

February 17, 2026

Peter Stith, TAC Committee Chair
City of Portsmouth
1 Junkins Avenue
Portsmouth, New Hampshire 03801

Re: Request for Site Plan Review at 1151 Sagamore Avenue, Tax Map 224, Lot 19

Dear Mr. Stith and Technical Advisory Committee (TAC) Members:

On behalf of 1151 Sagamore CBC LLC we are pleased to submit the attached plan set for **Site Plan Review and Approval** for the above-mentioned project and request that we be placed on the agenda for your **March 3, 2026**, meeting. The project is the demolition of the existing building and proposed new construction of four (4) standalone residential condominium units with the associated and required site improvements.

This will be the TAC's third review of this application. This application was previously reviewed in Summer 2025 as a Sketch Plan, followed by its first formal review at the January 6, 2026 TAC meeting. At this meeting, comments were provided by the Department of Public Works (DPW). A revised application that addressed these comments was placed on the February 3, 2026 agenda, but was withdrawn due to unaddressed DPW comments. With this resubmission, we have included application items that have been revised from the February 3, 2026 submission; these items include:

1. Cover Letter
2. Pump Design Report
3. Drainage Report
4. Drawing Set

Please see below for the DPW's comments provided after the January 6, 2026 TAC meeting, in bold, followed by updated responses of how they have been addressed, in plain text.

TAC Comments

- 1. Increase domestic water service sizes to 1" for to each building.**
HW Response: The drawings have been updated per this comment.
- 2. Fire services should have a curb stop for each building.**
HW Response: The drawings have been updated per this comment.
- 3. Paint domestic and fire service curb boxes blue and red, respectively.**
HW Response: The drawings have been updated per this comment.
- 4. South side of the driveway does not need radius. Remove radius and continue straight line of driveway until it intersects with Sagamore Ave.**
HW Response: The driveway entrance has been updated per this comment.



5. Consider redirecting driveway to Wentworth Road.

HW Response: The NHDOT expressed no concerns with the site's current access location and it is the preference of the Owner to keep it as is.

6. Add flushing hydrant to the end of the fire service main.

HW Response: The drawings have been updated per this comment.

7. NHDES may push back on individual sewer pumps to common force main. DES has required individual services connecting to the sewer main in Sagamore Ave in the past.

HW Response: The Applicant will coordinate with NHDES as needed. It would be preferred to utilize the site's existing force main stub versus disturbing Sagamore Ave to add additional connections.

8. Stub for sewer force main is 1.5". Stated size of sewer force main on property is 2". Confirm that 1.5" service size is sufficient for the four proposed properties. If it is sufficient then decrease force main size on property to 1.5".

HW Response: Per continued discussions with DPW, the force main has been revised to 1.25-inch. A revised copy of the pump design report has been provided.

9. City to provide sewer tie card for sewer stub location. Existing sewer alignment in Sagamore Ave is incorrect.

HW Response: The drawings have been updated per the sewer information provided by the City.

10. Sagamore Avenue is a state highway and will require a driveway permit from NHDOT.

HW Response: An application was submitted with NHDOT in November 2025 and their comments were addressed in this Site Plan application. Additional information they requested, such as a Drainage Report, will be provided to the NHDOT after they have been reviewed by the TAC.

11. The topography provided in the existing features plan does not match up with the drainage pattern provided in the drain study. It appears there is a large depression in the center of the lot that would naturally detain stormwater. This is not represented in the study. Also, as offsite flow onto the site needs to be accounted for in design, it is not relevant to the pre and post condition Summary and the offsite areas should have been shown a routing separately. In short, we believe that developing this site to the degree shown will dramatically influence the downstream drainage and that needs to be addressed.

HW Response: We have worked with DPW to revise the hydrology model to accurately depict existing drainage patterns. To comply with local stormwater regulations, the site design has been revised to include robust stormwater infiltration BMPs.



12. The engineer is showing detaining of drainage in direct proximity of what I believe is a proposed basement. This approach is not approvable as it will create hydraulic loading on the foundation and additional need to dewater the basement area.

HW Response: We have worked with DPW to address concerns with stormwater detention adjacent to basements. Revisions to the design include raising the basement slab grade by several feet, and provision of numerous water-proofing details.

13. Was more than one test pit conducted on site to determine soil type, depth to SHGW and ledge? Based on the one test pit shown, the soil is very shallow and rocky making infiltration almost impossible. A stormwater flowage easement may be necessary to create this level of development.

HW Response: One test pit was performed on the site in the location of the proposed rain garden, the test pit log is included within the Drainage Report. This test pit was performed at approximately elevation 29' and identified the seasonal high-water table approximately 2 feet deep, and ledge approximately 41 inches deep. The bottoms of both infiltration systems have been set at elevation 28' to allow for 1' of separation from the SHWT.

14. The proposed transformer should be further from the driveway.

HW Response: The drawings have been updated per this comment.

We look forward to TAC review of this submission and the Committees feedback on the proposed design.

Sincerely,
Haley Ward, Inc.

Drew Olehowski, PE
Project Manager

DJO-cba



CITY OF PORTSMOUTH

Planning & Sustainability
Department
1 Junkins Avenue
Portsmouth, New
Hampshire 03801
(603) 610-7216

TECHNICAL ADVISORY COMMITTEE

February 5, 2026

Sagamore Avenue CBC, LLC
76 State Street
Newburyport, Massachusetts 01950

RE: Site Plan Review approval for property located at 1151 Sagamore Avenue, Portsmouth, NH 03801 (LU-24-178)

Dear Property Owner:

The Technical Advisory Committee, at its regularly scheduled meeting of Tuesday, February 3, 2026, considered your application for Site Plan Review approval for the demolition of the existing structure and construction of four (4) standalone condominium single family structures with associated site improvements. Said property is shown on Assessor Map 224 Lot 19 and lies within the Mixed Residential Office (MRO) District. As a result of said consideration, the Committee voted to **postpone** the application to the March meeting.

This matter will be placed on the agenda for the Technical Advisory Committee meeting scheduled for **Tuesday, March 3, 2026**. One (1) hard copy of any revised plans and supporting reports and exhibits as well as an updated electronic file (in a PDF format) must be filed in the Planning Department by **Wednesday, February 18, 2026**.

The minutes and audio recording of this meeting are available by contacting the Planning & Sustainability Department.

Very truly yours,

Peter Britz,
Planning and Sustainability Director

cc:



Environment One Corporation

Pressure Sewer Preliminary

Cost and Design Analysis

For

1151 Sagamore Ave

Portsmouth, NH

Prepared For:

Drew Olehowski Haley Ward

120 Main St Suite 132

Saco ME 04072

Tel: 207-576-6488

Fax:

Prepared By: D.Coppola

February 11, 2026

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By:
D.Coppola

1151 Sagamore Ave
Portsmouth, NH

February 11, 2026

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Gals/day per Pump	Max Flow Per Pump (gpm)	Max Sim Ops	Max Flow (GPM)	Pipe Size (inches)	Max Velocity (FPS)	Length of Main this Zone	Friction Loss Factor (ft/100 ft)	Friction Loss This Zone	Accum Fric Loss (feet)	Max Main Elevation	Minimum Pump Elevation	Static Head (feet)	Total Dynamic Head (ft)
This spreadsheet was calculated using pipe diameters for: SDR11HDPE								Friction loss calculations were based on a Constant for inside roughness "C" of:								150	
1.00	1.00	4	4	200	11.00	3	33.00	1.25	7.31	274.00	14.40	39.46	39.46	32.00	28.00	4.00	43.46

Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One.

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME (HR)

Prepared By:
D.Coppola

1151 Sagamore Ave
Portsmouth, NH

February 11, 2026

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (inches)	Gallons per 100 lineal feet	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)
This spreadsheet was calculated using pipe diameters for			SDR11HDPE						Gals per Day per Dwelling	200
1.00	1.00	4	1.25	7.52	274.00	20.61	800	38.81	0.62	0.62



HALEY WARD®

STORMWATER MANAGEMENT AND EROSION CONTROL PLAN

**TO THE CITY OF PORTSMOUTH
FOR 1151 SAGAMORE AVENUE**

Map 224, Lot 19 | Portsmouth, NH

APPLICANT:

1151 Sagamore Avenue CBC LLC

76 State Street, Newburyport, ME 01950

February 17, 2026

JN: 5010314.002

REPORT PREPARED BY:

Haley Ward, Inc.

200 Griffin Road, Unit 14 | Portsmouth, NH 03801



EXECUTIVE SUMMARY

This drainage analysis examines the pre-development (existing) and post-development (proposed) stormwater drainage patterns for the proposed residential redevelopment project at 1151 Sagamore Avenue in Portsmouth, NH. The site is shown on the City of Portsmouth Assessor's Tax Map 224 as Lot 19. The project proposes to replace an existing building with four (4) single family condominiums. The total size of the lot is 30,191 square-feet (0.69 acres). The size of the total drainage area is 67,213 square-feet (1.53 acres).

The development will provide for the construction of four (4) standalone condominium units, with associated landscaping, utilities, and driveways. The new buildings will be serviced by public water and sewer. The development has the potential to increase stormwater runoff to adjacent properties and therefore must be designed in a manner to prevent that occurrence. This will be done primarily by capturing stormwater runoff and routing it through appropriate stormwater facilities, designed to ensure that there will be no significant increase in peak runoff from the site as a result of this project.

The hydrologic modeling utilized for this analysis uses the "Extreme Precipitation" values for rainfall from The Northeast Regional Climate Center (Cornell University), with a 15% increase to comply with local ordinance.

INTRODUCTION / PROJECT DESCRIPTION

This drainage report is designed to assist the owner, planning board, contractor, regulatory reviewer, and others in understanding the impact of the proposed development project on local surface water runoff and quality. The project site is shown on the City of Portsmouth, NH Assessor's Tax Map 224 as Lot 19. Bounding the site to north is Wentworth Road. Bounding the site to east is Sagamore Avenue. Bounding the site to south is a condominium complex. Bounding the site to the west is a City owned conservation land.

The property is situated in the Mixed Residential Office Zone. A vicinity map is included in the Appendix to this report. The proposed building replacement will demolish an existing building and associated driveway.

This report includes information about the existing site necessary to analyze stormwater runoff and to design any required mitigation. The report includes maps of pre-development and post-development watersheds, subcatchment areas and calculations of runoff. The report will provide a narrative of the stormwater runoff and describe numerically and graphically the surface water runoff patterns



for this site. Proposed stormwater management and treatment structures and methods will also be described, as well as erosion and sediment control practices. To fully understand the proposed site development the reader should also review a complete site plan set in addition to this report.

METHODOLOGY

“Extreme Precipitation” values from The Northeast Regional Climate Center (Cornell University) have been used for modeling purposes. These values have been used in this analysis, with a 15% addition to comply with local ordinances.

This report uses the US Soil Conservation Service (SCS) Method for estimating stormwater runoff. The SCS method is published in The National Engineering Handbook (NEH), Section 4 “Hydrology” and includes the Technical Release No. 20, (TR-20) “Computer Program for Project Formulation Hydrology”, and Technical Release No. 55 (TR-55) “Urban Hydrology for Small Watersheds” methods. This report uses the HydroCAD version 10.20 program, written by HydroCAD Software Solutions LLC, Chocorua, N.H., to apply these methods for the calculation of runoff and for pond modeling. Rainfall data and runoff curve numbers are taken from “The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire.”

Time of Concentration (T_c) is calculated by entering measured flow path data such as flow path type, length, slope and surface characteristics into the HydroCAD program. For the purposes of this report, a minimum time of concentration of 5 minutes is used.

The storm events used for the calculations in this report are the 2-year, 10-year, 25-year, and 50-year (24-hour) storms. Watershed basin boundaries have been delineated using topographic maps prepared by Haley Ward and field observations to confirm.

SITE SPECIFIC INFORMATION

Based on the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Soil Survey of Rockingham County, New Hampshire the site is made up of one soil type:

Soil Symbol	Soil Name and Slopes
140B	Chatfield-Hollis-Canton complex (0-8% slopes), rocky

Chatfield-Hollis-Canton complex is well drained with a stated depth to restrictive feature of 20-41 inches.



One test pit was dug on the site in the location of the proposed Rain Garden. A restrictive ledge layer was identified at 41-inches. The seasonal high-water table was identified at approximately 18" depth, or elevation 27-feet. The soil is described as fine, sandy loam, granular, friable, fill.

The physical characteristics of the site consist of flat (0-8%) grades that generally slope downward from the south to the north of the lot. Elevations on the site range from 30 to 35 feet above sea level. The existing site is developed and includes an existing building located in the front of the lot, with an asphalt driveway. Vegetation around the developed portion of the lot consists of established grasses, shrubs, and trees.

There are no protected natural resources on or directly adjacent to the subject property.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 33015C0286F (effective date January 29, 2021), the project site is located in Zone X and is determined to be outside of the 0.2% annual chance floodplain. A copy of the FIRM map is included in the Appendix.

CONSTRUCTION TIMING

Development of the site has been ongoing throughout 2025; completed activities include blasting/excavation to bring the site to foundation grade, and the existing home has already been demolished. Construction of the proposed development is anticipated to begin in Spring 2026, pending receipt of required land use permits. Prior to further earth moving activities, the site will be stabilized via the proposed erosion control devices as shown on the Site Plan. These devices will not be removed until the site has been stabilized via permanent vegetation, which is expected to occur in Fall/Winter 2026.

LOW-IMPACT DEVELOPMENT STATEMENT

The proposed developed utilized Low-Impact Development to the greatest extent practical. Primarily, runoff generated from the proposed driveway and building roofs is directed to a Rain Garden which has been designed per the New Hampshire Stormwater Manual. Impervious areas have been minimized by including garages within the proposed buildings, eliminating the need for additional outdoor parking spaces.



BUFFERS, SETBACKS, EXISTING FEATURES

The site will adhere to the applicable setbacks found within the City zoning ordinance. There are no setbacks related to protected natural resources. The site is not within a mapped floodplain. There are mature trees between the subject parcel and the abutting property to the south which will be protected as deemed practical. There are no known water quality concerns associated with this site.

WASTE

The majority of the site preparation, including demolition of the existing building, has already been completed at the time of this application's submission. Additional construction debris will be collected in a dumpster and will be disposed of off-site by a licensed hauler. Solid waste and wastewater generated by the proposed residential units will be handled via public systems.

PRE-DEVELOPMENT DRAINAGE

In the pre-development condition, the site has been analyzed as three (3) subcatchment watershed basins based on localized topography and discharge location. A Pre-Development Hydrology map and HydroCAD model results have been provided.

Subcatchment 1 (1S) represents the majority of the subject property area, as well as offsite area to the north, which drains towards the center of the site where runoff is detained in a local low point. Runoff in this detention area has been observed to infiltrate; no pooling of water has been documented. While the majority of runoff entering this area is discarded via infiltration, any overflow is directed to the southwest corner of the site (Summation Point 1.)

Subcatchment 2 (2S) represents the front of the subject property, as well as a portion of the abutting 1151 Sagamore Avenue property to the south. This area drains to the northeast corner of the site where it is discharged to the Sagamore Avenue Public ROW (Summation Point 2, SP2)

POST-DEVELOPMENT DRAINAGE

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. In the post-development condition, the site has been analyzed as eight (8) subcatchment basins. A Post-Development Hydrology map and HydroCAD model results have been provided.

Subcatchment 1 (1S) continues to represent the area to the north of the site. This drainage area will be intercepted by an infiltration trench to be located on the



north side of the proposed buildings. This trench has been designed to detain and infiltrate runoff from the 50-year storm event. This trench is equipped with underdrain pipe and several manholes for maintenance access. In the event that this trench were to fail, runoff will be directed to the rain garden.

Subcatchment 2 (2S) continues to represent the front of the lot and the adjacent 1155 Sagamore Avenue property. Runoff in this area will continue to be directed to the northeast corner of the lot, Summation Point 2.

Subcatchment 3 (3S) represents the proposed driveway and landscaped areas. Runoff within this subcatchment will be directed as overland flow to a proposed rain garden at the rear of the site. This rain garden will release controlled flow to a subsurface detention system located beneath the proposed driveway.

Subcatchments 4,5,6, and 7 (4S, 5S, 6S, 7S) represent the roof areas of the four proposed buildings. These units will be equipped with gutters and downspouts which will direct their runoff to the proposed rain garden.

Subcatchment 8 (8S) represents a portion of the 1155 Sagamore Avenue property, as well as offsite area to the west. Runoff from this offsite area cannot be feasibly captured by the proposed onsite stormwater infrastructure and is therefore the source of the minor post-development peak runoff rate increase, as identified below.

RUNOFF COMPARISON

Table 1: Pre-Development to Post-Development Comparison

Design Point	Q2 (CFS)		Q10 (CFS)		Q25(CFS)		Q50 (CFS)		Description
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
SP1	0.00	0.05	0.00	0.16	0.00	0.27	0.00	0.38	Southwest corner of property
SP2	0.38	0.38	0.87	0.78	1.30	1.13	1.71	1.46	Sagamore Ave ROW

As shown in Table 1, post-development runoff rates are similar to those observed under pre-development conditions. The minor increases observed at Summation Point 1 are due to runoff from the offsite areas (Subcatchment 8) that cannot be feasibly detained by the proposed onsite detention features. These increases of less than one half CFS are not expected to have a significant impact on downstream properties.



OFFSITE INFRASTRUCTURE CAPACITY

There is no Town infrastructure utilized in this project in regard to storm drainage. All retention and routing to the final destination of the stormwater is done on-site, therefore no impact to city infrastructure is anticipated.

EROSION AND SEDIMENT CONTROL PRACTICES

The erosion potential for this site as it exists is moderate due to the presence of soils that are highly erodible. During construction, the major potential for erosion is wind and stormwater runoff. The contractor will be required to inspect and maintain all necessary erosion control measures, as well as installing any additional measures as required. All erosion control practices shall conform to "The Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire." Some examples of erosion and sediment control measures to be utilized for this project during construction may include:

- Silt Soxx (or approved alternative) located at the toe of disturbed slopes
- Stabilized construction entrance at access point to the site
- Temporary mulching and seeding for disturbed areas
- Spraying water over disturbed areas to minimize wind erosion

After construction, permanent stabilization will be accomplished by permanent seeding, landscaping, and surfacing the access drives and parking areas with asphalt paving and other areas with impervious walkways.

CONCLUSION

The proposed development has been designed to match the pre-development drainage patterns to the greatest extent feasible. With the design of the rain garden, the post-development runoff rates are effectively equivalent to the pre-development runoff rates. Erosion and sediment control practices will be implemented for both the temporary condition during construction and for final stabilization after construction. Therefore, there are no negative impacts to downstream receptors or adjacent properties anticipated as a result of this project.



REFERENCES

1. Comprehensive Environmental Inc. and New Hampshire Department of Environmental Services. *New Hampshire Stormwater Manual (Volumes 1, 2 and 3)*, December 2008 (Revision 1.0).
2. Minnick, E.L. and H.T. Marshall. *Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire*, prepared by Rockingham County Conservation District, prepared for New Hampshire Department of Environmental Services, in cooperation with USDA Soil Conservation Service, August 1992.
3. HydroCAD Software Solution, LLC. *HydroCAD Stormwater Modeling System Version 10.20* copyright 2013.



Property Information

Property ID 0224-0019-0000
Location 1151 SAGAMORE AVE
Owner 1151 SAGAMORE AVENUE CBC LLC



**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/23/2025

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point	
Smoothing State	Yes
Location	
Latitude	43.052 degrees North
Longitude	70.748 degrees West
Elevation	10 feet
Date/Time	Fri Aug 25 2023 11:03:42 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.82	1.04	1yr	0.70	0.98	1.21	1.56	2.03	2.67	2.94	1yr	2.36	2.82	3.24	3.96	4.57	1yr
2yr	0.32	0.50	0.62	0.82	1.03	1.30	2yr	0.89	1.18	1.52	1.94	2.49	3.22	3.58	2yr	2.85	3.45	3.95	4.70	5.35	2yr
5yr	0.37	0.58	0.73	0.98	1.25	1.61	5yr	1.08	1.47	1.89	2.44	3.15	4.08	4.60	5yr	3.61	4.42	5.07	5.96	6.73	5yr
10yr	0.41	0.65	0.82	1.12	1.46	1.90	10yr	1.26	1.73	2.24	2.91	3.76	4.88	5.55	10yr	4.32	5.34	6.12	7.14	8.01	10yr
25yr	0.48	0.77	0.97	1.34	1.78	2.35	25yr	1.54	2.15	2.79	3.65	4.76	6.19	7.13	25yr	5.48	6.85	7.85	9.07	10.09	25yr
50yr	0.54	0.87	1.11	1.55	2.09	2.78	50yr	1.80	2.54	3.31	4.35	5.69	7.42	8.62	50yr	6.56	8.29	9.48	10.87	12.02	50yr
100yr	0.60	0.98	1.26	1.79	2.44	3.28	100yr	2.10	3.00	3.93	5.19	6.80	8.88	10.42	100yr	7.86	10.02	11.46	13.03	14.33	100yr
200yr	0.68	1.11	1.44	2.07	2.85	3.87	200yr	2.46	3.54	4.66	6.17	8.12	10.65	12.60	200yr	9.42	12.11	13.85	15.63	17.08	200yr
500yr	0.81	1.33	1.73	2.51	3.52	4.81	500yr	3.03	4.42	5.82	7.76	10.28	13.53	16.20	500yr	11.97	15.58	17.81	19.89	21.57	500yr

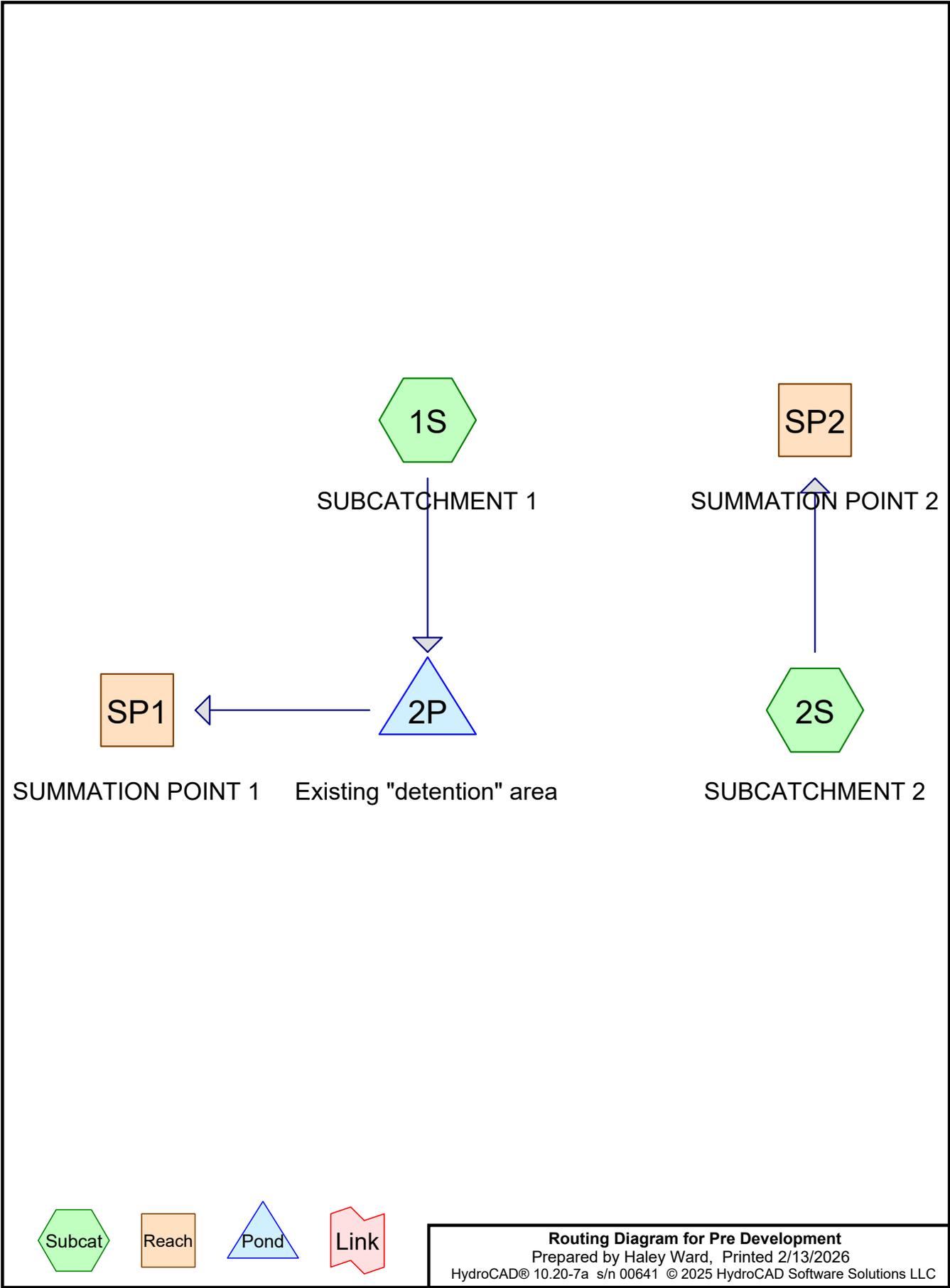
Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.88	1yr	0.62	0.86	0.93	1.34	1.69	2.26	2.50	1yr	2.00	2.41	2.88	3.21	3.94	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.19	2yr	0.86	1.16	1.37	1.81	2.33	3.07	3.47	2yr	2.72	3.33	3.84	4.56	5.11	2yr
5yr	0.35	0.54	0.67	0.92	1.17	1.40	5yr	1.01	1.37	1.61	2.11	2.72	3.80	4.20	5yr	3.36	4.04	4.74	5.56	6.26	5yr
10yr	0.39	0.59	0.74	1.03	1.33	1.60	10yr	1.15	1.57	1.80	2.38	3.05	4.38	4.88	10yr	3.88	4.69	5.47	6.44	7.22	10yr
25yr	0.44	0.67	0.83	1.19	1.56	1.90	25yr	1.35	1.86	2.10	2.74	3.52	4.78	5.91	25yr	4.23	5.68	6.69	7.83	8.72	25yr
50yr	0.48	0.73	0.91	1.31	1.77	2.17	50yr	1.53	2.12	2.35	3.05	3.91	5.41	6.82	50yr	4.79	6.56	7.77	9.10	10.06	50yr
100yr	0.54	0.81	1.02	1.47	2.02	2.47	100yr	1.74	2.41	2.63	3.39	4.31	6.10	7.87	100yr	5.40	7.57	9.04	10.58	11.63	100yr
200yr	0.59	0.89	1.13	1.64	2.28	2.81	200yr	1.97	2.75	2.94	3.74	4.74	6.86	9.09	200yr	6.07	8.74	10.50	12.32	13.45	200yr
500yr	0.69	1.02	1.31	1.91	2.72	3.36	500yr	2.34	3.29	3.42	4.26	5.39	8.01	10.98	500yr	7.09	10.56	12.80	15.09	16.30	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.72	0.89	1.09	1yr	0.77	1.06	1.26	1.74	2.20	2.98	3.18	1yr	2.64	3.06	3.59	4.38	5.05	1yr
2yr	0.34	0.52	0.64	0.87	1.07	1.27	2yr	0.92	1.24	1.48	1.96	2.52	3.43	3.72	2yr	3.03	3.58	4.11	4.86	5.64	2yr
5yr	0.40	0.62	0.77	1.05	1.34	1.63	5yr	1.16	1.59	1.89	2.54	3.26	4.36	4.98	5yr	3.85	4.79	5.40	6.40	7.18	5yr
10yr	0.47	0.72	0.89	1.25	1.62	1.99	10yr	1.39	1.94	2.29	3.11	3.97	5.36	6.23	10yr	4.74	5.99	6.85	7.87	8.79	10yr
25yr	0.58	0.88	1.10	1.57	2.06	2.59	25yr	1.78	2.53	2.97	4.08	5.18	7.75	8.38	25yr	6.86	8.05	9.20	10.38	11.45	25yr
50yr	0.68	1.03	1.28	1.84	2.48	3.15	50yr	2.14	3.08	3.61	5.02	6.36	9.69	10.50	50yr	8.57	10.10	11.51	12.78	14.01	50yr
100yr	0.80	1.20	1.51	2.18	2.99	3.84	100yr	2.58	3.76	4.40	6.19	7.83	12.11	13.16	100yr	10.71	12.65	14.40	15.76	17.15	100yr
200yr	0.93	1.41	1.78	2.58	3.60	4.70	200yr	3.10	4.59	5.37	7.63	9.63	15.17	16.51	200yr	13.43	15.87	18.04	19.43	20.98	200yr
500yr	1.16	1.73	2.22	3.23	4.59	6.11	500yr	3.96	5.97	6.97	10.10	12.71	20.46	22.28	500yr	18.11	21.43	24.31	25.62	27.41	500yr





Pre Development

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Type III 24-hr 2-yr Rainfall=3.70"

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Page 2

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=47,354 sf 10.22% Impervious Runoff Depth>0.66"
Flow Length=100' Slope=0.0800 '/' Tc=13.4 min CN=61 Runoff=0.50 cfs 0.060 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=12,579 sf 27.43% Impervious Runoff Depth>1.19"
Tc=5.0 min CN=71 Runoff=0.38 cfs 0.029 af

Reach SP1: SUMMATIONPOINT 1 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach SP2: SUMMATIONPOINT 2 Inflow=0.38 cfs 0.029 af
Outflow=0.38 cfs 0.029 af

Pond 2P: Existing "detention" area Peak Elev=27.60' Storage=704 cf Inflow=0.50 cfs 0.060 af
Discarded=0.12 cfs 0.060 af Primary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.060 af

Total Runoff Area = 1.376 ac Runoff Volume = 0.089 af Average Runoff Depth = 0.77"
86.16% Pervious = 1.186 ac 13.84% Impervious = 0.190 ac

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Type III 24-hr 2-yr Rainfall=3.70"

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Page 3

Summary for Subcatchment 1S: SUBCATCHMENT 1

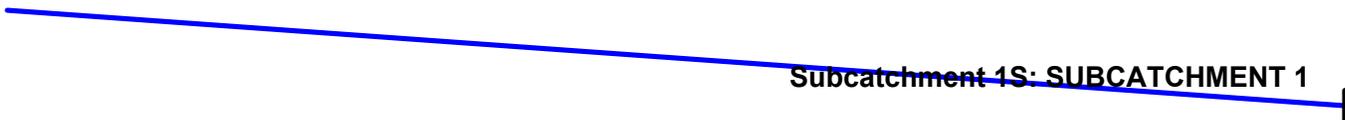
Runoff = 0.50 cfs @ 12.23 hrs, Volume= 0.060 af, Depth> 0.66"

Routed to Pond 2P : Existing "detention" area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

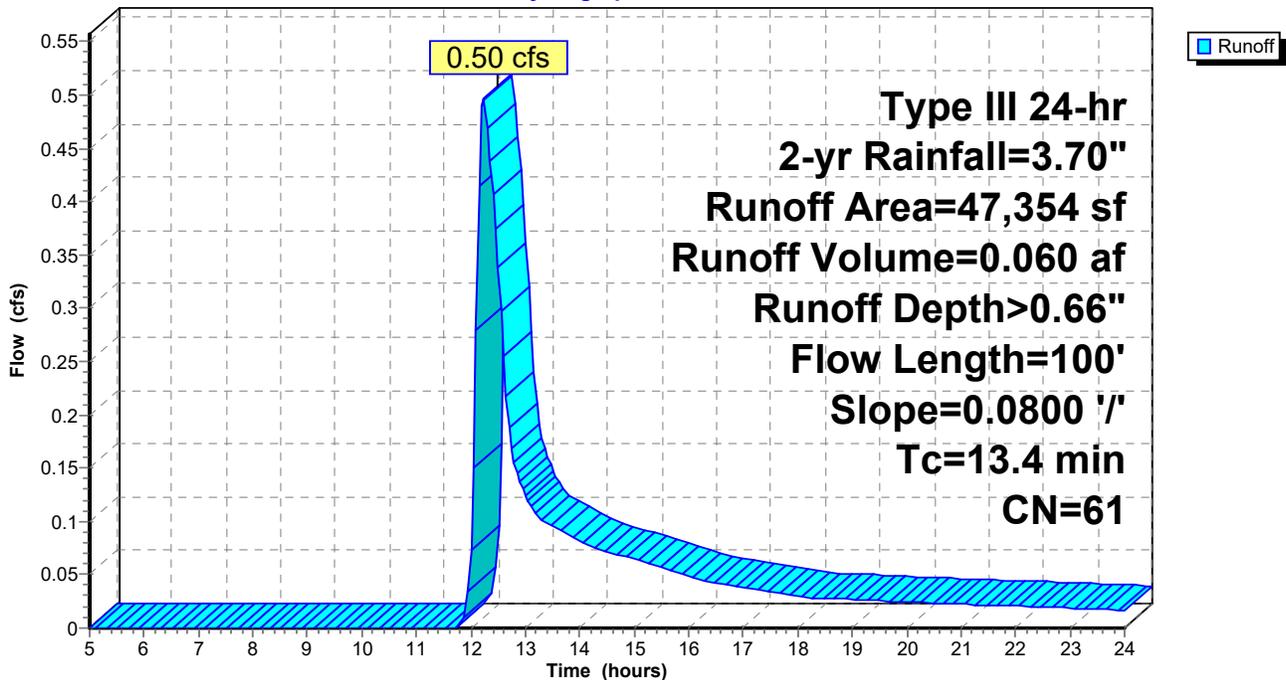
Area (sf)	CN	Description
28,956	55	Woods, Good, HSG B
13,557	61	>75% Grass cover, Good, HSG B
* 4,841	98	IMPERVIOUS
47,354	61	Weighted Average
42,513		89.78% Pervious Area
4,841		10.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	100	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.70"



Subcatchment 1S: SUBCATCHMENT 1

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.70"

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Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 1.19"
Routed to Reach SP2 : SUMMATION POINT 2

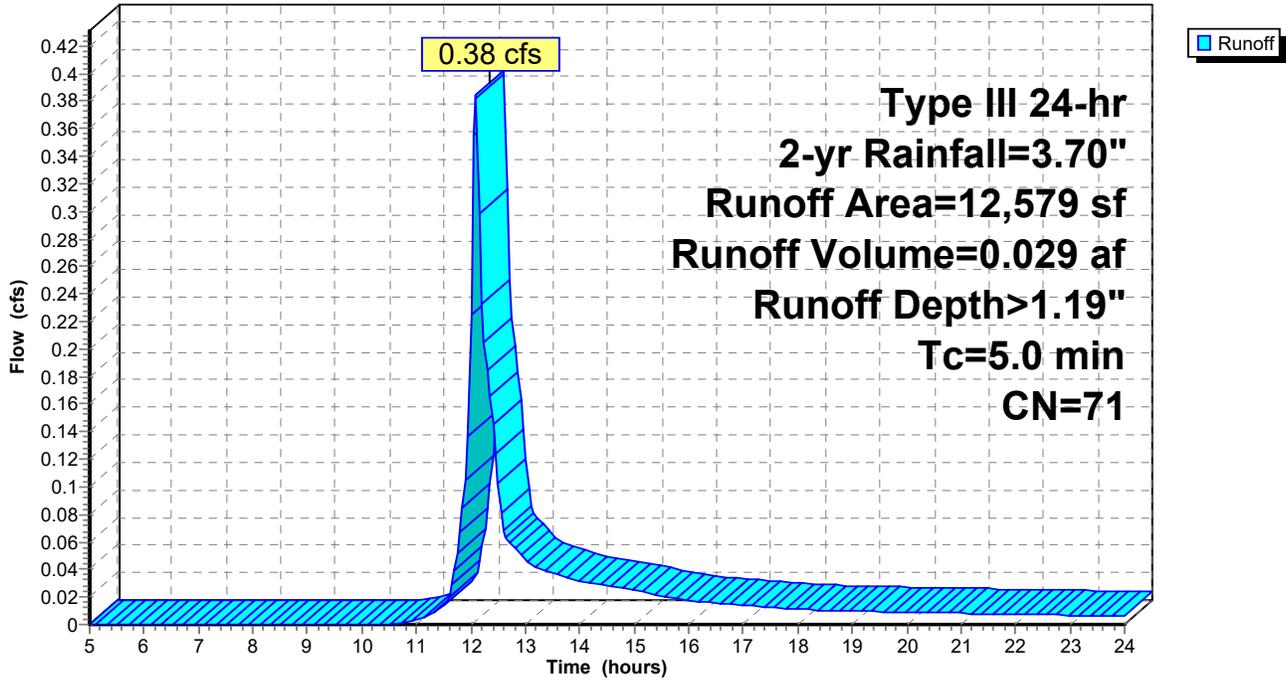
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
9,128	61	>75% Grass cover, Good, HSG B
* 3,451	98	IMPERVIOUS
12,579	71	Weighted Average
9,128		72.57% Pervious Area
3,451		27.43% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.70"

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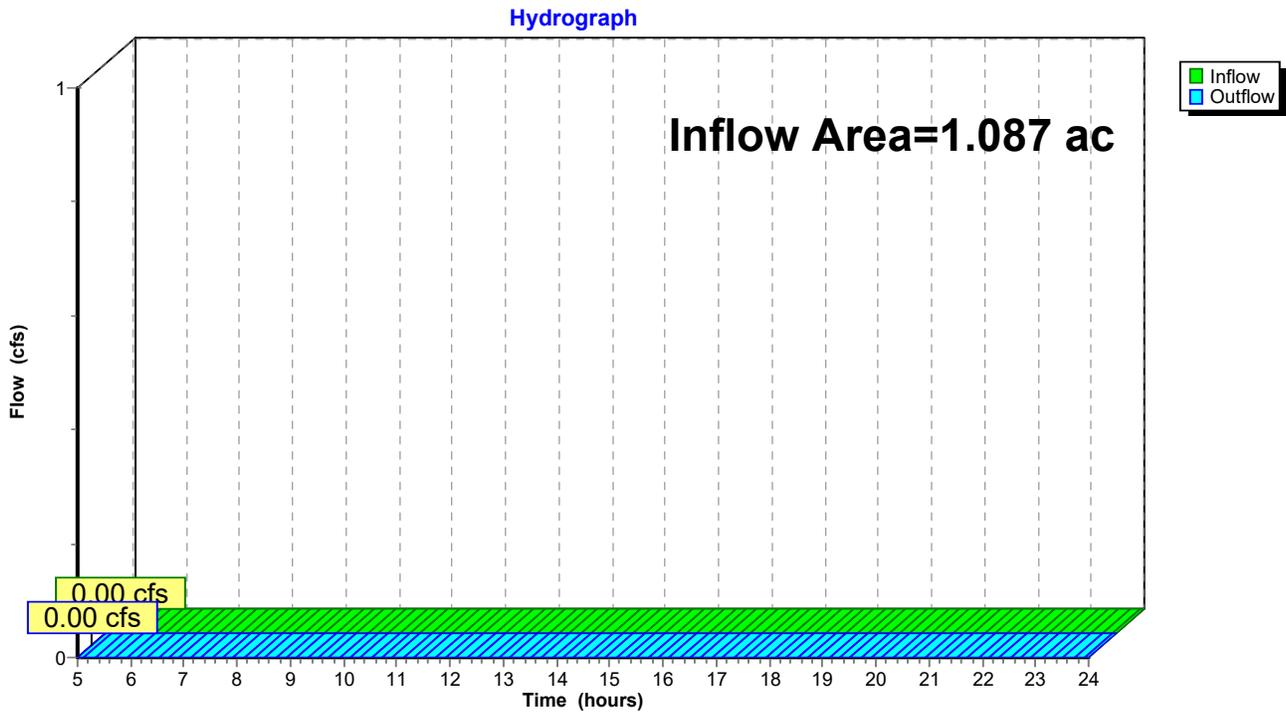
Page 5

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.087 ac, 10.22% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1



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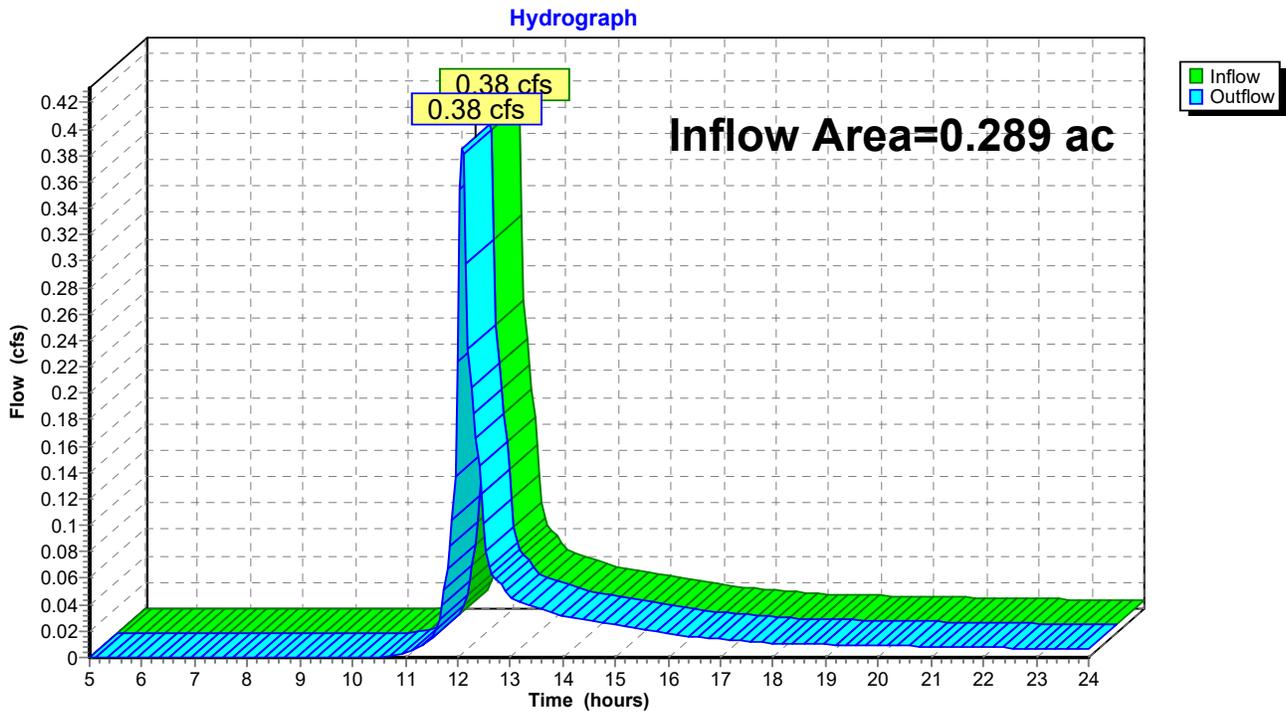
Page 6

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.289 ac, 27.43% Impervious, Inflow Depth > 1.19" for 2-yr event
Inflow = 0.38 cfs @ 12.09 hrs, Volume= 0.029 af
Outflow = 0.38 cfs @ 12.09 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2



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Type III 24-hr 2-yr Rainfall=3.70"

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Summary for Pond 2P: Existing "detention" area

Inflow Area = 1.087 ac, 10.22% Impervious, Inflow Depth > 0.66" for 2-yr event
 Inflow = 0.50 cfs @ 12.23 hrs, Volume= 0.060 af
 Outflow = 0.12 cfs @ 13.07 hrs, Volume= 0.060 af, Atten= 76%, Lag= 50.3 min
 Discarded = 0.12 cfs @ 13.07 hrs, Volume= 0.060 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 27.60' @ 13.07 hrs Surf.Area= 2,104 sf Storage= 704 cf

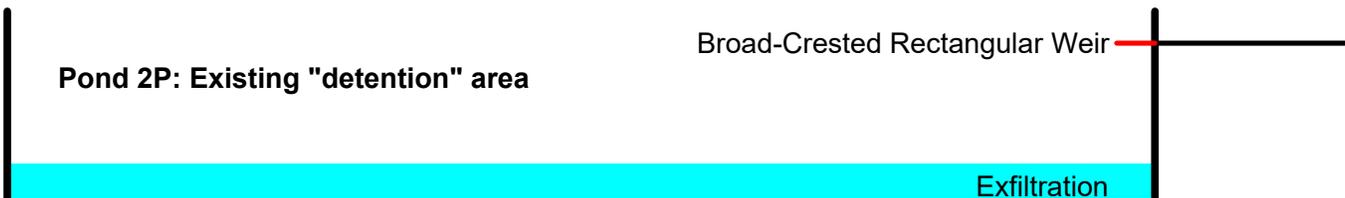
Plug-Flow detention time= 67.4 min calculated for 0.060 af (100% of inflow)
 Center-of-Mass det. time= 65.8 min (968.5 - 902.6)

Volume	Invert	Avail.Storage	Storage Description
#1	27.00'	17,225 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	250	0	0
28.00	3,350	1,800	1,800
29.00	8,000	5,675	7,475
30.00	11,500	9,750	17,225

Device	Routing	Invert	Outlet Devices
#1	Discarded	27.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	29.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.12 cfs @ 13.07 hrs HW=27.60' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.00' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)



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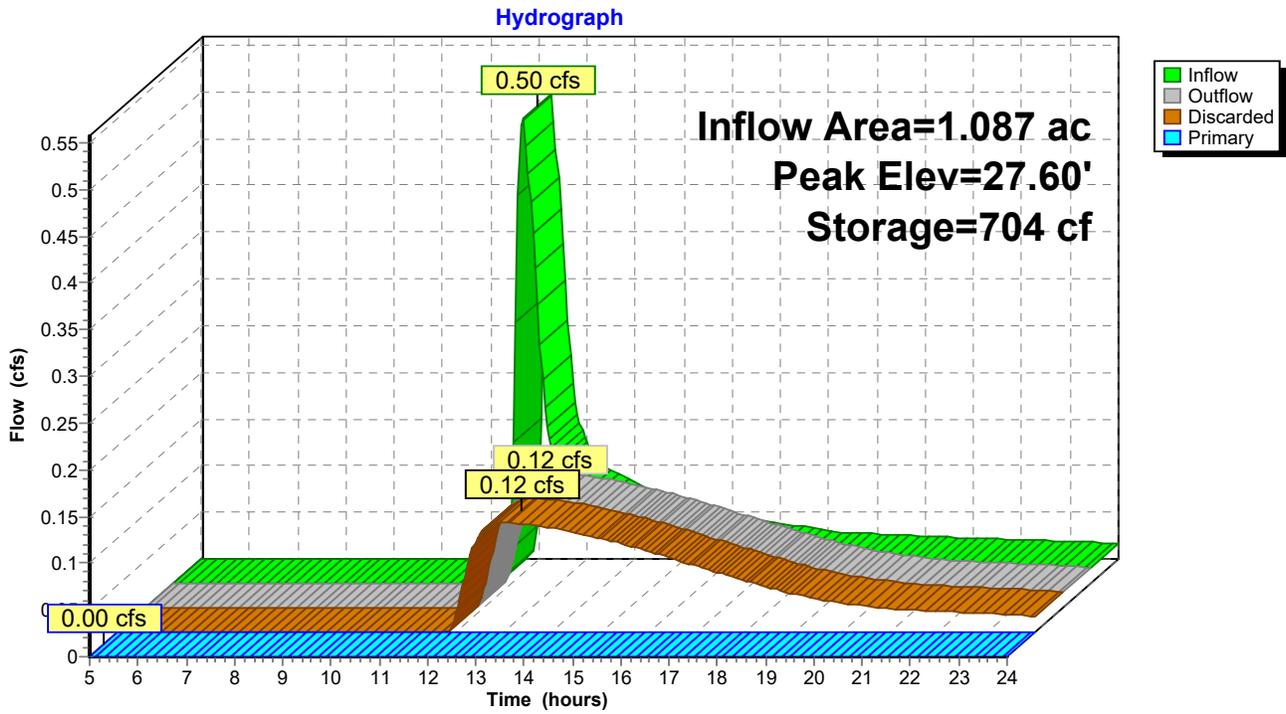
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Type III 24-hr 2-yr Rainfall=3.70"

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Pond 2P: Existing "detention" area



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Type III 24-hr 10-yr Rainfall=5.61"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=47,354 sf 10.22% Impervious Runoff Depth>1.74"
Flow Length=100' Slope=0.0800 '/' Tc=13.4 min CN=61 Runoff=1.63 cfs 0.158 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=12,579 sf 27.43% Impervious Runoff Depth>2.59"
Tc=5.0 min CN=71 Runoff=0.87 cfs 0.062 af

Reach SP1: SUMMATIONPOINT 1 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach SP2: SUMMATIONPOINT 2 Inflow=0.87 cfs 0.062 af
Outflow=0.87 cfs 0.062 af

Pond 2P: Existing "detention" area Peak Elev=28.22' Storage=2,652 cf Inflow=1.63 cfs 0.158 af
Discarded=0.24 cfs 0.155 af Primary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.155 af

Total Runoff Area = 1.376 ac Runoff Volume = 0.220 af Average Runoff Depth = 1.92"
86.16% Pervious = 1.186 ac 13.84% Impervious = 0.190 ac

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Type III 24-hr 10-yr Rainfall=5.61"

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Summary for Subcatchment 1S: SUBCATCHMENT 1

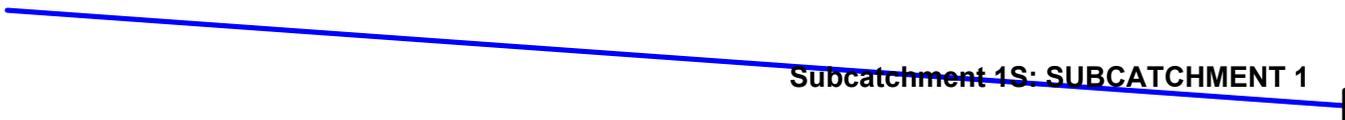
Runoff = 1.63 cfs @ 12.20 hrs, Volume= 0.158 af, Depth> 1.74"

Routed to Pond 2P : Existing "detention" area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.61"

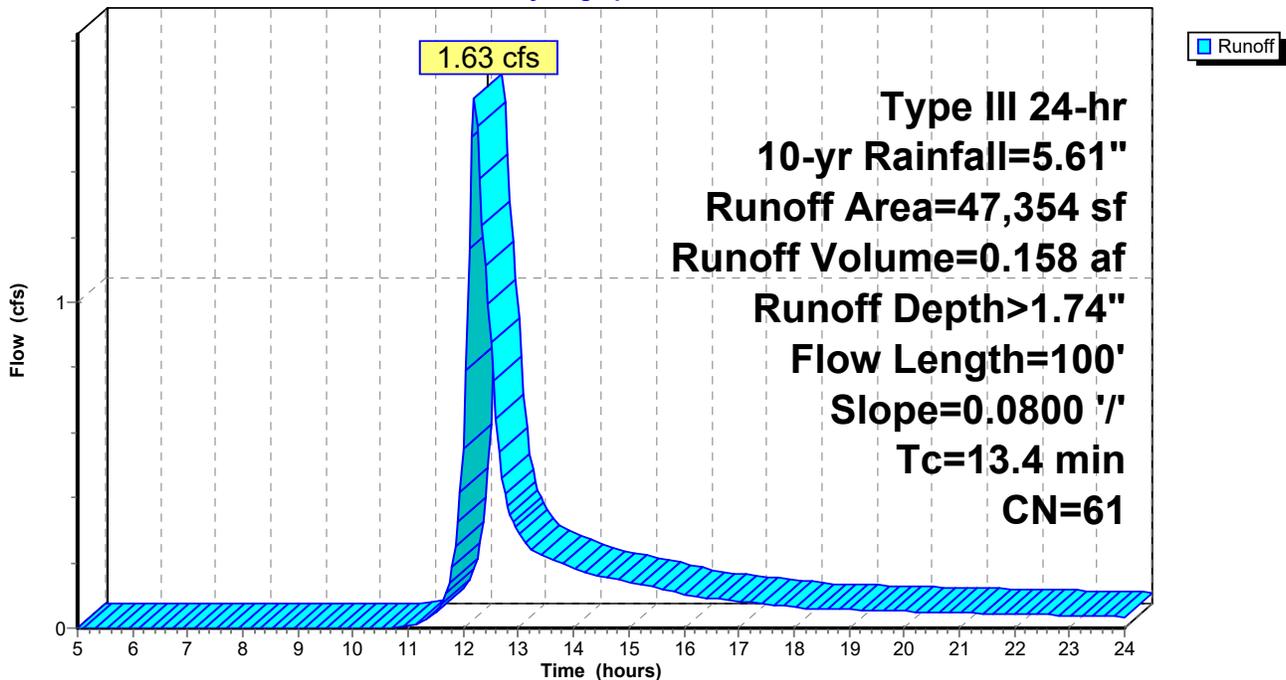
Area (sf)	CN	Description
28,956	55	Woods, Good, HSG B
13,557	61	>75% Grass cover, Good, HSG B
* 4,841	98	IMPERVIOUS
47,354	61	Weighted Average
42,513		89.78% Pervious Area
4,841		10.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	100	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.70"



Subcatchment 1S: SUBCATCHMENT 1

Hydrograph



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Type III 24-hr 10-yr Rainfall=5.61"

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Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 0.87 cfs @ 12.08 hrs, Volume= 0.062 af, Depth> 2.59"
 Routed to Reach SP2 : SUMMATION POINT 2

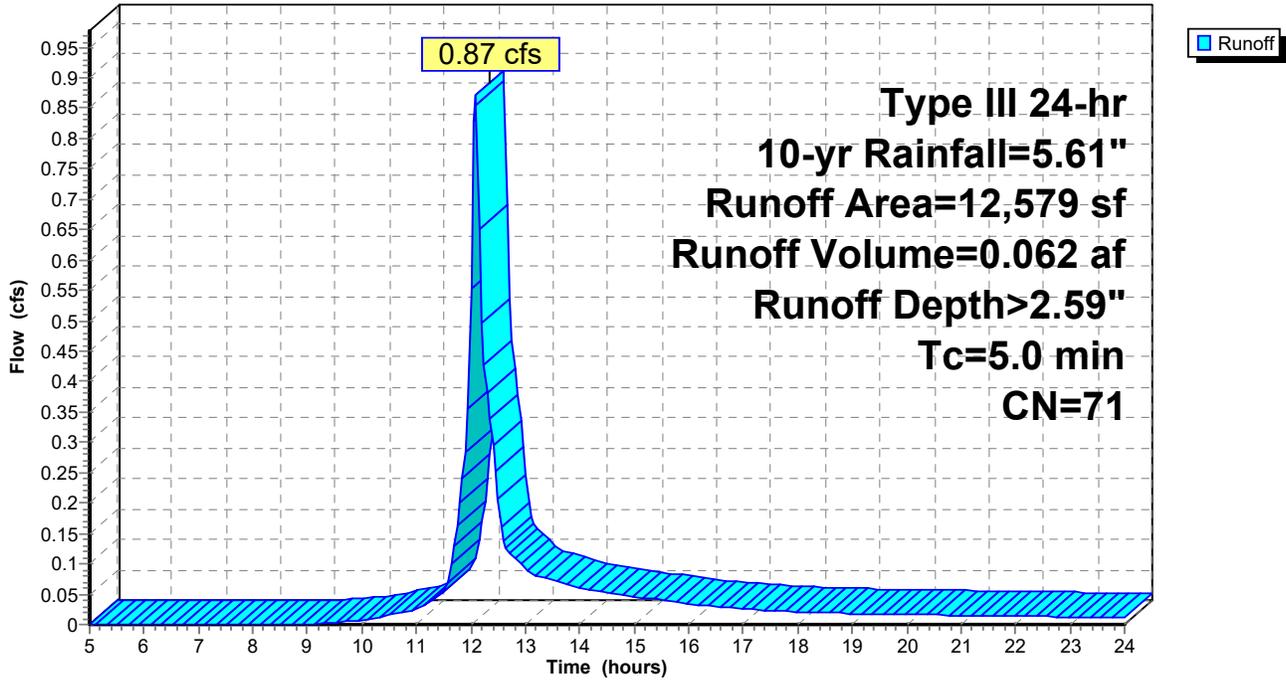
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
9,128	61	>75% Grass cover, Good, HSG B
* 3,451	98	IMPERVIOUS
12,579	71	Weighted Average
9,128		72.57% Pervious Area
3,451		27.43% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2

Hydrograph



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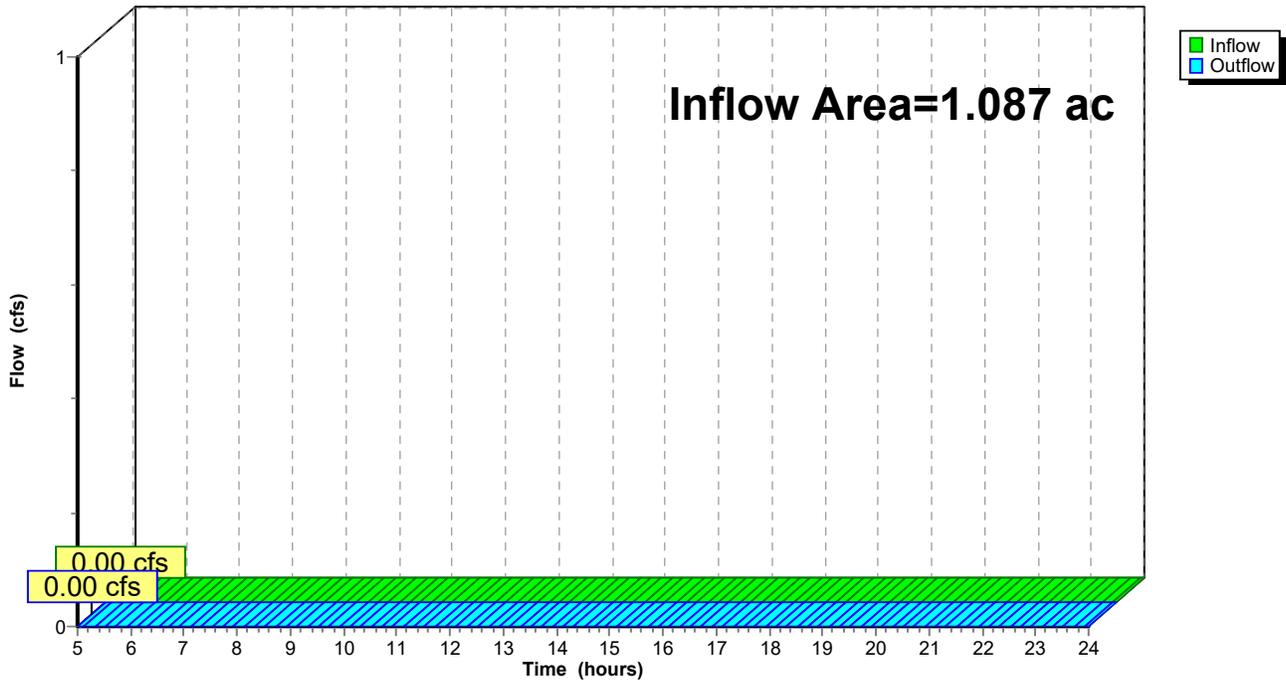
Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.087 ac, 10.22% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1

Hydrograph



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Type III 24-hr 10-yr Rainfall=5.61"

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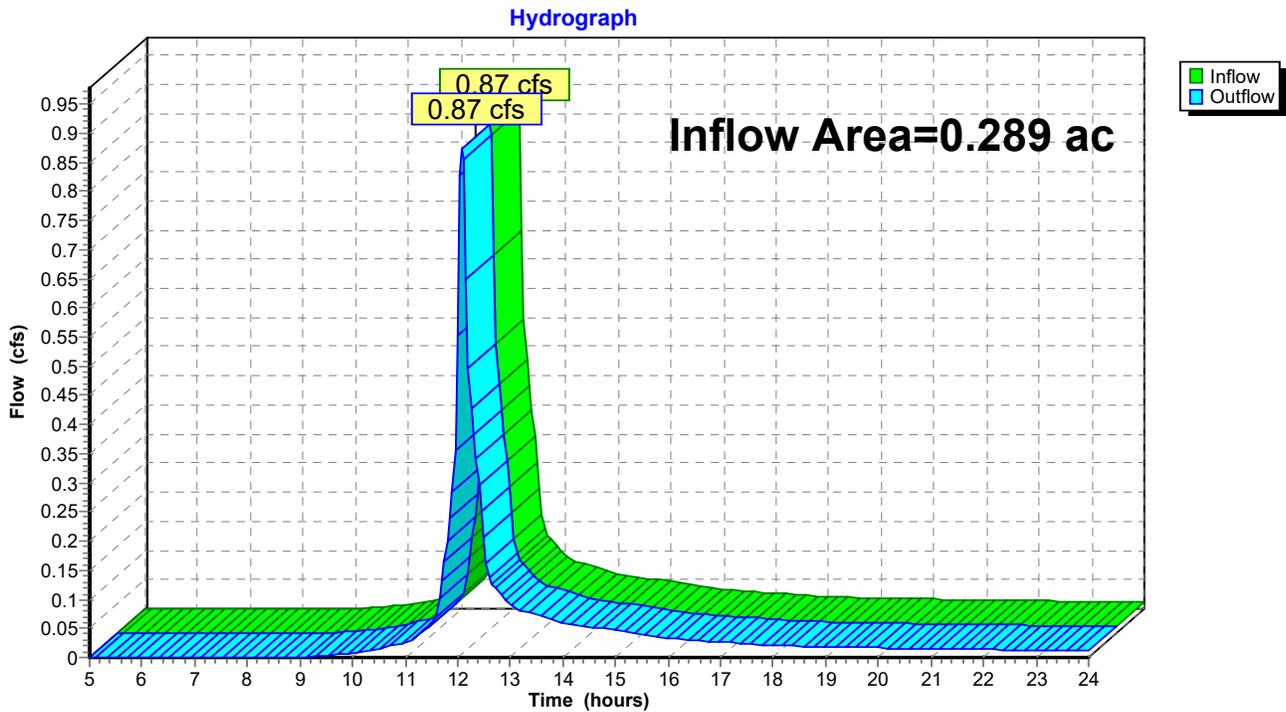
Page 13

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.289 ac, 27.43% Impervious, Inflow Depth > 2.59" for 10-yr event
Inflow = 0.87 cfs @ 12.08 hrs, Volume= 0.062 af
Outflow = 0.87 cfs @ 12.08 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2



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Type III 24-hr 10-yr Rainfall=5.61"

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Summary for Pond 2P: Existing "detention" area

Inflow Area = 1.087 ac, 10.22% Impervious, Inflow Depth > 1.74" for 10-yr event
 Inflow = 1.63 cfs @ 12.20 hrs, Volume= 0.158 af
 Outflow = 0.24 cfs @ 13.23 hrs, Volume= 0.155 af, Atten= 85%, Lag= 61.5 min
 Discarded = 0.24 cfs @ 13.23 hrs, Volume= 0.155 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.22' @ 13.23 hrs Surf.Area= 4,376 sf Storage= 2,652 cf

Plug-Flow detention time= 141.3 min calculated for 0.155 af (98% of inflow)
 Center-of-Mass det. time= 130.3 min (999.7 - 869.4)

Volume	Invert	Avail.Storage	Storage Description
#1	27.00'	17,225 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	250	0	0
28.00	3,350	1,800	1,800
29.00	8,000	5,675	7,475
30.00	11,500	9,750	17,225

Device	Routing	Invert	Outlet Devices
#1	Discarded	27.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	29.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.24 cfs @ 13.23 hrs HW=28.22' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.00' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)



Pre Development

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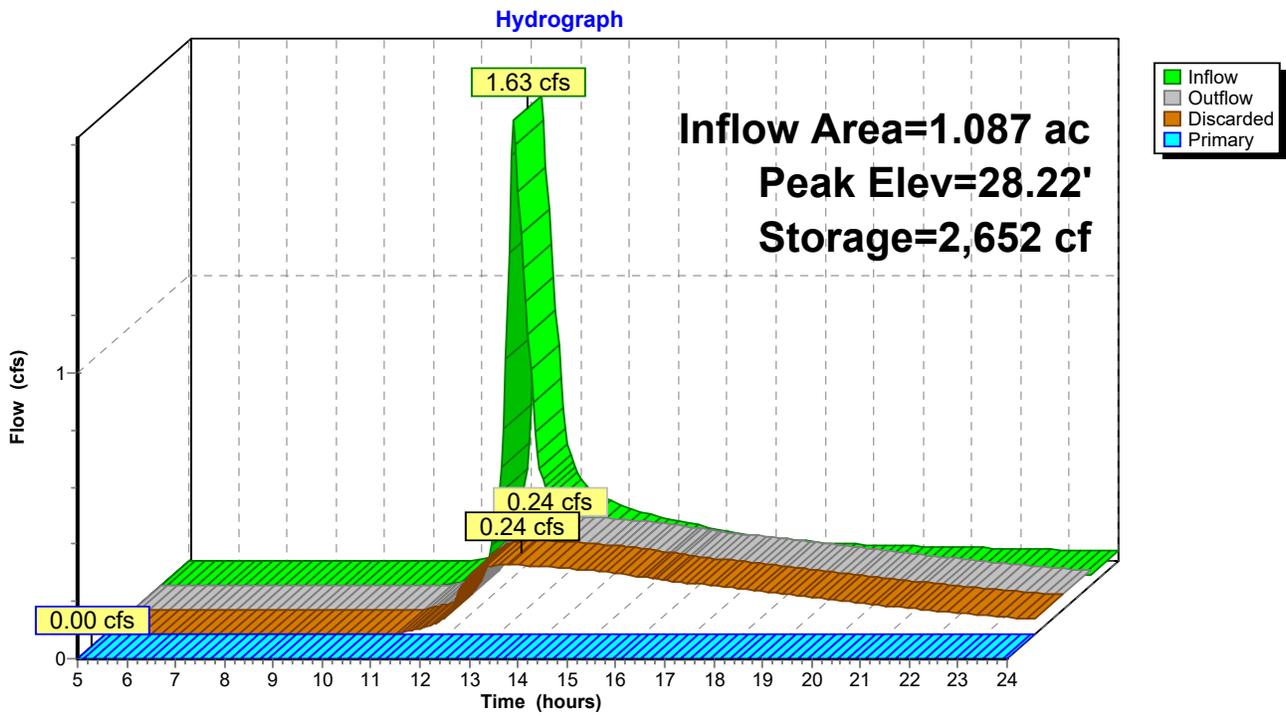
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Pond 2P: Existing "detention" area



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Type III 24-hr 25-yr Rainfall=7.12"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=47,354 sf 10.22% Impervious Runoff Depth>2.78"
Flow Length=100' Slope=0.0800 '/' Tc=13.4 min CN=61 Runoff=2.71 cfs 0.252 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=12,579 sf 27.43% Impervious Runoff Depth>3.82"
Tc=5.0 min CN=71 Runoff=1.30 cfs 0.092 af

Reach SP1: SUMMATIONPOINT 1 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach SP2: SUMMATIONPOINT 2 Inflow=1.30 cfs 0.092 af
Outflow=1.30 cfs 0.092 af

Pond 2P: Existing "detention" area Peak Elev=28.61' Storage=4,705 cf Inflow=2.71 cfs 0.252 af
Discarded=0.34 cfs 0.239 af Primary=0.00 cfs 0.000 af Outflow=0.34 cfs 0.239 af

Total Runoff Area = 1.376 ac Runoff Volume = 0.344 af Average Runoff Depth = 3.00"
86.16% Pervious = 1.186 ac 13.84% Impervious = 0.190 ac

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Type III 24-hr 25-yr Rainfall=7.12"

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Summary for Subcatchment 1S: SUBCATCHMENT 1

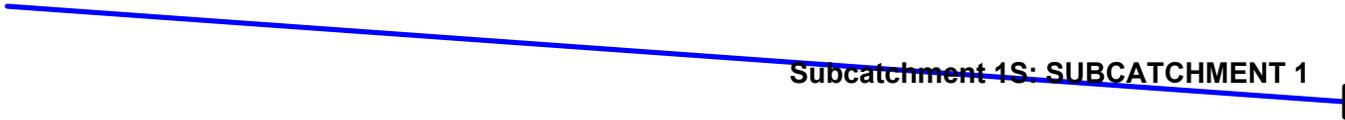
Runoff = 2.71 cfs @ 12.20 hrs, Volume= 0.252 af, Depth> 2.78"

Routed to Pond 2P : Existing "detention" area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

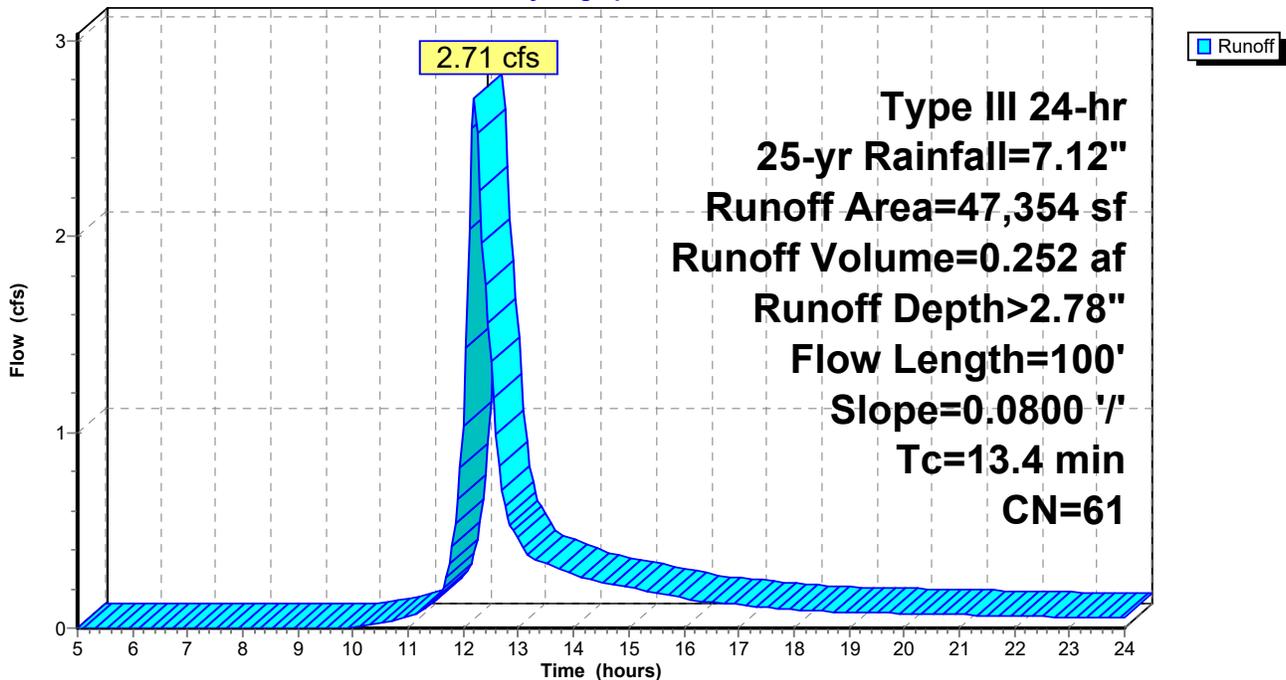
Area (sf)	CN	Description
28,956	55	Woods, Good, HSG B
13,557	61	>75% Grass cover, Good, HSG B
* 4,841	98	IMPERVIOUS
47,354	61	Weighted Average
42,513		89.78% Pervious Area
4,841		10.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	100	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.70"



Subcatchment 1S: SUBCATCHMENT 1

Hydrograph



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Type III 24-hr 25-yr Rainfall=7.12"

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Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 1.30 cfs @ 12.08 hrs, Volume= 0.092 af, Depth> 3.82"
Routed to Reach SP2 : SUMMATION POINT 2

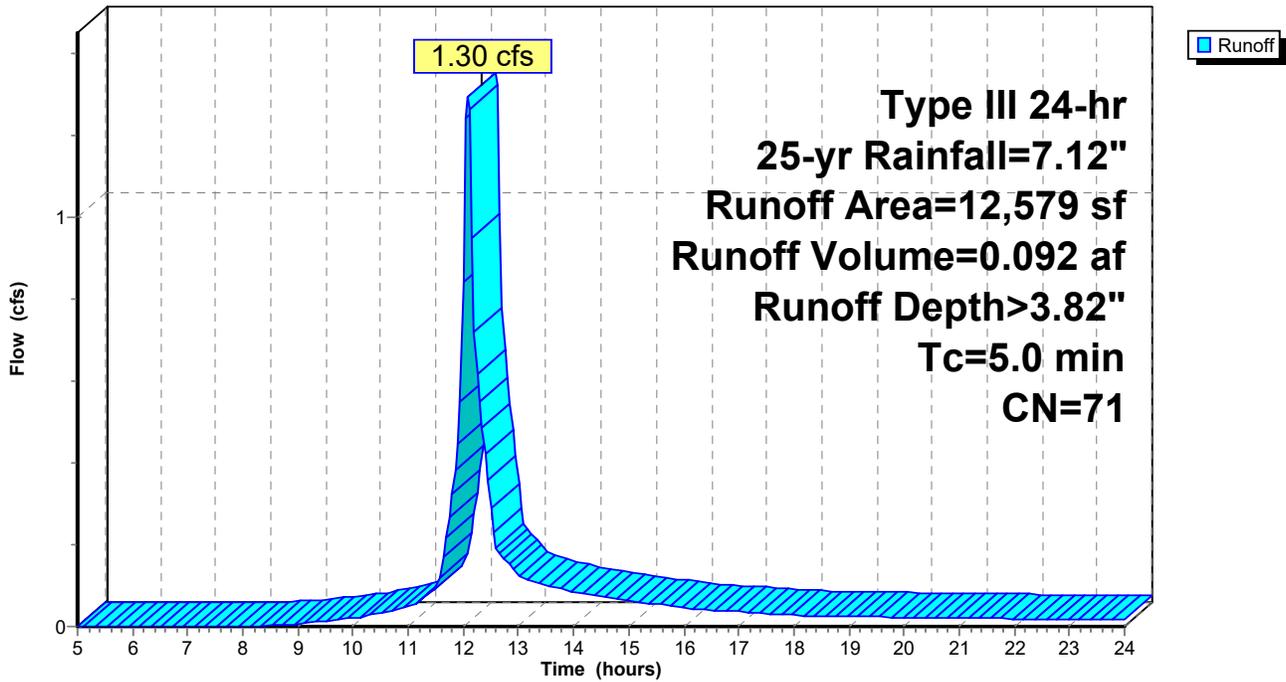
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
9,128	61	>75% Grass cover, Good, HSG B
* 3,451	98	IMPERVIOUS
12,579	71	Weighted Average
9,128		72.57% Pervious Area
3,451		27.43% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2

Hydrograph



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Type III 24-hr 25-yr Rainfall=7.12"

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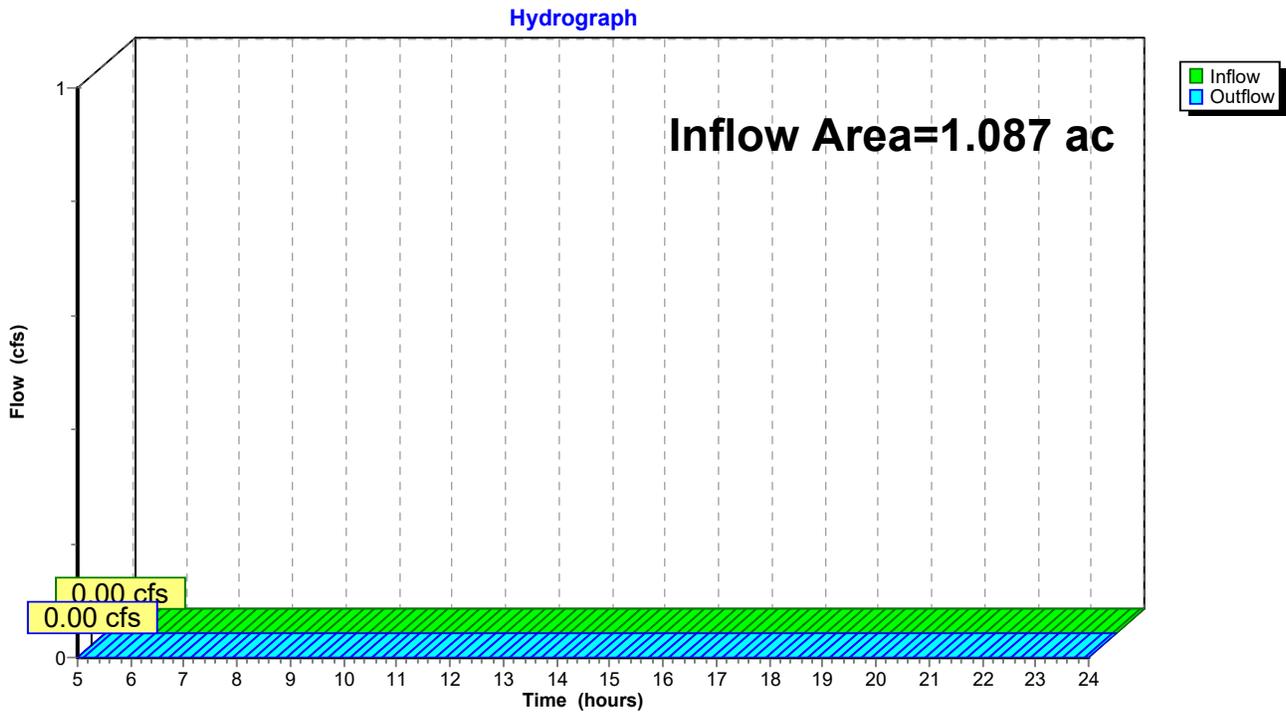
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Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.087 ac, 10.22% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1



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Type III 24-hr 25-yr Rainfall=7.12"

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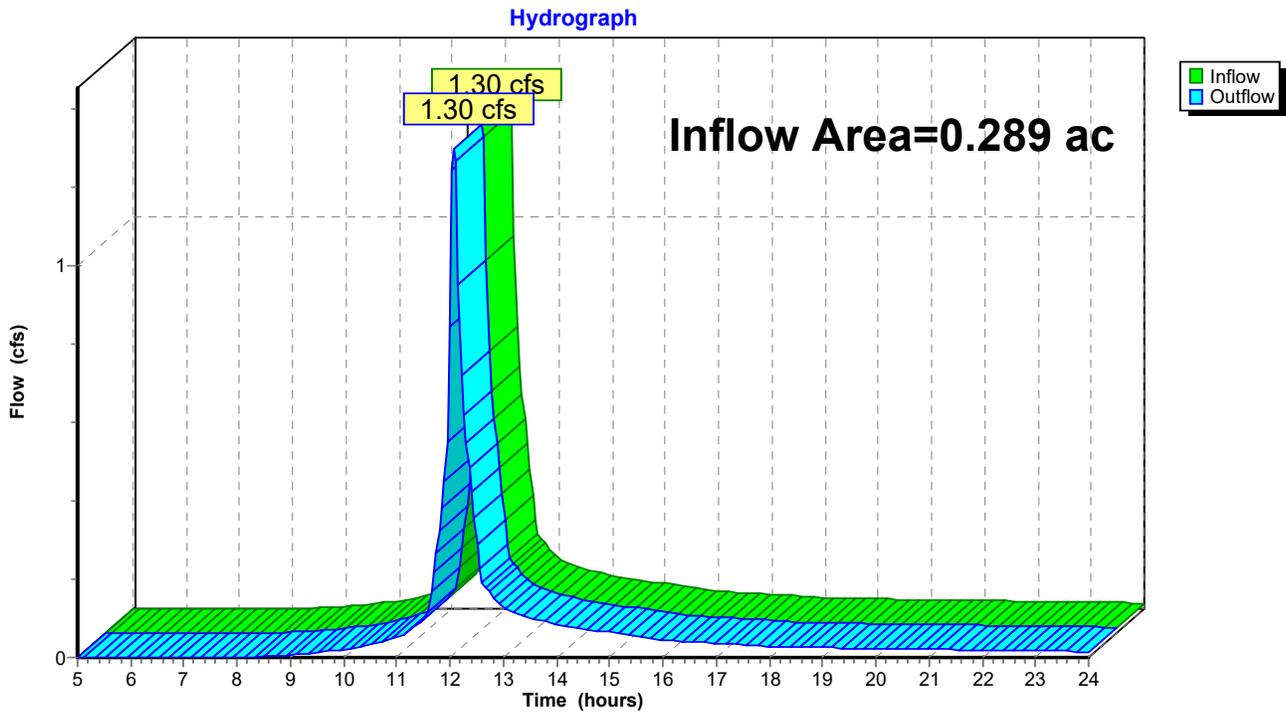
Page 20

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.289 ac, 27.43% Impervious, Inflow Depth > 3.82" for 25-yr event
Inflow = 1.30 cfs @ 12.08 hrs, Volume= 0.092 af
Outflow = 1.30 cfs @ 12.08 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2



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Summary for Pond 2P: Existing "detention" area

Inflow Area = 1.087 ac, 10.22% Impervious, Inflow Depth > 2.78" for 25-yr event
 Inflow = 2.71 cfs @ 12.20 hrs, Volume= 0.252 af
 Outflow = 0.34 cfs @ 13.36 hrs, Volume= 0.239 af, Atten= 87%, Lag= 69.9 min
 Discarded = 0.34 cfs @ 13.36 hrs, Volume= 0.239 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.61' @ 13.36 hrs Surf.Area= 6,183 sf Storage= 4,705 cf

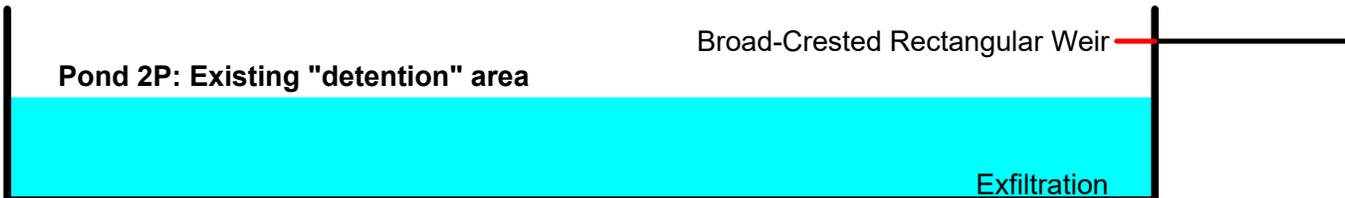
Plug-Flow detention time= 179.9 min calculated for 0.238 af (95% of inflow)
 Center-of-Mass det. time= 152.9 min (1,008.3 - 855.3)

Volume	Invert	Avail.Storage	Storage Description
#1	27.00'	17,225 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	250	0	0
28.00	3,350	1,800	1,800
29.00	8,000	5,675	7,475
30.00	11,500	9,750	17,225

Device	Routing	Invert	Outlet Devices
#1	Discarded	27.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	29.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.34 cfs @ 13.36 hrs HW=28.61' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 0.34 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.00' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)



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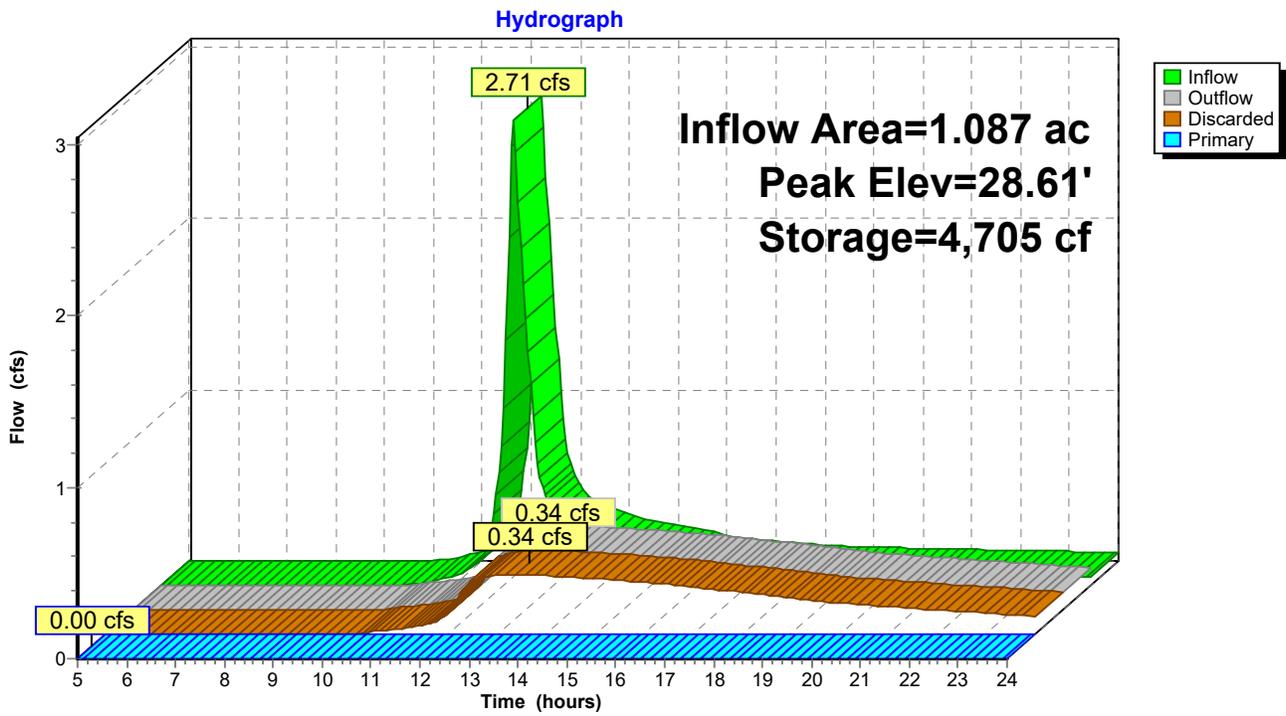
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Type III 24-hr 25-yr Rainfall=7.12"

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Pond 2P: Existing "detention" area



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Type III 24-hr 50-yr Rainfall=8.53"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=47,354 sf 10.22% Impervious Runoff Depth>3.84"
Flow Length=100' Slope=0.0800 '/' Tc=13.4 min CN=61 Runoff=3.81 cfs 0.348 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=12,579 sf 27.43% Impervious Runoff Depth>5.04"
Tc=5.0 min CN=71 Runoff=1.71 cfs 0.121 af

Reach SP1: SUMMATIONPOINT 1 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach SP2: SUMMATIONPOINT 2 Inflow=1.71 cfs 0.121 af
Outflow=1.71 cfs 0.121 af

Pond 2P: Existing "detention" area Peak Elev=28.93' Storage=6,956 cf Inflow=3.81 cfs 0.348 af
Discarded=0.43 cfs 0.320 af Primary=0.00 cfs 0.000 af Outflow=0.43 cfs 0.320 af

Total Runoff Area = 1.376 ac Runoff Volume = 0.469 af Average Runoff Depth = 4.09"
86.16% Pervious = 1.186 ac 13.84% Impervious = 0.190 ac

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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Subcatchment 1S: SUBCATCHMENT 1

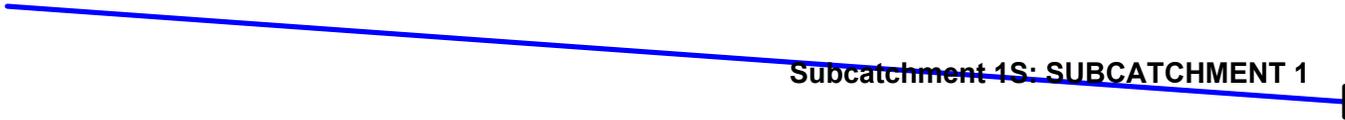
Runoff = 3.81 cfs @ 12.19 hrs, Volume= 0.348 af, Depth> 3.84"

Routed to Pond 2P : Existing "detention" area

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

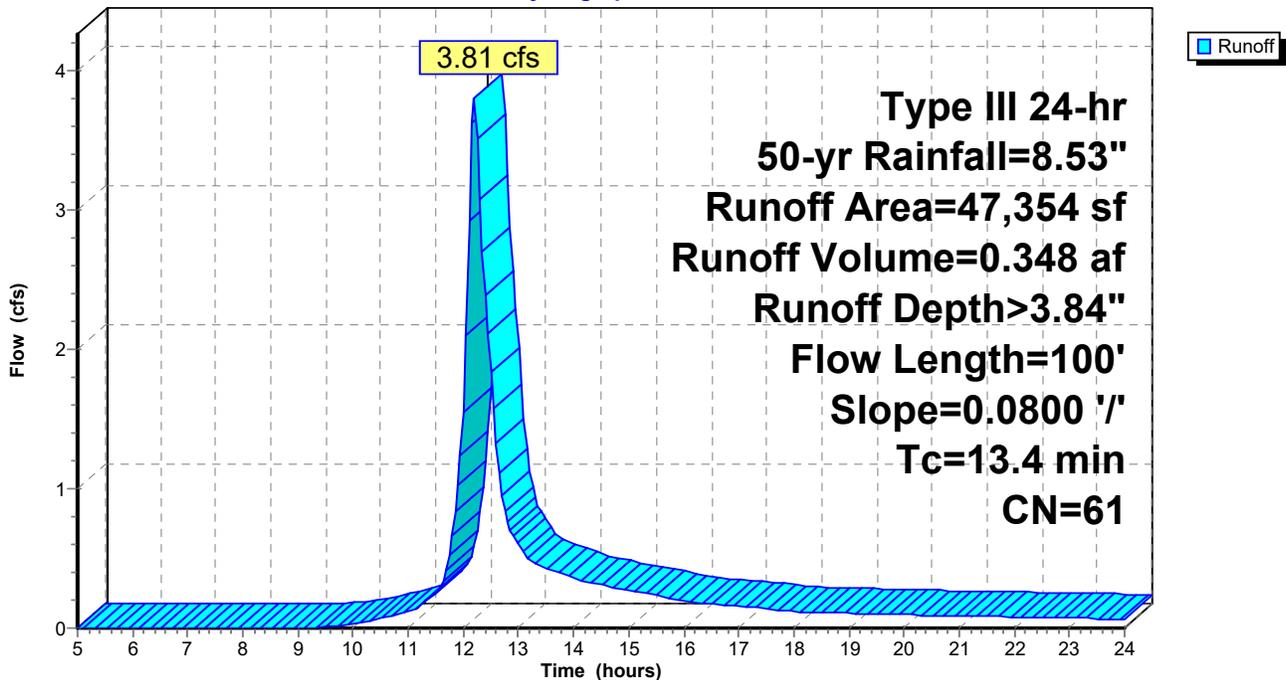
Area (sf)	CN	Description
28,956	55	Woods, Good, HSG B
13,557	61	>75% Grass cover, Good, HSG B
* 4,841	98	IMPERVIOUS
47,354	61	Weighted Average
42,513		89.78% Pervious Area
4,841		10.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	100	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.70"



Subcatchment 1S: SUBCATCHMENT 1

Hydrograph



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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 1.71 cfs @ 12.08 hrs, Volume= 0.121 af, Depth> 5.04"
 Routed to Reach SP2 : SUMMATION POINT 2

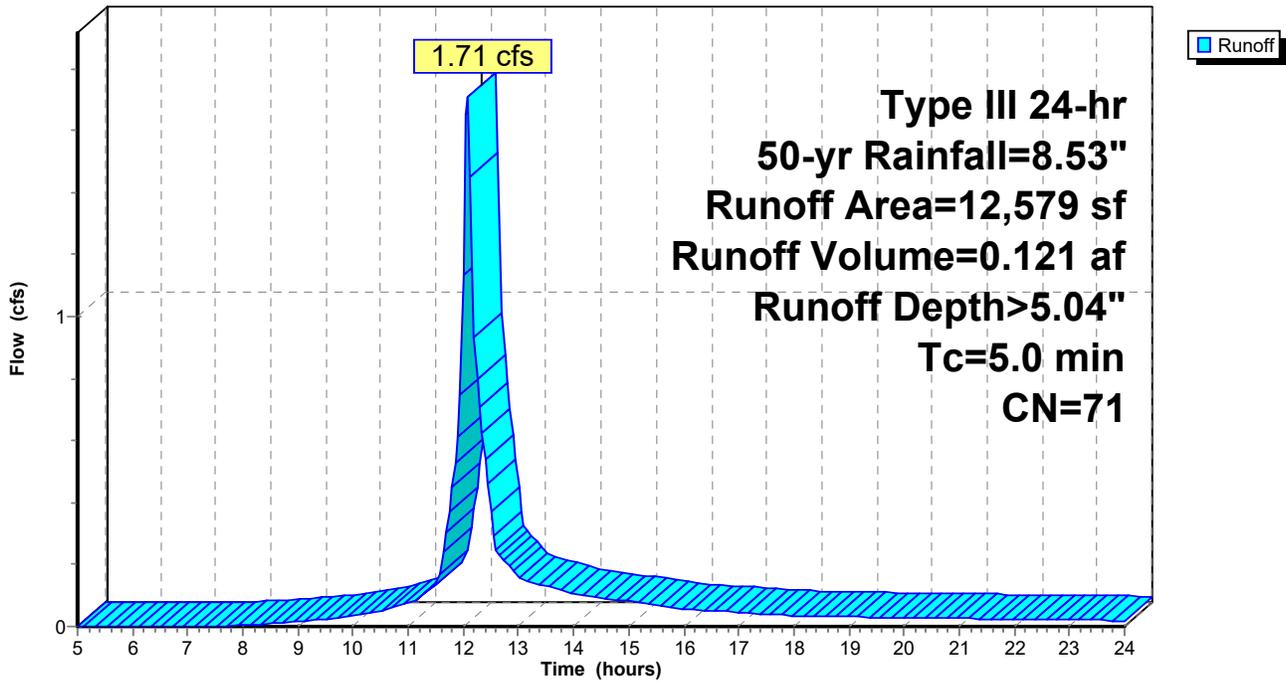
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
9,128	61	>75% Grass cover, Good, HSG B
* 3,451	98	IMPERVIOUS
12,579	71	Weighted Average
9,128		72.57% Pervious Area
3,451		27.43% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2

Hydrograph



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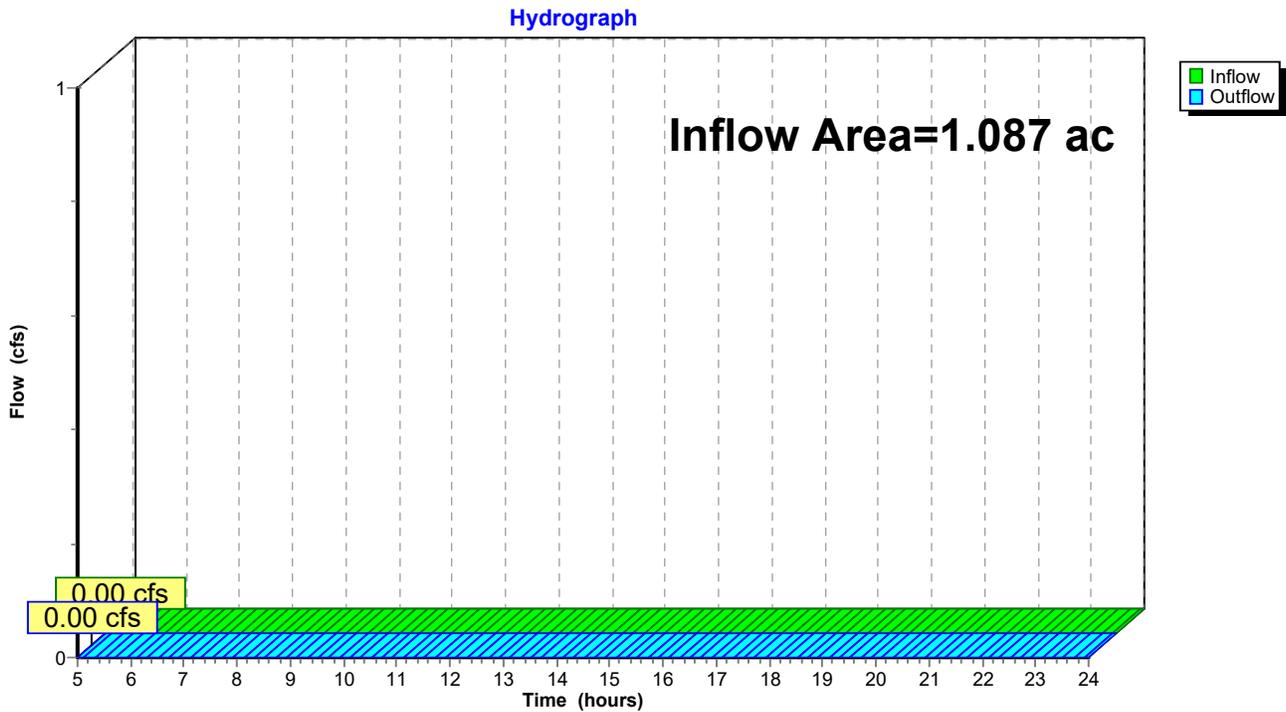
Page 26

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.087 ac, 10.22% Impervious, Inflow Depth = 0.00" for 50-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1



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Type III 24-hr 50-yr Rainfall=8.53"

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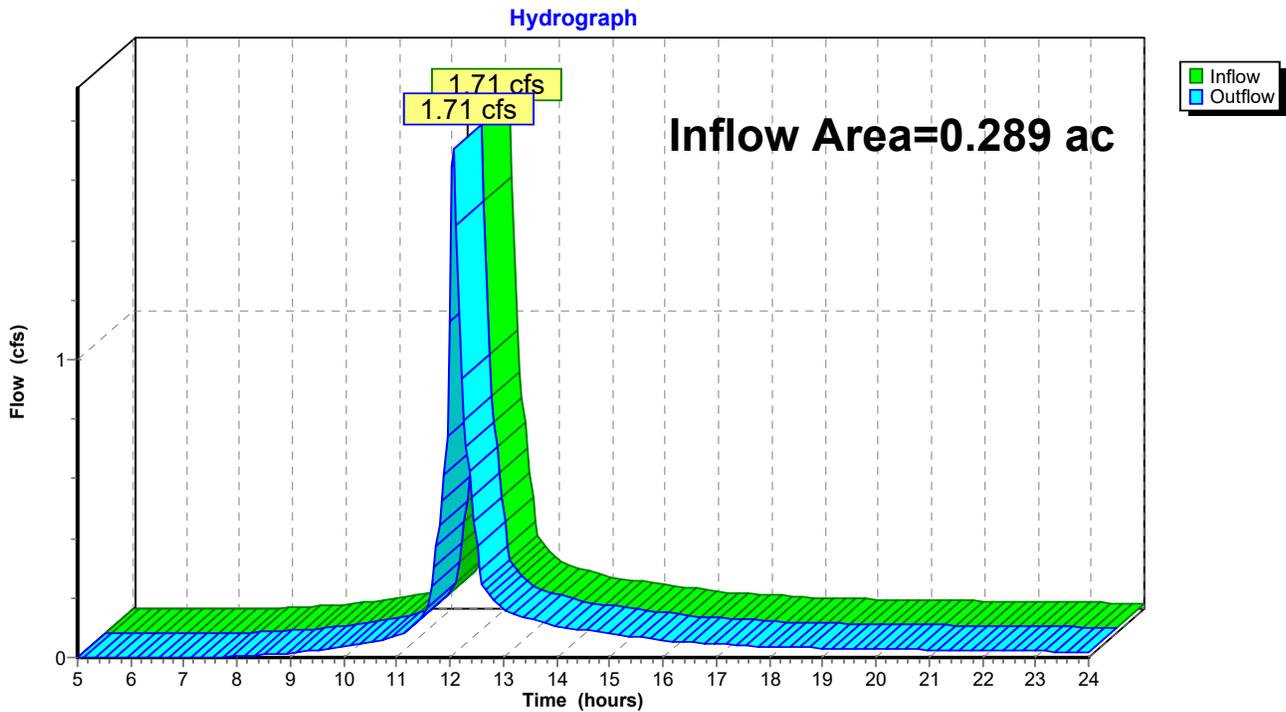
Page 27

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.289 ac, 27.43% Impervious, Inflow Depth > 5.04" for 50-yr event
Inflow = 1.71 cfs @ 12.08 hrs, Volume= 0.121 af
Outflow = 1.71 cfs @ 12.08 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2



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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Pond 2P: Existing "detention" area

Inflow Area = 1.087 ac, 10.22% Impervious, Inflow Depth > 3.84" for 50-yr event
 Inflow = 3.81 cfs @ 12.19 hrs, Volume= 0.348 af
 Outflow = 0.43 cfs @ 13.54 hrs, Volume= 0.320 af, Atten= 89%, Lag= 80.5 min
 Discarded = 0.43 cfs @ 13.54 hrs, Volume= 0.320 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.93' @ 13.54 hrs Surf.Area= 7,692 sf Storage= 6,956 cf

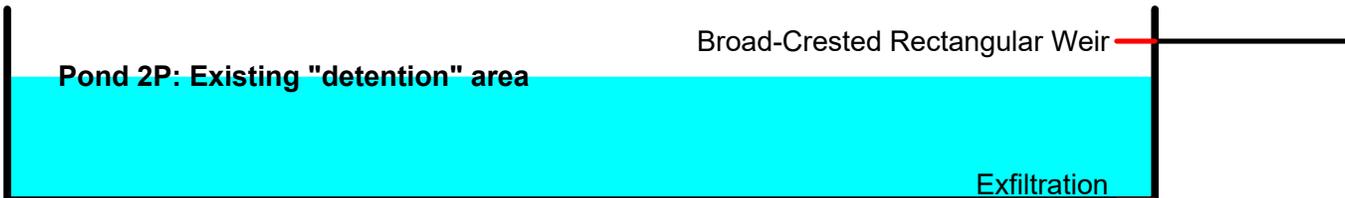
Plug-Flow detention time= 209.3 min calculated for 0.320 af (92% of inflow)
 Center-of-Mass det. time= 168.7 min (1,014.6 - 845.9)

Volume	Invert	Avail.Storage	Storage Description
#1	27.00'	17,225 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.00	250	0	0
28.00	3,350	1,800	1,800
29.00	8,000	5,675	7,475
30.00	11,500	9,750	17,225

Device	Routing	Invert	Outlet Devices
#1	Discarded	27.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	29.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.43 cfs @ 13.54 hrs HW=28.93' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 0.43 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=27.00' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)



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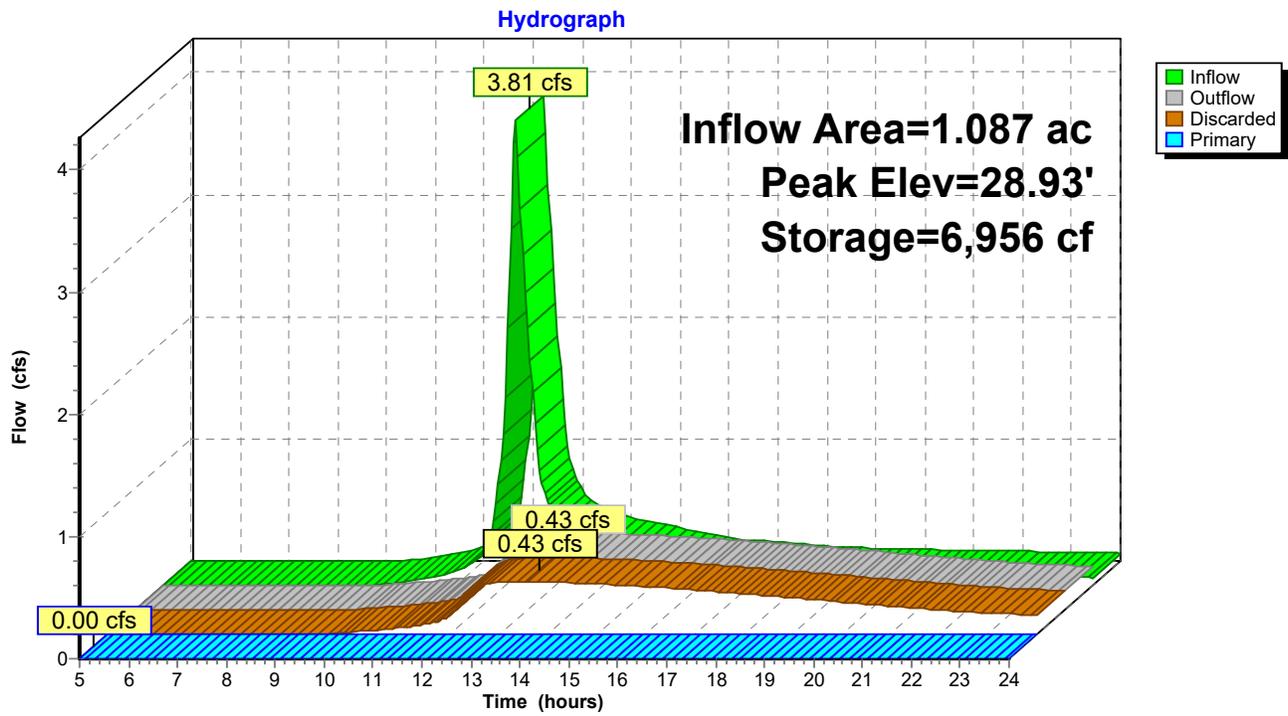
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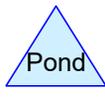
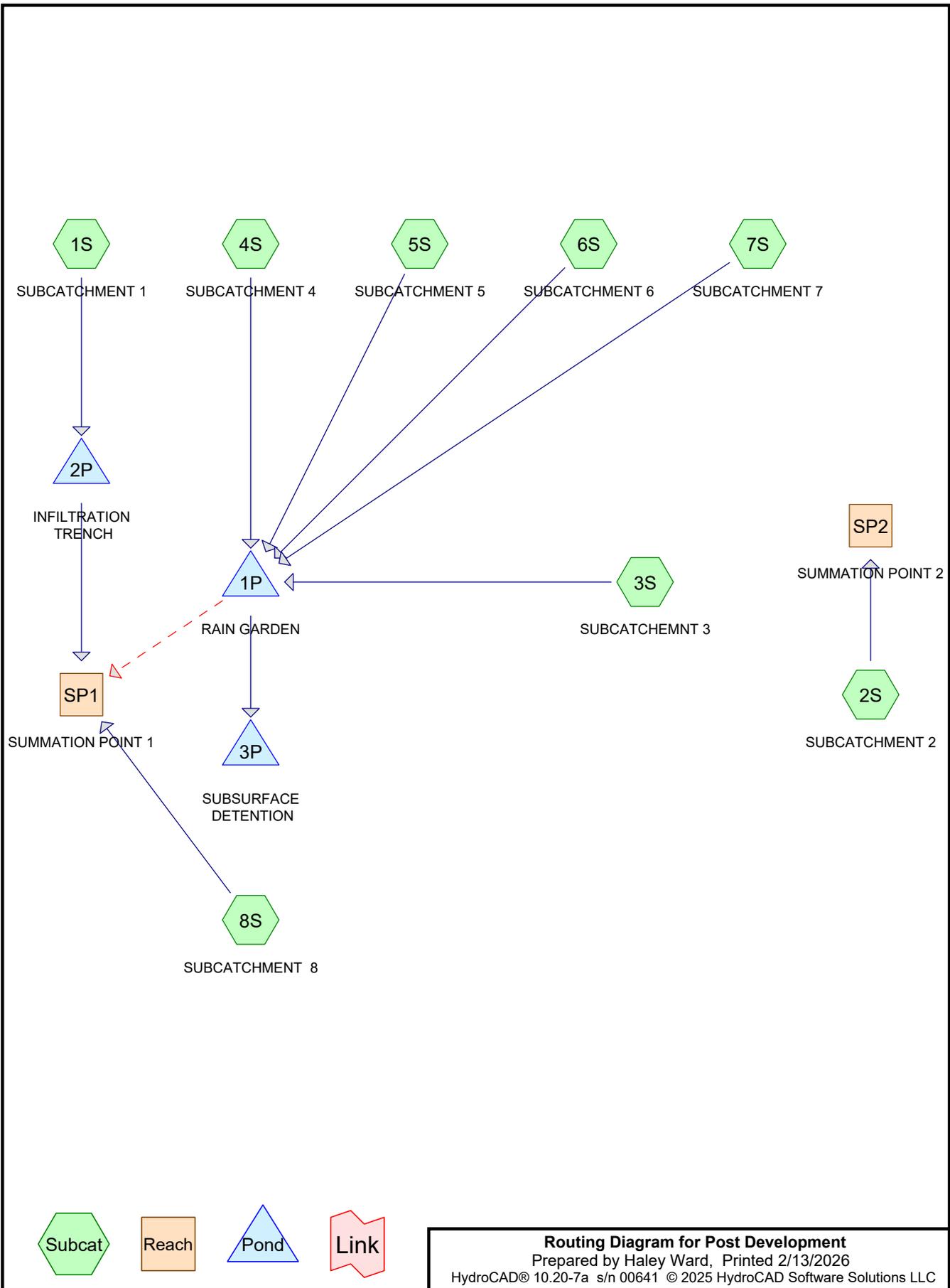
Type III 24-hr 50-yr Rainfall=8.53"

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Pond 2P: Existing "detention" area





Routing Diagram for Post Development
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Type III 24-hr 2-yr Rainfall=3.70"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=26,883 sf 8.11% Impervious Runoff Depth>0.61"
Flow Length=490' Tc=34.4 min CN=60 Runoff=0.18 cfs 0.032 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=9,849 sf 37.64% Impervious Runoff Depth>1.44"
Tc=5.0 min CN=75 Runoff=0.38 cfs 0.027 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=10,559 sf 56.44% Impervious Runoff Depth>1.95"
Tc=0.0 min CN=82 Runoff=0.64 cfs 0.039 af

Subcatchment4S: SUBCATCHMENT4 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>3.39"
Tc=5.0 min CN=98 Runoff=0.17 cfs 0.013 af

Subcatchment5S: SUBCATCHMENT5 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>3.39"
Tc=5.0 min CN=98 Runoff=0.17 cfs 0.013 af

Subcatchment6S: SUBCATCHMENT6 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>3.39"
Tc=5.0 min CN=98 Runoff=0.17 cfs 0.013 af

Subcatchment7S: SUBCATCHMENT7 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>3.39"
Tc=5.0 min CN=98 Runoff=0.17 cfs 0.013 af

Subcatchment8S: SUBCATCHMENT 8 Runoff Area=4,442 sf 0.00% Impervious Runoff Depth>0.62"
Tc=10.0 min CN=60 Runoff=0.05 cfs 0.005 af

Reach SP1: SUMMATIONPOINT 1 Inflow=0.05 cfs 0.005 af
Outflow=0.05 cfs 0.005 af

Reach SP2: SUMMATIONPOINT 2 Inflow=0.38 cfs 0.027 af
Outflow=0.38 cfs 0.027 af

Pond 1P: RAIN GARDEN Peak Elev=30.96' Storage=1,298 cf Inflow=1.18 cfs 0.093 af
Discarded=0.02 cfs 0.011 af Primary=0.82 cfs 0.065 af Secondary=0.00 cfs 0.000 af Outflow=0.83 cfs 0.076 af

Pond 2P: INFILTRATION TRENCH Peak Elev=28.09' Storage=87 cf Inflow=0.18 cfs 0.032 af
Discarded=0.13 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.031 af

Pond 3P: SUBSURFACE DETENTION Peak Elev=28.64' Storage=920 cf Inflow=0.82 cfs 0.065 af
Outflow=0.19 cfs 0.065 af

Total Runoff Area = 1.376 ac Runoff Volume = 0.157 af Average Runoff Depth = 1.37"
66.55% Pervious = 0.916 ac 33.45% Impervious = 0.460 ac

Post Development

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Type III 24-hr 2-yr Rainfall=3.70"

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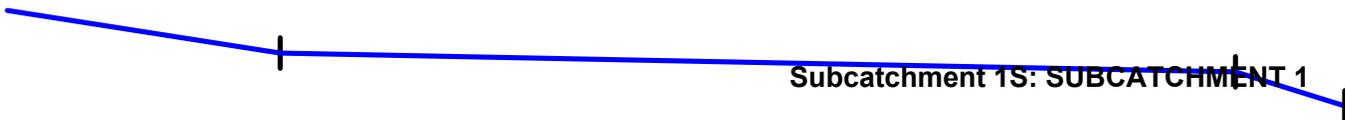
Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 0.18 cfs @ 12.60 hrs, Volume= 0.032 af, Depth> 0.61"
 Routed to Pond 2P : INFILTRATION TRENCH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
16,143	55	Woods, Good, HSG B
8,559	61	>75% Grass cover, Good, HSG B
* 2,181	98	IMPERVIOUS
26,883	60	Weighted Average
24,702		91.89% Pervious Area
2,181		8.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7	100	0.0400	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.70"
16.5	350	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
34.4	490	Total			



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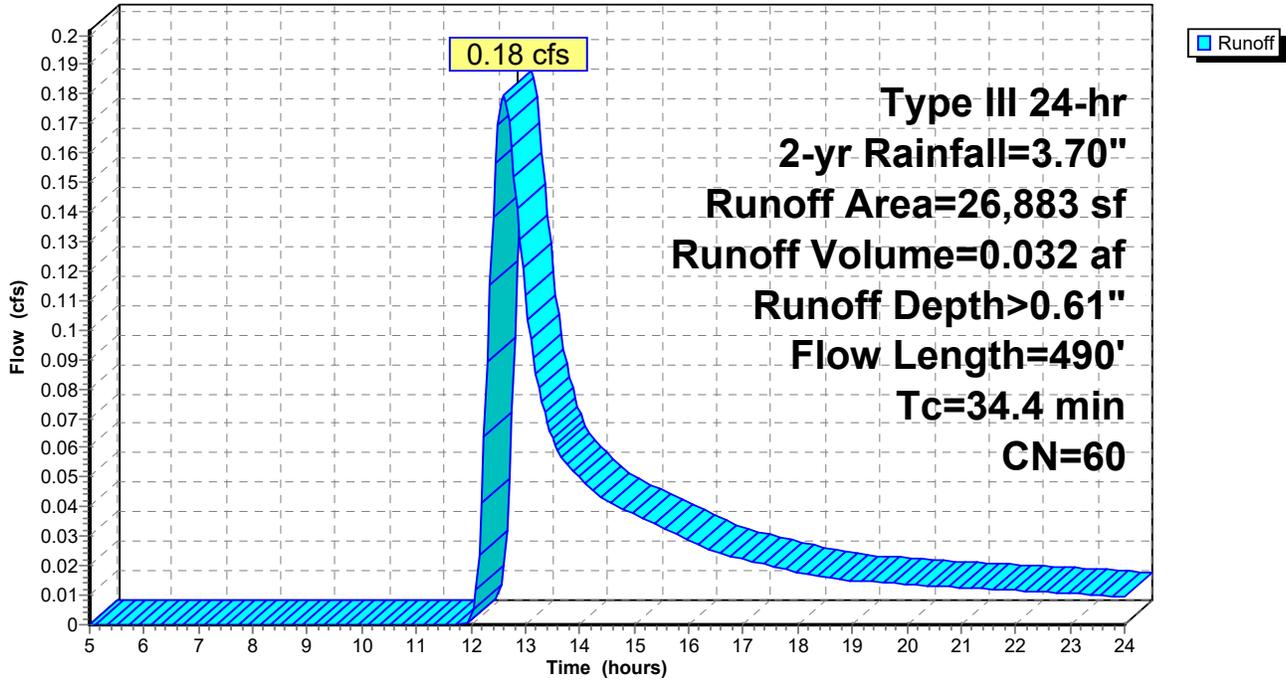
Type III 24-hr 2-yr Rainfall=3.70"

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Subcatchment 1S: SUBCATCHMENT 1

Hydrograph



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Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 0.38 cfs @ 12.08 hrs, Volume= 0.027 af, Depth> 1.44"
 Routed to Reach SP2 : SUMMATION POINT 2

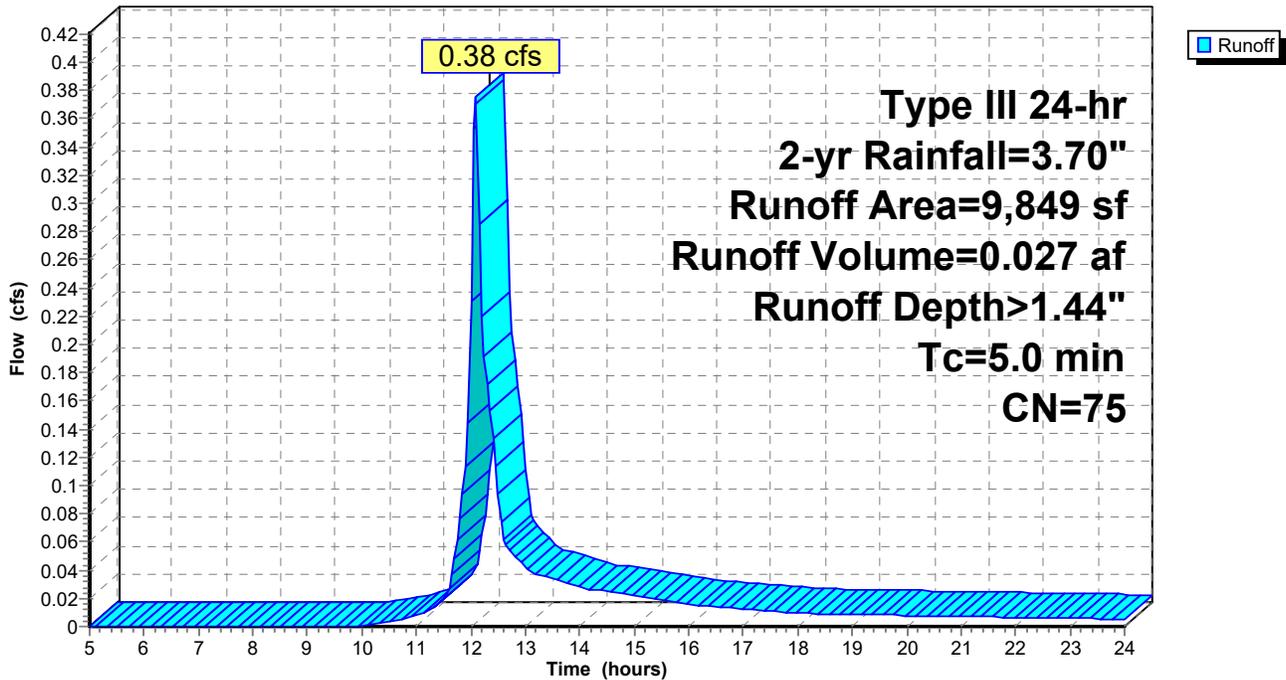
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
6,142	61	>75% Grass cover, Good, HSG B
* 3,707	98	IMPERVIOUS
9,849	75	Weighted Average
6,142		62.36% Pervious Area
3,707		37.64% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.70"

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Summary for Subcatchment 3S: SUBCATCHMENT 3

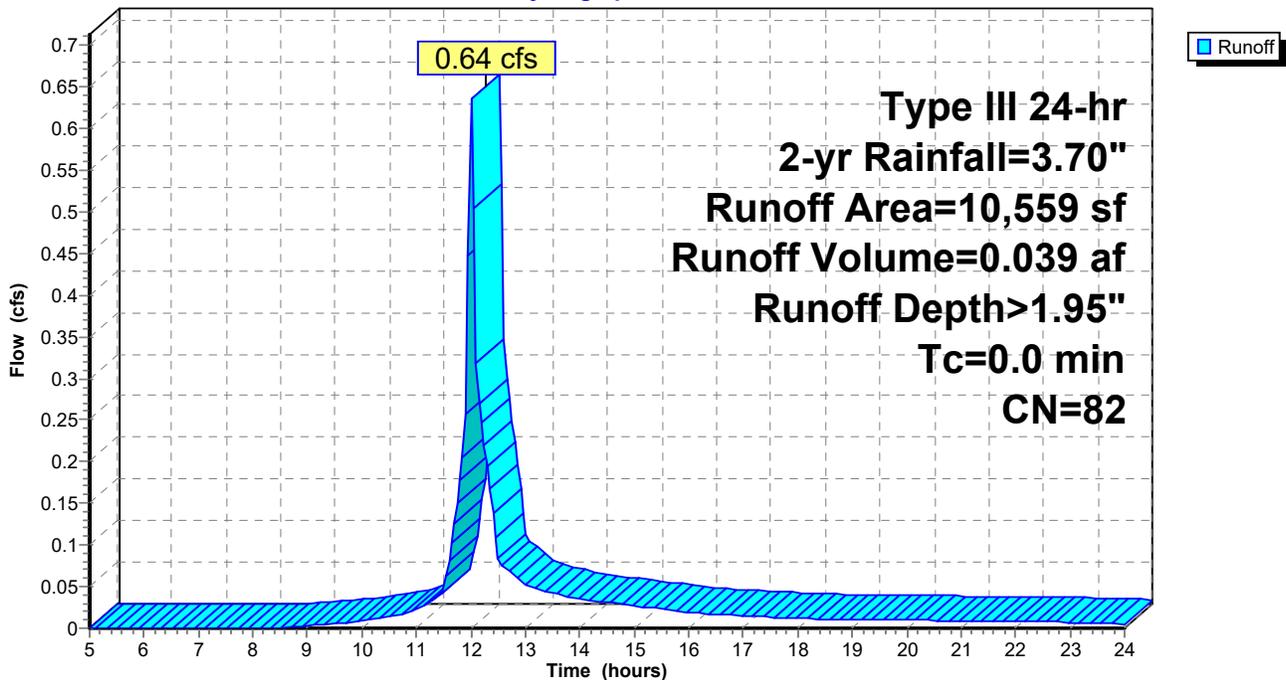
Runoff = 0.64 cfs @ 12.00 hrs, Volume= 0.039 af, Depth> 1.95"
Routed to Pond 1P : RAIN GARDEN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
18	55	Woods, Good, HSG B
4,582	61	>75% Grass cover, Good, HSG B
* 5,959	98	IMPERVIOUS
10,559	82	Weighted Average
4,600		43.56% Pervious Area
5,959		56.44% Impervious Area

Subcatchment 3S: SUBCATCHMENT 3

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Type III 24-hr 2-yr Rainfall=3.70"

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Summary for Subcatchment 4S: SUBCATCHMENT 4

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Depth> 3.39"
Routed to Pond 1P : RAIN GARDEN

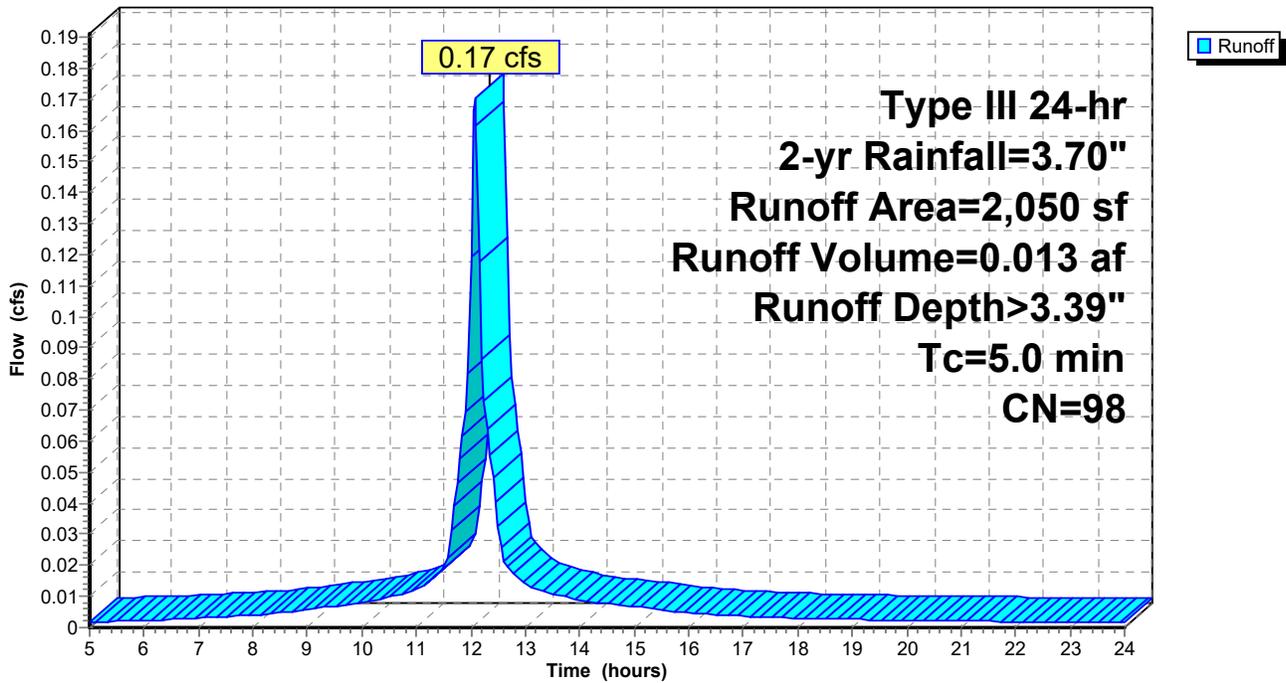
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 4S: SUBCATCHMENT 4

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.70"

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Summary for Subcatchment 5S: SUBCATCHMENT 5

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Depth> 3.39"
Routed to Pond 1P : RAIN GARDEN

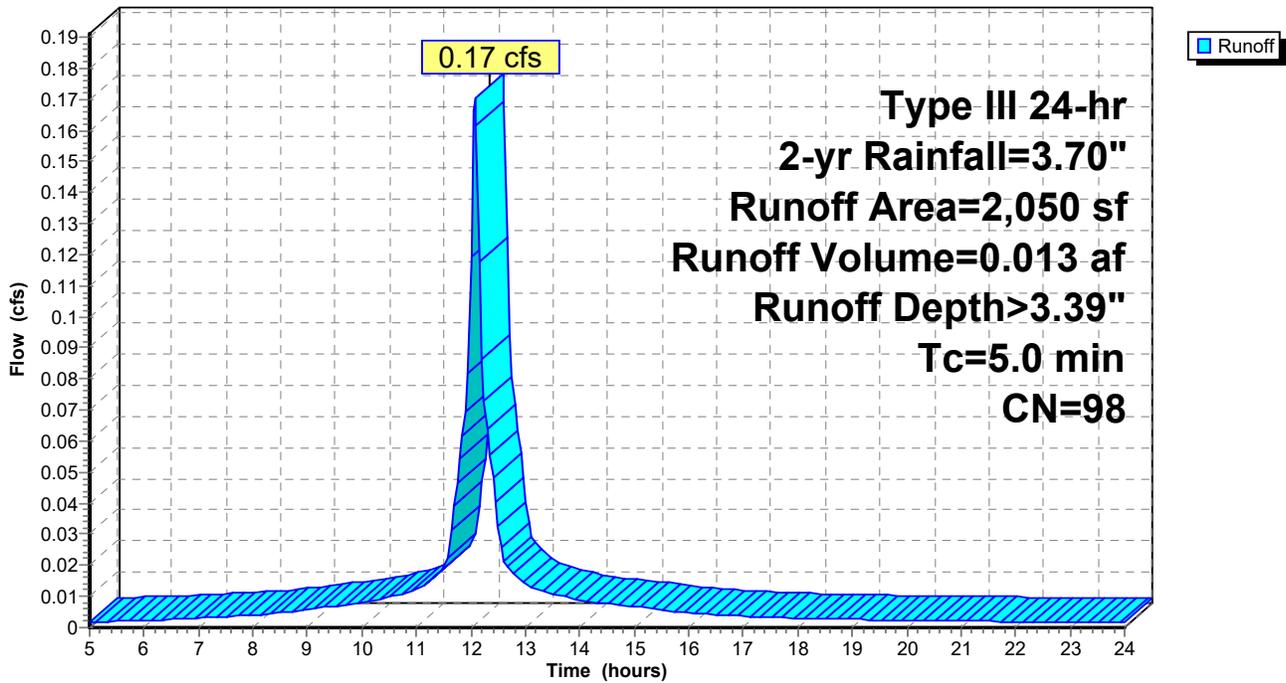
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 5S: SUBCATCHMENT 5

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.70"

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Summary for Subcatchment 6S: SUBCATCHMENT 6

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Depth> 3.39"
Routed to Pond 1P : RAIN GARDEN

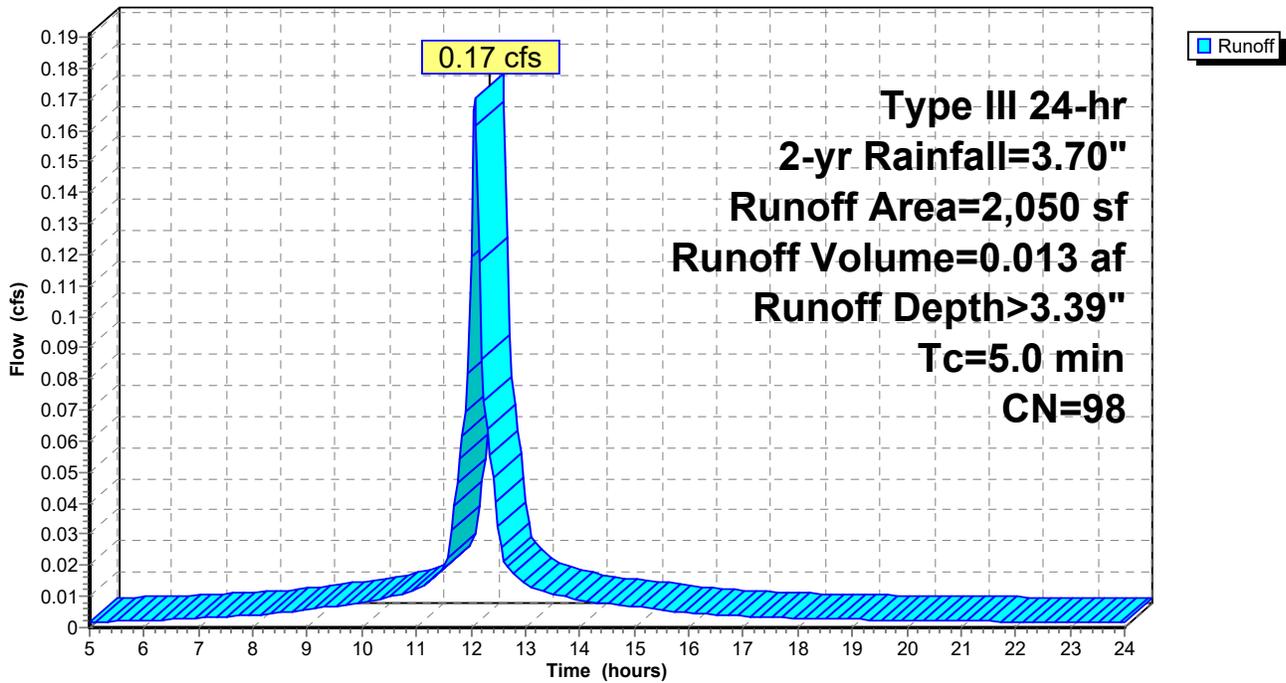
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 6S: SUBCATCHMENT 6

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.70"

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Summary for Subcatchment 7S: SUBCATCHMENT 7

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Depth> 3.39"
Routed to Pond 1P : RAIN GARDEN

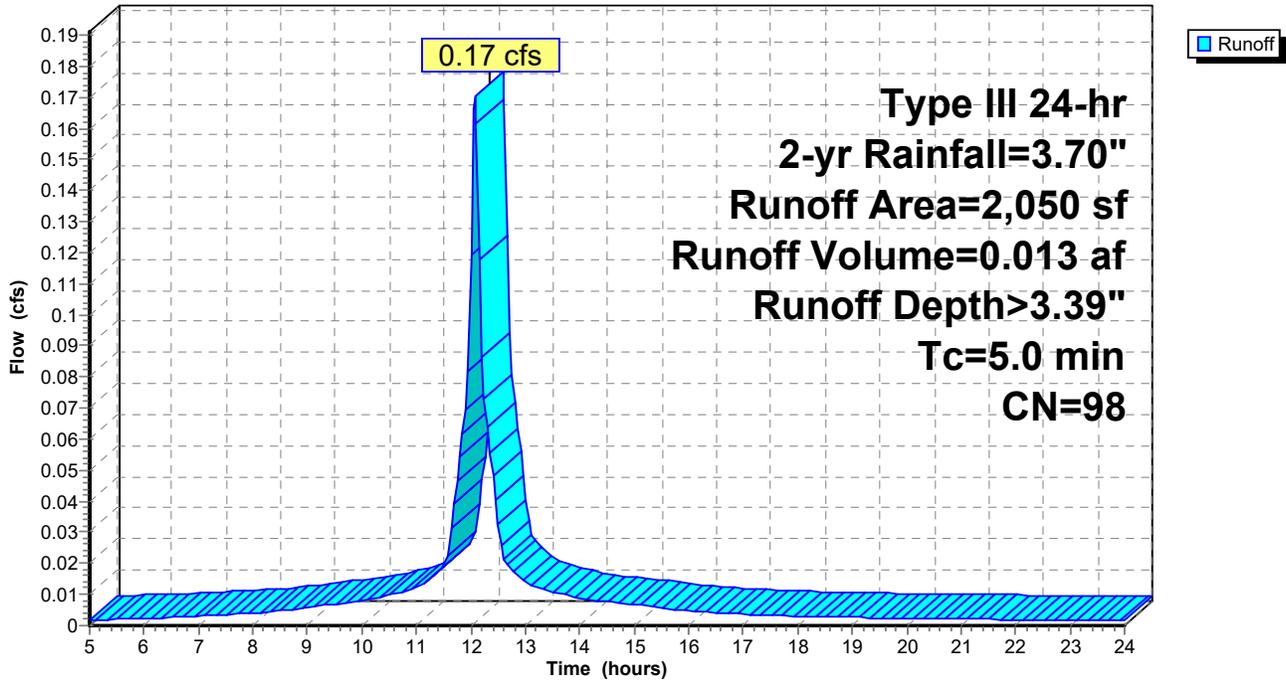
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 7S: SUBCATCHMENT 7

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Type III 24-hr 2-yr Rainfall=3.70"

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Summary for Subcatchment 8S: SUBCATCHMENT 8

Runoff = 0.05 cfs @ 12.18 hrs, Volume= 0.005 af, Depth> 0.62"
Routed to Reach SP1 : SUMMATION POINT 1

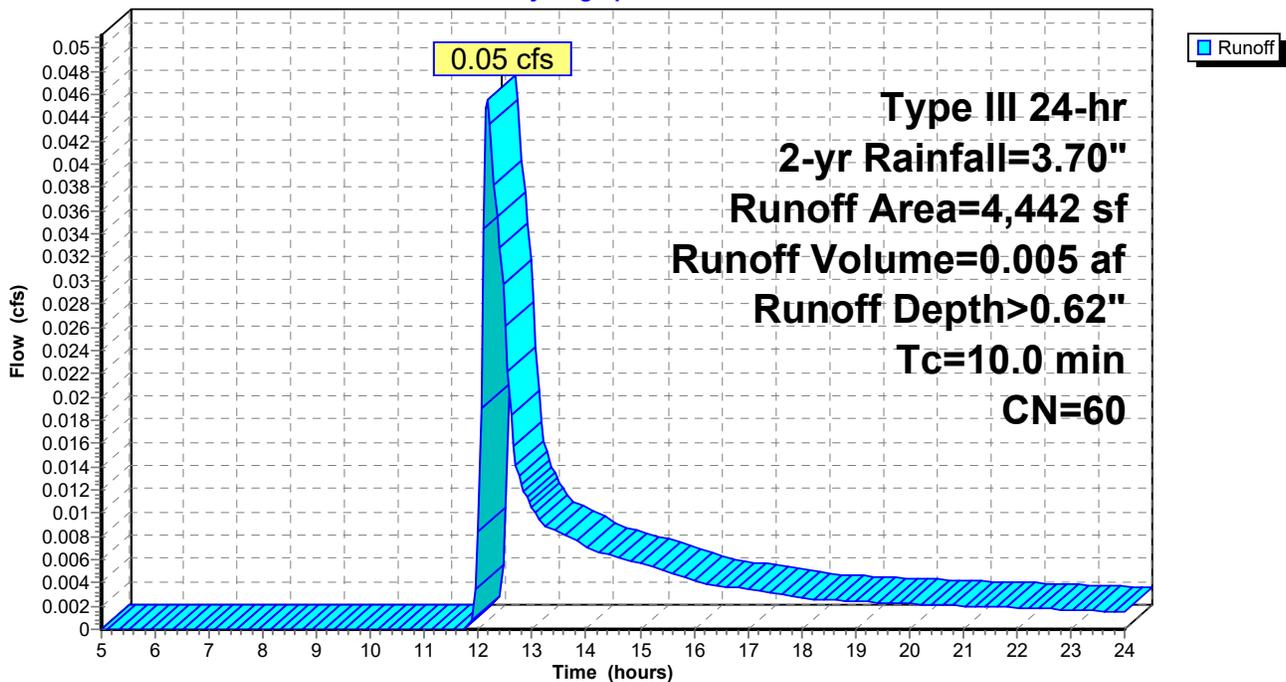
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.70"

Area (sf)	CN	Description
679	55	Woods, Good, HSG B
3,763	61	>75% Grass cover, Good, HSG B
4,442	60	Weighted Average
4,442		100.00% Pervious Area

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

Subcatchment 8S: SUBCATCHMENT 8

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Type III 24-hr 2-yr Rainfall=3.70"

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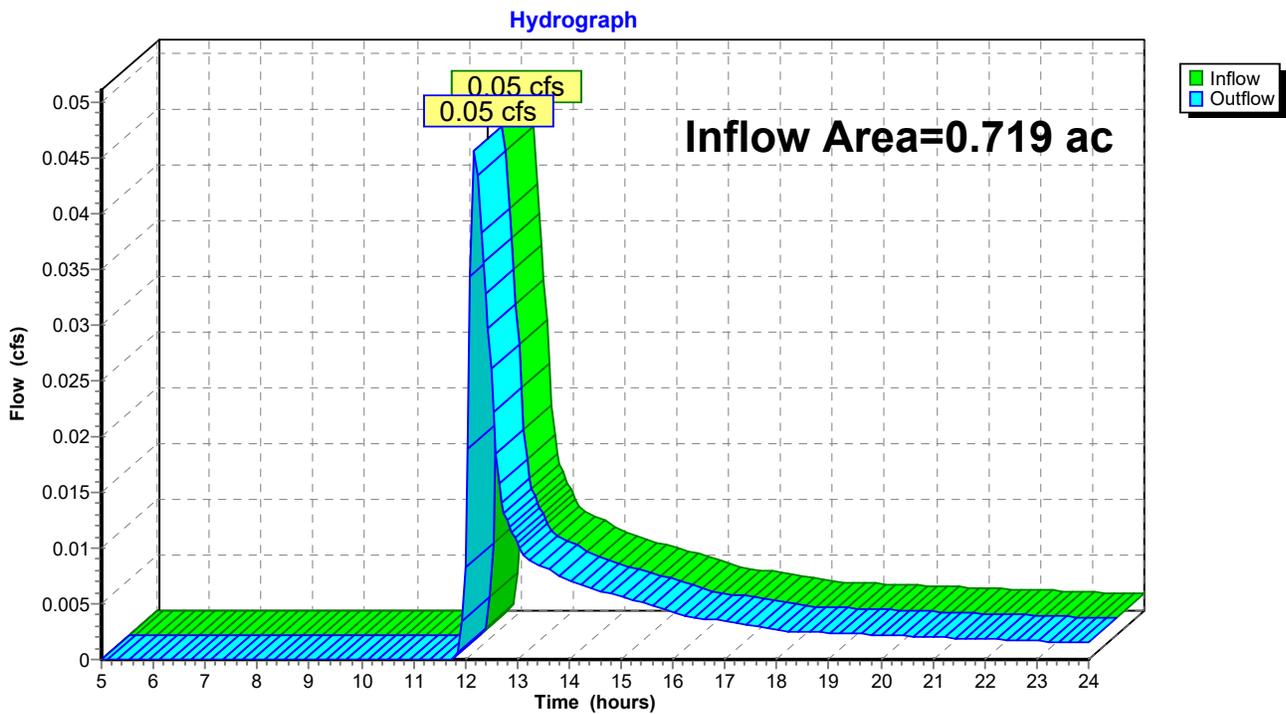
Page 12

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.719 ac, 6.96% Impervious, Inflow Depth > 0.09" for 2-yr event
Inflow = 0.05 cfs @ 12.18 hrs, Volume= 0.005 af
Outflow = 0.05 cfs @ 12.18 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1



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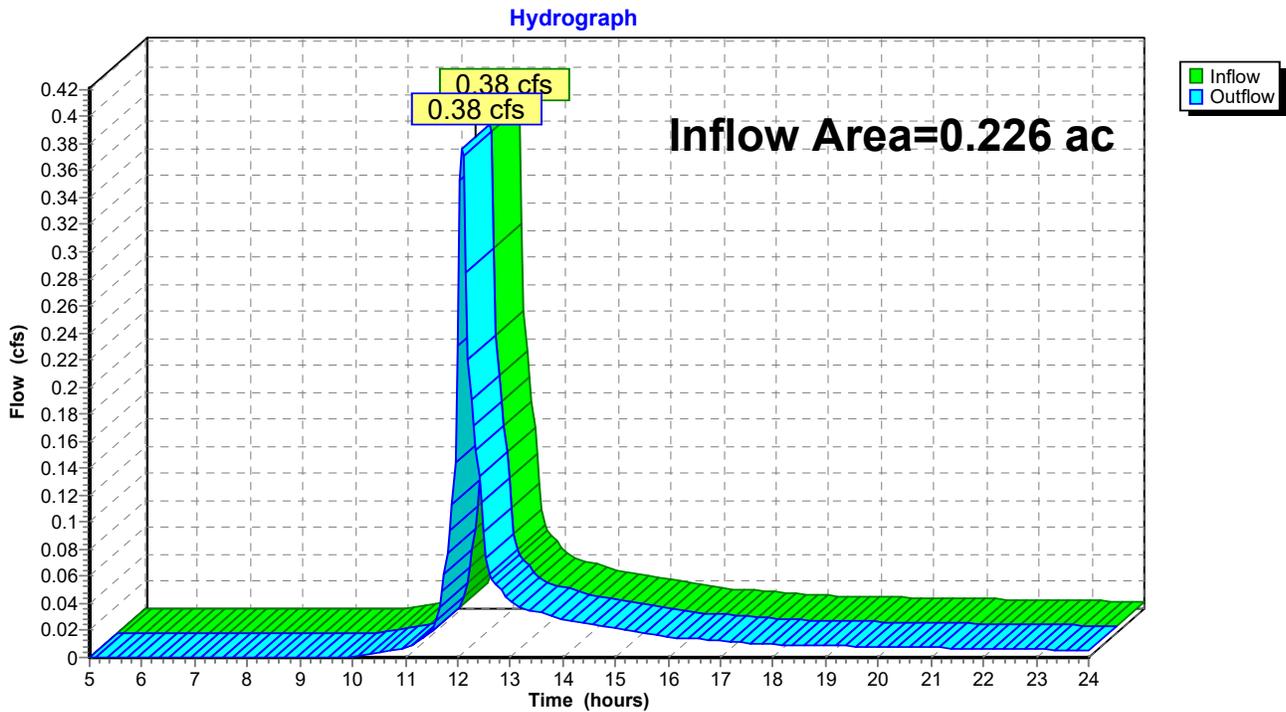
Page 13

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.226 ac, 37.64% Impervious, Inflow Depth > 1.44" for 2-yr event
Inflow = 0.38 cfs @ 12.08 hrs, Volume= 0.027 af
Outflow = 0.38 cfs @ 12.08 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2



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Summary for Pond 1P: RAIN GARDEN

Inflow Area = 0.431 ac, 75.48% Impervious, Inflow Depth > 2.58" for 2-yr event
 Inflow = 1.18 cfs @ 12.04 hrs, Volume= 0.093 af
 Outflow = 0.83 cfs @ 12.13 hrs, Volume= 0.076 af, Atten= 29%, Lag= 5.8 min
 Discarded = 0.02 cfs @ 12.13 hrs, Volume= 0.011 af
 Primary = 0.82 cfs @ 12.13 hrs, Volume= 0.065 af
 Routed to Pond 3P : SUBSURFACE DETENTION
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.96' @ 12.13 hrs Surf.Area= 1,488 sf Storage= 1,298 cf

Plug-Flow detention time= 131.7 min calculated for 0.076 af (82% of inflow)
 Center-of-Mass det. time= 60.8 min (850.0 - 789.2)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	5,850 cf	Custom Stage Data (Prismatic) Listed below
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	1,200	0	0
31.00	1,500	1,350	1,350
33.50	2,100	4,500	5,850

Device	Routing	Invert	Outlet Devices
#1	Discarded	30.00'	2.400 in/hr Exfiltration over Surface area above 30.00' Excluded Surface area = 1,200 sf
#2	Primary	30.00'	12.0" Round Culvert L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.00' / 29.50' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	30.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	32.80'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	32.90'	5.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

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Type III 24-hr 2-yr Rainfall=3.70"

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Discarded OutFlow Max=0.02 cfs @ 12.13 hrs HW=30.96' (Free Discharge)

↳ 1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.81 cfs @ 12.13 hrs HW=30.96' (Free Discharge)

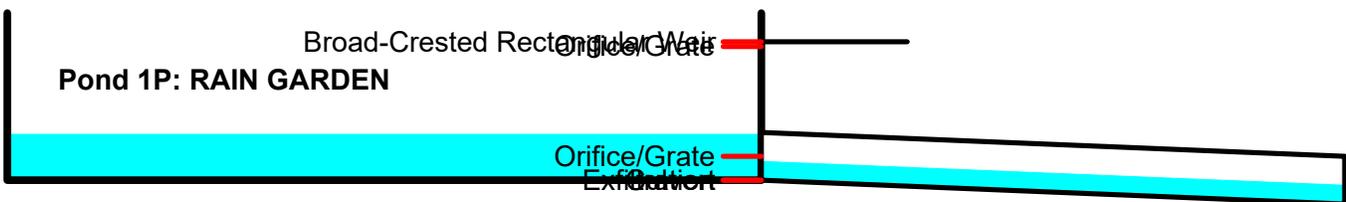
↳ 2=Culvert (Passes 0.81 cfs of 2.04 cfs potential flow)

↳ 3=Orifice/Grate (Orifice Controls 0.81 cfs @ 2.31 fps)

↳ 4=Orifice/Grate (Controls 0.00 cfs)

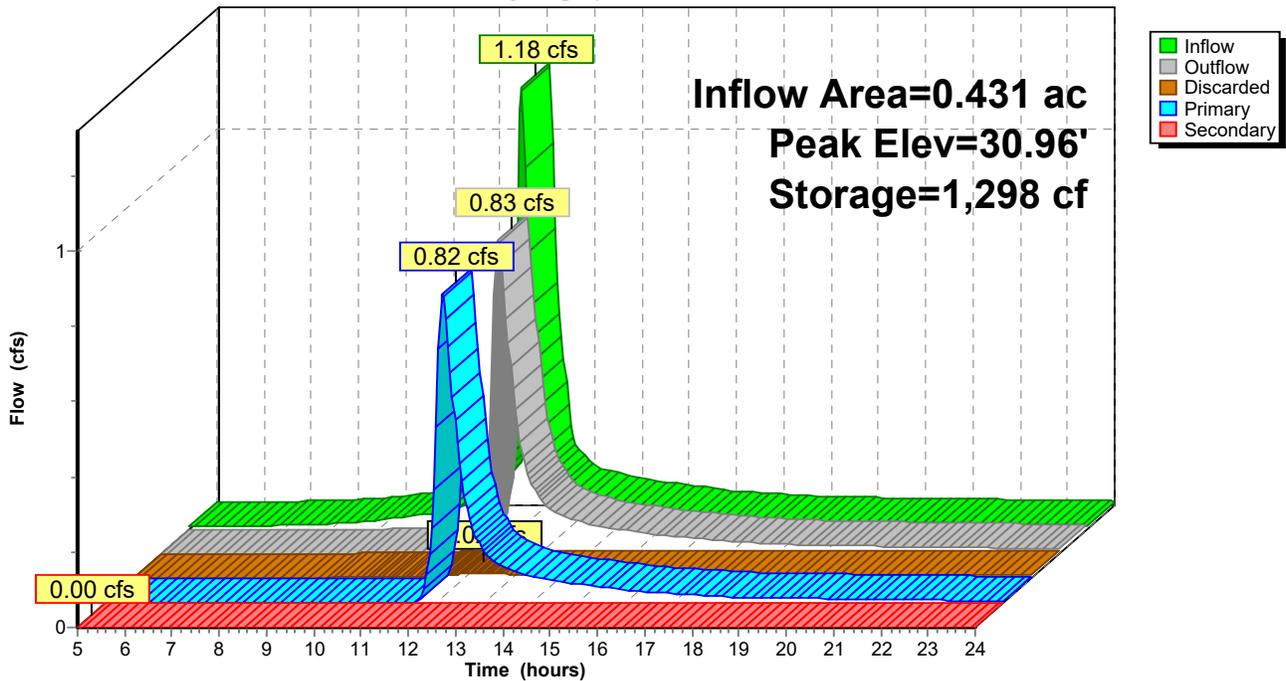
Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)

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



Pond 1P: RAIN GARDEN

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Summary for Pond 2P: INFILTRATION TRENCH

Inflow Area = 0.617 ac, 8.11% Impervious, Inflow Depth > 0.61" for 2-yr event
 Inflow = 0.18 cfs @ 12.60 hrs, Volume= 0.032 af
 Outflow = 0.13 cfs @ 12.45 hrs, Volume= 0.031 af, Atten= 29%, Lag= 0.0 min
 Discarded = 0.13 cfs @ 12.45 hrs, Volume= 0.031 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.09' @ 12.92 hrs Surf.Area= 2,300 sf Storage= 87 cf

Plug-Flow detention time= 5.1 min calculated for 0.031 af (100% of inflow)
 Center-of-Mass det. time= 4.3 min (926.6 - 922.3)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	2,157 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 6,900 cf Overall - 1,508 cf Embedded = 5,392 cf x 40.0% Voids
#2	28.50'	754 cf	24.0" Round Pipe Storage Inside #1 L= 240.0'
#3	28.50'	754 cf	24.0" Round Pipe Storage Inside #1 L= 240.0'
		3,665 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	2,300	0	0
31.00	2,300	6,900	6,900

Device	Routing	Invert	Outlet Devices
#1	Discarded	28.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	31.00'	320.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.13 cfs @ 12.45 hrs HW=28.03' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)



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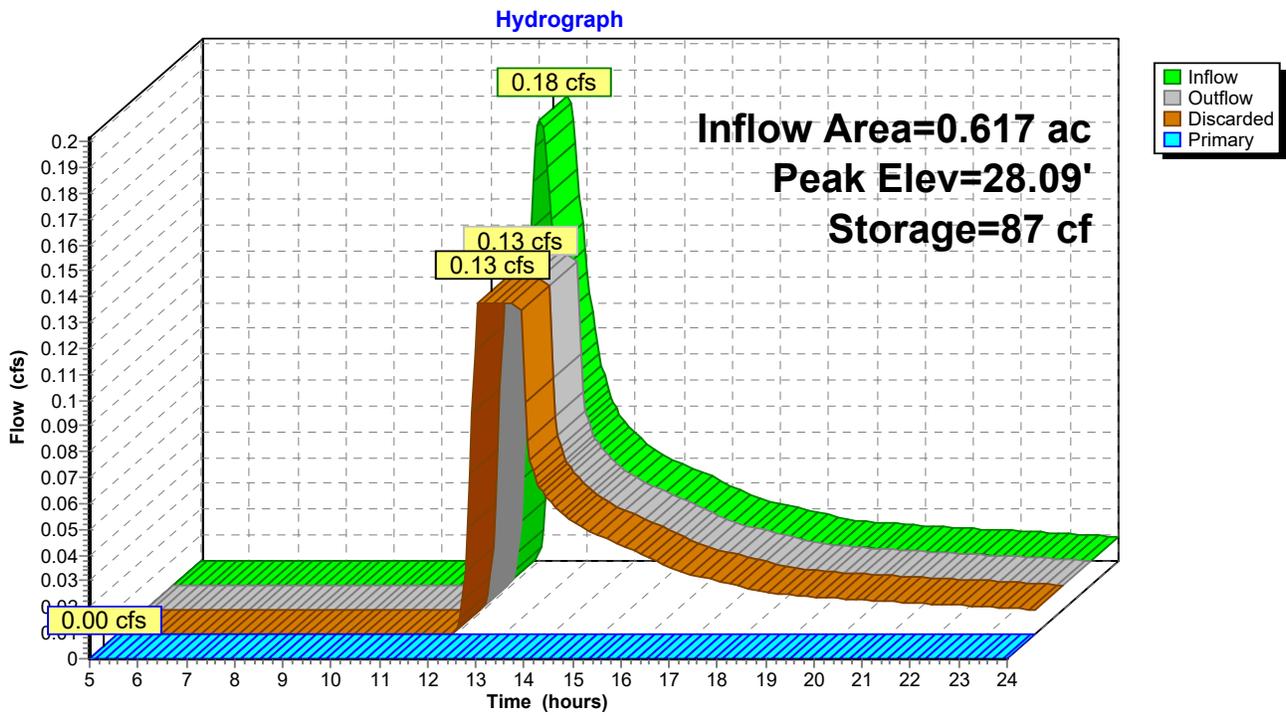
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Pond 2P: INFILTRATION TRENCH



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Summary for Pond 3P: SUBSURFACE DETENTION

Inflow Area = 0.431 ac, 75.48% Impervious, Inflow Depth > 1.80" for 2-yr event
 Inflow = 0.82 cfs @ 12.13 hrs, Volume= 0.065 af
 Outflow = 0.19 cfs @ 11.95 hrs, Volume= 0.065 af, Atten= 76%, Lag= 0.0 min
 Discarded = 0.19 cfs @ 11.95 hrs, Volume= 0.065 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 28.64' @ 12.78 hrs Surf.Area= 3,500 sf Storage= 920 cf

Plug-Flow detention time= 38.2 min calculated for 0.065 af (100% of inflow)
 Center-of-Mass det. time= 38.0 min (861.9 - 824.0)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	3,748 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 10,500 cf Overall - 1,131 cf Embedded = 9,369 cf x 40.0% Voids
#2	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
#3	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
#4	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
		4,879 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,500	0	0
31.00	3,500	10,500	10,500

Device	Routing	Invert	Outlet Devices
#1	Discarded	28.00'	2.400 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.19 cfs @ 11.95 hrs HW=28.03' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.19 cfs)



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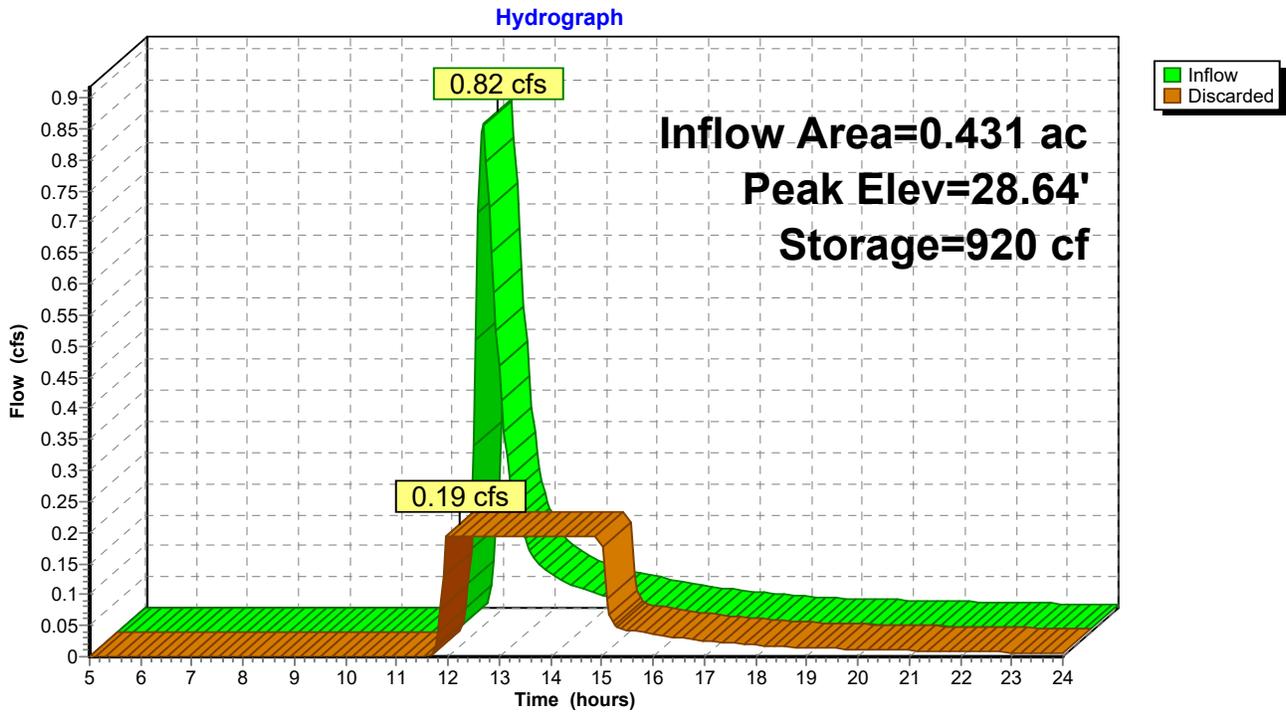
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Pond 3P: SUBSURFACE DETENTION



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Type III 24-hr 10-yr Rainfall=5.61"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=26,883 sf 8.11% Impervious Runoff Depth>1.66"
Flow Length=490' Tc=34.4 min CN=60 Runoff=0.59 cfs 0.085 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=9,849 sf 37.64% Impervious Runoff Depth>2.95"
Tc=5.0 min CN=75 Runoff=0.78 cfs 0.056 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=10,559 sf 56.44% Impervious Runoff Depth>3.63"
Tc=0.0 min CN=82 Runoff=1.18 cfs 0.073 af

Subcatchment4S: SUBCATCHMENT4 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>5.22"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.020 af

Subcatchment5S: SUBCATCHMENT5 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>5.22"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.020 af

Subcatchment6S: SUBCATCHMENT6 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>5.22"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.020 af

Subcatchment7S: SUBCATCHMENT7 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>5.22"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.020 af

Subcatchment8S: SUBCATCHMENT 8 Runoff Area=4,442 sf 0.00% Impervious Runoff Depth>1.67"
Tc=10.0 min CN=60 Runoff=0.16 cfs 0.014 af

Reach SP1: SUMMATIONPOINT 1 Inflow=0.16 cfs 0.014 af
Outflow=0.16 cfs 0.014 af

Reach SP2: SUMMATIONPOINT 2 Inflow=0.78 cfs 0.056 af
Outflow=0.78 cfs 0.056 af

Pond 1P: RAIN GARDEN Peak Elev=31.14' Storage=1,603 cf Inflow=1.97 cfs 0.155 af
Discarded=0.02 cfs 0.013 af Primary=1.45 cfs 0.125 af Secondary=0.00 cfs 0.000 af Outflow=1.47 cfs 0.138 af

Pond 2P: INFILTRATION TRENCH Peak Elev=29.07' Storage=1,200 cf Inflow=0.59 cfs 0.085 af
Discarded=0.13 cfs 0.085 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.085 af

Pond 3P: SUBSURFACE DETENTION Peak Elev=29.43' Storage=2,312 cf Inflow=1.45 cfs 0.125 af
Outflow=0.19 cfs 0.125 af

Total Runoff Area = 1.376 ac Runoff Volume = 0.310 af Average Runoff Depth = 2.70"
66.55% Pervious = 0.916 ac 33.45% Impervious = 0.460 ac

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Type III 24-hr 10-yr Rainfall=5.61"

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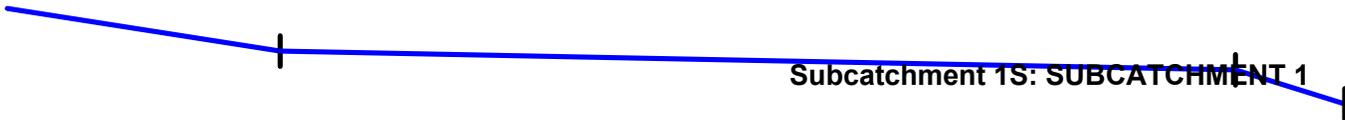
Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 0.59 cfs @ 12.53 hrs, Volume= 0.085 af, Depth> 1.66"
 Routed to Pond 2P : INFILTRATION TRENCH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
16,143	55	Woods, Good, HSG B
8,559	61	>75% Grass cover, Good, HSG B
* 2,181	98	IMPERVIOUS
26,883	60	Weighted Average
24,702		91.89% Pervious Area
2,181		8.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7	100	0.0400	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.70"
16.5	350	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
34.4	490	Total			



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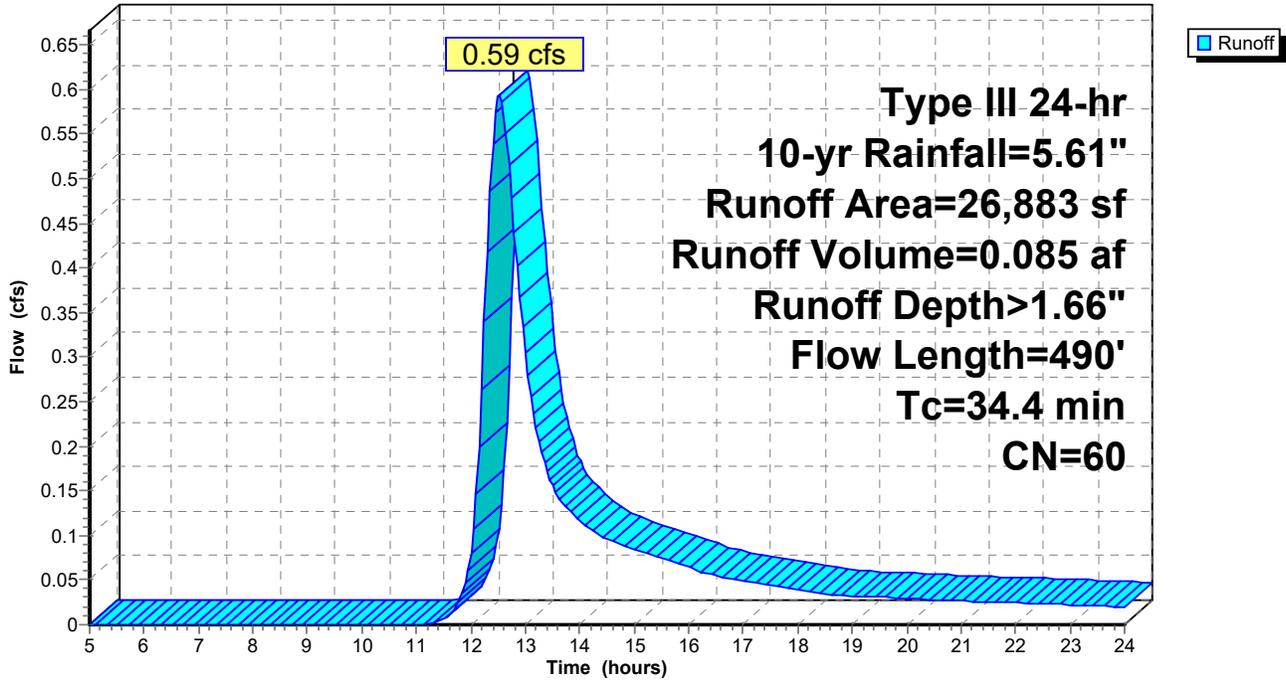
Type III 24-hr 10-yr Rainfall=5.61"

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Subcatchment 1S: SUBCATCHMENT 1

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Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 0.78 cfs @ 12.08 hrs, Volume= 0.056 af, Depth> 2.95"
 Routed to Reach SP2 : SUMMATION POINT 2

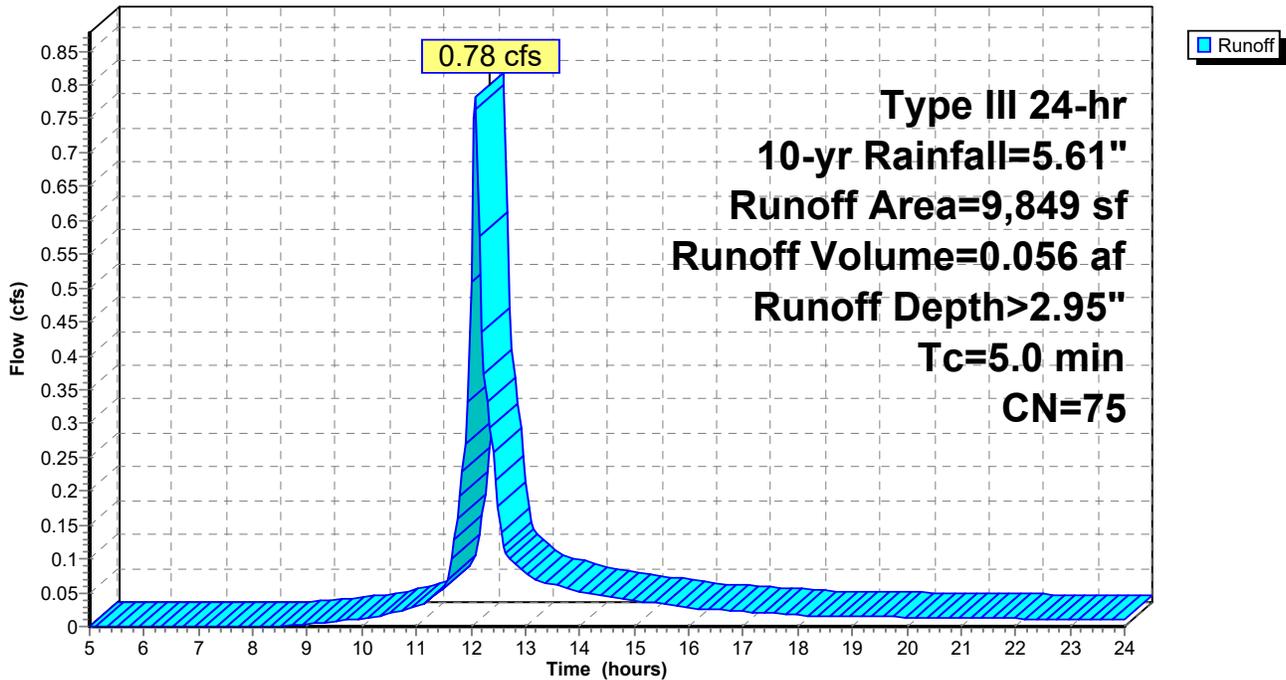
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
6,142	61	>75% Grass cover, Good, HSG B
* 3,707	98	IMPERVIOUS
9,849	75	Weighted Average
6,142		62.36% Pervious Area
3,707		37.64% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2

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Type III 24-hr 10-yr Rainfall=5.61"

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Summary for Subcatchment 3S: SUBCATCHMNT 3

Runoff = 1.18 cfs @ 12.00 hrs, Volume= 0.073 af, Depth> 3.63"

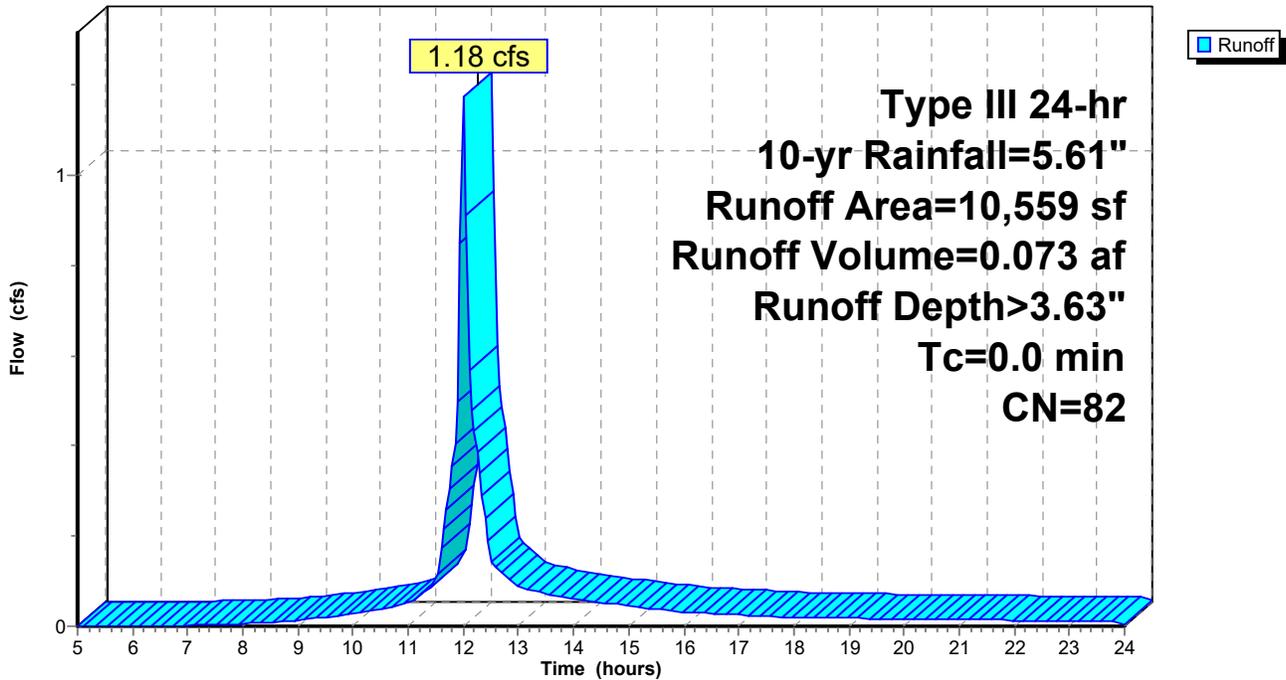
Routed to Pond 1P : RAIN GARDEN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
18	55	Woods, Good, HSG B
4,582	61	>75% Grass cover, Good, HSG B
* 5,959	98	IMPERVIOUS
10,559	82	Weighted Average
4,600		43.56% Pervious Area
5,959		56.44% Impervious Area

Subcatchment 3S: SUBCATCHMNT 3

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Type III 24-hr 10-yr Rainfall=5.61"

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Summary for Subcatchment 4S: SUBCATCHMENT 4

Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af, Depth> 5.22"

Routed to Pond 1P : RAIN GARDEN

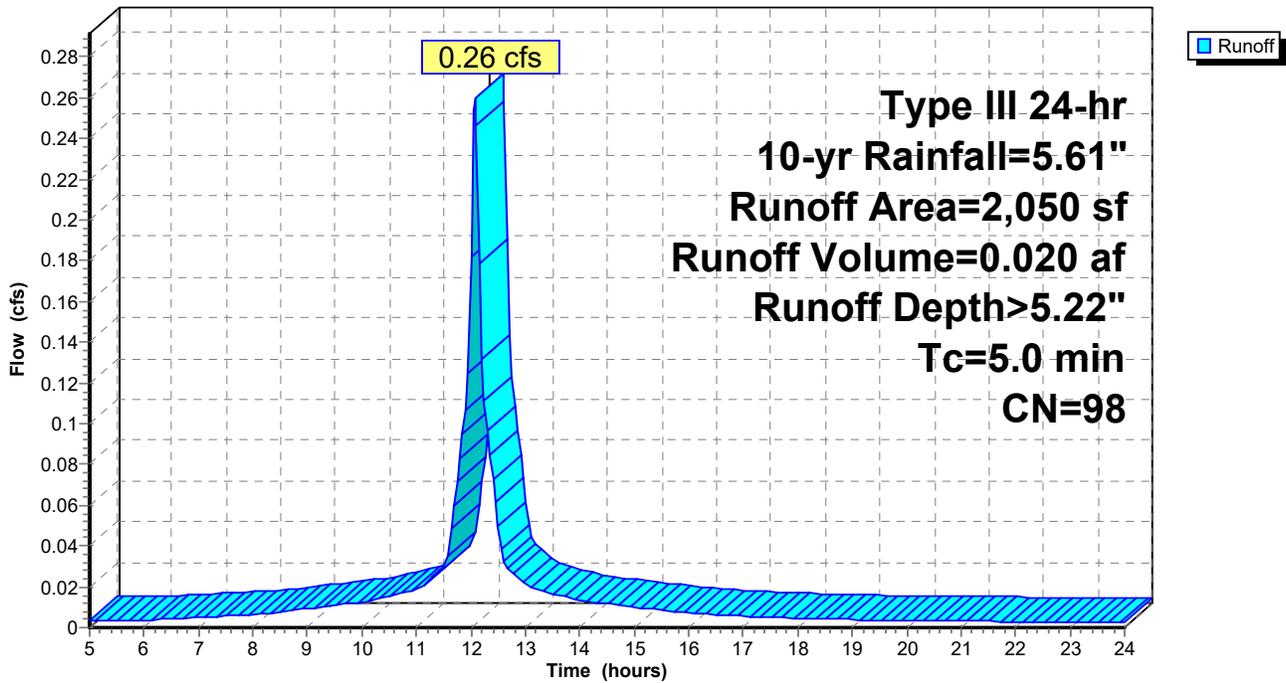
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 4S: SUBCATCHMENT 4

Hydrograph



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Summary for Subcatchment 5S: SUBCATCHMENT 5

Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af, Depth> 5.22"
Routed to Pond 1P : RAIN GARDEN

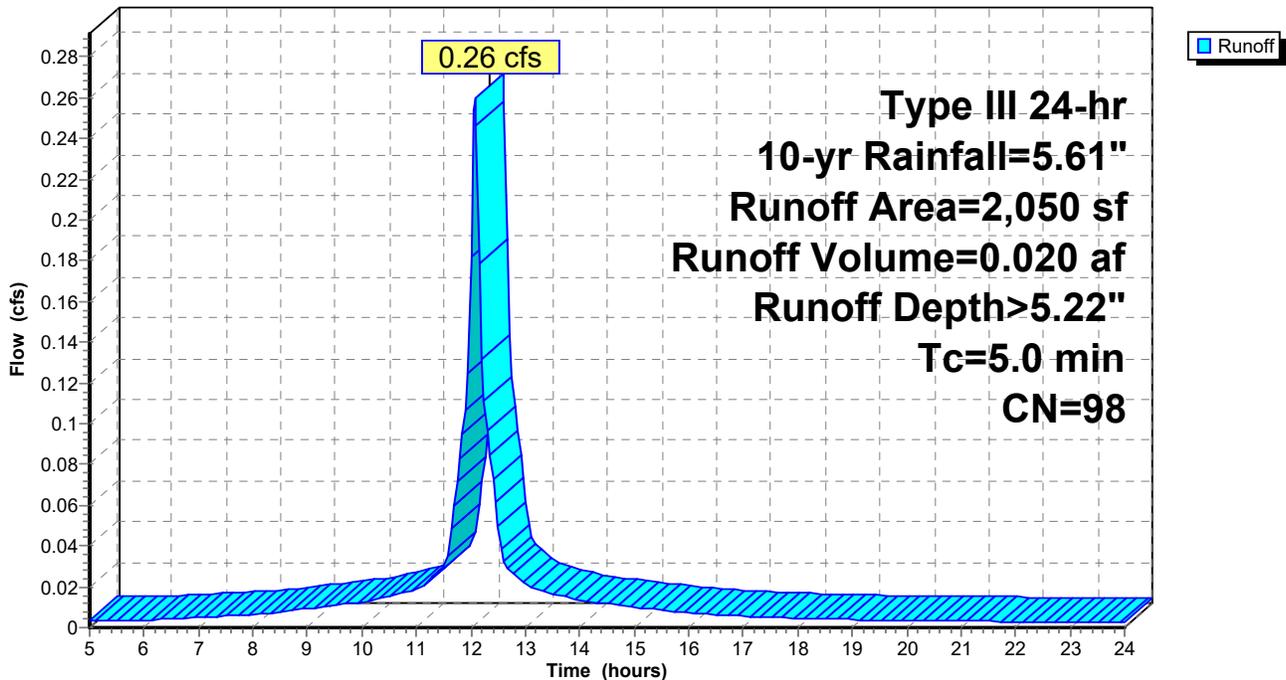
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 5S: SUBCATCHMENT 5

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Type III 24-hr 10-yr Rainfall=5.61"

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Summary for Subcatchment 6S: SUBCATCHMENT 6

Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af, Depth> 5.22"
Routed to Pond 1P : RAIN GARDEN

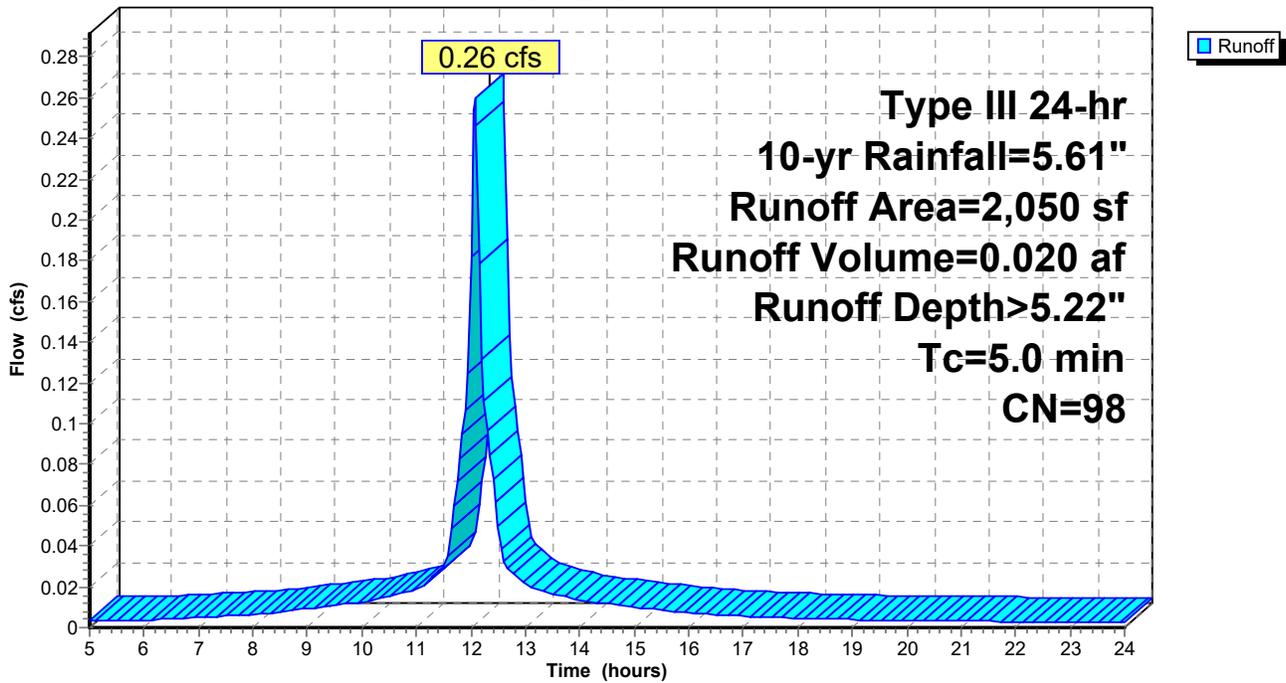
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 6S: SUBCATCHMENT 6

Hydrograph



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Type III 24-hr 10-yr Rainfall=5.61"

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Summary for Subcatchment 7S: SUBCATCHMENT 7

Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af, Depth> 5.22"
 Routed to Pond 1P : RAIN GARDEN

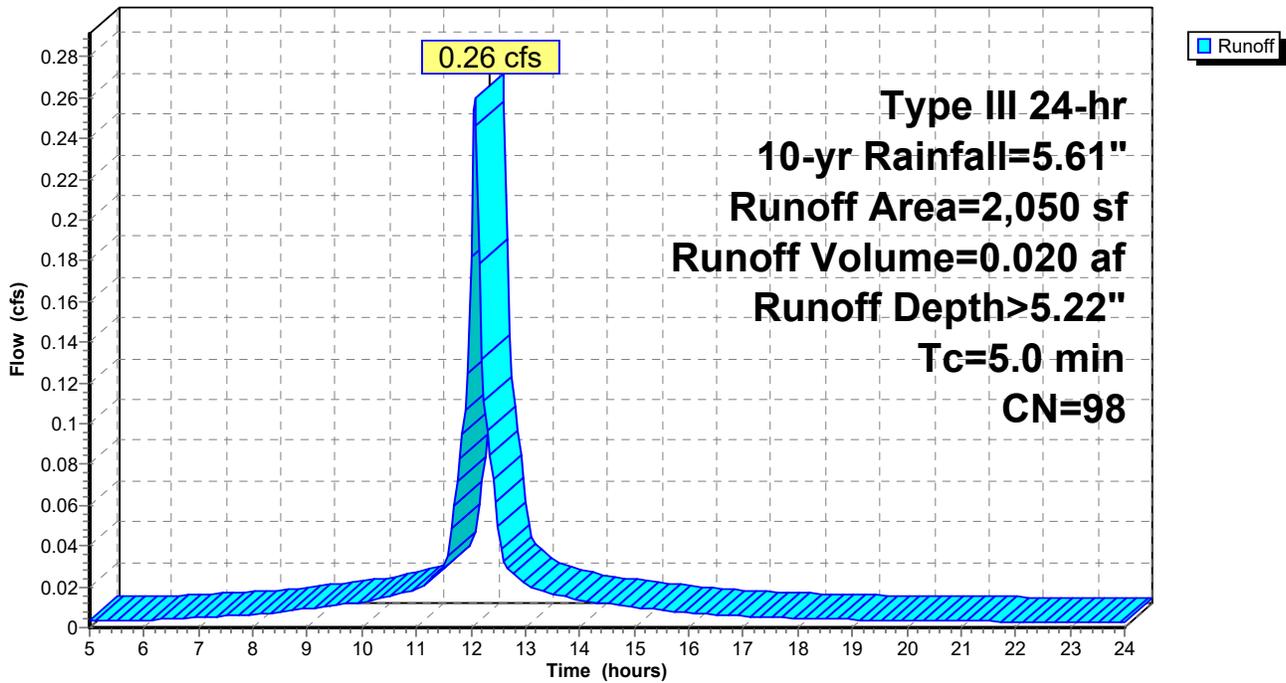
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 7S: SUBCATCHMENT 7

Hydrograph



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Type III 24-hr 10-yr Rainfall=5.61"

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Summary for Subcatchment 8S: SUBCATCHMENT 8

Runoff = 0.16 cfs @ 12.16 hrs, Volume= 0.014 af, Depth> 1.67"
Routed to Reach SP1 : SUMMATION POINT 1

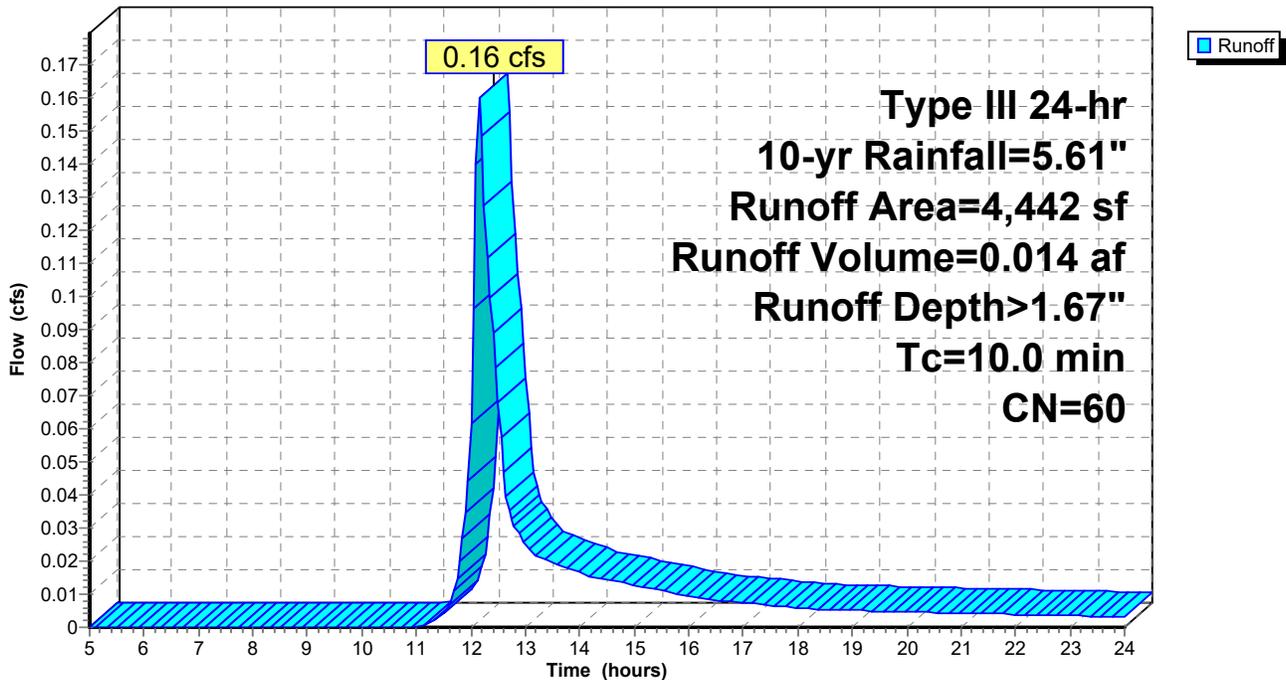
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.61"

Area (sf)	CN	Description
679	55	Woods, Good, HSG B
3,763	61	>75% Grass cover, Good, HSG B
4,442	60	Weighted Average
4,442		100.00% Pervious Area

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

Subcatchment 8S: SUBCATCHMENT 8

Hydrograph



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Type III 24-hr 10-yr Rainfall=5.61"

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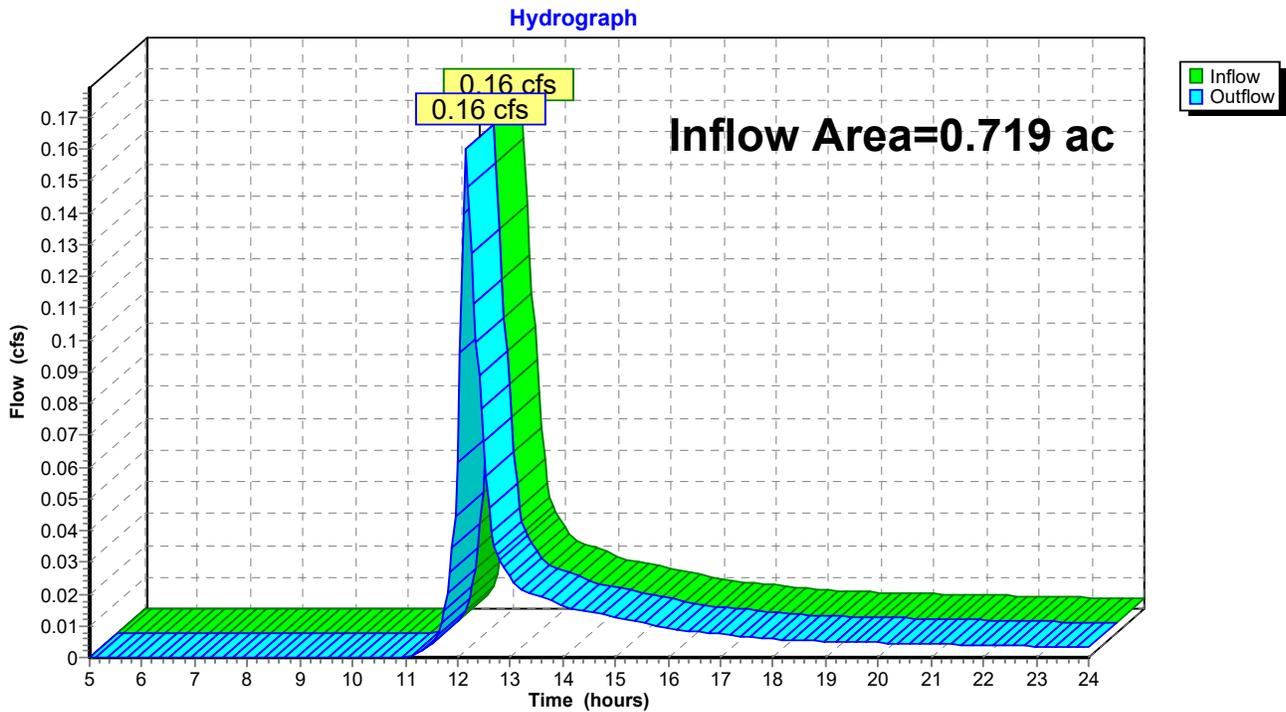
Page 30

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.719 ac, 6.96% Impervious, Inflow Depth > 0.24" for 10-yr event
Inflow = 0.16 cfs @ 12.16 hrs, Volume= 0.014 af
Outflow = 0.16 cfs @ 12.16 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1



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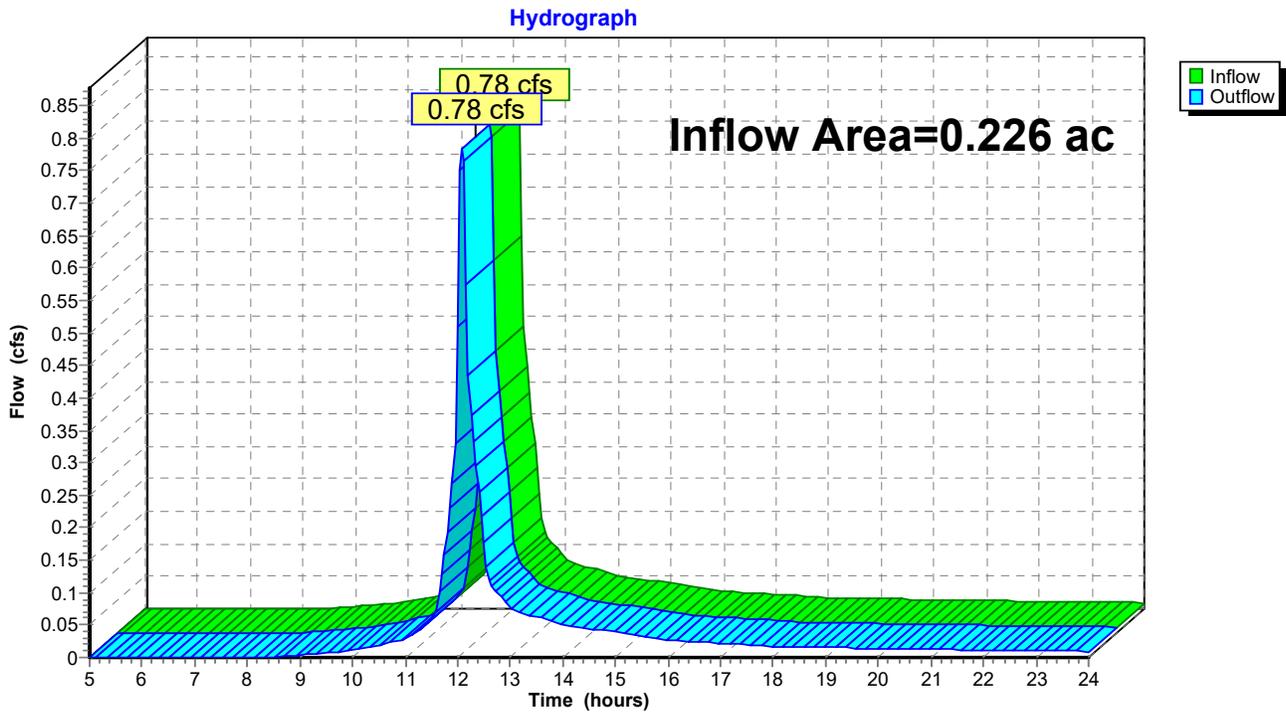
Page 31

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.226 ac, 37.64% Impervious, Inflow Depth > 2.95" for 10-yr event
Inflow = 0.78 cfs @ 12.08 hrs, Volume= 0.056 af
Outflow = 0.78 cfs @ 12.08 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2



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Summary for Pond 1P: RAIN GARDEN

Inflow Area = 0.431 ac, 75.48% Impervious, Inflow Depth > 4.32" for 10-yr event
 Inflow = 1.97 cfs @ 12.03 hrs, Volume= 0.155 af
 Outflow = 1.47 cfs @ 12.12 hrs, Volume= 0.138 af, Atten= 26%, Lag= 5.3 min
 Discarded = 0.02 cfs @ 12.12 hrs, Volume= 0.013 af
 Primary = 1.45 cfs @ 12.12 hrs, Volume= 0.125 af
 Routed to Pond 3P : SUBSURFACE DETENTION
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 31.14' @ 12.12 hrs Surf.Area= 1,534 sf Storage= 1,603 cf

Plug-Flow detention time= 97.0 min calculated for 0.138 af (89% of inflow)
 Center-of-Mass det. time= 45.4 min (827.5 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	5,850 cf	Custom Stage Data (Prismatic) Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	1,200	0	0
31.00	1,500	1,350	1,350
33.50	2,100	4,500	5,850

Device	Routing	Invert	Outlet Devices
#1	Discarded	30.00'	2.400 in/hr Exfiltration over Surface area above 30.00' Excluded Surface area = 1,200 sf
#2	Primary	30.00'	12.0" Round Culvert L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.00' / 29.50' S= 0.0250 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	30.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	32.80'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	32.90'	5.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

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Type III 24-hr 10-yr Rainfall=5.61"

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Discarded OutFlow Max=0.02 cfs @ 12.12 hrs HW=31.14' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.43 cfs @ 12.12 hrs HW=31.14' (Free Discharge)

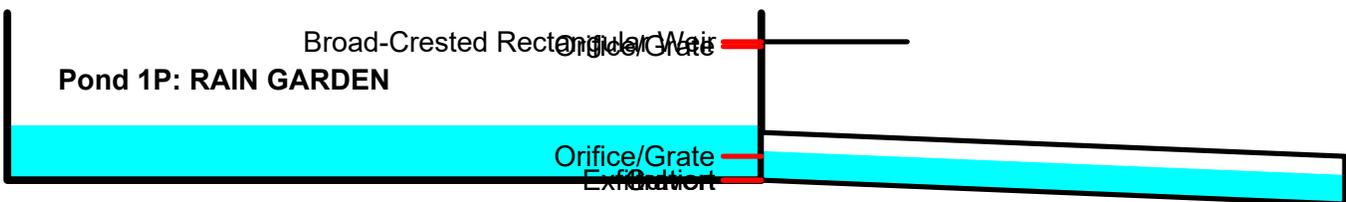
↑2=Culvert (Passes 1.43 cfs of 2.38 cfs potential flow)

↑3=Orifice/Grate (Orifice Controls 1.43 cfs @ 2.71 fps)

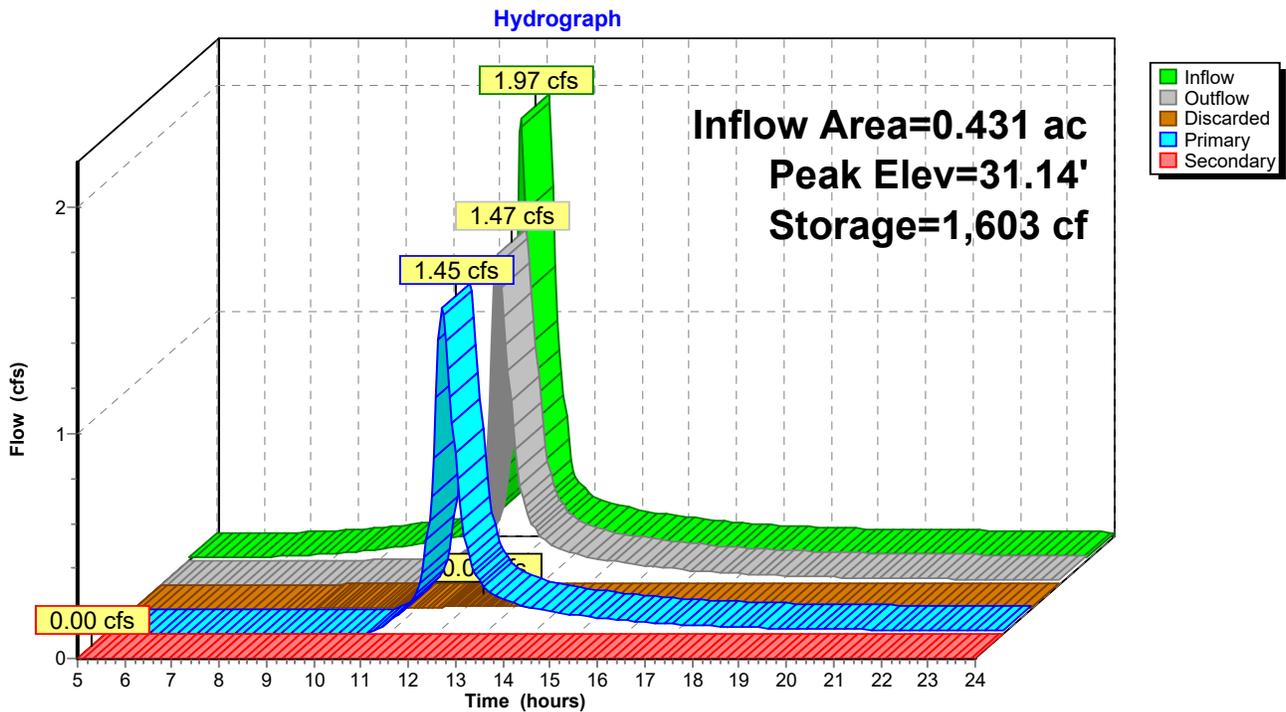
↑4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)

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



Pond 1P: RAIN GARDEN



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Summary for Pond 2P: INFILTRATION TRENCH

Inflow Area = 0.617 ac, 8.11% Impervious, Inflow Depth > 1.66" for 10-yr event
 Inflow = 0.59 cfs @ 12.53 hrs, Volume= 0.085 af
 Outflow = 0.13 cfs @ 12.15 hrs, Volume= 0.085 af, Atten= 79%, Lag= 0.0 min
 Discarded = 0.13 cfs @ 12.15 hrs, Volume= 0.085 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 29.07' @ 13.80 hrs Surf.Area= 2,300 sf Storage= 1,200 cf

Plug-Flow detention time= 84.8 min calculated for 0.085 af (100% of inflow)
 Center-of-Mass det. time= 84.0 min (972.1 - 888.2)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	2,157 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 6,900 cf Overall - 1,508 cf Embedded = 5,392 cf x 40.0% Voids
#2	28.50'	754 cf	24.0" Round Pipe Storage Inside #1 L= 240.0'
#3	28.50'	754 cf	24.0" Round Pipe Storage Inside #1 L= 240.0'
		3,665 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	2,300	0	0
31.00	2,300	6,900	6,900

Device	Routing	Invert	Outlet Devices
#1	Discarded	28.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	31.00'	320.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.13 cfs @ 12.15 hrs HW=28.04' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.00' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)



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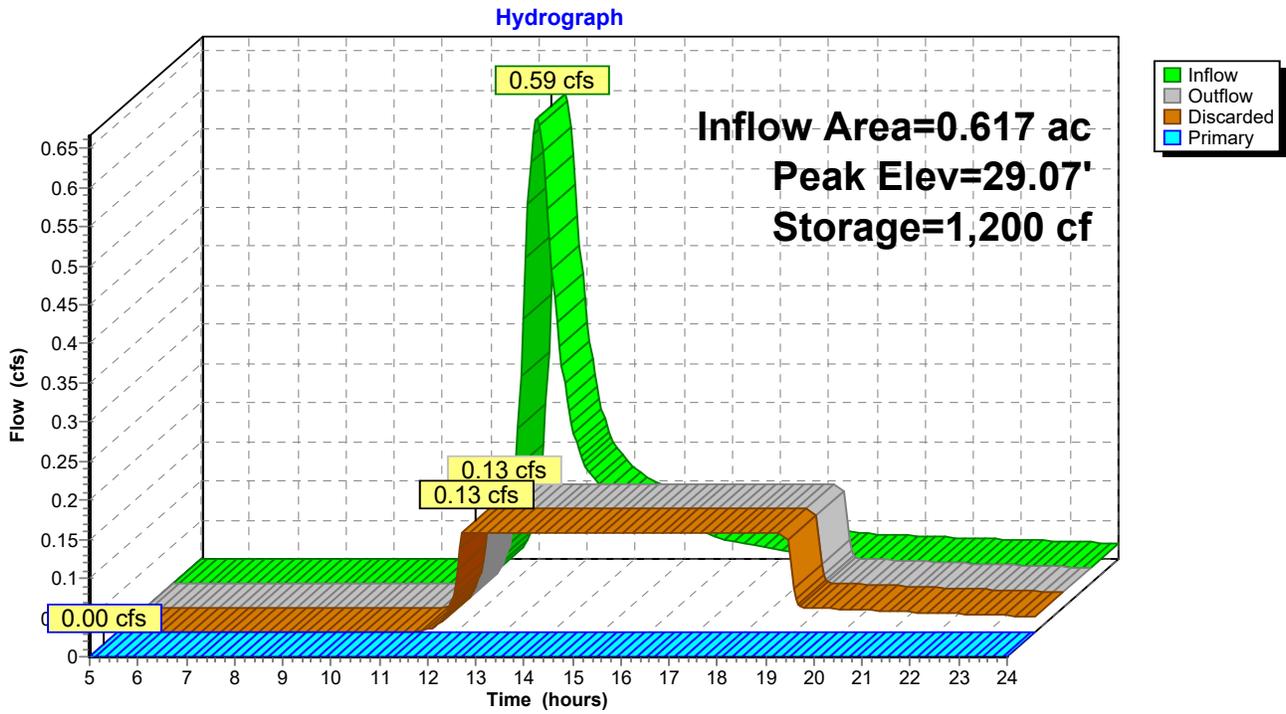
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Pond 2P: INFILTRATION TRENCH



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Summary for Pond 3P: SUBSURFACE DETENTION

Inflow Area = 0.431 ac, 75.48% Impervious, Inflow Depth > 3.49" for 10-yr event
 Inflow = 1.45 cfs @ 12.12 hrs, Volume= 0.125 af
 Outflow = 0.19 cfs @ 11.70 hrs, Volume= 0.125 af, Atten= 87%, Lag= 0.0 min
 Discarded = 0.19 cfs @ 11.70 hrs, Volume= 0.125 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 29.43' @ 13.09 hrs Surf.Area= 3,500 sf Storage= 2,312 cf

Plug-Flow detention time= 104.7 min calculated for 0.125 af (100% of inflow)
 Center-of-Mass det. time= 104.1 min (917.4 - 813.3)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	3,748 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 10,500 cf Overall - 1,131 cf Embedded = 9,369 cf x 40.0% Voids
#2	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
#3	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
#4	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
		4,879 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,500	0	0
31.00	3,500	10,500	10,500

Device	Routing	Invert	Outlet Devices
#1	Discarded	28.00'	2.400 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.19 cfs @ 11.70 hrs HW=28.04' (Free Discharge)
 ↑ 1=Exfiltration (Exfiltration Controls 0.19 cfs)



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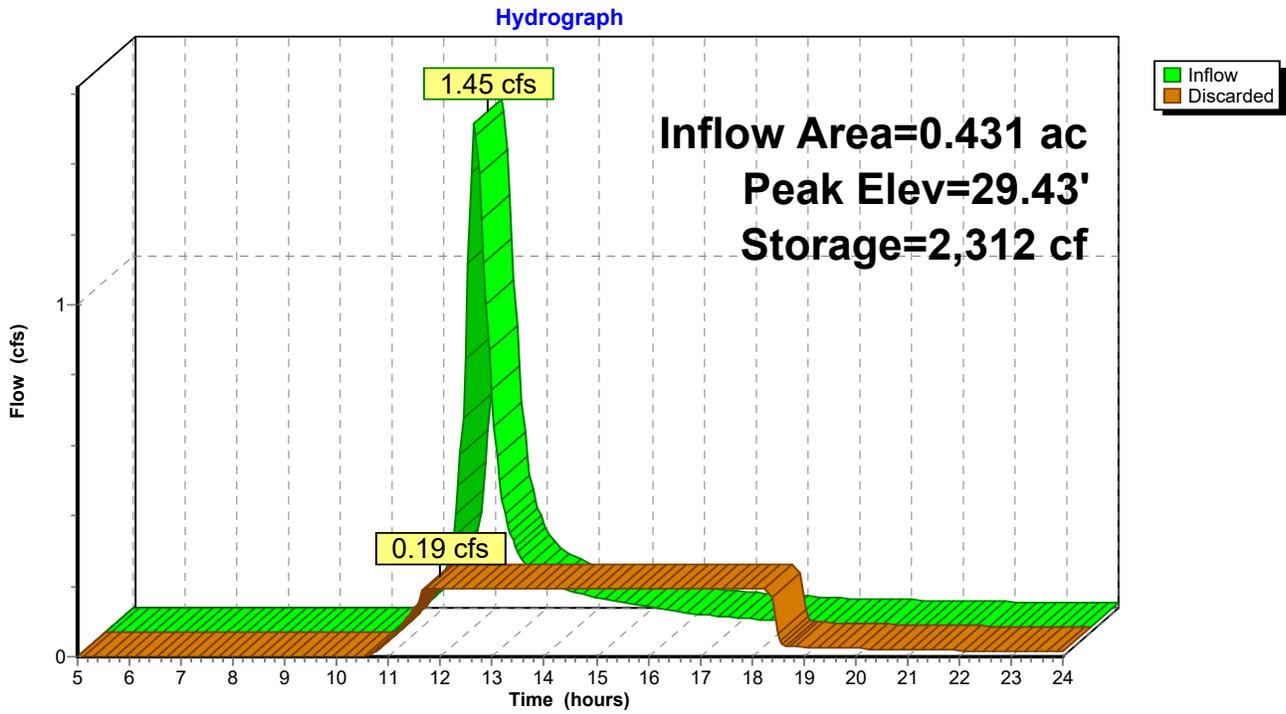
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Pond 3P: SUBSURFACE DETENTION



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Type III 24-hr 25-yr Rainfall=7.12"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=26,883 sf 8.11% Impervious Runoff Depth>2.67"
Flow Length=490' Tc=34.4 min CN=60 Runoff=1.00 cfs 0.137 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=9,849 sf 37.64% Impervious Runoff Depth>4.25"
Tc=5.0 min CN=75 Runoff=1.13 cfs 0.080 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=10,559 sf 56.44% Impervious Runoff Depth>5.03"
Tc=0.0 min CN=82 Runoff=1.61 cfs 0.102 af

Subcatchment4S: SUBCATCHMENT4 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>6.65"
Tc=5.0 min CN=98 Runoff=0.33 cfs 0.026 af

Subcatchment5S: SUBCATCHMENT5 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>6.65"
Tc=5.0 min CN=98 Runoff=0.33 cfs 0.026 af

Subcatchment6S: SUBCATCHMENT6 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>6.65"
Tc=5.0 min CN=98 Runoff=0.33 cfs 0.026 af

Subcatchment7S: SUBCATCHMENT7 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>6.65"
Tc=5.0 min CN=98 Runoff=0.33 cfs 0.026 af

Subcatchment8S: SUBCATCHMENT 8 Runoff Area=4,442 sf 0.00% Impervious Runoff Depth>2.68"
Tc=10.0 min CN=60 Runoff=0.27 cfs 0.023 af

Reach SP1: SUMMATIONPOINT 1 Inflow=0.27 cfs 0.023 af
Outflow=0.27 cfs 0.023 af

Reach SP2: SUMMATIONPOINT 2 Inflow=1.13 cfs 0.080 af
Outflow=1.13 cfs 0.080 af

Pond 1P: RAIN GARDEN Peak Elev=31.27' Storage=1,829 cf Inflow=2.63 cfs 0.206 af
Discarded=0.02 cfs 0.014 af Primary=1.92 cfs 0.175 af Secondary=0.00 cfs 0.000 af Outflow=1.94 cfs 0.189 af

Pond 2P: INFILTRATION TRENCH Peak Elev=30.04' Storage=2,629 cf Inflow=1.00 cfs 0.137 af
Discarded=0.13 cfs 0.131 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.131 af

Pond 3P: SUBSURFACE DETENTION Peak Elev=30.07' Storage=3,474 cf Inflow=1.92 cfs 0.175 af
Outflow=0.19 cfs 0.175 af

Total Runoff Area = 1.376 ac Runoff Volume = 0.446 af Average Runoff Depth = 3.89"
66.55% Pervious = 0.916 ac 33.45% Impervious = 0.460 ac

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Type III 24-hr 25-yr Rainfall=7.12"

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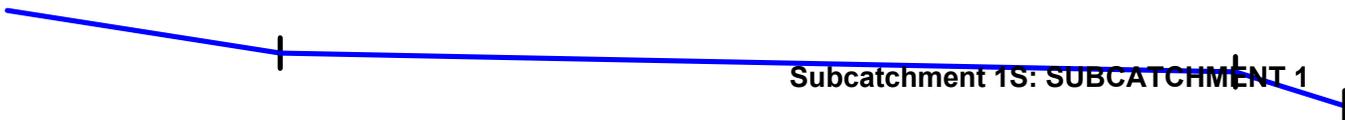
Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 1.00 cfs @ 12.51 hrs, Volume= 0.137 af, Depth> 2.67"
 Routed to Pond 2P : INFILTRATION TRENCH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
16,143	55	Woods, Good, HSG B
8,559	61	>75% Grass cover, Good, HSG B
* 2,181	98	IMPERVIOUS
26,883	60	Weighted Average
24,702		91.89% Pervious Area
2,181		8.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7	100	0.0400	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.70"
16.5	350	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
34.4	490	Total			



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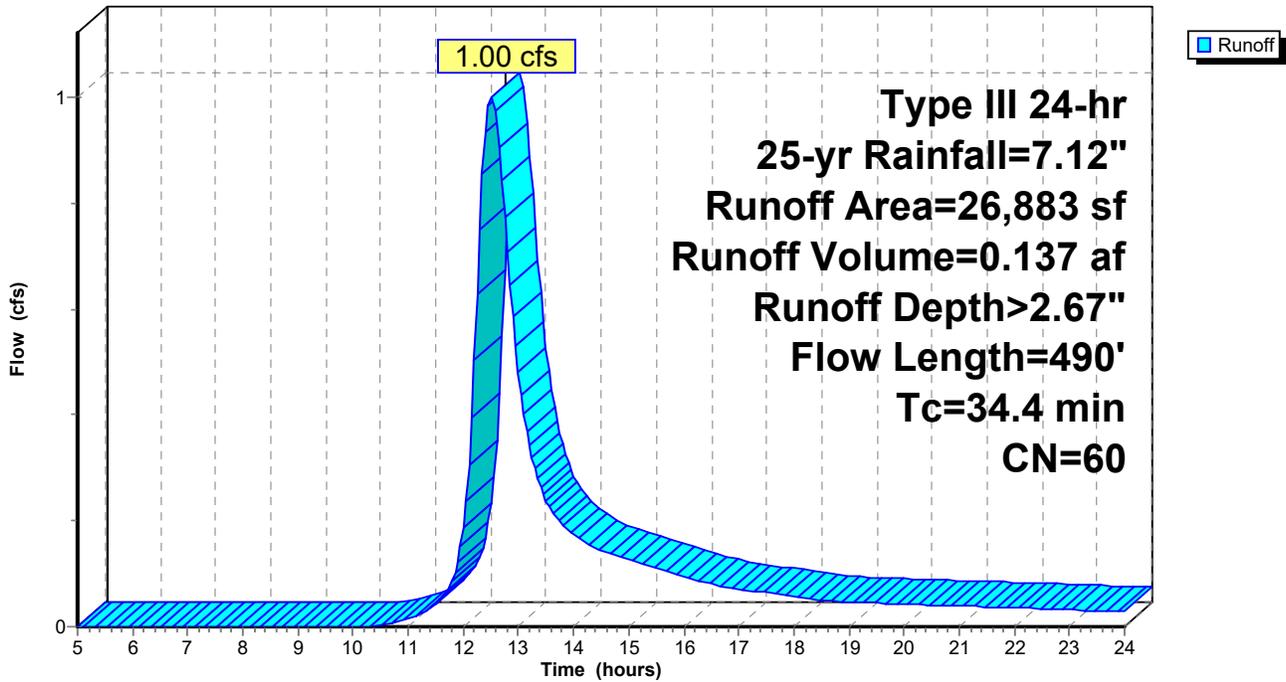
Type III 24-hr 25-yr Rainfall=7.12"

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Subcatchment 1S: SUBCATCHMENT 1

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Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 1.13 cfs @ 12.08 hrs, Volume= 0.080 af, Depth> 4.25"
Routed to Reach SP2 : SUMMATION POINT 2

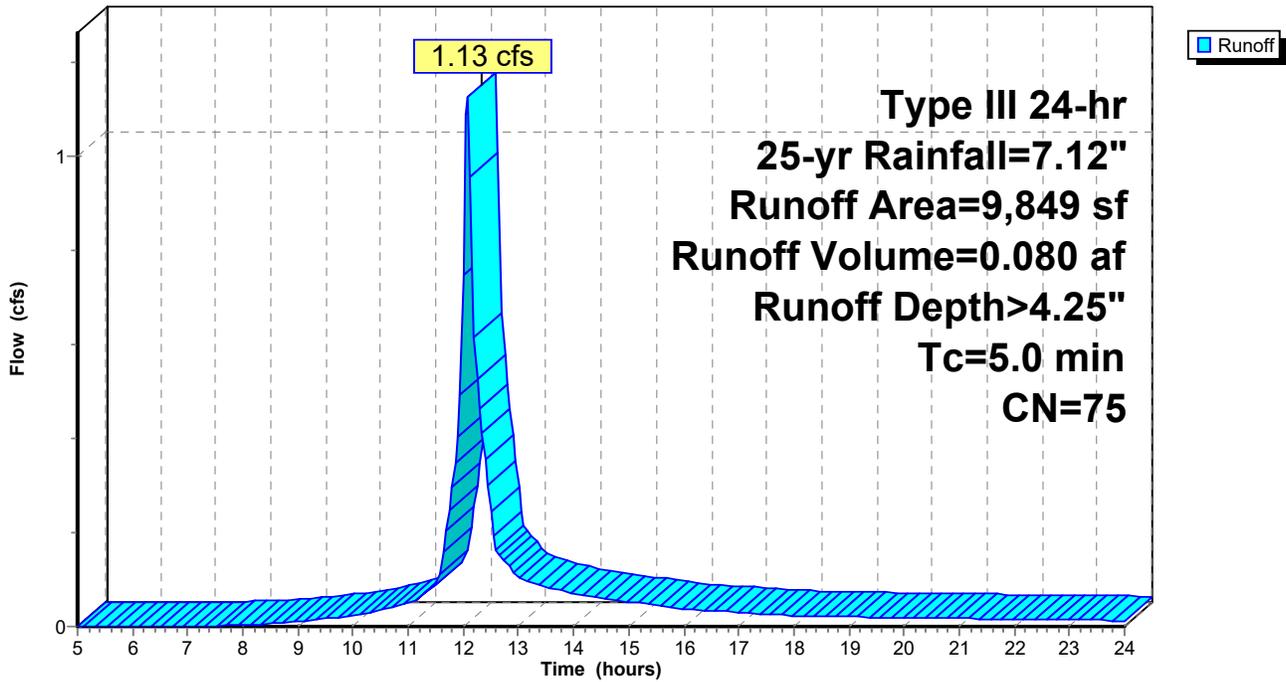
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
6,142	61	>75% Grass cover, Good, HSG B
* 3,707	98	IMPERVIOUS
9,849	75	Weighted Average
6,142		62.36% Pervious Area
3,707		37.64% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2

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Type III 24-hr 25-yr Rainfall=7.12"

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Summary for Subcatchment 3S: SUBCATCHMNT 3

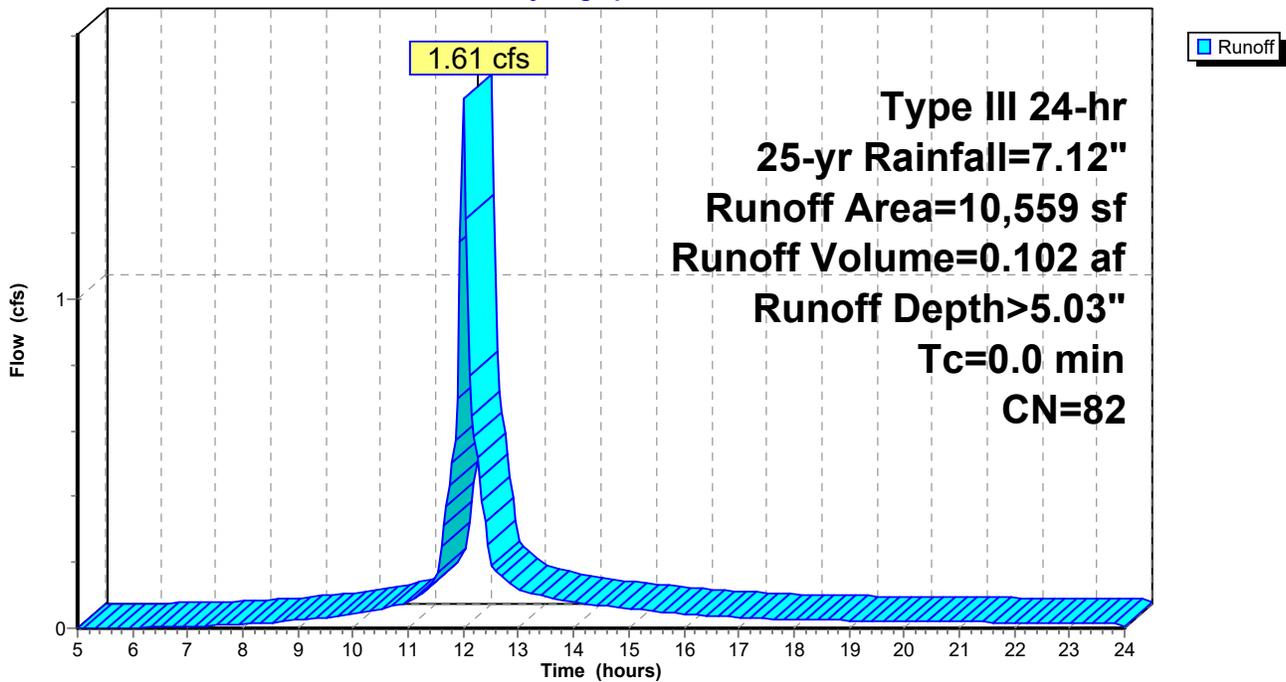
Runoff = 1.61 cfs @ 12.00 hrs, Volume= 0.102 af, Depth> 5.03"
Routed to Pond 1P : RAIN GARDEN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
18	55	Woods, Good, HSG B
4,582	61	>75% Grass cover, Good, HSG B
* 5,959	98	IMPERVIOUS
10,559	82	Weighted Average
4,600		43.56% Pervious Area
5,959		56.44% Impervious Area

Subcatchment 3S: SUBCATCHMNT 3

Hydrograph



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Type III 24-hr 25-yr Rainfall=7.12"

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Summary for Subcatchment 4S: SUBCATCHMENT 4

Runoff = 0.33 cfs @ 12.07 hrs, Volume= 0.026 af, Depth> 6.65"
Routed to Pond 1P : RAIN GARDEN

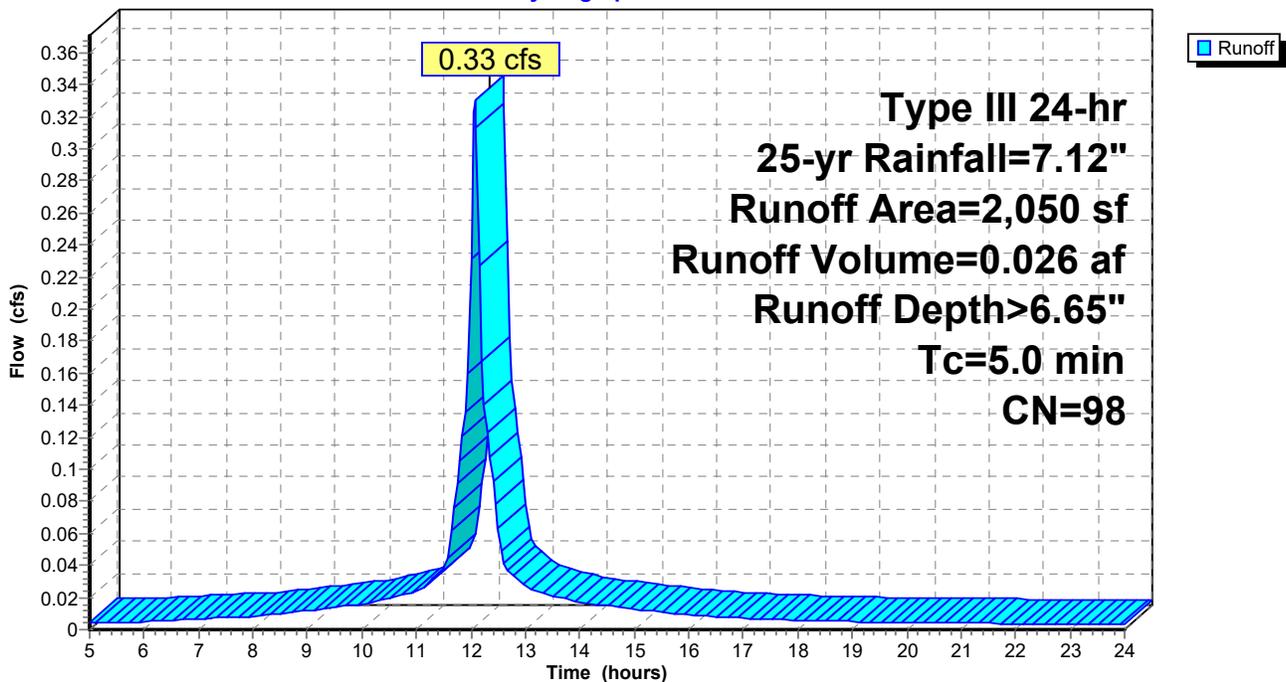
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 4S: SUBCATCHMENT 4

Hydrograph



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Summary for Subcatchment 5S: SUBCATCHMENT 5

Runoff = 0.33 cfs @ 12.07 hrs, Volume= 0.026 af, Depth> 6.65"
Routed to Pond 1P : RAIN GARDEN

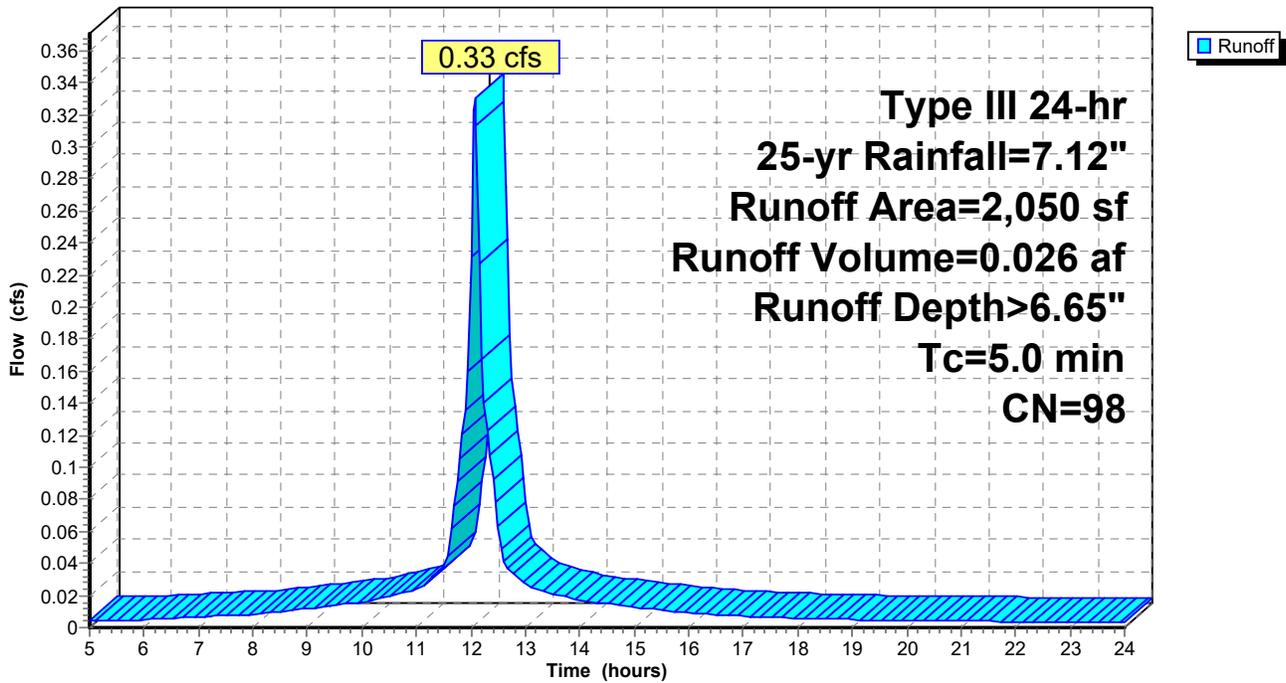
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 5S: SUBCATCHMENT 5

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Type III 24-hr 25-yr Rainfall=7.12"

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Summary for Subcatchment 6S: SUBCATCHMENT 6

Runoff = 0.33 cfs @ 12.07 hrs, Volume= 0.026 af, Depth> 6.65"

Routed to Pond 1P : RAIN GARDEN

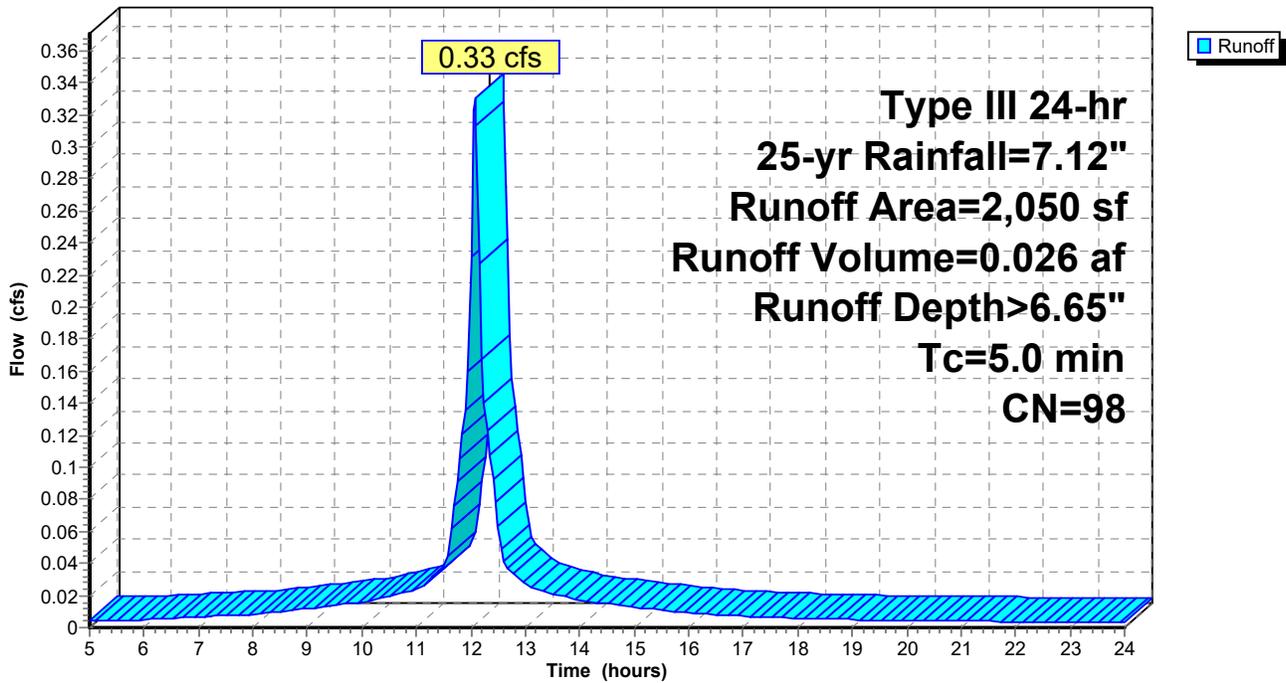
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 6S: SUBCATCHMENT 6

Hydrograph



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Type III 24-hr 25-yr Rainfall=7.12"

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Summary for Subcatchment 7S: SUBCATCHMENT 7

Runoff = 0.33 cfs @ 12.07 hrs, Volume= 0.026 af, Depth> 6.65"
Routed to Pond 1P : RAIN GARDEN

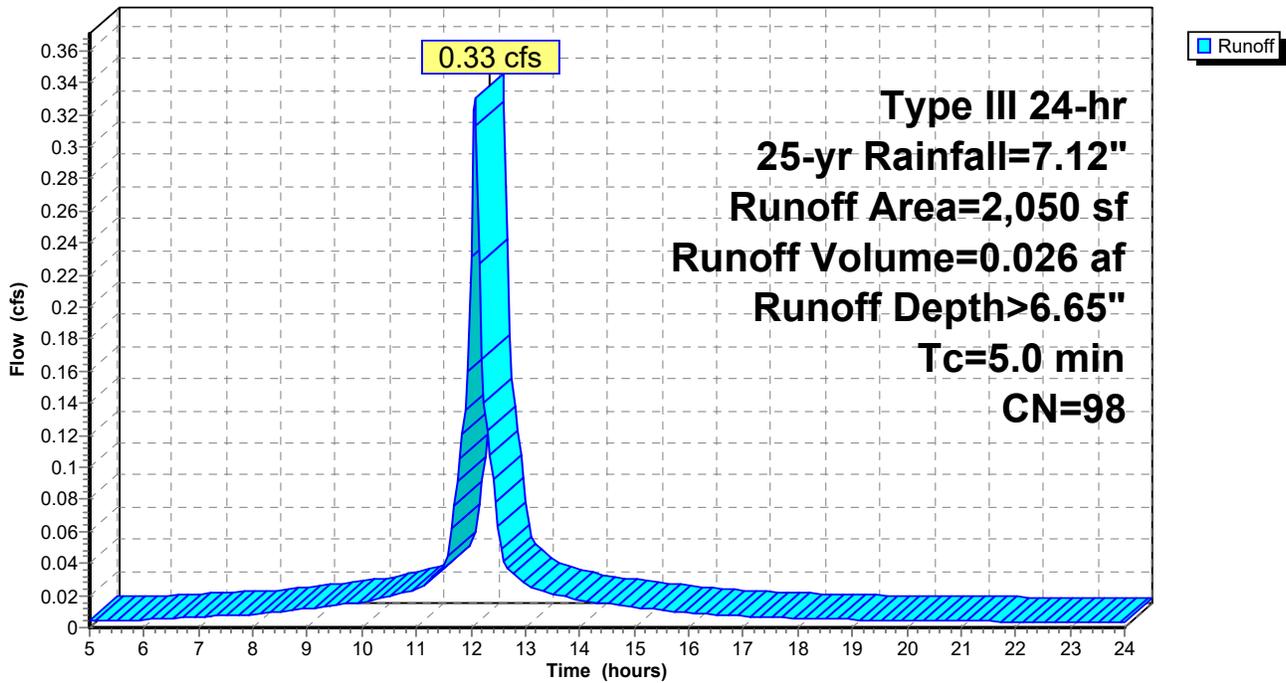
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 7S: SUBCATCHMENT 7

Hydrograph



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Type III 24-hr 25-yr Rainfall=7.12"

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Summary for Subcatchment 8S: SUBCATCHMENT 8

Runoff = 0.27 cfs @ 12.15 hrs, Volume= 0.023 af, Depth> 2.68"
Routed to Reach SP1 : SUMMATION POINT 1

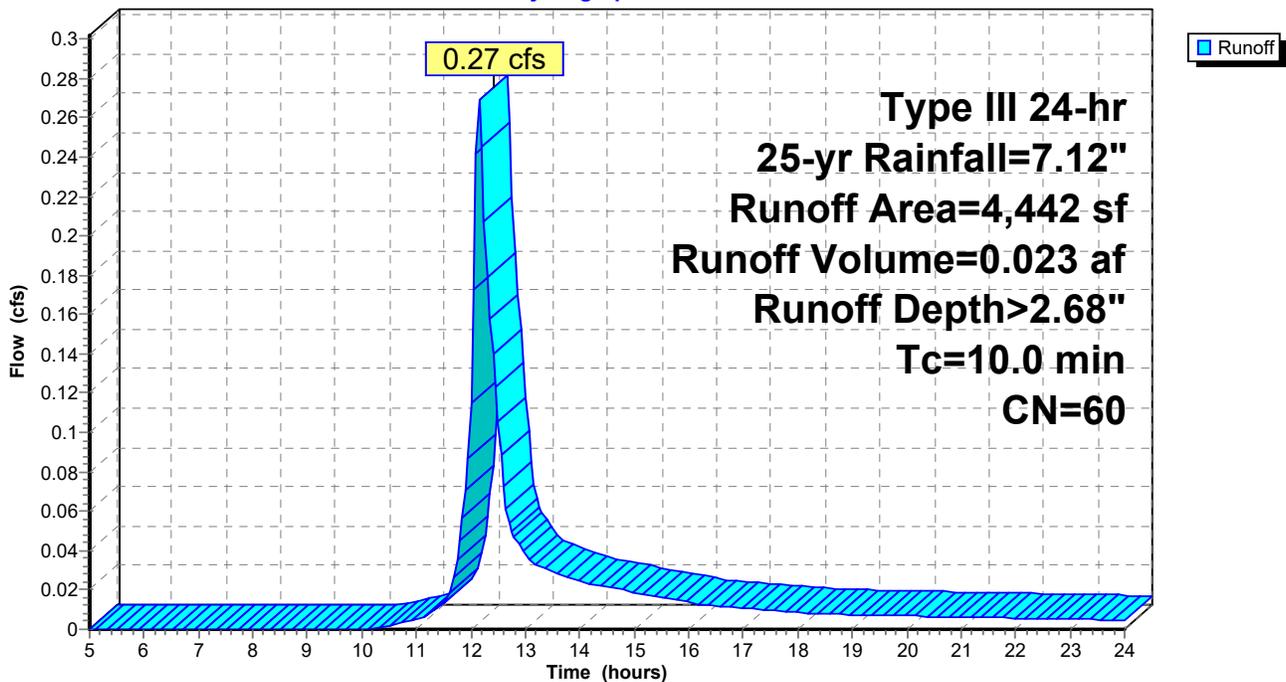
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=7.12"

Area (sf)	CN	Description
679	55	Woods, Good, HSG B
3,763	61	>75% Grass cover, Good, HSG B
4,442	60	Weighted Average
4,442		100.00% Pervious Area

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

Subcatchment 8S: SUBCATCHMENT 8

Hydrograph



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Type III 24-hr 25-yr Rainfall=7.12"

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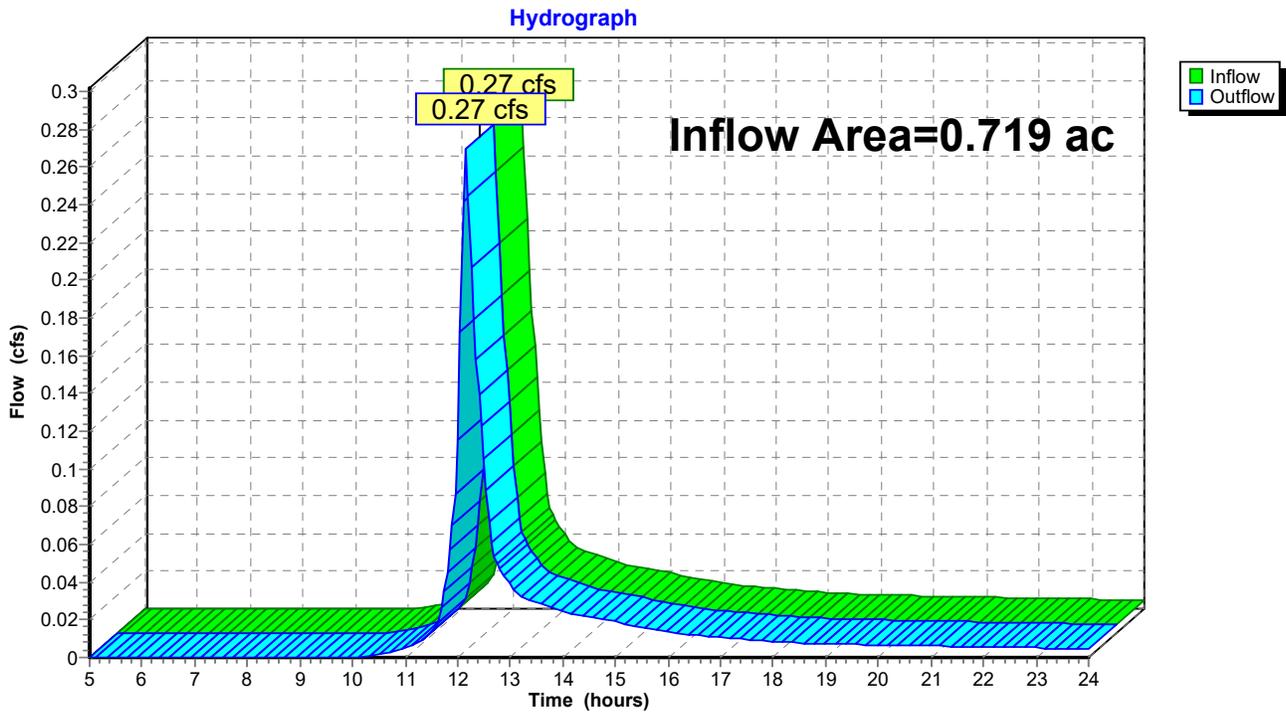
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Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.719 ac, 6.96% Impervious, Inflow Depth > 0.38" for 25-yr event
Inflow = 0.27 cfs @ 12.15 hrs, Volume= 0.023 af
Outflow = 0.27 cfs @ 12.15 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1



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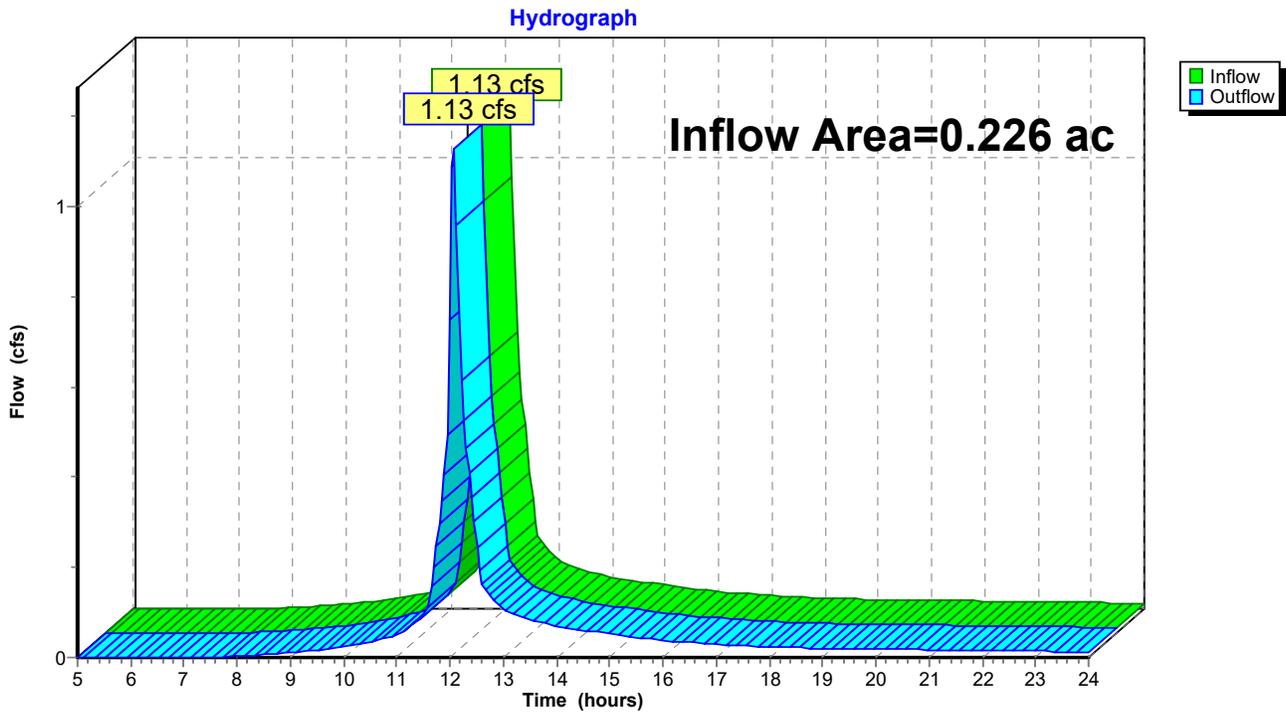
Page 49

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.226 ac, 37.64% Impervious, Inflow Depth > 4.25" for 25-yr event
Inflow = 1.13 cfs @ 12.08 hrs, Volume= 0.080 af
Outflow = 1.13 cfs @ 12.08 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2



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Summary for Pond 1P: RAIN GARDEN

Inflow Area = 0.431 ac, 75.48% Impervious, Inflow Depth > 5.74" for 25-yr event
 Inflow = 2.63 cfs @ 12.02 hrs, Volume= 0.206 af
 Outflow = 1.94 cfs @ 12.11 hrs, Volume= 0.189 af, Atten= 26%, Lag= 5.3 min
 Discarded = 0.02 cfs @ 12.11 hrs, Volume= 0.014 af
 Primary = 1.92 cfs @ 12.11 hrs, Volume= 0.175 af
 Routed to Pond 3P : SUBSURFACE DETENTION
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 31.27' @ 12.11 hrs Surf.Area= 1,564 sf Storage= 1,829 cf

Plug-Flow detention time= 81.7 min calculated for 0.188 af (91% of inflow)
 Center-of-Mass det. time= 39.1 min (817.0 - 777.9)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	5,850 cf	Custom Stage Data (Prismatic) Listed below
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	1,200	0	0
31.00	1,500	1,350	1,350
33.50	2,100	4,500	5,850

Device	Routing	Invert	Outlet Devices
#1	Discarded	30.00'	2.400 in/hr Exfiltration over Surface area above 30.00' Excluded Surface area = 1,200 sf
#2	Primary	30.00'	12.0" Round Culvert L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.00' / 29.50' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	30.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	32.80'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	32.90'	5.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

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Type III 24-hr 25-yr Rainfall=7.12"

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Discarded OutFlow Max=0.02 cfs @ 12.11 hrs HW=31.26' (Free Discharge)

↳ 1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.90 cfs @ 12.11 hrs HW=31.26' (Free Discharge)

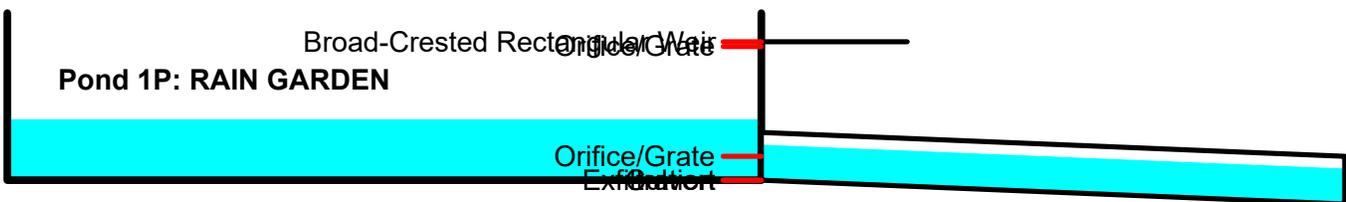
↳ 2=Culvert (Passes 1.90 cfs of 2.60 cfs potential flow)

↳ 3=Orifice/Grate (Orifice Controls 1.90 cfs @ 2.97 fps)

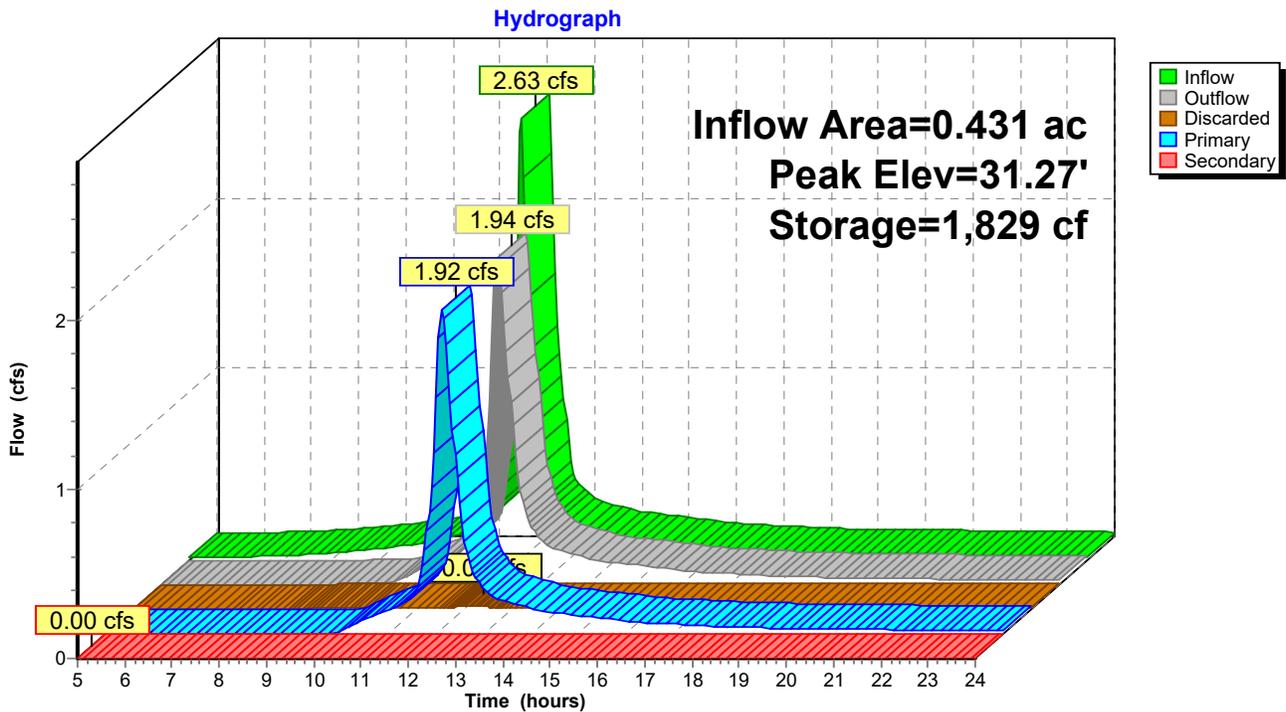
↳ 4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)

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



Pond 1P: RAIN GARDEN



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Summary for Pond 2P: INFILTRATION TRENCH

Inflow Area = 0.617 ac, 8.11% Impervious, Inflow Depth > 2.67" for 25-yr event
 Inflow = 1.00 cfs @ 12.51 hrs, Volume= 0.137 af
 Outflow = 0.13 cfs @ 12.00 hrs, Volume= 0.131 af, Atten= 87%, Lag= 0.0 min
 Discarded = 0.13 cfs @ 12.00 hrs, Volume= 0.131 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.04' @ 14.94 hrs Surf.Area= 2,300 sf Storage= 2,629 cf

Plug-Flow detention time= 216.4 min calculated for 0.131 af (96% of inflow)
 Center-of-Mass det. time= 194.2 min (1,068.1 - 873.9)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	2,157 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 6,900 cf Overall - 1,508 cf Embedded = 5,392 cf x 40.0% Voids
#2	28.50'	754 cf	24.0" Round Pipe Storage Inside #1 L= 240.0'
#3	28.50'	754 cf	24.0" Round Pipe Storage Inside #1 L= 240.0'
		3,665 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	2,300	0	0
31.00	2,300	6,900	6,900

Device	Routing	Invert	Outlet Devices
#1	Discarded	28.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	31.00'	320.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.13 cfs @ 12.00 hrs HW=28.04' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=28.00' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)



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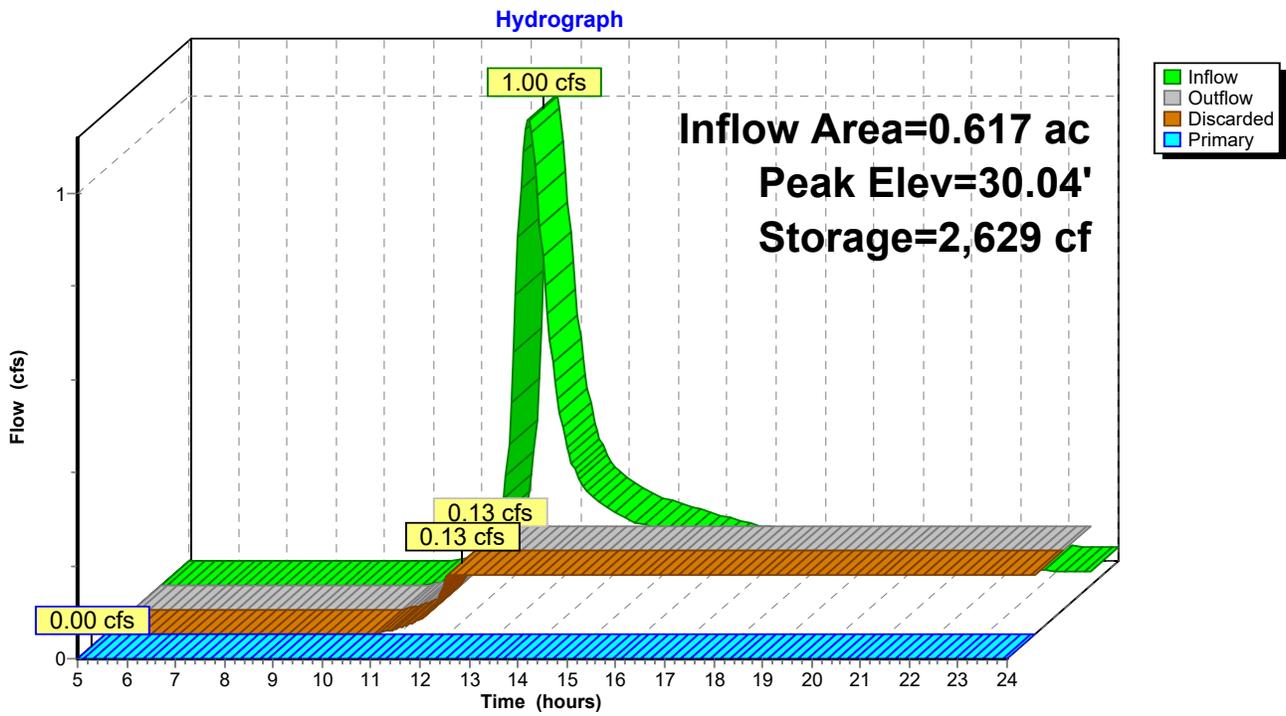
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Pond 2P: INFILTRATION TRENCH



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Summary for Pond 3P: SUBSURFACE DETENTION

Inflow Area = 0.431 ac, 75.48% Impervious, Inflow Depth > 4.87" for 25-yr event
 Inflow = 1.92 cfs @ 12.11 hrs, Volume= 0.175 af
 Outflow = 0.19 cfs @ 11.45 hrs, Volume= 0.175 af, Atten= 90%, Lag= 0.0 min
 Discarded = 0.19 cfs @ 11.45 hrs, Volume= 0.175 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.07' @ 13.44 hrs Surf.Area= 3,500 sf Storage= 3,474 cf

Plug-Flow detention time= 160.8 min calculated for 0.175 af (100% of inflow)
 Center-of-Mass det. time= 160.5 min (967.2 - 806.7)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	3,748 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 10,500 cf Overall - 1,131 cf Embedded = 9,369 cf x 40.0% Voids
#2	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
#3	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
#4	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
		4,879 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,500	0	0
31.00	3,500	10,500	10,500

Device	Routing	Invert	Outlet Devices
#1	Discarded	28.00'	2.400 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.19 cfs @ 11.45 hrs HW=28.03' (Free Discharge)
 ↑ 1=Exfiltration (Exfiltration Controls 0.19 cfs)



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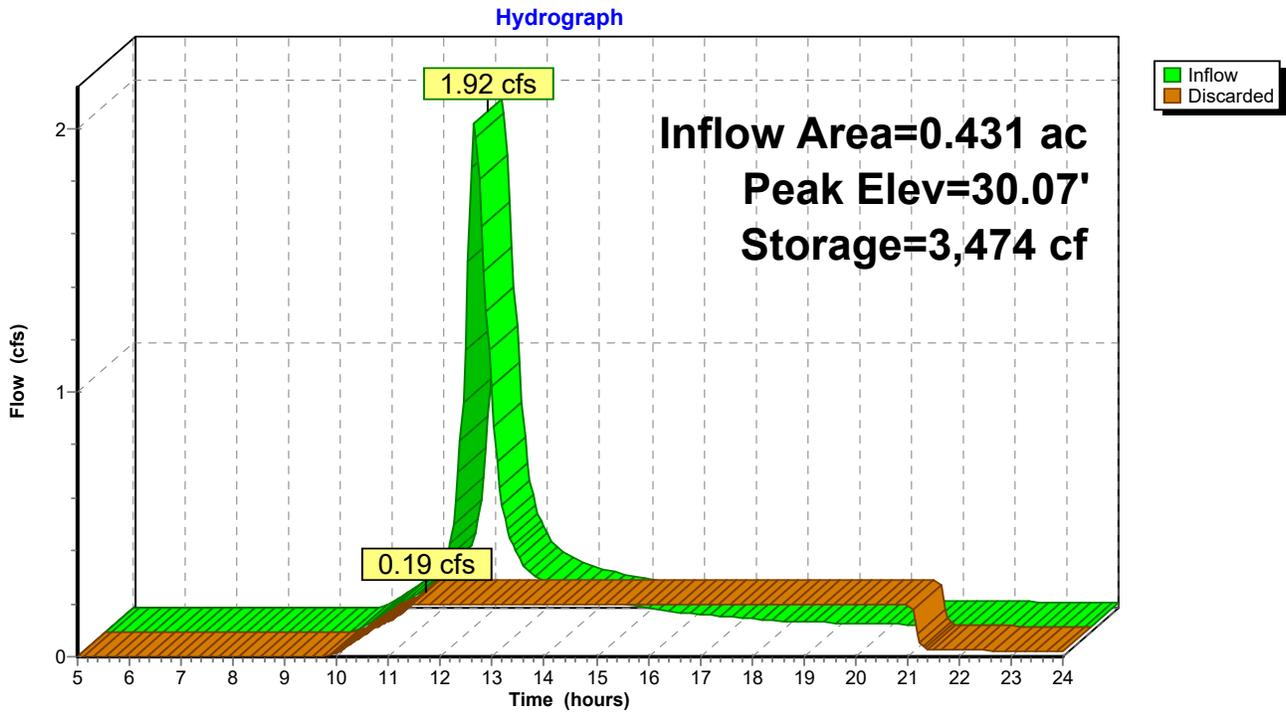
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Pond 3P: SUBSURFACE DETENTION



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Type III 24-hr 50-yr Rainfall=8.53"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: SUBCATCHMENT1 Runoff Area=26,883 sf 8.11% Impervious Runoff Depth>3.71"
Flow Length=490' Tc=34.4 min CN=60 Runoff=1.41 cfs 0.191 af

Subcatchment2S: SUBCATCHMENT2 Runoff Area=9,849 sf 37.64% Impervious Runoff Depth>5.52"
Tc=5.0 min CN=75 Runoff=1.46 cfs 0.104 af

Subcatchment3S: SUBCATCHMENT3 Runoff Area=10,559 sf 56.44% Impervious Runoff Depth>6.36"
Tc=0.0 min CN=82 Runoff=2.02 cfs 0.129 af

Subcatchment4S: SUBCATCHMENT4 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>7.99"
Tc=5.0 min CN=98 Runoff=0.40 cfs 0.031 af

Subcatchment5S: SUBCATCHMENT5 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>7.99"
Tc=5.0 min CN=98 Runoff=0.40 cfs 0.031 af

Subcatchment6S: SUBCATCHMENT6 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>7.99"
Tc=5.0 min CN=98 Runoff=0.40 cfs 0.031 af

Subcatchment7S: SUBCATCHMENT7 Runoff Area=2,050 sf 100.00% Impervious Runoff Depth>7.99"
Tc=5.0 min CN=98 Runoff=0.40 cfs 0.031 af

Subcatchment8S: SUBCATCHMENT 8 Runoff Area=4,442 sf 0.00% Impervious Runoff Depth>3.73"
Tc=10.0 min CN=60 Runoff=0.38 cfs 0.032 af

Reach SP1: SUMMATIONPOINT 1 Inflow=0.38 cfs 0.046 af
Outflow=0.38 cfs 0.046 af

Reach SP2: SUMMATIONPOINT 2 Inflow=1.46 cfs 0.104 af
Outflow=1.46 cfs 0.104 af

Pond 1P: RAIN GARDEN Peak Elev=31.38' Storage=2,042 cf Inflow=3.23 cfs 0.254 af
Discarded=0.02 cfs 0.015 af Primary=2.35 cfs 0.222 af Secondary=0.00 cfs 0.000 af Outflow=2.37 cfs 0.236 af

Pond 2P: INFILTRATION TRENCH Peak Elev=31.00' Storage=3,665 cf Inflow=1.41 cfs 0.191 af
Discarded=0.13 cfs 0.136 af Primary=0.31 cfs 0.015 af Outflow=0.44 cfs 0.150 af

Pond 3P: SUBSURFACE DETENTION Peak Elev=30.85' Storage=4,672 cf Inflow=2.35 cfs 0.222 af
Outflow=0.19 cfs 0.221 af

Total Runoff Area = 1.376 ac Runoff Volume = 0.580 af Average Runoff Depth = 5.06"
66.55% Pervious = 0.916 ac 33.45% Impervious = 0.460 ac

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Type III 24-hr 50-yr Rainfall=8.53"

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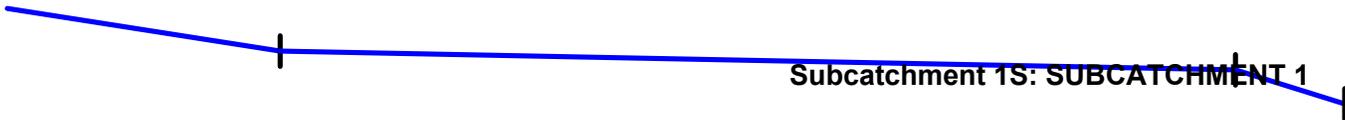
Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 1.41 cfs @ 12.50 hrs, Volume= 0.191 af, Depth> 3.71"
 Routed to Pond 2P : INFILTRATION TRENCH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
16,143	55	Woods, Good, HSG B
8,559	61	>75% Grass cover, Good, HSG B
* 2,181	98	IMPERVIOUS
26,883	60	Weighted Average
24,702		91.89% Pervious Area
2,181		8.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7	100	0.0400	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.70"
16.5	350	0.0050	0.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
34.4	490	Total			



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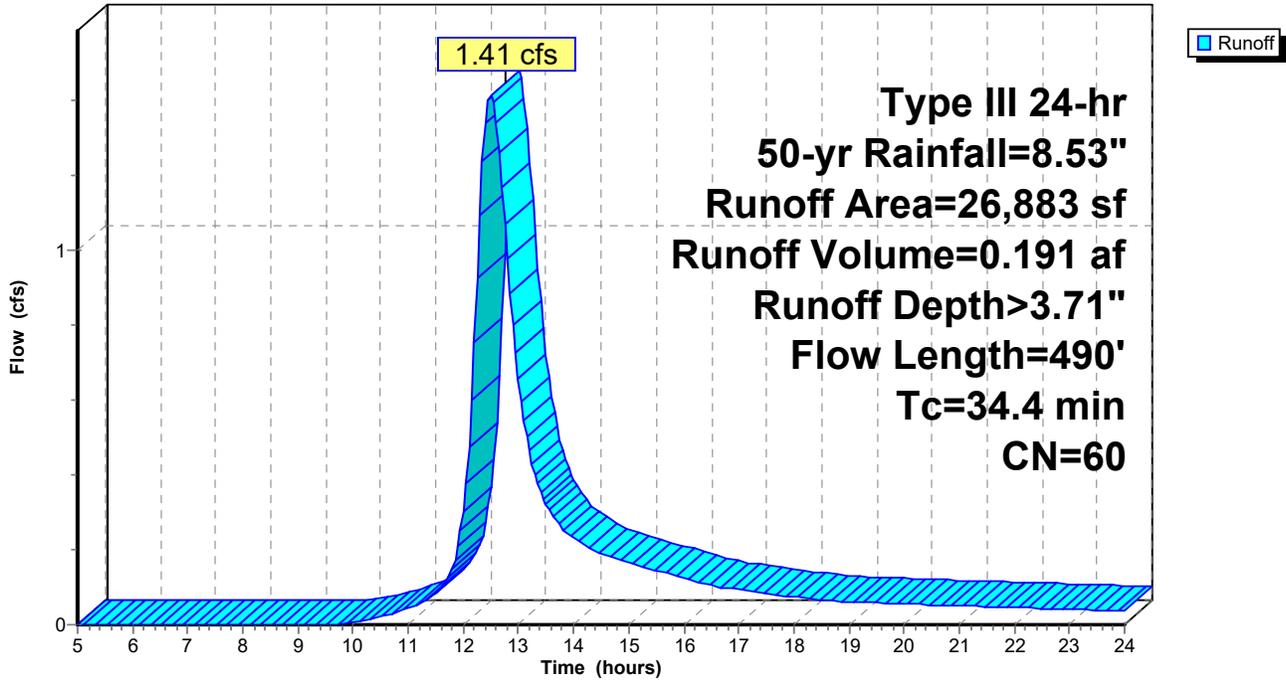
Type III 24-hr 50-yr Rainfall=8.53"

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Subcatchment 1S: SUBCATCHMENT 1

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Summary for Subcatchment 2S: SUBCATCHMENT 2

Runoff = 1.46 cfs @ 12.07 hrs, Volume= 0.104 af, Depth> 5.52"
 Routed to Reach SP2 : SUMMATION POINT 2

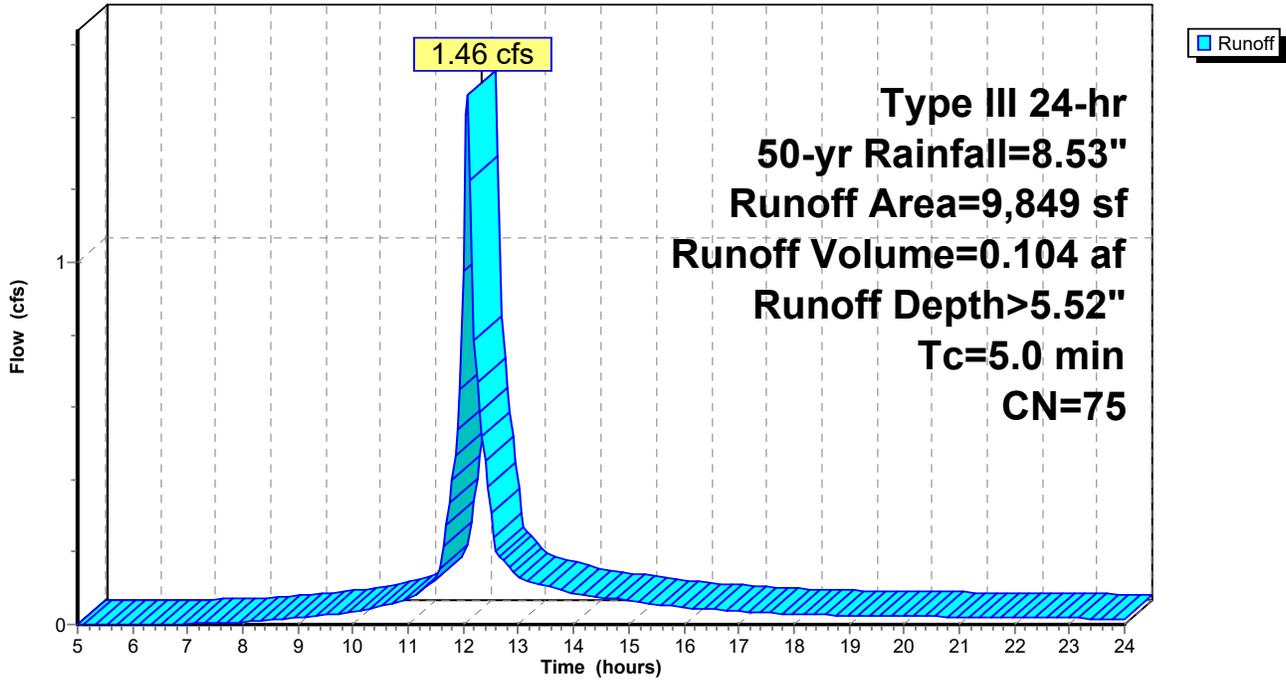
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
6,142	61	>75% Grass cover, Good, HSG B
* 3,707	98	IMPERVIOUS
9,849	75	Weighted Average
6,142		62.36% Pervious Area
3,707		37.64% Impervious Area

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

Subcatchment 2S: SUBCATCHMENT 2

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Summary for Subcatchment 3S: SUBCATCHMNT 3

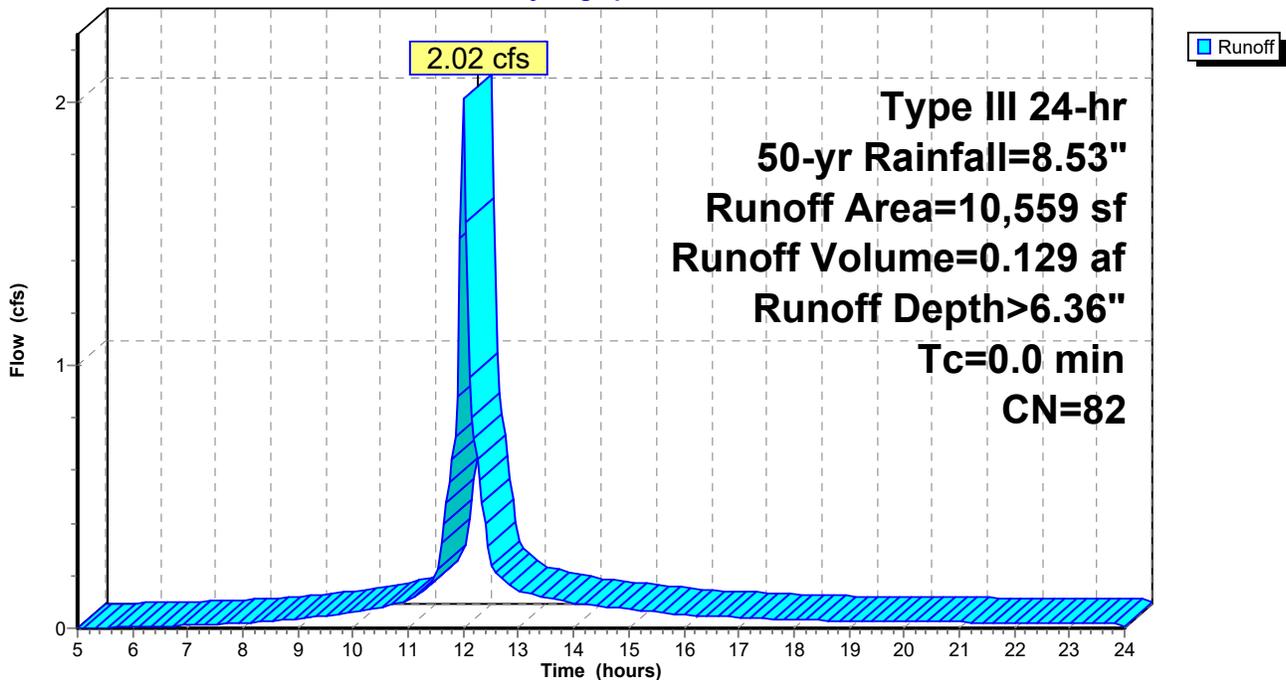
Runoff = 2.02 cfs @ 12.00 hrs, Volume= 0.129 af, Depth> 6.36"
Routed to Pond 1P : RAIN GARDEN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
18	55	Woods, Good, HSG B
4,582	61	>75% Grass cover, Good, HSG B
* 5,959	98	IMPERVIOUS
10,559	82	Weighted Average
4,600		43.56% Pervious Area
5,959		56.44% Impervious Area

Subcatchment 3S: SUBCATCHMNT 3

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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Subcatchment 4S: SUBCATCHMENT 4

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.031 af, Depth> 7.99"
Routed to Pond 1P : RAIN GARDEN

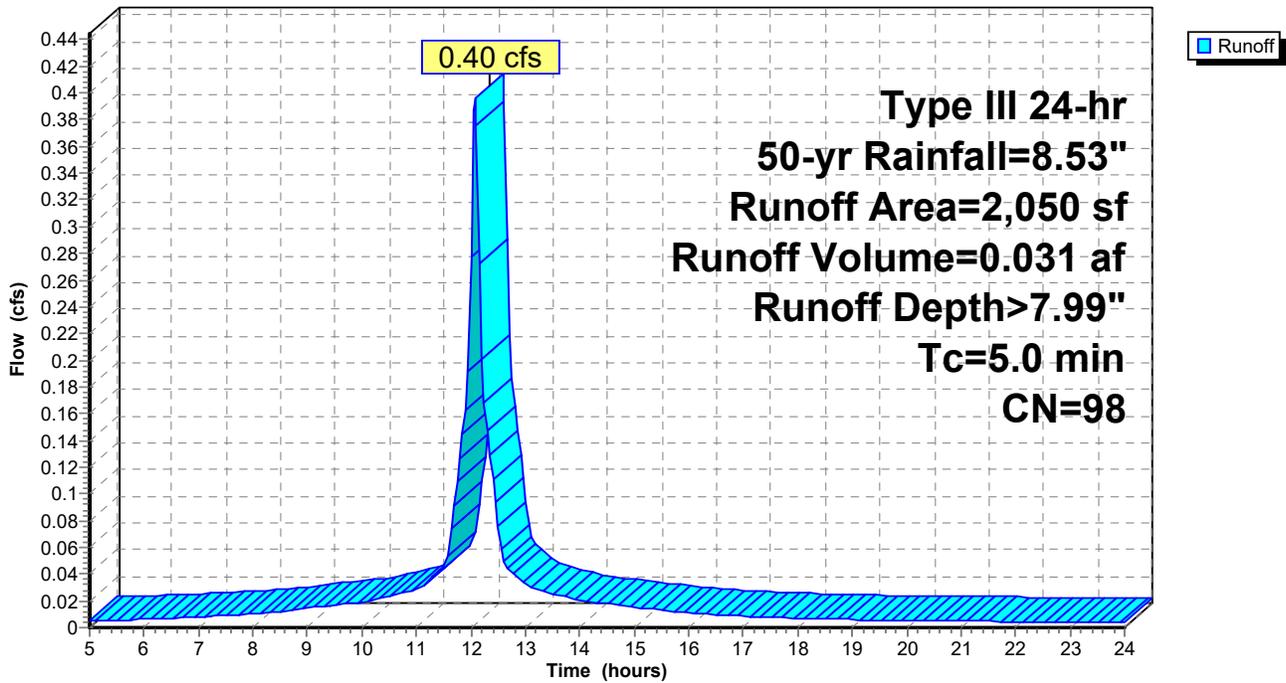
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 4S: SUBCATCHMENT 4

Hydrograph



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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Subcatchment 5S: SUBCATCHMENT 5

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.031 af, Depth> 7.99"
Routed to Pond 1P : RAIN GARDEN

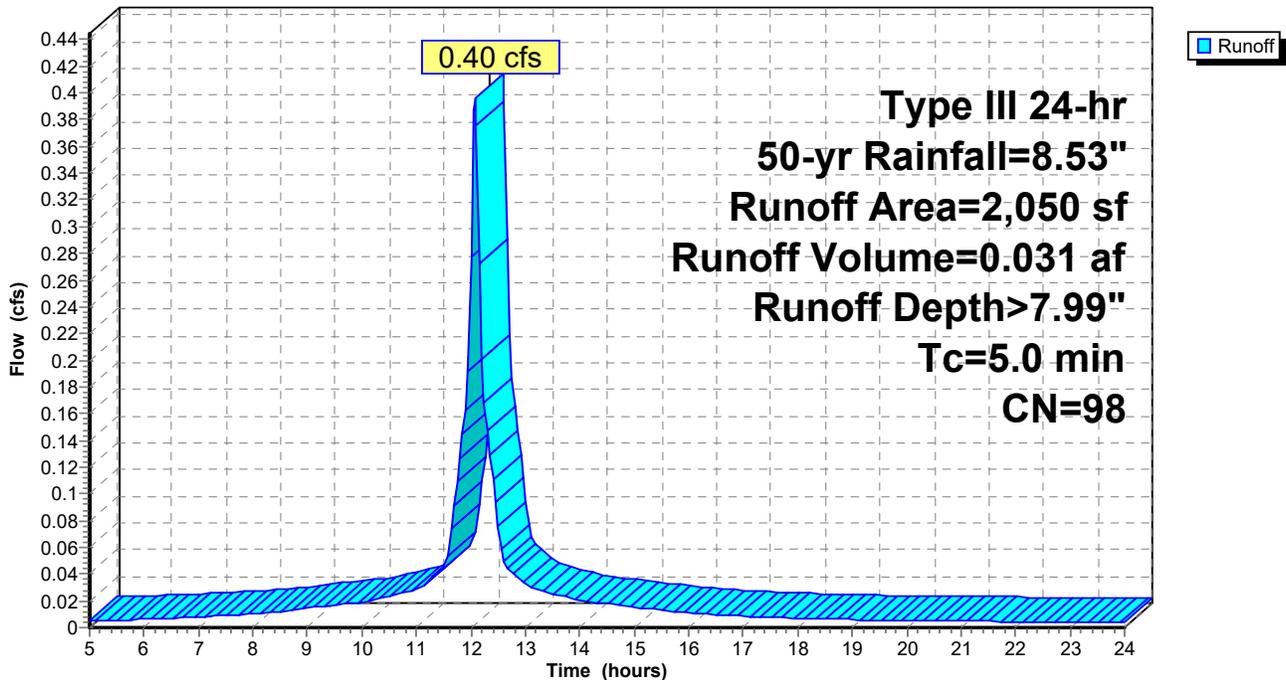
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 5S: SUBCATCHMENT 5

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Summary for Subcatchment 6S: SUBCATCHMENT 6

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.031 af, Depth> 7.99"

Routed to Pond 1P : RAIN GARDEN

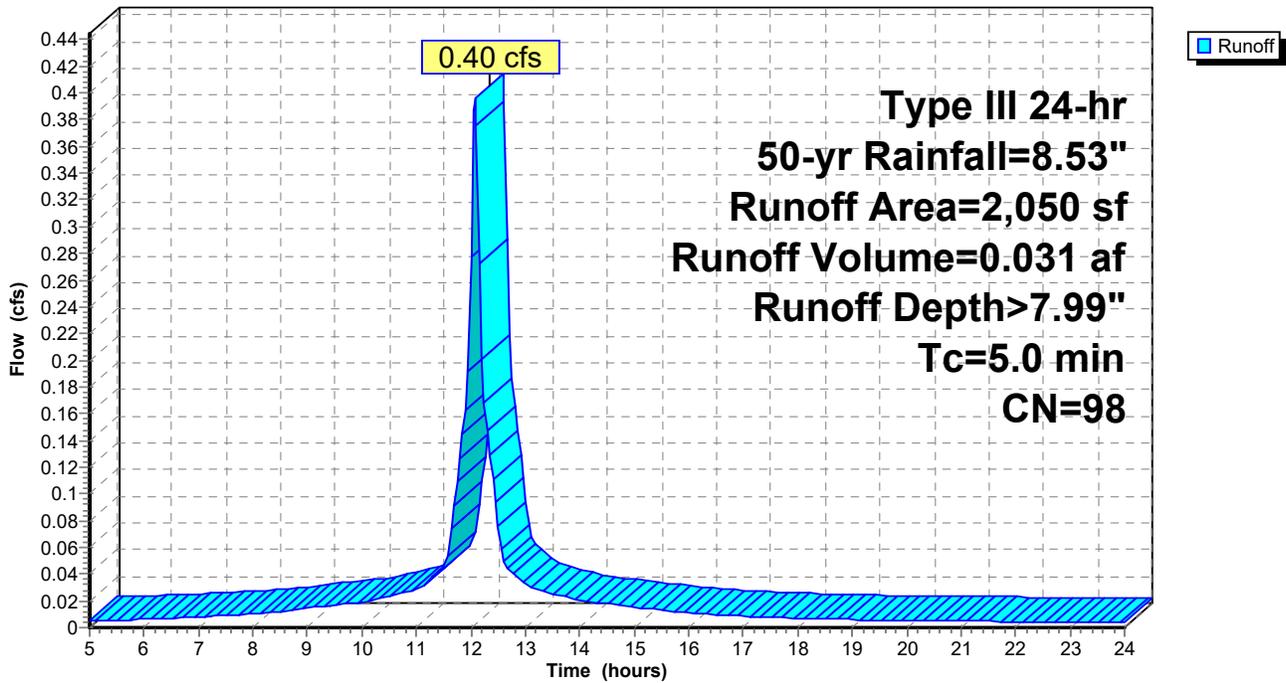
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 6S: SUBCATCHMENT 6

Hydrograph



Post Development

Prepared by Haley Ward

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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Subcatchment 7S: SUBCATCHMENT 7

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.031 af, Depth> 7.99"
Routed to Pond 1P : RAIN GARDEN

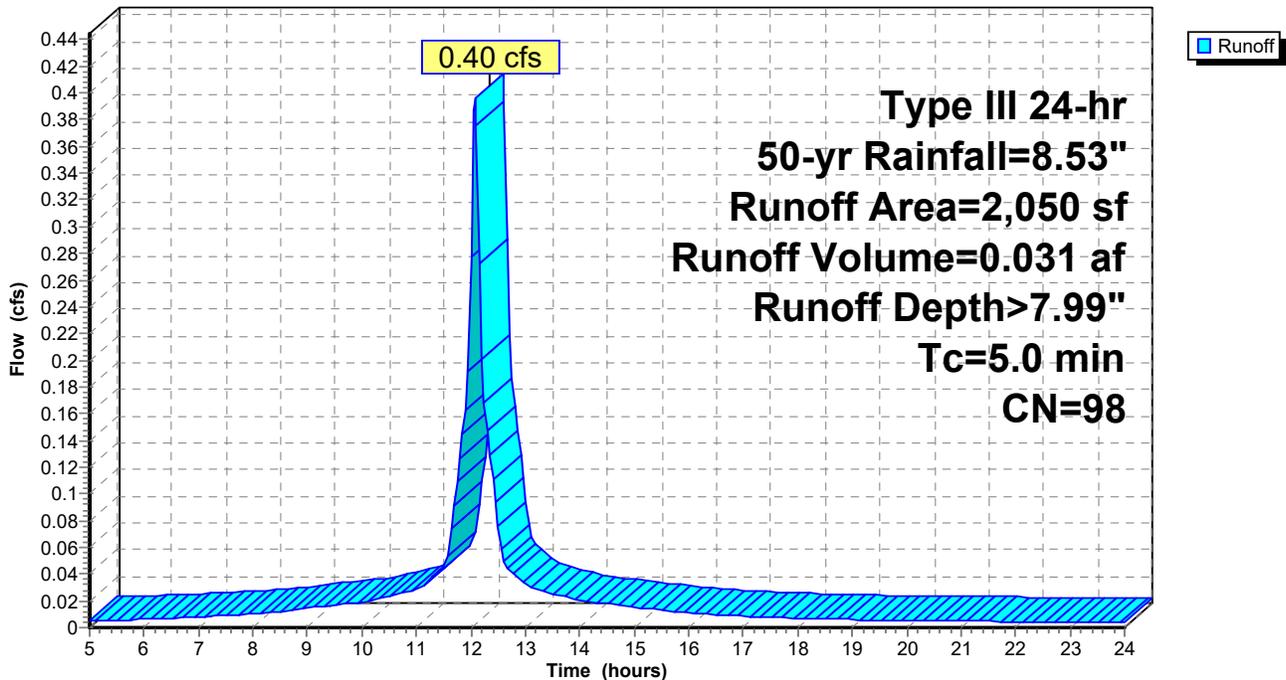
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
* 2,050	98	IMPERVIOUS
2,050		100.00% Impervious Area

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

Subcatchment 7S: SUBCATCHMENT 7

Hydrograph



Post Development

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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Subcatchment 8S: SUBCATCHMENT 8

Runoff = 0.38 cfs @ 12.15 hrs, Volume= 0.032 af, Depth> 3.73"
Routed to Reach SP1 : SUMMATION POINT 1

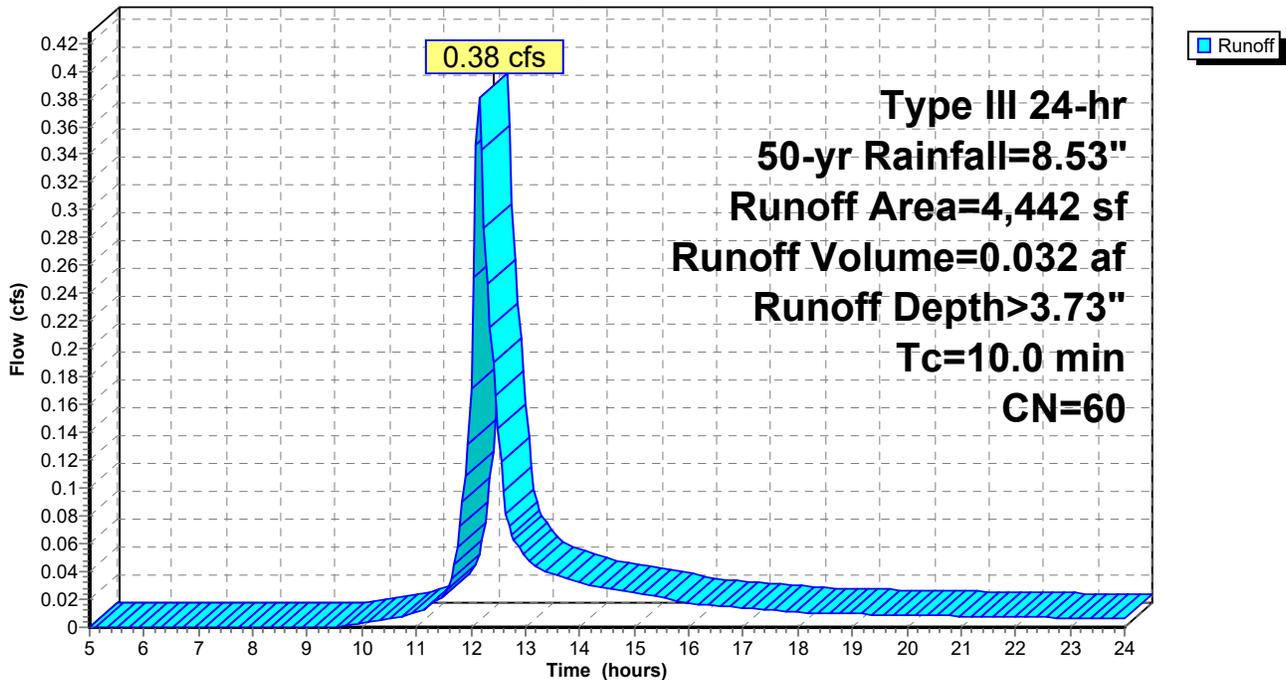
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=8.53"

Area (sf)	CN	Description
679	55	Woods, Good, HSG B
3,763	61	>75% Grass cover, Good, HSG B
4,442	60	Weighted Average
4,442		100.00% Pervious Area

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

Subcatchment 8S: SUBCATCHMENT 8

Hydrograph



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Type III 24-hr 50-yr Rainfall=8.53"

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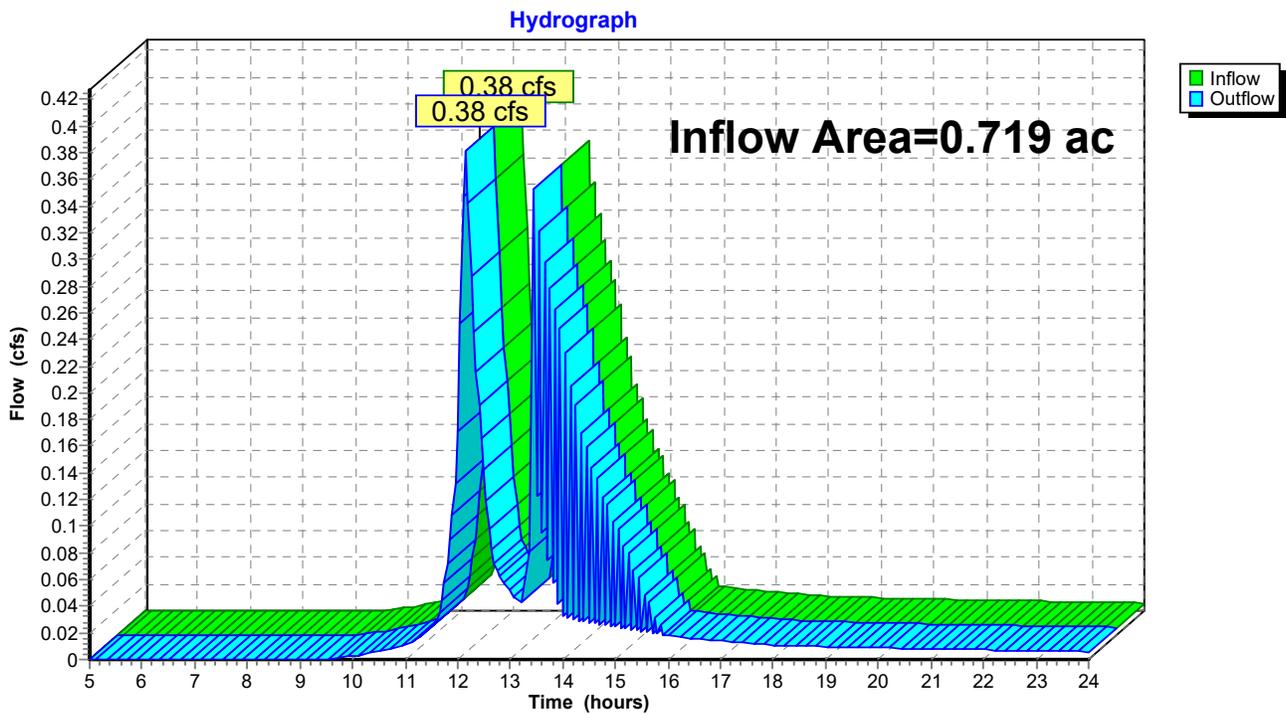
Page 66

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 0.719 ac, 6.96% Impervious, Inflow Depth > 0.77" for 50-yr event
Inflow = 0.38 cfs @ 12.15 hrs, Volume= 0.046 af
Outflow = 0.38 cfs @ 12.15 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP1: SUMMATION POINT 1



Post Development

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Type III 24-hr 50-yr Rainfall=8.53"

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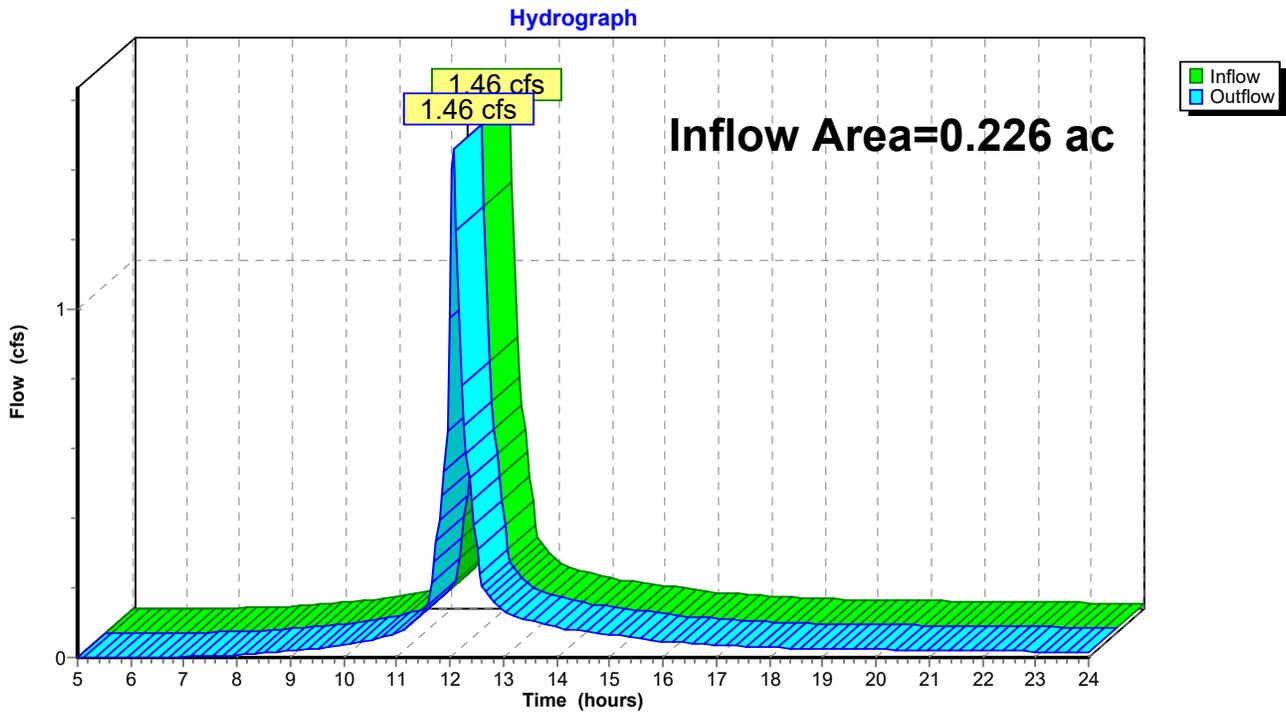
Page 67

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 0.226 ac, 37.64% Impervious, Inflow Depth > 5.52" for 50-yr event
Inflow = 1.46 cfs @ 12.07 hrs, Volume= 0.104 af
Outflow = 1.46 cfs @ 12.07 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

Reach SP2: SUMMATION POINT 2



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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Pond 1P: RAIN GARDEN

Inflow Area = 0.431 ac, 75.48% Impervious, Inflow Depth > 7.08" for 50-yr event
 Inflow = 3.23 cfs @ 12.02 hrs, Volume= 0.254 af
 Outflow = 2.37 cfs @ 12.11 hrs, Volume= 0.236 af, Atten= 26%, Lag= 5.4 min
 Discarded = 0.02 cfs @ 12.11 hrs, Volume= 0.015 af
 Primary = 2.35 cfs @ 12.11 hrs, Volume= 0.222 af
 Routed to Pond 3P : SUBSURFACE DETENTION
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 31.38' @ 12.11 hrs Surf.Area= 1,592 sf Storage= 2,042 cf

Plug-Flow detention time= 71.7 min calculated for 0.236 af (93% of inflow)
 Center-of-Mass det. time= 35.1 min (809.9 - 774.8)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	5,850 cf	Custom Stage Data (Prismatic) Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	1,200	0	0
31.00	1,500	1,350	1,350
33.50	2,100	4,500	5,850

Device	Routing	Invert	Outlet Devices
#1	Discarded	30.00'	2.400 in/hr Exfiltration over Surface area above 30.00' Excluded Surface area = 1,200 sf
#2	Primary	30.00'	12.0" Round Culvert L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 30.00' / 29.50' S= 0.0250 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	30.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	32.80'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Secondary	32.90'	5.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

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Type III 24-hr 50-yr Rainfall=8.53"

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Discarded OutFlow Max=0.02 cfs @ 12.11 hrs HW=31.38' (Free Discharge)

↳ 1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=2.33 cfs @ 12.11 hrs HW=31.38' (Free Discharge)

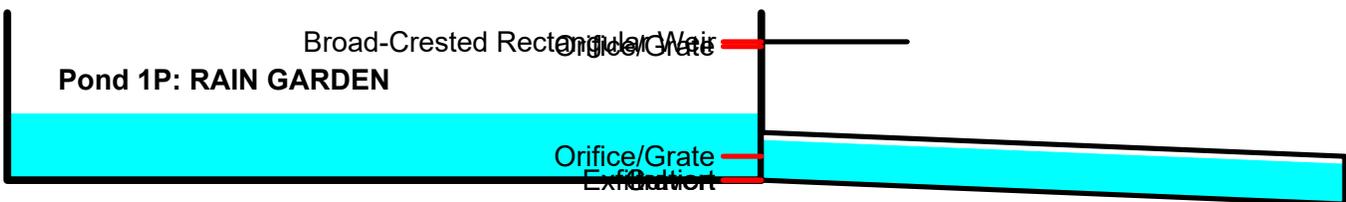
↳ 2=Culvert (Passes 2.33 cfs of 2.80 cfs potential flow)

↳ 3=Orifice/Grate (Orifice Controls 2.33 cfs @ 3.19 fps)

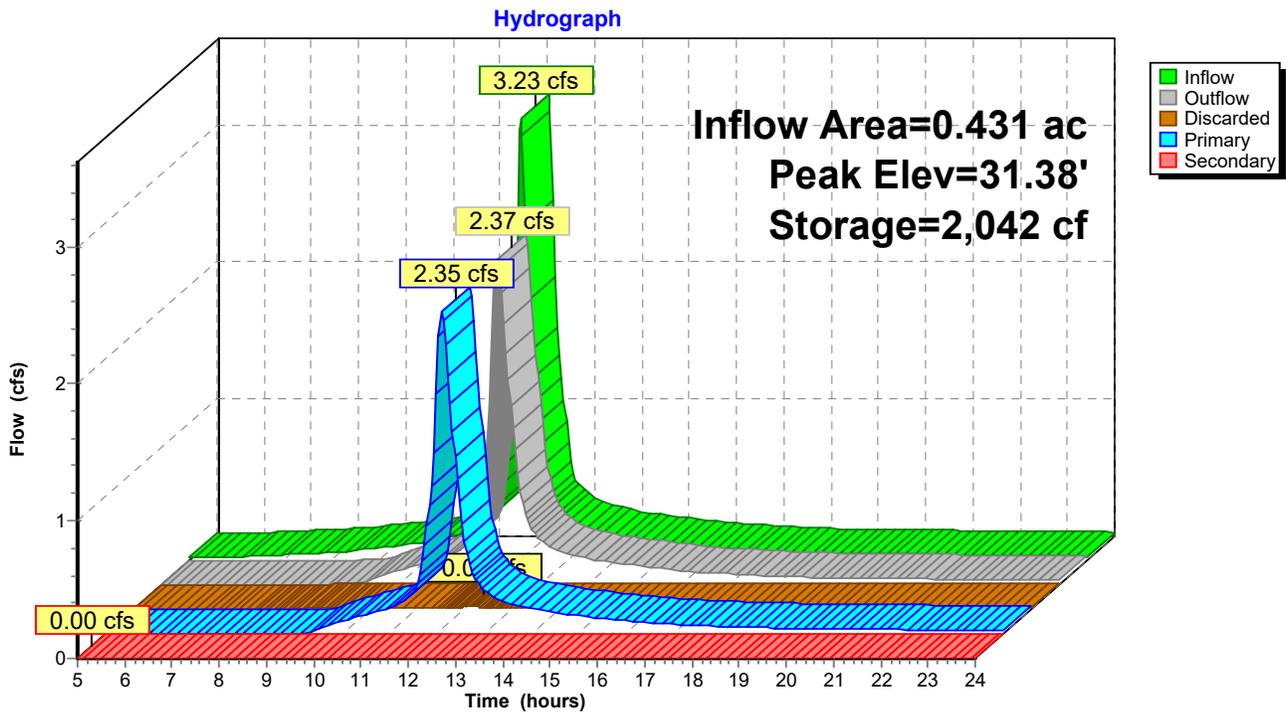
↳ 4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=30.00' (Free Discharge)

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



Pond 1P: RAIN GARDEN



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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Pond 2P: INFILTRATION TRENCH

Inflow Area = 0.617 ac, 8.11% Impervious, Inflow Depth > 3.71" for 50-yr event
 Inflow = 1.41 cfs @ 12.50 hrs, Volume= 0.191 af
 Outflow = 0.44 cfs @ 13.45 hrs, Volume= 0.150 af, Atten= 69%, Lag= 57.0 min
 Discarded = 0.13 cfs @ 11.80 hrs, Volume= 0.136 af
 Primary = 0.31 cfs @ 13.45 hrs, Volume= 0.015 af
 Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 31.00' @ 13.45 hrs Surf.Area= 2,300 sf Storage= 3,665 cf

Plug-Flow detention time= 249.6 min calculated for 0.150 af (79% of inflow)
 Center-of-Mass det. time= 170.8 min (1,035.2 - 864.4)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	2,157 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 6,900 cf Overall - 1,508 cf Embedded = 5,392 cf x 40.0% Voids
#2	28.50'	754 cf	24.0" Round Pipe Storage Inside #1 L= 240.0'
#3	28.50'	754 cf	24.0" Round Pipe Storage Inside #1 L= 240.0'
		3,665 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	2,300	0	0
31.00	2,300	6,900	6,900

Device	Routing	Invert	Outlet Devices
#1	Discarded	28.00'	2.400 in/hr Exfiltration over Surface area
#2	Primary	31.00'	320.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.13 cfs @ 11.80 hrs HW=28.03' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.09 cfs @ 13.45 hrs HW=31.00' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir**(Weir Controls 0.09 cfs @ 0.11 fps)



Post Development

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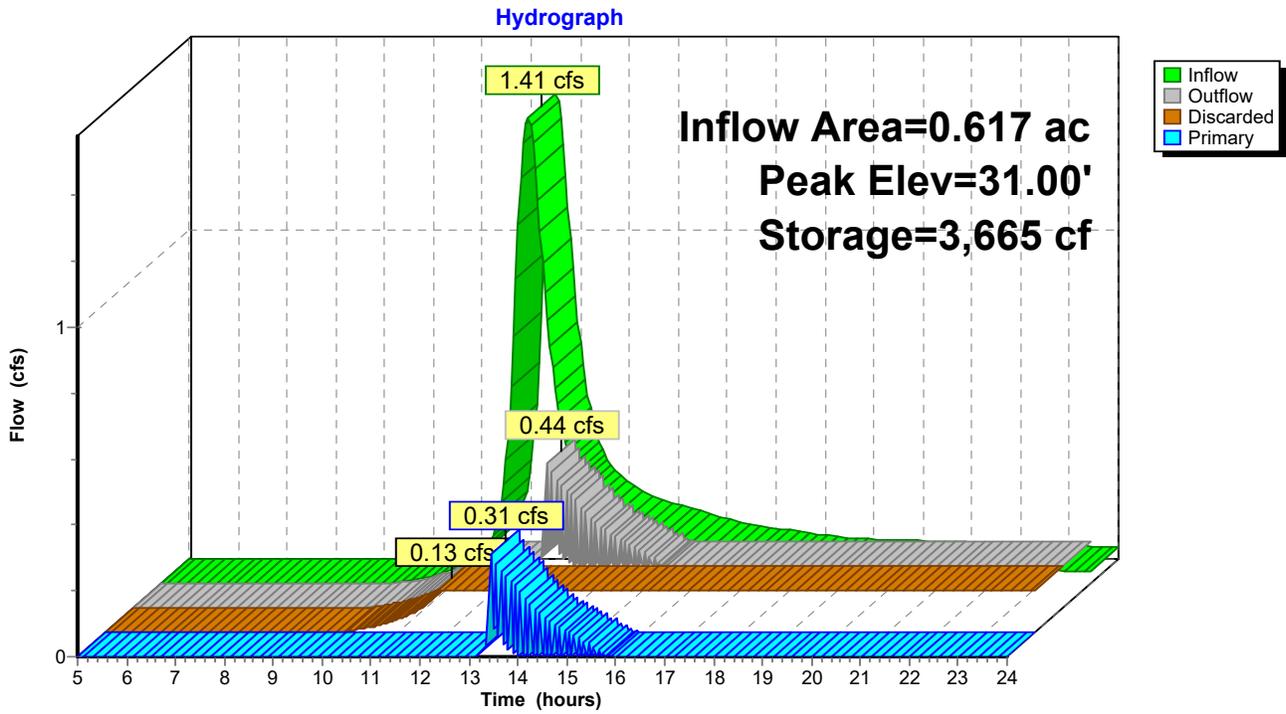
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Pond 2P: INFILTRATION TRENCH



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Type III 24-hr 50-yr Rainfall=8.53"

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Summary for Pond 3P: SUBSURFACE DETENTION

Inflow Area = 0.431 ac, 75.48% Impervious, Inflow Depth > 6.17" for 50-yr event
 Inflow = 2.35 cfs @ 12.11 hrs, Volume= 0.222 af
 Outflow = 0.19 cfs @ 11.15 hrs, Volume= 0.221 af, Atten= 92%, Lag= 0.0 min
 Discarded = 0.19 cfs @ 11.15 hrs, Volume= 0.221 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 30.85' @ 13.88 hrs Surf.Area= 3,500 sf Storage= 4,672 cf

Plug-Flow detention time= 219.9 min calculated for 0.221 af (100% of inflow)
 Center-of-Mass det. time= 219.5 min (1,021.2 - 801.7)

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	3,748 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 10,500 cf Overall - 1,131 cf Embedded = 9,369 cf x 40.0% Voids
#2	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
#3	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
#4	28.50'	377 cf	24.0" Round Pipe Storage Inside #1 L= 120.0'
		4,879 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,500	0	0
31.00	3,500	10,500	10,500

Device	Routing	Invert	Outlet Devices
#1	Discarded	28.00'	2.400 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.19 cfs @ 11.15 hrs HW=28.03' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.19 cfs)

Pond 3P: SUBSURFACE DETENTION

Exfiltration

Post Development

Prepared by Haley Ward

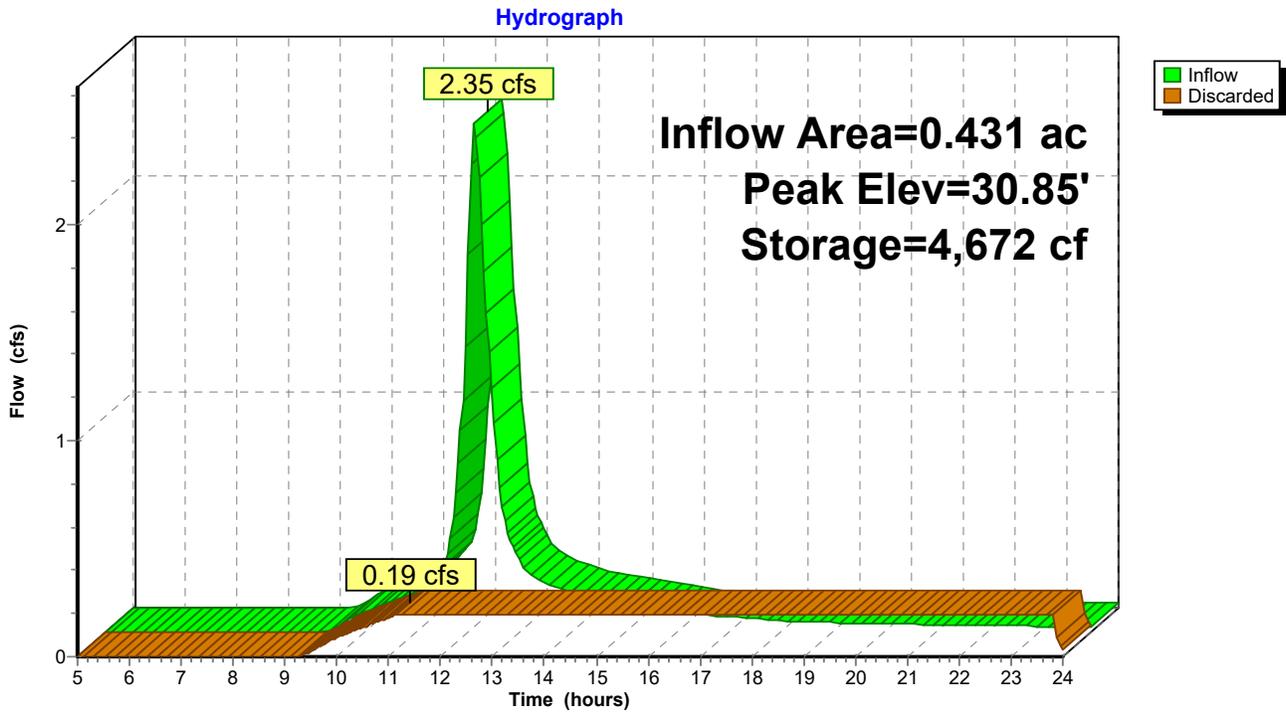
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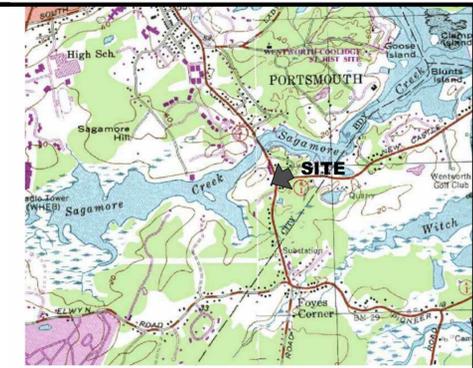
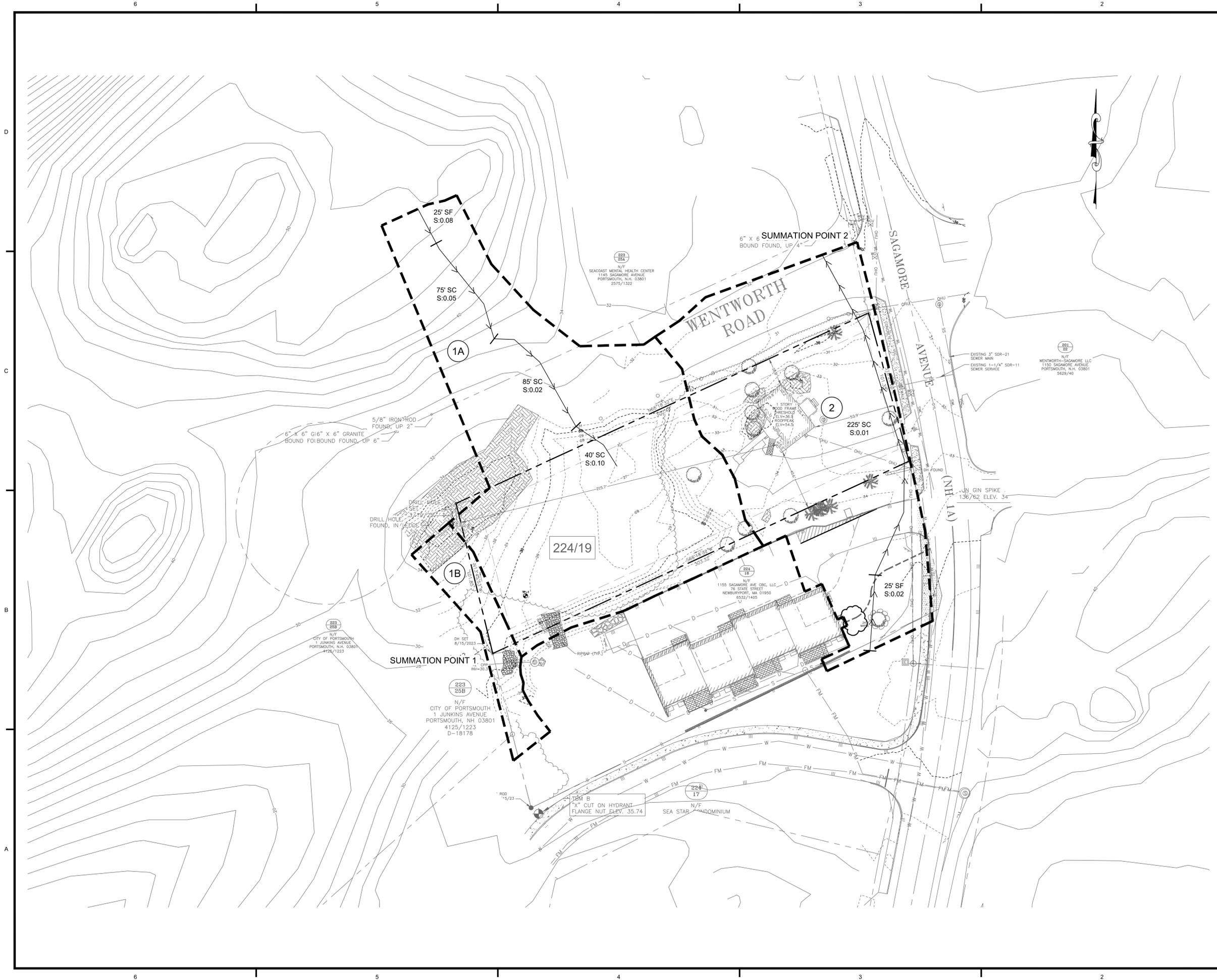
Type III 24-hr 50-yr Rainfall=8.53"

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Pond 3P: SUBSURFACE DETENTION

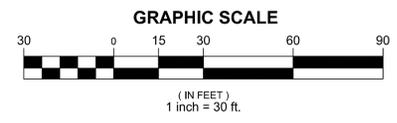




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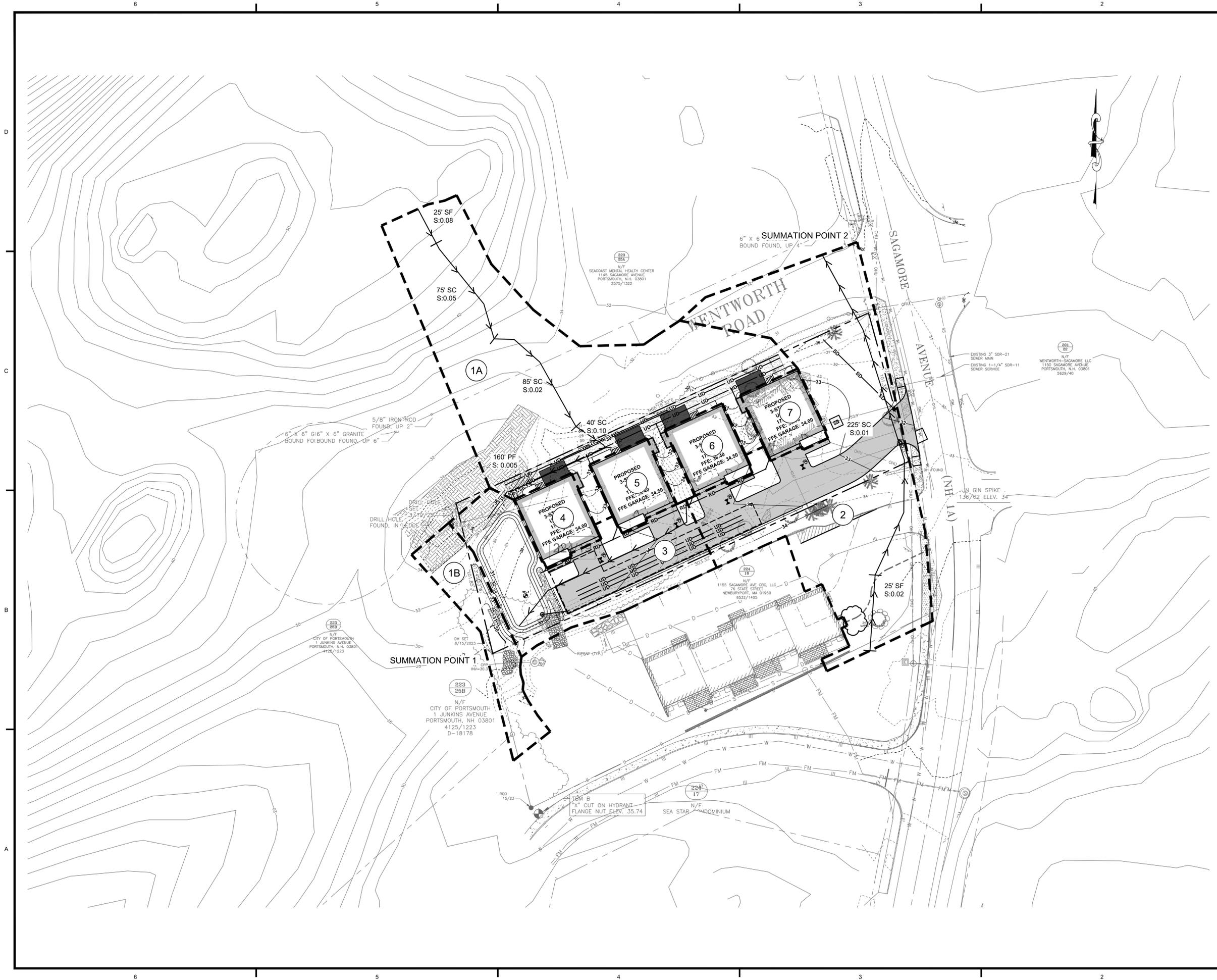
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	WATERSHED BOUNDARY LINE
	WATERSHED DESIGNATION
	TIME OF CONCENTRATION FLOW PATH
	FLOW PATH DESCRIPTION
	SHEET FLOW
	SHALLOW CONCENTRATED FLOW
	CHANNEL FLOW
	PIPE FLOW



1	2025.01.16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
REV.	DATE	DESCRIPTION	BY	CHK.
DRAWING ISSUE STATUS				
ISSUED FOR PERMITTING				
		HALEY WARD		
		200 Griffin Rd., Unit 14 Portsmouth, New Hampshire 03801 603.430.9282		
PROJECT				
1151 SAGAMORE AVENUE CBC, LLC 1151 SAGAMORE AVE., PORTSMOUTH, NH				
TITLE				
PRE-DEVELOPMENT HYDROLOGY PLAN				
	DATE	2025.12.22	SCALE	1"=30'
	DRAWN BY	BLO/PJM	DESIGNED BY	BLO/PJM
	CHECKED BY	DJO	PROJECT No.	5010314.002
	DRAWING No.	C701	REV.	1

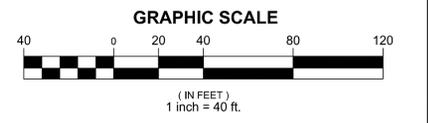
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POST LEGEND:

	PROPERTY LINE
	WATERSHED BOUNDARY LINE
	WATERSHED DESIGNATION
	TIME OF CONCENTRATION FLOW PATH
	FLOW PATH DESCRIPTION
	SHEET FLOW
	SHALLOW CONCENTRATED FLOW
	CHANNEL FLOW
	PIPE FLOW



1	2025.01.16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING

200 Griffin Rd., Unit 14
 Portsmouth, New Hampshire 03801
 603.430.9282

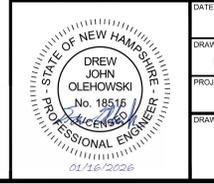
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 1151 SAGAMORE AVE., PORTSMOUTH, NH

TITLE

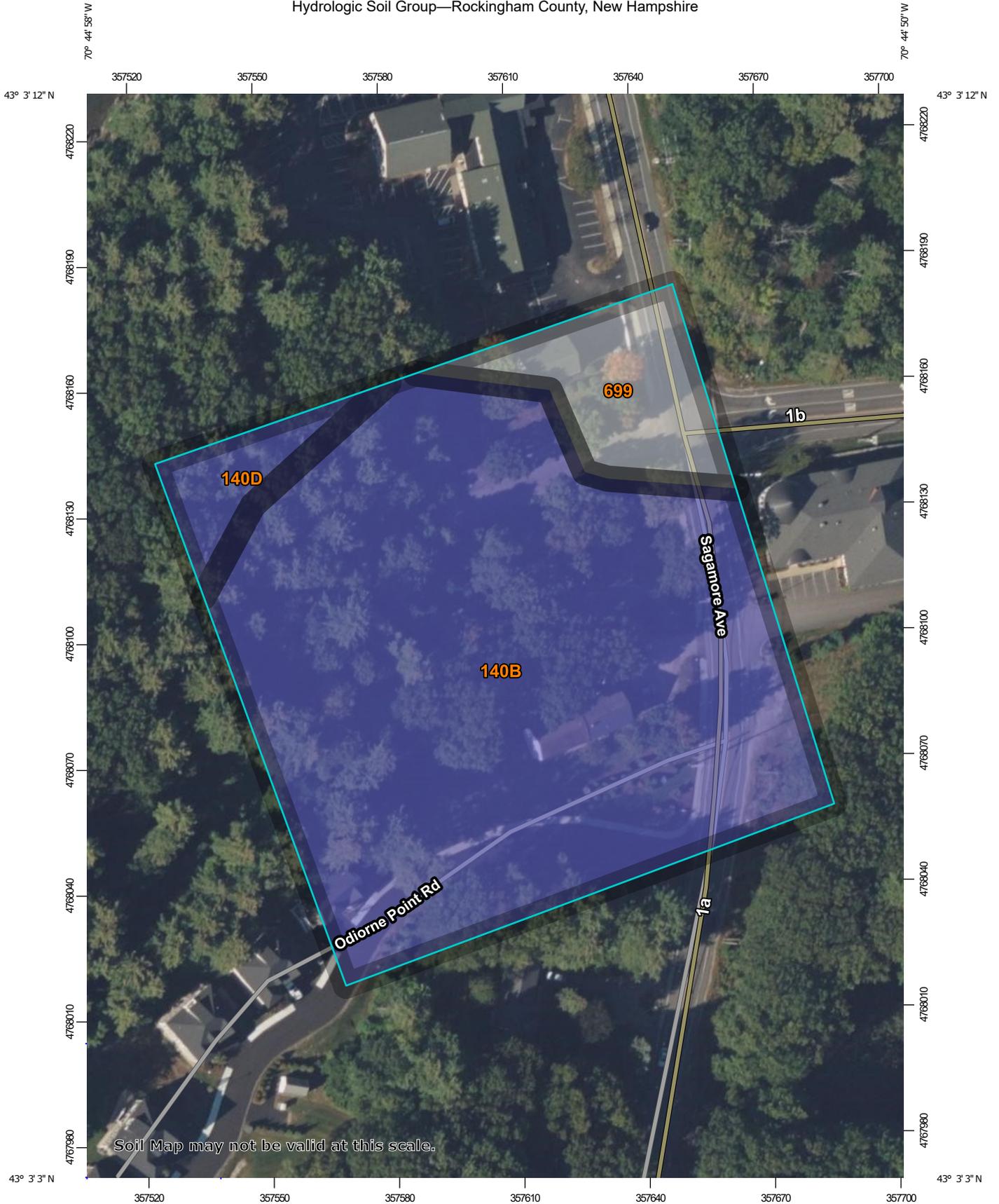
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CHECKED BY	DJO	PROJECT No.	5010314.002
DRAWING No.	C702	REV.	1

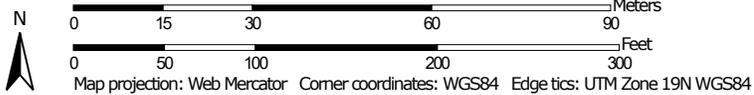


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Hydrologic Soil Group—Rockingham County, New Hampshire



Map Scale: 1:1,260 if printed on A portrait (8.5" x 11") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Rockingham County, New Hampshire
 Survey Area Data: Version 28, Sep 9, 2025

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	B	3.5	84.8%
140D	Chatfield-Hollis-Canton complex, 15 to 35 percent slopes, rocky	B	0.2	4.9%
699	Urban land		0.4	10.3%
Totals for Area of Interest			4.2	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

From the test pit observations taken 7/16/2025 and the Test Pit log created from this reading it is determined that the Soil Permeability Class for the Receiving Layer (0-16") to be Moderate to Moderately Rapid. This permeability Class equates to a permeability rate of 6 cm/hr. This is converted to 26 MPI.

SOIL DESCRIPTION

Soil type:		Map Unit Symbol:		File No:	
Area:		Date:		Described by:	
Location				Photo Number:	
Native Veg.				Climate:	
Parent material					
Relief				% Slope	Aspect:
Elevation		Drainage		Gr. water	

Additional notes:

	Soil Profile / Landscape Sketch

Horizon	Depth Inches	Color Moist	Color Redox Features	% Redox	Texture	Structure	Consistence Moist	Boun-dary	Roots	% Frags
B	0-10"	10YR 4/4	N/A	6	Silt & loam	Friable	Ledge		Yes	
	12"-18"	10YR 4/6	N/A		Sandy loam	Friable	Firming		No	
	18"-41"	10YR 4/6	18 = Est HWT		Silt & loam	Angular Blocky	Firm		↓	
Ledge	41"	Restrictive ledge	10YR 5/6 2.5 6/2			↓ Platy				

TABLE 17A
Visual indicators of permeability: structural characteristics of soil

<i>Permeability class (Table 15)</i>	<i>Structure, type and class (Sec 73) (1)</i>	<i>Structure, grade and consistency (Secs 72 + 80) (2)</i>	<i>Relationship of horizontal and vertical axes, overlap, cleavage, and its direction (3)</i>	<i>Porosity channels and cracks (4)</i>
Very slow permeability	<p>Massive</p> <p>Irregular blocky; often assuming a columnar structure</p> <p>Structureless</p>	<p>Very strong</p> <p>Clods are very strong and cannot be broken by hand. More force is required to break the blocks vertically than horizontally. Horizontal breakage is usually along the block faces and in some instances the small irregular angular blocks can be flaked off horizontally.</p> <p>It is usually difficult to break into the mass, but once broken in, the small indurated lumps pulverize easily.</p>	<p>Where the irregular blocky structure dominates, the irregular fragments are very firmly developed with a longer horizontal than vertical axis and with sharp angles. These are meshed shingle-fashion with about 50 percent horizontal overlap. Under proper moisture conditions, the medium to coarse irregular angular blocks break along definite cleavage to fine irregular, angular blocky structure, the arrangement remaining the same regardless of size.</p>	<p>Without visible pores.</p> <p>The individual blocks have no visible pores, but some tortuous vertical channels that seem to follow block faces are discernible, usually at 2- to 5-cm intervals which seldom extend more than 5-8 cm without a horizontal jog.</p>
Slow permeability	<p>Fine to medium irregular blocky</p> <p>Usually platy, sometimes structureless</p>	<p>More force is required to break the blocks along the vertical than the horizontal axis. The broken faces tend to assume a saw-toothed appearance.</p> <p>Plates broken horizontally fracture along straight smooth lines, the laminated layers seeming to be made of small flattish "chips" that can be easily removed by tweezers.</p>	<p>The irregular angular blocks have sharp angles and the horizontal axes are longer than the vertical. The blocks are generally meshed shingle-fashion with about 40 percent horizontal overlap. Horizontal bedding can be easily detected in "chip" form, generally lying in shingle-fashion with horizontal overlap of 40-50 percent or more. Sometimes the thin, laminated layers are continuous.</p>	<p>There are very few small pores discernible. The apparent vertical cracks which follow the block surfaces seldom extend more than a few cm before jogs of 2-5 cm appear.</p> <p>Only a few very fine vertical pores are visible. Flow of water follows apparently tortuous lines around the main chips.</p>
Moderately slow permeability	Medium to fine irregular blocky, fragmental	The blocks (clods) and fragments are less firm and stable than those of the slower permeability classes. They can be more easily broken along the vertical axes.	The angle of the blocks and fragments is not sharp and often very slightly rounded. The horizontal axis is only slightly longer than the vertical. The structural fragments overlap 20-25 percent. If the overlap is oblique, the size of fragments may be larger and the overlap more than 25 percent.	Pores are fine but moderately numerous. The oblique overlap is indicative of freer air and water movement. Root penetration is noticeable.
Moderate permeability	Fine to medium subangular blocky (nut-like), partially rounded, some obtuse angles	Cohesion of soil materials is moderate and clods are easily broken by hand, but seldom fractured unless broken individually.	The clods or blocks overlap only slightly and many vertical fractures are almost straight. Cleavage generally occurs along the faces of the nutforn aggregates.	Pores are medium to fine and numerous.
Moderately rapid permeability	Medium subangular blocky (nutforn) coarse granular or crumb structure	The structural aggregates are not firmly developed and the cohesion of soil material is moderately weak.	Vertical cleavage is nearly always along aggregate faces and follows approximately straight vertical or oblique lines, with only occasional slight overlap of structural aggregates.	Pores in the aggregate are large and numerous.
Rapid permeability	Crumb structure (sometimes ranging toward a single-grain condition)	Consistency ranges from slightly plastic when wet to friable or crumbly when dry.		Pore space is large.
Very rapid permeability	Single-grain structure	Consistency ranges from non-plastic when wet to incoherent when moist or dry.		

TABLE 17 B
Visual Indicators of permeability: texture, physical behaviour and colour of soil

<i>Permeability class (Table 15)</i>	<i>Texture and profile</i>	<i>Physical behaviour</i>	<i>Colour and mottling</i>
Very slow permeability	Claypans, heavy clay, or in presence of very slowly permeable substratum	Soil cracks severely on drying with exception of hardpan or indurated layers which do not crack or fracture.	Generally mottled.
	Hardpan as distinguished from claypan	The hardpan layers associated with this class often consist of highly indurated layers of sand or sand and gravel. These usually give out a ringing sound when struck with a spade.	High degree of mottling.
Slow permeability	Clay or silty clay, claypans, moderately indurated layers	Shrinkage and cracking are less pronounced than in the very slowly permeable class.	Mottling is moderately strong.
	Silt, "siltpan"		Moderately strong mottling and greyish colour are indications of this type of structure.
Moderately slow permeability	Moderately fine-textured horizons, showing a small amount of granulation or a slight dispersion of particles	Shrinkage is usually not very pronounced and cracks are neither large nor numerous.	Mottling is moderate, but the colour is brighter than for the slow permeability class.
Moderate permeability	Moderately fine textures, slightly plastic when wet and moderately hard when dry		Mottling is generally slight.
Moderately rapid permeability	Moderately fine to medium-textured soils		Occasional mottling. Colour is generally moderately bright yellow.
Rapid permeability	Medium or moderately coarse-textured soils		There are no mottlings unless water-table is high. Colour is generally very bright. Organic matter content is usually moderate or low.
Very rapid permeability	Coarse-textured or gravelly soils		Colour is bright unless the water-table is high.

TABLE 15
Soil permeability classes for agriculture and conservation

Soil permeability classes	Permeability rates ¹	
	cm/hour	cm/day
Very slow	Less than 0.13	Less than 3
Slow	0.13 - 0.3	3 - 12
Moderately slow	0.5 - 2.0	12 - 48
Moderate	2.0 - 6.3	48 - 151
Moderately rapid	6.3 - 12.7	151 - 305
Rapid	12.7 - 25	305 - 600
Very rapid	More than 25	More than 600

		Conversion Table: cm/h to min/inch				
		cm/hr	min/inch		cm/hr	min/inch
60 MPI Slowest Allowable Design		1	152.40		41	3.72
		2	76.20		42	3.63
		3	50.80		43	3.54
		4	38.10		44	3.46
		5	30.48		45	3.39
		6	25.40		46	3.31
		7	21.77		47	3.24
		8	19.05		48	3.18
		9	16.93		49	3.11
		10	15.24		50	3.05
		11	13.85		51	2.99
		12	12.70		52	2.93
		13	11.72		53	2.88
		14	10.89		54	2.82
		15	10.16		55	2.77
		16	9.53		56	2.72
		17	8.96		57	2.67
		18	8.47		58	2.63
		19	8.02		59	2.58
		20	7.62		60	2.54
		21	7.26		61	2.50
		22	6.93		62	2.46
		23	6.63		63	2.42
		24	6.35		64	2.38
		25	6.10		65	2.34

National Flood Hazard Layer FIRMMette



70°45'12"W 43°3'21"N



1:6,000

70°44'35"W 43°2'54"N

Basemap Imagery Source: USGS National Map 2023

Legend

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

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| GENERAL STRUCTURES | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance |
| | | 17.5 Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
| | | The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location. |



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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **9/27/2023 at 1:41 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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



INSPECTION & LONG-TERM MAINTENANCE PLAN FOR PROPOSED RESIDENTIAL DEVELOPMENT

**1151 SAGAMORE AVENUE
PORTSMOUTH, NH**

Introduction

The intent of this plan is to provide 1151 Sagamore Avenue CBC, LLC (herein referred to as “owner”) with a list of procedures that document the inspection and maintenance requirements of the stormwater management system for this development. Specifically, the Rain Garden and associated structures on the project site (collectively referred to as the “Stormwater Management System”). The contact information for the owner shall be kept current, and if there is a change of ownership of the property this plan must be transferred to the new owner.

The following inspection and maintenance program is necessary to keep the stormwater management system functioning properly and will help in maintaining a high quality of stormwater runoff to minimize potential environmental impacts. By following the enclosed procedures, the owner will be able to maintain the functional design of the stormwater management system and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Annual Report

The owner shall prepare an annual Inspection & Maintenance Report. The report shall include a summary of the system’s maintenance and repair by transmission of the Inspection & Maintenance Log and other information as required. A copy of the report shall be delivered annually to the City of Portsmouth Public Works Department, as required.

Inspection & Maintenance Checklist/Log

The following pages contain the Stormwater Management System Inspection & Maintenance Requirements and a blank copy of the Stormwater Management System Inspection & Maintenance Log. These forms are provided to the owner as a guideline for performing the inspection and maintenance of the Stormwater Management System. This is a guideline and should be periodically reviewed for conformance with current practice and standards.



Stormwater Management System Components

The Stormwater Management System is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, the design includes the following elements:

Non-Structural BMPs

Non-Structural best management practices (BMP's) include temporary and permanent measures that typically require less labor and capital inputs and are intended to provide protection against erosion of soils. Examples of non-structural BMP's on this project include but are not limited to:

- Temporary and Permanent mulching
- Temporary and Permanent grass cover
- Trees
- Shrubs and ground covers
- Miscellaneous landscape plantings
- Dust control
- Tree protection
- Topsoiling
- Sediment barriers
- Stabilized construction entrance
- Vegetated buffer area

Structural BMPs

Structural BMPs are more labor and capital-intensive structures or installations that require more specialized personnel to install. Examples on this project include but are not limited to:

- Rain Garden
- Outlet Control Structures and Storm Drains

Inspection and Maintenance Requirements

The following summarizes the inspection and maintenance requirements for the various BMPs that may be found on this project.

- 1. Grassed areas (until established):** After each rain event of 0.5" or more during a 24-hour period, inspect grassed areas for signs of disturbance, such as erosion. If damaged areas are discovered, immediately repair the damage. Repairs may include adding new topsoil, lime, seed, fertilizer and mulch.



2. **Plantings:** Planting and landscaping (trees, shrubs) shall be monitored bi-monthly during the first year to insure viability and vigorous growth. Replace dead or dying vegetation with new stock and make adjustments to the conditions that caused the dead or dying vegetation. During dryer times of the year, provide weekly watering or irrigation during the establishment period of the first year.

Make the necessary adjustments to ensure long-term health of the vegetated covers, i.e. provide more permanent mulch or compost or other means of protection.
3. **Vegetated buffer area:** Check for scour or sediment buildup in buffer area, at least annually. Replace any vegetation removed by scour or sediment buildup with similar vegetation.
4. **Rain Garden:** After installation of the rain garden, perform the following inspections on a monthly basis:
 - a. Monitor for excessive or concentrated accumulations of debris, or excessive erosion below the various pipe inlets. Remove debris as required and replace or add inlet fabric strips or rip rap stones.
 - b. Monitor the outflow for problems with erosion. Repair as required.
 - c. After significant rainfalls, monitor rain garden surfaces for ponding of water. If water remains flooded over the surface 24 hours after a 1” rainfall, then investigate the cause, if not related to overflow blockage, then excavate and replace filter media.
 - d. Monitor vegetation on rain garden and replace dead or dying vegetation as required.
 - e. Monitor rain garden for rodent borrows and repair as required; remove persistent occupiers.
 - f. Monitor side slopes of rain garden for damage or erosion—repair, as necessary.
5. **Outlet Control Structures and Storm Drains:** Monitor accumulation of debris in outlet control structures monthly or after significant rain events. Remove sediments when they accumulate within the yard drains and outlet pipe. During construction, maintain inlet protection until the site has been stabilized. Prior to the end of construction, inspect the drains and basins for accumulations and remove and clean by jet-vacuuming.

Pollution Prevention

The following pollution prevention activities shall be undertaken to minimize potential impacts on stormwater runoff quality. The Contractor is responsible for all activities during construction. The Owner is responsible thereafter.



Spill Procedures: Any discharge of waste oil or other pollutant shall be reported immediately to the New Hampshire Department of Environmental Services (NHDES). The Contractor/Owner will be responsible for any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater system, and may be required by NHDES to remediate incidents that may impact groundwater quality. If the property ownership is transferred, the new owner will be informed of the legal responsibilities associated with operation of the stormwater system, as indicated above.

Sanitary Facilities: Sanitary facilities shall be provided during all phases of construction.

Material Storage: No on site trash facility is provided until homes are constructed. The contractors are required to remove trash from the site. Hazardous material storage is prohibited.

Material Disposal: All waste material, trash, sediment, and debris shall be removed from the site and disposed of in accordance with applicable local, state, and federal guidelines and regulations. Removed sediments shall be if necessary dewatered prior to disposal.

Invasive Species

Monitor the Stormwater Management System for signs of invasive species growth. If caught early, their eradication is much easier. The most likely places where invasions start is in wetter, disturbed soils or detention ponds. Species such as phragmites and purple loose-strife are common invaders in these wetter areas. If they are found, the owner shall refer to the fact-sheet created by the University of New Hampshire Cooperative Extension (or other source) or contact a wetlands scientist with experience in invasive species control to implement a plan of action for eradication. Measures that do not require the application of chemical herbicides should be the first line of defense.



Figure 1: *Lythrum salicaria*, Purple Loosestrife. Photo by Liz West. Figure 2: *Phragmites australis*. Photo by Le Loup Gris

RAIN GARDEN MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	FREQUENCY	MAINTENANCE REQUIREMENTS
<p><i>-Inspect pond surface for the occurrence of sediment, trash, debris, or structural damage.</i></p>	<p>Bi-Yearly and following major storm events</p>	<p><i>-Remove sediments, trash, and debris, as necessary.</i></p> <p><i>-Repair outlet structures and appurtenances, as necessary.</i></p>
<p><i>-Check to see if pond drains within 72 hours of rainfall.</i></p> <p><i>-Check vegetation health.</i></p>	<p>Annually</p>	<p><i>-If system does not drain within 72 hours of a rainfall event, consult a qualified professional about restoration of function of the dry well.</i></p> <p><i>-Vegetation should be maintained and pruned.</i></p> <p><i>-Dead or diseased vegetation should be removed, as well as any invasive species.</i></p>

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	INSPECTOR CONTACT INFO
DATE OF INSPECTION	REASON FOR INSPECTION <input type="checkbox"/> LARGE STORM EVENT <input type="checkbox"/> PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? <input type="checkbox"/> YES <input type="checkbox"/> NO	DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE
DATE OF MAINTENANCE	PERFORMED BY
NOTES	

CLOSED DRAINAGE STRUCTURE LONG-TERM MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	FREQUENCY	MAINTENANCE REQUIREMENTS
-Outlet Control Structures -Drain Manholes -Catch Basins	Monthly for 1 year following construction, Every other Month thereafter	<i>Check for erosion or short-circuiting</i> <i>Check for sediment accumulation</i> <i>Check for floatable contaminants</i>
-Drainage Pipes	Monthly for 1 year following construction, 1 time per 2 years thereafter	<i>Check for sediment accumulation/clogging, or soiled runoff.</i> <i>Check for erosion at outlets.</i>

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	INSPECTOR CONTACT INFO
DATE OF INSPECTION	REASON FOR INSPECTION <input type="checkbox"/> LARGE STORM EVENT <input type="checkbox"/> PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? <input type="checkbox"/> YES <input type="checkbox"/> NO	DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE
DATE OF MAINTENANCE	PERFORMED BY
NOTES	

STABILIZED CONSTRUCTION ENTRANCE CONSTRUCTION MAINTENANCE SHEET

INSPECTION REQUIREMENTS		
ACTION TAKEN	FREQUENCY	MAINTENANCE REQUIREMENTS
ENTRANCE SURFACE <i>-Check for sediment accumulation/clogging of stone</i>	After heavy rains, as necessary	<i>-Top dress pad with new stone. -Replace stone completely if completely clogged.</i>
WASHING FACILITIES (if applicable) <i>-Monitor Sediment Accumulation</i>	As often as necessary	<i>-Remove Sediments from traps.</i>

MAINTENANCE LOG	
PROJECT NAME	
INSPECTOR NAME	INSPECTOR CONTACT INFO
DATE OF INSPECTION	REASON FOR INSPECTION <input type="checkbox"/> LARGE STORM EVENT <input type="checkbox"/> PERIODIC CHECK-IN
IS CORRECTIVE ACTION NEEDED? <input type="checkbox"/> YES <input type="checkbox"/> NO	DESCRIBE ANY PROBLEMS, NEEDED MAINTENANCE
DATE OF MAINTENANCE	PERFORMED BY
NOTES	

1151 SAGAMORE AVENUE CBC, LLC SITE PLAN REVIEW

1151 SAGAMORE AVENUE, PORTSMOUTH, NEW HAMPSHIRE

PROJECT INFORMATION

CIVIL ENGINEER
HALEY WARD, INC.
ATTN: DREW OLEHOWSKI, PE.
200 GRIFFIN ROAD, UNIT 14
PORTSMOUTH, NEW HAMPSHIRE 03801
T: 603.430.9282

OWNER / APPLICANT
1151 SAGAMORE AVENUE CBC, LLC
76 STATE STREET
NEWBURYPORT, MASSACHUSETTS 01950

SURVEYOR
HALEY WARD, INC.
ATTN: CHARLES ADAMS, LLS, PLS
200 GRIFFIN ROAD, UNIT 14
PORTSMOUTH, NEW HAMPSHIRE 03801
T: 603.430.9282

LANDSCAPE ARCHITECT
TERRA FIRMA LANDSCAPE ARCHITECTURE
ATTN: TERENCE PARKER
163.A COURT STREET
PORTSMOUTH, NEW HAMPSHIRE 03801
T: 603.531.9109

UTILITY PROVIDERS
WATER & SEWER
CITY OF PORTSMOUTH DEPT. OF
PUBLIC WORKS
ATTN: DOUG SPARKS
680 PEVERLY HILL ROAD
PORTSMOUTH, NEW HAMPSHIRE 03801
T: 603.427.1530

ELECTRIC
EVERSOURCE
ATTN: NICHOLAS KOSKO
1700 LAFAYETTE ROAD
PORTSMOUTH, NEW HAMPSHIRE 03801
T: 603.436.7708, EXT. 3327565

CABLE
XFINITY BY COMCAST
ATTN: MIKE COLLINS
180 GREENLEAF AVENUE
PORTSMOUTH, NEW HAMPSHIRE 03801
T: 603.266.2278

COMMUNICATIONS
CONSOLIDATED COMMUNICATIONS
ATTN: BENJAMIN WILLS
1575 GREENLAND ROAD
GREENLAND, NEW HAMPSHIRE 03840
T: 603.427.5525

NATURAL GAS
UNITIL
ATTN: DAVE BEAULIEU
325 WEST ROAD
PORTSMOUTH, NEW HAMPSHIRE 03801
T: 603.294.5144



LOCATION MAP

ISSUED FOR PERMITTING
FEBRUARY 13, 2026

INDEX OF DRAWINGS

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C001 GENERAL NOTES, LEGEND & ABBREVIATIONS
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C103 GRADING PLAN
C201 PROPOSED DRIVEWAY PLAN & PROFILE
C202 SITE DISTANCE PLAN & PROFILE
C501 SITE DETAILS
C502 SITE DETAILS
C503 SITE DETAILS
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C702 POST-DEVELOPMENT HYDROLOGY PLAN
TR-1 TURNING DIAGRAM
TR-2 TURNING DIAGRAM
TR-3 TURNING DIAGRAM
TR-4 TURNING DIAGRAM
EX-1 AVERAGE GRADE PLANE EXHIBIT

PLANS BY TERRA FIRMA LANDSCAPE ARCHITECTURE:

L-1 LANDSCAPE PLAN
L-2 LANDSCAPE DETAILS

PERMITS & APPROVALS

CITY OF PORTSMOUTH - SITE PLAN REVIEW: IN PROGRESS

PLAN REFERENCE

- EXISTING CONDITIONS PLAN FOR BUILD AMERICA, PREPARED FEBRUARY 2025 BY HALEY WARD, INC.
- AS-BUILT SITE PLAN FOR BUILD AMERICA, PREPARED NOVEMBER 2025 BY AMBIT ENGINEERING, INC., A DIVISION OF HALEY WARD, INC.
- SUPPLEMENTAL LIDAR TOPOGRAPHY OBTAINED FROM THE NOAA DIGITAL COAST DATA ACCESS VIEWER.



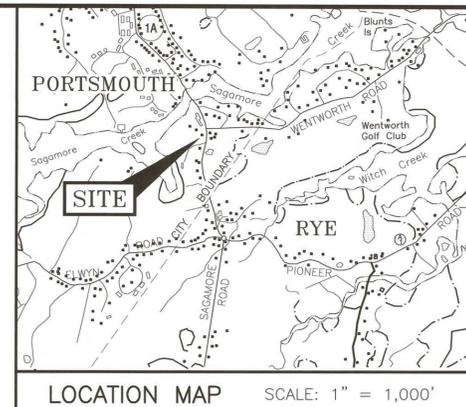
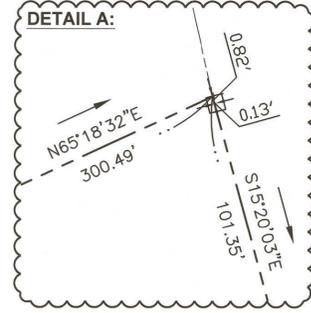
HALEY WARD

www.haleyward.com

LEGEND:

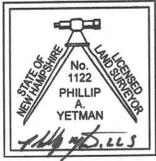
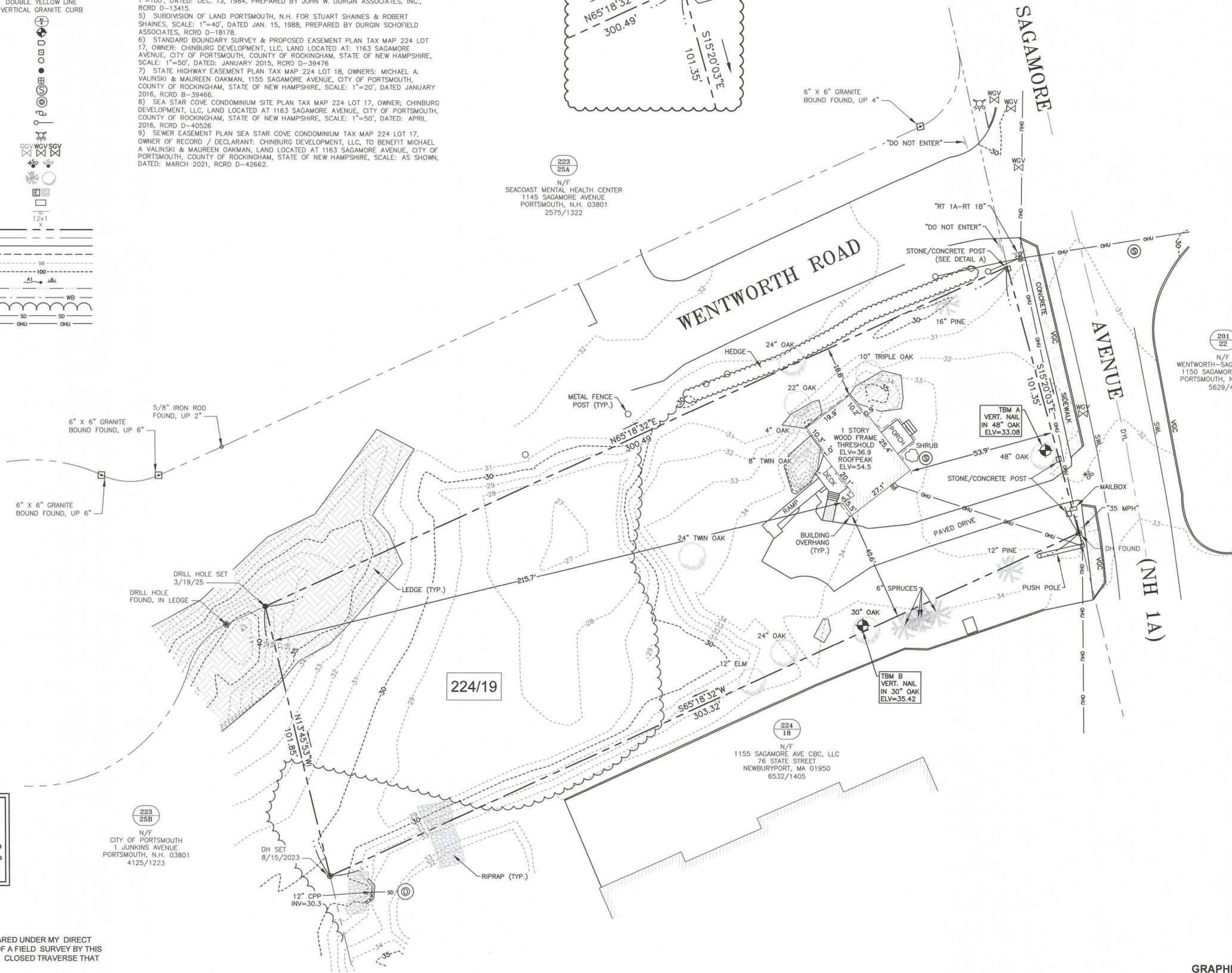
DESCRIPTION	EXISTING
RCRD 1234/123 N/F TYP.	ROCKINGHAM COUNTY REGISTRY OF DEEDS DEED BOOK/PAGE NOW OR FORMALLY TYPICAL
TBS INV. FF SWL DYL VGC	TO BE SET INVERT FINISHED FLOOR SINGLE WHITE LINE DOUBLE YELLOW LINE VERTICAL GRANITE CURB
MAP 21 LOT 8 BENCHMARK RAILROAD SPIKE BOUND IRON ROD/PIPE FOUND SET 5/8" REBAR WITH SURVEYOR'S CAP CATCH BASIN SEWER MANHOLE DRAIN MANHOLE UTILITY POLE GUY WIRE HYDRANT GATE VALVE GAS/WATER SHUTOFF TREES	
GAS/ELECTRIC METER MAIL BOX SIGN SPOT GRADE PROPERTY LINE APPROXIMATE EXTERIOR PROPERTY LINE EDGE OF PAVEMENT EDGE OF GRAVEL MINOR FOOT CONTOUR MAJOR FOOT CONTOUR WETLAND FLAG/WETLAND FRESH WATER WETLAND LINE WETLAND BUFFER LINE TREELINE STORM DRAIN LINE OVERHEAD UTILITY LINE	

- PLAN REFERENCES:**
- 1) PLAN OF LAND ON SAGAMORE CREEK, PORTSMOUTH, N.H. OWNED BY JOSIAH F. ADAMS, SURVEYED BY E.M.HUNT, JUN. ENGR., SCALE: 1"=1000', DATED: MARCH 1908, RCRD PLAN# 00254.
 - 2) PLAN OF LAND PORTSMOUTH, N.H. FOR NORMAN J. & JANET S. SMITH, SCALE: 1"=100', DATED: NOV. 1964, PREPARED BY JOHN W. DURGIN CIVIL ENGINEERS, RCRD PLAN# 1549.
 - 3) BOUNDARY LINE CHANGE LODGE 444 LOYAL ORDER OF MOOSE AND ROBERT & STUART SHAINES, SAGAMORE AVENUE, PORTSMOUTH, NEW HAMPSHIRE, SCALE: 1"=50', DATED MAY 1984, PREPARED BY K.E.MOORE & B.G.STAPLES LAND SURVEYORS, RCRD D-13349.
 - 4) SUBDIVISION OF LAND PORTSMOUTH & RYE, N.H. FOR R & S TRUST, SCALE: 1"=100', DATED: DEC. 13, 1984, PREPARED BY JOHN W. DURGIN ASSOCIATES, INC., RCRD D-13415.
 - 5) SUBDIVISION OF LAND PORTSMOUTH, N.H. FOR STUART SHAINES & ROBERT SHAINES, SCALE: 1"=40', DATED JAN. 15, 1988, PREPARED BY DURGIN SCHOFIELD ASSOCIATES, RCRD D-18178.
 - 6) STANDARD BOUNDARY SURVEY & PROPOSED EASEMENT PLAN TAX MAP 224 LOT 17, OWNER: CHINBURG DEVELOPMENT, LLC, LAND LOCATED AT: 1163 SAGAMORE AVENUE, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, SCALE: 1"=50', DATED: JANUARY 2015, RCRD D-39476.
 - 7) STATE HIGHWAY EASEMENT PLAN TAX MAP 224 LOT 18, OWNERS: MICHAEL A. VALINSKI & MAUREEN OAKMAN, 1155 SAGAMORE AVENUE, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, SCALE: 1"=20', DATED JANUARY 2016, RCRD B-39466.
 - 8) SEA STAR COVE CONDOMINIUM SITE PLAN TAX MAP 224 LOT 17, OWNER: CHINBURG DEVELOPMENT, LLC, LAND LOCATED AT 1163 SAGAMORE AVENUE, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, SCALE: 1"=50', DATED: APRIL 2016, RCRD D-40526.
 - 9) SEWER EASEMENT PLAN SEA STAR COVE CONDOMINIUM TAX MAP 224 LOT 17, OWNER OF RECORD / DECLARANT: CHINBURG DEVELOPMENT, LLC, TO BENEFIT MICHAEL A. VALINSKI & MAUREEN OAKMAN, LAND LOCATED AT 1163 SAGAMORE AVENUE, CITY OF PORTSMOUTH, COUNTY OF ROCKINGHAM, STATE OF NEW HAMPSHIRE, SCALE: AS SHOWN, DATED: MARCH 2021, RCRD D-42662.



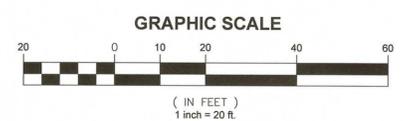
- NOTES:**
- 1) PARCEL IS SHOWN ON THE CITY OF PORTSMOUTH ASSESSOR'S MAP 224 AS LOT 19.
 - 2) OWNER OF RECORD: 1151 SAGAMORE AVENUE CBC, LLC, 76 STATE STREET, NEWBURYPORT, MA 01950, RCRD 6633/1720.
 - 3) PARCEL IS NOT IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33015C0286F. EFFECTIVE JANUARY 29, 2021.
 - 4) EXISTING LOT AREA: 30,191 S.F., 0.69 ACRES.
 - 5) PARCEL IS LOCATED IN MIXED RESIDENTIAL OFFICE (MRO) ZONING DISTRICT.
 - 6) DIMENSIONAL REQUIREMENTS:

MIN. LOT AREA:	7,500 S.F.
FRONTAGE:	100 FEET
SETBACKS:	FRONT 5 FEET, SIDE 10 FEET, REAR 15 FEET
MAXIMUM STRUCTURE HEIGHT:	40 FEET SLOPED ROOF, 30 FEET FLAT ROOF
MAXIMUM BUILDING COVERAGE:	40%
MINIMUM OPEN SPACE:	25%
 - 7) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITION ON ASSESSOR'S MAP 224 LOT 19 IN THE CITY OF PORTSMOUTH.
 - 8) VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.
 - 9) ABUTTER INFORMATION TAKEN FROM THE CITY OF PORTSMOUTH GIS WEBSITE.



"I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000."

PHILIP A. YETMAN, LLS 1122 DATE 10/23/2025



REV.	DATE	DESCRIPTION	BY	CHK.
1	10/22/2025	OWNERSHIP NAME	PAY	PAY
0	3/28/25	ISSUED FOR COMMENT	RJB	PAY

DRAWING ISSUE STATUS

SITE SURVEY

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
200 Griffin Road, Unit 14
Portsmouth, NH 03801
603-430-9282

PROJECT

BUILD AMERICA
1151 SAGAMORE AVENUE PORTSMOUTH, N.H.

TITLE

EXISTING CONDITIONS PLAN

DATE	SCALE
FEBRUARY 2025	1"=20'
DRAWN BY RJB	DESIGNED BY —
PROJECT No. 5010314.002	CHECKED BY PAY
DRAWING No.	FIELD BOOK/PAGE FB 450 PG 15
V101	

PARCEL INFORMATION	
MAP - LOT:	224 - 19
LOT AREA (ACRES):	69 ACRES
ZONE OR DISTRICT:	MRO - MIXED RESIDENTIAL OFFICE
EXISTING USE:	SINGLE FAMILY RESIDENTIAL
FLOOD ZONE (PNL 33015C0286F):	N/A
WATER:	PUBLIC
SEWER:	PUBLIC
RECORD OWNER:	1151 SAGAMORE AVENUE CBC, LLC 76 STATE STREET NEWBURYPORT, MASSACHUSETTS 01950

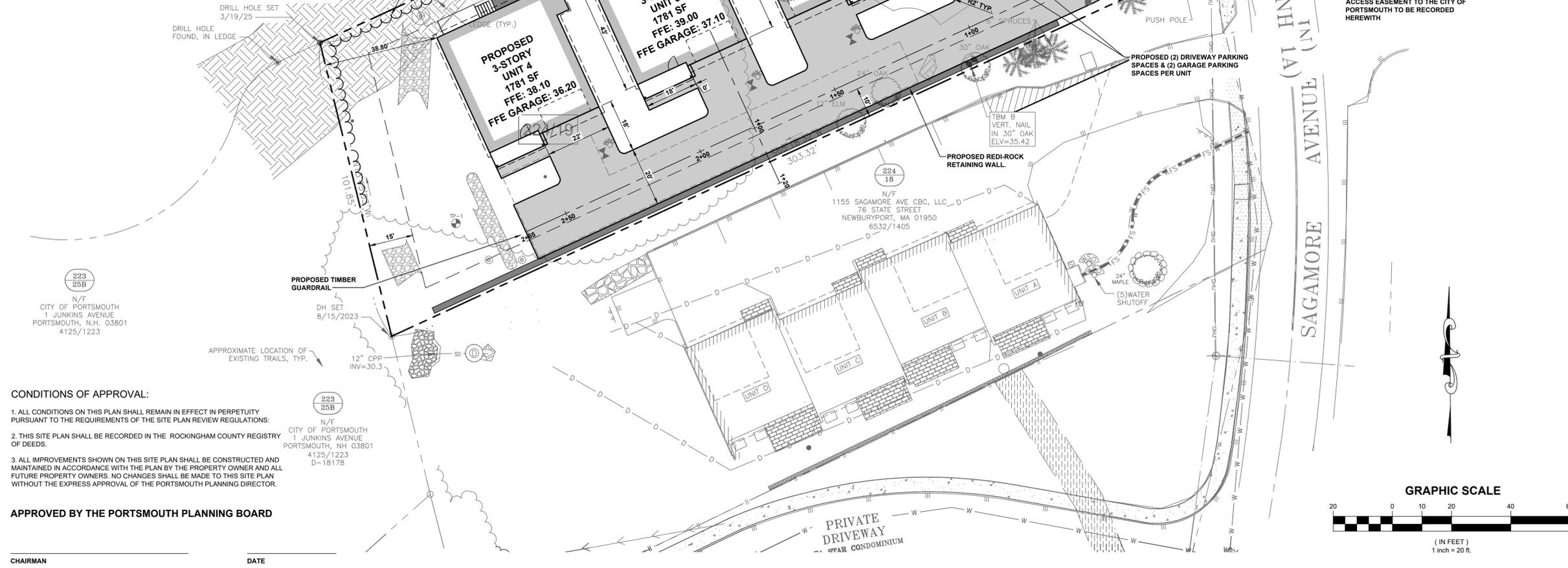
SITE DEVELOPMENT DATA		
	PRE-CONSTRUCTION IMPERVIOUS (SF)	POST-CONSTRUCTION IMPERVIOUS (SF)
MAIN STRUCTURE	789	7124
DECKS, STAIRS, & RAMPS	287	770
WALKWAYS	36	288
PAVEMENT	1575	6649
TOTAL IMPERVIOUS:	2687	14831
LOT COVERAGE:	8.90%	49.12%

DESIGN STANDARDS - PORTSMOUTH MRO		
	REQ'D	PROVIDED
MIN. LOT AREA (SF)	7500	30191
LOT AREA PER DWELLING UNIT (SF)	7500	7548
MINIMUM ROAD FRONTAGE (FT)	100	101.35
MINIMUM SETBACK, FRONT YARD (FT)	5	49
MINIMUM SETBACK, SIDE YARDS (FT)	10	14
MINIMUM SETBACK, REAR YARDS (FT)	15	39
MINIMUM OPEN SPACE	25%	50.88%
MAXIMUM STRUCTURE COVERAGE	40%	24%
MAXIMUM BUILDING HEIGHT (FT)	30 (FLAT ROOF), 40 (SLOPED ROOF)	TO COMPLY
PARKING:	1.3 PER UNIT x 4 = 6	16 (8 DRIVEWAY, 8 GARAGE)

PROJECT INFORMATION	
APPLICANT:	1151 SAGAMORE AVENUE CBC, LLC 76 STATE STREET NEWBURYPORT, MASSACHUSETTS 01950
ENGINEER:	HALEY WARD, INC. ATTN: DREW OLEHOWSKI, PE 200 GRIFFIN ROAD PORTSMOUTH, NEW HAMPSHIRE 03801



LOCATION MAP: USGS QUADRANGLE: KITTERY
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- NOTES:**
- VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.
 - TRASH PICKUP TO BE CURBSIDE.
- PLAN REFERENCE:**
- EXISTING CONDITIONS PLAN FOR BUILD AMERICA, PREPARED FEBRUARY 2025 BY HALEY WARD.
 - OFF-SITE TOPOGRAPHIC CONTOURS WERE PROVIDED BY THE CITY OF PORTSMOUTH GIS DEPARTMENT.

REV.	DATE	DESCRIPTION	BY	CHK.
2	2025.02.13	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
1	2025.01.16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO

ISSUED FOR PERMITTING

1151 SAGAMORE AVENUE CBC, LLC
1151 SAGAMORE AVE., PORTSMOUTH, NH

PROPOSED SITE PLAN

DATE	2025.12.22	SCALE	1"=20'
DRAWN BY	BLQ/PJM	DESIGNED BY	BLQ/PJM
CHECKED BY	DJO	PROJECT No.	5010314.002
DRAWING No.	C101	REV.	2

- CONDITIONS OF APPROVAL:**
- ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
 - THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
 - ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.

APPROVED BY THE PORTSMOUTH PLANNING BOARD

CHAIRMAN _____ DATE _____

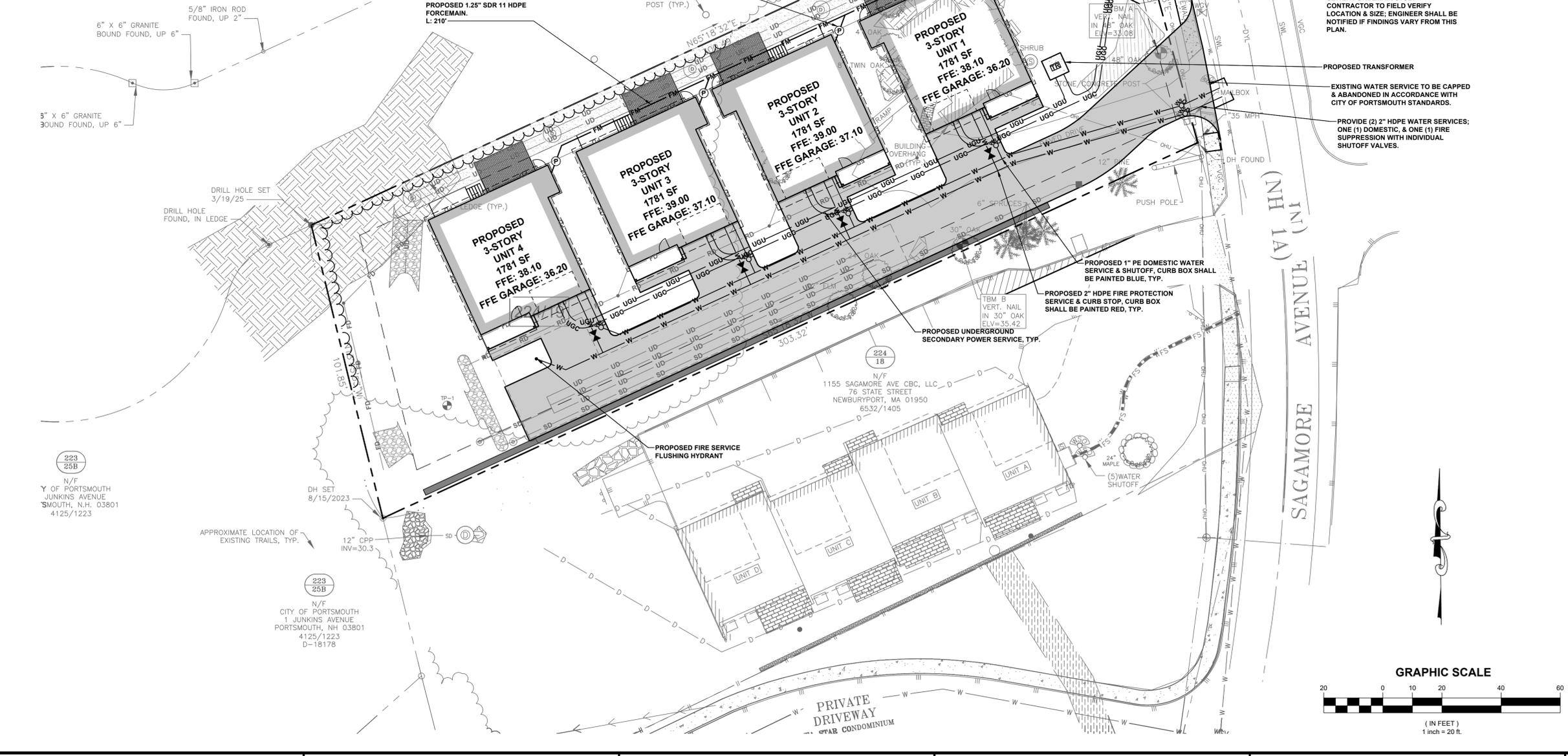
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UTILITY NOTES:

- SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.
- COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY.
- SEE GRADING AND DRAINAGE PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
- ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
- ALL WORK WITHIN CITY R.O.W. SHALL BE COORDINATED WITH CITY OF PORTSMOUTH.
- CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ABUTTING PROPERTIES THROUGHOUT CONSTRUCTION.
- ANY CONNECTION TO EXISTING WATERMAIN SHALL BE CONSTRUCTED BY THE CITY OF PORTSMOUTH.
- EXISTING UTILITIES TO BE REMOVED SHALL BE CAPPED AT THE MAIN AND MEET THE DEPARTMENT OF PUBLIC WORKS STANDARDS FOR CAPPING OF WATER AND SEWER SERVICES.
- ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
- THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH BUILDING DRAWINGS AND UTILITY COMPANIES.
- ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
- ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
- THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATED TO THE OWNER PRIOR TO THE COMPLETION OF PROJECT.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED IN THESE DRAWING TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
- CONTRACTOR SHALL PROVIDE EXCAVATION, BEDDING, BACKFILL AND COMPACTION FOR NATURAL GAS SERVICES.
- A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS WATER ABOVE SEWER.
- SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVED AREAS.
- GATE VALVES, FITTINGS, ETC. SHALL MEET THE REQUIREMENTS OF THE CITY OF PORTSMOUTH.
- COORDINATE TESTING OF SEWER CONSTRUCTION WITH THE CITY OF PORTSMOUTH.
- ALL SEWER PIPES WITH LESS THAN 6' COVER SHALL BE INSULATED.
- CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK INCLUDING BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, UTILITY POLE CONSTRUCTION, OVERHEAD WIRE RELOCATION, AND TRANSFORMER CONSTRUCTION WITH POWER COMPANY.
- SITE LIGHTING SPECIFICATIONS, CONDUIT LAYOUT AND CIRCUITRY FOR PROPOSED SITE LIGHTING AND SIGN ILLUMINATION SHALL BE PROVIDED BY THE PROJECT ELECTRICAL ENGINEER IN COORDINATION WITH THE SITE CIVIL ENGINEER.
- CONTRACTOR SHALL CONSTRUCT ALL UTILITIES AND DRAINS TO WITHIN 10' OF THE FOUNDATION WALLS AND CONNECT THESE TO SERVICE STUBS FROM THE BUILDING.
- FINAL REVIEW OF ALL UTILITIES SHALL BE MADE DURING THE REQUIRED SEWER CONNECTION PERMIT PROCESS IN COORDINATION WITH DEPARTMENT OF PUBLIC WORKS.
- ALL WORK PERFORMED IN THE PUBLIC RIGHT-OF-WAY SHALL BE BUILT TO DEPARTMENT OF PUBLIC WATER WORKS STANDARDS.
- THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY WITHIN 100 FEET OF UNDERGROUND UTILITIES. THE EXCAVATOR IS RESPONSIBLE TO MAINTAIN MARKS. DIG SAFE TICKETS EXPIRE IN THIRTY DAYS.
- UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
- PROVIDE STANDARD LEAK, VALVE AND METER EASEMENT DEED FOR THE PRIVATE WATER SYSTEM TO BE REVIEWED AND APPROVED BY THE CITY OF PORTSMOUTH. PAINT DOMESTIC WATER SHUTOFF BLUE AND FIRE SERVICE SHUTOFF RED.



LOCATION MAP: USGS QUADRANGLE: KITTERY
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NOTES:

- VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.
- TRASH PICKUP TO BE CURBSIDE.

PLAN REFERENCE:

- EXISTING CONDITIONS PLAN FOR BUILD AMERICA, PREPARED FEBRUARY 2025 BY HALEY WARD.
- OFF-SITE TOPOGRAPHIC CONTOURS WERE PROVIDED BY THE CITY OF PORTSMOUTH GIS DEPARTMENT.

REV.	DATE	DESCRIPTION	BY	CHK.
2	2026.02.13	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
1	2026.01.16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO

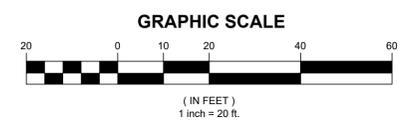
ISSUED FOR PERMITTING

HALEY WARD
 200 Griffin Rd., Unit 14
 Portsmouth, New Hampshire 03801
 603.430.9282
 WWW.HALEYWARD.COM

PROJECT
 1151 SAGAMORE AVENUE CBC, LLC
 1151 SAGAMORE AVE., PORTSMOUTH, NH

UTILITY PLAN

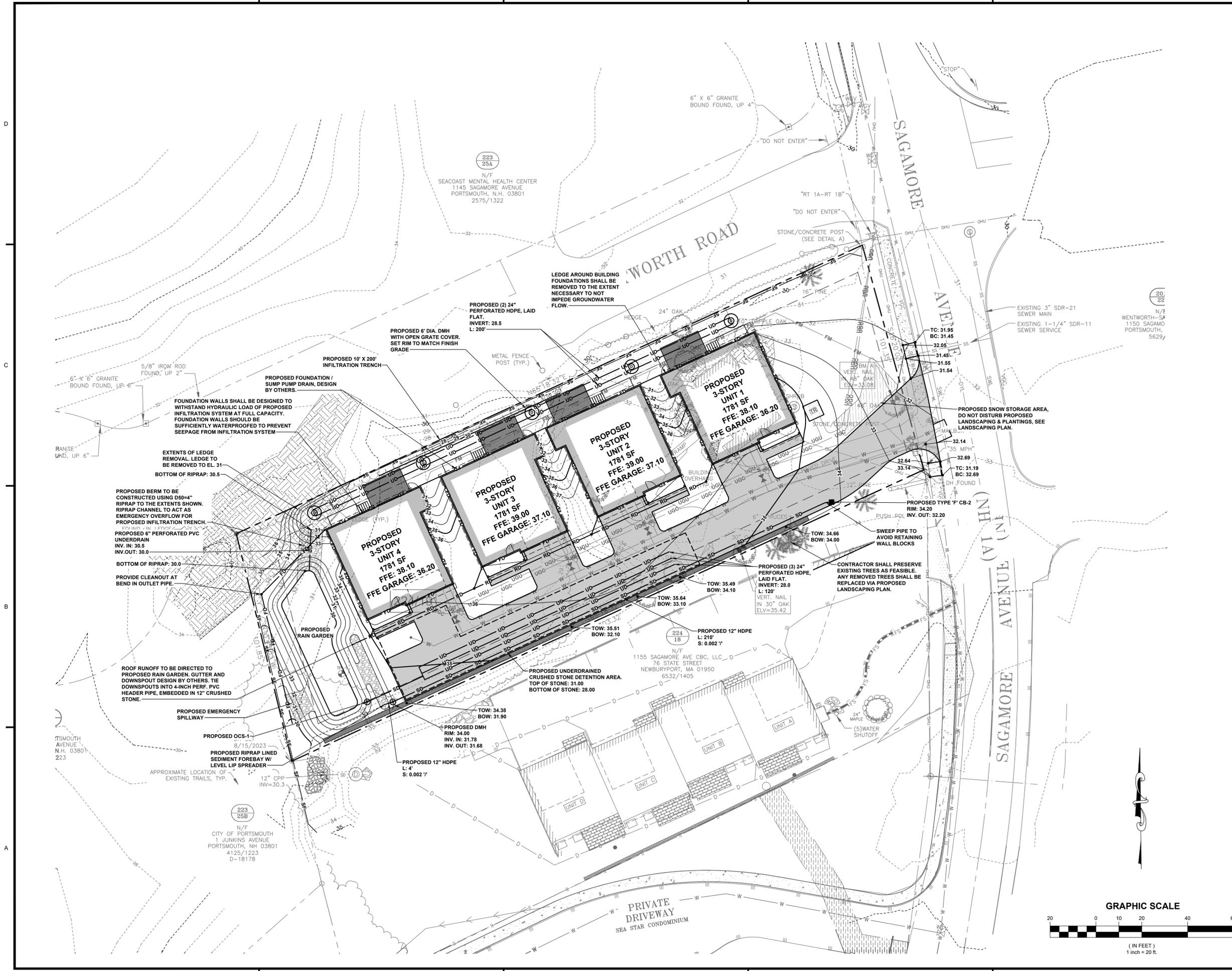
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DRAWN BY	DESIGNED BY	CHECKED BY
BLQ/PJM	BLQ/PJM	DJO
PROJECT No.	5010314.002	
DRAWING No.	C102	
REV.	2	



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 - TRASH PICKUP TO BE CURBSIDE.
- PLAN REFERENCE:**
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1	2026.01.16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO

ISSUED FOR PERMITTING

200 Griffin Rd., Unit 14
 Portsmouth, New Hampshire 03801
 603.430.9282

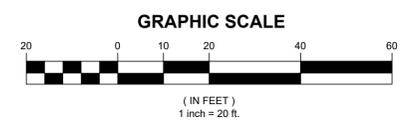
PROJECT

1151 SAGAMORE AVENUE CBC, LLC
 1151 SAGAMORE AVE., PORTSMOUTH, NH

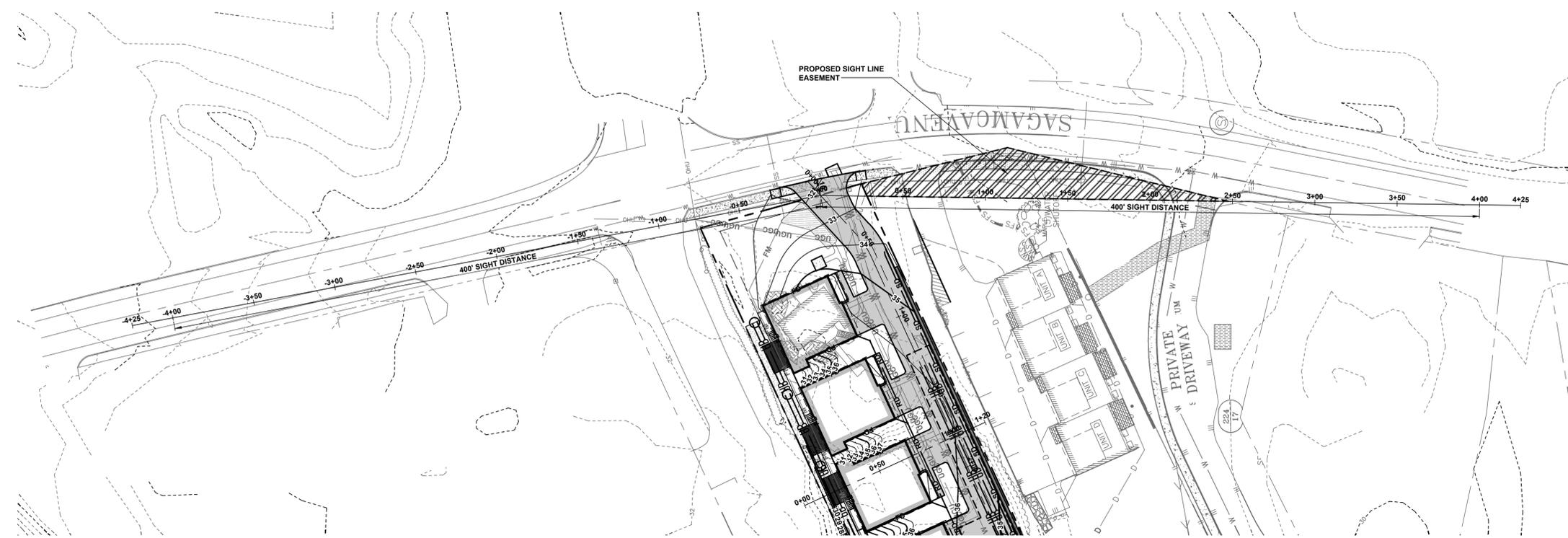
TITLE

GRADING PLAN

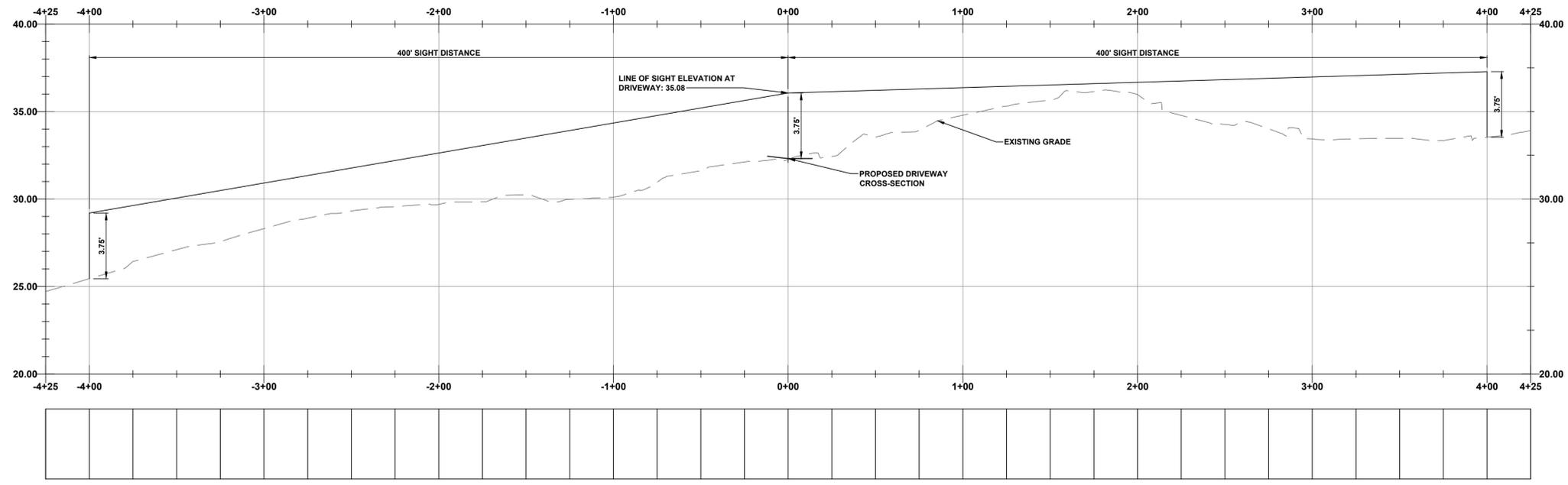
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CHECKED BY	DJO	PROJECT No.	5010314.002
DRAWING No.	C103	REV.	2



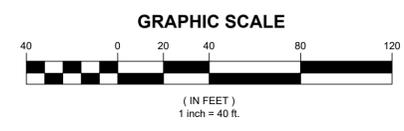
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LOCATION MAP: USGS QUADRANGLE: KITTERY
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PROFILE VIEW OF SITE DISTANCE - STA -4+25 TO 4+25
 SCALE: H: 1"=40' / V: 1"=4'



NOTES:

1. VERTICAL DATUM IS NAVD88. BASIS OF VERTICAL DATUM IS REDUNDANT RTN GNSS OBSERVATIONS.
2. TRASH PICKUP TO BE CURBSIDE.

PLAN REFERENCE:

1. EXISTING CONDITIONS PLAN FOR BUILD AMERICA, PREPARED FEBRUARY 2025 BY HALEY WARD
2. OFF-SITE TOPOGRAPHIC CONTOURS WERE PROVIDED BY THE CITY OF PORTSMOUTH GIS DEPARTMENT.

REV.	DATE	DESCRIPTION	BY	CHK.
2	2026.02.13	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
1	2026.01.16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO

ISSUED FOR PERMITTING

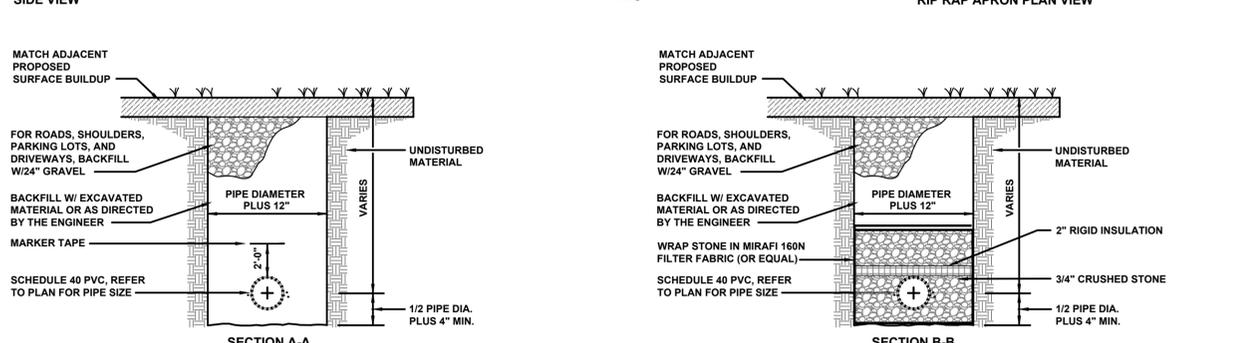
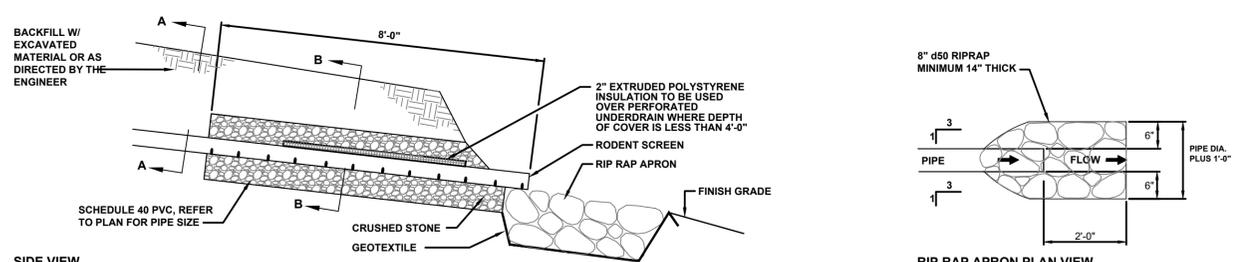
PROJECT
1151 SAGAMORE AVENUE CBC, LLC
 1151 SAGAMORE AVE., PORTSMOUTH, NH

TITLE
SITE DISTANCE PLAN & PROFILE

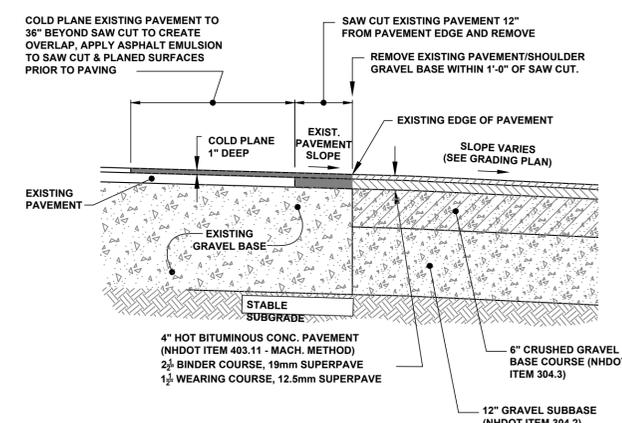
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DRAWN BY	BLQ/PJM	DESIGNED BY	BLQ/PJM
CHECKED BY	DJO	CHECKED BY	DJO
PROJECT No.	5010314.002		
DRAWING No.	C202		
REV.	2		



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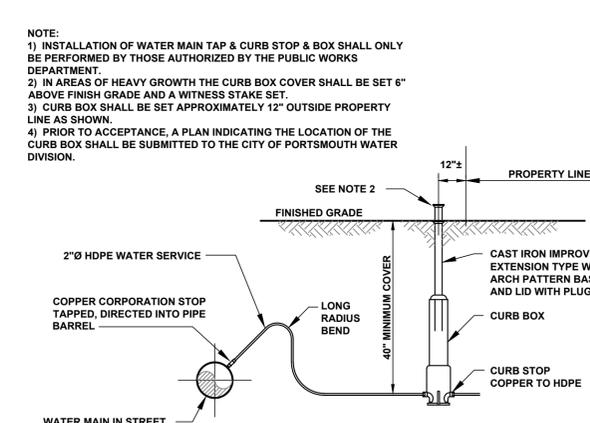


ROOF OR FOUNDATION DRAIN OUTLET DETAIL
NTS



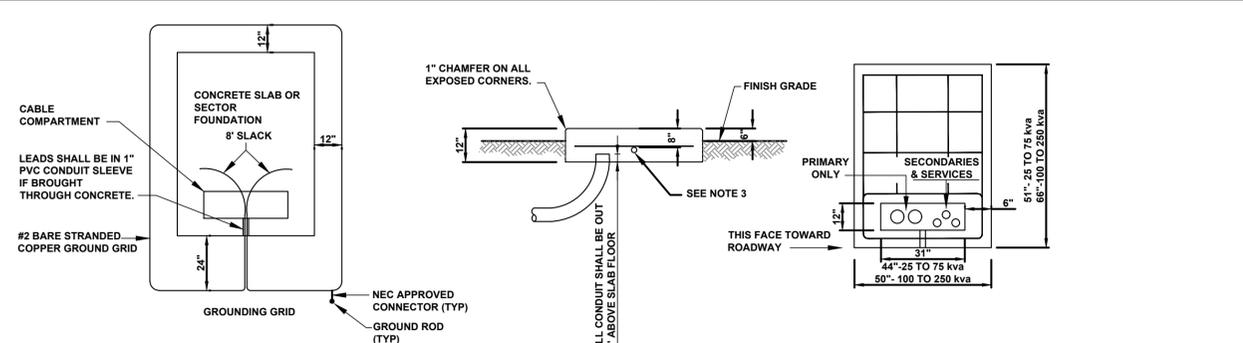
NOTES:
1) PAVEMENT SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS - SECTION 401.
2) CRUSHED GRAVEL AND GRAVEL SUBBASE SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS - SECTION 304, TABLE 1E, AND SHALL BE COMPACTED AS INDICATED IN SECTION 304, 3.6 COMPACTION, AND 3.7 DENSITY TESTING, AND CITY OF PORTSMOUTH CONSTRUCTION STANDARDS.

TYPICAL ASPHALT PAVEMENT GRINDING DETAIL
NTS



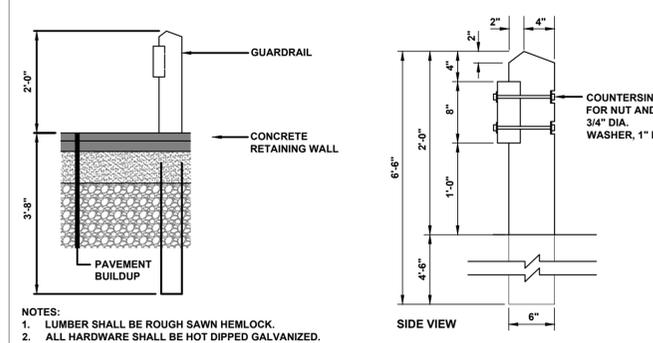
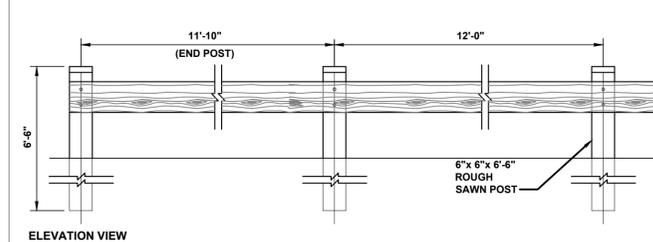
NOTE:
1) INSTALLATION OF WATER MAIN TAP & CURB STOP & BOX SHALL ONLY BE PERFORMED BY THOSE AUTHORIZED BY THE PUBLIC WORKS DEPARTMENT.
2) IN AREAS OF HEAVY GROWTH THE CURB BOX COVER SHALL BE SET 6" ABOVE FINISH GRADE AND A WITNESS STAKE SET.
3) CURB BOX SHALL BE SET APPROXIMATELY 12" OUTSIDE PROPERTY LINE AS SHOWN.
4) PRIOR TO ACCEPTANCE, A PLAN INDICATING THE LOCATION OF THE CURB BOX SHALL BE SUBMITTED TO THE CITY OF PORTSMOUTH WATER DIVISION.

TYPICAL WATER SERVICE DETAIL
NTS



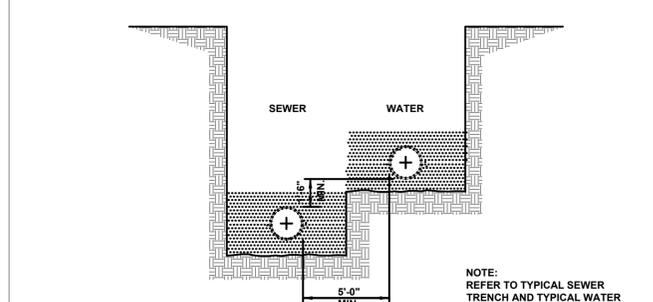
NOTES:
1. SEE SHEET "REQUIREMENTS FOR PADMOUNTED TRANSFORMER SLAB DETAILS".
2. ALL REINFORCING TO BE #6 BARS.
3. 1" PVC CONDUIT SLEEVE FOR GROUND GRID LEADS.
4. THE GROUND GRID SHALL BE SUPPLIED AND INSTALLED BY THE CUSTOMER AND IS TO BE BURIED AT LEAST 12" BELOW GRADE. EIGHT FEET OF EXTRA WIRE FOR EACH GROUND GRID LEG SHALL BE LEFT EXPOSED IN THE CABLE COMPARTMENT TO ALLOW FOR THE CONNECTION TO THE TRANSFORMER. THE TWO 8" GROUND RODS MAY BE EITHER GALVANIZED STEEL OR COPPERWELD AND THEY SHALL BE CONNECTED TO THE GRID WITH NEC APPROVED CONNECTORS.

3 PHASE TRANSFORMER PAD DETAIL
NTS



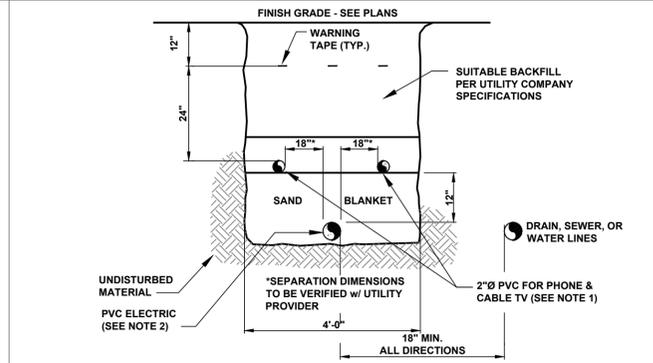
NOTES:
1. LUMBER SHALL BE ROUGH SAWN HEMLOCK.
2. ALL HARDWARE SHALL BE HOT DIPPED GALVANIZED.

TYPICAL TIMBER GUARDRAIL DETAIL
NTS



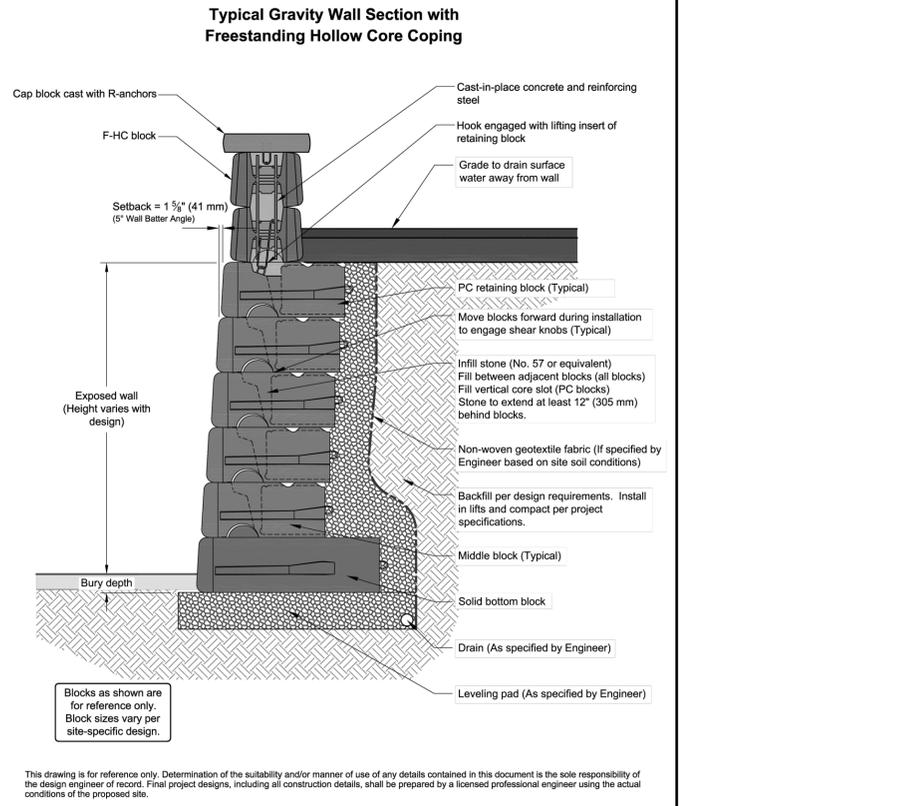
NOTE:
REFER TO TYPICAL SEWER TRENCH AND TYPICAL WATER TRENCH DETAILS FOR ADDITIONAL INFORMATION.

TYPICAL SEWER / WATER SEPARATION DETAIL
NTS



NOTES:
1) ALL CONDUIT TO BE U.L. LISTED, SCH. 80 UNDER ALL TRAVEL WAYS, & SCH. 40 FOR THE REMAINDER.
2) NORMAL CONDUIT SIZES FOR CMP ARE 3 INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4 INCH FOR THREE PHASE SECONDARY, AND 5 INCH FOR THREE PHASE PRIMARY.
3) ALL WORK TO CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST REVISION)
4) INSTALL A 200# PULL ROPE FOR EACH CONDUIT
5) VERIFY ALL CONDUIT SPECIFICATIONS WITH UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION.

TYPICAL UNDERGROUND UTILITY TRENCH DETAIL
NTS



Blocks as shown are for reference only. Block sizes vary per site-specific design.

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY:	NWL	TITLE:	Typical Gravity Wall Detail	<p>05481 US 31 SOUTH, CHARLEVIOUX, MI 48720 (800) 222-8400 ext 3010 • engineering@redi-rock.com www.redi-rock.com</p>
APPROVED BY:	JRJ	DATE:	31MAY2018	
SHEET:	1 of 1	FILE:	Typical-Gravity-Wall-with-F-HC-Section.dwg	

REV.	DATE	DESCRIPTION	BY	CHK.
2	2026.02.13	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
1	2026.01.16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING

200 Griffin Rd., Unit 14
Portsmouth, New Hampshire 03801
603.430.9262

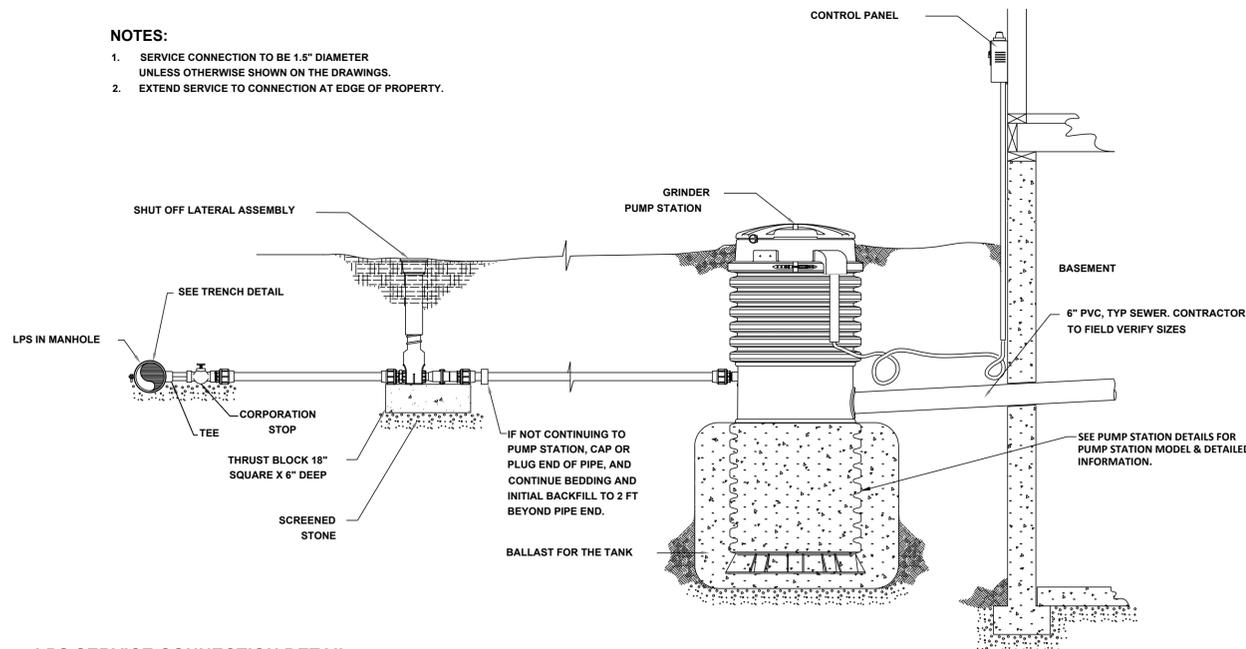
1151 SAGAMORE AVENUE CBC, LLC
1151 SAGAMORE AVE., PORTSMOUTH, NH

SITE DETAILS

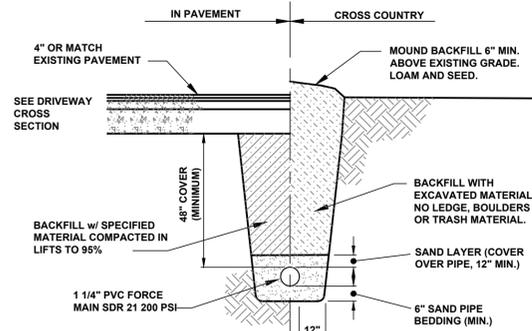
DATE	2025.12.22	SCALE	NTS
DRAWN BY	BLQ/PJM	DESIGNED BY	BLQ/PJM
CHECKED BY	DJO	PROJECT No.	5010314.002
DRAWING No.			REV.
		C502	2

NOTES:

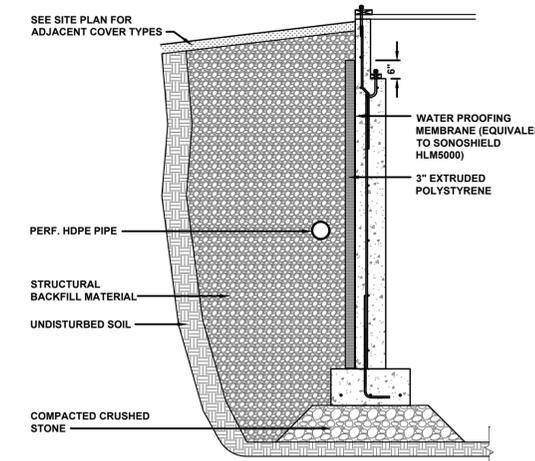
- SERVICE CONNECTION TO BE 1.5" DIAMETER UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- EXTEND SERVICE TO CONNECTION AT EDGE OF PROPERTY.



LPS SERVICE CONNECTION DETAIL
NTS



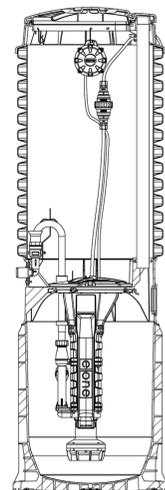
FORCE MAIN TRENCH DETAIL
NTS



TYPICAL BASEMENT WALL BACKFILL & DRAINAGE DETAIL
NTS

**E/ONE
EXTREME
SERIES**

DH071



General Features

The model DH071 grinder pump station is a complete unit that includes: the grinder pump, check valve, HDPE (high density polyethylene) tank, controls, and alarm panel. A single DH071 is a popular choice for one, average single-family home and can also be used for up to two average single-family homes where codes allow and with consent of the factory.

- Rated for flows of 700 gpd (2650 lpd)
- 70 gallons (265 liters) of capacity
- Indoor or outdoor installation
- Standard outdoor heights range from 61 inches to 160 inches

The DH071 has a cable that connects the motor controls to the level controls through watertight penetrations.

Operational Information

Motor

1 hp, 1,725 rpm, high torque, capacitor start, thermally protected, 120/240V, 60 Hz, 1 phase

Inlet Connections

4-inch inlet grommet standard for DWV pipe. Other inlet configurations available from the factory.

Discharge Connections

Pump discharge terminates in 1.25-inch NPT female thread. Can easily be adapted to 1.25-inch PVC pipe or any other material required by local codes.

Discharge

- 15 gpm at 0 psig (0.95 lps at 0 m)
- 11 gpm at 40 psig (0.69 lps at 28 m)
- 7.8 gpm at 80 psig (0.49 lps at 56 m)

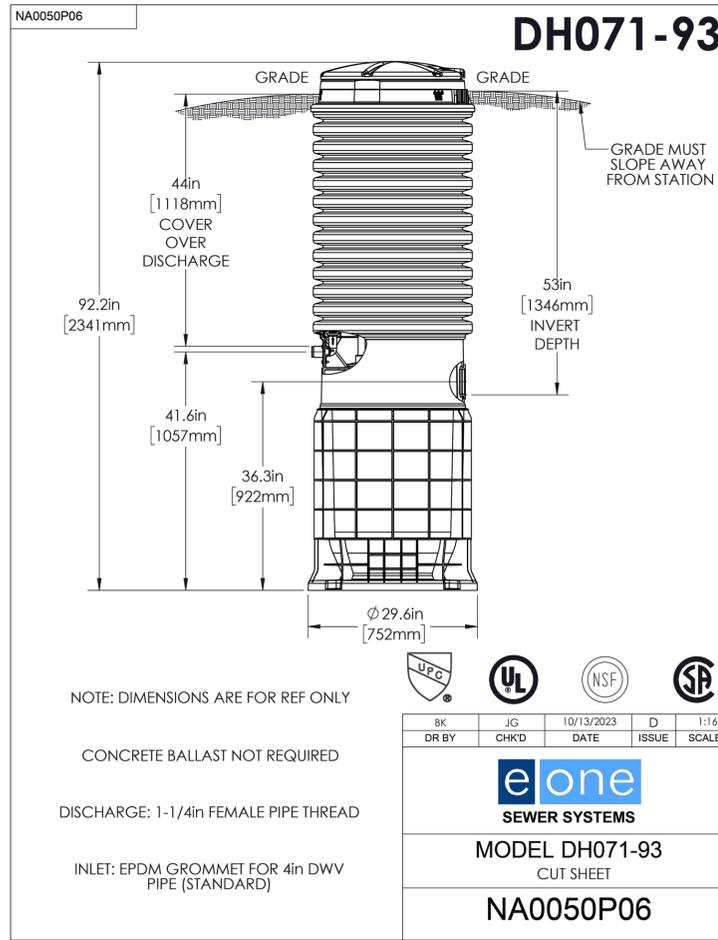
Accessories

E/One requires that the Uni-Lateral, E/One's own stainless steel check valve, be installed between the grinder pump station and the street main for added protection against backflow.

Alarm panels are available with a variety of options, from basic monitoring to advanced notice of service requirements.

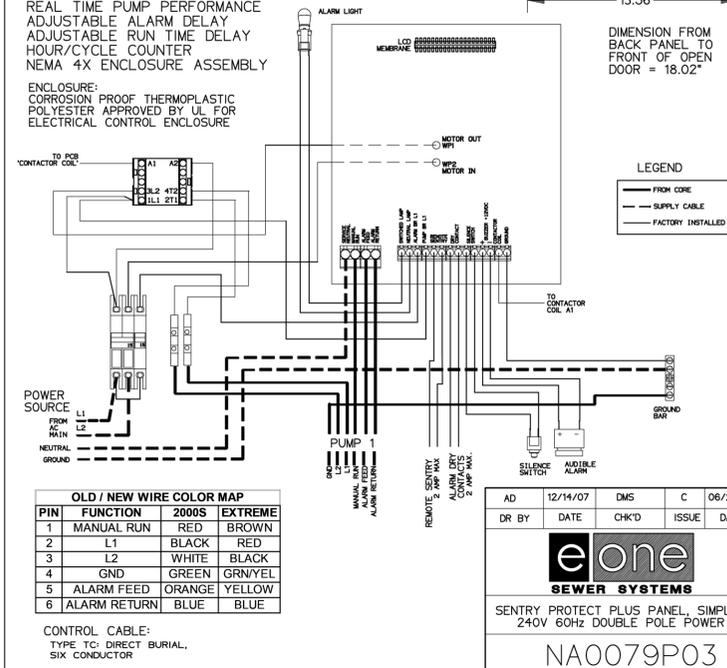
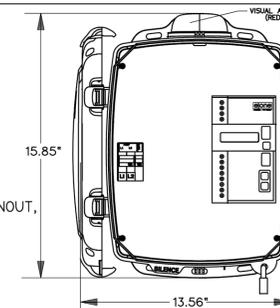
The Remote Sentry is ideal for installations where the alarm panel may be hidden from view.

NA0050P01 Rev E



**SENTRY PROTECT PLUS
SIMPLEX**

- REDUNDANT RUN (HIGH LEVEL)
 - EXTERNAL VISUAL & AUDIBLE ALARM
 - REMOTE SENTRY DRY CONTACTS FOR OPTIONAL POWER LOSS HIGH LEVEL ALARM (POWER LOSS ALARM FOR WIRELESS)
 - MANUAL ALARM SILENCE
 - MANUAL RUN
 - STATUS LED'S: NORMAL, PUMP RUNNING, HIGH LEVEL
 - TROUBLE INDICATIONS: RUN DRY, OVERPRESSURE, BROWNOUT, VOLTAGE, EXTENDED RUN TIME
 - DRY CONTACTS
 - CONFORMAL COATED CIRCUIT BOARD (BOTH SIDES)
 - PADLOCK
 - DEAD FRONT
 - PREDICTIVE ALARMS
 - REAL TIME PUMP PERFORMANCE
 - ADJUSTABLE ALARM DELAY
 - ADJUSTABLE RUN TIME DELAY
 - HOUR/CYCLE COUNTER
 - NEMA 4X ENCLOSURE ASSEMBLY
- ENCLOSURE: CORROSION PROOF THERMOPLASTIC POLYESTER APPROVED BY UL FOR ELECTRICAL CONTROL ENCLOSURE



2	2026-02-13	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
1	2026-01-16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
REV.	DATE	DESCRIPTION	BY	CHK.

ISSUED FOR PERMITTING

HALEY WARD

200 Griffin Rd., Unit 14
Portsmouth, New Hampshire 03801
603.430.9262

1151 SAGAMORE AVENUE CBC, LLC
1151 SAGAMORE AVE., PORTSMOUTH, NH

SITE DETAILS

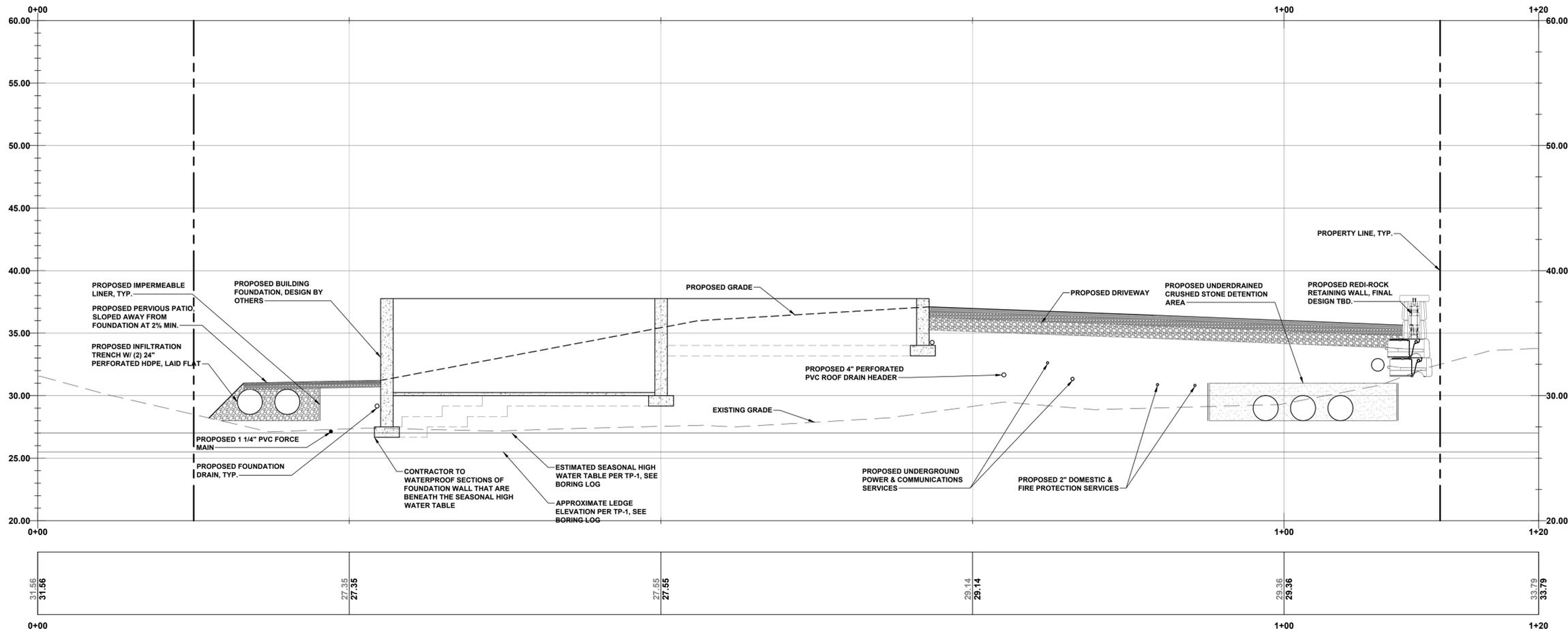
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DRAWN BY: BLQ/PJM DESIGNED BY: BLQ/PJM CHECKED BY: DJO

PROJECT No. 5010314.002

DRAWING No. **C503** REV. **2**

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PROFILE VIEW OF CROSS SECTION A - STA 0+00 TO 1+20

2	2026-02-13	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
1	2026-01-16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
REV.	DATE	DESCRIPTION	BY	CHK.

DRAWING ISSUE STATUS
ISSUED FOR PERMITTING

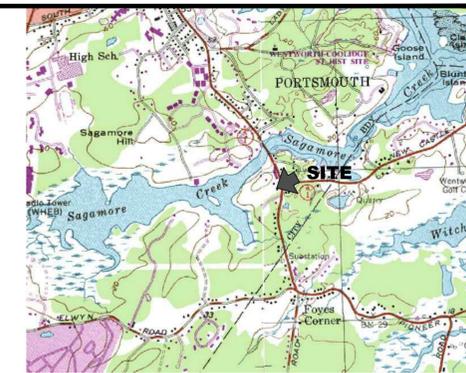
PROJECT
1151 SAGAMORE AVENUE CBC, LLC
1151 SAGAMORE AVE., PORTSMOUTH, NH

TITLE
SITE DETAILS

DATE	2025.12.22	SCALE	NTS
DRAWN BY	BLQ/PJM	DESIGNED BY	BLQ/PJM
CHECKED BY	DJO	PROJECT No.	5010314.002
DRAWING No.	C504	REV.	2

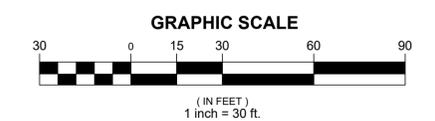


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PRE LEGEND:

	PROPERTY LINE
	WATERSHED BOUNDARY LINE
	WATERSHED DESIGNATION
	TIME OF CONCENTRATION FLOW PATH
	FLOW PATH DESCRIPTION
	SHEET FLOW
	SHALLOW CONCENTRATED FLOW
	CHANNEL FLOW
	PIPE FLOW



2	2026.02.13	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
1	2026.01.16	REVISED PER TAC REVIEW COMMENTS	PJM	DJO
REV.	DATE	DESCRIPTION	BY	CHK.

ISSUED FOR PERMITTING

HALEY WARD
 200 Griffin Rd., Unit 14
 Portsmouth, New Hampshire 03801
 603.430.9282

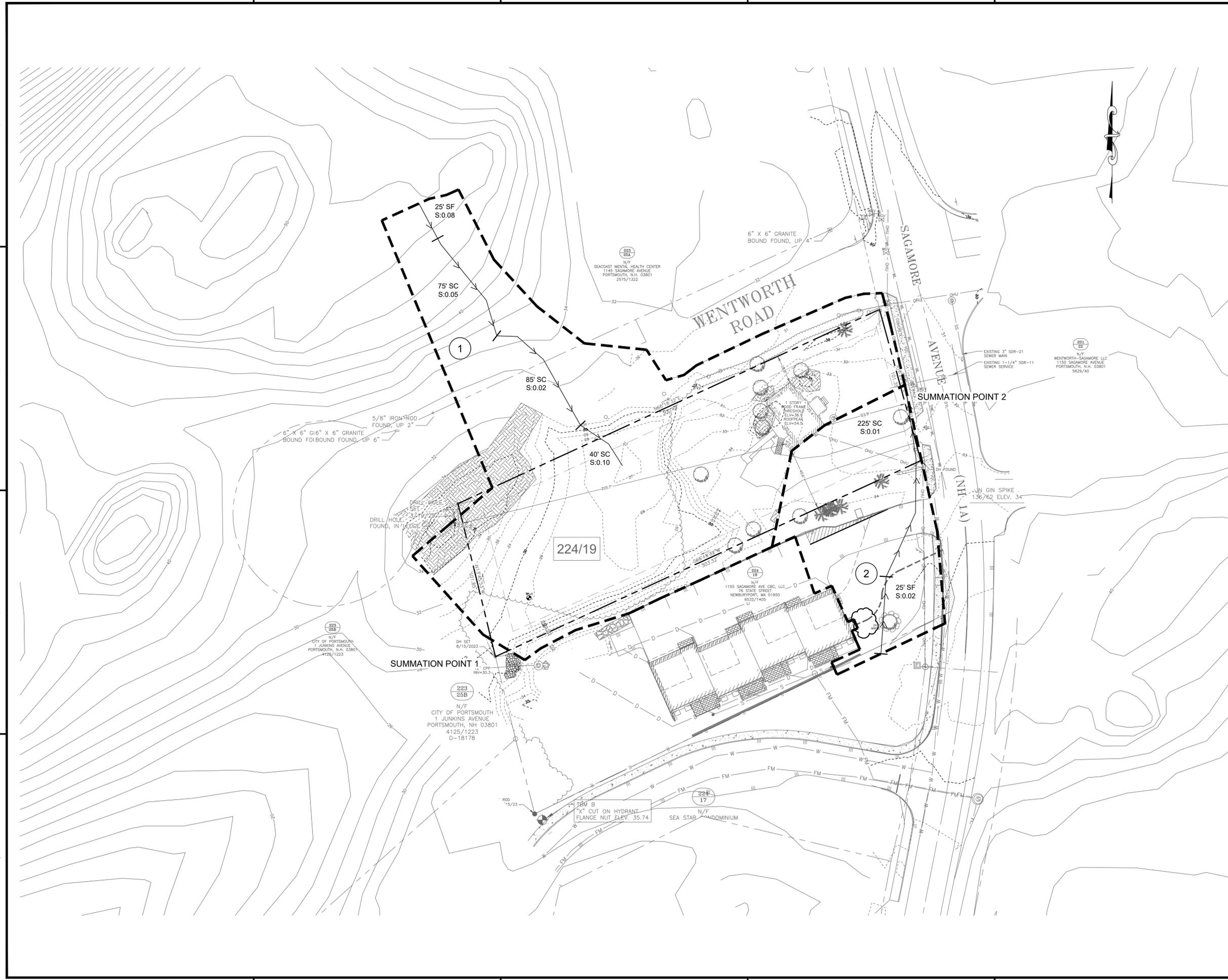
PROJECT

1151 SAGAMORE AVENUE CBC, LLC
 1151 SAGAMORE AVE., PORTSMOUTH, NH

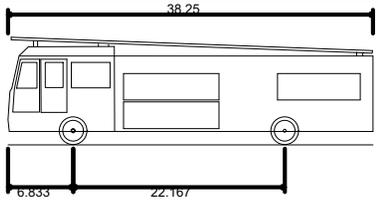
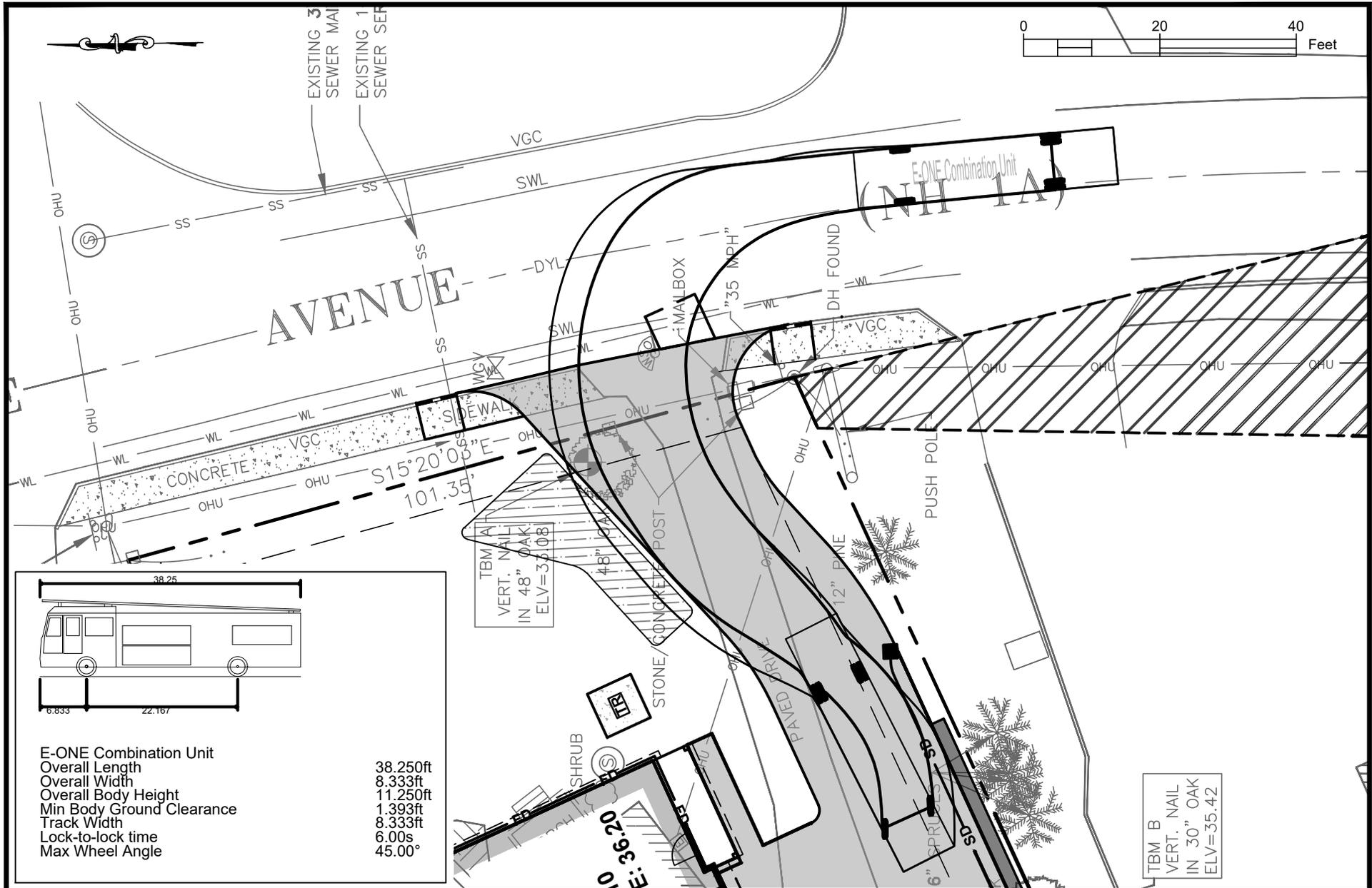
TITLE

PRE-DEVELOPMENT HYDROLOGY PLAN

	DATE	2025.12.22	SCALE	1"=30'
	DRAWN BY	BLQ/PJM	DESIGNED BY	BLQ/PJM
	CHECKED BY	DJO	PROJECT No.	5010314.002
	DRAWING No.	C701	REV.	2



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E-ONE Combination Unit
 Overall Length 38.250ft
 Overall Width 8.333ft
 Overall Body Height 11.250ft
 Min Body Ground Clearance 1.393ft
 Track Width 8.333ft
 Lock-to-lock time 6.00s
 Max Wheel Angle 45.00°

PROJECT **1151 SAGAMORE AVENUE CBC, LLC**
 1151 SAGAMORE AVE., PORTSMOUTH NH

TITLE **TURNING EXHIBIT**
LEFT TURN ENTERING COMPLEX

DWG No. **TR-1**

JN 5010314.002
 SCALE 1"=20'

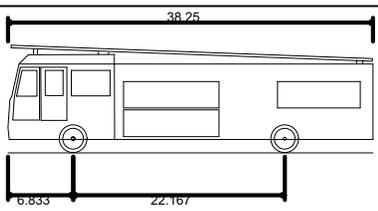
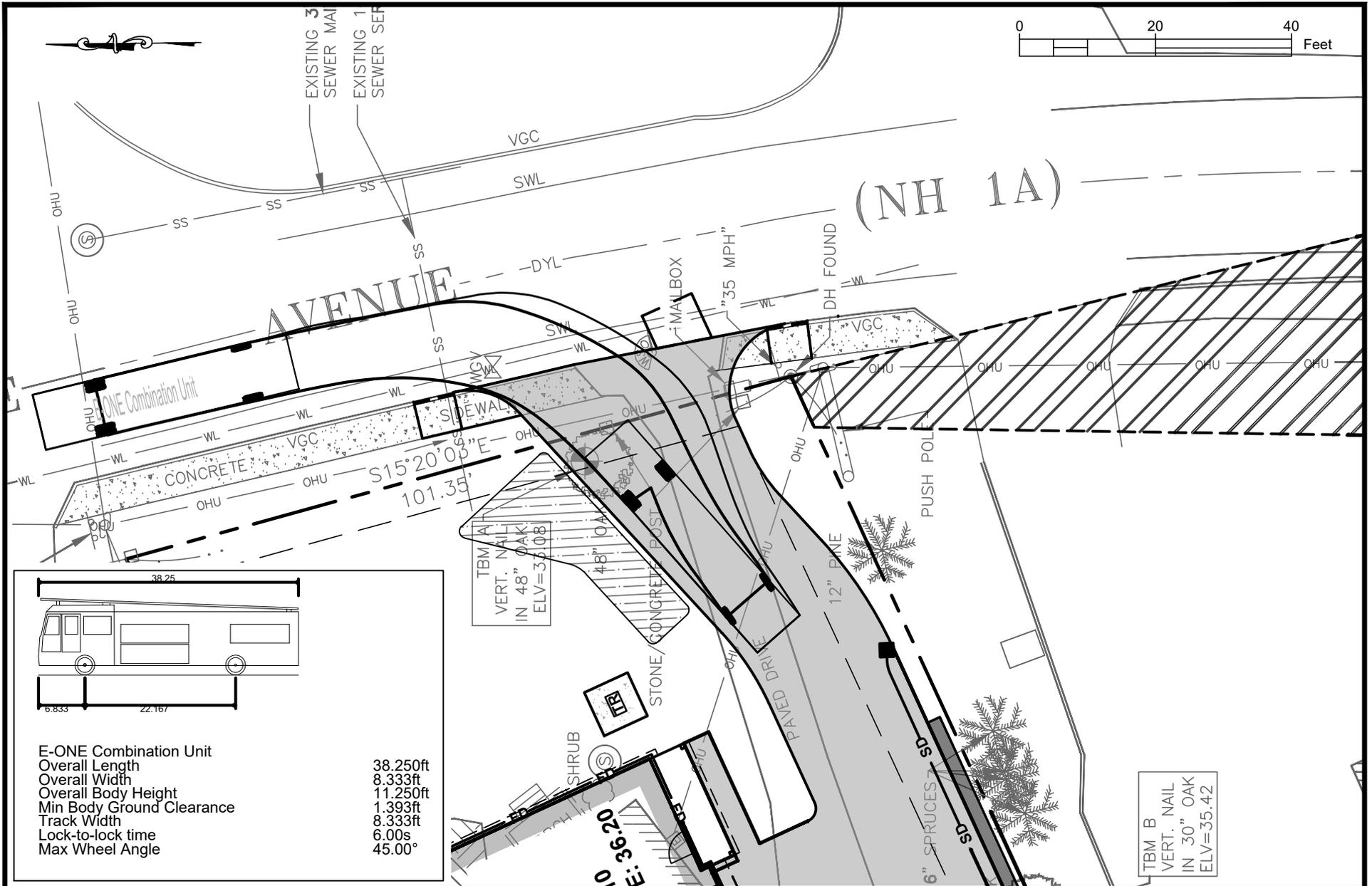
BY **PJM**

DATE 2025.12.22

REV.

REV. DATE





E-ONE Combination Unit	
Overall Length	38.250ft
Overall Width	8.333ft
Overall Body Height	11.250ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

PROJECT **1151 SAGAMORE AVENUE CBC, LLC**
1151 SAGAMORE AVE., PORTSMOUTH NH

TITLE **TURNING EXHIBIT**
RIGHT TURN ENTERING COMPLEX

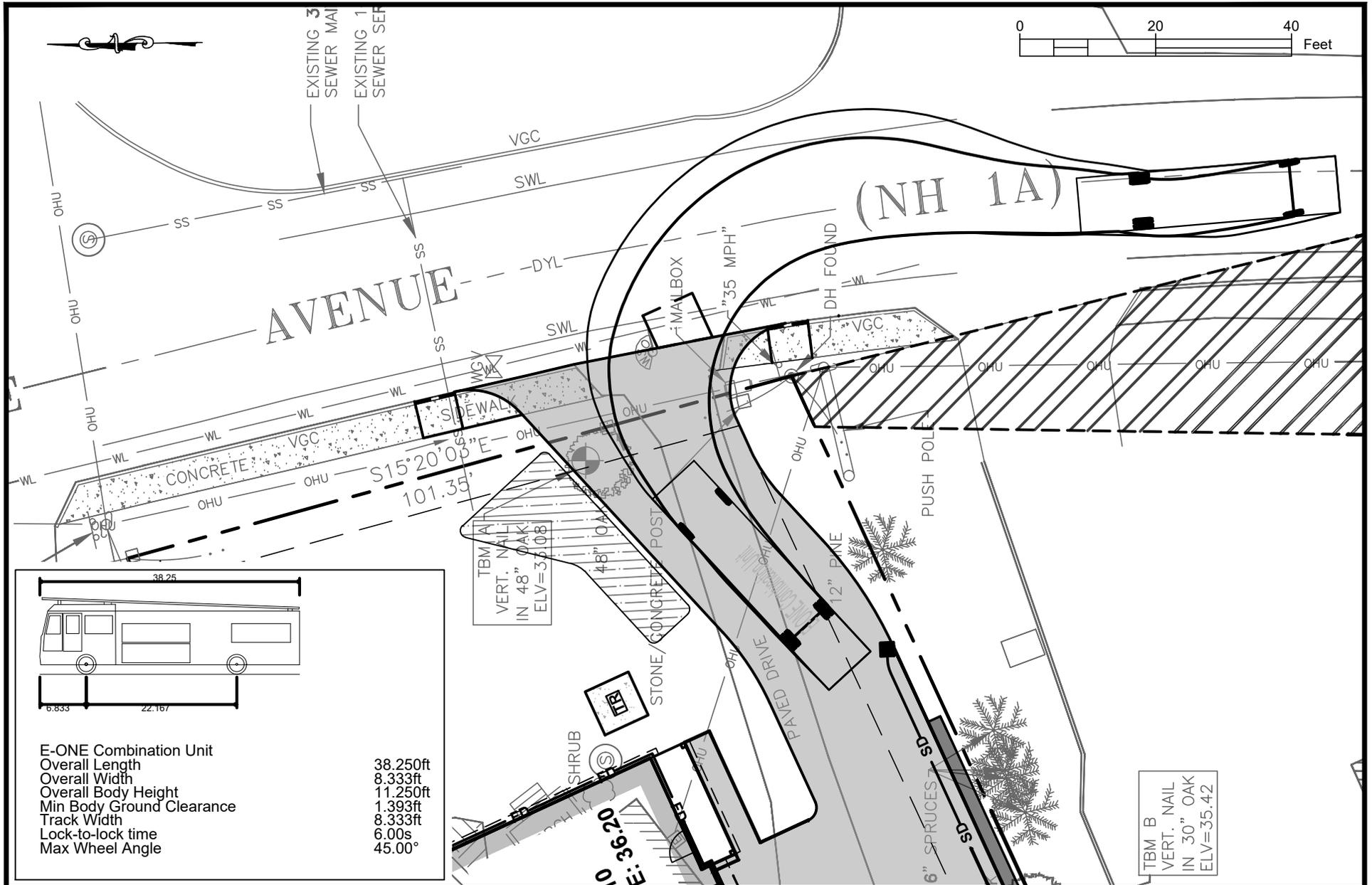
DWG No. **TR-2**

JN 5010314.002
 SCALE 1"=20'

BY **PJM**
 DATE 2025.12.22

REV.
 REV. DATE



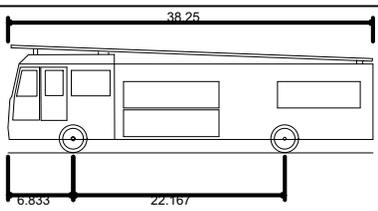
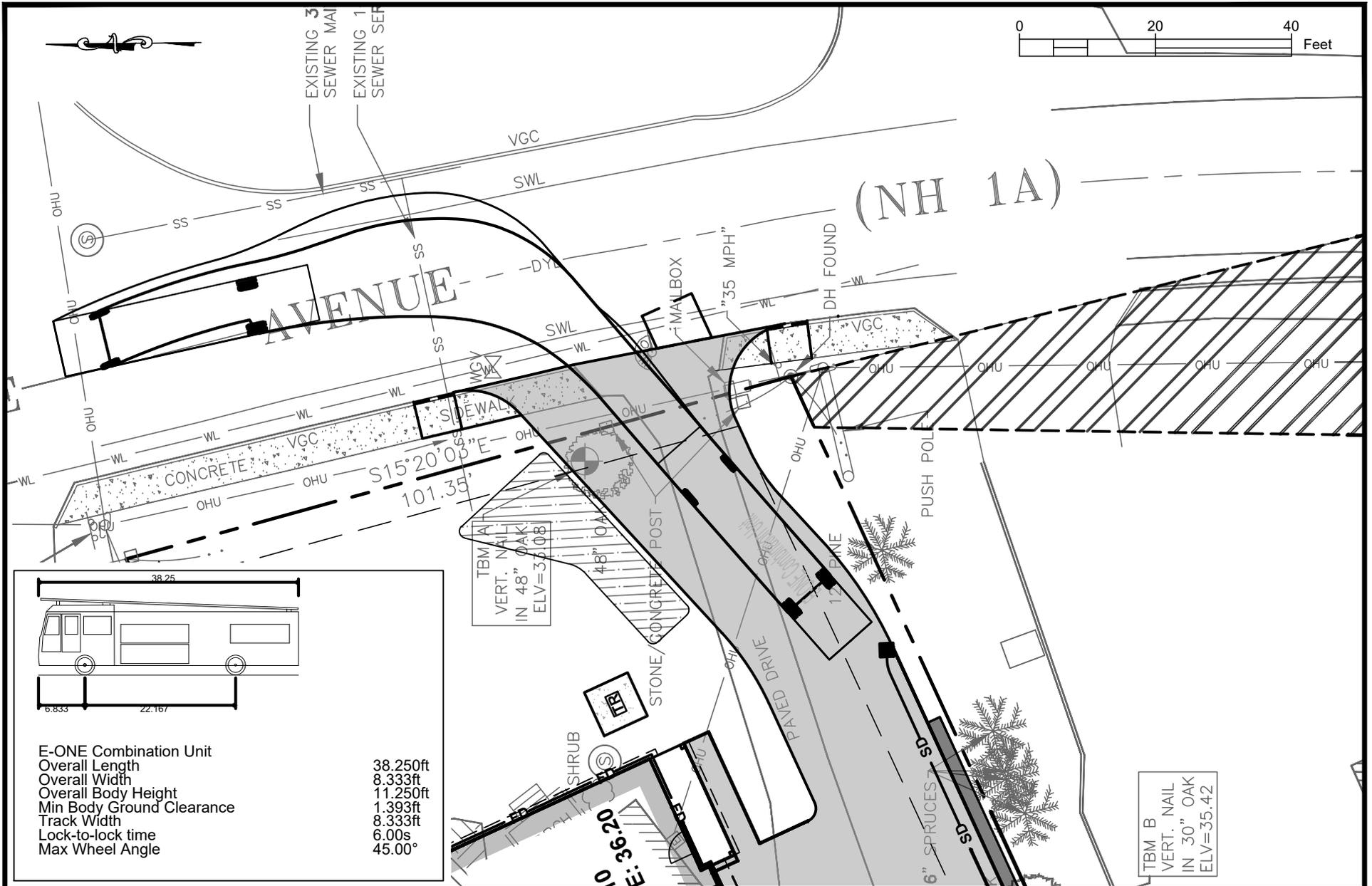


PROJECT	1151 SAGAMORE AVENUE CBC, LLC 1151 SAGAMORE AVE., PORTSMOUTH NH
TITLE	TURNING EXHIBIT RIGHT TURN EXITING COMPLEX

DWG No.	TR-3
JN	5010314.002
SCALE	1"=20'

BY	PJM
DATE	2025.12.22
REV.	
REV. DATE	





E-ONE Combination Unit	
Overall Length	38.250ft
Overall Width	8.333ft
Overall Body Height	11.250ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

PROJECT
1151 SAGAMORE AVENUE CBC, LLC
 1151 SAGAMORE AVE., PORTSMOUTH NH

TITLE
TURNING EXHIBIT
LEFT TURN EXITING COMPLEX

DWG No.
TR-4

JN
 5010314.002

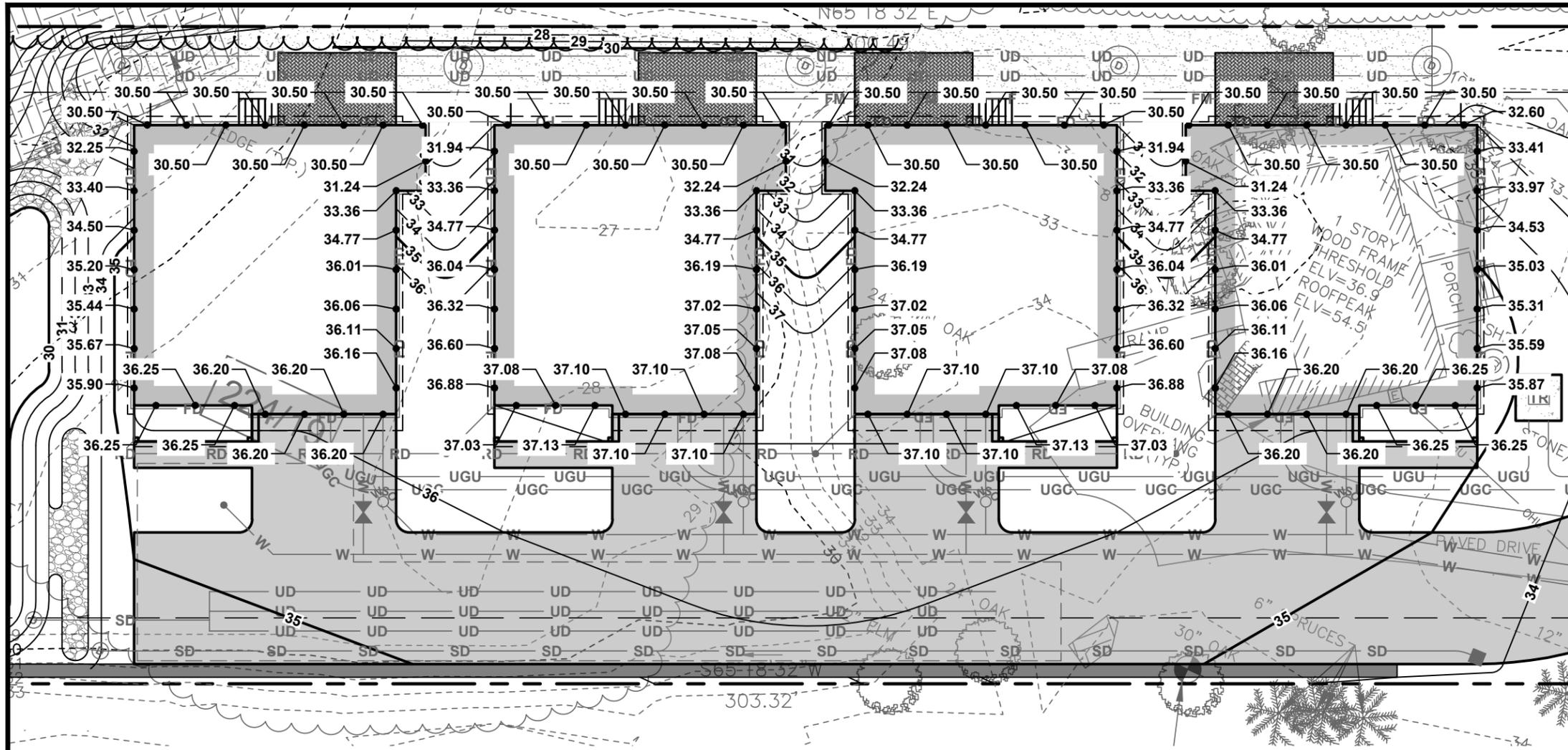
SCALE
 1"=20'

BY
 PJM

DATE
 2025.12.22

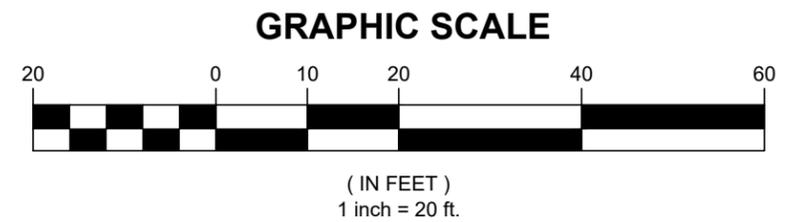
REV.
 REV. DATE





AVERAGE GRADE PLANE CALCULATIONS

	NORTH				EAST				SOUTH				WEST				TOTAL AVERAGE GRADE			
	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 1	UNIT 2	UNIT 3	UNIT 4
	30.5	30.5	30.5	30.5	33.41	31.94	32.24	31.24	36.2	37.1	37.1	36.2	31.24	32.24	31.94	32.25	34.16	34.53	34.53	34.04
	30.5	30.5	30.5	30.5	33.97	33.36	33.36	33.36	36.2	37.1	37.1	36.2	33.36	33.36	33.36	33.4				
	30.5	30.5	30.5	30.5	34.53	34.77	34.77	34.77	36.2	37.1	37.1	36.2	34.77	34.77	34.77	34.5				
	30.5	30.5	30.5	30.5	35.03	36.04	36.19	36.01	36.2	37.1	37.1	36.2	36.01	36.19	36.04	35.2				
	30.5	30.5	30.5	30.5	35.31	36.32	37.02	36.06	36.25	37.13	37.13	36.25	36.06	37.02	36.32	35.44				
	30.5	30.5	30.5	30.5	35.59	36.6	37.05	36.11	36.25	37.08	37.08	36.25	36.11	37.05	36.6	35.67				
	32.6	30.5	30.5	30.5	35.87	36.88	37.08	36.16	36.25	37.03	37.03	36.25	36.16	37.08	36.88	35.9				
TOTAL	215.6	213.5	213.5	213.5	243.71	245.91	247.71	243.71	253.55	259.64	259.64	253.55	243.71	247.71	245.91	242.36				
# OF POINTS	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7					
AVERAGE GRADE	30.8	30.5	30.5	30.5	34.82	35.13	35.39	34.82	36.22	37.09	37.09	36.22	34.82	35.39	35.13	34.62				



PROJECT	1151 SAGAMORE AVENUE CBC, LLC 1151 SAGAMORE AVE., PORTSMOUTH, NH	DWG No.	EXHIBIT 1	BY	VPJM	DRAWING STATUS	NOT FOR CONSTRUCTION	
TITLE	AVERAGE GRADE PLAN EXHIBIT	JN	5010314.002	DATE	2026.02.13			
		SCALE	1"=20'	REV.		REV. DATE		

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Plant List - Trees and Shrubs

ID	Qty	Botanical Name	Common Name	Scheduled Size	Mature Height	Mature Width	Growth Habit	Tolerances	Requirements
ARB	5	Acer rubrum 'Bowhall'	Bowhall Maple	3" Cal.	40-60'	10-15'	Upright, Broadly Columnar	Urban, Wet Soil	Full, partial sun. Moist, well drained soils.
GTH	1	Gleditsia triacanthos inermis 'Halka'	Halka Honeylocust	2" Cal.	30-40'	30-40'	Rounded	Urban, Salt, Drought, Wind, Heat	Full sun. Moist, well drained soils.
JBD	121	Juniperus communis depressa 'Blueberry Delight'	Blueberry Delight Juniper	2 Gal.	18-24"	4-5'	Spreading	Drought, Deer, Urban, Salt	Full, partial sun. Average, well drained soil.
PGD	3	Picea glauca 'Densata'	Black Hills Spruce	7-8' Ht.	20-30'	15-20'	Pyramidal	Drought, Deer, Wind	Full sun. Moist, well drained soils.
QB	1	Quercus bicolor	Swamp White Oak	3" Cal.	40-60'	40-60'	Broad	Drought, Moist Soil, Urban	Full sun, large space. Medium to wet, acidic soil.
RGL	47	Rhus aromatica 'Grow Low'	Grow Low Sumac	18-24"	18-24"	6-8'	Spreading	Drought, Urban, Salt	Full, partial sun. Dry to average, well drained soil.
TOS	5	Thuja occidentalis 'Smaragd'	American Arborvitae	7-8' Ht.	15-20'	5-6'	Upright, Pyramidal	Urban, Moist Soil	Full, partial sun. Average, well drained soil.
VBM	5	Viburnum dentatum 'Blue Muffin®'	Blue Muffin® Viburnum	3-4' Ht.	6-8'	4-5'	Compact	Deer, Moist Soil, Drought, Salt, Urban	Full, partial sun. Average, well drained soil.

Plant List - Perennials

ID	Qty	Botanical Name	Common Name	Scheduled Size	Mature Height	Mature Width	Growth Habit	Tolerances	Requirements
BAP	14	Baptisia australis	False Indigo	1 Gal.	36"	36"	Bushy	Salt, Drought, Urban	Sun, partial shade. Average soil.
PVS	19	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	2 Gal.	36"	30-48"	Clump	Drought, Wet soil, Urban, Salt	Sun, partial shade. Average to moist soil.



Ernst Conservation Seeds
 8884 Mercer Pike
 Meadville, PA 16335
 (800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: November 06, 2025

Rain Garden Grass Mix - ERNMX-180-1

Botanical Name	Common Name
40.30 % <i>Schizachyrium scoparium</i> , Fort Indiantown Gap-PA Ecotype	Little Bluestem, Fort Indiantown Gap-PA Ecotype
20.00 % <i>Elymus virginicus</i> , Madison-NY Ecotype	Virginia Wildrye, Madison-NY Ecotype
17.80 % <i>Carex vulpinoidea</i> , PA Ecotype	Fox Sedge, PA Ecotype
9.00 % <i>Panicum clandestinum</i> , Tioga	Deertongue, Tioga
6.00 % <i>Chasmodon latifolium</i> , WV Ecotype	River Oats, WV Ecotype
5.50 % <i>Panicum rigidulum</i> , PA Ecotype	Redtop Panicgrass, PA F
0.70 % <i>Juncus effusus</i>	Soft Rush
0.70 % <i>Juncus tenuis</i> , PA Ecotype	Path Rush, PA Ecoty;

100.00 % **Mix Price/Lb Bulk: \$28.84**

Seeding Rate: 15 lb per acre with a cover crop. For sites that drain within 24 hours of a rain event use one of the following cover crops: Oats (1 Jan to 31 Jul; 30 lbs/acre), Japanese Millet (1 May to 31 Aug; 10 lbs/acre), or grain rye (1 Aug to 31 Dec; 30 lbs/acre).

Grasses & Grass-like Species - Herbaceous Perennial; Stormwater Management

Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.



Ernst Conservation Seeds
 8884 Mercer Pike
 Meadville, PA 16335
 (800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: November 07, 2025

Conservation Shade Mix - ERNMX-129

Botanical Name	Common Name
30.00 % <i>Festuca rubra</i>	Creeping Red Fescue
30.00 % <i>Festuca rubra</i> ssp. <i>commutata</i>	Chewings Fescue
20.00 % <i>Lolium multiflorum</i>	Annual Ryegrass
10.00 % <i>Poa pratensis</i> , 'Baron'	Kentucky Bluegrass, 'Baron'
10.00 % <i>Poa trivialis</i>	Rough Bluegrass

100.00 %

Seeding Rate: 100-200 lb per acre, or 3-5 lb per 1,000 sq ft

Grasses & Grass-like Species - Herbaceous Perennial; Lawn & Turfgrass Sites

While designed for deep-shaded areas, this mix requires at least 2 hours of sunlight daily. The fescues and bluegrasses are shade tolerant and blend very well together. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.



terra firma
 landscape architecture

165.a Court Street Portsmouth, NH 03801
 605.531.9109 | terence@terrafirmalandscape.com

Build America
 1151 Sagamore Ave.
 Portsmouth, NH



terra firma landscape architecture
 163.a Court Street
 Portsmouth, NH

REV.	DATE	DESCRIPTION
C	2/11/2026	CIVIL PLAN UPDATES
B	12/19/2025	
A	12/5/2025	Patio, Walkway, and Window Well Adjustments

NO.	DATE	ISSUE NOTE

Project Manager: _____ Drawn By: TC
 Date: November 2025 Reviewed By: TP
 Project ID: 1151 Sagamore

Sheet Title: **Landscape Plan**

Sheet No: **L-1**

4

3

2

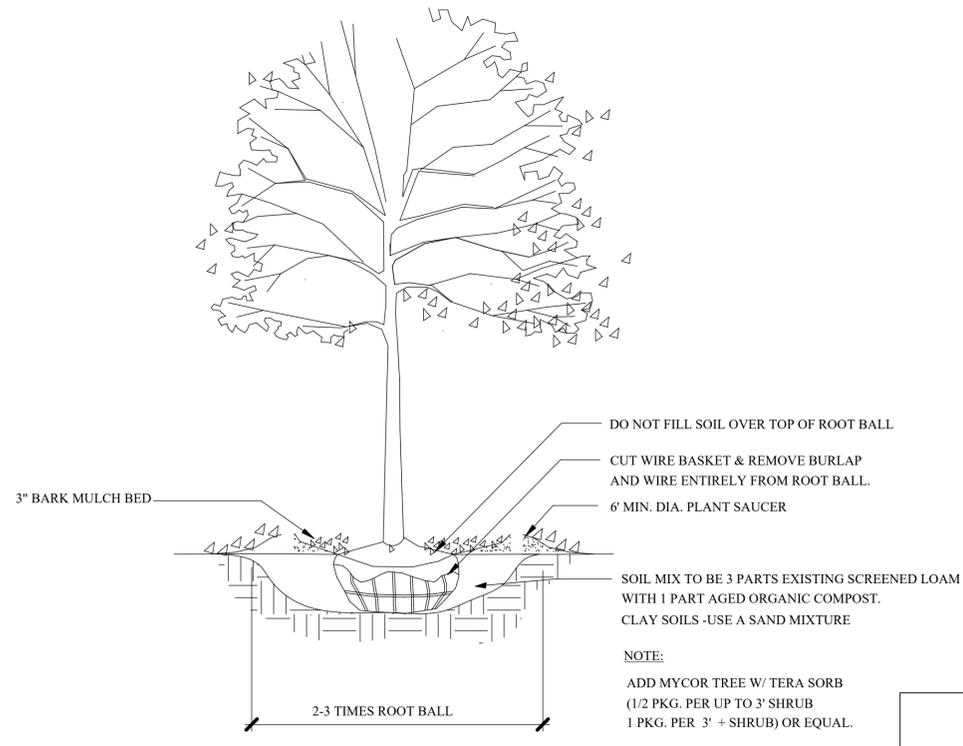
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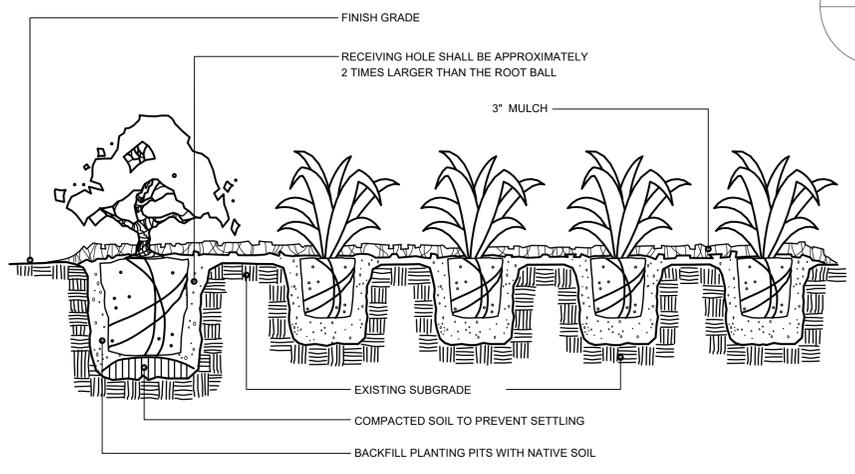
C

B

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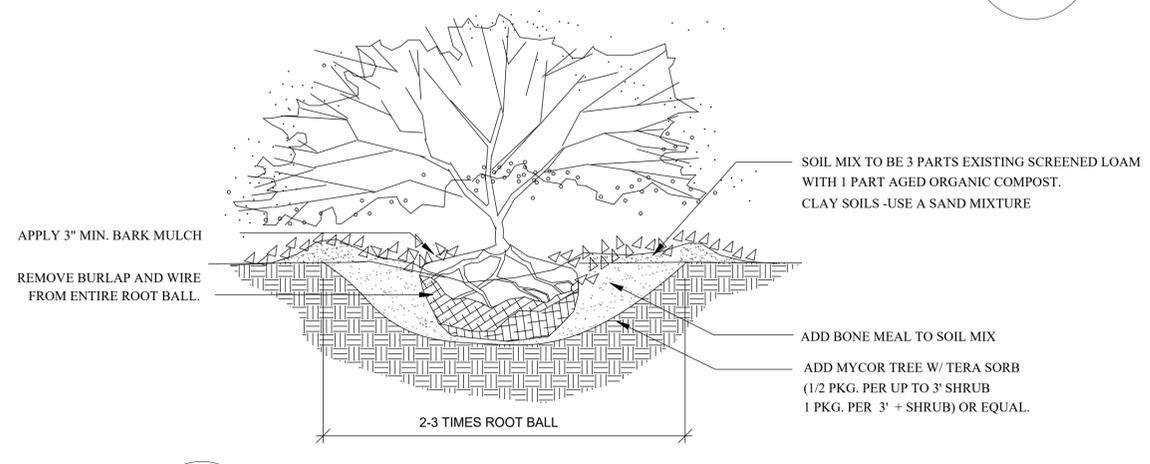
1
L-5
TREE PLANTING - 2"+ CAL.
SCALE: NTS



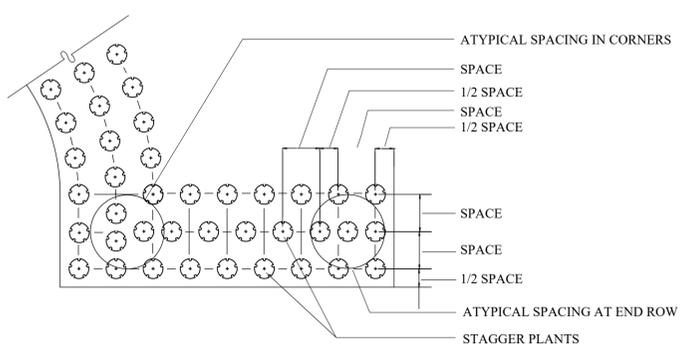
2
L-5
PYRAMIDAL EVERGREEN TREE PLANTING
SCALE: NTS

NOTE: SHRUBS SHALL BE PLANTED A MINIMUM OF 1" & NO MORE THAN 2" ABOVE FINISH GRADE, DEPENDING UPON SITE CONDITIONS.

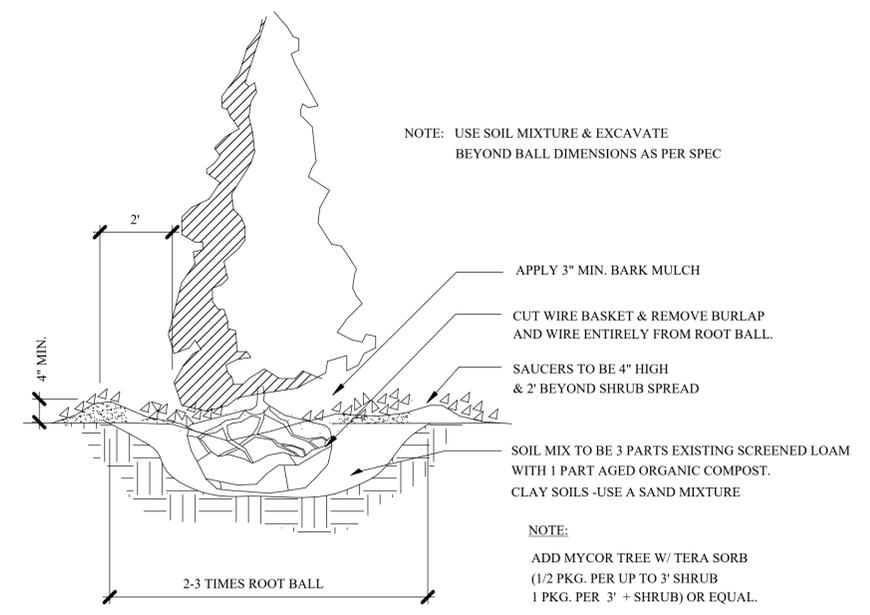
3
L-5
SHRUB/GROUND COVER PLANTING DETAIL
SCALE: NTS



4
L-5
B&B SHRUB PLANTING
SCALE: NTS



5
L-5
GROUND COVER SPACING DETAIL
SCALE: NTS



LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
3. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT.
5. ALL PLANT MATERIALS SHALL BE EXACTLY AS SPECIFIED BY THE LANDSCAPE ARCHITECT. IF PLANT SPECIES CULTIVARS ARE FOUND TO VARY FROM THAT SPECIFIED AT ANY TIME DURING THE GUARANTEE PERIOD, THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO HAVE THE CONTRACTOR REPLACE THAT PLANT MATERIAL. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT DELIVERED TO THE SITE FOR AESTHETIC REASONS BEFORE PLANTING. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE QUALITY FOR ALL THE PLANTS.
6. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ON-GOING TO CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
7. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
8. NO PLANT SHALL BE PUT IN THE GROUND BEFORE GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT.
9. ALL PLANTS SHALL BE INSTALLED AND DETAILED PER PROJECT SPECIFICATIONS.
10. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
11. ALL PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FOR NOT LESS THAN ONE FULL YEAR FROM THE TIME OF PROVISIONAL ACCEPTANCE. DURING THIS TIME, THE OWNER SHALL MAINTAIN ALL PLANT MATERIALS IN THE ABOVE MANNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE PLANTS TO ENSURE PROPER CARE. IF THE CONTRACTOR IS DISSATISFIED WITH THE CARE GIVEN, HE SHALL IMMEDIATELY, AND IN SUFFICIENT TIME TO PERMIT THE CONDITION TO BE RECTIFIED, NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OR OTHERWISE FORFEIT HIS CLAIM. LANDSCAPE CONTRACTOR SHALL PRUNE PLANTINGS OF DEAD LIMBS OR TWIGS DURING THE FIRST YEAR OF GROWTH.
12. FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT WILL BE MADE UPON THE CONTRACTOR'S REQUEST AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED.
13. LANDSCAPE CONTRACTOR SHOULD REPLACE DEAD PLANTINGS IMMEDIATELY UPON OWNER DIRECTION WITHIN THE WARRANTY PERIOD AND AGAIN AT THE END OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL HAVE REPLACED ANY PLANT MATERIAL THAT IS MISSING, NOT TRUE TO SIZE AS SPECIFIED, THAT HAVE DIED, THAT HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING OR INADEQUATE OR IMPROPER CARE, OR THAT ARE, IN THE OPINION OF THE LANDSCAPE ARCHITECT, IN UNHEALTHY OR UNSIGHTLY CONDITION.
14. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS CALLED FOR.
15. ALL TREES AND SHRUBS TO BE PLANTED IN MULCH BEDS WITH DEFINED AND CUT EDGES TO SEPARATE TURF GRASS AREAS.
16. FOR ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE, REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC., THEN APPLY GRASS SEED OR PINE BARK MULCH AS DEPICTED ON PLANS.
17. LANDSCAPE CONTRACTOR SHALL FEED AND PRUNE EX. TREES, ON OR JUST OFF SITE, THAT HAVE EXPERIENCED ROOT BASE INTRUSION OR DAMAGE DURING CONSTRUCTION IMMEDIATELY AND FOR THE DURATION OF THE WARRANTY PERIOD AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
18. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE EDGE OF THE EX. TREE CANOPY THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
19. ALL MULCH AREAS SHALL RECEIVE A 2" LAYER OF SHREDDED PINE BARK MULCH.
20. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.

PLEASE NOTE: THIS SHEET IS SCALED FOR 22 BY 34 PAPER, DO NOT REDUCE OR ENLARGE.



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REV.	DATE	DESCRIPTION

C	DATE	CIVIL PLAN UPDATES

NO.	DATE	ISSUE NOTE

Project Manager

Drawn By TC

Date November 2025

Reviewed By TP

Project ID 1151 Sagamore

Sheet Title

Landscape Details

Sheet No.

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