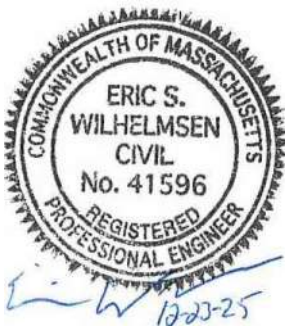
Stormwater Management Report

For:

North Attleborough High School
1 Wilson West Whitty Way
North Attleborough, MA 02760



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Report Preparation Date:

12/23/2025

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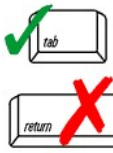
STORMWATER REPORT CHECKLIST

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

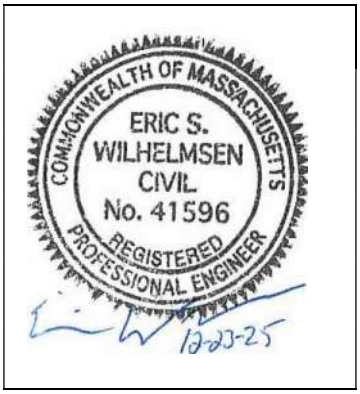
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☒ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☒ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☐ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☐ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☒ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☒ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

☐ Site is comprised solely of C and D soils and/or bedrock at the land surface

☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000

☐ Solid Waste Landfill pursuant to 310 CMR 19.000

☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☒ The BMP is sized (and calculations provided) based on:

- ☒ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☒ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

REPORT SUMMARY

REPORT SUMMARY:

Calculation Objectives:
The objective of these calculations is to demonstrate design compliance with DEP's Stormwater Management regulations, the Town of North Attleborough, and the Massachusetts Stormwater Handbook requirements for water quantity and water quality objectives. Drainage area maps have been incorporated into this report to depict proposed watershed areas.

Calculation Methods:
- TR55/TR20 methodology utilizing HydroCAD software by Applied Microcomputer Systems
- DEP Stormwater Management Handbook for Water Quality Calculations / TSS Removal

Sources of Data:
- Technical Report No. 20
- Technical Report No. 55 and the Massachusetts Supplement for TR-55
- Technical Paper No. 40
- "Custom Soil Resource Report for, Middlesex County Massachusetts" by the Natural Resources Conservation Service (NRCS).
- "Massachusetts Stormwater Handbook" – Revised February 2008, by the Massachusetts Department of Environmental Protection (MADEP)
- NOAA atlas 14 point Precipitation Frequency Estimates

Selection of Storm Events:
The NOAA atlas 14 point rainfall data for the Type III, 24-hour storm events are as follow:

Frequency (Years)	Rainfall (Inches)
2	3.40
10	5.17
25	6.27
100	7.97

The time of concentration (Tc) for each watershed was calculated utilizing SCS TR-55 and the Massachusetts supplement. If the calculated Tc resulted in a time of less than 0.1 hours (6 minutes), then a direct entry of 6 minutes was used in the calculations.

Existing Conditions Overview:

The project site consists of the North Attleborough High School and Middle School campus, located at approximately 41°58'52.1" N latitude and 71°18'40.2" W longitude on the south side of Landry Avenue in North Attleborough, Massachusetts. The property is located within the R15 Residential Zoning District and is developed with school buildings, access driveways, parking areas, athletic facilities, maintained lawn areas, and wooded sections. The campus is bordered by Landry Avenue to the north and by wooded areas and residential properties to the east, west, and south. Site topography is characterized by generally gentle slopes throughout the central portions of the campus, with steeper grades along the southern and western boundaries that drain toward adjacent residential properties.

Existing drainage infrastructure is present throughout the site and consists primarily of catch basins, manholes, and underground piping that collect and convey stormwater runoff from paved areas. In addition, aboveground detention basins are located along the eastern and southern portions of the site, and an underground chamber system is situated beneath the pavement in front of the Middle School. Stormwater runoff is ultimately discharged via multiple outfall locations and stabilized riprap swales toward adjacent and neighboring properties surrounding the site.

Soil Descriptions:

Existing soil conditions have been characterized by the Middlesex County Soil Survey Report. The soils have been assigned a Hydrologic Soil Grouping (HSG) by NRCS. The soil boundaries depicted on the soil maps are as follows.

	NRCS Soil Map Unit Description	Hydrologic Soil Group (HSG) Rating
73A	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	D
306B	Paxton fine sandy loam, 0 to 8 percent slopes, very stony	C
306C	Paxton fine sandy loam, 8 to 15 percent slopes, very stony	C
706C	Charlton-Rock outcrop-Paxton complex, 3 to 15 percent slopes	B

The site is predominantly underlain by Paxton fine sandy loam soils, classified as Hydrologic Soil Group (HSG) C, which exhibit moderately low infiltration rates. The baseball field located to the northwest is underlain by Whitman fine sandy loam soils (HSG D), while a portion of the parking lot in front of the Middle School is underlain by Charlton–Paxton soils (HSG B). Subsurface explorations conducted by Lahlaf Geotechnical Consulting, Inc. in April 2024 and August 2025 included soil borings and test pits. Groundwater was encountered at depths ranging from approximately 7.8 to 22 feet below ground surface. For stormwater management design, HSG C soils will be used to establish curve numbers, infiltration rates, and to calculate required groundwater recharge and water quality treatment volumes.

Existing Subcatchment:

The existing site has been analyzed using sixteen Design Points (DP-1e through DP-16e). The watersheds flowing to the design points are described as follows:

Subcatchments to DP-1e:

Watershed E-1: This watershed contains grass, woods, and a portion of Wilson West Whitty Way. The runoff from this area is captured by catch basins and discharged into an aboveground basin designated as DP-1e in the HydroCAD model and watershed maps.

Subcatchments to DP-2e:

Watershed E-2a: This watershed encompasses areas located southeast of the Middle School and includes grassed areas, paved surfaces, and portions of the Middle School roof (Roof 1 and Roof 2). Runoff from this watershed is collected by catch basins and conveyed to an aboveground detention basin. Discharge from this basin flows toward residential properties to the east and discharges at a point designated as DP-2e in the HydroCAD model and watershed maps.

Watershed E-2b: This watershed consists of the aboveground detention basin area. Discharge from this basin flows toward residential properties to the east and discharges at a point designated as DP-2e in the HydroCAD model and watershed maps.

Subcatchments to DP-3e:

Watershed E-3: This watershed is located to the east of the High School parking lot, and consists of grass, woods, and a section of tennis courts. Runoff from this watershed flows to residential properties to the east and discharges at a point designated as DP-3e in the HydroCAD model and watershed maps.

Subcatchments to DP-4e:

Watershed E-4: This watershed is located east of the High School and includes grassed areas, paved surfaces, tennis courts, and portions of the High School roof (Roof 3 and Roof 4). Runoff from this watershed is collected by on-site catch basins and conveyed via a riprap swale to the residential properties to the east. This discharge point is designated as DP-4e in the HydroCAD model and watershed maps.

Subcatchments to DP-5e:

Watershed E-5: This watershed is located east of the project site and includes portions of the grass field and adjacent wooded area. Runoff from this watershed flows to the residential properties to the east. This discharge point is designated as DP-5e in the HydroCAD model and watershed maps.

Subcatchments to DP-6e:

Watershed E-6: This watershed is located east of the project site and includes portions of the grass field and adjacent wooded area. Runoff from this watershed flows to the residential

properties to the east. This discharge point is designated as DP-6e in the HydroCAD model and watershed maps.

Subcatchments to DP-7e:

Watershed E-7: This watershed is located southeast of the project site and includes portions of the grass field and adjacent wooded area. Runoff from this watershed flows to the residential properties to the east. This discharge point is designated as DP-7e in the HydroCAD model and watershed maps.

Subcatchments to DP-8e:

Watershed E-8: This watershed is located south of the project site and includes portions of two grass fields, paved walkway, and adjacent wooded area. Runoff from this watershed flows to Stoddard Drive at the southern point of the campus. This discharge point is designated as DP-8e in the HydroCAD model and watershed maps.

Subcatchments to DP-9e:

Watershed E-9: This watershed is located south of the project site and includes portions of the grass field and adjacent wooded area. Runoff from this watershed flows to the woods to the south. This discharge point is designated as DP-9e in the HydroCAD model and watershed maps.

Subcatchments to DP-10e:

Watershed E-10a: This watershed encompasses the area near the center of the site, in between the two schools and the stadium. It includes grassed areas, paved and gravel surfaces, and portions of the roof from both schools (Roof 5 and Roof 6). Runoff from this watershed is collected by a system of catch basins and is transported then discharged to a detention basin at the southern point of the watershed. This discharge point is designated as DP-10e in the HydroCAD model and watershed maps.

Watershed E-10b: This watershed is located south of the project site and includes paved surfaces, portions of the grass field, and adjacent wooded area. Runoff from this watershed flows south to the detention basin at the southern point of the watershed. This discharge point is designated as DP-10e in the HydroCAD model and watershed maps.

Subcatchments to DP-11e:

Watershed E-11: This watershed is located southwest of the project site and includes portions of two grass fields, paved walkway, and adjacent wooded area. Runoff from this watershed flows to the woods to the southwest. This discharge point is designated as DP-11e in the HydroCAD model and watershed maps.

Subcatchments to DP-12e:

Watershed E-12: This watershed is located southwest of the project site and includes portions of the grass field, paved walkway, and adjacent wooded area. Runoff from this watershed flows

to the wooded residential area to the southwest. This discharge point is designated as DP-12e in the HydroCAD model and watershed maps.

Subcatchments to DP-13e:

Watershed E-13a: This watershed is located west of the project site and includes the existing stadium. Runoff from this watershed is collected by a system of catch basins and is transported offsite to the western wooded residential area. This discharge point is designated as DP-13e in the HydroCAD model and watershed maps.

Watershed E-13b: This watershed is located west of the project site and includes the existing stadium. Runoff from this watershed flows west to wooded residential area. This discharge point is designated as DP-13e in the HydroCAD model and watershed maps.

Subcatchments to DP-14e:

Watershed E-14: This watershed is located west of the project site and includes portions of the grass field, bleacher area, gravel path, and adjacent wooded area. Runoff from this watershed flows to the wooded residential area to the west. This discharge point is designated as DP-14e in the HydroCAD model and watershed maps.

Subcatchments to DP-15e:

Watershed E-15a: This watershed is located northwest of the project site and includes portions of the grass field, batting cages, gravel path, and adjacent wooded area. Runoff from this watershed flows to the wetlands to the west of the baseball/discus field. This discharge point is designated as DP-15e in the HydroCAD model and watershed maps.

Watershed E-15b: This watershed is located northwest of the project site and includes portions of the grass field, paved walkways, gravel path, and adjacent wooded area. Runoff from this watershed is collected by a catch basin at the northeast corner of the baseball field and is then transported and discharged to the wetlands to the west of the baseball/discus field. This discharge point is designated as DP-15e in the HydroCAD model and watershed maps.

Watershed E-15c, E-15i, E-15c: This watershed is located north of the project site and includes paved areas, some parts of the middle school roof, and some sidewalks and grass areas. Runoff from this watershed is collected by a system of catch basins and is transported and discharged to the wetlands west of the baseball/discus field. This discharge point is designated as DP-15e in the HydroCAD model and watershed maps.

Watershed E-15d, E-15e, E-15f, E-15h: This watershed is located north of the project site and includes paved areas and grass areas. Runoff from this watershed is collected by a system of catch basins and is fed into an underground chamber infiltration system. It is unsure how many chambers there are or how big the system is, but eventually the water is discharged and transported to the wetlands west of the baseball/discus field. This discharge point is designated as DP-15e in the HydroCAD model and watershed maps.

Subcatchments to DP-16e:

Watershed E-16: This watershed is located north of the project site and includes portions of the grass field and existing pavement driveway and sidewalk. Runoff from this watershed is collected by a series of catch basins and connects to the drainage system on Landry Street to the northwest. This discharge point is designated as DP-16e in the HydroCAD model and watershed maps.

Design Point	Summary of Existing Stormwater Conditions			
Peak Flow (cfs)	**2 Yr.**	**10 Yr.**	**25 Yr.**	**100 Yr.**
DP-1e	4.58	8.63	11.19	15.15
DP-2e	8.96	14.45	17.85	23.09
DP-3e	1.12	2.38	3.21	4.53
DP-4e	20.92	33.64	41.46	53.46
DP-5e	1.47	3.12	4.22	5.97
DP-6e	1.91	3.99	5.36	7.53
DP-7e	2.02	4.50	6.17	8.84
DP-8e	5.77	11.41	15.06	20.76
DP-9e	2.05	4.56	6.25	8.97
DP-10e	24.43	41.24	51.65	67.63
DP-11e	5.57	11.24	14.91	20.68
DP-12e	2.40	4.80	6.35	8.79
DP-13e	5.01	11.04	15.09	21.56
DP-14e	1.08	1.98	2.54	3.41
DP-15e	27.30	49.41	63.54	85.58
DP-16e	2.39	4.38	5.64	7.57

Proposed Conditions Overview:

Under the proposed conditions, the existing High School building and the adjacent southern baseball field will be demolished. The baseball field area will be redeveloped as the site of the newly proposed high school. Additional project elements include replacement of the existing high school parking lots, tennis courts, and baseball fields; construction of a new entrance dedicated to the high school; and the repaving and reconstruction of Wilson West Whitty Way, the Middle School parking lot, and the Middle School baseball field.

To accommodate changes in stormwater flow volumes, several underground infiltration systems (Cultec R-300HD) are proposed throughout the site to mitigate increased runoff between existing and proposed conditions. These systems will be connected to existing outlet structures to maintain the same discharge locations as existing conditions.

Proposed Subcatchments:

The proposed site analysis uses the same Design Point under existing conditions (DP-1p through DP-16p). The contributing watershed areas are as follows:

Subcatchments to DP-1p:

Watershed P-1a: This watershed contains the new Maintenance Building Site, along with paved parking and some grass areas. The runoff from this area is captured by a catch basin and sent into an underground infiltration system (UGI-A). This is then discharged into an existing basin along the entrance to the High School just south of Landry Avenue. This point is designated as DP-1p in the HydroCAD model and watershed maps. This area corresponds to a part of the area from E-1.

Watershed P-1b: This watershed encompasses a portion of Wilson West Whitty Way and some of its adjacent grass areas. The runoff from this area is captured by a series of catch basins and discharged into an existing basin along the entrance to the High School just south of Landry Avenue. This point is designated as DP-1p in the HydroCAD model and watershed maps. This area corresponds to a part of the area from E-1.

Watershed P-1c: This watershed consists of the wooded area and grassy area around the existing basin just south of Landry Avenue. The runoff from this area flows directly into the existing basin. This point is designated as DP-1p in the HydroCAD model and watershed maps. This area corresponds to a part of the area from E-1.

Subcatchments to DP-2p:

Watershed P-2a: This watershed encompasses areas located southeast of the Existing Middle School and includes grass areas, paved surfaces, and portions of the roof (Roof 1 and Roof 2). Runoff from this watershed is collected by a series of catch basins and fed into an underground infiltration system (UGI-4). This is then discharged into an existing basin on the eastern side of the site and into residential properties to the east. This discharge point is designated as DP-2p in the HydroCAD model and watershed maps. This area corresponds to a part of the area from E-2a and includes Roof 1 and Roof 2.

Watershed P-2b: This watershed encompasses areas located southeast of the Existing Middle School around the existing detention basin and includes grass areas and the adjacent wooded area. Runoff from this watershed flows directly in the detention basin and flows out to the residential areas to the east. This discharge point is designated as DP-2p in the HydroCAD model and watershed maps. This area corresponds to parts of the area from E-2b.

Subcatchments to DP-3p:

Watershed P-3: This watershed is located to the east of the High School parking lot, and consists of grass areas and the adjacent woods. Runoff from this watershed flows to residential properties to the east and discharges at a point designated as DP-3p in the HydroCAD model and watershed maps. This area corresponds to the same area as E-3.

Subcatchments to DP-4p:

Watershed P-4a: This watershed is located southwest of the Middle School and includes grassed areas and paved parking surfaces and sidewalks. Runoff from this watershed is collected by on-site catch basins and fed into an underground infiltration chamber (UGI-2). Any outflow

is then transported via a series of manholes and discharges to proposed rip rap that leads to the residential areas to the east of the site. This discharge point is designated as DP-4p in the HydroCAD model and watershed maps. This area corresponds to an area originally part of E-10a.

Watershed P-4b: This watershed is located south of the Middle School and includes grassed areas, part of the roof (Roof 6), and paved parking surfaces and sidewalks. Runoff from this watershed is collected by on-site catch basins and fed into an underground infiltration chamber (UGI-3). Any outflow is then transported via a series of manholes and discharges to proposed rip rap that leads to the residential areas to the east of the site. This discharge point is designated as DP-4p in the HydroCAD model and watershed maps. This area corresponds to an area originally part of E-2a, E-10a, and parts of the Existing High School roof.

Watershed P-4c: This watershed is located south of the Middle School and consists of the newly proposed synthetic field, which is to be built on the location of existing high school building. Runoff from this watershed is collected by subgrade flat drains and is then transported and discharged to proposed rip rap that leads to the residential areas to the east of the site. This discharge point is designated as DP-4p in the HydroCAD model and watershed maps. This area corresponds to an area originally part of the existing high school building and parts of E-4.

Watershed P-4d: This watershed is located south of the existing high school and consists of paved parking, driveways, and sidewalks, and some adjacent grass areas. Runoff from this watershed is collected by a series of catch basins and is then fed into an underground infiltration chamber (UGI-5). Any outflow is then transported via a series of manholes and discharges to proposed rip rap that leads to the residential areas to the east of the site. This discharge point is designated as DP-4p in the HydroCAD model and watershed maps. This area corresponds to an area originally part of E-2b, E-4, and E-10a.

Watershed P-4e: This watershed is located south of the existing middle school parking lot and consists of some paved areas and adjacent grass cover. Runoff from this watershed is collected by a series of catch basins and transported and discharged to proposed rip rap that leads to the residential areas to the east of the site. This discharge point is designated as DP-4p in the HydroCAD model and watershed maps. This area corresponds to an area originally part of E-2a and E-10a.

Watershed P-4f: This watershed is located east of the existing high school and consists of grass areas and adjacent wooded area. Runoff from this watershed discharges directly to the existing swale on the east side of the site and into the residential areas. This discharge point is designated as DP-4p in the HydroCAD model and watershed maps. This area corresponds to an area originally part of E-4.

<u>Subcatchments to DP-5p:</u>

Watershed E-5: This watershed is located east of the project site and includes portions of the grass field and adjacent wooded area. Runoff from this watershed flows to the residential properties to the east. This discharge point is designated as DP-5p in the HydroCAD model and watershed maps. This area corresponds to parts of the area from E-5a.

Subcatchments to DP-6p:

Watershed P-6: This watershed is located east of the project site and includes portions of the grass field and adjacent wooded area. Runoff from this watershed flows to the residential properties to the east. This discharge point is designated as DP-6p in the HydroCAD model and watershed maps. This area corresponds to parts of the area from E-6a.

Subcatchments to DP-7p:

Watershed P-7: This watershed is located southeast of the project site and includes portions of the grass field and adjacent wooded area. Runoff from this watershed flows to the residential properties to the east. This discharge point is designated as DP-7p in the HydroCAD model and watershed maps. This area corresponds to parts of the area from E-7a.

Subcatchments to DP-8p:

Watershed P-8: This watershed is located south of the project site and includes paved parking, some walkways, and some adjacent grass areas. Runoff from this watershed flows to Stoddard Drive at the southern point of the campus. This discharge point is designated as DP-8p in the HydroCAD model and watershed maps. This area corresponds to some of the area from E-8a.

Subcatchments to DP-9p:

Watershed P-9: This watershed is located south of the project site and includes portions of the grass field and adjacent wooded area. Runoff from this watershed flows to the woods to the south. This discharge point is designated as DP-9e in the HydroCAD model and watershed maps. This area corresponds to most of the area from E-9a.

Subcatchments to DP-10e:

Watershed P-10a: This watershed is located southeast of the project site, just east of the newly proposed high school building. It includes paved parking and some grass cover. Runoff from this watershed is collected by a system of catch basins and fed into an underground infiltration chamber (UGI-6). Any outflow is then transported and stored in a drain manhole (DMH-51), until it is then moved to another underground infiltration chamber (UGI-7). The water is then transported and discharged at an existing basin at the southwest corner of the site. This discharge point is designated as DP-10p in the HydroCAD model and watershed maps. This area corresponds to parts of E-4, E-5a, and E-6a.

Watershed P-10b: This watershed encompasses the new high school building and surrounding area. It includes the roofs of the building along with some grass area and adjacent parking. Runoff from this watershed is collected by a system of catch basins and area drains and fed into an underground infiltration chamber (UGI-6). Any outflow is then transported and stored in a drain manhole (DMH-51), until it is then moved to another underground infiltration chamber (UGI-7). The water is then transported and discharged at an existing basin at the southwest corner of the site. This discharge point is designated as DP-10p in the

HydroCAD model and watershed maps. This area corresponds to parts of E-4, E-8a, and E-10a.

Watershed P-10c: This watershed is in the southeast corner of the site and includes just the grass area. Runoff from this watershed is collected by a system of area drains and stored in a drain manhole (DMH-51), until it is fed into an underground infiltration chamber (UGI-7). The water is then transported and discharged at an existing basin at the southwest corner of the site. This discharge point is designated as DP-10p in the HydroCAD model and watershed maps. This area corresponds to parts of E-7a.

Watershed P-10d: This watershed is in the southern area of the site and includes the parking lot for the new high school and some adjacent grass cover. Runoff from this watershed is collected by a system of catch basins and stored in a drain manhole (DMH-55), before being fed into an underground infiltration chamber (UGI-8). The water is then transported and discharged at an existing basin at the southwest corner of the site. This discharge point is designated as DP-10p in the HydroCAD model and watershed maps. This area corresponds to parts of E-8a and E-9a.

Watershed P-10e: This watershed is in the southern area of the site and includes some paved parking and adjacent grass area around the existing detention basin. Runoff from this watershed flows directly into the existing detention pond. This discharge point is designated as DP-10p in the HydroCAD model and watershed maps. This area corresponds to most of E-10b.

Watershed P-10f: This watershed is located at the western side of the new high school building and includes parking areas, roofs, and some grass areas. Runoff from this watershed is collected by a system of catch basins and is fed into an underground infiltration chamber (UGI-9). The water is then transported and discharged at an existing basin at the southwest corner of the site. This discharge point is designated as DP-10p in the HydroCAD model and watershed maps. This area corresponds to parts of E-8a, E-10a, and E-11a.

Watershed P-10g: This watershed encompasses the grass fields on the southwest corner of the site and includes the synthetic field and adjacent sidewalk. Runoff from this watershed is collected by subgrade flat drains and is fed into an underground infiltration chamber (UGI-9). The water is then transported and discharged at an existing basin at the southwest corner of the site. This discharge point is designated as DP-10p in the HydroCAD model and watershed maps. This area corresponds to parts of E-11a and E-12a.

Watershed P-10h: This watershed is located at the western side of the site in between the grass field and stadium. The watershed includes some roofs, sidewalks, and adjacent grass cover. Runoff from this watershed is collected by a system of catch basins and is fed into an underground infiltration chamber (UGI-9). The water is then transported and discharged at an existing basin at the southwest corner of the site. This discharge point is designated as DP-10p in the HydroCAD model and watershed maps. This area corresponds to parts of E-10a and E-11a.

Watershed P-10i: This watershed encompasses the existing stadium and includes all the synthetic field. Runoff from this watershed is collected by a system of flat panel drains and is fed into an underground infiltration chamber (UGI-9). The water is then transported and discharged at an existing basin at the southwest corner of the site. This discharge point is

designated as DP-10p in the HydroCAD model and watershed maps. This area corresponds to the same area as E-13a and E-13b.

Subcatchments to DP-11p:

Watershed P-11: This watershed is located southwest of the project site and includes some parking areas, grassed areas, and adjacent woods. Runoff from this watershed flows to the woods to the southwest. This discharge point is designated as DP-11p in the HydroCAD model and watershed maps. This area corresponds to parts of E-11a.

Subcatchments to DP-12p:

Watershed P-12a: This watershed is located southwest of the project site and includes sidewalks, grass areas, and adjacent wooded area. Runoff from this watershed flows to the wooded residential area to the southwest. This discharge point is designated as DP-12p in the HydroCAD model and watershed maps. This area corresponds to parts of E-12a.

Watershed P-12b: This watershed is located southwest of the project site and includes a grass area. Runoff from this watershed flows to the wooded residential area to the southwest. This discharge point is designated as DP-12p in the HydroCAD model and watershed maps. This area corresponds to parts of E-12a.

Subcatchments to DP-13p:

Watershed P-13: This watershed is located west of the project site and includes the wooded area west of the existing stadium. Runoff from this watershed flows west to wooded residential area. This discharge point is designated as DP-13p in the HydroCAD model and watershed maps. This area corresponds to part of E-13b.

Subcatchments to DP-14p:

Watershed P-14: This watershed is located west of the project site and includes parking areas, grass cover, and adjacent wooded area. Runoff from this watershed flows to the wooded residential area to the west. This discharge point is designated as DP-14p in the HydroCAD model and watershed maps. This area corresponds with E-14a.

Subcatchments to DP-15p:

Watershed P-15a: This watershed is located northwest of the project site and includes grass areas and its adjacent wooded area. Runoff from this watershed flows to the wetlands to the west of the baseball/discus field. This discharge point is designated as DP-15p in the HydroCAD model and watershed maps. This area corresponds to a part of area E-15a.

Watershed P-15b: This watershed is located northwest of the project site and includes paved areas and some grass areas. Runoff from this watershed is collected by a series of catch basins and is discharged to the wetlands to the west of the existing baseball/discus field. This discharge point is designated as DP-15p in the HydroCAD model and watershed maps. This area corresponds to a part of area E-15a.

Watershed P-15c: This watershed is located at the north of the project site and includes the grass baseball/discus field, sidewalks, and adjacent woods. Runoff from this watershed is collected

by a series of subgrade flat drainpipes and is transported through a series of pipes and manholes. It is then discharged to the wetlands to the west of the existing baseball/discus field. This discharge point is designated as DP-15p in the HydroCAD model and watershed maps. This area corresponds to a part of area E-15a, E-15b, and E-16a.

Watershed P-15d: This watershed is located at the north of the project site and includes the existing middle school roof, parking area, and intermittent grass cover. Runoff from this watershed is collected by a series of existing catch basins and is transported through a series of pipes and manholes. It is then discharged to the wetlands to the west of the existing baseball/discus field. This discharge point is designated as DP-15p in the HydroCAD model and watershed maps. This area corresponds to a part of areas E-15g and E-15i.

Watershed P-15e: This watershed is located at the northeast of the project site and includes the existing middle school parking lot and intermittent grass cover. Runoff from this watershed is collected by a series of existing catch basins and into an existing set of underground chambers. It is then transported and discharged to the wetlands to the west of the existing baseball/discus field. This discharge point is designated as DP-15p in the HydroCAD model and watershed maps. This area corresponds to a part of areas E-15d, E-15e, E-15f, and E-15h.

<u>Subcatchments to DP-16p:</u>

Watershed E-16a: This watershed is located north of the project site and includes portions of the grass field and existing pavement driveway and sidewalk. Runoff from this watershed is collected by a series of catch basins and connects to the drainage system on Landry Street to the northwest. This discharge point is designated as DP-16p in the HydroCAD model and watershed maps. This area corresponds directly to E-16.

Design Point	Summary of Proposed Stormwater Conditions			
Peak Flow (cfs)	**2 Yr.**	**10 Yr.**	**25 Yr.**	**100 Yr.**
DP-1p	3.10	5.92	7.73	9.33
DP-2p	4.73	7.88	9.85	11.60
DP-3p	0.80	1.88	2.62	3.29
DP-4p	2.13	9.39	14.31	18.58
DP-5p	0.53	1.29	1.81	2.29
DP-6p	0.61	1.44	2.00	2.52
DP-7p	1.14	2.77	3.89	4.92
DP-8p	0.21	0.38	0.48	0.57
DP-9p	1.26	3.05	4.28	5.42
DP-10p	4.36	11.27	18.42	24.77
DP-11p	1.01	2.02	2.66	3.24
DP-12p	0.82	1.77	2.40	2.97
DP-13p	0.31	0.72	0.99	1.24
DP-14p	0.80	1.57	2.06	2.50
DP-15p	23.98	45.68	59.66	72.16
DP-16p	1.57	2.89	3.73	4.46

STORMWATER MANAGEMENT STANDARDS

STORMWATER MANAGEMENT STANDARDS

Project Narrative:

The proposed project consists of the construction of a new high school building along with associated site improvements, including new parking areas, sidewalks, a synthetic athletic field, baseball fields, and tennis courts. Stormwater improvements include the installation of a total of ten (10) underground infiltration systems, along with additional stormwater management measures throughout the site, to mitigate increases in runoff resulting from the proposed construction. The proposed stormwater systems are designed to meet existing condition peak flow rates and runoff volumes.

Developmental Measures:

The proposed stormwater improvements are comprised of underground plastic chambers, pipes and drainage structures to collect the runoff around the site and discharge to various points, matching the existing design points. The underground systems were also sized to provide recharge and water quality volumes, based on the differences in impervious areas between the existing conditions and proposed work.

Standard #1: No New Untreated Discharges or Erosion to Wetlands

Developmental Measures:

The proposed stormwater system has been designed to collect runoff from around the site and provide water quality treatment of storm water prior to discharge out of the site. Runoff from the redeveloped site is less than or equal to existing conditions, therefore no improvements have been proposed to the existing discharge points.

Standard #2: Peak Rate Attenuation

Summary of Computations:

For all storms studied, the proposed peak runoff rates coming out of the system under developed conditions is less or equal pre-existing conditions. Reduction or maintenance of peak rates at the analysis points can be attributed to the direct mitigation provided by the underground stormwater system that collects runoff from the site. The following table summarizes the peak rates of runoff for all storm events analyzed at each design point for both existing and proposed conditions:

Design Point	Summary of Peak Stormwater Conditions: (CFS)							
Peak Flow	**2 Yr.**		**10 Yr.**		**25 Yr.**		**100 Yr.**	
	Exist	Prop.	Exist	Prop.	Exist	Prop.	Exist	Prop.
DP-1 Basin	4.58	3.10	8.63	5.92	11.19	7.73	15.15	9.33
DP-2 Basin	8.96	4.73	14.45	7.88	17.85	9.85	23.09	11.60
DP-3 Residential	1.12	0.80	2.38	1.88	3.21	2.62	4.53	3.29
DP-4 Swale	20.92	2.13	33.64	9.39	41.46	14.31	53.46	18.58
DP-5 Residential	1.47	0.53	3.12	1.29	4.22	1.81	5.97	2.29
DP-6 Residential	1.91	0.61	3.99	1.44	5.36	2.00	7.53	2.52
DP-7 Residential	2.02	1.06	4.50	2.77	6.17	3.89	8.84	4.92
DP-8 Stoddard Dr	5.77	0.21	11.41	0.38	15.06	0.48	20.76	0.57
DP-9 Woods	2.05	1.26	4.56	3.05	6.25	4.28	8.97	5.42
DP-10 Basin	24.43	4.36	41.24	11.27	51.65	18.42	67.63	24.77
DP-11 Woods	5.57	1.01	11.24	2.02	14.91	2.66	20.68	3.24
DP-12 Residential	2.40	0.82	4.80	1.77	6.35	2.40	8.79	2.97
DP-13 Residential	5.01	0.31	11.04	0.72	15.09	0.99	21.56	1.24
DP-14 Woods	1.08	0.80	1.98	1.57	2.54	2.06	3.41	2.50
DP-15 Wetlands	27.30	23.98	49.41	45.68	63.54	59.66	85.58	72.16
DP-16 Landry Ave	2.39	1.57	4.38	2.89	5.64	3.73	7.57	4.46

Standard #3: Recharge

At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions. The intent of this standard is to ensure that the infiltration volume of precipitation into the ground under post-development conditions is at least as much as the infiltration volume under pre-development conditions.

Required Recharge Volume:

R_V = (*F)* * (Proposed Impervious Area)

R_V = Required Recharge Volume, expressed in Ft^3, cubic yards, or acre-feet

F = 0.25-inch (100% group C soils), Target Depth Factor associated with each Hydrologic Soil Group

The Required Recharge Volume for each design point is as follows:

DP-1:

Existing Impervious Area = 39,501 SF
Post-Construction Impervious Area = 37,720 SF
Change in Impervious Area from Existing Conditions = 1,781 SF

Required Recharge = 0.35-Inch * 1/12 Ft/inch * 37,720 SF = 1,101 CF

Provided Recharge Volume:
Underground Infiltration System (UGI-A)

Lowest outlet at 237.50
Storage Provided below the outlet = 4,712 CF → (HydroCAD Report)

4,712 CF > 1,101 CF ✓

Drawdown within 72 Hours

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

Rv = Storage Volume
K = Saturated Hydraulic Conductivity (0.17 in/hr)
Bottom Area = Bottom Area of Recharge Structure

$Time_{drawdown}$ UGI = 4,712 CF / (0.17 in/hr * 1/12 ft/in * 4,619 SF) = 72 hrs

DP-2:

Existing Impervious Area (excluding the Middle School Roof) = 57,716 SF
Post-Construction Impervious Area (excluding the Middle School Roof) = 28,114 SF
Change in Impervious Area from Existing Conditions = 29,602 SF

Required Recharge = 0.35-Inch * 1/12 Ft/inch * 28,114 SF = 820 CF

Provided Recharge Volume:
Underground Infiltration System (UGI-4)

Lowest outlet at 240.40
Storage Provided below the outlet = 2,433 CF → (HydroCAD Report)

2,433 CF > 820 CF ✓

Drawdown within 72 Hours

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

Rv = Storage Volume
K = Saturated Hydraulic Conductivity (0.17 in/hr)
Bottom Area = Bottom Area of Recharge Structure

$Time_{drawdown}$ UGI = 2,433 CF / (0.17 in/hr * 1/12 ft/in * 2,606 SF) = 66 hrs

DP-3:

Existing Impervious Area = 2,765 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 2,765 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-4:

Existing Impervious Area = 224,160 SF
Post-Construction Impervious Area (excluding the Middle School Roof) = 436,325 SF
Change in Impervious Area from Existing Conditions = 212,165 SF

Required Recharge = 0.35-Inch * 1/12 Ft/inch * 436,325 SF = 12,727 CF

Provided Recharge Volume:

Underground Infiltration System (UGI-2)

Lowest outlet at 241.00
Storage Provided below the outlet = 3,350 CF → (HydroCAD Report)

Underground Infiltration System (UGI-3)

Lowest outlet at 237.50
Storage Provided below the outlet = 36,477 CF → (HydroCAD Report)

Underground Infiltration System (UGI-5)

Lowest outlet at 236.20
Storage Provided below the outlet = 9,662 CF → (HydroCAD Report)

Field Stone Base (STONE)

Lowest outlet at 240.40
Storage Provided below the outlet = 28,309 CF → (HydroCAD Report)

Total Recharge Provided = 3,350 + 36,477 + 9,662 + 28,309 = 77,798 CF

77,798 CF > 12,727 CF ✓

Drawdown within 72 Hours

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

Rv = Storage Volume
K = Saturated Hydraulic Conductivity (0.17 in/hr)
Bottom Area = Bottom Area of Recharge Structure

$Time_{drawdown}$ UGI-2= 3,350 CF / (0.17 in/hr * 1/12 ft/in * 3,310 SF) = 72 hrs

$Time_{drawdown}$ UGI-3= 36,477 CF / (0.17 in/hr * 1/12 ft/in * 35,300 SF) = 73 hrs

$Time_{drawdown}$ UGI-5= 9,662 CF / (0.17 in/hr * 1/12 ft/in * 11,195 SF) = 61 hrs

$Time_{drawdown}$ STONE= 28,309 CF / (0.17 in/hr * 1/12 ft/in * 141,313 SF) = 14 hrs

DP-5:

Existing Impervious Area = 0 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

DP-6:

Existing Impervious Area = 0 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

DP-7:

Existing Impervious Area = 0 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

DP-8:

Existing Impervious Area = 13,668 SF
Post-Construction Impervious Area = 2,290 SF
Change in Impervious Area from Existing Conditions = 11,378 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-9:

Existing Impervious Area = 0 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

DP-10:

Existing Impervious Area (excluding the Middle School Roof) = 215,659 SF
Post-Construction Impervious Area (excluding the Middle School Roof and Existing Stadium) = 627,157 SF
Change in Impervious Area from Existing Conditions = 411,498 SF

Required Recharge = 0.35-Inch * 1/12 Ft/inch * 627,157 SF = 18,293 CF

Provided Recharge Volume:

Underground Infiltration System (UGI-6)

Lowest outlet at 236.10
Storage Provided below the outlet = 15,179 CF → (HydroCAD Report)

Underground Infiltration System (UGI-7)

Lowest outlet at 233.80
Storage Provided below the outlet = 1,895 CF → (HydroCAD Report)

Underground Infiltration System (UGI-8)

Lowest outlet at 233.00
Storage Provided below the outlet = 2,685 CF → (HydroCAD Report)

Underground Infiltration System (UGI-9)

Lowest outlet at 237.50
Storage Provided below the outlet = 42,112 CF → (HydroCAD Report)

Total Recharge Provided = 15,179 + 1,895 + 2,685 + 42,112 = 61,871 CF

61,871 CF > 18,293 CF ✓

Drawdown within 72 Hours

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

Rv = Storage Volume
K = Saturated Hydraulic Conductivity (0.17 in/hr)
Bottom Area = Bottom Area of Recharge Structure

$Time_{drawdown}$ UGI-6= 15,179 CF / (0.17 in/hr * 1/12 ft/in * 21,560 SF) = 50 hrs

$Time_{drawdown}$ UGI-7= 1,895 CF / (0.17 in/hr * 1/12 ft/in * 2,040 SF) = 66 hrs

$Time_{drawdown}$ UGI-8= 2,685 CF / (0.17 in/hr * 1/12 ft/in * 4,339 SF) = 44 hrs

$Time_{drawdown}$ UGI-9= 42,112 CF / (0.17 in/hr * 1/12 ft/in * 66,884 SF) = 45 hrs

DP-11:

Existing Impervious Area = 13,080 SF
Post-Construction Impervious Area = 7,011 SF
Change in Impervious Area from Existing Conditions = 6,069 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

DP-12:

Existing Impervious Area = 2,791 SF
Post-Construction Impervious Area = 961 SF
Change in Impervious Area from Existing Conditions = 1,830 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

DP-13:

Existing Impervious Area = 0 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

DP-14:

Existing Impervious Area = 6,572 SF
Post-Construction Impervious Area = 5,778 SF
Change in Impervious Area from Existing Conditions = 794 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

DP-15:

Existing Impervious Area (Excluding the Middle School Roof) = 152,271 SF
Post-Development Impervious Area (Excluding the Middle School Roof) = 141,470 SF
Change in Impervious Area from Existing Conditions = 10,801 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

DP-16:

Existing Impervious Area = 13,512 SF
Post-Development Impervious Area = 13,261 SF
Post-Development Additional Impervious Area = 251 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Recharge Standard.

Standard #4: Water Quality

Required Water Quality Volume:

V_{WQ} = (D_{WQ}/12 inches/foot) * (A_{IMP})
V_{WQ} = *Required Water Quality Volume* (in cubic feet)
D_{WQ} = Water Quality Depth: one-inch for discharges within a Zone II or Interim Wellhead Protection Area, to or near another critical area, runoff from a LUHPPL, or exfiltration to soils with infiltration rate greater than 2.4 inches/hour or greater; ½-inch for discharges near or to other areas.
A_{IMP} = Impervious Area (in square feet)

Required Retained Volume for Removal of Total Suspended Solids (TSS) and Total Phosphorus (TP) – Town of North Attleborough Conservation Commission Stormwater Management and Land Disturbance Regulations
V_{TSS+TP} = 1-Inch * 1/12 Ft/Inch * Post-Construction Impervious Area

The Required Water Quality Volume for each design point is as follows:

DP-1:

Existing Impervious Area = 39,501 SF
Post-Construction Impervious Area = 37,720 SF
Change in Impervious Area from Existing Conditions = 1,781 SF

Required WQV = 0.5-Inch * 1/12 Ft/inch * 37,720 SF = 1,572 CF
Required $V_{TSS+TP\ (North\ Attleborough)}$ = 1.0-Inch * 1/12 Ft/inch * 37,720 SF = 3,144 CF

Provided WQV:
Underground Infiltration System (UGI-A)
Lowest outlet at 237.50
Storage Provided below the outlet = 4,712 CF → (HydroCAD Report)

4,712 CF > 3,144 > 1,572 CF ✓

DP-2:

Existing Impervious Area (excluding the Middle School Roof) = 57,716 SF
Post-Construction Impervious Area (excluding the Middle School Roof) = 28,114 SF
Change in Impervious Area from Existing Conditions = 29,602 SF

Required WQV = 0.5-Inch * 1/12 Ft/inch * 28,114 SF = 1,172 CF
Required $V_{TSS+TP\ (North\ Attleborough)}$ = 1.0-Inch * 1/12 Ft/inch * 28,114 SF = 2,343 CF

Provided WQV:
Underground Infiltration System (UGI-4)
Lowest outlet at 240.40
Storage Provided below the outlet = 2,433 CF → (HydroCAD Report)

2,433 CF > 2,343 CF > 1,172 CF ✓

DP-3:

Existing Impervious Area = 2,765 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 2,765 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-4:

Existing Impervious Area = 224,160 SF
Post-Construction Impervious Area (excluding the Middle School Roof) = 436,325 SF
Change in Impervious Area from Existing Conditions = 212,165 SF

Required WQV = 0.5-Inch * 1/12 Ft/inch * 436,325 SF = 18,181 CF
Required $V_{TSS+TP\ (North\ Attleborough)}$ = 1.0-Inch * 1/12 Ft/inch * 436,325 SF = 36,361 CF

Provided WQV Volume:
Underground Infiltration System (UGI-2)
Lowest outlet at 241.00
Storage Provided below the outlet = 3,350 CF → (HydroCAD Report)

Underground Infiltration System (UGI-3)
Lowest outlet at 237.50
Storage Provided below the outlet = 36,477 CF → (HydroCAD Report)

Underground Infiltration System (UGI-5)
Lowest outlet at 236.20
Storage Provided below the outlet = 9,662 CF → (HydroCAD Report)

Field Stone Base (STONE)
Lowest outlet at 240.40
Storage Provided below the outlet = 28,309 CF → (HydroCAD Report)

Total WQV Provided = 3,350 + 36,477 + 9,662 + 28,309 = 77,798 CF
77,798 CF > 36,361 CF > 18,181 CF ✓

DP-5:

Existing Impervious Area = 0 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-6:

Existing Impervious Area = 0 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-7:

Existing Impervious Area = 0 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-8:

Existing Impervious Area = 13,668 SF
Post-Construction Impervious Area = 2,290 SF
Change in Impervious Area from Existing Conditions = 11,378 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-9:

Existing Impervious Area = 0 SF
Post-Construction Impervious Area = 0 SF
Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-10:

Existing Impervious Area (excluding the Middle School Roof) = 215,659 SF
Post-Construction Impervious Area (excluding the Middle School Roof and Existing Stadium) = 627,157 SF
Change in Impervious Area from Existing Conditions = 411,498 SF

Required WQV = 0.5-Inch * 1/12 Ft/inch * 627,157 SF = 26,132 CF
Required $V_{TSS+TP\ (North\ Attleborough)}$ = 1.0-Inch * 1/12 Ft/inch * 627,157 SF = 52,264 CF

Provided WQV Volume:
Underground Infiltration System (UGI-6)
Lowest outlet at 236.10
Storage Provided below the outlet = 15,179 CF → (HydroCAD Report)

Underground Infiltration System (UGI-7)

Lowest outlet at 233.80

Storage Provided below the outlet = 1,895 CF → (HydroCAD Report)

Underground Infiltration System (UGI-8)

Lowest outlet at 233.00

Storage Provided below the outlet = 2,685 CF → (HydroCAD Report)

Underground Infiltration System (UGI-9)

Lowest outlet at 237.50

Storage Provided below the outlet = 42,112 CF → (HydroCAD Report)

Total WQV Provided = 15,179 + 1,895 + 2,685 + 42,112 = 61,871 CF

61,871 CF > 52,264 CF > 26,132 CF ✓

DP-11:

Existing Impervious Area = 13,080 SF

Post-Construction Impervious Area = 7,011 SF

Change in Impervious Area from Existing Conditions = 6,069 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-12:

Existing Impervious Area = 2,791 SF

Post-Construction Impervious Area = 961 SF

Change in Impervious Area from Existing Conditions = 1,830 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-13:

Existing Impervious Area = 0 SF

Post-Construction Impervious Area = 0 SF

Change in Impervious Area from Existing Conditions = 0 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-14:

Existing Impervious Area = 6,572 SF
Post-Construction Impervious Area = 5,778 SF
Change in Impervious Area from Existing Conditions = 794 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-15:

Existing Impervious Area (Excluding the Middle School Roof) = 152,271 SF
Post-Development Impervious Area (Excluding the Middle School Roof) = 141,470 SF
Change in Impervious Area from Existing Conditions = 10,801 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

DP-16:

Existing Impervious Area = 13,512 SF
Post-Development Impervious Area = 13,261 SF
Post-Development Additional Impervious Area = 251 SF

As there is no new impervious area associated with this design point, no stormwater infiltration systems are required to meet the Water Quality Standard.

Treatment Train

The site runoff is captured by deep sump, hooded catch basins, and then discharged to one of the underground stormwater chamber systems throughout the site, before final discharge through one of the existing outlets. See TSS calculation sheet for the treatment train and percent removal efficiencies. All underground chamber systems have been sized to provide the required water quality volume, as well as the required Total Phosphorus (TP) and Total Suspended Solids (TSS) removal based on the North Attleborough Stormwater Management and Land Disturbance Regulations for Redevelopment.

Groundwater Separation

System	Proposed Bottom of Stone for the System	Test Pit/ Boring ID	Groundwater Depth/Bottom of Boring Elevation	Separation
UGI-2	239.50	B-133	235.00	4.50
UGI-3	236.00	B-101	233.00	3.00
UGI-4	239.00	TP-103	236.50	2.50
UGI-5	234.90	B-9-OW	230.50	4.40
UGI-6	235.00	B-139	230.00	5.00
UGI-7	232.40	TP-112	224.50	7.90
UGI-8	232.00	B-142	230.00	2.00
UGI-9	236.50	TP-104	228.90	7.60
UGI-A	236.00	B-148	232.00	4.00
SYNTHETIC FIELD STONE	240.80	B-9-OW	230.50	10.3

In borings and test pits where groundwater was not encountered, the bottom of exploration was conservatively assumed to represent the seasonal high groundwater (SHGW) elevation.

Standard #5: Land Uses with Higher Potential Pollutant Loads

This project does not have a land use with a higher potential pollutant loads.

Standard #6: Critical Areas

This site is not located on a Zone II wellhead protection area as shown on the Massachusetts GIS maps.

Standard #7: Redevelopment

This project is a redevelopment project of the existing High School. The proposed project meets all the stormwater standards to the maximum extent practicable. A Source Control and Pollution Prevention Plan, Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan, has been incorporated into this report. An Illicit Discharge Compliance Statement can be found in Standard 10.

Standard #8: Construction Period Pollution Prevention and Erosion and Sediment Control

A Construction Period Pollution Prevention and Sedimental Control Plan is provided on the site plans, including erosion control barrier locations and construction notes. A Long Term Pollution Prevention Plan is included in Attachment A.

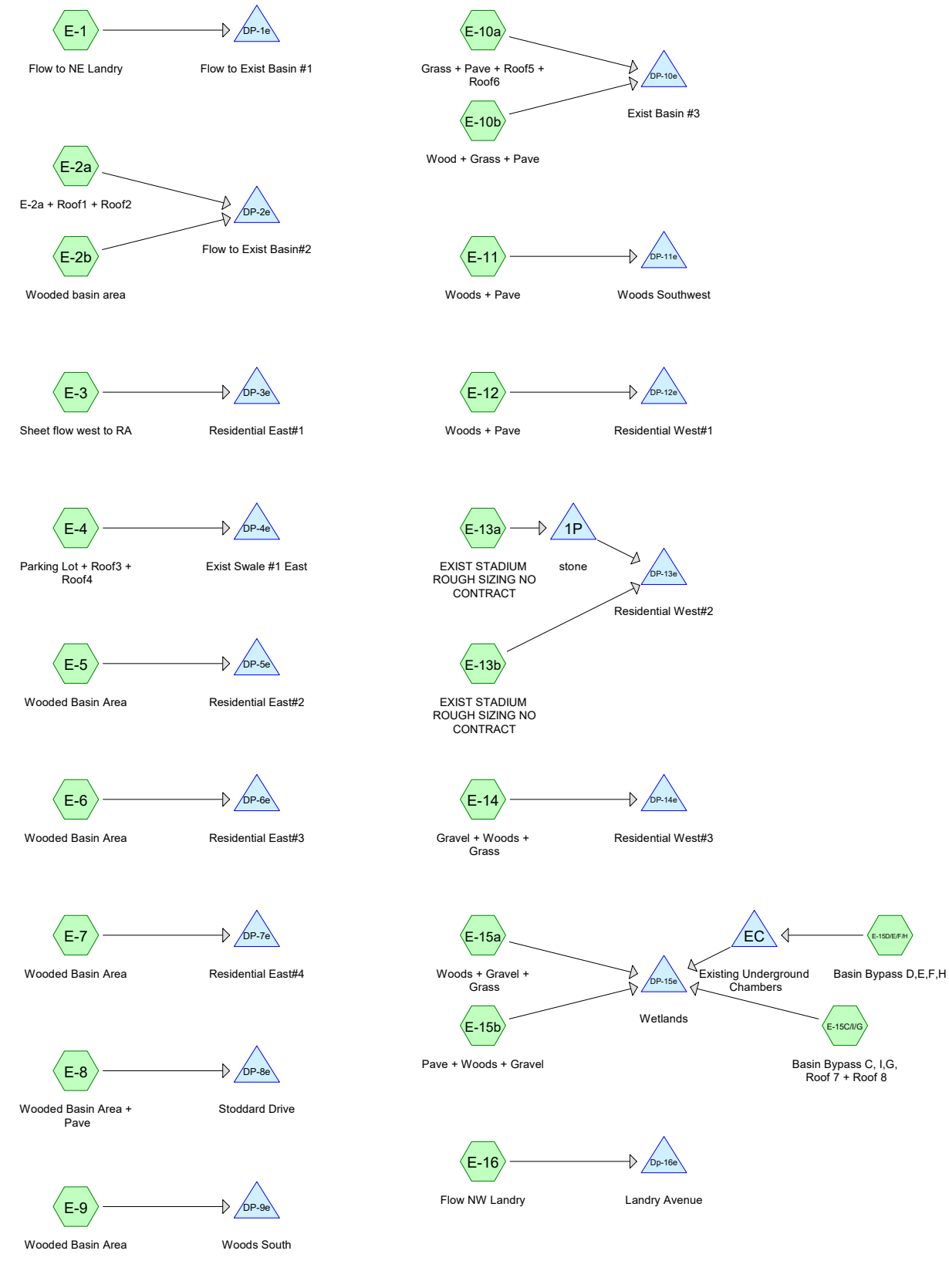
Standard #9: Operation and Maintenance Plan

An Operations & Maintenance plan has been provided in Attachment B. The contractor(s) is responsible for stormwater system operation and maintenance during construction; and the owner, after acceptance of the installation, will be the party responsible for the storm water system operation and maintenance.

Standard #10: Illicit Discharges

A signed Illicit Discharge Compliance Statement is provided in Attachment C.

SUPPORTING CALCULATIONS



Routing Diagram for 2145.0 NAHS PRE R2

Prepared by {enter your company name here}, Printed 12/23/2025

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,073,974	79	50-75% Grass cover, Fair, HSG C (E-1, E-10a, E-10b, E-11, E-12, E-14, E-15a, E-15b, E-16, E-2a, E-2b, E-3, E-4, E-5, E-6, E-7, E-8, E-9)
153,826	74	>75% Grass cover, Good, HSG C (E-13a)
2,437	98	Batting cages (E-15a)
6,572	98	Bleacher Area (E-14)
4,726	98	Entrance Walks (E-4)
256,788	98	Exist Pave (E-10a, E-4, E-8)
25,337	98	Exist Pave:E15d (E-15D/E/F/H)
44,455	98	Exist Pave:E15e (E-15D/E/F/H)
12,080	98	Exist Pave:E15f (E-15D/E/F/H)
34,777	98	Exist T.Court (E-3, E-4)
39,494	98	Exist pave (E-10a, E-11, E-12, E-15b, E-16)
15,125	98	Exist pave 15c (E-15C/I/G)
13,868	98	Exist pave 15g (E-15C/I/G)
14,565	98	Exist pave 15i (E-15C/I/G)
10,864	98	Exist pave, E15h (E-15D/E/F/H)
57,716	98	Existing Pave (E-2a)
12,009	79	Grass 15c (E-15C/I/G)
12,310	79	Grass 15g (E-15C/I/G)
4,727	79	Grass 15i (E-15C/I/G)
4,942	79	Grass C: E15d (E-15D/E/F/H)
2,073	79	Grass C: E15e (E-15D/E/F/H)
19,514	79	Grass C: E15f (E-15D/E/F/H)
17,862	79	Grass C: E15h (E-15D/E/F/H)
12,880	96	Gravel Road (E-10a)
19,486	96	Gravel Stadium North (E-10a)
16,927	96	Gravel surface, HSG C (E-14, E-15a, E-15b, E-4)
1,857	98	Maint Shed (E-4)
4,200	98	Pave Parking (E-1)
35,301	98	Pave access road (E-1)
25,256	98	Roof 1 (E-2a)
18,137	98	Roof 2 (E-2a)
60,521	98	Roof 3 (E-4)
6,923	98	Roof 4 (E-4)
36,319	98	Roof 5 (E-10a)
19,443	98	Roof 6 (E-10a)
20,592	98	Roof 7 (E-15C/I/G)
20,840	98	Roof 8 (E-15C/I/G)
10,983	98	Stadium Walks North (E-10a)
474,414	73	Woods, Fair, HSG C (E-1, E-10b, E-11, E-12, E-14, E-15a, E-15b, E-2b, E-3, E-5, E-6, E-7, E-9)

Area Listing (all nodes) (continued)

Area (sq-ft)	CN	Description (subcatchment-numbers)
17,585	76	Woods/grass comb., Fair, HSG C (E-13b, E-8)
2,641,705	**84**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
1,736,726	HSG C	E-1, E-10a, E-10b, E-11, E-12, E-13a, E-13b, E-14, E-15a, E-15b, E-16, E-2a, E-2b, E-3, E-4, E-5, E-6, E-7, E-8, E-9
0	HSG D	
904,979	Other	E-1, E-10a, E-11, E-12, E-14, E-15a, E-15b, E-15C/I/G, E-15D/E/F/H, E-16, E-2a, E-3, E-4, E-8
2,641,705		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	1,073,974	0	0	1,073,974	50-75% Grass cover, Fair	
0	0	153,826	0	0	153,826	>75% Grass cover, Good	
0	0	0	0	2,437	2,437	Batting cages	
0	0	0	0	6,572	6,572	Bleacher Area	
0	0	0	0	4,726	4,726	Entrance Walks	
0	0	0	0	256,788	256,788	Exist Pave	
0	0	0	0	25,337	25,337	Exist Pave:E15d	
0	0	0	0	44,455	44,455	Exist Pave:E15e	
0	0	0	0	12,080	12,080	Exist Pave:E15f	
0	0	0	0	34,777	34,777	Exist T.Court	
0	0	0	0	39,494	39,494	Exist pave	
0	0	0	0	15,125	15,125	Exist pave 15c	
0	0	0	0	13,868	13,868	Exist pave 15g	
0	0	0	0	14,565	14,565	Exist pave 15i	
0	0	0	0	10,864	10,864	Exist pave, E15h	
0	0	0	0	57,716	57,716	Existing Pave	
0	0	0	0	12,009	12,009	Grass 15c	
0	0	0	0	12,310	12,310	Grass 15g	
0	0	0	0	4,727	4,727	Grass 15i	
0	0	0	0	4,942	4,942	Grass C: E15d	
0	0	0	0	2,073	2,073	Grass C: E15e	
0	0	0	0	19,514	19,514	Grass C: E15f	
0	0	0	0	17,862	17,862	Grass C: E15h	
0	0	0	0	12,880	12,880	Gravel Road	
0	0	0	0	19,486	19,486	Gravel Stadium North	
0	0	16,927	0	0	16,927	Gravel surface	
0	0	0	0	1,857	1,857	Maint Shed	
0	0	0	0	4,200	4,200	Pave Parking	
0	0	0	0	35,301	35,301	Pave access road	
0	0	0	0	25,256	25,256	Roof 1	
0	0	0	0	18,137	18,137	Roof 2	
0	0	0	0	60,521	60,521	Roof 3	
0	0	0	0	6,923	6,923	Roof 4	
0	0	0	0	36,319	36,319	Roof 5	
0	0	0	0	19,443	19,443	Roof 6	
0	0	0	0	20,592	20,592	Roof 7	
0	0	0	0	20,840	20,840	Roof 8	

Ground Covers (all nodes) (continued)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	0	10,983	10,983	Stadium Walks North	
0	0	474,414	0	0	474,414	Woods, Fair	
0	0	17,585	0	0	17,585	Woods/grass comb., Fair	
0	**0**	**1,736,726**	**0**	**904,979**	**2,641,705**	**TOTAL AREA**	

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1: Flow to NE Landry Runoff Area=103,683 sf 38.10% Impervious Runoff Depth=1.85"
Tc=6.0 min CN=84 Runoff=5.07 cfs 15,994 cf

Subcatchment E-10a: Grass + Pave + Runoff Area=386,242 sf 52.49% Impervious Runoff Depth=2.35"
Tc=6.0 min CN=90 Runoff=23.62 cfs 75,785 cf

Subcatchment E-10b: Wood + Grass + Pave Runoff Area=27,615 sf 0.00% Impervious Runoff Depth=1.36"
Flow Length=305' Tc=8.8 min CN=77 Runoff=0.88 cfs 3,122 cf

Subcatchment E-11: Woods + Pave Runoff Area=192,003 sf 6.81% Impervious Runoff Depth=1.49"
Flow Length=638' Tc=15.9 min CN=79 Runoff=5.57 cfs 23,820 cf

Subcatchment E-12: Woods + Pave Runoff Area=61,696 sf 4.78% Impervious Runoff Depth=1.49"
Flow Length=260' Tc=6.0 min CN=79 Runoff=2.40 cfs 7,654 cf

Subcatchment E-13a: EXIST STADIUM Runoff Area=153,826 sf 0.00% Impervious Runoff Depth=1.17"
Tc=6.0 min CN=74 Runoff=4.57 cfs 15,016 cf

Subcatchment E-13b: EXIST STADIUM Runoff Area=12,959 sf 0.00% Impervious Runoff Depth=1.29"
Tc=6.0 min CN=76 Runoff=0.43 cfs 1,397 cf

Subcatchment E-14: Gravel + Woods + Runoff Area=22,068 sf 29.78% Impervious Runoff Depth=1.85"
Tc=6.0 min CN=84 Runoff=1.08 cfs 3,404 cf

Subcatchment E-15a: Woods + Gravel + Runoff Area=235,197 sf 1.04% Impervious Runoff Depth=1.29"
Flow Length=441' Tc=11.4 min CN=76 Runoff=6.60 cfs 25,347 cf

Subcatchment E-15b: Pave + Woods + Runoff Area=149,784 sf 5.76% Impervious Runoff Depth=1.56"
Flow Length=336' Tc=9.0 min CN=80 Runoff=5.52 cfs 19,440 cf

Subcatchment E-15C/I/G: Basin Bypass Runoff Area=114,036 sf 74.53% Impervious Runoff Depth=2.64"
Tc=6.0 min CN=93 Runoff=7.63 cfs 25,072 cf

Subcatchment E-15D/E/F/H: Basin Runoff Area=137,127 sf 67.63% Impervious Runoff Depth=2.54"
Tc=6.0 min CN=92 Runoff=8.92 cfs 29,038 cf

Subcatchment E-16: Flow NW Landry Runoff Area=48,957 sf 27.60% Impervious Runoff Depth=1.85"
Tc=6.0 min CN=84 Runoff=2.39 cfs 7,552 cf

Subcatchment E-2a: E-2a + Roof1 + Roof2 Runoff Area=124,442 sf 81.25% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=94 Runoff=8.55 cfs 28,396 cf

Subcatchment E-2b: Wooded basin area Runoff Area=12,330 sf 0.00% Impervious Runoff Depth=1.29"
Tc=6.0 min CN=76 Runoff=0.41 cfs 1,329 cf

Subcatchment E-3: Sheet flow west to RA Runoff Area=33,698 sf 8.21% Impervious Runoff Depth=1.29"
Tc=6.0 min CN=76 Runoff=1.12 cfs 3,632 cf

Subcatchment E-4: Parking Lot + Roof3 + Runoff Area=312,525 sf 68.63% Impervious Runoff Depth=2.64"
Tc=6.0 min CN=93 Runoff=20.92 cfs 68,712 cf

Subcatchment E-5: Wooded Basin Area Runoff Area=47,464 sf 0.00% Impervious Runoff Depth=1.29"
Flow Length=298' Tc=8.2 min CN=76 Runoff=1.47 cfs 5,115 cf

Subcatchment E-6: Wooded Basin Area Runoff Area=68,028 sf 0.00% Impervious Runoff Depth=1.36"
Flow Length=557' Tc=13.1 min CN=77 Runoff=1.91 cfs 7,691 cf

Subcatchment E-7: Wooded Basin Area Runoff Area=79,483 sf 0.00% Impervious Runoff Depth=1.17"
Flow Length=463' Tc=10.8 min CN=74 Runoff=2.02 cfs 7,759 cf

Subcatchment E-8: Wooded Basin Area + Runoff Area=206,307 sf 6.63% Impervious Runoff Depth=1.56"
Flow Length=681' Tc=19.8 min CN=80 Runoff=5.77 cfs 26,775 cf

Subcatchment E-9: Wooded Basin Area Runoff Area=112,235 sf 0.00% Impervious Runoff Depth=1.17"
Flow Length=498' Tc=25.5 min CN=74 Runoff=2.05 cfs 10,956 cf

Pond 1P: stone Inflow=4.57 cfs 15,016 cf
Primary=4.57 cfs 15,016 cf

Pond DP-10e: Exist Basin #3 Inflow=24.43 cfs 78,907 cf
Primary=24.43 cfs 78,907 cf

Pond DP-11e: Woods Southwest Inflow=5.57 cfs 23,820 cf
Primary=5.57 cfs 23,820 cf

Pond DP-12e: Residential West#1 Inflow=2.40 cfs 7,654 cf
Primary=2.40 cfs 7,654 cf

Pond DP-13e: Residential West#2 Inflow=5.01 cfs 16,413 cf
Primary=5.01 cfs 16,413 cf

Pond DP-14e: Residential West#3 Inflow=1.08 cfs 3,404 cf
Primary=1.08 cfs 3,404 cf

Pond DP-15e: Wetlands Inflow=27.30 cfs 98,897 cf
Primary=27.30 cfs 98,897 cf

Pond Dp-16e: Landry Avenue Inflow=2.39 cfs 7,552 cf
Primary=2.39 cfs 7,552 cf

Pond DP-1e: Flow to Exist Basin #1 Peak Elev=236.67' Storage=920 cf Inflow=5.07 cfs 15,994 cf
Discarded=0.02 cfs 350 cf Primary=4.58 cfs 15,644 cf Outflow=4.60 cfs 15,994 cf

Pond DP-2e: Flow to Exist Basin#2 Inflow=8.96 cfs 29,725 cf
Primary=8.96 cfs 29,725 cf

Pond DP-3e: Residential East#1 Inflow=1.12 cfs 3,632 cf
Primary=1.12 cfs 3,632 cf

Pond DP-4e: Exist Swale #1 East Inflow=20.92 cfs 68,712 cf
Primary=20.92 cfs 68,712 cf

Pond DP-5e: Residential East#2 Inflow=1.47 cfs 5,115 cf
Primary=1.47 cfs 5,115 cf

Pond DP-6e: Residential East#3 Inflow=1.91 cfs 7,691 cf
Primary=1.91 cfs 7,691 cf

Pond DP-7e: Residential East#4 Inflow=2.02 cfs 7,759 cf
Primary=2.02 cfs 7,759 cf

Pond DP-8e: Stoddard Drive Inflow=5.77 cfs 26,775 cf
Primary=5.77 cfs 26,775 cf

Pond DP-9e: Woods South Inflow=2.05 cfs 10,956 cf
Primary=2.05 cfs 10,956 cf

Pond EC: Existing Underground Chambers Inflow=8.92 cfs 29,038 cf
Primary=8.92 cfs 29,038 cf

Total Runoff Area = 2,641,705 sf Runoff Volume = 413,006 cf Average Runoff Depth = 1.88"
69.75% Pervious = 1,842,529 sf 30.25% Impervious = 799,176 sf

Summary for Subcatchment E-1: Flow to NE Landry

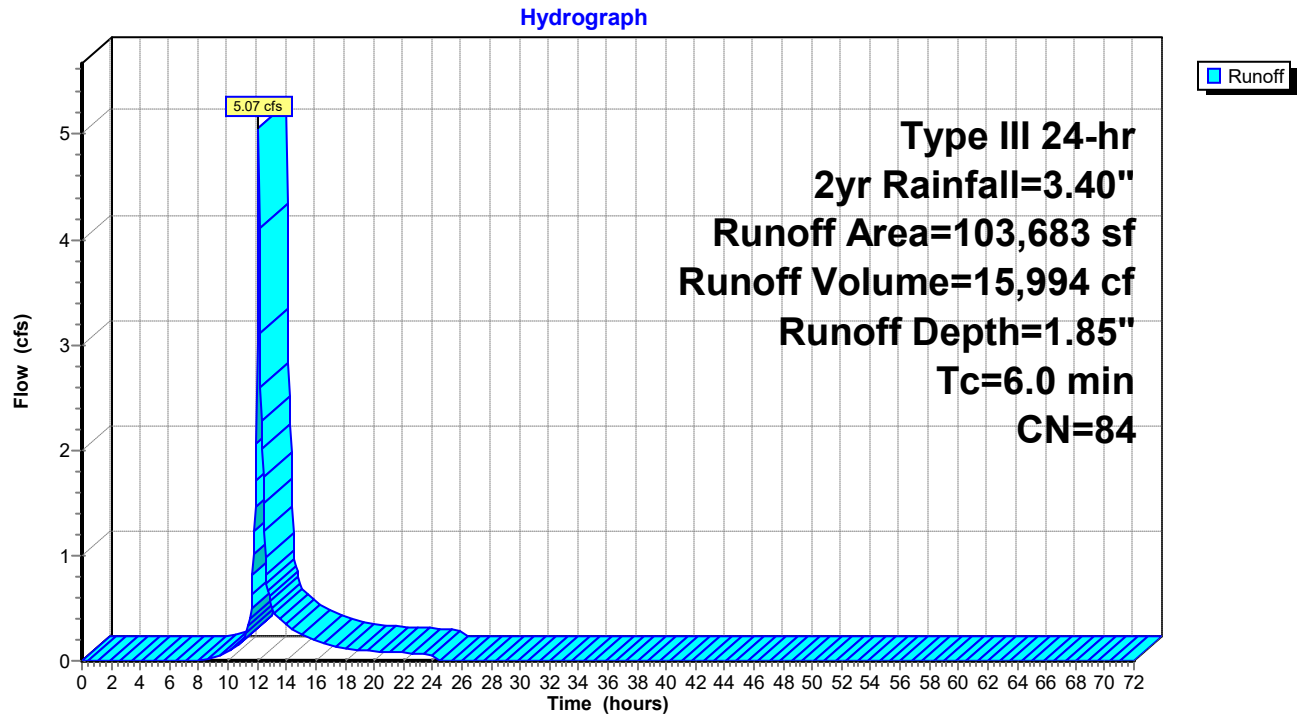
Runoff = 5.07 cfs @ 12.09 hrs, Volume= 15,994 cf, Depth= 1.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	35,301	98	Pave access road
*	4,200	98	Pave Parking
	38,226	73	Woods, Fair, HSG C
	25,956	79	50-75% Grass cover, Fair, HSG C
	103,683	84	Weighted Average
	64,182		61.90% Pervious Area
	39,501		38.10% Impervious Area

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

Subcatchment E-1: Flow to NE Landry



Summary for Subcatchment E-10a: Grass + Pave + Roof5 + Roof6

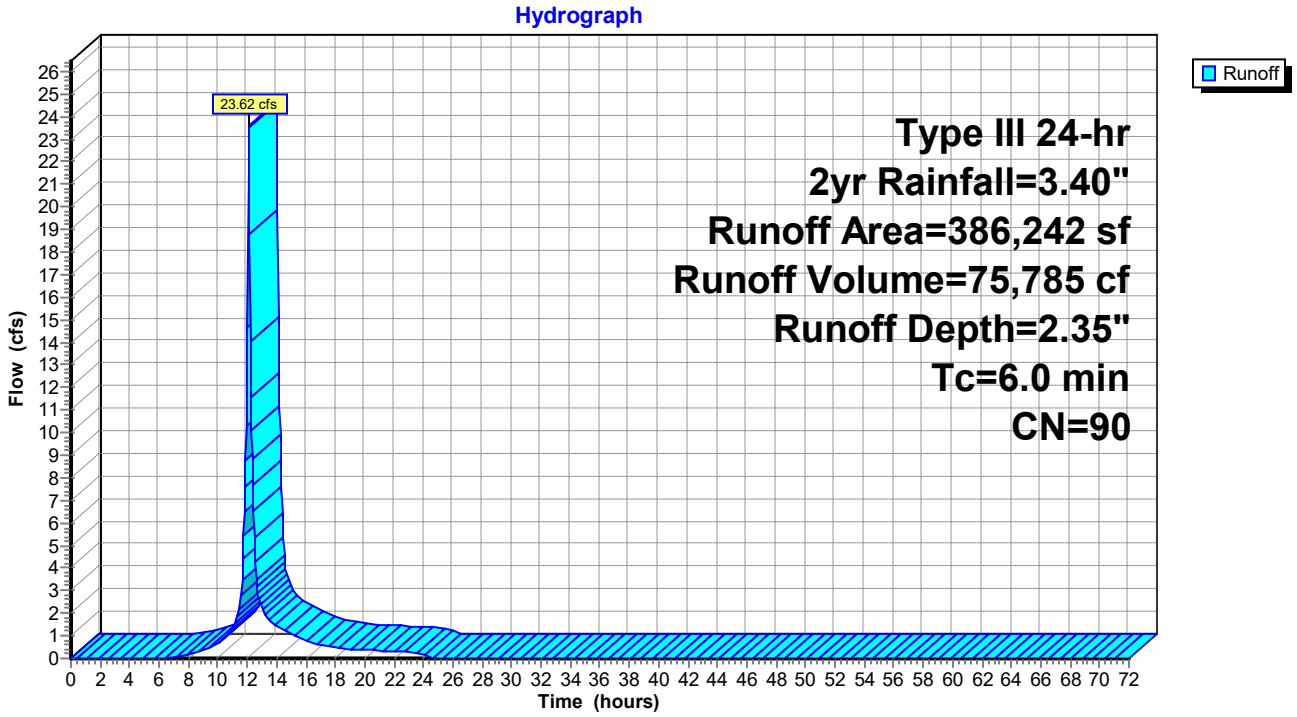
Runoff = 23.62 cfs @ 12.09 hrs, Volume= 75,785 cf, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	12,739	98	Exist Pave
*	9,128	98	Exist Pave
*	44,658	98	Exist Pave
*	53,005	98	Exist Pave
*	10,983	98	Stadium Walks North
*	9,236	98	Exist Pave
*	1,329	98	Exist pave
	58,315	79	50-75% Grass cover, Fair, HSG C
*	19,486	96	Gravel Stadium North
*	19,443	98	Roof 6
*	36,319	98	Roof 5
*	2,206	98	Exist Pave
*	3,690	98	Exist Pave
*	12,880	96	Gravel Road
	92,825	79	50-75% Grass cover, Fair, HSG C
	386,242	90	Weighted Average
	183,506		47.51% Pervious Area
	202,736		52.49% Impervious Area

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

Subcatchment E-10a: Grass + Pave + Roof5 + Roof6



Summary for Subcatchment E-10b: Wood + Grass + Pave

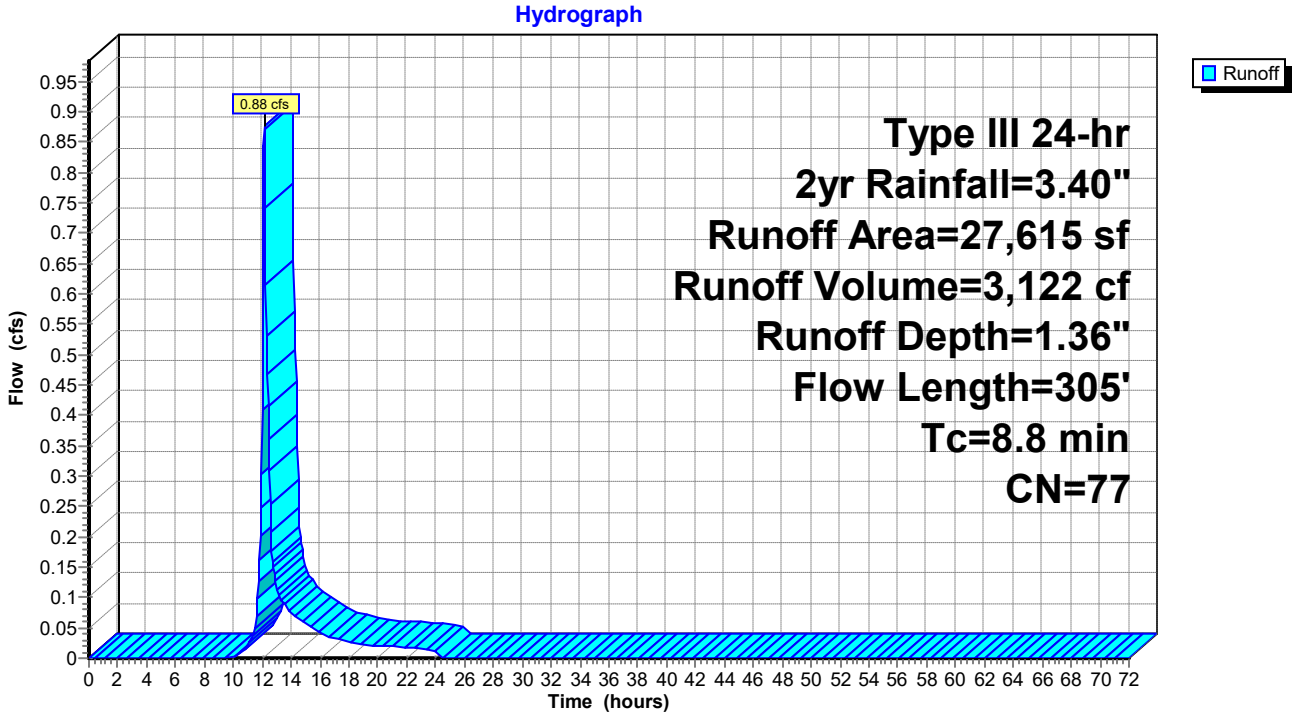
Runoff = 0.88 cfs @ 12.13 hrs, Volume= 3,122 cf, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

Area (sf)	CN	Description
9,528	73	Woods, Fair, HSG C
18,087	79	50-75% Grass cover, Fair, HSG C
27,615	77	Weighted Average
27,615		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	30	0.0050	0.07		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.4	144	0.0113	1.71		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	62	0.2100	7.38		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.4	69	0.0300	2.79		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
8.8	305	Total			

Subcatchment E-10b: Wood + Grass + Pave



Summary for Subcatchment E-11: Woods + Pave

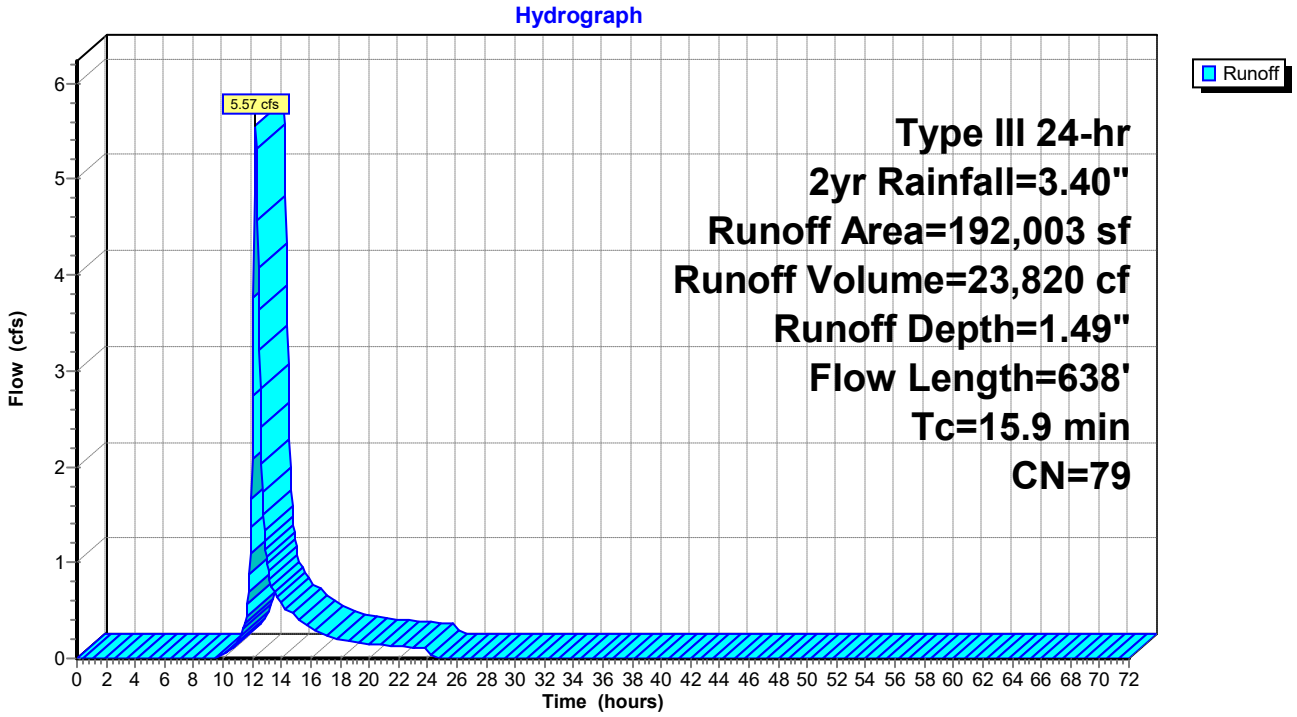
Runoff = 5.57 cfs @ 12.23 hrs, Volume= 23,820 cf, Depth= 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
	17,585	73	Woods, Fair, HSG C
	10,203	73	Woods, Fair, HSG C
*	13,080	98	Exist pave
	151,135	79	50-75% Grass cover, Fair, HSG C
	192,003	79	Weighted Average
	178,923		93.19% Pervious Area
	13,080		6.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	64	0.0061	0.09		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.1	160	0.0240	2.49		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.0	8	0.0250	3.21		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
0.1	28	0.1750	6.74		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
2.3	206	0.0087	1.50		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.8	172	0.0460	3.45		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
15.9	638	Total			

Subcatchment E-11: Woods + Pave



Summary for Subcatchment E-12: Woods + Pave

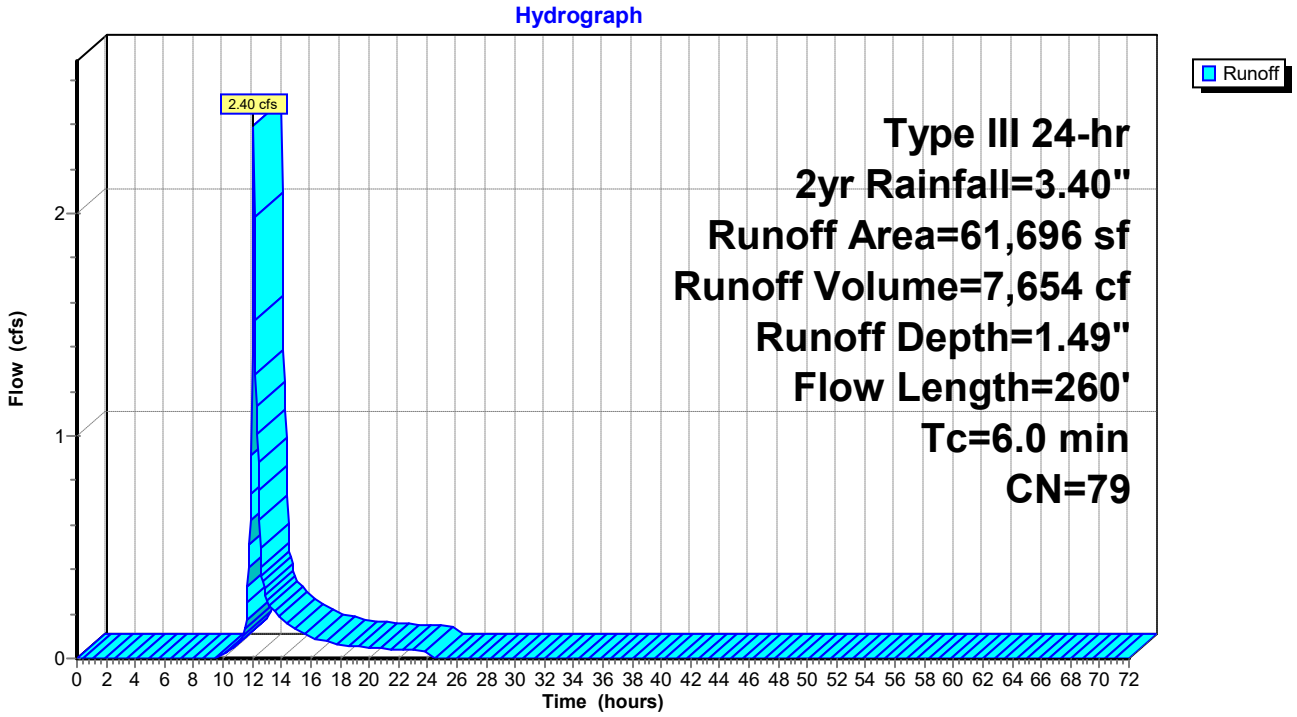
Runoff = 2.40 cfs @ 12.10 hrs, Volume= 7,654 cf, Depth= 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
	12,114	73	Woods, Fair, HSG C
*	2,947	98	Exist pave
	46,635	79	50-75% Grass cover, Fair, HSG C
	61,696	79	Weighted Average
	58,749		95.22% Pervious Area
	2,947		4.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	21	0.0500	0.17		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.2	36	0.0006	0.50		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
0.1	16	0.0225	2.42		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	44	0.2700	8.37		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.3	143	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.8	260	Total, Increased to minimum Tc = 6.0 min			

Subcatchment E-12: Woods + Pave



Summary for Subcatchment E-13a: EXIST STADIUM ROUGH SIZING NO CONTRACT

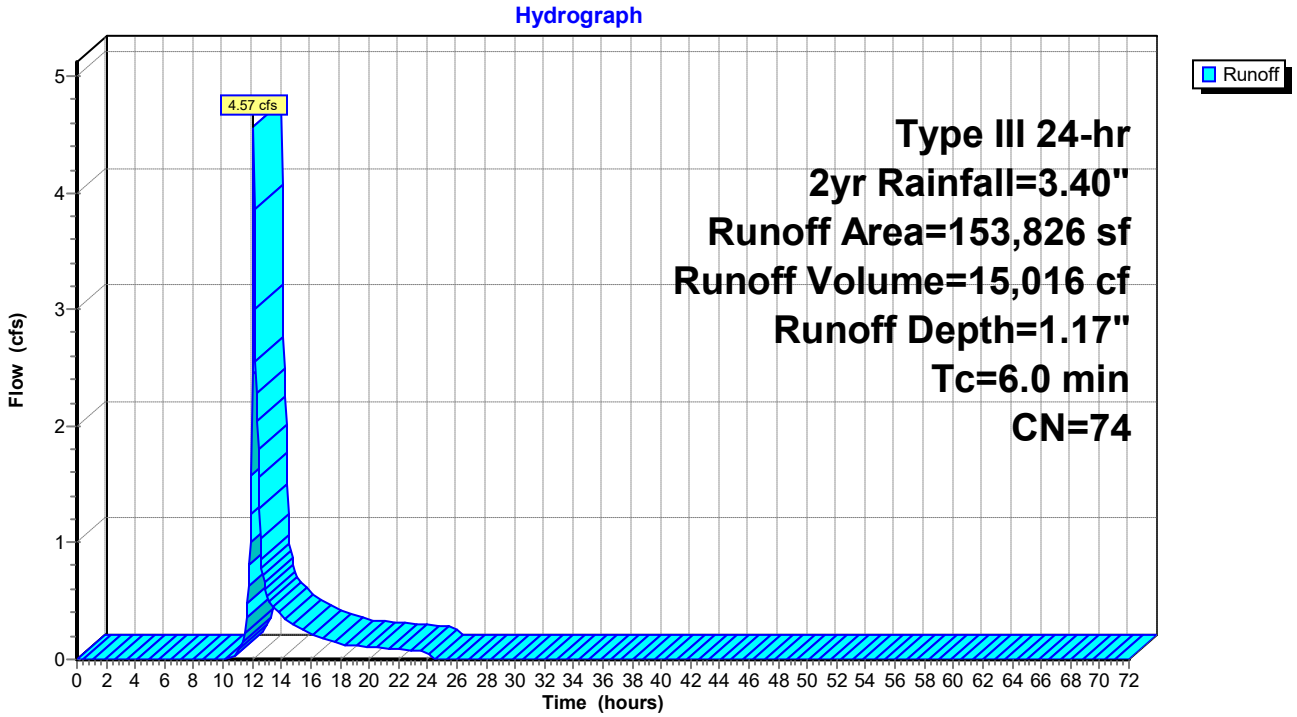
Runoff = 4.57 cfs @ 12.10 hrs, Volume= 15,016 cf, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

Area (sf)	CN	Description
153,826	74	>75% Grass cover, Good, HSG C
153,826		100.00% Pervious Area

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

Subcatchment E-13a: EXIST STADIUM ROUGH SIZING NO CONTRACT



Summary for Subcatchment E-13b: EXIST STADIUM ROUGH SIZING NO CONTRACT

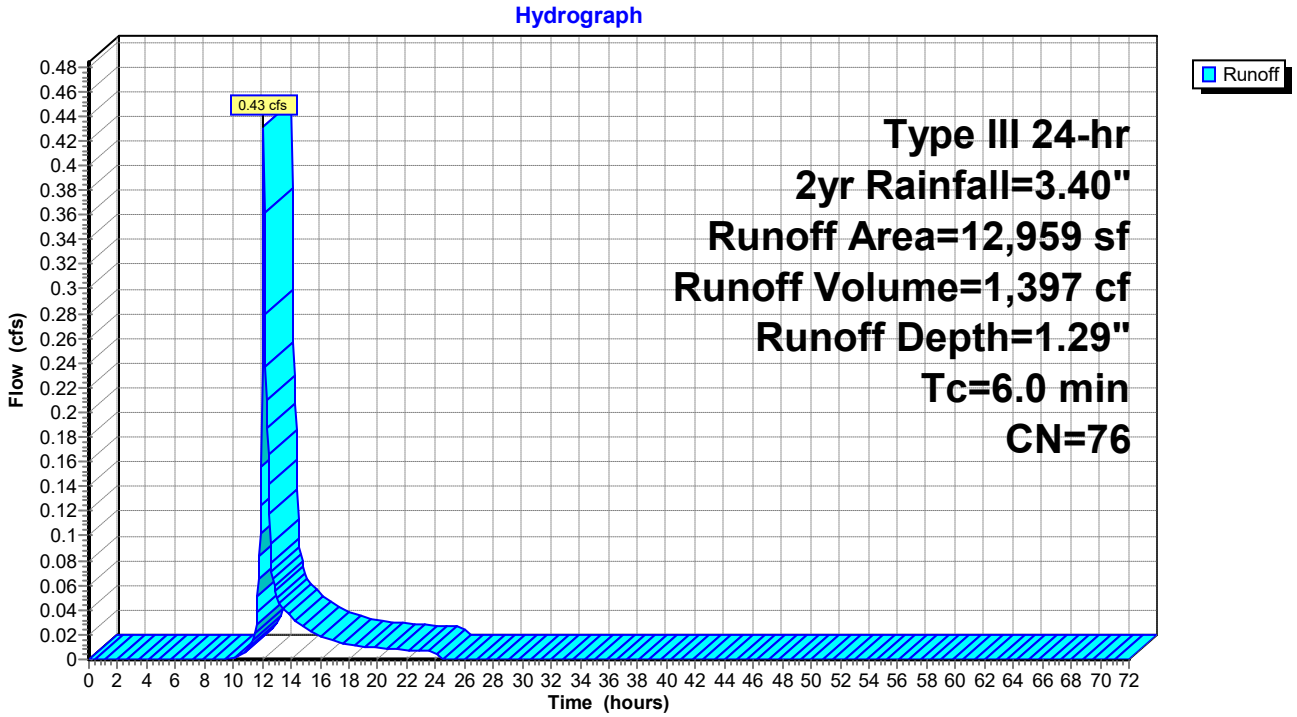
Runoff = 0.43 cfs @ 12.10 hrs, Volume= 1,397 cf, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

Area (sf)	CN	Description
12,959	76	Woods/grass comb., Fair, HSG C
12,959		100.00% Pervious Area

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

Subcatchment E-13b: EXIST STADIUM ROUGH SIZING NO CONTRACT



Summary for Subcatchment E-14: Gravel + Woods + Grass

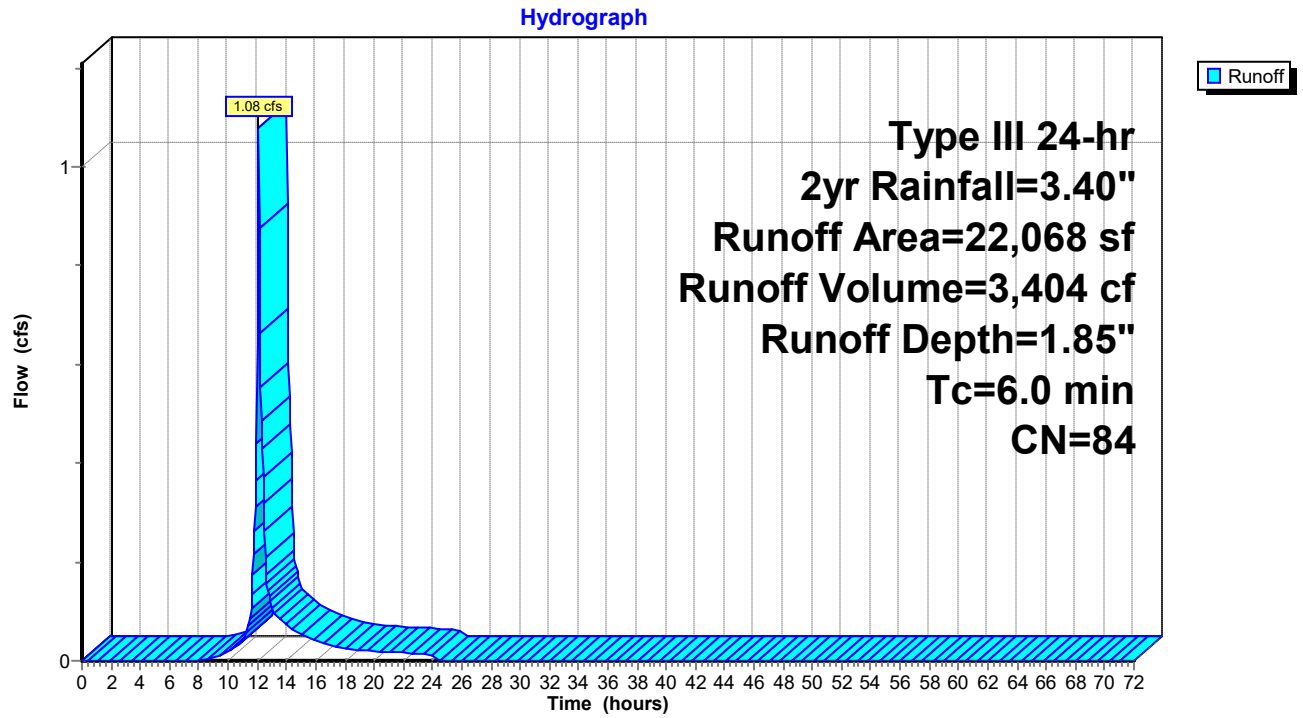
Runoff = 1.08 cfs @ 12.09 hrs, Volume= 3,404 cf, Depth= 1.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
	8,051	73	Woods, Fair, HSG C
	2,350	96	Gravel surface, HSG C
*	6,572	98	Bleacher Area
	5,095	79	50-75% Grass cover, Fair, HSG C
	22,068	84	Weighted Average
	15,496		70.22% Pervious Area
	6,572		29.78% Impervious Area

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

Subcatchment E-14: Gravel + Woods + Grass



Summary for Subcatchment E-15a: Woods + Gravel + Grass

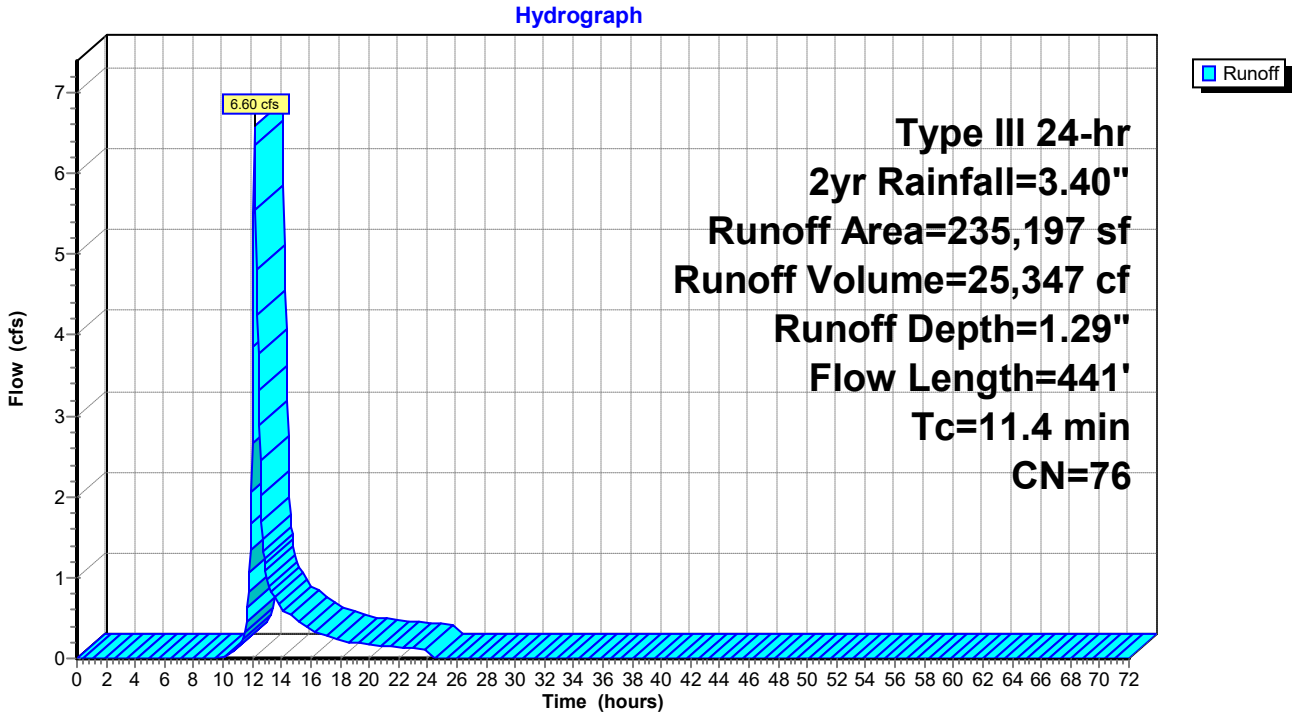
Runoff = 6.60 cfs @ 12.17 hrs, Volume= 25,347 cf, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
	2,647	96	Gravel surface, HSG C
*	2,437	98	Batting cages
	136,625	73	Woods, Fair, HSG C
	93,488	79	50-75% Grass cover, Fair, HSG C
	235,197	76	Weighted Average
	232,760		98.96% Pervious Area
	2,437		1.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	78	0.0187	0.15		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.5	170	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	43	0.4650	10.98		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.1	150	0.0200	2.28		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
11.4	441	Total			

Subcatchment E-15a: Woods + Gravel + Grass



Summary for Subcatchment E-15b: Pave + Woods + Gravel

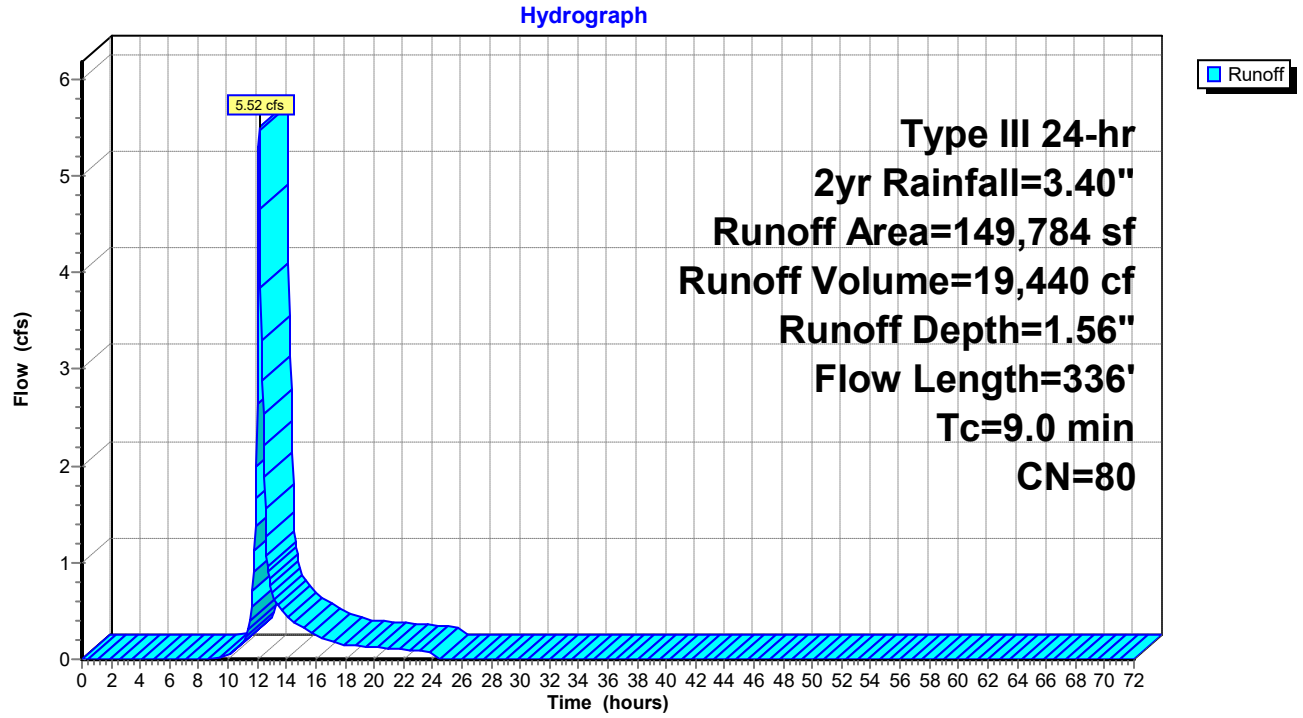
Runoff = 5.52 cfs @ 12.13 hrs, Volume= 19,440 cf, Depth= 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,721	98	Exist pave
*	3,905	98	Exist pave
	11,242	73	Woods, Fair, HSG C
	2,267	96	Gravel surface, HSG C
	127,649	79	50-75% Grass cover, Fair, HSG C
	149,784	80	Weighted Average
	141,158		94.24% Pervious Area
	8,626		5.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	34	0.0085	0.09		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.3	162	0.0167	2.08		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.6	140	0.0080	1.44		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
9.0	336	Total			

Subcatchment E-15b: Pave + Woods + Gravel



Summary for Subcatchment E-15C/I/G: Basin Bypass C, I,G, Roof 7 + Roof 8

C:27134
i: 19,292
g:26,178

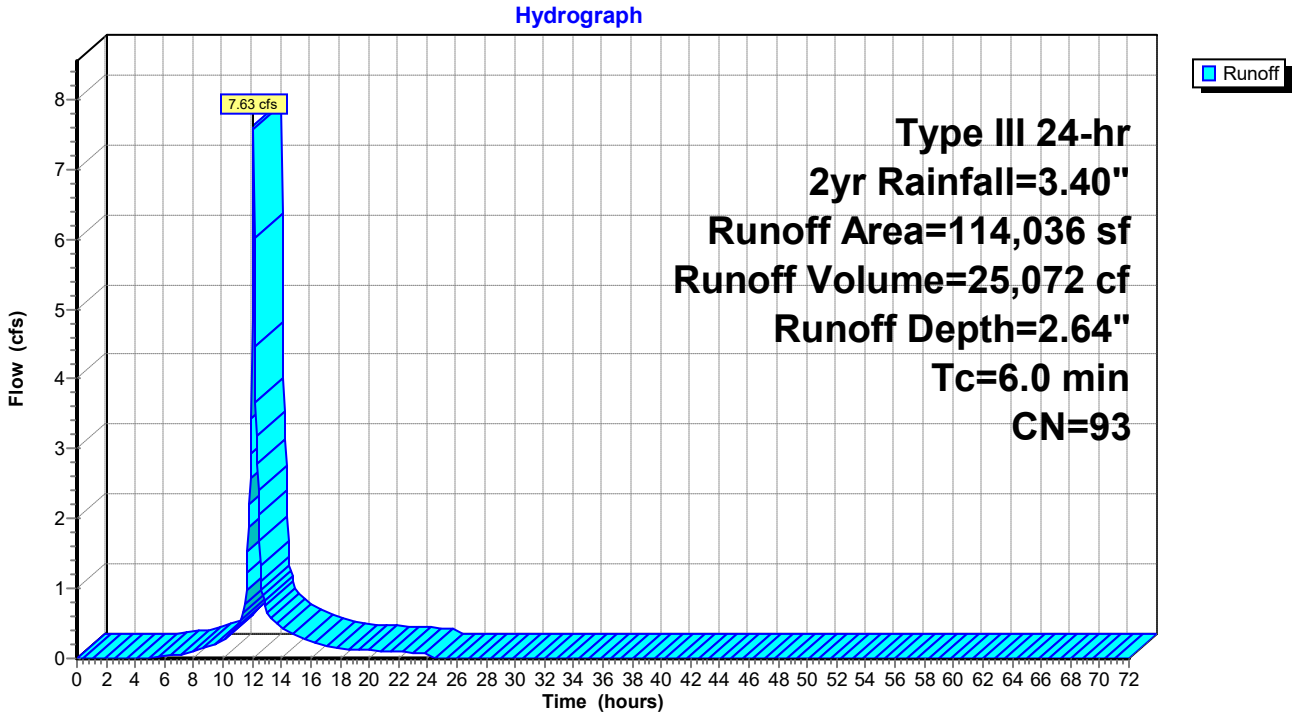
Runoff = 7.63 cfs @ 12.09 hrs, Volume= 25,072 cf, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	15,125	98	Exist pave 15c
*	12,009	79	Grass 15c
*	14,565	98	Exist pave 15i
*	4,727	79	Grass 15i
*	13,868	98	Exist pave 15g
*	12,310	79	Grass 15g
*	20,592	98	Roof 7
*	20,840	98	Roof 8
	114,036	93	Weighted Average
	29,046		25.47% Pervious Area
	84,990		74.53% Impervious Area

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

Subcatchment E-15C/I/G: Basin Bypass C, I,G, Roof 7 + Roof 8



Summary for Subcatchment E-15D/E/F/H: Basin Bypass D,E,F,H

E-15h:28,726
E-15f: 31,594
15e: 46528
15d: 30,279

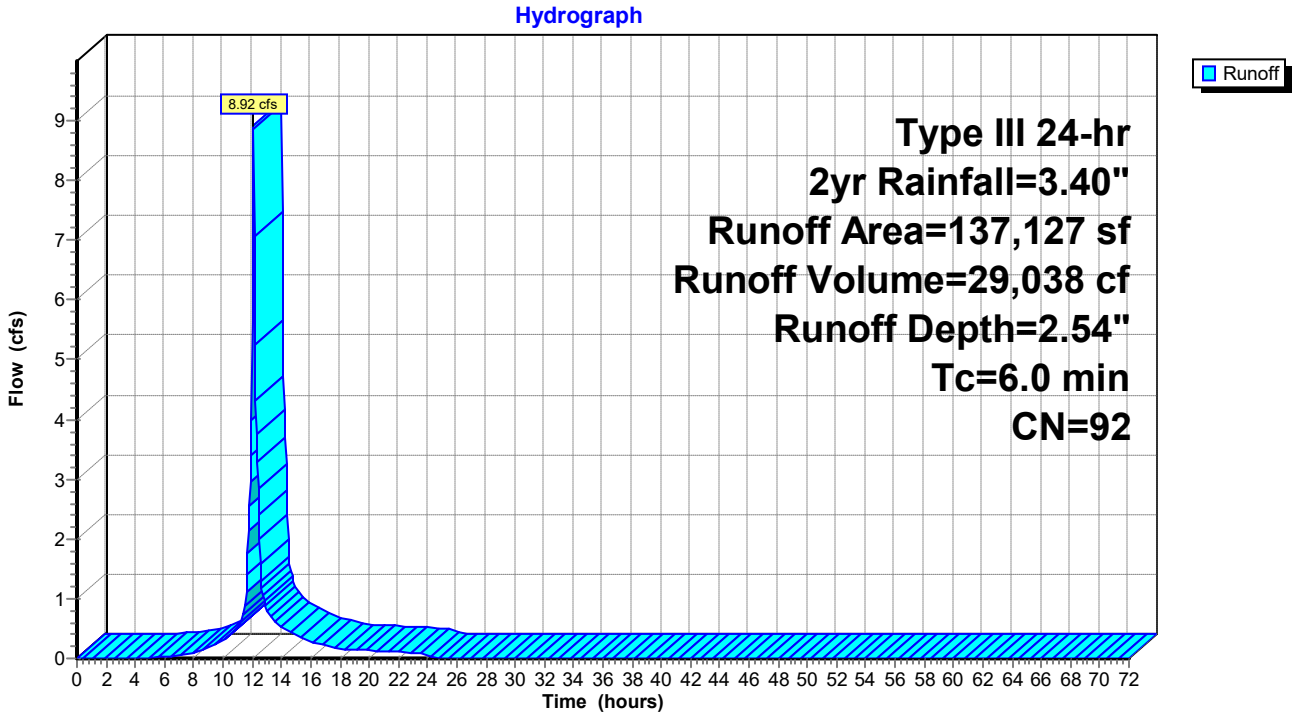
Runoff = 8.92 cfs @ 12.09 hrs, Volume= 29,038 cf, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	10,864	98	Exist pave, E15h
*	17,862	79	Grass C: E15h
*	12,080	98	Exist Pave:E15f
*	19,514	79	Grass C: E15f
*	44,455	98	Exist Pave:E15e
*	2,073	79	Grass C: E15e
*	25,337	98	Exist Pave:E15d
*	4,942	79	Grass C: E15d
	137,127	92	Weighted Average
	44,391		32.37% Pervious Area
	92,736		67.63% Impervious Area

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

Subcatchment E-15D/E/F/H: Basin Bypass D,E,F,H



Summary for Subcatchment E-16: Flow NW Landry

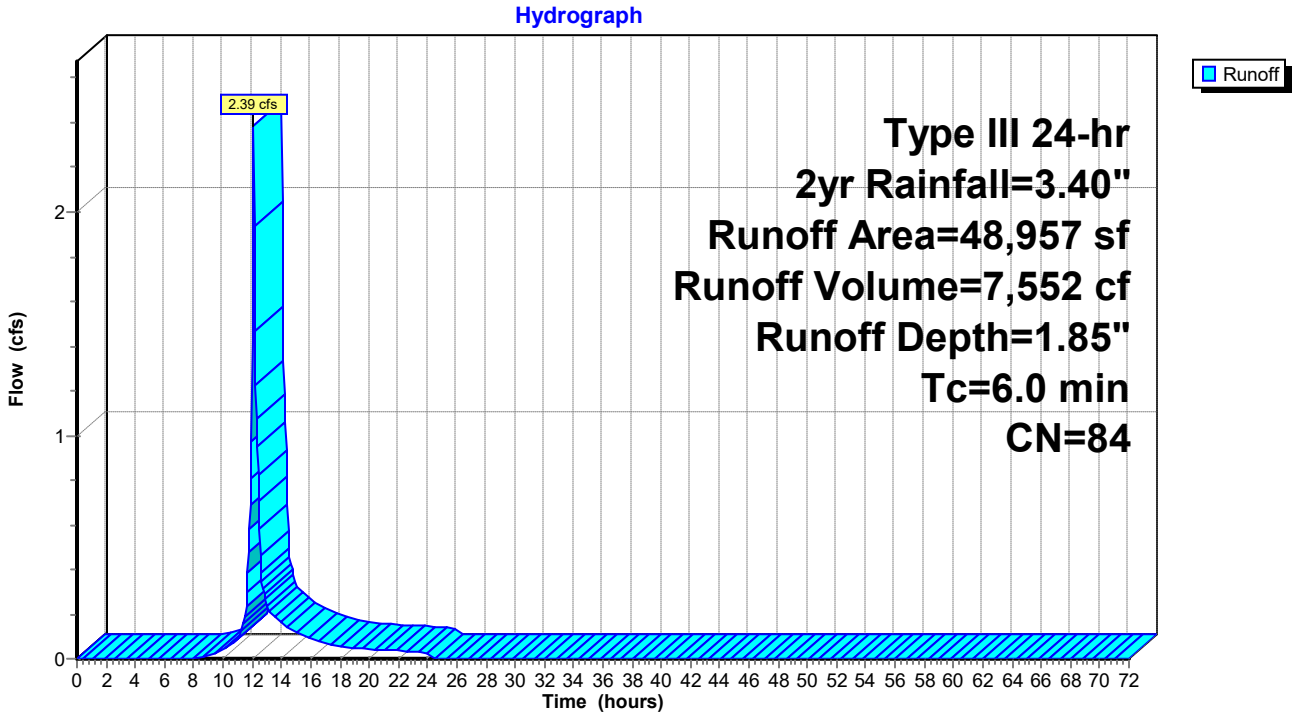
Runoff = 2.39 cfs @ 12.09 hrs, Volume= 7,552 cf, Depth= 1.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	13,512	98	Exist pave
	35,445	79	50-75% Grass cover, Fair, HSG C
	48,957	84	Weighted Average
	35,445		72.40% Pervious Area
	13,512		27.60% Impervious Area

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

Subcatchment E-16: Flow NW Landry



Summary for Subcatchment E-2a: E-2a + Roof1 + Roof2

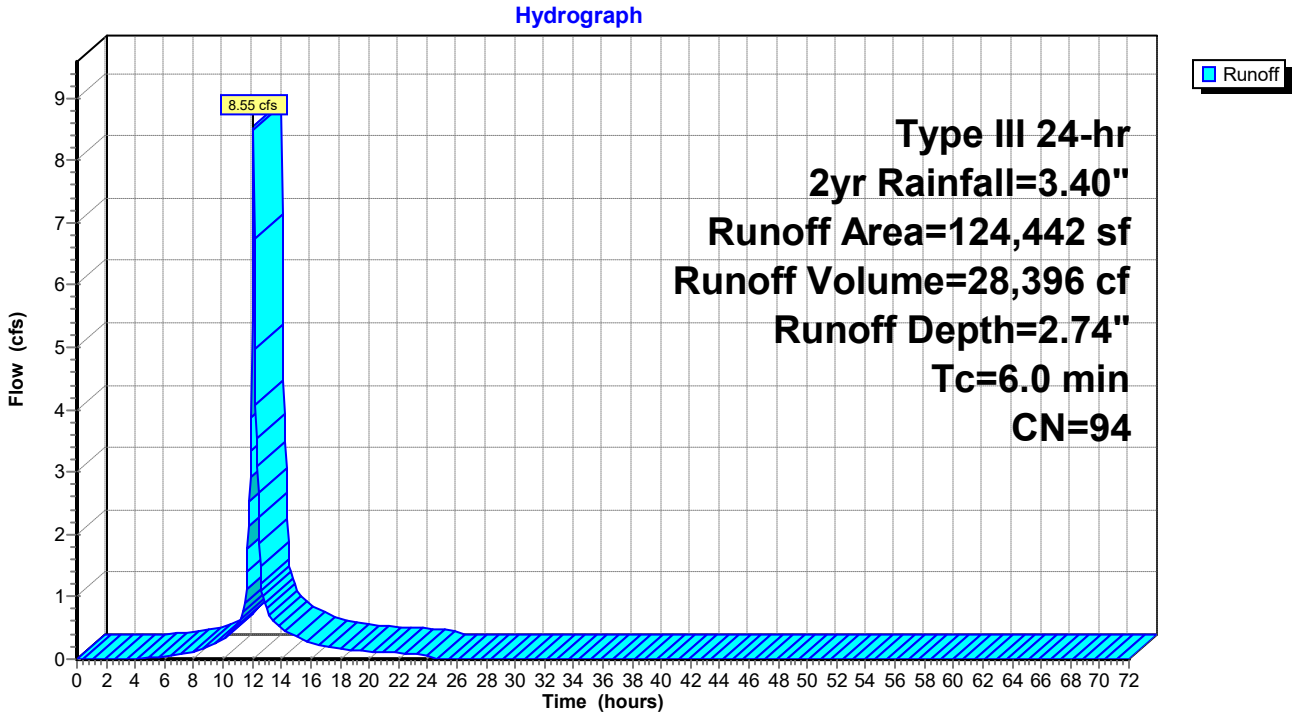
Runoff = 8.55 cfs @ 12.09 hrs, Volume= 28,396 cf, Depth= 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	22,807	98	Existing Pave
*	8,305	98	Existing Pave
*	17,342	98	Existing Pave
*	9,262	98	Existing Pave
	23,333	79	50-75% Grass cover, Fair, HSG C
*	25,256	98	Roof 1
*	18,137	98	Roof 2
	124,442	94	Weighted Average
	23,333		18.75% Pervious Area
	101,109		81.25% Impervious Area

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

Subcatchment E-2a: E-2a + Roof1 + Roof2



Summary for Subcatchment E-2b: Wooded basin area

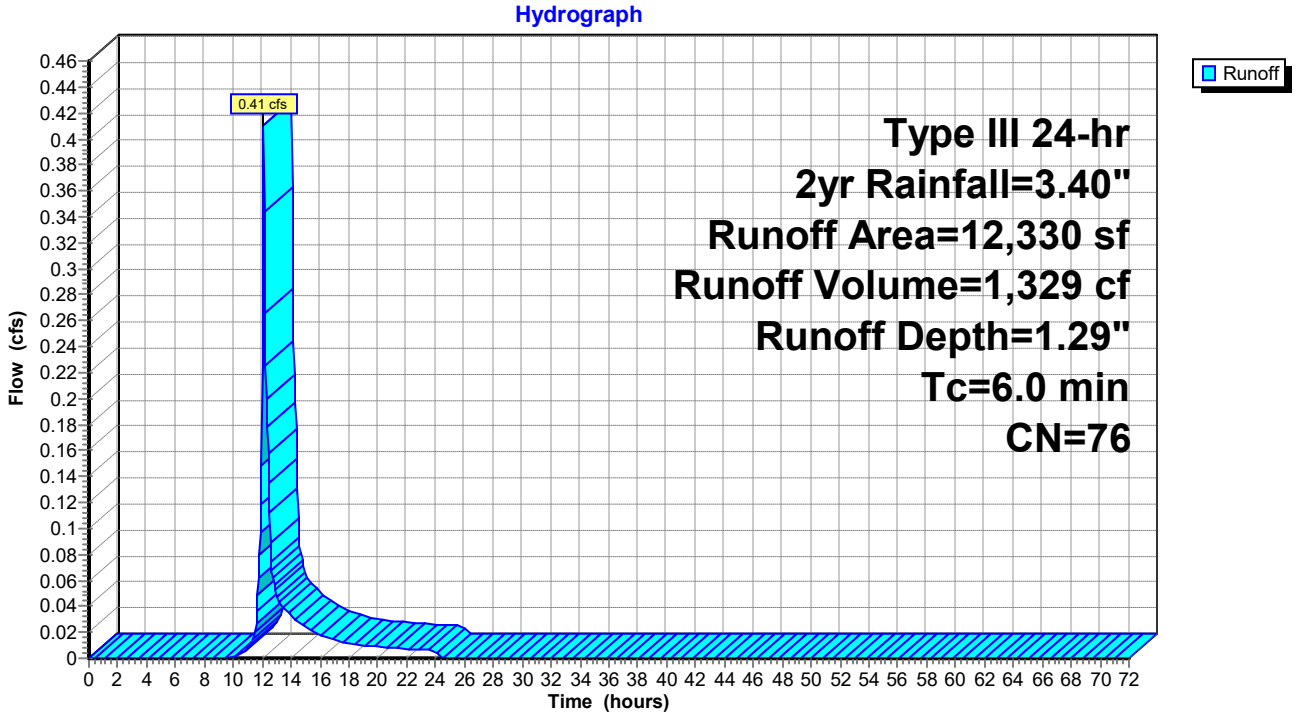
Runoff = 0.41 cfs @ 12.10 hrs, Volume= 1,329 cf, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

Area (sf)	CN	Description
4,275	73	Woods, Fair, HSG C
3,270	79	50-75% Grass cover, Fair, HSG C
2,202	73	Woods, Fair, HSG C
2,583	79	50-75% Grass cover, Fair, HSG C
12,330	76	Weighted Average
12,330		100.00% Pervious Area

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

Subcatchment E-2b: Wooded basin area



Summary for Subcatchment E-3: Sheet flow west to RA

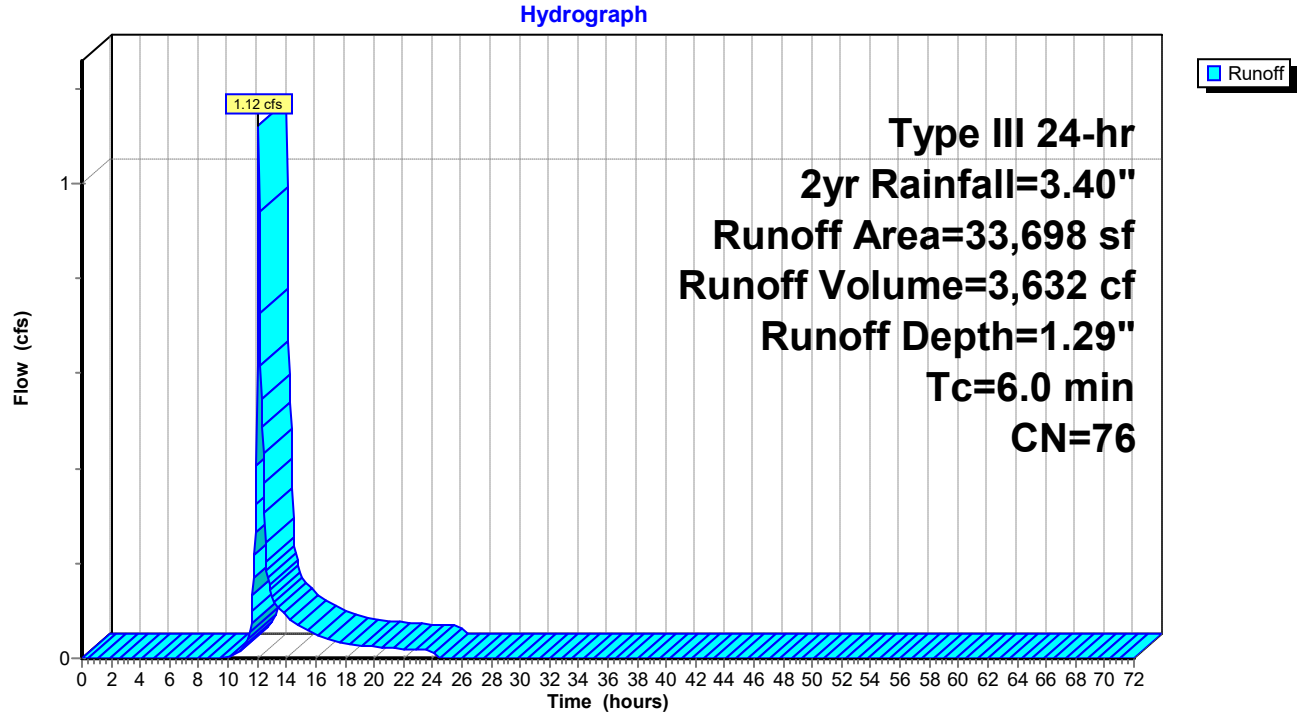
Runoff = 1.12 cfs @ 12.10 hrs, Volume= 3,632 cf, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	2,765	98	Exist T.Court
	23,638	73	Woods, Fair, HSG C
	7,295	79	50-75% Grass cover, Fair, HSG C
	33,698	76	Weighted Average
	30,933		91.79% Pervious Area
	2,765		8.21% Impervious Area

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

Subcatchment E-3: Sheet flow west to RA



Summary for Subcatchment E-4: Parking Lot + Roof3 + Roof4

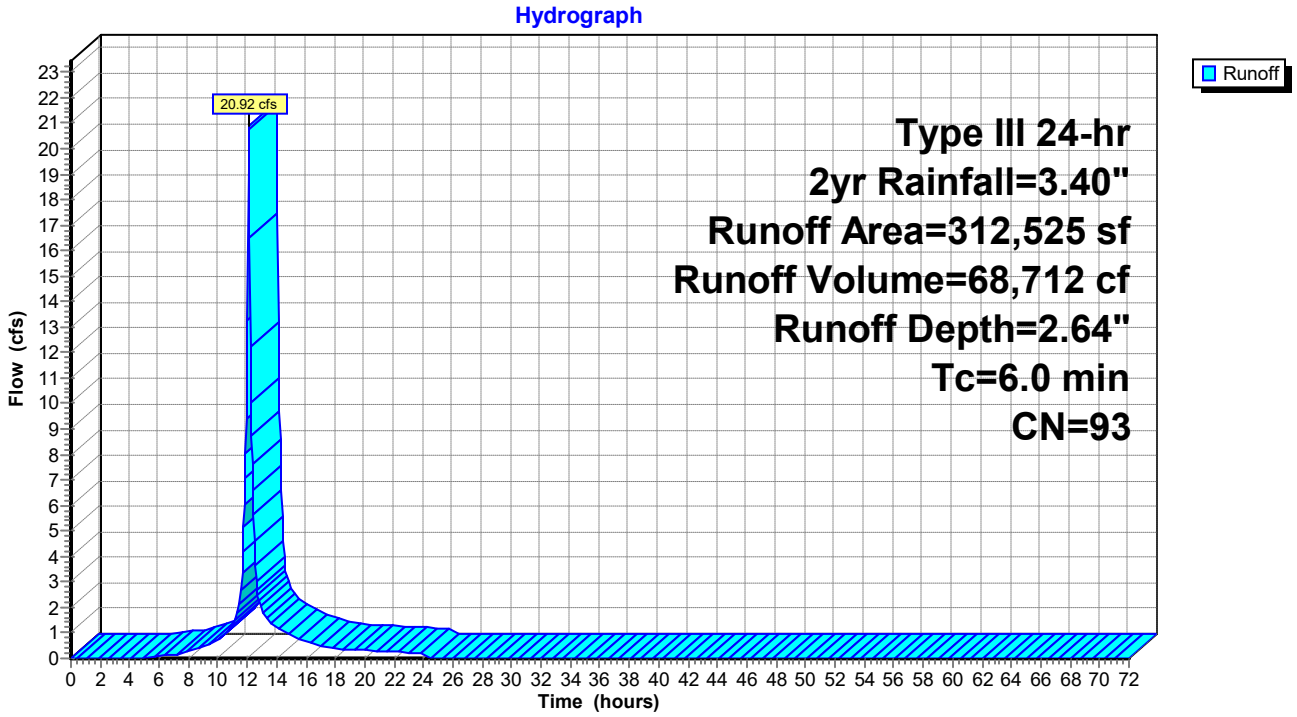
Runoff = 20.92 cfs @ 12.09 hrs, Volume= 68,712 cf, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	32,012	98	Exist T.Court
*	46,897	98	Exist Pave
*	16,683	98	Exist Pave
*	2,014	98	Exist Pave
*	42,864	98	Exist Pave
*	1,582	98	Maint Shed
	9,663	96	Gravel surface, HSG C
*	174	98	Maint Shed
*	101	98	Maint Shed
*	4,726	98	Entrance Walks
	88,365	79	50-75% Grass cover, Fair, HSG C
*	60,521	98	Roof 3
*	6,923	98	Roof 4
	312,525	93	Weighted Average
	98,028		31.37% Pervious Area
	214,497		68.63% Impervious Area

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

Subcatchment E-4: Parking Lot + Roof3 + Roof4



Summary for Subcatchment E-5: Wooded Basin Area

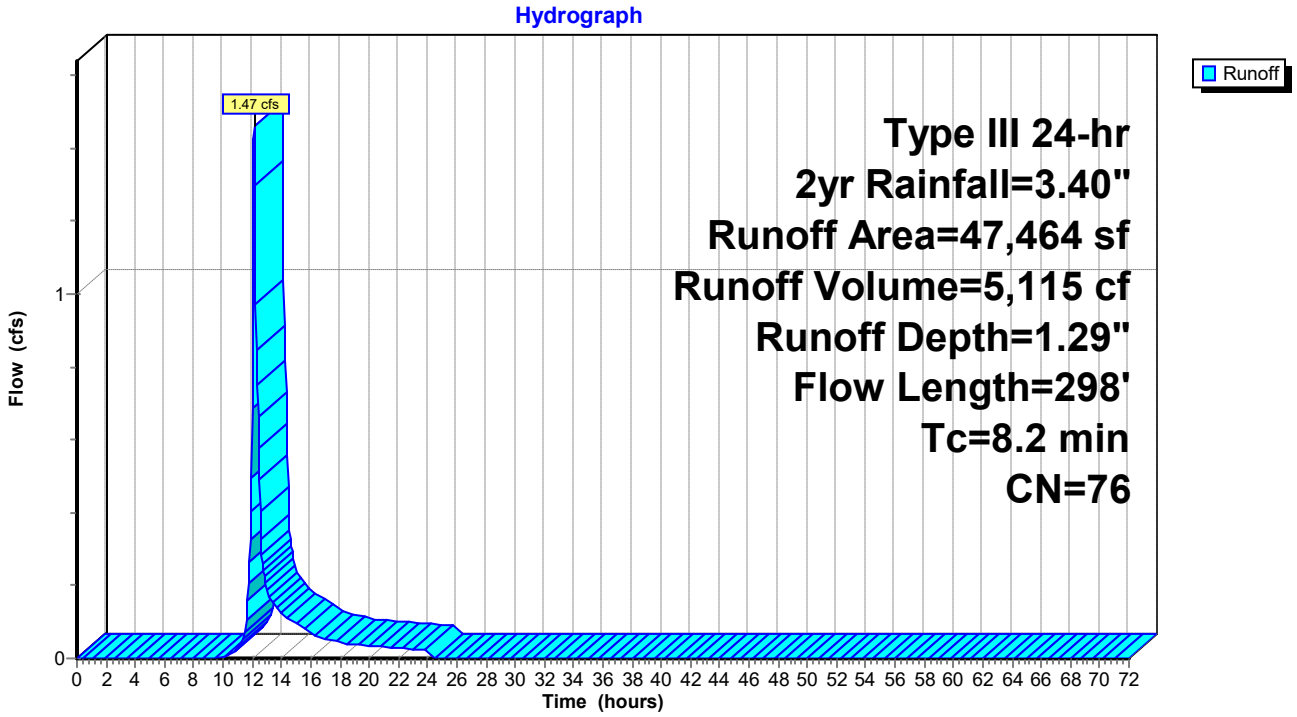
Runoff = 1.47 cfs @ 12.12 hrs, Volume= 5,115 cf, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

Area (sf)	CN	Description
21,768	73	Woods, Fair, HSG C
25,696	79	50-75% Grass cover, Fair, HSG C
47,464	76	Weighted Average
47,464		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.0062	0.08		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
0.3	23	0.0062	1.27		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.8	83	0.0120	1.76		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.5	96	0.0417	3.29		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	25	0.1200	5.58		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.2	41	0.0550	3.78		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
8.2	298	Total			

Subcatchment E-5: Wooded Basin Area



Summary for Subcatchment E-6: Wooded Basin Area

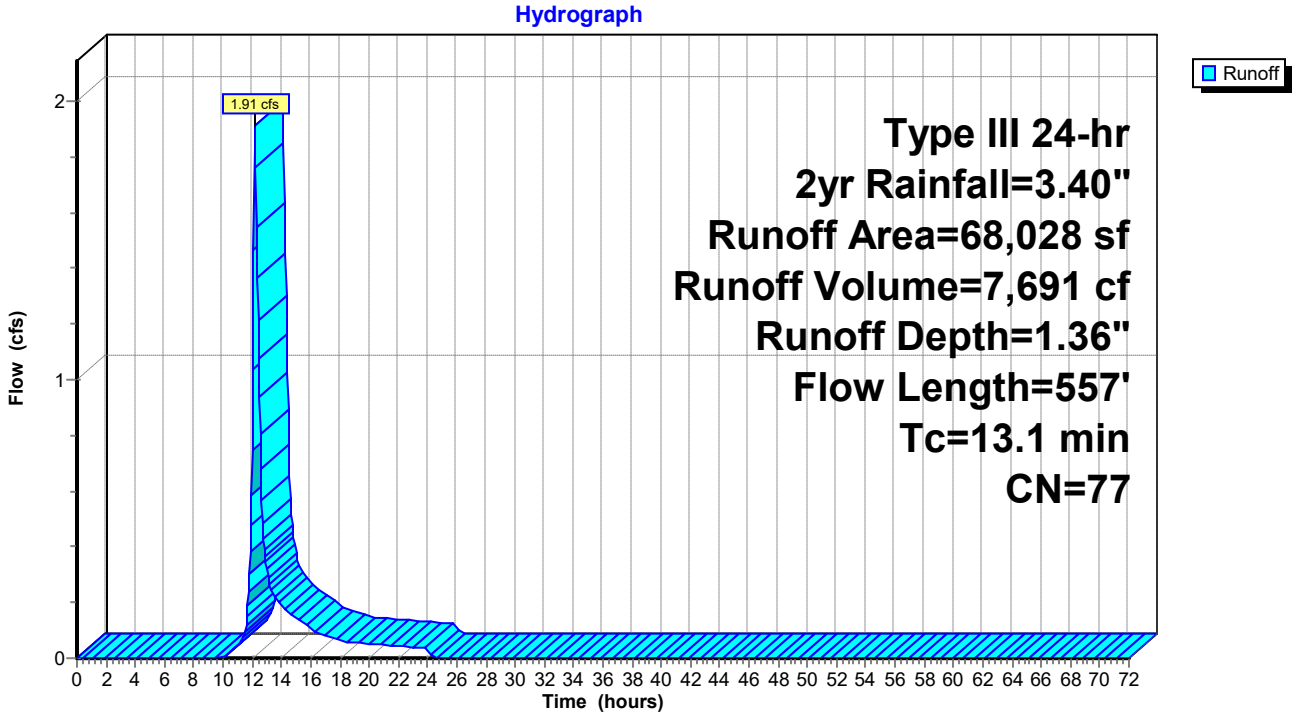
Runoff = 1.91 cfs @ 12.19 hrs, Volume= 7,691 cf, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

Area (sf)	CN	Description
22,756	73	Woods, Fair, HSG C
45,272	79	50-75% Grass cover, Fair, HSG C
68,028	77	Weighted Average
68,028		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	55	0.0074	0.10		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
2.1	200	0.0097	1.59		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.3	45	0.0230	2.44		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.2	257	0.0470	3.49		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
13.1	557	Total			

Subcatchment E-6: Wooded Basin Area



Summary for Subcatchment E-7: Wooded Basin Area

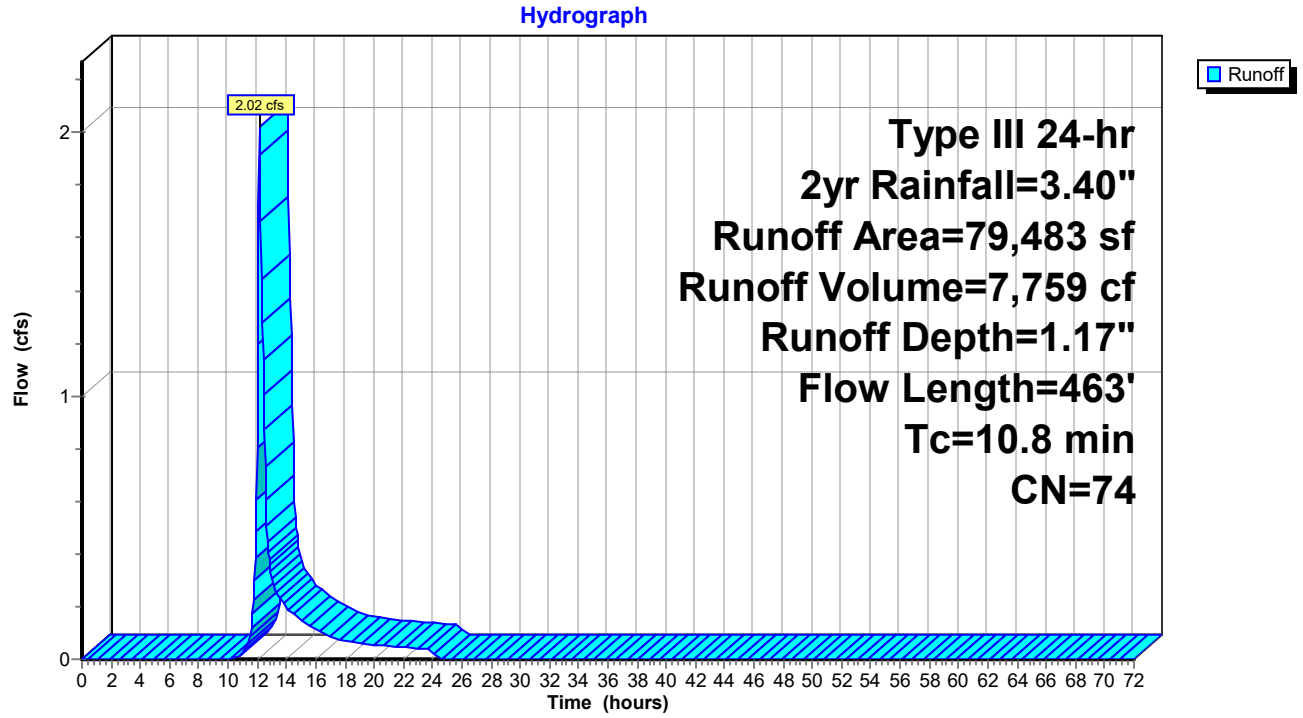
Runoff = 2.02 cfs @ 12.16 hrs, Volume= 7,759 cf, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

Area (sf)	CN	Description
68,664	73	Woods, Fair, HSG C
10,819	79	50-75% Grass cover, Fair, HSG C
79,483	74	Weighted Average
79,483		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	46	0.0080	0.10		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
0.3	45	0.0220	2.39		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	24	0.1670	6.58		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.5	109	0.0460	3.45		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.9	239	0.0170	2.10		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
10.8	463	Total			

Subcatchment E-7: Wooded Basin Area



Summary for Subcatchment E-8: Wooded Basin Area + Pave

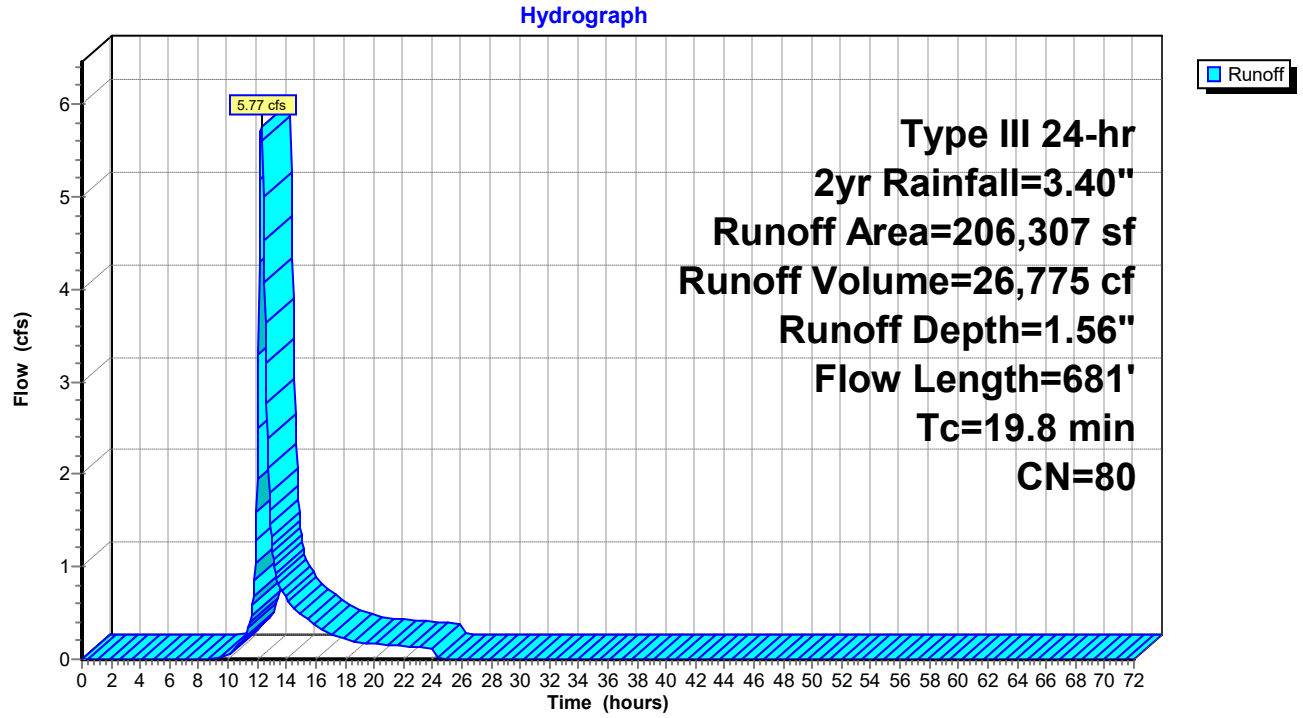
Runoff = 5.77 cfs @ 12.28 hrs, Volume= 26,775 cf, Depth= 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

	Area (sf)	CN	Description
*	13,668	98	Exist Pave
	4,626	76	Woods/grass comb., Fair, HSG C
	188,013	79	50-75% Grass cover, Fair, HSG C
	206,307	80	Weighted Average
	192,639		93.37% Pervious Area
	13,668		6.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	68	0.0040	0.08		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
2.2	170	0.0064	1.29		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
2.1	242	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.1	201	0.0220	3.01		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
19.8	681	Total			

Subcatchment E-8: Wooded Basin Area + Pave



Summary for Subcatchment E-9: Wooded Basin Area

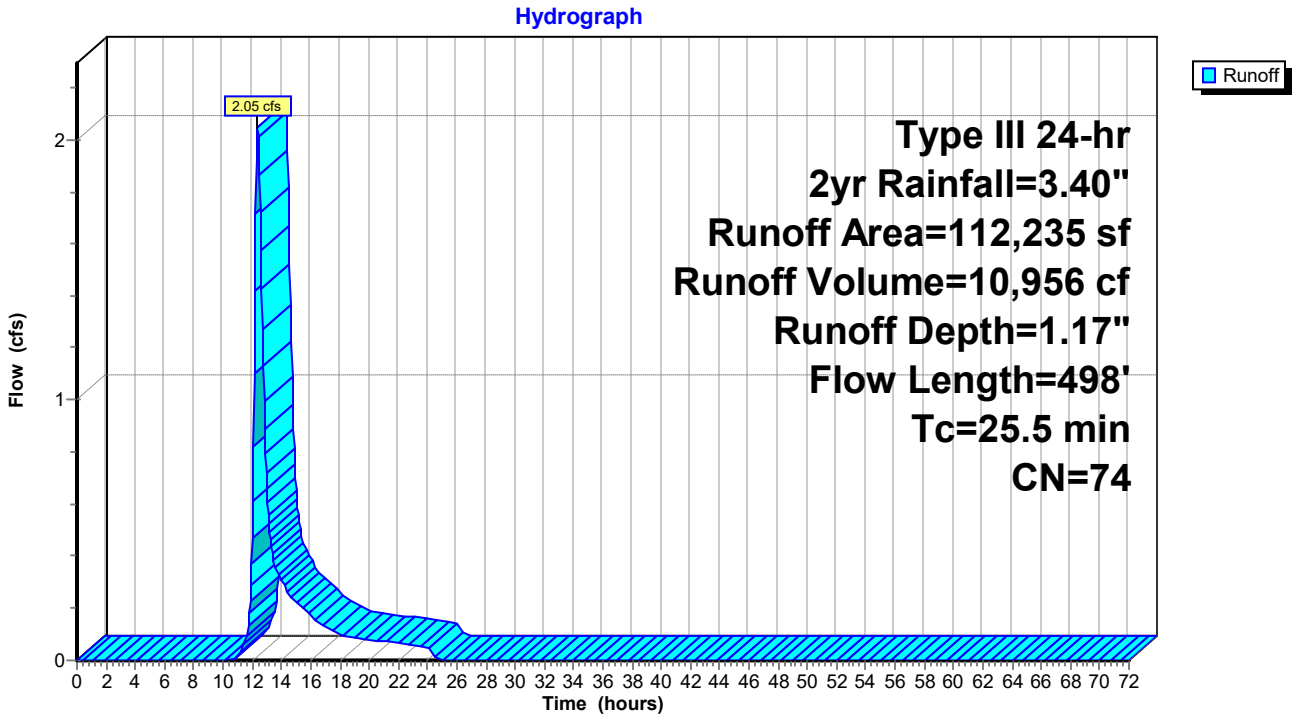
Runoff = 2.05 cfs @ 12.38 hrs, Volume= 10,956 cf, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.40"

Area (sf)	CN	Description
87,537	73	Woods, Fair, HSG C
24,698	79	50-75% Grass cover, Fair, HSG C
112,235	74	Weighted Average
112,235		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	50	0.0270	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.9	132	0.0250	2.55		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.6	316	0.0050	1.14		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
25.5	498	Total			

Subcatchment E-9: Wooded Basin Area

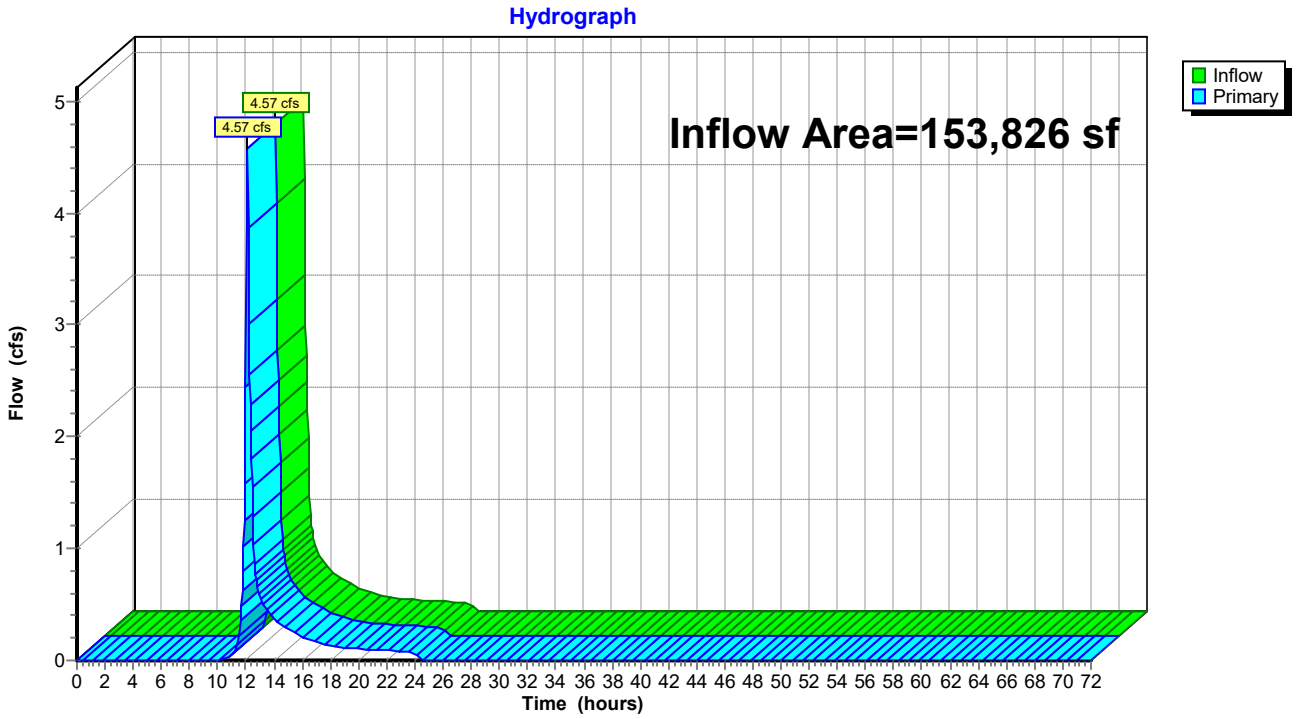


Summary for Pond 1P: stone

Inflow Area = 153,826 sf, 0.00% Impervious, Inflow Depth = 1.17" for 2yr event
Inflow = 4.57 cfs @ 12.10 hrs, Volume= 15,016 cf
Primary = 4.57 cfs @ 12.10 hrs, Volume= 15,016 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 1P: stone

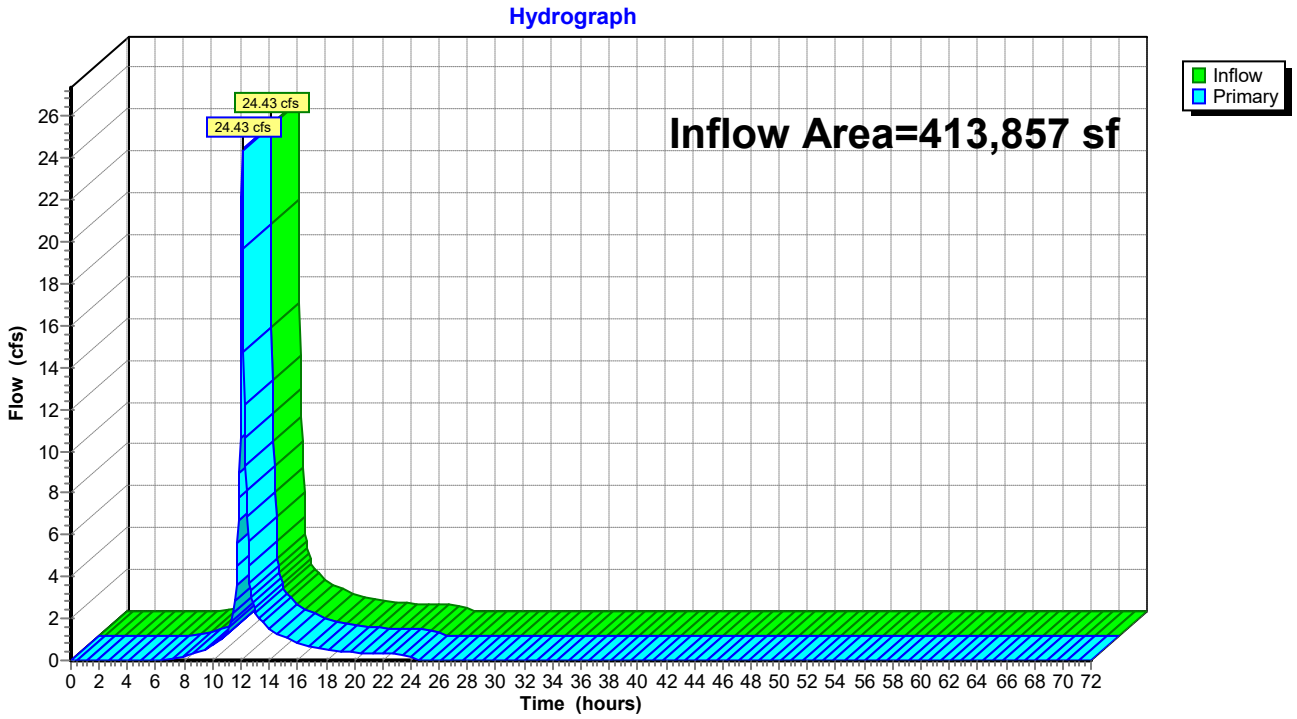


Summary for Pond DP-10e: Exist Basin #3

Inflow Area = 413,857 sf, 48.99% Impervious, Inflow Depth = 2.29" for 2yr event
Inflow = 24.43 cfs @ 12.09 hrs, Volume= 78,907 cf
Primary = 24.43 cfs @ 12.09 hrs, Volume= 78,907 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-10e: Exist Basin #3

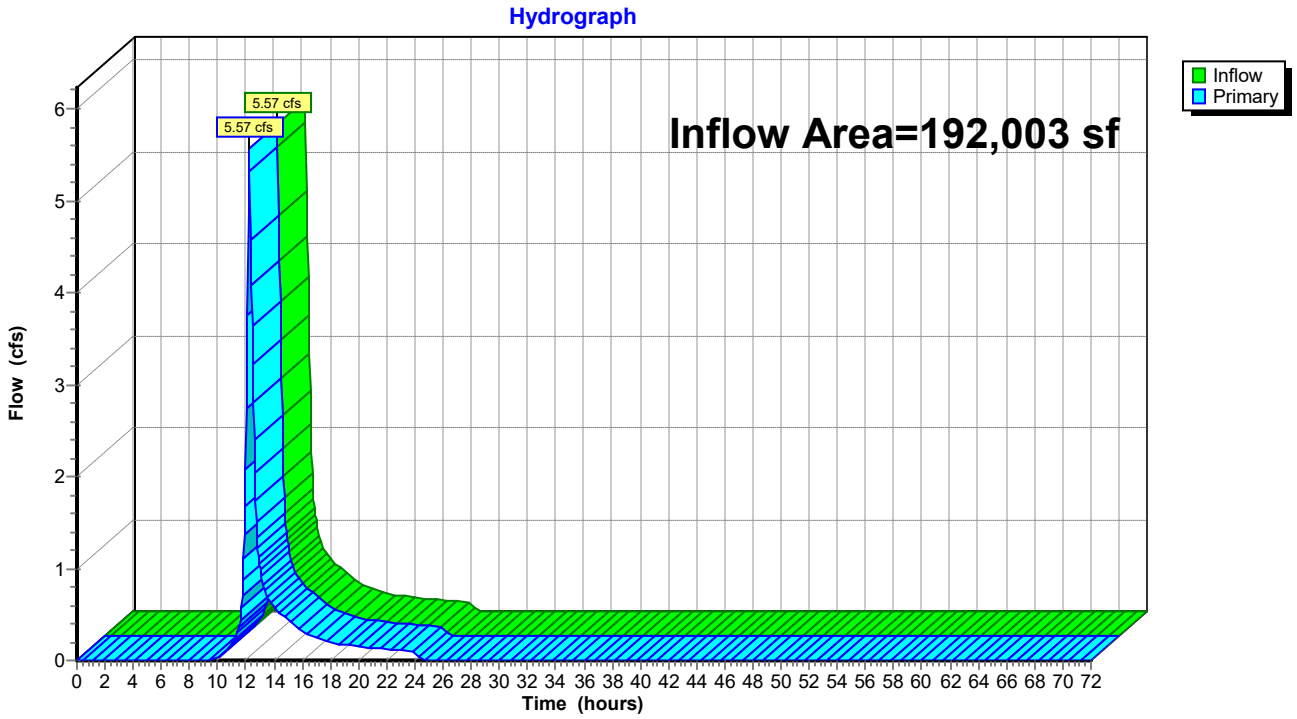


Summary for Pond DP-11e: Woods Southwest

Inflow Area = 192,003 sf, 6.81% Impervious, Inflow Depth = 1.49" for 2yr event
Inflow = 5.57 cfs @ 12.23 hrs, Volume= 23,820 cf
Primary = 5.57 cfs @ 12.23 hrs, Volume= 23,820 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-11e: Woods Southwest

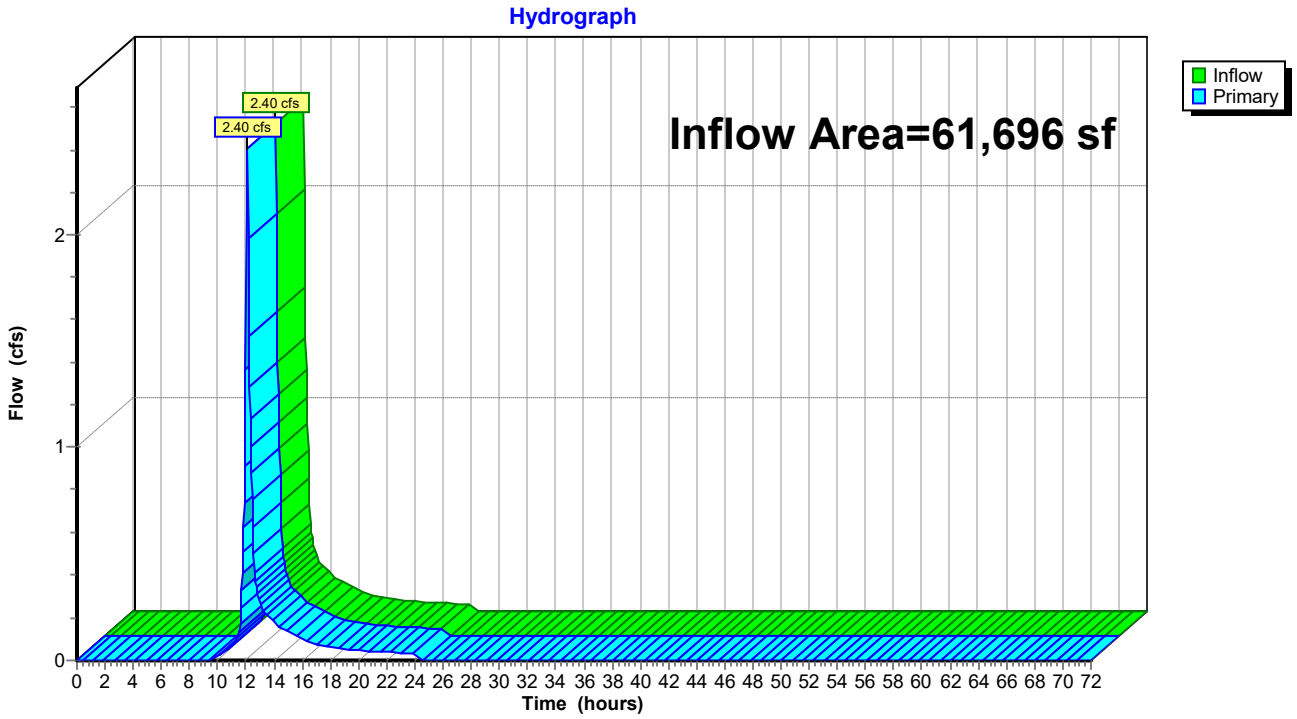


Summary for Pond DP-12e: Residential West#1

Inflow Area = 61,696 sf, 4.78% Impervious, Inflow Depth = 1.49" for 2yr event
Inflow = 2.40 cfs @ 12.10 hrs, Volume= 7,654 cf
Primary = 2.40 cfs @ 12.10 hrs, Volume= 7,654 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-12e: Residential West#1

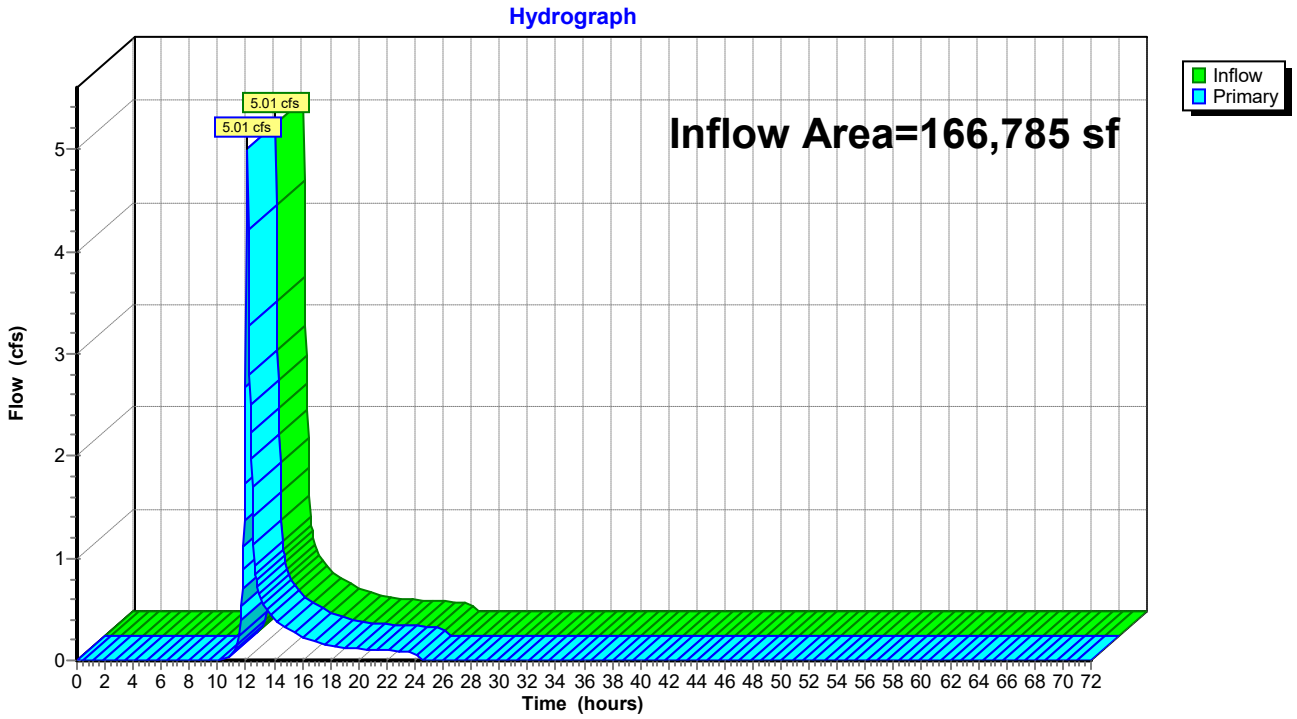


Summary for Pond DP-13e: Residential West#2

Inflow Area = 166,785 sf, 0.00% Impervious, Inflow Depth = 1.18" for 2yr event
Inflow = 5.01 cfs @ 12.10 hrs, Volume= 16,413 cf
Primary = 5.01 cfs @ 12.10 hrs, Volume= 16,413 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-13e: Residential West#2

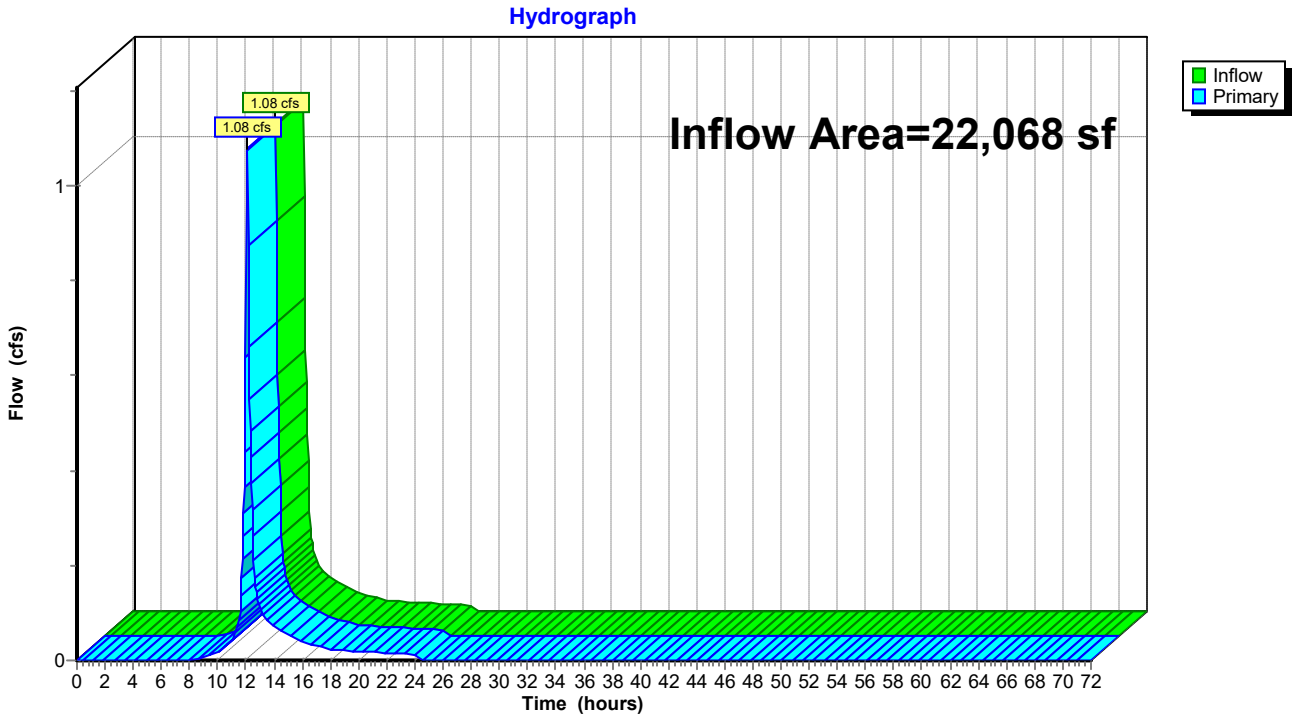


Summary for Pond DP-14e: Residential West#3

Inflow Area = 22,068 sf, 29.78% Impervious, Inflow Depth = 1.85" for 2yr event
Inflow = 1.08 cfs @ 12.09 hrs, Volume= 3,404 cf
Primary = 1.08 cfs @ 12.09 hrs, Volume= 3,404 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-14e: Residential West#3

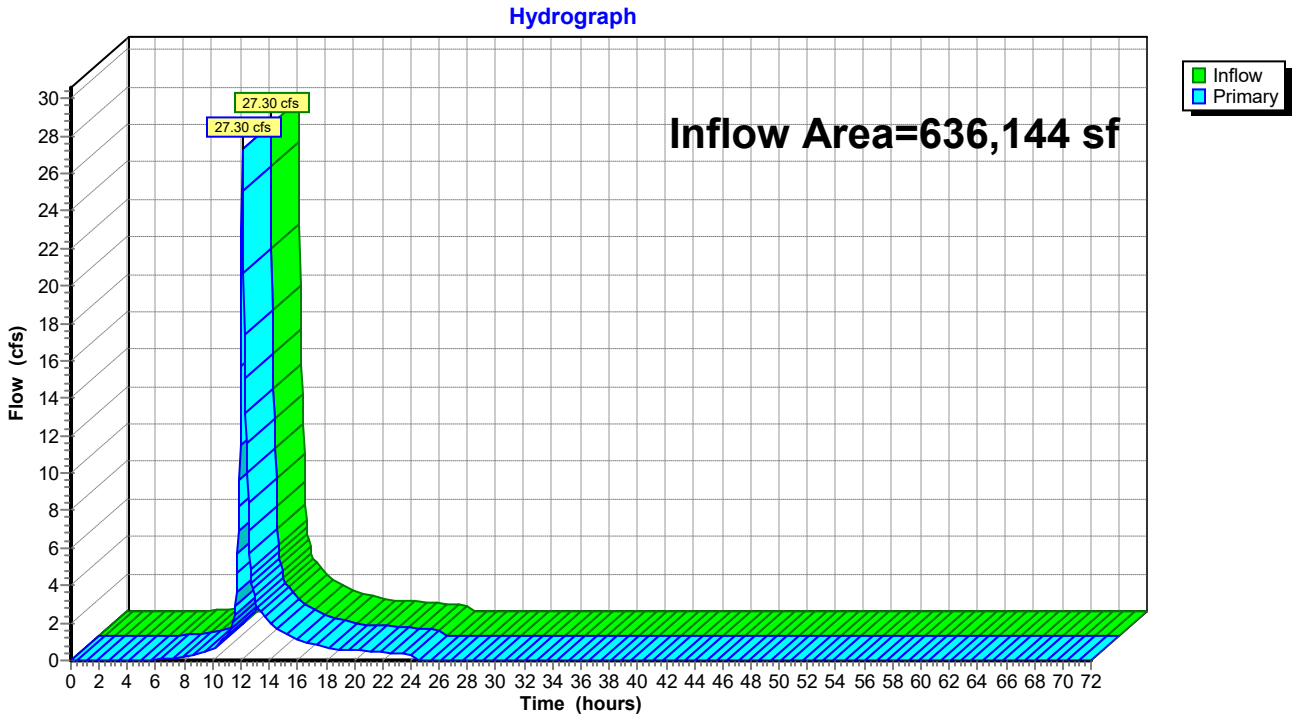


Summary for Pond DP-15e: Wetlands

Inflow Area = 636,144 sf, 29.68% Impervious, Inflow Depth = 1.87" for 2yr event
Inflow = 27.30 cfs @ 12.11 hrs, Volume= 98,897 cf
Primary = 27.30 cfs @ 12.11 hrs, Volume= 98,897 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-15e: Wetlands

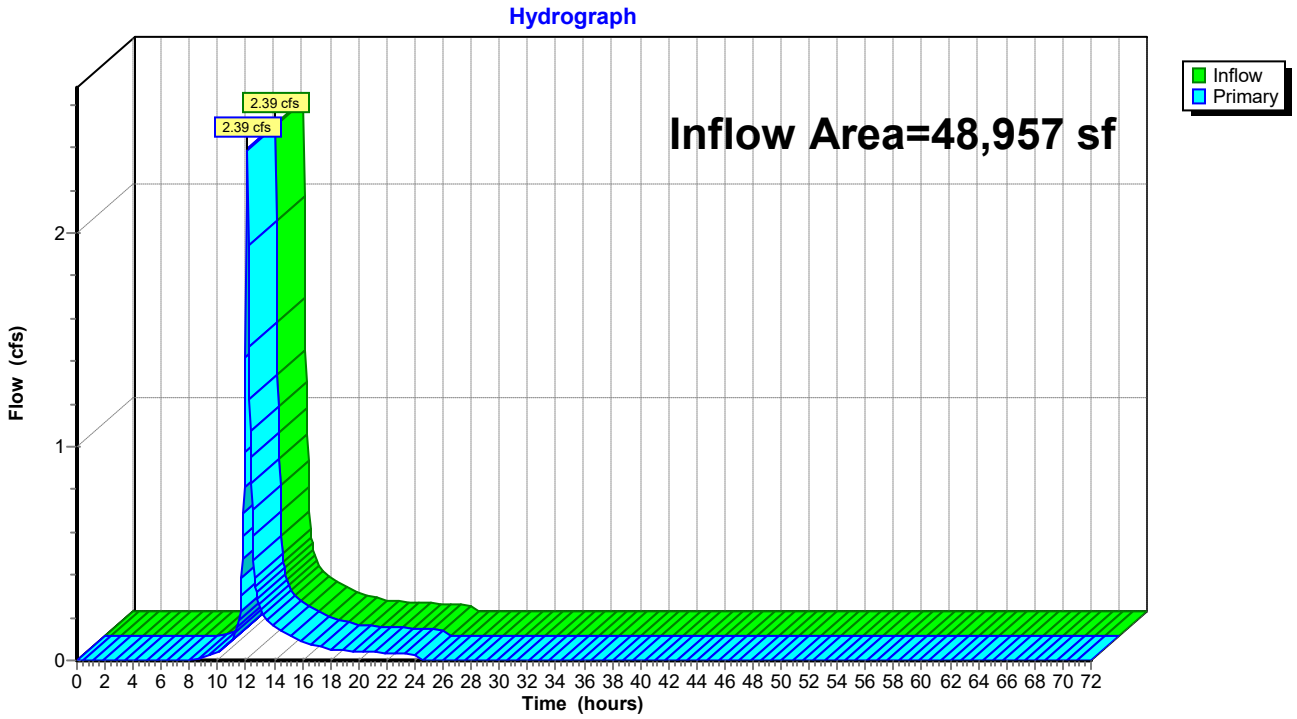


Summary for Pond Dp-16e: Landry Avenue

Inflow Area = 48,957 sf, 27.60% Impervious, Inflow Depth = 1.85" for 2yr event
Inflow = 2.39 cfs @ 12.09 hrs, Volume= 7,552 cf
Primary = 2.39 cfs @ 12.09 hrs, Volume= 7,552 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond Dp-16e: Landry Avenue



Summary for Pond DP-1e: Flow to Exist Basin #1

Inflow Area = 103,683 sf, 38.10% Impervious, Inflow Depth = 1.85" for 2yr event
Inflow = 5.07 cfs @ 12.09 hrs, Volume= 15,994 cf
Outflow = 4.60 cfs @ 12.13 hrs, Volume= 15,994 cf, Atten= 9%, Lag= 2.3 min
Discarded = 0.02 cfs @ 12.13 hrs, Volume= 350 cf
Primary = 4.58 cfs @ 12.13 hrs, Volume= 15,644 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 236.67' @ 12.13 hrs Surf.Area= 5,840 sf Storage= 920 cf

Plug-Flow detention time= 5.1 min calculated for 15,983 cf (100% of inflow)
Center-of-Mass det. time= 5.1 min (831.9 - 826.8)

Volume	Invert	Avail.Storage	Storage Description
#1	236.50'	78,288 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

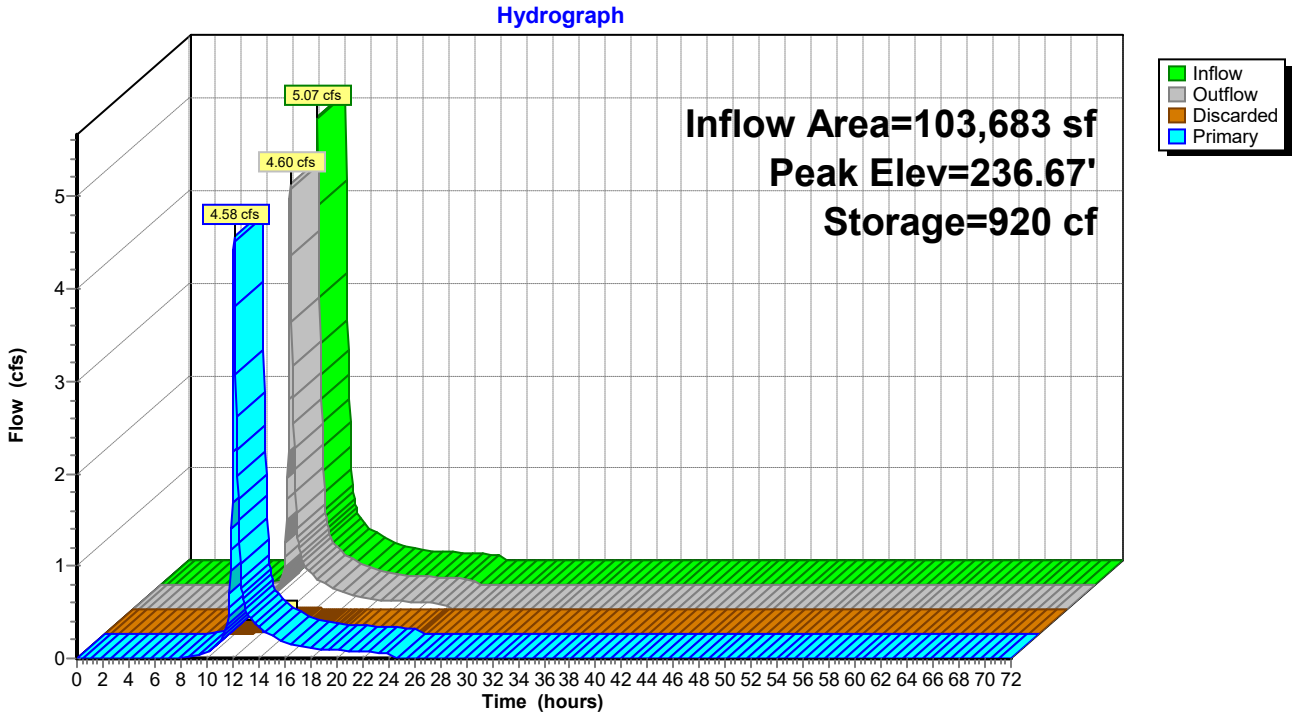
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.50	5,215	304.0	0	0	5,215
237.00	7,198	352.0	3,090	3,090	7,726
238.00	11,943	443.0	9,471	12,561	13,497
239.00	19,611	649.0	15,619	28,180	31,406
240.00	26,065	843.0	22,762	50,942	54,452
241.00	28,648	878.0	27,346	78,288	59,322

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**25.0' long x 45.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.02 cfs @ 12.13 hrs HW=236.66' (Free Discharge)
↑**2=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=4.46 cfs @ 12.13 hrs HW=236.66' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 4.46 cfs @ 1.09 fps)

Pond DP-1e: Flow to Exist Basin #1

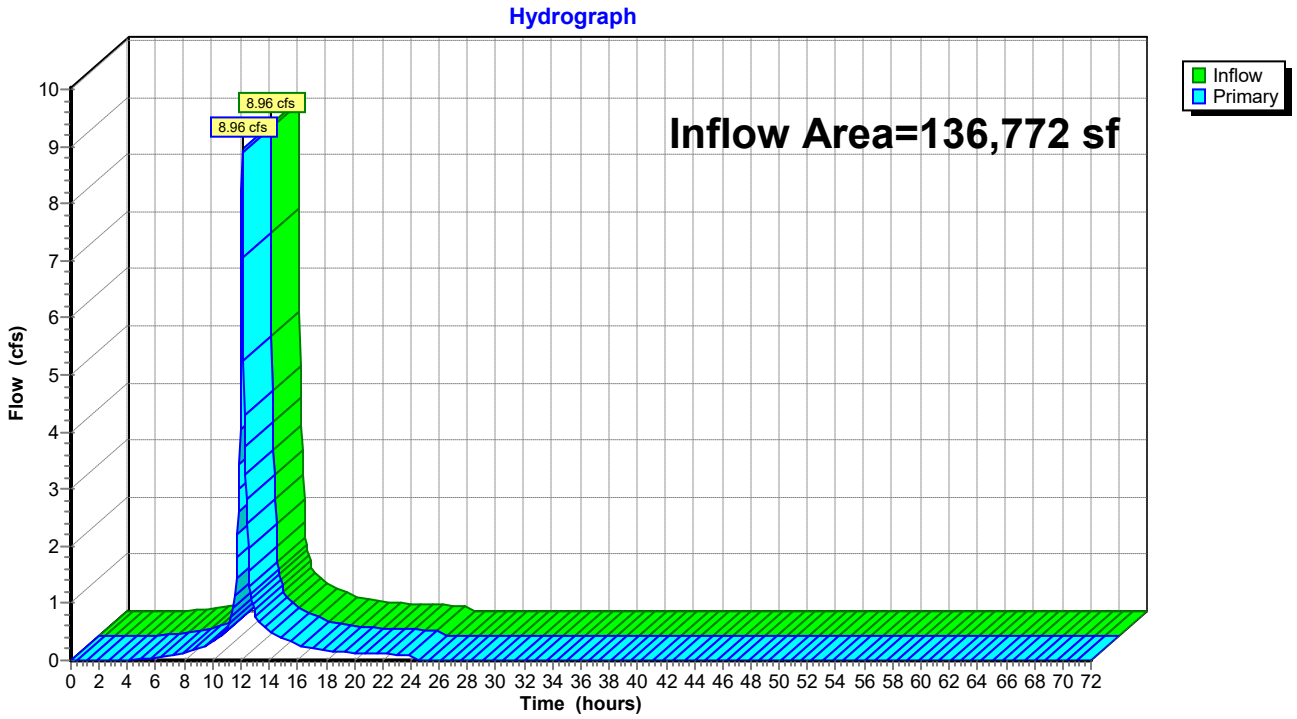


Summary for Pond DP-2e: Flow to Exist Basin#2

Inflow Area = 136,772 sf, 73.93% Impervious, Inflow Depth = 2.61" for 2yr event
Inflow = 8.96 cfs @ 12.09 hrs, Volume= 29,725 cf
Primary = 8.96 cfs @ 12.09 hrs, Volume= 29,725 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-2e: Flow to Exist Basin#2

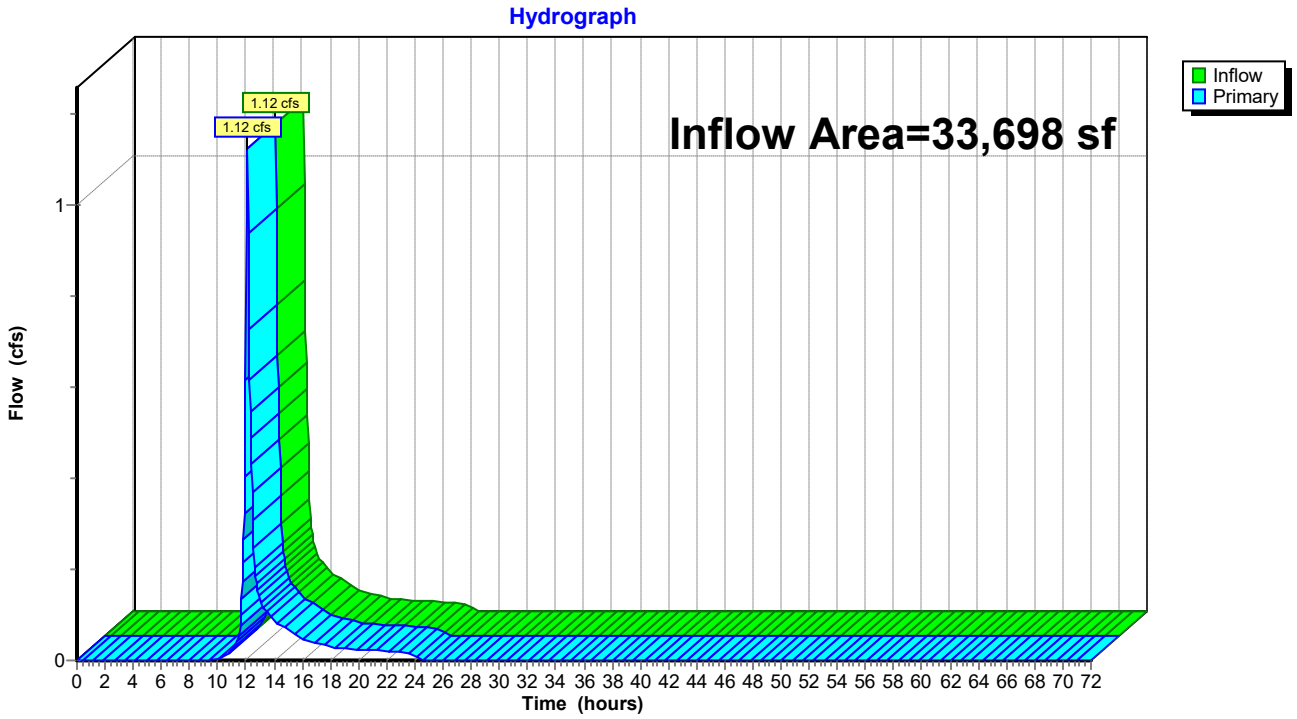


Summary for Pond DP-3e: Residential East#1

Inflow Area = 33,698 sf, 8.21% Impervious, Inflow Depth = 1.29" for 2yr event
Inflow = 1.12 cfs @ 12.10 hrs, Volume= 3,632 cf
Primary = 1.12 cfs @ 12.10 hrs, Volume= 3,632 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-3e: Residential East#1

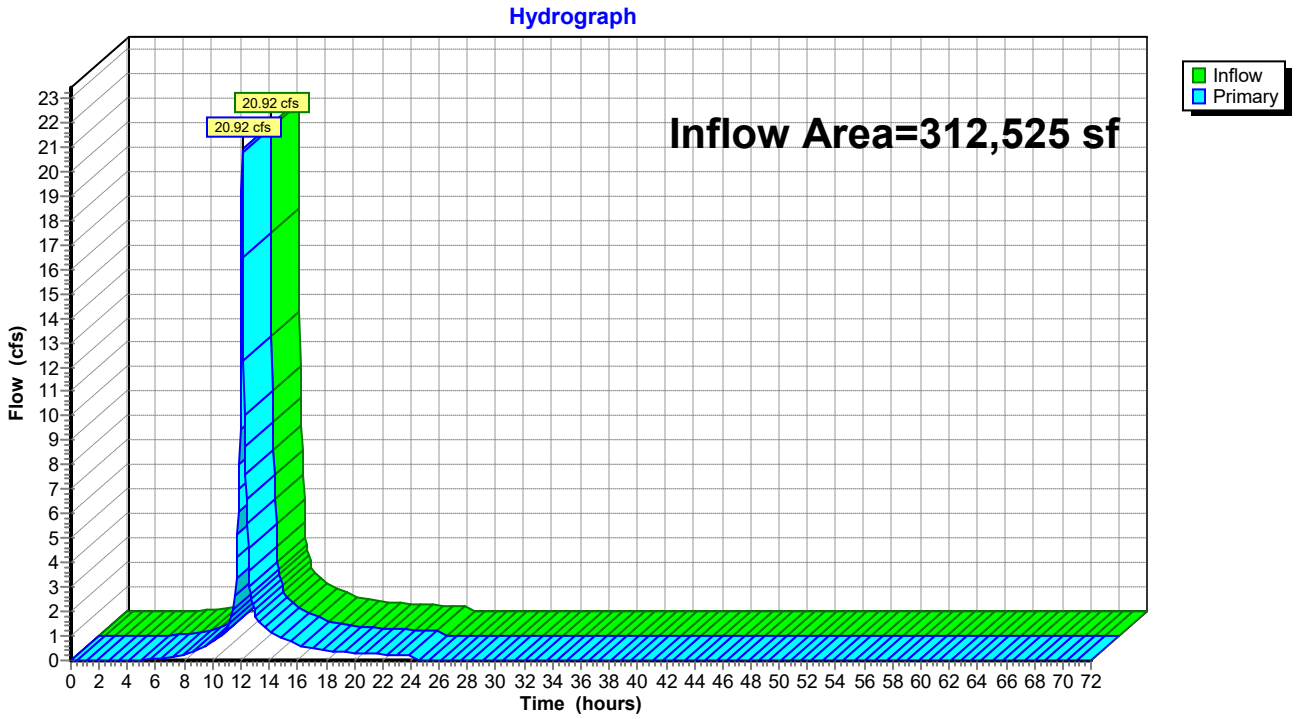


Summary for Pond DP-4e: Exist Swale #1 East

Inflow Area = 312,525 sf, 68.63% Impervious, Inflow Depth = 2.64" for 2yr event
Inflow = 20.92 cfs @ 12.09 hrs, Volume= 68,712 cf
Primary = 20.92 cfs @ 12.09 hrs, Volume= 68,712 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-4e: Exist Swale #1 East

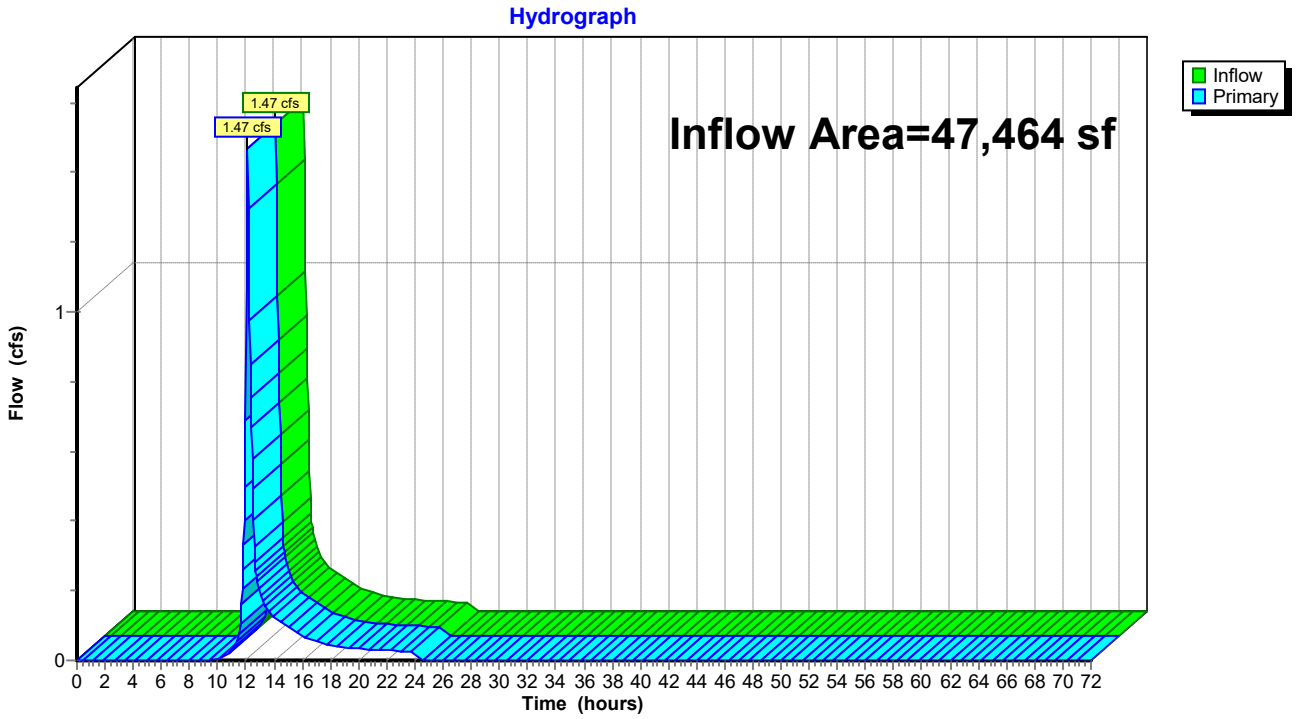


Summary for Pond DP-5e: Residential East#2

Inflow Area = 47,464 sf, 0.00% Impervious, Inflow Depth = 1.29" for 2yr event
Inflow = 1.47 cfs @ 12.12 hrs, Volume= 5,115 cf
Primary = 1.47 cfs @ 12.12 hrs, Volume= 5,115 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-5e: Residential East#2

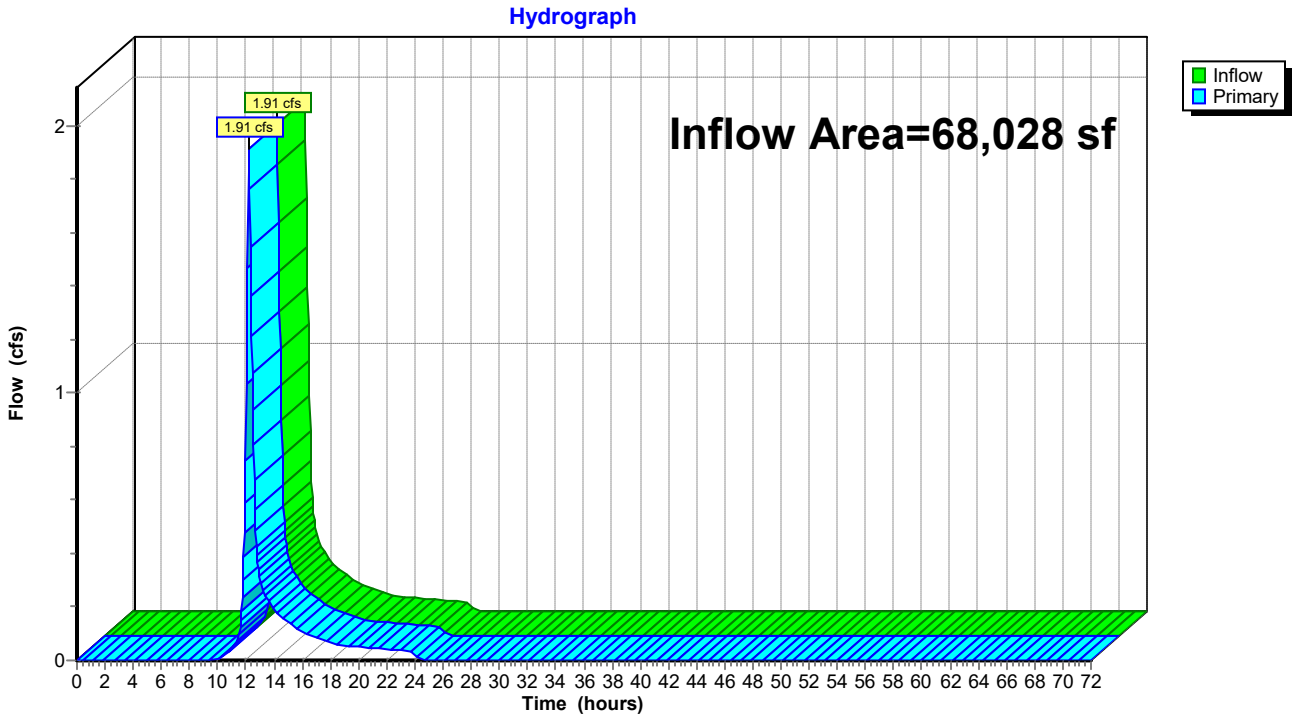


Summary for Pond DP-6e: Residential East#3

Inflow Area = 68,028 sf, 0.00% Impervious, Inflow Depth = 1.36" for 2yr event
Inflow = 1.91 cfs @ 12.19 hrs, Volume= 7,691 cf
Primary = 1.91 cfs @ 12.19 hrs, Volume= 7,691 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-6e: Residential East#3

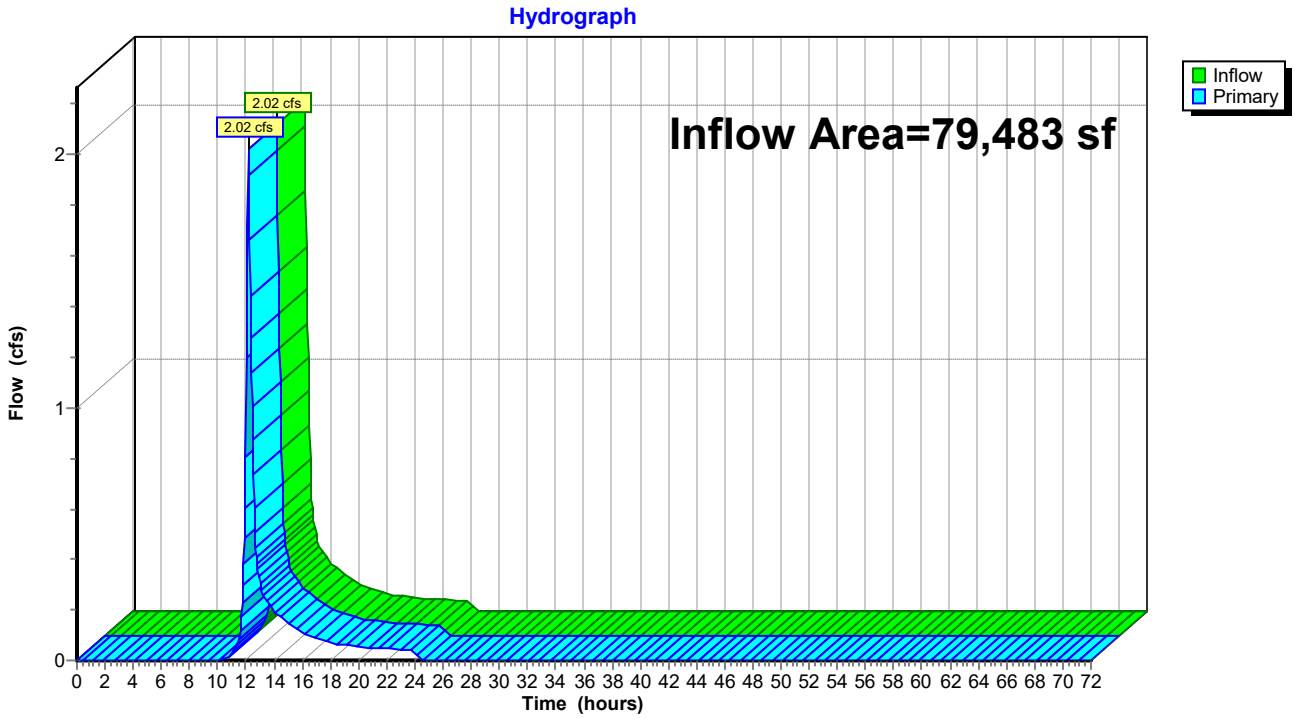


Summary for Pond DP-7e: Residential East#4

Inflow Area = 79,483 sf, 0.00% Impervious, Inflow Depth = 1.17" for 2yr event
Inflow = 2.02 cfs @ 12.16 hrs, Volume= 7,759 cf
Primary = 2.02 cfs @ 12.16 hrs, Volume= 7,759 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-7e: Residential East#4

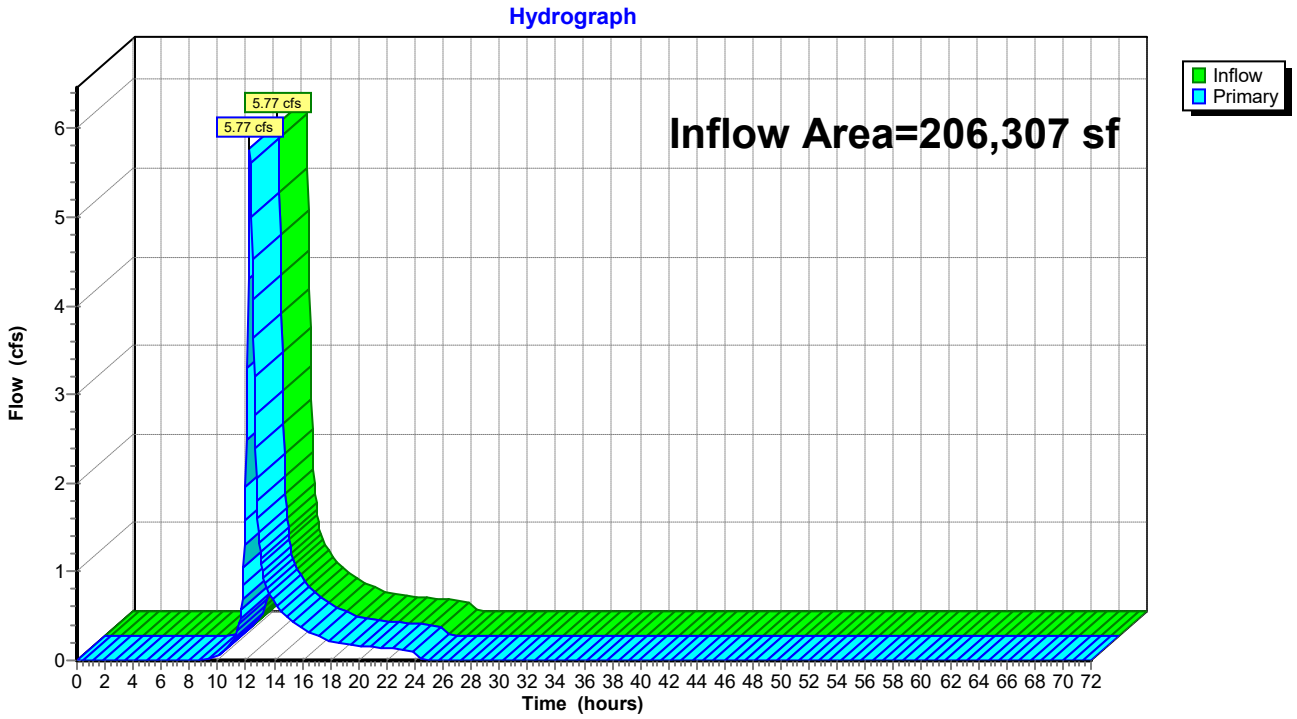


Summary for Pond DP-8e: Stoddard Drive

Inflow Area = 206,307 sf, 6.63% Impervious, Inflow Depth = 1.56" for 2yr event
Inflow = 5.77 cfs @ 12.28 hrs, Volume= 26,775 cf
Primary = 5.77 cfs @ 12.28 hrs, Volume= 26,775 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-8e: Stoddard Drive

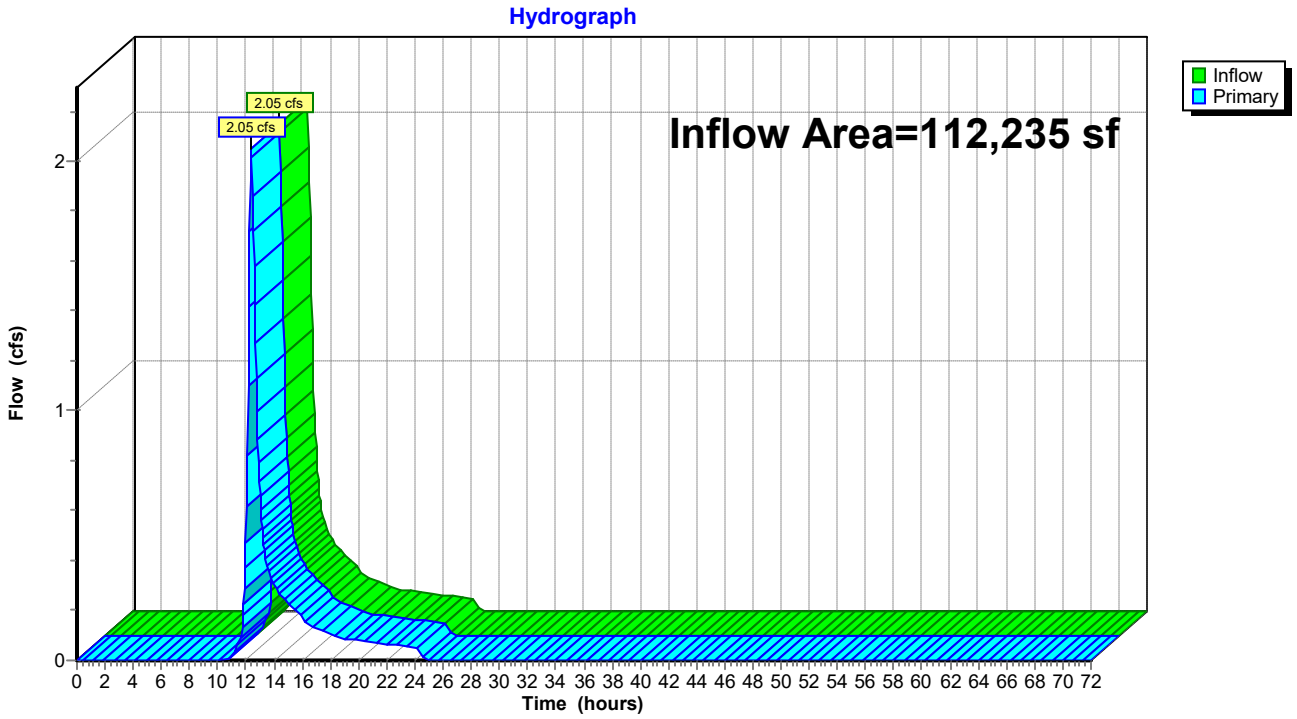


Summary for Pond DP-9e: Woods South

Inflow Area = 112,235 sf, 0.00% Impervious, Inflow Depth = 1.17" for 2yr event
Inflow = 2.05 cfs @ 12.38 hrs, Volume= 10,956 cf
Primary = 2.05 cfs @ 12.38 hrs, Volume= 10,956 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-9e: Woods South

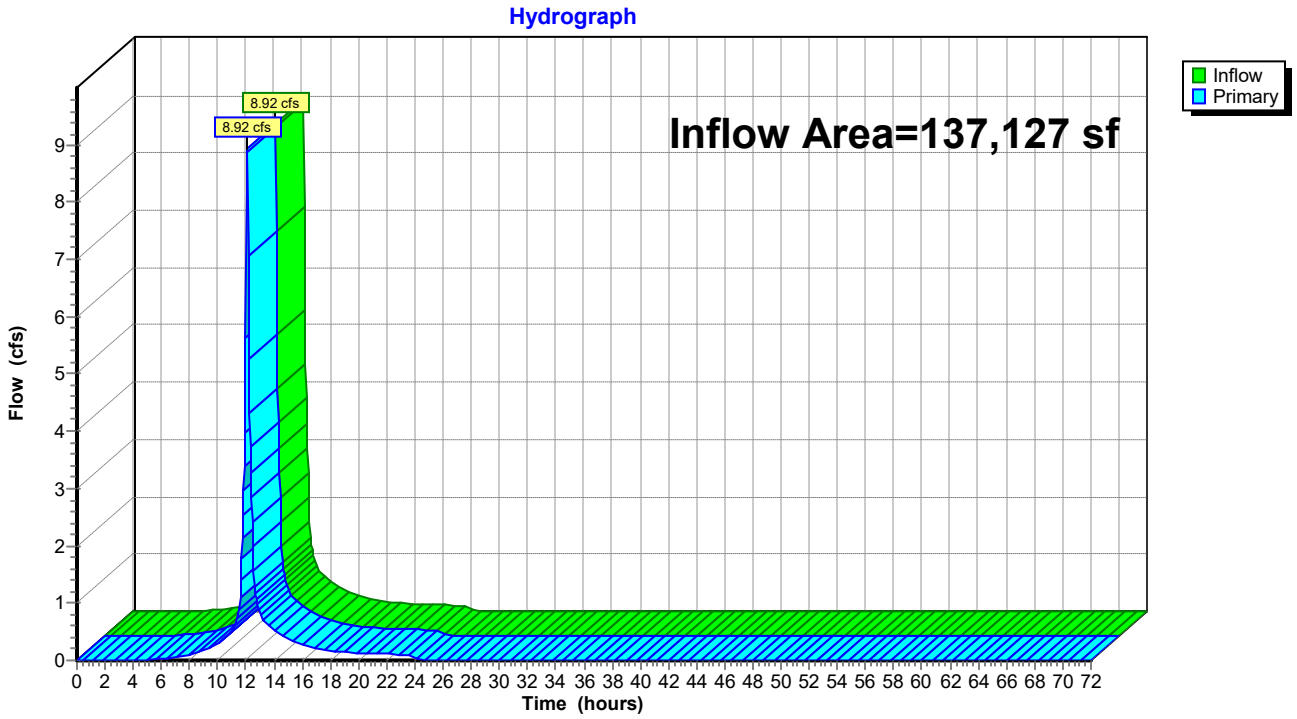


Summary for Pond EC: Existing Underground Chambers

Inflow Area = 137,127 sf, 67.63% Impervious, Inflow Depth = 2.54" for 2yr event
Inflow = 8.92 cfs @ 12.09 hrs, Volume= 29,038 cf
Primary = 8.92 cfs @ 12.09 hrs, Volume= 29,038 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond EC: Existing Underground Chambers



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1: Flow to NE Landry Runoff Area=103,683 sf 38.10% Impervious Runoff Depth=3.43"
Tc=6.0 min CN=84 Runoff=9.28 cfs 29,604 cf

Subcatchment E-10a: Grass + Pave + Runoff Area=386,242 sf 52.49% Impervious Runoff Depth=4.04"
Tc=6.0 min CN=90 Runoff=39.52 cfs 130,049 cf

Subcatchment E-10b: Wood + Grass + Pave Runoff Area=27,615 sf 0.00% Impervious Runoff Depth=2.77"
Flow Length=305' Tc=8.8 min CN=77 Runoff=1.83 cfs 6,365 cf

Subcatchment E-11: Woods + Pave Runoff Area=192,003 sf 6.81% Impervious Runoff Depth=2.95"
Flow Length=638' Tc=15.9 min CN=79 Runoff=11.24 cfs 47,178 cf

Subcatchment E-12: Woods + Pave Runoff Area=61,696 sf 4.78% Impervious Runoff Depth=2.95"
Flow Length=260' Tc=6.0 min CN=79 Runoff=4.80 cfs 15,159 cf

Subcatchment E-13a: EXIST STADIUM Runoff Area=153,826 sf 0.00% Impervious Runoff Depth=2.50"
Tc=6.0 min CN=74 Runoff=10.12 cfs 32,055 cf

Subcatchment E-13b: EXIST STADIUM Runoff Area=12,959 sf 0.00% Impervious Runoff Depth=2.68"
Tc=6.0 min CN=76 Runoff=0.91 cfs 2,890 cf

Subcatchment E-14: Gravel + Woods + Runoff Area=22,068 sf 29.78% Impervious Runoff Depth=3.43"
Tc=6.0 min CN=84 Runoff=1.98 cfs 6,301 cf

Subcatchment E-15a: Woods + Gravel + Runoff Area=235,197 sf 1.04% Impervious Runoff Depth=2.68"
Flow Length=441' Tc=11.4 min CN=76 Runoff=14.06 cfs 52,454 cf

Subcatchment E-15b: Pave + Woods + Runoff Area=149,784 sf 5.76% Impervious Runoff Depth=3.04"
Flow Length=336' Tc=9.0 min CN=80 Runoff=10.84 cfs 37,966 cf

Subcatchment E-15C/I/G: Basin Bypass Runoff Area=114,036 sf 74.53% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=93 Runoff=12.28 cfs 41,480 cf

Subcatchment E-15D/E/F/H: Basin Runoff Area=137,127 sf 67.63% Impervious Runoff Depth=4.26"
Tc=6.0 min CN=92 Runoff=14.53 cfs 48,628 cf

Subcatchment E-16: Flow NW Landry Runoff Area=48,957 sf 27.60% Impervious Runoff Depth=3.43"
Tc=6.0 min CN=84 Runoff=4.38 cfs 13,978 cf

Subcatchment E-2a: E-2a + Roof1 + Roof2 Runoff Area=124,442 sf 81.25% Impervious Runoff Depth=4.48"
Tc=6.0 min CN=94 Runoff=13.58 cfs 46,414 cf

Subcatchment E-2b: Wooded basin area Runoff Area=12,330 sf 0.00% Impervious Runoff Depth=2.68"
Tc=6.0 min CN=76 Runoff=0.87 cfs 2,750 cf

Subcatchment E-3: Sheet flow west to RA Runoff Area=33,698 sf 8.21% Impervious Runoff Depth=2.68"
Tc=6.0 min CN=76 Runoff=2.38 cfs 7,515 cf

Subcatchment E-4: Parking Lot + Roof3 + Runoff Area=312,525 sf 68.63% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=93 Runoff=33.64 cfs 113,679 cf

Subcatchment E-5: Wooded Basin Area Runoff Area=47,464 sf 0.00% Impervious Runoff Depth=2.68"
Flow Length=298' Tc=8.2 min CN=76 Runoff=3.12 cfs 10,585 cf

Subcatchment E-6: Wooded Basin Area Runoff Area=68,028 sf 0.00% Impervious Runoff Depth=2.77"
Flow Length=557' Tc=13.1 min CN=77 Runoff=3.99 cfs 15,680 cf

Subcatchment E-7: Wooded Basin Area Runoff Area=79,483 sf 0.00% Impervious Runoff Depth=2.50"
Flow Length=463' Tc=10.8 min CN=74 Runoff=4.50 cfs 16,563 cf

Subcatchment E-8: Wooded Basin Area + Runoff Area=206,307 sf 6.63% Impervious Runoff Depth=3.04"
Flow Length=681' Tc=19.8 min CN=80 Runoff=11.41 cfs 52,293 cf

Subcatchment E-9: Wooded Basin Area Runoff Area=112,235 sf 0.00% Impervious Runoff Depth=2.50"
Flow Length=498' Tc=25.5 min CN=74 Runoff=4.56 cfs 23,388 cf

Pond 1P: stone Inflow=10.12 cfs 32,055 cf
Primary=10.12 cfs 32,055 cf

Pond DP-10e: Exist Basin #3 Inflow=41.24 cfs 136,413 cf
Primary=41.24 cfs 136,413 cf

Pond DP-11e: Woods Southwest Inflow=11.24 cfs 47,178 cf
Primary=11.24 cfs 47,178 cf

Pond DP-12e: Residential West#1 Inflow=4.80 cfs 15,159 cf
Primary=4.80 cfs 15,159 cf

Pond DP-13e: Residential West#2 Inflow=11.04 cfs 34,945 cf
Primary=11.04 cfs 34,945 cf

Pond DP-14e: Residential West#3 Inflow=1.98 cfs 6,301 cf
Primary=1.98 cfs 6,301 cf

Pond DP-15e: Wetlands Inflow=49.41 cfs 180,528 cf
Primary=49.41 cfs 180,528 cf

Pond Dp-16e: Landry Avenue Inflow=4.38 cfs 13,978 cf
Primary=4.38 cfs 13,978 cf

Pond DP-1e: Flow to Exist Basin #1 Peak Elev=236.75' Storage=1,448 cf Inflow=9.28 cfs 29,604 cf
Discarded=0.02 cfs 556 cf Primary=8.63 cfs 29,048 cf Outflow=8.65 cfs 29,604 cf

Pond DP-2e: Flow to Exist Basin#2 Inflow=14.45 cfs 49,164 cf
Primary=14.45 cfs 49,164 cf

Pond DP-3e: Residential East#1 Inflow=2.38 cfs 7,515 cf
Primary=2.38 cfs 7,515 cf

Pond DP-4e: Exist Swale #1 East Inflow=33.64 cfs 113,679 cf
Primary=33.64 cfs 113,679 cf

Pond DP-5e: Residential East#2 Inflow=3.12 cfs 10,585 cf
Primary=3.12 cfs 10,585 cf

Pond DP-6e: Residential East#3 Inflow=3.99 cfs 15,680 cf
Primary=3.99 cfs 15,680 cf

Pond DP-7e: Residential East#4 Inflow=4.50 cfs 16,563 cf
Primary=4.50 cfs 16,563 cf

Pond DP-8e: Stoddard Drive Inflow=11.41 cfs 52,293 cf
Primary=11.41 cfs 52,293 cf

Pond DP-9e: Woods South Inflow=4.56 cfs 23,388 cf
Primary=4.56 cfs 23,388 cf

Pond EC: Existing Underground Chambers Inflow=14.53 cfs 48,628 cf
Primary=14.53 cfs 48,628 cf

Total Runoff Area = 2,641,705 sf Runoff Volume = 752,974 cf Average Runoff Depth = 3.42"
69.75% Pervious = 1,842,529 sf 30.25% Impervious = 799,176 sf

Summary for Subcatchment E-1: Flow to NE Landry

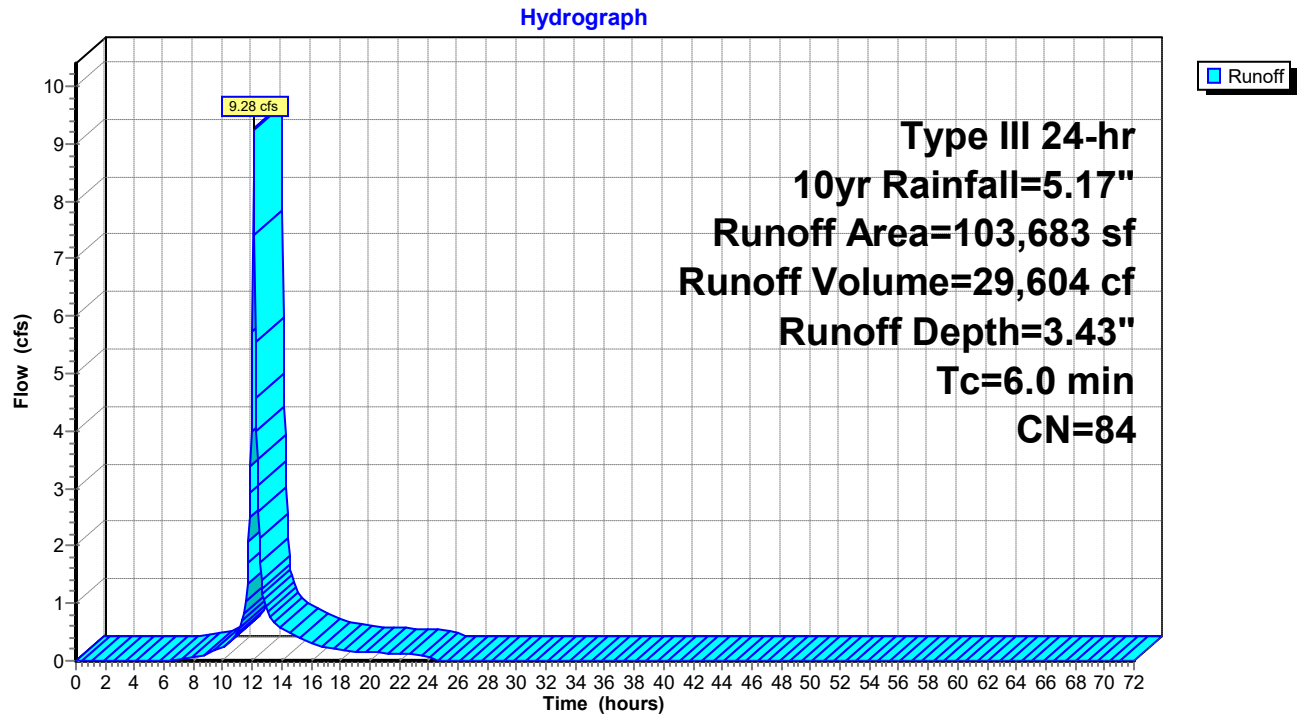
Runoff = 9.28 cfs @ 12.09 hrs, Volume= 29,604 cf, Depth= 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	35,301	98	Pave access road
*	4,200	98	Pave Parking
	38,226	73	Woods, Fair, HSG C
	25,956	79	50-75% Grass cover, Fair, HSG C
	103,683	84	Weighted Average
	64,182		61.90% Pervious Area
	39,501		38.10% Impervious Area

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

Subcatchment E-1: Flow to NE Landry



Summary for Subcatchment E-10a: Grass + Pave + Roof5 + Roof6

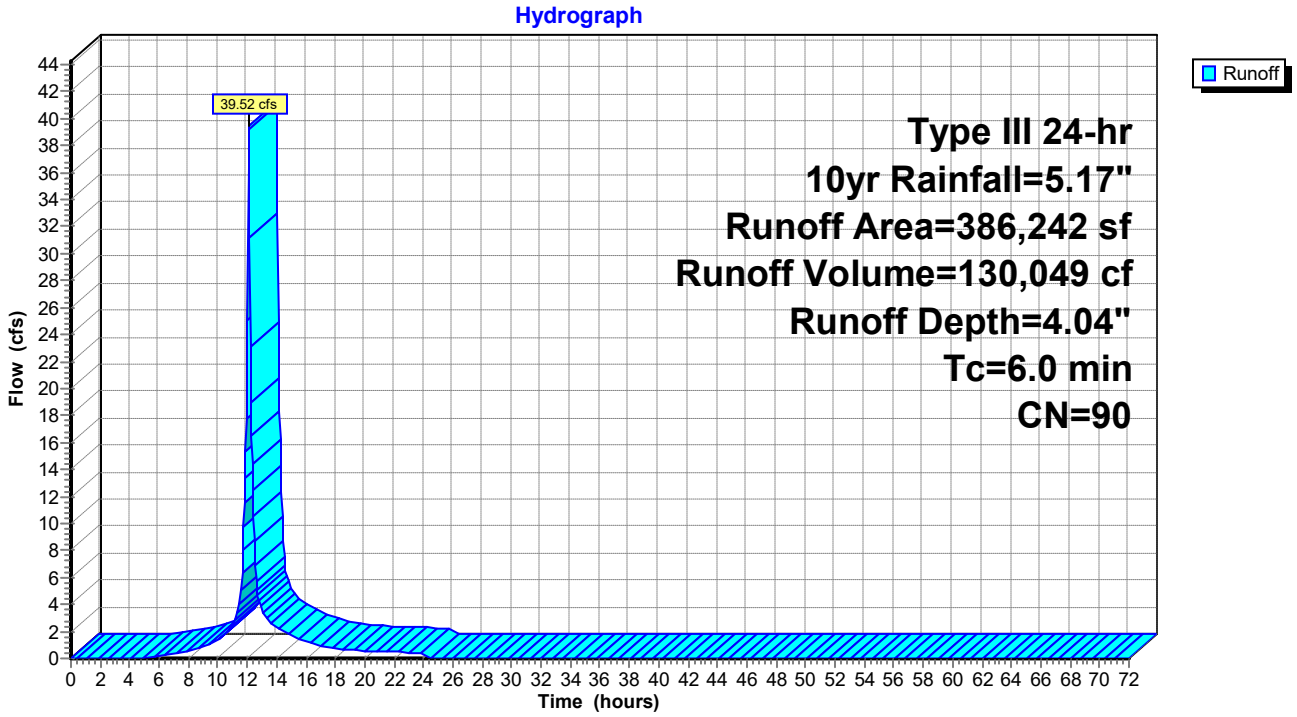
Runoff = 39.52 cfs @ 12.09 hrs, Volume= 130,049 cf, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	12,739	98	Exist Pave
*	9,128	98	Exist Pave
*	44,658	98	Exist Pave
*	53,005	98	Exist Pave
*	10,983	98	Stadium Walks North
*	9,236	98	Exist Pave
*	1,329	98	Exist pave
	58,315	79	50-75% Grass cover, Fair, HSG C
*	19,486	96	Gravel Stadium North
*	19,443	98	Roof 6
*	36,319	98	Roof 5
*	2,206	98	Exist Pave
*	3,690	98	Exist Pave
*	12,880	96	Gravel Road
	92,825	79	50-75% Grass cover, Fair, HSG C
	386,242	90	Weighted Average
	183,506		47.51% Pervious Area
	202,736		52.49% Impervious Area

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

Subcatchment E-10a: Grass + Pave + Roof5 + Roof6



Summary for Subcatchment E-10b: Wood + Grass + Pave

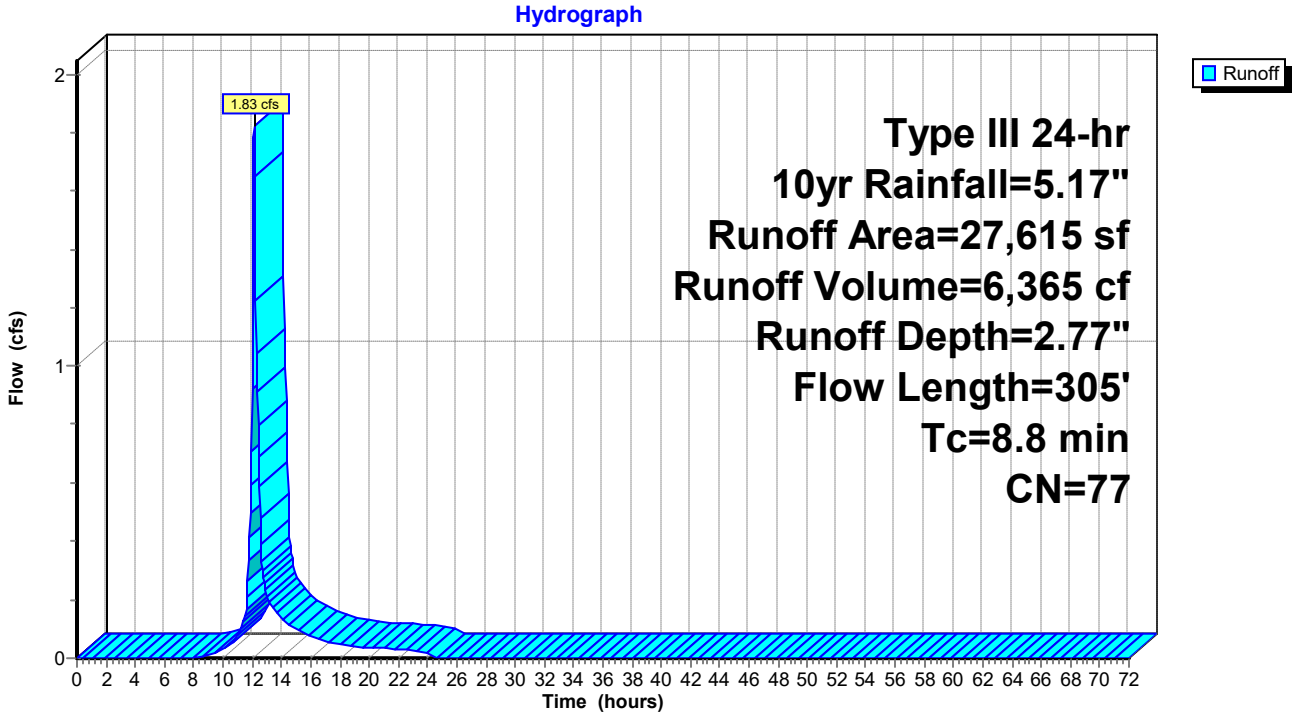
Runoff = 1.83 cfs @ 12.13 hrs, Volume= 6,365 cf, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

Area (sf)	CN	Description
9,528	73	Woods, Fair, HSG C
18,087	79	50-75% Grass cover, Fair, HSG C
27,615	77	Weighted Average
27,615		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	30	0.0050	0.07		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.4	144	0.0113	1.71		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	62	0.2100	7.38		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.4	69	0.0300	2.79		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
8.8	305	Total			

Subcatchment E-10b: Wood + Grass + Pave



Summary for Subcatchment E-11: Woods + Pave

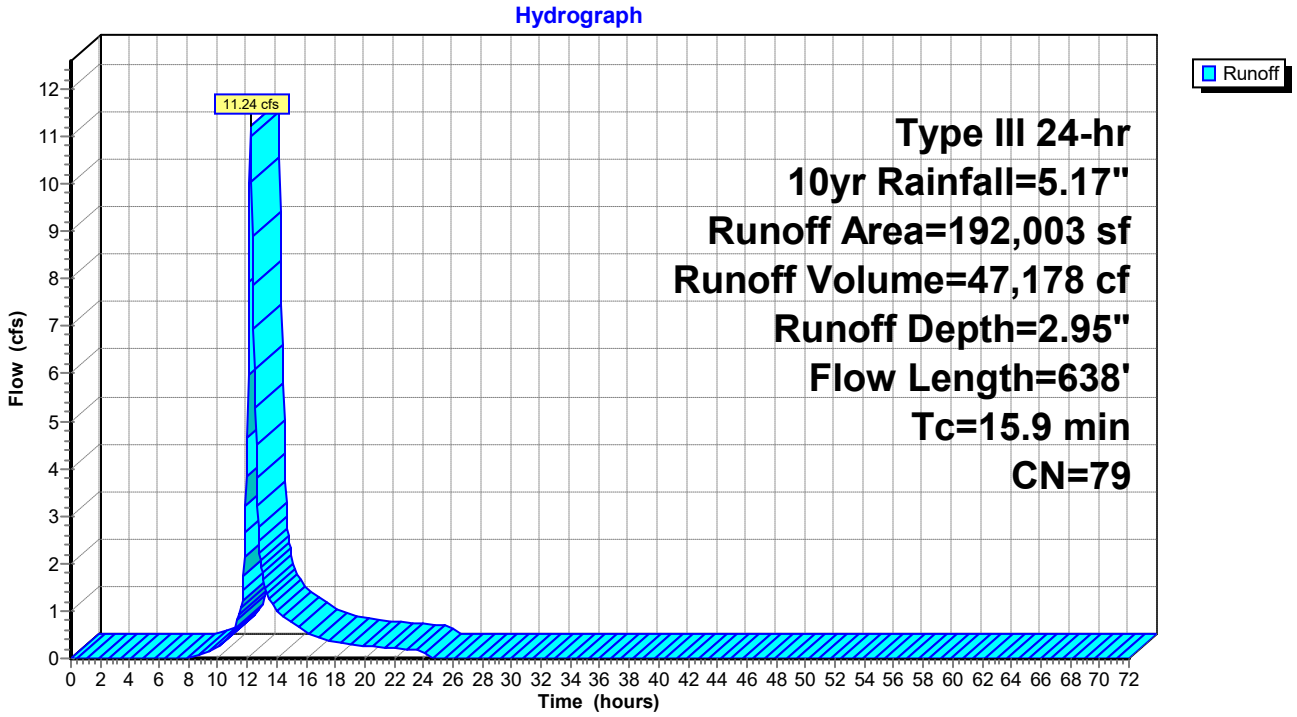
Runoff = 11.24 cfs @ 12.22 hrs, Volume= 47,178 cf, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
	17,585	73	Woods, Fair, HSG C
	10,203	73	Woods, Fair, HSG C
*	13,080	98	Exist pave
	151,135	79	50-75% Grass cover, Fair, HSG C
	192,003	79	Weighted Average
	178,923		93.19% Pervious Area
	13,080		6.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	64	0.0061	0.09		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.1	160	0.0240	2.49		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.0	8	0.0250	3.21		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
0.1	28	0.1750	6.74		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
2.3	206	0.0087	1.50		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.8	172	0.0460	3.45		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
15.9	638	Total			

Subcatchment E-11: Woods + Pave



Summary for Subcatchment E-12: Woods + Pave

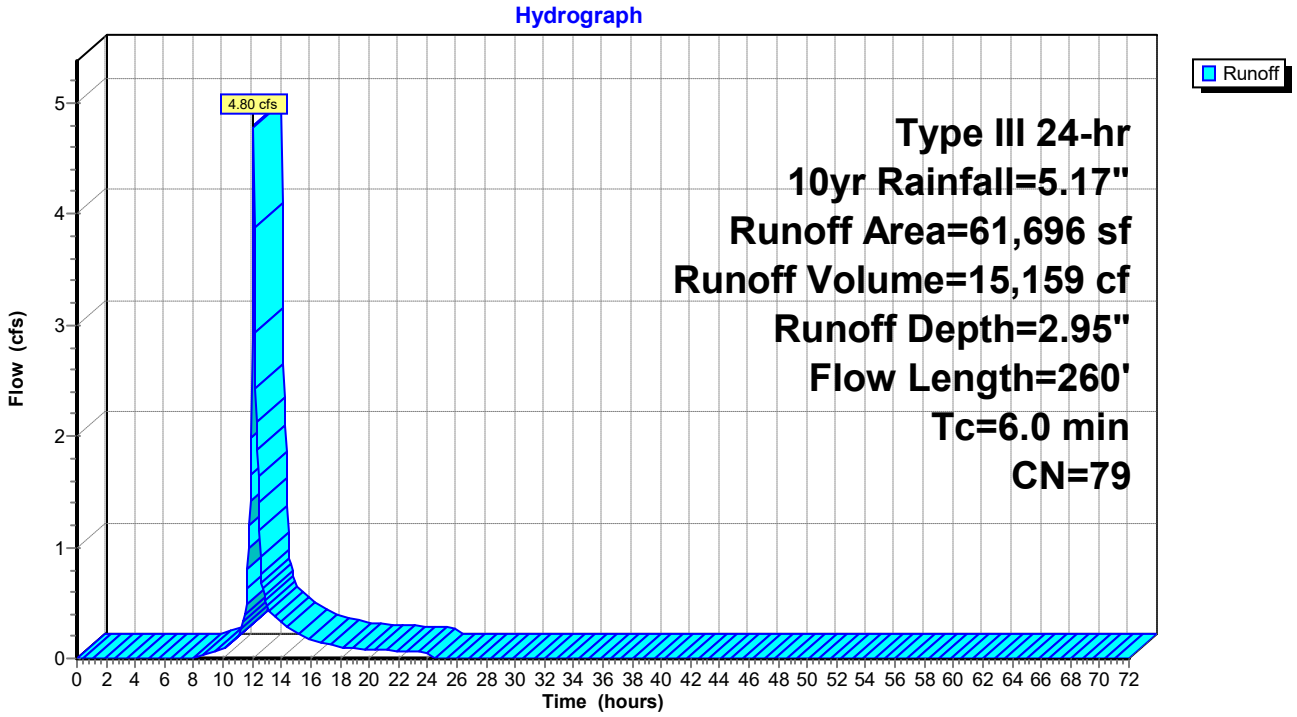
Runoff = 4.80 cfs @ 12.09 hrs, Volume= 15,159 cf, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
	12,114	73	Woods, Fair, HSG C
*	2,947	98	Exist pave
	46,635	79	50-75% Grass cover, Fair, HSG C
	61,696	79	Weighted Average
	58,749		95.22% Pervious Area
	2,947		4.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	21	0.0500	0.17		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.2	36	0.0006	0.50		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
0.1	16	0.0225	2.42		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	44	0.2700	8.37		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.3	143	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.8	260	Total, Increased to minimum Tc = 6.0 min			

Subcatchment E-12: Woods + Pave



Summary for Subcatchment E-13a: EXIST STADIUM ROUGH SIZING NO CONTRACT

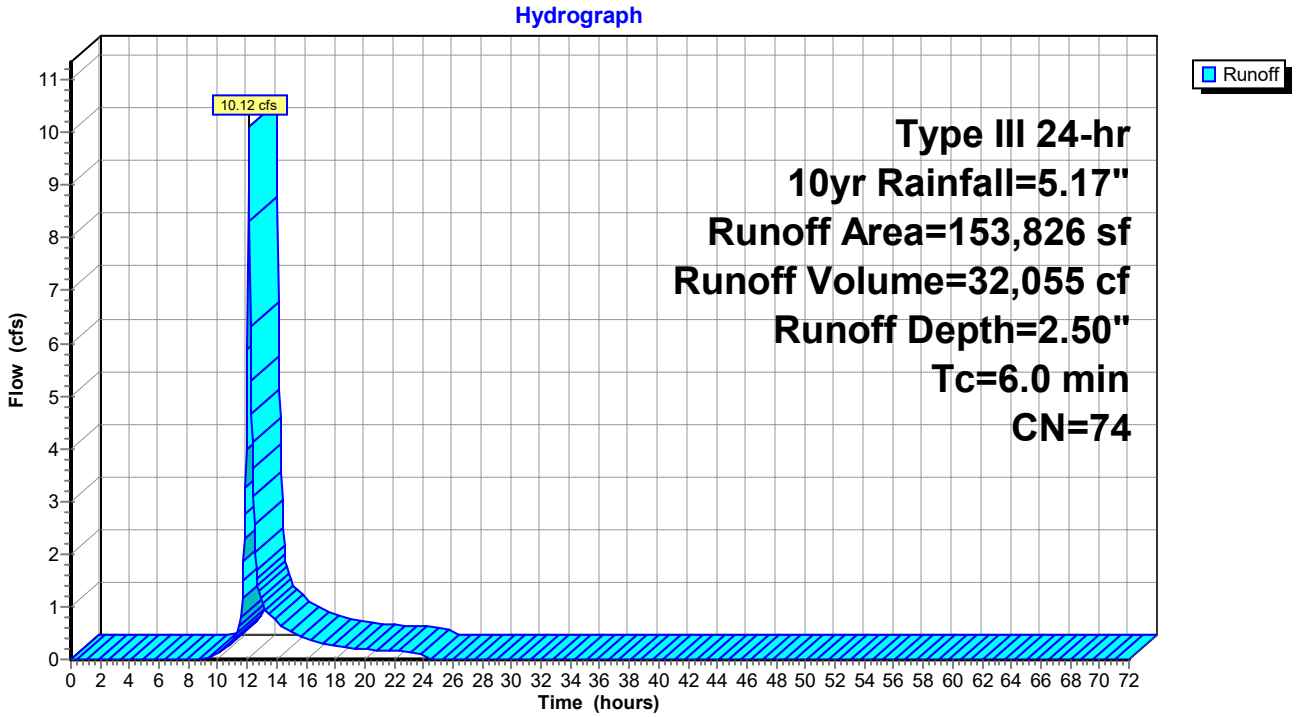
Runoff = 10.12 cfs @ 12.09 hrs, Volume= 32,055 cf, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

Area (sf)	CN	Description
153,826	74	>75% Grass cover, Good, HSG C
153,826		100.00% Pervious Area

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

Subcatchment E-13a: EXIST STADIUM ROUGH SIZING NO CONTRACT



Summary for Subcatchment E-13b: EXIST STADIUM ROUGH SIZING NO CONTRACT

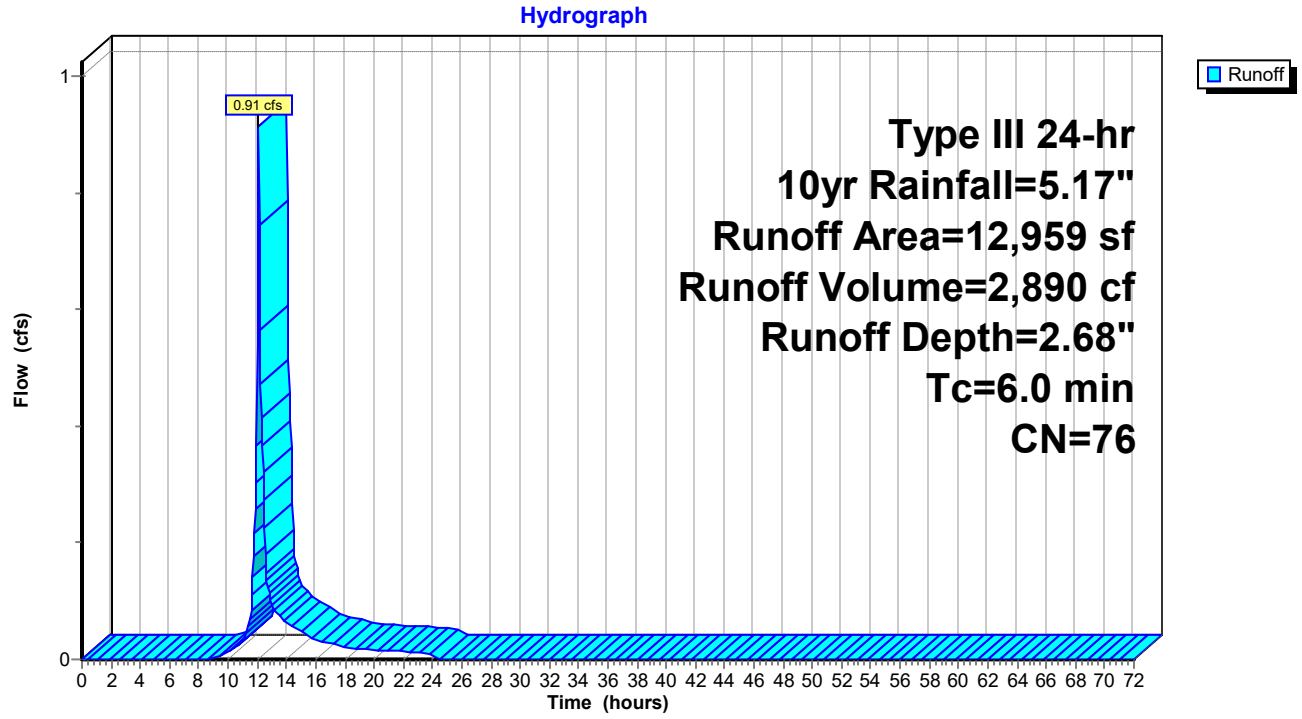
Runoff = 0.91 cfs @ 12.09 hrs, Volume= 2,890 cf, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

Area (sf)	CN	Description
12,959	76	Woods/grass comb., Fair, HSG C
12,959		100.00% Pervious Area

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

Subcatchment E-13b: EXIST STADIUM ROUGH SIZING NO CONTRACT



Summary for Subcatchment E-14: Gravel + Woods + Grass

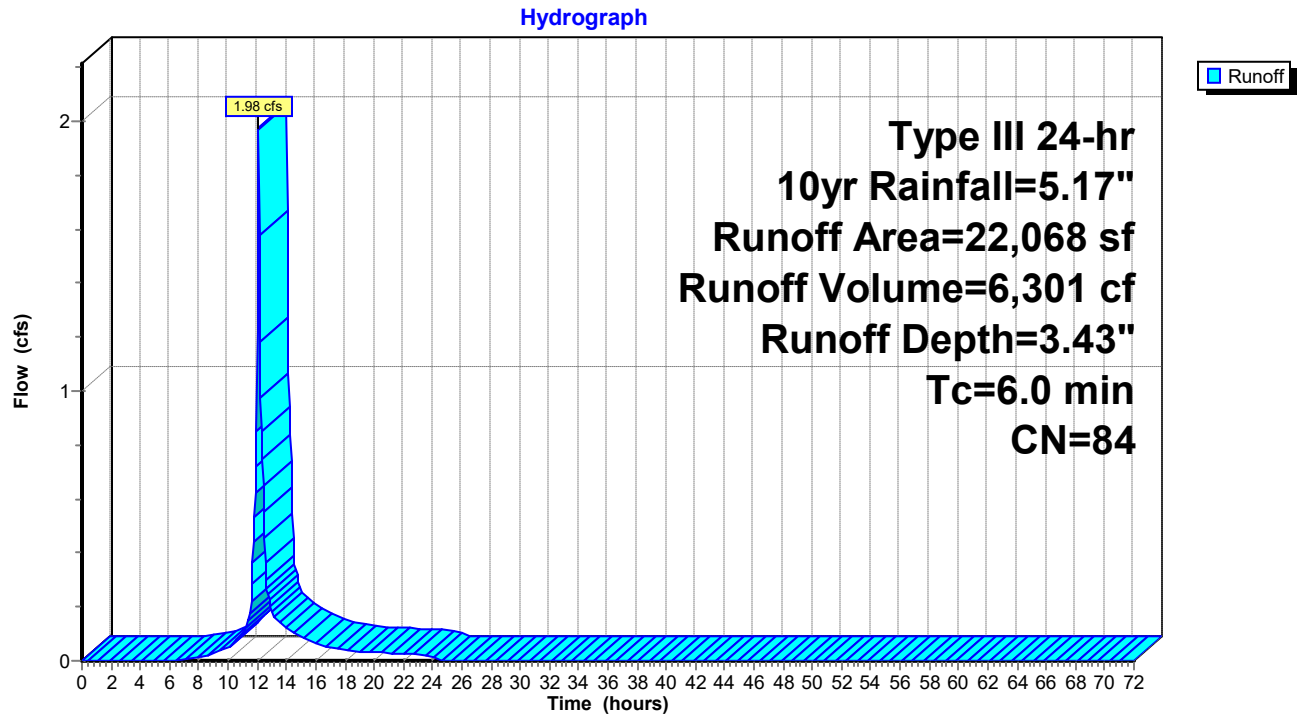
Runoff = 1.98 cfs @ 12.09 hrs, Volume= 6,301 cf, Depth= 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
	8,051	73	Woods, Fair, HSG C
	2,350	96	Gravel surface, HSG C
*	6,572	98	Bleacher Area
	5,095	79	50-75% Grass cover, Fair, HSG C
	22,068	84	Weighted Average
	15,496		70.22% Pervious Area
	6,572		29.78% Impervious Area

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

Subcatchment E-14: Gravel + Woods + Grass



Summary for Subcatchment E-15a: Woods + Gravel + Grass

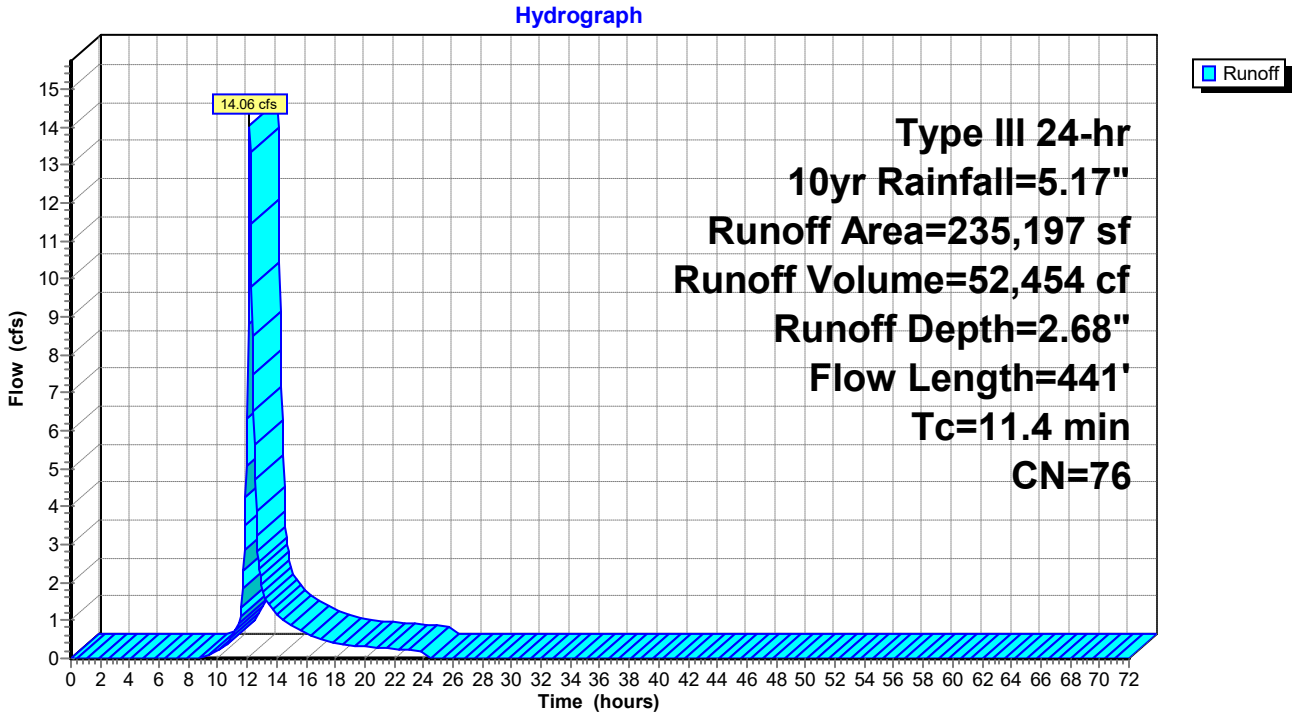
Runoff = 14.06 cfs @ 12.16 hrs, Volume= 52,454 cf, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
	2,647	96	Gravel surface, HSG C
*	2,437	98	Batting cages
	136,625	73	Woods, Fair, HSG C
	93,488	79	50-75% Grass cover, Fair, HSG C
	235,197	76	Weighted Average
	232,760		98.96% Pervious Area
	2,437		1.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	78	0.0187	0.15		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.5	170	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	43	0.4650	10.98		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.1	150	0.0200	2.28		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
11.4	441	Total			

Subcatchment E-15a: Woods + Gravel + Grass



Summary for Subcatchment E-15b: Pave + Woods + Gravel

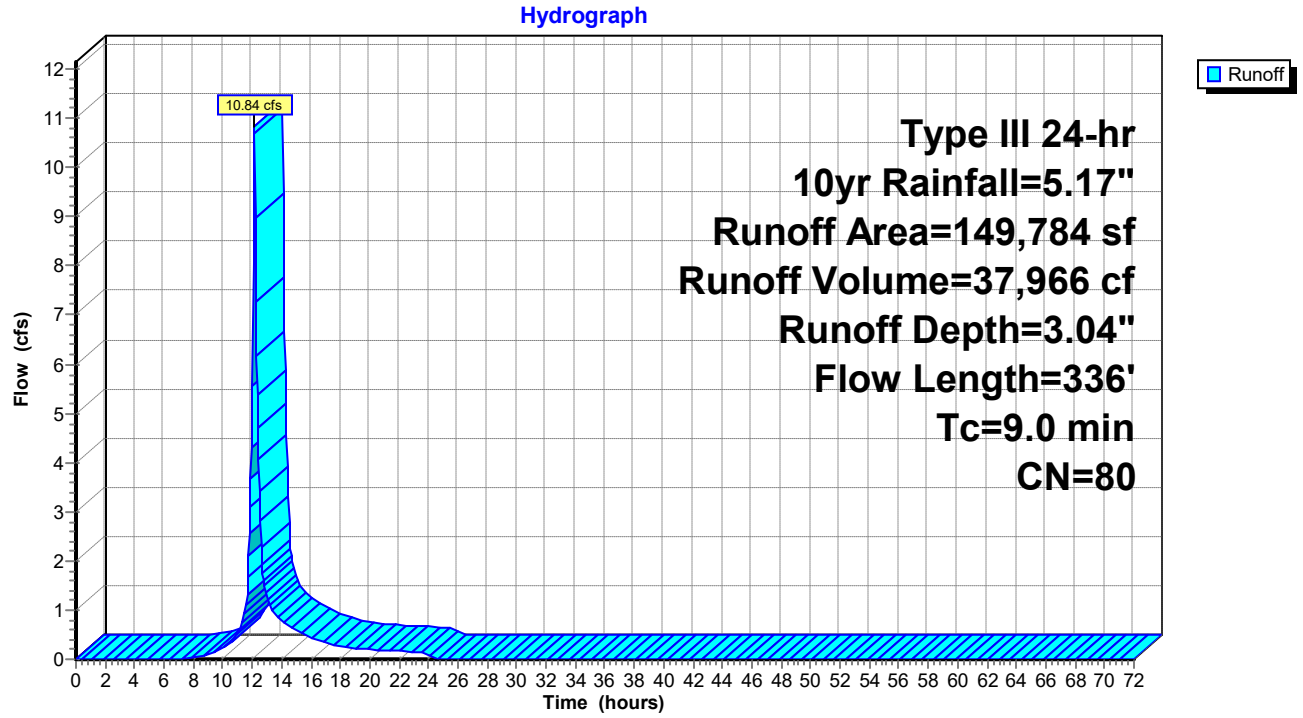
Runoff = 10.84 cfs @ 12.13 hrs, Volume= 37,966 cf, Depth= 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	4,721	98	Exist pave
*	3,905	98	Exist pave
	11,242	73	Woods, Fair, HSG C
	2,267	96	Gravel surface, HSG C
	127,649	79	50-75% Grass cover, Fair, HSG C
	149,784	80	Weighted Average
	141,158		94.24% Pervious Area
	8,626		5.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	34	0.0085	0.09		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.3	162	0.0167	2.08		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.6	140	0.0080	1.44		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
9.0	336	Total			

Subcatchment E-15b: Pave + Woods + Gravel



Summary for Subcatchment E-15C/I/G: Basin Bypass C, I,G, Roof 7 + Roof 8

C:27134
i: 19,292
g:26,178

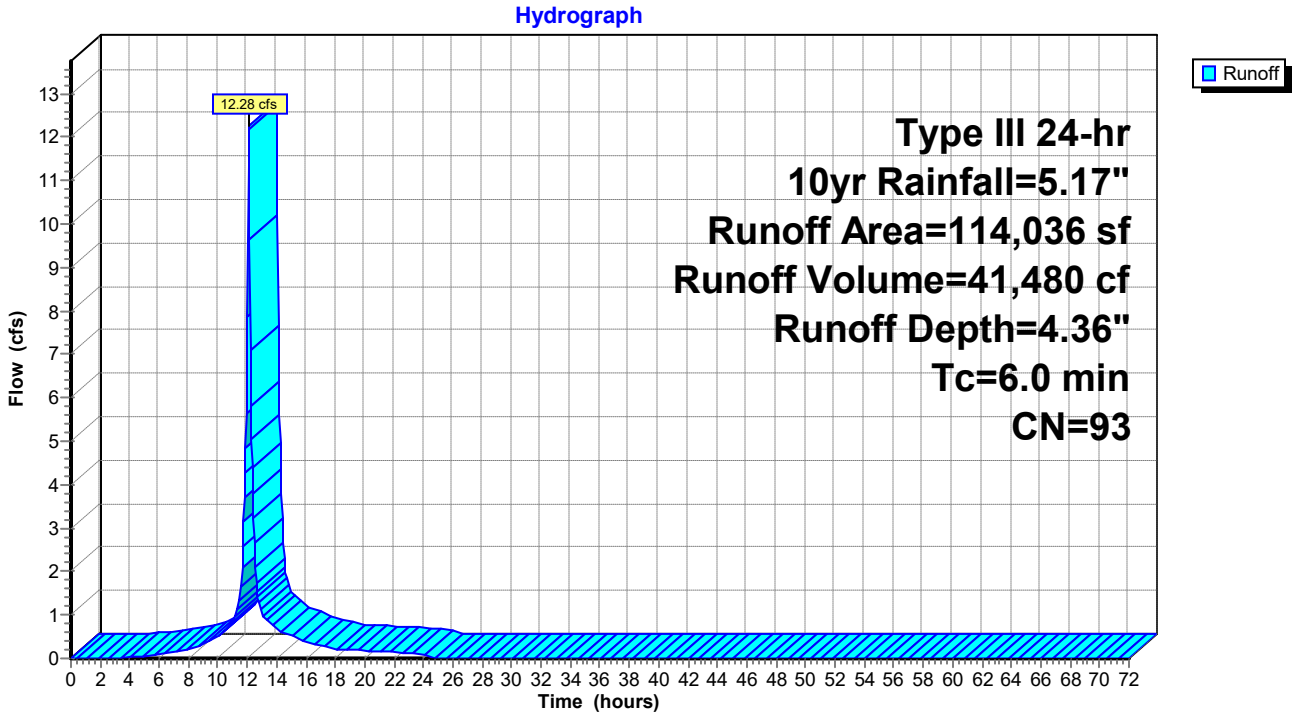
Runoff = 12.28 cfs @ 12.09 hrs, Volume= 41,480 cf, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	15,125	98	Exist pave 15c
*	12,009	79	Grass 15c
*	14,565	98	Exist pave 15i
*	4,727	79	Grass 15i
*	13,868	98	Exist pave 15g
*	12,310	79	Grass 15g
*	20,592	98	Roof 7
*	20,840	98	Roof 8
	114,036	93	Weighted Average
	29,046		25.47% Pervious Area
	84,990		74.53% Impervious Area

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

Subcatchment E-15C/I/G: Basin Bypass C, I,G, Roof 7 + Roof 8



Summary for Subcatchment E-15D/E/F/H: Basin Bypass D,E,F,H

E-15h:28,726
E-15f: 31,594
15e: 46528
15d: 30,279

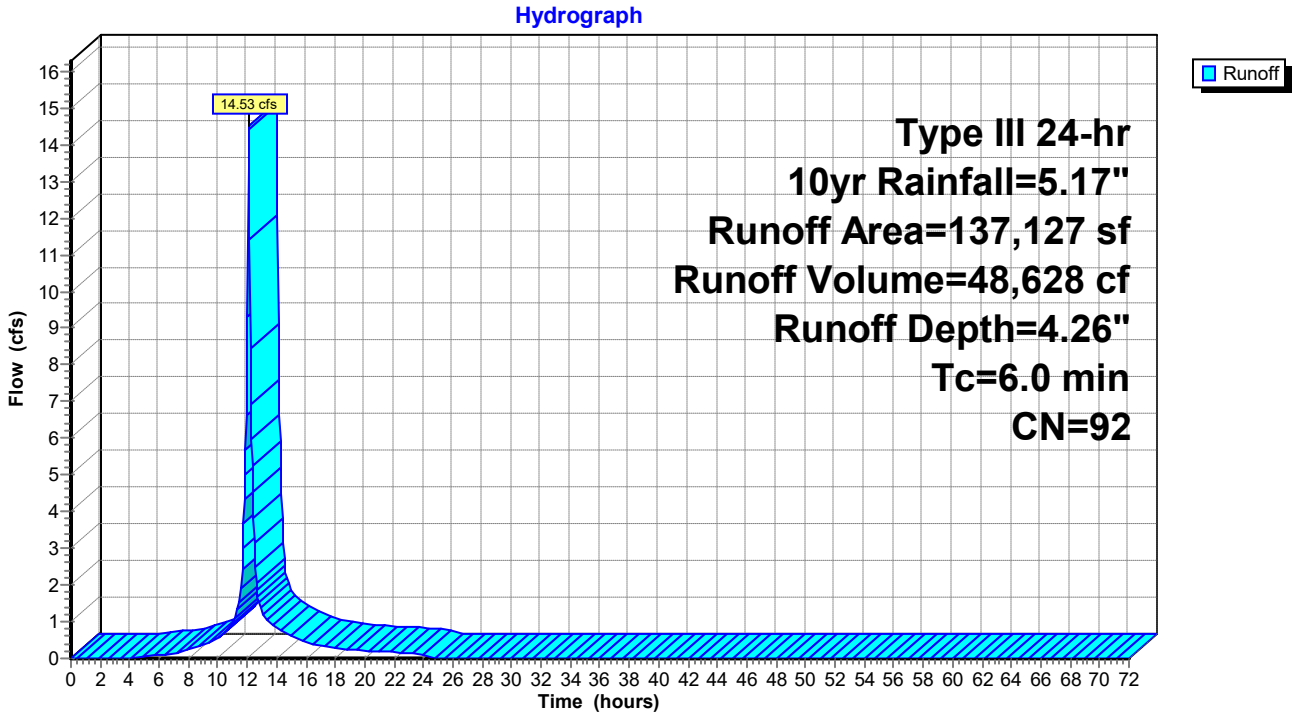
Runoff = 14.53 cfs @ 12.09 hrs, Volume= 48,628 cf, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	10,864	98	Exist pave, E15h
*	17,862	79	Grass C: E15h
*	12,080	98	Exist Pave:E15f
*	19,514	79	Grass C: E15f
*	44,455	98	Exist Pave:E15e
*	2,073	79	Grass C: E15e
*	25,337	98	Exist Pave:E15d
*	4,942	79	Grass C: E15d
	137,127	92	Weighted Average
	44,391		32.37% Pervious Area
	92,736		67.63% Impervious Area

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

Subcatchment E-15D/E/F/H: Basin Bypass D,E,F,H



Summary for Subcatchment E-16: Flow NW Landry

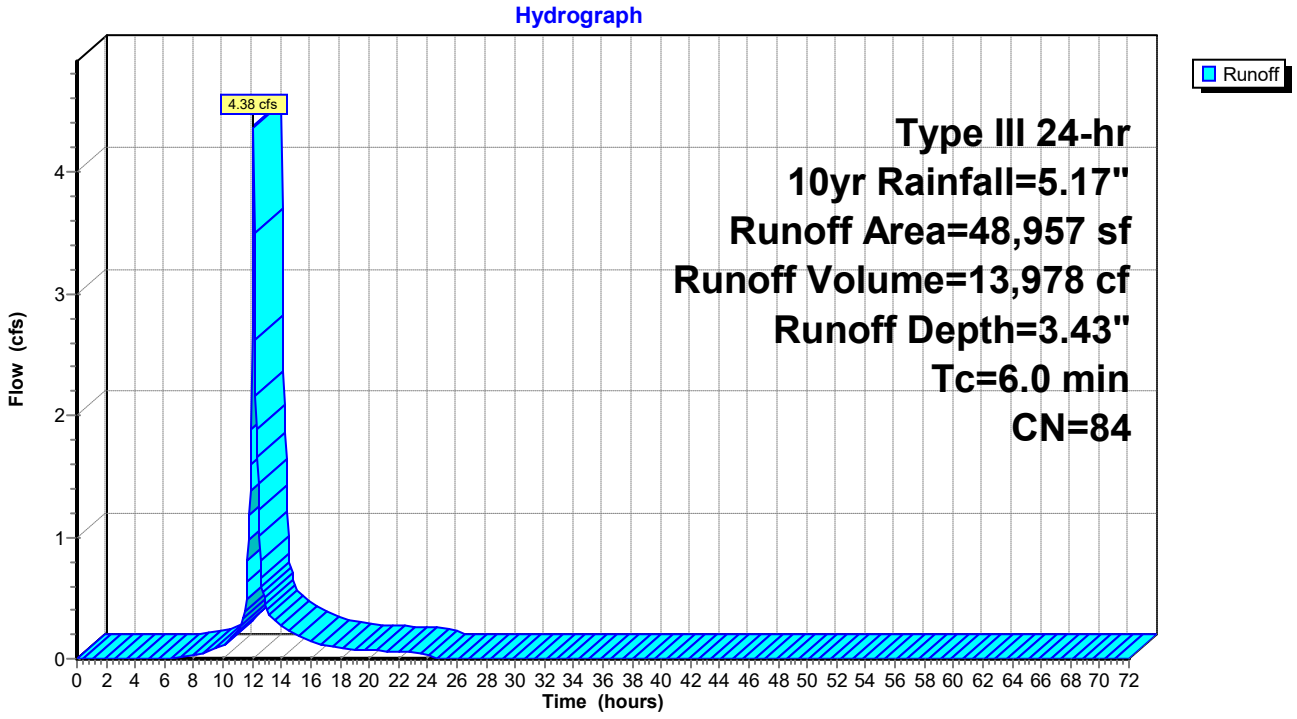
Runoff = 4.38 cfs @ 12.09 hrs, Volume= 13,978 cf, Depth= 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	13,512	98	Exist pave
	35,445	79	50-75% Grass cover, Fair, HSG C
	48,957	84	Weighted Average
	35,445		72.40% Pervious Area
	13,512		27.60% Impervious Area

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

Subcatchment E-16: Flow NW Landry



Summary for Subcatchment E-2a: E-2a + Roof1 + Roof2

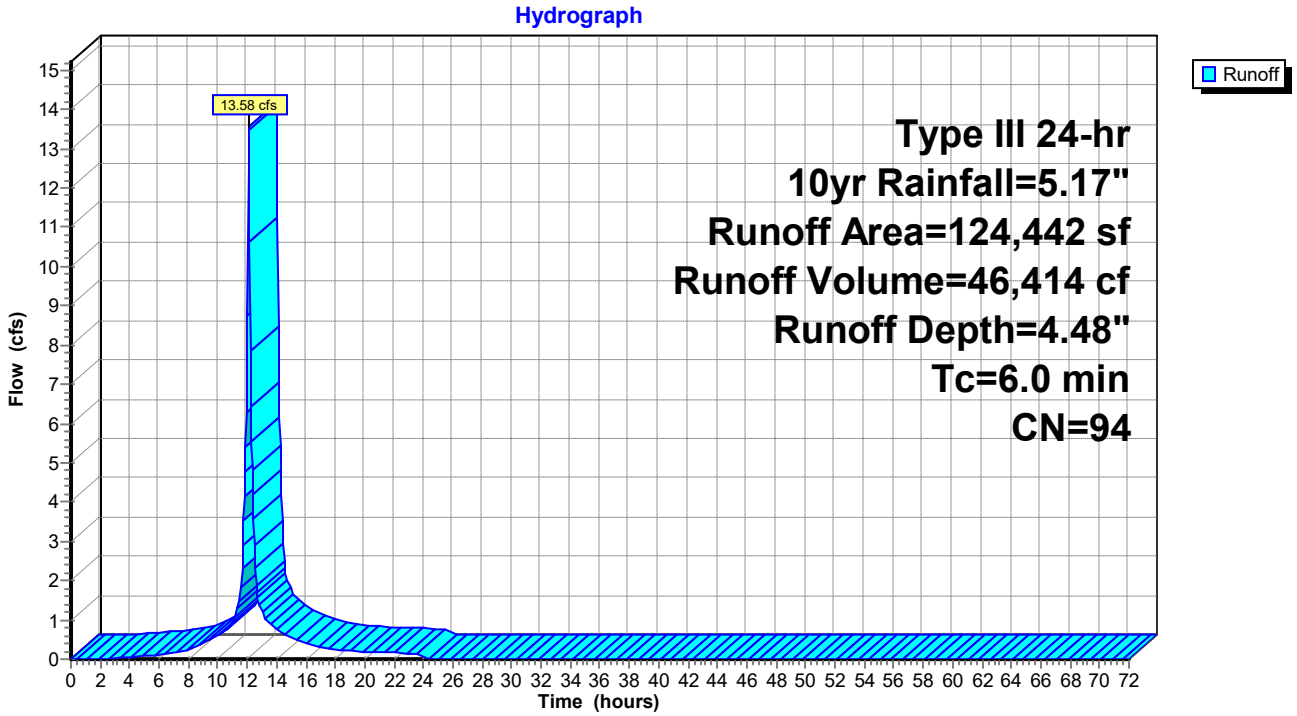
Runoff = 13.58 cfs @ 12.09 hrs, Volume= 46,414 cf, Depth= 4.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	22,807	98	Existing Pave
*	8,305	98	Existing Pave
*	17,342	98	Existing Pave
*	9,262	98	Existing Pave
	23,333	79	50-75% Grass cover, Fair, HSG C
*	25,256	98	Roof 1
*	18,137	98	Roof 2
	124,442	94	Weighted Average
	23,333		18.75% Pervious Area
	101,109		81.25% Impervious Area

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

Subcatchment E-2a: E-2a + Roof1 + Roof2



Summary for Subcatchment E-2b: Wooded basin area

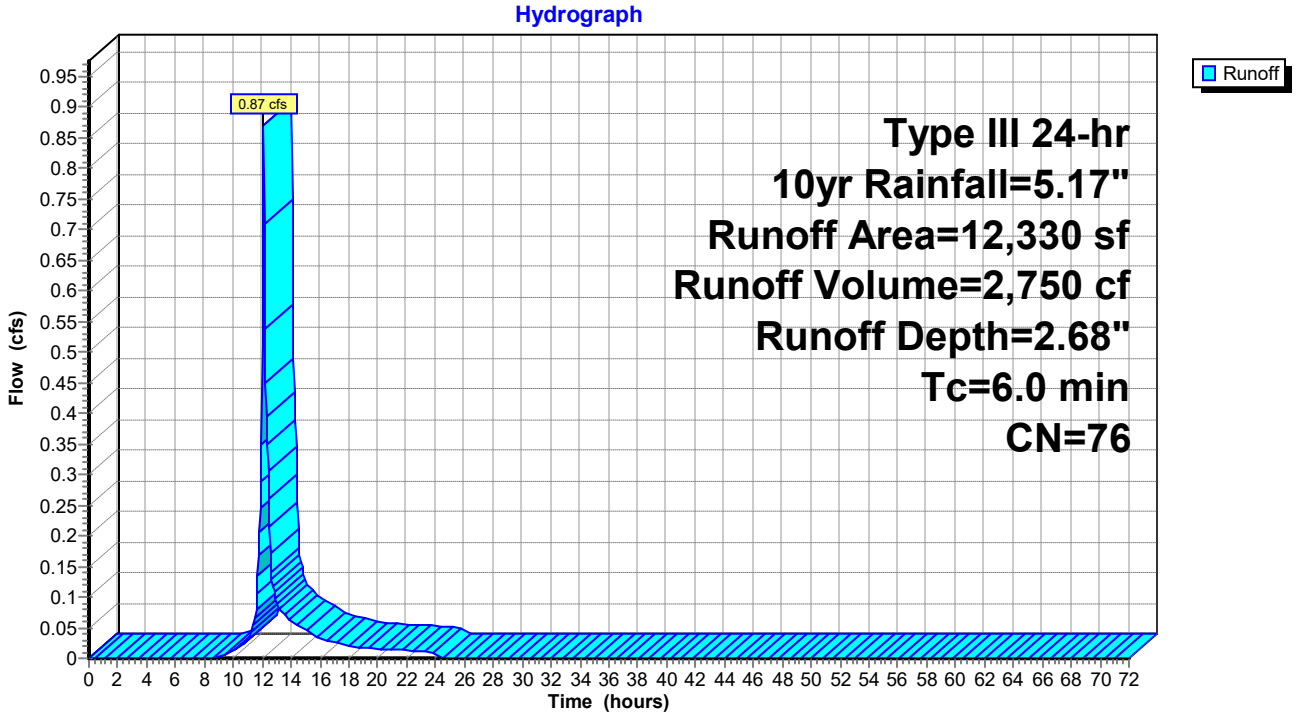
Runoff = 0.87 cfs @ 12.09 hrs, Volume= 2,750 cf, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

Area (sf)	CN	Description
4,275	73	Woods, Fair, HSG C
3,270	79	50-75% Grass cover, Fair, HSG C
2,202	73	Woods, Fair, HSG C
2,583	79	50-75% Grass cover, Fair, HSG C
12,330	76	Weighted Average
12,330		100.00% Pervious Area

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

Subcatchment E-2b: Wooded basin area



Summary for Subcatchment E-3: Sheet flow west to RA

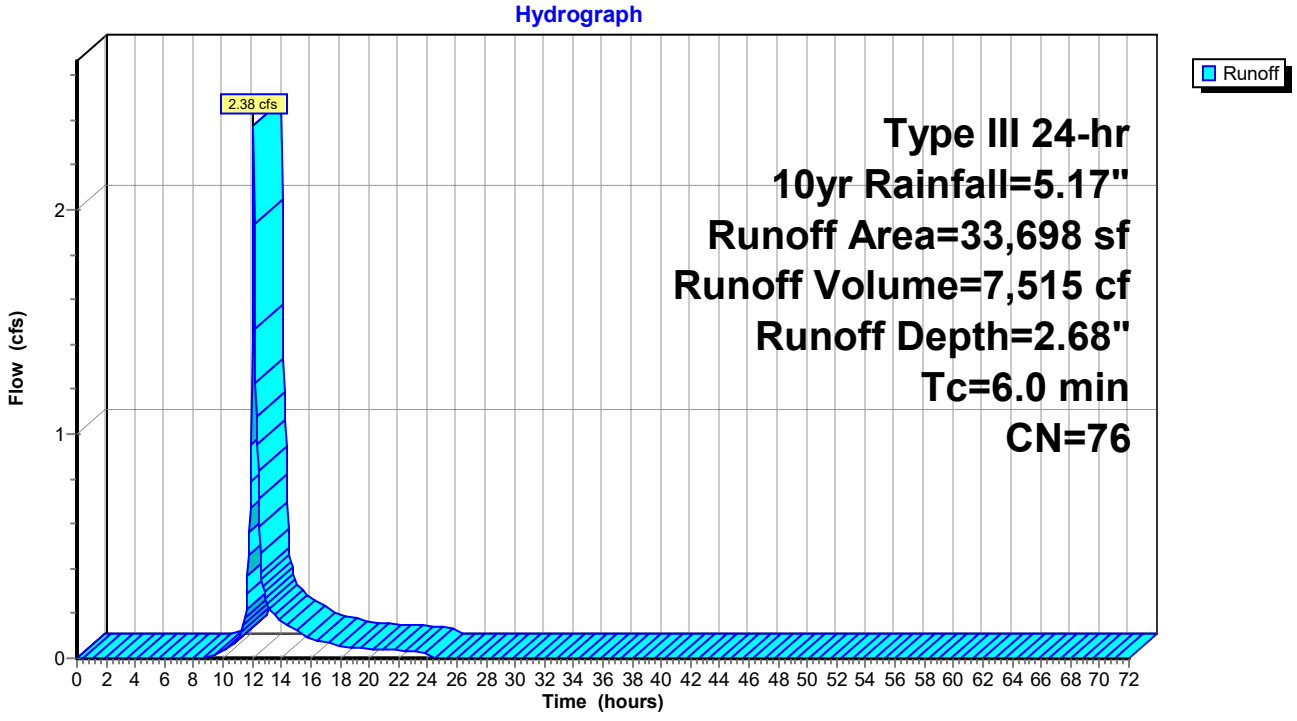
Runoff = 2.38 cfs @ 12.09 hrs, Volume= 7,515 cf, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	2,765	98	Exist T.Court
	23,638	73	Woods, Fair, HSG C
	7,295	79	50-75% Grass cover, Fair, HSG C
	33,698	76	Weighted Average
	30,933		91.79% Pervious Area
	2,765		8.21% Impervious Area

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

Subcatchment E-3: Sheet flow west to RA



Summary for Subcatchment E-4: Parking Lot + Roof3 + Roof4

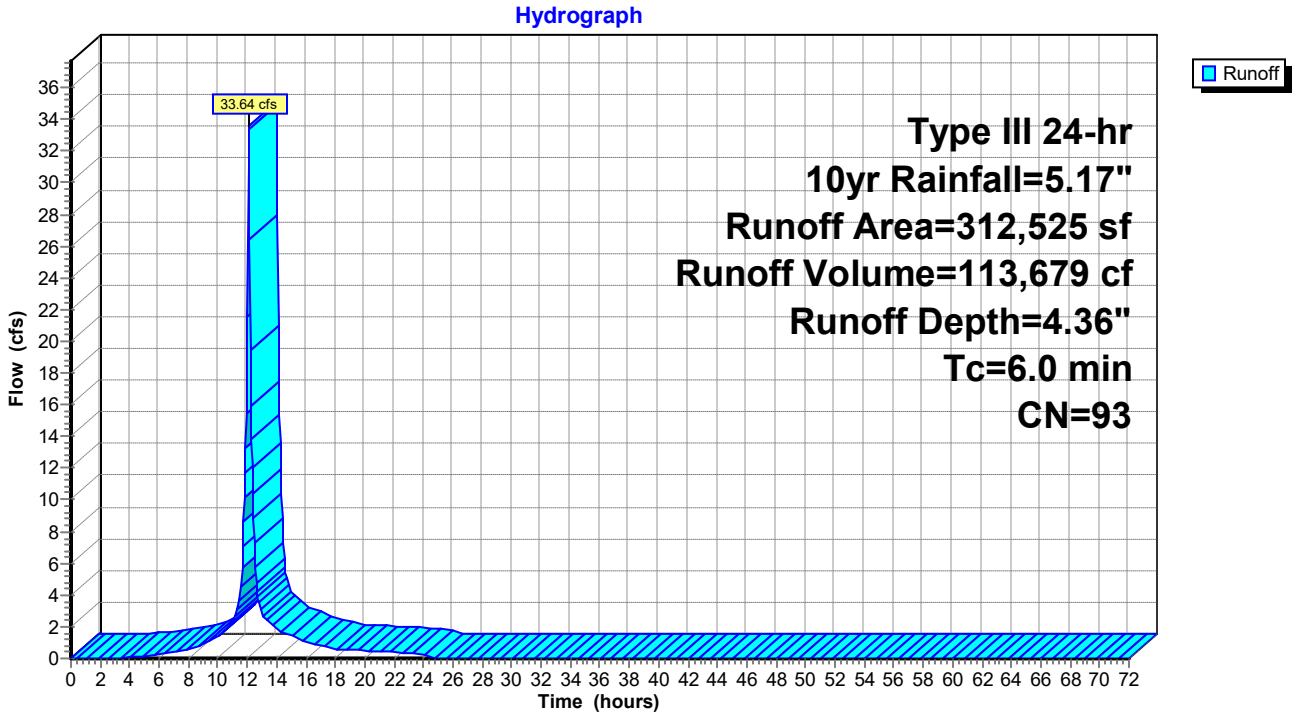
Runoff = 33.64 cfs @ 12.09 hrs, Volume= 113,679 cf, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	32,012	98	Exist T.Court
*	46,897	98	Exist Pave
*	16,683	98	Exist Pave
*	2,014	98	Exist Pave
*	42,864	98	Exist Pave
*	1,582	98	Maint Shed
	9,663	96	Gravel surface, HSG C
*	174	98	Maint Shed
*	101	98	Maint Shed
*	4,726	98	Entrance Walks
	88,365	79	50-75% Grass cover, Fair, HSG C
*	60,521	98	Roof 3
*	6,923	98	Roof 4
	312,525	93	Weighted Average
	98,028		31.37% Pervious Area
	214,497		68.63% Impervious Area

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

Subcatchment E-4: Parking Lot + Roof3 + Roof4



Summary for Subcatchment E-5: Wooded Basin Area

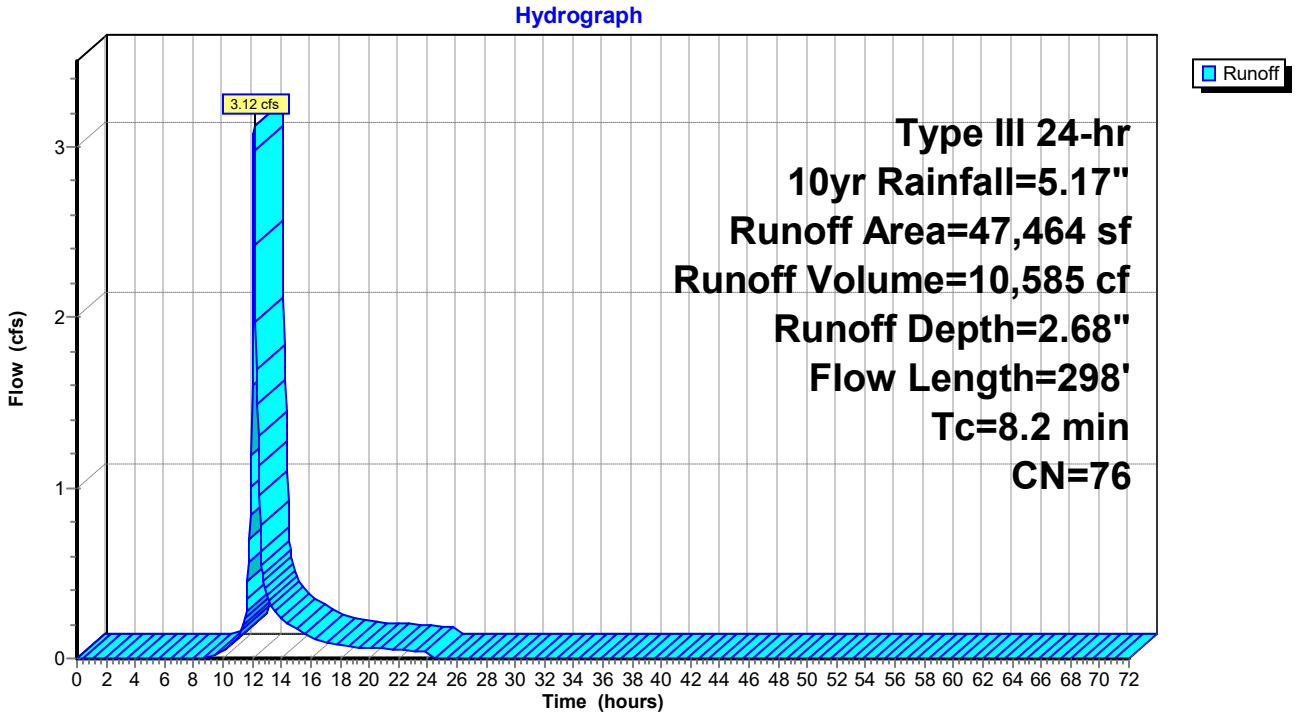
Runoff = 3.12 cfs @ 12.12 hrs, Volume= 10,585 cf, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

Area (sf)	CN	Description
21,768	73	Woods, Fair, HSG C
25,696	79	50-75% Grass cover, Fair, HSG C
47,464	76	Weighted Average
47,464		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.0062	0.08		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
0.3	23	0.0062	1.27		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.8	83	0.0120	1.76		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.5	96	0.0417	3.29		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	25	0.1200	5.58		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.2	41	0.0550	3.78		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
8.2	298	Total			

Subcatchment E-5: Wooded Basin Area



Summary for Subcatchment E-6: Wooded Basin Area

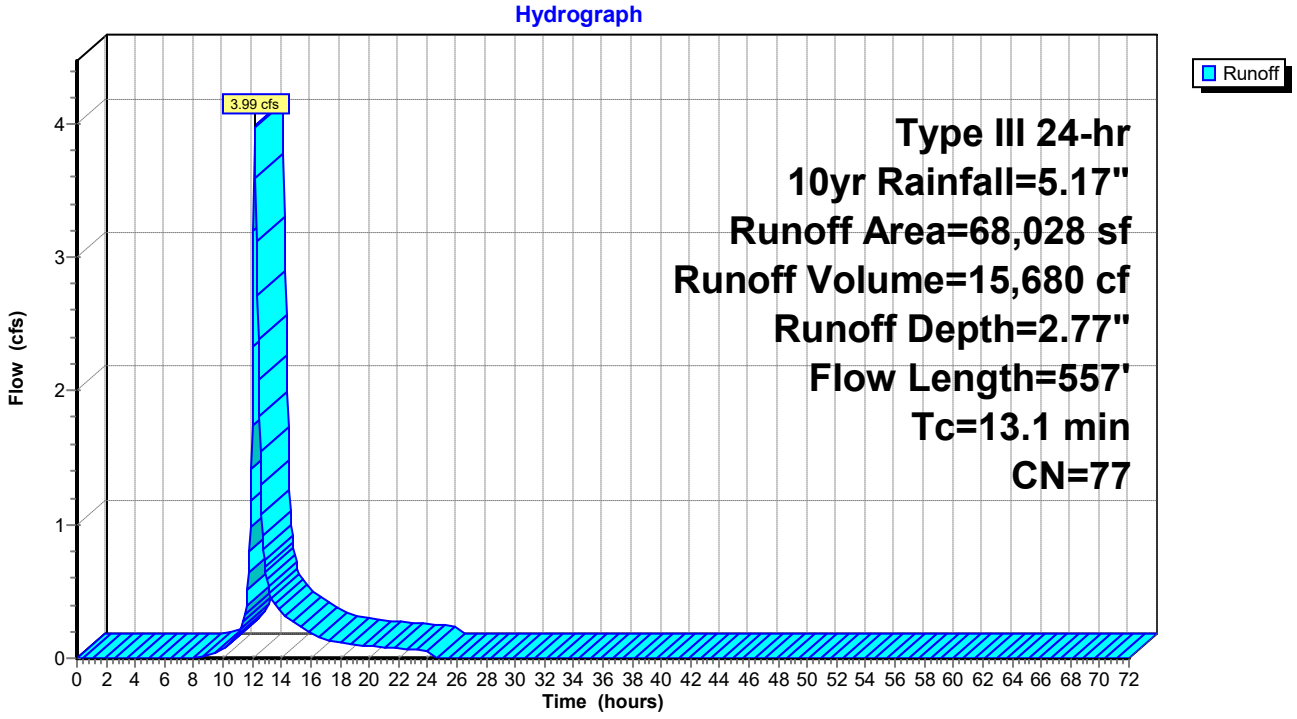
Runoff = 3.99 cfs @ 12.19 hrs, Volume= 15,680 cf, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

Area (sf)	CN	Description
22,756	73	Woods, Fair, HSG C
45,272	79	50-75% Grass cover, Fair, HSG C
68,028	77	Weighted Average
68,028		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	55	0.0074	0.10		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
2.1	200	0.0097	1.59		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.3	45	0.0230	2.44		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.2	257	0.0470	3.49		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
13.1	557	Total			

Subcatchment E-6: Wooded Basin Area



Summary for Subcatchment E-7: Wooded Basin Area

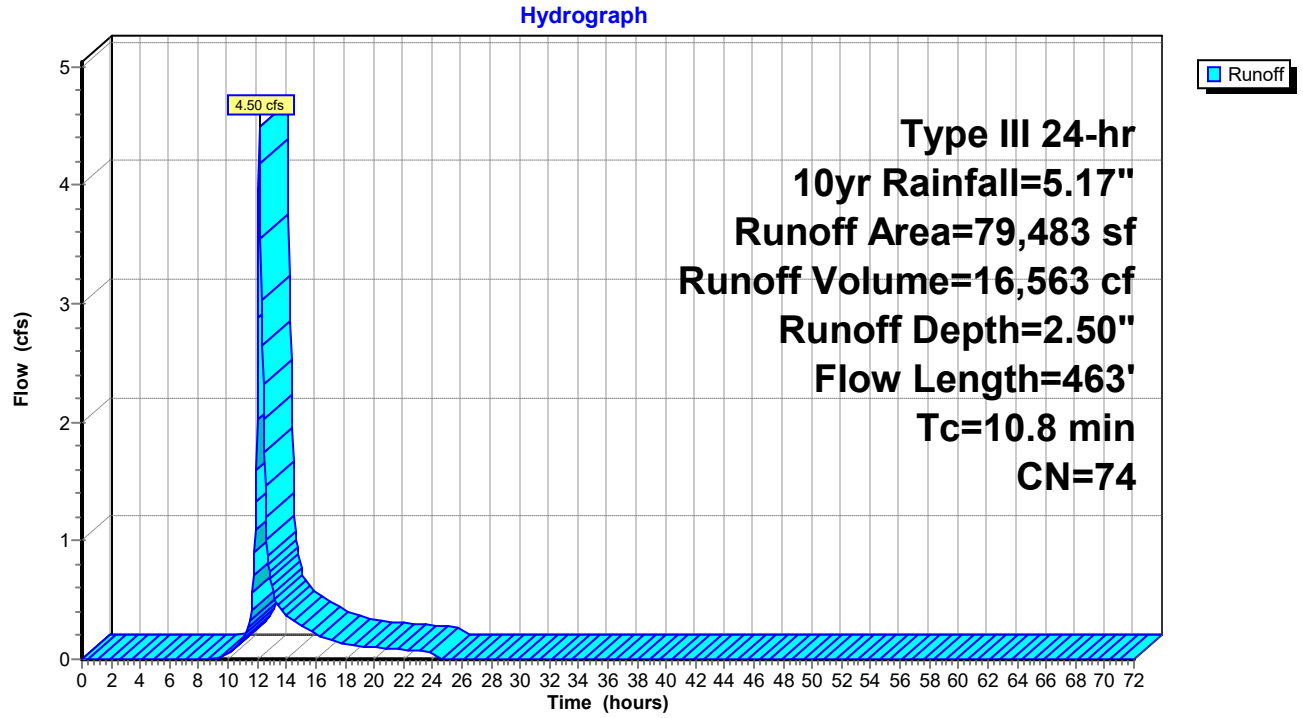
Runoff = 4.50 cfs @ 12.16 hrs, Volume= 16,563 cf, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

Area (sf)	CN	Description
68,664	73	Woods, Fair, HSG C
10,819	79	50-75% Grass cover, Fair, HSG C
79,483	74	Weighted Average
79,483		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	46	0.0080	0.10		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
0.3	45	0.0220	2.39		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	24	0.1670	6.58		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.5	109	0.0460	3.45		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.9	239	0.0170	2.10		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
10.8	463	Total			

Subcatchment E-7: Wooded Basin Area



Summary for Subcatchment E-8: Wooded Basin Area + Pave

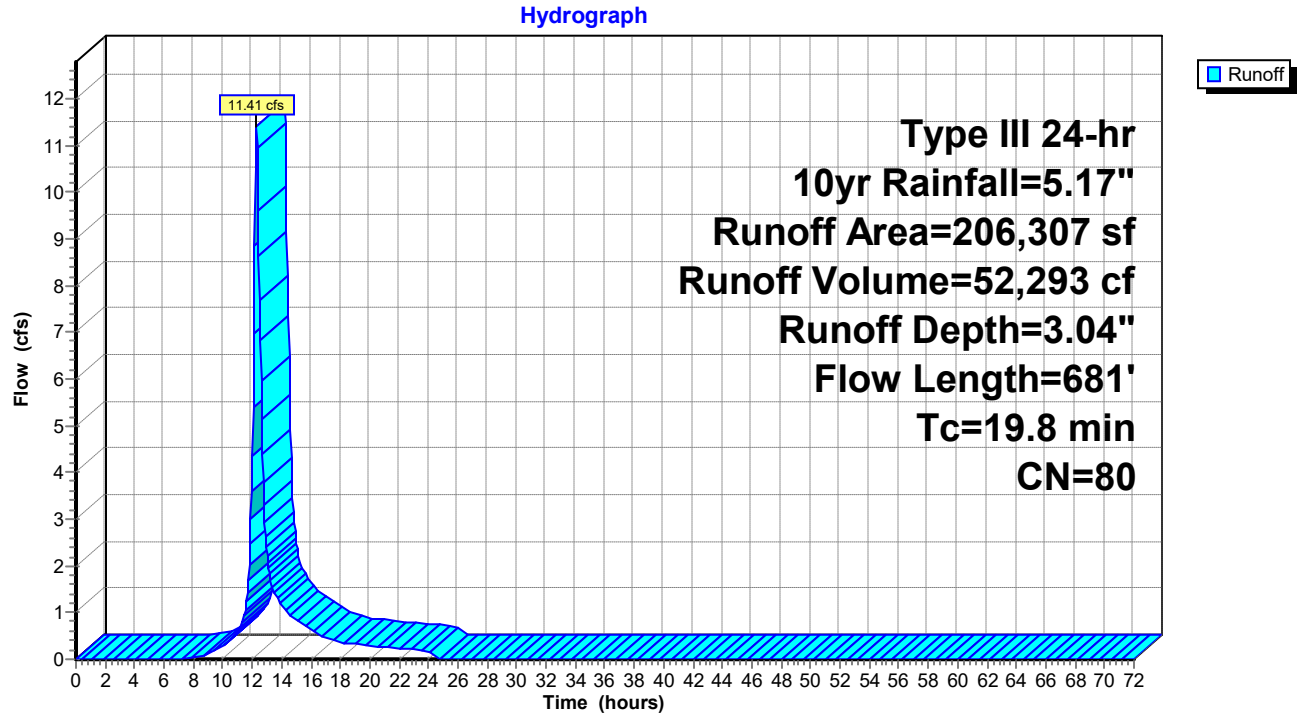
Runoff = 11.41 cfs @ 12.27 hrs, Volume= 52,293 cf, Depth= 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

	Area (sf)	CN	Description
*	13,668	98	Exist Pave
	4,626	76	Woods/grass comb., Fair, HSG C
	188,013	79	50-75% Grass cover, Fair, HSG C
	206,307	80	Weighted Average
	192,639		93.37% Pervious Area
	13,668		6.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	68	0.0040	0.08		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
2.2	170	0.0064	1.29		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
2.1	242	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.1	201	0.0220	3.01		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
19.8	681	Total			

Subcatchment E-8: Wooded Basin Area + Pave



Summary for Subcatchment E-9: Wooded Basin Area

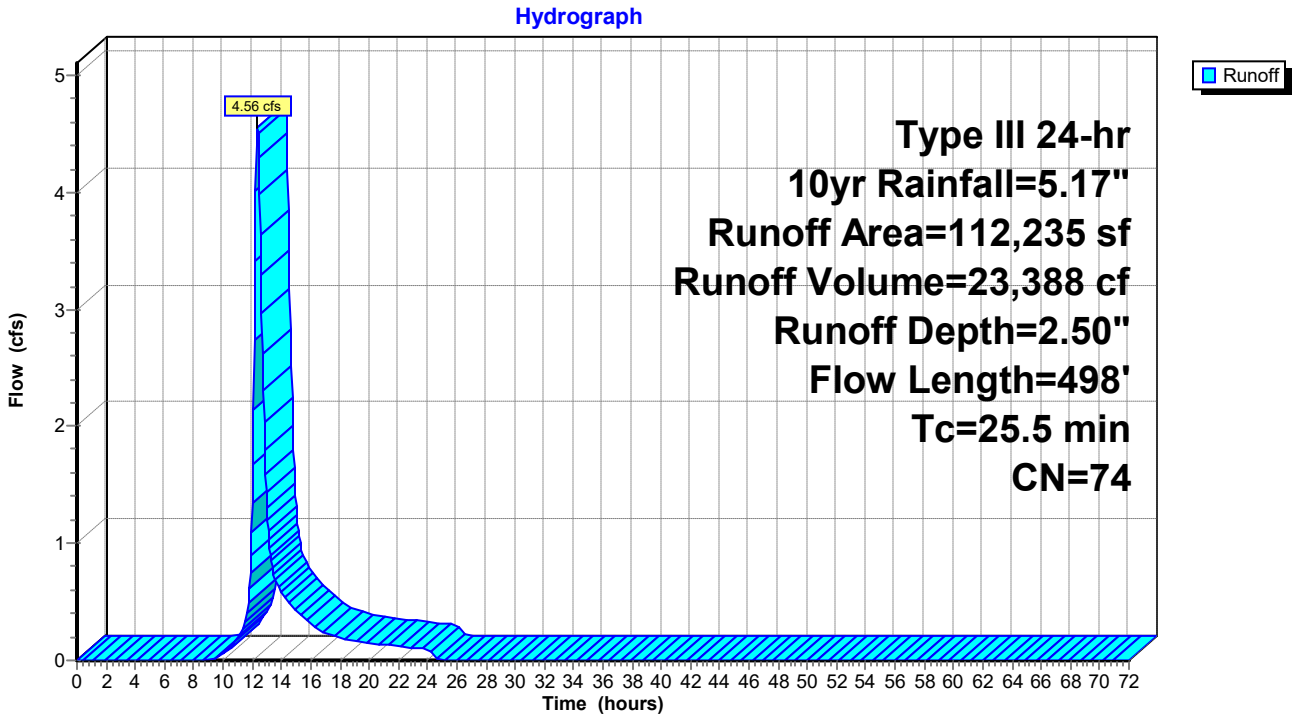
Runoff = 4.56 cfs @ 12.36 hrs, Volume= 23,388 cf, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Rainfall=5.17"

Area (sf)	CN	Description
87,537	73	Woods, Fair, HSG C
24,698	79	50-75% Grass cover, Fair, HSG C
112,235	74	Weighted Average
112,235		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	50	0.0270	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.9	132	0.0250	2.55		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.6	316	0.0050	1.14		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
25.5	498	Total			

Subcatchment E-9: Wooded Basin Area

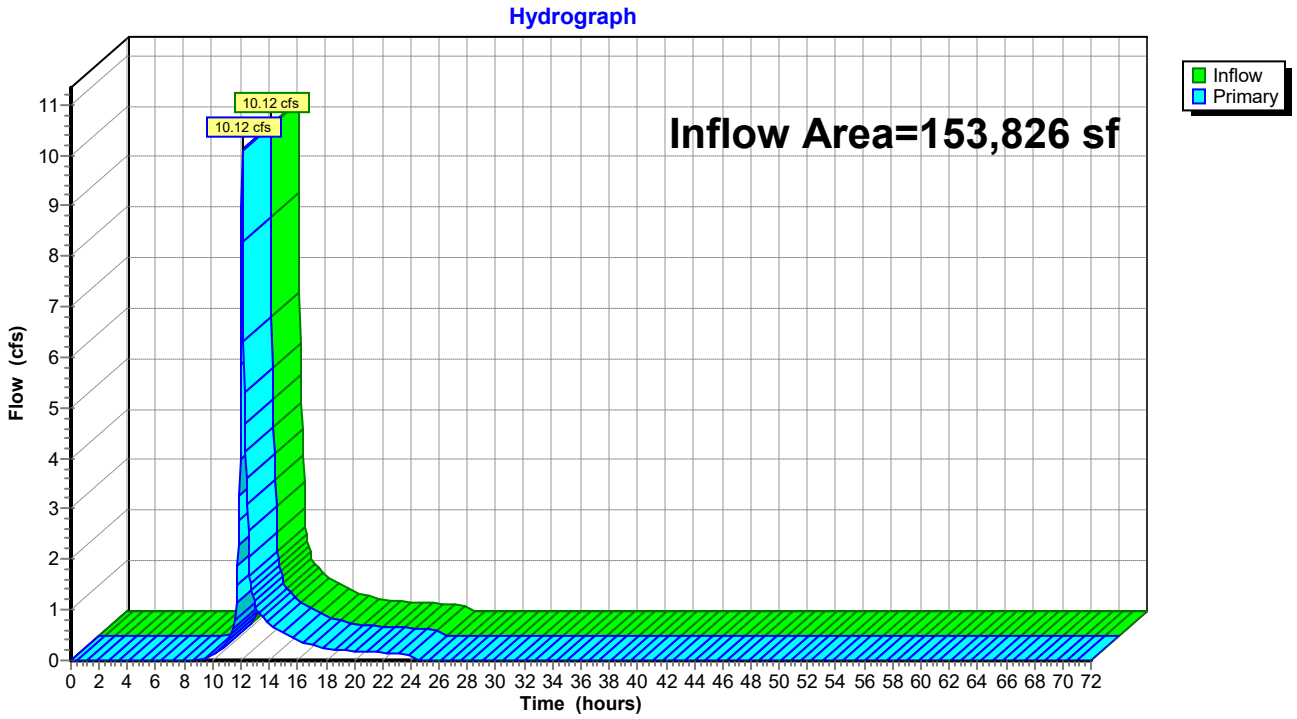


Summary for Pond 1P: stone

Inflow Area = 153,826 sf, 0.00% Impervious, Inflow Depth = 2.50" for 10yr event
Inflow = 10.12 cfs @ 12.09 hrs, Volume= 32,055 cf
Primary = 10.12 cfs @ 12.09 hrs, Volume= 32,055 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 1P: stone

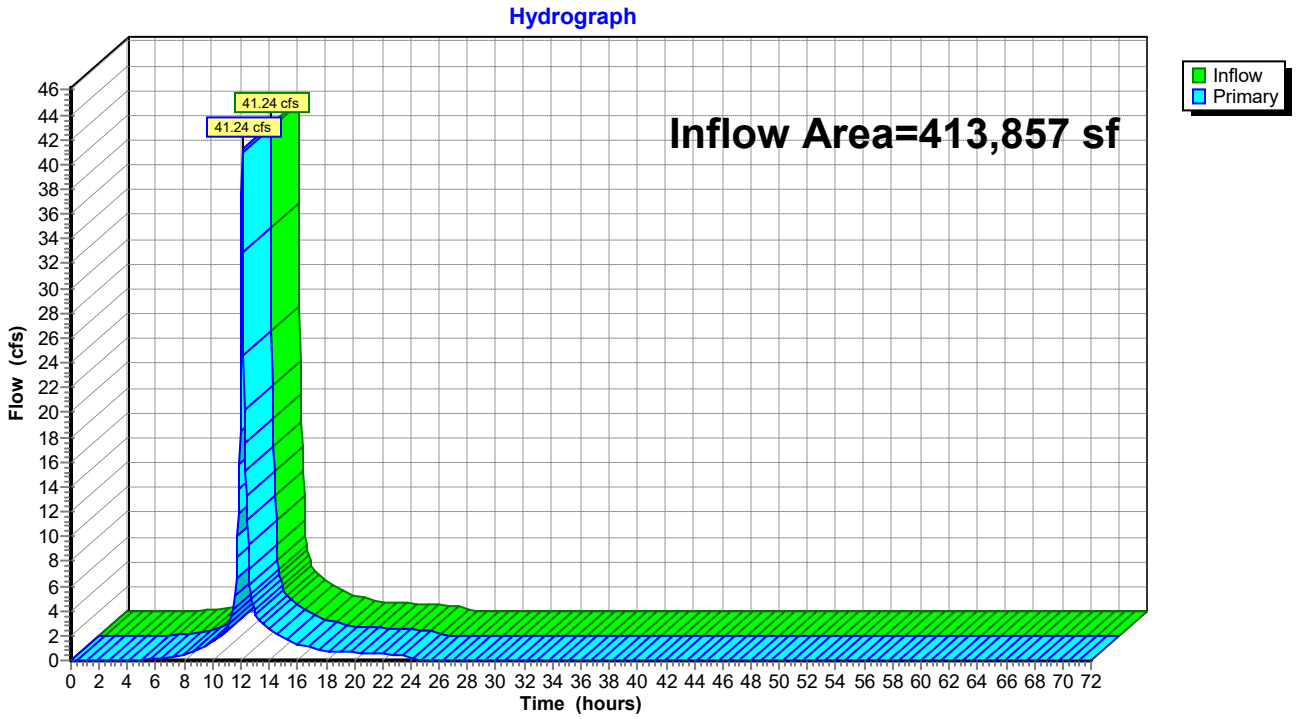


Summary for Pond DP-10e: Exist Basin #3

Inflow Area = 413,857 sf, 48.99% Impervious, Inflow Depth = 3.96" for 10yr event
Inflow = 41.24 cfs @ 12.09 hrs, Volume= 136,413 cf
Primary = 41.24 cfs @ 12.09 hrs, Volume= 136,413 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-10e: Exist Basin #3

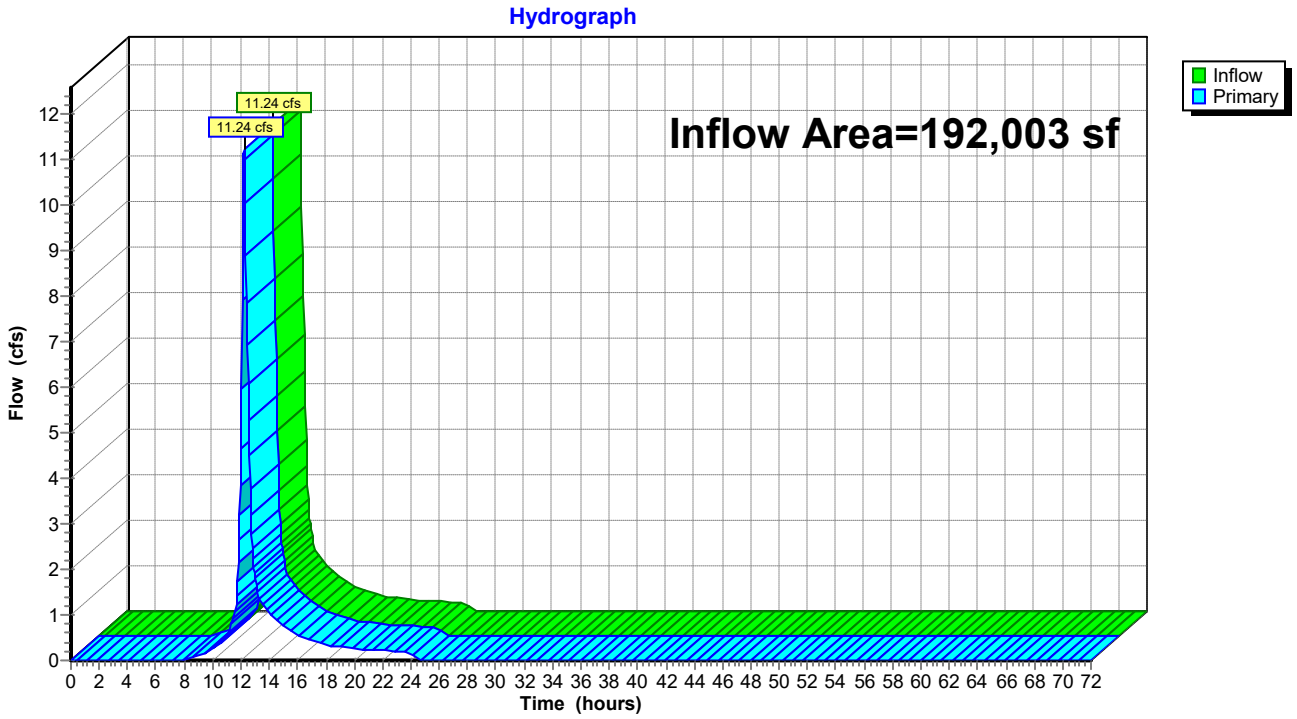


Summary for Pond DP-11e: Woods Southwest

Inflow Area = 192,003 sf, 6.81% Impervious, Inflow Depth = 2.95" for 10yr event
Inflow = 11.24 cfs @ 12.22 hrs, Volume= 47,178 cf
Primary = 11.24 cfs @ 12.22 hrs, Volume= 47,178 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-11e: Woods Southwest

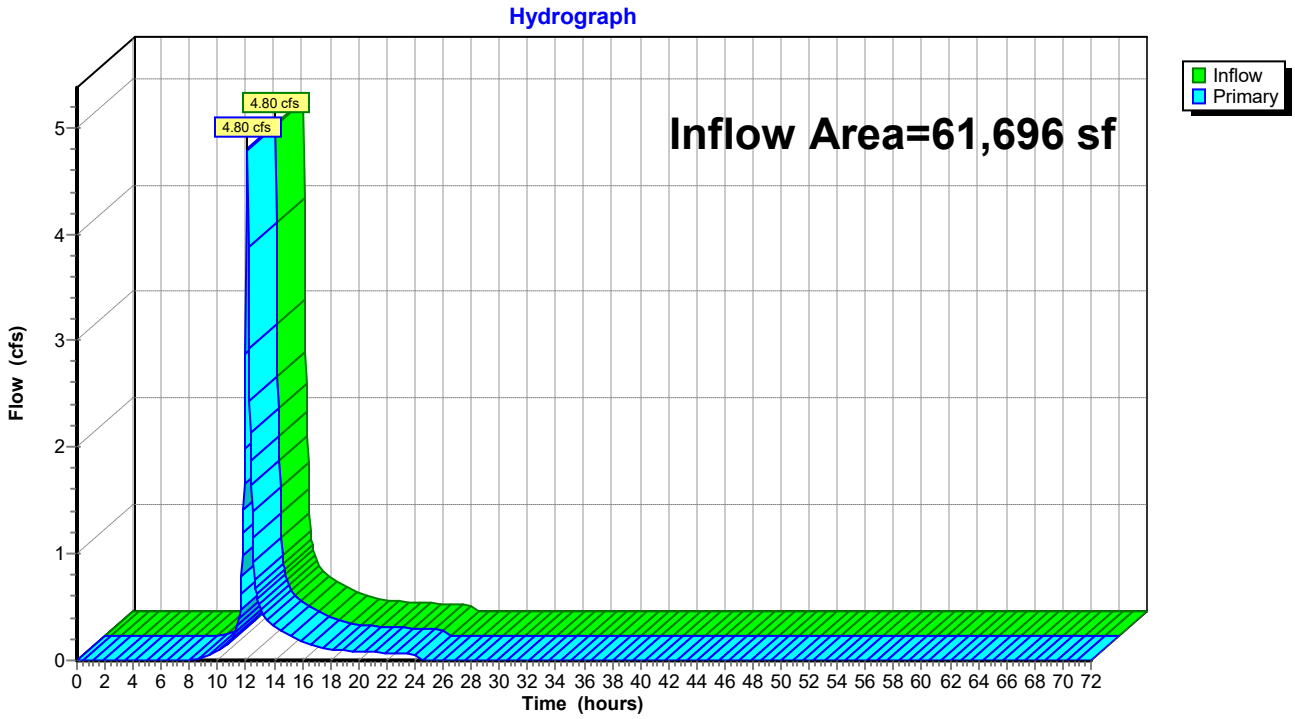


Summary for Pond DP-12e: Residential West#1

Inflow Area = 61,696 sf, 4.78% Impervious, Inflow Depth = 2.95" for 10yr event
Inflow = 4.80 cfs @ 12.09 hrs, Volume= 15,159 cf
Primary = 4.80 cfs @ 12.09 hrs, Volume= 15,159 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-12e: Residential West#1

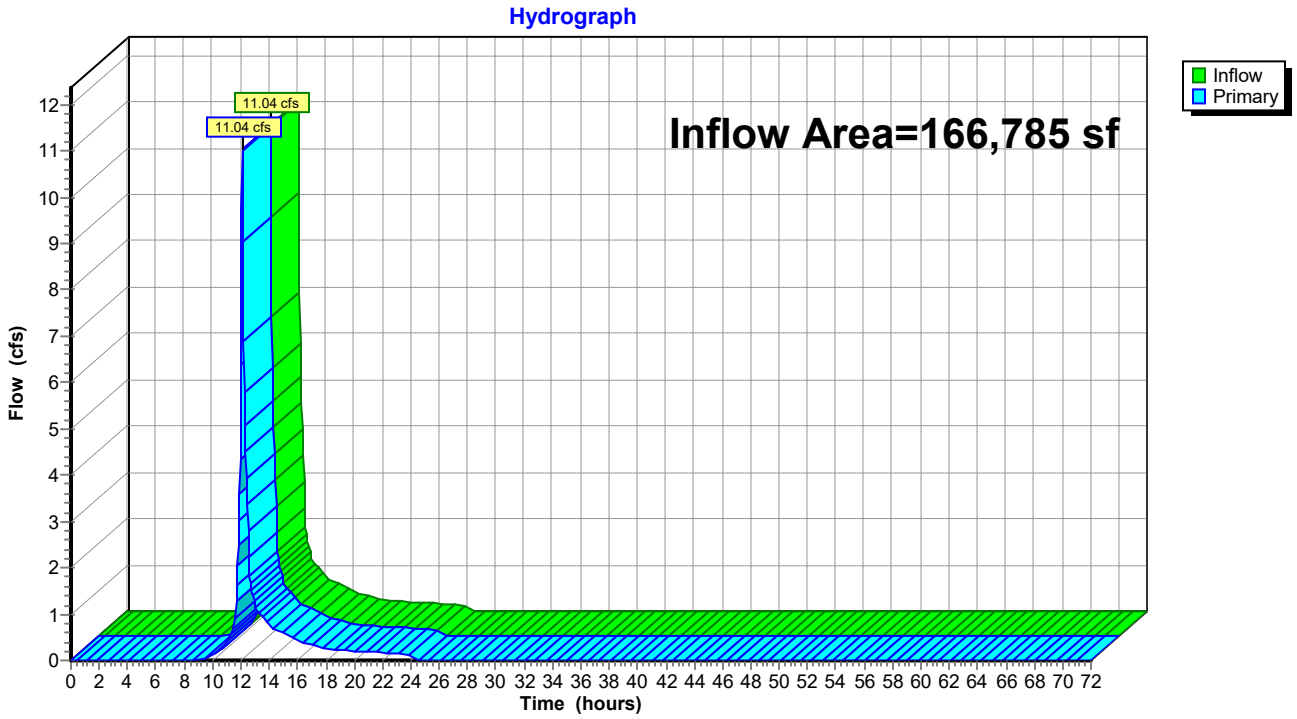


Summary for Pond DP-13e: Residential West#2

Inflow Area = 166,785 sf, 0.00% Impervious, Inflow Depth = 2.51" for 10yr event
Inflow = 11.04 cfs @ 12.09 hrs, Volume= 34,945 cf
Primary = 11.04 cfs @ 12.09 hrs, Volume= 34,945 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-13e: Residential West#2

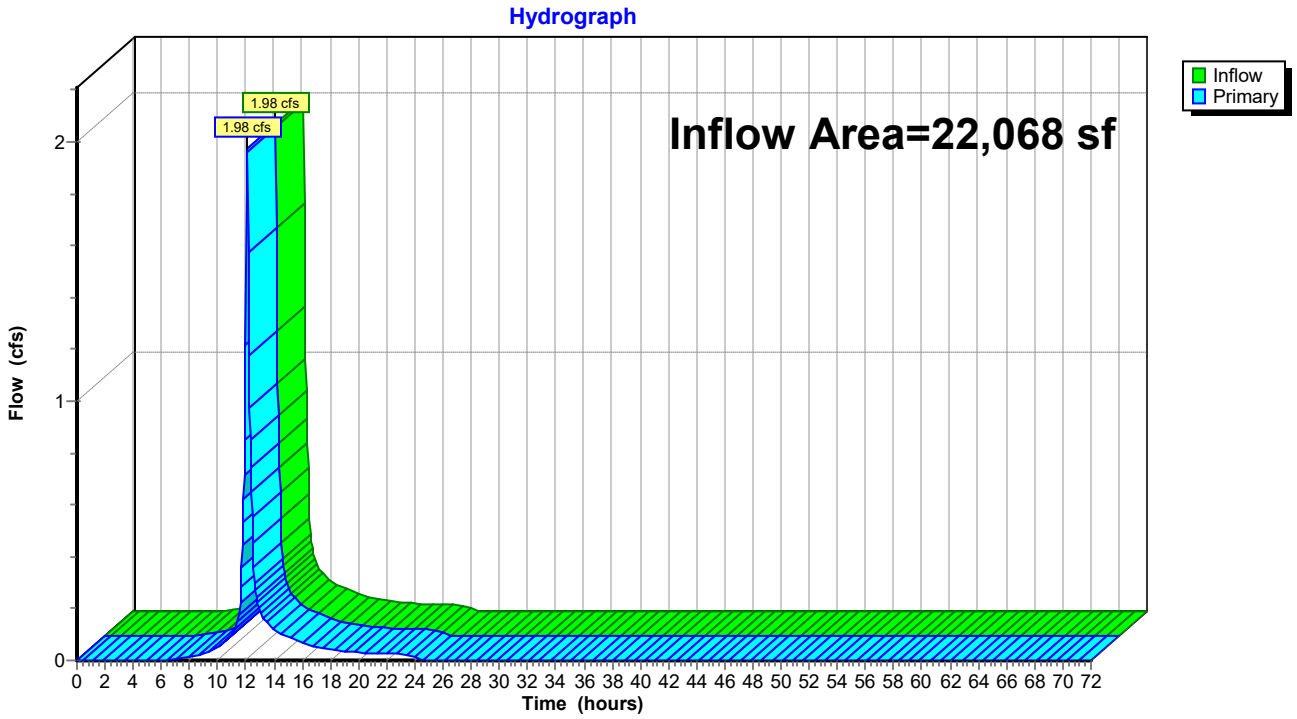


Summary for Pond DP-14e: Residential West#3

Inflow Area = 22,068 sf, 29.78% Impervious, Inflow Depth = 3.43" for 10yr event
Inflow = 1.98 cfs @ 12.09 hrs, Volume= 6,301 cf
Primary = 1.98 cfs @ 12.09 hrs, Volume= 6,301 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-14e: Residential West#3

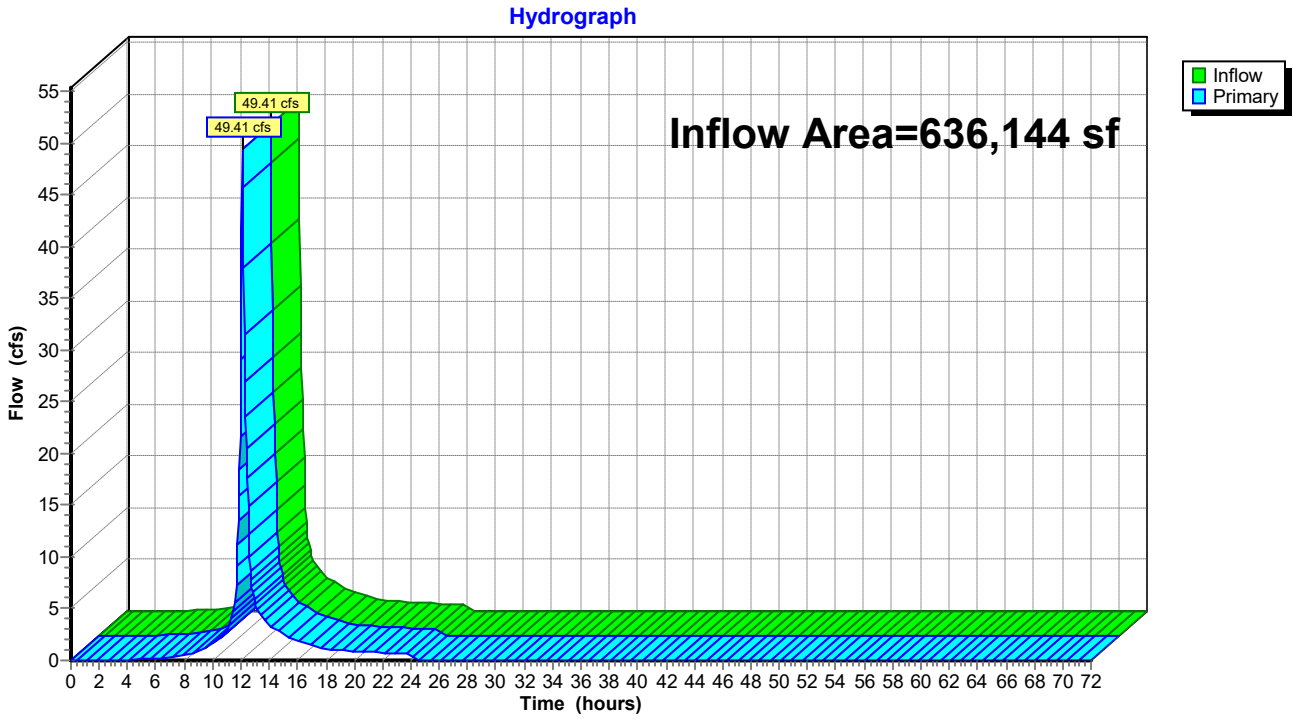


Summary for Pond DP-15e: Wetlands

Inflow Area = 636,144 sf, 29.68% Impervious, Inflow Depth = 3.41" for 10yr event
Inflow = 49.41 cfs @ 12.11 hrs, Volume= 180,528 cf
Primary = 49.41 cfs @ 12.11 hrs, Volume= 180,528 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-15e: Wetlands

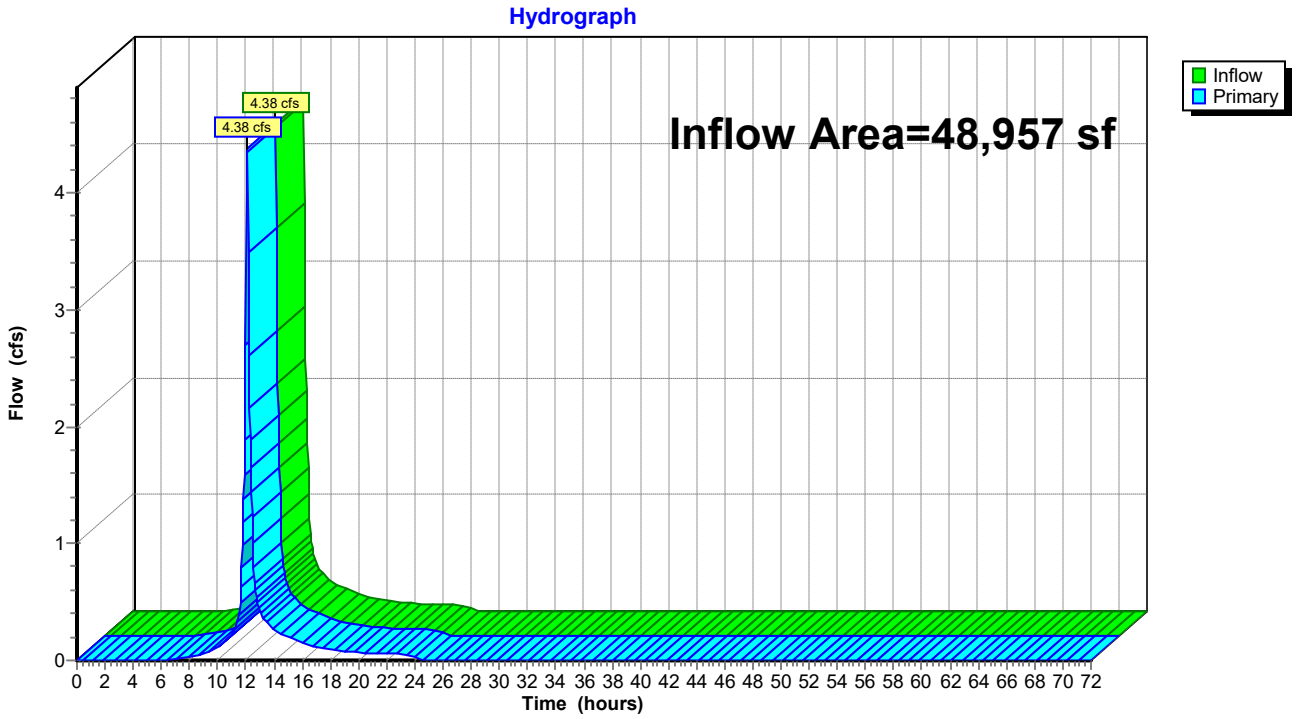


Summary for Pond Dp-16e: Landry Avenue

Inflow Area = 48,957 sf, 27.60% Impervious, Inflow Depth = 3.43" for 10yr event
Inflow = 4.38 cfs @ 12.09 hrs, Volume= 13,978 cf
Primary = 4.38 cfs @ 12.09 hrs, Volume= 13,978 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond Dp-16e: Landry Avenue



Summary for Pond DP-1e: Flow to Exist Basin #1

Inflow Area = 103,683 sf, 38.10% Impervious, Inflow Depth = 3.43" for 10yr event
Inflow = 9.28 cfs @ 12.09 hrs, Volume= 29,604 cf
Outflow = 8.65 cfs @ 12.12 hrs, Volume= 29,604 cf, Atten= 7%, Lag= 1.9 min
Discarded = 0.02 cfs @ 12.12 hrs, Volume= 556 cf
Primary = 8.63 cfs @ 12.12 hrs, Volume= 29,048 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 236.75' @ 12.12 hrs Surf.Area= 6,184 sf Storage= 1,448 cf

Plug-Flow detention time= 4.7 min calculated for 29,584 cf (100% of inflow)
Center-of-Mass det. time= 4.7 min (813.9 - 809.2)

Volume	Invert	Avail.Storage	Storage Description
#1	236.50'	78,288 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

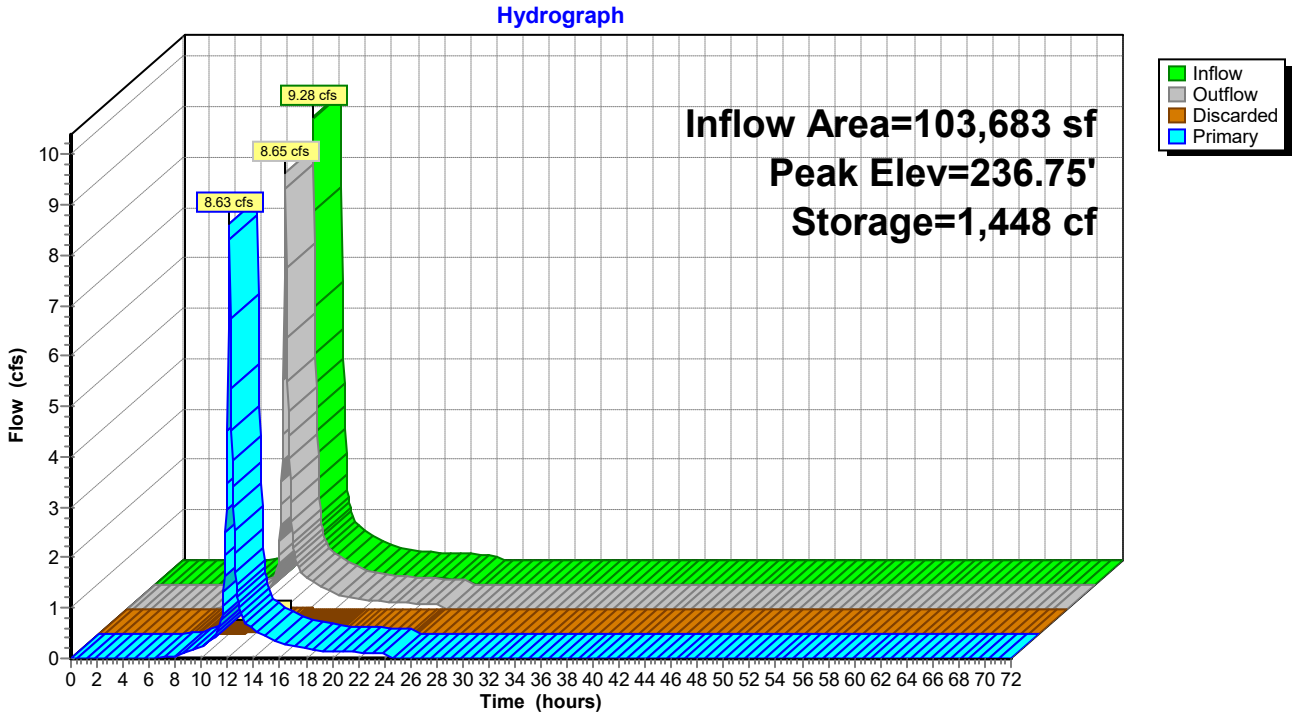
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.50	5,215	304.0	0	0	5,215
237.00	7,198	352.0	3,090	3,090	7,726
238.00	11,943	443.0	9,471	12,561	13,497
239.00	19,611	649.0	15,619	28,180	31,406
240.00	26,065	843.0	22,762	50,942	54,452
241.00	28,648	878.0	27,346	78,288	59,322

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**25.0' long x 45.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.02 cfs @ 12.12 hrs HW=236.75' (Free Discharge)
↑**2=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=8.35 cfs @ 12.12 hrs HW=236.75' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 8.35 cfs @ 1.34 fps)

Pond DP-1e: Flow to Exist Basin #1

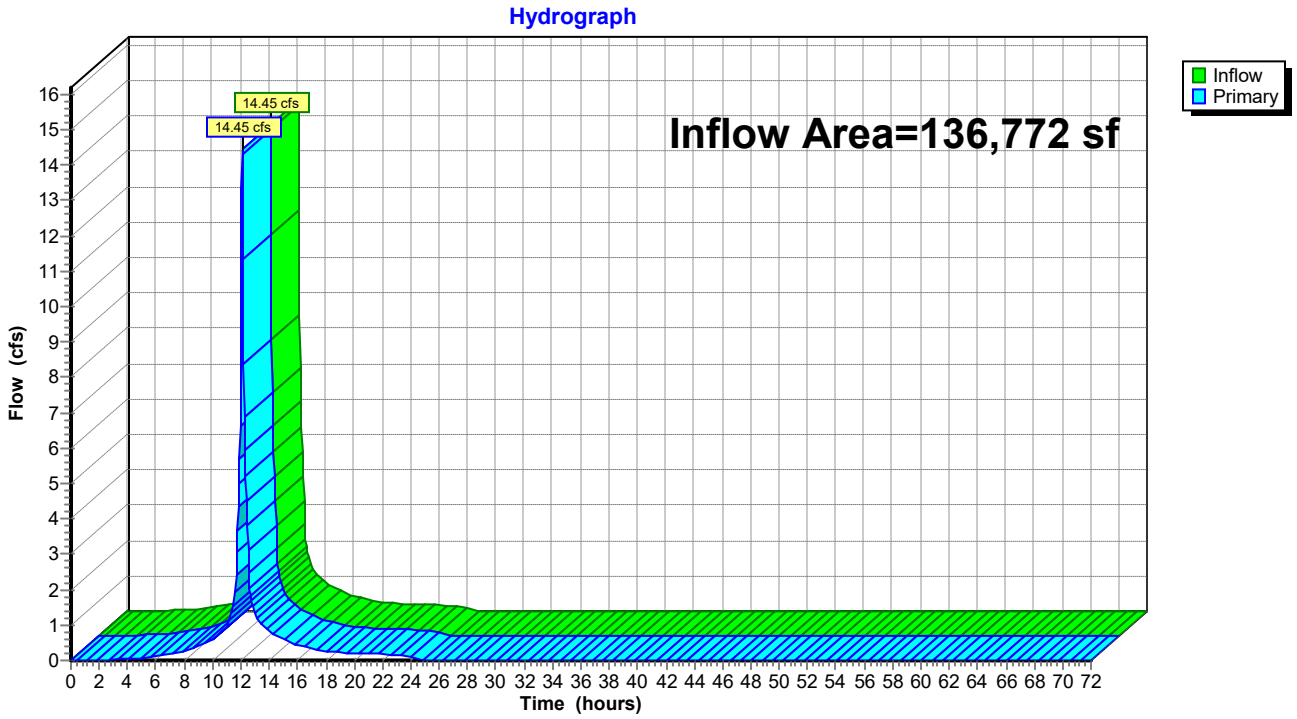


Summary for Pond DP-2e: Flow to Exist Basin#2

Inflow Area = 136,772 sf, 73.93% Impervious, Inflow Depth = 4.31" for 10yr event
Inflow = 14.45 cfs @ 12.09 hrs, Volume= 49,164 cf
Primary = 14.45 cfs @ 12.09 hrs, Volume= 49,164 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-2e: Flow to Exist Basin#2

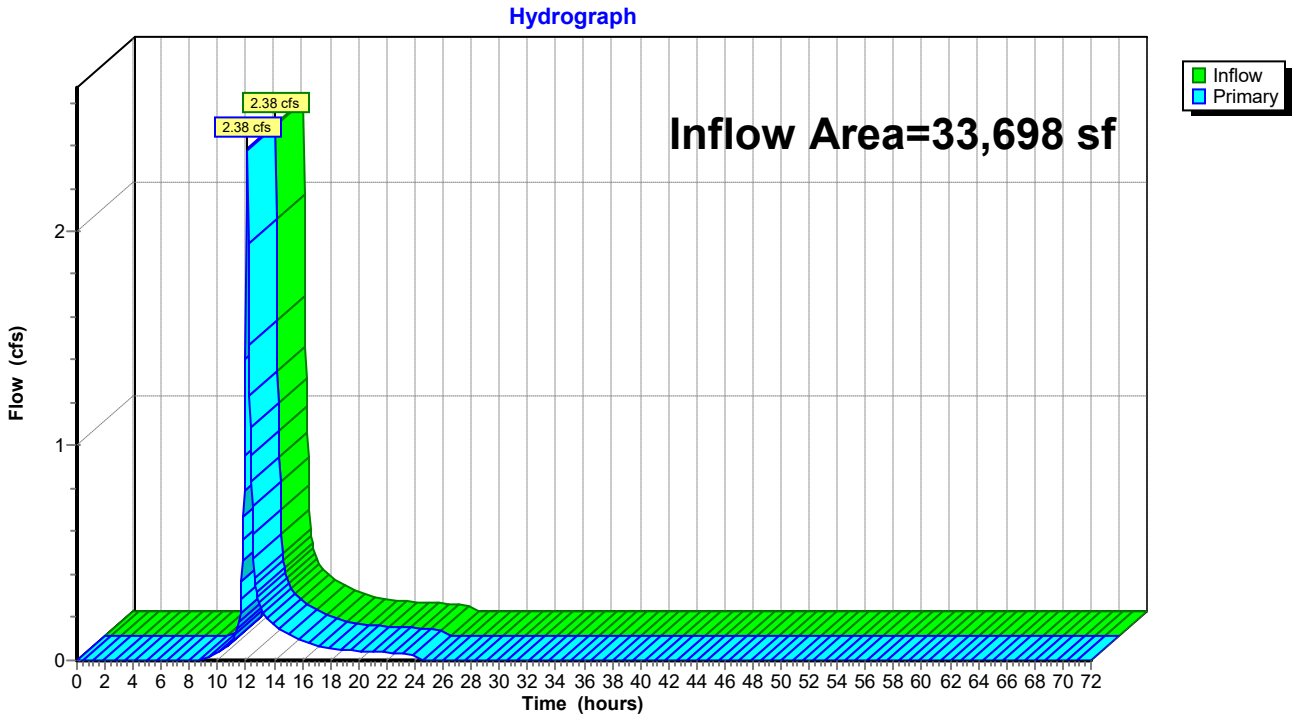


Summary for Pond DP-3e: Residential East#1

Inflow Area = 33,698 sf, 8.21% Impervious, Inflow Depth = 2.68" for 10yr event
Inflow = 2.38 cfs @ 12.09 hrs, Volume= 7,515 cf
Primary = 2.38 cfs @ 12.09 hrs, Volume= 7,515 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-3e: Residential East#1

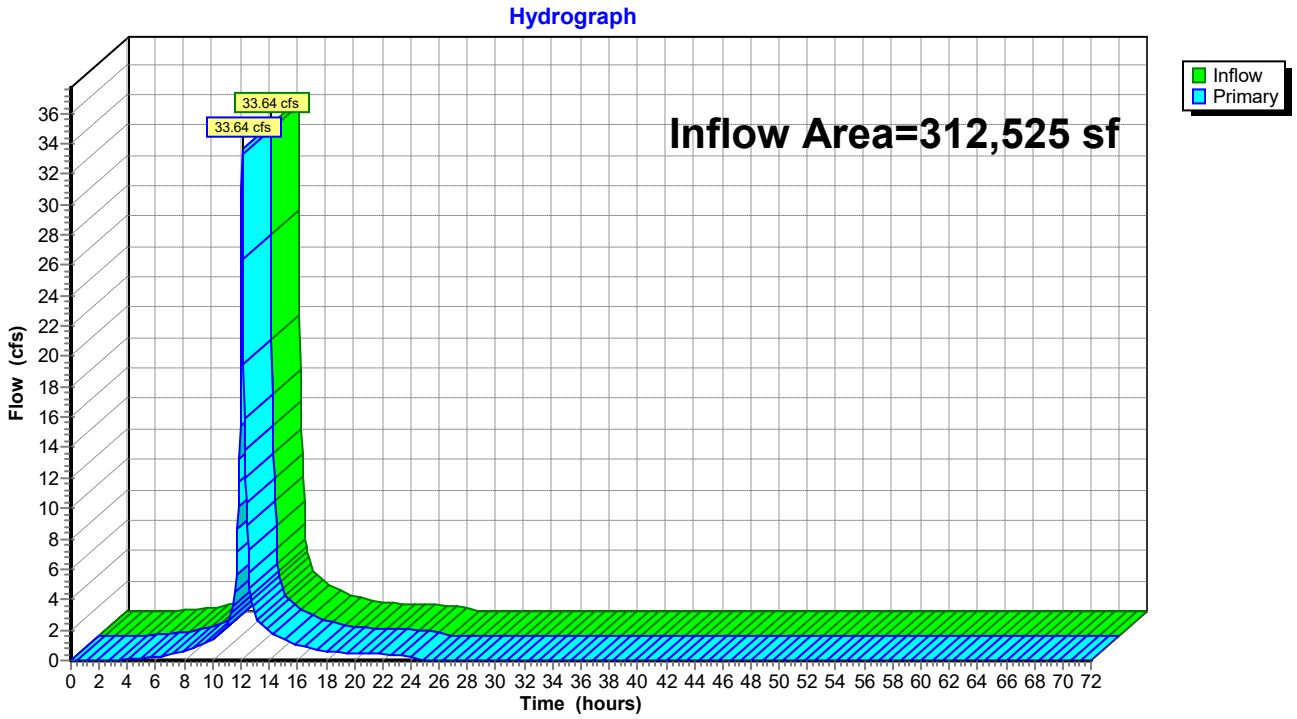


Summary for Pond DP-4e: Exist Swale #1 East

Inflow Area = 312,525 sf, 68.63% Impervious, Inflow Depth = 4.36" for 10yr event
Inflow = 33.64 cfs @ 12.09 hrs, Volume= 113,679 cf
Primary = 33.64 cfs @ 12.09 hrs, Volume= 113,679 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-4e: Exist Swale #1 East

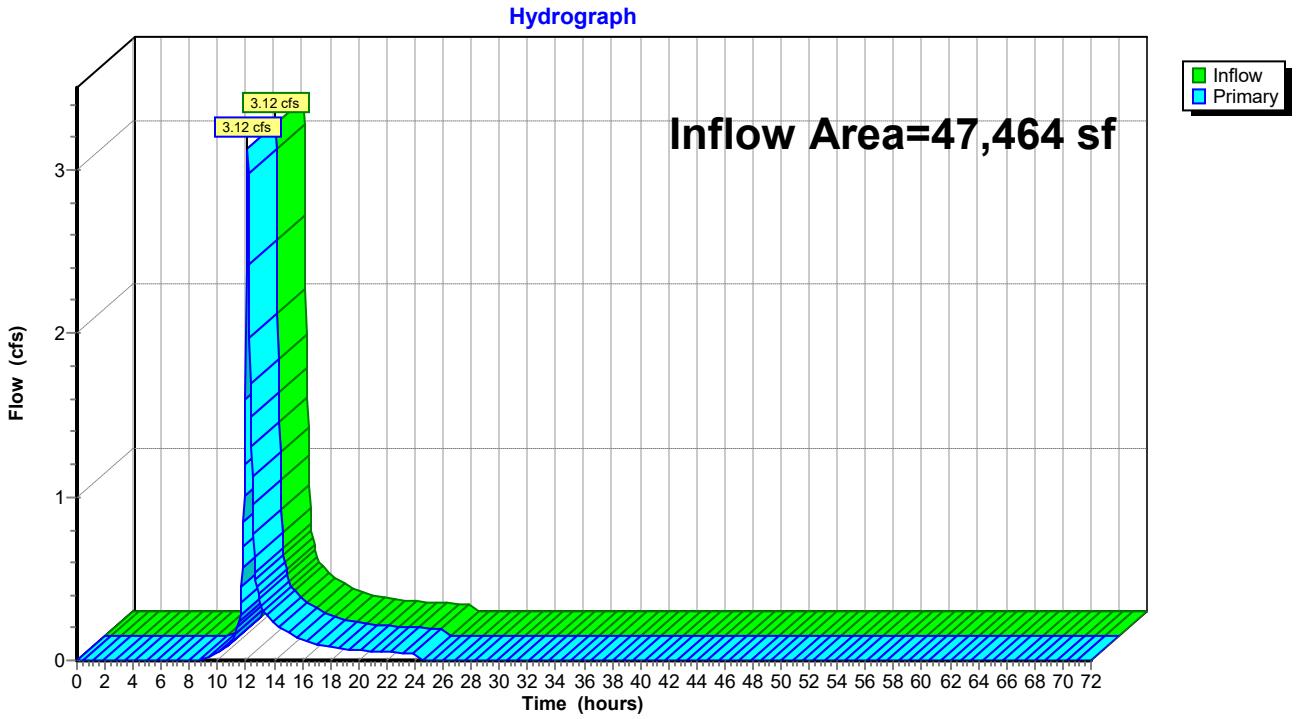


Summary for Pond DP-5e: Residential East#2

Inflow Area = 47,464 sf, 0.00% Impervious, Inflow Depth = 2.68" for 10yr event
Inflow = 3.12 cfs @ 12.12 hrs, Volume= 10,585 cf
Primary = 3.12 cfs @ 12.12 hrs, Volume= 10,585 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-5e: Residential East#2

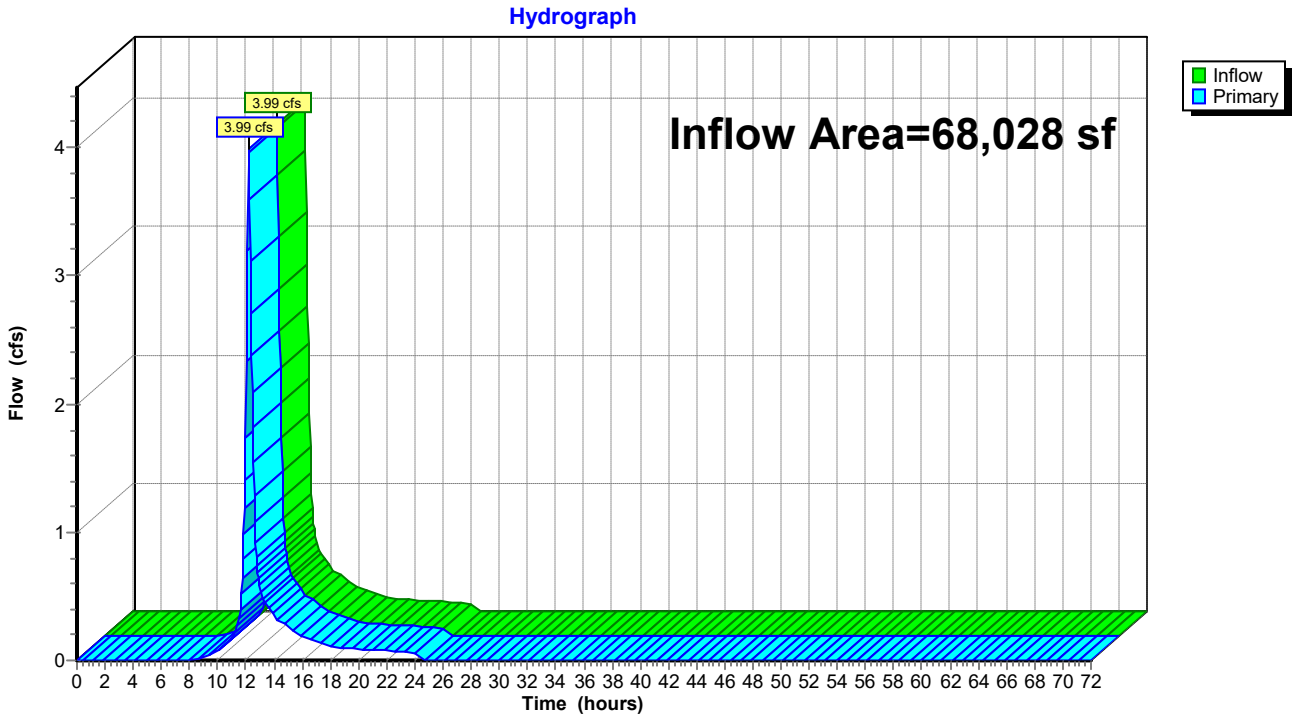


Summary for Pond DP-6e: Residential East#3

Inflow Area = 68,028 sf, 0.00% Impervious, Inflow Depth = 2.77" for 10yr event
Inflow = 3.99 cfs @ 12.19 hrs, Volume= 15,680 cf
Primary = 3.99 cfs @ 12.19 hrs, Volume= 15,680 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-6e: Residential East#3

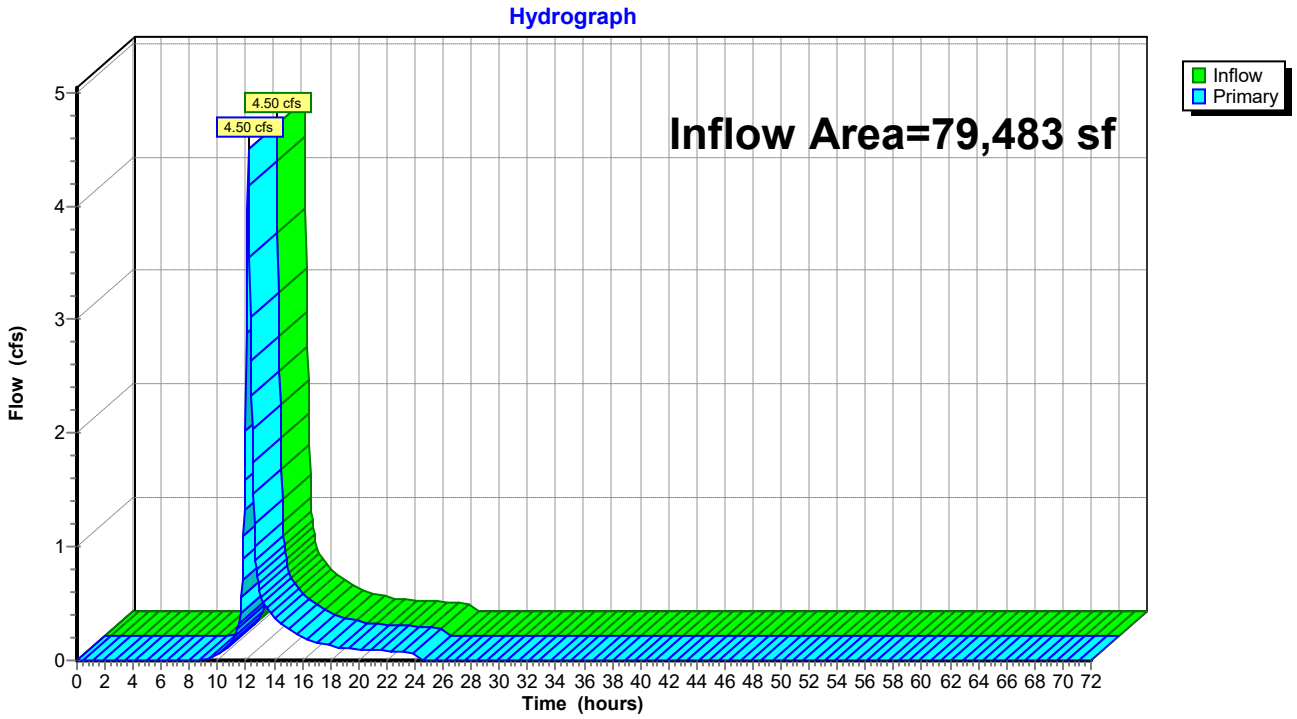


Summary for Pond DP-7e: Residential East#4

Inflow Area = 79,483 sf, 0.00% Impervious, Inflow Depth = 2.50" for 10yr event
Inflow = 4.50 cfs @ 12.16 hrs, Volume= 16,563 cf
Primary = 4.50 cfs @ 12.16 hrs, Volume= 16,563 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-7e: Residential East#4

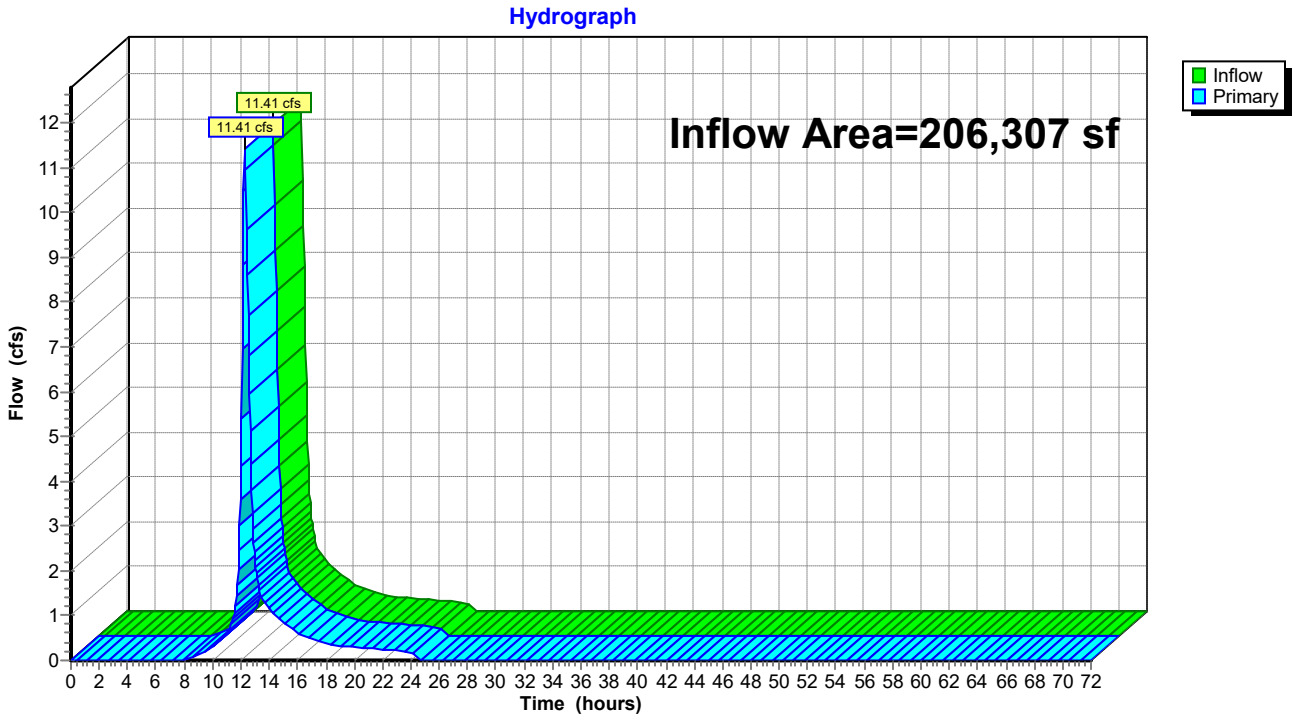


Summary for Pond DP-8e: Stoddard Drive

Inflow Area = 206,307 sf, 6.63% Impervious, Inflow Depth = 3.04" for 10yr event
Inflow = 11.41 cfs @ 12.27 hrs, Volume= 52,293 cf
Primary = 11.41 cfs @ 12.27 hrs, Volume= 52,293 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-8e: Stoddard Drive

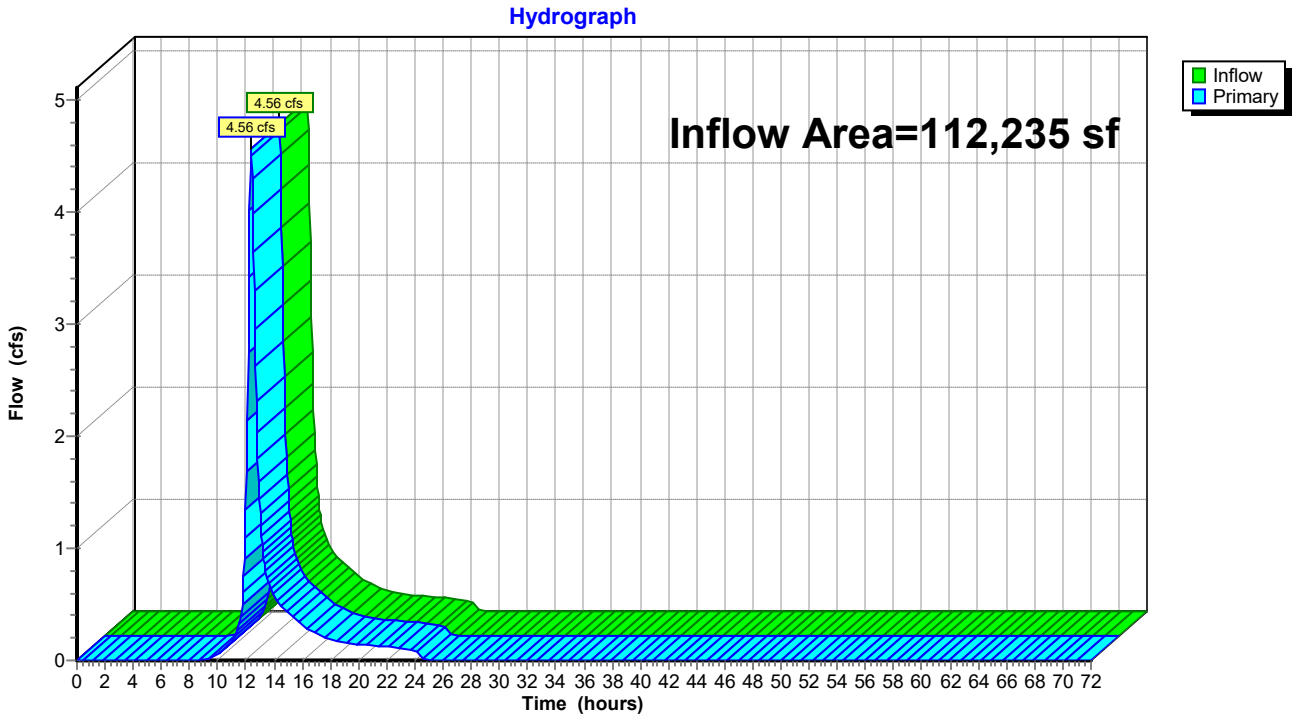


Summary for Pond DP-9e: Woods South

Inflow Area = 112,235 sf, 0.00% Impervious, Inflow Depth = 2.50" for 10yr event
Inflow = 4.56 cfs @ 12.36 hrs, Volume= 23,388 cf
Primary = 4.56 cfs @ 12.36 hrs, Volume= 23,388 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-9e: Woods South

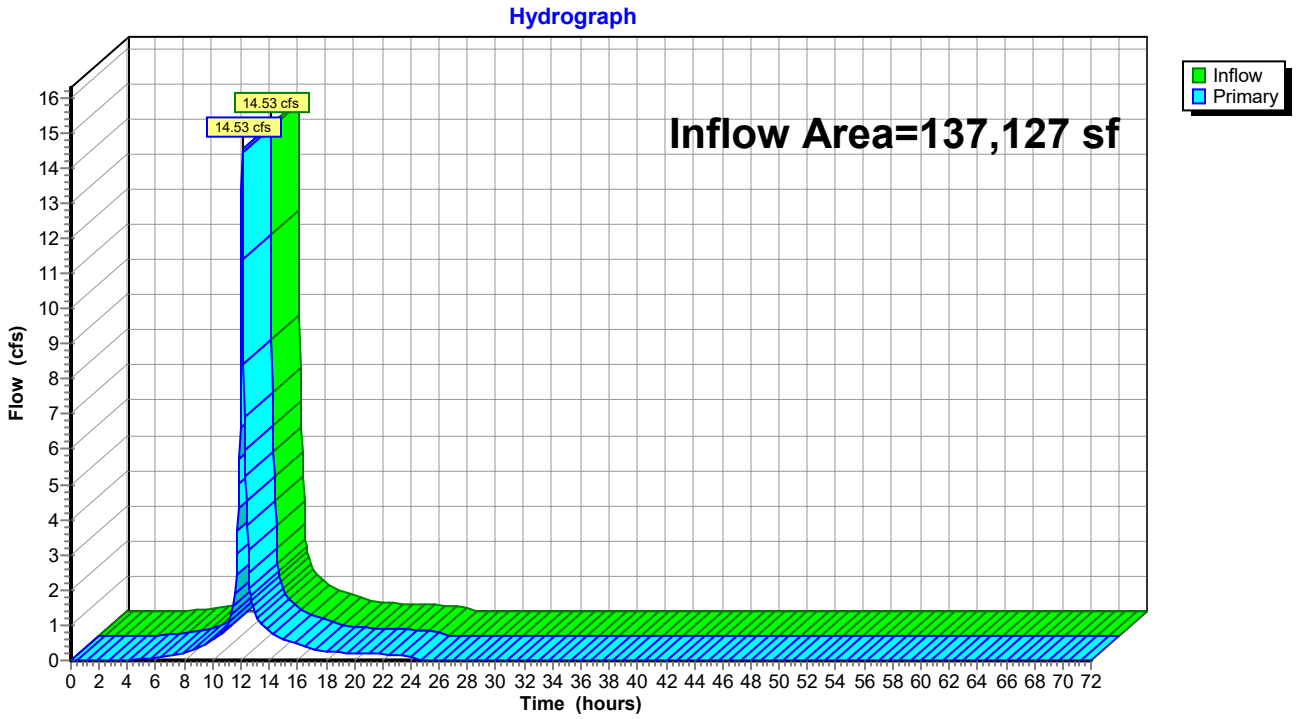


Summary for Pond EC: Existing Underground Chambers

Inflow Area = 137,127 sf, 67.63% Impervious, Inflow Depth = 4.26" for 10yr event
Inflow = 14.53 cfs @ 12.09 hrs, Volume= 48,628 cf
Primary = 14.53 cfs @ 12.09 hrs, Volume= 48,628 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond EC: Existing Underground Chambers



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1: Flow to NE Landry Runoff Area=103,683 sf 38.10% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=84 Runoff=11.94 cfs 38,447 cf

Subcatchment E-10a: Grass + Pave + Runoff Area=386,242 sf 52.49% Impervious Runoff Depth=5.11"
Tc=6.0 min CN=90 Runoff=49.32 cfs 164,446 cf

Subcatchment E-10b: Wood + Grass + Pave Runoff Area=27,615 sf 0.00% Impervious Runoff Depth=3.72"
Flow Length=305' Tc=8.8 min CN=77 Runoff=2.45 cfs 8,551 cf

Subcatchment E-11: Woods + Pave Runoff Area=192,003 sf 6.81% Impervious Runoff Depth=3.92"
Flow Length=638' Tc=15.9 min CN=79 Runoff=14.91 cfs 62,748 cf

Subcatchment E-12: Woods + Pave Runoff Area=61,696 sf 4.78% Impervious Runoff Depth=3.92"
Flow Length=260' Tc=6.0 min CN=79 Runoff=6.35 cfs 20,163 cf

Subcatchment E-13a: EXIST STADIUM Runoff Area=153,826 sf 0.00% Impervious Runoff Depth=3.41"
Tc=6.0 min CN=74 Runoff=13.86 cfs 43,753 cf

Subcatchment E-13b: EXIST STADIUM Runoff Area=12,959 sf 0.00% Impervious Runoff Depth=3.61"
Tc=6.0 min CN=76 Runoff=1.24 cfs 3,903 cf

Subcatchment E-14: Gravel + Woods + Runoff Area=22,068 sf 29.78% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=84 Runoff=2.54 cfs 8,183 cf

Subcatchment E-15a: Woods + Gravel + Runoff Area=235,197 sf 1.04% Impervious Runoff Depth=3.61"
Flow Length=441' Tc=11.4 min CN=76 Runoff=19.01 cfs 70,838 cf

Subcatchment E-15b: Pave + Woods + Runoff Area=149,784 sf 5.76% Impervious Runoff Depth=4.03"
Flow Length=336' Tc=9.0 min CN=80 Runoff=14.28 cfs 50,249 cf

Subcatchment E-15C/I/G: Basin Bypass Runoff Area=114,036 sf 74.53% Impervious Runoff Depth=5.45"
Tc=6.0 min CN=93 Runoff=15.13 cfs 51,784 cf

Subcatchment E-15D/E/F/H: Basin Runoff Area=137,127 sf 67.63% Impervious Runoff Depth=5.34"
Tc=6.0 min CN=92 Runoff=17.98 cfs 60,965 cf

Subcatchment E-16: Flow NW Landry Runoff Area=48,957 sf 27.60% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=84 Runoff=5.64 cfs 18,154 cf

Subcatchment E-2a: E-2a + Roof1 + Roof2 Runoff Area=124,442 sf 81.25% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=94 Runoff=16.68 cfs 57,701 cf

Subcatchment E-2b: Wooded basin area Runoff Area=12,330 sf 0.00% Impervious Runoff Depth=3.61"
Tc=6.0 min CN=76 Runoff=1.18 cfs 3,714 cf

Subcatchment E-3: Sheet flow west to RA Runoff Area=33,698 sf 8.21% Impervious Runoff Depth=3.61"
Tc=6.0 min CN=76 Runoff=3.21 cfs 10,149 cf

Subcatchment E-4: Parking Lot + Roof3 + Runoff Area=312,525 sf 68.63% Impervious Runoff Depth=5.45"
Tc=6.0 min CN=93 Runoff=41.46 cfs 141,918 cf

Subcatchment E-5: Wooded Basin Area Runoff Area=47,464 sf 0.00% Impervious Runoff Depth=3.61"
Flow Length=298' Tc=8.2 min CN=76 Runoff=4.22 cfs 14,295 cf

Subcatchment E-6: Wooded Basin Area Runoff Area=68,028 sf 0.00% Impervious Runoff Depth=3.72"
Flow Length=557' Tc=13.1 min CN=77 Runoff=5.36 cfs 21,066 cf

Subcatchment E-7: Wooded Basin Area Runoff Area=79,483 sf 0.00% Impervious Runoff Depth=3.41"
Flow Length=463' Tc=10.8 min CN=74 Runoff=6.17 cfs 22,608 cf

Subcatchment E-8: Wooded Basin Area + Runoff Area=206,307 sf 6.63% Impervious Runoff Depth=4.03"
Flow Length=681' Tc=19.8 min CN=80 Runoff=15.06 cfs 69,212 cf

Subcatchment E-9: Wooded Basin Area Runoff Area=112,235 sf 0.00% Impervious Runoff Depth=3.41"
Flow Length=498' Tc=25.5 min CN=74 Runoff=6.25 cfs 31,924 cf

Pond 1P: stone Inflow=13.86 cfs 43,753 cf
Primary=13.86 cfs 43,753 cf

Pond DP-10e: Exist Basin #3 Inflow=51.65 cfs 172,998 cf
Primary=51.65 cfs 172,998 cf

Pond DP-11e: Woods Southwest Inflow=14.91 cfs 62,748 cf
Primary=14.91 cfs 62,748 cf

Pond DP-12e: Residential West#1 Inflow=6.35 cfs 20,163 cf
Primary=6.35 cfs 20,163 cf

Pond DP-13e: Residential West#2 Inflow=15.09 cfs 47,657 cf
Primary=15.09 cfs 47,657 cf

Pond DP-14e: Residential West#3 Inflow=2.54 cfs 8,183 cf
Primary=2.54 cfs 8,183 cf

Pond DP-15e: Wetlands Inflow=63.54 cfs 233,836 cf
Primary=63.54 cfs 233,836 cf

Pond Dp-16e: Landry Avenue Inflow=5.64 cfs 18,154 cf
Primary=5.64 cfs 18,154 cf

Pond DP-1e: Flow to Exist Basin #1 Peak Elev=236.80' Storage=1,749 cf Inflow=11.94 cfs 38,447 cf
Discarded=0.03 cfs 668 cf Primary=11.19 cfs 37,779 cf Outflow=11.21 cfs 38,447 cf

Pond DP-2e: Flow to Exist Basin#2 Inflow=17.85 cfs 61,415 cf
Primary=17.85 cfs 61,415 cf

Pond DP-3e: Residential East#1 Inflow=3.21 cfs 10,149 cf
Primary=3.21 cfs 10,149 cf

Pond DP-4e: Exist Swale #1 East Inflow=41.46 cfs 141,918 cf
Primary=41.46 cfs 141,918 cf

Pond DP-5e: Residential East#2 Inflow=4.22 cfs 14,295 cf
Primary=4.22 cfs 14,295 cf

Pond DP-6e: Residential East#3 Inflow=5.36 cfs 21,066 cf
Primary=5.36 cfs 21,066 cf

Pond DP-7e: Residential East#4 Inflow=6.17 cfs 22,608 cf
Primary=6.17 cfs 22,608 cf

Pond DP-8e: Stoddard Drive Inflow=15.06 cfs 69,212 cf
Primary=15.06 cfs 69,212 cf

Pond DP-9e: Woods South Inflow=6.25 cfs 31,924 cf
Primary=6.25 cfs 31,924 cf

Pond EC: Existing Underground Chambers Inflow=17.98 cfs 60,965 cf
Primary=17.98 cfs 60,965 cf

Total Runoff Area = 2,641,705 sf Runoff Volume = 974,771 cf Average Runoff Depth = 4.43"
69.75% Pervious = 1,842,529 sf 30.25% Impervious = 799,176 sf

Summary for Subcatchment E-1: Flow to NE Landry

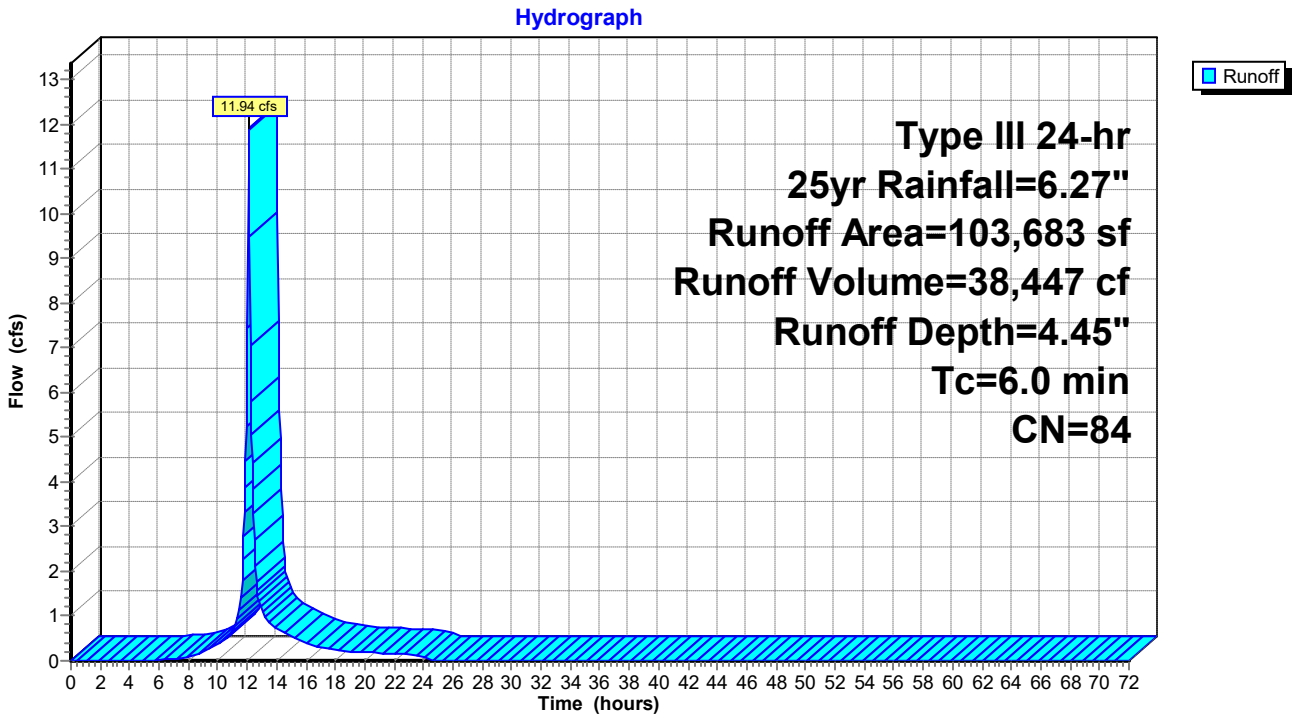
Runoff = 11.94 cfs @ 12.09 hrs, Volume= 38,447 cf, Depth= 4.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	35,301	98	Pave access road
*	4,200	98	Pave Parking
	38,226	73	Woods, Fair, HSG C
	25,956	79	50-75% Grass cover, Fair, HSG C
	103,683	84	Weighted Average
	64,182		61.90% Pervious Area
	39,501		38.10% Impervious Area

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

Subcatchment E-1: Flow to NE Landry



Summary for Subcatchment E-10a: Grass + Pave + Roof5 + Roof6

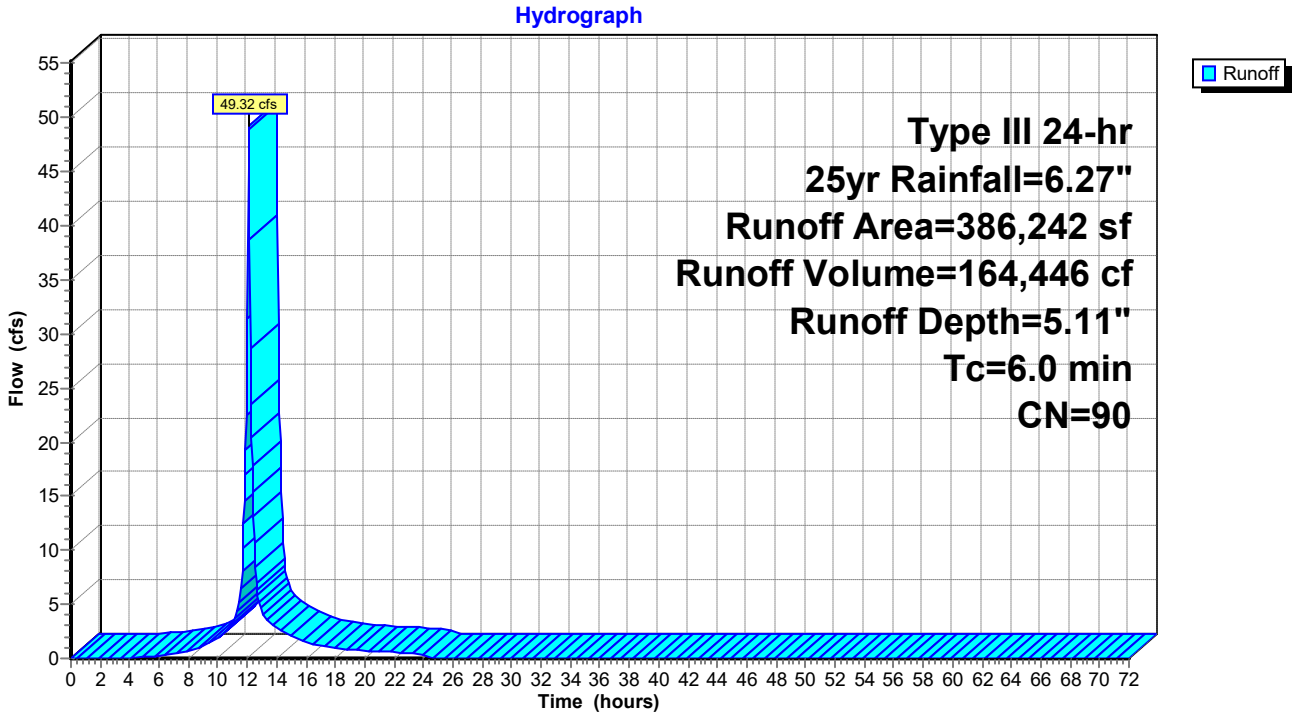
Runoff = 49.32 cfs @ 12.09 hrs, Volume= 164,446 cf, Depth= 5.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	12,739	98	Exist Pave
*	9,128	98	Exist Pave
*	44,658	98	Exist Pave
*	53,005	98	Exist Pave
*	10,983	98	Stadium Walks North
*	9,236	98	Exist Pave
*	1,329	98	Exist pave
	58,315	79	50-75% Grass cover, Fair, HSG C
*	19,486	96	Gravel Stadium North
*	19,443	98	Roof 6
*	36,319	98	Roof 5
*	2,206	98	Exist Pave
*	3,690	98	Exist Pave
*	12,880	96	Gravel Road
	92,825	79	50-75% Grass cover, Fair, HSG C
	386,242	90	Weighted Average
	183,506		47.51% Pervious Area
	202,736		52.49% Impervious Area

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

Subcatchment E-10a: Grass + Pave + Roof5 + Roof6



Summary for Subcatchment E-10b: Wood + Grass + Pave

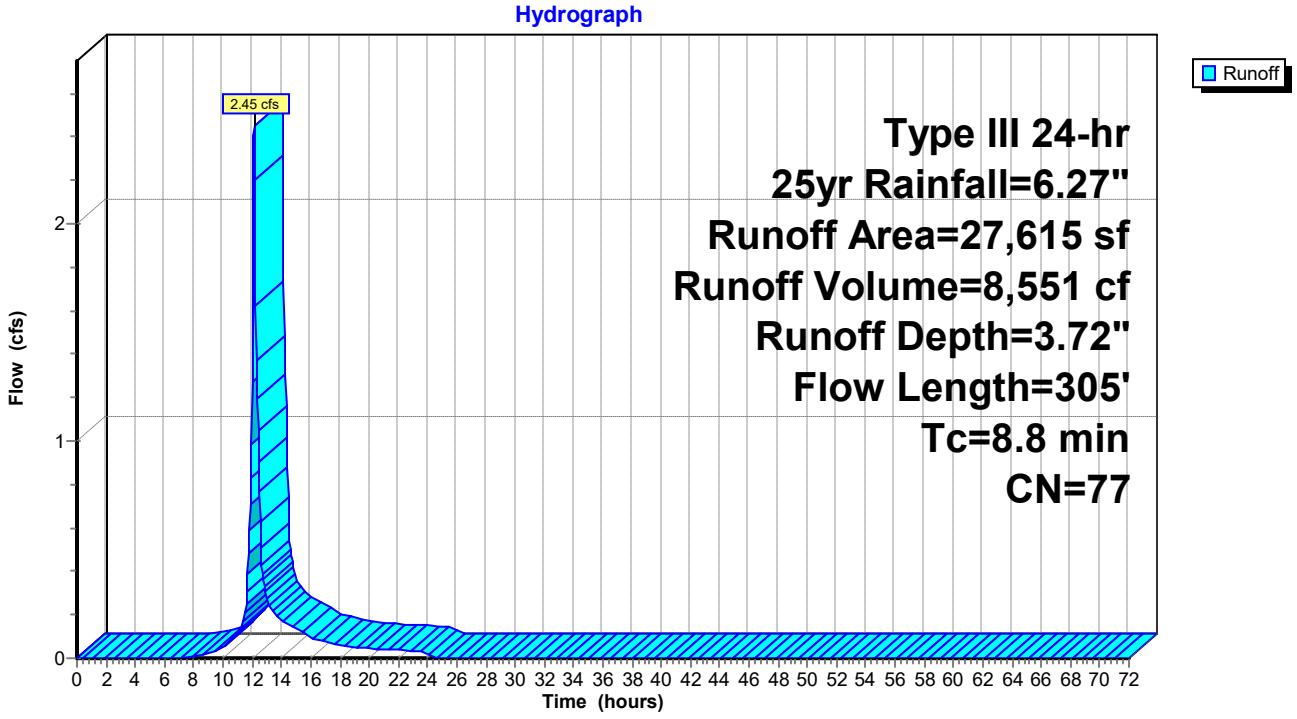
Runoff = 2.45 cfs @ 12.13 hrs, Volume= 8,551 cf, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

Area (sf)	CN	Description
9,528	73	Woods, Fair, HSG C
18,087	79	50-75% Grass cover, Fair, HSG C
27,615	77	Weighted Average
27,615		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	30	0.0050	0.07		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.4	144	0.0113	1.71		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	62	0.2100	7.38		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.4	69	0.0300	2.79		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
8.8	305	Total			

Subcatchment E-10b: Wood + Grass + Pave



Summary for Subcatchment E-11: Woods + Pave

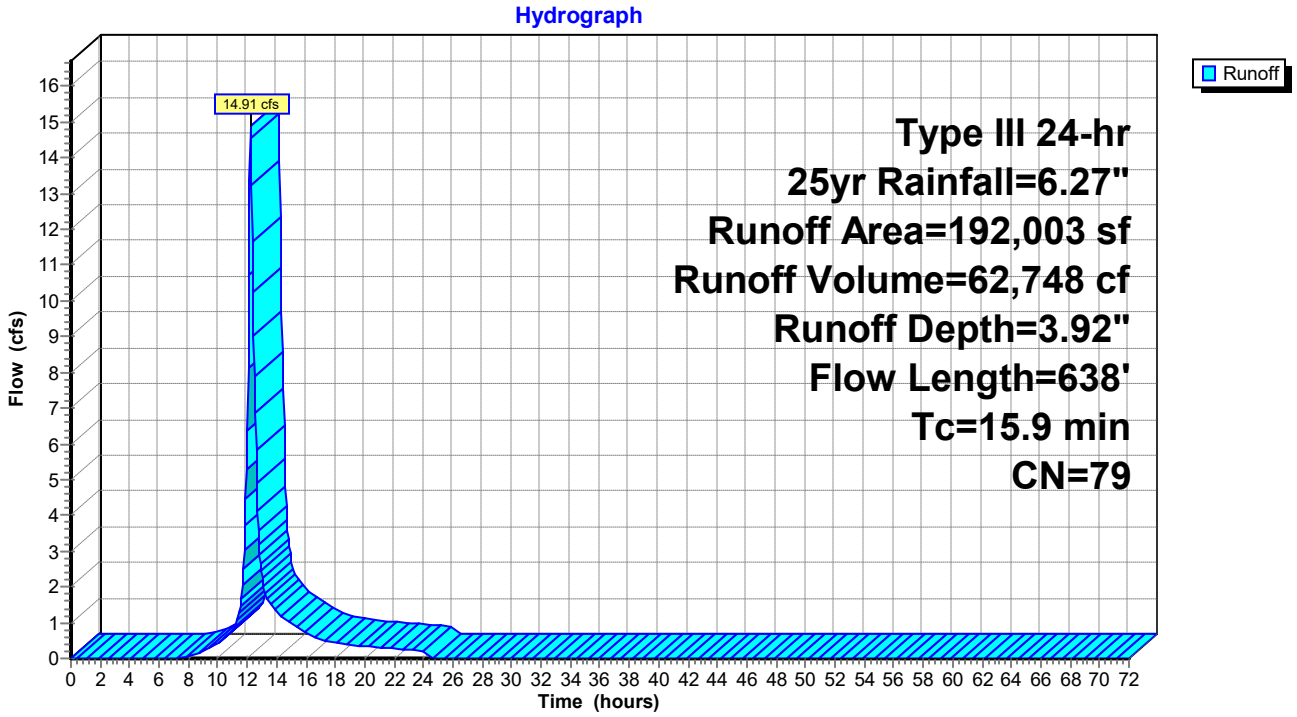
Runoff = 14.91 cfs @ 12.22 hrs, Volume= 62,748 cf, Depth= 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
	17,585	73	Woods, Fair, HSG C
	10,203	73	Woods, Fair, HSG C
*	13,080	98	Exist pave
	151,135	79	50-75% Grass cover, Fair, HSG C
	192,003	79	Weighted Average
	178,923		93.19% Pervious Area
	13,080		6.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	64	0.0061	0.09		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.1	160	0.0240	2.49		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.0	8	0.0250	3.21		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
0.1	28	0.1750	6.74		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
2.3	206	0.0087	1.50		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.8	172	0.0460	3.45		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
15.9	638	Total			

Subcatchment E-11: Woods + Pave



Summary for Subcatchment E-12: Woods + Pave

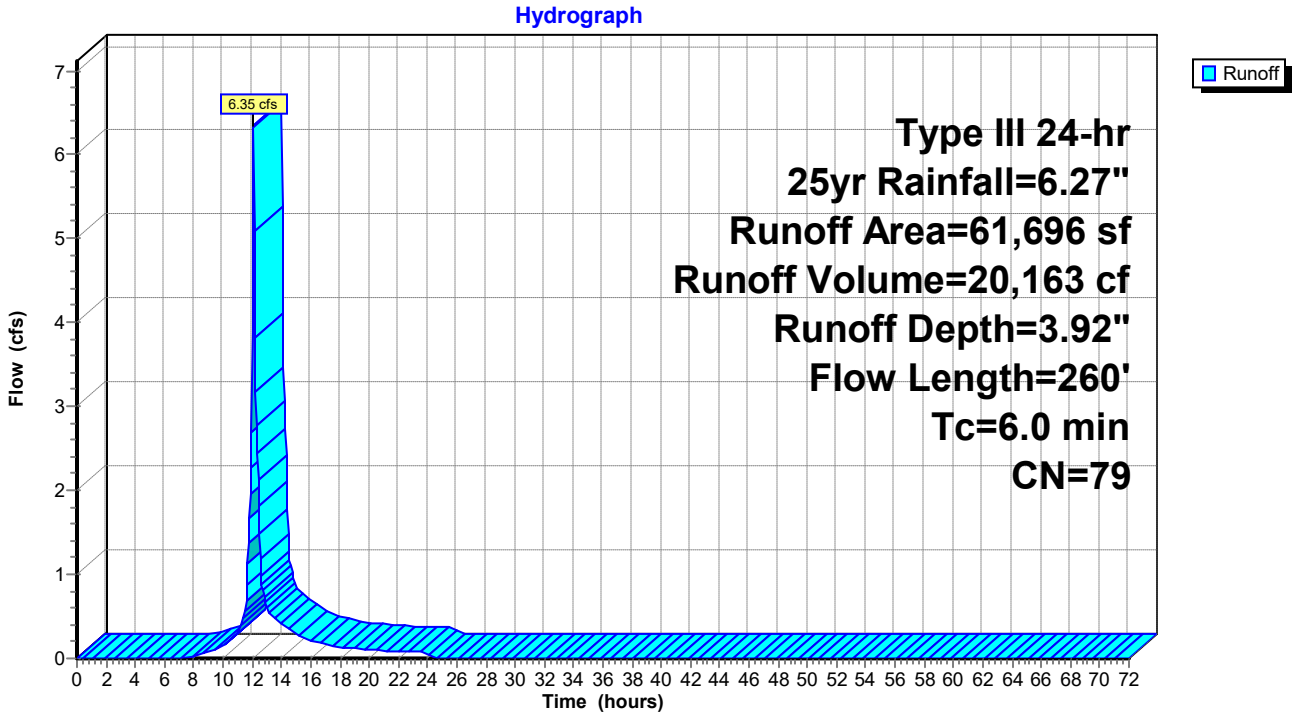
Runoff = 6.35 cfs @ 12.09 hrs, Volume= 20,163 cf, Depth= 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
	12,114	73	Woods, Fair, HSG C
*	2,947	98	Exist pave
	46,635	79	50-75% Grass cover, Fair, HSG C
	61,696	79	Weighted Average
	58,749		95.22% Pervious Area
	2,947		4.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	21	0.0500	0.17		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.2	36	0.0006	0.50		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
0.1	16	0.0225	2.42		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	44	0.2700	8.37		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.3	143	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.8	260	Total, Increased to minimum Tc = 6.0 min			

Subcatchment E-12: Woods + Pave



Summary for Subcatchment E-13a: EXIST STADIUM ROUGH SIZING NO CONTRACT

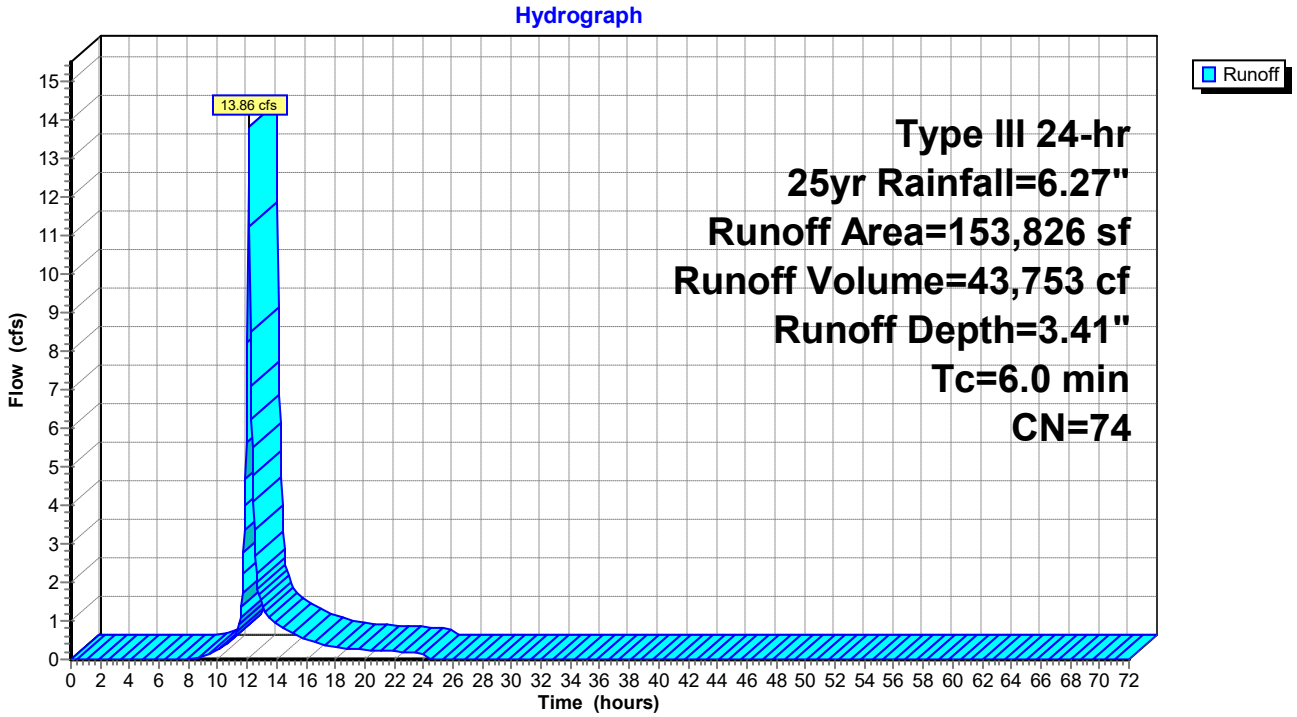
Runoff = 13.86 cfs @ 12.09 hrs, Volume= 43,753 cf, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

Area (sf)	CN	Description
153,826	74	>75% Grass cover, Good, HSG C
153,826		100.00% Pervious Area

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

Subcatchment E-13a: EXIST STADIUM ROUGH SIZING NO CONTRACT



Summary for Subcatchment E-13b: EXIST STADIUM ROUGH SIZING NO CONTRACT

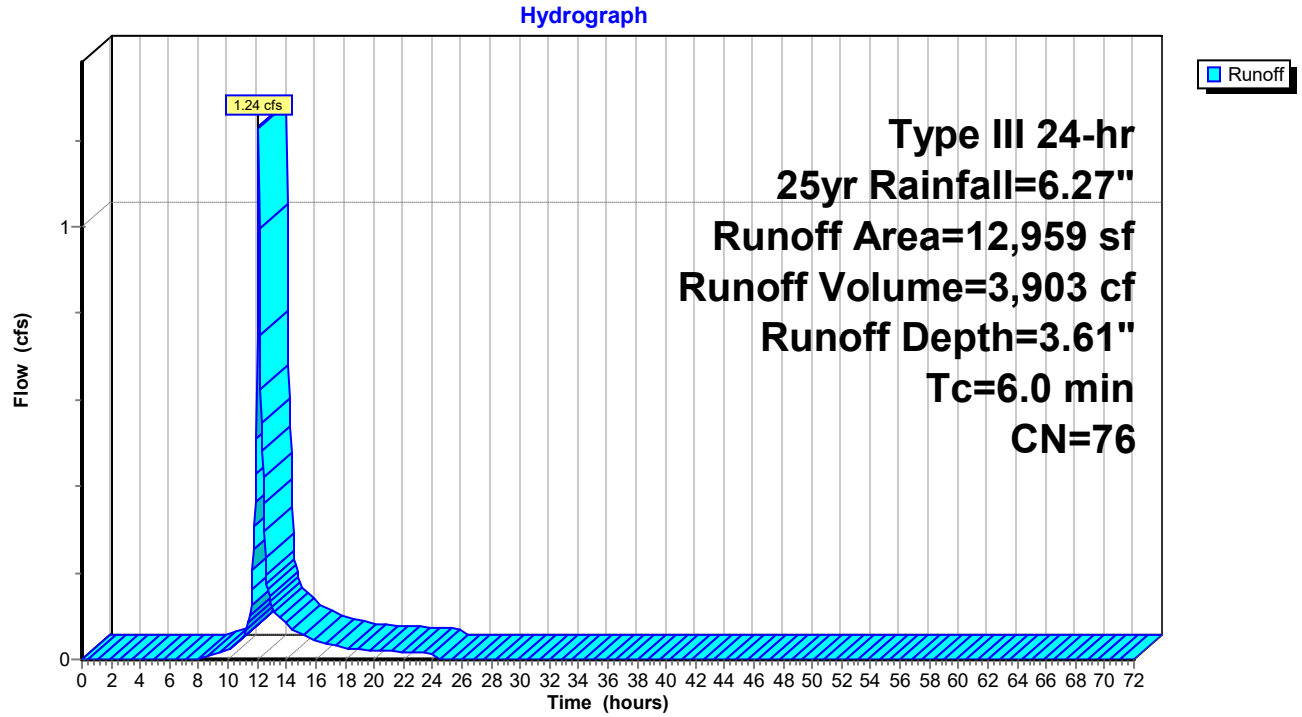
Runoff = 1.24 cfs @ 12.09 hrs, Volume= 3,903 cf, Depth= 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

Area (sf)	CN	Description
12,959	76	Woods/grass comb., Fair, HSG C
12,959		100.00% Pervious Area

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

Subcatchment E-13b: EXIST STADIUM ROUGH SIZING NO CONTRACT



Summary for Subcatchment E-14: Gravel + Woods + Grass

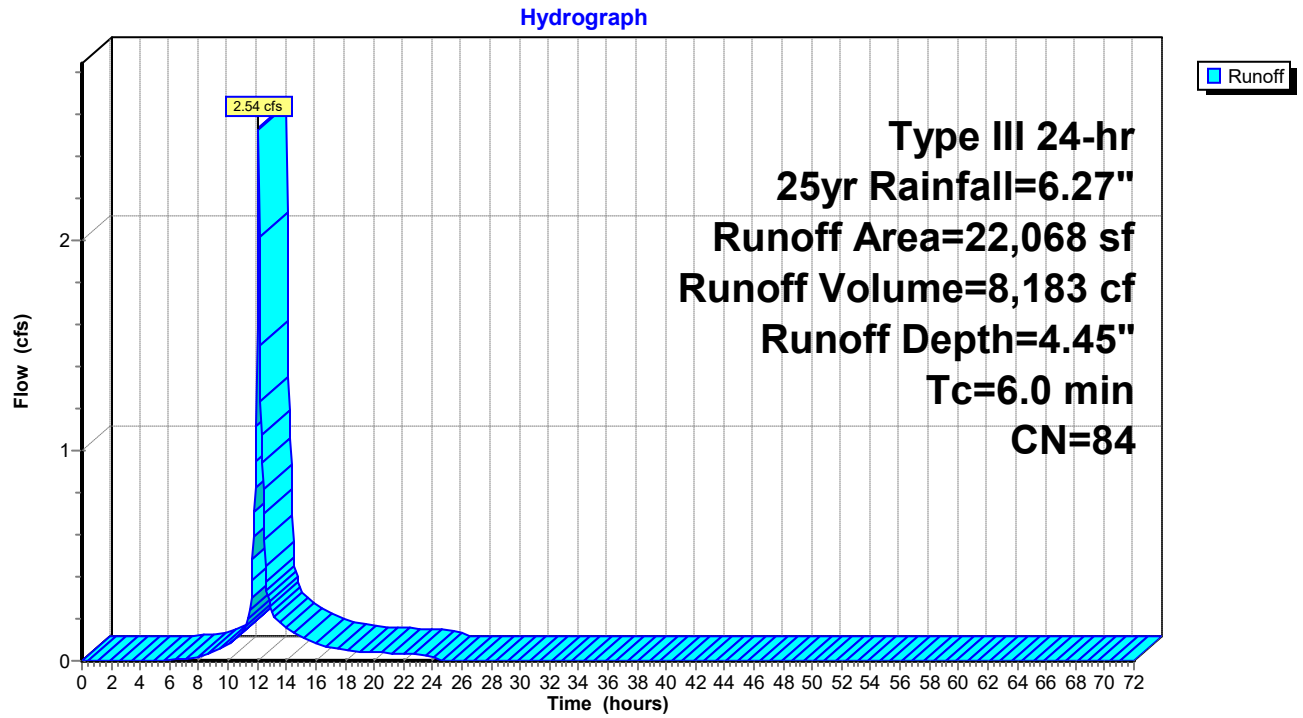
Runoff = 2.54 cfs @ 12.09 hrs, Volume= 8,183 cf, Depth= 4.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
	8,051	73	Woods, Fair, HSG C
	2,350	96	Gravel surface, HSG C
*	6,572	98	Bleacher Area
	5,095	79	50-75% Grass cover, Fair, HSG C
	22,068	84	Weighted Average
	15,496		70.22% Pervious Area
	6,572		29.78% Impervious Area

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

Subcatchment E-14: Gravel + Woods + Grass



Summary for Subcatchment E-15a: Woods + Gravel + Grass

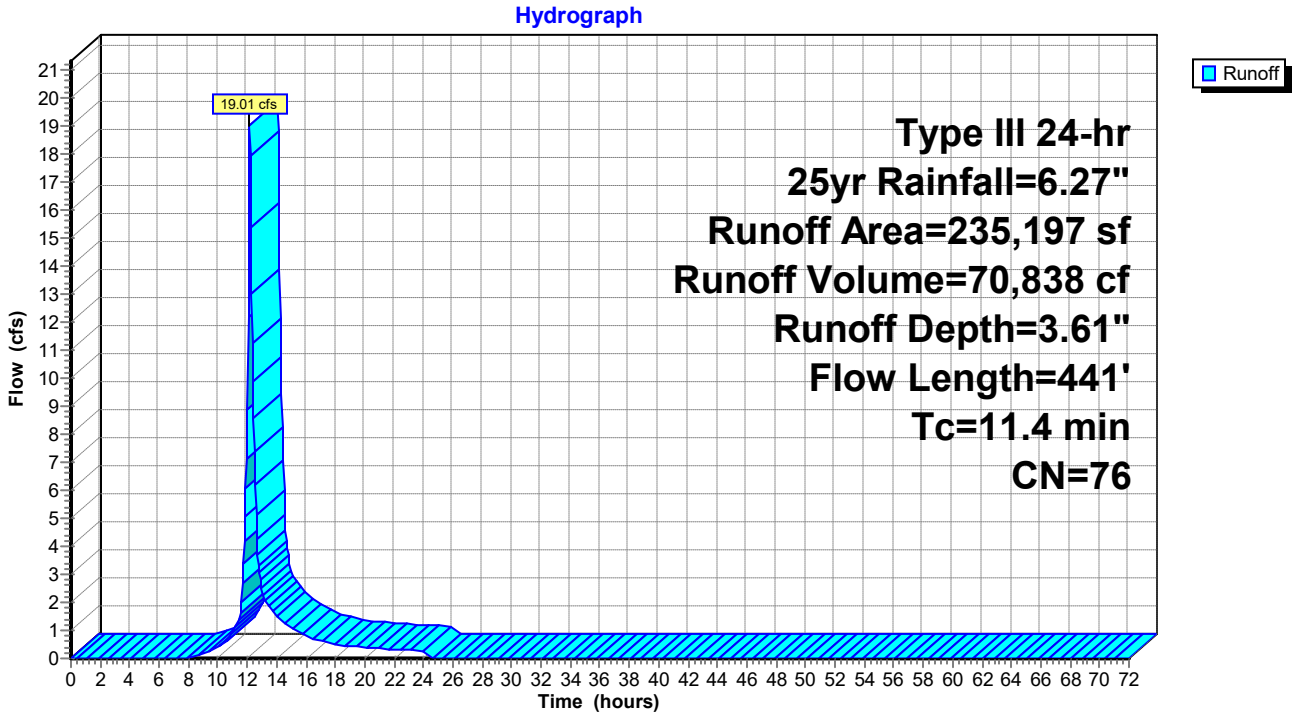
Runoff = 19.01 cfs @ 12.16 hrs, Volume= 70,838 cf, Depth= 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
	2,647	96	Gravel surface, HSG C
*	2,437	98	Batting cages
	136,625	73	Woods, Fair, HSG C
	93,488	79	50-75% Grass cover, Fair, HSG C
	235,197	76	Weighted Average
	232,760		98.96% Pervious Area
	2,437		1.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	78	0.0187	0.15		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.5	170	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	43	0.4650	10.98		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.1	150	0.0200	2.28		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
11.4	441	Total			

Subcatchment E-15a: Woods + Gravel + Grass



Summary for Subcatchment E-15b: Pave + Woods + Gravel

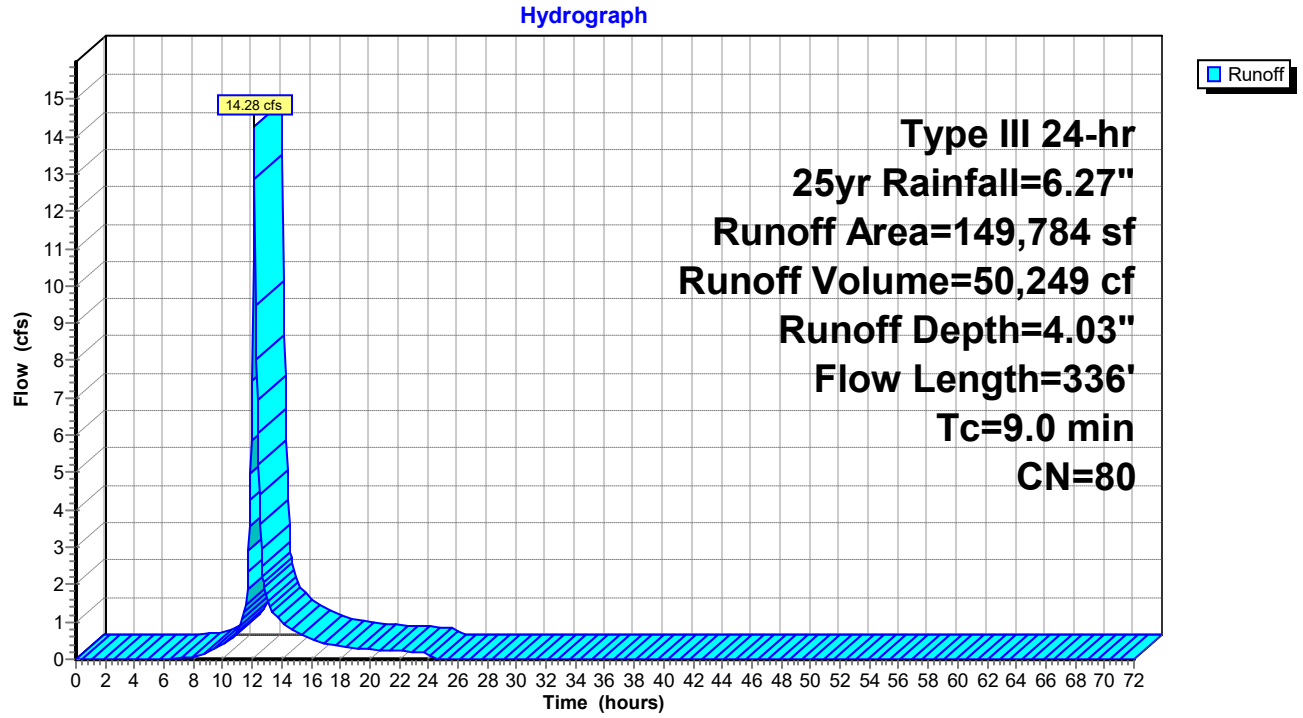
Runoff = 14.28 cfs @ 12.13 hrs, Volume= 50,249 cf, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	4,721	98	Exist pave
*	3,905	98	Exist pave
	11,242	73	Woods, Fair, HSG C
	2,267	96	Gravel surface, HSG C
	127,649	79	50-75% Grass cover, Fair, HSG C
	149,784	80	Weighted Average
	141,158		94.24% Pervious Area
	8,626		5.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	34	0.0085	0.09		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.3	162	0.0167	2.08		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.6	140	0.0080	1.44		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
9.0	336	Total			

Subcatchment E-15b: Pave + Woods + Gravel



Summary for Subcatchment E-15C/I/G: Basin Bypass C, I,G, Roof 7 + Roof 8

C:27134
i: 19,292
g:26,178

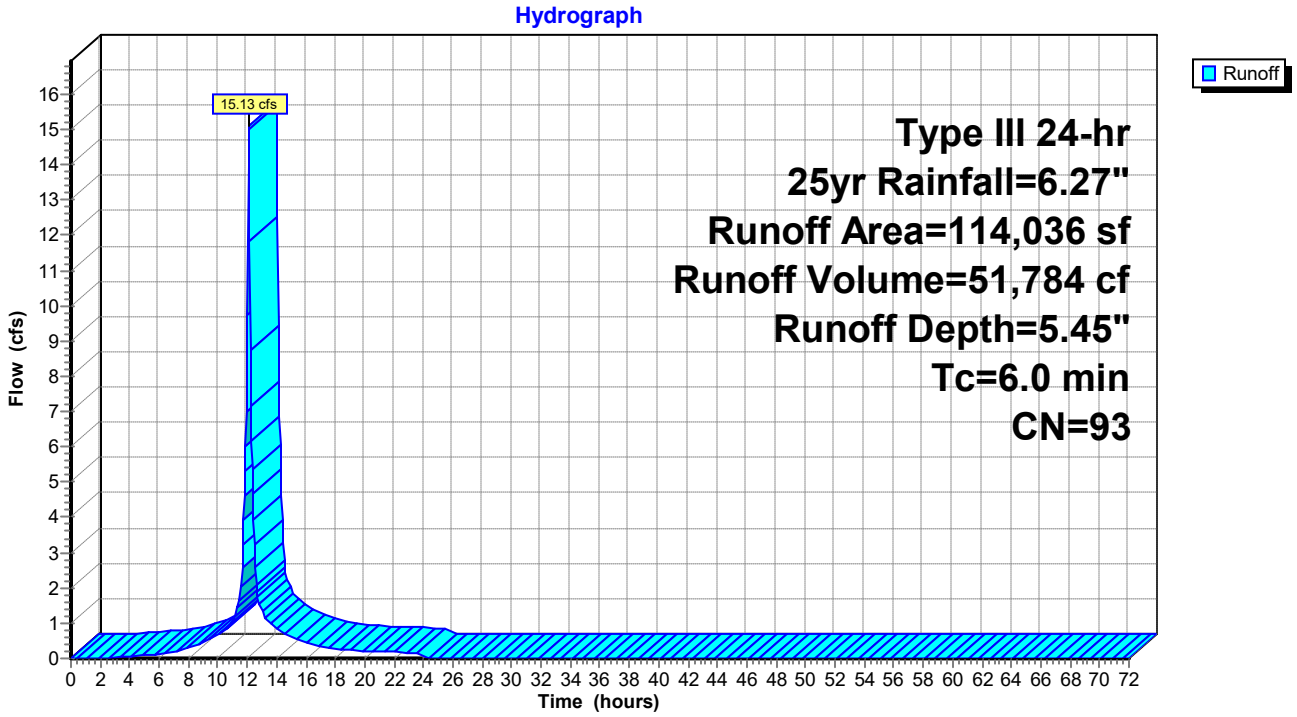
Runoff = 15.13 cfs @ 12.09 hrs, Volume= 51,784 cf, Depth= 5.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	15,125	98	Exist pave 15c
*	12,009	79	Grass 15c
*	14,565	98	Exist pave 15i
*	4,727	79	Grass 15i
*	13,868	98	Exist pave 15g
*	12,310	79	Grass 15g
*	20,592	98	Roof 7
*	20,840	98	Roof 8
	114,036	93	Weighted Average
	29,046		25.47% Pervious Area
	84,990		74.53% Impervious Area

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

Subcatchment E-15C/I/G: Basin Bypass C, I,G, Roof 7 + Roof 8



Summary for Subcatchment E-15D/E/F/H: Basin Bypass D,E,F,H

E-15h:28,726
E-15f: 31,594
15e: 46528
15d: 30,279

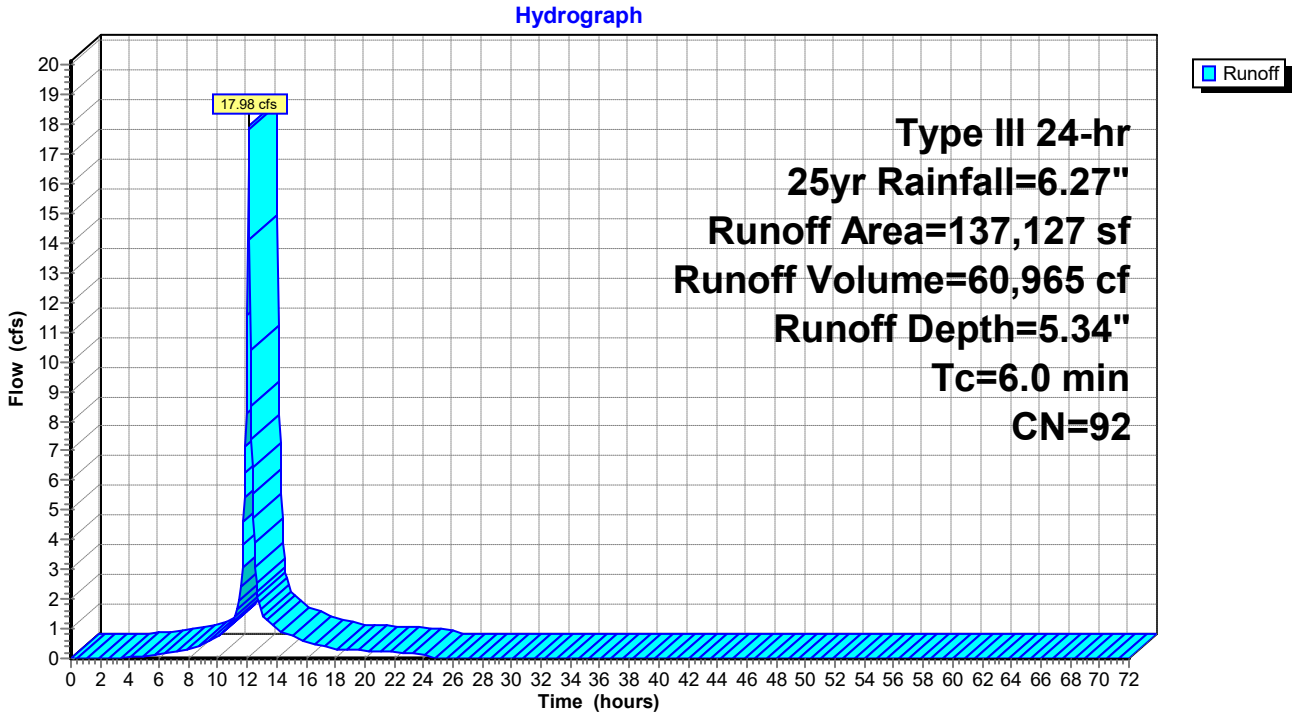
Runoff = 17.98 cfs @ 12.09 hrs, Volume= 60,965 cf, Depth= 5.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	10,864	98	Exist pave, E15h
*	17,862	79	Grass C: E15h
*	12,080	98	Exist Pave:E15f
*	19,514	79	Grass C: E15f
*	44,455	98	Exist Pave:E15e
*	2,073	79	Grass C: E15e
*	25,337	98	Exist Pave:E15d
*	4,942	79	Grass C: E15d
	137,127	92	Weighted Average
	44,391		32.37% Pervious Area
	92,736		67.63% Impervious Area

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

Subcatchment E-15D/E/F/H: Basin Bypass D,E,F,H



Summary for Subcatchment E-16: Flow NW Landry

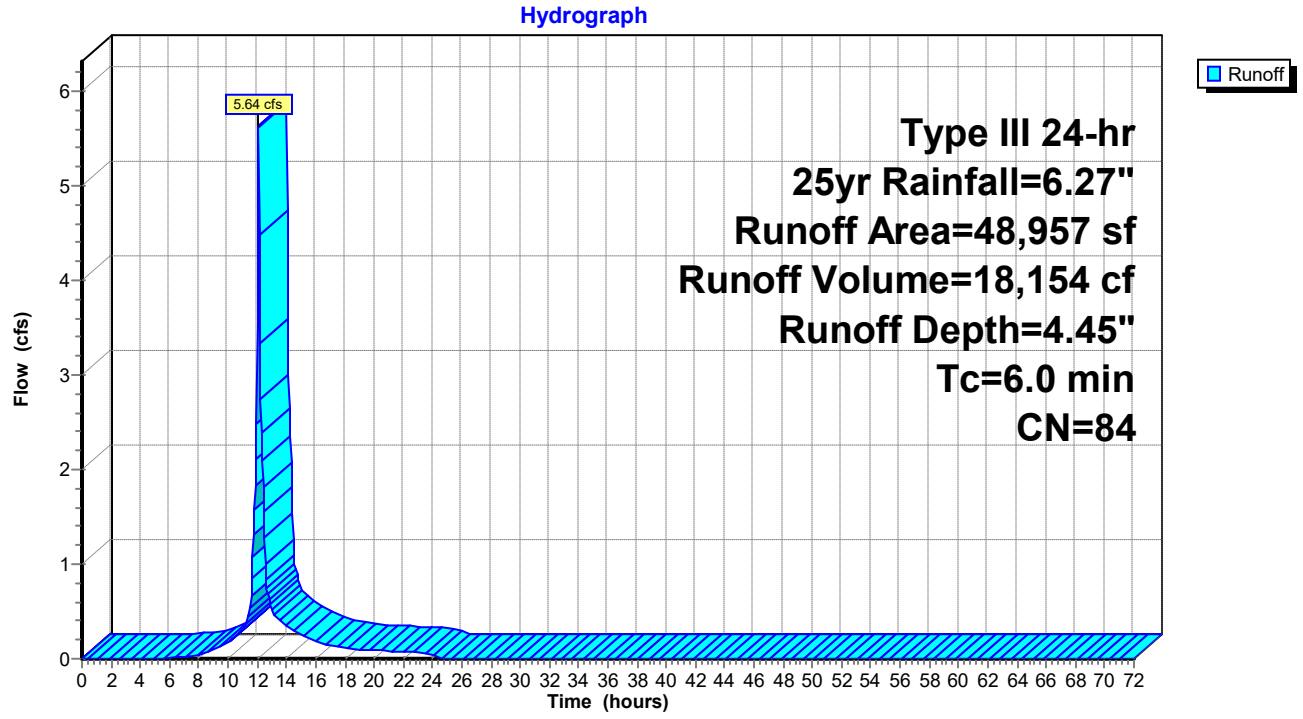
Runoff = 5.64 cfs @ 12.09 hrs, Volume= 18,154 cf, Depth= 4.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	13,512	98	Exist pave
	35,445	79	50-75% Grass cover, Fair, HSG C
	48,957	84	Weighted Average
	35,445		72.40% Pervious Area
	13,512		27.60% Impervious Area

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

Subcatchment E-16: Flow NW Landry



Summary for Subcatchment E-2a: E-2a + Roof1 + Roof2

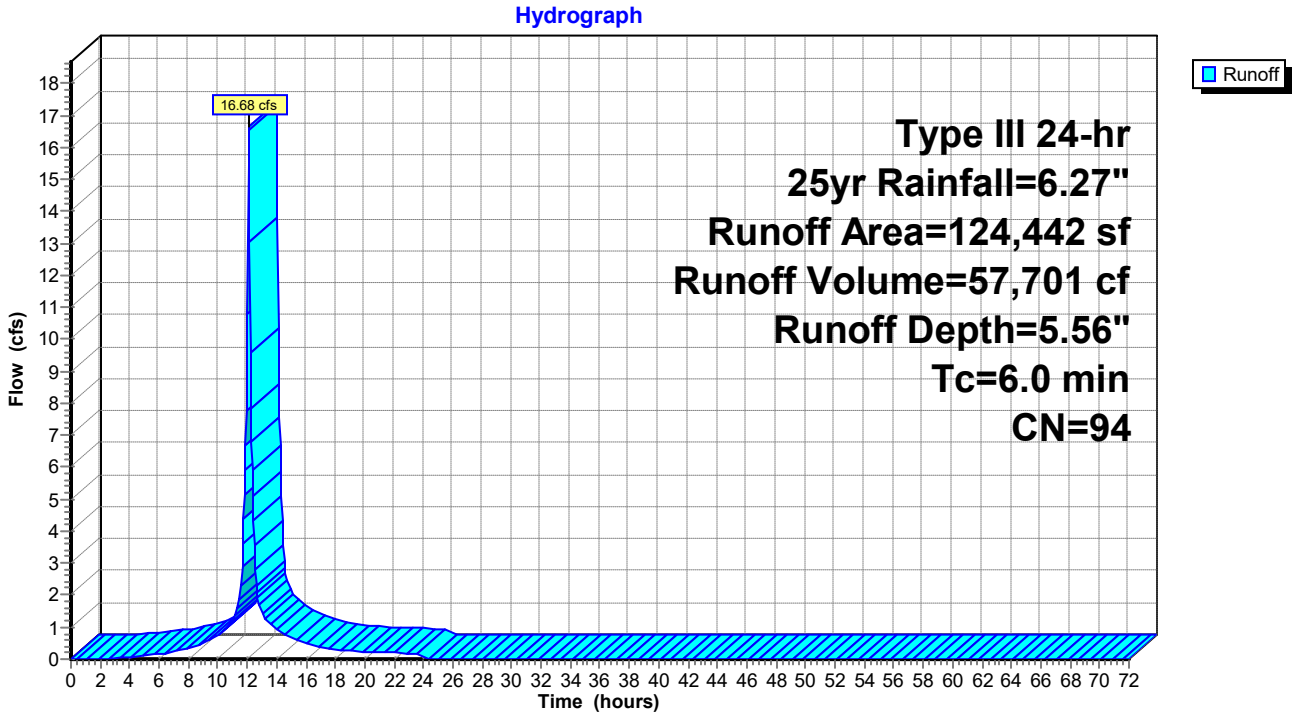
Runoff = 16.68 cfs @ 12.09 hrs, Volume= 57,701 cf, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	22,807	98	Existing Pave
*	8,305	98	Existing Pave
*	17,342	98	Existing Pave
*	9,262	98	Existing Pave
	23,333	79	50-75% Grass cover, Fair, HSG C
*	25,256	98	Roof 1
*	18,137	98	Roof 2
	124,442	94	Weighted Average
	23,333		18.75% Pervious Area
	101,109		81.25% Impervious Area

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

Subcatchment E-2a: E-2a + Roof1 + Roof2



Summary for Subcatchment E-2b: Wooded basin area

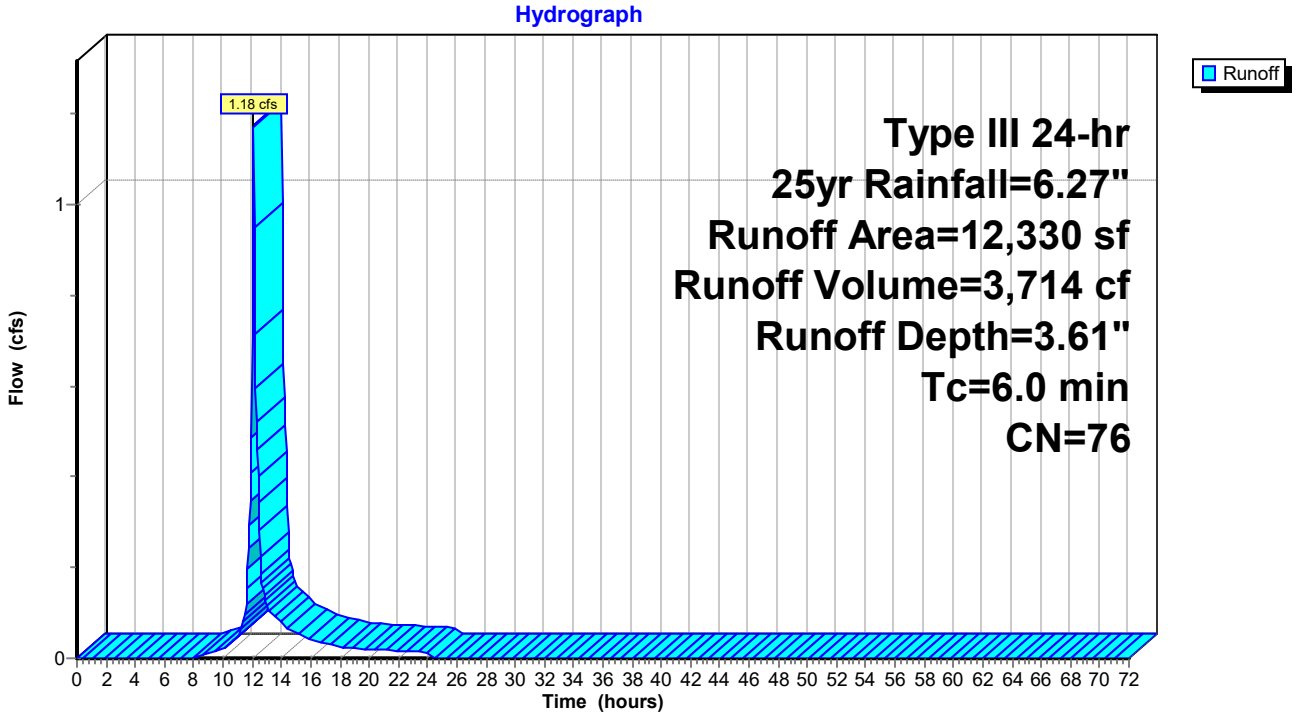
Runoff = 1.18 cfs @ 12.09 hrs, Volume= 3,714 cf, Depth= 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

Area (sf)	CN	Description
4,275	73	Woods, Fair, HSG C
3,270	79	50-75% Grass cover, Fair, HSG C
2,202	73	Woods, Fair, HSG C
2,583	79	50-75% Grass cover, Fair, HSG C
12,330	76	Weighted Average
12,330		100.00% Pervious Area

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

Subcatchment E-2b: Wooded basin area



Summary for Subcatchment E-3: Sheet flow west to RA

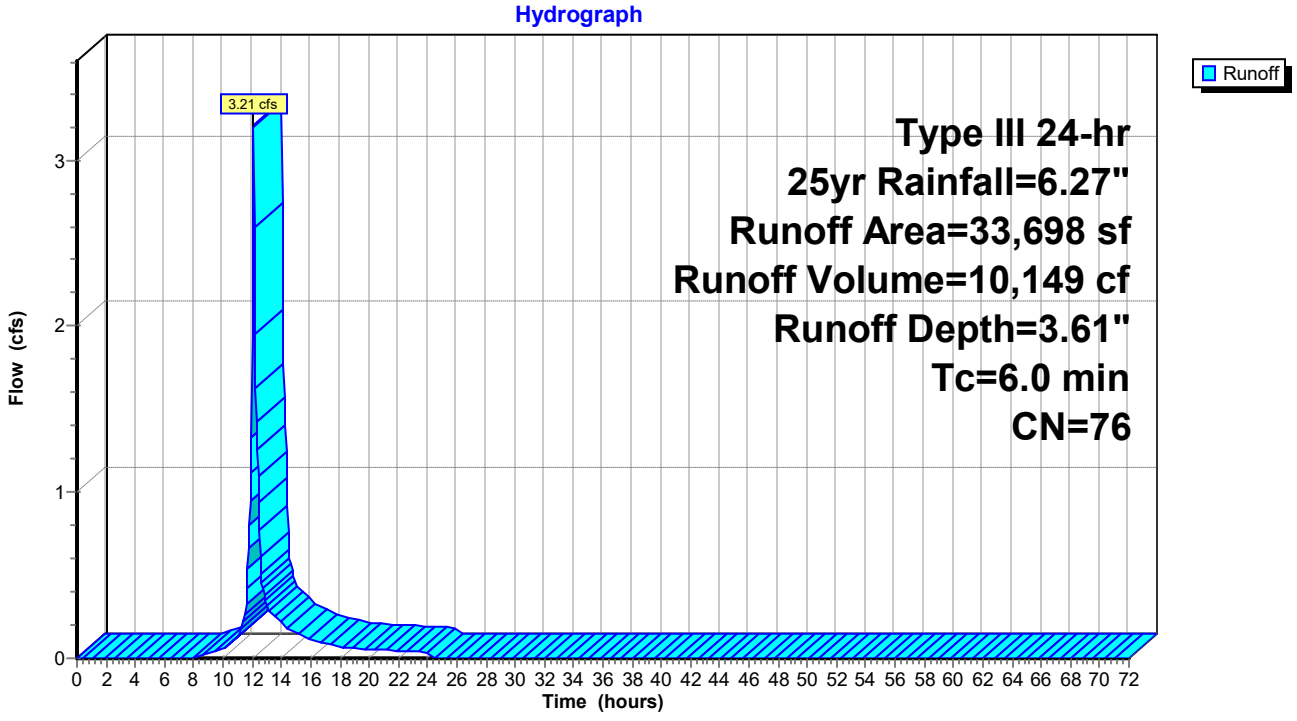
Runoff = 3.21 cfs @ 12.09 hrs, Volume= 10,149 cf, Depth= 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	2,765	98	Exist T.Court
	23,638	73	Woods, Fair, HSG C
	7,295	79	50-75% Grass cover, Fair, HSG C
	33,698	76	Weighted Average
	30,933		91.79% Pervious Area
	2,765		8.21% Impervious Area

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

Subcatchment E-3: Sheet flow west to RA



Summary for Subcatchment E-4: Parking Lot + Roof3 + Roof4

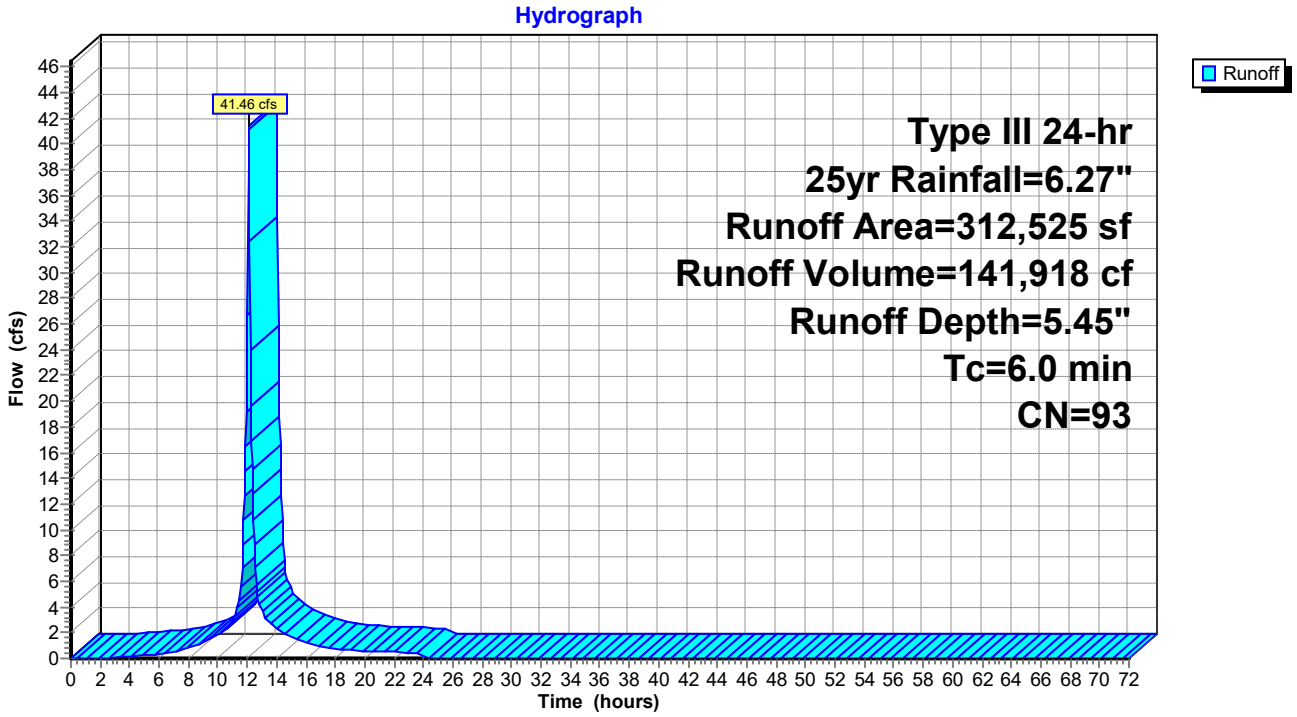
Runoff = 41.46 cfs @ 12.09 hrs, Volume= 141,918 cf, Depth= 5.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	32,012	98	Exist T.Court
*	46,897	98	Exist Pave
*	16,683	98	Exist Pave
*	2,014	98	Exist Pave
*	42,864	98	Exist Pave
*	1,582	98	Maint Shed
	9,663	96	Gravel surface, HSG C
*	174	98	Maint Shed
*	101	98	Maint Shed
*	4,726	98	Entrance Walks
	88,365	79	50-75% Grass cover, Fair, HSG C
*	60,521	98	Roof 3
*	6,923	98	Roof 4
	312,525	93	Weighted Average
	98,028		31.37% Pervious Area
	214,497		68.63% Impervious Area

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

Subcatchment E-4: Parking Lot + Roof3 + Roof4



Summary for Subcatchment E-5: Wooded Basin Area

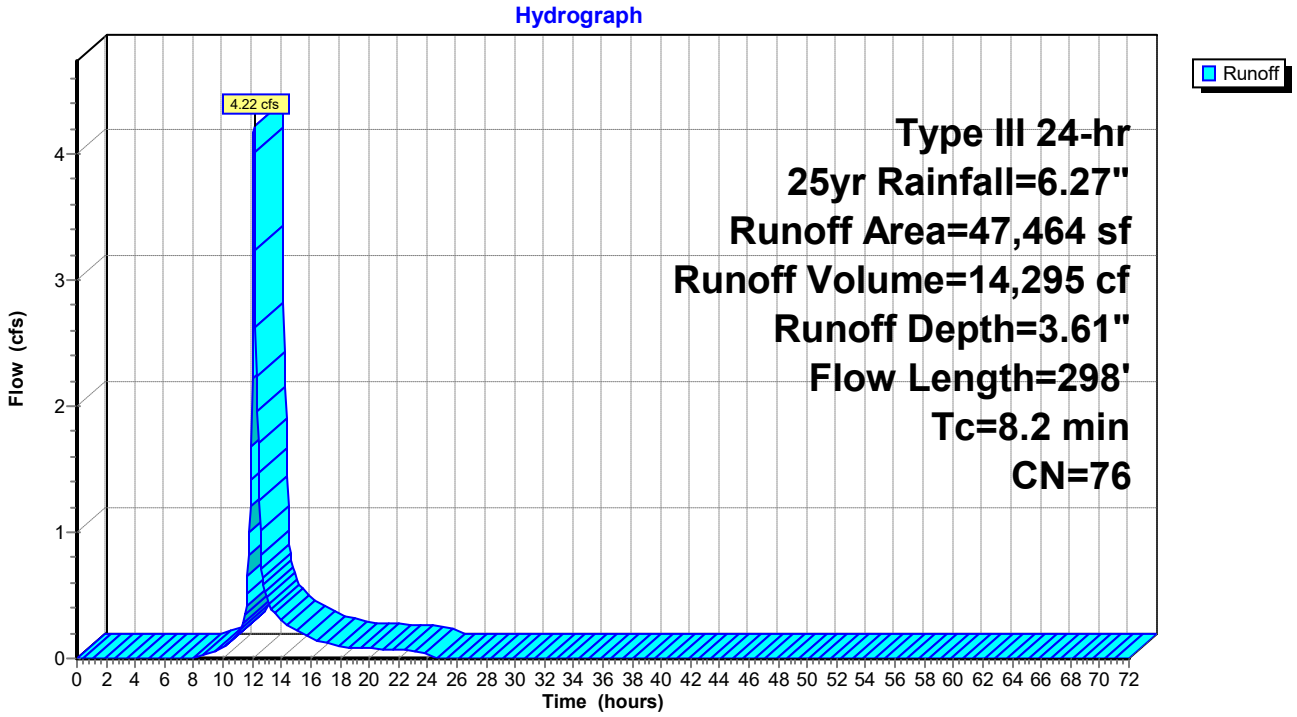
Runoff = 4.22 cfs @ 12.12 hrs, Volume= 14,295 cf, Depth= 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

Area (sf)	CN	Description
21,768	73	Woods, Fair, HSG C
25,696	79	50-75% Grass cover, Fair, HSG C
47,464	76	Weighted Average
47,464		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.0062	0.08		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
0.3	23	0.0062	1.27		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.8	83	0.0120	1.76		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.5	96	0.0417	3.29		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	25	0.1200	5.58		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.2	41	0.0550	3.78		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
8.2	298	Total			

Subcatchment E-5: Wooded Basin Area



Summary for Subcatchment E-6: Wooded Basin Area

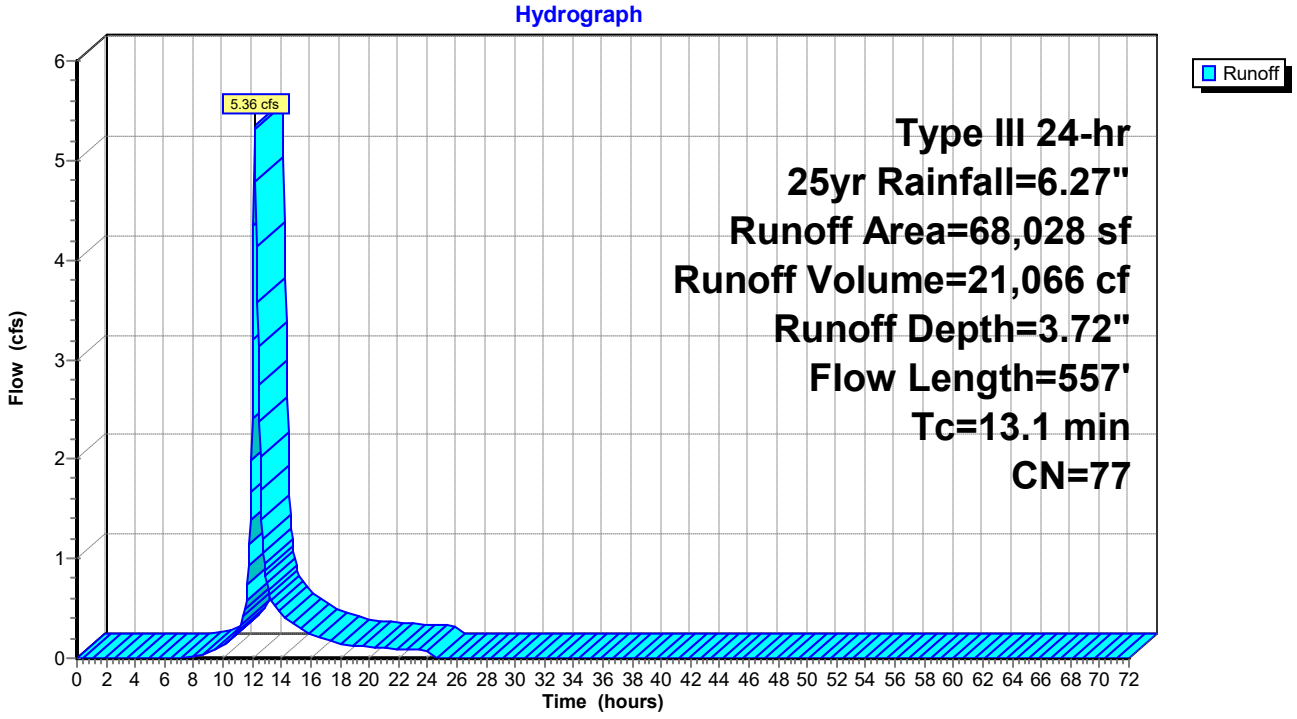
Runoff = 5.36 cfs @ 12.18 hrs, Volume= 21,066 cf, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

Area (sf)	CN	Description
22,756	73	Woods, Fair, HSG C
45,272	79	50-75% Grass cover, Fair, HSG C
68,028	77	Weighted Average
68,028		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	55	0.0074	0.10		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
2.1	200	0.0097	1.59		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.3	45	0.0230	2.44		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.2	257	0.0470	3.49		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
13.1	557	Total			

Subcatchment E-6: Wooded Basin Area



Summary for Subcatchment E-7: Wooded Basin Area

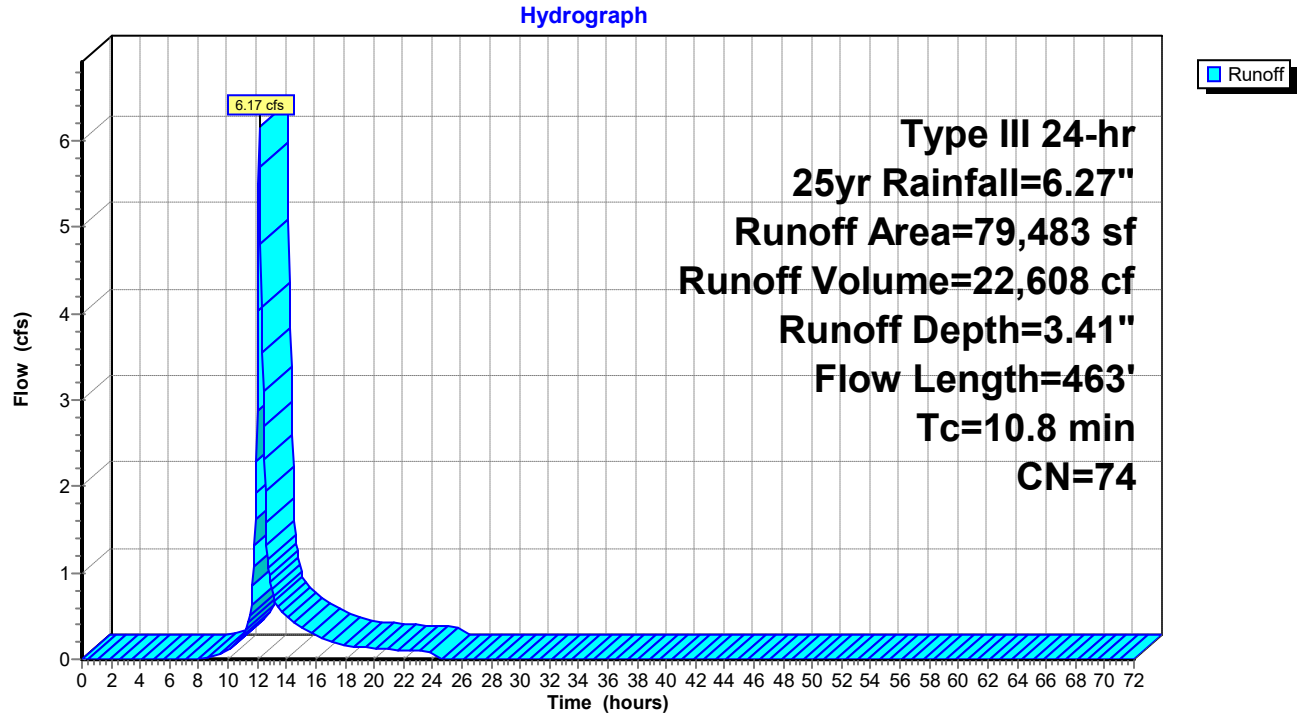
Runoff = 6.17 cfs @ 12.15 hrs, Volume= 22,608 cf, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

Area (sf)	CN	Description
68,664	73	Woods, Fair, HSG C
10,819	79	50-75% Grass cover, Fair, HSG C
79,483	74	Weighted Average
79,483		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	46	0.0080	0.10		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
0.3	45	0.0220	2.39		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	24	0.1670	6.58		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.5	109	0.0460	3.45		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.9	239	0.0170	2.10		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
10.8	463	Total			

Subcatchment E-7: Wooded Basin Area



Summary for Subcatchment E-8: Wooded Basin Area + Pave

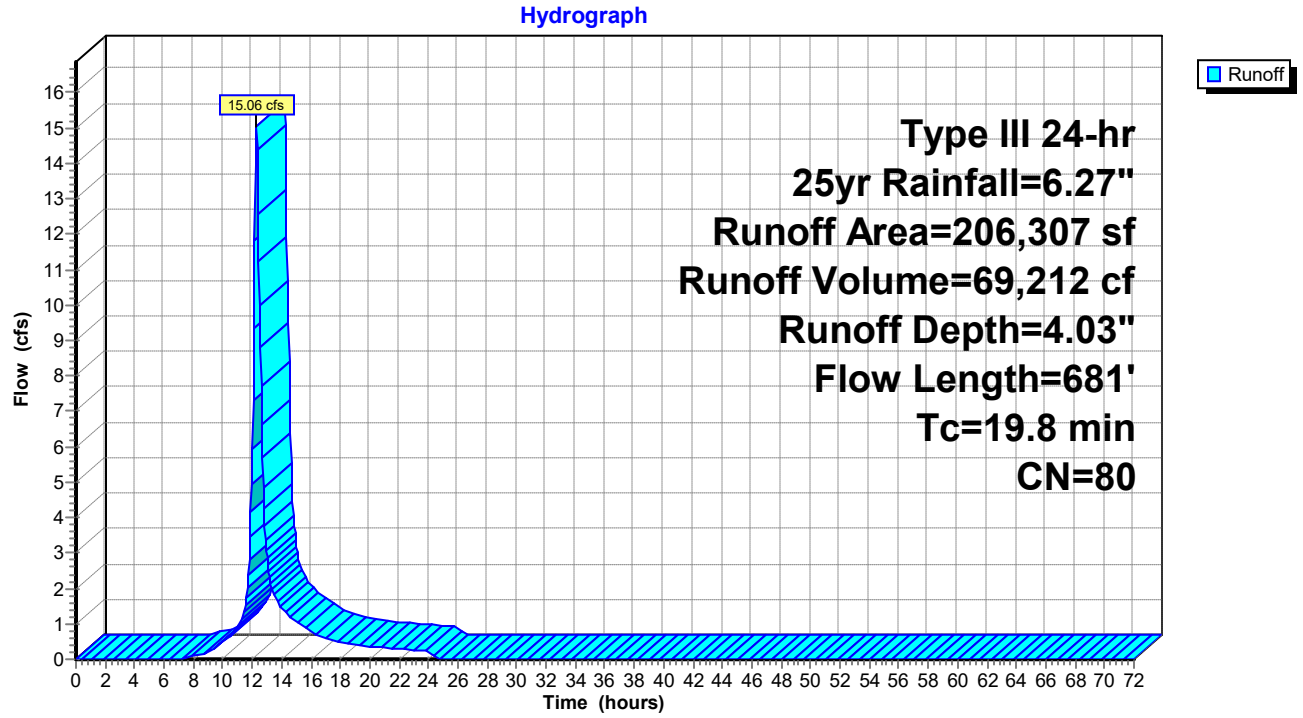
Runoff = 15.06 cfs @ 12.27 hrs, Volume= 69,212 cf, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

	Area (sf)	CN	Description
*	13,668	98	Exist Pave
	4,626	76	Woods/grass comb., Fair, HSG C
	188,013	79	50-75% Grass cover, Fair, HSG C
	206,307	80	Weighted Average
	192,639		93.37% Pervious Area
	13,668		6.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	68	0.0040	0.08		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
2.2	170	0.0064	1.29		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
2.1	242	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.1	201	0.0220	3.01		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
19.8	681	Total			

Subcatchment E-8: Wooded Basin Area + Pave



Summary for Subcatchment E-9: Wooded Basin Area

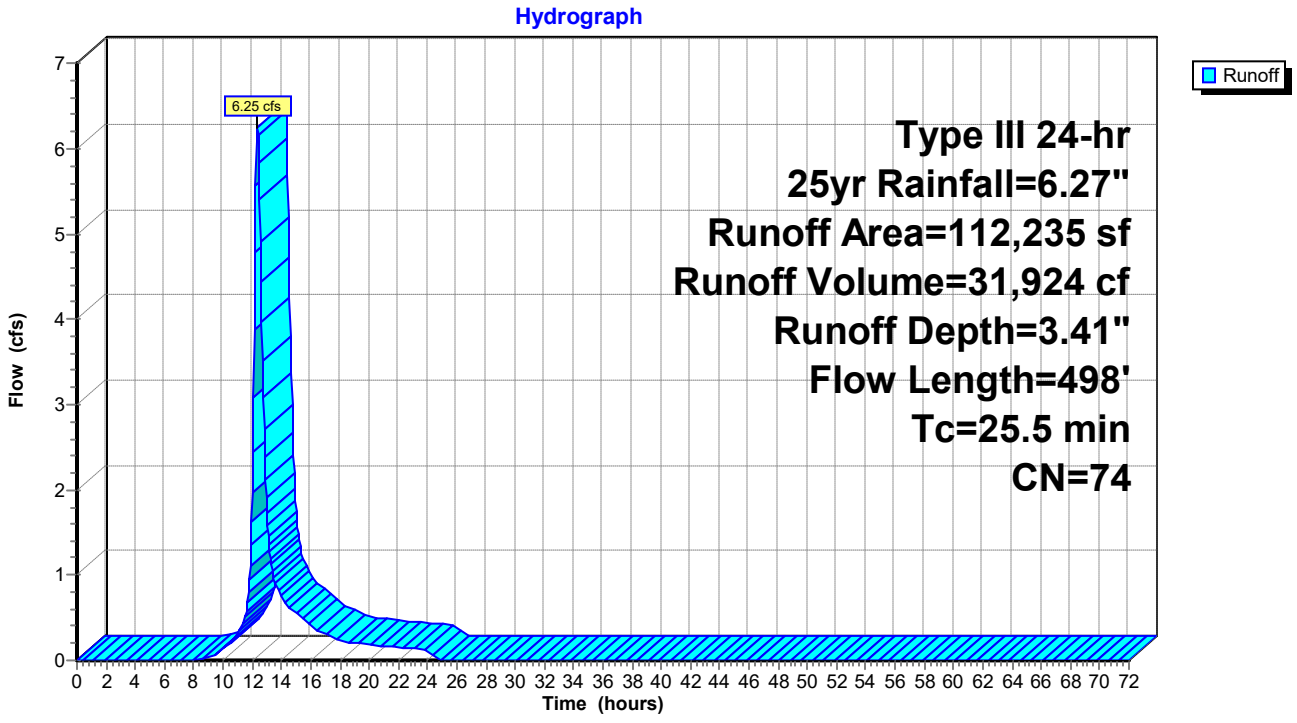
Runoff = 6.25 cfs @ 12.36 hrs, Volume= 31,924 cf, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.27"

Area (sf)	CN	Description
87,537	73	Woods, Fair, HSG C
24,698	79	50-75% Grass cover, Fair, HSG C
112,235	74	Weighted Average
112,235		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	50	0.0270	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.9	132	0.0250	2.55		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.6	316	0.0050	1.14		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
25.5	498	Total			

Subcatchment E-9: Wooded Basin Area

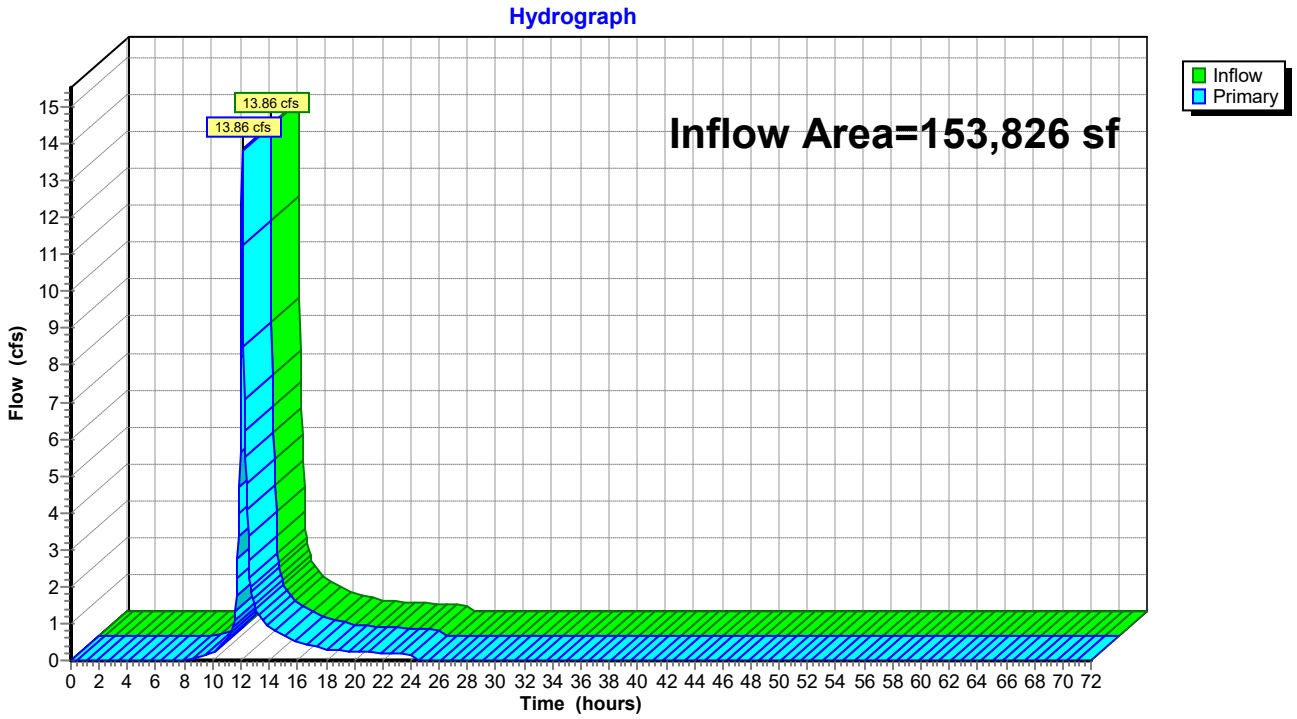


Summary for Pond 1P: stone

Inflow Area = 153,826 sf, 0.00% Impervious, Inflow Depth = 3.41" for 25yr event
Inflow = 13.86 cfs @ 12.09 hrs, Volume= 43,753 cf
Primary = 13.86 cfs @ 12.09 hrs, Volume= 43,753 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 1P: stone

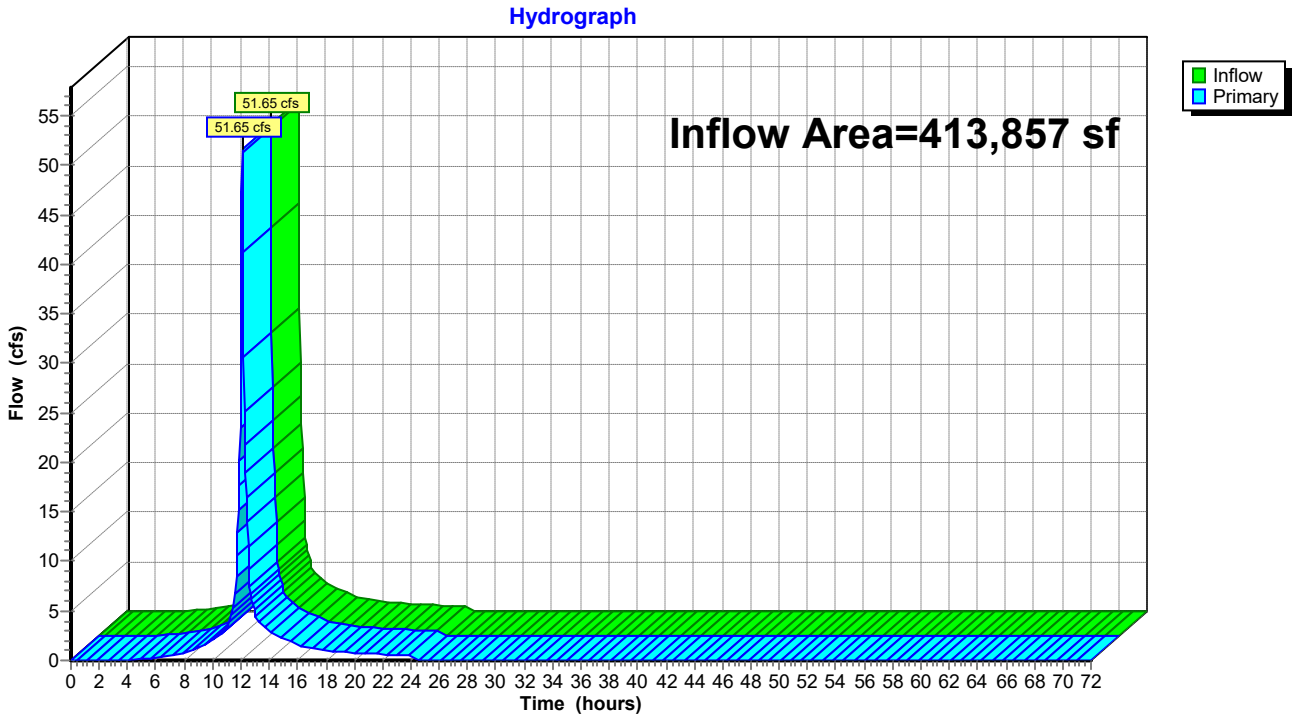


Summary for Pond DP-10e: Exist Basin #3

Inflow Area = 413,857 sf, 48.99% Impervious, Inflow Depth = 5.02" for 25yr event
Inflow = 51.65 cfs @ 12.09 hrs, Volume= 172,998 cf
Primary = 51.65 cfs @ 12.09 hrs, Volume= 172,998 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-10e: Exist Basin #3

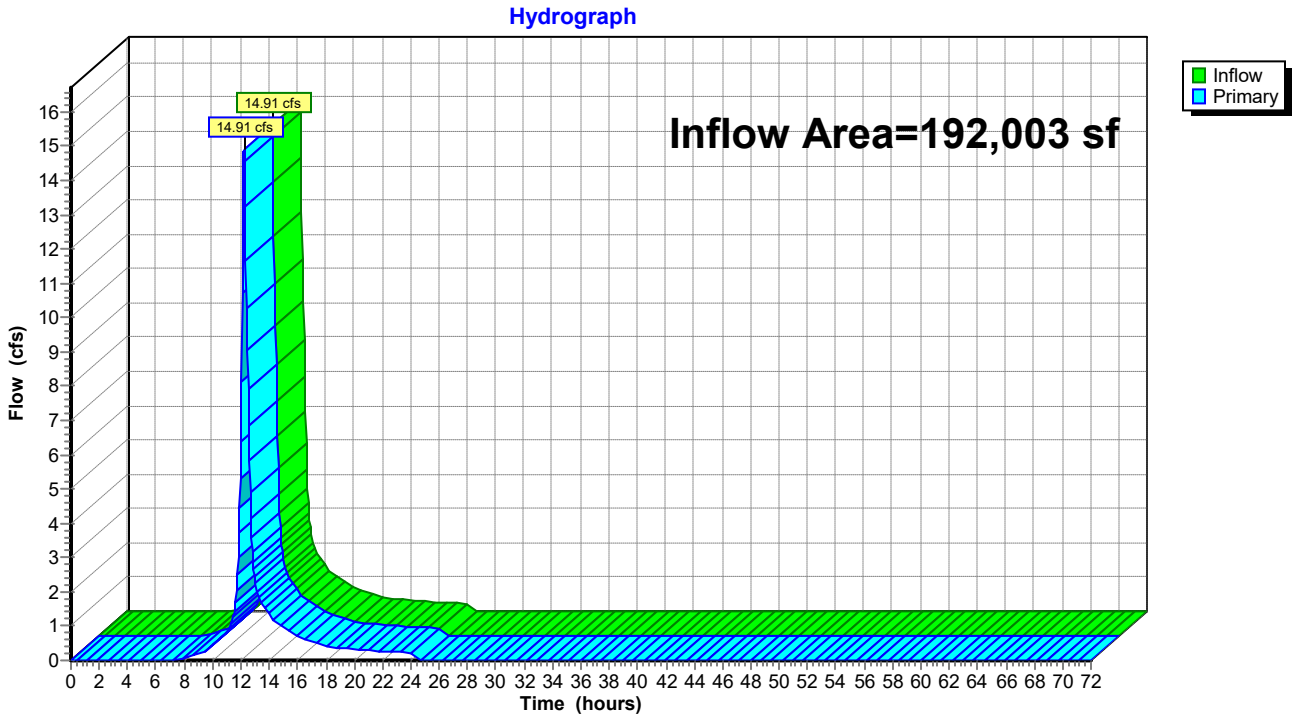


Summary for Pond DP-11e: Woods Southwest

Inflow Area = 192,003 sf, 6.81% Impervious, Inflow Depth = 3.92" for 25yr event
Inflow = 14.91 cfs @ 12.22 hrs, Volume= 62,748 cf
Primary = 14.91 cfs @ 12.22 hrs, Volume= 62,748 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-11e: Woods Southwest

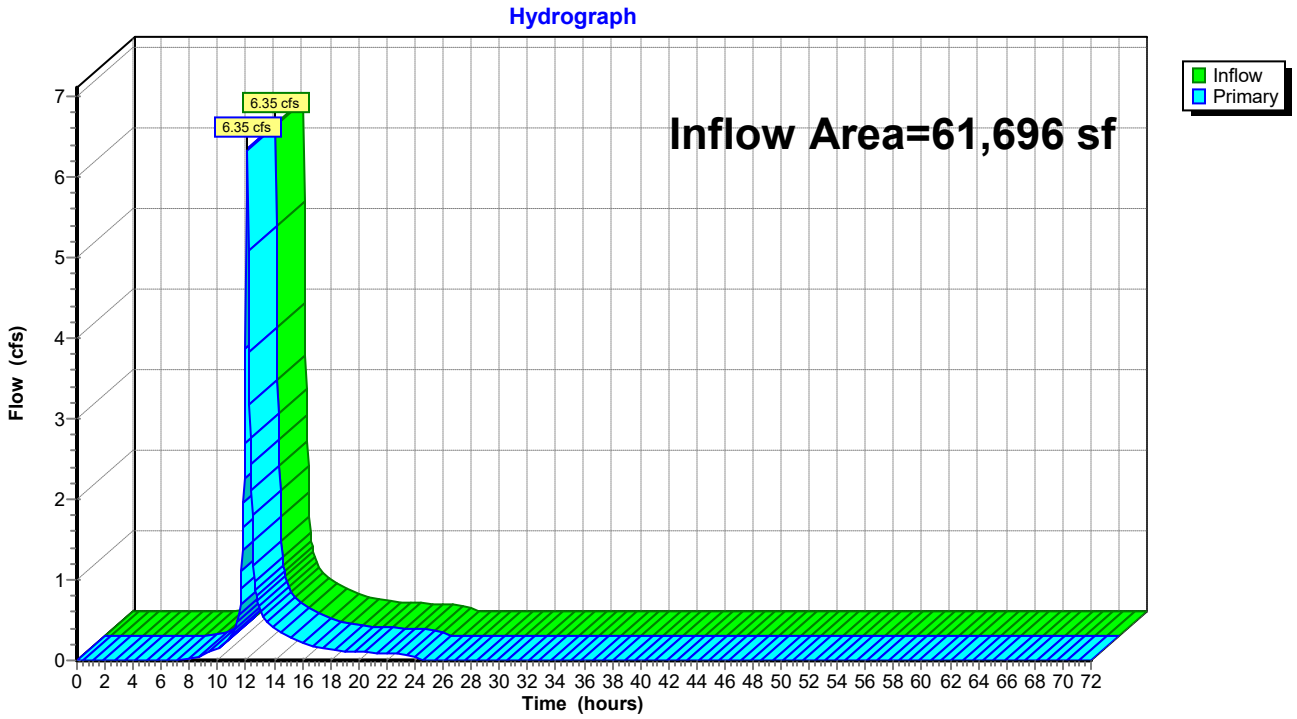


Summary for Pond DP-12e: Residential West#1

Inflow Area = 61,696 sf, 4.78% Impervious, Inflow Depth = 3.92" for 25yr event
Inflow = 6.35 cfs @ 12.09 hrs, Volume= 20,163 cf
Primary = 6.35 cfs @ 12.09 hrs, Volume= 20,163 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-12e: Residential West#1

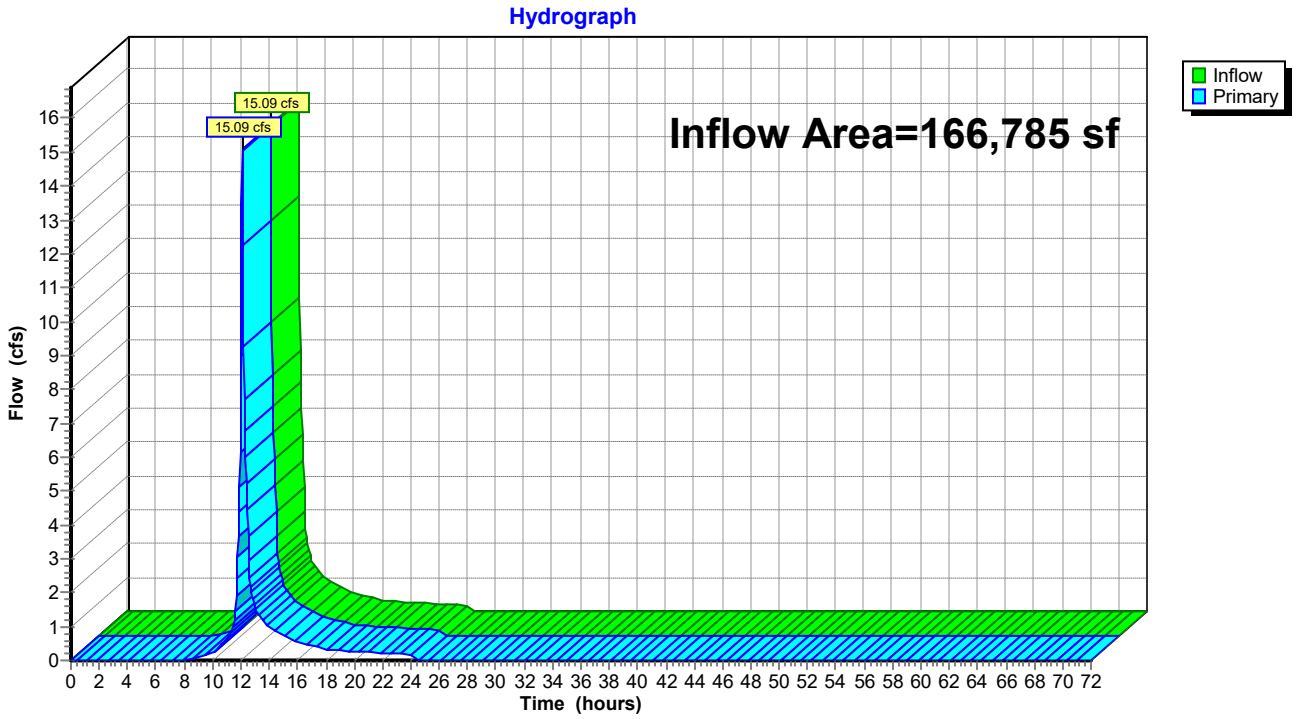


Summary for Pond DP-13e: Residential West#2

Inflow Area = 166,785 sf, 0.00% Impervious, Inflow Depth = 3.43" for 25yr event
Inflow = 15.09 cfs @ 12.09 hrs, Volume= 47,657 cf
Primary = 15.09 cfs @ 12.09 hrs, Volume= 47,657 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-13e: Residential West#2

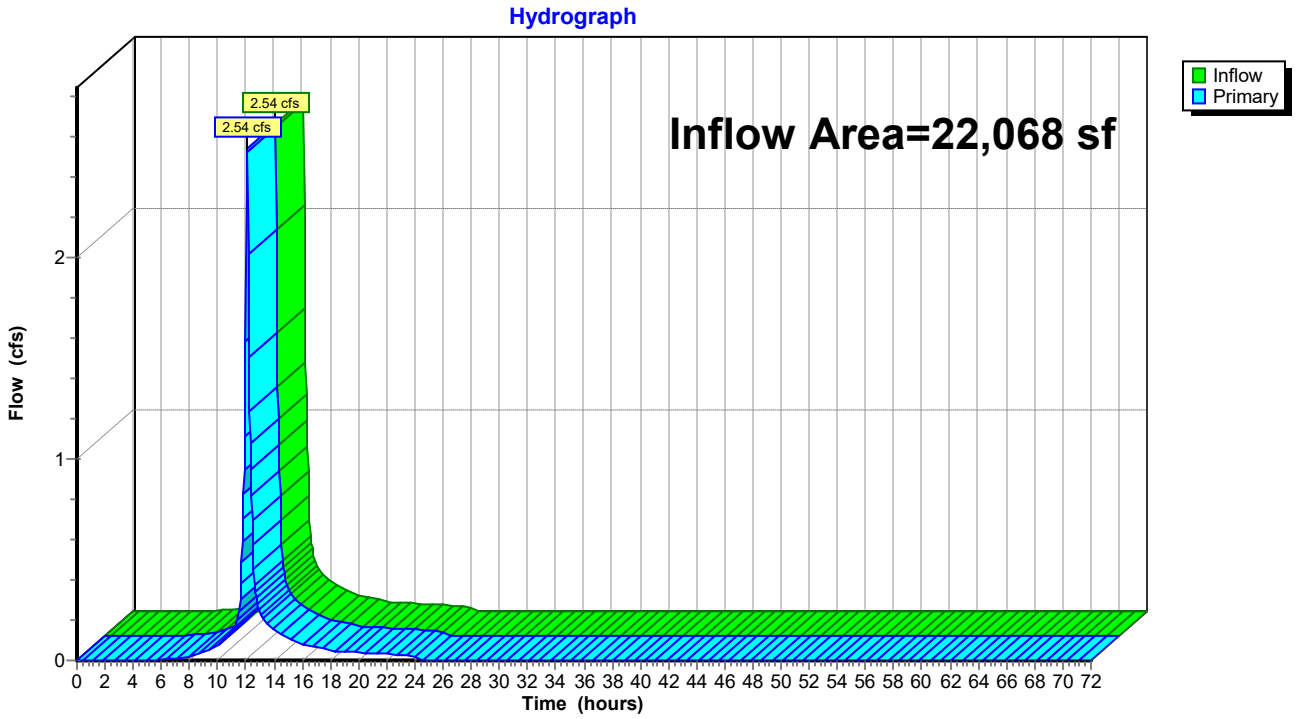


Summary for Pond DP-14e: Residential West#3

Inflow Area = 22,068 sf, 29.78% Impervious, Inflow Depth = 4.45" for 25yr event
Inflow = 2.54 cfs @ 12.09 hrs, Volume= 8,183 cf
Primary = 2.54 cfs @ 12.09 hrs, Volume= 8,183 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-14e: Residential West#3

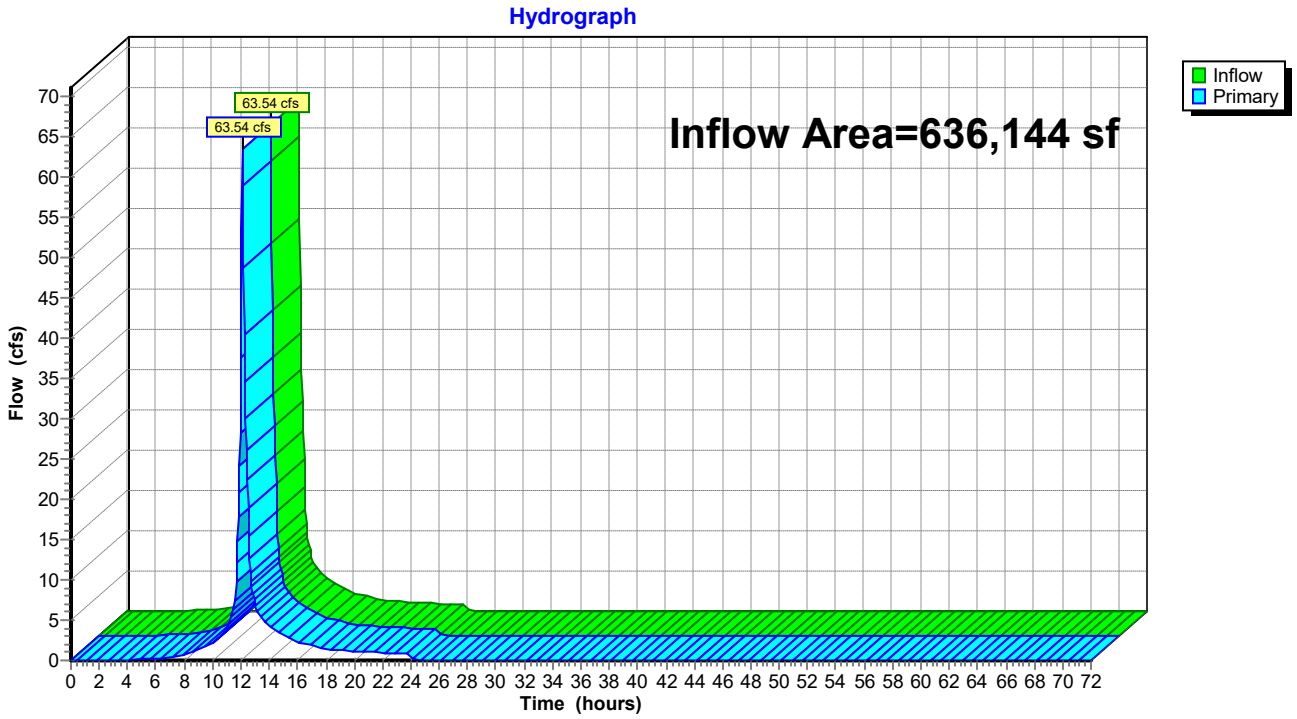


Summary for Pond DP-15e: Wetlands

Inflow Area = 636,144 sf, 29.68% Impervious, Inflow Depth = 4.41" for 25yr event
Inflow = 63.54 cfs @ 12.11 hrs, Volume= 233,836 cf
Primary = 63.54 cfs @ 12.11 hrs, Volume= 233,836 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-15e: Wetlands

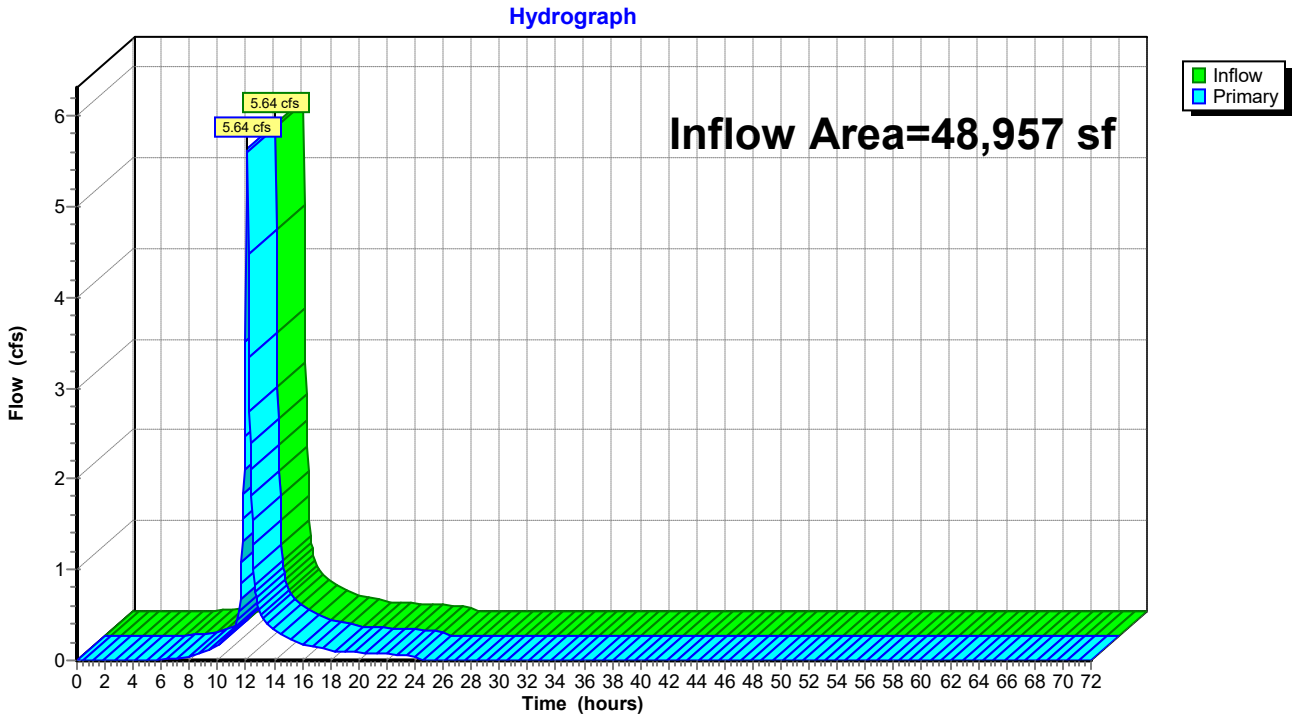


Summary for Pond Dp-16e: Landry Avenue

Inflow Area = 48,957 sf, 27.60% Impervious, Inflow Depth = 4.45" for 25yr event
Inflow = 5.64 cfs @ 12.09 hrs, Volume= 18,154 cf
Primary = 5.64 cfs @ 12.09 hrs, Volume= 18,154 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond Dp-16e: Landry Avenue



Summary for Pond DP-1e: Flow to Exist Basin #1

Inflow Area = 103,683 sf, 38.10% Impervious, Inflow Depth = 4.45" for 25yr event
Inflow = 11.94 cfs @ 12.09 hrs, Volume= 38,447 cf
Outflow = 11.21 cfs @ 12.12 hrs, Volume= 38,447 cf, Atten= 6%, Lag= 1.8 min
Discarded = 0.03 cfs @ 12.12 hrs, Volume= 668 cf
Primary = 11.19 cfs @ 12.12 hrs, Volume= 37,779 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 236.80' @ 12.12 hrs Surf.Area= 6,376 sf Storage= 1,749 cf

Plug-Flow detention time= 4.5 min calculated for 38,421 cf (100% of inflow)
Center-of-Mass det. time= 4.5 min (806.4 - 801.8)

Volume	Invert	Avail.Storage	Storage Description
#1	236.50'	78,288 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

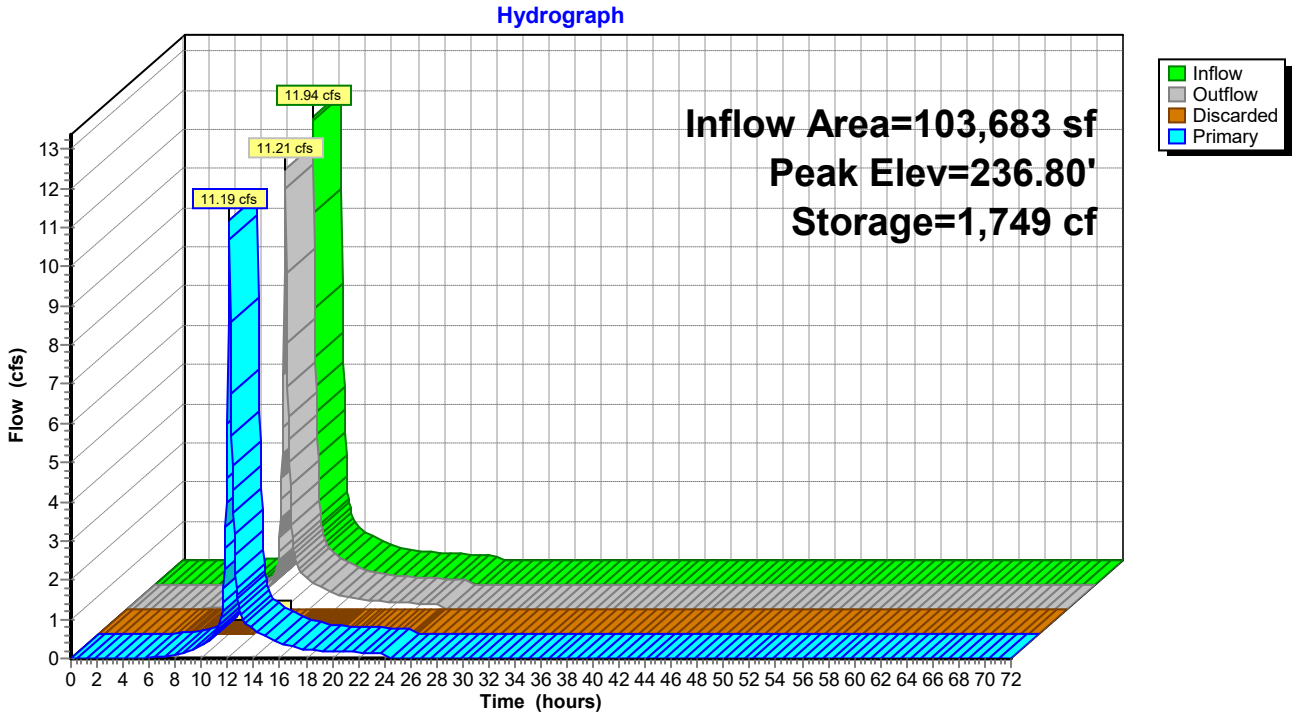
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.50	5,215	304.0	0	0	5,215
237.00	7,198	352.0	3,090	3,090	7,726
238.00	11,943	443.0	9,471	12,561	13,497
239.00	19,611	649.0	15,619	28,180	31,406
240.00	26,065	843.0	22,762	50,942	54,452
241.00	28,648	878.0	27,346	78,288	59,322

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**25.0' long x 45.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.03 cfs @ 12.12 hrs HW=236.80' (Free Discharge)
↑**2=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=10.85 cfs @ 12.12 hrs HW=236.80' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 10.85 cfs @ 1.46 fps)

Pond DP-1e: Flow to Exist Basin #1

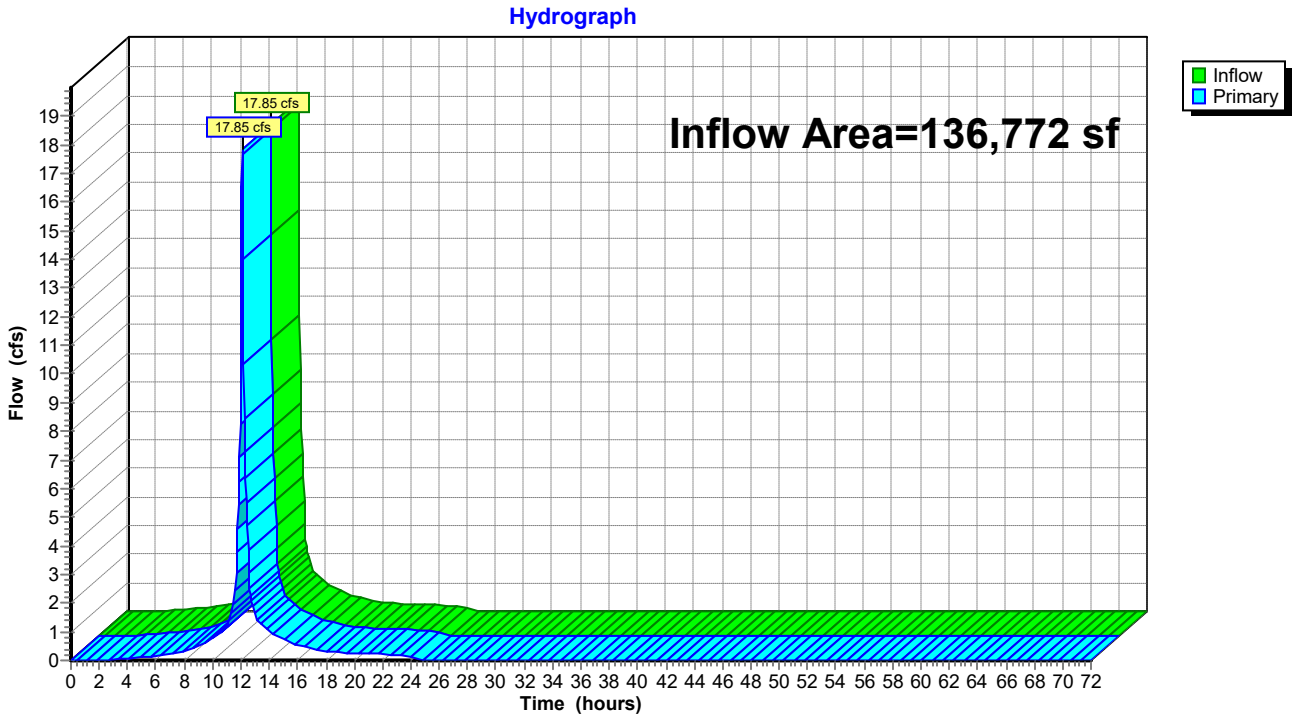


Summary for Pond DP-2e: Flow to Exist Basin#2

Inflow Area = 136,772 sf, 73.93% Impervious, Inflow Depth = 5.39" for 25yr event
Inflow = 17.85 cfs @ 12.09 hrs, Volume= 61,415 cf
Primary = 17.85 cfs @ 12.09 hrs, Volume= 61,415 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-2e: Flow to Exist Basin#2

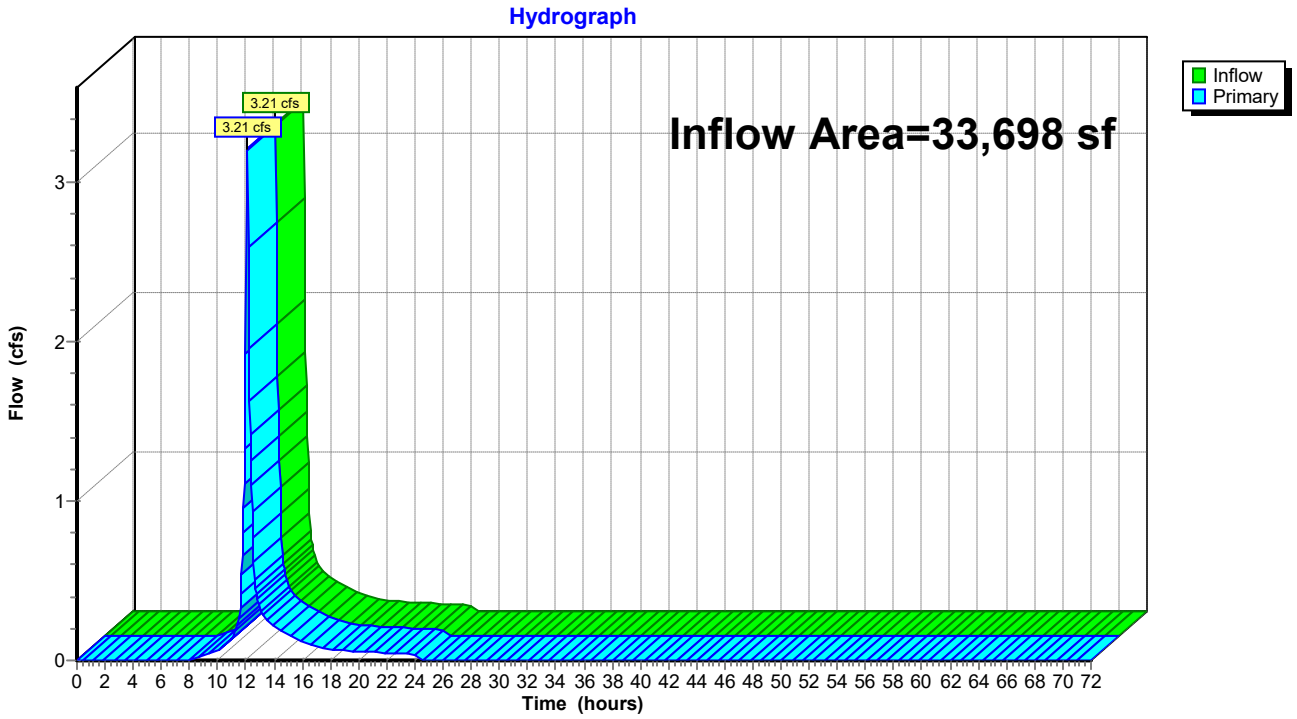


Summary for Pond DP-3e: Residential East#1

Inflow Area = 33,698 sf, 8.21% Impervious, Inflow Depth = 3.61" for 25yr event
Inflow = 3.21 cfs @ 12.09 hrs, Volume= 10,149 cf
Primary = 3.21 cfs @ 12.09 hrs, Volume= 10,149 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-3e: Residential East#1

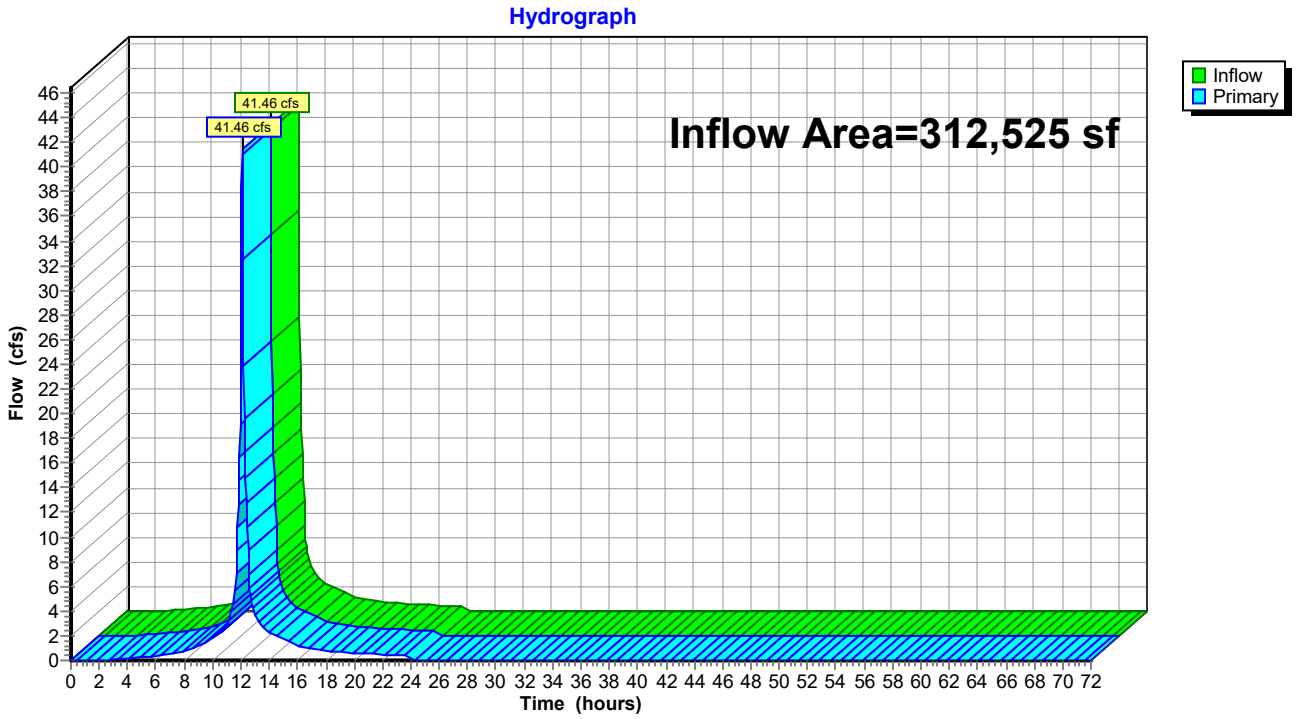


Summary for Pond DP-4e: Exist Swale #1 East

Inflow Area = 312,525 sf, 68.63% Impervious, Inflow Depth = 5.45" for 25yr event
Inflow = 41.46 cfs @ 12.09 hrs, Volume= 141,918 cf
Primary = 41.46 cfs @ 12.09 hrs, Volume= 141,918 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-4e: Exist Swale #1 East

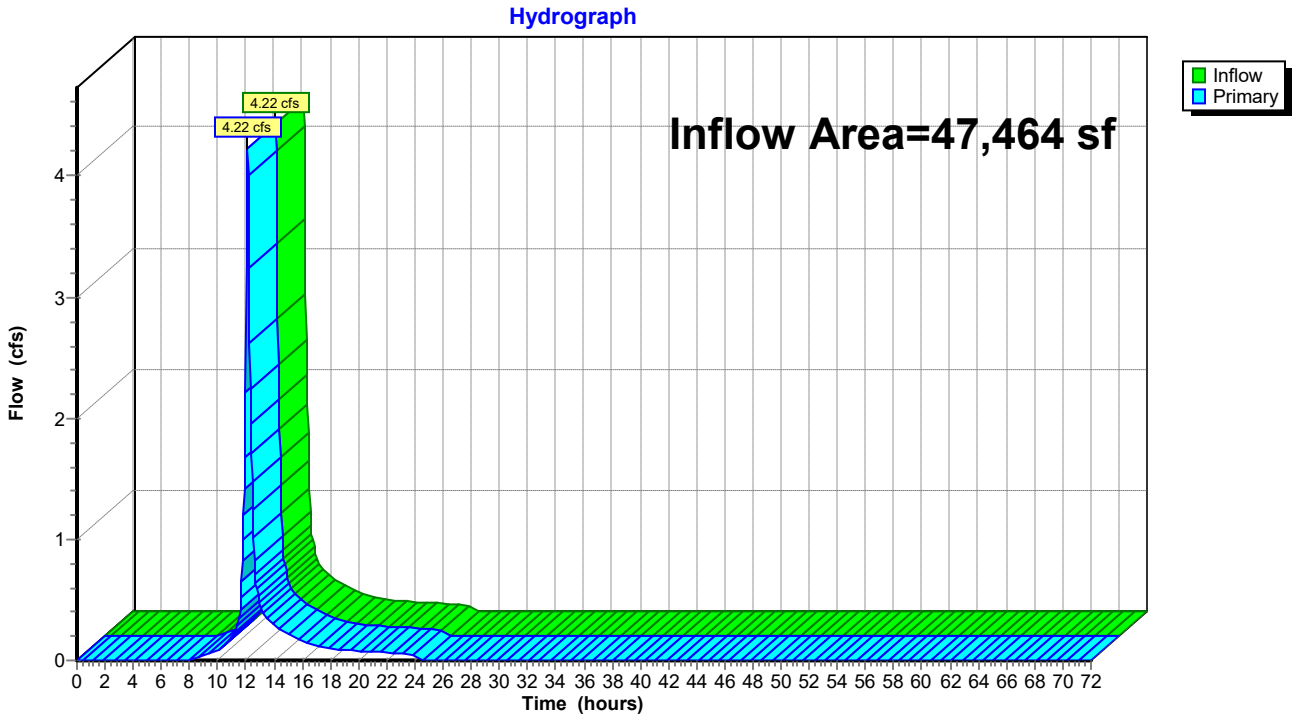


Summary for Pond DP-5e: Residential East#2

Inflow Area = 47,464 sf, 0.00% Impervious, Inflow Depth = 3.61" for 25yr event
Inflow = 4.22 cfs @ 12.12 hrs, Volume= 14,295 cf
Primary = 4.22 cfs @ 12.12 hrs, Volume= 14,295 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-5e: Residential East#2

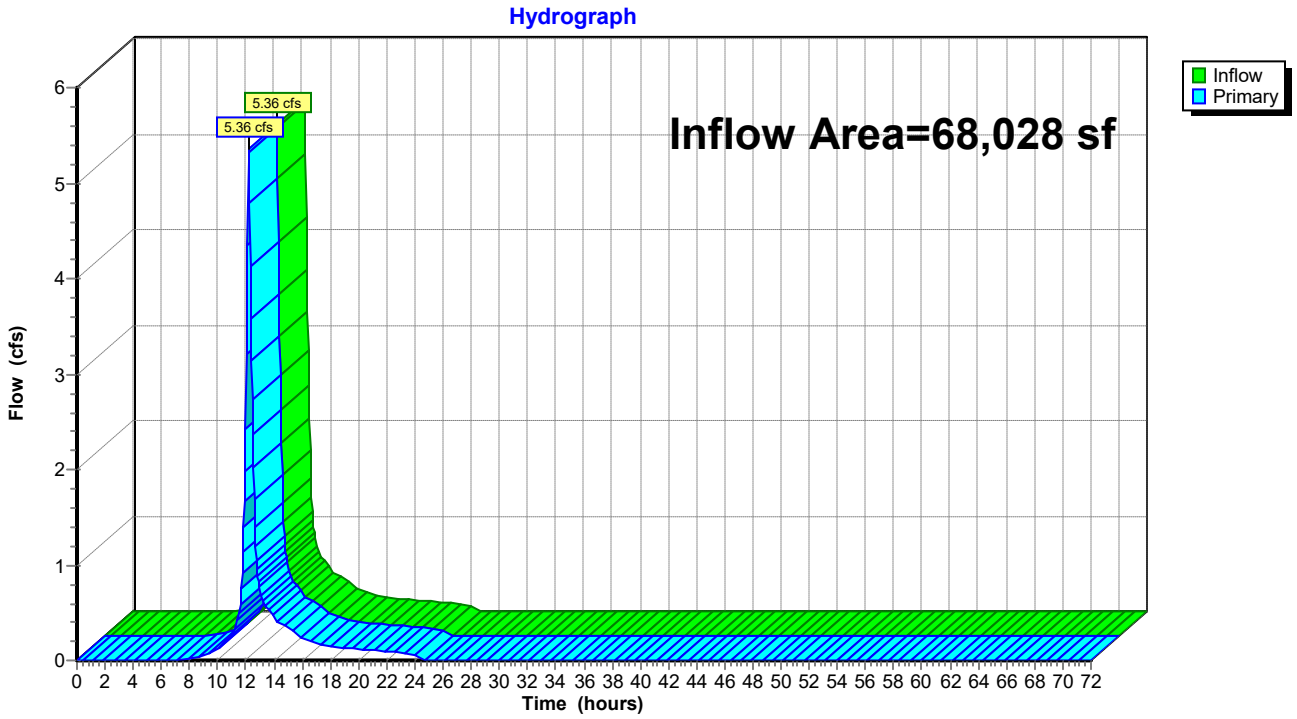


Summary for Pond DP-6e: Residential East#3

Inflow Area = 68,028 sf, 0.00% Impervious, Inflow Depth = 3.72" for 25yr event
Inflow = 5.36 cfs @ 12.18 hrs, Volume= 21,066 cf
Primary = 5.36 cfs @ 12.18 hrs, Volume= 21,066 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-6e: Residential East#3

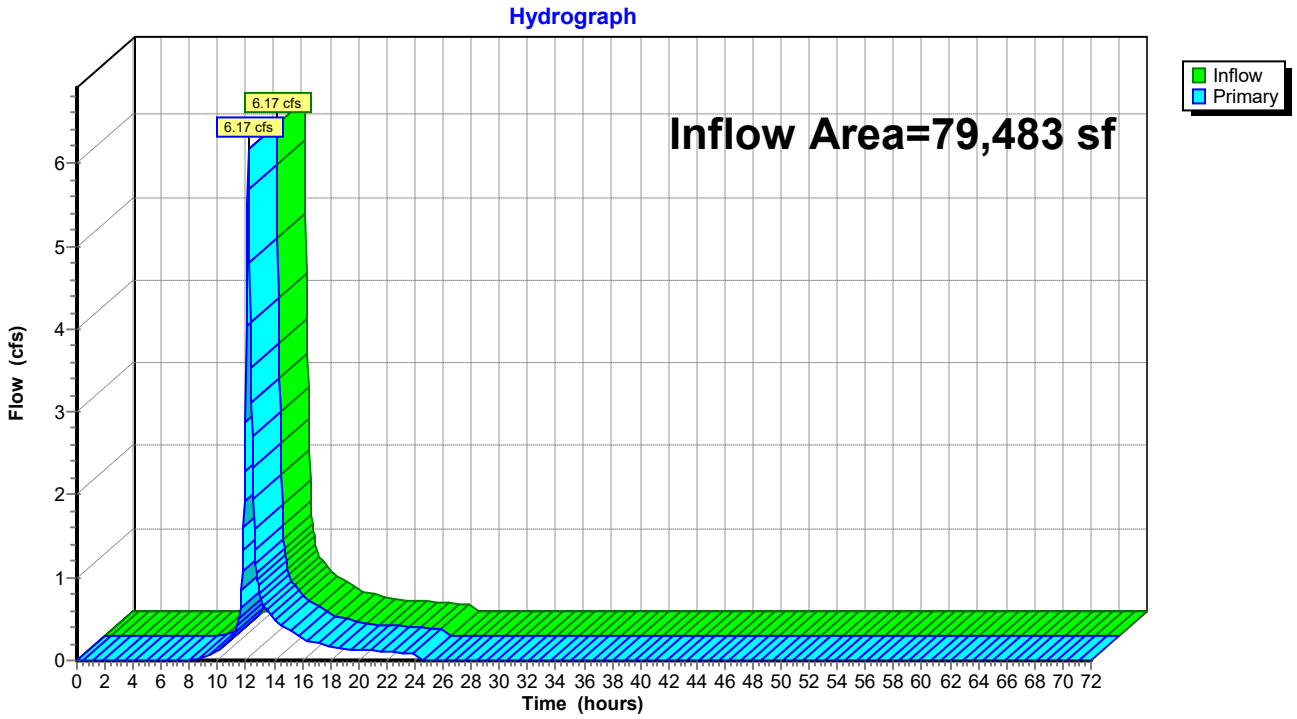


Summary for Pond DP-7e: Residential East#4

Inflow Area = 79,483 sf, 0.00% Impervious, Inflow Depth = 3.41" for 25yr event
Inflow = 6.17 cfs @ 12.15 hrs, Volume= 22,608 cf
Primary = 6.17 cfs @ 12.15 hrs, Volume= 22,608 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-7e: Residential East#4

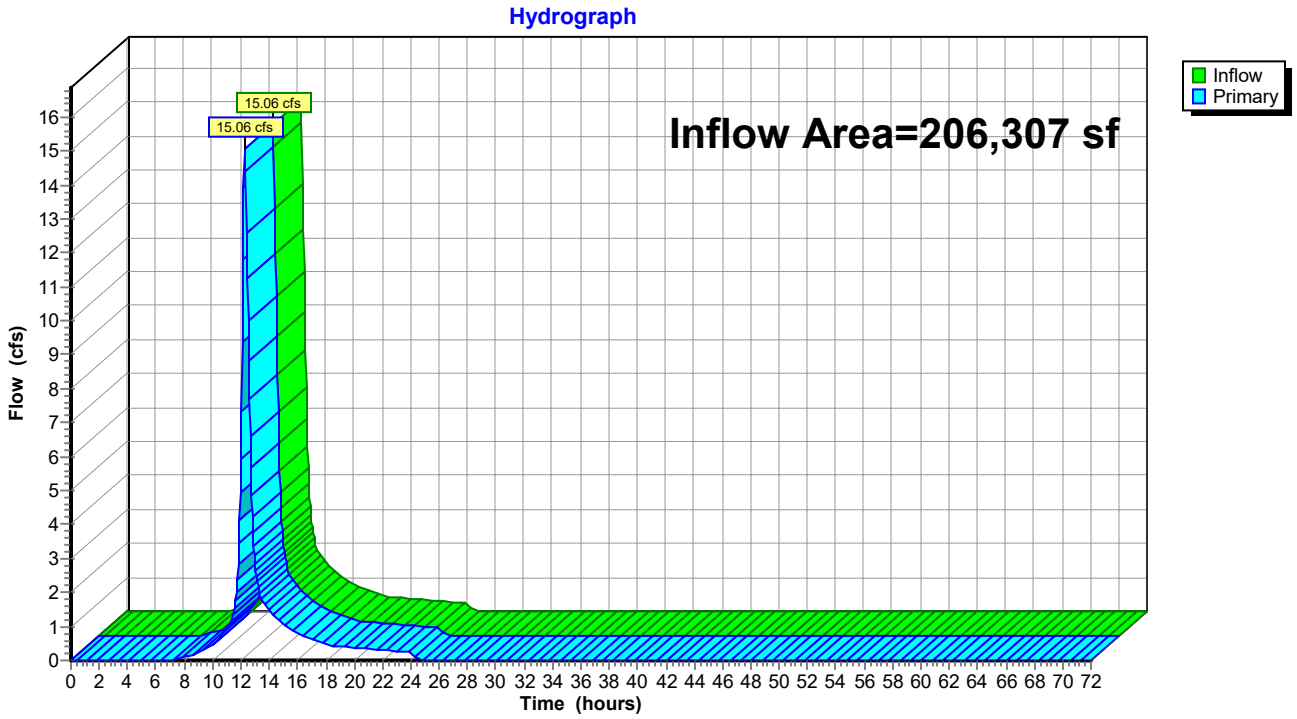


Summary for Pond DP-8e: Stoddard Drive

Inflow Area = 206,307 sf, 6.63% Impervious, Inflow Depth = 4.03" for 25yr event
Inflow = 15.06 cfs @ 12.27 hrs, Volume= 69,212 cf
Primary = 15.06 cfs @ 12.27 hrs, Volume= 69,212 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-8e: Stoddard Drive

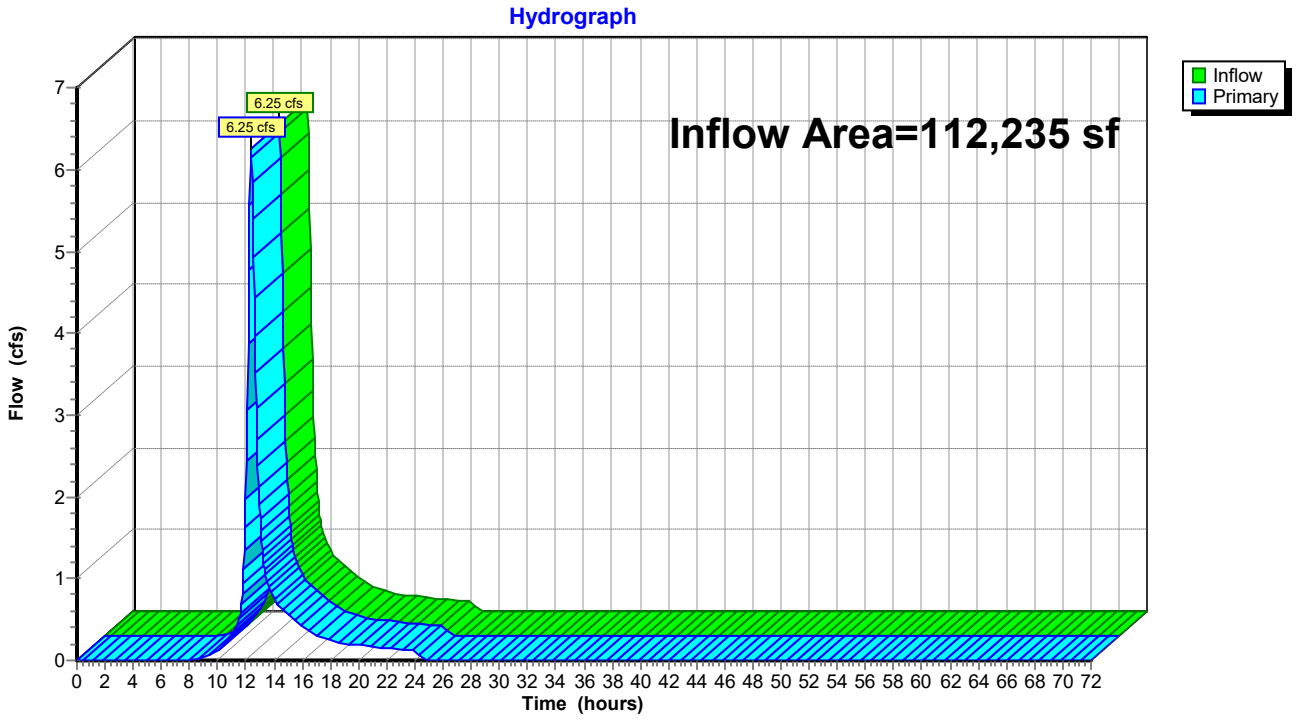


Summary for Pond DP-9e: Woods South

Inflow Area = 112,235 sf, 0.00% Impervious, Inflow Depth = 3.41" for 25yr event
Inflow = 6.25 cfs @ 12.36 hrs, Volume= 31,924 cf
Primary = 6.25 cfs @ 12.36 hrs, Volume= 31,924 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-9e: Woods South

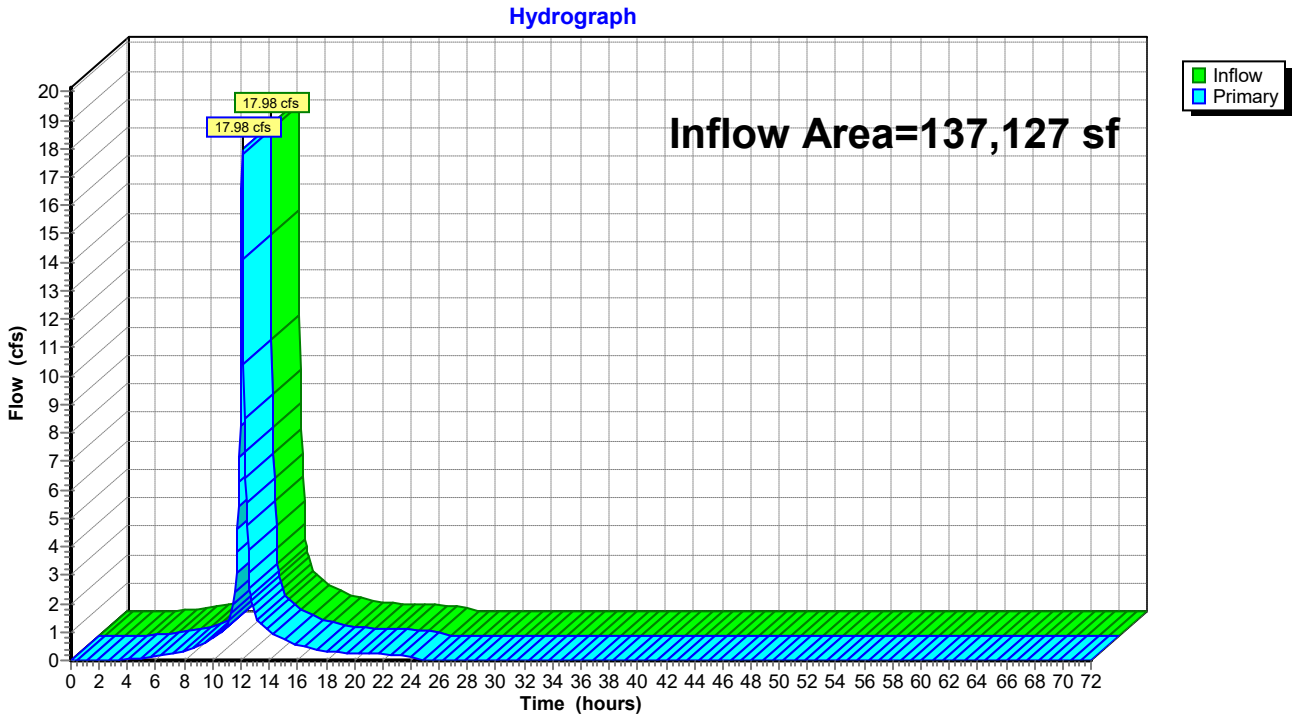


Summary for Pond EC: Existing Underground Chambers

Inflow Area = 137,127 sf, 67.63% Impervious, Inflow Depth = 5.34" for 25yr event
Inflow = 17.98 cfs @ 12.09 hrs, Volume= 60,965 cf
Primary = 17.98 cfs @ 12.09 hrs, Volume= 60,965 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond EC: Existing Underground Chambers



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1: Flow to NE Landry Runoff Area=103,683 sf 38.10% Impervious Runoff Depth=6.07"
Tc=6.0 min CN=84 Runoff=16.04 cfs 52,416 cf

Subcatchment E-10a: Grass + Pave + Runoff Area=386,242 sf 52.49% Impervious Runoff Depth=6.78"
Tc=6.0 min CN=90 Runoff=64.35 cfs 218,099 cf

Subcatchment E-10b: Wood + Grass + Pave Runoff Area=27,615 sf 0.00% Impervious Runoff Depth=5.25"
Flow Length=305' Tc=8.8 min CN=77 Runoff=3.47 cfs 12,074 cf

Subcatchment E-11: Woods + Pave Runoff Area=192,003 sf 6.81% Impervious Runoff Depth=5.48"
Flow Length=638' Tc=15.9 min CN=79 Runoff=20.68 cfs 87,681 cf

Subcatchment E-12: Woods + Pave Runoff Area=61,696 sf 4.78% Impervious Runoff Depth=5.48"
Flow Length=260' Tc=6.0 min CN=79 Runoff=8.79 cfs 28,174 cf

Subcatchment E-13a: EXIST STADIUM Runoff Area=153,826 sf 0.00% Impervious Runoff Depth=4.90"
Tc=6.0 min CN=74 Runoff=19.81 cfs 62,798 cf

Subcatchment E-13b: EXIST STADIUM Runoff Area=12,959 sf 0.00% Impervious Runoff Depth=5.13"
Tc=6.0 min CN=76 Runoff=1.74 cfs 5,541 cf

Subcatchment E-14: Gravel + Woods + Runoff Area=22,068 sf 29.78% Impervious Runoff Depth=6.07"
Tc=6.0 min CN=84 Runoff=3.41 cfs 11,156 cf

Subcatchment E-15a: Woods + Gravel + Runoff Area=235,197 sf 1.04% Impervious Runoff Depth=5.13"
Flow Length=441' Tc=11.4 min CN=76 Runoff=26.87 cfs 100,559 cf

Subcatchment E-15b: Pave + Woods + Runoff Area=149,784 sf 5.76% Impervious Runoff Depth=5.60"
Flow Length=336' Tc=9.0 min CN=80 Runoff=19.66 cfs 69,860 cf

Subcatchment E-15C/I/G: Basin Bypass Runoff Area=114,036 sf 74.53% Impervious Runoff Depth=7.13"
Tc=6.0 min CN=93 Runoff=19.51 cfs 67,784 cf

Subcatchment E-15D/E/F/H: Basin Runoff Area=137,127 sf 67.63% Impervious Runoff Depth=7.01"
Tc=6.0 min CN=92 Runoff=23.27 cfs 80,148 cf

Subcatchment E-16: Flow NW Landry Runoff Area=48,957 sf 27.60% Impervious Runoff Depth=6.07"
Tc=6.0 min CN=84 Runoff=7.57 cfs 24,750 cf

Subcatchment E-2a: E-2a + Roof1 + Roof2 Runoff Area=124,442 sf 81.25% Impervious Runoff Depth=7.25"
Tc=6.0 min CN=94 Runoff=21.43 cfs 75,205 cf

Subcatchment E-2b: Wooded basin area Runoff Area=12,330 sf 0.00% Impervious Runoff Depth=5.13"
Tc=6.0 min CN=76 Runoff=1.66 cfs 5,272 cf

Subcatchment E-3: Sheet flow west to RA Runoff Area=33,698 sf 8.21% Impervious Runoff Depth=5.13"
Tc=6.0 min CN=76 Runoff=4.53 cfs 14,408 cf

Subcatchment E-4: Parking Lot + Roof3 + Runoff Area=312,525 sf 68.63% Impervious Runoff Depth=7.13"
Tc=6.0 min CN=93 Runoff=53.46 cfs 185,767 cf

Subcatchment E-5: Wooded Basin Area Runoff Area=47,464 sf 0.00% Impervious Runoff Depth=5.13"
Flow Length=298' Tc=8.2 min CN=76 Runoff=5.97 cfs 20,293 cf

Subcatchment E-6: Wooded Basin Area Runoff Area=68,028 sf 0.00% Impervious Runoff Depth=5.25"
Flow Length=557' Tc=13.1 min CN=77 Runoff=7.53 cfs 29,744 cf

Subcatchment E-7: Wooded Basin Area Runoff Area=79,483 sf 0.00% Impervious Runoff Depth=4.90"
Flow Length=463' Tc=10.8 min CN=74 Runoff=8.84 cfs 32,448 cf

Subcatchment E-8: Wooded Basin Area + Runoff Area=206,307 sf 6.63% Impervious Runoff Depth=5.60"
Flow Length=681' Tc=19.8 min CN=80 Runoff=20.76 cfs 96,223 cf

Subcatchment E-9: Wooded Basin Area Runoff Area=112,235 sf 0.00% Impervious Runoff Depth=4.90"
Flow Length=498' Tc=25.5 min CN=74 Runoff=8.97 cfs 45,819 cf

Pond 1P: stone Inflow=19.81 cfs 62,798 cf
Primary=19.81 cfs 62,798 cf

Pond DP-10e: Exist Basin #3 Inflow=67.63 cfs 230,173 cf
Primary=67.63 cfs 230,173 cf

Pond DP-11e: Woods Southwest Inflow=20.68 cfs 87,681 cf
Primary=20.68 cfs 87,681 cf

Pond DP-12e: Residential West#1 Inflow=8.79 cfs 28,174 cf
Primary=8.79 cfs 28,174 cf

Pond DP-13e: Residential West#2 Inflow=21.56 cfs 68,338 cf
Primary=21.56 cfs 68,338 cf

Pond DP-14e: Residential West#3 Inflow=3.41 cfs 11,156 cf
Primary=3.41 cfs 11,156 cf

Pond DP-15e: Wetlands Inflow=85.58 cfs 318,351 cf
Primary=85.58 cfs 318,351 cf

Pond Dp-16e: Landry Avenue Inflow=7.57 cfs 24,750 cf
Primary=7.57 cfs 24,750 cf

Pond DP-1e: Flow to Exist Basin #1 Peak Elev=236.87' Storage=2,188 cf Inflow=16.04 cfs 52,416 cf
Discarded=0.03 cfs 815 cf Primary=15.15 cfs 51,601 cf Outflow=15.18 cfs 52,416 cf

Pond DP-2e: Flow to Exist Basin#2 Inflow=23.09 cfs 80,477 cf
Primary=23.09 cfs 80,477 cf

Pond DP-3e: Residential East#1 Inflow=4.53 cfs 14,408 cf
Primary=4.53 cfs 14,408 cf

Pond DP-4e: Exist Swale #1 East Inflow=53.46 cfs 185,767 cf
Primary=53.46 cfs 185,767 cf

Pond DP-5e: Residential East#2 Inflow=5.97 cfs 20,293 cf
Primary=5.97 cfs 20,293 cf

Pond DP-6e: Residential East#3 Inflow=7.53 cfs 29,744 cf
Primary=7.53 cfs 29,744 cf

Pond DP-7e: Residential East#4 Inflow=8.84 cfs 32,448 cf
Primary=8.84 cfs 32,448 cf

Pond DP-8e: Stoddard Drive Inflow=20.76 cfs 96,223 cf
Primary=20.76 cfs 96,223 cf

Pond DP-9e: Woods South Inflow=8.97 cfs 45,819 cf
Primary=8.97 cfs 45,819 cf

Pond EC: Existing Underground Chambers Inflow=23.27 cfs 80,148 cf
Primary=23.27 cfs 80,148 cf

Total Runoff Area = 2,641,705 sf Runoff Volume = 1,326,217 cf Average Runoff Depth = 6.02"
69.75% Pervious = 1,842,529 sf 30.25% Impervious = 799,176 sf

Summary for Subcatchment E-1: Flow to NE Landry

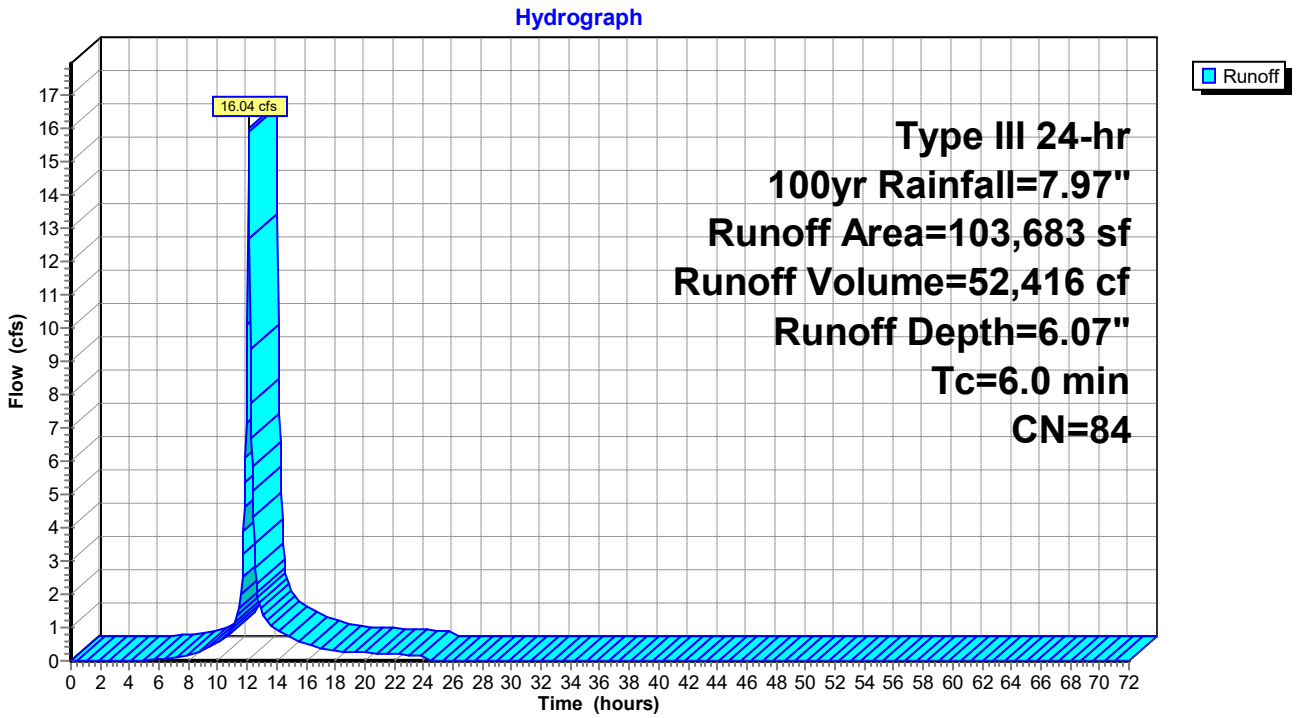
Runoff = 16.04 cfs @ 12.09 hrs, Volume= 52,416 cf, Depth= 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	35,301	98	Pave access road
*	4,200	98	Pave Parking
	38,226	73	Woods, Fair, HSG C
	25,956	79	50-75% Grass cover, Fair, HSG C
	103,683	84	Weighted Average
	64,182		61.90% Pervious Area
	39,501		38.10% Impervious Area

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

Subcatchment E-1: Flow to NE Landry



Summary for Subcatchment E-10a: Grass + Pave + Roof5 + Roof6

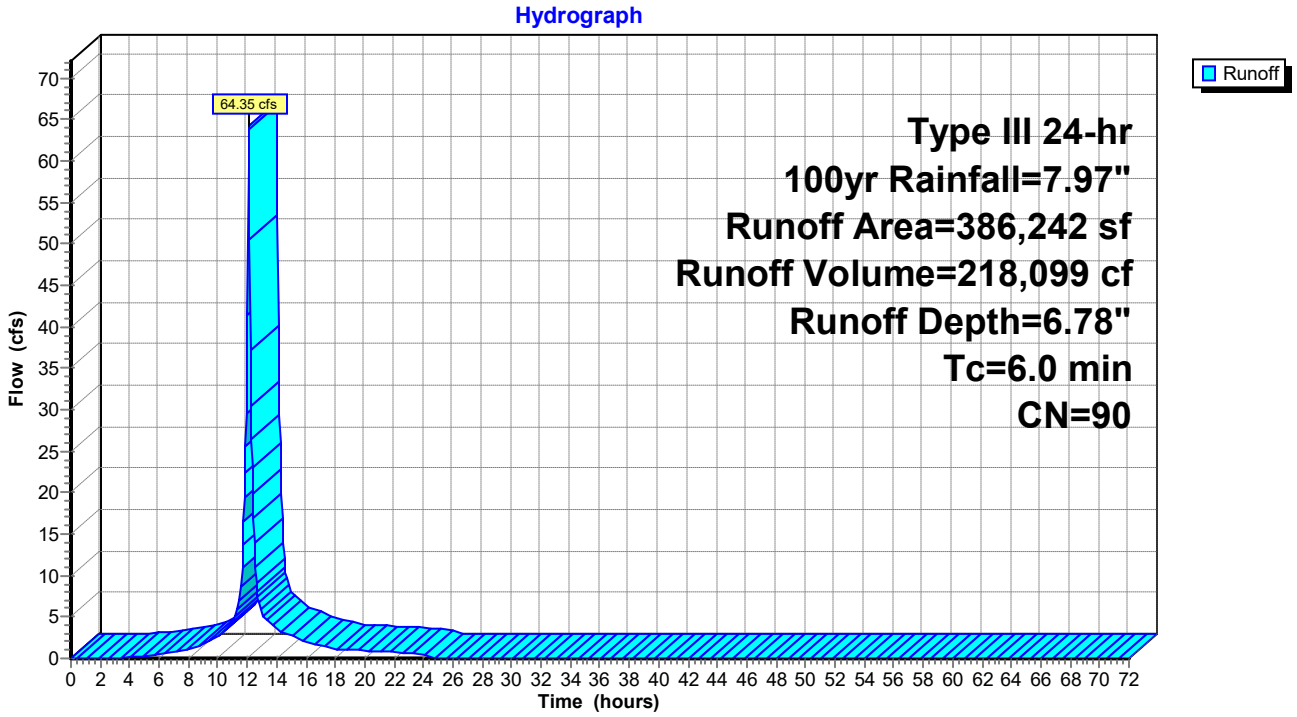
Runoff = 64.35 cfs @ 12.09 hrs, Volume= 218,099 cf, Depth= 6.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	12,739	98	Exist Pave
*	9,128	98	Exist Pave
*	44,658	98	Exist Pave
*	53,005	98	Exist Pave
*	10,983	98	Stadium Walks North
*	9,236	98	Exist Pave
*	1,329	98	Exist pave
	58,315	79	50-75% Grass cover, Fair, HSG C
*	19,486	96	Gravel Stadium North
*	19,443	98	Roof 6
*	36,319	98	Roof 5
*	2,206	98	Exist Pave
*	3,690	98	Exist Pave
*	12,880	96	Gravel Road
	92,825	79	50-75% Grass cover, Fair, HSG C
	386,242	90	Weighted Average
	183,506		47.51% Pervious Area
	202,736		52.49% Impervious Area

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

Subcatchment E-10a: Grass + Pave + Roof5 + Roof6



Summary for Subcatchment E-10b: Wood + Grass + Pave

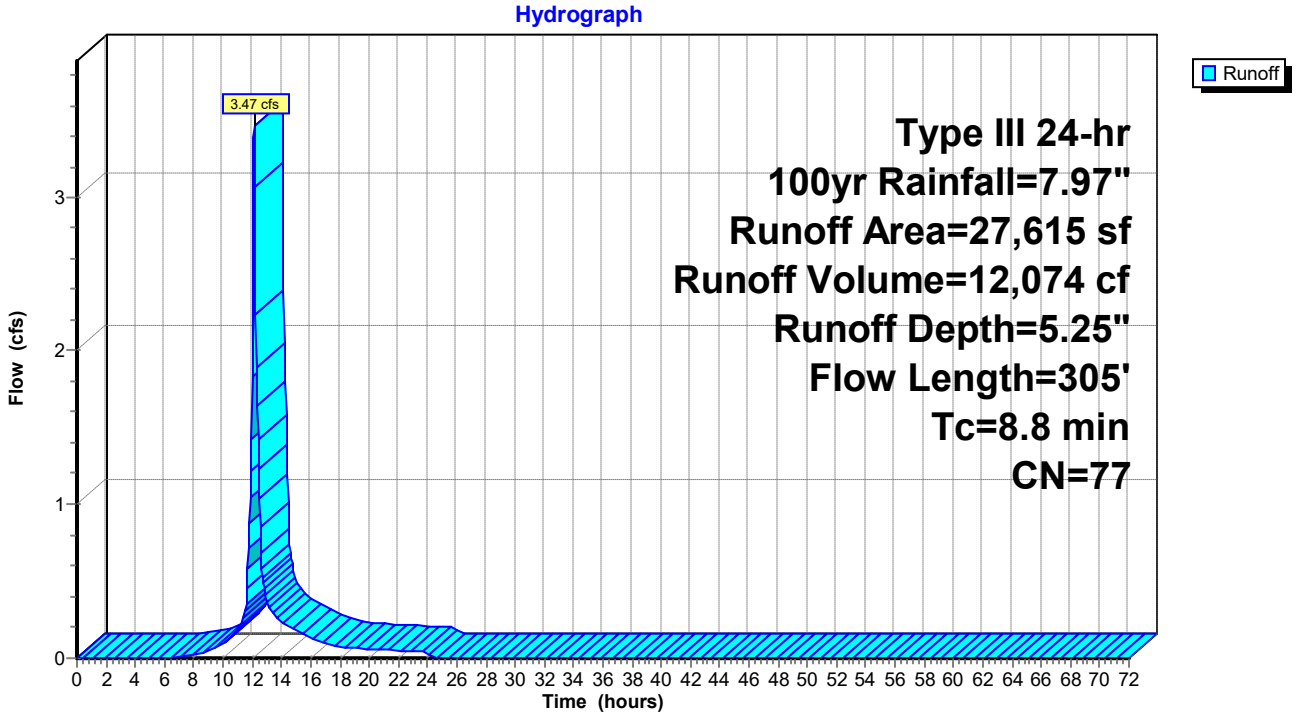
Runoff = 3.47 cfs @ 12.12 hrs, Volume= 12,074 cf, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

Area (sf)	CN	Description
9,528	73	Woods, Fair, HSG C
18,087	79	50-75% Grass cover, Fair, HSG C
27,615	77	Weighted Average
27,615		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	30	0.0050	0.07		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.4	144	0.0113	1.71		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	62	0.2100	7.38		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.4	69	0.0300	2.79		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
8.8	305	Total			

Subcatchment E-10b: Wood + Grass + Pave



Summary for Subcatchment E-11: Woods + Pave

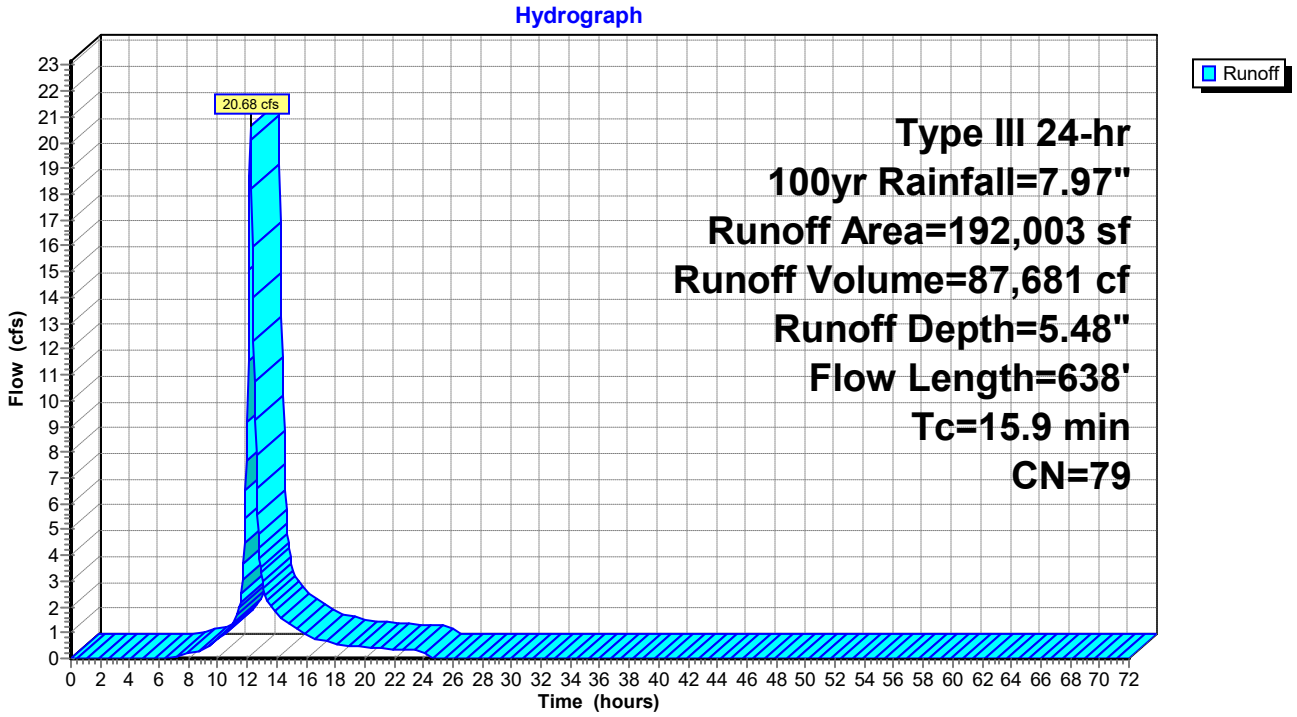
Runoff = 20.68 cfs @ 12.22 hrs, Volume= 87,681 cf, Depth= 5.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
	17,585	73	Woods, Fair, HSG C
	10,203	73	Woods, Fair, HSG C
*	13,080	98	Exist pave
	151,135	79	50-75% Grass cover, Fair, HSG C
	192,003	79	Weighted Average
	178,923		93.19% Pervious Area
	13,080		6.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	64	0.0061	0.09		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.1	160	0.0240	2.49		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.0	8	0.0250	3.21		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
0.1	28	0.1750	6.74		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
2.3	206	0.0087	1.50		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.8	172	0.0460	3.45		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
15.9	638	Total			

Subcatchment E-11: Woods + Pave



Summary for Subcatchment E-12: Woods + Pave

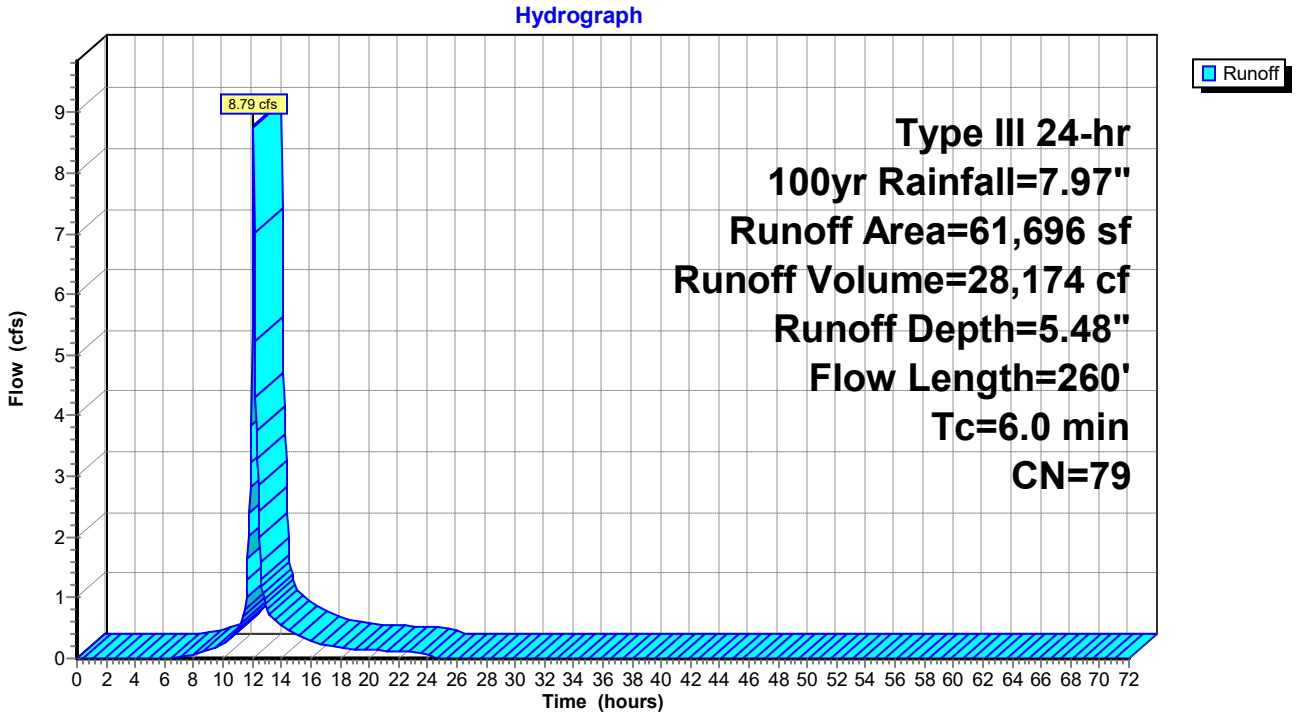
Runoff = 8.79 cfs @ 12.09 hrs, Volume= 28,174 cf, Depth= 5.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
	12,114	73	Woods, Fair, HSG C
*	2,947	98	Exist pave
	46,635	79	50-75% Grass cover, Fair, HSG C
	61,696	79	Weighted Average
	58,749		95.22% Pervious Area
	2,947		4.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	21	0.0500	0.17		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.2	36	0.0006	0.50		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
0.1	16	0.0225	2.42		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	44	0.2700	8.37		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.3	143	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.8	260	Total, Increased to minimum Tc = 6.0 min			

Subcatchment E-12: Woods + Pave



Summary for Subcatchment E-13a: EXIST STADIUM ROUGH SIZING NO CONTRACT

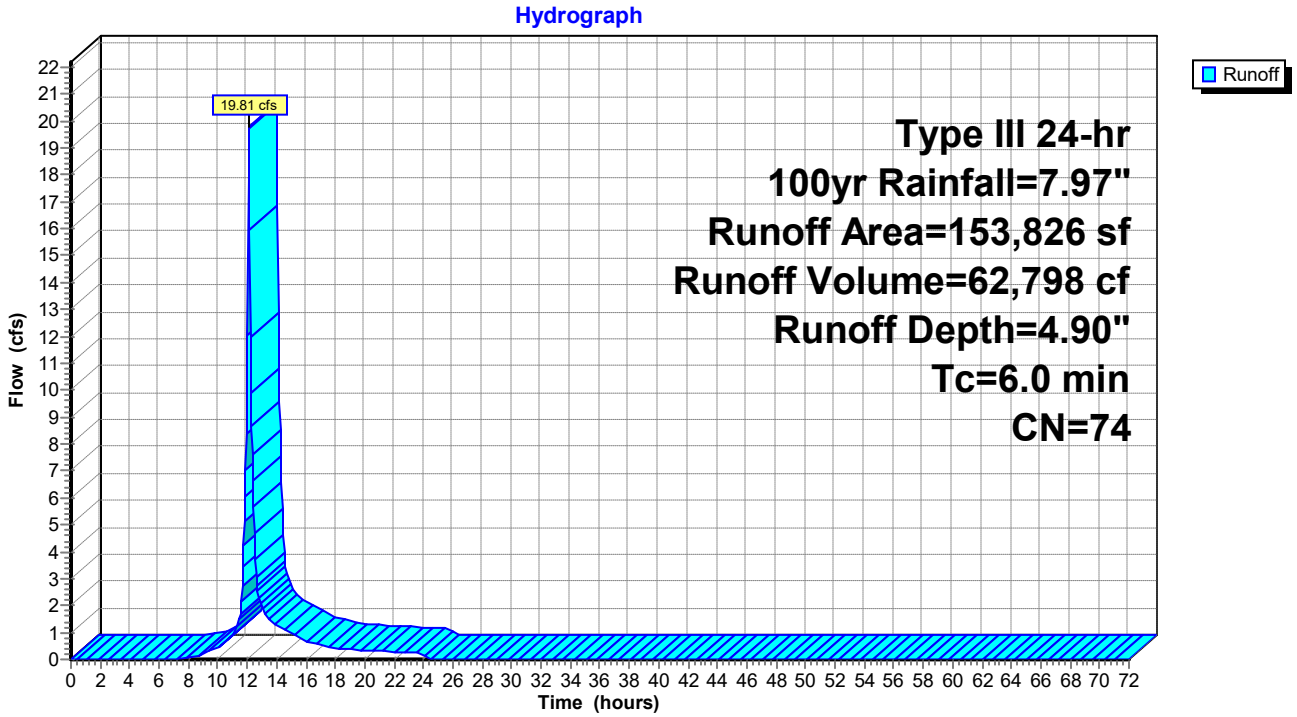
Runoff = 19.81 cfs @ 12.09 hrs, Volume= 62,798 cf, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

Area (sf)	CN	Description
153,826	74	>75% Grass cover, Good, HSG C
153,826		100.00% Pervious Area

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

Subcatchment E-13a: EXIST STADIUM ROUGH SIZING NO CONTRACT



Summary for Subcatchment E-13b: EXIST STADIUM ROUGH SIZING NO CONTRACT

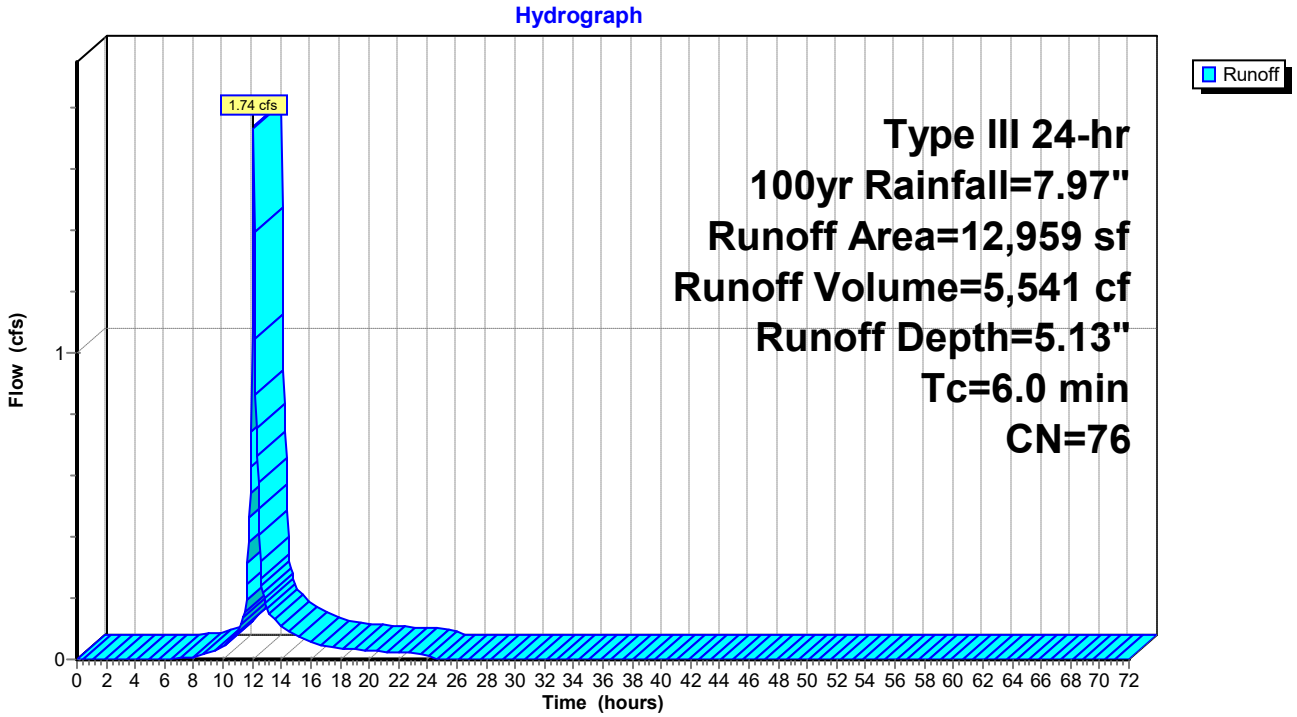
Runoff = 1.74 cfs @ 12.09 hrs, Volume= 5,541 cf, Depth= 5.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

Area (sf)	CN	Description
12,959	76	Woods/grass comb., Fair, HSG C
12,959		100.00% Pervious Area

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

Subcatchment E-13b: EXIST STADIUM ROUGH SIZING NO CONTRACT



Summary for Subcatchment E-14: Gravel + Woods + Grass

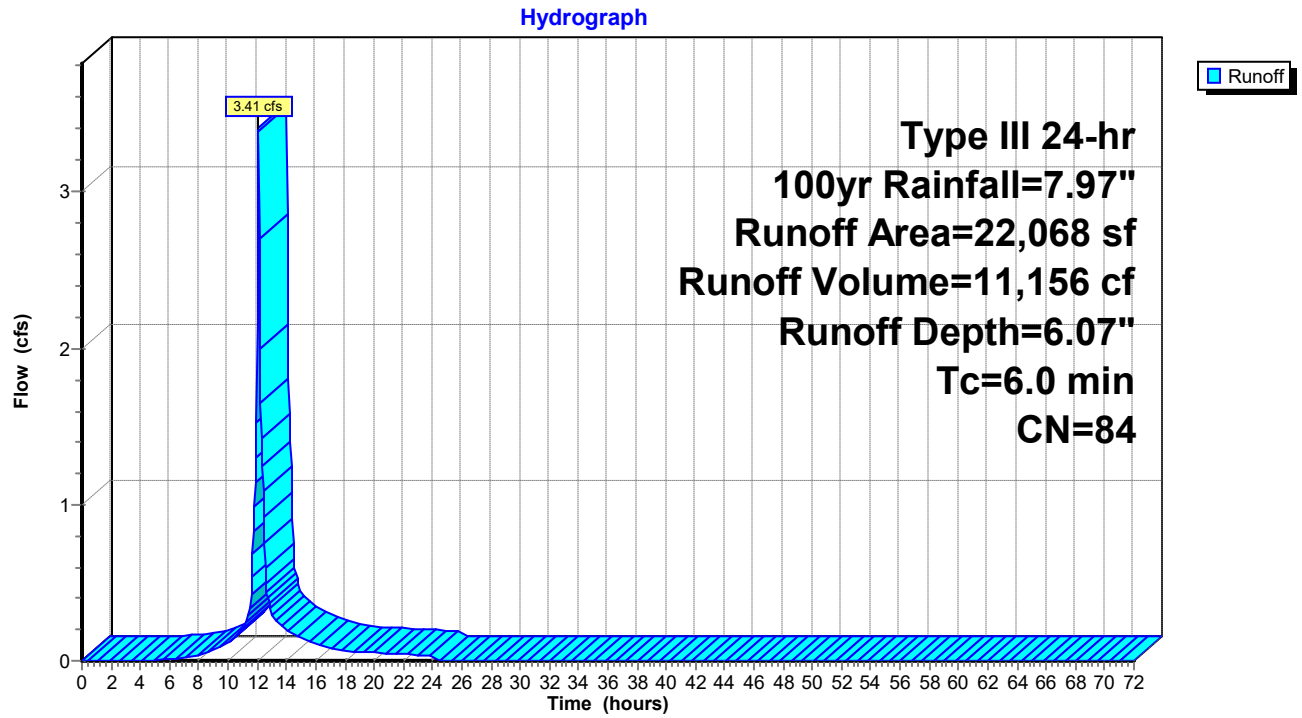
Runoff = 3.41 cfs @ 12.09 hrs, Volume= 11,156 cf, Depth= 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
	8,051	73	Woods, Fair, HSG C
	2,350	96	Gravel surface, HSG C
*	6,572	98	Bleacher Area
	5,095	79	50-75% Grass cover, Fair, HSG C
	22,068	84	Weighted Average
	15,496		70.22% Pervious Area
	6,572		29.78% Impervious Area

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

Subcatchment E-14: Gravel + Woods + Grass



Summary for Subcatchment E-15a: Woods + Gravel + Grass

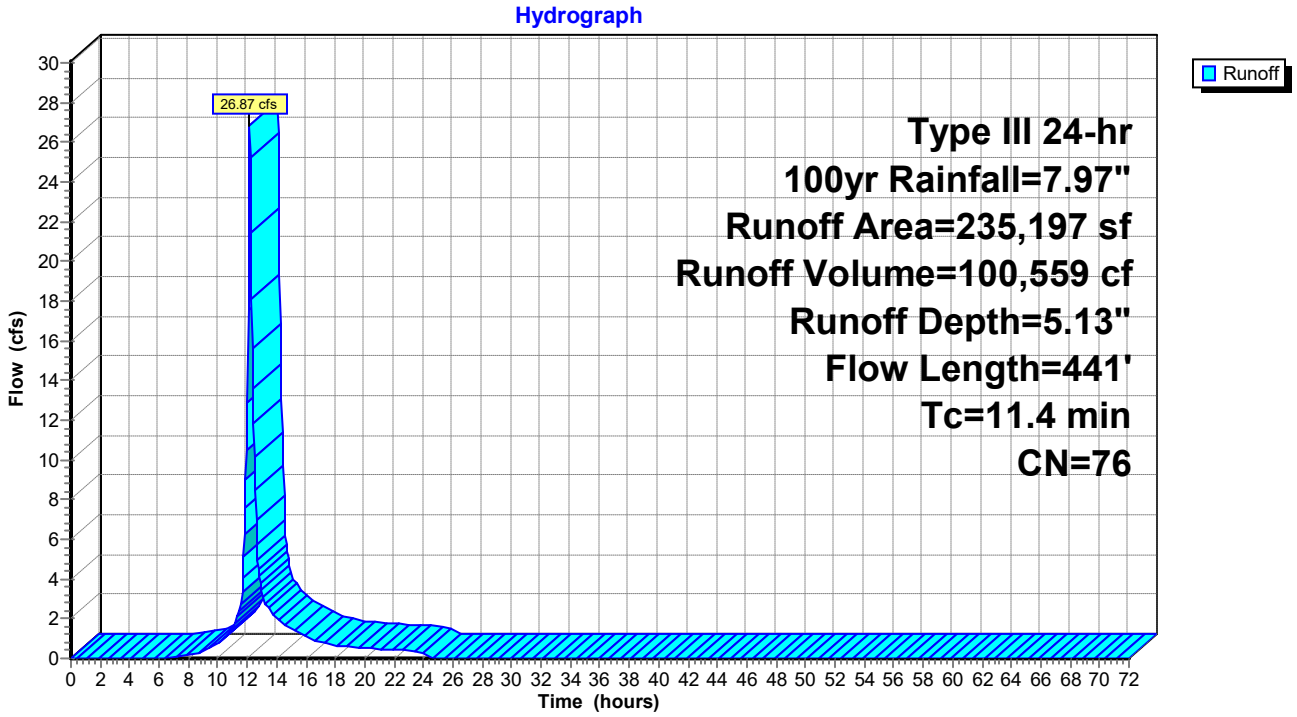
Runoff = 26.87 cfs @ 12.16 hrs, Volume= 100,559 cf, Depth= 5.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
	2,647	96	Gravel surface, HSG C
*	2,437	98	Batting cages
	136,625	73	Woods, Fair, HSG C
	93,488	79	50-75% Grass cover, Fair, HSG C
	235,197	76	Weighted Average
	232,760		98.96% Pervious Area
	2,437		1.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	78	0.0187	0.15		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.5	170	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	43	0.4650	10.98		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.1	150	0.0200	2.28		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
11.4	441	Total			

Subcatchment E-15a: Woods + Gravel + Grass



Summary for Subcatchment E-15b: Pave + Woods + Gravel

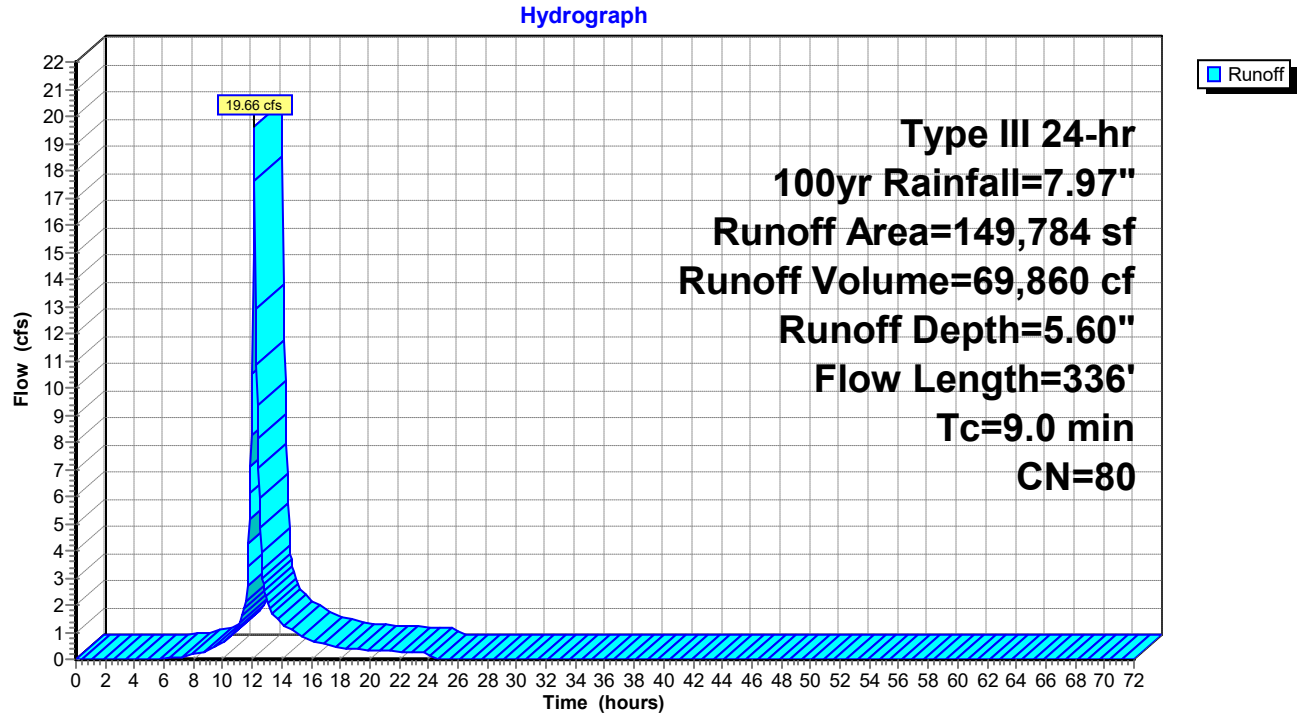
Runoff = 19.66 cfs @ 12.13 hrs, Volume= 69,860 cf, Depth= 5.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	4,721	98	Exist pave
*	3,905	98	Exist pave
	11,242	73	Woods, Fair, HSG C
	2,267	96	Gravel surface, HSG C
	127,649	79	50-75% Grass cover, Fair, HSG C
	149,784	80	Weighted Average
	141,158		94.24% Pervious Area
	8,626		5.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	34	0.0085	0.09		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
1.3	162	0.0167	2.08		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.6	140	0.0080	1.44		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
9.0	336	Total			

Subcatchment E-15b: Pave + Woods + Gravel



Summary for Subcatchment E-15C/I/G: Basin Bypass C, I,G, Roof 7 + Roof 8

C:27134
i: 19,292
g:26,178

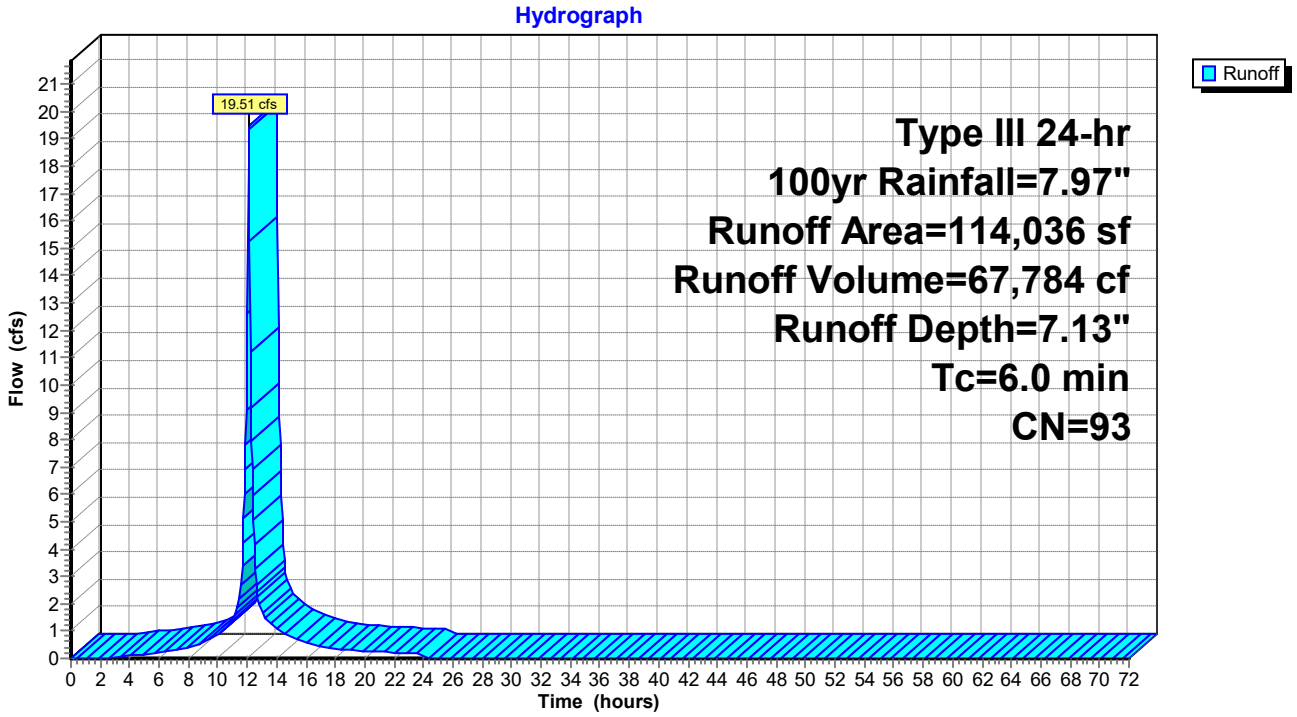
Runoff = 19.51 cfs @ 12.09 hrs, Volume= 67,784 cf, Depth= 7.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	15,125	98	Exist pave 15c
*	12,009	79	Grass 15c
*	14,565	98	Exist pave 15i
*	4,727	79	Grass 15i
*	13,868	98	Exist pave 15g
*	12,310	79	Grass 15g
*	20,592	98	Roof 7
*	20,840	98	Roof 8
	114,036	93	Weighted Average
	29,046		25.47% Pervious Area
	84,990		74.53% Impervious Area

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

Subcatchment E-15C/I/G: Basin Bypass C, I,G, Roof 7 + Roof 8



Summary for Subcatchment E-15D/E/F/H: Basin Bypass D,E,F,H

E-15h:28,726
E-15f: 31,594
15e: 46528
15d: 30,279

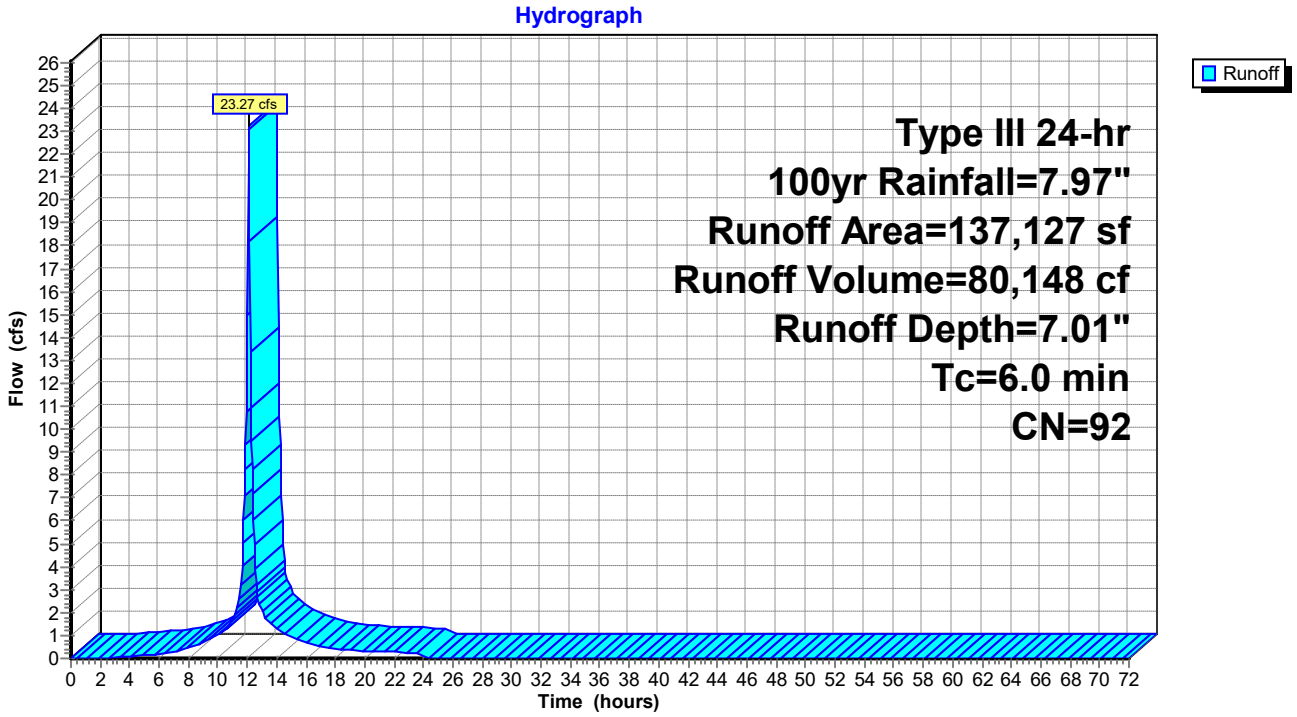
Runoff = 23.27 cfs @ 12.09 hrs, Volume= 80,148 cf, Depth= 7.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	10,864	98	Exist pave, E15h
*	17,862	79	Grass C: E15h
*	12,080	98	Exist Pave:E15f
*	19,514	79	Grass C: E15f
*	44,455	98	Exist Pave:E15e
*	2,073	79	Grass C: E15e
*	25,337	98	Exist Pave:E15d
*	4,942	79	Grass C: E15d
	137,127	92	Weighted Average
	44,391		32.37% Pervious Area
	92,736		67.63% Impervious Area

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

Subcatchment E-15D/E/F/H: Basin Bypass D,E,F,H



Summary for Subcatchment E-16: Flow NW Landry

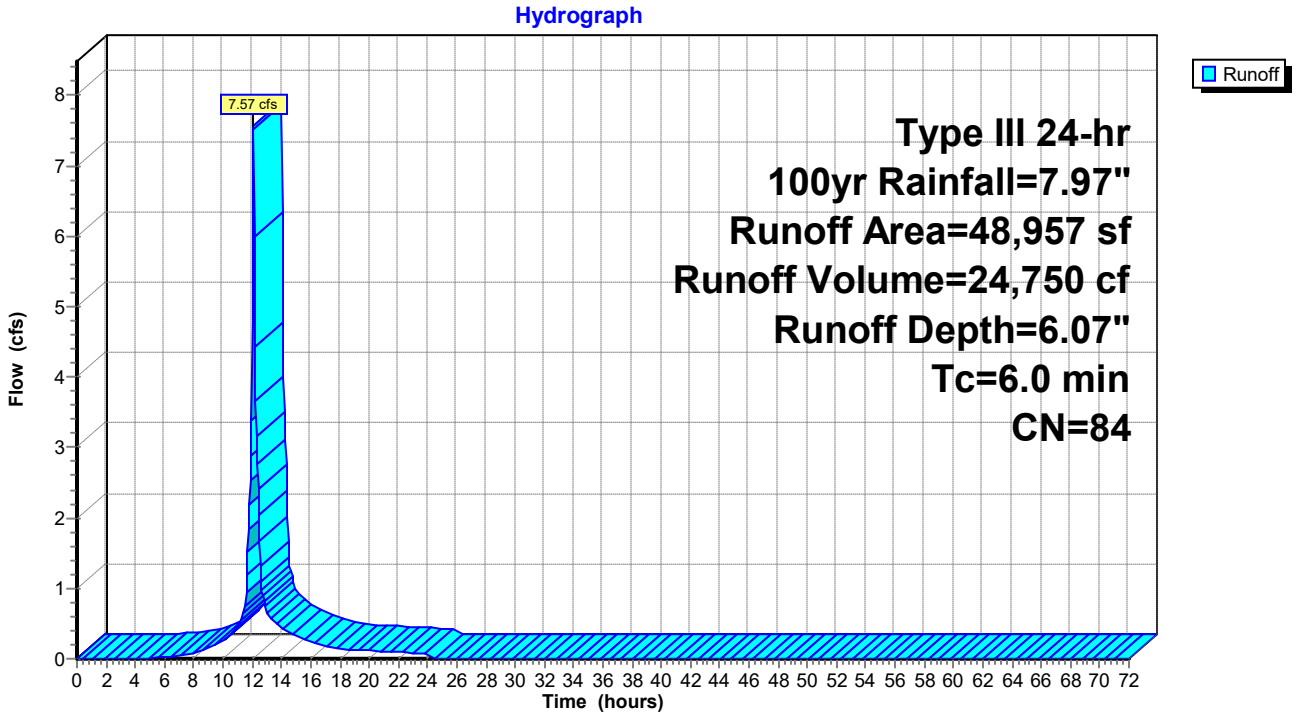
Runoff = 7.57 cfs @ 12.09 hrs, Volume= 24,750 cf, Depth= 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	13,512	98	Exist pave
	35,445	79	50-75% Grass cover, Fair, HSG C
	48,957	84	Weighted Average
	35,445		72.40% Pervious Area
	13,512		27.60% Impervious Area

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

Subcatchment E-16: Flow NW Landry



Summary for Subcatchment E-2a: E-2a + Roof1 + Roof2

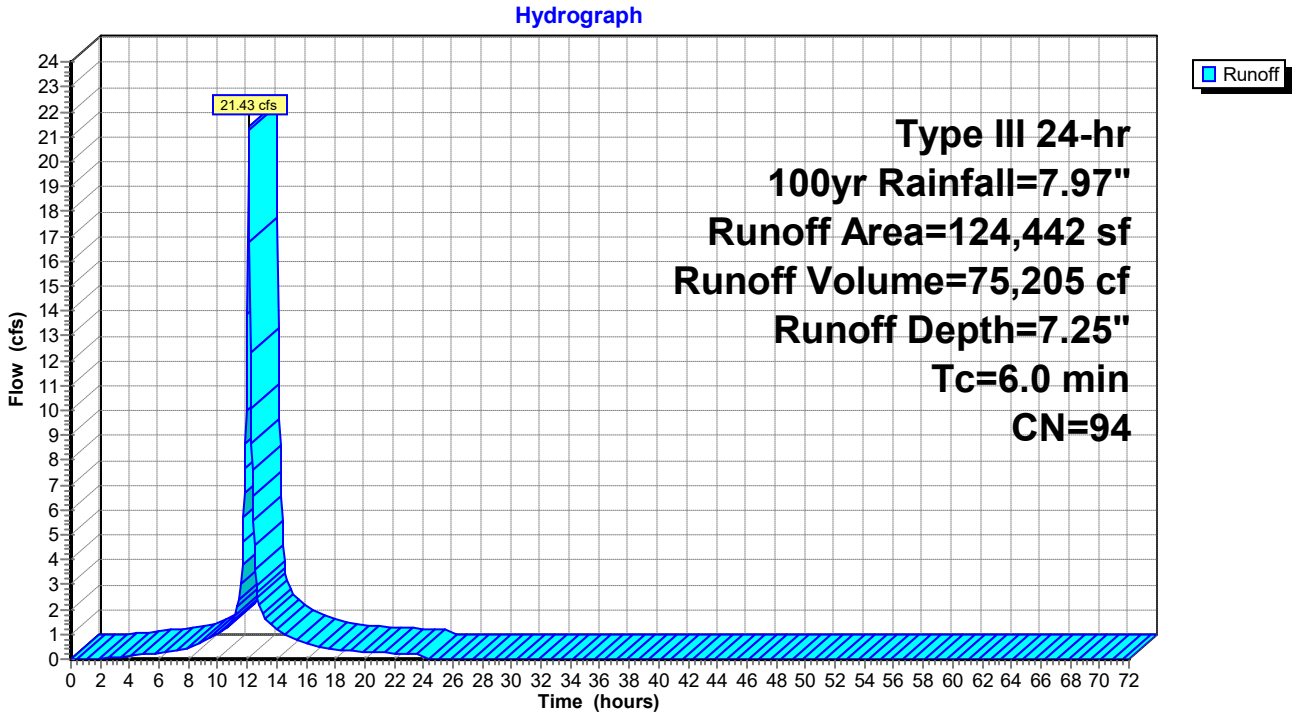
Runoff = 21.43 cfs @ 12.09 hrs, Volume= 75,205 cf, Depth= 7.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	22,807	98	Existing Pave
*	8,305	98	Existing Pave
*	17,342	98	Existing Pave
*	9,262	98	Existing Pave
	23,333	79	50-75% Grass cover, Fair, HSG C
*	25,256	98	Roof 1
*	18,137	98	Roof 2
	124,442	94	Weighted Average
	23,333		18.75% Pervious Area
	101,109		81.25% Impervious Area

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

Subcatchment E-2a: E-2a + Roof1 + Roof2



Summary for Subcatchment E-2b: Wooded basin area

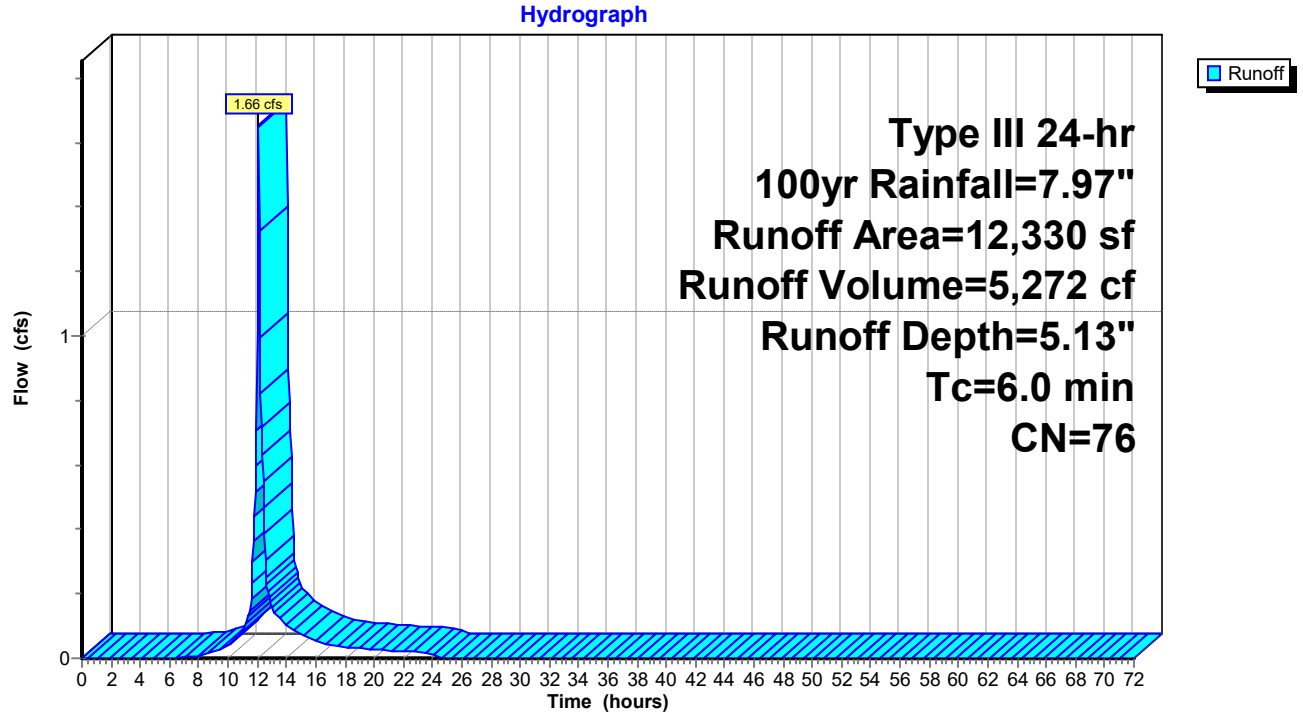
Runoff = 1.66 cfs @ 12.09 hrs, Volume= 5,272 cf, Depth= 5.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

Area (sf)	CN	Description
4,275	73	Woods, Fair, HSG C
3,270	79	50-75% Grass cover, Fair, HSG C
2,202	73	Woods, Fair, HSG C
2,583	79	50-75% Grass cover, Fair, HSG C
12,330	76	Weighted Average
12,330		100.00% Pervious Area

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

Subcatchment E-2b: Wooded basin area



Summary for Subcatchment E-3: Sheet flow west to RA

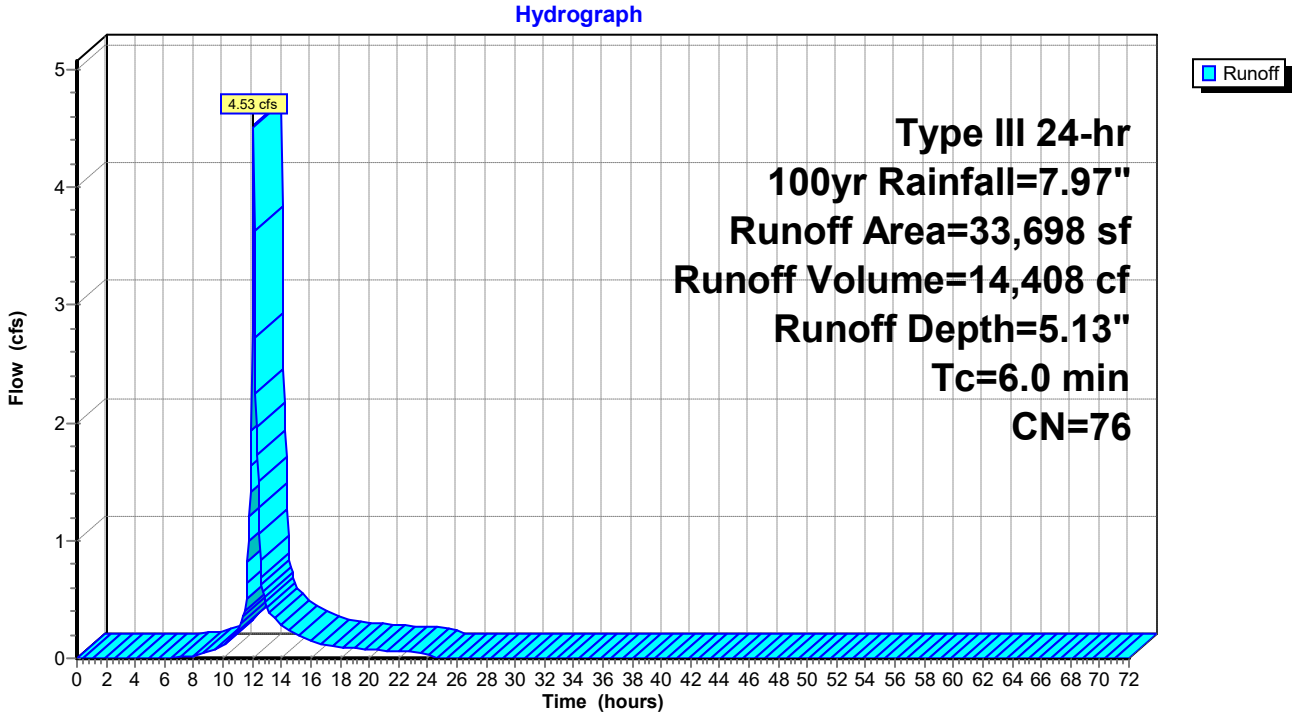
Runoff = 4.53 cfs @ 12.09 hrs, Volume= 14,408 cf, Depth= 5.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	2,765	98	Exist T.Court
	23,638	73	Woods, Fair, HSG C
	7,295	79	50-75% Grass cover, Fair, HSG C
	33,698	76	Weighted Average
	30,933		91.79% Pervious Area
	2,765		8.21% Impervious Area

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

Subcatchment E-3: Sheet flow west to RA



Summary for Subcatchment E-4: Parking Lot + Roof3 + Roof4

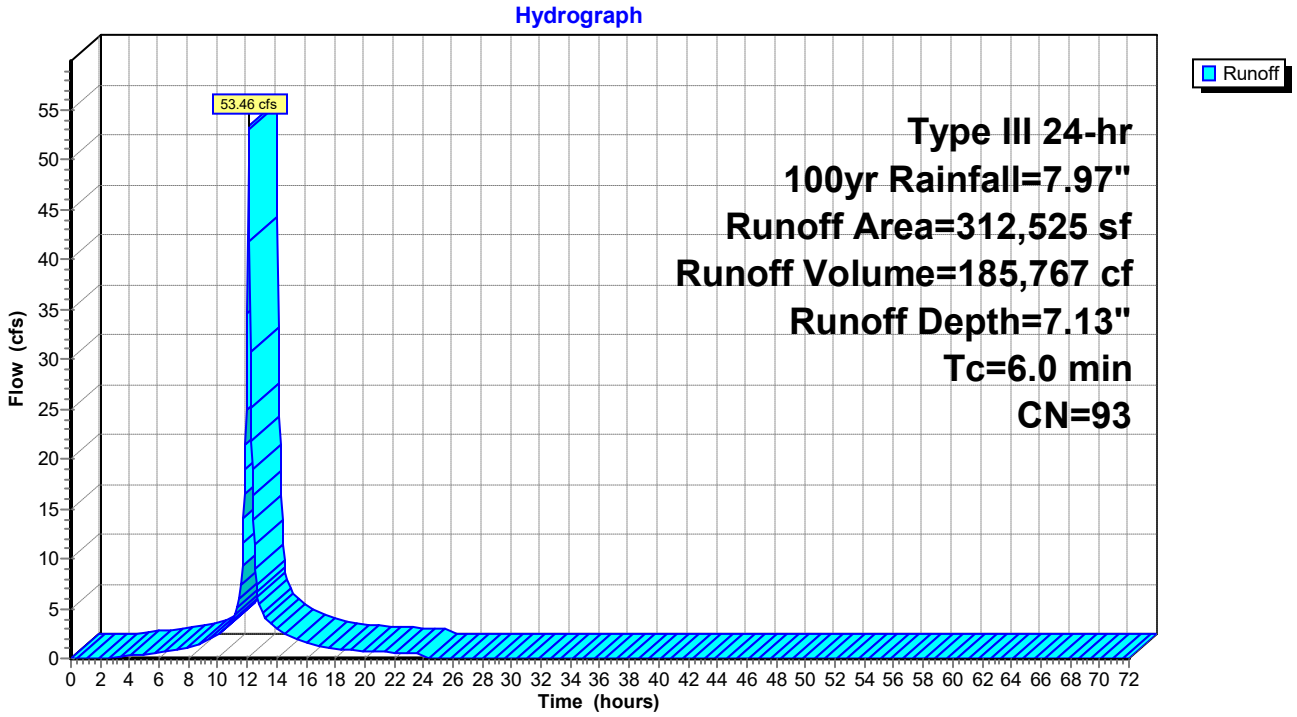
Runoff = 53.46 cfs @ 12.09 hrs, Volume= 185,767 cf, Depth= 7.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	32,012	98	Exist T.Court
*	46,897	98	Exist Pave
*	16,683	98	Exist Pave
*	2,014	98	Exist Pave
*	42,864	98	Exist Pave
*	1,582	98	Maint Shed
	9,663	96	Gravel surface, HSG C
*	174	98	Maint Shed
*	101	98	Maint Shed
*	4,726	98	Entrance Walks
	88,365	79	50-75% Grass cover, Fair, HSG C
*	60,521	98	Roof 3
*	6,923	98	Roof 4
	312,525	93	Weighted Average
	98,028		31.37% Pervious Area
	214,497		68.63% Impervious Area

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

Subcatchment E-4: Parking Lot + Roof3 + Roof4



Summary for Subcatchment E-5: Wooded Basin Area

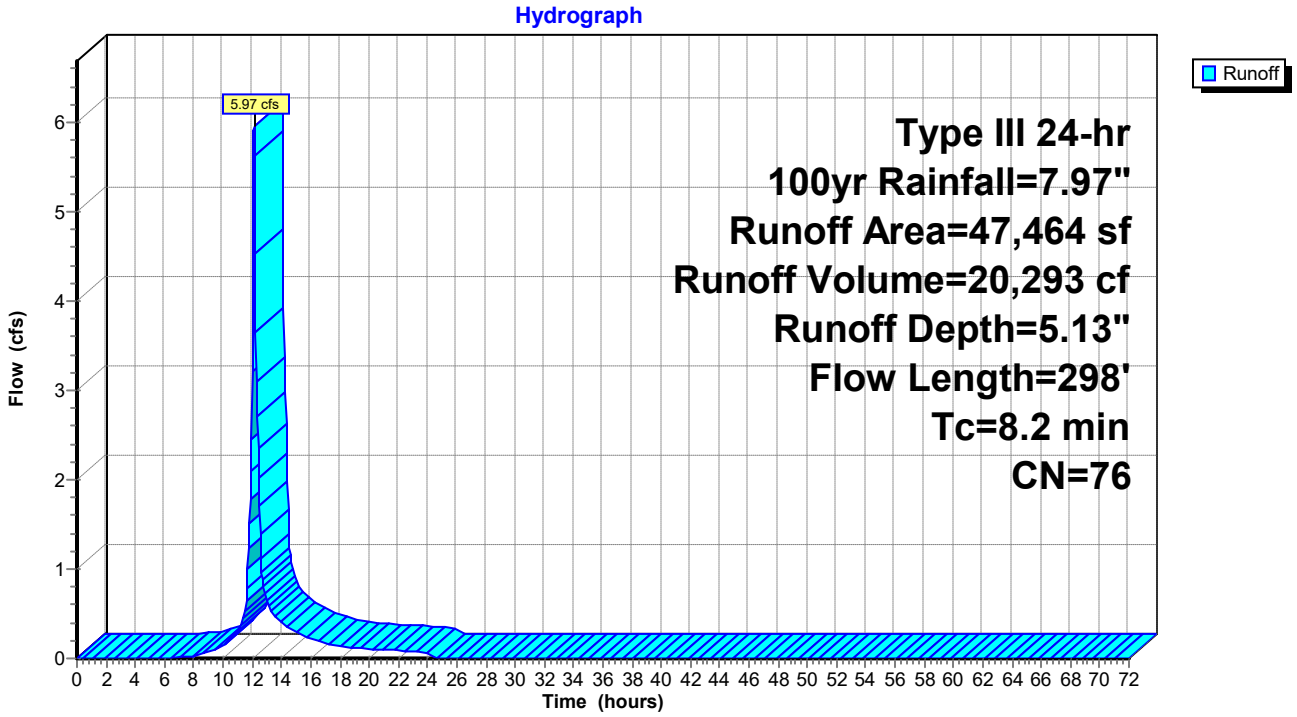
Runoff = 5.97 cfs @ 12.12 hrs, Volume= 20,293 cf, Depth= 5.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

Area (sf)	CN	Description
21,768	73	Woods, Fair, HSG C
25,696	79	50-75% Grass cover, Fair, HSG C
47,464	76	Weighted Average
47,464		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.0062	0.08		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
0.3	23	0.0062	1.27		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.8	83	0.0120	1.76		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.5	96	0.0417	3.29		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	25	0.1200	5.58		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.2	41	0.0550	3.78		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
8.2	298	Total			

Subcatchment E-5: Wooded Basin Area



Summary for Subcatchment E-6: Wooded Basin Area

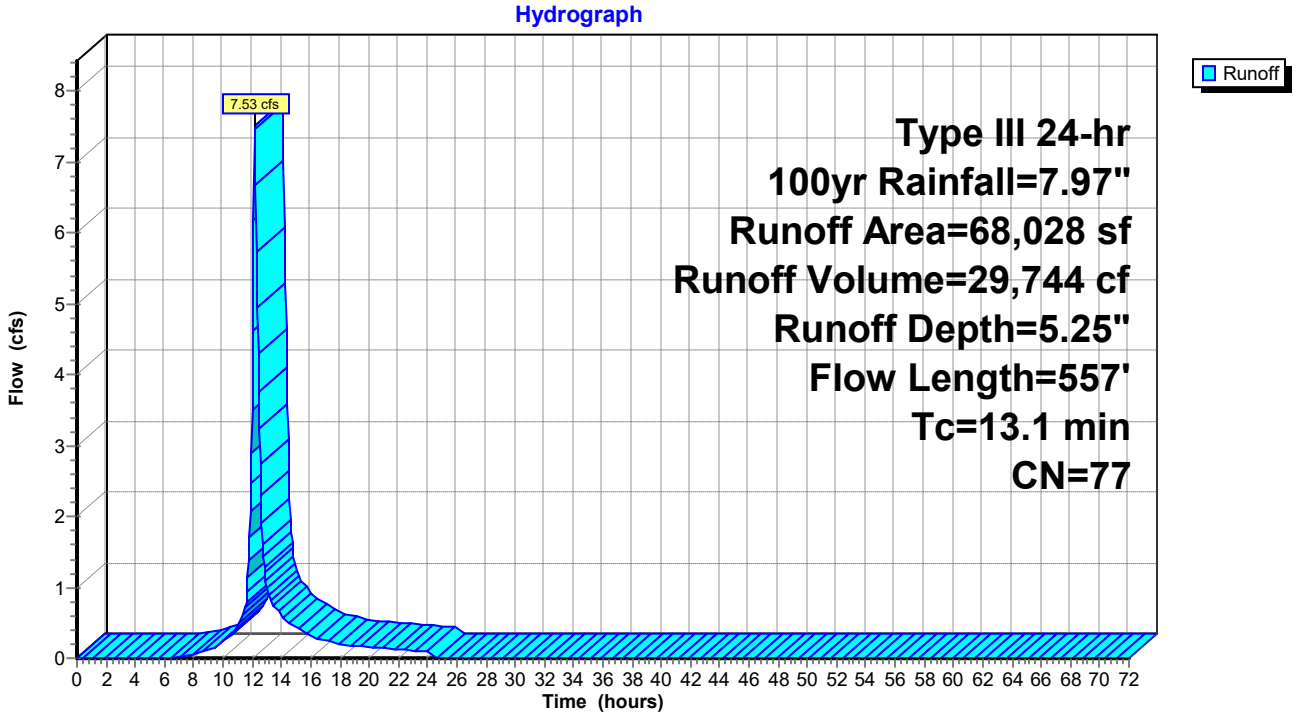
Runoff = 7.53 cfs @ 12.18 hrs, Volume= 29,744 cf, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

Area (sf)	CN	Description
22,756	73	Woods, Fair, HSG C
45,272	79	50-75% Grass cover, Fair, HSG C
68,028	77	Weighted Average
68,028		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	55	0.0074	0.10		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
2.1	200	0.0097	1.59		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.3	45	0.0230	2.44		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.2	257	0.0470	3.49		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
13.1	557	Total			

Subcatchment E-6: Wooded Basin Area



Summary for Subcatchment E-7: Wooded Basin Area

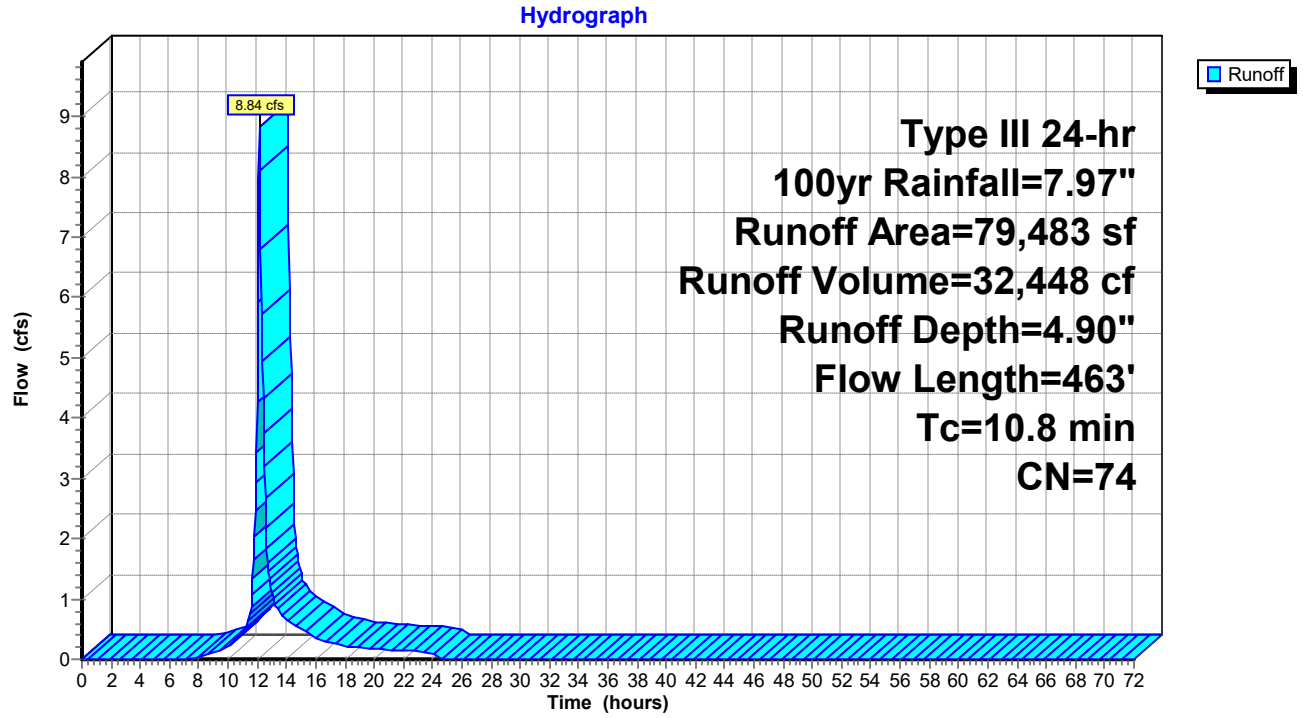
Runoff = 8.84 cfs @ 12.15 hrs, Volume= 32,448 cf, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

Area (sf)	CN	Description
68,664	73	Woods, Fair, HSG C
10,819	79	50-75% Grass cover, Fair, HSG C
79,483	74	Weighted Average
79,483		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	46	0.0080	0.10		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
0.3	45	0.0220	2.39		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.1	24	0.1670	6.58		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
0.5	109	0.0460	3.45		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.9	239	0.0170	2.10		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
10.8	463	Total			

Subcatchment E-7: Wooded Basin Area



Summary for Subcatchment E-8: Wooded Basin Area + Pave

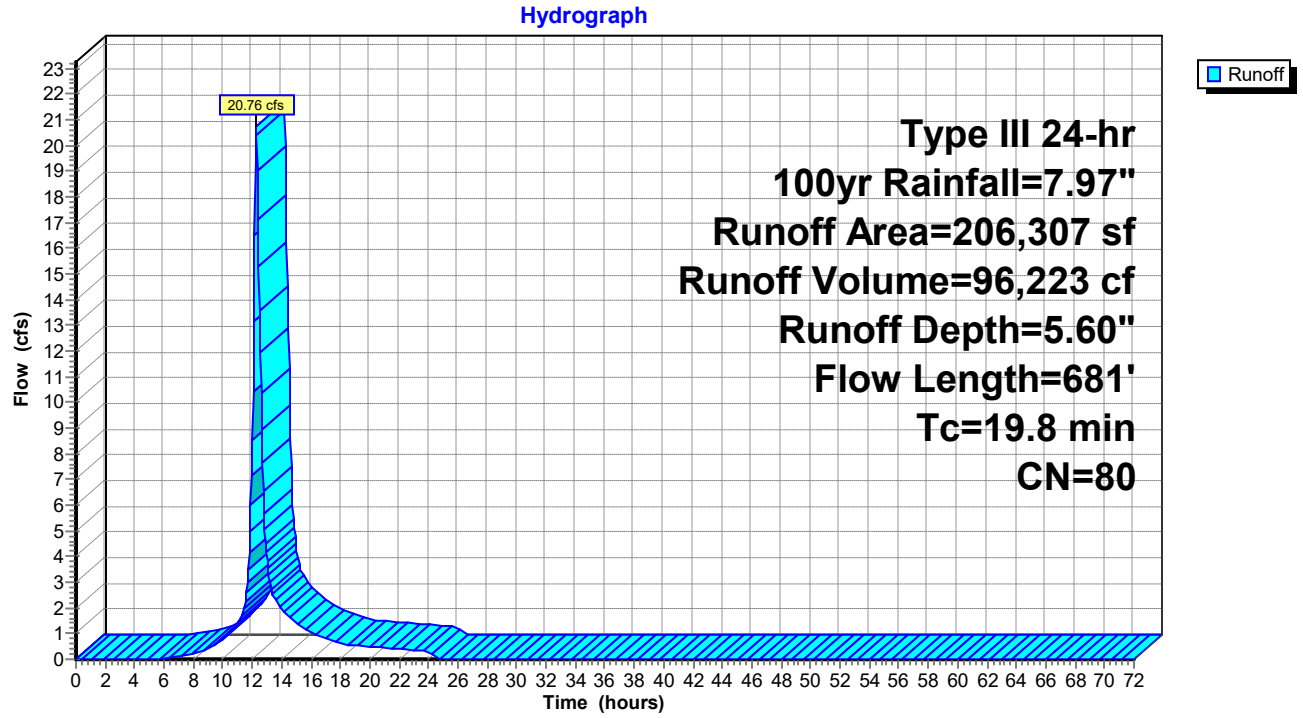
Runoff = 20.76 cfs @ 12.27 hrs, Volume= 96,223 cf, Depth= 5.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

	Area (sf)	CN	Description
*	13,668	98	Exist Pave
	4,626	76	Woods/grass comb., Fair, HSG C
	188,013	79	50-75% Grass cover, Fair, HSG C
	206,307	80	Weighted Average
	192,639		93.37% Pervious Area
	13,668		6.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	68	0.0040	0.08		**Sheet Flow, SF** Grass: Short n= 0.150 P2= 2.89"
2.2	170	0.0064	1.29		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
2.1	242	0.0140	1.90		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
1.1	201	0.0220	3.01		**Shallow Concentrated Flow, SCF** Paved Kv= 20.3 fps
19.8	681	Total			

Subcatchment E-8: Wooded Basin Area + Pave



Summary for Subcatchment E-9: Wooded Basin Area

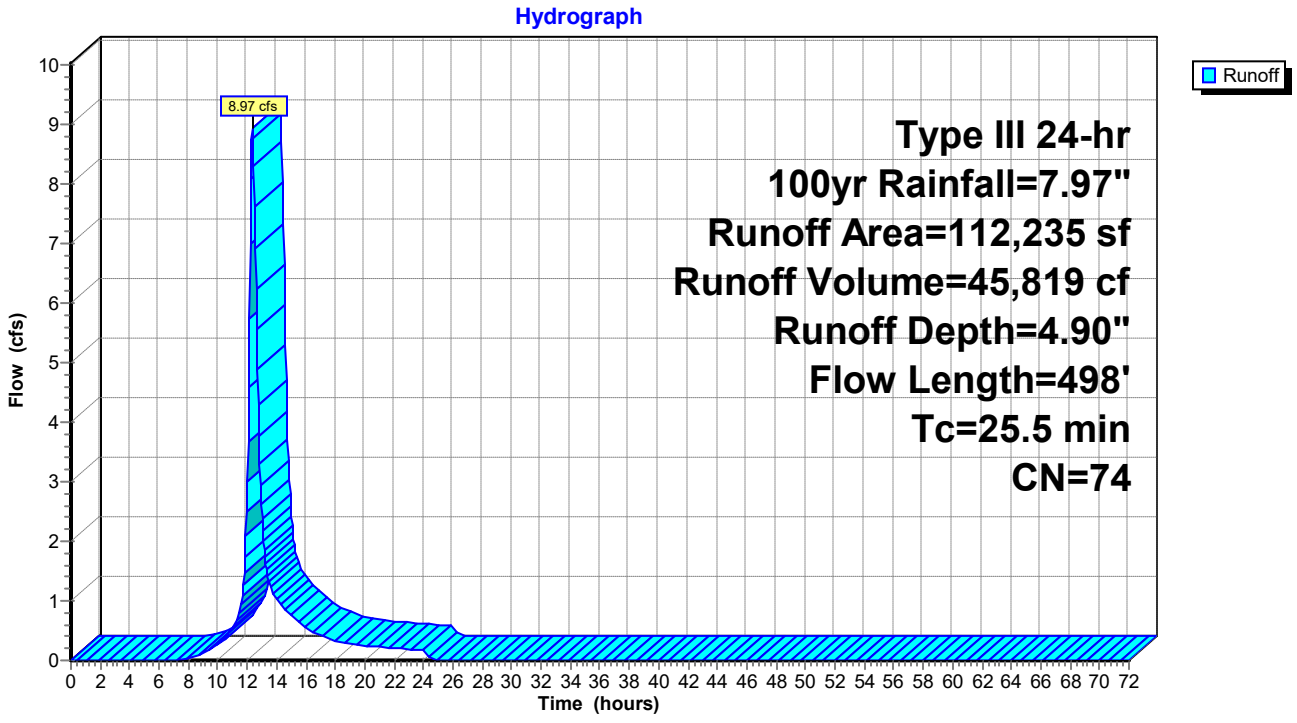
Runoff = 8.97 cfs @ 12.35 hrs, Volume= 45,819 cf, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=7.97"

Area (sf)	CN	Description
87,537	73	Woods, Fair, HSG C
24,698	79	50-75% Grass cover, Fair, HSG C
112,235	74	Weighted Average
112,235		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	50	0.0270	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.9	132	0.0250	2.55		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.6	316	0.0050	1.14		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
25.5	498	Total			

Subcatchment E-9: Wooded Basin Area

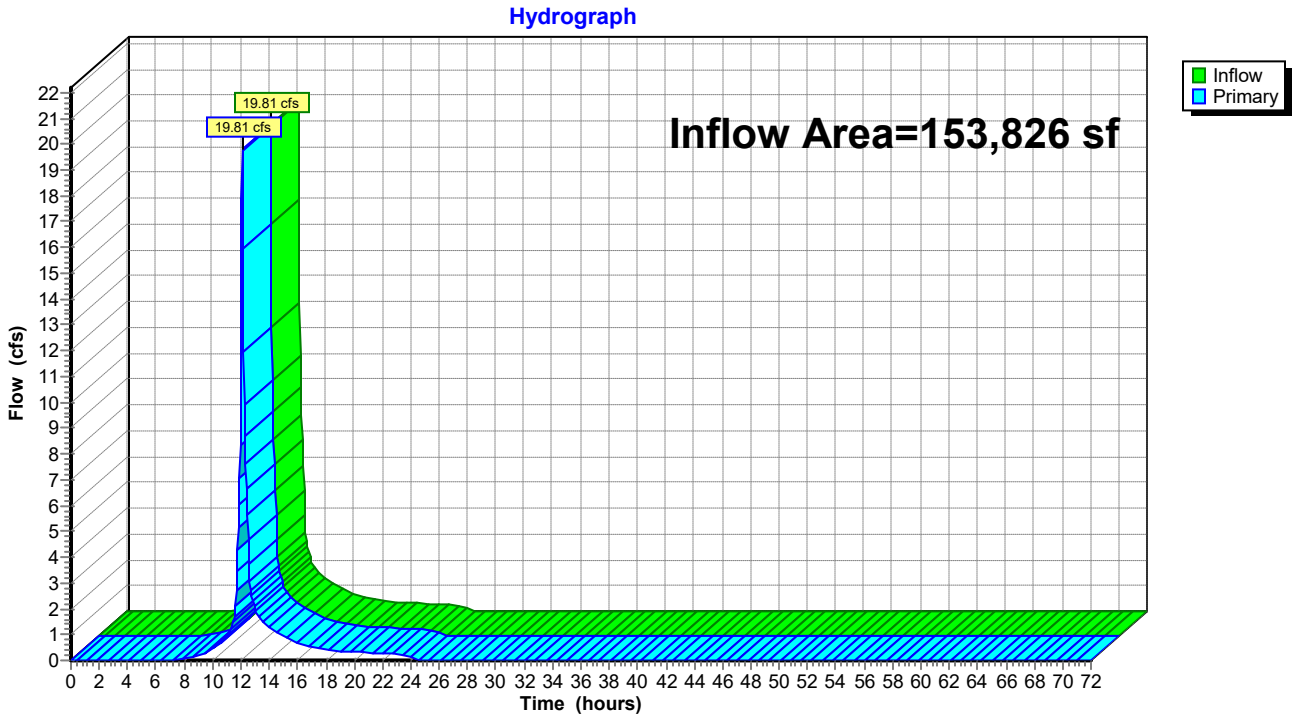


Summary for Pond 1P: stone

Inflow Area = 153,826 sf, 0.00% Impervious, Inflow Depth = 4.90" for 100yr event
Inflow = 19.81 cfs @ 12.09 hrs, Volume= 62,798 cf
Primary = 19.81 cfs @ 12.09 hrs, Volume= 62,798 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 1P: stone

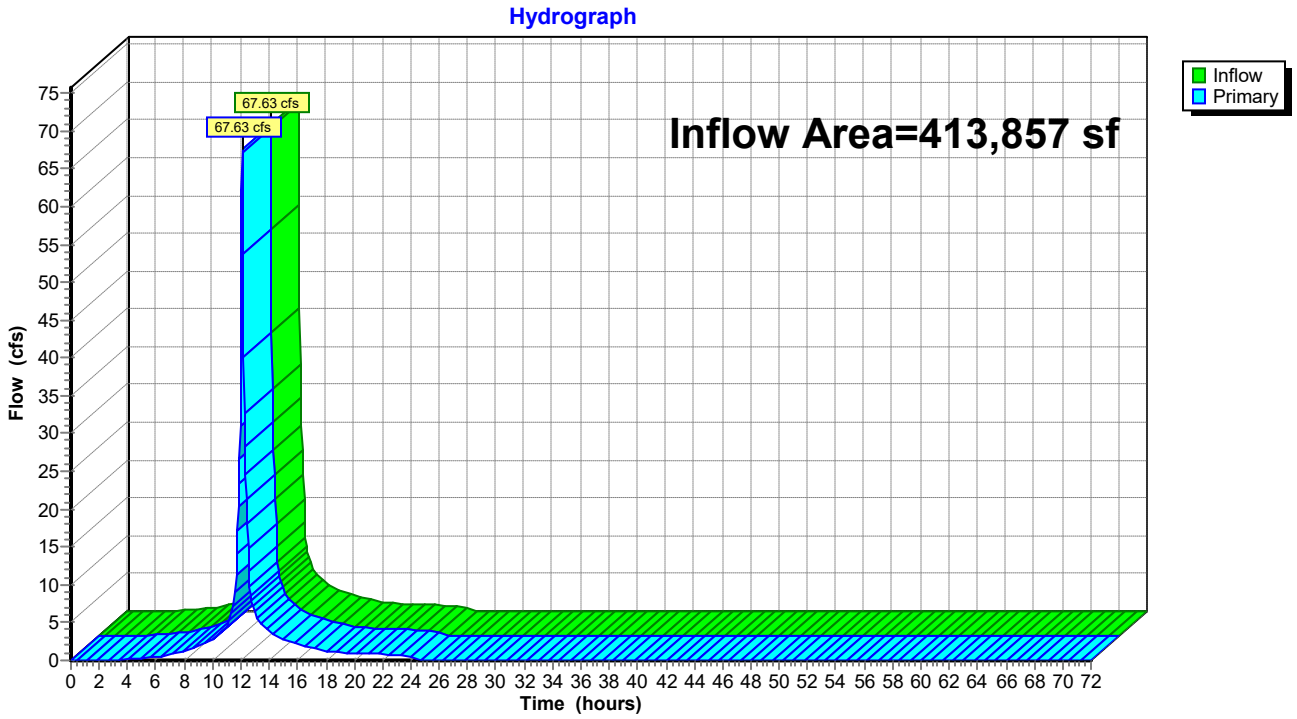


Summary for Pond DP-10e: Exist Basin #3

Inflow Area = 413,857 sf, 48.99% Impervious, Inflow Depth = 6.67" for 100yr event
Inflow = 67.63 cfs @ 12.09 hrs, Volume= 230,173 cf
Primary = 67.63 cfs @ 12.09 hrs, Volume= 230,173 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-10e: Exist Basin #3

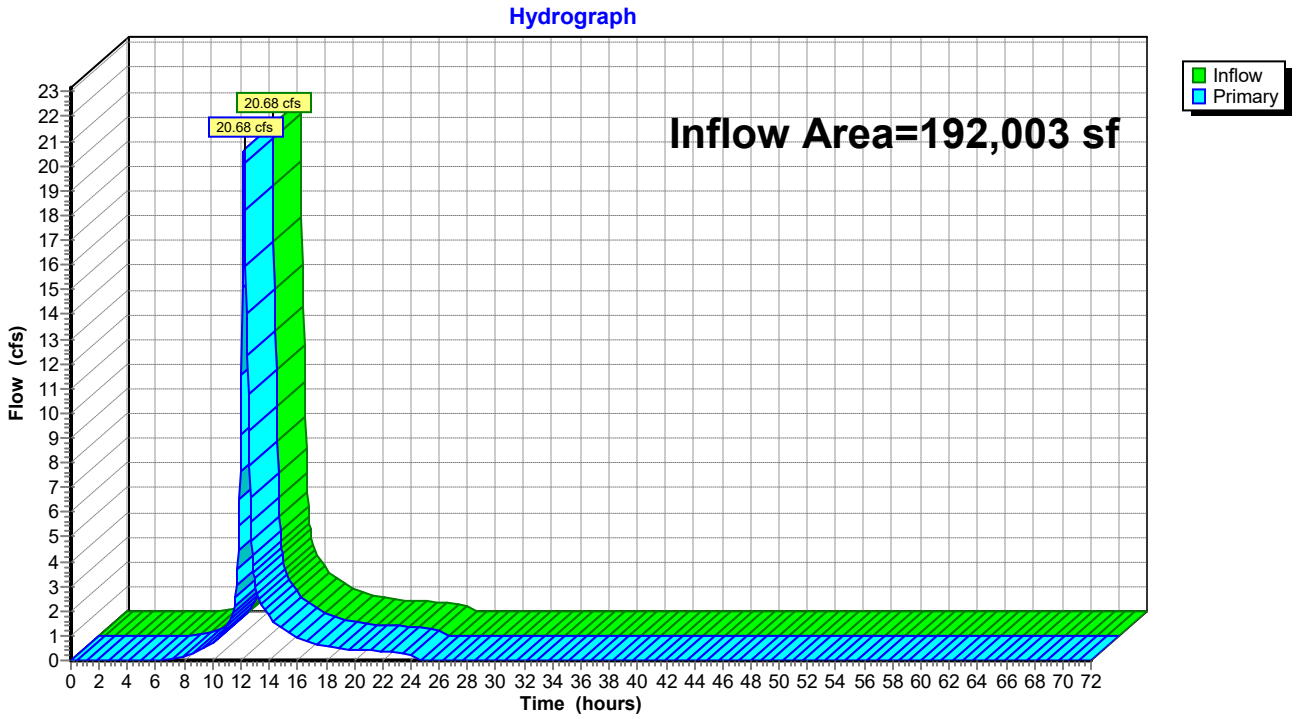


Summary for Pond DP-11e: Woods Southwest

Inflow Area = 192,003 sf, 6.81% Impervious, Inflow Depth = 5.48" for 100yr event
Inflow = 20.68 cfs @ 12.22 hrs, Volume= 87,681 cf
Primary = 20.68 cfs @ 12.22 hrs, Volume= 87,681 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-11e: Woods Southwest

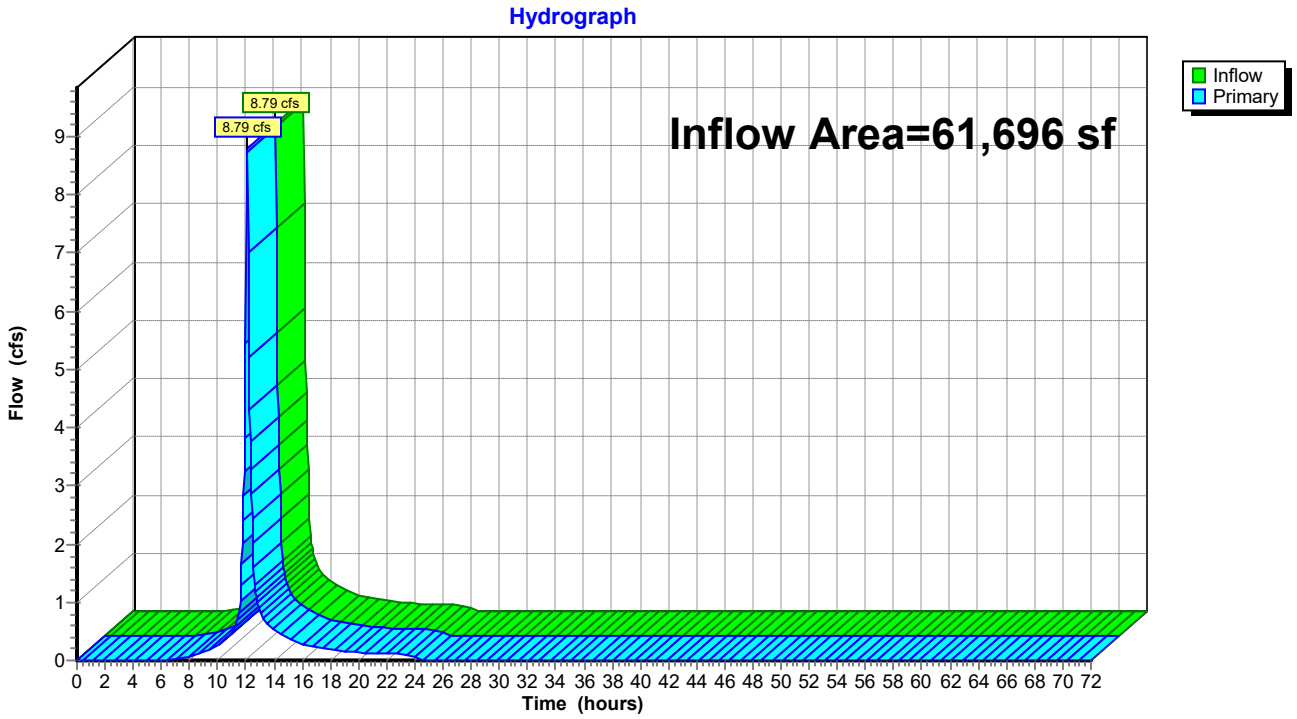


Summary for Pond DP-12e: Residential West#1

Inflow Area = 61,696 sf, 4.78% Impervious, Inflow Depth = 5.48" for 100yr event
Inflow = 8.79 cfs @ 12.09 hrs, Volume= 28,174 cf
Primary = 8.79 cfs @ 12.09 hrs, Volume= 28,174 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-12e: Residential West#1

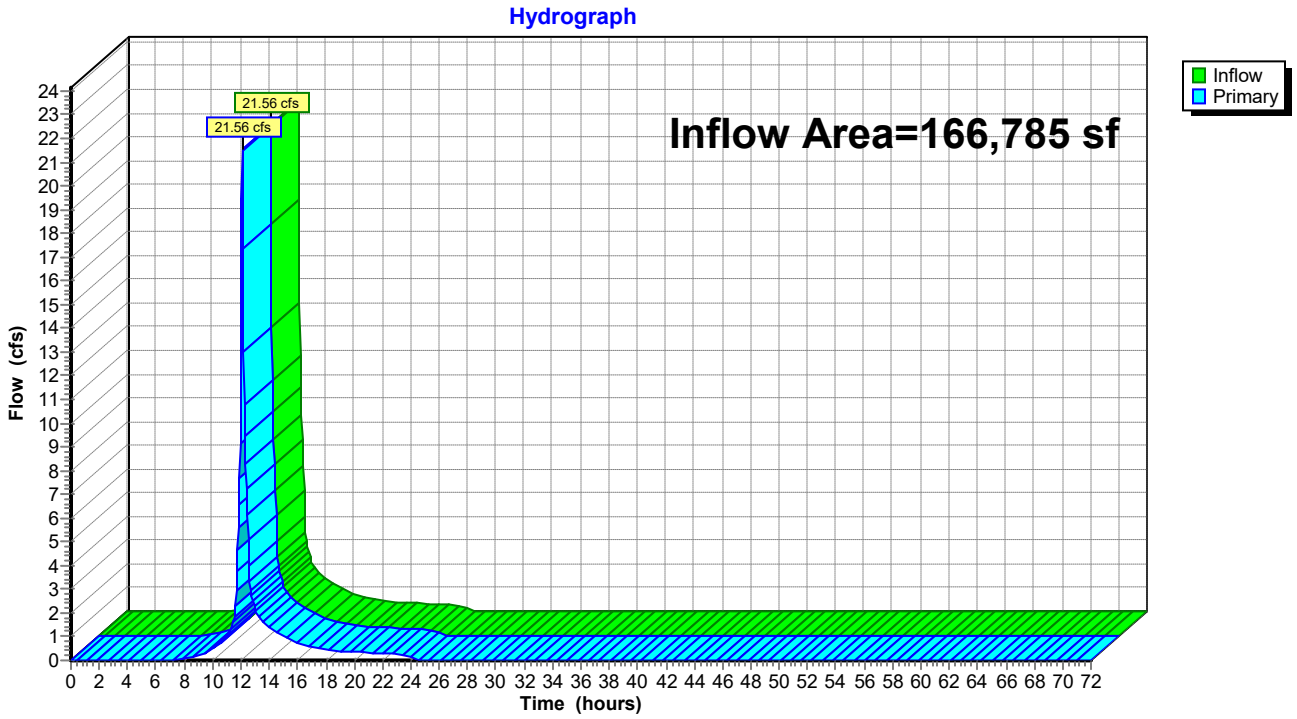


Summary for Pond DP-13e: Residential West#2

Inflow Area = 166,785 sf, 0.00% Impervious, Inflow Depth = 4.92" for 100yr event
Inflow = 21.56 cfs @ 12.09 hrs, Volume= 68,338 cf
Primary = 21.56 cfs @ 12.09 hrs, Volume= 68,338 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-13e: Residential West#2

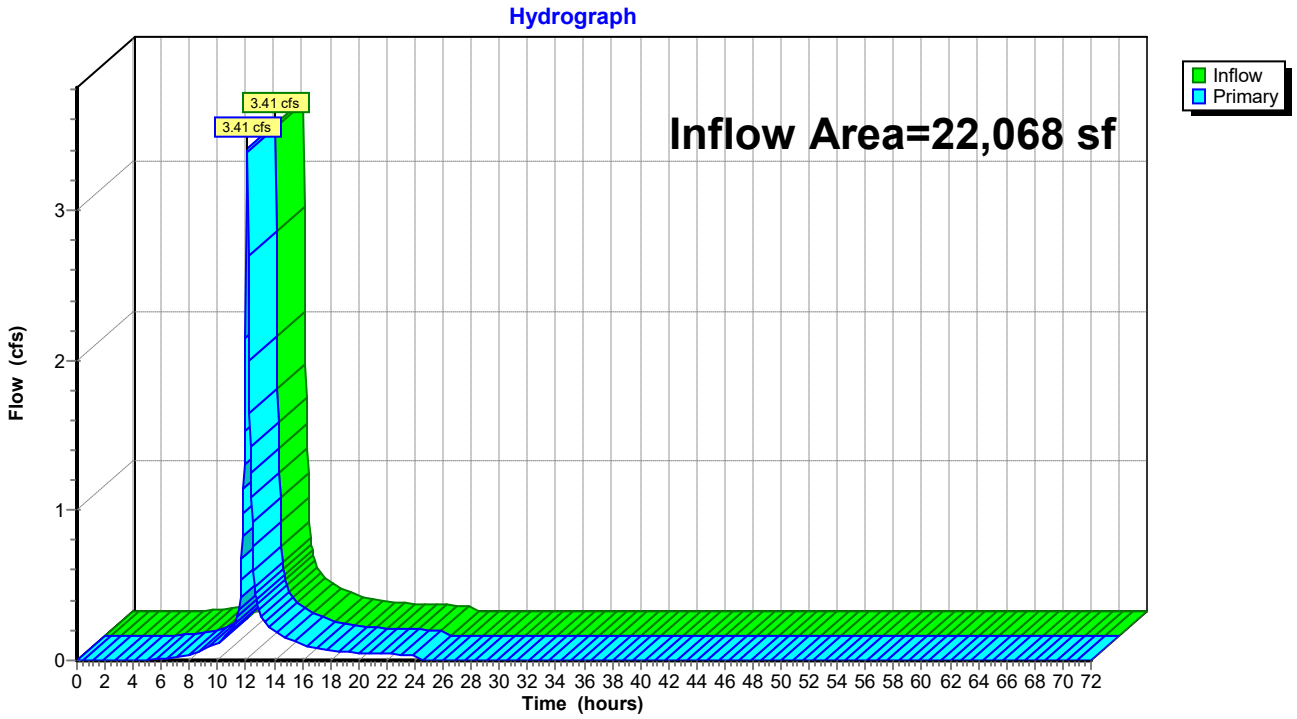


Summary for Pond DP-14e: Residential West#3

Inflow Area = 22,068 sf, 29.78% Impervious, Inflow Depth = 6.07" for 100yr event
Inflow = 3.41 cfs @ 12.09 hrs, Volume= 11,156 cf
Primary = 3.41 cfs @ 12.09 hrs, Volume= 11,156 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-14e: Residential West#3

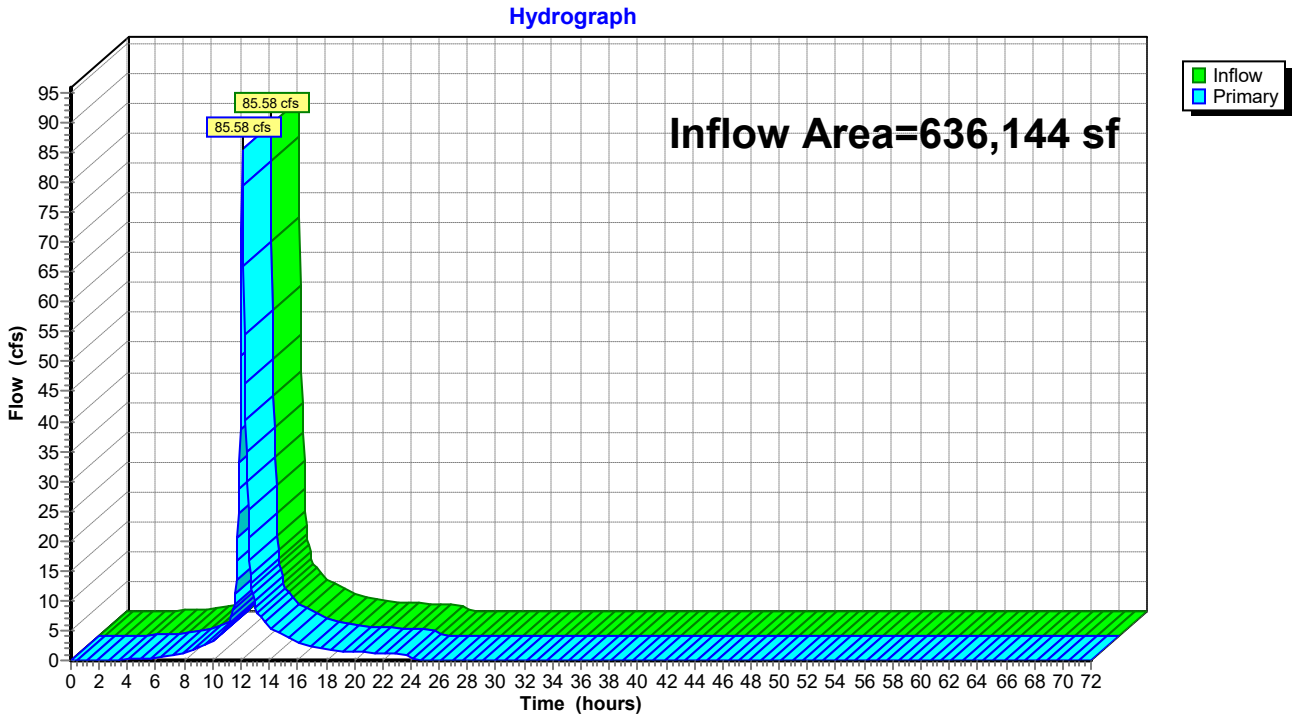


Summary for Pond DP-15e: Wetlands

Inflow Area = 636,144 sf, 29.68% Impervious, Inflow Depth = 6.01" for 100yr event
Inflow = 85.58 cfs @ 12.11 hrs, Volume= 318,351 cf
Primary = 85.58 cfs @ 12.11 hrs, Volume= 318,351 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-15e: Wetlands

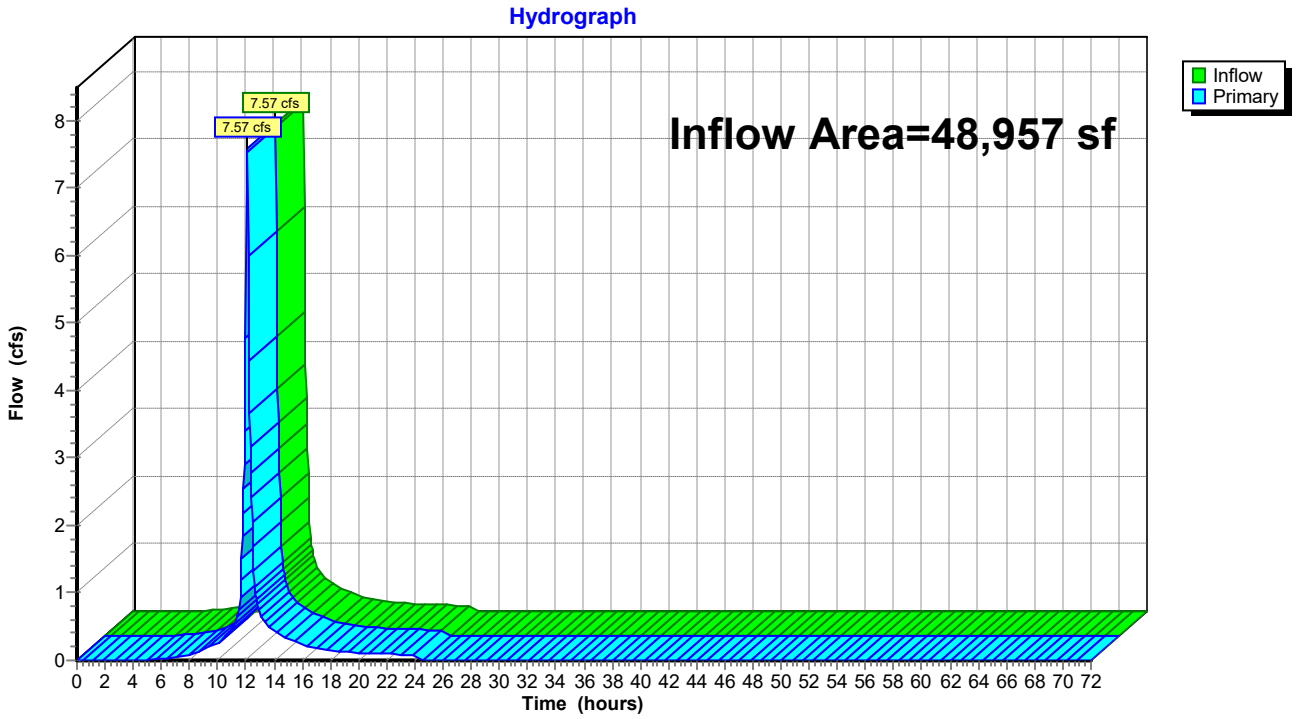


Summary for Pond Dp-16e: Landry Avenue

Inflow Area = 48,957 sf, 27.60% Impervious, Inflow Depth = 6.07" for 100yr event
Inflow = 7.57 cfs @ 12.09 hrs, Volume= 24,750 cf
Primary = 7.57 cfs @ 12.09 hrs, Volume= 24,750 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond Dp-16e: Landry Avenue



Summary for Pond DP-1e: Flow to Exist Basin #1

Inflow Area = 103,683 sf, 38.10% Impervious, Inflow Depth = 6.07" for 100yr event
Inflow = 16.04 cfs @ 12.09 hrs, Volume= 52,416 cf
Outflow = 15.18 cfs @ 12.12 hrs, Volume= 52,416 cf, Atten= 5%, Lag= 1.7 min
Discarded = 0.03 cfs @ 12.12 hrs, Volume= 815 cf
Primary = 15.15 cfs @ 12.12 hrs, Volume= 51,601 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 236.87' @ 12.12 hrs Surf.Area= 6,651 sf Storage= 2,188 cf

Plug-Flow detention time= 4.3 min calculated for 52,379 cf (100% of inflow)
Center-of-Mass det. time= 4.3 min (797.5 - 793.2)

Volume	Invert	Avail.Storage	Storage Description
#1	236.50'	78,288 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

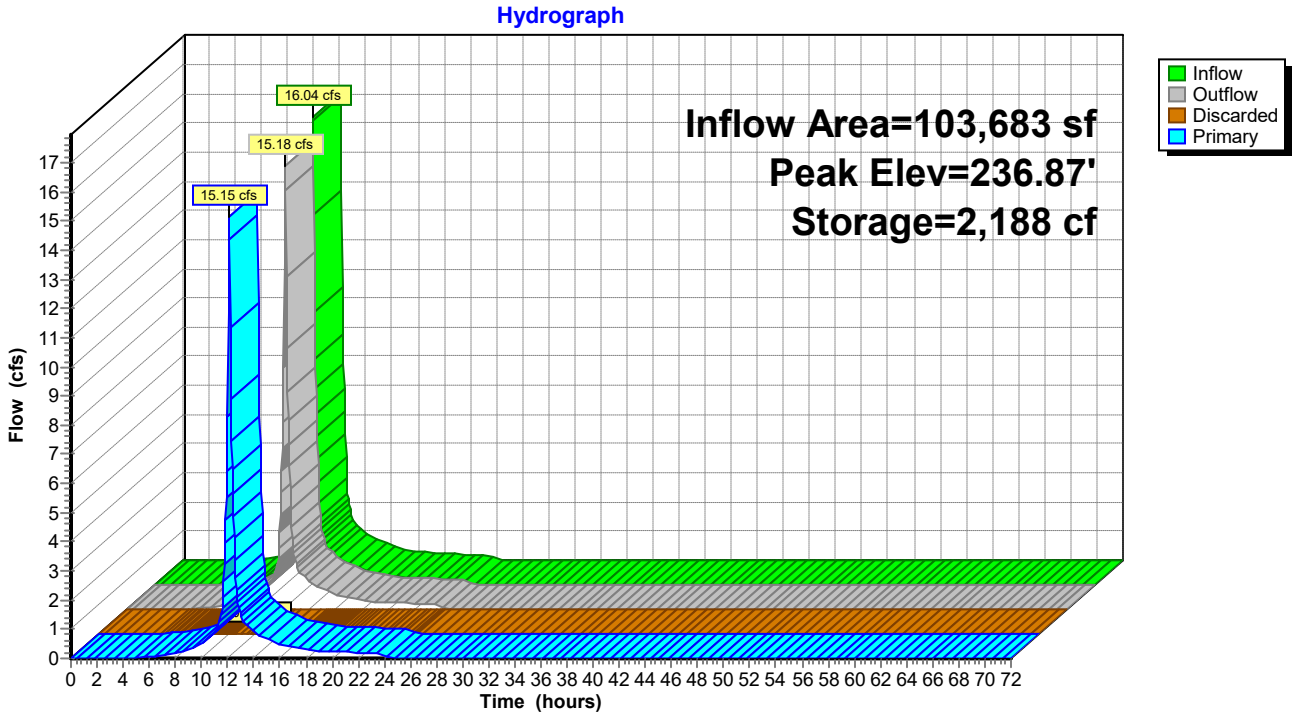
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
236.50	5,215	304.0	0	0	5,215
237.00	7,198	352.0	3,090	3,090	7,726
238.00	11,943	443.0	9,471	12,561	13,497
239.00	19,611	649.0	15,619	28,180	31,406
240.00	26,065	843.0	22,762	50,942	54,452
241.00	28,648	878.0	27,346	78,288	59,322

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**25.0' long x 45.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.03 cfs @ 12.12 hrs HW=236.86' (Free Discharge)
↑**2=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=14.73 cfs @ 12.12 hrs HW=236.86' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 14.73 cfs @ 1.62 fps)

Pond DP-1e: Flow to Exist Basin #1

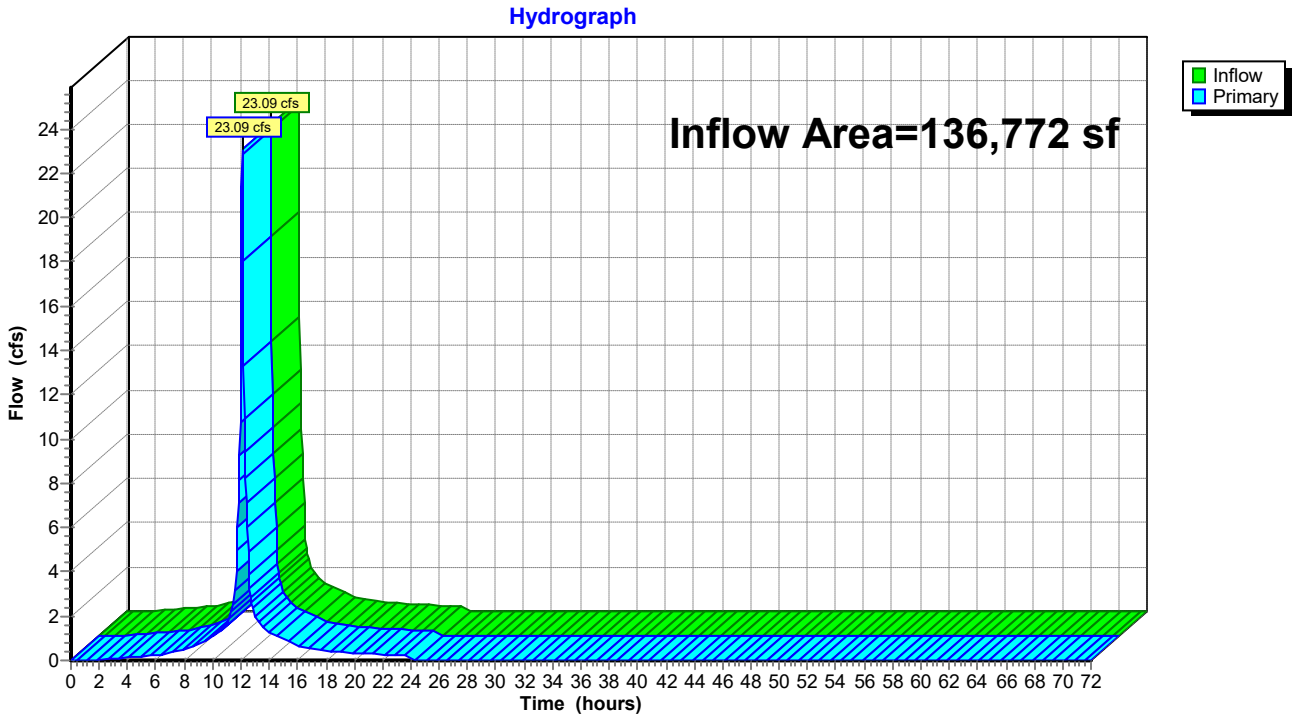


Summary for Pond DP-2e: Flow to Exist Basin#2

Inflow Area = 136,772 sf, 73.93% Impervious, Inflow Depth = 7.06" for 100yr event
Inflow = 23.09 cfs @ 12.09 hrs, Volume= 80,477 cf
Primary = 23.09 cfs @ 12.09 hrs, Volume= 80,477 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-2e: Flow to Exist Basin#2

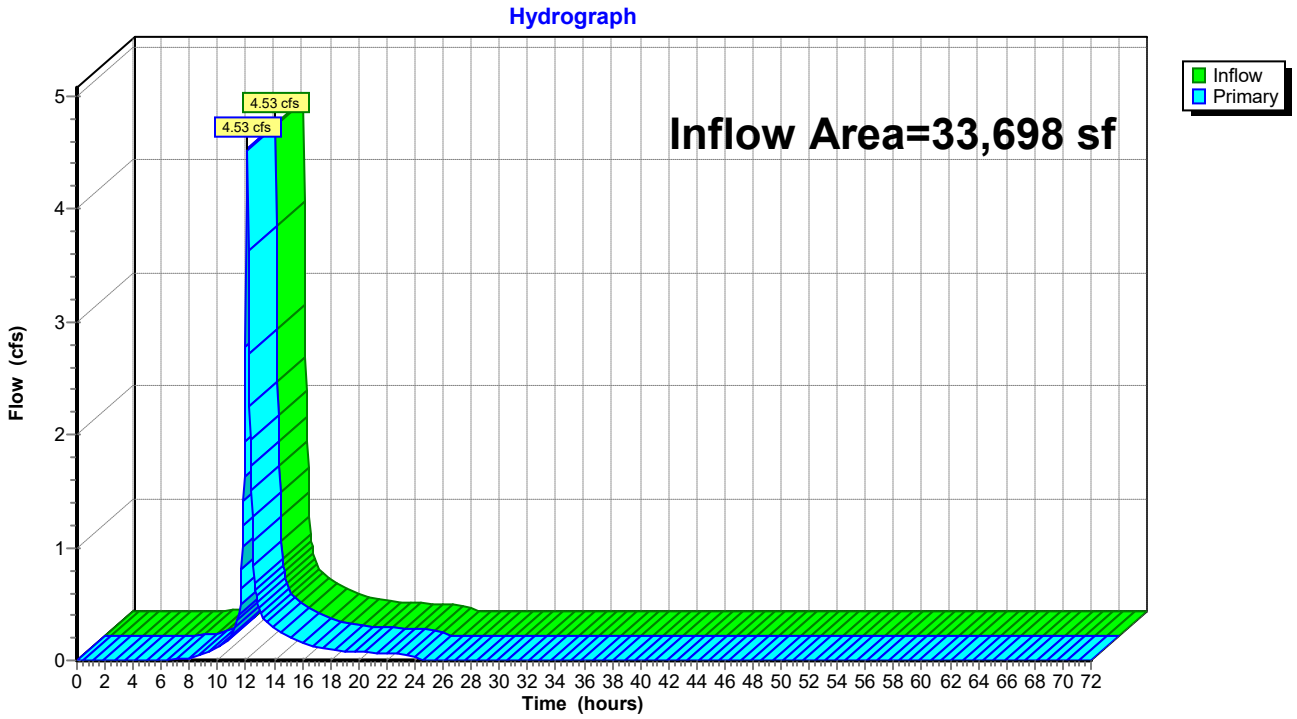


Summary for Pond DP-3e: Residential East#1

Inflow Area = 33,698 sf, 8.21% Impervious, Inflow Depth = 5.13" for 100yr event
Inflow = 4.53 cfs @ 12.09 hrs, Volume= 14,408 cf
Primary = 4.53 cfs @ 12.09 hrs, Volume= 14,408 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-3e: Residential East#1

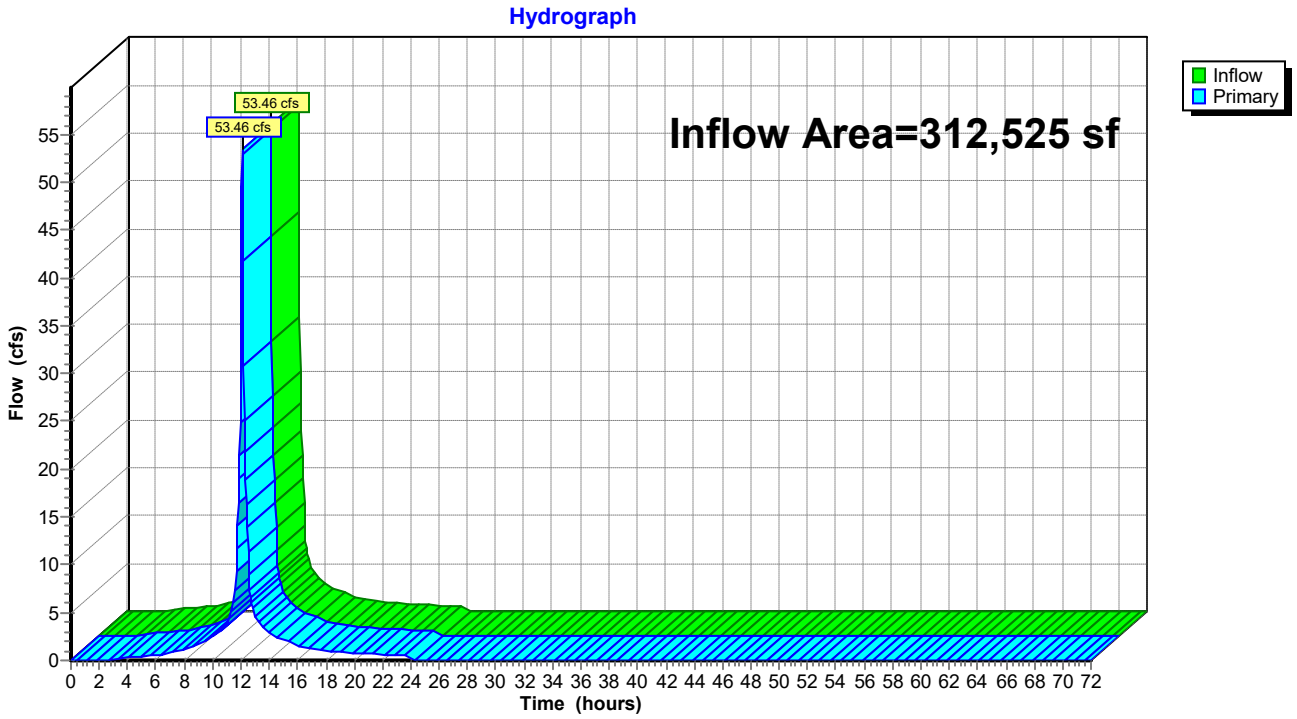


Summary for Pond DP-4e: Exist Swale #1 East

Inflow Area = 312,525 sf, 68.63% Impervious, Inflow Depth = 7.13" for 100yr event
Inflow = 53.46 cfs @ 12.09 hrs, Volume= 185,767 cf
Primary = 53.46 cfs @ 12.09 hrs, Volume= 185,767 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-4e: Exist Swale #1 East

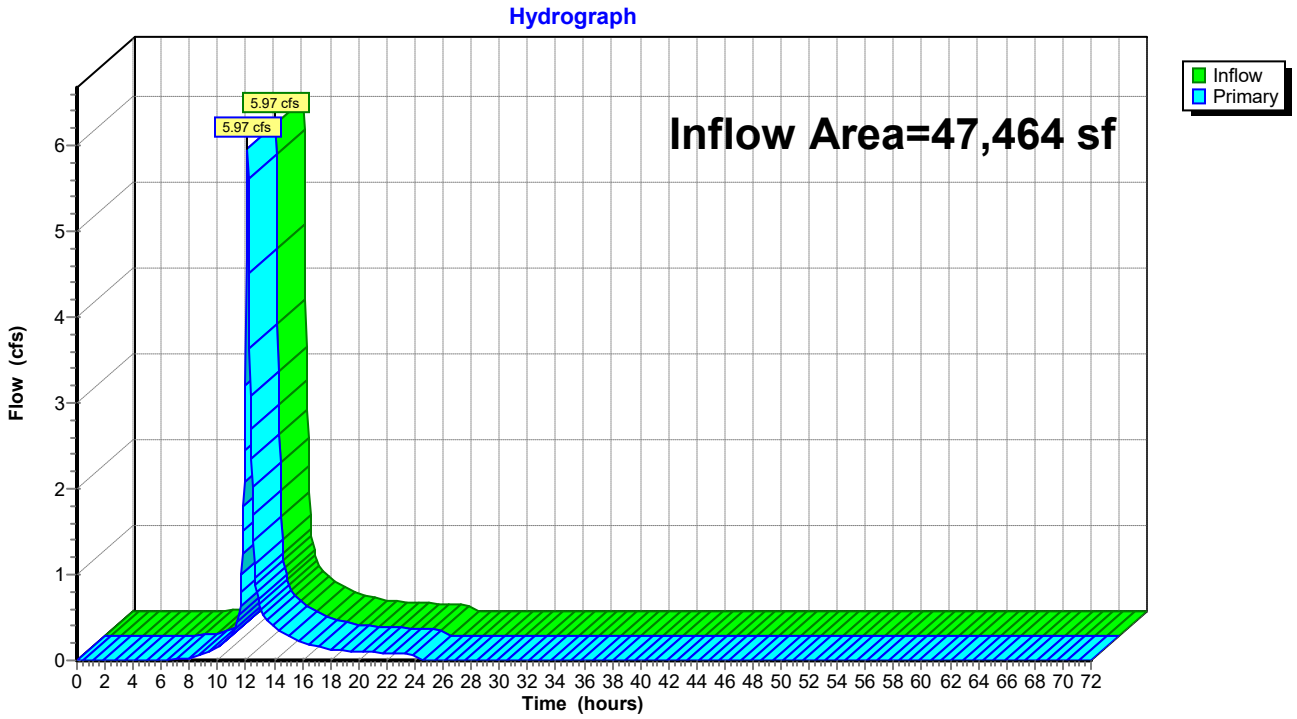


Summary for Pond DP-5e: Residential East#2

Inflow Area = 47,464 sf, 0.00% Impervious, Inflow Depth = 5.13" for 100yr event
Inflow = 5.97 cfs @ 12.12 hrs, Volume= 20,293 cf
Primary = 5.97 cfs @ 12.12 hrs, Volume= 20,293 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-5e: Residential East#2

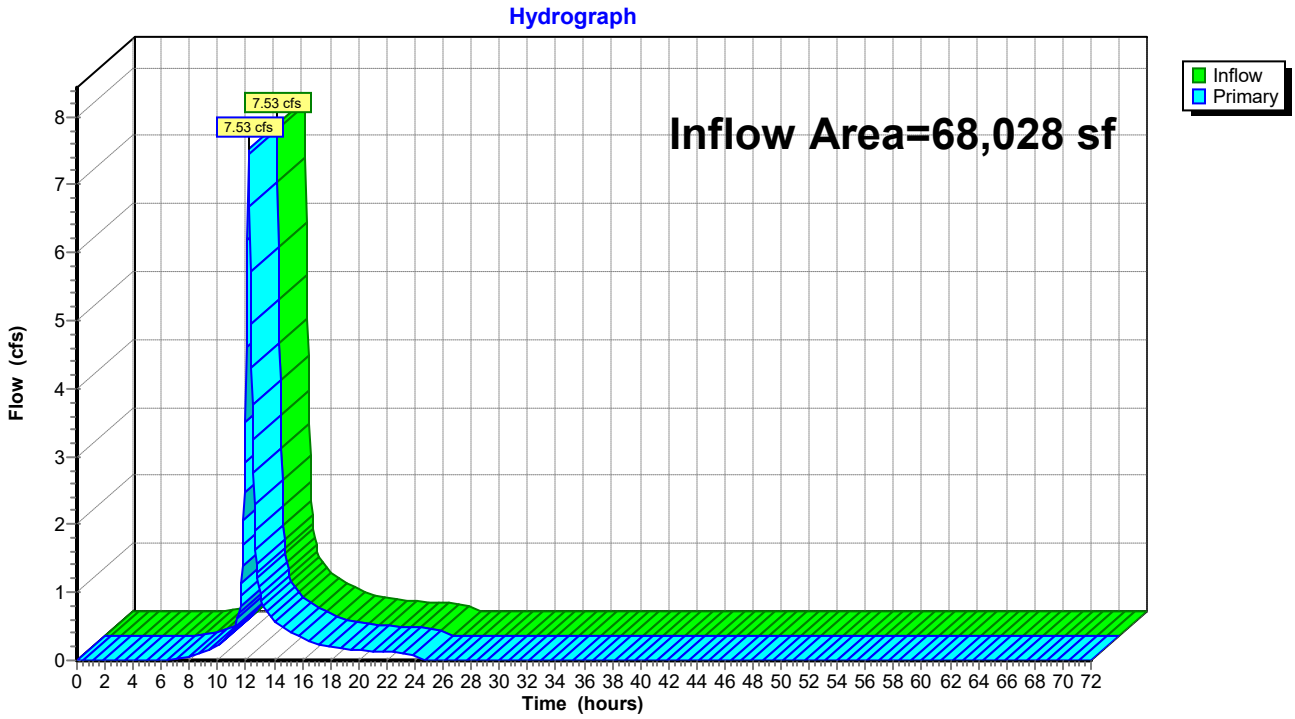


Summary for Pond DP-6e: Residential East#3

Inflow Area = 68,028 sf, 0.00% Impervious, Inflow Depth = 5.25" for 100yr event
Inflow = 7.53 cfs @ 12.18 hrs, Volume= 29,744 cf
Primary = 7.53 cfs @ 12.18 hrs, Volume= 29,744 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-6e: Residential East#3

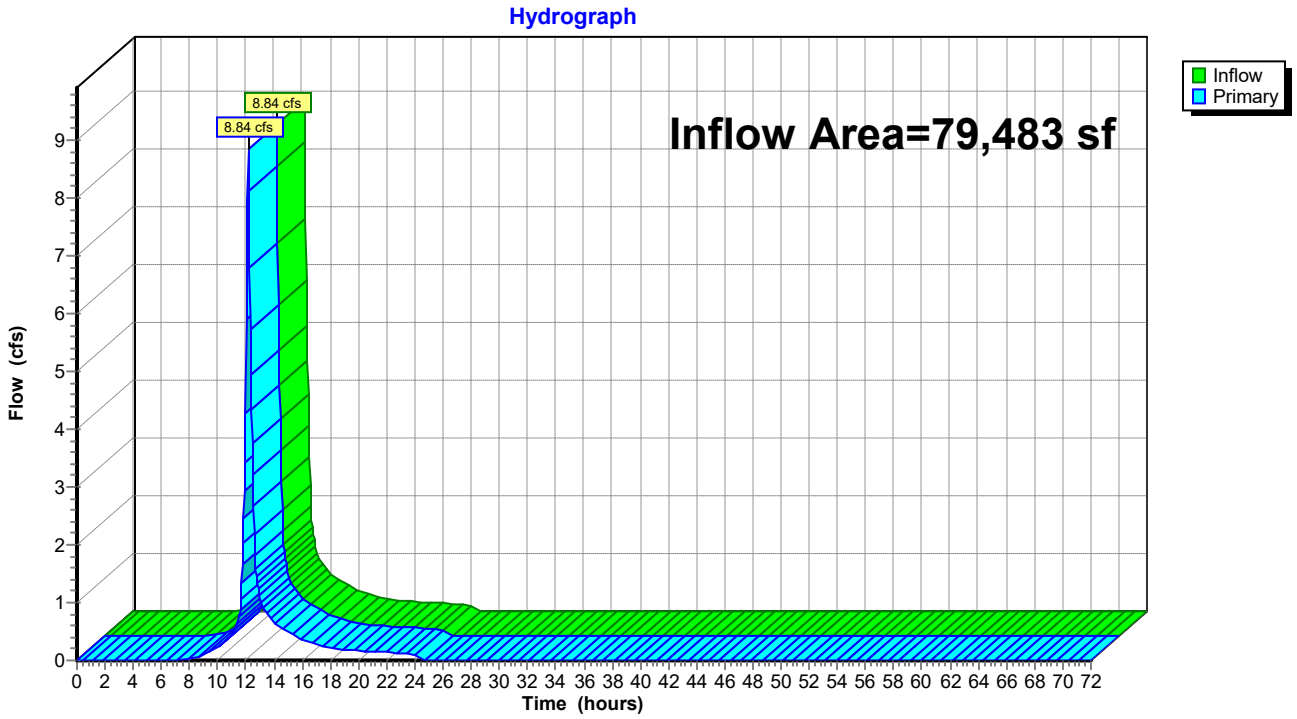


Summary for Pond DP-7e: Residential East#4

Inflow Area = 79,483 sf, 0.00% Impervious, Inflow Depth = 4.90" for 100yr event
Inflow = 8.84 cfs @ 12.15 hrs, Volume= 32,448 cf
Primary = 8.84 cfs @ 12.15 hrs, Volume= 32,448 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-7e: Residential East#4

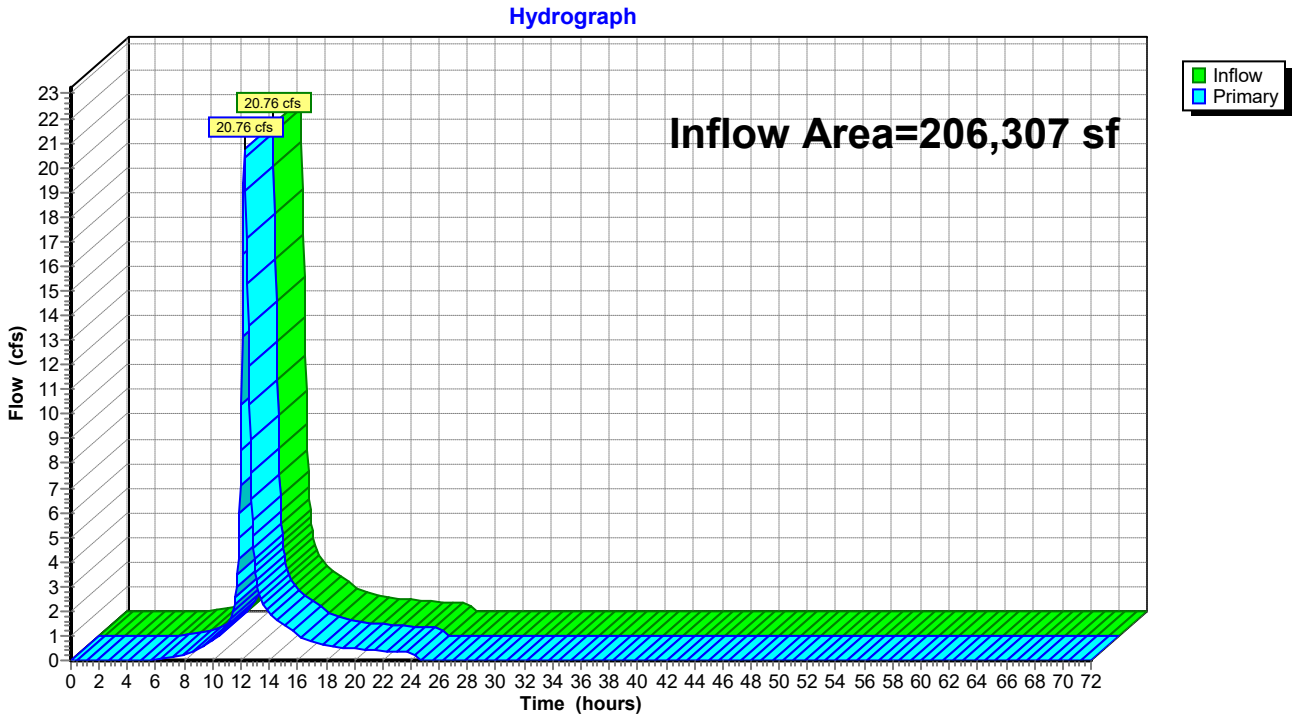


Summary for Pond DP-8e: Stoddard Drive

Inflow Area = 206,307 sf, 6.63% Impervious, Inflow Depth = 5.60" for 100yr event
Inflow = 20.76 cfs @ 12.27 hrs, Volume= 96,223 cf
Primary = 20.76 cfs @ 12.27 hrs, Volume= 96,223 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-8e: Stoddard Drive

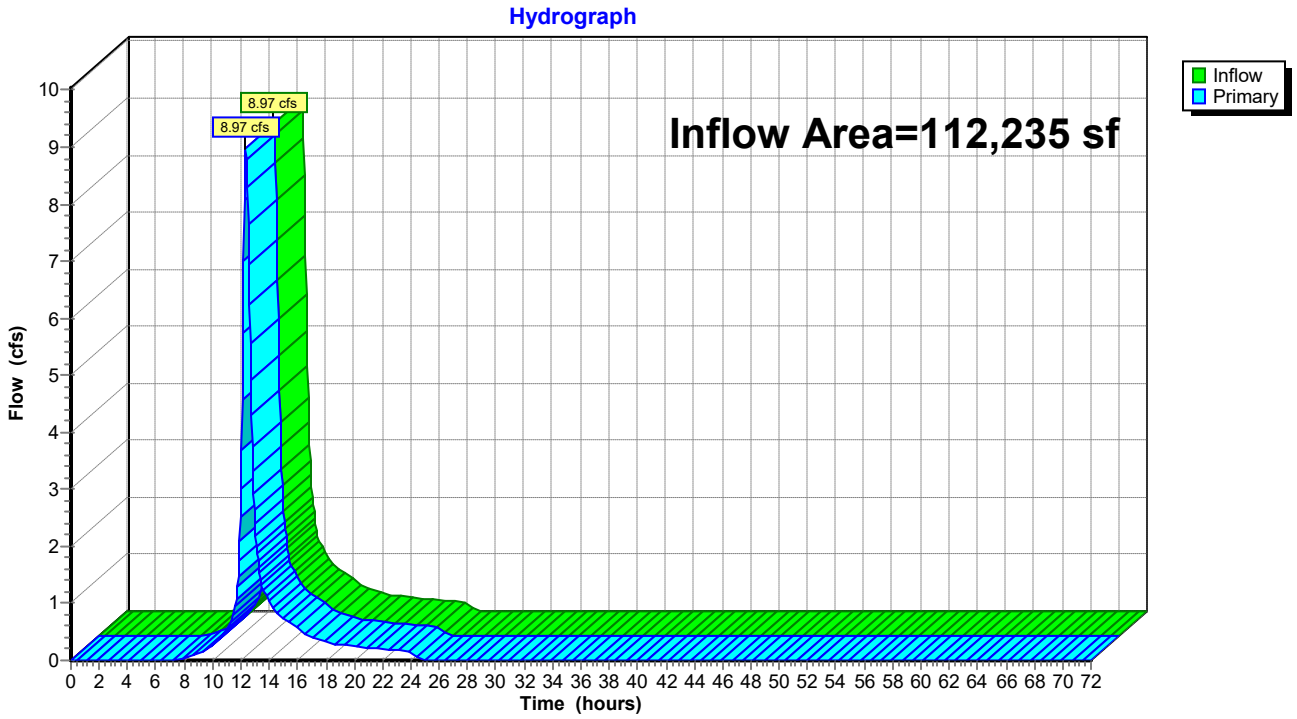


Summary for Pond DP-9e: Woods South

Inflow Area = 112,235 sf, 0.00% Impervious, Inflow Depth = 4.90" for 100yr event
Inflow = 8.97 cfs @ 12.35 hrs, Volume= 45,819 cf
Primary = 8.97 cfs @ 12.35 hrs, Volume= 45,819 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond DP-9e: Woods South

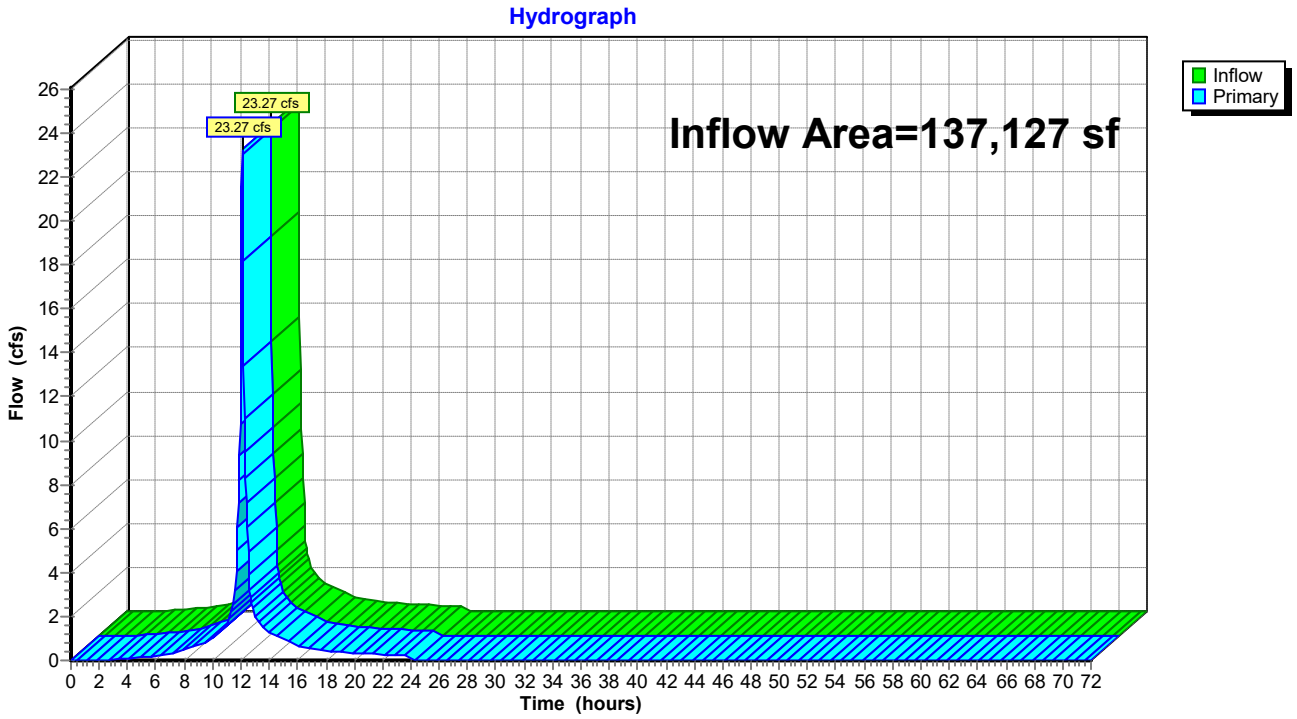


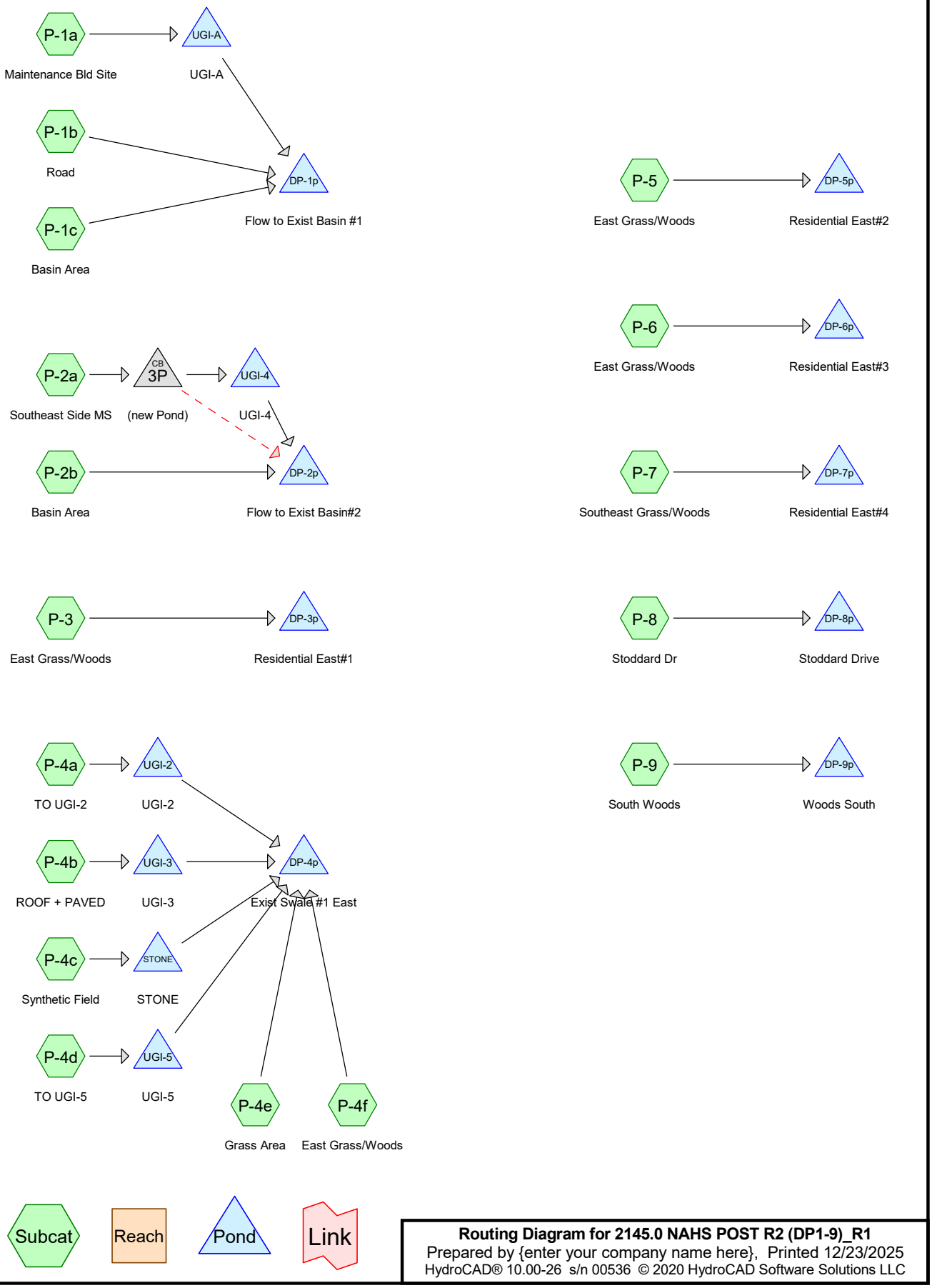
Summary for Pond EC: Existing Underground Chambers

Inflow Area = 137,127 sf, 67.63% Impervious, Inflow Depth = 7.01" for 100yr event
Inflow = 23.27 cfs @ 12.09 hrs, Volume= 80,148 cf
Primary = 23.27 cfs @ 12.09 hrs, Volume= 80,148 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond EC: Existing Underground Chambers





Routing Diagram for 2145.0 NAHS POST R2 (DP1-9)_R1

Prepared by {enter your company name here}, Printed 12/23/2025

HydroCAD® 10.00-26 s/n 00536 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
284,687	79	50-75% Grass cover, Fair, HSG C (P-1a, P-1b, P-1c, P-2a, P-2b, P-3, P-4a, P-4b, P-4d, P-4e, P-4f, P-5, P-6, P-7, P-8, P-9)
41,063	98	Exist Roof , HSG C (P-2a)
43,127	98	IMPERVIOUS (P-4a, P-4e)
277,106	98	Paved parking, HSG C (P-1a, P-1b, P-2a, P-4b, P-4d, P-8)
19,532	98	Roof (P-4b)
5,015	98	Roofs, HSG C (P-1a)
179,201	98	Synthetic Field, HSG C (P-4c)
206,986	73	Woods, Fair, HSG C (P-1c, P-2b, P-3, P-4f, P-5, P-6, P-7, P-9)
1,056,717	**88**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
994,058	HSG C	P-1a, P-1b, P-1c, P-2a, P-2b, P-3, P-4a, P-4b, P-4c, P-4d, P-4e, P-4f, P-5, P-6, P-7, P-8, P-9
0	HSG D	
62,659	Other	P-4a, P-4b, P-4e
1,056,717		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	284,687	0	0	284,687	50-75% Grass cover, Fair	
0	0	41,063	0	0	41,063	Exist Roof	
0	0	0	0	43,127	43,127	IMPERVIOUS	
0	0	277,106	0	0	277,106	Paved parking	
0	0	0	0	19,532	19,532	Roof	
0	0	5,015	0	0	5,015	Roofs	
0	0	179,201	0	0	179,201	Synthetic Field	
0	0	206,986	0	0	206,986	Woods, Fair	
0	**0**	**994,058**	**0**	**62,659**	**1,056,717**	**TOTAL AREA**	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P-1a: Maintenance Bld Site Runoff Area=24,216 sf 65.28% Impervious Runoff Depth=1.97"
Tc=6.0 min CN=91 Runoff=1.27 cfs 3,973 cf

Subcatchment P-1b: Road Runoff Area=48,277 sf 45.39% Impervious Runoff Depth=1.72"
Tc=6.0 min CN=88 Runoff=2.23 cfs 6,923 cf

Subcatchment P-1c: Basin Area Runoff Area=33,956 sf 0.00% Impervious Runoff Depth=1.00"
Tc=6.0 min CN=77 Runoff=0.87 cfs 2,817 cf

Subcatchment P-2a: Southeast Side MS Runoff Area=81,022 sf 85.38% Impervious Runoff Depth=2.34"
Tc=6.0 min CN=95 Runoff=4.86 cfs 15,813 cf

Subcatchment P-2b: Basin Area Runoff Area=11,282 sf 0.00% Impervious Runoff Depth=1.05"
Tc=6.0 min CN=78 Runoff=0.31 cfs 988 cf

Subcatchment P-3: East Grass/Woods Runoff Area=35,588 sf 0.00% Impervious Runoff Depth=0.89"
Tc=6.0 min CN=75 Runoff=0.80 cfs 2,638 cf

Subcatchment P-4a: TO UGI-2 Runoff Area=87,726 sf 42.98% Impervious Runoff Depth=1.64"
Tc=6.0 min CN=87 Runoff=3.88 cfs 12,014 cf

Subcatchment P-4b: ROOF + PAVED Runoff Area=205,806 sf 68.06% Impervious Runoff Depth=2.06"
Tc=6.0 min CN=92 Runoff=11.19 cfs 35,285 cf

Subcatchment P-4c: Synthetic Field Runoff Area=179,201 sf 100.00% Impervious Runoff Depth=2.66"
Tc=6.0 min CN=98 Runoff=11.51 cfs 39,704 cf

Subcatchment P-4d: TO UGI-5 Runoff Area=108,946 sf 85.78% Impervious Runoff Depth=2.34"
Tc=6.0 min CN=95 Runoff=6.54 cfs 21,263 cf

Subcatchment P-4e: Grass Area Runoff Area=22,330 sf 24.29% Impervious Runoff Depth=1.43"
Tc=6.0 min CN=84 Runoff=0.86 cfs 2,654 cf

Subcatchment P-4f: East Grass/Woods Runoff Area=6,872 sf 0.00% Impervious Runoff Depth=0.94"
Tc=6.0 min CN=76 Runoff=0.17 cfs 539 cf

Subcatchment P-5: East Grass/Woods Runoff Area=25,439 sf 0.00% Impervious Runoff Depth=0.84"
Tc=6.0 min CN=74 Runoff=0.53 cfs 1,779 cf

Subcatchment P-6: East Grass/Woods Runoff Area=27,226 sf 0.00% Impervious Runoff Depth=0.89"
Tc=6.0 min CN=75 Runoff=0.61 cfs 2,018 cf

Subcatchment P-7: Southeast Grass/Woods Runoff Area=54,764 sf 0.00% Impervious Runoff Depth=0.84"
Tc=6.0 min CN=74 Runoff=1.14 cfs 3,830 cf

Subcatchment P-8: Stoddard Dr Runoff Area=4,592 sf 49.87% Impervious Runoff Depth=1.72"
Tc=6.0 min CN=88 Runoff=0.21 cfs 658 cf

Subcatchment P-9: South Woods Runoff Area=99,474 sf 0.00% Impervious Runoff Depth=0.84"
Flow Length=498' Tc=25.5 min CN=74 Runoff=1.26 cfs 6,957 cf

Pond 3P: (new Pond) Peak Elev=240.45' Inflow=4.86 cfs 15,813 cf
Primary=4.85 cfs 15,811 cf Secondary=0.01 cfs 2 cf Outflow=4.86 cfs 15,813 cf

Pond DP-1p: Flow to Exist Basin #1 Inflow=3.10 cfs 9,740 cf
Primary=3.10 cfs 9,740 cf

Pond DP-2p: Flow to Exist Basin#2 Inflow=4.73 cfs 13,634 cf
Primary=4.73 cfs 13,634 cf

Pond DP-3p: Residential East#1 Inflow=0.80 cfs 2,638 cf
Primary=0.80 cfs 2,638 cf

Pond DP-4p: Exist Swale #1 East Inflow=2.13 cfs 19,139 cf
Primary=2.13 cfs 19,139 cf

Pond DP-5p: Residential East#2 Inflow=0.53 cfs 1,779 cf
Primary=0.53 cfs 1,779 cf

Pond DP-6p: Residential East#3 Inflow=0.61 cfs 2,018 cf
Primary=0.61 cfs 2,018 cf

Pond DP-7p: Residential East#4 Inflow=1.14 cfs 3,830 cf
Primary=1.14 cfs 3,830 cf

Pond DP-8p: Stoddard Drive Inflow=0.21 cfs 658 cf
Primary=0.21 cfs 658 cf

Pond DP-9p: Woods South Inflow=1.26 cfs 6,957 cf
Primary=1.26 cfs 6,957 cf

Pond STONE: STONE Peak Elev=240.22' Storage=18,256 cf Inflow=11.51 cfs 39,704 cf
Discarded=0.56 cfs 39,676 cf Primary=0.00 cfs 0 cf Outflow=0.56 cfs 39,676 cf

Pond UGI-2: UGI-2 Peak Elev=241.56' Storage=4,719 cf Inflow=3.88 cfs 12,014 cf
Discarded=0.01 cfs 2,987 cf Primary=1.54 cfs 7,815 cf Outflow=1.56 cfs 10,802 cf

Pond UGI-3: UGI-3 Peak Elev=237.43' Storage=34,448 cf Inflow=11.19 cfs 35,285 cf
Discarded=0.01 cfs 3,243 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 3,243 cf

Pond UGI-4: UGI-4 Peak Elev=240.89' Storage=3,402 cf Inflow=4.85 cfs 15,811 cf
Discarded=0.01 cfs 2,493 cf Primary=4.43 cfs 12,644 cf Outflow=4.44 cfs 15,137 cf

Pond UGI-5: UGI-5 Peak Elev=236.52' Storage=12,502 cf Inflow=6.54 cfs 21,263 cf
Discarded=0.04 cfs 10,520 cf Primary=0.55 cfs 8,130 cf Outflow=0.59 cfs 18,651 cf

Pond UGI-A: UGI-A Peak Elev=237.27' Storage=3,867 cf Inflow=1.27 cfs 3,973 cf
Discarded=0.00 cfs 421 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 421 cf

Total Runoff Area = 1,056,717 sf Runoff Volume = 159,856 cf Average Runoff Depth = 1.82"
46.53% Pervious = 491,673 sf 53.47% Impervious = 565,044 sf

Summary for Subcatchment P-1a: Maintenance Bld Site

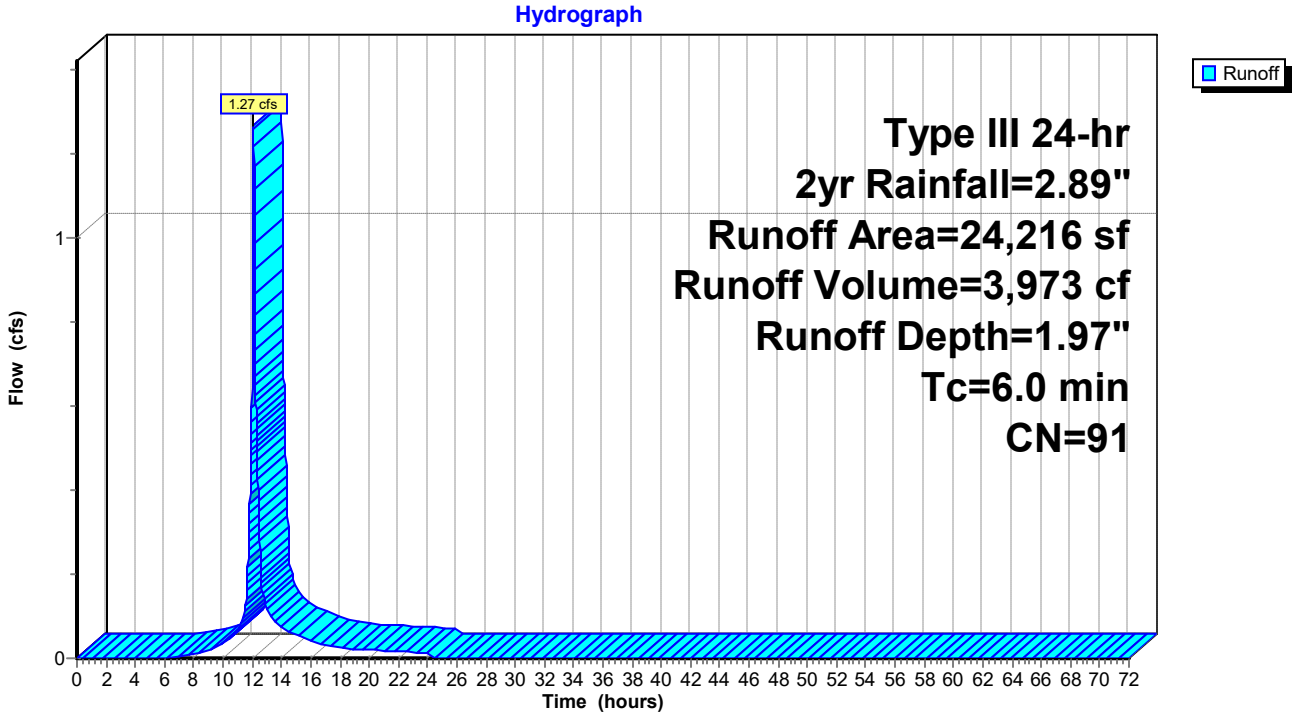
Runoff = 1.27 cfs @ 12.09 hrs, Volume= 3,973 cf, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
10,792	98	Paved parking, HSG C
5,015	98	Roofs, HSG C
8,409	79	50-75% Grass cover, Fair, HSG C
24,216	91	Weighted Average
8,409		34.72% Pervious Area
15,807		65.28% Impervious Area

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

Subcatchment P-1a: Maintenance Bld Site



Summary for Subcatchment P-1b: Road

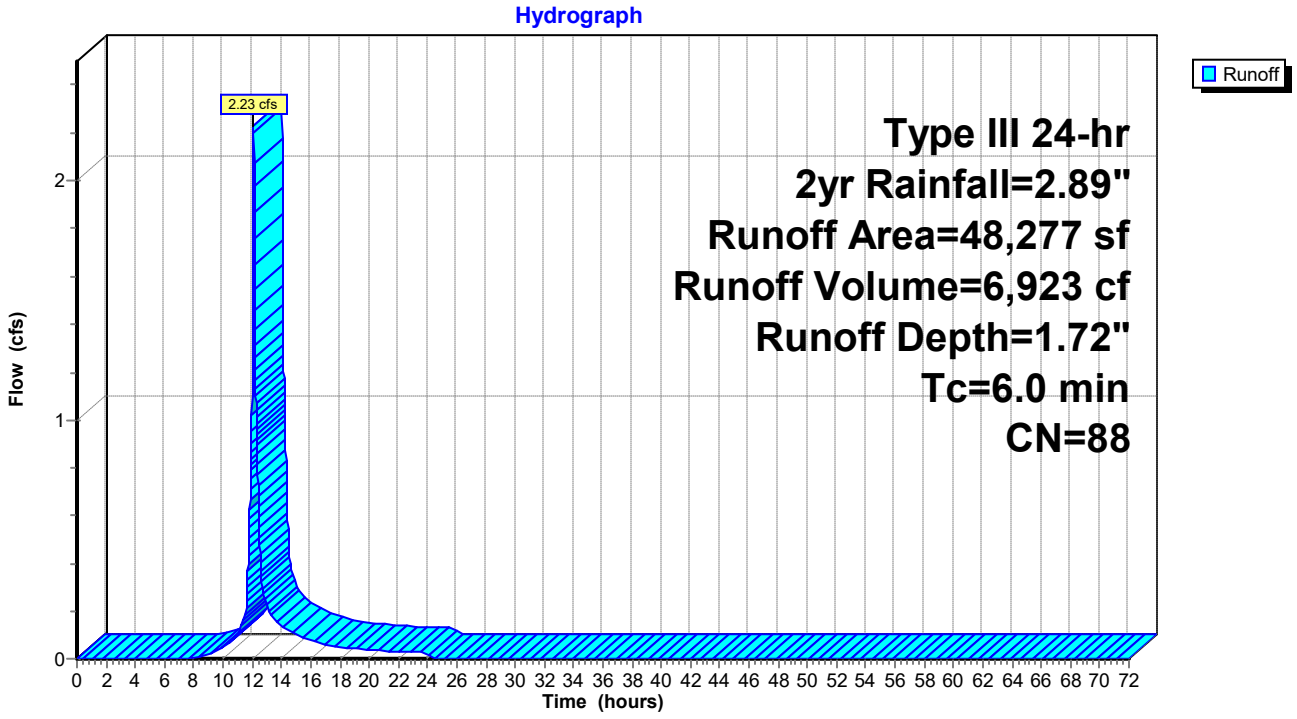
Runoff = 2.23 cfs @ 12.09 hrs, Volume= 6,923 cf, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
21,913	98	Paved parking, HSG C
26,364	79	50-75% Grass cover, Fair, HSG C
48,277	88	Weighted Average
26,364		54.61% Pervious Area
21,913		45.39% Impervious Area

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

Subcatchment P-1b: Road



Summary for Subcatchment P-1c: Basin Area

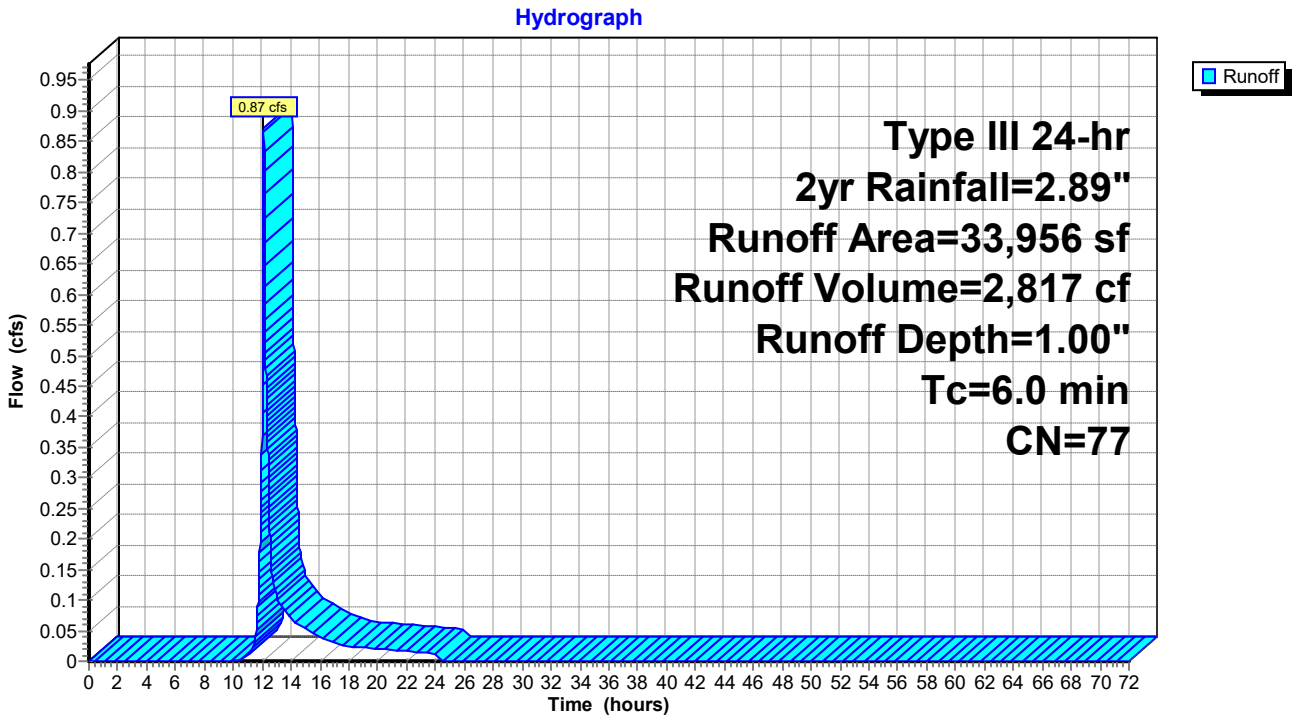
Runoff = 0.87 cfs @ 12.09 hrs, Volume= 2,817 cf, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
10,345	73	Woods, Fair, HSG C
23,611	79	50-75% Grass cover, Fair, HSG C
33,956	77	Weighted Average
33,956		100.00% Pervious Area

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

Subcatchment P-1c: Basin Area



Summary for Subcatchment P-2a: Southeast Side MS

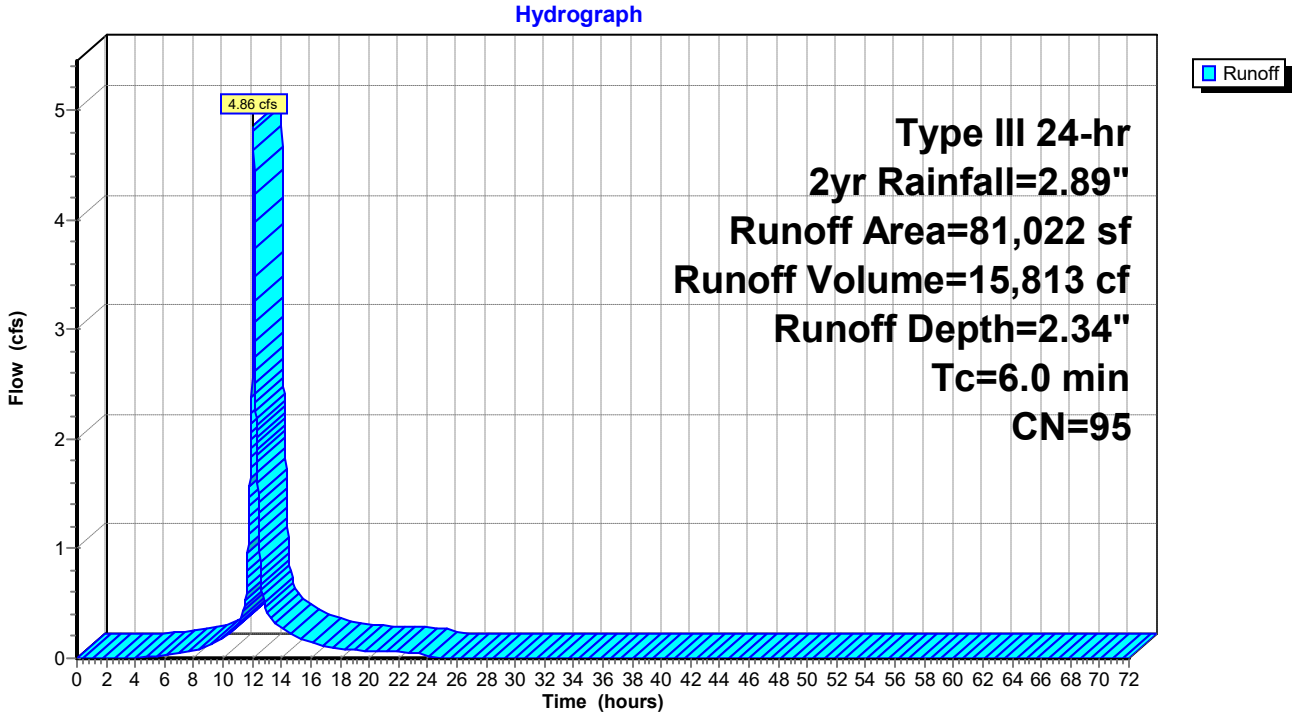
Runoff = 4.86 cfs @ 12.08 hrs, Volume= 15,813 cf, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
	28,114	98	Paved parking, HSG C
	11,845	79	50-75% Grass cover, Fair, HSG C
*	41,063	98	Exist Roof , HSG C
	81,022	95	Weighted Average
	11,845		14.62% Pervious Area
	69,177		85.38% Impervious Area

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

Subcatchment P-2a: Southeast Side MS



Summary for Subcatchment P-2b: Basin Area

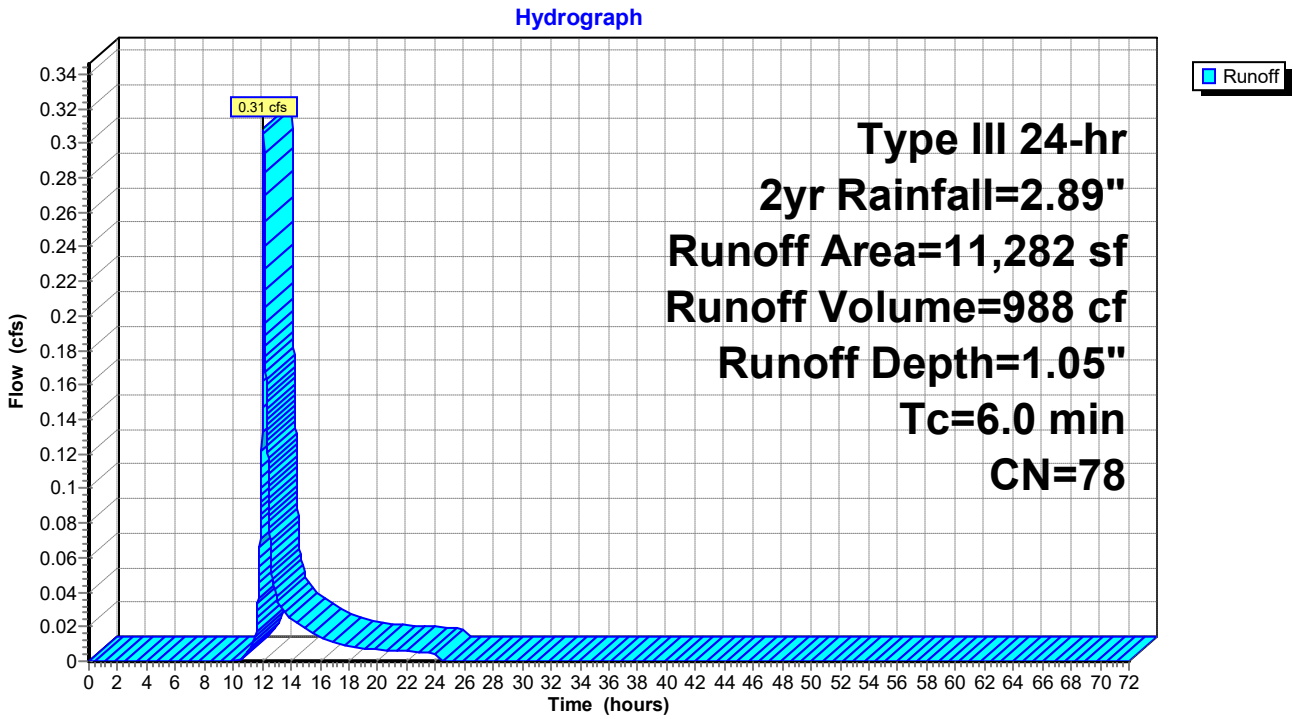
Runoff = 0.31 cfs @ 12.09 hrs, Volume= 988 cf, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	2,391	73	Woods, Fair, HSG C
	8,891	79	50-75% Grass cover, Fair, HSG C
	11,282	78	Weighted Average
	11,282		100.00% Pervious Area

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

Subcatchment P-2b: Basin Area



Summary for Subcatchment P-3: East Grass/Woods

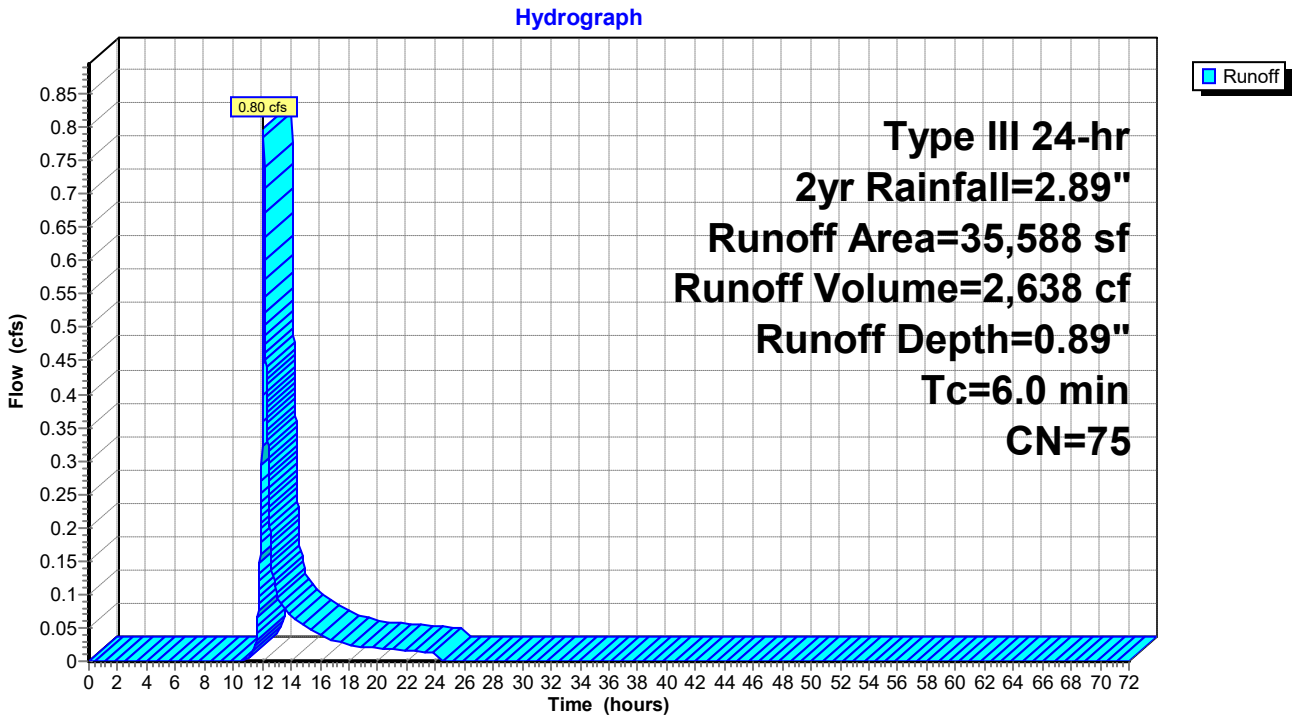
Runoff = 0.80 cfs @ 12.10 hrs, Volume= 2,638 cf, Depth= 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
22,537	73	Woods, Fair, HSG C
13,051	79	50-75% Grass cover, Fair, HSG C
35,588	75	Weighted Average
35,588		100.00% Pervious Area

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

Subcatchment P-3: East Grass/Woods



Summary for Subcatchment P-4a: TO UGI-2

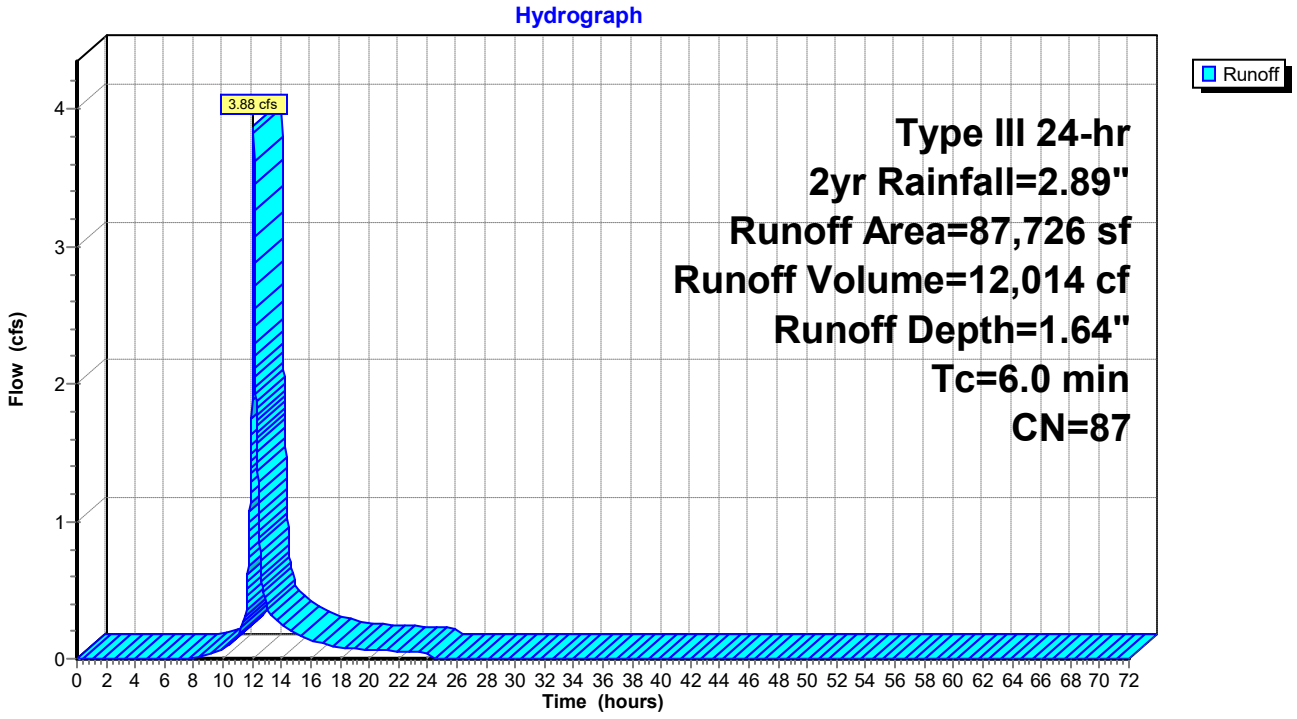
Runoff = 3.88 cfs @ 12.09 hrs, Volume= 12,014 cf, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	37,704	98	IMPERVIOUS
	50,022	79	50-75% Grass cover, Fair, HSG C
	87,726	87	Weighted Average
	50,022		57.02% Pervious Area
	37,704		42.98% Impervious Area

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

Subcatchment P-4a: TO UGI-2



Summary for Subcatchment P-4b: ROOF + PAVED

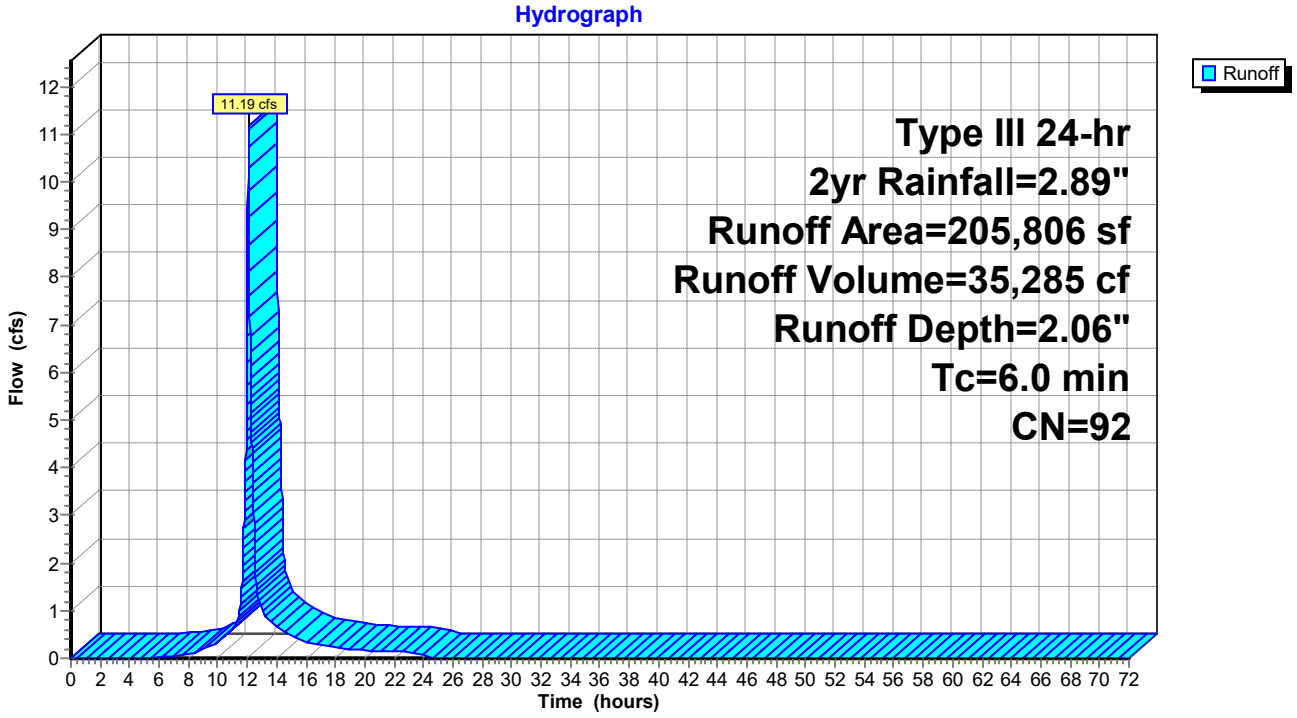
Runoff = 11.19 cfs @ 12.09 hrs, Volume= 35,285 cf, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
	120,540	98	Paved parking, HSG C
	65,734	79	50-75% Grass cover, Fair, HSG C
*	19,532	98	Roof
	205,806	92	Weighted Average
	65,734		31.94% Pervious Area
	140,072		68.06% Impervious Area

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

Subcatchment P-4b: ROOF + PAVED



Summary for Subcatchment P-4c: Synthetic Field

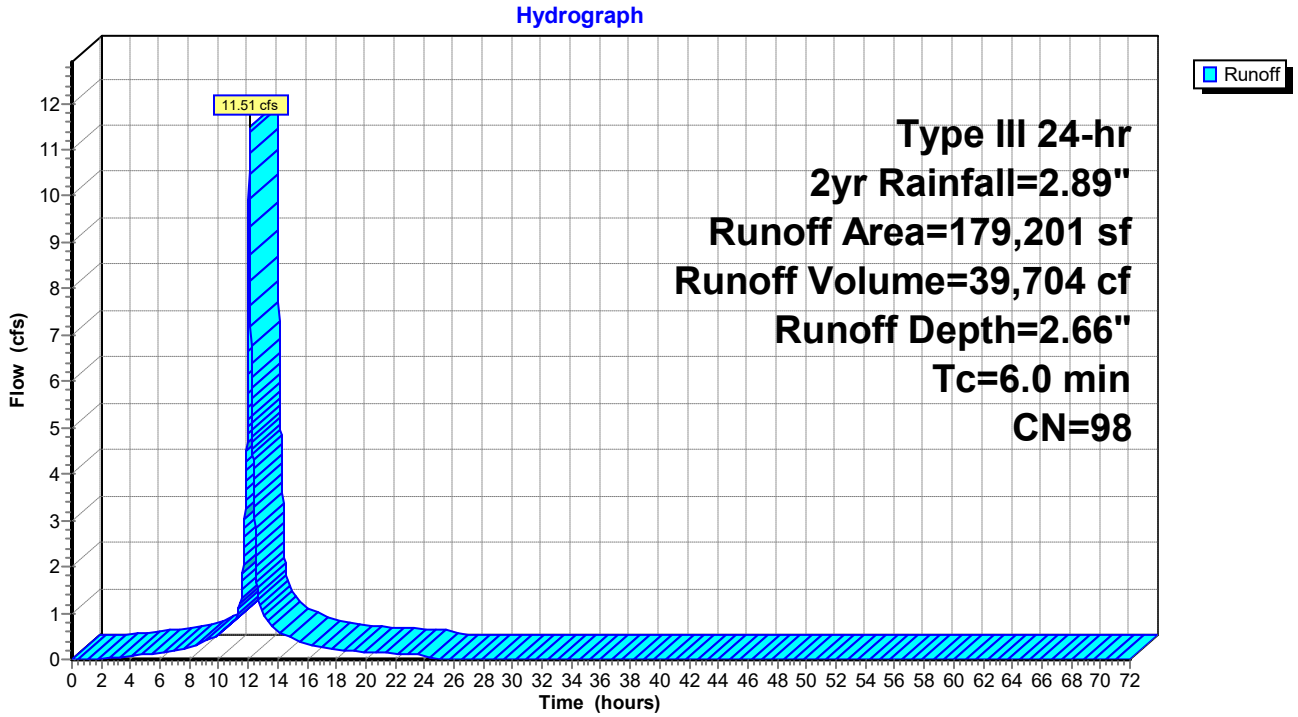
Runoff = 11.51 cfs @ 12.08 hrs, Volume= 39,704 cf, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	179,201	98	Synthetic Field, HSG C
	179,201		100.00% Impervious Area

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

Subcatchment P-4c: Synthetic Field



Summary for Subcatchment P-4d: TO UGI-5

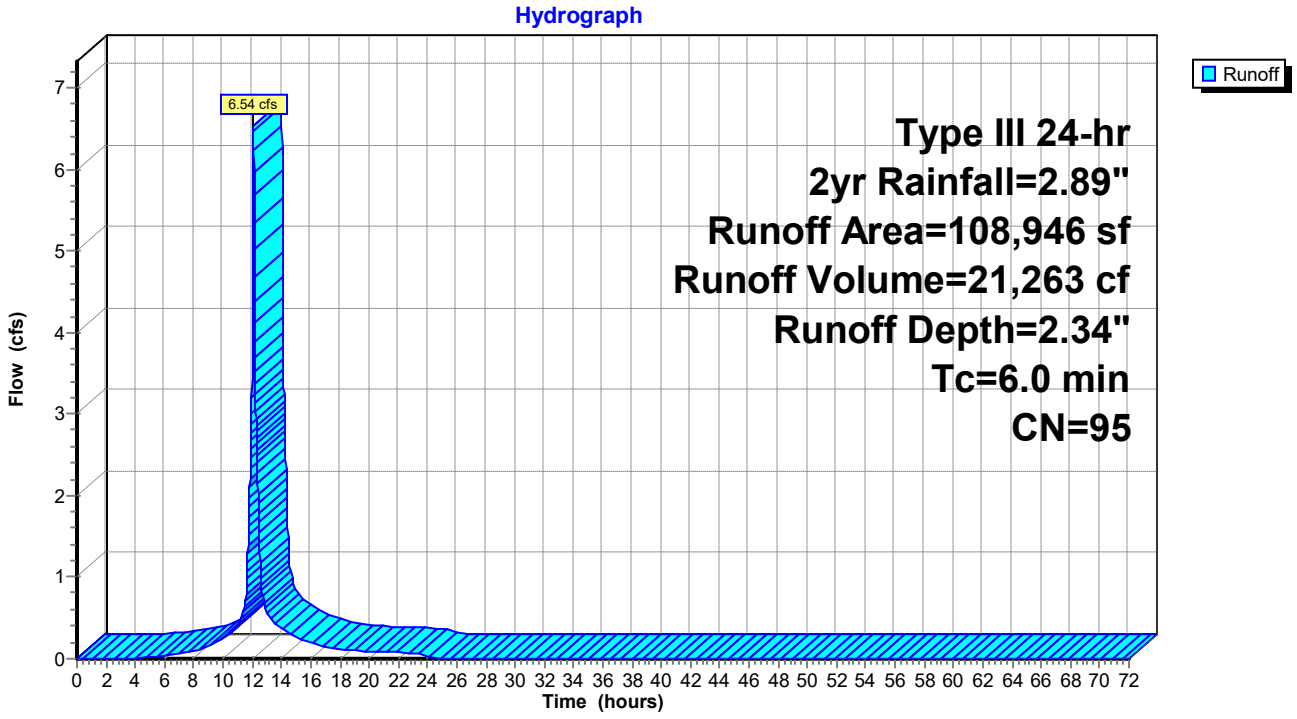
Runoff = 6.54 cfs @ 12.08 hrs, Volume= 21,263 cf, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
93,457	98	Paved parking, HSG C
15,489	79	50-75% Grass cover, Fair, HSG C
108,946	95	Weighted Average
15,489		14.22% Pervious Area
93,457		85.78% Impervious Area

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

Subcatchment P-4d: TO UGI-5



Summary for Subcatchment P-4e: Grass Area

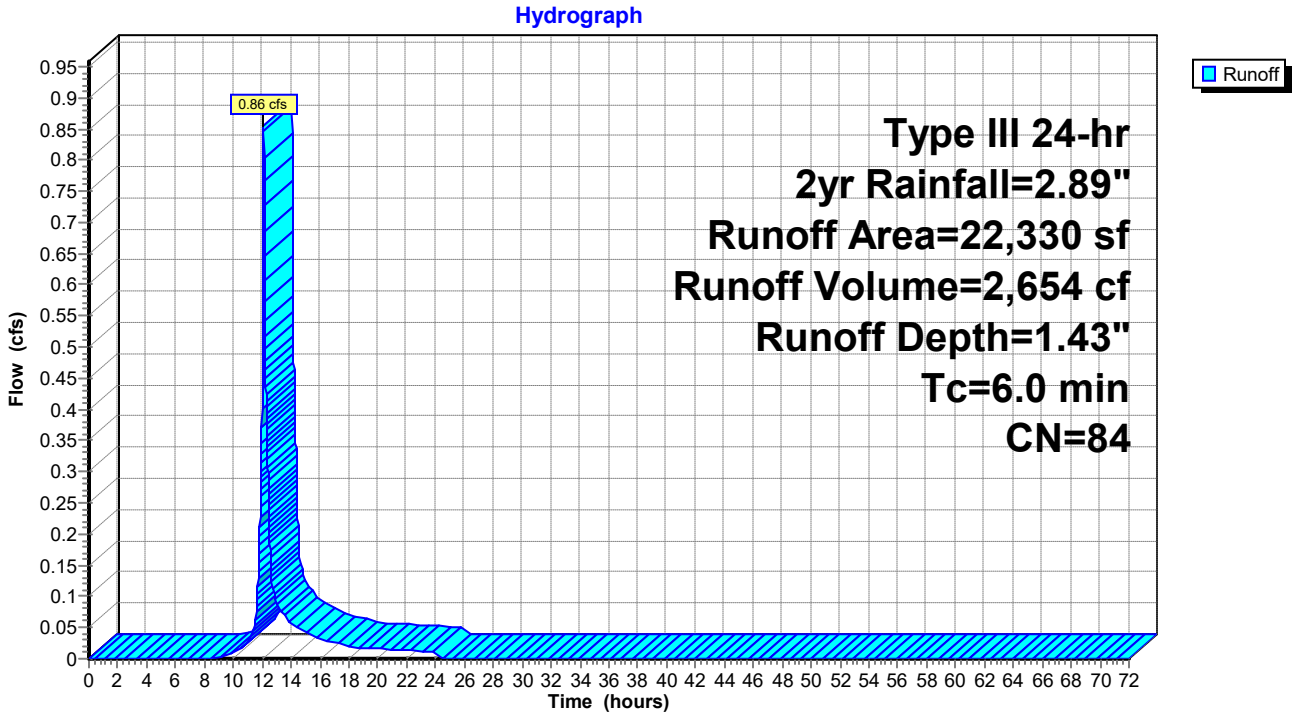
Runoff = 0.86 cfs @ 12.09 hrs, Volume= 2,654 cf, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	5,423	98	IMPERVIOUS
	16,907	79	50-75% Grass cover, Fair, HSG C
	22,330	84	Weighted Average
	16,907		75.71% Pervious Area
	5,423		24.29% Impervious Area

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

Subcatchment P-4e: Grass Area



Summary for Subcatchment P-4f: East Grass/Woods

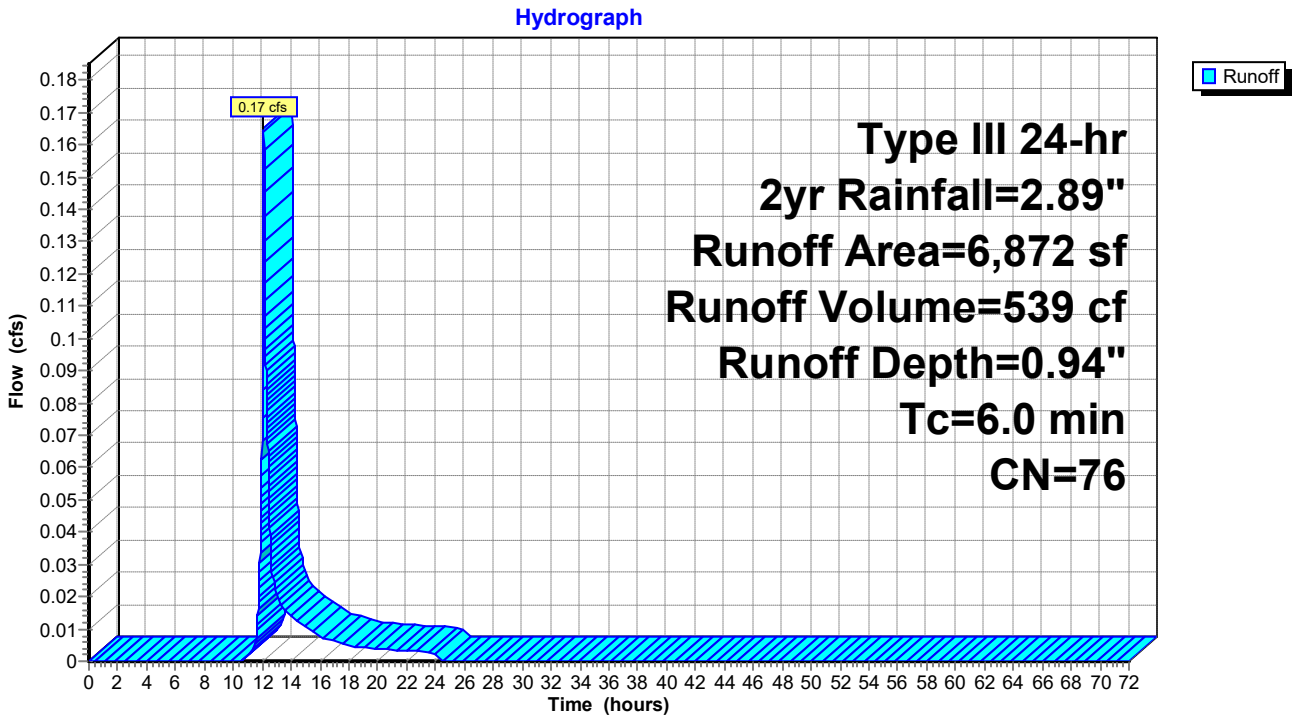
Runoff = 0.17 cfs @ 12.10 hrs, Volume= 539 cf, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
3,120	73	Woods, Fair, HSG C
3,752	79	50-75% Grass cover, Fair, HSG C
6,872	76	Weighted Average
6,872		100.00% Pervious Area

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

Subcatchment P-4f: East Grass/Woods



Summary for Subcatchment P-5: East Grass/Woods

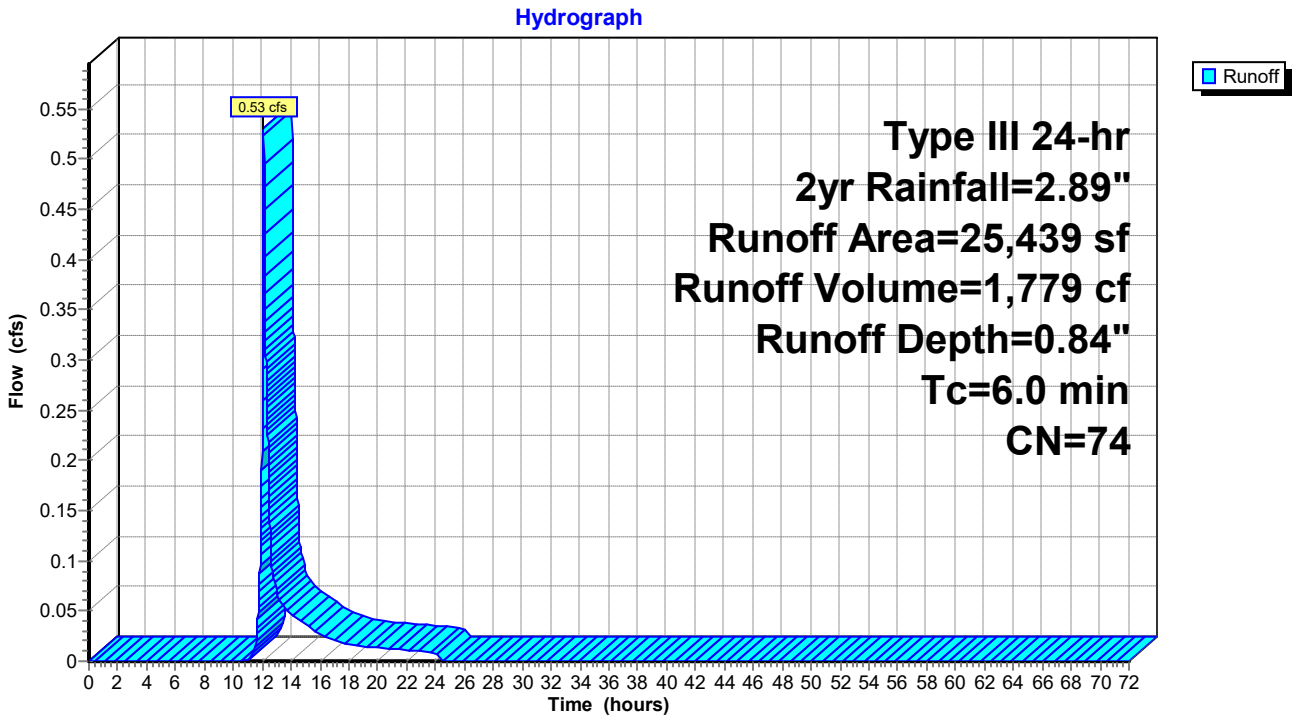
Runoff = 0.53 cfs @ 12.10 hrs, Volume= 1,779 cf, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
3,717	79	50-75% Grass cover, Fair, HSG C
21,722	73	Woods, Fair, HSG C
25,439	74	Weighted Average
25,439		100.00% Pervious Area

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

Subcatchment P-5: East Grass/Woods



Summary for Subcatchment P-6: East Grass/Woods

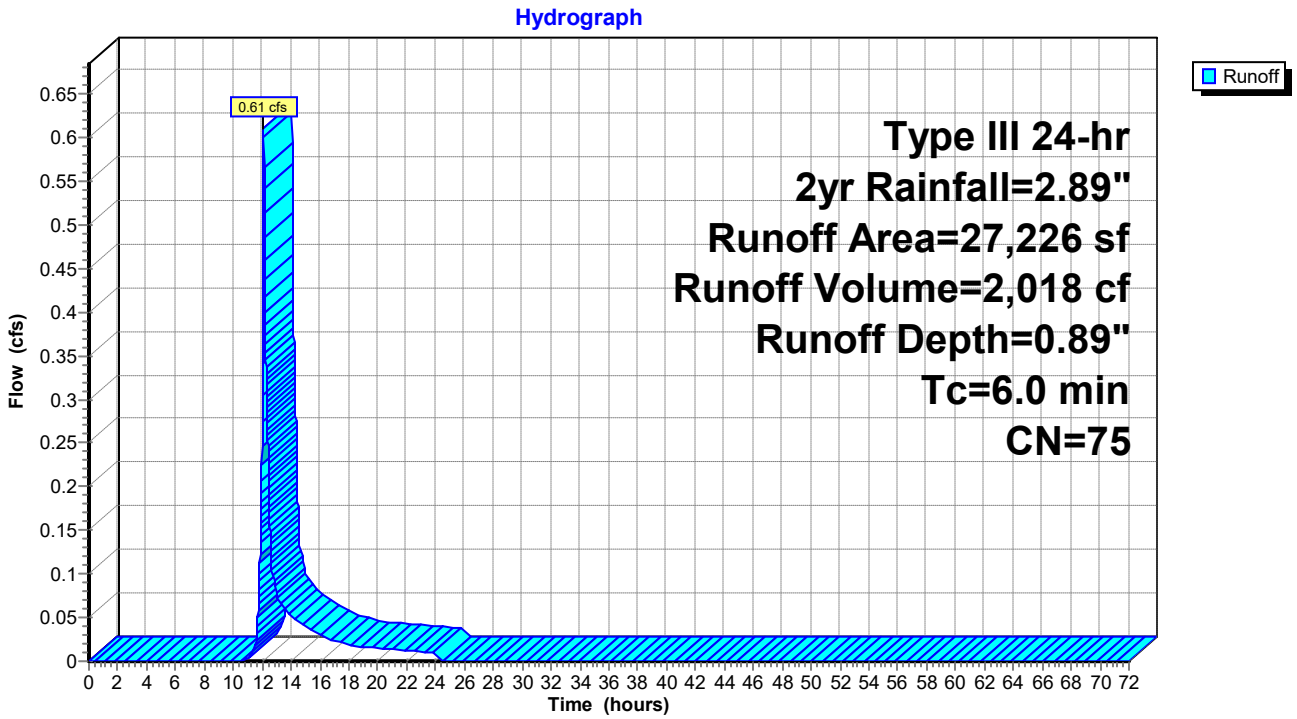
Runoff = 0.61 cfs @ 12.10 hrs, Volume= 2,018 cf, Depth= 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
16,017	73	Woods, Fair, HSG C
11,209	79	50-75% Grass cover, Fair, HSG C
27,226	75	Weighted Average
27,226		100.00% Pervious Area

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

Subcatchment P-6: East Grass/Woods



Summary for Subcatchment P-7: Southeast Grass/Woods

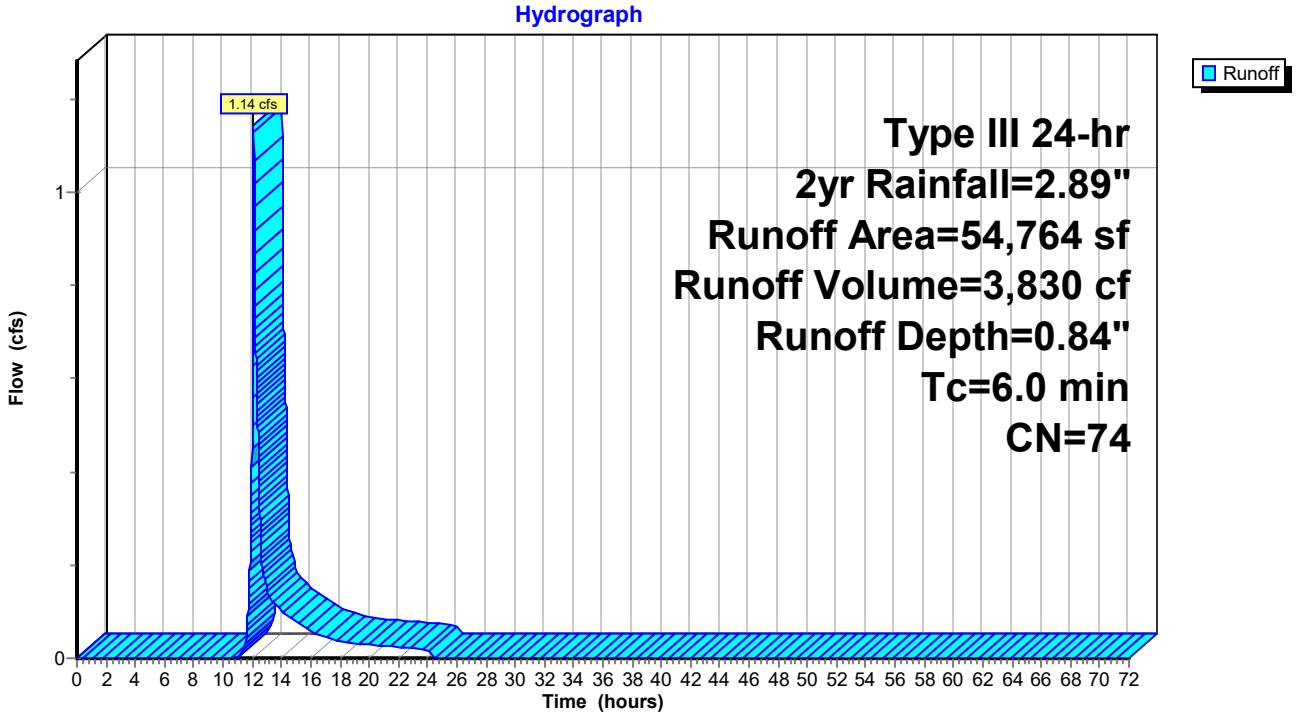
Runoff = 1.14 cfs @ 12.10 hrs, Volume= 3,830 cf, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
41,823	73	Woods, Fair, HSG C
12,941	79	50-75% Grass cover, Fair, HSG C
54,764	74	Weighted Average
54,764		100.00% Pervious Area

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

Subcatchment P-7: Southeast Grass/Woods



Summary for Subcatchment P-8: Stoddard Dr

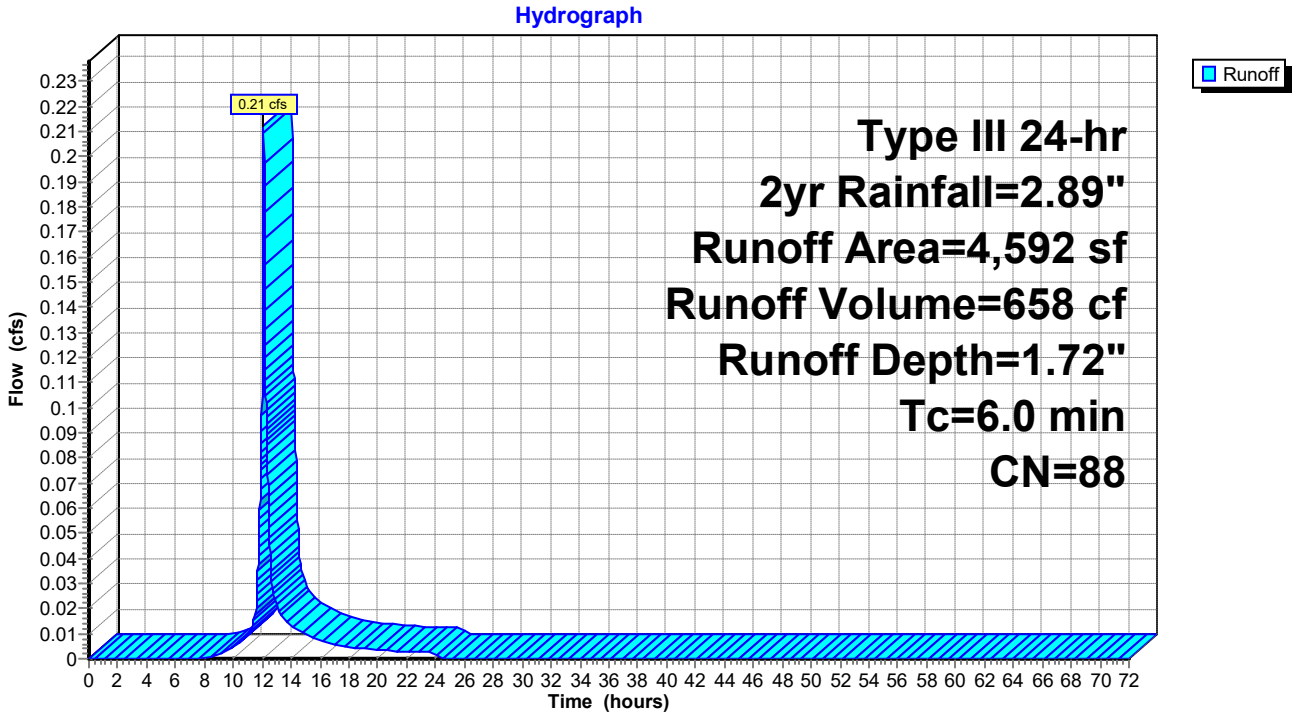
Runoff = 0.21 cfs @ 12.09 hrs, Volume= 658 cf, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	2,302	79	50-75% Grass cover, Fair, HSG C
	2,290	98	Paved parking, HSG C
	4,592	88	Weighted Average
	2,302		50.13% Pervious Area
	2,290		49.87% Impervious Area

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

Subcatchment P-8: Stoddard Dr



Summary for Subcatchment P-9: South Woods

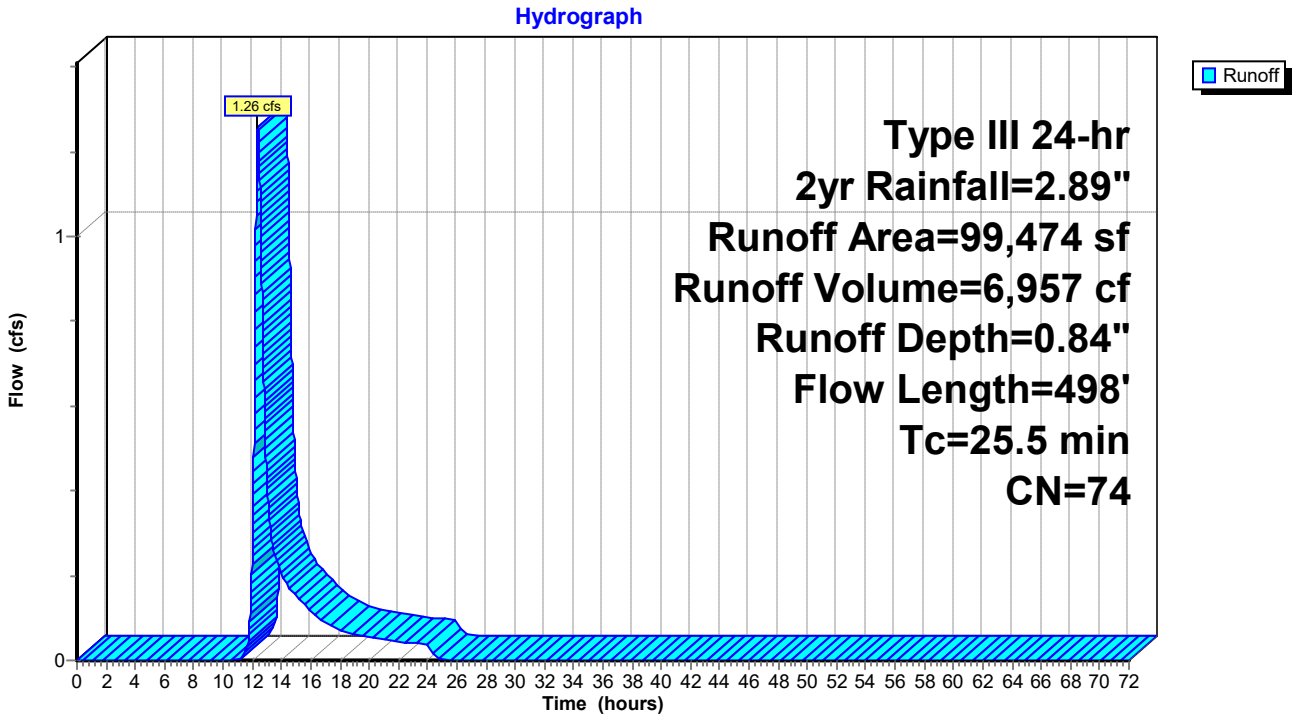
Runoff = 1.26 cfs @ 12.39 hrs, Volume= 6,957 cf, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
10,443	79	50-75% Grass cover, Fair, HSG C
89,031	73	Woods, Fair, HSG C
99,474	74	Weighted Average
99,474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	50	0.0270	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.9	132	0.0250	2.55		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.6	316	0.0050	1.14		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
25.5	498	Total			

Subcatchment P-9: South Woods



Summary for Pond 3P: (new Pond)

Inflow Area = 81,022 sf, 85.38% Impervious, Inflow Depth = 2.34" for 2yr event
Inflow = 4.86 cfs @ 12.08 hrs, Volume= 15,813 cf
Outflow = 4.86 cfs @ 12.08 hrs, Volume= 15,813 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.85 cfs @ 12.08 hrs, Volume= 15,811 cf
Secondary = 0.01 cfs @ 12.08 hrs, Volume= 2 cf

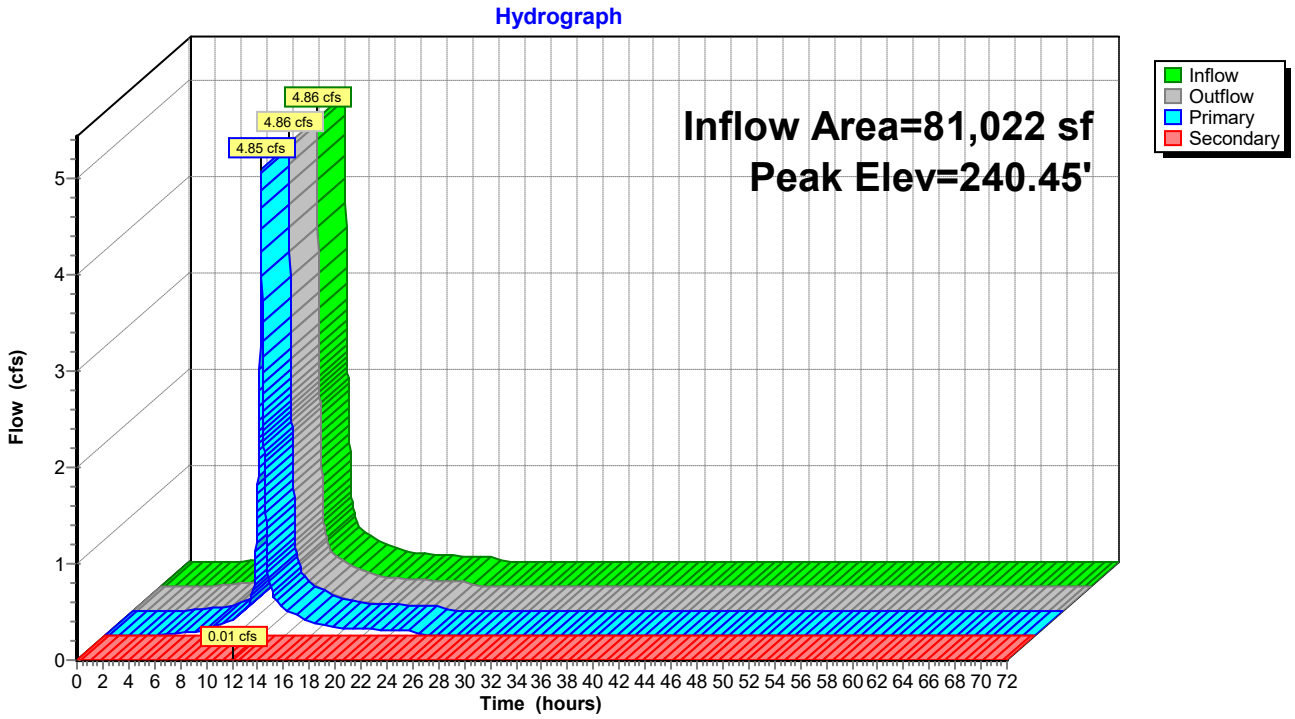
Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 240.45' @ 12.08 hrs
Flood Elev= 244.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	240.40'	**24.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=4.84 cfs @ 12.08 hrs HW=240.45' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 4.84 cfs @ 3.31 fps)

Secondary OutFlow Max=0.01 cfs @ 12.08 hrs HW=240.45' (Free Discharge)
└**2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.73 fps)

Pond 3P: (new Pond)

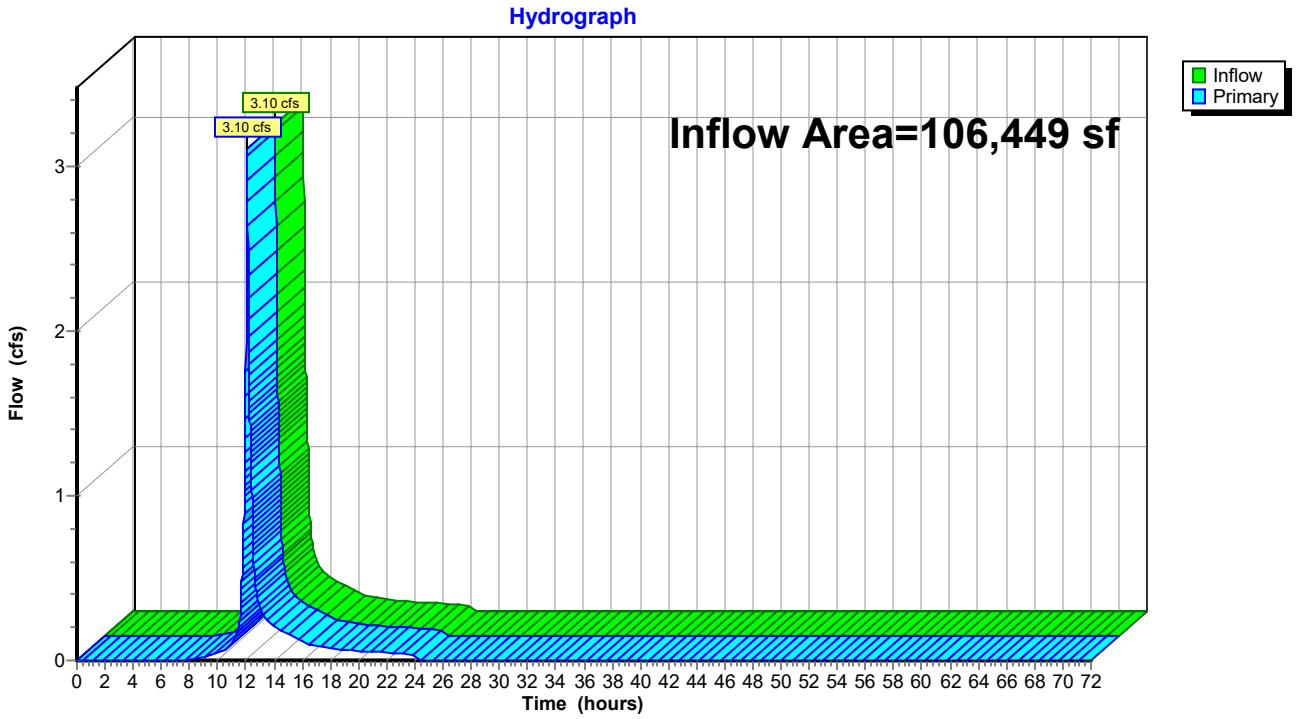


Summary for Pond DP-1p: Flow to Exist Basin #1

Inflow Area = 106,449 sf, 35.43% Impervious, Inflow Depth = 1.10" for 2yr event
Inflow = 3.10 cfs @ 12.09 hrs, Volume= 9,740 cf
Primary = 3.10 cfs @ 12.09 hrs, Volume= 9,740 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-1p: Flow to Exist Basin #1

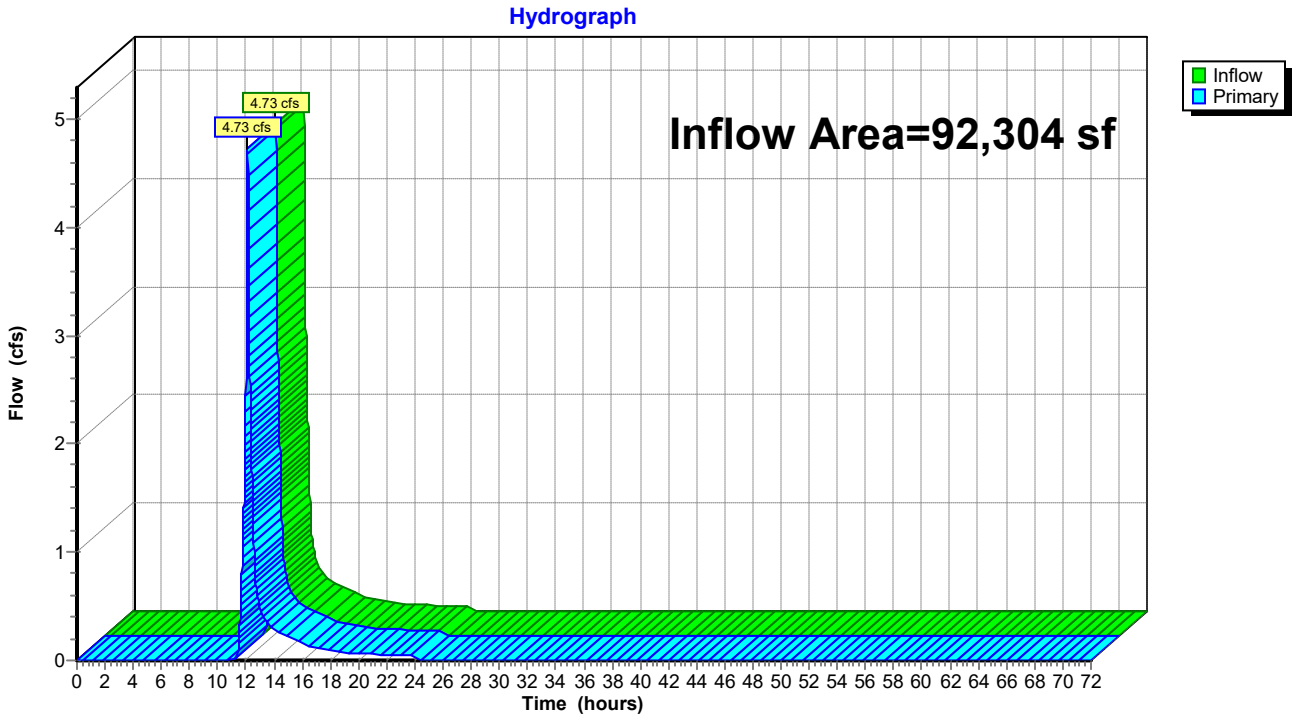


Summary for Pond DP-2p: Flow to Exist Basin#2

Inflow Area = 92,304 sf, 74.94% Impervious, Inflow Depth = 1.77" for 2yr event
Inflow = 4.73 cfs @ 12.12 hrs, Volume= 13,634 cf
Primary = 4.73 cfs @ 12.12 hrs, Volume= 13,634 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-2p: Flow to Exist Basin#2

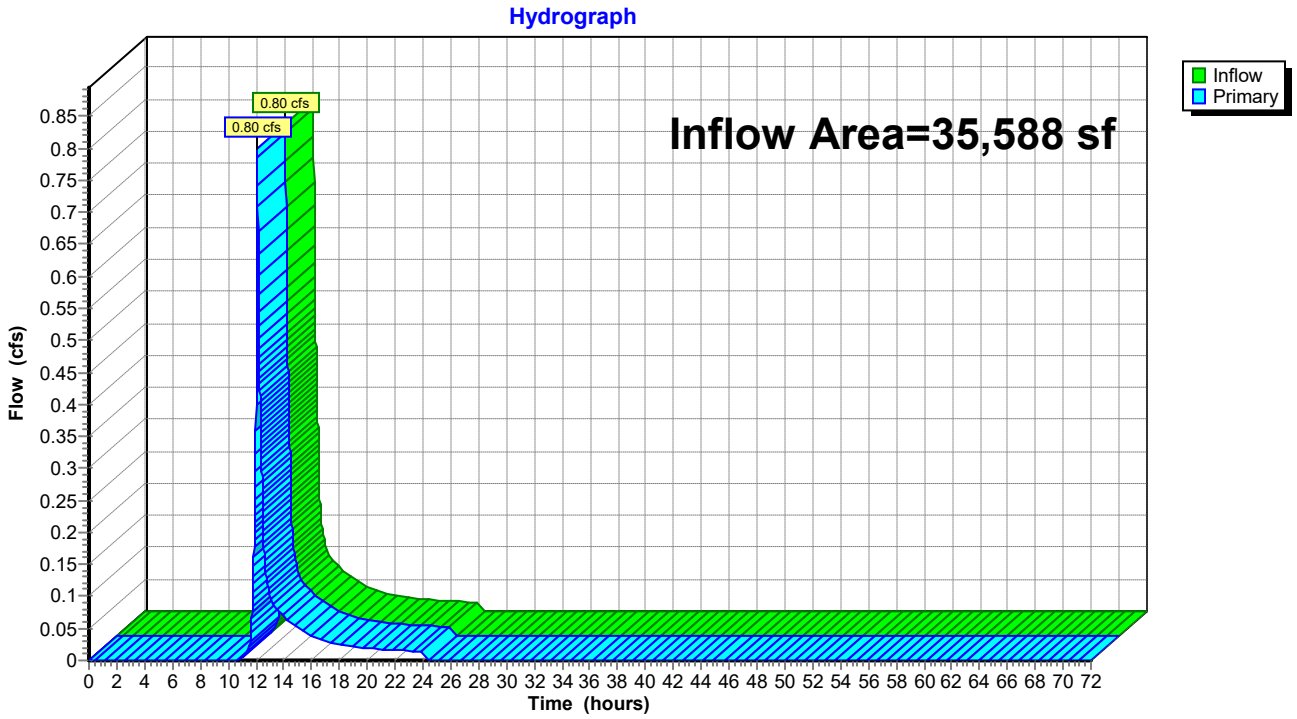


Summary for Pond DP-3p: Residential East#1

Inflow Area = 35,588 sf, 0.00% Impervious, Inflow Depth = 0.89" for 2yr event
Inflow = 0.80 cfs @ 12.10 hrs, Volume= 2,638 cf
Primary = 0.80 cfs @ 12.10 hrs, Volume= 2,638 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-3p: Residential East#1

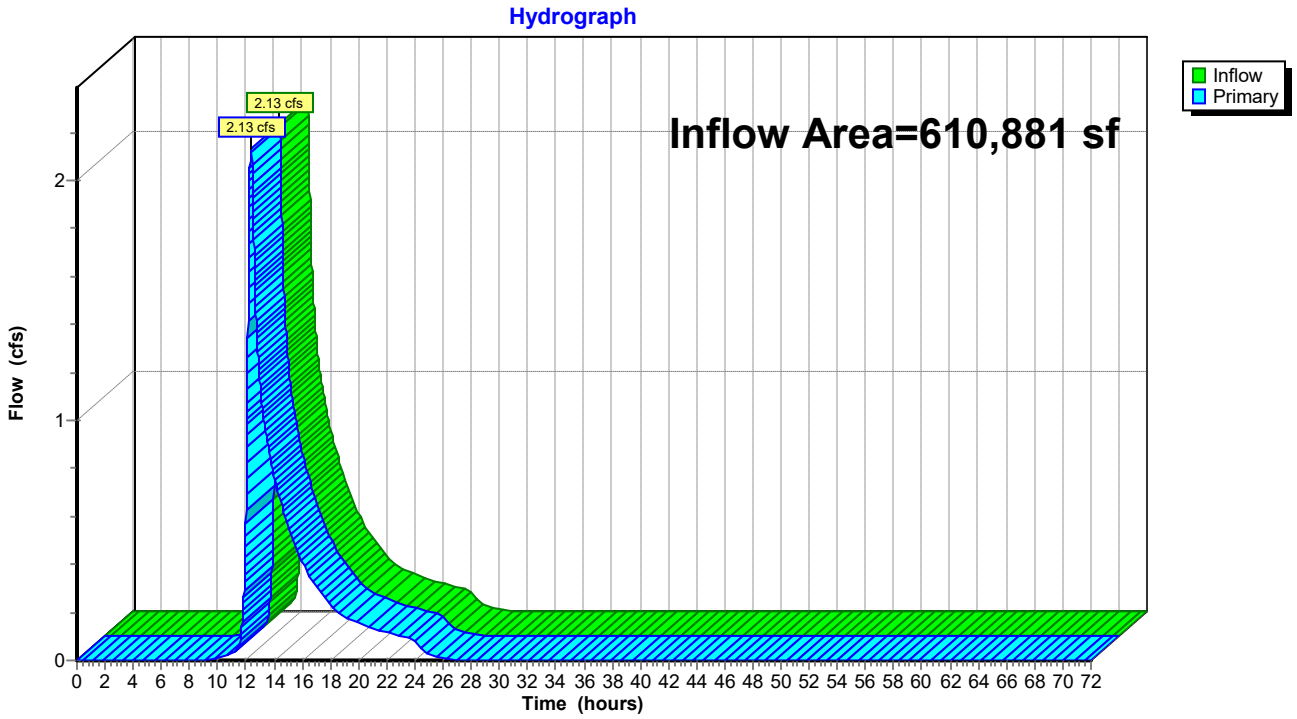


Summary for Pond DP-4p: Exist Swale #1 East

Inflow Area = 610,881 sf, 74.62% Impervious, Inflow Depth = 0.38" for 2yr event
Inflow = 2.13 cfs @ 12.36 hrs, Volume= 19,139 cf
Primary = 2.13 cfs @ 12.36 hrs, Volume= 19,139 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-4p: Exist Swale #1 East

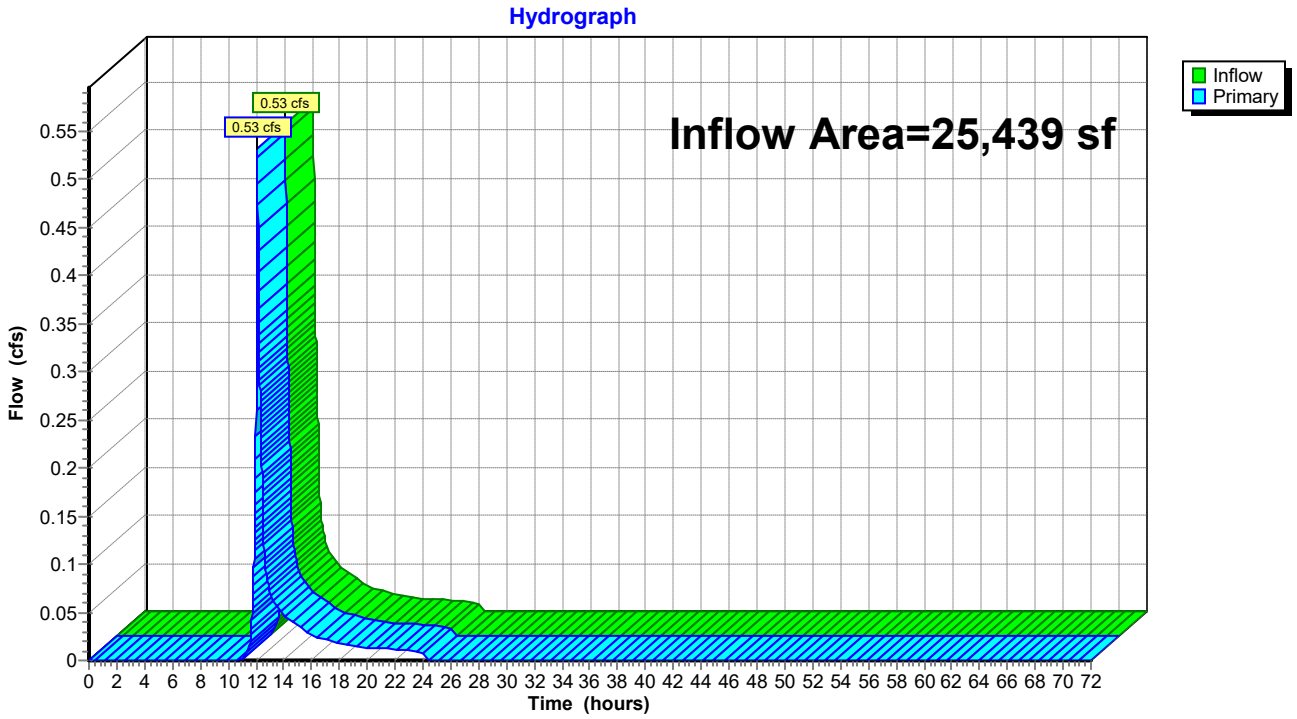


Summary for Pond DP-5p: Residential East#2

Inflow Area = 25,439 sf, 0.00% Impervious, Inflow Depth = 0.84" for 2yr event
Inflow = 0.53 cfs @ 12.10 hrs, Volume= 1,779 cf
Primary = 0.53 cfs @ 12.10 hrs, Volume= 1,779 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-5p: Residential East#2

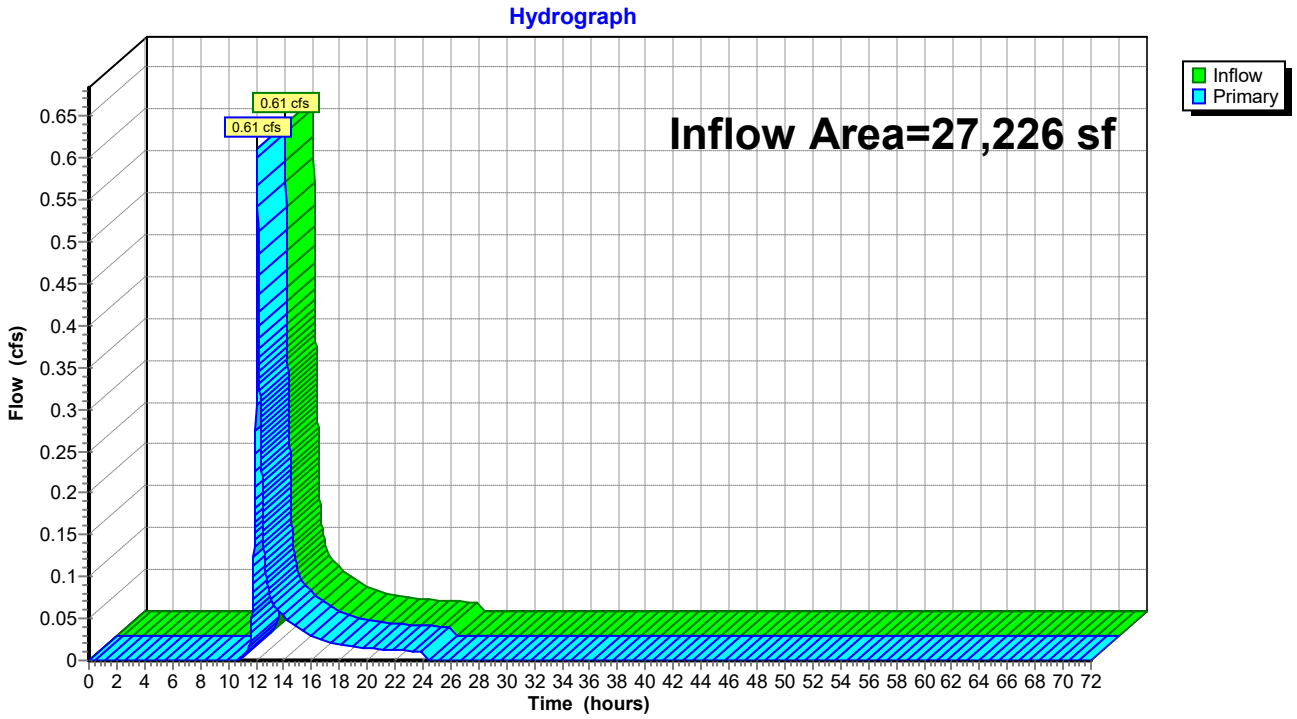


Summary for Pond DP-6p: Residential East#3

Inflow Area = 27,226 sf, 0.00% Impervious, Inflow Depth = 0.89" for 2yr event
Inflow = 0.61 cfs @ 12.10 hrs, Volume= 2,018 cf
Primary = 0.61 cfs @ 12.10 hrs, Volume= 2,018 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-6p: Residential East#3

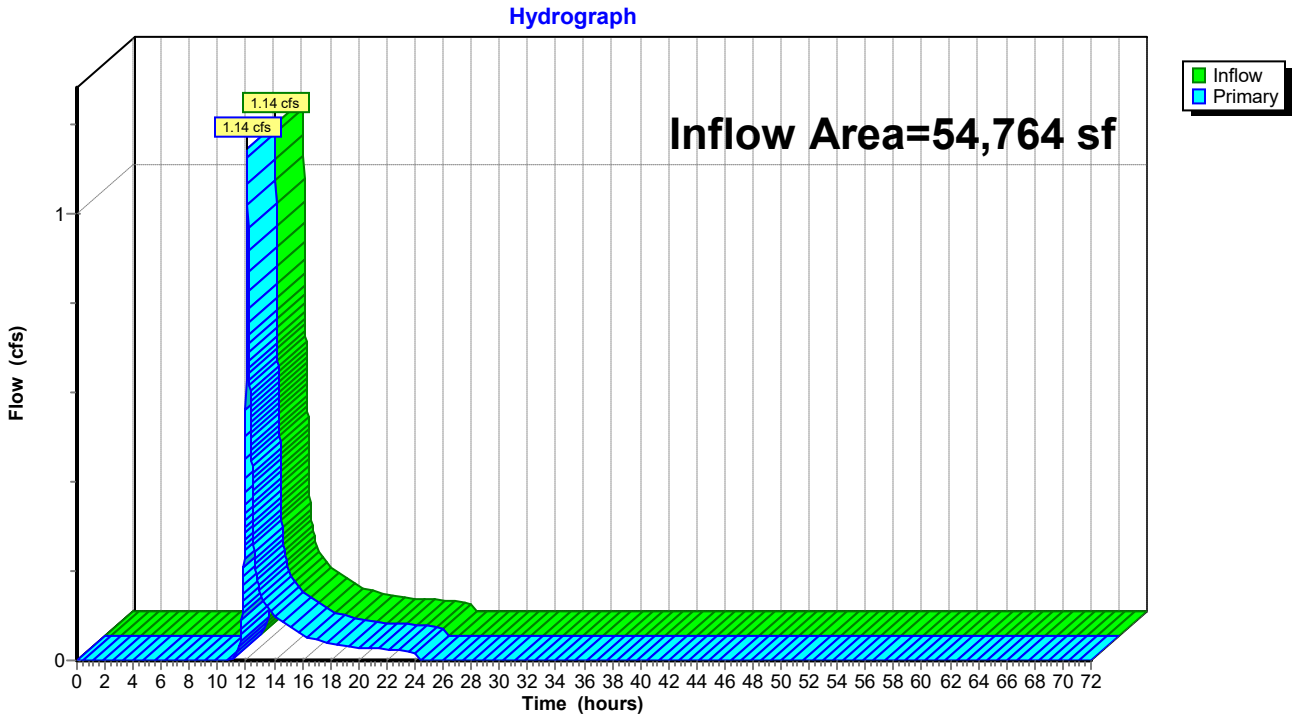


Summary for Pond DP-7p: Residential East#4

Inflow Area = 54,764 sf, 0.00% Impervious, Inflow Depth = 0.84" for 2yr event
Inflow = 1.14 cfs @ 12.10 hrs, Volume= 3,830 cf
Primary = 1.14 cfs @ 12.10 hrs, Volume= 3,830 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-7p: Residential East#4

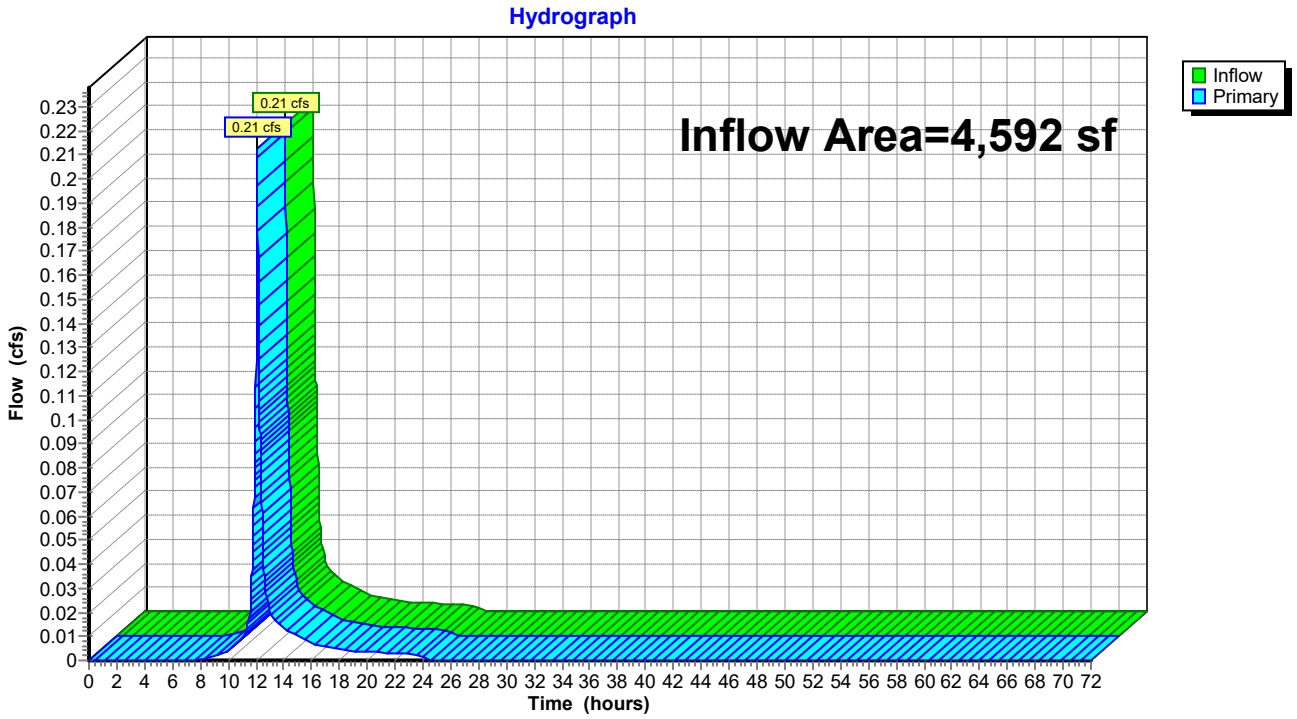


Summary for Pond DP-8p: Stoddard Drive

Inflow Area = 4,592 sf, 49.87% Impervious, Inflow Depth = 1.72" for 2yr event
Inflow = 0.21 cfs @ 12.09 hrs, Volume= 658 cf
Primary = 0.21 cfs @ 12.09 hrs, Volume= 658 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-8p: Stoddard Drive

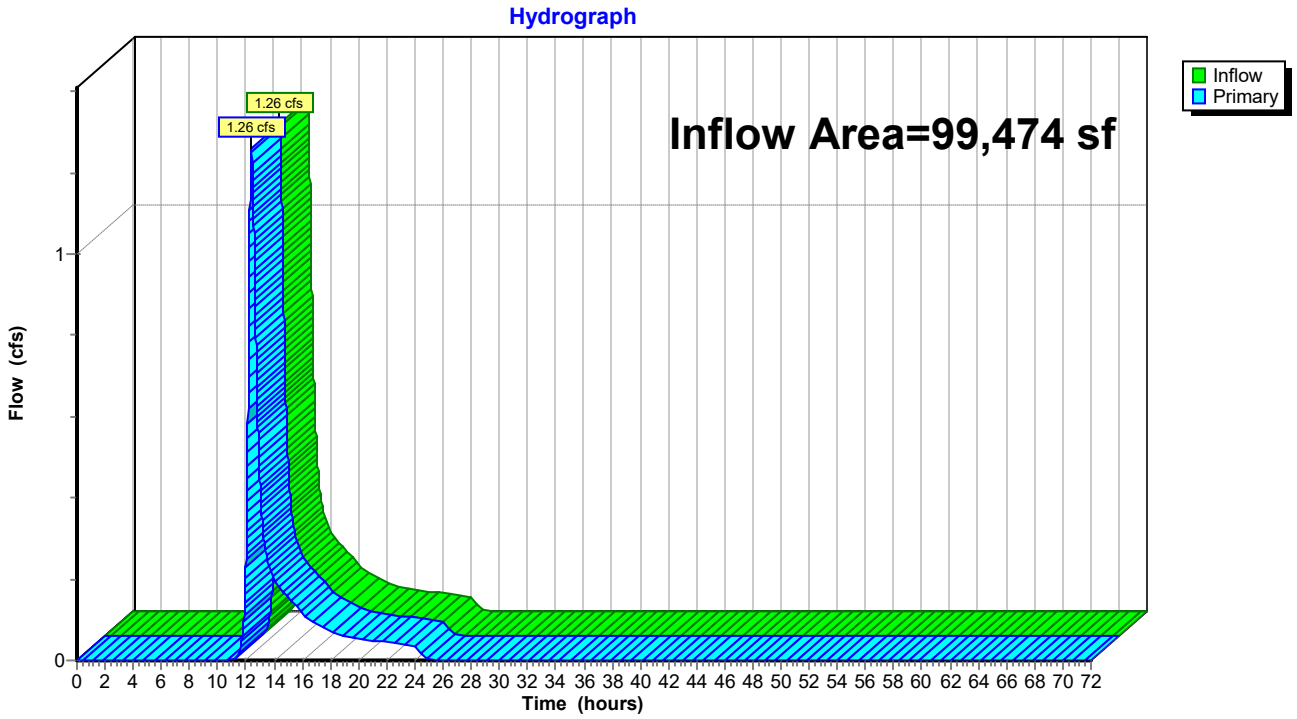


Summary for Pond DP-9p: Woods South

Inflow Area = 99,474 sf, 0.00% Impervious, Inflow Depth = 0.84" for 2yr event
Inflow = 1.26 cfs @ 12.39 hrs, Volume= 6,957 cf
Primary = 1.26 cfs @ 12.39 hrs, Volume= 6,957 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-9p: Woods South



Summary for Pond STONE: STONE

Inflow Area = 179,201 sf,100.00% Impervious, Inflow Depth = 2.66" for 2yr event
Inflow = 11.51 cfs @ 12.08 hrs, Volume= 39,704 cf
Outflow = 0.56 cfs @ 14.29 hrs, Volume= 39,676 cf, Atten= 95%, Lag= 132.3 min
Discarded = 0.56 cfs @ 14.29 hrs, Volume= 39,676 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 240.22' @ 14.29 hrs Surf.Area= 141,313 sf Storage= 18,256 cf

Plug-Flow detention time= 273.7 min calculated for 39,671 cf (100% of inflow)
Center-of-Mass det. time= 273.5 min (1,032.1 - 758.6)

Volume	Invert	Avail.Storage	Storage Description
#1	240.90'	28,260 cf	**Stone Above Flat Panel Drains (Irregular)** Listed below (Recalc) 70,650 cf Overall x 40.0% Voids
#2	239.90'	56,520 cf	**12" Stone Under Flat Panel Drains (Irregular)** Listed below (Recalc) 141,300 cf Overall x 40.0% Voids
#3	236.50'	57 cf	**4.00'D x 4.50'H DMH**
		84,837 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
240.90	141,300	1,510.0	0	0	141,300
241.40	141,300	1,510.0	70,650	70,650	142,055

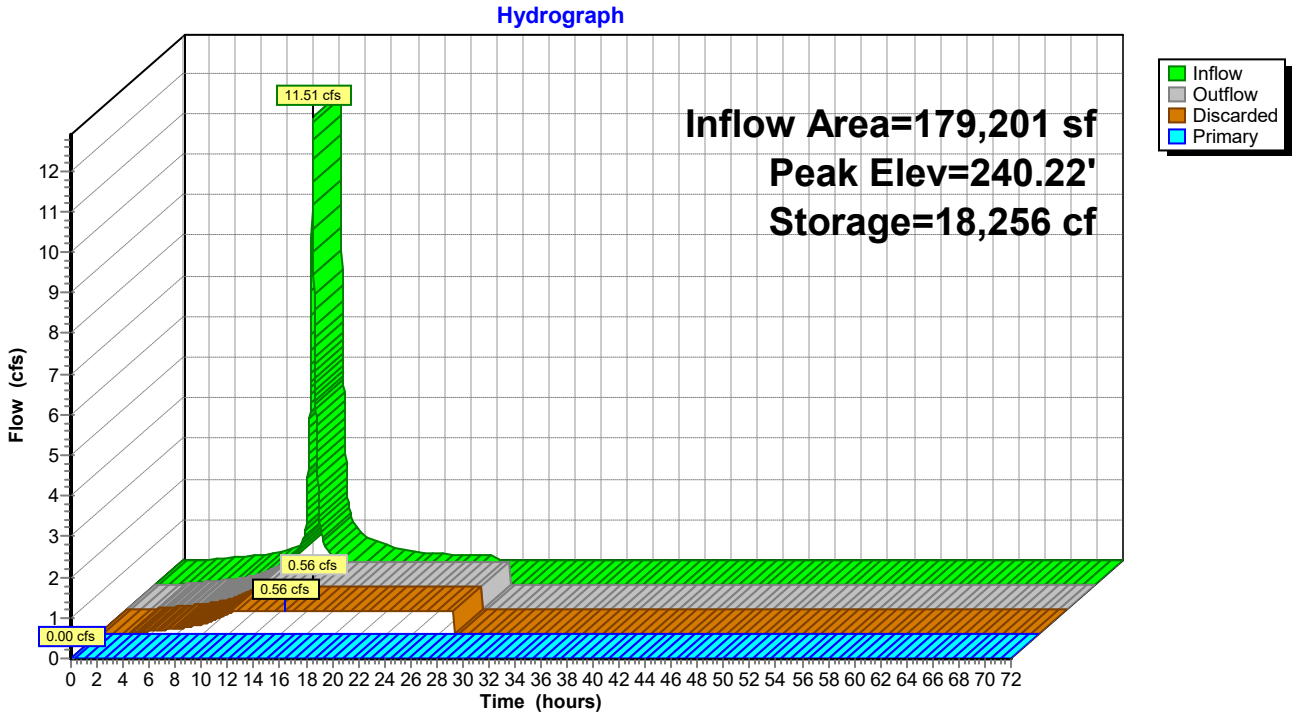
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
239.90	141,300	1,510.0	0	0	141,300
240.90	141,300	1,510.0	141,300	141,300	142,810

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	240.40'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#3	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.50'

Discarded OutFlow Max=0.56 cfs @ 14.29 hrs HW=240.22' (Free Discharge)
└**3=Exfiltration** (Controls 0.56 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=236.50' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond STONE: STONE



Summary for Pond UGI-2: UGI-2

Inflow Area = 87,726 sf, 42.98% Impervious, Inflow Depth = 1.64" for 2yr event
Inflow = 3.88 cfs @ 12.09 hrs, Volume= 12,014 cf
Outflow = 1.56 cfs @ 12.33 hrs, Volume= 10,802 cf, Atten= 60%, Lag= 14.7 min
Discarded = 0.01 cfs @ 12.33 hrs, Volume= 2,987 cf
Primary = 1.54 cfs @ 12.33 hrs, Volume= 7,815 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.56' @ 12.33 hrs Surf.Area= 3,310 sf Storage= 4,719 cf

Plug-Flow detention time= 538.6 min calculated for 10,800 cf (90% of inflow)
Center-of-Mass det. time= 490.0 min (1,313.3 - 823.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	239.50'	2,959 cf	**25.25'W x 131.10'L x 3.50'H Field A** 11,586 cf Overall - 4,188 cf Embedded = 7,398 cf x 40.0% Voids
#2A	240.00'	4,188 cf	**Cultec R-300HD** x 90 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 90 Chambers in 5 Rows Cap Storage= +2.7 cf x 2 x 5 rows = 26.5 cf
		7,147 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	241.00'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	239.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.01 cfs @ 12.33 hrs HW=241.56' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=1.54 cfs @ 12.33 hrs HW=241.56' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 1.54 cfs @ 2.55 fps)

Pond UGI-2: UGI-2 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 5 rows = 26.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

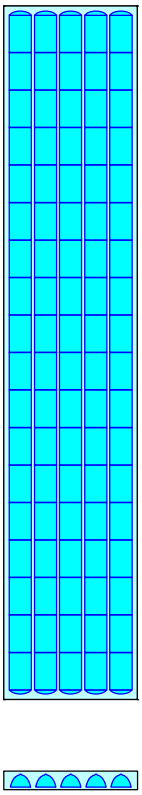
18 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 129.10' Row Length +12.0" End Stone x 2 = 131.10' Base Length
5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

90 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 5 Rows = 4,188.3 cf Chamber Storage

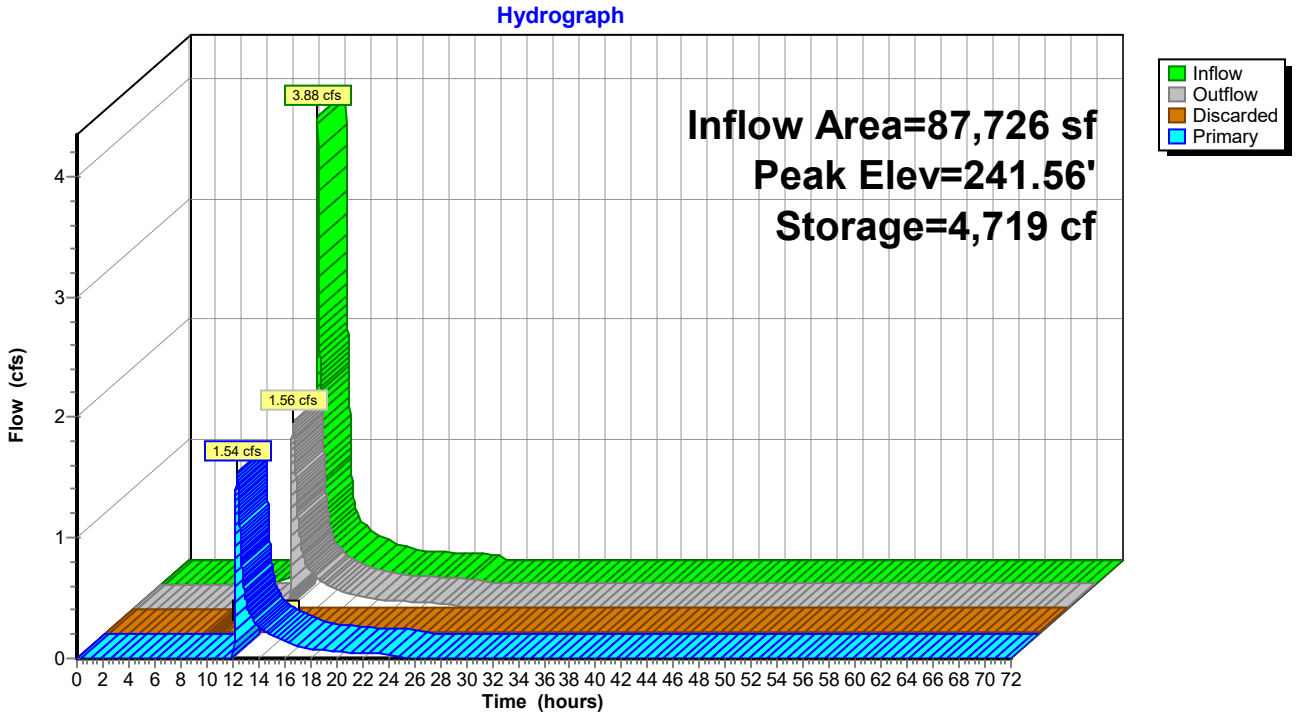
11,586.0 cf Field - 4,188.3 cf Chambers = 7,397.6 cf Stone x 40.0% Voids = 2,959.1 cf Stone Storage

Chamber Storage + Stone Storage = 7,147.4 cf = 0.164 af
Overall Storage Efficiency = 61.7%
Overall System Size = 131.10' x 25.25' x 3.50'

90 Chambers
429.1 cy Field
274.0 cy Stone



Pond UGI-2: UGI-2



Summary for Pond UGI-3: UGI-3

Inflow Area = 205,806 sf, 68.06% Impervious, Inflow Depth = 2.06" for 2yr event
Inflow = 11.19 cfs @ 12.09 hrs, Volume= 35,285 cf
Outflow = 0.01 cfs @ 24.14 hrs, Volume= 3,243 cf, Atten= 100%, Lag= 723.3 min
Discarded = 0.01 cfs @ 24.14 hrs, Volume= 3,243 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.43' @ 24.14 hrs Surf.Area= 35,300 sf Storage= 34,448 cf

Plug-Flow detention time= 1,813.0 min calculated for 3,243 cf (9% of inflow)
Center-of-Mass det. time= 1,584.3 min (2,385.8 - 801.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.00'	30,623 cf	**343.50'W x 102.77'L x 3.50'H Field A** 123,551 cf Overall - 46,994 cf Embedded = 76,557 cf x 40.0% Voids
#2A	236.50'	46,994 cf	**Cultec R-300HD** x 1008 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 1008 Chambers in 72 Rows Cap Storage= +2.7 cf x 2 x 72 rows = 382.3 cf
		77,617 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	238.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	237.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Discarded	236.00'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.01 cfs @ 24.14 hrs HW=237.43' (Free Discharge)
└**4=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=236.00' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)
  ├**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Pond UGI-3: UGI-3 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 72 rows = 382.3 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

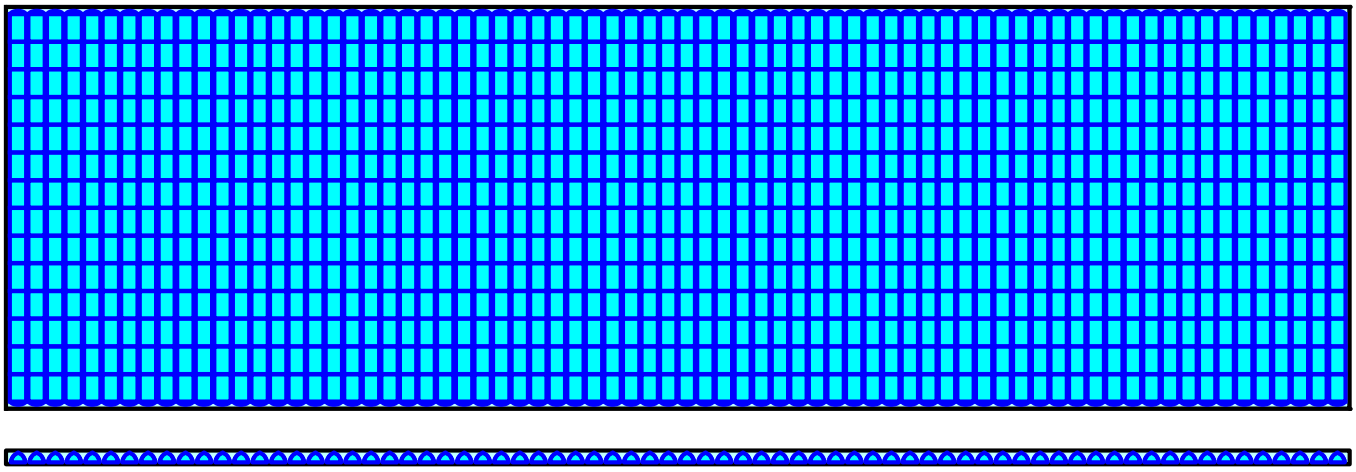
14 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 100.77' Row Length +12.0" End Stone x 2 = 102.77' Base Length
72 Rows x 51.0" Wide + 6.0" Spacing x 71 + 12.0" Side Stone x 2 = 343.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

1,008 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 72 Rows = 46,994.2 cf Chamber Storage

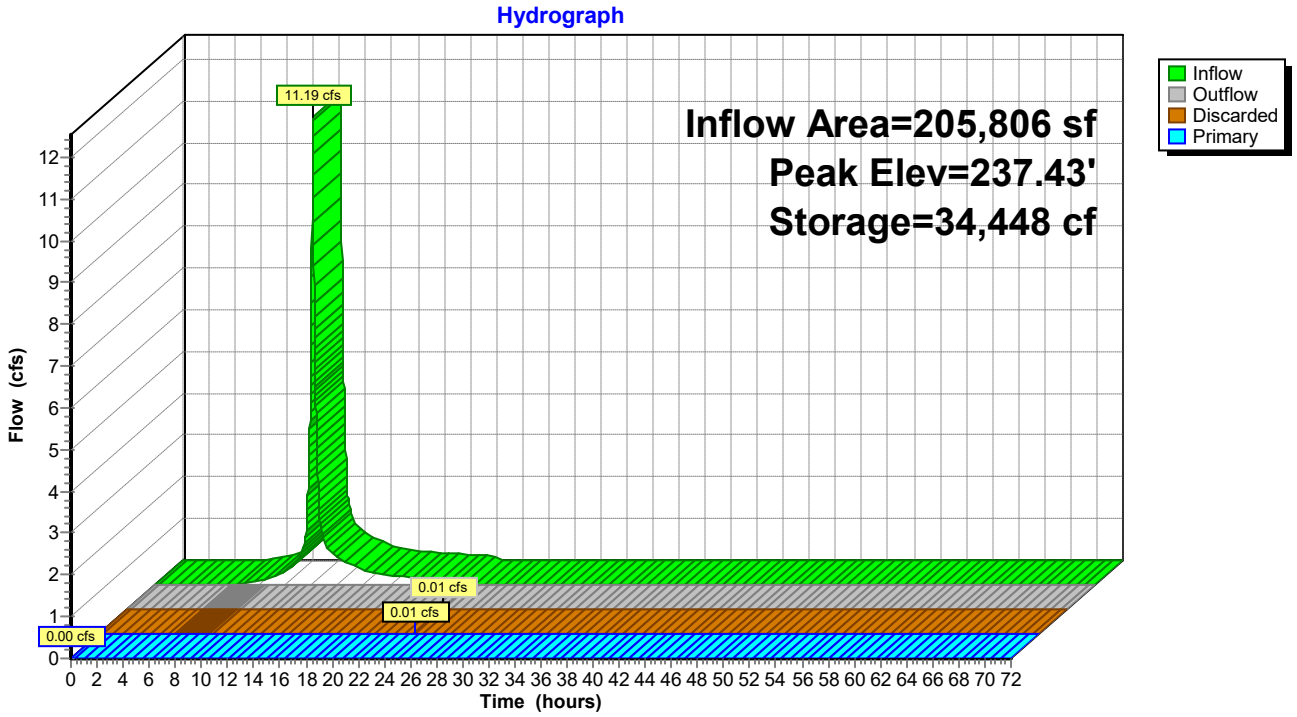
123,551.2 cf Field - 46,994.2 cf Chambers = 76,557.0 cf Stone x 40.0% Voids = 30,622.8 cf Stone Storage

Chamber Storage + Stone Storage = 77,617.0 cf = 1.782 af
Overall Storage Efficiency = 62.8%
Overall System Size = 102.77' x 343.50' x 3.50'

1,008 Chambers
4,576.0 cy Field
2,835.4 cy Stone



Pond UGI-3: UGI-3



Summary for Pond UGI-4: UGI-4

Inflow Area = 81,022 sf, 85.38% Impervious, Inflow Depth = 2.34" for 2yr event
Inflow = 4.85 cfs @ 12.08 hrs, Volume= 15,811 cf
Outflow = 4.44 cfs @ 12.12 hrs, Volume= 15,137 cf, Atten= 8%, Lag= 2.2 min
Discarded = 0.01 cfs @ 12.12 hrs, Volume= 2,493 cf
Primary = 4.43 cfs @ 12.12 hrs, Volume= 12,644 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 240.89' @ 12.12 hrs Surf.Area= 2,606 sf Storage= 3,402 cf

Plug-Flow detention time= 308.1 min calculated for 15,137 cf (96% of inflow)
Center-of-Mass det. time= 283.4 min (1,067.6 - 784.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	239.00'	2,332 cf	**49.00'W x 53.18'L x 3.50'H Field A** 9,121 cf Overall - 3,290 cf Embedded = 5,831 cf x 40.0% Voids
#2A	239.50'	3,290 cf	**Cultec R-300HD** x 70 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 70 Chambers in 10 Rows Cap Storage= +2.7 cf x 2 x 10 rows = 53.1 cf
		5,622 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.33'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	240.40'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	239.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'

Discarded OutFlow Max=0.01 cfs @ 12.12 hrs HW=240.89' (Free Discharge)
└**3=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=4.43 cfs @ 12.12 hrs HW=240.89' (Free Discharge)
└**1=Orifice/Grate** (Passes 4.43 cfs of 24.22 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 4.43 cfs @ 2.30 fps)

Pond UGI-4: UGI-4 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 10 rows = 53.1 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

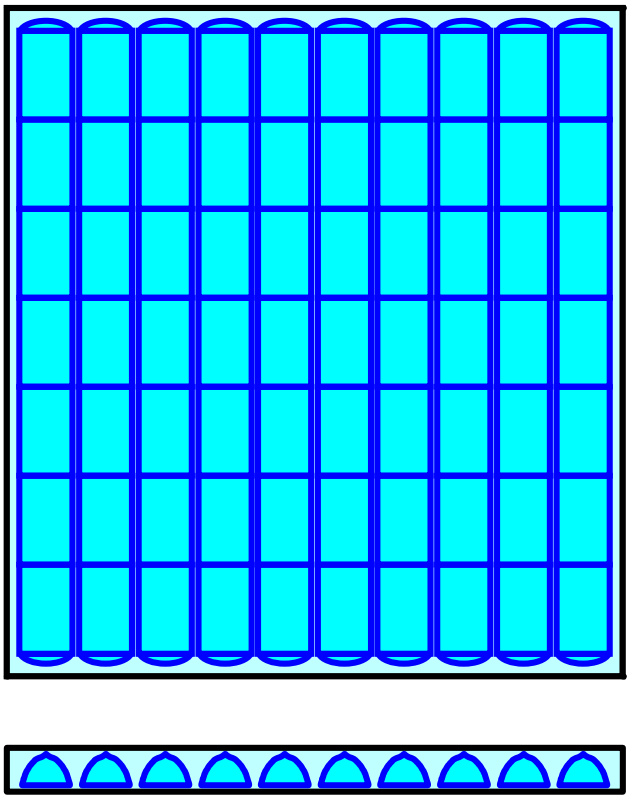
7 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 51.18' Row Length +12.0" End Stone x 2 = 53.18' Base Length
10 Rows x 51.0" Wide + 6.0" Spacing x 9 + 12.0" Side Stone x 2 = 49.00' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

70 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 10 Rows = 3,290.0 cf Chamber Storage

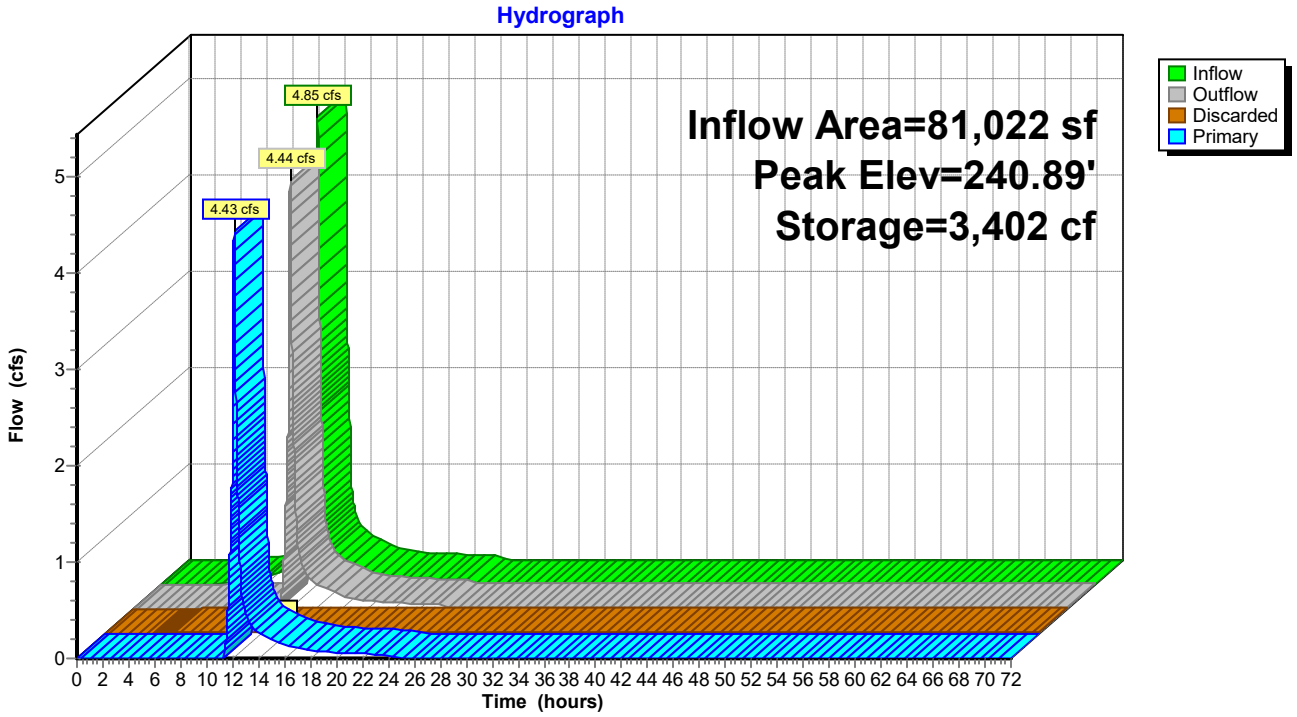
9,120.9 cf Field - 3,290.0 cf Chambers = 5,830.9 cf Stone x 40.0% Voids = 2,332.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,622.4 cf = 0.129 af
Overall Storage Efficiency = 61.6%
Overall System Size = 53.18' x 49.00' x 3.50'

70 Chambers
337.8 cy Field
216.0 cy Stone



Pond UGI-4: UGI-4



Summary for Pond UGI-5: UGI-5

Inflow Area = 108,946 sf, 85.78% Impervious, Inflow Depth = 2.34" for 2yr event
Inflow = 6.54 cfs @ 12.08 hrs, Volume= 21,263 cf
Outflow = 0.59 cfs @ 12.97 hrs, Volume= 18,651 cf, Atten= 91%, Lag= 53.0 min
Discarded = 0.04 cfs @ 12.97 hrs, Volume= 10,520 cf
Primary = 0.55 cfs @ 12.97 hrs, Volume= 8,130 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 236.52' @ 12.97 hrs Surf.Area= 11,195 sf Storage= 12,502 cf

Plug-Flow detention time= 1,004.3 min calculated for 18,648 cf (88% of inflow)
Center-of-Mass det. time= 948.5 min (1,732.7 - 784.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	234.90'	9,883 cf	**210.50'W x 53.18'L x 3.50'H Field A** 39,183 cf Overall - 14,476 cf Embedded = 24,707 cf x 40.0% Voids
#2A	235.40'	14,476 cf	**Cultec R-300HD** x 308 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 308 Chambers in 44 Rows Cap Storage= +2.7 cf x 2 x 44 rows = 233.6 cf
		24,359 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.20'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	234.90'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.90'

Discarded OutFlow Max=0.04 cfs @ 12.97 hrs HW=236.52' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.54 cfs @ 12.97 hrs HW=236.52' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.54 cfs @ 1.94 fps)

Pond UGI-5: UGI-5 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 44 rows = 233.6 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

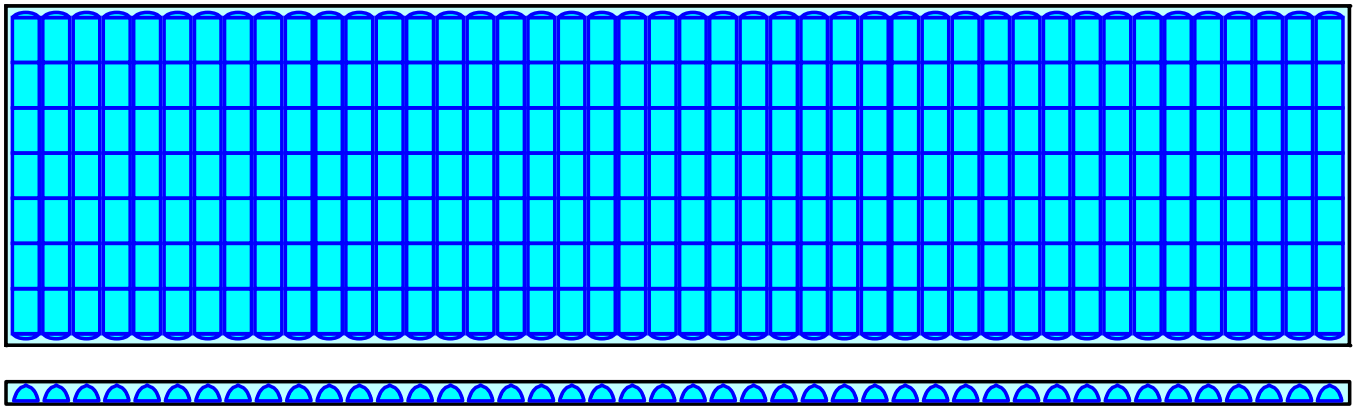
7 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 51.18' Row Length +12.0" End Stone x 2 = 53.18' Base Length
44 Rows x 51.0" Wide + 6.0" Spacing x 43 + 12.0" Side Stone x 2 = 210.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

308 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 44 Rows = 14,476.2 cf Chamber Storage

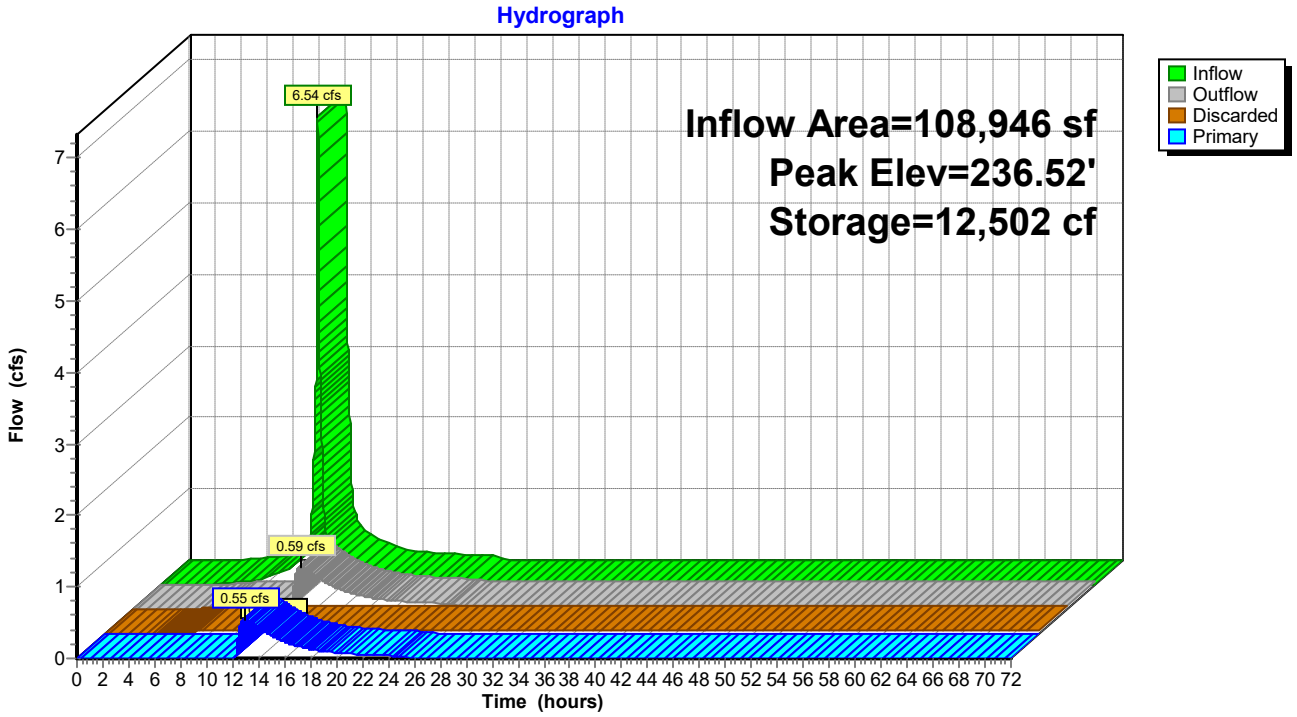
39,182.8 cf Field - 14,476.2 cf Chambers = 24,706.7 cf Stone x 40.0% Voids = 9,882.7 cf Stone Storage

Chamber Storage + Stone Storage = 24,358.8 cf = 0.559 af
Overall Storage Efficiency = 62.2%
Overall System Size = 53.18' x 210.50' x 3.50'

308 Chambers
1,451.2 cy Field
915.1 cy Stone



Pond UGI-5: UGI-5



Summary for Pond UGI-A: UGI-A

Inflow Area = 24,216 sf, 65.28% Impervious, Inflow Depth = 1.97" for 2yr event
Inflow = 1.27 cfs @ 12.09 hrs, Volume= 3,973 cf
Outflow = 0.00 cfs @ 24.14 hrs, Volume= 421 cf, Atten= 100%, Lag= 723.0 min
Discarded = 0.00 cfs @ 24.14 hrs, Volume= 421 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.27' @ 24.14 hrs Surf.Area= 4,619 sf Storage= 3,867 cf

Plug-Flow detention time= 1,801.8 min calculated for 421 cf (11% of inflow)
Center-of-Mass det. time= 1,595.1 min (2,401.5 - 806.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.00'	4,082 cf	**39.50'W x 116.93'L x 3.50'H Field A** 16,166 cf Overall - 5,961 cf Embedded = 10,205 cf x 40.0% Voids
#2A	236.50'	5,961 cf	**Cultec R-300HD** x 128 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 128 Chambers in 8 Rows Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf
		10,043 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	**15.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	236.00'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.00 cfs @ 24.14 hrs HW=237.27' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=236.00' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Pond UGI-A: UGI-A - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

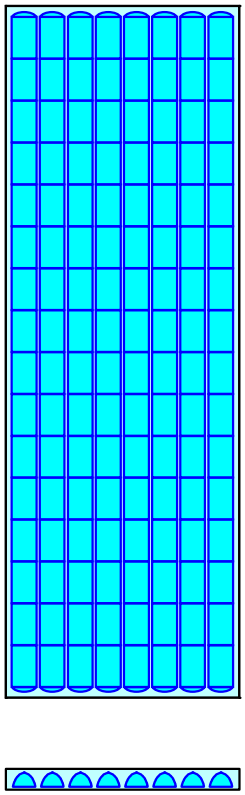
16 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 114.93' Row Length +12.0" End Stone x 2 = 116.93' Base Length
8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

128 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 8 Rows = 5,961.4 cf Chamber Storage

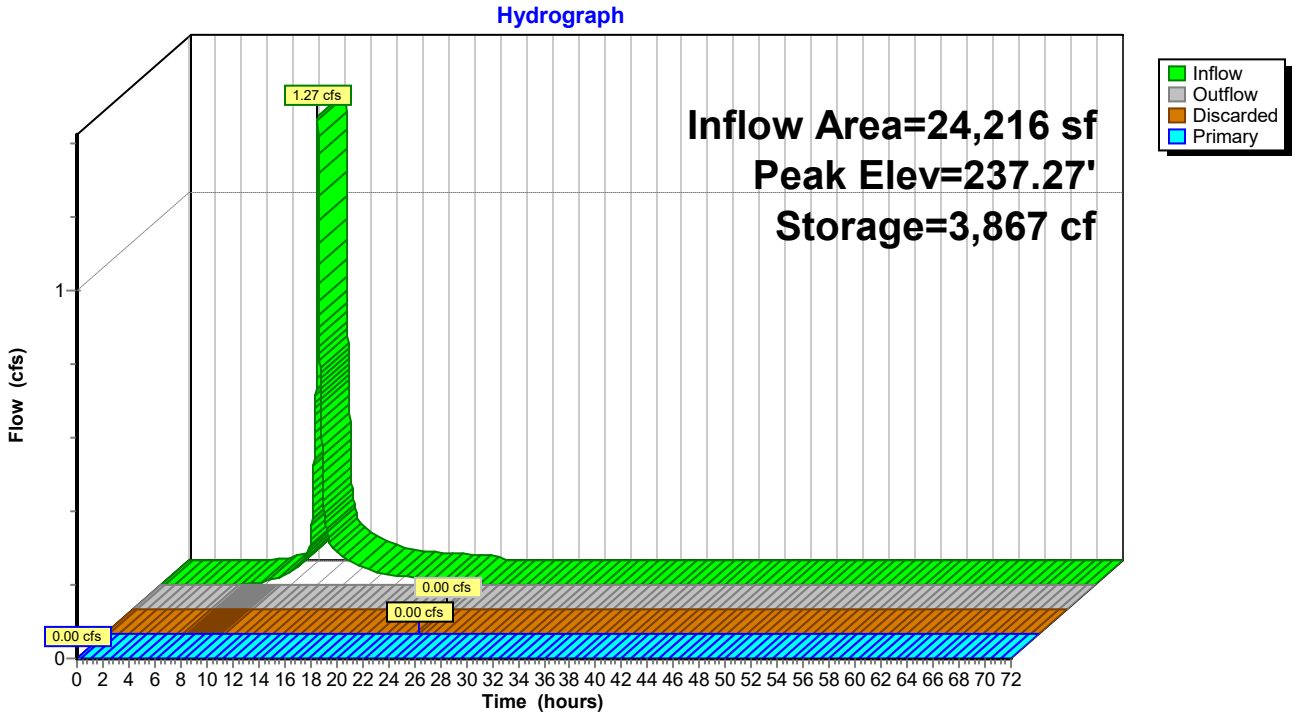
16,166.0 cf Field - 5,961.4 cf Chambers = 10,204.6 cf Stone x 40.0% Voids = 4,081.8 cf Stone Storage

Chamber Storage + Stone Storage = 10,043.3 cf = 0.231 af
Overall Storage Efficiency = 62.1%
Overall System Size = 116.93' x 39.50' x 3.50'

128 Chambers
598.7 cy Field
377.9 cy Stone



Pond UGI-A: UGI-A



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P-1a: Maintenance Bld Site Runoff Area=24,216 sf 65.28% Impervious Runoff Depth=3.41"
Tc=6.0 min CN=91 Runoff=2.15 cfs 6,884 cf

Subcatchment P-1b: Road Runoff Area=48,277 sf 45.39% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=88 Runoff=3.98 cfs 12,519 cf

Subcatchment P-1c: Basin Area Runoff Area=33,956 sf 0.00% Impervious Runoff Depth=2.14"
Tc=6.0 min CN=77 Runoff=1.95 cfs 6,049 cf

Subcatchment P-2a: Southeast Side MS Runoff Area=81,022 sf 85.38% Impervious Runoff Depth=3.84"
Tc=6.0 min CN=95 Runoff=7.74 cfs 25,898 cf

Subcatchment P-2b: Basin Area Runoff Area=11,282 sf 0.00% Impervious Runoff Depth=2.22"
Tc=6.0 min CN=78 Runoff=0.67 cfs 2,086 cf

Subcatchment P-3: East Grass/Woods Runoff Area=35,588 sf 0.00% Impervious Runoff Depth=1.98"
Tc=6.0 min CN=75 Runoff=1.88 cfs 5,872 cf

Subcatchment P-4a: TO UGI-2 Runoff Area=87,726 sf 42.98% Impervious Runoff Depth=3.02"
Tc=6.0 min CN=87 Runoff=7.04 cfs 22,043 cf

Subcatchment P-4b: ROOF + PAVED Runoff Area=205,806 sf 68.06% Impervious Runoff Depth=3.51"
Tc=6.0 min CN=92 Runoff=18.63 cfs 60,278 cf

Subcatchment P-4c: Synthetic Field Runoff Area=179,201 sf 100.00% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=98 Runoff=17.72 cfs 62,335 cf

Subcatchment P-4d: TO UGI-5 Runoff Area=108,946 sf 85.78% Impervious Runoff Depth=3.84"
Tc=6.0 min CN=95 Runoff=10.41 cfs 34,824 cf

Subcatchment P-4e: Grass Area Runoff Area=22,330 sf 24.29% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=84 Runoff=1.64 cfs 5,091 cf

Subcatchment P-4f: East Grass/Woods Runoff Area=6,872 sf 0.00% Impervious Runoff Depth=2.06"
Tc=6.0 min CN=76 Runoff=0.38 cfs 1,179 cf

Subcatchment P-5: East Grass/Woods Runoff Area=25,439 sf 0.00% Impervious Runoff Depth=1.90"
Tc=6.0 min CN=74 Runoff=1.29 cfs 4,035 cf

Subcatchment P-6: East Grass/Woods Runoff Area=27,226 sf 0.00% Impervious Runoff Depth=1.98"
Tc=6.0 min CN=75 Runoff=1.44 cfs 4,493 cf

Subcatchment P-7: Southeast Grass/Woods Runoff Area=54,764 sf 0.00% Impervious Runoff Depth=1.90"
Tc=6.0 min CN=74 Runoff=2.77 cfs 8,686 cf

Subcatchment P-8: Stoddard Dr Runoff Area=4,592 sf 49.87% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=88 Runoff=0.38 cfs 1,191 cf

Subcatchment P-9: South Woods Runoff Area=99,474 sf 0.00% Impervious Runoff Depth=1.90"
Flow Length=498' Tc=25.5 min CN=74 Runoff=3.05 cfs 15,778 cf

Pond 3P: (new Pond) Peak Elev=240.69' Inflow=7.74 cfs 25,898 cf
Primary=7.23 cfs 25,721 cf Secondary=0.51 cfs 177 cf Outflow=7.74 cfs 25,898 cf

Pond DP-1p: Flow to Exist Basin #1 Inflow=5.92 cfs 20,547 cf
Primary=5.92 cfs 20,547 cf

Pond DP-2p: Flow to Exist Basin#2 Inflow=7.88 cfs 24,761 cf
Primary=7.88 cfs 24,761 cf

Pond DP-3p: Residential East#1 Inflow=1.88 cfs 5,872 cf
Primary=1.88 cfs 5,872 cf

Pond DP-4p: Exist Swale #1 East Inflow=9.39 cfs 68,826 cf
Primary=9.39 cfs 68,826 cf

Pond DP-5p: Residential East#2 Inflow=1.29 cfs 4,035 cf
Primary=1.29 cfs 4,035 cf

Pond DP-6p: Residential East#3 Inflow=1.44 cfs 4,493 cf
Primary=1.44 cfs 4,493 cf

Pond DP-7p: Residential East#4 Inflow=2.77 cfs 8,686 cf
Primary=2.77 cfs 8,686 cf

Pond DP-8p: Stoddard Drive Inflow=0.38 cfs 1,191 cf
Primary=0.38 cfs 1,191 cf

Pond DP-9p: Woods South Inflow=3.05 cfs 15,778 cf
Primary=3.05 cfs 15,778 cf

Pond STONE: STONE Peak Elev=240.47' Storage=32,161 cf Inflow=17.72 cfs 62,335 cf
Discarded=0.56 cfs 58,414 cf Primary=0.29 cfs 3,887 cf Outflow=0.85 cfs 62,301 cf

Pond UGI-2: UGI-2 Peak Elev=242.20' Storage=6,032 cf Inflow=7.04 cfs 22,043 cf
Discarded=0.01 cfs 3,071 cf Primary=5.62 cfs 17,744 cf Outflow=5.64 cfs 20,815 cf

Pond UGI-3: UGI-3 Peak Elev=238.03' Storage=50,750 cf Inflow=18.63 cfs 60,278 cf
Discarded=0.01 cfs 3,339 cf Primary=0.25 cfs 19,650 cf Outflow=0.27 cfs 22,988 cf

Pond UGI-4: UGI-4 Peak Elev=241.06' Storage=3,711 cf Inflow=7.23 cfs 25,721 cf
Discarded=0.01 cfs 2,546 cf Primary=6.80 cfs 22,498 cf Outflow=6.81 cfs 25,044 cf

Pond UGI-5: UGI-5 Peak Elev=237.07' Storage=16,932 cf Inflow=10.41 cfs 34,824 cf
Discarded=0.04 cfs 10,800 cf Primary=3.36 cfs 21,277 cf Outflow=3.40 cfs 32,077 cf

Pond UGI-A: UGI-A Peak Elev=237.63' Storage=5,185 cf Inflow=2.15 cfs 6,884 cf
Discarded=0.00 cfs 433 cf Primary=0.09 cfs 1,980 cf Outflow=0.09 cfs 2,413 cf

Total Runoff Area = 1,056,717 sf Runoff Volume = 279,240 cf Average Runoff Depth = 3.17"
46.53% Pervious = 491,673 sf 53.47% Impervious = 565,044 sf

Summary for Subcatchment P-1a: Maintenance Bld Site

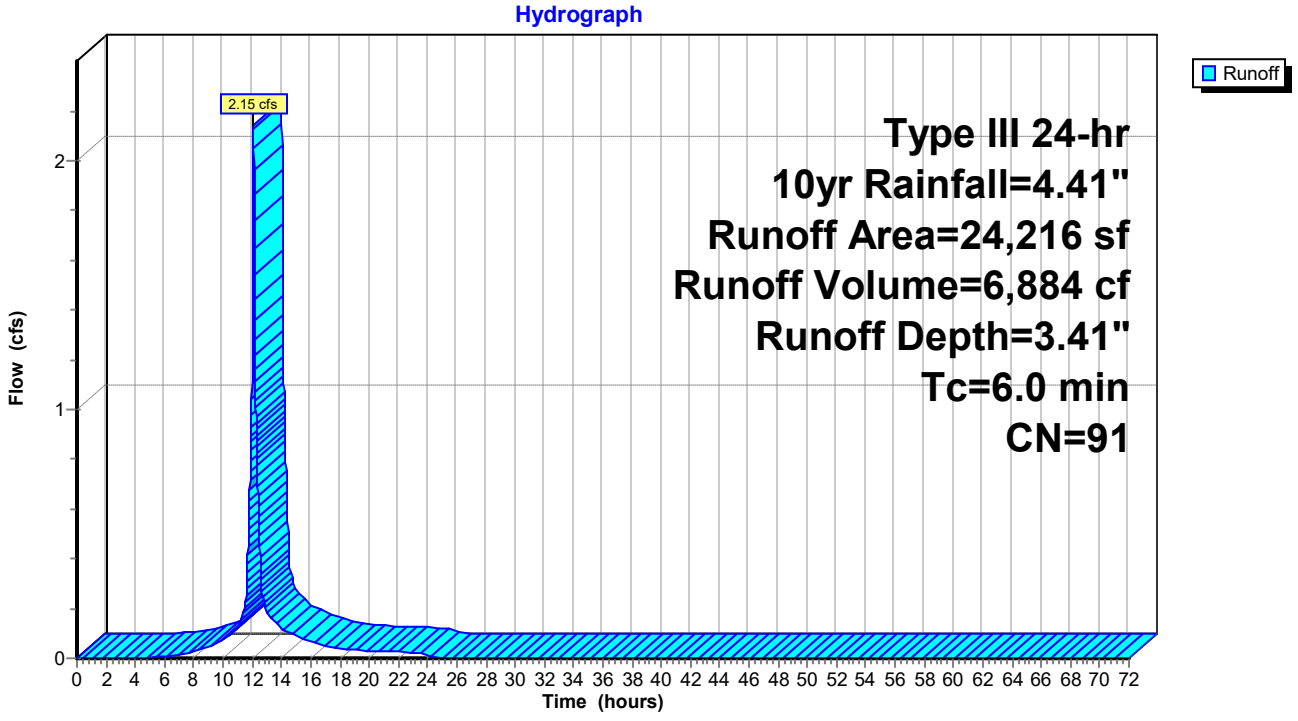
Runoff = 2.15 cfs @ 12.09 hrs, Volume= 6,884 cf, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
10,792	98	Paved parking, HSG C
5,015	98	Roofs, HSG C
8,409	79	50-75% Grass cover, Fair, HSG C
24,216	91	Weighted Average
8,409		34.72% Pervious Area
15,807		65.28% Impervious Area

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

Subcatchment P-1a: Maintenance Bld Site



Summary for Subcatchment P-1b: Road

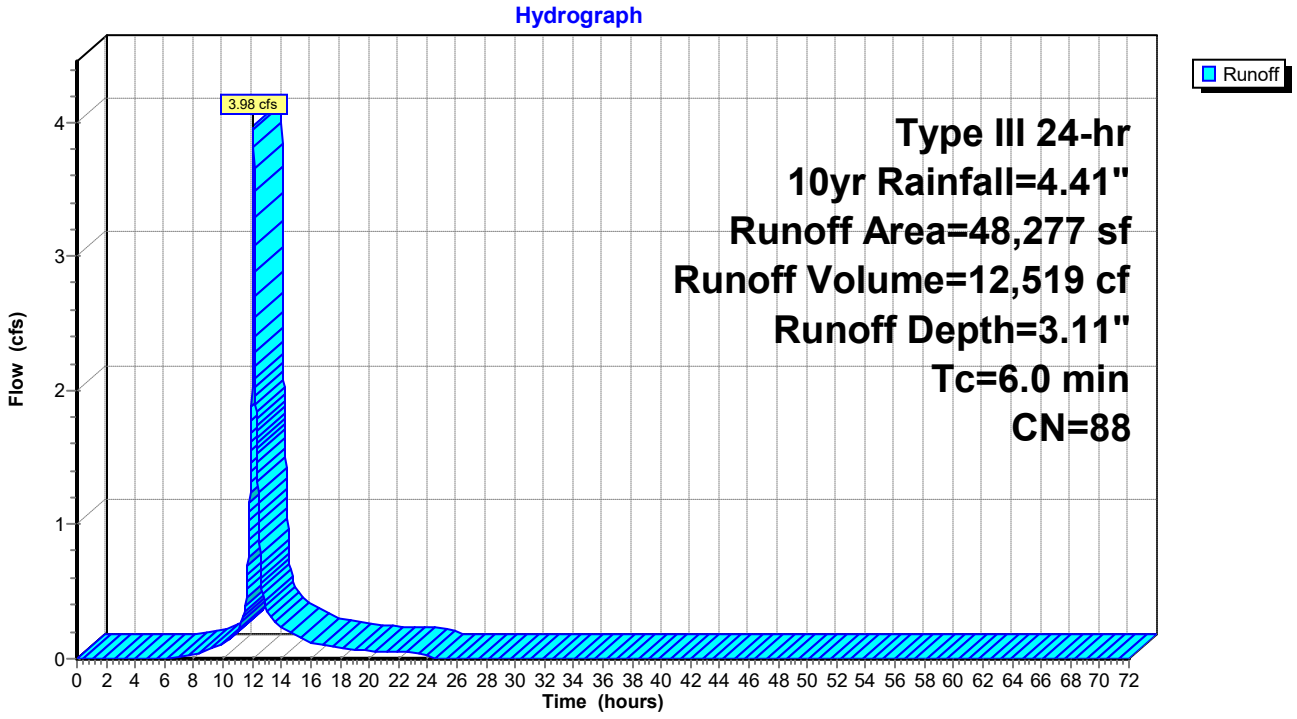
Runoff = 3.98 cfs @ 12.09 hrs, Volume= 12,519 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
21,913	98	Paved parking, HSG C
26,364	79	50-75% Grass cover, Fair, HSG C
48,277	88	Weighted Average
26,364		54.61% Pervious Area
21,913		45.39% Impervious Area

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

Subcatchment P-1b: Road



Summary for Subcatchment P-1c: Basin Area

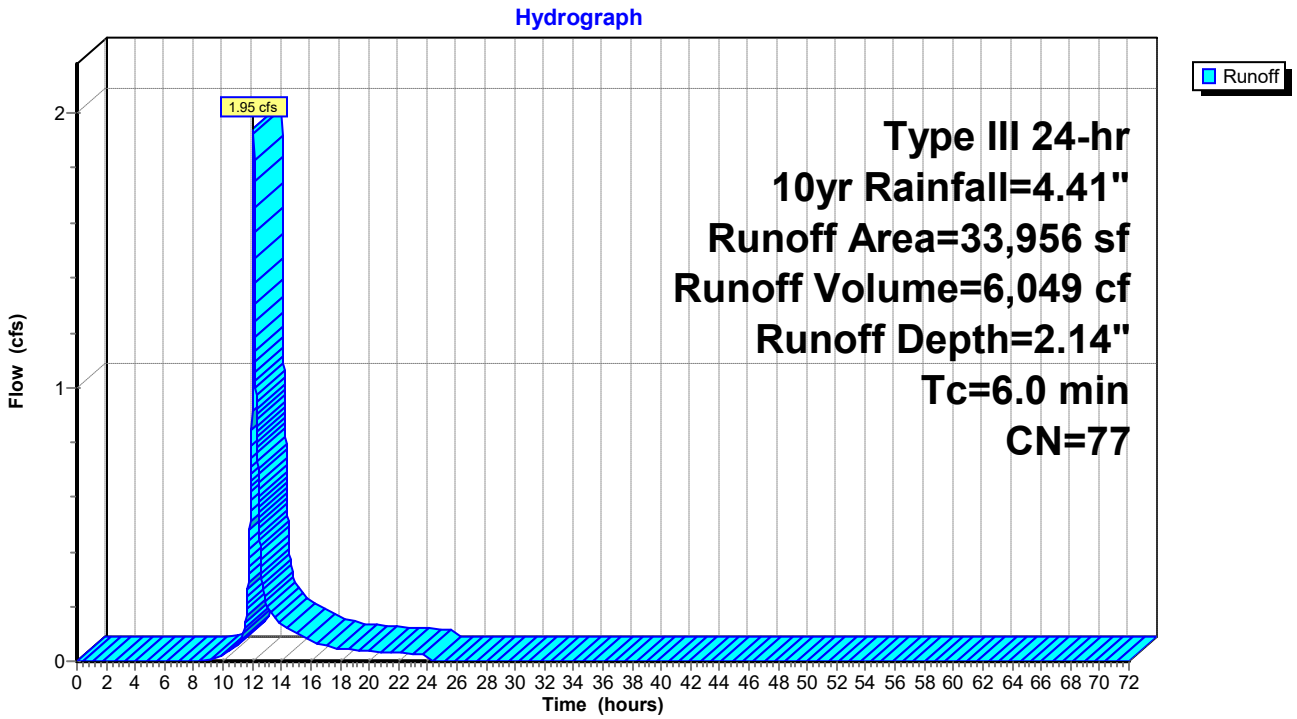
Runoff = 1.95 cfs @ 12.09 hrs, Volume= 6,049 cf, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
10,345	73	Woods, Fair, HSG C
23,611	79	50-75% Grass cover, Fair, HSG C
33,956	77	Weighted Average
33,956		100.00% Pervious Area

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

Subcatchment P-1c: Basin Area



Summary for Subcatchment P-2a: Southeast Side MS

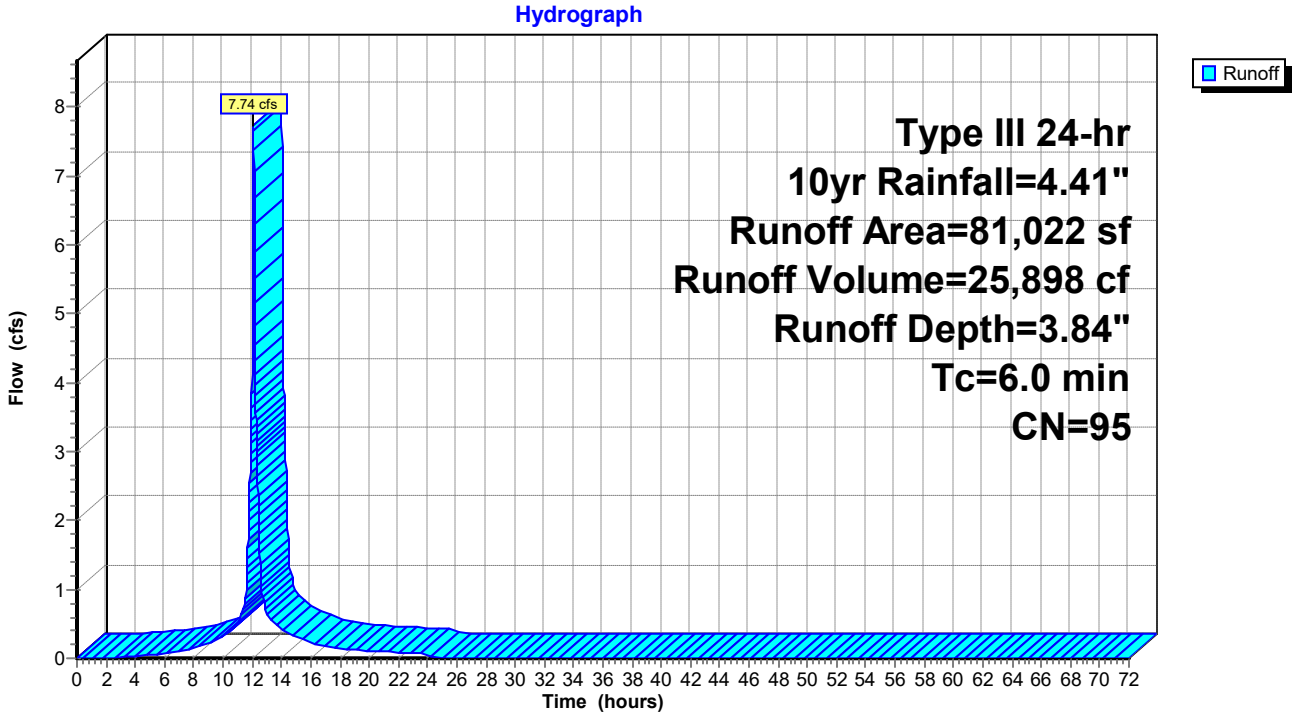
Runoff = 7.74 cfs @ 12.08 hrs, Volume= 25,898 cf, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
	28,114	98	Paved parking, HSG C
	11,845	79	50-75% Grass cover, Fair, HSG C
*	41,063	98	Exist Roof , HSG C
	81,022	95	Weighted Average
	11,845		14.62% Pervious Area
	69,177		85.38% Impervious Area

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

Subcatchment P-2a: Southeast Side MS



Summary for Subcatchment P-2b: Basin Area

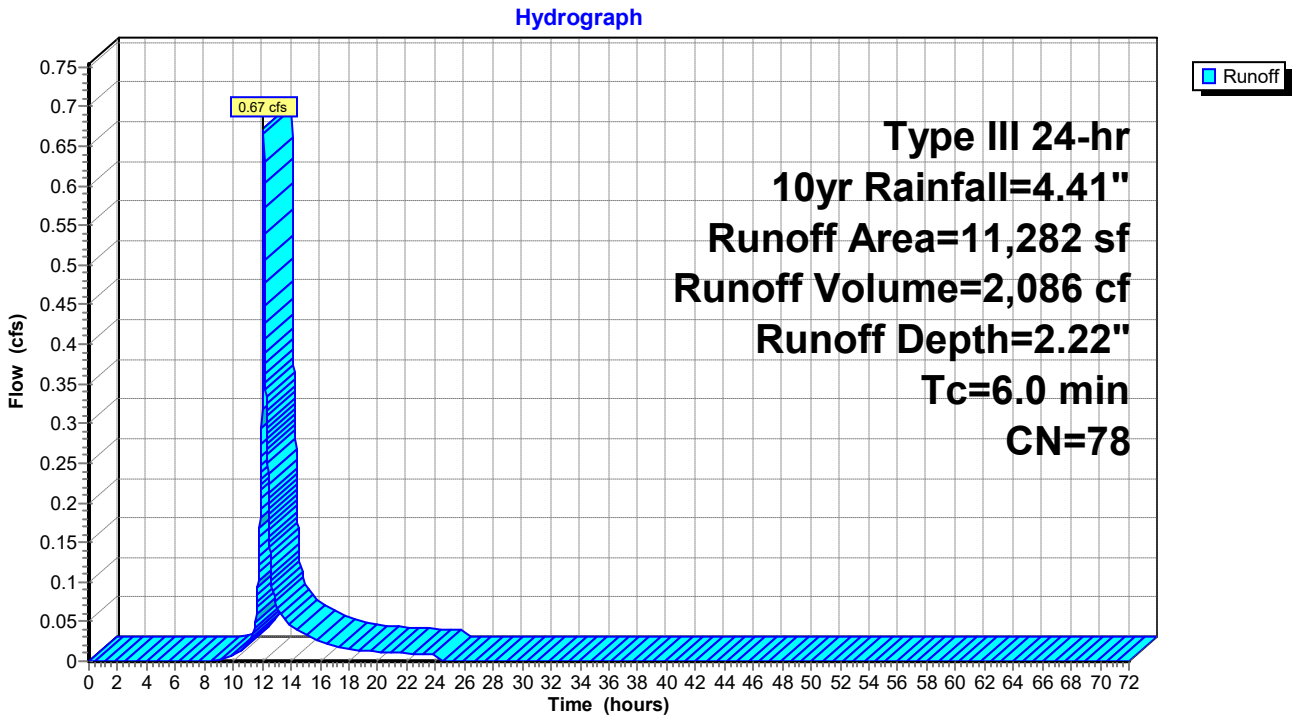
Runoff = 0.67 cfs @ 12.09 hrs, Volume= 2,086 cf, Depth= 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	2,391	73	Woods, Fair, HSG C
	8,891	79	50-75% Grass cover, Fair, HSG C
	11,282	78	Weighted Average
	11,282		100.00% Pervious Area

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

Subcatchment P-2b: Basin Area



Summary for Subcatchment P-3: East Grass/Woods

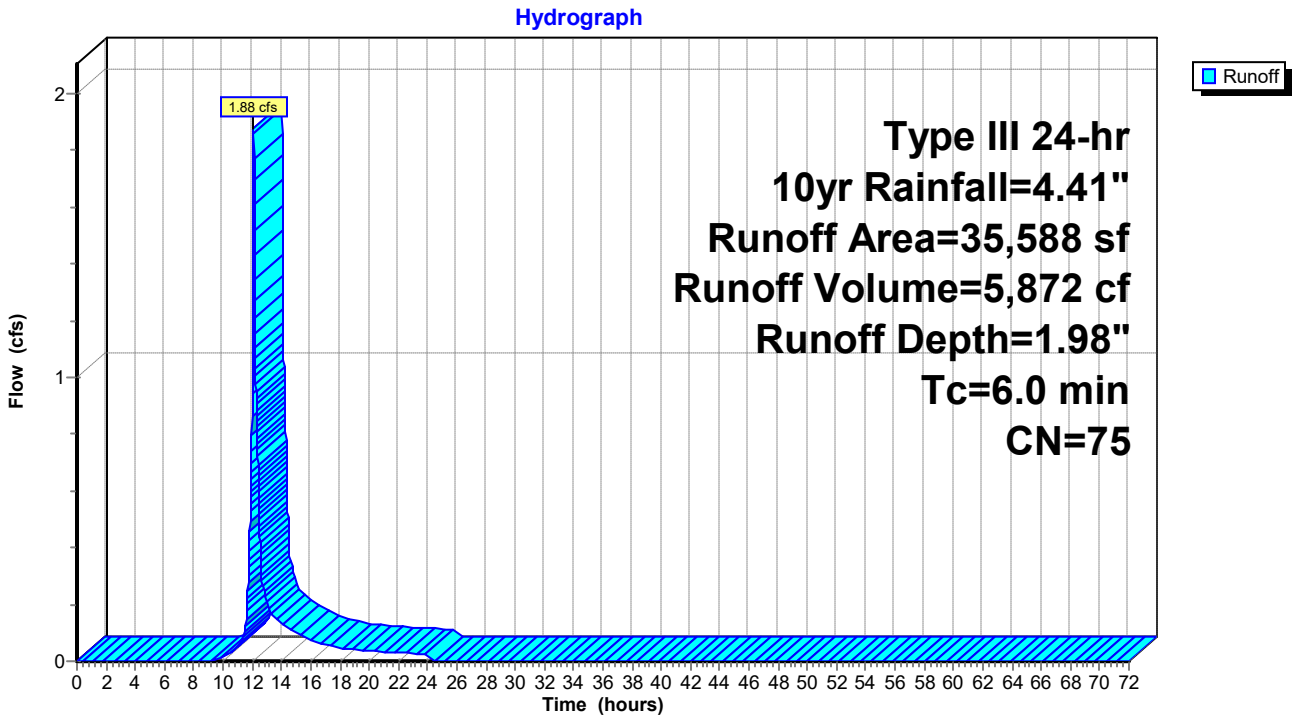
Runoff = 1.88 cfs @ 12.09 hrs, Volume= 5,872 cf, Depth= 1.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
22,537	73	Woods, Fair, HSG C
13,051	79	50-75% Grass cover, Fair, HSG C
35,588	75	Weighted Average
35,588		100.00% Pervious Area

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

Subcatchment P-3: East Grass/Woods



Summary for Subcatchment P-4a: TO UGI-2

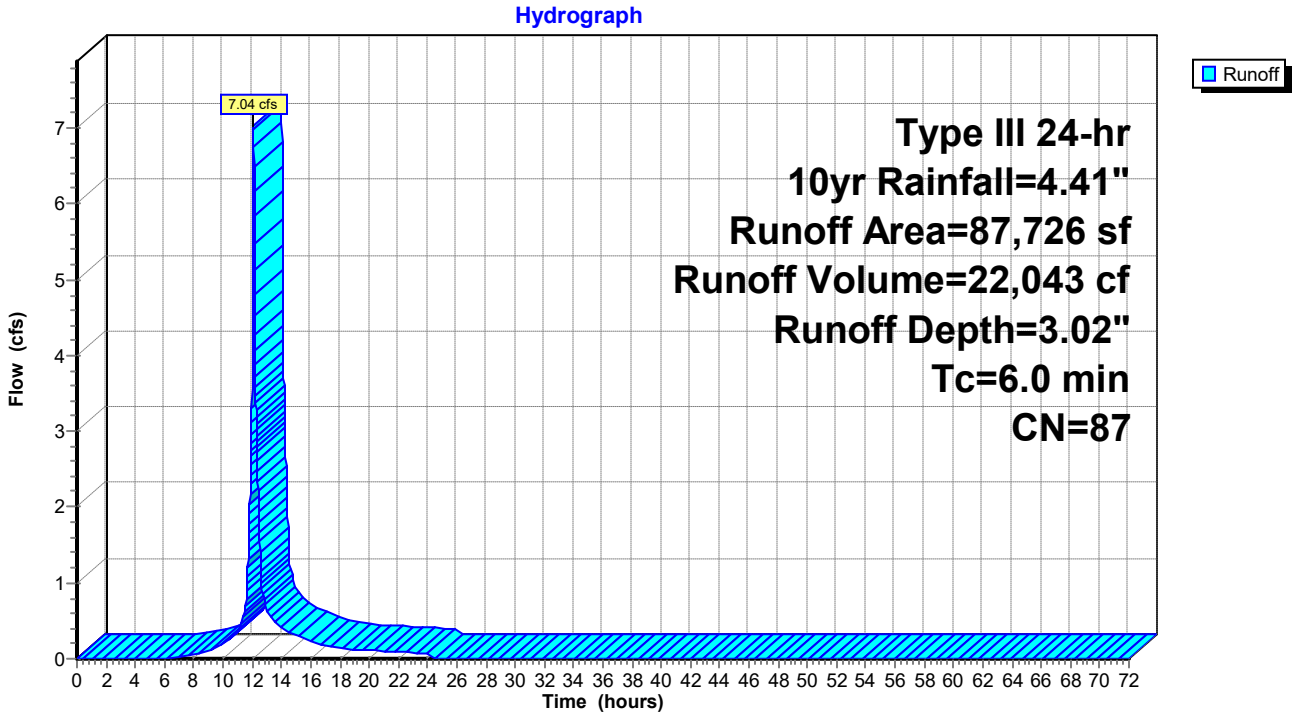
Runoff = 7.04 cfs @ 12.09 hrs, Volume= 22,043 cf, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	37,704	98	IMPERVIOUS
	50,022	79	50-75% Grass cover, Fair, HSG C
	87,726	87	Weighted Average
	50,022		57.02% Pervious Area
	37,704		42.98% Impervious Area

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

Subcatchment P-4a: TO UGI-2



Summary for Subcatchment P-4b: ROOF + PAVED

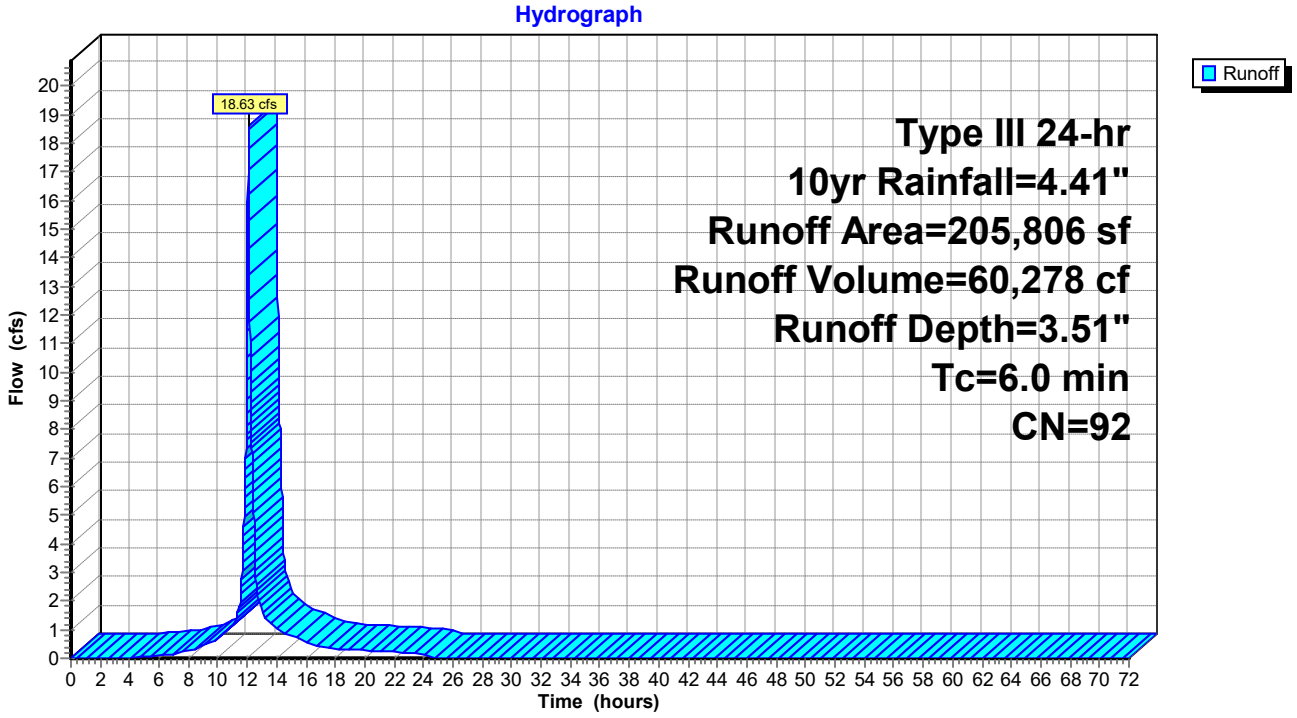
Runoff = 18.63 cfs @ 12.08 hrs, Volume= 60,278 cf, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
	120,540	98	Paved parking, HSG C
	65,734	79	50-75% Grass cover, Fair, HSG C
*	19,532	98	Roof
	205,806	92	Weighted Average
	65,734		31.94% Pervious Area
	140,072		68.06% Impervious Area

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

Subcatchment P-4b: ROOF + PAVED



Summary for Subcatchment P-4c: Synthetic Field

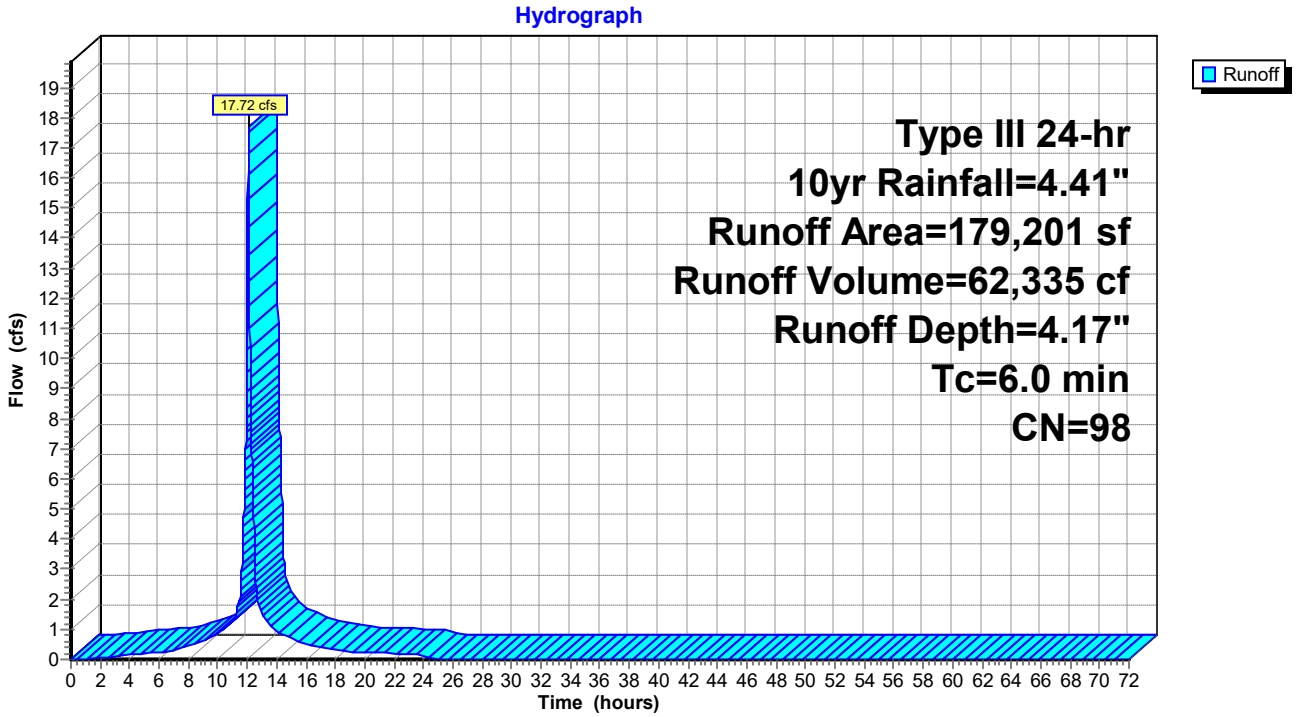
Runoff = 17.72 cfs @ 12.08 hrs, Volume= 62,335 cf, Depth= 4.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	179,201	98	Synthetic Field, HSG C
	179,201		100.00% Impervious Area

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

Subcatchment P-4c: Synthetic Field



Summary for Subcatchment P-4d: TO UGI-5

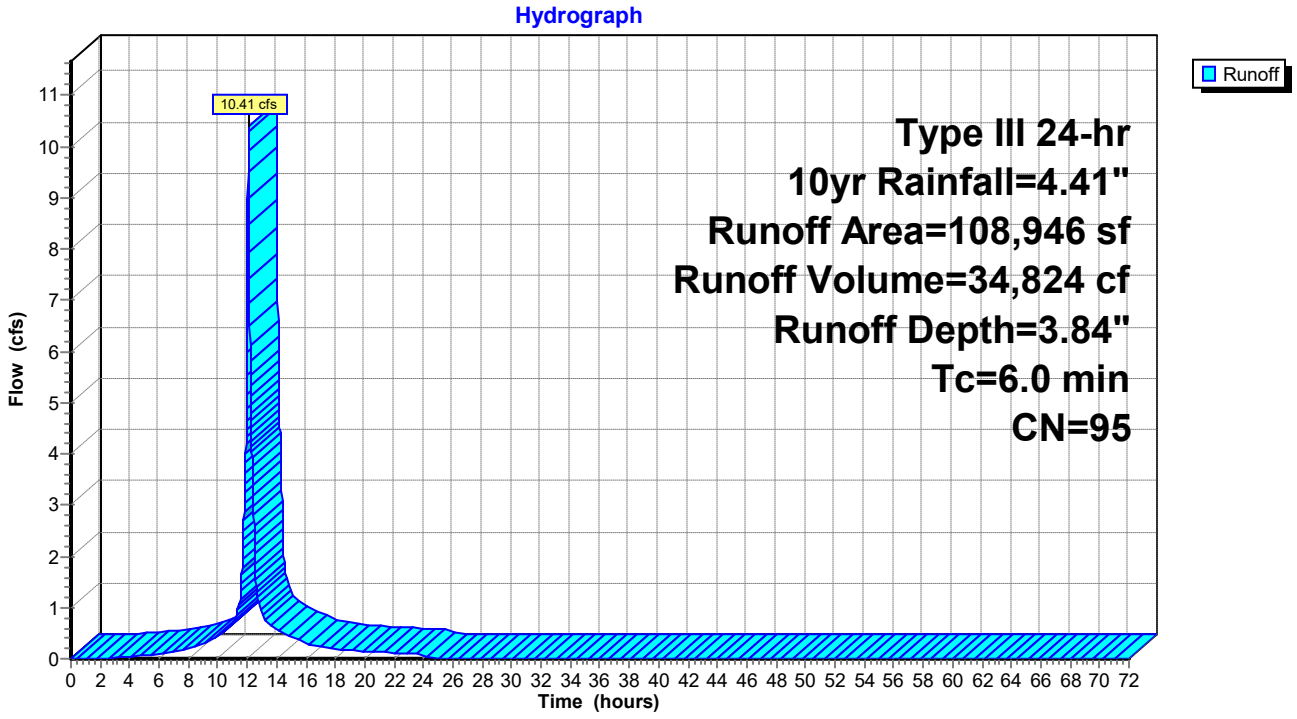
Runoff = 10.41 cfs @ 12.08 hrs, Volume= 34,824 cf, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
93,457	98	Paved parking, HSG C
15,489	79	50-75% Grass cover, Fair, HSG C
108,946	95	Weighted Average
15,489		14.22% Pervious Area
93,457		85.78% Impervious Area

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

Subcatchment P-4d: TO UGI-5



Summary for Subcatchment P-4e: Grass Area

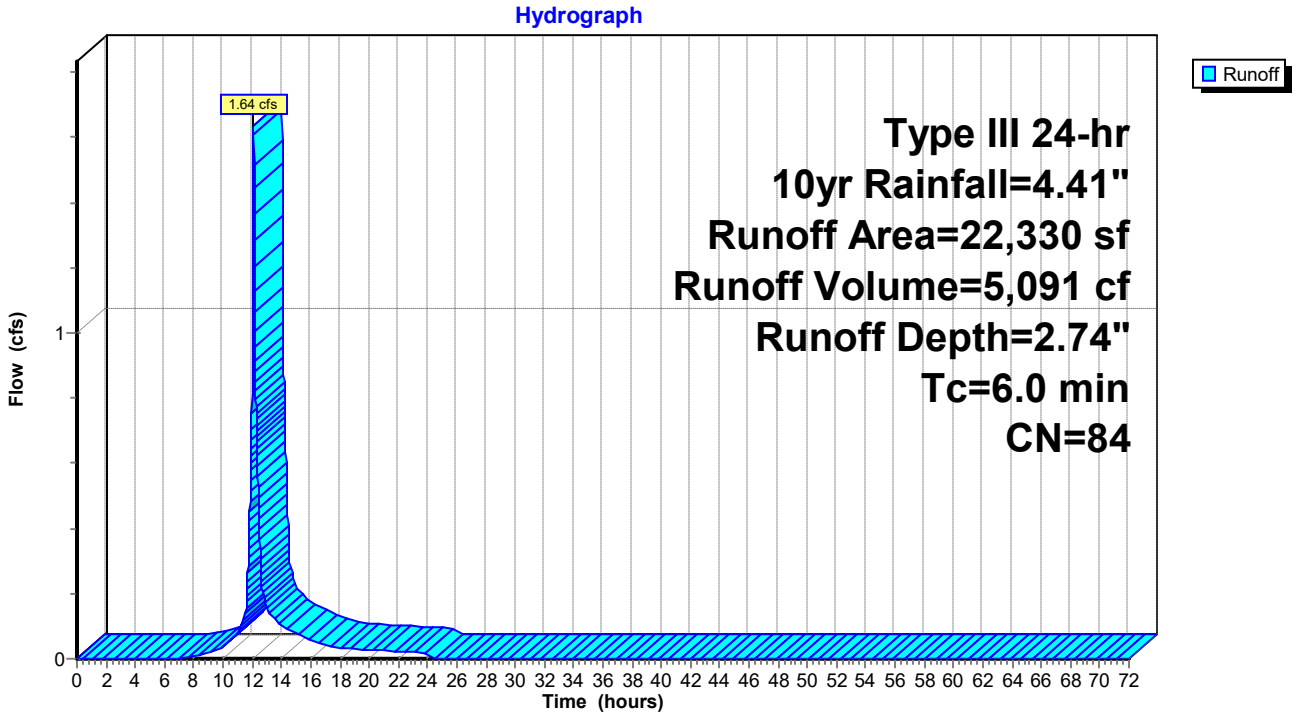
Runoff = 1.64 cfs @ 12.09 hrs, Volume= 5,091 cf, Depth= 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	5,423	98	IMPERVIOUS
	16,907	79	50-75% Grass cover, Fair, HSG C
	22,330	84	Weighted Average
	16,907		75.71% Pervious Area
	5,423		24.29% Impervious Area

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

Subcatchment P-4e: Grass Area



Summary for Subcatchment P-4f: East Grass/Woods

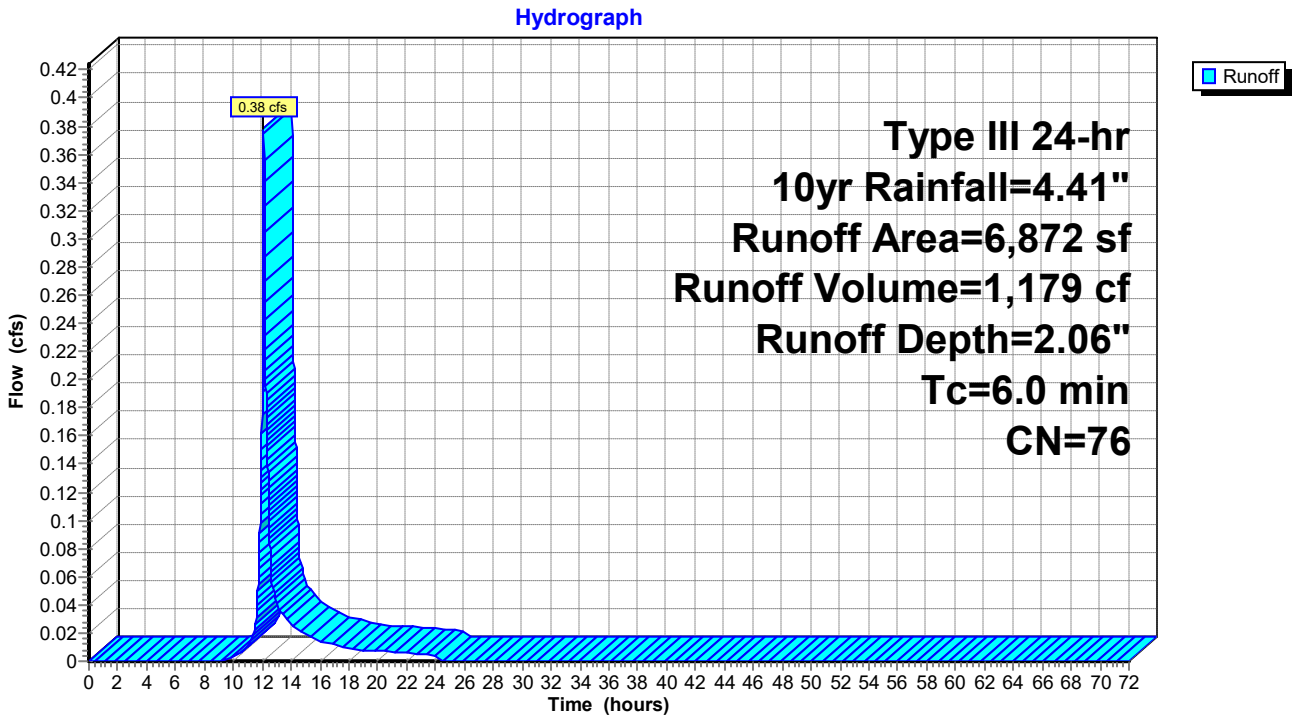
Runoff = 0.38 cfs @ 12.09 hrs, Volume= 1,179 cf, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
3,120	73	Woods, Fair, HSG C
3,752	79	50-75% Grass cover, Fair, HSG C
6,872	76	Weighted Average
6,872		100.00% Pervious Area

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

Subcatchment P-4f: East Grass/Woods



Summary for Subcatchment P-5: East Grass/Woods

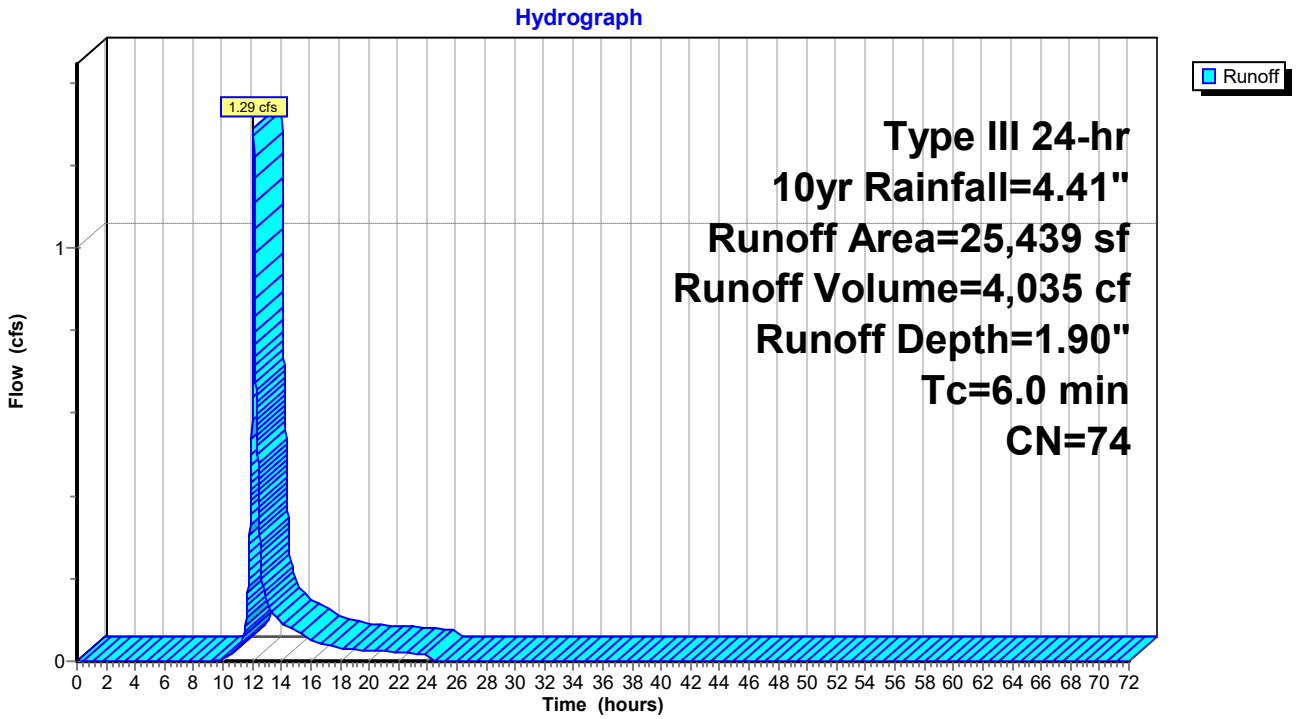
Runoff = 1.29 cfs @ 12.09 hrs, Volume= 4,035 cf, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
3,717	79	50-75% Grass cover, Fair, HSG C
21,722	73	Woods, Fair, HSG C
25,439	74	Weighted Average
25,439		100.00% Pervious Area

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

Subcatchment P-5: East Grass/Woods



Summary for Subcatchment P-6: East Grass/Woods

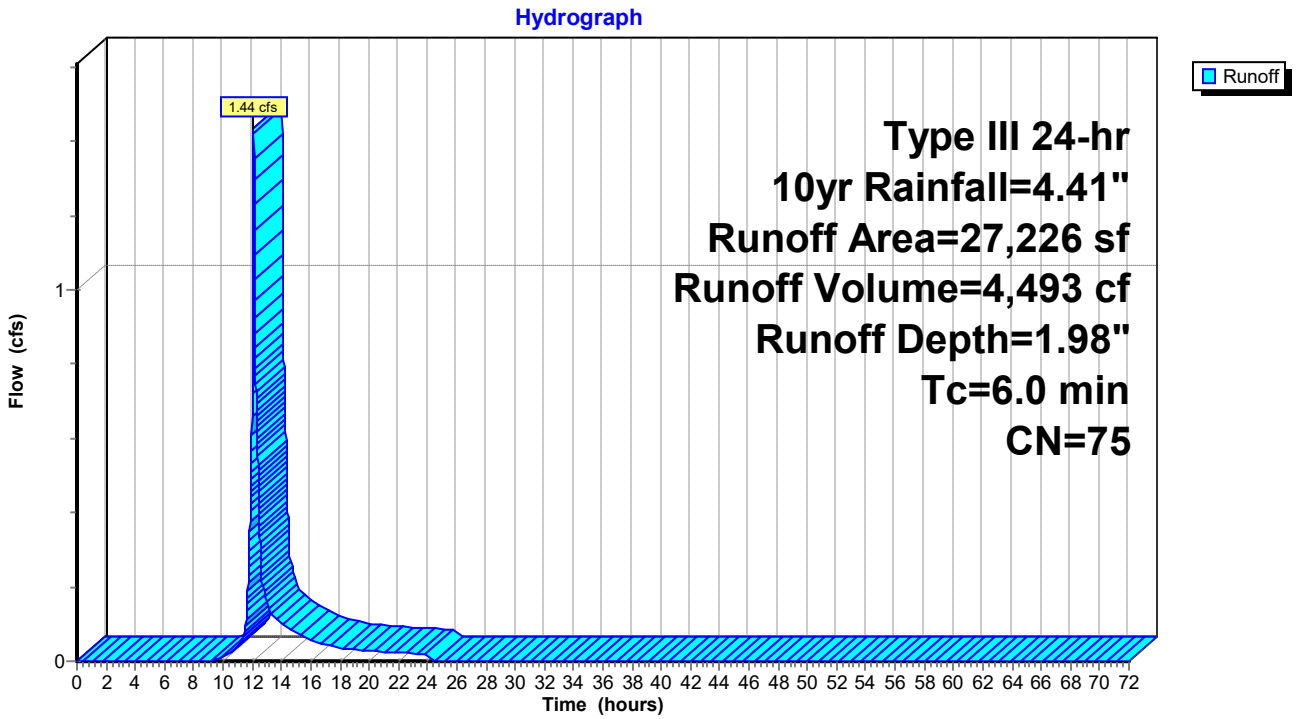
Runoff = 1.44 cfs @ 12.09 hrs, Volume= 4,493 cf, Depth= 1.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
16,017	73	Woods, Fair, HSG C
11,209	79	50-75% Grass cover, Fair, HSG C
27,226	75	Weighted Average
27,226		100.00% Pervious Area

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

Subcatchment P-6: East Grass/Woods



Summary for Subcatchment P-7: Southeast Grass/Woods

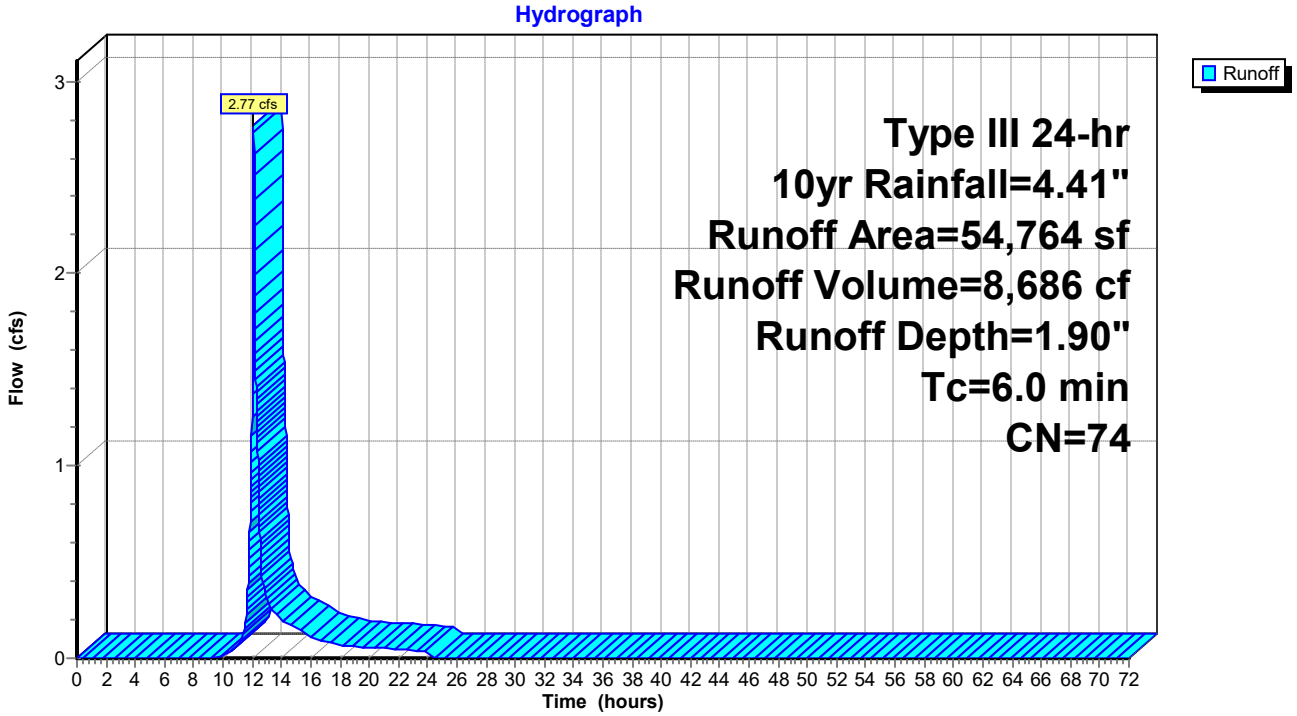
Runoff = 2.77 cfs @ 12.09 hrs, Volume= 8,686 cf, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
41,823	73	Woods, Fair, HSG C
12,941	79	50-75% Grass cover, Fair, HSG C
54,764	74	Weighted Average
54,764		100.00% Pervious Area

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

Subcatchment P-7: Southeast Grass/Woods



Summary for Subcatchment P-8: Stoddard Dr

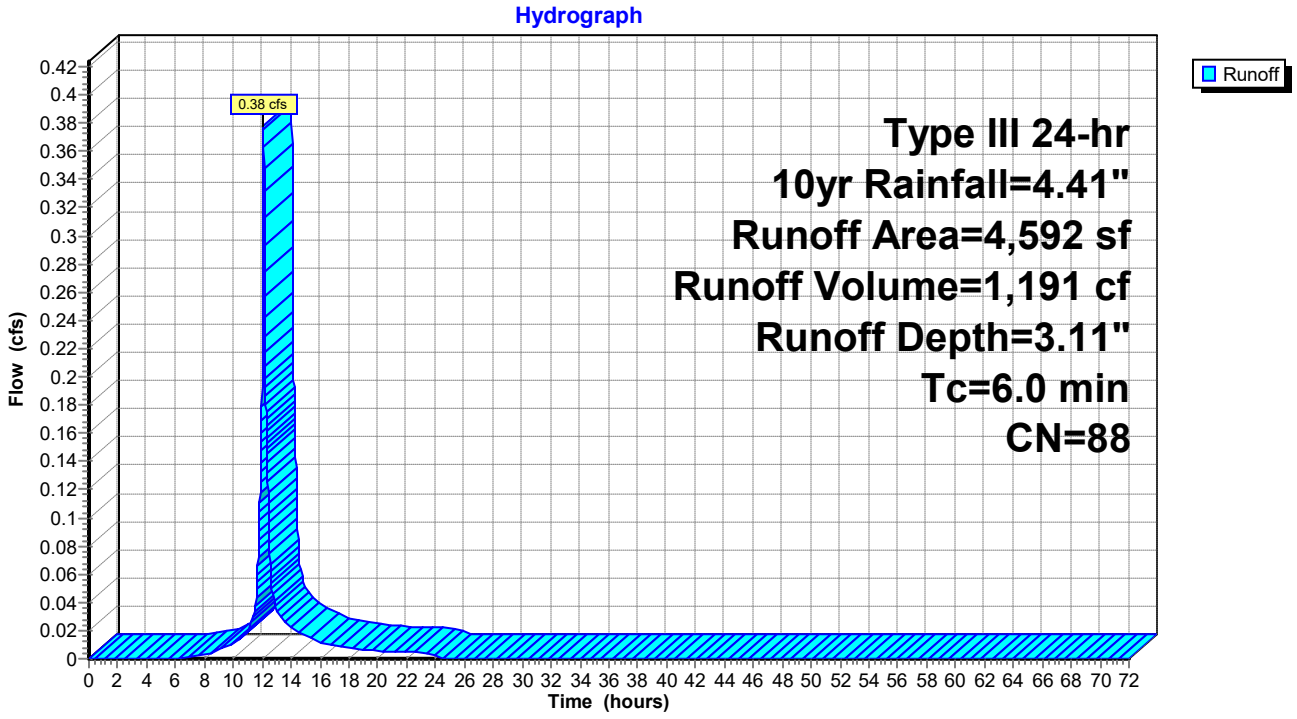
Runoff = 0.38 cfs @ 12.09 hrs, Volume= 1,191 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	2,302	79	50-75% Grass cover, Fair, HSG C
	2,290	98	Paved parking, HSG C
	4,592	88	Weighted Average
	2,302		50.13% Pervious Area
	2,290		49.87% Impervious Area

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

Subcatchment P-8: Stoddard Dr



Summary for Subcatchment P-9: South Woods

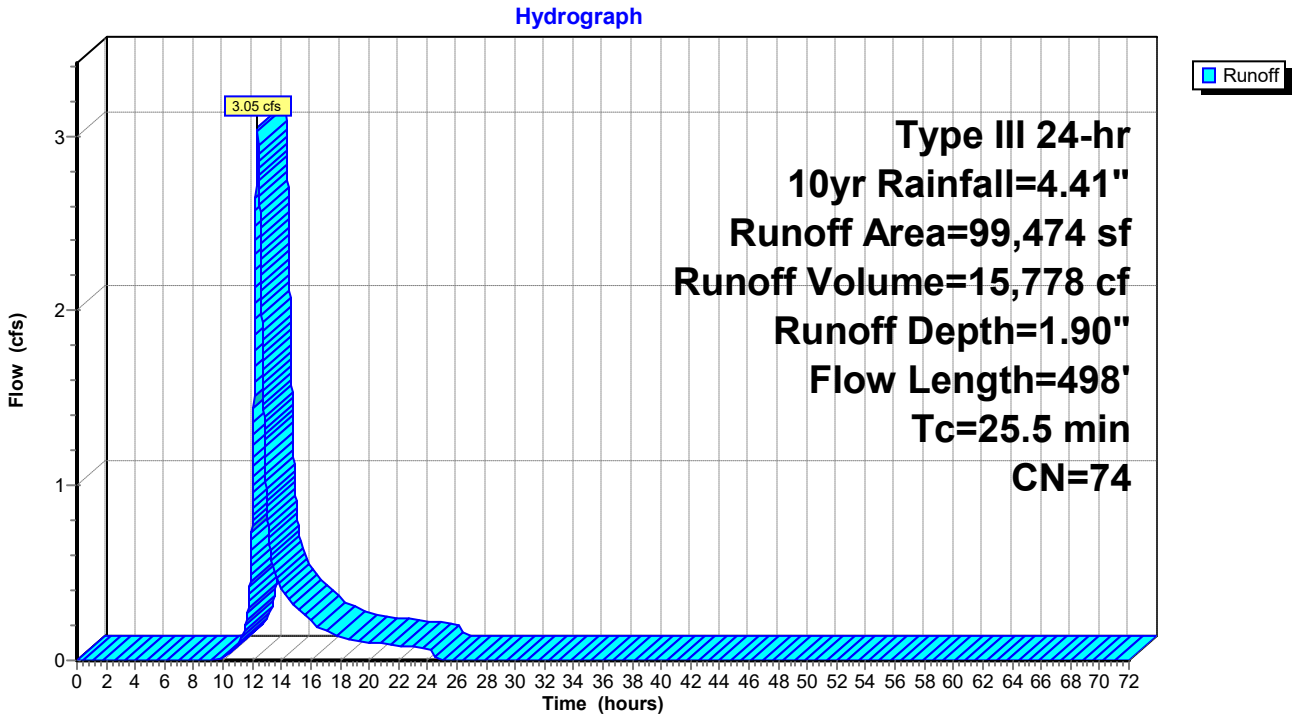
Runoff = 3.05 cfs @ 12.38 hrs, Volume= 15,778 cf, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
10,443	79	50-75% Grass cover, Fair, HSG C
89,031	73	Woods, Fair, HSG C
99,474	74	Weighted Average
99,474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	50	0.0270	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.9	132	0.0250	2.55		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.6	316	0.0050	1.14		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
25.5	498	Total			

Subcatchment P-9: South Woods



Summary for Pond 3P: (new Pond)

Inflow Area = 81,022 sf, 85.38% Impervious, Inflow Depth = 3.84" for 10yr event
Inflow = 7.74 cfs @ 12.08 hrs, Volume= 25,898 cf
Outflow = 7.74 cfs @ 12.08 hrs, Volume= 25,898 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.23 cfs @ 12.08 hrs, Volume= 25,721 cf
Secondary = 0.51 cfs @ 12.08 hrs, Volume= 177 cf

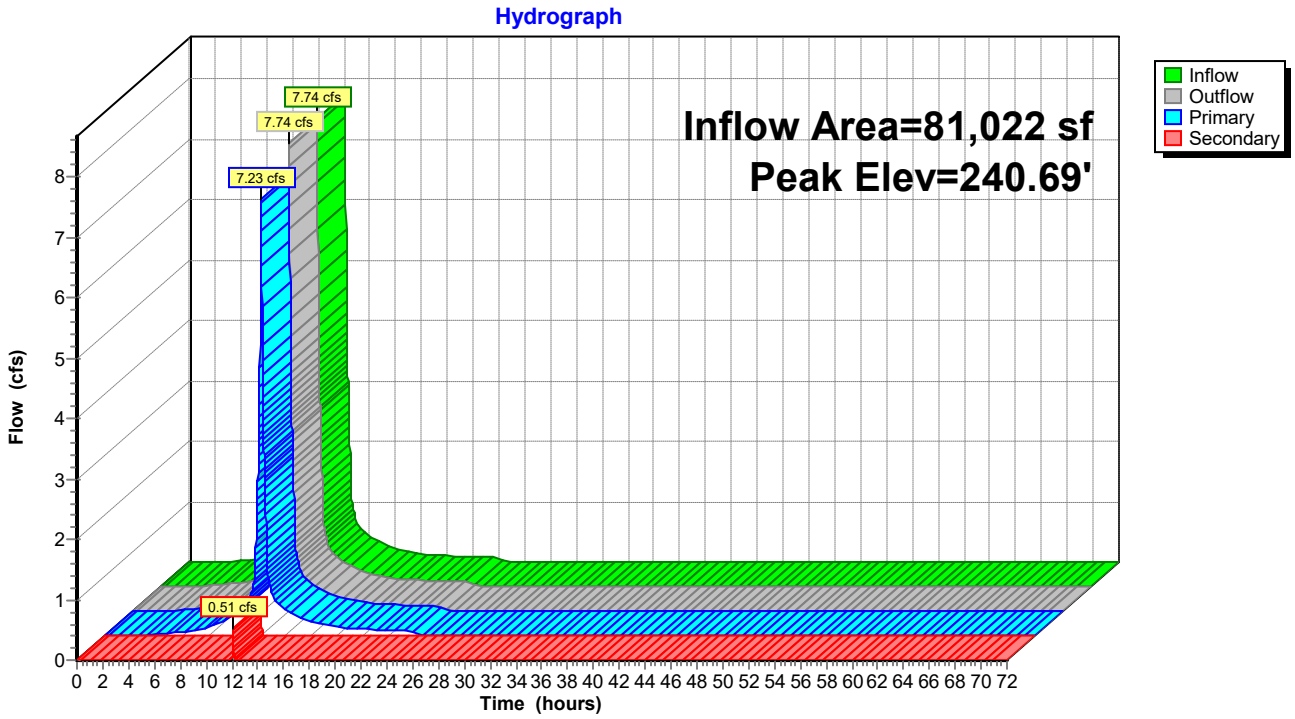
Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 240.69' @ 12.08 hrs
Flood Elev= 244.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	240.40'	**24.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=7.22 cfs @ 12.08 hrs HW=240.69' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 7.22 cfs @ 3.71 fps)

Secondary OutFlow Max=0.51 cfs @ 12.08 hrs HW=240.69' (Free Discharge)
└**2=Orifice/Grate** (Orifice Controls 0.51 cfs @ 1.83 fps)

Pond 3P: (new Pond)

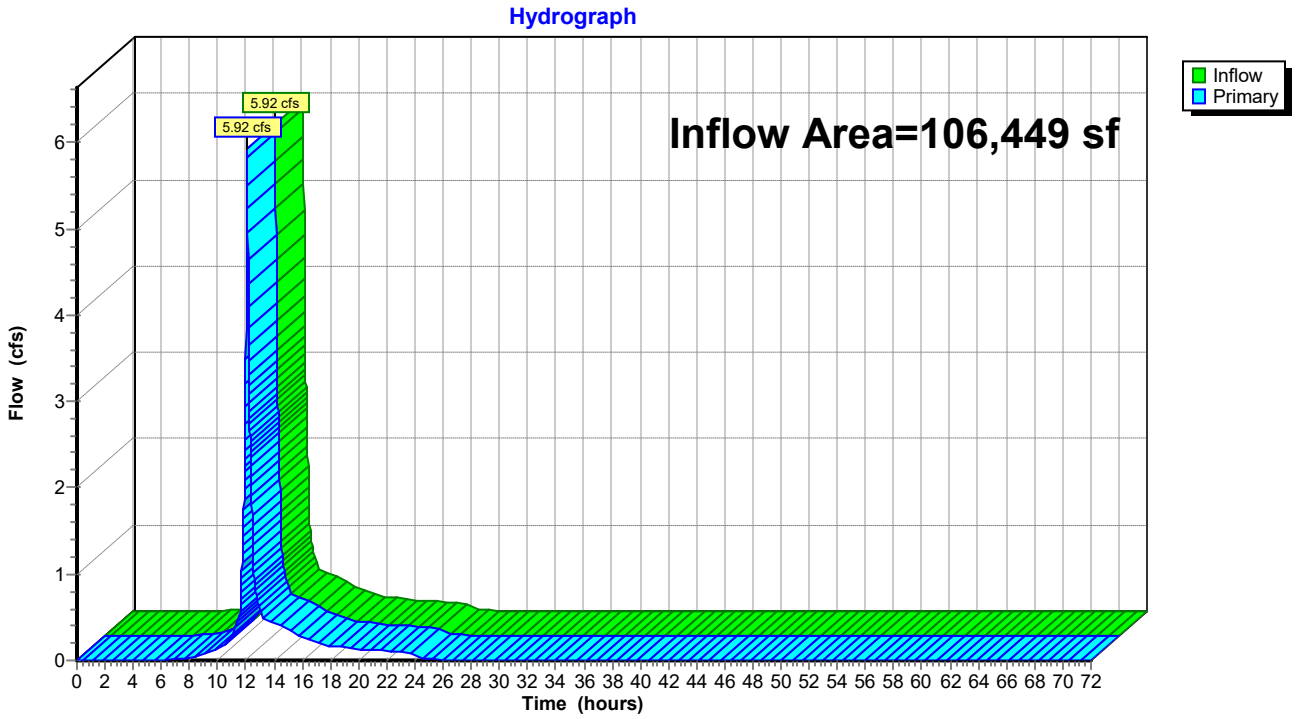


Summary for Pond DP-1p: Flow to Exist Basin #1

Inflow Area = 106,449 sf, 35.43% Impervious, Inflow Depth = 2.32" for 10yr event
Inflow = 5.92 cfs @ 12.09 hrs, Volume= 20,547 cf
Primary = 5.92 cfs @ 12.09 hrs, Volume= 20,547 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-1p: Flow to Exist Basin #1

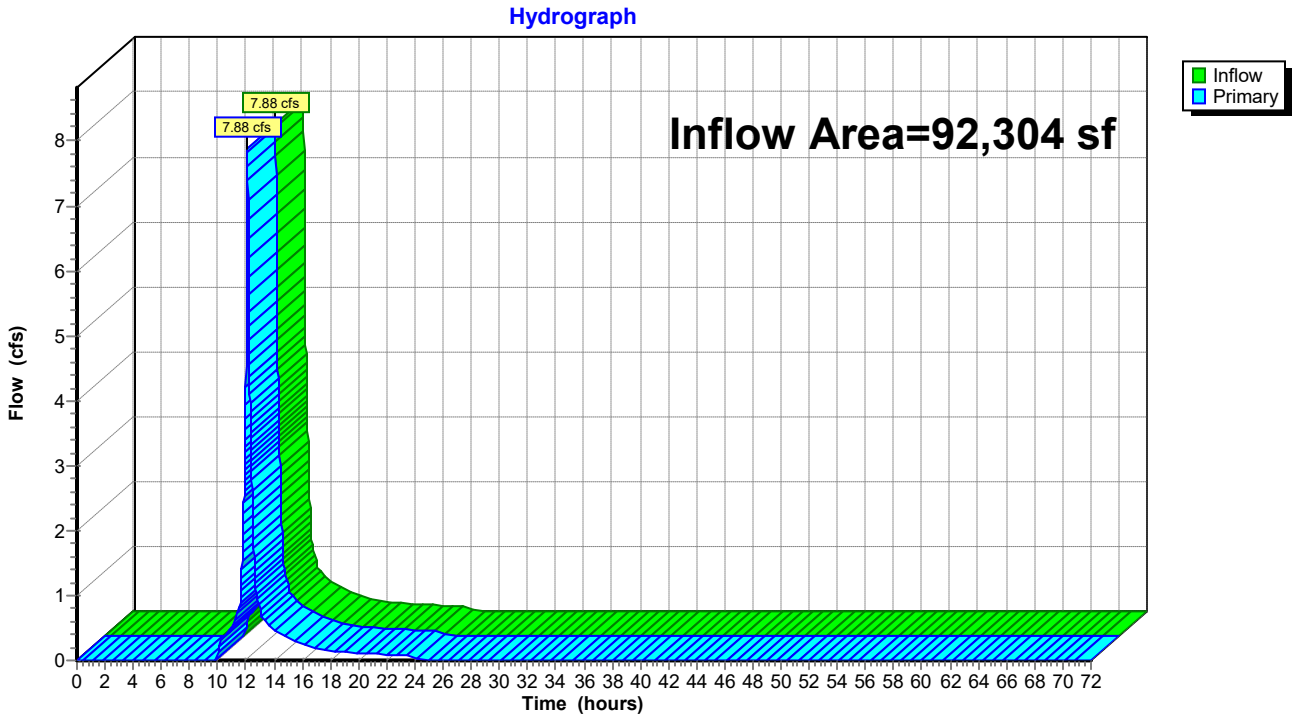


Summary for Pond DP-2p: Flow to Exist Basin#2

Inflow Area = 92,304 sf, 74.94% Impervious, Inflow Depth = 3.22" for 10yr event
Inflow = 7.88 cfs @ 12.11 hrs, Volume= 24,761 cf
Primary = 7.88 cfs @ 12.11 hrs, Volume= 24,761 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-2p: Flow to Exist Basin#2

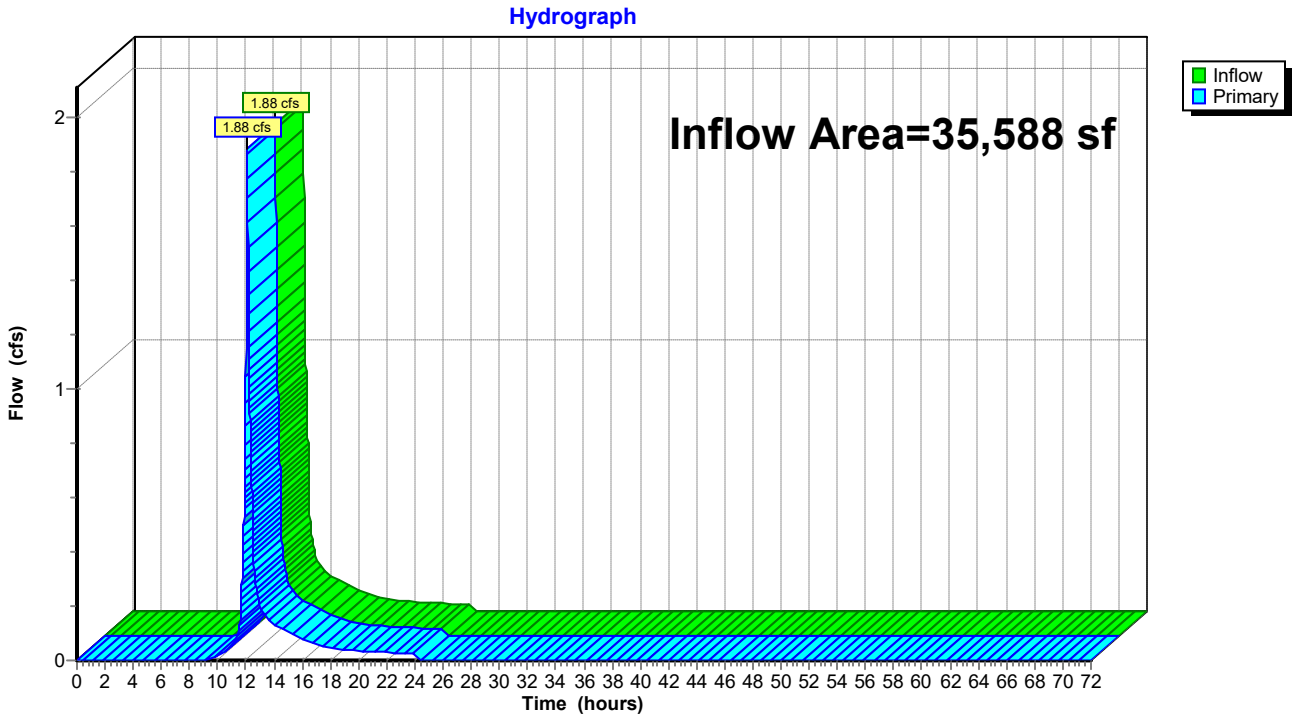


Summary for Pond DP-3p: Residential East#1

Inflow Area = 35,588 sf, 0.00% Impervious, Inflow Depth = 1.98" for 10yr event
Inflow = 1.88 cfs @ 12.09 hrs, Volume= 5,872 cf
Primary = 1.88 cfs @ 12.09 hrs, Volume= 5,872 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-3p: Residential East#1

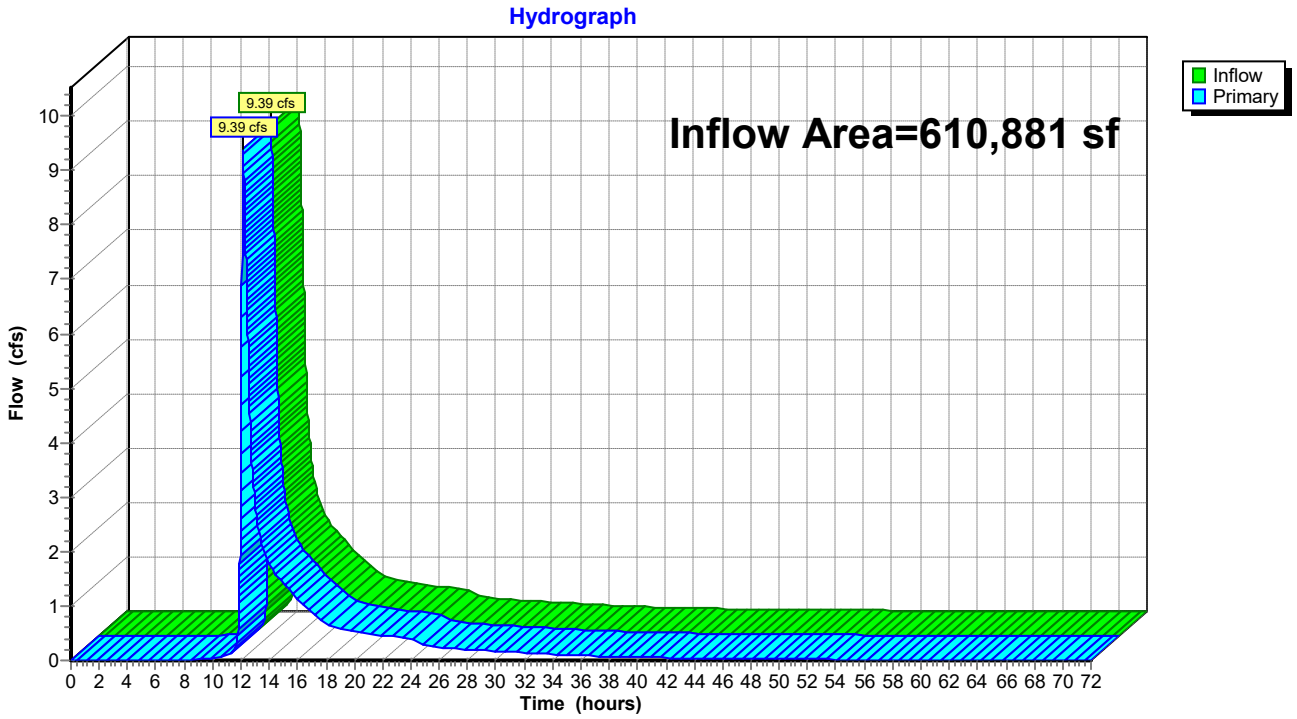


Summary for Pond DP-4p: Exist Swale #1 East

Inflow Area = 610,881 sf, 74.62% Impervious, Inflow Depth > 1.35" for 10yr event
Inflow = 9.39 cfs @ 12.15 hrs, Volume= 68,826 cf
Primary = 9.39 cfs @ 12.15 hrs, Volume= 68,826 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-4p: Exist Swale #1 East

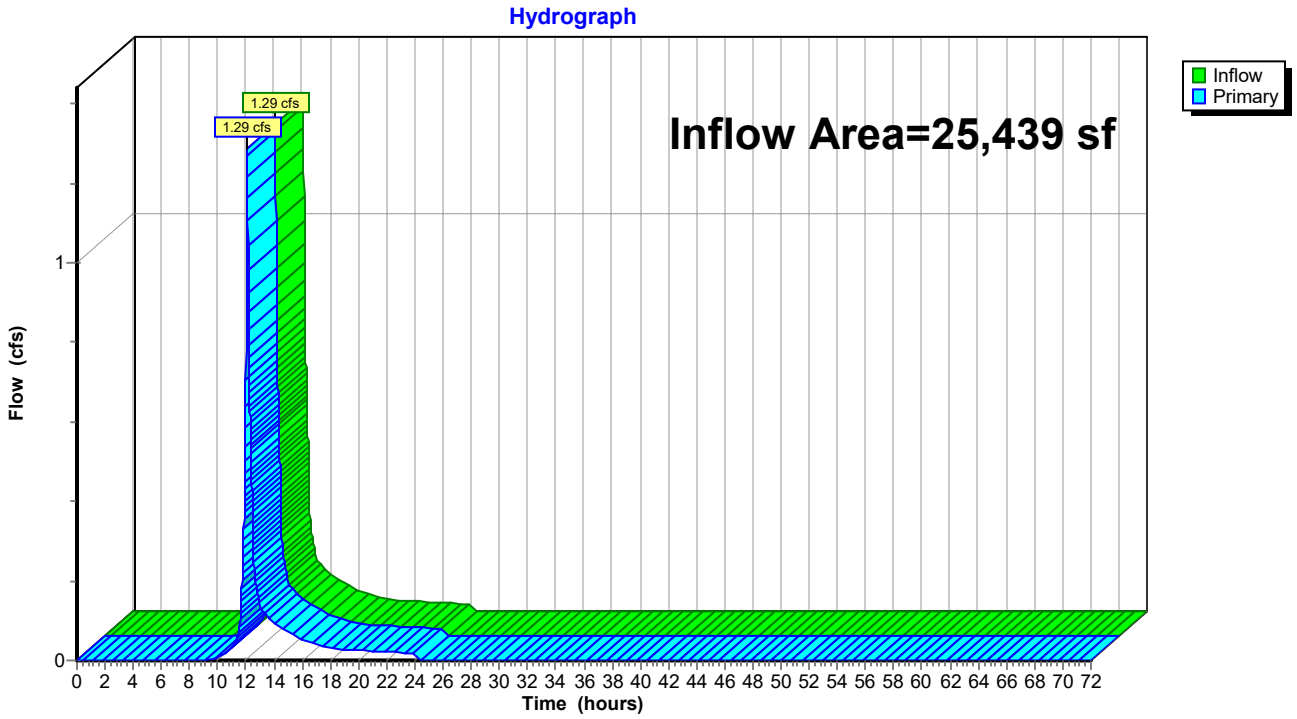


Summary for Pond DP-5p: Residential East#2

Inflow Area = 25,439 sf, 0.00% Impervious, Inflow Depth = 1.90" for 10yr event
Inflow = 1.29 cfs @ 12.09 hrs, Volume= 4,035 cf
Primary = 1.29 cfs @ 12.09 hrs, Volume= 4,035 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-5p: Residential East#2

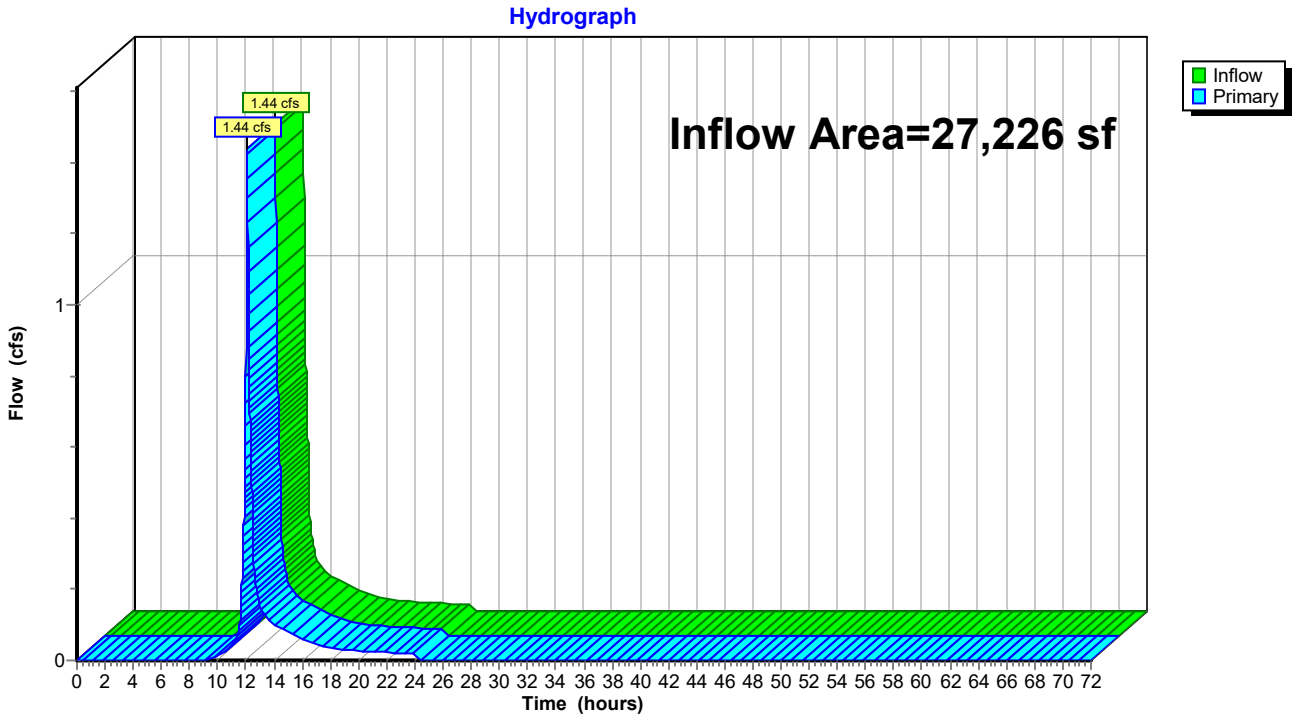


Summary for Pond DP-6p: Residential East#3

Inflow Area = 27,226 sf, 0.00% Impervious, Inflow Depth = 1.98" for 10yr event
Inflow = 1.44 cfs @ 12.09 hrs, Volume= 4,493 cf
Primary = 1.44 cfs @ 12.09 hrs, Volume= 4,493 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-6p: Residential East#3

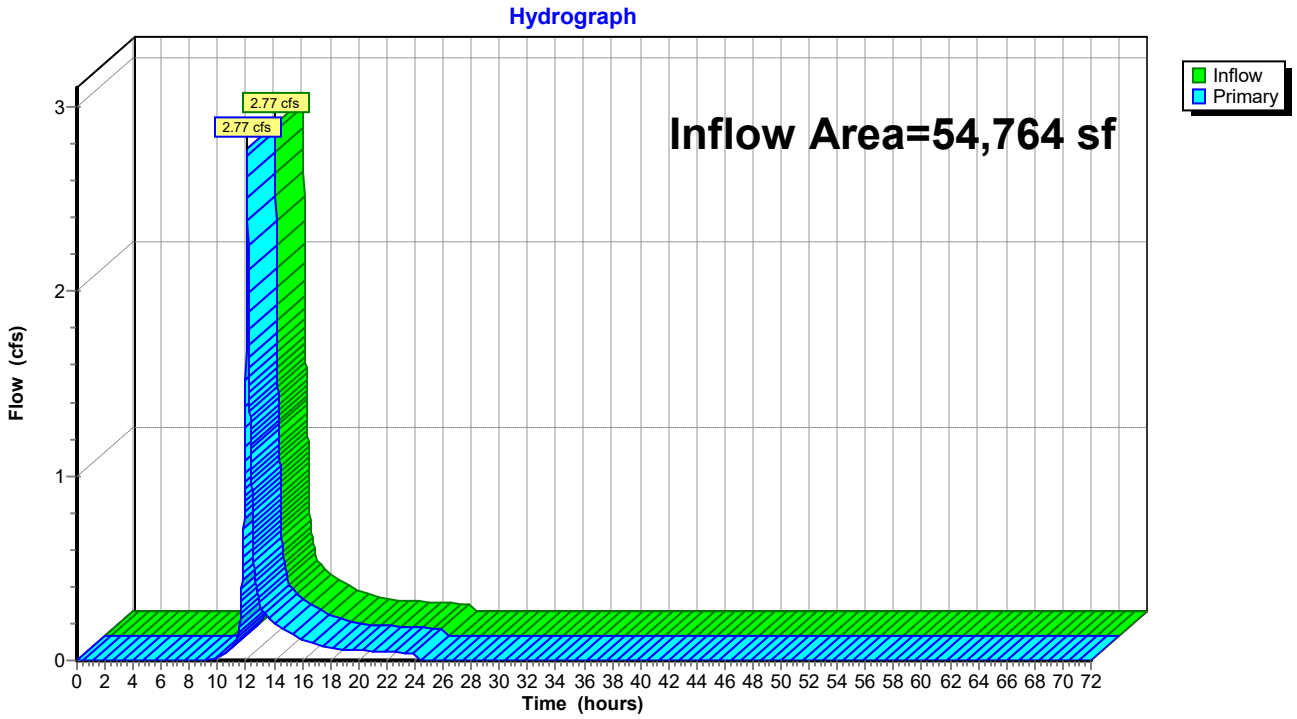


Summary for Pond DP-7p: Residential East#4

Inflow Area = 54,764 sf, 0.00% Impervious, Inflow Depth = 1.90" for 10yr event
Inflow = 2.77 cfs @ 12.09 hrs, Volume= 8,686 cf
Primary = 2.77 cfs @ 12.09 hrs, Volume= 8,686 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-7p: Residential East#4

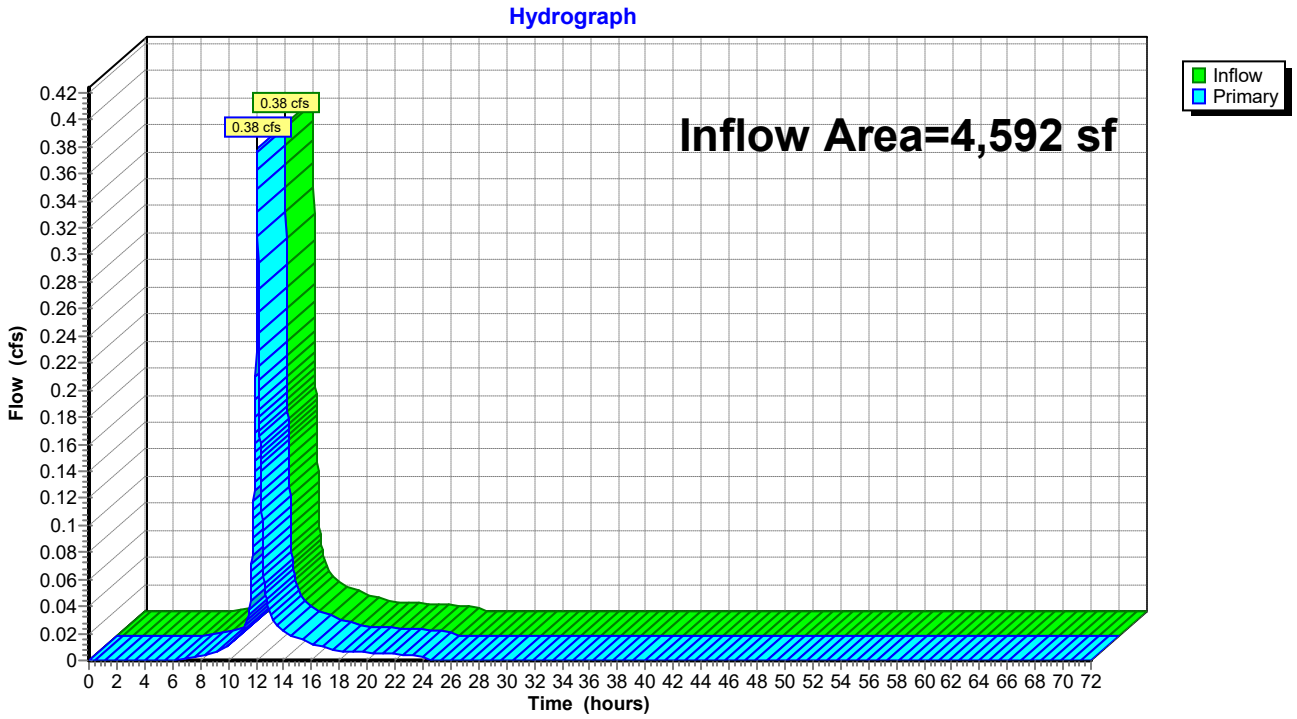


Summary for Pond DP-8p: Stoddard Drive

Inflow Area = 4,592 sf, 49.87% Impervious, Inflow Depth = 3.11" for 10yr event
Inflow = 0.38 cfs @ 12.09 hrs, Volume= 1,191 cf
Primary = 0.38 cfs @ 12.09 hrs, Volume= 1,191 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-8p: Stoddard Drive

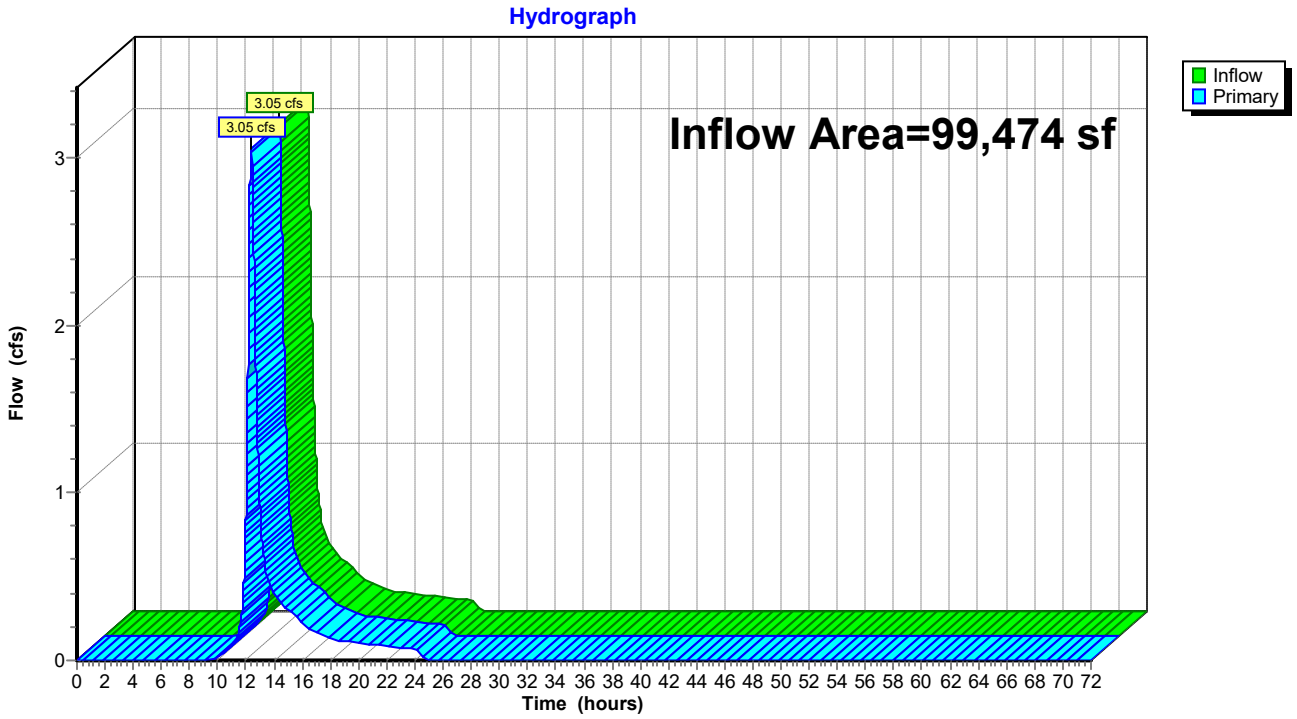


Summary for Pond DP-9p: Woods South

Inflow Area = 99,474 sf, 0.00% Impervious, Inflow Depth = 1.90" for 10yr event
Inflow = 3.05 cfs @ 12.38 hrs, Volume= 15,778 cf
Primary = 3.05 cfs @ 12.38 hrs, Volume= 15,778 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-9p: Woods South



Summary for Pond STONE: STONE

Inflow Area = 179,201 sf,100.00% Impervious, Inflow Depth = 4.17" for 10yr event
Inflow = 17.72 cfs @ 12.08 hrs, Volume= 62,335 cf
Outflow = 0.85 cfs @ 14.30 hrs, Volume= 62,301 cf, Atten= 95%, Lag= 133.2 min
Discarded = 0.56 cfs @ 14.30 hrs, Volume= 58,414 cf
Primary = 0.29 cfs @ 14.30 hrs, Volume= 3,887 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 240.47' @ 14.30 hrs Surf.Area= 141,313 sf Storage= 32,161 cf

Plug-Flow detention time= 446.5 min calculated for 62,292 cf (100% of inflow)
Center-of-Mass det. time= 446.3 min (1,196.4 - 750.2)

Volume	Invert	Avail.Storage	Storage Description
#1	240.90'	28,260 cf	**Stone Above Flat Panel Drains (Irregular)** Listed below (Recalc) 70,650 cf Overall x 40.0% Voids
#2	239.90'	56,520 cf	**12" Stone Under Flat Panel Drains (Irregular)** Listed below (Recalc) 141,300 cf Overall x 40.0% Voids
#3	236.50'	57 cf	**4.00'D x 4.50'H DMH**
		84,837 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
240.90	141,300	1,510.0	0	0	141,300
241.40	141,300	1,510.0	70,650	70,650	142,055

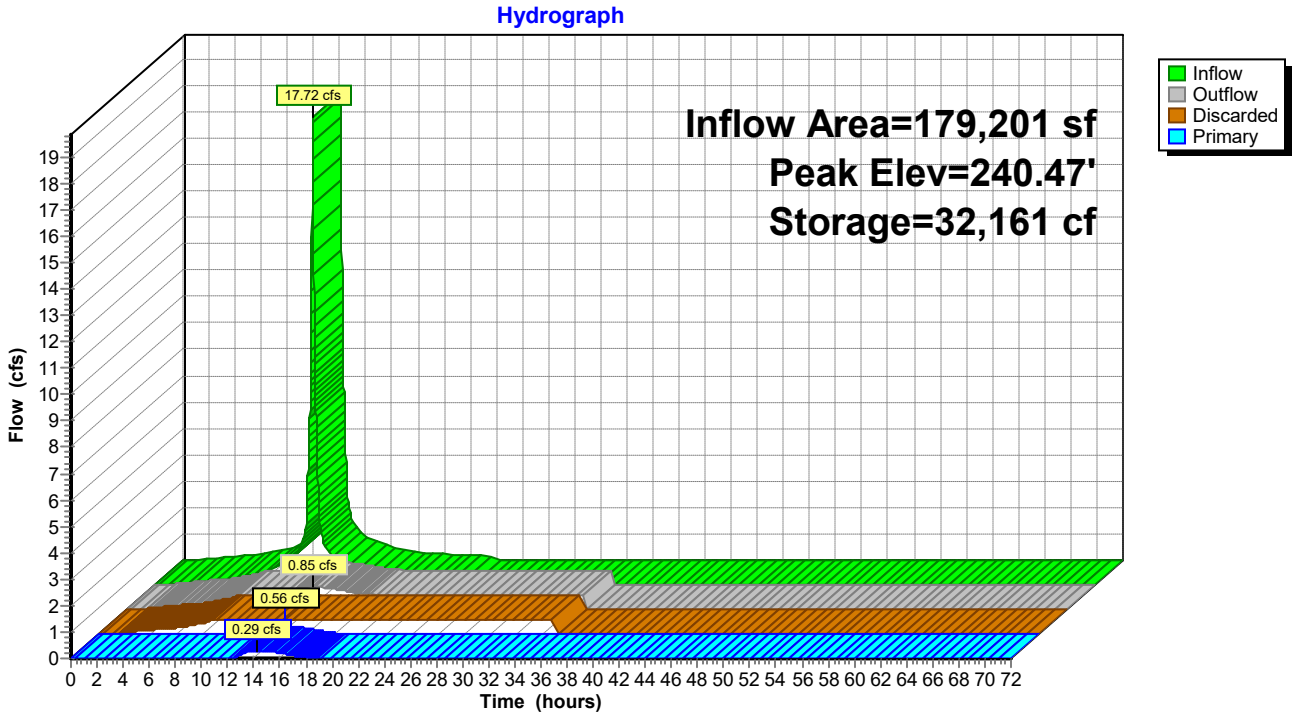
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
239.90	141,300	1,510.0	0	0	141,300
240.90	141,300	1,510.0	141,300	141,300	142,810

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	240.40'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#3	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.50'

Discarded OutFlow Max=0.56 cfs @ 14.30 hrs HW=240.47' (Free Discharge)
↑└**3=Exfiltration** (Controls 0.56 cfs)

Primary OutFlow Max=0.29 cfs @ 14.30 hrs HW=240.47' (Free Discharge)
↑└**1=Orifice/Grate** (Passes 0.29 cfs of 26.06 cfs potential flow)
↑└**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.29 cfs @ 0.86 fps)

Pond STONE: STONE



Summary for Pond UGI-2: UGI-2

Inflow Area = 87,726 sf, 42.98% Impervious, Inflow Depth = 3.02" for 10yr event
Inflow = 7.04 cfs @ 12.09 hrs, Volume= 22,043 cf
Outflow = 5.64 cfs @ 12.15 hrs, Volume= 20,815 cf, Atten= 20%, Lag= 3.6 min
Discarded = 0.01 cfs @ 12.15 hrs, Volume= 3,071 cf
Primary = 5.62 cfs @ 12.15 hrs, Volume= 17,744 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 242.20' @ 12.15 hrs Surf.Area= 3,310 sf Storage= 6,032 cf

Plug-Flow detention time= 298.4 min calculated for 20,812 cf (94% of inflow)
Center-of-Mass det. time= 268.4 min (1,074.3 - 806.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	239.50'	2,959 cf	**25.25'W x 131.10'L x 3.50'H Field A** 11,586 cf Overall - 4,188 cf Embedded = 7,398 cf x 40.0% Voids
#2A	240.00'	4,188 cf	**Cultec R-300HD** x 90 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 90 Chambers in 5 Rows Cap Storage= +2.7 cf x 2 x 5 rows = 26.5 cf
		7,147 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	241.00'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	239.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.01 cfs @ 12.15 hrs HW=242.19' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=5.62 cfs @ 12.15 hrs HW=242.19' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 5.62 cfs @ 3.72 fps)

Pond UGI-2: UGI-2 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 5 rows = 26.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

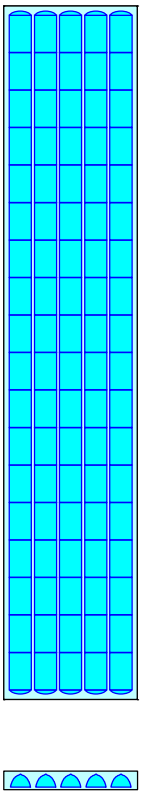
18 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 129.10' Row Length +12.0" End Stone x 2 = 131.10' Base Length
5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

90 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 5 Rows = 4,188.3 cf Chamber Storage

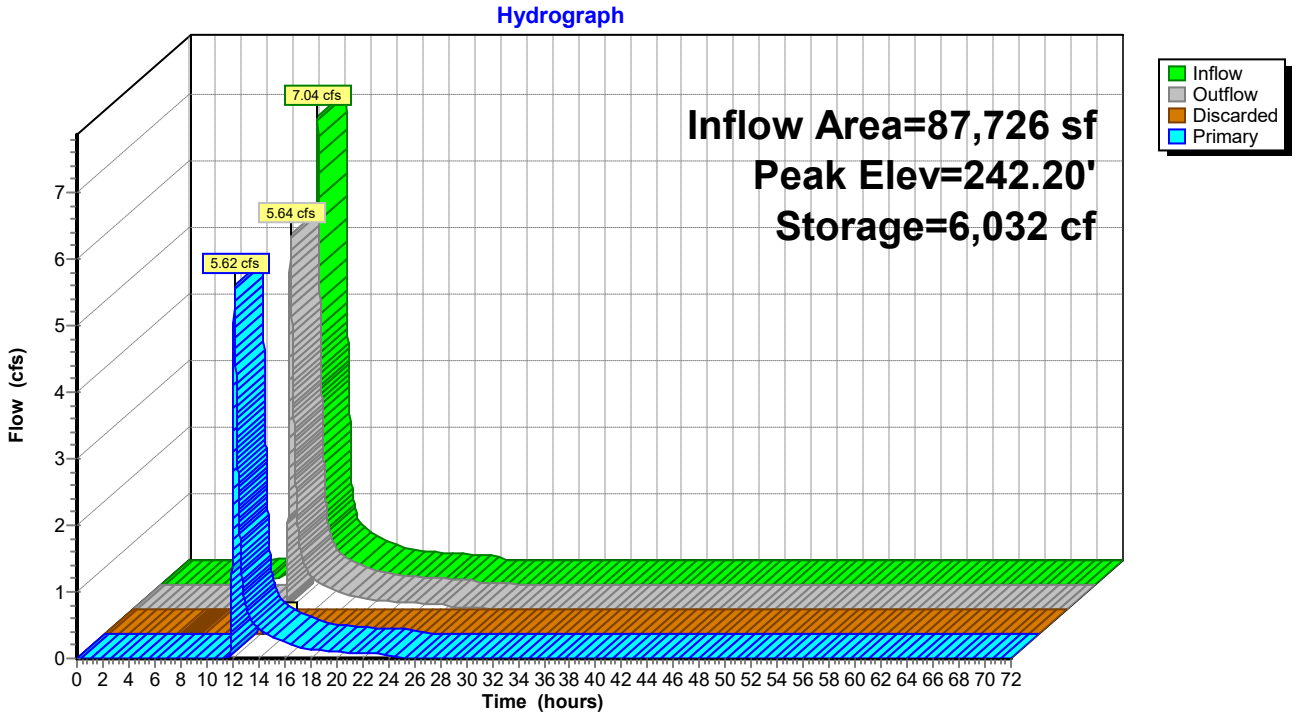
11,586.0 cf Field - 4,188.3 cf Chambers = 7,397.6 cf Stone x 40.0% Voids = 2,959.1 cf Stone Storage

Chamber Storage + Stone Storage = 7,147.4 cf = 0.164 af
Overall Storage Efficiency = 61.7%
Overall System Size = 131.10' x 25.25' x 3.50'

90 Chambers
429.1 cy Field
274.0 cy Stone



Pond UGI-2: UGI-2



Summary for Pond UGI-3: UGI-3

Inflow Area = 205,806 sf, 68.06% Impervious, Inflow Depth = 3.51" for 10yr event
Inflow = 18.63 cfs @ 12.08 hrs, Volume= 60,278 cf
Outflow = 0.27 cfs @ 19.95 hrs, Volume= 22,988 cf, Atten= 99%, Lag= 472.0 min
Discarded = 0.01 cfs @ 19.95 hrs, Volume= 3,339 cf
Primary = 0.25 cfs @ 19.95 hrs, Volume= 19,650 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 238.03' @ 19.95 hrs Surf.Area= 35,300 sf Storage= 50,750 cf

Plug-Flow detention time= 1,063.8 min calculated for 22,988 cf (38% of inflow)
Center-of-Mass det. time= 932.6 min (1,719.3 - 786.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.00'	30,623 cf	**343.50'W x 102.77'L x 3.50'H Field A** 123,551 cf Overall - 46,994 cf Embedded = 76,557 cf x 40.0% Voids
#2A	236.50'	46,994 cf	**Cultec R-300HD** x 1008 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 1008 Chambers in 72 Rows Cap Storage= +2.7 cf x 2 x 72 rows = 382.3 cf
		77,617 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	238.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	237.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Discarded	236.00'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.01 cfs @ 19.95 hrs HW=238.03' (Free Discharge)
└**4=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.25 cfs @ 19.95 hrs HW=238.03' (Free Discharge)
└**1=Orifice/Grate** (Passes 0.25 cfs of 10.91 cfs potential flow)
  ├**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Orifice Controls 0.25 cfs @ 2.92 fps)

Pond UGI-3: UGI-3 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 72 rows = 382.3 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

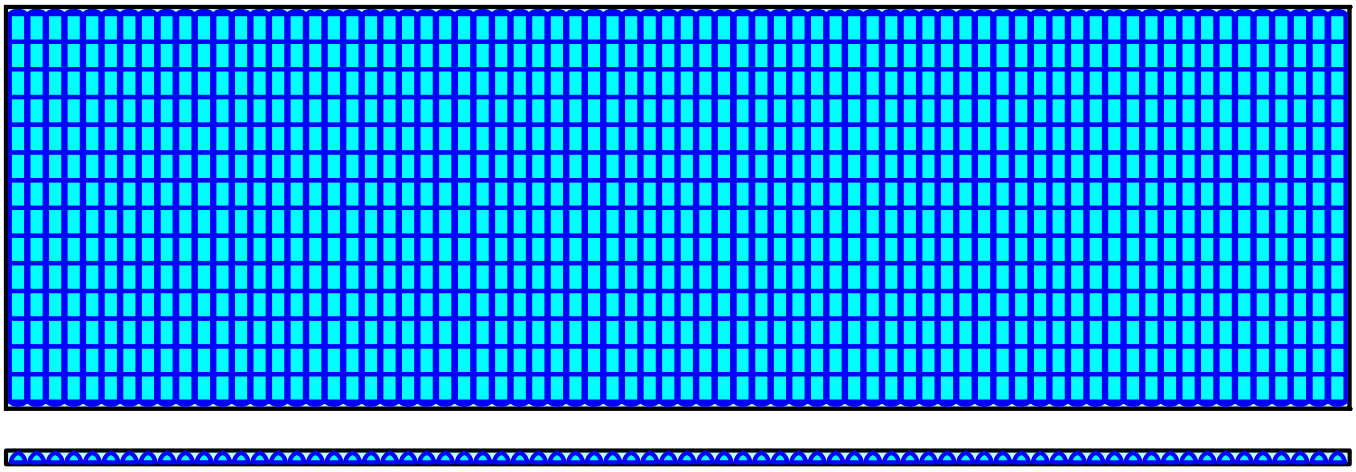
14 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 100.77' Row Length +12.0" End Stone x 2 = 102.77' Base Length
72 Rows x 51.0" Wide + 6.0" Spacing x 71 + 12.0" Side Stone x 2 = 343.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

1,008 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 72 Rows = 46,994.2 cf Chamber Storage

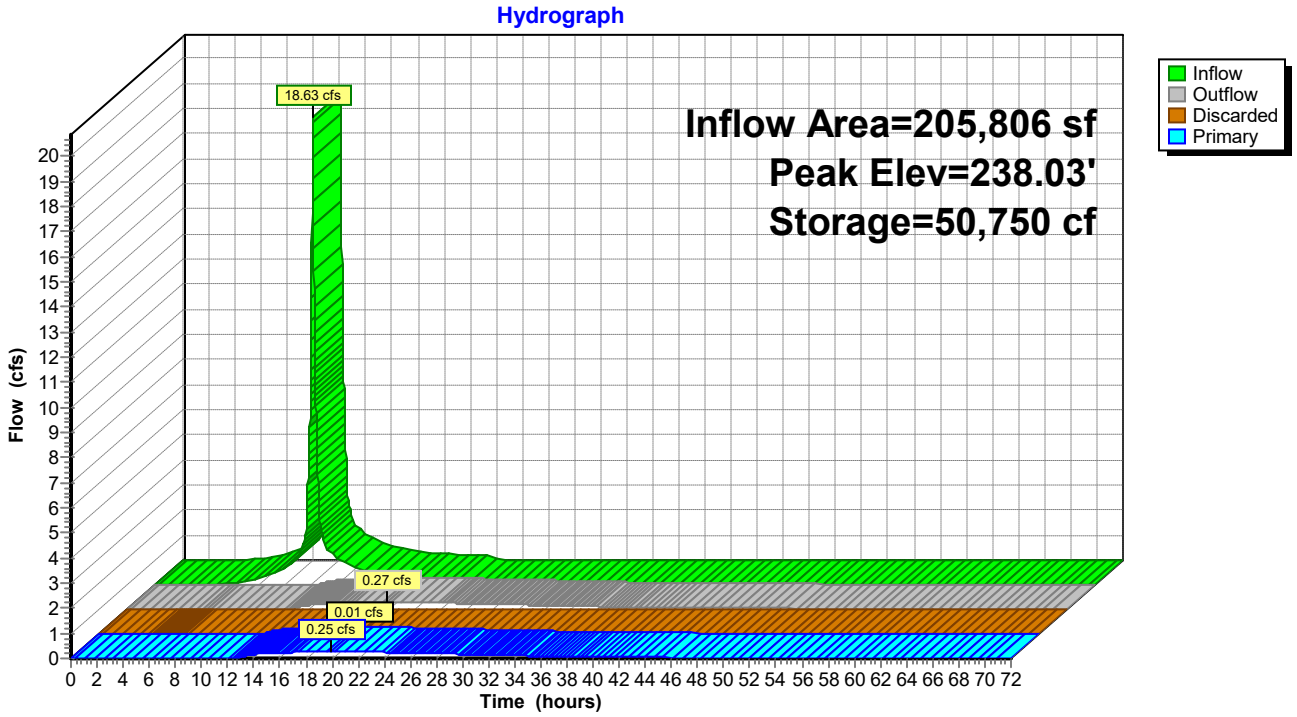
123,551.2 cf Field - 46,994.2 cf Chambers = 76,557.0 cf Stone x 40.0% Voids = 30,622.8 cf Stone Storage

Chamber Storage + Stone Storage = 77,617.0 cf = 1.782 af
Overall Storage Efficiency = 62.8%
Overall System Size = 102.77' x 343.50' x 3.50'

1,008 Chambers
4,576.0 cy Field
2,835.4 cy Stone



Pond UGI-3: UGI-3



Summary for Pond UGI-4: UGI-4

Inflow Area = 81,022 sf, 85.38% Impervious, Inflow Depth = 3.81" for 10yr event
Inflow = 7.23 cfs @ 12.08 hrs, Volume= 25,721 cf
Outflow = 6.81 cfs @ 12.12 hrs, Volume= 25,044 cf, Atten= 6%, Lag= 1.9 min
Discarded = 0.01 cfs @ 12.12 hrs, Volume= 2,546 cf
Primary = 6.80 cfs @ 12.12 hrs, Volume= 22,498 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.06' @ 12.12 hrs Surf.Area= 2,606 sf Storage= 3,711 cf

Plug-Flow detention time= 198.7 min calculated for 25,041 cf (97% of inflow)
Center-of-Mass det. time= 182.8 min (954.8 - 771.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	239.00'	2,332 cf	**49.00'W x 53.18'L x 3.50'H Field A** 9,121 cf Overall - 3,290 cf Embedded = 5,831 cf x 40.0% Voids
#2A	239.50'	3,290 cf	**Cultec R-300HD** x 70 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 70 Chambers in 10 Rows Cap Storage= +2.7 cf x 2 x 10 rows = 53.1 cf
		5,622 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.33'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	240.40'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	239.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'

Discarded OutFlow Max=0.01 cfs @ 12.12 hrs HW=241.06' (Free Discharge)
└**3=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=6.80 cfs @ 12.12 hrs HW=241.06' (Free Discharge)
└**1=Orifice/Grate** (Passes 6.80 cfs of 25.00 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 6.80 cfs @ 2.66 fps)

Pond UGI-4: UGI-4 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 10 rows = 53.1 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

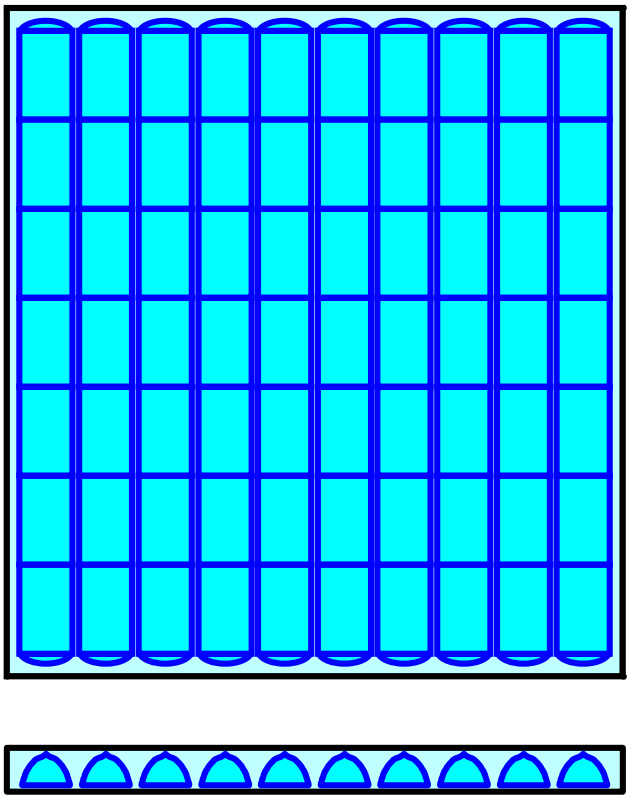
7 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 51.18' Row Length +12.0" End Stone x 2 = 53.18' Base Length
10 Rows x 51.0" Wide + 6.0" Spacing x 9 + 12.0" Side Stone x 2 = 49.00' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

70 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 10 Rows = 3,290.0 cf Chamber Storage

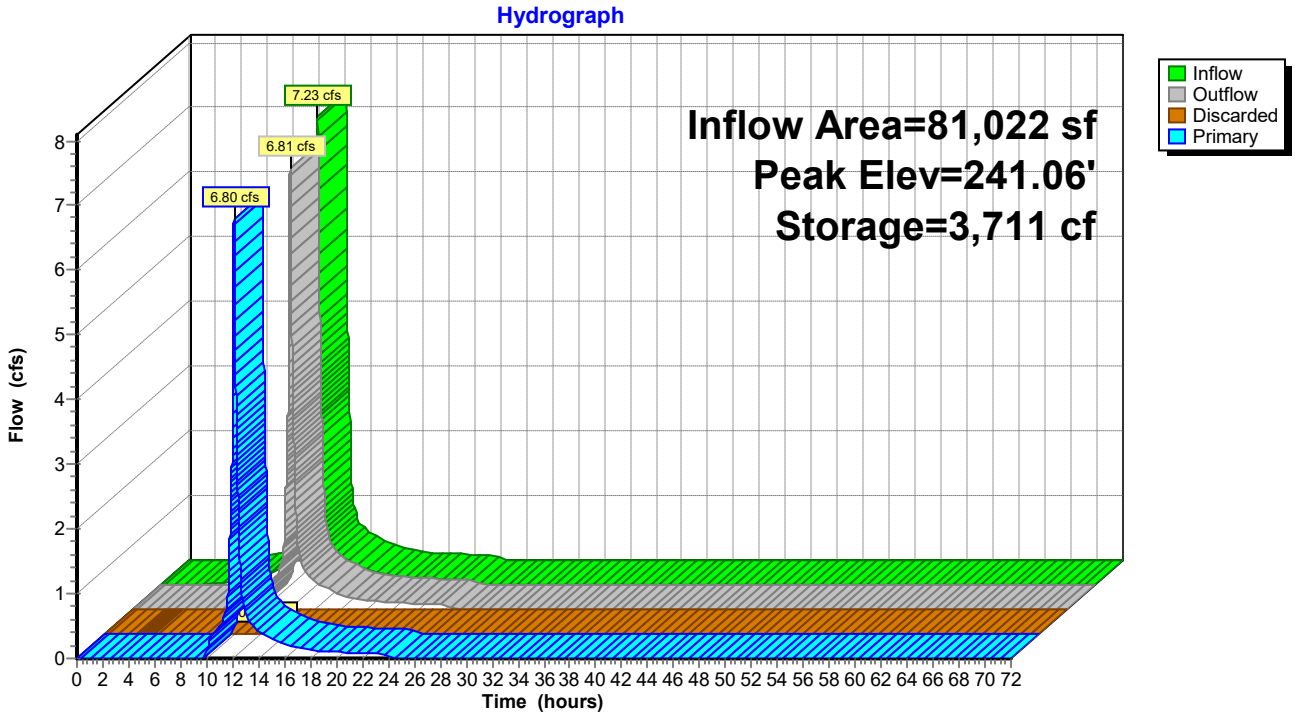
9,120.9 cf Field - 3,290.0 cf Chambers = 5,830.9 cf Stone x 40.0% Voids = 2,332.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,622.4 cf = 0.129 af
Overall Storage Efficiency = 61.6%
Overall System Size = 53.18' x 49.00' x 3.50'

70 Chambers
337.8 cy Field
216.0 cy Stone



Pond UGI-4: UGI-4



Summary for Pond UGI-5: UGI-5

Inflow Area = 108,946 sf, 85.78% Impervious, Inflow Depth = 3.84" for 10yr event
Inflow = 10.41 cfs @ 12.08 hrs, Volume= 34,824 cf
Outflow = 3.40 cfs @ 12.37 hrs, Volume= 32,077 cf, Atten= 67%, Lag= 17.3 min
Discarded = 0.04 cfs @ 12.37 hrs, Volume= 10,800 cf
Primary = 3.36 cfs @ 12.37 hrs, Volume= 21,277 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.07' @ 12.37 hrs Surf.Area= 11,195 sf Storage= 16,932 cf

Plug-Flow detention time= 623.2 min calculated for 32,072 cf (92% of inflow)
Center-of-Mass det. time= 582.3 min (1,354.0 - 771.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	234.90'	9,883 cf	**210.50'W x 53.18'L x 3.50'H Field A** 39,183 cf Overall - 14,476 cf Embedded = 24,707 cf x 40.0% Voids
#2A	235.40'	14,476 cf	**Cultec R-300HD** x 308 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 308 Chambers in 44 Rows Cap Storage= +2.7 cf x 2 x 44 rows = 233.6 cf
		24,359 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.20'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	234.90'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.90'

Discarded OutFlow Max=0.04 cfs @ 12.37 hrs HW=237.07' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=3.36 cfs @ 12.37 hrs HW=237.07' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 3.36 cfs @ 3.17 fps)

Pond UGI-5: UGI-5 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 44 rows = 233.6 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

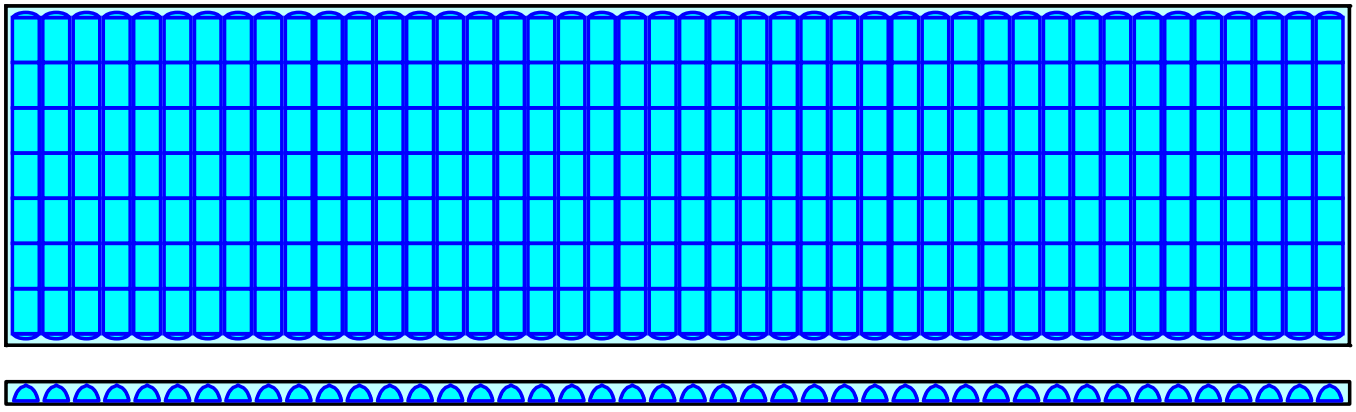
7 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 51.18' Row Length +12.0" End Stone x 2 = 53.18' Base Length
44 Rows x 51.0" Wide + 6.0" Spacing x 43 + 12.0" Side Stone x 2 = 210.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

308 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 44 Rows = 14,476.2 cf Chamber Storage

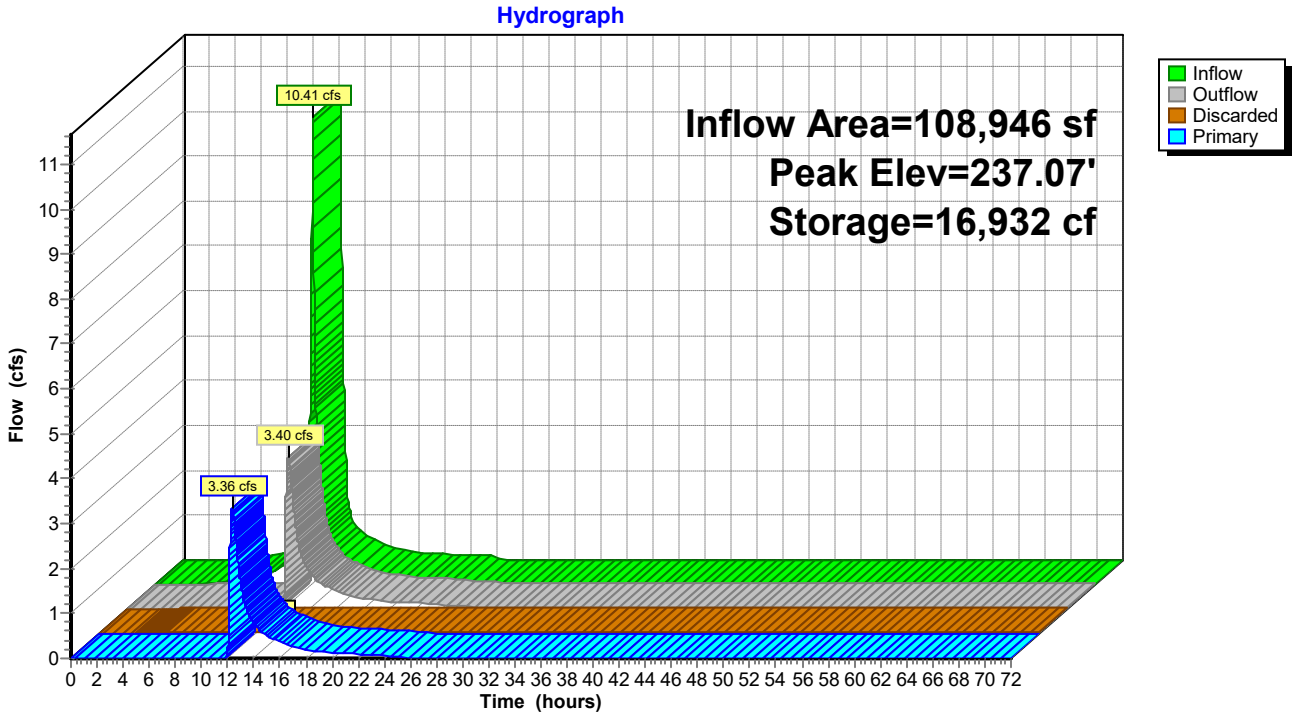
39,182.8 cf Field - 14,476.2 cf Chambers = 24,706.7 cf Stone x 40.0% Voids = 9,882.7 cf Stone Storage

Chamber Storage + Stone Storage = 24,358.8 cf = 0.559 af
Overall Storage Efficiency = 62.2%
Overall System Size = 53.18' x 210.50' x 3.50'

308 Chambers
1,451.2 cy Field
915.1 cy Stone



Pond UGI-5: UGI-5



Summary for Pond UGI-A: UGI-A

Inflow Area = 24,216 sf, 65.28% Impervious, Inflow Depth = 3.41" for 10yr event
Inflow = 2.15 cfs @ 12.09 hrs, Volume= 6,884 cf
Outflow = 0.09 cfs @ 15.04 hrs, Volume= 2,413 cf, Atten= 96%, Lag= 177.3 min
Discarded = 0.00 cfs @ 15.04 hrs, Volume= 433 cf
Primary = 0.09 cfs @ 15.04 hrs, Volume= 1,980 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.63' @ 15.04 hrs Surf.Area= 4,619 sf Storage= 5,185 cf

Plug-Flow detention time= 666.9 min calculated for 2,413 cf (35% of inflow)
Center-of-Mass det. time= 532.3 min (1,323.3 - 791.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.00'	4,082 cf	**39.50'W x 116.93'L x 3.50'H Field A** 16,166 cf Overall - 5,961 cf Embedded = 10,205 cf x 40.0% Voids
#2A	236.50'	5,961 cf	**Cultec R-300HD** x 128 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 128 Chambers in 8 Rows Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf
		10,043 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	**15.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	236.00'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.00 cfs @ 15.04 hrs HW=237.63' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.09 cfs @ 15.04 hrs HW=237.63' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.24 fps)

Pond UGI-A: UGI-A - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

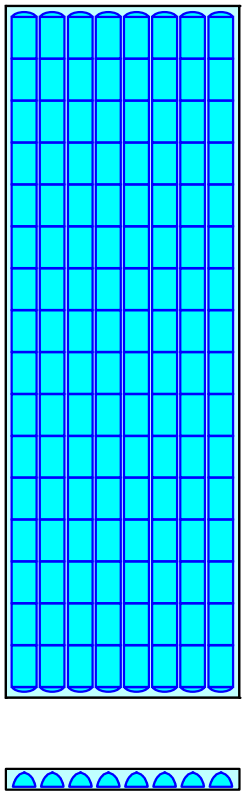
16 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 114.93' Row Length +12.0" End Stone x 2 = 116.93' Base Length
8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

128 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 8 Rows = 5,961.4 cf Chamber Storage

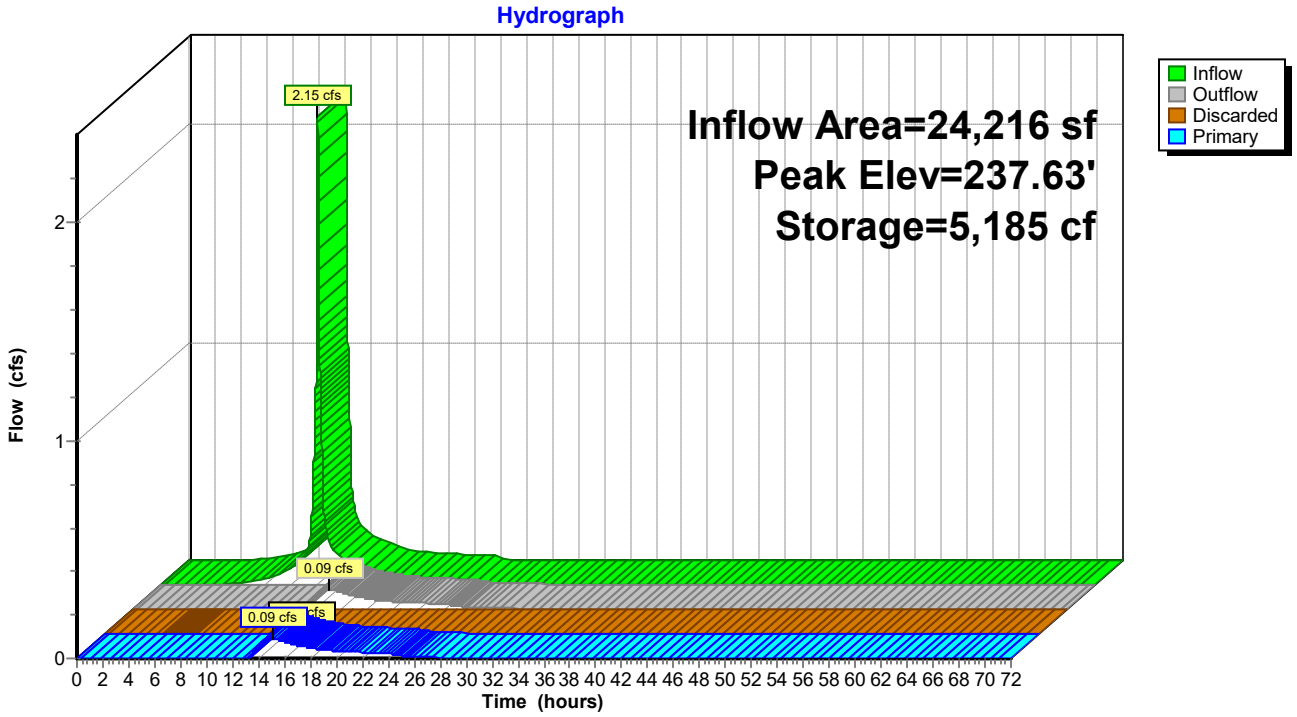
16,166.0 cf Field - 5,961.4 cf Chambers = 10,204.6 cf Stone x 40.0% Voids = 4,081.8 cf Stone Storage

Chamber Storage + Stone Storage = 10,043.3 cf = 0.231 af
Overall Storage Efficiency = 62.1%
Overall System Size = 116.93' x 39.50' x 3.50'

128 Chambers
598.7 cy Field
377.9 cy Stone



Pond UGI-A: UGI-A



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P-1a: Maintenance Bld Site Runoff Area=24,216 sf 65.28% Impervious Runoff Depth=4.32"
Tc=6.0 min CN=91 Runoff=2.68 cfs 8,723 cf

Subcatchment P-1b: Road Runoff Area=48,277 sf 45.39% Impervious Runoff Depth=4.00"
Tc=6.0 min CN=88 Runoff=5.06 cfs 16,102 cf

Subcatchment P-1c: Basin Area Runoff Area=33,956 sf 0.00% Impervious Runoff Depth=2.92"
Tc=6.0 min CN=77 Runoff=2.67 cfs 8,258 cf

Subcatchment P-2a: Southeast Side MS Runoff Area=81,022 sf 85.38% Impervious Runoff Depth=4.77"
Tc=6.0 min CN=95 Runoff=9.50 cfs 32,182 cf

Subcatchment P-2b: Basin Area Runoff Area=11,282 sf 0.00% Impervious Runoff Depth=3.01"
Tc=6.0 min CN=78 Runoff=0.91 cfs 2,831 cf

Subcatchment P-3: East Grass/Woods Runoff Area=35,588 sf 0.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=75 Runoff=2.62 cfs 8,114 cf

Subcatchment P-4a: TO UGI-2 Runoff Area=87,726 sf 42.98% Impervious Runoff Depth=3.90"
Tc=6.0 min CN=87 Runoff=9.00 cfs 28,496 cf

Subcatchment P-4b: ROOF + PAVED Runoff Area=205,806 sf 68.06% Impervious Runoff Depth=4.43"
Tc=6.0 min CN=92 Runoff=23.19 cfs 76,004 cf

Subcatchment P-4c: Synthetic Field Runoff Area=179,201 sf 100.00% Impervious Runoff Depth=5.11"
Tc=6.0 min CN=98 Runoff=21.55 cfs 76,349 cf

Subcatchment P-4d: TO UGI-5 Runoff Area=108,946 sf 85.78% Impervious Runoff Depth=4.77"
Tc=6.0 min CN=95 Runoff=12.78 cfs 43,274 cf

Subcatchment P-4e: Grass Area Runoff Area=22,330 sf 24.29% Impervious Runoff Depth=3.59"
Tc=6.0 min CN=84 Runoff=2.14 cfs 6,684 cf

Subcatchment P-4f: East Grass/Woods Runoff Area=6,872 sf 0.00% Impervious Runoff Depth=2.83"
Tc=6.0 min CN=76 Runoff=0.52 cfs 1,619 cf

Subcatchment P-5: East Grass/Woods Runoff Area=25,439 sf 0.00% Impervious Runoff Depth=2.65"
Tc=6.0 min CN=74 Runoff=1.81 cfs 5,610 cf

Subcatchment P-6: East Grass/Woods Runoff Area=27,226 sf 0.00% Impervious Runoff Depth=2.74"
Tc=6.0 min CN=75 Runoff=2.00 cfs 6,208 cf

Subcatchment P-7: Southeast Grass/Woods Runoff Area=54,764 sf 0.00% Impervious Runoff Depth=2.65"
Tc=6.0 min CN=74 Runoff=3.89 cfs 12,078 cf

Subcatchment P-8: Stoddard Dr Runoff Area=4,592 sf 49.87% Impervious Runoff Depth=4.00"
Tc=6.0 min CN=88 Runoff=0.48 cfs 1,532 cf

Subcatchment P-9: South Woods Runoff Area=99,474 sf 0.00% Impervious Runoff Depth=2.65"
Flow Length=498' Tc=25.5 min CN=74 Runoff=4.28 cfs 21,938 cf

Pond 3P: (new Pond) Peak Elev=240.81' Inflow=9.50 cfs 32,182 cf
Primary=8.49 cfs 31,767 cf Secondary=1.01 cfs 415 cf Outflow=9.50 cfs 32,182 cf

Pond DP-1p: Flow to Exist Basin #1 Inflow=7.73 cfs 28,171 cf
Primary=7.73 cfs 28,171 cf

Pond DP-2p: Flow to Exist Basin#2 Inflow=9.85 cfs 31,769 cf
Primary=9.85 cfs 31,769 cf

Pond DP-3p: Residential East#1 Inflow=2.62 cfs 8,114 cf
Primary=2.62 cfs 8,114 cf

Pond DP-4p: Exist Swale #1 East Inflow=14.31 cfs 110,902 cf
Primary=14.31 cfs 110,902 cf

Pond DP-5p: Residential East#2 Inflow=1.81 cfs 5,610 cf
Primary=1.81 cfs 5,610 cf

Pond DP-6p: Residential East#3 Inflow=2.00 cfs 6,208 cf
Primary=2.00 cfs 6,208 cf

Pond DP-7p: Residential East#4 Inflow=3.89 cfs 12,078 cf
Primary=3.89 cfs 12,078 cf

Pond DP-8p: Stoddard Drive Inflow=0.48 cfs 1,532 cf
Primary=0.48 cfs 1,532 cf

Pond DP-9p: Woods South Inflow=4.28 cfs 21,938 cf
Primary=4.28 cfs 21,938 cf

Pond STONE: STONE Peak Elev=240.56' Storage=37,560 cf Inflow=21.55 cfs 76,349 cf
Discarded=0.56 cfs 62,207 cf Primary=1.09 cfs 14,101 cf Outflow=1.65 cfs 76,307 cf

Pond UGI-2: UGI-2 Peak Elev=242.52' Storage=6,509 cf Inflow=9.00 cfs 28,496 cf
Discarded=0.01 cfs 3,111 cf Primary=7.46 cfs 24,152 cf Outflow=7.47 cfs 27,264 cf

Pond UGI-3: UGI-3 Peak Elev=238.50' Storage=61,785 cf Inflow=23.19 cfs 76,004 cf
Discarded=0.01 cfs 3,380 cf Primary=0.39 cfs 34,776 cf Outflow=0.40 cfs 38,157 cf

Pond UGI-4: UGI-4 Peak Elev=241.14' Storage=3,858 cf Inflow=8.49 cfs 31,767 cf
Discarded=0.01 cfs 2,566 cf Primary=8.07 cfs 28,523 cf Outflow=8.08 cfs 31,089 cf

Pond UGI-5: UGI-5 Peak Elev=237.38' Storage=19,219 cf Inflow=12.78 cfs 43,274 cf
Discarded=0.04 cfs 10,906 cf Primary=5.53 cfs 29,570 cf Outflow=5.58 cfs 40,476 cf

Pond UGI-A: UGI-A Peak Elev=237.73' Storage=5,520 cf Inflow=2.68 cfs 8,723 cf
Discarded=0.00 cfs 438 cf Primary=0.25 cfs 3,811 cf Outflow=0.25 cfs 4,250 cf

Total Runoff Area = 1,056,717 sf Runoff Volume = 356,001 cf Average Runoff Depth = 4.04"
46.53% Pervious = 491,673 sf 53.47% Impervious = 565,044 sf

Summary for Subcatchment P-1a: Maintenance Bld Site

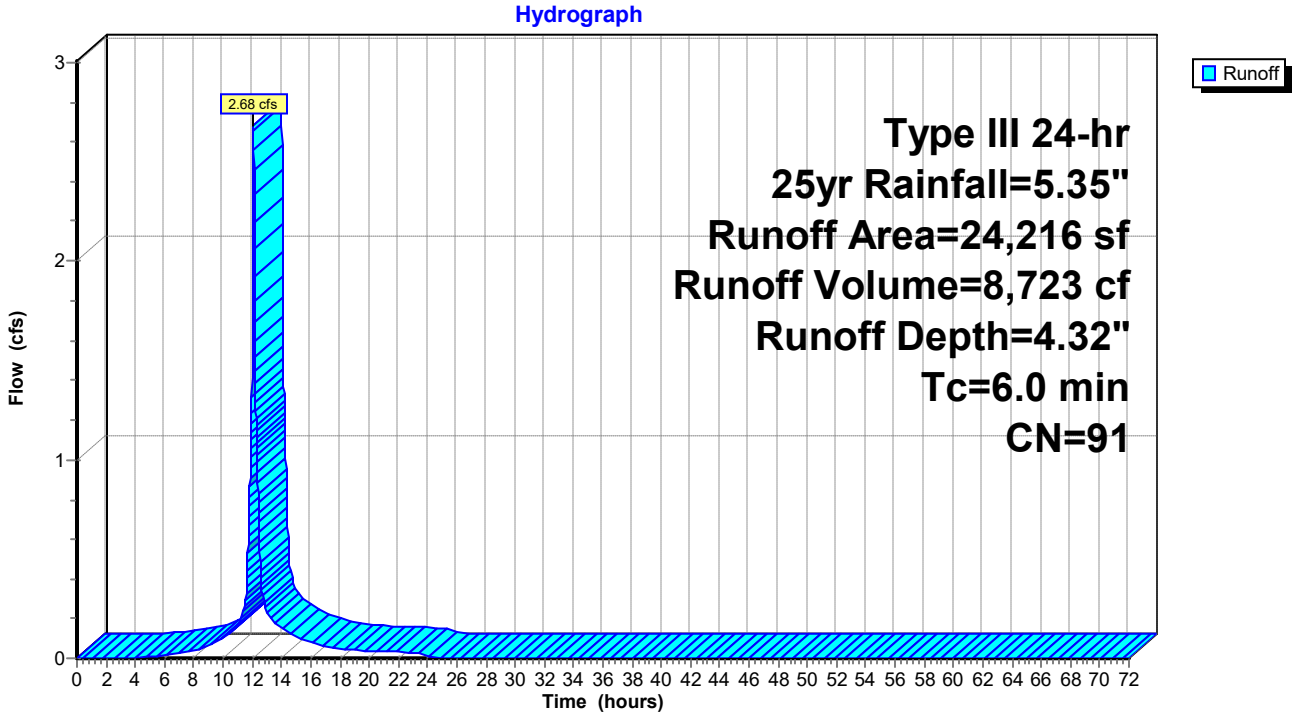
Runoff = 2.68 cfs @ 12.08 hrs, Volume= 8,723 cf, Depth= 4.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
10,792	98	Paved parking, HSG C
5,015	98	Roofs, HSG C
8,409	79	50-75% Grass cover, Fair, HSG C
24,216	91	Weighted Average
8,409		34.72% Pervious Area
15,807		65.28% Impervious Area

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

Subcatchment P-1a: Maintenance Bld Site



Summary for Subcatchment P-1b: Road

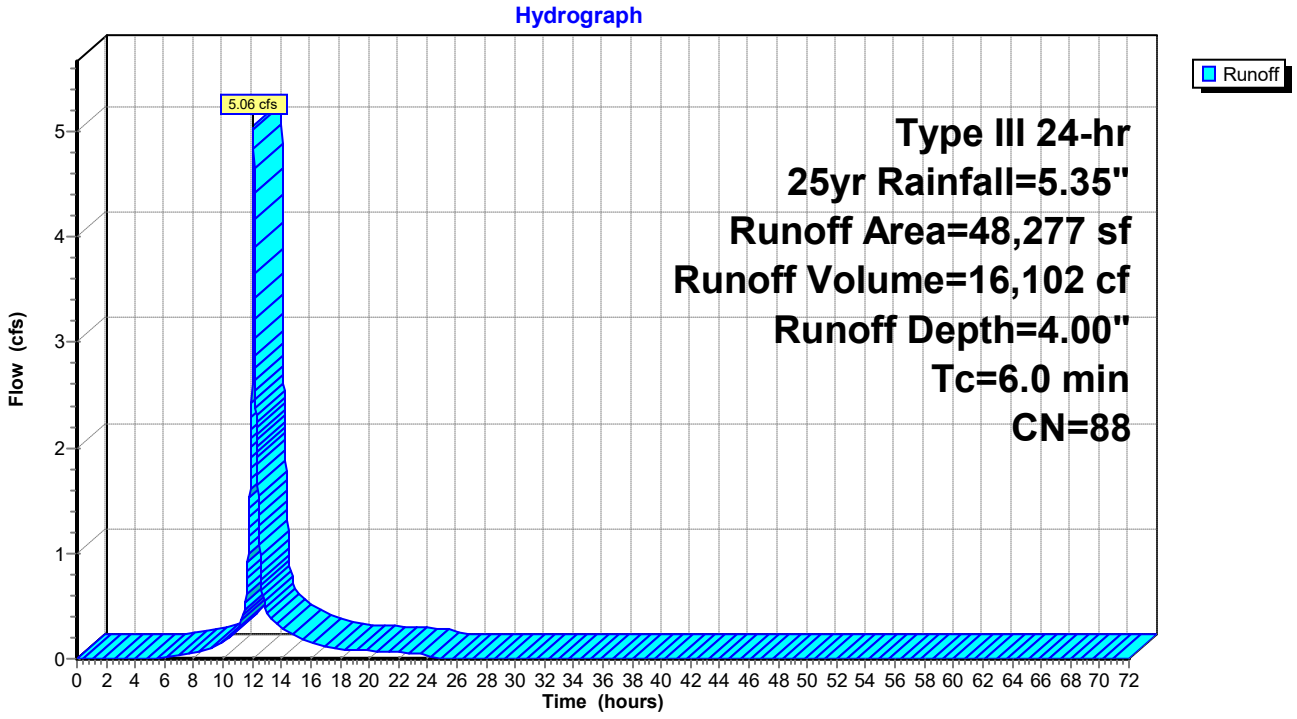
Runoff = 5.06 cfs @ 12.09 hrs, Volume= 16,102 cf, Depth= 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
21,913	98	Paved parking, HSG C
26,364	79	50-75% Grass cover, Fair, HSG C
48,277	88	Weighted Average
26,364		54.61% Pervious Area
21,913		45.39% Impervious Area

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

Subcatchment P-1b: Road



Summary for Subcatchment P-1c: Basin Area

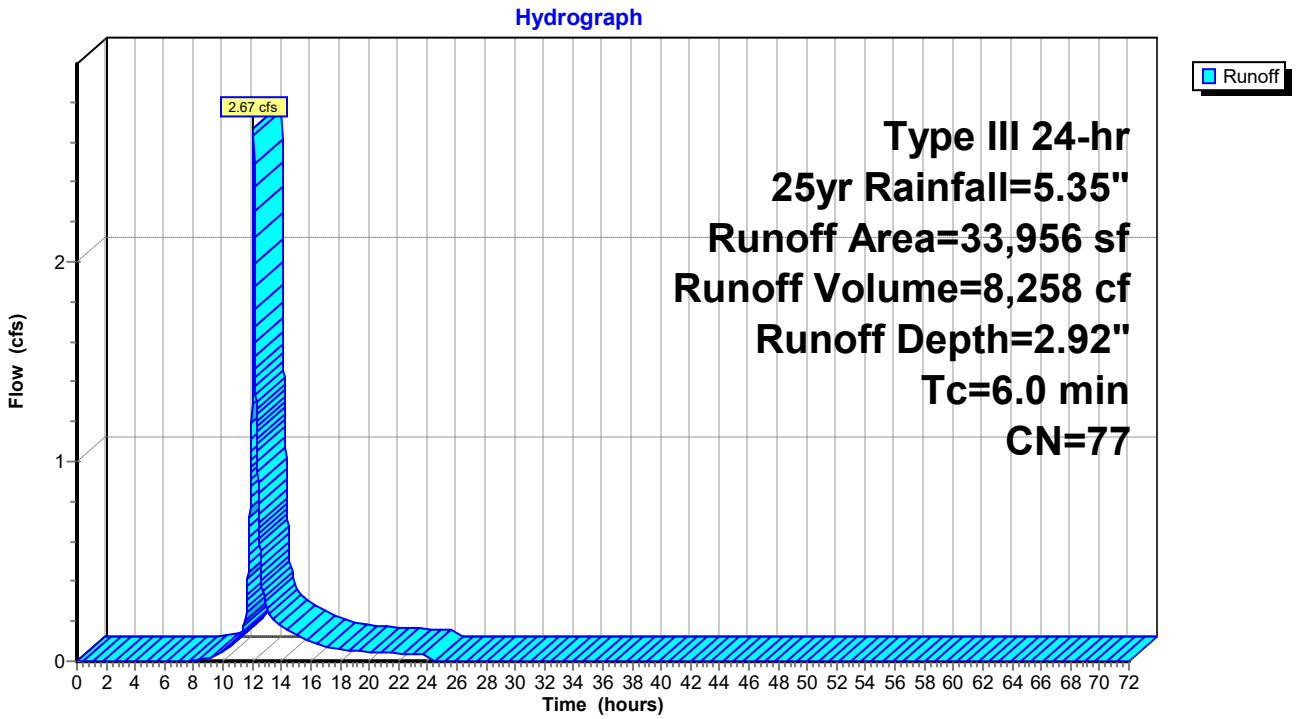
Runoff = 2.67 cfs @ 12.09 hrs, Volume= 8,258 cf, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
10,345	73	Woods, Fair, HSG C
23,611	79	50-75% Grass cover, Fair, HSG C
33,956	77	Weighted Average
33,956		100.00% Pervious Area

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

Subcatchment P-1c: Basin Area



Summary for Subcatchment P-2a: Southeast Side MS

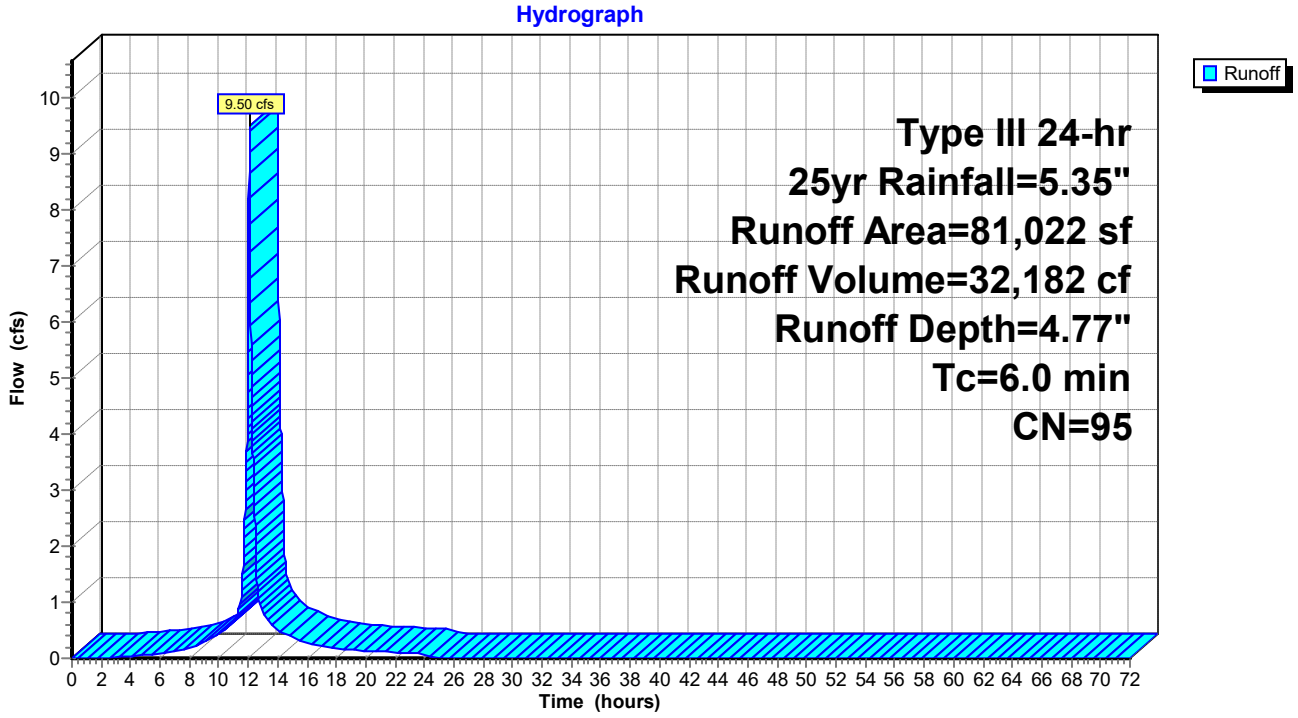
Runoff = 9.50 cfs @ 12.08 hrs, Volume= 32,182 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
	28,114	98	Paved parking, HSG C
	11,845	79	50-75% Grass cover, Fair, HSG C
*	41,063	98	Exist Roof , HSG C
	81,022	95	Weighted Average
	11,845		14.62% Pervious Area
	69,177		85.38% Impervious Area

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

Subcatchment P-2a: Southeast Side MS



Summary for Subcatchment P-2b: Basin Area

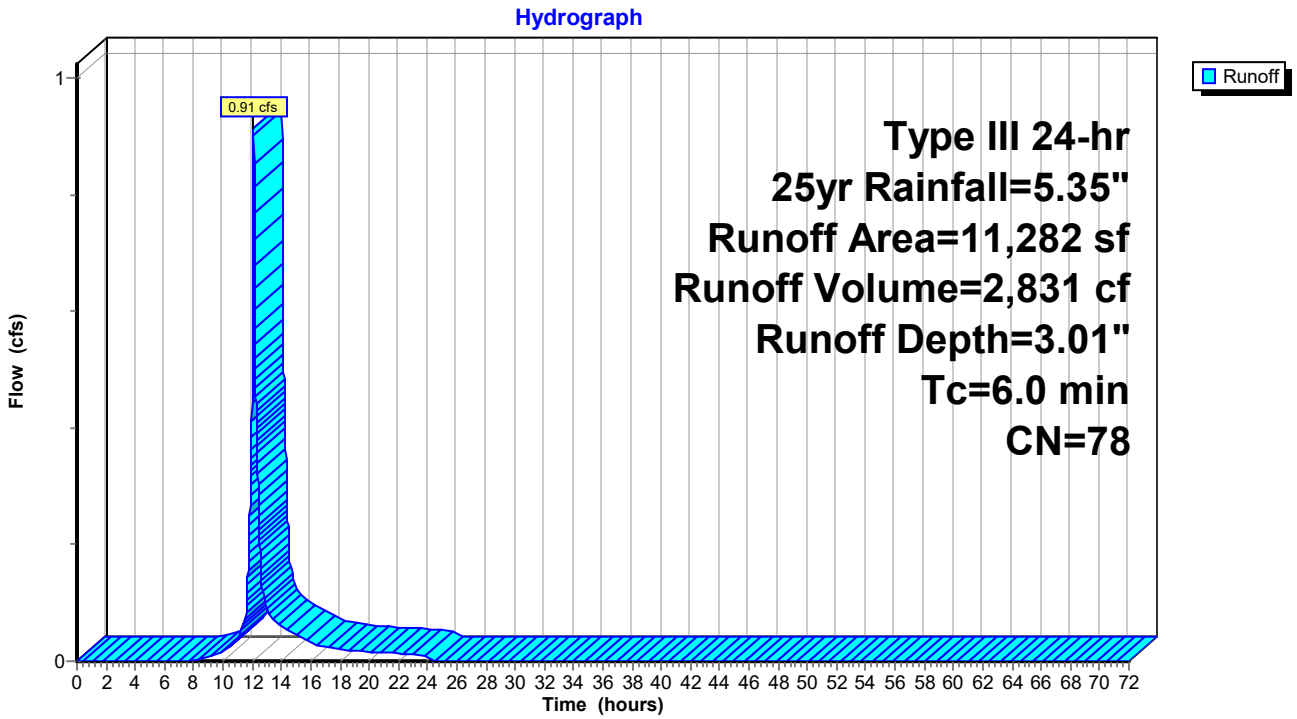
Runoff = 0.91 cfs @ 12.09 hrs, Volume= 2,831 cf, Depth= 3.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	2,391	73	Woods, Fair, HSG C
	8,891	79	50-75% Grass cover, Fair, HSG C
	11,282	78	Weighted Average
	11,282		100.00% Pervious Area

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

Subcatchment P-2b: Basin Area



Summary for Subcatchment P-3: East Grass/Woods

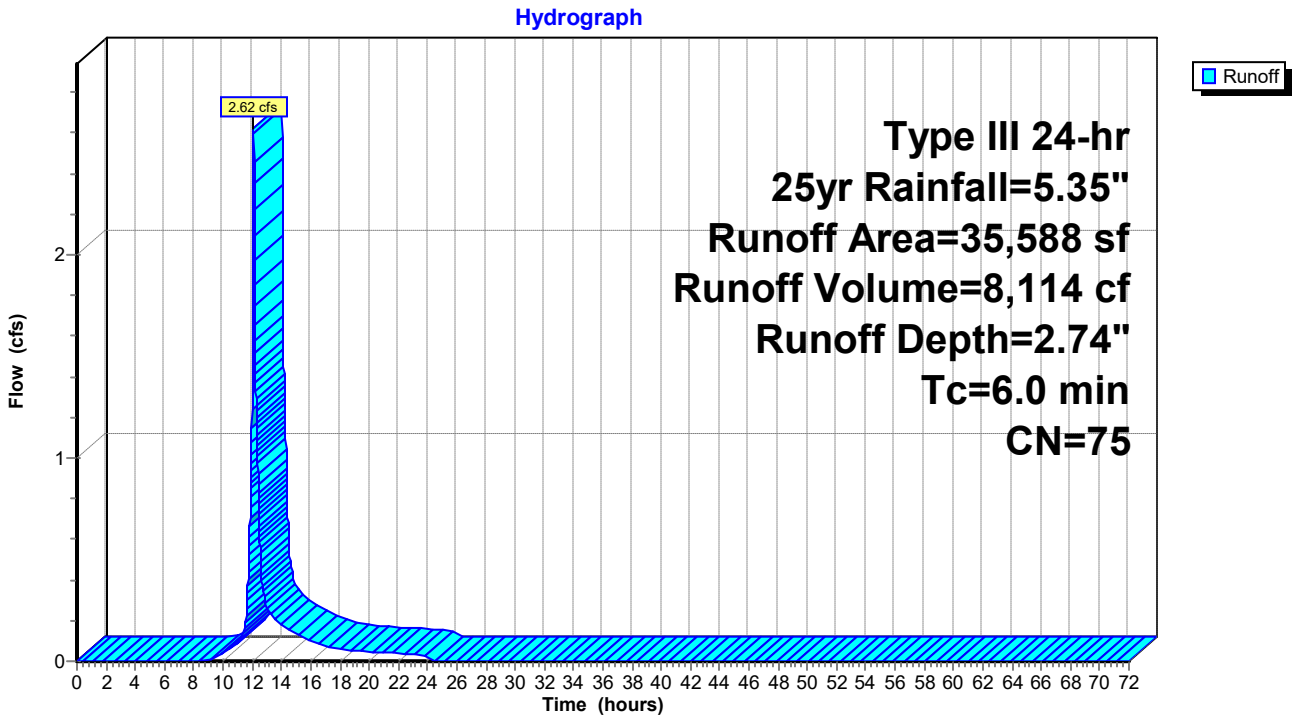
Runoff = 2.62 cfs @ 12.09 hrs, Volume= 8,114 cf, Depth= 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
22,537	73	Woods, Fair, HSG C
13,051	79	50-75% Grass cover, Fair, HSG C
35,588	75	Weighted Average
35,588		100.00% Pervious Area

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

Subcatchment P-3: East Grass/Woods



Summary for Subcatchment P-4a: TO UGI-2

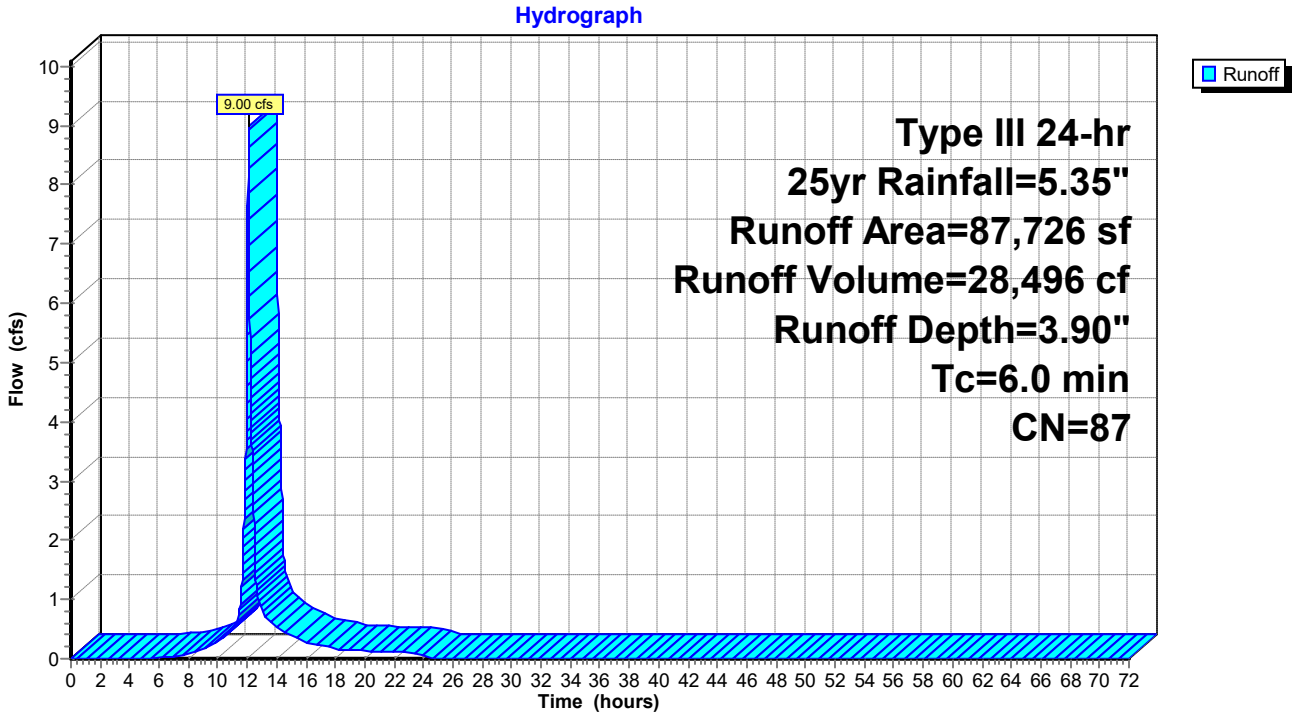
Runoff = 9.00 cfs @ 12.09 hrs, Volume= 28,496 cf, Depth= 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	37,704	98	IMPERVIOUS
	50,022	79	50-75% Grass cover, Fair, HSG C
	87,726	87	Weighted Average
	50,022		57.02% Pervious Area
	37,704		42.98% Impervious Area

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

Subcatchment P-4a: TO UGI-2



Summary for Subcatchment P-4b: ROOF + PAVED

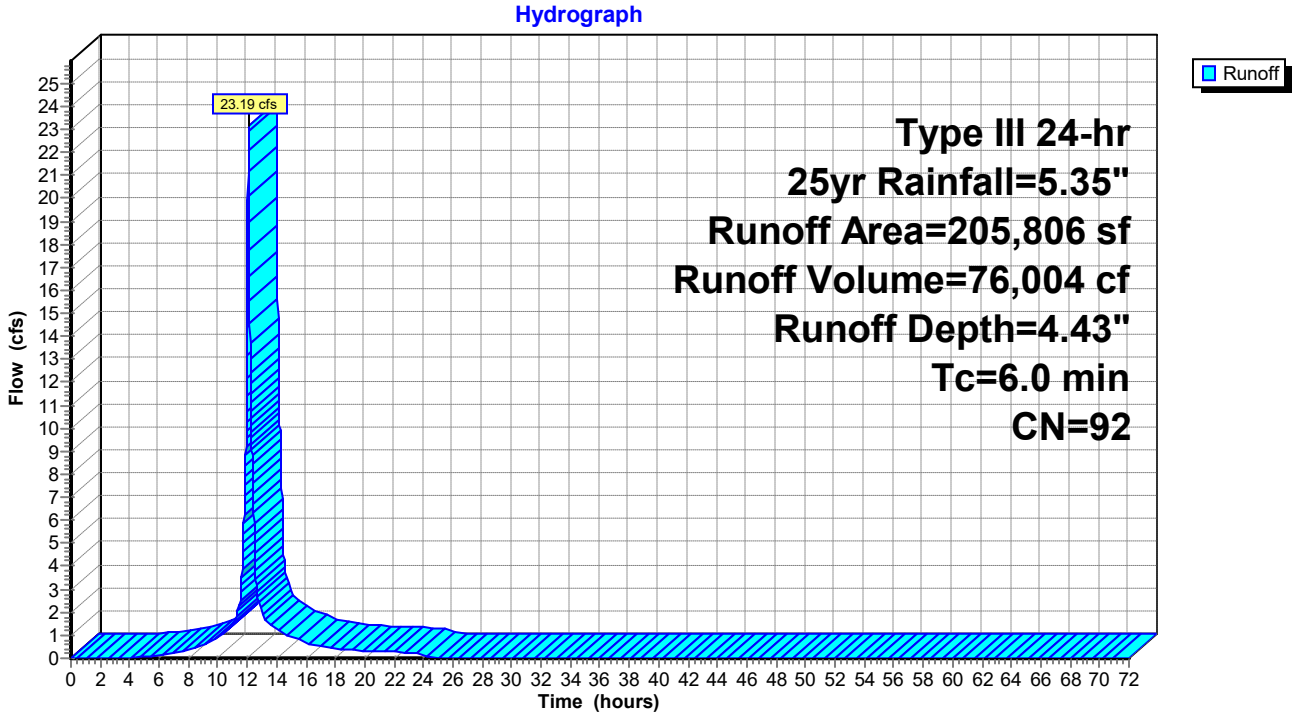
Runoff = 23.19 cfs @ 12.08 hrs, Volume= 76,004 cf, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
	120,540	98	Paved parking, HSG C
	65,734	79	50-75% Grass cover, Fair, HSG C
*	19,532	98	Roof
	205,806	92	Weighted Average
	65,734		31.94% Pervious Area
	140,072		68.06% Impervious Area

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

Subcatchment P-4b: ROOF + PAVED



Summary for Subcatchment P-4c: Synthetic Field

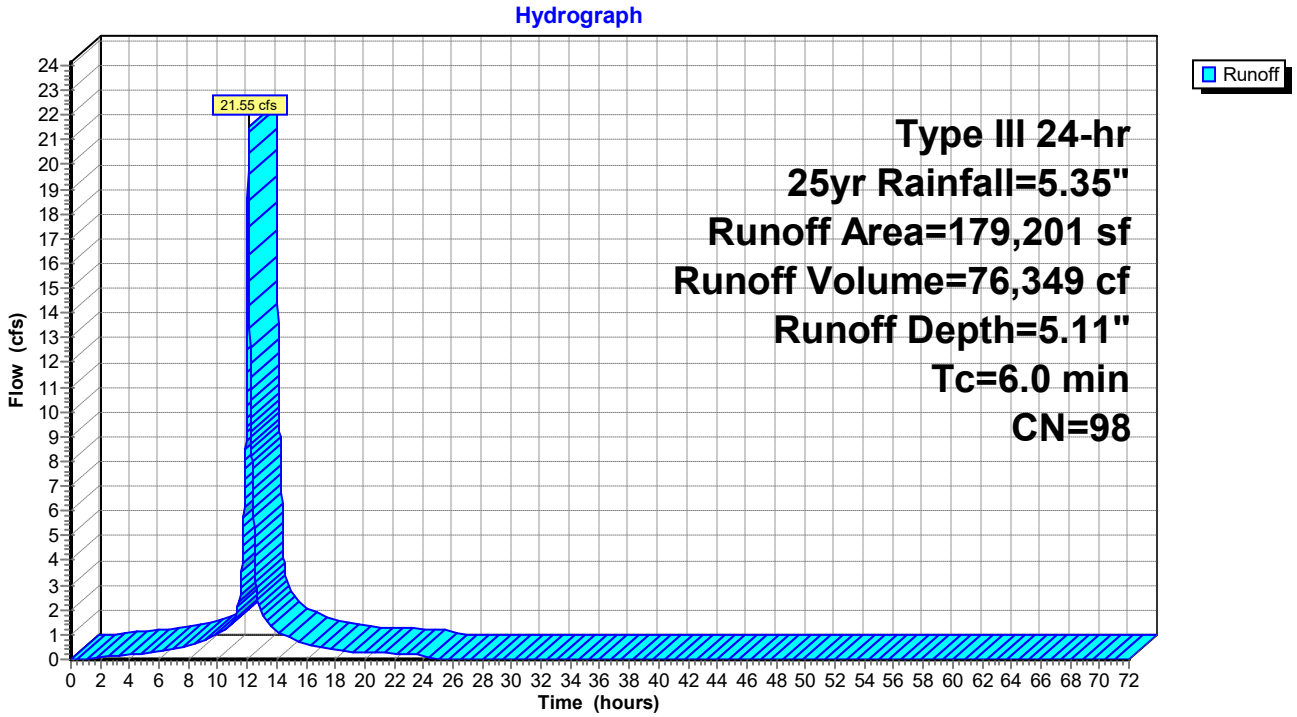
Runoff = 21.55 cfs @ 12.08 hrs, Volume= 76,349 cf, Depth= 5.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	179,201	98	Synthetic Field, HSG C
	179,201		100.00% Impervious Area

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

Subcatchment P-4c: Synthetic Field



Summary for Subcatchment P-4d: TO UGI-5

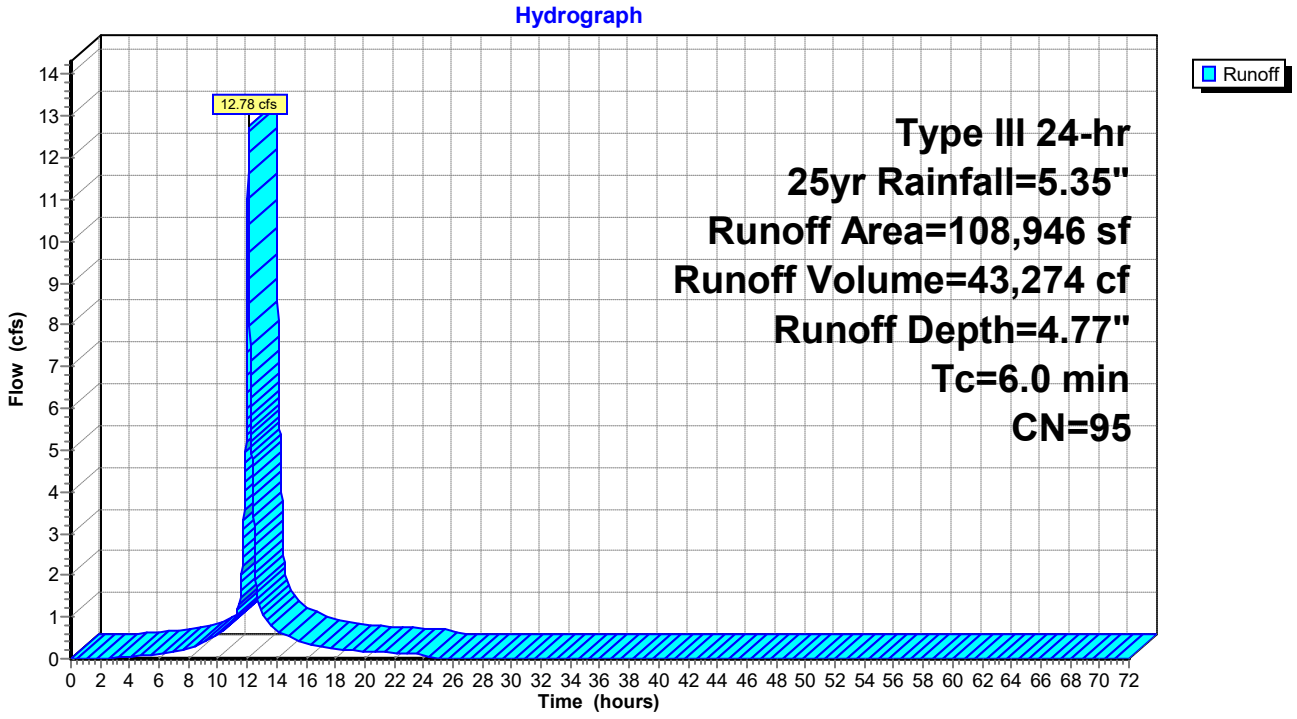
Runoff = 12.78 cfs @ 12.08 hrs, Volume= 43,274 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
93,457	98	Paved parking, HSG C
15,489	79	50-75% Grass cover, Fair, HSG C
108,946	95	Weighted Average
15,489		14.22% Pervious Area
93,457		85.78% Impervious Area

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

Subcatchment P-4d: TO UGI-5



Summary for Subcatchment P-4e: Grass Area

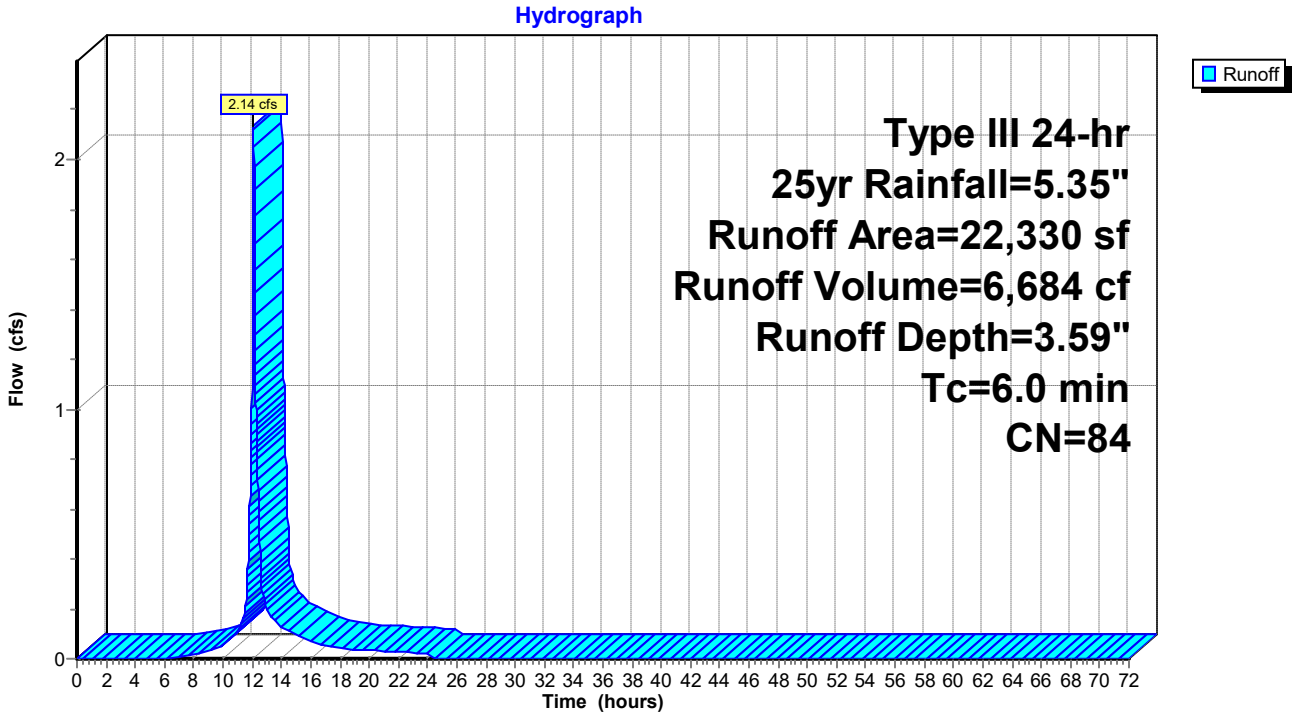
Runoff = 2.14 cfs @ 12.09 hrs, Volume= 6,684 cf, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	5,423	98	IMPERVIOUS
	16,907	79	50-75% Grass cover, Fair, HSG C
	22,330	84	Weighted Average
	16,907		75.71% Pervious Area
	5,423		24.29% Impervious Area

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

Subcatchment P-4e: Grass Area



Summary for Subcatchment P-4f: East Grass/Woods

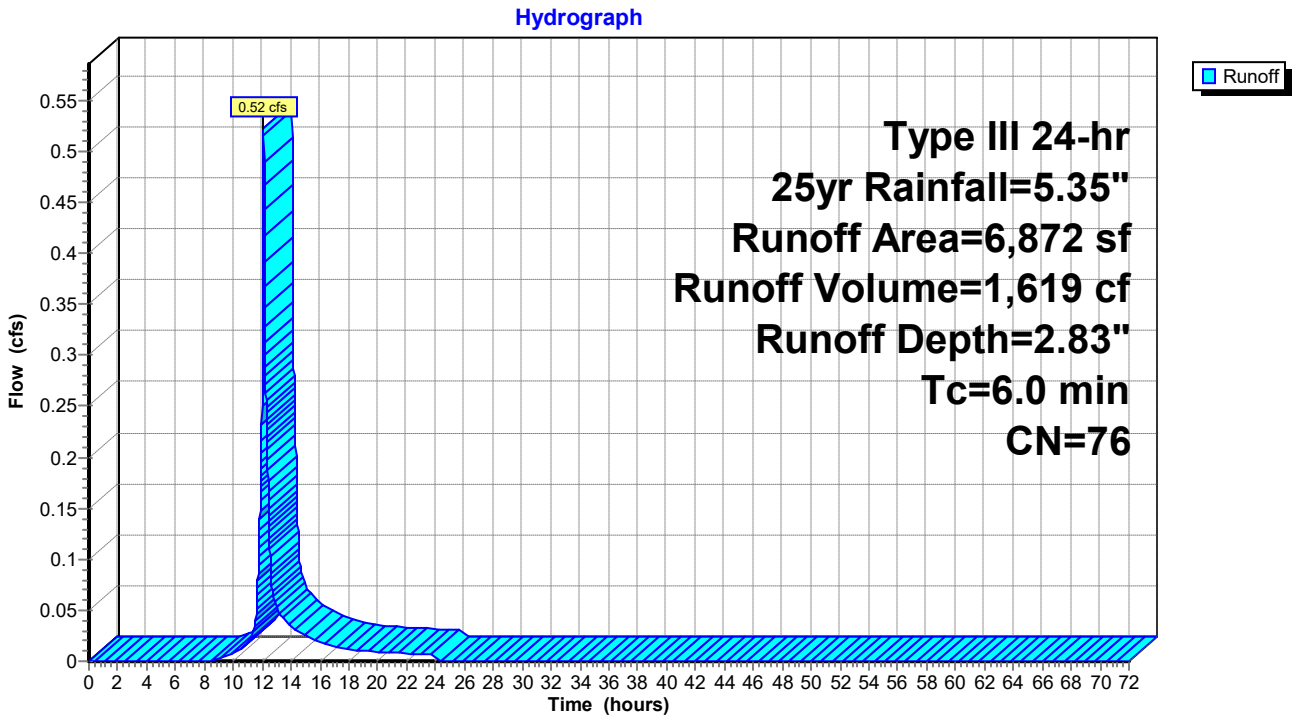
Runoff = 0.52 cfs @ 12.09 hrs, Volume= 1,619 cf, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
3,120	73	Woods, Fair, HSG C
3,752	79	50-75% Grass cover, Fair, HSG C
6,872	76	Weighted Average
6,872		100.00% Pervious Area

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

Subcatchment P-4f: East Grass/Woods



Summary for Subcatchment P-5: East Grass/Woods

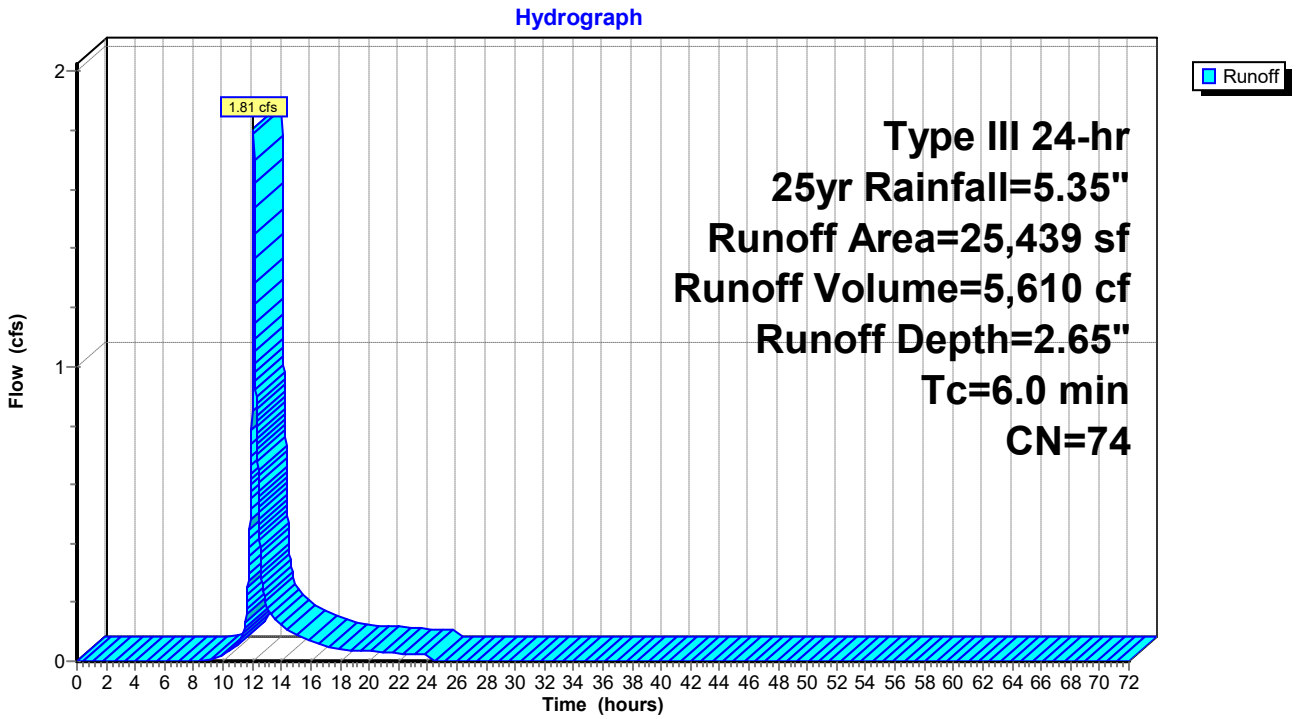
Runoff = 1.81 cfs @ 12.09 hrs, Volume= 5,610 cf, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
3,717	79	50-75% Grass cover, Fair, HSG C
21,722	73	Woods, Fair, HSG C
25,439	74	Weighted Average
25,439		100.00% Pervious Area

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

Subcatchment P-5: East Grass/Woods



Summary for Subcatchment P-6: East Grass/Woods

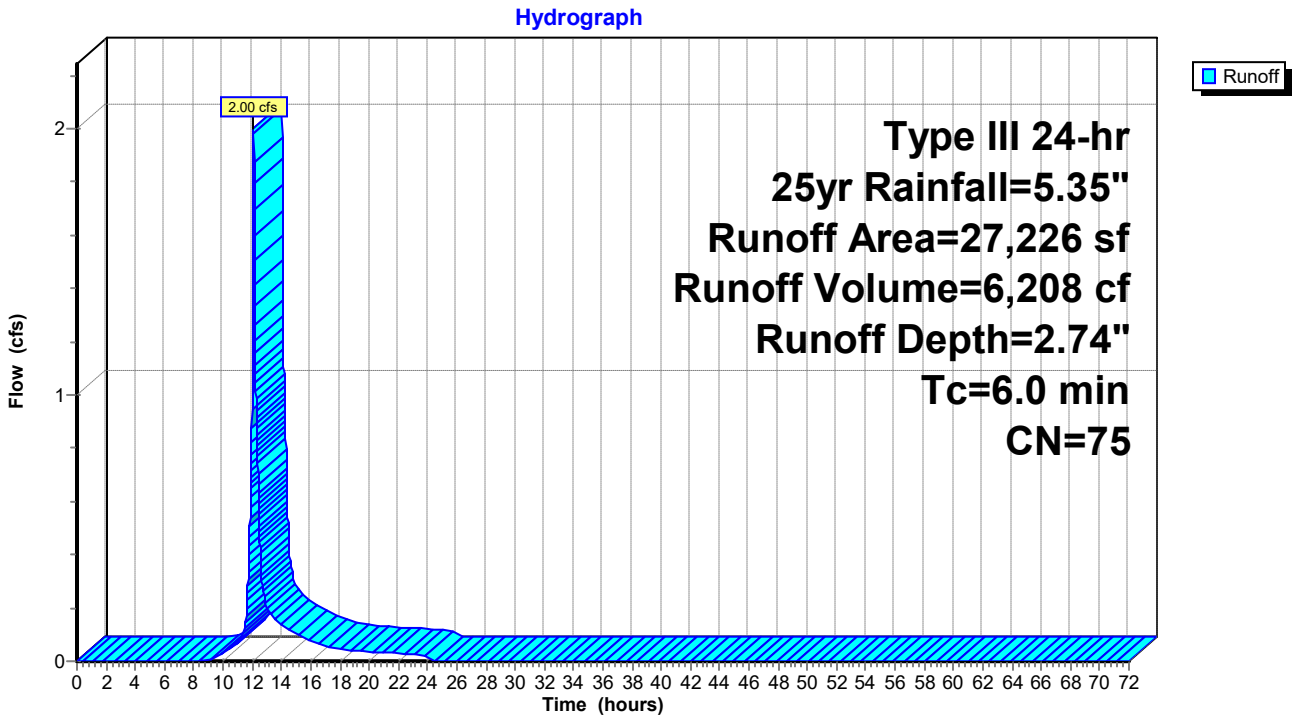
Runoff = 2.00 cfs @ 12.09 hrs, Volume= 6,208 cf, Depth= 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
16,017	73	Woods, Fair, HSG C
11,209	79	50-75% Grass cover, Fair, HSG C
27,226	75	Weighted Average
27,226		100.00% Pervious Area

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

Subcatchment P-6: East Grass/Woods



Summary for Subcatchment P-7: Southeast Grass/Woods

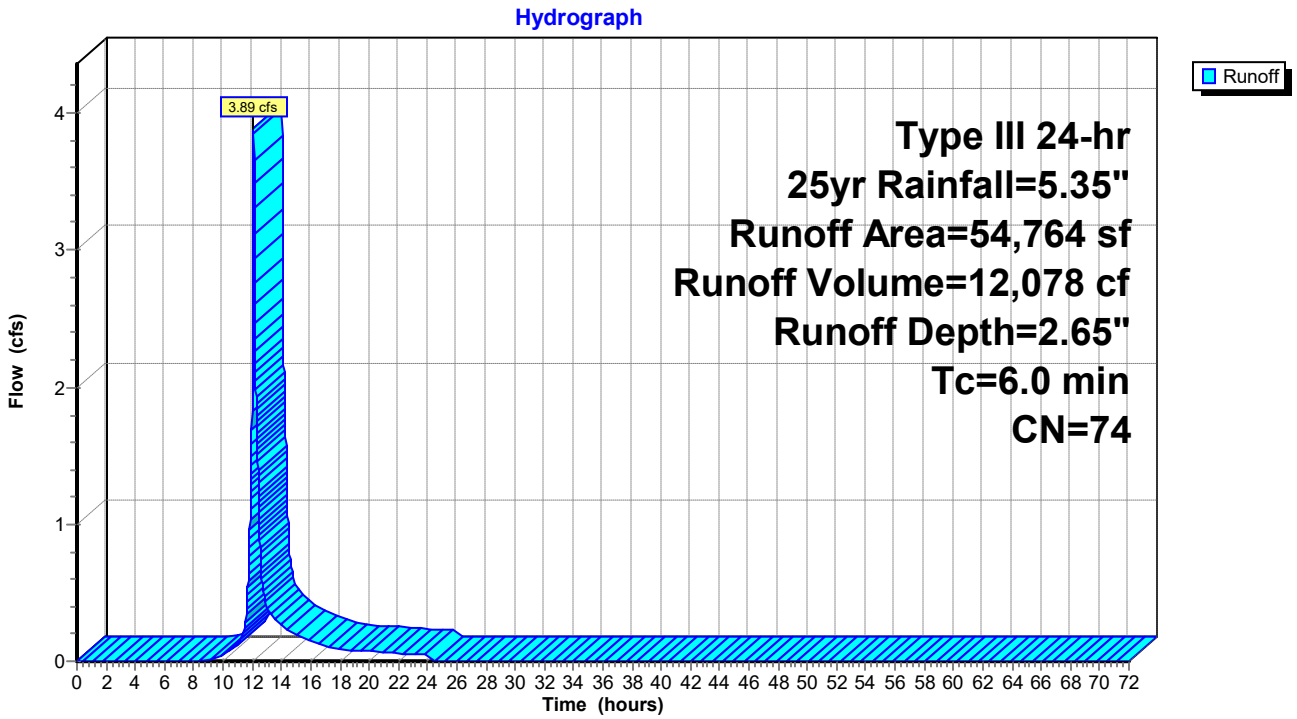
Runoff = 3.89 cfs @ 12.09 hrs, Volume= 12,078 cf, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
41,823	73	Woods, Fair, HSG C
12,941	79	50-75% Grass cover, Fair, HSG C
54,764	74	Weighted Average
54,764		100.00% Pervious Area

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

Subcatchment P-7: Southeast Grass/Woods



Summary for Subcatchment P-8: Stoddard Dr

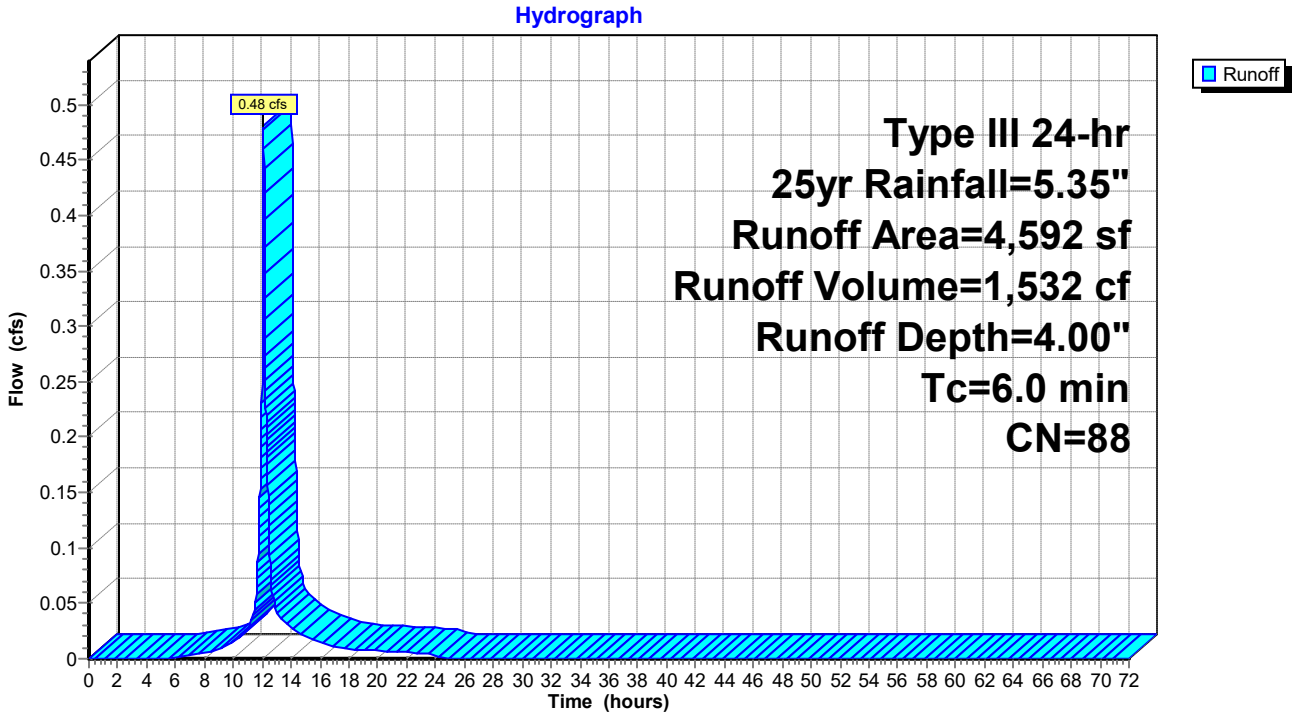
Runoff = 0.48 cfs @ 12.09 hrs, Volume= 1,532 cf, Depth= 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	2,302	79	50-75% Grass cover, Fair, HSG C
	2,290	98	Paved parking, HSG C
	4,592	88	Weighted Average
	2,302		50.13% Pervious Area
	2,290		49.87% Impervious Area

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

Subcatchment P-8: Stoddard Dr



Summary for Subcatchment P-9: South Woods

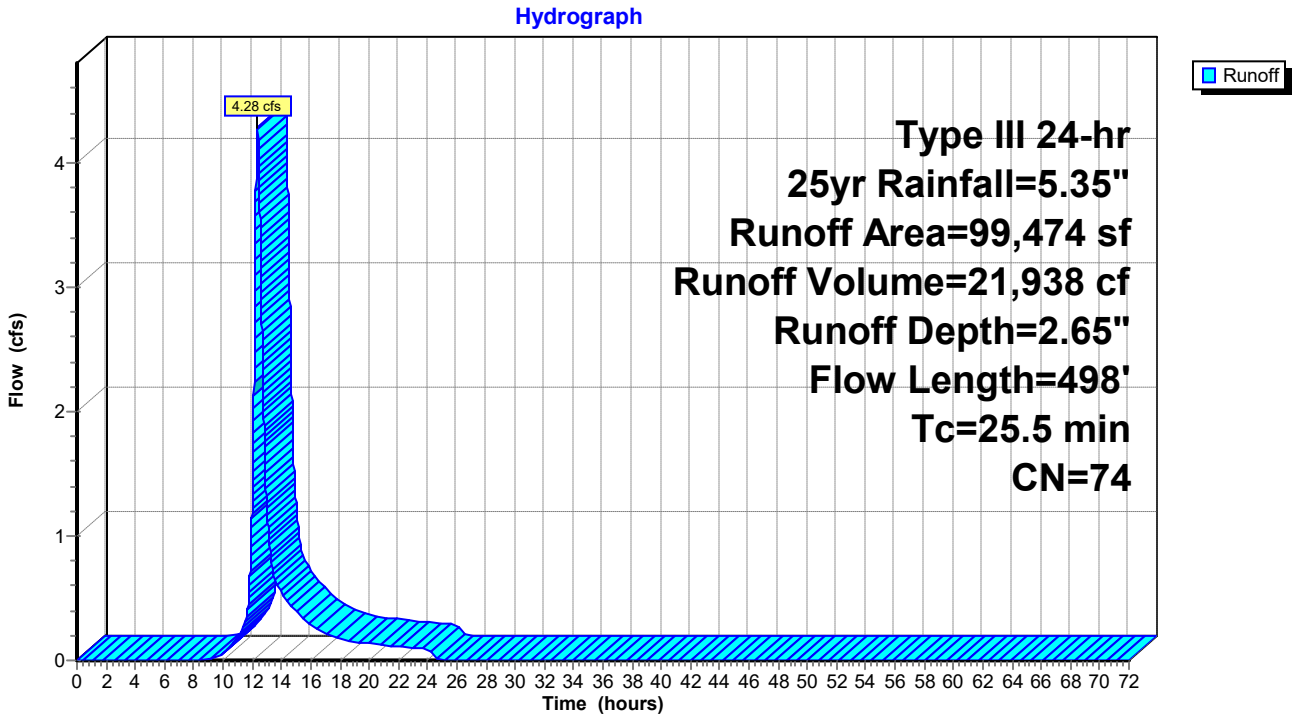
Runoff = 4.28 cfs @ 12.36 hrs, Volume= 21,938 cf, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
10,443	79	50-75% Grass cover, Fair, HSG C
89,031	73	Woods, Fair, HSG C
99,474	74	Weighted Average
99,474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	50	0.0270	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.9	132	0.0250	2.55		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.6	316	0.0050	1.14		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
25.5	498	Total			

Subcatchment P-9: South Woods



Summary for Pond 3P: (new Pond)

Inflow Area = 81,022 sf, 85.38% Impervious, Inflow Depth = 4.77" for 25yr event
Inflow = 9.50 cfs @ 12.08 hrs, Volume= 32,182 cf
Outflow = 9.50 cfs @ 12.08 hrs, Volume= 32,182 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.49 cfs @ 12.08 hrs, Volume= 31,767 cf
Secondary = 1.01 cfs @ 12.08 hrs, Volume= 415 cf

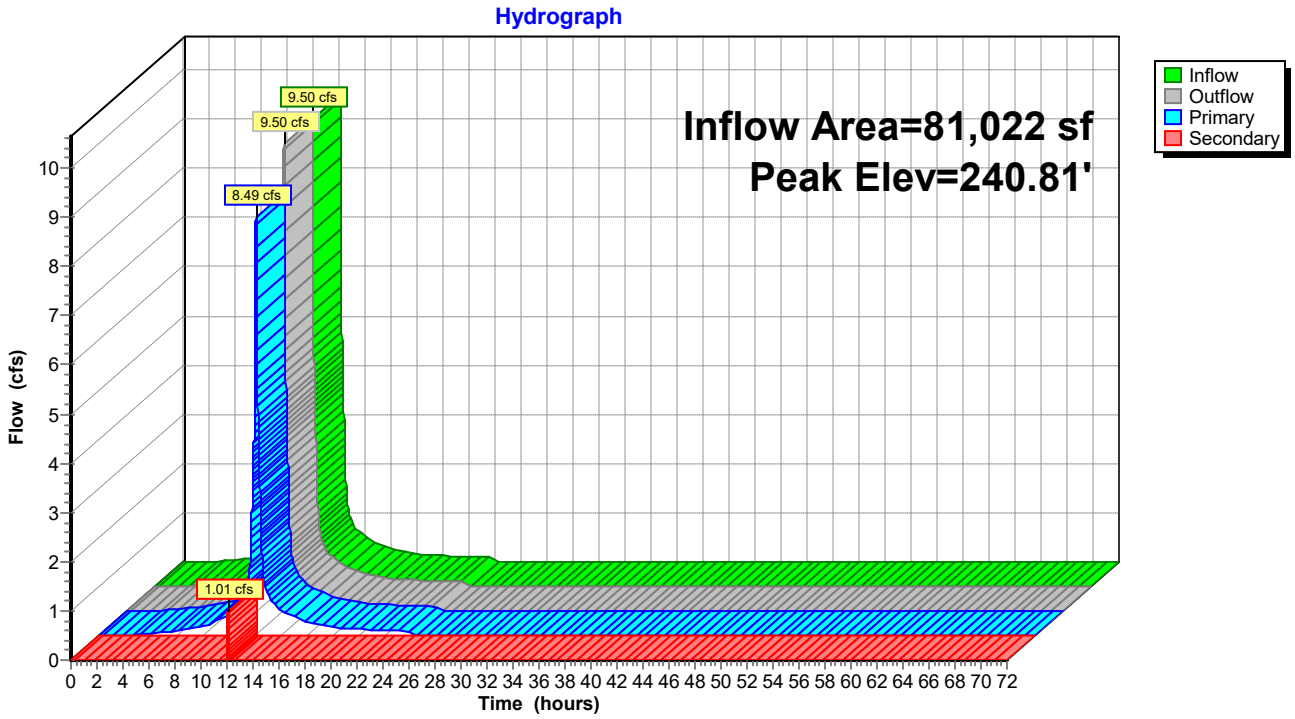
Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 240.81' @ 12.08 hrs
Flood Elev= 244.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	240.40'	**24.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=8.48 cfs @ 12.08 hrs HW=240.81' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 8.48 cfs @ 3.89 fps)

Secondary OutFlow Max=1.00 cfs @ 12.08 hrs HW=240.81' (Free Discharge)
└**2=Orifice/Grate** (Orifice Controls 1.00 cfs @ 2.18 fps)

Pond 3P: (new Pond)

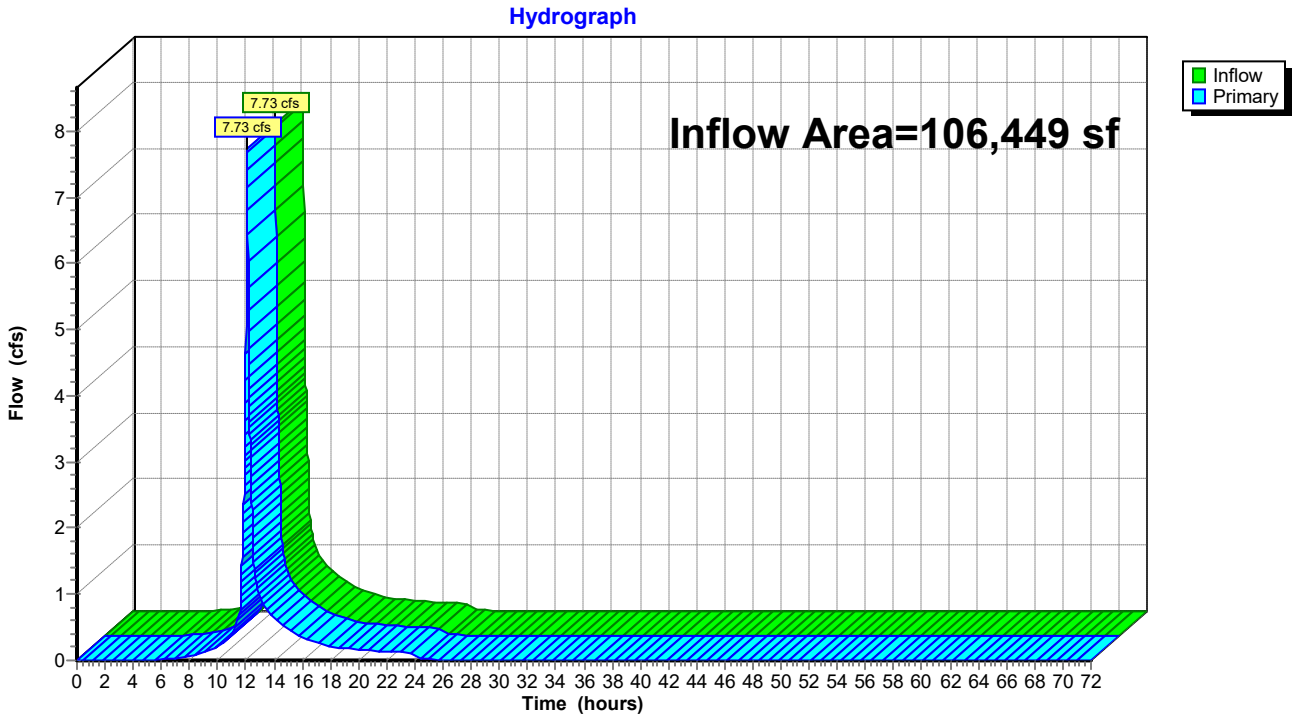


Summary for Pond DP-1p: Flow to Exist Basin #1

Inflow Area = 106,449 sf, 35.43% Impervious, Inflow Depth = 3.18" for 25yr event
Inflow = 7.73 cfs @ 12.09 hrs, Volume= 28,171 cf
Primary = 7.73 cfs @ 12.09 hrs, Volume= 28,171 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-1p: Flow to Exist Basin #1

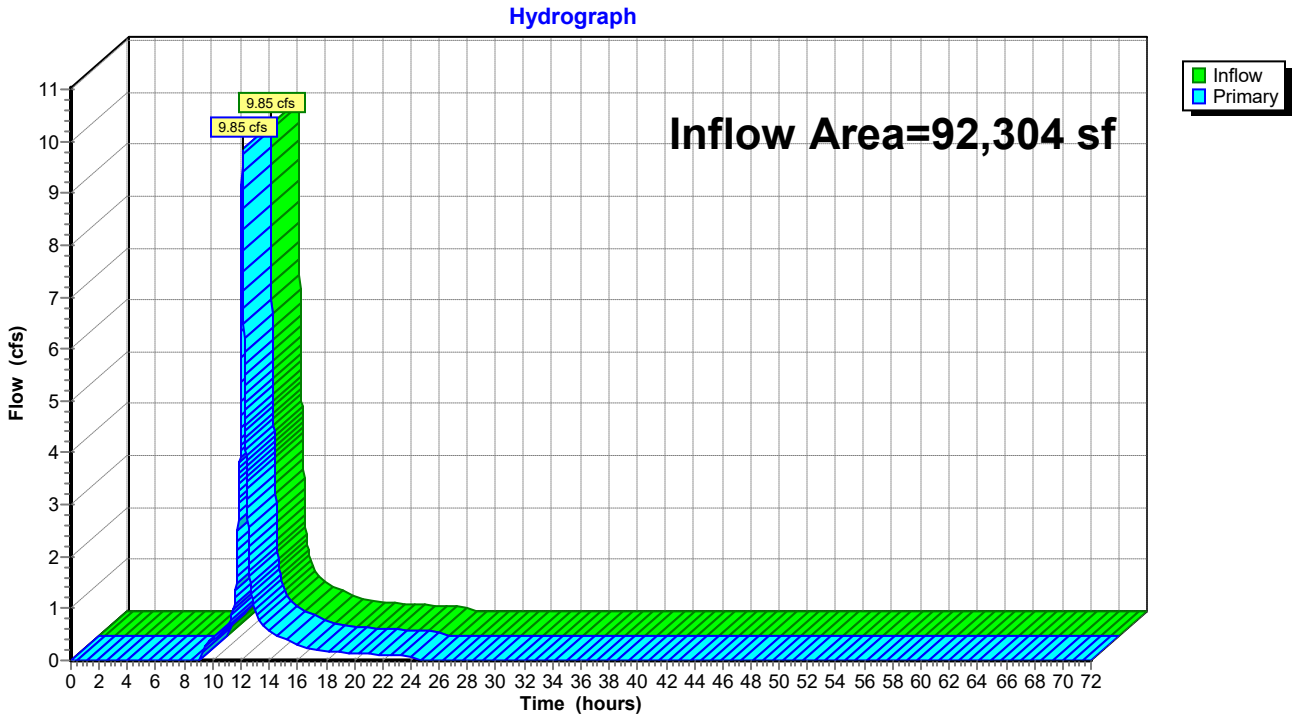


Summary for Pond DP-2p: Flow to Exist Basin#2

Inflow Area = 92,304 sf, 74.94% Impervious, Inflow Depth = 4.13" for 25yr event
Inflow = 9.85 cfs @ 12.10 hrs, Volume= 31,769 cf
Primary = 9.85 cfs @ 12.10 hrs, Volume= 31,769 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-2p: Flow to Exist Basin#2

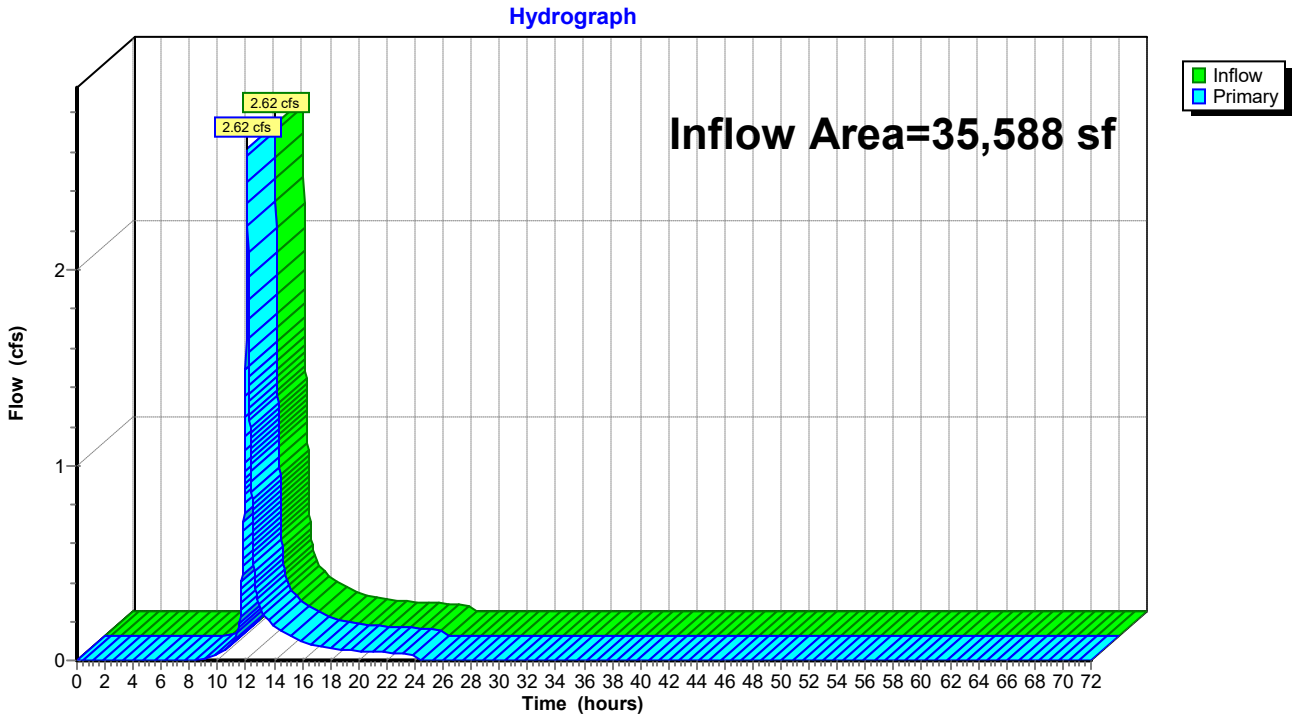


Summary for Pond DP-3p: Residential East#1

Inflow Area = 35,588 sf, 0.00% Impervious, Inflow Depth = 2.74" for 25yr event
Inflow = 2.62 cfs @ 12.09 hrs, Volume= 8,114 cf
Primary = 2.62 cfs @ 12.09 hrs, Volume= 8,114 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-3p: Residential East#1

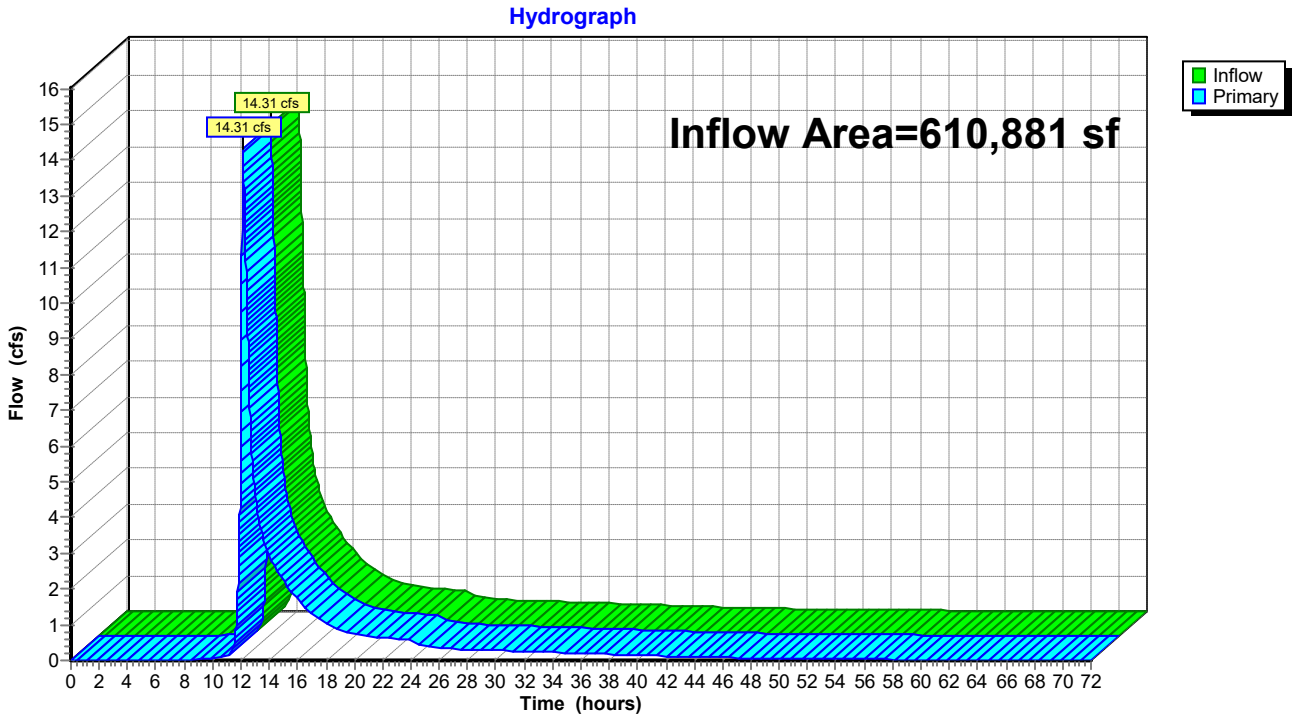


Summary for Pond DP-4p: Exist Swale #1 East

Inflow Area = 610,881 sf, 74.62% Impervious, Inflow Depth > 2.18" for 25yr event
Inflow = 14.31 cfs @ 12.15 hrs, Volume= 110,902 cf
Primary = 14.31 cfs @ 12.15 hrs, Volume= 110,902 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-4p: Exist Swale #1 East

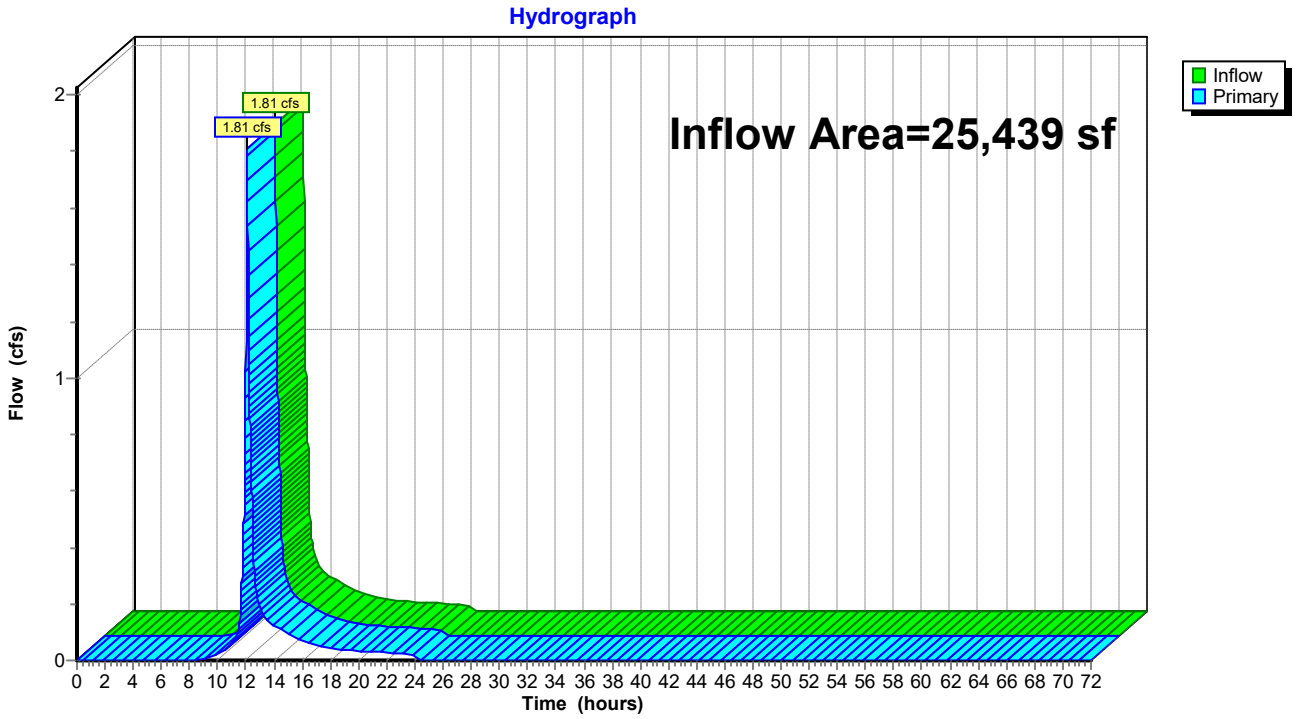


Summary for Pond DP-5p: Residential East#2

Inflow Area = 25,439 sf, 0.00% Impervious, Inflow Depth = 2.65" for 25yr event
Inflow = 1.81 cfs @ 12.09 hrs, Volume= 5,610 cf
Primary = 1.81 cfs @ 12.09 hrs, Volume= 5,610 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-5p: Residential East#2

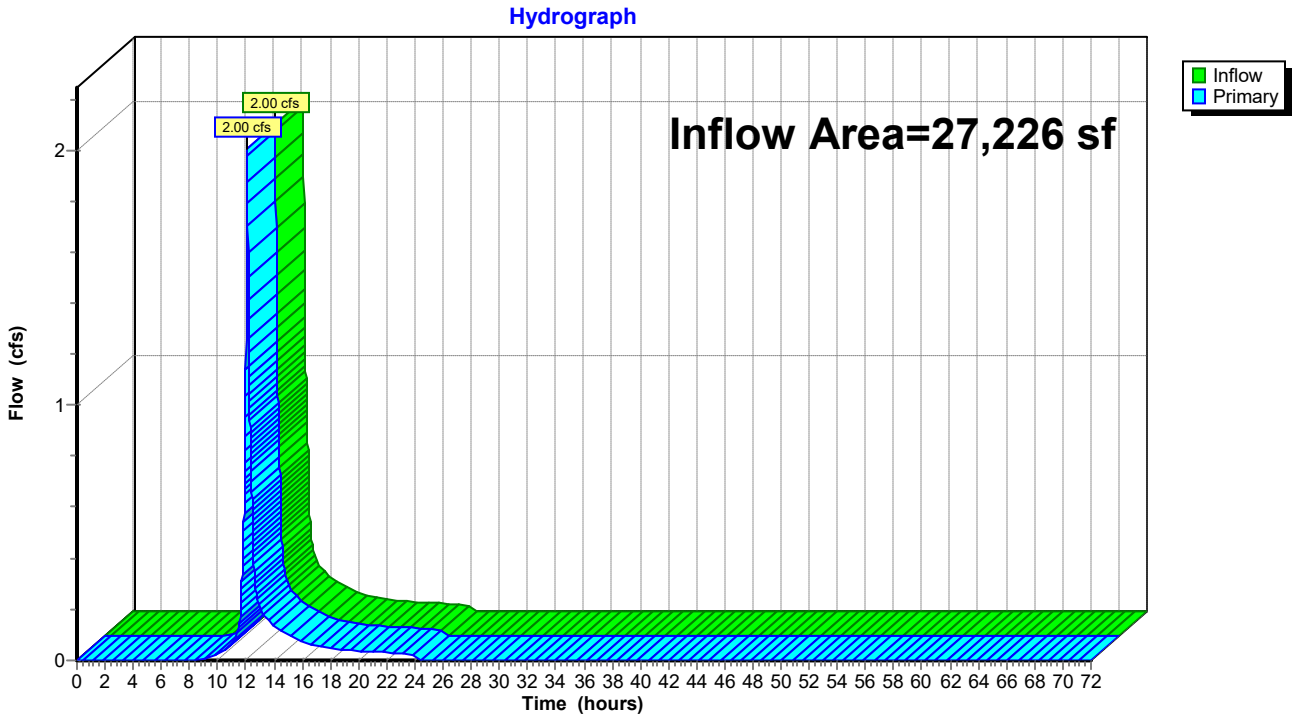


Summary for Pond DP-6p: Residential East#3

Inflow Area = 27,226 sf, 0.00% Impervious, Inflow Depth = 2.74" for 25yr event
Inflow = 2.00 cfs @ 12.09 hrs, Volume= 6,208 cf
Primary = 2.00 cfs @ 12.09 hrs, Volume= 6,208 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-6p: Residential East#3

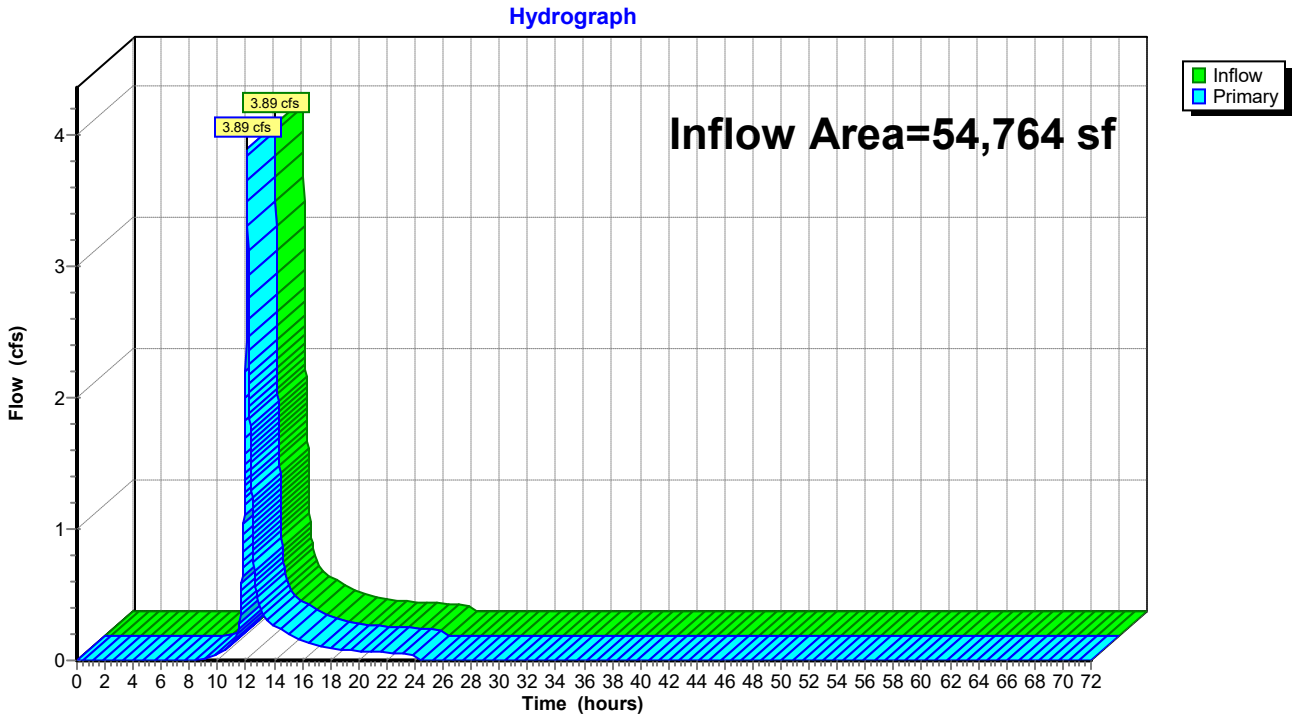


Summary for Pond DP-7p: Residential East#4

Inflow Area = 54,764 sf, 0.00% Impervious, Inflow Depth = 2.65" for 25yr event
Inflow = 3.89 cfs @ 12.09 hrs, Volume= 12,078 cf
Primary = 3.89 cfs @ 12.09 hrs, Volume= 12,078 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-7p: Residential East#4

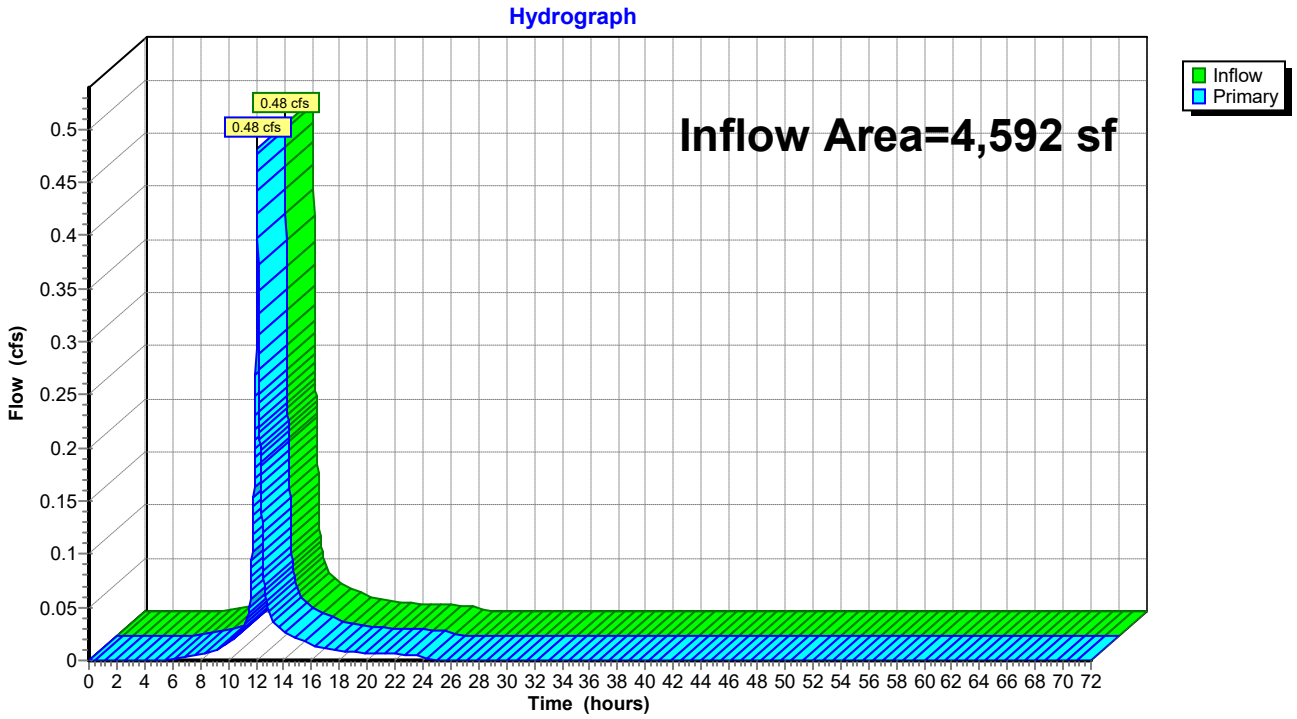


Summary for Pond DP-8p: Stoddard Drive

Inflow Area = 4,592 sf, 49.87% Impervious, Inflow Depth = 4.00" for 25yr event
Inflow = 0.48 cfs @ 12.09 hrs, Volume= 1,532 cf
Primary = 0.48 cfs @ 12.09 hrs, Volume= 1,532 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-8p: Stoddard Drive

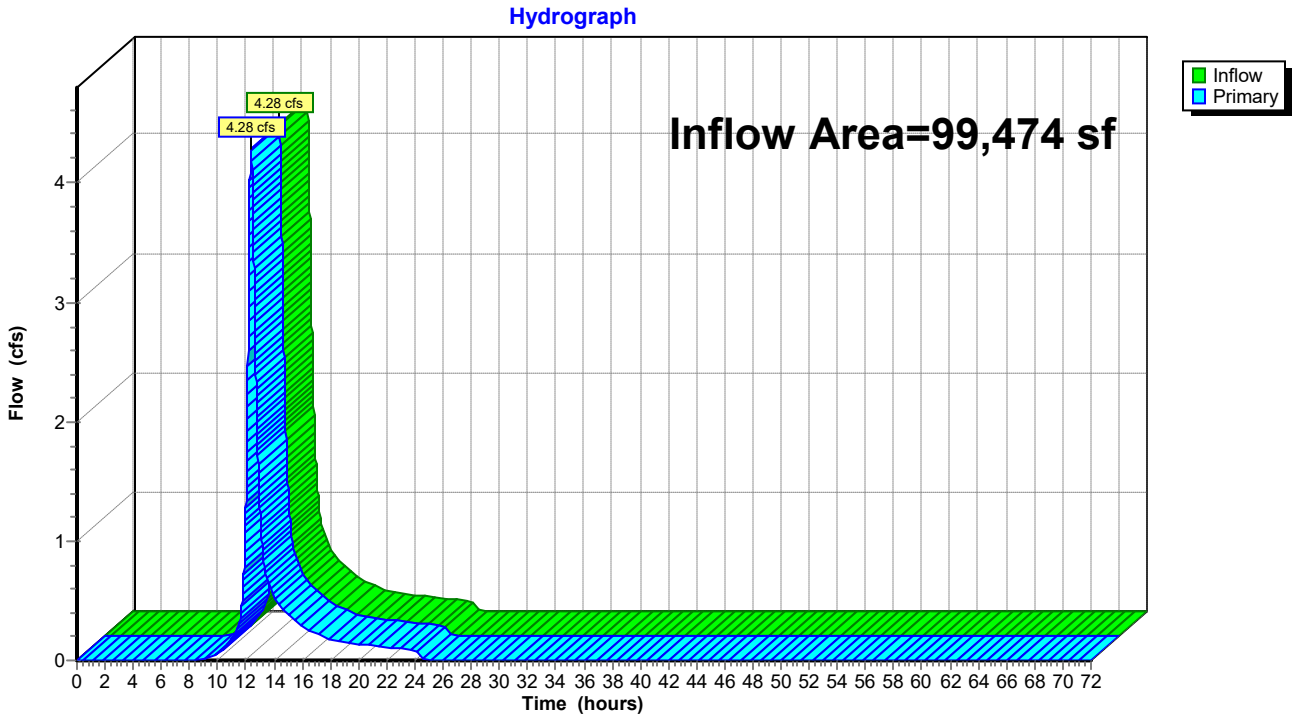


Summary for Pond DP-9p: Woods South

Inflow Area = 99,474 sf, 0.00% Impervious, Inflow Depth = 2.65" for 25yr event
Inflow = 4.28 cfs @ 12.36 hrs, Volume= 21,938 cf
Primary = 4.28 cfs @ 12.36 hrs, Volume= 21,938 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-9p: Woods South



Summary for Pond STONE: STONE

Inflow Area = 179,201 sf,100.00% Impervious, Inflow Depth = 5.11" for 25yr event
Inflow = 21.55 cfs @ 12.08 hrs, Volume= 76,349 cf
Outflow = 1.65 cfs @ 13.09 hrs, Volume= 76,307 cf, Atten= 92%, Lag= 60.4 min
Discarded = 0.56 cfs @ 13.09 hrs, Volume= 62,207 cf
Primary = 1.09 cfs @ 13.09 hrs, Volume= 14,101 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 240.56' @ 13.09 hrs Surf.Area= 141,313 sf Storage= 37,560 cf

Plug-Flow detention time= 414.6 min calculated for 76,297 cf (100% of inflow)
Center-of-Mass det. time= 414.3 min (1,161.3 - 746.9)

Volume	Invert	Avail.Storage	Storage Description
#1	240.90'	28,260 cf	**Stone Above Flat Panel Drains (Irregular)** Listed below (Recalc) 70,650 cf Overall x 40.0% Voids
#2	239.90'	56,520 cf	**12" Stone Under Flat Panel Drains (Irregular)** Listed below (Recalc) 141,300 cf Overall x 40.0% Voids
#3	236.50'	57 cf	**4.00'D x 4.50'H DMH**
		84,837 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
240.90	141,300	1,510.0	0	0	141,300
241.40	141,300	1,510.0	70,650	70,650	142,055

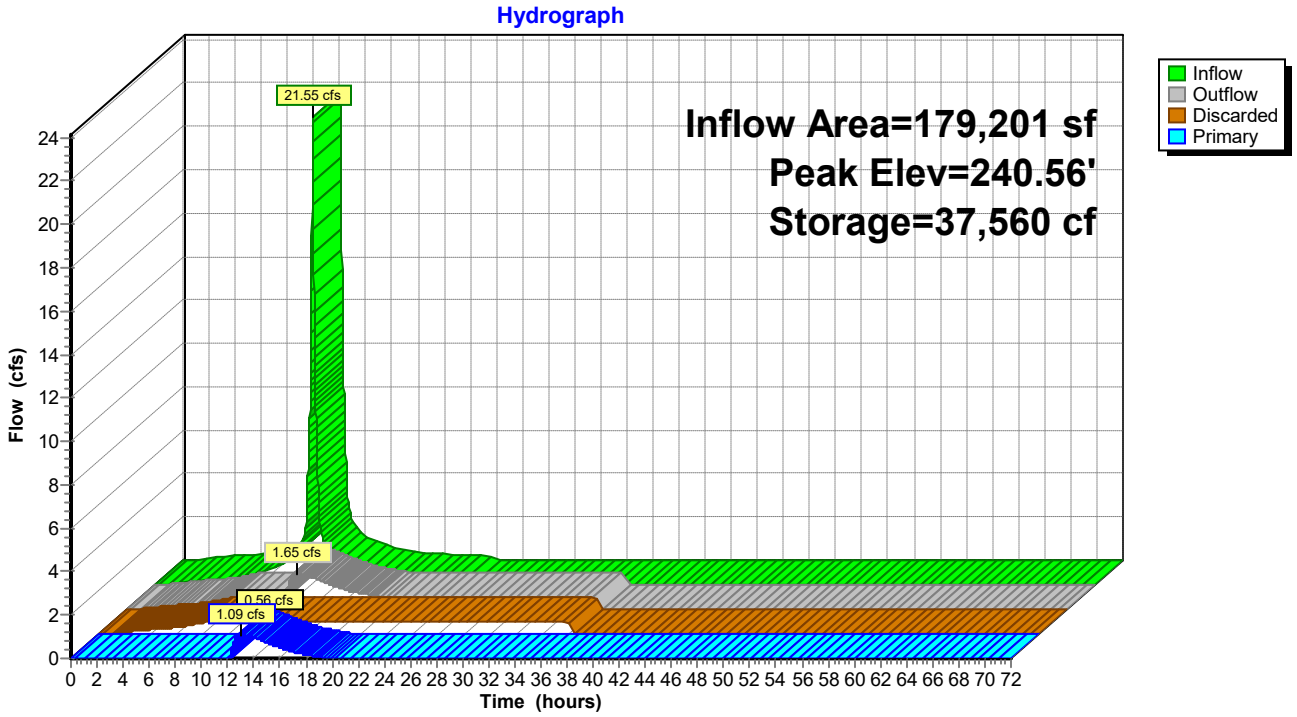
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
239.90	141,300	1,510.0	0	0	141,300
240.90	141,300	1,510.0	141,300	141,300	142,810

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	240.40'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#3	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.50'

Discarded OutFlow Max=0.56 cfs @ 13.09 hrs HW=240.56' (Free Discharge)
└**3=Exfiltration** (Controls 0.56 cfs)

Primary OutFlow Max=1.09 cfs @ 13.09 hrs HW=240.56' (Free Discharge)
└**1=Orifice/Grate** (Passes 1.09 cfs of 26.48 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 1.09 cfs @ 1.34 fps)

Pond STONE: STONE



Summary for Pond UGI-2: UGI-2

Inflow Area = 87,726 sf, 42.98% Impervious, Inflow Depth = 3.90" for 25yr event
Inflow = 9.00 cfs @ 12.09 hrs, Volume= 28,496 cf
Outflow = 7.47 cfs @ 12.14 hrs, Volume= 27,264 cf, Atten= 17%, Lag= 3.2 min
Discarded = 0.01 cfs @ 12.14 hrs, Volume= 3,111 cf
Primary = 7.46 cfs @ 12.14 hrs, Volume= 24,152 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 242.52' @ 12.14 hrs Surf.Area= 3,310 sf Storage= 6,509 cf

Plug-Flow detention time= 236.4 min calculated for 27,260 cf (96% of inflow)
Center-of-Mass det. time= 212.1 min (1,010.9 - 798.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	239.50'	2,959 cf	**25.25'W x 131.10'L x 3.50'H Field A** 11,586 cf Overall - 4,188 cf Embedded = 7,398 cf x 40.0% Voids
#2A	240.00'	4,188 cf	**Cultec R-300HD** x 90 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 90 Chambers in 5 Rows Cap Storage= +2.7 cf x 2 x 5 rows = 26.5 cf
		7,147 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	241.00'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	239.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.01 cfs @ 12.14 hrs HW=242.52' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=7.46 cfs @ 12.14 hrs HW=242.52' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 7.46 cfs @ 4.22 fps)

Pond UGI-2: UGI-2 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 5 rows = 26.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

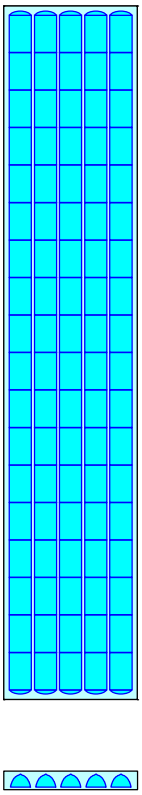
18 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 129.10' Row Length +12.0" End Stone x 2 = 131.10' Base Length
5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

90 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 5 Rows = 4,188.3 cf Chamber Storage

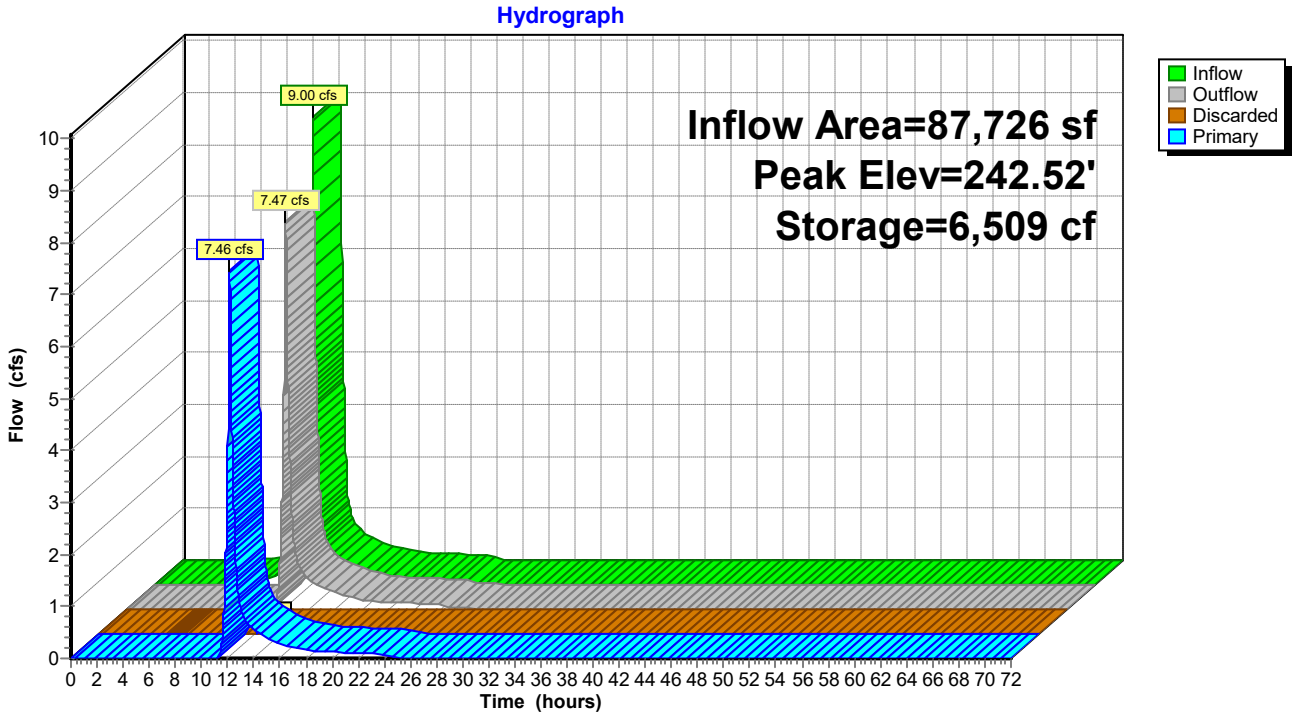
11,586.0 cf Field - 4,188.3 cf Chambers = 7,397.6 cf Stone x 40.0% Voids = 2,959.1 cf Stone Storage

Chamber Storage + Stone Storage = 7,147.4 cf = 0.164 af
Overall Storage Efficiency = 61.7%
Overall System Size = 131.10' x 25.25' x 3.50'

90 Chambers
429.1 cy Field
274.0 cy Stone



Pond UGI-2: UGI-2



Summary for Pond UGI-3: UGI-3

Inflow Area = 205,806 sf, 68.06% Impervious, Inflow Depth = 4.43" for 25yr event
Inflow = 23.19 cfs @ 12.08 hrs, Volume= 76,004 cf
Outflow = 0.40 cfs @ 18.06 hrs, Volume= 38,157 cf, Atten= 98%, Lag= 358.4 min
Discarded = 0.01 cfs @ 18.06 hrs, Volume= 3,380 cf
Primary = 0.39 cfs @ 18.06 hrs, Volume= 34,776 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 238.50' @ 18.06 hrs Surf.Area= 35,300 sf Storage= 61,785 cf

Plug-Flow detention time= 1,070.1 min calculated for 38,151 cf (50% of inflow)
Center-of-Mass det. time= 955.3 min (1,735.9 - 780.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.00'	30,623 cf	**343.50'W x 102.77'L x 3.50'H Field A** 123,551 cf Overall - 46,994 cf Embedded = 76,557 cf x 40.0% Voids
#2A	236.50'	46,994 cf	**Cultec R-300HD** x 1008 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 1008 Chambers in 72 Rows Cap Storage= +2.7 cf x 2 x 72 rows = 382.3 cf
		77,617 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	238.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	237.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Discarded	236.00'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.01 cfs @ 18.06 hrs HW=238.50' (Free Discharge)
└**4=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.39 cfs @ 18.06 hrs HW=238.50' (Free Discharge)
└**1=Orifice/Grate** (Passes 0.39 cfs of 15.15 cfs potential flow)
  ├**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.16 fps)
  └**3=Orifice/Grate** (Orifice Controls 0.38 cfs @ 4.40 fps)

Pond UGI-3: UGI-3 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 72 rows = 382.3 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

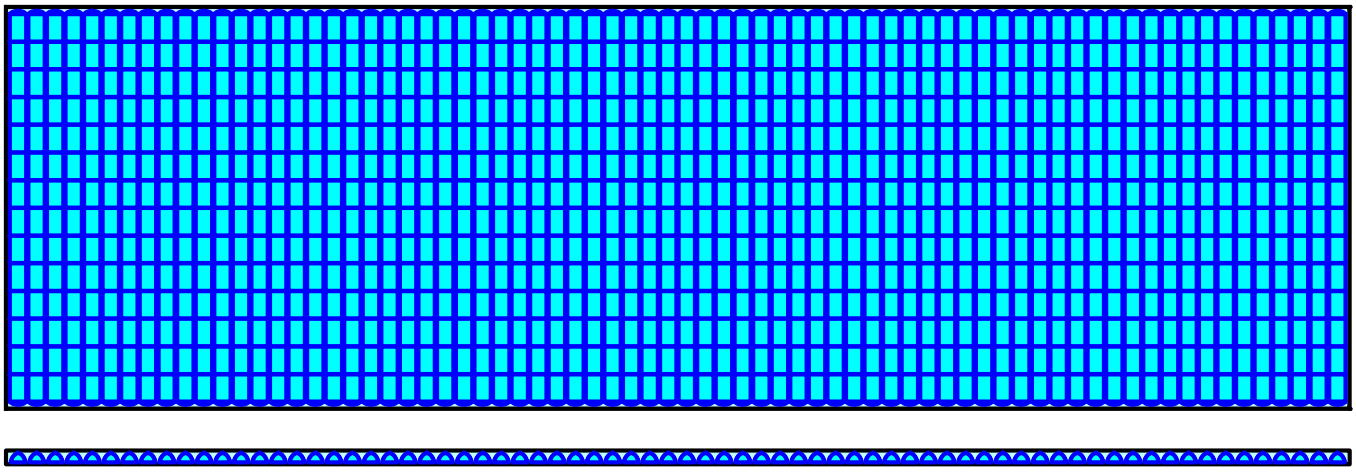
14 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 100.77' Row Length +12.0" End Stone x 2 = 102.77' Base Length
72 Rows x 51.0" Wide + 6.0" Spacing x 71 + 12.0" Side Stone x 2 = 343.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

1,008 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 72 Rows = 46,994.2 cf Chamber Storage

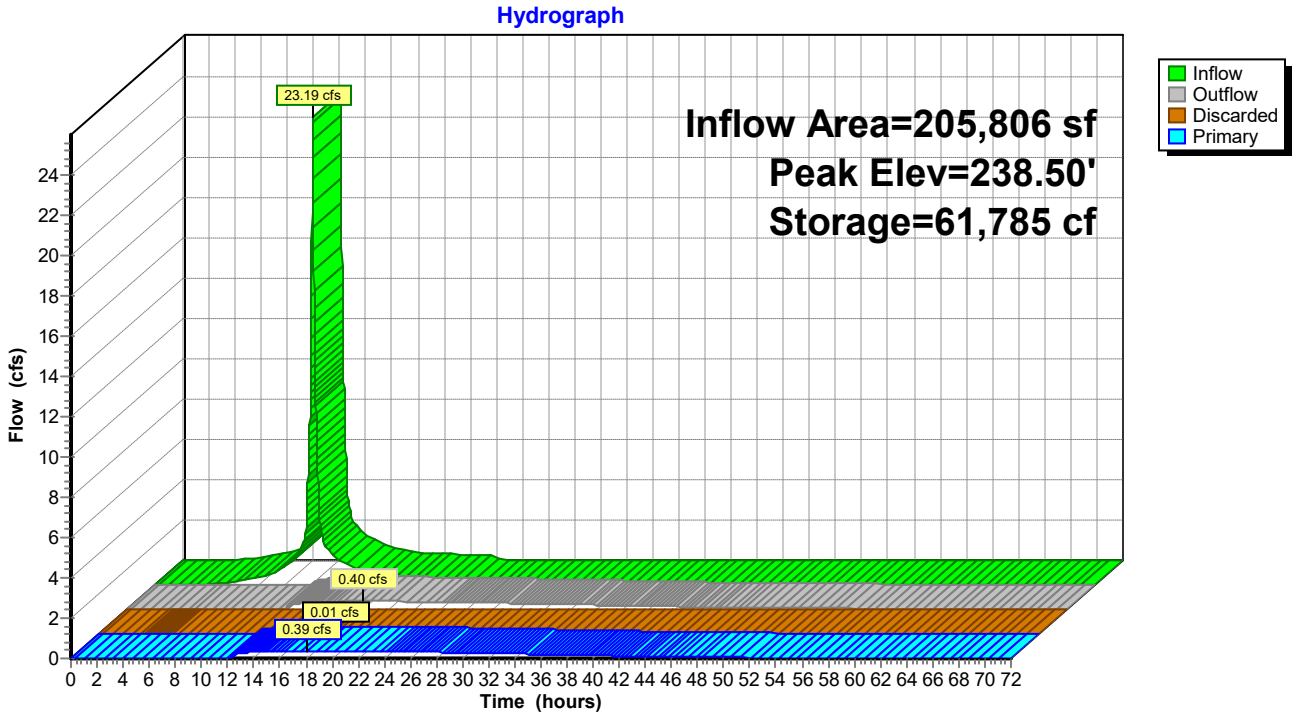
123,551.2 cf Field - 46,994.2 cf Chambers = 76,557.0 cf Stone x 40.0% Voids = 30,622.8 cf Stone Storage

Chamber Storage + Stone Storage = 77,617.0 cf = 1.782 af
Overall Storage Efficiency = 62.8%
Overall System Size = 102.77' x 343.50' x 3.50'

1,008 Chambers
4,576.0 cy Field
2,835.4 cy Stone



Pond UGI-3: UGI-3



Summary for Pond UGI-4: UGI-4

Inflow Area = 81,022 sf, 85.38% Impervious, Inflow Depth = 4.70" for 25yr event
Inflow = 8.49 cfs @ 12.08 hrs, Volume= 31,767 cf
Outflow = 8.08 cfs @ 12.11 hrs, Volume= 31,089 cf, Atten= 5%, Lag= 1.8 min
Discarded = 0.01 cfs @ 12.11 hrs, Volume= 2,566 cf
Primary = 8.07 cfs @ 12.11 hrs, Volume= 28,523 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.14' @ 12.11 hrs Surf.Area= 2,606 sf Storage= 3,858 cf

Plug-Flow detention time= 165.4 min calculated for 31,089 cf (98% of inflow)
Center-of-Mass det. time= 151.9 min (918.9 - 767.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	239.00'	2,332 cf	**49.00'W x 53.18'L x 3.50'H Field A** 9,121 cf Overall - 3,290 cf Embedded = 5,831 cf x 40.0% Voids
#2A	239.50'	3,290 cf	**Cultec R-300HD** x 70 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 70 Chambers in 10 Rows Cap Storage= +2.7 cf x 2 x 10 rows = 53.1 cf
		5,622 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.33'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	240.40'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	239.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'

Discarded OutFlow Max=0.01 cfs @ 12.11 hrs HW=241.14' (Free Discharge)
└**3=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=8.06 cfs @ 12.11 hrs HW=241.14' (Free Discharge)
└**1=Orifice/Grate** (Passes 8.06 cfs of 25.37 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 8.06 cfs @ 2.82 fps)

Pond UGI-4: UGI-4 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 10 rows = 53.1 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

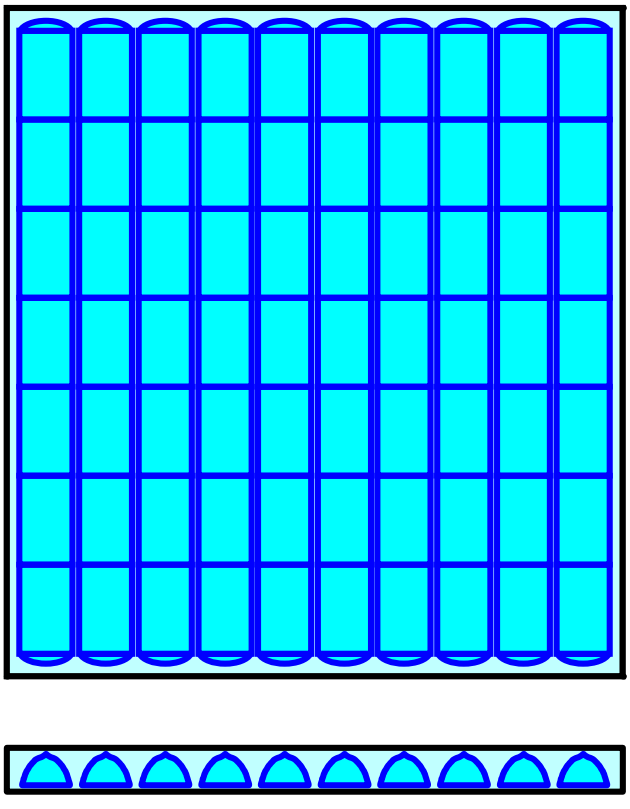
7 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 51.18' Row Length +12.0" End Stone x 2 = 53.18' Base Length
10 Rows x 51.0" Wide + 6.0" Spacing x 9 + 12.0" Side Stone x 2 = 49.00' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

70 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 10 Rows = 3,290.0 cf Chamber Storage

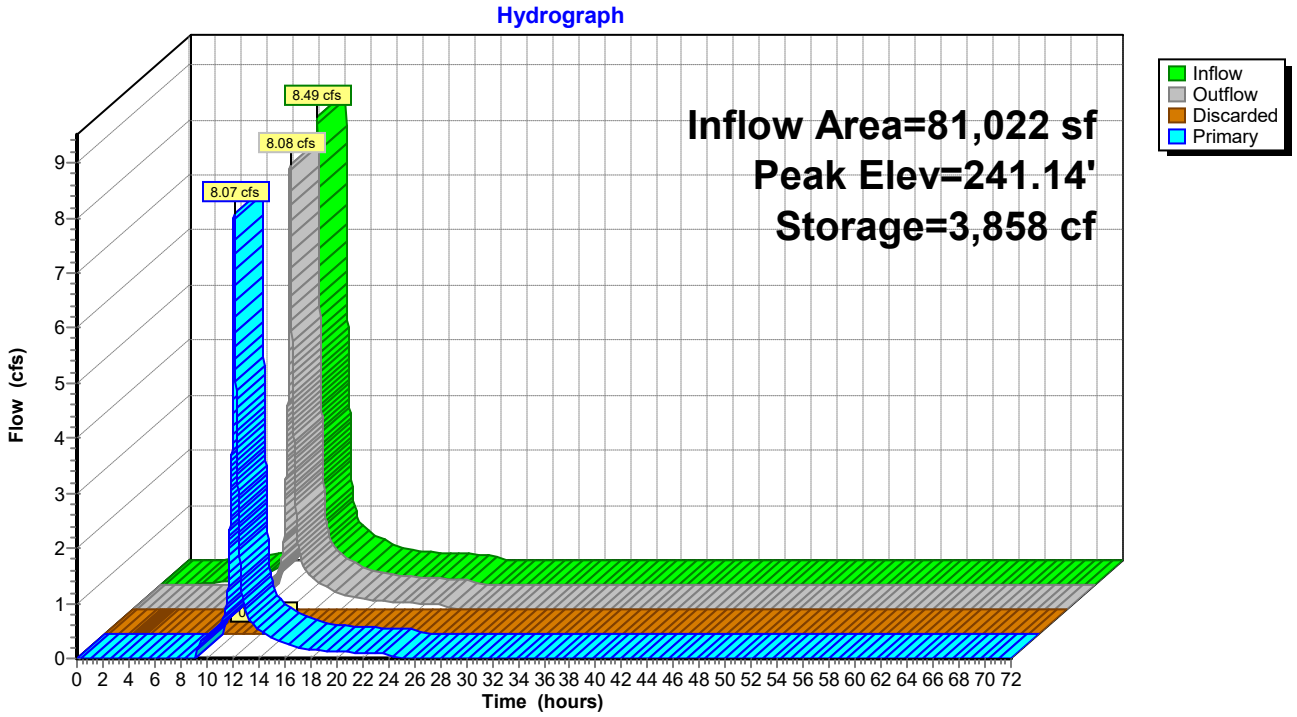
9,120.9 cf Field - 3,290.0 cf Chambers = 5,830.9 cf Stone x 40.0% Voids = 2,332.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,622.4 cf = 0.129 af
Overall Storage Efficiency = 61.6%
Overall System Size = 53.18' x 49.00' x 3.50'

70 Chambers
337.8 cy Field
216.0 cy Stone



Pond UGI-4: UGI-4



Summary for Pond UGI-5: UGI-5

Inflow Area = 108,946 sf, 85.78% Impervious, Inflow Depth = 4.77" for 25yr event
Inflow = 12.78 cfs @ 12.08 hrs, Volume= 43,274 cf
Outflow = 5.58 cfs @ 12.27 hrs, Volume= 40,476 cf, Atten= 56%, Lag= 10.9 min
Discarded = 0.04 cfs @ 12.27 hrs, Volume= 10,906 cf
Primary = 5.53 cfs @ 12.27 hrs, Volume= 29,570 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.38' @ 12.27 hrs Surf.Area= 11,195 sf Storage= 19,219 cf

Plug-Flow detention time= 511.5 min calculated for 40,476 cf (94% of inflow)
Center-of-Mass det. time= 476.1 min (1,242.6 - 766.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	234.90'	9,883 cf	**210.50'W x 53.18'L x 3.50'H Field A** 39,183 cf Overall - 14,476 cf Embedded = 24,707 cf x 40.0% Voids
#2A	235.40'	14,476 cf	**Cultec R-300HD** x 308 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 308 Chambers in 44 Rows Cap Storage= +2.7 cf x 2 x 44 rows = 233.6 cf
		24,359 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.20'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	234.90'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.90'

Discarded OutFlow Max=0.04 cfs @ 12.27 hrs HW=237.38' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=5.53 cfs @ 12.27 hrs HW=237.38' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 5.53 cfs @ 3.70 fps)

Pond UGI-5: UGI-5 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 44 rows = 233.6 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

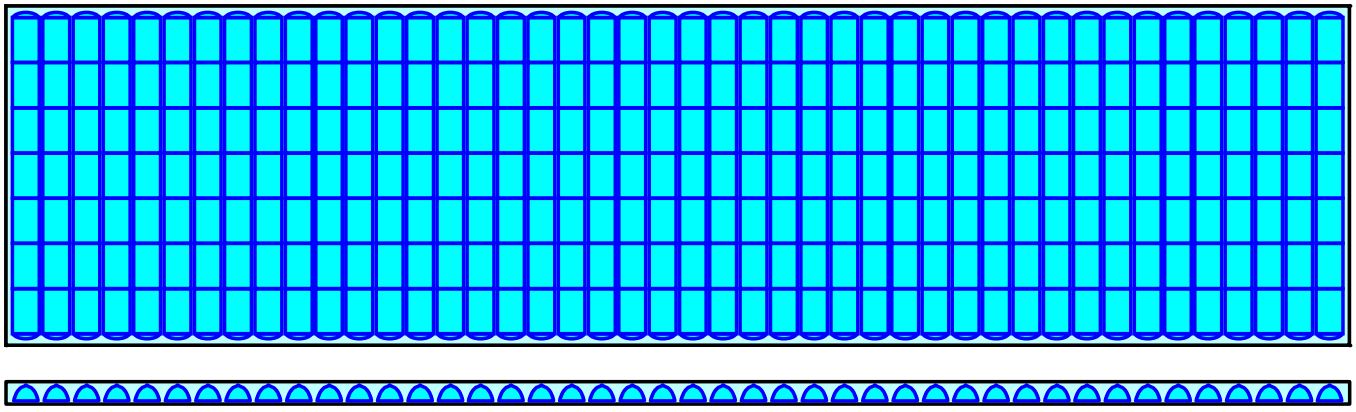
7 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 51.18' Row Length +12.0" End Stone x 2 = 53.18' Base Length
44 Rows x 51.0" Wide + 6.0" Spacing x 43 + 12.0" Side Stone x 2 = 210.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

308 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 44 Rows = 14,476.2 cf Chamber Storage

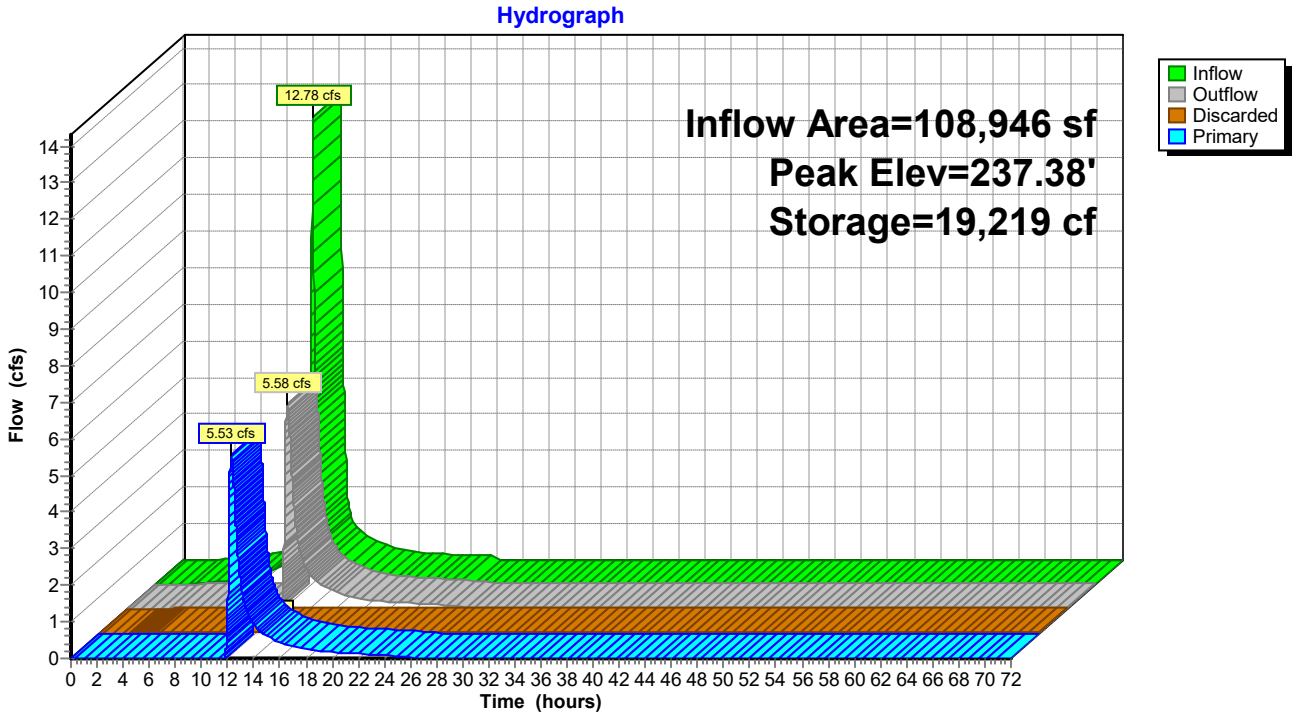
39,182.8 cf Field - 14,476.2 cf Chambers = 24,706.7 cf Stone x 40.0% Voids = 9,882.7 cf Stone Storage

Chamber Storage + Stone Storage = 24,358.8 cf = 0.559 af
Overall Storage Efficiency = 62.2%
Overall System Size = 53.18' x 210.50' x 3.50'

308 Chambers
1,451.2 cy Field
915.1 cy Stone



Pond UGI-5: UGI-5



Summary for Pond UGI-A: UGI-A

Inflow Area = 24,216 sf, 65.28% Impervious, Inflow Depth = 4.32" for 25yr event
Inflow = 2.68 cfs @ 12.08 hrs, Volume= 8,723 cf
Outflow = 0.25 cfs @ 12.93 hrs, Volume= 4,250 cf, Atten= 91%, Lag= 50.5 min
Discarded = 0.00 cfs @ 12.93 hrs, Volume= 438 cf
Primary = 0.25 cfs @ 12.93 hrs, Volume= 3,811 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.73' @ 12.93 hrs Surf.Area= 4,619 sf Storage= 5,520 cf

Plug-Flow detention time= 458.3 min calculated for 4,250 cf (49% of inflow)
Center-of-Mass det. time= 342.2 min (1,126.8 - 784.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.00'	4,082 cf	**39.50'W x 116.93'L x 3.50'H Field A** 16,166 cf Overall - 5,961 cf Embedded = 10,205 cf x 40.0% Voids
#2A	236.50'	5,961 cf	**Cultec R-300HD** x 128 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 128 Chambers in 8 Rows Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf
		10,043 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	**15.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	236.00'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.00 cfs @ 12.93 hrs HW=237.73' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.25 cfs @ 12.93 hrs HW=237.73' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.25 cfs @ 1.63 fps)

Pond UGI-A: UGI-A - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

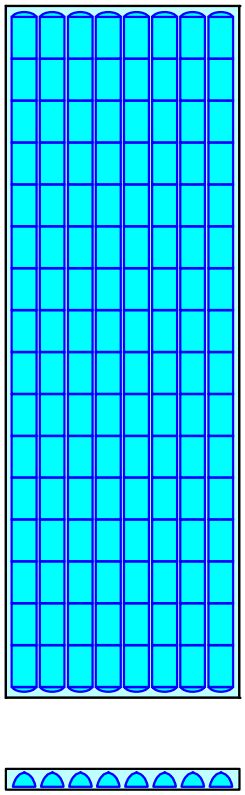
16 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 114.93' Row Length +12.0" End Stone x 2 = 116.93' Base Length
8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

128 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 8 Rows = 5,961.4 cf Chamber Storage

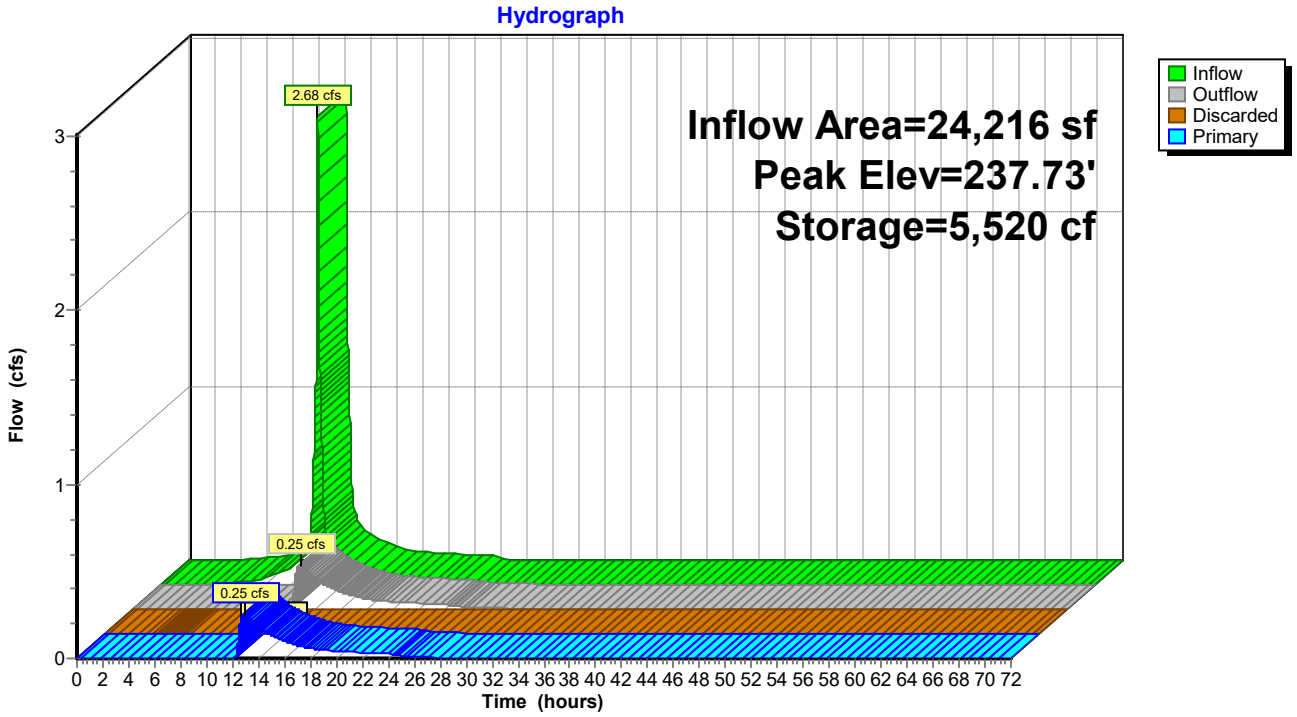
16,166.0 cf Field - 5,961.4 cf Chambers = 10,204.6 cf Stone x 40.0% Voids = 4,081.8 cf Stone Storage

Chamber Storage + Stone Storage = 10,043.3 cf = 0.231 af
Overall Storage Efficiency = 62.1%
Overall System Size = 116.93' x 39.50' x 3.50'

128 Chambers
598.7 cy Field
377.9 cy Stone



Pond UGI-A: UGI-A



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P-1a: Maintenance Bld Site Runoff Area=24,216 sf 65.28% Impervious Runoff Depth=5.13"
Tc=6.0 min CN=91 Runoff=3.16 cfs 10,359 cf

Subcatchment P-1b: Road Runoff Area=48,277 sf 45.39% Impervious Runoff Depth=4.80"
Tc=6.0 min CN=88 Runoff=6.01 cfs 19,308 cf

Subcatchment P-1c: Basin Area Runoff Area=33,956 sf 0.00% Impervious Runoff Depth=3.64"
Tc=6.0 min CN=77 Runoff=3.32 cfs 10,291 cf

Subcatchment P-2a: Southeast Side MS Runoff Area=81,022 sf 85.38% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=95 Runoff=11.05 cfs 37,745 cf

Subcatchment P-2b: Basin Area Runoff Area=11,282 sf 0.00% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=78 Runoff=1.13 cfs 3,515 cf

Subcatchment P-3: East Grass/Woods Runoff Area=35,588 sf 0.00% Impervious Runoff Depth=3.44"
Tc=6.0 min CN=75 Runoff=3.29 cfs 10,190 cf

Subcatchment P-4a: TO UGI-2 Runoff Area=87,726 sf 42.98% Impervious Runoff Depth=4.69"
Tc=6.0 min CN=87 Runoff=10.74 cfs 34,284 cf

Subcatchment P-4b: ROOF + PAVED Runoff Area=205,806 sf 68.06% Impervious Runoff Depth=5.25"
Tc=6.0 min CN=92 Runoff=27.19 cfs 89,980 cf

Subcatchment P-4c: Synthetic Field Runoff Area=179,201 sf 100.00% Impervious Runoff Depth=5.94"
Tc=6.0 min CN=98 Runoff=24.92 cfs 88,729 cf

Subcatchment P-4d: TO UGI-5 Runoff Area=108,946 sf 85.78% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=95 Runoff=14.86 cfs 50,754 cf

Subcatchment P-4e: Grass Area Runoff Area=22,330 sf 24.29% Impervious Runoff Depth=4.37"
Tc=6.0 min CN=84 Runoff=2.58 cfs 8,123 cf

Subcatchment P-4f: East Grass/Woods Runoff Area=6,872 sf 0.00% Impervious Runoff Depth=3.54"
Tc=6.0 min CN=76 Runoff=0.65 cfs 2,025 cf

Subcatchment P-5: East Grass/Woods Runoff Area=25,439 sf 0.00% Impervious Runoff Depth=3.34"
Tc=6.0 min CN=74 Runoff=2.29 cfs 7,074 cf

Subcatchment P-6: East Grass/Woods Runoff Area=27,226 sf 0.00% Impervious Runoff Depth=3.44"
Tc=6.0 min CN=75 Runoff=2.52 cfs 7,796 cf

Subcatchment P-7: Southeast Grass/Woods Runoff Area=54,764 sf 0.00% Impervious Runoff Depth=3.34"
Tc=6.0 min CN=74 Runoff=4.92 cfs 15,228 cf

Subcatchment P-8: Stoddard Dr Runoff Area=4,592 sf 49.87% Impervious Runoff Depth=4.80"
Tc=6.0 min CN=88 Runoff=0.57 cfs 1,837 cf

Subcatchment P-9: South Woods Runoff Area=99,474 sf 0.00% Impervious Runoff Depth=3.34"
Flow Length=498' Tc=25.5 min CN=74 Runoff=5.42 cfs 27,661 cf

Pond 3P: (new Pond) Peak Elev=240.91' Inflow=11.05 cfs 37,745 cf
Primary=9.54 cfs 37,046 cf Secondary=1.52 cfs 700 cf Outflow=11.05 cfs 37,745 cf

Pond DP-1p: Flow to Exist Basin #1 Inflow=9.33 cfs 35,042 cf
Primary=9.33 cfs 35,042 cf

Pond DP-2p: Flow to Exist Basin#2 Inflow=11.60 cfs 38,002 cf
Primary=11.60 cfs 38,002 cf

Pond DP-3p: Residential East#1 Inflow=3.29 cfs 10,190 cf
Primary=3.29 cfs 10,190 cf

Pond DP-4p: Exist Swale #1 East Inflow=18.57 cfs 149,613 cf
Primary=18.57 cfs 149,613 cf

Pond DP-5p: Residential East#2 Inflow=2.29 cfs 7,074 cf
Primary=2.29 cfs 7,074 cf

Pond DP-6p: Residential East#3 Inflow=2.52 cfs 7,796 cf
Primary=2.52 cfs 7,796 cf

Pond DP-7p: Residential East#4 Inflow=4.92 cfs 15,228 cf
Primary=4.92 cfs 15,228 cf

Pond DP-8p: Stoddard Drive Inflow=0.57 cfs 1,837 cf
Primary=0.57 cfs 1,837 cf

Pond DP-9p: Woods South Inflow=5.42 cfs 27,661 cf
Primary=5.42 cfs 27,661 cf

Pond STONE: STONE Peak Elev=240.65' Storage=42,625 cf Inflow=24.92 cfs 88,729 cf
Discarded=0.56 cfs 64,760 cf Primary=2.10 cfs 23,946 cf Outflow=2.66 cfs 88,706 cf

Pond UGI-2: UGI-2 Peak Elev=242.83' Storage=6,924 cf Inflow=10.74 cfs 34,284 cf
Discarded=0.01 cfs 3,141 cf Primary=8.85 cfs 29,906 cf Outflow=8.86 cfs 33,047 cf

Pond UGI-3: UGI-3 Peak Elev=238.67' Storage=65,186 cf Inflow=27.19 cfs 89,980 cf
Discarded=0.01 cfs 3,407 cf Primary=1.32 cfs 48,667 cf Outflow=1.33 cfs 52,074 cf

Pond UGI-4: UGI-4 Peak Elev=241.21' Storage=3,971 cf Inflow=9.54 cfs 37,046 cf
Discarded=0.01 cfs 2,579 cf Primary=9.11 cfs 33,788 cf Outflow=9.12 cfs 36,367 cf

Pond UGI-5: UGI-5 Peak Elev=237.68' Storage=21,037 cf Inflow=14.86 cfs 50,754 cf
Discarded=0.04 cfs 10,977 cf Primary=7.28 cfs 36,946 cf Outflow=7.33 cfs 47,923 cf

Pond UGI-A: UGI-A Peak Elev=237.87' Storage=6,010 cf Inflow=3.16 cfs 10,359 cf
Discarded=0.00 cfs 442 cf Primary=0.64 cfs 5,443 cf Outflow=0.64 cfs 5,885 cf

Total Runoff Area = 1,056,717 sf Runoff Volume = 424,898 cf Average Runoff Depth = 4.83"
46.53% Pervious = 491,673 sf 53.47% Impervious = 565,044 sf

Summary for Subcatchment P-1a: Maintenance Bld Site

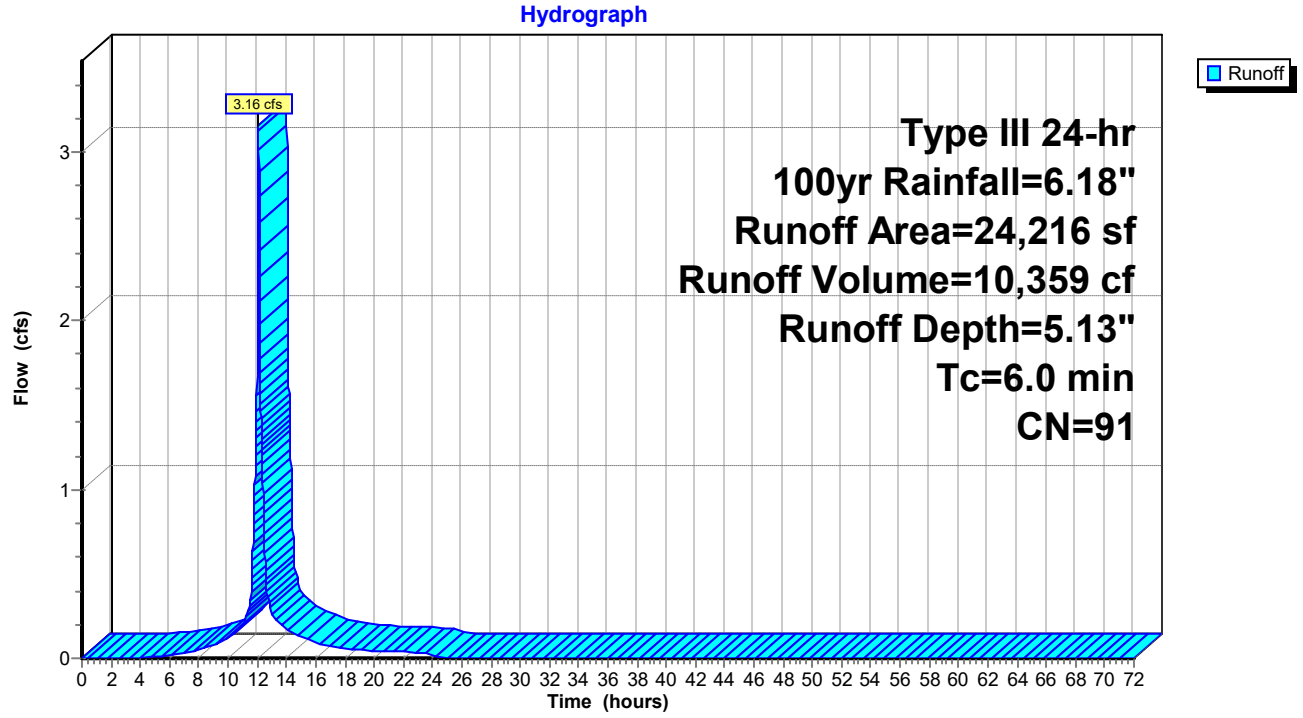
Runoff = 3.16 cfs @ 12.08 hrs, Volume= 10,359 cf, Depth= 5.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
10,792	98	Paved parking, HSG C
5,015	98	Roofs, HSG C
8,409	79	50-75% Grass cover, Fair, HSG C
24,216	91	Weighted Average
8,409		34.72% Pervious Area
15,807		65.28% Impervious Area

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

Subcatchment P-1a: Maintenance Bld Site



Summary for Subcatchment P-1b: Road

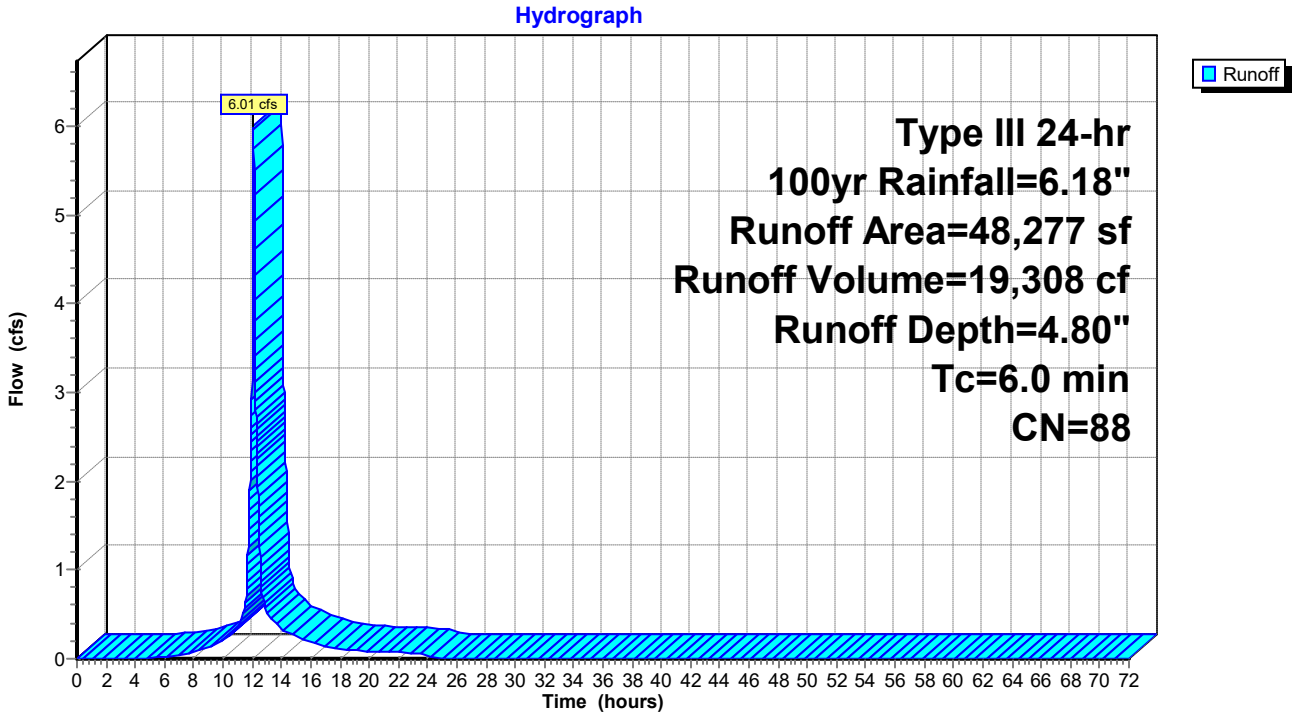
Runoff = 6.01 cfs @ 12.09 hrs, Volume= 19,308 cf, Depth= 4.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
21,913	98	Paved parking, HSG C
26,364	79	50-75% Grass cover, Fair, HSG C
48,277	88	Weighted Average
26,364		54.61% Pervious Area
21,913		45.39% Impervious Area

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

Subcatchment P-1b: Road



Summary for Subcatchment P-1c: Basin Area

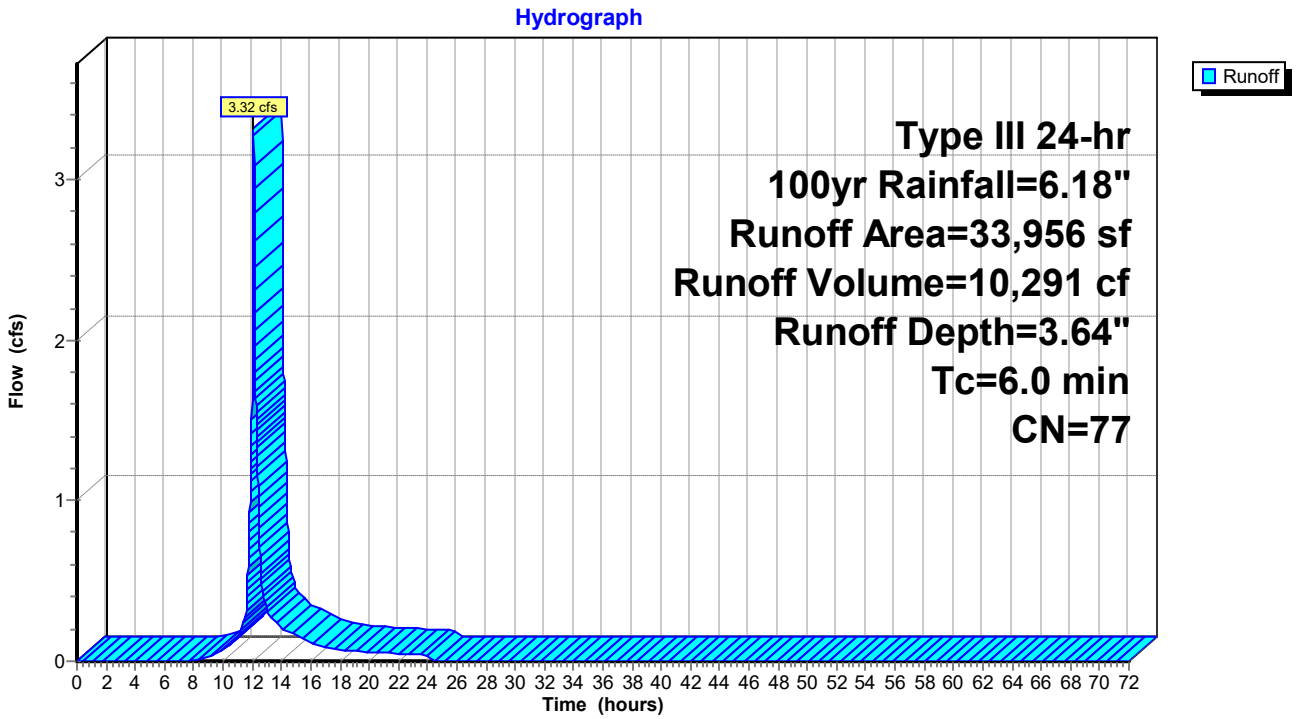
Runoff = 3.32 cfs @ 12.09 hrs, Volume= 10,291 cf, Depth= 3.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
10,345	73	Woods, Fair, HSG C
23,611	79	50-75% Grass cover, Fair, HSG C
33,956	77	Weighted Average
33,956		100.00% Pervious Area

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

Subcatchment P-1c: Basin Area



Summary for Subcatchment P-2a: Southeast Side MS

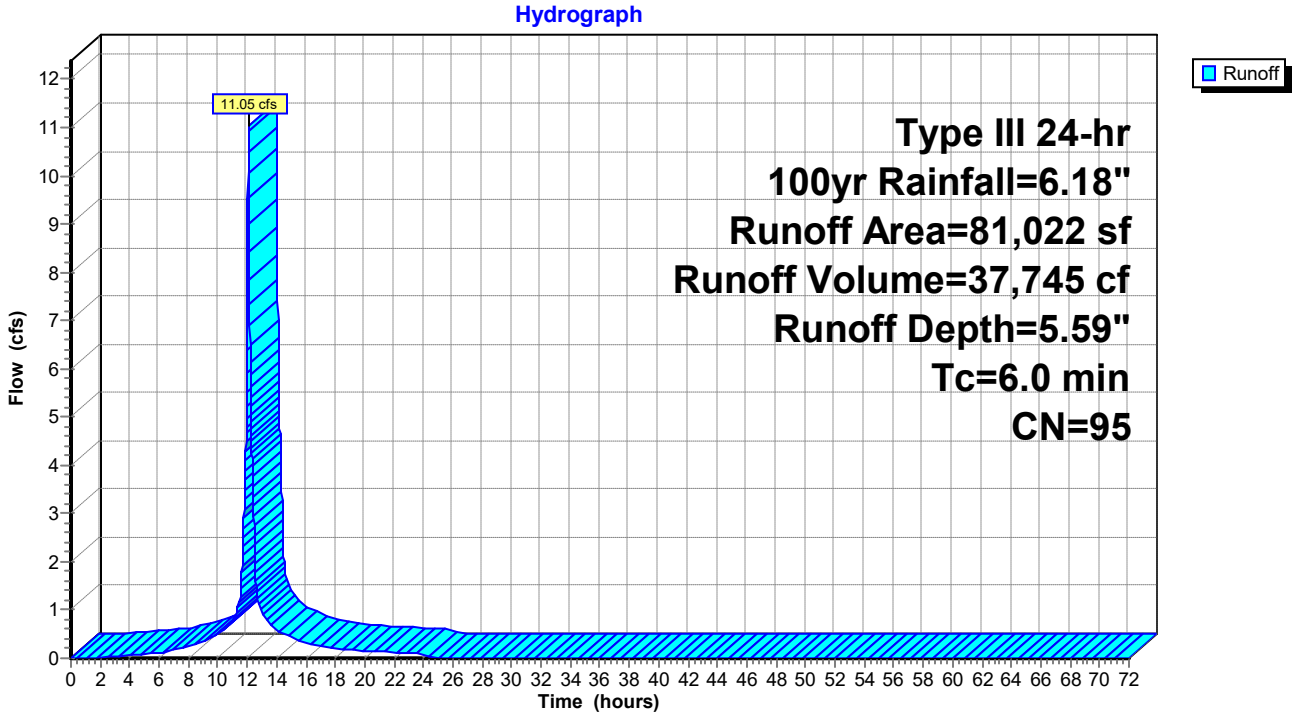
Runoff = 11.05 cfs @ 12.08 hrs, Volume= 37,745 cf, Depth= 5.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
	28,114	98	Paved parking, HSG C
	11,845	79	50-75% Grass cover, Fair, HSG C
*	41,063	98	Exist Roof , HSG C
	81,022	95	Weighted Average
	11,845		14.62% Pervious Area
	69,177		85.38% Impervious Area

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

Subcatchment P-2a: Southeast Side MS



Summary for Subcatchment P-2b: Basin Area

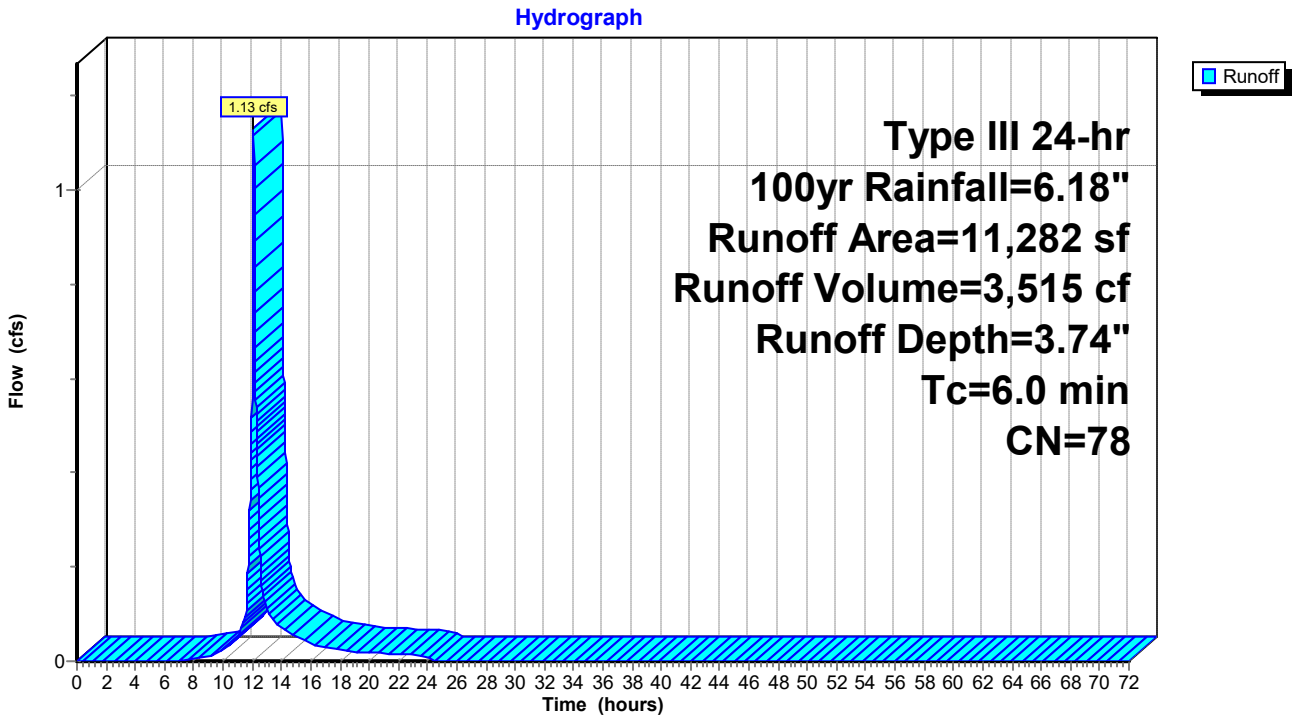
Runoff = 1.13 cfs @ 12.09 hrs, Volume= 3,515 cf, Depth= 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	2,391	73	Woods, Fair, HSG C
	8,891	79	50-75% Grass cover, Fair, HSG C
	11,282	78	Weighted Average
	11,282		100.00% Pervious Area

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

Subcatchment P-2b: Basin Area



Summary for Subcatchment P-3: East Grass/Woods

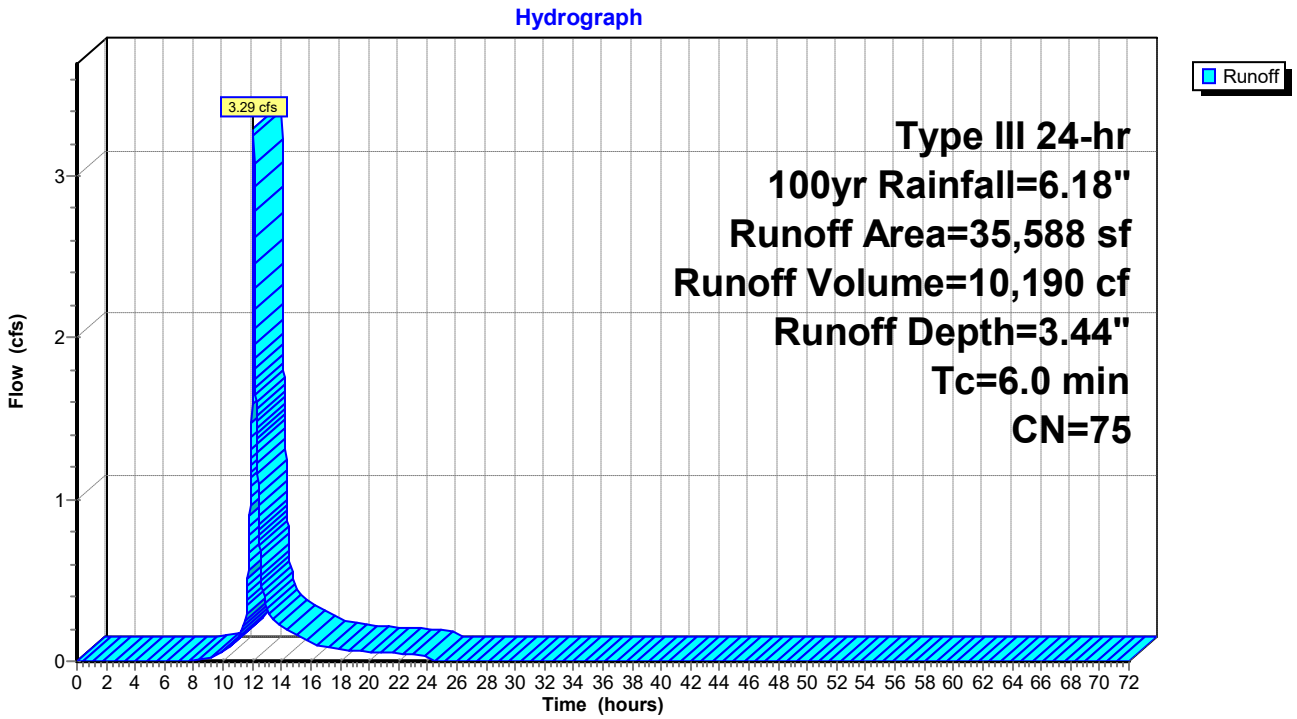
Runoff = 3.29 cfs @ 12.09 hrs, Volume= 10,190 cf, Depth= 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
22,537	73	Woods, Fair, HSG C
13,051	79	50-75% Grass cover, Fair, HSG C
35,588	75	Weighted Average
35,588		100.00% Pervious Area

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

Subcatchment P-3: East Grass/Woods



Summary for Subcatchment P-4a: TO UGI-2

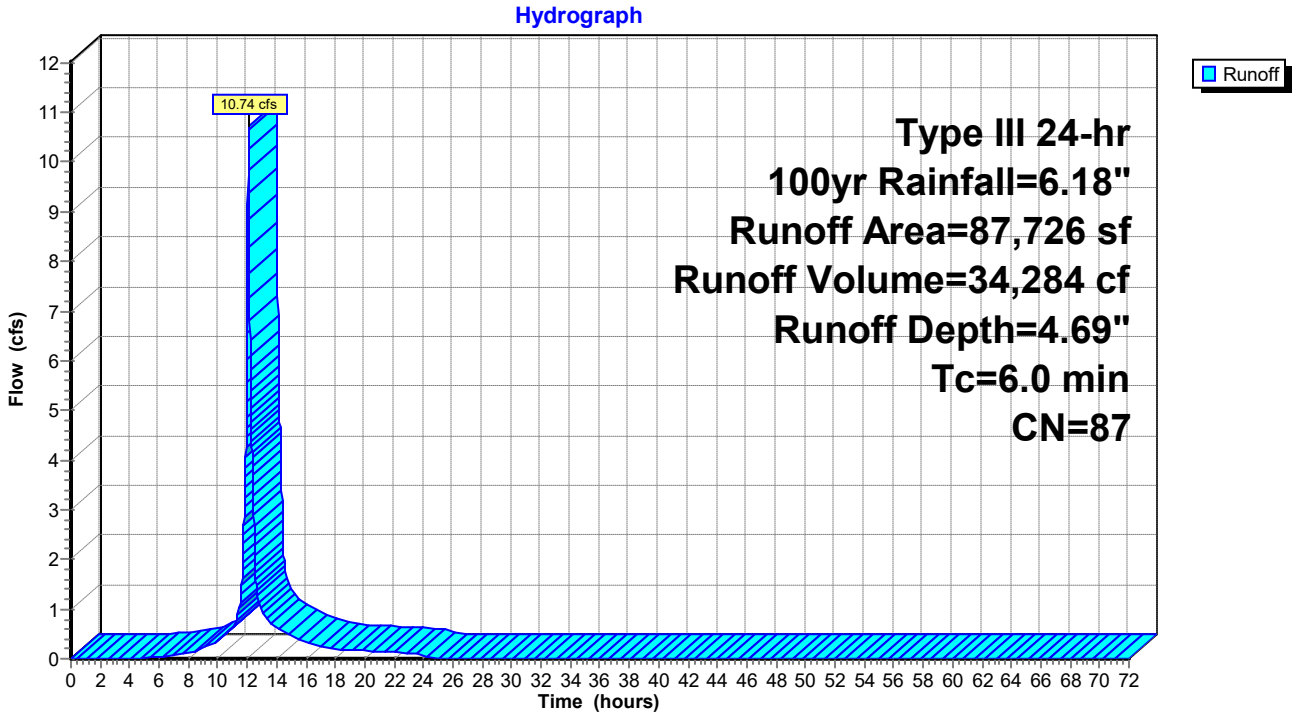
Runoff = 10.74 cfs @ 12.09 hrs, Volume= 34,284 cf, Depth= 4.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	37,704	98	IMPERVIOUS
	50,022	79	50-75% Grass cover, Fair, HSG C
	87,726	87	Weighted Average
	50,022		57.02% Pervious Area
	37,704		42.98% Impervious Area

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

Subcatchment P-4a: TO UGI-2



Summary for Subcatchment P-4b: ROOF + PAVED

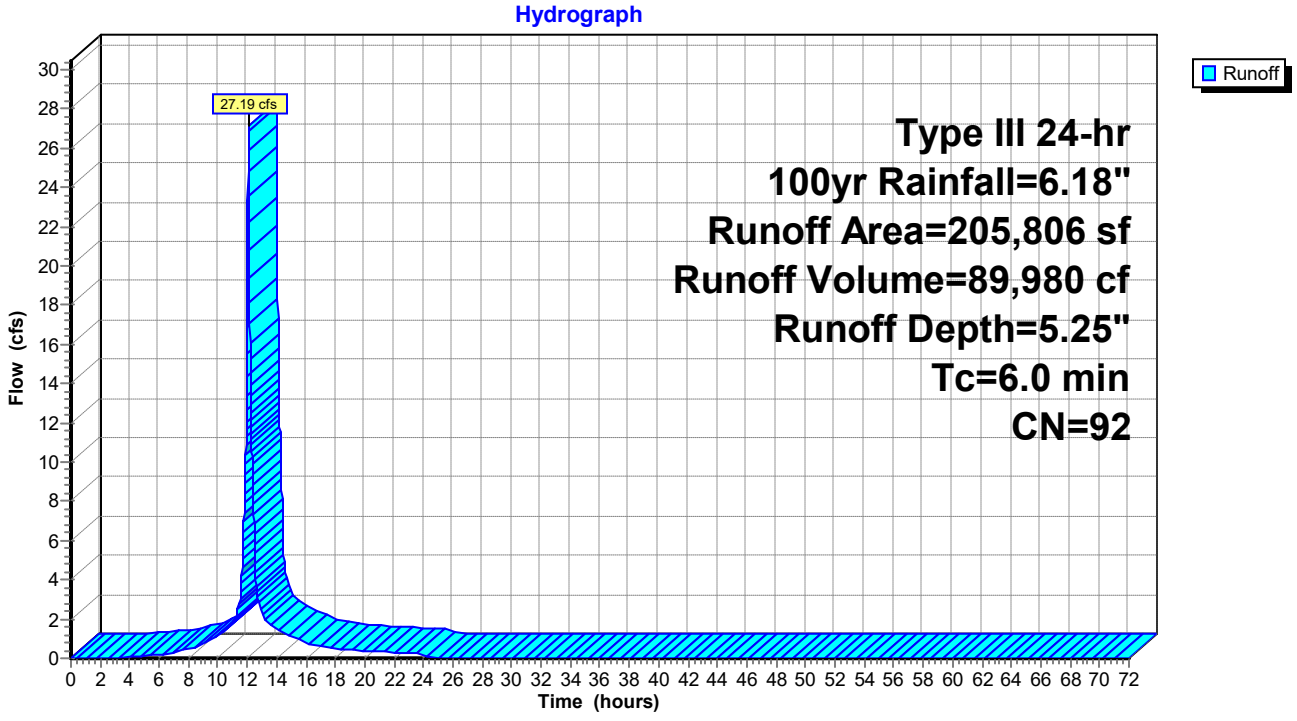
Runoff = 27.19 cfs @ 12.08 hrs, Volume= 89,980 cf, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
	120,540	98	Paved parking, HSG C
	65,734	79	50-75% Grass cover, Fair, HSG C
*	19,532	98	Roof
	205,806	92	Weighted Average
	65,734		31.94% Pervious Area
	140,072		68.06% Impervious Area

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

Subcatchment P-4b: ROOF + PAVED



Summary for Subcatchment P-4c: Synthetic Field

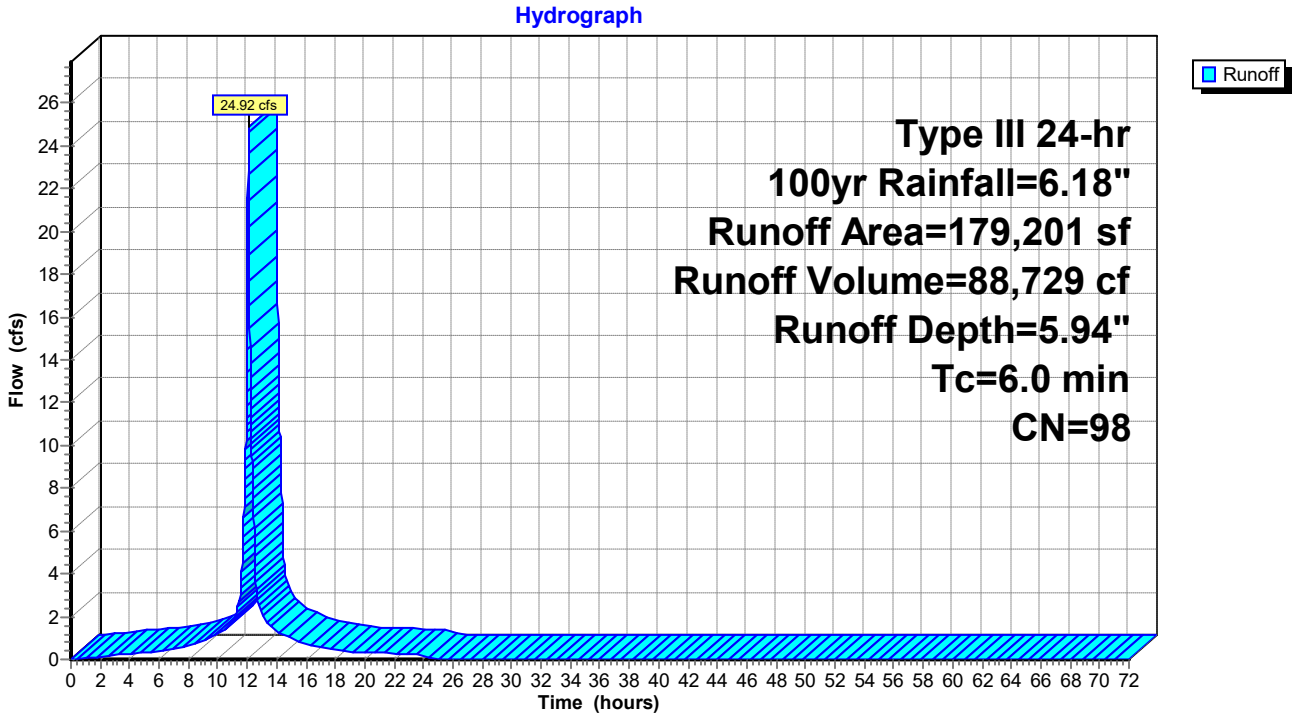
Runoff = 24.92 cfs @ 12.08 hrs, Volume= 88,729 cf, Depth= 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	179,201	98	Synthetic Field, HSG C
	179,201		100.00% Impervious Area

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

Subcatchment P-4c: Synthetic Field



Summary for Subcatchment P-4d: TO UGI-5

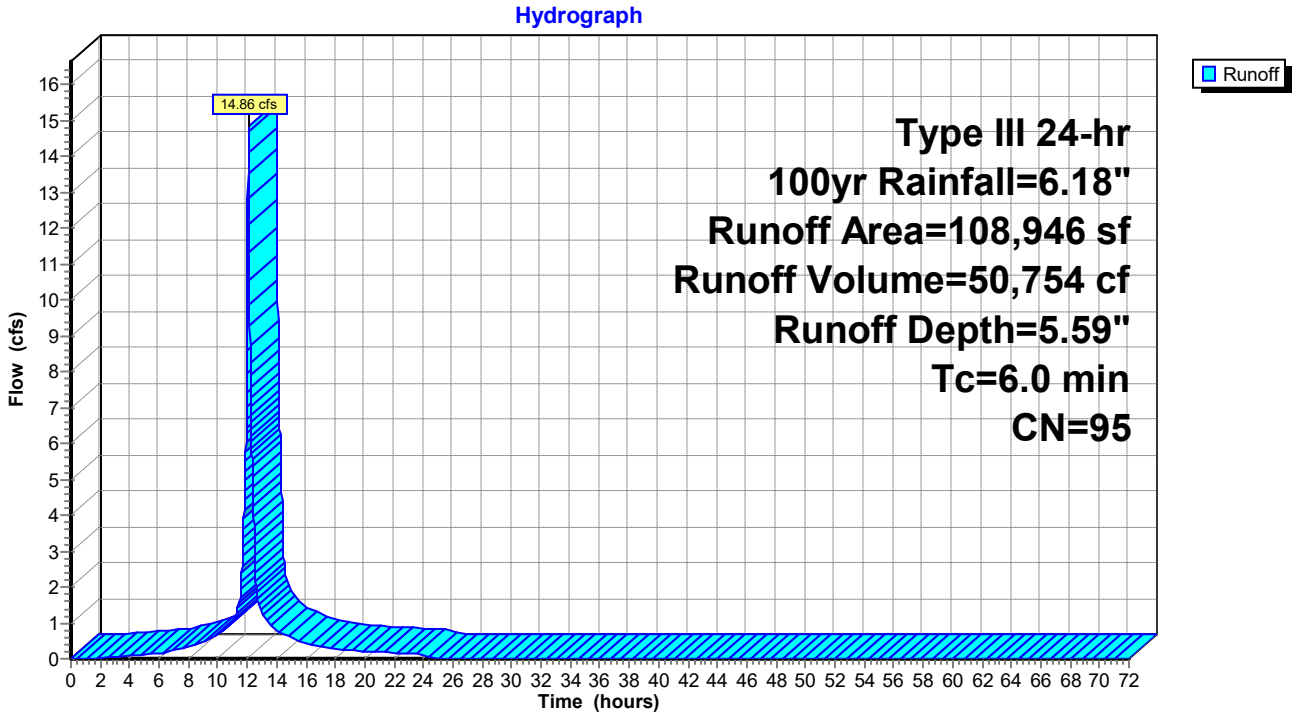
Runoff = 14.86 cfs @ 12.08 hrs, Volume= 50,754 cf, Depth= 5.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
93,457	98	Paved parking, HSG C
15,489	79	50-75% Grass cover, Fair, HSG C
108,946	95	Weighted Average
15,489		14.22% Pervious Area
93,457		85.78% Impervious Area

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

Subcatchment P-4d: TO UGI-5



Summary for Subcatchment P-4e: Grass Area

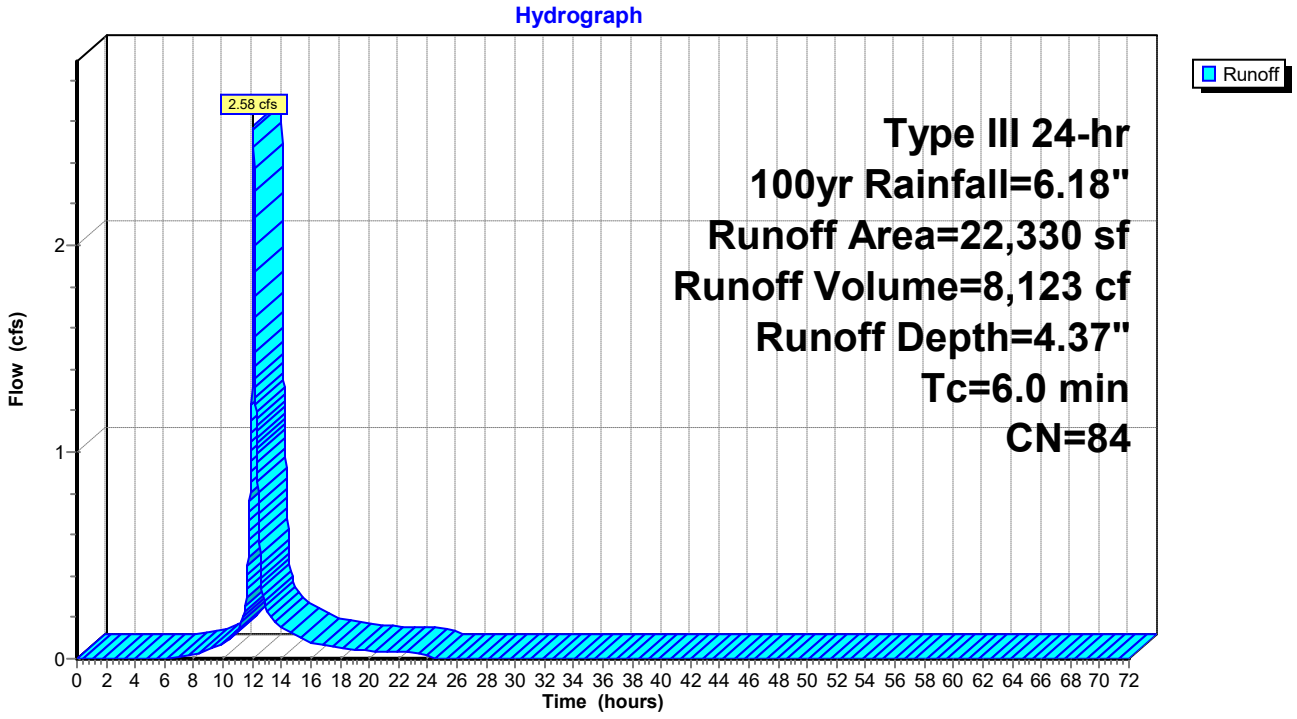
Runoff = 2.58 cfs @ 12.09 hrs, Volume= 8,123 cf, Depth= 4.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	5,423	98	IMPERVIOUS
	16,907	79	50-75% Grass cover, Fair, HSG C
	22,330	84	Weighted Average
	16,907		75.71% Pervious Area
	5,423		24.29% Impervious Area

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

Subcatchment P-4e: Grass Area



Summary for Subcatchment P-4f: East Grass/Woods

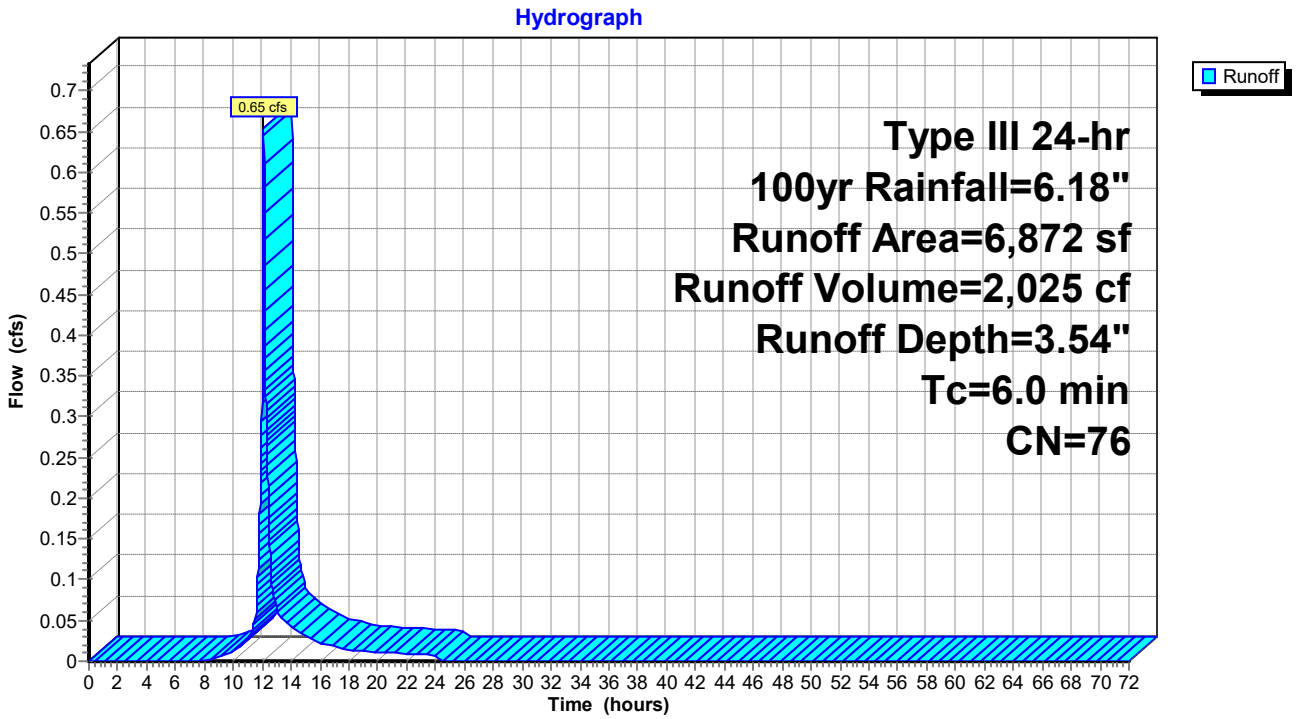
Runoff = 0.65 cfs @ 12.09 hrs, Volume= 2,025 cf, Depth= 3.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
3,120	73	Woods, Fair, HSG C
3,752	79	50-75% Grass cover, Fair, HSG C
6,872	76	Weighted Average
6,872		100.00% Pervious Area

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

Subcatchment P-4f: East Grass/Woods



Summary for Subcatchment P-5: East Grass/Woods

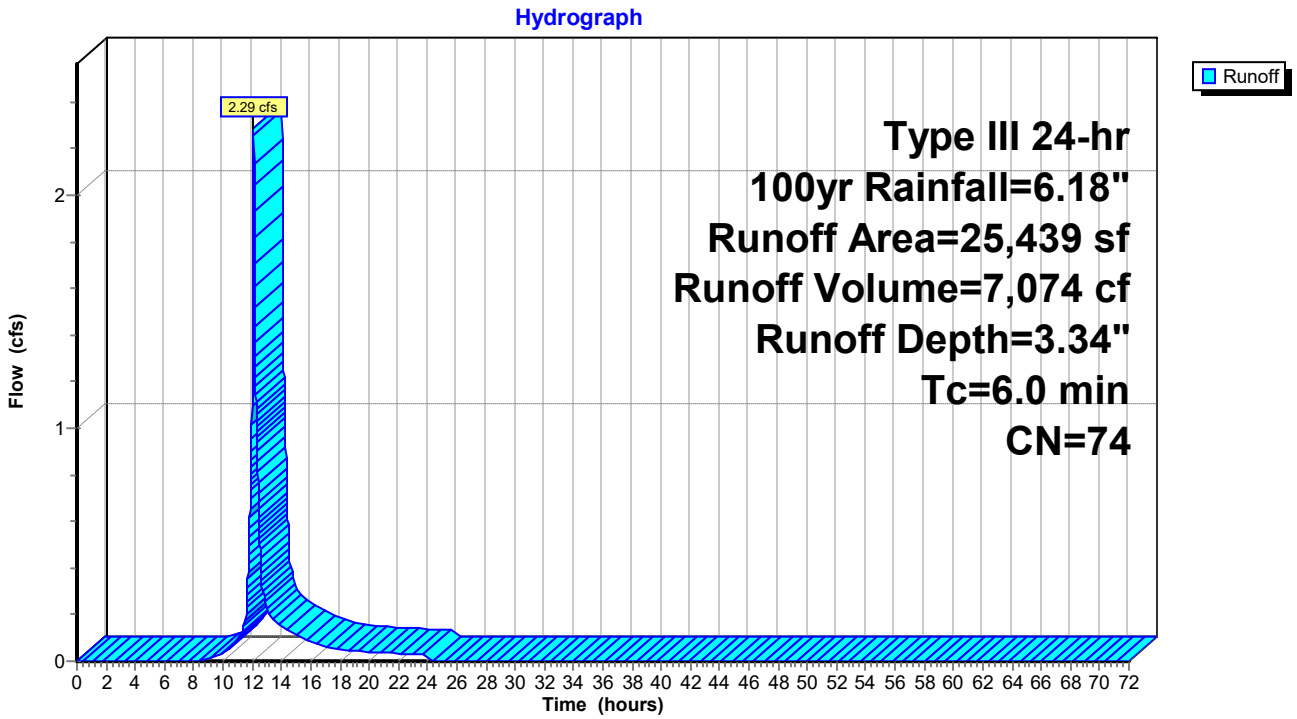
Runoff = 2.29 cfs @ 12.09 hrs, Volume= 7,074 cf, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
3,717	79	50-75% Grass cover, Fair, HSG C
21,722	73	Woods, Fair, HSG C
25,439	74	Weighted Average
25,439		100.00% Pervious Area

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

Subcatchment P-5: East Grass/Woods



Summary for Subcatchment P-6: East Grass/Woods

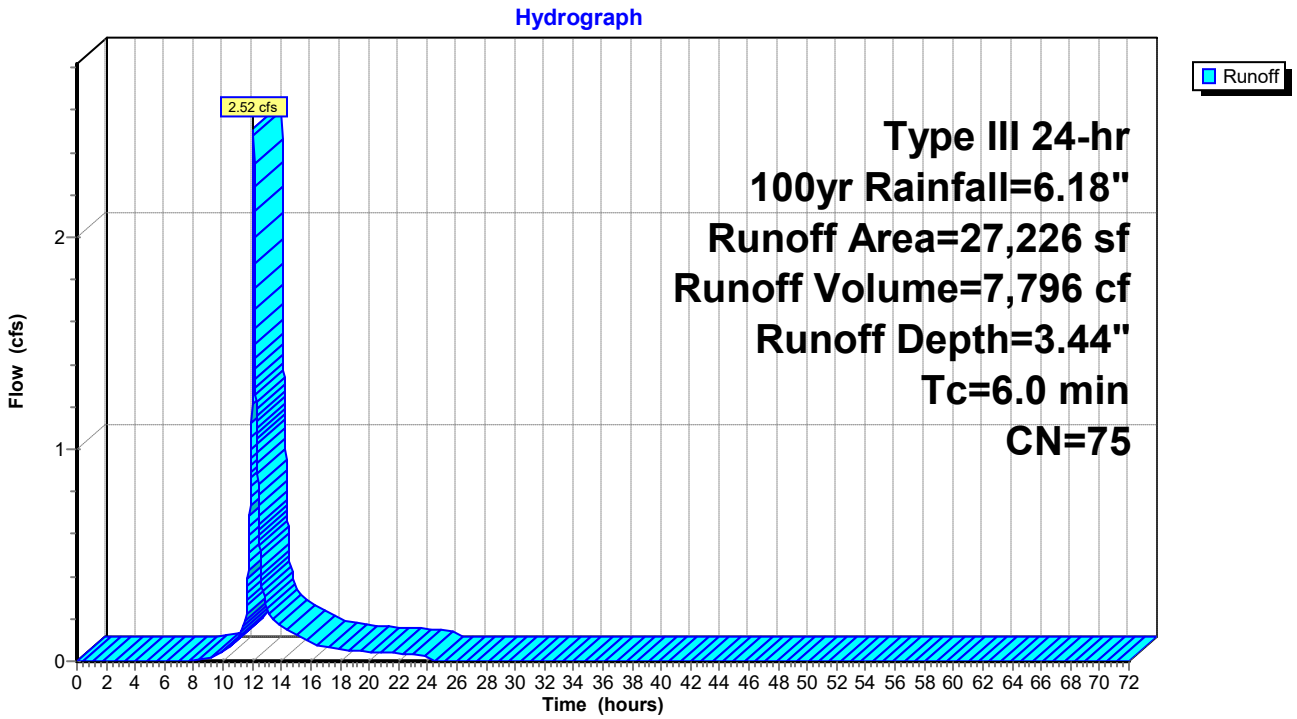
Runoff = 2.52 cfs @ 12.09 hrs, Volume= 7,796 cf, Depth= 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
16,017	73	Woods, Fair, HSG C
11,209	79	50-75% Grass cover, Fair, HSG C
27,226	75	Weighted Average
27,226		100.00% Pervious Area

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

Subcatchment P-6: East Grass/Woods



Summary for Subcatchment P-7: Southeast Grass/Woods

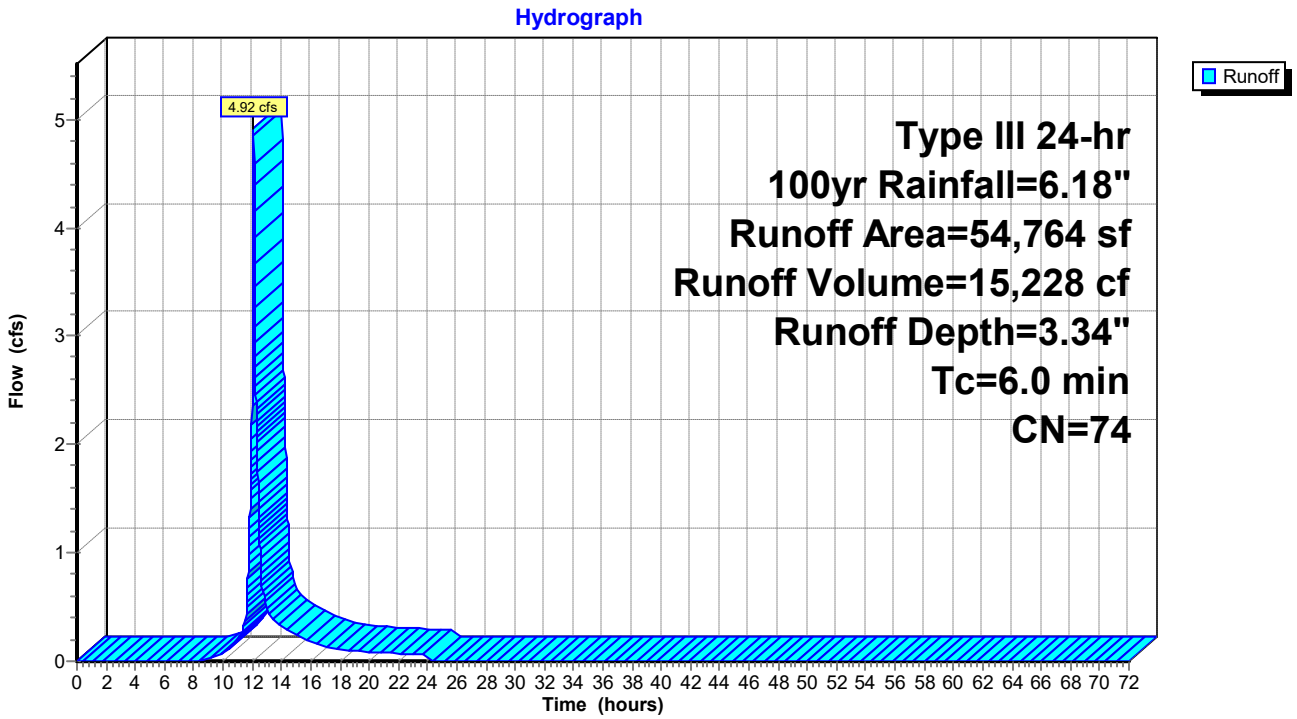
Runoff = 4.92 cfs @ 12.09 hrs, Volume= 15,228 cf, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
41,823	73	Woods, Fair, HSG C
12,941	79	50-75% Grass cover, Fair, HSG C
54,764	74	Weighted Average
54,764		100.00% Pervious Area

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

Subcatchment P-7: Southeast Grass/Woods



Summary for Subcatchment P-8: Stoddard Dr

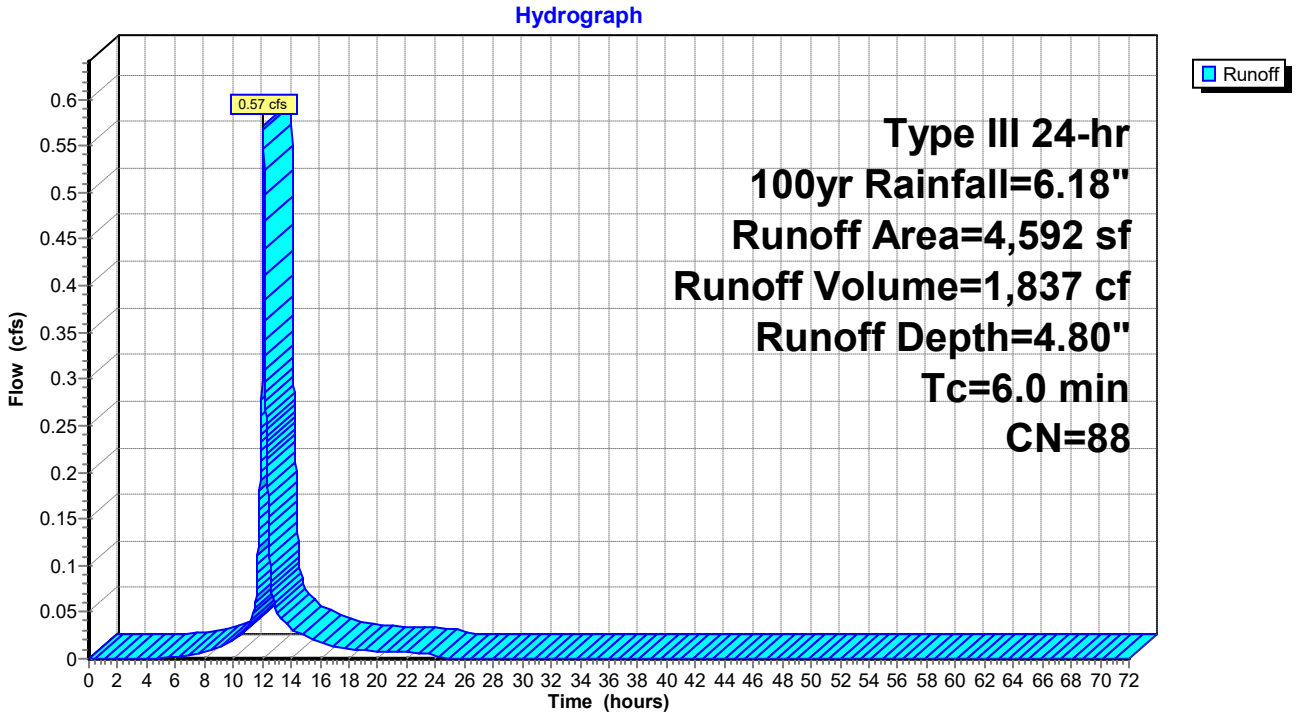
Runoff = 0.57 cfs @ 12.09 hrs, Volume= 1,837 cf, Depth= 4.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	2,302	79	50-75% Grass cover, Fair, HSG C
	2,290	98	Paved parking, HSG C
	4,592	88	Weighted Average
	2,302		50.13% Pervious Area
	2,290		49.87% Impervious Area

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

Subcatchment P-8: Stoddard Dr



Summary for Subcatchment P-9: South Woods

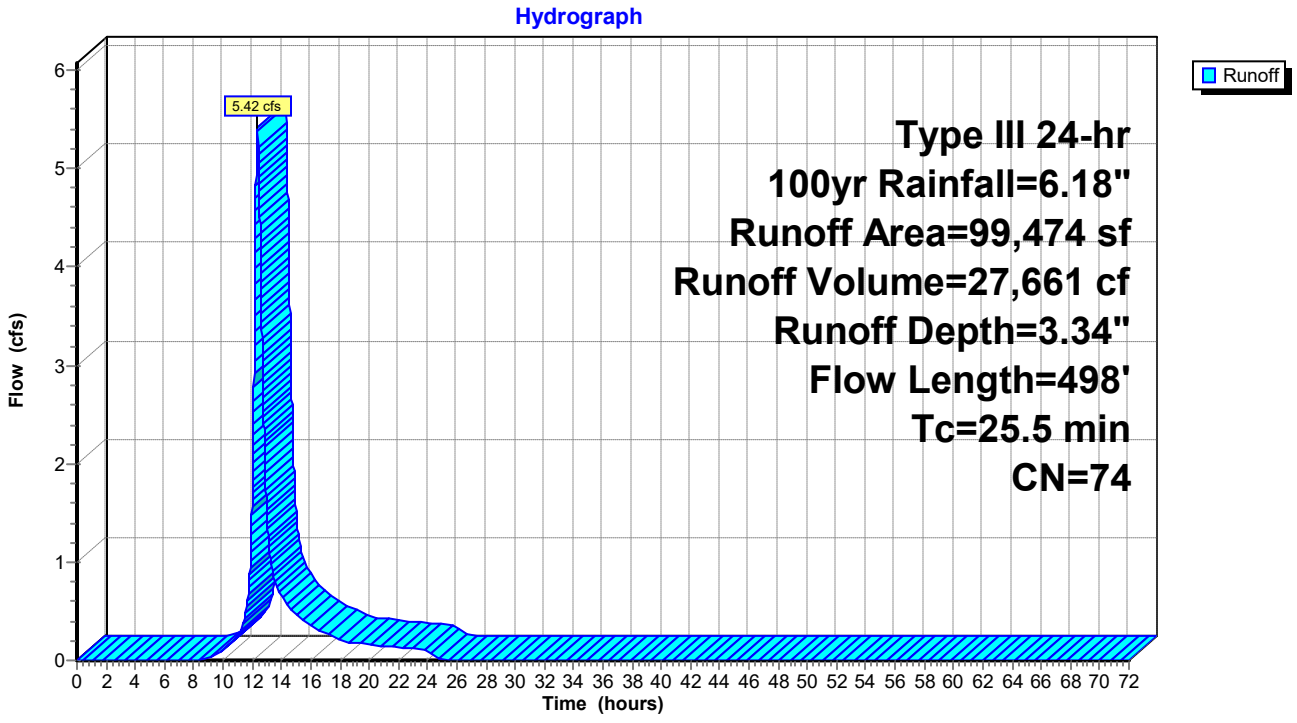
Runoff = 5.42 cfs @ 12.35 hrs, Volume= 27,661 cf, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
10,443	79	50-75% Grass cover, Fair, HSG C
89,031	73	Woods, Fair, HSG C
99,474	74	Weighted Average
99,474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	50	0.0270	0.04		**Sheet Flow, SF** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.9	132	0.0250	2.55		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
4.6	316	0.0050	1.14		**Shallow Concentrated Flow, SCF** Unpaved Kv= 16.1 fps
25.5	498	Total			

Subcatchment P-9: South Woods



Summary for Pond 3P: (new Pond)

Inflow Area = 81,022 sf, 85.38% Impervious, Inflow Depth = 5.59" for 100yr event
Inflow = 11.05 cfs @ 12.08 hrs, Volume= 37,745 cf
Outflow = 11.05 cfs @ 12.08 hrs, Volume= 37,745 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.54 cfs @ 12.08 hrs, Volume= 37,046 cf
Secondary = 1.52 cfs @ 12.08 hrs, Volume= 700 cf

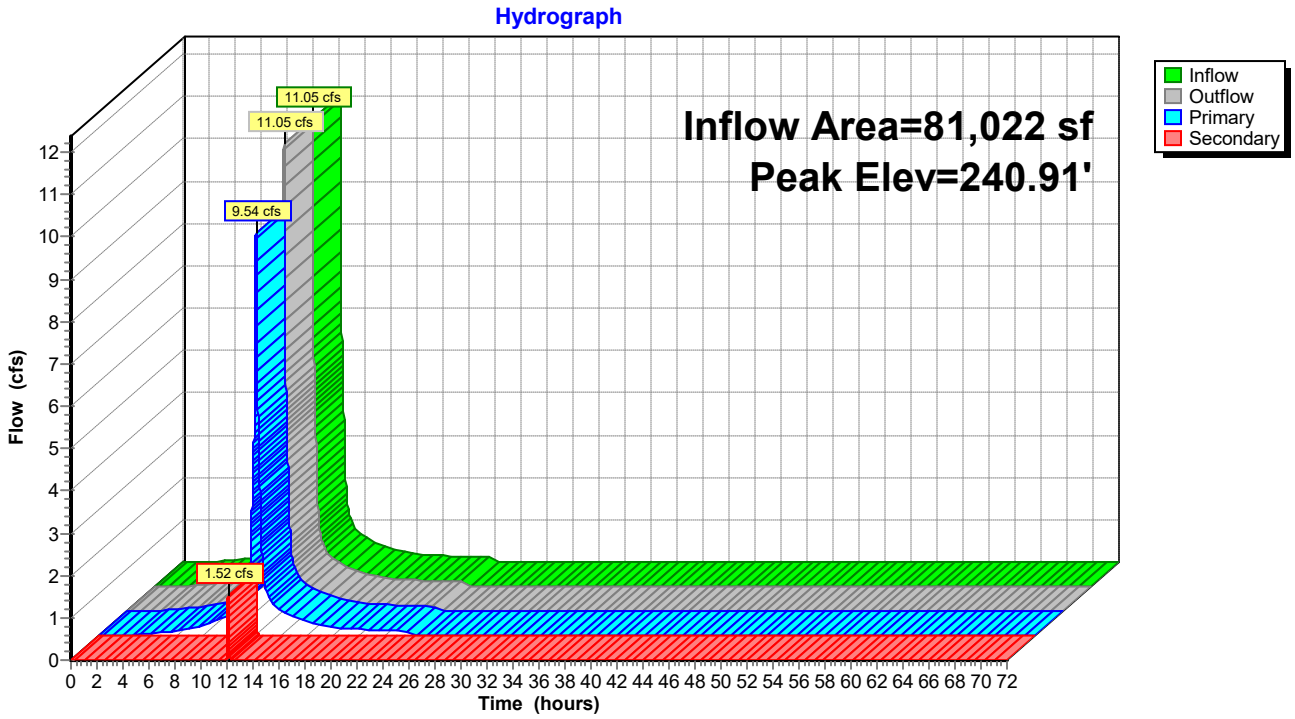
Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 240.91' @ 12.08 hrs
Flood Elev= 244.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	240.40'	**24.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=9.52 cfs @ 12.08 hrs HW=240.91' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 9.52 cfs @ 4.04 fps)

Secondary OutFlow Max=1.51 cfs @ 12.08 hrs HW=240.91' (Free Discharge)
└**2=Orifice/Grate** (Orifice Controls 1.51 cfs @ 2.42 fps)

Pond 3P: (new Pond)

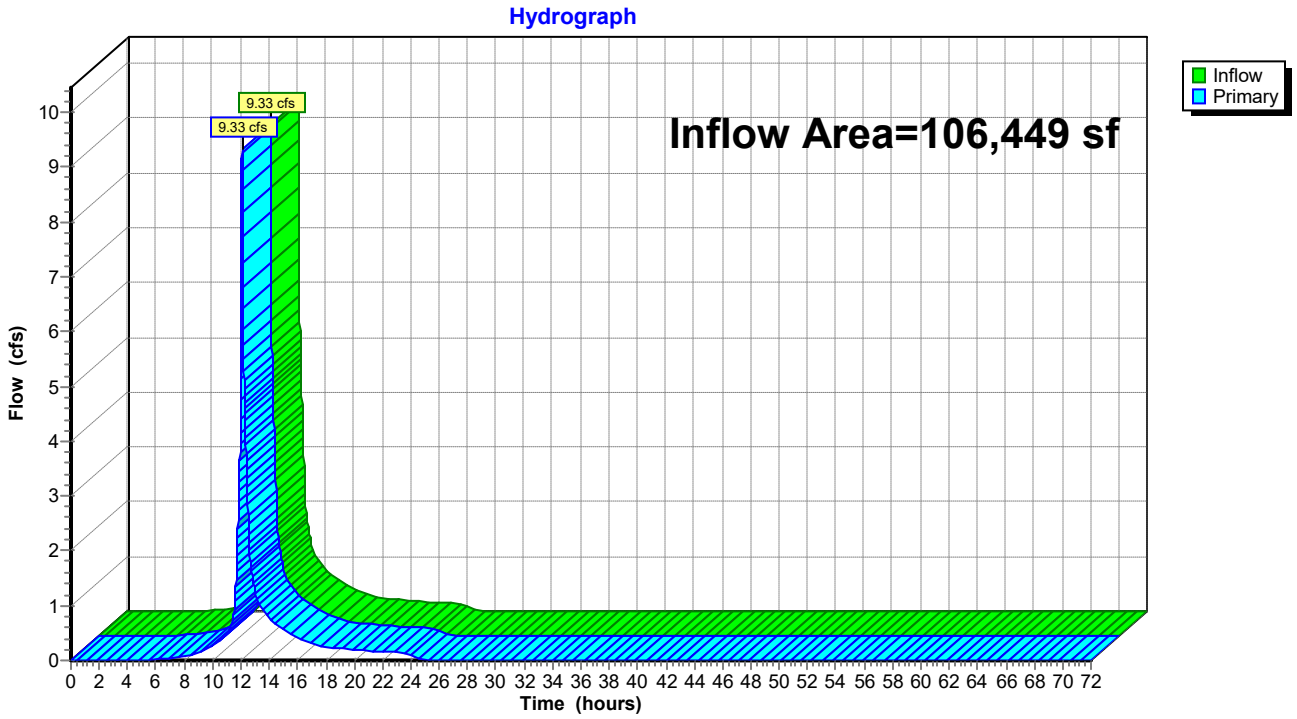


Summary for Pond DP-1p: Flow to Exist Basin #1

Inflow Area = 106,449 sf, 35.43% Impervious, Inflow Depth = 3.95" for 100yr event
Inflow = 9.33 cfs @ 12.09 hrs, Volume= 35,042 cf
Primary = 9.33 cfs @ 12.09 hrs, Volume= 35,042 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-1p: Flow to Exist Basin #1

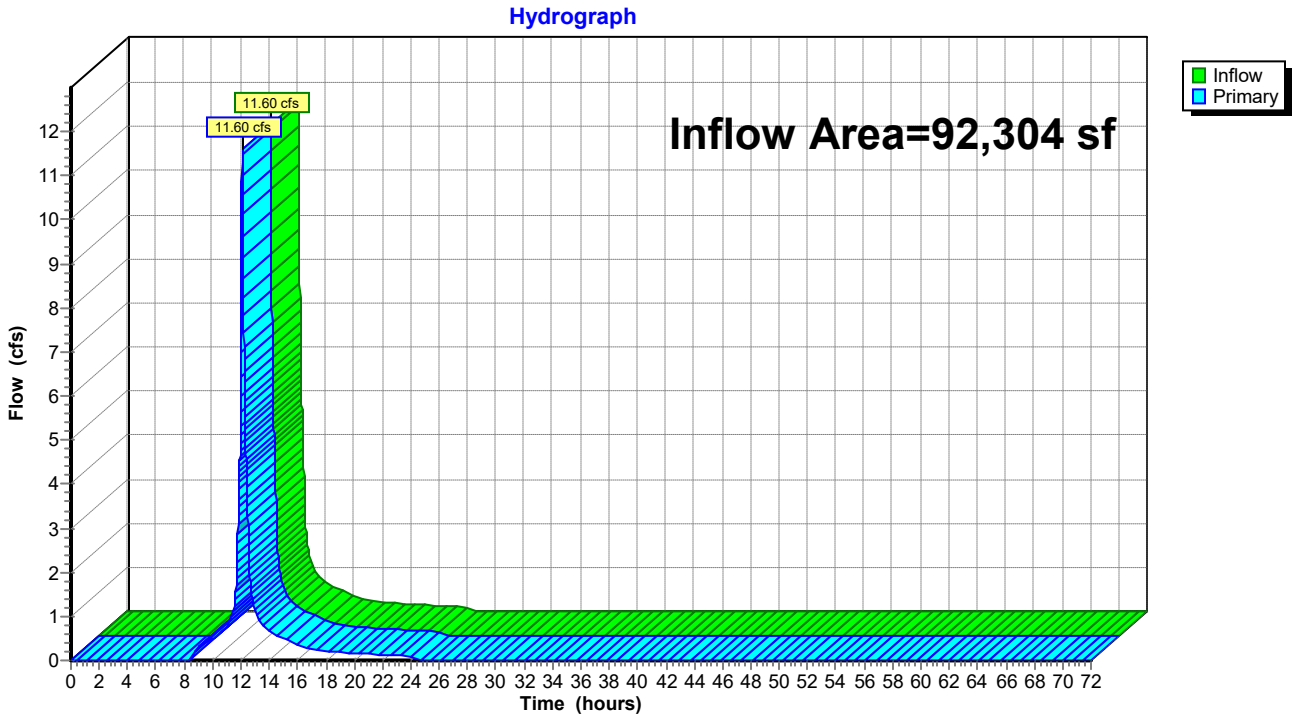


Summary for Pond DP-2p: Flow to Exist Basin#2

Inflow Area = 92,304 sf, 74.94% Impervious, Inflow Depth = 4.94" for 100yr event
Inflow = 11.60 cfs @ 12.10 hrs, Volume= 38,002 cf
Primary = 11.60 cfs @ 12.10 hrs, Volume= 38,002 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-2p: Flow to Exist Basin#2

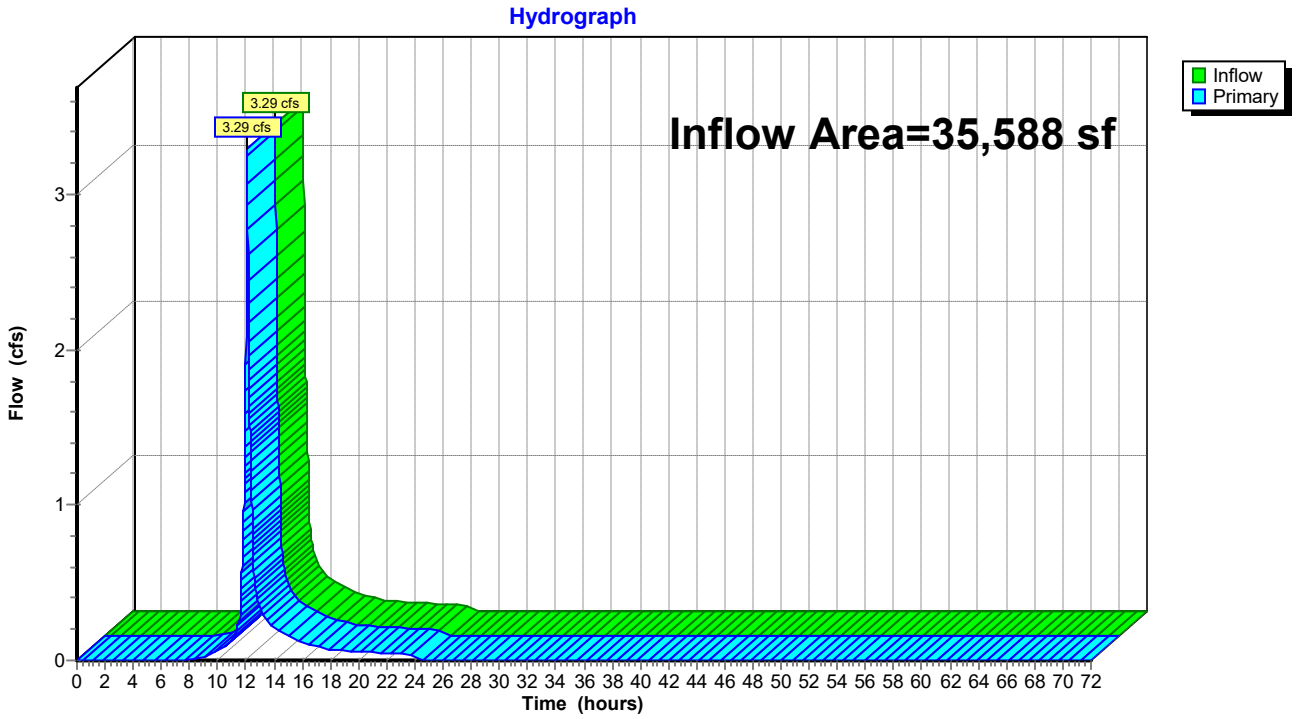


Summary for Pond DP-3p: Residential East#1

Inflow Area = 35,588 sf, 0.00% Impervious, Inflow Depth = 3.44" for 100yr event
Inflow = 3.29 cfs @ 12.09 hrs, Volume= 10,190 cf
Primary = 3.29 cfs @ 12.09 hrs, Volume= 10,190 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-3p: Residential East#1

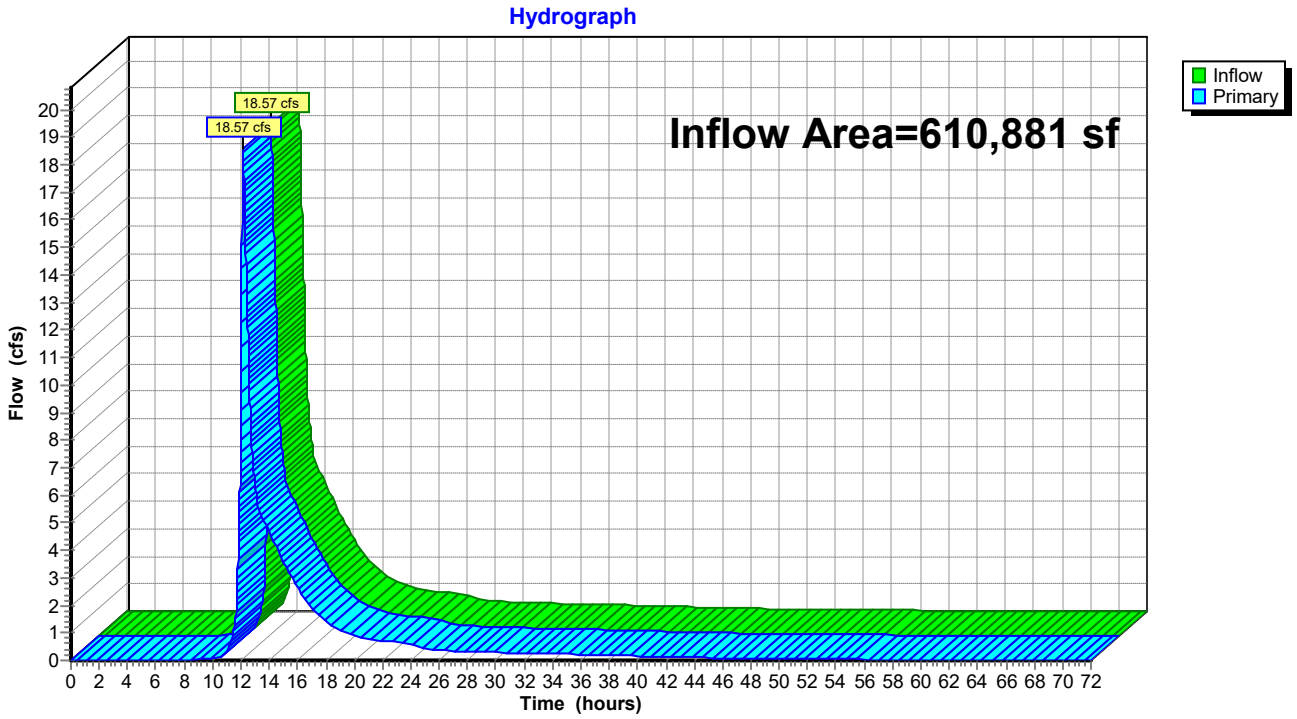


Summary for Pond DP-4p: Exist Swale #1 East

Inflow Area = 610,881 sf, 74.62% Impervious, Inflow Depth > 2.94" for 100yr event
Inflow = 18.57 cfs @ 12.15 hrs, Volume= 149,613 cf
Primary = 18.57 cfs @ 12.15 hrs, Volume= 149,613 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-4p: Exist Swale #1 East

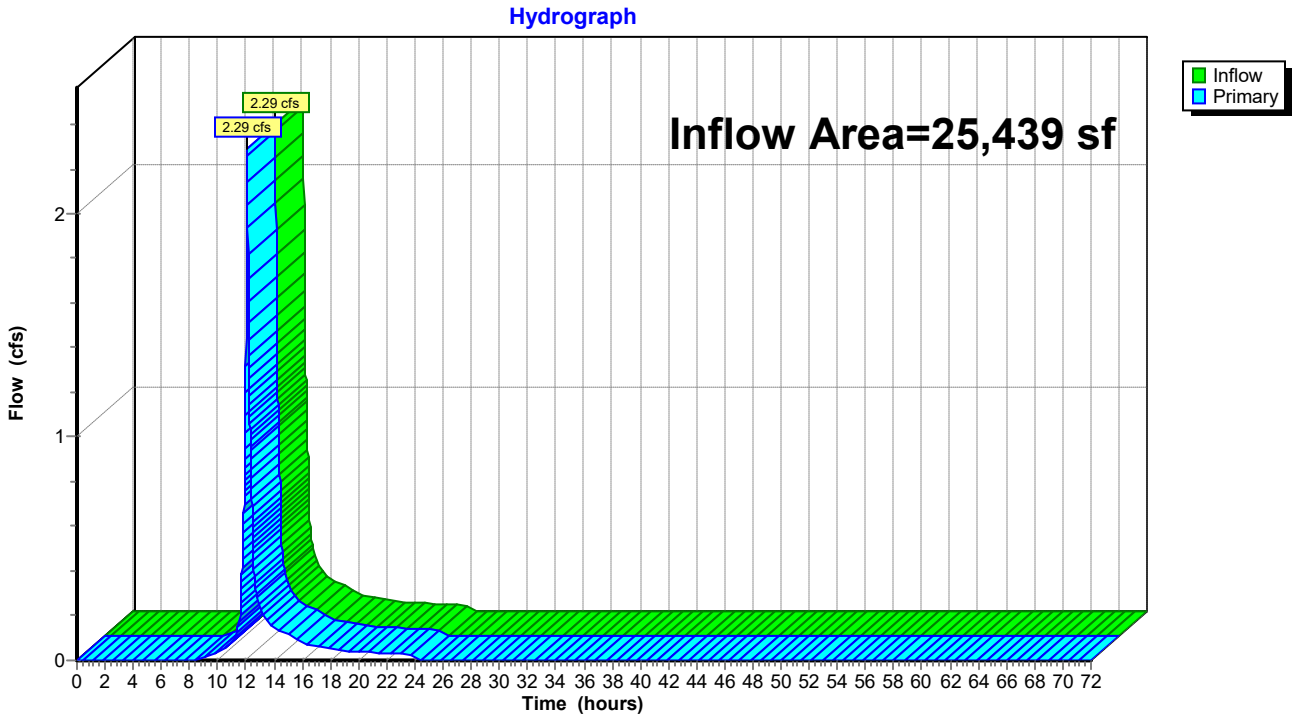


Summary for Pond DP-5p: Residential East#2

Inflow Area = 25,439 sf, 0.00% Impervious, Inflow Depth = 3.34" for 100yr event
Inflow = 2.29 cfs @ 12.09 hrs, Volume= 7,074 cf
Primary = 2.29 cfs @ 12.09 hrs, Volume= 7,074 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-5p: Residential East#2

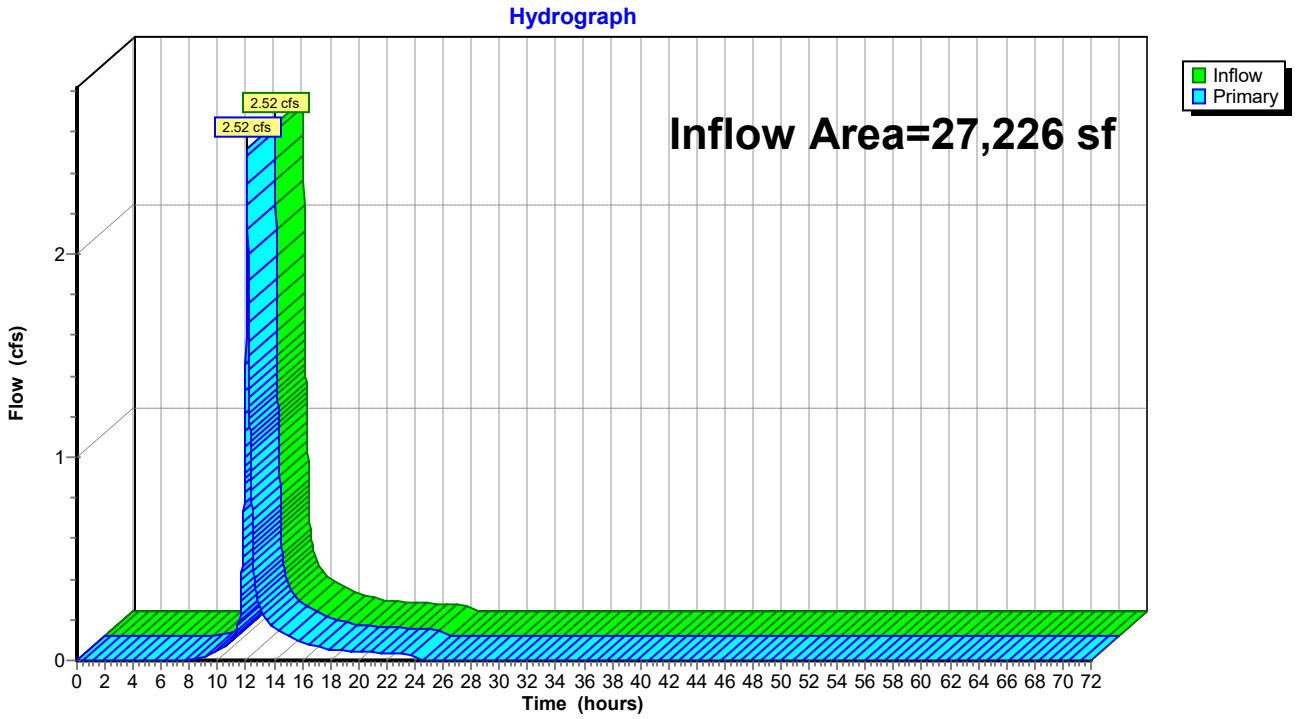


Summary for Pond DP-6p: Residential East#3

Inflow Area = 27,226 sf, 0.00% Impervious, Inflow Depth = 3.44" for 100yr event
Inflow = 2.52 cfs @ 12.09 hrs, Volume= 7,796 cf
Primary = 2.52 cfs @ 12.09 hrs, Volume= 7,796 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-6p: Residential East#3

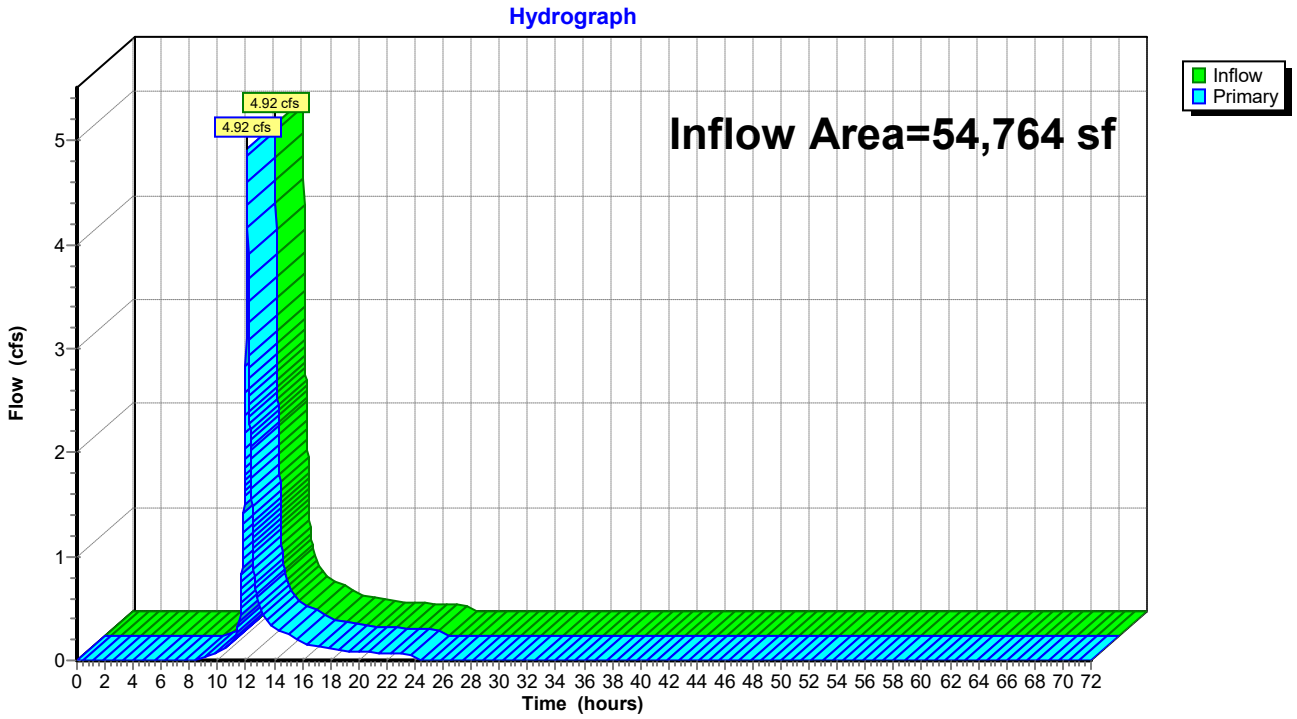


Summary for Pond DP-7p: Residential East#4

Inflow Area = 54,764 sf, 0.00% Impervious, Inflow Depth = 3.34" for 100yr event
Inflow = 4.92 cfs @ 12.09 hrs, Volume= 15,228 cf
Primary = 4.92 cfs @ 12.09 hrs, Volume= 15,228 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-7p: Residential East#4

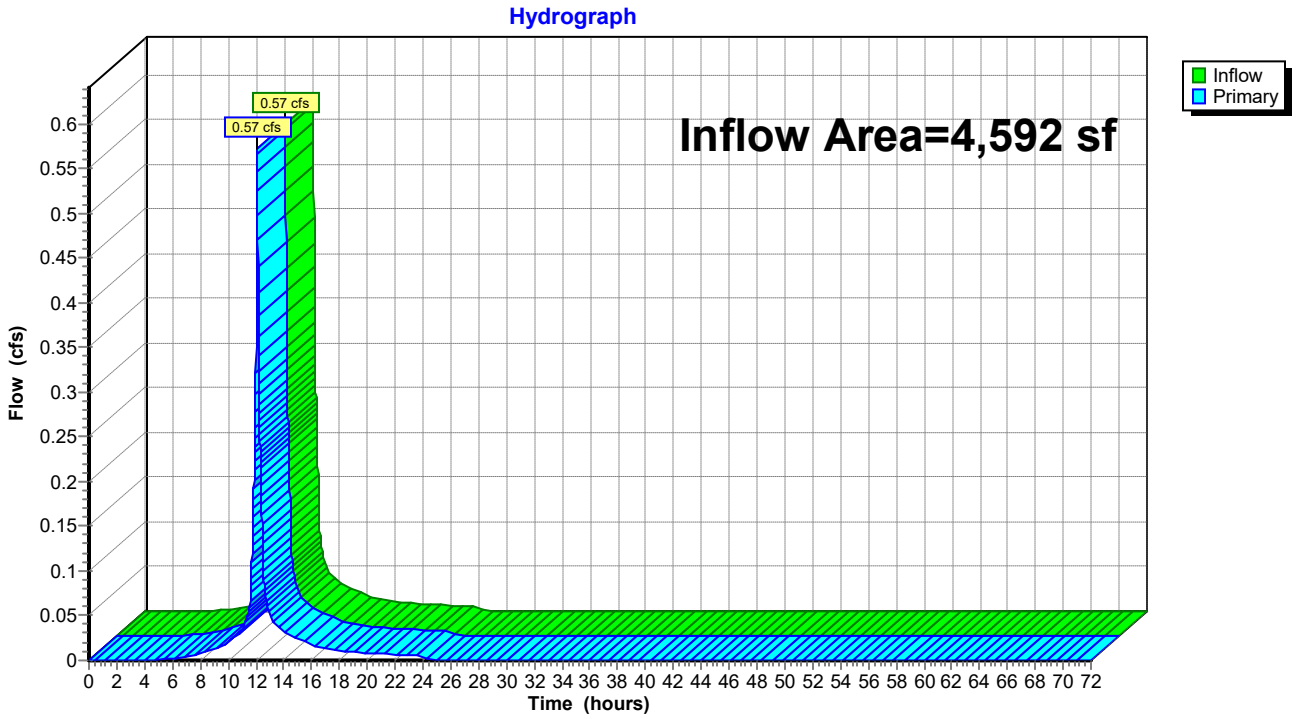


Summary for Pond DP-8p: Stoddard Drive

Inflow Area = 4,592 sf, 49.87% Impervious, Inflow Depth = 4.80" for 100yr event
Inflow = 0.57 cfs @ 12.09 hrs, Volume= 1,837 cf
Primary = 0.57 cfs @ 12.09 hrs, Volume= 1,837 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-8p: Stoddard Drive

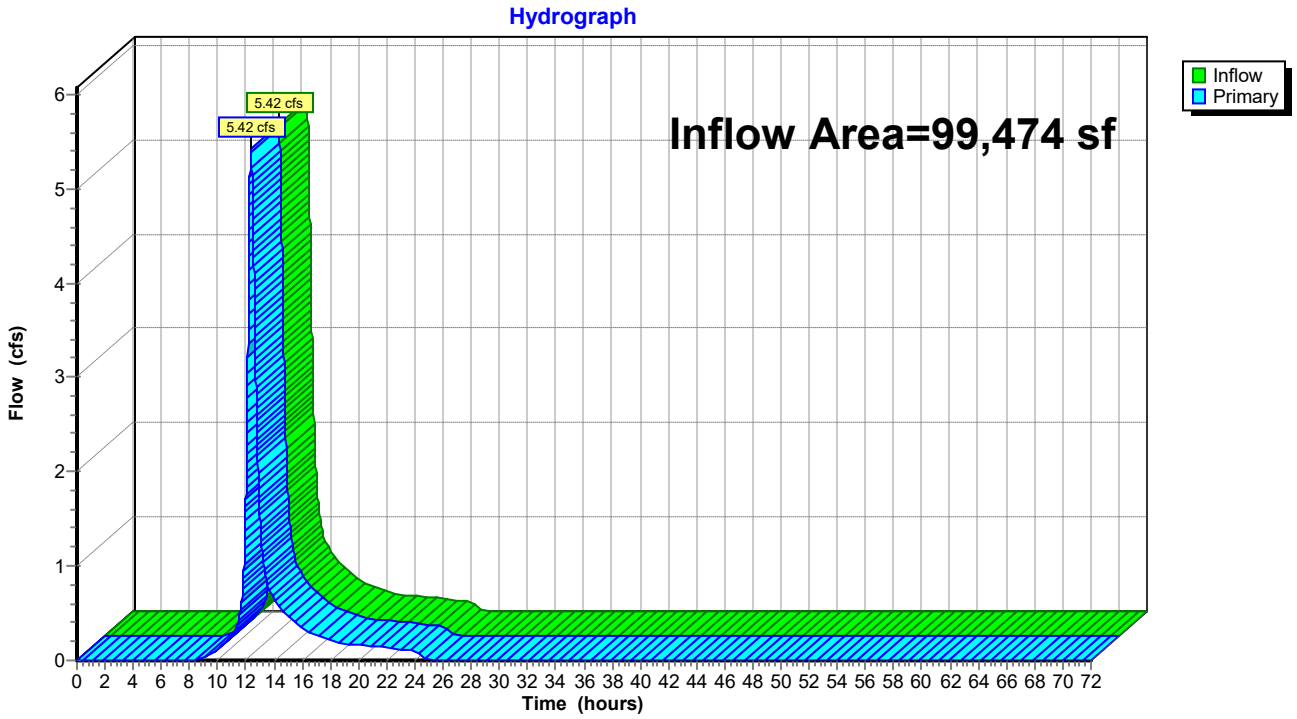


Summary for Pond DP-9p: Woods South

Inflow Area = 99,474 sf, 0.00% Impervious, Inflow Depth = 3.34" for 100yr event
Inflow = 5.42 cfs @ 12.35 hrs, Volume= 27,661 cf
Primary = 5.42 cfs @ 12.35 hrs, Volume= 27,661 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP-9p: Woods South



Summary for Pond STONE: STONE

Inflow Area = 179,201 sf,100.00% Impervious, Inflow Depth = 5.94" for 100yr event
Inflow = 24.92 cfs @ 12.08 hrs, Volume= 88,729 cf
Outflow = 2.66 cfs @ 12.76 hrs, Volume= 88,706 cf, Atten= 89%, Lag= 40.5 min
Discarded = 0.56 cfs @ 12.76 hrs, Volume= 64,760 cf
Primary = 2.10 cfs @ 12.76 hrs, Volume= 23,946 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 240.65' @ 12.76 hrs Surf.Area= 141,313 sf Storage= 42,625 cf

Plug-Flow detention time= 385.0 min calculated for 88,694 cf (100% of inflow)
Center-of-Mass det. time= 385.0 min (1,129.7 - 744.7)

Volume	Invert	Avail.Storage	Storage Description
#1	240.90'	28,260 cf	**Stone Above Flat Panel Drains (Irregular)** Listed below (Recalc) 70,650 cf Overall x 40.0% Voids
#2	239.90'	56,520 cf	**12" Stone Under Flat Panel Drains (Irregular)** Listed below (Recalc) 141,300 cf Overall x 40.0% Voids
#3	236.50'	57 cf	**4.00'D x 4.50'H DMH**
		84,837 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
240.90	141,300	1,510.0	0	0	141,300
241.40	141,300	1,510.0	70,650	70,650	142,055

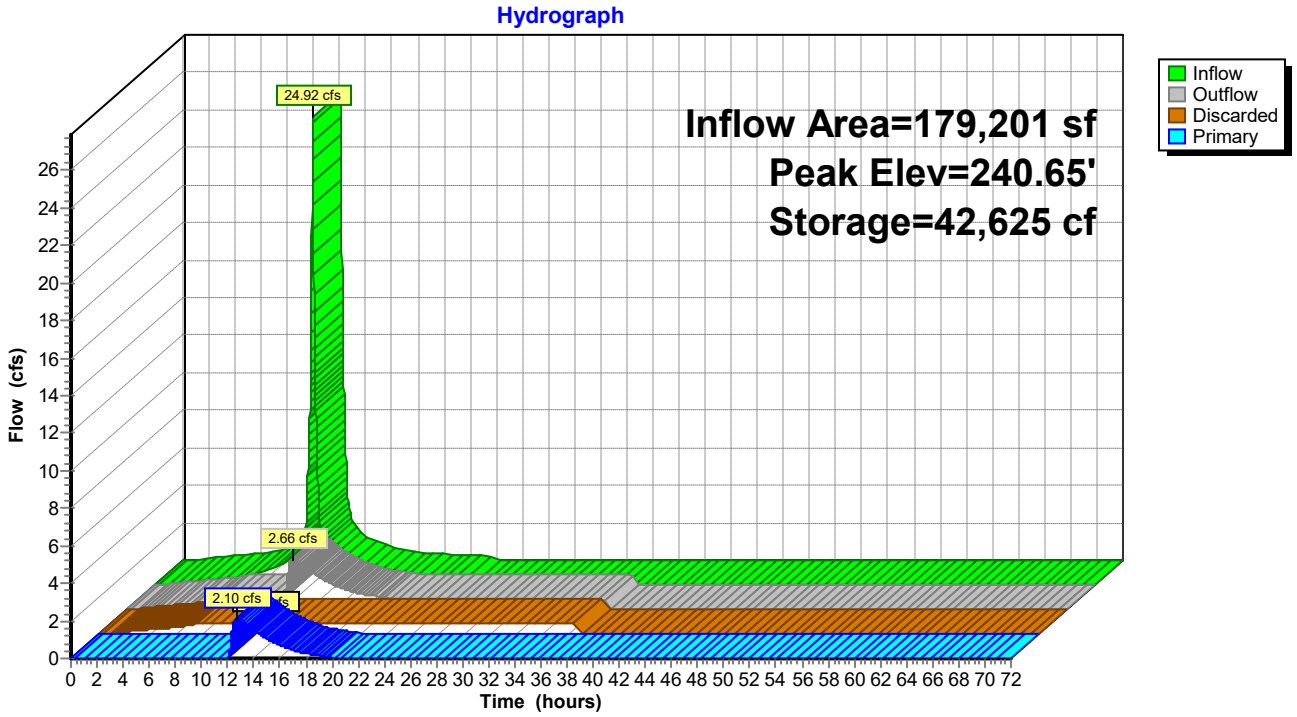
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
239.90	141,300	1,510.0	0	0	141,300
240.90	141,300	1,510.0	141,300	141,300	142,810

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	240.40'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#3	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 3.50'

Discarded OutFlow Max=0.56 cfs @ 12.76 hrs HW=240.65' (Free Discharge)
└**3=Exfiltration** (Controls 0.56 cfs)

Primary OutFlow Max=2.09 cfs @ 12.76 hrs HW=240.65' (Free Discharge)
└**1=Orifice/Grate** (Passes 2.09 cfs of 26.86 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 2.09 cfs @ 1.67 fps)

Pond STONE: STONE



Summary for Pond UGI-2: UGI-2

Inflow Area = 87,726 sf, 42.98% Impervious, Inflow Depth = 4.69" for 100yr event
Inflow = 10.74 cfs @ 12.09 hrs, Volume= 34,284 cf
Outflow = 8.86 cfs @ 12.14 hrs, Volume= 33,047 cf, Atten= 17%, Lag= 3.3 min
Discarded = 0.01 cfs @ 12.14 hrs, Volume= 3,141 cf
Primary = 8.85 cfs @ 12.14 hrs, Volume= 29,906 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 242.83' @ 12.14 hrs Surf.Area= 3,310 sf Storage= 6,924 cf

Plug-Flow detention time= 200.8 min calculated for 33,042 cf (96% of inflow)
Center-of-Mass det. time= 180.2 min (973.8 - 793.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	239.50'	2,959 cf	**25.25'W x 131.10'L x 3.50'H Field A** 11,586 cf Overall - 4,188 cf Embedded = 7,398 cf x 40.0% Voids
#2A	240.00'	4,188 cf	**Cultec R-300HD** x 90 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 90 Chambers in 5 Rows Cap Storage= +2.7 cf x 2 x 5 rows = 26.5 cf
		7,147 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	241.00'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	239.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.01 cfs @ 12.14 hrs HW=242.83' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=8.85 cfs @ 12.14 hrs HW=242.83' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 8.85 cfs @ 5.01 fps)

Pond UGI-2: UGI-2 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 5 rows = 26.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

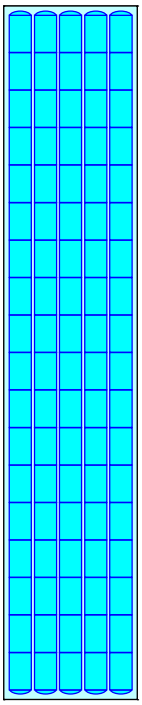
18 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 129.10' Row Length +12.0" End Stone x 2 = 131.10' Base Length
5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

90 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 5 Rows = 4,188.3 cf Chamber Storage

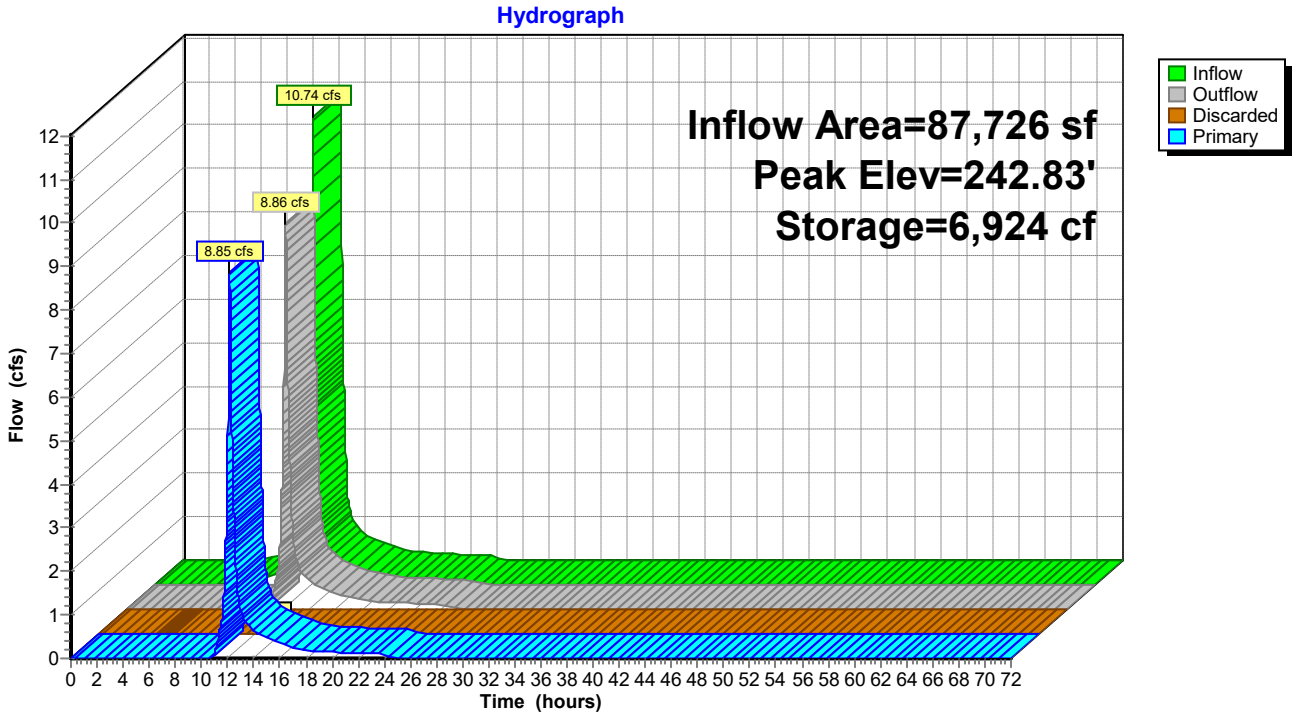
11,586.0 cf Field - 4,188.3 cf Chambers = 7,397.6 cf Stone x 40.0% Voids = 2,959.1 cf Stone Storage

Chamber Storage + Stone Storage = 7,147.4 cf = 0.164 af
Overall Storage Efficiency = 61.7%
Overall System Size = 131.10' x 25.25' x 3.50'

90 Chambers
429.1 cy Field
274.0 cy Stone



Pond UGI-2: UGI-2



Summary for Pond UGI-3: UGI-3

Inflow Area = 205,806 sf, 68.06% Impervious, Inflow Depth = 5.25" for 100yr event
Inflow = 27.19 cfs @ 12.08 hrs, Volume= 89,980 cf
Outflow = 1.33 cfs @ 14.33 hrs, Volume= 52,074 cf, Atten= 95%, Lag= 134.7 min
Discarded = 0.01 cfs @ 14.33 hrs, Volume= 3,407 cf
Primary = 1.32 cfs @ 14.33 hrs, Volume= 48,667 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 238.67' @ 14.33 hrs Surf.Area= 35,300 sf Storage= 65,186 cf

Plug-Flow detention time= 877.6 min calculated for 52,074 cf (58% of inflow)
Center-of-Mass det. time= 771.0 min (1,547.3 - 776.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.00'	30,623 cf	**343.50'W x 102.77'L x 3.50'H Field A** 123,551 cf Overall - 46,994 cf Embedded = 76,557 cf x 40.0% Voids
#2A	236.50'	46,994 cf	**Cultec R-300HD** x 1008 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 1008 Chambers in 72 Rows Cap Storage= +2.7 cf x 2 x 72 rows = 382.3 cf
		77,617 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	238.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	237.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#4	Discarded	236.00'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.01 cfs @ 14.33 hrs HW=238.67' (Free Discharge)
└**4=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=1.32 cfs @ 14.33 hrs HW=238.67' (Free Discharge)
└**1=Orifice/Grate** (Passes 1.32 cfs of 16.35 cfs potential flow)
  ├**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.90 cfs @ 1.34 fps)
  └**3=Orifice/Grate** (Orifice Controls 0.42 cfs @ 4.82 fps)

Pond UGI-3: UGI-3 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 72 rows = 382.3 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

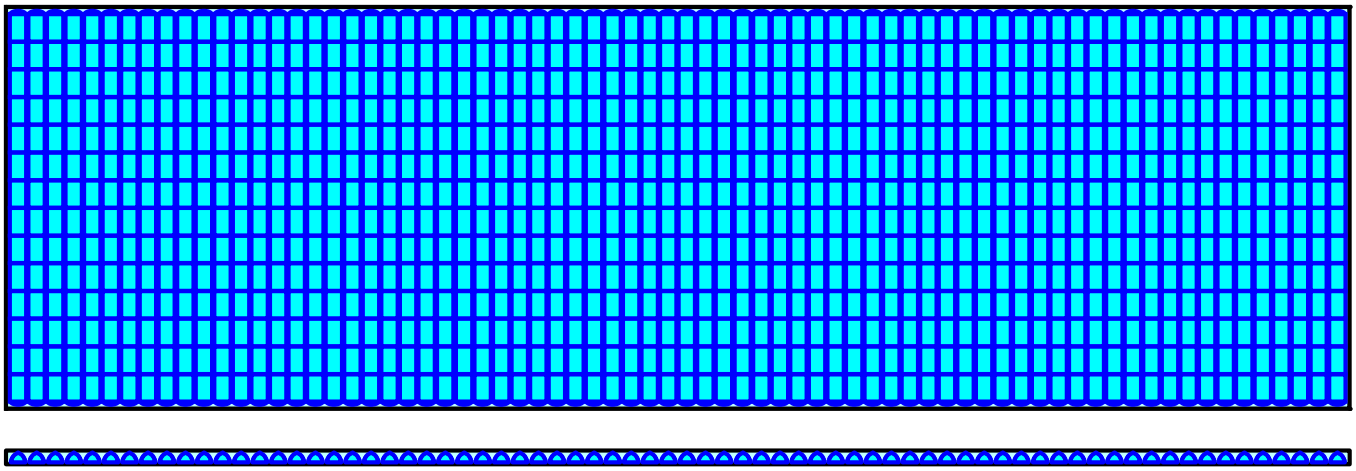
14 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 100.77' Row Length +12.0" End Stone x 2 = 102.77' Base Length
72 Rows x 51.0" Wide + 6.0" Spacing x 71 + 12.0" Side Stone x 2 = 343.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

1,008 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 72 Rows = 46,994.2 cf Chamber Storage

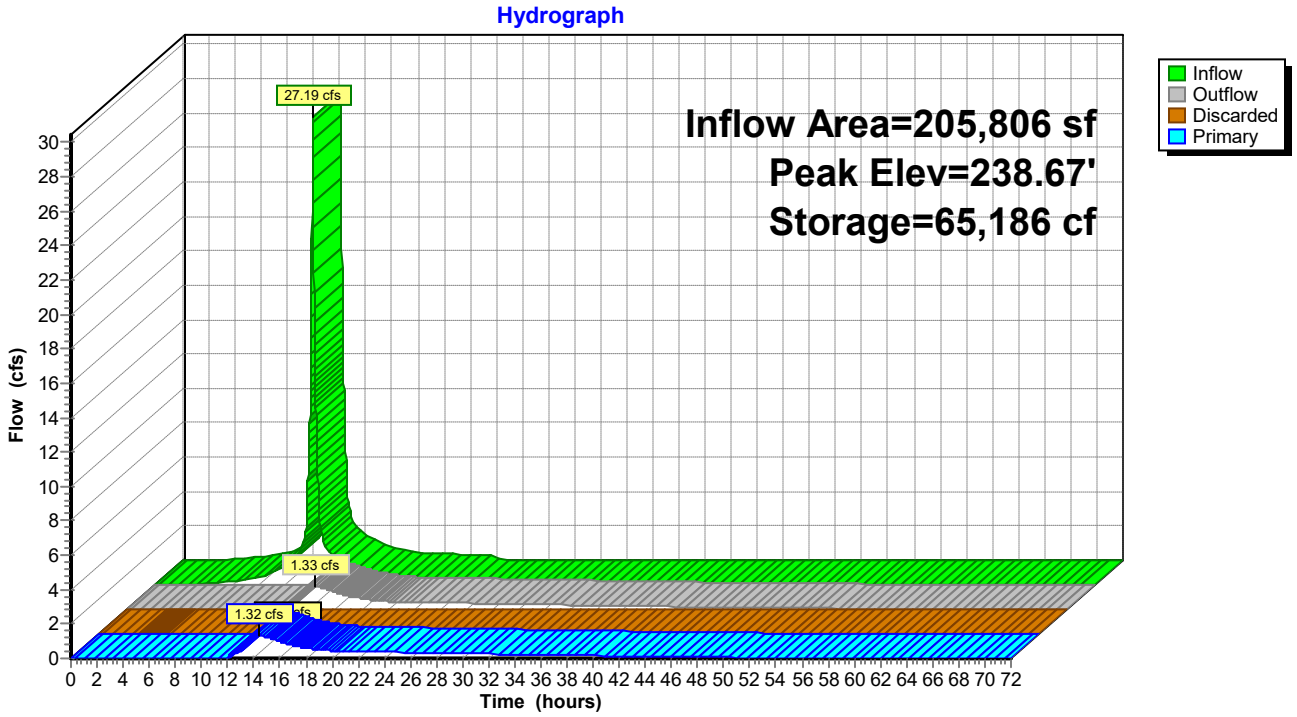
123,551.2 cf Field - 46,994.2 cf Chambers = 76,557.0 cf Stone x 40.0% Voids = 30,622.8 cf Stone Storage

Chamber Storage + Stone Storage = 77,617.0 cf = 1.782 af
Overall Storage Efficiency = 62.8%
Overall System Size = 102.77' x 343.50' x 3.50'

1,008 Chambers
4,576.0 cy Field
2,835.4 cy Stone



Pond UGI-3: UGI-3



Summary for Pond UGI-4: UGI-4

Inflow Area = 81,022 sf, 85.38% Impervious, Inflow Depth = 5.49" for 100yr event
Inflow = 9.54 cfs @ 12.08 hrs, Volume= 37,046 cf
Outflow = 9.12 cfs @ 12.11 hrs, Volume= 36,367 cf, Atten= 4%, Lag= 1.7 min
Discarded = 0.01 cfs @ 12.11 hrs, Volume= 2,579 cf
Primary = 9.11 cfs @ 12.11 hrs, Volume= 33,788 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.21' @ 12.11 hrs Surf.Area= 2,606 sf Storage= 3,971 cf

Plug-Flow detention time= 144.3 min calculated for 36,361 cf (98% of inflow)
Center-of-Mass det. time= 132.9 min (896.5 - 763.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	239.00'	2,332 cf	**49.00'W x 53.18'L x 3.50'H Field A** 9,121 cf Overall - 3,290 cf Embedded = 5,831 cf x 40.0% Voids
#2A	239.50'	3,290 cf	**Cultec R-300HD** x 70 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 70 Chambers in 10 Rows Cap Storage= +2.7 cf x 2 x 10 rows = 53.1 cf
		5,622 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.33'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	240.40'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	239.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.00'

Discarded OutFlow Max=0.01 cfs @ 12.11 hrs HW=241.21' (Free Discharge)
└**3=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=9.10 cfs @ 12.11 hrs HW=241.21' (Free Discharge)
└**1=Orifice/Grate** (Passes 9.10 cfs of 25.66 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 9.10 cfs @ 2.94 fps)

Pond UGI-4: UGI-4 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 10 rows = 53.1 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

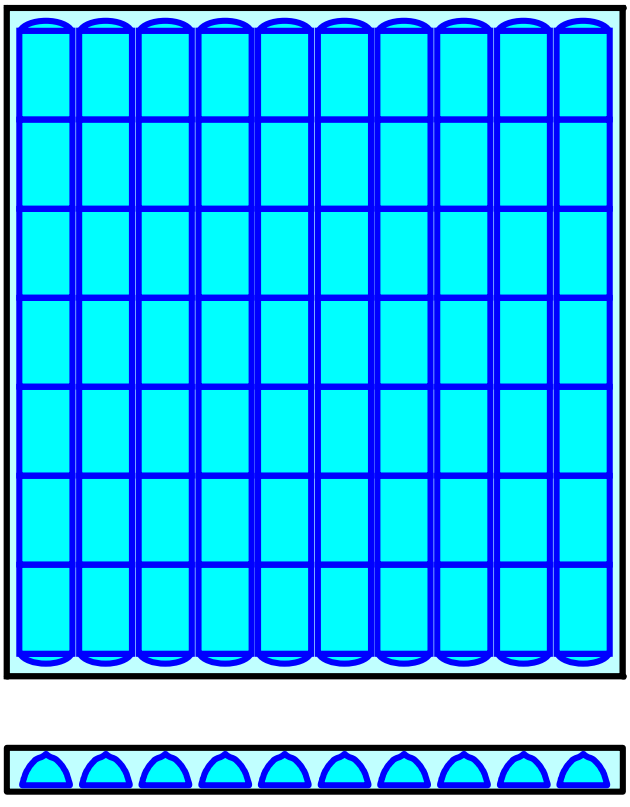
7 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 51.18' Row Length +12.0" End Stone x 2 = 53.18' Base Length
10 Rows x 51.0" Wide + 6.0" Spacing x 9 + 12.0" Side Stone x 2 = 49.00' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

70 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 10 Rows = 3,290.0 cf Chamber Storage

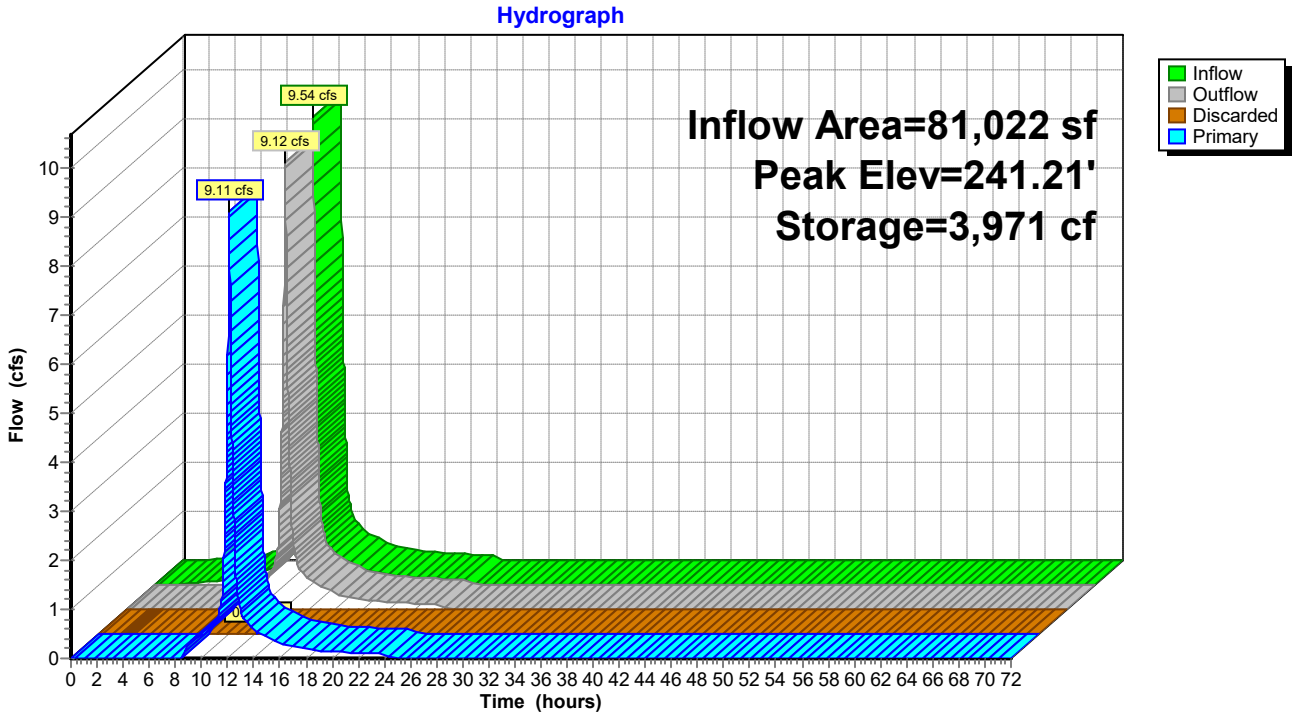
9,120.9 cf Field - 3,290.0 cf Chambers = 5,830.9 cf Stone x 40.0% Voids = 2,332.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,622.4 cf = 0.129 af
Overall Storage Efficiency = 61.6%
Overall System Size = 53.18' x 49.00' x 3.50'

70 Chambers
337.8 cy Field
216.0 cy Stone



Pond UGI-4: UGI-4



Summary for Pond UGI-5: UGI-5

Inflow Area = 108,946 sf, 85.78% Impervious, Inflow Depth = 5.59" for 100yr event
Inflow = 14.86 cfs @ 12.08 hrs, Volume= 50,754 cf
Outflow = 7.33 cfs @ 12.23 hrs, Volume= 47,923 cf, Atten= 51%, Lag= 8.7 min
Discarded = 0.04 cfs @ 12.23 hrs, Volume= 10,977 cf
Primary = 7.28 cfs @ 12.23 hrs, Volume= 36,946 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.68' @ 12.23 hrs Surf.Area= 11,195 sf Storage= 21,037 cf

Plug-Flow detention time= 444.2 min calculated for 47,916 cf (94% of inflow)
Center-of-Mass det. time= 413.0 min (1,175.9 - 762.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	234.90'	9,883 cf	**210.50'W x 53.18'L x 3.50'H Field A** 39,183 cf Overall - 14,476 cf Embedded = 24,707 cf x 40.0% Voids
#2A	235.40'	14,476 cf	**Cultec R-300HD** x 308 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 308 Chambers in 44 Rows Cap Storage= +2.7 cf x 2 x 44 rows = 233.6 cf
		24,359 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.20'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	234.90'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.90'

Discarded OutFlow Max=0.04 cfs @ 12.23 hrs HW=237.68' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=7.29 cfs @ 12.23 hrs HW=237.68' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 7.29 cfs @ 4.14 fps)

Pond UGI-5: UGI-5 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 44 rows = 233.6 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

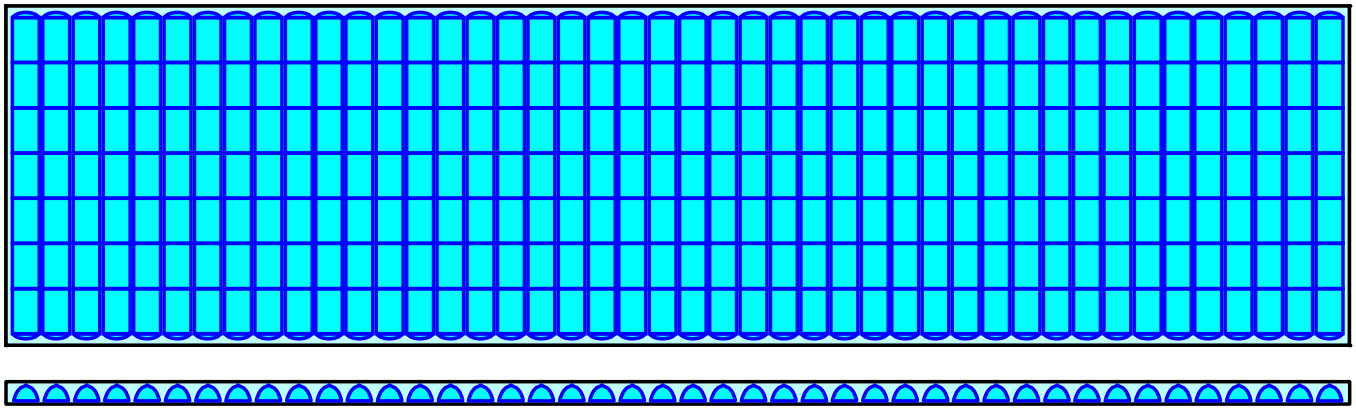
7 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 51.18' Row Length +12.0" End Stone x 2 = 53.18' Base Length
44 Rows x 51.0" Wide + 6.0" Spacing x 43 + 12.0" Side Stone x 2 = 210.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

308 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 44 Rows = 14,476.2 cf Chamber Storage

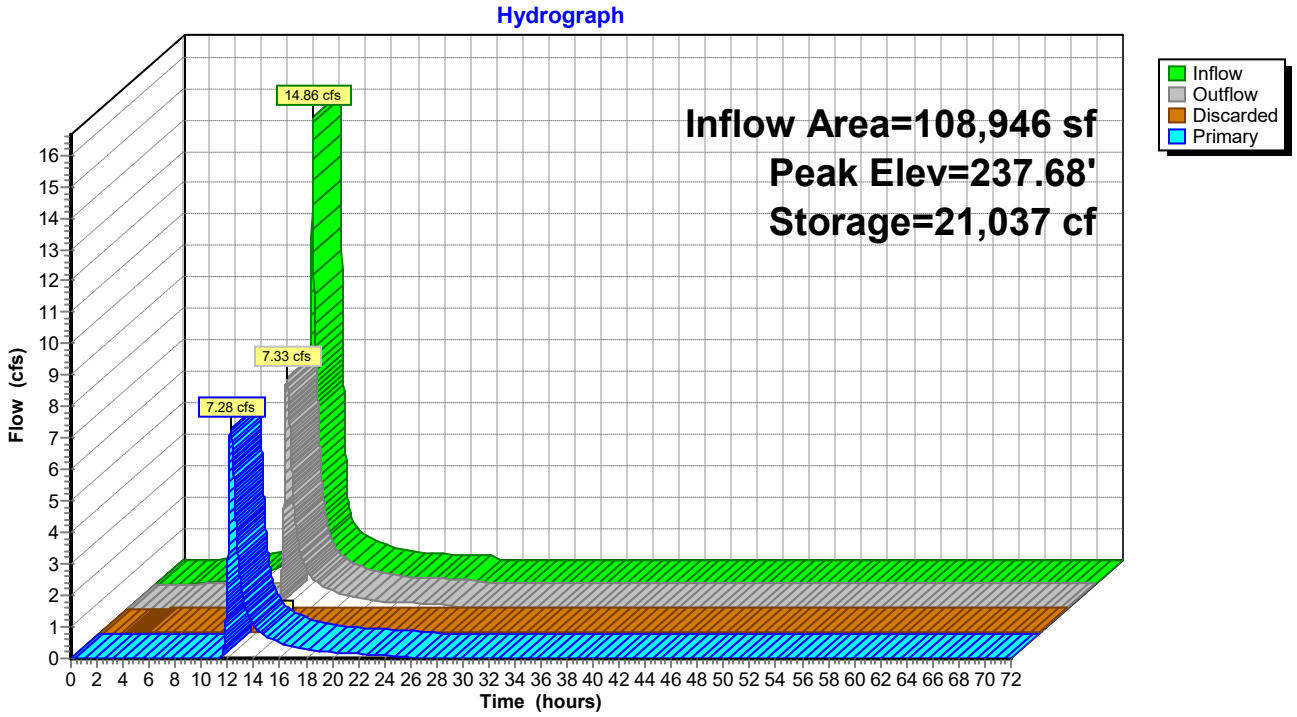
39,182.8 cf Field - 14,476.2 cf Chambers = 24,706.7 cf Stone x 40.0% Voids = 9,882.7 cf Stone Storage

Chamber Storage + Stone Storage = 24,358.8 cf = 0.559 af
Overall Storage Efficiency = 62.2%
Overall System Size = 53.18' x 210.50' x 3.50'

308 Chambers
1,451.2 cy Field
915.1 cy Stone



Pond UGI-5: UGI-5



Summary for Pond UGI-A: UGI-A

Inflow Area = 24,216 sf, 65.28% Impervious, Inflow Depth = 5.13" for 100yr event
Inflow = 3.16 cfs @ 12.08 hrs, Volume= 10,359 cf
Outflow = 0.64 cfs @ 12.51 hrs, Volume= 5,885 cf, Atten= 80%, Lag= 25.6 min
Discarded = 0.00 cfs @ 12.51 hrs, Volume= 442 cf
Primary = 0.64 cfs @ 12.51 hrs, Volume= 5,443 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.87' @ 12.51 hrs Surf.Area= 4,619 sf Storage= 6,010 cf

Plug-Flow detention time= 373.2 min calculated for 5,885 cf (57% of inflow)
Center-of-Mass det. time= 266.0 min (1,046.1 - 780.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.00'	4,082 cf	**39.50'W x 116.93'L x 3.50'H Field A** 16,166 cf Overall - 5,961 cf Embedded = 10,205 cf x 40.0% Voids
#2A	236.50'	5,961 cf	**Cultec R-300HD** x 128 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 128 Chambers in 8 Rows Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf
		10,043 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	**15.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	236.00'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.00 cfs @ 12.51 hrs HW=237.87' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.63 cfs @ 12.51 hrs HW=237.87' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.63 cfs @ 2.08 fps)

Pond UGI-A: UGI-A - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

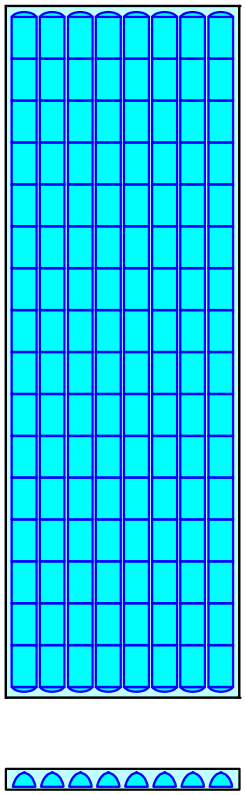
16 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 114.93' Row Length +12.0" End Stone x 2 = 116.93' Base Length
8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

128 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 8 Rows = 5,961.4 cf Chamber Storage

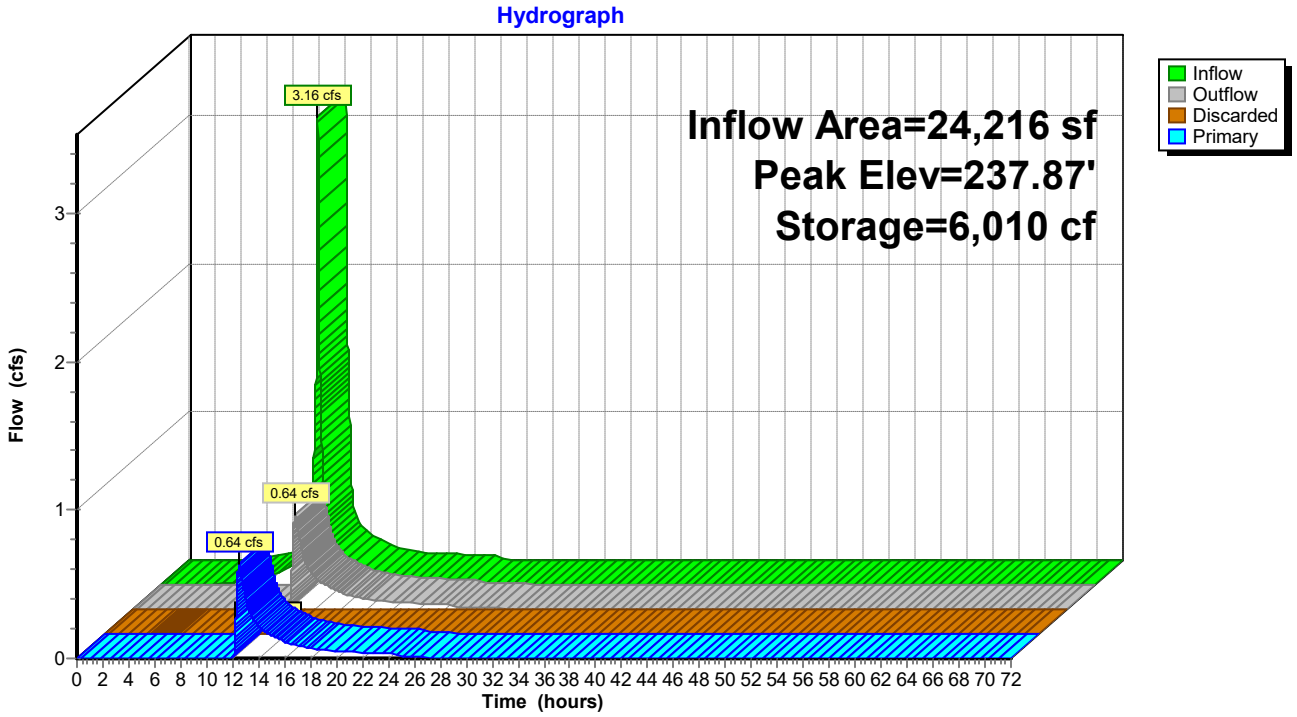
16,166.0 cf Field - 5,961.4 cf Chambers = 10,204.6 cf Stone x 40.0% Voids = 4,081.8 cf Stone Storage

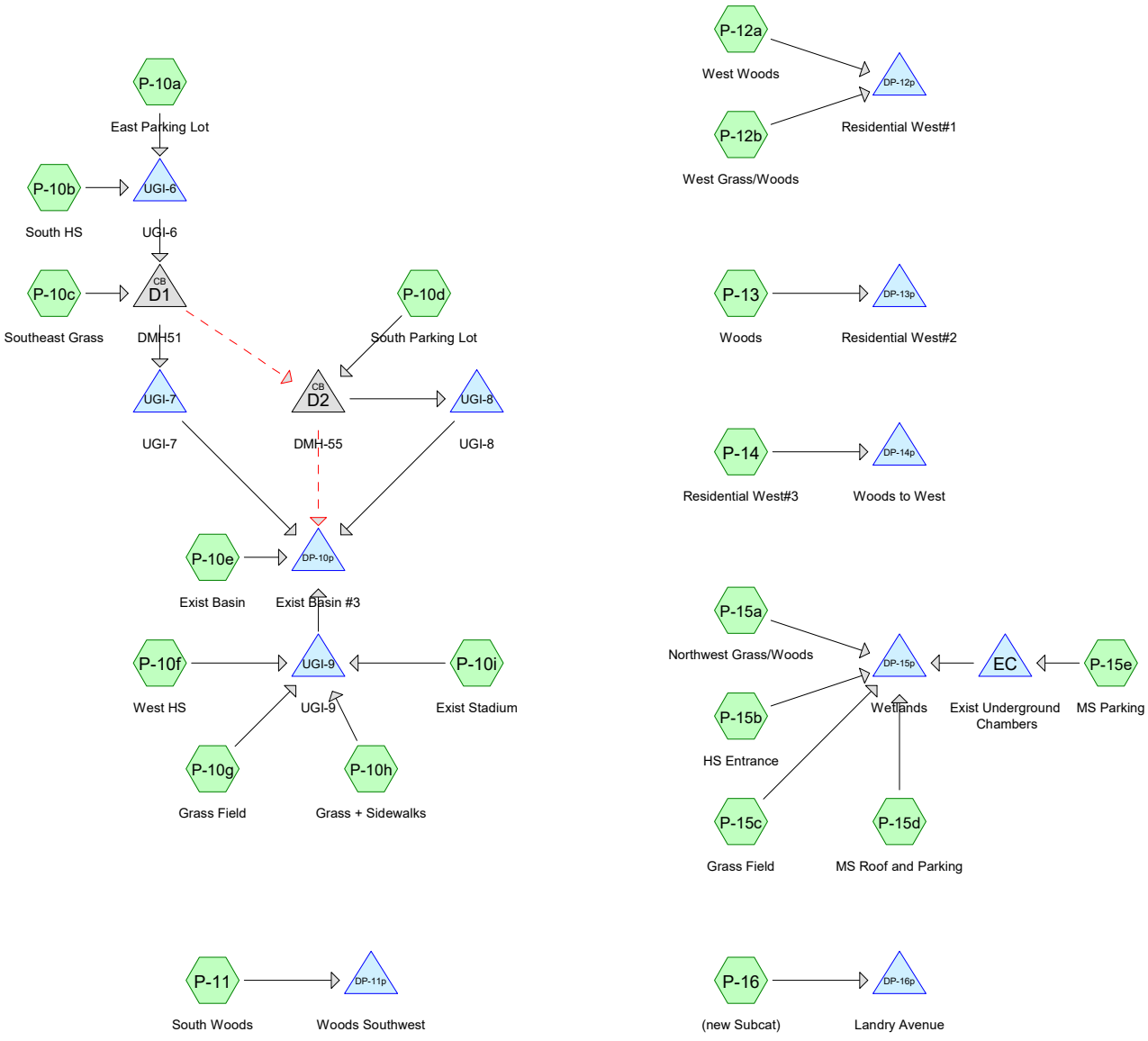
Chamber Storage + Stone Storage = 10,043.3 cf = 0.231 af
Overall Storage Efficiency = 62.1%
Overall System Size = 116.93' x 39.50' x 3.50'

128 Chambers
598.7 cy Field
377.9 cy Stone



Pond UGI-A: UGI-A





Subcat Reach Pond Link

Routing Diagram for 2145.0 NAHS POST (DP10-16)_R1
Prepared by {enter your company name here}, Printed 12/23/2025
HydroCAD® 10.00-26 s/n 00536 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
561,027	79	50-75% Grass cover, Fair, HSG C (P-10a, P-10b, P-10c, P-10d, P-10e, P-10f, P-10h, P-11, P-12a, P-12b, P-14, P-15a, P-15b, P-15c, P-15d, P-15e, P-16)
1,071	98	Exist Roof, HSG C (P-10h)
7,431	98	Exist Sidewalk, HSG C (P-10h, P-12a)
115,868	98	HS Roofs, HSG C (P-10b, P-10f)
41,432	98	MS Roof, HSG C (P-15d)
363,073	98	Paved parking, HSG C (P-10a, P-10b, P-10d, P-10e, P-10f, P-11, P-14, P-15b, P-15d, P-15e, P-16)
12,523	98	Prop Sidewalk, HSG C (P-10h)
22,918	98	Sidewalks, HSG C (P-10g, P-15c)
153,842	98	Synfield (P-10i)
118,453	98	Synthetic Field, HSG C (P-10g)
148,276	73	Woods, Fair, HSG C (P-11, P-12a, P-15a, P-15c)
8,051	77	Woods, Poor, HSG C (P-14)
12,980	76	Woods/grass comb., Fair, HSG C (P-13)
1,566,945	**89**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
1,413,103	HSG C	P-10a, P-10b, P-10c, P-10d, P-10e, P-10f, P-10g, P-10h, P-11, P-12a, P-12b, P-13, P-14, P-15a, P-15b, P-15c, P-15d, P-15e, P-16
0	HSG D	
153,842	Other	P-10i
1,566,945		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	561,027	0	0	561,027	50-75% Grass cover, Fair	
0	0	1,071	0	0	1,071	Exist Roof	
0	0	7,431	0	0	7,431	Exist Sidewalk	
0	0	115,868	0	0	115,868	HS Roofs	
0	0	41,432	0	0	41,432	MS Roof	
0	0	363,073	0	0	363,073	Paved parking	
0	0	12,523	0	0	12,523	Prop Sidewalk	
0	0	22,918	0	0	22,918	Sidewalks	
0	0	0	0	153,842	153,842	Synfield	
0	0	118,453	0	0	118,453	Synthetic Field	
0	0	148,276	0	0	148,276	Woods, Fair	
0	0	8,051	0	0	8,051	Woods, Poor	
0	0	12,980	0	0	12,980	Woods/grass comb., Fair	
0	**0**	**1,413,103**	**0**	**153,842**	**1,566,945**	**TOTAL AREA**	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment P-10a: East Parking Lot Runoff Area=60,002 sf 93.94% Impervious Runoff Depth=2.55"
Tc=6.0 min CN=97 Runoff=3.78 cfs 12,747 cf

Subcatchment P-10b: South HS Runoff Area=144,093 sf 83.51% Impervious Runoff Depth=2.34"
Tc=6.0 min CN=95 Runoff=8.65 cfs 28,123 cf

Subcatchment P-10c: Southeast Grass Runoff Area=22,017 sf 0.00% Impervious Runoff Depth=1.11"
Tc=6.0 min CN=79 Runoff=0.64 cfs 2,034 cf

Subcatchment P-10d: South Parking Lot Runoff Area=71,980 sf 79.90% Impervious Runoff Depth=2.24"
Tc=6.0 min CN=94 Runoff=4.19 cfs 13,459 cf

Subcatchment P-10e: Exist Basin Runoff Area=29,855 sf 9.23% Impervious Runoff Depth=1.23"
Tc=6.0 min CN=81 Runoff=0.98 cfs 3,059 cf

Subcatchment P-10f: West HS Runoff Area=113,103 sf 78.73% Impervious Runoff Depth=2.24"
Tc=6.0 min CN=94 Runoff=6.59 cfs 21,149 cf

Subcatchment P-10g: Grass Field Runoff Area=126,785 sf 100.00% Impervious Runoff Depth=2.66"
Tc=6.0 min CN=98 Runoff=8.14 cfs 28,091 cf

Subcatchment P-10h: Grass + Sidewalks Runoff Area=68,897 sf 29.12% Impervious Runoff Depth=1.50"
Tc=6.0 min CN=85 Runoff=2.77 cfs 8,591 cf

Subcatchment P-10i: Exist Stadium Runoff Area=153,842 sf 100.00% Impervious Runoff Depth=2.66"
Tc=6.0 min CN=98 Runoff=9.88 cfs 34,086 cf

Subcatchment P-11: South Woods Runoff Area=29,293 sf 23.93% Impervious Runoff Depth=1.29"
Tc=6.0 min CN=82 Runoff=1.01 cfs 3,156 cf

Subcatchment P-12a: West Woods Runoff Area=14,093 sf 6.82% Impervious Runoff Depth=1.05"
Tc=6.0 min CN=78 Runoff=0.39 cfs 1,235 cf

Subcatchment P-12b: West Grass/Woods Runoff Area=15,036 sf 0.00% Impervious Runoff Depth=1.11"
Tc=6.0 min CN=79 Runoff=0.44 cfs 1,389 cf

Subcatchment P-13: Woods Runoff Area=12,980 sf 0.00% Impervious Runoff Depth=0.94"
Tc=6.0 min CN=76 Runoff=0.31 cfs 1,019 cf

Subcatchment P-14: Residential West#3 Runoff Area=22,068 sf 26.18% Impervious Runoff Depth=1.36"
Tc=6.0 min CN=83 Runoff=0.80 cfs 2,498 cf

Subcatchment P-15a: Northwest Runoff Area=157,944 sf 0.00% Impervious Runoff Depth=0.84"
Tc=6.0 min CN=74 Runoff=3.30 cfs 11,046 cf

Subcatchment P-15b: HS Entrance Runoff Area=68,639 sf 34.96% Impervious Runoff Depth=1.57"
Tc=6.0 min CN=86 Runoff=2.90 cfs 8,972 cf

Subcatchment P-15c: Grass Field Runoff Area=196,324 sf 7.43% Impervious Runoff Depth=1.17"
Tc=6.0 min CN=80 Runoff=6.06 cfs 19,111 cf

Subcatchment P-15d: MS Roof and Parking Runoff Area=85,422 sf 81.99% Impervious Runoff Depth=2.34"
Tc=6.0 min CN=95 Runoff=5.13 cfs 16,672 cf

Subcatchment P-15e: MS Parking Runoff Area=137,453 sf 54.04% Impervious Runoff Depth=1.80"
Tc=6.0 min CN=89 Runoff=6.64 cfs 20,626 cf

Subcatchment P-16: (new Subcat) Runoff Area=37,119 sf 35.73% Impervious Runoff Depth=1.57"
Tc=6.0 min CN=86 Runoff=1.57 cfs 4,852 cf

Pond D1: DMH51 Peak Elev=234.13' Inflow=1.30 cfs 20,554 cf
Primary=1.27 cfs 11,197 cf Secondary=0.65 cfs 9,346 cf Outflow=1.30 cfs 20,544 cf

Pond D2: DMH-55 Peak Elev=233.45' Inflow=4.19 cfs 22,806 cf
Primary=2.99 cfs 19,132 cf Secondary=1.23 cfs 3,673 cf Outflow=4.19 cfs 22,804 cf

Pond DP-10p: Exist Basin #3 Inflow=4.36 cfs 54,252 cf
Primary=4.36 cfs 54,252 cf

Pond DP-11p: Woods Southwest Inflow=1.01 cfs 3,156 cf
Primary=1.01 cfs 3,156 cf

Pond DP-12p: Residential West#1 Inflow=0.82 cfs 2,624 cf
Primary=0.82 cfs 2,624 cf

Pond DP-13p: Residential West#2 Inflow=0.31 cfs 1,019 cf
Primary=0.31 cfs 1,019 cf

Pond DP-14p: Woods to West Inflow=0.80 cfs 2,498 cf
Primary=0.80 cfs 2,498 cf

Pond DP-15p: Wetlands Inflow=23.98 cfs 76,427 cf
Primary=23.98 cfs 76,427 cf

Pond DP-16p: Landry Avenue Inflow=1.57 cfs 4,852 cf
Primary=1.57 cfs 4,852 cf

Pond EC: Exist Underground Chambers Inflow=6.64 cfs 20,626 cf
Primary=6.64 cfs 20,626 cf

Pond UGI-6: UGI-6 Peak Elev=236.59' Storage=23,648 cf Inflow=12.43 cfs 40,870 cf
Discarded=0.09 cfs 20,119 cf Primary=1.21 cfs 18,520 cf Outflow=1.29 cfs 38,639 cf

Pond UGI-7: UGI-7 Peak Elev=234.12' Storage=2,395 cf Inflow=1.27 cfs 11,197 cf
Discarded=0.00 cfs 180 cf Primary=0.64 cfs 9,230 cf Outflow=0.64 cfs 9,410 cf

Pond UGI-8: UGI-8 Peak Elev=233.32' Storage=3,808 cf Inflow=2.99 cfs 19,132 cf
Discarded=0.02 cfs 3,920 cf Primary=2.33 cfs 15,166 cf Outflow=2.34 cfs 19,087 cf

Pond UGI-9: UGI-9 Peak Elev=237.87' Storage=62,751 cf Inflow=27.38 cfs 91,916 cf
Discarded=0.26 cfs 62,689 cf Primary=0.71 cfs 23,125 cf Outflow=0.98 cfs 85,814 cf

Total Runoff Area = 1,566,945 sf Runoff Volume = 241,915 cf Average Runoff Depth = 1.85"
46.61% Pervious = 730,334 sf 53.39% Impervious = 836,611 sf

Summary for Subcatchment P-10a: East Parking Lot

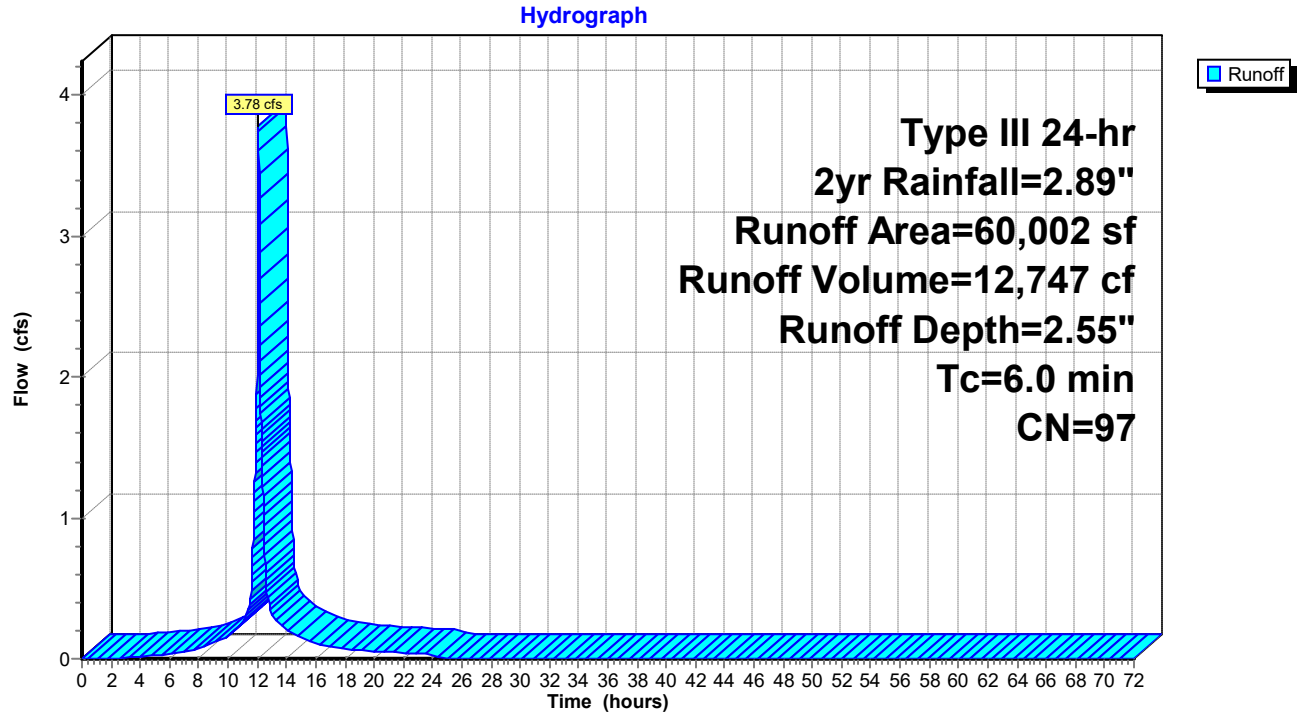
Runoff = 3.78 cfs @ 12.08 hrs, Volume= 12,747 cf, Depth= 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
3,636	79	50-75% Grass cover, Fair, HSG C
56,366	98	Paved parking, HSG C
60,002	97	Weighted Average
3,636		6.06% Pervious Area
56,366		93.94% Impervious Area

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

Subcatchment P-10a: East Parking Lot



Summary for Subcatchment P-10b: South HS

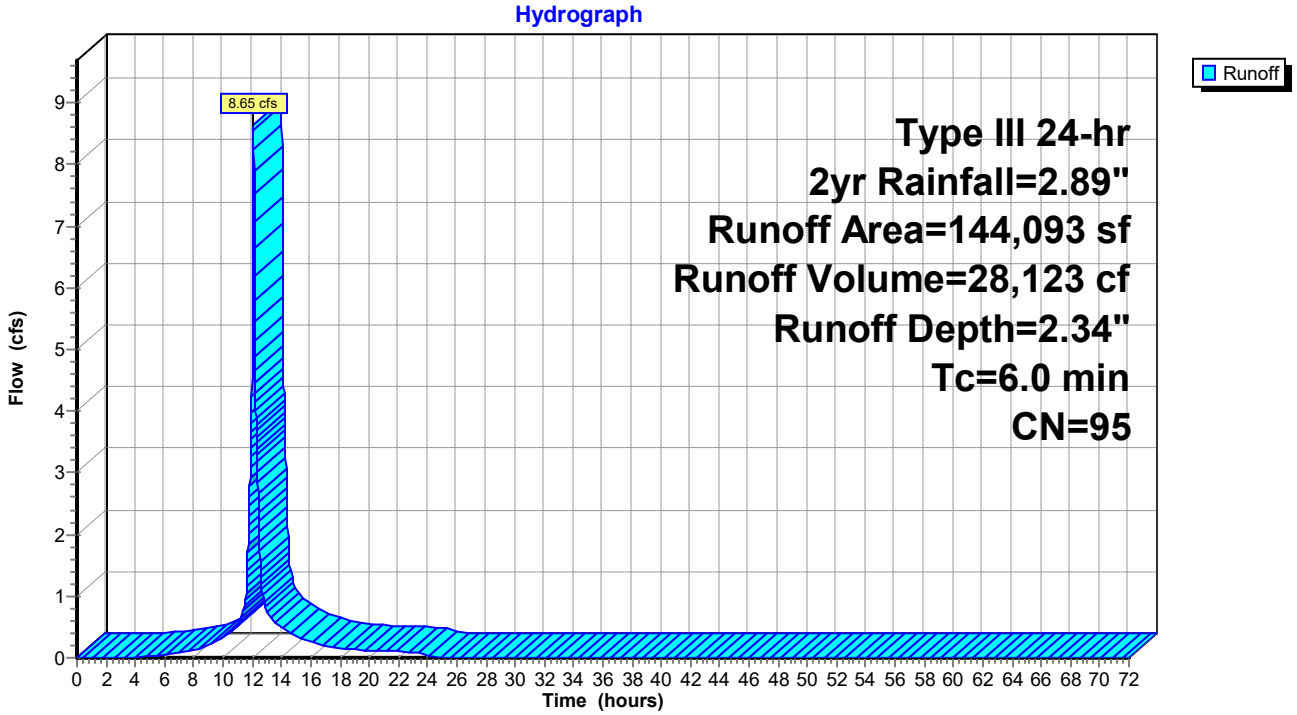
Runoff = 8.65 cfs @ 12.08 hrs, Volume= 28,123 cf, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	25,314	98	HS Roofs, HSG C
*	37,903	98	HS Roofs, HSG C
	23,764	79	50-75% Grass cover, Fair, HSG C
	57,112	98	Paved parking, HSG C
	144,093	95	Weighted Average
	23,764		16.49% Pervious Area
	120,329		83.51% Impervious Area

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

Subcatchment P-10b: South HS



Summary for Subcatchment P-10c: Southeast Grass

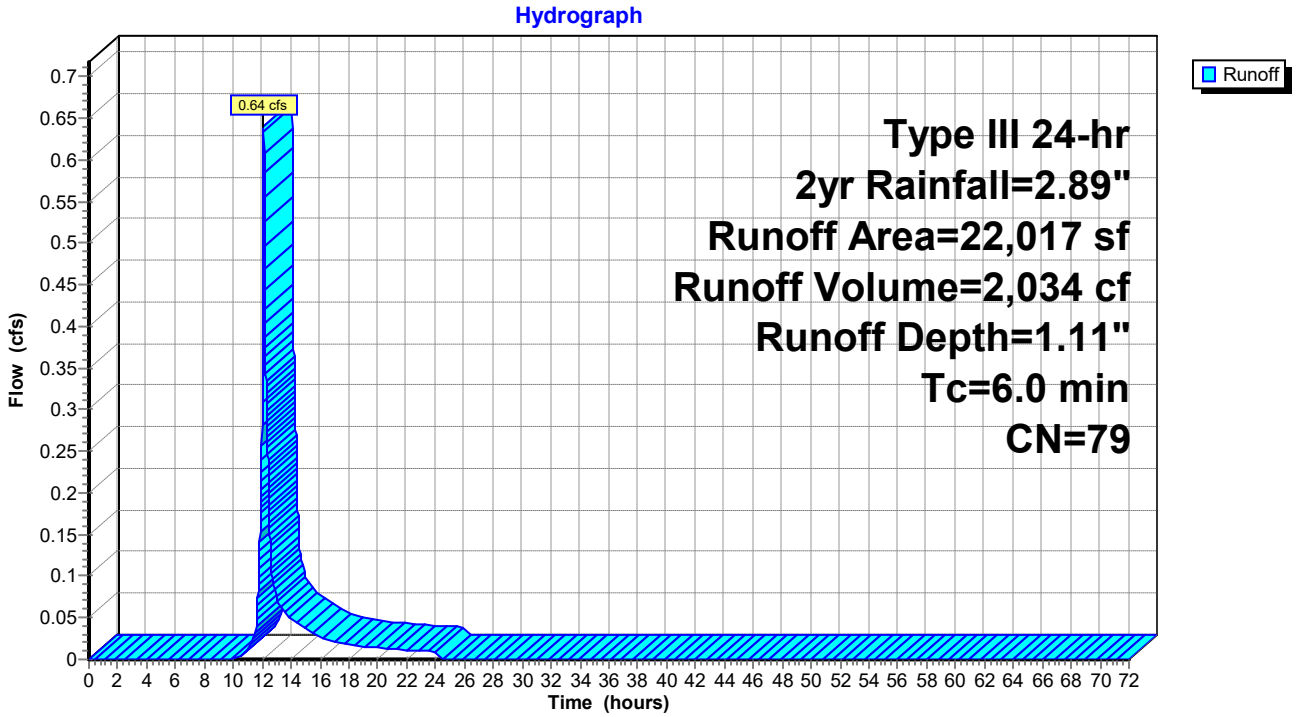
Runoff = 0.64 cfs @ 12.09 hrs, Volume= 2,034 cf, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
22,017	79	50-75% Grass cover, Fair, HSG C
22,017		100.00% Pervious Area

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

Subcatchment P-10c: Southeast Grass



Summary for Subcatchment P-10d: South Parking Lot

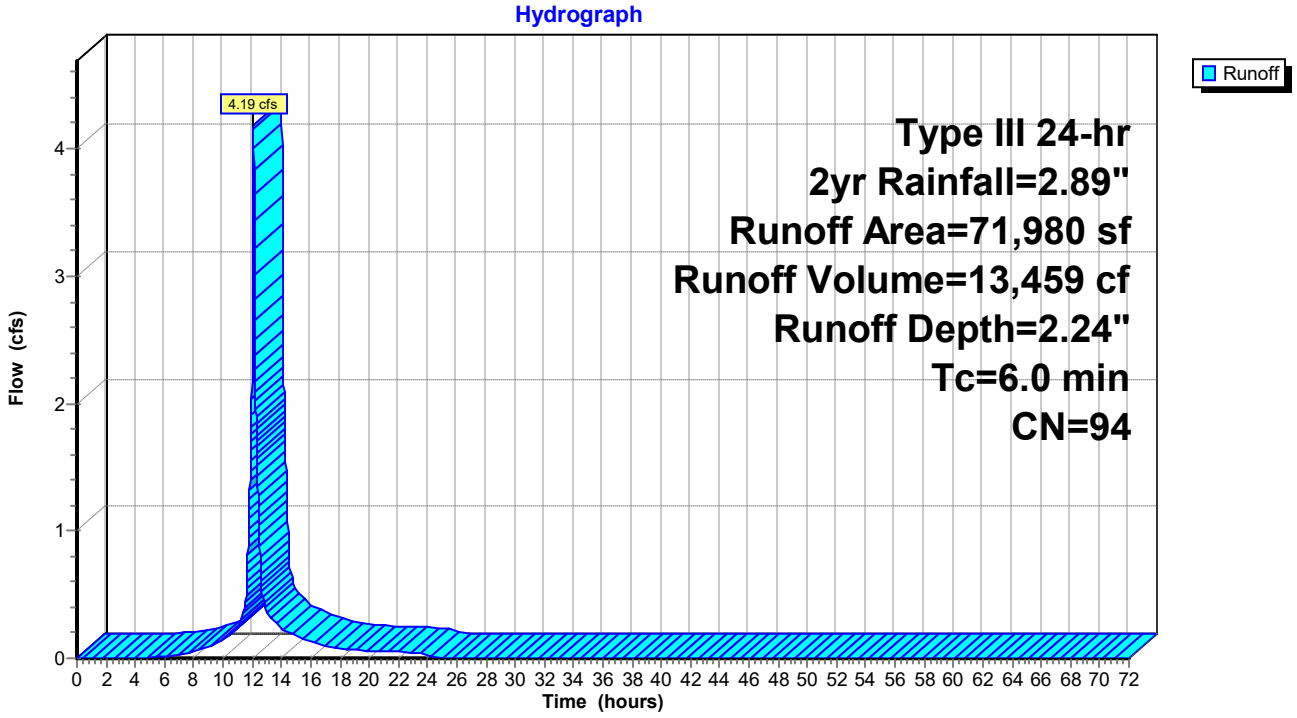
Runoff = 4.19 cfs @ 12.09 hrs, Volume= 13,459 cf, Depth= 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
26,521	98	Paved parking, HSG C
30,989	98	Paved parking, HSG C
14,470	79	50-75% Grass cover, Fair, HSG C
71,980	94	Weighted Average
14,470		20.10% Pervious Area
57,510		79.90% Impervious Area

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

Subcatchment P-10d: South Parking Lot



Summary for Subcatchment P-10e: Exist Basin

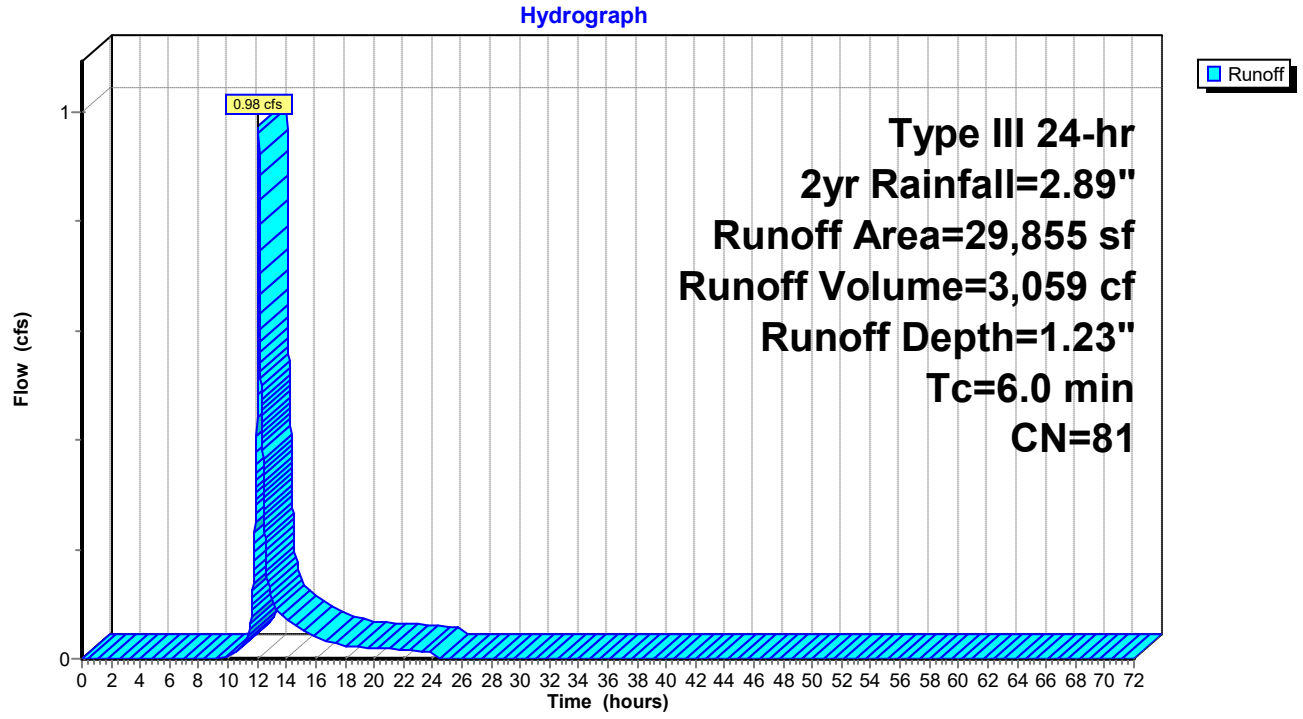
Runoff = 0.98 cfs @ 12.09 hrs, Volume= 3,059 cf, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
27,099	79	50-75% Grass cover, Fair, HSG C
2,756	98	Paved parking, HSG C
29,855	81	Weighted Average
27,099		90.77% Pervious Area
2,756		9.23% Impervious Area

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

Subcatchment P-10e: Exist Basin



Summary for Subcatchment P-10f: West HS

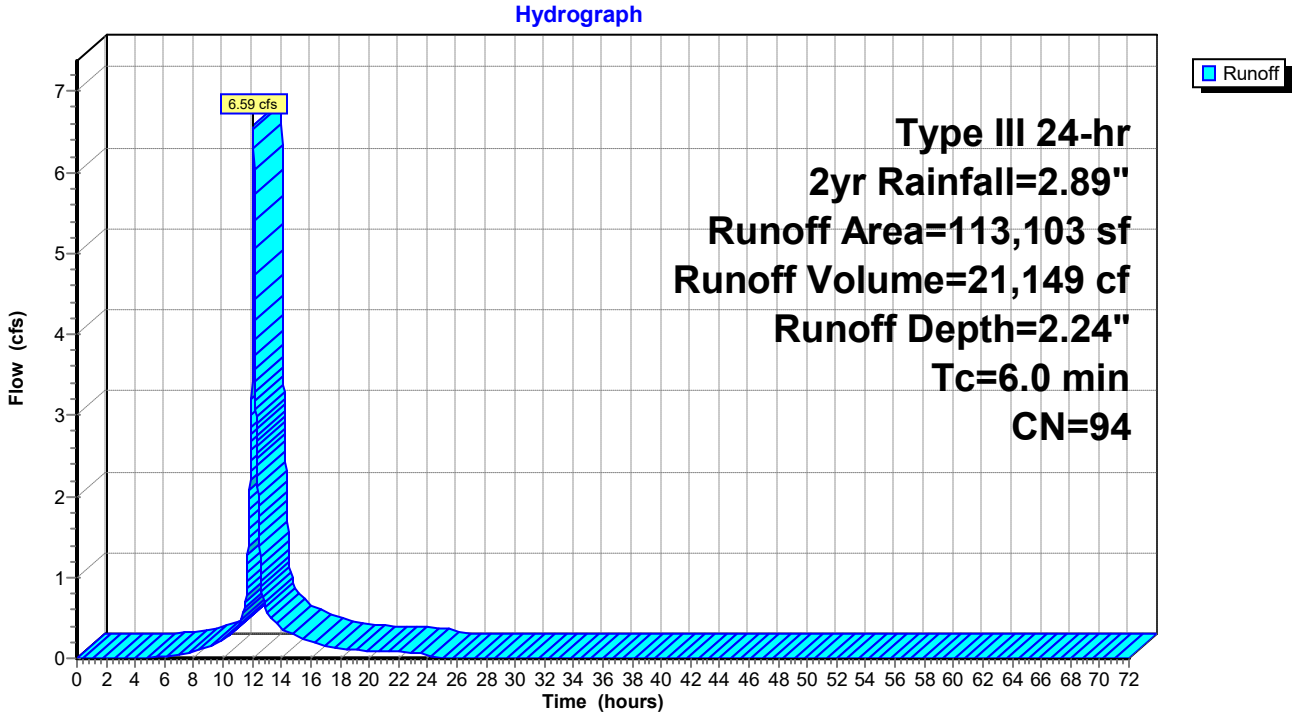
Runoff = 6.59 cfs @ 12.09 hrs, Volume= 21,149 cf, Depth= 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
	36,395	98	Paved parking, HSG C
	24,057	79	50-75% Grass cover, Fair, HSG C
*	52,651	98	HS Roofs, HSG C
	113,103	94	Weighted Average
	24,057		21.27% Pervious Area
	89,046		78.73% Impervious Area

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

Subcatchment P-10f: West HS



Summary for Subcatchment P-10g: Grass Field

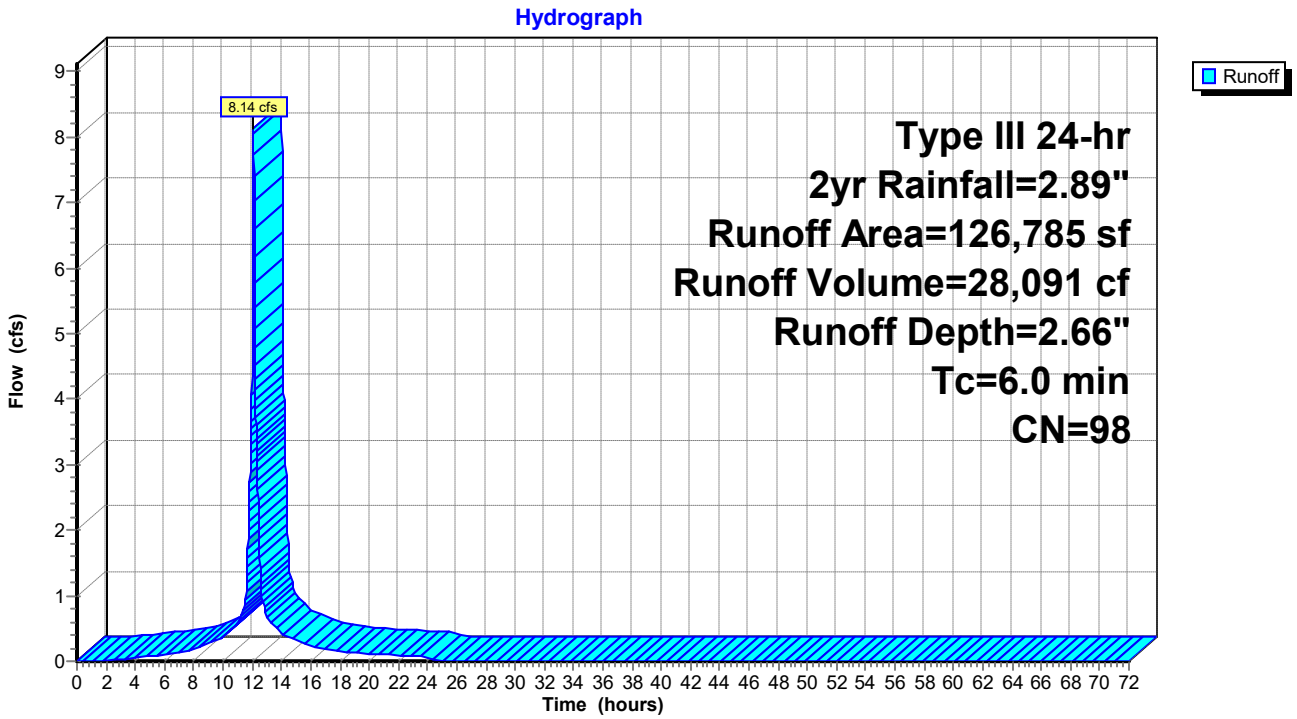
Runoff = 8.14 cfs @ 12.08 hrs, Volume= 28,091 cf, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	118,453	98	Synthetic Field, HSG C
*	8,332	98	Sidewalks, HSG C
	126,785	98	Weighted Average
	126,785		100.00% Impervious Area

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

Subcatchment P-10g: Grass Field



Summary for Subcatchment P-10h: Grass + Sidewalks

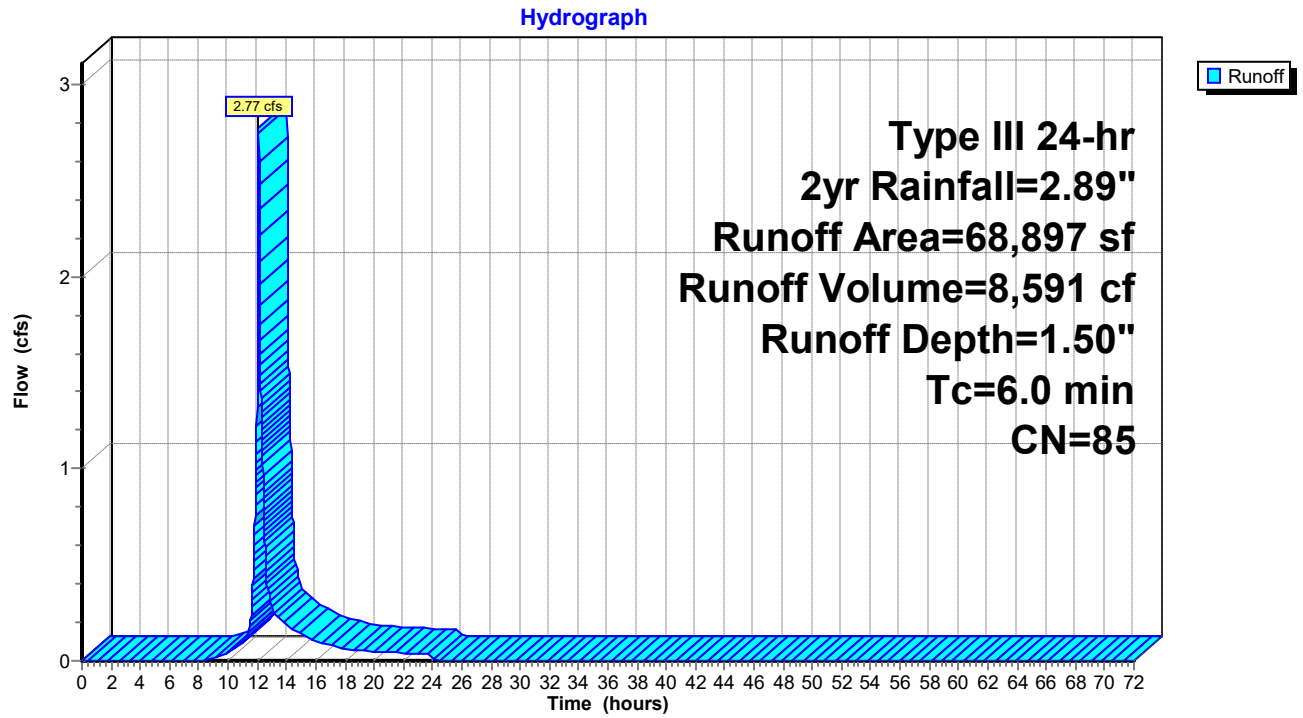
Runoff = 2.77 cfs @ 12.09 hrs, Volume= 8,591 cf, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
	48,833	79	50-75% Grass cover, Fair, HSG C
*	6,470	98	Exist Sidewalk, HSG C
*	1,071	98	Exist Roof, HSG C
*	12,523	98	Prop Sidewalk, HSG C
	68,897	85	Weighted Average
	48,833		70.88% Pervious Area
	20,064		29.12% Impervious Area

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

Subcatchment P-10h: Grass + Sidewalks



Summary for Subcatchment P-10i: Exist Stadium

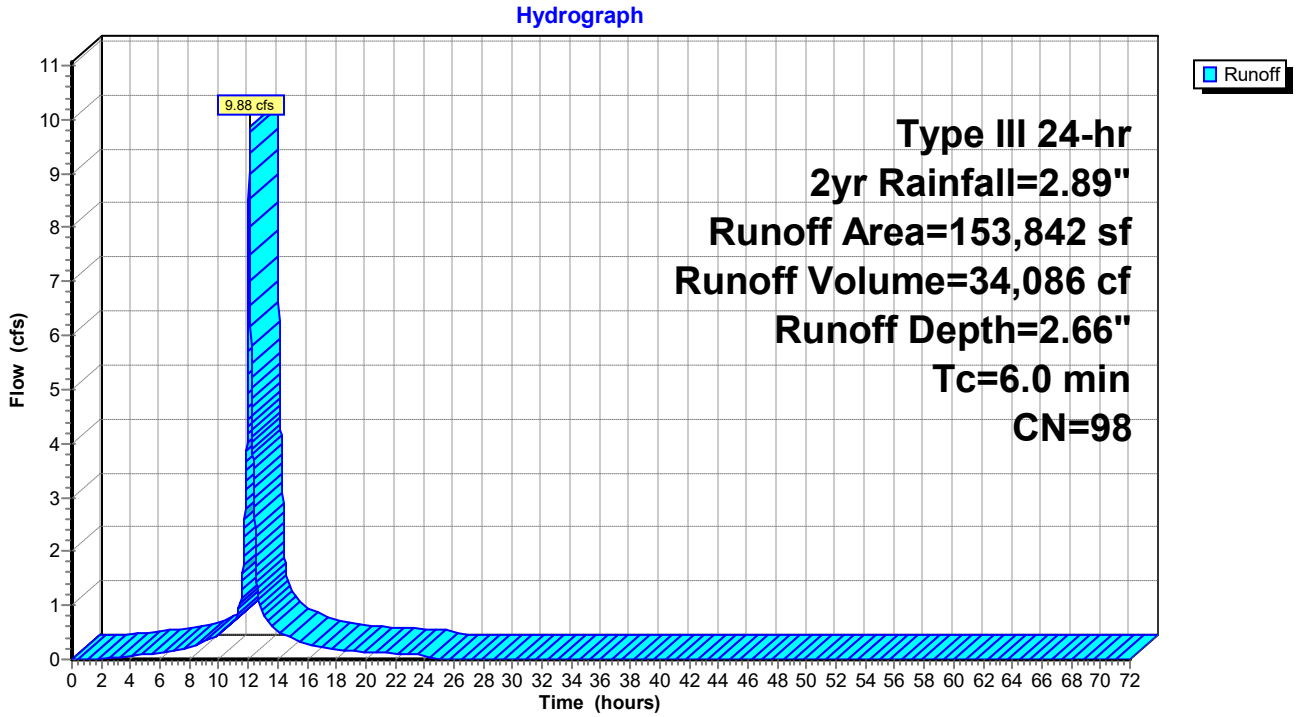
Runoff = 9.88 cfs @ 12.08 hrs, Volume= 34,086 cf, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	153,842	98	Synfield
	153,842		100.00% Impervious Area

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

Subcatchment P-10i: Exist Stadium



Summary for Subcatchment P-11: South Woods

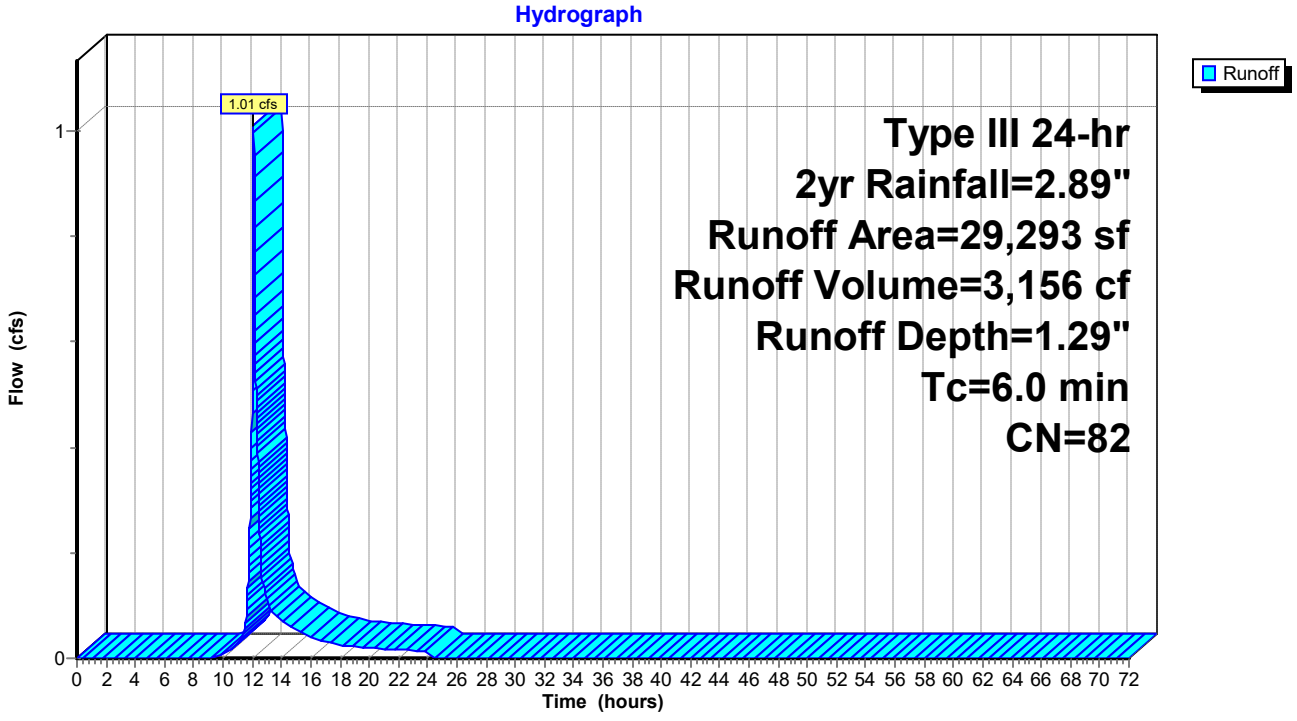
Runoff = 1.01 cfs @ 12.09 hrs, Volume= 3,156 cf, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
13,455	79	50-75% Grass cover, Fair, HSG C
8,827	73	Woods, Fair, HSG C
7,011	98	Paved parking, HSG C
29,293	82	Weighted Average
22,282		76.07% Pervious Area
7,011		23.93% Impervious Area

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

Subcatchment P-11: South Woods



Summary for Subcatchment P-12a: West Woods

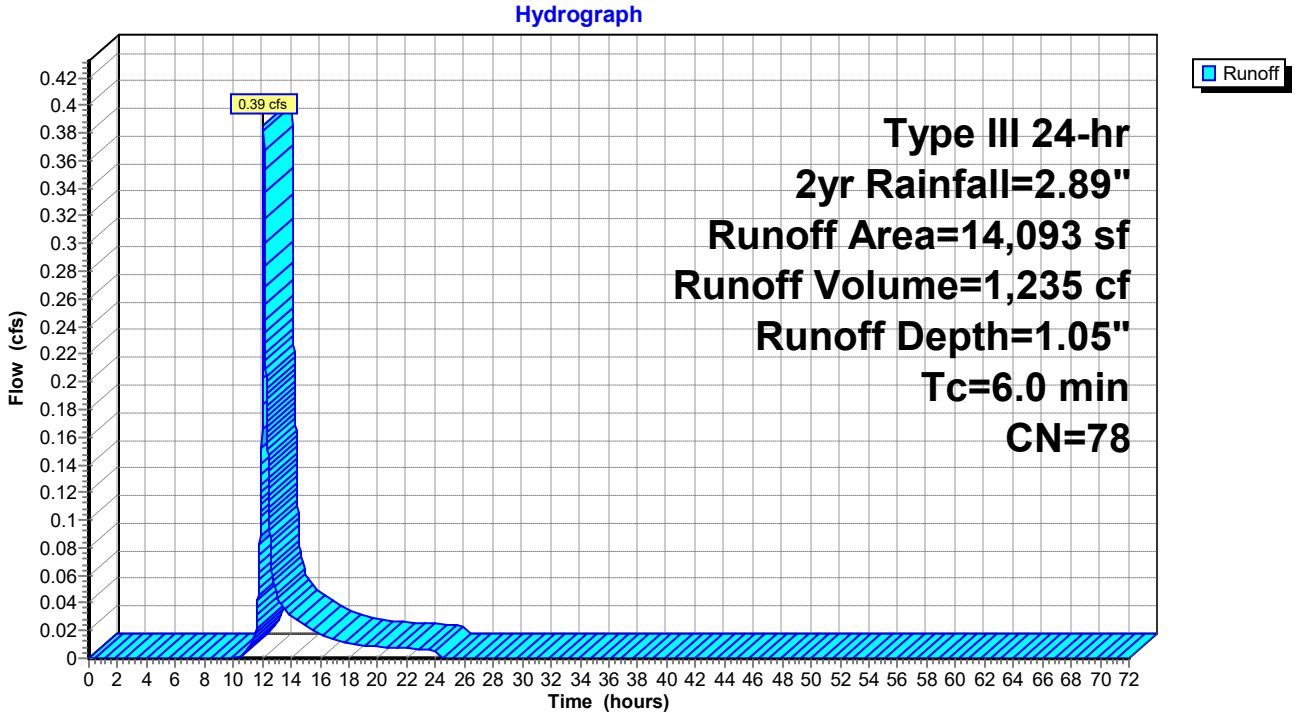
Runoff = 0.39 cfs @ 12.09 hrs, Volume= 1,235 cf, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
	6,843	79	50-75% Grass cover, Fair, HSG C
	6,289	73	Woods, Fair, HSG C
*	961	98	Exist Sidewalk, HSG C
	14,093	78	Weighted Average
	13,132		93.18% Pervious Area
	961		6.82% Impervious Area

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

Subcatchment P-12a: West Woods



Summary for Subcatchment P-12b: West Grass/Woods

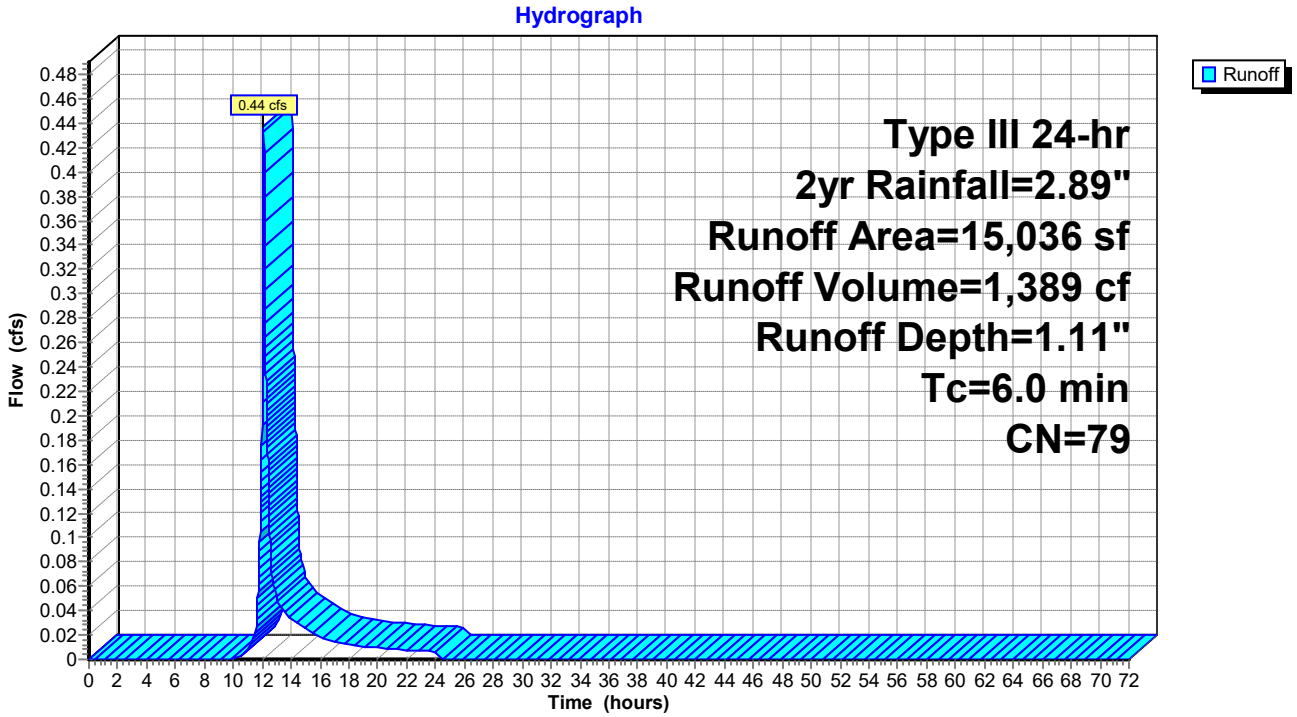
Runoff = 0.44 cfs @ 12.09 hrs, Volume= 1,389 cf, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
15,036	79	50-75% Grass cover, Fair, HSG C
15,036		100.00% Pervious Area

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

Subcatchment P-12b: West Grass/Woods



Summary for Subcatchment P-13: Woods

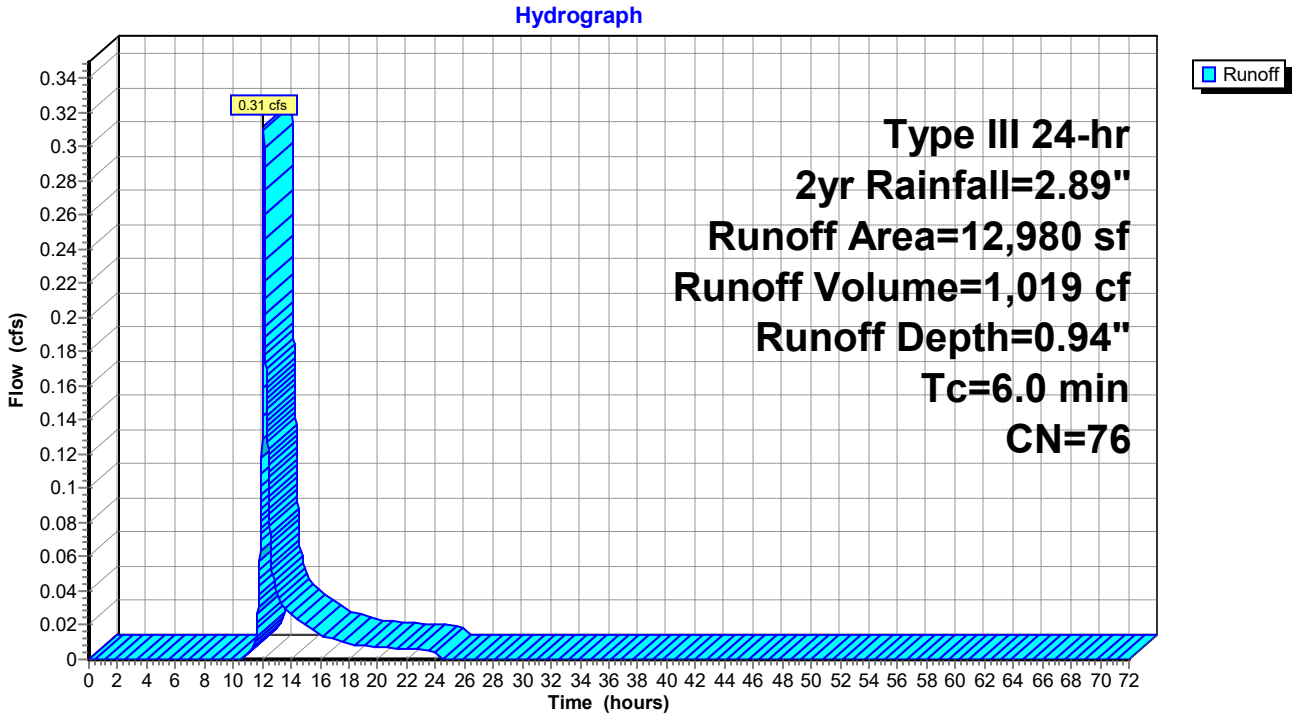
Runoff = 0.31 cfs @ 12.10 hrs, Volume= 1,019 cf, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
12,980	76	Woods/grass comb., Fair, HSG C
12,980		100.00% Pervious Area

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

Subcatchment P-13: Woods



Summary for Subcatchment P-14: Residential West#3

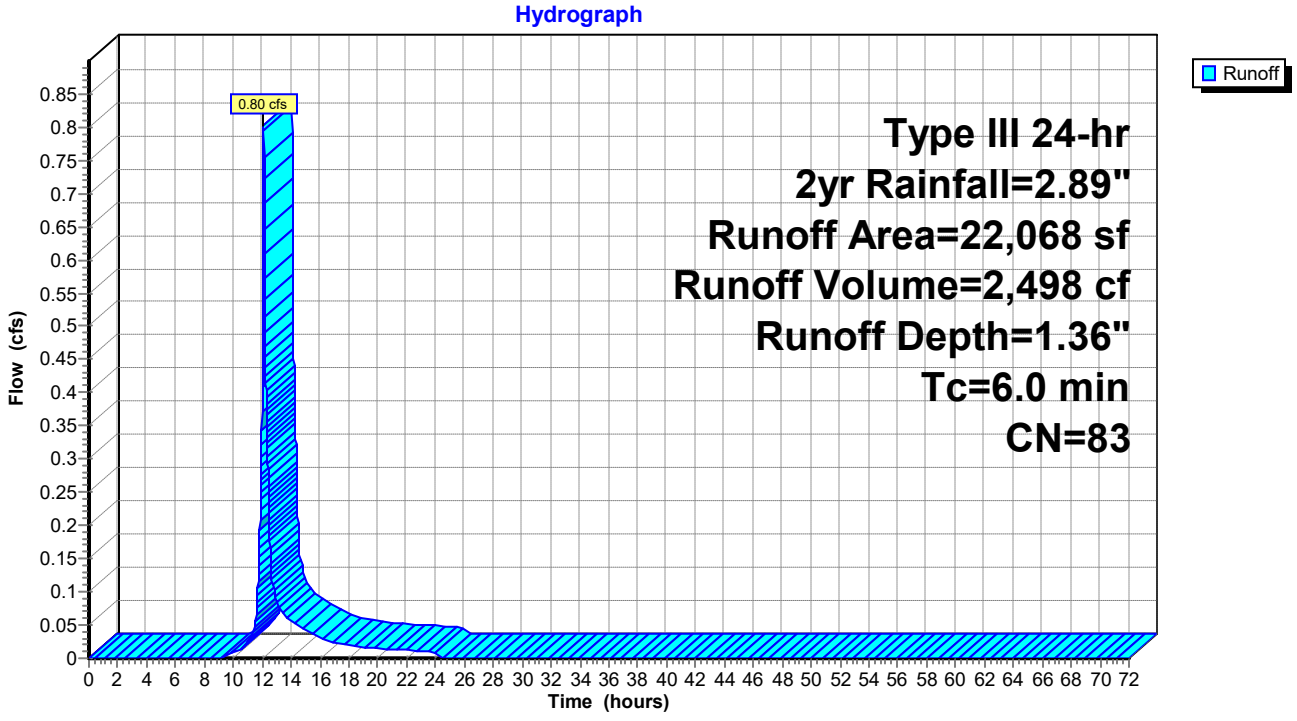
Runoff = 0.80 cfs @ 12.09 hrs, Volume= 2,498 cf, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
8,051	77	Woods, Poor, HSG C
5,778	98	Paved parking, HSG C
8,239	79	50-75% Grass cover, Fair, HSG C
22,068	83	Weighted Average
16,290		73.82% Pervious Area
5,778		26.18% Impervious Area

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

Subcatchment P-14: Residential West#3



Summary for Subcatchment P-15a: Northwest Grass/Woods

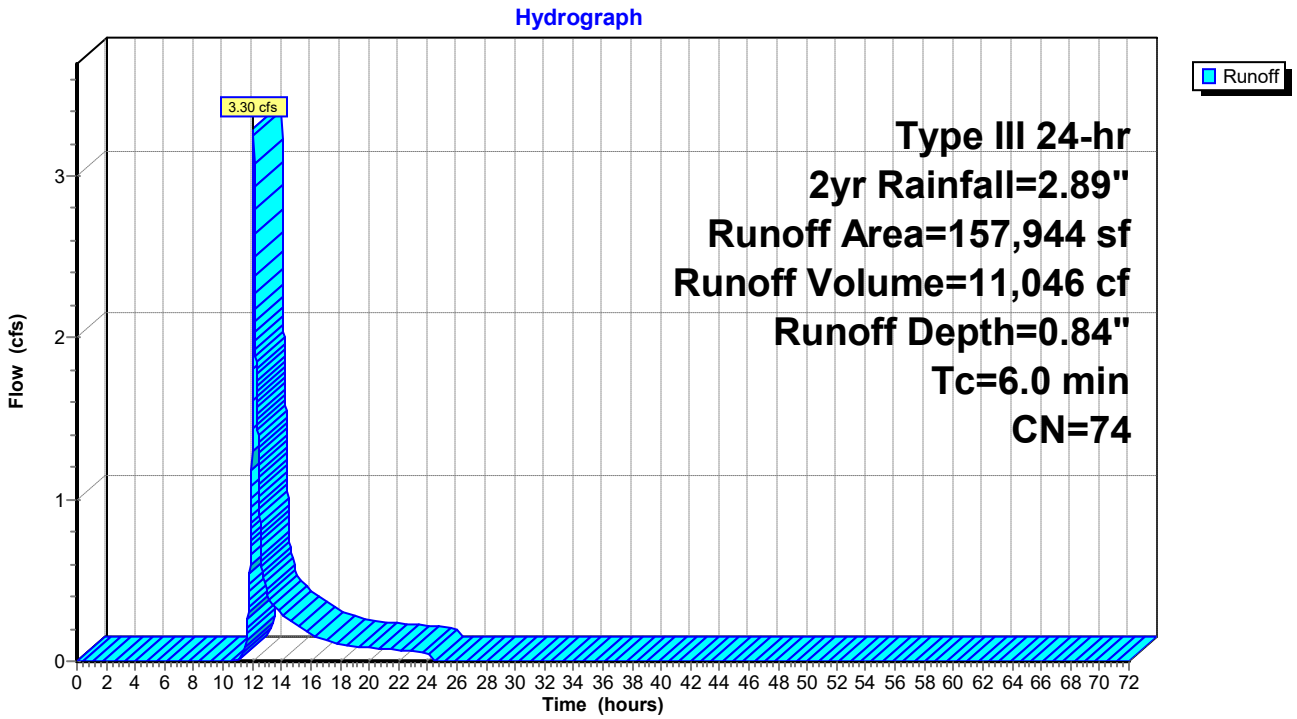
Runoff = 3.30 cfs @ 12.10 hrs, Volume= 11,046 cf, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
125,137	73	Woods, Fair, HSG C
32,807	79	50-75% Grass cover, Fair, HSG C
157,944	74	Weighted Average
157,944		100.00% Pervious Area

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

Subcatchment P-15a: Northwest Grass/Woods



Summary for Subcatchment P-15b: HS Entrance

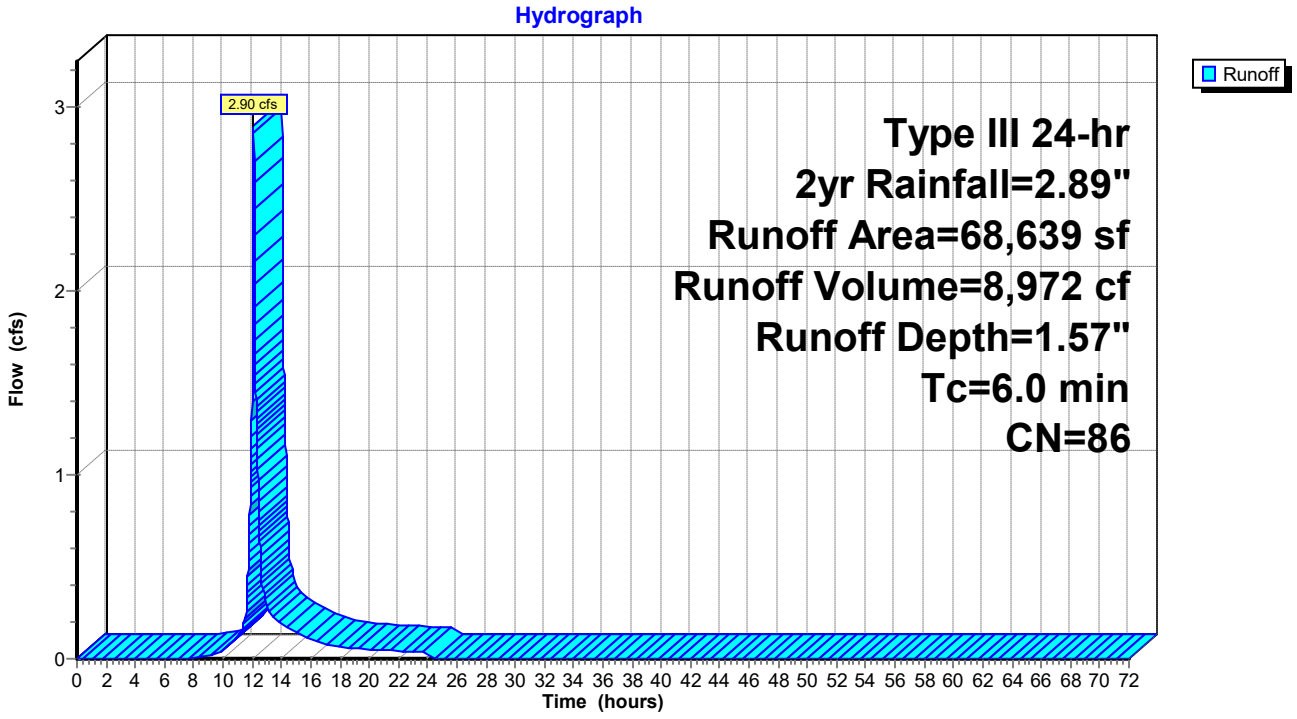
Runoff = 2.90 cfs @ 12.09 hrs, Volume= 8,972 cf, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
23,997	98	Paved parking, HSG C
44,642	79	50-75% Grass cover, Fair, HSG C
68,639	86	Weighted Average
44,642		65.04% Pervious Area
23,997		34.96% Impervious Area

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

Subcatchment P-15b: HS Entrance



Summary for Subcatchment P-15c: Grass Field

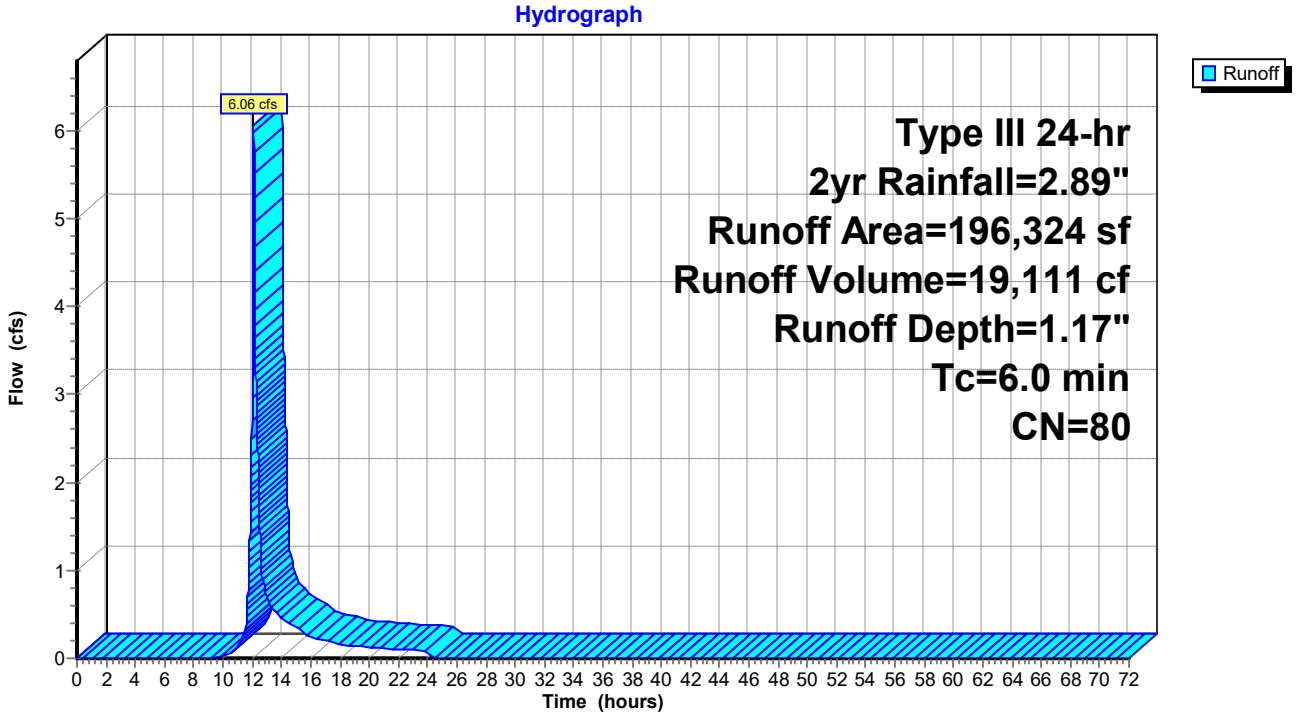
Runoff = 6.06 cfs @ 12.09 hrs, Volume= 19,111 cf, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	14,586	98	Sidewalks, HSG C
	173,715	79	50-75% Grass cover, Fair, HSG C
	8,023	73	Woods, Fair, HSG C
	196,324	80	Weighted Average
	181,738		92.57% Pervious Area
	14,586		7.43% Impervious Area

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

Subcatchment P-15c: Grass Field



Summary for Subcatchment P-15d: MS Roof and Parking

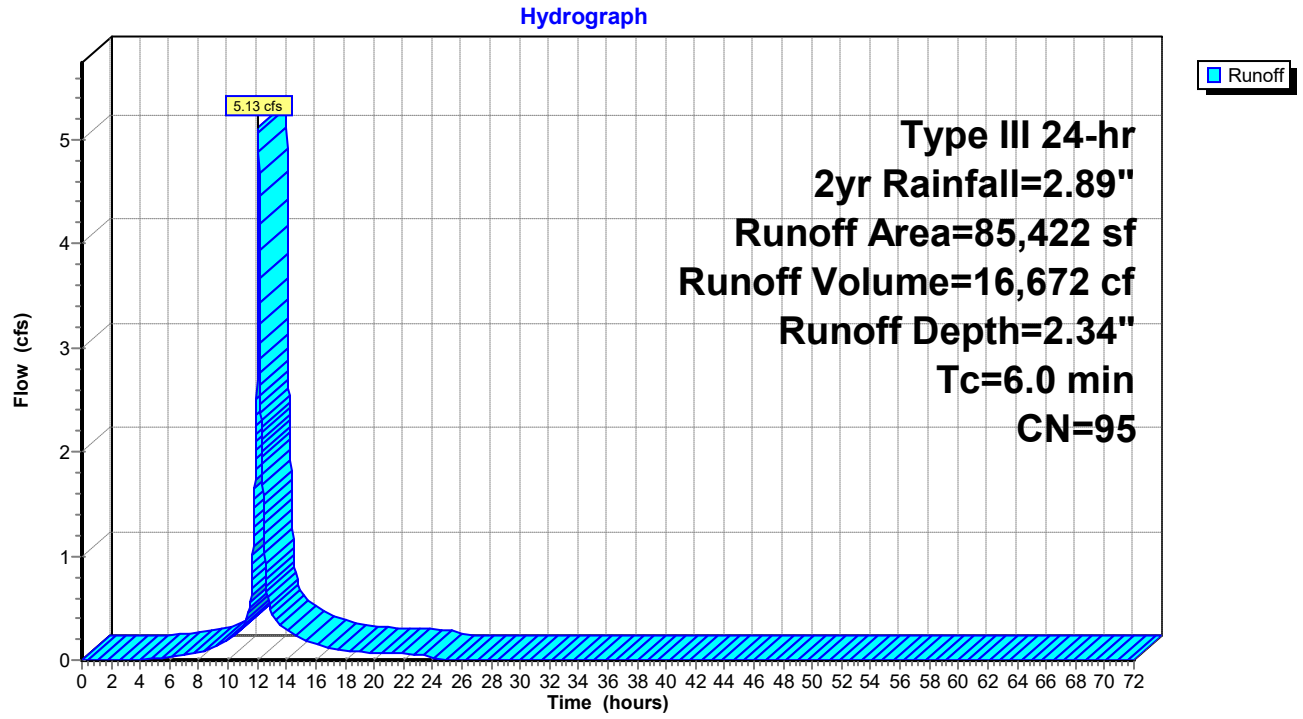
Runoff = 5.13 cfs @ 12.08 hrs, Volume= 16,672 cf, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

	Area (sf)	CN	Description
*	41,432	98	MS Roof, HSG C
	14,853	98	Paved parking, HSG C
	2,924	79	50-75% Grass cover, Fair, HSG C
	13,755	98	Paved parking, HSG C
	12,458	79	50-75% Grass cover, Fair, HSG C
	85,422	95	Weighted Average
	15,382		18.01% Pervious Area
	70,040		81.99% Impervious Area

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

Subcatchment P-15d: MS Roof and Parking



Summary for Subcatchment P-15e: MS Parking

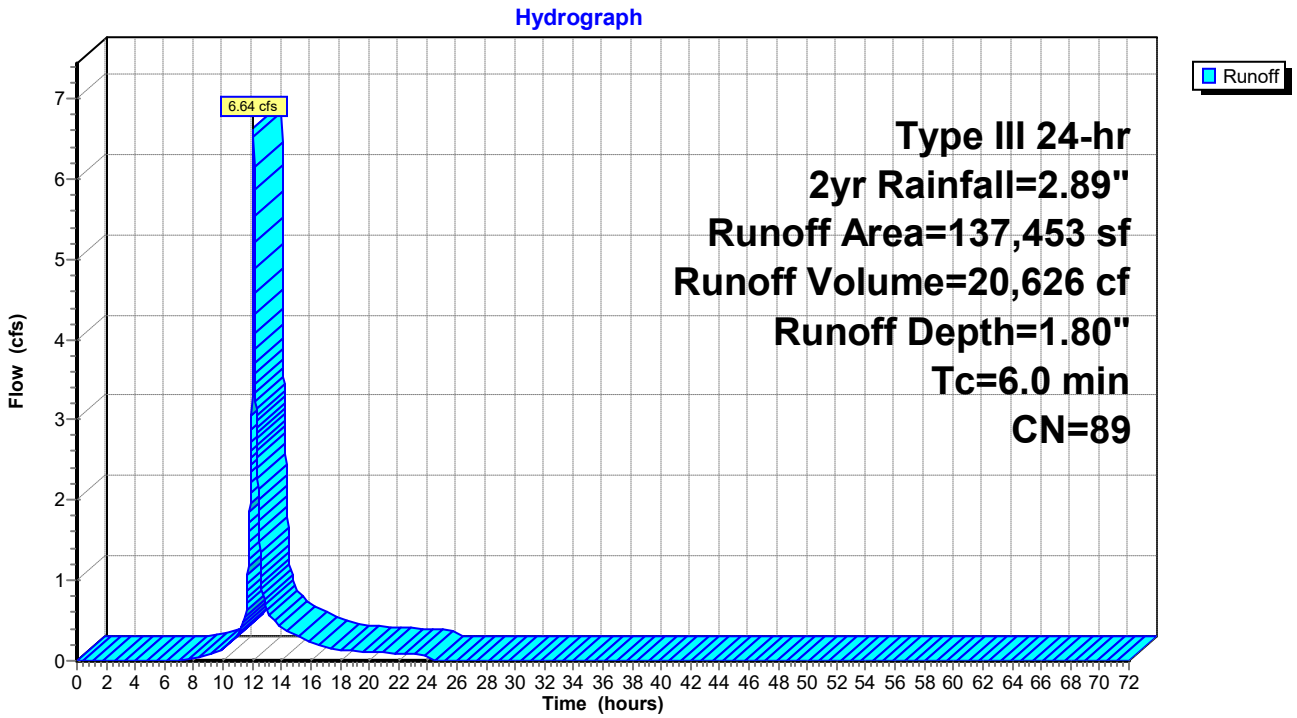
Runoff = 6.64 cfs @ 12.09 hrs, Volume= 20,626 cf, Depth= 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
17,142	79	50-75% Grass cover, Fair, HSG C
11,587	98	Paved parking, HSG C
46,032	79	50-75% Grass cover, Fair, HSG C
62,692	98	Paved parking, HSG C
137,453	89	Weighted Average
63,174		45.96% Pervious Area
74,279		54.04% Impervious Area

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

Subcatchment P-15e: MS Parking



Summary for Subcatchment P-16: (new Subcat)

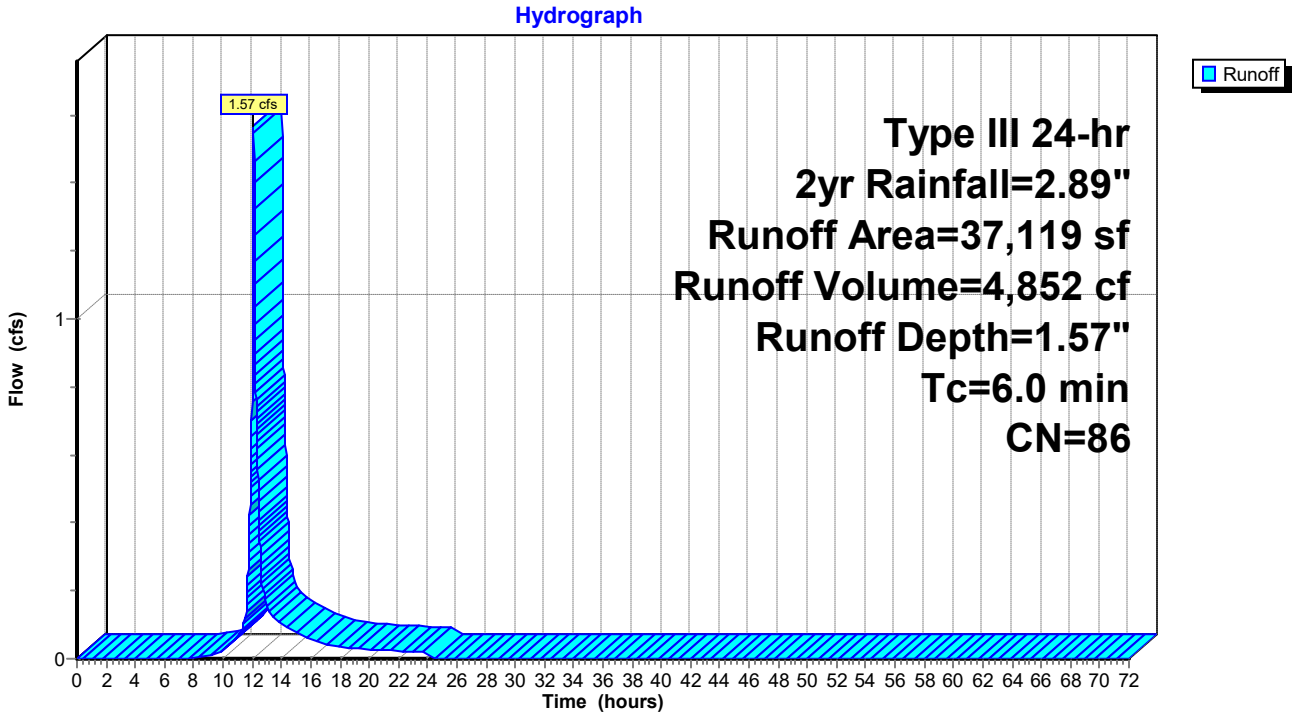
Runoff = 1.57 cfs @ 12.09 hrs, Volume= 4,852 cf, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=2.89"

Area (sf)	CN	Description
13,261	98	Paved parking, HSG C
23,858	79	50-75% Grass cover, Fair, HSG C
37,119	86	Weighted Average
23,858		64.27% Pervious Area
13,261		35.73% Impervious Area

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

Subcatchment P-16: (new Subcat)



Summary for Pond D1: DMH51

Inflow Area = 226,112 sf, 78.14% Impervious, Inflow Depth = 1.09" for 2yr event
Inflow = 1.30 cfs @ 12.76 hrs, Volume= 20,554 cf
Outflow = 1.30 cfs @ 12.77 hrs, Volume= 20,544 cf, Atten= 0%, Lag= 0.6 min
Primary = 1.27 cfs @ 12.55 hrs, Volume= 11,197 cf
Secondary = 0.65 cfs @ 12.89 hrs, Volume= 9,346 cf

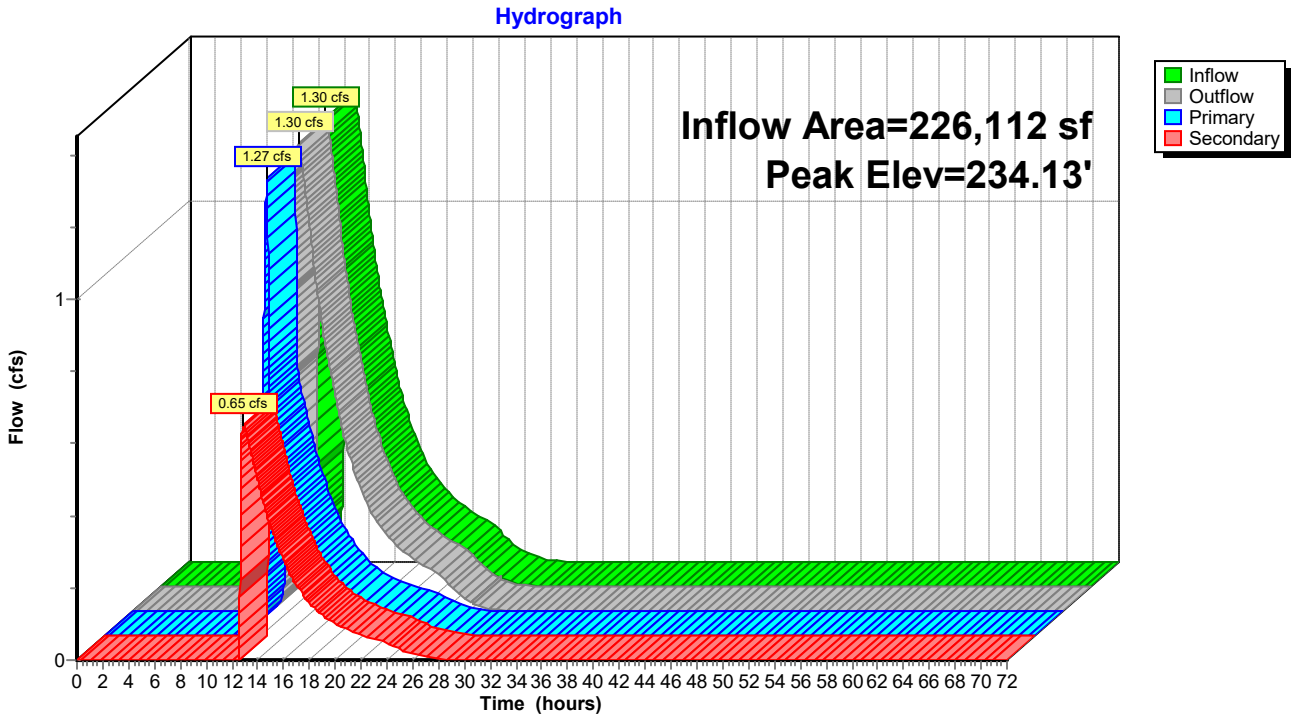
Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.13' @ 12.89 hrs
Flood Elev= 238.32'

Device	Routing	Invert	Outlet Devices	
#1	Primary	232.90'	**24.0" Vert. Orifice/Grate**	C= 0.600
#2	Secondary	233.80'	**24.0" Vert. Orifice/Grate**	C= 0.600

Primary OutFlow Max=0.57 cfs @ 12.55 hrs HW=233.81' TW=233.80' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 0.57 cfs @ 0.41 fps)

Secondary OutFlow Max=0.65 cfs @ 12.89 hrs HW=234.13' TW=233.19' (Dynamic Tailwater)
└**2=Orifice/Grate** (Orifice Controls 0.65 cfs @ 1.95 fps)

Pond D1: DMH51



Summary for Pond D2: DMH-55

Inflow Area = 71,980 sf, 79.90% Impervious, Inflow Depth = 3.80" for 2yr event
Inflow = 4.19 cfs @ 12.09 hrs, Volume= 22,806 cf
Outflow = 4.19 cfs @ 12.10 hrs, Volume= 22,804 cf, Atten= 0%, Lag= 0.6 min
Primary = 2.99 cfs @ 12.09 hrs, Volume= 19,132 cf
Secondary = 1.23 cfs @ 12.11 hrs, Volume= 3,673 cf

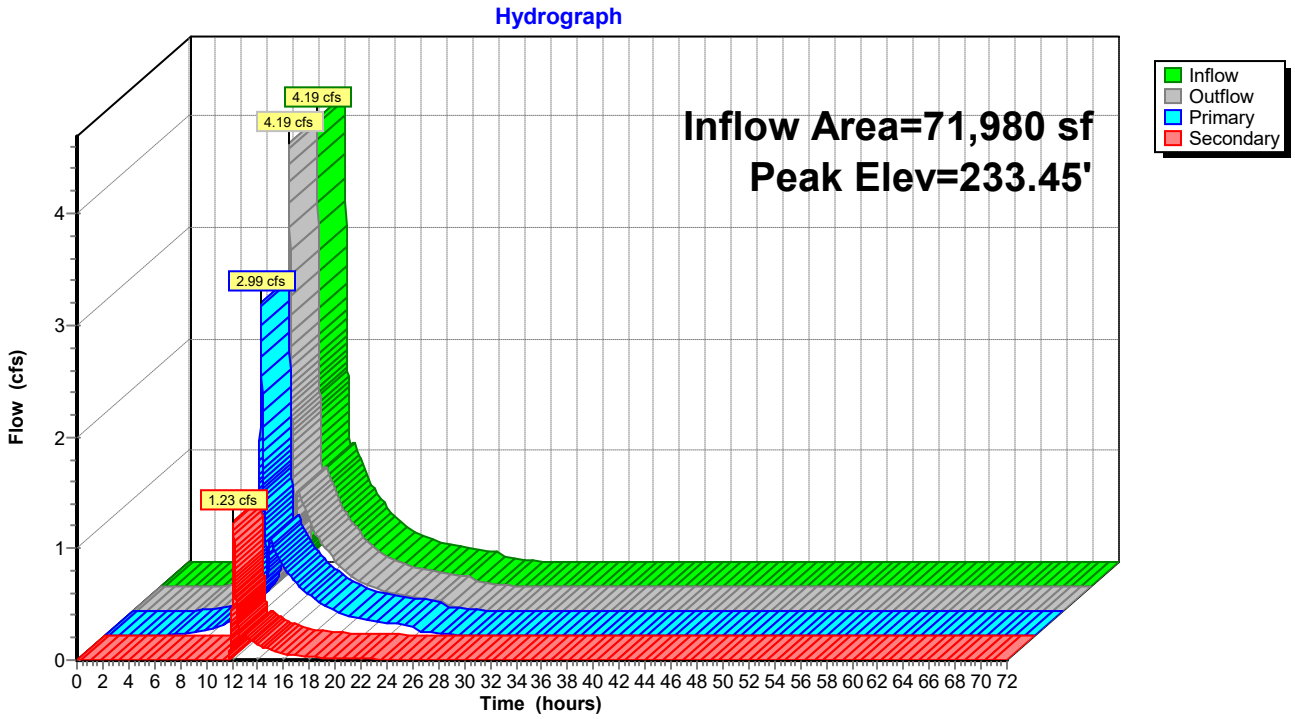
Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 233.45' @ 12.11 hrs
Flood Elev= 242.27'

Device	Routing	Invert	Outlet Devices	
#1	Primary	232.50'	**24.0" Vert. Orifice/Grate**	C= 0.600
#2	Secondary	233.00'	**24.0" Vert. Orifice/Grate**	C= 0.600

Primary OutFlow Max=2.88 cfs @ 12.09 hrs HW=233.45' TW=233.28' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 2.88 cfs @ 1.97 fps)

Secondary OutFlow Max=1.23 cfs @ 12.11 hrs HW=233.45' TW=0.00' (Dynamic Tailwater)
└**2=Orifice/Grate** (Orifice Controls 1.23 cfs @ 2.30 fps)

Pond D2: DMH-55

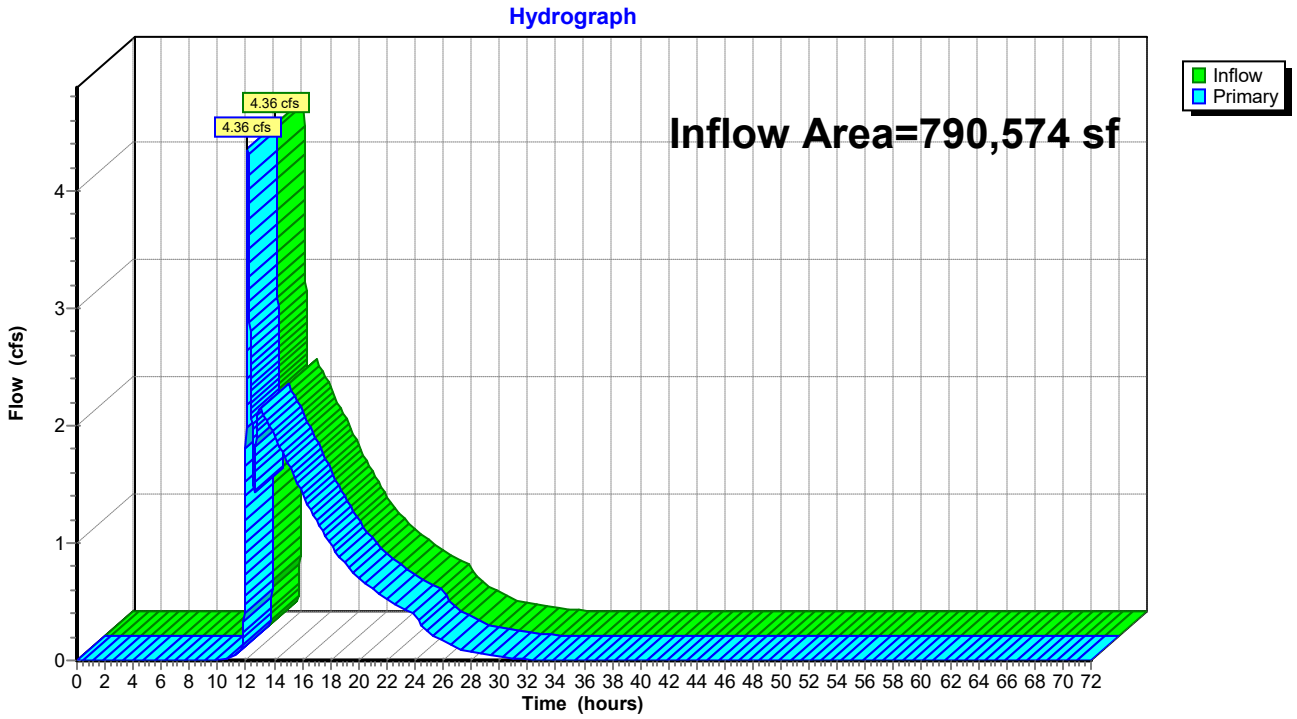


Summary for Pond DP-10p: Exist Basin #3

Inflow Area = 790,574 sf, 79.27% Impervious, Inflow Depth = 0.82" for 2yr event
Inflow = 4.36 cfs @ 12.12 hrs, Volume= 54,252 cf
Primary = 4.36 cfs @ 12.13 hrs, Volume= 54,252 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-10p: Exist Basin #3

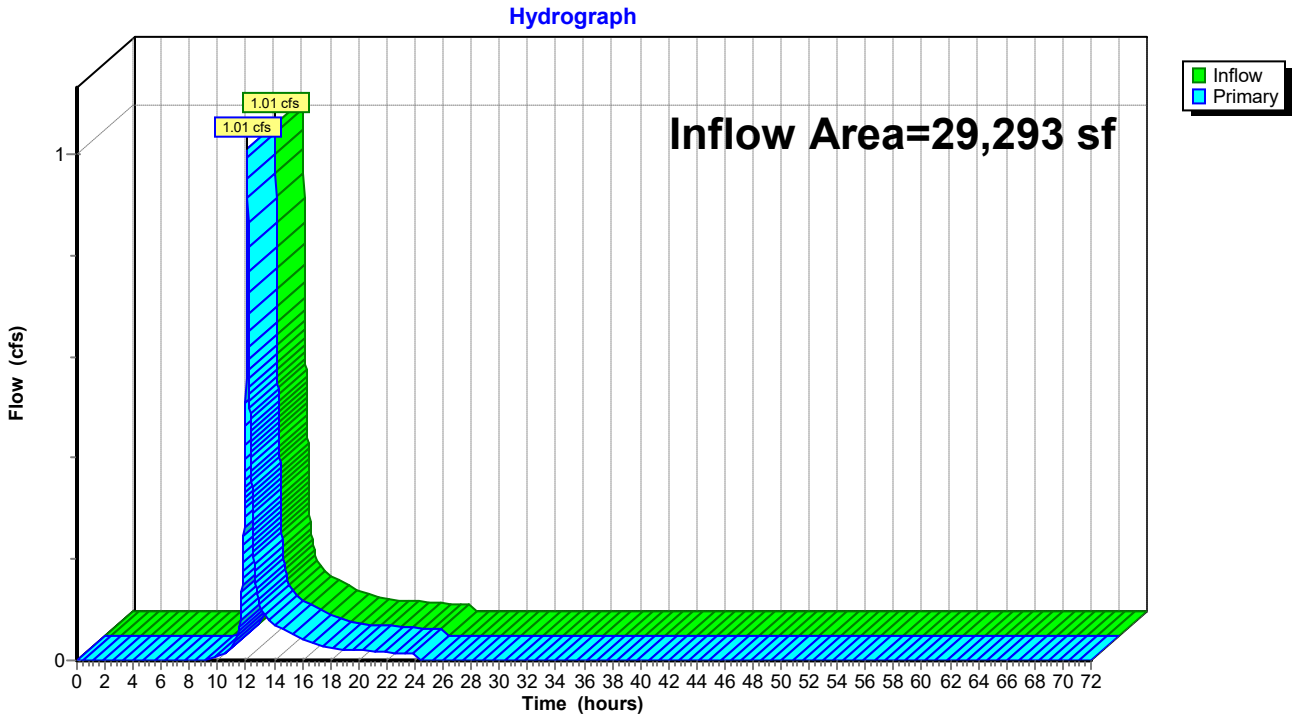


Summary for Pond DP-11p: Woods Southwest

Inflow Area = 29,293 sf, 23.93% Impervious, Inflow Depth = 1.29" for 2yr event
Inflow = 1.01 cfs @ 12.09 hrs, Volume= 3,156 cf
Primary = 1.01 cfs @ 12.10 hrs, Volume= 3,156 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-11p: Woods Southwest

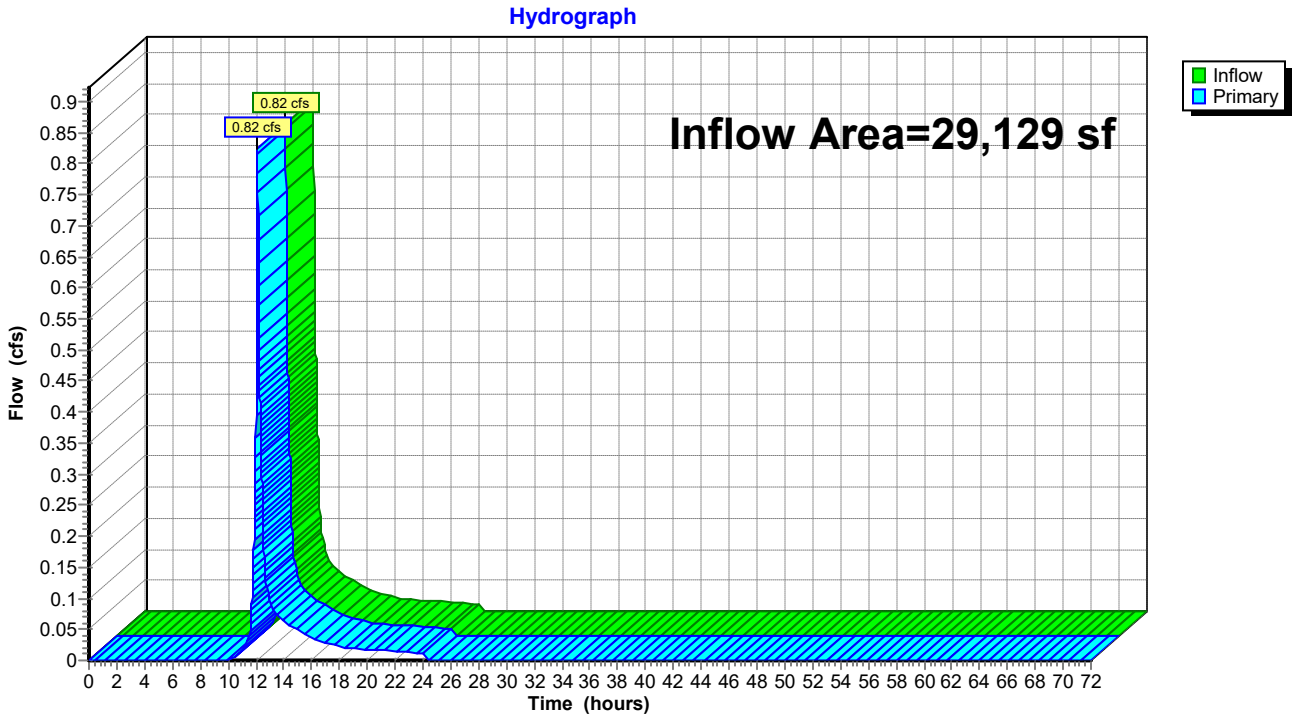


Summary for Pond DP-12p: Residential West#1

Inflow Area = 29,129 sf, 3.30% Impervious, Inflow Depth = 1.08" for 2yr event
Inflow = 0.82 cfs @ 12.09 hrs, Volume= 2,624 cf
Primary = 0.82 cfs @ 12.10 hrs, Volume= 2,624 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-12p: Residential West#1

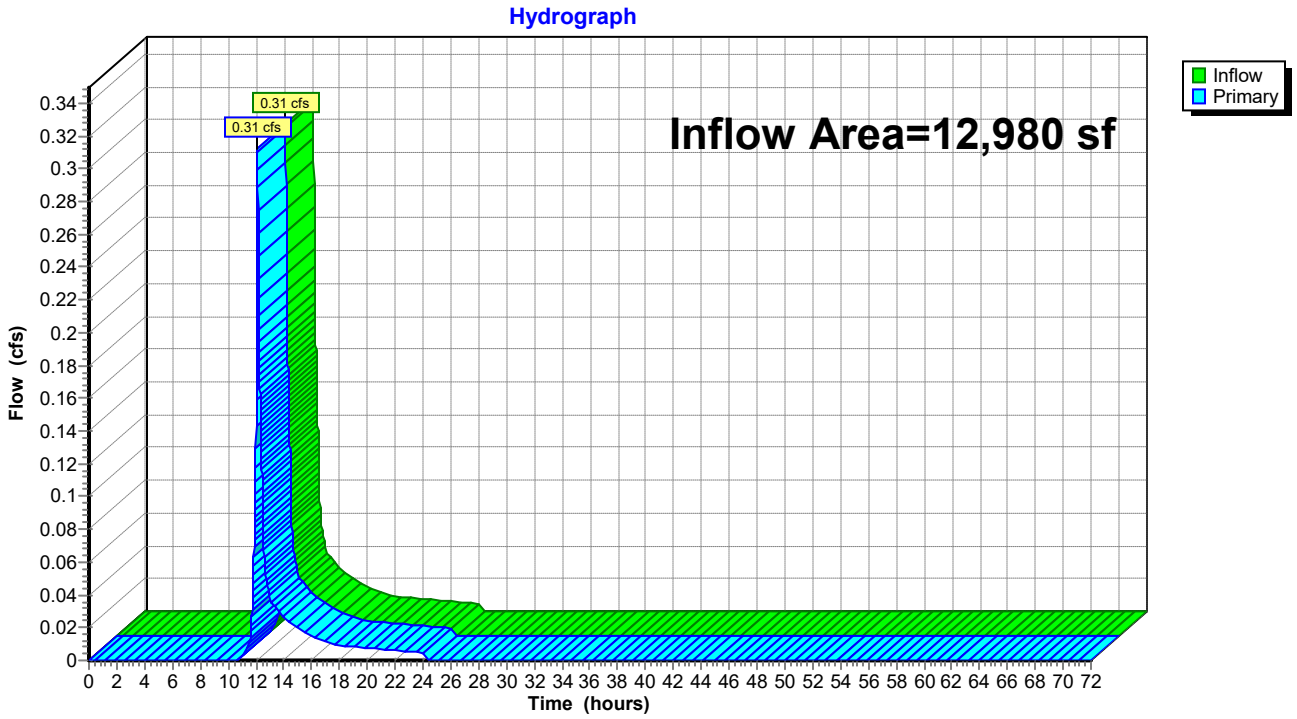


Summary for Pond DP-13p: Residential West#2

Inflow Area = 12,980 sf, 0.00% Impervious, Inflow Depth = 0.94" for 2yr event
Inflow = 0.31 cfs @ 12.10 hrs, Volume= 1,019 cf
Primary = 0.31 cfs @ 12.11 hrs, Volume= 1,019 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-13p: Residential West#2

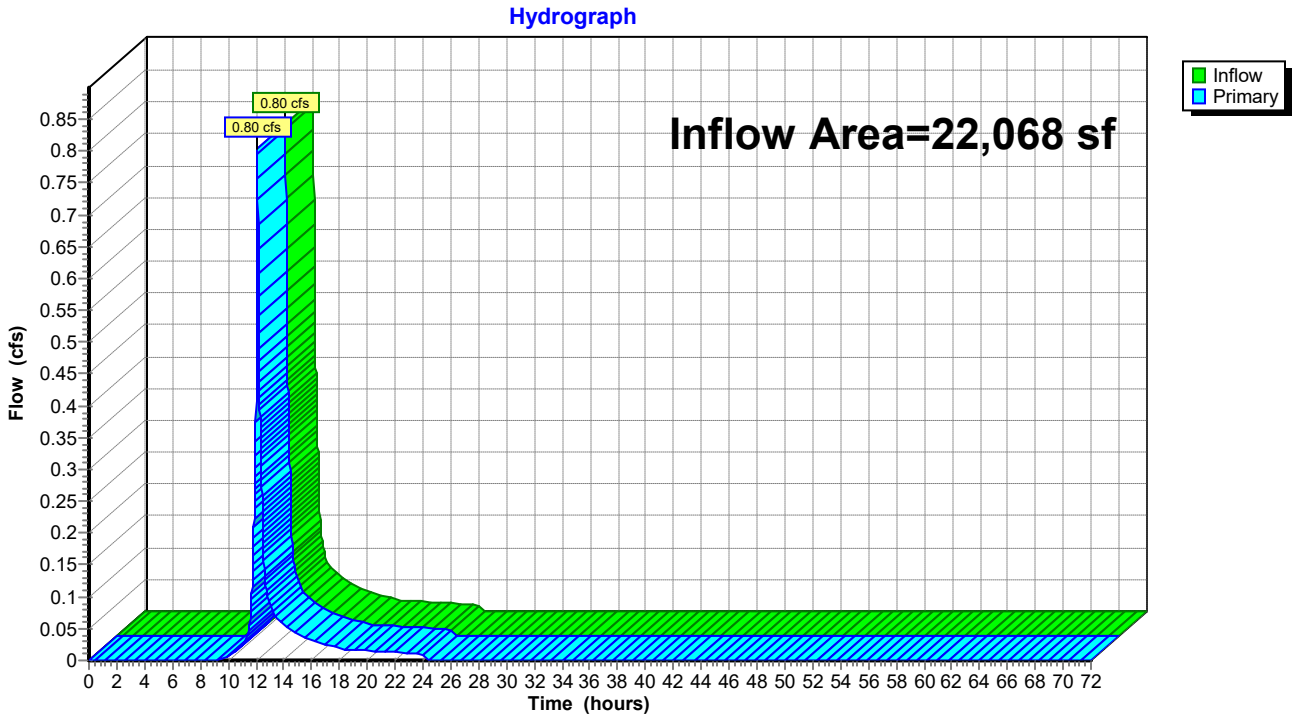


Summary for Pond DP-14p: Woods to West

Inflow Area = 22,068 sf, 26.18% Impervious, Inflow Depth = 1.36" for 2yr event
Inflow = 0.80 cfs @ 12.09 hrs, Volume= 2,498 cf
Primary = 0.80 cfs @ 12.10 hrs, Volume= 2,498 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-14p: Woods to West

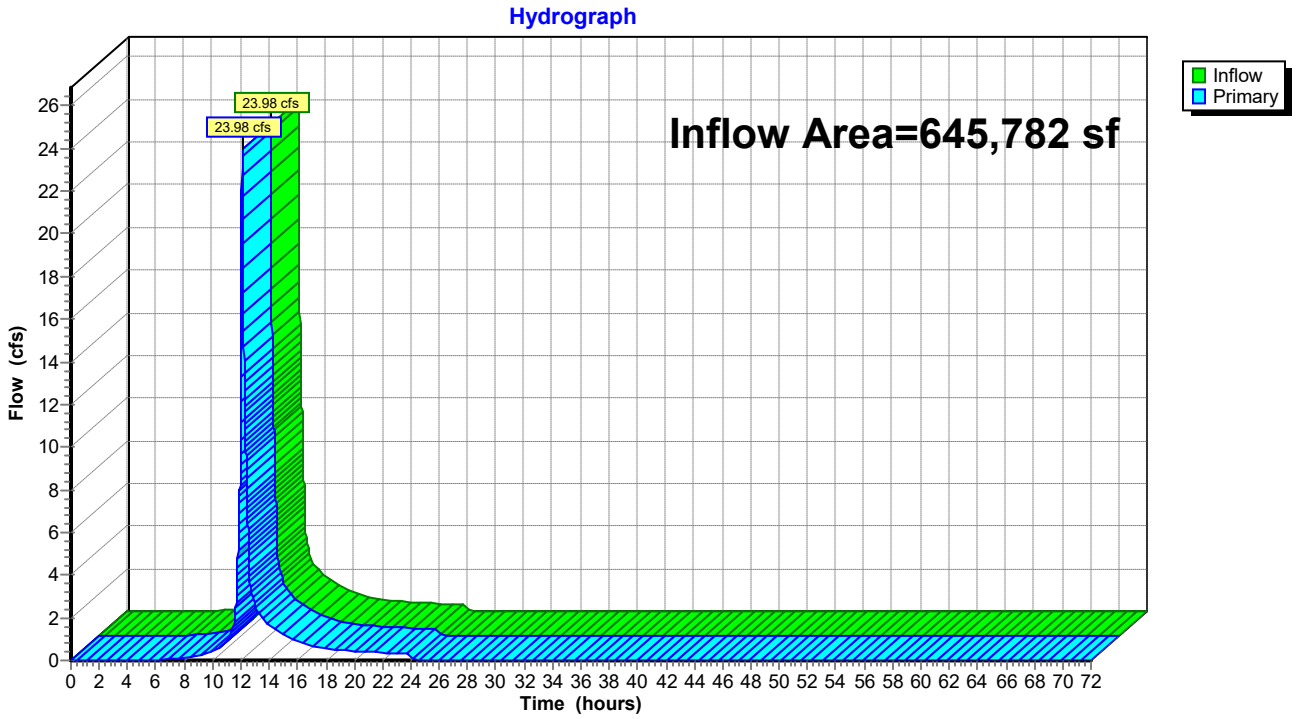


Summary for Pond DP-15p: Wetlands

Inflow Area = 645,782 sf, 28.32% Impervious, Inflow Depth = 1.42" for 2yr event
Inflow = 23.98 cfs @ 12.09 hrs, Volume= 76,427 cf
Primary = 23.98 cfs @ 12.10 hrs, Volume= 76,427 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-15p: Wetlands

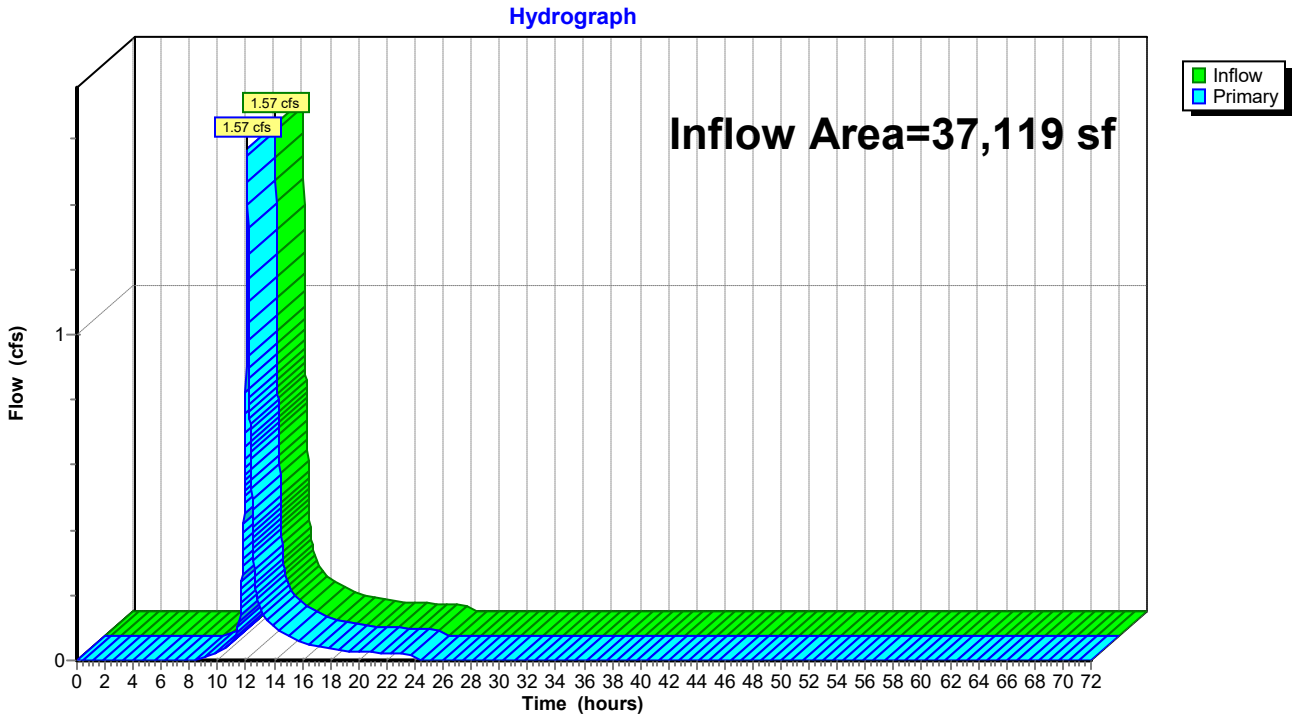


Summary for Pond DP-16p: Landry Avenue

Inflow Area = 37,119 sf, 35.73% Impervious, Inflow Depth = 1.57" for 2yr event
Inflow = 1.57 cfs @ 12.09 hrs, Volume= 4,852 cf
Primary = 1.57 cfs @ 12.10 hrs, Volume= 4,852 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-16p: Landry Avenue

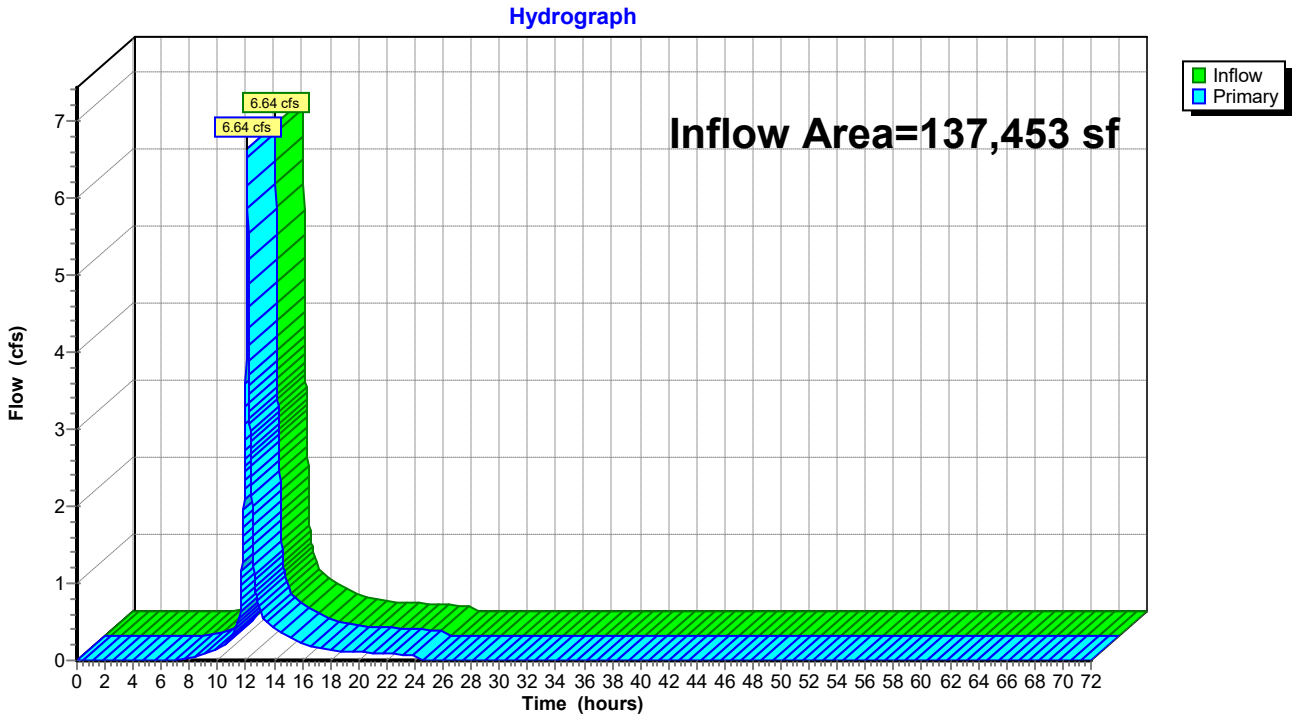


Summary for Pond EC: Exist Underground Chambers

Inflow Area = 137,453 sf, 54.04% Impervious, Inflow Depth = 1.80" for 2yr event
Inflow = 6.64 cfs @ 12.09 hrs, Volume= 20,626 cf
Primary = 6.64 cfs @ 12.10 hrs, Volume= 20,626 cf, Atten= 0%, Lag= 0.6 min

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

Pond EC: Exist Underground Chambers



Summary for Pond UGI-6: UGI-6

Inflow Area = 204,095 sf, 86.57% Impervious, Inflow Depth = 2.40" for 2yr event
Inflow = 12.43 cfs @ 12.08 hrs, Volume= 40,870 cf
Outflow = 1.29 cfs @ 12.82 hrs, Volume= 38,639 cf, Atten= 90%, Lag= 44.4 min
Discarded = 0.09 cfs @ 12.82 hrs, Volume= 20,119 cf
Primary = 1.21 cfs @ 12.82 hrs, Volume= 18,520 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 236.59' @ 12.82 hrs Surf.Area= 21,560 sf Storage= 23,648 cf

Plug-Flow detention time= 931.3 min calculated for 38,633 cf (95% of inflow)
Center-of-Mass det. time= 901.0 min (1,680.3 - 779.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.00'	18,927 cf	**357.75'W x 60.27'L x 3.50'H Field A** 75,461 cf Overall - 28,143 cf Embedded = 47,318 cf x 40.0% Voids
#2A	235.50'	28,143 cf	**Cultec R-300HD** x 600 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 600 Chambers in 75 Rows Cap Storage= +2.7 cf x 2 x 75 rows = 398.2 cf
		47,071 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.10'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	235.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00' Phase-In= 0.10'

Discarded OutFlow Max=0.09 cfs @ 12.82 hrs HW=236.59' (Free Discharge)
↑└**2=Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=1.21 cfs @ 12.82 hrs HW=236.59' TW=234.13' (Dynamic Tailwater)
↑└**1=Orifice/Grate** (Orifice Controls 1.21 cfs @ 2.39 fps)

Pond UGI-6: UGI-6 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 75 rows = 398.2 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

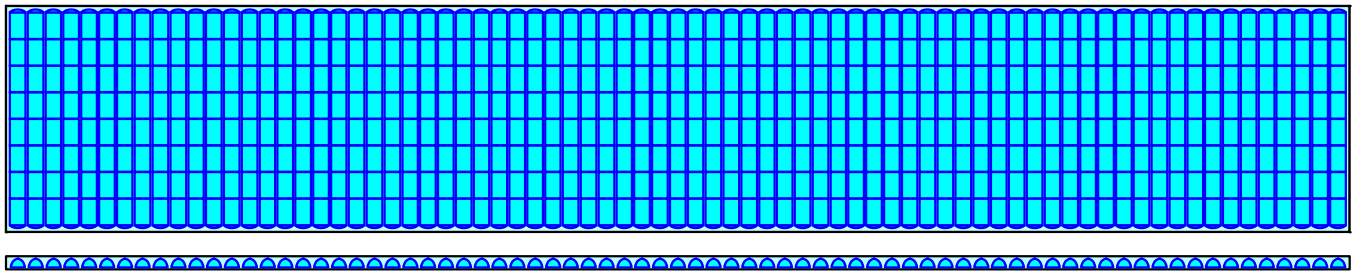
8 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 58.27' Row Length +12.0" End Stone x 2 = 60.27' Base Length
75 Rows x 51.0" Wide + 6.0" Spacing x 74 + 12.0" Side Stone x 2 = 357.75' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

600 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 75 Rows = 28,143.4 cf Chamber Storage

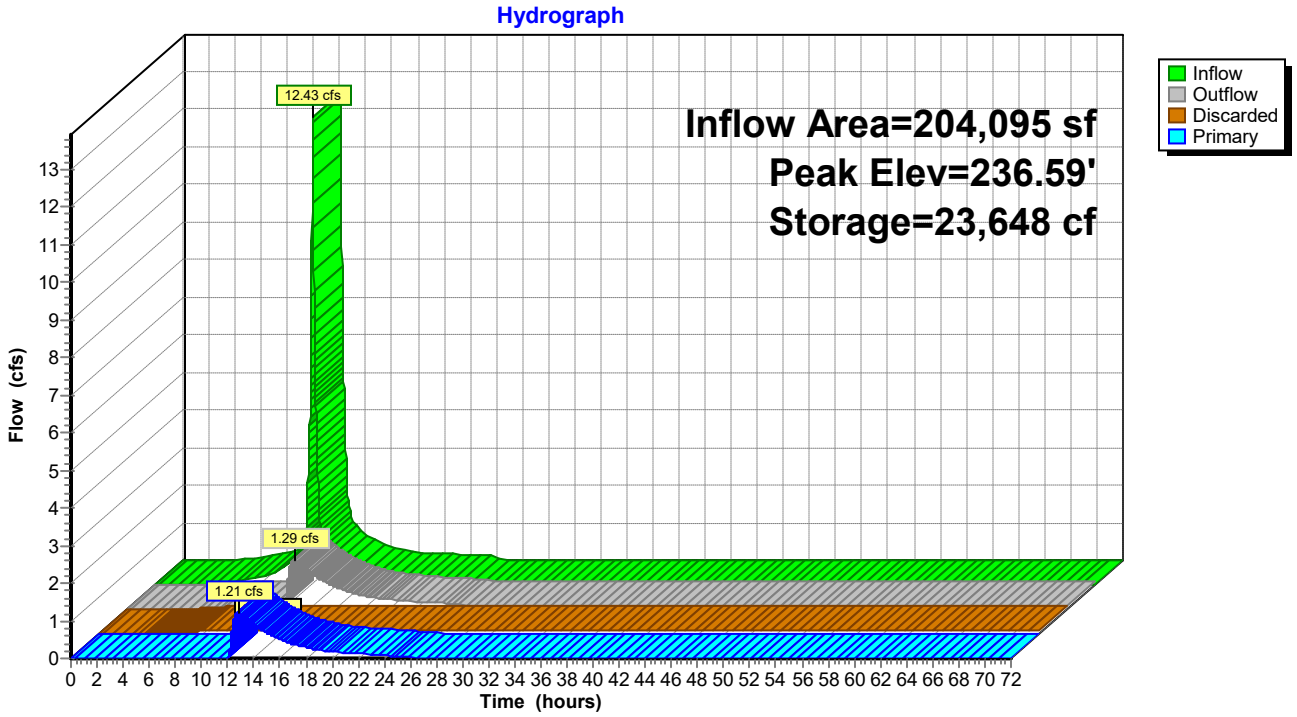
75,461.4 cf Field - 28,143.4 cf Chambers = 47,318.0 cf Stone x 40.0% Voids = 18,927.2 cf Stone Storage

Chamber Storage + Stone Storage = 47,070.6 cf = 1.081 af
Overall Storage Efficiency = 62.4%
Overall System Size = 60.27' x 357.75' x 3.50'

600 Chambers
2,794.9 cy Field
1,752.5 cy Stone



Pond UGI-6: UGI-6



Summary for Pond UGI-7: UGI-7

Inflow Area = 226,112 sf, 78.14% Impervious, Inflow Depth = 0.59" for 2yr event
Inflow = 1.27 cfs @ 12.55 hrs, Volume= 11,197 cf
Outflow = 0.64 cfs @ 12.89 hrs, Volume= 9,410 cf, Atten= 50%, Lag= 20.6 min
Discarded = 0.00 cfs @ 12.89 hrs, Volume= 180 cf
Primary = 0.64 cfs @ 12.89 hrs, Volume= 9,230 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.12' @ 12.89 hrs Surf.Area= 2,040 sf Storage= 2,395 cf

Plug-Flow detention time= 153.5 min calculated for 9,409 cf (84% of inflow)
Center-of-Mass det. time= 85.7 min (1,003.9 - 918.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	232.40'	1,838 cf	**44.25'W x 46.10'L x 3.50'H Field A** 7,140 cf Overall - 2,545 cf Embedded = 4,595 cf x 40.0% Voids
#2A	232.90'	2,545 cf	**Cultec R-300HD** x 54 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 54 Chambers in 9 Rows Cap Storage= +2.7 cf x 2 x 9 rows = 47.8 cf
		4,383 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	232.40'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = -1.60'
#2	Primary	233.80'	**24.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.00 cfs @ 12.89 hrs HW=234.12' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.64 cfs @ 12.89 hrs HW=234.12' TW=0.00' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Orifice Controls 0.64 cfs @ 1.93 fps)

Pond UGI-7: UGI-7 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 9 rows = 47.8 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

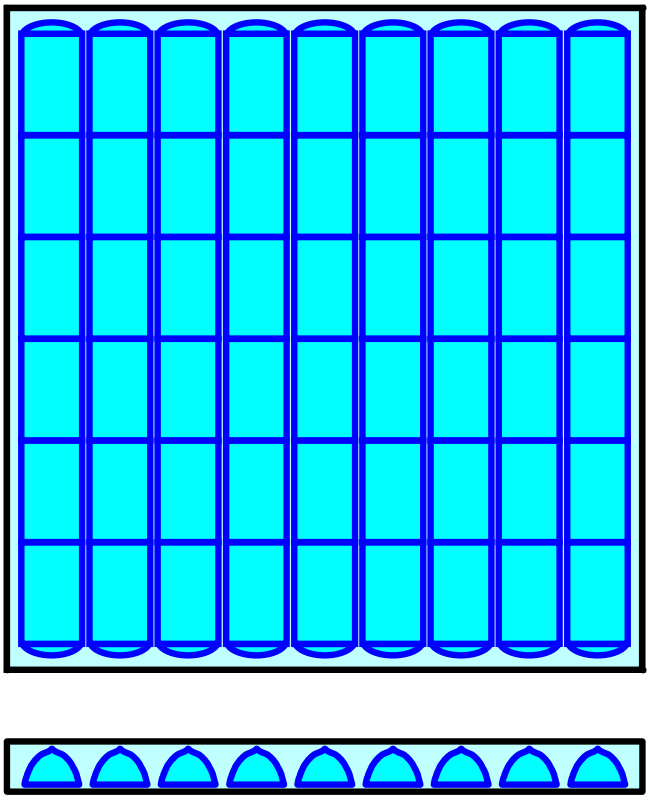
6 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 44.10' Row Length +12.0" End Stone x 2 = 46.10' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

54 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 9 Rows = 2,544.9 cf Chamber Storage

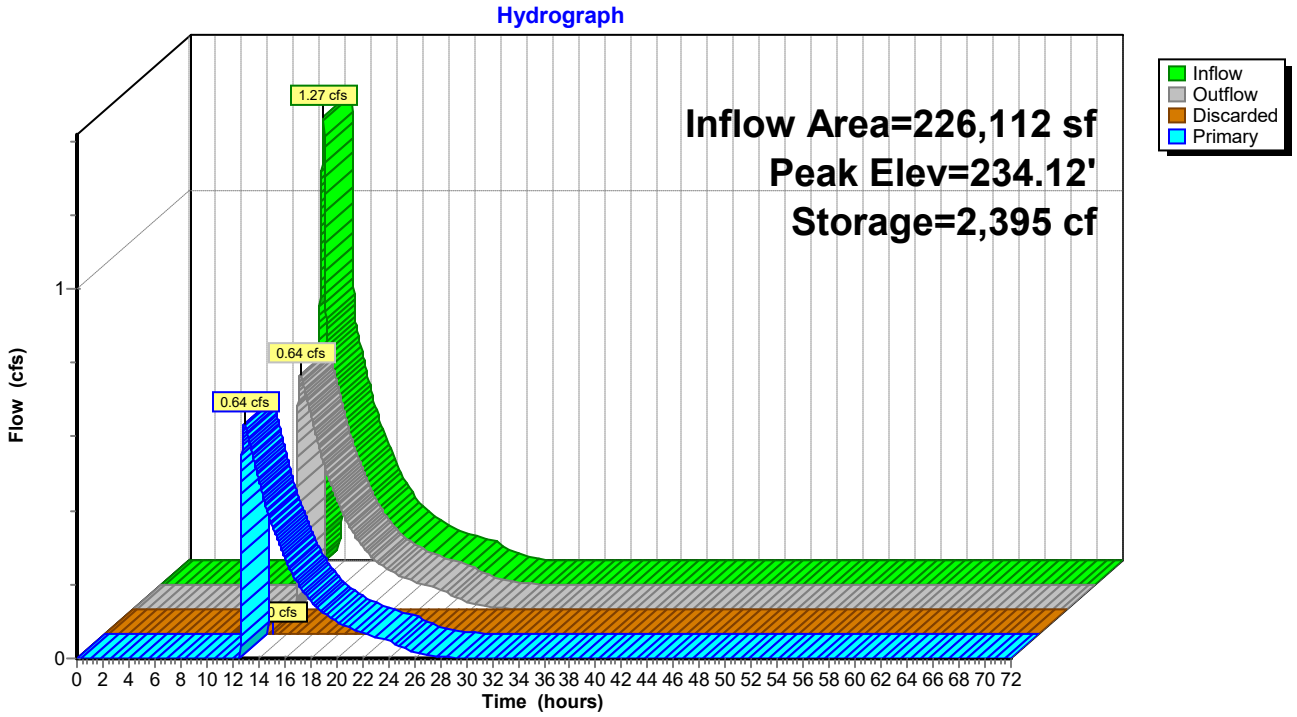
7,139.7 cf Field - 2,544.9 cf Chambers = 4,594.9 cf Stone x 40.0% Voids = 1,838.0 cf Stone Storage

Chamber Storage + Stone Storage = 4,382.8 cf = 0.101 af
Overall Storage Efficiency = 61.4%
Overall System Size = 46.10' x 44.25' x 3.50'

54 Chambers
264.4 cy Field
170.2 cy Stone



Pond UGI-7: UGI-7



Summary for Pond UGI-8: UGI-8

Inflow Area = 71,980 sf, 79.90% Impervious, Inflow Depth = 3.19" for 2yr event
Inflow = 2.99 cfs @ 12.09 hrs, Volume= 19,132 cf
Outflow = 2.34 cfs @ 12.15 hrs, Volume= 19,087 cf, Atten= 22%, Lag= 4.0 min
Discarded = 0.02 cfs @ 12.15 hrs, Volume= 3,920 cf
Primary = 2.33 cfs @ 12.15 hrs, Volume= 15,166 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 233.32' @ 12.15 hrs Surf.Area= 4,339 sf Storage= 3,808 cf

Plug-Flow detention time= 332.2 min calculated for 19,087 cf (100% of inflow)
Center-of-Mass det. time= 330.4 min (1,201.2 - 870.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	232.00'	3,838 cf	**39.50'W x 109.85'L x 3.50'H Field A** 15,187 cf Overall - 5,592 cf Embedded = 9,595 cf x 40.0% Voids
#2A	232.50'	5,592 cf	**Cultec R-300HD** x 120 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 120 Chambers in 8 Rows Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf
		9,430 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	232.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	233.00'	**4.0' long x 3.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	232.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = -2.00' Phase-In= 0.10'

Discarded OutFlow Max=0.02 cfs @ 12.15 hrs HW=233.32' (Free Discharge)
└**3=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=2.32 cfs @ 12.15 hrs HW=233.32' TW=0.00' (Dynamic Tailwater)
└**1=Orifice/Grate** (Passes 2.32 cfs of 3.74 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 2.32 cfs @ 1.85 fps)

Pond UGI-8: UGI-8 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

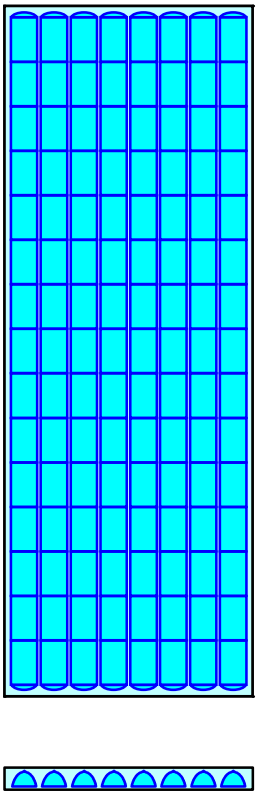
15 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 107.85' Row Length +12.0" End Stone x 2 = 109.85' Base Length
8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

120 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 8 Rows = 5,591.5 cf Chamber Storage

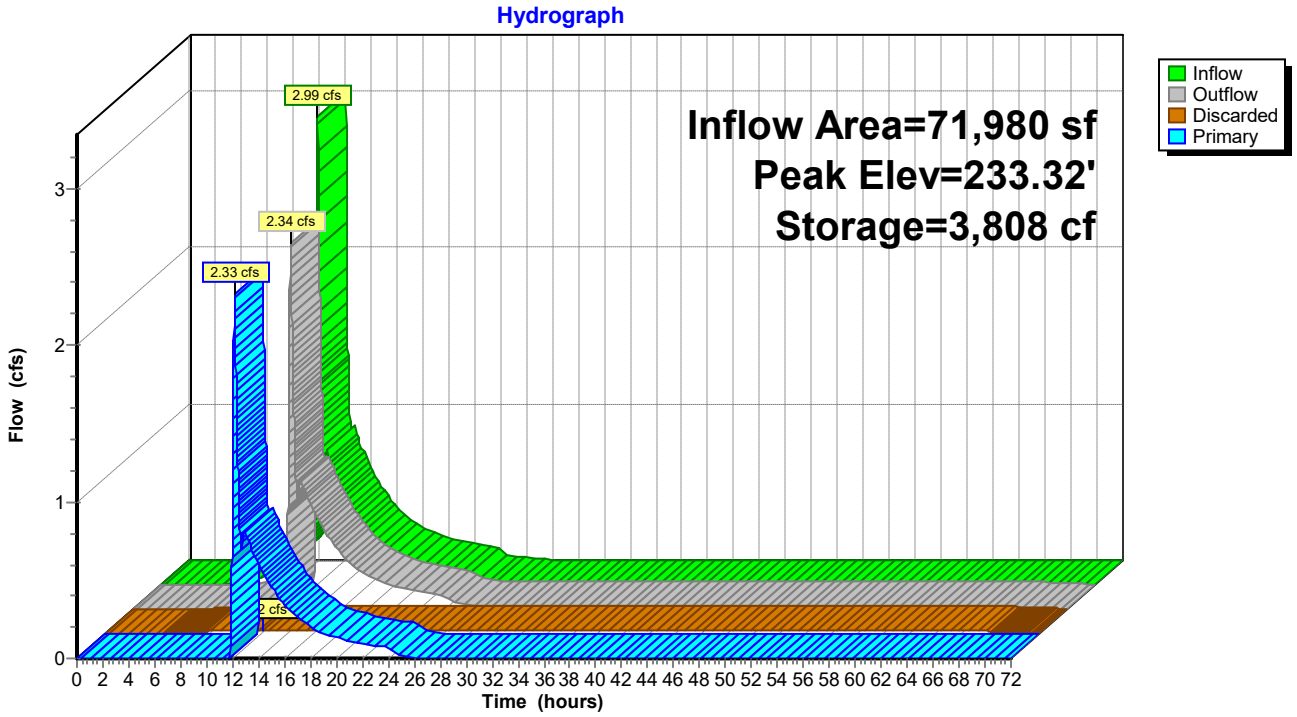
15,186.8 cf Field - 5,591.5 cf Chambers = 9,595.2 cf Stone x 40.0% Voids = 3,838.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,429.6 cf = 0.216 af
Overall Storage Efficiency = 62.1%
Overall System Size = 109.85' x 39.50' x 3.50'

120 Chambers
562.5 cy Field
355.4 cy Stone



Pond UGI-8: UGI-8



Summary for Pond UGI-9: UGI-9

Inflow Area = 462,627 sf, 84.24% Impervious, Inflow Depth = 2.38" for 2yr event
Inflow = 27.38 cfs @ 12.08 hrs, Volume= 91,916 cf
Outflow = 0.98 cfs @ 15.48 hrs, Volume= 85,814 cf, Atten= 96%, Lag= 203.8 min
Discarded = 0.26 cfs @ 15.48 hrs, Volume= 62,689 cf
Primary = 0.71 cfs @ 15.48 hrs, Volume= 23,125 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.87' @ 15.48 hrs Surf.Area= 66,884 sf Storage= 62,751 cf

Plug-Flow detention time= 1,272.4 min calculated for 85,802 cf (93% of inflow)
Center-of-Mass det. time= 1,236.4 min (2,009.1 - 772.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.50'	57,463 cf	**239.00'W x 279.85'L x 3.50'H Field A** 234,095 cf Overall - 90,437 cf Embedded = 143,657 cf x 40.0% Voids
#2A	237.00'	90,437 cf	**Cultec R-300HD** x 1950 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 1950 Chambers in 50 Rows Cap Storage= +2.7 cf x 2 x 50 rows = 265.5 cf
		147,900 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 2.50' Phase-In= 0.10'

Discarded OutFlow Max=0.26 cfs @ 15.48 hrs HW=237.87' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.26 cfs)

Primary OutFlow Max=0.71 cfs @ 15.48 hrs HW=237.87' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 0.71 cfs @ 2.08 fps)

Pond UGI-9: UGI-9 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 50 rows = 265.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

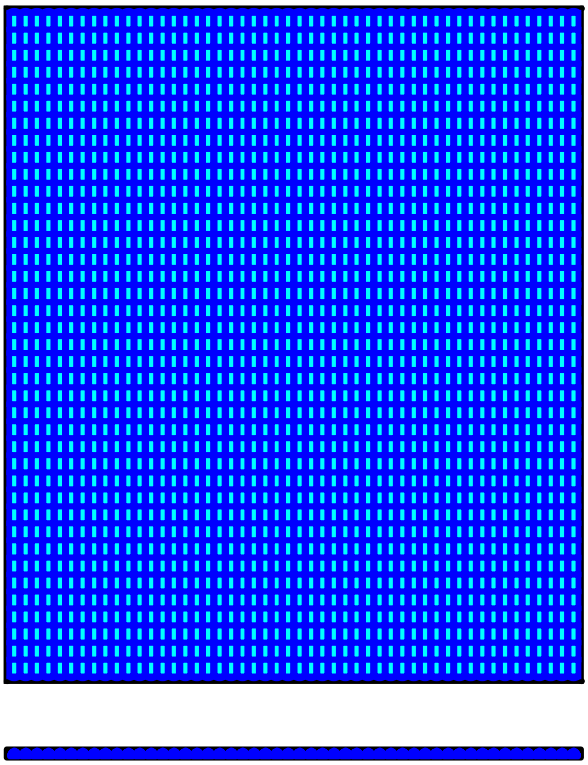
39 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 277.85' Row Length +12.0" End Stone x 2 = 279.85' Base Length
50 Rows x 51.0" Wide + 6.0" Spacing x 49 + 12.0" Side Stone x 2 = 239.00' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

1,950 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 50 Rows = 90,437.3 cf Chamber Storage

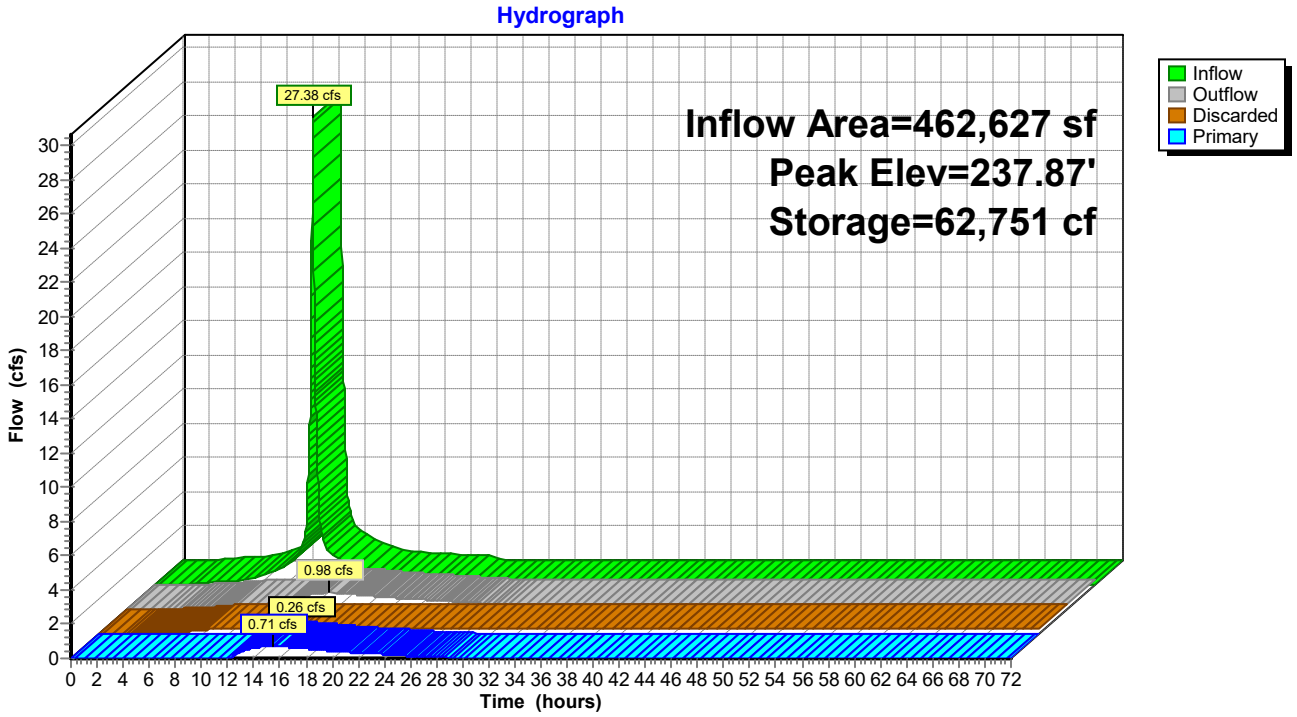
234,094.5 cf Field - 90,437.3 cf Chambers = 143,657.2 cf Stone x 40.0% Voids = 57,462.9 cf Stone Storage

Chamber Storage + Stone Storage = 147,900.2 cf = 3.395 af
Overall Storage Efficiency = 63.2%
Overall System Size = 279.85' x 239.00' x 3.50'

1,950 Chambers
8,670.2 cy Field
5,320.6 cy Stone



Pond UGI-9: UGI-9



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment P-10a: East Parking Lot Runoff Area=60,002 sf 93.94% Impervious Runoff Depth=4.06"
Tc=6.0 min CN=97 Runoff=5.88 cfs 20,298 cf

Subcatchment P-10b: South HS Runoff Area=144,093 sf 83.51% Impervious Runoff Depth=3.84"
Tc=6.0 min CN=95 Runoff=13.77 cfs 46,059 cf

Subcatchment P-10c: Southeast Grass Runoff Area=22,017 sf 0.00% Impervious Runoff Depth=2.30"
Tc=6.0 min CN=79 Runoff=1.36 cfs 4,222 cf

Subcatchment P-10d: South Parking Lot Runoff Area=71,980 sf 79.90% Impervious Runoff Depth=3.73"
Tc=6.0 min CN=94 Runoff=6.77 cfs 22,355 cf

Subcatchment P-10e: Exist Basin Runoff Area=29,855 sf 9.23% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=81 Runoff=1.99 cfs 6,146 cf

Subcatchment P-10f: West HS Runoff Area=113,103 sf 78.73% Impervious Runoff Depth=3.73"
Tc=6.0 min CN=94 Runoff=10.64 cfs 35,126 cf

Subcatchment P-10g: Grass Field Runoff Area=126,785 sf 100.00% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=98 Runoff=12.54 cfs 44,102 cf

Subcatchment P-10h: Grass + Sidewalks Runoff Area=68,897 sf 29.12% Impervious Runoff Depth=2.83"
Tc=6.0 min CN=85 Runoff=5.22 cfs 16,233 cf

Subcatchment P-10i: Exist Stadium Runoff Area=153,842 sf 100.00% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=98 Runoff=15.21 cfs 53,514 cf

Subcatchment P-11: South Woods Runoff Area=29,293 sf 23.93% Impervious Runoff Depth=2.56"
Tc=6.0 min CN=82 Runoff=2.02 cfs 6,243 cf

Subcatchment P-12a: West Woods Runoff Area=14,093 sf 6.82% Impervious Runoff Depth=2.22"
Tc=6.0 min CN=78 Runoff=0.84 cfs 2,606 cf

Subcatchment P-12b: West Grass/Woods Runoff Area=15,036 sf 0.00% Impervious Runoff Depth=2.30"
Tc=6.0 min CN=79 Runoff=0.93 cfs 2,883 cf

Subcatchment P-13: Woods Runoff Area=12,980 sf 0.00% Impervious Runoff Depth=2.06"
Tc=6.0 min CN=76 Runoff=0.72 cfs 2,226 cf

Subcatchment P-14: Residential West#3 Runoff Area=22,068 sf 26.18% Impervious Runoff Depth=2.65"
Tc=6.0 min CN=83 Runoff=1.57 cfs 4,866 cf

Subcatchment P-15a: Northwest Runoff Area=157,944 sf 0.00% Impervious Runoff Depth=1.90"
Tc=6.0 min CN=74 Runoff=8.00 cfs 25,052 cf

Subcatchment P-15b: HS Entrance Runoff Area=68,639 sf 34.96% Impervious Runoff Depth=2.92"
Tc=6.0 min CN=86 Runoff=5.35 cfs 16,705 cf

Subcatchment P-15c: Grass Field Runoff Area=196,324 sf 7.43% Impervious Runoff Depth=2.39"
Tc=6.0 min CN=80 Runoff=12.61 cfs 39,020 cf

Subcatchment P-15d: MS Roof and Parking Runoff Area=85,422 sf 81.99% Impervious Runoff Depth=3.84"
Tc=6.0 min CN=95 Runoff=8.16 cfs 27,305 cf

Subcatchment P-15e: MS Parking Runoff Area=137,453 sf 54.04% Impervious Runoff Depth=3.21"
Tc=6.0 min CN=89 Runoff=11.62 cfs 36,766 cf

Subcatchment P-16: (new Subcat) Runoff Area=37,119 sf 35.73% Impervious Runoff Depth=2.92"
Tc=6.0 min CN=86 Runoff=2.89 cfs 9,034 cf

Pond D1: DMH51 Peak Elev=234.52' Inflow=5.65 cfs 47,372 cf
Primary=3.73 cfs 24,080 cf Secondary=2.97 cfs 23,284 cf Outflow=5.65 cfs 47,364 cf

Pond D2: DMH-55 Peak Elev=233.64' Inflow=6.77 cfs 45,639 cf
Primary=4.44 cfs 34,850 cf Secondary=2.37 cfs 10,787 cf Outflow=6.77 cfs 45,636 cf

Pond DP-10p: Exist Basin #3 Inflow=11.27 cfs 146,083 cf
Primary=11.27 cfs 146,083 cf

Pond DP-11p: Woods Southwest Inflow=2.02 cfs 6,243 cf
Primary=2.02 cfs 6,243 cf

Pond DP-12p: Residential West#1 Inflow=1.77 cfs 5,489 cf
Primary=1.77 cfs 5,489 cf

Pond DP-13p: Residential West#2 Inflow=0.72 cfs 2,226 cf
Primary=0.72 cfs 2,226 cf

Pond DP-14p: Woods to West Inflow=1.57 cfs 4,866 cf
Primary=1.57 cfs 4,866 cf

Pond DP-15p: Wetlands Inflow=45.68 cfs 144,848 cf
Primary=45.68 cfs 144,848 cf

Pond DP-16p: Landry Avenue Inflow=2.89 cfs 9,034 cf
Primary=2.89 cfs 9,034 cf

Pond EC: Exist Underground Chambers Inflow=11.62 cfs 36,766 cf
Primary=11.62 cfs 36,766 cf

Pond UGI-6: UGI-6 Peak Elev=237.24' Storage=33,732 cf Inflow=19.65 cfs 66,357 cf
Discarded=0.09 cfs 20,659 cf Primary=5.21 cfs 43,150 cf Outflow=5.29 cfs 63,809 cf

Pond UGI-7: UGI-7 Peak Elev=234.48' Storage=2,922 cf Inflow=3.73 cfs 24,080 cf
Discarded=0.00 cfs 185 cf Primary=2.67 cfs 22,105 cf Outflow=2.67 cfs 22,290 cf

Pond UGI-8: UGI-8 Peak Elev=233.44' Storage=4,219 cf Inflow=4.44 cfs 34,850 cf
Discarded=0.02 cfs 4,074 cf Primary=3.73 cfs 30,711 cf Outflow=3.75 cfs 34,785 cf

Pond UGI-9: UGI-9 Peak Elev=238.38' Storage=89,091 cf Inflow=43.60 cfs 148,975 cf
Discarded=0.27 cfs 64,357 cf Primary=3.43 cfs 76,334 cf Outflow=3.69 cfs 140,691 cf

Total Runoff Area = 1,566,945 sf Runoff Volume = 420,760 cf Average Runoff Depth = 3.22"
46.61% Pervious = 730,334 sf 53.39% Impervious = 836,611 sf

Summary for Subcatchment P-10a: East Parking Lot

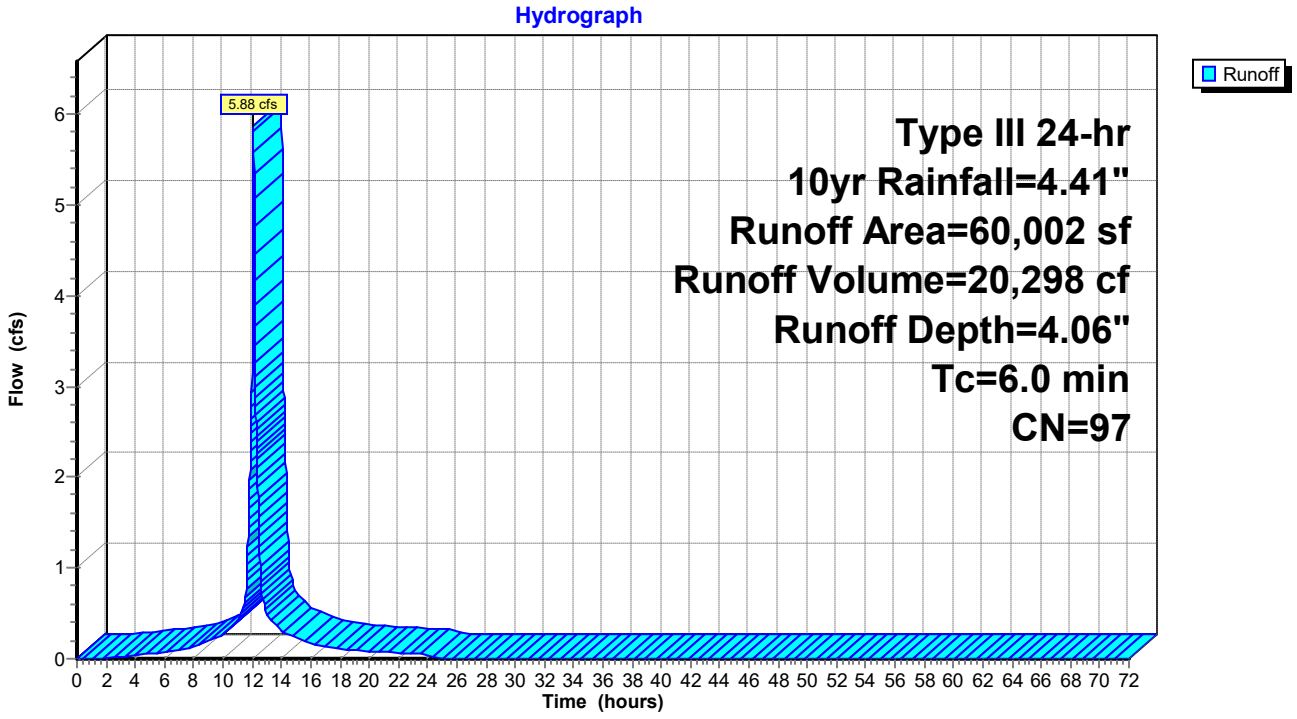
Runoff = 5.88 cfs @ 12.08 hrs, Volume= 20,298 cf, Depth= 4.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
3,636	79	50-75% Grass cover, Fair, HSG C
56,366	98	Paved parking, HSG C
60,002	97	Weighted Average
3,636		6.06% Pervious Area
56,366		93.94% Impervious Area

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

Subcatchment P-10a: East Parking Lot



Summary for Subcatchment P-10b: South HS

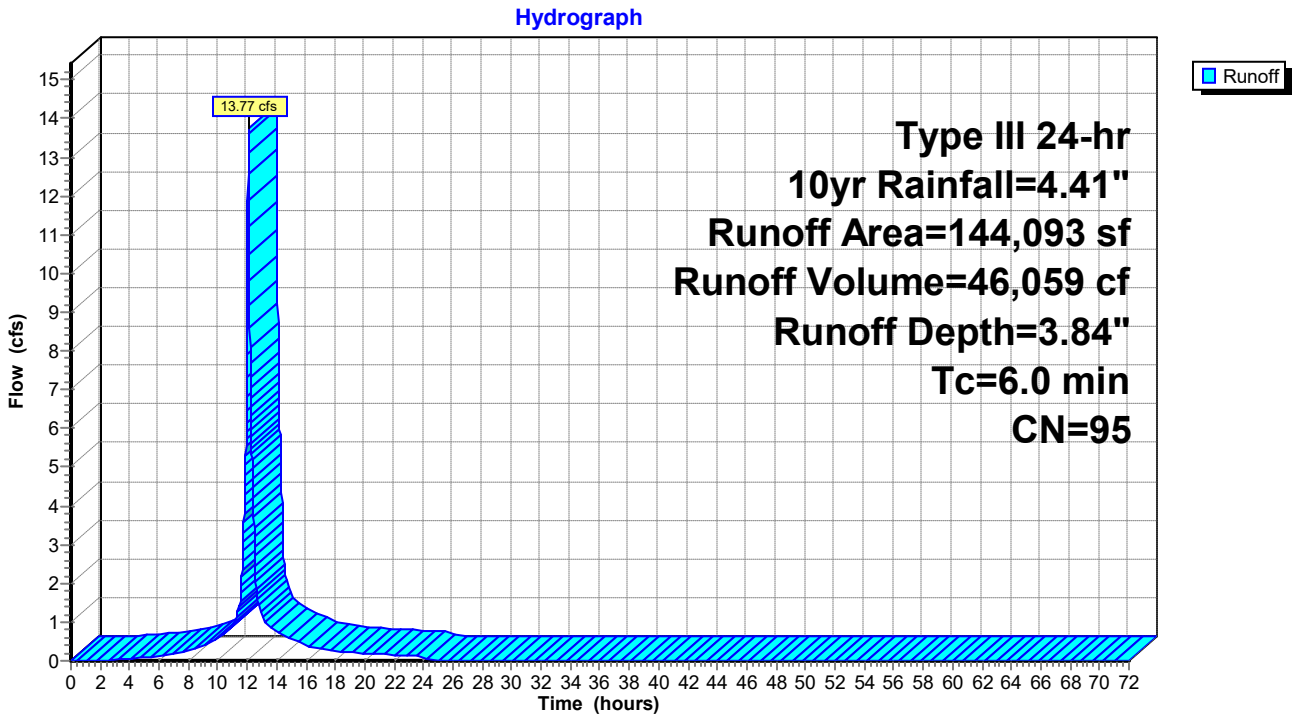
Runoff = 13.77 cfs @ 12.08 hrs, Volume= 46,059 cf, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	25,314	98	HS Roofs, HSG C
*	37,903	98	HS Roofs, HSG C
	23,764	79	50-75% Grass cover, Fair, HSG C
	57,112	98	Paved parking, HSG C
	144,093	95	Weighted Average
	23,764		16.49% Pervious Area
	120,329		83.51% Impervious Area

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

Subcatchment P-10b: South HS



Summary for Subcatchment P-10c: Southeast Grass

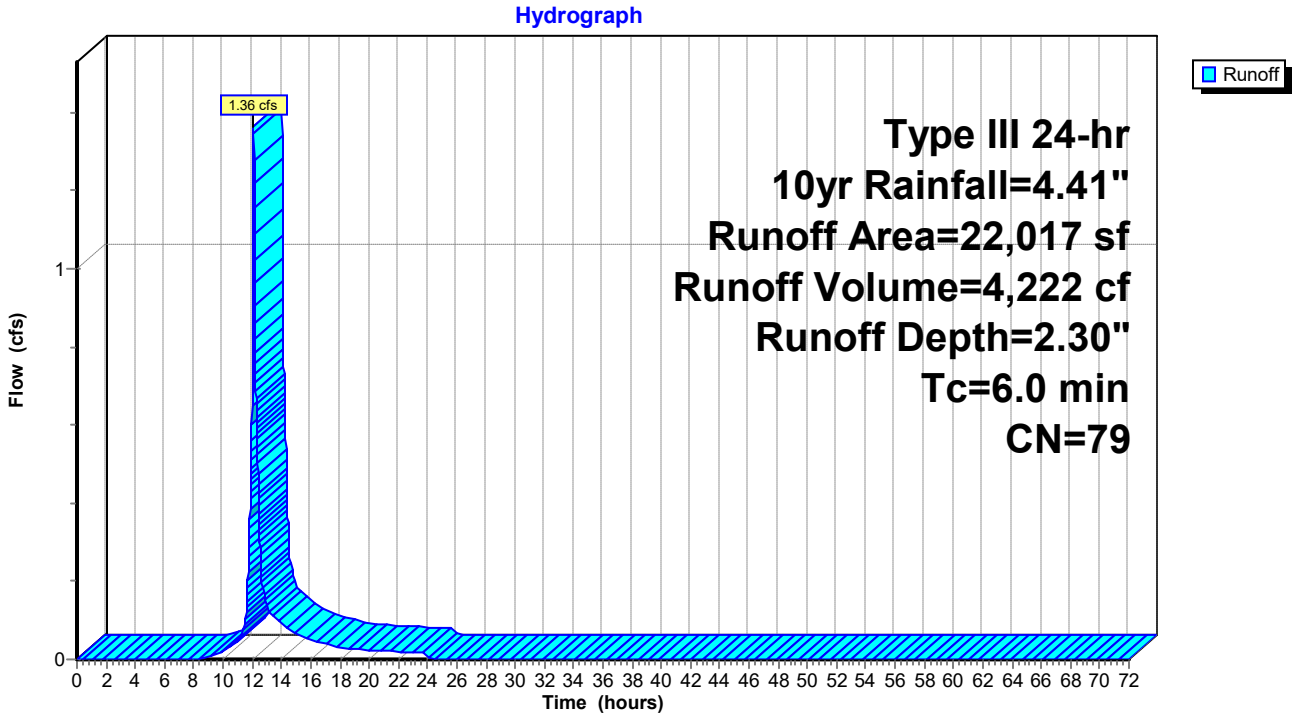
Runoff = 1.36 cfs @ 12.09 hrs, Volume= 4,222 cf, Depth= 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
22,017	79	50-75% Grass cover, Fair, HSG C
22,017		100.00% Pervious Area

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

Subcatchment P-10c: Southeast Grass



Summary for Subcatchment P-10d: South Parking Lot

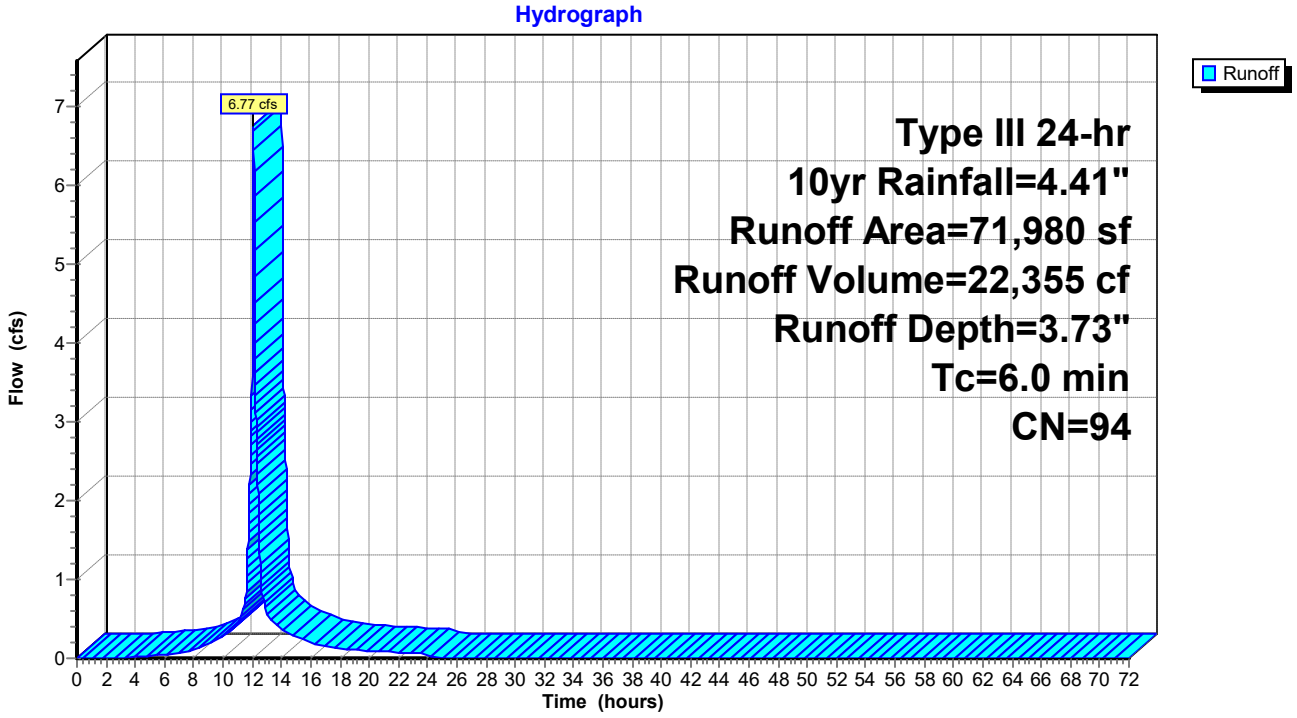
Runoff = 6.77 cfs @ 12.08 hrs, Volume= 22,355 cf, Depth= 3.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
26,521	98	Paved parking, HSG C
30,989	98	Paved parking, HSG C
14,470	79	50-75% Grass cover, Fair, HSG C
71,980	94	Weighted Average
14,470		20.10% Pervious Area
57,510		79.90% Impervious Area

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

Subcatchment P-10d: South Parking Lot



Summary for Subcatchment P-10e: Exist Basin

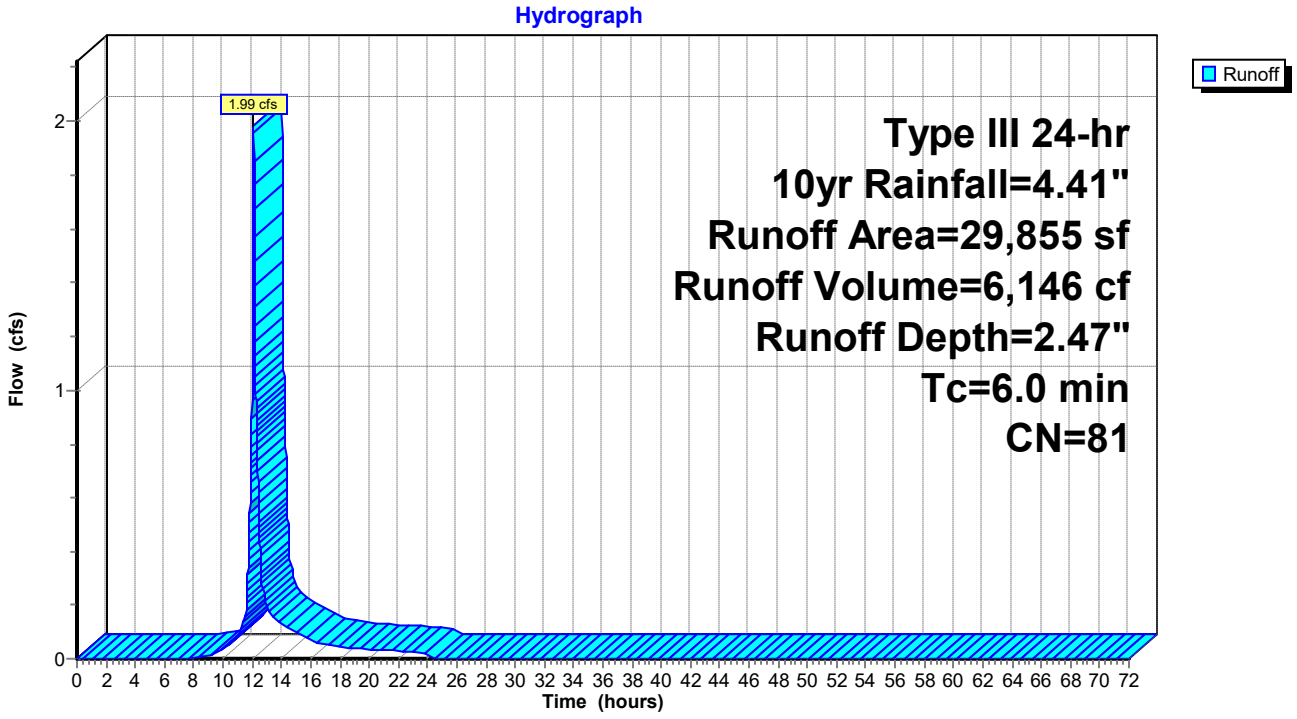
Runoff = 1.99 cfs @ 12.09 hrs, Volume= 6,146 cf, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
27,099	79	50-75% Grass cover, Fair, HSG C
2,756	98	Paved parking, HSG C
29,855	81	Weighted Average
27,099		90.77% Pervious Area
2,756		9.23% Impervious Area

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

Subcatchment P-10e: Exist Basin



Summary for Subcatchment P-10f: West HS

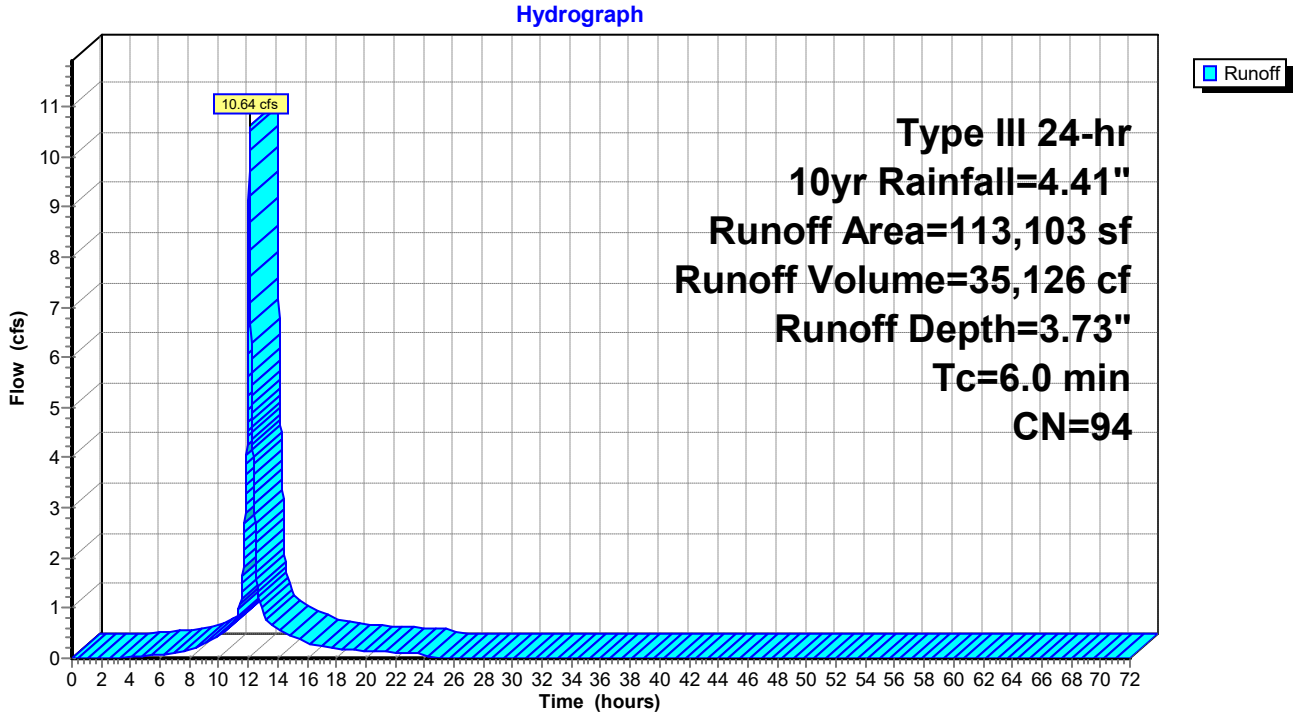
Runoff = 10.64 cfs @ 12.08 hrs, Volume= 35,126 cf, Depth= 3.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
	36,395	98	Paved parking, HSG C
	24,057	79	50-75% Grass cover, Fair, HSG C
*	52,651	98	HS Roofs, HSG C
	113,103	94	Weighted Average
	24,057		21.27% Pervious Area
	89,046		78.73% Impervious Area

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

Subcatchment P-10f: West HS



Summary for Subcatchment P-10g: Grass Field

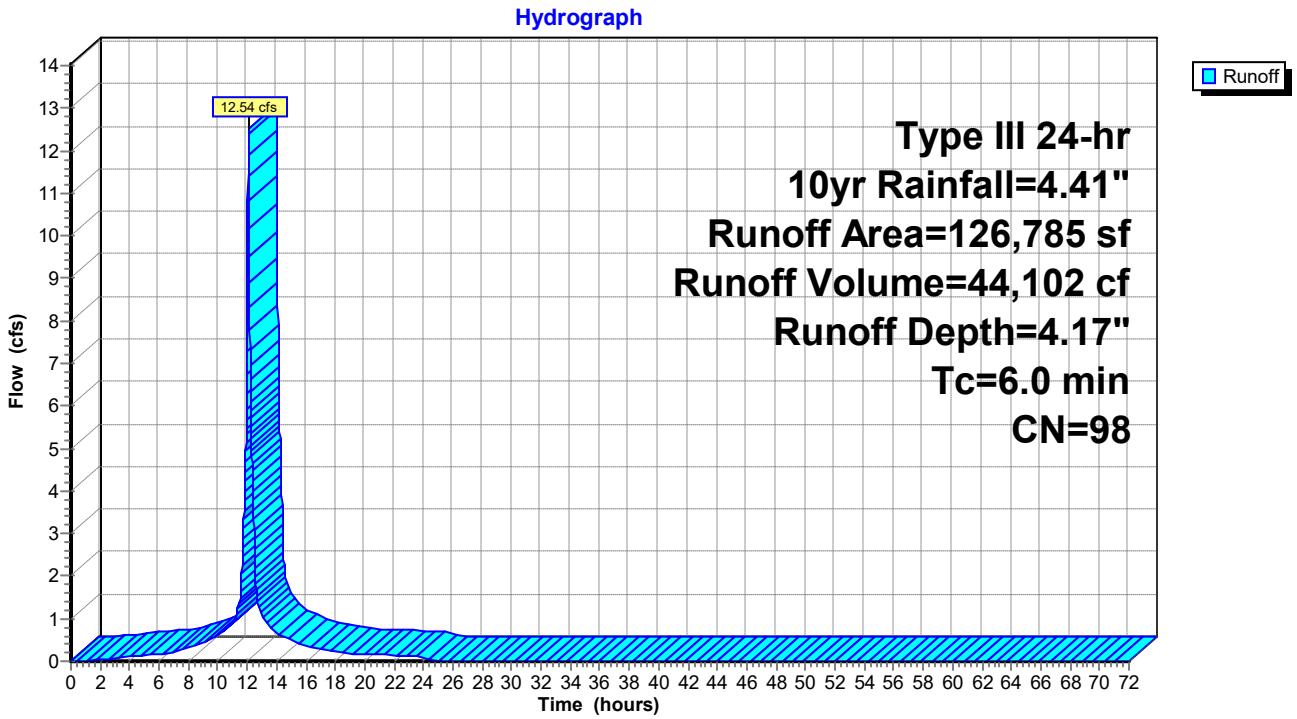
Runoff = 12.54 cfs @ 12.08 hrs, Volume= 44,102 cf, Depth= 4.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	118,453	98	Synthetic Field, HSG C
*	8,332	98	Sidewalks, HSG C
	126,785	98	Weighted Average
	126,785		100.00% Impervious Area

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

Subcatchment P-10g: Grass Field



Summary for Subcatchment P-10h: Grass + Sidewalks

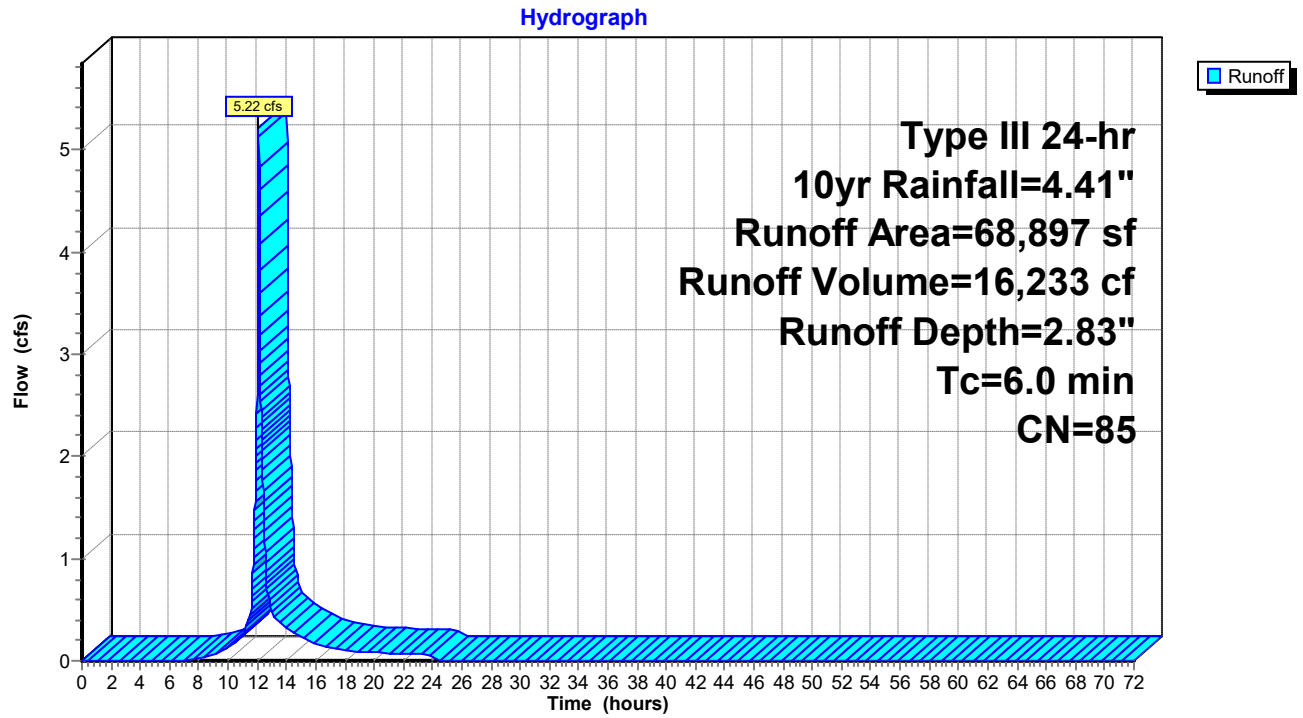
Runoff = 5.22 cfs @ 12.09 hrs, Volume= 16,233 cf, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
	48,833	79	50-75% Grass cover, Fair, HSG C
*	6,470	98	Exist Sidewalk, HSG C
*	1,071	98	Exist Roof, HSG C
*	12,523	98	Prop Sidewalk, HSG C
	68,897	85	Weighted Average
	48,833		70.88% Pervious Area
	20,064		29.12% Impervious Area

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

Subcatchment P-10h: Grass + Sidewalks



Summary for Subcatchment P-10i: Exist Stadium

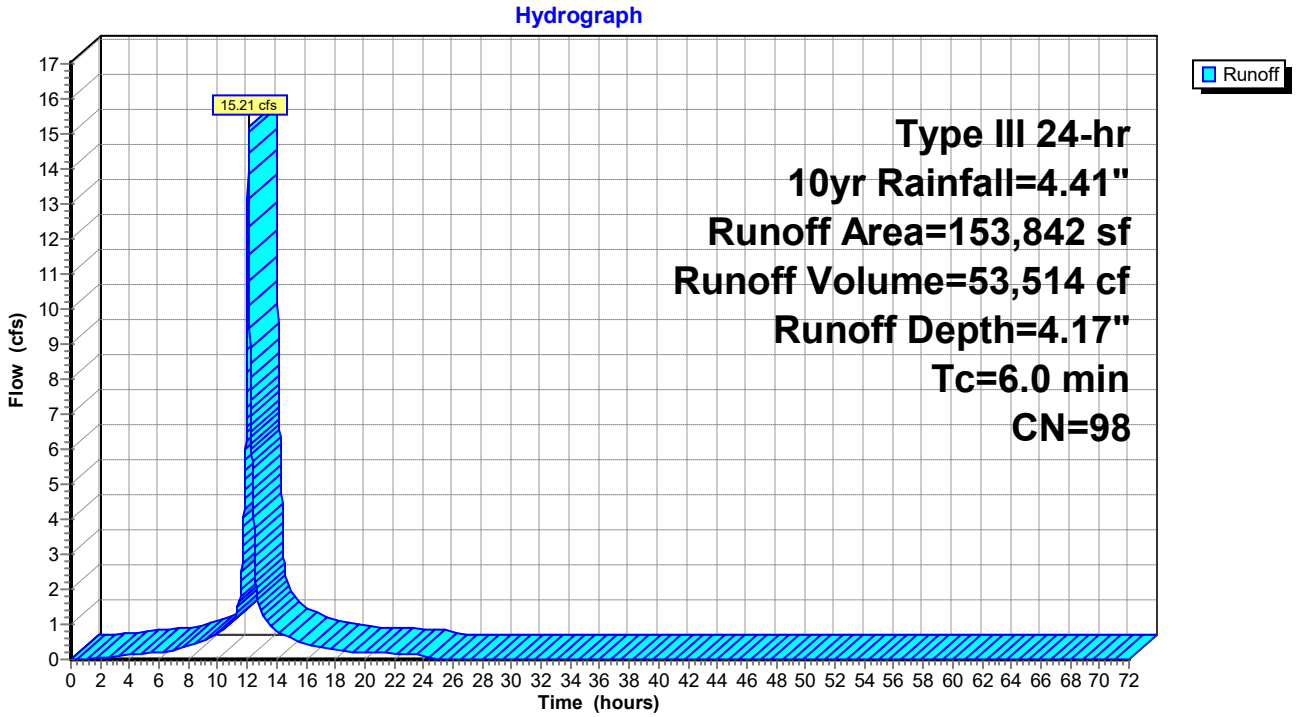
Runoff = 15.21 cfs @ 12.08 hrs, Volume= 53,514 cf, Depth= 4.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	153,842	98	Synfield
	153,842		100.00% Impervious Area

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

Subcatchment P-10i: Exist Stadium



Summary for Subcatchment P-11: South Woods

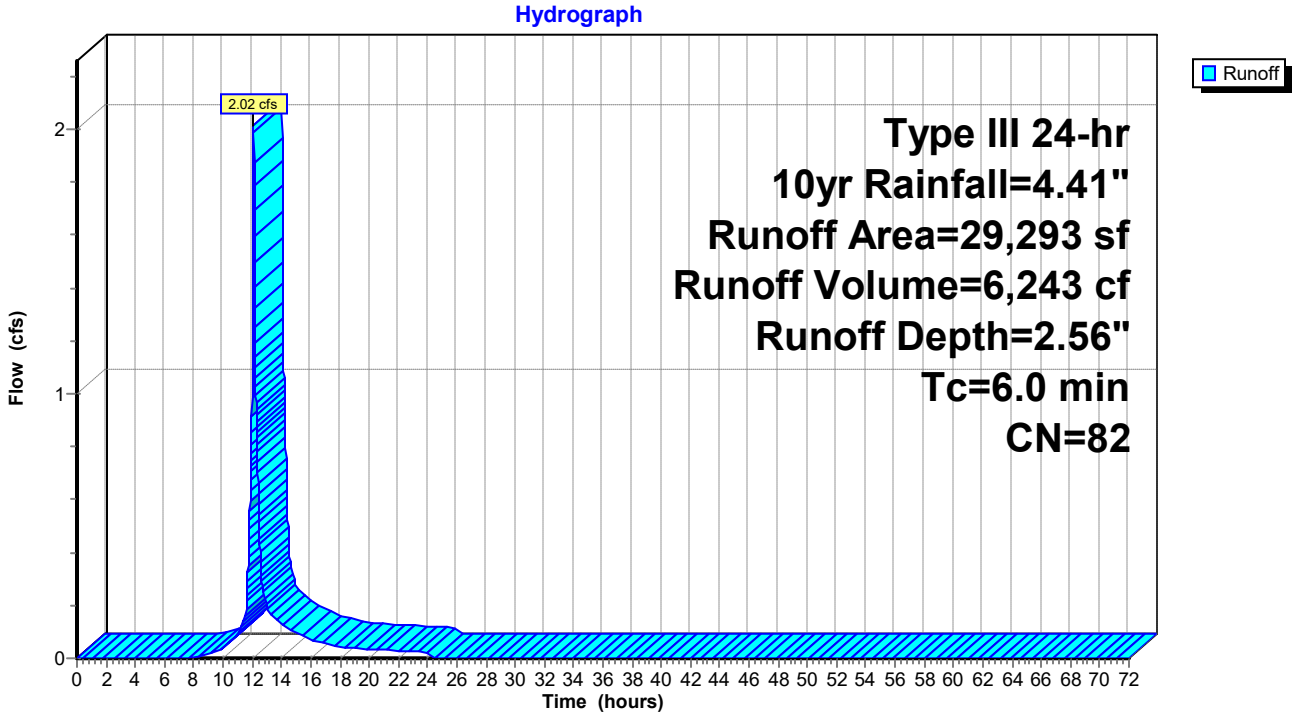
Runoff = 2.02 cfs @ 12.09 hrs, Volume= 6,243 cf, Depth= 2.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
13,455	79	50-75% Grass cover, Fair, HSG C
8,827	73	Woods, Fair, HSG C
7,011	98	Paved parking, HSG C
29,293	82	Weighted Average
22,282		76.07% Pervious Area
7,011		23.93% Impervious Area

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

Subcatchment P-11: South Woods



Summary for Subcatchment P-12a: West Woods

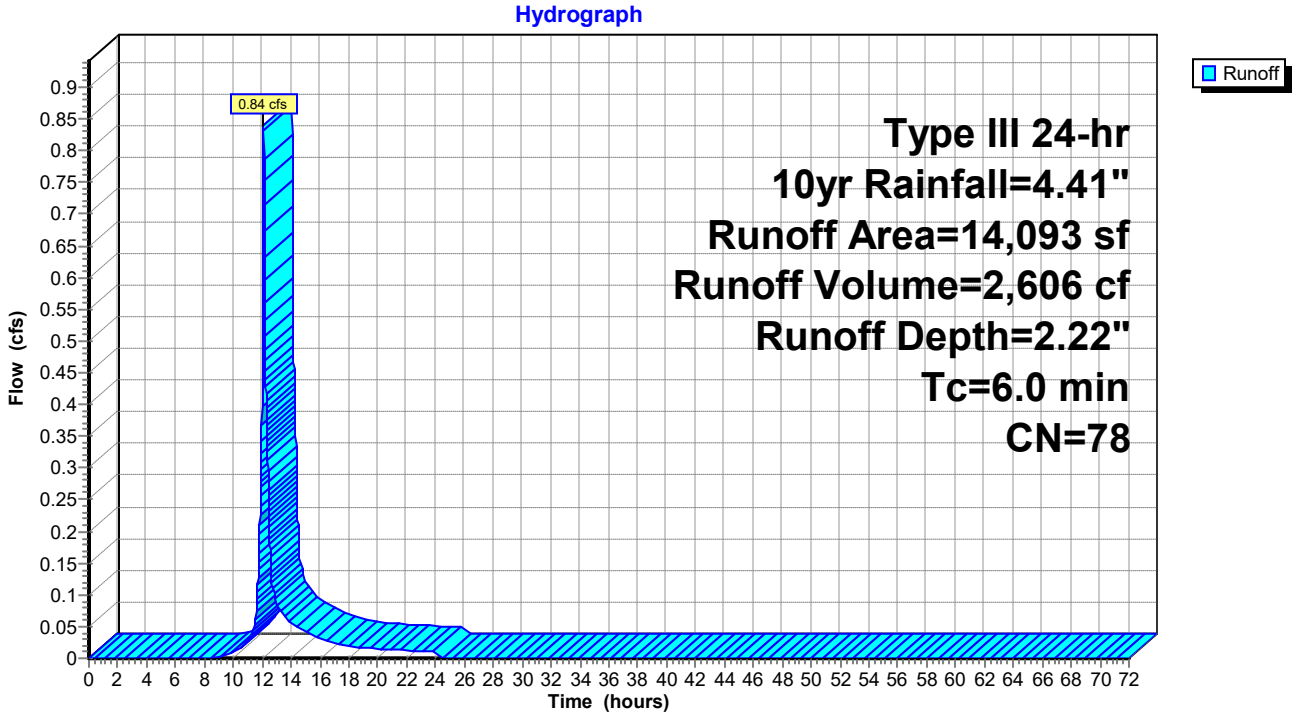
Runoff = 0.84 cfs @ 12.09 hrs, Volume= 2,606 cf, Depth= 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
	6,843	79	50-75% Grass cover, Fair, HSG C
	6,289	73	Woods, Fair, HSG C
*	961	98	Exist Sidewalk, HSG C
	14,093	78	Weighted Average
	13,132		93.18% Pervious Area
	961		6.82% Impervious Area

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

Subcatchment P-12a: West Woods



Summary for Subcatchment P-12b: West Grass/Woods

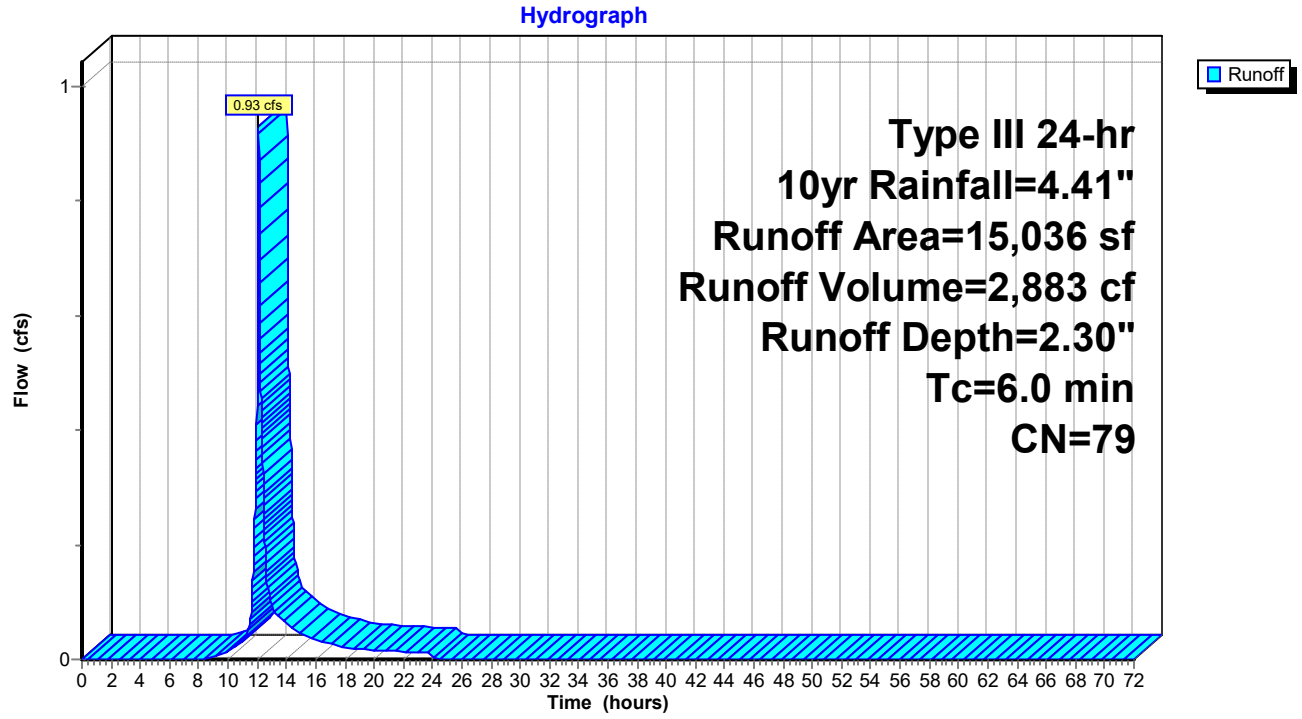
Runoff = 0.93 cfs @ 12.09 hrs, Volume= 2,883 cf, Depth= 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
15,036	79	50-75% Grass cover, Fair, HSG C
15,036		100.00% Pervious Area

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

Subcatchment P-12b: West Grass/Woods



Summary for Subcatchment P-13: Woods

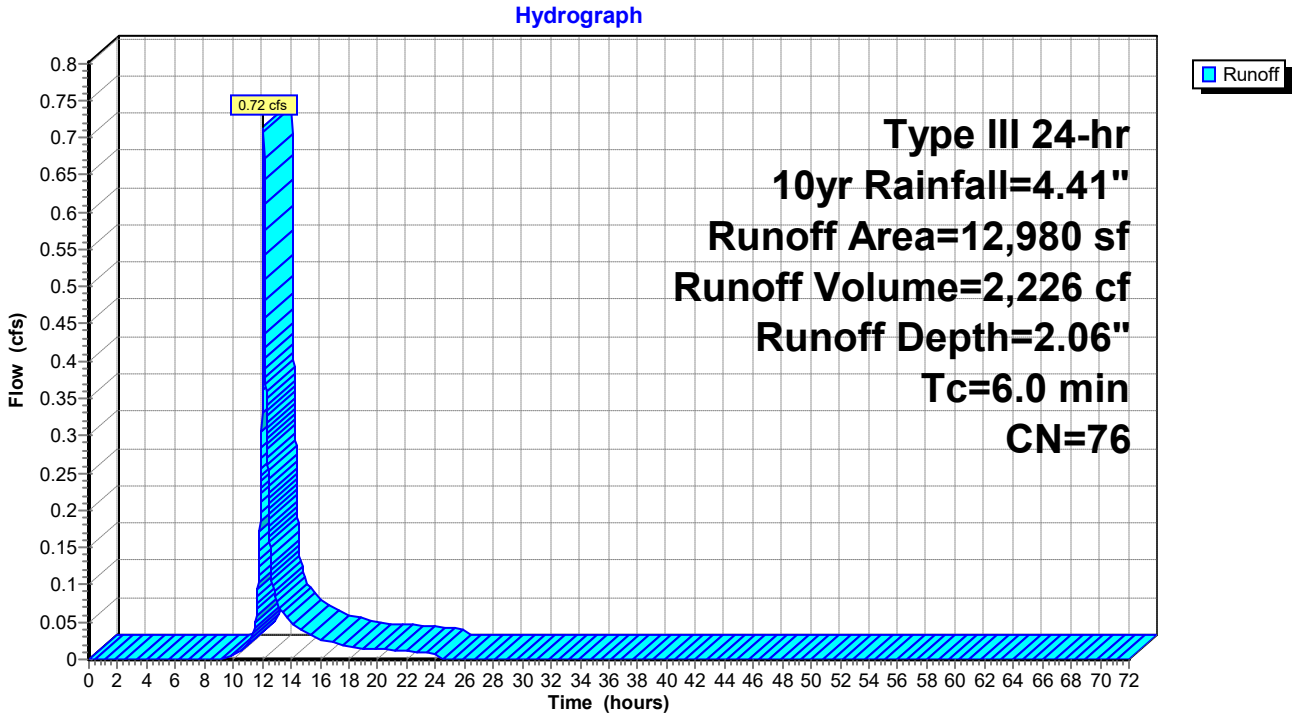
Runoff = 0.72 cfs @ 12.09 hrs, Volume= 2,226 cf, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
12,980	76	Woods/grass comb., Fair, HSG C
12,980		100.00% Pervious Area

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

Subcatchment P-13: Woods



Summary for Subcatchment P-14: Residential West#3

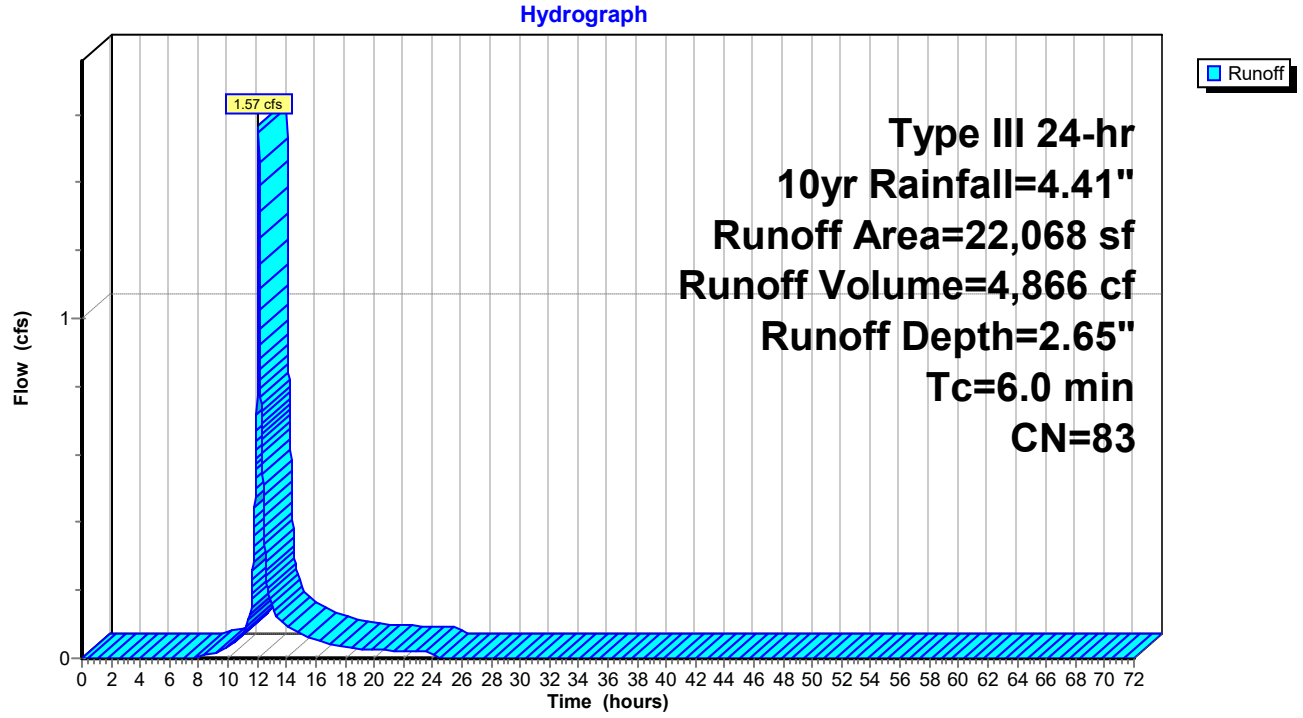
Runoff = 1.57 cfs @ 12.09 hrs, Volume= 4,866 cf, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
8,051	77	Woods, Poor, HSG C
5,778	98	Paved parking, HSG C
8,239	79	50-75% Grass cover, Fair, HSG C
22,068	83	Weighted Average
16,290		73.82% Pervious Area
5,778		26.18% Impervious Area

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

Subcatchment P-14: Residential West#3



Summary for Subcatchment P-15a: Northwest Grass/Woods

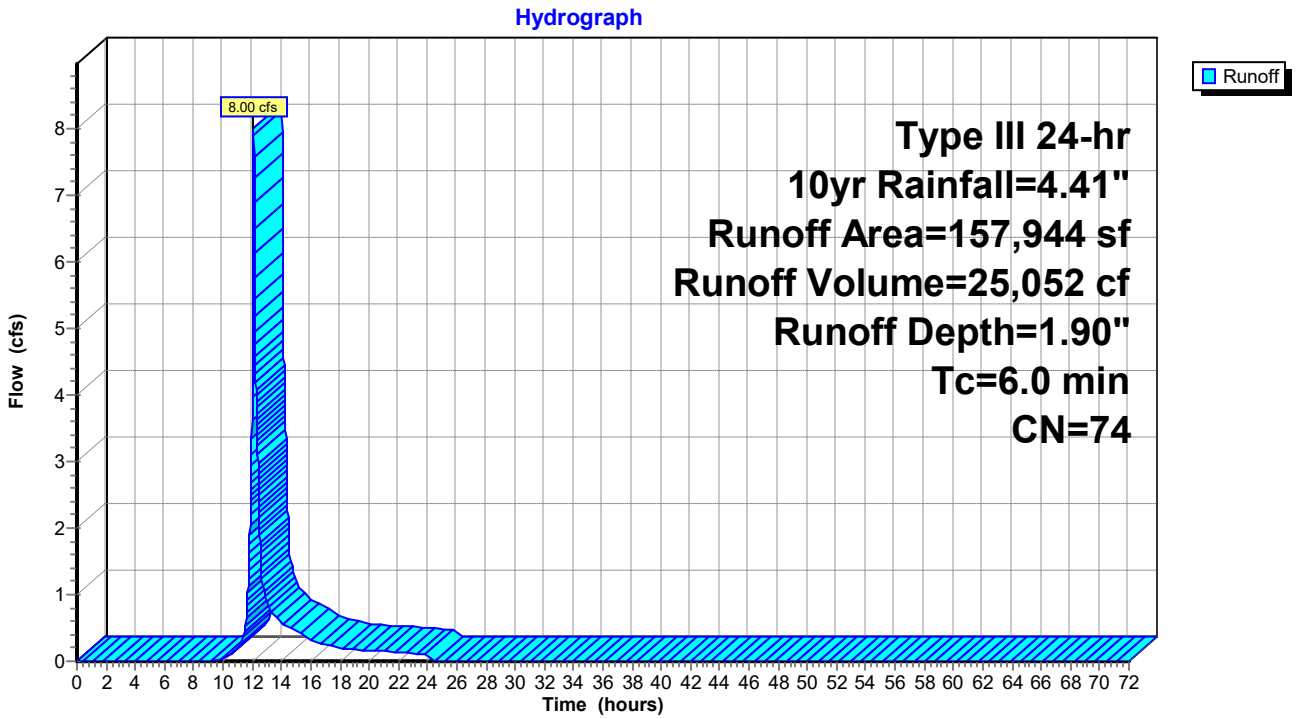
Runoff = 8.00 cfs @ 12.09 hrs, Volume= 25,052 cf, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
125,137	73	Woods, Fair, HSG C
32,807	79	50-75% Grass cover, Fair, HSG C
157,944	74	Weighted Average
157,944		100.00% Pervious Area

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

Subcatchment P-15a: Northwest Grass/Woods



Summary for Subcatchment P-15b: HS Entrance

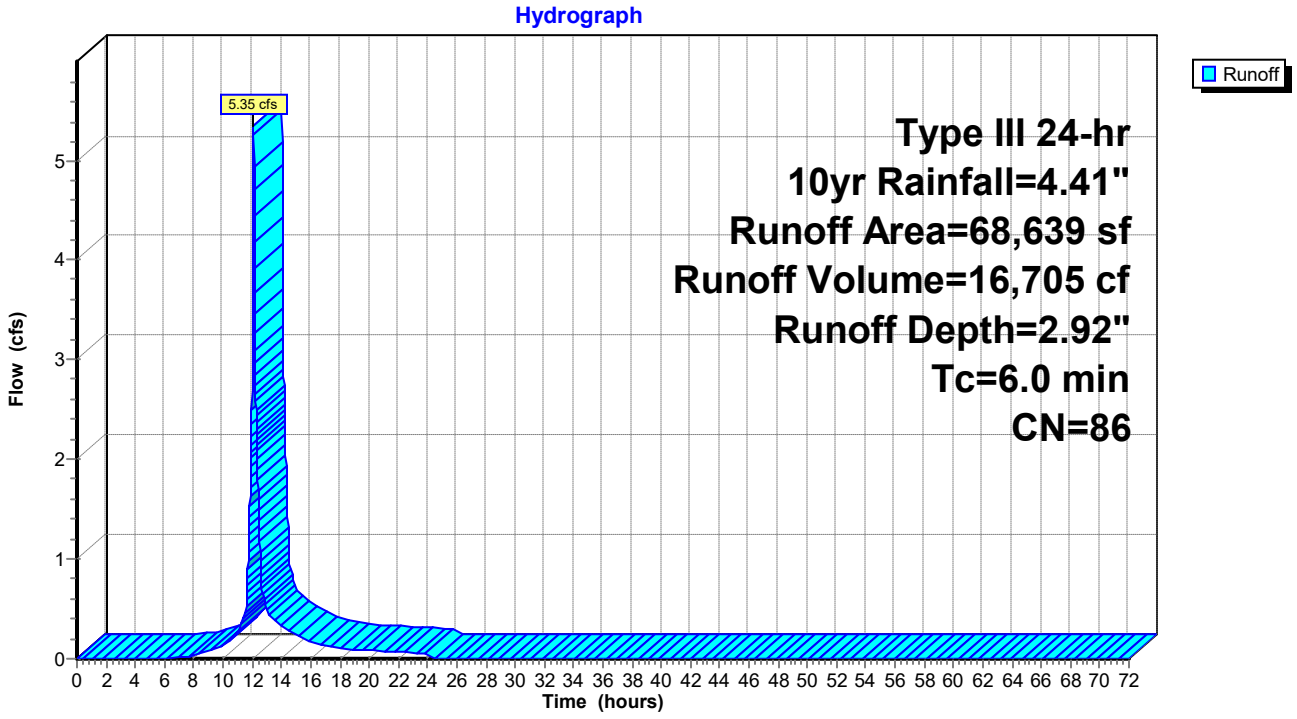
Runoff = 5.35 cfs @ 12.09 hrs, Volume= 16,705 cf, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
23,997	98	Paved parking, HSG C
44,642	79	50-75% Grass cover, Fair, HSG C
68,639	86	Weighted Average
44,642		65.04% Pervious Area
23,997		34.96% Impervious Area

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

Subcatchment P-15b: HS Entrance



Summary for Subcatchment P-15c: Grass Field

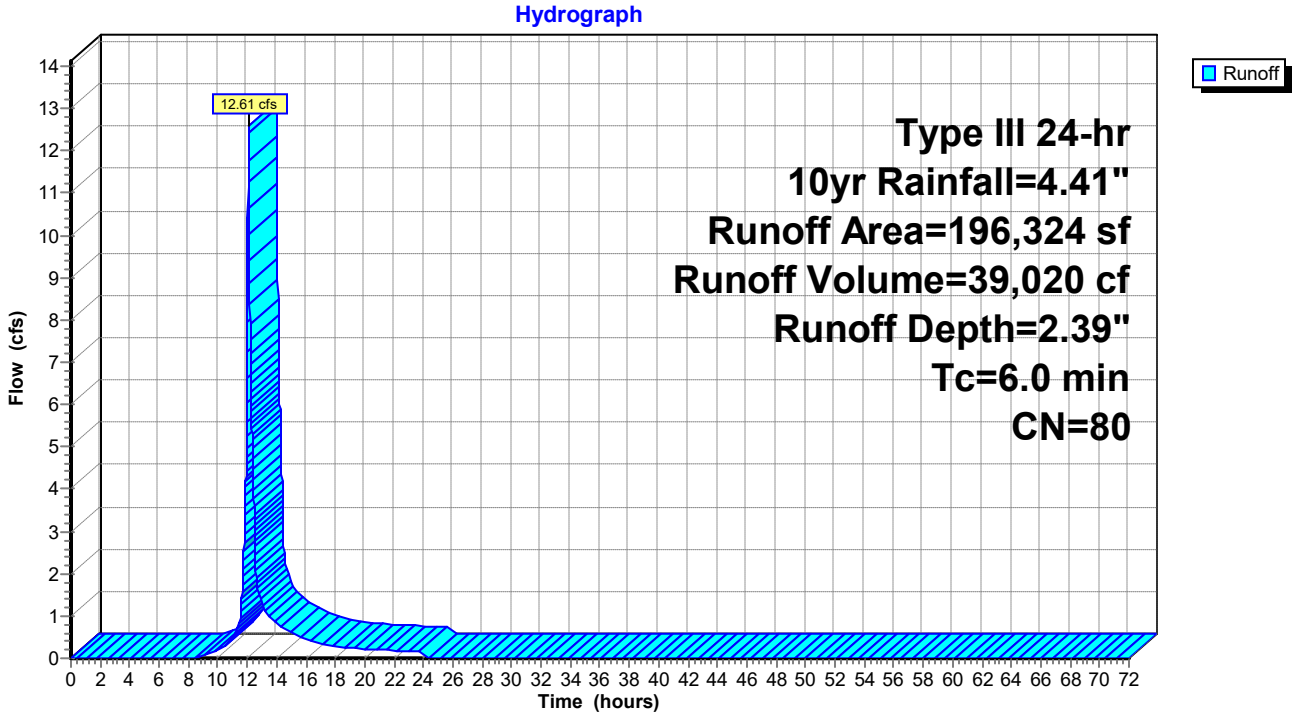
Runoff = 12.61 cfs @ 12.09 hrs, Volume= 39,020 cf, Depth= 2.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	14,586	98	Sidewalks, HSG C
	173,715	79	50-75% Grass cover, Fair, HSG C
	8,023	73	Woods, Fair, HSG C
	196,324	80	Weighted Average
	181,738		92.57% Pervious Area
	14,586		7.43% Impervious Area

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

Subcatchment P-15c: Grass Field



Summary for Subcatchment P-15d: MS Roof and Parking

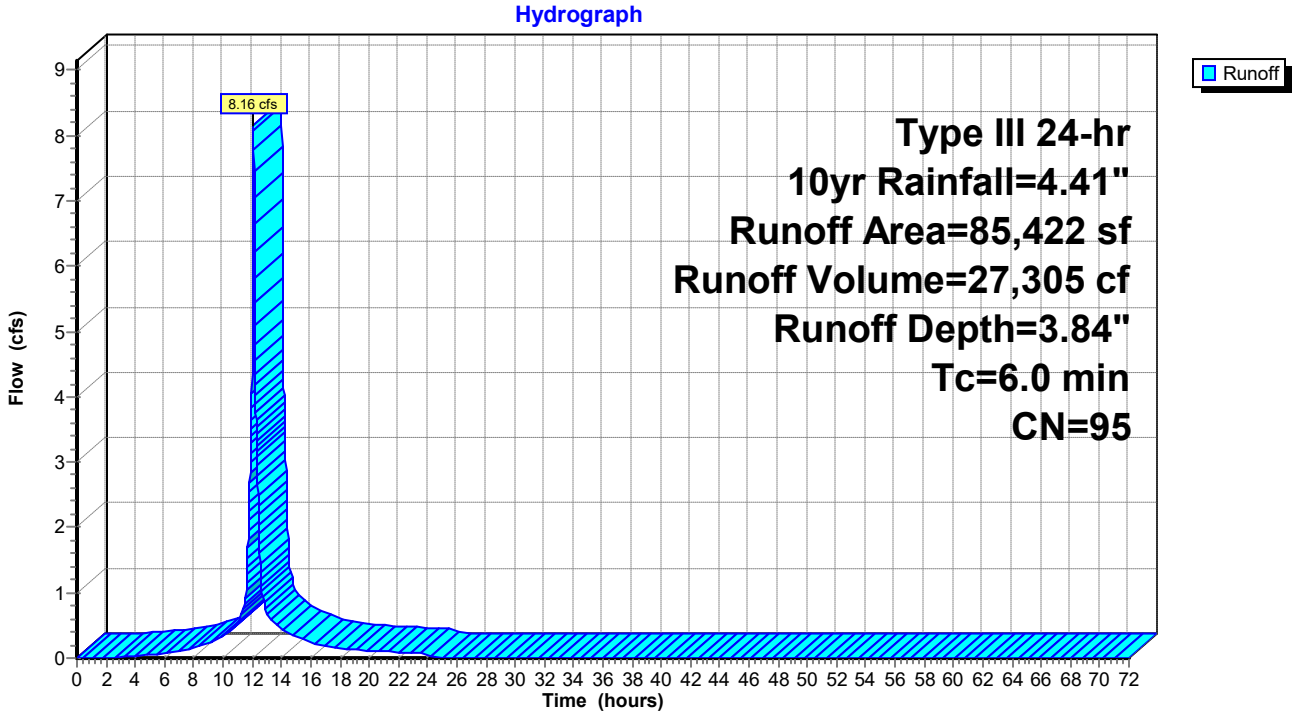
Runoff = 8.16 cfs @ 12.08 hrs, Volume= 27,305 cf, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

	Area (sf)	CN	Description
*	41,432	98	MS Roof, HSG C
	14,853	98	Paved parking, HSG C
	2,924	79	50-75% Grass cover, Fair, HSG C
	13,755	98	Paved parking, HSG C
	12,458	79	50-75% Grass cover, Fair, HSG C
	85,422	95	Weighted Average
	15,382		18.01% Pervious Area
	70,040		81.99% Impervious Area

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

Subcatchment P-15d: MS Roof and Parking



Summary for Subcatchment P-15e: MS Parking

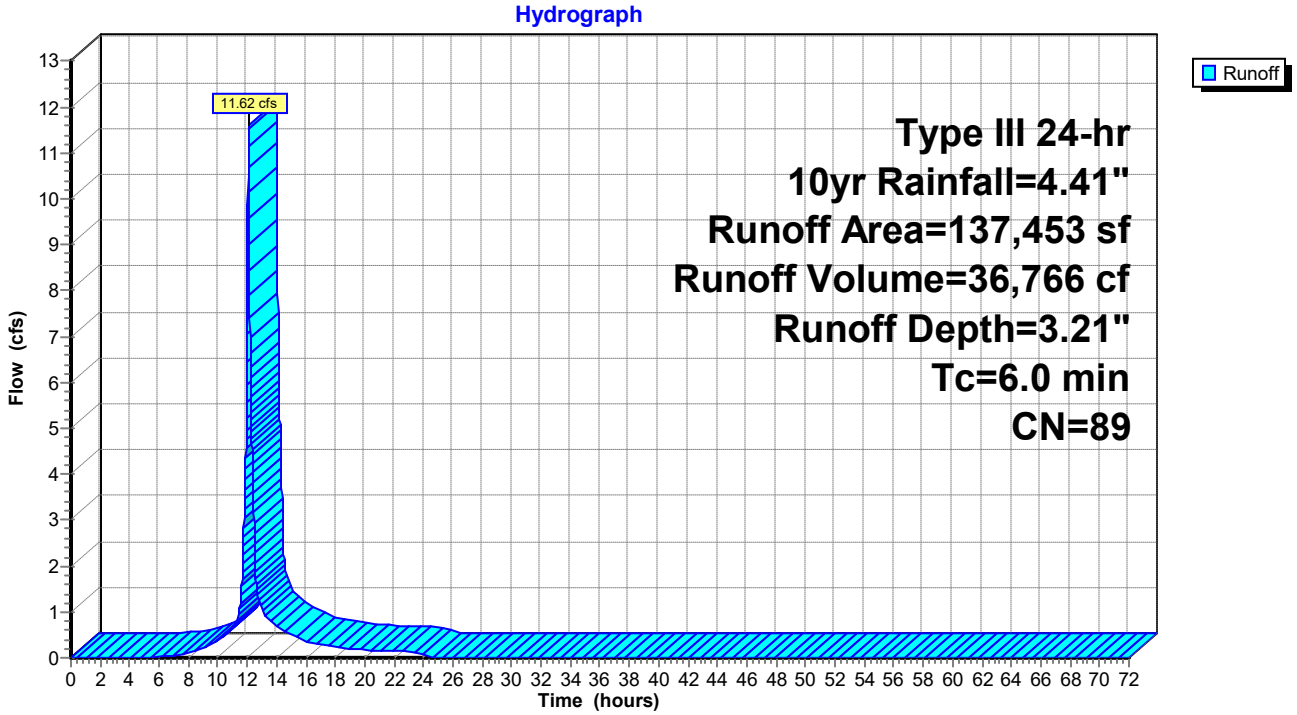
Runoff = 11.62 cfs @ 12.09 hrs, Volume= 36,766 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
17,142	79	50-75% Grass cover, Fair, HSG C
11,587	98	Paved parking, HSG C
46,032	79	50-75% Grass cover, Fair, HSG C
62,692	98	Paved parking, HSG C
137,453	89	Weighted Average
63,174		45.96% Pervious Area
74,279		54.04% Impervious Area

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

Subcatchment P-15e: MS Parking



Summary for Subcatchment P-16: (new Subcat)

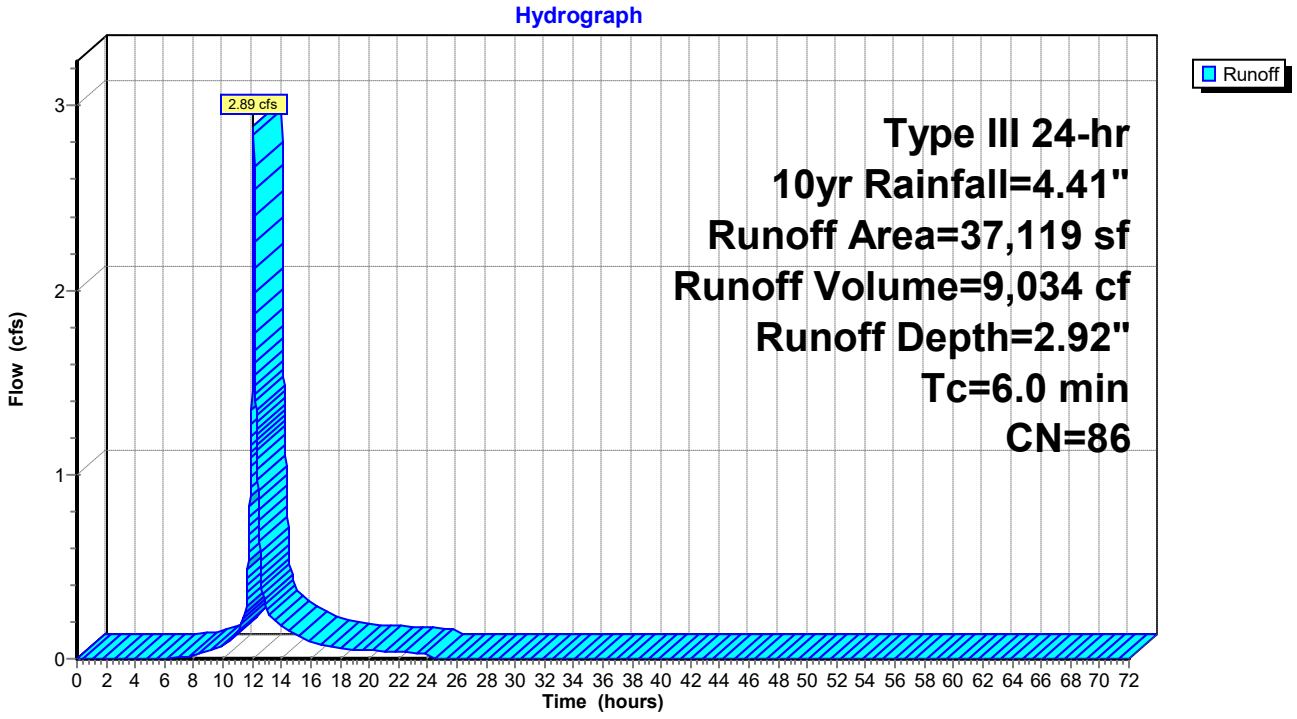
Runoff = 2.89 cfs @ 12.09 hrs, Volume= 9,034 cf, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10yr Rainfall=4.41"

Area (sf)	CN	Description
13,261	98	Paved parking, HSG C
23,858	79	50-75% Grass cover, Fair, HSG C
37,119	86	Weighted Average
23,858		64.27% Pervious Area
13,261		35.73% Impervious Area

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

Subcatchment P-16: (new Subcat)



Summary for Pond D1: DMH51

Inflow Area = 226,112 sf, 78.14% Impervious, Inflow Depth = 2.51" for 10yr event
Inflow = 5.65 cfs @ 12.40 hrs, Volume= 47,372 cf
Outflow = 5.65 cfs @ 12.41 hrs, Volume= 47,364 cf, Atten= 0%, Lag= 0.6 min
Primary = 3.73 cfs @ 12.13 hrs, Volume= 24,080 cf
Secondary = 2.97 cfs @ 12.43 hrs, Volume= 23,284 cf

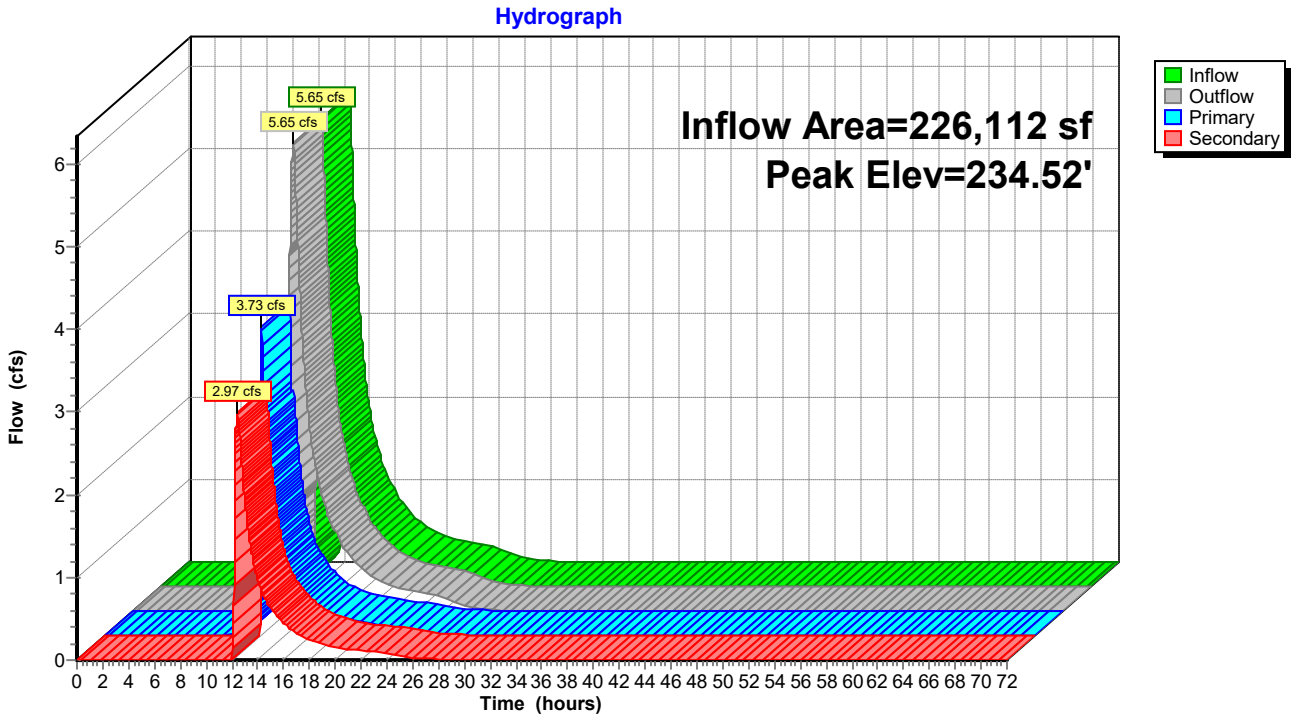
Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.52' @ 12.43 hrs
Flood Elev= 238.32'

Device	Routing	Invert	Outlet Devices
#1	Primary	232.90'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	233.80'	**24.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=2.72 cfs @ 12.13 hrs HW=234.03' TW=233.93' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 2.72 cfs @ 1.49 fps)

Secondary OutFlow Max=2.97 cfs @ 12.43 hrs HW=234.52' TW=233.55' (Dynamic Tailwater)
└**2=Orifice/Grate** (Orifice Controls 2.97 cfs @ 2.90 fps)

Pond D1: DMH51



Summary for Pond D2: DMH-55

Inflow Area = 71,980 sf, 79.90% Impervious, Inflow Depth = 7.61" for 10yr event
Inflow = 6.77 cfs @ 12.08 hrs, Volume= 45,639 cf
Outflow = 6.77 cfs @ 12.09 hrs, Volume= 45,636 cf, Atten= 0%, Lag= 0.6 min
Primary = 4.44 cfs @ 12.09 hrs, Volume= 34,850 cf
Secondary = 2.37 cfs @ 12.11 hrs, Volume= 10,787 cf

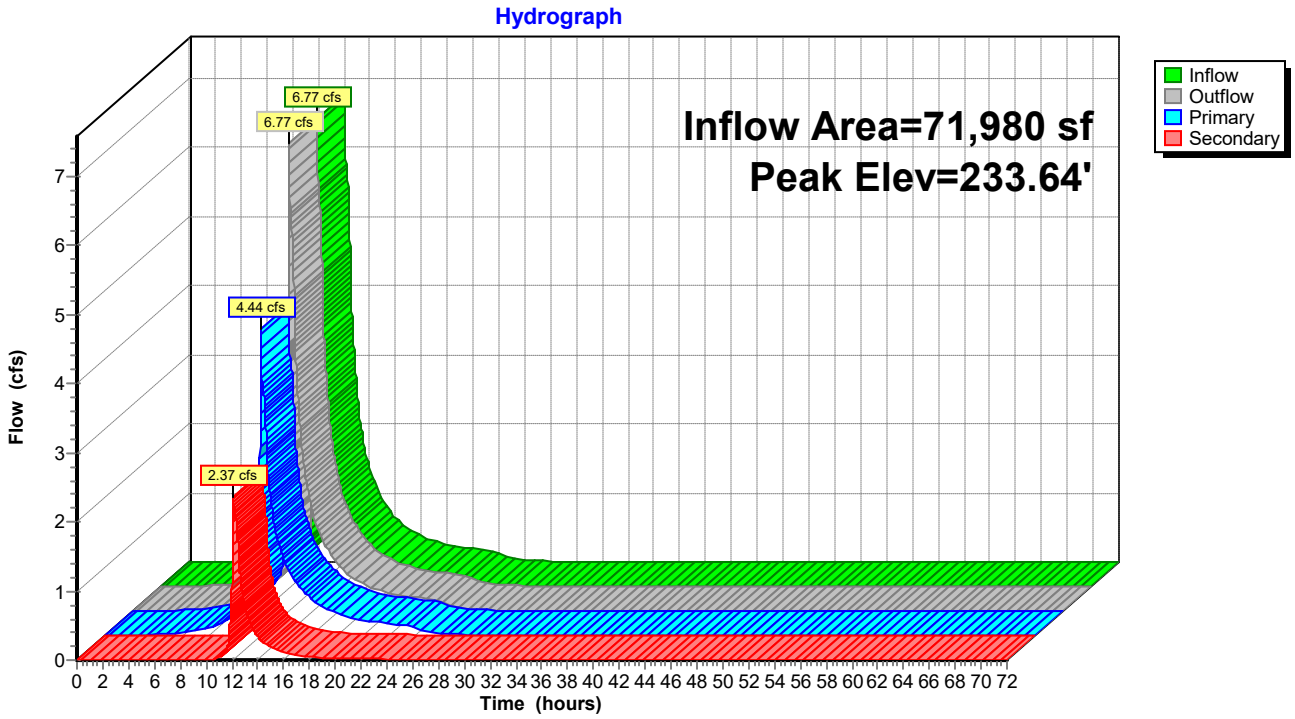
Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 233.64' @ 12.11 hrs
Flood Elev= 242.27'

Device	Routing	Invert	Outlet Devices	
#1	Primary	232.50'	**24.0" Vert. Orifice/Grate**	C= 0.600
#2	Secondary	233.00'	**24.0" Vert. Orifice/Grate**	C= 0.600

Primary OutFlow Max=4.30 cfs @ 12.09 hrs HW=233.63' TW=233.39' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 4.30 cfs @ 2.35 fps)

Secondary OutFlow Max=2.37 cfs @ 12.11 hrs HW=233.64' TW=0.00' (Dynamic Tailwater)
└**2=Orifice/Grate** (Orifice Controls 2.37 cfs @ 2.73 fps)

Pond D2: DMH-55

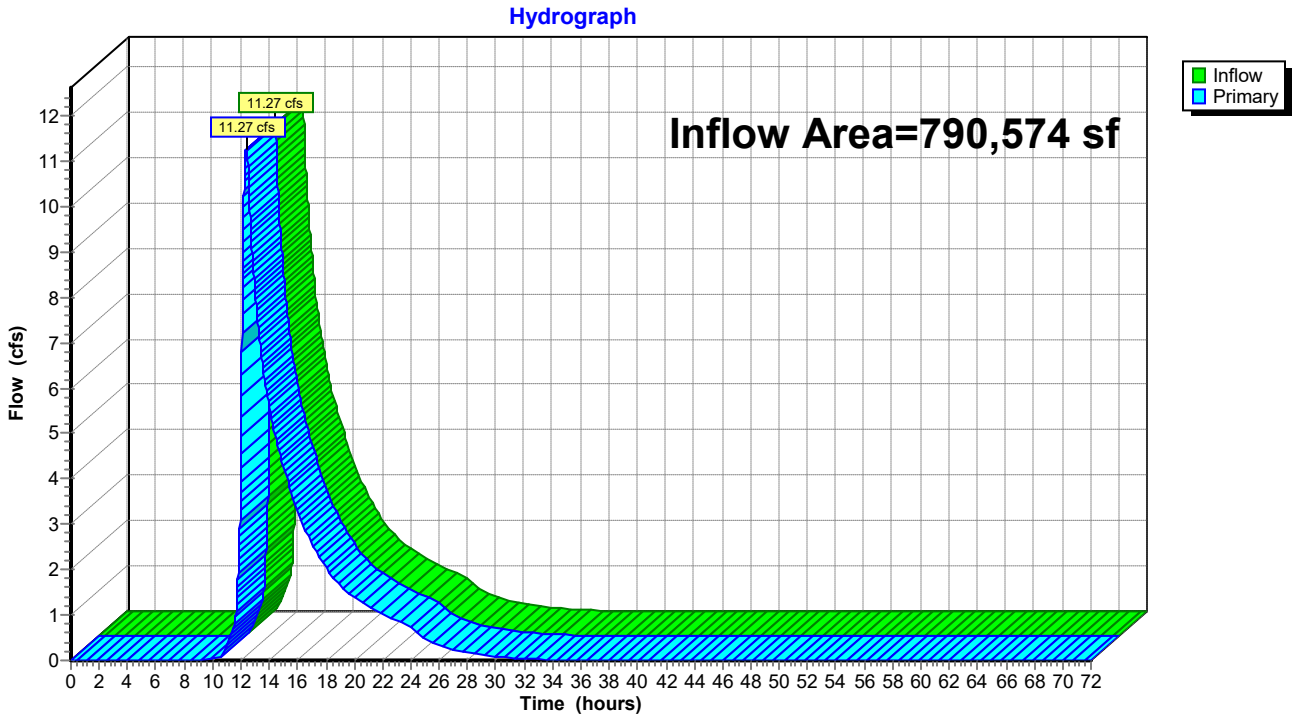


Summary for Pond DP-10p: Exist Basin #3

Inflow Area = 790,574 sf, 79.27% Impervious, Inflow Depth = 2.22" for 10yr event
Inflow = 11.27 cfs @ 12.37 hrs, Volume= 146,083 cf
Primary = 11.27 cfs @ 12.38 hrs, Volume= 146,083 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-10p: Exist Basin #3

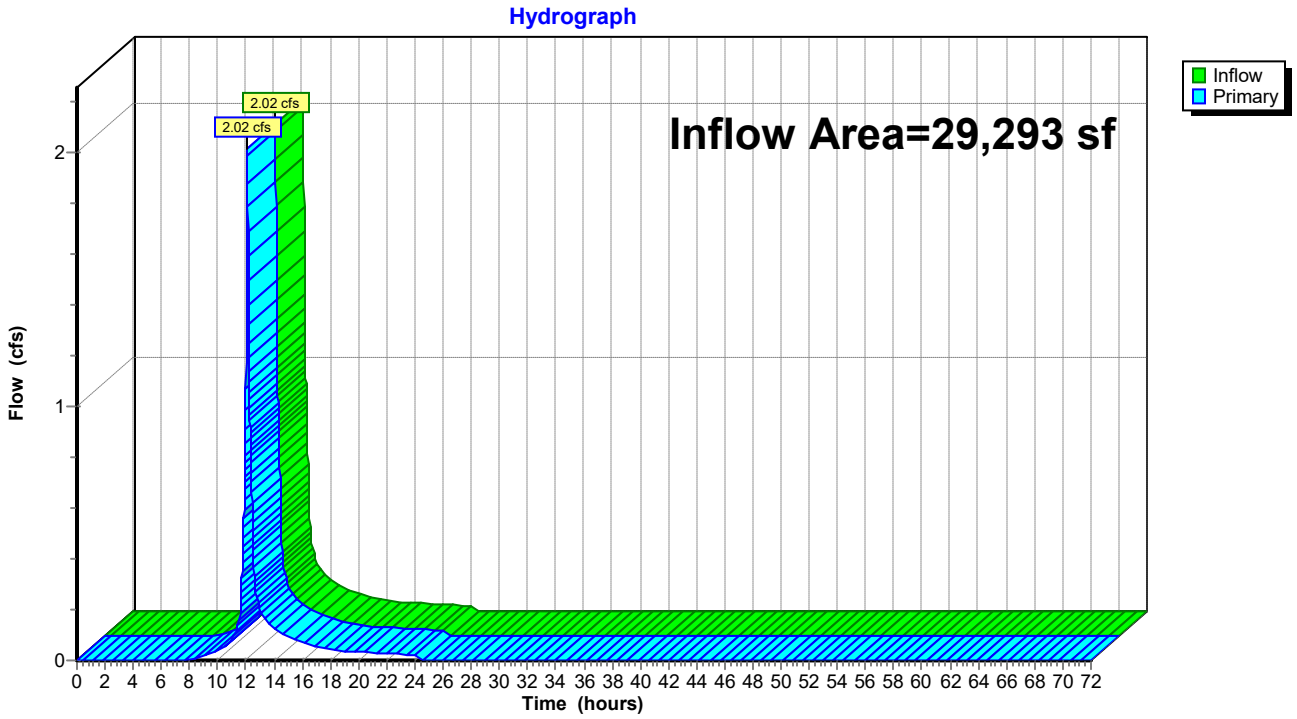


Summary for Pond DP-11p: Woods Southwest

Inflow Area = 29,293 sf, 23.93% Impervious, Inflow Depth = 2.56" for 10yr event
Inflow = 2.02 cfs @ 12.09 hrs, Volume= 6,243 cf
Primary = 2.02 cfs @ 12.10 hrs, Volume= 6,243 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-11p: Woods Southwest

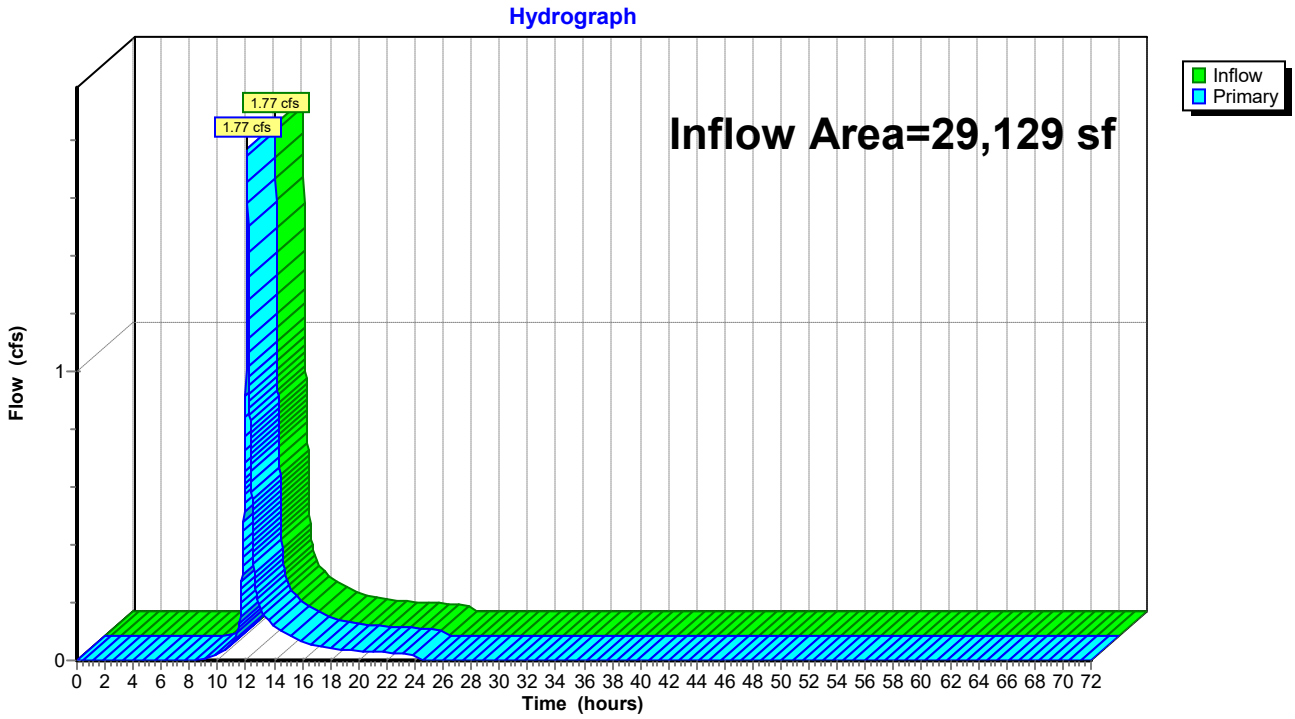


Summary for Pond DP-12p: Residential West#1

Inflow Area = 29,129 sf, 3.30% Impervious, Inflow Depth = 2.26" for 10yr event
Inflow = 1.77 cfs @ 12.09 hrs, Volume= 5,489 cf
Primary = 1.77 cfs @ 12.10 hrs, Volume= 5,489 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-12p: Residential West#1

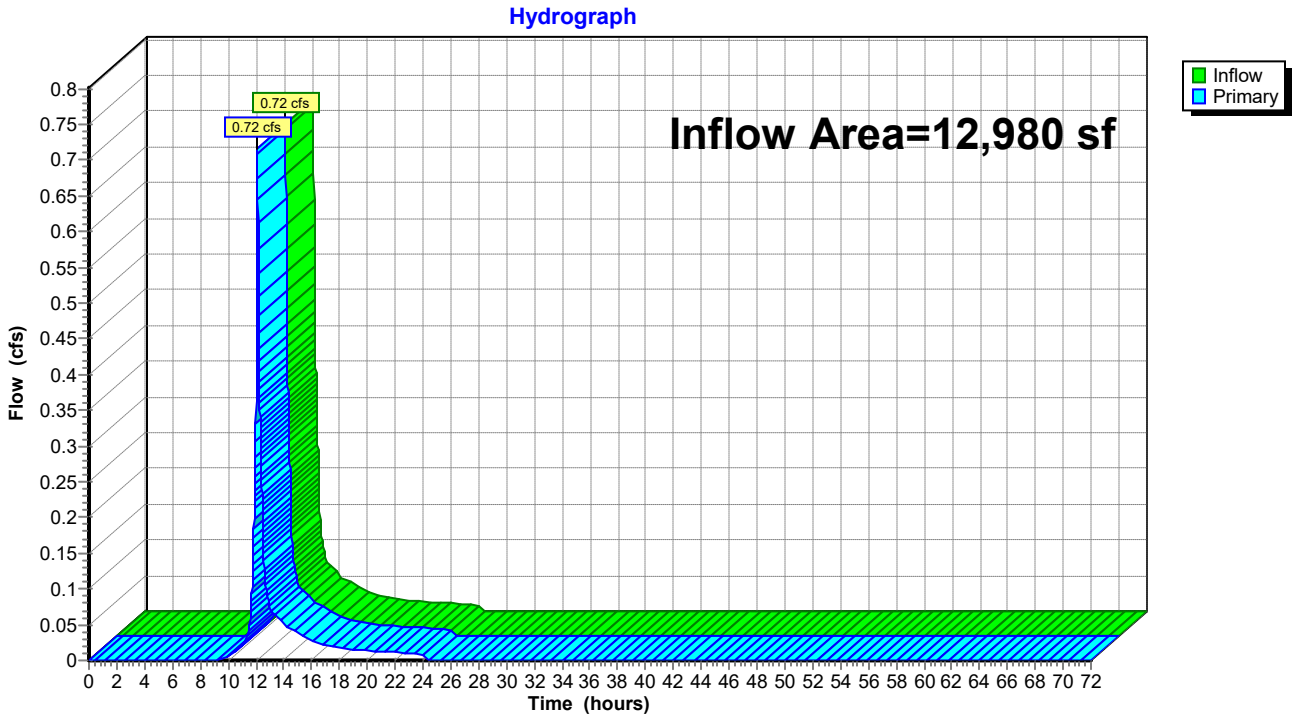


Summary for Pond DP-13p: Residential West#2

Inflow Area = 12,980 sf, 0.00% Impervious, Inflow Depth = 2.06" for 10yr event
Inflow = 0.72 cfs @ 12.09 hrs, Volume= 2,226 cf
Primary = 0.72 cfs @ 12.10 hrs, Volume= 2,226 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-13p: Residential West#2

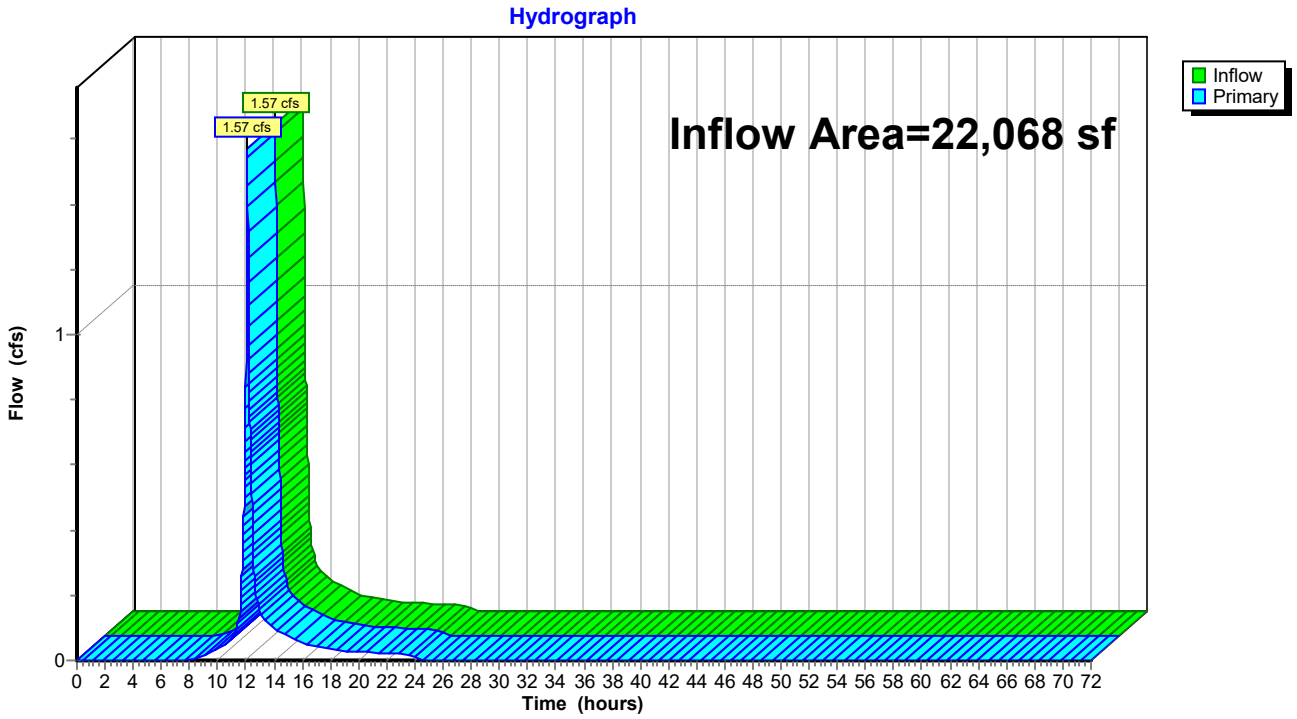


Summary for Pond DP-14p: Woods to West

Inflow Area = 22,068 sf, 26.18% Impervious, Inflow Depth = 2.65" for 10yr event
Inflow = 1.57 cfs @ 12.09 hrs, Volume= 4,866 cf
Primary = 1.57 cfs @ 12.10 hrs, Volume= 4,866 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-14p: Woods to West

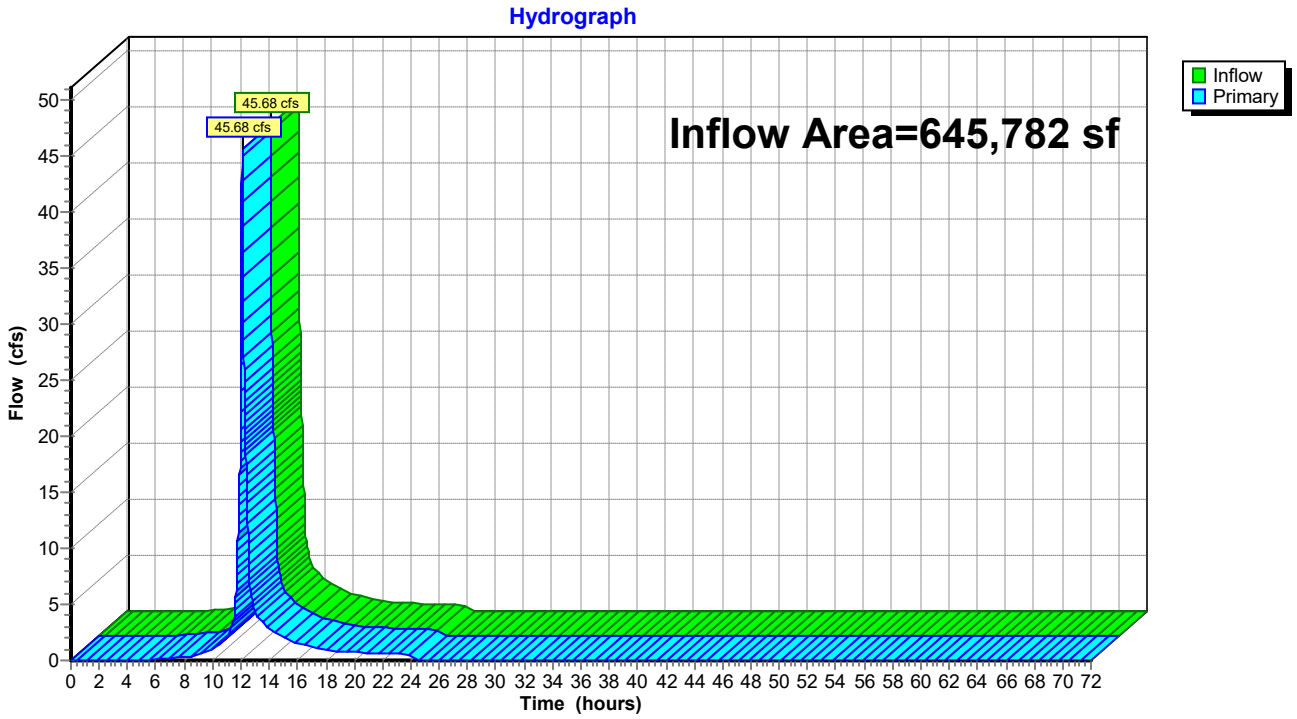


Summary for Pond DP-15p: Wetlands

Inflow Area = 645,782 sf, 28.32% Impervious, Inflow Depth = 2.69" for 10yr event
Inflow = 45.68 cfs @ 12.09 hrs, Volume= 144,848 cf
Primary = 45.68 cfs @ 12.10 hrs, Volume= 144,848 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-15p: Wetlands

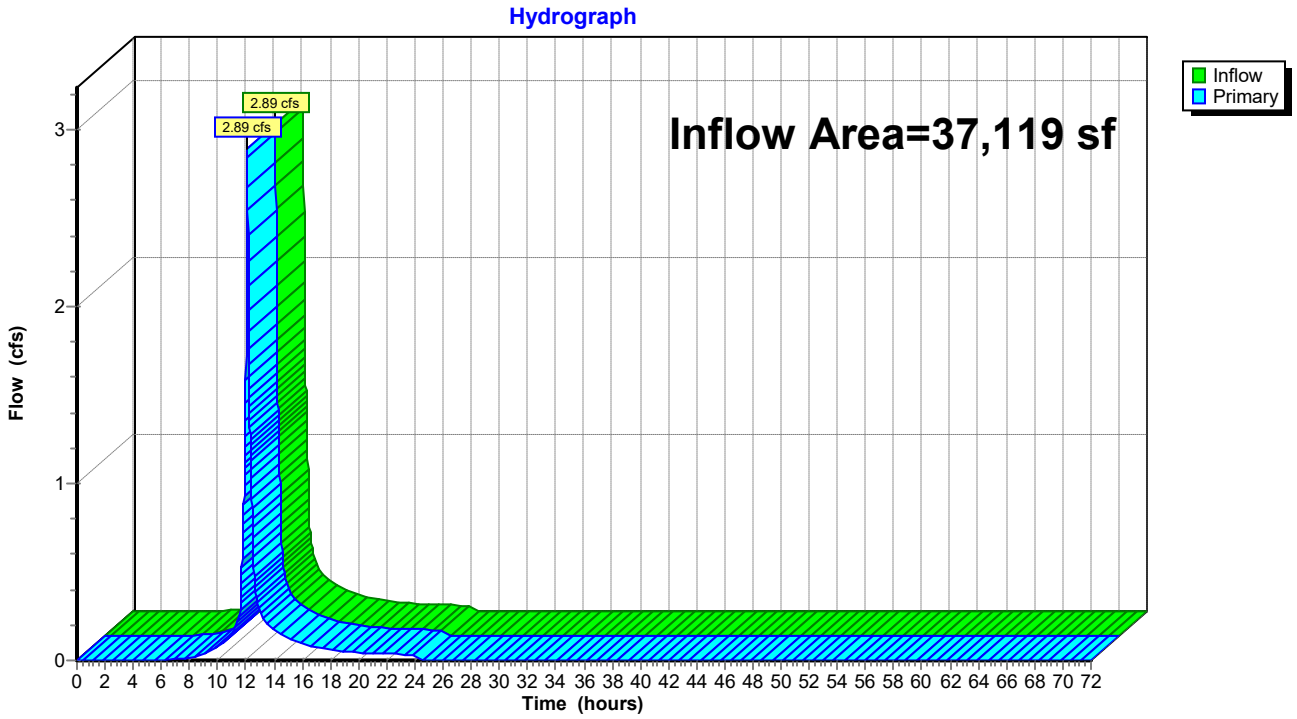


Summary for Pond DP-16p: Landry Avenue

Inflow Area = 37,119 sf, 35.73% Impervious, Inflow Depth = 2.92" for 10yr event
Inflow = 2.89 cfs @ 12.09 hrs, Volume= 9,034 cf
Primary = 2.89 cfs @ 12.10 hrs, Volume= 9,034 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-16p: Landry Avenue

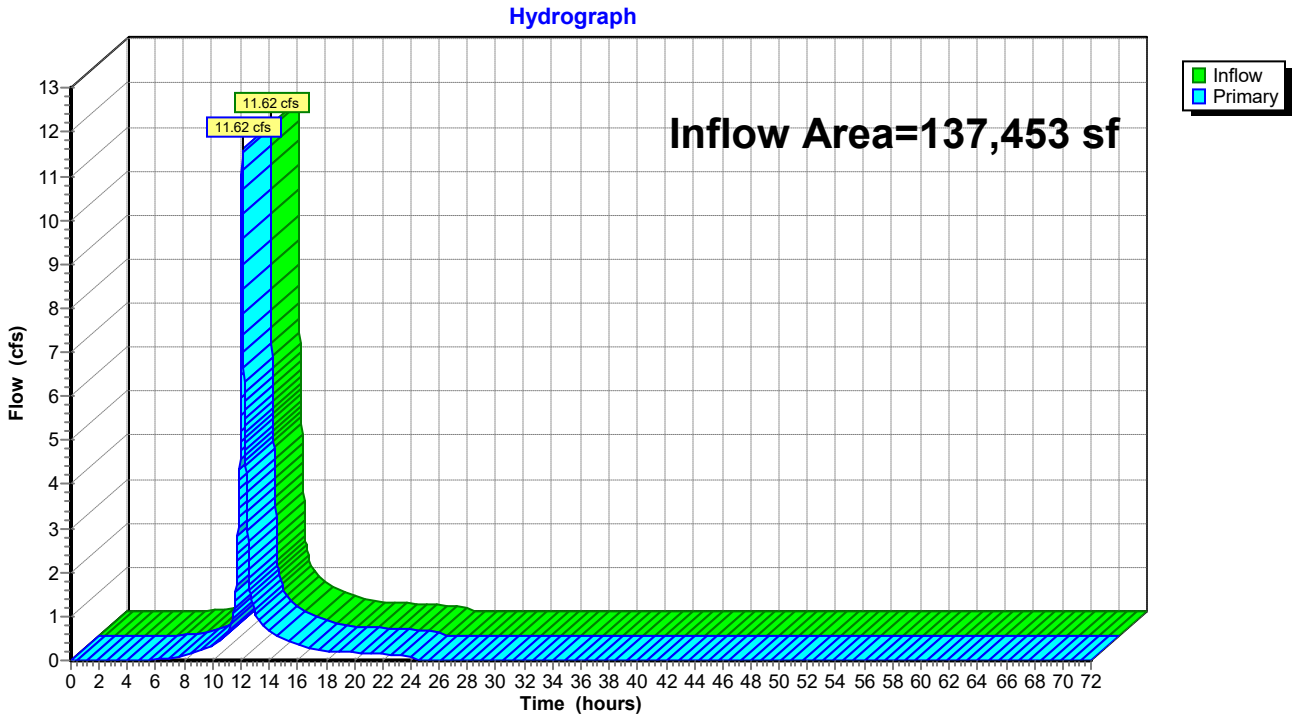


Summary for Pond EC: Exist Underground Chambers

Inflow Area = 137,453 sf, 54.04% Impervious, Inflow Depth = 3.21" for 10yr event
Inflow = 11.62 cfs @ 12.09 hrs, Volume= 36,766 cf
Primary = 11.62 cfs @ 12.10 hrs, Volume= 36,766 cf, Atten= 0%, Lag= 0.6 min

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

Pond EC: Exist Underground Chambers



Summary for Pond UGI-6: UGI-6

Inflow Area = 204,095 sf, 86.57% Impervious, Inflow Depth = 3.90" for 10yr event
Inflow = 19.65 cfs @ 12.08 hrs, Volume= 66,357 cf
Outflow = 5.29 cfs @ 12.44 hrs, Volume= 63,809 cf, Atten= 73%, Lag= 21.3 min
Discarded = 0.09 cfs @ 12.44 hrs, Volume= 20,659 cf
Primary = 5.21 cfs @ 12.44 hrs, Volume= 43,150 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.24' @ 12.44 hrs Surf.Area= 21,560 sf Storage= 33,732 cf

Plug-Flow detention time= 605.8 min calculated for 63,809 cf (96% of inflow)
Center-of-Mass det. time= 582.9 min (1,350.5 - 767.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.00'	18,927 cf	**357.75'W x 60.27'L x 3.50'H Field A** 75,461 cf Overall - 28,143 cf Embedded = 47,318 cf x 40.0% Voids
#2A	235.50'	28,143 cf	**Cultec R-300HD** x 600 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 600 Chambers in 75 Rows Cap Storage= +2.7 cf x 2 x 75 rows = 398.2 cf
		47,071 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.10'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	235.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00' Phase-In= 0.10'

Discarded OutFlow Max=0.09 cfs @ 12.44 hrs HW=237.24' (Free Discharge)
↑└**2=Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=5.21 cfs @ 12.44 hrs HW=237.24' TW=234.52' (Dynamic Tailwater)
↑└**1=Orifice/Grate** (Orifice Controls 5.21 cfs @ 3.63 fps)

Pond UGI-6: UGI-6 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 75 rows = 398.2 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

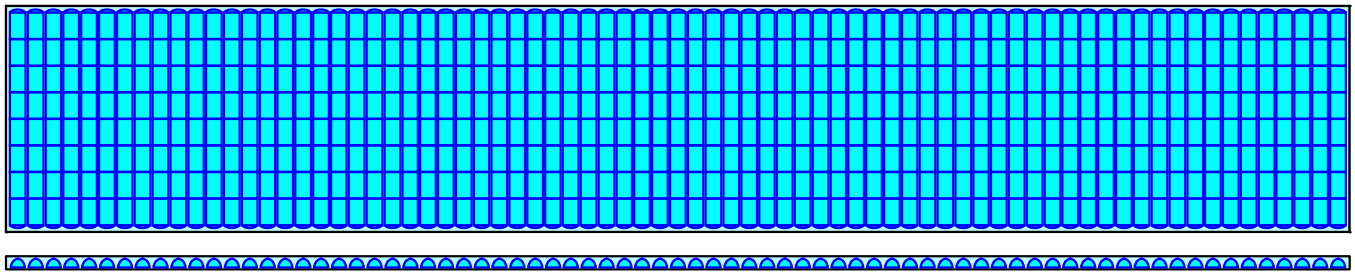
8 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 58.27' Row Length +12.0" End Stone x 2 = 60.27' Base Length
75 Rows x 51.0" Wide + 6.0" Spacing x 74 + 12.0" Side Stone x 2 = 357.75' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

600 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 75 Rows = 28,143.4 cf Chamber Storage

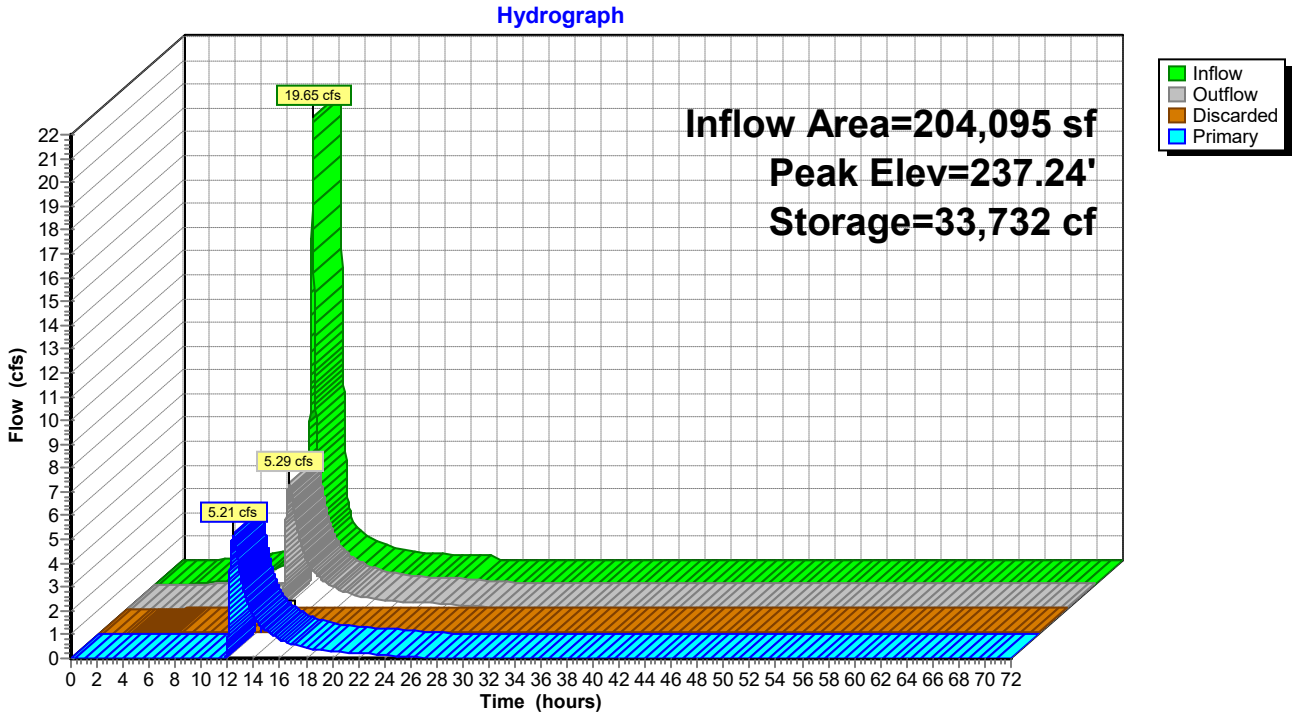
75,461.4 cf Field - 28,143.4 cf Chambers = 47,318.0 cf Stone x 40.0% Voids = 18,927.2 cf Stone Storage

Chamber Storage + Stone Storage = 47,070.6 cf = 1.081 af
Overall Storage Efficiency = 62.4%
Overall System Size = 60.27' x 357.75' x 3.50'

600 Chambers
2,794.9 cy Field
1,752.5 cy Stone



Pond UGI-6: UGI-6



Summary for Pond UGI-7: UGI-7

Inflow Area = 226,112 sf, 78.14% Impervious, Inflow Depth = 1.28" for 10yr event
Inflow = 3.73 cfs @ 12.13 hrs, Volume= 24,080 cf
Outflow = 2.67 cfs @ 12.43 hrs, Volume= 22,290 cf, Atten= 28%, Lag= 18.0 min
Discarded = 0.00 cfs @ 12.43 hrs, Volume= 185 cf
Primary = 2.67 cfs @ 12.43 hrs, Volume= 22,105 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.48' @ 12.43 hrs Surf.Area= 2,040 sf Storage= 2,922 cf

Plug-Flow detention time= 78.8 min calculated for 22,287 cf (93% of inflow)
Center-of-Mass det. time= 39.9 min (921.0 - 881.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	232.40'	1,838 cf	**44.25'W x 46.10'L x 3.50'H Field A** 7,140 cf Overall - 2,545 cf Embedded = 4,595 cf x 40.0% Voids
#2A	232.90'	2,545 cf	**Cultec R-300HD** x 54 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 54 Chambers in 9 Rows Cap Storage= +2.7 cf x 2 x 9 rows = 47.8 cf
		4,383 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	232.40'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = -1.60'
#2	Primary	233.80'	**24.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.00 cfs @ 12.43 hrs HW=234.48' (Free Discharge)
↑└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=2.67 cfs @ 12.43 hrs HW=234.48' TW=0.00' (Dynamic Tailwater)
↑└**2=Orifice/Grate** (Orifice Controls 2.67 cfs @ 2.81 fps)

Pond UGI-7: UGI-7 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 9 rows = 47.8 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

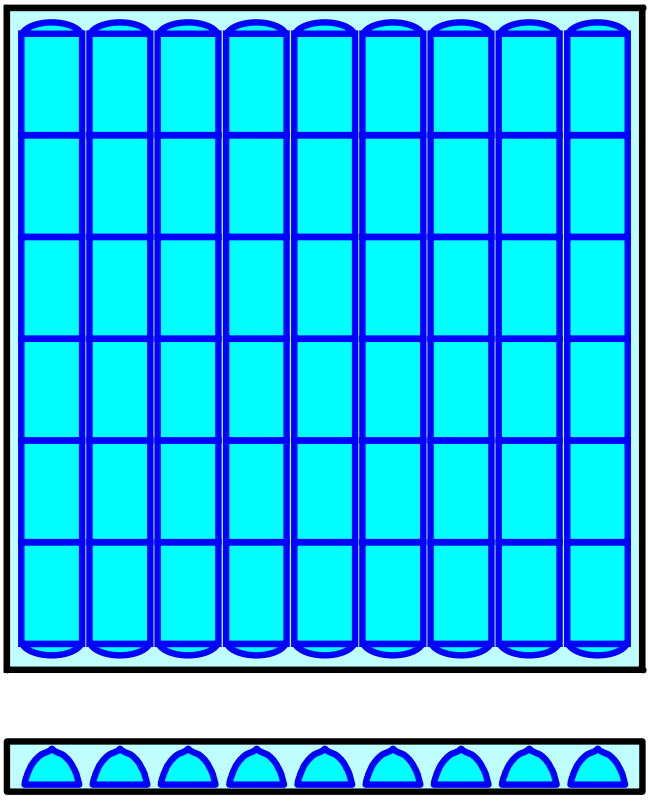
6 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 44.10' Row Length +12.0" End Stone x 2 = 46.10' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

54 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 9 Rows = 2,544.9 cf Chamber Storage

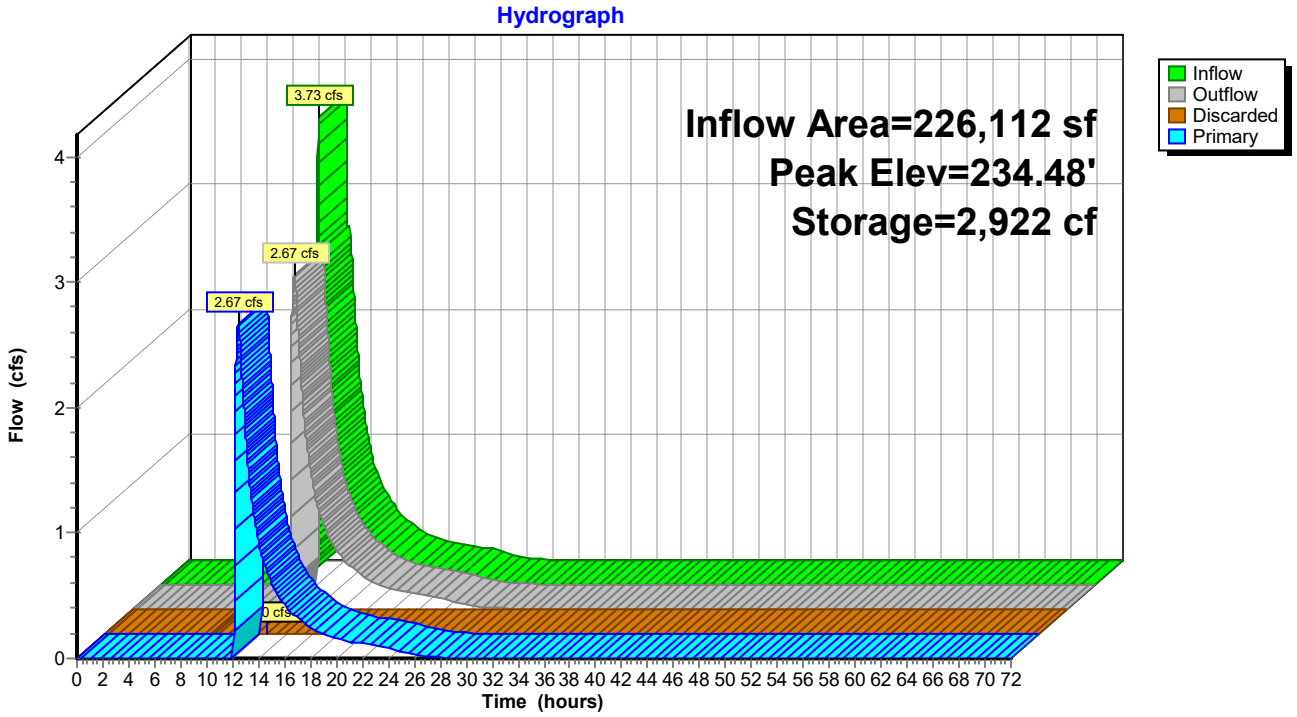
7,139.7 cf Field - 2,544.9 cf Chambers = 4,594.9 cf Stone x 40.0% Voids = 1,838.0 cf Stone Storage

Chamber Storage + Stone Storage = 4,382.8 cf = 0.101 af
Overall Storage Efficiency = 61.4%
Overall System Size = 46.10' x 44.25' x 3.50'

54 Chambers
264.4 cy Field
170.2 cy Stone



Pond UGI-7: UGI-7



Summary for Pond UGI-8: UGI-8

Inflow Area = 71,980 sf, 79.90% Impervious, Inflow Depth = 5.81" for 10yr event
Inflow = 4.44 cfs @ 12.09 hrs, Volume= 34,850 cf
Outflow = 3.75 cfs @ 12.15 hrs, Volume= 34,785 cf, Atten= 16%, Lag= 4.0 min
Discarded = 0.02 cfs @ 12.15 hrs, Volume= 4,074 cf
Primary = 3.73 cfs @ 12.15 hrs, Volume= 30,711 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 233.44' @ 12.15 hrs Surf.Area= 4,339 sf Storage= 4,219 cf

Plug-Flow detention time= 196.3 min calculated for 34,785 cf (100% of inflow)
Center-of-Mass det. time= 194.8 min (1,045.2 - 850.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	232.00'	3,838 cf	**39.50'W x 109.85'L x 3.50'H Field A** 15,187 cf Overall - 5,592 cf Embedded = 9,595 cf x 40.0% Voids
#2A	232.50'	5,592 cf	**Cultec R-300HD** x 120 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 120 Chambers in 8 Rows Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf
		9,430 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	232.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	233.00'	**4.0' long x 3.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	232.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = -2.00' Phase-In= 0.10'

Discarded OutFlow Max=0.02 cfs @ 12.15 hrs HW=233.44' (Free Discharge)
└**3=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=3.73 cfs @ 12.15 hrs HW=233.44' TW=0.00' (Dynamic Tailwater)
└**1=Orifice/Grate** (Passes 3.73 cfs of 4.78 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 3.73 cfs @ 2.17 fps)

Pond UGI-8: UGI-8 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

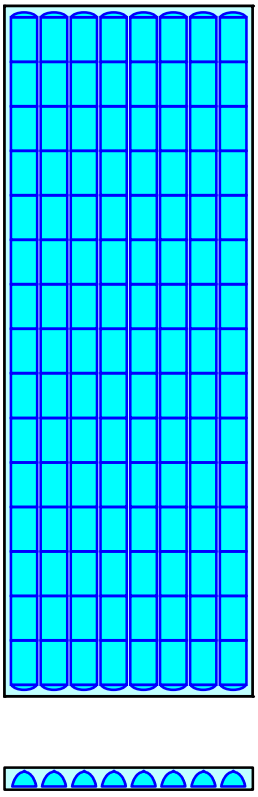
15 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 107.85' Row Length +12.0" End Stone x 2 = 109.85' Base Length
8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

120 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 8 Rows = 5,591.5 cf Chamber Storage

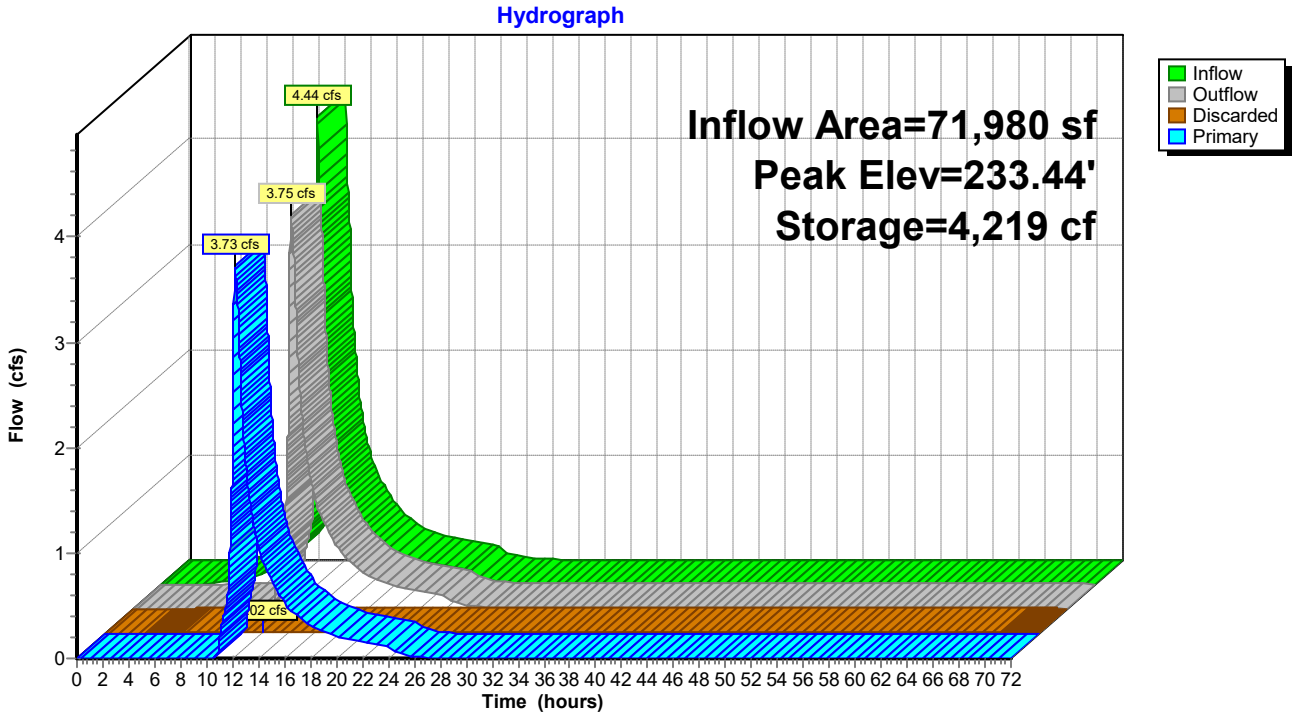
15,186.8 cf Field - 5,591.5 cf Chambers = 9,595.2 cf Stone x 40.0% Voids = 3,838.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,429.6 cf = 0.216 af
Overall Storage Efficiency = 62.1%
Overall System Size = 109.85' x 39.50' x 3.50'

120 Chambers
562.5 cy Field
355.4 cy Stone



Pond UGI-8: UGI-8



Summary for Pond UGI-9: UGI-9

Inflow Area = 462,627 sf, 84.24% Impervious, Inflow Depth = 3.86" for 10yr event
Inflow = 43.60 cfs @ 12.08 hrs, Volume= 148,975 cf
Outflow = 3.69 cfs @ 13.02 hrs, Volume= 140,691 cf, Atten= 92%, Lag= 55.9 min
Discarded = 0.27 cfs @ 13.02 hrs, Volume= 64,357 cf
Primary = 3.43 cfs @ 13.02 hrs, Volume= 76,334 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 238.38' @ 13.02 hrs Surf.Area= 66,884 sf Storage= 89,091 cf

Plug-Flow detention time= 867.1 min calculated for 140,671 cf (94% of inflow)
Center-of-Mass det. time= 835.8 min (1,599.1 - 763.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.50'	57,463 cf	**239.00'W x 279.85'L x 3.50'H Field A** 234,095 cf Overall - 90,437 cf Embedded = 143,657 cf x 40.0% Voids
#2A	237.00'	90,437 cf	**Cultec R-300HD** x 1950 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 1950 Chambers in 50 Rows Cap Storage= +2.7 cf x 2 x 50 rows = 265.5 cf
		147,900 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 2.50' Phase-In= 0.10'

Discarded OutFlow Max=0.27 cfs @ 13.02 hrs HW=238.38' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.27 cfs)

Primary OutFlow Max=3.43 cfs @ 13.02 hrs HW=238.38' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 3.43 cfs @ 3.19 fps)

Pond UGI-9: UGI-9 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 50 rows = 265.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

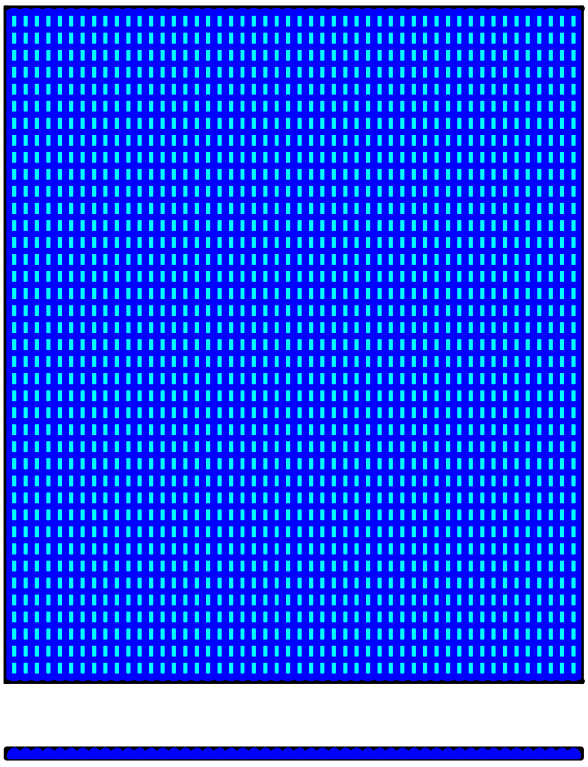
39 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 277.85' Row Length +12.0" End Stone x 2 = 279.85' Base Length
50 Rows x 51.0" Wide + 6.0" Spacing x 49 + 12.0" Side Stone x 2 = 239.00' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

1,950 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 50 Rows = 90,437.3 cf Chamber Storage

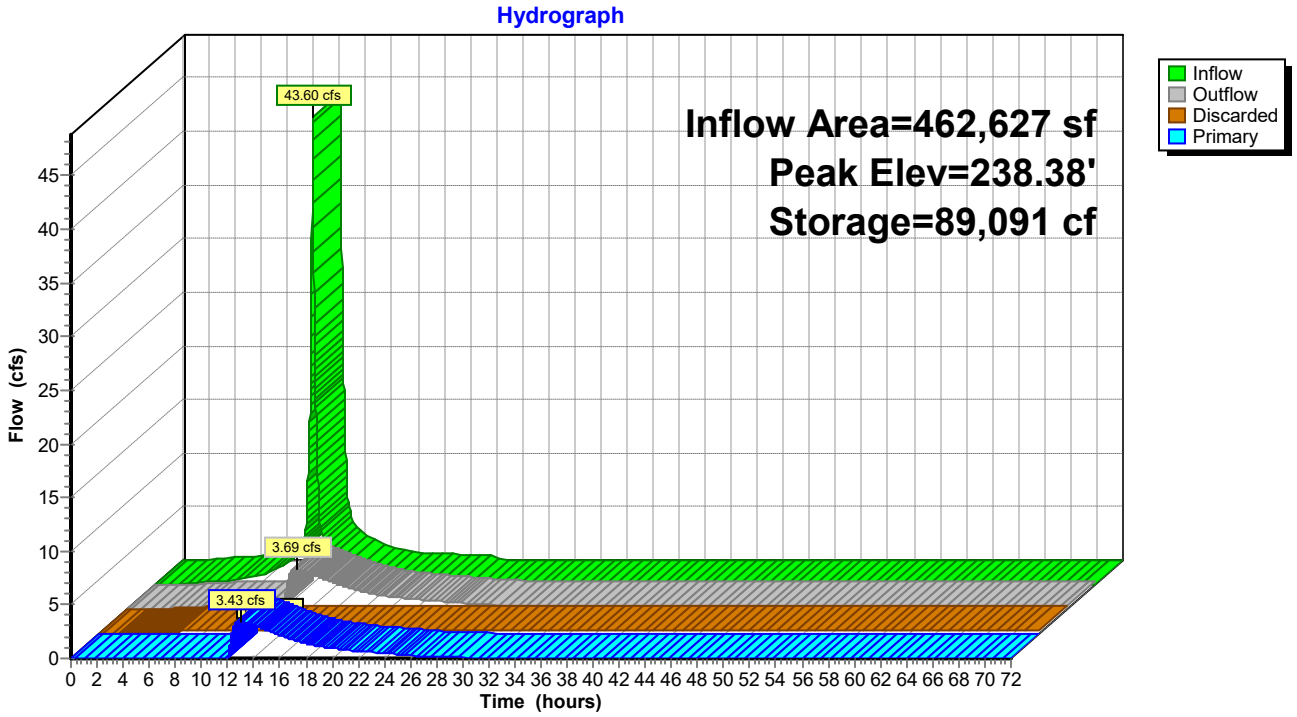
234,094.5 cf Field - 90,437.3 cf Chambers = 143,657.2 cf Stone x 40.0% Voids = 57,462.9 cf Stone Storage

Chamber Storage + Stone Storage = 147,900.2 cf = 3.395 af
Overall Storage Efficiency = 63.2%
Overall System Size = 279.85' x 239.00' x 3.50'

1,950 Chambers
8,670.2 cy Field
5,320.6 cy Stone



Pond UGI-9: UGI-9



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment P-10a: East Parking Lot Runoff Area=60,002 sf 93.94% Impervious Runoff Depth=5.00"
Tc=6.0 min CN=97 Runoff=7.17 cfs 24,981 cf

Subcatchment P-10b: South HS Runoff Area=144,093 sf 83.51% Impervious Runoff Depth=4.77"
Tc=6.0 min CN=95 Runoff=16.90 cfs 57,234 cf

Subcatchment P-10c: Southeast Grass Runoff Area=22,017 sf 0.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=79 Runoff=1.84 cfs 5,697 cf

Subcatchment P-10d: South Parking Lot Runoff Area=71,980 sf 79.90% Impervious Runoff Depth=4.65"
Tc=6.0 min CN=94 Runoff=8.34 cfs 27,914 cf

Subcatchment P-10e: Exist Basin Runoff Area=29,855 sf 9.23% Impervious Runoff Depth=3.30"
Tc=6.0 min CN=81 Runoff=2.64 cfs 8,202 cf

Subcatchment P-10f: West HS Runoff Area=113,103 sf 78.73% Impervious Runoff Depth=4.65"
Tc=6.0 min CN=94 Runoff=13.11 cfs 43,861 cf

Subcatchment P-10g: Grass Field Runoff Area=126,785 sf 100.00% Impervious Runoff Depth=5.11"
Tc=6.0 min CN=98 Runoff=15.24 cfs 54,017 cf

Subcatchment P-10h: Grass + Sidewalks Runoff Area=68,897 sf 29.12% Impervious Runoff Depth=3.69"
Tc=6.0 min CN=85 Runoff=6.76 cfs 21,203 cf

Subcatchment P-10i: Exist Stadium Runoff Area=153,842 sf 100.00% Impervious Runoff Depth=5.11"
Tc=6.0 min CN=98 Runoff=18.50 cfs 65,545 cf

Subcatchment P-11: South Woods Runoff Area=29,293 sf 23.93% Impervious Runoff Depth=3.39"
Tc=6.0 min CN=82 Runoff=2.66 cfs 8,285 cf

Subcatchment P-12a: West Woods Runoff Area=14,093 sf 6.82% Impervious Runoff Depth=3.01"
Tc=6.0 min CN=78 Runoff=1.14 cfs 3,536 cf

Subcatchment P-12b: West Grass/Woods Runoff Area=15,036 sf 0.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=79 Runoff=1.26 cfs 3,891 cf

Subcatchment P-13: Woods Runoff Area=12,980 sf 0.00% Impervious Runoff Depth=2.83"
Tc=6.0 min CN=76 Runoff=0.99 cfs 3,057 cf

Subcatchment P-14: Residential West#3 Runoff Area=22,068 sf 26.18% Impervious Runoff Depth=3.49"
Tc=6.0 min CN=83 Runoff=2.06 cfs 6,423 cf

Subcatchment P-15a: Northwest Runoff Area=157,944 sf 0.00% Impervious Runoff Depth=2.65"
Tc=6.0 min CN=74 Runoff=11.23 cfs 34,833 cf

Subcatchment P-15b: HS Entrance Runoff Area=68,639 sf 34.96% Impervious Runoff Depth=3.79"
Tc=6.0 min CN=86 Runoff=6.89 cfs 21,706 cf

Subcatchment P-15c: Grass Field Runoff Area=196,324 sf 7.43% Impervious Runoff Depth=3.20"
Tc=6.0 min CN=80 Runoff=16.90 cfs 52,359 cf

Subcatchment P-15d: MS Roof and Parking Runoff Area=85,422 sf 81.99% Impervious Runoff Depth=4.77"
Tc=6.0 min CN=95 Runoff=10.02 cfs 33,930 cf

Subcatchment P-15e: MS Parking Runoff Area=137,453 sf 54.04% Impervious Runoff Depth=4.11"
Tc=6.0 min CN=89 Runoff=14.70 cfs 47,053 cf

Subcatchment P-16: (new Subcat) Runoff Area=37,119 sf 35.73% Impervious Runoff Depth=3.79"
Tc=6.0 min CN=86 Runoff=3.73 cfs 11,739 cf

Pond D1: DMH51 Peak Elev=234.71' Inflow=8.33 cfs 64,364 cf
Primary=3.86 cfs 31,999 cf Secondary=4.47 cfs 32,352 cf Outflow=8.33 cfs 64,351 cf

Pond D2: DMH-55 Peak Elev=233.89' Inflow=10.96 cfs 60,265 cf
Primary=6.70 cfs 44,183 cf Secondary=4.35 cfs 16,081 cf Outflow=10.96 cfs 60,264 cf

Pond DP-10p: Exist Basin #3 Inflow=18.42 cfs 204,934 cf
Primary=18.42 cfs 204,934 cf

Pond DP-11p: Woods Southwest Inflow=2.66 cfs 8,285 cf
Primary=2.66 cfs 8,285 cf

Pond DP-12p: Residential West#1 Inflow=2.40 cfs 7,427 cf
Primary=2.40 cfs 7,427 cf

Pond DP-13p: Residential West#2 Inflow=0.99 cfs 3,057 cf
Primary=0.99 cfs 3,057 cf

Pond DP-14p: Woods to West Inflow=2.06 cfs 6,423 cf
Primary=2.06 cfs 6,423 cf

Pond DP-15p: Wetlands Inflow=59.66 cfs 189,881 cf
Primary=59.66 cfs 189,881 cf

Pond DP-16p: Landry Avenue Inflow=3.73 cfs 11,739 cf
Primary=3.73 cfs 11,739 cf

Pond EC: Exist Underground Chambers Inflow=14.70 cfs 47,053 cf
Primary=14.70 cfs 47,053 cf

Pond UGI-6: UGI-6 Peak Elev=237.65' Storage=39,328 cf Inflow=24.07 cfs 82,215 cf
Discarded=0.09 cfs 20,876 cf Primary=7.63 cfs 58,666 cf Outflow=7.72 cfs 79,542 cf

Pond UGI-7: UGI-7 Peak Elev=234.63' Storage=3,128 cf Inflow=3.86 cfs 31,999 cf
Discarded=0.00 cfs 187 cf Primary=3.85 cfs 30,020 cf Outflow=3.85 cfs 30,208 cf

Pond UGI-8: UGI-8 Peak Elev=233.59' Storage=4,739 cf Inflow=6.70 cfs 44,183 cf
Discarded=0.02 cfs 4,133 cf Primary=5.81 cfs 39,976 cf Outflow=5.83 cfs 44,109 cf

Pond UGI-9: UGI-9 Peak Elev=238.75' Storage=106,954 cf Inflow=53.61 cfs 184,626 cf
Discarded=0.27 cfs 65,030 cf Primary=6.00 cfs 110,655 cf Outflow=6.26 cfs 175,685 cf

Total Runoff Area = 1,566,945 sf Runoff Volume = 535,465 cf Average Runoff Depth = 4.10"
46.61% Pervious = 730,334 sf 53.39% Impervious = 836,611 sf

Summary for Subcatchment P-10a: East Parking Lot

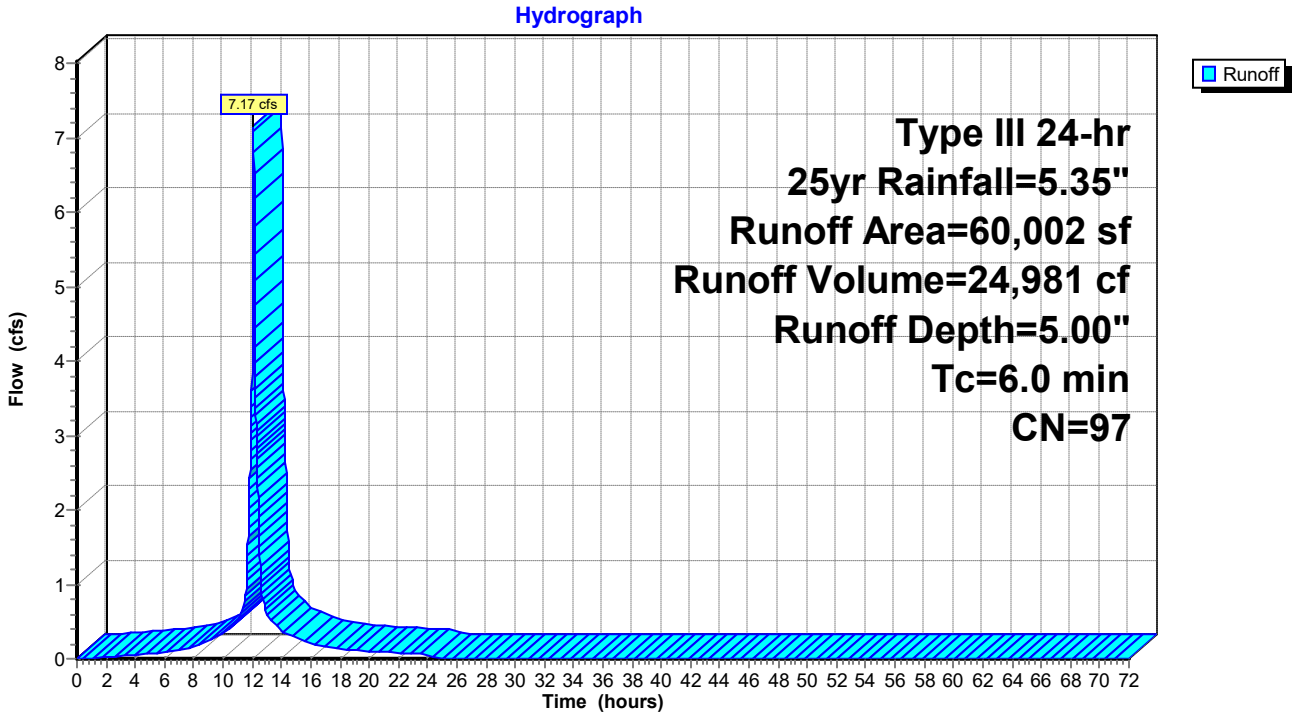
Runoff = 7.17 cfs @ 12.08 hrs, Volume= 24,981 cf, Depth= 5.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
3,636	79	50-75% Grass cover, Fair, HSG C
56,366	98	Paved parking, HSG C
60,002	97	Weighted Average
3,636		6.06% Pervious Area
56,366		93.94% Impervious Area

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

Subcatchment P-10a: East Parking Lot



Summary for Subcatchment P-10b: South HS

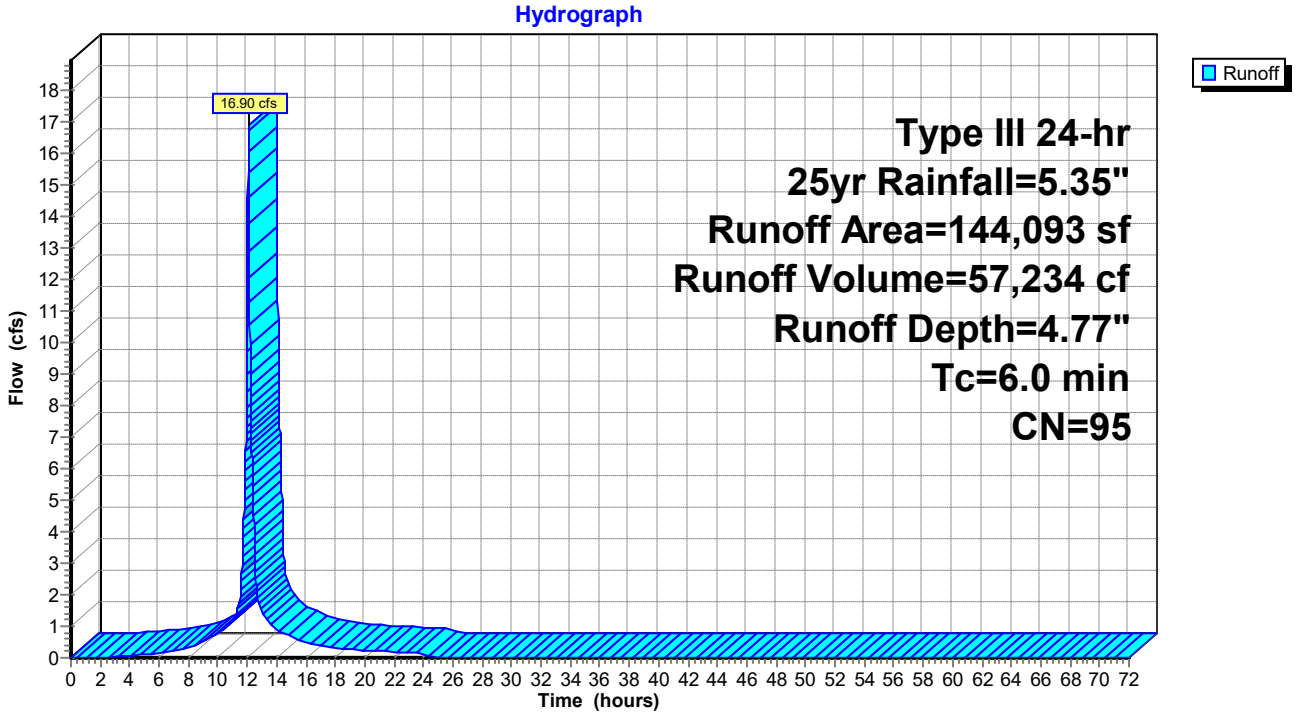
Runoff = 16.90 cfs @ 12.08 hrs, Volume= 57,234 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	25,314	98	HS Roofs, HSG C
*	37,903	98	HS Roofs, HSG C
	23,764	79	50-75% Grass cover, Fair, HSG C
	57,112	98	Paved parking, HSG C
	144,093	95	Weighted Average
	23,764		16.49% Pervious Area
	120,329		83.51% Impervious Area

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

Subcatchment P-10b: South HS



Summary for Subcatchment P-10c: Southeast Grass

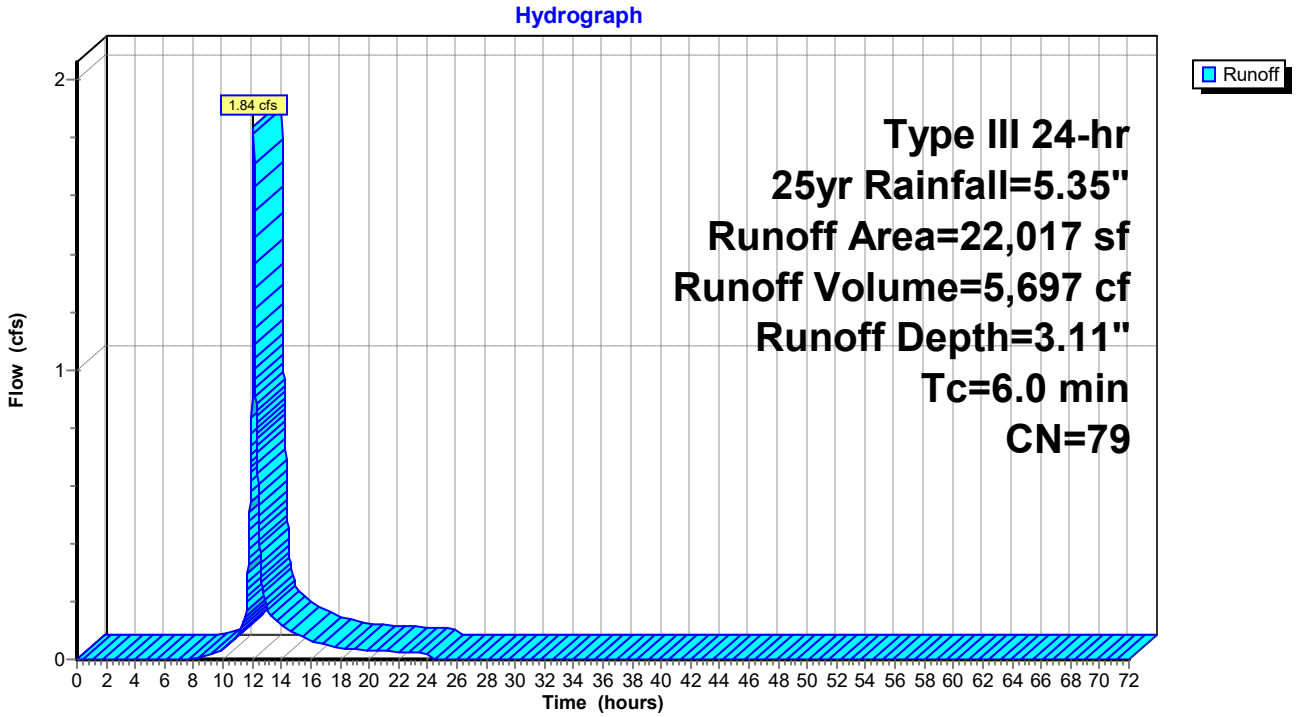
Runoff = 1.84 cfs @ 12.09 hrs, Volume= 5,697 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
22,017	79	50-75% Grass cover, Fair, HSG C
22,017		100.00% Pervious Area

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

Subcatchment P-10c: Southeast Grass



Summary for Subcatchment P-10d: South Parking Lot

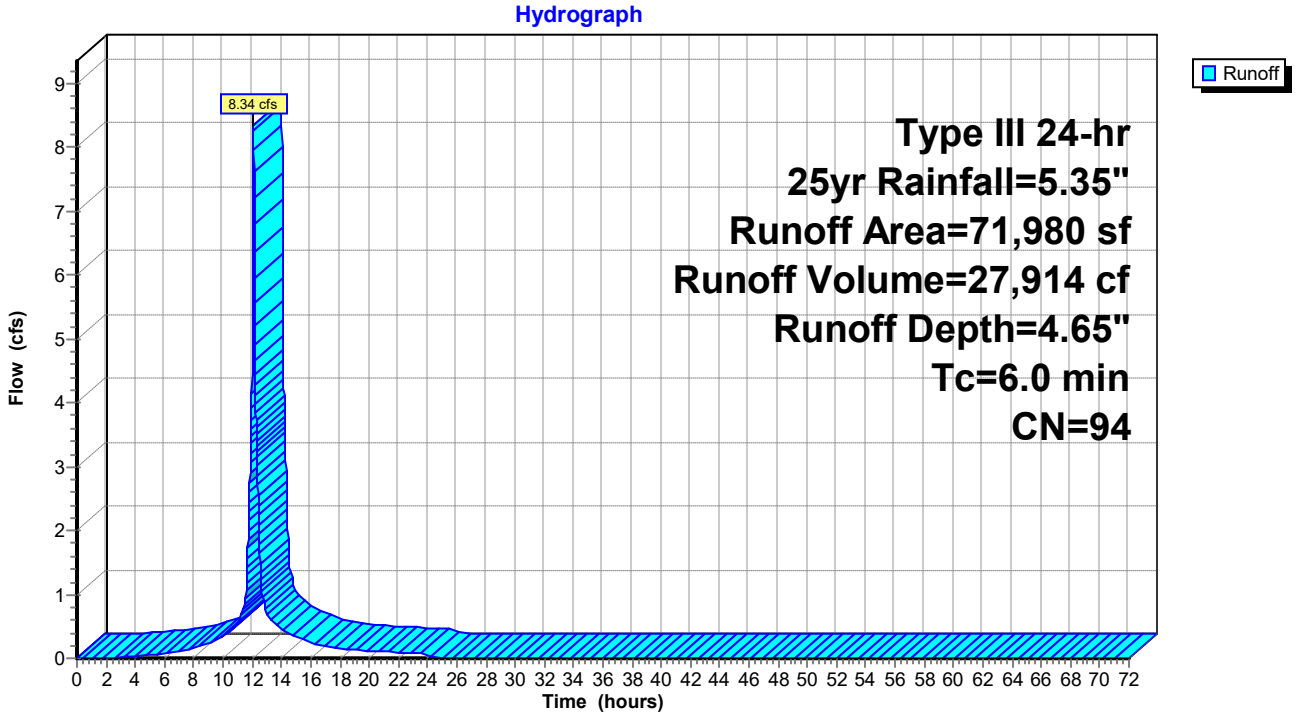
Runoff = 8.34 cfs @ 12.08 hrs, Volume= 27,914 cf, Depth= 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
26,521	98	Paved parking, HSG C
30,989	98	Paved parking, HSG C
14,470	79	50-75% Grass cover, Fair, HSG C
71,980	94	Weighted Average
14,470		20.10% Pervious Area
57,510		79.90% Impervious Area

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

Subcatchment P-10d: South Parking Lot



Summary for Subcatchment P-10e: Exist Basin

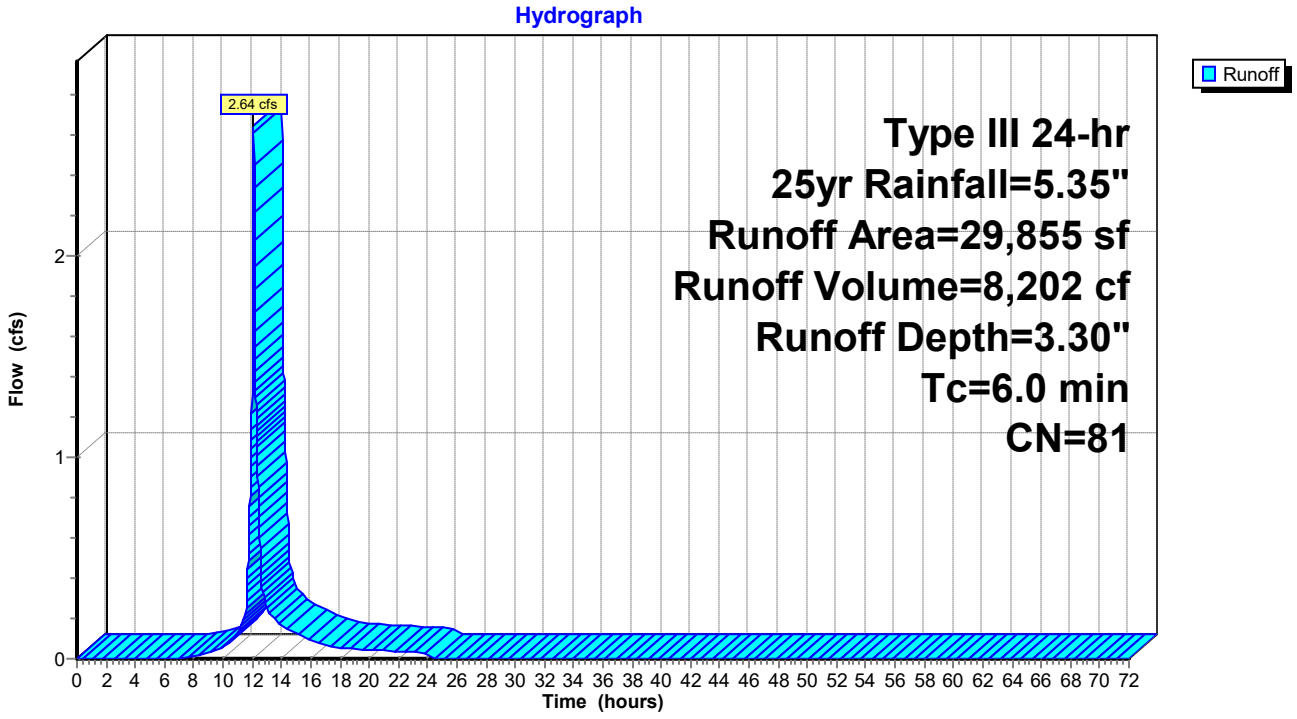
Runoff = 2.64 cfs @ 12.09 hrs, Volume= 8,202 cf, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
27,099	79	50-75% Grass cover, Fair, HSG C
2,756	98	Paved parking, HSG C
29,855	81	Weighted Average
27,099		90.77% Pervious Area
2,756		9.23% Impervious Area

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

Subcatchment P-10e: Exist Basin



Summary for Subcatchment P-10f: West HS

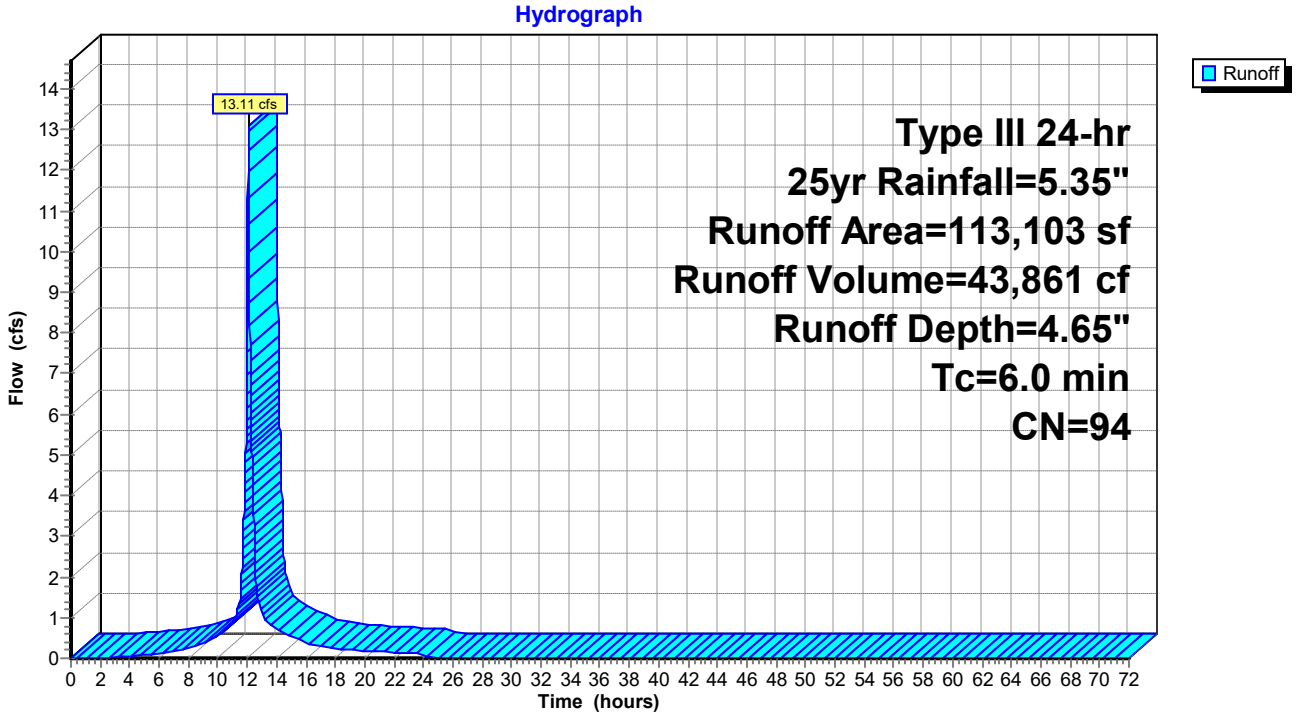
Runoff = 13.11 cfs @ 12.08 hrs, Volume= 43,861 cf, Depth= 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
	36,395	98	Paved parking, HSG C
	24,057	79	50-75% Grass cover, Fair, HSG C
*	52,651	98	HS Roofs, HSG C
	113,103	94	Weighted Average
	24,057		21.27% Pervious Area
	89,046		78.73% Impervious Area

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

Subcatchment P-10f: West HS



Summary for Subcatchment P-10g: Grass Field

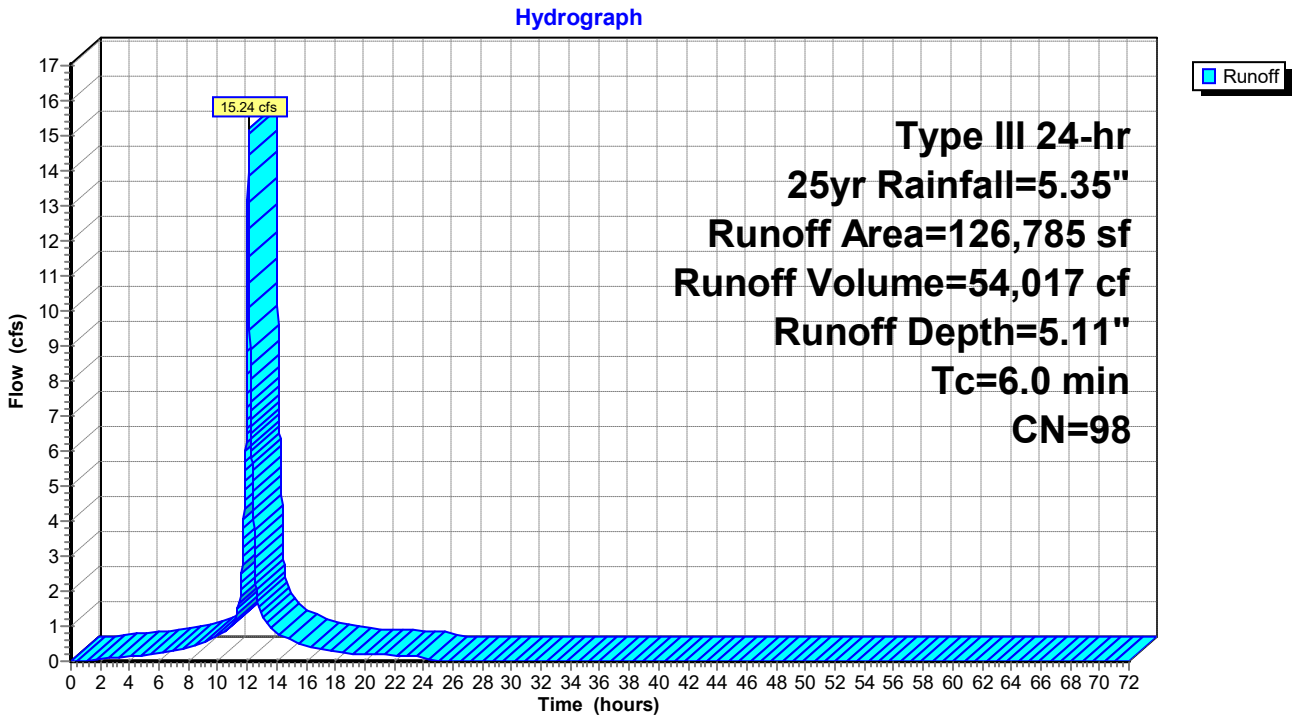
Runoff = 15.24 cfs @ 12.08 hrs, Volume= 54,017 cf, Depth= 5.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	118,453	98	Synthetic Field, HSG C
*	8,332	98	Sidewalks, HSG C
	126,785	98	Weighted Average
	126,785		100.00% Impervious Area

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

Subcatchment P-10g: Grass Field



Summary for Subcatchment P-10h: Grass + Sidewalks

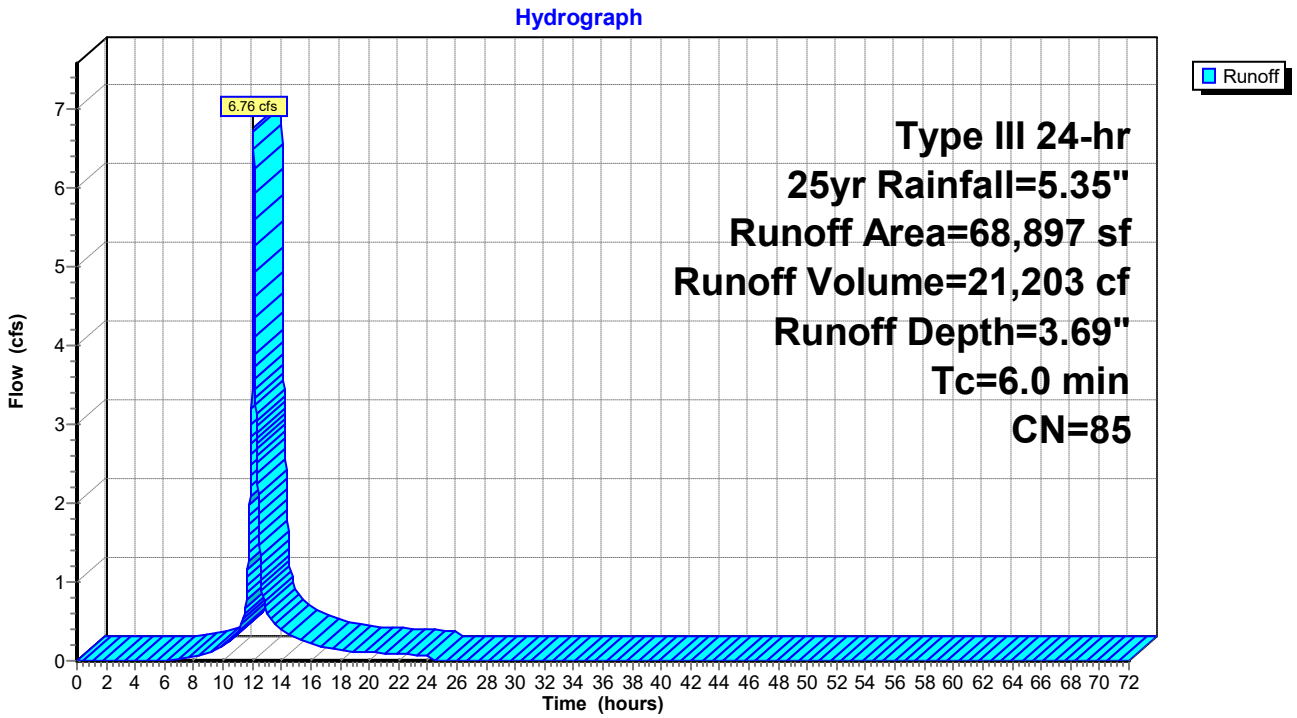
Runoff = 6.76 cfs @ 12.09 hrs, Volume= 21,203 cf, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
	48,833	79	50-75% Grass cover, Fair, HSG C
*	6,470	98	Exist Sidewalk, HSG C
*	1,071	98	Exist Roof, HSG C
*	12,523	98	Prop Sidewalk, HSG C
	68,897	85	Weighted Average
	48,833		70.88% Pervious Area
	20,064		29.12% Impervious Area

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

Subcatchment P-10h: Grass + Sidewalks



Summary for Subcatchment P-10i: Exist Stadium

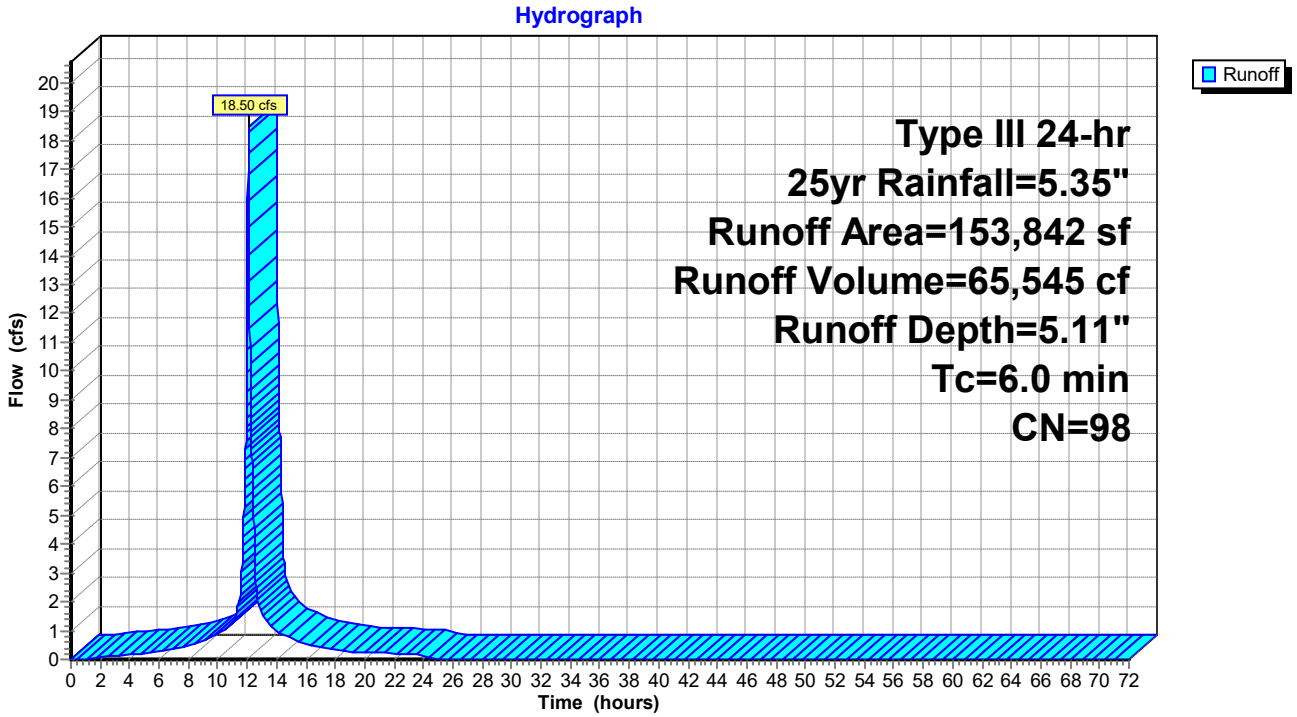
Runoff = 18.50 cfs @ 12.08 hrs, Volume= 65,545 cf, Depth= 5.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	153,842	98	Synfield
	153,842		100.00% Impervious Area

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

Subcatchment P-10i: Exist Stadium



Summary for Subcatchment P-11: South Woods

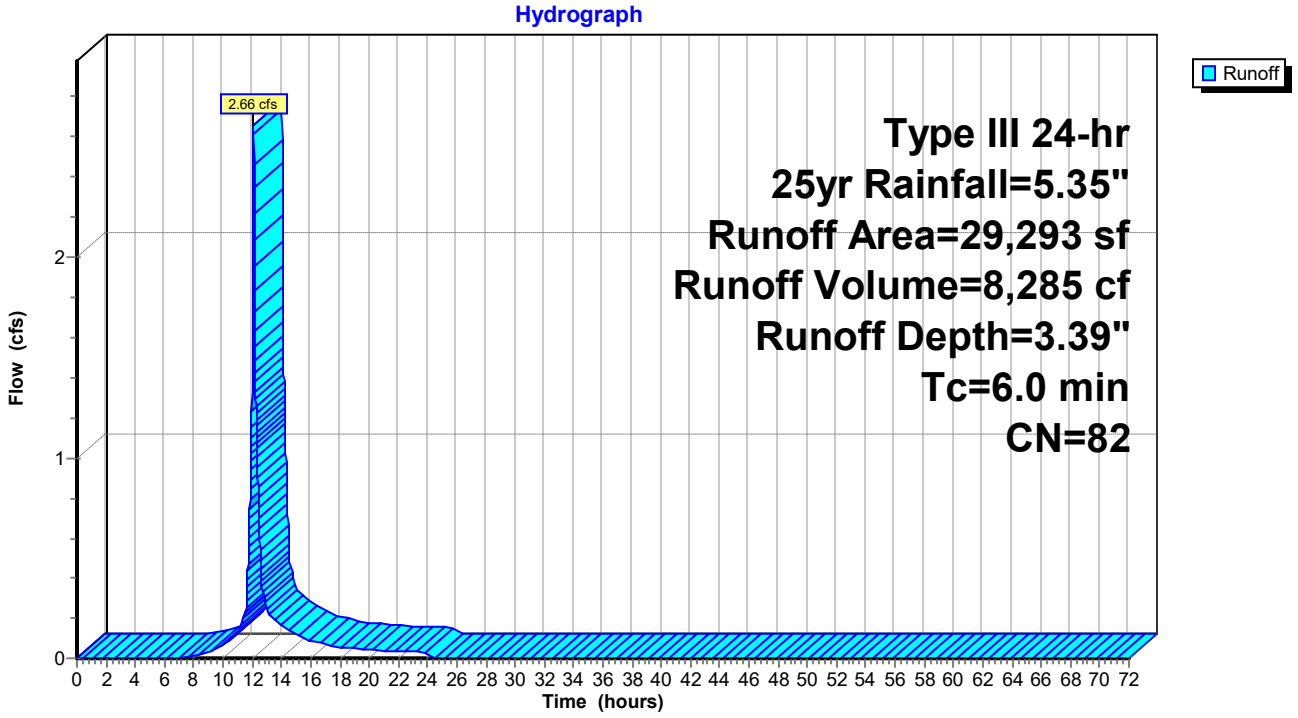
Runoff = 2.66 cfs @ 12.09 hrs, Volume= 8,285 cf, Depth= 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
13,455	79	50-75% Grass cover, Fair, HSG C
8,827	73	Woods, Fair, HSG C
7,011	98	Paved parking, HSG C
29,293	82	Weighted Average
22,282		76.07% Pervious Area
7,011		23.93% Impervious Area

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

Subcatchment P-11: South Woods



Summary for Subcatchment P-12a: West Woods

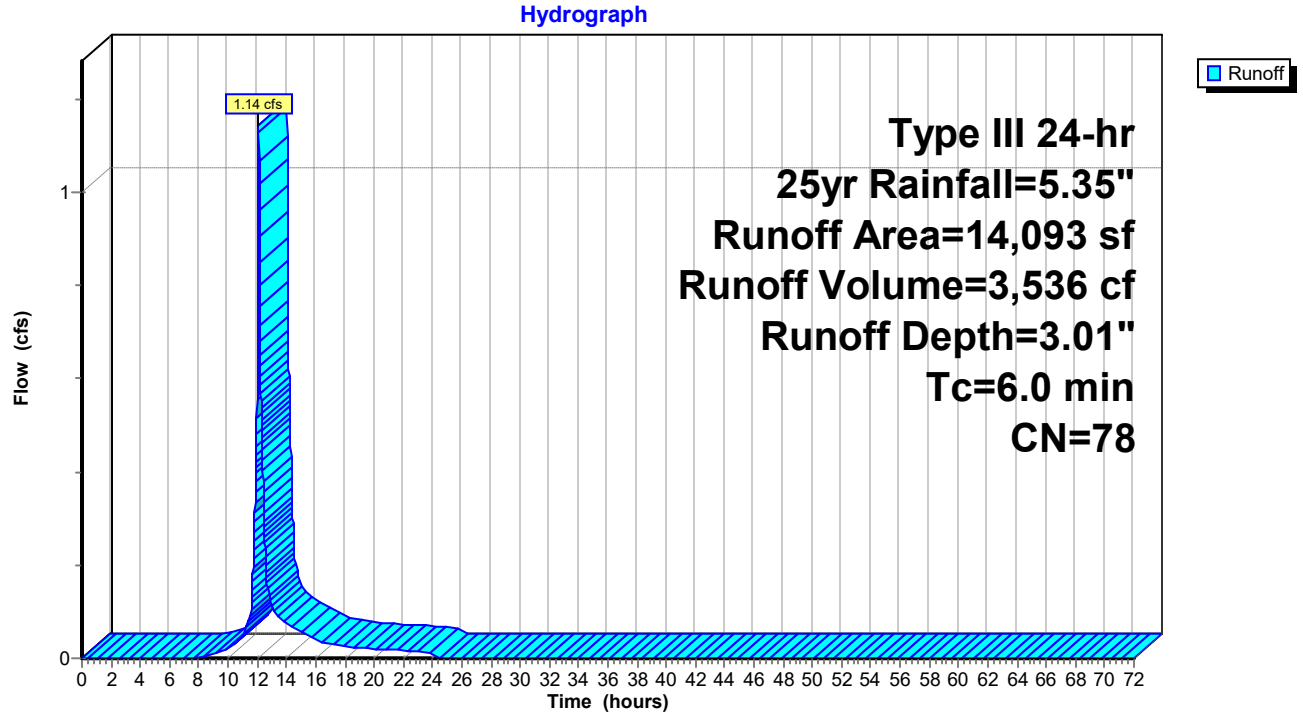
Runoff = 1.14 cfs @ 12.09 hrs, Volume= 3,536 cf, Depth= 3.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
	6,843	79	50-75% Grass cover, Fair, HSG C
	6,289	73	Woods, Fair, HSG C
*	961	98	Exist Sidewalk, HSG C
	14,093	78	Weighted Average
	13,132		93.18% Pervious Area
	961		6.82% Impervious Area

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

Subcatchment P-12a: West Woods



Summary for Subcatchment P-12b: West Grass/Woods

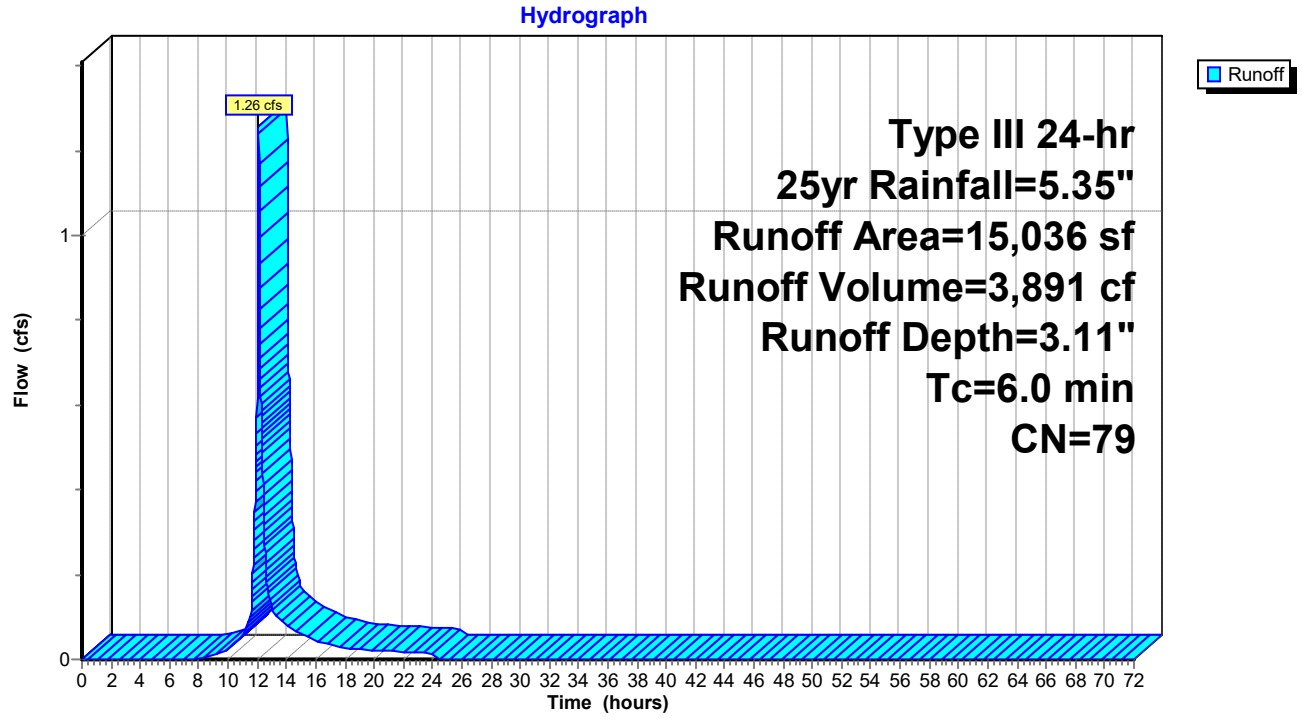
Runoff = 1.26 cfs @ 12.09 hrs, Volume= 3,891 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
15,036	79	50-75% Grass cover, Fair, HSG C
15,036		100.00% Pervious Area

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

Subcatchment P-12b: West Grass/Woods



Summary for Subcatchment P-13: Woods

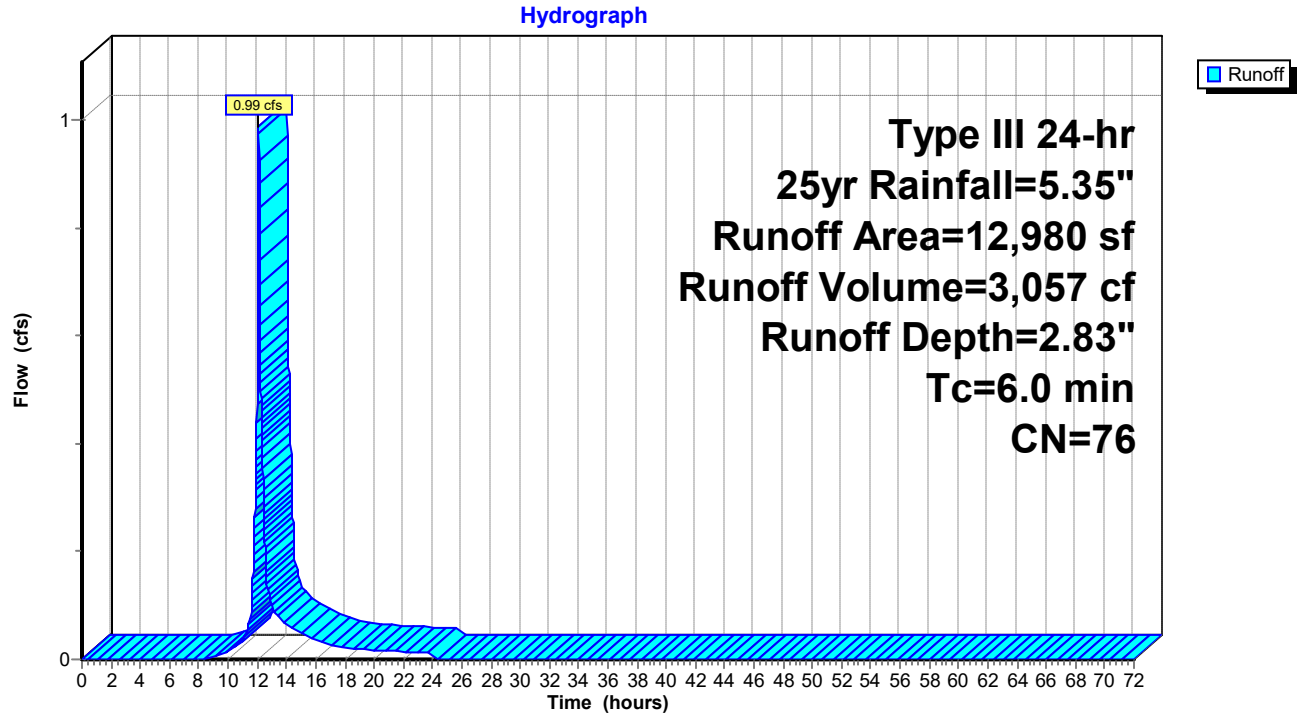
Runoff = 0.99 cfs @ 12.09 hrs, Volume= 3,057 cf, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
12,980	76	Woods/grass comb., Fair, HSG C
12,980		100.00% Pervious Area

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

Subcatchment P-13: Woods



Summary for Subcatchment P-14: Residential West#3

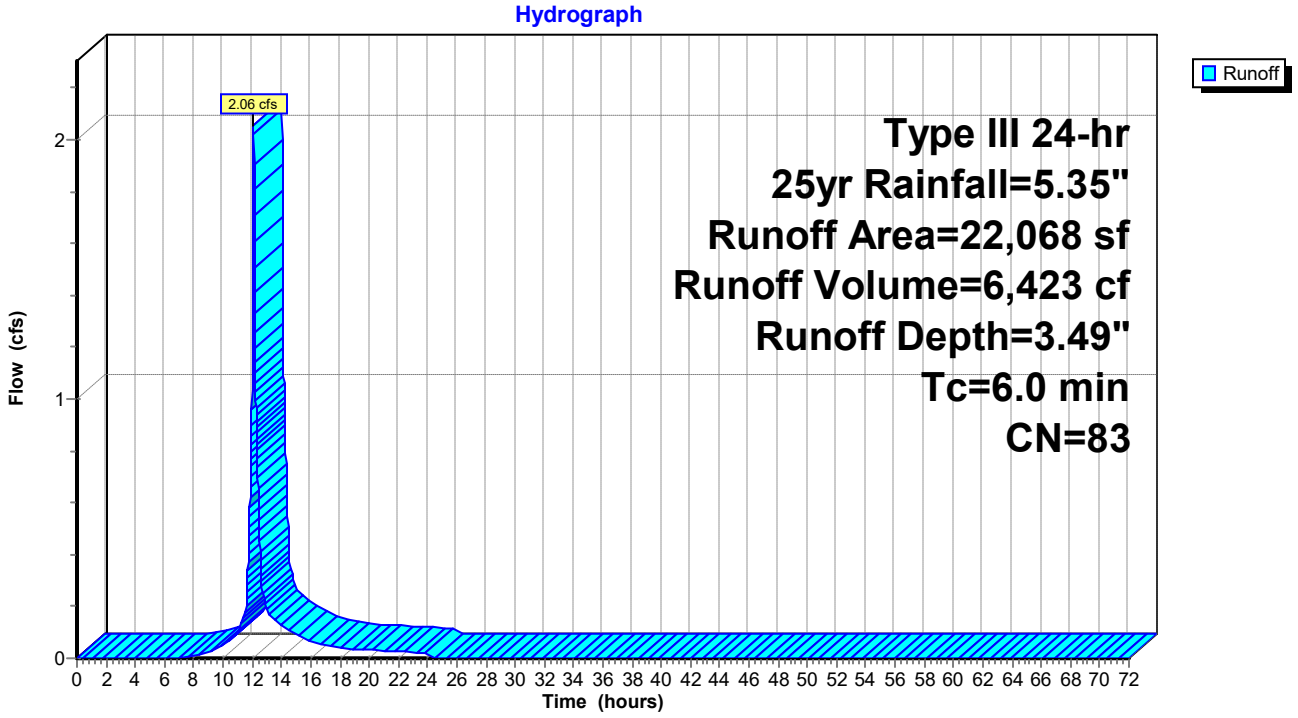
Runoff = 2.06 cfs @ 12.09 hrs, Volume= 6,423 cf, Depth= 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
8,051	77	Woods, Poor, HSG C
5,778	98	Paved parking, HSG C
8,239	79	50-75% Grass cover, Fair, HSG C
22,068	83	Weighted Average
16,290		73.82% Pervious Area
5,778		26.18% Impervious Area

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

Subcatchment P-14: Residential West#3



Summary for Subcatchment P-15a: Northwest Grass/Woods

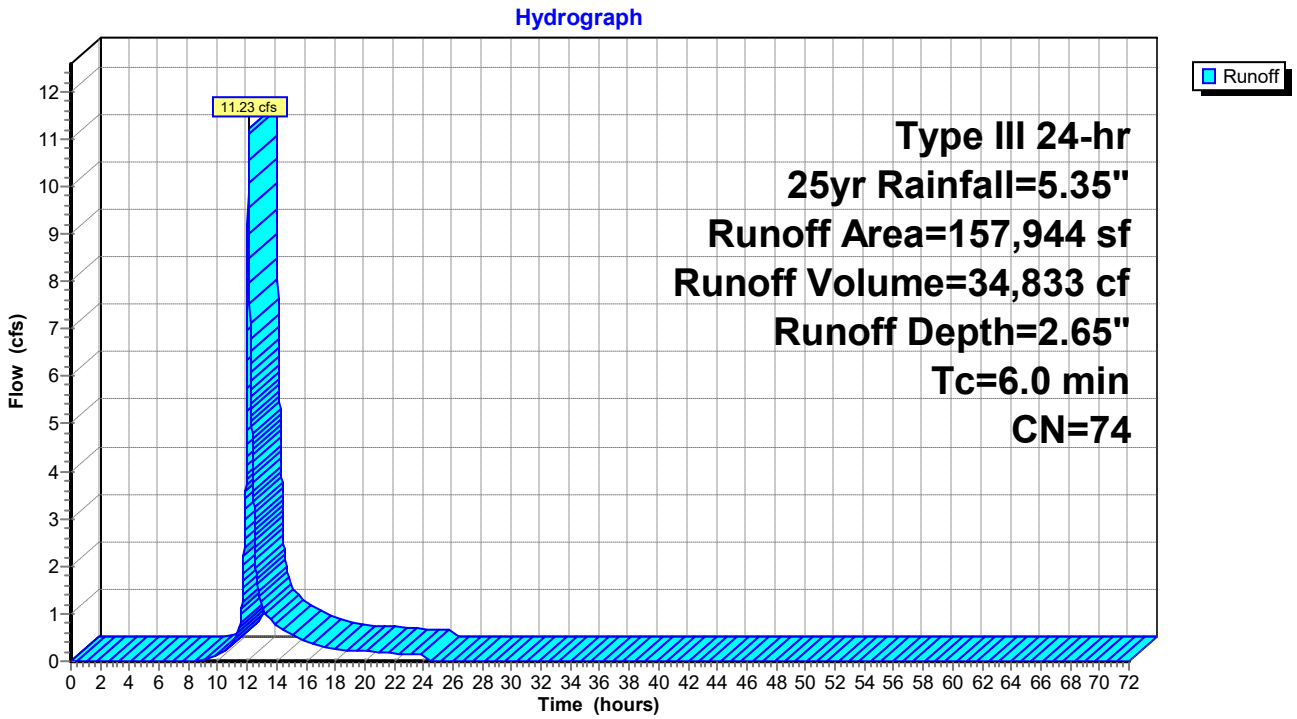
Runoff = 11.23 cfs @ 12.09 hrs, Volume= 34,833 cf, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
125,137	73	Woods, Fair, HSG C
32,807	79	50-75% Grass cover, Fair, HSG C
157,944	74	Weighted Average
157,944		100.00% Pervious Area

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

Subcatchment P-15a: Northwest Grass/Woods



Summary for Subcatchment P-15b: HS Entrance

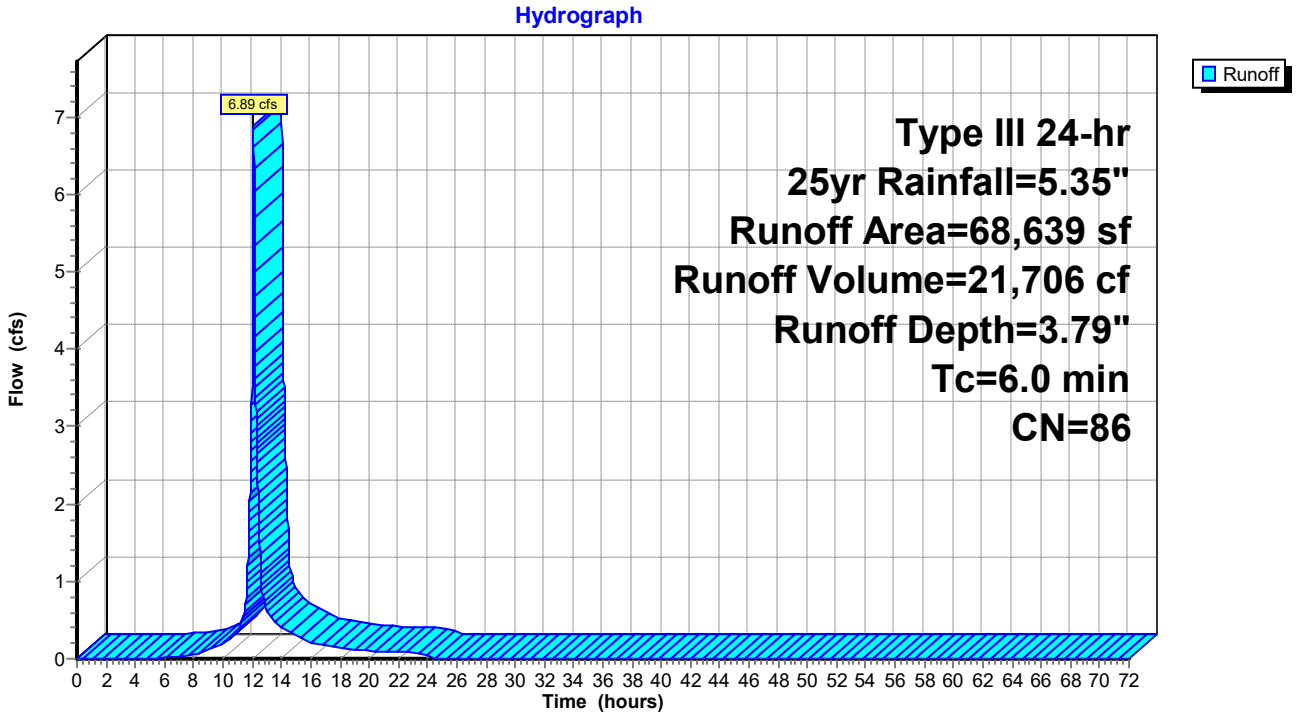
Runoff = 6.89 cfs @ 12.09 hrs, Volume= 21,706 cf, Depth= 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
23,997	98	Paved parking, HSG C
44,642	79	50-75% Grass cover, Fair, HSG C
68,639	86	Weighted Average
44,642		65.04% Pervious Area
23,997		34.96% Impervious Area

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

Subcatchment P-15b: HS Entrance



Summary for Subcatchment P-15c: Grass Field

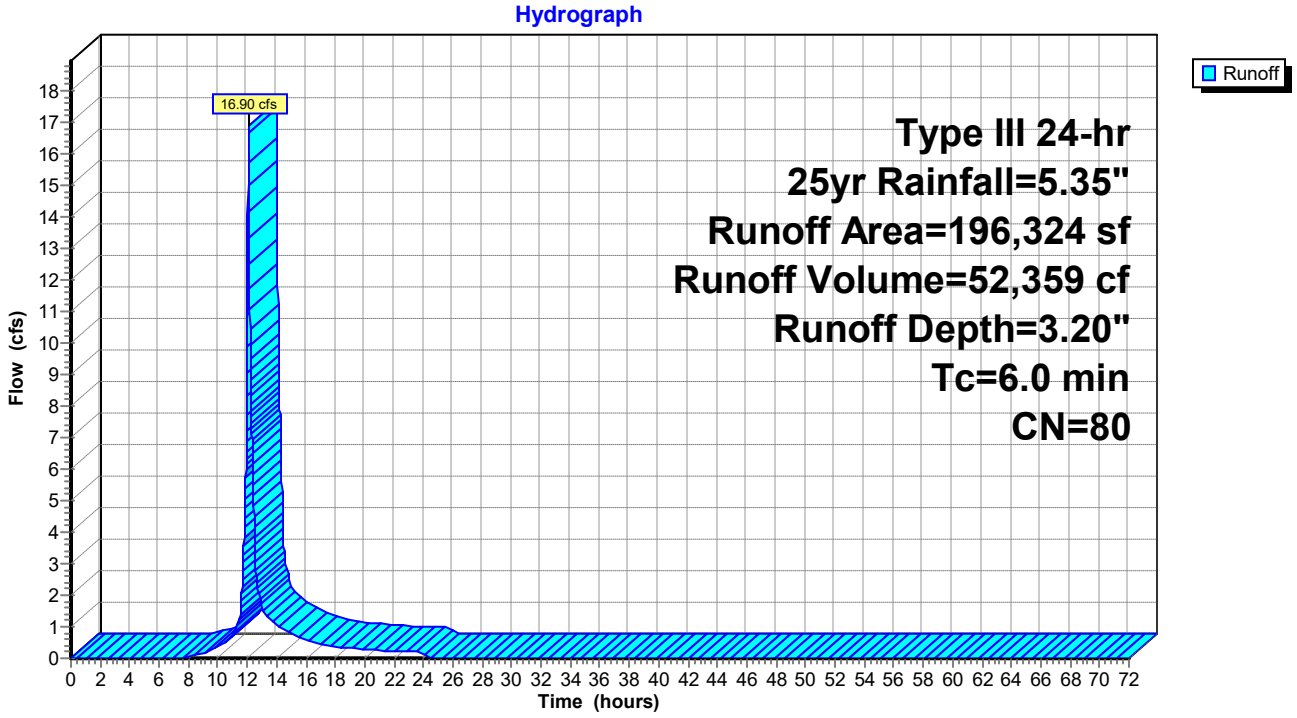
Runoff = 16.90 cfs @ 12.09 hrs, Volume= 52,359 cf, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	14,586	98	Sidewalks, HSG C
	173,715	79	50-75% Grass cover, Fair, HSG C
	8,023	73	Woods, Fair, HSG C
	196,324	80	Weighted Average
	181,738		92.57% Pervious Area
	14,586		7.43% Impervious Area

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

Subcatchment P-15c: Grass Field



Summary for Subcatchment P-15d: MS Roof and Parking

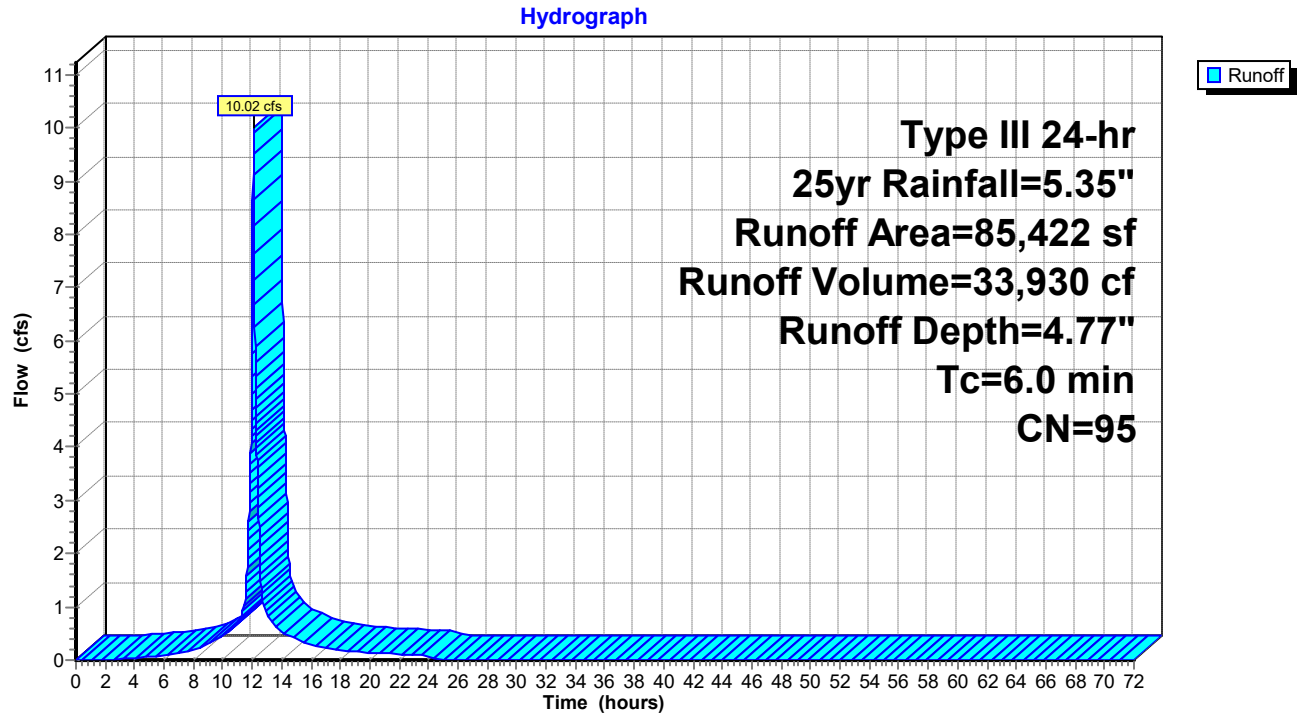
Runoff = 10.02 cfs @ 12.08 hrs, Volume= 33,930 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

	Area (sf)	CN	Description
*	41,432	98	MS Roof, HSG C
	14,853	98	Paved parking, HSG C
	2,924	79	50-75% Grass cover, Fair, HSG C
	13,755	98	Paved parking, HSG C
	12,458	79	50-75% Grass cover, Fair, HSG C
	85,422	95	Weighted Average
	15,382		18.01% Pervious Area
	70,040		81.99% Impervious Area

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

Subcatchment P-15d: MS Roof and Parking



Summary for Subcatchment P-15e: MS Parking

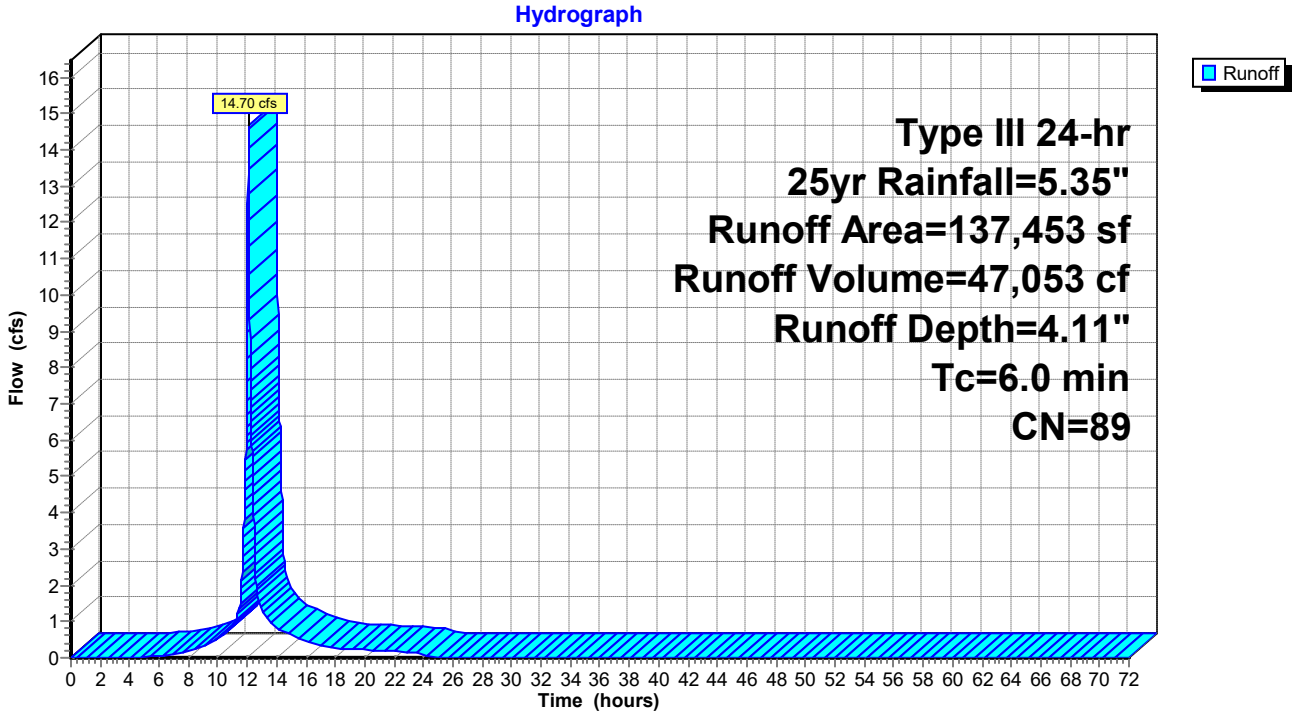
Runoff = 14.70 cfs @ 12.09 hrs, Volume= 47,053 cf, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
17,142	79	50-75% Grass cover, Fair, HSG C
11,587	98	Paved parking, HSG C
46,032	79	50-75% Grass cover, Fair, HSG C
62,692	98	Paved parking, HSG C
137,453	89	Weighted Average
63,174		45.96% Pervious Area
74,279		54.04% Impervious Area

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

Subcatchment P-15e: MS Parking



Summary for Subcatchment P-16: (new Subcat)

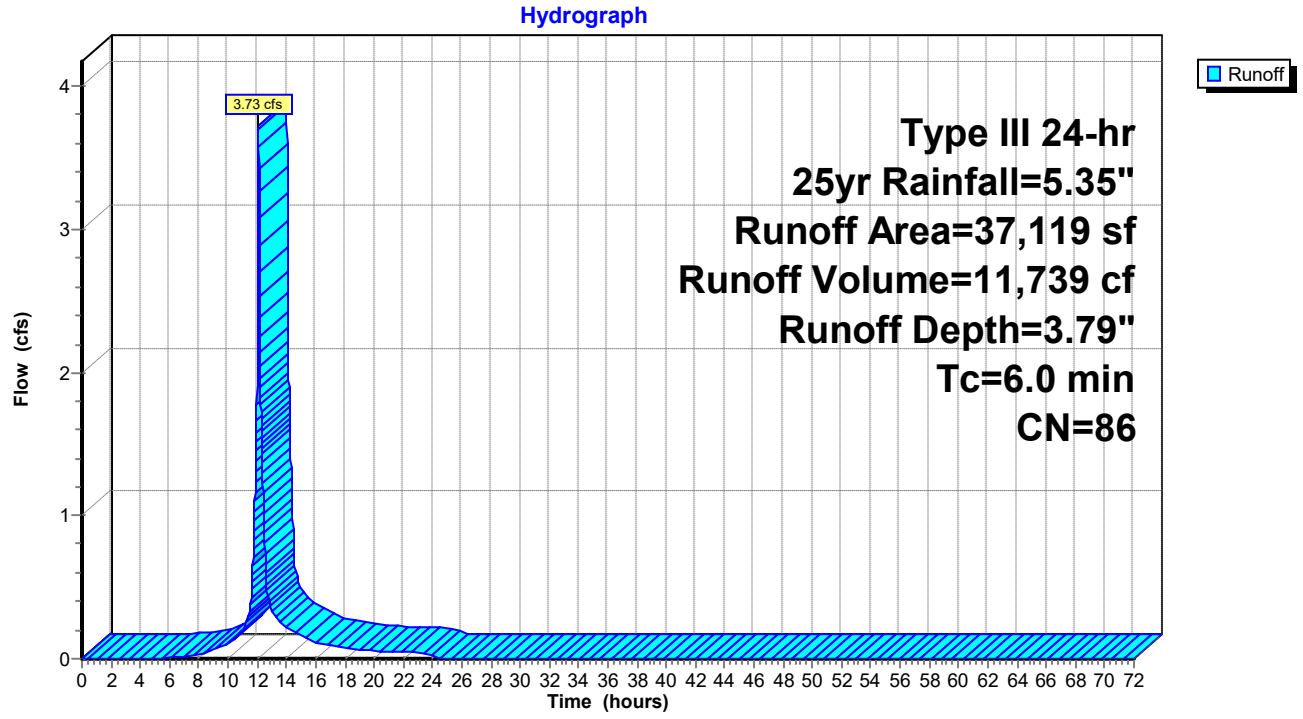
Runoff = 3.73 cfs @ 12.09 hrs, Volume= 11,739 cf, Depth= 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=5.35"

Area (sf)	CN	Description
13,261	98	Paved parking, HSG C
23,858	79	50-75% Grass cover, Fair, HSG C
37,119	86	Weighted Average
23,858		64.27% Pervious Area
13,261		35.73% Impervious Area

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

Subcatchment P-16: (new Subcat)



Summary for Pond D1: DMH51

Inflow Area = 226,112 sf, 78.14% Impervious, Inflow Depth = 3.42" for 25yr event
Inflow = 8.33 cfs @ 12.33 hrs, Volume= 64,364 cf
Outflow = 8.33 cfs @ 12.34 hrs, Volume= 64,351 cf, Atten= 0%, Lag= 0.6 min
Primary = 3.86 cfs @ 12.32 hrs, Volume= 31,999 cf
Secondary = 4.47 cfs @ 12.36 hrs, Volume= 32,352 cf

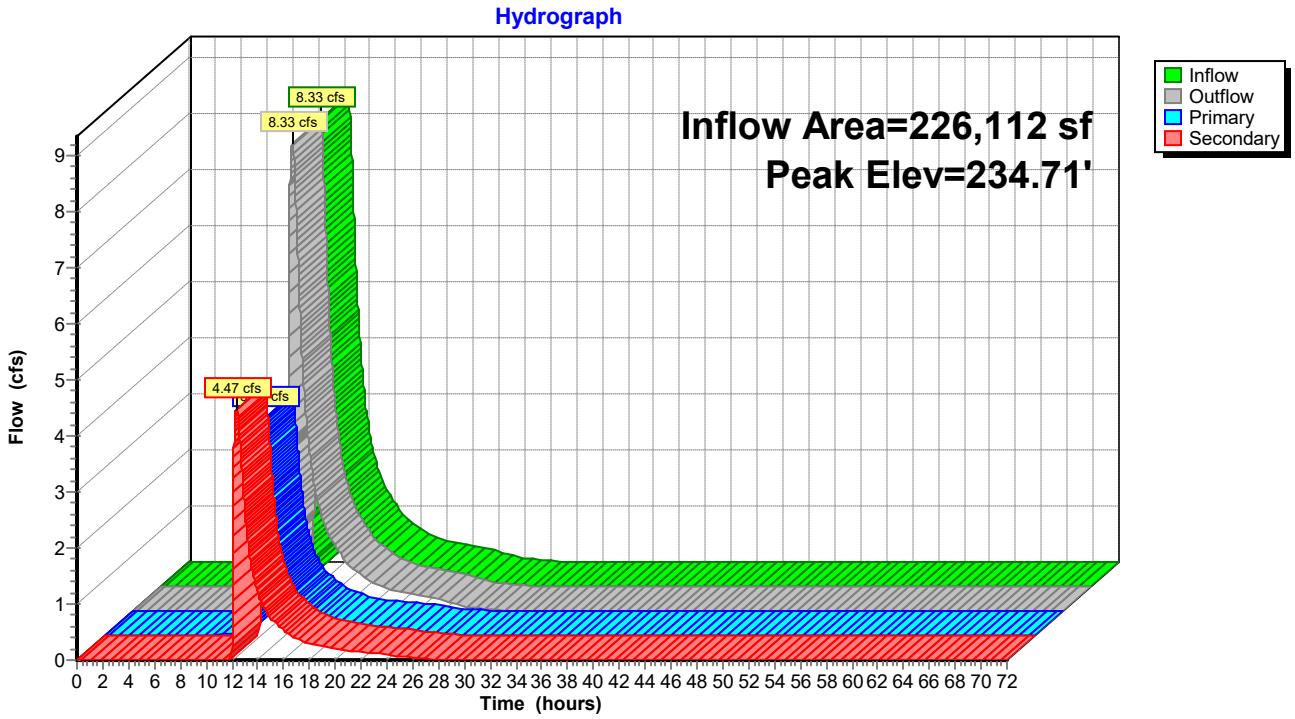
Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.71' @ 12.36 hrs
Flood Elev= 238.32'

Device	Routing	Invert	Outlet Devices	
#1	Primary	232.90'	**24.0" Vert. Orifice/Grate**	C= 0.600
#2	Secondary	233.80'	**24.0" Vert. Orifice/Grate**	C= 0.600

Primary OutFlow Max=3.84 cfs @ 12.32 hrs HW=234.70' TW=234.63' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 3.84 cfs @ 1.29 fps)

Secondary OutFlow Max=4.47 cfs @ 12.36 hrs HW=234.71' TW=233.73' (Dynamic Tailwater)
└**2=Orifice/Grate** (Orifice Controls 4.47 cfs @ 3.24 fps)

Pond D1: DMH51



Summary for Pond D2: DMH-55

Inflow Area = 71,980 sf, 79.90% Impervious, Inflow Depth = 10.05" for 25yr event
Inflow = 10.96 cfs @ 12.11 hrs, Volume= 60,265 cf
Outflow = 10.96 cfs @ 12.12 hrs, Volume= 60,264 cf, Atten= 0%, Lag= 0.6 min
Primary = 6.70 cfs @ 12.11 hrs, Volume= 44,183 cf
Secondary = 4.35 cfs @ 12.13 hrs, Volume= 16,081 cf

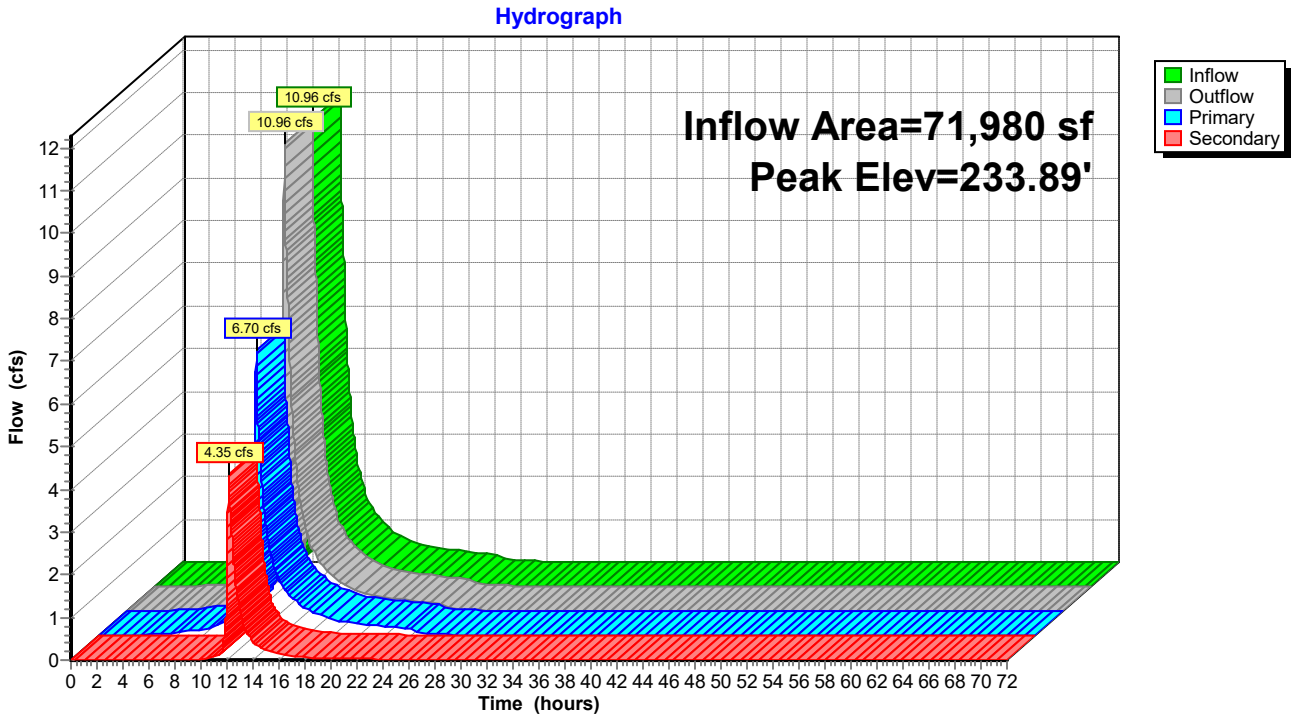
Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 233.89' @ 12.13 hrs
Flood Elev= 242.27'

Device	Routing	Invert	Outlet Devices	
#1	Primary	232.50'	**24.0" Vert. Orifice/Grate**	C= 0.600
#2	Secondary	233.00'	**24.0" Vert. Orifice/Grate**	C= 0.600

Primary OutFlow Max=6.49 cfs @ 12.11 hrs HW=233.87' TW=233.53' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 6.49 cfs @ 2.82 fps)

Secondary OutFlow Max=4.35 cfs @ 12.13 hrs HW=233.89' TW=0.00' (Dynamic Tailwater)
└**2=Orifice/Grate** (Orifice Controls 4.35 cfs @ 3.21 fps)

Pond D2: DMH-55

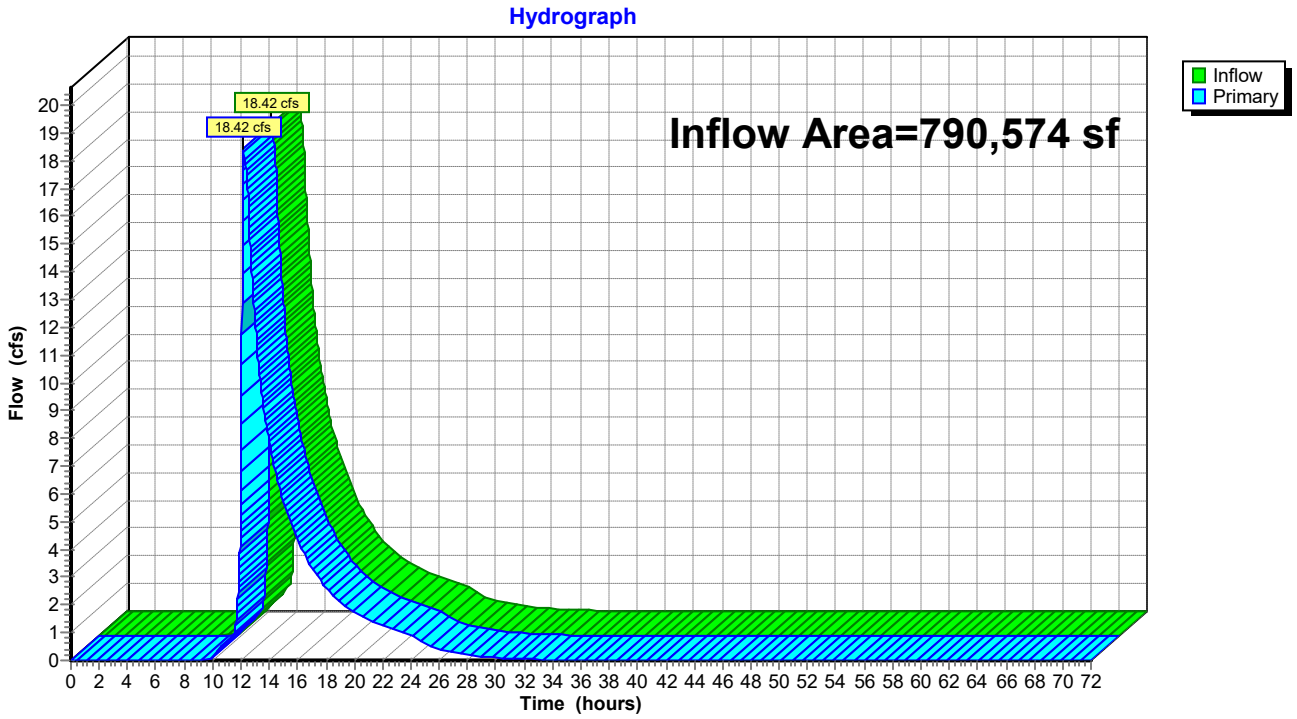


Summary for Pond DP-10p: Exist Basin #3

Inflow Area = 790,574 sf, 79.27% Impervious, Inflow Depth = 3.11" for 25yr event
Inflow = 18.42 cfs @ 12.18 hrs, Volume= 204,934 cf
Primary = 18.42 cfs @ 12.19 hrs, Volume= 204,934 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-10p: Exist Basin #3

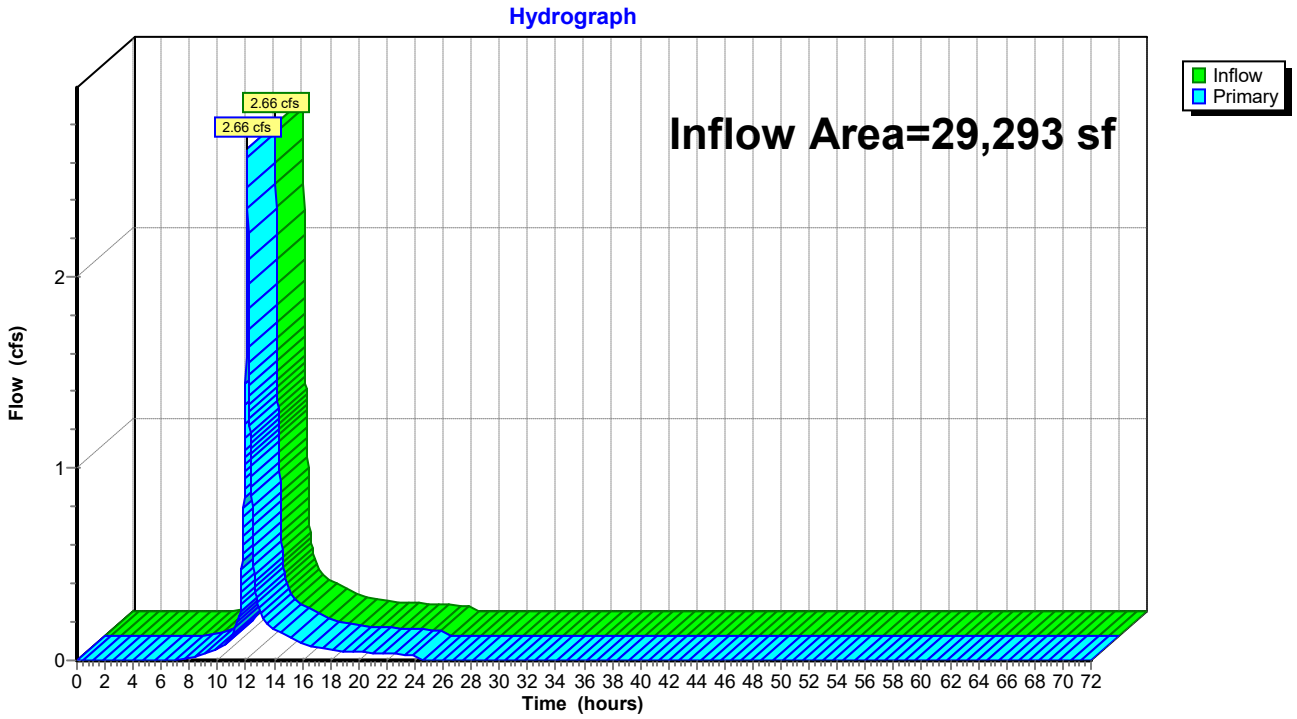


Summary for Pond DP-11p: Woods Southwest

Inflow Area = 29,293 sf, 23.93% Impervious, Inflow Depth = 3.39" for 25yr event
Inflow = 2.66 cfs @ 12.09 hrs, Volume= 8,285 cf
Primary = 2.66 cfs @ 12.10 hrs, Volume= 8,285 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-11p: Woods Southwest

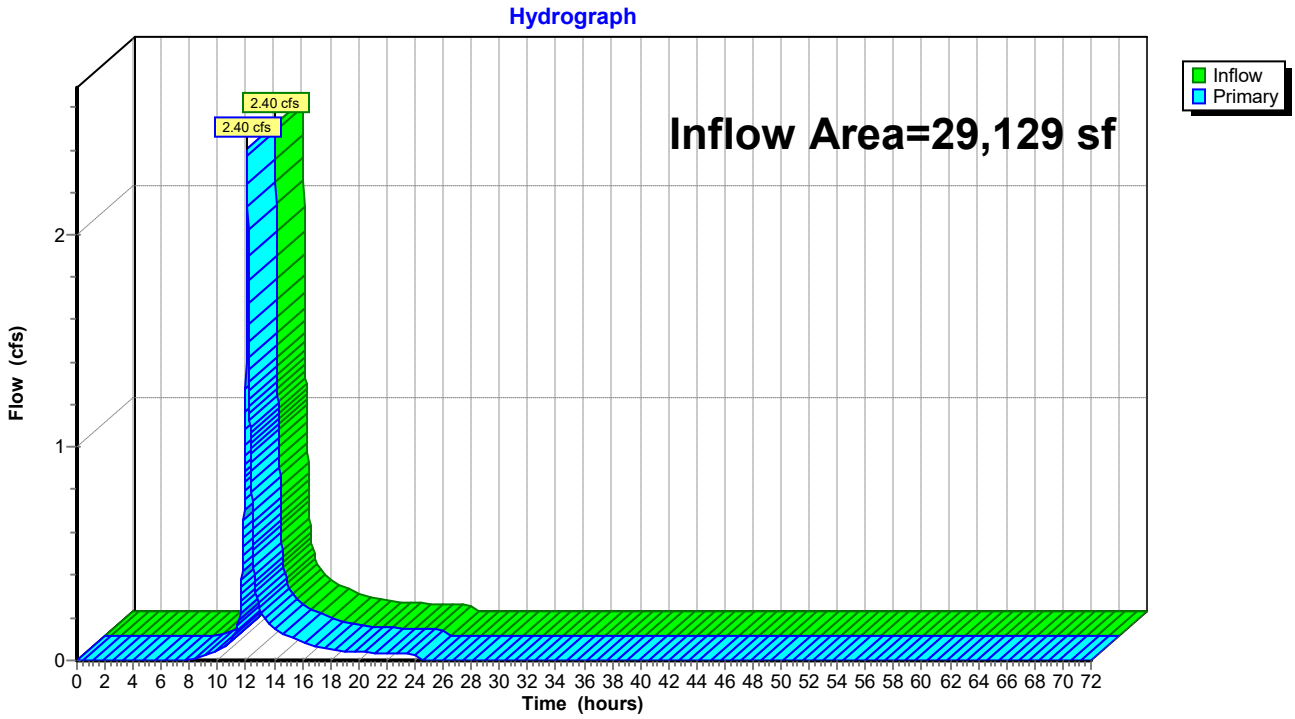


Summary for Pond DP-12p: Residential West#1

Inflow Area = 29,129 sf, 3.30% Impervious, Inflow Depth = 3.06" for 25yr event
Inflow = 2.40 cfs @ 12.09 hrs, Volume= 7,427 cf
Primary = 2.40 cfs @ 12.10 hrs, Volume= 7,427 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-12p: Residential West#1

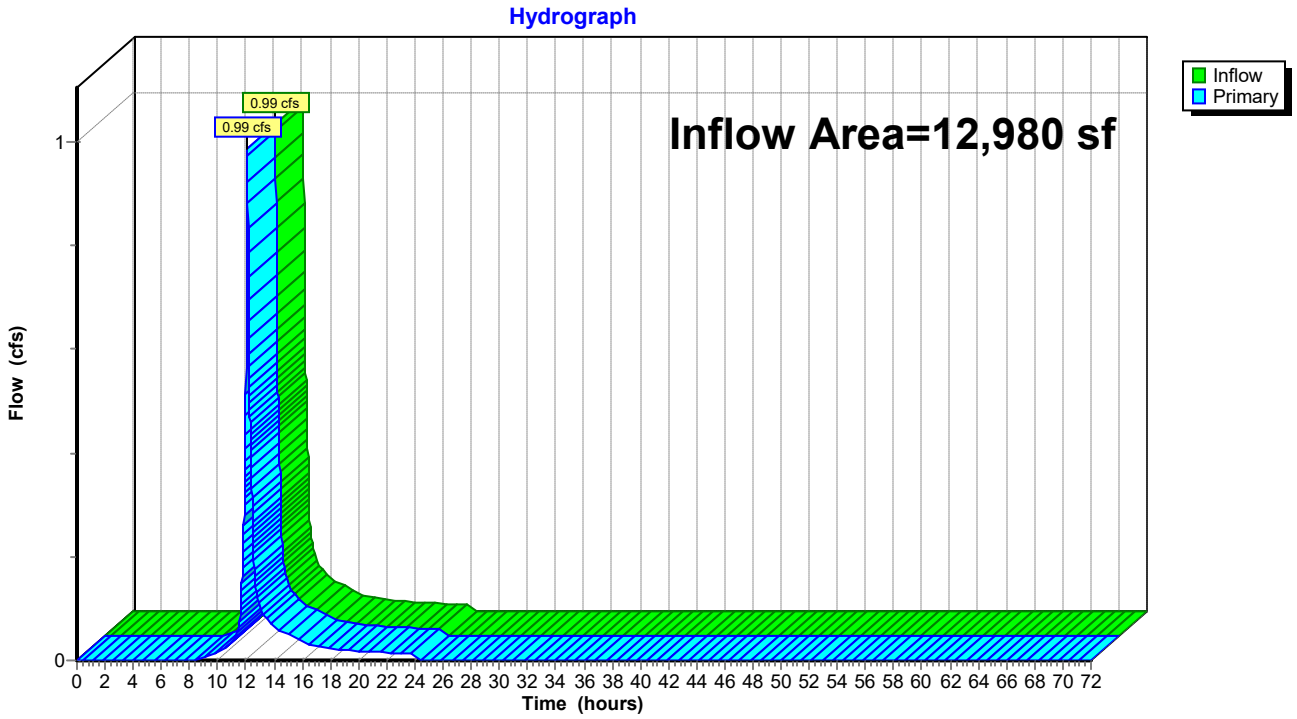


Summary for Pond DP-13p: Residential West#2

Inflow Area = 12,980 sf, 0.00% Impervious, Inflow Depth = 2.83" for 25yr event
Inflow = 0.99 cfs @ 12.09 hrs, Volume= 3,057 cf
Primary = 0.99 cfs @ 12.10 hrs, Volume= 3,057 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-13p: Residential West#2

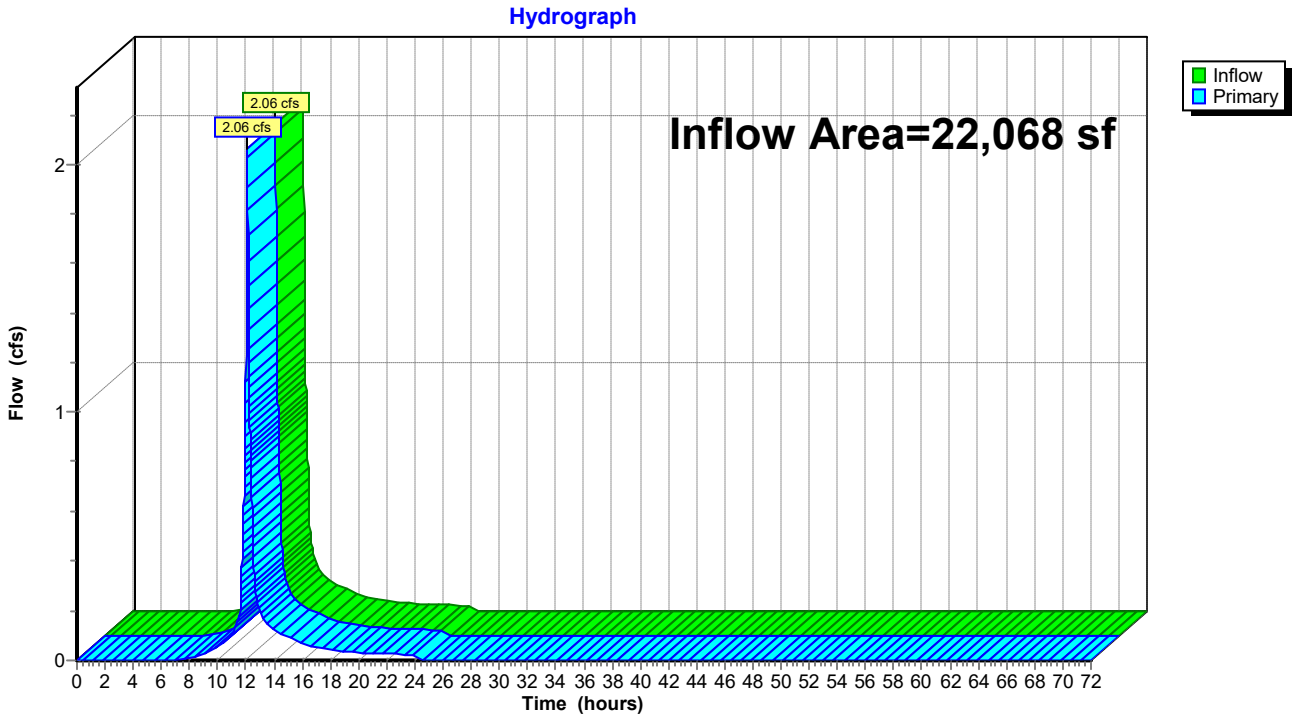


Summary for Pond DP-14p: Woods to West

Inflow Area = 22,068 sf, 26.18% Impervious, Inflow Depth = 3.49" for 25yr event
Inflow = 2.06 cfs @ 12.09 hrs, Volume= 6,423 cf
Primary = 2.06 cfs @ 12.10 hrs, Volume= 6,423 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-14p: Woods to West

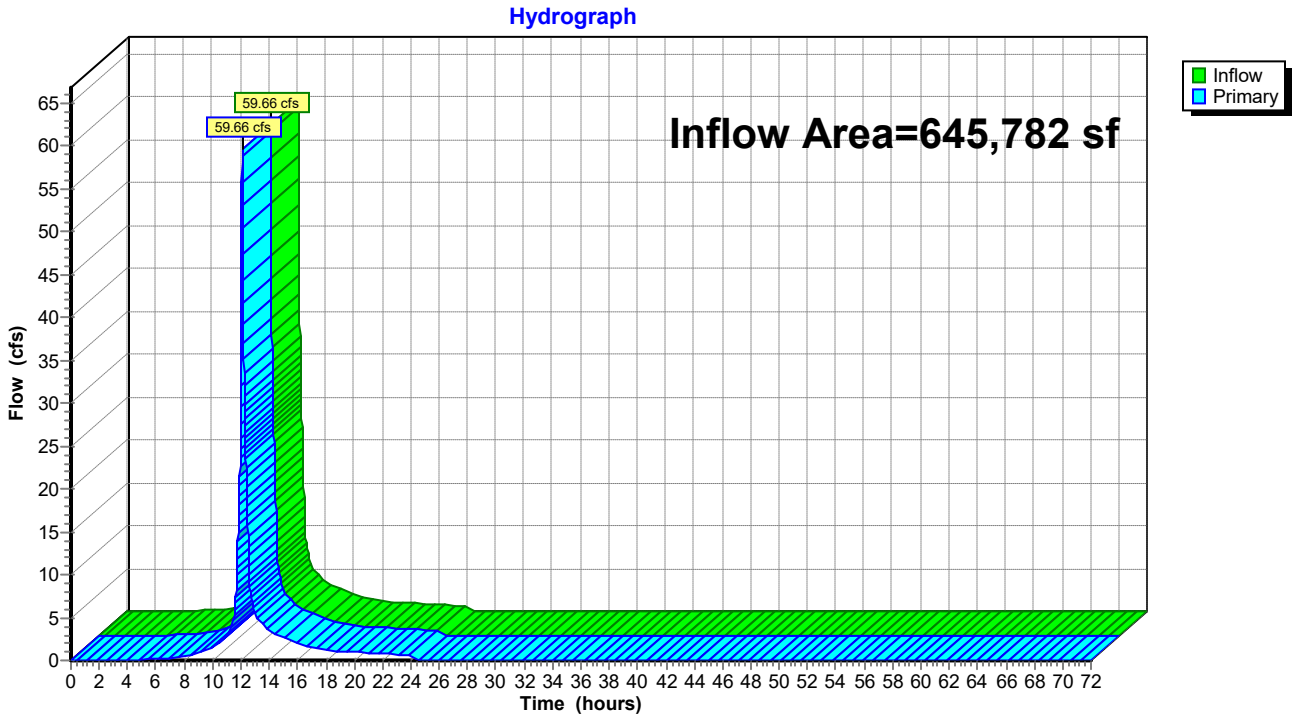


Summary for Pond DP-15p: Wetlands

Inflow Area = 645,782 sf, 28.32% Impervious, Inflow Depth = 3.53" for 25yr event
Inflow = 59.66 cfs @ 12.09 hrs, Volume= 189,881 cf
Primary = 59.66 cfs @ 12.10 hrs, Volume= 189,881 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-15p: Wetlands

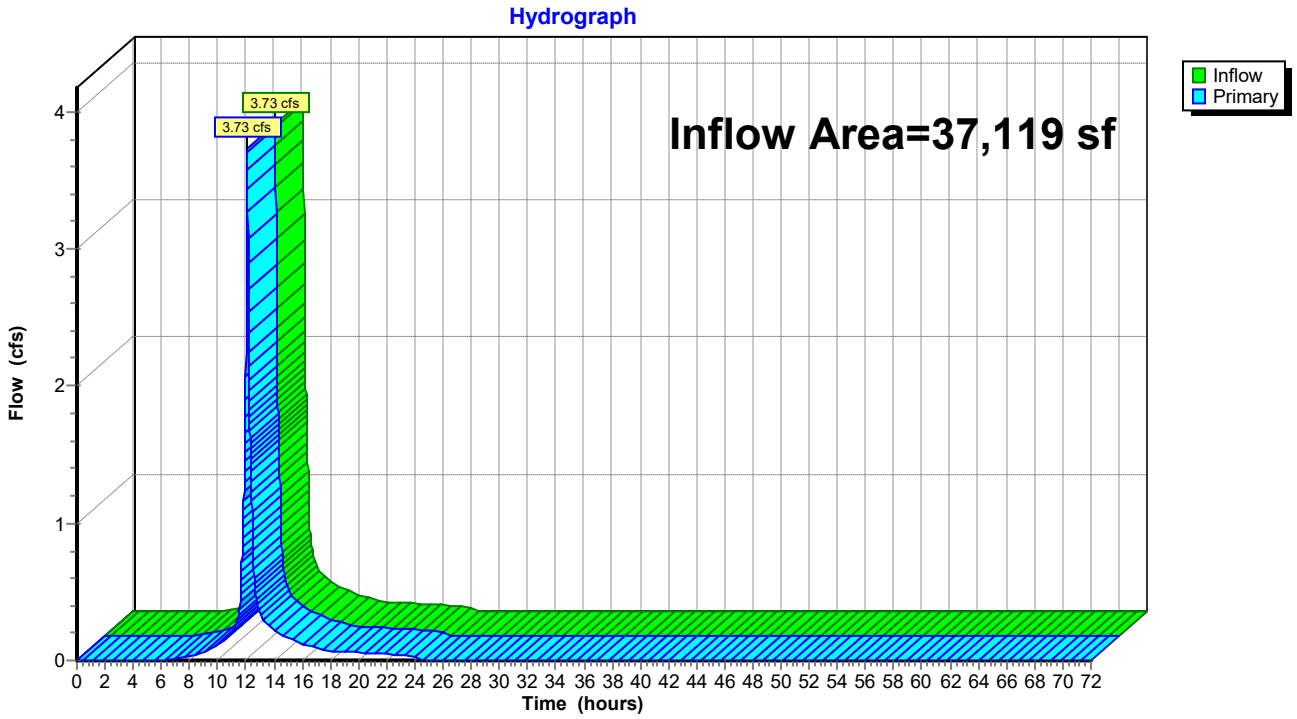


Summary for Pond DP-16p: Landry Avenue

Inflow Area = 37,119 sf, 35.73% Impervious, Inflow Depth = 3.79" for 25yr event
Inflow = 3.73 cfs @ 12.09 hrs, Volume= 11,739 cf
Primary = 3.73 cfs @ 12.10 hrs, Volume= 11,739 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-16p: Landry Avenue

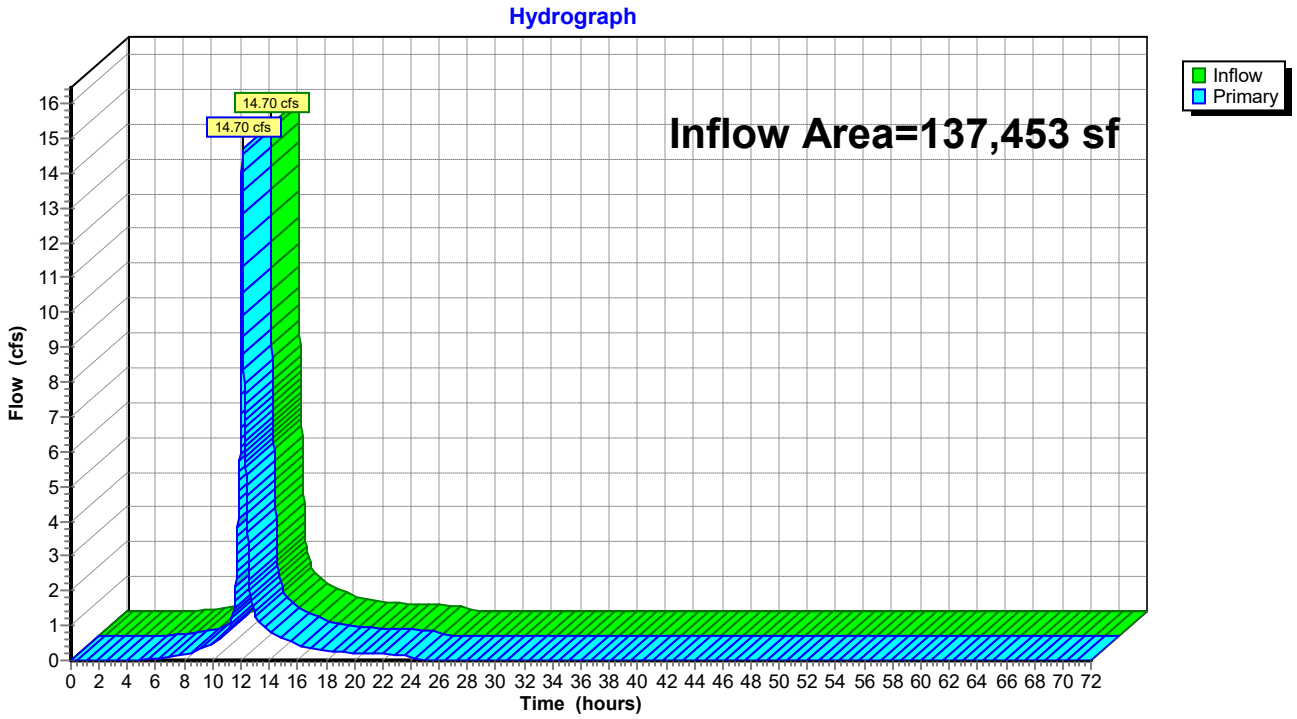


Summary for Pond EC: Exist Underground Chambers

Inflow Area = 137,453 sf, 54.04% Impervious, Inflow Depth = 4.11" for 25yr event
Inflow = 14.70 cfs @ 12.09 hrs, Volume= 47,053 cf
Primary = 14.70 cfs @ 12.10 hrs, Volume= 47,053 cf, Atten= 0%, Lag= 0.6 min

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

Pond EC: Exist Underground Chambers



Summary for Pond UGI-6: UGI-6

Inflow Area = 204,095 sf, 86.57% Impervious, Inflow Depth = 4.83" for 25yr event
Inflow = 24.07 cfs @ 12.08 hrs, Volume= 82,215 cf
Outflow = 7.72 cfs @ 12.38 hrs, Volume= 79,542 cf, Atten= 68%, Lag= 17.9 min
Discarded = 0.09 cfs @ 12.38 hrs, Volume= 20,876 cf
Primary = 7.63 cfs @ 12.38 hrs, Volume= 58,666 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.65' @ 12.38 hrs Surf.Area= 21,560 sf Storage= 39,328 cf

Plug-Flow detention time= 504.8 min calculated for 79,531 cf (97% of inflow)
Center-of-Mass det. time= 485.3 min (1,248.1 - 762.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.00'	18,927 cf	**357.75'W x 60.27'L x 3.50'H Field A** 75,461 cf Overall - 28,143 cf Embedded = 47,318 cf x 40.0% Voids
#2A	235.50'	28,143 cf	**Cultec R-300HD** x 600 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 600 Chambers in 75 Rows Cap Storage= +2.7 cf x 2 x 75 rows = 398.2 cf
		47,071 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.10'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	235.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00' Phase-In= 0.10'

Discarded OutFlow Max=0.09 cfs @ 12.38 hrs HW=237.65' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=7.63 cfs @ 12.38 hrs HW=237.65' TW=234.70' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 7.63 cfs @ 4.32 fps)

Pond UGI-6: UGI-6 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 75 rows = 398.2 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

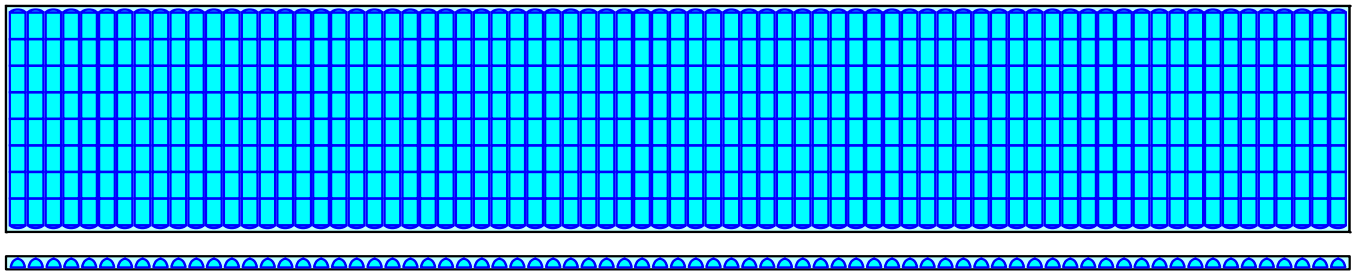
8 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 58.27' Row Length +12.0" End Stone x 2 = 60.27' Base Length
75 Rows x 51.0" Wide + 6.0" Spacing x 74 + 12.0" Side Stone x 2 = 357.75' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

600 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 75 Rows = 28,143.4 cf Chamber Storage

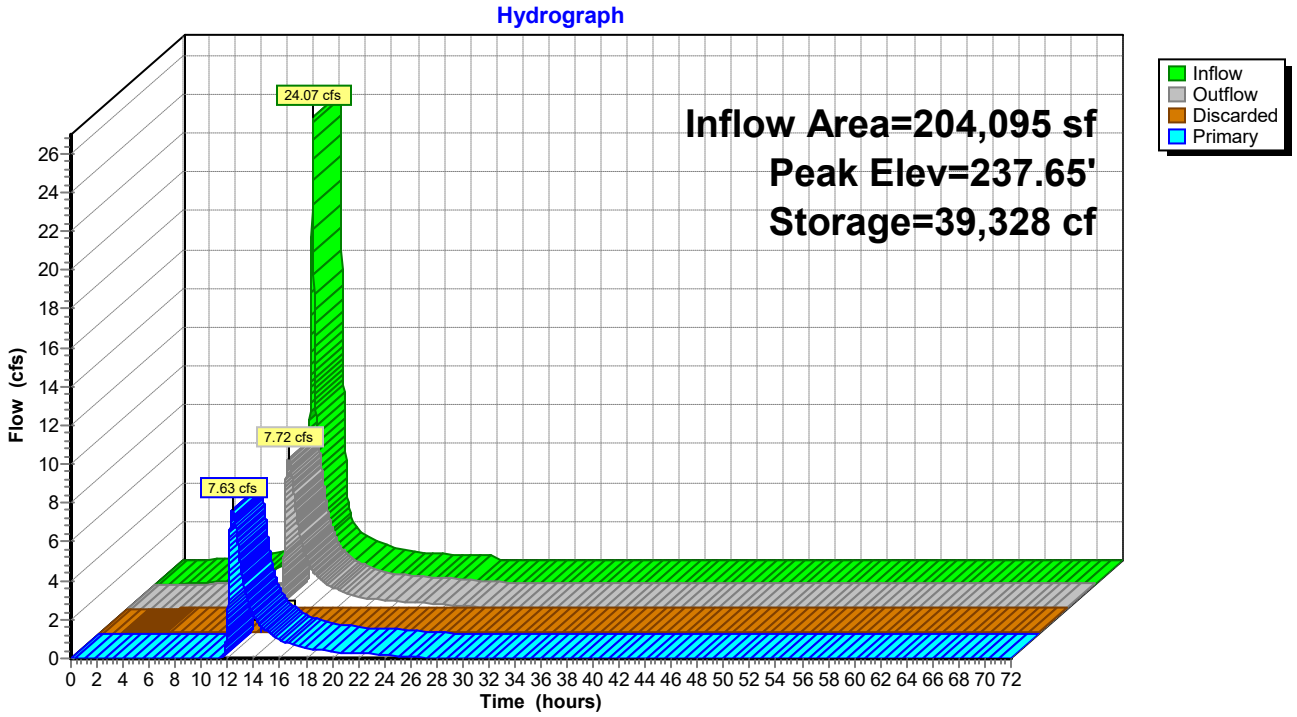
75,461.4 cf Field - 28,143.4 cf Chambers = 47,318.0 cf Stone x 40.0% Voids = 18,927.2 cf Stone Storage

Chamber Storage + Stone Storage = 47,070.6 cf = 1.081 af
Overall Storage Efficiency = 62.4%
Overall System Size = 60.27' x 357.75' x 3.50'

600 Chambers
2,794.9 cy Field
1,752.5 cy Stone



Pond UGI-6: UGI-6



Summary for Pond UGI-7: UGI-7

Inflow Area = 226,112 sf, 78.14% Impervious, Inflow Depth = 1.70" for 25yr event
Inflow = 3.86 cfs @ 12.32 hrs, Volume= 31,999 cf
Outflow = 3.85 cfs @ 12.36 hrs, Volume= 30,208 cf, Atten= 0%, Lag= 2.5 min
Discarded = 0.00 cfs @ 12.36 hrs, Volume= 187 cf
Primary = 3.85 cfs @ 12.36 hrs, Volume= 30,020 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.63' @ 12.36 hrs Surf.Area= 2,040 sf Storage= 3,128 cf

Plug-Flow detention time= 63.1 min calculated for 30,208 cf (94% of inflow)
Center-of-Mass det. time= 31.4 min (901.6 - 870.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	232.40'	1,838 cf	**44.25'W x 46.10'L x 3.50'H Field A** 7,140 cf Overall - 2,545 cf Embedded = 4,595 cf x 40.0% Voids
#2A	232.90'	2,545 cf	**Cultec R-300HD** x 54 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 54 Chambers in 9 Rows Cap Storage= +2.7 cf x 2 x 9 rows = 47.8 cf
		4,383 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	232.40'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = -1.60'
#2	Primary	233.80'	**24.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.00 cfs @ 12.36 hrs HW=234.63' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=3.85 cfs @ 12.36 hrs HW=234.63' TW=0.00' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Orifice Controls 3.85 cfs @ 3.11 fps)

Pond UGI-7: UGI-7 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 9 rows = 47.8 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

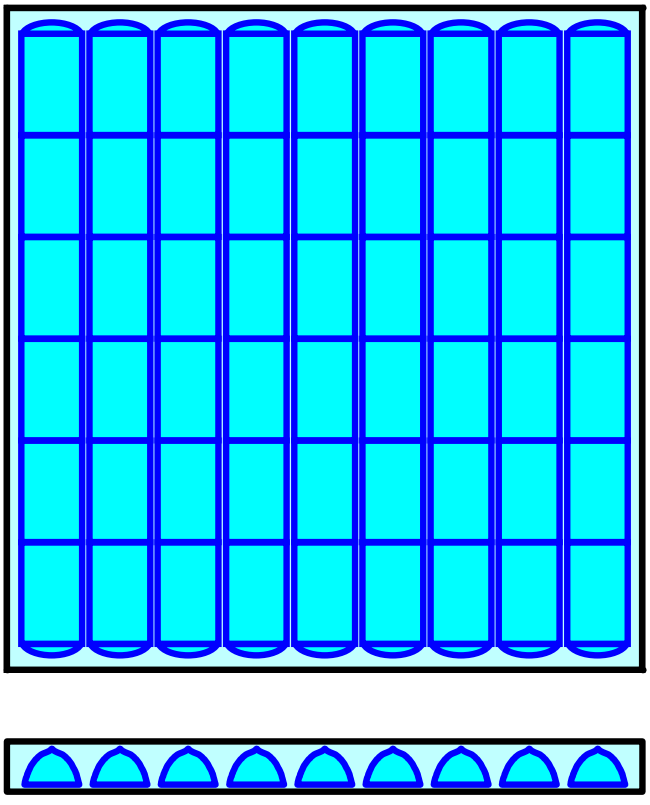
6 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 44.10' Row Length +12.0" End Stone x 2 = 46.10' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

54 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 9 Rows = 2,544.9 cf Chamber Storage

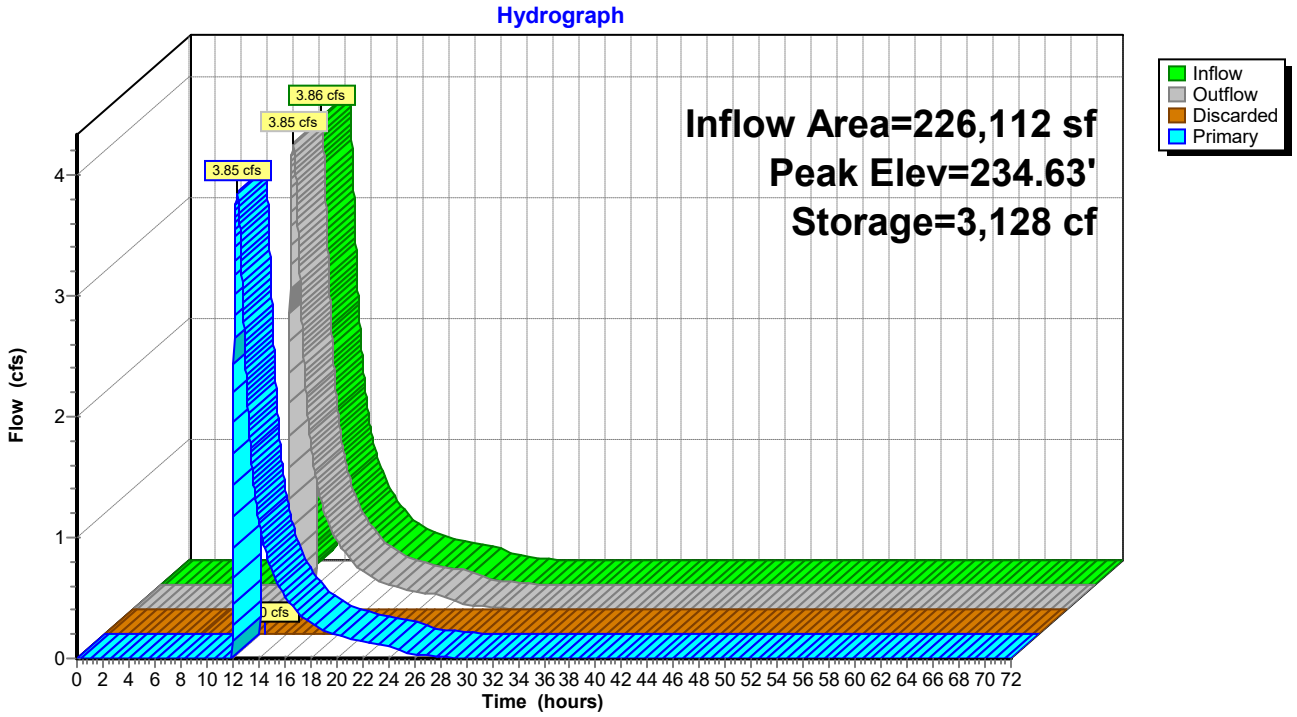
7,139.7 cf Field - 2,544.9 cf Chambers = 4,594.9 cf Stone x 40.0% Voids = 1,838.0 cf Stone Storage

Chamber Storage + Stone Storage = 4,382.8 cf = 0.101 af
Overall Storage Efficiency = 61.4%
Overall System Size = 46.10' x 44.25' x 3.50'

54 Chambers
264.4 cy Field
170.2 cy Stone



Pond UGI-7: UGI-7



Summary for Pond UGI-8: UGI-8

Inflow Area = 71,980 sf, 79.90% Impervious, Inflow Depth = 7.37" for 25yr event
Inflow = 6.70 cfs @ 12.11 hrs, Volume= 44,183 cf
Outflow = 5.83 cfs @ 12.17 hrs, Volume= 44,109 cf, Atten= 13%, Lag= 3.9 min
Discarded = 0.02 cfs @ 12.17 hrs, Volume= 4,133 cf
Primary = 5.81 cfs @ 12.17 hrs, Volume= 39,976 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 233.59' @ 12.17 hrs Surf.Area= 4,339 sf Storage= 4,739 cf

Plug-Flow detention time= 159.8 min calculated for 44,102 cf (100% of inflow)
Center-of-Mass det. time= 158.7 min (1,001.5 - 842.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	232.00'	3,838 cf	**39.50'W x 109.85'L x 3.50'H Field A** 15,187 cf Overall - 5,592 cf Embedded = 9,595 cf x 40.0% Voids
#2A	232.50'	5,592 cf	**Cultec R-300HD** x 120 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 120 Chambers in 8 Rows Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf
		9,430 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	232.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	233.00'	**4.0' long x 3.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	232.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = -2.00' Phase-In= 0.10'

Discarded OutFlow Max=0.02 cfs @ 12.17 hrs HW=233.59' (Free Discharge)
└**3=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=5.81 cfs @ 12.17 hrs HW=233.59' TW=0.00' (Dynamic Tailwater)
└**1=Orifice/Grate** (Passes 5.81 cfs of 6.26 cfs potential flow)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 5.81 cfs @ 2.52 fps)

Pond UGI-8: UGI-8 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

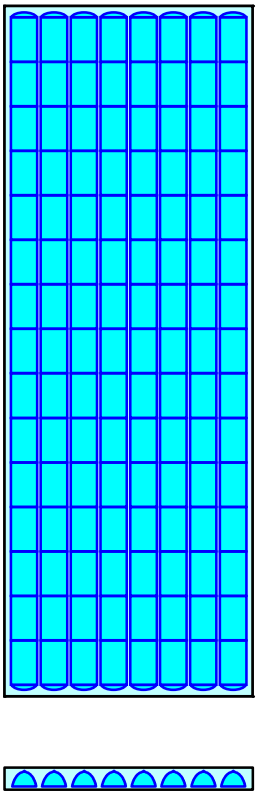
15 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 107.85' Row Length +12.0" End Stone x 2 = 109.85' Base Length
8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

120 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 8 Rows = 5,591.5 cf Chamber Storage

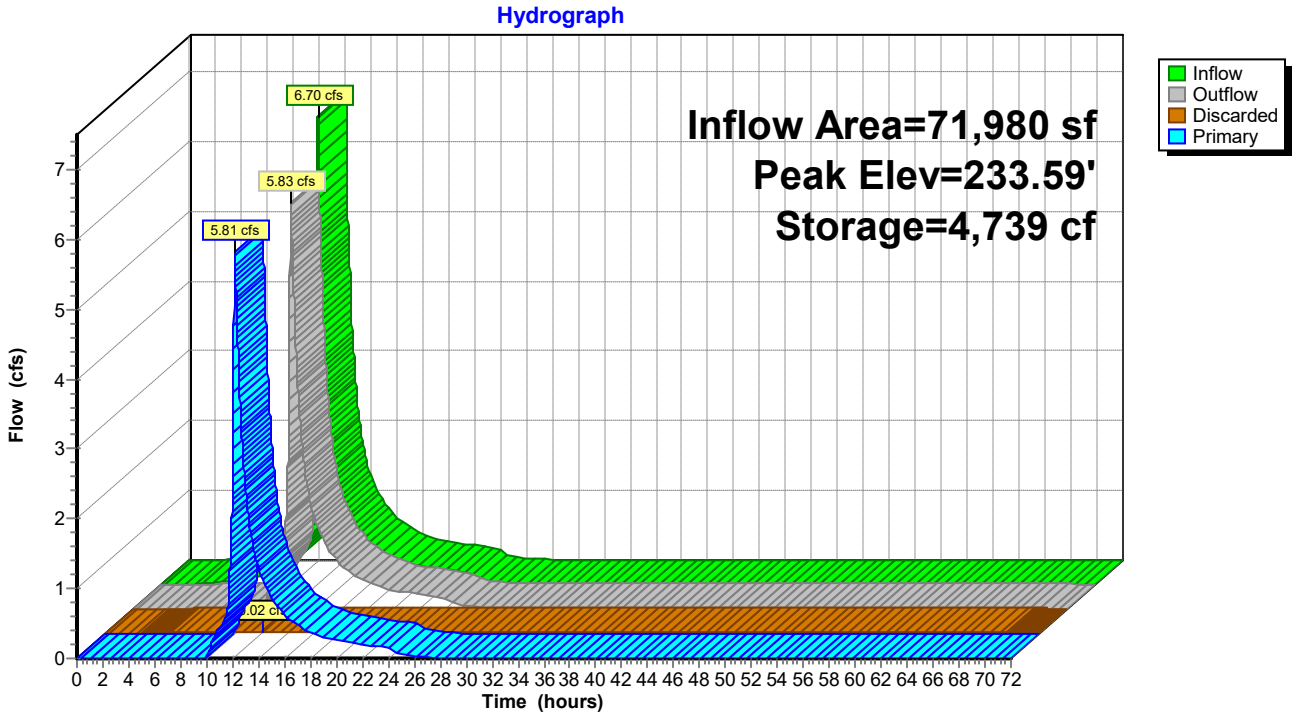
15,186.8 cf Field - 5,591.5 cf Chambers = 9,595.2 cf Stone x 40.0% Voids = 3,838.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,429.6 cf = 0.216 af
Overall Storage Efficiency = 62.1%
Overall System Size = 109.85' x 39.50' x 3.50'

120 Chambers
562.5 cy Field
355.4 cy Stone



Pond UGI-8: UGI-8



Summary for Pond UGI-9: UGI-9

Inflow Area = 462,627 sf, 84.24% Impervious, Inflow Depth = 4.79" for 25yr event
Inflow = 53.61 cfs @ 12.08 hrs, Volume= 184,626 cf
Outflow = 6.26 cfs @ 12.69 hrs, Volume= 175,685 cf, Atten= 88%, Lag= 36.3 min
Discarded = 0.27 cfs @ 12.69 hrs, Volume= 65,030 cf
Primary = 6.00 cfs @ 12.69 hrs, Volume= 110,655 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 238.75' @ 12.69 hrs Surf.Area= 66,884 sf Storage= 106,954 cf

Plug-Flow detention time= 731.9 min calculated for 175,685 cf (95% of inflow)
Center-of-Mass det. time= 703.7 min (1,463.1 - 759.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.50'	57,463 cf	**239.00'W x 279.85'L x 3.50'H Field A** 234,095 cf Overall - 90,437 cf Embedded = 143,657 cf x 40.0% Voids
#2A	237.00'	90,437 cf	**Cultec R-300HD** x 1950 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 1950 Chambers in 50 Rows Cap Storage= +2.7 cf x 2 x 50 rows = 265.5 cf
		147,900 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 2.50' Phase-In= 0.10'

Discarded OutFlow Max=0.27 cfs @ 12.69 hrs HW=238.75' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.27 cfs)

Primary OutFlow Max=6.00 cfs @ 12.69 hrs HW=238.75' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 6.00 cfs @ 3.81 fps)

Pond UGI-9: UGI-9 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 50 rows = 265.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

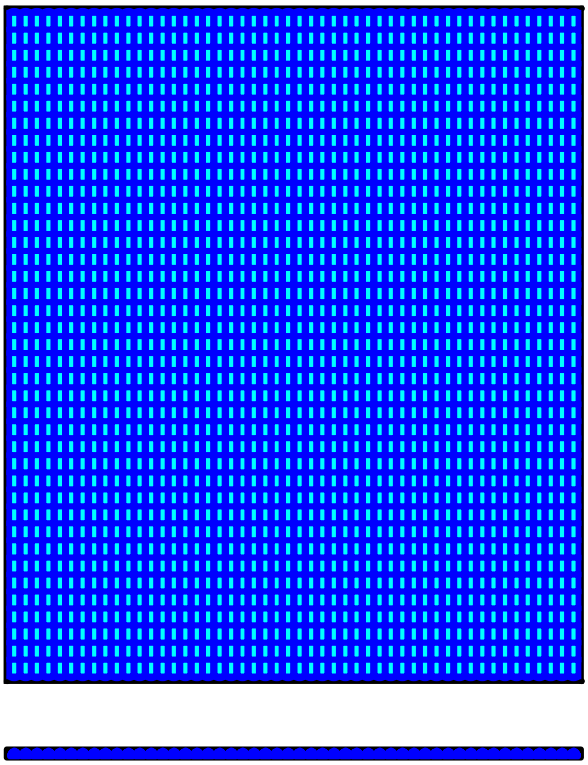
39 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 277.85' Row Length +12.0" End Stone x 2 = 279.85' Base Length
50 Rows x 51.0" Wide + 6.0" Spacing x 49 + 12.0" Side Stone x 2 = 239.00' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

1,950 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 50 Rows = 90,437.3 cf Chamber Storage

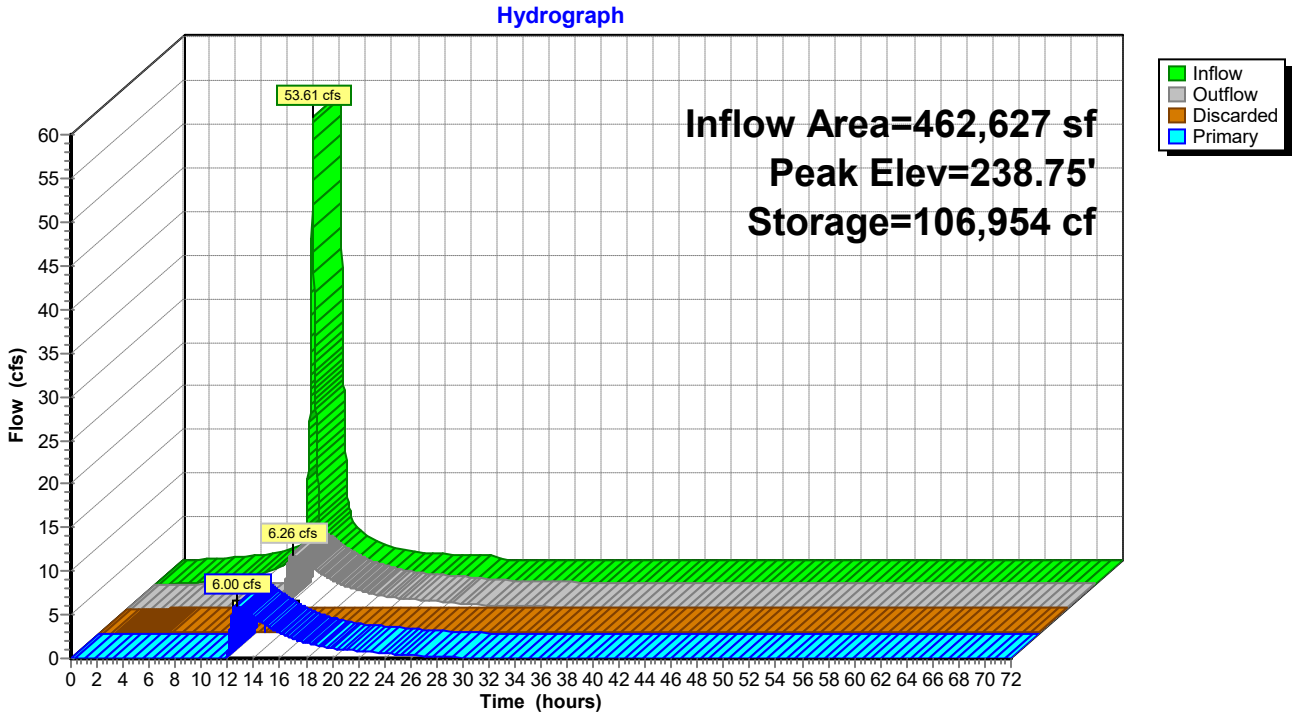
234,094.5 cf Field - 90,437.3 cf Chambers = 143,657.2 cf Stone x 40.0% Voids = 57,462.9 cf Stone Storage

Chamber Storage + Stone Storage = 147,900.2 cf = 3.395 af
Overall Storage Efficiency = 63.2%
Overall System Size = 279.85' x 239.00' x 3.50'

1,950 Chambers
8,670.2 cy Field
5,320.6 cy Stone



Pond UGI-9: UGI-9



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

Subcatchment P-10a: East Parking Lot Runoff Area=60,002 sf 93.94% Impervious Runoff Depth=5.82"
Tc=6.0 min CN=97 Runoff=8.30 cfs 29,120 cf

Subcatchment P-10b: South HS Runoff Area=144,093 sf 83.51% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=95 Runoff=19.66 cfs 67,128 cf

Subcatchment P-10c: Southeast Grass Runoff Area=22,017 sf 0.00% Impervious Runoff Depth=3.84"
Tc=6.0 min CN=79 Runoff=2.27 cfs 7,047 cf

Subcatchment P-10d: South Parking Lot Runoff Area=71,980 sf 79.90% Impervious Runoff Depth=5.47"
Tc=6.0 min CN=94 Runoff=9.73 cfs 32,840 cf

Subcatchment P-10e: Exist Basin Runoff Area=29,855 sf 9.23% Impervious Runoff Depth=4.05"
Tc=6.0 min CN=81 Runoff=3.23 cfs 10,071 cf

Subcatchment P-10f: West HS Runoff Area=113,103 sf 78.73% Impervious Runoff Depth=5.47"
Tc=6.0 min CN=94 Runoff=15.29 cfs 51,603 cf

Subcatchment P-10g: Grass Field Runoff Area=126,785 sf 100.00% Impervious Runoff Depth=5.94"
Tc=6.0 min CN=98 Runoff=17.63 cfs 62,776 cf

Subcatchment P-10h: Grass + Sidewalks Runoff Area=68,897 sf 29.12% Impervious Runoff Depth=4.47"
Tc=6.0 min CN=85 Runoff=8.12 cfs 25,679 cf

Subcatchment P-10i: Exist Stadium Runoff Area=153,842 sf 100.00% Impervious Runoff Depth=5.94"
Tc=6.0 min CN=98 Runoff=21.40 cfs 76,173 cf

Subcatchment P-11: South Woods Runoff Area=29,293 sf 23.93% Impervious Runoff Depth=4.15"
Tc=6.0 min CN=82 Runoff=3.24 cfs 10,138 cf

Subcatchment P-12a: West Woods Runoff Area=14,093 sf 6.82% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=78 Runoff=1.42 cfs 4,390 cf

Subcatchment P-12b: West Grass/Woods Runoff Area=15,036 sf 0.00% Impervious Runoff Depth=3.84"
Tc=6.0 min CN=79 Runoff=1.55 cfs 4,813 cf

Subcatchment P-13: Woods Runoff Area=12,980 sf 0.00% Impervious Runoff Depth=3.54"
Tc=6.0 min CN=76 Runoff=1.24 cfs 3,825 cf

Subcatchment P-14: Residential West#3 Runoff Area=22,068 sf 26.18% Impervious Runoff Depth=4.26"
Tc=6.0 min CN=83 Runoff=2.50 cfs 7,832 cf

Subcatchment P-15a: Northwest Runoff Area=157,944 sf 0.00% Impervious Runoff Depth=3.34"
Tc=6.0 min CN=74 Runoff=14.19 cfs 43,919 cf

Subcatchment P-15b: HS Entrance Runoff Area=68,639 sf 34.96% Impervious Runoff Depth=4.58"
Tc=6.0 min CN=86 Runoff=8.25 cfs 26,201 cf

Subcatchment P-15c: Grass Field Runoff Area=196,324 sf 7.43% Impervious Runoff Depth=3.94"
Tc=6.0 min CN=80 Runoff=20.74 cfs 64,526 cf

Subcatchment P-15d: MS Roof and Parking Runoff Area=85,422 sf 81.99% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=95 Runoff=11.65 cfs 39,795 cf

Subcatchment P-15e: MS Parking Runoff Area=137,453 sf 54.04% Impervious Runoff Depth=4.91"
Tc=6.0 min CN=89 Runoff=17.40 cfs 56,241 cf

Subcatchment P-16: (new Subcat) Runoff Area=37,119 sf 35.73% Impervious Runoff Depth=4.58"
Tc=6.0 min CN=86 Runoff=4.46 cfs 14,169 cf

Pond D1: DMH51 Peak Elev=234.84' Inflow=10.56 cfs 79,515 cf
Primary=4.81 cfs 38,976 cf Secondary=5.76 cfs 40,529 cf Outflow=10.56 cfs 79,505 cf

Pond D2: DMH-55 Peak Elev=234.05' Inflow=13.88 cfs 73,369 cf
Primary=8.11 cfs 52,316 cf Secondary=5.85 cfs 21,051 cf Outflow=13.88 cfs 73,366 cf

Pond DP-10p: Exist Basin #3 Inflow=24.77 cfs 257,548 cf
Primary=24.77 cfs 257,548 cf

Pond DP-11p: Woods Southwest Inflow=3.24 cfs 10,138 cf
Primary=3.24 cfs 10,138 cf

Pond DP-12p: Residential West#1 Inflow=2.97 cfs 9,203 cf
Primary=2.97 cfs 9,203 cf

Pond DP-13p: Residential West#2 Inflow=1.24 cfs 3,825 cf
Primary=1.24 cfs 3,825 cf

Pond DP-14p: Woods to West Inflow=2.50 cfs 7,832 cf
Primary=2.50 cfs 7,832 cf

Pond DP-15p: Wetlands Inflow=72.16 cfs 230,682 cf
Primary=72.16 cfs 230,682 cf

Pond DP-16p: Landry Avenue Inflow=4.46 cfs 14,169 cf
Primary=4.46 cfs 14,169 cf

Pond EC: Exist Underground Chambers Inflow=17.40 cfs 56,241 cf
Primary=17.40 cfs 56,241 cf

Pond UGI-6: UGI-6 Peak Elev=238.14' Storage=43,946 cf Inflow=27.96 cfs 96,248 cf
Discarded=0.09 cfs 21,020 cf Primary=9.66 cfs 72,468 cf Outflow=9.74 cfs 93,489 cf

Pond UGI-7: UGI-7 Peak Elev=234.74' Storage=3,271 cf Inflow=4.81 cfs 38,976 cf
Discarded=0.00 cfs 189 cf Primary=4.80 cfs 36,995 cf Outflow=4.80 cfs 37,184 cf

Pond UGI-8: UGI-8 Peak Elev=233.69' Storage=5,061 cf Inflow=8.11 cfs 52,316 cf
Discarded=0.02 cfs 4,172 cf Primary=7.25 cfs 48,061 cf Outflow=7.27 cfs 52,234 cf

Pond UGI-9: UGI-9 Peak Elev=239.15' Storage=123,484 cf Inflow=62.43 cfs 216,231 cf
Discarded=0.27 cfs 65,473 cf Primary=8.05 cfs 141,370 cf Outflow=8.32 cfs 206,843 cf

Total Runoff Area = 1,566,945 sf Runoff Volume = 638,286 cf Average Runoff Depth = 4.89"
46.61% Pervious = 730,334 sf 53.39% Impervious = 836,611 sf

Summary for Subcatchment P-10a: East Parking Lot

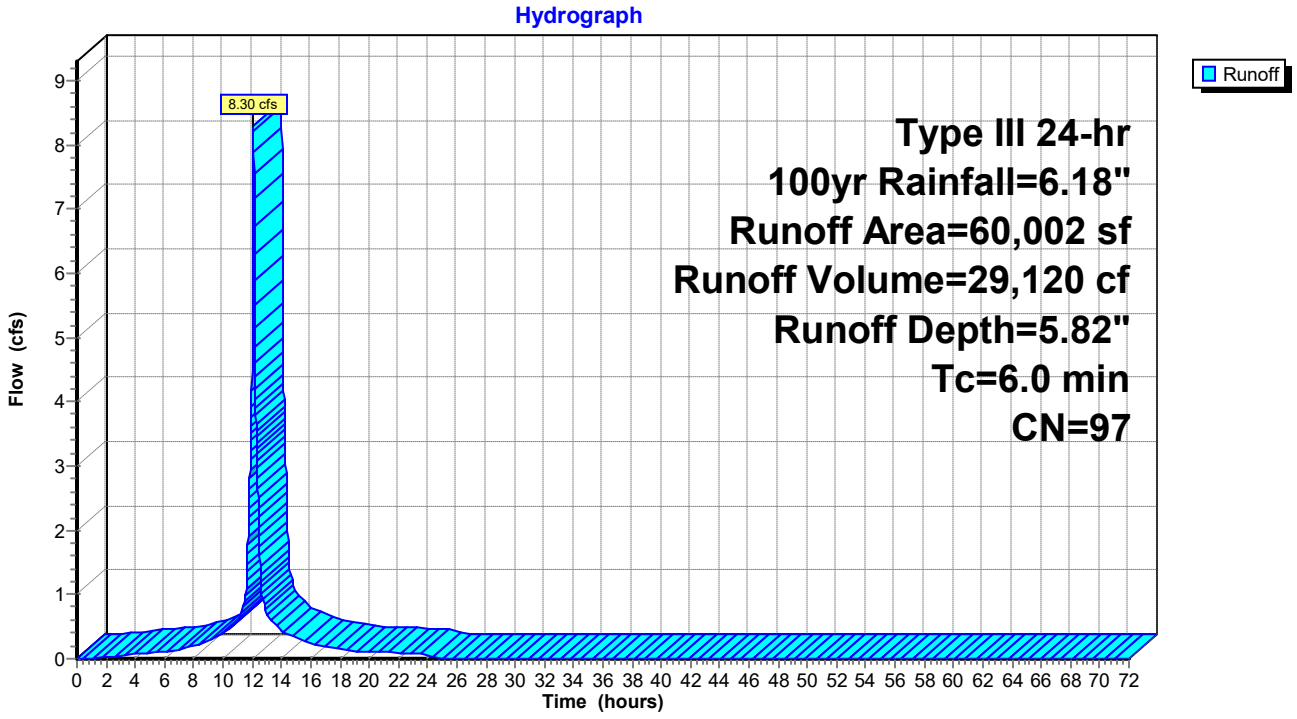
Runoff = 8.30 cfs @ 12.08 hrs, Volume= 29,120 cf, Depth= 5.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
3,636	79	50-75% Grass cover, Fair, HSG C
56,366	98	Paved parking, HSG C
60,002	97	Weighted Average
3,636		6.06% Pervious Area
56,366		93.94% Impervious Area

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

Subcatchment P-10a: East Parking Lot



Summary for Subcatchment P-10b: South HS

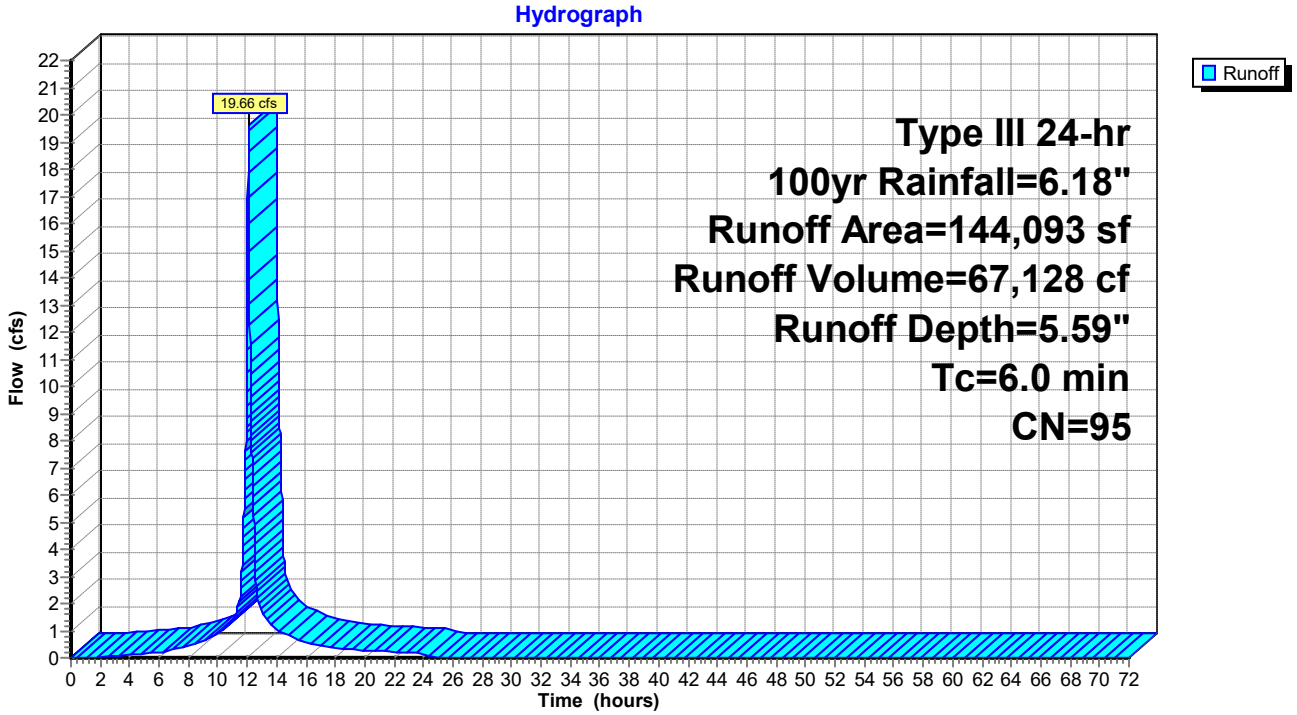
Runoff = 19.66 cfs @ 12.08 hrs, Volume= 67,128 cf, Depth= 5.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	25,314	98	HS Roofs, HSG C
*	37,903	98	HS Roofs, HSG C
	23,764	79	50-75% Grass cover, Fair, HSG C
	57,112	98	Paved parking, HSG C
	144,093	95	Weighted Average
	23,764		16.49% Pervious Area
	120,329		83.51% Impervious Area

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

Subcatchment P-10b: South HS



Summary for Subcatchment P-10c: Southeast Grass

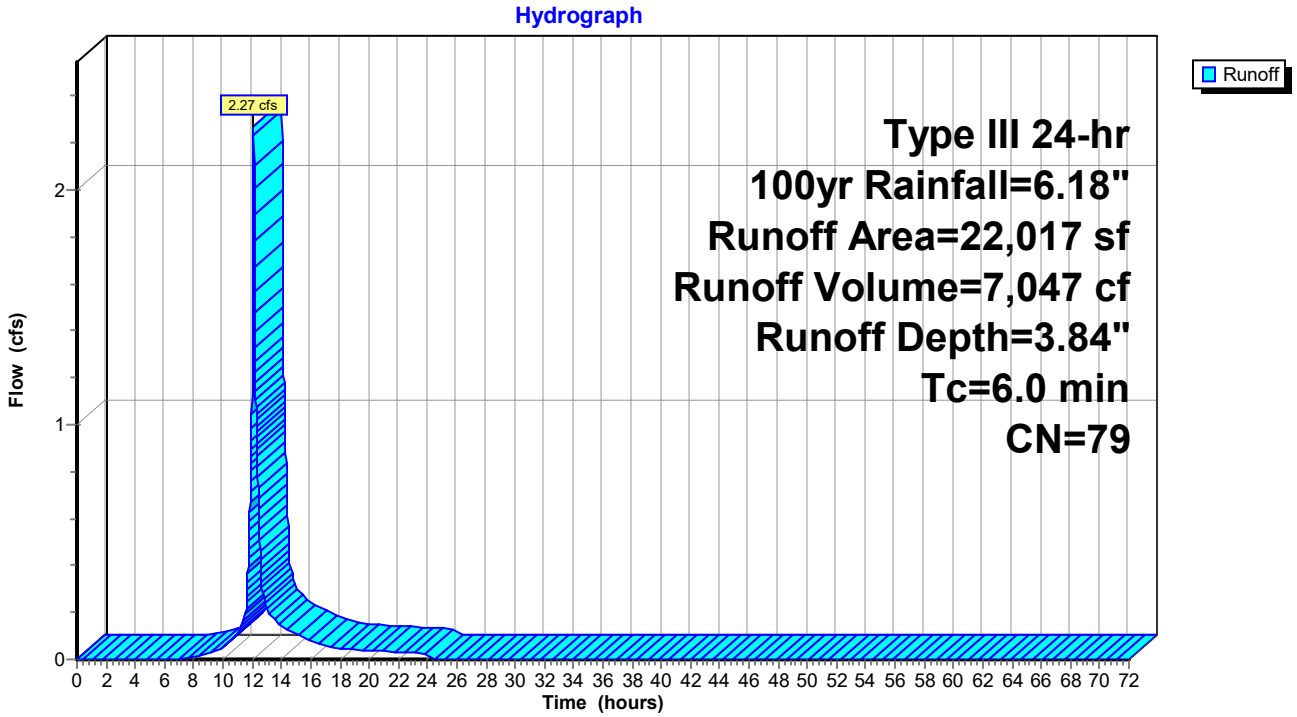
Runoff = 2.27 cfs @ 12.09 hrs, Volume= 7,047 cf, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
22,017	79	50-75% Grass cover, Fair, HSG C
22,017		100.00% Pervious Area

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

Subcatchment P-10c: Southeast Grass



Summary for Subcatchment P-10d: South Parking Lot

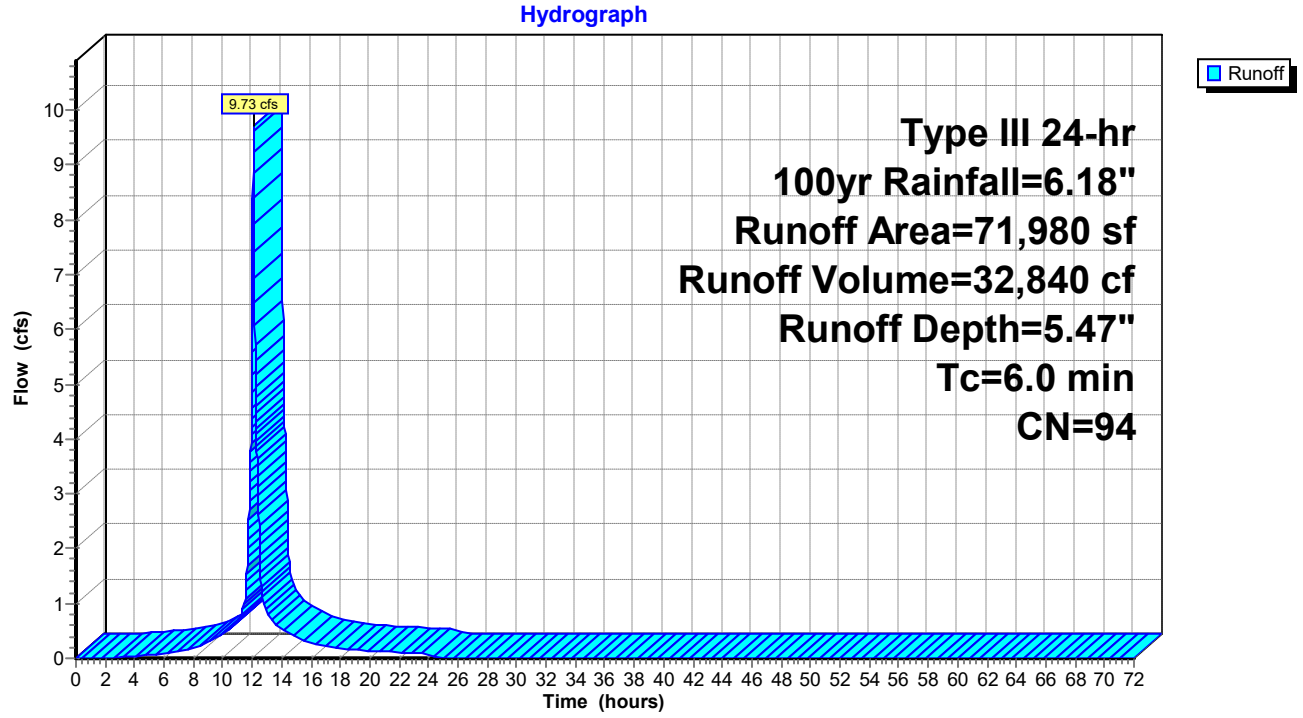
Runoff = 9.73 cfs @ 12.08 hrs, Volume= 32,840 cf, Depth= 5.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
26,521	98	Paved parking, HSG C
30,989	98	Paved parking, HSG C
14,470	79	50-75% Grass cover, Fair, HSG C
71,980	94	Weighted Average
14,470		20.10% Pervious Area
57,510		79.90% Impervious Area

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

Subcatchment P-10d: South Parking Lot



Summary for Subcatchment P-10e: Exist Basin

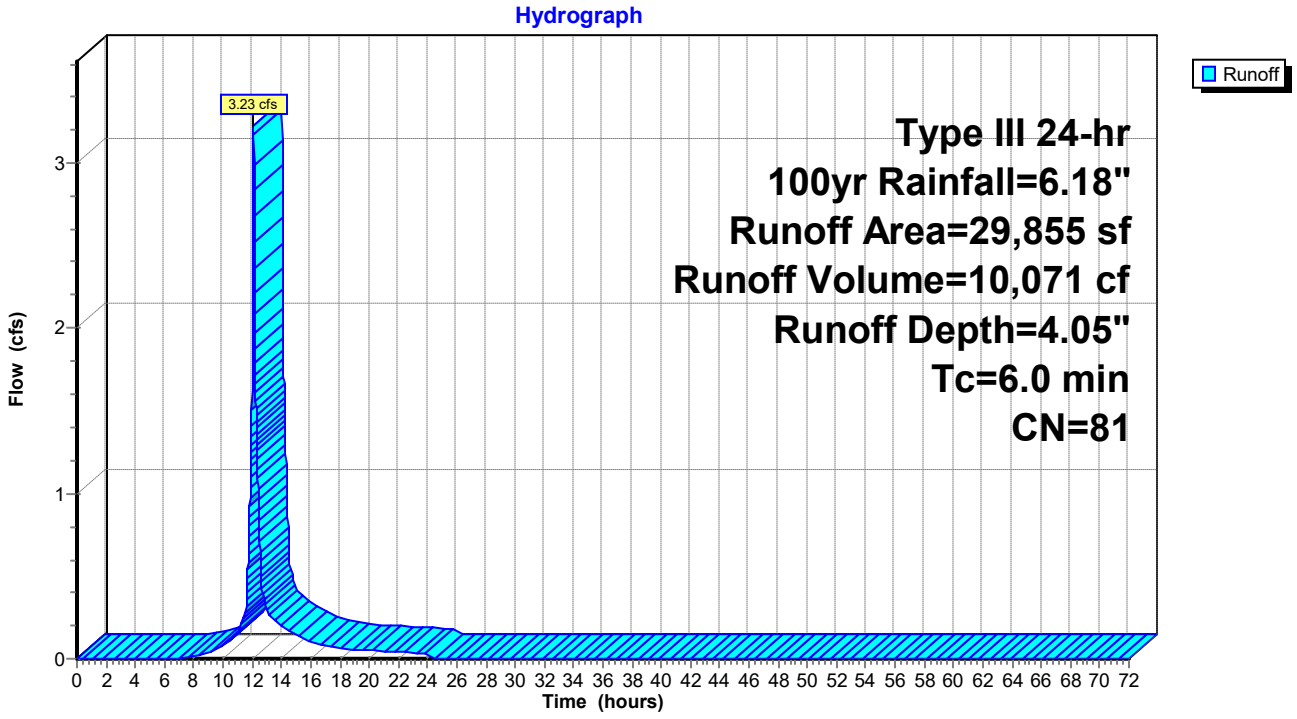
Runoff = 3.23 cfs @ 12.09 hrs, Volume= 10,071 cf, Depth= 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
27,099	79	50-75% Grass cover, Fair, HSG C
2,756	98	Paved parking, HSG C
29,855	81	Weighted Average
27,099		90.77% Pervious Area
2,756		9.23% Impervious Area

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

Subcatchment P-10e: Exist Basin



Summary for Subcatchment P-10f: West HS

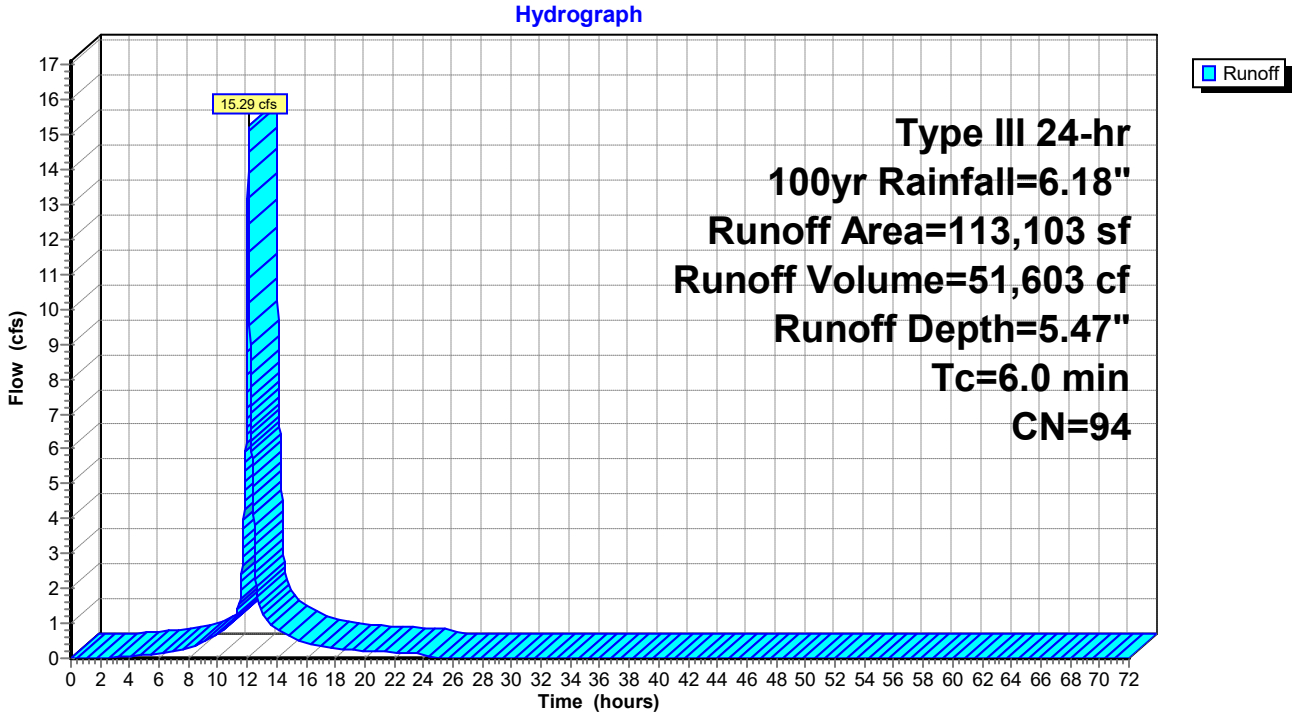
Runoff = 15.29 cfs @ 12.08 hrs, Volume= 51,603 cf, Depth= 5.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
	36,395	98	Paved parking, HSG C
	24,057	79	50-75% Grass cover, Fair, HSG C
*	52,651	98	HS Roofs, HSG C
	113,103	94	Weighted Average
	24,057		21.27% Pervious Area
	89,046		78.73% Impervious Area

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

Subcatchment P-10f: West HS



Summary for Subcatchment P-10g: Grass Field

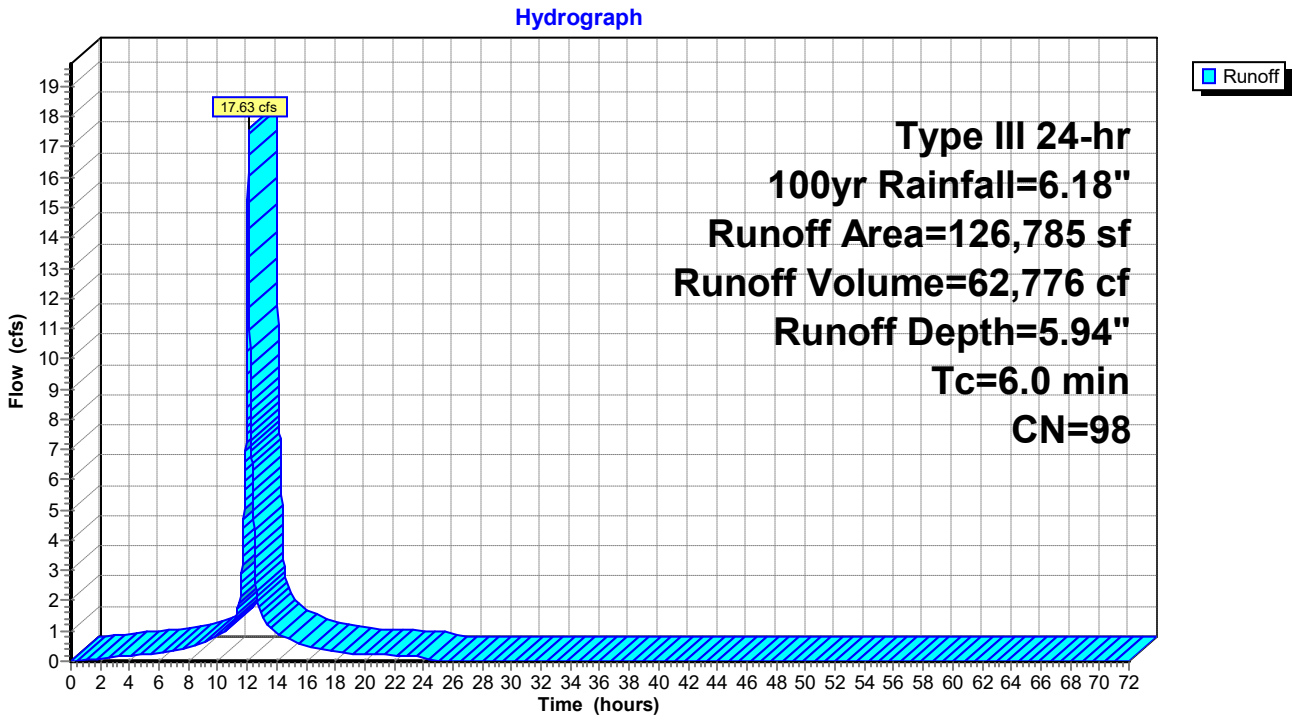
Runoff = 17.63 cfs @ 12.08 hrs, Volume= 62,776 cf, Depth= 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	118,453	98	Synthetic Field, HSG C
*	8,332	98	Sidewalks, HSG C
	126,785	98	Weighted Average
	126,785		100.00% Impervious Area

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

Subcatchment P-10g: Grass Field



Summary for Subcatchment P-10h: Grass + Sidewalks

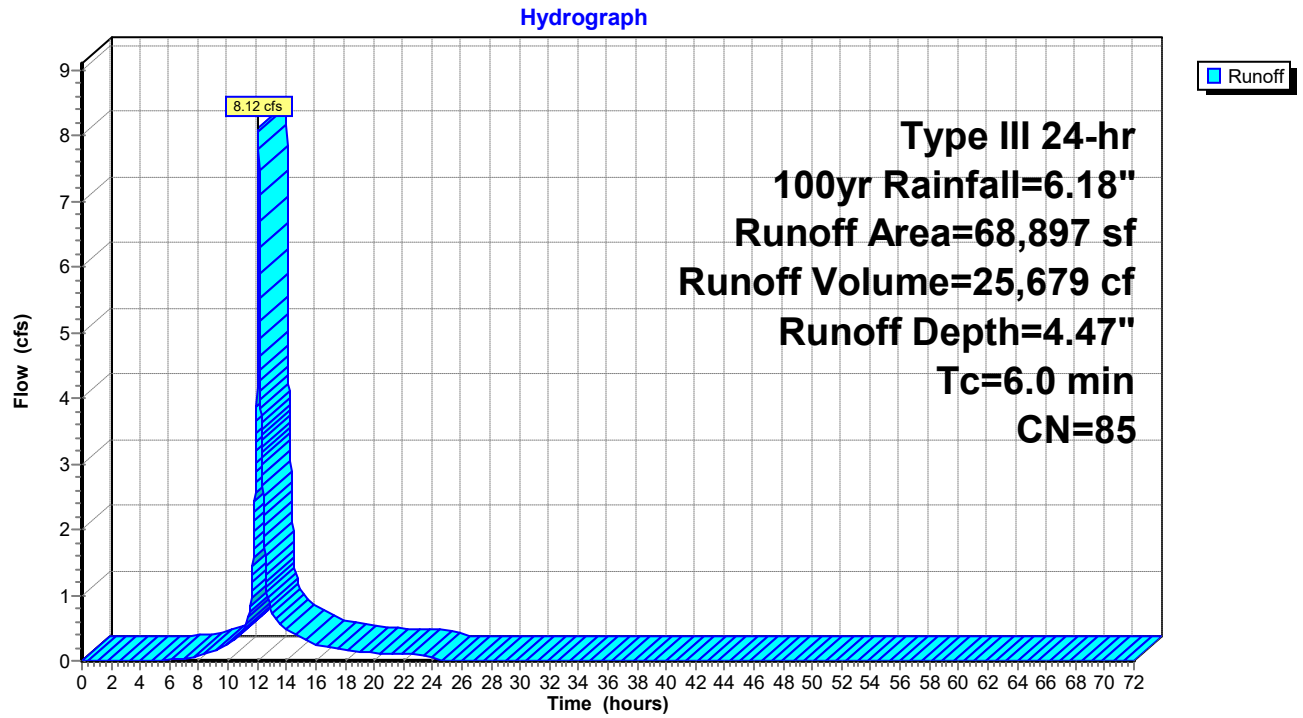
Runoff = 8.12 cfs @ 12.09 hrs, Volume= 25,679 cf, Depth= 4.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
	48,833	79	50-75% Grass cover, Fair, HSG C
*	6,470	98	Exist Sidewalk, HSG C
*	1,071	98	Exist Roof, HSG C
*	12,523	98	Prop Sidewalk, HSG C
	68,897	85	Weighted Average
	48,833		70.88% Pervious Area
	20,064		29.12% Impervious Area

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

Subcatchment P-10h: Grass + Sidewalks



Summary for Subcatchment P-10i: Exist Stadium

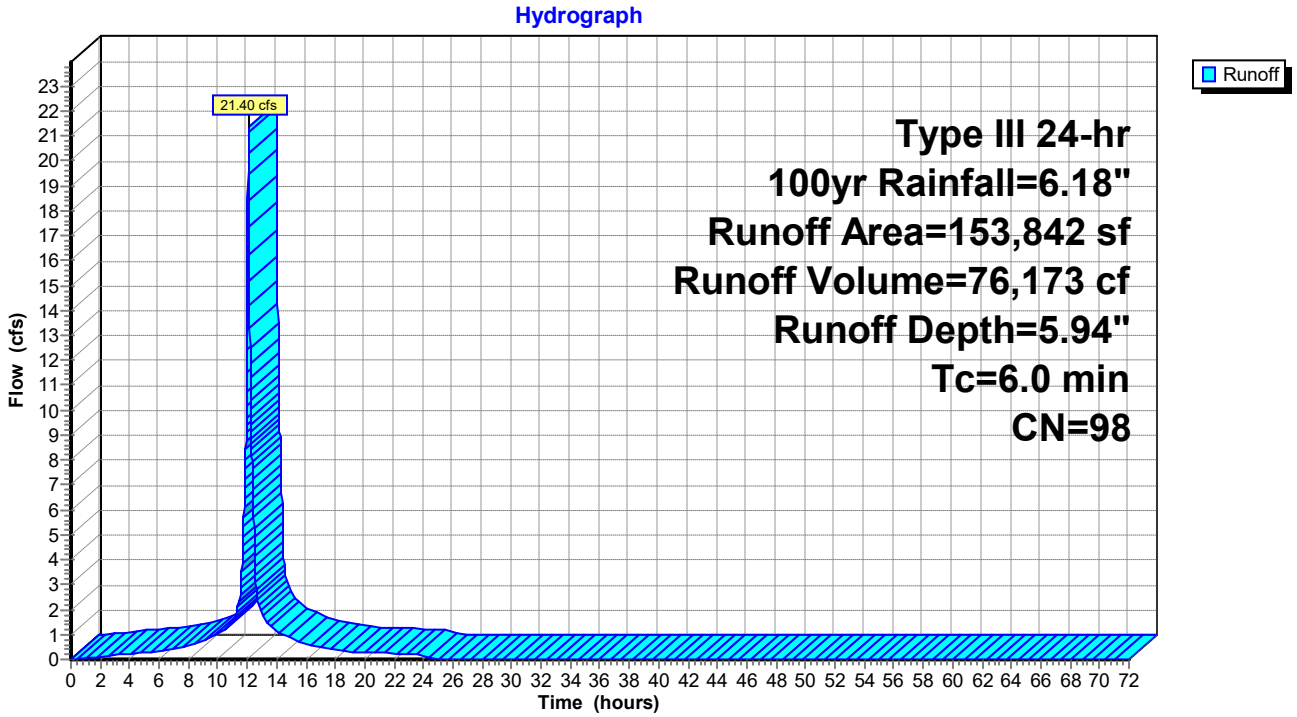
Runoff = 21.40 cfs @ 12.08 hrs, Volume= 76,173 cf, Depth= 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	153,842	98	Synfield
	153,842		100.00% Impervious Area

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

Subcatchment P-10i: Exist Stadium



Summary for Subcatchment P-11: South Woods

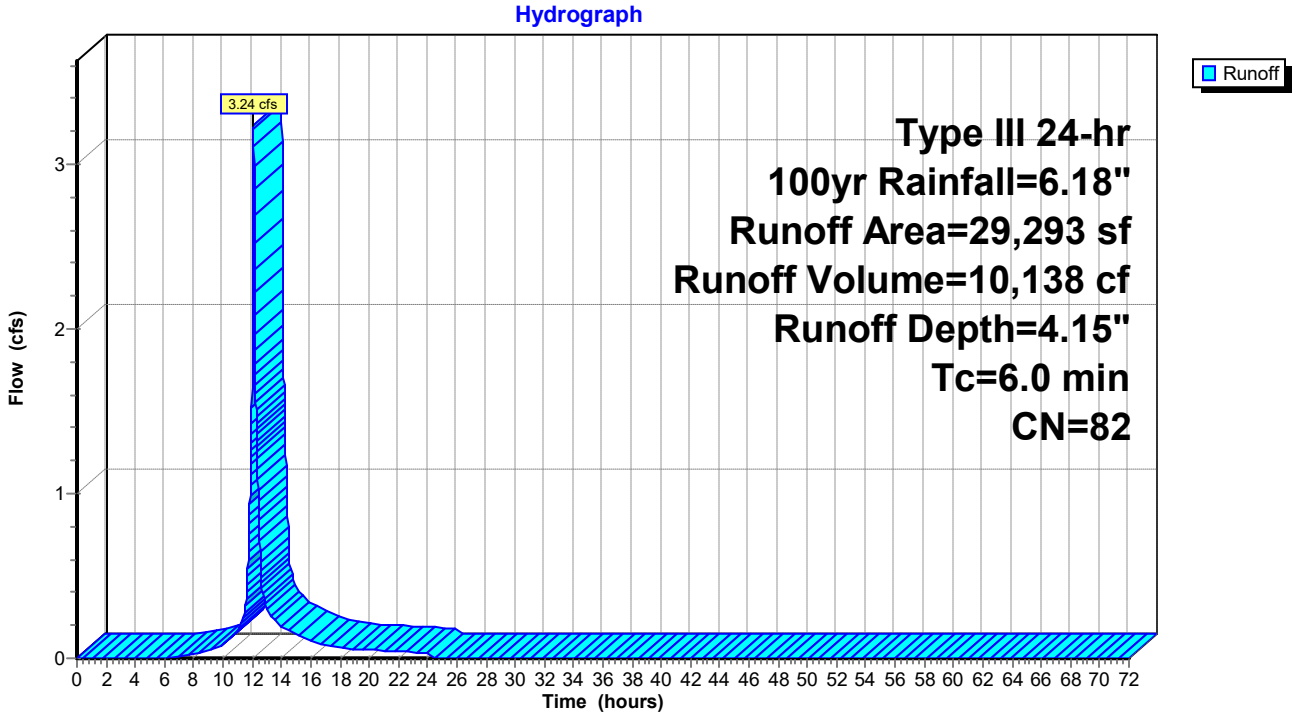
Runoff = 3.24 cfs @ 12.09 hrs, Volume= 10,138 cf, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
13,455	79	50-75% Grass cover, Fair, HSG C
8,827	73	Woods, Fair, HSG C
7,011	98	Paved parking, HSG C
29,293	82	Weighted Average
22,282		76.07% Pervious Area
7,011		23.93% Impervious Area

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

Subcatchment P-11: South Woods



Summary for Subcatchment P-12a: West Woods

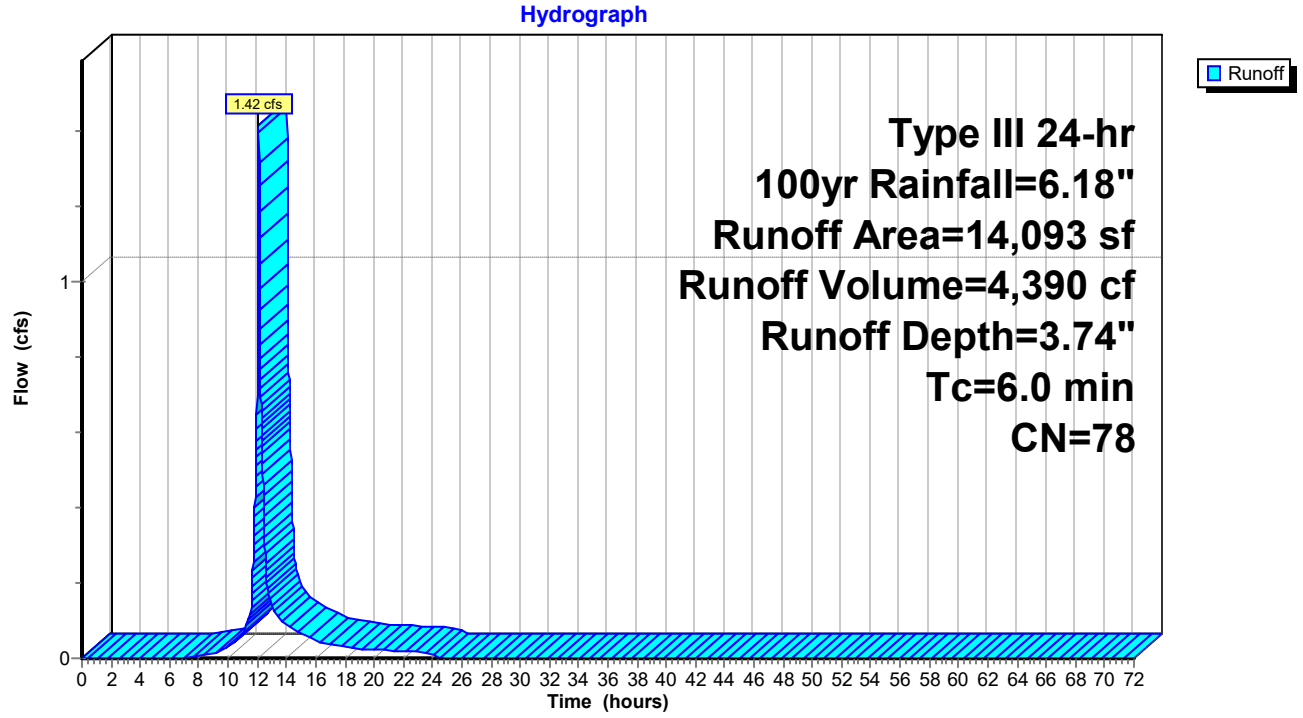
Runoff = 1.42 cfs @ 12.09 hrs, Volume= 4,390 cf, Depth= 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
	6,843	79	50-75% Grass cover, Fair, HSG C
	6,289	73	Woods, Fair, HSG C
*	961	98	Exist Sidewalk, HSG C
	14,093	78	Weighted Average
	13,132		93.18% Pervious Area
	961		6.82% Impervious Area

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

Subcatchment P-12a: West Woods



Summary for Subcatchment P-12b: West Grass/Woods

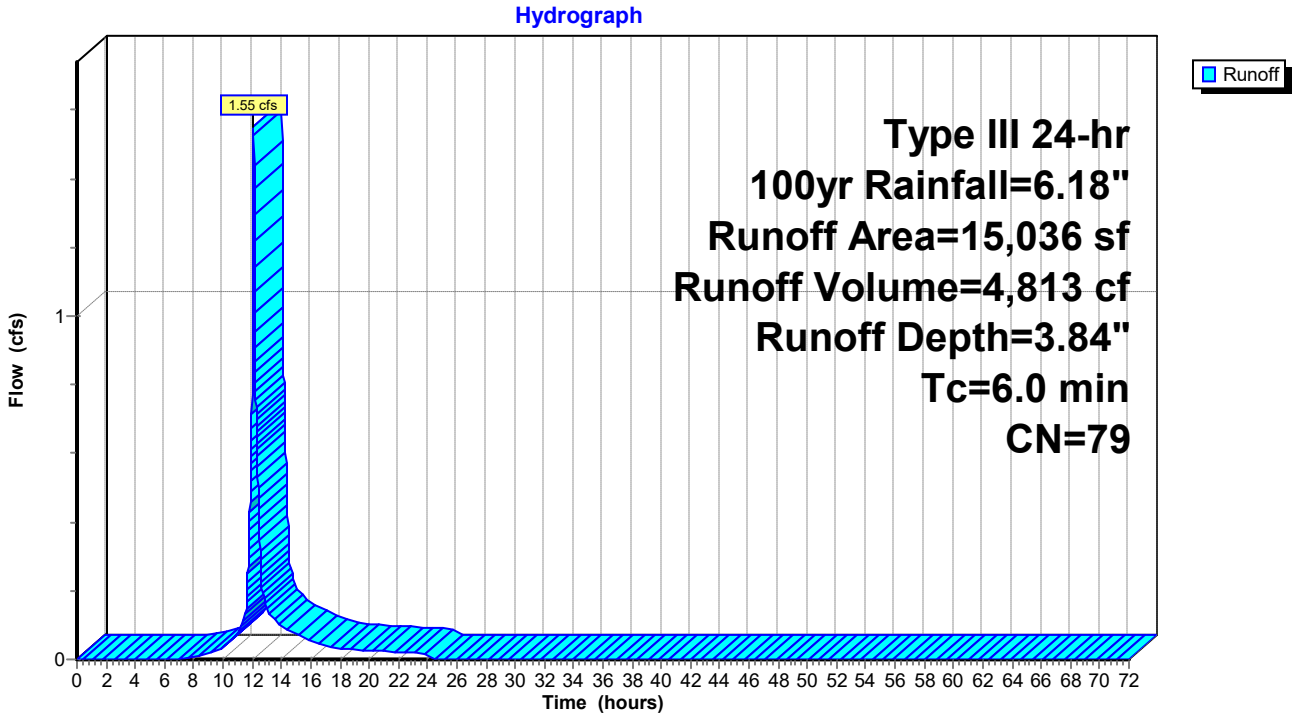
Runoff = 1.55 cfs @ 12.09 hrs, Volume= 4,813 cf, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
15,036	79	50-75% Grass cover, Fair, HSG C
15,036		100.00% Pervious Area

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

Subcatchment P-12b: West Grass/Woods



Summary for Subcatchment P-13: Woods

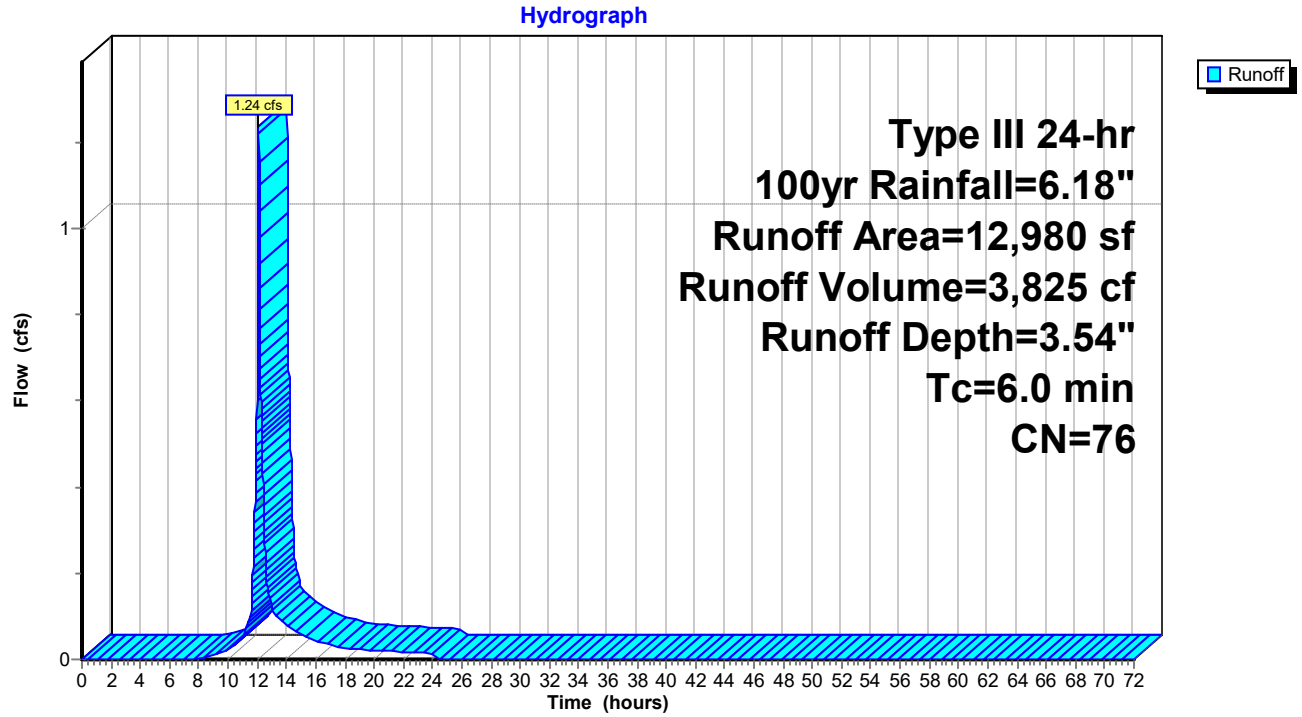
Runoff = 1.24 cfs @ 12.09 hrs, Volume= 3,825 cf, Depth= 3.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
12,980	76	Woods/grass comb., Fair, HSG C
12,980		100.00% Pervious Area

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

Subcatchment P-13: Woods



Summary for Subcatchment P-14: Residential West#3

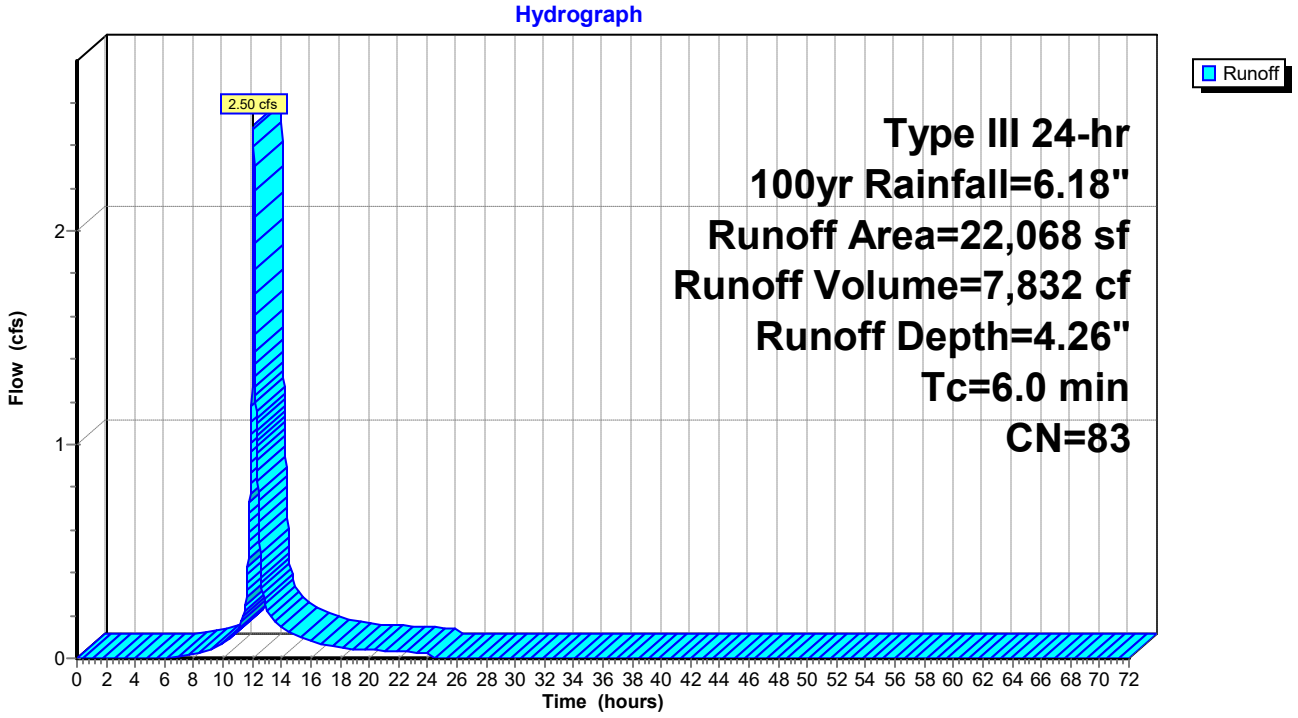
Runoff = 2.50 cfs @ 12.09 hrs, Volume= 7,832 cf, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
8,051	77	Woods, Poor, HSG C
5,778	98	Paved parking, HSG C
8,239	79	50-75% Grass cover, Fair, HSG C
22,068	83	Weighted Average
16,290		73.82% Pervious Area
5,778		26.18% Impervious Area

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

Subcatchment P-14: Residential West#3



Summary for Subcatchment P-15a: Northwest Grass/Woods

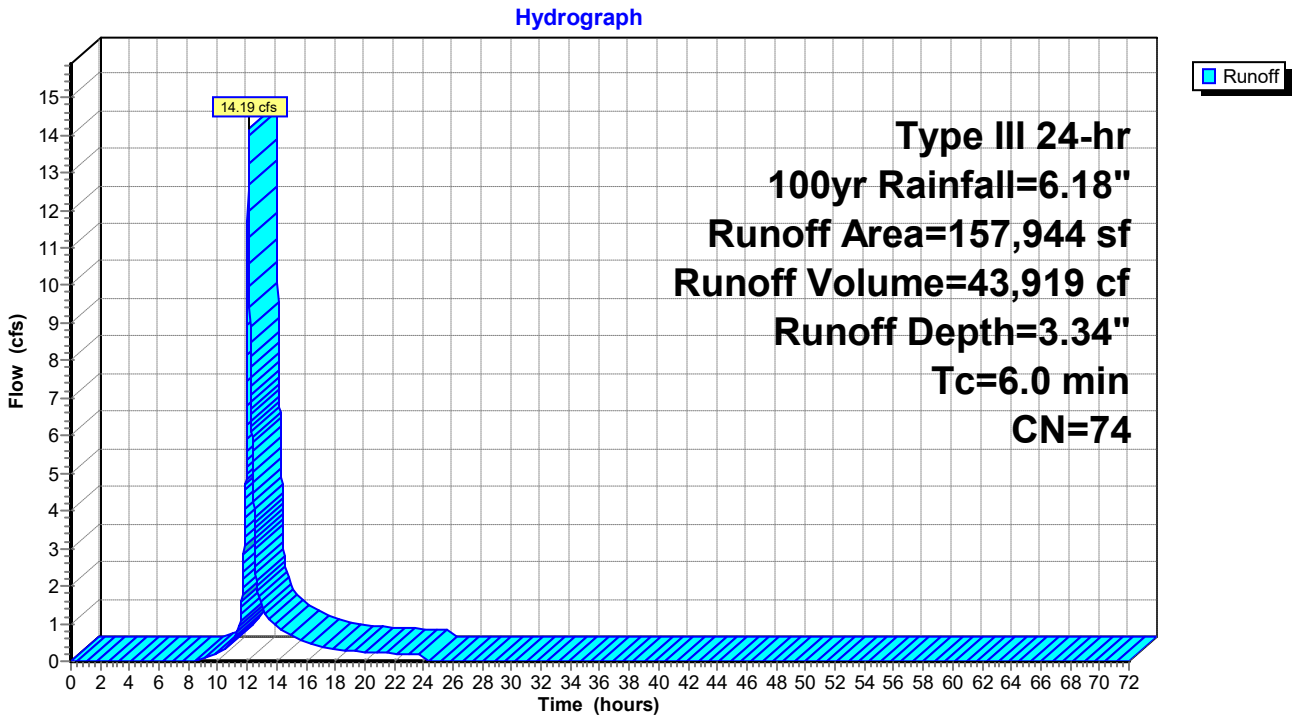
Runoff = 14.19 cfs @ 12.09 hrs, Volume= 43,919 cf, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
125,137	73	Woods, Fair, HSG C
32,807	79	50-75% Grass cover, Fair, HSG C
157,944	74	Weighted Average
157,944		100.00% Pervious Area

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

Subcatchment P-15a: Northwest Grass/Woods



Summary for Subcatchment P-15b: HS Entrance

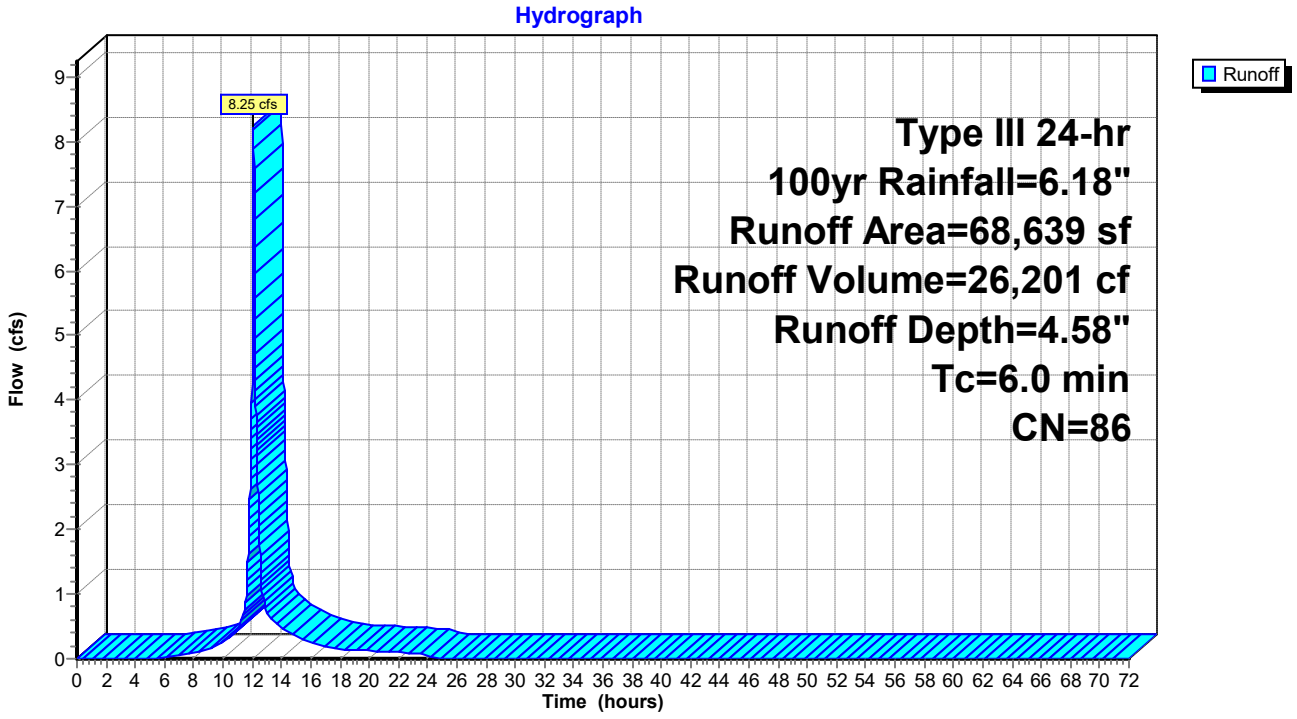
Runoff = 8.25 cfs @ 12.09 hrs, Volume= 26,201 cf, Depth= 4.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
23,997	98	Paved parking, HSG C
44,642	79	50-75% Grass cover, Fair, HSG C
68,639	86	Weighted Average
44,642		65.04% Pervious Area
23,997		34.96% Impervious Area

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

Subcatchment P-15b: HS Entrance



Summary for Subcatchment P-15c: Grass Field

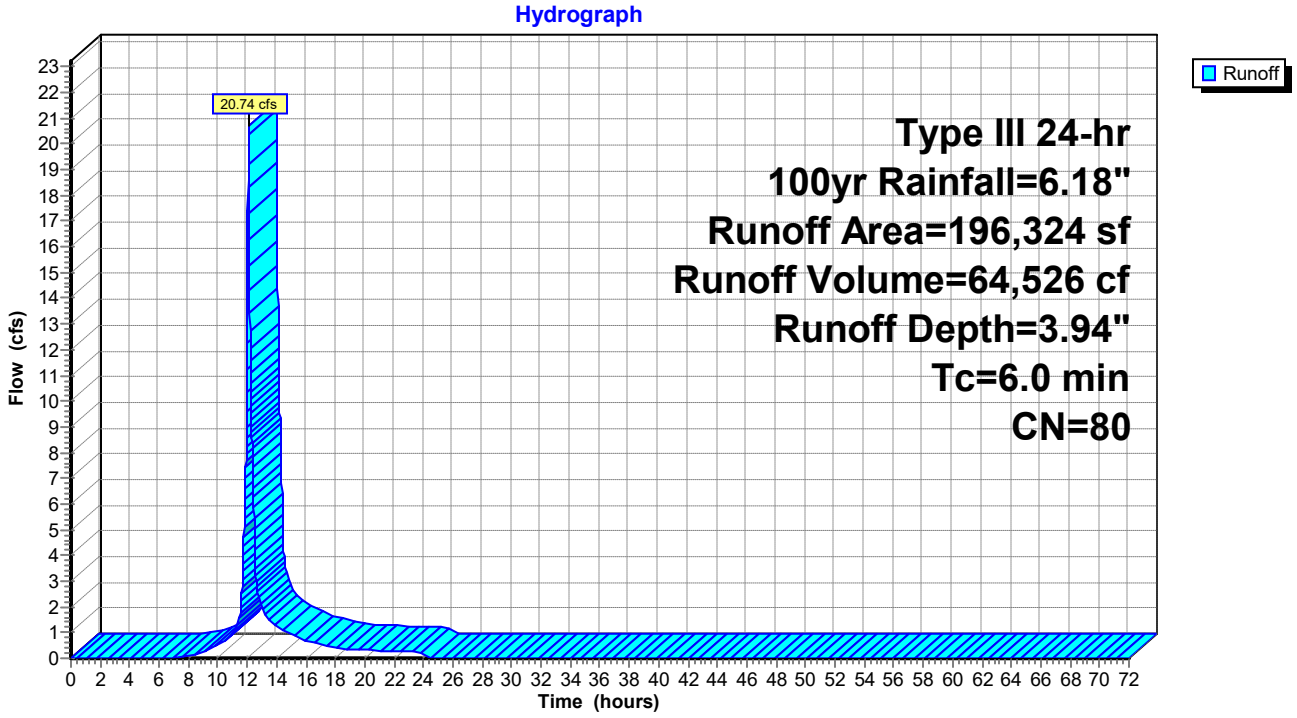
Runoff = 20.74 cfs @ 12.09 hrs, Volume= 64,526 cf, Depth= 3.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	14,586	98	Sidewalks, HSG C
	173,715	79	50-75% Grass cover, Fair, HSG C
	8,023	73	Woods, Fair, HSG C
	196,324	80	Weighted Average
	181,738		92.57% Pervious Area
	14,586		7.43% Impervious Area

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

Subcatchment P-15c: Grass Field



Summary for Subcatchment P-15d: MS Roof and Parking

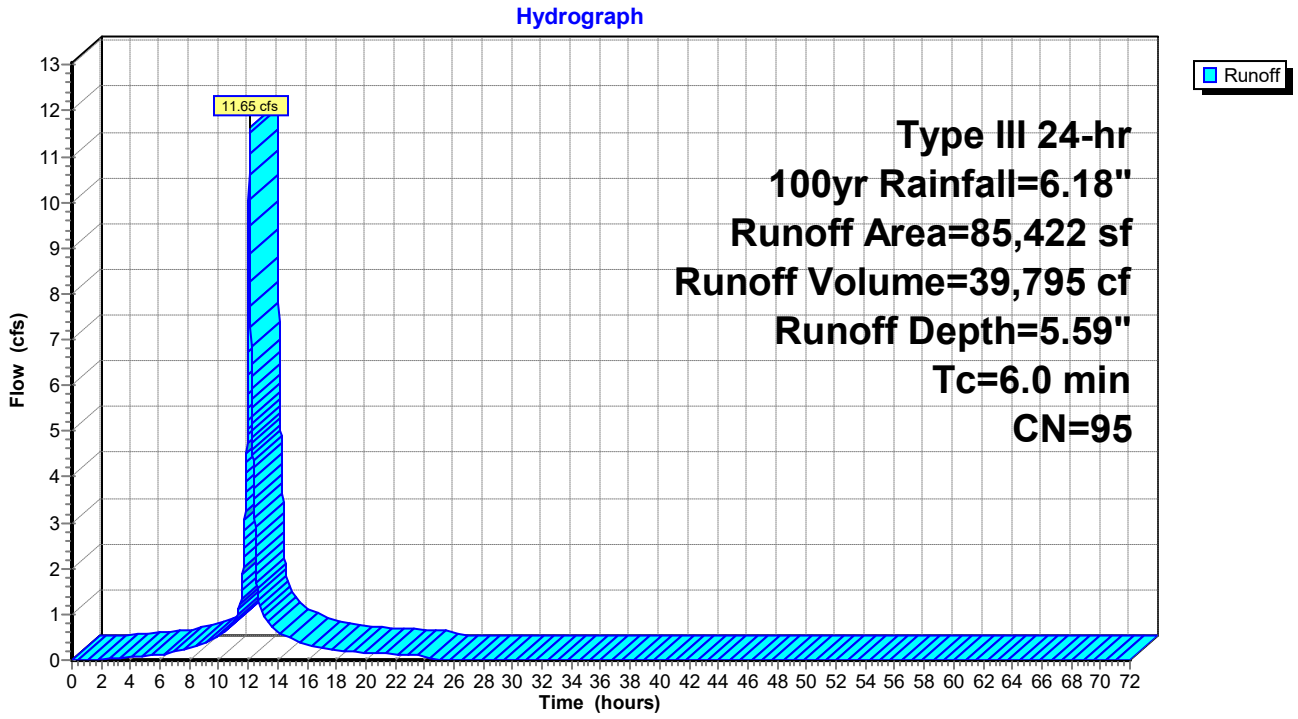
Runoff = 11.65 cfs @ 12.08 hrs, Volume= 39,795 cf, Depth= 5.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

	Area (sf)	CN	Description
*	41,432	98	MS Roof, HSG C
	14,853	98	Paved parking, HSG C
	2,924	79	50-75% Grass cover, Fair, HSG C
	13,755	98	Paved parking, HSG C
	12,458	79	50-75% Grass cover, Fair, HSG C
	85,422	95	Weighted Average
	15,382		18.01% Pervious Area
	70,040		81.99% Impervious Area

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

Subcatchment P-15d: MS Roof and Parking



Summary for Subcatchment P-15e: MS Parking

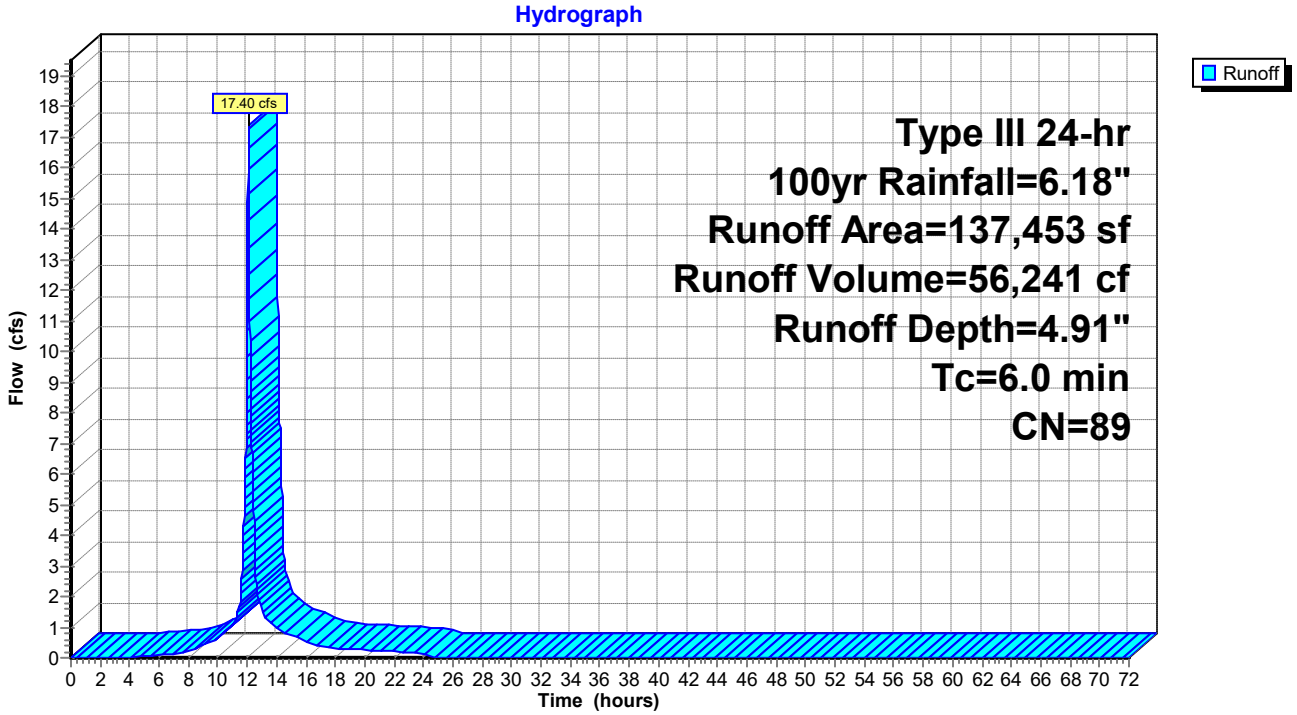
Runoff = 17.40 cfs @ 12.08 hrs, Volume= 56,241 cf, Depth= 4.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
17,142	79	50-75% Grass cover, Fair, HSG C
11,587	98	Paved parking, HSG C
46,032	79	50-75% Grass cover, Fair, HSG C
62,692	98	Paved parking, HSG C
137,453	89	Weighted Average
63,174		45.96% Pervious Area
74,279		54.04% Impervious Area

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

Subcatchment P-15e: MS Parking



Summary for Subcatchment P-16: (new Subcat)

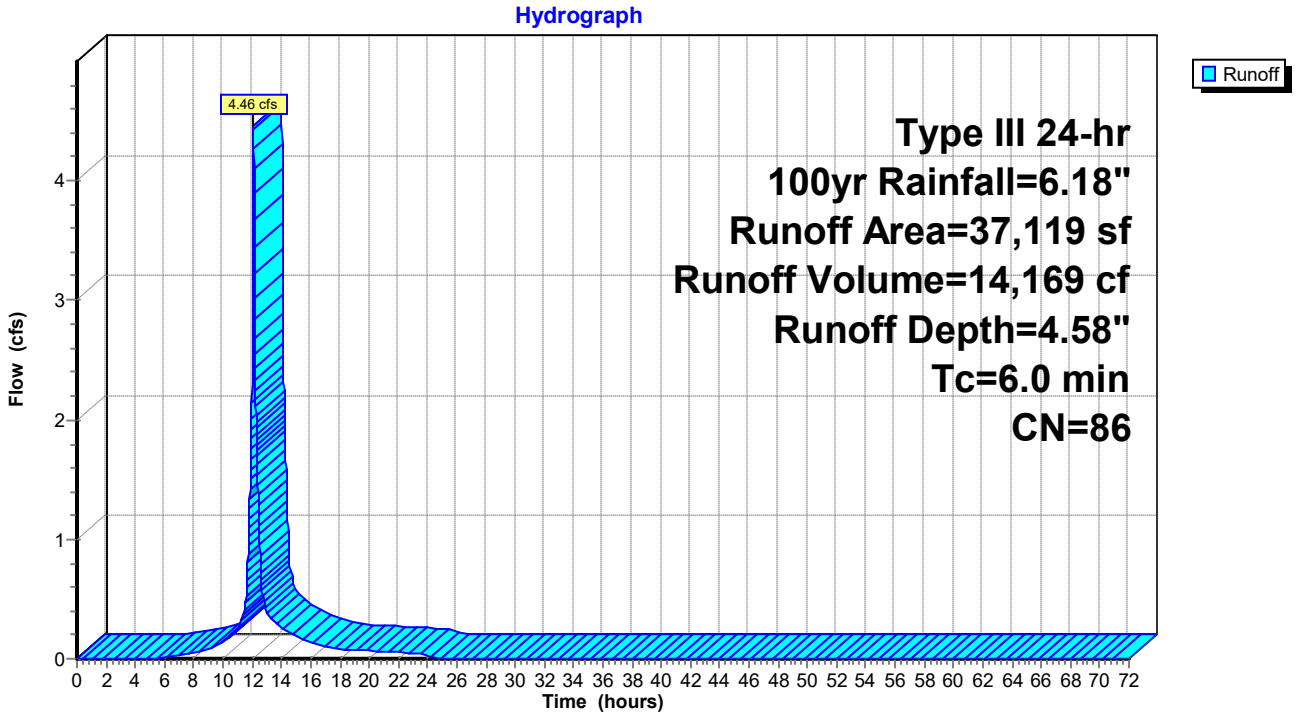
Runoff = 4.46 cfs @ 12.09 hrs, Volume= 14,169 cf, Depth= 4.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=6.18"

Area (sf)	CN	Description
13,261	98	Paved parking, HSG C
23,858	79	50-75% Grass cover, Fair, HSG C
37,119	86	Weighted Average
23,858		64.27% Pervious Area
13,261		35.73% Impervious Area

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

Subcatchment P-16: (new Subcat)



Summary for Pond D1: DMH51

Inflow Area = 226,112 sf, 78.14% Impervious, Inflow Depth = 4.22" for 100yr event
Inflow = 10.56 cfs @ 12.30 hrs, Volume= 79,515 cf
Outflow = 10.56 cfs @ 12.31 hrs, Volume= 79,505 cf, Atten= 0%, Lag= 0.6 min
Primary = 4.81 cfs @ 12.29 hrs, Volume= 38,976 cf
Secondary = 5.76 cfs @ 12.32 hrs, Volume= 40,529 cf

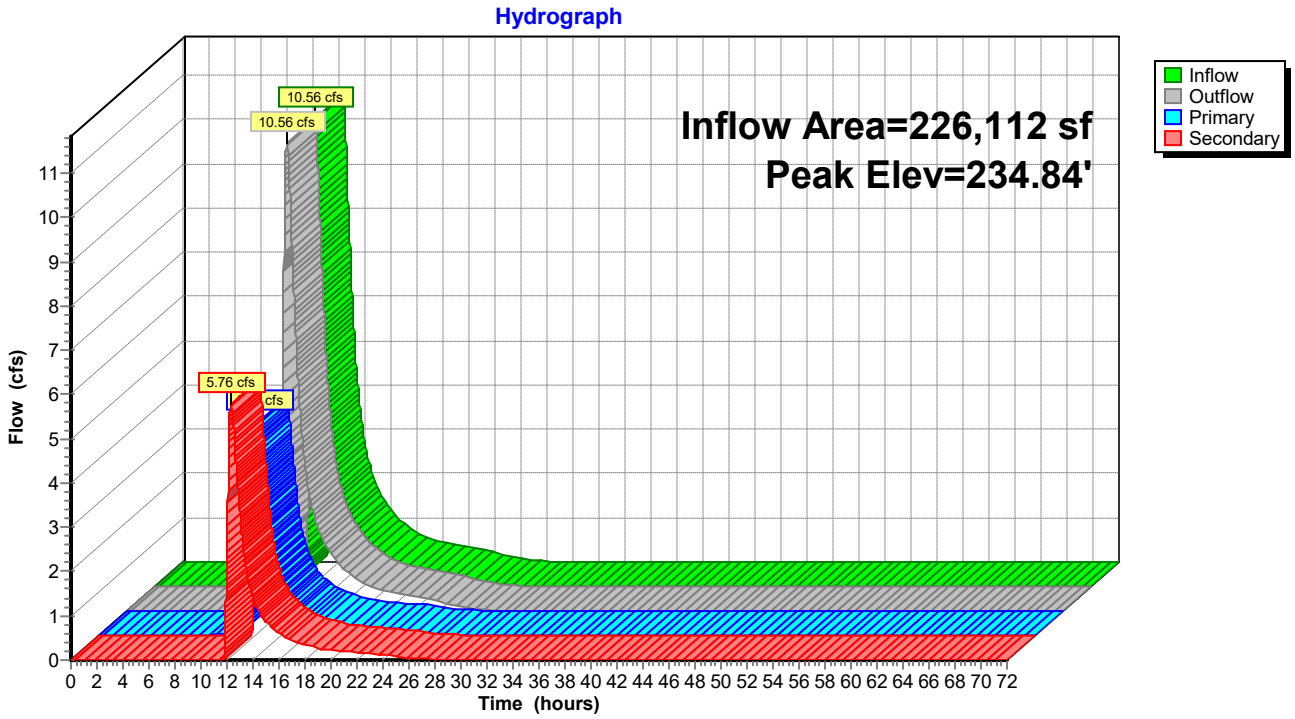
Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.84' @ 12.32 hrs
Flood Elev= 238.32'

Device	Routing	Invert	Outlet Devices
#1	Primary	232.90'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	233.80'	**24.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=4.79 cfs @ 12.29 hrs HW=234.84' TW=234.74' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 4.79 cfs @ 1.54 fps)

Secondary OutFlow Max=5.76 cfs @ 12.32 hrs HW=234.84' TW=233.85' (Dynamic Tailwater)
└**2=Orifice/Grate** (Orifice Controls 5.76 cfs @ 3.48 fps)

Pond D1: DMH51



Summary for Pond D2: DMH-55

Inflow Area = 71,980 sf, 79.90% Impervious, Inflow Depth = 12.23" for 100yr event
Inflow = 13.88 cfs @ 12.10 hrs, Volume= 73,369 cf
Outflow = 13.88 cfs @ 12.11 hrs, Volume= 73,366 cf, Atten= 0%, Lag= 0.6 min
Primary = 8.11 cfs @ 12.10 hrs, Volume= 52,316 cf
Secondary = 5.85 cfs @ 12.12 hrs, Volume= 21,051 cf

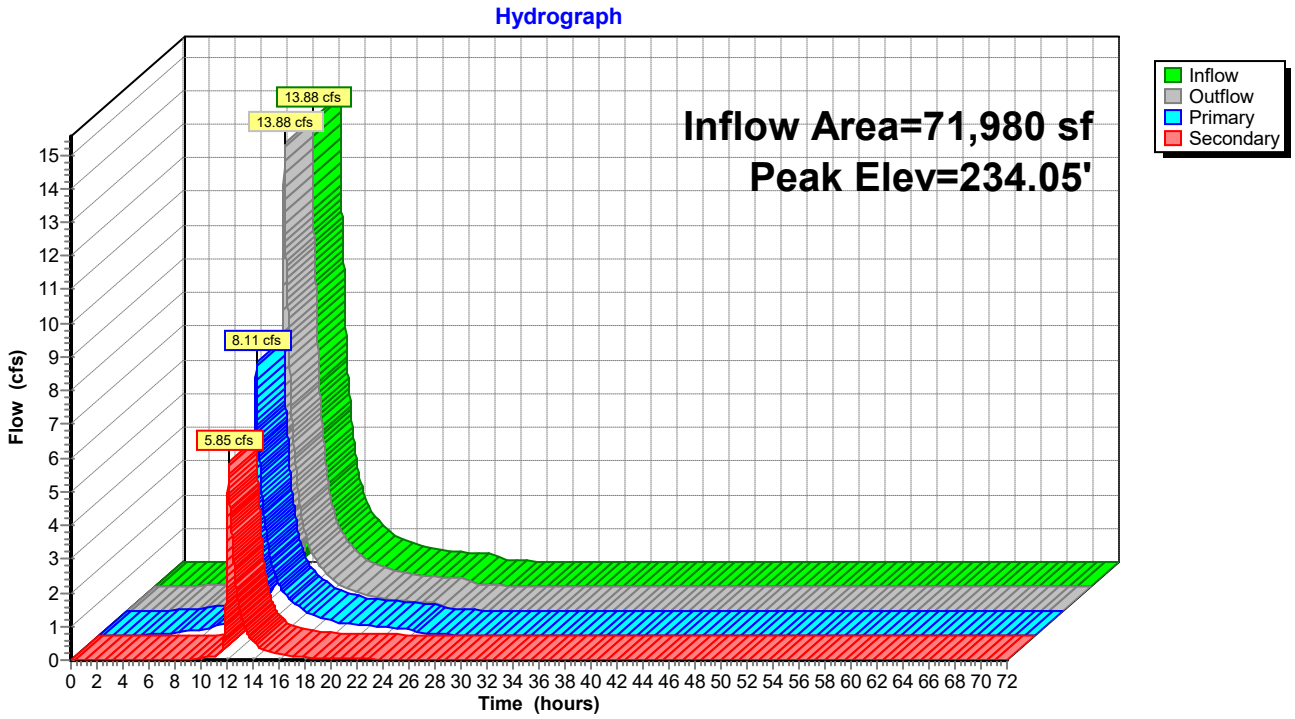
Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.05' @ 12.12 hrs
Flood Elev= 242.27'

Device	Routing	Invert	Outlet Devices	
#1	Primary	232.50'	**24.0" Vert. Orifice/Grate**	C= 0.600
#2	Secondary	233.00'	**24.0" Vert. Orifice/Grate**	C= 0.600

Primary OutFlow Max=7.90 cfs @ 12.10 hrs HW=234.04' TW=233.64' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 7.90 cfs @ 3.05 fps)

Secondary OutFlow Max=5.85 cfs @ 12.12 hrs HW=234.05' TW=0.00' (Dynamic Tailwater)
└**2=Orifice/Grate** (Orifice Controls 5.85 cfs @ 3.49 fps)

Pond D2: DMH-55

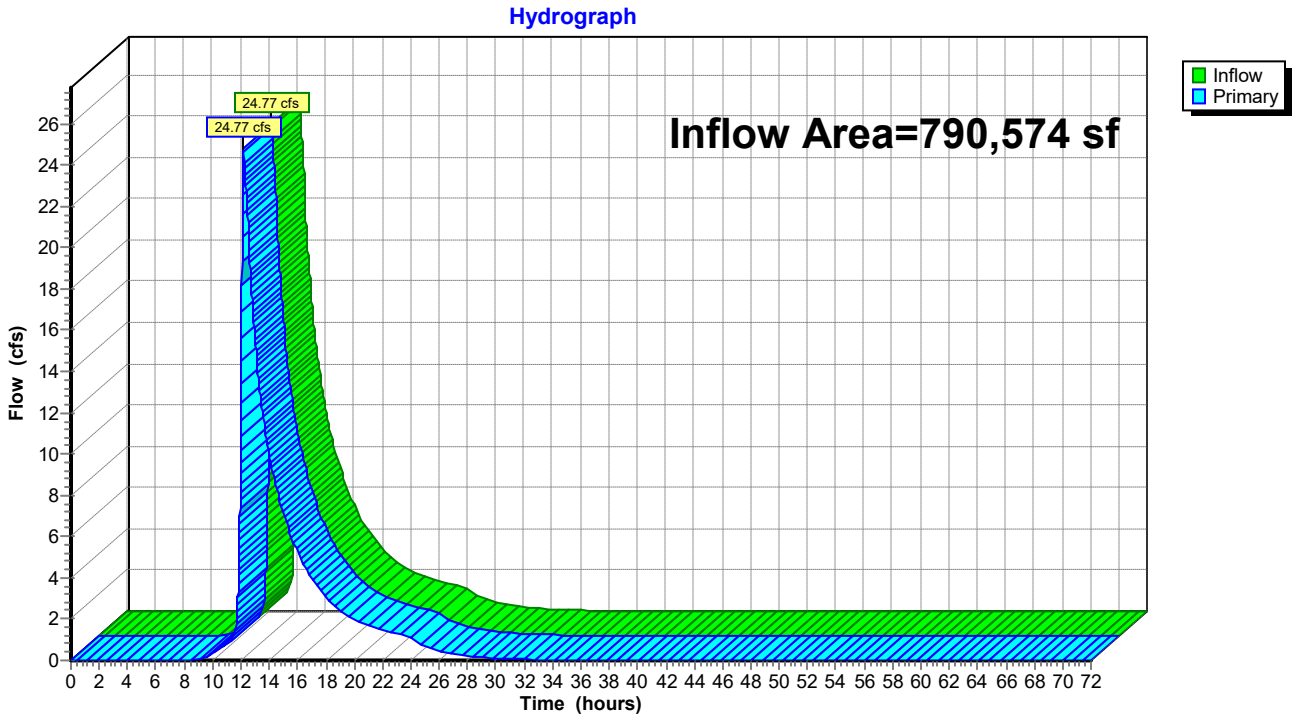


Summary for Pond DP-10p: Exist Basin #3

Inflow Area = 790,574 sf, 79.27% Impervious, Inflow Depth = 3.91" for 100yr event
Inflow = 24.77 cfs @ 12.16 hrs, Volume= 257,548 cf
Primary = 24.77 cfs @ 12.17 hrs, Volume= 257,548 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-10p: Exist Basin #3

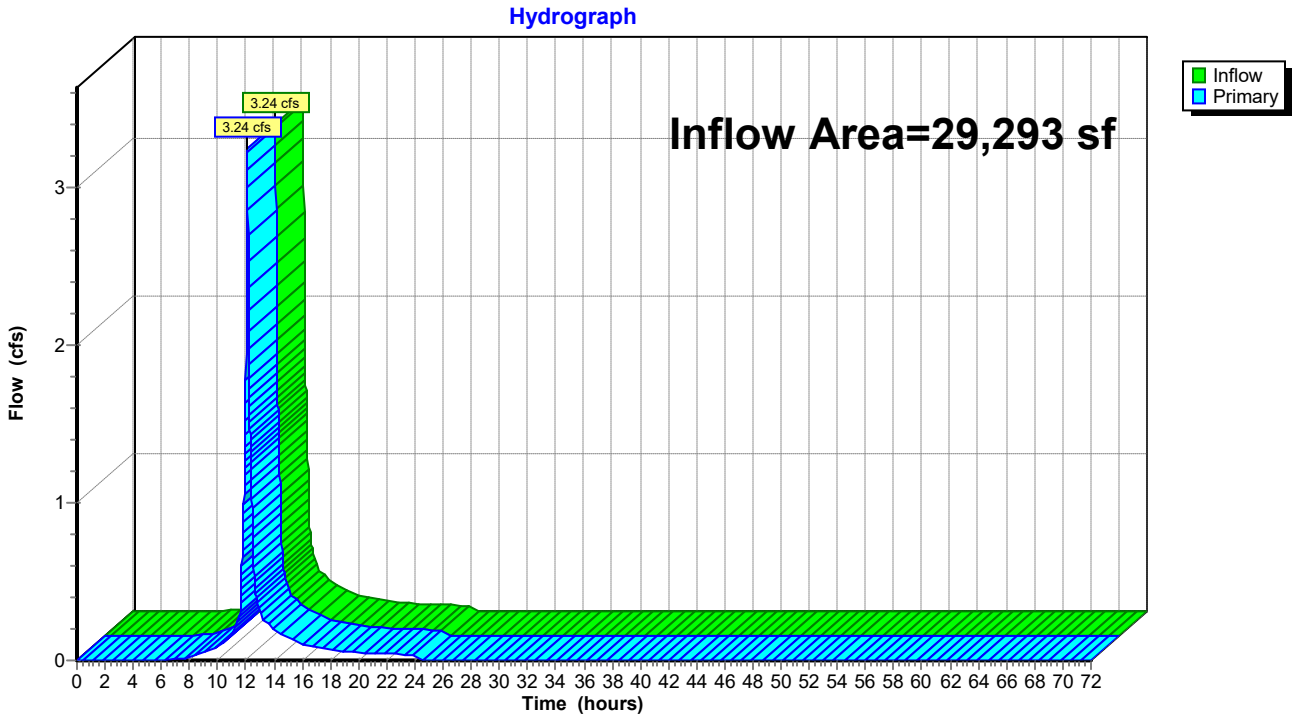


Summary for Pond DP-11p: Woods Southwest

Inflow Area = 29,293 sf, 23.93% Impervious, Inflow Depth = 4.15" for 100yr event
Inflow = 3.24 cfs @ 12.09 hrs, Volume= 10,138 cf
Primary = 3.24 cfs @ 12.10 hrs, Volume= 10,138 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-11p: Woods Southwest

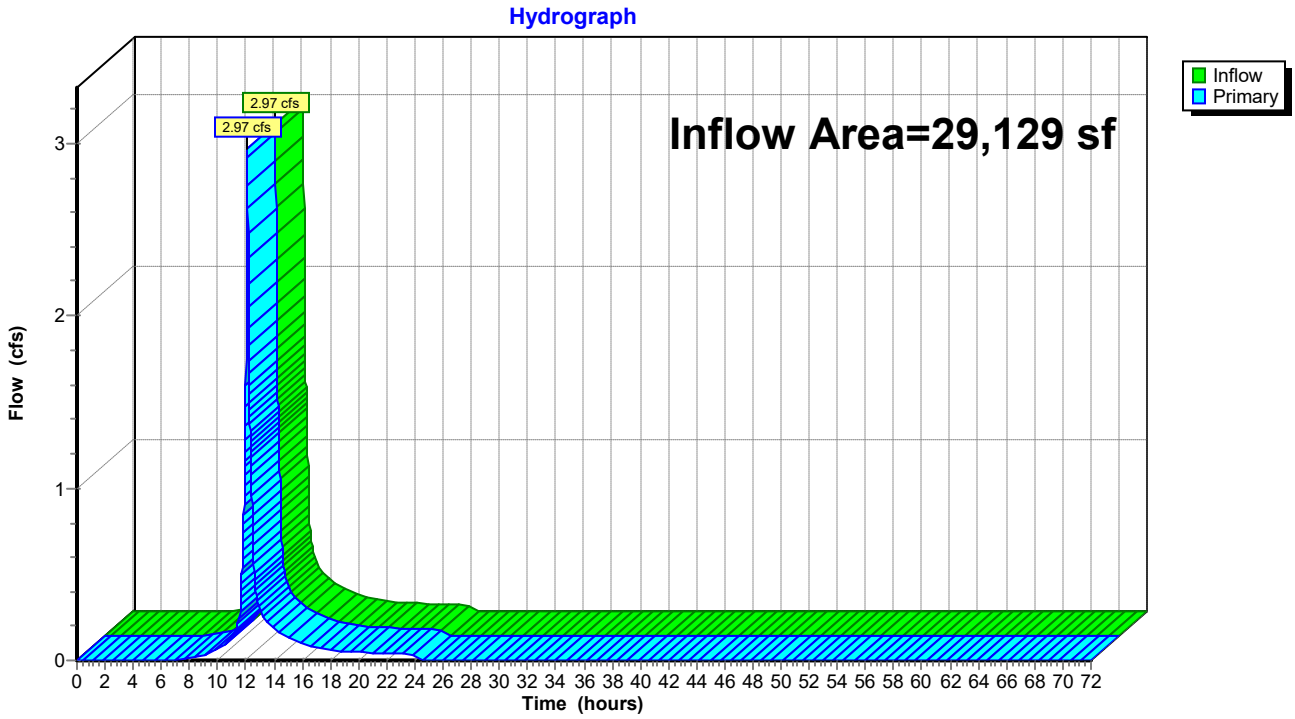


Summary for Pond DP-12p: Residential West#1

Inflow Area = 29,129 sf, 3.30% Impervious, Inflow Depth = 3.79" for 100yr event
Inflow = 2.97 cfs @ 12.09 hrs, Volume= 9,203 cf
Primary = 2.97 cfs @ 12.10 hrs, Volume= 9,203 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-12p: Residential West#1

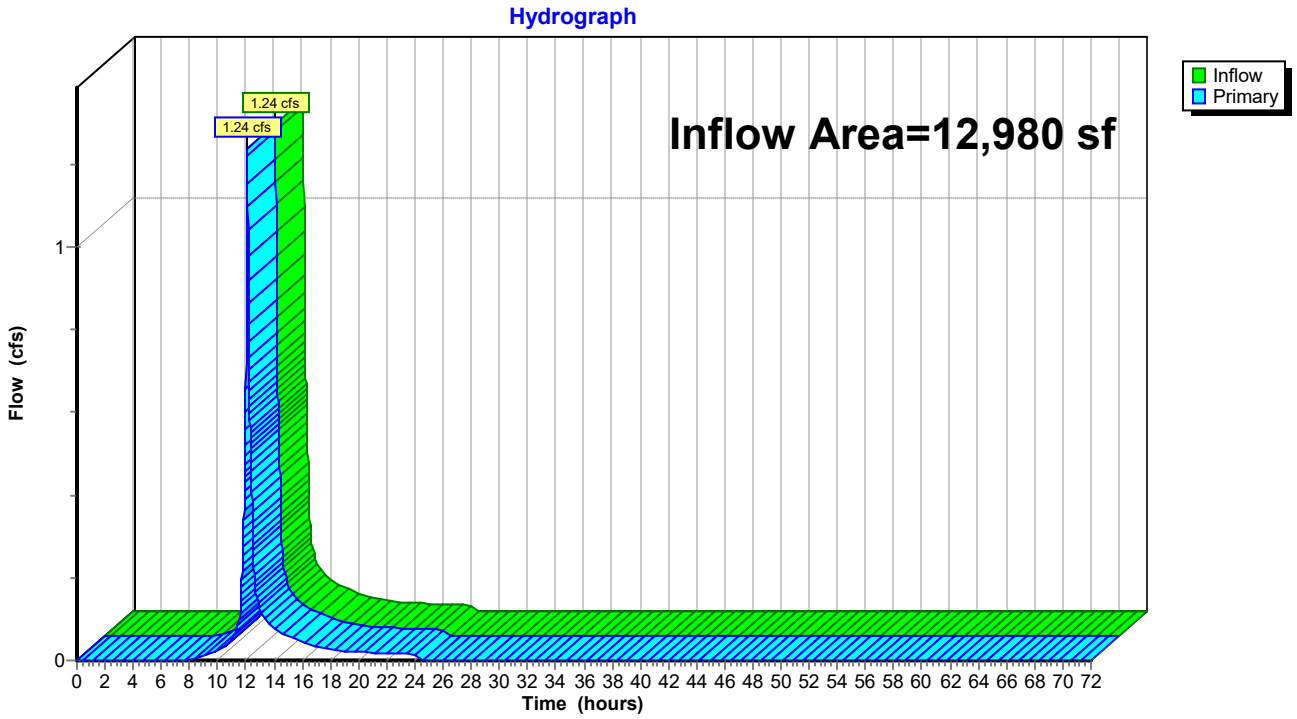


Summary for Pond DP-13p: Residential West#2

Inflow Area = 12,980 sf, 0.00% Impervious, Inflow Depth = 3.54" for 100yr event
Inflow = 1.24 cfs @ 12.09 hrs, Volume= 3,825 cf
Primary = 1.24 cfs @ 12.10 hrs, Volume= 3,825 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-13p: Residential West#2

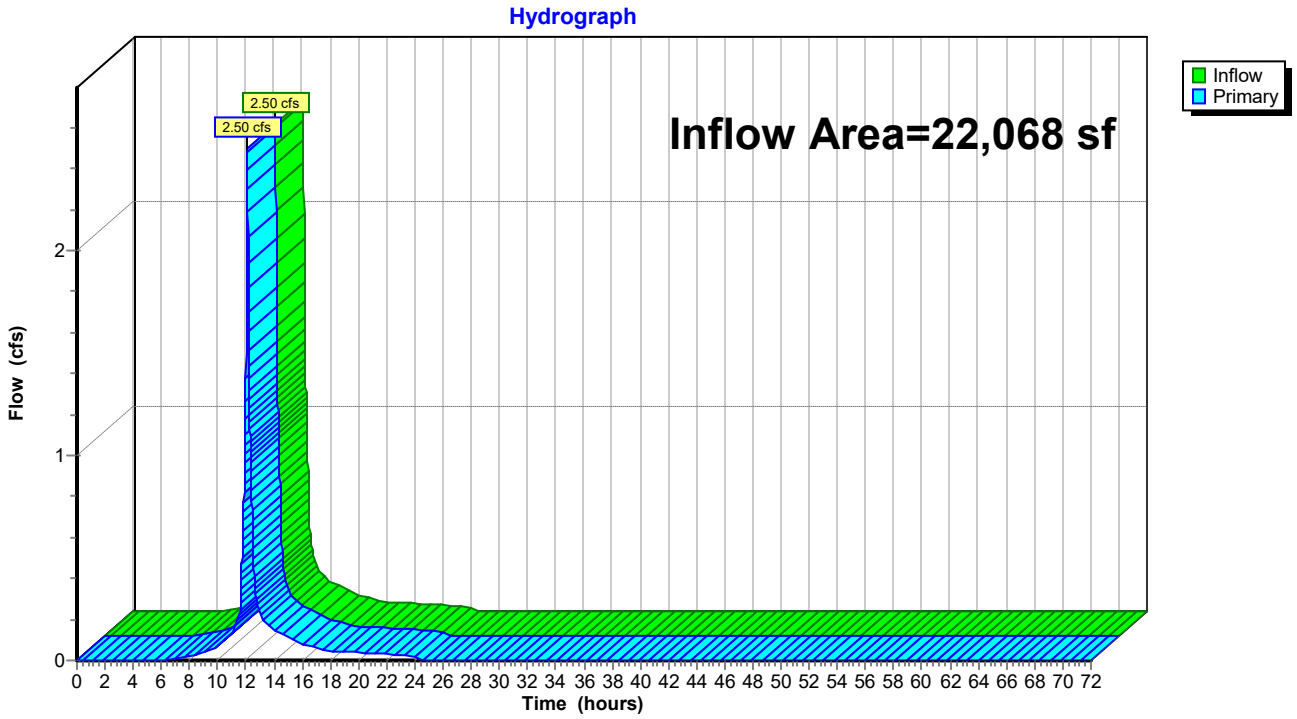


Summary for Pond DP-14p: Woods to West

Inflow Area = 22,068 sf, 26.18% Impervious, Inflow Depth = 4.26" for 100yr event
Inflow = 2.50 cfs @ 12.09 hrs, Volume= 7,832 cf
Primary = 2.50 cfs @ 12.10 hrs, Volume= 7,832 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-14p: Woods to West

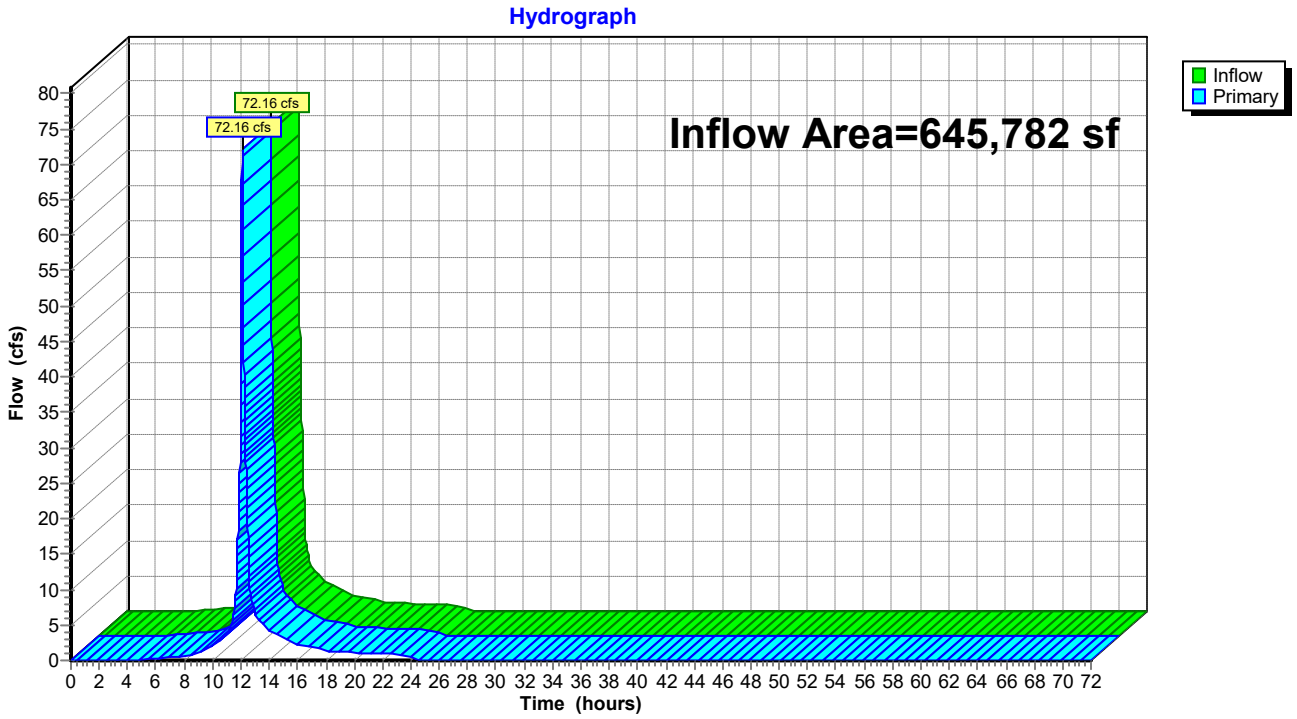


Summary for Pond DP-15p: Wetlands

Inflow Area = 645,782 sf, 28.32% Impervious, Inflow Depth = 4.29" for 100yr event
Inflow = 72.16 cfs @ 12.09 hrs, Volume= 230,682 cf
Primary = 72.16 cfs @ 12.10 hrs, Volume= 230,682 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-15p: Wetlands

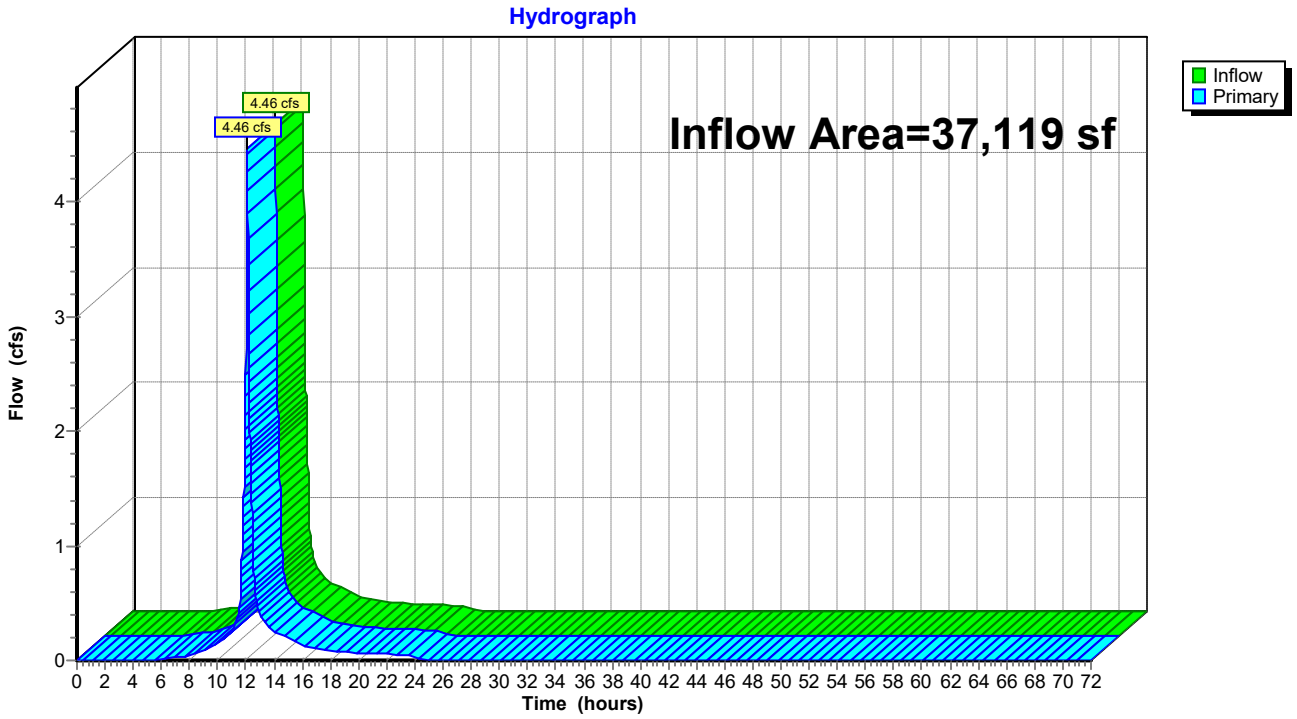


Summary for Pond DP-16p: Landry Avenue

Inflow Area = 37,119 sf, 35.73% Impervious, Inflow Depth = 4.58" for 100yr event
Inflow = 4.46 cfs @ 12.09 hrs, Volume= 14,169 cf
Primary = 4.46 cfs @ 12.10 hrs, Volume= 14,169 cf, Atten= 0%, Lag= 0.6 min

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

Pond DP-16p: Landry Avenue

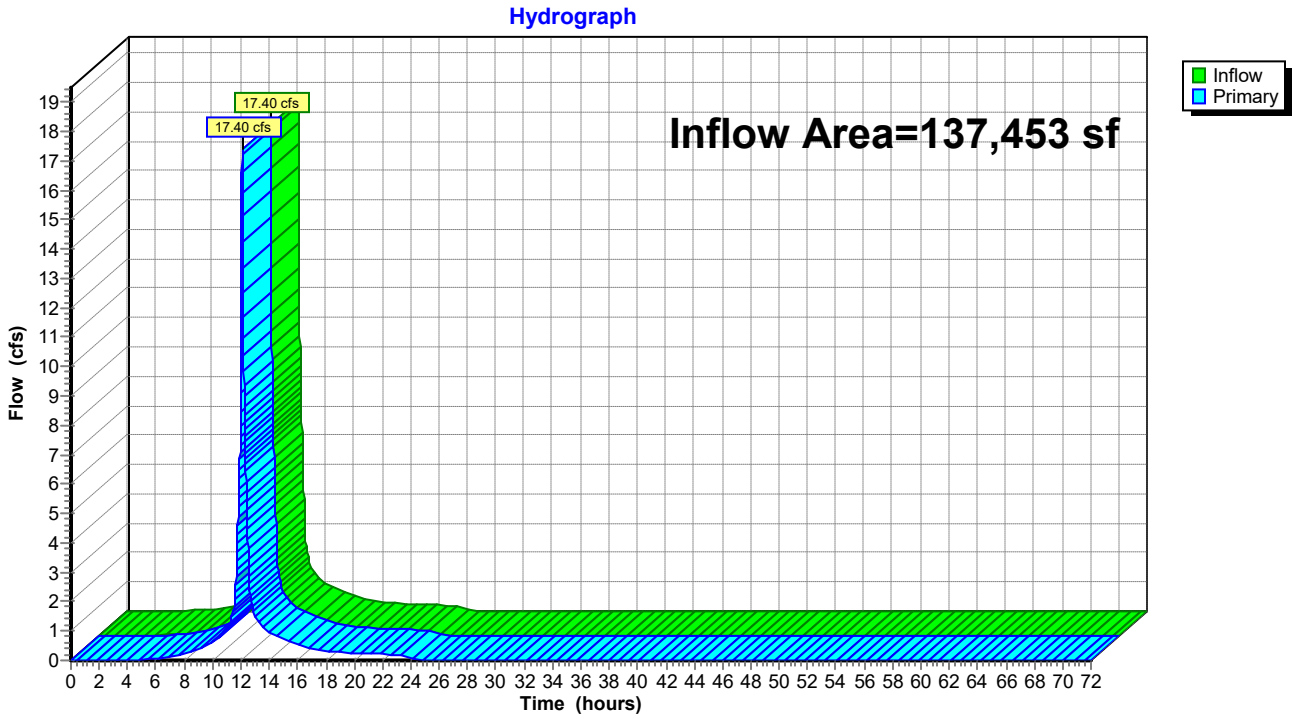


Summary for Pond EC: Exist Underground Chambers

Inflow Area = 137,453 sf, 54.04% Impervious, Inflow Depth = 4.91" for 100yr event
Inflow = 17.40 cfs @ 12.08 hrs, Volume= 56,241 cf
Primary = 17.40 cfs @ 12.09 hrs, Volume= 56,241 cf, Atten= 0%, Lag= 0.6 min

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

Pond EC: Exist Underground Chambers



Summary for Pond UGI-6: UGI-6

Inflow Area = 204,095 sf, 86.57% Impervious, Inflow Depth = 5.66" for 100yr event
Inflow = 27.96 cfs @ 12.08 hrs, Volume= 96,248 cf
Outflow = 9.74 cfs @ 12.35 hrs, Volume= 93,489 cf, Atten= 65%, Lag= 16.1 min
Discarded = 0.09 cfs @ 12.35 hrs, Volume= 21,020 cf
Primary = 9.66 cfs @ 12.35 hrs, Volume= 72,468 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 238.14' @ 12.35 hrs Surf.Area= 21,560 sf Storage= 43,946 cf

Plug-Flow detention time= 443.9 min calculated for 93,489 cf (97% of inflow)
Center-of-Mass det. time= 426.2 min (1,185.6 - 759.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	235.00'	18,927 cf	**357.75'W x 60.27'L x 3.50'H Field A** 75,461 cf Overall - 28,143 cf Embedded = 47,318 cf x 40.0% Voids
#2A	235.50'	28,143 cf	**Cultec R-300HD** x 600 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 600 Chambers in 75 Rows Cap Storage= +2.7 cf x 2 x 75 rows = 398.2 cf
		47,071 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	236.10'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	235.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 1.00' Phase-In= 0.10'

Discarded OutFlow Max=0.09 cfs @ 12.35 hrs HW=238.14' (Free Discharge)
↑└**2=Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=9.66 cfs @ 12.35 hrs HW=238.14' TW=234.84' (Dynamic Tailwater)
↑└**1=Orifice/Grate** (Orifice Controls 9.66 cfs @ 5.46 fps)

Pond UGI-6: UGI-6 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 75 rows = 398.2 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

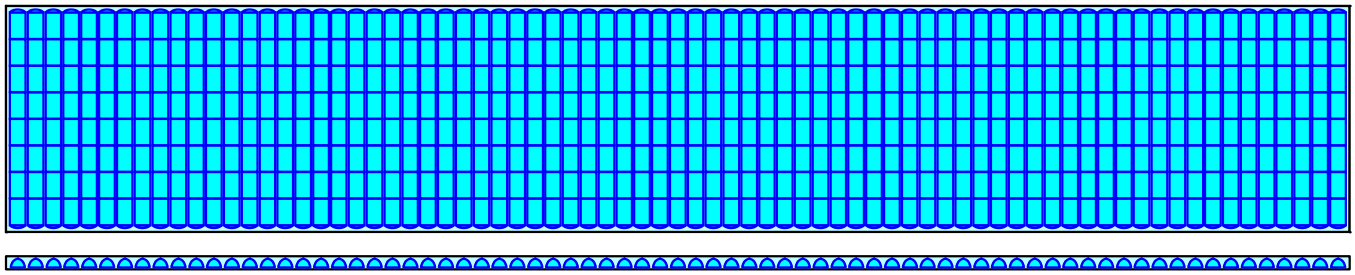
8 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 58.27' Row Length +12.0" End Stone x 2 = 60.27' Base Length
75 Rows x 51.0" Wide + 6.0" Spacing x 74 + 12.0" Side Stone x 2 = 357.75' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

600 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 75 Rows = 28,143.4 cf Chamber Storage

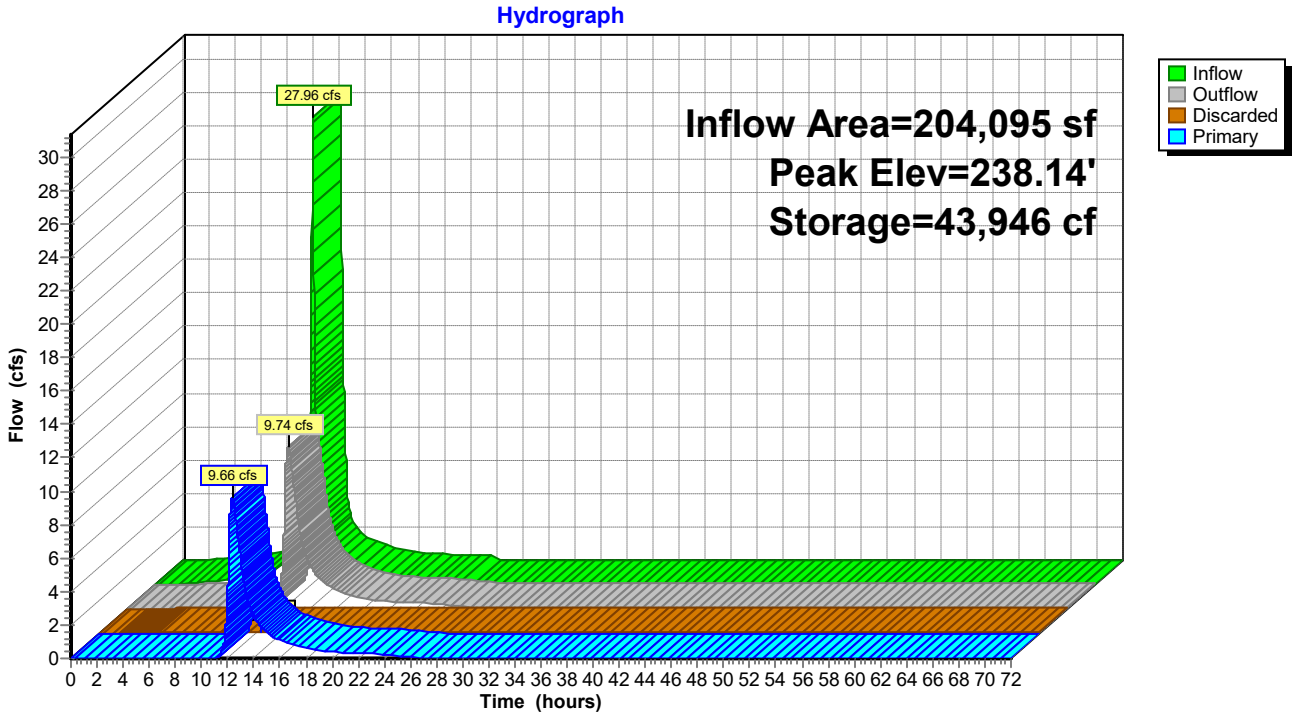
75,461.4 cf Field - 28,143.4 cf Chambers = 47,318.0 cf Stone x 40.0% Voids = 18,927.2 cf Stone Storage

Chamber Storage + Stone Storage = 47,070.6 cf = 1.081 af
Overall Storage Efficiency = 62.4%
Overall System Size = 60.27' x 357.75' x 3.50'

600 Chambers
2,794.9 cy Field
1,752.5 cy Stone



Pond UGI-6: UGI-6



Summary for Pond UGI-7: UGI-7

Inflow Area = 226,112 sf, 78.14% Impervious, Inflow Depth = 2.07" for 100yr event
Inflow = 4.81 cfs @ 12.29 hrs, Volume= 38,976 cf
Outflow = 4.80 cfs @ 12.33 hrs, Volume= 37,184 cf, Atten= 0%, Lag= 2.6 min
Discarded = 0.00 cfs @ 12.33 hrs, Volume= 189 cf
Primary = 4.80 cfs @ 12.33 hrs, Volume= 36,995 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.74' @ 12.33 hrs Surf.Area= 2,040 sf Storage= 3,271 cf

Plug-Flow detention time= 54.4 min calculated for 37,184 cf (95% of inflow)
Center-of-Mass det. time= 27.3 min (890.7 - 863.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	232.40'	1,838 cf	**44.25'W x 46.10'L x 3.50'H Field A** 7,140 cf Overall - 2,545 cf Embedded = 4,595 cf x 40.0% Voids
#2A	232.90'	2,545 cf	**Cultec R-300HD** x 54 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 54 Chambers in 9 Rows Cap Storage= +2.7 cf x 2 x 9 rows = 47.8 cf
		4,383 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	232.40'	**0.017 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = -1.60'
#2	Primary	233.80'	**24.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.00 cfs @ 12.33 hrs HW=234.74' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=4.80 cfs @ 12.33 hrs HW=234.74' TW=0.00' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Orifice Controls 4.80 cfs @ 3.30 fps)

Pond UGI-7: UGI-7 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 9 rows = 47.8 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

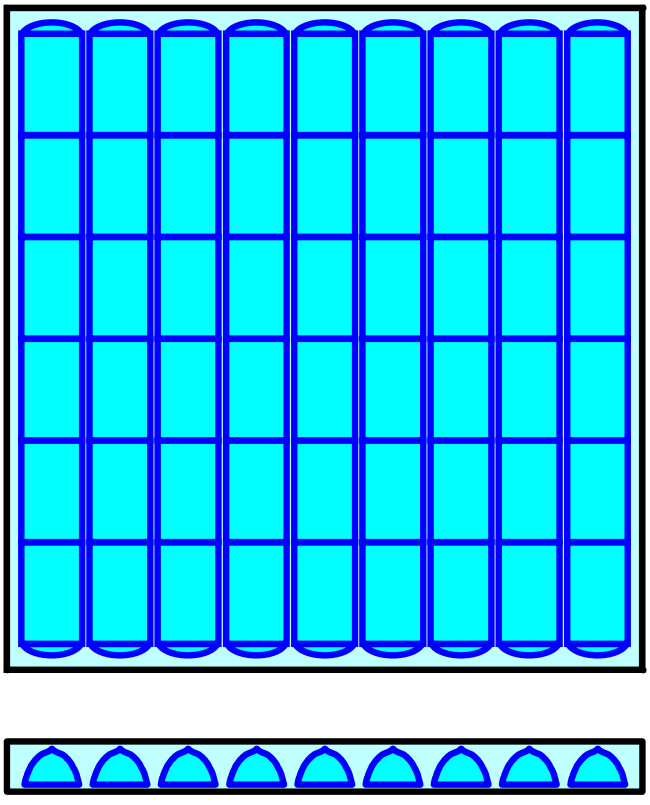
6 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 44.10' Row Length +12.0" End Stone x 2 = 46.10' Base Length
9 Rows x 51.0" Wide + 6.0" Spacing x 8 + 12.0" Side Stone x 2 = 44.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

54 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 9 Rows = 2,544.9 cf Chamber Storage

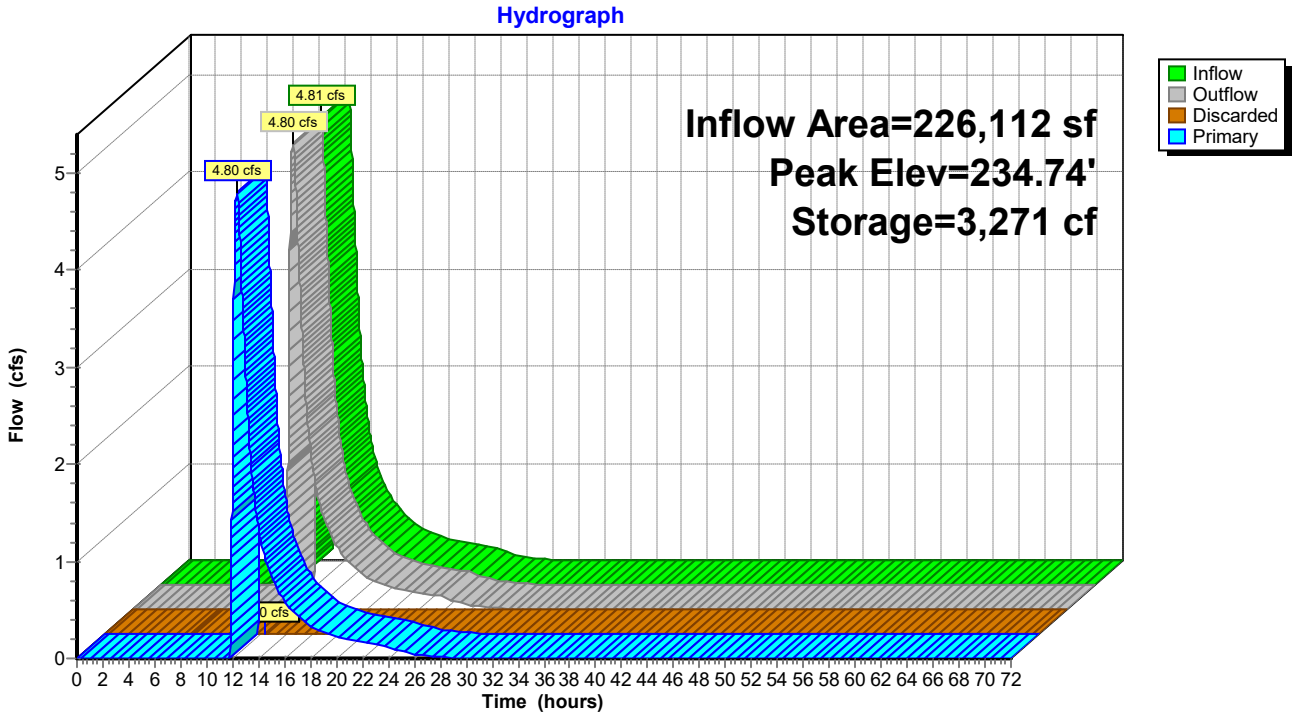
7,139.7 cf Field - 2,544.9 cf Chambers = 4,594.9 cf Stone x 40.0% Voids = 1,838.0 cf Stone Storage

Chamber Storage + Stone Storage = 4,382.8 cf = 0.101 af
Overall Storage Efficiency = 61.4%
Overall System Size = 46.10' x 44.25' x 3.50'

54 Chambers
264.4 cy Field
170.2 cy Stone



Pond UGI-7: UGI-7



Summary for Pond UGI-8: UGI-8

Inflow Area = 71,980 sf, 79.90% Impervious, Inflow Depth = 8.72" for 100yr event
Inflow = 8.11 cfs @ 12.10 hrs, Volume= 52,316 cf
Outflow = 7.27 cfs @ 12.16 hrs, Volume= 52,234 cf, Atten= 10%, Lag= 3.3 min
Discarded = 0.02 cfs @ 12.16 hrs, Volume= 4,172 cf
Primary = 7.25 cfs @ 12.16 hrs, Volume= 48,061 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 233.69' @ 12.16 hrs Surf.Area= 4,339 sf Storage= 5,061 cf

Plug-Flow detention time= 138.7 min calculated for 52,234 cf (100% of inflow)
Center-of-Mass det. time= 137.3 min (975.0 - 837.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	232.00'	3,838 cf	**39.50'W x 109.85'L x 3.50'H Field A** 15,187 cf Overall - 5,592 cf Embedded = 9,595 cf x 40.0% Voids
#2A	232.50'	5,592 cf	**Cultec R-300HD** x 120 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 120 Chambers in 8 Rows Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf
		9,430 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	232.50'	**24.0" Vert. Orifice/Grate** C= 0.600
#2	Device 1	233.00'	**4.0' long x 3.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	232.00'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = -2.00' Phase-In= 0.10'

Discarded OutFlow Max=0.02 cfs @ 12.16 hrs HW=233.69' (Free Discharge)
└**3=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=7.25 cfs @ 12.16 hrs HW=233.69' TW=0.00' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 7.25 cfs @ 3.72 fps)
└**2=Sharp-Crested Rectangular Weir** (Passes 7.25 cfs of 7.26 cfs potential flow)

Pond UGI-8: UGI-8 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 8 rows = 42.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

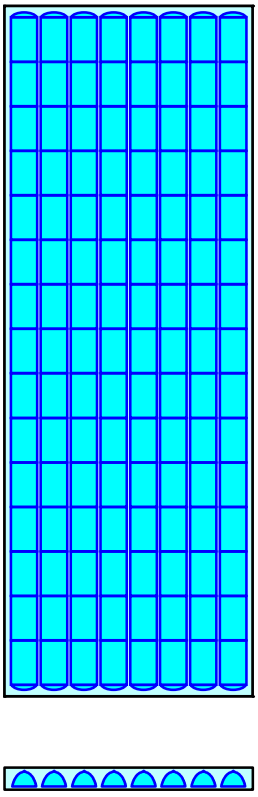
15 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 107.85' Row Length +12.0" End Stone x 2 = 109.85' Base Length
8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

120 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 8 Rows = 5,591.5 cf Chamber Storage

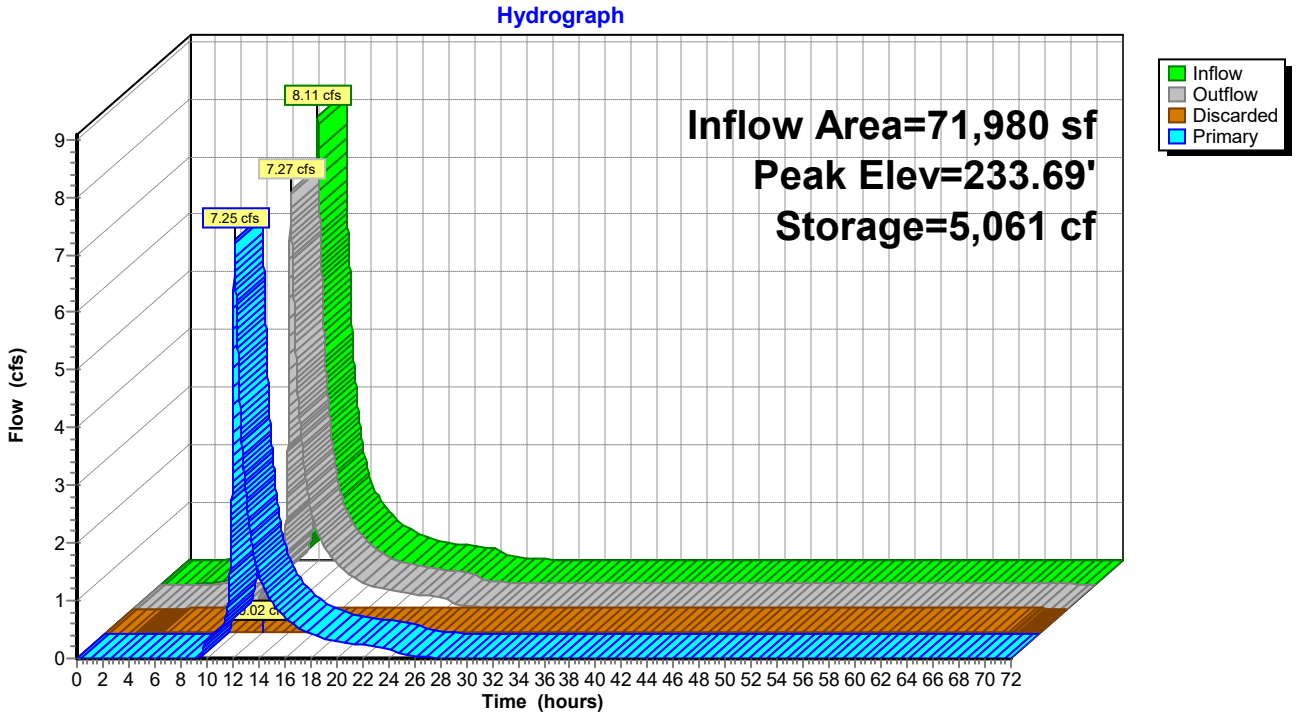
15,186.8 cf Field - 5,591.5 cf Chambers = 9,595.2 cf Stone x 40.0% Voids = 3,838.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,429.6 cf = 0.216 af
Overall Storage Efficiency = 62.1%
Overall System Size = 109.85' x 39.50' x 3.50'

120 Chambers
562.5 cy Field
355.4 cy Stone



Pond UGI-8: UGI-8



Summary for Pond UGI-9: UGI-9

Inflow Area = 462,627 sf, 84.24% Impervious, Inflow Depth = 5.61" for 100yr event
Inflow = 62.43 cfs @ 12.08 hrs, Volume= 216,231 cf
Outflow = 8.32 cfs @ 12.61 hrs, Volume= 206,843 cf, Atten= 87%, Lag= 31.5 min
Discarded = 0.27 cfs @ 12.61 hrs, Volume= 65,473 cf
Primary = 8.05 cfs @ 12.61 hrs, Volume= 141,370 cf

Routing by Sim-Route method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 239.15' @ 12.61 hrs Surf.Area= 66,884 sf Storage= 123,484 cf

Plug-Flow detention time= 649.4 min calculated for 206,843 cf (96% of inflow)
Center-of-Mass det. time= 623.6 min (1,380.3 - 756.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	236.50'	57,463 cf	**239.00'W x 279.85'L x 3.50'H Field A** 234,095 cf Overall - 90,437 cf Embedded = 143,657 cf x 40.0% Voids
#2A	237.00'	90,437 cf	**Cultec R-300HD** x 1950 Inside #1 Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap 1950 Chambers in 50 Rows Cap Storage= +2.7 cf x 2 x 50 rows = 265.5 cf
		147,900 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	237.50'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	236.50'	**0.170 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 2.50' Phase-In= 0.10'

Discarded OutFlow Max=0.27 cfs @ 12.61 hrs HW=239.15' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.27 cfs)

Primary OutFlow Max=8.05 cfs @ 12.61 hrs HW=239.15' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 8.05 cfs @ 4.56 fps)

Pond UGI-9: UGI-9 - Chamber Wizard Field A

Chamber Model = Cultec R-300HD (Cultec Recharger® 300HD)
Effective Size= 45.6"W x 30.0"H => 6.53 sf x 7.08'L = 46.2 cf
Overall Size= 51.0"W x 30.0"H x 7.54'L with 0.46' Overlap
Cap Storage= +2.7 cf x 2 x 50 rows = 265.5 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

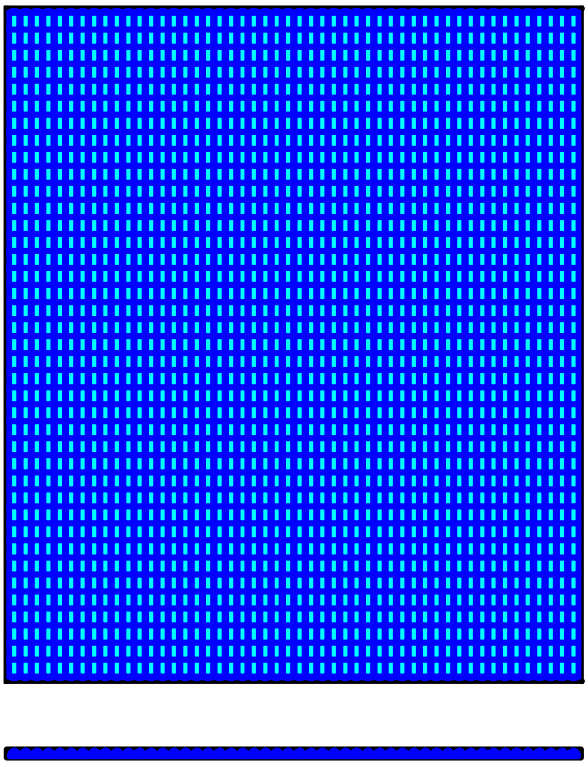
39 Chambers/Row x 7.08' Long +0.80' Cap Length x 2 = 277.85' Row Length +12.0" End Stone x 2 = 279.85' Base Length
50 Rows x 51.0" Wide + 6.0" Spacing x 49 + 12.0" Side Stone x 2 = 239.00' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

1,950 Chambers x 46.2 cf + 2.7 cf Cap Volume x 2 x 50 Rows = 90,437.3 cf Chamber Storage

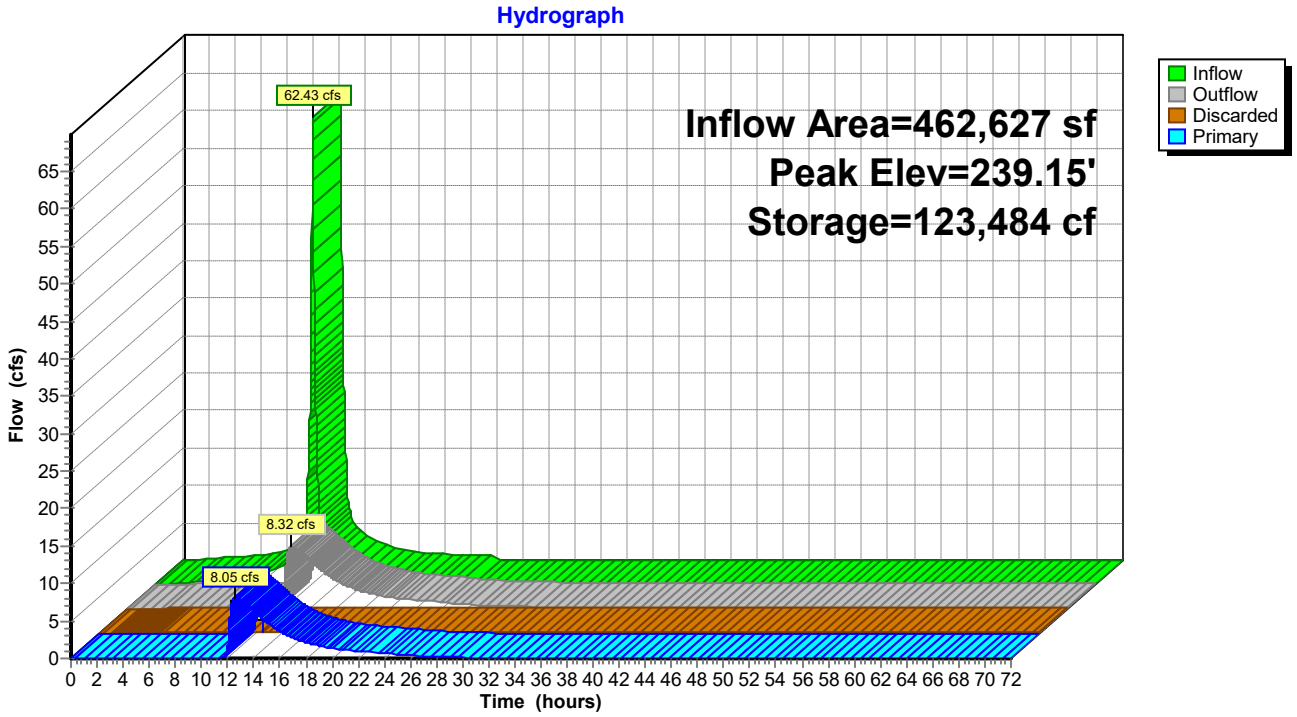
234,094.5 cf Field - 90,437.3 cf Chambers = 143,657.2 cf Stone x 40.0% Voids = 57,462.9 cf Stone Storage

Chamber Storage + Stone Storage = 147,900.2 cf = 3.395 af
Overall Storage Efficiency = 63.2%
Overall System Size = 279.85' x 239.00' x 3.50'

1,950 Chambers
8,670.2 cy Field
5,320.6 cy Stone



Pond UGI-9: UGI-9



INSTRUCTIONS:

Non-automated: Mar. 4, 2008

1. Sheet is nonautomated. Print sheet and complete using hand calculations. Column A and B: See MassDEP Structural BMP Table
2. The calculations must be completed using the Column Headings specified in Chart and Not the Excel Column Headings
3. To complete Chart Column D, multiple Column B value within Row x Column C value within Row
4. To complete Chart Column E value, subtract Column D value within Row from Column C within Row
5. Total TSS Removal = Sum All Values in Column D

Location: Underground System (DP-1)

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Underground System to DP-1	**0.80**	**1.00**	**0.80**	**0.20**

Total TSS Removal = **80%**

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

Project: North Attleborough High School

Prepared By: CDW

Date: 12/23/2025

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

INSTRUCTIONS:

Non-automated: Mar. 4, 2008

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3. To complete Chart Column D, multiple Column B value within Row x Column C value within Row
4. To complete Chart Column E value, subtract Column D value within Row from Column C within Row
5. Total TSS Removal = Sum All Values in Column D

Location: Underground System (DP-2)

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Underground System to DP-2	**0.80**	**1.00**	**0.80**	**0.20**

Total TSS Removal = **80%**

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

Project: North Attleborough High School

Prepared By: CDW

Date: 12/23/2025

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

INSTRUCTIONS:

Non-automated: Mar. 4, 2008

1. Sheet is nonautomated. Print sheet and complete using hand calculations. Column A and B: See MassDEP Structural BMP Table
2. The calculations must be completed using the Column Headings specified in Chart and Not the Excel Column Headings
3. To complete Chart Column D, multiple Column B value within Row x Column C value within Row
4. To complete Chart Column E value, subtract Column D value within Row from Column C within Row
5. Total TSS Removal = Sum All Values in Column D

Location: Underground System (DP-4)

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Underground System to DP-4	**0.80**	**1.00**	**0.80**	**0.20**

Total TSS Removal = **80%**

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

Project: North Attleborough High School

Prepared By: CDW

Date: 12/23/2025

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

INSTRUCTIONS:

Non-automated: Mar. 4, 2008

1. Sheet is nonautomated. Print sheet and complete using hand calculations. Column A and B: See MassDEP Structural BMP Table
2. The calculations must be completed using the Column Headings specified in Chart and Not the Excel Column Headings
3. To complete Chart Column D, multiple Column B value within Row x Column C value within Row
4. To complete Chart Column E value, subtract Column D value within Row from Column C within Row
5. Total TSS Removal = Sum All Values in Column D

Location: Underground System (DP-10)

TSS Removal Calculation Worksheet

A BMP[1]	B TSS Removal Rate[1]	C Starting TSS Load*	D Amount Removed (B*C)	E Remaining Load (C-D)
Underground System to DP-10	**0.80**	**1.00**	**0.80**	**0.20**

Total TSS Removal = **80%**

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

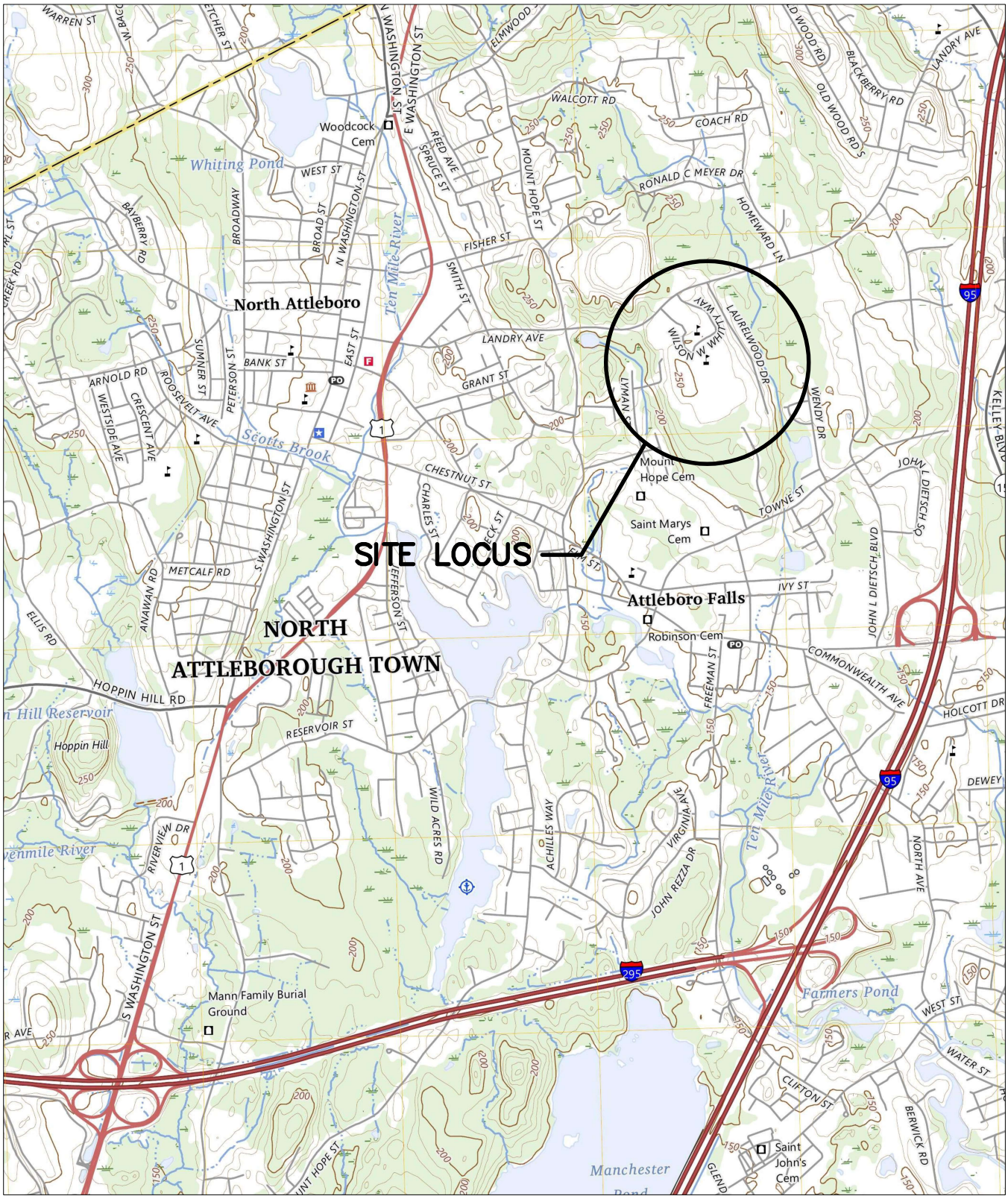
Project: North Attleborough High School

Prepared By: CDW

Date: 12/23/2025

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

MAPS & PLANS



CDW CONSULTANTS, INC.

LOCUS MAP

NORTH ATTLEBOROUGH HIGH SCHOOL
1 WILSON W WHITTY WAY
NORTH ATTLEBOROUGH, MA 02760

DATE:12/1/2025

PROJ NO.: 2145.00
SCALE: NTS

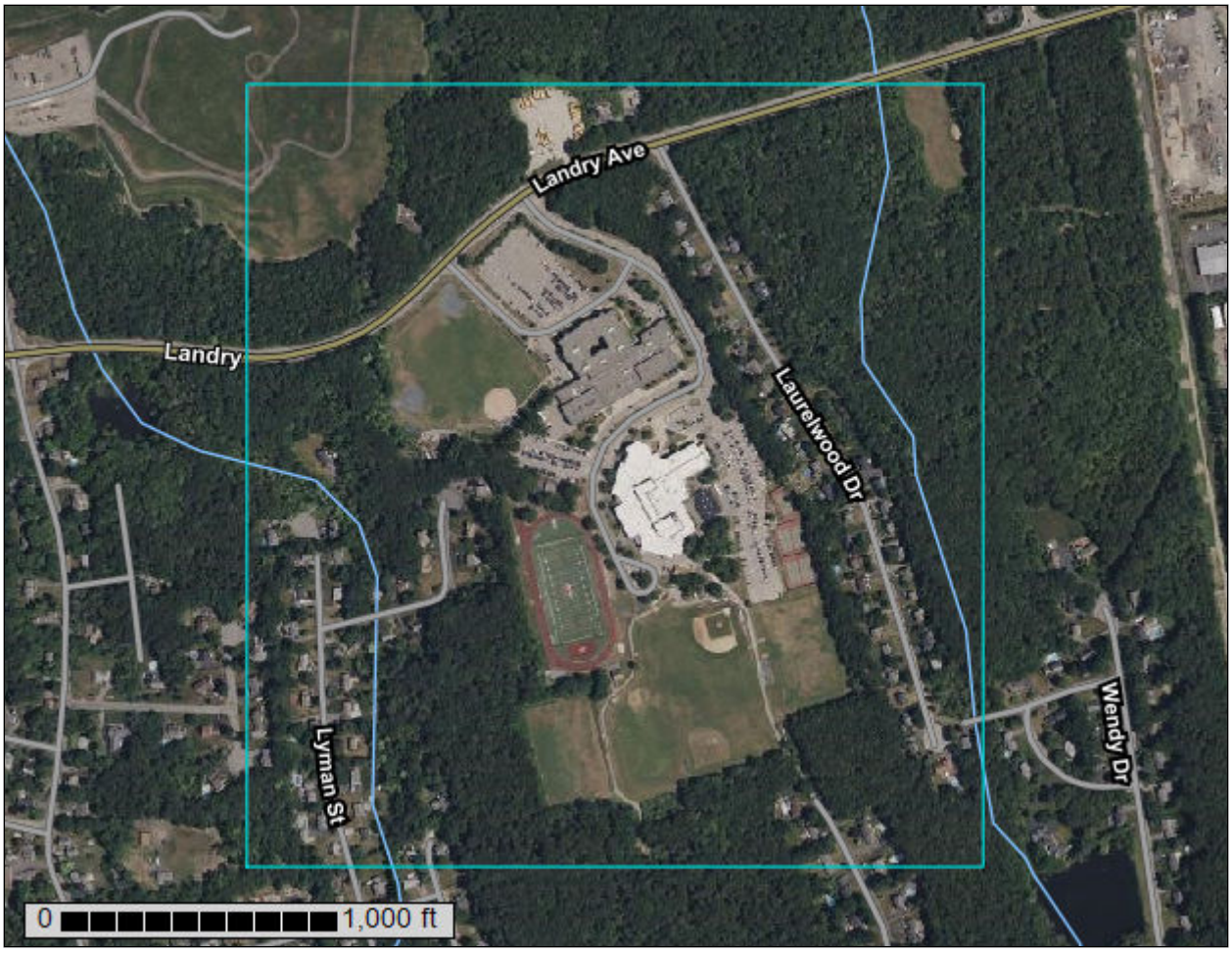
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Bristol County, Massachusetts, Northern Part



December 3, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

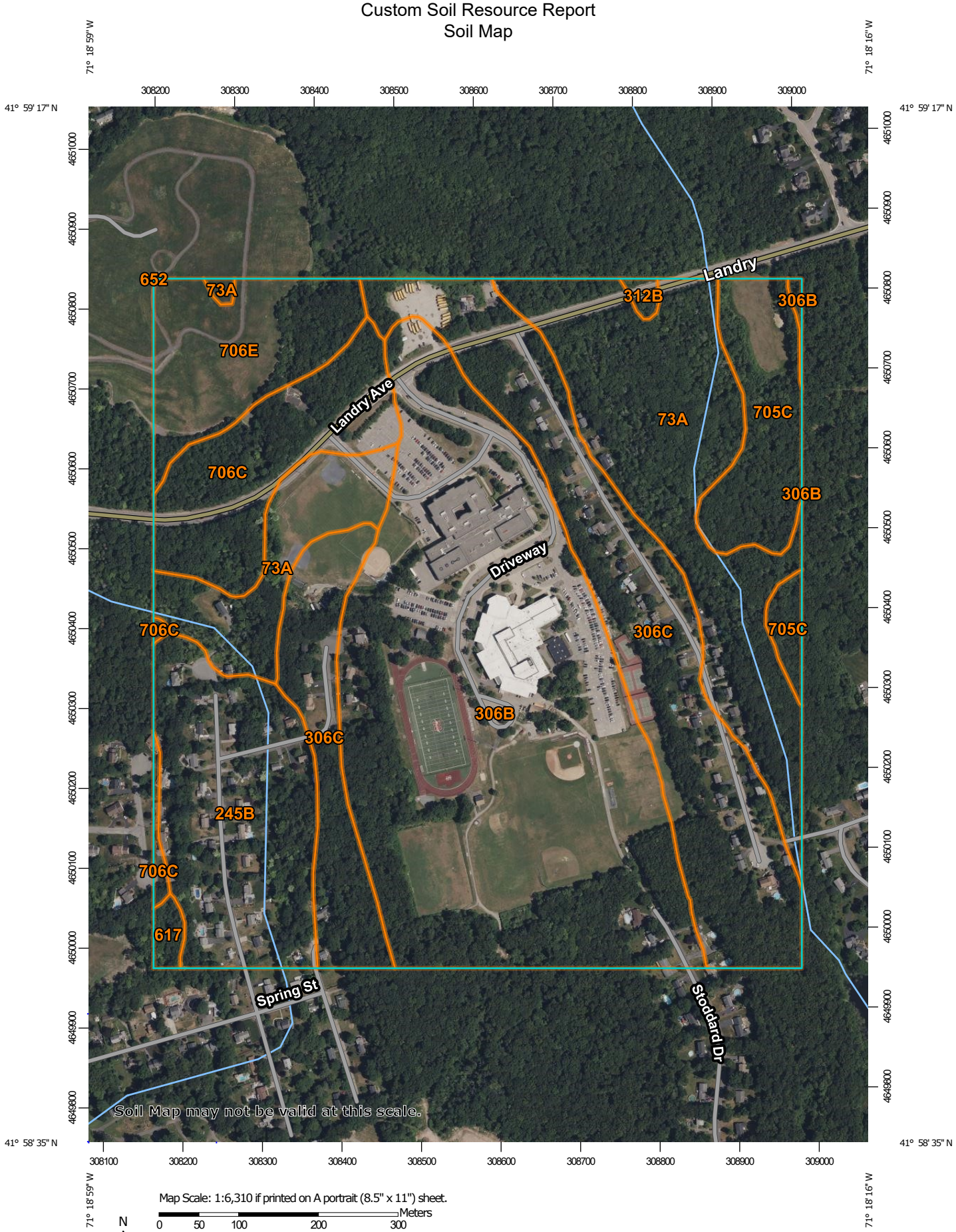
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Bristol County, Massachusetts, Northern Part
Survey Area Data: Version 17, Aug 27, 2024

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

Date(s) aerial images were photographed: Jun 14, 2022—Jul 1, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
73A	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	31.3	17.9%
245B	Hinckley loamy sand, 3 to 8 percent slopes	17.4	10.0%
306B	Paxton fine sandy loam, 0 to 8 percent slopes, very stony	58.7	33.6%
306C	Paxton fine sandy loam, 8 to 15 percent slopes, very stony	34.7	19.9%
312B	Woodbridge fine sandy loam, 0 to 8 percent slopes, extremely stony	0.4	0.2%
617	Pits - Udorthents complex, gravelly	0.8	0.4%
652	Udorthents, refuse substratum (Dumps/Landfill)	0.0	0.0%
705C	Charlton-Paxton fine sandy loams, 8 to 15 percent slopes, very rocky	9.1	5.2%
706C	Charlton-Rock outcrop-Paxton complex, 3 to 15 percent slopes	12.0	6.9%
706E	Charlton-Rock outcrop-Paxton complex, 15 to 35 percent slopes	10.1	5.8%
Totals for Area of Interest		**174.5**	**100.0%**

Map Unit Descriptions

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

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

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

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

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

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

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

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion

of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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

Bristol County, Massachusetts, Northern Part

73A—Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w695
Elevation: 0 to 1,580 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Whitman, extremely stony, and similar soils: 81 percent
Minor components: 19 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whitman, Extremely Stony

Setting

Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 1 inches: peat
A - 1 to 10 inches: fine sandy loam
Bg - 10 to 17 inches: gravelly fine sandy loam
Cdg - 17 to 61 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 7 to 38 inches to densic material
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY041MA - Very Wet Till Depressions
Hydric soil rating: Yes

Minor Components

Ridgebury, extremely stony

Percent of map unit: 10 percent
Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Drainageways, depressions, outwash terraces, outwash deltas
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 3 percent
Landform: Marshes, bogs, swamps
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Woodbridge, extremely stony

Percent of map unit: 1 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

245B—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, kames, kame terraces, moraines, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Side slope, crest, nose slope, base slope, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Side slope, crest, nose slope, base slope, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent

Landform: Outwash deltas, outwash terraces, moraines, outwash plains, kame terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, head slope, base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Agawam

Percent of map unit: 2 percent
Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Side slope, crest, nose slope, base slope, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

306B—Paxton fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w673
Elevation: 0 to 1,340 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Paxton, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Very Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam

Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, very stony

Percent of map unit: 8 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 4 percent
Landform: Drumlins, drainageways, depressions, hills, ground moraines
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Charlton, very stony

Percent of map unit: 3 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

306C—Paxton fine sandy loam, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w677
Elevation: 0 to 1,330 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Paxton, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Very Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, very stony
Percent of map unit: 8 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Charlton, very stony
Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony
Percent of map unit: 2 percent
Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

312B—Woodbridge fine sandy loam, 0 to 8 percent slopes, extremely stony

Map Unit Setting
National map unit symbol: 2t2qs
Elevation: 0 to 1,580 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Woodbridge, extremely stony, and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Extremely Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 9 inches: fine sandy loam
Bw1 - 9 to 20 inches: fine sandy loam
Bw2 - 20 to 32 inches: fine sandy loam
Cd - 32 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 19 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton, extremely stony

Percent of map unit: 10 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 8 percent
Landform: Hills, drainageways, drumlins, depressions, ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave

Across-slope shape: Concave
Hydric soil rating: Yes

617—Pits - Udorthents complex, gravelly

Map Unit Setting

National map unit symbol: tghf
Elevation: 0 to 3,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 120 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Pits, gravelly: 60 percent
Udorthents, gravelly, and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pits, Gravelly

Typical profile

H1 - 0 to 6 inches: extremely gravelly sand
H2 - 6 to 60 inches: very gravelly coarse sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Description of Udorthents, Gravelly

Typical profile

H1 - 0 to 6 inches: variable
H2 - 6 to 60 inches: variable

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: Unranked

652—Udorthents, refuse substratum (Dumps/Landfill)

Map Unit Setting

National map unit symbol: 9983
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Dumps: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Hadley

Percent of map unit: 5 percent
Hydric soil rating: No

Udorthents

Percent of map unit: 5 percent
Hydric soil rating: Unranked

705C—Charlton-Paxton fine sandy loams, 8 to 15 percent slopes, very rocky

Map Unit Setting

National map unit symbol: 2x1k2
Elevation: 0 to 310 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton, very stony, and similar soils: 50 percent
Paxton, very stony, and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope

Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Paxton, Very Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, very stony

Percent of map unit: 8 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Gloucester, very stony

Percent of map unit: 5 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 4 percent
Landform: Ground moraines, hills, drainageways, drumlins, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 3 percent
Landform: Ridges, hills
Hydric soil rating: No

706C—Charlton-Rock outcrop-Paxton complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2x1k5
Elevation: 0 to 340 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton, extremely stony, and similar soils: 35 percent
Rock outcrop: 25 percent
Paxton, extremely stony, and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton, Extremely Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ridges, hills
Parent material: Igneous and metamorphic rock

Typical profile

R - 0 to 79 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Paxton, Extremely Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches

Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Montauk, extremely stony

Percent of map unit: 7 percent
Landform: Hills, recessionial moraines, ground moraines, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge, extremely stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 4 percent
Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Gloucester, extremely stony

Percent of map unit: 4 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

706E—Charlton-Rock outcrop-Paxton complex, 15 to 35 percent slopes

Map Unit Setting

National map unit symbol: 2x1k4
Elevation: 0 to 390 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton, extremely stony, and similar soils: 35 percent
Rock outcrop: 25 percent
Paxton, extremely stony, and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton, Extremely Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ridges, hills
Parent material: Igneous and metamorphic rock

Typical profile

R - 0 to 79 inches: bedrock

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Paxton, Extremely Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches

Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Montauk, extremely stony

Percent of map unit: 6 percent
Landform: Hills, recessionial moraines, ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Gloucester, extremely stony

Percent of map unit: 6 percent
Landform: Ground moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge, extremely stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 3 percent
Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

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LGCI
Lahlaf Geotechnical Consulting, Inc.

October 15, 2025

Mr. Roberto W. Fitzgerald
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Newburyport, MA 01950
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Fax: (978) 499-2944
E-mail: rfitzgerald@DoreandWhittier.com

Re: **Geotechnical Report**
Proposed North Attleborough High School
North Attleborough, Massachusetts
LGCI Project No. 2407

Dear Mr. Fitzgerald:

Lahlaf Geotechnical Consulting, Inc. (LGCI) has completed a geotechnical study for the proposed North Attleborough High School in North Attleborough, Massachusetts. We are submitting our geotechnical report electronically.

The soil samples and rock cores from our explorations are currently stored at LGCI for further analysis, if requested. Unless notified otherwise, we will dispose of the soil samples and rock cores after three (3) months.

Thank you for choosing LGCI as your geotechnical engineer.

Very truly yours,

Lahlaf Geotechnical Consulting, Inc.

Abdelmadjid M. Lahlaf, Ph.D., P.E.
Principal Engineer

LGCI
Lahlaf Geotechnical Consulting, Inc.

GEOTECHNICAL REPORT
PROPOSED NORTH ATTLEBOROUGH HIGH SCHOOL
NORTH ATTLEBOROUGH, MASSACHUSETTS

LGCI Project No. 2407
October 15, 2025

Prepared for:

Dore & Whittier Architects, Inc.
260 Merrimack Street
Building 7, 2nd Floor
Newburyport, MA 01950
Phone: (802) 863-1428 Ext. 241

GEOTECHNICAL REPORT
PROPOSED NORTH ATTLEBOROUGH HIGH SCHOOL
NORTH ATTLEBOROUGH, MASSACHUSETTS
LGCI Project No. 2407
October 15, 2025

Prepared for:

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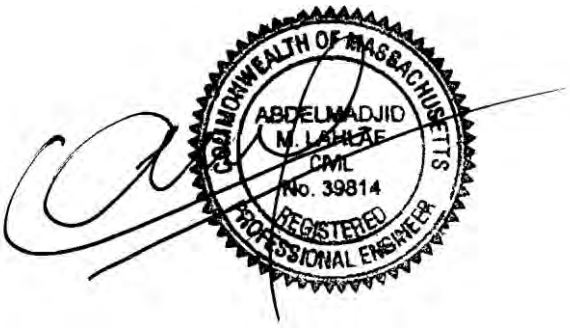

Abdelmadjid M. Lahlaf, Ph.D., P.E.
Principal Engineer

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1. PROJECT INFORMATION

1.1 Project Authorization

This geotechnical report presents the results of the subsurface explorations and a geotechnical evaluation performed by Lahlaf Geotechnical Consulting, Inc. (LGCI) for the proposed North Attleborough High School in North Attleborough, Massachusetts. We performed our services for this project in two (2) phases as described below:

We performed our preliminary phase services in general accordance with our proposal No. 24011 dated January 26, 2024, and in general accordance with the terms and conditions of the Standard Form of Agreement Between Architect and Consultant (Agreement) between Dore & Whittier Architects, Inc. (Dore & Whittier) and LGCI dated February 6, 2024. Mr. Donald M. Walter of Dore & Whittier authorized our services by signing the Agreement.

We performed our Design Development (DD) phase services in accordance with our proposal No. 25032-Rev. 3 dated March 18, 2025, revised on August 2, 2025, and in accordance with the terms and conditions of the Amendment to the Consultant Services Agreement dated August 7, 2025 (Amendment). Mr. Donald M. Walter of Dore & Whittier authorized our services by signing the Amendment on August 18, 2025.

1.2 Purpose and Scope of Services

The purpose of our geotechnical services was to perform subsurface explorations at the site for the proposed North Attleborough High School, and to provide foundation design and construction recommendations. LGCI performed the following services:

- Coordinated our exploration locations with Dore & Whittier and with the North Attleborough high school staff.

- Marked the exploration locations at the site and notified Dig Safe Systems, Inc. (Dig Safe) and the Town of North Attleborough for utility clearance prior to the start of our explorations.

- Engaged a drilling subcontractor to advance sixty-eight (68) soil borings at the site including nine (9) soil borings as part of our preliminary phase services and fifty-nine (59) soil borings as part of our DD phase services. Our drilling subcontractor installed two (2) groundwater observation wells in two (2) borings (one each) as part of our preliminary phase services.

- Engaged an excavation subcontractor and coordinated with the Town of North Attleborough Department of Public Works (DPW) to excavate twenty (20) test pits at the site including seven (7) test pits as part of our preliminary phase services and thirteen (13) test pits as part of our DD phase services.

- Provided an LGCI geotechnical field representative at the site to coordinate and observe the borings and test pits, describe the soil samples and rock cores, and prepare field logs.

- Submitted sixteen (16) soil samples from the explorations for laboratory testing including four (4) soil samples as part of our preliminary phase services and twelve (12) soil samples as part of our DD phase services.

- Prepared this geotechnical report containing the results of our subsurface explorations and our recommendations for foundation design and construction.

Following the completion of our preliminary phase services, LGCI submitted a preliminary geotechnical report dated May 4, 2024. This geotechnical report includes the results of the preliminary geotechnical report and supersedes it.

Our scope includes preparing specifications, reviewing contract documents, attending meetings, and providing construction services. These services will be performed separately and are not included in this geotechnical report.

Recommendations for unsupported slopes, stormwater management, erosion control, pavement design, slope stability analyses, site specific seismic and liquefaction analyses, pile analysis and design, FEMA 100-year flood elevation, historic uses of site, contaminated soil and groundwater treatment and disposal requirements and techniques, and cost or quantity estimates are not included in our scope of work.

LGCI's scope of services does not include an environmental assessment for the presence or absence of wetlands or analytical testing for hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site, or mold in the soil or in any structure at the site. Any statements regarding odors, colors, or unusual or suspicious items or conditions are strictly for the information of the client.

1.3 Site Description

Our understanding of the site is based on our field observations, our discussions with Dore & Whittier and on the following document:

- Drawings VB100 to VB107 (Sheets 1 to 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," (Existing Conditions Plan) prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier via e-mail on April 29, 2024

The site is located at the existing North Attleborough High School. The existing high school is located at 1 Wilson West Whitty Way in North Attleborough, Massachusetts as shown in Figure 1. The existing high school is part of a 34-acre campus that encompasses the existing high school, the North Attleborough Middle School, athletic fields, and paved areas.

The existing high school portion of the site includes the existing two-story high school building; athletic fields, including a football field, two (2) baseball fields, two (2) soccer/lacrosse fields, a practice field, and five (5) tennis courts; and paved areas, including a parking lot on the eastern side of the existing building, a driveway, a drop-off loop, and walkways.

Based on the Existing Conditions Plan, the grades at the high school site generally rise from about El. 190 feet near the southwestern corner to about El. 250 feet near the existing building.

The grades in the existing athletic fields range between about El. 236 and El. 237 feet within the western soccer/lacrosse field; between El. 240 feet and El. 244 feet within the practice field and baseballs fields; and between El. 242 feet and El. 245 feet within the eastern soccer/lacrosse field.

The grades range between about El. 243 feet and El. 244 feet within the existing parking lot, and between El. 242 feet and El. 250 feet along the driveway around the high school building.

1.4 Project Description

Our understanding of the proposed construction is based on our discussions with Dore & Whittier, the document listed in Section 1.3, and the following drawings:

- Drawings C-3.1 to C-3.2 titled: "North Attleborough High School, Site Grading & Drainage Enlargement," (Grading Plan) prepared by CDW Consultants, dated May 1, 2025, and provided to LGCI by Dore & Whittier via e-mail on August 18, 2025.

- Drawing titled: "North Attleborough High School, Site Layout," (Site Plan) prepared by Dore & Whittier, dated February 12, 2025, and provided to LGCI by Dore & Whittier via e-mail on February 22, 2025.

- Draft Design Development Civil Drawings (Civil Drawings) prepared by CDW Consultants, dated September 17, 2025, and provided to LGCI by Dore & Whittier via e-mail on October 1, 2025.

- Draft Schematic Design Landscape Drawings (Landscape Drawings) prepared by B+S Landscape Architecture, dated March 21, 2025, and provided to LGCI by Dore & Whittier via e-mail on October 1, 2025.

- Draft Design Development Structural Drawings (Structural Drawings) prepared by Engineers Design Group (EDG), dated September 30, 2025, and provided to LGCI by Dore &Whittier via e-mail on October 1, 2025.

- Draft Design Development Architectural Drawings (Architectural Drawings) prepared by Dore & Whittier, dated October 17, 2025, and provided to LGCI by Dore & Whittier via e-mail on October 1, 2025.

We understand that the Town of North Attleborough has engaged Dore & Whittier to design the new North Attleborough High School. Based on the documents listed above in Section 1.4, we

understand that the proposed construction will consist of a new, three-story, irregularly shaped high school building with a footprint of about 113,000 square feet located in the existing athletic fields south of the existing high school building. We understand that the first finished floor elevation (FFE) of the proposed high school building will be at elevation El. 245.50 feet, requiring minor cuts and fills up to about 2.5 feet to achieve the proposed FFE of the proposed high school building. We understand that the existing high school building will be demolished to allow for the construction of new athletic fields.

Based on the Site Plan, we understand the proposed construction will also include paved parking lots and a paved access loop surrounding the proposed high school building. The Site Plan also indicates that a proposed baseball field and tennis courts will be located south and southeast of the proposed high school building. The grades around the proposed high school building generally range between El. 243 feet and El. 246 feet. The grades within the proposed fields north of the proposed high school building range between El. 242 feet and El. 245 feet. The grades within the proposed paved areas range between El. 240 feet and El. 249 feet. The grades within the proposed baseball field and tennis courts range between El. 243 feet and El. 244 feet.

1.5 Elevation Datum

We understand that the elevations provided in the Existing Conditions Plan are referenced with respect to the North American Vertical Datum of 1988 (NAVD 1988).

2. SITE AND SUBSURFACE CONDITIONS

2.1 Surficial Geology

LGCI reviewed a surficial geologic map titled: "Surficial Materials Map of the Attleborough Quadrangle, Massachusetts," prepared by Stone, B.D., Stone, J.R., and DiGiacomo-Cohen, M.L., Scientific Investigation Map 3402, Quadrangle 108 – Attleborough, 2018.

The surficial geologic map of the site indicates that the natural soils in the general vicinity of the site consist of thin and thick till.

The thin till consists of a nonsorted, nonstratified matrix of sand, some silt and little clay containing scattered pebble, cobble, and boulder clasts. The thin till is generally less than 10 to 15 feet thick.

The thick till is similar in composition to the thin till; however, the thickness is greater than 10 to 15 feet thick.

The surficial geologic map also indicates the presence of rock outcrops located north of the general area of the site.

The Surficial Geologic Map is shown in Figure 2.

2.2 Previous Explorations

Dore & Whittier provided us with a geotechnical report prepared by Terracon Consultants Inc. for the bleacher replacement project, dated June 6, 2022. The report included the logs of three (3) test pits. The subsurface conditions encountered in the test pits consisted of about 2 inches of topsoil, overlying existing fill, overlying natural clayey/silty sand. The existing fill consisted of silty sand and extended to depths ranging between 2 and 4.5 feet beneath the ground surface.

2.3 LGCI's Explorations

2.3.1 General

LGCI coordinated our exploration locations with Dore & Whittier and with the North Attleborough High School staff and marked the exploration locations in the field. LGCI notified Dig Safe and the Town of North Attleborough for utility clearance prior to starting our explorations at the site. Unless notified otherwise, we will dispose of the soil samples and rock cores obtained during our explorations after three (3) months.

2.3.2 LGCI's Soil Borings

As part of our preliminary phase services, LGCI engaged Soil X, Corp. (Soil X) of Leominster, Massachusetts to advance nine (9) soil borings (B-1 to B-9-OW) at the site

between April 8 and 10, 2024. The borings were advanced with a Diedrich D-70 Turbo ATV Drill Rig using 4 ¼-inch hollow stem augers and with drive and wash boring techniques using 3-inch casing. The borings extended to depths ranging between 15.0 and 21.0 feet beneath the ground surface. Upon completion, the boreholes were backfilled with the drill cuttings and sand. The ground surface was restored with cold patch asphalt in paved areas.

As part of our DD phase services, LGCI engaged Soil X to advance an additional fifty-nine (59) soil borings (B-101 to B-146, B-148 to B-158, B-160 to B-161) at the site between August 11 and 26, 2025. The borings were advanced with a Diedrich D-70 Turbo ATV Drill Rig using 4 ¼-inch hollow stem augers or with a Geoprobe 7822DT using direct push boring techniques. The borings extended to depths ranging between 4.5 feet and 22.0 feet beneath the ground surface. Upon completion, the boreholes were backfilled with the drill cuttings and sand. The ground surface was restored with asphalt cold patch in paved areas and with concrete in sidewalks.

As part of our preliminary phase services, Soil X installed two (2) groundwater observation wells in two (2) soil borings (one each) in borings B-3-OW and B-9-OW.

Soil X performed Standard Penetration Tests (SPT) and obtained split spoon samples with an automatic hammer at typical depth intervals of 2 feet or 5 feet as noted on the boring logs in general accordance with ASTM D-1586.

An LGCI geotechnical field representative observed and logged the soil borings in the field.

2.3.3 LGCI's Test Pits

As part of our preliminary phase services, LGCI coordinated with the Town of North Attleborough DPW to perform seven (7) test pits (TP-1 to TP-7) at the site on July 25 and August 1, 2024. The test pits were excavated with a Holland RD 675E excavator. The test pits extended to depths ranging between 5.0 and 9.0 feet beneath the ground surface. Upon completion, the test pit excavations were backfilled with the excavated soil in 12-inch to 24-inch lifts and tamped with the excavator bucket.

As part of our DD phase services, LGCI coordinated with the Town of North Attleborough DPW and engaged Andrew's Landscaping of Warwick, Rhode Island to perform an additional thirteen (13) test pits (TP-101, TP-103 to TP-105, TP-110 to TP-118) at the site between July 28 and August 7, 2025. The test pits were excavated with a CAT 440 Backhoe or Yanmar SV40 excavator. Test pits TP-102, and TP-106 to RP-109 were not performed due to possible conflicts with utilities. The test pits extended to depths ranging between 5.5 and 10.5 feet beneath the ground surface. Upon completion, the test pit excavations were backfilled with the excavated soil in 12-inch to 24-inch lifts and tamped with the excavator bucket.

An LGCI geotechnical field representative observed and logged the test pits in the field.

2.3.4 Exploration Logs and Locations

The boring and test pit locations are shown in Figures 3A and 3B. Appendices A and B contain LGCI's boring logs and test pit logs, respectively. Tables 1 and 2 include the summary of LGCI's borings and test pits, respectively.

2.4 Subsurface Conditions

The subsurface description in this report is based on a limited number of explorations and is intended to highlight the major soil strata encountered during our explorations. The subsurface conditions are known only at the actual exploration locations. Variations may occur and should be expected between exploration locations. The boring and test pit logs represent conditions that we observed at the time of our explorations and were edited, as appropriate, based on the results of the laboratory test data and inspection of the soil samples and rock cores in the laboratory. The strata boundaries shown in our boring and test pit logs are based on our interpretations and the actual transitions may be gradual. Graphic soil symbols are for illustration only.

The soil strata encountered in LGCI's borings were as follows, starting at the ground surface.

Asphalt – Asphalt was encountered at the ground surface in boring B-9-OW. The thickness of the asphalt was about 0.3 feet.

Concrete – Concrete was encountered at the ground surface in boring B-134. The thickness of the concrete was about 0.5 feet.

Forest Mat – Forest mat was encountered at the ground surface in borings B-151 and B-152 and test pits TP-112 and TP-114. The thickness of the forest mat ranged between 0.3 feet and 0.7 feet.

Topsoil – A layer of surficial organic topsoil was encountered at the ground surface in all borings and test pits except borings B-9-OW, B-134, B-151, and B-152 and test pits TP-112 and TP-114. The thickness of the topsoil ranged between 0.3 and 1.4 feet.

Subsoil – A layer of subsoil was encountered beneath the forest mat or topsoil in borings B-140, B-141, B-151, and B-152 and test pits TP-112, TP-115, TP-117, and TP-118. The subsoil extended to depths ranging between 1.1 feet and 5.0 feet beneath the ground surface. The samples within this layer were mostly described as silty sand. One (1) sample was described as poorly graded sand. The fines content in the subsoil ranged between 10 and 25 percent, and the gravel content ranged between 5 and 30 percent. The subsoil contained traces of roots and cobbles up to 6 inches in diameter.

The SPT N-values in this layer ranged between 17 blows per foot (bpf) and 45 bpf indicating mostly medium dense to dense material. Please note that the high SPT N-values recorded in the subsoil may be due to obstructions such as cobbles and boulders present in the subsoil and may not represent the true density of the subsoil.

Fill – A layer of fill was encountered beneath the asphalt, concrete, forest mat, or topsoil in all borings and test pits except borings B-140, B-141, B-151, B-152, B-156, and B-161, and test pits TP-3, TP-112, TP-115, TP-117, and TP-118. The fill extended to depths ranging between 1.0 foot and 12.0 feet beneath the ground surface. The samples within this layer were described as silty sand, well graded sand, and silty gravel. The fines content in the fill ranged between 0 and 40 percent, and the gravel content ranged between 0 and 45 percent. When described as gravel, the sand content in the fill ranged between 35 and 40 percent. The fill contained traces of asphalt, organic soil, bricks, roots, metal, and wood.

The SPT N-values in this layer ranged between 7 bpf and refusal, with most values ranging between 8 bpf and 28 bpf, indicating mostly loose to medium dense material. Please note that the high SPT N-values recorded in the fill may be due to obstructions such as cobbles and boulders present in the fill and may not represent the true density of the fill.

Buried Organic Soil – A layer of buried organic soil was encountered beneath the fill in boring B-108 and test pit TP-6. The buried organic soil extended to depths ranging between 4.2 feet and 4.5 feet beneath the ground surface. The samples within this layer were described as silty sand. The fines content in the buried organic soil ranged between 20 and 25 percent, and the gravel content ranged between 0 and 10 percent. The buried organic soil contained traces of organic soil and roots.

The SPT N-values in this layer ranged between 0 bpf and 16 bpf indicating loose to medium dense material. Please note that the high SPT N-values recorded in the buried organic soil may be due to obstructions such as cobbles and boulders present in the buried organic soil and may not represent the true density of the buried organic soil.

Buried Subsoil / Forest Mat – A layer of buried subsoil or buried forest mat was encountered beneath the fill in test pits TP-103 and TP-113. The buried subsoil or forest mat extended to depths ranging between 3.5 feet and 5.0 feet beneath the ground surface. The samples within this layer were described as silty sand. The fines content in the buried subsoil or forest mat ranged between 15 and 25 percent, and the gravel content ranged between 0 and 15 percent. The buried subsoil or forest mat contained traces of organic soil and roots.

The excavation effort in this layer was described as moderate.

Sand and Gravel – A layer of sand and gravel was encountered beneath the layer of fill in all borings and test pits except boring B-130 and test pits TP-104 and TP-105. The sand and gravel layer extended to depths ranging between 4.5 feet and 22.0 feet. The sand and gravel layer extended to the termination depths of all borings and test pits except borings B-1, B-5 to B-9, B-101, B-103, B-130, and B-153, and test pits TP-104 and TP-105. The sand and gravel extended to the top of rock in borings B-1, B-9-OW, and B-153, and to weathered rock in borings B-5 to B-8, B-101, and B-103. The samples in this layer were mostly described as silty sand. Six (6) samples were described as well graded sand, twelve (12) samples were described as poorly graded sand, one (1) sample was described as silty gravel, and one (1) sample was described as poorly graded gravel. The fines content in this layer ranged between 10 and 25 percent, and the

gravel content ranged between 0 and 40 percent. When described as gravel, the sand content in this layer ranged between 15 and 45 percent. The sand and gravel layer contained traces of weathered rock and cobbles up to 8 inches in diameter.

The SPT N-values in this layer ranged between 18 bpf and refusal, with most values ranging between 30 bpf and refusal, indicating dense to very dense material. Please note that the high SPT N-values in the sand and gravel may be due to obstructions such as cobbles and boulders in the sand and gravel and may not represent the true density of the sand and gravel.

Silt – A layer of silt was encountered beneath the layer of fill in test pits TP-1, TP-104, and TP-105. The silt layer extended to depths ranging between 6.0 feet and 9.5 feet. The silt layer extended to the termination depths in test pits TP-104 and TP-105. The samples in this layer were described as silt. The sand content in this layer ranged between 5 and 10 percent, and the gravel content ranged between 10 and 20 percent. The silt layer contained cobbles up to 12 inches in diameter.

The excavation effort in this layer was described as moderate to difficult.

Weathered Rock – Weathered rock was encountered beneath the sand and gravel in borings B-5 to B-8, B-101, and B-103 at depths ranging between 18.1 and 22.0 feet beneath the ground surface. The weathered rock extended to the termination depths of these borings. The samples in this layer were described as silty sand. The fines content in this layer ranged between 15 and 20 percent, and the gravel content ranged between 15 and 20 percent. What appears to be sound rock zones were encountered in boring B-7 within the weathered rock layer.

The SPT N-values in this layer ranged between 71 bpf and refusal, indicating very dense material.

Rock – Rock was encountered beneath the sand and gravel layer in borings B-1, B-9-OW, and B-153 at depths of 14.7 feet, 10.3 feet, and 13.0 feet beneath the ground surface, respectively. To confirm and characterize the rock, rock was cored in boring B-153. The rock generally consisted of hard, slightly weathered to fresh, extremely fractured to moderately fractured, pink, coarse-grained Conglomerate. The rock coring rate ranged between 4.5 and 6.0 minutes per foot. The rock core recovery was 100 percent, and the Rock Quality Designation (RQD) was about 51.7 percent.

2.5 Groundwater

Groundwater was encountered in all borings except B-5, B-109, B-112, B-113, B-115, B-120, B-121, B-125 to B-146, B-148 to B-158, B-160, and B-161 at depths ranging between 7.8 and 22.0 feet beneath the ground surface, as shown in Table 1 and in the boring logs.

Groundwater was measured in the groundwater observation wells at the depths shown in the table below and in the Groundwater Observation Well Installation Reports included in Appendix A.

Date	B-3-OW G.S. El.= 242.0 (ft.)	B-9-OW G.S. El.= 243.0 (ft.)
	Depth / Elevation (ft.)	**Depth / Elevation (ft.)**
9/8/2024	8.0 / 234.0	- / -
9/9/2024	- / -	12.5 / 230.5
9/10/2024	6.9 / 235.1	13.5 / 229.5

The groundwater information reported in our exploration logs is based on observations made during or shortly after the completion of drilling. In addition, the drilling procedure introduced water into some of the boreholes during drilling. Therefore, the groundwater levels reported in our exploration logs may not represent the actual groundwater conditions, as additional time may be required for the groundwater levels to stabilize. The groundwater information presented in this preliminary report only represents the conditions encountered at the time and location of the explorations. Seasonal fluctuation should be anticipated.

2.6 Laboratory Test Data

LGCI submitted sixteen (16) soil samples collected from the borings for grain-size analysis. The results of the grain-size analyses are provided in the test data sheets included in Appendix C and are summarized in the table below.

Grain-Size Analysis Test Results

Boring No.	Sample No.	Stratum	Sample Depth (ft.)	Percent Gravel	Percent Sand	Percent Fines
B-2	S2	Fill	2.0 – 4.0	40.9	48.2	10.9
B-5	S2	Fill	2.0 – 4.0	19.7	44.3	36.0
B-7	S3	Sand & Gravel	4.0 – 6.0	41.1	37.2	21.7
B-9-OW	S3	Fill	5.0 – 7.0	14.0	63.0	23.0
B-101	S2	Sand & Gravel	2.0 – 3.3	21.2	46.2	32.6
B-105	S2	Fill	2.0 – 4.0	37.5	46.2	16.3
B-109	S1 Bot. 9”	Fill	0.0 – 2.0	20.5	43.1	36.4
B-110	S2	Fill	2.0 – 4.0	35.9	46.1	18.0
B-120	S2	Fill	2.0 – 4.0	28.9	51.2	19.9
B-124	S1 Bot. 12”	Fill	0.0 – 2.0	47.4	35.9	16.7
B-127	G1 Bot. 38”	Sand & Gravel	0.0 – 5.0	27.2	47.0	25.8
B-130	G1 Bot. 16”	Fill	0.0 – 5.0	43.1	42.4	14.5
B-132	G1 Bot. 17”	Fill	0.0 – 5.0	17.0	58.4	24.6
B-136	G1 Mid 14”	Fill	0.0 – 5.0	40.4	51.5	8.1
B-139	G1 Bot. 30”	Fill	0.0 – 5.0	36.3	49.2	14.5
B-140	G1 Bot. 31”	Sand & Gravel	0.0 – 5.0	31.1	48.6	20.3

3. EVALUATION AND RECOMMENDATIONS

3.1 Evaluation

3.1.1 General

In general, the subsurface conditions at the site are suitable for the proposed construction. However, based on our understanding of the proposed construction, our observation of our borings and the results of our laboratory testing, there are a few issues that we would like to highlight for consideration and discussion.

3.1.2 Asphalt, Concrete, Forest Mat, Surficial Topsoil and Subsoil, Buried Organic Soil/Subsoil/Forest Mat, and Existing Fill

- Asphalt, concrete, forest mat, surficial topsoil and subsoil, buried organic soil/subsoil/forest mat, and existing fill, were encountered in the borings and test pits. These materials are not suitable to support foundations.

- The asphalt, concrete, forest mat, surficial topsoil and subsoil, and buried organic soil/subsoil/forest mat should be entirely removed from within the proposed building footprint.

- The existing fill was observed to be variable in composition and density. In addition, the existing fill contained traces of asphalt, organic soil, bricks, roots, metal, and wood. Existing fill that was not placed with strict moisture, density, and gradation control presents risk of unpredictable settlement that may result in poor performance of floor slabs and foundations. Due to these risks, the existing fill should be entirely removed from within the proposed building footprints and replaced with Structural Fill. We anticipate that the removal within the proposed building footprint will extend to depths of up to 6 feet beneath the ground surface. The removal may extend to greater depths at locations not explored by LGCI. The removal should extend laterally a distance equal to the distance between the bottom of the proposed footings and the top of the natural sand and gravel or 5 feet, whichever is greater.

- The subgrade of footings should be prepared in accordance with the recommendations in Section 4.1.

- The asphalt, concrete, forest mat, and surficial topsoil should be entirely removed from under the proposed paved areas.

- We recommend removing the existing fill, the subsoil, and the buried organic soil/subsoil/forest mat to the top of the natural sand and gravel layer or to a depth of 18 inches beneath the bottom of the proposed pavement. The exposed subgrade deeper than 18 inches beneath the bottom of the proposed pavement should be improved in accordance with the recommendations in Section 4.2.

3.1.3 Shallow Footings and Slabs-on-Grade

The proposed buildings should be supported on shallow spread and continuous footings bearing on Structural Fill placed directly on top of the natural sand and gravel layer after entirely removing the asphalt, concrete, forest mat, surficial topsoil and subsoil, buried organic soil/subsoil/forest mat, and the existing fill. The proposed slabs may be designed as slabs-on-grade. Our recommendation for net allowable bearing capacity in the sand and gravel is presented in Section 3.2.1. Our estimates for settlement are presented in Section 3.2.2. Our concrete slab considerations are presented in Section 3.3.

3.1.4 Weathered Rock and Boulders

Weathered rock was observed beneath the natural sand and gravel layer in many of our borings. The weathered rock was penetrated with the drilling tools. However, the weathered rock may not be excavatable with conventional earth moving equipment and may require special rock removal techniques such as hoe-ramming or blasting. Our test pits did not extend into the weathered rock and it was not possible to evaluate how excavatable the weathered rock was.

In addition to the surficial boulders visible at the site, our test pits indicated the presence of boulders in the exisitng fill and the natural sand and gravel layer. We recommend that the project documents include an allowance for removing boulders from open excavation and from utility trenches.

3.2 Foundation Recommendations

3.2.1 Footing Design

- We recommend supporting the proposed building on spread footings bearing on Structural Fill placed directly on the natural sand and gravel.

- We recommend designing the proposed footings using a net allowable bearing pressure of 4 kips per square foot (ksf). We recommend that the footings bear on a minimum of 12 inches of Structural Fill placed directly on top of the natural sand and gravel layer. The Structural Fill should extend at least 1 foot laterally beyond the limits of the footings.

- Footing subgrades should be prepared in accordance with the recommendations in Section 4.1.

- Foundations should be designed in accordance with The Commonwealth of Massachusetts State Building Code 780 CMR, Tenth Edition (MSBC 10th Edition).

- Exterior footings and footings in unheated areas should be placed at a minimum depth of 4 feet below the final exterior grade to provide adequate frost protection. Interior footings

in heated areas may be designed and constructed at a minimum depth of 2 feet below finished floor grades.

- Wall footings should be designed and constructed with continuous, longitudinal steel reinforcement for greater bending strength to span across small areas of loose or soft soils that may go undetected during construction.

- A representative of LGCI should be engaged to observe that the subgrade has been prepared in accordance with our recommendations.

3.2.2 Settlement Estimates

Based on our experience with similar soils and designs using a net allowable bearing pressure of 4 ksf, we anticipate that the total settlement will be approximately 1 inch, and that the differential settlement of the footings will be 3/4 inch or less over a distance of 25 feet. We believe that total and differential settlements of this magnitude are tolerable for a similar structure. However, the tolerance of the proposed structure to the predicted total and differential settlements should be assessed by the structural engineer.

3.3 Concrete Slab Considerations

3.3.1 Slabs-on-Grade

- Floor slabs should be constructed as slabs-on-grade bearing on a minimum of 12 inches of Structural Fill placed directly on top of the natural sand and gravel layer. The subgrade of the slabs should be prepared as described in Section 4.1.

- To reduce the potential for dampness in the proposed floor slab, the project architect may consider placing a vapor barrier beneath the floor slab. The vapor barrier should be protected from puncture during the placement of the proposed slab reinforcement.

- For the design of the floor slab bearing on the materials described above, we recommend using a modulus of subgrade reaction, k_{s1}, of 100 tons per cubic foot (tcf). Please note that the values of k_{s1} are for a 1 x 1 square foot area. These values should be adjusted for larger areas using the following expression:

$$Modulus\ of\ Subgrade\,\mathrm{Re}action\,(k_s) = k_{s1} * \left(\frac{B+1}{2B}\right)^2$$

where:

k_s = Coefficient of vertical subgrade reaction for loaded area;
k_{s1} = Coefficient of vertical subgrade reaction for a 1 x 1 square foot area; and

B = Width of area loaded, in feet.

Please note that cracking of slabs-on-grade can occur as a result of heaving or compression of the underlying soil, but also as a result of concrete curing stresses. To reduce the potential for cracking, the precautions listed below should be closely followed during the construction of all slabs-on-grade:

- Construction joints should be provided between the floor slab and the walls and columns in accordance with the American Concrete Institute (ACI) requirements, or other applicable code.

- The backfill in interior utility trenches should be properly compacted.

- In order for the movement of exterior slabs not to be transmitted to foundations or superstructures, exterior slabs, such as approach slabs and sidewalks, should be isolated from the superstructure.

3.3.2 Under-slab Drains and Waterproofing

Based on the groundwater level observed in the borings and based on the proposed FFE, we believe that an under-slab drainage system is not required. If the proposed grading changes, LGCI should be notified to modify this recommendation if needed.

If the proposed building includes an elevator pit or other structure that extends beneath the FFE, such elevator pit or other structure should be designed to be waterproof.

3.4 Seismic Design

In accordance with Section 1604 of MSBC 10th Edition and International Building Code of 2021 (IBC 2021), and based on the SPT data from the borings, the seismic criteria for the site are as follows:

- Site Class (IBC 2021, Section 1613.2.2): D
- Spectral Response Acceleration at short period (Ss) (MSBC 10th Ed., Table 1604.11): 0.207g
- Spectral Response Acceleration at 1 sec. (S_1) (MSBC 10th Ed., Table 1604.11): 0.057g
- Site Coefficient Fa (IBC 2021, Table 1613.2.3(1)): 1.6
- Site Coefficient Fv (IBC 2021, Table 1613.2.3(2): 2.4
- Adjusted spectral response S_{MS} (IBC 2021, Equation 16-20): 0.331g
- Adjusted spectral response S_{M1} (IBC 2021, Equation 16-21): 0.137g

Based on the SPT data from the borings and in accordance with Section 1806.4 of MSBC 10th Edition, the site soils are not susceptible to liquefaction.

3.5 Lateral Pressures for Wall Design

3.5.1 Lateral Earth Pressures

Lateral earth pressures for the design of below-grade walls and site retaining walls, if any, are provided below.

Coefficient of Active Earth Pressure, K_A:	0.31
Coefficient of At-Rest Earth Pressure, K_o:	0.47
Coefficient of Passive Earth Pressure, K_p:	3.3
Total Unit Weight γ:	125 pcf

Note: The values in the table above are based on a friction angle for the backfill of 32 degrees and neglecting friction between the backfill and the wall. The design active and passive coefficients are based on horizontal surfaces (non-sloping backfill) on both the active and passive sides, and on a vertical wall face.

- Exterior walls of below-ground spaces and other retaining walls braced at the top to restrain movement/rotation, should be designed using the "at-rest" pressure coefficient.

- We recommend placing free-draining material within the 3 feet immediately behind retaining walls.

- We recommend providing weep holes at the bottom of site retaining walls, including temporary SOE systems, to promote drainage where possible. Alternatively, a pipe should be placed at the base of the wall to collect the water. Groundwater collected by the wall drains should be discharged into a lower area if gravity flow is possible.

- Passive earth pressures should only be used at the toe of the wall where special measures or provisions are taken to prevent the disturbance or future removal of the soil on the passive side of the wall, or in areas where the wall design includes a key. In any case, the passive pressures should be neglected in the top 4 feet.

- Where a permanent vertical uniform load will be applied to the active side immediately adjacent to the wall, a horizontal surcharge load equal to half of the uniform vertical load should be applied over the height of the wall. At a minimum, a temporary lateral construction surcharge load of 100 pounds per square foot (psf) should be applied uniformly over the height of the wall.

- We recommend using an ultimate friction factor of 0.45 between the sand layer or Structural Fill and the bottom of the wall. Below-grade walls should be designed for minimum factors of safety of 1.5 for sliding and 2.0 for overturning.

3.5.2 Seismic Pressures

In accordance with MSBC 10th Edition, Section 1610, a lateral earthquake force equal to $0.100*(S_s)*(F_a)*\gamma*H^2$ should be included in the design of the walls (for horizontal backfill),

where S_s is the maximum considered earthquake spectral response acceleration (defined in Section 3.4), F_a is the site coefficient (defined in Section 3.4), γ is the total unit weight of the soil backfill, and H is the height of the wall.

The earthquake force should be distributed as an inverted triangle over the height of the wall. In accordance with MSBC 10th Edition, Section 1610.2, a load factor of 1.43 should be applied to the earthquake force for wall strength design.

Temporary surcharges should not be included when designing for earthquake loads. Surcharge loads applied for extended periods of time should be included in the total static lateral soil pressure, and their earthquake lateral force should be computed and added to the force determined above.

3.5.3 Perimeter Drains

- We recommend that free-draining material be placed within 3 feet of the exterior of walls of below-ground spaces, if any. To reduce the potential for dampness in below-ground spaces, proposed below-ground walls should be damp-proofed.

- We recommend that drains be provided behind the exterior of walls of below-ground spaces. The drains should consist of 4-inch perforated PVC pipes installed with the slots facing down. Perimeter drains should be installed at the bottom of the wall in 18 inches of crushed stone wrapped in a geotextile for separation and filtration.

To the extent possible, groundwater collected by the wall drains should be discharged in a lower area if gravity flow is possible. In any case, the groundwater collected by the wall drains should be discharged in accordance with municipal, state, and other applicable standards.

3.6 Parking Lots, Driveways, and Sidewalks

3.6.1 General

The subsurface conditions encountered at the site are generally suitable to support the proposed driveways, parking lots, and sidewalks after preparation of the subgrade as described in Section 4.2.

- We recommend entirely removing the asphalt and the surficial topsoil soil from within the footprint of the proposed driveways and parking lots.

- The existing fill should be improved in accordance with the recommendations in Section 4.2.

- Cobbles and boulders should be removed to at least 18 inches below the bottom of the pavement.

3.6.2 Sidewalks

- Sidewalks should be placed on a minimum of 12 inches of Structural Fill with less than 5 percent fines.

- To reduce the potential for heave caused by surface water penetrating under the sidewalk, the joints between sidewalk concrete sections should be sealed with a waterproof compound. The sidewalks should be sloped away from the building or other vertical surfaces to promote flow of water. To the extent possible, roof leaders should not discharge onto sidewalk surfaces.

3.6.3 Pavement Sections

A typical, minimum, standard-duty pavement section that could be used for parking areas is as follows:

1.5" Asphalt "Top Course"
2.0" Asphalt "Base Course"
8" Processed Gravel for Sub-Base (MassDOT M1.03.1)

A typical, minimum, heavy-duty pavement section that could be used for areas of heavy truck traffic is as follows:

2.0" Asphalt "Top Course"
2.5" Asphalt "Base Course"
12" Processed Gravel for Sub-Base (MassDOT M1.03.1)

The pavement sections shown above represent minimum thicknesses representative of typical local construction practices for similar use. Periodic maintenance should be anticipated.

Pavement material types and construction procedures should conform to specifications of the “Standard Specifications for Highways and Bridges,” prepared by the Commonwealth of Massachusetts Department of Transportation, dated 2025.

Areas to receive relatively highly concentrated, sustained loads such as dumpsters, loading areas, and storage bins are typically installed over a rigid pavement section to distribute concentrated loads and reduce the possibility of high stress concentrations on the subgrade. Typical rigid pavement sections consist of 6 inches of concrete placed over a minimum of 12 inches of subbase material.

3.7 Underground Utilities

Boulders at the bottom of utility trenches should be removed to at least 12 inches below the pipe invert and the resulting excavation should be backfilled with suitable backfill. Utilities should be

placed on suitable bedding material in accordance with the manufacturer's recommendations. "Cushion" material should be placed, by hand, above the utility pipe in maximum 6-inch lifts. The lift should be compacted by hand to avoid damage to the utility. Where the bedding/cushion material consists of crushed stone, it should be wrapped in a geotextile fabric.

Compaction of fill in utility trenches should be in accordance with our recommendations in Section 4.2. To reduce the potential for damage to utilities, placement and compaction of fill immediately above the utilities should be performed in accordance with the manufacturer's recommendations.

4. CONSTRUCTION CONSIDERATIONS

4.1 Subgrade Preparation for Footings and Slabs

- asphalt, concrete, forest mat, surficial topsoil and subsoil, and buried organic soil/subsoil/forest mat, abandoned utilities, buried foundations, below-ground structures, and other deleterious matter should be entirely removed from within the footprint of the proposed building and site structures, including site retaining walls, and exterior stairs, if any, before the start of foundation work.

- Tree stumps, root balls, and roots larger than ½ inch in diameter should be removed and the cavities filled with suitable material and compacted per Section 4.4 of this preliminary report.

- Cobbles and boulders should be removed at least 6 inches from beneath footings and 18 inches beneath the bottom of slabs and paved areas. The resulting excavations should be backfilled with compacted Structural Fill under the building and other structures, and with Ordinary Fill under the subbase of paved areas.

- Due to the high susceptibility of the natural soil for disturbance under foot and vehicular traffic, we recommend placing a minimum of 6 inches of Structural Fill at the bottom of the excavations or 4 inches of lean concrete to serve as a working mat.

- The bottom of the excavations resulting from the removal of the existing fill or natural soil should be compacted with a dynamic vibratory compactor imparting a minimum of 40 kips of force to the subgrade.

- The base of the footing excavations in granular soil should be compacted with a dynamic vibratory compactor weighing at least 200 pounds and imparting a minimum of 4 kips of force to the subgrade.

- Fill placed within the footprint of the proposed building and site structures should meet the gradation and compaction requirements of Structural Fill, shown in Section 4.4.1.

- Where soft zones are revealed during the preparation of the subgrade, the soft materials or buried organic soil should be removed and replaced with Structural Fill within the building footprint and with Ordinary Fill beneath the subbase of paved areas.

- To reduce the potential of increasing lateral pressures on any retaining walls, fill placed within 3 feet of the walls, if any, should be compacted using a small plate compactor imparting a maximum dynamic effort of 4 kips. The fill within 3 feet of the walls should be placed in maximum 8-inch loose lifts.

- When crushed stone is required in the drawings or it is used for the convenience of the contractor, it should be wrapped in a geotextile fabric for separation. The geotextile fabric should not be used under retaining walls as it promotes a plane of sliding.

- An LGCI geotechnical representative should observe the exposed subgrades prior to fill and concrete placement to verify that the exposed bearing materials are suitable for the design soil bearing pressure. If soft or loose pockets are encountered in the footing excavations, the soft or loose materials should be removed, and the bottom of the footing should be placed at a lower elevation on firm soil, or the resulting excavation should be backfilled with Structural Fill or crushed stone wrapped in geotextile for separation.

4.2 Subgrade Preparation for Paved Areas and Sidewalks, and Exterior Pads

- Topsoil and root balls should be entirely removed from under proposed paved areas, under sidewalks, and under exterior pads.

- The existing fill higher than 18 inches beneath the bottom of the pavement, and other deleterious material should be entirely removed from within the paved areas, under sidewalks, and under exterior pads.

- After the surficial materials are removed to a depth of 18 inches within the proposed paved areas, under sidewalks, and under exterior pads in accordance with the recommendations in Section 3.1.1, the existing fill deeper than 18 inches beneath the bottom of the proposed pavement should be improved by compacting the exposed surface with at least six (6) passes of a vibratory roller compactor imparting a dynamic effort of at least 40 kips to a firm and unyielding. Where organic soil or soft zones of soil are observed, the organic soil or soft soil should be removed, and the grade should be restored using Ordinary Fill to the bottom of the proposed subbase layer. If pumping of the existing fill or buried subsoil deeper than 18 inches beneath the bottom of the proposed pavement is observed, the soft and/or pumping material should be removed and replaced.

- The subbase of paved areas should conform to the recommendations in Section 3.6 above.

- Fill placed under the subbase of paved areas should meet the gradation and compaction requirements of Ordinary Fill, shown in Section 4.4.2.

- Fill placed in the top 12 inches beneath sidewalks should consist of Structural Fill with less than 5 percent fines.

- Loose or soft soils identified during the compaction of the footing or floor slab subgrades should be excavated to a suitable bearing stratum, as determined by the representative of LGCI. Grades should be restored by backfilling with Structural Fill or crushed stone.

- When crushed stone is required in the drawings or is used for the convenience of the contractor, it should be wrapped in a geotextile fabric for separation except where introduction of the geotextile fabric promotes sliding. A geotextile fabric should not be placed between the bottoms of the footings and the crushed stone.

- An LGCI representative should observe the exposed subgrades prior to fill and concrete placement to verify that the exposed bearing materials are suitable for the design soil bearing pressure. If soft or loose pockets are encountered in the footing excavations, the soft or loose materials should be removed and the bottom of the footing should be placed at a lower elevation on firm soil, or the resulting excavation should be backfilled with Structural Fill, or crushed stone wrapped in a filter fabric.

4.3 Subgrade Protection

The onsite fill and natural soils are frost susceptible. If construction takes place during freezing weather, special measures should be taken to prevent the subgrade from freezing. Such measures should include the use of heat blankets or excavating the final 6 inches of soil just before pouring the concrete. Footings should be backfilled as soon as possible after footing construction. Soil used as backfill should be free of frozen material, as should the ground on which it is placed. Filling operations should be halted during freezing weather.

Materials with high fines contents are typically difficult to handle when wet, as they are sensitive to moisture content variations. Subgrade support capacities may deteriorate when such soils become wet and/or disturbed. The contractor should keep exposed subgrades properly drained and free of ponded water. Subgrades should be protected from machine and foot traffic to reduce disturbance.

4.4 Fill Materials

Structural Fill and Ordinary Fill should consist of inert, hard, durable sand and gravel free from organic matter, clay, surface coatings, and deleterious materials, and should conform to the gradation requirements shown below.

4.4.1 Structural Fill

The Structural Fill should have a plasticity index of less than 6 and should meet the gradation requirements shown below. Structural Fill should be compacted in maximum 9-inch loose lifts to at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557), with moisture contents within ±2 percentage points of the optimum moisture content.

Sieve Size Percent	Passing by Weight
3 inches	100
1 ½ inch	80-100
½ inch	50-100
No. 4	30-85
No. 20	15-60
No. 60	5-35
No. 200*	0-10

* 0 – 5 for the top 12 inches under sidewalks, exterior slabs, pads, and walkways

4.4.2 Ordinary Fill

Ordinary Fill should have a plasticity index of less than 6 and should meet the gradation requirements shown below. Ordinary Fill should be compacted in maximum 9-inch loose lifts to at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557), with moisture contents within ±2 percentage points of the optimum moisture content.

Sieve Size Percent	Passing by Weight
6 inches	100
1 inch	50-100
No. 4	20-100
No. 20	10-70
No. 60	5-45
No. 200	0-20

4.5 Reuse of Onsite Materials

Based on our field observations and the results of the grain-size analyses, the onsite fill and natural sand and gravel are not suitable for reuse as Structural Fill. The existing fill free of organic matter may be used as Ordinary Fill.

The contractor should avoid mixing the reusable soils with fine-grained and/or organic soils. The soils to be reused should be excavated and stockpiled separately for compliance testing. Soils with 20 percent or greater fines contents are generally very sensitive to moisture content variations and are susceptible to frost. Such soils are very difficult to compact at moisture contents that are much higher or much lower than the optimum moisture content determined from the laboratory compaction test. Therefore, strict moisture control should be implemented during the compaction of onsite soils with fines contents of 20 percent or greater. The contractor should be prepared to remove and replace such soils if pumping occurs.

Materials to be used as fill should first be tested for compliance with the applicable gradation specifications.

4.6 Groundwater Control Procedures

Based on the groundwater levels measured in our borings, we anticipate that groundwater control procedures will be needed during construction. We anticipate that filtered sump pumps installed in a series of sump pump pits located at least 3 feet below the bottom of planned excavations may be sufficient to handle groundwater and surface runoff that may enter the excavations during the removal of the existing fill, and in utility excavations during wet weather. The contractor should be prepared to use multiple sump pumps to maintain a dry excavation during the removal of the existing fill.

The contractor should be permitted to employ whatever commonly accepted means and practices are necessary to maintain the groundwater level below the bottom of the excavation and to

maintain a dry excavation during wet weather. Groundwater levels should be maintained at a minimum of 1 foot below the bottom of the excavations during construction. The placement of reinforcing steel or concrete in standing water should not be permitted.

To reduce the potential for sinkholes developing over sump pump pits after the sump pumps are removed, the crushed stone placed in the sump pump pits should be wrapped in a geotextile fabric. Alternatively, the crushed stone should be entirely removed after the sump pump is no longer in use, and the sump pump pit should be restored with suitable backfill.

4.7 Temporary Excavations

All excavations to receive human traffic should be constructed in accordance with OSHA guidelines.

The site soils should generally be considered Type "C" and should have a maximum allowable slope of 1.5 Horizontal to 1 Vertical (1.5H:1V) for excavations less than 20 feet deep. Deeper excavations, if needed, should have shoring designed by a professional engineer.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain the stability of the excavation sides and bottom.

5. REPORT LIMITATIONS

Our analyses and recommendations are based on project information provided to us at the time of this preliminary report. If changes to the type, size, and location of the proposed structures or to the site grading are made, the recommendations contained in this preliminary report shall not be considered valid unless the changes are reviewed, and the conclusions and recommendations modified in writing by LGCI. LGCI cannot accept responsibility for designs based on our recommendations unless we are engaged to review the final plans and specifications to determine whether any changes in the project affect the validity of our recommendations, and whether our recommendations have been properly implemented in the design.

It is not part of our scope to perform a more detailed site history; therefore, we have not explored for or researched the locations of buried utilities or other structures in the area of the proposed construction. Our scope did not include environmental services or services related to moisture, mold, or other biological contaminants in or around the site.

The recommendations in this preliminary report are based in part on the data obtained from the subsurface explorations. The nature and extent of variations between explorations may not become evident until construction. If variations from anticipated conditions are encountered, it may be necessary to revise the recommendations in this preliminary report. We cannot accept responsibility for designs based on recommendations in this preliminary report unless we are engaged to 1) make site visits during construction to check that the subsurface conditions exposed during construction are in general conformance with our design assumptions and 2) ascertain that, in general, the work is being performed in compliance with the contract documents.

Our preliminary report has been prepared in accordance with generally accepted engineering practices and in accordance with the terms and conditions set forth in our agreement. No other warranty, expressed or implied, is made. This report has been prepared for the exclusive use of Dore and Whittier Architects, Inc. for the proposed North Attleborough High School in North Attleborough, Massachusetts as conceived at this time.

6. REFERENCES

In addition to the references included in the text of the report, we used the following references:

American Society of Civil Engineers, "Minimum Design Loads and Associated Criteria for Buildings and Other Structures," ASCE/SEI 7-16, 2017.

International Code Council, "International Building Code, 2021."

The Commonwealth of Massachusetts (2024), "The Massachusetts State Building Code, Tenth (10th) Edition."

The Department of Labor, Occupational Safety and Health Administration (1989), "Occupational Safety and Health Standards - Excavations; Final Rule," 20 CFR Part 1926, Subpart P.

USGS North Attleborough, MA topographic map from http://mapserver.mytopo.com.

Table 1 - Summary of LGCI's Borings
Prop. North Attleborough High School
North Attleborough, MA
LGCI Project No. 2407

Boring No.	Ground Surface Elevation (ft.)[1]	Groundwater[2] Depth / El. (ft.)	Bottom of **Asphalt** / Topsoil / *Forest Mat* Depth / El. (ft.)	Bottom of Fill Depth / El. (ft.)	Bottom of Buried organic soil/**Subsoil** Depth / El. (ft.)	Bottom of Sand and Gravel Depth / El. (ft.)	Top of Rock Depth / El. (ft.)	Bottom of Boring Depth / El. (ft.)
2024 Borings								
B-1	244.0	13.0 / **231.0**	0.3 / **243.7**	4.0 / **240.0**	- / -	14.7 / **229.3**	14.7 [3]/ **229.3**	15.5 / **228.5**
B-2	243.0	8.7 / **234.3**	0.5 / **242.5**	4.0 / **239.0**	- / -	21.0 [4]/ **222.0**	- / -	21.0 / **222.0**
B-3-OW	242.0	8.0 / **234.0**	0.4 / **241.6**	2.5 / **239.5**	- / -	20.5 [4]/ **221.5**	- [7] -	20.5 / **221.5**
B-4	243.0	13.3 / **229.7**	0.4 / **242.6**	6.0 / **237.0**	- / -	21.0 [4]/ **222.0**	- / -	21.0 / **222.0**
B-5	237.0	- / -	0.4 / **236.6**	4.0 / **233.0**	- / -	14.0 / **223.0**	- / -	18.1 [5]/ **218.9**
B-6	244.0	19.0 / **225.0**	0.5 / **243.5**	2.7 / **241.3**	- / -	19.0 / **225.0**	- / -	20.8 [5]/ **223.2**
B-7	244.0	9.0 / **235.0**	0.6 / **243.4**	2.0 / **242.0**	- / -	9.0 / **235.0**	- / -	19.3 [5]/ **224.7**
B-8	244.0	7.8 / **236.2**	0.4 / **243.6**	2.0 / **242.0**	- / -	14.0 / **230.0**	- / -	19.3 [5]/ **224.7**
B-9-OW	243.0	12.5 / **230.5**	**0.3** / **242.7**	7.0 / **236.0**	- / -	10.3 / **232.7**	10.3 [3]/ **232.7**	15.0 / **228.0**
2025 Borings								
B-101	243.0	10.0 / **233.0**	0.5 / **242.5**	2.0 / **241.0**	- / -	17.0 / **226.0**	- / -	20.3 [5]/ **222.7**
B-102	244.0	11.0 / **233.0**	0.7 / **243.3**	4.5 / **239.5**	- / -	20.5 [4]/ **223.5**	- / -	20.5 / **223.5**
B-103	245.0	14.0 / **231.0**	0.8 / **244.2**	4.5 / **240.5**	- / -	18.0 / **227.0**	- / -	22.0 [5]/ **223.0**
B-104	245.0	17.0 / **228.0**	0.9 / **244.1**	5.9 / **239.1**	- / -	20.7 [4]/ **224.3**	- / -	20.7 / **224.3**
B-105	245.0	15.0 / **230.0**	0.6 / **244.4**	4.0 / **241.0**	- / -	21.0 [4]/ **224.0**	- / -	21.0 / **224.0**
B-106	243.0	9.0 / **234.0**	0.5 / **242.5**	1.0 / **242.0**	- / -	18.0 [4]/ **225.0**	- / -	18.0 / **225.0**
B-107	245.0	12.0 / **233.0**	0.5 / **244.5**	4.0 / **241.0**	- / -	19.3 [4]/ **225.7**	- / -	19.3 / **225.7**
B-108	245.0	13.5 / **231.5**	0.5 / **244.5**	3.0 / **242.0**	4.5 / **240.5**	20.5 [4]/ **224.5**	- / -	20.5 / **224.5**
B-109	243.0	- / -	0.4 / **242.6**	2.0 / **241.0**	- / -	19.9 [4]/ **223.1**	- / -	19.9 / **223.1**
B-110	245.0	22.0 / **223.0**	0.5 / **244.5**	4.5 / **240.5**	- / -	22.0 [4]/ **223.0**	- / -	22.0 / **223.0**
B-111	245.0	15.0 / **230.0**	0.5 / **244.5**	2.0 / **243.0**	- / -	21.7 [4]/ **223.3**	- / -	21.7 / **223.3**
B-112	245.0	- / -	0.6 / **244.4**	2.0 / **243.0**	- / -	18.0 [4]/ **227.0**	- / -	18.0 / **227.0**
B-113	244.0	- / -	0.5 / **243.5**	4.5 / **239.5**	- / -	12.0 [4]/ **232.0**	- / -	12.0 / **232.0**
B-114	244.0	12.0 / **232.0**	0.4 / **243.6**	4.0 / **240.0**	- / -	21.0 [4]/ **223.0**	- / -	21.0 / **223.0**
B-115	244.0	- / -	0.5 / **243.5**	2.0 / **242.0**	- / -	12.0 [4]/ **232.0**	- / -	12.0 / **232.0**
B-116	243.0	21.0 / **222.0**	0.7 / **242.3**	2.0 / **241.0**	- / -	21.0 [4]/ **222.0**	- / -	21.0 / **222.0**
B-117	243.0	16.5 / **226.5**	0.7 / **242.3**	4.0 / **239.0**	- / -	22.0 [4]/ **221.0**	- / -	22.0 / **221.0**
B-118	244.0	15.0 / **229.0**	0.5 / **243.5**	2.0 / **242.0**	- / -	21.5 [4]/ **222.5**	- / -	21.5 / **222.5**
B-119	243.0	16.0 **227.0**	0.5 / **242.5**	3.0 / **240.0**	- / -	21.5 [4]/ **221.5**	- / -	21.5 / **221.5**
B-120	244.0	- / -	0.5 / **243.5**	4.0 / **240.0**	- / -	21.0 [4]/ **223.0**	- / -	21.0 / **223.0**
B-121	243.0	- / -	0.5 / **242.5**	4.5 / **238.5**	- / -	12.0 [4]/ **231.0**	- / -	12.0 / **231.0**
B-122	243.0	15.0 / **228.0**	0.5 / **242.5**	4.5 / **238.5**	- / -	22.0 [4]/ **221.0**	- / -	22.0 / **221.0**
B-123	243.0	15.0 / **228.0**	0.5 / **242.5**	2.0 / **241.0**	- / -	22.0 [4]/ **221.0**	- / -	22.0 / **221.0**
B-124	243.0	16.0 / **227.0**	0.6 / **242.4**	4.0 / **239.0**	- / -	22.0 [4]/ **221.0**	- / -	22.0 / **221.0**
B-125	247.0	- / -	0.3 / **246.7**	6.2 / **240.8**	- / -	8.0 [4]/ **239.0**	- / -	8.0 / **239.0**
B-126	245.0	- / -	0.5 / **244.5**	5.0 / **240.0**	- / -	8.0 [4]/ **237.0**	- / -	8.0 / **237.0**
B-127	237.0	- / -	0.5 / **236.5**	1.0 / **236.0**	- / -	5.0 [4]/ **232.0**	- / -	5.0 / **232.0**
B-128	237.0	- / -	0.3 / **236.7**	0.7 / **236.3**	- / -	10.0 [4]/ **227.0**	- / -	10.0 / **227.0**
B-129	236.0	- / -	0.6 / **235.4**	1.0 / **235.0**	- / -	10.0 [4]/ **226.0**	- / -	10.0 / **226.0**
B-130	245.0	- / -	0.8 / **244.2**	6.0 [3]/ **239.0**	- / -	- / -	- / -	6.0 / **239.0**
B-131	245.0	- / -	- / -	6.8 / **238.2**	- / -	10.0 [4]/ **235.0**	- / -	10.0 / **235.0**
B-132	246.0	- / -	0.3 / **245.7**	6.0 / **240.0**	- / -	10.0 [4]/ **236.0**	- / -	10.0 / **236.0**
B-133	245.0	- / -	0.3 / **244.7**	6.3 / **238.7**	- / -	10.0 [4]/ **235.0**	- / -	10.0 / **235.0**
B-134	246.0	- / -	0.5[8] / **245.4**	5.0 / **241.0**	- / -	10.0 [4]/ **236.0**	- / -	10.0 / **236.0**
B-135	233.0	- / -	0.8 / **232.2**	1.4 / **231.6**	- / -	10.0 [4]/ **223.0**	- / -	10.0 / **223.0**
B-136	232.0	- / -	0.8 / **231.2**	2.0 / **230.0**	- / -	10.0 [4]/ **222.0**	- / -	10.0 / **222.0**
B-137	240.0	- / -	0.3 / **239.7**	5.7 / **234.3**	- / -	7.0 [4]/ **233.0**	- / -	7.0 / **233.0**
B-138	241.0	- / -	0.3 / **240.7**	2.0 / **239.0**	- / -	7.0 [4]/ **234.0**	- / -	7.0 / **234.0**
B-139	243.0	- / -	0.5 / **242.5**	10.0 / **233.0**	- / -	13.0 [4]/ **230.0**	- / -	13.0 / **230.0**

B-140	235.0	- / -	0.5 / **234.5**	- / -	**1.1** / **233.9**	10.0 [4]/ **225.0**	- / -	10.0 / **225.0**
B-141	233.0	- / -	0.5 / **232.5**	- / -	**1.1** / **231.9**	7.0 [4]/ **226.0**	- / -	7.0 / **226.0**
B-142	241.0	- / -	0.5 / **240.5**	5.0 / **236.0**	- / -	11.0 [4]/ **230.0**	- / -	11.0 / **230.0**
B-143	241.0	- / -	0.6 / **240.4**	5.8 / **235.2**	- / -	10.0 [4]/ **231.0**	- / -	10.0 / **231.0**
B-144	242.0	- / -	0.7 / **241.3**	1.7 / **240.3**	- / -	10.0 [4]/ **232.0**	- / -	10.0 / **232.0**
B-145	243.0	- / -	0.5 / **242.5**	1.3 / **241.7**	- / -	10.0 [4]/ **233.0**	- / -	10.0 / **233.0**
B-146	244.0	- / -	0.5 / **243.5**	1.3 / **242.7**	- / -	10.0 [4]/ **234.0**	- / -	10.0 / **234.0**
B-148	242.0	- / -	0.5 / **241.5**	7.0 / **235.0**	- / -	10.0 [4]/ **232.0**	- / -	10.0 / **232.0**
B-149	244.0	- / -	0.8 / **243.2**	2.3 / **241.7**	- / -	4.5 [4]/ **239.5**	- / -	4.5 / **239.5**
B-150	237.0	- / -	0.6 / **236.4**	2.6 / **234.4**	- / -	10.0 [4]/ **227.0**	- / -	10.0 / **227.0**
B-151	237.0	- / -	*0.3* / **236.7**	- / -	**4.0** / **233.0**	16.8 [3]/ **220.2**	- / -	16.8 / **220.2**
B-152	237.0	- / -	*0.5* / **236.5**	- / -	**2.4** / **234.6**	14.0 [4]/ **223.0**	- / -	14.0 / **223.0**
B-153	238.0	- / -	0.5 / **237.5**	4.0 / **234.0**	- / -	13.0 / **225.0**	13.0 [3]/ **225.0**	17.8 / **220.2**
B-154	246.0	- / -	0.5 / **245.5**	2.0 / **244.0**	- / -	5.0 [4]/ **241.0**	- / -	5.0 / **241.0**
B-155	247.0	- / -	0.4 / **246.6**	8.5 / **238.5**	- / -	12.0 [4]/ **235.0**	- / -	12.0 / **235.0**
B-156	241.0	- / -	0.8 / **240.2**	- / -	- / -	11.0 [4]/ **230.0**	- / -	11.0 / **230.0**
B-157	242.0	- / -	0.3 / **241.7**	12.0 / **230.0**	- / -	13.5 [4]/ **228.5**	- / -	13.5 / **228.5**
B-158	243.0	- / -	0.4 / **242.6**	9.5 / **233.5**	- / -	12.0 [4]/ **231.0**	- / -	12.0 / **231.0**
B-160	244.0	- / -	0.5 / **243.5**	4.5 / **239.5**	- / -	12.0 [4]/ **232.0**	- / -	12.0 / **232.0**
B-161	243.0	- / -	1.0 / **242.0**	- / -	- / -	11.2 [4]/ **231.8**	- / -	11.2 / **231.8**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB105 and VB106 (Sheets 6 and 7 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore + Whittier Architects, Inc. on April 29, 2024.
2. Groundwater was measured during drilling, at the end of drilling, after drilling, or based on sample moisture whichever is shallower.
3. Boring terminated on refusal in possible rock.
4. Boring terminated in the sand and gravel layer.
5. Boring terminated in the weathered rock layer.
6. "-" means groundwater or layer was not encountered.
7. Borings B-147 and B-159 were not performed.
8. A layer of concrete was encountered at the ground surface in boring B-134.

Table 2 - Summary of LGCI's Test Pits
Prop. North Attleborough High School
North Attleborough, MA
LGCI Project No. 2407

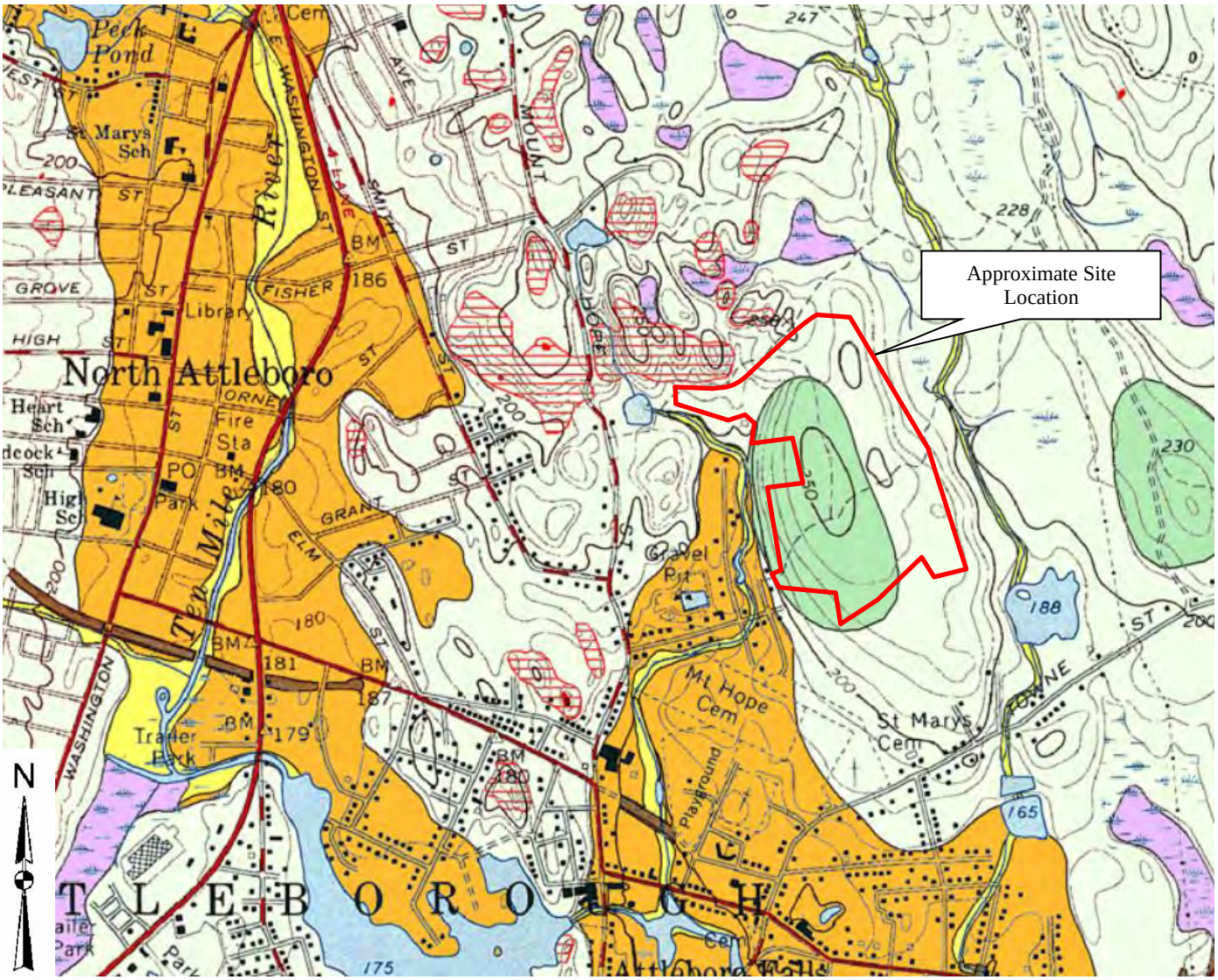
Test Pit No.	Ground Surface Elevation (ft.)[1]	Groundwater[2] Depth / El. (ft.)	Bottom of Topsoil/ **Forest Mat** Depth / El. (ft.)	Bottom of Fill Depth / El. (ft.)	Bottom of Buried Organic Soil / **Subsoil** / *Buried Forest Mat* Depth / El. (ft.)	Bottom of Silt Depth / El. (ft.)	Bottom of Sand and Gravel Depth / El. (ft.)	Bottom of Test Pit Depth / El. (ft.)
2024 Test Pits								
TP-1	233.0	- / -	0.8 / **232.2**	3.6 / **229.4**	- / -	6.0 [5]/ **227.0**	9.0 [3]/ **224.0**	9.0 / **224.0**
TP-2	245.0	- / -	0.5 / **244.5**	2.5 / **242.5**	- / -	- / -	6.7 [3]/ **238.3**	6.7 / **238.3**
TP-3	246.0	- / -	0.6 / **245.4**	- / -	- / -	- / -	5.0 [3]/ **241.0**	5.0 / **241.0**
TP-4	245.0	- / -	0.5 / **244.5**	1.7 / **243.3**	- / -	- / -	7.5 [3]/ **237.5**	7.5 / **237.5**
TP-5	242.0	- / -	1.3 / **240.7**	2.6 / **239.4**	- / -	- / -	8.8 [3]/ **233.2**	8.8 / **233.2**
TP-6	243.0	- / -	0.6 / **242.4**	3.7 / **239.3**	4.2 / **238.8**	- / -	7.8 [3]/ **235.2**	7.8 / **235.2**
TP-7	235.0	- / -	1.4 / **233.6**	1.9 / **233.1**	- / -	- / -	6.7 [3]/ **228.3**	6.7 / **228.3**
2025 Test Pits								
TP-101	233.0	- / -	0.5 / **232.5**	2.5 / **230.5**	- / -	- / -	7.5 [3]/ **225.5**	7.5 / **225.5**
TP-103	246.0	- / -	1.0 / **245.0**	2.0 / **244.0**	**3.5** / **242.5**	- / -	9.5 [3]/ **236.5**	9.5 / **236.5**
TP-104	236.0	- / -	0.5 / **235.5**	1.3 / **234.7**	- / -	7.1 [4]/ **228.9**	- / -	7.1 / **228.9**
TP-105	238.0	- / -	1.0 / **237.0**	1.8 / **236.2**	- / -	9.5 [4]/ **228.5**	- / -	9.5 / **228.5**
TP-110	243.0	- / -	0.5 / **242.5**	1.0 / **242.0**	- / -	- / -	9.0 [3]/ **234.0**	9.0 / **234.0**
TP-111	242.0	- / -	0.5 / **241.5**	2.0 / **240.0**	- / -	- / -	9.5 [3]/ **232.5**	9.5 / **232.5**
TP-112	234.0	- / -	**0.7** / **233.3**	- / -	**2.0** / **232.0**	- / -	9.5 [3]/ **224.5**	9.5 / **224.5**
TP-113	241.0	- / -	0.5 / **240.5**	3.0 / **238.0**	*5.0* / **236.0**	**- / -**	9.0 [3]/ **232.0**	9.0 / **232.0**
TP-114	235.0	- / -	**0.5 / 234.5**	2.0 / **233.0**	- / -	- / -	8.0 [3]/ **227.0**	8.0 / **227.0**
TP-115	235.0	- / -	**0.4** / **234.6**	- / -	**2.0** / **233.0**	- / -	10.5 [3]/ **224.5**	10.5 / **224.5**
TP-116	243.0	- / -	0.5 / **242.5**	1.0 / **242.0**	- / -	- / -	5.5 [3]/ **237.5**	5.5 / **237.5**
TP-117	249.0	- / -	0.5 / **248.5**	- / -	**1.5 / 247.5**	- / -	9.5 [3]/ **239.5**	9.5 / **239.5**
TP-118	248.0	- / -	0.5 / **247.5**	- / -	**2.0 / 246.0**	- / -	10.0 [3]/ **238.0**	10.0 / **238.0**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101 to VB108 (Sheets 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore & Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Groundwater was measured during excavation, at the end of excavation, or based on sample moisture whichever is shallower.
3. Test pit terminated in the sand and gravel layer.
4. Test pit terminated in the silt layer.
5 A layer of silt was encountered in the clay layer in test pit TP-1 between depths of 5.1 to 6 feet.
5. "-" means groundwater or layer was not encountered.
6. Test pits TP-102, TP106 to TP-109 were not performed.

Contour Intervals: 3 meters

Note: Figure based on USA Topo Maps of North Attleboro, MA obtained from https://apps.nationalmap.gov/viewer/

Client:	Project:	Figure 1 – Site Location Map	
Dore & Whittier Architects, Inc.	Proposed North Attleborough High School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: North Attleborough, MA	LGCI Project No.: 2407	Date: Oct. 2025



Thick till—Nonsorted, nonstratified matrix of sand, some silt, and little clay containing scattered pebbles, cobbles, and boulders in the shallow subsurface; at greater depths consists of compact, nonsorted matrix of silt, very fine sand, and some clay containing scattered small gravel clasts. Mapped in areas where till is greater than 10 to 15 ft thick, mostly in drumlin landforms in which till thickness commonly exceeds 100 ft (maximum recorded thickness is 230 ft). Although upper till of late Wisconsinan age is the surface deposit, lower till of probable Illinoian age constitutes the bulk of the material in thick-till areas. Lower till is moderately to very compact and is commonly finer grained and less stony than upper till. An oxidized zone, the lower part of a soil profile formed during a period of interglacial weathering, is generally present in the upper part of the lower till. This zone commonly shows closely spaced joints that are stained with iron and manganese oxides

Thin till—Nonsorted, nonstratified matrix of sand, some silt, and little clay containing scattered pebble, cobble, and boulder clasts; large surface boulders are common; unit was mapped where till is generally less than 10 to 15 ft thick including areas of shallow bedrock. Predominantly consists of upper till of the last glaciation; loose to moderately compact, generally sandy, commonly stony. Two facies are present in some places: a looser, coarser grained ablation facies, melted out from supraglacial position; and an underlying more compact, finer grained lodgement facies deposited subglacially. In general, both ablation and lodgement facies of upper till derived from fine-grained bedrock are finer grained, more compact, less stony and have fewer surface boulders than upper till derived from coarse-grained crystalline rocks. Across Massachusetts, fine-grained bedrock sources include the red Mesozoic sedimentary rocks of the Connecticut Valley lowland, marble in the western river valleys, and fine-grained schists in upland areas

Note: Figure based on map titled: “Surficial Materials Map of the Attleboro Quadrangle, Massachusetts,” prepared by Stone, B.D., Stone, J.R., and DiGiacomo-Cohen, M.L., Scientific Investigation Map 3402, Quadrangle 108 – Attleboro, 2018.

Client:	Project:	Figure 2 – Surficial Geologic Map	
Dore & Whittier Architects, Inc.	Proposed North Attleborough High School		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: North Attleborough, MA	LGCI Project No.: 2407	Date: Oct. 2025

Legend

Approximate location of borings advanced by Soil X Corporation of Leominster, MA between April 8 and 10, 2024 and observed by Lahlaf Geotechnical Consulting, Inc. (LGCI).

Approximate location of test pits advanced by the DPW of North Attleborough, MA, on August 1, 2024, and observed by Lahlaf Geotechnical Consulting, Inc. (LGCI).

Approximate location of borings advanced by Soil X, Corp. of Leominster, MA between August 11 and 26, 2025 and observed by LGCI.

Approximate location of test pits advanced by North Attleborough DPW of North Attleborough, MA and Andrew's Landscaping of Warwick, RI between July 28 and August 7, 2025 and observed by LGCI.

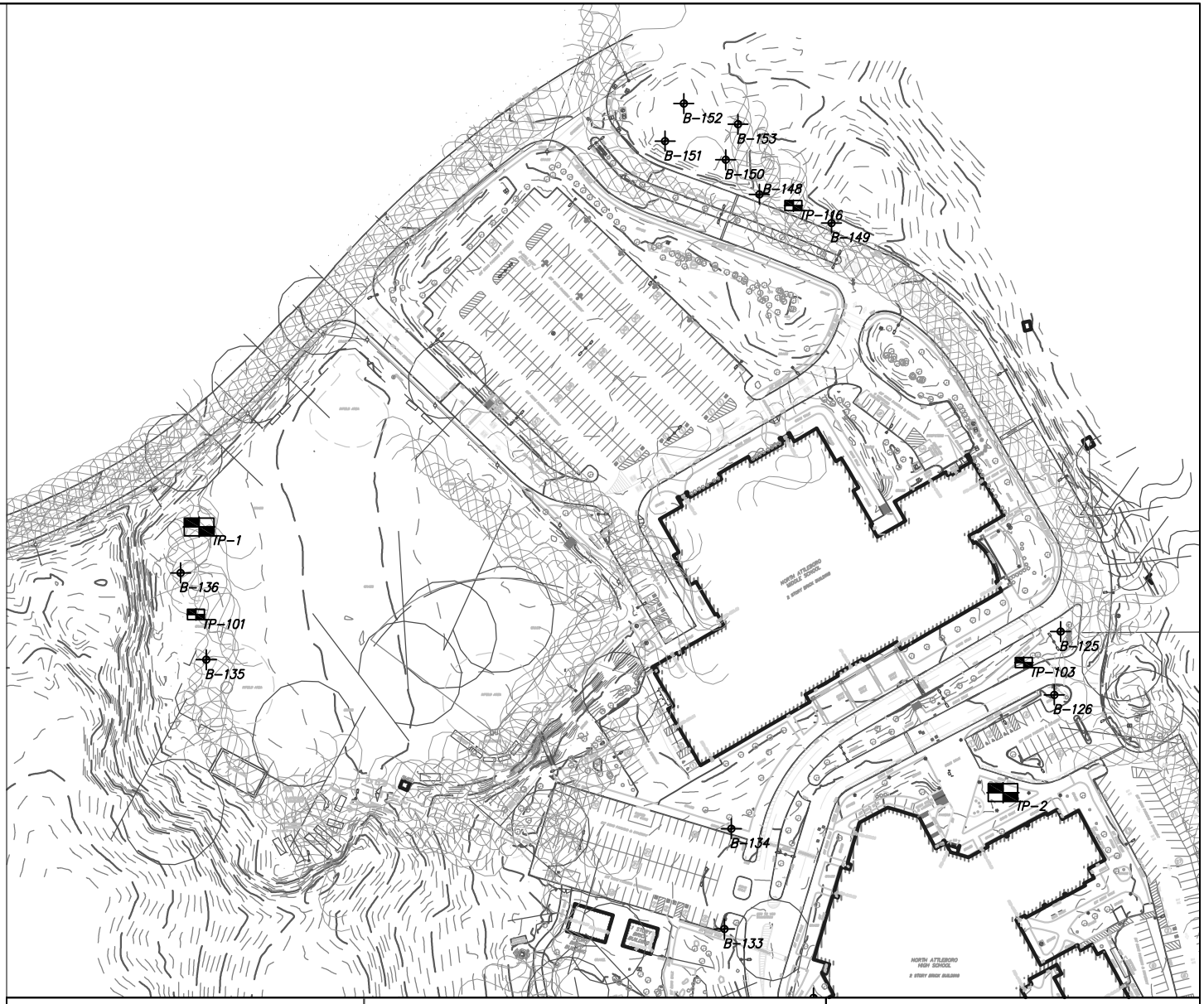
N

Approximate Scale (feet)

0 200 400 Feet

Notes

1. Figure based on a drawing "151042201-V-EA0101" prepared by Langan, and provided to LGCI by Dore and Whittier Architects via e-mail on July 16, 2025.



Client: Dore and Whittier Architects	Project: Proposed North Attleborough High School	Figure 3A - Exploration Location Plan - North	
LGCI Lahlaf Geotechnical Consulting, Inc	Project Location: North Attleborough, MA	LGCI Project No.: 2407	Date: Oct. 2025

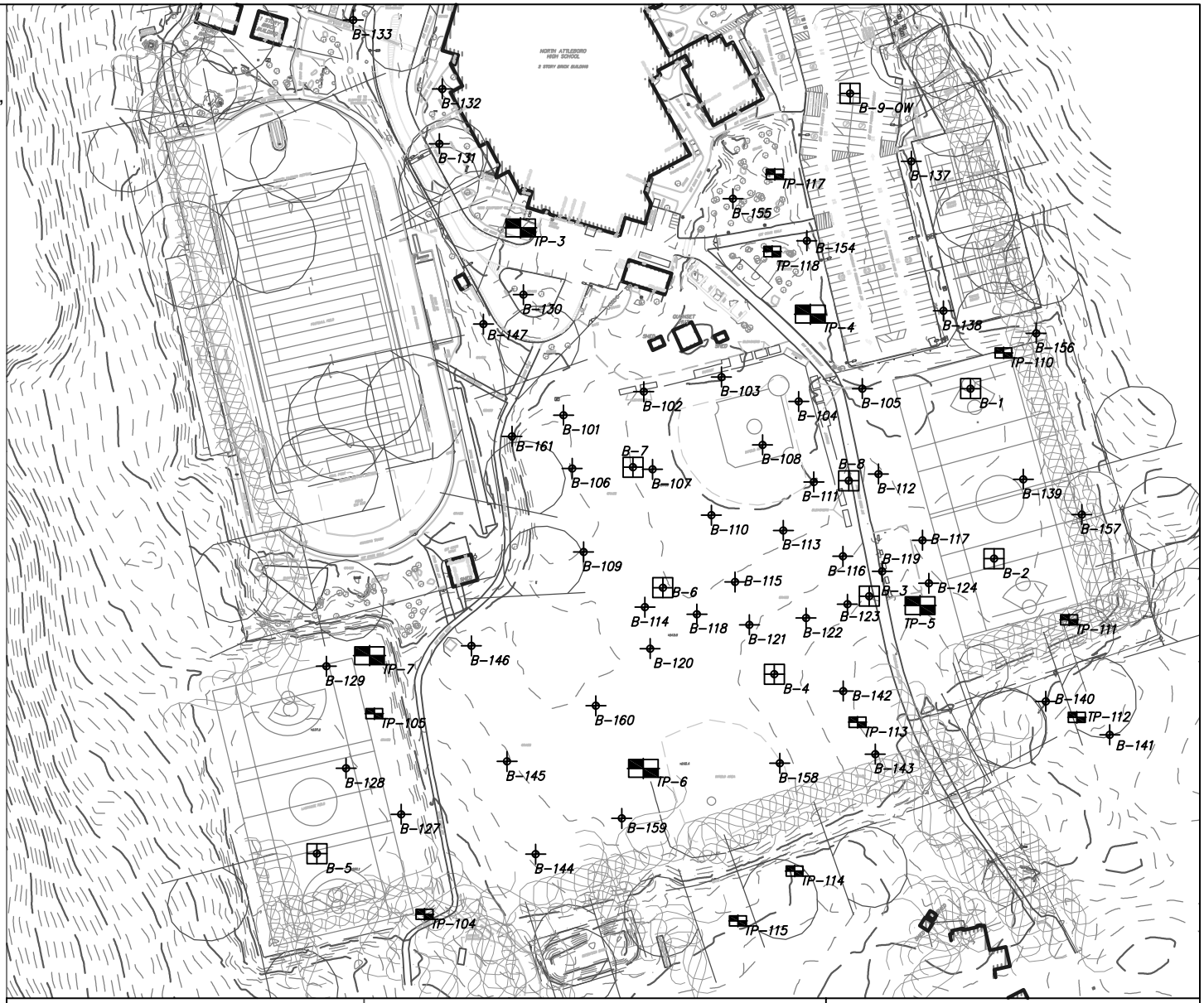
Legend

Approximate location of borings advanced by Soil X Corp. of Leominster, MA between April 8 and 10, 2024 and observed by Lahlaf Geotechnical Consulting, Inc. (LGCI).

Approximate location of test pits advanced by the DPW of North Attleborough, MA, on August 1, 2024, and observed by LGCI.

Approximate location of borings advanced by Soil X, Corp. of Leominster, MA between August 11 and 26, 2025 and observed by LGCI.

Approximate location of test pits advanced by North Attleborough DPW of North Attleborough, MA and Andrew's Landscaping of Warwick, RI between July 28 and August 7, 2025 and observed by LGCI.



N

Approximate Scale (feet)

0 200 400 Feet

Notes

1. Figure based on a drawing "151042201-V-EA0101" prepared by Langan, and provided to LGCI by Dore and Whittier Architects via e-mail on July 16, 2025.

Client: Dore and Whittier Architects	Project: Proposed North Attleborough High School	Figure 3B - Exploration Location Plan - South
LGCI Lahlaf Geotechnical Consulting, Inc	Project Location: North Attleborough, MA	LGCI Project No.: 2407 / Date: Oct. 2025

Appendix A – LGCI's Boring Logs and Groundwater Observation Well Installation Reports

LGCI
Lahlaf Geotechnical Consulting, Inc.
100 Chelmsford Road
01862
Telephone: 978-330-5912
Fax: 978-330-5056

BORING LOG

B-1
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 4/10/24 **DATE COMPLETED:** 4/10/24
BORING LOCATION: Northern side of existing east field
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 15.5 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 14.0 ft. / El. 230.0 ft. Based on sample moisture
AT END OF DRILLING: 13.0 ft. / El. 231.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: HSA (4-1/4" I.D.) then 3-inch casing
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: MBH **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-9-21-23 (30)	24/13		Topsoil	0.3 / 243.7	S1 - Top 4": Topsoil Bot. 9": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 20-25% fine to coarse subangular gravel, trace of roots, brown, moist
		2	S2	58-31-41-36 (72)	24/16		Fill		S2 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 25-30% fine to coarse subangular gravel, trace of roots, brown, moist
	240.0	4	S3	16-18-58-50/3" (76)	21/7			4.0 / 240.0	S3 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 25-30% fine to coarse subangular gravel, red to brown, moist
5		5.8							
		7	S4	62-50/4" (50/4")	10/9				S4 - Similar to S3
	235.0	7.8					Sand and Gravel		
		9	S5	20-43-53-48 (96)	24/14				S5 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse subangular gravel, trace of fractured rock, red, moist
10		11							
	230.0	14	S6	69-50/2" (50/2")	8/8				S6 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse subangular gravel, trace of fractured rock, red, wet
15		14.7						14.7 / 229.3	
						1	Rock	15.5	REMARK 1: Auger refusal encountered at depth of 15.5 feet on possible rock or boulder. Boring terminated.
									Bottom of borehole at 15.5 feet. Borehole backfilled with drill cuttings.
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

LGCI
Lahlaf Geotechnical Consulting, Inc.
100 Chelmsford Road
01862
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Fax: 978-330-5056

BORING LOG

B-2

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 4/9/24 **DATE COMPLETED:** 4/9/24
BORING LOCATION: Southern side of existing east field
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 21 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 9.0 ft. / El. 234.0 ft. Based on sample moisture
AT END OF DRILLING: 8.7 ft. / El. 234.3 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: HSA (4-1/4" I.D.) then 3-inch casing
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: MBH **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-7-15-9 (22)	24/13		Topsoil	0.5 / 242.5	S1 - Top 6": Topsoil Bot. 7": Poorly Graded SAND with Silt (SP-SM), fine to medium, ~10% fines, 10-15% fine to coarse subangular gravel, trace of organic soil, trace of roots, brown, moist
		2	S2	20-26-35-26 (61)	24/8		Fill	4.0 / 239.0	S2 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, ~40% mostly fine subangular gravel, trace of organic soil, trace of roots, brown, moist
	240.0	4	S3	17-15-15-16 (30)	24/14				S3 - Silty SAND with Gravel (SM), fine to coarse, ~15% fines, 20-25% fine to coarse subangular gravel, red to brown, moist
5		6	S4	24-21-20-15 (41)	24/13				S4 - Similar to S3
	235.0	8							
		9	S5	38-43-31-70/4" (74)	22/8	1			REMARK 1: Split Spoon possibly advanced through boulder at depth of 9.0 feet. S5 - Poorly Graded GRAVEL with Silt and Sand (GP-GM), fine to coarse, subangular, 10-15% fines, 15-20% fine to coarse sand, brown, wet
10		10.8					Sand and Gravel		
	230.0	14	S6	14-24-31-51 (55)	24/16				S6 - Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, 15-20% fine to coarse subangular gravel, brown to red, wet
15		16							
	225.0	19	S7	29-23-29-35 (52)	24/7				S7 - Similar to S6
20		21						21.0	
	220.0								Bottom of borehole at 21.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

LGCI
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Telephone: 978-330-5912
Fax: 978-330-5056

BORING LOG

B-3-OW

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 4/8/24 **DATE COMPLETED:** 4/8/24
BORING LOCATION: SE of existing bleachers
COORDINATES: NA
SURFACE El.: 242 ft. (see note 1) **TOTAL DEPTH:** 20.5 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 9.0 ft. / El. 233.0 ft. Based on sample moisture
AT END OF DRILLING: 8.0 ft. / El. 234.0 ft.
OTHER: 6.9 ft. / El. 235.1 ft. on 4/10/2024

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: HSA (4-1/4" I.D.) then 3-inch casing
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: MBH **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-30-70/2" (100/8")	14/13	1	Topsoil	0.4 241.6	S1 - Top 5": Topsoil
		1.2					Fill		Bot. 8": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 15-20% fine to coarse subangular gravel, trace of roots, brown, moist
	240.0							2.5 239.5	REMARK 1: Split spoon refusal encountered at depth of 1.4 feet on possible boulder. Auger advanced to depth 3.0 feet to obtain next split spoon sample.
		3	S2	14-19-25-19 (44)	24/14				S2 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, brown to red, moist
5		5	S3	12-18-21-30 (39)	24/22				S3 - Similar to S2, red
	235.0	7							
		9	S4	24-36-39-29 (75)	24/13				S4 - Similar to S2, red, wet
10		11					Sand and Gravel		
	230.0								
		14	S5	13-16-16-17 (32)	24/16				S5 - Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, 15-20% fine to coarse subangular gravel, red, wet
15		16							
	225.0								
		19	S6	19-45-70 (115)	18/16				S6 - Similar to S5
20		20.5						20.5	Bottom of borehole at 20.5 feet. Installed groundwater observation well.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

B-4
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 4/8/24 **DATE COMPLETED:** 4/8/24
BORING LOCATION: South of existing infield area
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 21 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 14.0 ft. / El. 229.0 ft. Based on sample moisture
AT END OF DRILLING: 13.3 ft. / El. 229.7 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: HSA (4-1/4" I.D.) then 3-inch casing
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: MBH **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	4-6-15-12 (21)	24/13		Topsoil	0.4 242.6	S1 - Top 5": Topsoil Bot 8": Silty SAND (SM), fine to coarse, 15-20% fines, 5-10% fine subangular gravel, trace of wood, trace of organic soil, brown, moist (appears reworked)
	240.0	2	S2	13-11-11-15 (22)	24/7		Fill		S2 - Similar to S1 Bot. 8"
5		4	S3	5-4-3-3 (7)	24/5				S3 - Similar to S1 Bot. 8", contained 2" of buried topsoil
		6	S4	11-20-20-21 (40)	24/23			6.0 237.0	S4 - Silty SAND with Gravel (SM), fine to coarse, ~15% fines, 20-25% fine to coarse subangular gravel, red, moist
	235.0	8							
		9	S5	15-19-20-21 (39)	24/14				S5 - Similar to S4
10		11							
	230.0						Sand and Gravel		
		14	S6	12-11-15-14 (26)	24/5				S6 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, ~20% fine to coarse subangular gravel, red, wet
15		16							
	225.0								
		19	S7	9-13-23-32 (36)	24/24				S7 - Similar to S6
20		21						21.0	
	220.0								Bottom of borehole at 21.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 4/8/24 **DATE COMPLETED:** 4/8/24
BORING LOCATION: Near southern side of existing lacrosse field
COORDINATES: NA
SURFACE El.: 237 ft. (see note 1) **TOTAL DEPTH:** 18.1 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: HSA (4-1/4" I.D.) then 3-inch casing
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: MBH **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.4 / 236.6	S1 - Top 5": Topsoil Bot. 7": Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, trace of organic soil, trace of roots, brown, moist
	235.0	2	S1	1-5-7-16 (12)	24/12		Fill		S2 - Silty SAND with Gravel (SM), fine to coarse, 35-40% fines, ~20% fine to coarse subangular gravel, red to brown, moist (possibly reworked)
		4	S2	13-7-4-8 (11)	24/10			4.0 / 233.0	
5			S3	6-14-38-59 (52)	24/13				S3 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, red to brown, moist
		6	S4	100/4"	4/3				S4 - Similar to S3
	230.0	6.3					Sand and Gravel		
		9	S5	26-26-26-27 (52)	24/17				S5 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse subangular gravel, trace of weathered rock, red, moist
10		11	S6	23-23-18-22 (41)	24/17				S6 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, ~20% fine to coarse subangular gravel, red, moist
	225.0	13						14.0 / 223.0	
		14	S7	20-30-70/1" (100/7")	13/7				S7 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, ~20% fine to coarse subangular gravel, trace of weathered rock, red, moist
15		15.1					Weathered Rock		
	220.0								
		18						18.1	
		18.1	S8	100/1"	1/0				S8 - No recovery Bottom of borehole at 18.1 feet. Borehole backfilled with drill cuttings.
20									
	215.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing VB106 (Sheet 7 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 4/10/24 **DATE COMPLETED:** 4/10/24
BORING LOCATION: SW of existing infield area
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 20.8 ft.
WEATHER: 40's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 19.0 ft. / El. 225.0 ft. Based on sample moisture
AT END OF DRILLING: 20.0 ft. / El. 224.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: HSA (4-1/4" I.D.) then 3-inch casing
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: MBH **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5 243.5	S1 - Top 6": Topsoil
			S1	3-5-4-5 (9)	24/13		Fill		Bot. 7": Poorly Graded SAND with Silt (SP-SM), fine to medium, 5-10% fines, ~10% mostly fine subangular gravel, trace of roots, trace of organic soil, brown, moist
		2	S2	7-13-29-23 (42)	24/16			2.7 241.3	S2 - Top 9": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, ~10% mostly fine subangular gravel, trace of roots, trace of organic soil, brown, moist
	240.0	4							Bot. 7": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 15-20% fine to coarse subangular gravel, red, moist
5			S3	14-12-39-36 (51)	24/14				S3 - Similar to S2 Bot. 7", red to gray
		6	S4	36-75/3" (75/3")	9/5				S4 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 20-25% fine to coarse subangular gravel, red, moist
		6.8							
	235.0	9							
10			S5	33-42-29-73/2" (71)	20/8				S5 - Similar to S4, 15-20% fine to coarse subangular gravel
		10.7					Sand and Gravel		
	230.0	14							
15			S6	11-10-11-17 (21)	24/17				S6 - Silty SAND with Gravel (SM), fine to medium, ~15% fines, 15-20% fine to coarse subangular gravel, red moist
		16							
	225.0	19						19.0 225.0 ▽	
20			S7	24-40-31-74/2" (71)	20/16		Weathered Rock		S7 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subangular gravel, trace of weathered rock, red, moist
		20.7						20.8	
									Bottom of borehole at 20.8 feet. Borehole backfilled with drill cuttings.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 4/10/24 **DATE COMPLETED:** 4/10/24
BORING LOCATION: West of existing infield area
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 19.3 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 9.0 ft. / El. 235.0 ft. Based on sample moisture
AT END OF DRILLING: 18.0 ft. / El. 226.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: HSA (4-1/4" I.D.) then 3-inch casing
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: MBH **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.6	S1 - Top 8": Topsoil
			S1	3-11-13-14 (24)	24/19		Fill	243.4	Bot. 11": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 10-15% fines, 15-20%, mostly fine subangular gravel, trace of organic soil, brown to red, moist
		2						2.0	
			S2	20-24-24-22 (48)	24/19			242.0	S2 - Poorly Graded SAND with Silt (SP-SM), fine to medium, ~10% fines, ~10% mostly fine subangular gravel, red, moist
	240.0	4							
5			S3	18-19-20-17 (39)	24/22		Sand and Gravel		S3 - Silty GRAVEL with Sand (GM), fine to coarse, subangular, 20-25% fines, 40-45% fine to coarse sand, red, moist
		6							
	235.0	9						9.0 ▽ 235.0	S4 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, trace of weathered rock, red, wet
10			S4	12-12-62-40/1" (74)	19/17				
		10.6							
	230.0	14					Weathered Rock		S5 - Similar to S4
		14.3	S5	101/3"	3/3				
15								▼	
	225.0	19							
		19.3	S6	100/4"	4/3			19.3	S6 - Similar to S4
20									Bottom of borehole at 19.3 feet. Borehole backfilled with drill cuttings.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 4/10/24 **DATE COMPLETED:** 4/10/24
BORING LOCATION: East of existing infield area
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 19.3 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 9.0 ft. / El. 235.0 ft. Based on sample moisture
AT END OF DRILLING: 7.8 ft. / El. 236.2 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: HSA (4-1/4" I.D.) then 3-inch casing
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: MBH **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.4	S1 - Top 5": Topsoil
			S1	4-9-7-11 (16)	24/15		Fill	243.6	Bot. 10": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 15-20% fine to coarse subangular gravel, trace of roots, brown, moist
		2						2.0	
			S2	28-30-32-35 (62)	24/24		Sand and Gravel	242.0	S2 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10 fines, 15-20% fine to coarse subangular gravel, red to brown, moist
	240.0	4							
5			S3	27-41-36-36 (77)	24/19				S3 - Similar to S2, red to gray
		6							
									▼
	235.0	9							▽ S4 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, red, wet
10			S4	16-15-18-27 (33)	24/20				
		11							
	230.0	14						14.0	
15			S5	28-34-52-50/3" (86)	21/18		Weathered Rock	230.0	S5 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, trace of weathered rock, red, wet
		15.8							
	225.0	19							
		19.3	S6	100/4"	4/4			19.3	S6 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, trace of weathered rock, red, wet
20									Bottom of borehole at 19.3 feet. Borehole backfilled with drill cuttings.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

B-9-OW

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 4/9/24 **DATE COMPLETED:** 4/9/24
BORING LOCATION: East of existing high school
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 15 ft.
WEATHER: 50's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: 12.5 ft. / El. 230.5 ft.
OTHER: 13.5 ft. / El. 229.5 ft. on 4/10/2-24

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: HSA (4-1/4" I.D.) then 3-inch casing
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: MBH **CHECKED BY:** JKW

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0.3					Asphalt	0.3	
			S1	10-13-33-33 (46)	24/9			242.7	S1 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 15-20% fine to coarse subangular gravel, brown to red, moist
		2.3							
	240.0	3	S2	21-27-73/2" (100/8")	14/10		Fill		S2 - Similar to S1 (appears reworked)
		4.2							
5		5	S3	20-37-48-49 (85)	24/20				S3 - Silty SAND (SM), mostly fine, trace medium to coarse, 20-25% fines, 10-15% fine subangular gravel, red to brown, moist
		7						7.0	
	235.0		S4	38-41-65 (106)	18/13			236.0	S4 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 20-25% fine to coarse subangular gravel, red, moist
		8.5					Sand and Gravel		
		9	S5	33-41-61/3" (102/9")	15/5				S5 - Similar to S4, trace of fractured rock
10		10.3						10.3	
						1		232.7	REMARK 1: Roller bit advanced between depths of 11.0 feet to 15.0 feet into rock to install groundwater observation well. Rock appears to be Red Siltstone or Mudstone.
	230.0						Rock		
15								15.0	
									Bottom of borehole at 15.0 feet. Installed groundwater observation well.
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/13/25 **DATE COMPLETED:** 8/13/25
BORING LOCATION: Near NW corner of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 20.3 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 10.0 ft. / El. 233.0 ft. Based on sample moisture
AT END OF DRILLING: 17.0 ft. / El. 226.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	7-16-20-22 (36)	24/12		Topsoil	0.5 242.5	S1 - Top 6": Topsoil
							Fill		Bot. 6": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, trace of fine subangular gravel, brown, moist
		2	S2	32-52-50/3" (102/9")	15/14			2.0 241.0	S2 - Silty SAND with Gravel (SM), fine to coarse, 30-35% fines, 20-25% fine subangular gravel, brown (sieve performed)
	240.0	3.3							
5		5	S3	18-21-32-34 (53)	24/22				S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, trace of fine subangular gravel, brown, moist
		7							
	235.0						Sand and Gravel		
10		10	S4	25-20-16-16 (36)	24/9				S4 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, trace of fine subangular gravel, brown, wet
		12							
	230.0								
15		15	S5	24-40-56 (96)	18/6				S5 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, trace of fine subangular gravel, brown, wet
		16.5				1		17.0 226.0	REMARK 1: Auger grinding encountered at depth of 17.0 feet on possible weathered rock. Strata change assumed based on drilling effort.
	225.0						Weathered Rock		
20		20	S6	80/3"	3/3			20.3	S6 - Weathered rock fragments
		20.3							Bottom of borehole at 20.3 feet. Borehole backfilled with drill cuttings.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/13/25 **DATE COMPLETED:** 8/13/25
BORING LOCATION: Near NW portion of prop. building
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 20.5 ft.
WEATHER: 80's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 17.0 ft. / El. 227.0 ft. Based on sample moisture
AT END OF DRILLING: 11.0 ft. / El. 233.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.7	S1 - Top 8": Topsoil
			S1	4-18-20-24 (38)	24/20			243.3	Bot. 12": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine subrounded gravel, brown, moist
		2	S2	20-14-12-14 (26)	24/12		Fill		S2 - Similar to S1 Bot. 12"
	240.0	4						4.5	
5						1		239.5	REMARK 1: Strata change assumed based on drilling effort.
		5	S3	15-26-28-22 (54)	24/16				S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
		7							
	235.0								
10		10	S4	8-9-11-14 (20)	24/24				S4 - Similar to S3, trace of fine subangular gravel
		12					Sand and Gravel		
	230.0								
15		15	S5	8-16-18-14 (34)	24/22				S5 - Similar to S3, tip of split spoon wet
		17							
	225.0								
20		20	S6	85	6/6			20.5	S6 - Similar to S3, wet, weathered rock in tip of split spoon
		20.5							Bottom of borehole at 20.5 feet. Borehole backfilled with drill cuttings.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/13/25 **DATE COMPLETED:** 8/13/25
BORING LOCATION: Near northern portion of prop. building
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 70's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 15.0 ft. / El. 230.0 ft. Based on sample moisture
AT END OF DRILLING: 14.0 ft. / El. 231.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	4-4-4-14 (8)	24/14		Topsoil	0.8	S1 - Top 9": Topsoil
		2	S2	20-10-12-14 (22)	24/15		Fill	244.2	Bot. 5": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine subangular gravel, red-brown, moist S2 - Similar to S1 Bot. 5", brown
		4						4.5	
5	240.0					1		240.5	REMARK 1: Strata change assumed based on drilling effort.
		5	S3	21-21-21-26 (42)	24/24				S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
		7							
10	235.0								
		10	S4	30-24-22-22 (46)	24/3		Sand and Gravel		S4 - Similar to S3, rock stuck in tip of split spoon
		12							
15	230.0								
		15	S5	20-26-72 (98)	18/5	2			S5 - Mostly fractured rock fragments, wet REMARK 2: Auger grinding encountered between depths of 15.0 feet to 17.0 feet on possible boulder or weathered rock.
		16.5							
						3		18.0	
								227.0	REMARK 3: Strata change assumed based on drilling effort.
20	225.0						Weathered Rock		
		20	S6	30-30-22-22 (52)	24/16				S6 - Silty SAND (SM), fine to coarse, 15-20% fines, brown, wet (possible weathered rock)
		22						22.0	
									Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/12/25 **DATE COMPLETED:** 8/12/25
BORING LOCATION: Near NE portion of prop. building
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 20.7 ft.
WEATHER: 90's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 20.5 ft. / El. 224.5 ft. Based on sample moisture
AT END OF DRILLING: 17.0 ft. / El. 228.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	3-4-10-18 (14)	24/16		Topsoil	0.9	S1 - Top 11": Topsoil
		2	S2	23-17-9-20 (26)	24/16		Fill	244.1	Bot. 5": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, brown, moist S2 - Similar to S1 Bot. 5"
		4							
5	240.0	5	S3	18-28-28-27 (56)	24/22			5.9	S3 - Top 11": Similar to S1 Bot. 5" (appears reworked)
		7					Sand and Gravel	239.1	Bot. 11": Silty SAND (SM), fine to medium, trace coarse, ~15% fines, 10-15% fine subangular gravel, red-brown, moist
10	235.0	10	S4	12-17-37-38 (54)	24/24				S4 - Similar to S3 Bot. 11"
		12							
15	230.0	15	S5	26-70	12/12				S5 - Similar to S3 Bot. 11"
		16							
20	225.0	20	S6	60-60/2" (60/2")	8/8			20.7	S6 - Similar to S3 Bot. 11", tip of split spoon wet
		20.7							Bottom of borehole at 20.7 feet. Borehole backfilled with drill cuttings.
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/11/25 **DATE COMPLETED:** 8/11/25
BORING LOCATION: Near NE corner of prop. building
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 21 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 15.0 ft. / El. 230.0 ft. Based on sample moisture
AT END OF DRILLING: 15.0 ft. / El. 230.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	5-13-25-21 (38)	24/16		Topsoil	0.6	S1 - Top 7": Topsoil
		2	S2	13-13-12-23 (25)	24/17		Fill	244.4	Bot. 9": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, ~15% fine subangular gravel, brown, moist S2 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 35-40% fine to coarse subangular gravel, trace of wood, brown, moist (sieve performed)
		4	S3	33-34-40-24 (74)	24/14			4.0	
5	240.0	6	S4	22-20-32-27 (52)	24/18			241.0	S3 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse subangular gravel, trace of weathered rock, brown, moist S4 - Silty SAND with Gravel (SM), fine, 15-20% fines, 15-20% fine to coarse subrounded gravel, trace of weathered rock, red-brown, moist
		8							
10	235.0	10	S5	33-44-46-42 (90)	24/22		Sand and Gravel		S5 - Silty SAND with Gravel (SM), fine, 15-20% fines, 20-25% coarse subrounded gravel, trace of weathered rock, red-brown, moist
		12							
15	230.0	15	S6	27-25-19-16 (44)	24/9				S6 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse subrounded gravel, trace of weathered rock, red-brown, wet
		17							
20	225.0	20	S7	31-100	12/12				S7 - Similar to S6
		21						21.0	
25	220.0								Bottom of borehole at 21.0 feet. Borehole backfilled with drill cuttings.

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/13/25 **DATE COMPLETED:** 8/13/25
BORING LOCATION: Near NW portion of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 18 ft.
WEATHER: 80's / Partly Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 12.0 ft. / El. 231.0 ft. Based on sample moisture
AT END OF DRILLING: 9.0 ft. / El. 234.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5 242.5	S1 - Top 6": Topsoil
			S1	8-20-38-34 (58)	24/20		Fill	1.0 242.0	Mid. 6": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 5-10% fine subrounded gravel, brown, moist
		2							Bot. 8": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
	240.0	3	S2	45-60	12/11				S2 - Similar to S1 Bot. 8"
5		5	S3	13-11-15-19 (26)	24/8				S3 - Similar to S1 Bot. 8"
		7							
	235.0						Sand and Gravel		
10		10	S4	24-31-31-32 (62)	24/24				S4 - Similar to S1 Bot. 8", moist to wet
		12							
	230.0								
15		15	S5	24-22-32-50 (54)	24/22				S5 - Similar to S1 Bot. 8", wet, weathered rock in tip of split spoon
		17				1			REMARK 1: Auger grinding encountered between depths of 17.0 feet to 18.0 feet on possible weathered rock.
	225.0					2		18.0	REMARK 2: Auger refusal encountered at depth of 18.0 feet on possible rock. Boring terminated.
20									Bottom of borehole at 18.0 feet. Borehole backfilled with drill cuttings.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/15/25 **DATE COMPLETED:** 8/15/25
BORING LOCATION: Near NW portion of prop. building
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 19.3 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 14.0 ft. / El. 231.0 ft. Based on sample moisture
AT END OF DRILLING: 12.0 ft. / El. 233.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	S1 - Top 6": Topsoil
			S1	5-12-5-7 (17)	24/18			244.5	Bot. 12": Silty SAND (SM), fine, 15-20% fines, light brown, moist
		2	S2	6-6-6-13 (12)	24/12		Fill		S2 - Top 4": Similar to S1 Bot. 12" Bot. 8": Silty SAND (SM), fine, 15-20% fines, trace of fine subangular gravel, trace of roots, brown, moist
		4						4.0	
5	240.0		S3	34-30-30-22 (60)	24/20			241.0	S3 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 25-30% fine to coarse subangular gravel, red-brown, moist
		6							
		9							S4 - Silty SAND with Gravel (SM), fine to coarse, 25-30% fines, ~15% fine to coarse subrounded gravel, red-brown, moist
10	235.0		S4	9-9-9-11 (18)	24/21				
		11					Sand and Gravel		▼
		14							▽ S5 - Top 5": Silty SAND with Gravel (SM), fine to coarse, 25-30% fines, 20-25% fine to coarse subrounded gravel, red-brown, wet
15	230.0		S5	50-56-39-32 (95)	24/17				Bot. 12": Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine subrounded gravel, red-brown, wet
		16							
		19						19.3	
		19.3	S6	95/4"	4/4				S6 - Silty SAND (SM), fine to medium, 25-30% fines, trace of fine subangular gravel, red-brown, wet (rock stuck in tip of split spoon) Bottom of borehole at 19.3 feet. Borehole backfilled with drill cuttings.
20	225.0								
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

B-108
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/13/25 **DATE COMPLETED:** 8/13/25
BORING LOCATION: Near northern portion of prop. building
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 20.5 ft.
WEATHER: 70's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 15.0 ft. / El. 230.0 ft. Based on sample moisture
AT END OF DRILLING: 13.5 ft. / El. 231.5 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	S1 - Top 6": Topsoil
		2	S1	3-3-9-11 (12)	24/20		Fill	244.5	Mid. 10": Silty SAND (SM), fine to medium, 15-20% fines, trace of organic soil, brown, moist Bot. 4": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine subrounded gravel, red-brown, moist
		4	S2	10-7-9-11 (16)	24/18			3.0	S2 - Top 12": Similar to S1 Bot. 4"
							Buried Organic Soil	242.0	Bot. 6": Silty SAND (SM), fine to medium, 20-25% fines, trace of organic soil, trace of roots, black, moist
5	240.0	5	S3	24-40-30-24 (70)	24/22	1		4.5 240.5	REMARK 1: Strata change assumed based on drilling effort. S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
		7							
10	235.0	10	S4	13-16-16-18 (32)	24/20				S4 - Similar to S3
		12					Sand and Gravel		
15	230.0	15	S5	19-32-44-50 (76)	24/22				S5 - Similar to S3, wet
		17							
20	225.0	20	S6	100	6/6			20.5	S6 - Similar to S3, wet
		20.5							Bottom of borehole at 20.5 feet. Borehole backfilled with drill cuttings.
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/15/25 **DATE COMPLETED:** 8/15/25
BORING LOCATION: Near NW portion of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 19.9 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	5-16-20-19 (36)	24/14		Topsoil	0.4	S1 - Top 5": Topsoil
							Fill	242.6	Bot. 9": Silty SAND with Gravel (SM), fine to coarse, 35-40% fines, 20-25% fine subangular gravel, brown(sieve performed)
		2	S2	32-62-44/4" (106/10")	16/12			2.0 241.0	S2 - Silty SAND (SM), fine, 20-25% fines, 5-10% coarse subrounded gravel, red-brown, moist
	240.0	3.3							
		4	S3	22-21-20-28 (41)	24/20				S3 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
5		6							
	235.0								
		9	S4	12-16-22-24 (38)	24/17		Sand and Gravel		S4 - Top 3": Silty SAND with Gravel (SM), fine, 20-25% fines, ~15% fine to coarse subrounded gravel, brown, moist Bot. 14": Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 15-20% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
10		11							
	230.0								
		14	S5	37-61-41-61/4" (102)	22/20				S5 - Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 30-35% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
15		15.8							
	225.0								
		19	S6	43-63/5" (63/5")	11/11			19.9	S6 - Similar to S5
20		19.9							Bottom of borehole at 19.9 feet. Borehole backfilled with drill cuttings.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/18/25 **DATE COMPLETED:** 8/18/15
BORING LOCATION: Near center of prop. building
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 22.0 ft. / El. 223.0 ft. Based on sample moisture
AT END OF DRILLING: Dry at the end of drilling
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	S1 - Top 6": Topsoil
			S1	4-10-12-9 (22)	24/20			244.5	Bot. 14": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 5-10% fine subangular gravel, trace of organic soil, brown, moist
		2					Fill		
			S2	5-8-7-9 (15)	24/18				S2 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 35-40% fine subangular gravel, brown (sieve performed)
		4						4.5	
5	240.0					1		240.5	REMARK 1: Strata change assumed based on drilling effort.
		5							S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
			S3	18-20-28-24 (48)	24/22				
		7							
10	235.0								
		10							S4 - Similar to S3
			S4	14-20-20-16 (40)	24/22				
		12					Sand and Gravel		
15	230.0								
		15							S5 - Similar to S3
			S5	25-34-40-40 (74)	24/24				
		17							
20	225.0								
		20							S6 - No recovery, tip of split spoon wet
			S6	28-44-38-30 (82)	24/0				
		22						22.0 ▽	
									Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/12/25 **DATE COMPLETED:** 8/12/25
BORING LOCATION: Near center of prop. building
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 21.7 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 15.0 ft. / El. 230.0 ft. Based on sample moisture
AT END OF DRILLING: Dry at end of drilling
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	3-7-15-34 (22)	24/20		Topsoil	0.5 / 244.5	S1 - Top 6": Topsoil Bot. 14": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, brown, moist (appears reworked)
		2	S2	28-16-14-25 (30)	24/18		Fill	2.0 / 243.0	S2 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, brown, moist (natural)
5	240.0	4							
		5 / 5.1	S3	60/1"	1/1	1			S3 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, brown, moist (natural) REMARK 1: Augered through boulder between depths of 5.1 feet to 6.0 feet.
		6	S4	50-32-36-45 (68)	24/22				S4 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine subangular gravel, red-brown, moist
		8							
10	235.0	10	S5	45-45-34-28 (79)	24/9		Sand and Gravel		S5 - Similar to S4, 2" fractured rock in tip of split spoon
		12							
15	230.0	15	S6	11-18-24-50 (42)	24/16			▽	S6 - Similar to S4, wet
		17							
20	225.0	20	S7	16-20-36-50/2" (56)	20/20			21.7	S7 - Silty SAND (SM), fine to coarse, ~15% fines, trace of fine subrounded gravel, red-brown, wet
		21.7							Bottom of borehole at 21.7 feet. Borehole backfilled with drill cuttings.
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/11/25 **DATE COMPLETED:** 8/11/25
BORING LOCATION: Near NE portion of prop. building
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 18 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	4-9-21-69 (30)	24/20		Topsoil	0.6	S1 - Top 7": Topsoil
							Fill	244.4	Bot. 13": Silty SAND with Gravel (SM), fine, ~15% fines, ~15% fine to coarse subrounded gravel, brown, moist (appears reworked)
		2	S2	74-64-72-100/4" (136)	22/18			2.0 243.0	S2 - Poorly Graded SAND with Silt and Gravel (SP-SM), fine, 10-15% fines, 25-30% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
		3.8 4							
5	240.0		S3	40-69-60-85 (129)	24/22				S3 - Similar to S2
		6							
10	235.0	10	S4	17-22-29-37 (51)	24/23		Sand and Gravel		S4 - Similar to S2
		12							
15	230.0	15	S5	70/5"	5/5				S5 - Silty SAND with Gravel (SM), fine, ~20% fines, 25-30% coarse subrounded gravel, trace of weathered rock, red-brown, moist
		15.4							
						1		18.0	REMARK 1: Auger refusal encountered at depth of 18.0 feet on possible rock. Boring terminated.
20	225.0								Bottom of borehole at 18.0 feet. Borehole backfilled with drill cuttings.
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/18/25 **DATE COMPLETED:** 8/18/25
BORING LOCATION: Near center of prop. building
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 12 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	4-9-12-8 (21)	24/16		Topsoil	0.5 243.5	S1 - Top 6": Topsoil Bot. 10": Poorly Graded SAND with Silt (SP-SM), fine to medium, trace coarse, 10-15% fines, 5-10% fine subangular gravel, brown, moist (appears reworked)
		2	S2	3-5-7-58 (12)	24/16		Fill		S2 - Silty SAND (SM), fine to medium, 15-20% fines, 5-10% fine subrounded gravel, trace of organic soil, brown, moist
	240.0	4						4.5 239.5	
5		5	S3	30-50-50/4" (100/10")	16/14	1			REMARK 1: Strata changed assumed based on drilling effort. S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
		6.3				2	Sand and Gravel		REMARK 2: Auger grinding encountered between depths of 7.0 feet to 9.0 feet on possible cobbles or boulder.
	235.0								
10		10	S4	12-16-20-18 (36)	24/22				S4 - Similar to S3
		12						12.0	Bottom of borehole at 12.0 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/15/25 **DATE COMPLETED:** 8/15/25
BORING LOCATION: Near SW portion of prop. building
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 21 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 14.0 ft. / El. 230.0 ft. Based on sample moisture
AT END OF DRILLING: 12.0 ft. / El. 232.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	6-9-7-8 (16)	24/18		Topsoil	0.4 / 243.6	S1 - Top 5": Topsoil Bot. 13": Silty SAND (SM), fine to medium, 15-20% fines, ~5% fine subrounded gravel, trace of roots, trace of organic odor, brown, moist
		2	S2	14-21-21-15 (42)	24/9		Fill		S2 - Silty SAND (SM), fine, 15-20% fines, 5-10% fine subrounded gravel, trace of organic odor, brown, moist
	240.0	4	S3	11-15-23-33 (38)	24/23			4.0 / 240.0	S3 - Silty SAND (SM), fine to medium, 20-25% fines, brown with gray mottles, moist
5		6							
	235.0	9	S4	14-25-22-20 (47)	24/22		Sand and Gravel		S4 - Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 20-25% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
10		11							
	230.0	14	S5	22-29-26-34 (55)	24/7				S5 - Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 15-20% fine to coarse subrounded gravel, red-brown, wet
15		16							
	225.0	19	S6	44-46-40-40 (86)	24/20				S6 - Silty SAND with Gravel (SM), fine to medium, 25-30% fines, 20-25% fine to coarse subangular gravel, trace of weathered rock, red-brown, wet
20		21						21.0	
	220.0								Bottom of borehole at 21.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/18/25 **DATE COMPLETED:** 8/18/25
BORING LOCATION: Near SW portion of prop. building
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 12 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5 / 243.5	S1 - Top 6": Topsoil
			S1	5-12-20-50 (32)	24/22		Fill		Bot. 16": Silty SAND (SM), fine to medium, 15-20% fines, 5-10% fine subangular gravel, trace of organic soil, brown, moist
		2	S2	36-50-45 (95)	18/16			2.0 / 242.0	S2 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
	240.0	3.5							
5		5	S3	18-28-34-36 (62)	24/20		Sand and Gravel		S3 - Similar to S2
		7							
	235.0								
10		10	S4	25-32-22-20 (54)	24/22				S4 - Similar to S2
		12						12.0	
									Bottom of borehole at 12.0 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/12/25 **DATE COMPLETED:** 8/12/25
BORING LOCATION: Near SE portion of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 21 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 21.0 ft. / El. 222.0 ft. Based on sample moisture
AT END OF DRILLING: 21.0 ft. / El. 222.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.7 / 242.3	S1 - Top 8": Topsoil
			S1	8-20-14-14 (34)	24/18		Fill		Mid. 6": Silty SAND (SM), fine to coarse, 15-20% fines, 10-15% fine subangular gravel, brown, moist
		2						2.0 / 241.0	Bot. 4": Silty SAND (SM), fine to medium, 15-20% fines, 5-10% fine subangular gravel, 1/2" layer of organic soil, brown, moist
	240.0		S2	20-16-17-23 (33)	24/16				S2 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine subangular gravel, red-brown, moist
		4							
5		5	S3	32-32-62 (94)	18/14				S3 - Similar to S2, 2" fractured rock in tip of split spoon
		6.5							
	235.0								
10		10	S4	18-26-26-30 (52)	24/20		Sand and Gravel		S4 - Similar to S2
		12							
	230.0								
15		15	S5	10-18-24-38 (42)	24/24				S5 - Similar to S2
		17							
	225.0								
20		20	S6	36-70	12/12				S6 - Similar to S2, wet at tip of split spoon
		21						21.0	Bottom of borehole at 21.0 feet. Borehole backfilled with drill cuttings.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/12/25 **DATE COMPLETED:** 8/12/25
BORING LOCATION: Near SE portion of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 16.5 ft. / El. 226.5 ft. Based on sample moisture
AT END OF DRILLING: 20.0 ft. / El. 223.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	4-11-33-27 (44)	24/11		Topsoil	0.7 / 242.3	S1 - Top 8": Topsoil Bot. 3": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 15-20% fine to coarse subangular gravel, brown, moist
	240.0	2	S2	19-9-5-4 (14)	24/16		Fill	4.0 / 239.0	S2 - Top 8": Similar to S1 Bot. 3" Bot. 8": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 5-10% fine subangular gravel, trace of roots, brown, moist
5		4							
		5	S3	9-33-50/1" (83/7")	13/11				S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 5-10% fine subangular gravel, brown, moist
	235.0	6.1							
10		10	S4	8-22-36-29 (58)	24/22		Sand and Gravel		S4 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 5-10% fine to coarse subangular gravel, brown, moist
	230.0	12							
15		15	S5	8-16-21-20 (37)	24/16				S5 - Similar to S4, red-brown, wet in tip of split spoon
	225.0	17							
20		20	S6	15-23-35-50 (58)	24/24				S6 - Similar to S4, red-brown, wet
		22						22.0	
	220.0								Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/18/25 **DATE COMPLETED:** 8/18/25
BORING LOCATION: Near SW portion of prop. building
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 21.5 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: 15.0 ft. / El. 229.0 ft. Based on sample moisture
AT END OF DRILLING: Dry at end of drilling
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	S1 - Top 6": Topsoil
			S1	4-6-12-14 (18)	24/18		Fill	243.5	Bot. 12": Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine subangular gravel, brown, moist
		2						2.0	
			S2	20-20-20-21 (40)	24/20			242.0	S2 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
	240.0	4							
5		5	S3	16-17-20-22 (37)	24/22				S3 - Similar to S2
		7							
	235.0								
10		10	S4	17-36-50 (86)	18/18				S4 - Similar to S2
		11.5					Sand and Gravel		
	230.0								
15		15	S5	13-19-26-18 (45)	24/24				▽ S5 - Similar to S2, wet
		17							
	225.0								
20		20	S6	17-38-50 (88)	18/18				S6 - Similar to S2, wet
		21.5						21.5	
									Bottom of borehole at 21.5 feet. Borehole backfilled with drill cuttings.
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/11/25 **DATE COMPLETED:** 8/11/25
BORING LOCATION: Near SE portion of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 21.5 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 16.0 ft. / El. 227.0 ft. Based on sample moisture
AT END OF DRILLING: 16.0 ft. / El. 227.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	S1 - Top 6": Topsoil
			S1	9-7-11-90/4" (18)	22/16			242.5	Bot. 10": Silty SAND (SM), fine, 20-25% fines, 10-15% fine subangular gravel, trace of organic soil, brown, moist
		1.8				1	Fill		REMARK 1: Augered through boulder between depths of 2.0 feet to 3.0 feet.
	240.0	3						3.0	
			S2	26-30-29-70 (59)	24/23			240.0	S2 - Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine to coarse subrounded gravel, red-brown, moist
5		5							
			S3	28-37-41-52 (78)	24/24				S3 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 20-25% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
		7							
	235.0								
10		10							
			S4	30-30-31-20 (61)	24/18				S4 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subrounded gravel, trace of weathered rock, red-brown, moist
		12					Sand and Gravel		
	230.0								
15		15							
			S5	11-14-13-23 (27)	24/18				S5 - Similar to S4, moist to wet
		17							
	225.0								
20		20							
			S6	20-32-72 (104)	18/16				S6 - Silty SAND with Gravel (SM), fine to coarse, 25-30% fines, ~15% fine to coarse subangular gravel, trace of weathered rock, red-brown, wet
		21.5						21.5	
	220.0								Bottom of borehole at 21.5 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

2. Vacuum exploration performed to a depth of 3.5 feet on August 19, 2025.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/15/25 **DATE COMPLETED:** 8/15/25
BORING LOCATION: Near SW corner of prop. building
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 21 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	S1 - Top 6": Topsoil
			S1	7-10-14-11 (24)	24/11			243.5	Bot. 5": Silty SAND (SM), fine, 15-20% fines, 5-10% fine to coarse subrounded gravel, trace of roots, trace of organic odor, brown, moist
		2	S2	9-15-31-42 (46)	24/18		Fill		S2 - Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 25-30% fine to coarse subangular gravel, trace of organic soil, trace of roots, dark brown (sieve performed)
	240.0	4						4.0	
5			S3	21-30-33-36 (63)	24/20			240.0	S3 - Silty SAND with Gravel (SM), fine, 15-20% fines, 20-25% fine to coarse subrounded gravel, trace of weathered rock, red-brown, moist
		6							
	235.0	9	S4	15-23-31-25 (54)	24/20				S4 - Silty SAND with Gravel (SM), fine, 20-25% fines, 20-25% fine to coarse subrounded gravel, trace of weathered rock, red-brown, moist
10		11					Sand and Gravel		
	230.0	14	S5	63-40/4" (40/4")	10/10				S5 - Silty SAND (SM), fine to medium, 20-25% fines, 10-15% fine to coarse subrounded gravel, trace of weathered rock, red-brown, moist
15		14.8							
	225.0	19	S6	45-36-47-54 (83)	24/22				S6 - Silty SAND with Gravel (SM), fine, 15-20% fines, 20-25% fine to coarse subrounded gravel, trace of weathered rock, red-brown, moist
20		21						21.0	
	220.0								Bottom of borehole at 21.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/18/25 **DATE COMPLETED:** 8/18/25
BORING LOCATION: Near SW portion of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 12 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	6-10-12-20 (22)	24/20		Topsoil	0.5 242.5	S1 - Top 6": Topsoil Bot. 14": Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine subangular gravel, brown, moist
	240.0	2	S2	24-18-12-20 (30)	24/16		Fill		S2 - Similar to S1 Bot. 14", trace of organic soil
5		4				1		4.5 238.5	REMARK 1: Strata change assumed based on drilling effort.
		5	S3	25-30-34-40 (64)	24/20				S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
	235.0	7					Sand and Gravel		
10		10	S4	16-16-18-22 (34)	24/22				S4 - Similar to S3
		12						12.0	Bottom of borehole at 12.0 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/18/25 **DATE COMPLETED:** 8/18/25
BORING LOCATION: Near southern portion of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 15.0 ft. / El. 228.0 ft. Based on sample moisture
AT END OF DRILLING: 19.0 ft. / El. 224.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	S1 - Top 6": Topsoil
			S1	6-12-18-24 (30)	24/20			242.5	Bot. 14": Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine subangular gravel, brown, moist
		2					Fill		
	240.0		S2	12-18-22-40 (40)	24/20				S2 - Similar to S1 Bot. 14"
		4						4.5	
5						1		238.5	REMARK 1: Strata change assumed based on drilling effort.
		5	S3	18-25-31-50 (56)	24/20				S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subrounded gravel, red-brown, moist
		7							
	235.0								
10									
		10	S4	18-17-17-18 (34)	24/21				S4 - Similar to S3
		12					Sand and Gravel		
	230.0								
15									
		15	S5	10-15-15-17 (30)	24/22				S5 - Similar to S3, wet
		17							
	225.0								
20									S6 - Similar to S3, wet
		20	S6	15-15-21-39 (36)	24/24				
		22						22.0	
	220.0								Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/12/25 **DATE COMPLETED:** 8/12/25
BORING LOCATION: Near southern portion of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 16.5 ft. / El. 226.5 ft. Based on sample moisture
AT END OF DRILLING: 15.0 ft. / El. 228.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5 / 242.5	S1 - Top 6": Topsoil
			S1	6-20-38-50 (58)	24/20		Fill		Bot. 14": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, trace of fine subangular gravel, brown, moist
		2						2.0 / 241.0	
	240.0		S2	47-53	12/8				S2 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 5-10% fine subangular gravel, red-brown, moist
		3							
5									
		5	S3	40-33-34-50 (67)	24/20				S3 - Similar to S2
		7							
	235.0								
10									
		10	S4	14-65	12/9				S4 - Similar to S2
		11					Sand and Gravel		
	230.0								
15									
		15	S5	28-30-16-14 (46)	24/18				S5 - Similar to S2, wet at tip of split spoon
		17							
	225.0								
20									
		20	S6	7-13-23-35 (36)	24/20				S6 - Similar to S2, wet
		22						22.0	
	220.0								Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/11/25 **DATE COMPLETED:** 8/11/25
BORING LOCATION: Near SE corner of prop. building
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 22 ft.
WEATHER: 80's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 20.0 ft. / El. 223.0 ft. Based on sample moisture
AT END OF DRILLING: 16.0 ft. / El. 227.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.6	S1 - Top 7": Topsoil
			S1	4-22-29-26 (51)	24/19			242.4	Bot. 12": Silty GRAVEL with Sand (GM), mostly coarse, subangular, 15-20% fines, 35-40% fine to coarse sand, brown, moist (sieve performed)
		2					Fill		
	240.0		S2	27-13-7-10 (20)	24/4				S2 - Similar to S1 Bot. 12"
		4						4.0	
5			S3	14-22-23-30 (45)	24/22			239.0	S3 - Silty SAND with Gravel (SM), fine, 20-25% fines, 15-20% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
		6							
	235.0								
10									
		10	S4	35-29-47-47 (76)	24/21				S4 - Similar to S3
		12					Sand and Gravel		
	230.0								
15									
		15	S5	58-29-18-18 (47)	24/22				S5 - Similar to S3
		17							
	225.0								
20									
		20	S6	14-24-30-32 (54)	24/20				S6 - Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, 15-20% fine to coarse subrounded gravel, trace of weathered rock, red-brown, wet
		22						22.0	
	220.0								Bottom of borehole at 22.0 feet. Borehole backfilled with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-4
COORDINATES: NA
SURFACE El.: 247 ft. (see note 1) **TOTAL DEPTH:** 8 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0	245.0	0	G1		60/22		Topsoil / Fill	0.3 / 246.7	G1 - Top 4": Topsoil Bot. 18": Silty SAND (SM), fine, 15-20% fines, 10-15% fine to coarse subrounded gravel, trace of roots, light brown, moist (previously vacuumed material)
5		5	G2		36/36				G2 - Top 14": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 25-30% fine to coarse subrounded gravel, trace of roots, light brown, moist
	240.0	8					Sand and Gravel	6.2 / 240.8	Bot. 22": Silty SAND with Gravel (SM), fine, 15-20% fines, 15-20% fine to coarse subrounded gravel, red-brown, moist
10								8.0	Bottom of borehole at 8.0 feet. Borehole backfilled with drill cuttings.
	235.0								
15									
	230.0								
20									
	225.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Vacuum exploration performed to a depth of 3.5 feet on August 14, 2025.

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-4
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 8 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	G1 - Top 6": Topsoil
			G1		60/28		Fill	244.5	Mid. 5": Silty SAND (SM), fine, 15-20% fines, 10-15% fine to coarse subrounded gravel, trace of roots, trace of organic odor, brown, moist Bot. 17": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 20-25% fine to coarse subrounded gravel, trace of organic soil, trace of roots, red-brown, moist
5	240.0	5						5.0	
			G2		36/17		Sand and Gravel	240.0	G2 - Silty SAND (SM), fine, 15-20% fines, 5-10% fine subrounded gravel, red-brown, moist
		8				1		8.0	REMARK 1: Geoprobe refusal encountered at depth of 8.0 feet on possible boulder or rock. Boring terminated. Bottom of borehole at 8.0 feet. Borehole backfilled with drill cuttings.
10	235.0								
15	230.0								
20	225.0								
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/22/25 **DATE COMPLETED:** 8/22/25
BORING LOCATION: Near prop. UGI-9 and UGI-10
COORDINATES: NA
SURFACE El.: 237 ft. (see note 1) **TOTAL DEPTH:** 5 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0	235.0	0	G1		60/50	1	Topsoil	0.5	G1 - Top 6": Topsoil
							Fill	236.5	Mid. 6": Poorly Graded SAND with Gravel (SP), fine to medium, 0-5% fines, 15-20% fine to coarse subrounded gravel, brown, moist
							Sand and Gravel	1.0 236.0	Bot. 38": Silty SAND with Gravel (SM), fine to coarse, 25-30% fines, 25-30% fine to coarse subangular gravel, brown, moist (sieve performed)
5	230.0	5						5.0	REMARK 1: Geoprobe refusal encountered at depth of 5.0 feet on possible boulder or rock. Boring terminated.
10	225.0								Bottom of borehole at 5.0 feet. Borehole backfilled with drill cuttings.
15	220.0								
20	215.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/22/25 **DATE COMPLETED:** 8/22/25
BORING LOCATION: Near prop. UGI-9 and UGI-10
COORDINATES: NA
SURFACE El.: 237 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0	235.0	0	G1		60/48		Topsoil / Fill	0.3 / 236.7	G1 - Top 4": Topsoil Mid. 4"; Poorly Graded SAND with Gravel (SP), fine to medium, 0-5% fines, 15-20% fine to coarse subangular gravel, brown, moist
5	230.0	5	G2		60/50		Sand and Gravel	0.7 / 236.3	Bot. 40": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, red-brown, moist G2 - Similar to G1 Bot. 40"
10	225.0	10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
15	220.0								
20	215.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/22/25 **DATE COMPLETED:** 8/22/25
BORING LOCATION: Near prop. UGI-9 and UGI-10
COORDINATES: NA
SURFACE El.: 236 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0	235.0	0					Topsoil	0.6	G1 - Top 7": Topsoil
							Fill	235.4	Mid. 5": Poorly Graded SAND with Gravel (SP), fine to medium, trace coarse, 0-5% fines, 15-20% fine to coarse subangular gravel, brown, moist
			G1		60/50			1.0 235.0	Bot. 38": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, red-brown, moist
5		5					Sand and Gravel		G2 - Similar to G1 Bot. 38"
	230.0		G2		60/44				
10		10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	225.0								
15									
	220.0								
20									
	215.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-3
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 6 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	G1		60/25		Topsoil	0.8	G1 - Top 9": Topsoil
							Fill	244.2	Bot. 16": Well Graded GRAVEL with Silt and Sand (GW-GM), fine to coarse, subangular, 10-15% fines, 40-45% fine to coarse sand, brown, moist (previously vacuumed material) (sieve performed)
5	240.0	5	G2		12/12	1		6.0	G2 - Silty SAND with Gravel (SM), fine, 25-30% fines, 15-20% fine to coarse subangular gravel, trace of roots, red-brown, moist
		6							REMARK 1: Geoprobe refusal encountered at depth of 6.0 feet on possible boulder or rock. Boring terminated.
									Bottom of borehole at 6.0 feet. Borehole backfilled with drill cuttings.
10	235.0								
15	230.0								
20	225.0								
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Vacuum exploration performed to depth of 4 feet on August 14, 2025.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-3
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	G1		60/16		Fill		G1 - Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine to coarse subrounded gravel, trace of roots, brown, moist (previously vacuumed material)
5	240.0	5	G2		60/60				G2 - Top 22": Silty SAND (SM), fine to medium, 20-25% fines, 10-15% fine to coarse subrounded gravel, trace of roots, light brown, moist
								6.8 238.2	
							Sand and Gravel		Bot. 38": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, ~15% fine to coarse subrounded gravel, red-brown, moist
10	235.0	10						10.0	
									Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
15	230.0								
20	225.0								
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Vacuum exploration performed to depth of 3 feet on August 14, 2025.

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BORING LOG

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CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-3
COORDINATES: NA
SURFACE El.: 246 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	245.0	0	G1		60/20		Topsoil / Fill	0.3 / 245.7	G1 - Top 3": Topsoil Bot. 17": Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, 15-20% fine subangular gravel, trace of roots, brown, moist (previously vacuumed material) (sieve performed)
5		5	G2		60/55				G2 - Top 12": Similar to G1 Bot. 17"
	240.0						Sand and Gravel	6.0 / 240.0	Bot. 43": Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 20-25% fine to coarse subrounded gravel, red-brown, moist
10		10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	235.0								
15									
	230.0								
20									
	225.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Vacuum exploration performed to depth of 3 feet on August 14, 2025.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-2
COORDINATES: NA
SURFACE El.: 245 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.3 / 244.7	G1 - Top 3": Topsoil Bot. 9": Silty SAND with Gravel (SM), fine, 15-20% fines, 15-20% fine subrounded gravel, light brown, moist (previously vacuumed material)
			G1		60/12		Fill		
5	240.0	5							G2 - Top 16": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 20-25% fine to coarse subrounded gravel, trace of asphalt, trace of roots, trace of organic odor, brown, moist
			G2		60/54		Sand and Gravel	6.3 / 238.7	Bot. 38": Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 20-25% fine to coarse subrounded gravel, brown, moist
10	235.0	10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
15	230.0								
20	225.0								
25	220.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Vacuum exploration performed to depth of 4 feet on August 14, 2025.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-2
COORDINATES: NA
SURFACE El.: 246 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
							Concrete	0.5	6" Concrete sidewalk
	245.0	0.5	G1		54/22		Fill	245.5	G1 - Top 15": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 40-45% fine to coarse subangular gravel, trace of asphalt, trace of roots, dark brown, moist (previously vacuumed material) Bot. 7": Silty SAND (SM), fine, 30-35% fines, ~5% fine subrounded gravel, orange-brown, moist
5		5						5.0	
	240.0		G2		60/26		Sand and Gravel	241.0	G2 - Top 7": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 35-40% fine to coarse subrounded gravel, brown, moist Bot. 19": Silty SAND with Gravel (SM), fine, 20-25% fines, 15-20% fine subrounded gravel, red-brown, moist
10		10						10.0	
	235.0								Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
15									
	230.0								
20									
	225.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Vacuum exploration performed to depth of 3.5 feet on August 14, 2025.

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BORING LOG

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CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/22/25 **DATE COMPLETED:** 8/22/25
BORING LOCATION: Near prop. UGI-1
COORDINATES: NA
SURFACE El.: 233 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0		0					Topsoil	0.8	G1 - Top 9": Topsoil
							Fill	232.2 1.4 231.6	Mid. 8": Poorly Graded SAND with Gravel (SP), fine to medium, trace coarse, 0-5% fines, 15-20% fine to coarse subangular gravel, brown, moist
	230.0		G1		60/24				Bot. 7": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, red-brown, moist
5		5					Sand and Gravel		G2 - Similar to G1 Bot. 7"
	225.0		G2		60/48				
10		10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	220.0								
15									
	215.0								
20									
	210.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/22/25 **DATE COMPLETED:** 8/22/25
BORING LOCATION: Near prop. UGI-1
COORDINATES: NA
SURFACE El.: 232 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.8	G1 - Top 10": Topsoil
	230.0						Fill	231.2 2.0	Mid. 14": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 40-45% fine to coarse subangular gravel, brown, moist (sieve performed)
			G1		60/50			230.0	Bot. 26": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, ~15% fine to coarse subangular gravel, red-brown, moist
5		5					Sand and Gravel		G2 - Similar to G1 Bot. 26"
	225.0		G2		60/45				
10		10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	220.0								
15									
	215.0								
20									
	210.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-5
COORDINATES: NA
SURFACE El.: 240 ft. (see note 1) **TOTAL DEPTH:** 7 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.3 / 239.7	G1 - Top 3": Topsoil Bot. 6": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 15-20% fine to coarse subrounded gravel, trace of roots, brown, moist (previously vacuumed material)
			G1		60/9		Fill		
5	235.0	5						5.7 / 234.3	G2 - Top 8": Silty SAND (SM), fine, 15-20% fines, 10-15% fine to coarse subrounded gravel, trace of roots, brown, moist
			G2		24/22		Sand and Gravel		Bot. 14": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subrounded gravel, trace of weathered rock, light brown, moist
		7						7.0	Bottom of borehole at 7.0 feet. Borehole backfilled with drill cuttings.
10	230.0								
15	225.0								
20	220.0								
25	215.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Vacuum exploration performed to depth of 4.5 feet on August 19, 2025.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-5
COORDINATES: NA
SURFACE El.: 241 ft. (see note 1) **TOTAL DEPTH:** 7 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0	240.0	0	G1		60/16	1	Topsoil / Fill	0.3 / 240.7	G1 - Top 3": Topsoil Bot. 13": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 10-15% fines, 15-20% fine to coarse subrounded gravel, red-brown, moist (previously vacuumed material)
								2.0 / 239.0	REMARK 1: Strata change assumed based on material vacuumed from borehole.
5	235.0	5	G2		24/12		Sand and Gravel	7.0	G2 - Silty GRAVEL with Sand (GM), fine to coarse, subangular, 20-25% fines, 15-20% fine sand, light brown, moist
		7							Bottom of borehole at 7.0 feet. Borehole backfilled with drill cuttings.
10	230.0								
15	225.0								
20	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Vacuum exploration performed to depth of 4 feet on August 19, 2025.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/22/25 **DATE COMPLETED:** 8/22/25
BORING LOCATION: Near prop. UGI-6
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 13 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE:
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	G1 - Top 6": Topsoil
	240.0		G1		60/40			242.5	Mid. 4": Poorly Graded SAND with Gravel (SP), fine to medium, trace coarse, 0-5% fines, 15-20% fine to coarse subangular gravel, brown, moist Bot. 30": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 10-15% fines, 35-40% fine to coarse subangular gravel, trace of brick, trace of roots, brown, moist (sieve performed)
5		5					Fill		G2 - Similar to G1 Bot. 30", trace of wood
	235.0		G2		60/36				
10		10						10.0	
			G3		36/28	1	Sand and Gravel	233.0	G3 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, red-brown, moist
	230.0	13						13.0	REMARK 1: Geoprobe refusal encountered at depth of 13.0 feet on possible boulder or rock. Boring terminated. Bottom of borehole at 13.0 feet. Borehole backfilled with drill cuttings.
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-7
COORDINATES: NA
SURFACE El.: 235 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	G1 - Top 6": Topsoil
							Subsoil	234.5	Mid. 7": Silty SAND (SM), fine, 15-20% fines, 5-10% fine subrounded gravel, trace of roots, orange-brown, moist (subsoil)
								1.1 233.9	Bot. 31": Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, 30-35% fine to coarse subangular gravel, brown, moist (sieve performed)
			G1		60/44				
5	230.0	5					Sand and Gravel		G2 - Top 25": Silty SAND (SM), fine to medium, 20-25% fines, 5-10% fine to coarse subrounded gravel, red-brown, moist
			G2		60/40				Bot. 15": Silty SAND with Gravel (SM), fine, 20-25% fines, 35-40% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
10	225.0	10						10.0	
									Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
15	220.0								
20	215.0								
25	210.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-7
COORDINATES: NA
SURFACE El.: 233 ft. (see note 1) **TOTAL DEPTH:** 7 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0		0					Topsoil	0.5	G1 - Top 6": Topsoil
							Subsoil	232.5	Mid. 7": Silty SAND (SM), fine, 15-20% fines, 5-10% fine subrounded gravel, trace of roots, orange-brown, moist (subsoil)
								1.1	
								231.9	Bot. 31": Silty SAND (SM), fine, 25-30% fines, 5-10% fine subrounded gravel, red-brown, moist
	230.0		G1		60/44		Sand and Gravel		
5		5							G2 - Similar to G1 Bot. 31"
			G2		24/10				
		7				1		7.0	REMARK 1: Geoprobe refusal encountered at depth of 7.0 feet on possible boulder or rock. Boring terminated.
	225.0								Bottom of borehole at 7.0 feet. Borehole backfilled with drill cuttings.
10									
	220.0								
15									
	215.0								
20									
	210.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/18/25 **DATE COMPLETED:** 8/20/25
BORING LOCATION: Near prop. UGI-8
COORDINATES: NA
SURFACE El.: 241 ft. (see note 1) **TOTAL DEPTH:** 11 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	240.0	0					Topsoil	0.5	S1 - Top 6": Topsoil
			S1	5-8-24-31 (32)	24/18			240.5	Bot. 12": Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine to coarse subangular gravel, trace of roots, trace of organic soil, brown, moist
		2					Fill		
			S2	18-13-15-20 (28)	24/20				S2 - Similar to S1 Bot. 12"
		4							
5		5				1		5.0	REMARK 1: Strata change assumed based on drilling effort.
	235.0		S3	25-23-27-50 (50)	24/0			236.0	S3 - No recovery
		7							
			S4	19-81/3" (81/3")	9/9		Sand and Gravel		S4 - Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 20-25% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
		7.8				2			REMARK 2: Auger chattering between depths of 8.0 feet to 9.0 feet on possible boulder.
		9							
10			S5	14-16-15-19 (31)	24/23				S5 - Silty SAND (SM), fine to medium, 25-30% fines, 10-15% fine to coarse subrounded gravel, red-brown, moist
	230.0	11						11.0	
									Bottom of borehole at 11.0 feet. Borehole backfilled with drill cuttings.
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

B-143

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Near prop. UGI-8
COORDINATES: NA
SURFACE El.: 241 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	240.0	0					Topsoil	0.6	G1 - Top 7": Topsoil
			G1		60/29		Fill	240.4	Mid. 9": Silty SAND with Gravel (SM), fine to medium, 20-25% fines, ~15% fine to coarse subrounded gravel, trace of roots, brown, moist Bot. 13": Silty SAND (SM), fine to medium, 25-30% fines, 5-10% fine subrounded gravel, trace of wood chips, black, moist
5		5						5.8	G2 - Top 9": Similar to S1 Bot. 13"
	235.0		G2		60/45		Sand and Gravel	235.2	Bot. 36": Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 30-35% fine to coarse subangular gravel, red-brown, moist
10		10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/22/25 **DATE COMPLETED:** 8/22/25
BORING LOCATION: Near prop. UGI-9
COORDINATES: NA
SURFACE El.: 242 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.7	G1 - Top 8": Topsoil
							Fill	241.3	Mid. 12": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine subrounded gravel, red-brown, moist (appears reworked)
	240.0		G1		60/45			1.7 240.3	Bot. 25": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, ~15% fine to coarse subangular gravel, red-brown, moist
5		5					Sand and Gravel		G2 - Similar to G1 Bot. 25"
	235.0		G2		60/50				
10		10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/22/25 **DATE COMPLETED:** 8/22/25
BORING LOCATION: Near prop. UGI-9
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0	240.0	0	G1		60/54		Topsoil	0.5	G1 - Top 6": Topsoil
							Fill	242.5	Mid. 10": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 5-10% fine subrounded gravel, red-brown, moist (appears reworked)
								1.3	
								241.7	Bot. 38": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, red-brown, moist
5	235.0	5	G2		60/53		Sand and Gravel		G2 - Similar to G1 Bot. 38"
10	230.0	10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
15	225.0								
20	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/22/25 **DATE COMPLETED:** 8/22/25
BORING LOCATION: Near prop. UGI-9
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0		0					Topsoil	0.5	G1 - Top 6": Topsoil
							Fill	243.5	Mid. 10": Silty SAND (SM), fine to medium, 15-20% fines, trace fine subangular gravel, red-brown, moist (appears reworked)
								1.3	
								242.7	Bot. 30": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, ~15% fine to coarse subangular gravel, red-brown, moist
			G1		60/46				
	240.0								
5		5					Sand and Gravel		G2 - Similar to G1 Bot. 30"
			G2		60/55				
	235.0								
10		10						10.0	
									Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

B-147

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: _____ **DATE COMPLETED:** _____
BORING LOCATION: _____
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 0 ft.
WEATHER: _____
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: _____
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** _____

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
5									
10									
15									
20									
25									

GENERAL NOTES:
B-147 was not performed due to the lack of access to area behind fence.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Within prop. bldg. SE of prop. maintenance bldg.
COORDINATES: NA
SURFACE El.: 242 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.5	G1 - Top 6": Topsoil
	240.0		G1		60/33		Fill	241.5	Mid. 13": Silty SAND (SM), fine, 15-20% fines, 5-10% fine subrounded gravel, trace of roots, orange-brown, moist Bot. 14": Silty SAND (SM), fine, 15-20% fines, 0-5% fine subrounded gravel, trace of roots, trace of wood, brown, moist
5		5							G2 - Top 24": Similar to G1 Bot. 14"
	235.0		G2		60/42		Sand and Gravel	235.0	Bot. 18": Silty SAND with Gravel (SM), fine, 15-20% fines, 20-25% fine to coarse subangular gravel, red-brown, moist
10		10						10.0	Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/21/25 **DATE COMPLETED:** 8/21/25
BORING LOCATION: Within prop. bldg. SE of prop. maintenance bldg.
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 4.5 ft.
WEATHER: 60's / Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Don Leger
DRILLING METHOD: Direct Push
DRILL RIG TYPE/MODEL: Geoprobe 7822DT
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: 1.625 in. I.D., 2.25 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.8	G1 - Top 10": Topsoil
			G1		54/34		Fill	243.2 2.3	Mid. 17": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 25-30% fine to coarse subrounded gravel, brown, moist
	240.0						Sand and Gravel	241.7	Bot. 7": Silty SAND (SM), fine, 15-20% fines, 0-5% fine subrounded gravel, light brown, moist
5		4.5				1		4.5	REMARK 1: Geoprobe refusal encountered at depth of 4.5 feet on possible boulder or rock. Boring terminated. Bottom of borehole at 4.5 feet. Borehole backfilled with drill cuttings.
	235.0								
10									
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

B-150

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/20/25 **DATE COMPLETED:** 8/20/25
BORING LOCATION: Near SE corner of prop. maintenance bldg.
COORDINATES: NA
SURFACE El.: 237 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.6	S1 - Top 7": Topsoil
	235.0	2	S1	5-9-4-4 (13)	24/12		Fill	236.4	Bot. 5": Silty SAND (SM), fine, 15-20% fines, 5-10% fine to coarse subrounded gravel, trace of roots, trace of organic odor, brown, moist
								2.6	S2 - Top 7": Similar to S1 Bot. 5"
		4	S2	11-25-45-60 (70)	24/24			234.4	Bot. 17": Silty SAND (SM), fine to medium, 20-25% fines, 5-10% fine subrounded gravel, light brown, moist
5			S3	30-58-46/3" (104/9")	15/15				S3 - Silty SAND (SM), fine, 20-25% fines, 10-15% fine to coarse subrounded gravel, light brown, moist
		5.3					Sand and Gravel		
	230.0					1			REMARK 1: Auger chattering encountered between depths of 7.0 feet to 9.0 feet on possible boulder.
		9							
		9.4	S4	100/5"	5/5				S4 - Silty SAND (SM), fine, 25-30% fines, 5-10% fine to coarse subrounded gravel, red-brown, moist
10						2		10.0	REMARK 2: Auger refusal encountered at depth of 10.0 feet on possible rock. Boring terminated.
									Bottom of borehole at 10.0 feet. Borehole backfilled with drill cuttings.
	225.0								
15									
	220.0								
20									
	215.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/20/25 **DATE COMPLETED:** 8/20/25
BORING LOCATION: Near SW corner of prop. maintenance bldg.
COORDINATES: NA
SURFACE El.: 237 ft. (see note 1) **TOTAL DEPTH:** 16.8 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Forest Mat	0.3 / 236.7	S1 - Top 4": Forest Mat
	235.0	2	S1	8-35-10-19 (45)	24/16				Bot. 12": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subrounded gravel, trace of roots, brown, moist
			S2	16-18-24-36 (42)	24/18		Subsoil		S2 - Top 8": Similar to S1 Bot. 12"
		4						4.0 / 233.0	Bot. 10": Poorly Graded SAND with Silt and Gravel (SP-SM), fine, 10-15% fines, 25-30% fine to coarse subrounded gravel, trace of roots, orange-brown, moist
5		5	S3	20-26-40-59 (66)	24/24				S3 - Silty SAND (SM), fine, 15-20% fines, 10-15% fine subrounded gravel, brown, moist
	230.0	7							
10		10	S4	11-19-31-22 (50)	24/17		Sand and Gravel		S4 - Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 15-20% fine to coarse subrounded gravel, trace of weathered rock, red-brown, moist
	225.0	12							
15		15	S5	20-13-13-57/3" (26)	21/13				S5 - Silty SAND with Gravel (SM), fine to coarse, 25-30% fines, 30-35% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
	220.0	16.8				1		16.8	REMARK 1: Split spoon and auger refusal encountered at depth of 16.8 feet on possible rock. Boring terminated.
									Bottom of borehole at 16.8 feet. Borehole backfilled with drill cuttings.
20									
	215.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/20/25 **DATE COMPLETED:** 8/20/25
BORING LOCATION: Near NW corner of prop. maintenance bldg.
COORDINATES: NA
SURFACE El.: 237 ft. (see note 1) **TOTAL DEPTH:** 14 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Forest Mat	0.5 / 236.5	S1 - Top 6": Forest Mat Bot. 6": Silty SAND (SM), fine to medium, 15-20% fines, ~5% fine subrounded gravel, trace of organic soil, trace of roots, brown, moist
	235.0	2	S1	1-9-8-28 (17)	24/12		Subsoil	2.4 / 234.6	S2 - Top 5": Similar to S1 Bot. 6" Bot. 17": Silty SAND with Gravel (SM), fine, ~20% fines, 30-35% fine to coarse subangular gravel, trace of weathered rock, light brown, moist
		4	S2	25-35-52-53 (87)	24/22				S3 - Similar to S2 Bot. 17"
5		5.3	S3	30-54-50/3" (104/9")	15/15				
	230.0						Sand and Gravel		
		9							S4 - Silty SAND with Gravel (SM), fine, 25-30% fines, 30-35% fine to coarse subangular gravel, trace of weathered rock, red-brown, moist
10		11	S4	18-16-14-16 (30)	24/23				
	225.0					1			REMARK 1: Auger chattering encountered between depths of 12.0 feet to 14.0 feet on possible boulder.
						2		14.0	REMARK 2: Auger refusal encountered at depth of 14.0 feet on possible rock. Boring terminated.
15									Bottom of borehole at 14.0 feet. Borehole backfilled with drill cuttings.
	220.0								
20									
	215.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/20/25 **DATE COMPLETED:** 8/20/25
BORING LOCATION: Near NE corner of prop. maintenance bldg.
COORDINATES: NA
SURFACE El.: 238 ft. (see note 1) **TOTAL DEPTH:** 17.8 ft.
WEATHER: 60's / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NX
LOGGED BY: JA **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.4 / 237.6	S1 - Top 5": Topsoil
			S1	10-9-16-13 (25)	24/12				Bot. 7": Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subrounded gravel, trace of roots, trace of organic odor, brown, moist
		2					Fill		S2 - Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine to coarse subrounded gravel, trace of roots, brown, moist
	235.0		S2	17-14-35-67/4" (49)	22/15				
		3.8						4.0 / 234.0	
		4	S3	100/5"	5/5	1			S3 - Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 15-20% fine to coarse subrounded gravel, brown, moist
5		4.4							REMARK 1: Auger chattering encountered between depths of 4.5 feet and 8.0 feet on possible boulder.
	230.0						Sand and Gravel		
		9	S4	65-50/3" (50/3")	9/9				S4 - Silty SAND with Gravel (SM), fine to coarse, 30-35% fines, 25-30% fine to coarse subangular gravel, red-brown, moist
10		9.8							
	225.0	13				2		13.0 / 225.0	REMARK 2: Auger refusal encountered at depth of 13.0 feet on rock. Started coring rock at depth of 13.0 feet.
15			C1		58/58		Rock		C1 - Min./ft.: 6.0, 5.0, 4.5, 4.5, 5.0 REC. - 58"/58" = 100.00% RQD = 30"/58" = 51.72% Hard, slightly weathered to fresh, extremely fractured to moderately fractured, coarse-grained, pink, CONGLOMERATE
	220.0	17.8						17.8	
									Bottom of borehole at 17.8 feet. Borehole backfilled with drill cuttings.
20									
	215.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/19/25 **DATE COMPLETED:** 8/19/25
BORING LOCATION: Near southern portion of exploratory ledge area
COORDINATES: NA
SURFACE El.: 246 ft. (see note 1) **TOTAL DEPTH:** 5 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Vacuum Exploration
DRILL RIG TYPE/MODEL: Ditch Witch FX 60
HAMMER TYPE: NA
HAMMER WEIGHT: NA lb. **HAMMER DROP:** NA in.
SPLIT SPOON DIA.: NA
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	245.0	0	G1		60/60		Topsoil	0.5	G1 - Top 6": Topsoil
							Fill	245.5	Mid. 18": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, trace of plastic, red-brown, moist
								2.0	
							Sand and Gravel	244.0	Bot. 36": Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, 15-20% cobbles up to 12 inches in diameter, red-brown, moist
5		5						5.0	
	240.0								Bottom of borehole at 5.0 feet. Borehole backfilled with drill cuttings.
10									
	235.0								
15									
	230.0								
20									
	225.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.
2. Vacuum exploration performed to depth of 4 feet on August 19, 2025. Boring abandoned due to proximity to electric lines.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/26/25 **DATE COMPLETED:** 8/26/25
BORING LOCATION: Near northern portion of exploratory ledge area
COORDINATES: NA
SURFACE El.: 247 ft. (see note 1) **TOTAL DEPTH:** 12 ft.
WEATHER: 60's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.4 / 246.6	S1 - Top 5": Topsoil Bot. 11": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 5-10% fine to coarse subangular gravel, trace of organic soil, brown, moist
	245.0	2	S1	15-13-14-14 (27)	24/16				
		3.5	S2	18-28-60 (88)	18/14		Fill		S2 - Similar to S1 Bot. 11", red-brown
5		5							
		6.5	S3	25-50-60 (110)	18/18				S3 - Similar to S1 Bot. 11", red-brown
	240.0								
						1		8.5 / 238.5	REMARK 1: Strata changed assumed based on drilling effort.
10		10					Sand and Gravel		
		12	S4	12-17-18-25 (35)	24/18				S4 - Silty SAND (SM), fine to medium, 15-20% fines, 5-10% fine subangular gravel, red-brown, moist
	235.0							12.0	
									Bottom of borehole at 12.0 feet. Borehole backfilled with drill cuttings.
15									
	230.0								
20									
	225.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/26/25 **DATE COMPLETED:** 8/26/25
BORING LOCATION: South of existing tennis courts
COORDINATES: NA
SURFACE El.: 241 ft. (see note 1) **TOTAL DEPTH:** 11 ft.
WEATHER: 60's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
	240.0	0	S1	4-6-15-28 (21)	24/18		Topsoil	0.8	S1 - Top 10": Topsoil
		2	S2	28-42-56 (98)	18/14			240.2	Bot. 8": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
		3.5							S2 - Similar to S1 Bot. 8"
5		5	S3	30-42-60 (102)	18/16		Sand and Gravel		S3 - Similar to S1 Bot, 8"
	235.0	6.5				1			REMARK 1: Auger grinding encountered between depths of 8.0 feet and 9.5 feet on possible boulder.
10		10	S4	32-75	12/9				S4 - Similar to S1 Bot. 8", 15-20% fine to coarse subangular gravel
	230.0	11				2		11.0	REMARK 2: Split spoon refusal encountered at depth of 11.0 feet on possible boulder or rock. Boring terminated.
									Bottom of borehole at 11.0 feet. Borehole backfilled with drill cuttings.
15	225.0								
20	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/26/25 **DATE COMPLETED:** 8/26/25
BORING LOCATION: South of existing tennis courts
COORDINATES: NA
SURFACE El.: 242 ft. (see note 1) **TOTAL DEPTH:** 13.5 ft.
WEATHER: 60's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Topsoil	0.3 241.7	S1 - Top 4": Topsoil
	240.0	2	S1	4-10-12-12 (22)	24/18				Mid. 1": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, 5-10% fines, 15-20% fine subangular gravel, brown, moist Bot. 13": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine subangular gravel, brown, moist
		3.5	S2	13-80-25 (105)	18/14				S2 - Similar to S1 Bot. 13", trace of organic soil
5		5	S3	12-24-16-14 (40)	24/16	1	Fill		S3 - Similar to S1 Bot. 13", trace of coarse subangular gravel, trace of organic soil
	235.0	7							REMARK 1: Auger grinding encountered between depths of 7.5 feet and 10.0 feet on possible cobbles or boulder.
10		10	S4	9-8-12-36 (20)	24/16				S4 - Silty SAND (SM), fine, 20-25% fines, brown-gray, moist (appears reworked)
	230.0	12	S5	50-58-56 (114)	18/14			12.0 230.0	
		13.5				2	Sand and Gravel	13.5	S5 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subangular gravel, red-brown, moist REMARK 2: Split spoon refusal encountered at depth of 13.5 feet on possible boulder or rock. Boring terminated. Bottom of borehole at 13.5 feet. Borehole backfilled with drill cuttings.
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/26/25 **DATE COMPLETED:** 8/26/25
BORING LOCATION: South of existing football field and track
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 12 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	2-5-9-14 (14)	24/20		Topsoil	0.4 242.6	S1 - Top 5": Topsoil Bot. 15": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subrounded gravel, trace of organic soil, red-brown, moist
		2	S2	25-18-16-16 (34)	24/18				S2 - Similar to S1 Bot. 15"
	240.0	4							
5		5	S3	8-5-7-11 (12)	24/16		Fill		S3 - Similar to S1 Bot. 15", trace of roots
		7	S4	7-10-6-14 (16)	24/16				S4 - Similar to S1 Bot. 15", trace of roots
	235.0	9						9.5 233.5	
10		10	S5	26-30-36-60 (66)	24/22	1	Sand and Gravel		REMARK 1: Strata change assumed based on drilling effort. S5 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
		12						12.0	Bottom of borehole at 12.0 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

B-159

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: _____ **DATE COMPLETED:** _____
BORING LOCATION: _____
COORDINATES: NA
SURFACE El.: (see note 1) **TOTAL DEPTH:** 0 ft.
WEATHER: _____
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: -
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: _____
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** _____

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
5									
10									
15									
20									
25									

GENERAL NOTES:
B- 159 was not performed due to the proximity to drainline.

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BORING LOG

B-160
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/26/25 **DATE COMPLETED:** 8/26/25
BORING LOCATION: South of existing football field and track
COORDINATES: NA
SURFACE El.: 244 ft. (see note 1) **TOTAL DEPTH:** 12 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: Not Encountered
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	4-10-17-25 (27)	24/14		Topsoil	0.5 / 243.5	S1 - Top 6": Topsoil Bot. 8": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 5-10% fine subangular gravel, brown, moist
		2	S2	15-14-10-11 (24)	24/0		Fill		S2 - No recovery, rock stuck in tip of split spoon
	240.0	4						4.5 / 239.5	REMARK 1: Strata change assumed based on drilling effort.
5		5	S3	27-50-46-30 (96)	24/18	1	Sand and Gravel		S3 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist
	235.0	7							
10		10	S4	12-14-16-21 (30)	24/24			12.0	S4 - Similar to S3
		12							Bottom of borehole at 12.0 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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BORING LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/26/25 **DATE COMPLETED:** 8/26/25
BORING LOCATION: South of existing football field and track
COORDINATES: NA
SURFACE El.: 243 ft. (see note 1) **TOTAL DEPTH:** 11.2 ft.
WEATHER: 70's / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: 10.0 ft. / El. 233.0 ft. Based on sample moisture
AT END OF DRILLING: 10.0 ft. / El. 233.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Soil X, Corp.
DRILLING FOREMAN: Edwin Fajardo
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: Diedrich D-70 turbo
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: AS **CHECKED BY:** NP

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	3-6-14-15 (20)	24/20		Topsoil	1.0	S1 - Top 12": Topsoil
	240.0	2	S2	33-33-41-44 (74)	24/16			242.0	Bot. 8": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subangular gravel, red-brown, moist S2 - Similar to S1 Bot. 8"
5		4							
		5	S3	22-30-34-35 (64)	24/24		Sand and Gravel		S3 - Similar to S1 Bot. 8"
	235.0	7				1			REMARK 1: Auger grinding encountered between depths of 7.0 feet and 10.0 feet on possible cobbles or boulder.
10		10	S4	30-26-70/2" (96/8")	14/2				S4 - Similar to S1 Bot. 8", wet
		11.2				2		11.2	REMARK 2: Split spoon refusal encountered at depth of 11.2 feet on possible boulder or rock. Boring terminated. Bottom of borehole at 11.2 feet. Borehole backfilled with drill cuttings.
	230.0								
15									
	225.0								
20									
	220.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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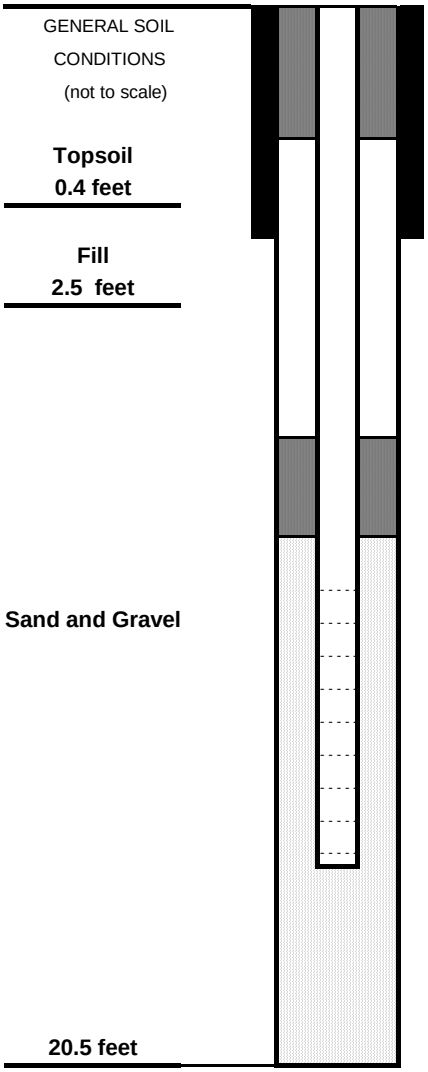
GROUNDWATER OBSERVATION WELL INSTALLATION REPORT

Boring No. : **B-3-OW**

Project Name:	**Prop. North Attleboro High School, North Attleboro, MA**		
LGCI Project Number:	**2407**		
Client: Dore and Whittier Architects			
Drilling Subcontractor:	Soil Exploration, Corp.	Date Started:	4/8/24
Drilling Foreman:	Edwin Fajardo	Date Completed:	4/8/24
LGCI Engineer:	MBH	Location: SE of exisitng bleachers	
Ground Surface Elevation:	242.0 feet (see note 1)	Total Depth of Boring: 20.5 feet	
Groundwater Depth:	9.0 ft. (based on sample moisture)	Drill Rig Type: Diedrich D-70 Turbo ATV Drill Rig	
	8.0 ft. at the end of drilling, (6.9 ft. on 4/10/24	Drilling Method: Hollow Stem Auger (4-1/4" I.D.) and 3" casing	



Riser Stickup ~0.0' above ground surface

THICKNESS OF SURFACE SEAL	1 foot
TYPE OF SURFACE SEAL	Concrete
TYPE OF SURFACE CASING	Roadway Box
ID OF SURFACE CASING	6 inch
DEPTH TO BOTTOM OF CASING	0.7 foot
ID OF RISER PIPE	2 inch
TYPE OF RISER PIPE	Schedule 40 PVC
TYPE OF BACKFILL AROUND RISER PIPE	Filter sand
DEPTH TO TOP OF SEAL	7 feet
TYPE OF SEAL	Bentonite Chips
DEPTH TO BOTTOM OF SEAL	8.0 feet
DEPTH TO TOP OF PERVIOUS SECTION	9 feet
TYPE OF PERVIOUS SECTION	Schedule 40 PVC
DESCRIBE OPENINGS	0.01 inch slots
ID OF PERVIOUS SECTION	2 inch
TYPE OF BACKFILL AROUND PERVIOUS SECTION	Filter sand (Holliston sand)
DEPTH TO BOTTOM OF PERVIOUS SECTION	19 feet
DEPTH TO BOTTOM OF SAND COLUMN	20.5 feet
TYPE OF BACKFILL BELOW PERVIOUS SECTION	Filter sand (Holliston sand)
DIAMETER OF BOREHOLE	4 inch
DEPTH TO BOTTOM OF BOREHOLE	20.5 feet

Note: 1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore + Whittier Architects, Inc. on April 29, 2024.

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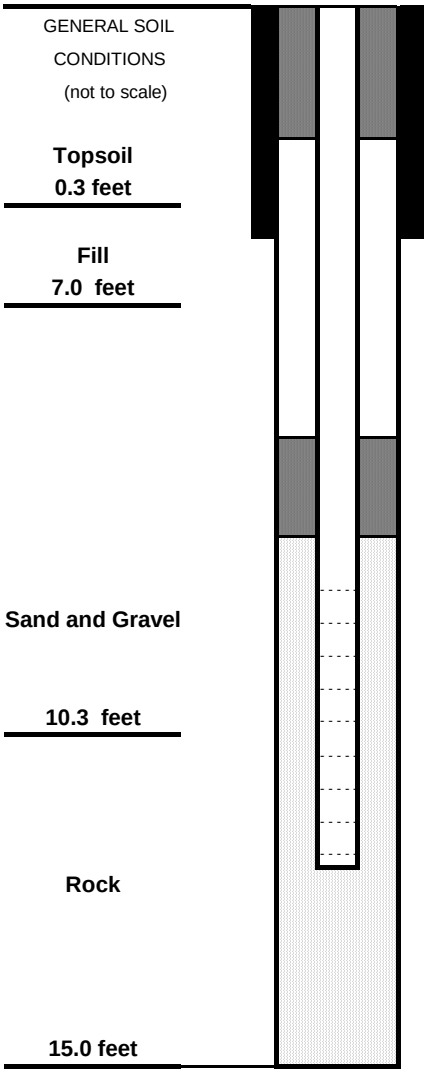
GROUNDWATER OBSERVATION WELL INSTALLATION REPORT

Boring No. : **B-9-OW**

Project Name: **Prop. North Attleboro High School, North Attleboro, MA**	
LGCI Project Number: **2407**	
Client: Dore and Whittier Architects	
Drilling Subcontractor: Soil Exploration, Corp.	Date Started: 4/9/24
Drilling Foreman: Edwin Fajardo	Date Completed: 4/9/24
LGCI Engineer: MBH	Location: SE of exisitng bleachers
Ground Surface Elevation: 243.0 feet (see note 1)	Total Depth of Boring: 15.0 feet
Groundwater Depth: 12.5 ft. at the end of drilling	Drill Rig Type: Diedrich D-70 Turbo ATV Drill Rig
13.5 ft. on 4/10/24	Drilling Method: Hollow Stem Auger (4-1/4" I.D.) and 3" casing



Riser Stickup ~0.0' above ground surface

THICKNESS OF SURFACE SEAL	1 foot
TYPE OF SURFACE SEAL	Concrete
TYPE OF SURFACE CASING	Roadway Box
ID OF SURFACE CASING	6 inch
DEPTH TO BOTTOM OF CASING	0.7 foot
ID OF RISER PIPE	2 inch
TYPE OF RISER PIPE	Schedule 40 PVC
TYPE OF BACKFILL AROUND RISER PIPE	Filter sand
DEPTH TO TOP OF SEAL	2 feet
TYPE OF SEAL	Bentonite Chips
DEPTH TO BOTTOM OF SEAL	4.0 feet
DEPTH TO TOP OF PERVIOUS SECTION	5 feet
TYPE OF PERVIOUS SECTION	Schedule 40 PVC
DESCRIBE OPENINGS	0.01 inch slots
ID OF PERVIOUS SECTION	2 inch
TYPE OF BACKFILL AROUND PERVIOUS SECTION	Filter sand (Holliston sand)
DEPTH TO BOTTOM OF PERVIOUS SECTION	15 feet
DEPTH TO BOTTOM OF SAND COLUMN	15 feet
TYPE OF BACKFILL BELOW PERVIOUS SECTION	Filter sand (Holliston sand)
DIAMETER OF BOREHOLE	4 inch
DEPTH TO BOTTOM OF BOREHOLE	15 feet

Note: 1. The ground surface elevation was interpolated to the nearest foot from drawing VB105 (Sheet 6 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore + Whittier Architects, Inc. on April 29, 2024.

Appendix B – LGCI's Test Pit Logs

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TEST PIT LOG

TP-1
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/25/24 **DATE COMPLETED:** 7/25/24
TEST PIT LOCATION: NW of existing middle school
COORDINATES: NA
SURFACE EL.: 233 ft. (see note 1) **TOTAL DEPTH:** 9 ft.
GROUNDWATER LEVELS:
DURING EXCAVATION: Not Encountered
AT END OF EXCAVATION: Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Patrick Guthrie
EXCAVATOR TYPE/MODEL: Holland RD 675E
WEATHER: 80's / Sunny
TEST PIT DIMENSIONS: 3.5' x 8.0'
LOGGED BY: OL **CHECKED BY:** SL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
	232.5	M		Topsoil	0.8	0 ft. - 0.8 ft.: Topsoil
		M	1	Fill	232.2	0.8 ft. - 3.3 ft.: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 20-25% fine to coarse subangular gravel, tan, moist REMARK 1: Cobbles ranging between 3 to 6 inches in size were encountered between depths of 0.8 to 3.3 feet.
2.5	230.0	M			3.6	3.3 ft. - 3.6 ft.: Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, ~20% fine to coarse subrounded gravel, dark brown, moist
		D		Sand and Gravel	229.4	3.6 ft. - 5.1 ft.: Silty SAND with Gravel (SM), mostly medium to coarse, 20-25% fines, ~20% fine to coarse subrounded gravel, red, moist
5.0	227.5	D	2	Silt	5.1 227.9	5.1 ft. - 6 ft.: SILT with Gravel (ML), non-plastic, 5-10% medium sand, 15-20% fine to coarse subrounded gravel, brown, moist REMARK 2: Cobbles ranging up to 12 inches in size were encountered at depth of 5.6 feet.
7.5	225.0	V	3	Sand and Gravel	6.0 227.0	6 ft. - 9 ft.: Silty SAND with Gravel (SM), fine to coarse, 25-30% fines, ~25% fine to coarse subrounded gravel, brown, moist
					9.0	REMARK 3: Test pit terminated at depth of 9.0 feet due to limits of excavator. Bottom of test pit at 9.0 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-2
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/1/24 **DATE COMPLETED:** 8/1/24
TEST PIT LOCATION: North of existing high school
COORDINATES: NA
SURFACE EL.: 245 ft. (see note 1) **TOTAL DEPTH:** 6.7 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Patrick Guthrie
EXCAVATOR TYPE/MODEL: Holland RD 675E
WEATHER: 80's / Sunny
TEST PIT DIMENSIONS: 2.5' x 9.5'
LOGGED BY: OL **CHECKED BY:** EP

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		M		Topsoil	0.5	0 ft. - 0.5 ft.: Topsoil
		V	1 2	Fill	244.5 2.5	0.5 ft. - 2.5 ft.: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 10-15% fines, 25-30% fine to coarse subrounded gravel, tan, moist REMARK 1: Plastic bags observed in side wall of test pit at depth of 1.8 feet. REMARK 2: Trace of construction debris including metal and styrofoam encountered at depth of 1.9 feet.
2.5	242.5				242.5	
		V	3	Sand and Gravel		2.5 ft. - 6.7 ft.: Silty SAND with Gravel (SM), mostly fine, 20-25% fines, 20-25% fine to coarse subrounded gravel, red-brown, moist REMARK 3: Cobbles ranging up to 8 inches in size were encountered throughout sand and gravel layer.
5.0	240.0					
			4		6.7	REMARK 4: Excavator refusal encountered in test pit at depth of 6.7 feet on large boulder. Test pit terminated. Bottom of test pit at 6.7 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-3
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/1/24 **DATE COMPLETED:** 8/1/24
TEST PIT LOCATION: Near SW corner of existing high school
COORDINATES: NA
SURFACE EL.: 246 ft. (see note 1) **TOTAL DEPTH:** 5 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Patrick Guthrie
EXCAVATOR TYPE/MODEL: Holland RD 675E
WEATHER: 80's / Sunny
TEST PIT DIMENSIONS: 2.5' x 11.5'
LOGGED BY: OL **CHECKED BY:** EP

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		M		Topsoil	0.6 / 245.4	0 ft. - 0.6 ft.: Topsoil
	245.0		1			0.6 ft. - 5 ft.: Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 30-35% fine to coarse subangular gravel, trace of roots, red-brown, moist REMARK 1: Cobbles ranging between 3 to 6 inches in size were encountered between depths of 1.0 and 5.0 feet.
2.5		V		Sand and Gravel		
	242.5					
5.0			2		5.0	REMARK 2: Test pit terminated at depth of 5.0 feet due to limits of excavator. Bottom of test pit at 5.0 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-4
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/1/24 **DATE COMPLETED:** 8/1/24
TEST PIT LOCATION: SE of existing high school
COORDINATES: NA
SURFACE EL.: 245 ft. (see note 1) **TOTAL DEPTH:** 7.5 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Patrick Guthrie
EXCAVATOR TYPE/MODEL: Holland RD 675E
WEATHER: 80's / Sunny
TEST PIT DIMENSIONS: 2.5' x 12'
LOGGED BY: OL **CHECKED BY:** EP

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		D		Topsoil	0.5	0 ft. - 0.5 ft.: Topsoil
		V	1	Fill	244.5	0.5 ft. - 1.7 ft.: Silty SAND with Gravel (SM), medium to coarse, ~20% fines, 20-25% fine to coarse subrounded to subangular gravel, trace of roots, tan to brown, moist REMARK 1: Cobbles and boulders ranging up to 18 inches in size were encountered between depths of 0.9 and 2.0 feet.
2.5	242.5	V	2	Sand and Gravel	1.7 243.3	1.7 ft. - 7.5 ft.: Silty SAND with Gravel (SM), mostly fine, 20-25% fines, 20-25% fine to coarse subrounded gravel, red-brown, moist REMARK 2: Cobbles ranging up to 6 inches in size were encountered at depth of 4.0 feet.
5.0	240.0					
7.5	237.5		3 4		7.5	REMARK 3: 24-inch boulder encountered at depth of 7.0 feet. REMARK 4: Test pit terminated at depth of 7.5 feet due to limits of excavator. Bottom of test pit at 7.5 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-5
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/25/24 **DATE COMPLETED:** 7/25/24
TEST PIT LOCATION: South of existing batting cage
COORDINATES: NA
SURFACE EL.: 242 ft. (see note 1) **TOTAL DEPTH:** 8.8 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Patrick Guthrie
EXCAVATOR TYPE/MODEL: Holland RD 675E
WEATHER: 80's / Sunny
TEST PIT DIMENSIONS: 2.5' x 7.5'
LOGGED BY: OL **CHECKED BY:** SL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	1.3	0 ft. - 1.3 ft.: Topsoil
	240.0	M	1	Fill	240.7	1.3 ft. - 2.6 ft.: Silty SAND (SM), fine, trace medium to coarse, 30-35% fines, 5-10% fine to coarse subrounded gravel, orange, moist REMARK 1: 8 inch cobbles encountered at depth of 1.6 feet.
2.5					2.6	
		D		Sand and Gravel	239.4	2.6 ft. - 8.8 ft.: Silty SAND with Gravel (SM), fine to coarse, ~20% fines, 15-20% fine to coarse subrounded gravel, dark brown, moist
	237.5					
5.0			2			REMARK 2: Cobbles ranging between 6 to 8 inches in size were encountered at depth of 5.0 feet.
	235.0	V				
7.5						
			3		8.8	REMARK 3: Test pit terminated at depth of 8.8 feet due to limits of excavator.
						Bottom of test pit at 8.8 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-6
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/1/24 **DATE COMPLETED:** 8/1/24
TEST PIT LOCATION: South of existing high school
COORDINATES: NA
SURFACE EL.: 243 ft. (see note 1) **TOTAL DEPTH:** 7.8 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Patrick Guthrie
EXCAVATOR TYPE/MODEL: Holland RD 675E
WEATHER: 80's / Sunny
TEST PIT DIMENSIONS: 2.5' x 9'
LOGGED BY: OL **CHECKED BY:** EP

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
	242.5	E		Topsoil	0.6	0 ft. - 0.6 ft.: Topsoil
		D	1	Fill	242.4	0.6 ft. - 2 ft.: Silty SAND with Gravel (SM), mostly fine, ~20% fines. 20-25% fine to coarse subrounded gravel, trace of roots, light brown, moist (appears to be reworked) REMARK 1: Boulders ranging between 18 and 24 inches in size were encountered at depth of 0.7 feet.
2.5	240.0	V			3.7	2 ft. - 3.7 ft.: Silty SAND with Gravel (SM), mostly fine, 20-25% fines. 25-30% fine to coarse subrounded gravel, trace of roots, orange-brown, moist
		V		Buried Organic Soil	239.3 4.2	3.7 ft. - 4.2 ft.: Silty SAND (SM), fine, 20-25% fines, 5-10% fine subrounded gravel, trace of roots, trace of wood, brown to black, moist
5.0	237.5	V	2	Sand and Gravel	238.8	4.2 ft. - 7.8 ft.: Silty SAND with Gravel (SM), fine to medium, 20-25% fines, 15-20% fine to coarse subrounded gravel, red, moist REMARK 2: Cobbles ranging up to 8 inches in size were encountered at depth of 6.5 feet.
7.5			3		7.8	REMARK 3: Test pit terminated at depth of 7.8 feet due to limits of excavator. Bottom of test pit at 7.8 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-7
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/25/24 **DATE COMPLETED:** 7/25/24
TEST PIT LOCATION: South of existing football field and track
COORDINATES: NA
SURFACE EL.: 235 ft. (see note 1) **TOTAL DEPTH:** 6.7 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Patrick Guthrie
EXCAVATOR TYPE/MODEL: Holland RD 675E
WEATHER: 80's / Sunny
TEST PIT DIMENSIONS: 2.5' x 8.0'
LOGGED BY: OL **CHECKED BY:** SL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	1.4	0 ft. - 1.4 ft.: Topsoil
		D		Fill	233.6 1.9	1.4 ft. - 1.9 ft.: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, ~15% fine to coarse subangular gravel, tan to brown, moist
2.5	232.5	D			233.1	1.9 ft. - 6.7 ft.: Silty SAND with Gravel (SM), mostly coarse, 15-20% fines, 20-25% fine to coarse subrounded gravel, dark brown, moist
			1			REMARK 1: Cobbles approximately 6 inches in size were encountered between depths of 3.0 feet and 6.7 feet.
				Sand and Gravel		
5.0	230.0	V				
			2		6.7	REMARK 2: Test pit terminated at depth of 6.7 feet due to limits of excavator.
						Bottom of test pit at 6.7 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-101
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/29/25 **DATE COMPLETED:** 7/29/25
TEST PIT LOCATION: Near prop. UGI-1
COORDINATES: NA
SURFACE EL.: 233 ft. (see note 1) **TOTAL DEPTH:** 7.5 ft.
GROUNDWATER LEVELS:
DURING EXCAVATION: Not Encountered
AT END OF EXCAVATION: Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Dave Ward
EXCAVATOR TYPE/MODEL: CAT 440 Backhoe
WEATHER: 90's / Sunny
TEST PIT DIMENSIONS: 8.0' x 2.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
	232.5	E		Topsoil	0.5	0 ft. - 0.5 ft.: Topsoil
		E/M		Fill	232.5	0.5 ft. - 2.5 ft.: Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, trace coarse, ~5% fines, 15-20% fine to coarse subrounded gravel, brown, moist
2.5					2.5	
	230.0	D/VD		Sand and Gravel	230.5	2.5 ft. - 7.5 ft.: Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subrounded gravel, light gray, moist
5.0						
	227.5					
7.5			1		7.5	REMARK 1: Boulders encountered at depth of 7.5 feet. Very difficult excavation effort.
						Bottom of test pit at 7.5 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-103
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/7/25 **DATE COMPLETED:** 8/7/25
TEST PIT LOCATION: Near prop. UGI-4
COORDINATES: NA
SURFACE EL.: 246 ft. (see note 1) **TOTAL DEPTH:** 9.5 ft.
GROUNDWATER LEVELS:
DURING EXCAVATION: Not Encountered
AT END OF EXCAVATION: Not Encountered

EXCAVATION SUBCONTRACTOR: Andrew's Landscaping LLC
EXCAVATION FOREMAN: Andrew Butler
EXCAVATOR TYPE/MODEL: Yanmar SV40
WEATHER: 70's / Sunny
TEST PIT DIMENSIONS: 6.0' x 4.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
	245.0	E		Topsoil	1.0	0 ft. - 1 ft.: Topsoil
		E/M		Fill	245.0 2.0	1 ft. - 2 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subrounded gravel, ~5% cobbles, brown, moist
2.5		M		Buried Subsoil	244.0 3.5	2 ft. - 3.5 ft.: Silty SAND (SM), fine, trace medium, 15-20% fines, 10-15% fine subrounded gravel, yellow-brown, moist
	242.5	M/D		Sand and Gravel	242.5	3.5 ft. - 6 ft.: Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 15-20% fine to coarse subrounded gravel, trace of cobbles, brown, moist
5.0		D				
	240.0	D/V				6 ft. - 9.5 ft.: Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, trace coarse, 10-15% fines, 15-20% fine to coarse subrounded gravel, ~5% cobbles, brown, moist
7.5						
	237.5				9.5	
						Bottom of test pit at 9.5 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-104
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/28/25 **DATE COMPLETED:** 7/28/25
TEST PIT LOCATION: Near prop. UGI-9 and UGI-10
COORDINATES: NA
SURFACE EL.: 236 ft. (see note 1) **TOTAL DEPTH:** 7.1 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** 7.0 ft. / El. 229.0 ft.
▼ **AT END OF EXCAVATION:** 7.0 ft. / El. 229.0 ft.

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Dave Ward
EXCAVATOR TYPE/MODEL: CAT 440 Backhoe
WEATHER: 90's / Sunny
TEST PIT DIMENSIONS: 10.0' x 3.5'
LOGGED BY: OL **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E	1	Topsoil	0.5 / 235.5	0 ft. - 0.5 ft.: Topsoil
	235.0	M		Fill	1.3 / 234.7	0.5 ft. - 1.3 ft.: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, ~20% subrounded fine to coarse gravel, tan, moist REMARK 1: Pea stone and drainage pipe wrapped in geotextile fabric encountered between depths of 0.5 feet to 4.5 feet on the south side of test pit.
2.5	232.5	M/D	2	Silt	7.1 ▼	1.3 ft. - 7.1 ft.: SILT with Gravel (ML), non-plastic, ~15% fine subrounded gravel, red, moist REMARK 2: Cobbles up to 8 inches in diameter encountered between depths of 2.0 feet to 7.1 feet.
5.0	230.0					
						Bottom of test pit at 7.1 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-105
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/28/25 **DATE COMPLETED:** 7/28/25
TEST PIT LOCATION: Near prop. UGI-9 and UGI-10
COORDINATES: NA
SURFACE EL.: 238 ft. (see note 1) **TOTAL DEPTH:** 9.5 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Dave Ward
EXCAVATOR TYPE/MODEL: CAT 440 Backhoe
WEATHER: 90's / Sunny
TEST PIT DIMENSIONS: 11.0' x 3.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
	237.5	E		Topsoil	1.0	0 ft. - 1 ft.: Topsoil
		M		Fill	237.0 1.8	1 ft. - 1.8 ft.: Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 15-20% fine to coarse subrounded gravel, tan, moist
2.5	235.0	M	1	Silt	236.2	1.8 ft. - 5 ft.: SILT (ML), non-plastic, 10-15% fine subrounded gravel, red, moist REMARK 1: Cobbles ranging between 3 inches to 6 inches in diameter encountered between depths of 1.8 feet to 9.5 feet.
5.0	232.5	D				5 ft. - 9.5 ft.: SILT with Gravel (ML), non-plastic, ~20% fine to coarse subrounded gravel, red, moist
7.5	230.0		2		9.5	REMARK 2: Test pit terminated at depth of 9.5 feet due to limits of excavator. Bottom of test pit at 9.5 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore & Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-110

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/29/25 **DATE COMPLETED:** 7/29/25
TEST PIT LOCATION: Near prop. UGI-6
COORDINATES: NA
SURFACE EL.: 243 ft. (see note 1) **TOTAL DEPTH:** 9 ft.
GROUNDWATER LEVELS:
DURING EXCAVATION: Not Encountered
AT END OF EXCAVATION: Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Dave Ward
EXCAVATOR TYPE/MODEL: CAT 440 Backhoe
WEATHER: 90's / Sunny
TEST PIT DIMENSIONS: 8.0' x 2.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
	242.5	E		Topsoil	0.5	0 ft. - 0.5 ft.: Topsoil
		E		Fill	242.5 1.0	0.5 ft. - 1 ft.: Well Graded SAND with Gravel (SW), fine to coarse, 0-5% fines, 15-20% fine to coarse subrounded gravel, brown, moist
2.5	240.0	D/V		Sand and Gravel	242.0	1 ft. - 9 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, ~15% fines, 15-20% fine to coarse subrounded gravel, ~10% cobbles, trace of boulders up to 1.5 feet in diameter, trace of roots, brown, moist
5.0	237.5					
7.5	235.0				9.0	
						Bottom of test pit at 9.0 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore and Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-111
PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/29/25 **DATE COMPLETED:** 7/29/25
TEST PIT LOCATION: Near prop. UGI-6
COORDINATES: NA
SURFACE EL.: 242 ft. (see note 1) **TOTAL DEPTH:** 9.5 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** 9.5 ft. / El. 232.5 ft.
▼ **AT END OF EXCAVATION:** 9.5 ft. / El. 232.5 ft.

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Dave Ward
EXCAVATOR TYPE/MODEL: CAT 440 Backhoe
WEATHER: 90's / Sunny
TEST PIT DIMENSIONS: 8.0' x 2.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	0.5 / 241.5	0 ft. - 0.5 ft.: Topsoil
	240.0	E		Fill	2.0 / 240.0	0.5 ft. - 2 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subrounded gravel, brown, moist
2.5		M/D		Sand and Gravel		2 ft. - 9.5 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 15-20% fine to coarse subrounded gravel, trace of cobbles, trace of roots, brown, moist to wet
	237.5					
5.0						
	235.0					
7.5						
	232.5				9.5	
						Bottom of test pit at 9.5 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore and Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/7/25 **DATE COMPLETED:** 8/7/25
TEST PIT LOCATION: Near prop. UGI-7
COORDINATES: NA
SURFACE EL.: 234 ft. (see note 1) **TOTAL DEPTH:** 9.5 ft.
GROUNDWATER LEVELS:
DURING EXCAVATION: Not Encountered
AT END OF EXCAVATION: Not Encountered

EXCAVATION SUBCONTRACTOR: Andrew's Landscaping LLC
EXCAVATION FOREMAN: Andrew Butler
EXCAVATOR TYPE/MODEL: Yanmar SV40
WEATHER: 70's / Sunny
TEST PIT DIMENSIONS: 6.0' x 4.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Forest Mat	0.7	0 ft. - 0.7 ft.: Forest Mat
	232.5	E		Subsoil	233.3 2.0	0.7 ft. - 2 ft.: Silty SAND (SM), fine, trace medium, 20-25% fines, 10-15% fine to coarse subrounded gravel, ~15% cobbles, yellow-brown, moist
2.5		E/M			232.0	2 ft. - 5.5 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, 20-25% fines, 15-20% fine to coarse subrounded gravel, light brown, moist
	230.0	D				
5.0		D/V				
	227.5	V		Sand and Gravel		5.5 ft. - 9.5 ft.: Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, 10-15% fine to coarse subrounded gravel, brown, moist
7.5						
	225.0				9.5	
						Bottom of test pit at 9.5 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore and Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

TP-113

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/29/25 **DATE COMPLETED:** 7/29/25
TEST PIT LOCATION: Near prop. UGI-8
COORDINATES: NA
SURFACE EL.: 241 ft. (see note 1) **TOTAL DEPTH:** 9 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Dave Ward
EXCAVATOR TYPE/MODEL: CAT 440 Backhoe
WEATHER: 90's / Sunny
TEST PIT DIMENSIONS: 8.0' x 2.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft)	Material Description
		E		Topsoil	0.5	0 ft. - 0.5 ft.: Topsoil
	240.0	E/M		Fill	240.5	0.5 ft. - 3 ft.: Silty SAND with Gravel (SM), fine to medium, 15-20% fines, 15-20% fine to coarse subrounded gravel, trace of cobbles, brown, moist
2.5					3.0	
	237.5	M		Forest Mat	238.0	3 ft. - 5 ft.: Buried Forest Mat, trace of roots, trace of small tree stumps
5.0					5.0	
	235.0	D/V		Sand and Gravel	236.0	5 ft. - 9 ft.: Silty SAND (SM), fine to medium, 25-30% fines, gray, moist
7.5						
	232.5				9.0	
						Bottom of test pit at 9.0 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore and Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/29/25 **DATE COMPLETED:** 7/29/25
TEST PIT LOCATION: Near prop. UGI-9
COORDINATES: NA
SURFACE EL.: 235 ft. (see note 1) **TOTAL DEPTH:** 8 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Dave Ward
EXCAVATOR TYPE/MODEL: CAT 440 Backhoe
WEATHER: 90's / Sunny
TEST PIT DIMENSIONS: 8.0' x 2.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Forest Mat	0.5	0 ft. - 0.5 ft.: Topsoil
		E/M		Fill	234.5 2.0	0.5 ft. - 2 ft.: Silty SAND with Gravel (SM), fine to medium, 20-25% fines, ~15% fine to coarse subrounded gravel, ~10 cobbles and boulders up to 2 feet in diameter, gray, moist
2.5	232.5	D/V		Sand and Gravel	233.0	2 ft. - 8 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 20-25% fine to coarse subrounded gravel, trace of cobbles and boulders up to 1.5 feet in diameter, brown, moist
5.0	230.0					
7.5	227.5		1		8.0	REMARK 1: Excavator refusal encountered at depth of 8.0 feet on large boulders.
						Bottom of test pit at 8.0 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore and Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/28/25 **DATE COMPLETED:** 7/28/25
TEST PIT LOCATION: Near prop. UGI-9
COORDINATES: NA
SURFACE EL.: 235 ft. (see note 1) **TOTAL DEPTH:** 10.5 ft.
GROUNDWATER LEVELS:
DURING EXCAVATION: 9.0 ft. / El. 227.0 ft.
AT END OF EXCAVATION: 9.0 ft. / El. 227.0 ft.

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Dave Ward
EXCAVATOR TYPE/MODEL: CAT 440 Backhoe
WEATHER: 90's / Sunny
TEST PIT DIMENSIONS: 11.0' x 2.5'
LOGGED BY: OL **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		M		Forest Mat	0.4	0 ft. - 0.4 ft.: Forest Mat
		D		Subsoil	234.6 2.0	0.4 ft. - 2 ft.: Silty SAND with Gravel (SM), mostly fine, 20% fines, 20-25% fine subrounded gravel, trace of cobbles up to 6 inches in diameter, trace of roots, light brown, moist
2.5	232.5				233.0	2 ft. - 8 ft.: Silty SAND with Gravel (SM), mostly fine, 20-25% fines, 25-30% fine subrounded gravel, red, moist
5.0	230.0	D		Sand and Gravel		
7.5	227.5		1			8 ft. - 10.5 ft.: Silty SAND with Gravel (SM), fine to coarse, ~20% fines, 15-20% fine subrounded gravel, red-brown, moist REMARK 1: Boulder encountered at depth of 8.0 feet.
10.0	225.0	V			10.5	
						Bottom of test pit at 10.5 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore and Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 7/29/25 **DATE COMPLETED:** 7/29/25
TEST PIT LOCATION: Within prop. bldg. SE of prop. maintenance bldg.
COORDINATES: NA
SURFACE EL.: 243 ft. (see note 1) **TOTAL DEPTH:** 5.5 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: North Attleboro DPW
EXCAVATION FOREMAN: Dave Ward
EXCAVATOR TYPE/MODEL: CAT 440 Backhoe
WEATHER: 90's / Sunny
TEST PIT DIMENSIONS: 12.0' x 2.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
	242.5			Topsoil	0.5	0 ft. - 0.5 ft.: Topsoil
				Fill	242.5 1.0	0.5 ft. - 1 ft.: Poorly Graded SAND with Silt and Gravel (SP-SM), fine to medium, trace coarse, 10-15% fines, 15-20% fine subrounded gravel, trace of roots, brown, moist
					242.0	1 ft. - 5.5 ft.: Similar to above
2.5	240.0			Sand and Gravel		
5.0	237.5		1		5.5	REMARK 1: Excavator refusal encountered at depth of 5.5 feet on large boulder or rock.
						Bottom of test pit at 5.5 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore and Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/7/25 **DATE COMPLETED:** 8/7/25
TEST PIT LOCATION: Near northern portion of exploratory ledge area
COORDINATES: NA
SURFACE EL.: 249 ft. (see note 1) **TOTAL DEPTH:** 9.5 ft.
GROUNDWATER LEVELS:
DURING EXCAVATION: Not Encountered
AT END OF EXCAVATION: Not Encountered

EXCAVATION SUBCONTRACTOR: Andrew's Landscaping LLC
EXCAVATION FOREMAN: Andrew Butler
EXCAVATOR TYPE/MODEL: Yanmar SV40
WEATHER: 70's / Sunny
TEST PIT DIMENSIONS: 10.0' x 4.0'
LOGGED BY: AS **CHECKED BY:** AL

Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
		E		Topsoil	0.5 / 248.5	0 ft. - 0.5 ft.: Topsoil
	247.5	E/M		Subsoil	1.5 / 247.5	0.5 ft. - 1.5 ft.: Silty SAND (SM), fine to medium, trace coarse, 20-25% fines, 10-15% fine subrounded gravel, trace of roots, yellow-brown, moist
2.5		M/D		Sand and Gravel		1.5 ft. - 9.5 ft.: Silty SAND with Gravel (SM), fine to medium, trace coarse, 15-20% fines, 20-25% fine to coarse subrounded gravel, ~20% of subangular cobbles, light brown, moist
	245.0	D				
5.0						
	242.5	V				
7.5						
	240.0				9.5	Bottom of test pit at 9.5 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore and Whittier Architects, Inc. on April 29, 2024.

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TEST PIT LOG

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PAGE 1 OF 1

CLIENT: Dore and Whittier Architects, Inc.
PROJECT NAME: Proposed North Attleborough High School
LGCI PROJECT NUMBER: 2407
PROJECT LOCATION: North Attleborough, MA

DATE STARTED: 8/7/25 **DATE COMPLETED:** 8/7/25
TEST PIT LOCATION: Near southern portion of exploratory ledge area
COORDINATES: NA
SURFACE EL.: 248 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
GROUNDWATER LEVELS:
▽ **DURING EXCAVATION:** Not Encountered
▼ **AT END OF EXCAVATION:** Not Encountered

EXCAVATION SUBCONTRACTOR: Andrew's Landscaping LLC
EXCAVATION FOREMAN: Andrew Butler
EXCAVATOR TYPE/MODEL: Yanmar SV40
WEATHER: 70's / Sunny
TEST PIT DIMENSIONS: 10.0' x 5.0'
LOGGED BY: AS **CHECKED BY:** AL

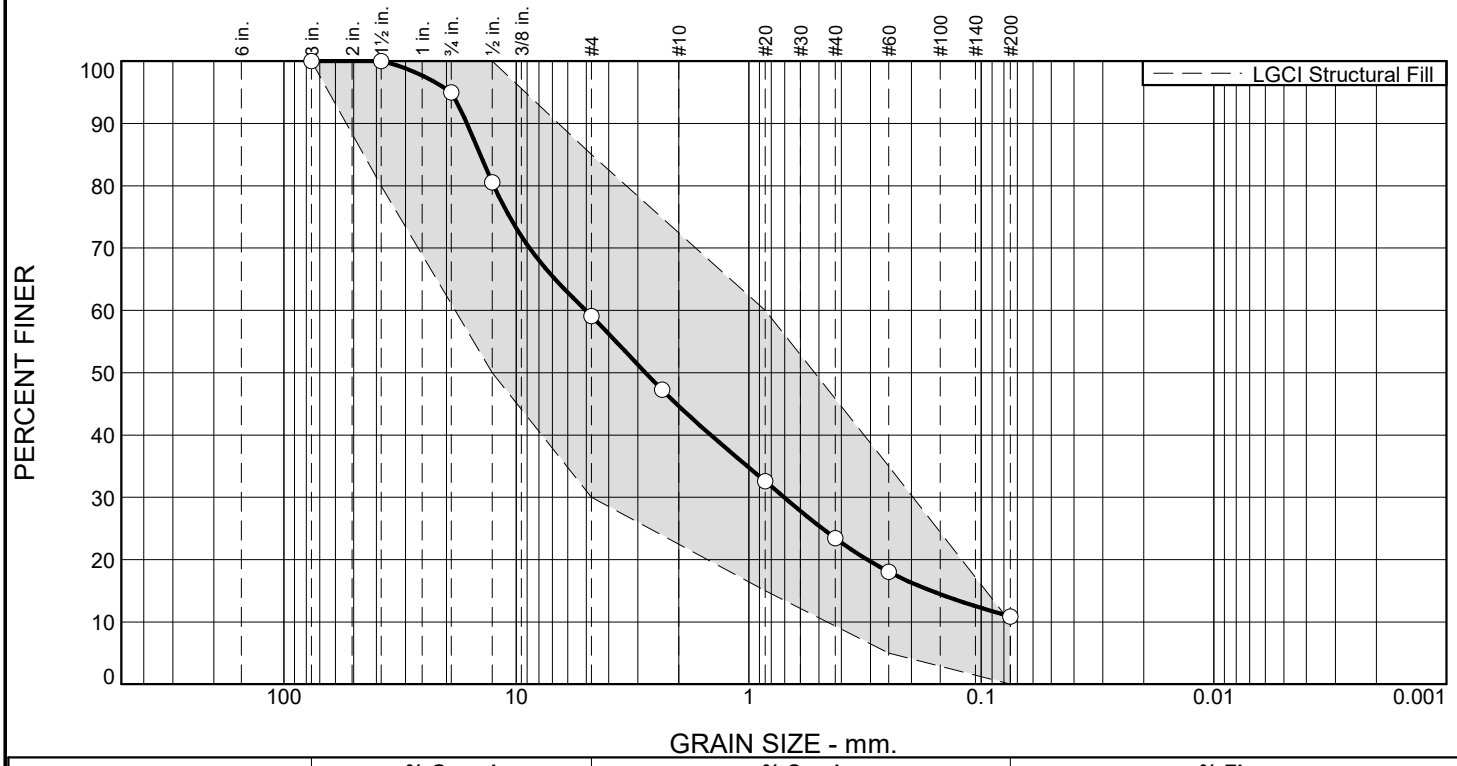
Depth (ft)	El. (ft)	Excavation Effort	Remark	Strata	Depth El.(ft.)	Material Description
	247.5	E		Topsoil	0.5	0 ft. - 0.5 ft.: Topsoil
		M		Subsoil	247.5 2.0	0.5 ft. - 2 ft.: Silty SAND (SM), fine to medium, trace coarse, 20-25% fines, 10-15% fine subrounded gravel, trace of roots, yellow-brown, moist
2.5	245.0	D			246.0	2 ft. - 5.5 ft.: Silty SAND with Gravel (SM), fine to coarse, 15-20% fines, 20-25% fine to coarse subangular to subrounded gravel, 10-15% subrounded cobbles, red-brown, moist
5.0	242.5	V		Sand and Gravel		5.5 ft. - 10 ft.: Silty SAND (SM), fine to medium, 15-20% fines, 10-15% fine to coarse subrounded gravel, red-brown, moist
7.5	240.0	V				
10.0					10.0	Bottom of test pit at 10.0 feet. Test pit backfilled with excavated material in 12-inch to 24-inch lifts and tamped with the excavator bucket.

GENERAL COMMENTS: **E = Easy, M - Moderate, D = Difficult, V = Very Difficult**

1. The ground surface elevation was interpolated to the nearest foot from drawings VB101-VB108 (Sheet 1 to 8 of 8) titled: "Boundary and Topographic Plan of Land, Dore + Whittier Fire Study, North Attleborough, 570 Landry Avenue, North Attleborough, 02760, Bristol County, Massachusetts," prepared by Langan Engineering and Environmental Services, Inc., and provided to LGCI by Dore and Whittier Architects, Inc. on April 29, 2024.

Appendix C - Laboratory Test Results

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.0	35.9	14.5	21.2	12.5	10.9	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	95.0		
0.5"	80.6	50.0 - 100.0	
#4	59.1	30.0 - 85.0	
#8	47.3		
#20	32.6	15.0 - 60.0	
#40	23.4		
#60	18.1	5.0 - 35.0	
#200	10.9	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 10% fines, 40% mostly fine gravel

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 16.3125 D_{85}= 14.2997 D_{60}= 5.0258
D_{50}= 2.7847 D_{30}= 0.7046 D_{15}= 0.1646
D_{10}= C_u= C_c=

Remarks

Fill Material

Date Received: 4/9/24 **Date Tested:** 5/24

Tested By: AS

Checked By:

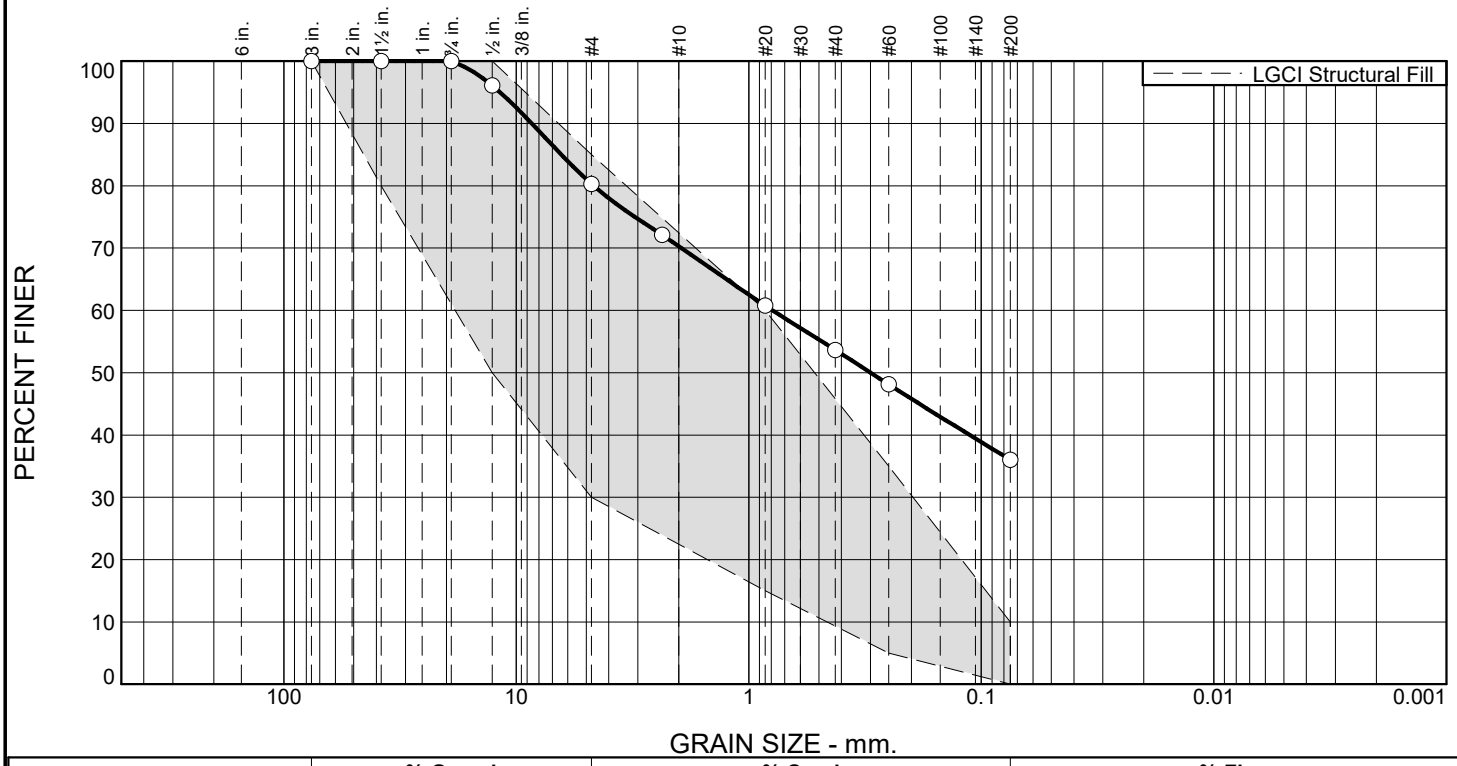
Location: Boring B-2
Sample Number: S2 **Depth:** 2.0'-4.0'

Date Sampled: 4/9/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA
Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	19.7	10.0	16.6	17.7	36.0	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	100.0		
0.5"	96.1	50.0 - 100.0	
#4	80.3	30.0 - 85.0	
#8	72.1		
#20	60.8	15.0 - 60.0	X
#40	53.7		
#60	48.1	5.0 - 35.0	X
#200	36.0	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 35-30% fines, 20% fine gravel

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 8.5680 D_{85}= 6.3937 D_{60}= 0.7903
D_{50}= 0.2991 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill Material

Date Received: 4/8/24 **Date Tested:** 5/1/24

Tested By: AS

Checked By:

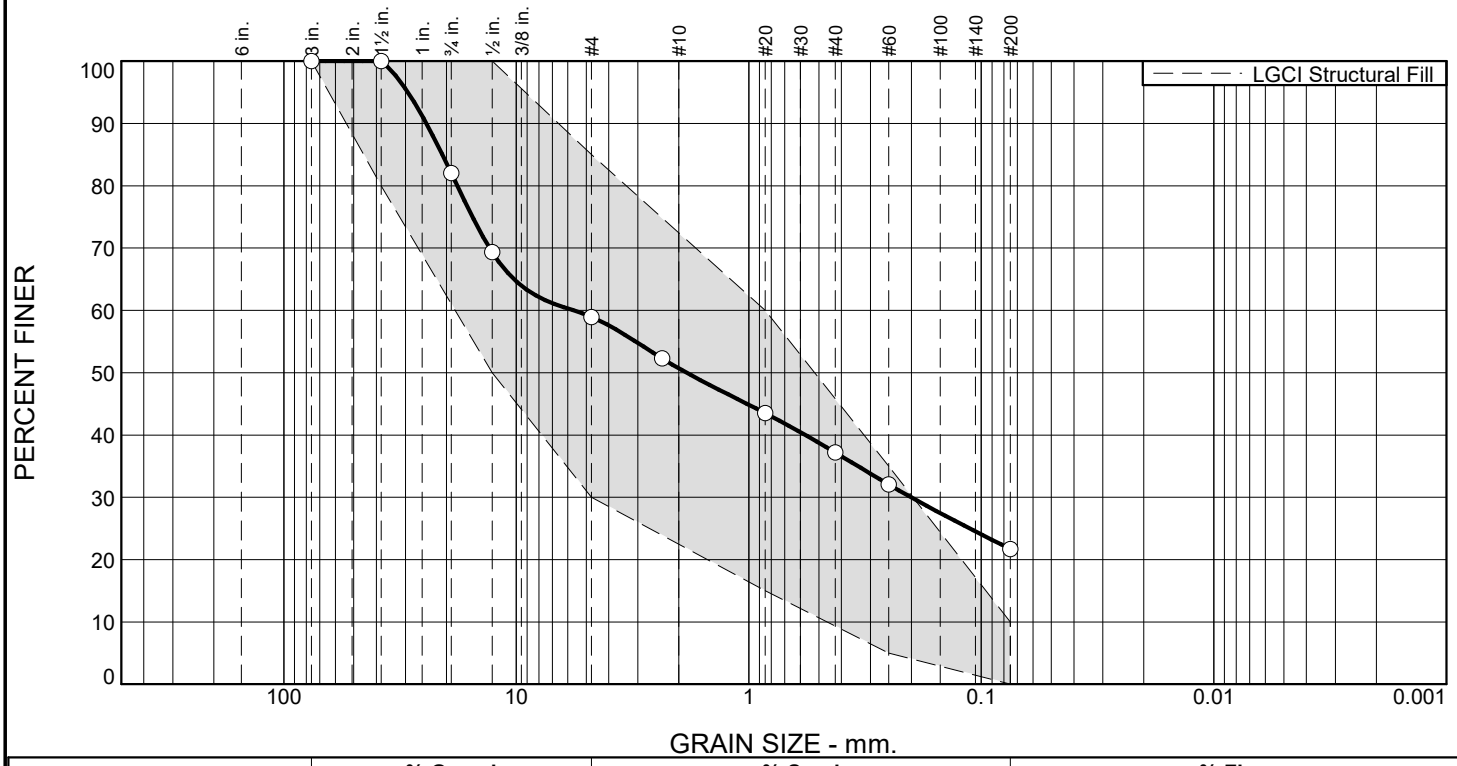
Location: Boring B-5
Sample Number: S2 **Depth:** 2.0'-4.0'

Date Sampled: 4/8/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA
Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	18.0	23.1	8.2	13.5	15.5	21.7	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	82.0		
0.5"	69.3	50.0 - 100.0	
#4	58.9	30.0 - 85.0	
#8	52.3		
#20	43.5	15.0 - 60.0	
#40	37.2		
#60	32.1	5.0 - 35.0	
#200	21.7	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty GRAVEL with Sand (GM) , fine to coarse, 20-25% fines, 40-45% fine to coarse sand

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 24.3778 D_{85}= 20.8092 D_{60}= 5.6687
D_{50}= 1.8493 D_{30}= 0.2002 D_{15}=
D_{10}= C_u= C_c=

Remarks

Natural Soil Material

Date Received: 4/10/24 **Date Tested:** 5/1/24

Tested By: AS

Checked By:

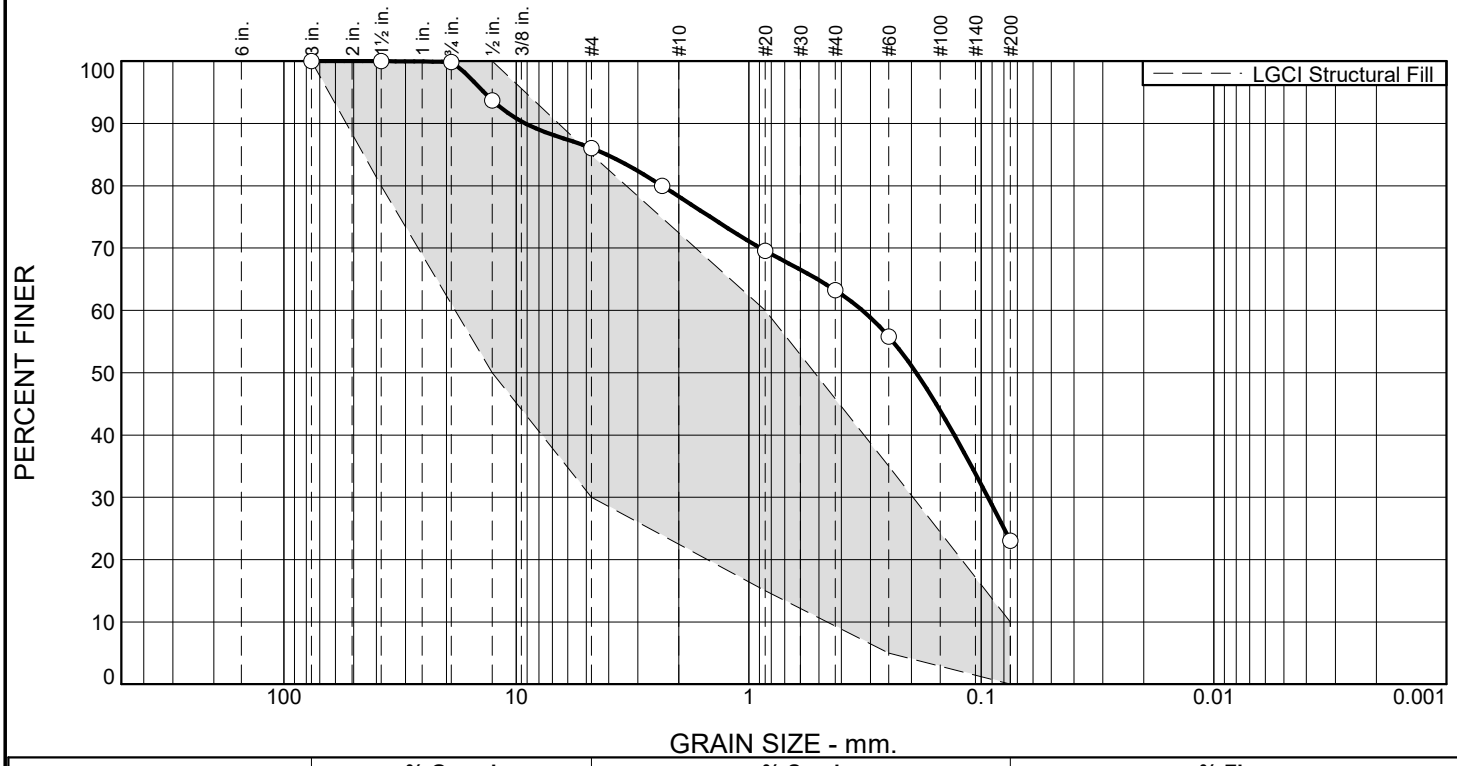
Location: Boring B-7
Sample Number: S3 **Depth:** 4.0'-6.0'

Date Sampled: 4/10/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA
Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.1	13.9	7.7	15.1	40.2	23.0	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	99.9		
0.5"	93.7	50.0 - 100.0	
#4	86.0	30.0 - 85.0	X
#8	80.0		
#20	69.6	15.0 - 60.0	X
#40	63.2		
#60	55.8	5.0 - 35.0	X
#200	23.0	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND (SM), mostly fine with medium to coarse, 20-25% fines, 10-15% fine gravel

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 9.1328 D_{85}= 4.0857 D_{60}= 0.3247
D_{50}= 0.1904 D_{30}= 0.0936 D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill Material

Date Received: 4/9/24 **Date Tested:** 5/1/24

Tested By: AS

Checked By:

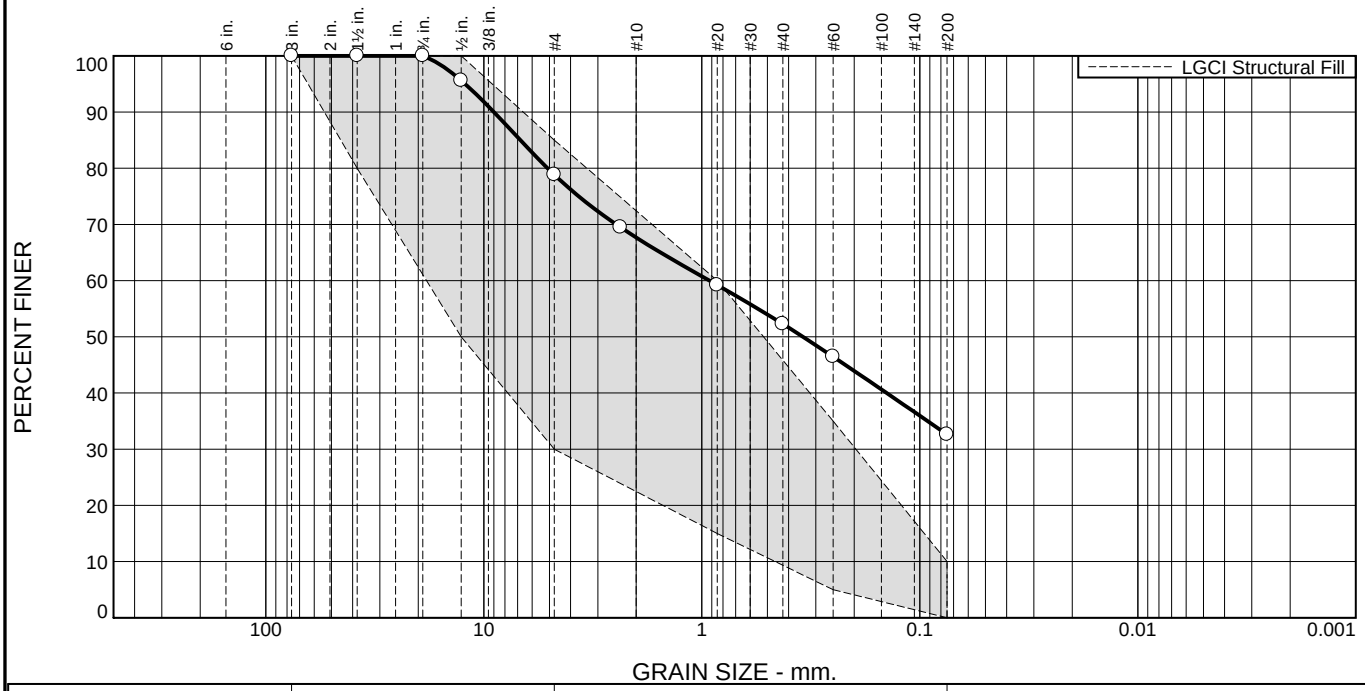
Location: Boring B-9-OW
Sample Number: S3 **Depth:** 5.0'-7.0'

Date Sampled: 4/9/24

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA
Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	21.2	11.1	15.4	19.7	32.6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	100.0		
0.5"	95.6	50.0 - 100.0	
#4	78.8	30.0 - 85.0	
#8	69.5		
#20	59.2	15.0 - 60.0	
#40	52.3		
#60	46.5	5.0 - 35.0	X
#200	32.6	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 32.6% fines, 21.2% fine subangular gravel, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 8.9916 D_{85}= 6.7958 D_{60}= 0.9232
D_{50}= 0.3438 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Natural sand and gravel sample.

Date Received: 8/13/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

Location: Boring B-101
Sample Number: S2 **Depth:** 2.0'-3.3'

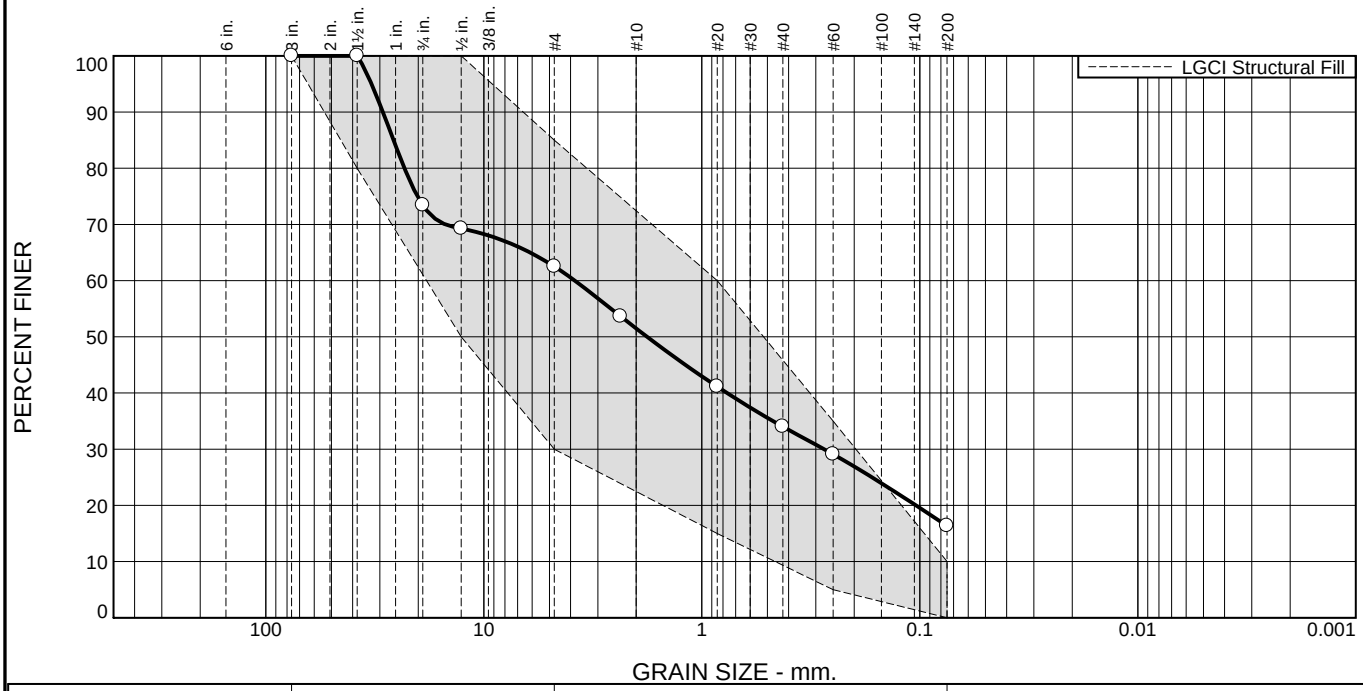
Date Sampled: 8/13/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	26.6	10.9	11.0	17.5	17.7	16.3	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	73.4		
0.5"	69.3	50.0 - 100.0	
#4	62.5	30.0 - 85.0	
#8	53.7		
#20	41.1	15.0 - 60.0	
#40	34.0		
#60	29.1	5.0 - 35.0	
#200	16.3	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 16.3% fines, 37.5% fine to coarse subangular gravel, trace of wood, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 29.0436 D_{85}= 25.9653 D_{60}= 3.8277
D_{50}= 1.7828 D_{30}= 0.2751 D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill sample.

Date Received: 8/11/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

Location: Boring B-105
Sample Number: S2 **Depth:** 2.0'-4.0'

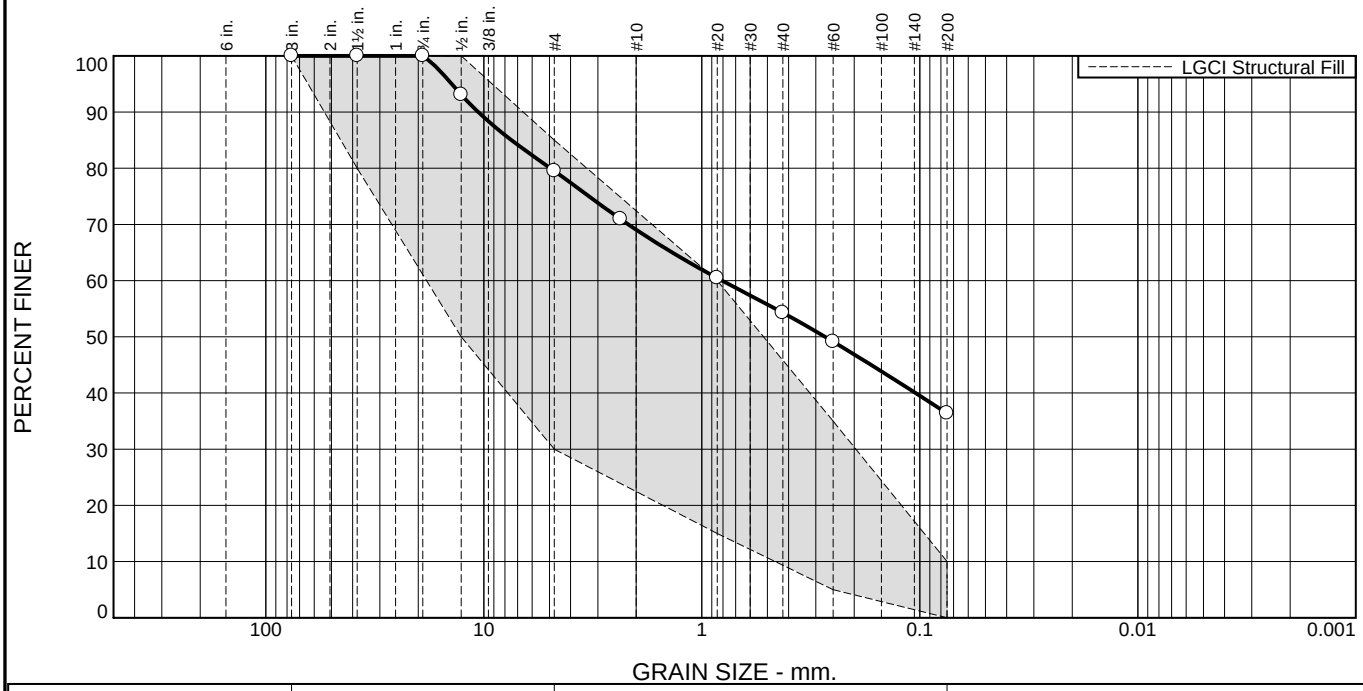
Date Sampled: 8/11/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	20.5	10.4	14.8	17.9	36.4	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	100.0		
0.5"	93.1	50.0 - 100.0	
#4	79.5	30.0 - 85.0	
#8	71.0		
#20	60.5	15.0 - 60.0	X
#40	54.3		
#60	49.1	5.0 - 35.0	X
#200	36.4	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 36.4% fines, 20.5% fine subangular gravel, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 10.6098 D_{85}= 7.4669 D_{60}= 0.8075
D_{50}= 0.2723 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill sample.

Date Received: 8/15/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

Location: Boring B-109
Sample Number: S1 Bot. 9" **Depth:** 0.0'-2.0'

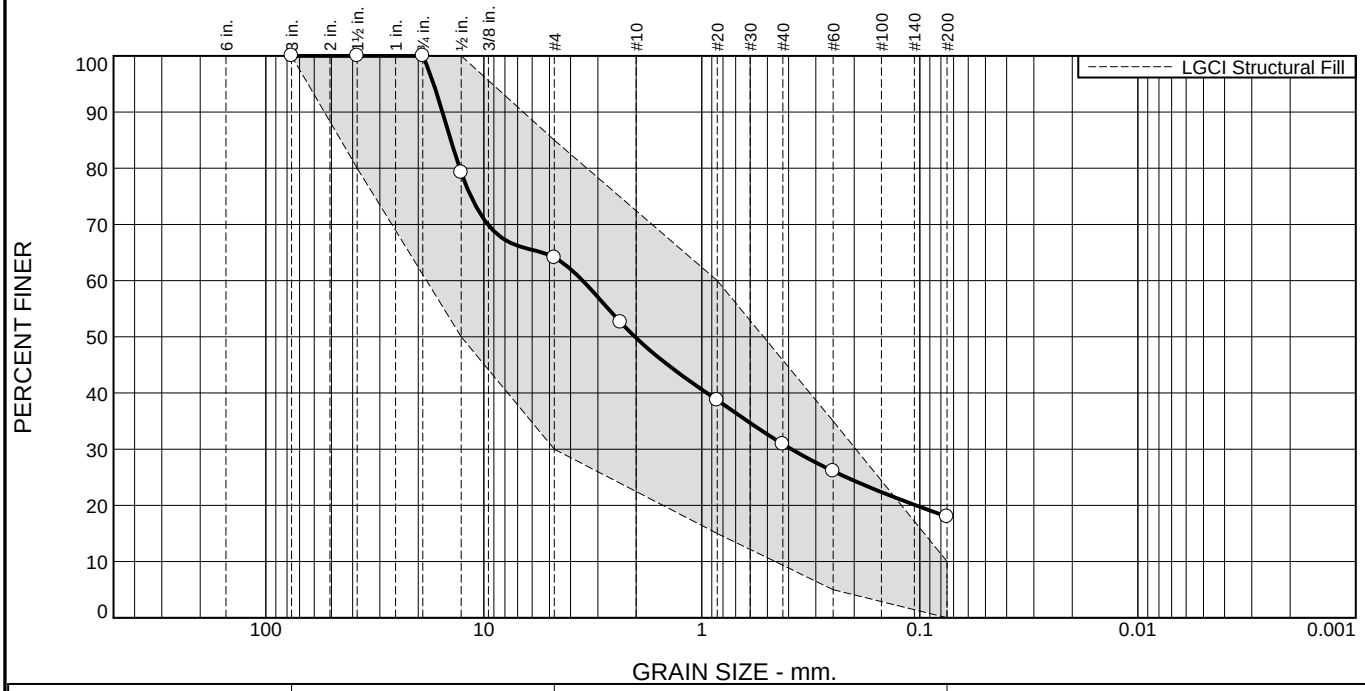
Date Sampled: 8/15/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	35.9	14.3	18.9	12.9	18.0	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	100.0		
0.5"	79.2	50.0 - 100.0	
#4	64.1	30.0 - 85.0	
#8	52.6		
#20	38.7	15.0 - 60.0	
#40	30.9		
#60	26.1	5.0 - 35.0	
#200	18.0	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 18.0% fines, 35.9% fine subangular gravel, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 15.4918 D_{85}= 14.1785 D_{60}= 3.5190
D_{50}= 2.0259 D_{30}= 0.3880 D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill sample.

Date Received: 8/18/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

Location: Boring B-110
Sample Number: S2 **Depth:** 2.0'-4.0'

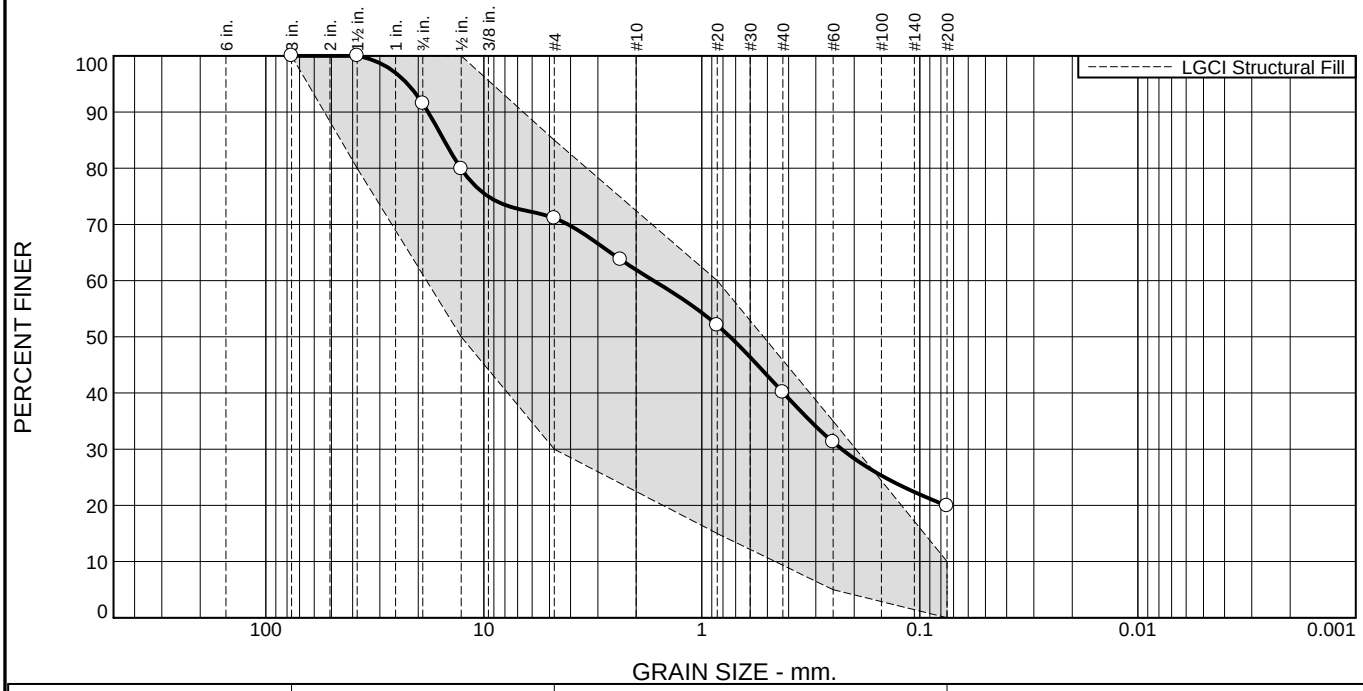
Date Sampled: 8/18/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.5	20.4	9.2	21.8	20.2	19.9	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	91.5		
0.5"	79.9	50.0 - 100.0	
#4	71.1	30.0 - 85.0	
#8	63.7		
#20	52.1	15.0 - 60.0	
#40	40.1		
#60	31.3	5.0 - 35.0	
#200	19.9	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 19.9% fines, 28.9% fine to coarse subangular gravel, trace of organic soil, trace of roots, dark brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 18.0134 D_{85}= 15.2365 D_{60}= 1.6657
D_{50}= 0.7429 D_{30}= 0.2281 D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill sample.

Date Received: 8/15/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

Location: Boring B-120
Sample Number: S2 **Depth:** 2.0'-4.0'

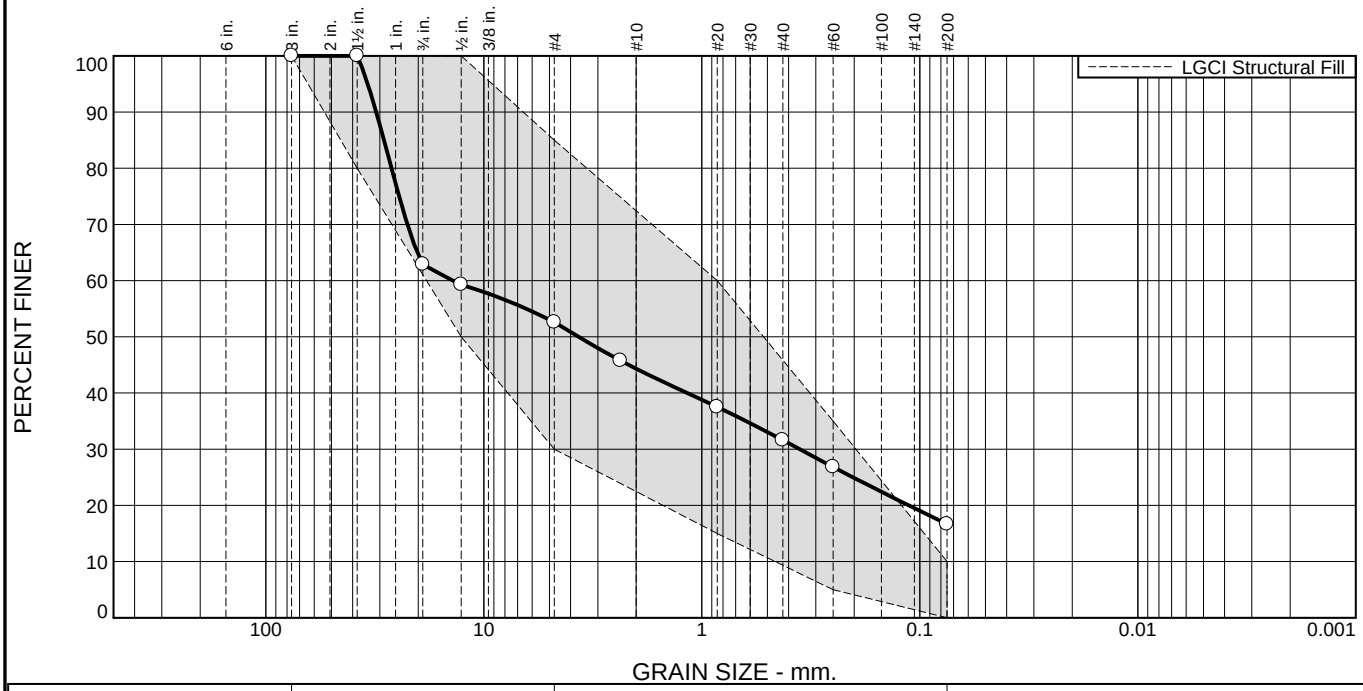
Date Sampled: 8/15/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	37.1	10.3	8.3	12.7	14.9	16.7	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	62.9		
0.5"	59.3	50.0 - 100.0	
#4	52.6	30.0 - 85.0	
#8	45.8		
#20	37.5	15.0 - 60.0	
#40	31.6		
#60	26.8	5.0 - 35.0	
#200	16.7	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty GRAVEL with Sand (GM), mostly coarse, subangular, 16.7% fines, 35.9% fine to coarse sand, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 31.1589 D_{85}= 28.7170 D_{60}= 13.8394
D_{50}= 3.6720 D_{30}= 0.3555 D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill sample.

Date Received: 8/11/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

Location: Boring B-124
Sample Number: S1 Bot. 12" **Depth:** 0.0'-2.0'

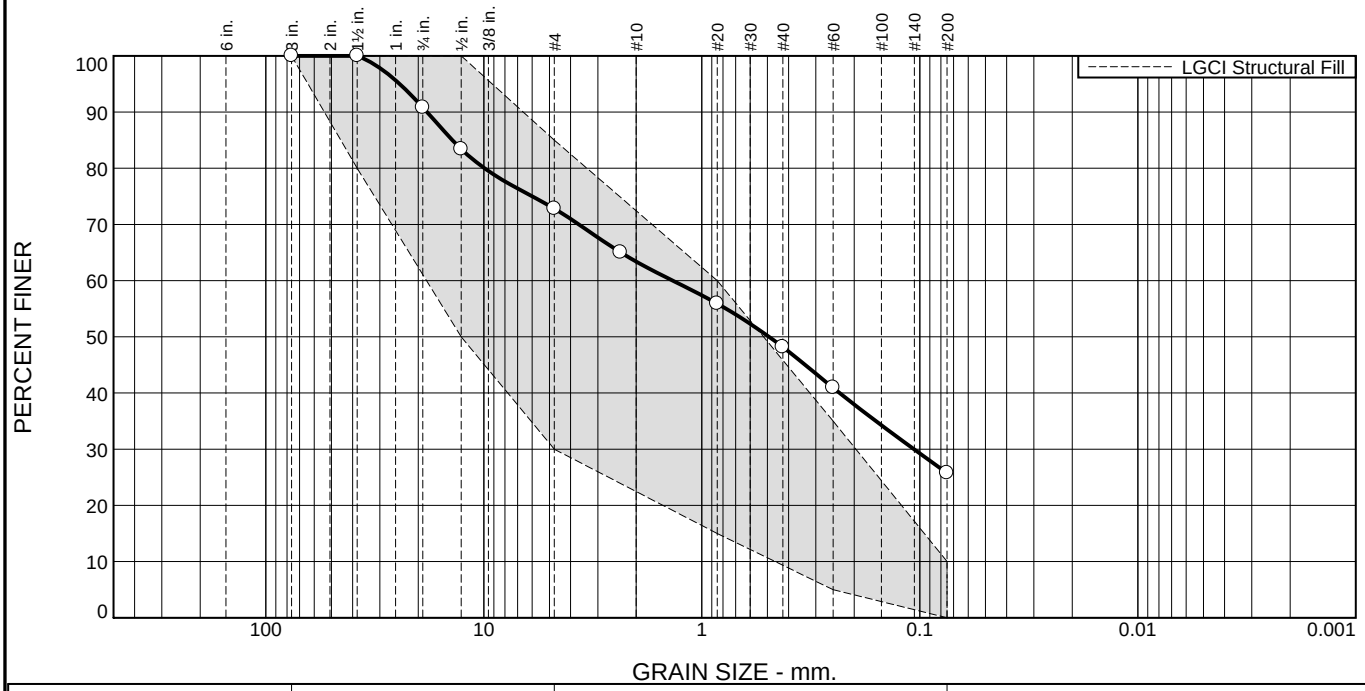
Date Sampled: 8/11/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.2	18.0	9.4	15.2	22.4	25.8	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	90.8		
0.5"	83.4	50.0 - 100.0	
#4	72.8	30.0 - 85.0	
#8	65.0		
#20	55.9	15.0 - 60.0	
#40	48.2		
#60	40.9	5.0 - 35.0	X
#200	25.8	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 25.8% fines, 27.2% fine to coarse subangular gravel, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 18.2189 D_{85}= 13.9390 D_{60}= 1.3606
D_{50}= 0.4917 D_{30}= 0.1064 D_{15}=
D_{10}= C_u= C_c=

Remarks

Natural sand and gravel sample.

Date Received: 8/22/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

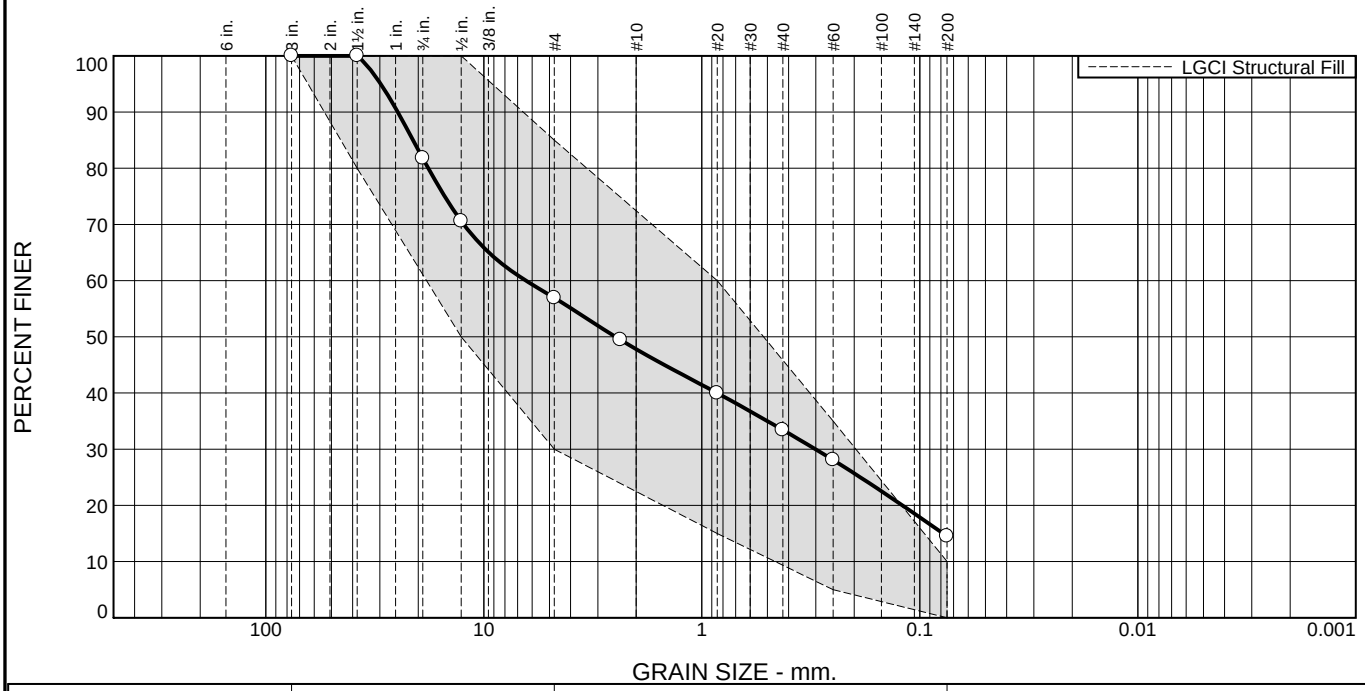
Location: Boring B-127
Sample Number: G1 Bot. 38" **Depth:** 0.0'-5.0' **Date Sampled:** 8/22/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	18.2	24.9	9.1	14.4	18.9	14.5	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	81.8		
0.5"	70.6	50.0 - 100.0	
#4	56.9	30.0 - 85.0	
#8	49.5		
#20	40.0	15.0 - 60.0	
#40	33.4		
#60	28.1	5.0 - 35.0	
#200	14.5	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Well Graded GRAVEL with Silt and Sand (GW-GM), fine to coarse, subangular, 14.5% fines, 42.4% fine to coarse sand, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 24.8367 D_{85}= 21.1257 D_{60}= 6.4181
D_{50}= 2.4880 D_{30}= 0.3013 D_{15}= 0.0782
D_{10}= C_u= C_c=

Remarks

Fill sample.

Date Received: 8/21/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

Location: Boring B-130
Sample Number: G1 Bot. 16" **Depth:** 0.0'-5.0'

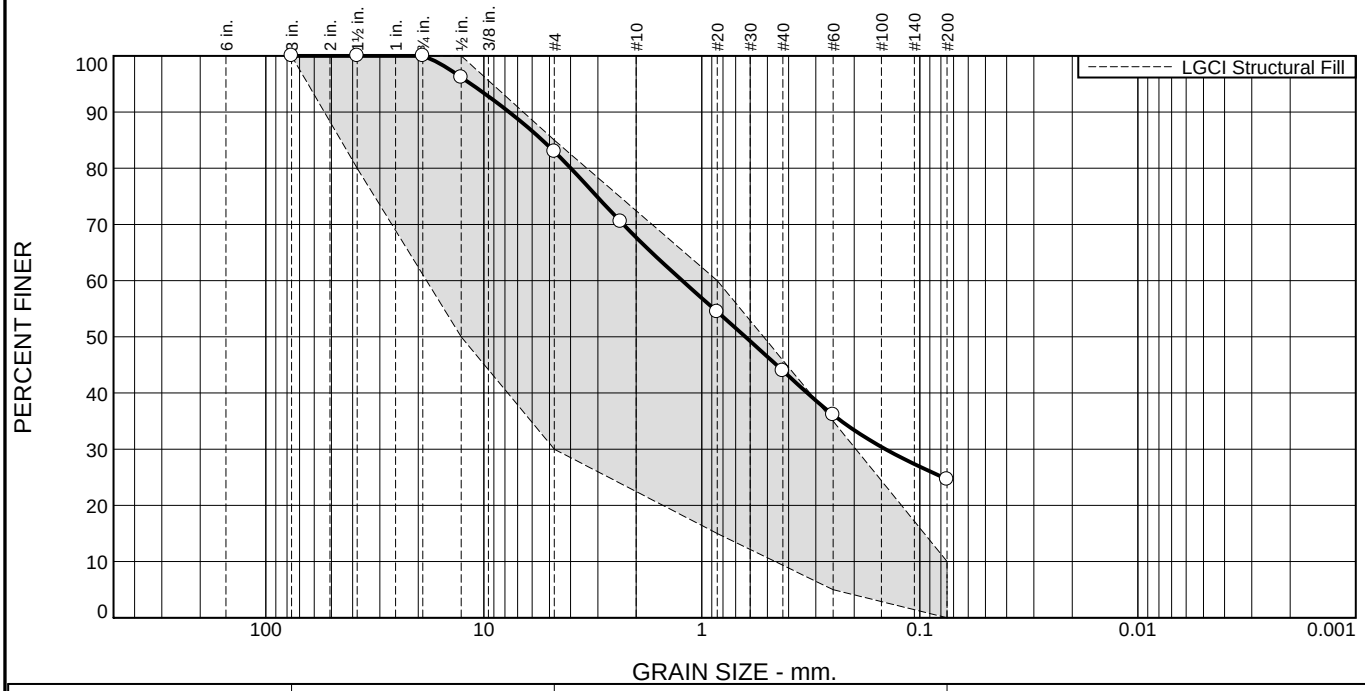
Date Sampled: 8/21/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	17.0	15.3	23.7	19.4	24.6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	100.0		
0.5"	96.2	50.0 - 100.0	
#4	83.0	30.0 - 85.0	
#8	70.5		
#20	54.5	15.0 - 60.0	
#40	44.0		
#60	36.1	5.0 - 35.0	X
#200	24.6	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 24.6% fines, 17.0% fine subangular gravel, trace of roots, brown

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 7.6525 D_{85}= 5.3935 D_{60}= 1.2301
D_{50}= 0.6315 D_{30}= 0.1437 D_{15}=
D_{10}= C_u= C_c=

Remarks

Fill sample.

Date Received: 8/21/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

Location: Boring B-132
Sample Number: G1 Bot. 17" **Depth:** 0.0'-5.0'

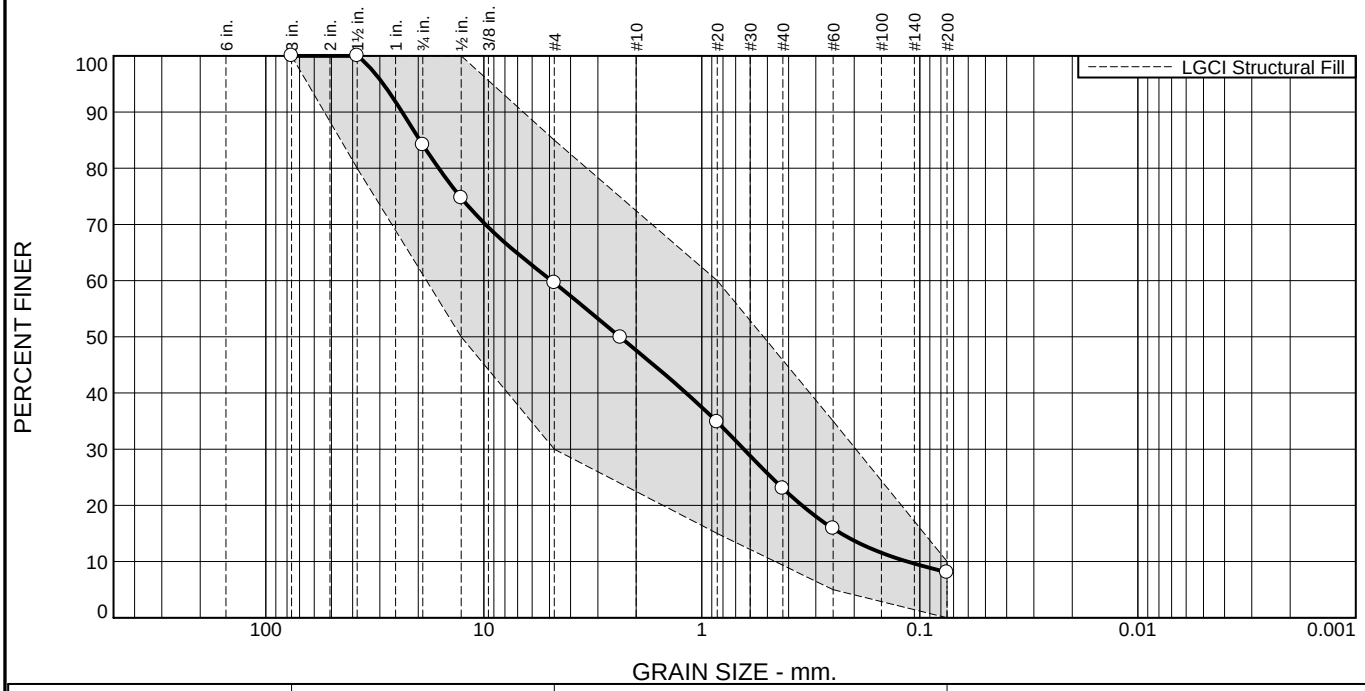
Date Sampled: 8/21/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	15.8	24.6	12.0	24.6	14.9	8.1	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	84.2		
0.5"	74.7	50.0 - 100.0	
#4	59.6	30.0 - 85.0	
#8	49.9		
#20	34.8	15.0 - 60.0	
#40	23.0		
#60	15.9	5.0 - 35.0	
#200	8.1	0.0 - 10.0	

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 8.1% fines, 40.4% fine to coarse subangular gravel, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 23.6957 D_{85}= 19.6517 D_{60}= 4.8941
D_{50}= 2.3786 D_{30}= 0.6418 D_{15}= 0.2297
D_{10}= 0.1142 C_u= 42.86 C_c= 0.74

Remarks

Fill sample.

Date Received: 8/22/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

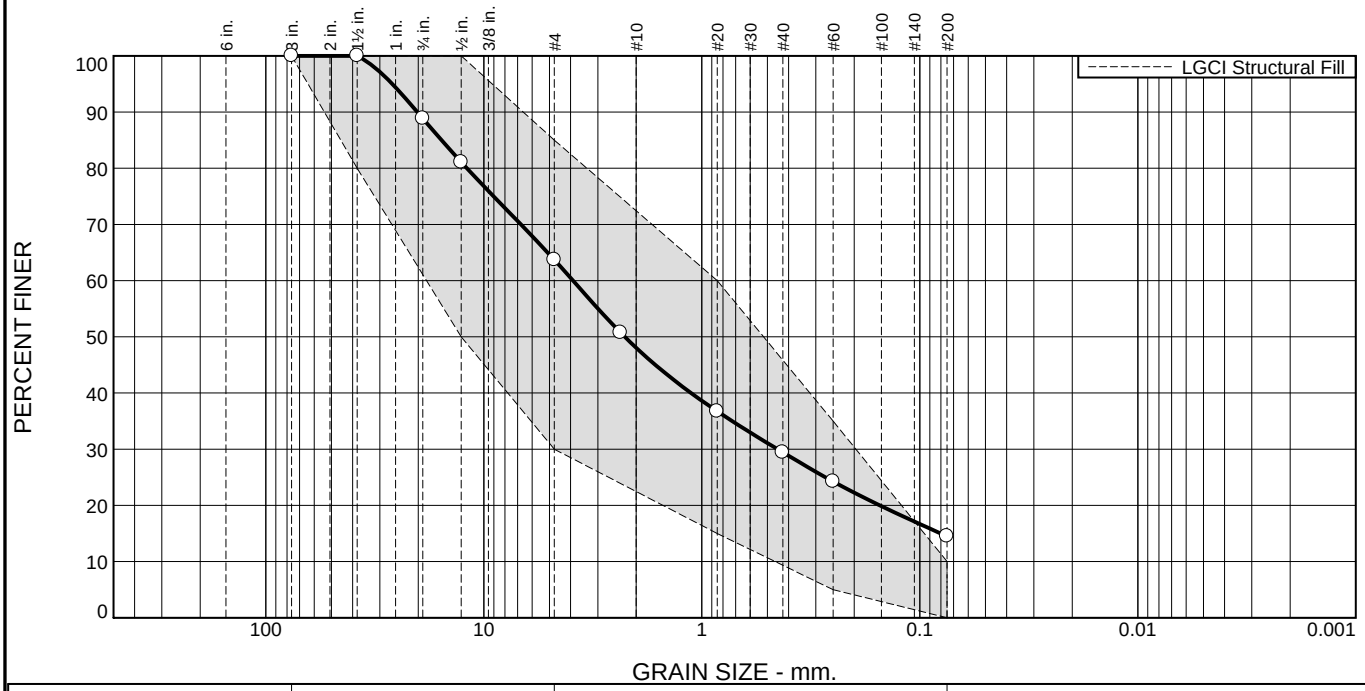
Location: Boring B-136
Sample Number: G1 Mid. 14" **Depth:** 0.0'-5.0' **Date Sampled:** 8/22/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.1	25.2	15.7	18.6	14.9	14.5	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	88.9		
0.5"	81.1	50.0 - 100.0	
#4	63.7	30.0 - 85.0	
#8	50.8		
#20	36.7	15.0 - 60.0	
#40	29.4		
#60	24.3	5.0 - 35.0	
#200	14.5	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 14.5% fines, 36.3% fine to coarse subangular gravel, trace of brick, trace of roots, brown

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= **AASHTO (M 145)=**

Coefficients

D_{90}= 20.1908 D_{85}= 15.6294 D_{60}= 3.8998
D_{50}= 2.2568 D_{30}= 0.4492 D_{15}= 0.0802
D_{10}= C_u= C_c=

Remarks

Fill sample.

Date Received: 8/22/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

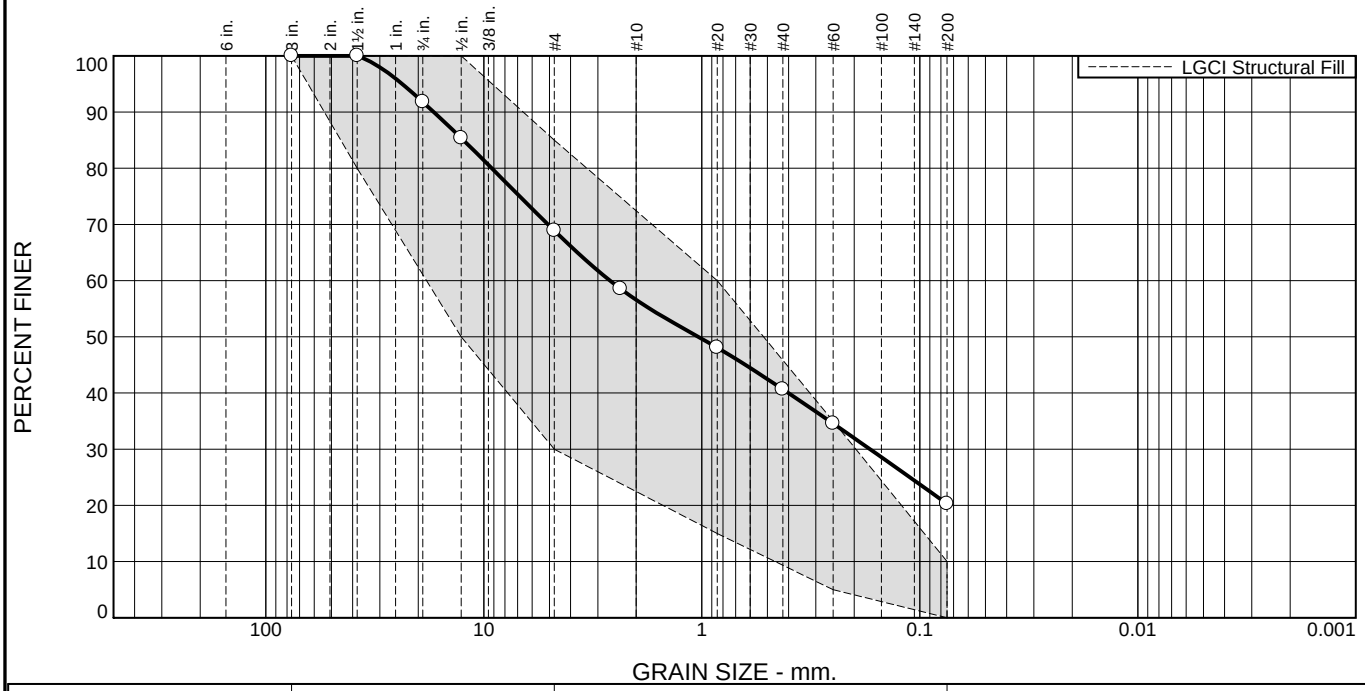
Location: Boring B-139
Sample Number: G1 Bot. 30" **Depth:** 0.0'-5.0' **Date Sampled:** 8/22/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.2	22.9	12.3	15.9	20.4	20.3	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3"	100.0	100.0	
1.5"	100.0	80.0 - 100.0	
0.75"	91.8		
0.5"	85.4	50.0 - 100.0	
#4	68.9	30.0 - 85.0	
#8	58.5		
#20	48.1	15.0 - 60.0	
#40	40.7		
#60	34.6	5.0 - 35.0	
#200	20.3	0.0 - 10.0	X

* LGCI Structural Fill

Material Description

ASTM (D 2488) Classification: Silty SAND with Gravel (SM), fine to coarse, 20.3% fines, 31.1% fine to coarse subangular gravel, brown

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 16.9715 D_{85}= 12.4136 D_{60}= 2.6381
D_{50}= 1.0378 D_{30}= 0.1693 D_{15}=
D_{10}= C_u= C_c=

Remarks

Natural sand and gravel sample.

Date Received: 8/21/25 **Date Tested:** 8/24/25

Tested By: NP

Checked By: JA

Location: Boring B-140
Sample Number: G1 Bot. 31" **Depth:** 0.0'-5.0' **Date Sampled:** 8/21/25

LGCI
Lahlaf Geotechnical Consulting, Inc.

Client: Dore & Whittier Architects, Inc.
Project: Proposed North Attleborough High School, North Attleborough, MA

Project No: 2407 **Figure**

EXISTING CONDITIONS/SURVEY NOTES:

1. EXISTING CONDITIONS ARE BASED ON A SURVEY PREPARED BY XXXIASSOCIATES, XXX XX STREET, XXX, MA XXX, ENTITLED "XXX PROJECT NO XXX, REVISED XX. TAKE ADDITIONAL NOTES FROM THEIR SURVEY AS NEEDED.
2. ELEVATIONS SHOWN HEREON REFER TO XXX DATUM.
3. THE SITE IS NOT WITHIN A 100--YEAR FLOOD PLAIN, AS SHOWN OF FLOOD INSURANCE RATE MAP, NUMBER XXXX, EFFECTIVE DATE XXX XX, XXX.

DP-1e
DP-2e
DP-3e
DP-4e
DP-5e
DP-6e
DP-7e
DP-8e
DP-9e
DP-10e
DP-11e
DP-12e
DP-13e
DP-14e
DP-15e
DP-16e

E-1
E-2a
E-2b
E-3
E-4
E-5a
E-6a
E-7a
E-8a
E-9a
E-10a
E-10b
E-11a
E-12a
E-13a
E-13b
E-14a
E-15a
E-15b
E-15c
E-15d
E-15e
E-15f
E-15g
E-15h
E-15i
E-16a

ROOF 1
ROOF 2
ROOF 3
ROOF 4
ROOF 5
ROOF 6
ROOF 7
ROOF 8

LAUREL WOOD DRIVE
SPRING STREET
EAST SPRING STREET
SHADE OVERLOOK DRIVE
WILSON WEST WHITTY WAY

GRAPHIC SCALE
(IN FEET)
1 INCH = 80 FT.

DORE + WHITTIER
MASSACHUSETTS
260 MERRIMAC STREET BUILDING 7, 2ND FLOOR
NEWBURYPORT, MA 01950
P: (978) 499-2999
VERMONT
212 BATTERY STREET
BURLINGTON, VT 05401
P: (802) 863-1428
CDW CONSULTANTS
Environmental and Civil Engineering

North Attleborough High School

1 Wilson West Whitty Way
North Attleborough, MA 02760

PROJECT NUMBER: 24-0856

SEAL AND SIGNATURE:

REVISIONS:

NO.	DATE	TITLE

ISSUE TITLE AND DATE:
SITE PERMITTING PACKAGE
12/19/2025

KEY PLAN

ORIENTATION AND SCALE:
N
PROJECT NORTH

SHEET TITLE:
PRE-DEVELOPMENT WATERSHED MAP

SHEET NUMBER:
PRE

EXISTING CONDITIONS/SURVEY NOTES:

1. EXISTING CONDITIONS ARE BASED ON A SURVEY PREPARED BY XXXIASSOCIATES, XXX XX STREET, XXX, MA XXX, ENTITLED "XXX PROJECT NO XXX, REVISED XX. TAKE ADDITIONAL NOTES FROM THEIR SURVEY AS NEEDED.
2. ELEVATIONS SHOWN HEREON REFER TO XXX DATUM.
3. THE SITE IS NOT WITHIN A 100-YEAR FLOOD PLAIN, AS SHOWN OF FLOOD INSURANCE RATE MAP, NUMBER XXXX, EFFECTIVE DATE XXX XX, XXX.

DP-1p
DP-2p
DP-3p
DP-4p
DP-5p
DP-6p
DP-7p
DP-8p
DP-9p
DP-10p
DP-11p
DP-12p
DP-13p
DP-14p
DP-15p
DP-16p

P-1a
P-1b
P-1c
P-2a
P-2b
P-3
P-4a
P-4b
P-4c
P-4d
P-4e
P-4f
P-5
P-6
P-7
P-8
P-9
P-10a
P-10b
P-10c
P-10d
P-10e
P-10f
P-10g
P-10h
P-10i
P-11
P-12a
P-12b
P-13
P-14
P-15a
P-15b
P-15c
P-15d
P-15e
P-16

LAUREL AVENUE
LAUREL AVENUE (PUBLIC WAY - WIDTH VARIES)
RIVET AVENUE
BLACK SPRING STREET
SPRING STREET
LAUREL WOOD DRIVE
LAUREL WOOD DRIVE
LAUREL WOOD DRIVE
LAUREL WOOD DRIVE
WETLAND AREA
WETLAND AREA
WETLAND AREA

ATTACHMENTS

ATTACHMENT A

LONG TERM POLLUTION PREVENTION PLAN

Long Term Pollution Prevention Plan

Standard #4 of the MA DEP Stormwater Management Handbook requires that a Long Term Pollution Prevention Plan (LTPPP) be prepared and incorporated into the long term operation and maintenance of the proposed stormwater management system. The purpose of the LTPPP is to identify potential sources of pollution that may affect the quality of stormwater discharges and to describe suggested practices to reduce pollutants in stormwater discharges.

Good housekeeping practices - The subject property owners are to keep the site in a neat and orderly condition so that pollutants are not conveyed to the storm drainage system. Materials swept, blown or washed into the storm drains can decrease the system's effectiveness and could eventually be conveyed into the adjacent wetland resource area. Some examples of good housekeeping practices are pavement sweeping, litter control, contained outdoor waste and proper cigarette disposal, and protected material storage areas. The property owners should assign responsibilities to personnel to keep the site in a neat and orderly condition.

Provisions for storing materials and waste products inside or under cover – There are no exterior (un-covered) storage areas associated with the project site. A trash disposal company hired by the town will pick up waste materials and properly dispose at a state approved disposal facility.

The proposed stormwater drainage system includes catch basins equipped with hooded outlets designed to capture and retain trash, debris, oils, and sediments. In addition, the underground stormwater chambers will provide further treatment by intercepting any remaining trash, debris, oils, or sediments that may enter the system prior to discharge through the outfalls.

Requirements for routine inspections and maintenance of stormwater BMP's - Consistent with Standard 9 of the Massachusetts Stormwater Management Regulations, an Operation and Maintenance Plan has been provided in the Stormwater Management Report. The plan details routine inspection and maintenance of the stormwater BMP's along with associated record keeping forms.

Spill prevention and response plans – Sources of potential spill hazards include vehicle fluids and fuels, pesticides, paints, solvents, and liquid cleaning products. The majority of the spill hazards would likely occur within the building and would not enter the stormwater drainage system. However, there are spill hazards from vehicle fluids and fuels located outside of the buildings.

These exterior spill hazards have the potential to enter the stormwater drainage system and are to be addressed as follows:

1) Spill hazards of pesticides, paints, and solvents shall be remediated using the Manufacturers' recommended spill cleanup protocol.
2) Vehicle fluid and fuel spills shall be remediated according to local and state regulations governing fuel spills.
3) The property owners shall have the following equipment and materials on hand to address a spill clean-up: brooms, dust-pans, mops, rags, gloves, trash bags, trash containers, and absorptive materials such as sand, sawdust, or kitty litter.
4) Spills of toxic or hazardous materials shall be reported to the Massachusetts Department of Environmental Protection at 1-888-304-1133.

Provisions for maintenance of lawns, garden, and other landscaped areas - It should be a general goal of the subject property owners to achieve a high quality of well-groomed and stable landscape that evolves throughout the changing seasons and overall condition of the property. All landscaped areas are to be maintained with dense vegetative growth or a layer of mulch so as to minimize sediment transport. Litter and waste are to be removed weekly from the landscaped areas and adjoining parking lots and disposed of properly.

Requirements for storage and use of fertilizer, herbicides, and pesticides - Should use become necessary, application should be performed by a state licensed contractor in accordance with the manufacturer's label instruction and when environmental conditions are conducive to product application. Chemical controls should be used as a last resort to organic and biological control methods.

Pet waste management provisions - All pet waste is to be scooped up, sealed in a plastic bag, and disposed of properly in the garbage. Never deposit pet waste in the stormwater management system for it contains high level of fecal coliform bacteria.

Snow disposal and deicing chemicals – The property owner will be responsible for the clearing of the driveways and building entrances. The owners may be required to use a de-icing agent such as salt or potassium chloride to maintain a safe walking surface. De-icing agents should not be stored outside.

ATTACHMENT B

OPERATION & MAINTENANCE PLAN

Operation & Maintenance Plan

System Owner: Town of North Attleborough
43 S Washington Street
North Attleborough, MA 02760

Party Responsible for O&M: During construction the property will be maintained by the site contractor selected to perform the work, yet to be determined. This includes the catch basins, drain manholes, drainpipes, stormwater treatment devices, and underground infiltration systems. Maintenance of areas outside the contractor's scope of work will continue to be maintained by the Town of North Attleborough.

Following construction and acceptance of the site, the property will be fully maintained by the Town of North Attleborough. This includes the catch basins, drain manholes, drainpipes, stormwater treatment devices, and underground infiltration systems.

The drainage system is to be operated and maintained in accordance with the following:

Part I: Construction Phase Controls

Construction Phasing: Construction shall proceed in the following sequence:

1. Install Erosion Controls around work areas and site Construction Entrance, to prevent silt and sediment laden runoff from flowing into the underground infiltration areas. Inspection and maintenance of these Erosion Controls and Construction Entrance is required throughout the project as detailed below.
2. Demolish existing site features and clear & grub areas only as needed.
3. Install Stormwater controls. Compost filter socks to be maintained until all disturbed areas are stabilized.

4. Install all underground utilities.
5. Install pavement base, fine grade, and install binder course of bituminous pavement. Install drainage grates and protect with silt sacks.
6. Adjust gratings and install final paving.

Throughout construction, siltation controls are to be placed at drain inlets (silt sacks and compost filter socks) to prevent silt from entering the drainage system. These controls are to be inspected daily and maintained throughout the duration of the construction phase and removed only when needed to pave the surfaces. The siltation controls shall be maintained, and sediment removed as needed throughout construction.

Prior to turning the site over to the Owner for acceptance, the site shall be in a stable condition. All catch basins, drain manholes, and stormwater treatment devices shall be cleaned with a vacuum truck. The roadway shall be free of any debris and swept clean.

Part II: Post-Development Controls

1). Inspections. The catch basins, piping system, and underground chambers are to be inspected by the System Owner during the first year of operation on a quarterly basis. The inspection frequency can be reduced after the first year to annual inspections provided that the quarterly inspections do not indicate the need for more frequent inspections. If more frequent inspections become appropriate at any time, they should be implemented. Inspection Forms are provided at the end of this section.

Piping System. During each inspection the piping is to be inspected for structural integrity, settlement, and sedimentation. Standing water in the piping indicates a lack of infiltration capacity or settlement. Sedimentation in the piping indicates the need for cleaning.

Catch basins. Remove the cover from the catch basin and visually inspect for corrosion and structural damage. Using a wooden pole, probe the sump to determine the depth of sediment. Accumulation greater than 16" indicates clean-out. Cleaning should be by a vacuum truck or clamshell. Take care as to not damage the catch basin hood. If an oil layer is floating on the water surface, place an oil-absorbent pillow on surface, allow to soak and remove and replace. Repeat this process until the oil layer is removed. Alternatively, have the oil layer pumped out by a licensed disposal contractor and appropriately disposed of. The oil absorbent pillows must be drummed for disposal by a licensed disposal contractor.

Pavement. Remove debris from the roadway as it accumulates, as part of normal site clean-up. Weekly patrolling for litter is recommended. Significant oil leaks should be swept up and disposed of using oil-absorbent material as they are discovered. Any oil spills or leaks that reach the catch basins must be reported to the Massachusetts DEP oil spill hotline.

Water Quality, Proprietary Separator. Inspect and clean these units in strict accordance with manufacturers' recommendations and requirements. Clean the units using the method specified by the manufacturer. Vactor trucks are typically used to clean these units. Clamshell buckets typically used for cleaning catch basins are almost never allowed by manufacturers. Sometimes it will be necessary to remove sediment manually. The manufacturer's O&M is included at the end of this manual.

Subsurface Infiltration Structures, Chambers. Inspect the recharge structures after major storms to ensure proper function and stabilization. Record water levels over several days to check for the infiltration performance. After the first year, inspect the recharge structures annually for silt buildup or clogging. Remove trash and debris from the structures. Sediment at the inlet should be removed when it exceeds 6-inches in depth. After an extended period of dry weather inspect for standing water.

TABLE 1: Construction Phase Inspection and Maintenance Procedures

Control	Inspection Frequency (1)	Maintenance Procedure
Construction Entrance	Weekly	a
Silt Fence	Weekly	a
Stormwater Basins	Weekly	a
Dust Control	Daily	b
Permanent Stabilization	Weekly	c

1. Inspection frequencies are a minimum. Site conditions may warrant more frequent review. All control shall be inspected after each storm event which exceeds 0.5 inches in 24-hours.

2. Maintenance Procedures shall be reviewed and revised as necessary to protect the environment.

   a. Remove accumulated debris and replace as necessary.
   b. Water or calcium chloride shall be utilized to prevent the generation of dust.
   c. Disturbed areas shall either be paved or stabilized by permanent seeding.

Inspection forms are to be completed weekly and retained with project files.

INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.5 INCHES OR MORE

INSPECTOR: _____

DATE:_____

INSPECTOR'S QUALIFICATIONS:

_____

_____

DAYS SINCE LAST RAINFALL:_____

AMOUNT OF LAST RAINFALL:_____ INCHES

STABILIZATION MEASURES

Project Area	Date Since Last Disturbed	Date of Next Disturbance	Stabilized? (Yes/No)	Stabilized With	Condition
North East South West					

STABILIZATION REQUIRED:

_____

_____

_____

_____

_____

_____

_____

TO BE PERFORMED BY:_____ ON OR BEFORE_____

INSPECTION AND MAINTENANCE REPORT FORM

STABILIZED CONSTRUCTION ENTRANCE

Does Sediment Get Tracked onto the Road?	Is the Gravel Clean or is it Filled with Sediment?	Does All Traffic Use the Stabilized Exit to Leave the Site?

MAINTENANCE REQUIRED FOR ENTRANCE:

_____
_____
_____
_____
_____
_____
_____

TO BE PERFORMED BY:_____ ON OR BEFORE_____

INSPECTION AND MAINTENANCE REPORT FORM

SILT FENCE or HAYBALES

Location	Depth of Sediment Build-Up	Sediment Need Removal?	Need Replacement?
Eastern Side Southern Side Western Side Northern Side			

MAINTENANCE REQUIRED:

_____
_____
_____
_____
_____
_____
_____

TO BE PERFORMED BY:_____ ON OR BEFORE_____

INSPECTION AND MAINTENANCE REPORT FORM

INFILTRATION STRUCTURES

Location	Depth of Sediment Build-Up	Sediment Need Removal?	Need Replacement?
#1			
#2			
#3			
#4			

MAINTENANCE REQUIRED FOR BASIN:

_____
_____
_____
_____
_____
_____
_____

TO BE PERFORMED BY:_____ ON OR BEFORE_____

INSPECTION AND MAINTENANCE REPORT FORM

DEEP SUMP CATCHBASINS / STORMWATER TREATMENT DEVICES

Location	Depth of Sediment Build-Up	Sediment Need Removal?	Need Replacement?

MAINTENANCE REQUIRED:

_____
_____
_____
_____
_____
_____
_____

TO BE PERFORMED BY:_____ ON OR BEFORE_____

ATTACHMENT C

ILLICIT DISCHARGE STATEMENT

ILLICIT DISCHARGE COMPLIANCE STATEMENT

Responsibility: The Owner is responsible for ultimate compliance with all provisions of the Massachusetts Stormwater Management Policy, the USEPA NPDES Construction General Permit and responsible for identifying and eliminating illicit discharges (as defined by the USEPA).

PROPERTY LOCATION: 1 Wilson West Whitty Way
North Attleborough, MA 02760

OWNER NAME: Town of North Attleboough

ADDRESS: 43 S Washington Street
North Attleborough, MA 02760

TEL. NUMBER: (508)699-0100

Engineer's Compliance Statement:
To the best of my knowledge, the attached plans, computations and specifications meet the requirements of Standard 10 of the Massachusetts Stormwater Handbook regarding illicit discharges to the stormwater management system and that no detectable illicit discharges exist on the site. All documents and attachments were prepared under my direction and qualified personnel properly gathered and evaluated the information submitted, to the best of my knowledge. Included with this statement are site plans, drawn to scale, that identify the location of systems for conveying stormwater on the site and show that these systems do not allow the entry of any illicit discharges into the stormwater management system. The plans also show any systems for conveying wastewater and/or groundwater on the site and show that there are no connections between the stormwater and wastewater systems.

	Eric Wilhelmsen	12/23/2025
Signature	Print Name	Date
Associate Principal	CDW Consultants, Inc.	
Title	Company	