

STORMWATER MANAGEMENT REPORT

Prepared for:

Temple Ner Tamid

Block 931, Lot 50
936 Broad Street
Township of Bloomfield
Essex County, New Jersey

Prepared by:

BOHLER //

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1. Introduction

The subject property is located at 936 Broad Street in the Township of Bloomfield, Essex County, New Jersey. The property is identified as Block 931, Lot 50 on the Township of Bloomfield Tax Map. The overall subject property is approx. 2.32 Acres and will hereafter be referred to as “the site”.

The scope of this study includes a comparative analysis of the existing and proposed drainage conditions for the subject site. The primary objective is to preserve or improve the site's current stormwater management performance following development. To achieve this, the existing underground storage pipe located at the rear of the property has been upsized to increase detention capacity and attenuate peak flow rates to match existing discharge peak flow. In addition, two new drywells are proposed at the front of the site to manage runoff from the proposed roof areas. These new drywells are designed to function in series with the existing on-site drywells, collectively providing adequate storage and promoting infiltration to reduce and manage the increase in impervious cover.

The construction of the improvements that are proposed as part of this application, which are described in greater detail below, will increase the impervious area of the site by approximately 4,377 SF (0.10 acres), increase/ the Motor Vehicle Surface Area (MVSA) 465 SF (0.01 acres), and will disturb approx. 16,958 SF (0.38 acres). The NJDEP Stormwater Management Regulations (NJAC 7:8) defines “Major Development” as any “development” that results in disturbing one or more acres of land, increasing impervious surface by one-quarter acre or more, or increasing motor vehicle surface area (MVSA) by one-quarter acre or more. Therefore, this development does not qualify as a Major Development per NJDEP.

Although the proposed development does not meet the threshold for classification as a Major Development, HydroCAD modeling has been conducted to evaluate the stormwater impacts. The results of the analysis demonstrate that post-development peak runoff rates are maintained at or below existing conditions, despite the increase in impervious cover. This confirms that the proposed stormwater management measures are sufficient to mitigate any adverse hydrologic impacts associated with the development.

2. Stormwater Management Design Methodology

The assessment of stormwater runoff has been based upon the Soil Conservation Service Method (SCS) Unit Hydrograph as described in Chapters 7, 9, 10, 15 and 16, Part 630 Hydrology, National Engineering Handbook (NEH) (previously described in Technical Release Number 55 (TR55), “Urban Hydrology for Small Watersheds”). Theoretical storms are modeled with the 24-Hour SCS Unit Dimensionless Hydrograph using the NOAA Atlas 14 Type D rainfall distribution and recurrence intervals of 2, 10, and 100 years. Hydrograph creation and routings are accomplished using the HydroCAD stormwater modeling program by HydroCAD Software Solutions, LLC.

2.1 Rainfall Data

Rainfall data used in the stormwater calculations of this report are obtained from different sources based on the latest NJ stormwater management regulations (*NJAC 7:8*). The Water Quality storm event is based on the NJ BMP Manual Chapter 5 definition of having a total rainfall depth of 1.25 inches and a total duration of two (2) hours. Twenty-four-hour rainfall

frequency data in Essex County for all other storms has been obtained from the Engineering Field Handbook NJ Supplement last revised August 2012 (developed from data contained in NOAA Atlas 14 Volume 2). The rainfall depth values used in this project are listed in Table 2.1.

TABLE 4.1 – 24-Hour Rainfall Frequency Data

Event (year)	2	10	100
NOAA Atlas 14 Rainfall (inches)	3.44	5.22	8.66

2.2 Site Soils

Site soil information has been obtained from the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey database. The soil types present within the studied watershed are shown in Table 2.2. The soils consist of hydrologic soil group (HSG) Type D, therefore the CN values used in calculations are those associated with Type D soils.

TABLE 2.3 - Site Soil Properties

Soil Symbol	Soil Name	Characteristics	Hydrologic Soil Group Rating
USBOOB	Urban Land, Boonton substratum	0-8% slopes	D
UdbooB	Udorthents, Boonton substratum	0-8% slopes	D
USDUNB	Urban Land, Dunellen substratum	0-8% slopes	D

2.3 Curve Numbers

For determining the runoff flows, the cover types in combination with the HSG rating must be determined for each drainage area. These are used to determine the runoff curve number (CN) values that are used in the hydraulic calculations. The CN values used in this project are listed in Table 2.3.

TABLE 2.4 - CN Values

Land Cover Description	HSG D
Open space, Good Condition (grass cover >75%)	80
Impervious Surfaces	98

2.4 Time of Concentration

The calculations are based on a minimum time of concentration of 6 minutes.

3. Pre-Development Site Conditions

The existing site that is being analyzed includes 55,389 SF of impervious area, 28,716 SF of Motor Vehicle Surface Area (MVSA) and, in the existing condition, contains the existing Temple Ner Tamid with concrete sidewalks, curbs, asphalt parking areas, and associated site improvements. The site's existing drainage pattern contains one drainage area in which runoff sheet flows into existing inlets throughout the site and which discharges to the existing inlet located near the driveway entrance along Broad Street. An existing detention basin is located in the rear parking area and collects a portion of the landscape, parking and roof area. An existing dry well system is located within the front yard of the site that collects the previously approved temple expansion.

4. Post-Development Site Conditions

The post development conditions include the construction of the Temple building expansion, replacing concrete sidewalks, curbs, and small asphalt parking expansion along the driveway entrance, and proposed stormwater improvements. The total impervious area on site increases by 4,377 SF and the MVSA increases by 465 SF in the post-development condition. The proposed site is designed in a manner that maintains the existing drainage pattern allowing runoff to flow into the existing detention system which will be modified to include the storage piping at the rear of the development and provide an additional two dry wells in the front yard to capture the improvements. The ultimate discharge point will remain the same in the proposed condition.

4.1 Proposed Structural Stormwater Management Strategies

4.1.1 Drainage Area 1A (Rear of Site)

As part of the proposed improvements, the existing underground stormwater management system will be upgraded to accommodate the increase in runoff resulting from additional impervious coverage. Specifically, the existing subsurface storage system will be enhanced by replacing or upsizing a portion of the current 48" HDPE storage pipe to a 54" HDPE pipe to provide additional detention volume.

The rear portion of the site currently conveys stormwater runoff to a series of inlets, which discharge to the existing subsurface detention system comprised of 48" HDPE pipes and an outlet control structure (OCS). The OCS includes an orifice for controlled release of smaller storm events and a weir to provide additional attenuation for larger events. This outlet control device will remain unaltered under the proposed conditions.

Hydrologic and hydraulic analyses were performed using HydroCAD to compare pre- and post-development peak flow rates. The results confirm that peak discharges for the 2-, 10-, and 100-year storm events will be maintained or reduced under the proposed conditions. Tables 4.1 summarize the peak outflows, demonstrating compliance with existing site discharge characteristics.

**Table 4.1 – Drainage Area 1A Hydrograph Summary
Existing vs. Proposed Flow Summary
Precipitation Depths**

	Existing Peak Flow	Proposed Peak Flow	Net Change
Storm Event	CFS	CFS	CFS
2-Year	2.37	2.34	-0.03
10-Year	3.58	3.52	-0.06
100-Year	5.58	5.41	-0.17

4.1.2 Dry Well (Front of Site)

As part of the proposed stormwater design, a dry well expansion is included to accommodate the increase in stormwater runoff for the added impervious coverage on site.

The existing drywell was previously approved and installed as part of the “Grading and Utility Plan” prepared by Professional Planning and Engineering Corporation (PPE) dated September 17th 2002, last revised January 20th 2003.

The drywell was designed to collect a portion of the previously proposed temple expansion roof area and infiltrate the water quality storm (1.25” / 2 hours). The drywell was designed to hold the Water Quality Storm Volume without discharge through the overflow pipe or top inlet grate. Infiltration appears to not be considered in the original routing of the system. From the limited information available from previous records, it is assumed that the seasonal high groundwater elevation was not encountered. Reviewing available mapping and information from the Websoilsurvey.com, it has shown that the depth to water table is greater than 200 cm above the ground surface.

The existing drywell will be expanded to accommodate the additional Water Quality Storm volume from the increase in impervious coverage from the proposed improvements. The expanded dry well system continues to infiltrate the Water Quality Storm volume. A 24” HDPE pipe is proposed between the existing and proposed dry well tanks; the pipe is set at the bottom of the storage chambers, which increases the volume of the existing tank to increase without changing the onsite drainage pattern and allows the drywells to act as one system. Drywell storage description can be found in Appendix A.

In regards to evaluating drain time of the drywell, the NJDEP minimum of 0.5in/hr was applied to evaluate the drywell drains in less than 72 hours. Permeability Testing during construction will need to be completed, and is noted on the Site Plans, to confirm permeability rates

Calculations for the 2-, 10- and 100-year storm events are included to demonstrate drywell will not overtop the drywell system. Stormwater runoff for these larger storm

event will be discharged into the existing stormwater conveyance system through an existing 6" PVC pipe. Overflow grates have been provided in the drywells for storm events greater than the 100-year event.

Table 4.3 – Dry Well #1 Summary

Dry Well #	Combined Existing & Proposed Drywells
Drainage Area (Acres)	0.147
Water Quality Storm Volume (CF)	566
Storage Volume (CF)	1,394
Permeability Rate (Inches/Hour)	0.50
Drain Time (Hours)	32.40
Seasonal High Ground Water Elevation	Not Encountered
Dry Well Bottom Elevation	156.92 (Tank) 155.92 (Stone)

4.2 Soil Erosion and Sediment Control

The Soil Erosion and Sediment Control plans and details are included within the Site Plan documents prepared by Bohler and must be followed throughout construction. Silt fences, stabilized construction entrances, a temporary stockpile and inlet filters are proposed during construction. This report and the Site Plan documents prepared by Bohler are being submitted to the Hudson Essex Passaic County Soil Conservation District for approval.

Proposed on-site stormwater facilities discharge to an existing, stable stormwater conveyance network. The rate of runoff at the discharge point has been maintained or decreased.

The drywell tank is designed to only infiltration the water quality storms and discharge all storm event greater (2-, 10-, & 100- year) through the existing 6" overflow pipe. Infiltration was not considered in the routing; the drywell tank stores the entire water quality storm volume. In the event of the drywell experiences a complete loss of infiltration function, stormwater runoff for all storm events will be discharged through the 6" PVC overflow pipe into the downstream conveyance system. The stormwater facility will discharge to the existing stormwater conveyance network where the rate of runoff at the discharge point will be maintained or decreased.

5. Quantity

The NJDEP Stormwater Management Regulations dictate that the runoff quantity reduction standards (N.J.A.C. 7:8-5.6(a)) apply only if there is a net increase of 0.25 Ac. (10,890 SF) or

more of impervious surface coverage, a net increase of 0.25 Ac. (10,890 SF) or more of MVSA, or if there is a disturbance of 1.00 Ac. (43,560 SF) or more of land area.

The project as designed will involve the disturbance of 0.38 Ac. (16,958 SF), an increase of 0.10 Ac. (4,377 SF) of impervious area, and an increase of 0.01 Ac. (465 SF) of MVSA. Therefore, water quantity standards do not apply. The increase in impervious surface coverage will result in a de minimis impact to stormwater runoff.

6. Groundwater Recharge

The NJDEP Stormwater Management Regulations dictate that the groundwater recharge standards (N.J.A.C. 7:8-5.4(a)) apply only if there is a net increase of 0.25 Ac. (10,890 SF) or more of impervious surface coverage or if there is a disturbance of 1.00 Ac. (43,560 SF) or more of land area.

The project as designed will involve the disturbance of 0.38 Ac. (16,958 SF), an increase of 0.10 Ac. (4,377 SF) of impervious area, and an increase of 0.01 Ac. (465 SF) of MVSA. Therefore, the groundwater recharge standards do not apply.

7. Water Quality

The NJDEP Stormwater Management Regulations dictate that the water quality standards (N.J.A.C. 7:8-5.5(a)) apply only if there is a net increase of 0.25 Ac. (10,890 SF) or more of MVSA.

The project as designed will involve an increase of 0.01 Ac. (465 SF) of MVSA, therefore, the water quality standards do not apply.

8. Nonstructural Stormwater Management Strategies

In accordance with the NJDEP Stormwater Management Regulations and the latest New Jersey Stormwater Best Management Practices Manual, several nonstructural stormwater management strategies have been incorporated into the design of the site and are listed below:

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.

The footprint of the improvements has been minimized to the previously improved and/or disturbed areas. The majority of the existing vegetated areas remain undisturbed. Stormwater runoff will be discharged in a similar manner of existing conditions.

2. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.

The overall impervious coverage is being increased by approximately 4,377 square feet. As part of the proposed site design, the impervious area has been decreased as much as possible to maintain similar conditions to the existing. A portion of the roof runoff of the building will be discharged to two proposed dry wells and disconnected from the stormwater conveyance system. Perforated underdrains are utilized to help slow the proposed run off from the development.

3. Maximize the protection of natural drainage features and vegetation.

The footprint of the improvements has been minimized to the areas adjacent to the existing building as well as previously developed area. Most of the existing wooded areas remain undisturbed. Stormwater runoff will be discharged in a similar manner of existing conditions. Soil erosion measures are proposed to be utilized during construction to protect the adjoining undisturbed vegetation.

4. Minimize the decrease in the "time of concentration" from pre-construction to postconstruction.

The minimal proposed site improvements for this application will attempt to maintain the time of concentration from the existing conditions. The site layout, grading and drainage improvements have been designed in order to maintain the existing drainage pattern and time of concentration.

5. Minimize land disturbance, including clearing and grading.

The minimal proposed site improvements will maintain the previously undisturbed areas. The natural areas will be protected during construction through the use of silt fence, construction fence, and tree-protection fencing.

6. Minimize soil compaction.

Soil compaction has been minimized within the project limits.

7. Provide other source controls to prevent or minimize the use or exposure of pollutants from development sites in order to prevent or minimize the release of those pollutants into stormwater runoff. These source controls include, but are not limited to:

- i. Development design features that help to prevent accumulation and discharge of trash and debris in drainage systems.

Proposed stormwater inlets have been specified with "eco" type curb pieces indicating the text "Dump No Waste, Drains to Waterways."

- ii. Development design features that help to prevent and/or contain spills or other harmful accumulations of pollutants at industrial or commercial developments.

Spills and accumulation of pollutants are not anticipated due to the type of use proposed. However, proposed stormwater management facilities intercept stormwater from the impervious surfaces and the proposed roadways, which will provide a collection point for vehicular pollutants.

- iii. When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and implementing rules.

The soil erosion and sediment control plans address the requirement for establishing vegetation. Preventative source controls include the use of "eco" inlet curb pieces, storm drain inlets, and trash racks on outlet control structures. The soil erosion and sediment control plan addresses re-stabilizing vegetation and implementing soil erosion and sediment control protection measures.

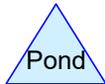
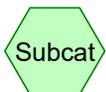
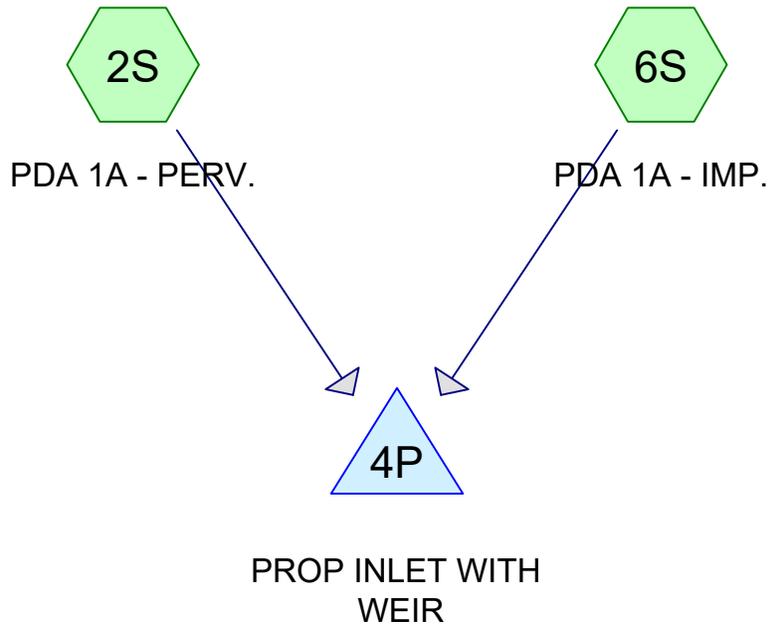
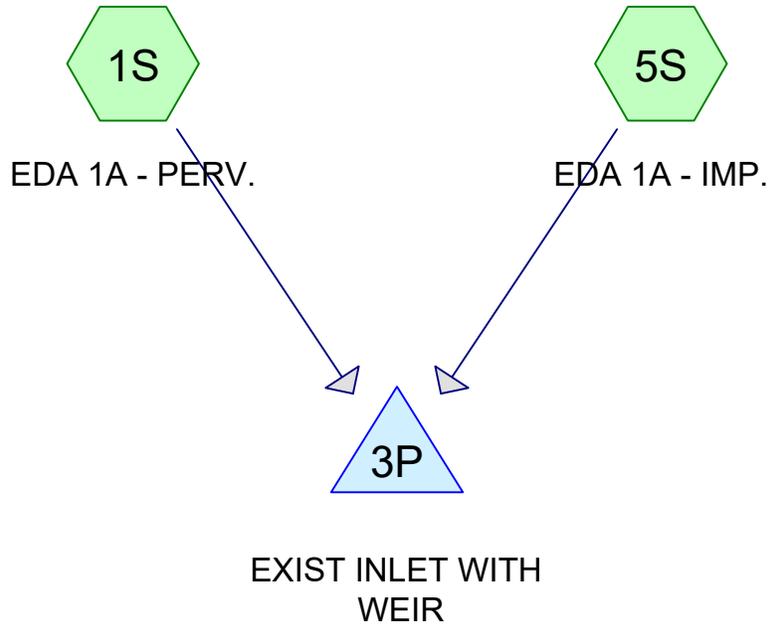
9. Conclusions

In summary, the stormwater management plan for the proposed project is designed to maintain the existing surface drainage patterns and to minimize or reduce the impacts of the proposed development to the surrounding area. The project is not a major development and therefore is not required to meet NJDEP standards for quantity, water quality, and/or groundwater recharge. Existing drainage patterns, runoff rates, groundwater recharge and water quality are being maintained. Therefore, Bohler anticipates that the stormwater design will not have a negative impact to the surrounding areas.

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A. Detention System Hydrographs (Proposed Rear Hydrographs)

- ◆ **2-Year Storm Event**
- ◆ **10-Year Storm Event**
- ◆ **100-Year Storm Event**



Temple Bloomfield - Prelim HydroCAD NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Prepared by Bohler

Printed 7/21/2025

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

Subcatchment1S: EDA 1A - PERV.	Runoff Area=18,030 sf 0.00% Impervious Runoff Depth=1.59" Flow Length=310' Tc=8.0 min CN=80 Runoff=0.70 cfs 0.055 af
Subcatchment2S: PDA 1A - PERV.	Runoff Area=16,331 sf 0.00% Impervious Runoff Depth=1.59" Flow Length=278' Tc=7.8 min CN=80 Runoff=0.64 cfs 0.050 af
Subcatchment5S: EDA 1A - IMP.	Runoff Area=26,805 sf 100.00% Impervious Runoff Depth=3.21" Flow Length=310' Tc=8.0 min CN=98 Runoff=1.84 cfs 0.164 af
Subcatchment6S: PDA 1A - IMP.	Runoff Area=29,641 sf 100.00% Impervious Runoff Depth=3.21" Flow Length=278' Tc=7.8 min CN=98 Runoff=2.06 cfs 0.182 af
Pond 3P: EXIST INLET WITH WEIR	Peak Elev=167.79' Storage=0.004 af Inflow=2.55 cfs 0.219 af Outflow=2.37 cfs 0.219 af
Pond 4P: PROP INLET WITH WEIR	Peak Elev=167.80' Storage=0.014 af Inflow=2.70 cfs 0.231 af Outflow=2.34 cfs 0.219 af

Total Runoff Area = 2.085 ac Runoff Volume = 0.451 af Average Runoff Depth = 2.59"
37.84% Pervious = 0.789 ac 62.16% Impervious = 1.296 ac

Summary for Subcatchment 1S: EDA 1A - PERV.

Runoff = 0.70 cfs @ 12.15 hrs, Volume= 0.055 af, Depth= 1.59"
 Routed to Pond 3P : EXIST INLET WITH WEIR

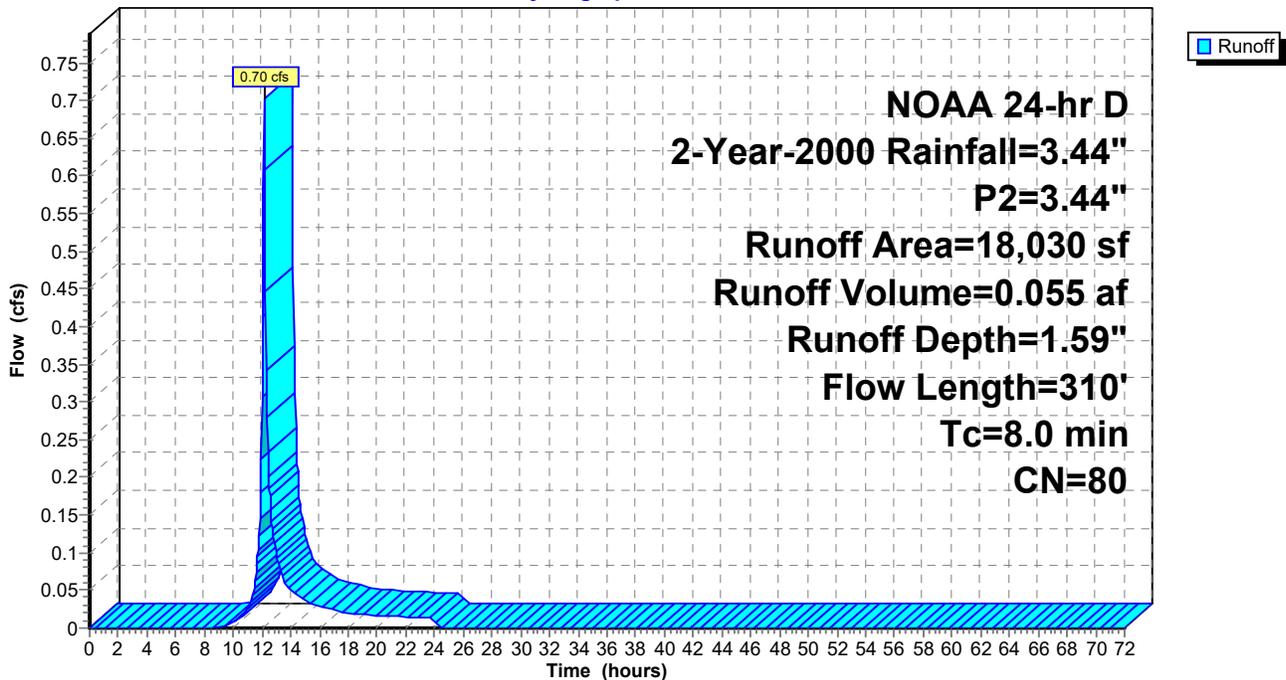
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Area (sf)	CN	Description
18,030	80	>75% Grass cover, Good, HSG D
18,030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	53	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.1	30	0.0060	9.59	120.54	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
8.0	310	Total			

Subcatchment 1S: EDA 1A - PERV.

Hydrograph



Summary for Subcatchment 2S: PDA 1A - PERV.

Runoff = 0.64 cfs @ 12.15 hrs, Volume= 0.050 af, Depth= 1.59"
 Routed to Pond 4P : PROP INLET WITH WEIR

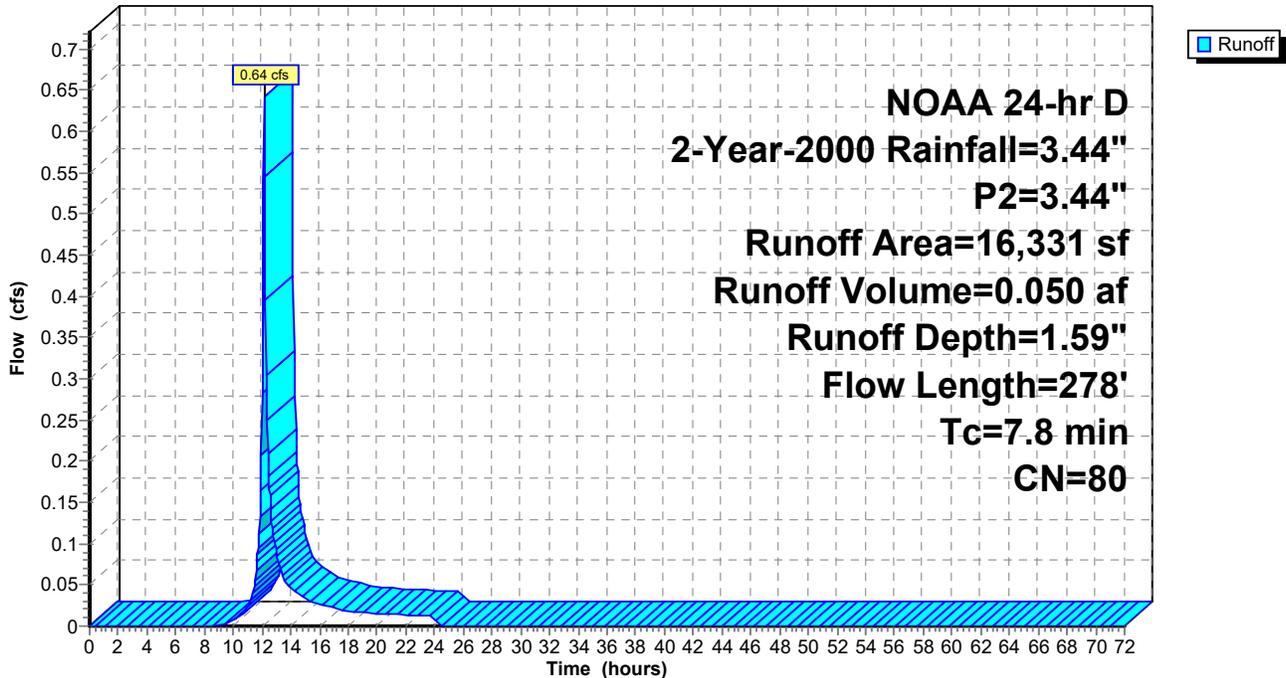
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Area (sf)	CN	Description
16,331	80	>75% Grass cover, Good, HSG D
16,331		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	32	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.0	19	0.0520	30.55	485.80	Pipe Channel, 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012
7.8	278	Total			

Subcatchment 2S: PDA 1A - PERV.

Hydrograph



Summary for Subcatchment 5S: EDA 1A - IMP.

Runoff = 1.84 cfs @ 12.15 hrs, Volume= 0.164 af, Depth= 3.21"
 Routed to Pond 3P : EXIST INLET WITH WEIR

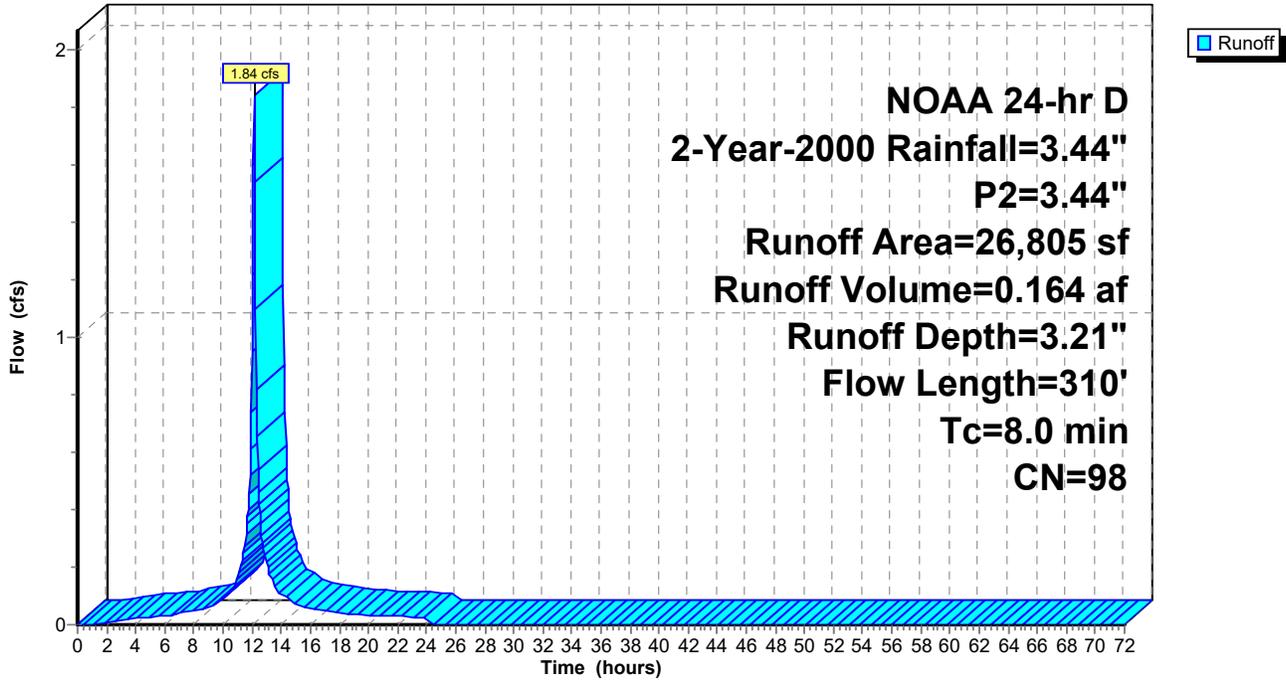
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Area (sf)	CN	Description
22,270	98	Unconnected pavement, HSG D
4,535	98	Unconnected roofs, HSG D
26,805	98	Weighted Average
26,805		100.00% Impervious Area
26,805		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	53	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.1	30	0.0060	9.59	120.54	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
8.0	310	Total			

Subcatchment 5S: EDA 1A - IMP.

Hydrograph



Summary for Subcatchment 6S: PDA 1A - IMP.

Runoff = 2.06 cfs @ 12.15 hrs, Volume= 0.182 af, Depth= 3.21"
 Routed to Pond 4P : PROP INLET WITH WEIR

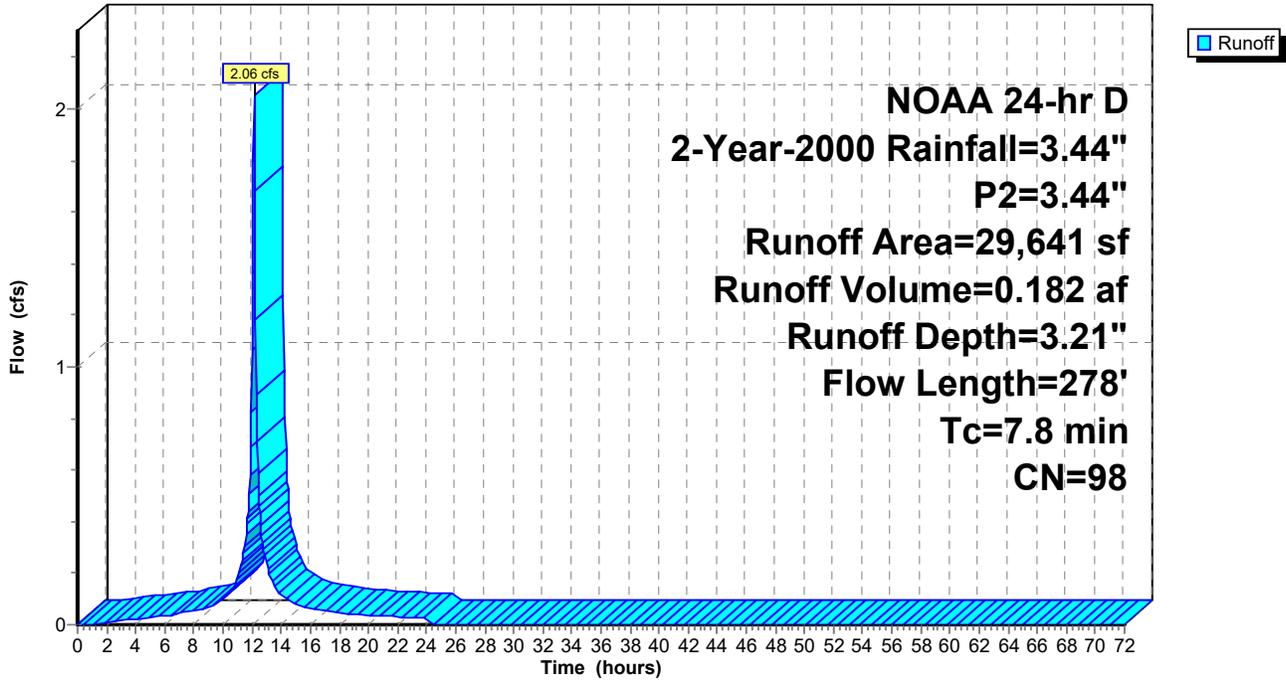
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Area (sf)	CN	Description
22,526	98	Unconnected pavement, HSG D
7,115	98	Unconnected roofs, HSG D
29,641	98	Weighted Average
29,641		100.00% Impervious Area
29,641		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	32	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.0	19	0.0520	30.55	485.80	Pipe Channel, 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012
7.8	278	Total			

Subcatchment 6S: PDA 1A - IMP.

Hydrograph



Summary for Pond 3P: EXIST INLET WITH WEIR

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 1.029 ac, 59.79% Impervious, Inflow Depth = 2.56" for 2-Year-2000 event
 Inflow = 2.55 cfs @ 12.15 hrs, Volume= 0.219 af
 Outflow = 2.37 cfs @ 12.18 hrs, Volume= 0.219 af, Atten= 7%, Lag= 1.9 min
 Primary = 2.37 cfs @ 12.18 hrs, Volume= 0.219 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 167.79' @ 12.18 hrs Surf.Area= 0.011 ac Storage= 0.004 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.2 min (782.1 - 781.9)

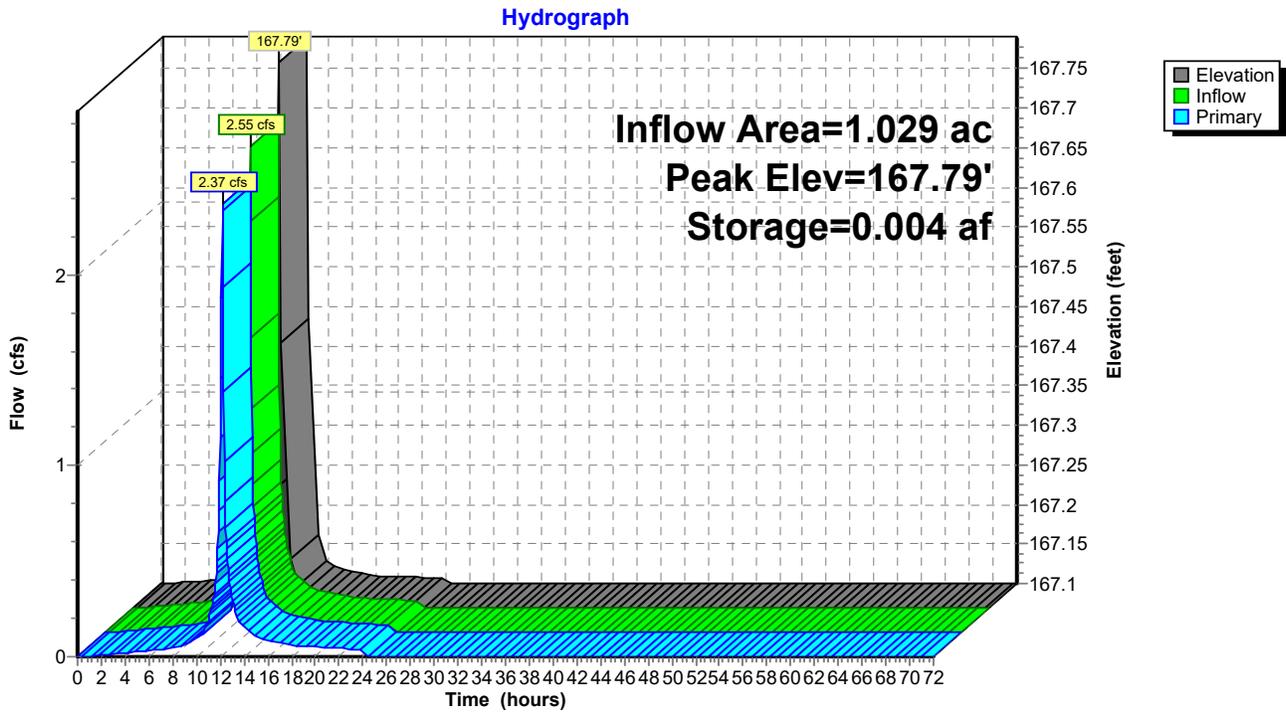
Volume	Invert	Avail.Storage	Storage Description
#1	167.10'	0.008 af	48.0" Round Pipe Storage L= 29.4' S= 0.0068 '/'
#2	167.30'	0.016 af	48.0" Round Pipe Storage L= 55.5' S= 0.0018 '/'
#3	167.30'	0.014 af	48.0" Round Pipe Storage L= 49.0'
#4	167.30'	0.018 af	48.0" Round Pipe Storage L= 62.8' S= 0.0032 '/'
		0.057 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	166.80'	15.0" Round Culvert L= 95.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 166.80' / 165.80' S= 0.0105 '/ Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	166.90'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	170.70'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=2.32 cfs @ 12.18 hrs HW=167.77' (Free Discharge)

- ↑ **1=Culvert** (Passes 2.32 cfs of 3.44 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 2.32 cfs @ 3.18 fps)
- ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: EXIST INLET WITH WEIR



Summary for Pond 4P: PROP INLET WITH WEIR

[42] Hint: Gap in defined storage above volume #10 at 143.82'

Inflow Area = 1.055 ac, 64.48% Impervious, Inflow Depth = 2.63" for 2-Year-2000 event
 Inflow = 2.70 cfs @ 12.15 hrs, Volume= 0.231 af
 Outflow = 2.34 cfs @ 12.19 hrs, Volume= 0.219 af, Atten= 13%, Lag= 2.7 min
 Primary = 2.34 cfs @ 12.19 hrs, Volume= 0.219 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 167.80' @ 12.19 hrs Surf.Area= 0.025 ac Storage= 0.014 af

Plug-Flow detention time= 57.2 min calculated for 0.219 af (95% of inflow)
 Center-of-Mass det. time= 25.2 min (803.5 - 778.4)

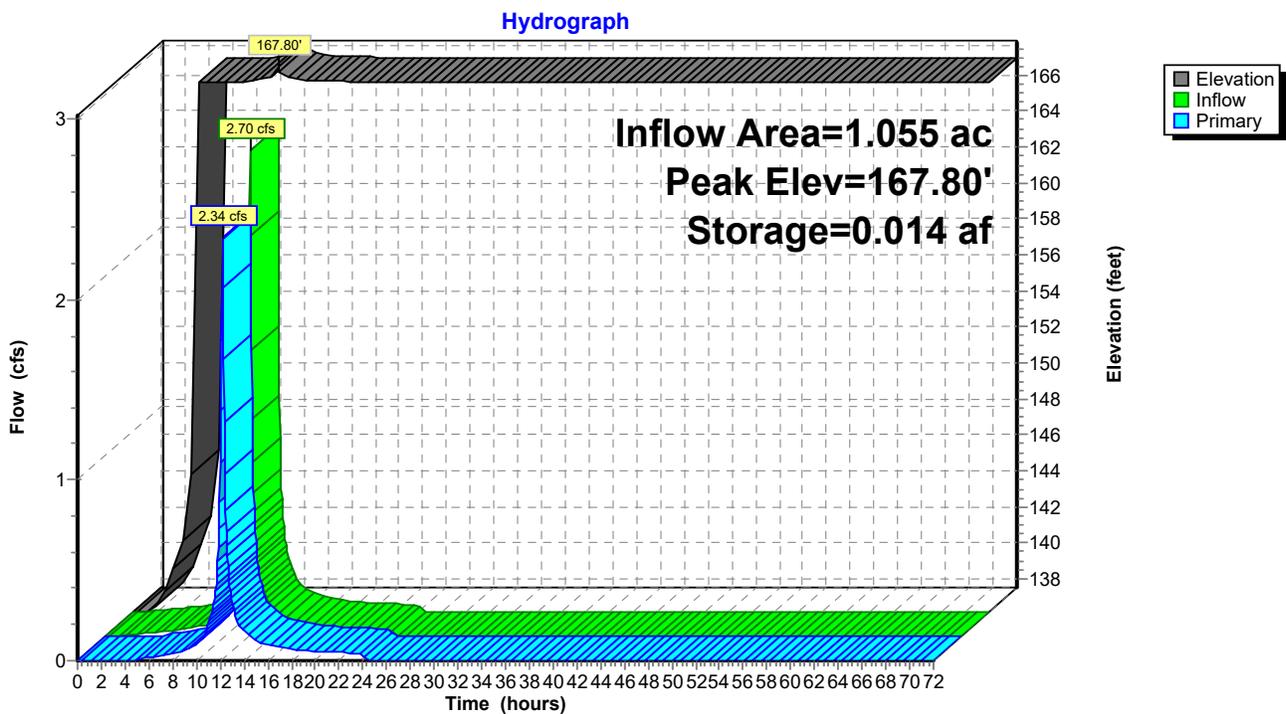
Volume	Invert	Avail.Storage	Storage Description
#1	167.10'	0.007 af	54.0" Round Pipe Storage Inside #2 L= 19.0' S= 0.0010 '/'
#2	167.10'	0.003 af	78.0" W x 60.0" H Box Pipe Storage L= 19.0' S= 0.0010 '/'
#3	167.12'	0.033 af	54.0" Round Pipe Storage Inside #4 L= 90.0' S= 0.0010 '/'
#4	167.12'	0.014 af	78.0" W x 60.0" H Box Pipe Storage L= 90.0' S= 0.0010 '/'
#5	167.30'	0.009 af	48.0" Round Pipe Storage L= 30.7'
#6	167.30'	0.018 af	48.0" Round Pipe Storage L= 62.8' S= 0.0032 '/'
#7	167.12'	0.006 af	6.00'W x 6.00'L x 7.85'H Prismatic
#8	167.20'	0.006 af	6.00'W x 6.00'L x 7.80'H Prismatic
#9	167.20'	0.004 af	5.00'W x 5.00'L x 7.33'H Prismatic
#10	137.50'	0.005 af	6.00'W x 6.00'L x 6.32'H Prismatic
		0.106 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	166.80'	15.0" Round Culvert L= 95.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 166.80' / 165.80' S= 0.0105 '/ Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	166.90'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	170.70'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=2.36 cfs @ 12.19 hrs HW=167.79' (Free Discharge)

- ↑ **1=Culvert** (Passes 2.36 cfs of 3.52 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 2.36 cfs @ 3.21 fps)
- ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: PROP INLET WITH WEIR



Temple Bloomfield - Prelim HydroCAD NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Prepared by Bohler

Printed 7/21/2025

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

Subcatchment1S: EDA 1A - PERV.	Runoff Area=18,030 sf 0.00% Impervious Runoff Depth=3.09" Flow Length=310' Tc=8.0 min CN=80 Runoff=1.36 cfs 0.106 af
Subcatchment2S: PDA 1A - PERV.	Runoff Area=16,331 sf 0.00% Impervious Runoff Depth=3.09" Flow Length=278' Tc=7.8 min CN=80 Runoff=1.24 cfs 0.096 af
Subcatchment5S: EDA 1A - IMP.	Runoff Area=26,805 sf 100.00% Impervious Runoff Depth=4.98" Flow Length=310' Tc=8.0 min CN=98 Runoff=2.82 cfs 0.256 af
Subcatchment6S: PDA 1A - IMP.	Runoff Area=29,641 sf 100.00% Impervious Runoff Depth=4.98" Flow Length=278' Tc=7.8 min CN=98 Runoff=3.14 cfs 0.283 af
Pond 3P: EXIST INLET WITH WEIR	Peak Elev=168.29' Storage=0.011 af Inflow=4.18 cfs 0.362 af Outflow=3.58 cfs 0.362 af
Pond 4P: PROP INLET WITH WEIR	Peak Elev=168.27' Storage=0.024 af Inflow=4.38 cfs 0.379 af Outflow=3.52 cfs 0.384 af

Total Runoff Area = 2.085 ac Runoff Volume = 0.741 af Average Runoff Depth = 4.26"
37.84% Pervious = 0.789 ac 62.16% Impervious = 1.296 ac

Summary for Subcatchment 1S: EDA 1A - PERV.

Runoff = 1.36 cfs @ 12.15 hrs, Volume= 0.106 af, Depth= 3.09"
 Routed to Pond 3P : EXIST INLET WITH WEIR

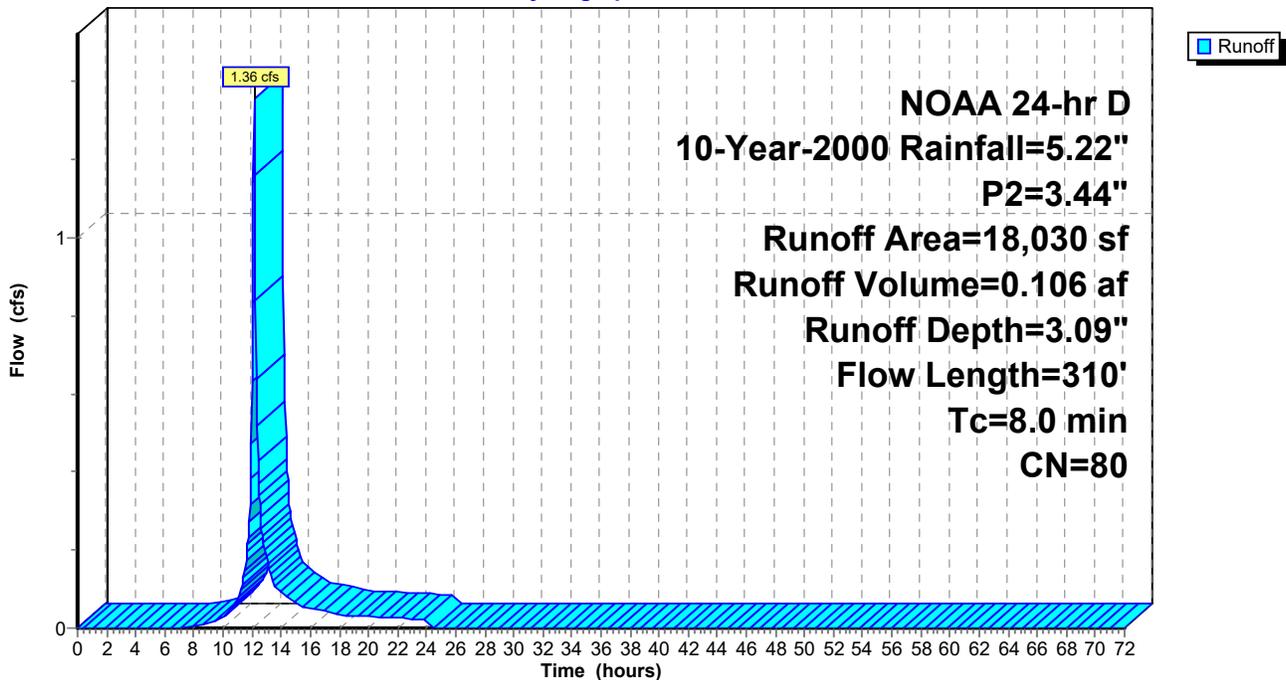
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Area (sf)	CN	Description
18,030	80	>75% Grass cover, Good, HSG D
18,030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	53	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.1	30	0.0060	9.59	120.54	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
8.0	310	Total			

Subcatchment 1S: EDA 1A - PERV.

Hydrograph



Summary for Subcatchment 2S: PDA 1A - PERV.

Runoff = 1.24 cfs @ 12.15 hrs, Volume= 0.096 af, Depth= 3.09"
 Routed to Pond 4P : PROP INLET WITH WEIR

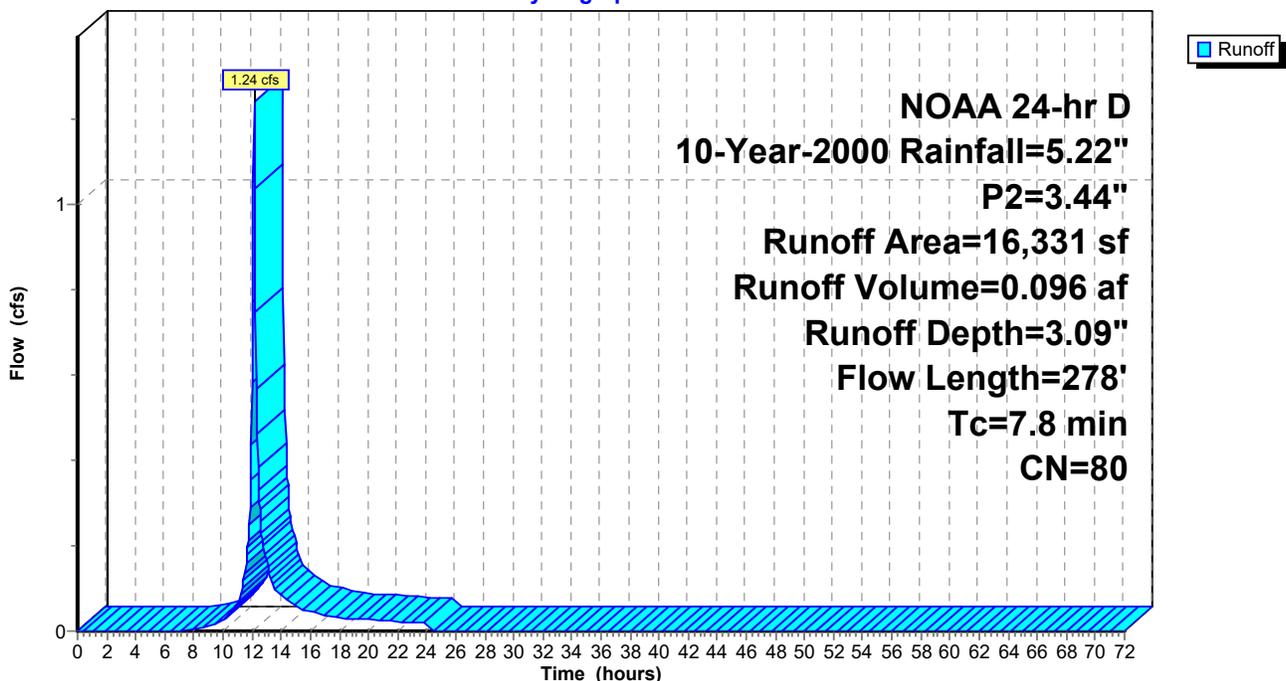
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Area (sf)	CN	Description
16,331	80	>75% Grass cover, Good, HSG D
16,331		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	32	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.0	19	0.0520	30.55	485.80	Pipe Channel, 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012
7.8	278	Total			

Subcatchment 2S: PDA 1A - PERV.

Hydrograph



Summary for Subcatchment 5S: EDA 1A - IMP.

Runoff = 2.82 cfs @ 12.15 hrs, Volume= 0.256 af, Depth= 4.98"
 Routed to Pond 3P : EXIST INLET WITH WEIR

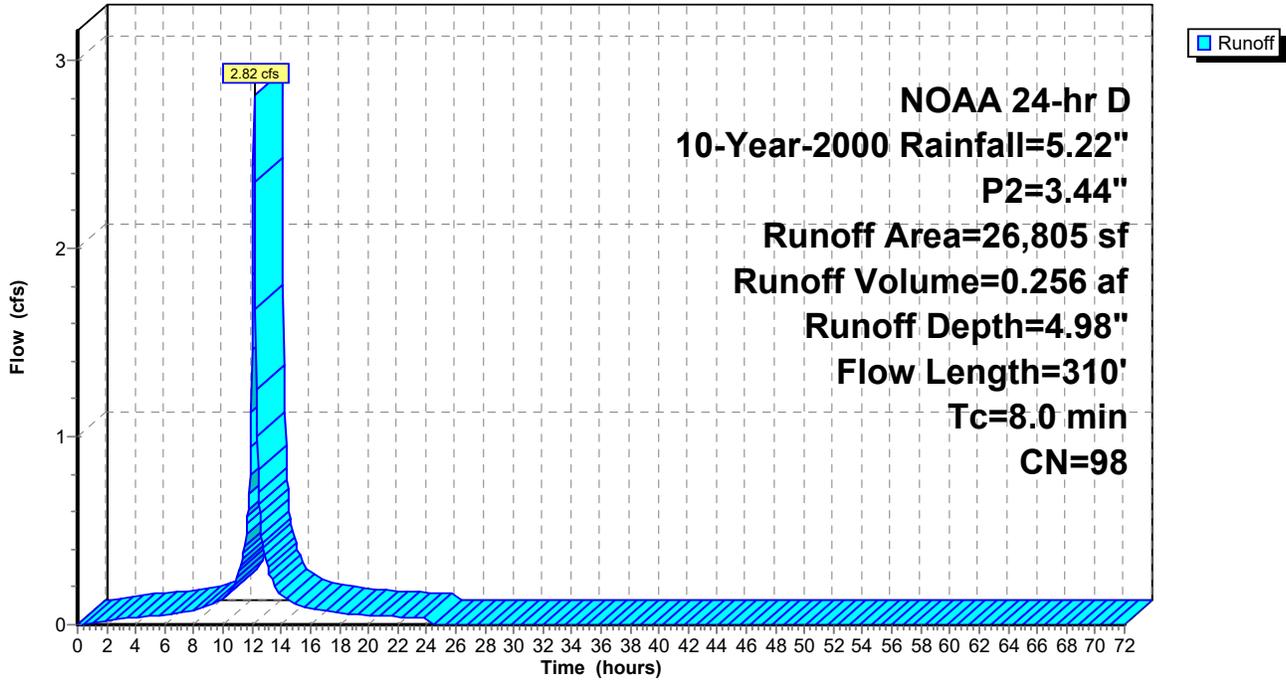
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Area (sf)	CN	Description
22,270	98	Unconnected pavement, HSG D
4,535	98	Unconnected roofs, HSG D
26,805	98	Weighted Average
26,805		100.00% Impervious Area
26,805		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	53	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.1	30	0.0060	9.59	120.54	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
8.0	310	Total			

Subcatchment 5S: EDA 1A - IMP.

Hydrograph



Summary for Subcatchment 6S: PDA 1A - IMP.

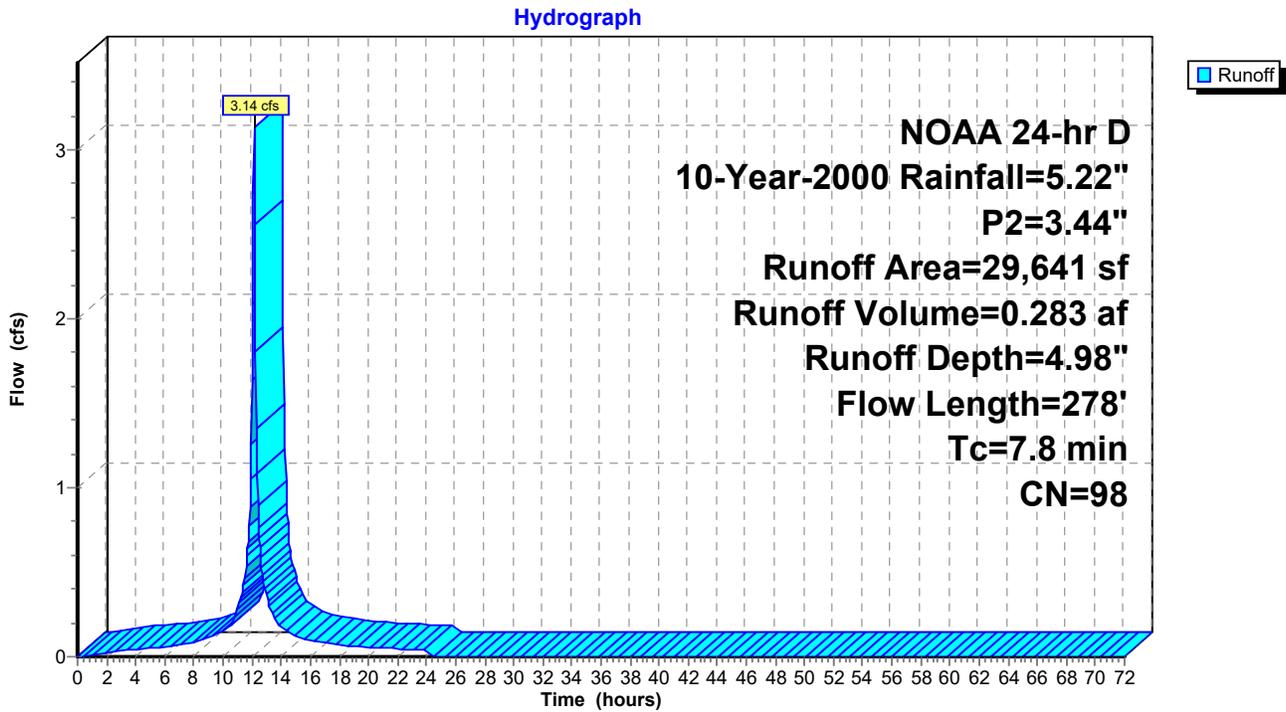
Runoff = 3.14 cfs @ 12.15 hrs, Volume= 0.283 af, Depth= 4.98"
 Routed to Pond 4P : PROP INLET WITH WEIR

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Area (sf)	CN	Description
22,526	98	Unconnected pavement, HSG D
7,115	98	Unconnected roofs, HSG D
29,641	98	Weighted Average
29,641		100.00% Impervious Area
29,641		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	32	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.0	19	0.0520	30.55	485.80	Pipe Channel, 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012
7.8	278	Total			

Subcatchment 6S: PDA 1A - IMP.



Summary for Pond 3P: EXIST INLET WITH WEIR

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 1.029 ac, 59.79% Impervious, Inflow Depth = 4.22" for 10-Year-2000 event
 Inflow = 4.18 cfs @ 12.15 hrs, Volume= 0.362 af
 Outflow = 3.58 cfs @ 12.20 hrs, Volume= 0.362 af, Atten= 14%, Lag= 3.0 min
 Primary = 3.58 cfs @ 12.20 hrs, Volume= 0.362 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 168.29' @ 12.20 hrs Surf.Area= 0.015 ac Storage= 0.011 af

Plug-Flow detention time= 0.5 min calculated for 0.362 af (100% of inflow)
 Center-of-Mass det. time= 0.5 min (774.4 - 774.0)

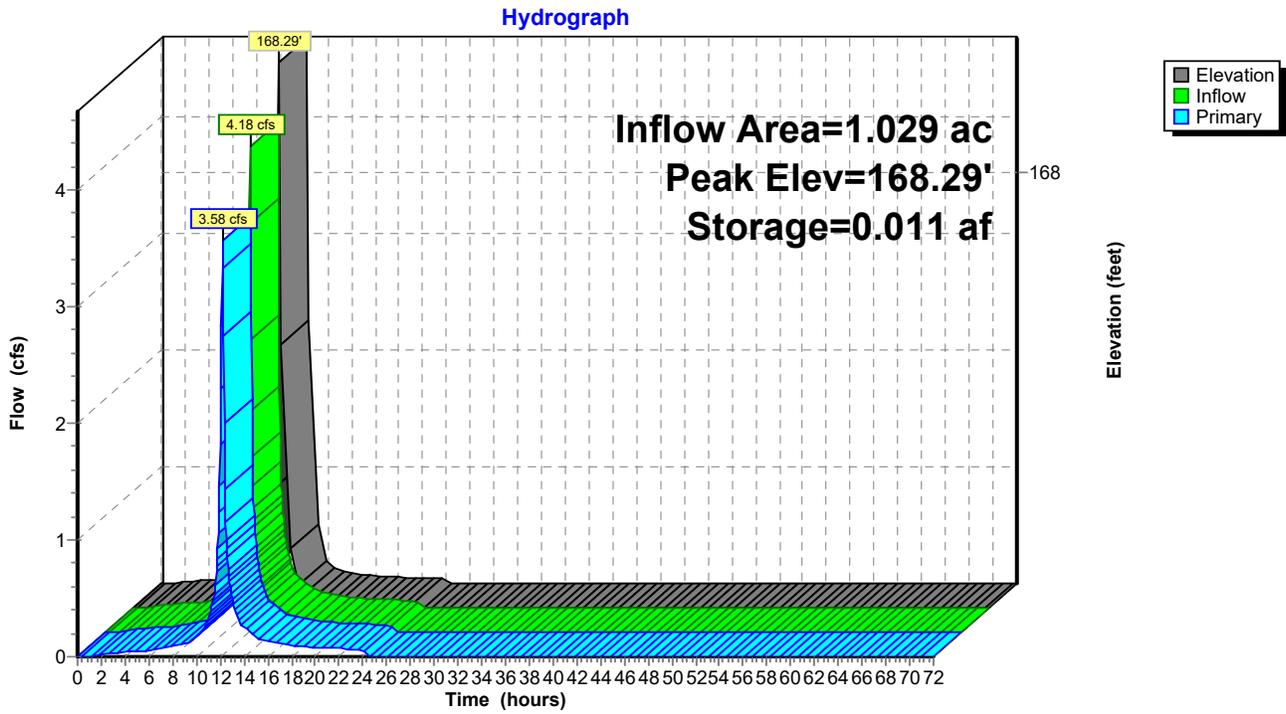
Volume	Invert	Avail.Storage	Storage Description
#1	167.10'	0.008 af	48.0" Round Pipe Storage L= 29.4' S= 0.0068 '/'
#2	167.30'	0.016 af	48.0" Round Pipe Storage L= 55.5' S= 0.0018 '/'
#3	167.30'	0.014 af	48.0" Round Pipe Storage L= 49.0'
#4	167.30'	0.018 af	48.0" Round Pipe Storage L= 62.8' S= 0.0032 '/'
		0.057 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	166.80'	15.0" Round Culvert L= 95.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 166.80' / 165.80' S= 0.0105 '/ Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	166.90'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	170.70'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=3.57 cfs @ 12.20 hrs HW=168.29' (Free Discharge)

- ↑ 1=Culvert (Passes 3.57 cfs of 5.50 cfs potential flow)
- ↑ 2=Orifice/Grate (Orifice Controls 3.57 cfs @ 4.54 fps)
- ↑ 3=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 3P: EXIST INLET WITH WEIR



Summary for Pond 4P: PROP INLET WITH WEIR

[42] Hint: Gap in defined storage above volume #10 at 143.82'

Inflow Area = 1.055 ac, 64.48% Impervious, Inflow Depth = 4.31" for 10-Year-2000 event
 Inflow = 4.38 cfs @ 12.15 hrs, Volume= 0.379 af
 Outflow = 3.52 cfs @ 12.20 hrs, Volume= 0.384 af, Atten= 20%, Lag= 3.5 min
 Primary = 3.52 cfs @ 12.20 hrs, Volume= 0.384 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 168.27' @ 12.20 hrs Surf.Area= 0.026 ac Storage= 0.024 af

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

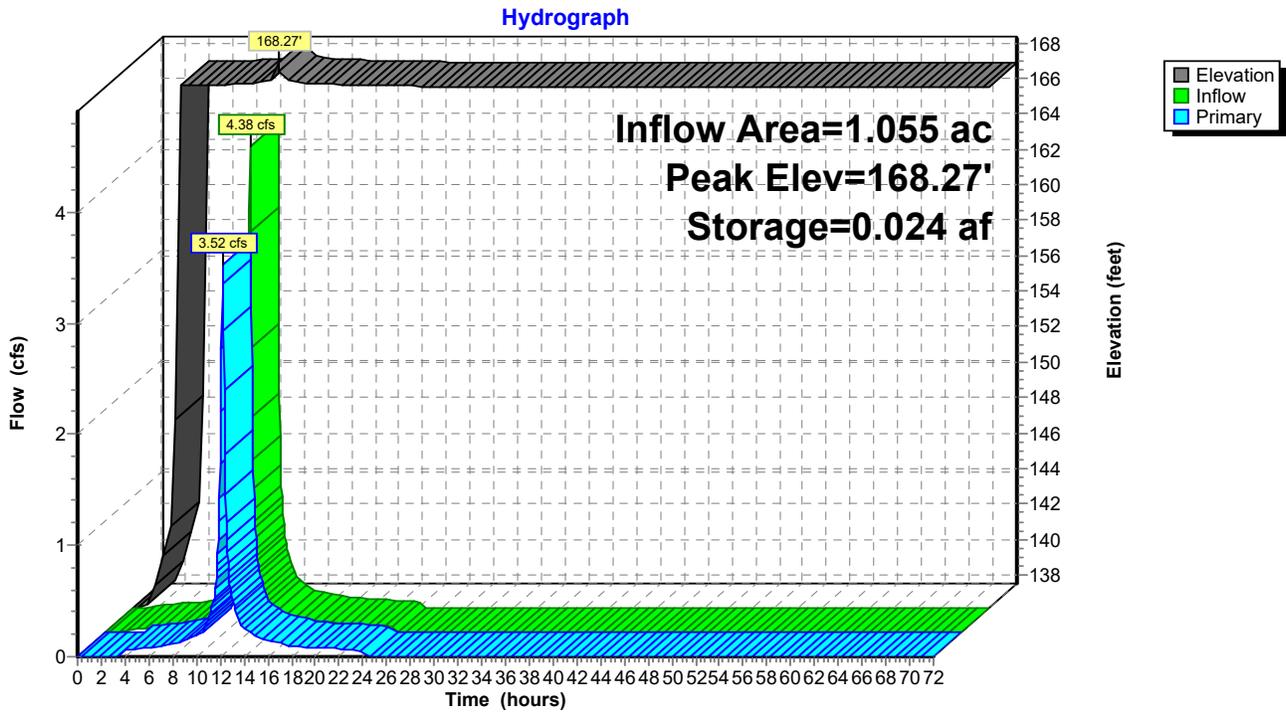
Volume	Invert	Avail.Storage	Storage Description
#1	167.10'	0.007 af	54.0" Round Pipe Storage Inside #2 L= 19.0' S= 0.0010 '/'
#2	167.10'	0.003 af	78.0" W x 60.0" H Box Pipe Storage L= 19.0' S= 0.0010 '/' 0.014 af Overall - 0.007 af Embedded = 0.007 af x 40.0% Voids
#3	167.12'	0.033 af	54.0" Round Pipe Storage Inside #4 L= 90.0' S= 0.0010 '/'
#4	167.12'	0.014 af	78.0" W x 60.0" H Box Pipe Storage L= 90.0' S= 0.0010 '/' 0.067 af Overall - 0.033 af Embedded = 0.034 af x 40.0% Voids
#5	167.30'	0.009 af	48.0" Round Pipe Storage L= 30.7'
#6	167.30'	0.018 af	48.0" Round Pipe Storage L= 62.8' S= 0.0032 '/'
#7	167.12'	0.006 af	6.00'W x 6.00'L x 7.85'H Prismatic
#8	167.20'	0.006 af	6.00'W x 6.00'L x 7.80'H Prismatic
#9	167.20'	0.004 af	5.00'W x 5.00'L x 7.33'H Prismatic
#10	137.50'	0.005 af	6.00'W x 6.00'L x 6.32'H Prismatic
		0.106 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	166.80'	15.0" Round Culvert L= 95.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 166.80' / 165.80' S= 0.0105 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	166.90'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	170.70'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=3.51 cfs @ 12.20 hrs HW=168.26' (Free Discharge)

- ↑ **1=Culvert** (Passes 3.51 cfs of 5.40 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 3.51 cfs @ 4.47 fps)
- ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: PROP INLET WITH WEIR



Temple Bloomfield - Prelim HydroCA NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Prepared by Bohler

Printed 7/21/2025

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

Subcatchment1S: EDA 1A - PERV.	Runoff Area=18,030 sf 0.00% Impervious Runoff Depth=6.25" Flow Length=310' Tc=8.0 min CN=80 Runoff=2.68 cfs 0.215 af
Subcatchment2S: PDA 1A - PERV.	Runoff Area=16,331 sf 0.00% Impervious Runoff Depth=6.25" Flow Length=278' Tc=7.8 min CN=80 Runoff=2.45 cfs 0.195 af
Subcatchment5S: EDA 1A - IMP.	Runoff Area=26,805 sf 100.00% Impervious Runoff Depth=8.42" Flow Length=310' Tc=8.0 min CN=98 Runoff=4.69 cfs 0.432 af
Subcatchment6S: PDA 1A - IMP.	Runoff Area=29,641 sf 100.00% Impervious Runoff Depth=8.42" Flow Length=278' Tc=7.8 min CN=98 Runoff=5.22 cfs 0.477 af
Pond 3P: EXIST INLET WITH WEIR	Peak Elev=169.57' Storage=0.033 af Inflow=7.37 cfs 0.647 af Outflow=5.58 cfs 0.647 af
Pond 4P: PROP INLET WITH WEIR	Peak Elev=169.44' Storage=0.052 af Inflow=7.67 cfs 0.673 af Outflow=5.41 cfs 0.688 af

Total Runoff Area = 2.085 ac Runoff Volume = 1.320 af Average Runoff Depth = 7.60"
37.84% Pervious = 0.789 ac 62.16% Impervious = 1.296 ac

Summary for Subcatchment 1S: EDA 1A - PERV.

Runoff = 2.68 cfs @ 12.15 hrs, Volume= 0.215 af, Depth= 6.25"
 Routed to Pond 3P : EXIST INLET WITH WEIR

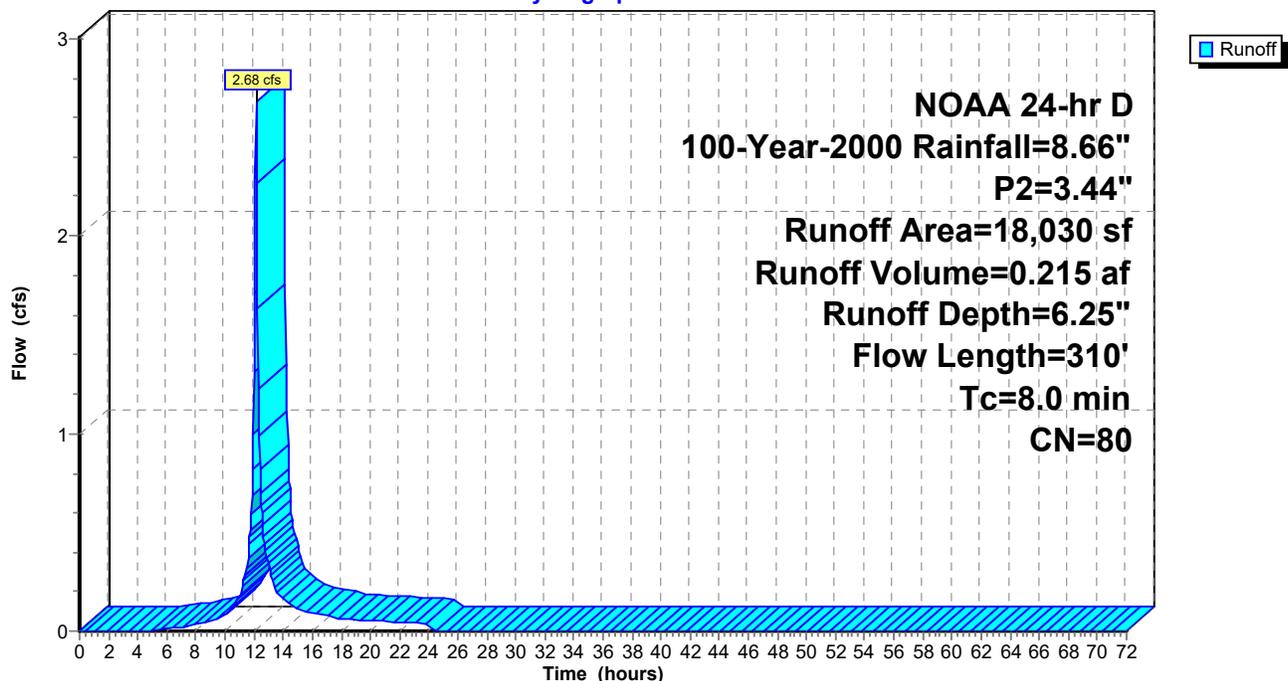
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Area (sf)	CN	Description
18,030	80	>75% Grass cover, Good, HSG D
18,030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	53	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.1	30	0.0060	9.59	120.54	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
8.0	310	Total			

Subcatchment 1S: EDA 1A - PERV.

Hydrograph



Summary for Subcatchment 2S: PDA 1A - PERV.

Runoff = 2.45 cfs @ 12.15 hrs, Volume= 0.195 af, Depth= 6.25"
 Routed to Pond 4P : PROP INLET WITH WEIR

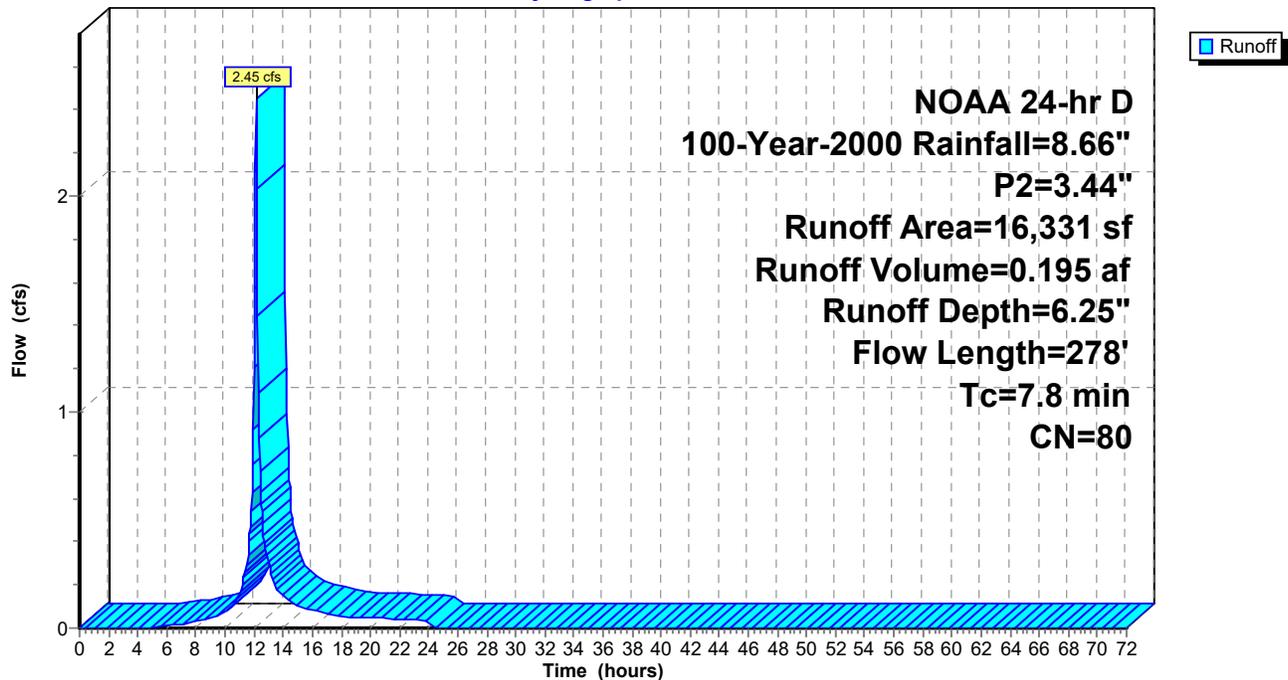
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Area (sf)	CN	Description
16,331	80	>75% Grass cover, Good, HSG D
16,331		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	32	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.0	19	0.0520	30.55	485.80	Pipe Channel, 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012
7.8	278	Total			

Subcatchment 2S: PDA 1A - PERV.

Hydrograph



Summary for Subcatchment 5S: EDA 1A - IMP.

Runoff = 4.69 cfs @ 12.15 hrs, Volume= 0.432 af, Depth= 8.42"
 Routed to Pond 3P : EXIST INLET WITH WEIR

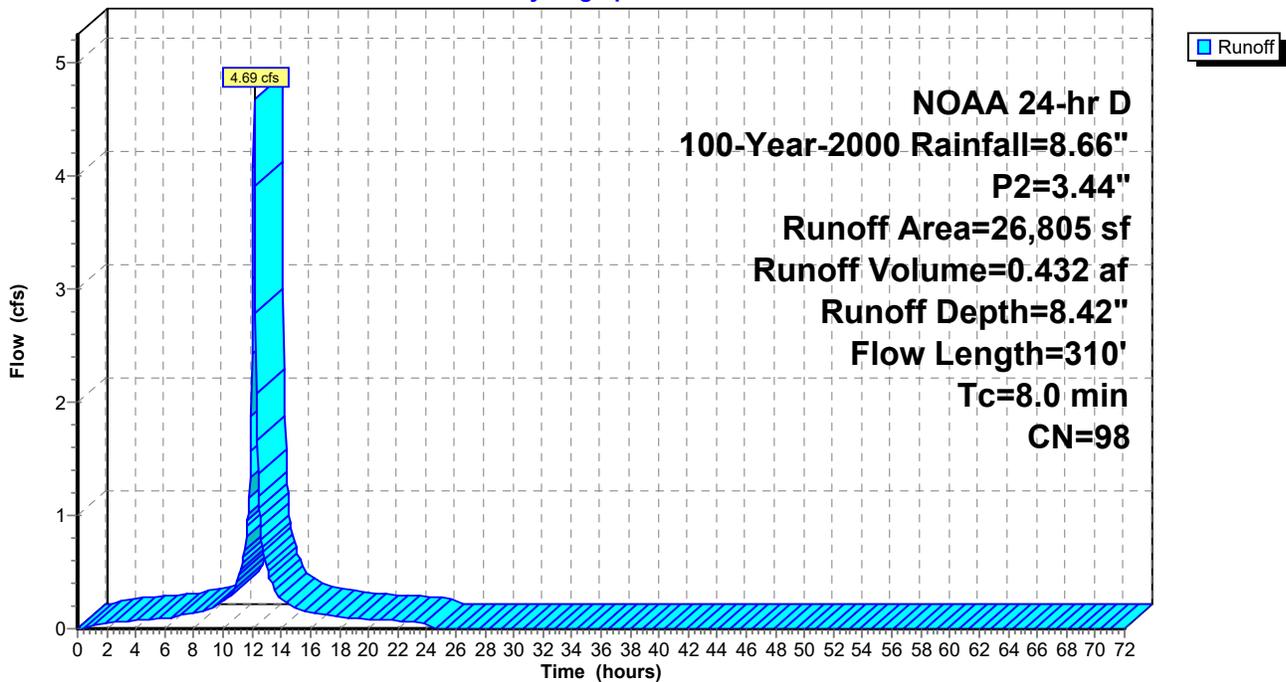
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Area (sf)	CN	Description
22,270	98	Unconnected pavement, HSG D
4,535	98	Unconnected roofs, HSG D
26,805	98	Weighted Average
26,805		100.00% Impervious Area
26,805		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.2	53	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.1	30	0.0060	9.59	120.54	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
8.0	310	Total			

Subcatchment 5S: EDA 1A - IMP.

Hydrograph



Summary for Subcatchment 6S: PDA 1A - IMP.

Runoff = 5.22 cfs @ 12.15 hrs, Volume= 0.477 af, Depth= 8.42"
 Routed to Pond 4P : PROP INLET WITH WEIR

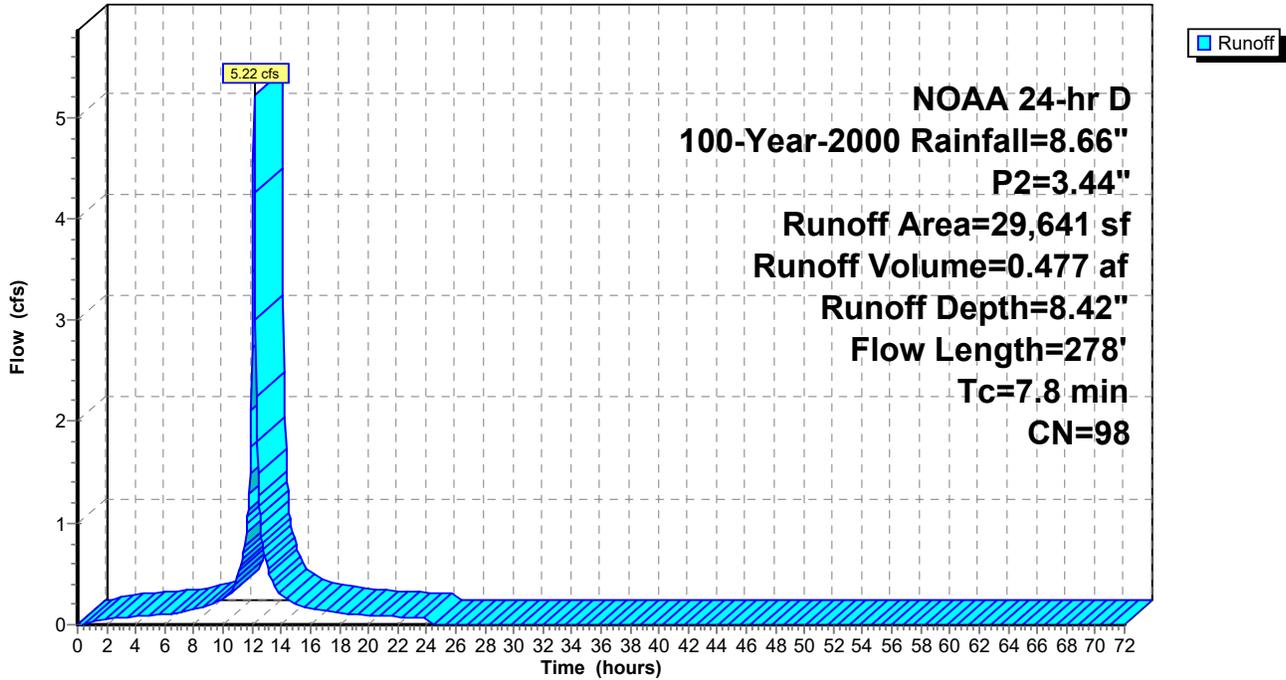
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Area (sf)	CN	Description
22,526	98	Unconnected pavement, HSG D
7,115	98	Unconnected roofs, HSG D
29,641	98	Weighted Average
29,641		100.00% Impervious Area
29,641		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	87	0.0785	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.44"
0.6	140	0.0314	3.60		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	32	0.0010	3.92	49.21	Pipe Channel, 48.0" Round Area= 12.6 sf Perim= 12.6' r= 1.00' n= 0.012
0.0	19	0.0520	30.55	485.80	Pipe Channel, 54.0" Round Area= 15.9 sf Perim= 14.1' r= 1.13' n= 0.012
7.8	278	Total			

Subcatchment 6S: PDA 1A - IMP.

Hydrograph



Summary for Pond 3P: EXIST INLET WITH WEIR

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 1.029 ac, 59.79% Impervious, Inflow Depth = 7.55" for 100-Year-2000 event
 Inflow = 7.37 cfs @ 12.15 hrs, Volume= 0.647 af
 Outflow = 5.58 cfs @ 12.22 hrs, Volume= 0.647 af, Atten= 24%, Lag= 4.3 min
 Primary = 5.58 cfs @ 12.22 hrs, Volume= 0.647 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 169.57' @ 12.22 hrs Surf.Area= 0.018 ac Storage= 0.033 af

Plug-Flow detention time= 1.0 min calculated for 0.647 af (100% of inflow)
 Center-of-Mass det. time= 1.0 min (765.7 - 764.7)

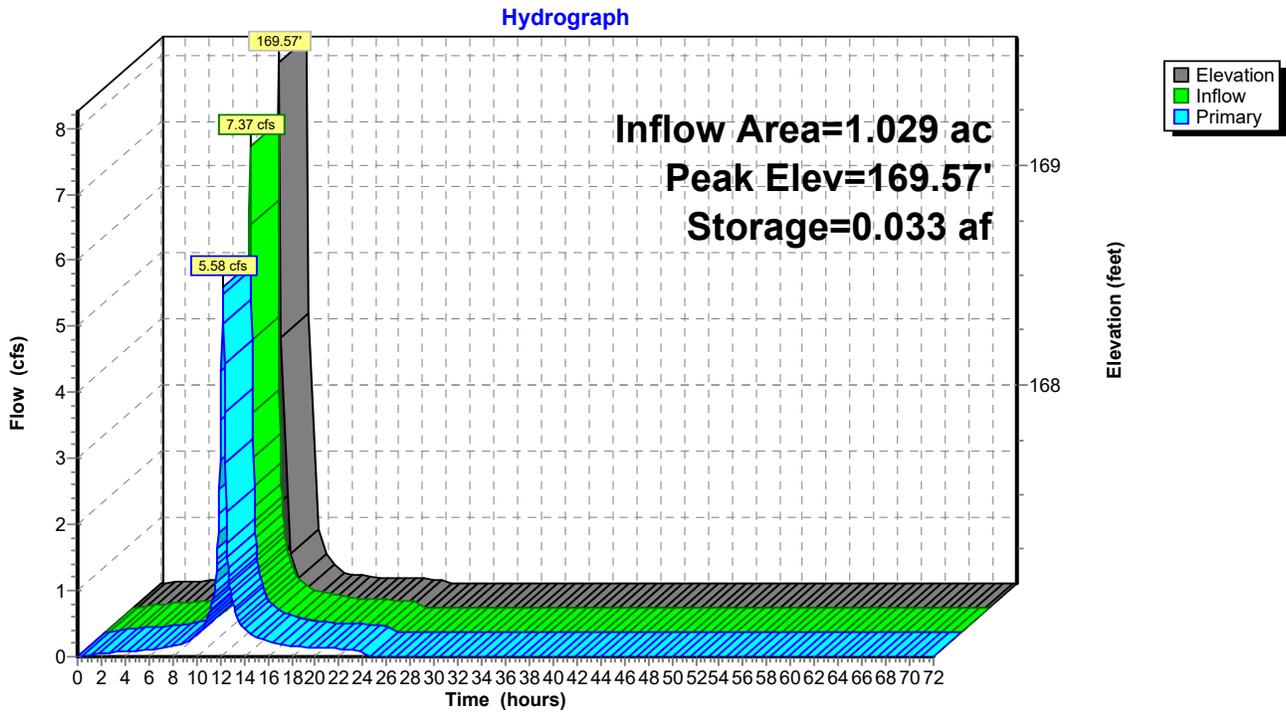
Volume	Invert	Avail.Storage	Storage Description
#1	167.10'	0.008 af	48.0" Round Pipe Storage L= 29.4' S= 0.0068 '/'
#2	167.30'	0.016 af	48.0" Round Pipe Storage L= 55.5' S= 0.0018 '/'
#3	167.30'	0.014 af	48.0" Round Pipe Storage L= 49.0'
#4	167.30'	0.018 af	48.0" Round Pipe Storage L= 62.8' S= 0.0032 '/'
		0.057 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	166.80'	15.0" Round Culvert L= 95.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 166.80' / 165.80' S= 0.0105 '/ Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	166.90'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	170.70'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=5.52 cfs @ 12.22 hrs HW=169.53' (Free Discharge)

- ↑ **1=Culvert** (Passes 5.52 cfs of 8.57 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 5.52 cfs @ 7.03 fps)
- ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: EXIST INLET WITH WEIR



Summary for Pond 4P: PROP INLET WITH WEIR

[42] Hint: Gap in defined storage above volume #10 at 143.82'

Inflow Area = 1.055 ac, 64.48% Impervious, Inflow Depth = 7.65" for 100-Year-2000 event
 Inflow = 7.67 cfs @ 12.15 hrs, Volume= 0.673 af
 Outflow = 5.41 cfs @ 12.22 hrs, Volume= 0.688 af, Atten= 30%, Lag= 4.7 min
 Primary = 5.41 cfs @ 12.22 hrs, Volume= 0.688 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 169.44' @ 12.22 hrs Surf.Area= 0.028 ac Storage= 0.052 af

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

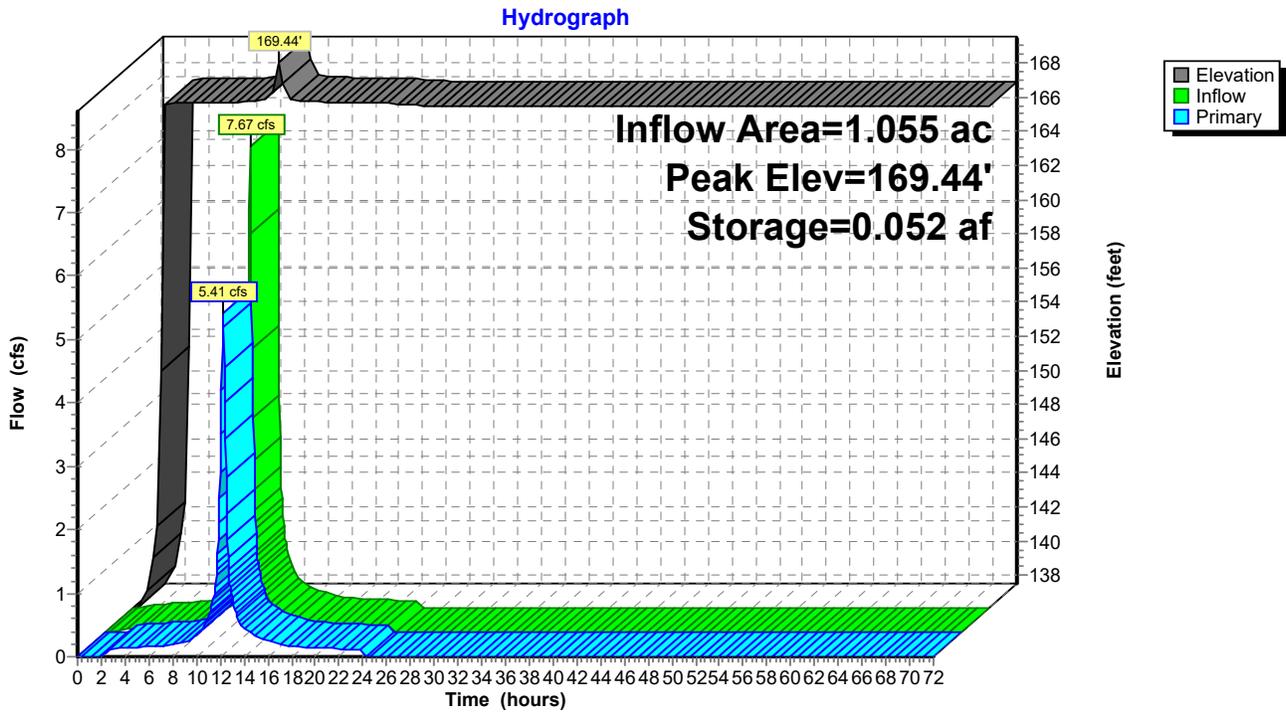
Volume	Invert	Avail.Storage	Storage Description
#1	167.10'	0.007 af	54.0" Round Pipe Storage Inside #2 L= 19.0' S= 0.0010 '/'
#2	167.10'	0.003 af	78.0" W x 60.0" H Box Pipe Storage L= 19.0' S= 0.0010 '/'
#3	167.12'	0.033 af	0.014 af Overall - 0.007 af Embedded = 0.007 af x 40.0% Voids 54.0" Round Pipe Storage Inside #4 L= 90.0' S= 0.0010 '/'
#4	167.12'	0.014 af	78.0" W x 60.0" H Box Pipe Storage L= 90.0' S= 0.0010 '/'
#5	167.30'	0.009 af	0.067 af Overall - 0.033 af Embedded = 0.034 af x 40.0% Voids 48.0" Round Pipe Storage L= 30.7'
#6	167.30'	0.018 af	48.0" Round Pipe Storage L= 62.8' S= 0.0032 '/'
#7	167.12'	0.006 af	6.00'W x 6.00'L x 7.85'H Prismatic
#8	167.20'	0.006 af	6.00'W x 6.00'L x 7.80'H Prismatic
#9	167.20'	0.004 af	5.00'W x 5.00'L x 7.33'H Prismatic
#10	137.50'	0.005 af	6.00'W x 6.00'L x 6.32'H Prismatic
		0.106 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	166.80'	15.0" Round Culvert L= 95.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 166.80' / 165.80' S= 0.0105 '/ Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.23 sf
#2	Device 1	166.90'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	170.70'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=5.35 cfs @ 12.22 hrs HW=169.40' (Free Discharge)

- 1=Culvert (Passes 5.35 cfs of 8.31 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 5.35 cfs @ 6.82 fps)
- 3=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 4P: PROP INLET WITH WEIR



B. Dry Well Sizing (Proposed Front Hydrographs)

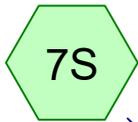
- ◆ **Water Quality Storm Event**
- ◆ **2-Year Storm Event**
- ◆ **10-Year Storm Event**
- ◆ **100-Year Storm Event**



EXIST DRYWELL



EXISTING DRYWELL SYSTEM



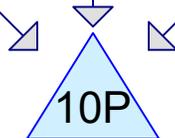
EXIST DRYWELL



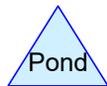
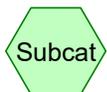
PROP DRYWELL #1



PROP DRYWELL #2



EXISTING AND PROPOSED DRYWELL SYSTEM



Temple Bloomfield - Prelim HydroCAD - 2025-07 NJ DEP 2-hr WQ Rainfall=1.25", P2=4.09"

Prepared by Bohler

Printed 7/16/2025

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

Subcatchment7S: EXIST DRYWELL Runoff Area=4,150 sf 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.008 af

Subcatchment8S: PROP DRYWELL #1 Runoff Area=1,221 sf 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.002 af

Subcatchment9S: PROP DRYWELL #2 Runoff Area=1,038 sf 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=0.07 cfs 0.002 af

Subcatchment16S: EXIST DRYWELL Runoff Area=4,150 sf 100.00% Impervious Runoff Depth=1.03"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.008 af

Pond 10P: EXISTING AND PROPOSED Peak Elev=158.59' Storage=0.013 af Inflow=0.43 cfs 0.013 af
6.0" Round Culvert n=0.012 L=33.0' S=0.0676 '/ Outflow=0.00 cfs 0.000 af

Pond 17P: EXISTING DRYWELL SYSTEM Peak Elev=159.15' Storage=0.008 af Inflow=0.28 cfs 0.008 af
6.0" Round Culvert n=0.012 L=33.0' S=0.0676 '/ Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.242 ac Runoff Volume = 0.021 af Average Runoff Depth = 1.03"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.242 ac

Summary for Subcatchment 7S: EXIST DRYWELL

Runoff = 0.28 cfs @ 1.09 hrs, Volume= 0.008 af, Depth= 1.03"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

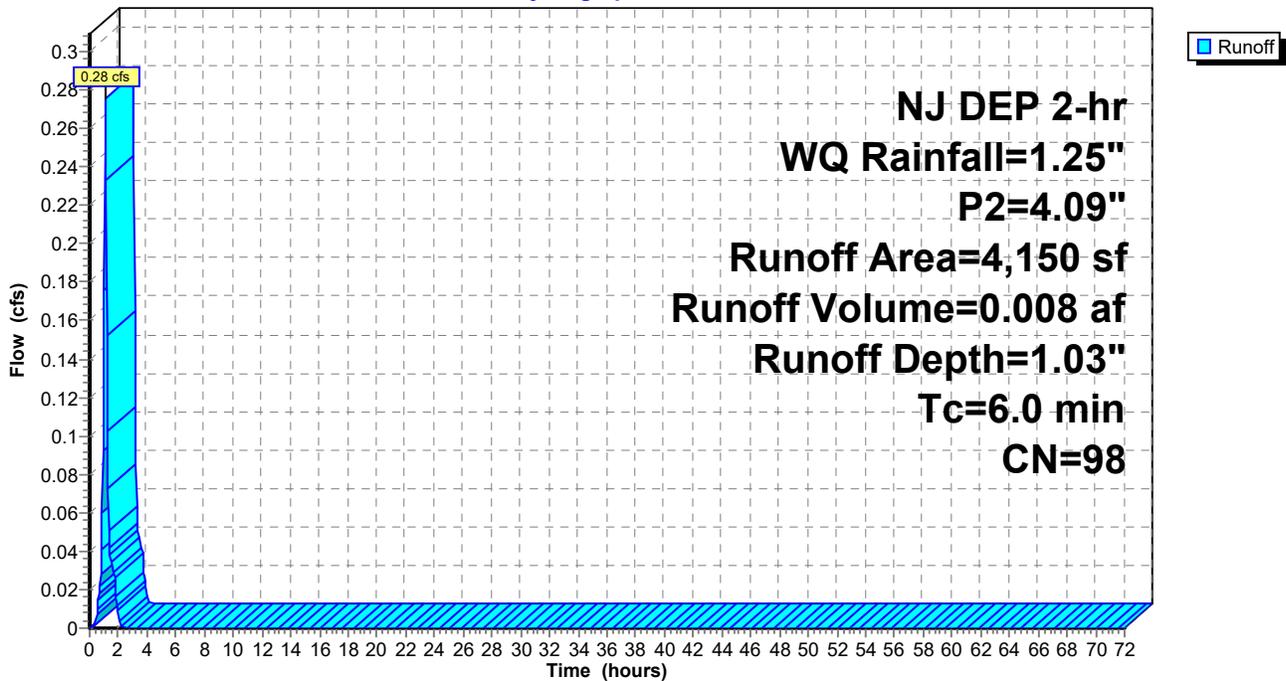
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25", P2=4.09"

Area (sf)	CN	Description
* 4,150	98	ROOF HSG D
4,150		100.00% Impervious Area

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

Subcatchment 7S: EXIST DRYWELL

Hydrograph



Summary for Subcatchment 8S: PROP DRYWELL #1

Runoff = 0.08 cfs @ 1.09 hrs, Volume= 0.002 af, Depth= 1.03"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

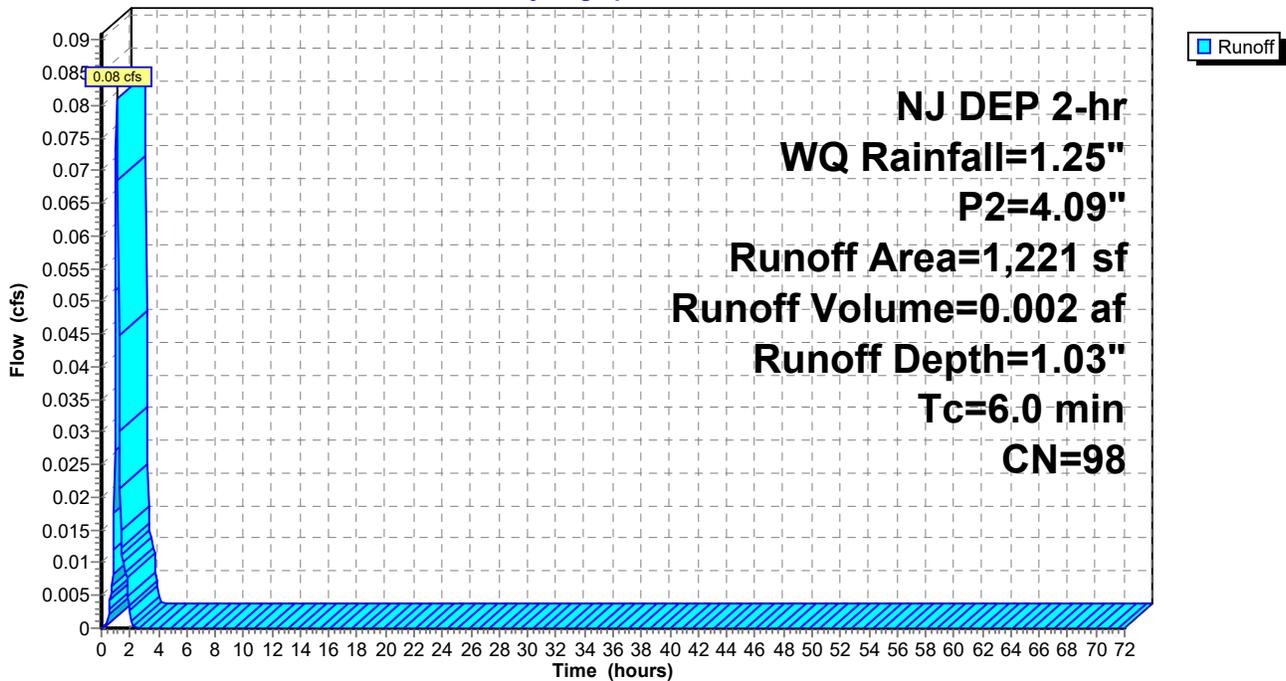
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25", P2=4.09"

Area (sf)	CN	Description
* 1,221	98	ROOF HSG D
1,221		100.00% Impervious Area

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

Subcatchment 8S: PROP DRYWELL #1

Hydrograph



Summary for Subcatchment 9S: PROP DRYWELL #2

Runoff = 0.07 cfs @ 1.09 hrs, Volume= 0.002 af, Depth= 1.03"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

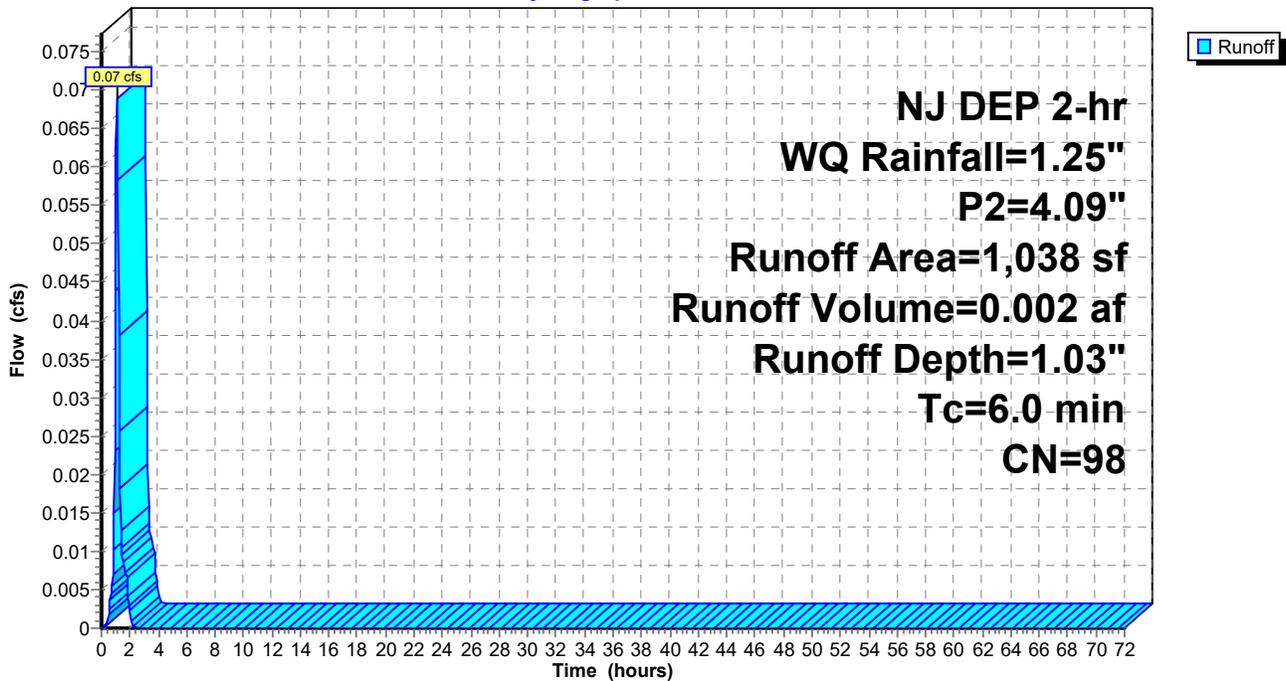
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25", P2=4.09"

Area (sf)	CN	Description
* 1,038	98	ROOF HSG D
1,038		100.00% Impervious Area

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

Subcatchment 9S: PROP DRYWELL #2

Hydrograph



Summary for Subcatchment 16S: EXIST DRYWELL

Runoff = 0.28 cfs @ 1.09 hrs, Volume= 0.008 af, Depth= 1.03"
 Routed to Pond 17P : EXISTING DRYWELL SYSTEM

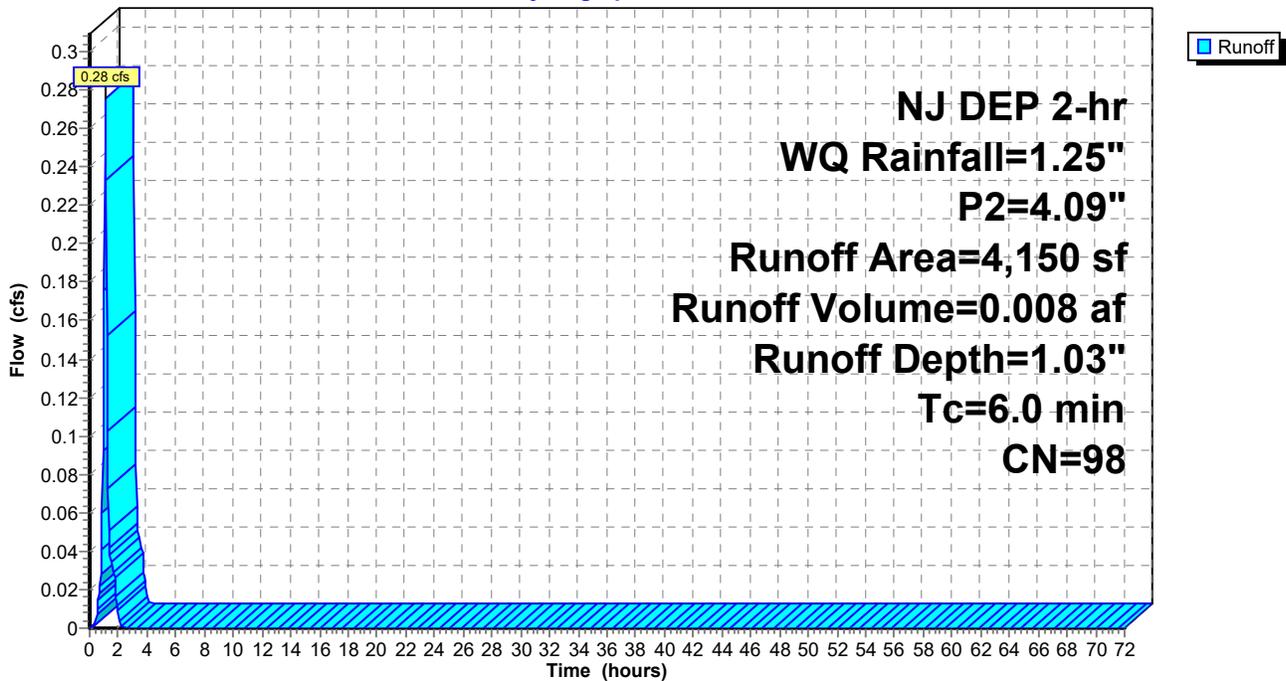
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25", P2=4.09"

Area (sf)	CN	Description
* 4,150	98	ROOF HSG D
4,150		100.00% Impervious Area

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

Subcatchment 16S: EXIST DRYWELL

Hydrograph



Summary for Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM

Inflow Area = 0.147 ac, 100.00% Impervious, Inflow Depth = 1.03" for WQ event
 Inflow = 0.43 cfs @ 1.09 hrs, Volume= 0.013 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.59' @ 2.40 hrs Surf.Area= 0.010 ac Storage= 0.013 af

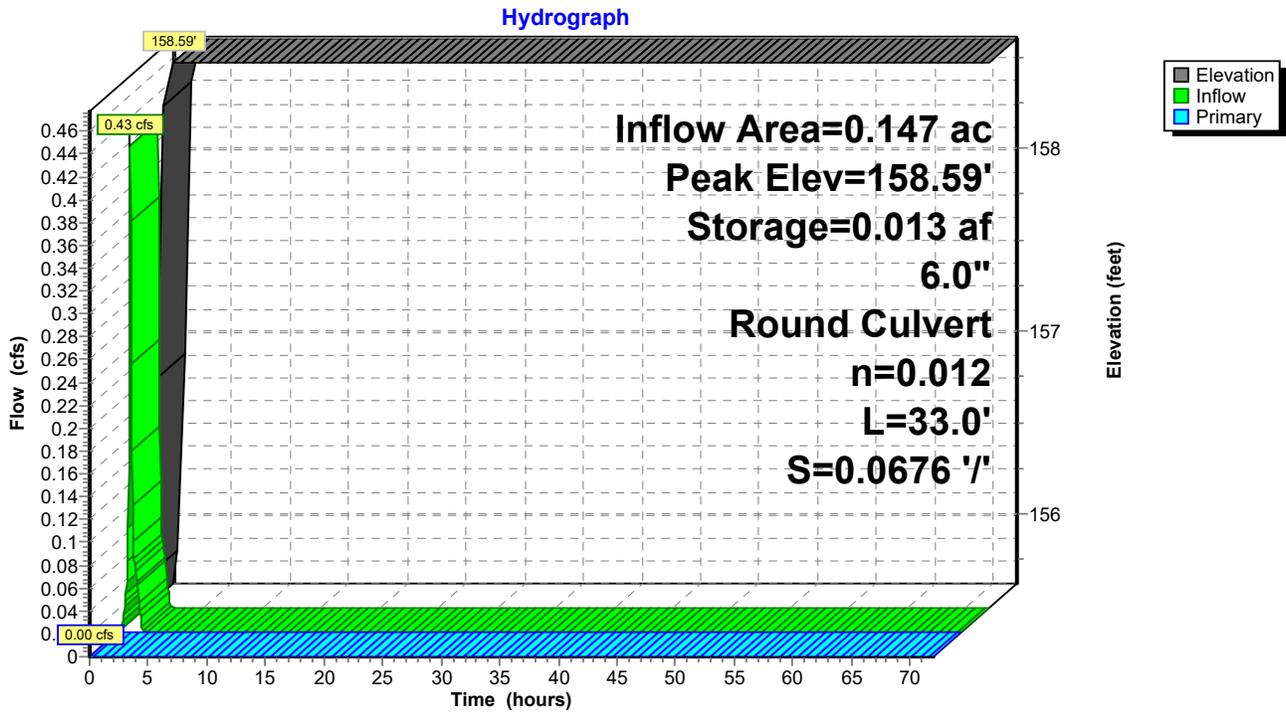
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	155.92'	0.009 af	9.00'W x 9.00'L x 6.00'H Exist Drywell #1 (Prismatoid) x 2 0.022 af Overall x 40.0% Voids
#2	156.92'	0.008 af	6.50'D x 5.00'H Exist Drywell #1 (Vertical Cone/Cylinder) x 2
#3	159.50'	0.000 af	12.0" Round Pipe Storage L= 2.0'
#4	155.92'	0.004 af	8.67'W x 8.67'L x 6.00'H Prop Drywell #1 (Prismatoid) 0.010 af Overall x 40.0% Voids
#5	156.92'	0.003 af	6.00'D x 5.00'H Prop Drywell #1 (Vertical Cone/Cylinder)
#6	155.62'	0.000 af	24.0" Round Pipe Storage L= 2.0'
#7	155.92'	0.004 af	8.67'W x 8.67'L x 6.00'H Prop Drywell #2 (Prismatoid) 0.010 af Overall x 40.0% Voids
#8	156.92'	0.003 af	6.00'D x 5.00'H Prop Drywell #2 (Vertical Cone/Cylinder)
#9	155.62'	0.000 af	24.0" Round Pipe Storage L= 2.0'
		0.032 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	161.40'	6.0" Round Culvert L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 161.40' / 159.17' S= 0.0676 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=155.62' (Free Discharge)
 ↑**1=Culvert** (Controls 0.00 cfs)

Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM



Summary for Pond 17P: EXISTING DRYWELL SYSTEM

Inflow Area = 0.095 ac, 100.00% Impervious, Inflow Depth = 1.03" for WQ event
 Inflow = 0.28 cfs @ 1.09 hrs, Volume= 0.008 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.15' @ 2.40 hrs Surf.Area= 0.005 ac Storage= 0.008 af

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

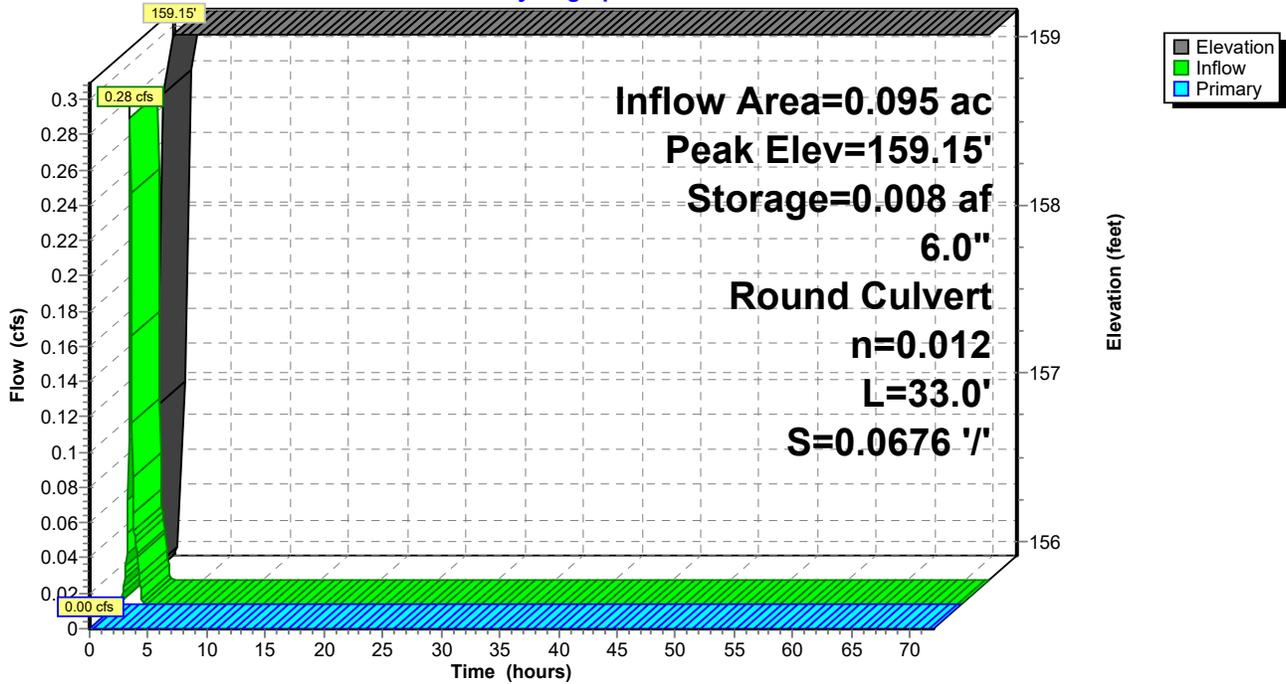
Volume	Invert	Avail.Storage	Storage Description
#1	155.92'	0.009 af	9.00'W x 9.00'L x 6.00'H Exist Drywell #1 (Prismatoid) x 2 0.022 af Overall x 40.0% Voids
#2	156.92'	0.008 af	6.50'D x 5.00'H Exist Drywell #1 (Vertical Cone/Cylinder) x 2
#3	159.50'	0.000 af	12.0" Round Pipe Storage L= 2.0'
		0.017 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	161.40'	6.0" Round Culvert L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 161.40' / 159.17' S= 0.0676 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=155.92' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 17P: EXISTING DRYWELL SYSTEM

Hydrograph





EXIST DRYWELL



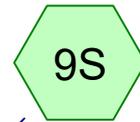
EXISTING DRYWELL SYSTEM



EXIST DRYWELL



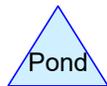
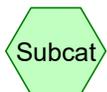
PROP DRYWELL #1



PROP DRYWELL #2



EXISTING AND PROPOSED DRYWELL SYSTEM



Temple Bloomfield - Prelim HydroCAD NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Prepared by Bohler

Printed 7/16/2025

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

Subcatchment7S: EXIST DRYWELL Runoff Area=4,150 sf 100.00% Impervious Runoff Depth=3.21"
Tc=6.0 min CN=98 Runoff=0.30 cfs 0.025 af

Subcatchment8S: PROP DRYWELL #1 Runoff Area=1,221 sf 100.00% Impervious Runoff Depth=3.21"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.007 af

Subcatchment9S: PROP DRYWELL #2 Runoff Area=1,038 sf 100.00% Impervious Runoff Depth=3.21"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment16S: EXIST DRYWELL Runoff Area=4,150 sf 100.00% Impervious Runoff Depth=3.21"
Tc=6.0 min CN=98 Runoff=0.30 cfs 0.025 af

Pond 10P: EXISTING AND PROPOSED Peak Elev=161.50' Storage=0.029 af Inflow=0.46 cfs 0.039 af
6.0" Round Culvert n=0.012 L=33.0' S=0.0676 '/ Outflow=0.03 cfs 0.011 af

Pond 17P: EXISTING DRYWELL SYSTEM Peak Elev=161.55' Storage=0.015 af Inflow=0.30 cfs 0.025 af
6.0" Round Culvert n=0.012 L=33.0' S=0.0676 '/ Outflow=0.07 cfs 0.010 af

Total Runoff Area = 0.242 ac Runoff Volume = 0.065 af Average Runoff Depth = 3.21"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.242 ac

Summary for Subcatchment 7S: EXIST DRYWELL

Runoff = 0.30 cfs @ 12.13 hrs, Volume= 0.025 af, Depth= 3.21"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

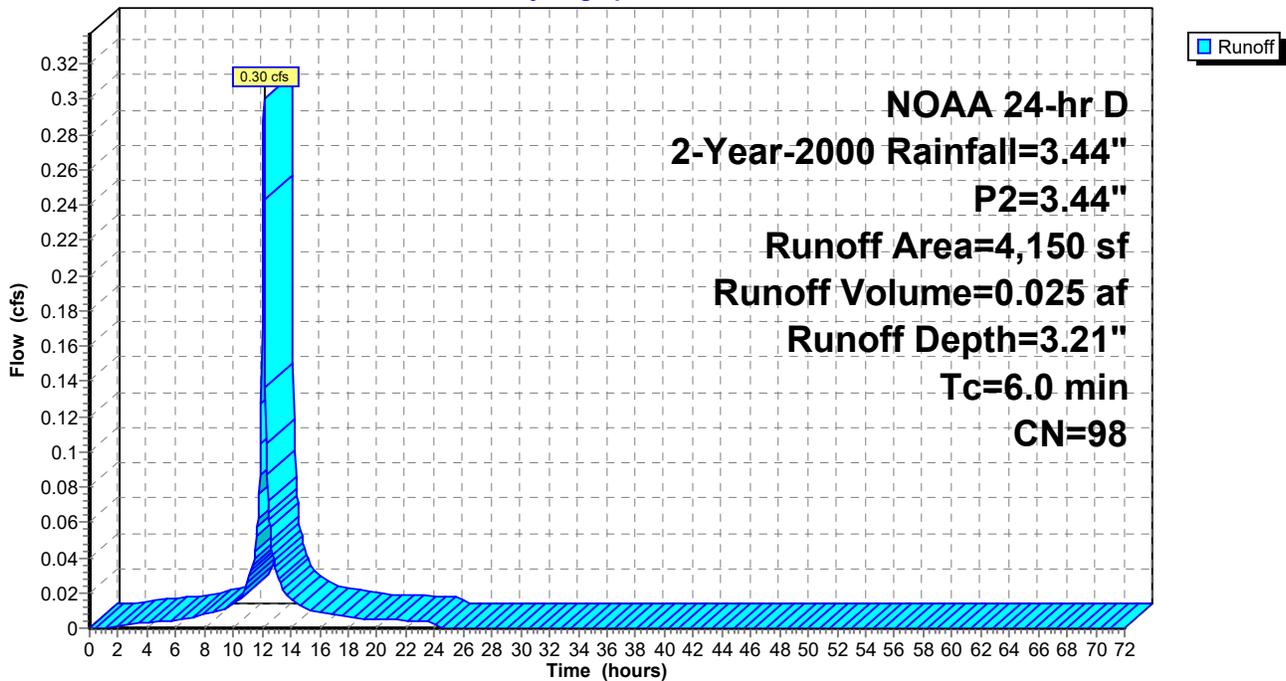
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Area (sf)	CN	Description
* 4,150	98	ROOF HSG D
4,150		100.00% Impervious Area

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

Subcatchment 7S: EXIST DRYWELL

Hydrograph



Summary for Subcatchment 8S: PROP DRYWELL #1

Runoff = 0.09 cfs @ 12.13 hrs, Volume= 0.007 af, Depth= 3.21"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

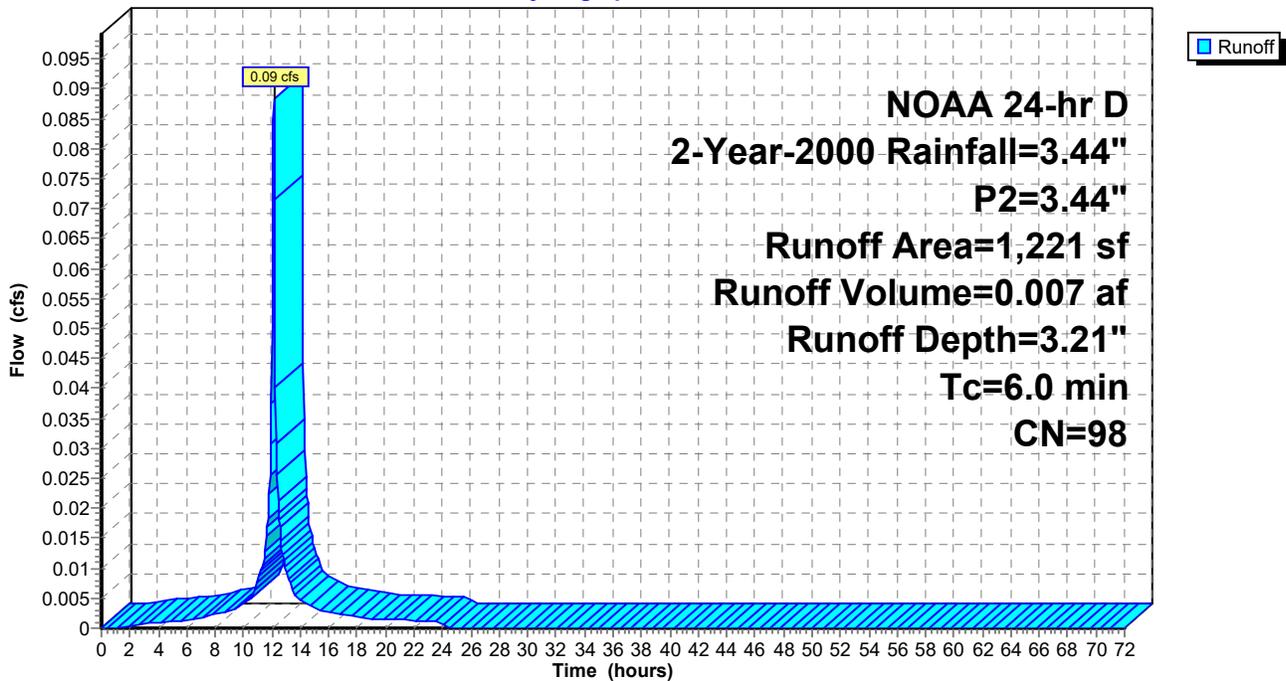
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Area (sf)	CN	Description
* 1,221	98	ROOF HSG D
1,221		100.00% Impervious Area

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

Subcatchment 8S: PROP DRYWELL #1

Hydrograph



Summary for Subcatchment 9S: PROP DRYWELL #2

Runoff = 0.08 cfs @ 12.13 hrs, Volume= 0.006 af, Depth= 3.21"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

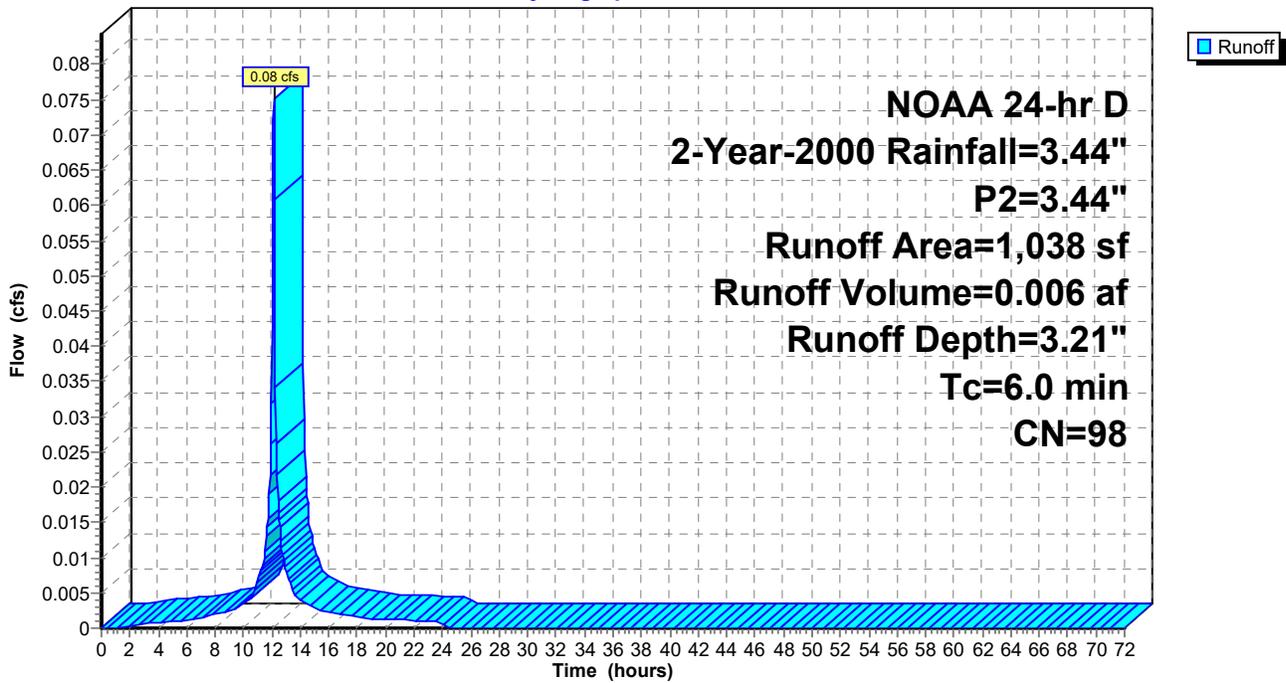
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Area (sf)	CN	Description
* 1,038	98	ROOF HSG D
1,038		100.00% Impervious Area

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

Subcatchment 9S: PROP DRYWELL #2

Hydrograph



Summary for Subcatchment 16S: EXIST DRYWELL

Runoff = 0.30 cfs @ 12.13 hrs, Volume= 0.025 af, Depth= 3.21"
 Routed to Pond 17P : EXISTING DRYWELL SYSTEM

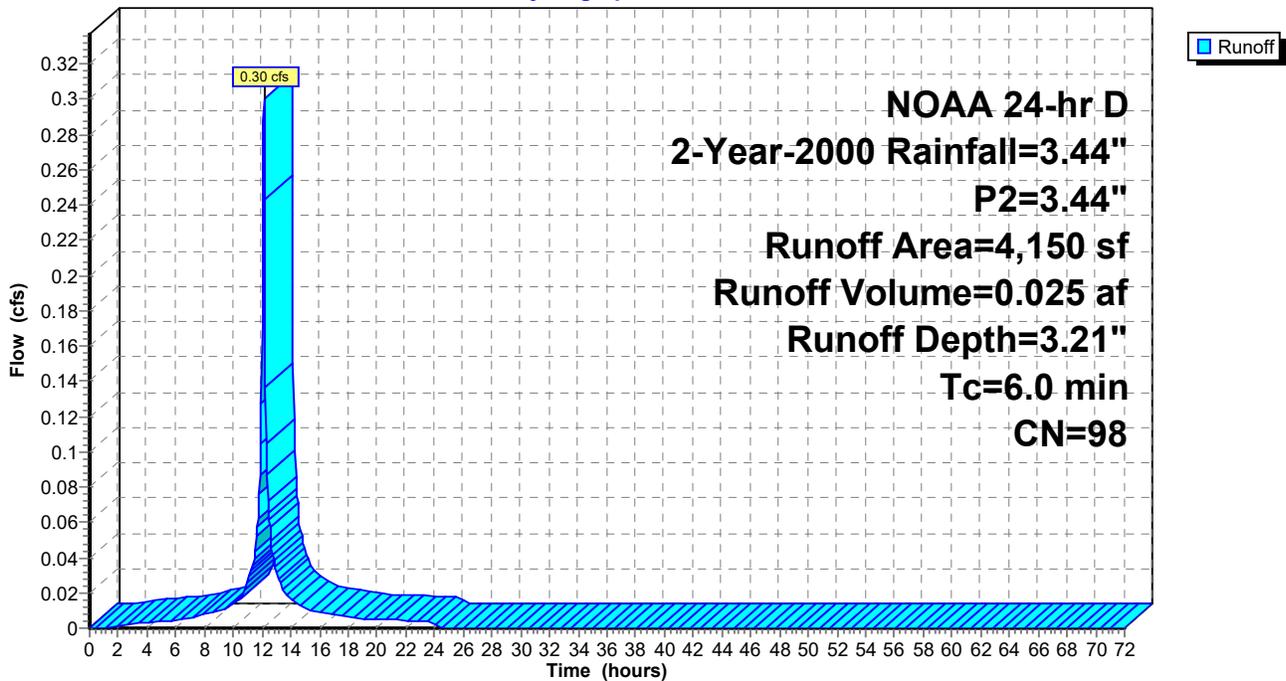
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year-2000 Rainfall=3.44", P2=3.44"

Area (sf)	CN	Description
* 4,150	98	ROOF HSG D
4,150		100.00% Impervious Area

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

Subcatchment 16S: EXIST DRYWELL

Hydrograph



Summary for Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM

Inflow Area = 0.147 ac, 100.00% Impervious, Inflow Depth = 3.21" for 2-Year-2000 event
 Inflow = 0.46 cfs @ 12.13 hrs, Volume= 0.039 af
 Outflow = 0.03 cfs @ 13.56 hrs, Volume= 0.011 af, Atten= 94%, Lag= 86.3 min
 Primary = 0.03 cfs @ 13.56 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.50' @ 13.56 hrs Surf.Area= 0.010 ac Storage= 0.029 af

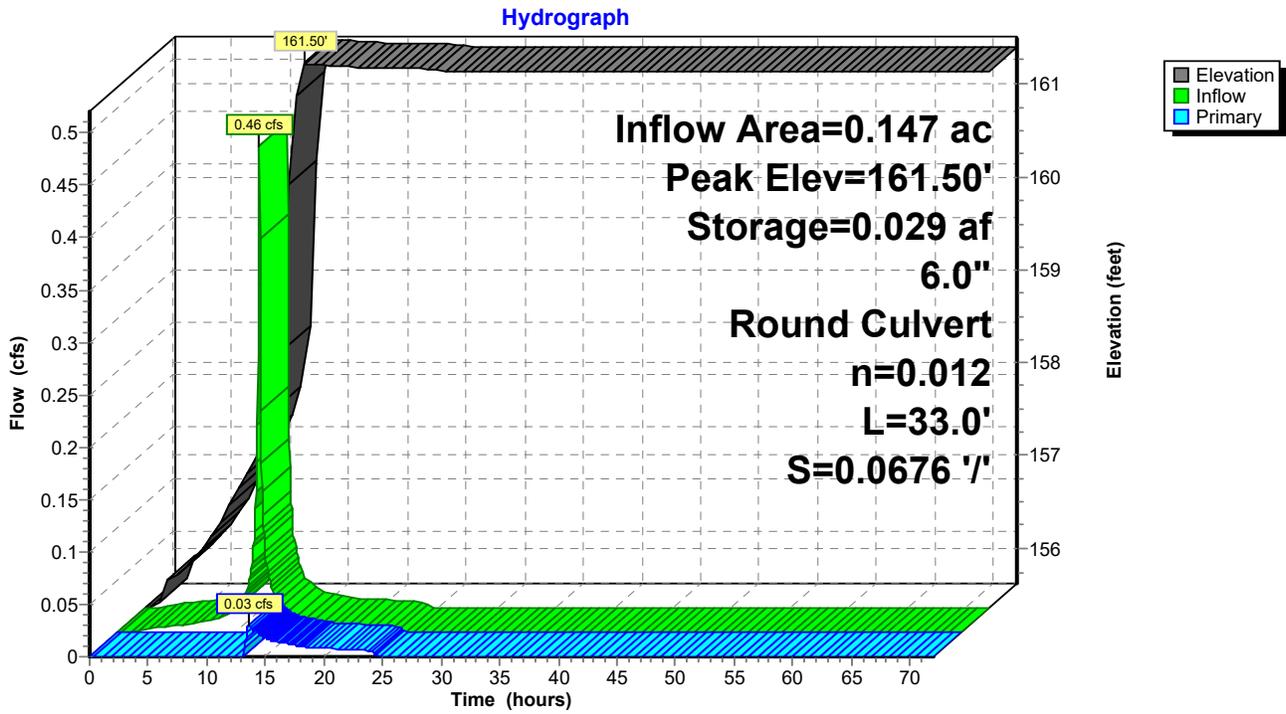
Plug-Flow detention time= 506.8 min calculated for 0.011 af (27% of inflow)
 Center-of-Mass det. time= 283.9 min (1,040.6 - 756.7)

Volume	Invert	Avail.Storage	Storage Description
#1	155.92'	0.009 af	9.00'W x 9.00'L x 6.00'H Exist Drywell #1 (Prismatoid) x 2 0.022 af Overall x 40.0% Voids
#2	156.92'	0.008 af	6.50'D x 5.00'H Exist Drywell #1 (Vertical Cone/Cylinder) x 2
#3	159.50'	0.000 af	12.0" Round Pipe Storage L= 2.0'
#4	155.92'	0.004 af	8.67'W x 8.67'L x 6.00'H Prop Drywell #1 (Prismatoid) 0.010 af Overall x 40.0% Voids
#5	156.92'	0.003 af	6.00'D x 5.00'H Prop Drywell #1 (Vertical Cone/Cylinder)
#6	155.62'	0.000 af	24.0" Round Pipe Storage L= 2.0'
#7	155.92'	0.004 af	8.67'W x 8.67'L x 6.00'H Prop Drywell #2 (Prismatoid) 0.010 af Overall x 40.0% Voids
#8	156.92'	0.003 af	6.00'D x 5.00'H Prop Drywell #2 (Vertical Cone/Cylinder)
#9	155.62'	0.000 af	24.0" Round Pipe Storage L= 2.0'
		0.032 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	161.40'	6.0" Round Culvert L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 161.40' / 159.17' S= 0.0676 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.03 cfs @ 13.56 hrs HW=161.50' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 0.03 cfs @ 1.06 fps)

Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM



Summary for Pond 17P: EXISTING DRYWELL SYSTEM

Inflow Area = 0.095 ac, 100.00% Impervious, Inflow Depth = 3.21" for 2-Year-2000 event
 Inflow = 0.30 cfs @ 12.13 hrs, Volume= 0.025 af
 Outflow = 0.07 cfs @ 12.42 hrs, Volume= 0.010 af, Atten= 76%, Lag= 17.9 min
 Primary = 0.07 cfs @ 12.42 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.55' @ 12.40 hrs Surf.Area= 0.005 ac Storage= 0.015 af

Plug-Flow detention time= 349.1 min calculated for 0.010 af (41% of inflow)
 Center-of-Mass det. time= 185.6 min (942.3 - 756.7)

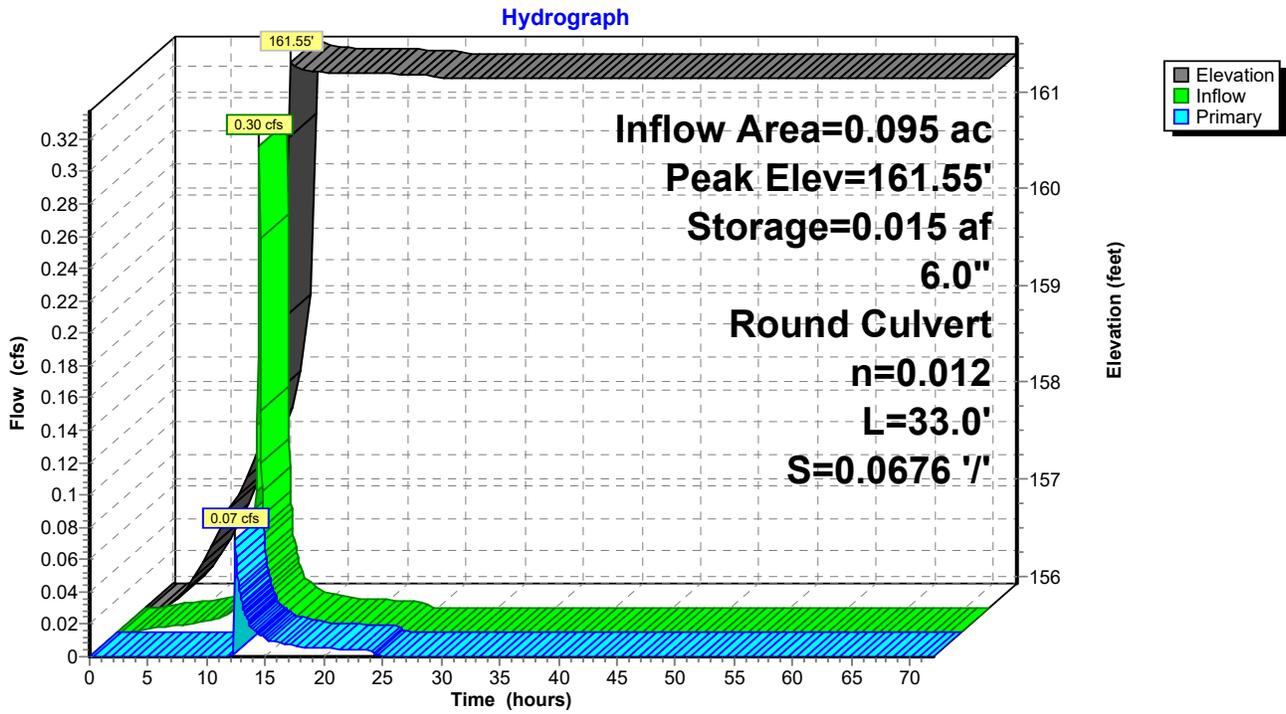
Volume	Invert	Avail.Storage	Storage Description
#1	155.92'	0.009 af	9.00'W x 9.00'L x 6.00'H Exist Drywell #1 (Prismatoid) x 2 0.022 af Overall x 40.0% Voids
#2	156.92'	0.008 af	6.50'D x 5.00'H Exist Drywell #1 (Vertical Cone/Cylinder) x 2
#3	159.50'	0.000 af	12.0" Round Pipe Storage L= 2.0'
		0.017 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	161.40'	6.0" Round Culvert L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 161.40' / 159.17' S= 0.0676 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.07 cfs @ 12.42 hrs HW=161.55' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 1.33 fps)

Pond 17P: EXISTING DRYWELL SYSTEM



Temple Bloomfield - Prelim HydroCAD NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Prepared by Bohler

Printed 7/16/2025

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

Subcatchment7S: EXIST DRYWELL Runoff Area=4,150 sf 100.00% Impervious Runoff Depth=4.98"
Tc=6.0 min CN=98 Runoff=0.46 cfs 0.040 af

Subcatchment8S: PROP DRYWELL #1 Runoff Area=1,221 sf 100.00% Impervious Runoff Depth=4.98"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.012 af

Subcatchment9S: PROP DRYWELL #2 Runoff Area=1,038 sf 100.00% Impervious Runoff Depth=4.98"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.010 af

Subcatchment16S: EXIST DRYWELL Runoff Area=4,150 sf 100.00% Impervious Runoff Depth=4.98"
Tc=6.0 min CN=98 Runoff=0.46 cfs 0.040 af

Pond 10P: EXISTING AND PROPOSED Peak Elev=161.91' Storage=0.032 af Inflow=0.71 cfs 0.061 af
6.0" Round Culvert n=0.012 L=33.0' S=0.0676 '/ Outflow=0.48 cfs 0.032 af

Pond 17P: EXISTING DRYWELL SYSTEM Peak Elev=161.86' Storage=0.016 af Inflow=0.46 cfs 0.040 af
6.0" Round Culvert n=0.012 L=33.0' S=0.0676 '/ Outflow=0.44 cfs 0.025 af

Total Runoff Area = 0.242 ac Runoff Volume = 0.101 af Average Runoff Depth = 4.98"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.242 ac

Summary for Subcatchment 7S: EXIST DRYWELL

Runoff = 0.46 cfs @ 12.13 hrs, Volume= 0.040 af, Depth= 4.98"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

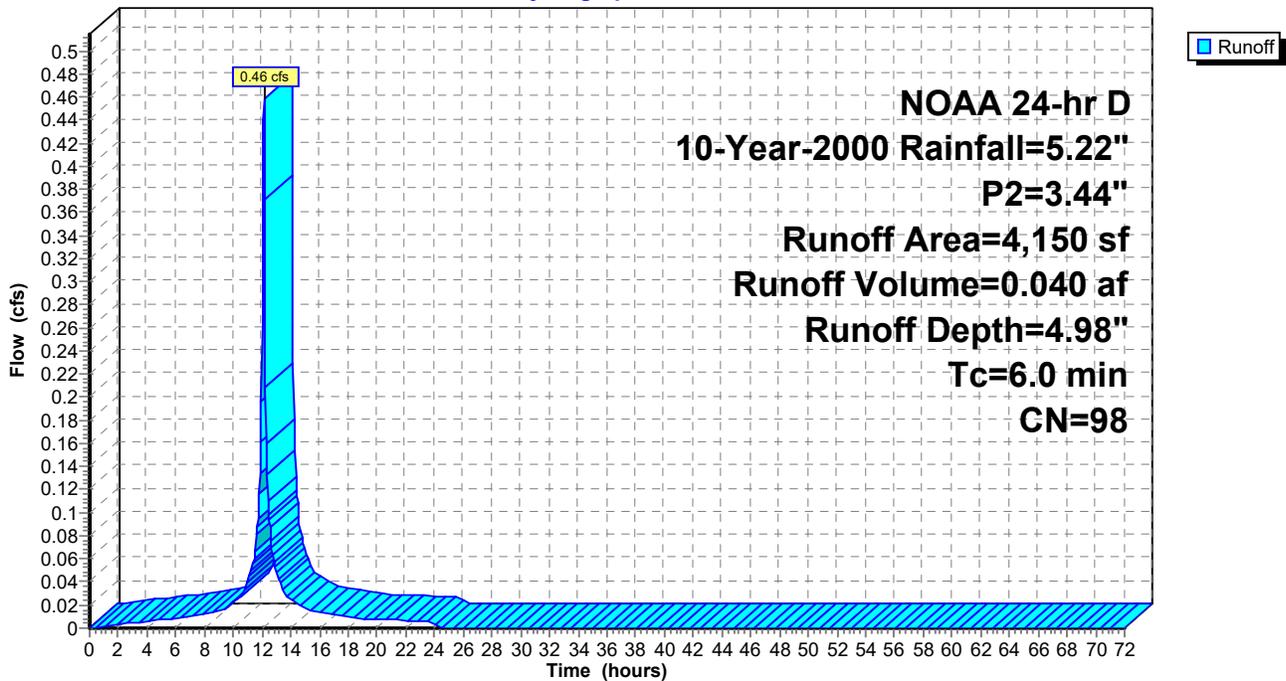
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Area (sf)	CN	Description
* 4,150	98	ROOF HSG D
4,150		100.00% Impervious Area

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

Subcatchment 7S: EXIST DRYWELL

Hydrograph



Summary for Subcatchment 8S: PROP DRYWELL #1

Runoff = 0.14 cfs @ 12.13 hrs, Volume= 0.012 af, Depth= 4.98"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

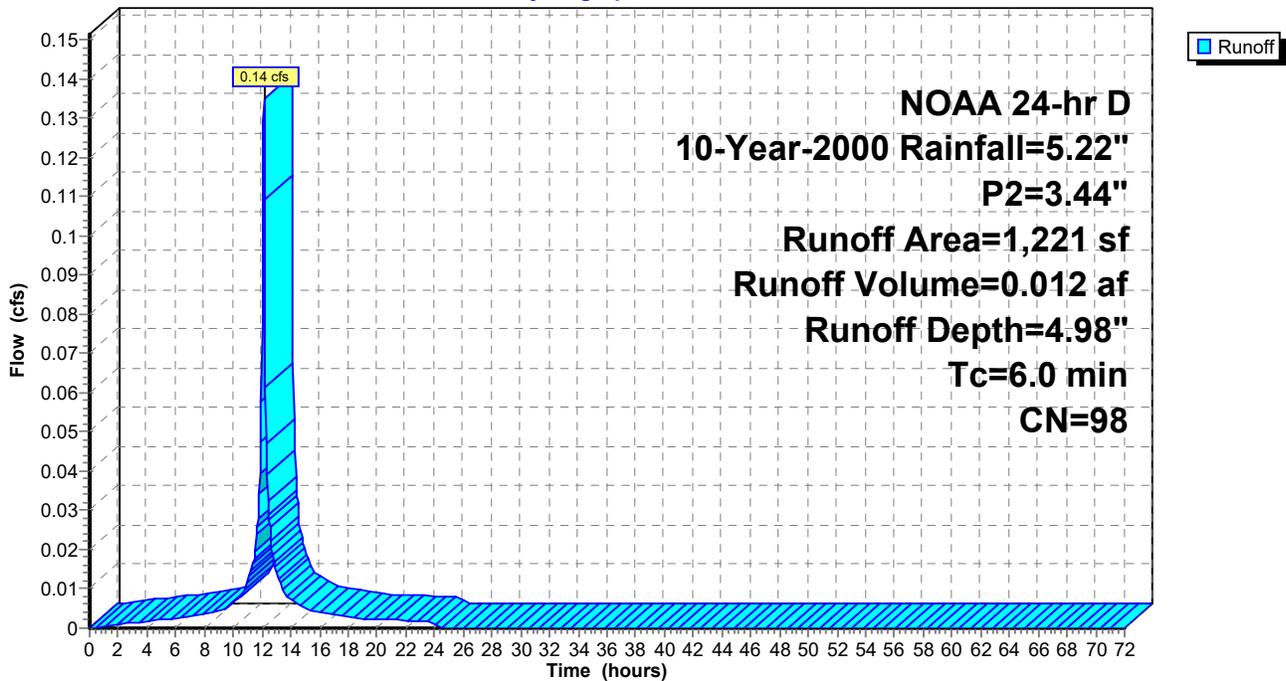
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Area (sf)	CN	Description
* 1,221	98	ROOF HSG D
1,221		100.00% Impervious Area

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

Subcatchment 8S: PROP DRYWELL #1

Hydrograph



Summary for Subcatchment 9S: PROP DRYWELL #2

Runoff = 0.11 cfs @ 12.13 hrs, Volume= 0.010 af, Depth= 4.98"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

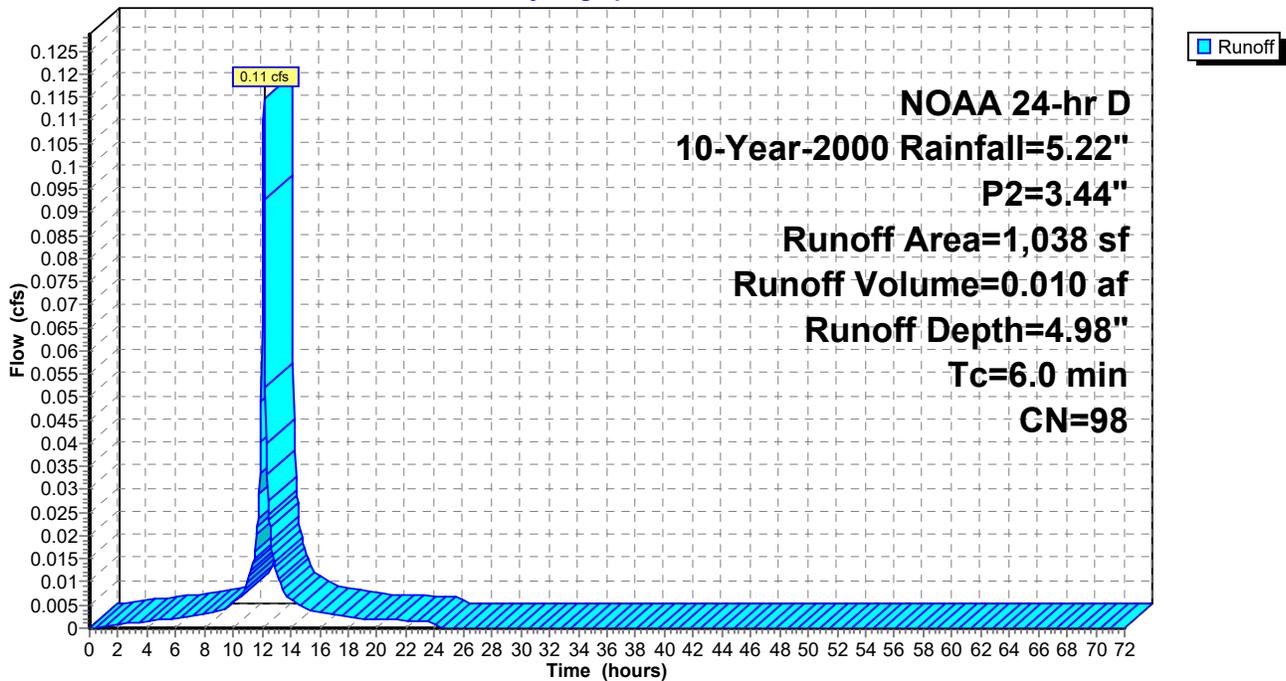
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Area (sf)	CN	Description
* 1,038	98	ROOF HSG D
1,038		100.00% Impervious Area

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

Subcatchment 9S: PROP DRYWELL #2

Hydrograph



Summary for Subcatchment 16S: EXIST DRYWELL

Runoff = 0.46 cfs @ 12.13 hrs, Volume= 0.040 af, Depth= 4.98"
 Routed to Pond 17P : EXISTING DRYWELL SYSTEM

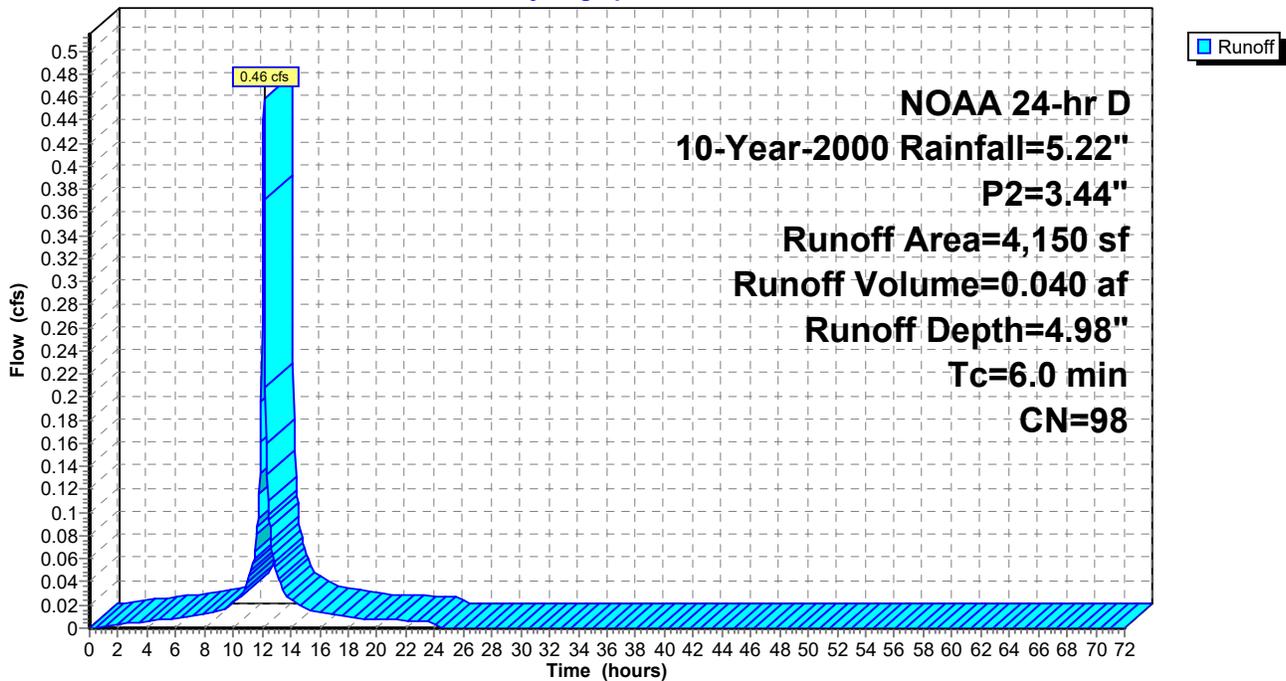
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year-2000 Rainfall=5.22", P2=3.44"

Area (sf)	CN	Description
* 4,150	98	ROOF HSG D
4,150		100.00% Impervious Area

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

Subcatchment 16S: EXIST DRYWELL

Hydrograph



Summary for Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM

Inflow Area = 0.147 ac, 100.00% Impervious, Inflow Depth = 4.98" for 10-Year-2000 event
 Inflow = 0.71 cfs @ 12.13 hrs, Volume= 0.061 af
 Outflow = 0.48 cfs @ 12.21 hrs, Volume= 0.032 af, Atten= 32%, Lag= 5.2 min
 Primary = 0.48 cfs @ 12.21 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.91' @ 12.21 hrs Surf.Area= 0.010 ac Storage= 0.032 af

Plug-Flow detention time= 281.5 min calculated for 0.032 af (53% of inflow)
 Center-of-Mass det. time= 145.5 min (894.0 - 748.5)

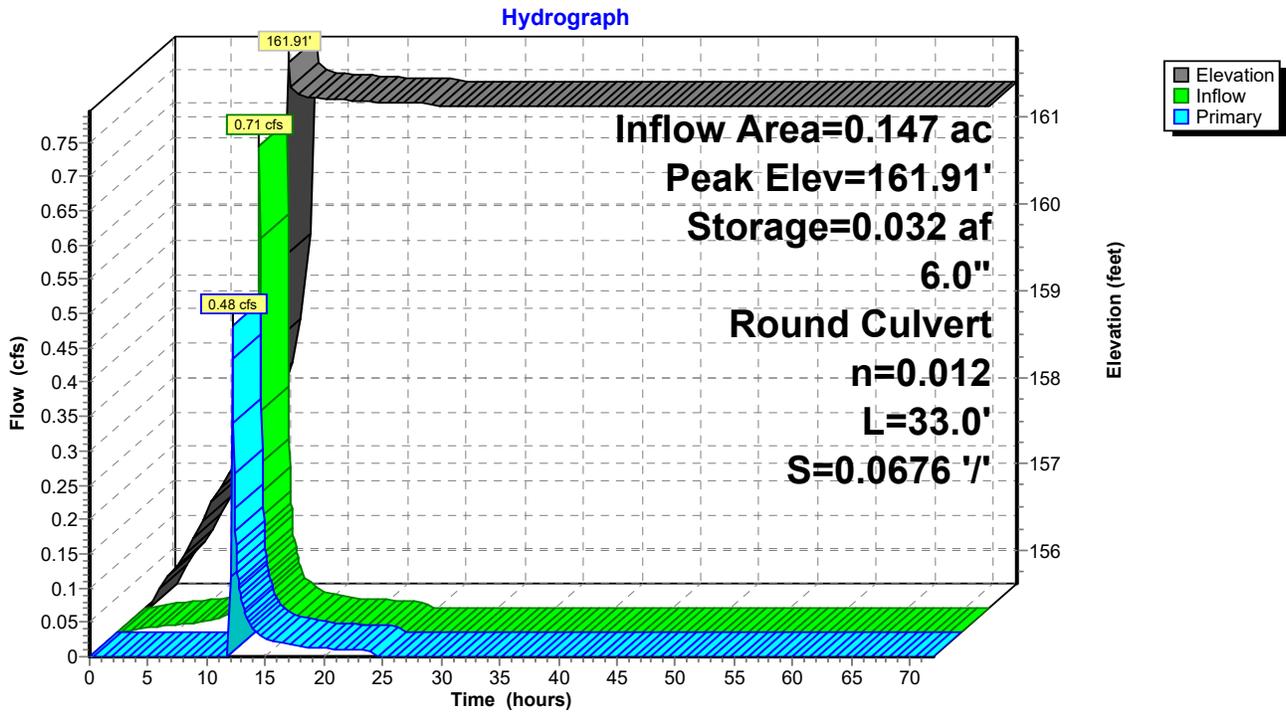
Volume	Invert	Avail.Storage	Storage Description
#1	155.92'	0.009 af	9.00'W x 9.00'L x 6.00'H Exist Drywell #1 (Prismatoid) x 2 0.022 af Overall x 40.0% Voids
#2	156.92'	0.008 af	6.50'D x 5.00'H Exist Drywell #1 (Vertical Cone/Cylinder) x 2
#3	159.50'	0.000 af	12.0" Round Pipe Storage L= 2.0'
#4	155.92'	0.004 af	8.67'W x 8.67'L x 6.00'H Prop Drywell #1 (Prismatoid) 0.010 af Overall x 40.0% Voids
#5	156.92'	0.003 af	6.00'D x 5.00'H Prop Drywell #1 (Vertical Cone/Cylinder)
#6	155.62'	0.000 af	24.0" Round Pipe Storage L= 2.0'
#7	155.92'	0.004 af	8.67'W x 8.67'L x 6.00'H Prop Drywell #2 (Prismatoid) 0.010 af Overall x 40.0% Voids
#8	156.92'	0.003 af	6.00'D x 5.00'H Prop Drywell #2 (Vertical Cone/Cylinder)
#9	155.62'	0.000 af	24.0" Round Pipe Storage L= 2.0'
		0.032 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	161.40'	6.0" Round Culvert L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 161.40' / 159.17' S= 0.0676 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.47 cfs @ 12.21 hrs HW=161.89' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.47 cfs @ 2.39 fps)

Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM



Summary for Pond 17P: EXISTING DRYWELL SYSTEM

Inflow Area = 0.095 ac, 100.00% Impervious, Inflow Depth = 4.98" for 10-Year-2000 event
 Inflow = 0.46 cfs @ 12.13 hrs, Volume= 0.040 af
 Outflow = 0.44 cfs @ 12.15 hrs, Volume= 0.025 af, Atten= 5%, Lag= 1.4 min
 Primary = 0.44 cfs @ 12.15 hrs, Volume= 0.025 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.86' @ 12.15 hrs Surf.Area= 0.005 ac Storage= 0.016 af

Plug-Flow detention time= 235.8 min calculated for 0.025 af (62% of inflow)
 Center-of-Mass det. time= 117.5 min (866.0 - 748.5)

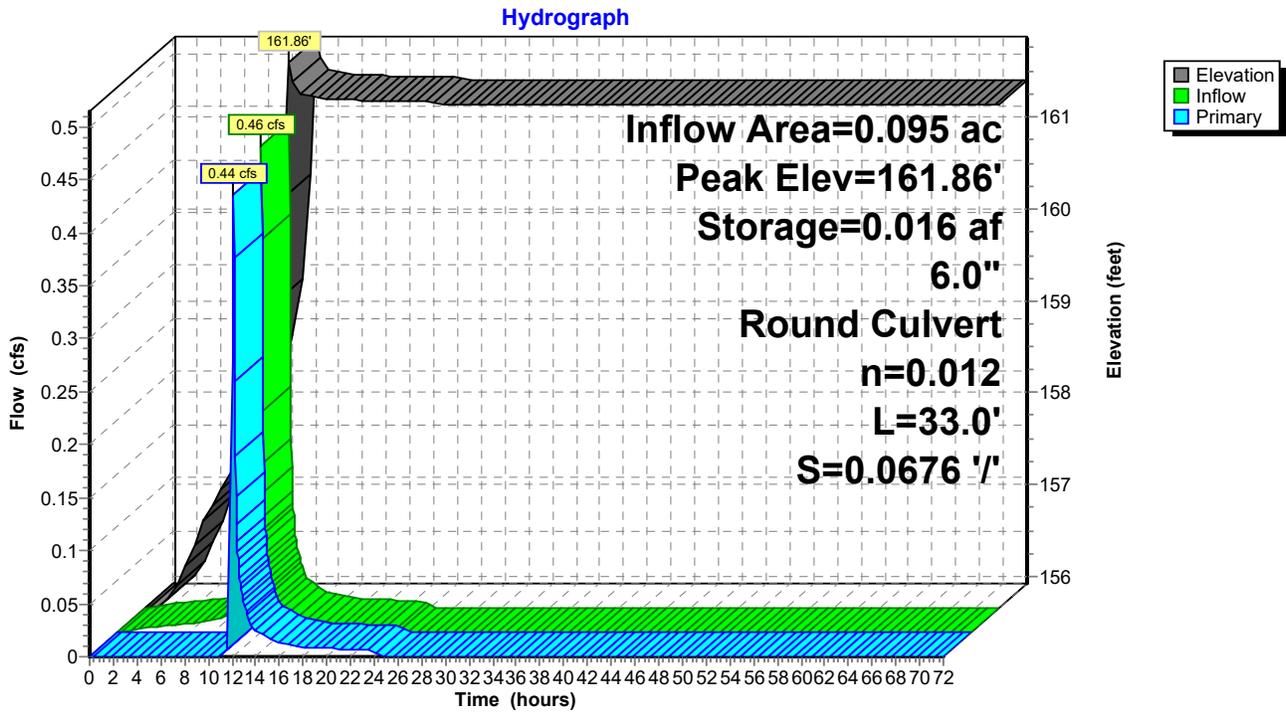
Volume	Invert	Avail.Storage	Storage Description
#1	155.92'	0.009 af	9.00'W x 9.00'L x 6.00'H Exist Drywell #1 (Prismatoid) x 2 0.022 af Overall x 40.0% Voids
#2	156.92'	0.008 af	6.50'D x 5.00'H Exist Drywell #1 (Vertical Cone/Cylinder) x 2
#3	159.50'	0.000 af	12.0" Round Pipe Storage L= 2.0'
		0.017 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	161.40'	6.0" Round Culvert L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 161.40' / 159.17' S= 0.0676 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.44 cfs @ 12.15 hrs HW=161.86' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 0.44 cfs @ 2.31 fps)

Pond 17P: EXISTING DRYWELL SYSTEM



Temple Bloomfield - Prelim HydroCA NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Prepared by Bohler

Printed 7/16/2025

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

Subcatchment7S: EXIST DRYWELL Runoff Area=4,150 sf 100.00% Impervious Runoff Depth=8.42"
Tc=6.0 min CN=98 Runoff=0.76 cfs 0.067 af

Subcatchment8S: PROP DRYWELL #1 Runoff Area=1,221 sf 100.00% Impervious Runoff Depth=8.42"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.020 af

Subcatchment9S: PROP DRYWELL #2 Runoff Area=1,038 sf 100.00% Impervious Runoff Depth=8.42"
Tc=6.0 min CN=98 Runoff=0.19 cfs 0.017 af

Subcatchment16S: EXIST DRYWELL Runoff Area=4,150 sf 100.00% Impervious Runoff Depth=8.42"
Tc=6.0 min CN=98 Runoff=0.76 cfs 0.067 af

Pond 10P: EXISTING AND PROPOSED Peak Elev=163.45' Storage=0.032 af Inflow=1.18 cfs 0.103 af
6.0" Round Culvert n=0.012 L=33.0' S=0.0676 '/ Outflow=1.28 cfs 0.075 af

Pond 17P: EXISTING DRYWELL SYSTEM Peak Elev=162.35' Storage=0.017 af Inflow=0.76 cfs 0.067 af
6.0" Round Culvert n=0.012 L=33.0' S=0.0676 '/ Outflow=0.79 cfs 0.052 af

Total Runoff Area = 0.242 ac Runoff Volume = 0.170 af Average Runoff Depth = 8.42"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.242 ac

Summary for Subcatchment 7S: EXIST DRYWELL

Runoff = 0.76 cfs @ 12.13 hrs, Volume= 0.067 af, Depth= 8.42"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

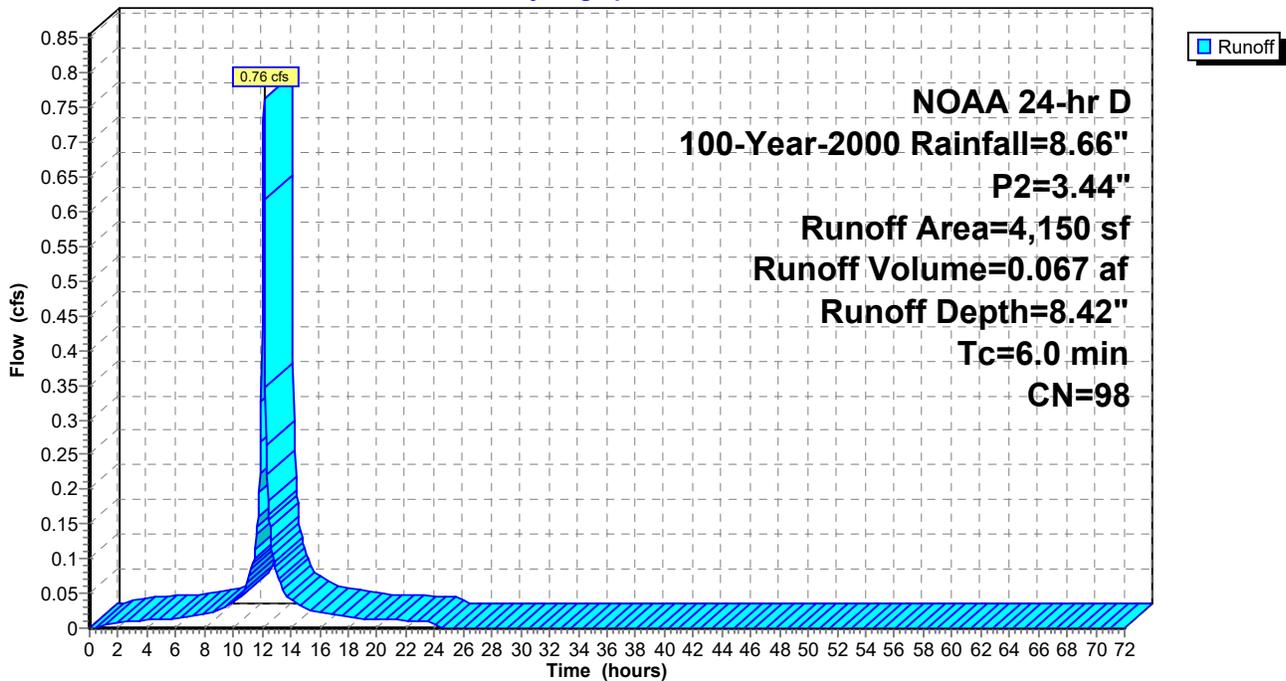
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Area (sf)	CN	Description
* 4,150	98	ROOF HSG D
4,150		100.00% Impervious Area

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

Subcatchment 7S: EXIST DRYWELL

Hydrograph



Summary for Subcatchment 8S: PROP DRYWELL #1

Runoff = 0.22 cfs @ 12.13 hrs, Volume= 0.020 af, Depth= 8.42"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

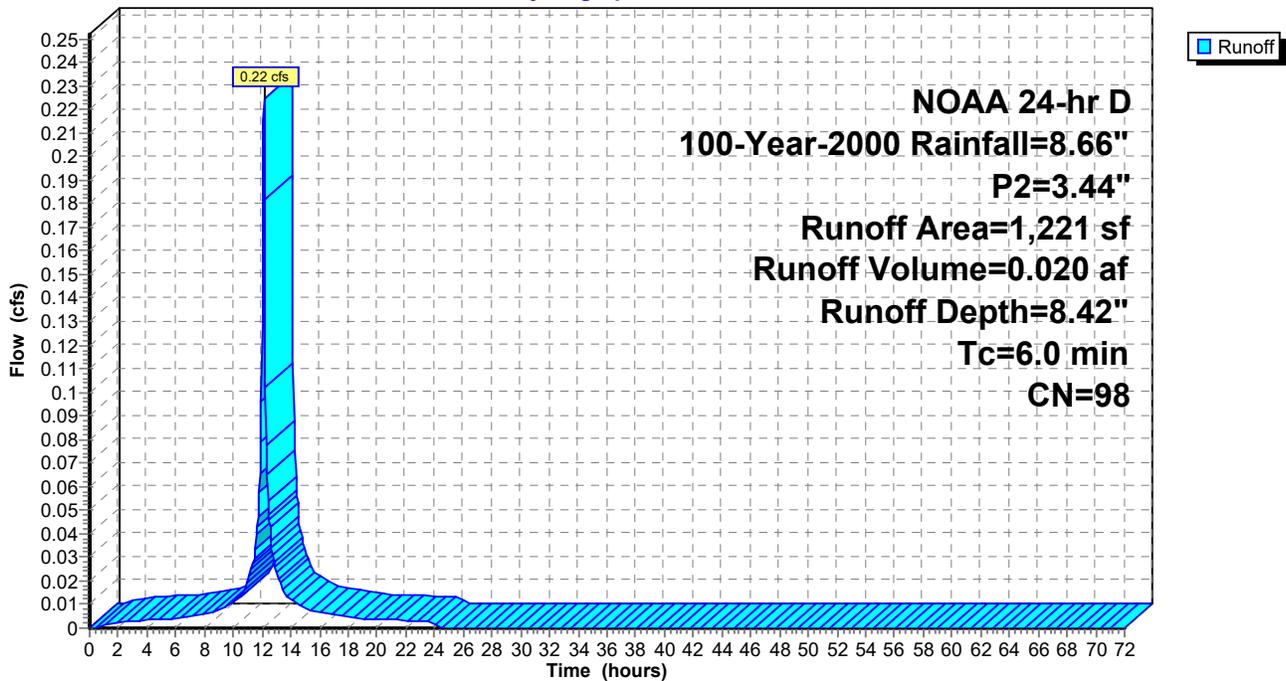
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Area (sf)	CN	Description
* 1,221	98	ROOF HSG D
1,221		100.00% Impervious Area

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

Subcatchment 8S: PROP DRYWELL #1

Hydrograph



Summary for Subcatchment 9S: PROP DRYWELL #2

Runoff = 0.19 cfs @ 12.13 hrs, Volume= 0.017 af, Depth= 8.42"
 Routed to Pond 10P : EXISTING AND PROPOSED DRYWELL SYSTEM

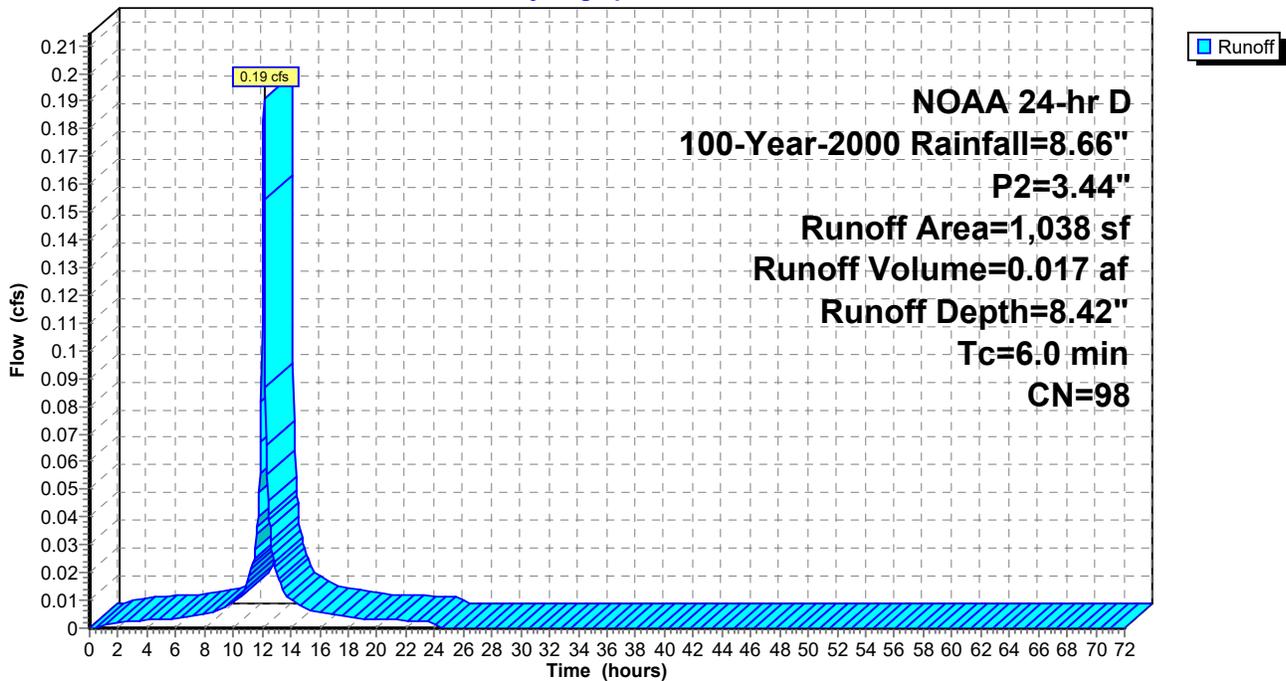
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Area (sf)	CN	Description
* 1,038	98	ROOF HSG D
1,038		100.00% Impervious Area

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

Subcatchment 9S: PROP DRYWELL #2

Hydrograph



Summary for Subcatchment 16S: EXIST DRYWELL

Runoff = 0.76 cfs @ 12.13 hrs, Volume= 0.067 af, Depth= 8.42"
 Routed to Pond 17P : EXISTING DRYWELL SYSTEM

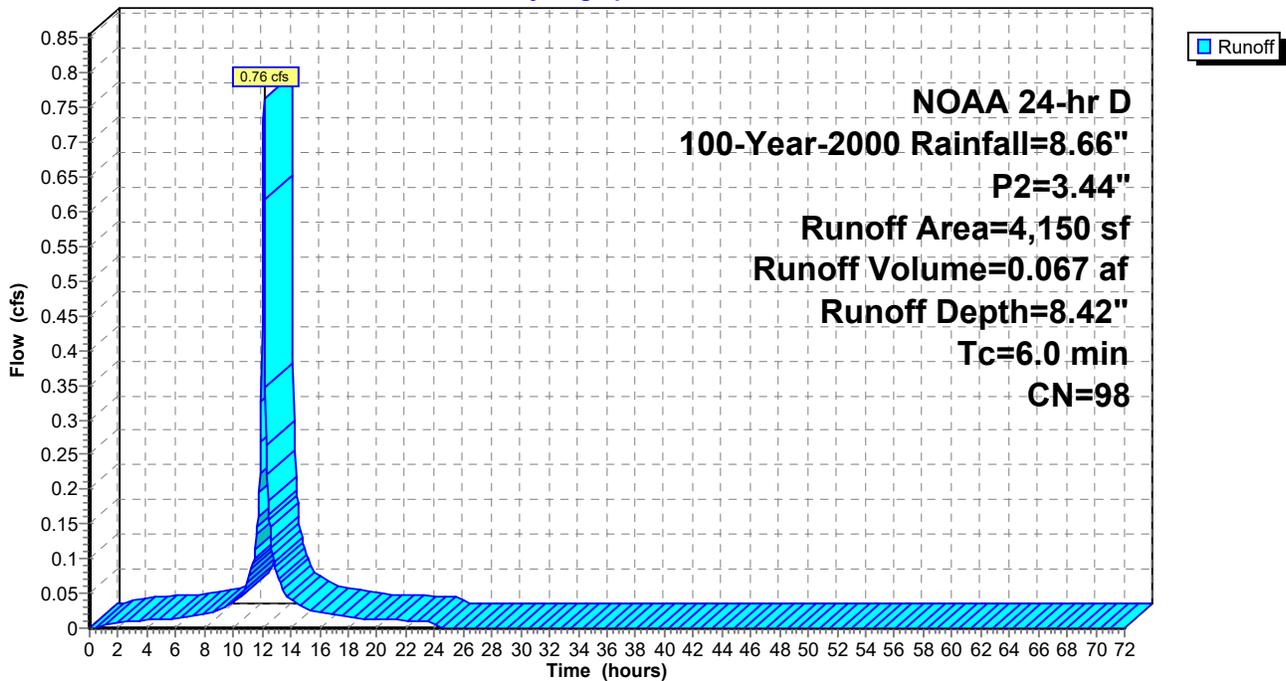
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year-2000 Rainfall=8.66", P2=3.44"

Area (sf)	CN	Description
* 4,150	98	ROOF HSG D
4,150		100.00% Impervious Area

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

Subcatchment 16S: EXIST DRYWELL

Hydrograph



Summary for Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM

[93] Warning: Storage range exceeded by 1.53'

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

Inflow Area = 0.147 ac, 100.00% Impervious, Inflow Depth = 8.42" for 100-Year-2000 event
 Inflow = 1.18 cfs @ 12.13 hrs, Volume= 0.103 af
 Outflow = 1.28 cfs @ 12.14 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.8 min
 Primary = 1.28 cfs @ 12.14 hrs, Volume= 0.075 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.45' @ 12.14 hrs Surf.Area= 0.010 ac Storage= 0.032 af

Plug-Flow detention time= 204.5 min calculated for 0.075 af (72% of inflow)
 Center-of-Mass det. time= 102.0 min (843.0 - 741.0)

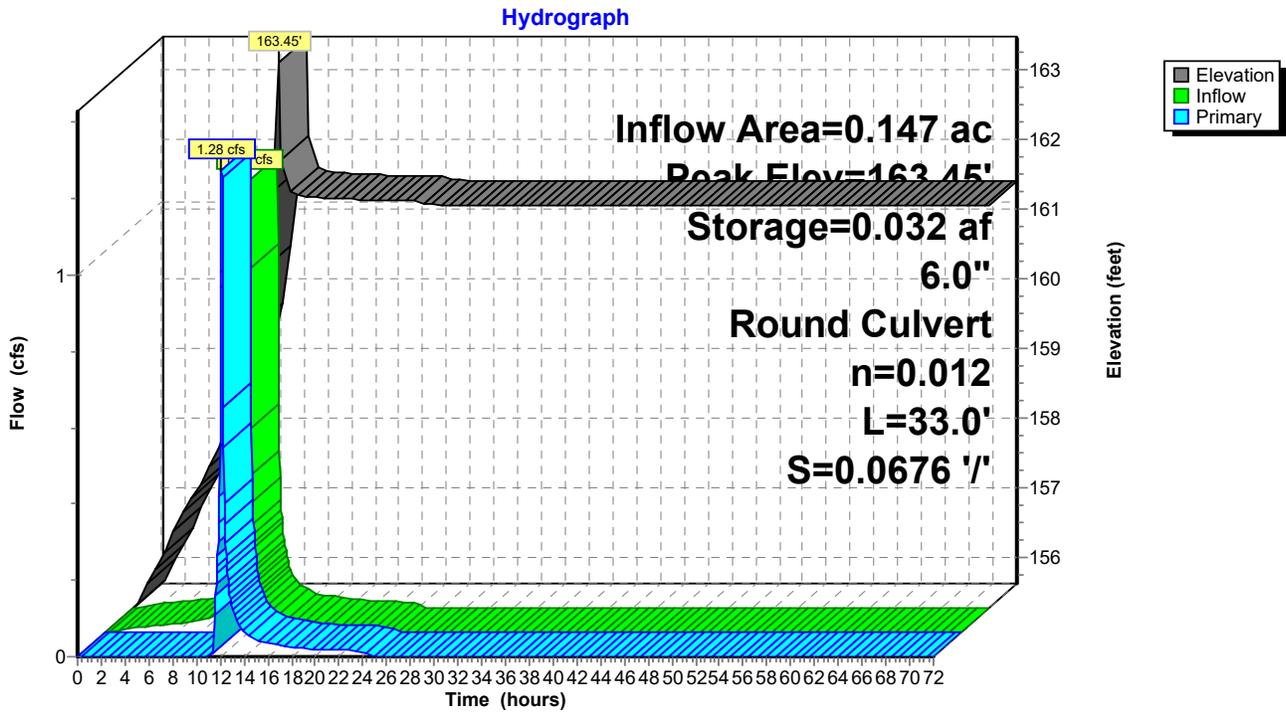
Volume	Invert	Avail.Storage	Storage Description
#1	155.92'	0.009 af	9.00'W x 9.00'L x 6.00'H Exist Drywell #1 (Prismatoid) x 2 0.022 af Overall x 40.0% Voids
#2	156.92'	0.008 af	6.50'D x 5.00'H Exist Drywell #1 (Vertical Cone/Cylinder) x 2
#3	159.50'	0.000 af	12.0" Round Pipe Storage L= 2.0'
#4	155.92'	0.004 af	8.67'W x 8.67'L x 6.00'H Prop Drywell #1 (Prismatoid) 0.010 af Overall x 40.0% Voids
#5	156.92'	0.003 af	6.00'D x 5.00'H Prop Drywell #1 (Vertical Cone/Cylinder)
#6	155.62'	0.000 af	24.0" Round Pipe Storage L= 2.0'
#7	155.92'	0.004 af	8.67'W x 8.67'L x 6.00'H Prop Drywell #2 (Prismatoid) 0.010 af Overall x 40.0% Voids
#8	156.92'	0.003 af	6.00'D x 5.00'H Prop Drywell #2 (Vertical Cone/Cylinder)
#9	155.62'	0.000 af	24.0" Round Pipe Storage L= 2.0'
		0.032 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	161.40'	6.0" Round Culvert L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 161.40' / 159.17' S= 0.0676 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=1.21 cfs @ 12.14 hrs HW=163.28' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 1.21 cfs @ 6.16 fps)

Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM



Summary for Pond 17P: EXISTING DRYWELL SYSTEM

[93] Warning: Storage range exceeded by 0.43'

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

Inflow Area = 0.095 ac, 100.00% Impervious, Inflow Depth = 8.42" for 100-Year-2000 event
 Inflow = 0.76 cfs @ 12.13 hrs, Volume= 0.067 af
 Outflow = 0.79 cfs @ 12.11 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.79 cfs @ 12.11 hrs, Volume= 0.052 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.35' @ 12.11 hrs Surf.Area= 0.005 ac Storage= 0.017 af

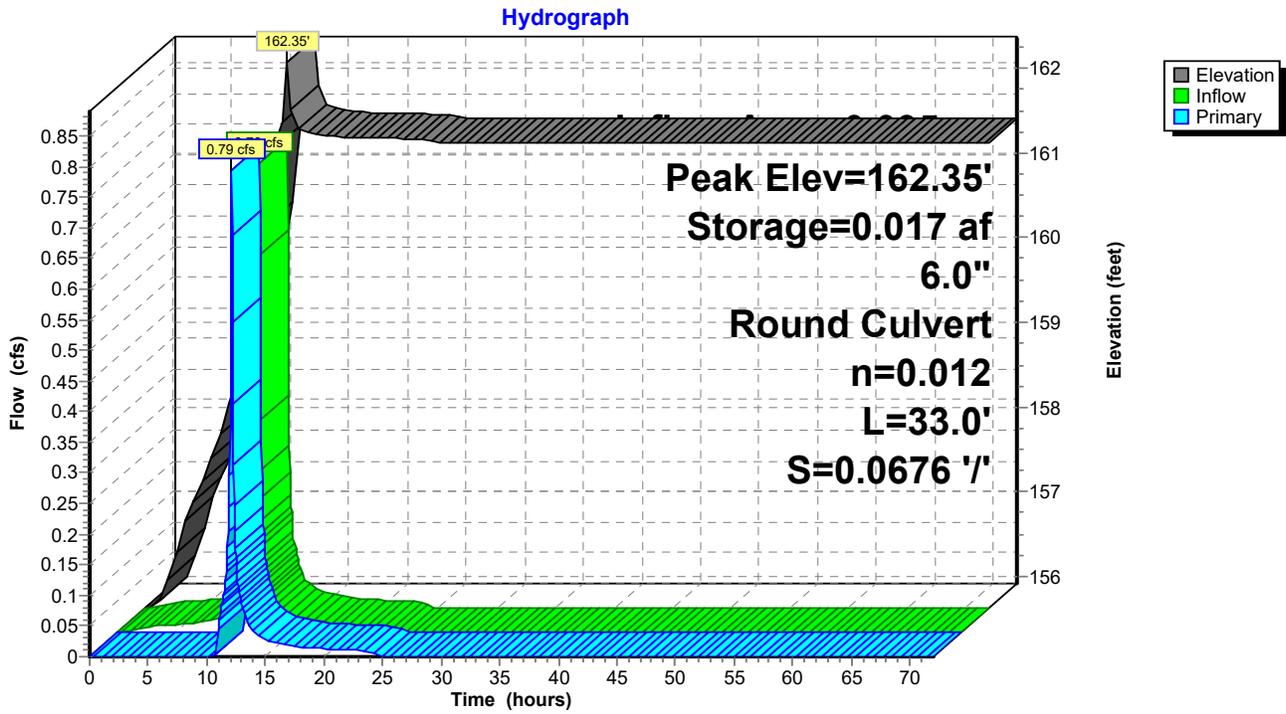
Plug-Flow detention time= 178.6 min calculated for 0.052 af (77% of inflow)
 Center-of-Mass det. time= 88.0 min (829.0 - 741.0)

Volume	Invert	Avail.Storage	Storage Description
#1	155.92'	0.009 af	9.00'W x 9.00'L x 6.00'H Exist Drywell #1 (Prismatoid) x 2 0.022 af Overall x 40.0% Voids
#2	156.92'	0.008 af	6.50'D x 5.00'H Exist Drywell #1 (Vertical Cone/Cylinder) x 2
#3	159.50'	0.000 af	12.0" Round Pipe Storage L= 2.0'
		0.017 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	161.40'	6.0" Round Culvert L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 161.40' / 159.17' S= 0.0676 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.76 cfs @ 12.11 hrs HW=162.29' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 0.76 cfs @ 3.85 fps)

Pond 17P: EXISTING DRYWELL SYSTEM



C. Design Calculations

- ◆ **Dry Well Drain Time for Water Quality Storm Event**

Hydrograph for Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	155.62	0.00	0.00	0.00
0.20	0.00	0	155.62	0.00	0.00	0.00
0.40	0.00	0	155.78	0.00	0.00	0.00
0.60	0.02	7	155.96	0.00	0.00	0.00
0.80	0.05	28	156.12	0.00	0.00	0.00
1.00	0.27	116	156.78	0.00	0.00	0.00
1.20	0.24	352	157.79	0.01	0.01	0.00
1.40	0.07	445	158.16	0.01	0.01	0.00
1.60	0.05	482	158.31	0.01	0.01	0.00
1.80	0.04	510	158.42	0.01	0.01	0.00
2.00	0.01	522	158.47	0.01	0.01	0.00
2.20	0.00	524	158.48	0.01	0.01	0.00
2.40	0.00	520	158.46	0.01	0.01	0.00
2.60	0.00	516	158.45	0.01	0.01	0.00
2.80	0.00	513	158.43	0.01	0.01	0.00
3.00	0.00	509	158.42	0.01	0.01	0.00
3.20	0.00	506	158.40	0.01	0.01	0.00
3.40	0.00	502	158.39	0.01	0.01	0.00
3.60	0.00	498	158.38	0.01	0.01	0.00
3.80	0.00	495	158.36	0.01	0.01	0.00
4.00	0.00	491	158.35	0.01	0.01	0.00
4.20	0.00	487	158.33	0.01	0.01	0.00
4.40	0.00	484	158.32	0.01	0.01	0.00
4.60	0.00	480	158.30	0.01	0.01	0.00
4.80	0.00	477	158.29	0.01	0.01	0.00
5.00	0.00	473	158.27	0.01	0.01	0.00
5.20	0.00	469	158.26	0.01	0.01	0.00
5.40	0.00	466	158.24	0.01	0.01	0.00
5.60	0.00	462	158.23	0.01	0.01	0.00
5.80	0.00	458	158.21	0.01	0.01	0.00
6.00	0.00	455	158.20	0.01	0.01	0.00
6.20	0.00	451	158.19	0.01	0.01	0.00
6.40	0.00	448	158.17	0.01	0.01	0.00
6.60	0.00	444	158.16	0.01	0.01	0.00
6.80	0.00	440	158.14	0.01	0.01	0.00
7.00	0.00	437	158.13	0.01	0.01	0.00
7.20	0.00	433	158.11	0.01	0.01	0.00
7.40	0.00	429	158.10	0.01	0.01	0.00
7.60	0.00	426	158.08	0.01	0.01	0.00
7.80	0.00	422	158.07	0.01	0.01	0.00
8.00	0.00	418	158.05	0.01	0.01	0.00
8.20	0.00	415	158.04	0.01	0.01	0.00
8.40	0.00	411	158.02	0.01	0.01	0.00
8.60	0.00	408	158.01	0.01	0.01	0.00
8.80	0.00	404	158.00	0.01	0.01	0.00
9.00	0.00	400	157.98	0.01	0.01	0.00
9.20	0.00	397	157.97	0.01	0.01	0.00
9.40	0.00	393	157.95	0.01	0.01	0.00
9.60	0.00	389	157.94	0.01	0.01	0.00
9.80	0.00	386	157.92	0.01	0.01	0.00
10.00	0.00	382	157.91	0.01	0.01	0.00
10.20	0.00	379	157.89	0.01	0.01	0.00

Hydrograph for Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
10.40	0.00	375	157.88	0.01	0.01	0.00
10.60	0.00	371	157.86	0.01	0.01	0.00
10.80	0.00	368	157.85	0.01	0.01	0.00
11.00	0.00	364	157.83	0.01	0.01	0.00
11.20	0.00	360	157.82	0.01	0.01	0.00
11.40	0.00	357	157.80	0.01	0.01	0.00
11.60	0.00	353	157.79	0.01	0.01	0.00
11.80	0.00	350	157.78	0.01	0.01	0.00
12.00	0.00	346	157.76	0.01	0.01	0.00
12.20	0.00	342	157.75	0.01	0.01	0.00
12.40	0.00	339	157.73	0.01	0.01	0.00
12.60	0.00	335	157.72	0.01	0.01	0.00
12.80	0.00	331	157.70	0.01	0.01	0.00
13.00	0.00	328	157.69	0.01	0.01	0.00
13.20	0.00	324	157.67	0.01	0.01	0.00
13.40	0.00	321	157.66	0.01	0.01	0.00
13.60	0.00	317	157.64	0.01	0.01	0.00
13.80	0.00	313	157.63	0.01	0.01	0.00
14.00	0.00	310	157.61	0.01	0.01	0.00
14.20	0.00	306	157.60	0.01	0.01	0.00
14.40	0.00	302	157.59	0.01	0.01	0.00
14.60	0.00	299	157.57	0.01	0.01	0.00
14.80	0.00	295	157.56	0.01	0.01	0.00
15.00	0.00	291	157.54	0.01	0.01	0.00
15.20	0.00	288	157.53	0.01	0.01	0.00
15.40	0.00	284	157.51	0.01	0.01	0.00
15.60	0.00	280	157.50	0.01	0.01	0.00
15.80	0.00	277	157.48	0.01	0.01	0.00
16.00	0.00	273	157.47	0.01	0.01	0.00
16.20	0.00	270	157.45	0.01	0.01	0.00
16.40	0.00	266	157.44	0.01	0.01	0.00
16.60	0.00	262	157.43	0.01	0.01	0.00
16.80	0.00	259	157.41	0.01	0.01	0.00
17.00	0.00	255	157.40	0.01	0.01	0.00
17.20	0.00	251	157.38	0.01	0.01	0.00
17.40	0.00	247	157.37	0.01	0.01	0.00
17.60	0.00	244	157.35	0.01	0.01	0.00
17.80	0.00	240	157.34	0.01	0.01	0.00
18.00	0.00	236	157.32	0.01	0.01	0.00
18.20	0.00	233	157.31	0.01	0.01	0.00
18.40	0.00	229	157.30	0.01	0.01	0.00
18.60	0.00	225	157.28	0.01	0.01	0.00
18.80	0.00	222	157.27	0.01	0.01	0.00
19.00	0.00	218	157.25	0.01	0.01	0.00
19.20	0.00	214	157.24	0.01	0.01	0.00
19.40	0.00	211	157.22	0.01	0.01	0.00
19.60	0.00	207	157.21	0.01	0.01	0.00
19.80	0.00	203	157.19	0.01	0.01	0.00
20.00	0.00	200	157.18	0.01	0.01	0.00
20.20	0.00	196	157.16	0.01	0.01	0.00
20.40	0.00	192	157.15	0.01	0.01	0.00
20.60	0.00	189	157.14	0.01	0.01	0.00

Hydrograph for Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
20.80	0.00	185	157.12	0.01	0.01	0.00
21.00	0.00	181	157.11	0.01	0.01	0.00
21.20	0.00	178	157.09	0.01	0.01	0.00
21.40	0.00	174	157.08	0.01	0.01	0.00
21.60	0.00	170	157.06	0.01	0.01	0.00
21.80	0.00	167	157.05	0.01	0.01	0.00
22.00	0.00	163	157.03	0.01	0.01	0.00
22.20	0.00	159	157.02	0.01	0.01	0.00
22.40	0.00	155	157.01	0.01	0.01	0.00
22.60	0.00	152	156.99	0.01	0.01	0.00
22.80	0.00	148	156.98	0.01	0.01	0.00
23.00	0.00	144	156.96	0.01	0.01	0.00
23.20	0.00	141	156.95	0.01	0.01	0.00
23.40	0.00	137	156.93	0.01	0.01	0.00
23.60	0.00	133	156.92	0.01	0.01	0.00
23.80	0.00	130	156.89	0.00	0.00	0.00
24.00	0.00	127	156.87	0.00	0.00	0.00
24.20	0.00	125	156.85	0.00	0.00	0.00
24.40	0.00	122	156.83	0.00	0.00	0.00
24.60	0.00	119	156.81	0.00	0.00	0.00
24.80	0.00	117	156.79	0.00	0.00	0.00
25.00	0.00	114	156.77	0.00	0.00	0.00
25.20	0.00	111	156.75	0.00	0.00	0.00
25.40	0.00	109	156.73	0.00	0.00	0.00
25.60	0.00	106	156.71	0.00	0.00	0.00
25.80	0.00	103	156.69	0.00	0.00	0.00
26.00	0.00	101	156.67	0.00	0.00	0.00
26.20	0.00	98	156.65	0.00	0.00	0.00
26.40	0.00	95	156.63	0.00	0.00	0.00
26.60	0.00	93	156.61	0.00	0.00	0.00
26.80	0.00	90	156.59	0.00	0.00	0.00
27.00	0.00	87	156.57	0.00	0.00	0.00
27.20	0.00	85	156.55	0.00	0.00	0.00
27.40	0.00	82	156.53	0.00	0.00	0.00
27.60	0.00	79	156.51	0.00	0.00	0.00
27.80	0.00	77	156.49	0.00	0.00	0.00
28.00	0.00	74	156.47	0.00	0.00	0.00
28.20	0.00	71	156.45	0.00	0.00	0.00
28.40	0.00	69	156.43	0.00	0.00	0.00
28.60	0.00	66	156.41	0.00	0.00	0.00
28.80	0.00	63	156.39	0.00	0.00	0.00
29.00	0.00	61	156.37	0.00	0.00	0.00
29.20	0.00	58	156.35	0.00	0.00	0.00
29.40	0.00	55	156.33	0.00	0.00	0.00
29.60	0.00	53	156.31	0.00	0.00	0.00
29.80	0.00	50	156.29	0.00	0.00	0.00
30.00	0.00	47	156.27	0.00	0.00	0.00
30.20	0.00	45	156.25	0.00	0.00	0.00
30.40	0.00	42	156.23	0.00	0.00	0.00
30.60	0.00	39	156.21	0.00	0.00	0.00
30.80	0.00	37	156.19	0.00	0.00	0.00
31.00	0.00	34	156.17	0.00	0.00	0.00

Hydrograph for Pond 10P: EXISTING AND PROPOSED DRYWELL SYSTEM (continued)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
31.20	0.00	31	156.15	0.00	0.00	0.00
31.40	0.00	29	156.13	0.00	0.00	0.00
31.60	0.00	26	156.11	0.00	0.00	0.00
31.80	0.00	23	156.09	0.00	0.00	0.00
32.00	0.00	21	156.07	0.00	0.00	0.00
32.20	0.00	18	156.05	0.00	0.00	0.00
32.40	0.00	15	156.03	0.00	0.00	0.00
32.60	0.00	13	156.01	0.00	0.00	0.00
32.80	0.00	10	155.99	0.00	0.00	0.00
33.00	0.00	7	155.97	0.00	0.00	0.00
33.20	0.00	5	155.95	0.00	0.00	0.00
33.40	0.00	2	155.93	0.00	0.00	0.00
33.60	0.00	1	155.83	0.00	0.00	0.00
33.80	0.00	1	155.83	0.00	0.00	0.00
34.00	0.00	1	155.82	0.00	0.00	0.00
34.20	0.00	1	155.81	0.00	0.00	0.00
34.40	0.00	1	155.80	0.00	0.00	0.00
34.60	0.00	1	155.79	0.00	0.00	0.00
34.80	0.00	0	155.78	0.00	0.00	0.00
35.00	0.00	0	155.78	0.00	0.00	0.00
35.20	0.00	0	155.77	0.00	0.00	0.00
35.40	0.00	0	155.76	0.00	0.00	0.00
35.60	0.00	0	155.75	0.00	0.00	0.00
35.80	0.00	0	155.74	0.00	0.00	0.00
36.00	0.00	0	155.73	0.00	0.00	0.00
36.20	0.00	0	155.73	0.00	0.00	0.00
36.40	0.00	0	155.72	0.00	0.00	0.00
36.60	0.00	0	155.71	0.00	0.00	0.00
36.80	0.00	0	155.70	0.00	0.00	0.00
37.00	0.00	0	155.69	0.00	0.00	0.00
37.20	0.00	0	155.69	0.00	0.00	0.00
37.40	0.00	0	155.68	0.00	0.00	0.00
37.60	0.00	0	155.67	0.00	0.00	0.00
37.80	0.00	0	155.66	0.00	0.00	0.00
38.00	0.00	0	155.65	0.00	0.00	0.00
38.20	0.00	0	155.65	0.00	0.00	0.00
38.40	0.00	0	155.64	0.00	0.00	0.00
38.60	0.00	0	155.64	0.00	0.00	0.00
38.80	0.00	0	155.63	0.00	0.00	0.00
39.00	0.00	0	155.63	0.00	0.00	0.00
39.20	0.00	0	155.63	0.00	0.00	0.00
39.40	0.00	0	155.63	0.00	0.00	0.00
39.60	0.00	0	155.63	0.00	0.00	0.00
39.80	0.00	0	155.63	0.00	0.00	0.00
40.00	0.00	0	155.62	0.00	0.00	0.00
40.20	0.00	0	155.62	0.00	0.00	0.00
40.40	0.00	0	155.62	0.00	0.00	0.00
40.60	0.00	0	155.62	0.00	0.00	0.00
40.80	0.00	0	155.62	0.00	0.00	0.00
41.00	0.00	0	155.62	0.00	0.00	0.00
41.20	0.00	0	155.62	0.00	0.00	0.00
41.40	0.00	0	155.62	0.00	0.00	0.00

WQ Drain Time =
 34.60 HRS - 2.20 HRS =
 32.40 HRS

D. Drainage Area Maps

- ◆ Existing Drainage Area Map
- ◆ Proposed Drainage Area Map

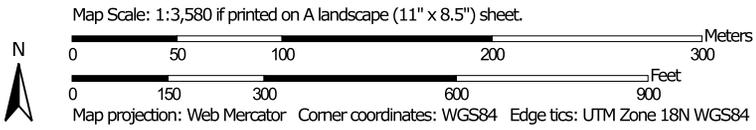
E. Supplemental Information

- ♦ **Soil Map prepared from Web Soil Survey**
- ♦ **Grading and Utility Plan prepared by Professional Planning and Engineering Corporation (PPE) dated September 17th 2002, last revised January 20th 2003.**

Soil Map—Essex County, New Jersey



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Essex County, New Jersey
Survey Area Data: Version 20, Sep 3, 2024

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

Date(s) aerial images were photographed: Oct 10, 2022—Oct 16, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UdbooB	Udorthents, Boonton substratum, 0 to 8 percent slopes, red sandstone lowland	19.8	30.7%
UddunB	Udorthents, Dunellen substratum, 0 to 8 percent slopes	0.1	0.2%
USBOOB	Urban land, Boonton substratum - Boonton complex, red sandstone lowland, 0 to 8 percent slopes	14.9	23.2%
USDUNB	Urban land, Dunellen substratum - Dunellen complex, 0 to 8 percent slopes	29.6	45.9%
Totals for Area of Interest		64.4	100.0%

