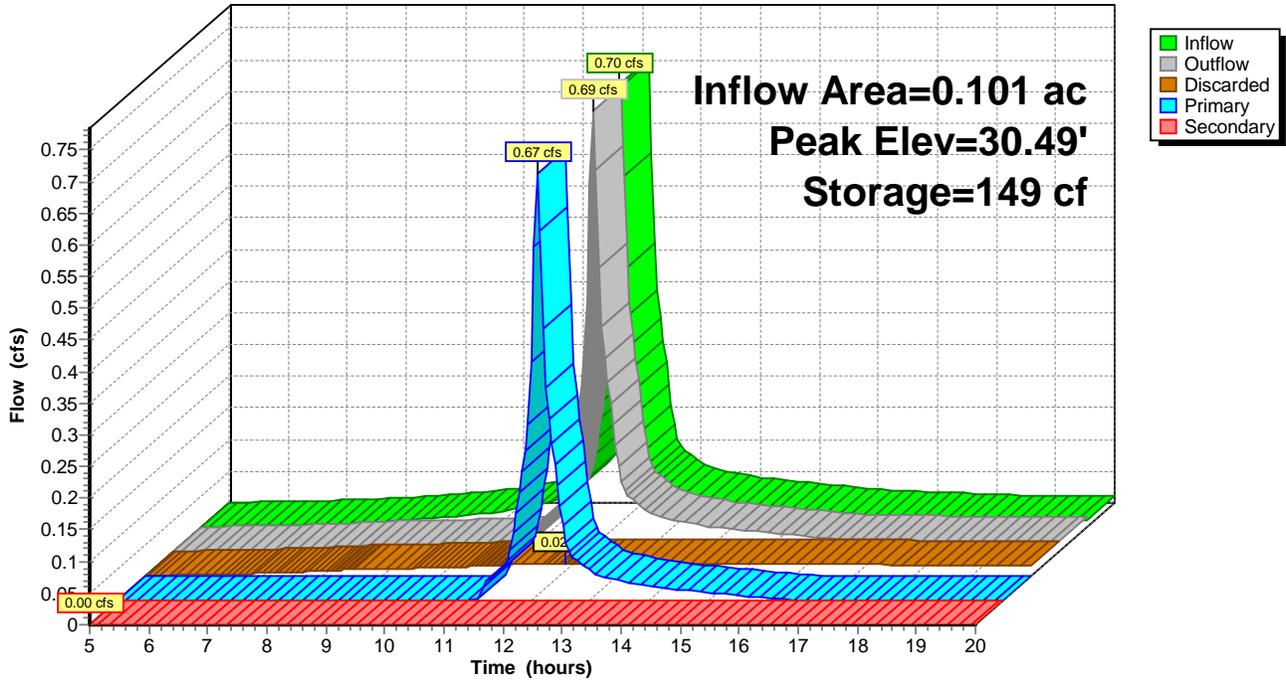
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 352

Pond SWB-2:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 353

Summary for Pond SWB-3:

Inflow Area = 0.154 ac, 35.71% Impervious, Inflow Depth > 4.74" for 100-YR event
 Inflow = 0.69 cfs @ 12.20 hrs, Volume= 0.061 af
 Outflow = 0.69 cfs @ 12.21 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.6 min
 Discarded = 0.01 cfs @ 12.21 hrs, Volume= 0.012 af
 Primary = 0.68 cfs @ 12.21 hrs, Volume= 0.047 af
 Routed to Pond UG-1 :
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Pond GT-1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 31.00' @ 12.21 hrs Surf.Area= 275 sf Storage= 92 cf

Plug-Flow detention time= 13.9 min calculated for 0.059 af (98% of inflow)
 Center-of-Mass det. time= 5.0 min (793.8 - 788.7)

Volume	Invert	Avail.Storage	Storage Description
#1	30.60'	510 cf	Basin Stage Storage (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.60	182	0	0
31.00	274	91	91
31.50	412	172	263
32.00	576	247	510

Device	Routing	Invert	Outlet Devices
#1	Secondary	32.00'	114.0' long + 3.0 ' SideZ x 3.0' breadth Top of Berm (Overflow) Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	30.60'	2.270 in/hr Exfiltration over Surface area
#3	Primary	25.96'	12.0" Round 12" HDPE Pipe L= 24.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 25.96' / 25.72' S= 0.0100 ' /' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#4	Device 3	30.88'	3.6" x 0.9" Horiz. 18" Nyloplast Drain Grate X 4.00 columns X 14 rows C= 0.600 in 18.0" Grate (71% open area) Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.21 hrs HW=31.00' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.67 cfs @ 12.21 hrs HW=31.00' (Free Discharge)
 ↑3=12" HDPE Pipe (Passes 0.67 cfs of 6.36 cfs potential flow)
 ↑4=18" Nyloplast Drain Grate (Weir Controls 0.67 cfs @ 1.15 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.60' (Free Discharge)
 ↑1=Top of Berm (Overflow) (Controls 0.00 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

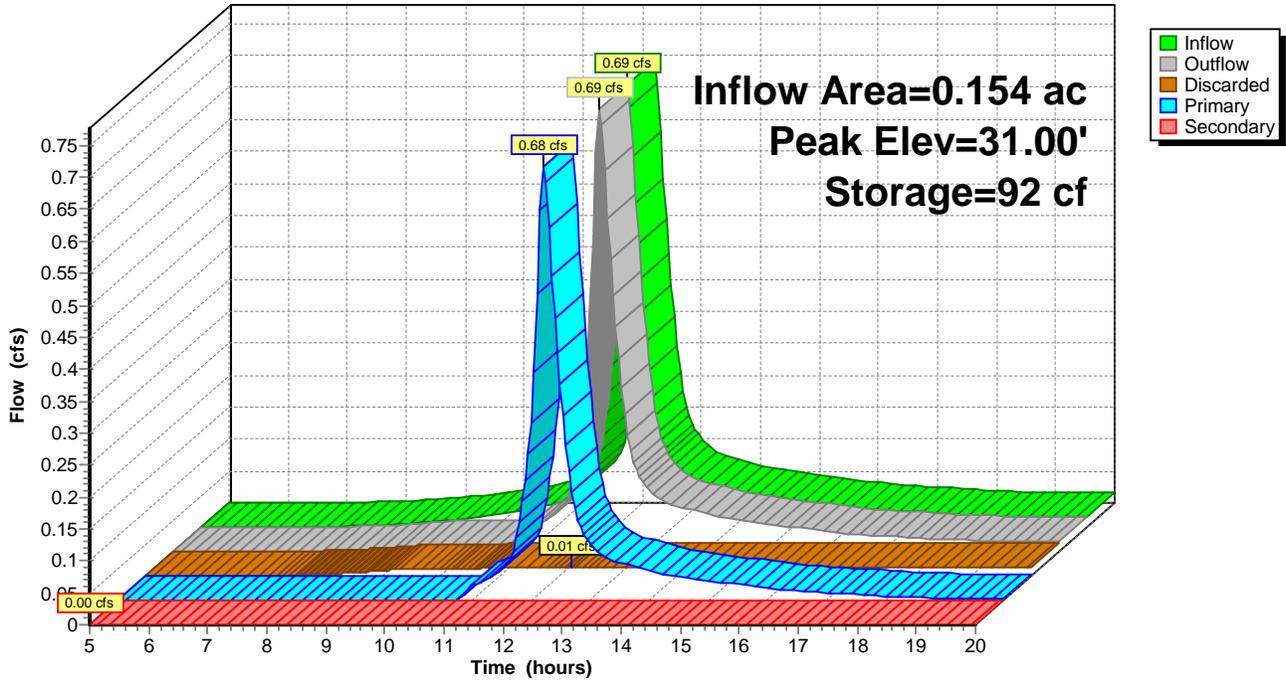
Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 354

Pond SWB-3:

Hydrograph



HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.16"

Printed 12/9/2025

Page 355

Summary for Pond UG-1:

Inflow Area = 0.575 ac, 72.70% Impervious, Inflow Depth > 5.05" for 100-YR event
 Inflow = 3.23 cfs @ 12.10 hrs, Volume= 0.242 af
 Outflow = 0.12 cfs @ 10.55 hrs, Volume= 0.123 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.12 cfs @ 10.55 hrs, Volume= 0.123 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 26.64' @ 15.13 hrs Surf.Area= 0.054 ac Storage= 0.146 af

Plug-Flow detention time= 164.1 min calculated for 0.122 af (51% of inflow)
 Center-of-Mass det. time= 85.7 min (828.9 - 743.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	22.69'	0.076 af	37.08'W x 63.06'L x 5.50'H Field A 0.295 af Overall - 0.104 af Embedded = 0.191 af x 40.0% Voids
#2A	23.44'	0.104 af	ADS_StormTech MC-3500 d +Cap x 40 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 40 Chambers in 5 Rows Cap Storage= 14.9 cf x 2 x 5 rows = 149.0 cf
		0.181 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.69'	2.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.12 cfs @ 10.55 hrs HW=22.75' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.12 cfs)

HSC-Proposed Hydrology Model

Prepared by SLR International Corporation

HydroCAD® 10.20-6a s/n 08105 © 2024 HydroCAD Software Solutions LLC

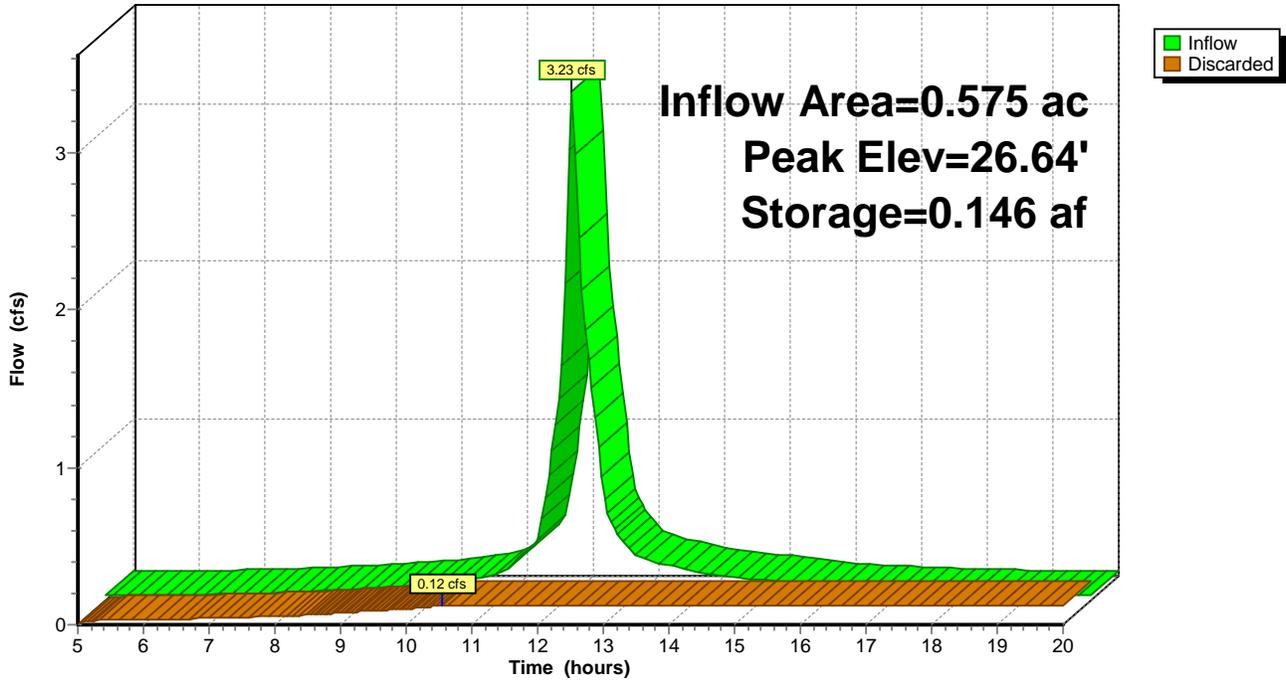
Type III 24-hr 100-YR Rainfall=8.16"

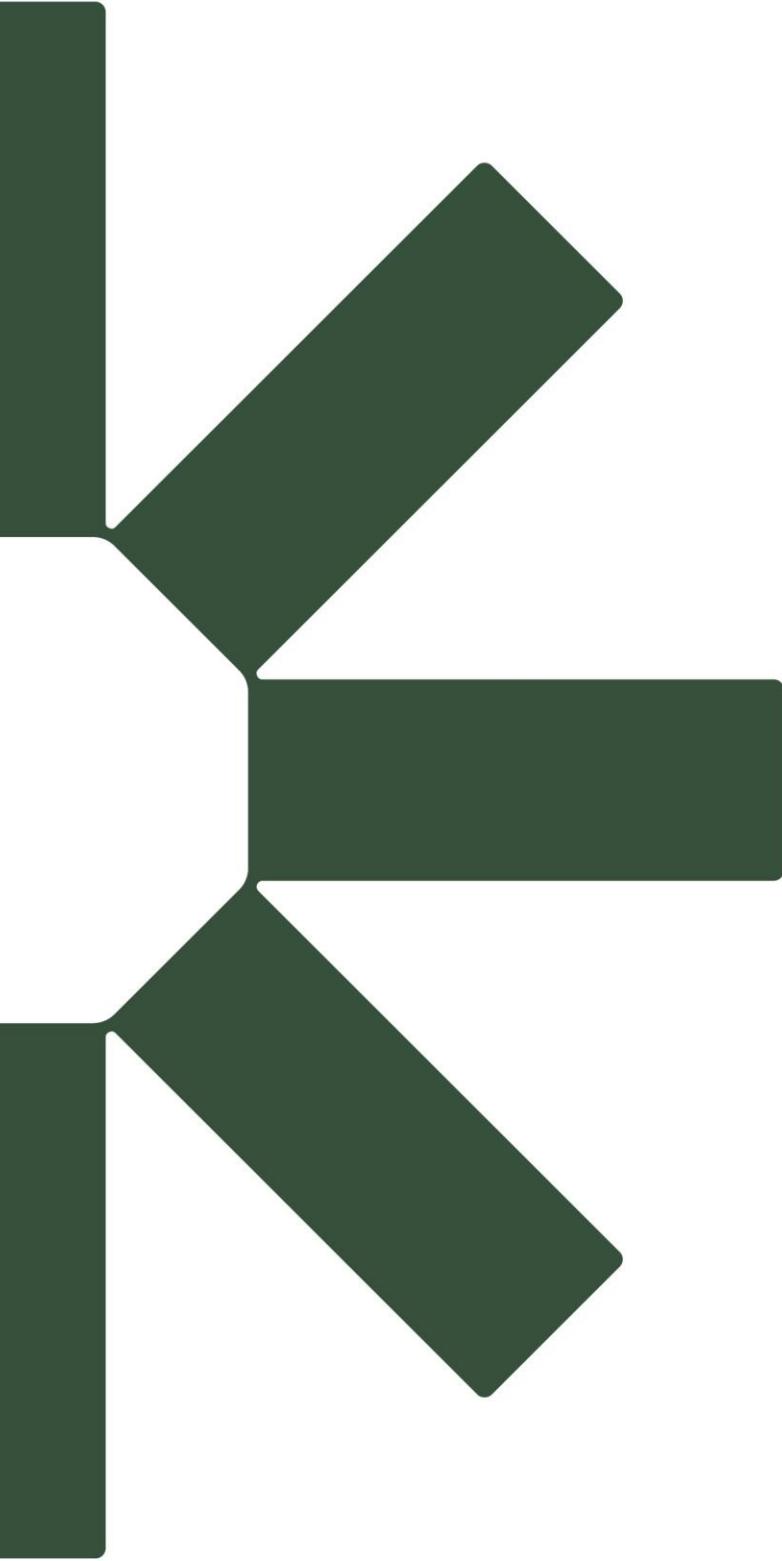
Printed 12/9/2025

Page 356

Pond UG-1:

Hydrograph





Making Sustainability Happen