# Bridgeville Town Center

*Town of Bridgeville*

*Sussex County, Delaware*

# STORMWATER REPORT

July 2022

HC#4270

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# Table of Contents

This stormwater management report has been prepared in conjuncture with the Sussex County Conservation District's Sediment & Stormwater Management Plan Review Checklist. Text from the checklist is shown bold text.

**SITE NARRATIVE**

**Introduction**

This 47-acre site is located in the Town of Bridgeville in Sussex County Delaware between Sussex Highway (DE 13) and Seashore Highway (DE 404). The site consists of 2 tax parcels, 131-15.00-24.00 and 131-15.00-24.01. Parcel 24.00 is zoned C-1 Commercial and parcel 24.01 is zoned R-2 Multifamily Residential. Currently the entire site is farmland. The proposed development will include a mix of commercial buildings on parcel 24.00 and residential apartment structures on parcel 24.01, with related improvements.

**Existing Conditions describing the drainage patterns, land use(s), and existing features. Include 2017 site aerial and photos of the site conditions and at all discharge locations.**

The site is currently farmland, with generally flat topography with minor elevation changes generally sloping in all directions. Stormwater runoff leaving the site will be analyzed at 1 of 4 points of interest (POI) as shown on the enclosed Drainage Area Map in Appendix D. POI#1 along the northern property line accounts for site runoff that collects an existing basin on the adjoining property to the north. POI #2 on east end of the site accounts for site runoff that collects in an existing swale along Seashore Highway that conveys runoff from the highway and surrounding properties to the southeast. POI #3 in the south-east corner of the site accounts for runoff leaving the site along the southern property line. POI #4 northwest of the site accounts for runoff that collects in the existing swale along Sussex Highway that conveys runoff from the highway and surrounding properties north. Drainage being conveyed from off-site is negligible, as the frontage on Seashore Highway is a local high point and ditches along Seashore Highway and Sussex Highway convey runoff away from the site. The site is not within any mapped WRPA or FEMA floodplain, and is completely within the Nanticoke River Watershed and Ake Tax Ditch Watershed. See POI photos on next page.

**Existing Soils description per the current NRCS mapping data including the hydrologic soil group.**

A USDA Web Soil Survey of the site performed in July 2022 found 4 soil types on site. Soil types found and their hydrologic soil group (HSG) were as follows:

IgA – Ingleside sandy loam, 0-2% slopes, HSG A;
ImB – Ingleside-Hammonton-Fallsington complex, 0-5% slopes, HSG B;
HbA – Hambrook sandy loam, 0-2% slopes, HSG B;
WddA – Woodstown sandy loam, 0-2% slopes, Northern Tidewater Area, HSG C.

See the full print out of the USDA Web Soil Survey enclosed in Appendix A.

Image #1:  Off Site SWM basin, which serves as POI #1

Image #2: Swale along Seashore Highway, which serves as POI #2

Image #3: The south east property line (in the background), which serves as POI #3

Image #4: Swale along Sussex Highway, which serves as POI #4

**Post Development Conditions, including summary of the proposed development, the proposed drainage system, indication of why the standards or performance approach was used, methods for RPv, Cv, and Fv compliance, requests for variances and/or offsets, etc.**

This plan proposes construction of multiple commercial and residential buildings with associated parking, access roads, landscaping, hardscaping, utilities, and stormwater facilities. In the proposed conditions runoff from the proposed impervious surfaces will be conveyed by a system of curb cuts, inlets, and underground culverts to either underground drywells, basins, or submerged gravel wetlands. Each facility was designed to treat the RPv design storm event and sized to manage peak flow rates during the Cv and Fv design storms. The post-development stormwater analysis was performed in HydroCAD using the same standards as pre-development conditions, and utilizes the "Dyn-Stor-Ind" pond routing method, which re-evaluates the discharge from each pond at each time step based on the current elevation of any downstream nodes. This allows the routing to respond to tailwater effects as the ponds fill with water in larger storm events.

The post-development runoff peak rate calculations are enclosed in Appendix B, and summarized below:

| Storm event | POI #1 Peak Rate (cfs) | | | POI #2 Peak Rate (cfs) | | | POI #3 Peak Rate (cfs) | | | POI #4 Peak Rate (cfs) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exist. | Post. | Diff. | Exist. | Post. | Diff. | Exist. | Post. | Diff. | Exist. | Post. | Diff. |
| RPv | 22.76 | 2.29 | -20.47 | 29.53 | 2.12 | -27.41 | 6.18 | 2.40 | -3.78 | 2.93 | 2.22 | -0.71 |
| Cv | 58.64 | 5.01 | -53.63 | 76.09 | 11.55 | -64.54 | 16.22 | 5.80 | -10.42 | 7.71 | 5.77 | -1.94 |
| Fv | 126.66 | 6.73 | -119.93 | 164.36 | 45.27 | -119.09 | 40.74 | 18.07 | -22.67 | 18.32 | 12.85 | -5.47 |

**Include DURMM RPv Summary Table.**

The DURMM RPv Summary Table is summarized below and included in Appendix C.

| Drainage Area | Contributing Area (ac) | Runoff (in) | Runoff (cf) | Required | |
|---|---|---|---|---|---|
| | | | | Required | Provided |
| POI #1 | 10.21 | 1.91 | 70789.0 | 29294 | 50355 |
| POI #2 | 14.21 | 1.64 | 84595.0 | 42832 | 74561 |
| POI #3 | 24.67 | 1.24 | 111044.6 | 72232 | 98761 |
| POI #4 | 1.35 | 0.97 | 4753.5 | 457 | 0 |
| Total | 50.44 | - | 271182 | 144815 | 223677 |

**Indicate RPv Method of Compliance Analysis: Drainage Area Method or Project Limit of Disturbance Method**

Drainage Area Method will be used as there is minimal off-site drainage onto the site.

**Construction Site Conditions, describing methods to prevent sediment and pollution discharge and illicit transportation**.

Erosion and sediment control measures proposed for the site include the typical applications of a stabilized construction entrance for construction vehicles leaving the site, silt fence to provide perimeter controls, and inlet filter to protect stormwater facilities and culverts from sediment laden runoff during construction. If the building contractor requires additional off-site staging area, erosion and sediment controls for that site shall be provided to the County for approval prior to construction.

**Conclusion (Note: The intent of the construction and post construction practices should be described, indicating how the site will be handled with any potential concerns documented.)**

Due to existing groundwater levels and infiltration rates, large shallow systems are required to manage stormwater for the proposed site. Stormwater peak rates will be overmanaged to provide required water quality

**DURMM computations and a schematic of the drainage subareas and stormwater practices.**

DURMM calculation are enclosed in Appendix C and drainage area plans are enclosed in Appendix D.

**Additional hydraulic and hydrologic (H&H) computations for unmanaged areas require submittal of pre and post development RPv, Cv and Fv.**

N/A, unmanaged areas are included in the H&H computations.

**Supplementary construction site computations (i.e., temporary sediment basin sizing, anti-seep collar sizing, forebay sizing, etc.).**

N/A, only general information provided with Preliminary Plan submission per Town checklists.

**Soil report(s) including boring locations, log reports, and infiltration testing results as applicable in accordance with Appendix A-1 Soil Investigation Procedures.**

To determine the feasibility of infiltrating stormwater on site, soil boring and infiltration testing was performed by John D. Hynes & Associates, Inc in April 2021 and July 2021. Forty (40) soil test pits were dug across the site at the location of the proposed BMPs and single-ring infiltration tests were performed in each test pit.

The full Soil Report prepared by John D. Hynes & Associates, Inc, including soil boring logs, infiltration test results, and recommended infiltration rates, will be included in this submission as a separate document.

**Appendix containing any supplemental information.**

See table of contents for Appendices' title and page number.

**Drainage calculations for the RPv, Cv, and Fv events using the latest DURMM model and other approved H&H software as appropriate.**

See DURMM calculations in Appendix C and HydroCAD calculations in Appendix B.

**All inputted data supported by surveys, Lidar information, photos, aerials, maps, etc. and referenced in the report and/or drainage area plans. Information previously included within the Stormwater Assessment Study submittal is acceptable and does not need to be duplicated although it should be referenced accordingly.**

The property was surveyed by Hillcrest Associates and Axis Geopspatial, as discussed in the SAS.

**Computations based on the NRCS 24-hour rainfall event, using either NRCS Type II or appropriate NOAA Rainfall Distribution Curve for both pre and post development conditions. For projects south of the Chesapeake and Delaware (C&D) Canal, the Delmarva Unit Hydrograph should be used for computing peak discharges.**

The rainfall depths for the site used were 24-hour NOAA Rainfall Curve D per the DNREC Sediment & Stormwater program Regulatory Guidance Memorandum 1, effective January 2020.

**Pre-development condition based off of the 2017 aerial photography provided by the State of Delaware, through Stormwater Assessment Study GIS Web Application. This may not directly correlate to current site conditions if the land use has changed; however, the 2017 land use should be used even if more or less conservative than the current land use.**

The site has been farmed since 2017.

**Pre-development condition computed assuming that all existing land uses in the site are in good hydrologic condition.**

See existing conditions drainage area enclosed in Appendix D and HydroCAD calculation in Appendix B

**Sizing information for the BMP(s) meeting sizing guidelines according to Post Construction Stormwater BMP Standards and Specifications.**

The proposed BMP facilities were designed and sized to meet performance requirements set forth by in the Delaware Post Construction Stormwater BMP Standards & Specification. These standards will be documented in the final stormwater report for the project.

**BMP capacity information for any detention practices to be used.**

Storage capacity for the proposed BMP facilities were calculated using the HydroCAD model of the proposed site in Appendix B.

# Appendix A

Soil Data


Map Scale: 1:4,110 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

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

**Soil Rating Lines**

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

**Soil Rating Points**

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

**Water Features**

- Streams and Canals

**Transportation**

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**

- Aerial Photography

## MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 22, Aug 26, 2021

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

Date(s) aerial images were photographed: Apr 1, 2020—Oct 1, 2020

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

# Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| HbA | Hambrook sandy loam, 0 to 2 percent slopes | B | 27.4 | 48.3% |
| IgA | Ingleside sandy loam, 0 to 2 percent slopes | A | 4.0 | 7.1% |
| ImB | Ingleside-Hammonton-Fallsington complex, 0 to 5 percent slopes | A | 16.0 | 28.1% |
| WddA | Woodstown sandy loam, 0 to 2 percent slopes, Northern Tidewater Area | C | 9.5 | 16.6% |
| **Totals for Area of Interest** | | | **56.9** | **100.0%** |

## Description

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

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

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

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

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

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

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

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher


Map Scale: 1:4,110 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

**Soil Rating Lines**
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

**Soil Rating Points**
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 22, Aug 26, 2021

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

Date(s) aerial images were photographed: Apr 1, 2020—Oct 1, 2020

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

# Depth to Water Table

| Map unit symbol | Map unit name | Rating (centimeters) | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| HbA | Hambrook sandy loam, 0 to 2 percent slopes | 114 | 27.4 | 48.3% |
| IgA | Ingleside sandy loam, 0 to 2 percent slopes | 114 | 4.0 | 7.1% |
| ImB | Ingleside-Hammonton-Fallsington complex, 0 to 5 percent slopes | 114 | 16.0 | 28.1% |
| WddA | Woodstown sandy loam, 0 to 2 percent slopes, Northern Tidewater Area | 61 | 9.5 | 16.6% |
| **Totals for Area of Interest** | | | **56.9** | **100.0%** |

## Description

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

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

## Rating Options

*Units of Measure:* centimeters

*Aggregation Method:* Dominant Component

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Lower

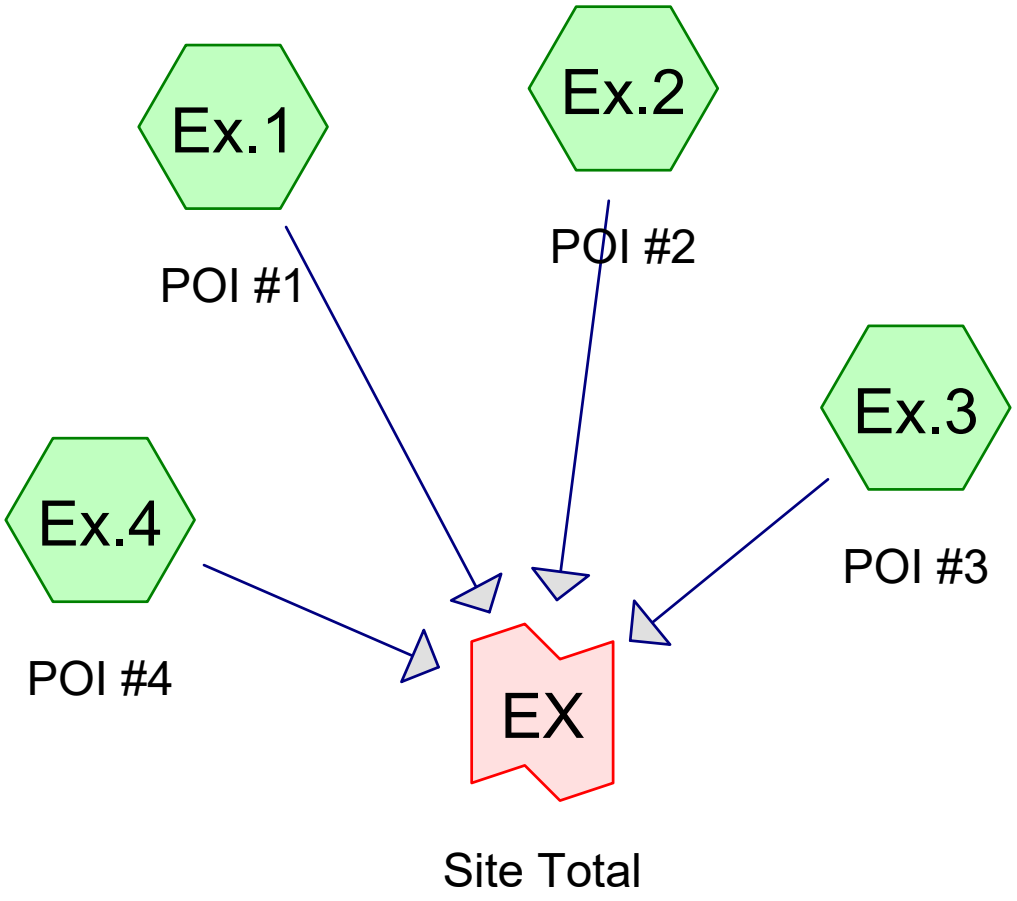
*Interpret Nulls as Zero:* No

*Beginning Month:* January

*Ending Month:* December

# Appendix B

HydroCAD™ Models




Subcat Reach Pond Link

**Routing Diagram for 4270 SWM Pre 2021-06**
Prepared by Hillcrest Associates, Inc., Printed 6/30/2022
HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment Ex.1: POI #1** Runoff Area=781,190 sf 0.00% Impervious Runoff Depth=1.17"
Tc=6.0 min CN=77 Runoff=22.76 cfs 76,480 cf

**Subcatchment Ex.2: POI #2** Runoff Area=1,013,719 sf 1.53% Impervious Runoff Depth=1.17"
Tc=6.0 min CN=77 Runoff=29.53 cfs 99,246 cf

**Subcatchment Ex.3: POI #3** Runoff Area=297,608 sf 0.00% Impervious Runoff Depth=0.85"
Tc=6.0 min CN=68 Runoff=6.18 cfs 21,011 cf

**Subcatchment Ex.4: POI #4** Runoff Area=125,688 sf 34.49% Impervious Runoff Depth=0.95"
Tc=6.0 min CN=71 Runoff=2.93 cfs 9,915 cf

**Link EX: Site Total** Inflow=61.39 cfs 206,651 cf
Primary=61.39 cfs 206,651 cf

**Total Runoff Area = 2,218,205 sf Runoff Volume = 206,651 cf Average Runoff Depth = 1.12"**
**97.35% Pervious = 2,159,343 sf 2.65% Impervious = 58,862 sf**

## Summary for Subcatchment Ex.1: POI #1

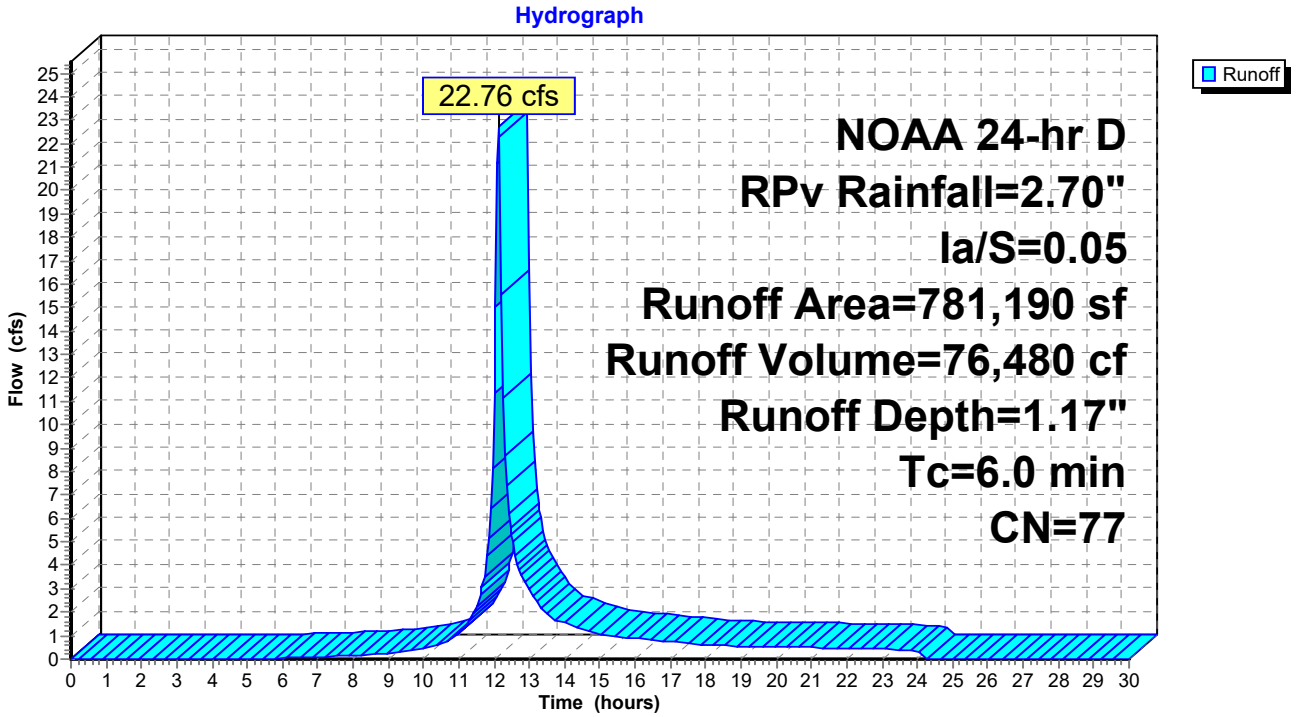
Runoff = 22.76 cfs @ 12.13 hrs, Volume= 76,480 cf, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| | 67,376 | 67 | Row crops, HSG A |
| | 661,612 | 78 | Row crops, HSG B |
| | 46,689 | 85 | Row crops, HSG C |
| * | 0 | 98 | Ex. Driveway (Undisturbed) |
| * | 379 | 39 | Grass, HSG A (Undisturbed) |
| * | 5,134 | 61 | Grass, HSG B (Undisturbed) |
| | 781,190 | 77 | Weighted Average |
| | 781,190 | | 100.00% Pervious Area |

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

## Subcatchment Ex.1: POI #1



## Hydrograph for Subcatchment Ex.1: POI #1

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.02 | 0.00 | 0.00 |
| 1.00 | 0.03 | 0.00 | 0.00 |
| 1.50 | 0.05 | 0.00 | 0.00 |
| 2.00 | 0.06 | 0.00 | 0.00 |
| 2.50 | 0.08 | 0.00 | 0.00 |
| 3.00 | 0.10 | 0.00 | 0.00 |
| 3.50 | 0.12 | 0.00 | 0.00 |
| 4.00 | 0.14 | 0.00 | 0.00 |
| 4.50 | 0.16 | 0.00 | 0.00 |
| 5.00 | 0.18 | 0.00 | 0.02 |
| 5.50 | 0.21 | 0.00 | 0.03 |
| 6.00 | 0.23 | 0.00 | 0.04 |
| 6.50 | 0.26 | 0.00 | 0.06 |
| 7.00 | 0.28 | 0.01 | 0.09 |
| 7.50 | 0.32 | 0.01 | 0.12 |
| 8.00 | 0.35 | 0.01 | 0.15 |
| 8.50 | 0.39 | 0.02 | 0.19 |
| 9.00 | 0.43 | 0.02 | 0.24 |
| 9.50 | 0.48 | 0.03 | 0.34 |
| 10.00 | 0.54 | 0.04 | 0.47 |
| 10.50 | 0.60 | 0.06 | 0.64 |
| 11.00 | 0.70 | 0.09 | 1.11 |
| 11.50 | 0.86 | 0.14 | 2.13 |
| 12.00 | 1.29 | 0.32 | **11.34** |
| 12.50 | 1.84 | 0.61 | **5.33** |
| 13.00 | 2.00 | 0.71 | 2.94 |
| 13.50 | 2.10 | 0.77 | 1.93 |
| 14.00 | 2.16 | 0.81 | 1.53 |
| 14.50 | 2.22 | 0.85 | 1.30 |
| 15.00 | 2.27 | 0.88 | 1.06 |
| 15.50 | 2.31 | 0.91 | 0.95 |
| 16.00 | 2.35 | 0.93 | 0.88 |
| 16.50 | 2.38 | 0.96 | 0.81 |
| 17.00 | 2.42 | 0.98 | 0.75 |
| 17.50 | 2.44 | 1.00 | 0.68 |
| 18.00 | 2.47 | 1.01 | 0.61 |
| 18.50 | 2.49 | 1.03 | 0.57 |
| 19.00 | 2.52 | 1.05 | 0.56 |
| 19.50 | 2.54 | 1.06 | 0.54 |
| 20.00 | 2.56 | 1.08 | 0.52 |
| 20.50 | 2.58 | 1.09 | 0.51 |
| 21.00 | 2.60 | 1.10 | 0.49 |
| 21.50 | 2.62 | 1.12 | 0.47 |
| 22.00 | 2.64 | 1.13 | 0.45 |
| 22.50 | 2.65 | 1.14 | 0.43 |
| 23.00 | 2.67 | 1.15 | 0.42 |
| 23.50 | 2.68 | 1.16 | 0.40 |
| 24.00 | **2.70** | **1.17** | 0.38 |
| 24.50 | 2.70 | 1.17 | 0.00 |
| 25.00 | 2.70 | 1.17 | 0.00 |
| 25.50 | 2.70 | 1.17 | 0.00 |
| 26.00 | 2.70 | 1.17 | 0.00 |
| 26.50 | 2.70 | 1.17 | 0.00 |
| 27.00 | 2.70 | 1.17 | 0.00 |
| 27.50 | 2.70 | 1.17 | 0.00 |
| 28.00 | 2.70 | 1.17 | 0.00 |
| 28.50 | 2.70 | 1.17 | 0.00 |
| 29.00 | 2.70 | 1.17 | 0.00 |
| 29.50 | 2.70 | 1.17 | 0.00 |
| 30.00 | 2.70 | 1.17 | 0.00 |

## Summary for Subcatchment Ex.2: POI #2

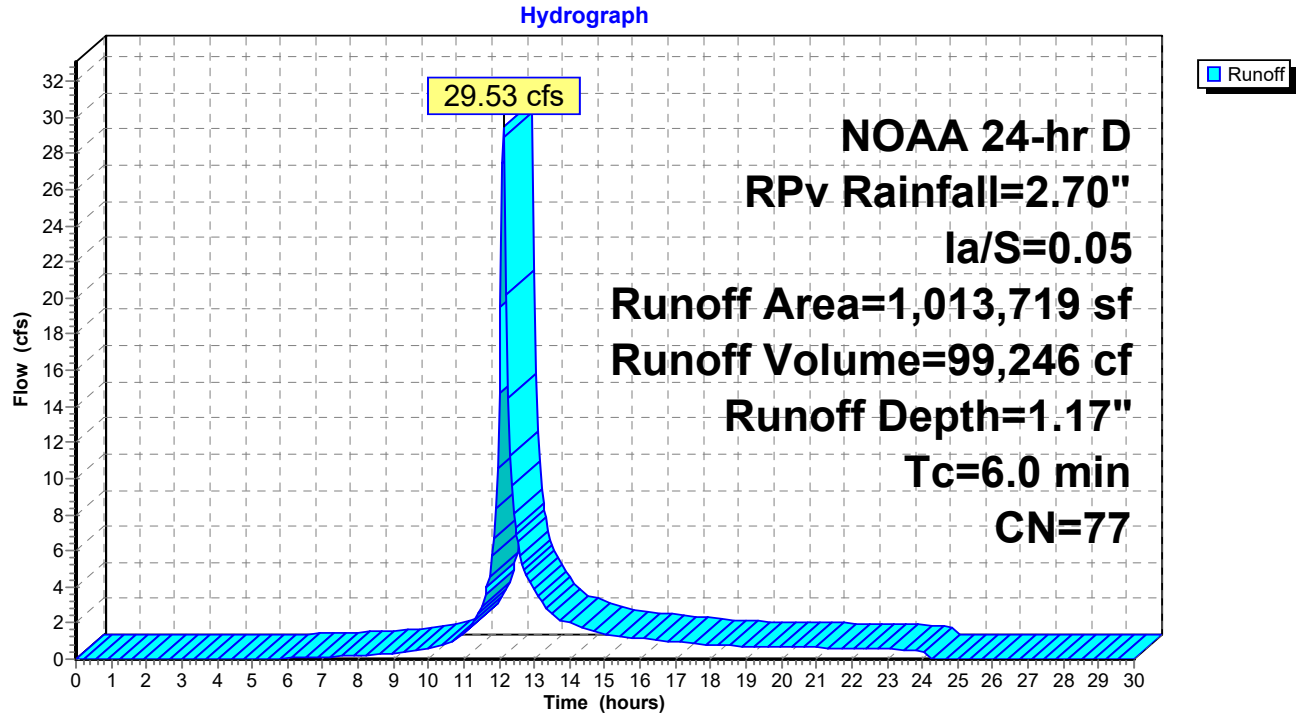
Runoff = 29.53 cfs @ 12.13 hrs, Volume= 99,246 cf, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 15,509 | 98 | Ex.Roadway |
| * | 1,542 | 39 | Grass, HSG A |
| * | 9,265 | 61 | Grass, HSG B |
| * | 4,076 | 74 | Grass, HSG C |
| | 265,752 | 67 | Row crops, HSG A |
| | 401,050 | 78 | Row crops, HSG B |
| | 316,525 | 85 | Row crops, HSG C |
| | 1,013,719 | 77 | Weighted Average |
| | 998,210 | | 98.47% Pervious Area |
| | 15,509 | | 1.53% Impervious Area |

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

## Subcatchment Ex.2: POI #2



## Hydrograph for Subcatchment Ex.2: POI #2

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.02 | 0.00 | 0.00 |
| 1.00 | 0.03 | 0.00 | 0.00 |
| 1.50 | 0.05 | 0.00 | 0.00 |
| 2.00 | 0.06 | 0.00 | 0.00 |
| 2.50 | 0.08 | 0.00 | 0.00 |
| 3.00 | 0.10 | 0.00 | 0.00 |
| 3.50 | 0.12 | 0.00 | 0.00 |
| 4.00 | 0.14 | 0.00 | 0.00 |
| 4.50 | 0.16 | 0.00 | 0.01 |
| 5.00 | 0.18 | 0.00 | 0.02 |
| 5.50 | 0.21 | 0.00 | 0.04 |
| 6.00 | 0.23 | 0.00 | 0.05 |
| 6.50 | 0.26 | 0.00 | 0.08 |
| 7.00 | 0.28 | 0.01 | 0.11 |
| 7.50 | 0.32 | 0.01 | 0.15 |
| 8.00 | 0.35 | 0.01 | 0.20 |
| 8.50 | 0.39 | 0.02 | 0.25 |
| 9.00 | 0.43 | 0.02 | 0.31 |
| 9.50 | 0.48 | 0.03 | 0.44 |
| 10.00 | 0.54 | 0.04 | 0.61 |
| 10.50 | 0.60 | 0.06 | 0.82 |
| 11.00 | 0.70 | 0.09 | 1.44 |
| 11.50 | 0.86 | 0.14 | 2.76 |
| 12.00 | 1.29 | 0.32 | **14.71** |
| 12.50 | 1.84 | 0.61 | **6.92** |
| 13.00 | 2.00 | 0.71 | 3.81 |
| 13.50 | 2.10 | 0.77 | 2.51 |
| 14.00 | 2.16 | 0.81 | 1.99 |
| 14.50 | 2.22 | 0.85 | 1.69 |
| 15.00 | 2.27 | 0.88 | 1.38 |
| 15.50 | 2.31 | 0.91 | 1.23 |
| 16.00 | 2.35 | 0.93 | 1.14 |
| 16.50 | 2.38 | 0.96 | 1.06 |
| 17.00 | 2.42 | 0.98 | 0.97 |
| 17.50 | 2.44 | 1.00 | 0.88 |
| 18.00 | 2.47 | 1.01 | 0.79 |
| 18.50 | 2.49 | 1.03 | 0.74 |
| 19.00 | 2.52 | 1.05 | 0.72 |
| 19.50 | 2.54 | 1.06 | 0.70 |
| 20.00 | 2.56 | 1.08 | 0.68 |
| 20.50 | 2.58 | 1.09 | 0.66 |
| 21.00 | 2.60 | 1.10 | 0.63 |
| 21.50 | 2.62 | 1.12 | 0.61 |
| 22.00 | 2.64 | 1.13 | 0.59 |
| 22.50 | 2.65 | 1.14 | 0.56 |
| 23.00 | 2.67 | 1.15 | 0.54 |
| 23.50 | 2.68 | 1.16 | 0.52 |
| 24.00 | **2.70** | **1.17** | 0.50 |
| 24.50 | 2.70 | 1.17 | 0.00 |
| 25.00 | 2.70 | 1.17 | 0.00 |
| 25.50 | 2.70 | 1.17 | 0.00 |
| 26.00 | 2.70 | 1.17 | 0.00 |
| 26.50 | 2.70 | 1.17 | 0.00 |
| 27.00 | 2.70 | 1.17 | 0.00 |
| 27.50 | 2.70 | 1.17 | 0.00 |
| 28.00 | 2.70 | 1.17 | 0.00 |
| 28.50 | 2.70 | 1.17 | 0.00 |
| 29.00 | 2.70 | 1.17 | 0.00 |
| 29.50 | 2.70 | 1.17 | 0.00 |
| 30.00 | 2.70 | 1.17 | 0.00 |

## Summary for Subcatchment Ex.3: POI #3

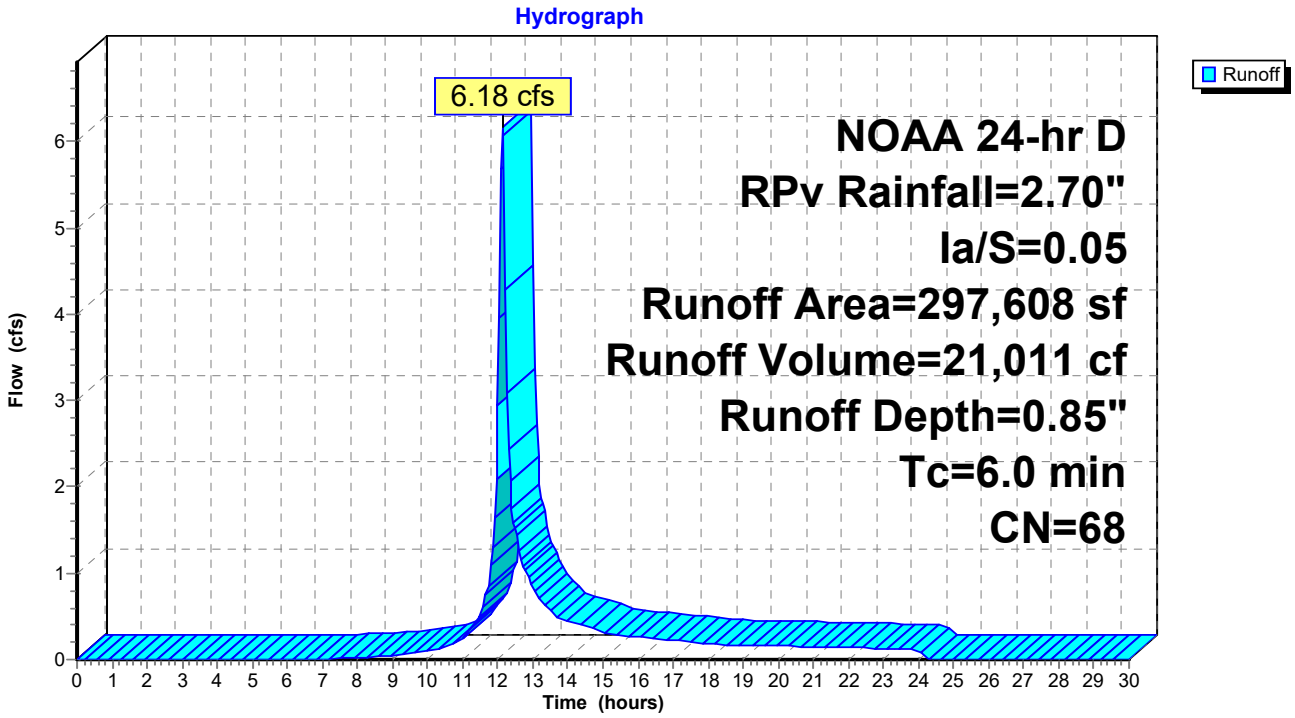
Runoff = 6.18 cfs @ 12.13 hrs, Volume= 21,011 cf, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| Area (sf) | CN | Description |
|---|---|---|
| 269,953 | 67 | Row crops, HSG A |
| 27,655 | 78 | Row crops, HSG B |
| 0 | 85 | Row crops, HSG C |
| 297,608 | 68 | Weighted Average |
| 297,608 | | 100.00% Pervious Area |

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

## Subcatchment Ex.3: POI #3



## Hydrograph for Subcatchment Ex.3: POI #3

| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.02 | 0.00 | 0.00 |
| 1.00 | 0.03 | 0.00 | 0.00 |
| 1.50 | 0.05 | 0.00 | 0.00 |
| 2.00 | 0.06 | 0.00 | 0.00 |
| 2.50 | 0.08 | 0.00 | 0.00 |
| 3.00 | 0.10 | 0.00 | 0.00 |
| 3.50 | 0.12 | 0.00 | 0.00 |
| 4.00 | 0.14 | 0.00 | 0.00 |
| 4.50 | 0.16 | 0.00 | 0.00 |
| 5.00 | 0.18 | 0.00 | 0.00 |
| 5.50 | 0.21 | 0.00 | 0.00 |
| 6.00 | 0.23 | 0.00 | 0.00 |
| 6.50 | 0.26 | 0.00 | 0.00 |
| 7.00 | 0.28 | 0.00 | 0.01 |
| 7.50 | 0.32 | 0.00 | 0.01 |
| 8.00 | 0.35 | 0.00 | 0.02 |
| 8.50 | 0.39 | 0.00 | 0.03 |
| 9.00 | 0.43 | 0.01 | 0.04 |
| 9.50 | 0.48 | 0.01 | 0.07 |
| 10.00 | 0.54 | 0.02 | 0.10 |
| 10.50 | 0.60 | 0.03 | 0.14 |
| 11.00 | 0.70 | 0.04 | 0.25 |
| 11.50 | 0.86 | 0.07 | 0.51 |
| 12.00 | 1.29 | 0.19 | **2.95** |
| 12.50 | 1.84 | 0.41 | **1.51** |
| 13.00 | 2.00 | 0.48 | 0.85 |
| 13.50 | 2.10 | 0.53 | 0.56 |
| 14.00 | 2.16 | 0.56 | 0.45 |
| 14.50 | 2.22 | 0.59 | 0.38 |
| 15.00 | 2.27 | 0.62 | 0.32 |
| 15.50 | 2.31 | 0.64 | 0.28 |
| 16.00 | 2.35 | 0.66 | 0.26 |
| 16.50 | 2.38 | 0.67 | 0.24 |
| 17.00 | 2.42 | 0.69 | 0.22 |
| 17.50 | 2.44 | 0.71 | 0.20 |
| 18.00 | 2.47 | 0.72 | 0.18 |
| 18.50 | 2.49 | 0.73 | 0.17 |
| 19.00 | 2.52 | 0.74 | 0.17 |
| 19.50 | 2.54 | 0.76 | 0.16 |
| 20.00 | 2.56 | 0.77 | 0.16 |
| 20.50 | 2.58 | 0.78 | 0.15 |
| 21.00 | 2.60 | 0.79 | 0.15 |
| 21.50 | 2.62 | 0.80 | 0.14 |
| 22.00 | 2.64 | 0.81 | 0.14 |
| 22.50 | 2.65 | 0.82 | 0.13 |
| 23.00 | 2.67 | 0.83 | 0.13 |
| 23.50 | 2.68 | 0.84 | 0.12 |
| 24.00 | **2.70** | **0.85** | 0.12 |
| 24.50 | 2.70 | 0.85 | 0.00 |
| 25.00 | 2.70 | 0.85 | 0.00 |
| 25.50 | 2.70 | 0.85 | 0.00 |
| 26.00 | 2.70 | 0.85 | 0.00 |
| 26.50 | 2.70 | 0.85 | 0.00 |
| 27.00 | 2.70 | 0.85 | 0.00 |
| 27.50 | 2.70 | 0.85 | 0.00 |
| 28.00 | 2.70 | 0.85 | 0.00 |
| 28.50 | 2.70 | 0.85 | 0.00 |
| 29.00 | 2.70 | 0.85 | 0.00 |
| 29.50 | 2.70 | 0.85 | 0.00 |
| 30.00 | 2.70 | 0.85 | 0.00 |

## Summary for Subcatchment Ex.4: POI #4

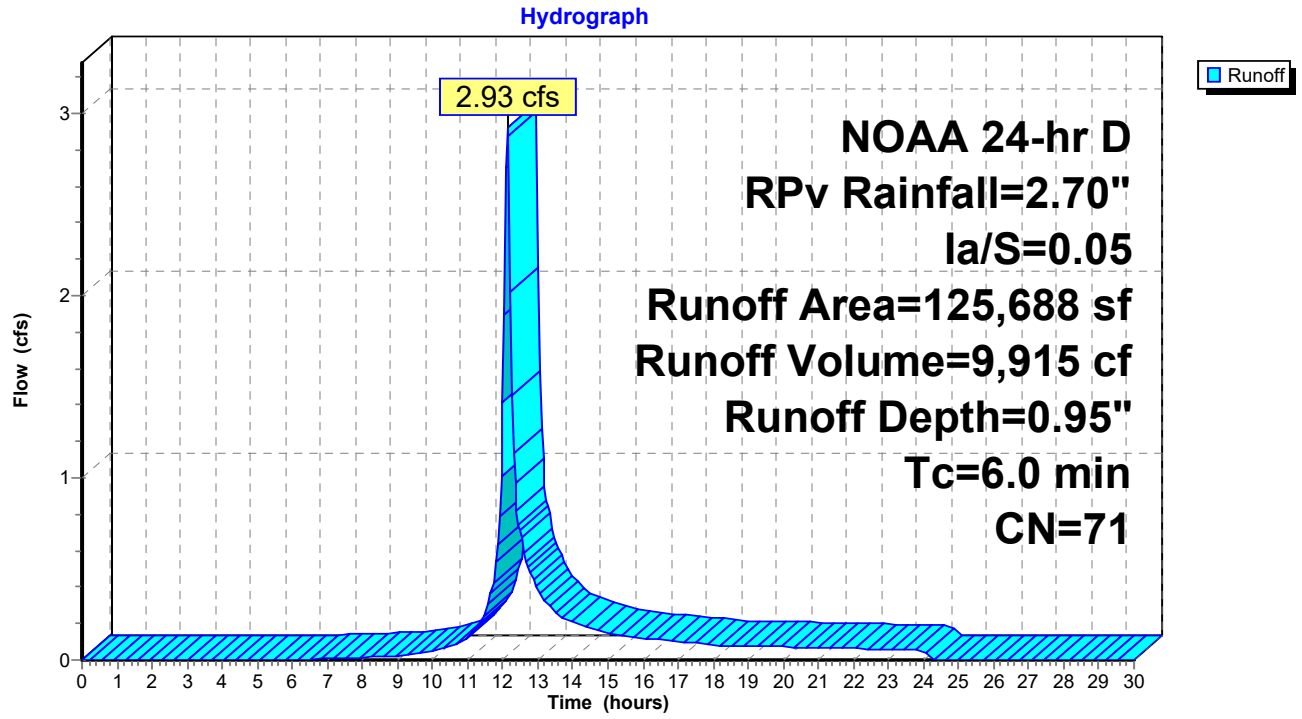
Runoff = 2.93 cfs @ 12.13 hrs, Volume= 9,915 cf, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 39,196 | 98 | Ex. Roadway |
| * | 1,670 | 98 | Ex. Driveway |
| * | 3,970 | 39 | Grass, HSG A |
| * | 6,579 | 61 | Grass, HSG B |
| * | 8,555 | 74 | Grass, HSG C |
| | 20,950 | 67 | Row crops, HSG A |
| | 7,174 | 78 | Row crops, HSG B |
| | 0 | 85 | Row crops, HSG C |
| * | 2,487 | 98 | Ex. Driveway (Undisturbed) |
| * | 25,779 | 39 | Grass, HSG A (Undisturbed) |
| * | 9,328 | 61 | Grass, HSG B (Undisturbed) |
| | 125,688 | 71 | Weighted Average |
| | 82,335 | | 65.51% Pervious Area |
| | 43,353 | | 34.49% Impervious Area |

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

### Subcatchment Ex.4: POI #4



## Hydrograph for Subcatchment Ex.4: POI #4

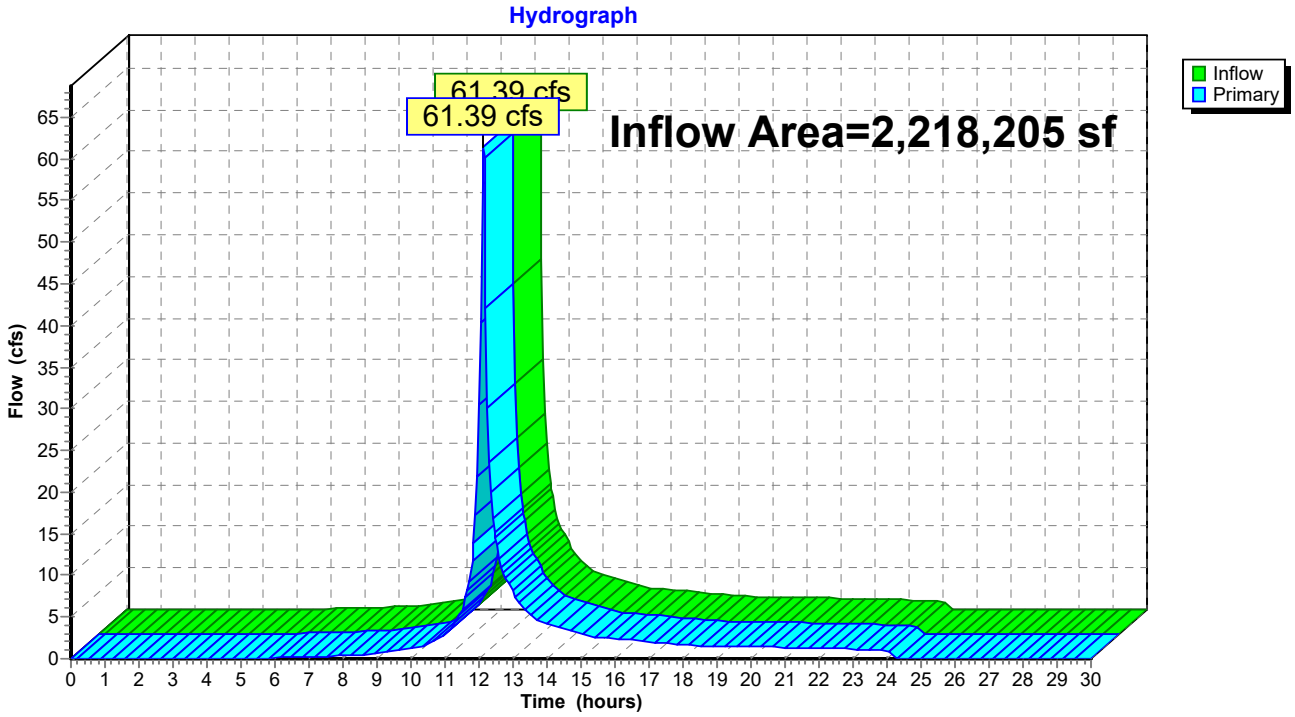
| Time (hours) | Precip. (inches) | Excess (inches) | Runoff (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 |
| 0.50 | 0.02 | 0.00 | 0.00 |
| 1.00 | 0.03 | 0.00 | 0.00 |
| 1.50 | 0.05 | 0.00 | 0.00 |
| 2.00 | 0.06 | 0.00 | 0.00 |
| 2.50 | 0.08 | 0.00 | 0.00 |
| 3.00 | 0.10 | 0.00 | 0.00 |
| 3.50 | 0.12 | 0.00 | 0.00 |
| 4.00 | 0.14 | 0.00 | 0.00 |
| 4.50 | 0.16 | 0.00 | 0.00 |
| 5.00 | 0.18 | 0.00 | 0.00 |
| 5.50 | 0.21 | 0.00 | 0.00 |
| 6.00 | 0.23 | 0.00 | 0.00 |
| 6.50 | 0.26 | 0.00 | 0.00 |
| 7.00 | 0.28 | 0.00 | 0.01 |
| 7.50 | 0.32 | 0.00 | 0.01 |
| 8.00 | 0.35 | 0.01 | 0.01 |
| 8.50 | 0.39 | 0.01 | 0.02 |
| 9.00 | 0.43 | 0.01 | 0.02 |
| 9.50 | 0.48 | 0.02 | 0.04 |
| 10.00 | 0.54 | 0.02 | 0.05 |
| 10.50 | 0.60 | 0.04 | 0.07 |
| 11.00 | 0.70 | 0.05 | 0.13 |
| 11.50 | 0.86 | 0.09 | 0.25 |
| 12.00 | 1.29 | 0.23 | **1.42** |
| 12.50 | 1.84 | 0.47 | **0.71** |
| 13.00 | 2.00 | 0.55 | 0.39 |
| 13.50 | 2.10 | 0.60 | 0.26 |
| 14.00 | 2.16 | 0.64 | 0.21 |
| 14.50 | 2.22 | 0.67 | 0.18 |
| 15.00 | 2.27 | 0.69 | 0.15 |
| 15.50 | 2.31 | 0.72 | 0.13 |
| 16.00 | 2.35 | 0.74 | 0.12 |
| 16.50 | 2.38 | 0.76 | 0.11 |
| 17.00 | 2.42 | 0.78 | 0.10 |
| 17.50 | 2.44 | 0.79 | 0.09 |
| 18.00 | 2.47 | 0.81 | 0.08 |
| 18.50 | 2.49 | 0.82 | 0.08 |
| 19.00 | 2.52 | 0.84 | 0.08 |
| 19.50 | 2.54 | 0.85 | 0.07 |
| 20.00 | 2.56 | 0.86 | 0.07 |
| 20.50 | 2.58 | 0.87 | 0.07 |
| 21.00 | 2.60 | 0.88 | 0.07 |
| 21.50 | 2.62 | 0.90 | 0.07 |
| 22.00 | 2.64 | 0.91 | 0.06 |
| 22.50 | 2.65 | 0.92 | 0.06 |
| 23.00 | 2.67 | 0.93 | 0.06 |
| 23.50 | 2.68 | 0.94 | 0.06 |
| 24.00 | **2.70** | **0.95** | 0.05 |
| 24.50 | 2.70 | 0.95 | 0.00 |
| 25.00 | 2.70 | 0.95 | 0.00 |
| 25.50 | 2.70 | 0.95 | 0.00 |
| 26.00 | 2.70 | 0.95 | 0.00 |
| 26.50 | 2.70 | 0.95 | 0.00 |
| 27.00 | 2.70 | 0.95 | 0.00 |
| 27.50 | 2.70 | 0.95 | 0.00 |
| 28.00 | 2.70 | 0.95 | 0.00 |
| 28.50 | 2.70 | 0.95 | 0.00 |
| 29.00 | 2.70 | 0.95 | 0.00 |
| 29.50 | 2.70 | 0.95 | 0.00 |
| 30.00 | 2.70 | 0.95 | 0.00 |

## Summary for Link EX: Site Total

Inflow Area = 2,218,205 sf, 2.65% Impervious, Inflow Depth = 1.12" for RPv event
Inflow = 61.39 cfs @ 12.13 hrs, Volume= 206,651 cf
Primary = 61.39 cfs @ 12.13 hrs, Volume= 206,651 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

## Link EX: Site Total



## Hydrograph for Link EX: Site Total

| Time (hours) | Inflow (cfs) | Elevation (feet) | Primary (cfs) |
|---|---|---|---|
| 0.00 | 0.00 | **0.00** | 0.00 |
| 0.50 | 0.00 | 0.00 | 0.00 |
| 1.00 | 0.00 | 0.00 | 0.00 |
| 1.50 | 0.00 | 0.00 | 0.00 |
| 2.00 | 0.00 | 0.00 | 0.00 |
| 2.50 | 0.00 | 0.00 | 0.00 |
| 3.00 | 0.00 | 0.00 | 0.00 |
| 3.50 | 0.00 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 |
| 4.50 | 0.01 | 0.00 | 0.01 |
| 5.00 | 0.04 | 0.00 | 0.04 |
| 5.50 | 0.07 | 0.00 | 0.07 |
| 6.00 | 0.10 | 0.00 | 0.10 |
| 6.50 | 0.15 | 0.00 | 0.15 |
| 7.00 | 0.21 | 0.00 | 0.21 |
| 7.50 | 0.29 | 0.00 | 0.29 |
| 8.00 | 0.38 | 0.00 | 0.38 |
| 8.50 | 0.49 | 0.00 | 0.49 |
| 9.00 | 0.62 | 0.00 | 0.62 |
| 9.50 | 0.88 | 0.00 | 0.88 |
| 10.00 | 1.23 | 0.00 | 1.23 |
| 10.50 | 1.67 | 0.00 | 1.67 |
| 11.00 | 2.92 | 0.00 | 2.92 |
| 11.50 | 5.65 | 0.00 | 5.65 |
| 12.00 | **30.41** | 0.00 | **30.41** |
| 12.50 | **14.47** | 0.00 | **14.47** |
| 13.00 | 7.99 | 0.00 | 7.99 |
| 13.50 | 5.26 | 0.00 | 5.26 |
| 14.00 | 4.18 | 0.00 | 4.18 |
| 14.50 | 3.55 | 0.00 | 3.55 |
| 15.00 | 2.90 | 0.00 | 2.90 |
| 15.50 | 2.59 | 0.00 | 2.59 |
| 16.00 | 2.41 | 0.00 | 2.41 |
| 16.50 | 2.22 | 0.00 | 2.22 |
| 17.00 | 2.04 | 0.00 | 2.04 |
| 17.50 | 1.85 | 0.00 | 1.85 |
| 18.00 | 1.66 | 0.00 | 1.66 |
| 18.50 | 1.56 | 0.00 | 1.56 |
| 19.00 | 1.52 | 0.00 | 1.52 |
| 19.50 | 1.48 | 0.00 | 1.48 |
| 20.00 | 1.43 | 0.00 | 1.43 |
| 20.50 | 1.38 | 0.00 | 1.38 |
| 21.00 | 1.34 | 0.00 | 1.34 |
| 21.50 | 1.29 | 0.00 | 1.29 |
| 22.00 | 1.24 | 0.00 | 1.24 |
| 22.50 | 1.19 | 0.00 | 1.19 |
| 23.00 | 1.14 | 0.00 | 1.14 |
| 23.50 | 1.09 | 0.00 | 1.09 |
| 24.00 | 1.05 | 0.00 | 1.05 |
| 24.50 | 0.00 | 0.00 | 0.00 |
| 25.00 | 0.00 | 0.00 | 0.00 |
| 25.50 | 0.00 | 0.00 | 0.00 |
| 26.00 | 0.00 | 0.00 | 0.00 |
| 26.50 | 0.00 | 0.00 | 0.00 |
| 27.00 | 0.00 | 0.00 | 0.00 |
| 27.50 | 0.00 | 0.00 | 0.00 |
| 28.00 | 0.00 | 0.00 | 0.00 |
| 28.50 | 0.00 | 0.00 | 0.00 |
| 29.00 | 0.00 | 0.00 | 0.00 |
| 29.50 | 0.00 | 0.00 | 0.00 |
| 30.00 | 0.00 | 0.00 | 0.00 |

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment Ex.1: POI #1** Runoff Area=781,190 sf 0.00% Impervious Runoff Depth=2.88"
Tc=6.0 min CN=77 Runoff=58.64 cfs 187,218 cf

**Subcatchment Ex.2: POI #2** Runoff Area=1,013,719 sf 1.53% Impervious Runoff Depth=2.88"
Tc=6.0 min CN=77 Runoff=76.09 cfs 242,945 cf

**Subcatchment Ex.3: POI #3** Runoff Area=297,608 sf 0.00% Impervious Runoff Depth=2.10"
Tc=6.0 min CN=68 Runoff=16.22 cfs 51,981 cf

**Subcatchment Ex.4: POI #4** Runoff Area=125,688 sf 34.49% Impervious Runoff Depth=2.35"
Tc=6.0 min CN=71 Runoff=7.71 cfs 24,570 cf

**Link EX: Site Total** Inflow=158.64 cfs 506,714 cf
Primary=158.64 cfs 506,714 cf

**Total Runoff Area = 2,218,205 sf Runoff Volume = 506,714 cf Average Runoff Depth = 2.74"**
**97.35% Pervious = 2,159,343 sf 2.65% Impervious = 58,862 sf**

## Summary for Subcatchment Ex.1: POI #1

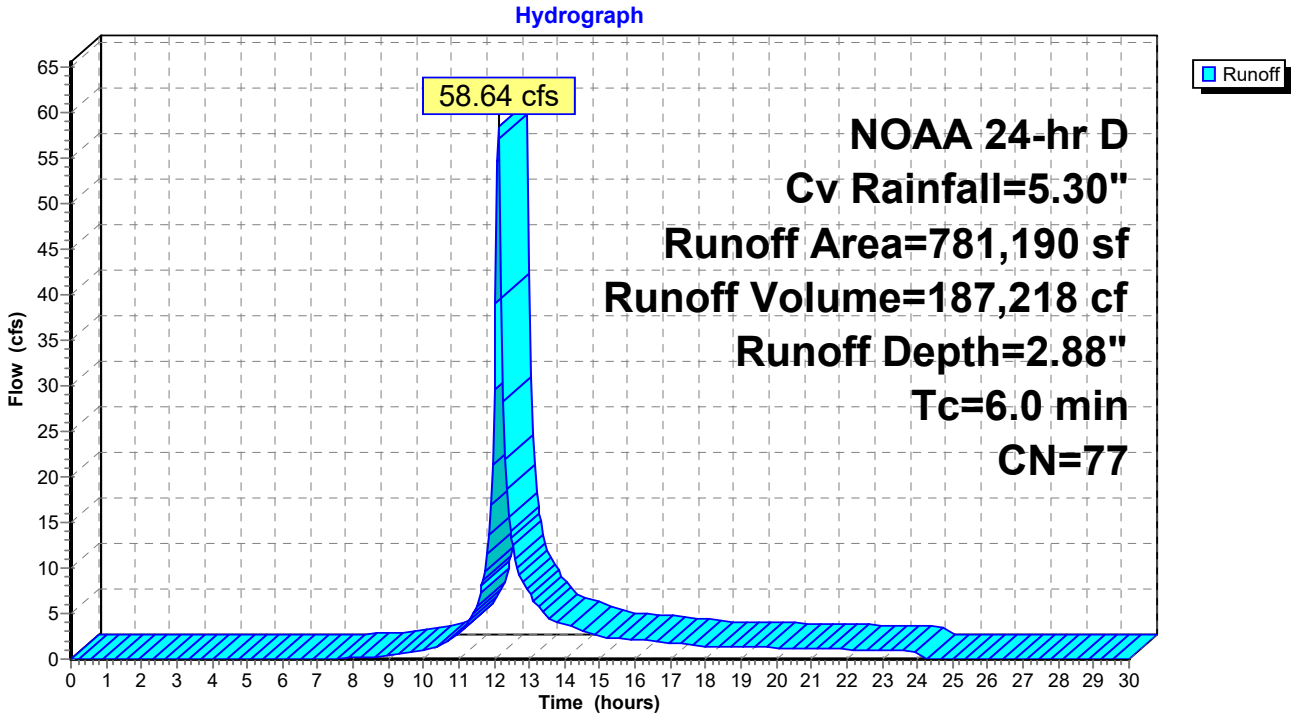
Runoff = 58.64 cfs @ 12.13 hrs, Volume= 187,218 cf, Depth= 2.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| | 67,376 | 67 | Row crops, HSG A |
| | 661,612 | 78 | Row crops, HSG B |
| | 46,689 | 85 | Row crops, HSG C |
| * | 0 | 98 | Ex. Driveway (Undisturbed) |
| * | 379 | 39 | Grass, HSG A (Undisturbed) |
| * | 5,134 | 61 | Grass, HSG B (Undisturbed) |
| | 781,190 | 77 | Weighted Average |
| | 781,190 | | 100.00% Pervious Area |

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

## Subcatchment Ex.1: POI #1



## Summary for Subcatchment Ex.2: POI #2

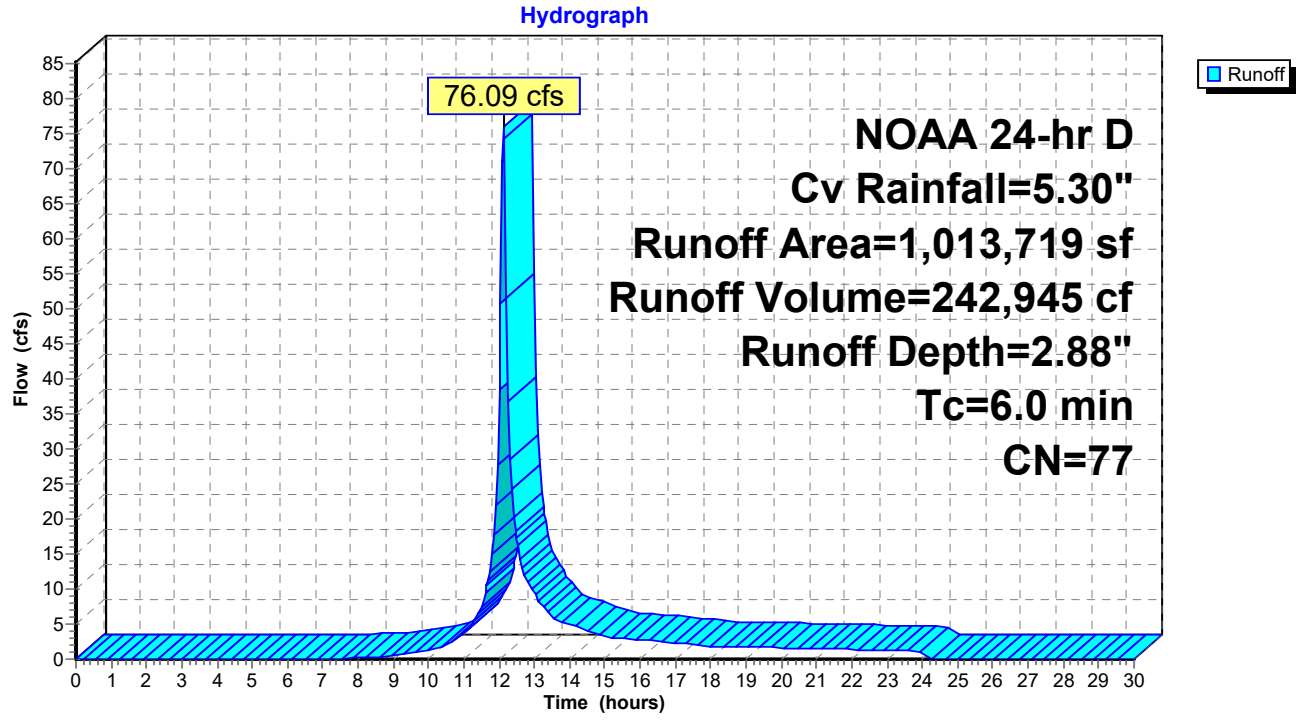
Runoff = 76.09 cfs @ 12.13 hrs, Volume= 242,945 cf, Depth= 2.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 15,509 | 98 | Ex.Roadway |
| * | 1,542 | 39 | Grass, HSG A |
| * | 9,265 | 61 | Grass, HSG B |
| * | 4,076 | 74 | Grass, HSG C |
| | 265,752 | 67 | Row crops, HSG A |
| | 401,050 | 78 | Row crops, HSG B |
| | 316,525 | 85 | Row crops, HSG C |
| | 1,013,719 | 77 | Weighted Average |
| | 998,210 | | 98.47% Pervious Area |
| | 15,509 | | 1.53% Impervious Area |

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

## Subcatchment Ex.2: POI #2



## Summary for Subcatchment Ex.3: POI #3

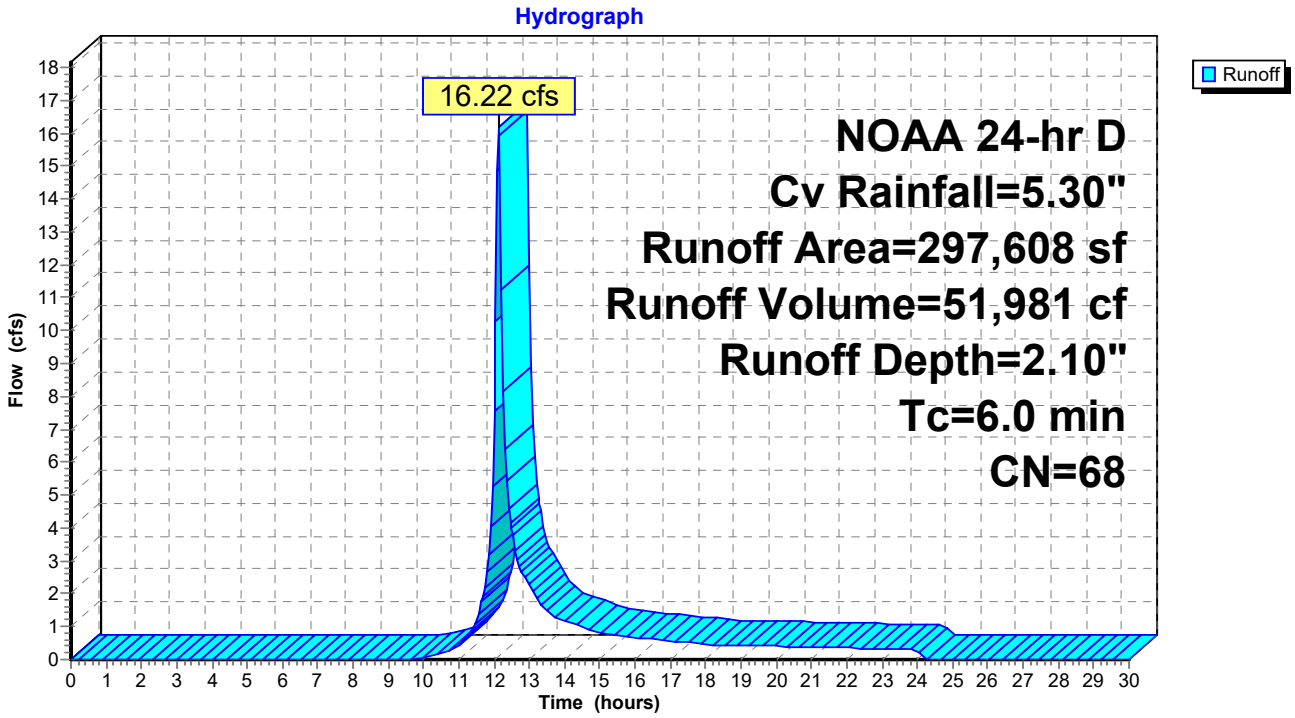
Runoff = 16.22 cfs @ 12.13 hrs, Volume= 51,981 cf, Depth= 2.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| Area (sf) | CN | Description |
|---|---|---|
| 269,953 | 67 | Row crops, HSG A |
| 27,655 | 78 | Row crops, HSG B |
| 0 | 85 | Row crops, HSG C |
| 297,608 | 68 | Weighted Average |
| 297,608 | | 100.00% Pervious Area |

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

## Subcatchment Ex.3: POI #3



## Summary for Subcatchment Ex.4: POI #4

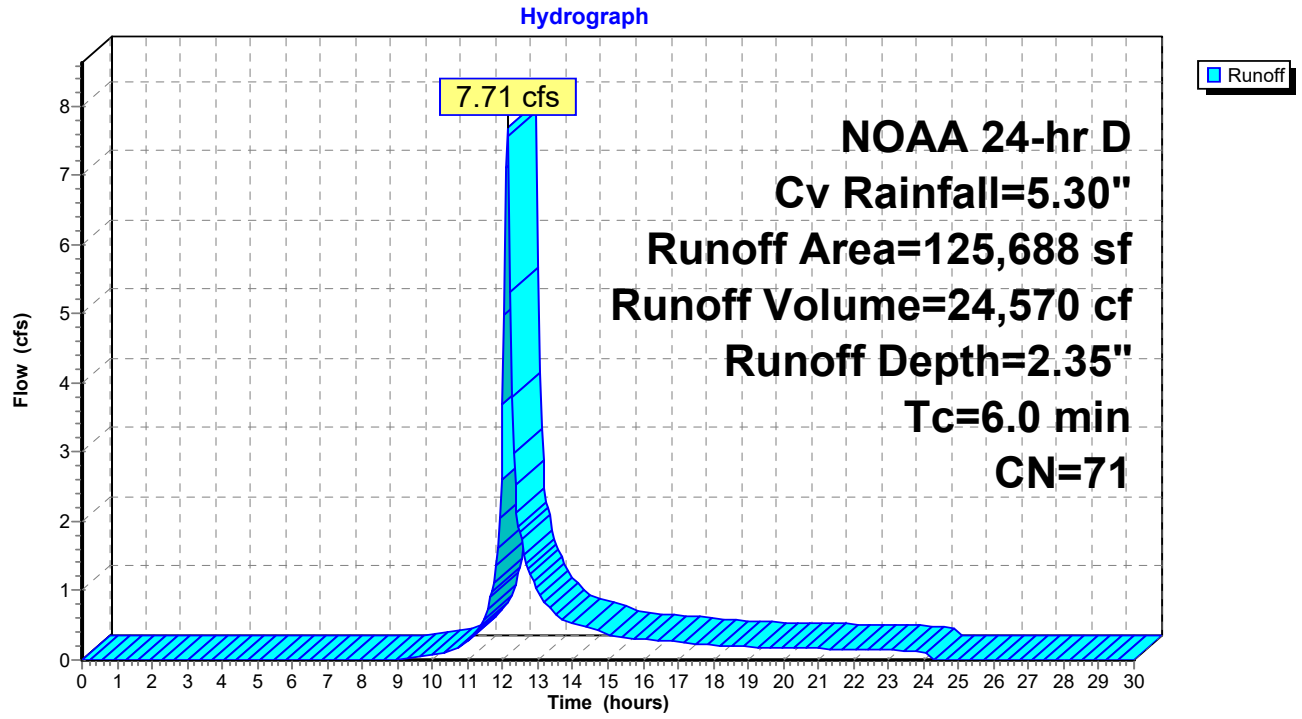
Runoff = 7.71 cfs @ 12.13 hrs, Volume= 24,570 cf, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 39,196 | 98 | Ex. Roadway |
| * | 1,670 | 98 | Ex. Driveway |
| * | 3,970 | 39 | Grass, HSG A |
| * | 6,579 | 61 | Grass, HSG B |
| * | 8,555 | 74 | Grass, HSG C |
| | 20,950 | 67 | Row crops, HSG A |
| | 7,174 | 78 | Row crops, HSG B |
| | 0 | 85 | Row crops, HSG C |
| * | 2,487 | 98 | Ex. Driveway (Undisturbed) |
| * | 25,779 | 39 | Grass, HSG A (Undisturbed) |
| * | 9,328 | 61 | Grass, HSG B (Undisturbed) |
| | 125,688 | 71 | Weighted Average |
| | 82,335 | | 65.51% Pervious Area |
| | 43,353 | | 34.49% Impervious Area |

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

### Subcatchment Ex.4: POI #4

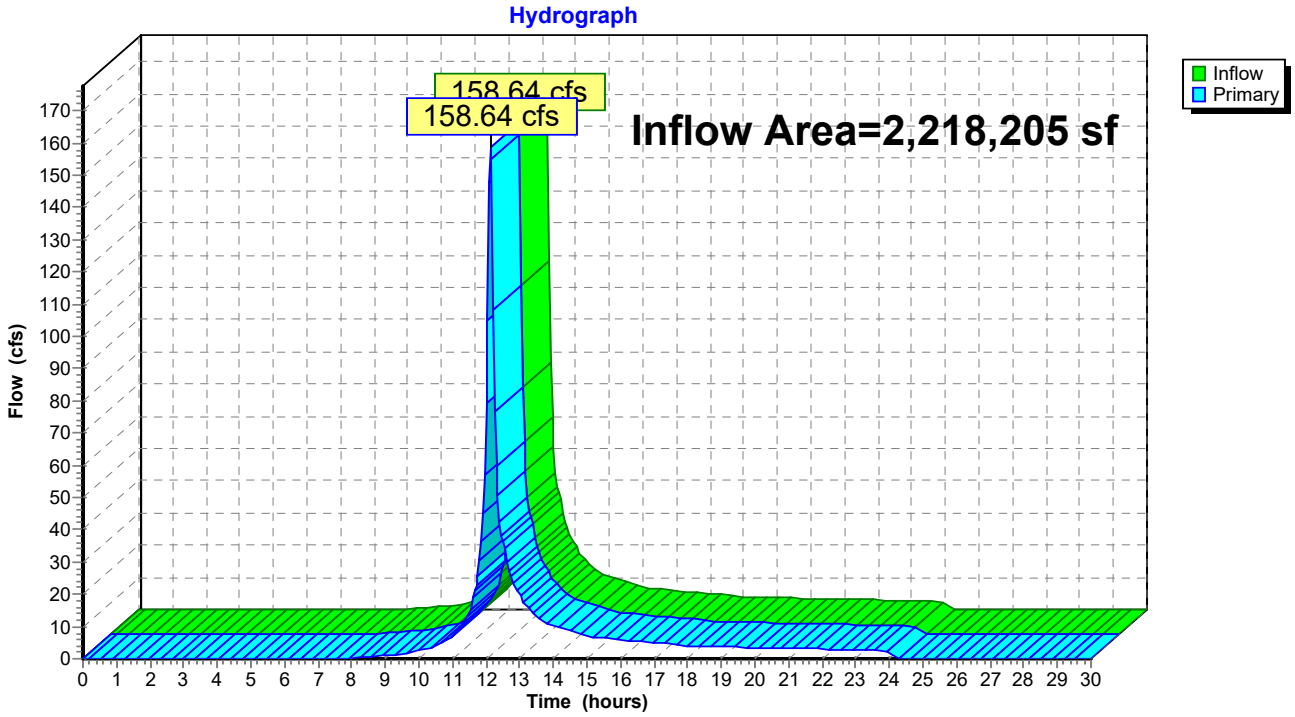


## Summary for Link EX: Site Total

Inflow Area = 2,218,205 sf, 2.65% Impervious, Inflow Depth = 2.74" for Cv event
Inflow = 158.64 cfs @ 12.13 hrs, Volume= 506,714 cf
Primary = 158.64 cfs @ 12.13 hrs, Volume= 506,714 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

## Link EX: Site Total



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment Ex.1: POI #1** Runoff Area=781,190 sf 0.00% Impervious Runoff Depth=6.39"
Tc=6.0 min CN=77 Runoff=126.66 cfs 415,686 cf

**Subcatchment Ex.2: POI #2** Runoff Area=1,013,719 sf 1.53% Impervious Runoff Depth=6.39"
Tc=6.0 min CN=77 Runoff=164.36 cfs 539,420 cf

**Subcatchment Ex.3: POI #3** Runoff Area=297,608 sf 0.00% Impervious Runoff Depth=5.26"
Tc=6.0 min CN=68 Runoff=40.74 cfs 130,478 cf

**Subcatchment Ex.4: POI #4** Runoff Area=125,688 sf 34.49% Impervious Runoff Depth=5.64"
Tc=6.0 min CN=71 Runoff=18.32 cfs 59,039 cf

**Link EX: Site Total** Inflow=350.08 cfs 1,144,623 cf
Primary=350.08 cfs 1,144,623 cf

**Total Runoff Area = 2,218,205 sf Runoff Volume = 1,144,623 cf Average Runoff Depth = 6.19"**
**97.35% Pervious = 2,159,343 sf 2.65% Impervious = 58,862 sf**

## Summary for Subcatchment Ex.1: POI #1

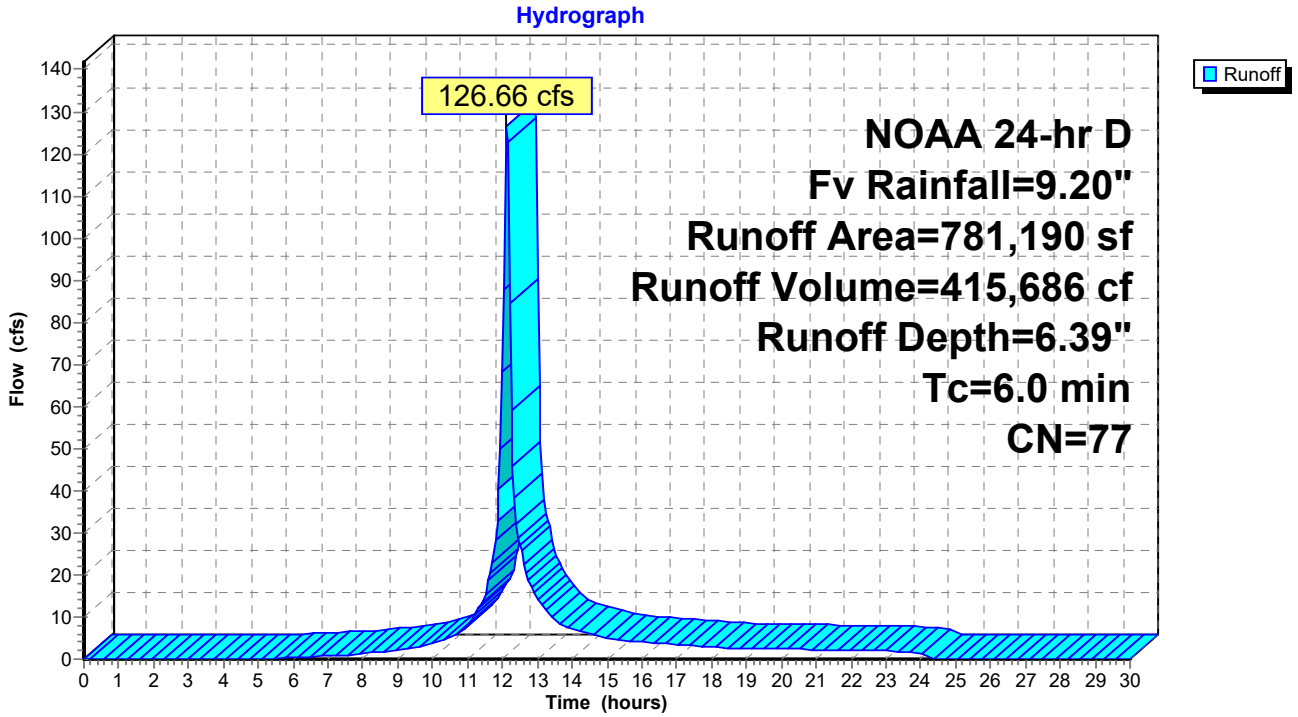
Runoff = 126.66 cfs @ 12.13 hrs, Volume= 415,686 cf, Depth= 6.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| | 67,376 | 67 | Row crops, HSG A |
| | 661,612 | 78 | Row crops, HSG B |
| | 46,689 | 85 | Row crops, HSG C |
| * | 0 | 98 | Ex. Driveway (Undisturbed) |
| * | 379 | 39 | Grass, HSG A (Undisturbed) |
| * | 5,134 | 61 | Grass, HSG B (Undisturbed) |
| | 781,190 | 77 | Weighted Average |
| | 781,190 | | 100.00% Pervious Area |

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

## Subcatchment Ex.1: POI #1



## Summary for Subcatchment Ex.2: POI #2

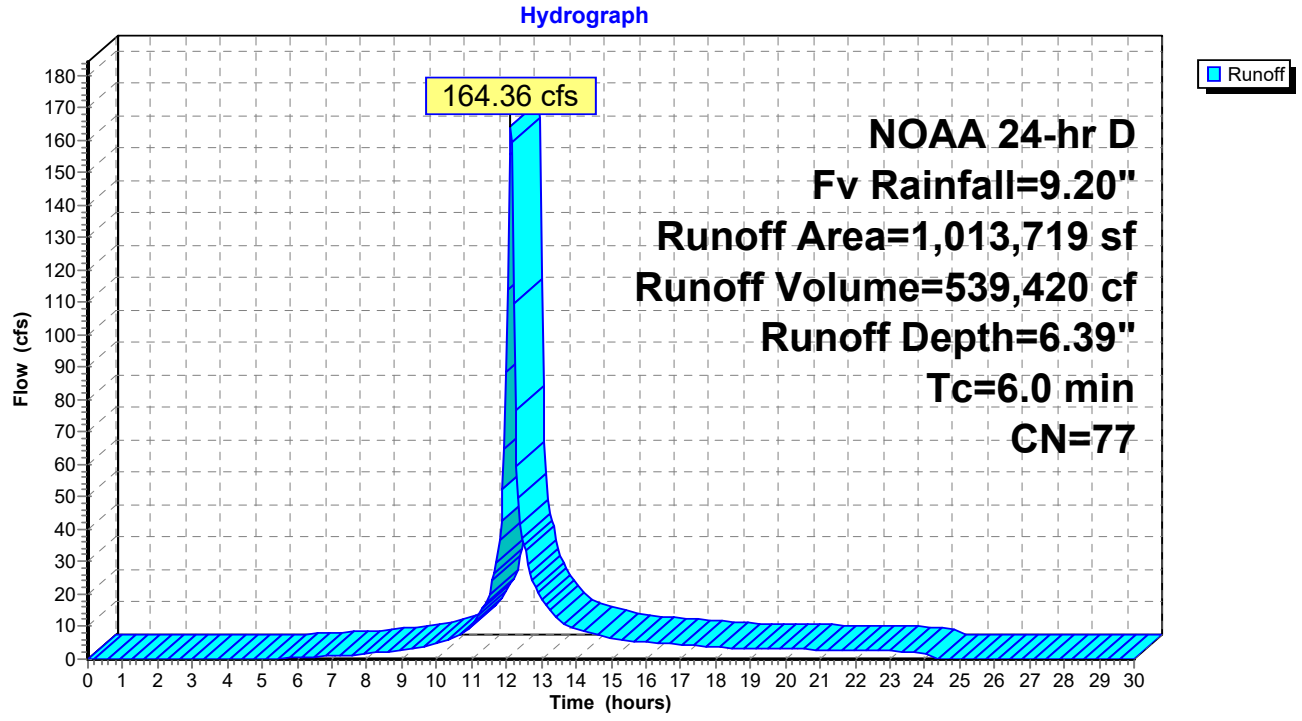
Runoff = 164.36 cfs @ 12.13 hrs, Volume= 539,420 cf, Depth= 6.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 15,509 | 98 | Ex.Roadway |
| * | 1,542 | 39 | Grass, HSG A |
| * | 9,265 | 61 | Grass, HSG B |
| * | 4,076 | 74 | Grass, HSG C |
| | 265,752 | 67 | Row crops, HSG A |
| | 401,050 | 78 | Row crops, HSG B |
| | 316,525 | 85 | Row crops, HSG C |
| | 1,013,719 | 77 | Weighted Average |
| | 998,210 | | 98.47% Pervious Area |
| | 15,509 | | 1.53% Impervious Area |

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

## Subcatchment Ex.2: POI #2



## Summary for Subcatchment Ex.3: POI #3

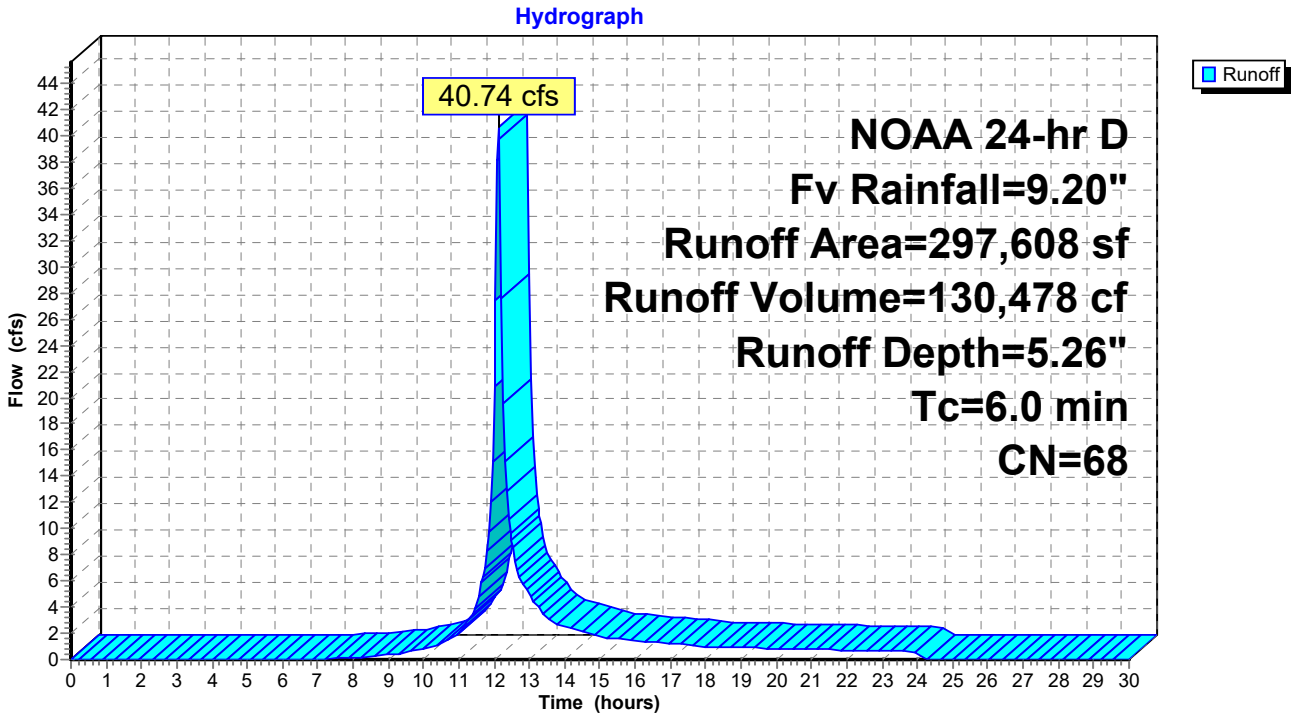
Runoff = 40.74 cfs @ 12.13 hrs, Volume= 130,478 cf, Depth= 5.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| Area (sf) | CN | Description |
|---|---|---|
| 269,953 | 67 | Row crops, HSG A |
| 27,655 | 78 | Row crops, HSG B |
| 0 | 85 | Row crops, HSG C |
| 297,608 | 68 | Weighted Average |
| 297,608 | | 100.00% Pervious Area |

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

## Subcatchment Ex.3: POI #3



## Summary for Subcatchment Ex.4: POI #4

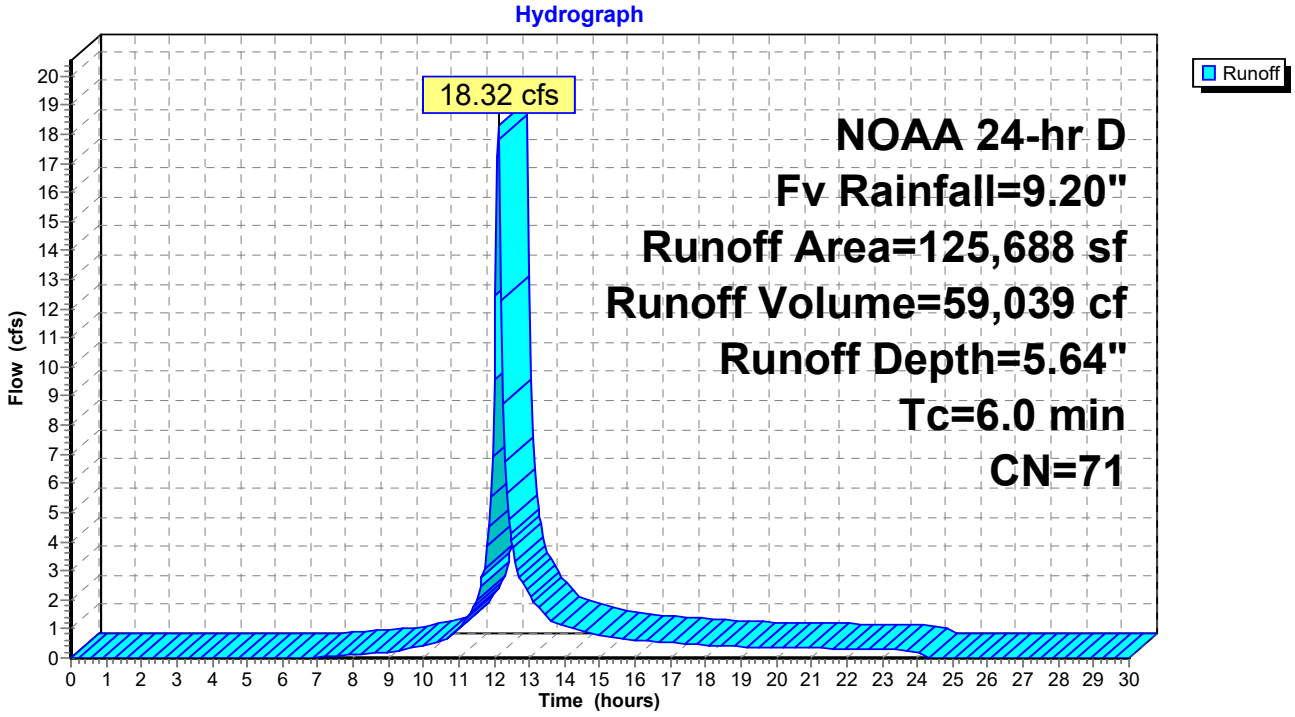
Runoff = 18.32 cfs @ 12.13 hrs, Volume= 59,039 cf, Depth= 5.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 39,196 | 98 | Ex. Roadway |
| * | 1,670 | 98 | Ex. Driveway |
| * | 3,970 | 39 | Grass, HSG A |
| * | 6,579 | 61 | Grass, HSG B |
| * | 8,555 | 74 | Grass, HSG C |
| | 20,950 | 67 | Row crops, HSG A |
| | 7,174 | 78 | Row crops, HSG B |
| | 0 | 85 | Row crops, HSG C |
| * | 2,487 | 98 | Ex. Driveway (Undisturbed) |
| * | 25,779 | 39 | Grass, HSG A (Undisturbed) |
| * | 9,328 | 61 | Grass, HSG B (Undisturbed) |
| | 125,688 | 71 | Weighted Average |
| | 82,335 | | 65.51% Pervious Area |
| | 43,353 | | 34.49% Impervious Area |

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

## Subcatchment Ex.4: POI #4

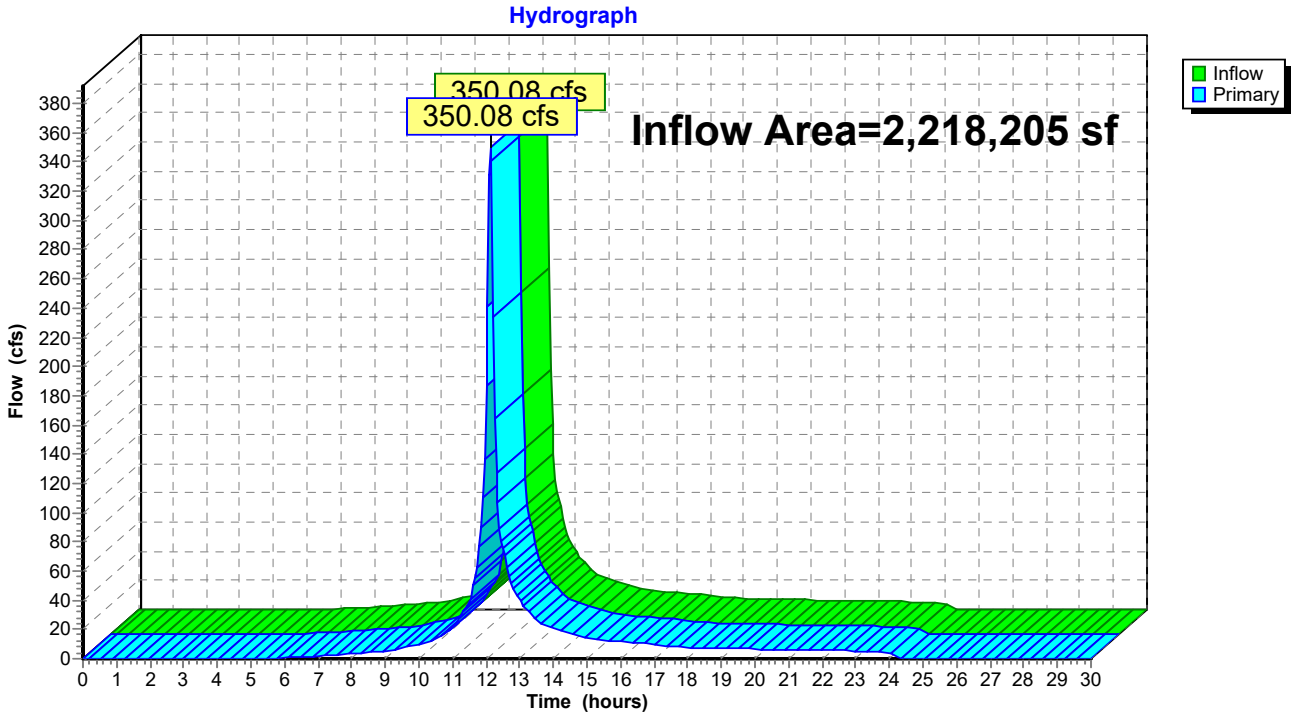


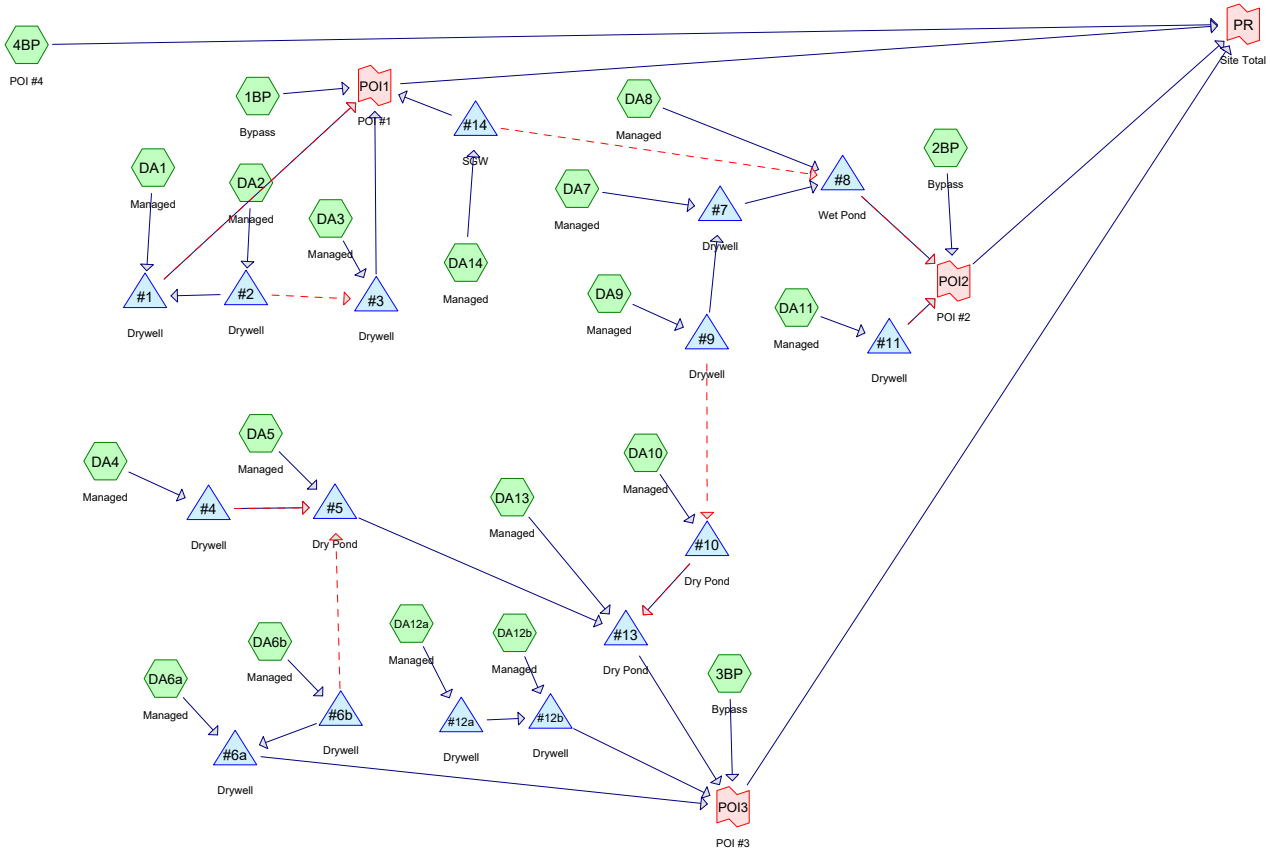
## Summary for Link EX: Site Total

Inflow Area = 2,218,205 sf, 2.65% Impervious, Inflow Depth = 6.19" for Fv event
Inflow = 350.08 cfs @ 12.13 hrs, Volume= 1,144,623 cf
Primary = 350.08 cfs @ 12.13 hrs, Volume= 1,144,623 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

## Link EX: Site Total






**Routing Diagram for 4270 SWM Post 2022-06**
Prepared by Hillcrest Associates, Inc., Printed 6/30/2022
HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment 1BP: Bypass** Runoff Area=19,408 sf 0.00% Impervious Runoff Depth=0.29"
Tc=6.0 min CN=44 Runoff=0.13 cfs 466 cf

**Subcatchment 2BP: Bypass** Runoff Area=62,103 sf 28.07% Impervious Runoff Depth=1.13"
Tc=6.0 min CN=76 Runoff=1.80 cfs 5,867 cf

**Subcatchment 3BP: Bypass** Runoff Area=161,604 sf 32.63% Impervious Runoff Depth=0.59"
Tc=6.0 min CN=59 Runoff=2.40 cfs 8,013 cf

**Subcatchment 4BP: POI #4** Runoff Area=79,190 sf 47.39% Impervious Runoff Depth=1.09"
Tc=6.0 min CN=75 Runoff=2.22 cfs 7,219 cf

**Subcatchment DA1: Managed** Runoff Area=33,087 sf 91.75% Impervious Runoff Depth=2.23"
Tc=6.0 min CN=95 Runoff=1.82 cfs 6,160 cf

**Subcatchment DA10: Managed** Runoff Area=199,819 sf 78.40% Impervious Runoff Depth=1.86"
Tc=6.0 min CN=90 Runoff=9.47 cfs 31,006 cf

**Subcatchment DA11: Managed** Runoff Area=64,196 sf 78.15% Impervious Runoff Depth=2.08"
Tc=6.0 min CN=93 Runoff=3.34 cfs 11,104 cf

**Subcatchment DA12a: Managed** Runoff Area=59,904 sf 86.88% Impervious Runoff Depth=1.86"
Tc=6.0 min CN=90 Runoff=2.84 cfs 9,295 cf

**Subcatchment DA12b: Managed** Runoff Area=50,150 sf 89.70% Impervious Runoff Depth=2.00"
Tc=6.0 min CN=92 Runoff=2.53 cfs 8,364 cf

**Subcatchment DA13: Managed** Runoff Area=211,364 sf 63.35% Impervious Runoff Depth=1.50"
Tc=6.0 min CN=84 Runoff=8.18 cfs 26,501 cf

**Subcatchment DA14: Managed** Runoff Area=145,491 sf 74.57% Impervious Runoff Depth=1.73"
Tc=6.0 min CN=88 Runoff=6.46 cfs 21,018 cf

**Subcatchment DA2: Managed** Runoff Area=112,875 sf 84.89% Impervious Runoff Depth=2.00"
Tc=6.0 min CN=92 Runoff=5.70 cfs 18,826 cf

**Subcatchment DA3: Managed** Runoff Area=134,266 sf 86.16% Impervious Runoff Depth=2.00"
Tc=6.0 min CN=92 Runoff=6.78 cfs 22,393 cf

**Subcatchment DA4: Managed** Runoff Area=153,759 sf 43.45% Impervious Runoff Depth=0.95"
Tc=6.0 min CN=71 Runoff=3.71 cfs 12,129 cf

**Subcatchment DA5: Managed** Runoff Area=163,266 sf 61.28% Impervious Runoff Depth=1.13"
Tc=6.0 min CN=76 Runoff=4.74 cfs 15,425 cf

**Subcatchment DA6a: Managed** Runoff Area=30,789 sf 89.70% Impervious Runoff Depth=2.15"
Tc=6.0 min CN=94 Runoff=1.65 cfs 5,524 cf

**Subcatchment DA6b: Managed** Runoff Area=15,793 sf 91.49% Impervious Runoff Depth=2.08"
Tc=6.0 min CN=93 Runoff=0.82 cfs 2,732 cf

**Subcatchment DA7: Managed** Runoff Area=32,319 sf 87.77% Impervious Runoff Depth=2.15"
Tc=6.0 min CN=94 Runoff=1.73 cfs 5,799 cf

**Subcatchment DA8: Managed** Runoff Area=260,488 sf 54.51% Impervious Runoff Depth=1.50"
Tc=6.0 min CN=84 Runoff=10.08 cfs 32,660 cf

**Subcatchment DA9: Managed** Runoff Area=199,819 sf 78.40% Impervious Runoff Depth=1.86"
Tc=6.0 min CN=90 Runoff=9.47 cfs 31,006 cf

**Pond #1: Drywell** Peak Elev=39.41' Storage=1,124 cf Inflow=1.82 cfs 6,160 cf
Discarded=0.39 cfs 6,162 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.39 cfs 6,162 cf

**Pond #10: Dry Pond** Peak Elev=36.23' Storage=15,229 cf Inflow=9.47 cfs 31,006 cf
Discarded=0.40 cfs 31,010 cf Primary=0.00 cfs 0 cf Outflow=0.40 cfs 31,010 cf

**Pond #11: Drywell** Peak Elev=37.64' Storage=4,725 cf Inflow=3.34 cfs 11,104 cf
Discarded=0.04 cfs 6,945 cf Primary=0.93 cfs 4,159 cf Secondary=0.00 cfs 0 cf Outflow=0.97 cfs 11,104 cf

**Pond #12a: Drywell** Peak Elev=39.41' Storage=2,063 cf Inflow=2.84 cfs 9,295 cf
Discarded=0.49 cfs 9,300 cf Primary=0.00 cfs 0 cf Outflow=0.49 cfs 9,300 cf

**Pond #12b: Drywell** Peak Elev=39.38' Storage=1,777 cf Inflow=2.53 cfs 8,364 cf
Discarded=0.46 cfs 8,370 cf Primary=0.00 cfs 0 cf Outflow=0.46 cfs 8,370 cf

**Pond #13: Dry Pond** Peak Elev=36.81' Storage=4,115 cf Inflow=8.18 cfs 26,501 cf
Discarded=2.17 cfs 26,502 cf Primary=0.00 cfs 0 cf Outflow=2.17 cfs 26,502 cf

**Pond #14: SGW** Peak Elev=41.18' Storage=11,212 cf Inflow=6.46 cfs 21,018 cf
Primary=2.24 cfs 21,018 cf Secondary=0.00 cfs 0 cf Outflow=2.24 cfs 21,018 cf

**Pond #2: Drywell** Peak Elev=38.55' Storage=5,996 cf Inflow=5.70 cfs 18,826 cf
Discarded=0.57 cfs 18,828 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.57 cfs 18,828 cf

**Pond #3: Drywell** Peak Elev=38.64' Storage=9,305 cf Inflow=6.78 cfs 22,393 cf
Discarded=0.41 cfs 22,400 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 22,400 cf

**Pond #4: Drywell** Peak Elev=39.86' Storage=4,044 cf Inflow=3.71 cfs 12,129 cf
Discarded=0.35 cfs 12,133 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.35 cfs 12,133 cf

**Pond #5: Dry Pond** Peak Elev=38.84' Storage=4,217 cf Inflow=4.74 cfs 15,425 cf
Discarded=0.62 cfs 15,432 cf Primary=0.00 cfs 0 cf Outflow=0.62 cfs 15,432 cf

**Pond #6a: Drywell** Peak Elev=41.47' Storage=1,582 cf Inflow=1.65 cfs 5,524 cf
Discarded=0.19 cfs 5,525 cf Primary=0.00 cfs 0 cf Outflow=0.19 cfs 5,525 cf

**Pond #6b: Drywell** Peak Elev=39.97' Storage=1,342 cf Inflow=0.82 cfs 2,732 cf
Discarded=0.03 cfs 2,732 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.03 cfs 2,732 cf

**Pond #7: Drywell** Peak Elev=36.31' Storage=1,258 cf Inflow=1.73 cfs 5,799 cf
Discarded=0.30 cfs 5,802 cf Primary=0.00 cfs 0 cf Outflow=0.30 cfs 5,802 cf

**Pond #8: Wet Pond** Peak Elev=37.54' Storage=43,264 cf Inflow=10.08 cfs 32,660 cf
Primary=0.81 cfs 30,794 cf Secondary=0.00 cfs 0 cf Outflow=0.81 cfs 30,794 cf

**Pond #9: Drywell** Peak Elev=39.74' Storage=0.195 af Inflow=9.47 cfs 31,006 cf
Discarded=1.22 cfs 31,020 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=1.22 cfs 31,020 cf

**Link POI1: POI #1** Inflow=2.29 cfs 21,484 cf
Primary=2.29 cfs 21,484 cf

**Link POI2: POI #2** Inflow=2.12 cfs 40,820 cf
Primary=2.12 cfs 40,820 cf

**Link POI3: POI #3** Inflow=2.40 cfs 8,013 cf
Primary=2.40 cfs 8,013 cf

**Link PR: Site Total** Inflow=8.44 cfs 77,536 cf
Primary=8.44 cfs 77,536 cf

**Total Runoff Area = 2,189,690 sf Runoff Volume = 281,506 cf Average Runoff Depth = 1.54"**
**34.62% Pervious = 757,973 sf 65.38% Impervious = 1,431,717 sf**

## Summary for Subcatchment 1BP: Bypass

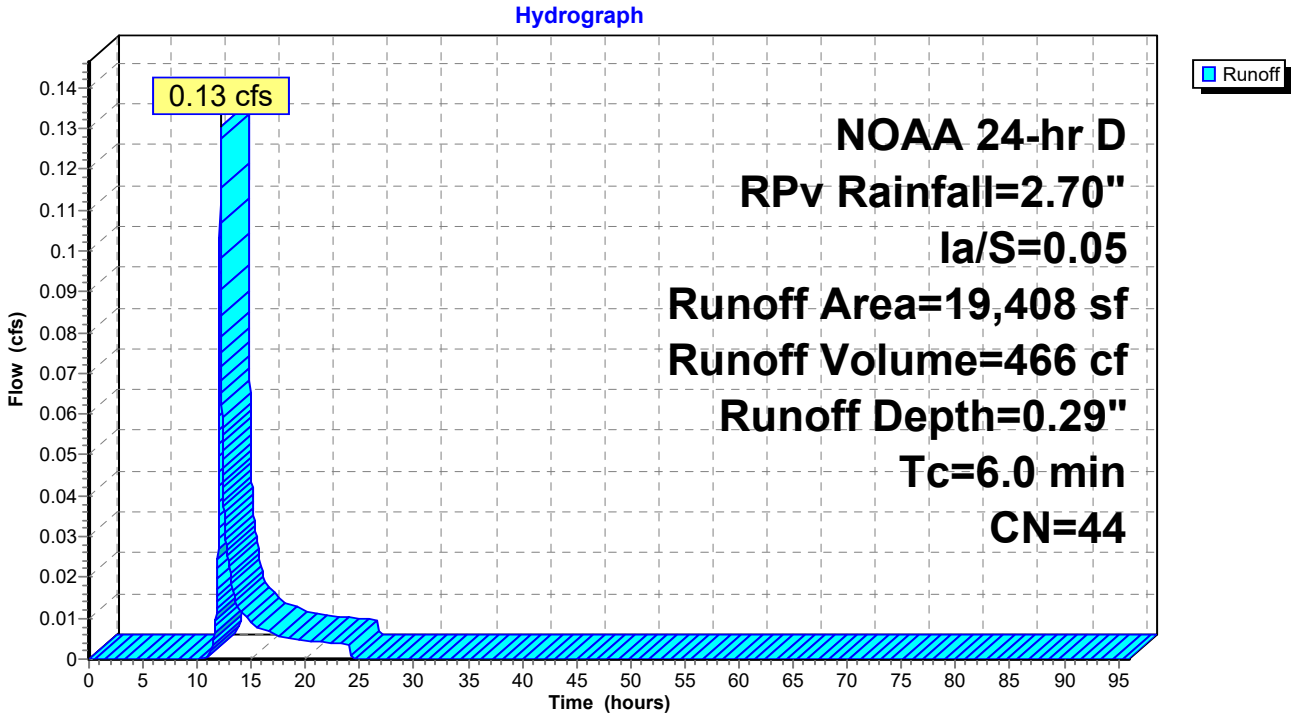
Runoff = 0.13 cfs @ 12.14 hrs, Volume= 466 cf, Depth= 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 0 | 98 | Roof |
| * | 0 | 98 | Pavement |
| * | 0 | 98 | Sidewalk |
| * | 14,850 | 39 | Grass, HSG A |
| * | 4,558 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 19,408 | 44 | Weighted Average |
| | 19,408 | | 100.00% Pervious Area |

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

## Subcatchment 1BP: Bypass



## Summary for Subcatchment 2BP: Bypass

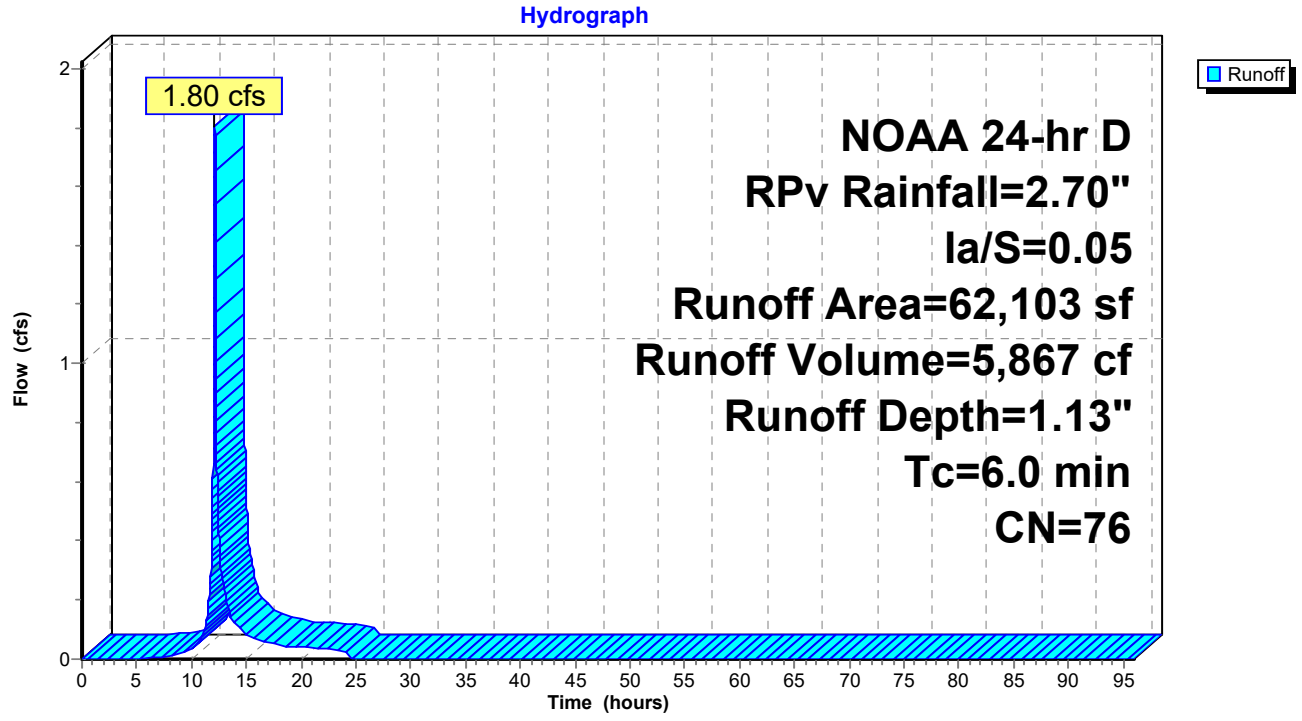
Runoff = 1.80 cfs @ 12.13 hrs, Volume= 5,867 cf, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 3,148 | 98 | Roof |
| * | 1,657 | 98 | Pavement |
| * | 5,920 | 98 | Sidewalk |
| * | 5,931 | 39 | Grass, HSG A |
| * | 7,283 | 61 | Grass, HSG B |
| * | 31,454 | 74 | Grass, HSG C |
| * | 6,710 | 98 | Ex. Roadway |
| | 62,103 | 76 | Weighted Average |
| | 44,668 | | 71.93% Pervious Area |
| | 17,435 | | 28.07% Impervious Area |

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

## Subcatchment 2BP: Bypass



## Summary for Subcatchment 3BP: Bypass

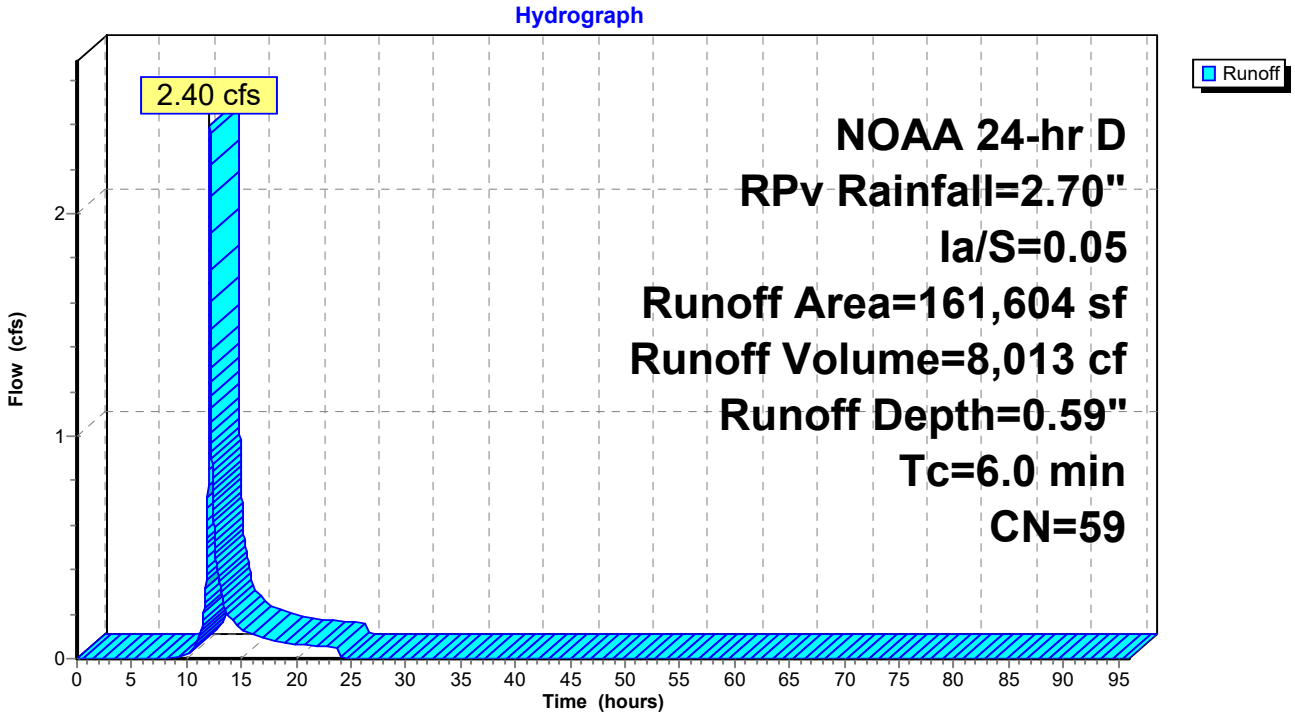
Runoff = 2.40 cfs @ 12.14 hrs, Volume= 8,013 cf, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 30,567 | 98 | Roof |
| * | 19,555 | 98 | Pavement |
| * | 2,610 | 98 | Sidewalk |
| * | 105,358 | 39 | Grass, HSG A |
| * | 3,155 | 61 | Grass, HSG B |
| * | 359 | 74 | Grass, HSG C |
| | 161,604 | 59 | Weighted Average |
| | 108,872 | | 67.37% Pervious Area |
| | 52,732 | | 32.63% Impervious Area |

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

## Subcatchment 3BP: Bypass



## Summary for Subcatchment 4BP: POI #4

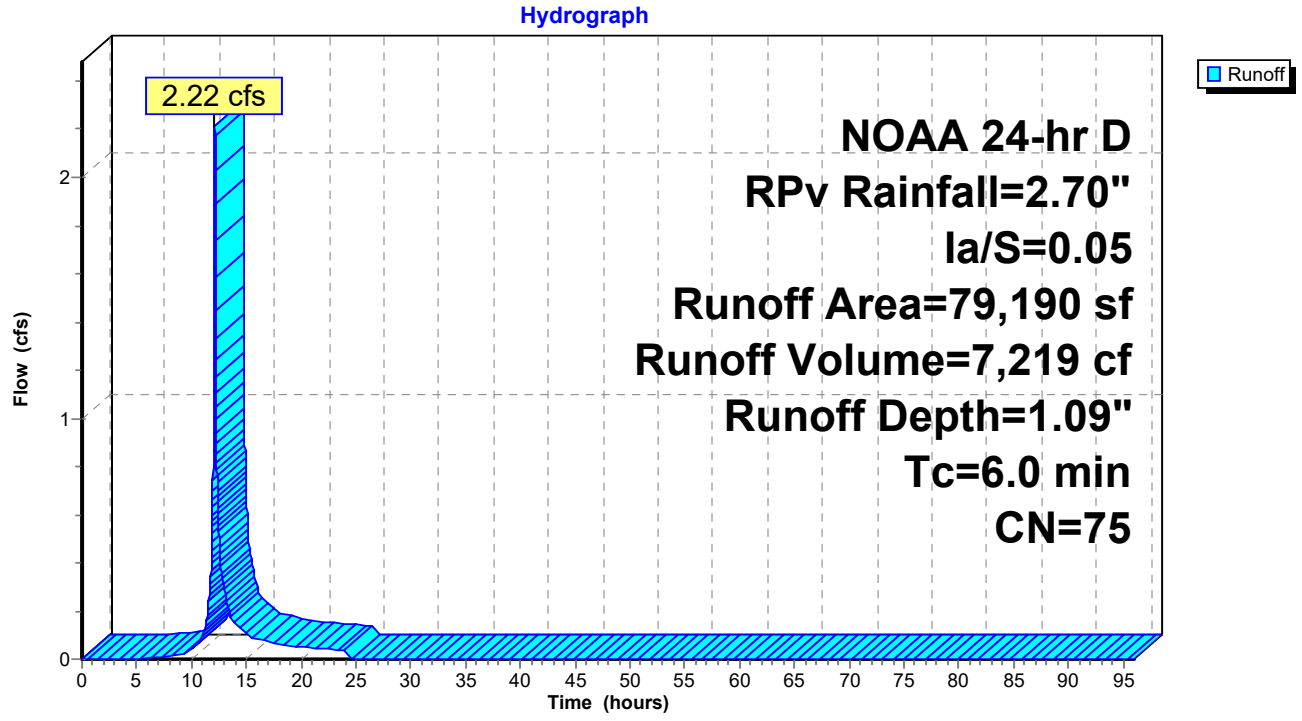
Runoff = 2.22 cfs @ 12.13 hrs, Volume= 7,219 cf, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 0 | 98 | Roof |
| * | 3,356 | 98 | Pavement |
| * | 5,503 | 98 | Sidewalk |
| * | 16,262 | 39 | Grass, HSG A |
| * | 16,847 | 61 | Grass, HSG B |
| * | 8,555 | 74 | Grass, HSG C |
| * | 28,667 | 98 | Existing Roadway |
| | 79,190 | 75 | Weighted Average |
| | 41,664 | | 52.61% Pervious Area |
| | 37,526 | | 47.39% Impervious Area |

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

## Subcatchment 4BP: POI #4



## Summary for Subcatchment DA1: Managed

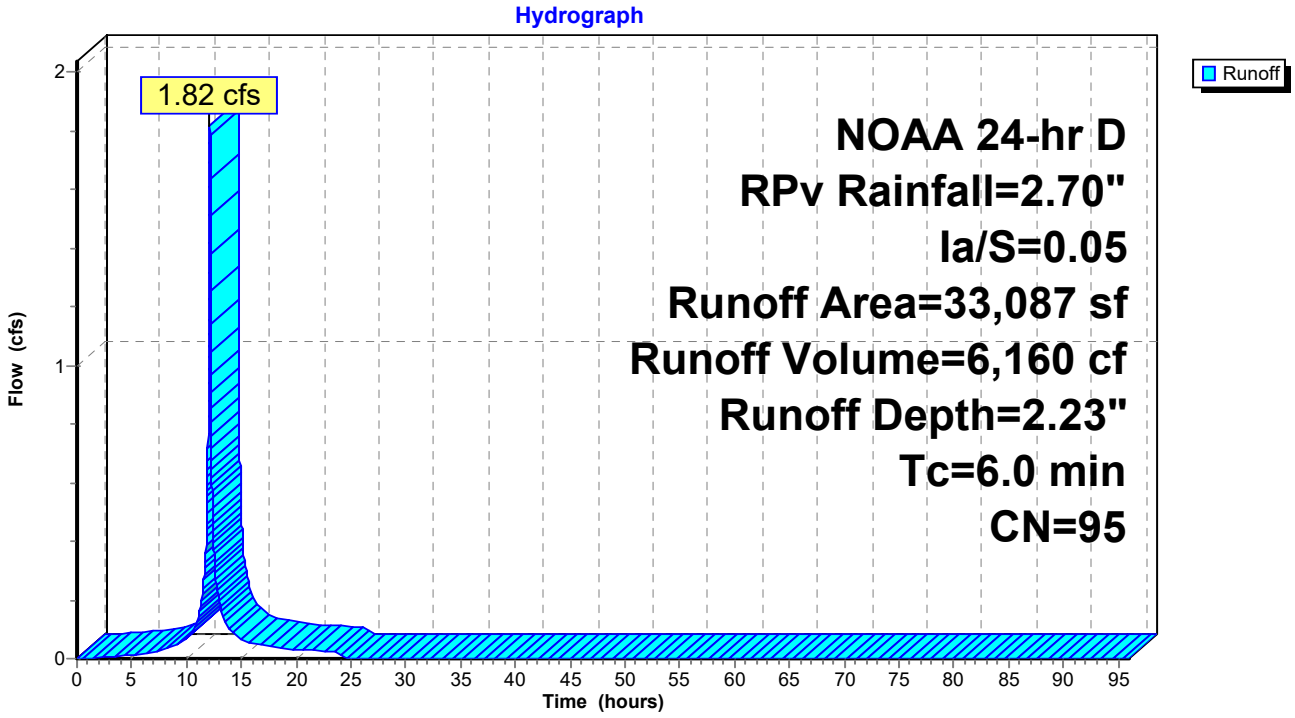
Runoff = 1.82 cfs @ 12.13 hrs, Volume= 6,160 cf, Depth= 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 5,119 | 98 | Roof |
| * | 24,140 | 98 | Pavement |
| * | 1,098 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 2,730 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 33,087 | 95 | Weighted Average |
| | 2,730 | | 8.25% Pervious Area |
| | 30,357 | | 91.75% Impervious Area |

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

## Subcatchment DA1: Managed



## Summary for Subcatchment DA10: Managed

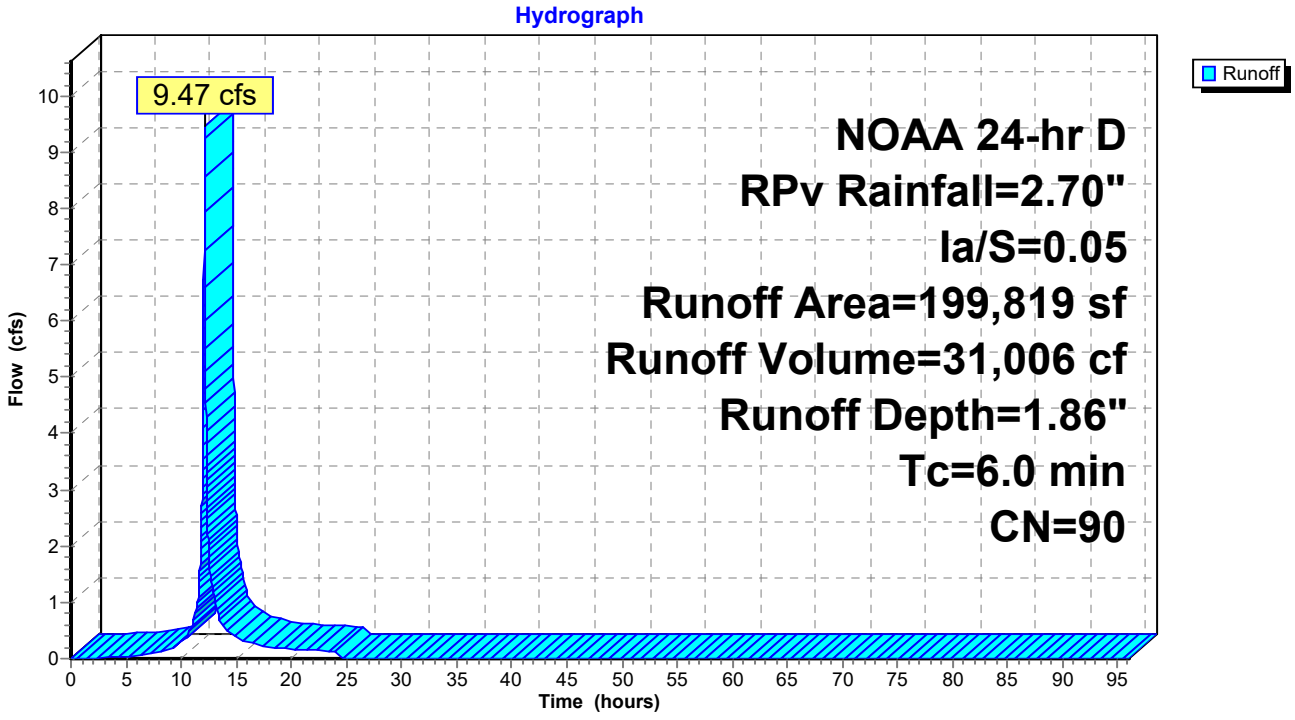
Runoff = 9.47 cfs @ 12.13 hrs, Volume= 31,006 cf, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 45,831 | 98 | Roof |
| * | 99,756 | 98 | Pavement |
| * | 11,069 | 98 | Sidewalk |
| * | 1,120 | 39 | Grass, HSG A |
| * | 42,043 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 199,819 | 90 | Weighted Average |
| | 43,163 | | 21.60% Pervious Area |
| | 156,656 | | 78.40% Impervious Area |

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

## Subcatchment DA10: Managed



## Summary for Subcatchment DA11: Managed

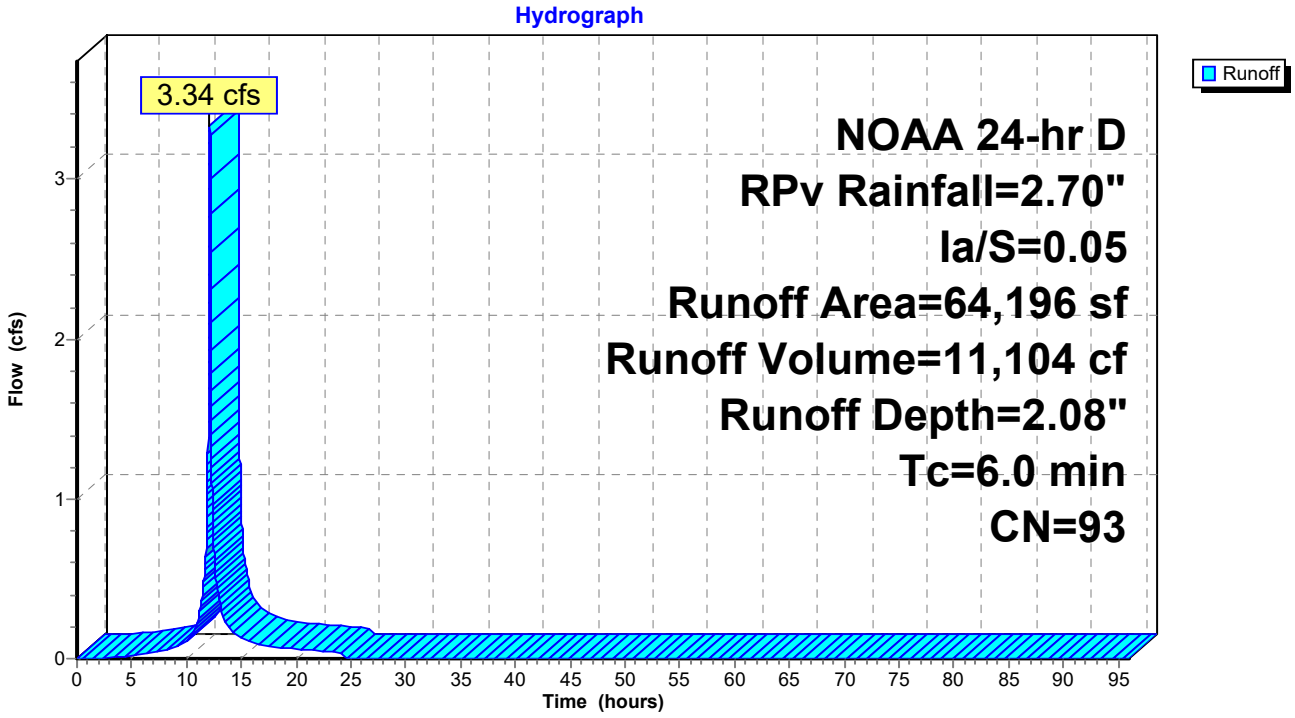
Runoff = 3.34 cfs @ 12.13 hrs, Volume= 11,104 cf, Depth= 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 6,876 | 98 | Roof |
| * | 35,655 | 98 | Pavement |
| * | 7,636 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 14,029 | 74 | Grass, HSG C |
| | 64,196 | 93 | Weighted Average |
| | 14,029 | | 21.85% Pervious Area |
| | 50,167 | | 78.15% Impervious Area |

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

## Subcatchment DA11: Managed



## Summary for Subcatchment DA12a: Managed

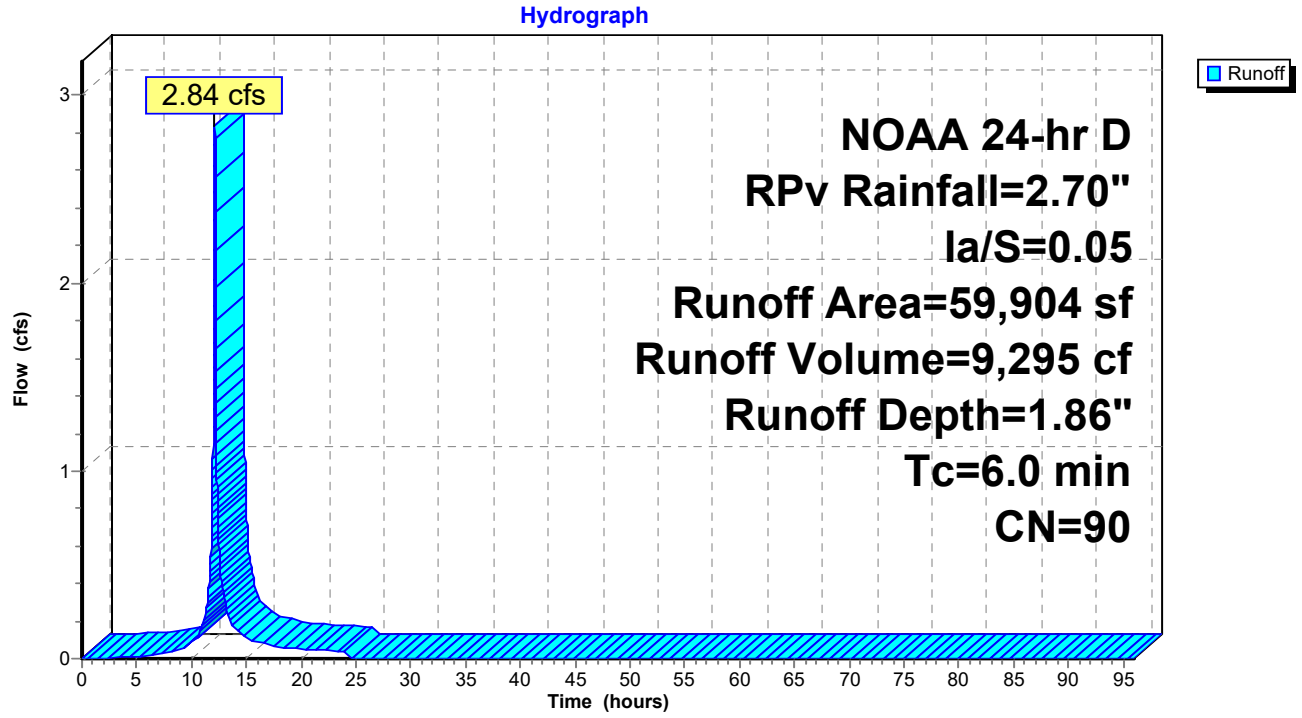
Runoff = 2.84 cfs @ 12.13 hrs, Volume= 9,295 cf, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 14,960 | 98 | Roof |
| * | 35,092 | 98 | Pavement |
| * | 1,991 | 98 | Sidewalk |
| * | 7,861 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 59,904 | 90 | Weighted Average |
| | 7,861 | | 13.12% Pervious Area |
| | 52,043 | | 86.88% Impervious Area |

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

## Subcatchment DA12a: Managed



## Summary for Subcatchment DA12b: Managed

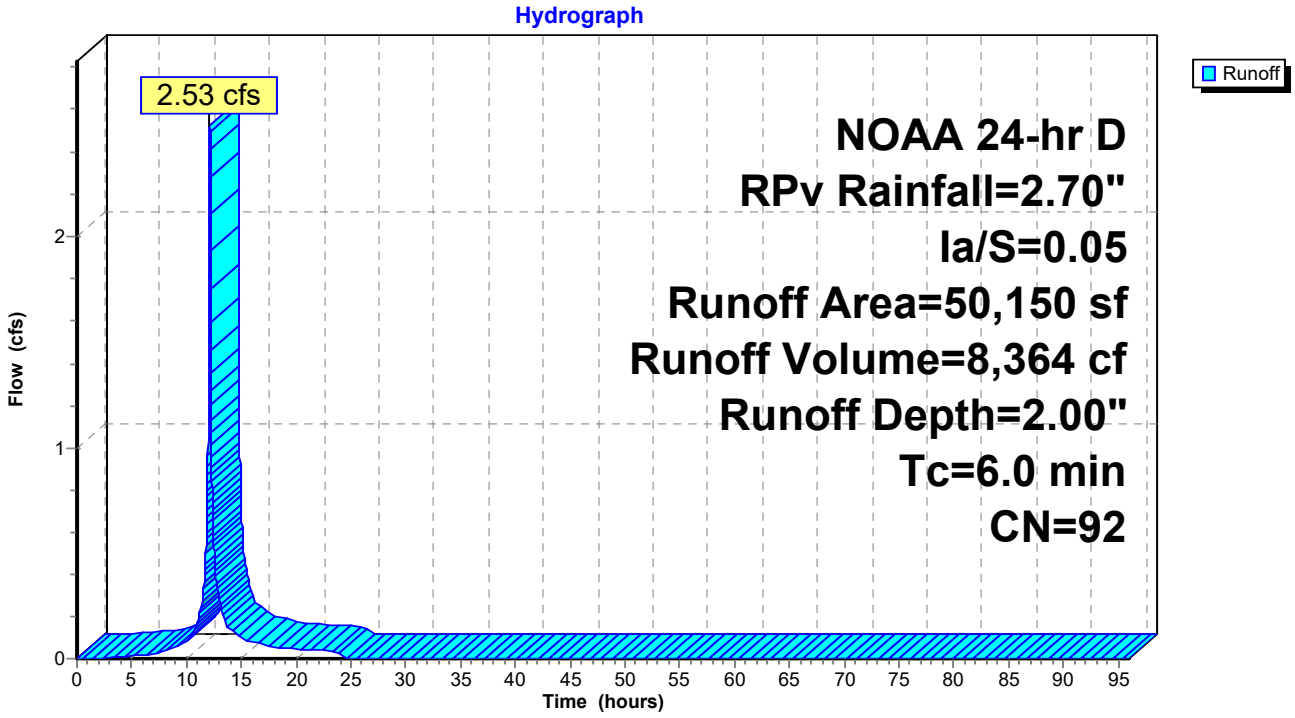
Runoff = 2.53 cfs @ 12.13 hrs, Volume= 8,364 cf, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 12,223 | 98 | Roof |
| * | 31,728 | 98 | Pavement |
| * | 1,032 | 98 | Sidewalk |
| * | 5,167 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 50,150 | 92 | Weighted Average |
| | 5,167 | | 10.30% Pervious Area |
| | 44,983 | | 89.70% Impervious Area |

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

### Subcatchment DA12b: Managed



## Summary for Subcatchment DA13: Managed

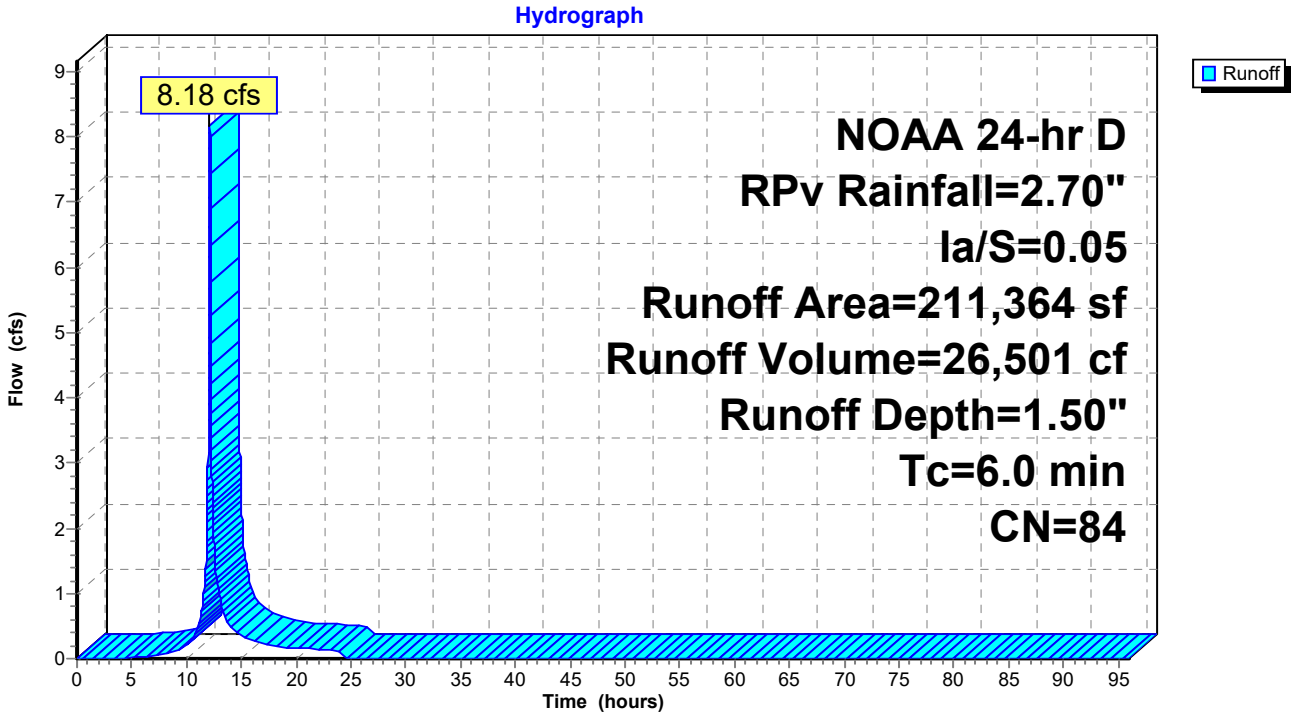
Runoff = 8.18 cfs @ 12.13 hrs, Volume= 26,501 cf, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 43,108 | 98 | Roof |
| * | 81,796 | 98 | Pavement |
| * | 9,004 | 98 | Sidewalk |
| * | 16,604 | 39 | Grass, HSG A |
| * | 45,260 | 61 | Grass, HSG B |
| * | 15,592 | 74 | Grass, HSG C |
| | 211,364 | 84 | Weighted Average |
| | 77,456 | | 36.65% Pervious Area |
| | 133,908 | | 63.35% Impervious Area |

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

## Subcatchment DA13: Managed



## Summary for Subcatchment DA14: Managed

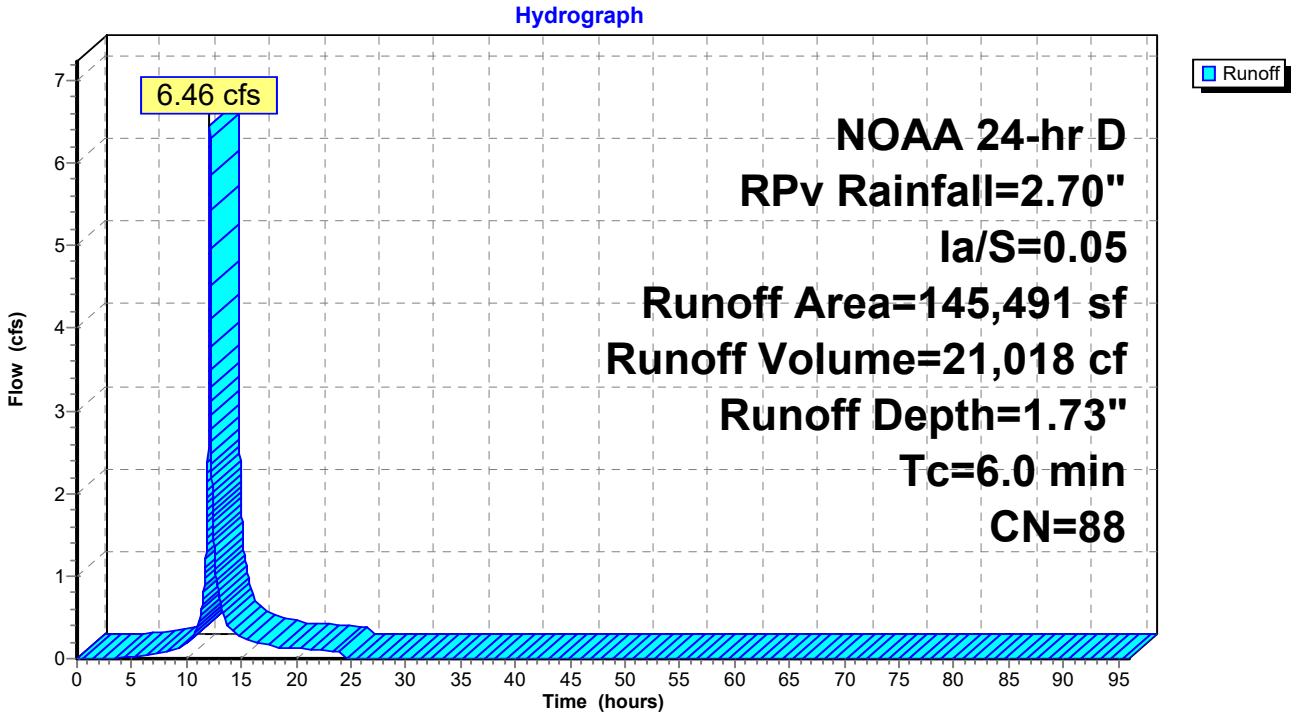
Runoff = 6.46 cfs @ 12.13 hrs, Volume= 21,018 cf, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 67,744 | 98 | Roof |
| * | 37,879 | 98 | Pavement |
| * | 2,866 | 98 | Sidewalk |
| * | 8,381 | 39 | Grass, HSG A |
| * | 25,644 | 61 | Grass, HSG B |
| * | 2,977 | 74 | Grass, HSG C |
| | 145,491 | 88 | Weighted Average |
| | 37,002 | | 25.43% Pervious Area |
| | 108,489 | | 74.57% Impervious Area |

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

## Subcatchment DA14: Managed



## Summary for Subcatchment DA2: Managed

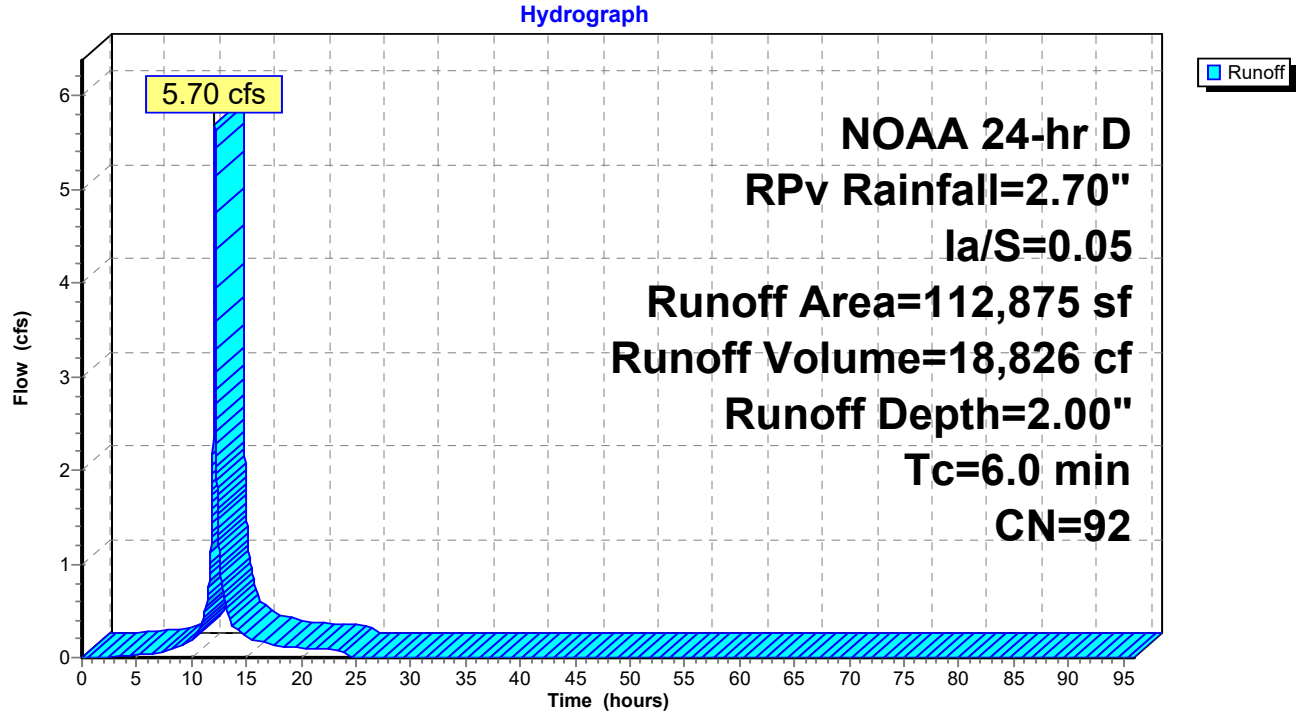
Runoff = 5.70 cfs @ 12.13 hrs, Volume= 18,826 cf, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 9,696 | 98 | Roof |
| * | 79,428 | 98 | Pavement |
| * | 6,694 | 98 | Sidewalk |
| * | 17,057 | 61 | Grass, HSG B |
| | 112,875 | 92 | Weighted Average |
| | 17,057 | | 15.11% Pervious Area |
| | 95,818 | | 84.89% Impervious Area |

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

## Subcatchment DA2: Managed



## Summary for Subcatchment DA3: Managed

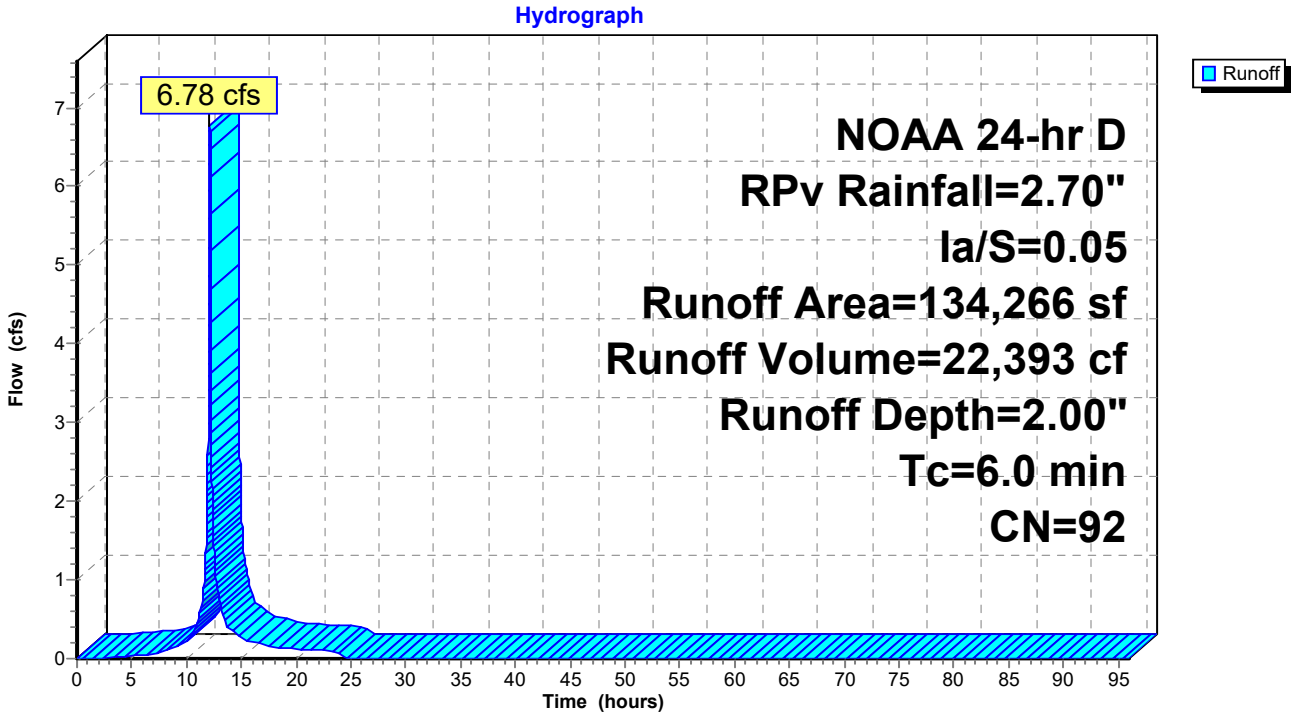
Runoff = 6.78 cfs @ 12.13 hrs, Volume= 22,393 cf, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 152 | 98 | Roof |
| * | 92,770 | 98 | Pavement |
| * | 22,763 | 98 | Sidewalk |
| * | 8,191 | 39 | Grass, HSG A |
| * | 10,390 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 134,266 | 92 | Weighted Average |
| | 18,581 | | 13.84% Pervious Area |
| | 115,685 | | 86.16% Impervious Area |

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

### Subcatchment DA3: Managed



## Summary for Subcatchment DA4: Managed

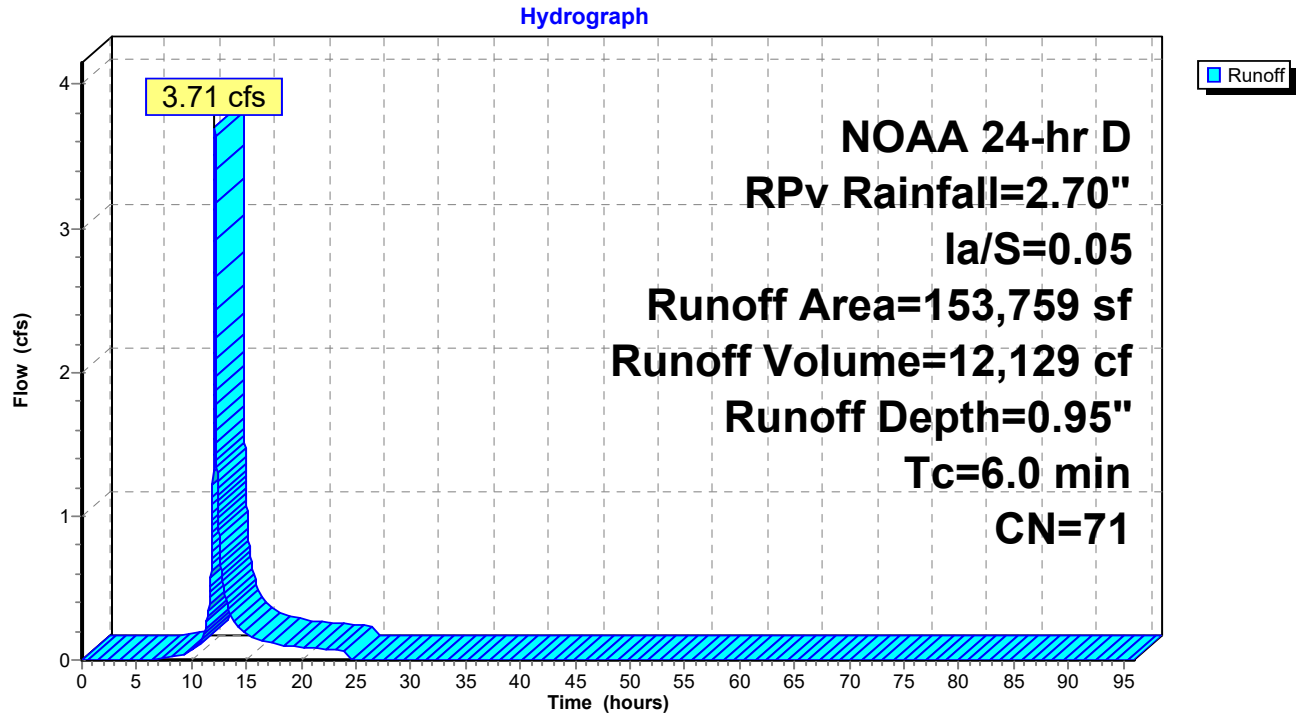
Runoff = 3.71 cfs @ 12.13 hrs, Volume= 12,129 cf, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 6,897 | 98 | Roof |
| * | 40,222 | 98 | Pavement |
| * | 4,998 | 98 | Sidewalk |
| * | 17,113 | 39 | Grass, HSG A |
| * | 29,223 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| * | 10,529 | 98 | Existing Roadway |
| * | 1,670 | 98 | Existing Driveway |
| * | 2,487 | 98 | Ex. Impervious (Undisturbed) |
| * | 26,157 | 39 | Grass, HSG A (Undisturbed) |
| * | 14,463 | 61 | Grass, HSG B (Undisturbed) |
| | 153,759 | 71 | Weighted Average |
| | 86,956 | | 56.55% Pervious Area |
| | 66,803 | | 43.45% Impervious Area |

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

## Subcatchment DA4: Managed



## Summary for Subcatchment DA5: Managed

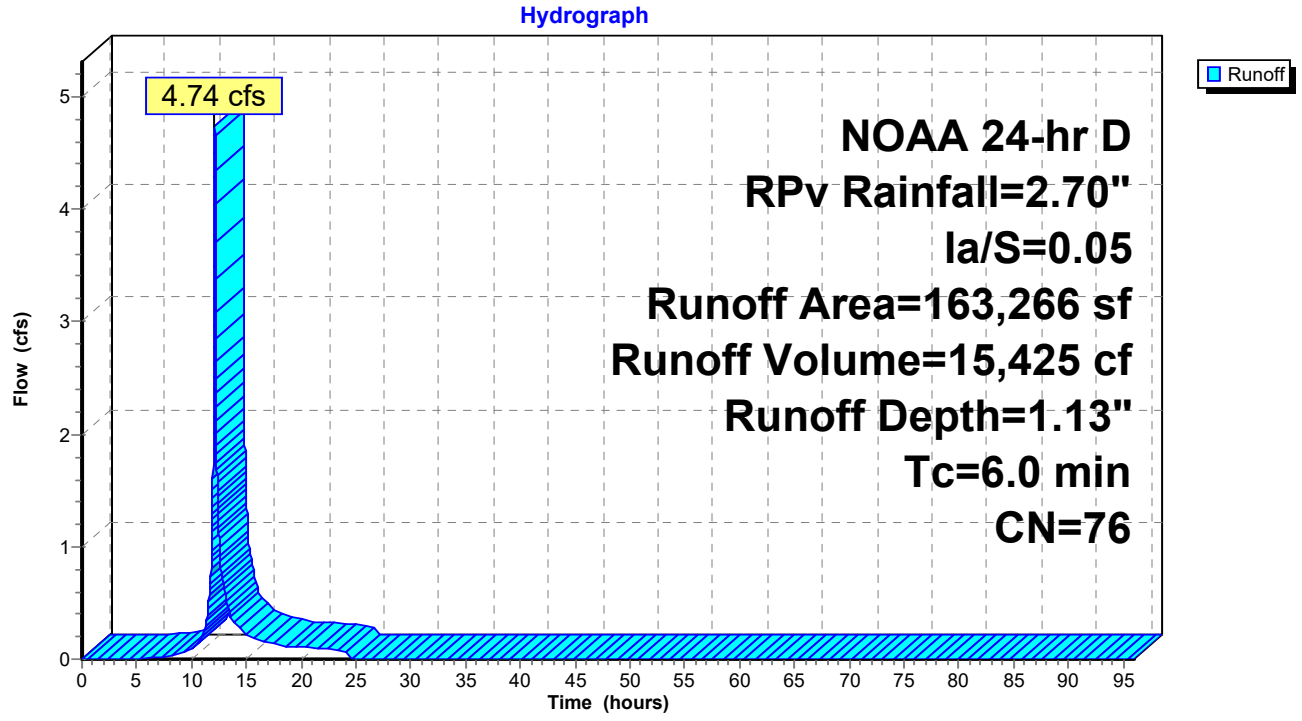
Runoff = 4.74 cfs @ 12.13 hrs, Volume= 15,425 cf, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,386 | 98 | Roof |
| * | 11,095 | 98 | Roof+ |
| * | 70,449 | 98 | Pavement |
| * | 8,116 | 98 | Sidewalk |
| * | 53,775 | 39 | Grass, HSG A |
| * | 9,445 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 163,266 | 76 | Weighted Average |
| | 63,220 | | 38.72% Pervious Area |
| | 100,046 | | 61.28% Impervious Area |

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

## Subcatchment DA5: Managed



## Summary for Subcatchment DA6a: Managed

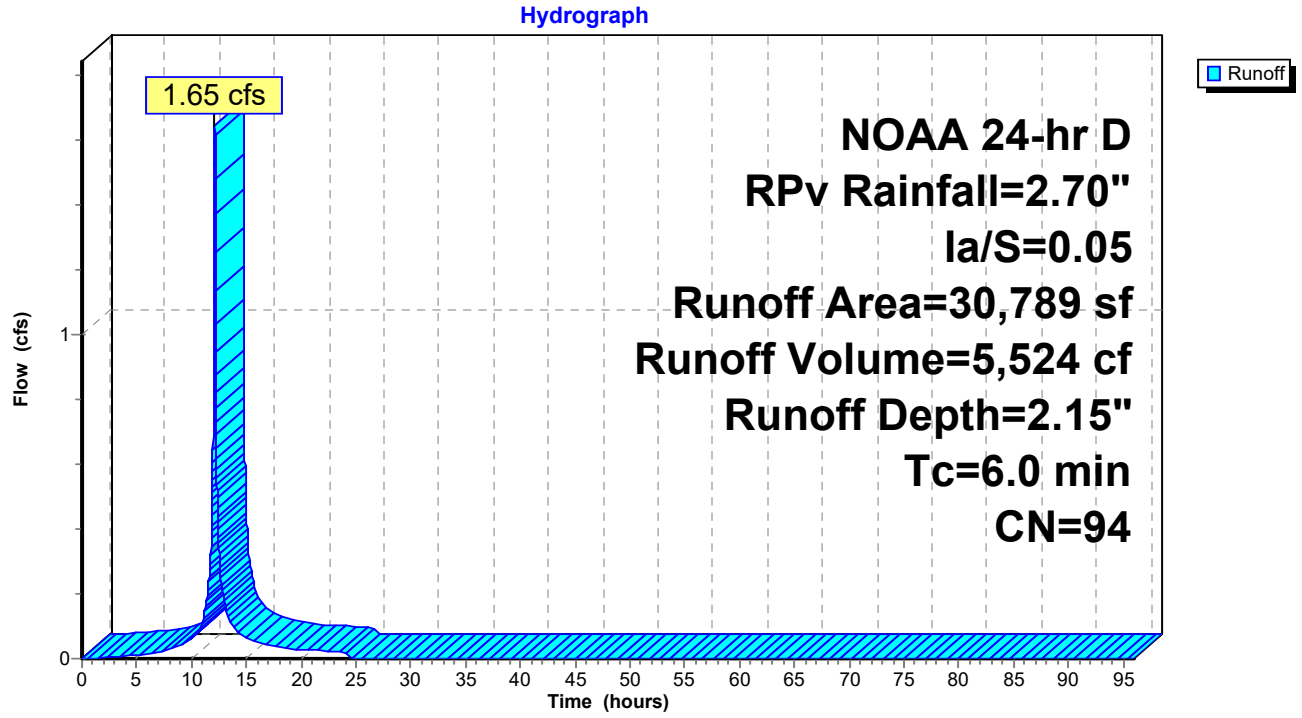
Runoff = 1.65 cfs @ 12.13 hrs, Volume= 5,524 cf, Depth= 2.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 1,985 | 98 | Roof |
| * | 24,381 | 98 | Pavement |
| * | 1,251 | 98 | Sidewalk |
| * | 609 | 39 | Grass, HSG A |
| * | 2,563 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 30,789 | 94 | Weighted Average |
| | 3,172 | | 10.30% Pervious Area |
| | 27,617 | | 89.70% Impervious Area |

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

## Subcatchment DA6a: Managed



## Summary for Subcatchment DA6b: Managed

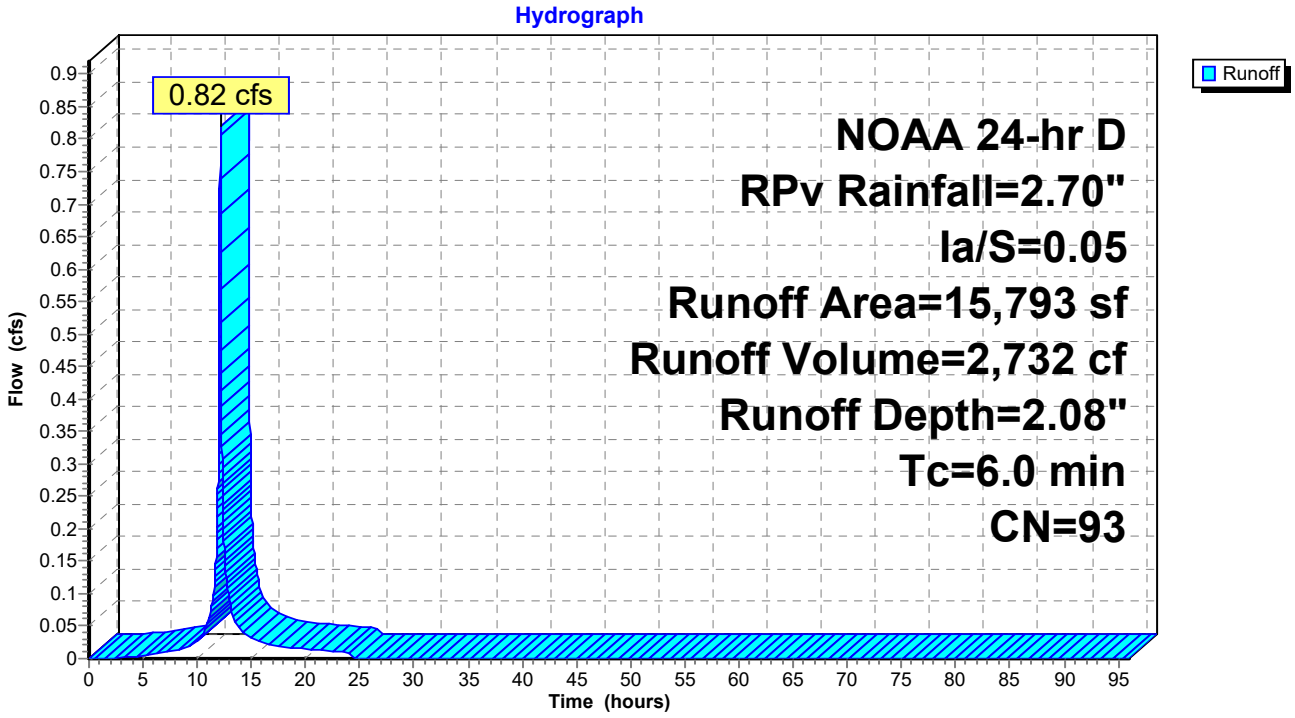
Runoff = 0.82 cfs @ 12.13 hrs, Volume= 2,732 cf, Depth= 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 4,320 | 98 | Roof |
| * | 9,409 | 98 | Pavement |
| * | 720 | 98 | Sidewalk |
| * | 1,344 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 15,793 | 93 | Weighted Average |
| | 1,344 | | 8.51% Pervious Area |
| | 14,449 | | 91.49% Impervious Area |

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

## Subcatchment DA6b: Managed



## Summary for Subcatchment DA7: Managed

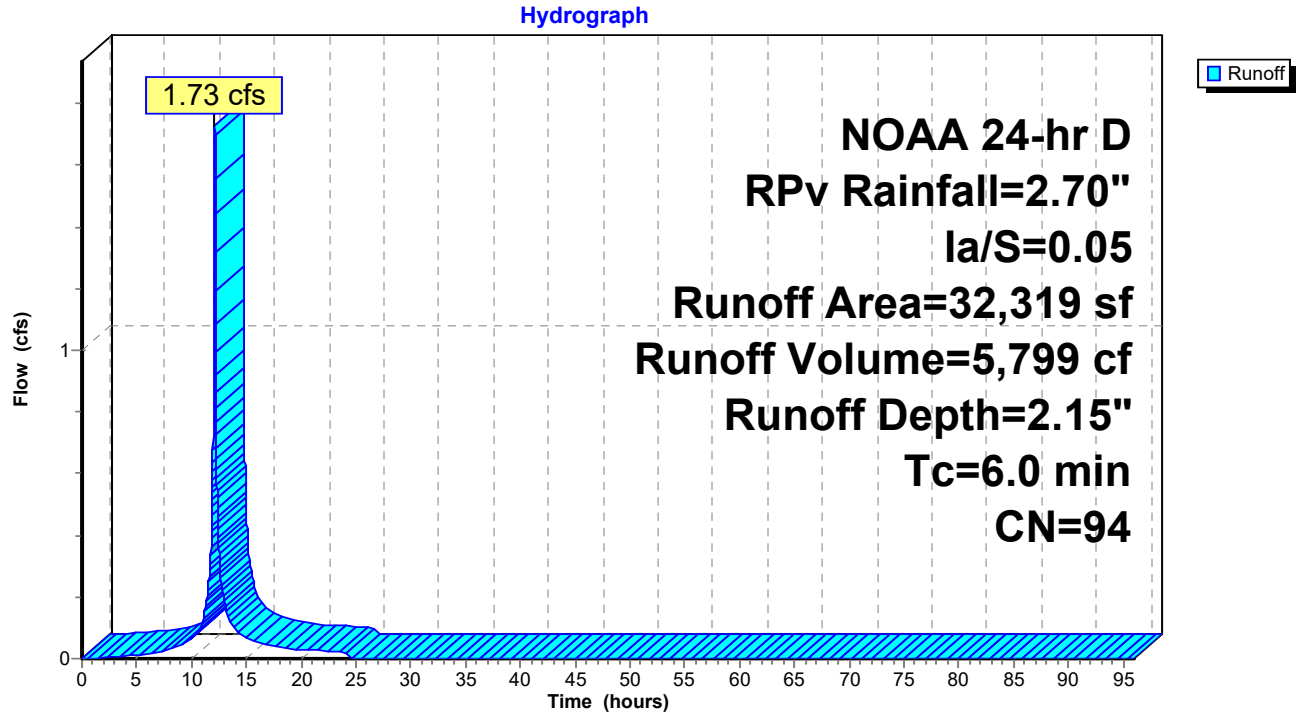
Runoff = 1.73 cfs @ 12.13 hrs, Volume= 5,799 cf, Depth= 2.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 7,045 | 98 | Roof |
| * | 19,833 | 98 | Pavement |
| * | 1,490 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 3,693 | 61 | Grass, HSG B |
| * | 258 | 74 | Grass, HSG C |
| | 32,319 | 94 | Weighted Average |
| | 3,951 | | 12.23% Pervious Area |
| | 28,368 | | 87.77% Impervious Area |

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

## Subcatchment DA7: Managed



## Summary for Subcatchment DA8: Managed

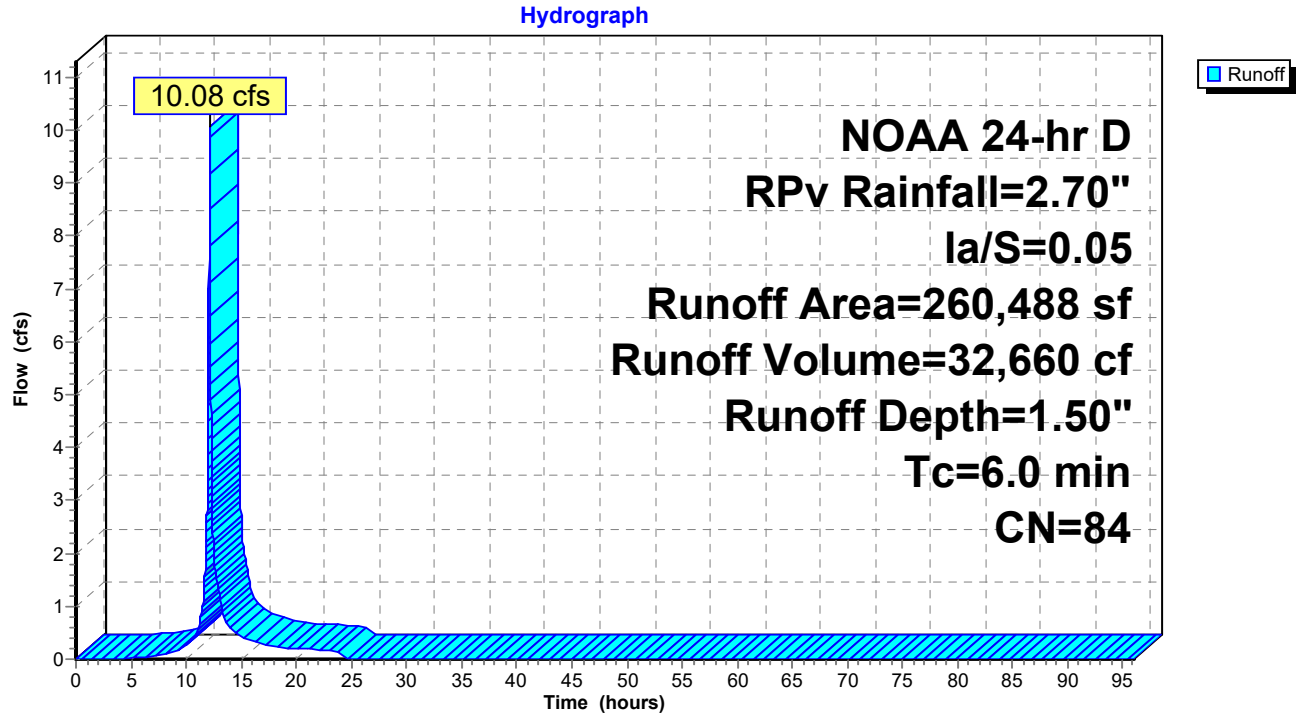
Runoff = 10.08 cfs @ 12.13 hrs, Volume= 32,660 cf, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 28,409 | 98 | Roof |
| * | 91,663 | 98 | Pavement |
| * | 13,109 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 68,342 | 61 | Grass, HSG B |
| * | 50,167 | 74 | Grass, HSG C |
| * | 8,798 | 98 | Ex.Roadway |
| | 260,488 | 84 | Weighted Average |
| | 118,509 | | 45.49% Pervious Area |
| | 141,979 | | 54.51% Impervious Area |

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

## Subcatchment DA8: Managed



## Summary for Subcatchment DA9: Managed

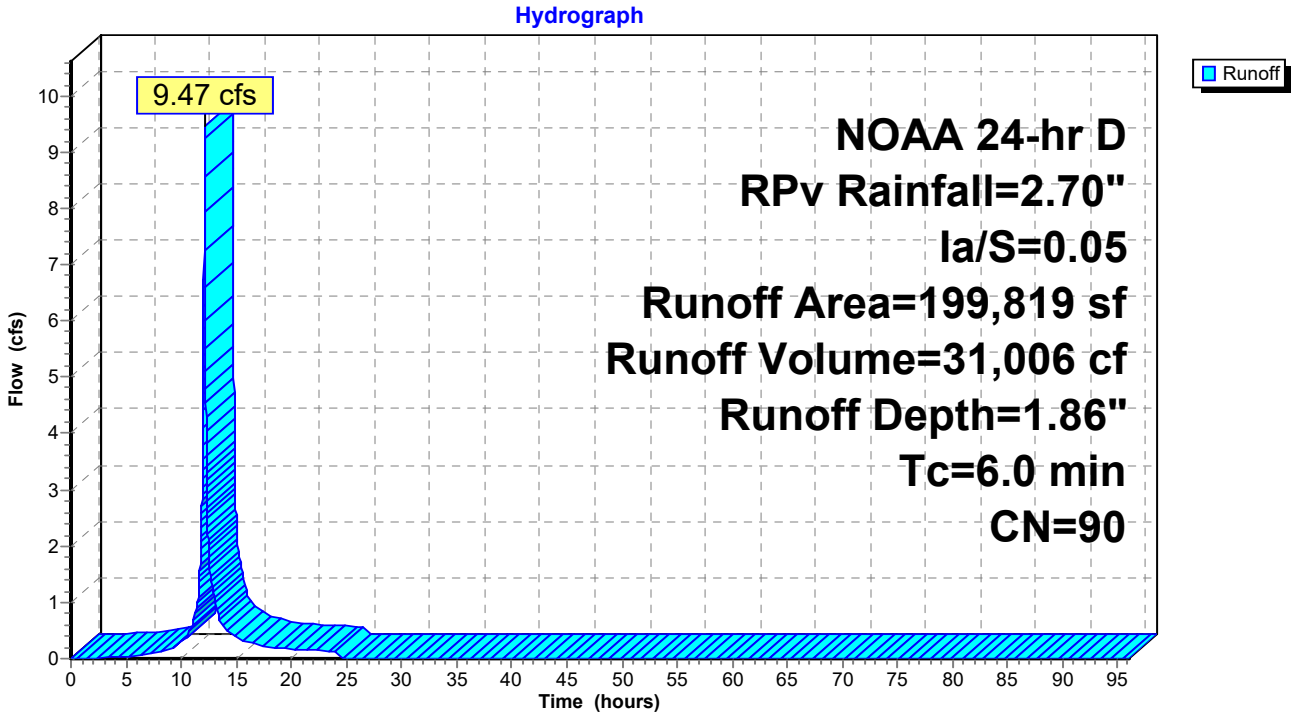
Runoff = 9.47 cfs @ 12.13 hrs, Volume= 31,006 cf, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 45,831 | 98 | Roof |
| * | 99,756 | 98 | Pavement |
| * | 11,069 | 98 | Sidewalk |
| * | 1,120 | 39 | Grass, HSG A |
| * | 42,043 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 199,819 | 90 | Weighted Average |
| | 43,163 | | 21.60% Pervious Area |
| | 156,656 | | 78.40% Impervious Area |

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

## Subcatchment DA9: Managed



## Summary for Pond #1: Drywell

Inflow Area = 145,962 sf, 86.44% Impervious, Inflow Depth = 0.51" for RPv event
Inflow = 1.82 cfs @ 12.13 hrs, Volume= 6,160 cf
Outflow = 0.39 cfs @ 11.98 hrs, Volume= 6,162 cf, Atten= 78%, Lag= 0.0 min
Discarded = 0.39 cfs @ 11.98 hrs, Volume= 6,162 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.41' @ 12.44 hrs Surf.Area= 6,800 sf Storage= 1,124 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 13.5 min ( 792.6 - 779.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 8,616 cf | **40.00'W x 170.00'L x 3.25'H Field A**<br>22,100 cf Overall - 560 cf Embedded = 21,540 cf x 40.0% Voids |
| #2 | 39.50' | 177 cf | **ADS_StormTech SC-310 +Cap** x 12 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>12 Chambers in 2 Rows |
| #3 | 39.50' | 383 cf | **ADS_StormTech SC-310 +Cap** x 26 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>26 Chambers in 2 Rows |
| #4 | 39.75' | 55 cf | **2.00'W x 2.83'L x 3.25'H CB #** x 3 -Impervious |
| #5 | 43.00' | 4,070 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 13,302 cf | Total Available Storage |

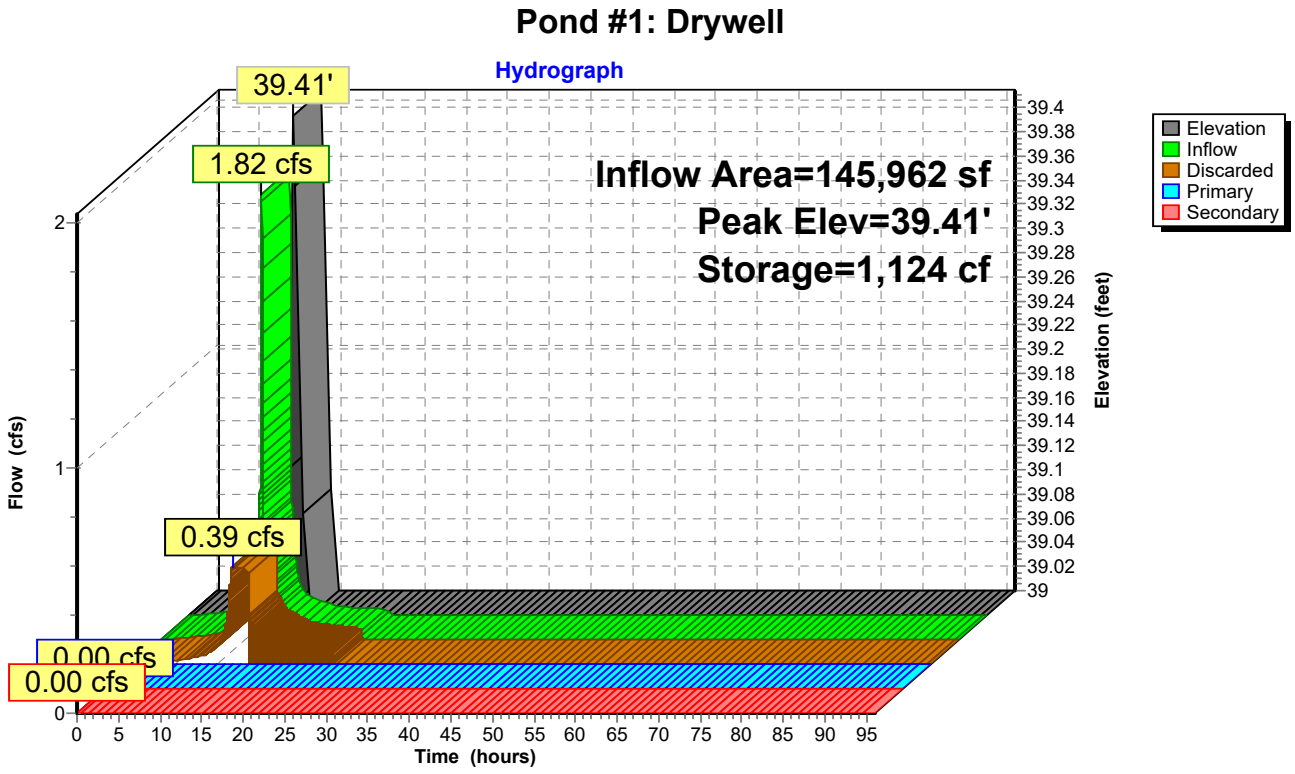
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.00 | 17 | 0 | 0 |
| 43.25 | 15,525 | 1,943 | 1,943 |
| 43.40 | 12,842 | 2,128 | 4,070 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **2.500 in/hr Exfiltration over Surface area** |
| #2 | Secondary | 43.50' | **134.0' long x 0.7' breadth Top of Curb**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50<br>Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32 |
| #3 | Primary | 41.50' | **12.0" Round Over Drain X 0.00** L= 50.0' Ke= 0.500<br>Inlet / Outlet Invert= 41.50' / 41.30' S= 0.0040 '/' Cc= 0.900<br>n= 0.012, Flow Area= 0.79 sf |

**Discarded OutFlow** Max=0.39 cfs @ 11.98 hrs HW=39.05' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.39 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=0.00' (Dynamic Tailwater)
└**3=Over Drain** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=0.00' (Dynamic Tailwater)
└**2=Top of Curb** ( Controls 0.00 cfs)



## Summary for Pond #10: Dry Pond

Inflow Area = 199,819 sf, 78.40% Impervious, Inflow Depth = 1.86" for RPv event
Inflow = 9.47 cfs @ 12.13 hrs, Volume= 31,006 cf
Outflow = 0.40 cfs @ 14.78 hrs, Volume= 31,010 cf, Atten= 96%, Lag= 159.2 min
Discarded = 0.40 cfs @ 14.78 hrs, Volume= 31,010 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 36.23' @ 14.78 hrs Surf.Area= 21,843 sf Storage= 15,229 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 354.8 min ( 1,156.5 - 801.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 35.50' | 117,567 cf | **Dry Pond (Prismatic)**Listed below (Recalc) |

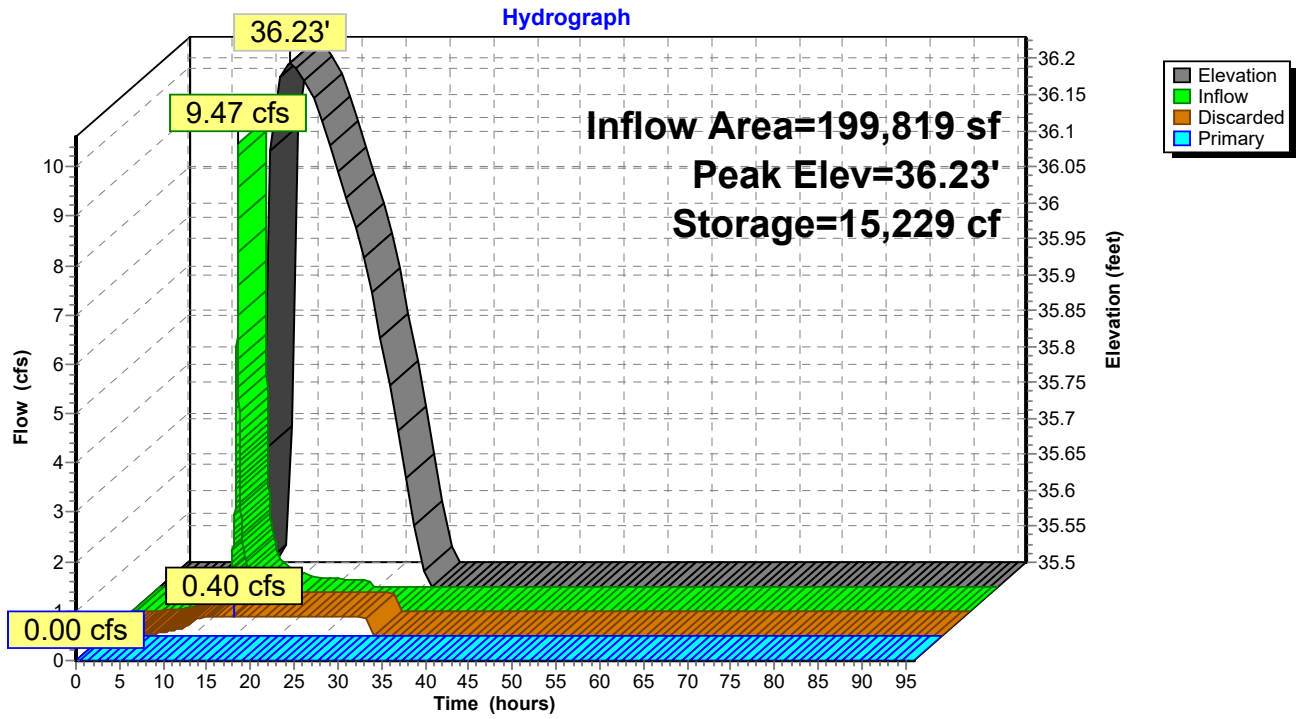
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 35.50 | 20,002 | 0 | 0 |
| 36.00 | 21,260 | 10,316 | 10,316 |
| 37.00 | 23,817 | 22,539 | 32,854 |
| 38.00 | 26,430 | 25,124 | 57,978 |
| 39.00 | 29,833 | 28,132 | 86,109 |
| 40.00 | 33,082 | 31,458 | 117,567 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 35.50' | **0.800 in/hr Exfiltration over Surface area** |
| #2 | Primary | 40.75' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.40 cfs @ 14.78 hrs HW=36.23' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.40 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=35.50' TW=36.70' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #10: Dry Pond



## Summary for Pond #11: Drywell

Inflow Area = 64,196 sf, 78.15% Impervious, Inflow Depth = 2.08" for RPv event
Inflow = 3.34 cfs @ 12.13 hrs, Volume= 11,104 cf
Outflow = 0.97 cfs @ 12.35 hrs, Volume= 11,104 cf, Atten= 71%, Lag= 13.2 min
Discarded = 0.04 cfs @ 9.09 hrs, Volume= 6,945 cf
Primary = 0.93 cfs @ 12.35 hrs, Volume= 4,159 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 37.64' @ 12.35 hrs Surf.Area= 5,600 sf Storage= 4,725 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 638.8 min ( 1,428.3 - 789.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.25' | 6,059 cf | **70.00'W x 80.00'L x 3.25'H Field A**<br>18,200 cf Overall - 3,052 cf Embedded = 15,148 cf x 40.0% Voids |
| #2 | 36.75' | 55 cf | **2.00'W x 2.83'L x 3.25'H CB #** x 3 -Impervious |
| #3 | 36.75' | 52 cf | **4.00'W x 4.00'L x 3.25'H CB #**-Impervious |
| #4 | 40.00' | 2,692 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #5 | 36.75' | 265 cf | **ADS_StormTech SC-310 +Cap** x 18 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>18 Chambers in 2 Rows |
| #6 | 36.75' | 2,786 cf | **ADS_StormTech SC-310 +Cap** x 189 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>189 Chambers in 21 Rows |
| | | 11,910 cf | Total Available Storage |

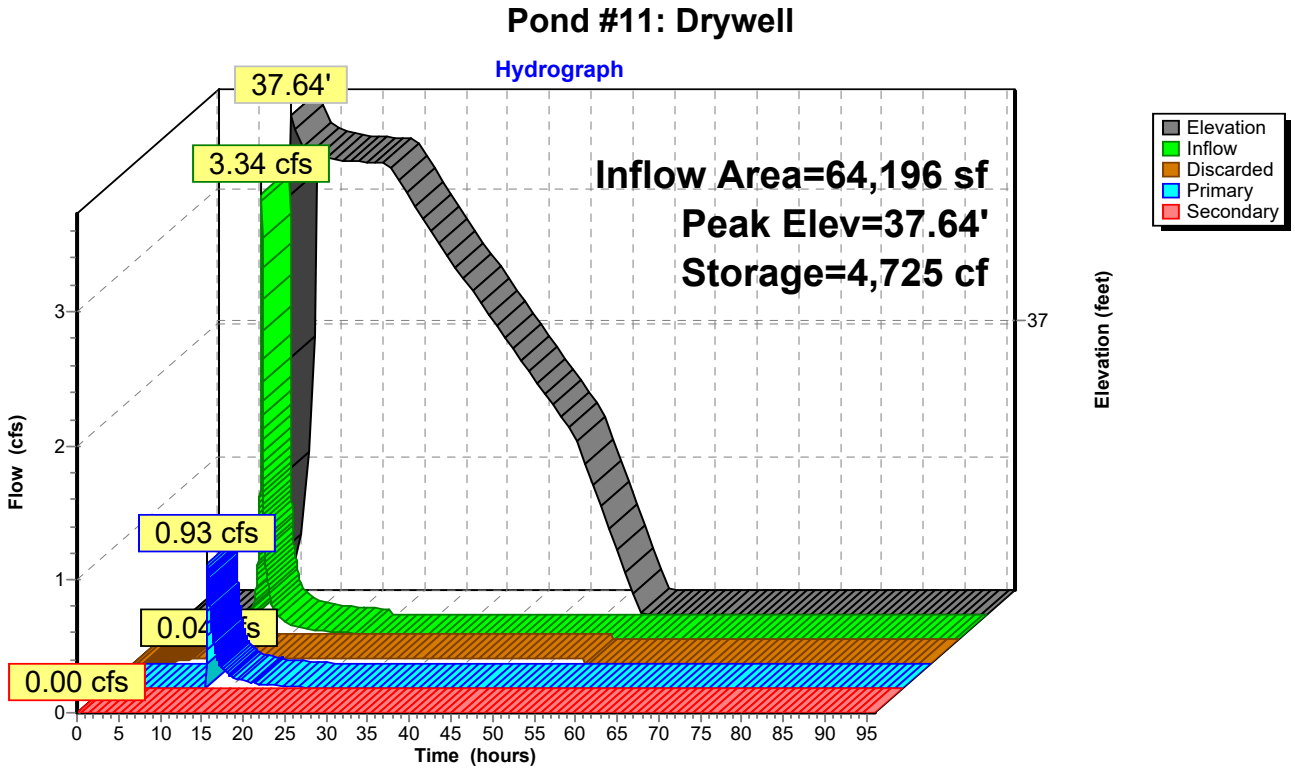
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 40.00 | 39 | 0 | 0 |
| 40.25 | 1,685 | 216 | 216 |
| 40.50 | 18,126 | 2,476 | 2,692 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 36.25' | **0.300 in/hr Exfiltration over Surface area** |
| #2 | Primary | 36.75' | **15.0" Round Culvert** L= 105.0' Ke= 0.500<br>Inlet / Outlet Invert= 36.75' / 36.00' S= 0.0071 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.23 sf |
| #3 | Device 2 | 37.50' | **5.5' long x 0.75' rise Outlet Weir** 2 End Contraction(s) |
| #4 | Secondary | 40.57' | **Roadway Crown, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |

**Discarded OutFlow** Max=0.04 cfs @ 9.09 hrs HW=36.30' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

**Primary OutFlow** Max=0.93 cfs @ 12.35 hrs HW=37.64' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.93 cfs of 2.83 cfs potential flow)
└**3=Outlet Weir** (Weir Controls 0.93 cfs @ 1.22 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=36.25' TW=0.00' (Dynamic Tailwater)
└**4=Roadway Crown** ( Controls 0.00 cfs)



## Summary for Pond #12a: Drywell

Inflow Area = 59,904 sf, 86.88% Impervious, Inflow Depth = 1.86" for RPv event
Inflow = 2.84 cfs @ 12.13 hrs, Volume= 9,295 cf
Outflow = 0.49 cfs @ 11.99 hrs, Volume= 9,300 cf, Atten= 83%, Lag= 0.0 min
Discarded = 0.49 cfs @ 11.99 hrs, Volume= 9,300 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.41' @ 12.59 hrs Surf.Area= 12,545 sf Storage= 2,063 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 23.1 min ( 824.8 - 801.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 16,644 cf | **65.00'W x 193.00'L x 3.50'H Field A**<br>43,908 cf Overall - 2,297 cf Embedded = 41,610 cf x 40.0% Voids |
| #2 | 39.50' | 2,297 cf | **SC-740 Isolator Row +Cap** x 50 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>50 Chambers in 2 Rows |
| #3 | 39.50' | 45 cf | **2.00'W x 2.83'L x 4.00'H CB#** x 2 -Impervious |
| #4 | 43.50' | 596 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 19,582 cf | Total Available Storage |

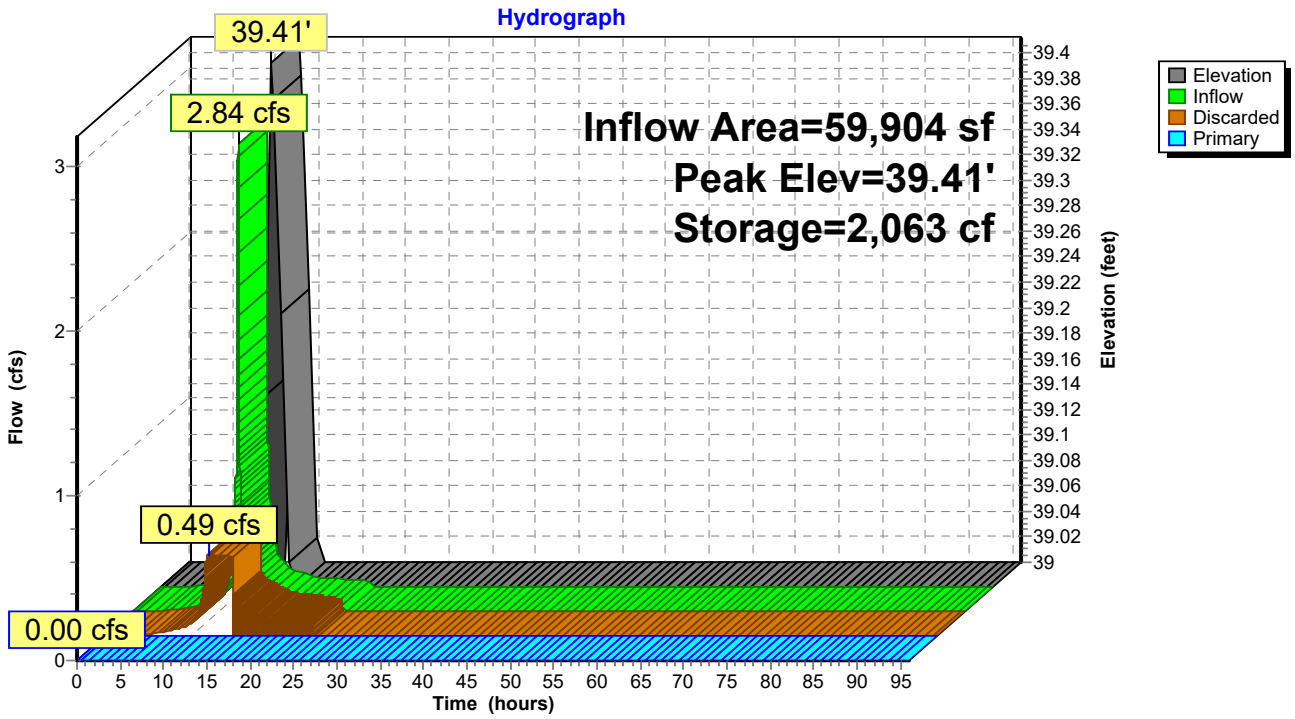
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.50 | 11 | 0 | 0 |
| 43.75 | 157 | 21 | 21 |
| 44.00 | 670 | 103 | 124 |
| 44.25 | 3,101 | 471 | 596 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **1.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 44.41' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.49 cfs @ 11.99 hrs HW=39.06' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.49 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=39.00' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #12a: Drywell



## Summary for Pond #12b: Drywell

Inflow Area = 110,054 sf, 88.16% Impervious, Inflow Depth = 0.91" for RPv event
Inflow = 2.53 cfs @ 12.13 hrs, Volume= 8,364 cf
Outflow = 0.46 cfs @ 11.99 hrs, Volume= 8,370 cf, Atten= 82%, Lag= 0.0 min
Discarded = 0.46 cfs @ 11.99 hrs, Volume= 8,370 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.38' @ 12.57 hrs Surf.Area= 11,780 sf Storage= 1,777 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 20.4 min ( 814.3 - 793.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 15,007 cf | **62.00'W x 190.00'L x 3.25'H Field A**<br>38,285 cf Overall - 767 cf Embedded = 37,518 cf x 40.0% Voids |
| #2 | 39.50' | 767 cf | **SC-310 Isolator Row+Cap** x 52 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>52 Chambers in 2 Rows |
| #3 | 39.70' | 22 cf | **2.00'W x 2.83'L x 3.80'H CB#**-Impervious |
| #4 | 43.50' | 122 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #5 | 40.00' | 17 cf | **2.00'W x 2.83'L x 3.00'H CB#**-Impervious |
| #6 | 43.00' | 300 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 16,234 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.50 | 6 | 0 | 0 |
| 43.75 | 75 | 10 | 10 |
| 44.00 | 203 | 35 | 45 |
| 44.25 | 417 | 78 | 122 |

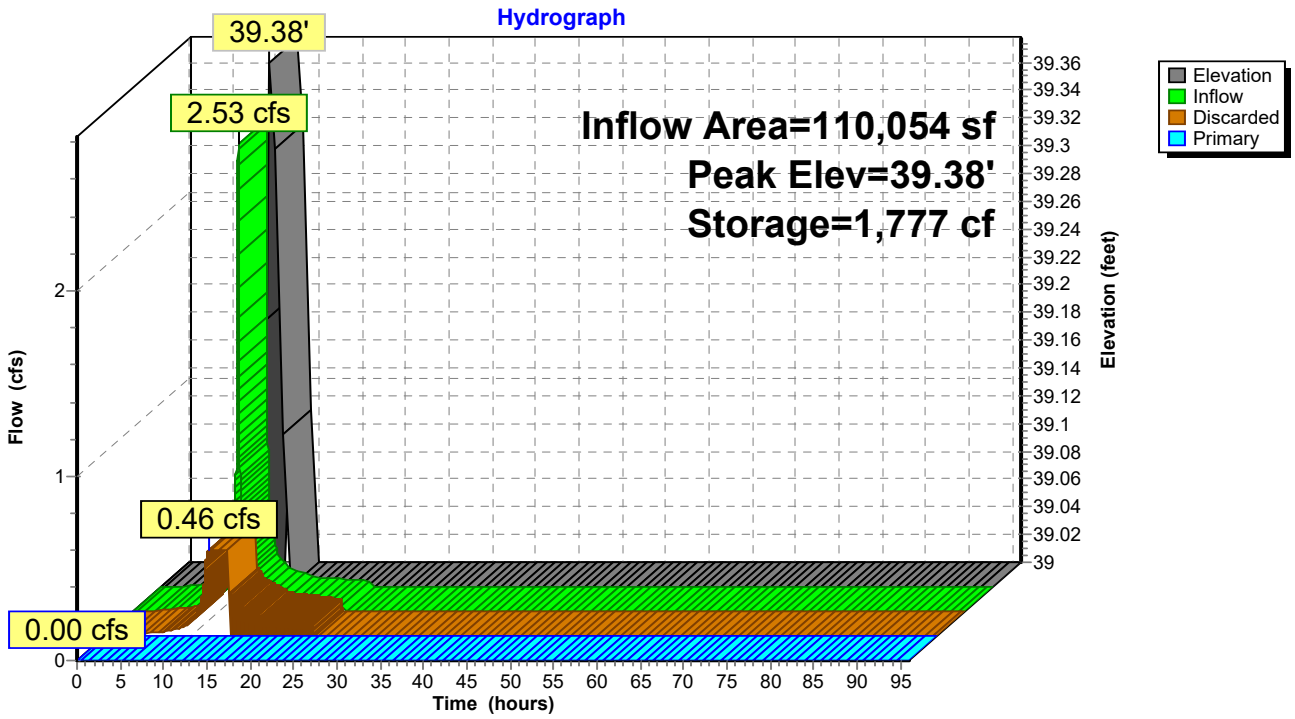
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.00 | 6 | 0 | 0 |
| 43.25 | 2,391 | 300 | 300 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **1.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.39' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.46 cfs @ 11.99 hrs HW=39.05' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.46 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=0.00' (Dynamic Tailwater)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #12b: Drywell



## Summary for Pond #13: Dry Pond

Inflow Area = 728,208 sf, 62.81% Impervious, Inflow Depth = 0.44" for RPv event
Inflow = 8.18 cfs @ 12.13 hrs, Volume= 26,501 cf
Outflow = 2.17 cfs @ 12.39 hrs, Volume= 26,502 cf, Atten= 73%, Lag= 15.2 min
Discarded = 2.17 cfs @ 12.39 hrs, Volume= 26,502 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 36.81' @ 12.39 hrs Surf.Area= 39,075 sf Storage= 4,115 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 8.6 min ( 828.4 - 819.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.70' | 50,581 cf | **Custom Stage Data (Prismatic)**Listed below (Recalc) |
| | | 50,581 cf | x 2.00 = 101,163 cf Total Available Storage |

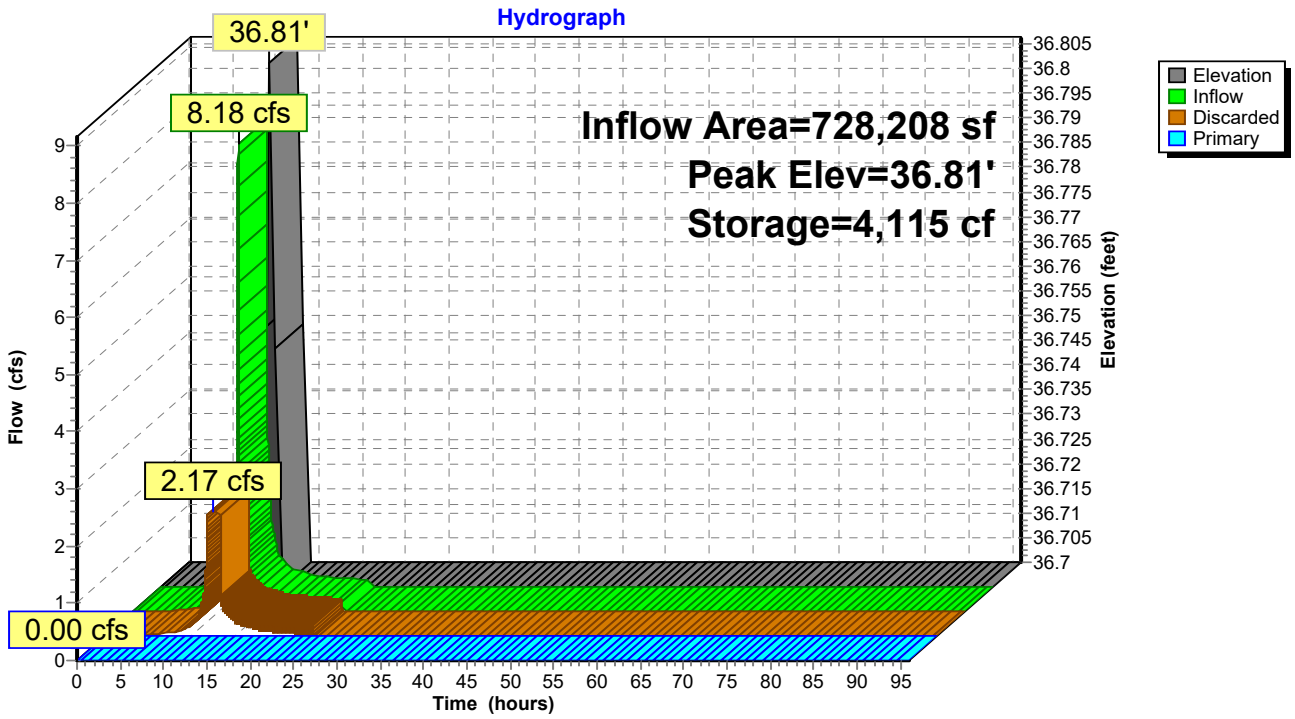
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 36.70 | 19,271 | 0 | 0 |
| 37.00 | 20,025 | 5,894 | 5,894 |
| 38.00 | 22,329 | 21,177 | 27,071 |
| 39.00 | 24,691 | 23,510 | 50,581 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 36.70' | **2.400 in/hr Exfiltration over Surface area** |
| #2 | Primary | 39.50' | **10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 |
| | | | Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=2.17 cfs @ 12.39 hrs HW=36.81' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 2.17 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=36.70' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #13: Dry Pond



## Summary for Pond #14: SGW

Inflow Area = 145,491 sf, 74.57% Impervious, Inflow Depth = 1.73" for RPv event
Inflow = 6.46 cfs @ 12.13 hrs, Volume= 21,018 cf
Outflow = 2.24 cfs @ 12.30 hrs, Volume= 21,018 cf, Atten= 65%, Lag= 10.3 min
Primary = 2.24 cfs @ 12.30 hrs, Volume= 21,018 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 40.17' Surf.Area= 6,915 sf Storage= 5,556 cf
Peak Elev= 41.18' @ 12.30 hrs Surf.Area= 10,513 sf Storage= 11,212 cf (5,657 cf above start)

Plug-Flow detention time= 222.5 min calculated for 15,463 cf (74% of inflow)
Center-of-Mass det. time= 48.7 min ( 857.2 - 808.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 37.83' | 24,299 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

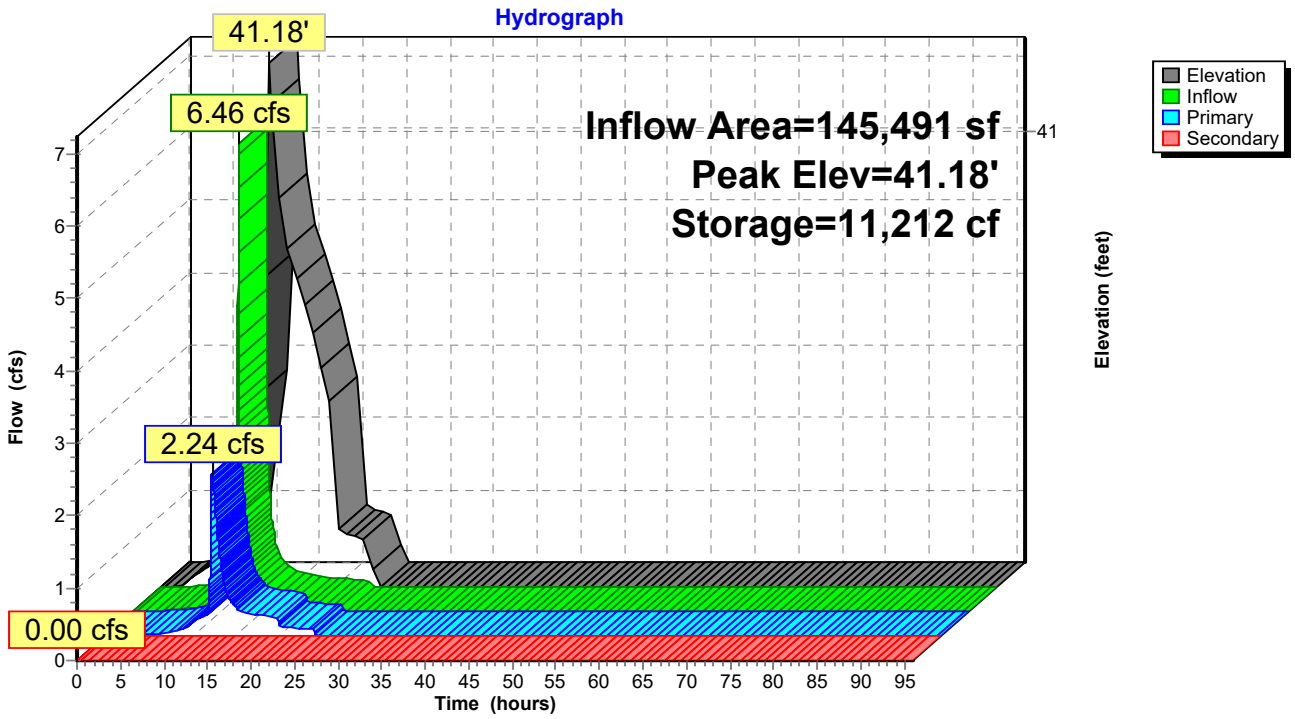
| Elevation (feet) | Surf.Area (sq-ft) | Voids (%) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|---|
| 37.83 | 6,915 | 0.0 | 0 | 0 |
| 39.83 | 6,915 | 40.0 | 5,532 | 5,532 |
| 40.50 | 6,915 | 1.0 | 46 | 5,578 |
| 41.00 | 8,691 | 100.0 | 3,902 | 9,480 |
| 41.50 | 13,739 | 100.0 | 5,608 | 15,087 |
| 42.00 | 23,108 | 100.0 | 9,212 | 24,299 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 40.00' | **15.0" Round Culvert** L= 66.0' Ke= 0.500<br>Inlet / Outlet Invert= 40.00' / 39.74' S= 0.0039 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.23 sf |
| #2 | Device 1 | 40.17' | **4.0" Horiz. Under Drain Rim** C= 0.600<br>Limited to weir flow at low heads |
| #3 | Device 1 | 40.75' | **24.0" W x 12.0" H Vert. Low Flow Weir** C= 0.600<br>Limited to weir flow at low heads |
| #4 | Device 1 | 41.75' | **24.0" x 34.0" Horiz. Top of Inlet** C= 0.600<br>Limited to weir flow at low heads |
| #5 | Secondary | 41.50' | **20.0' long x 6.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83 |

**Primary OutFlow** Max=2.24 cfs @ 12.30 hrs HW=41.18' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 2.24 cfs of 3.49 cfs potential flow)
  ├─**2=Under Drain Rim** (Orifice Controls 0.42 cfs @ 4.84 fps)
  ├─**3=Low Flow Weir** (Orifice Controls 1.81 cfs @ 2.11 fps)
  └─**4=Top of Inlet** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=40.17' TW=37.05' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #14: SGW


Hydrograph
41.18'
6.46 cfs
2.24 cfs
0.00 cfs
Inflow Area=145,491 sf
Peak Elev=41.18'
Storage=11,212 cf
Flow (cfs)
Time (hours)
Elevation (feet)
Elevation
Inflow
Primary
Secondary

## Summary for Pond #2: Drywell

Inflow Area = 112,875 sf, 84.89% Impervious, Inflow Depth = 2.00" for RPv event
Inflow = 5.70 cfs @ 12.13 hrs, Volume= 18,826 cf
Outflow = 0.57 cfs @ 11.87 hrs, Volume= 18,828 cf, Atten= 90%, Lag= 0.0 min
Discarded = 0.57 cfs @ 11.87 hrs, Volume= 18,828 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 38.55' @ 13.08 hrs Surf.Area= 24,750 sf Storage= 5,996 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 71.9 min ( 865.8 - 793.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 38.00' | 28,989 cf | **150.00'W x 165.00'L x 3.50'H Field A**<br>86,625 cf Overall - 14,152 cf Embedded = 72,473 cf x 40.0% Voids |
| #2 | 38.50' | 14,152 cf | **ADS_StormTech RC-310 +Cap** x 960 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>960 Chambers in 48 Rows |
| #3 | 42.00' | 5,253 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #4 | 38.50' | 79 cf | **2.00'W x 2.83'L x 3.50'H CB #** x 4 -Impervious |
| | | 48,474 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 42.00 | 23 | 0 | 0 |
| 42.25 | 194 | 27 | 27 |
| 42.50 | 528 | 90 | 117 |
| 42.75 | 5,743 | 784 | 901 |
| 43.00 | 29,071 | 4,352 | 5,253 |

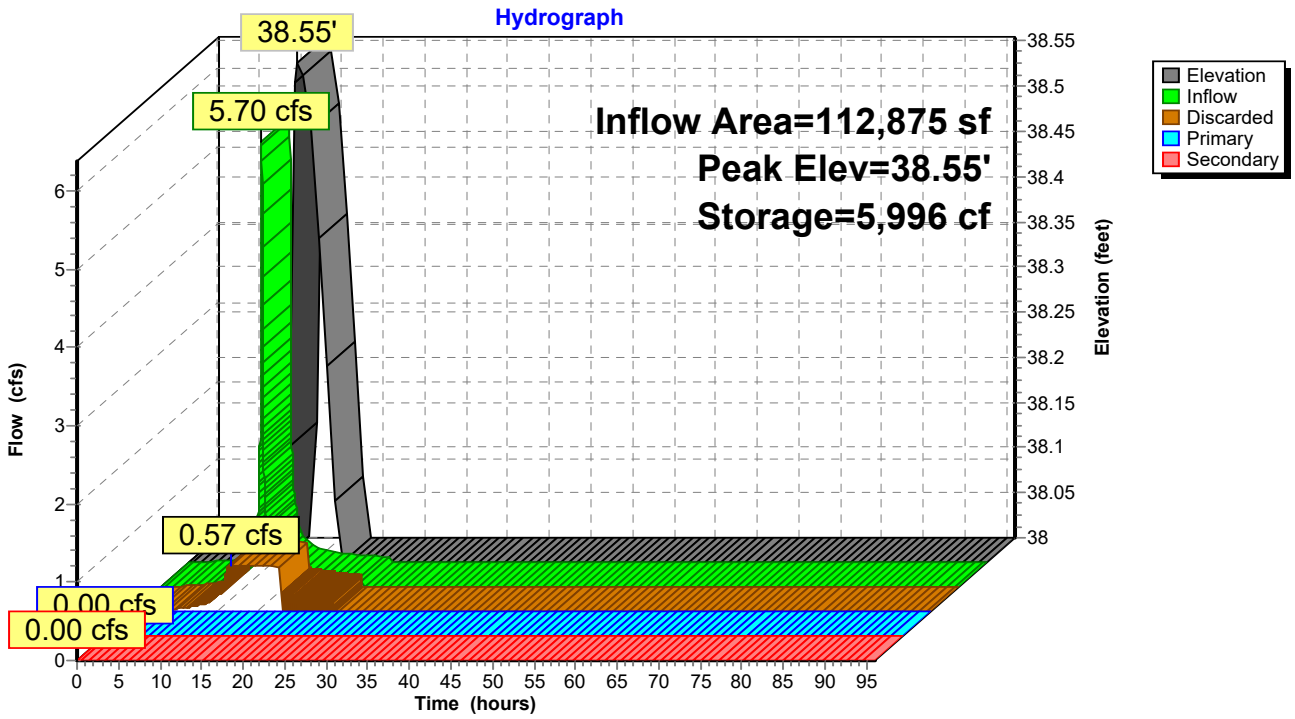
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 38.00' | **1.000 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.41' | **Asymmetrical Weir, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |
| #3 | Secondary | 43.46' | **Asymmetrical Weir, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |

**Discarded OutFlow** Max=0.57 cfs @ 11.87 hrs HW=38.06' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.57 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=39.00' (Dynamic Tailwater)
↑**2=Asymmetrical Weir** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=38.00' (Dynamic Tailwater)
↑**3=Asymmetrical Weir** ( Controls 0.00 cfs)

## Pond #2: Drywell



## Summary for Pond #3: Drywell

Inflow Area = 134,266 sf, 86.16% Impervious, Inflow Depth = 2.00" for RPv event
Inflow = 6.78 cfs @ 12.13 hrs, Volume= 22,393 cf
Outflow = 0.41 cfs @ 11.62 hrs, Volume= 22,400 cf, Atten= 94%, Lag= 0.0 min
Discarded = 0.41 cfs @ 11.62 hrs, Volume= 22,400 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 38.64' @ 13.73 hrs Surf.Area= 29,415 sf Storage= 9,305 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 190.6 min ( 984.5 - 793.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 38.00' | 26,848 cf | **265.00'W x 111.00'L x 3.50'H Field A**<br>102,953 cf Overall - 35,833 cf Embedded = 67,119 cf x 40.0% Voids |
| #2 | 38.50' | 42 cf | **2.00'W x 2.83'L x 3.75'H CB #** x 2 -Impervious |
| #3 | 38.50' | 120 cf | **4.00'W x 4.00'L x 3.75'H CB #** x 2 -Impervious |
| #4 | 42.25' | 2,419 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #5 | 38.50' | 35,833 cf | **ADS_StormTech SC-740 +Cap** x 780 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>780 Chambers in 52 Rows |
| | | 65,262 cf | Total Available Storage |

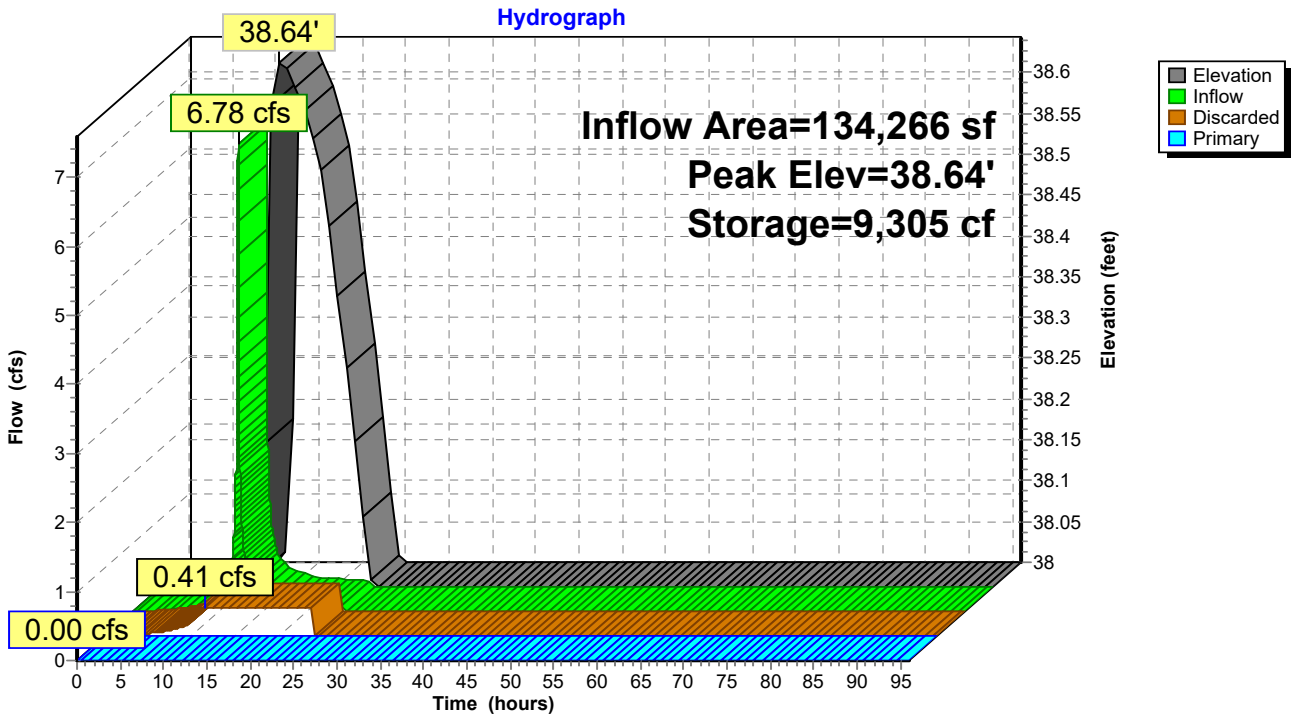
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 42.25 | 43 | 0 | 0 |
| 42.50 | 874 | 115 | 115 |
| 42.75 | 17,561 | 2,304 | 2,419 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 38.00' | **0.600 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.00' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.41 cfs @ 11.62 hrs HW=38.05' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=0.00' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #3: Drywell



## Summary for Pond #4: Drywell

Inflow Area = 153,759 sf, 43.45% Impervious, Inflow Depth = 0.95" for RPv event
Inflow = 3.71 cfs @ 12.13 hrs, Volume= 12,129 cf
Outflow = 0.35 cfs @ 11.86 hrs, Volume= 12,133 cf, Atten= 91%, Lag= 0.0 min
Discarded = 0.35 cfs @ 11.86 hrs, Volume= 12,133 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.86' @ 13.41 hrs Surf.Area= 8,775 sf Storage= 4,044 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 93.3 min ( 940.2 - 846.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 9,563 cf | **45.00'W x 195.00'L x 3.25'H Drywell**<br>28,519 cf Overall - 4,611 cf Embedded = 23,908 cf x 40.0% Voids |
| #2 | 40.00' | 369 cf | **ADS_StormTech SC-310 +Cap** x 25 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap |
| #3 | 39.50' | 4,216 cf | **ADS_StormTech SC-310 +Cap** x 286 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>286 Chambers in 11 Rows |
| #4 | 40.00' | 13 cf | **2.00'W x 2.83'L x 2.25'H CB #1** Inside #1<br>26 cf Overall - 6.0" Wall Thickness = 13 cf |
| #5 | 42.25' | 5 cf | **2.00'W x 2.83'L x 0.90'H CB #1** |
| #6 | 43.15' | 3,594 cf | **#1 Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 17,760 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.15 | 6 | 0 | 0 |
| 43.25 | 175 | 9 | 9 |
| 43.50 | 2,939 | 389 | 398 |
| 43.75 | 6,476 | 1,177 | 1,575 |
| 44.00 | 9,673 | 2,019 | 3,594 |

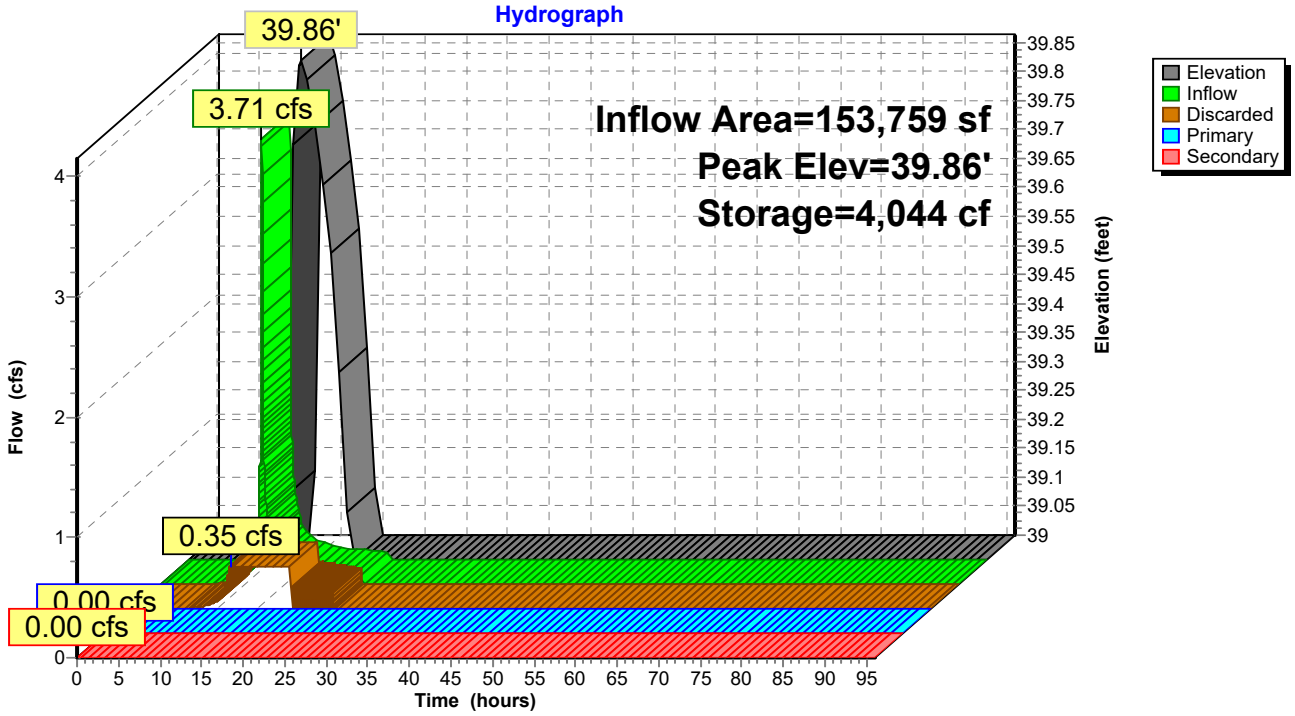
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **1.700 in/hr Exfiltration over Surface area** |
| #2 | Secondary | 44.11' | **Asymmetrical Weir, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.30 0.50 |
| #3 | Primary | 40.01' | **12.0" Vert. 12" Over Drain** C= 0.600<br>Limited to weir flow at low heads |
| #4 | Primary | 40.01' | **18.0" Vert. 15" Over Drain** C= 0.600<br>Limited to weir flow at low heads |

**Discarded OutFlow** Max=0.35 cfs @ 11.86 hrs HW=39.06' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.35 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=38.50' (Dynamic Tailwater)
└**3=12" Over Drain** ( Controls 0.00 cfs)
└**4=15" Over Drain** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=38.50' (Dynamic Tailwater)
└**2=Asymmetrical Weir** ( Controls 0.00 cfs)

## Pond #4: Drywell



## Summary for Pond #5: Dry Pond

Inflow Area = 317,025 sf, 52.63% Impervious, Inflow Depth = 0.58" for RPv event
Inflow = 4.74 cfs @ 12.13 hrs, Volume= 15,425 cf
Outflow = 0.62 cfs @ 12.96 hrs, Volume= 15,432 cf, Atten= 87%, Lag= 49.5 min
Discarded = 0.62 cfs @ 12.96 hrs, Volume= 15,432 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 38.84' @ 12.96 hrs Surf.Area= 12,807 sf Storage= 4,217 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 46.7 min ( 884.2 - 837.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 38.50' | 100,215 cf | **Dry Pond (Prismatic)**Listed below (Recalc) |
| #2 | 39.50' | 58 cf | **4.00'W x 4.00'L x 3.65'H CB #**-Impervious |
| #3 | 43.15' | 1,793 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #4 | 38.50' | 280 cf | **24.0" Round Culvert**-Impervious<br>L= 89.0' S= 0.0112 '/' |
| | | 102,345 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 38.50 | 12,091 | 0 | 0 |
| 39.00 | 13,149 | 6,310 | 6,310 |
| 40.00 | 15,319 | 14,234 | 20,544 |
| 41.00 | 17,557 | 16,438 | 36,982 |
| 42.00 | 19,866 | 18,712 | 55,694 |
| 43.00 | 22,243 | 21,055 | 76,748 |
| 44.00 | 24,690 | 23,467 | 100,215 |

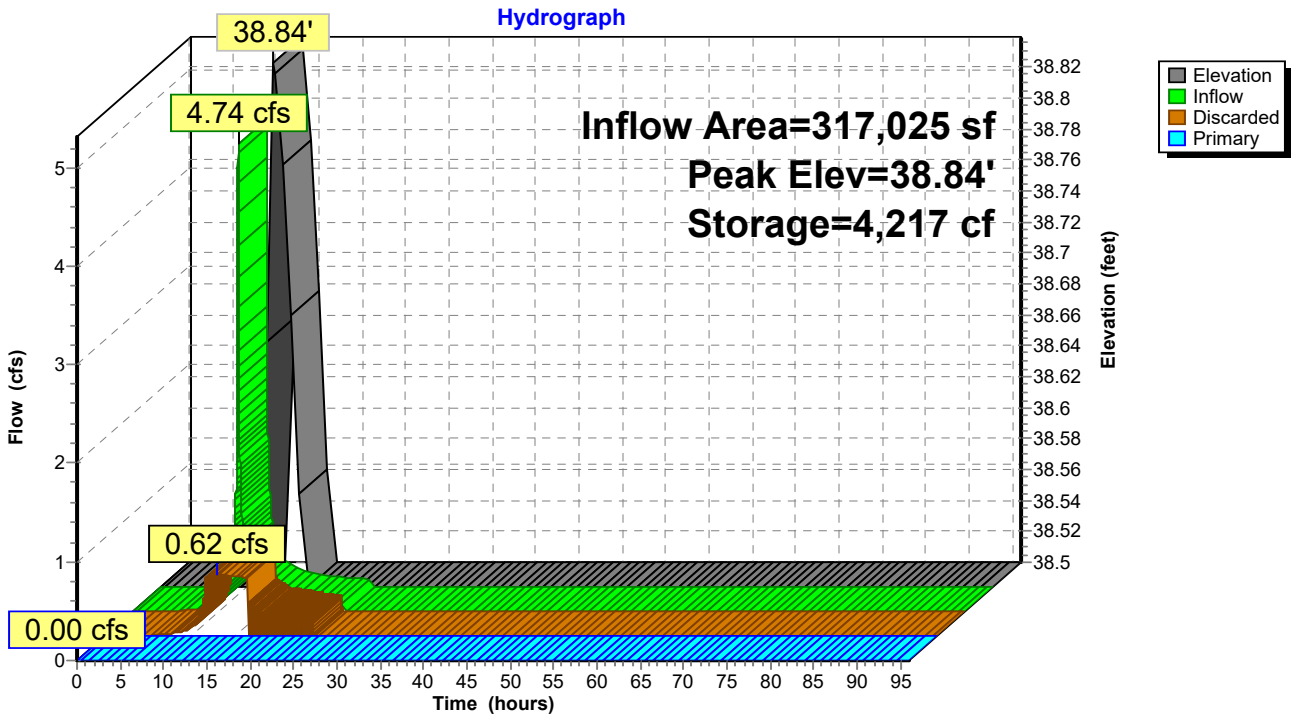
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.15 | 6 | 0 | 0 |
| 43.25 | 151 | 8 | 8 |
| 43.50 | 1,336 | 186 | 194 |
| 43.75 | 3,192 | 566 | 760 |
| 44.00 | 5,073 | 1,033 | 1,793 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 38.50' | **2.100 in/hr Exfiltration over Surface area** |
| #2 | Primary | 45.72' | **Top of Curb, C= 3.27**<br>Offset (feet) 0.00 9.59 19.17 24.92 30.87 40.79 50.71<br>Height (feet) 0.13 0.07 0.02 0.00 0.02 0.07 0.13 |

**Discarded OutFlow** Max=0.62 cfs @ 12.96 hrs HW=38.84' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.62 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.50' TW=36.70' (Dynamic Tailwater)
↑**2=Top of Curb** ( Controls 0.00 cfs)

## Pond #5: Dry Pond



## Summary for Pond #6a: Drywell

Inflow Area = 46,582 sf, 90.31% Impervious, Inflow Depth = 1.42" for RPv event
Inflow = 1.65 cfs @ 12.13 hrs, Volume= 5,524 cf
Outflow = 0.19 cfs @ 11.89 hrs, Volume= 5,525 cf, Atten= 88%, Lag= 0.0 min
Discarded = 0.19 cfs @ 11.89 hrs, Volume= 5,525 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 41.47' @ 12.90 hrs Surf.Area= 8,400 sf Storage= 1,582 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 51.4 min ( 836.0 - 784.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 41.00' | 10,694 cf | **48.00'W x 175.00'L x 3.25'H Field A**<br>27,300 cf Overall - 564 cf Embedded = 26,736 cf x 40.0% Voids |
| #2 | 41.50' | 501 cf | **ADS_StormTech SC-310 +Cap** x 34 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>34 Chambers in 2 Rows |
| #3 | 41.50' | 38 cf | **2.50'W x 5.50'L x 2.75'H CB #** Inside #1<br>63 cf Overall - 6.0" Wall Thickness = 38 cf |
| #4 | 44.25' | 7 cf | **2.50'W x 5.50'L x 0.50'H CB #**-Impervious |
| #5 | 44.75' | 7,658 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 18,898 cf | Total Available Storage |

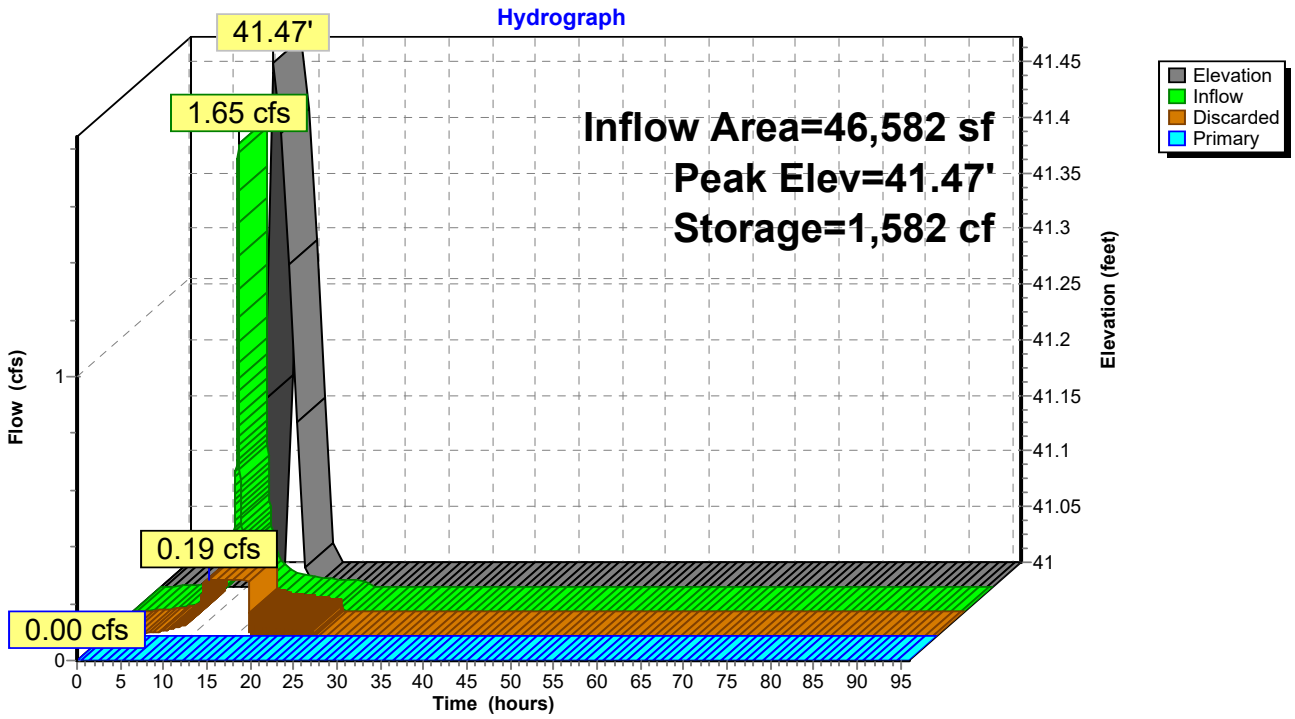
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 44.75 | 16 | 0 | 0 |
| 45.00 | 141 | 20 | 20 |
| 45.25 | 5,306 | 681 | 701 |
| 45.50 | 14,035 | 2,418 | 3,118 |
| 45.75 | 22,283 | 4,540 | 7,658 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 41.00' | **1.000 in/hr Exfiltration over Surface area** |
| #2 | Primary | 45.72' | **Top of Curb, C= 3.27**<br>Offset (feet) 0.00 9.59 19.17 24.92 30.87 40.79 50.71<br>Height (feet) 0.13 0.07 0.02 0.00 0.02 0.07 0.13 |

**Discarded OutFlow** Max=0.19 cfs @ 11.89 hrs HW=41.05' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.19 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=41.00' TW=0.00' (Dynamic Tailwater)
↑—**2=Top of Curb** ( Controls 0.00 cfs)

## Pond #6a: Drywell



## Summary for Pond #6b: Drywell

Inflow Area = 15,793 sf, 91.49% Impervious, Inflow Depth = 2.08" for RPv event
Inflow = 0.82 cfs @ 12.13 hrs, Volume= 2,732 cf
Outflow = 0.03 cfs @ 11.75 hrs, Volume= 2,732 cf, Atten= 96%, Lag= 0.0 min
Discarded = 0.03 cfs @ 11.75 hrs, Volume= 2,732 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.97' @ 14.81 hrs Surf.Area= 7,200 sf Storage= 1,342 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 362.3 min ( 1,151.8 - 789.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.50' | 8,528 cf | **60.00'W x 120.00'L x 3.00'H Field A**<br>21,600 cf Overall - 279 cf Embedded = 21,321 cf x 40.0% Voids |
| #2 | 40.00' | 206 cf | **ADS_StormTech SC-310 +Cap** x 14 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>14 Chambers in 2 Rows |
| #3 | 40.00' | 44 cf | **ADS_StormTech SC-310 +Cap** x 3 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap |
| #4 | 40.00' | 14 cf | **2.00'W x 2.83'L x 2.50'H CB #** Inside #1<br>29 cf Overall - 6.0" Wall Thickness = 14 cf |
| #5 | 42.50' | 16 cf | **2.00'W x 2.83'L x 2.88'H CB #**-Impervious |
| #6 | 45.38' | 1,144 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 9,953 cf | Total Available Storage |

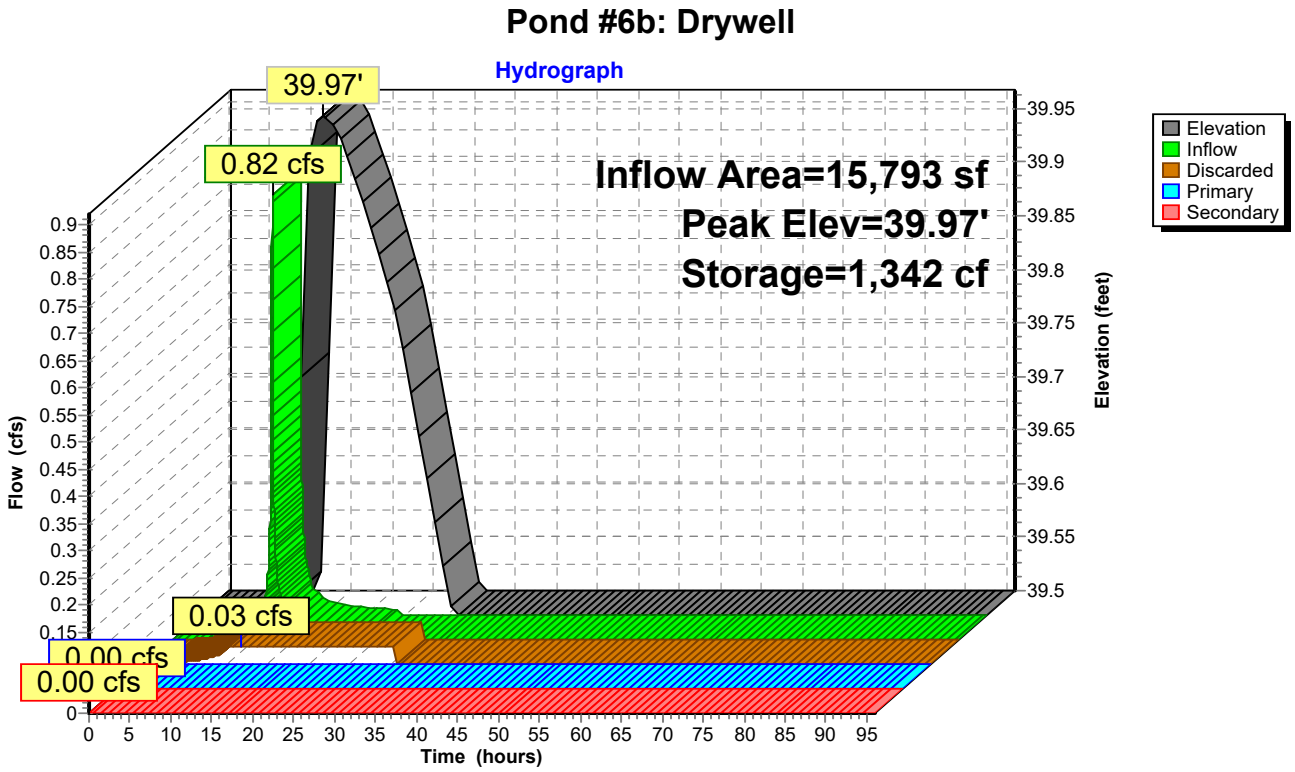
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 45.38 | 6 | 0 | 0 |
| 45.50 | 733 | 44 | 44 |
| 45.75 | 8,064 | 1,100 | 1,144 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.50' | **0.200 in/hr Exfiltration over Surface area** |
| #2 | Primary | 45.74' | **Weir Outlet, C= 3.27**<br>Offset (feet) 0.00 20.00 28.00<br>Height (feet) 0.04 0.00 0.04 |
| #3 | Secondary | 45.74' | **Weir Outlet, C= 3.27**<br>Offset (feet) 0.00 20.00 28.00<br>Height (feet) 0.04 0.00 0.04 |

**Discarded OutFlow** Max=0.03 cfs @ 11.75 hrs HW=39.56' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.50' TW=41.00' (Dynamic Tailwater)
└**2=Weir Outlet** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.50' TW=38.50' (Dynamic Tailwater)
└**3=Weir Outlet** ( Controls 0.00 cfs)



## Summary for Pond #7: Drywell

Inflow Area = 232,138 sf, 79.70% Impervious, Inflow Depth = 0.30" for RPv event
Inflow = 1.73 cfs @ 12.13 hrs, Volume= 5,799 cf
Outflow = 0.30 cfs @ 12.05 hrs, Volume= 5,802 cf, Atten= 82%, Lag= 0.0 min
Discarded = 0.30 cfs @ 12.05 hrs, Volume= 5,802 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 36.31' @ 12.58 hrs Surf.Area= 10,125 sf Storage= 1,258 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 21.9 min ( 806.5 - 784.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.00' | 16,584 cf | **45.00'W x 225.00'L x 6.00'H Field A**<br>60,750 cf Overall - 19,291 cf Embedded = 41,459 cf x 40.0% Voids |
| #2 | 36.75' | 3,028 cf | **ADS_StormTech MC-3500 d +Cap** x 27 Inside #1<br>Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf<br>Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap<br>27 Chambers in 2 Rows<br>Cap Storage= +14.9 cf x 2 x 2 rows = 59.6 cf |
| #3 | 36.75' | 16,092 cf | **ADS_StormTech MC-3500 d +Cap** x 145 Inside #1<br>Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf<br>Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap<br>145 Chambers in 5 Rows<br>Cap Storage= +14.9 cf x 2 x 5 rows = 149.0 cf |
| #4 | 36.75' | 116 cf | **4.00'W x 5.50'L x 5.25'H CB #** Inside #1<br>171 cf Overall - 6.0" Wall Thickness = 116 cf |
| #5 | 42.00' | 29 cf | **4.00'W x 5.50'L x 1.34'H CB #**-Impervious |
| #6 | 43.34' | 1,003 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 36,852 cf | Total Available Storage |

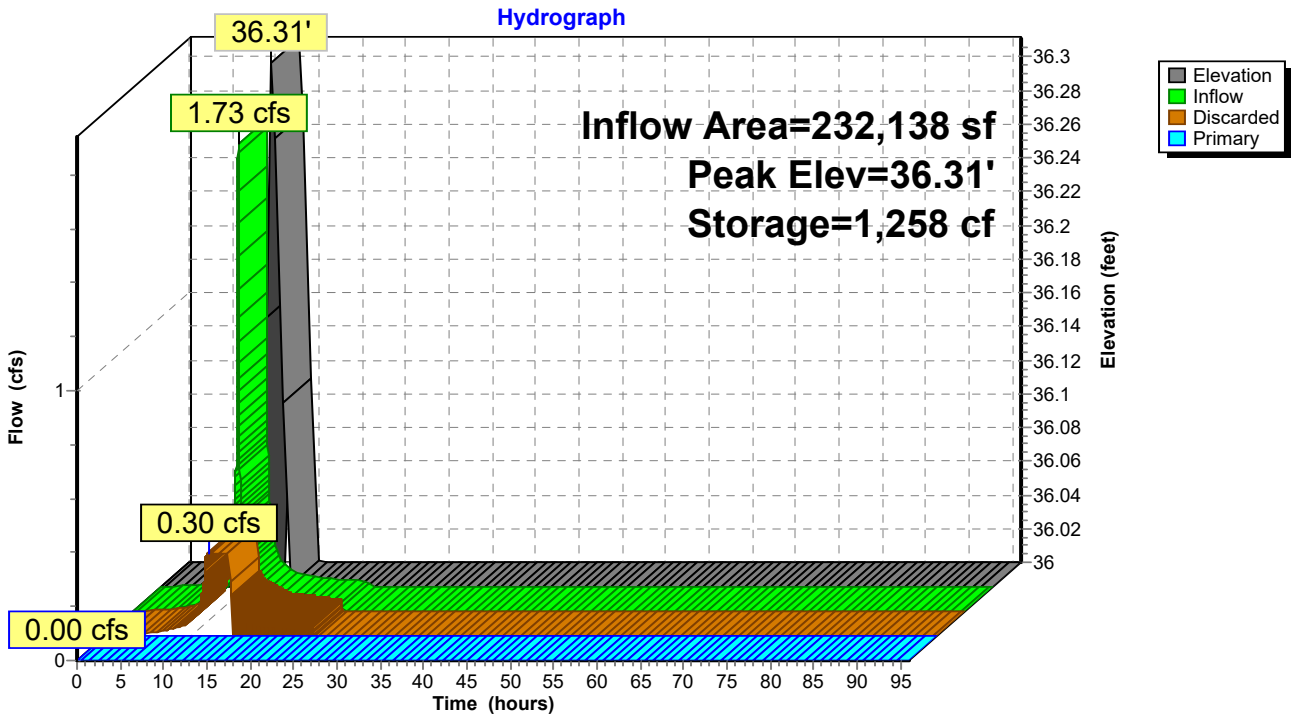
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.34 | 6 | 0 | 0 |
| 43.50 | 245 | 20 | 20 |
| 43.75 | 1,632 | 235 | 255 |
| 44.00 | 4,355 | 748 | 1,003 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 36.00' | **1.300 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.84' | **Top of Curb, C= 3.27**<br>Offset (feet) 0.00 83.50 167.00<br>Height (feet) 0.41 0.00 0.41 |

**Discarded OutFlow** Max=0.30 cfs @ 12.05 hrs HW=36.09' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.30 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=37.05' (Dynamic Tailwater)
↑**2=Top of Curb** ( Controls 0.00 cfs)

## Pond #7: Drywell



## Summary for Pond #8: Wet Pond

Inflow Area = 492,626 sf, 66.38% Impervious, Inflow Depth = 0.80" for RPv event
Inflow = 10.08 cfs @ 12.13 hrs, Volume= 32,660 cf
Outflow = 0.81 cfs @ 13.45 hrs, Volume= 30,794 cf, Atten= 92%, Lag= 79.3 min
Primary = 0.81 cfs @ 13.45 hrs, Volume= 30,794 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 37.05' Surf.Area= 35,833 sf Storage= 25,059 cf
Peak Elev= 37.54' @ 13.45 hrs Surf.Area= 38,127 sf Storage= 43,264 cf (18,205 cf above start)

Plug-Flow detention time= 2,137.5 min calculated for 5,734 cf (18% of inflow)
Center-of-Mass det. time= 571.7 min ( 1,391.4 - 819.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.00' | 104,096 cf | **Pond (Prismatic)** Listed below (Recalc) |
| #2 | 38.25' | 2,140 cf | **Roadway Ponding (Prismatic)** Listed below (Recalc) |
| | | 106,235 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 36.00 | 22,109 | 0 | 0 |
| 37.00 | 24,969 | 23,539 | 23,539 |
| 37.05 | 35,833 | 1,520 | 25,059 |
| 38.00 | 40,259 | 36,144 | 61,203 |
| 39.00 | 45,527 | 42,893 | 104,096 |

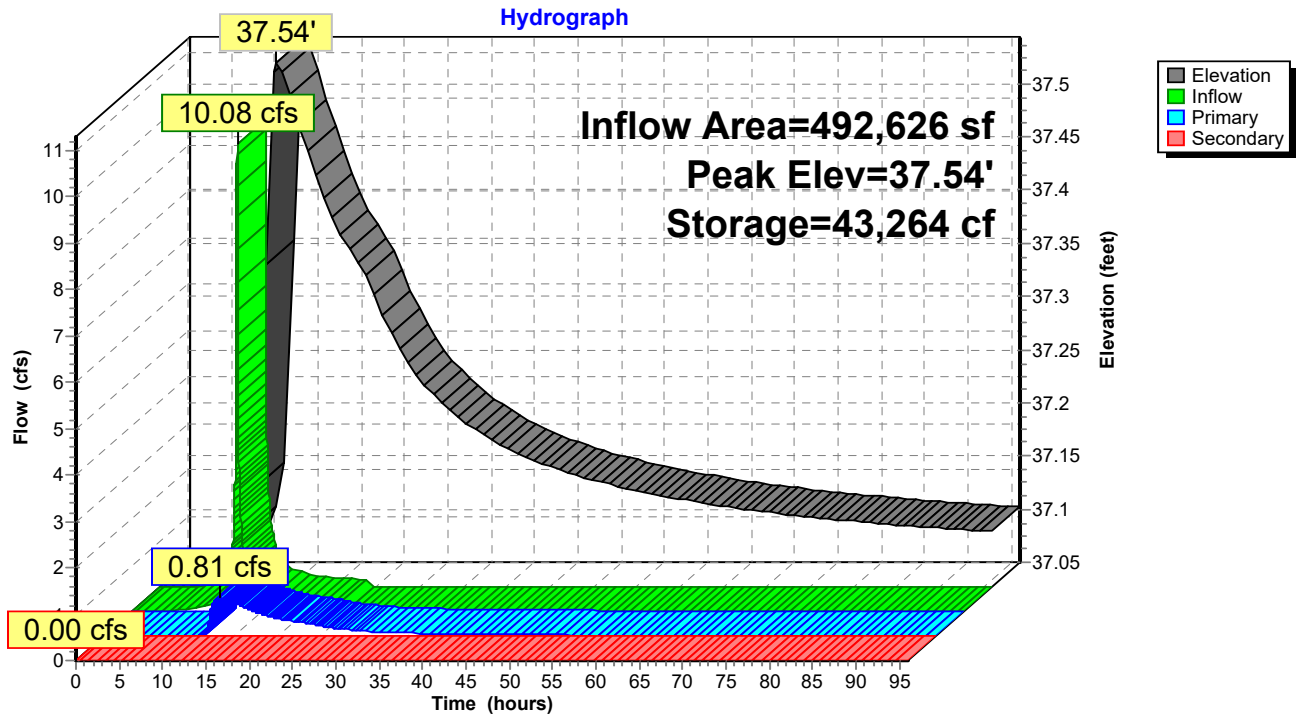
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 38.25 | 11 | 0 | 0 |
| 38.50 | 1,429 | 180 | 180 |
| 38.75 | 3,297 | 591 | 771 |
| 39.00 | 7,653 | 1,369 | 2,140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 37.05' | **23.0" W x 14.0" H, R=22.0" Elliptical RCP_Elliptical 23x14**<br>L= 106.0' CPP, end-section conforming to fill, Ke= 0.500<br>Inlet / Outlet Invert= 37.05' / 37.00' S= 0.0005 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.83 sf |
| #2 | Secondary | 38.75' | **5.0' long x 3.0' breadth Curb Cut**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50<br>Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32 |

**Primary OutFlow** Max=0.81 cfs @ 13.45 hrs HW=37.54' TW=0.00' (Dynamic Tailwater)
↑—**1=RCP_Elliptical 23x14** (Barrel Controls 0.81 cfs @ 1.59 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=37.05' TW=0.00' (Dynamic Tailwater)
↑—**2=Curb Cut** ( Controls 0.00 cfs)

## Pond #8: Wet Pond



## Summary for Pond #9: Drywell

Inflow Area = 199,819 sf, 78.40% Impervious, Inflow Depth = 1.86" for RPv event
Inflow = 9.47 cfs @ 12.13 hrs, Volume= 31,006 cf
Outflow = 1.22 cfs @ 11.88 hrs, Volume= 31,020 cf, Atten= 87%, Lag= 0.0 min
Discarded = 1.22 cfs @ 11.88 hrs, Volume= 31,020 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.74' @ 12.85 hrs Surf.Area= 0.552 ac Storage= 0.195 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 43.8 min ( 845.5 - 801.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 0.809 af | **130.00'W x 185.00'L x 4.00'H Field A**<br>2.208 af Overall - 0.186 af Embedded = 2.022 af x 40.0% Voids |
| #2 | 39.50' | 0.186 af | **ADS_StormTech SC-310 +Cap** x 550 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>550 Chambers in 22 Rows |
| #3 | 39.50' | 0.002 af | **2.00'W x 2.83'L x 3.50'H CB #** x 4 -Impervious |
| #4 | 43.00' | 0.109 af | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 1.106 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 43.00 | 0.001 | 0.000 | 0.000 |
| 43.25 | 0.017 | 0.002 | 0.002 |
| 43.50 | 0.043 | 0.008 | 0.010 |
| 43.75 | 0.116 | 0.020 | 0.030 |
| 44.00 | 0.517 | 0.079 | 0.109 |

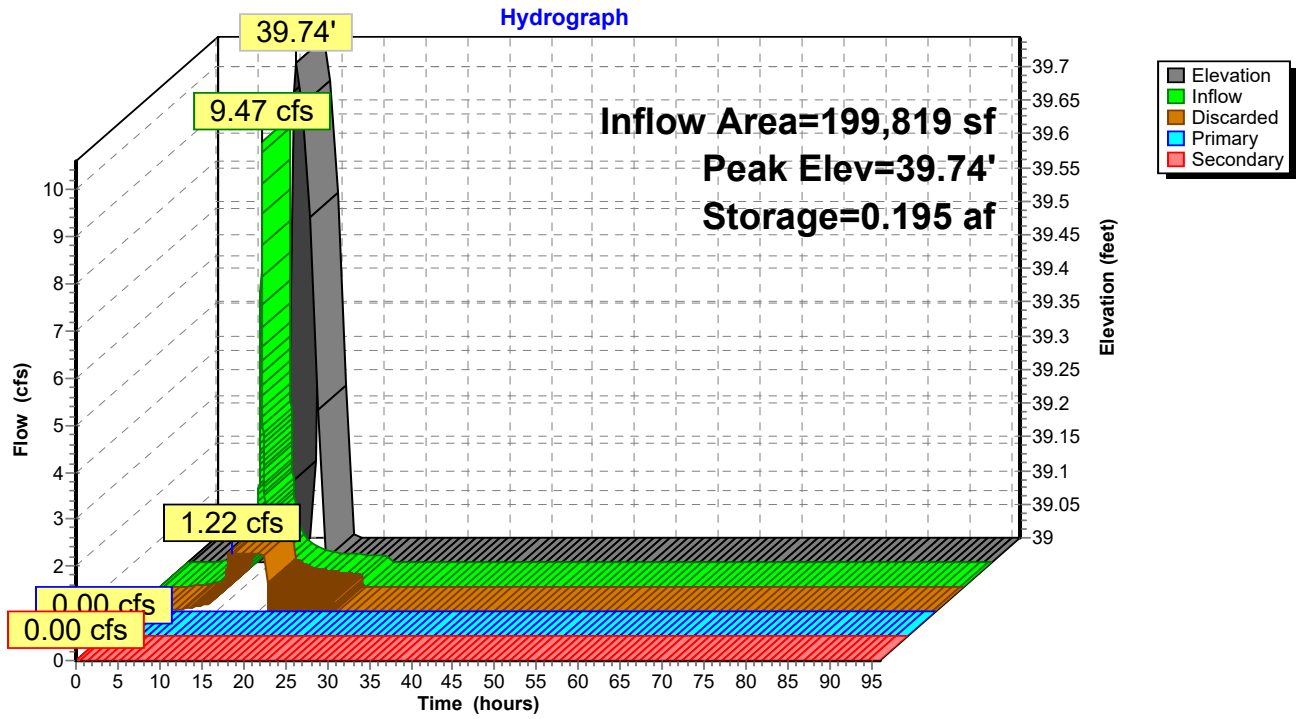
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **2.200 in/hr Exfiltration over Surface area** |
| #2 | Secondary | 44.59' | **Asymmetrical Weir X 2.00, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |
| #3 | Primary | 40.50' | **15.0" Round Over Drain** L= 199.0' Ke= 0.500<br>Inlet / Outlet Invert= 40.50' / 37.00' S= 0.0176 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.23 sf |

**Discarded OutFlow** Max=1.22 cfs @ 11.88 hrs HW=39.06' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 1.22 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=36.00' (Dynamic Tailwater)
↑**3=Over Drain** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=35.50' (Dynamic Tailwater)
↑**2=Asymmetrical Weir** ( Controls 0.00 cfs)

## Pond #9: Drywell

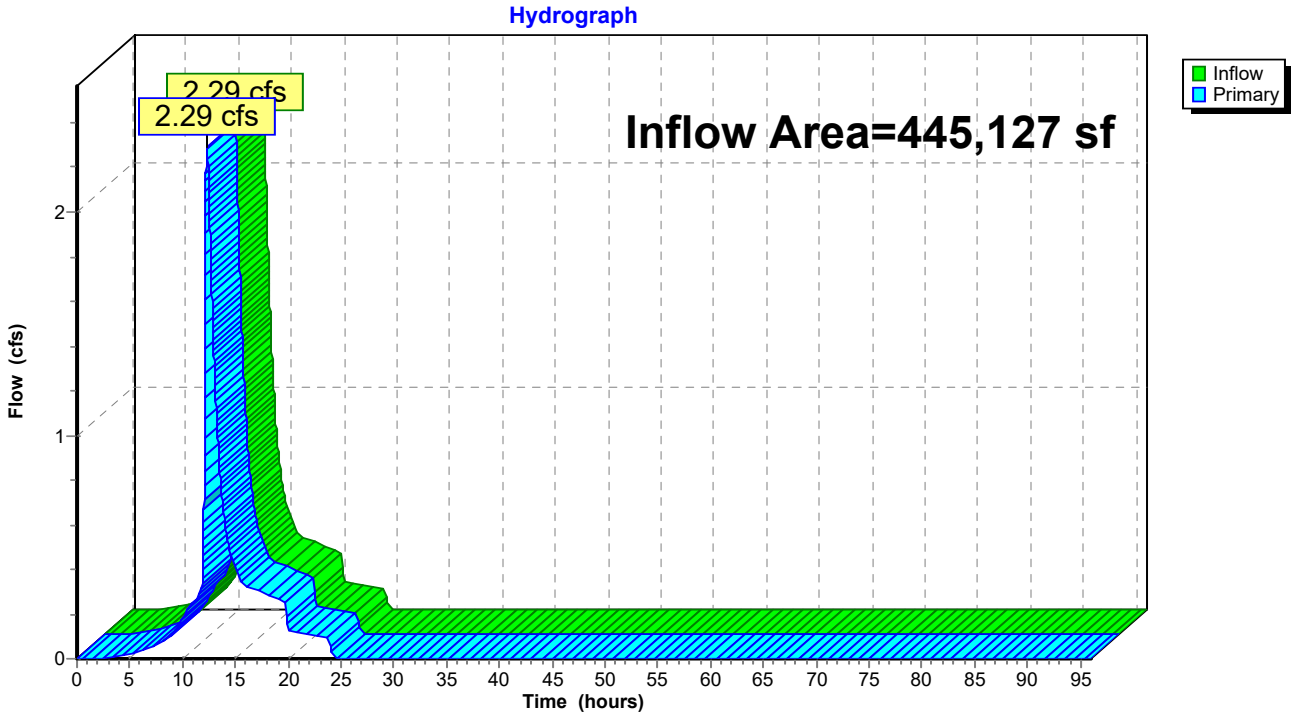


## Summary for Link POI1: POI #1

Inflow Area = 445,127 sf, 78.71% Impervious, Inflow Depth = 0.58" for RPv event
Inflow = 2.29 cfs @ 12.29 hrs, Volume= 21,484 cf
Primary = 2.29 cfs @ 12.29 hrs, Volume= 21,484 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link POI1: POI #1

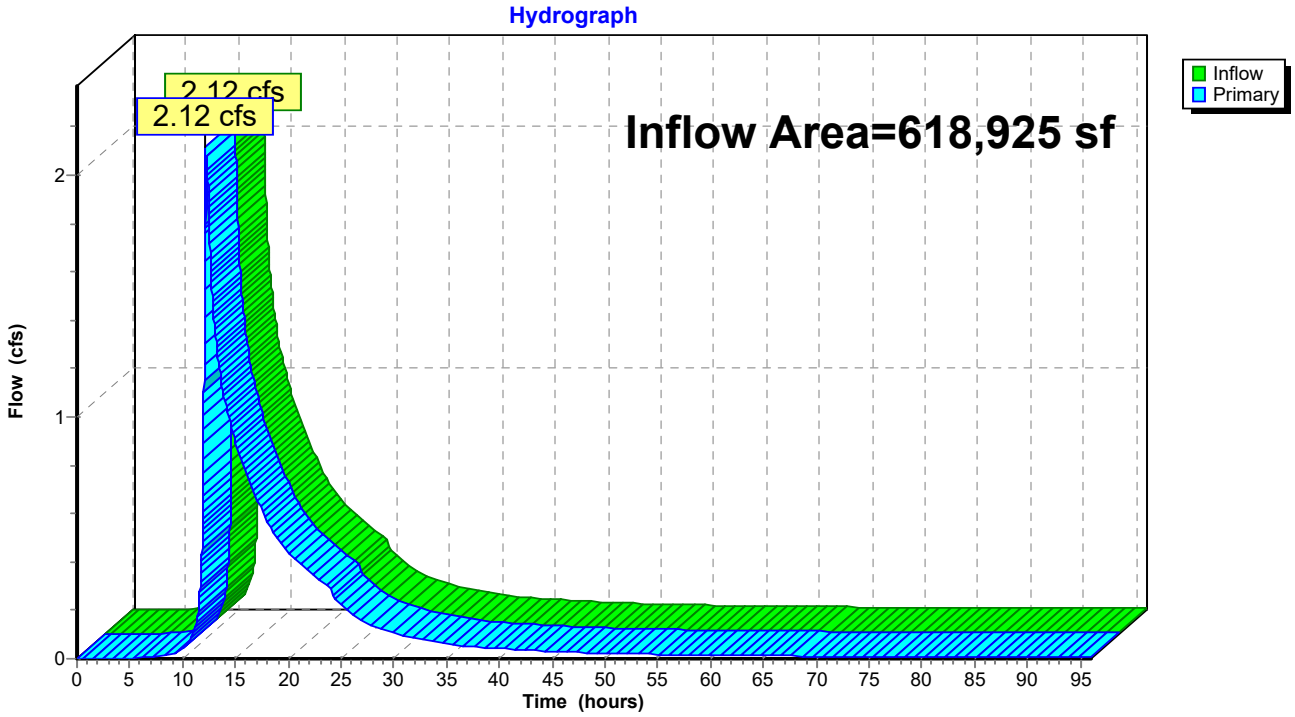


## Summary for Link POI2: POI #2

Inflow Area = 618,925 sf, 63.76% Impervious, Inflow Depth > 0.79" for RPv event
Inflow = 2.12 cfs @ 12.14 hrs, Volume= 40,820 cf
Primary = 2.12 cfs @ 12.14 hrs, Volume= 40,820 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link POI2: POI #2

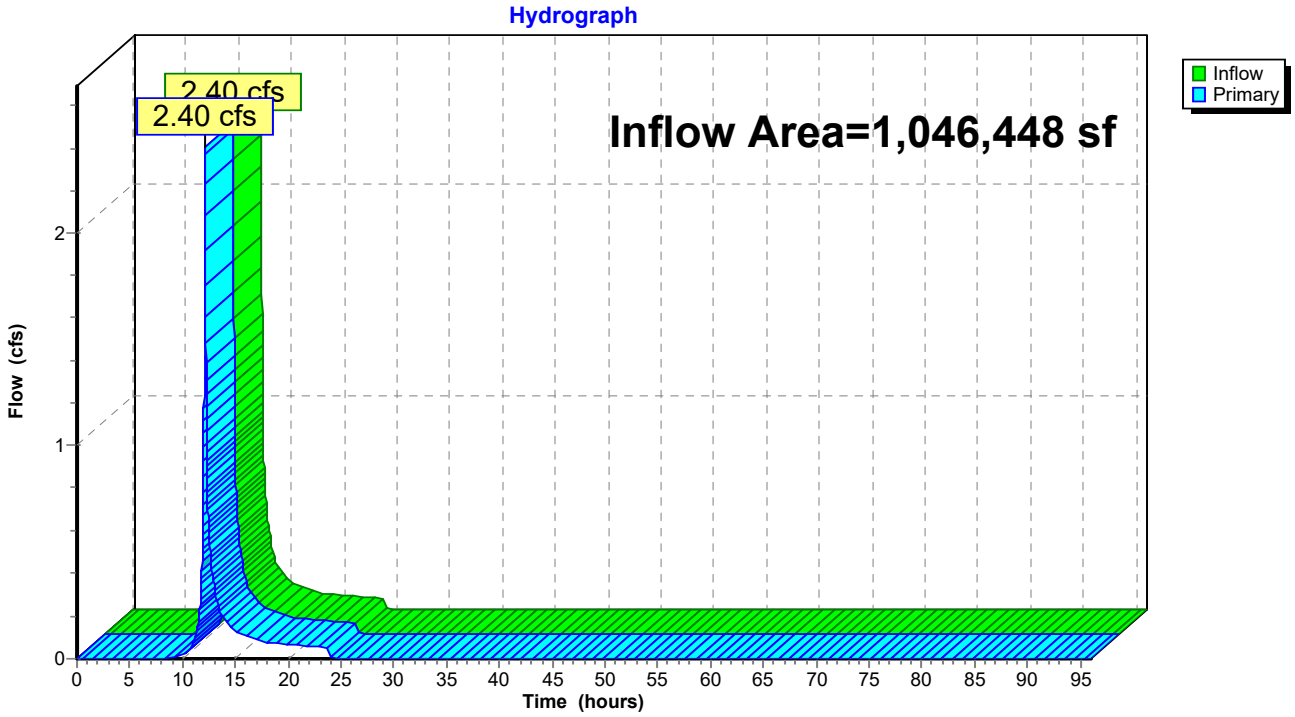


## Summary for Link POI3: POI #3

Inflow Area = 1,046,448 sf, 62.04% Impervious, Inflow Depth = 0.09" for RPv event
Inflow = 2.40 cfs @ 12.14 hrs, Volume= 8,013 cf
Primary = 2.40 cfs @ 12.14 hrs, Volume= 8,013 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link POI3: POI #3

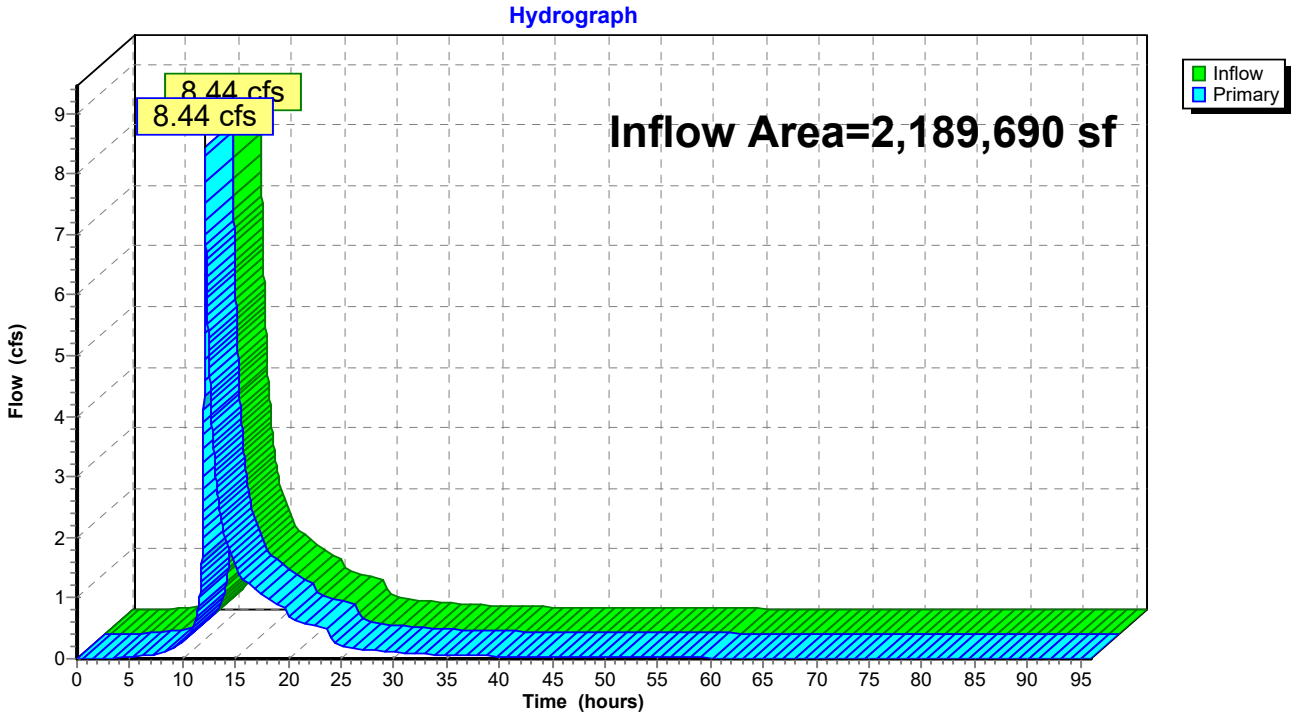


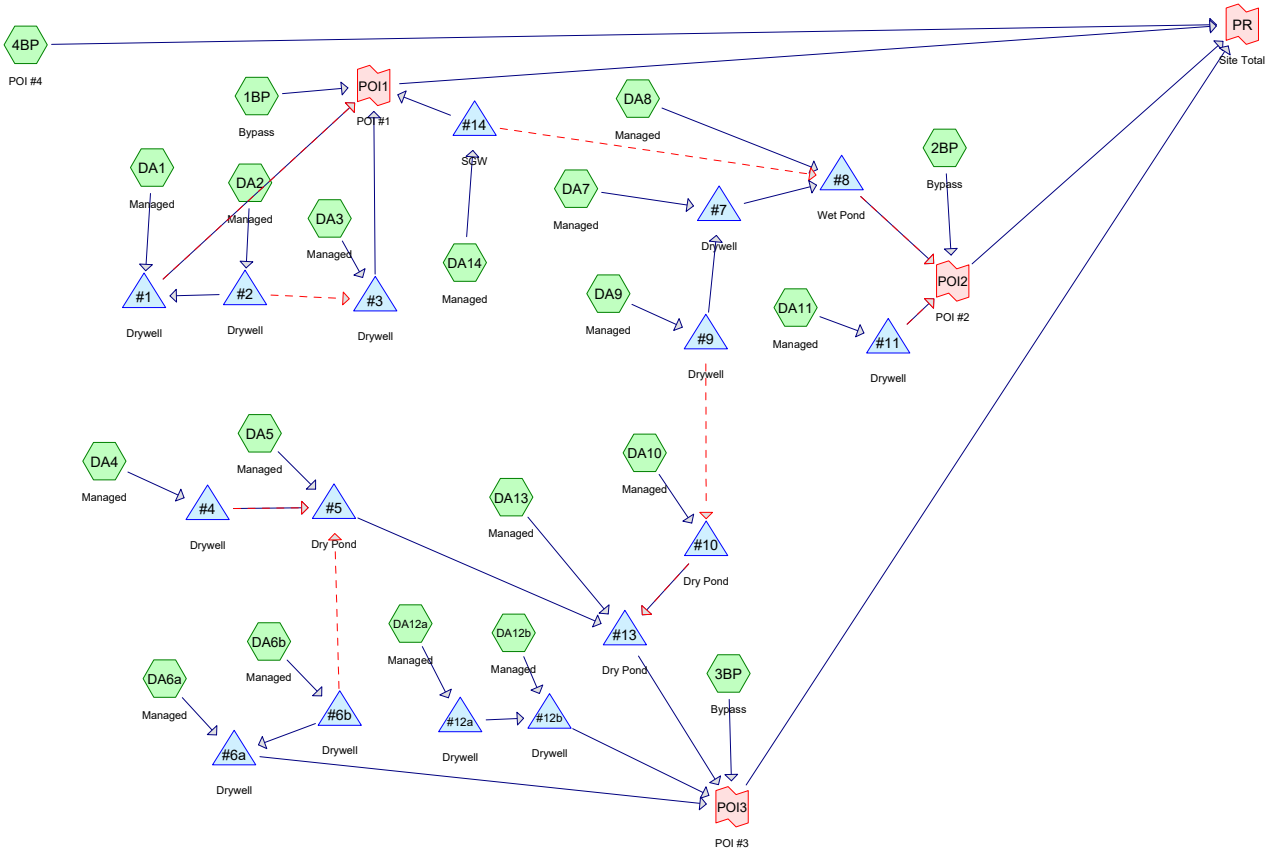
## Summary for Link PR: Site Total

Inflow Area = 2,189,690 sf, 65.38% Impervious, Inflow Depth > 0.42" for RPv event
Inflow = 8.44 cfs @ 12.14 hrs, Volume= 77,536 cf
Primary = 8.44 cfs @ 12.14 hrs, Volume= 77,536 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link PR: Site Total






Subcat Reach Pond Link

**Routing Diagram for 4270 SWM Post 2022-06**
Prepared by Hillcrest Associates, Inc., Printed 6/30/2022
HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment 1BP: Bypass** Runoff Area=19,408 sf 0.00% Impervious Runoff Depth=0.49"
Tc=6.0 min CN=44 Runoff=0.11 cfs 793 cf

**Subcatchment 2BP: Bypass** Runoff Area=62,103 sf 28.07% Impervious Runoff Depth=2.78"
Tc=6.0 min CN=76 Runoff=4.68 cfs 14,412 cf

**Subcatchment 3BP: Bypass** Runoff Area=161,604 sf 32.63% Impervious Runoff Depth=1.41"
Tc=6.0 min CN=59 Runoff=5.80 cfs 18,961 cf

**Subcatchment 4BP: POI #4** Runoff Area=79,190 sf 47.39% Impervious Runoff Depth=2.69"
Tc=6.0 min CN=75 Runoff=5.77 cfs 17,783 cf

**Subcatchment DA1: Managed** Runoff Area=33,087 sf 91.75% Impervious Runoff Depth=4.72"
Tc=6.0 min CN=95 Runoff=3.76 cfs 13,006 cf

**Subcatchment DA10: Managed** Runoff Area=199,819 sf 78.40% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=90 Runoff=21.17 cfs 69,373 cf

**Subcatchment DA11: Managed** Runoff Area=64,196 sf 78.15% Impervious Runoff Depth=4.49"
Tc=6.0 min CN=93 Runoff=7.12 cfs 24,035 cf

**Subcatchment DA12a: Managed** Runoff Area=59,904 sf 86.88% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=90 Runoff=6.35 cfs 20,797 cf

**Subcatchment DA12b: Managed** Runoff Area=50,150 sf 89.70% Impervious Runoff Depth=4.38"
Tc=6.0 min CN=92 Runoff=5.49 cfs 18,316 cf

**Subcatchment DA13: Managed** Runoff Area=211,364 sf 63.35% Impervious Runoff Depth=3.55"
Tc=6.0 min CN=84 Runoff=19.82 cfs 62,458 cf

**Subcatchment DA14: Managed** Runoff Area=145,491 sf 74.57% Impervious Runoff Depth=3.95"
Tc=6.0 min CN=88 Runoff=14.86 cfs 47,947 cf

**Subcatchment DA2: Managed** Runoff Area=112,875 sf 84.89% Impervious Runoff Depth=4.38"
Tc=6.0 min CN=92 Runoff=12.35 cfs 41,224 cf

**Subcatchment DA3: Managed** Runoff Area=134,266 sf 86.16% Impervious Runoff Depth=4.38"
Tc=6.0 min CN=92 Runoff=14.69 cfs 49,037 cf

**Subcatchment DA4: Managed** Runoff Area=153,759 sf 43.45% Impervious Runoff Depth=2.35"
Tc=6.0 min CN=71 Runoff=9.75 cfs 30,058 cf

**Subcatchment DA5: Managed** Runoff Area=163,266 sf 61.28% Impervious Runoff Depth=2.78"
Tc=6.0 min CN=76 Runoff=12.29 cfs 37,888 cf

**Subcatchment DA6a: Managed** Runoff Area=30,789 sf 89.70% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=94 Runoff=3.46 cfs 11,813 cf

**Subcatchment DA6b: Managed** Runoff Area=15,793 sf 91.49% Impervious Runoff Depth=4.49"
Tc=6.0 min CN=93 Runoff=1.75 cfs 5,913 cf

**Subcatchment DA7: Managed** Runoff Area=32,319 sf 87.77% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=94 Runoff=3.63 cfs 12,400 cf

**Subcatchment DA8: Managed** Runoff Area=260,488 sf 54.51% Impervious Runoff Depth=3.55"
Tc=6.0 min CN=84 Runoff=24.42 cfs 76,974 cf

**Subcatchment DA9: Managed** Runoff Area=199,819 sf 78.40% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=90 Runoff=21.17 cfs 69,373 cf

**Pond #1: Drywell** Peak Elev=40.35' Storage=3,955 cf Inflow=3.76 cfs 13,006 cf
Discarded=0.39 cfs 13,008 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.39 cfs 13,008 cf

**Pond #10: Dry Pond** Peak Elev=37.48' Storage=44,563 cf Inflow=21.17 cfs 69,373 cf
Discarded=0.46 cfs 69,376 cf Primary=0.00 cfs 0 cf Outflow=0.46 cfs 69,376 cf

**Pond #11: Drywell** Peak Elev=38.17' Storage=6,170 cf Inflow=7.12 cfs 24,035 cf
Discarded=0.04 cfs 7,170 cf Primary=5.26 cfs 16,865 cf Secondary=0.00 cfs 0 cf Outflow=5.29 cfs 24,035 cf

**Pond #12a: Drywell** Peak Elev=40.41' Storage=7,757 cf Inflow=6.35 cfs 20,797 cf
Discarded=0.49 cfs 20,797 cf Primary=0.00 cfs 0 cf Outflow=0.49 cfs 20,797 cf

**Pond #12b: Drywell** Peak Elev=40.29' Storage=6,465 cf Inflow=5.49 cfs 18,316 cf
Discarded=0.46 cfs 18,321 cf Primary=0.00 cfs 0 cf Outflow=0.46 cfs 18,321 cf

**Pond #13: Dry Pond** Peak Elev=37.19' Storage=19,321 cf Inflow=19.82 cfs 62,458 cf
Discarded=2.27 cfs 62,459 cf Primary=0.00 cfs 0 cf Outflow=2.27 cfs 62,459 cf

**Pond #14: SGW** Peak Elev=41.65' Storage=17,320 cf Inflow=14.86 cfs 47,947 cf
Primary=4.91 cfs 45,805 cf Secondary=2.69 cfs 2,142 cf Outflow=7.59 cfs 47,947 cf

**Pond #2: Drywell** Peak Elev=39.27' Storage=19,288 cf Inflow=12.35 cfs 41,224 cf
Discarded=0.57 cfs 41,229 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.57 cfs 41,229 cf

**Pond #3: Drywell** Peak Elev=39.44' Storage=28,022 cf Inflow=14.69 cfs 49,037 cf
Discarded=0.41 cfs 49,040 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 49,040 cf

**Pond #4: Drywell** Peak Elev=40.62' Storage=8,280 cf Inflow=9.75 cfs 30,058 cf
Discarded=0.35 cfs 19,526 cf Primary=3.09 cfs 10,536 cf Secondary=0.00 cfs 0 cf Outflow=3.44 cfs 30,062 cf

**Pond #5: Dry Pond** Peak Elev=40.32' Storage=25,753 cf Inflow=12.65 cfs 48,424 cf
Discarded=0.78 cfs 48,427 cf Primary=0.00 cfs 0 cf Outflow=0.78 cfs 48,427 cf

**Pond #6a: Drywell** Peak Elev=42.41' Storage=5,021 cf Inflow=3.46 cfs 11,813 cf
Discarded=0.19 cfs 11,813 cf Primary=0.00 cfs 0 cf Outflow=0.19 cfs 11,813 cf

**Pond #6b: Drywell** Peak Elev=40.79' Storage=3,833 cf Inflow=1.75 cfs 5,913 cf
Discarded=0.03 cfs 5,913 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.03 cfs 5,913 cf

**Pond #7: Drywell** Peak Elev=37.81' Storage=11,834 cf Inflow=3.63 cfs 20,694 cf
Discarded=0.30 cfs 20,694 cf Primary=0.00 cfs 0 cf Outflow=0.30 cfs 20,694 cf

**Pond #8: Wet Pond** Peak Elev=38.09' Storage=64,846 cf Inflow=25.02 cfs 79,115 cf
Primary=3.42 cfs 77,193 cf Secondary=0.00 cfs 0 cf Outflow=3.42 cfs 77,193 cf

**Pond #9: Drywell** Peak Elev=41.12' Storage=0.580 af Inflow=21.17 cfs 69,373 cf
Discarded=1.22 cfs 61,083 cf Primary=1.62 cfs 8,293 cf Secondary=0.00 cfs 0 cf Outflow=2.84 cfs 69,376 cf

**Link POI1: POI #1** Inflow=5.01 cfs 46,597 cf
Primary=5.01 cfs 46,597 cf

**Link POI2: POI #2** Inflow=11.55 cfs 108,470 cf
Primary=11.55 cfs 108,470 cf

**Link POI3: POI #3** Inflow=5.80 cfs 18,961 cf
Primary=5.80 cfs 18,961 cf

**Link PR: Site Total** Inflow=27.95 cfs 191,811 cf
Primary=27.95 cfs 191,811 cf

**Total Runoff Area = 2,189,690 sf Runoff Volume = 642,557 cf Average Runoff Depth = 3.52"**
**34.62% Pervious = 757,973 sf 65.38% Impervious = 1,431,717 sf**

## Summary for Subcatchment 1BP: Bypass

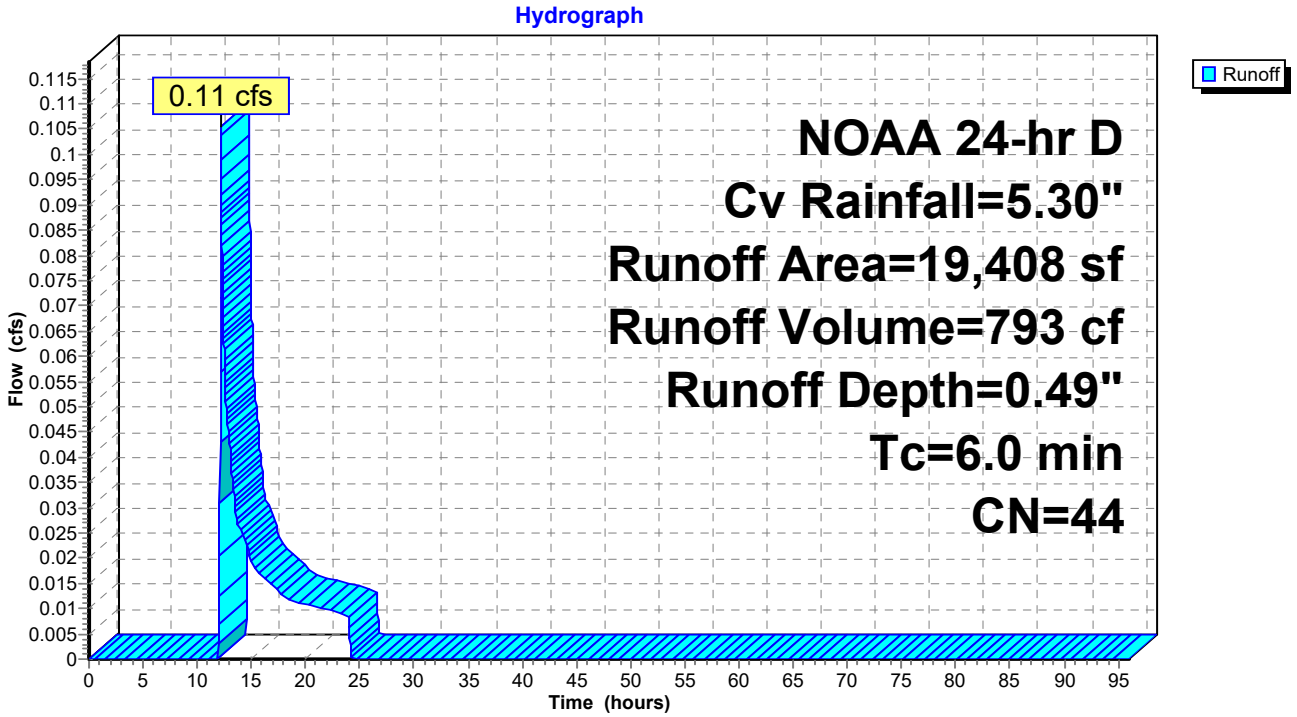
Runoff = 0.11 cfs @ 12.16 hrs, Volume= 793 cf, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 0 | 98 | Roof |
| * | 0 | 98 | Pavement |
| * | 0 | 98 | Sidewalk |
| * | 14,850 | 39 | Grass, HSG A |
| * | 4,558 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 19,408 | 44 | Weighted Average |
| | 19,408 | | 100.00% Pervious Area |

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

## Subcatchment 1BP: Bypass



## Summary for Subcatchment 2BP: Bypass

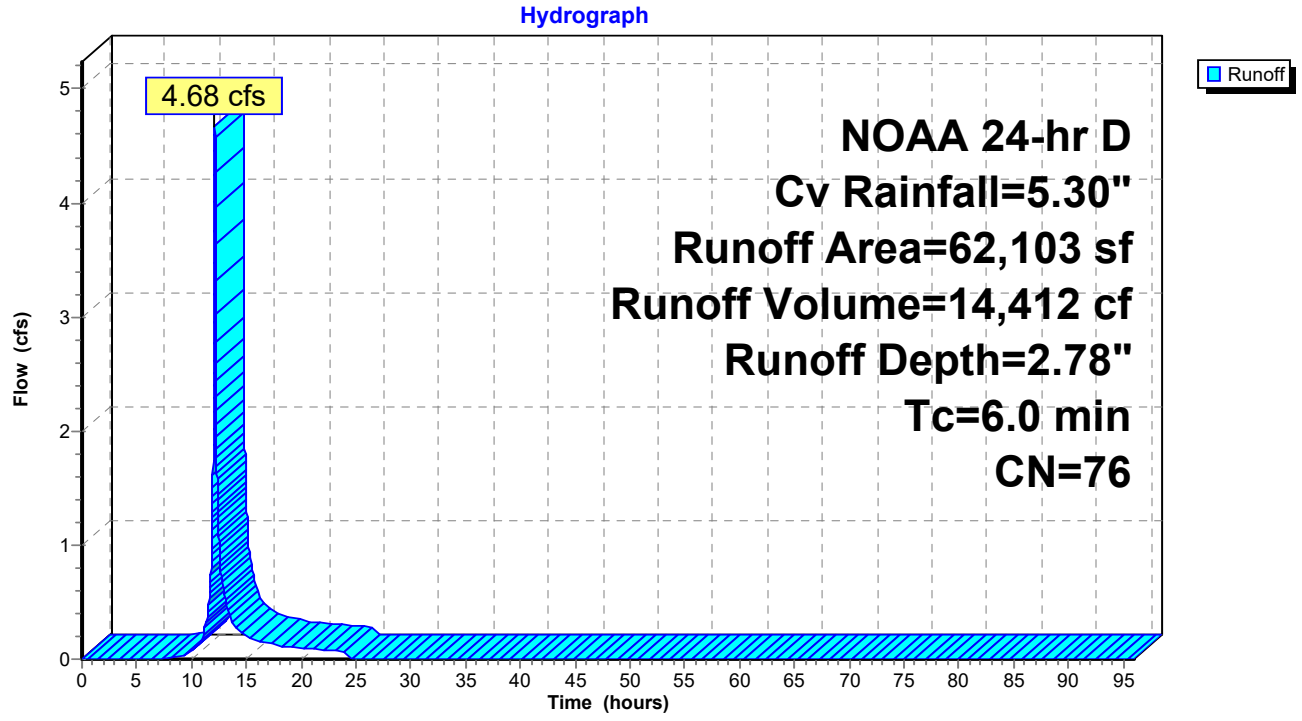
Runoff = 4.68 cfs @ 12.13 hrs, Volume= 14,412 cf, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 3,148 | 98 | Roof |
| * | 1,657 | 98 | Pavement |
| * | 5,920 | 98 | Sidewalk |
| * | 5,931 | 39 | Grass, HSG A |
| * | 7,283 | 61 | Grass, HSG B |
| * | 31,454 | 74 | Grass, HSG C |
| * | 6,710 | 98 | Ex. Roadway |
| | 62,103 | 76 | Weighted Average |
| | 44,668 | | 71.93% Pervious Area |
| | 17,435 | | 28.07% Impervious Area |

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

## Subcatchment 2BP: Bypass



## Summary for Subcatchment 3BP: Bypass

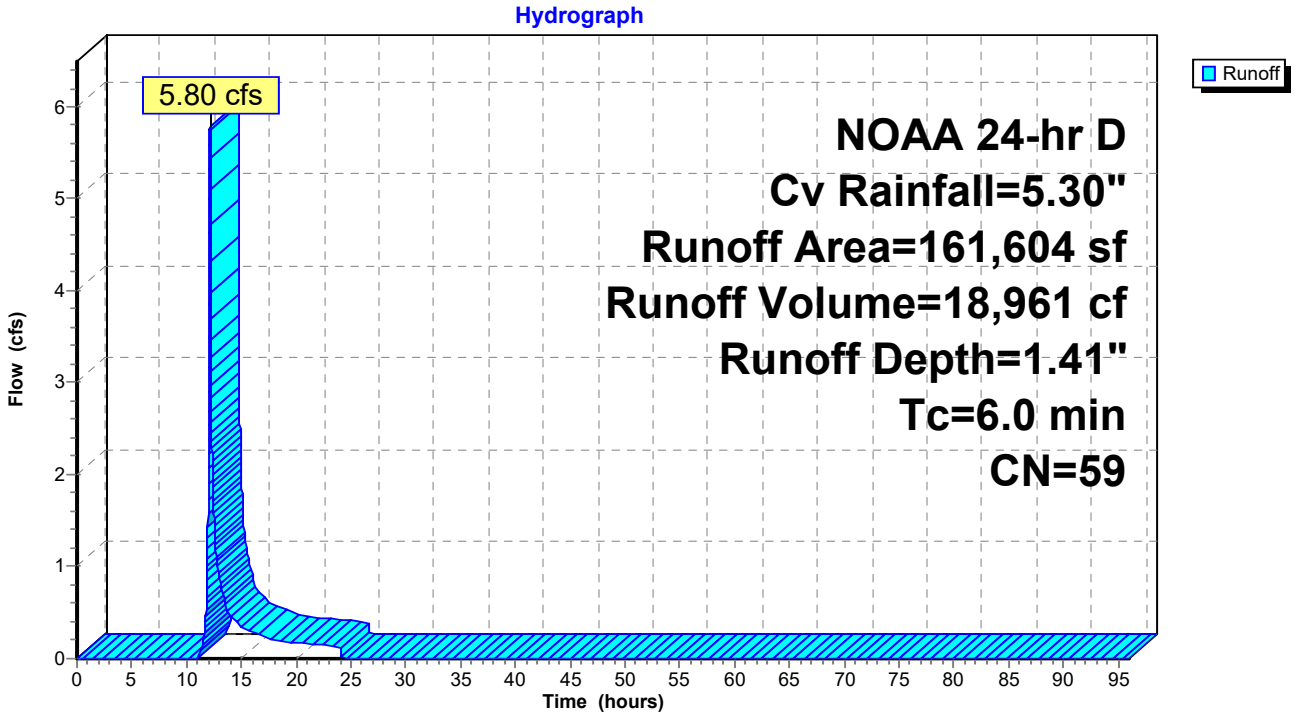
Runoff = 5.80 cfs @ 12.14 hrs, Volume= 18,961 cf, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 30,567 | 98 | Roof |
| * | 19,555 | 98 | Pavement |
| * | 2,610 | 98 | Sidewalk |
| * | 105,358 | 39 | Grass, HSG A |
| * | 3,155 | 61 | Grass, HSG B |
| * | 359 | 74 | Grass, HSG C |
| | 161,604 | 59 | Weighted Average |
| | 108,872 | | 67.37% Pervious Area |
| | 52,732 | | 32.63% Impervious Area |

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

## Subcatchment 3BP: Bypass



## Summary for Subcatchment 4BP: POI #4

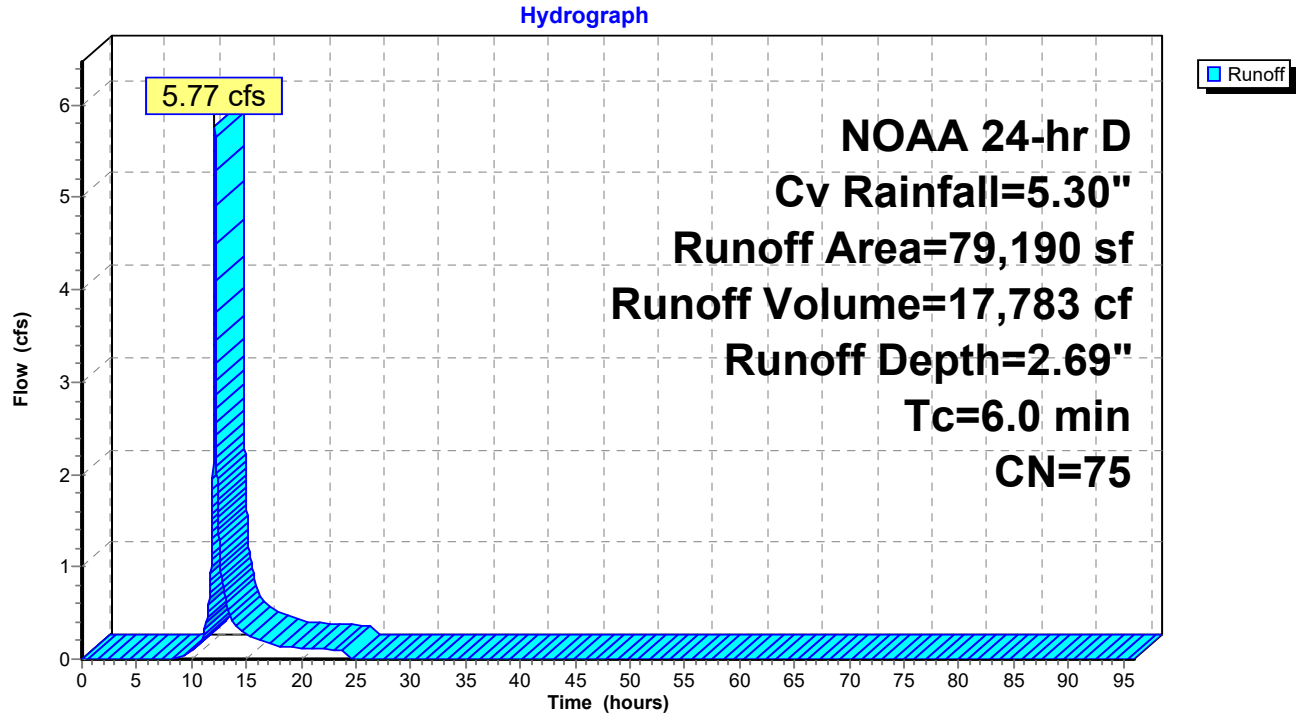
Runoff = 5.77 cfs @ 12.13 hrs, Volume= 17,783 cf, Depth= 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 0 | 98 | Roof |
| * | 3,356 | 98 | Pavement |
| * | 5,503 | 98 | Sidewalk |
| * | 16,262 | 39 | Grass, HSG A |
| * | 16,847 | 61 | Grass, HSG B |
| * | 8,555 | 74 | Grass, HSG C |
| * | 28,667 | 98 | Existing Roadway |
| | 79,190 | 75 | Weighted Average |
| | 41,664 | | 52.61% Pervious Area |
| | 37,526 | | 47.39% Impervious Area |

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

## Subcatchment 4BP: POI #4



## Summary for Subcatchment DA1: Managed

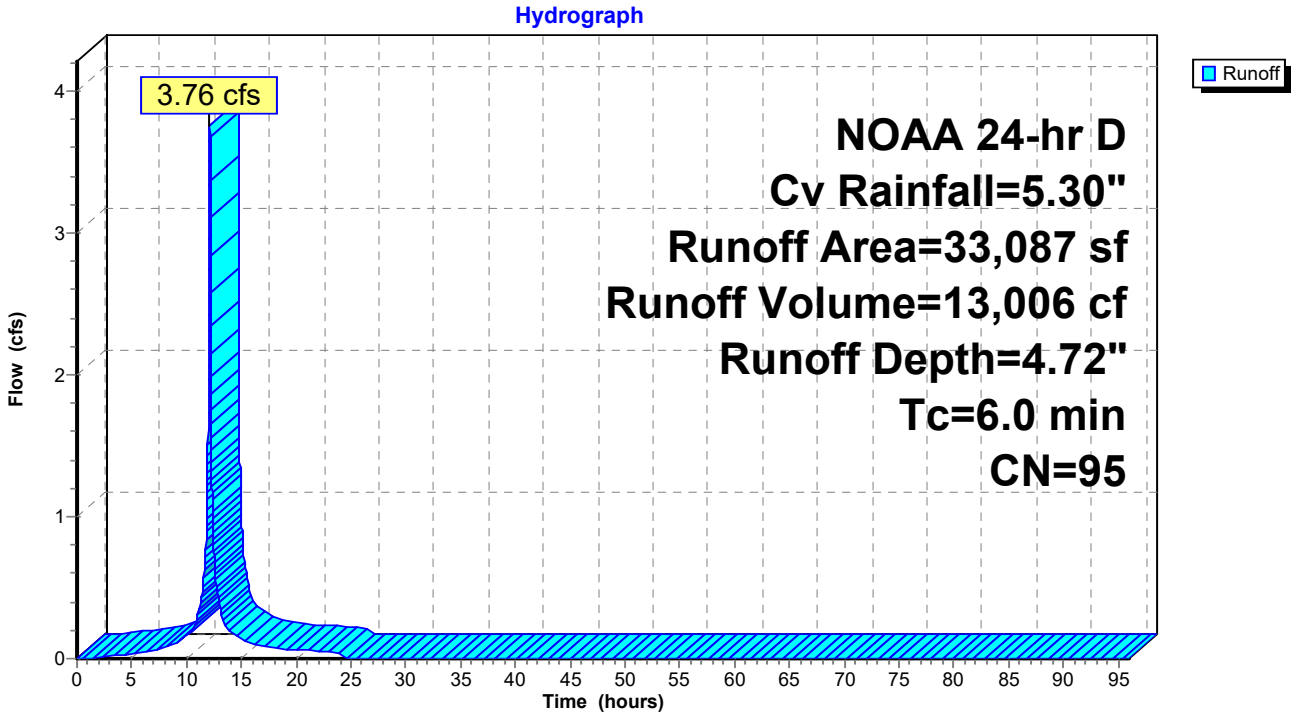
Runoff = 3.76 cfs @ 12.13 hrs, Volume= 13,006 cf, Depth= 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 5,119 | 98 | Roof |
| * | 24,140 | 98 | Pavement |
| * | 1,098 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 2,730 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 33,087 | 95 | Weighted Average |
| | 2,730 | | 8.25% Pervious Area |
| | 30,357 | | 91.75% Impervious Area |

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

## Subcatchment DA1: Managed



## Summary for Subcatchment DA10: Managed

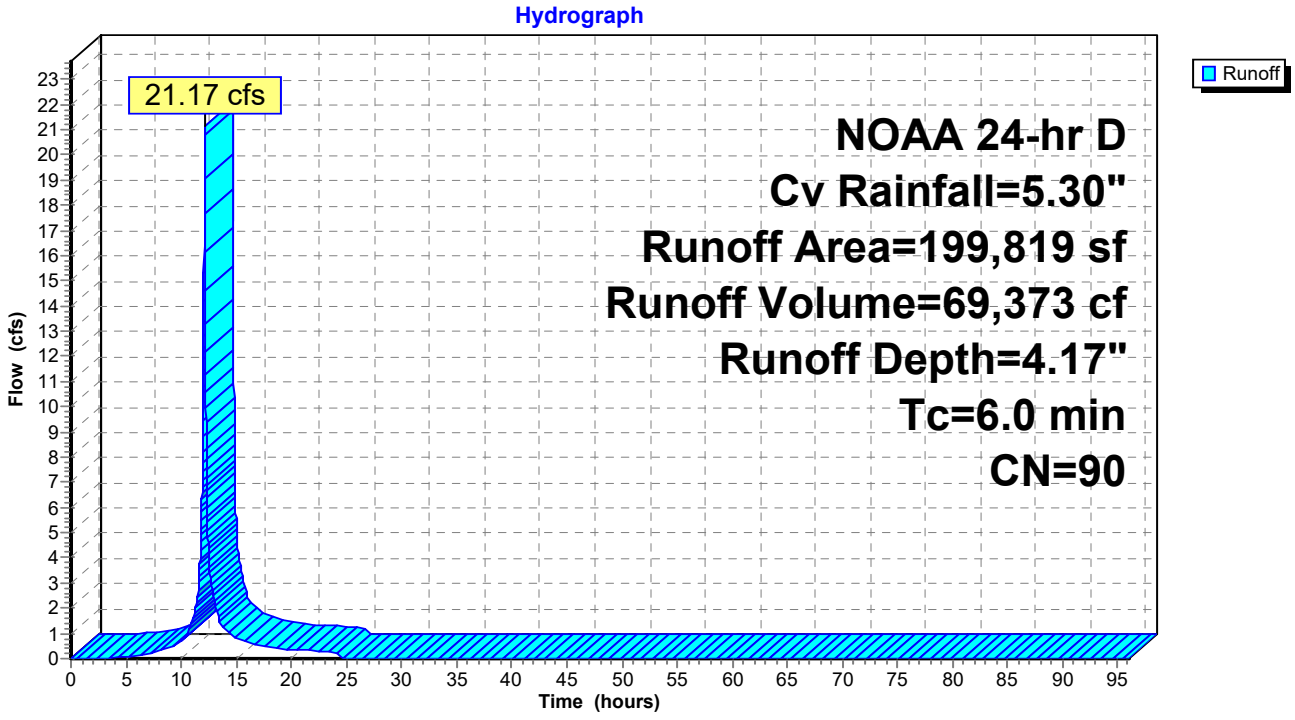
Runoff = 21.17 cfs @ 12.13 hrs, Volume= 69,373 cf, Depth= 4.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 45,831 | 98 | Roof |
| * | 99,756 | 98 | Pavement |
| * | 11,069 | 98 | Sidewalk |
| * | 1,120 | 39 | Grass, HSG A |
| * | 42,043 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 199,819 | 90 | Weighted Average |
| | 43,163 | | 21.60% Pervious Area |
| | 156,656 | | 78.40% Impervious Area |

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

## Subcatchment DA10: Managed



## Summary for Subcatchment DA11: Managed

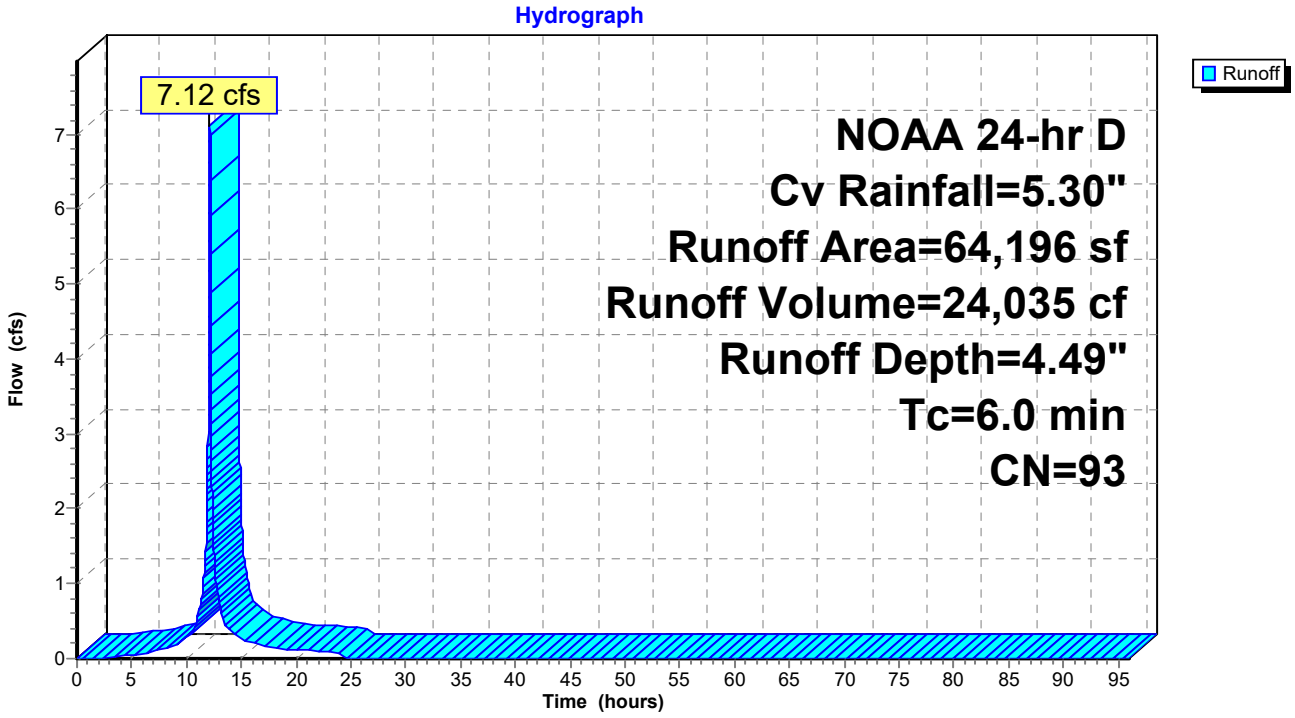
Runoff = 7.12 cfs @ 12.13 hrs, Volume= 24,035 cf, Depth= 4.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 6,876 | 98 | Roof |
| * | 35,655 | 98 | Pavement |
| * | 7,636 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 14,029 | 74 | Grass, HSG C |
| | 64,196 | 93 | Weighted Average |
| | 14,029 | | 21.85% Pervious Area |
| | 50,167 | | 78.15% Impervious Area |

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

### Subcatchment DA11: Managed



## Summary for Subcatchment DA12a: Managed

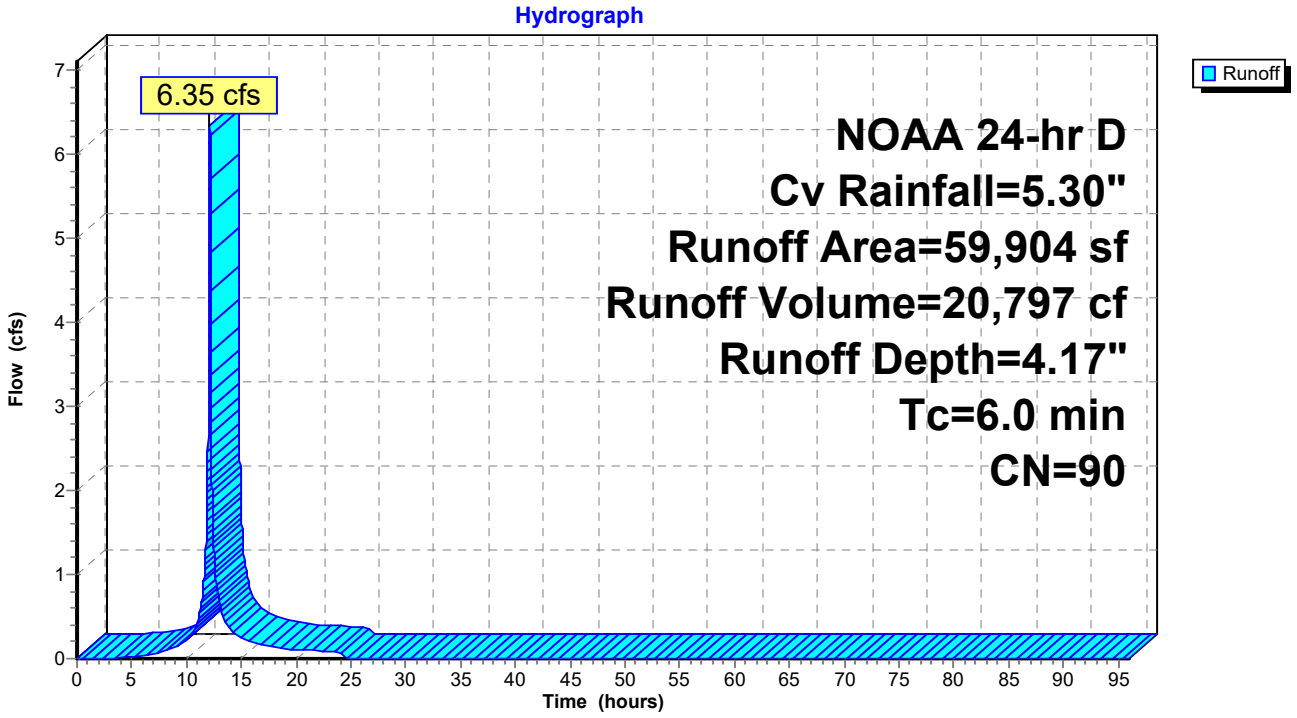
Runoff = 6.35 cfs @ 12.13 hrs, Volume= 20,797 cf, Depth= 4.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 14,960 | 98 | Roof |
| * | 35,092 | 98 | Pavement |
| * | 1,991 | 98 | Sidewalk |
| * | 7,861 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 59,904 | 90 | Weighted Average |
| | 7,861 | | 13.12% Pervious Area |
| | 52,043 | | 86.88% Impervious Area |

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

## Subcatchment DA12a: Managed



## Summary for Subcatchment DA12b: Managed

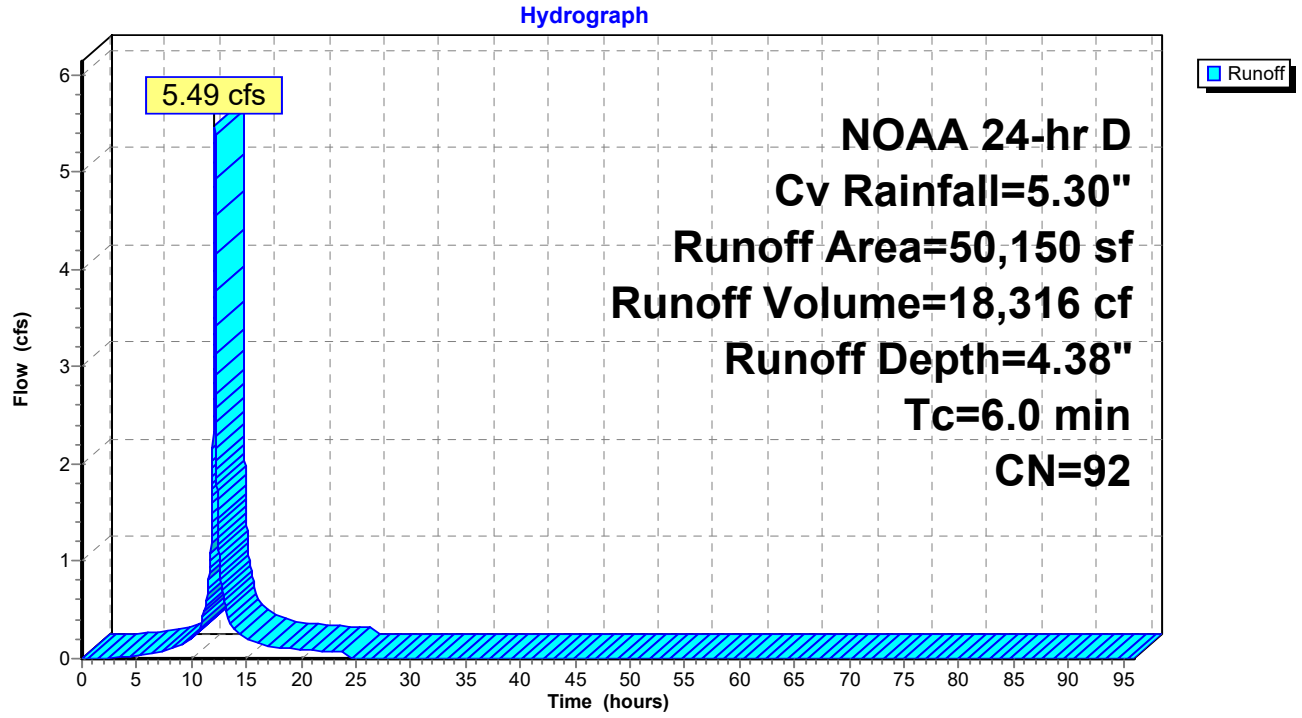
Runoff = 5.49 cfs @ 12.13 hrs, Volume= 18,316 cf, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 12,223 | 98 | Roof |
| * | 31,728 | 98 | Pavement |
| * | 1,032 | 98 | Sidewalk |
| * | 5,167 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 50,150 | 92 | Weighted Average |
| | 5,167 | | 10.30% Pervious Area |
| | 44,983 | | 89.70% Impervious Area |

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

### Subcatchment DA12b: Managed



## Summary for Subcatchment DA13: Managed

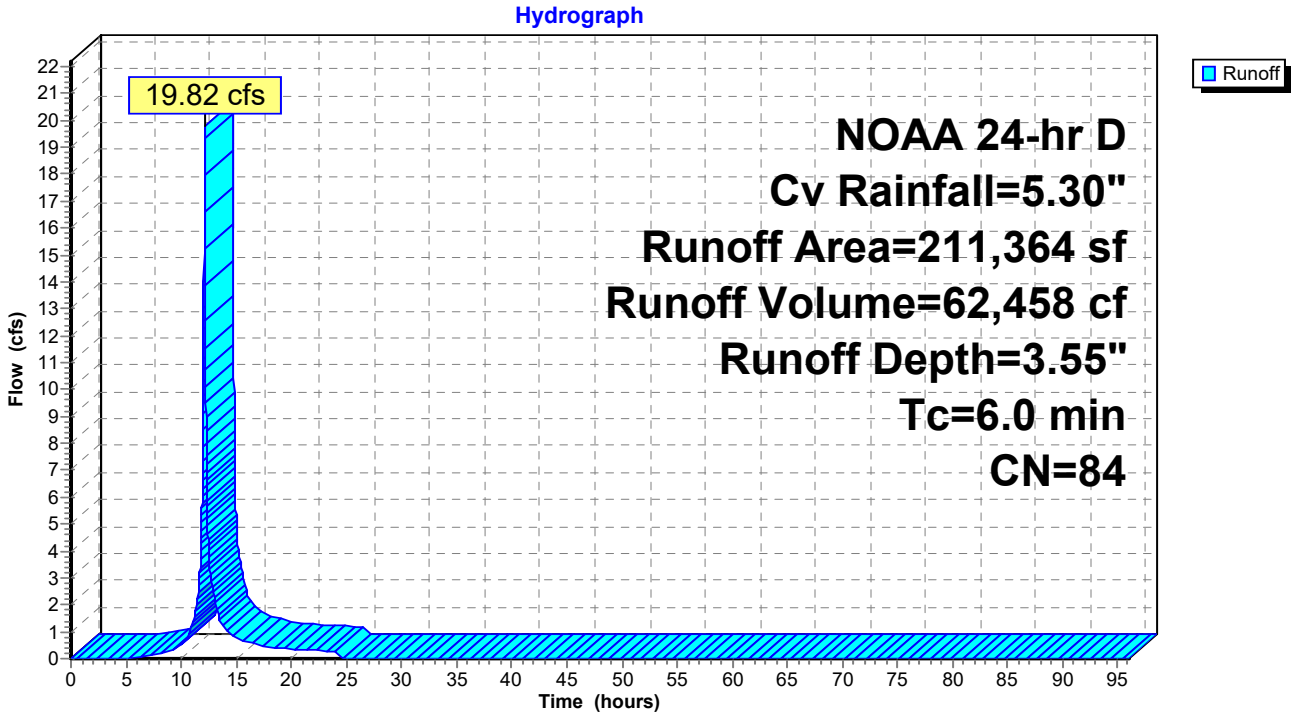
Runoff = 19.82 cfs @ 12.13 hrs, Volume= 62,458 cf, Depth= 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 43,108 | 98 | Roof |
| * | 81,796 | 98 | Pavement |
| * | 9,004 | 98 | Sidewalk |
| * | 16,604 | 39 | Grass, HSG A |
| * | 45,260 | 61 | Grass, HSG B |
| * | 15,592 | 74 | Grass, HSG C |
| | 211,364 | 84 | Weighted Average |
| | 77,456 | | 36.65% Pervious Area |
| | 133,908 | | 63.35% Impervious Area |

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

## Subcatchment DA13: Managed



## Summary for Subcatchment DA14: Managed

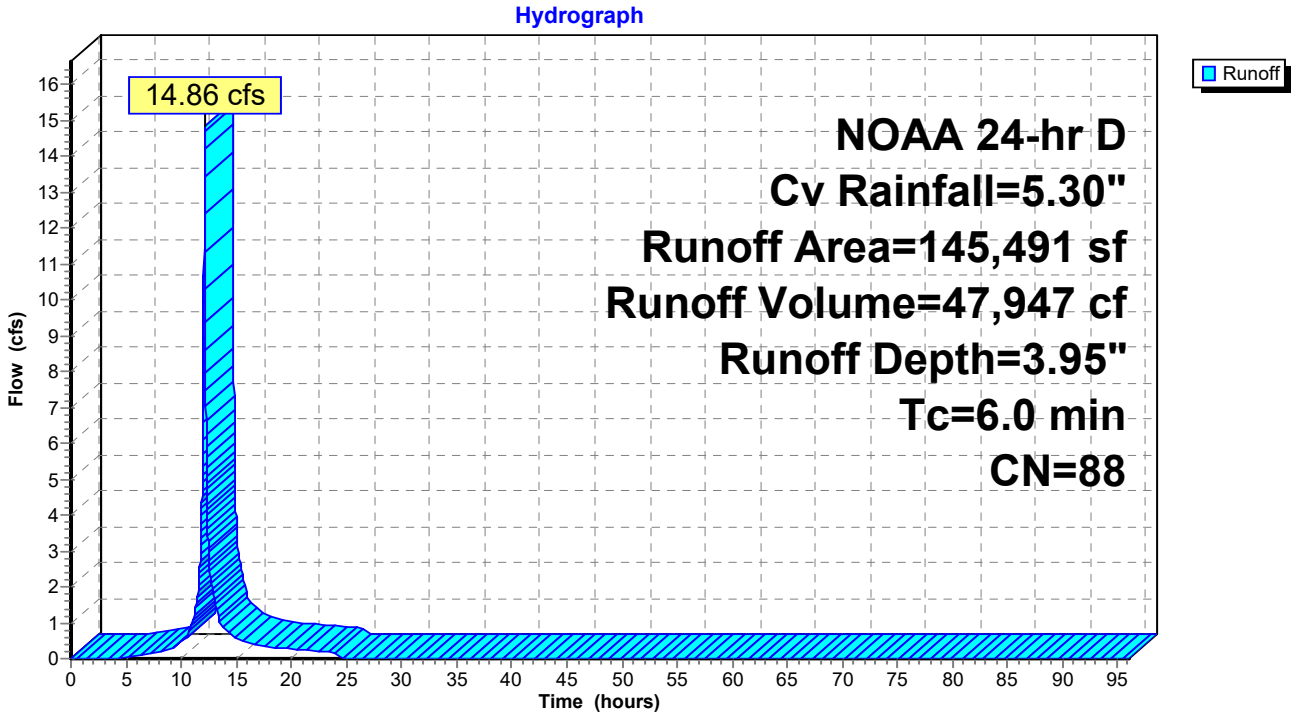
Runoff = 14.86 cfs @ 12.13 hrs, Volume= 47,947 cf, Depth= 3.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 67,744 | 98 | Roof |
| * | 37,879 | 98 | Pavement |
| * | 2,866 | 98 | Sidewalk |
| * | 8,381 | 39 | Grass, HSG A |
| * | 25,644 | 61 | Grass, HSG B |
| * | 2,977 | 74 | Grass, HSG C |
| | 145,491 | 88 | Weighted Average |
| | 37,002 | | 25.43% Pervious Area |
| | 108,489 | | 74.57% Impervious Area |

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

## Subcatchment DA14: Managed



## Summary for Subcatchment DA2: Managed

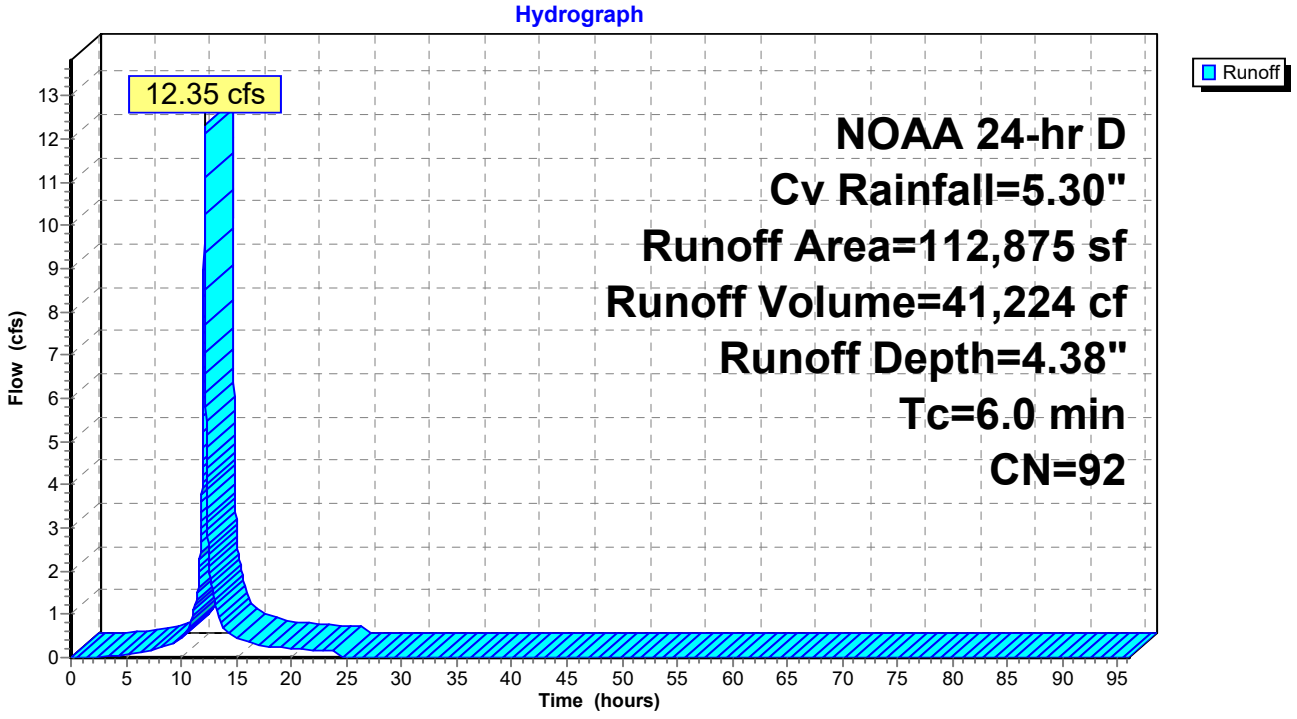
Runoff = 12.35 cfs @ 12.13 hrs, Volume= 41,224 cf, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 9,696 | 98 | Roof |
| * | 79,428 | 98 | Pavement |
| * | 6,694 | 98 | Sidewalk |
| * | 17,057 | 61 | Grass, HSG B |
| | 112,875 | 92 | Weighted Average |
| | 17,057 | | 15.11% Pervious Area |
| | 95,818 | | 84.89% Impervious Area |

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

## Subcatchment DA2: Managed



## Summary for Subcatchment DA3: Managed

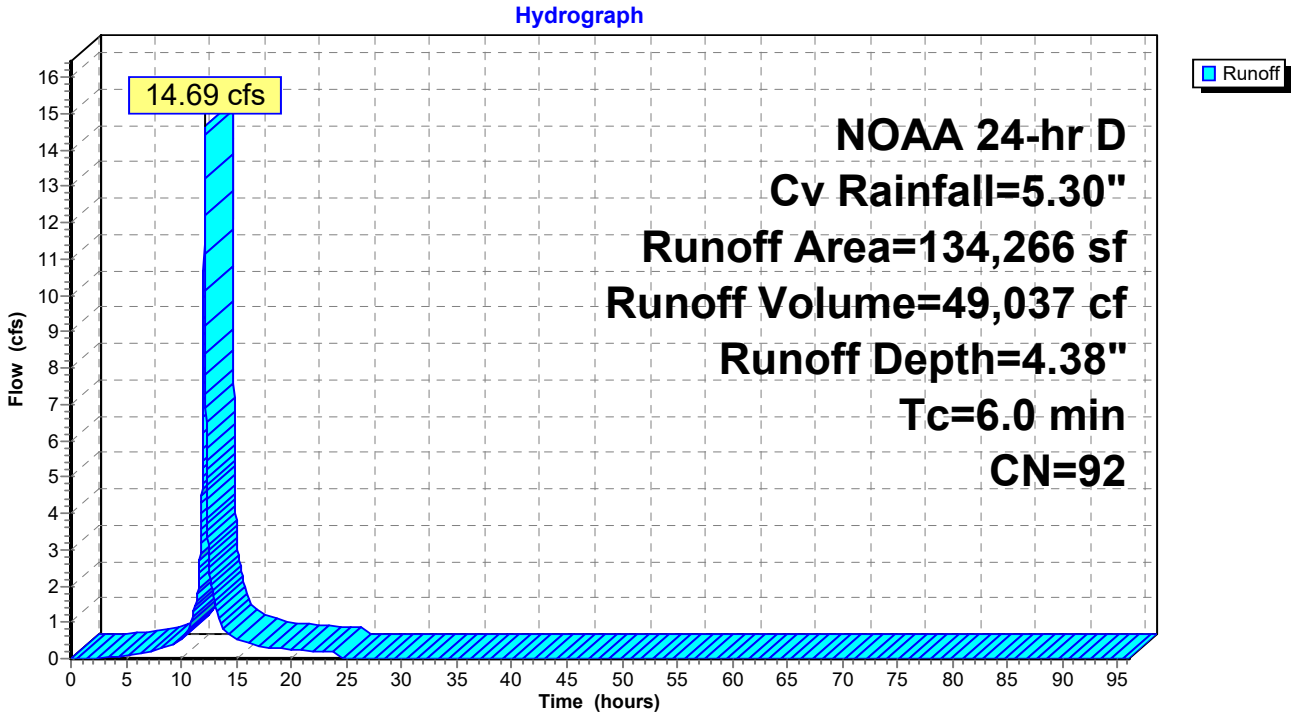
Runoff = 14.69 cfs @ 12.13 hrs, Volume= 49,037 cf, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 152 | 98 | Roof |
| * | 92,770 | 98 | Pavement |
| * | 22,763 | 98 | Sidewalk |
| * | 8,191 | 39 | Grass, HSG A |
| * | 10,390 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 134,266 | 92 | Weighted Average |
| | 18,581 | | 13.84% Pervious Area |
| | 115,685 | | 86.16% Impervious Area |

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

## Subcatchment DA3: Managed



## Summary for Subcatchment DA4: Managed

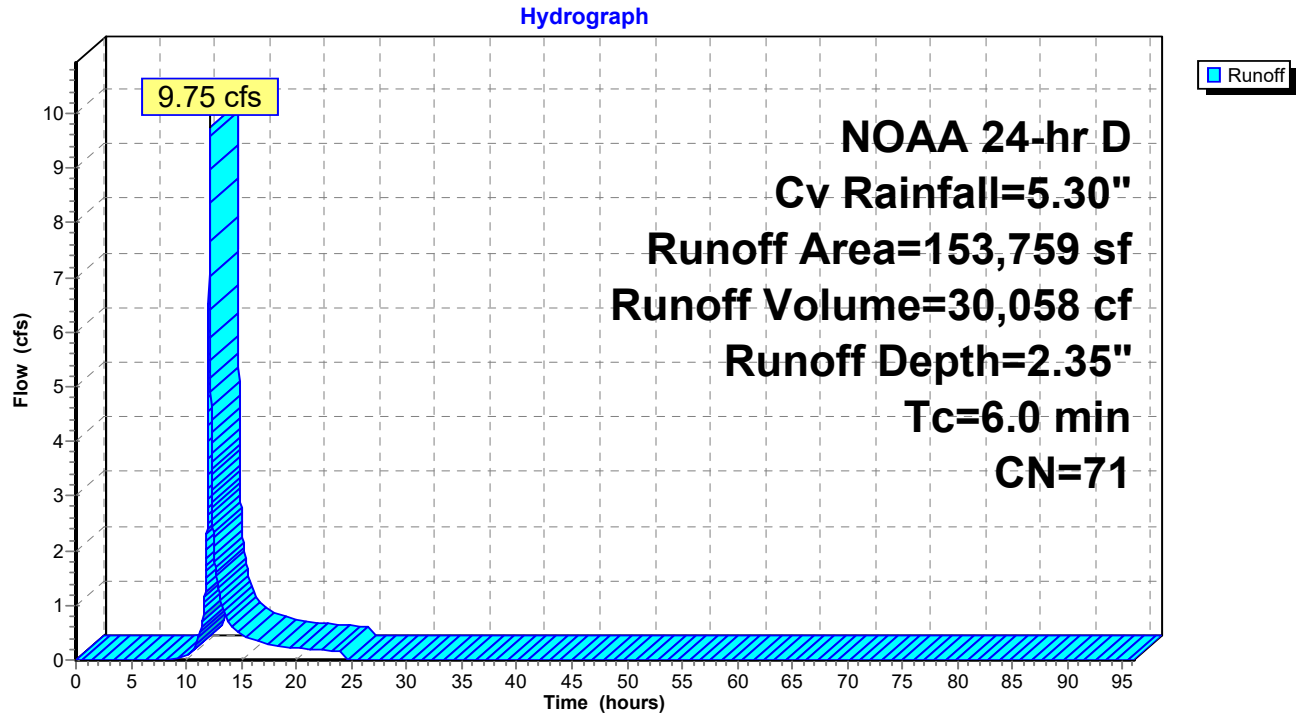
Runoff = 9.75 cfs @ 12.13 hrs, Volume= 30,058 cf, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 6,897 | 98 | Roof |
| * | 40,222 | 98 | Pavement |
| * | 4,998 | 98 | Sidewalk |
| * | 17,113 | 39 | Grass, HSG A |
| * | 29,223 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| * | 10,529 | 98 | Existing Roadway |
| * | 1,670 | 98 | Existing Driveway |
| * | 2,487 | 98 | Ex. Impervious (Undisturbed) |
| * | 26,157 | 39 | Grass, HSG A (Undisturbed) |
| * | 14,463 | 61 | Grass, HSG B (Undisturbed) |
| | 153,759 | 71 | Weighted Average |
| | 86,956 | | 56.55% Pervious Area |
| | 66,803 | | 43.45% Impervious Area |

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

## Subcatchment DA4: Managed



## Summary for Subcatchment DA5: Managed

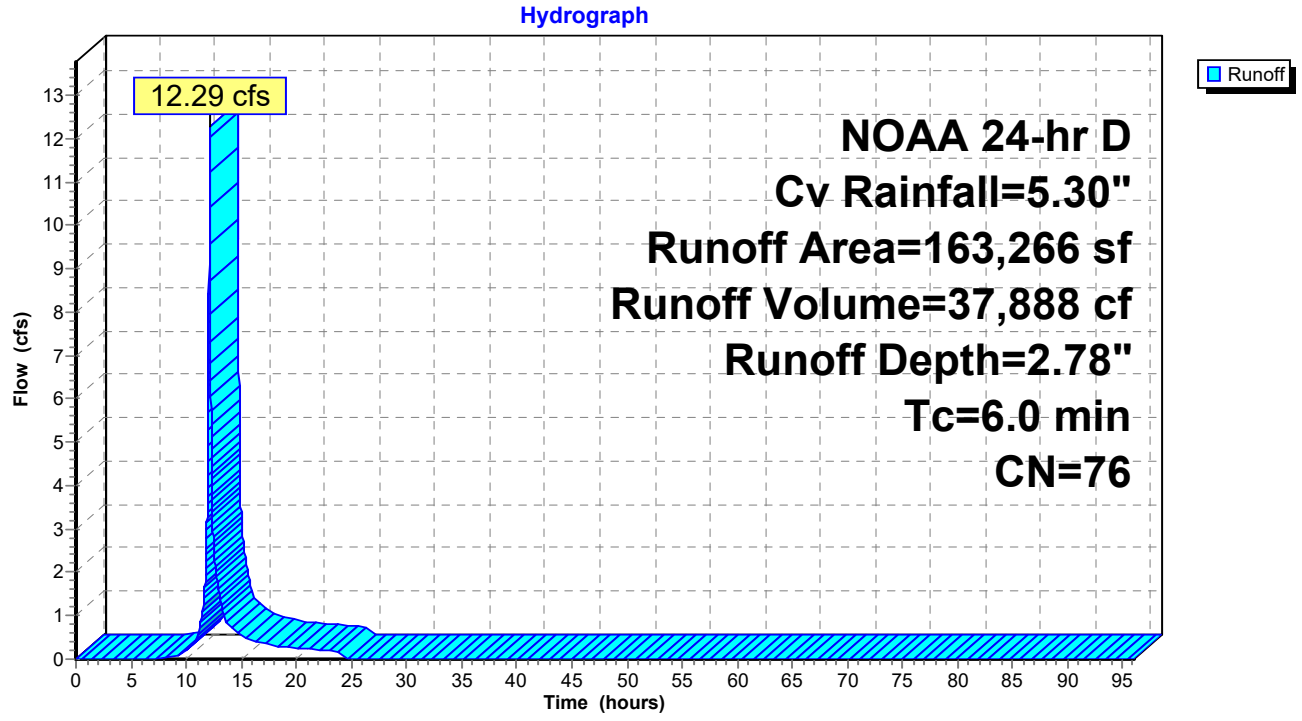
Runoff = 12.29 cfs @ 12.13 hrs, Volume= 37,888 cf, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,386 | 98 | Roof |
| * | 11,095 | 98 | Roof+ |
| * | 70,449 | 98 | Pavement |
| * | 8,116 | 98 | Sidewalk |
| * | 53,775 | 39 | Grass, HSG A |
| * | 9,445 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 163,266 | 76 | Weighted Average |
| | 63,220 | | 38.72% Pervious Area |
| | 100,046 | | 61.28% Impervious Area |

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

## Subcatchment DA5: Managed



## Summary for Subcatchment DA6a: Managed

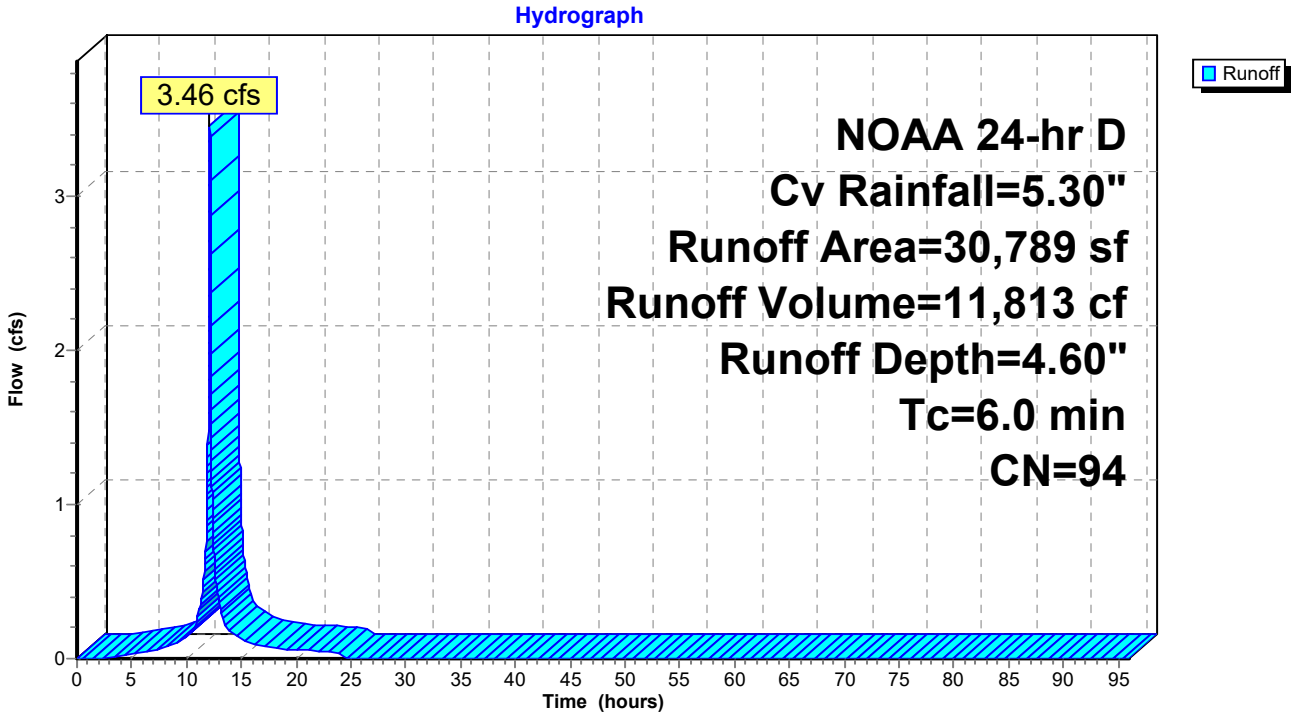
Runoff = 3.46 cfs @ 12.13 hrs, Volume= 11,813 cf, Depth= 4.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 1,985 | 98 | Roof |
| * | 24,381 | 98 | Pavement |
| * | 1,251 | 98 | Sidewalk |
| * | 609 | 39 | Grass, HSG A |
| * | 2,563 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 30,789 | 94 | Weighted Average |
| | 3,172 | | 10.30% Pervious Area |
| | 27,617 | | 89.70% Impervious Area |

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

## Subcatchment DA6a: Managed



## Summary for Subcatchment DA6b: Managed

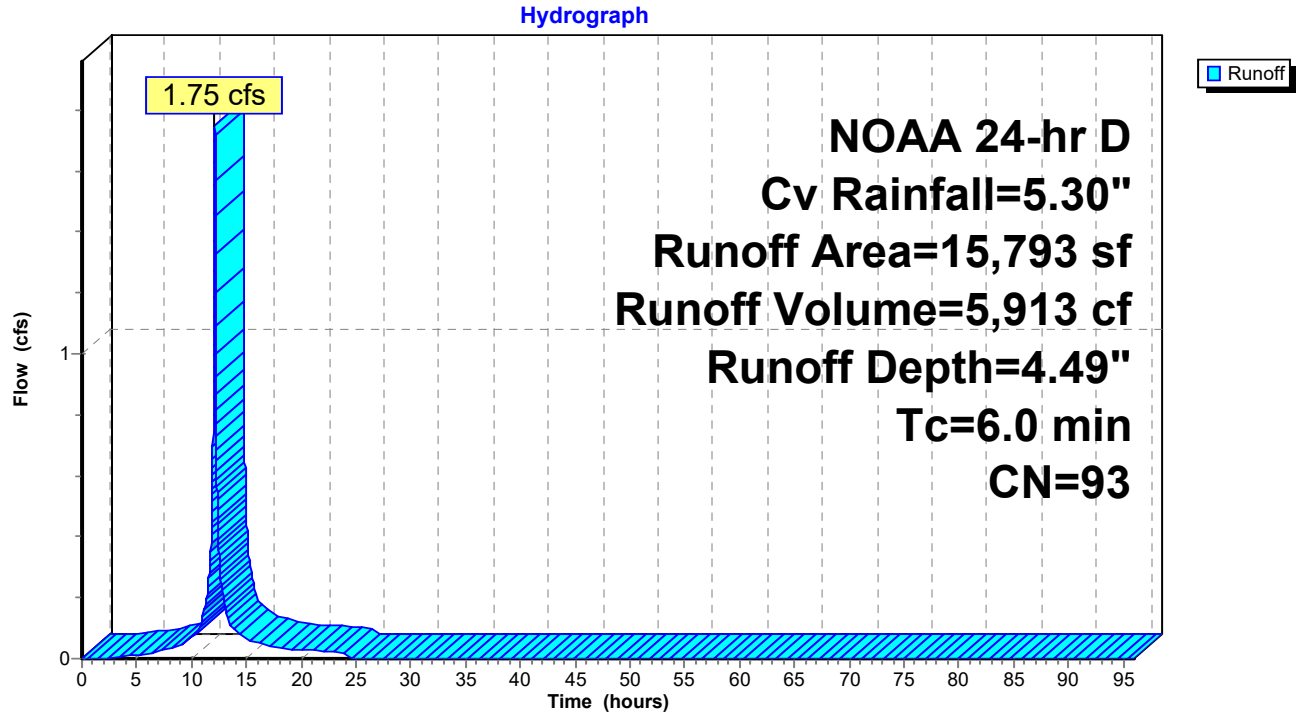
Runoff = 1.75 cfs @ 12.13 hrs, Volume= 5,913 cf, Depth= 4.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 4,320 | 98 | Roof |
| * | 9,409 | 98 | Pavement |
| * | 720 | 98 | Sidewalk |
| * | 1,344 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 15,793 | 93 | Weighted Average |
| | 1,344 | | 8.51% Pervious Area |
| | 14,449 | | 91.49% Impervious Area |

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

## Subcatchment DA6b: Managed



## Summary for Subcatchment DA7: Managed

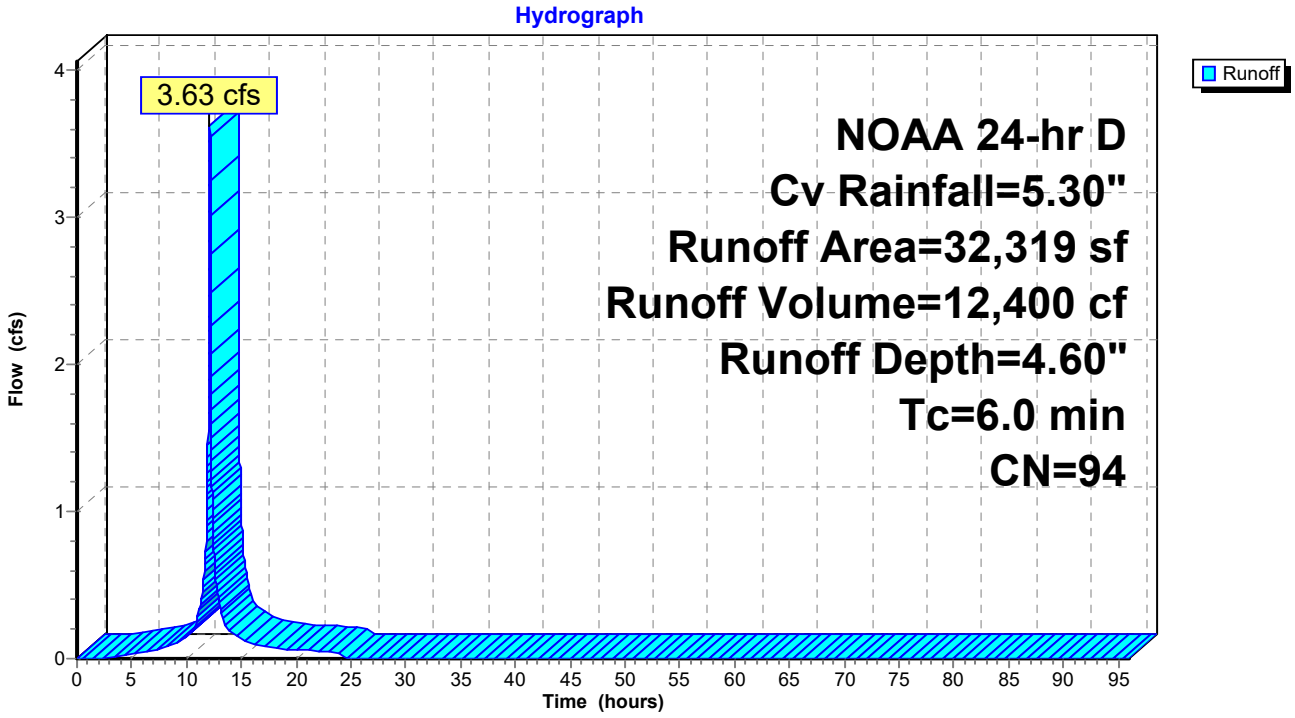
Runoff = 3.63 cfs @ 12.13 hrs, Volume= 12,400 cf, Depth= 4.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 7,045 | 98 | Roof |
| * | 19,833 | 98 | Pavement |
| * | 1,490 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 3,693 | 61 | Grass, HSG B |
| * | 258 | 74 | Grass, HSG C |
| | 32,319 | 94 | Weighted Average |
| | 3,951 | | 12.23% Pervious Area |
| | 28,368 | | 87.77% Impervious Area |

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

## Subcatchment DA7: Managed



## Summary for Subcatchment DA8: Managed

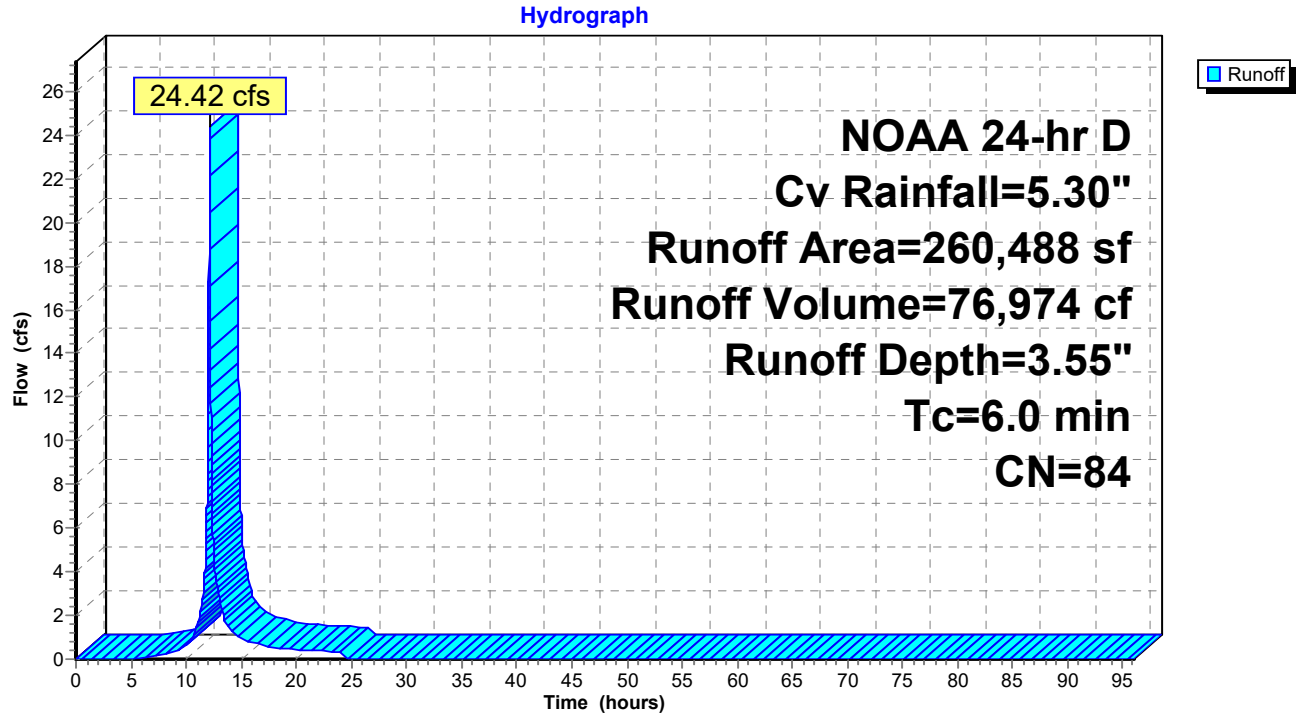
Runoff = 24.42 cfs @ 12.13 hrs, Volume= 76,974 cf, Depth= 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 28,409 | 98 | Roof |
| * | 91,663 | 98 | Pavement |
| * | 13,109 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 68,342 | 61 | Grass, HSG B |
| * | 50,167 | 74 | Grass, HSG C |
| * | 8,798 | 98 | Ex.Roadway |
| | 260,488 | 84 | Weighted Average |
| | 118,509 | | 45.49% Pervious Area |
| | 141,979 | | 54.51% Impervious Area |

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

## Subcatchment DA8: Managed



## Summary for Subcatchment DA9: Managed

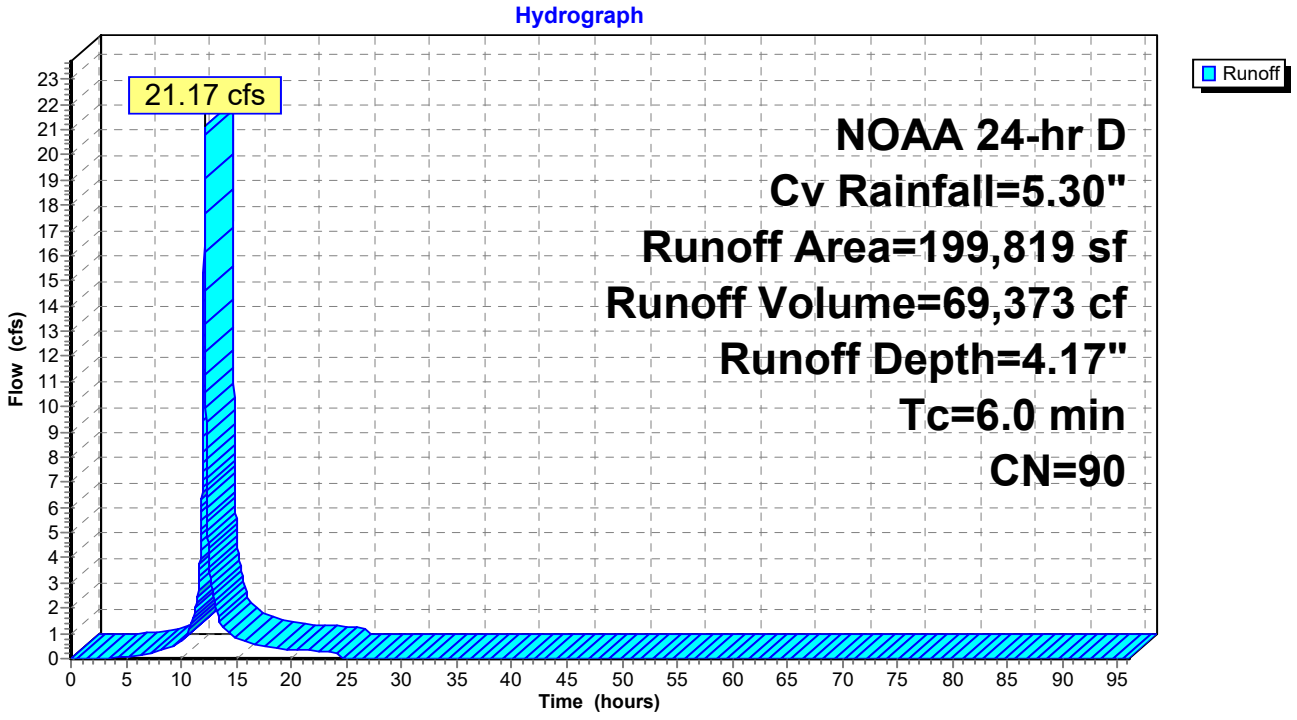
Runoff = 21.17 cfs @ 12.13 hrs, Volume= 69,373 cf, Depth= 4.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Cv Rainfall=5.30"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 45,831 | 98 | Roof |
| * | 99,756 | 98 | Pavement |
| * | 11,069 | 98 | Sidewalk |
| * | 1,120 | 39 | Grass, HSG A |
| * | 42,043 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 199,819 | 90 | Weighted Average |
| | 43,163 | | 21.60% Pervious Area |
| | 156,656 | | 78.40% Impervious Area |

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

## Subcatchment DA9: Managed



## Summary for Pond #1: Drywell

Inflow Area = 145,962 sf, 86.44% Impervious, Inflow Depth = 1.07" for Cv event
Inflow = 3.76 cfs @ 12.13 hrs, Volume= 13,006 cf
Outflow = 0.39 cfs @ 11.63 hrs, Volume= 13,008 cf, Atten= 90%, Lag= 0.0 min
Discarded = 0.39 cfs @ 11.63 hrs, Volume= 13,008 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 40.35' @ 12.99 hrs Surf.Area= 6,800 sf Storage= 3,955 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 64.2 min ( 833.8 - 769.7 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 8,616 cf | **40.00'W x 170.00'L x 3.25'H Field A**<br>22,100 cf Overall - 560 cf Embedded = 21,540 cf x 40.0% Voids |
| #2 | 39.50' | 177 cf | **ADS_StormTech SC-310 +Cap** x 12 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>12 Chambers in 2 Rows |
| #3 | 39.50' | 383 cf | **ADS_StormTech SC-310 +Cap** x 26 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>26 Chambers in 2 Rows |
| #4 | 39.75' | 55 cf | **2.00'W x 2.83'L x 3.25'H CB #** x 3 -Impervious |
| #5 | 43.00' | 4,070 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 13,302 cf | Total Available Storage |

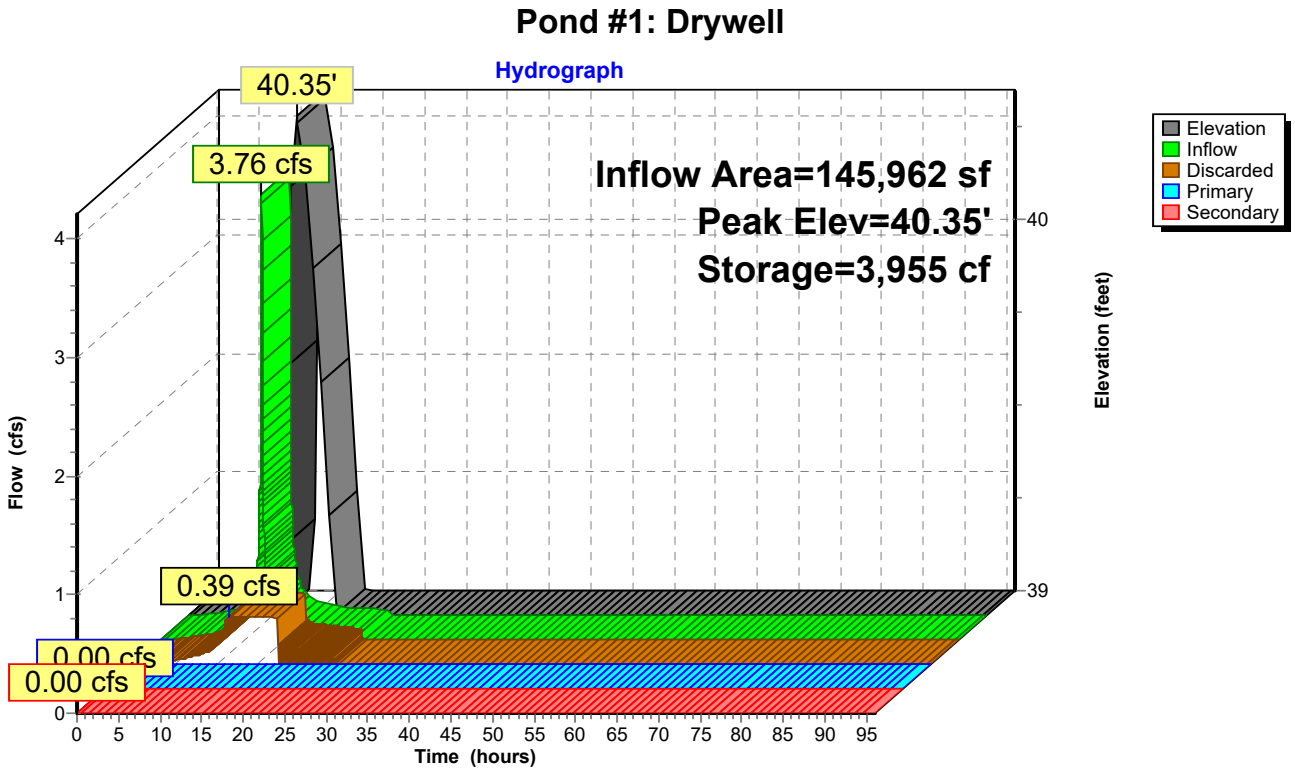
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.00 | 17 | 0 | 0 |
| 43.25 | 15,525 | 1,943 | 1,943 |
| 43.40 | 12,842 | 2,128 | 4,070 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **2.500 in/hr Exfiltration over Surface area** |
| #2 | Secondary | 43.50' | **134.0' long x 0.7' breadth Top of Curb**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50<br>Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32 |
| #3 | Primary | 41.50' | **12.0" Round Over Drain X 0.00** L= 50.0' Ke= 0.500<br>Inlet / Outlet Invert= 41.50' / 41.30' S= 0.0040 '/' Cc= 0.900<br>n= 0.012, Flow Area= 0.79 sf |

**Discarded OutFlow** Max=0.39 cfs @ 11.63 hrs HW=39.05' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.39 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=0.00' (Dynamic Tailwater)
└**3=Over Drain** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=0.00' (Dynamic Tailwater)
└**2=Top of Curb** ( Controls 0.00 cfs)



## Summary for Pond #10: Dry Pond

Inflow Area = 199,819 sf, 78.40% Impervious, Inflow Depth = 4.17" for Cv event
Inflow = 21.17 cfs @ 12.13 hrs, Volume= 69,373 cf
Outflow = 0.46 cfs @ 17.65 hrs, Volume= 69,376 cf, Atten= 98%, Lag= 331.4 min
Discarded = 0.46 cfs @ 17.65 hrs, Volume= 69,376 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 37.48' @ 17.65 hrs Surf.Area= 25,069 sf Storage= 44,563 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 938.1 min ( 1,732.2 - 794.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 35.50' | 117,567 cf | **Dry Pond (Prismatic)**Listed below (Recalc) |

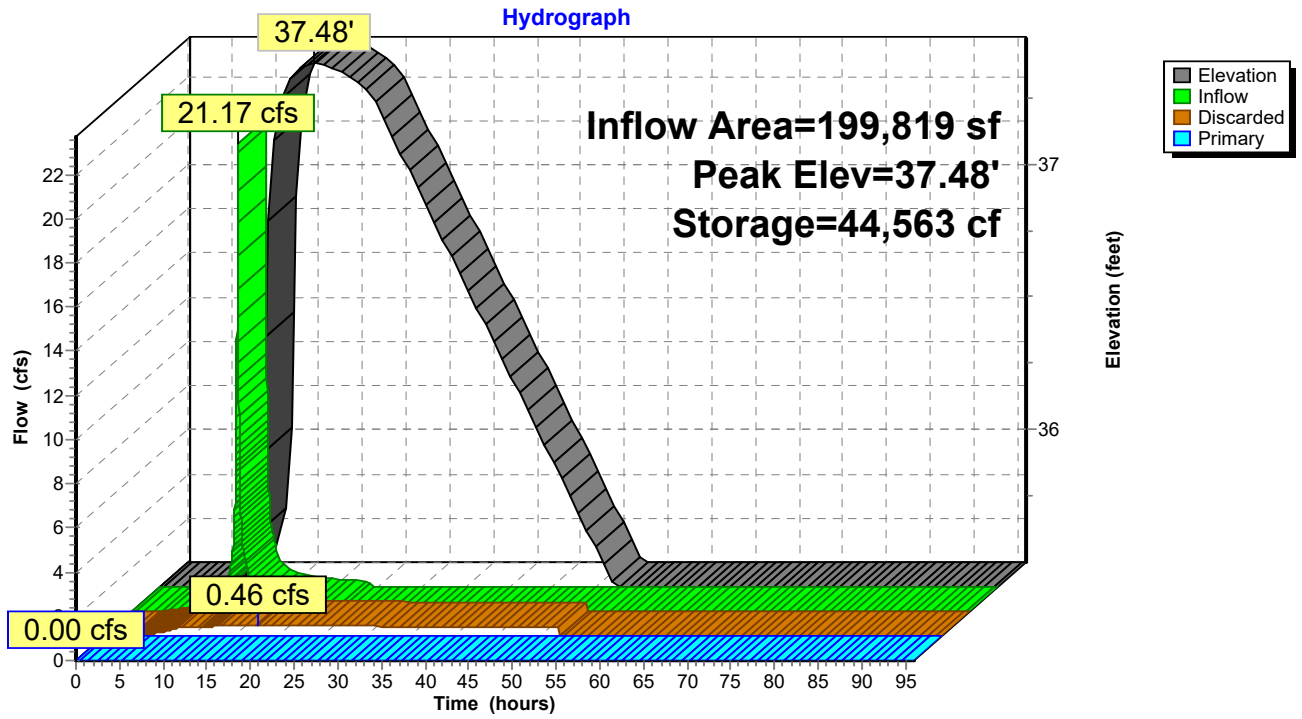
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 35.50 | 20,002 | 0 | 0 |
| 36.00 | 21,260 | 10,316 | 10,316 |
| 37.00 | 23,817 | 22,539 | 32,854 |
| 38.00 | 26,430 | 25,124 | 57,978 |
| 39.00 | 29,833 | 28,132 | 86,109 |
| 40.00 | 33,082 | 31,458 | 117,567 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 35.50' | **0.800 in/hr Exfiltration over Surface area** |
| #2 | Primary | 40.75' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.46 cfs @ 17.65 hrs HW=37.48' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.46 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=35.50' TW=36.70' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #10: Dry Pond



## Summary for Pond #11: Drywell

Inflow Area = 64,196 sf, 78.15% Impervious, Inflow Depth = 4.49" for Cv event
Inflow = 7.12 cfs @ 12.13 hrs, Volume= 24,035 cf
Outflow = 5.29 cfs @ 12.18 hrs, Volume= 24,035 cf, Atten= 26%, Lag= 3.2 min
Discarded = 0.04 cfs @ 6.27 hrs, Volume= 7,170 cf
Primary = 5.26 cfs @ 12.18 hrs, Volume= 16,865 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 38.17' @ 12.18 hrs Surf.Area= 5,600 sf Storage= 6,170 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 318.4 min ( 1,098.9 - 780.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.25' | 6,059 cf | **70.00'W x 80.00'L x 3.25'H Field A**<br>18,200 cf Overall - 3,052 cf Embedded = 15,148 cf x 40.0% Voids |
| #2 | 36.75' | 55 cf | **2.00'W x 2.83'L x 3.25'H CB #** x 3 -Impervious |
| #3 | 36.75' | 52 cf | **4.00'W x 4.00'L x 3.25'H CB #**-Impervious |
| #4 | 40.00' | 2,692 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #5 | 36.75' | 265 cf | **ADS_StormTech SC-310 +Cap** x 18 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>18 Chambers in 2 Rows |
| #6 | 36.75' | 2,786 cf | **ADS_StormTech SC-310 +Cap** x 189 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>189 Chambers in 21 Rows |
| | | 11,910 cf | Total Available Storage |

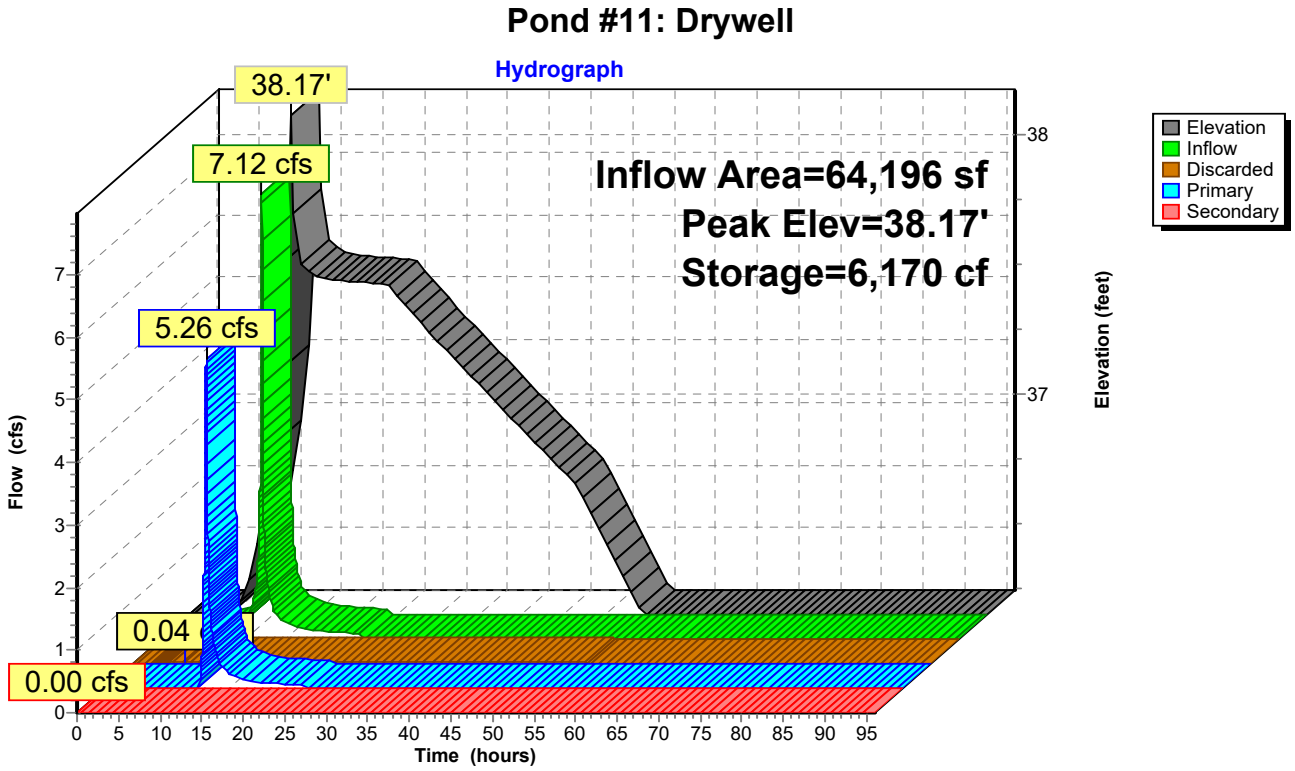
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 40.00 | 39 | 0 | 0 |
| 40.25 | 1,685 | 216 | 216 |
| 40.50 | 18,126 | 2,476 | 2,692 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 36.25' | **0.300 in/hr Exfiltration over Surface area** |
| #2 | Primary | 36.75' | **15.0" Round Culvert** L= 105.0' Ke= 0.500<br>Inlet / Outlet Invert= 36.75' / 36.00' S= 0.0071 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.23 sf |
| #3 | Device 2 | 37.50' | **5.5' long x 0.75' rise Outlet Weir** 2 End Contraction(s) |
| #4 | Secondary | 40.57' | **Roadway Crown, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |

**Discarded OutFlow** Max=0.04 cfs @ 6.27 hrs HW=36.30' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

**Primary OutFlow** Max=5.25 cfs @ 12.18 hrs HW=38.17' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 5.25 cfs @ 4.28 fps)
└**3=Outlet Weir** (Passes 5.25 cfs of 9.53 cfs potential flow)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=36.25' TW=0.00' (Dynamic Tailwater)
└**4=Roadway Crown** ( Controls 0.00 cfs)



## Summary for Pond #12a: Drywell

Inflow Area = 59,904 sf, 86.88% Impervious, Inflow Depth = 4.17" for Cv event
Inflow = 6.35 cfs @ 12.13 hrs, Volume= 20,797 cf
Outflow = 0.49 cfs @ 11.57 hrs, Volume= 20,797 cf, Atten= 92%, Lag= 0.0 min
Discarded = 0.49 cfs @ 11.57 hrs, Volume= 20,797 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 40.41' @ 13.37 hrs Surf.Area= 12,545 sf Storage= 7,757 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 119.0 min ( 913.0 - 794.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 16,644 cf | **65.00'W x 193.00'L x 3.50'H Field A**<br>43,908 cf Overall - 2,297 cf Embedded = 41,610 cf x 40.0% Voids |
| #2 | 39.50' | 2,297 cf | **SC-740 Isolator Row +Cap** x 50 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>50 Chambers in 2 Rows |
| #3 | 39.50' | 45 cf | **2.00'W x 2.83'L x 4.00'H CB#** x 2 -Impervious |
| #4 | 43.50' | 596 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 19,582 cf | Total Available Storage |

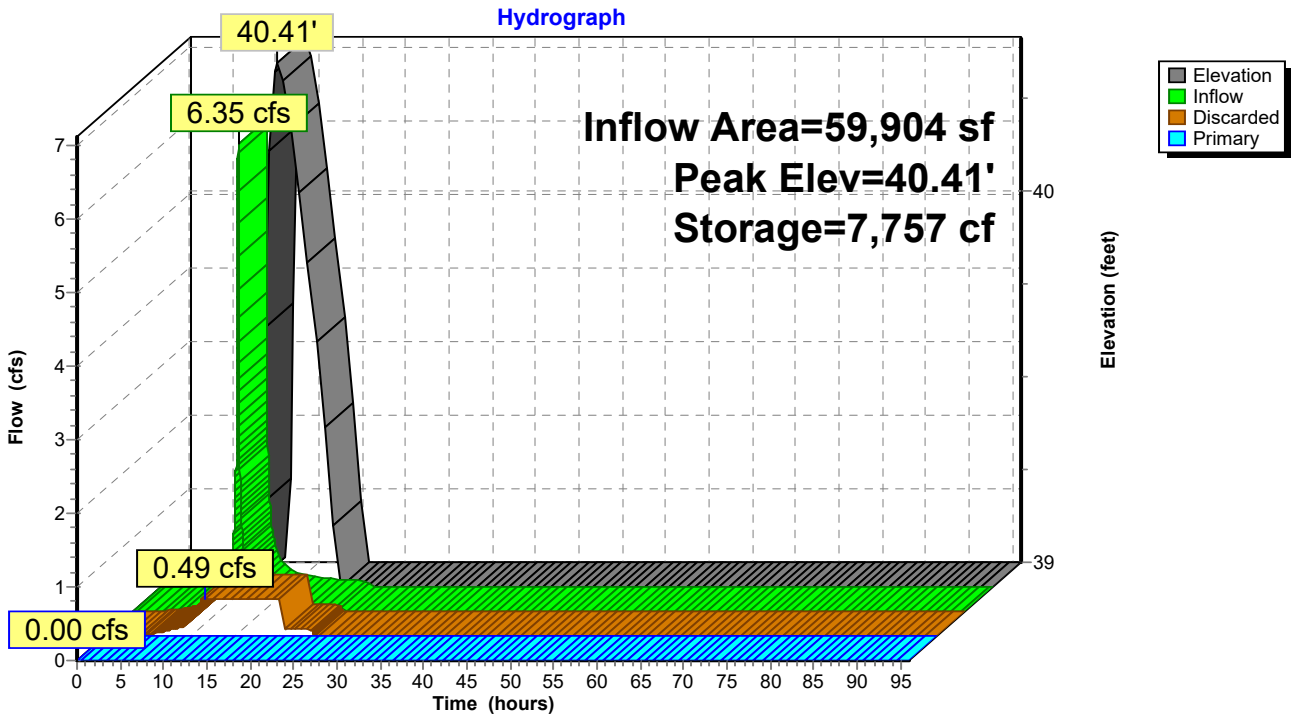
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.50 | 11 | 0 | 0 |
| 43.75 | 157 | 21 | 21 |
| 44.00 | 670 | 103 | 124 |
| 44.25 | 3,101 | 471 | 596 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **1.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 44.41' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.49 cfs @ 11.57 hrs HW=39.06' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.49 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=39.00' (Dynamic Tailwater)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #12a: Drywell



## Summary for Pond #12b: Drywell

Inflow Area = 110,054 sf, 88.16% Impervious, Inflow Depth = 2.00" for Cv event
Inflow = 5.49 cfs @ 12.13 hrs, Volume= 18,316 cf
Outflow = 0.46 cfs @ 11.60 hrs, Volume= 18,321 cf, Atten= 92%, Lag= 0.0 min
Discarded = 0.46 cfs @ 11.60 hrs, Volume= 18,321 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 40.29' @ 13.24 hrs Surf.Area= 11,780 sf Storage= 6,465 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 100.4 min ( 885.7 - 785.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 15,007 cf | **62.00'W x 190.00'L x 3.25'H Field A**<br>38,285 cf Overall - 767 cf Embedded = 37,518 cf x 40.0% Voids |
| #2 | 39.50' | 767 cf | **SC-310 Isolator Row+Cap** x 52 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>52 Chambers in 2 Rows |
| #3 | 39.70' | 22 cf | **2.00'W x 2.83'L x 3.80'H CB#**-Impervious |
| #4 | 43.50' | 122 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #5 | 40.00' | 17 cf | **2.00'W x 2.83'L x 3.00'H CB#**-Impervious |
| #6 | 43.00' | 300 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 16,234 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.50 | 6 | 0 | 0 |
| 43.75 | 75 | 10 | 10 |
| 44.00 | 203 | 35 | 45 |
| 44.25 | 417 | 78 | 122 |

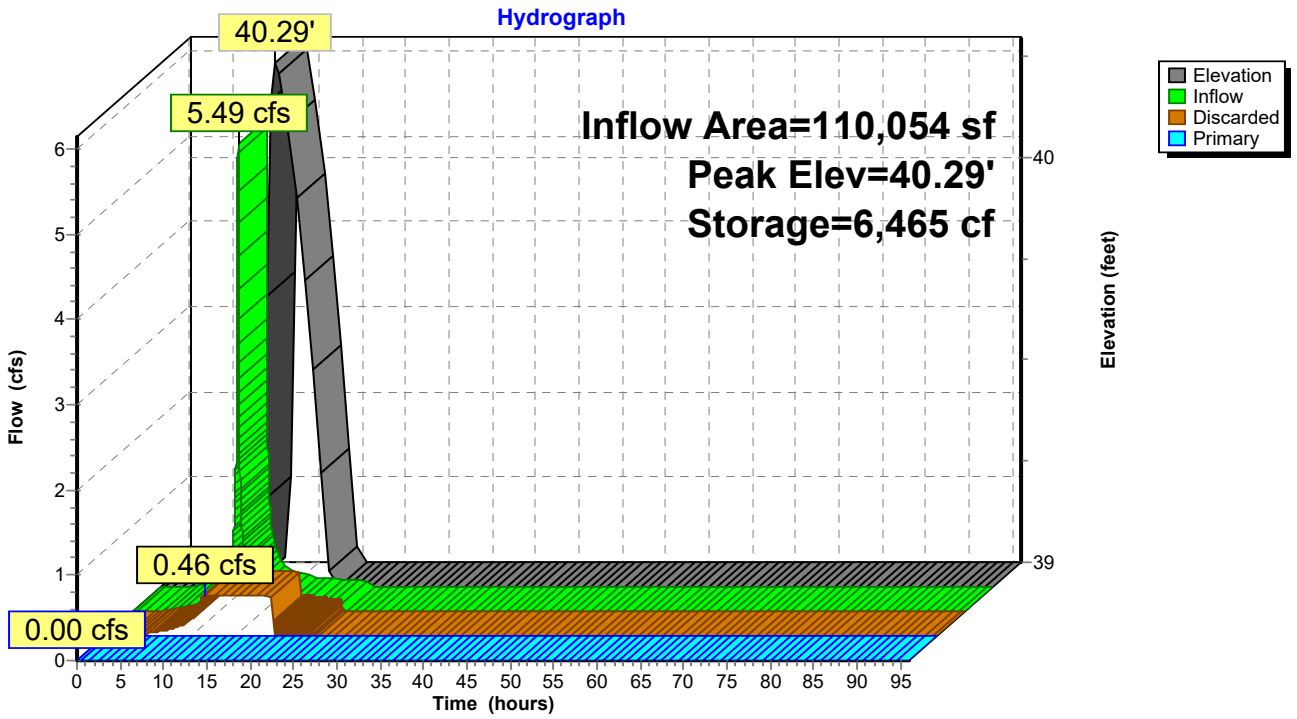
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.00 | 6 | 0 | 0 |
| 43.25 | 2,391 | 300 | 300 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **1.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.39' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.46 cfs @ 11.60 hrs HW=39.06' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.46 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #12b: Drywell



## Summary for Pond #13: Dry Pond

Inflow Area = 728,208 sf, 62.81% Impervious, Inflow Depth = 1.03" for Cv event
Inflow = 19.82 cfs @ 12.13 hrs, Volume= 62,458 cf
Outflow = 2.27 cfs @ 12.98 hrs, Volume= 62,459 cf, Atten= 89%, Lag= 50.8 min
Discarded = 2.27 cfs @ 12.98 hrs, Volume= 62,459 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 37.19' @ 12.98 hrs Surf.Area= 40,907 sf Storage= 19,321 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 59.8 min ( 875.6 - 815.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.70' | 50,581 cf | **Custom Stage Data (Prismatic)**Listed below (Recalc) |
| | | 50,581 cf | x 2.00 = 101,163 cf Total Available Storage |

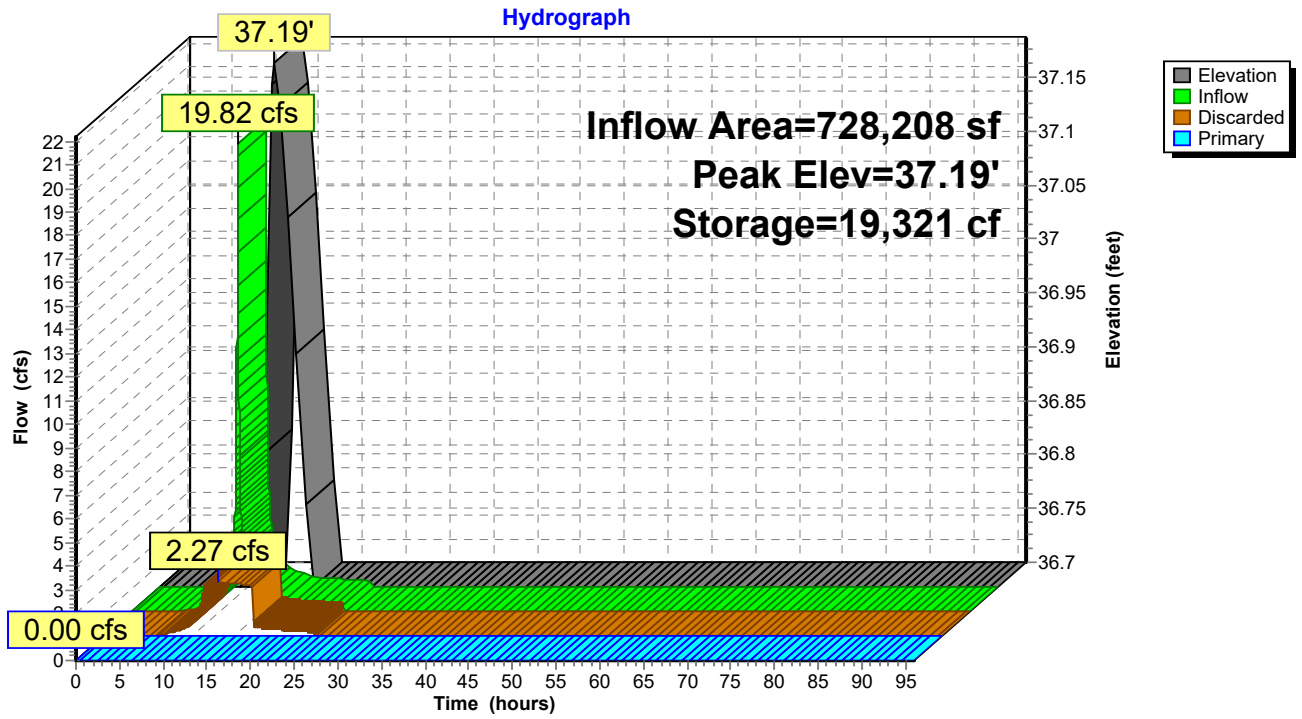
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 36.70 | 19,271 | 0 | 0 |
| 37.00 | 20,025 | 5,894 | 5,894 |
| 38.00 | 22,329 | 21,177 | 27,071 |
| 39.00 | 24,691 | 23,510 | 50,581 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 36.70' | **2.400 in/hr Exfiltration over Surface area** |
| #2 | Primary | 39.50' | **10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 |
| | | | Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=2.27 cfs @ 12.98 hrs HW=37.19' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 2.27 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=36.70' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #13: Dry Pond



## Summary for Pond #14: SGW

Inflow Area = 145,491 sf, 74.57% Impervious, Inflow Depth = 3.95" for Cv event
Inflow = 14.86 cfs @ 12.13 hrs, Volume= 47,947 cf
Outflow = 7.59 cfs @ 12.23 hrs, Volume= 47,947 cf, Atten= 49%, Lag= 5.9 min
Primary = 4.91 cfs @ 12.28 hrs, Volume= 45,805 cf
Secondary = 2.69 cfs @ 12.23 hrs, Volume= 2,142 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 40.17' Surf.Area= 6,915 sf Storage= 5,556 cf
Peak Elev= 41.65' @ 12.23 hrs Surf.Area= 16,505 sf Storage= 17,320 cf (11,764 cf above start)

Plug-Flow detention time= 142.9 min calculated for 42,391 cf (88% of inflow)
Center-of-Mass det. time= 49.4 min ( 851.3 - 801.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 37.83' | 24,299 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

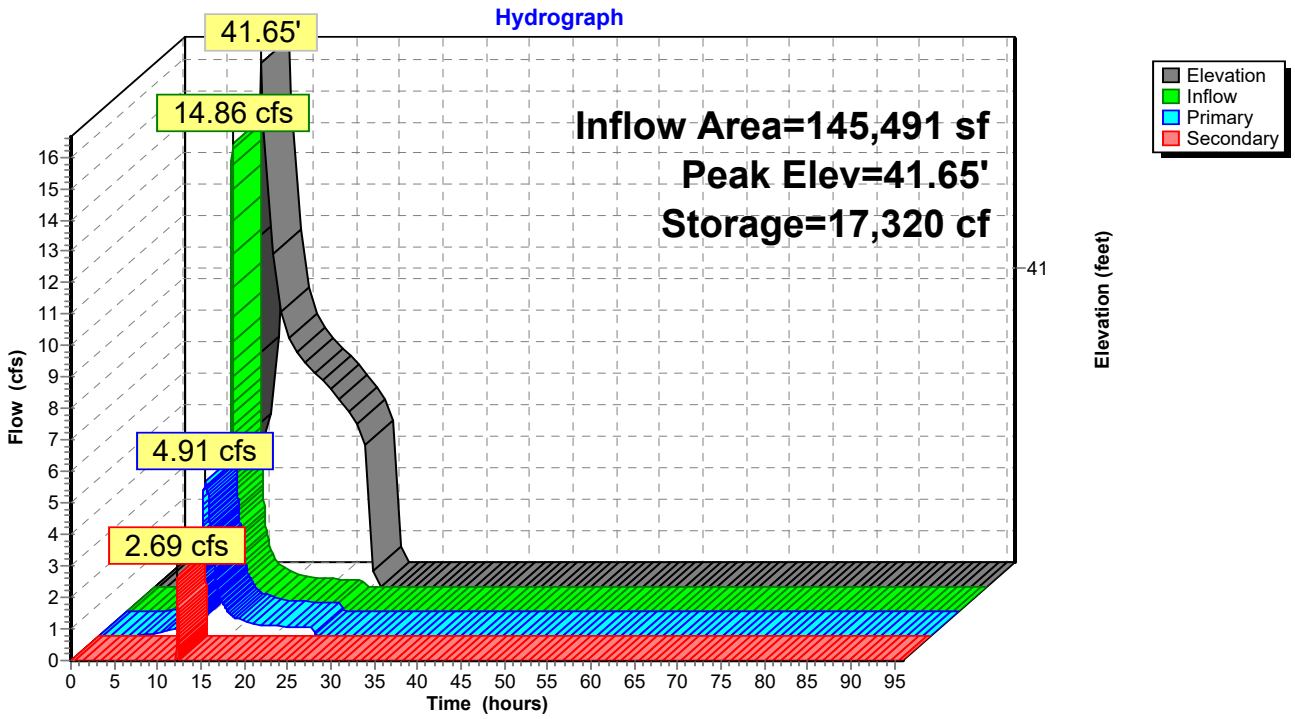
| Elevation (feet) | Surf.Area (sq-ft) | Voids (%) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|---|
| 37.83 | 6,915 | 0.0 | 0 | 0 |
| 39.83 | 6,915 | 40.0 | 5,532 | 5,532 |
| 40.50 | 6,915 | 1.0 | 46 | 5,578 |
| 41.00 | 8,691 | 100.0 | 3,902 | 9,480 |
| 41.50 | 13,739 | 100.0 | 5,608 | 15,087 |
| 42.00 | 23,108 | 100.0 | 9,212 | 24,299 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 40.00' | **15.0" Round Culvert** L= 66.0' Ke= 0.500<br>Inlet / Outlet Invert= 40.00' / 39.74' S= 0.0039 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.23 sf |
| #2 | Device 1 | 40.17' | **4.0" Horiz. Under Drain Rim** C= 0.600<br>Limited to weir flow at low heads |
| #3 | Device 1 | 40.75' | **24.0" W x 12.0" H Vert. Low Flow Weir** C= 0.600<br>Limited to weir flow at low heads |
| #4 | Device 1 | 41.75' | **24.0" x 34.0" Horiz. Top of Inlet** C= 0.600<br>Limited to weir flow at low heads |
| #5 | Secondary | 41.50' | **20.0' long x 6.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83 |

**Primary OutFlow** Max=4.91 cfs @ 12.28 hrs HW=41.64' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 4.91 cfs @ 4.02 fps)
  ├─**2=Under Drain Rim** (Passes < 0.51 cfs potential flow)
  ├─**3=Low Flow Weir** (Passes < 5.35 cfs potential flow)
  └─**4=Top of Inlet** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=2.69 cfs @ 12.23 hrs HW=41.65' TW=37.93' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Weir Controls 2.69 cfs @ 0.91 fps)

## Pond #14: SGW


Hydrograph
41.65'
14.86 cfs
4.91 cfs
2.69 cfs
Inflow Area=145,491 sf
Peak Elev=41.65'
Storage=17,320 cf
Elevation
Inflow
Primary
Secondary
Flow (cfs)
Elevation (feet)
Time (hours)
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
41

## Summary for Pond #2: Drywell

Inflow Area = 112,875 sf, 84.89% Impervious, Inflow Depth = 4.38" for Cv event
Inflow = 12.35 cfs @ 12.13 hrs, Volume= 41,224 cf
Outflow = 0.57 cfs @ 11.19 hrs, Volume= 41,229 cf, Atten= 95%, Lag= 0.0 min
Discarded = 0.57 cfs @ 11.19 hrs, Volume= 41,229 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.27' @ 14.39 hrs Surf.Area= 24,750 sf Storage= 19,288 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 294.3 min ( 1,079.7 - 785.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 38.00' | 28,989 cf | **150.00'W x 165.00'L x 3.50'H Field A**<br>86,625 cf Overall - 14,152 cf Embedded = 72,473 cf x 40.0% Voids |
| #2 | 38.50' | 14,152 cf | **ADS_StormTech RC-310 +Cap** x 960 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>960 Chambers in 48 Rows |
| #3 | 42.00' | 5,253 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #4 | 38.50' | 79 cf | **2.00'W x 2.83'L x 3.50'H CB #** x 4 -Impervious |
| | | 48,474 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 42.00 | 23 | 0 | 0 |
| 42.25 | 194 | 27 | 27 |
| 42.50 | 528 | 90 | 117 |
| 42.75 | 5,743 | 784 | 901 |
| 43.00 | 29,071 | 4,352 | 5,253 |

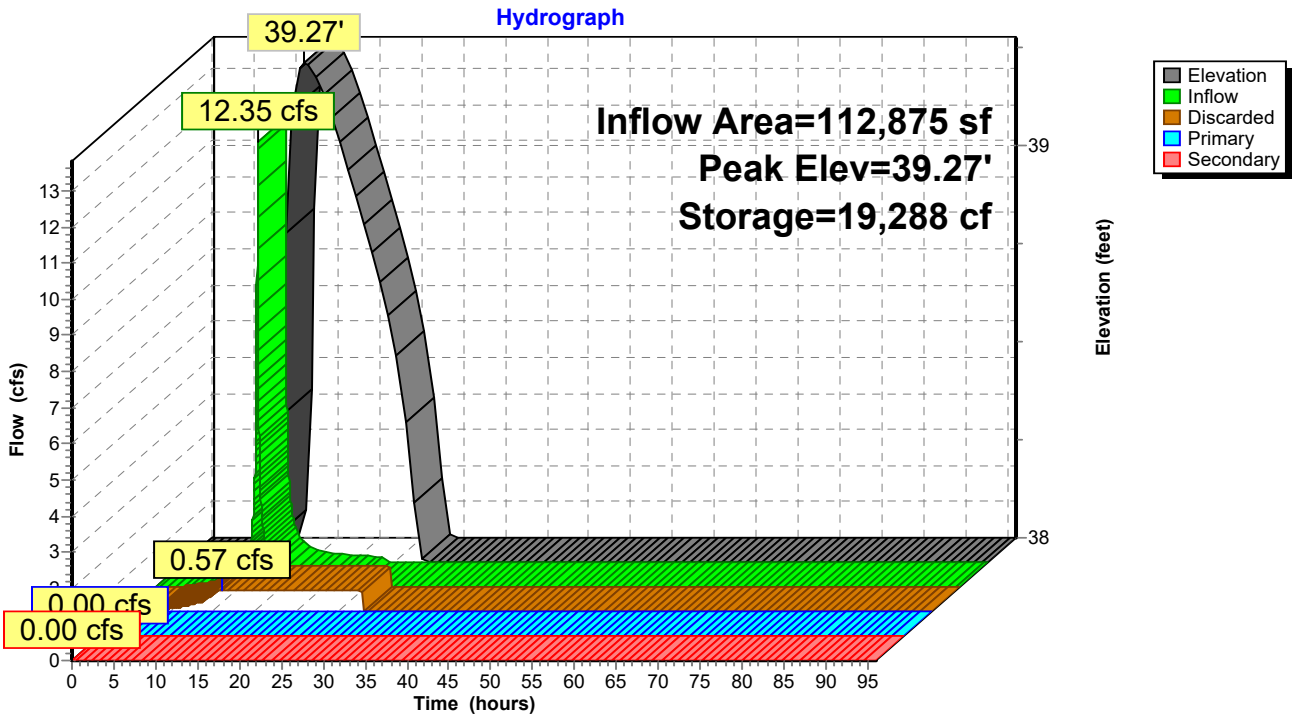
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 38.00' | **1.000 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.41' | **Asymmetrical Weir, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |
| #3 | Secondary | 43.46' | **Asymmetrical Weir, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |

**Discarded OutFlow** Max=0.57 cfs @ 11.19 hrs HW=38.06' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.57 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=39.00' (Dynamic Tailwater)
↑**2=Asymmetrical Weir** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=38.00' (Dynamic Tailwater)
↑**3=Asymmetrical Weir** ( Controls 0.00 cfs)

## Pond #2: Drywell



## Summary for Pond #3: Drywell

Inflow Area = 134,266 sf, 86.16% Impervious, Inflow Depth = 4.38" for Cv event
Inflow = 14.69 cfs @ 12.13 hrs, Volume= 49,037 cf
Outflow = 0.41 cfs @ 10.51 hrs, Volume= 49,040 cf, Atten= 97%, Lag= 0.0 min
Discarded = 0.41 cfs @ 10.51 hrs, Volume= 49,040 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.44' @ 16.37 hrs Surf.Area= 29,415 sf Storage= 28,022 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 626.0 min ( 1,411.4 - 785.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 38.00' | 26,848 cf | **265.00'W x 111.00'L x 3.50'H Field A**<br>102,953 cf Overall - 35,833 cf Embedded = 67,119 cf x 40.0% Voids |
| #2 | 38.50' | 42 cf | **2.00'W x 2.83'L x 3.75'H CB #** x 2 -Impervious |
| #3 | 38.50' | 120 cf | **4.00'W x 4.00'L x 3.75'H CB #** x 2 -Impervious |
| #4 | 42.25' | 2,419 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #5 | 38.50' | 35,833 cf | **ADS_StormTech SC-740 +Cap** x 780 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>780 Chambers in 52 Rows |
| | | 65,262 cf | Total Available Storage |

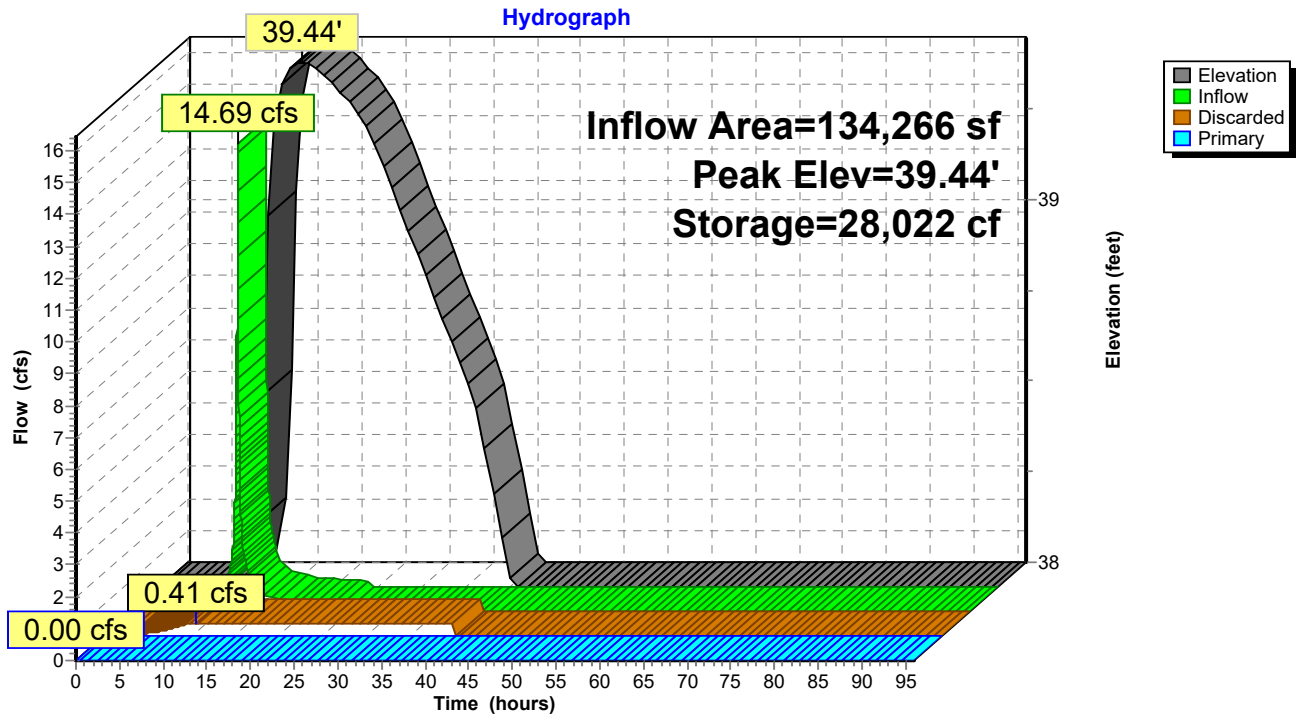
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 42.25 | 43 | 0 | 0 |
| 42.50 | 874 | 115 | 115 |
| 42.75 | 17,561 | 2,304 | 2,419 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 38.00' | **0.600 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.00' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.41 cfs @ 10.51 hrs HW=38.05' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=0.00' (Dynamic Tailwater)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #3: Drywell



## Summary for Pond #4: Drywell

Inflow Area = 153,759 sf, 43.45% Impervious, Inflow Depth = 2.35" for Cv event
Inflow = 9.75 cfs @ 12.13 hrs, Volume= 30,058 cf
Outflow = 3.44 cfs @ 12.32 hrs, Volume= 30,062 cf, Atten= 65%, Lag= 10.9 min
Discarded = 0.35 cfs @ 11.42 hrs, Volume= 19,526 cf
Primary = 3.09 cfs @ 12.32 hrs, Volume= 10,536 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 40.62' @ 12.32 hrs Surf.Area= 8,775 sf Storage= 8,280 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 137.0 min ( 990.1 - 853.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 9,563 cf | **45.00'W x 195.00'L x 3.25'H Drywell**<br>28,519 cf Overall - 4,611 cf Embedded = 23,908 cf x 40.0% Voids |
| #2 | 40.00' | 369 cf | **ADS_StormTech SC-310 +Cap** x 25 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap |
| #3 | 39.50' | 4,216 cf | **ADS_StormTech SC-310 +Cap** x 286 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>286 Chambers in 11 Rows |
| #4 | 40.00' | 13 cf | **2.00'W x 2.83'L x 2.25'H CB #1** Inside #1<br>26 cf Overall - 6.0" Wall Thickness = 13 cf |
| #5 | 42.25' | 5 cf | **2.00'W x 2.83'L x 0.90'H CB #1** |
| #6 | 43.15' | 3,594 cf | **#1 Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 17,760 cf | Total Available Storage |

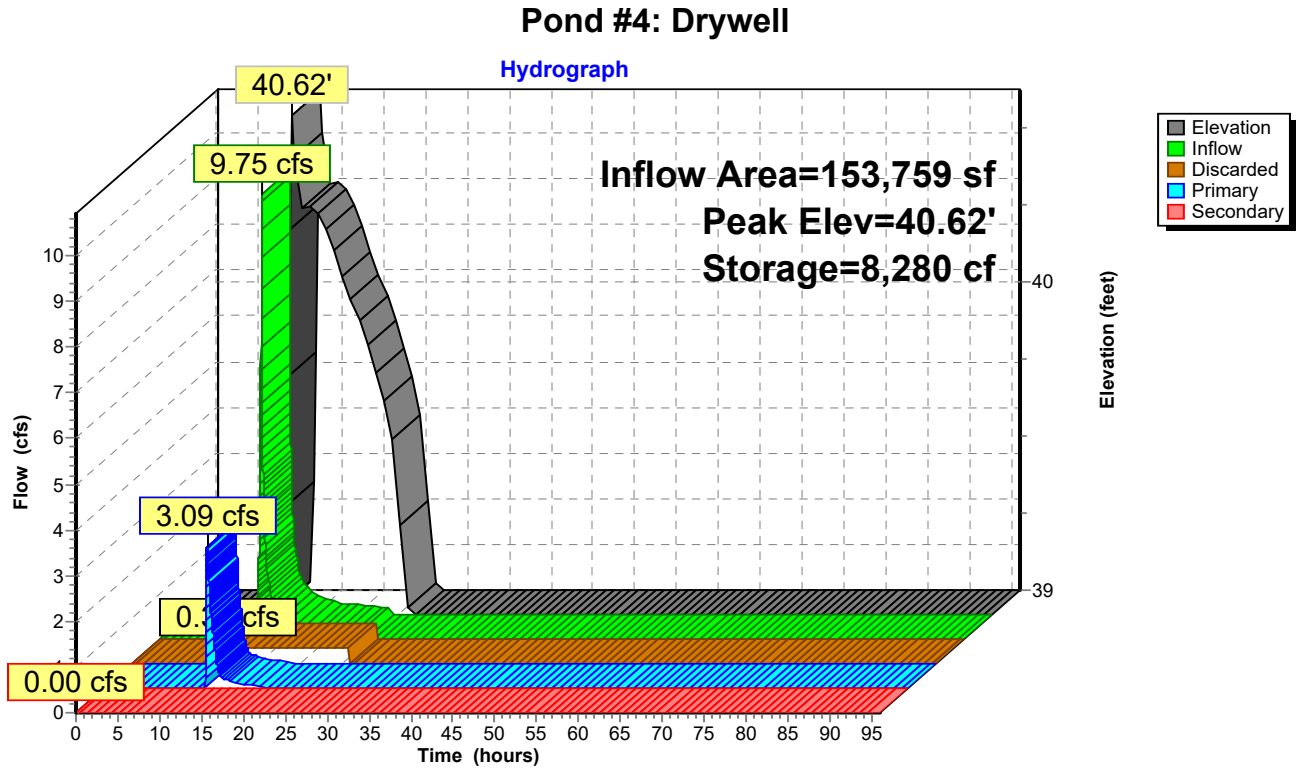
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.15 | 6 | 0 | 0 |
| 43.25 | 175 | 9 | 9 |
| 43.50 | 2,939 | 389 | 398 |
| 43.75 | 6,476 | 1,177 | 1,575 |
| 44.00 | 9,673 | 2,019 | 3,594 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **1.700 in/hr Exfiltration over Surface area** |
| #2 | Secondary | 44.11' | **Asymmetrical Weir, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.30 0.50 |
| #3 | Primary | 40.01' | **12.0" Vert. 12" Over Drain** C= 0.600<br>Limited to weir flow at low heads |
| #4 | Primary | 40.01' | **18.0" Vert. 15" Over Drain** C= 0.600<br>Limited to weir flow at low heads |

**Discarded OutFlow** Max=0.35 cfs @ 11.42 hrs HW=39.06' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.35 cfs)

**Primary OutFlow** Max=3.09 cfs @ 12.32 hrs HW=40.62' TW=39.52' (Dynamic Tailwater)
├**3=12" Over Drain** (Orifice Controls 1.32 cfs @ 2.65 fps)
└**4=15" Over Drain** (Orifice Controls 1.77 cfs @ 2.65 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=38.50' (Dynamic Tailwater)
└**2=Asymmetrical Weir** ( Controls 0.00 cfs)



## Summary for Pond #5: Dry Pond

Inflow Area = 317,025 sf, 52.63% Impervious, Inflow Depth = 1.83" for Cv event
Inflow = 12.65 cfs @ 12.14 hrs, Volume= 48,424 cf
Outflow = 0.78 cfs @ 14.69 hrs, Volume= 48,427 cf, Atten= 94%, Lag= 152.9 min
Discarded = 0.78 cfs @ 14.69 hrs, Volume= 48,427 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 40.32' @ 14.69 hrs Surf.Area= 16,033 sf Storage= 25,753 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 345.7 min ( 1,175.9 - 830.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 38.50' | 100,215 cf | **Dry Pond (Prismatic)**Listed below (Recalc) |
| #2 | 39.50' | 58 cf | **4.00'W x 4.00'L x 3.65'H CB #**-Impervious |
| #3 | 43.15' | 1,793 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #4 | 38.50' | 280 cf | **24.0" Round Culvert**-Impervious<br>L= 89.0' S= 0.0112 '/' |
| | | 102,345 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 38.50 | 12,091 | 0 | 0 |
| 39.00 | 13,149 | 6,310 | 6,310 |
| 40.00 | 15,319 | 14,234 | 20,544 |
| 41.00 | 17,557 | 16,438 | 36,982 |
| 42.00 | 19,866 | 18,712 | 55,694 |
| 43.00 | 22,243 | 21,055 | 76,748 |
| 44.00 | 24,690 | 23,467 | 100,215 |

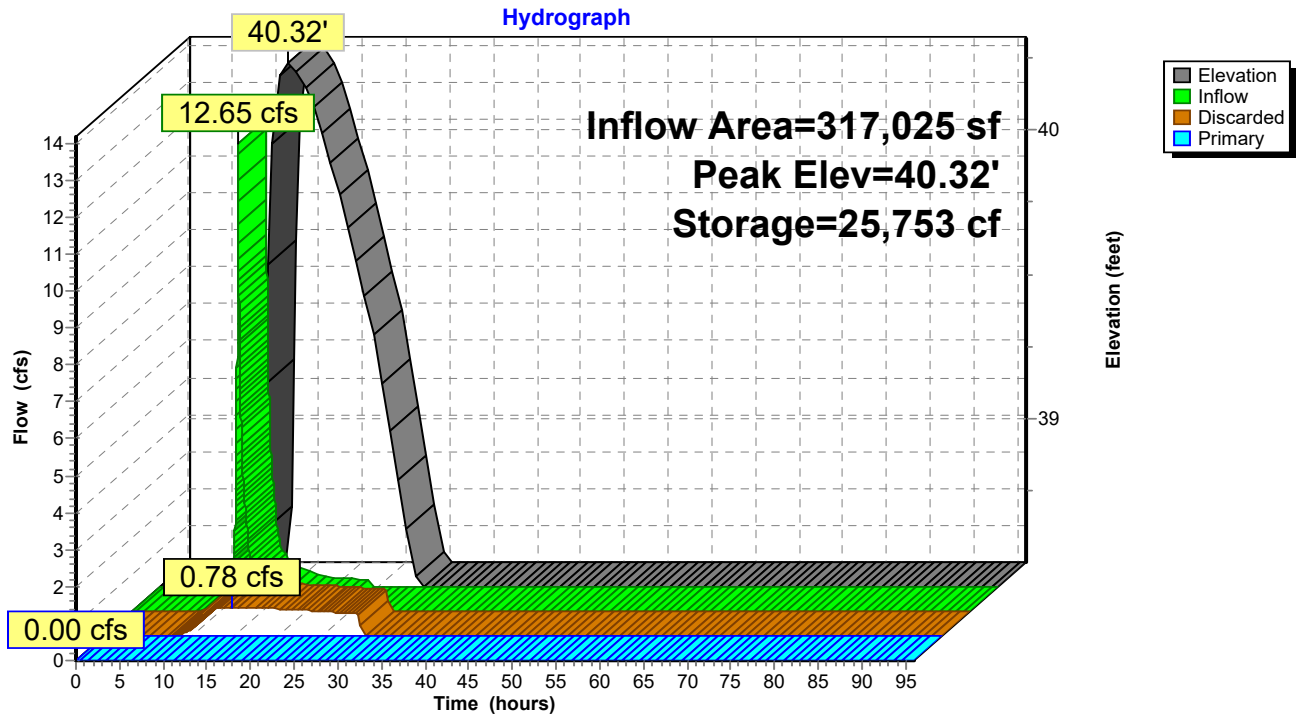
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.15 | 6 | 0 | 0 |
| 43.25 | 151 | 8 | 8 |
| 43.50 | 1,336 | 186 | 194 |
| 43.75 | 3,192 | 566 | 760 |
| 44.00 | 5,073 | 1,033 | 1,793 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 38.50' | **2.100 in/hr Exfiltration over Surface area** |
| #2 | Primary | 45.72' | **Top of Curb, C= 3.27**<br>Offset (feet) 0.00 9.59 19.17 24.92 30.87 40.79 50.71<br>Height (feet) 0.13 0.07 0.02 0.00 0.02 0.07 0.13 |

**Discarded OutFlow** Max=0.78 cfs @ 14.69 hrs HW=40.32' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.78 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.50' TW=36.70' (Dynamic Tailwater)
↑**2=Top of Curb** ( Controls 0.00 cfs)

## Pond #5: Dry Pond



## Summary for Pond #6a: Drywell

Inflow Area = 46,582 sf, 90.31% Impervious, Inflow Depth = 3.04" for Cv event
Inflow = 3.46 cfs @ 12.13 hrs, Volume= 11,813 cf
Outflow = 0.19 cfs @ 11.27 hrs, Volume= 11,813 cf, Atten= 94%, Lag= 0.0 min
Discarded = 0.19 cfs @ 11.27 hrs, Volume= 11,813 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 42.41' @ 13.78 hrs Surf.Area= 8,400 sf Storage= 5,021 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 211.0 min ( 986.3 - 775.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 41.00' | 10,694 cf | **48.00'W x 175.00'L x 3.25'H Field A**<br>27,300 cf Overall - 564 cf Embedded = 26,736 cf x 40.0% Voids |
| #2 | 41.50' | 501 cf | **ADS_StormTech SC-310 +Cap** x 34 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>34 Chambers in 2 Rows |
| #3 | 41.50' | 38 cf | **2.50'W x 5.50'L x 2.75'H CB #** Inside #1<br>63 cf Overall - 6.0" Wall Thickness = 38 cf |
| #4 | 44.25' | 7 cf | **2.50'W x 5.50'L x 0.50'H CB #**-Impervious |
| #5 | 44.75' | 7,658 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 18,898 cf | Total Available Storage |

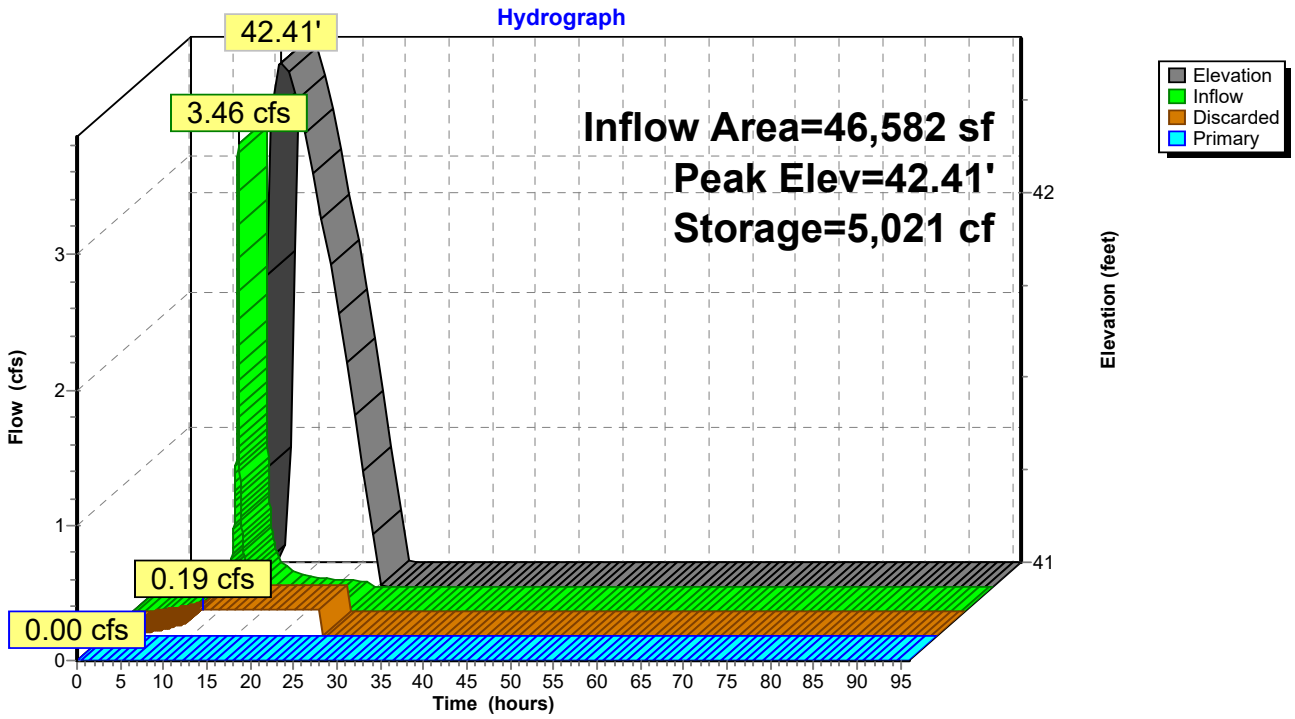
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 44.75 | 16 | 0 | 0 |
| 45.00 | 141 | 20 | 20 |
| 45.25 | 5,306 | 681 | 701 |
| 45.50 | 14,035 | 2,418 | 3,118 |
| 45.75 | 22,283 | 4,540 | 7,658 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 41.00' | **1.000 in/hr Exfiltration over Surface area** |
| #2 | Primary | 45.72' | **Top of Curb, C= 3.27**<br>Offset (feet) 0.00 9.59 19.17 24.92 30.87 40.79 50.71<br>Height (feet) 0.13 0.07 0.02 0.00 0.02 0.07 0.13 |

**Discarded OutFlow** Max=0.19 cfs @ 11.27 hrs HW=41.05' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.19 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=41.00' TW=0.00' (Dynamic Tailwater)
↑—**2=Top of Curb** ( Controls 0.00 cfs)

## Pond #6a: Drywell



## Summary for Pond #6b: Drywell

Inflow Area = 15,793 sf, 91.49% Impervious, Inflow Depth = 4.49" for Cv event
Inflow = 1.75 cfs @ 12.13 hrs, Volume= 5,913 cf
Outflow = 0.03 cfs @ 10.52 hrs, Volume= 5,913 cf, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 10.52 hrs, Volume= 5,913 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 40.79' @ 18.15 hrs Surf.Area= 7,200 sf Storage= 3,833 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,034.4 min ( 1,814.9 - 780.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.50' | 8,528 cf | **60.00'W x 120.00'L x 3.00'H Field A**<br>21,600 cf Overall - 279 cf Embedded = 21,321 cf x 40.0% Voids |
| #2 | 40.00' | 206 cf | **ADS_StormTech SC-310 +Cap** x 14 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>14 Chambers in 2 Rows |
| #3 | 40.00' | 44 cf | **ADS_StormTech SC-310 +Cap** x 3 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap |
| #4 | 40.00' | 14 cf | **2.00'W x 2.83'L x 2.50'H CB #** Inside #1<br>29 cf Overall - 6.0" Wall Thickness = 14 cf |
| #5 | 42.50' | 16 cf | **2.00'W x 2.83'L x 2.88'H CB #**-Impervious |
| #6 | 45.38' | 1,144 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 9,953 cf | Total Available Storage |

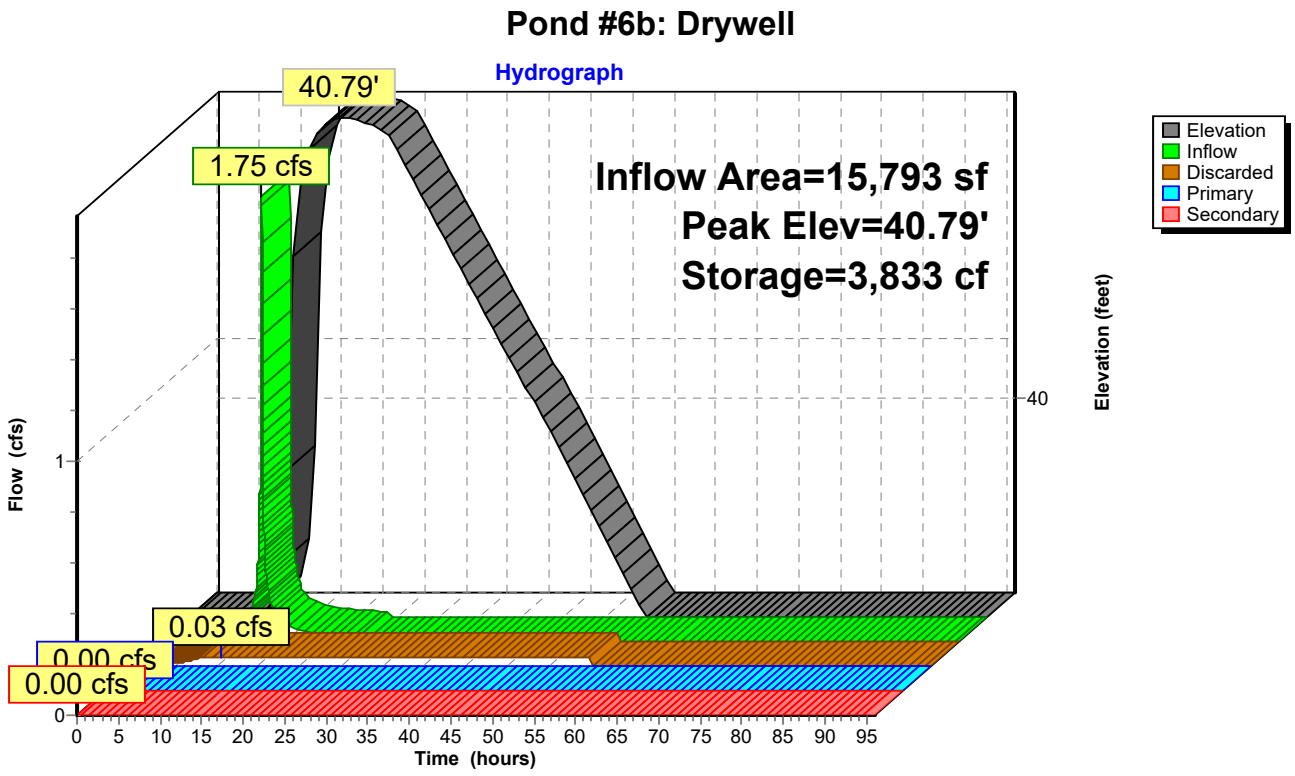
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 45.38 | 6 | 0 | 0 |
| 45.50 | 733 | 44 | 44 |
| 45.75 | 8,064 | 1,100 | 1,144 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.50' | **0.200 in/hr Exfiltration over Surface area** |
| #2 | Primary | 45.74' | **Weir Outlet, C= 3.27**<br>Offset (feet) 0.00 20.00 28.00<br>Height (feet) 0.04 0.00 0.04 |
| #3 | Secondary | 45.74' | **Weir Outlet, C= 3.27**<br>Offset (feet) 0.00 20.00 28.00<br>Height (feet) 0.04 0.00 0.04 |

**Discarded OutFlow** Max=0.03 cfs @ 10.52 hrs HW=39.56' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.50' TW=41.00' (Dynamic Tailwater)
└**2=Weir Outlet** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.50' TW=38.50' (Dynamic Tailwater)
└**3=Weir Outlet** ( Controls 0.00 cfs)



## Summary for Pond #7: Drywell

Inflow Area = 232,138 sf, 79.70% Impervious, Inflow Depth = 1.07" for Cv event
Inflow = 3.63 cfs @ 12.13 hrs, Volume= 20,694 cf
Outflow = 0.30 cfs @ 11.71 hrs, Volume= 20,694 cf, Atten= 92%, Lag= 0.0 min
Discarded = 0.30 cfs @ 11.71 hrs, Volume= 20,694 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 37.81' @ 14.79 hrs Surf.Area= 10,125 sf Storage= 11,834 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 318.1 min ( 1,100.9 - 782.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.00' | 16,584 cf | **45.00'W x 225.00'L x 6.00'H Field A**<br>60,750 cf Overall - 19,291 cf Embedded = 41,459 cf x 40.0% Voids |
| #2 | 36.75' | 3,028 cf | **ADS_StormTech MC-3500 d +Cap** x 27 Inside #1<br>Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf<br>Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap<br>27 Chambers in 2 Rows<br>Cap Storage= +14.9 cf x 2 x 2 rows = 59.6 cf |
| #3 | 36.75' | 16,092 cf | **ADS_StormTech MC-3500 d +Cap** x 145 Inside #1<br>Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf<br>Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap<br>145 Chambers in 5 Rows<br>Cap Storage= +14.9 cf x 2 x 5 rows = 149.0 cf |
| #4 | 36.75' | 116 cf | **4.00'W x 5.50'L x 5.25'H CB #** Inside #1<br>171 cf Overall - 6.0" Wall Thickness = 116 cf |
| #5 | 42.00' | 29 cf | **4.00'W x 5.50'L x 1.34'H CB #**-Impervious |
| #6 | 43.34' | 1,003 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 36,852 cf | Total Available Storage |

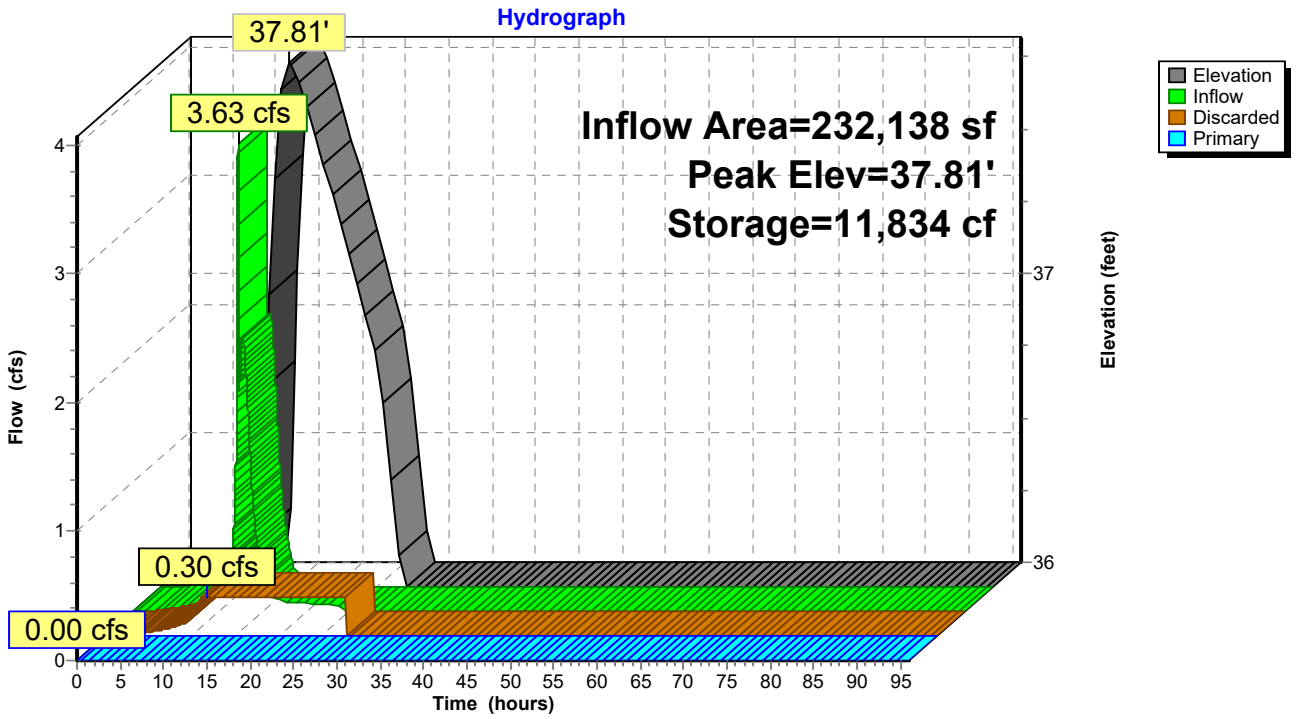
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.34 | 6 | 0 | 0 |
| 43.50 | 245 | 20 | 20 |
| 43.75 | 1,632 | 235 | 255 |
| 44.00 | 4,355 | 748 | 1,003 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 36.00' | **1.300 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.84' | **Top of Curb, C= 3.27**<br>Offset (feet) 0.00 83.50 167.00<br>Height (feet) 0.41 0.00 0.41 |

**Discarded OutFlow** Max=0.30 cfs @ 11.71 hrs HW=36.08' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.30 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=37.05' (Dynamic Tailwater)
↑**2=Top of Curb** ( Controls 0.00 cfs)

## Pond #7: Drywell



## Summary for Pond #8: Wet Pond

Inflow Area = 492,626 sf, 66.38% Impervious, Inflow Depth = 1.93" for Cv event
Inflow = 25.02 cfs @ 12.14 hrs, Volume= 79,115 cf
Outflow = 3.42 cfs @ 12.76 hrs, Volume= 77,193 cf, Atten= 86%, Lag= 37.3 min
Primary = 3.42 cfs @ 12.76 hrs, Volume= 77,193 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 37.05' Surf.Area= 35,833 sf Storage= 25,059 cf
Peak Elev= 38.09' @ 12.76 hrs Surf.Area= 40,733 sf Storage= 64,846 cf (39,787 cf above start)

Plug-Flow detention time= 632.0 min calculated for 52,129 cf (66% of inflow)
Center-of-Mass det. time= 345.8 min ( 1,159.4 - 813.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.00' | 104,096 cf | **Pond (Prismatic)** Listed below (Recalc) |
| #2 | 38.25' | 2,140 cf | **Roadway Ponding (Prismatic)** Listed below (Recalc) |
| | | 106,235 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 36.00 | 22,109 | 0 | 0 |
| 37.00 | 24,969 | 23,539 | 23,539 |
| 37.05 | 35,833 | 1,520 | 25,059 |
| 38.00 | 40,259 | 36,144 | 61,203 |
| 39.00 | 45,527 | 42,893 | 104,096 |

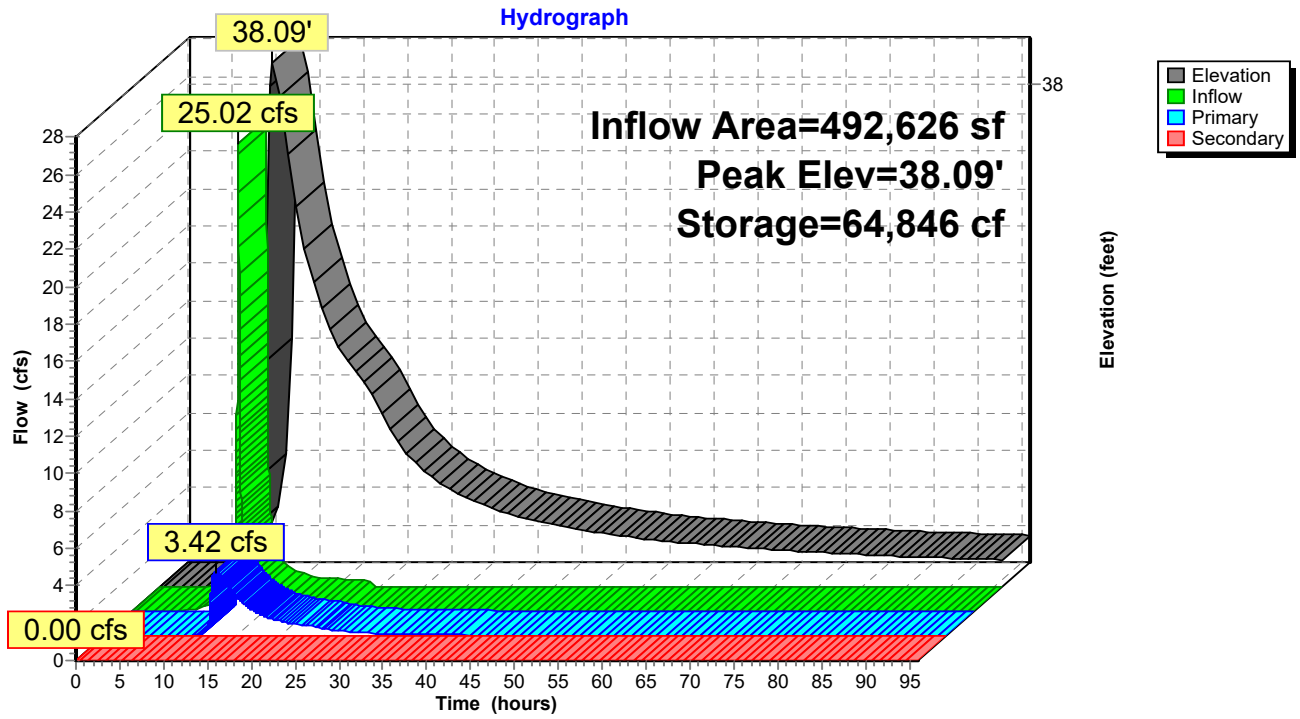
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 38.25 | 11 | 0 | 0 |
| 38.50 | 1,429 | 180 | 180 |
| 38.75 | 3,297 | 591 | 771 |
| 39.00 | 7,653 | 1,369 | 2,140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 37.05' | **23.0" W x 14.0" H, R=22.0" Elliptical RCP_Elliptical 23x14**<br>L= 106.0' CPP, end-section conforming to fill, Ke= 0.500<br>Inlet / Outlet Invert= 37.05' / 37.00' S= 0.0005 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.83 sf |
| #2 | Secondary | 38.75' | **5.0' long x 3.0' breadth Curb Cut**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50<br>Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32 |

**Primary OutFlow** Max=3.42 cfs @ 12.76 hrs HW=38.09' TW=0.00' (Dynamic Tailwater)
↑—**1=RCP_Elliptical 23x14** (Barrel Controls 3.42 cfs @ 2.66 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=37.05' TW=0.00' (Dynamic Tailwater)
↑—**2=Curb Cut** ( Controls 0.00 cfs)

## Pond #8: Wet Pond



## Summary for Pond #9: Drywell

Inflow Area = 199,819 sf, 78.40% Impervious, Inflow Depth = 4.17" for Cv event
Inflow = 21.17 cfs @ 12.13 hrs, Volume= 69,373 cf
Outflow = 2.84 cfs @ 12.76 hrs, Volume= 69,376 cf, Atten= 87%, Lag= 37.8 min
Discarded = 1.22 cfs @ 11.26 hrs, Volume= 61,083 cf
Primary = 1.62 cfs @ 12.76 hrs, Volume= 8,293 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 41.12' @ 12.76 hrs Surf.Area= 0.552 ac Storage= 0.580 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 131.7 min ( 925.8 - 794.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 0.809 af | **130.00'W x 185.00'L x 4.00'H Field A**<br>2.208 af Overall - 0.186 af Embedded = 2.022 af x 40.0% Voids |
| #2 | 39.50' | 0.186 af | **ADS_StormTech SC-310 +Cap** x 550 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>550 Chambers in 22 Rows |
| #3 | 39.50' | 0.002 af | **2.00'W x 2.83'L x 3.50'H CB #** x 4 -Impervious |
| #4 | 43.00' | 0.109 af | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 1.106 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 43.00 | 0.001 | 0.000 | 0.000 |
| 43.25 | 0.017 | 0.002 | 0.002 |
| 43.50 | 0.043 | 0.008 | 0.010 |
| 43.75 | 0.116 | 0.020 | 0.030 |
| 44.00 | 0.517 | 0.079 | 0.109 |

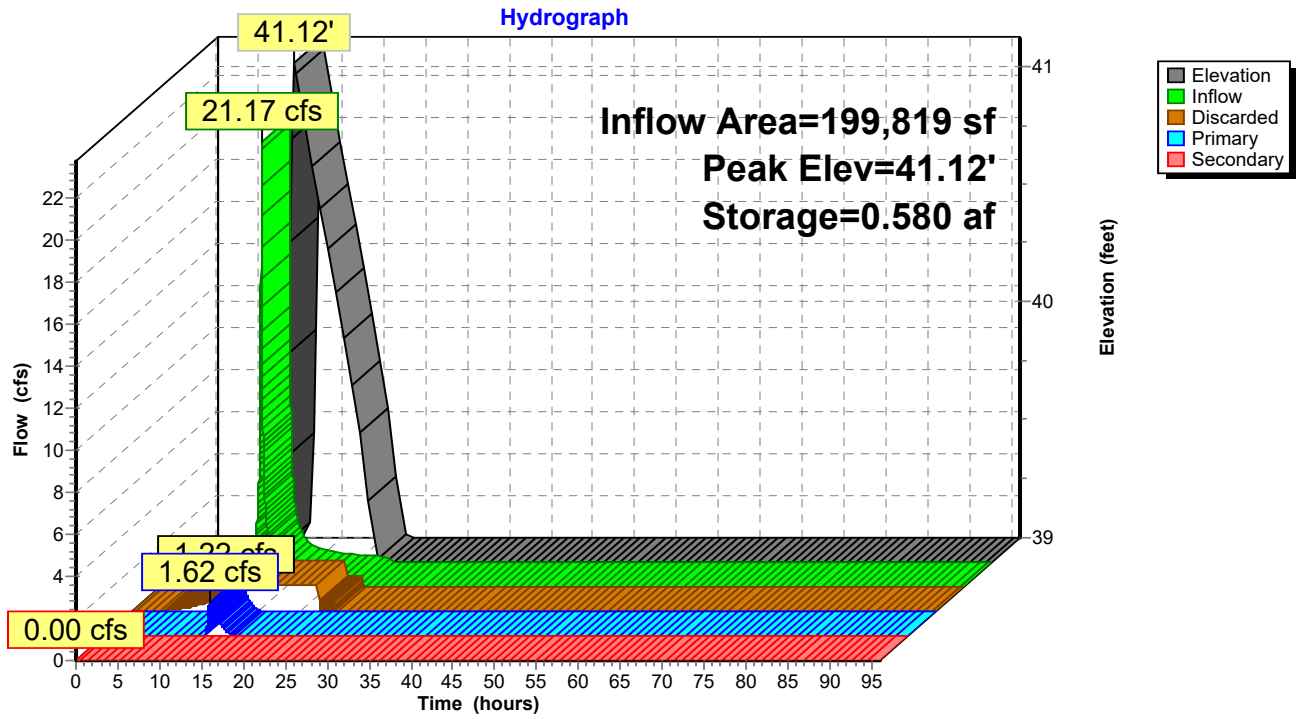
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **2.200 in/hr Exfiltration over Surface area** |
| #2 | Secondary | 44.59' | **Asymmetrical Weir X 2.00, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |
| #3 | Primary | 40.50' | **15.0" Round Over Drain** L= 199.0' Ke= 0.500<br>Inlet / Outlet Invert= 40.50' / 37.00' S= 0.0176 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.23 sf |

**Discarded OutFlow** Max=1.22 cfs @ 11.26 hrs HW=39.06' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 1.22 cfs)

**Primary OutFlow** Max=1.62 cfs @ 12.76 hrs HW=41.12' TW=37.15' (Dynamic Tailwater)
↑**3=Over Drain** (Inlet Controls 1.62 cfs @ 2.68 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=35.50' (Dynamic Tailwater)
↑**2=Asymmetrical Weir** ( Controls 0.00 cfs)

## Pond #9: Drywell

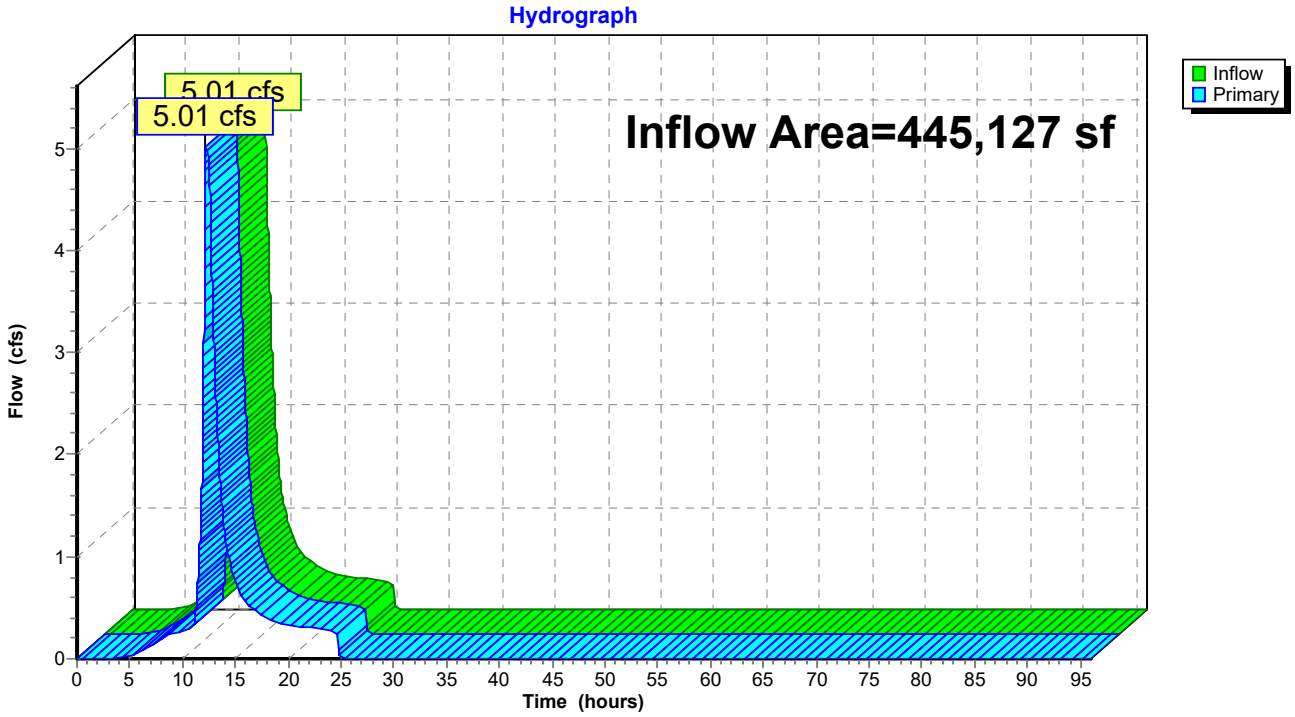


## Summary for Link POI1: POI #1

Inflow Area = 445,127 sf, 78.71% Impervious, Inflow Depth = 1.26" for Cv event
Inflow = 5.01 cfs @ 12.18 hrs, Volume= 46,597 cf
Primary = 5.01 cfs @ 12.18 hrs, Volume= 46,597 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link POI1: POI #1

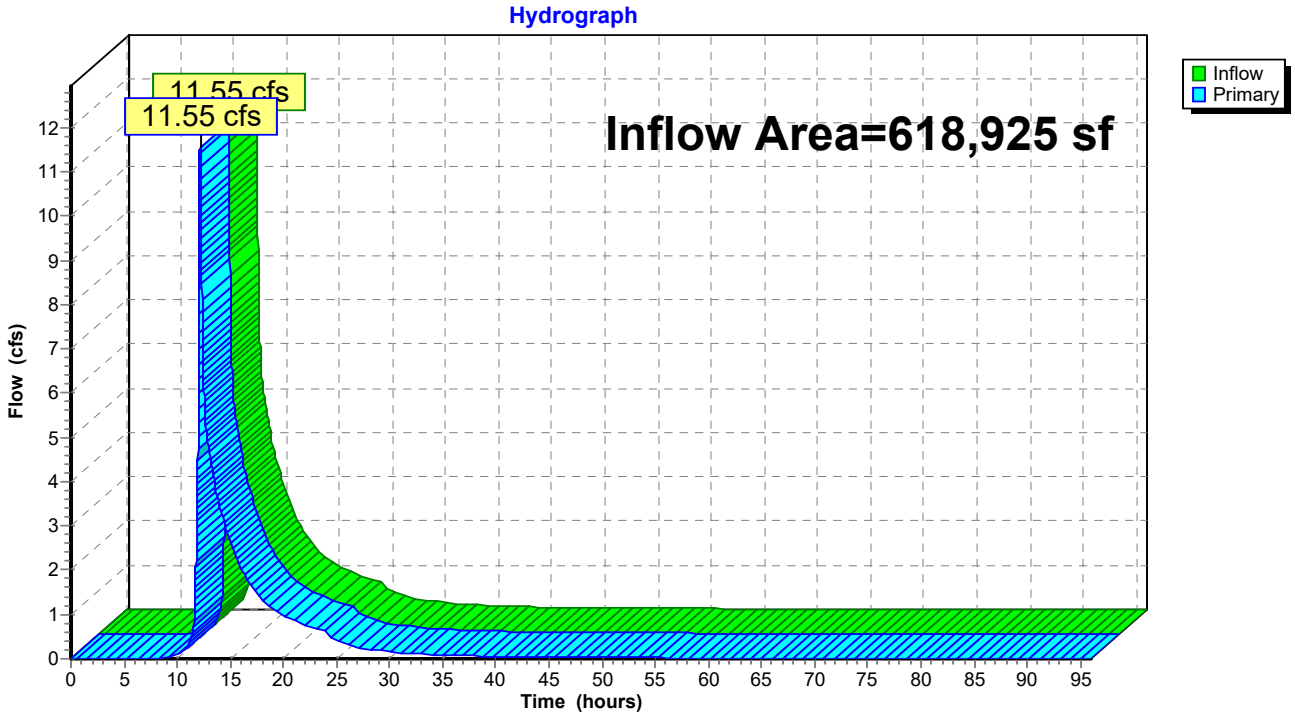


## Summary for Link POI2: POI #2

Inflow Area = 618,925 sf, 63.76% Impervious, Inflow Depth > 2.10" for Cv event
Inflow = 11.55 cfs @ 12.15 hrs, Volume= 108,470 cf
Primary = 11.55 cfs @ 12.15 hrs, Volume= 108,470 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link POI2: POI #2

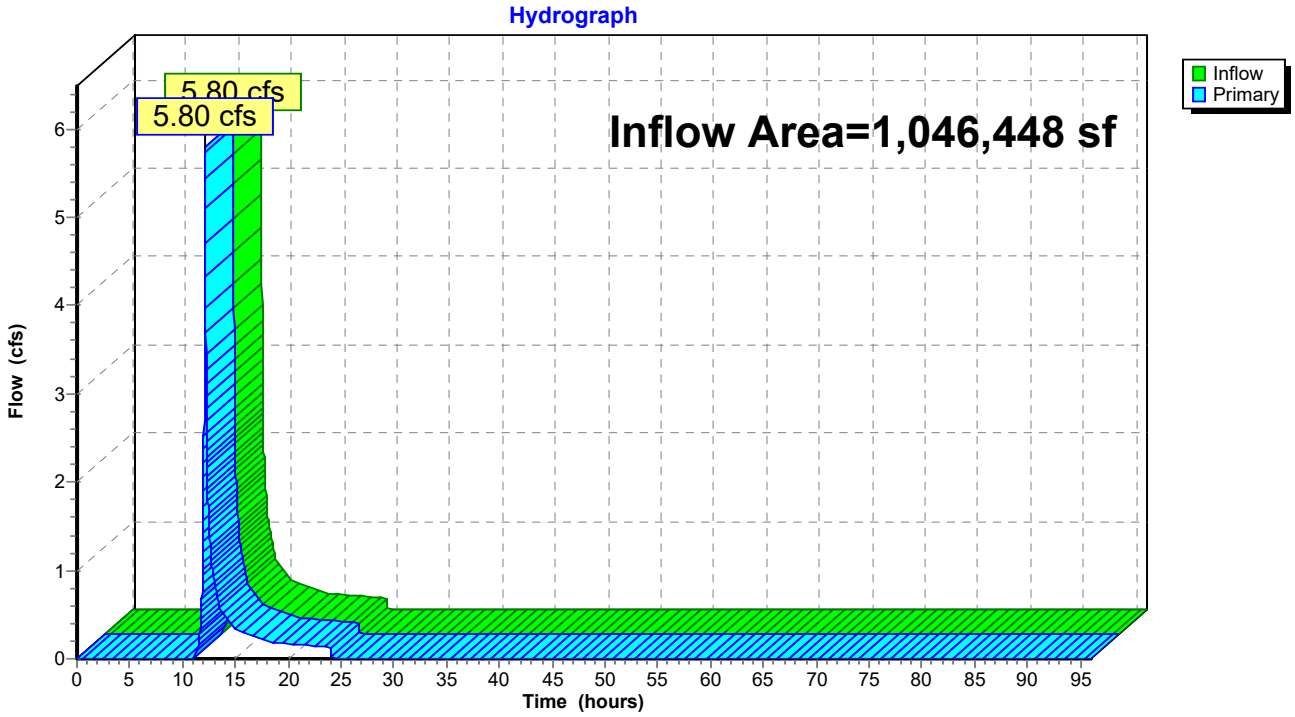


## Summary for Link POI3: POI #3

Inflow Area = 1,046,448 sf, 62.04% Impervious, Inflow Depth = 0.22" for Cv event
Inflow = 5.80 cfs @ 12.14 hrs, Volume= 18,961 cf
Primary = 5.80 cfs @ 12.14 hrs, Volume= 18,961 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link POI3: POI #3

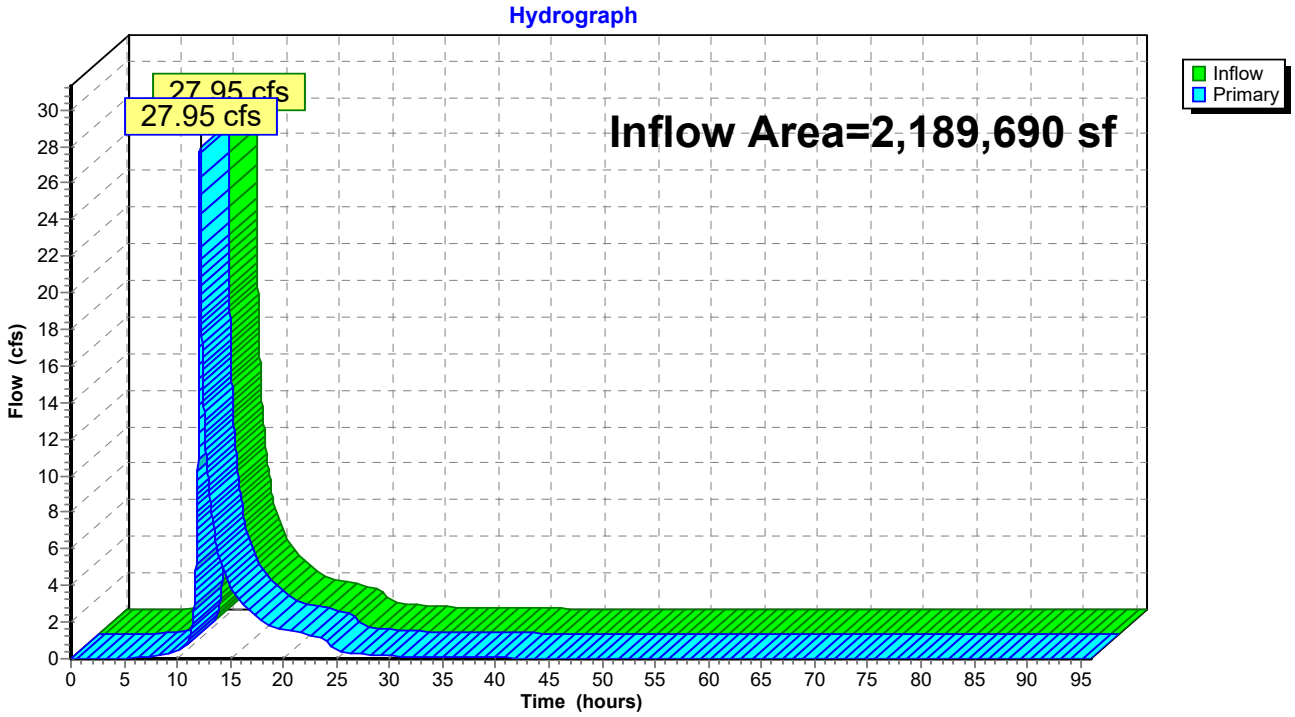


## Summary for Link PR: Site Total

Inflow Area = 2,189,690 sf, 65.38% Impervious, Inflow Depth > 1.05" for Cv event
Inflow = 27.95 cfs @ 12.14 hrs, Volume= 191,811 cf
Primary = 27.95 cfs @ 12.14 hrs, Volume= 191,811 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link PR: Site Total



Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

**Subcatchment 1BP: Bypass** Runoff Area=19,408 sf 0.00% Impervious Runoff Depth=2.28"
Tc=6.0 min CN=44 Runoff=1.11 cfs 3,695 cf

**Subcatchment 2BP: Bypass** Runoff Area=62,103 sf 28.07% Impervious Runoff Depth=6.26"
Tc=6.0 min CN=76 Runoff=10.25 cfs 32,402 cf

**Subcatchment 3BP: Bypass** Runoff Area=161,604 sf 32.63% Impervious Runoff Depth=4.13"
Tc=6.0 min CN=59 Runoff=18.07 cfs 55,658 cf

**Subcatchment 4BP: POI #4** Runoff Area=79,190 sf 47.39% Impervious Runoff Depth=6.14"
Tc=6.0 min CN=75 Runoff=12.85 cfs 40,495 cf

**Subcatchment DA1: Managed** Runoff Area=33,087 sf 91.75% Impervious Runoff Depth=8.60"
Tc=6.0 min CN=95 Runoff=6.64 cfs 23,705 cf

**Subcatchment DA10: Managed** Runoff Area=199,819 sf 78.40% Impervious Runoff Depth=7.99"
Tc=6.0 min CN=90 Runoff=38.95 cfs 133,030 cf

**Subcatchment DA11: Managed** Runoff Area=64,196 sf 78.15% Impervious Runoff Depth=8.35"
Tc=6.0 min CN=93 Runoff=12.76 cfs 44,694 cf

**Subcatchment DA12a: Managed** Runoff Area=59,904 sf 86.88% Impervious Runoff Depth=7.99"
Tc=6.0 min CN=90 Runoff=11.68 cfs 39,881 cf

**Subcatchment DA12b: Managed** Runoff Area=50,150 sf 89.70% Impervious Runoff Depth=8.23"
Tc=6.0 min CN=92 Runoff=9.91 cfs 34,407 cf

**Subcatchment DA13: Managed** Runoff Area=211,364 sf 63.35% Impervious Runoff Depth=7.25"
Tc=6.0 min CN=84 Runoff=38.95 cfs 127,745 cf

**Subcatchment DA14: Managed** Runoff Area=145,491 sf 74.57% Impervious Runoff Depth=7.74"
Tc=6.0 min CN=88 Runoff=27.90 cfs 93,894 cf

**Subcatchment DA2: Managed** Runoff Area=112,875 sf 84.89% Impervious Runoff Depth=8.23"
Tc=6.0 min CN=92 Runoff=22.30 cfs 77,441 cf

**Subcatchment DA3: Managed** Runoff Area=134,266 sf 86.16% Impervious Runoff Depth=8.23"
Tc=6.0 min CN=92 Runoff=26.53 cfs 92,117 cf

**Subcatchment DA4: Managed** Runoff Area=153,759 sf 43.45% Impervious Runoff Depth=5.64"
Tc=6.0 min CN=71 Runoff=23.19 cfs 72,225 cf

**Subcatchment DA5: Managed** Runoff Area=163,266 sf 61.28% Impervious Runoff Depth=6.26"
Tc=6.0 min CN=76 Runoff=26.95 cfs 85,183 cf

**Subcatchment DA6a: Managed** Runoff Area=30,789 sf 89.70% Impervious Runoff Depth=8.48"
Tc=6.0 min CN=94 Runoff=6.15 cfs 21,747 cf

**Subcatchment DA6b: Managed** Runoff Area=15,793 sf 91.49% Impervious Runoff Depth=8.35"
Tc=6.0 min CN=93 Runoff=3.14 cfs 10,995 cf

**Subcatchment DA7: Managed** Runoff Area=32,319 sf 87.77% Impervious Runoff Depth=8.48"
Tc=6.0 min CN=94 Runoff=6.46 cfs 22,828 cf

**Subcatchment DA8: Managed** Runoff Area=260,488 sf 54.51% Impervious Runoff Depth=7.25"
Tc=6.0 min CN=84 Runoff=48.00 cfs 157,435 cf

**Subcatchment DA9: Managed** Runoff Area=199,819 sf 78.40% Impervious Runoff Depth=7.99"
Tc=6.0 min CN=90 Runoff=38.95 cfs 133,030 cf

**Pond #1: Drywell** Peak Elev=43.10' Storage=9,544 cf Inflow=6.64 cfs 23,705 cf
Discarded=0.39 cfs 23,706 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.39 cfs 23,706 cf

**Pond #10: Dry Pond** Peak Elev=39.38' Storage=97,681 cf Inflow=38.95 cfs 133,030 cf
Discarded=0.58 cfs 133,032 cf Primary=0.00 cfs 0 cf Outflow=0.58 cfs 133,032 cf

**Pond #11: Drywell** Peak Elev=39.28' Storage=8,698 cf Inflow=12.76 cfs 44,694 cf
Discarded=0.04 cfs 7,402 cf Primary=7.41 cfs 37,292 cf Secondary=0.00 cfs 0 cf Outflow=7.45 cfs 44,695 cf

**Pond #12a: Drywell** Peak Elev=44.07' Storage=19,176 cf Inflow=11.68 cfs 39,881 cf
Discarded=0.49 cfs 39,886 cf Primary=0.00 cfs 0 cf Outflow=0.49 cfs 39,886 cf

**Pond #12b: Drywell** Peak Elev=42.23' Storage=15,683 cf Inflow=9.91 cfs 34,407 cf
Discarded=0.46 cfs 34,408 cf Primary=0.00 cfs 0 cf Outflow=0.46 cfs 34,408 cf

**Pond #13: Dry Pond** Peak Elev=38.00' Storage=54,106 cf Inflow=38.95 cfs 127,745 cf
Discarded=2.48 cfs 127,751 cf Primary=0.00 cfs 0 cf Outflow=2.48 cfs 127,751 cf

**Pond #14: SGW** Peak Elev=41.93' Storage=22,819 cf Inflow=27.90 cfs 93,894 cf
Primary=5.71 cfs 76,668 cf Secondary=14.55 cfs 17,226 cf Outflow=20.26 cfs 93,894 cf

**Pond #2: Drywell** Peak Elev=42.82' Storage=44,764 cf Inflow=22.30 cfs 77,441 cf
Discarded=0.57 cfs 77,445 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.57 cfs 77,445 cf

**Pond #3: Drywell** Peak Elev=42.61' Storage=63,469 cf Inflow=26.53 cfs 92,117 cf
Discarded=0.41 cfs 92,122 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 92,122 cf

**Pond #4: Drywell** Peak Elev=43.19' Storage=14,167 cf Inflow=23.19 cfs 72,225 cf
Discarded=0.35 cfs 33,850 cf Primary=17.28 cfs 38,374 cf Secondary=0.00 cfs 0 cf Outflow=17.63 cfs 72,224 cf

**Pond #5: Dry Pond** Peak Elev=43.19' Storage=81,266 cf Inflow=40.49 cfs 123,557 cf
Discarded=1.10 cfs 123,565 cf Primary=0.00 cfs 0 cf Outflow=1.10 cfs 123,565 cf

**Pond #6a: Drywell** Peak Elev=45.15' Storage=11,516 cf Inflow=6.15 cfs 21,747 cf
Discarded=0.19 cfs 21,750 cf Primary=0.00 cfs 0 cf Outflow=0.19 cfs 21,750 cf

**Pond #6b: Drywell** Peak Elev=42.39' Storage=8,470 cf Inflow=3.14 cfs 10,995 cf
Discarded=0.03 cfs 10,995 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.03 cfs 10,995 cf

**Pond #7: Drywell** Peak Elev=43.86' Storage=36,353 cf Inflow=12.80 cfs 52,385 cf
Discarded=0.30 cfs 52,281 cf Primary=0.04 cfs 107 cf Outflow=0.34 cfs 52,388 cf

**Pond #8: Wet Pond** Peak Elev=40.21' Storage=106,235 cf Inflow=60.11 cfs 174,768 cf
Primary=11.70 cfs 161,927 cf Secondary=23.48 cfs 10,884 cf Outflow=35.19 cfs 172,811 cf

**Pond #9: Drywell** Peak Elev=43.86' Storage=1.048 af Inflow=38.95 cfs 133,030 cf
Discarded=1.22 cfs 103,592 cf Primary=9.54 cfs 29,557 cf Secondary=0.00 cfs 0 cf Outflow=10.77 cfs 133,033 cf

**Link POI1: POI #1** Inflow=6.73 cfs 80,363 cf
Primary=6.73 cfs 80,363 cf

**Link POI2: POI #2** Inflow=45.27 cfs 242,505 cf
Primary=45.27 cfs 242,505 cf

**Link POI3: POI #3** Inflow=18.07 cfs 55,658 cf
Primary=18.07 cfs 55,658 cf

**Link PR: Site Total** Inflow=61.50 cfs 419,021 cf
Primary=61.50 cfs 419,021 cf

**Total Runoff Area = 2,189,690 sf Runoff Volume = 1,302,607 cf Average Runoff Depth = 7.14"**
**34.62% Pervious = 757,973 sf 65.38% Impervious = 1,431,717 sf**

## Summary for Subcatchment 1BP: Bypass

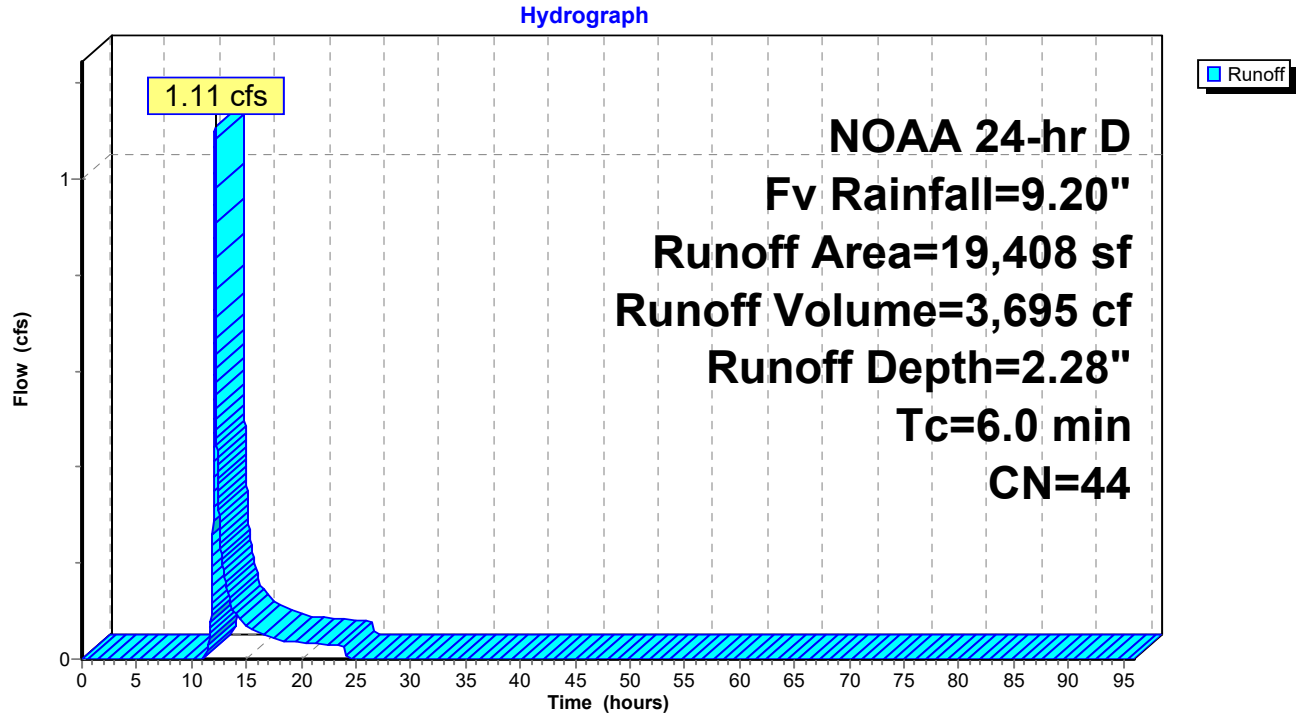
Runoff = 1.11 cfs @ 12.14 hrs, Volume= 3,695 cf, Depth= 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 0 | 98 | Roof |
| * | 0 | 98 | Pavement |
| * | 0 | 98 | Sidewalk |
| * | 14,850 | 39 | Grass, HSG A |
| * | 4,558 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 19,408 | 44 | Weighted Average |
| | 19,408 | | 100.00% Pervious Area |

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

## Subcatchment 1BP: Bypass



## Summary for Subcatchment 2BP: Bypass

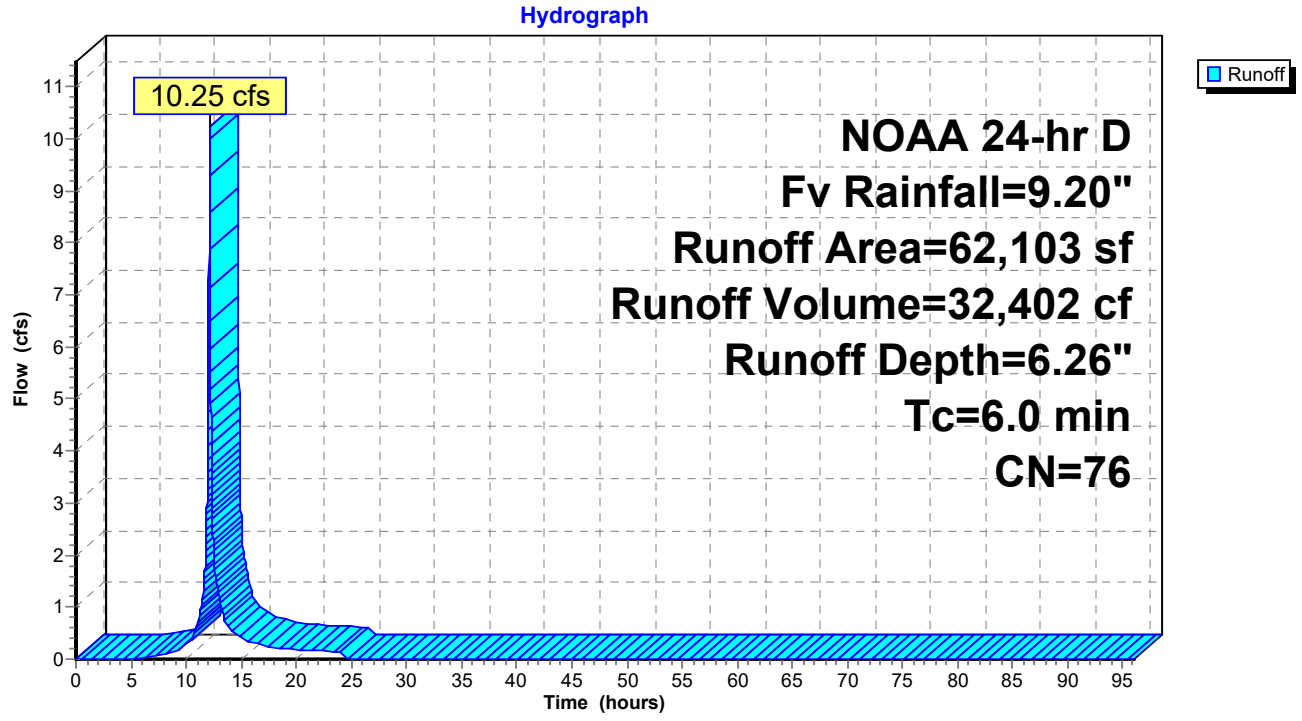
Runoff = 10.25 cfs @ 12.13 hrs, Volume= 32,402 cf, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 3,148 | 98 | Roof |
| * | 1,657 | 98 | Pavement |
| * | 5,920 | 98 | Sidewalk |
| * | 5,931 | 39 | Grass, HSG A |
| * | 7,283 | 61 | Grass, HSG B |
| * | 31,454 | 74 | Grass, HSG C |
| * | 6,710 | 98 | Ex. Roadway |
| | 62,103 | 76 | Weighted Average |
| | 44,668 | | 71.93% Pervious Area |
| | 17,435 | | 28.07% Impervious Area |

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

## Subcatchment 2BP: Bypass



## Summary for Subcatchment 3BP: Bypass

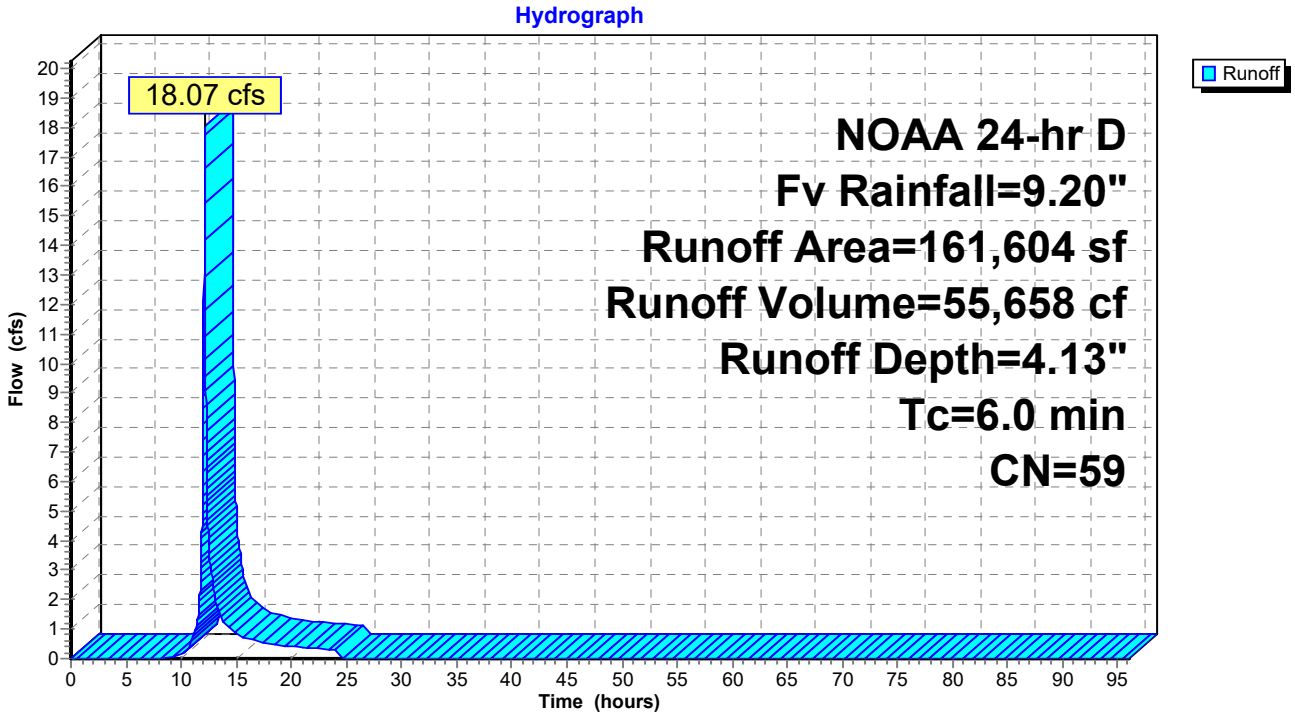
Runoff = 18.07 cfs @ 12.13 hrs, Volume= 55,658 cf, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 30,567 | 98 | Roof |
| * | 19,555 | 98 | Pavement |
| * | 2,610 | 98 | Sidewalk |
| * | 105,358 | 39 | Grass, HSG A |
| * | 3,155 | 61 | Grass, HSG B |
| * | 359 | 74 | Grass, HSG C |
| | 161,604 | 59 | Weighted Average |
| | 108,872 | | 67.37% Pervious Area |
| | 52,732 | | 32.63% Impervious Area |

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

## Subcatchment 3BP: Bypass



## Summary for Subcatchment 4BP: POI #4

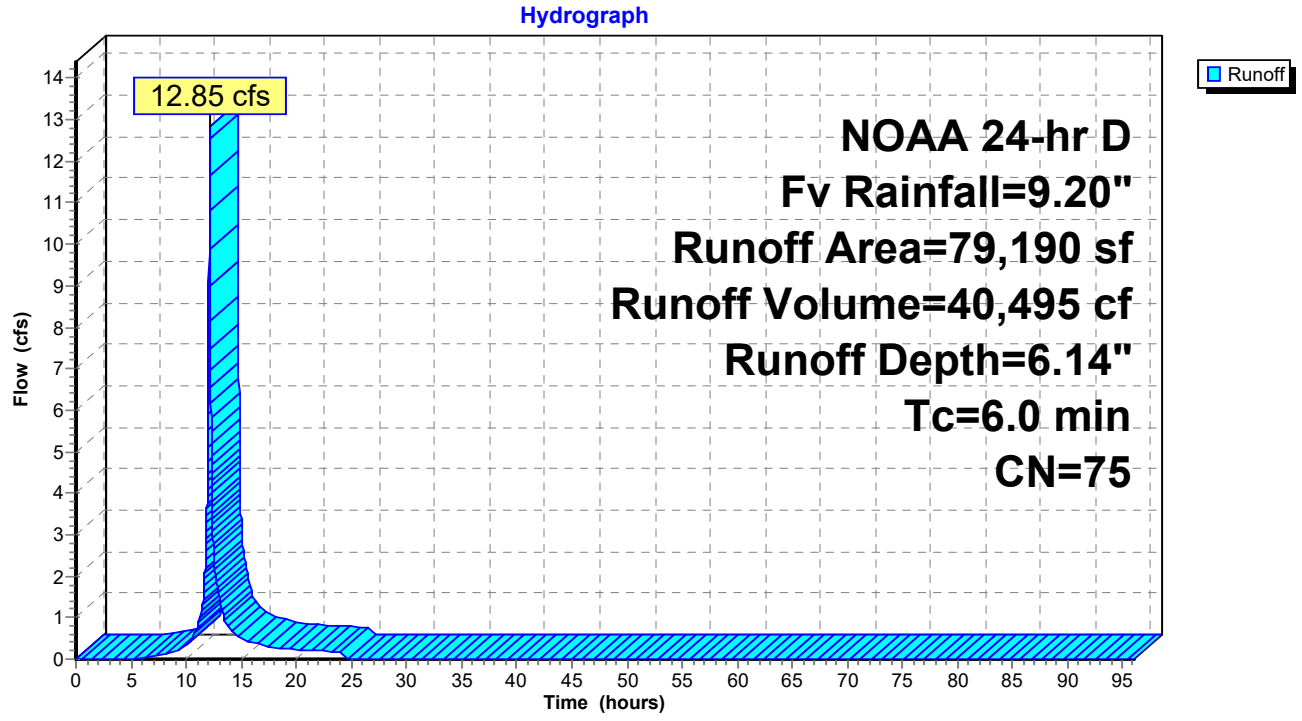
Runoff = 12.85 cfs @ 12.13 hrs, Volume= 40,495 cf, Depth= 6.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 0 | 98 | Roof |
| * | 3,356 | 98 | Pavement |
| * | 5,503 | 98 | Sidewalk |
| * | 16,262 | 39 | Grass, HSG A |
| * | 16,847 | 61 | Grass, HSG B |
| * | 8,555 | 74 | Grass, HSG C |
| * | 28,667 | 98 | Existing Roadway |
| | 79,190 | 75 | Weighted Average |
| | 41,664 | | 52.61% Pervious Area |
| | 37,526 | | 47.39% Impervious Area |

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

## Subcatchment 4BP: POI #4



## Summary for Subcatchment DA1: Managed

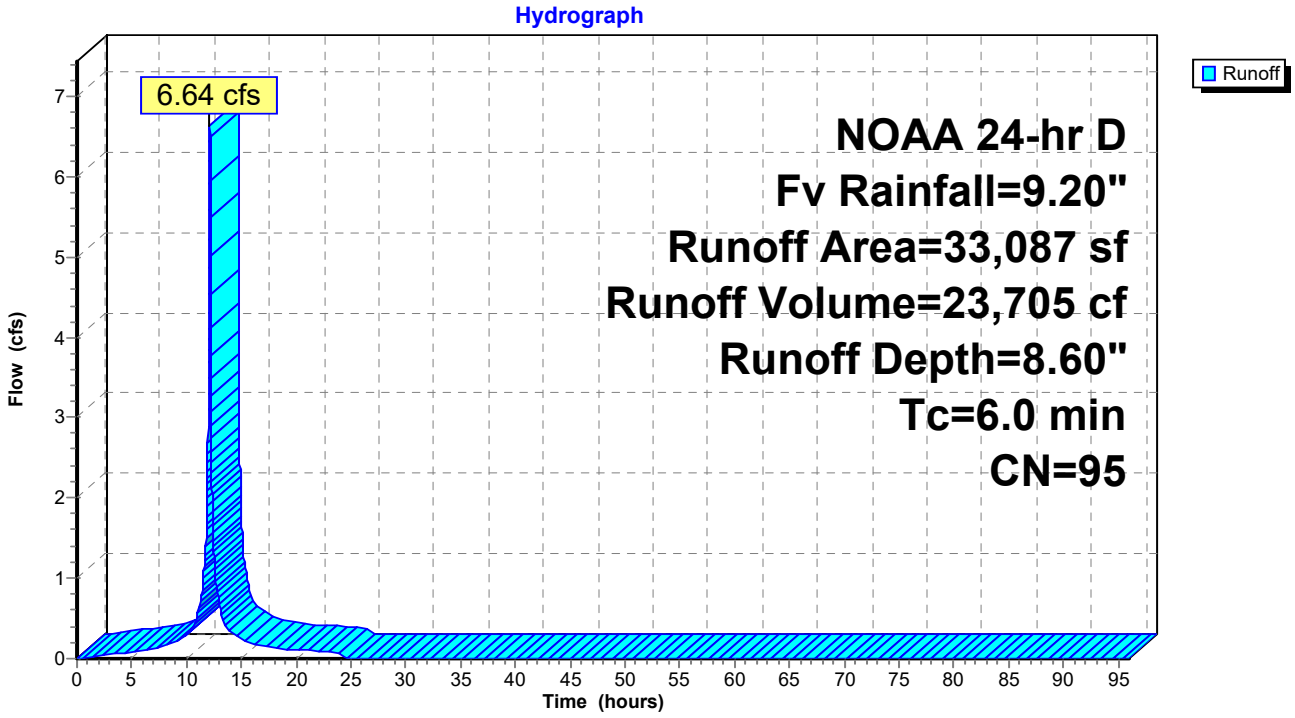
Runoff = 6.64 cfs @ 12.13 hrs, Volume= 23,705 cf, Depth= 8.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 5,119 | 98 | Roof |
| * | 24,140 | 98 | Pavement |
| * | 1,098 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 2,730 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 33,087 | 95 | Weighted Average |
| | 2,730 | | 8.25% Pervious Area |
| | 30,357 | | 91.75% Impervious Area |

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

## Subcatchment DA1: Managed



## Summary for Subcatchment DA10: Managed

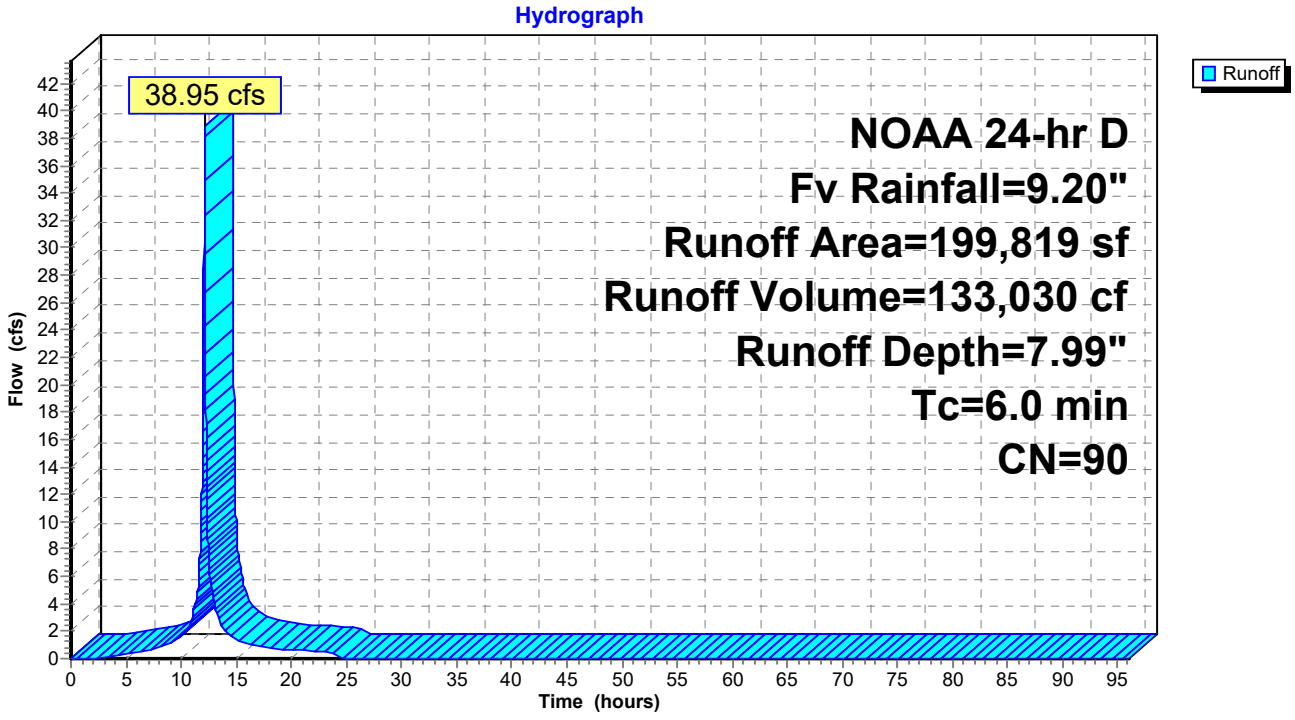
Runoff = 38.95 cfs @ 12.13 hrs, Volume= 133,030 cf, Depth= 7.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 45,831 | 98 | Roof |
| * | 99,756 | 98 | Pavement |
| * | 11,069 | 98 | Sidewalk |
| * | 1,120 | 39 | Grass, HSG A |
| * | 42,043 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 199,819 | 90 | Weighted Average |
| | 43,163 | | 21.60% Pervious Area |
| | 156,656 | | 78.40% Impervious Area |

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

## Subcatchment DA10: Managed



## Summary for Subcatchment DA11: Managed

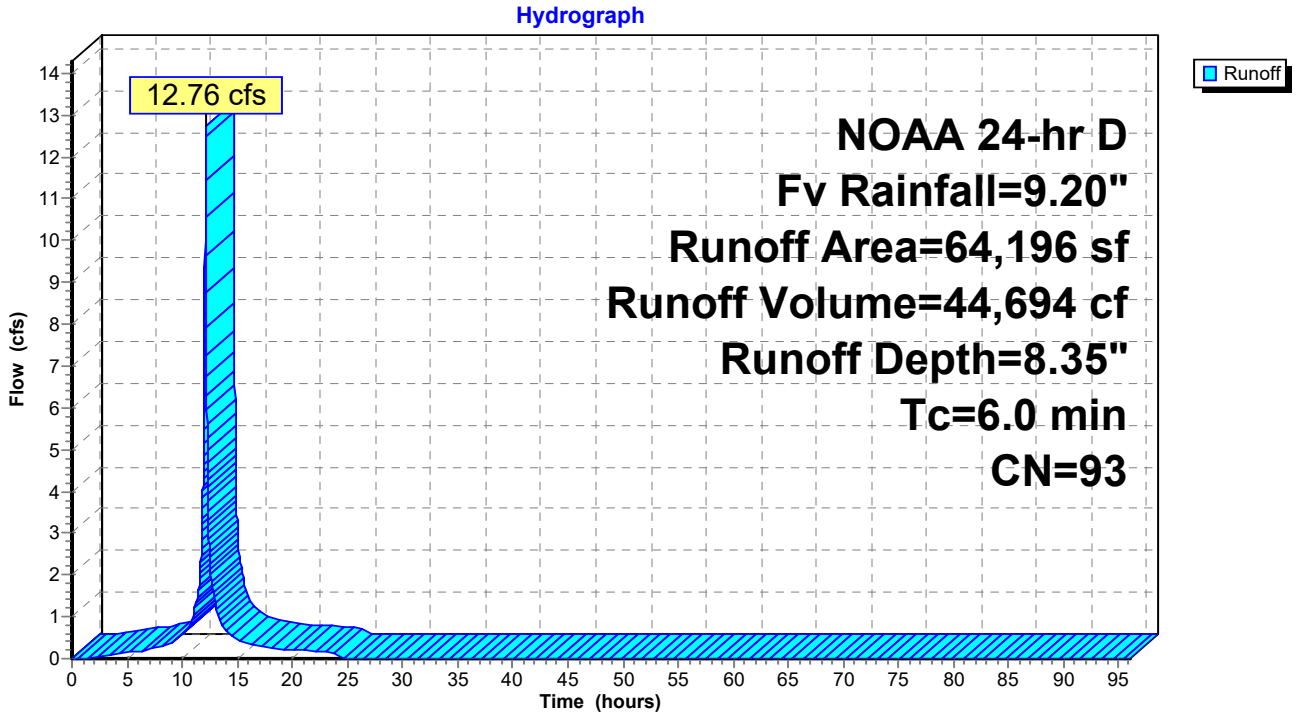
Runoff = 12.76 cfs @ 12.13 hrs, Volume= 44,694 cf, Depth= 8.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 6,876 | 98 | Roof |
| * | 35,655 | 98 | Pavement |
| * | 7,636 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 14,029 | 74 | Grass, HSG C |
| | 64,196 | 93 | Weighted Average |
| | 14,029 | | 21.85% Pervious Area |
| | 50,167 | | 78.15% Impervious Area |

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

## Subcatchment DA11: Managed



## Summary for Subcatchment DA12a: Managed

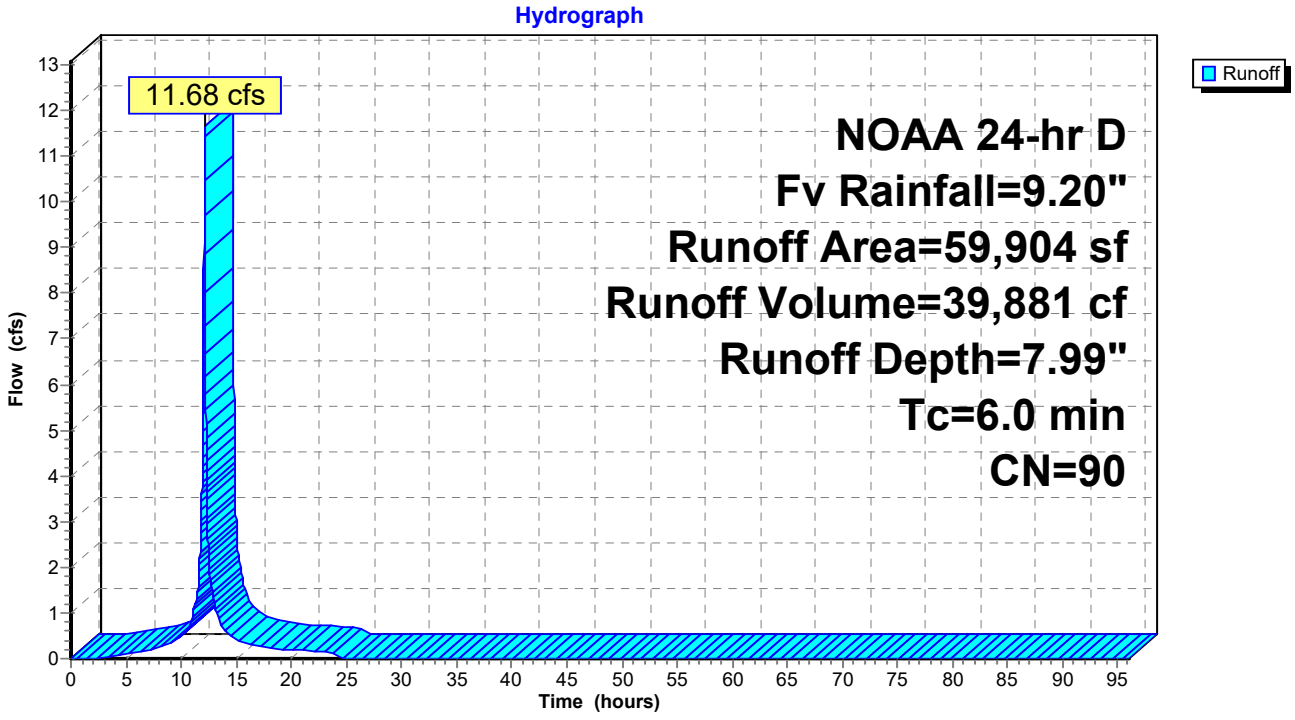
Runoff = 11.68 cfs @ 12.13 hrs, Volume= 39,881 cf, Depth= 7.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 14,960 | 98 | Roof |
| * | 35,092 | 98 | Pavement |
| * | 1,991 | 98 | Sidewalk |
| * | 7,861 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 59,904 | 90 | Weighted Average |
| | 7,861 | | 13.12% Pervious Area |
| | 52,043 | | 86.88% Impervious Area |

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

## Subcatchment DA12a: Managed



## Summary for Subcatchment DA12b: Managed

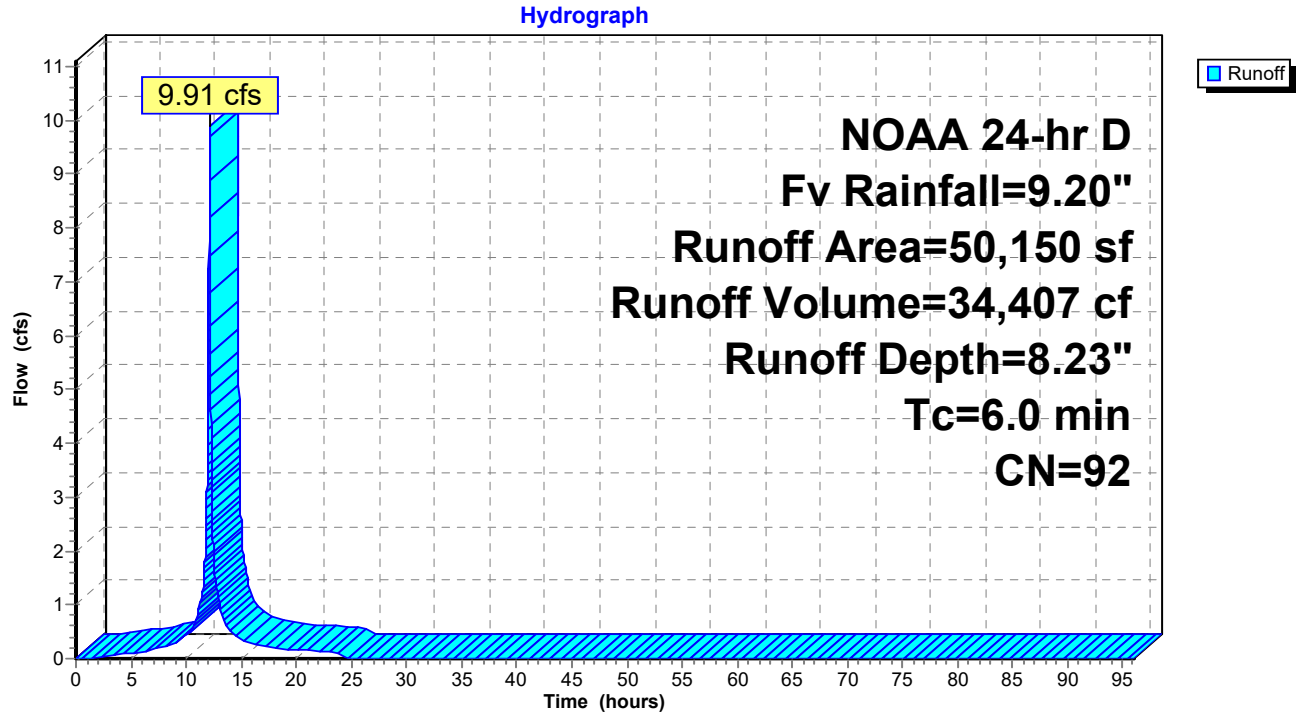
Runoff = 9.91 cfs @ 12.13 hrs, Volume= 34,407 cf, Depth= 8.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 12,223 | 98 | Roof |
| * | 31,728 | 98 | Pavement |
| * | 1,032 | 98 | Sidewalk |
| * | 5,167 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 50,150 | 92 | Weighted Average |
| | 5,167 | | 10.30% Pervious Area |
| | 44,983 | | 89.70% Impervious Area |

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

## Subcatchment DA12b: Managed



## Summary for Subcatchment DA13: Managed

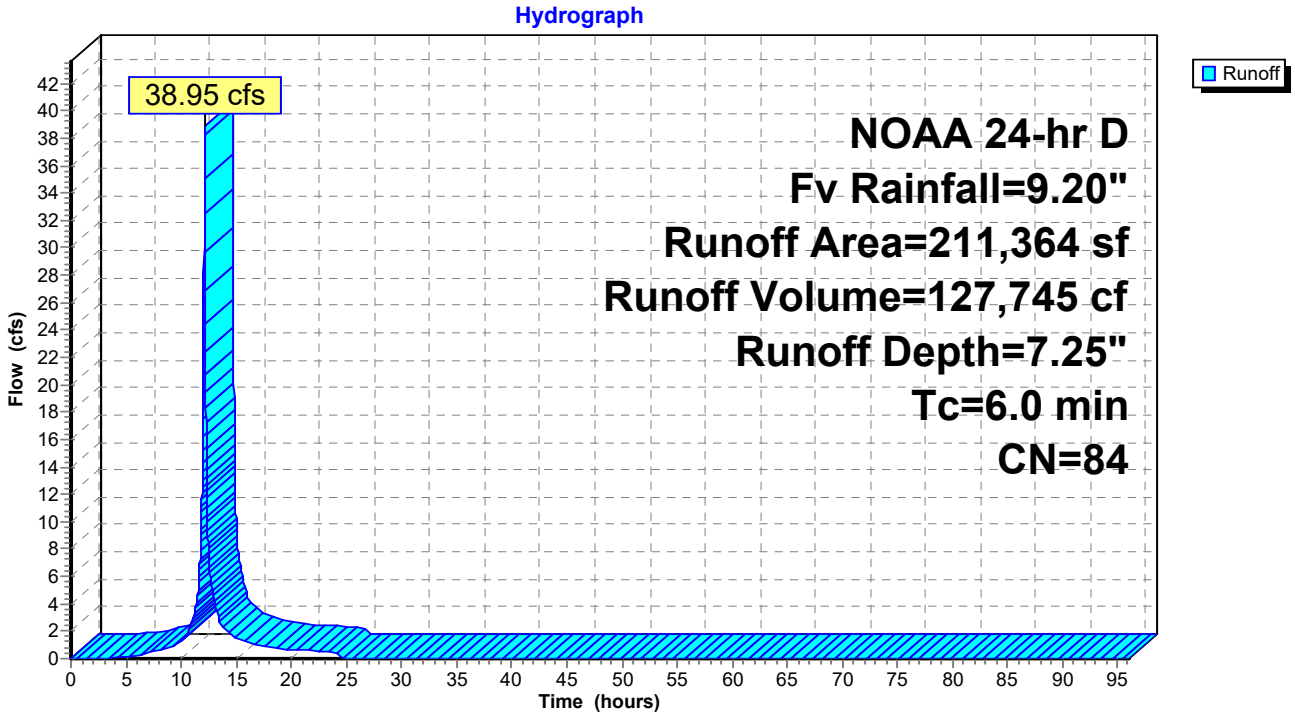
Runoff = 38.95 cfs @ 12.13 hrs, Volume= 127,745 cf, Depth= 7.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 43,108 | 98 | Roof |
| * | 81,796 | 98 | Pavement |
| * | 9,004 | 98 | Sidewalk |
| * | 16,604 | 39 | Grass, HSG A |
| * | 45,260 | 61 | Grass, HSG B |
| * | 15,592 | 74 | Grass, HSG C |
| | 211,364 | 84 | Weighted Average |
| | 77,456 | | 36.65% Pervious Area |
| | 133,908 | | 63.35% Impervious Area |

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

## Subcatchment DA13: Managed



## Summary for Subcatchment DA14: Managed

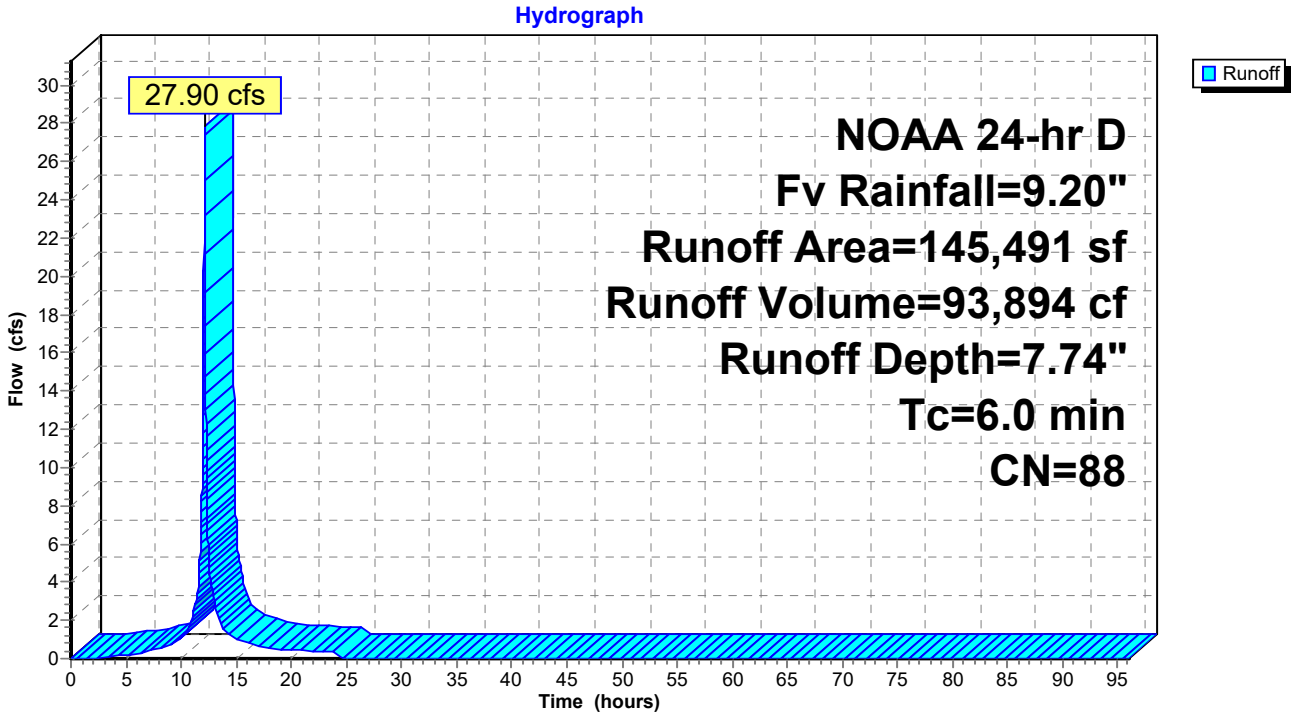
Runoff = 27.90 cfs @ 12.13 hrs, Volume= 93,894 cf, Depth= 7.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 67,744 | 98 | Roof |
| * | 37,879 | 98 | Pavement |
| * | 2,866 | 98 | Sidewalk |
| * | 8,381 | 39 | Grass, HSG A |
| * | 25,644 | 61 | Grass, HSG B |
| * | 2,977 | 74 | Grass, HSG C |
| | 145,491 | 88 | Weighted Average |
| | 37,002 | | 25.43% Pervious Area |
| | 108,489 | | 74.57% Impervious Area |

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

## Subcatchment DA14: Managed



## Summary for Subcatchment DA2: Managed

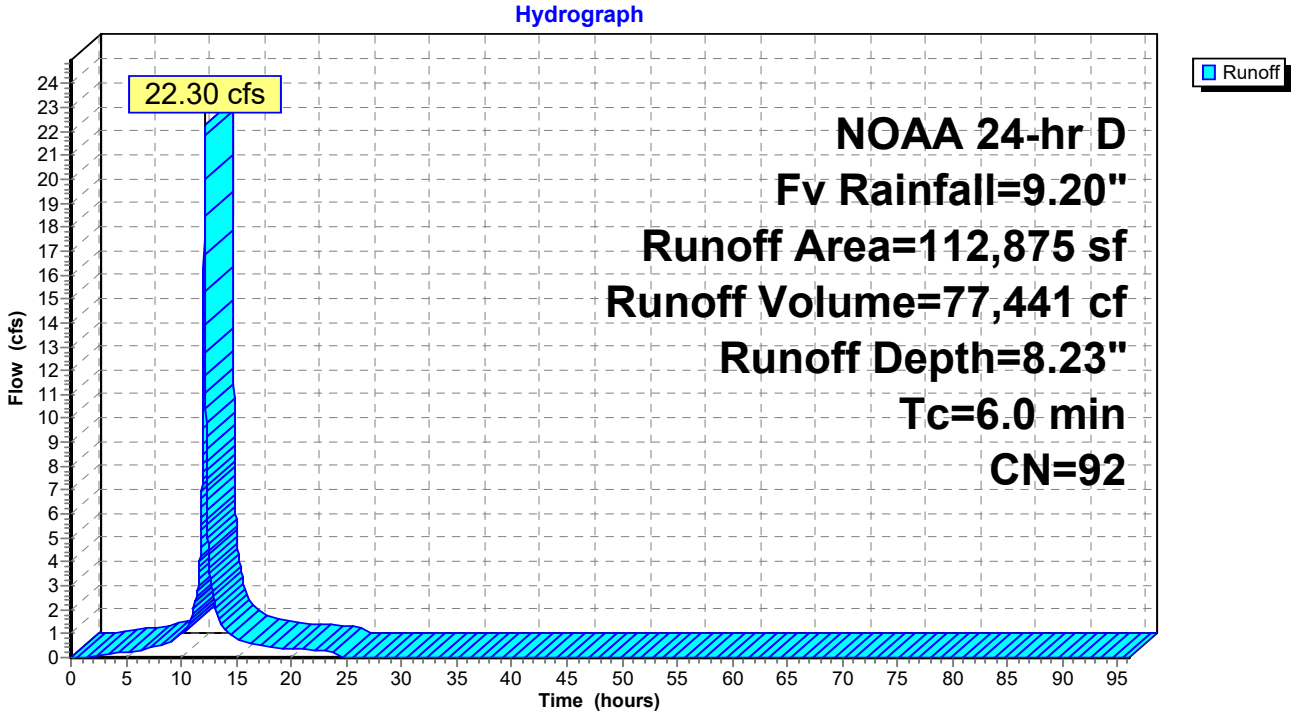
Runoff = 22.30 cfs @ 12.13 hrs, Volume= 77,441 cf, Depth= 8.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 9,696 | 98 | Roof |
| * | 79,428 | 98 | Pavement |
| * | 6,694 | 98 | Sidewalk |
| * | 17,057 | 61 | Grass, HSG B |
| | 112,875 | 92 | Weighted Average |
| | 17,057 | | 15.11% Pervious Area |
| | 95,818 | | 84.89% Impervious Area |

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

## Subcatchment DA2: Managed



## Summary for Subcatchment DA3: Managed

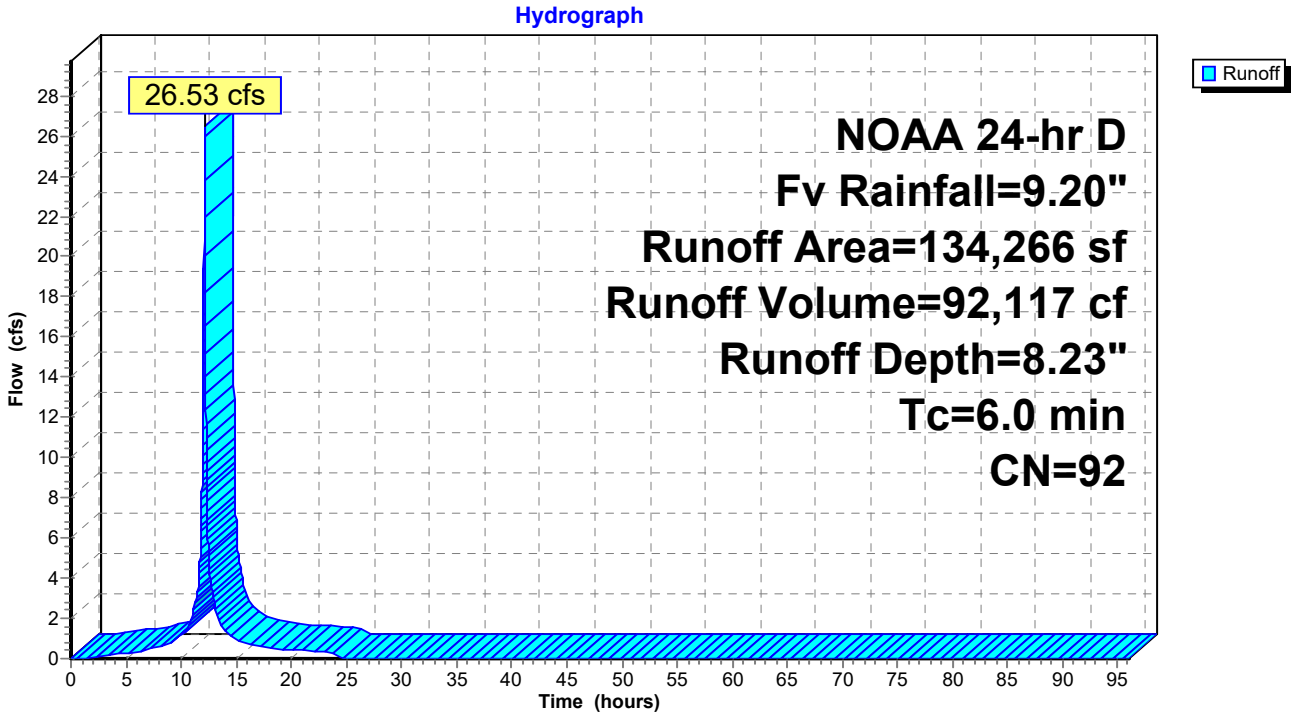
Runoff = 26.53 cfs @ 12.13 hrs, Volume= 92,117 cf, Depth= 8.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 152 | 98 | Roof |
| * | 92,770 | 98 | Pavement |
| * | 22,763 | 98 | Sidewalk |
| * | 8,191 | 39 | Grass, HSG A |
| * | 10,390 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 134,266 | 92 | Weighted Average |
| | 18,581 | | 13.84% Pervious Area |
| | 115,685 | | 86.16% Impervious Area |

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

## Subcatchment DA3: Managed



## Summary for Subcatchment DA4: Managed

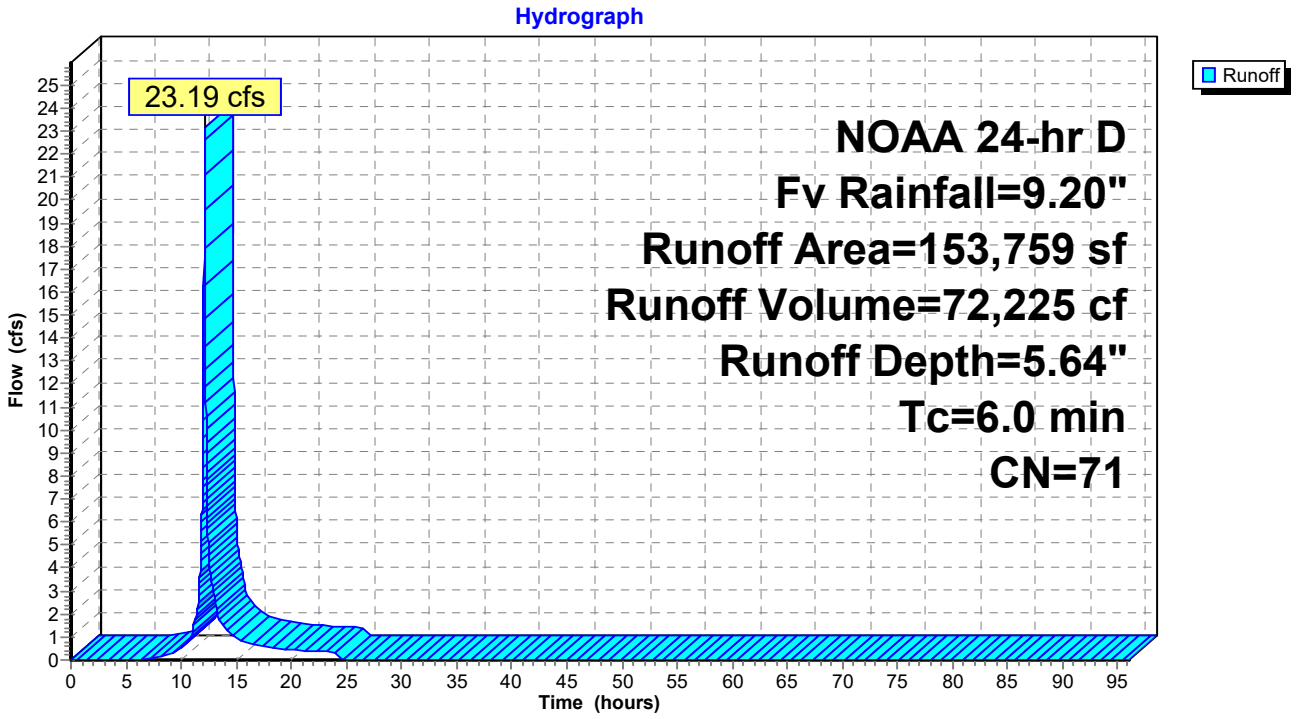
Runoff = 23.19 cfs @ 12.13 hrs, Volume= 72,225 cf, Depth= 5.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 6,897 | 98 | Roof |
| * | 40,222 | 98 | Pavement |
| * | 4,998 | 98 | Sidewalk |
| * | 17,113 | 39 | Grass, HSG A |
| * | 29,223 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| * | 10,529 | 98 | Existing Roadway |
| * | 1,670 | 98 | Existing Driveway |
| * | 2,487 | 98 | Ex. Impervious (Undisturbed) |
| * | 26,157 | 39 | Grass, HSG A (Undisturbed) |
| * | 14,463 | 61 | Grass, HSG B (Undisturbed) |
| | 153,759 | 71 | Weighted Average |
| | 86,956 | | 56.55% Pervious Area |
| | 66,803 | | 43.45% Impervious Area |

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

## Subcatchment DA4: Managed



## Summary for Subcatchment DA5: Managed

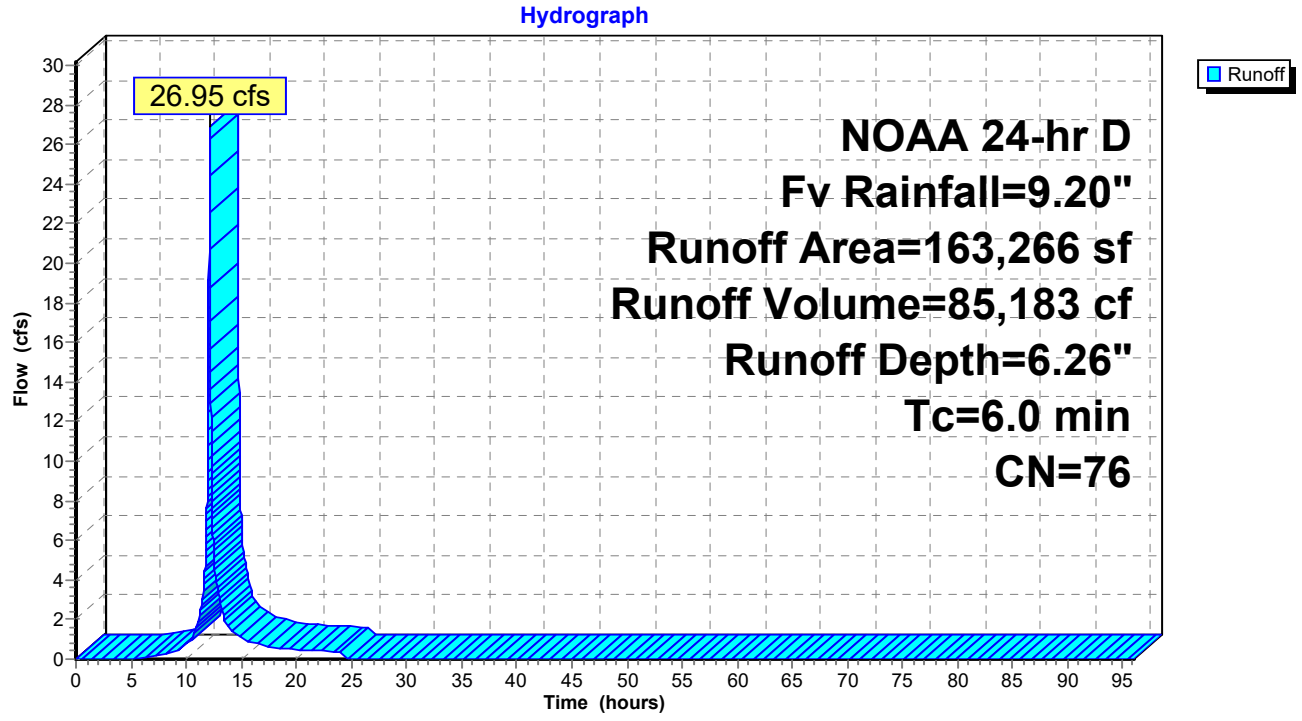
Runoff = 26.95 cfs @ 12.13 hrs, Volume= 85,183 cf, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 10,386 | 98 | Roof |
| * | 11,095 | 98 | Roof+ |
| * | 70,449 | 98 | Pavement |
| * | 8,116 | 98 | Sidewalk |
| * | 53,775 | 39 | Grass, HSG A |
| * | 9,445 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 163,266 | 76 | Weighted Average |
| | 63,220 | | 38.72% Pervious Area |
| | 100,046 | | 61.28% Impervious Area |

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

## Subcatchment DA5: Managed



## Summary for Subcatchment DA6a: Managed

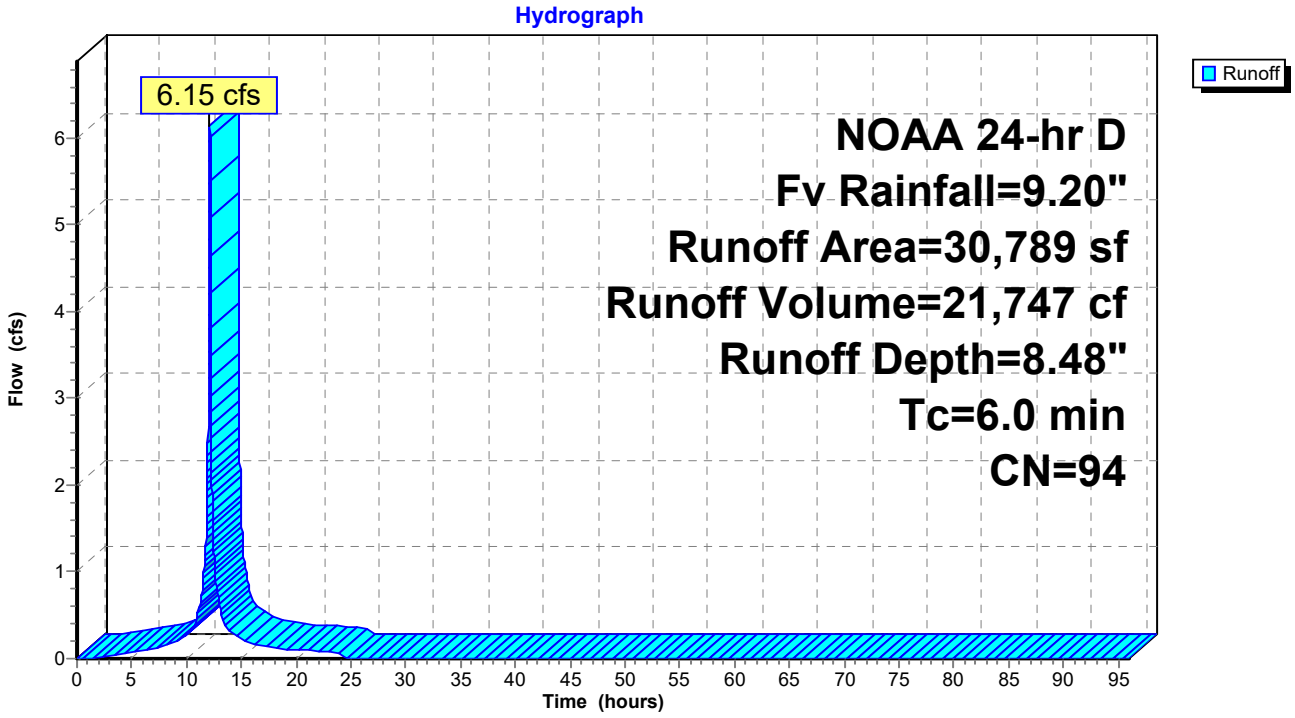
Runoff = 6.15 cfs @ 12.13 hrs, Volume= 21,747 cf, Depth= 8.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 1,985 | 98 | Roof |
| * | 24,381 | 98 | Pavement |
| * | 1,251 | 98 | Sidewalk |
| * | 609 | 39 | Grass, HSG A |
| * | 2,563 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 30,789 | 94 | Weighted Average |
| | 3,172 | | 10.30% Pervious Area |
| | 27,617 | | 89.70% Impervious Area |

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

## Subcatchment DA6a: Managed



## Summary for Subcatchment DA6b: Managed

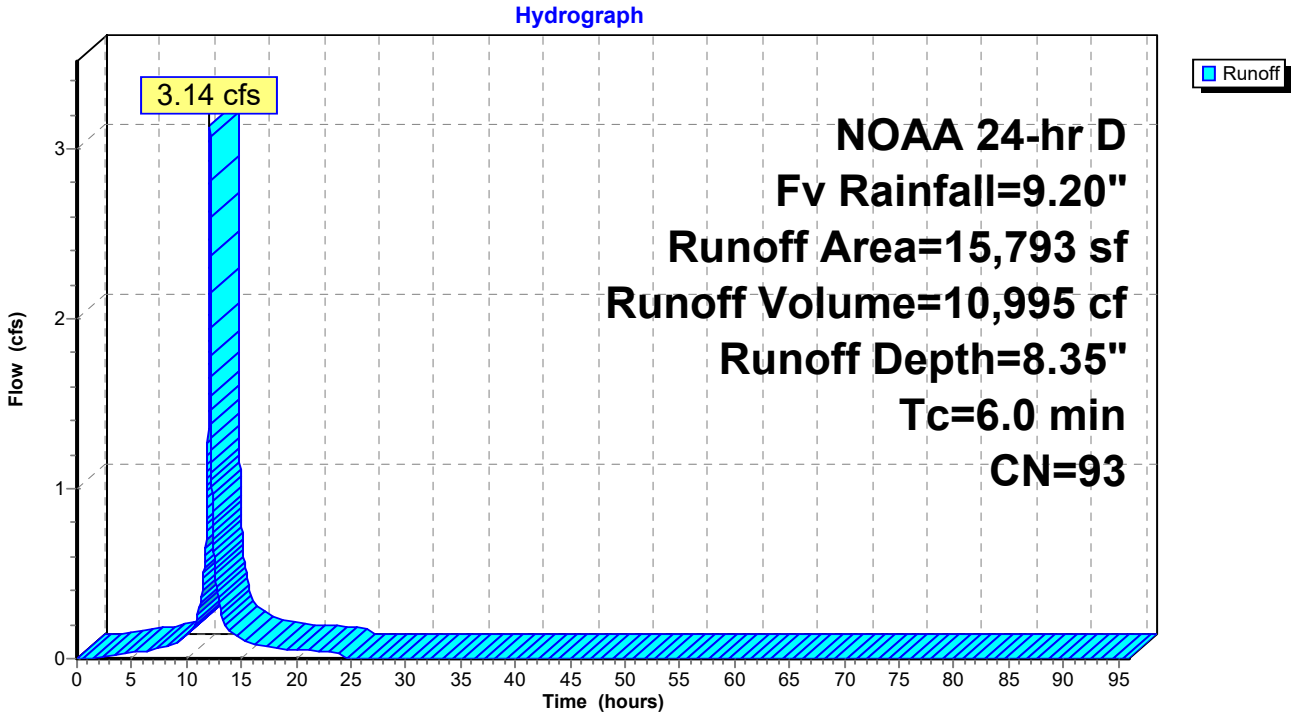
Runoff = 3.14 cfs @ 12.13 hrs, Volume= 10,995 cf, Depth= 8.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 4,320 | 98 | Roof |
| * | 9,409 | 98 | Pavement |
| * | 720 | 98 | Sidewalk |
| * | 1,344 | 39 | Grass, HSG A |
| * | 0 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 15,793 | 93 | Weighted Average |
| | 1,344 | | 8.51% Pervious Area |
| | 14,449 | | 91.49% Impervious Area |

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

## Subcatchment DA6b: Managed



## Summary for Subcatchment DA7: Managed

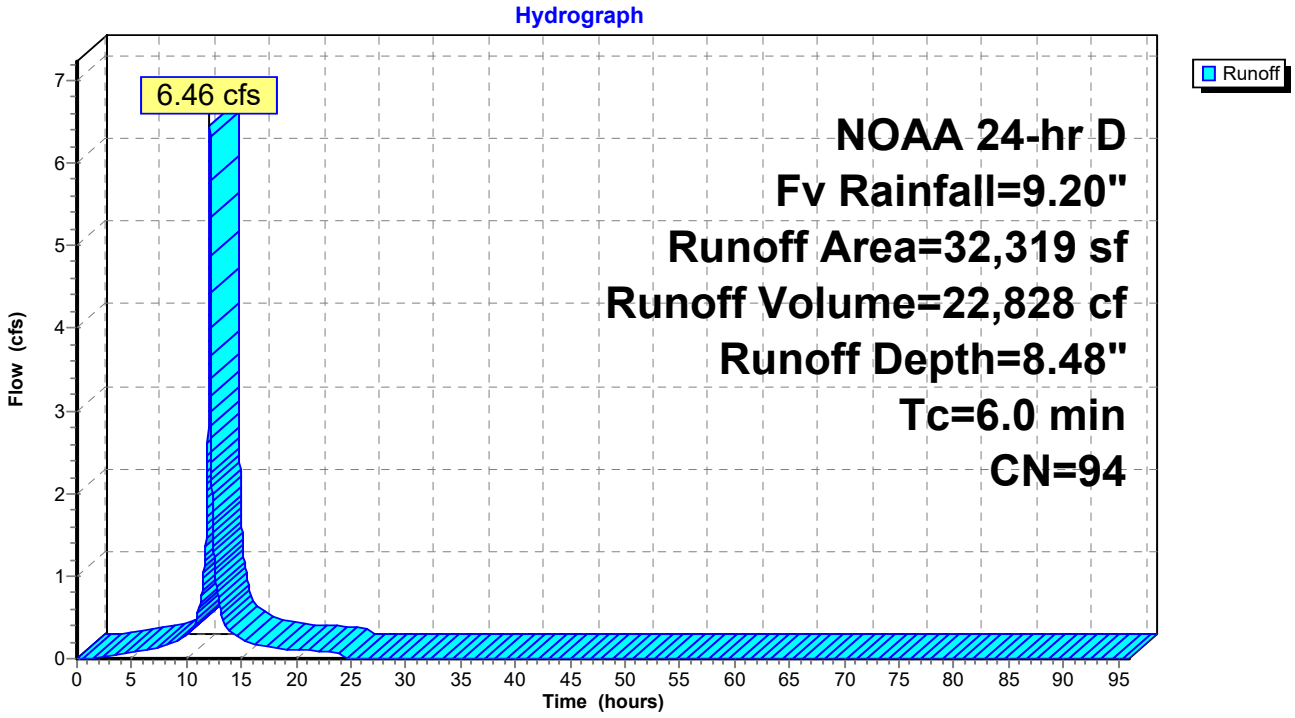
Runoff = 6.46 cfs @ 12.13 hrs, Volume= 22,828 cf, Depth= 8.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 7,045 | 98 | Roof |
| * | 19,833 | 98 | Pavement |
| * | 1,490 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 3,693 | 61 | Grass, HSG B |
| * | 258 | 74 | Grass, HSG C |
| | 32,319 | 94 | Weighted Average |
| | 3,951 | | 12.23% Pervious Area |
| | 28,368 | | 87.77% Impervious Area |

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

## Subcatchment DA7: Managed



## Summary for Subcatchment DA8: Managed

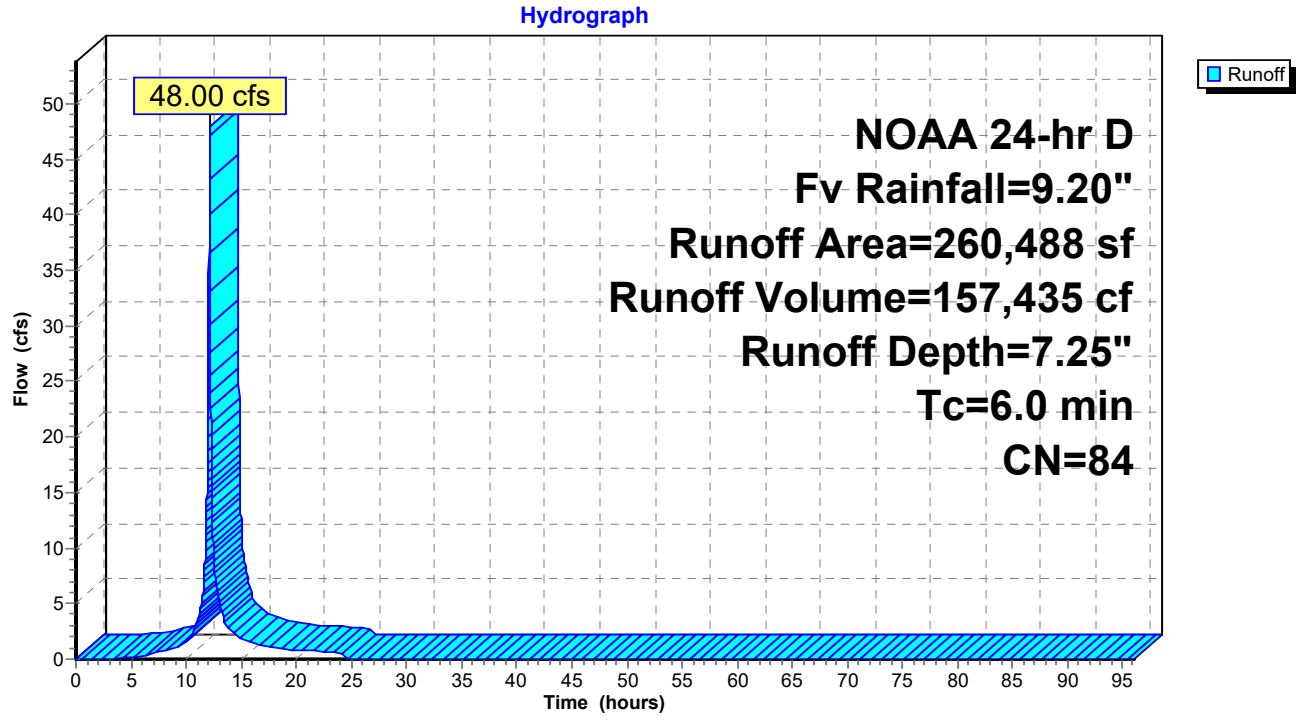
Runoff = 48.00 cfs @ 12.13 hrs, Volume= 157,435 cf, Depth= 7.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 28,409 | 98 | Roof |
| * | 91,663 | 98 | Pavement |
| * | 13,109 | 98 | Sidewalk |
| * | 0 | 39 | Grass, HSG A |
| * | 68,342 | 61 | Grass, HSG B |
| * | 50,167 | 74 | Grass, HSG C |
| * | 8,798 | 98 | Ex.Roadway |
| | 260,488 | 84 | Weighted Average |
| | 118,509 | | 45.49% Pervious Area |
| | 141,979 | | 54.51% Impervious Area |

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

## Subcatchment DA8: Managed



## Summary for Subcatchment DA9: Managed

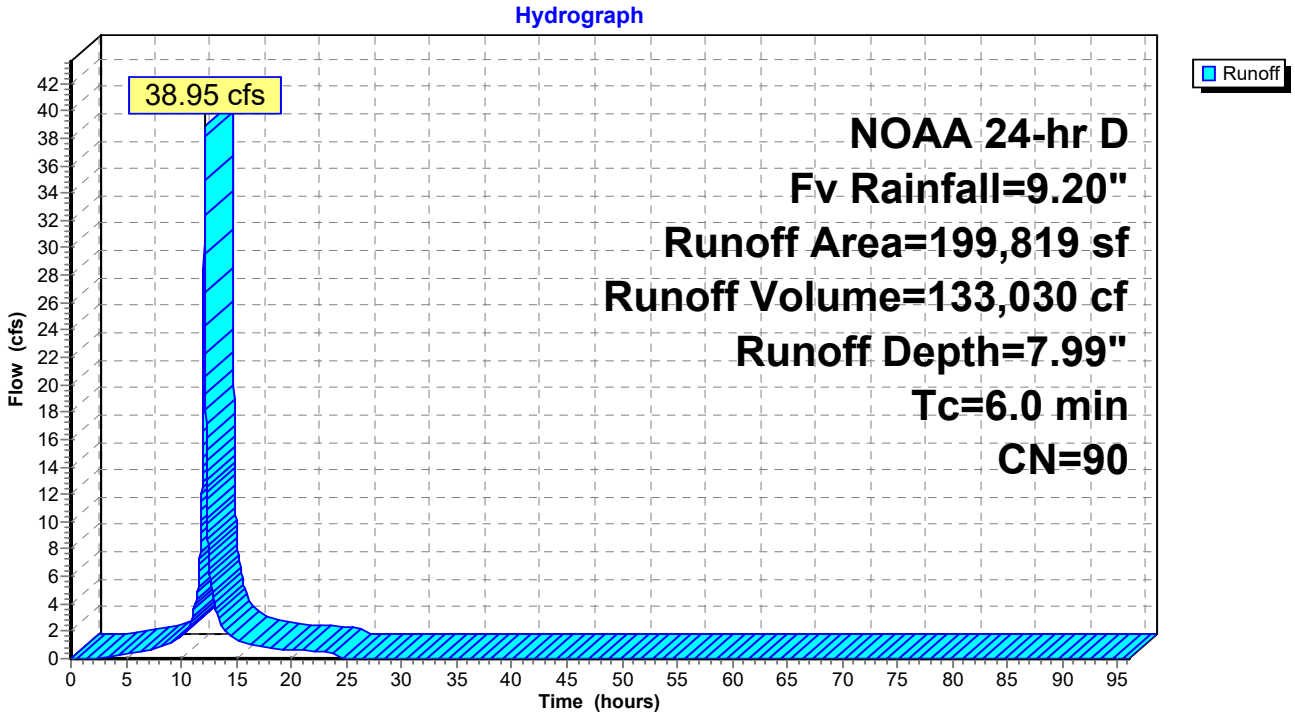
Runoff = 38.95 cfs @ 12.13 hrs, Volume= 133,030 cf, Depth= 7.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
NOAA 24-hr D Fv Rainfall=9.20"

| | Area (sf) | CN | Description |
|---|---|---|---|
| * | 45,831 | 98 | Roof |
| * | 99,756 | 98 | Pavement |
| * | 11,069 | 98 | Sidewalk |
| * | 1,120 | 39 | Grass, HSG A |
| * | 42,043 | 61 | Grass, HSG B |
| * | 0 | 74 | Grass, HSG C |
| | 199,819 | 90 | Weighted Average |
| | 43,163 | | 21.60% Pervious Area |
| | 156,656 | | 78.40% Impervious Area |

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

## Subcatchment DA9: Managed



## Summary for Pond #1: Drywell

Inflow Area = 145,962 sf, 86.44% Impervious, Inflow Depth = 1.95" for Fv event
Inflow = 6.64 cfs @ 12.13 hrs, Volume= 23,705 cf
Outflow = 0.39 cfs @ 11.02 hrs, Volume= 23,706 cf, Atten= 94%, Lag= 0.0 min
Discarded = 0.39 cfs @ 11.02 hrs, Volume= 23,706 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 43.10' @ 13.62 hrs Surf.Area= 6,800 sf Storage= 9,544 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 186.5 min ( 942.5 - 755.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 8,616 cf | **40.00'W x 170.00'L x 3.25'H Field A**<br>22,100 cf Overall - 560 cf Embedded = 21,540 cf x 40.0% Voids |
| #2 | 39.50' | 177 cf | **ADS_StormTech SC-310 +Cap** x 12 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>12 Chambers in 2 Rows |
| #3 | 39.50' | 383 cf | **ADS_StormTech SC-310 +Cap** x 26 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>26 Chambers in 2 Rows |
| #4 | 39.75' | 55 cf | **2.00'W x 2.83'L x 3.25'H CB #** x 3 -Impervious |
| #5 | 43.00' | 4,070 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 13,302 cf | Total Available Storage |

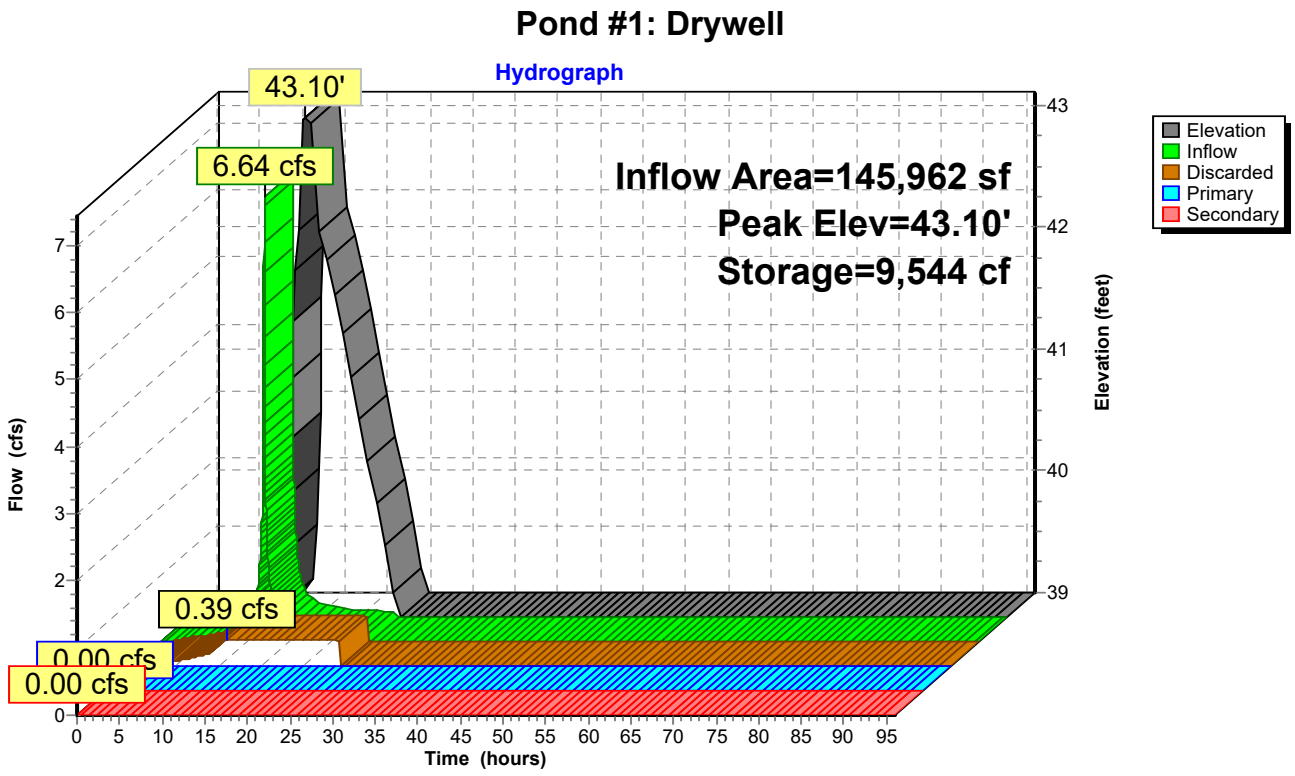
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.00 | 17 | 0 | 0 |
| 43.25 | 15,525 | 1,943 | 1,943 |
| 43.40 | 12,842 | 2,128 | 4,070 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **2.500 in/hr Exfiltration over Surface area** |
| #2 | Secondary | 43.50' | **134.0' long x 0.7' breadth Top of Curb**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50<br>Coef. (English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32 3.31 3.32 |
| #3 | Primary | 41.50' | **12.0" Round Over Drain X 0.00** L= 50.0' Ke= 0.500<br>Inlet / Outlet Invert= 41.50' / 41.30' S= 0.0040 '/' Cc= 0.900<br>n= 0.012, Flow Area= 0.79 sf |

**Discarded OutFlow** Max=0.39 cfs @ 11.02 hrs HW=39.05' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.39 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=0.00' (Dynamic Tailwater)
└**3=Over Drain** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=0.00' (Dynamic Tailwater)
└**2=Top of Curb** ( Controls 0.00 cfs)



## Summary for Pond #10: Dry Pond

Inflow Area = 199,819 sf, 78.40% Impervious, Inflow Depth = 7.99" for Fv event
Inflow = 38.95 cfs @ 12.13 hrs, Volume= 133,030 cf
Outflow = 0.58 cfs @ 21.56 hrs, Volume= 133,032 cf, Atten= 99%, Lag= 565.7 min
Discarded = 0.58 cfs @ 21.56 hrs, Volume= 133,032 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.38' @ 21.56 hrs Surf.Area= 31,068 sf Storage= 97,681 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,699.6 min ( 2,475.0 - 775.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 35.50' | 117,567 cf | **Dry Pond (Prismatic)**Listed below (Recalc) |

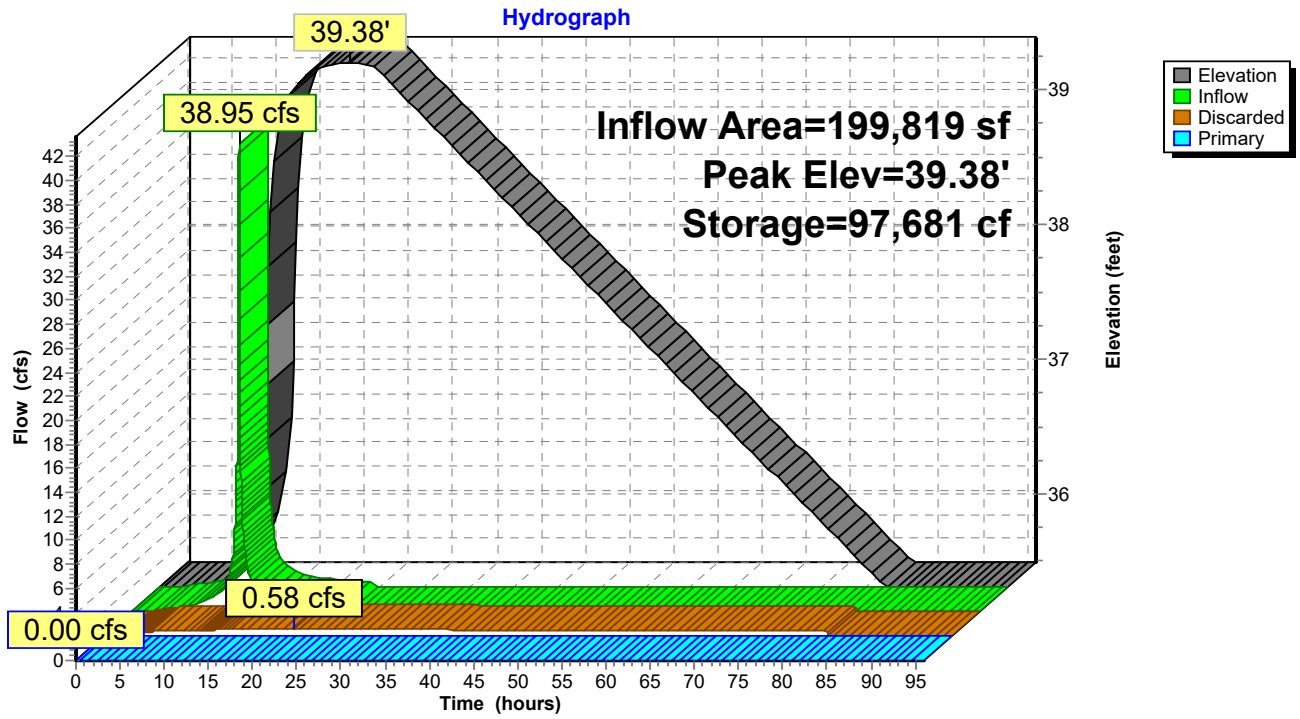
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 35.50 | 20,002 | 0 | 0 |
| 36.00 | 21,260 | 10,316 | 10,316 |
| 37.00 | 23,817 | 22,539 | 32,854 |
| 38.00 | 26,430 | 25,124 | 57,978 |
| 39.00 | 29,833 | 28,132 | 86,109 |
| 40.00 | 33,082 | 31,458 | 117,567 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 35.50' | **0.800 in/hr Exfiltration over Surface area** |
| #2 | Primary | 40.75' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.58 cfs @ 21.56 hrs HW=39.38' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.58 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=35.50' TW=36.70' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #10: Dry Pond



## Summary for Pond #11: Drywell

Inflow Area = 64,196 sf, 78.15% Impervious, Inflow Depth = 8.35" for Fv event
Inflow = 12.76 cfs @ 12.13 hrs, Volume= 44,694 cf
Outflow = 7.45 cfs @ 12.21 hrs, Volume= 44,695 cf, Atten= 42%, Lag= 4.7 min
Discarded = 0.04 cfs @ 3.50 hrs, Volume= 7,402 cf
Primary = 7.41 cfs @ 12.21 hrs, Volume= 37,292 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 39.28' @ 12.21 hrs Surf.Area= 5,600 sf Storage= 8,698 cf

Plug-Flow detention time= 190.6 min calculated for 44,690 cf (100% of inflow)
Center-of-Mass det. time= 190.8 min ( 955.2 - 764.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.25' | 6,059 cf | **70.00'W x 80.00'L x 3.25'H Field A**<br>18,200 cf Overall - 3,052 cf Embedded = 15,148 cf x 40.0% Voids |
| #2 | 36.75' | 55 cf | **2.00'W x 2.83'L x 3.25'H CB #** x 3 -Impervious |
| #3 | 36.75' | 52 cf | **4.00'W x 4.00'L x 3.25'H CB #**-Impervious |
| #4 | 40.00' | 2,692 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #5 | 36.75' | 265 cf | **ADS_StormTech SC-310 +Cap** x 18 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>18 Chambers in 2 Rows |
| #6 | 36.75' | 2,786 cf | **ADS_StormTech SC-310 +Cap** x 189 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>189 Chambers in 21 Rows |
| | | 11,910 cf | Total Available Storage |

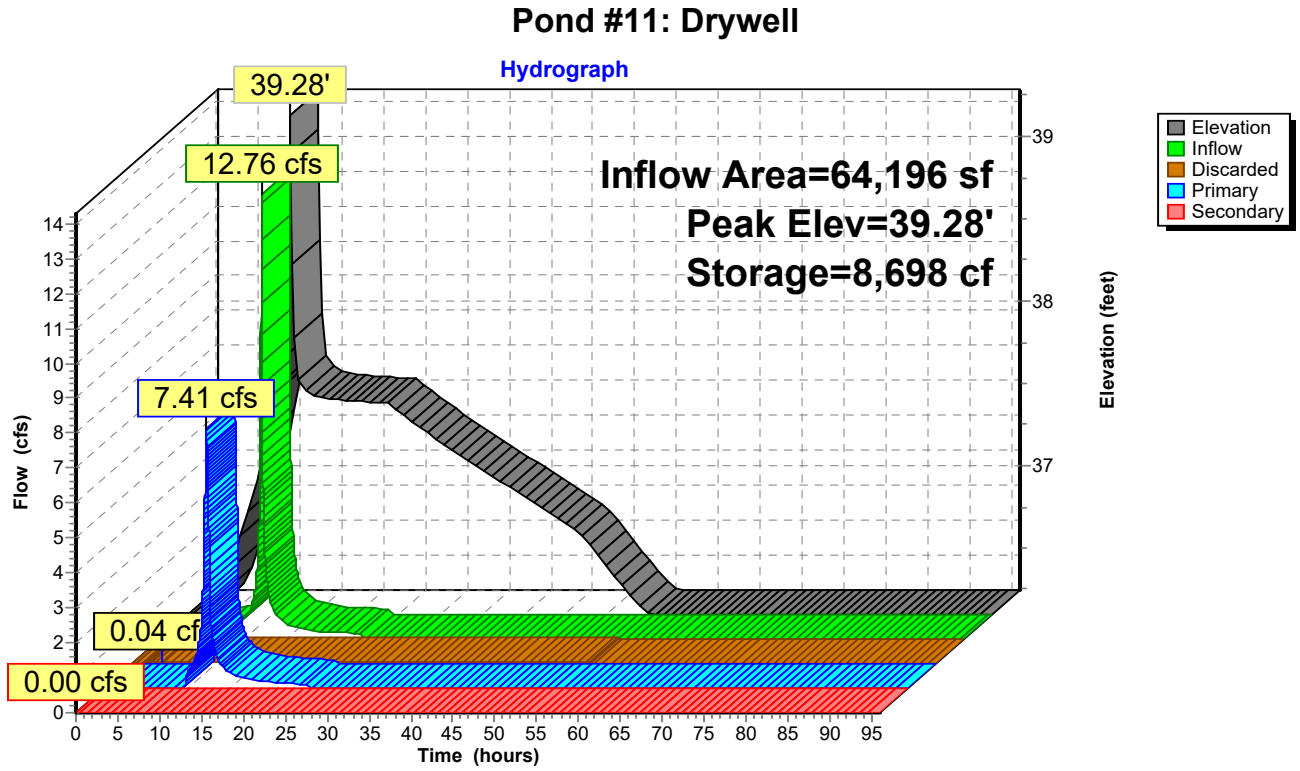
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 40.00 | 39 | 0 | 0 |
| 40.25 | 1,685 | 216 | 216 |
| 40.50 | 18,126 | 2,476 | 2,692 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 36.25' | **0.300 in/hr Exfiltration over Surface area** |
| #2 | Primary | 36.75' | **15.0" Round Culvert** L= 105.0' Ke= 0.500<br>Inlet / Outlet Invert= 36.75' / 36.00' S= 0.0071 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.23 sf |
| #3 | Device 2 | 37.50' | **5.5' long x 0.75' rise Outlet Weir** 2 End Contraction(s) |
| #4 | Secondary | 40.57' | **Roadway Crown, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |

**Discarded OutFlow** Max=0.04 cfs @ 3.50 hrs HW=36.30' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

**Primary OutFlow** Max=7.40 cfs @ 12.21 hrs HW=39.28' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Barrel Controls 7.40 cfs @ 6.03 fps)
└**3=Outlet Weir** (Passes 7.40 cfs of 23.24 cfs potential flow)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=36.25' TW=0.00' (Dynamic Tailwater)
└**4=Roadway Crown** ( Controls 0.00 cfs)



## Summary for Pond #12a: Drywell

Inflow Area = 59,904 sf, 86.88% Impervious, Inflow Depth = 7.99" for Fv event
Inflow = 11.68 cfs @ 12.13 hrs, Volume= 39,881 cf
Outflow = 0.49 cfs @ 10.81 hrs, Volume= 39,886 cf, Atten= 96%, Lag= 0.0 min
Discarded = 0.49 cfs @ 10.81 hrs, Volume= 39,886 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 44.07' @ 14.60 hrs Surf.Area= 12,545 sf Storage= 19,176 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 337.0 min ( 1,112.4 - 775.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 16,644 cf | **65.00'W x 193.00'L x 3.50'H Field A**<br>43,908 cf Overall - 2,297 cf Embedded = 41,610 cf x 40.0% Voids |
| #2 | 39.50' | 2,297 cf | **SC-740 Isolator Row +Cap** x 50 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>50 Chambers in 2 Rows |
| #3 | 39.50' | 45 cf | **2.00'W x 2.83'L x 4.00'H CB#** x 2 -Impervious |
| #4 | 43.50' | 596 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 19,582 cf | Total Available Storage |

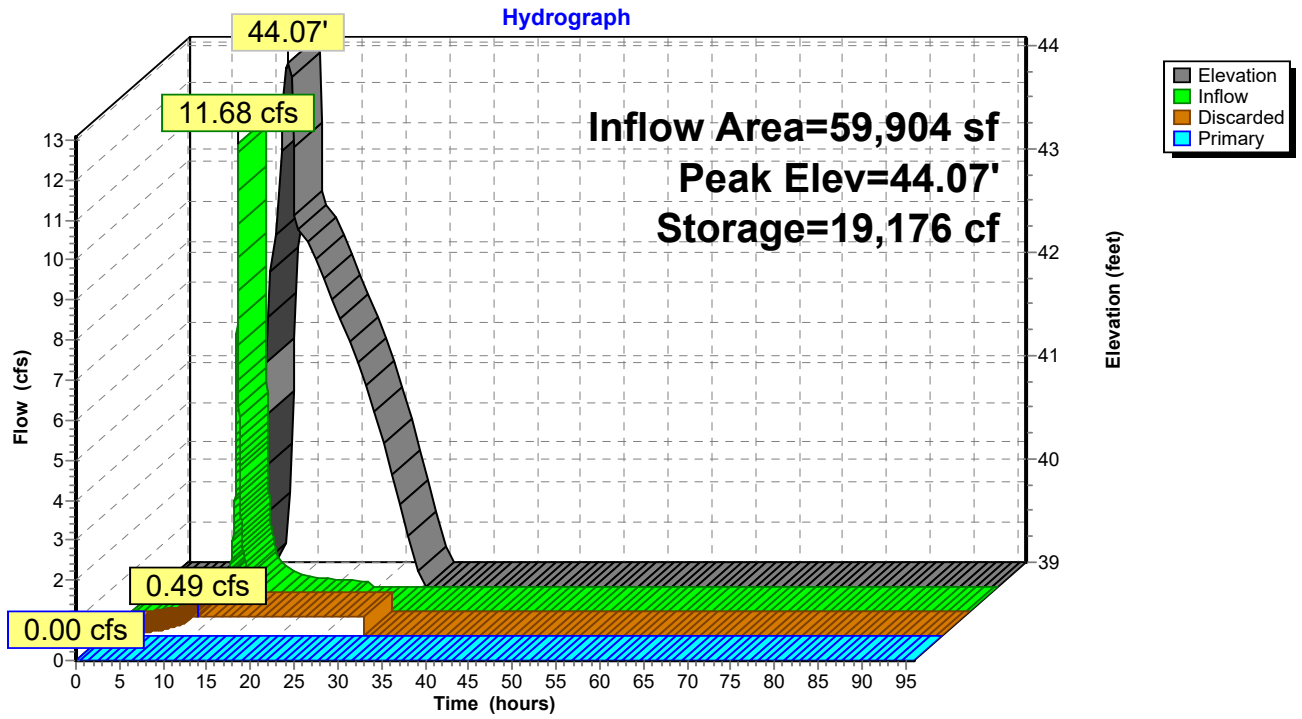
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.50 | 11 | 0 | 0 |
| 43.75 | 157 | 21 | 21 |
| 44.00 | 670 | 103 | 124 |
| 44.25 | 3,101 | 471 | 596 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **1.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 44.41' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.49 cfs @ 10.81 hrs HW=39.06' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.49 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=39.00' (Dynamic Tailwater)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #12a: Drywell



## Summary for Pond #12b: Drywell

Inflow Area = 110,054 sf, 88.16% Impervious, Inflow Depth = 3.75" for Fv event
Inflow = 9.91 cfs @ 12.13 hrs, Volume= 34,407 cf
Outflow = 0.46 cfs @ 10.90 hrs, Volume= 34,408 cf, Atten= 95%, Lag= 0.0 min
Discarded = 0.46 cfs @ 10.90 hrs, Volume= 34,408 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 42.23' @ 14.32 hrs Surf.Area= 11,780 sf Storage= 15,683 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 284.4 min ( 1,052.6 - 768.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 15,007 cf | **62.00'W x 190.00'L x 3.25'H Field A**<br>38,285 cf Overall - 767 cf Embedded = 37,518 cf x 40.0% Voids |
| #2 | 39.50' | 767 cf | **SC-310 Isolator Row+Cap** x 52 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>52 Chambers in 2 Rows |
| #3 | 39.70' | 22 cf | **2.00'W x 2.83'L x 3.80'H CB#**-Impervious |
| #4 | 43.50' | 122 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #5 | 40.00' | 17 cf | **2.00'W x 2.83'L x 3.00'H CB#**-Impervious |
| #6 | 43.00' | 300 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 16,234 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.50 | 6 | 0 | 0 |
| 43.75 | 75 | 10 | 10 |
| 44.00 | 203 | 35 | 45 |
| 44.25 | 417 | 78 | 122 |

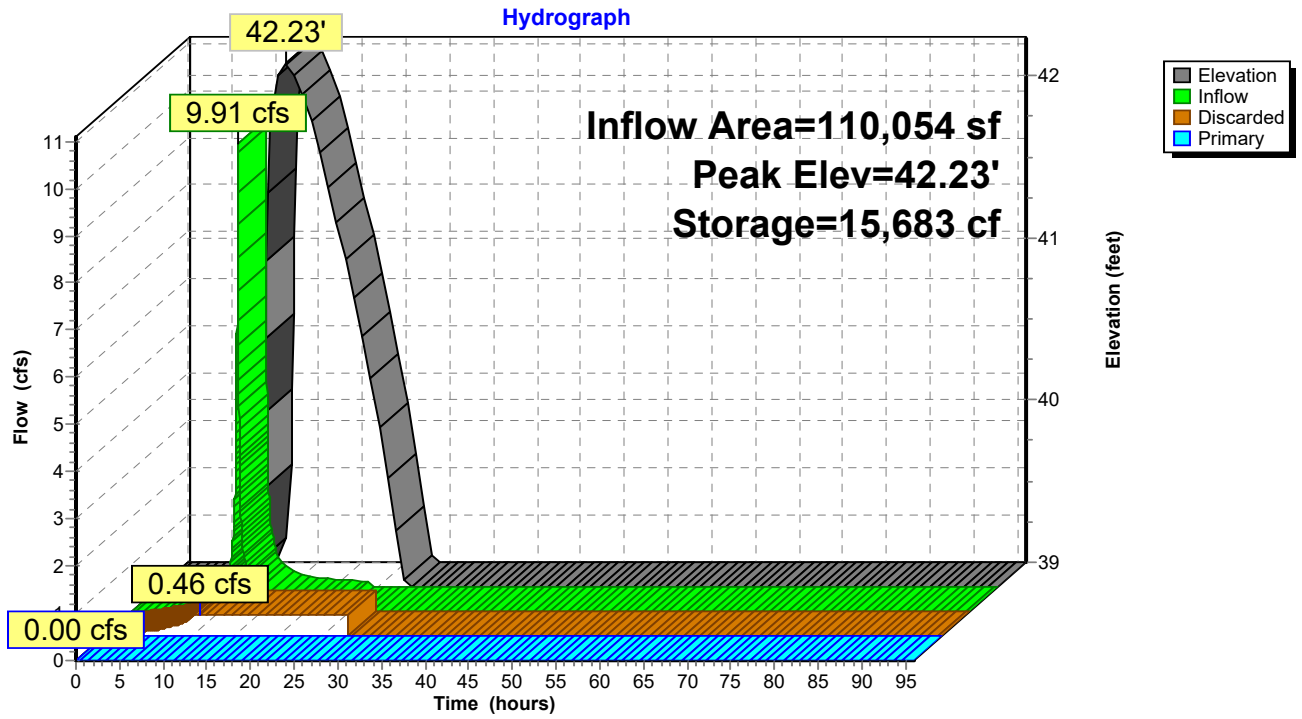
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.00 | 6 | 0 | 0 |
| 43.25 | 2,391 | 300 | 300 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **1.700 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.39' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.46 cfs @ 10.90 hrs HW=39.05' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.46 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #12b: Drywell



## Summary for Pond #13: Dry Pond

Inflow Area = 728,208 sf, 62.81% Impervious, Inflow Depth = 2.11" for Fv event
Inflow = 38.95 cfs @ 12.13 hrs, Volume= 127,745 cf
Outflow = 2.48 cfs @ 13.58 hrs, Volume= 127,751 cf, Atten= 94%, Lag= 87.2 min
Discarded = 2.48 cfs @ 13.58 hrs, Volume= 127,751 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 38.00' @ 13.58 hrs Surf.Area= 44,654 sf Storage= 54,106 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 188.4 min ( 982.0 - 793.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.70' | 50,581 cf | **Custom Stage Data (Prismatic)**Listed below (Recalc) |
| | | 50,581 cf | x 2.00 = 101,163 cf Total Available Storage |

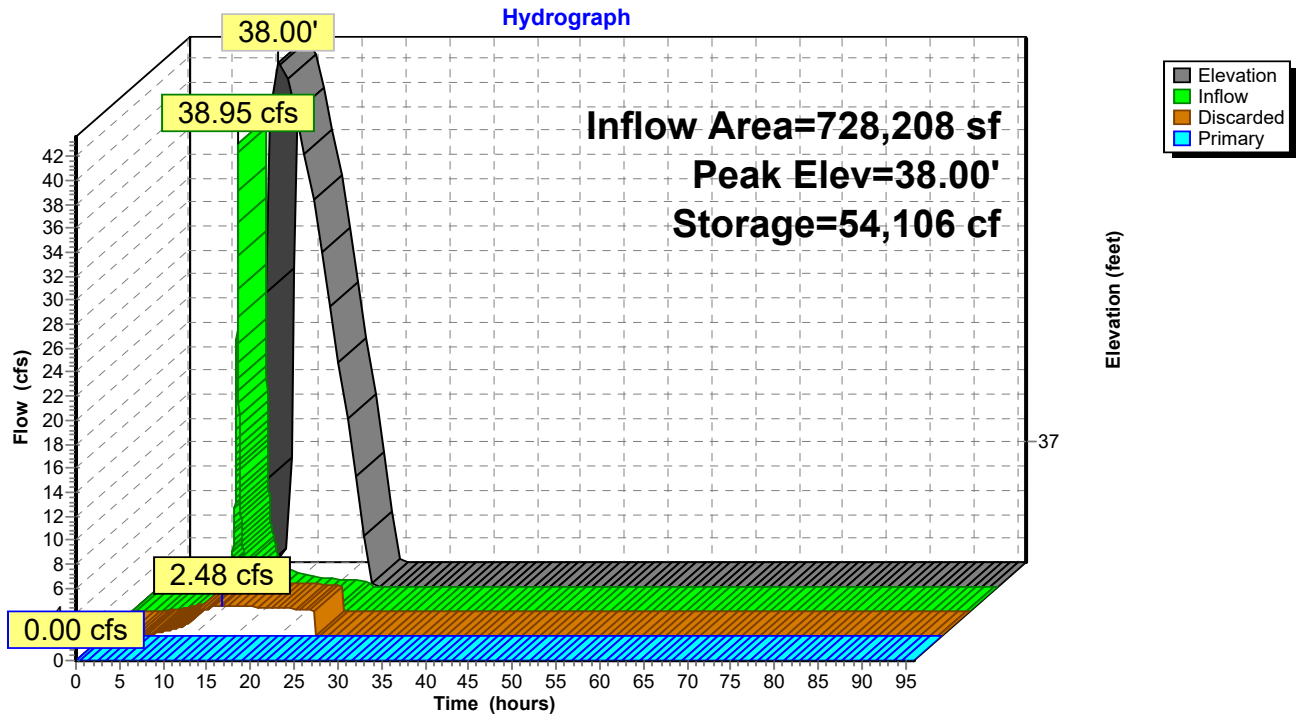
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 36.70 | 19,271 | 0 | 0 |
| 37.00 | 20,025 | 5,894 | 5,894 |
| 38.00 | 22,329 | 21,177 | 27,071 |
| 39.00 | 24,691 | 23,510 | 50,581 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 36.70' | **2.400 in/hr Exfiltration over Surface area** |
| #2 | Primary | 39.50' | **10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 |
| | | | Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=2.48 cfs @ 13.58 hrs HW=38.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 2.48 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=36.70' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #13: Dry Pond



## Summary for Pond #14: SGW

Inflow Area = 145,491 sf, 74.57% Impervious, Inflow Depth = 7.74" for Fv event
Inflow = 27.90 cfs @ 12.13 hrs, Volume= 93,894 cf
Outflow = 20.26 cfs @ 12.18 hrs, Volume= 93,894 cf, Atten= 27%, Lag= 3.3 min
Primary = 5.71 cfs @ 12.18 hrs, Volume= 76,668 cf
Secondary = 14.55 cfs @ 12.18 hrs, Volume= 17,226 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 40.17' Surf.Area= 6,915 sf Storage= 5,556 cf
Peak Elev= 41.93' @ 12.18 hrs Surf.Area= 21,875 sf Storage= 22,819 cf (17,264 cf above start)

Plug-Flow detention time= 101.0 min calculated for 88,339 cf (94% of inflow)
Center-of-Mass det. time= 42.1 min ( 824.0 - 781.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 37.83' | 24,299 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

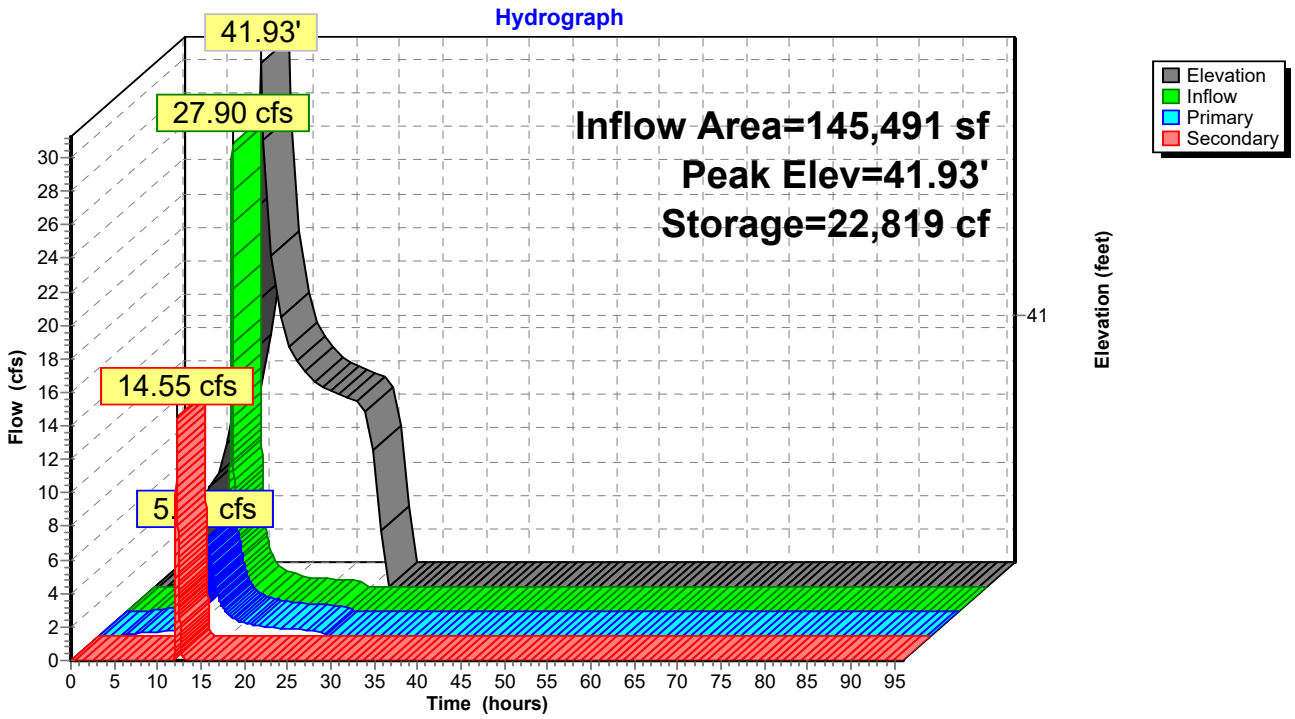
| Elevation (feet) | Surf.Area (sq-ft) | Voids (%) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|---|
| 37.83 | 6,915 | 0.0 | 0 | 0 |
| 39.83 | 6,915 | 40.0 | 5,532 | 5,532 |
| 40.50 | 6,915 | 1.0 | 46 | 5,578 |
| 41.00 | 8,691 | 100.0 | 3,902 | 9,480 |
| 41.50 | 13,739 | 100.0 | 5,608 | 15,087 |
| 42.00 | 23,108 | 100.0 | 9,212 | 24,299 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 40.00' | **15.0" Round Culvert** L= 66.0' Ke= 0.500<br>Inlet / Outlet Invert= 40.00' / 39.74' S= 0.0039 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.23 sf |
| #2 | Device 1 | 40.17' | **4.0" Horiz. Under Drain Rim** C= 0.600<br>Limited to weir flow at low heads |
| #3 | Device 1 | 40.75' | **24.0" W x 12.0" H Vert. Low Flow Weir** C= 0.600<br>Limited to weir flow at low heads |
| #4 | Device 1 | 41.75' | **24.0" x 34.0" Horiz. Top of Inlet** C= 0.600<br>Limited to weir flow at low heads |
| #5 | Secondary | 41.50' | **20.0' long x 6.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83 |

**Primary OutFlow** Max=5.71 cfs @ 12.18 hrs HW=41.93' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 5.71 cfs @ 4.65 fps)
  ├─**2=Under Drain Rim** (Passes < 0.56 cfs potential flow)
  ├─**3=Low Flow Weir** (Passes < 7.76 cfs potential flow)
  └─**4=Top of Inlet** (Passes < 2.49 cfs potential flow)

**Secondary OutFlow** Max=14.53 cfs @ 12.18 hrs HW=41.93' TW=38.76' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Weir Controls 14.53 cfs @ 1.67 fps)

## Pond #14: SGW


Hydrograph
41.93'
27.90 cfs
14.55 cfs
5. cfs
Inflow Area=145,491 sf
Peak Elev=41.93'
Storage=22,819 cf
Flow (cfs)
Time (hours)
Elevation (feet)
41
Elevation
Inflow
Primary
Secondary

## Summary for Pond #2: Drywell

Inflow Area = 112,875 sf, 84.89% Impervious, Inflow Depth = 8.23" for Fv event
Inflow = 22.30 cfs @ 12.13 hrs, Volume= 77,441 cf
Outflow = 0.57 cfs @ 9.85 hrs, Volume= 77,445 cf, Atten= 97%, Lag= 0.0 min
Discarded = 0.57 cfs @ 9.85 hrs, Volume= 77,445 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 42.82' @ 16.67 hrs Surf.Area= 24,750 sf Storage= 44,764 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 691.6 min ( 1,459.9 - 768.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 38.00' | 28,989 cf | **150.00'W x 165.00'L x 3.50'H Field A**<br>86,625 cf Overall - 14,152 cf Embedded = 72,473 cf x 40.0% Voids |
| #2 | 38.50' | 14,152 cf | **ADS_StormTech RC-310 +Cap** x 960 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>960 Chambers in 48 Rows |
| #3 | 42.00' | 5,253 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #4 | 38.50' | 79 cf | **2.00'W x 2.83'L x 3.50'H CB #** x 4 -Impervious |
| | | 48,474 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 42.00 | 23 | 0 | 0 |
| 42.25 | 194 | 27 | 27 |
| 42.50 | 528 | 90 | 117 |
| 42.75 | 5,743 | 784 | 901 |
| 43.00 | 29,071 | 4,352 | 5,253 |

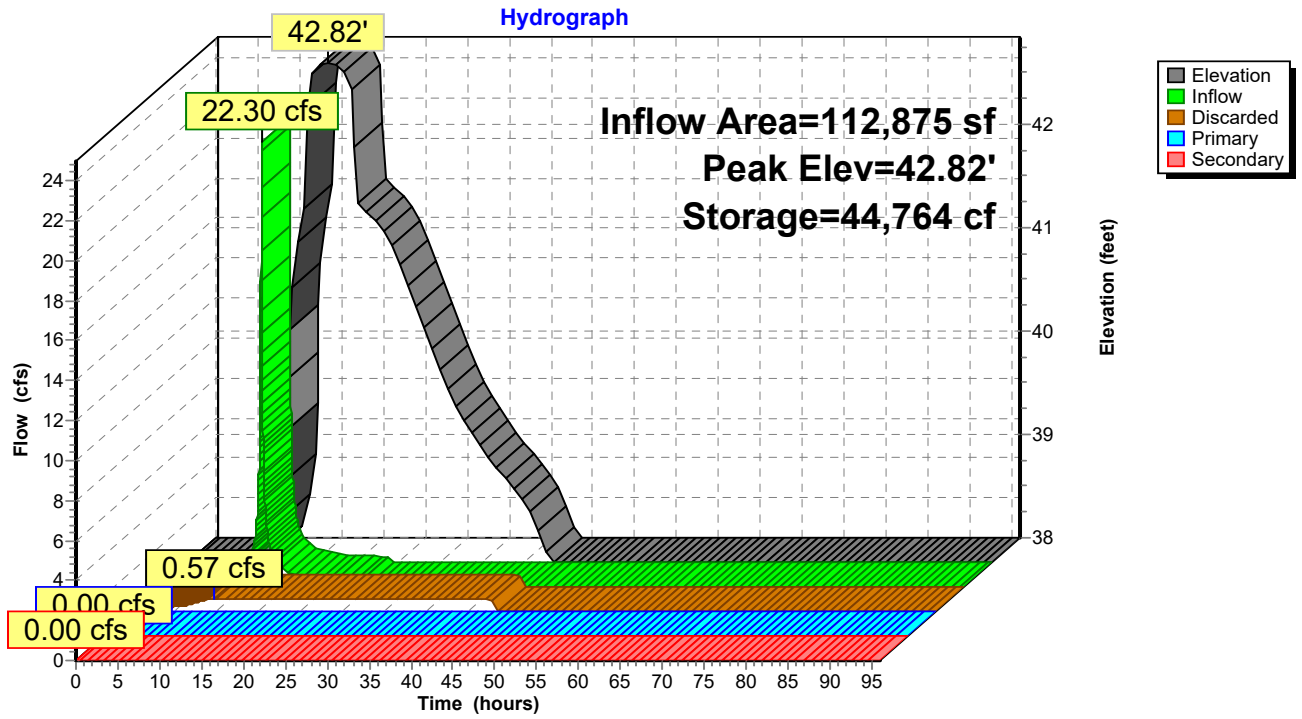
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 38.00' | **1.000 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.41' | **Asymmetrical Weir, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |
| #3 | Secondary | 43.46' | **Asymmetrical Weir, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |

**Discarded OutFlow** Max=0.57 cfs @ 9.85 hrs HW=38.06' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.57 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=39.00' (Dynamic Tailwater)
↑—**2=Asymmetrical Weir** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=38.00' (Dynamic Tailwater)
↑—**3=Asymmetrical Weir** ( Controls 0.00 cfs)

## Pond #2: Drywell



## Summary for Pond #3: Drywell

Inflow Area = 134,266 sf, 86.16% Impervious, Inflow Depth = 8.23" for Fv event
Inflow = 26.53 cfs @ 12.13 hrs, Volume= 92,117 cf
Outflow = 0.41 cfs @ 8.25 hrs, Volume= 92,122 cf, Atten= 98%, Lag= 0.0 min
Discarded = 0.41 cfs @ 8.25 hrs, Volume= 92,122 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 42.61' @ 20.94 hrs Surf.Area= 29,415 sf Storage= 63,469 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,363.4 min ( 2,131.7 - 768.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 38.00' | 26,848 cf | **265.00'W x 111.00'L x 3.50'H Field A**<br>102,953 cf Overall - 35,833 cf Embedded = 67,119 cf x 40.0% Voids |
| #2 | 38.50' | 42 cf | **2.00'W x 2.83'L x 3.75'H CB #** x 2 -Impervious |
| #3 | 38.50' | 120 cf | **4.00'W x 4.00'L x 3.75'H CB #** x 2 -Impervious |
| #4 | 42.25' | 2,419 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #5 | 38.50' | 35,833 cf | **ADS_StormTech SC-740 +Cap** x 780 Inside #1<br>Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf<br>Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap<br>780 Chambers in 52 Rows |
| | | 65,262 cf | Total Available Storage |

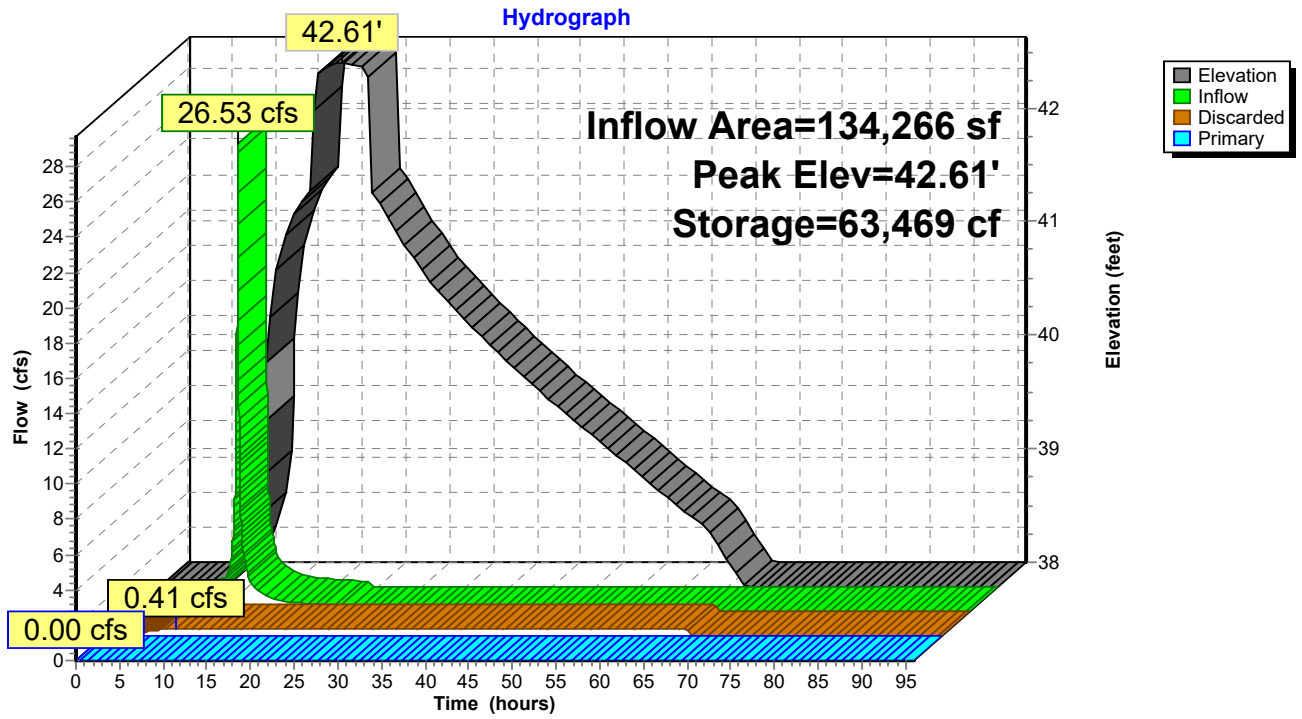
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 42.25 | 43 | 0 | 0 |
| 42.50 | 874 | 115 | 115 |
| 42.75 | 17,561 | 2,304 | 2,419 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 38.00' | **0.600 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.00' | **24.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Discarded OutFlow** Max=0.41 cfs @ 8.25 hrs HW=38.05' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=0.00' (Dynamic Tailwater)
**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond #3: Drywell



## Summary for Pond #4: Drywell

Inflow Area = 153,759 sf, 43.45% Impervious, Inflow Depth = 5.64" for Fv event
Inflow = 23.19 cfs @ 12.13 hrs, Volume= 72,225 cf
Outflow = 17.63 cfs @ 12.19 hrs, Volume= 72,224 cf, Atten= 24%, Lag= 3.3 min
Discarded = 0.35 cfs @ 12.18 hrs, Volume= 33,850 cf
Primary = 17.28 cfs @ 12.19 hrs, Volume= 38,374 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 43.19' @ 16.67 hrs Surf.Area= 8,781 sf Storage= 14,167 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 213.1 min ( 1,038.3 - 825.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 9,563 cf | **45.00'W x 195.00'L x 3.25'H Drywell**<br>28,519 cf Overall - 4,611 cf Embedded = 23,908 cf x 40.0% Voids |
| #2 | 40.00' | 369 cf | **ADS_StormTech SC-310 +Cap** x 25 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap |
| #3 | 39.50' | 4,216 cf | **ADS_StormTech SC-310 +Cap** x 286 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>286 Chambers in 11 Rows |
| #4 | 40.00' | 13 cf | **2.00'W x 2.83'L x 2.25'H CB #1** Inside #1<br>26 cf Overall - 6.0" Wall Thickness = 13 cf |
| #5 | 42.25' | 5 cf | **2.00'W x 2.83'L x 0.90'H CB #1** |
| #6 | 43.15' | 3,594 cf | **#1 Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 17,760 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.15 | 6 | 0 | 0 |
| 43.25 | 175 | 9 | 9 |
| 43.50 | 2,939 | 389 | 398 |
| 43.75 | 6,476 | 1,177 | 1,575 |
| 44.00 | 9,673 | 2,019 | 3,594 |

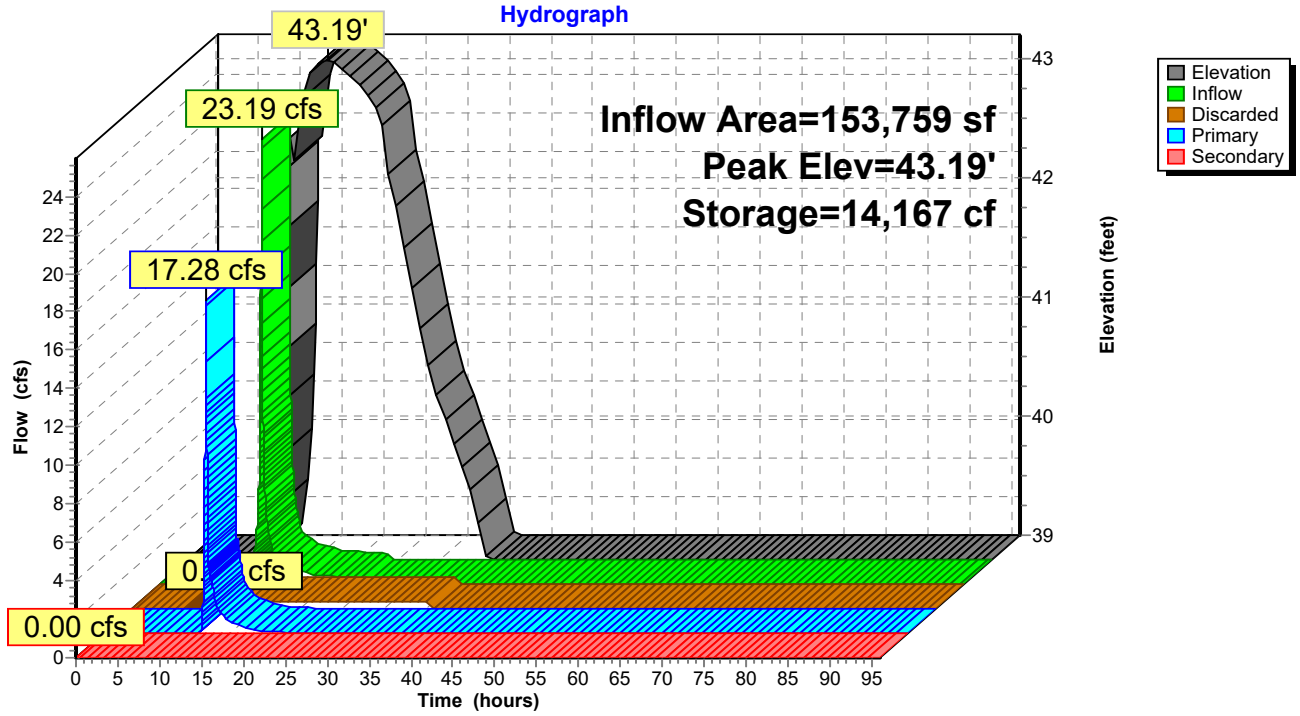
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **1.700 in/hr Exfiltration over Surface area** |
| #2 | Secondary | 44.11' | **Asymmetrical Weir, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.30 0.50 |
| #3 | Primary | 40.01' | **12.0" Vert. 12" Over Drain** C= 0.600<br>Limited to weir flow at low heads |
| #4 | Primary | 40.01' | **18.0" Vert. 15" Over Drain** C= 0.600<br>Limited to weir flow at low heads |

**Discarded OutFlow** Max=0.35 cfs @ 12.18 hrs HW=42.79' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.35 cfs)

**Primary OutFlow** Max=16.82 cfs @ 12.19 hrs HW=42.94' TW=41.06' (Dynamic Tailwater)
├**3=12" Over Drain** (Orifice Controls 5.18 cfs @ 6.59 fps)
└**4=15" Over Drain** (Orifice Controls 11.65 cfs @ 6.59 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=38.50' (Dynamic Tailwater)
└**2=Asymmetrical Weir** ( Controls 0.00 cfs)

## Pond #4: Drywell



## Summary for Pond #5: Dry Pond

Inflow Area = 317,025 sf, 52.63% Impervious, Inflow Depth = 4.68" for Fv event
Inflow = 40.49 cfs @ 12.14 hrs, Volume= 123,557 cf
Outflow = 1.10 cfs @ 16.68 hrs, Volume= 123,565 cf, Atten= 97%, Lag= 272.6 min
Discarded = 1.10 cfs @ 16.68 hrs, Volume= 123,565 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 43.19' @ 16.68 hrs Surf.Area= 22,698 sf Storage= 81,266 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 798.4 min ( 1,607.6 - 809.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 38.50' | 100,215 cf | **Dry Pond (Prismatic)**Listed below (Recalc) |
| #2 | 39.50' | 58 cf | **4.00'W x 4.00'L x 3.65'H CB #**-Impervious |
| #3 | 43.15' | 1,793 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| #4 | 38.50' | 280 cf | **24.0" Round Culvert**-Impervious<br>L= 89.0' S= 0.0112 '/' |
| | | 102,345 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 38.50 | 12,091 | 0 | 0 |
| 39.00 | 13,149 | 6,310 | 6,310 |
| 40.00 | 15,319 | 14,234 | 20,544 |
| 41.00 | 17,557 | 16,438 | 36,982 |
| 42.00 | 19,866 | 18,712 | 55,694 |
| 43.00 | 22,243 | 21,055 | 76,748 |
| 44.00 | 24,690 | 23,467 | 100,215 |

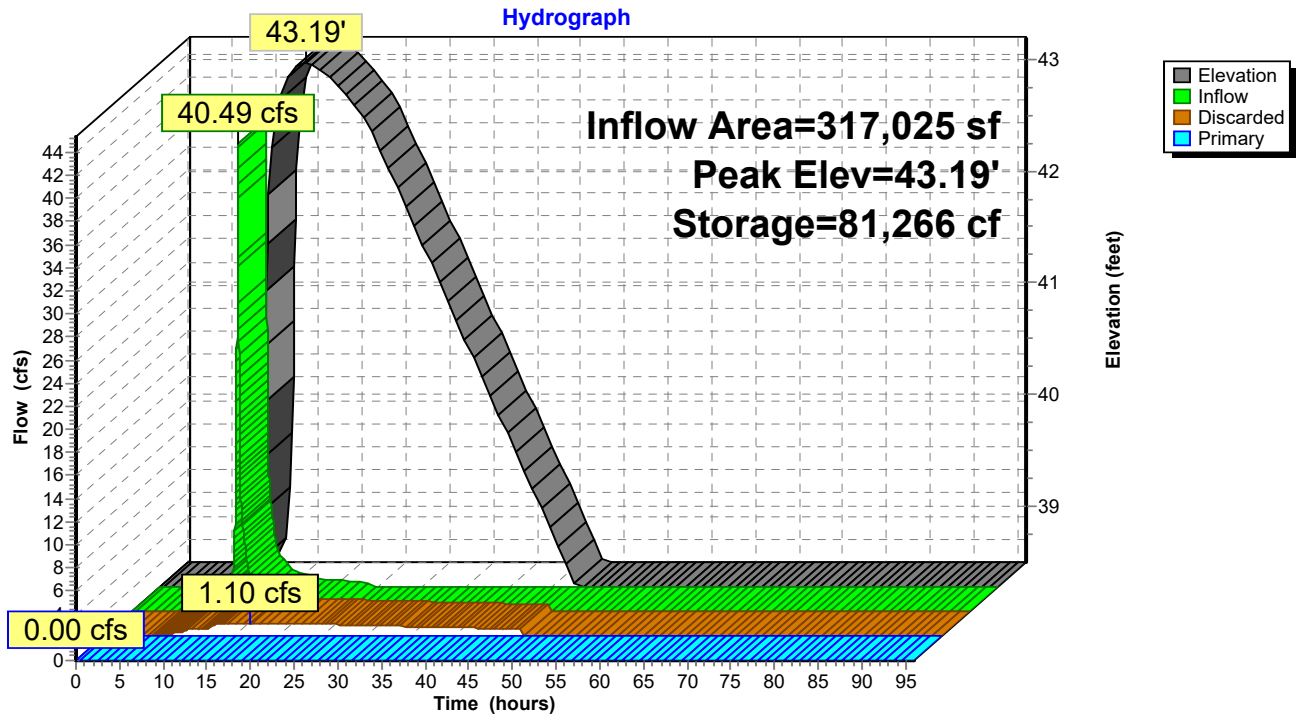
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.15 | 6 | 0 | 0 |
| 43.25 | 151 | 8 | 8 |
| 43.50 | 1,336 | 186 | 194 |
| 43.75 | 3,192 | 566 | 760 |
| 44.00 | 5,073 | 1,033 | 1,793 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 38.50' | **2.100 in/hr Exfiltration over Surface area** |
| #2 | Primary | 45.72' | **Top of Curb, C= 3.27**<br>Offset (feet) 0.00 9.59 19.17 24.92 30.87 40.79 50.71<br>Height (feet) 0.13 0.07 0.02 0.00 0.02 0.07 0.13 |

**Discarded OutFlow** Max=1.10 cfs @ 16.68 hrs HW=43.19' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 1.10 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.50' TW=36.70' (Dynamic Tailwater)
↑**2=Top of Curb** ( Controls 0.00 cfs)

## Pond #5: Dry Pond



## Summary for Pond #6a: Drywell

Inflow Area = 46,582 sf, 90.31% Impervious, Inflow Depth = 5.60" for Fv event
Inflow = 6.15 cfs @ 12.13 hrs, Volume= 21,747 cf
Outflow = 0.19 cfs @ 10.13 hrs, Volume= 21,750 cf, Atten= 97%, Lag= 0.0 min
Discarded = 0.19 cfs @ 10.13 hrs, Volume= 21,750 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 45.15' @ 15.38 hrs Surf.Area= 8,400 sf Storage= 11,516 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 513.5 min ( 1,273.8 - 760.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 41.00' | 10,694 cf | **48.00'W x 175.00'L x 3.25'H Field A**<br>27,300 cf Overall - 564 cf Embedded = 26,736 cf x 40.0% Voids |
| #2 | 41.50' | 501 cf | **ADS_StormTech SC-310 +Cap** x 34 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>34 Chambers in 2 Rows |
| #3 | 41.50' | 38 cf | **2.50'W x 5.50'L x 2.75'H CB #** Inside #1<br>63 cf Overall - 6.0" Wall Thickness = 38 cf |
| #4 | 44.25' | 7 cf | **2.50'W x 5.50'L x 0.50'H CB #**-Impervious |
| #5 | 44.75' | 7,658 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 18,898 cf | Total Available Storage |

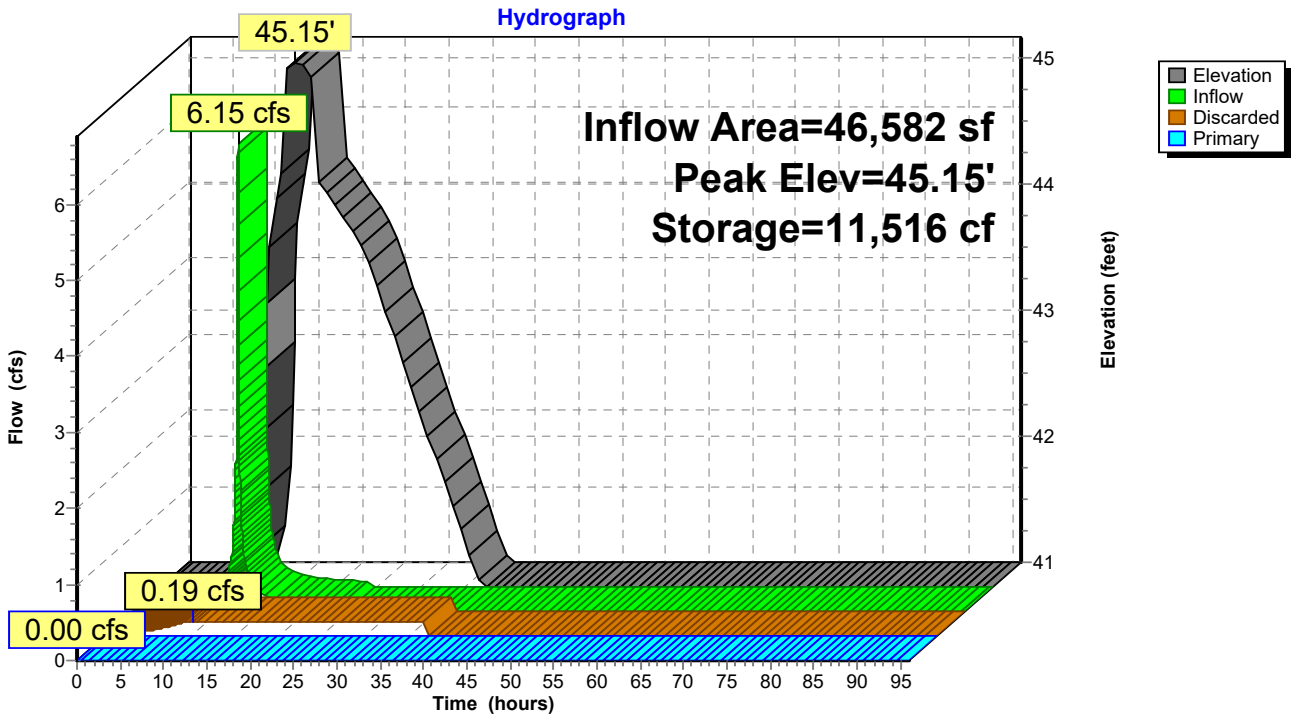
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 44.75 | 16 | 0 | 0 |
| 45.00 | 141 | 20 | 20 |
| 45.25 | 5,306 | 681 | 701 |
| 45.50 | 14,035 | 2,418 | 3,118 |
| 45.75 | 22,283 | 4,540 | 7,658 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 41.00' | **1.000 in/hr Exfiltration over Surface area** |
| #2 | Primary | 45.72' | **Top of Curb, C= 3.27**<br>Offset (feet) 0.00 9.59 19.17 24.92 30.87 40.79 50.71<br>Height (feet) 0.13 0.07 0.02 0.00 0.02 0.07 0.13 |

**Discarded OutFlow** Max=0.19 cfs @ 10.13 hrs HW=41.05' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.19 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=41.00' TW=0.00' (Dynamic Tailwater)
↑—**2=Top of Curb** ( Controls 0.00 cfs)

## Pond #6a: Drywell



## Summary for Pond #6b: Drywell

Inflow Area = 15,793 sf, 91.49% Impervious, Inflow Depth = 8.35" for Fv event
Inflow = 3.14 cfs @ 12.13 hrs, Volume= 10,995 cf
Outflow = 0.03 cfs @ 8.01 hrs, Volume= 10,995 cf, Atten= 99%, Lag= 0.0 min
Discarded = 0.03 cfs @ 8.01 hrs, Volume= 10,995 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 42.39' @ 24.04 hrs Surf.Area= 7,200 sf Storage= 8,470 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2,167.6 min ( 2,932.0 - 764.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.50' | 8,528 cf | **60.00'W x 120.00'L x 3.00'H Field A**<br>21,600 cf Overall - 279 cf Embedded = 21,321 cf x 40.0% Voids |
| #2 | 40.00' | 206 cf | **ADS_StormTech SC-310 +Cap** x 14 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>14 Chambers in 2 Rows |
| #3 | 40.00' | 44 cf | **ADS_StormTech SC-310 +Cap** x 3 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap |
| #4 | 40.00' | 14 cf | **2.00'W x 2.83'L x 2.50'H CB #** Inside #1<br>29 cf Overall - 6.0" Wall Thickness = 14 cf |
| #5 | 42.50' | 16 cf | **2.00'W x 2.83'L x 2.88'H CB #**-Impervious |
| #6 | 45.38' | 1,144 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 9,953 cf | Total Available Storage |

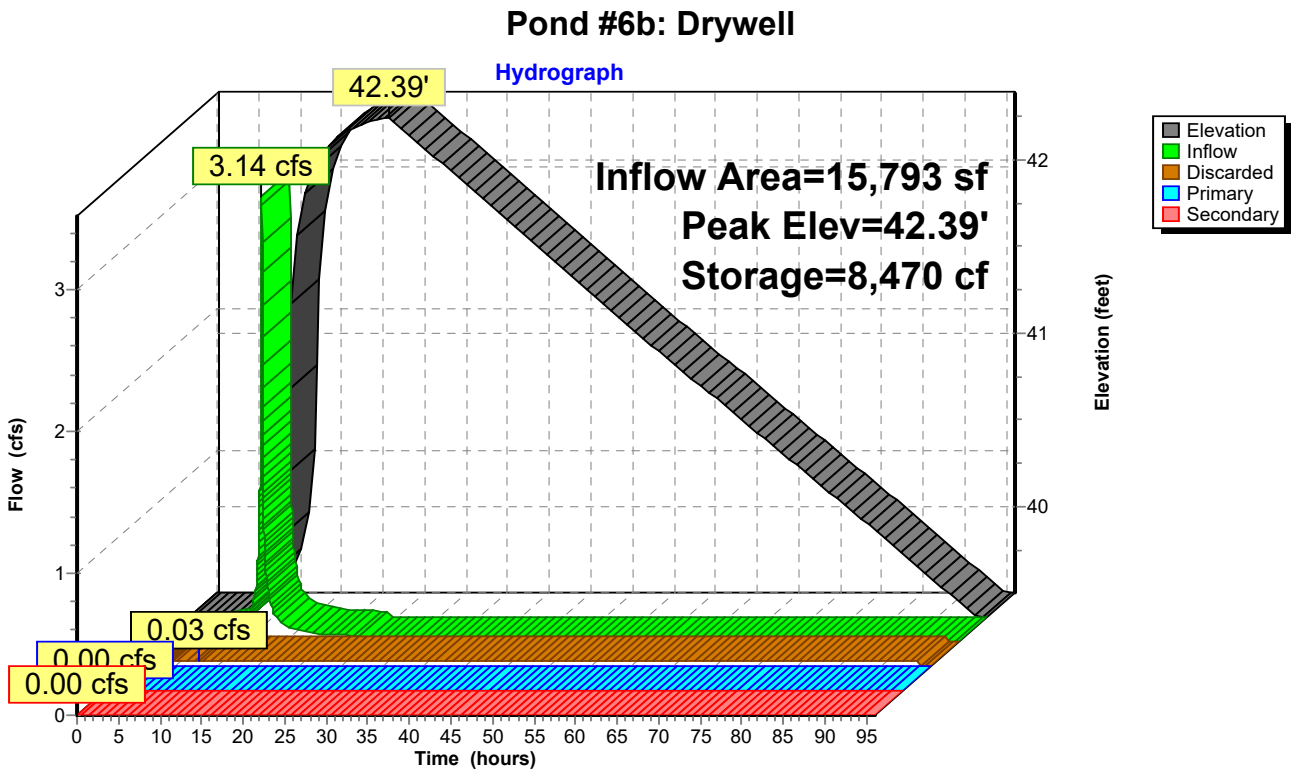
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 45.38 | 6 | 0 | 0 |
| 45.50 | 733 | 44 | 44 |
| 45.75 | 8,064 | 1,100 | 1,144 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.50' | **0.200 in/hr Exfiltration over Surface area** |
| #2 | Primary | 45.74' | **Weir Outlet, C= 3.27**<br>Offset (feet) 0.00 20.00 28.00<br>Height (feet) 0.04 0.00 0.04 |
| #3 | Secondary | 45.74' | **Weir Outlet, C= 3.27**<br>Offset (feet) 0.00 20.00 28.00<br>Height (feet) 0.04 0.00 0.04 |

**Discarded OutFlow** Max=0.03 cfs @ 8.01 hrs HW=39.56' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.50' TW=41.00' (Dynamic Tailwater)
└**2=Weir Outlet** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.50' TW=38.50' (Dynamic Tailwater)
└**3=Weir Outlet** ( Controls 0.00 cfs)



## Summary for Pond #7: Drywell

Inflow Area = 232,138 sf, 79.70% Impervious, Inflow Depth = 2.71" for Fv event
Inflow = 12.80 cfs @ 12.15 hrs, Volume= 52,385 cf
Outflow = 0.34 cfs @ 13.95 hrs, Volume= 52,388 cf, Atten= 97%, Lag= 107.8 min
Discarded = 0.30 cfs @ 11.09 hrs, Volume= 52,281 cf
Primary = 0.04 cfs @ 13.95 hrs, Volume= 107 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 43.86' @ 13.95 hrs Surf.Area= 10,125 sf Storage= 36,353 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,068.3 min ( 1,847.2 - 778.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.00' | 16,584 cf | **45.00'W x 225.00'L x 6.00'H Field A**<br>60,750 cf Overall - 19,291 cf Embedded = 41,459 cf x 40.0% Voids |
| #2 | 36.75' | 3,028 cf | **ADS_StormTech MC-3500 d +Cap** x 27 Inside #1<br>Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf<br>Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap<br>27 Chambers in 2 Rows<br>Cap Storage= +14.9 cf x 2 x 2 rows = 59.6 cf |
| #3 | 36.75' | 16,092 cf | **ADS_StormTech MC-3500 d +Cap** x 145 Inside #1<br>Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf<br>Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap<br>145 Chambers in 5 Rows<br>Cap Storage= +14.9 cf x 2 x 5 rows = 149.0 cf |
| #4 | 36.75' | 116 cf | **4.00'W x 5.50'L x 5.25'H CB #** Inside #1<br>171 cf Overall - 6.0" Wall Thickness = 116 cf |
| #5 | 42.00' | 29 cf | **4.00'W x 5.50'L x 1.34'H CB #**-Impervious |
| #6 | 43.34' | 1,003 cf | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 36,852 cf | Total Available Storage |

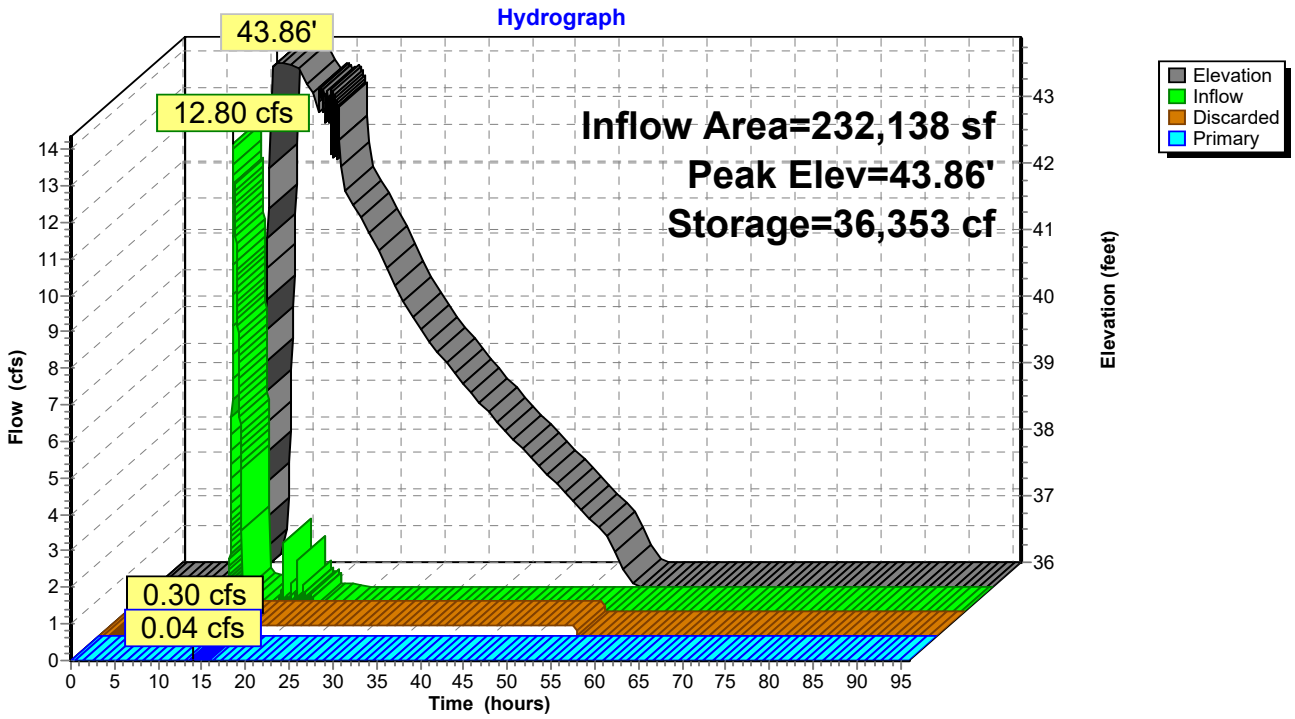
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 43.34 | 6 | 0 | 0 |
| 43.50 | 245 | 20 | 20 |
| 43.75 | 1,632 | 235 | 255 |
| 44.00 | 4,355 | 748 | 1,003 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 36.00' | **1.300 in/hr Exfiltration over Surface area** |
| #2 | Primary | 43.84' | **Top of Curb, C= 3.27**<br>Offset (feet) 0.00 83.50 167.00<br>Height (feet) 0.41 0.00 0.41 |

**Discarded OutFlow** Max=0.30 cfs @ 11.09 hrs HW=36.08' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.30 cfs)

**Primary OutFlow** Max=0.04 cfs @ 13.95 hrs HW=43.86' TW=38.71' (Dynamic Tailwater)
↑**2=Top of Curb** (Weir Controls 0.04 cfs @ 0.19 fps)

## Pond #7: Drywell



## Summary for Pond #8: Wet Pond

Inflow Area = 492,626 sf, 66.38% Impervious, Inflow Depth = 4.26" for Fv event
Inflow = 60.11 cfs @ 12.14 hrs, Volume= 174,768 cf
Outflow = 35.19 cfs @ 12.32 hrs, Volume= 172,811 cf, Atten= 41%, Lag= 10.9 min
Primary = 11.70 cfs @ 12.32 hrs, Volume= 161,927 cf
Secondary = 23.48 cfs @ 12.32 hrs, Volume= 10,884 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Starting Elev= 37.05' Surf.Area= 35,833 sf Storage= 25,059 cf
Peak Elev= 40.21' @ 12.32 hrs Surf.Area= 53,180 sf Storage= 106,235 cf (81,176 cf above start)

Plug-Flow detention time= 360.8 min calculated for 147,736 cf (85% of inflow)
Center-of-Mass det. time= 240.0 min ( 1,028.0 - 788.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 36.00' | 104,096 cf | **Pond (Prismatic)** Listed below (Recalc) |
| #2 | 38.25' | 2,140 cf | **Roadway Ponding (Prismatic)** Listed below (Recalc) |
| | | 106,235 cf | Total Available Storage |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 36.00 | 22,109 | 0 | 0 |
| 37.00 | 24,969 | 23,539 | 23,539 |
| 37.05 | 35,833 | 1,520 | 25,059 |
| 38.00 | 40,259 | 36,144 | 61,203 |
| 39.00 | 45,527 | 42,893 | 104,096 |

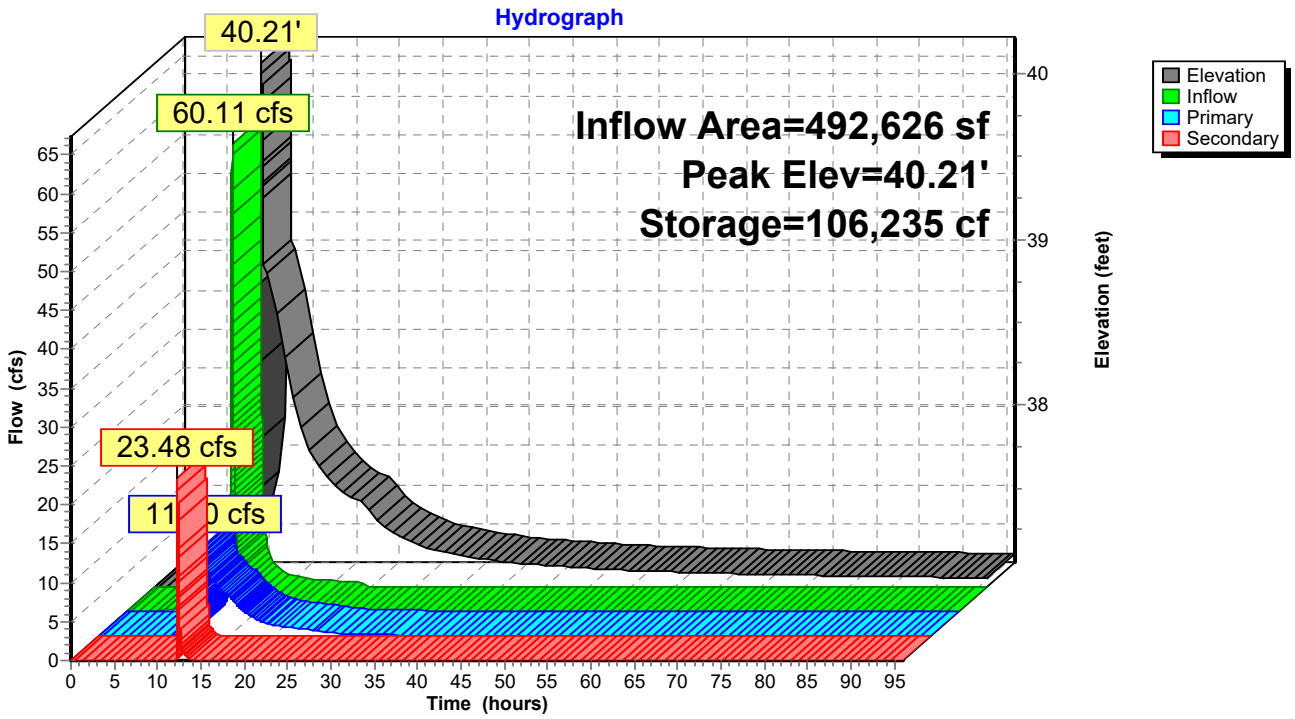
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 38.25 | 11 | 0 | 0 |
| 38.50 | 1,429 | 180 | 180 |
| 38.75 | 3,297 | 591 | 771 |
| 39.00 | 7,653 | 1,369 | 2,140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 37.05' | **23.0" W x 14.0" H, R=22.0" Elliptical RCP_Elliptical 23x14**<br>L= 106.0' CPP, end-section conforming to fill, Ke= 0.500<br>Inlet / Outlet Invert= 37.05' / 37.00' S= 0.0005 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.83 sf |
| #2 | Secondary | 38.75' | **5.0' long x 3.0' breadth Curb Cut**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50<br>Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32 |

**Primary OutFlow** Max=11.70 cfs @ 12.32 hrs HW=40.21' TW=0.00' (Dynamic Tailwater)
**1=RCP_Elliptical 23x14** (Barrel Controls 11.70 cfs @ 6.40 fps)

**Secondary OutFlow** Max=23.02 cfs @ 12.32 hrs HW=40.20' TW=0.00' (Dynamic Tailwater)
**2=Curb Cut** (Weir Controls 23.02 cfs @ 3.19 fps)

## Pond #8: Wet Pond



## Summary for Pond #9: Drywell

Inflow Area = 199,819 sf, 78.40% Impervious, Inflow Depth = 7.99" for Fv event
Inflow = 38.95 cfs @ 12.13 hrs, Volume= 133,030 cf
Outflow = 10.77 cfs @ 12.36 hrs, Volume= 133,033 cf, Atten= 72%, Lag= 13.7 min
Discarded = 1.22 cfs @ 10.10 hrs, Volume= 103,592 cf
Primary = 9.54 cfs @ 12.36 hrs, Volume= 29,557 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 43.86' @ 15.08 hrs Surf.Area= 0.552 ac Storage= 1.048 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 255.0 min ( 1,030.4 - 775.4 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 39.00' | 0.809 af | **130.00'W x 185.00'L x 4.00'H Field A**<br>2.208 af Overall - 0.186 af Embedded = 2.022 af x 40.0% Voids |
| #2 | 39.50' | 0.186 af | **ADS_StormTech SC-310 +Cap** x 550 Inside #1<br>Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf<br>Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap<br>550 Chambers in 22 Rows |
| #3 | 39.50' | 0.002 af | **2.00'W x 2.83'L x 3.50'H CB #** x 4 -Impervious |
| #4 | 43.00' | 0.109 af | **Above Ground (Prismatic)**Listed below (Recalc) -Impervious |
| | | 1.106 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 43.00 | 0.001 | 0.000 | 0.000 |
| 43.25 | 0.017 | 0.002 | 0.002 |
| 43.50 | 0.043 | 0.008 | 0.010 |
| 43.75 | 0.116 | 0.020 | 0.030 |
| 44.00 | 0.517 | 0.079 | 0.109 |

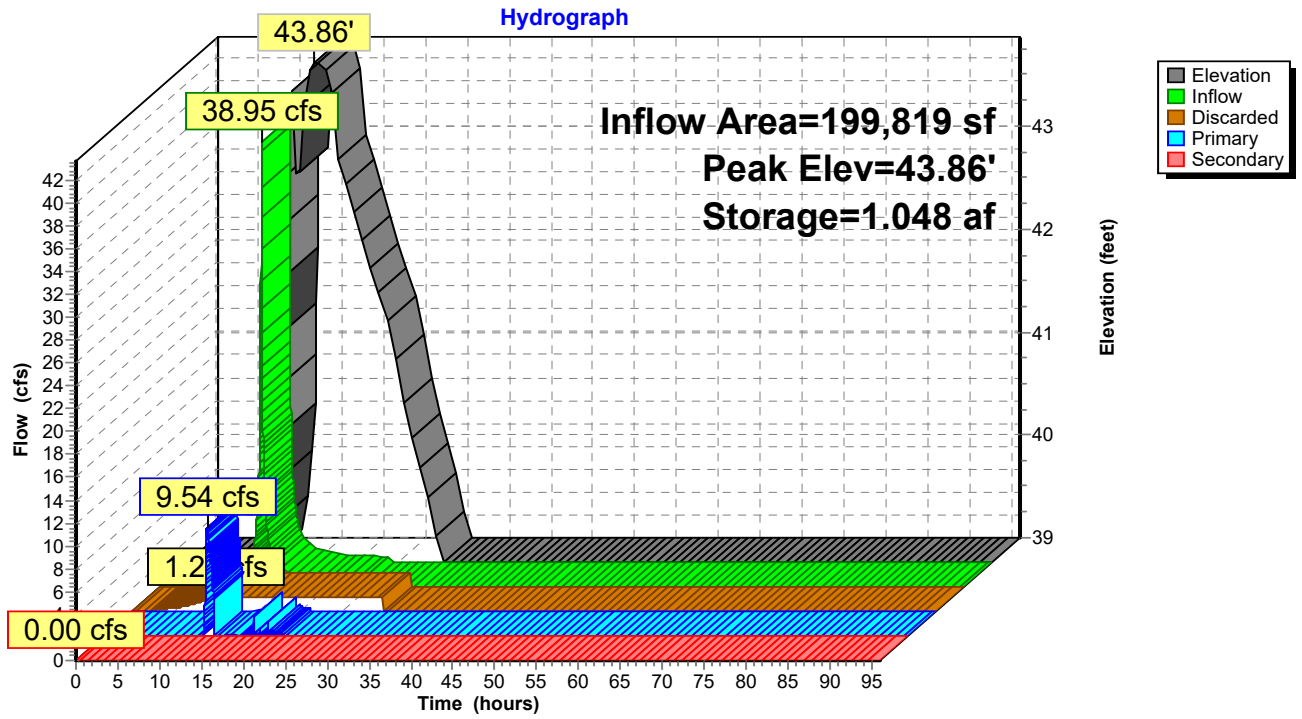
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Discarded | 39.00' | **2.200 in/hr Exfiltration over Surface area** |
| #2 | Secondary | 44.59' | **Asymmetrical Weir X 2.00, C= 3.27**<br>Offset (feet) 0.00 0.00 24.00 24.00<br>Height (feet) 0.50 0.00 0.12 0.50 |
| #3 | Primary | 40.50' | **15.0" Round Over Drain** L= 199.0' Ke= 0.500<br>Inlet / Outlet Invert= 40.50' / 37.00' S= 0.0176 '/' Cc= 0.900<br>n= 0.012, Flow Area= 1.23 sf |

**Discarded OutFlow** Max=1.22 cfs @ 10.10 hrs HW=39.06' (Free Discharge)
**1=Exfiltration** (Exfiltration Controls 1.22 cfs)

**Primary OutFlow** Max=9.54 cfs @ 12.36 hrs HW=43.73' TW=38.41' (Dynamic Tailwater)
**3=Over Drain** (Inlet Controls 9.54 cfs @ 7.78 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=39.00' TW=35.50' (Dynamic Tailwater)
**2=Asymmetrical Weir** ( Controls 0.00 cfs)

## Pond #9: Drywell

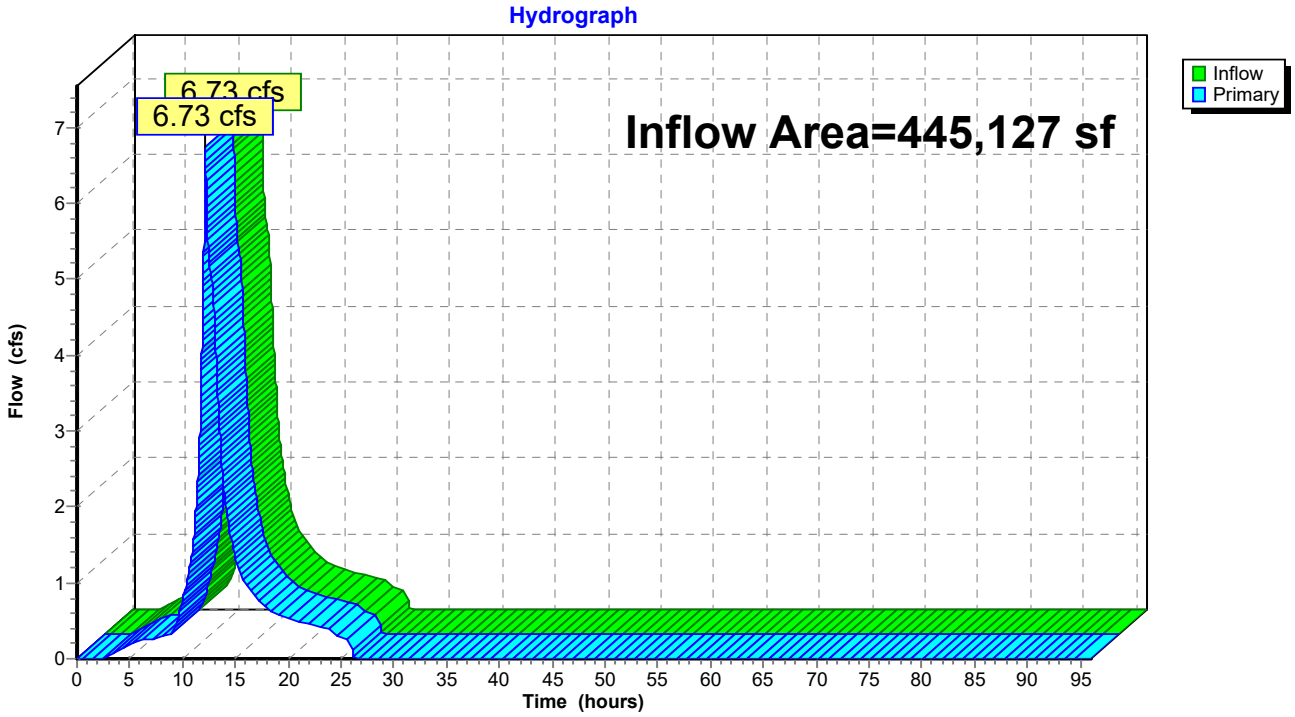


## Summary for Link POI1: POI #1

Inflow Area = 445,127 sf, 78.71% Impervious, Inflow Depth = 2.17" for Fv event
Inflow = 6.73 cfs @ 12.15 hrs, Volume= 80,363 cf
Primary = 6.73 cfs @ 12.15 hrs, Volume= 80,363 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link POI1: POI #1

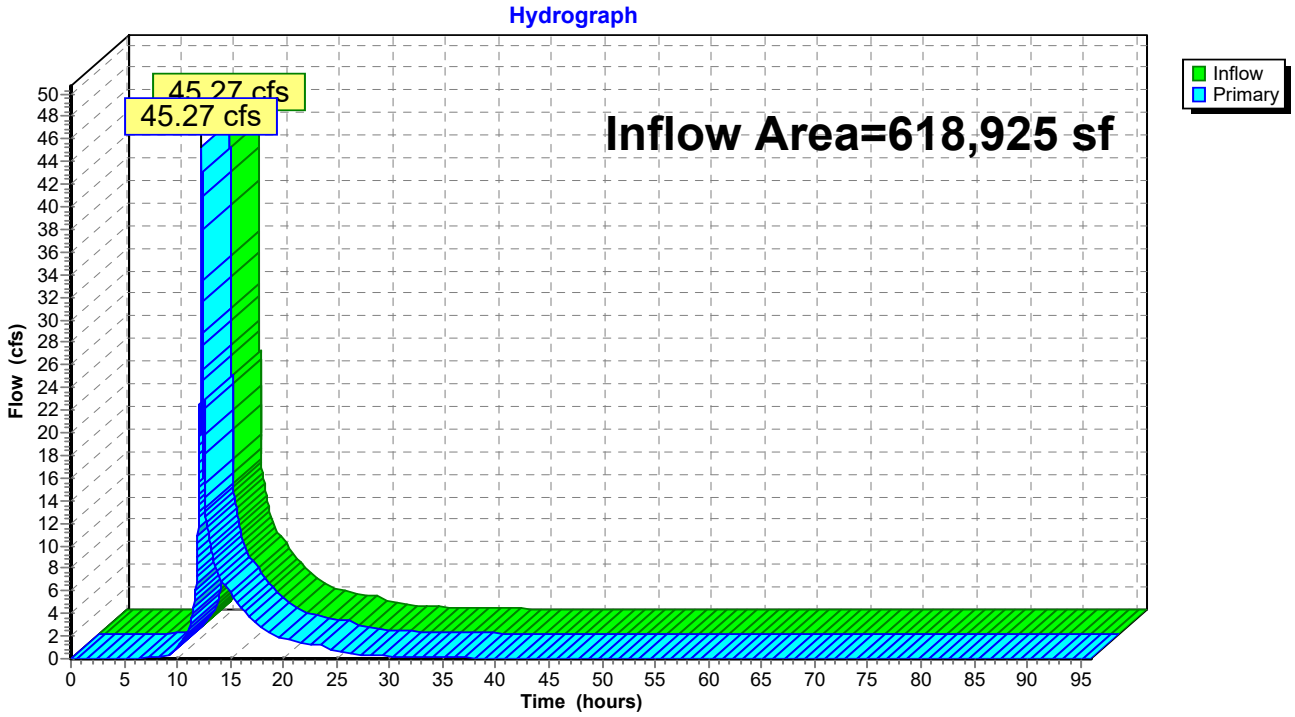


## Summary for Link POI2: POI #2

Inflow Area = 618,925 sf, 63.76% Impervious, Inflow Depth > 4.70" for Fv event
Inflow = 45.27 cfs @ 12.32 hrs, Volume= 242,505 cf
Primary = 45.27 cfs @ 12.32 hrs, Volume= 242,505 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link POI2: POI #2

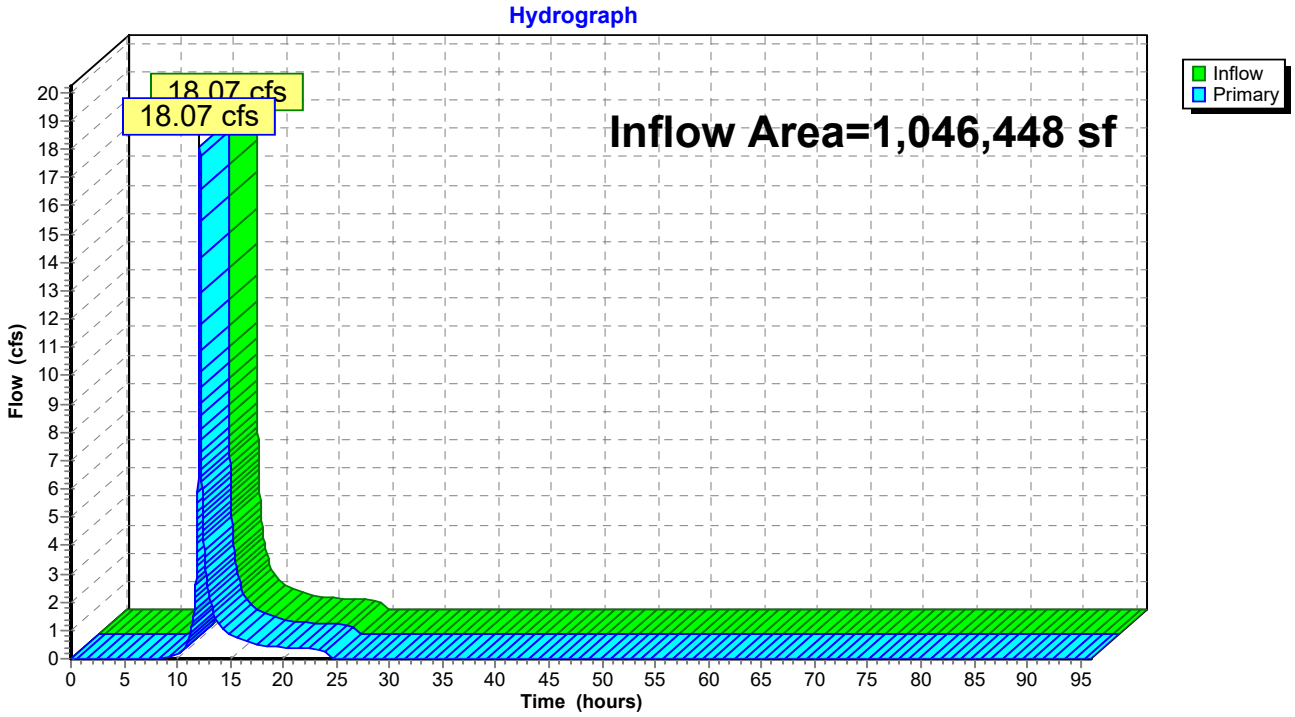


## Summary for Link POI3: POI #3

Inflow Area = 1,046,448 sf, 62.04% Impervious, Inflow Depth = 0.64" for Fv event
Inflow = 18.07 cfs @ 12.13 hrs, Volume= 55,658 cf
Primary = 18.07 cfs @ 12.13 hrs, Volume= 55,658 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link POI3: POI #3

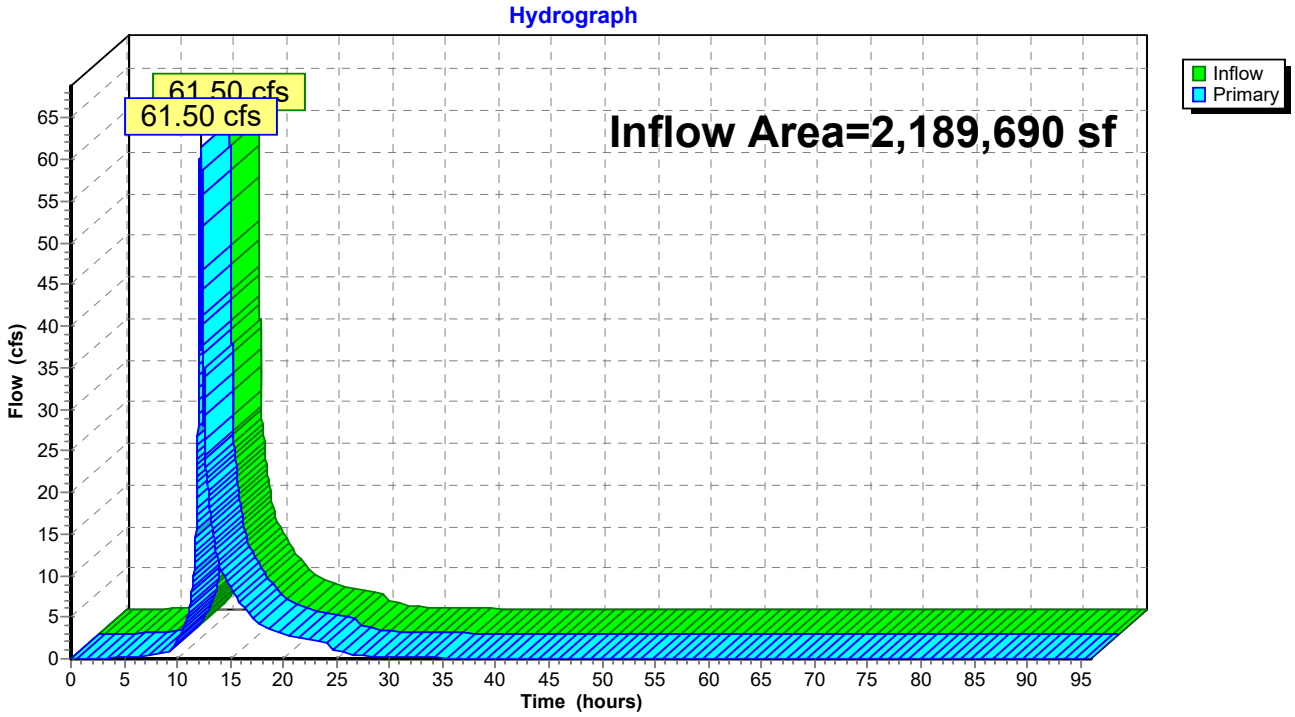


## Summary for Link PR: Site Total

Inflow Area = 2,189,690 sf, 65.38% Impervious, Inflow Depth = 2.30" for Fv event
Inflow = 61.50 cfs @ 12.32 hrs, Volume= 419,021 cf
Primary = 61.50 cfs @ 12.32 hrs, Volume= 419,021 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

## Link PR: Site Total



# Appendix C

DURMM Calculations

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #1 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

## CONTRIBUTING AREA RUNOFF CURVE NUMBER (C.A. RCN) WORKSHEET

| Cover Type | Treatment | Hydrologic Condition | Curve Numbers for Hydrologic Soil Type A Acres | A RCN | B Acres | B RCN | C Acres | C RCN | D Acres | D RCN |
|---|---|---|---|---|---|---|---|---|---|---|
| **CULTIVATED AGRICULTURAL LANDS** | | | | | | | | | | |
| Fallow | Bare soil | ---- | | 77 | | 86 | | 91 | | 94 |
| | Crop residue (CR) | poor | | 76 | | 85 | | 90 | | 93 |
| | Crop residue (CR) | good | | 74 | | 83 | | 88 | | 90 |
| Row Crops | Straight row (SR) | poor | | 72 | | 81 | | 88 | | 91 |
| | Straight row (SR) | good | | 67 | | 78 | | 85 | | 89 |
| | SR + Crop residue | poor | | 71 | | 80 | | 87 | | 90 |
| | SR + Crop residue | good | | 64 | | 75 | | 82 | | 85 |
| | Contoured (C) | poor | | 70 | | 79 | | 84 | | 88 |
| | Contoured (C) | good | | 65 | | 75 | | 82 | | 86 |
| | C + Crop residue | poor | | 69 | | 78 | | 83 | | 87 |
| | C + Crop residue | good | | 64 | | 74 | | 81 | | 85 |
| | Cont & terraced(C&T) | poor | | 66 | | 74 | | 80 | | 82 |
| | Cont & terraced(C&T) | good | | 62 | | 71 | | 78 | | 81 |
| | C&T + Crop residue | poor | | 65 | | 73 | | 79 | | 81 |
| | C&T + Crop residue | good | | 61 | | 70 | | 77 | | 80 |
| Small Grain | Straight row (SR) | poor | | 65 | | 76 | | 84 | | 88 |
| | Straight row (SR) | good | | 63 | | 75 | | 83 | | 87 |
| | SR + Crop residue | poor | | 64 | | 75 | | 83 | | 86 |
| | SR + Crop residue | good | | 60 | | 72 | | 80 | | 84 |
| | Contoured (C) | poor | | 63 | | 74 | | 82 | | 85 |
| | Contoured (C) | good | | 61 | | 73 | | 81 | | 84 |
| | C + Crop residue | poor | | 62 | | 73 | | 81 | | 84 |
| | C + Crop residue | good | | 60 | | 72 | | 80 | | 83 |
| | Cont & terraced(C&T) | poor | | 61 | | 72 | | 79 | | 82 |
| | Cont & terraces(C&T) | good | | 59 | | 70 | | 78 | | 81 |
| | C&T + Crop residue | poor | | 60 | | 71 | | 78 | | 81 |
| | C&T + Crop residue | good | | 58 | | 69 | | 77 | | 80 |
| Close-seeded | Straight row | poor | | 66 | | 77 | | 85 | | 89 |
| or broadcast | Straight row | good | | 58 | | 72 | | 81 | | 85 |
| legumes or | Contoured | poor | | 64 | | 75 | | 83 | | 85 |
| rotation | Contoured | good | | 55 | | 69 | | 78 | | 83 |
| meadow | Cont & terraced | poor | | 63 | | 73 | | 80 | | 83 |
| | Cont & terraced | good | | 51 | | 67 | | 76 | | 80 |
| **OTHER AGRICULTURAL LANDS** | | | | | | | | | | |
| | Pasture, grassland or range | poor | | 68 | | 79 | | 86 | | 89 |
| | | fair | | 49 | | 69 | | 79 | | 84 |
| | | good | | 39 | | 61 | | 74 | | 80 |
| | Meadow -cont. grass (non grazed) | ---- | | 30 | | 58 | | 71 | | 78 |
| | Brush - brush, weed, grass mix | poor | | 48 | | 67 | | 77 | | 83 |
| | | fair | | 35 | | 56 | | 70 | | 77 |
| | | good | | 30 | | 48 | | 65 | | 73 |
| | Woods - grass combination | poor | | 57 | | 73 | | 82 | | 86 |
| | | fair | | 43 | | 65 | | 76 | | 82 |
| | | good | | 32 | | 58 | | 72 | | 79 |
| | Woods | poor | | 45 | | 66 | | 77 | | 83 |
| | | fair | | 36 | | 60 | | 73 | | 79 |
| | | good | | 30 | | 55 | | 70 | | 77 |
| | Farmsteads | ---- | | 59 | | 74 | | 82 | | 86 |
| **FULLY DEVELOPED URBAN AREAS (Veg Established)** | | | | | | | | | | |
| Open space (Lawns,parks etc.) | | | | | | | | | | |
| | Poor condition; grass cover < 50% | | | 68 | | 79 | | 86 | | 89 |
| | Fair condition; grass cover 50% to 75 % | | | 49 | | 69 | | 79 | | 84 |
| | Good condition; grass cover > 75% | | 0.38 | 39 | 1.62 | 61 | 0.17 | 74 | | 80 |
| Impervious Areas | | | | | | | | | | |
| | Paved parking lots, roofs, driveways | | 0.93 | 98 | 6.56 | 98 | 0.55 | 98 | | 98 |
| | Streets and roads | | | | | | | | | |
| | Paved; curbs and storm sewers | | | 98 | | 98 | | 98 | | 98 |
| | Paved; open ditches (w/right-of-way) | | | 83 | | 89 | | 92 | | 93 |
| | Gravel (w/ right-of-way) | | | 76 | | 85 | | 89 | | 91 |
| | Dirt (w/ right-of-way) | | | 72 | | 82 | | 87 | | 89 |
| Urban Districts | | Avg % impervious | | | | | | | | |
| | Commercial & business | 85 | | 89 | | 92 | | 94 | | 95 |
| | Industrial | 72 | | 81 | | 88 | | 91 | | 93 |
| Residential districts by average lot size | | Avg % impervious | | | | | | | | |
| | 1/8 acre (town houses) | 65 | | 77 | | 85 | | 90 | | 92 |
| | 1/4 acre | 38 | | 61 | | 75 | | 83 | | 87 |
| | 1/3 acre | 30 | | 57 | | 72 | | 81 | | 86 |
| | 1/2 acre | 25 | | 54 | | 70 | | 80 | | 85 |
| | 1 acre | 20 | | 51 | | 68 | | 79 | | 84 |
| | 2 acre | 12 | | 46 | | 65 | | 77 | | 82 |
| **DEVELOPING URBAN AREA (No Vegetation)** | | | | | | | | | | |
| | Newly graded area (pervious only) | | | 77 | | 86 | | 91 | | 94 |
| **USER DEFINED** | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Subarea Contributing Area per Soil Type (ac)** | 1.31 | 8.18 | 0.72 | 0 |
| **Subarea Contributing Area (ac)** | 10.21 | | | |
| **Subarea Weighted RCN** | 90 | | | |

| **UPSTREAM CONTRIBUTING AREAS** | *Subarea ID* | *Acres* | *RCN* |
|---|---|---|---|
| Upstream Contributing Area 1 | | | |
| Upstream Contributing Area 2 | | | |
| Upstream Contributing Area 3 | | | |
| Upstream Contributing Area 4 | | | |

| | |
|---|---|
| **Total Contributing Area w. Upstream Areas (ac)** | 10.2 |
| **Weighted Runoff Curve Number (RCN)** | 90 |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #1 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

## LIMIT OF DISTURBANCE (LOD) WORKSHEET

| **Step 1 - Subarea LOD Data** | **HSG A** | **HSG B** | **HSG C** | **HSG D** |
|---|---|---|---|---|
| 1.1 HSG Area Within LOD (ac) | 1.31 | 6.04 | 0.72 | |
| 1.2 Pre-Developed Woods/Meadow Within LOD (ac) | 0 | 0 | 0 | |
| 1.3 Pre-Developed Impervious Within LOD (ac) | 0 | 0 | 0 | |
| 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); ***OR*** | 0.93 | 6.56 | 0.55 | |
| 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%) | 71% | 109% | 76% | 0% |

| **Step 2 - Subarea LOD Runoff Calculations** | | | | |
|---|---|---|---|---|
| 2.1 RCN per HSG | 80.89 | 101.19 | 92.33 | 0.00 |
| 2.2 RPv per HSG (in.) | 1.35 | 2.83 | 2.03 | 0.00 |
| 2.3 Target RCN per HSG | 39.00 | 61.00 | 74.00 | 0.00 |
| 2.4 Target Runoff per HSG (in.) | 0.21 | 0.65 | 1.06 | 0.00 |

| | |
|---|---|
| 2.5 Subarea LOD (ac) | 8.07 |
| 2.6 Subarea Weighted RCN | 97.10 |
| 2.7 Subarea Weighted RPv (in.) | 2.42 |
| 2.8 Subarea Weighted Target Runoff (in.) | 0.61 |

| **Step 3 - Upstream LOD Areas** ***(from previous DURMM Report as applicable)*** | **Area 1** | **Area 2** | **Area 3** | **Area 4** |
|---|---|---|---|---|
| 3.1 Upstream Sub-Area ID | | | | |
| 3.2 Upstream Contributing Area (ac) | | | | |
| 3.3 Target Runoff for Upstream Area (in.) | | | | |
| 3.4 Adjusted CN after all reductions | | | | |
| 3.5 Adjusted RPv (in.) | | | | |
| 3.6 Adjusted Cv (in.) | | | | |
| 3.7 Adjusted Fv (in.) | | | | |

| **Step 4 - RPv Calculations for Combined LOD** | |
|---|---|
| 4.1 Combined LOD (ac) | 8.07 |
| 4.2 Weighted RCN | 97.10 |
| 4.3 Weighted RPv (in.) | 2.42 |
| 4.4 Weighted Target Runoff (in.) | 0.61 |
| 4.5 Estimated Annual Runoff (in.) | 36.09 |
| 4.6 Req'd Runoff to be Managed within LOD (in.) | 1.00 |
| 4.7 Req'd Runoff to be Managed within LOD (%) | 41% |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #1 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

**OUTSIDE LIMIT OF DISTURBANCE (OLOD) WORKSHEET**

## Step 1 - Site Data

| | |
|---|---|
| 1.1 Total Contributing Area (ac) | 10.21 |
| 1.2 C.A. RCN | 90 |
| 1.3 LOD Area (ac) | 8.07 |
| 1.4 LOD RCN | 97 |
| 1.5 Outside LOD Area (ac) | 2.14 |
| 1.6 Outside LOD RCN | 61 |

## Step 2 - Time of Concentration

| FLOW TYPE | 2.1 LENGTH (feet) | 2.2 SLOPE (ft./ft.) | 2.3 SURFACE CODE | 2.4 MANNINGS "n" | 2.5 VELOCITY (ft./sec.) | 2.6 TRAVEL TIME (hrs) |
|---|---|---|---|---|---|---|
| *Sheet* | | | | ---------- | N/A | 0.00 |
| | | | | ---------- | N/A | 0.00 |
| | | | | ---------- | N/A | 0.00 |
| *Shallow Concentrated* | | | | N/A | ---------- | 0.00 |
| | | | | N/A | ---------- | 0.00 |
| | | | | N/A | ---------- | 0.00 |
| *Open Channel* | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |

2.7 Time of Concentration (Tc) 0.10

***Sheet Flow Surface Codes***

a smooth surface
b fallow (no residue)
c cultivated < 20% Res.
d cultivated > 20% Res.
e grass - range, short
f grass, dense
g grass, bermuda
h woods, light
i woods, dense
j range, natural

***Shallow Concentrated Surface Codes***

u unpaved surface
p paved surface

## Step 3 - Peak Discharge

| | | |
|---|---|---|
| 3.1 Unit Hydrograph Type | STD | |
| 3.2 Frequency (yr) | 10 | 100 |
| 3.3 24-HR Rainfall, P (in.) | 5.3 | 9.2 |
| 3.4 Initial Abstraction, Ia (in.) | 1.279 | 1.279 |
| 3.5 Ia/P ratio | 0.24 | 0.14 |
| 3.6 Unit Peak Discharge, qu (csm/in) | 1020 | 1036 |
| 3.7 Runoff (in.) | 1.55 | 4.38 |
| 3.8 Peak Discharge, qp (cfs) | 5.29 | 15.19 |
| 3.9 Equiv. unit peak discharge (cfs/ac) | 2.47 | 7.10 |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #1
**LOCATION (County):** Sussex

## RESOURCE PROTECTION EVENT (RPv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type | 1-C Underground Infiltration | Type | -- | Type | -- | Type | -- | Type | -- |
| ***Step 1 - Calculate Initial RPv*** | Data | | | | | | | | | |
| 1.1 Total contributing area to BMP (ac) | 10.21 | | | | | | | | | |
| 1.2 Initial RCN | 89.53 | | | | | | | | | |
| 1.3 RPv for Contributing Area (in.) | 1.91 | | | | | | | | | |
| 1.4 Req'd RPv to be Managed for Contributing Area (in.) | 0.79 | | | | | | | | | |
| 1.5 Req'd RPv to be Managed for Contributing Area (%) | 41% | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Retention volume provided (cu. ft.) | 47390 | | | | | | | | | |
| 2.2 Retention reduction allowance (%) | 100% | | N/A | | N/A | | N/A | | N/A | |
| 2.3 Retention reduction volume (ac-ft) | 1.09 | | N/A | | N/A | | N/A | | N/A | |
| 2.4 Retention reduction volume (in.) | 1.28 | | N/A | | N/A | | N/A | | N/A | |
| 2.5 Runoff volume after retention reduction (in.) | 0.63 | | N/A | | N/A | | N/A | | N/A | |
| 2.6 Adjusted CN* | 60.44 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Annual CN (ACN) | 89.53 | | N/A | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff (in.) | 27.17 | | N/A | | N/A | | N/A | | N/A | |
| 3.3 Proportion A/B soils in BMP footprint (%) | 0% | | 0% | | 0% | | 0% | | 0% | |
| 3.4 Annual runoff reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 3.5 Annual runoff after reduction (in.) | 27.17 | | N/A | | N/A | | N/A | | N/A | |
| 3.6 Adjusted ACN | 89.53 | | N/A | | N/A | | N/A | | N/A | |
| 3.7 Annual Runoff Reduction Allowance for RPv (in.) | 0.08 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate RPv with BMP Reductions*** | | | | | | | | | | |
| 4.1 RPv Runoff Manangement Provided (cu. ft.) | 50355 | | N/A | | N/A | | N/A | | N/A | |
| 4.2 RPv runoff volume after all reductions (in.) | 0.55 | | N/A | | N/A | | N/A | | N/A | |
| 4.3 RPv runoff volume after all reductions (cu.ft.) | 20,434 | | N/A | | N/A | | N/A | | N/A | |
| 4.4 Total RPv runoff reduction (in.) | 1.36 | | N/A | | N/A | | N/A | | N/A | |
| 4.5 Total RPv runoff reduction (%) | 71% | | N/A | | N/A | | N/A | | N/A | |
| 4.6 Adjusted CN after all reductions* | 60.44 | | N/A | | N/A | | N/A | | N/A | |
| 4.7 Adjusted equivalent annual runoff (in.) | 6.87 | | N/A | | N/A | | N/A | | N/A | |
| 4.8 RPv Compliance Met Through Runoff Reduction? | YES | | N/A | | N/A | | N/A | | N/A | |
| 4.9 Runoff Reduction Credit, if Applicable (cu.ft) | -21060.88 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 5 - Determine Residual Volume to be Managed or Offset*** | | | | | | | | | | |
| 5.1 RPv Residual Volume (in.) | N/A | | N/A | | N/A | | N/A | | N/A | |
| 5.2 RPv Residual Volume (cu.ft./ac) | N/A | | N/A | | N/A | | N/A | | N/A | |
| 5.3 Residual Volume to be Managed or Offset (cu.ft.) | N/A | | N/A | | N/A | | N/A | | N/A | |
| 5.4 RPv avg. discharge rate for 48-hr detention (cfs) | N/A | | N/A | | N/A | | N/A | | N/A | |
| 5.5 RPv max. discharge rate for 48-hr detention (cfs) | N/A | | N/A | | N/A | | N/A | | N/A | |

***NOTE: No additional runoff reduction credit can be taken for surface recharge practices once the "Adjusted CN after all reductions" (Step 4.6) reaches the equivalent CN for the native soil-cover condition of the BMP footprint itself (i.e. for Sheet Flow to Turf Filter Strip on B soils Step 4.6 cannot be below 61). If this occurs contact the DNREC – SSP for further guidance.**

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #1
**TMDL WATERSHED:** Nanticoke River

## TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET

| | BMP 1 | | | | BMP 2 | | | | BMP 3 | | | | BMP 4 | | | | BMP 5 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 1-C Underground Infiltration | | | Type: | -- | | | Type: | -- | | | Type: | -- | | | Type: | -- | | |
| ***Step 1 - Calculate Annual Runoff Volume*** | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS |
| 1.1 Total contributing area to BMP (ac) | 10.21 | | | | | | | | | | | | | | | | | | | |
| 1.2 Initial RCN | 90 | | | | | | | | | | | | | | | | | | | |
| 1.3 Annual runoff volume (in.) | 27.17 | | | | | | | | | | | | | | | | | | | |
| 1.4 Annual runoff volume (liters) | 2.85E+07 | | | | | | | | | | | | | | | | | | | |
| ***Step 2 - Calculate Annual Pollutant Load*** | | | | | | | | | | | | | | | | | | | | |
| 2.1 EMC (mg/L) | | 2.80 | 0.49 | 90 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 2.2 Load (mg/yr) | | 7.98E+07 | 1.40E+07 | 2.57E+09 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 2.3 Stormwater Load (lb/ac/yr) | | 17.24 | 3.02 | 554 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| ***Step 3 - Adjust for Pollutant Reduction*** | | | | | | | | | | | | | | | | | | | | |
| 3.1 BMP annual runoff reduction (%) | 75% | | | | N/A | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.2 Adjusted annual runoff volume (in) | 6.87 | | | | N/A | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.3 Adjusted annual runoff volume (liters) | 7.21E+06 | | | | N/A | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.4 Adjusted load from annual reductions (lb/ac/yr) | | 4.36 | 0.76 | 140.07 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.5 BMP removal efficiency (%) | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.6 BMP effluent concentration (mg/L) | | 2.80 | 0.49 | 90.00 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.7 Final Adjusted load (lb/ac/yr) | | 4.36 | 0.76 | 140 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| ***Step 4 - Pollutant Reduction Met?*** ***(For Informational Purposes)*** | | | | | | | | | | | | | | | | | | | | |
| 4.1 TMDL (lb/ac/yr) | | 6.58 | 0.58 | 129 | | | | | | | | | | | | | | | | |
| 4.2 Reduction met? | | YES | NO | NO | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 4.3 Final Adjusted Load (lb/yr) | | 44.49 | 7.79 | 1430 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #1
**LOCATION (County):** Sussex

## CONVEYANCE EVENT (Cv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 1-C Underground Infiltration | Type: | -- | Type: | -- | Type: | -- | Type: | -- |
| ***Step 1 - Calculate Initial Cv*** | Data | | Data | | Data | | Data | | Data | |
| 1.1 Total contributing area to BMP (ac) | 10.21 | | 10.21 | | 10.21 | | 10.21 | | 10.21 | |
| 1.2 Initial RCN | 89.53 | | | | | | | | | |
| 1.3 10-Year Rainfall (in.) | 5.3 | | | | | | | | | |
| 1.4 Cv runoff volume (in.) | 4.12 | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Storage volume (cu. ft.) | 47390.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.2 Storage volume (ac-ft) | 1.09 | | N/A | | N/A | | N/A | | N/A | |
| 2.3 Storage volume (in.) | 1.28 | | N/A | | N/A | | N/A | | N/A | |
| 2.4 Runoff volume after reduction (in.) | 2.84 | | N/A | | N/A | | N/A | | N/A | |
| 2.5 CN* | 76.58 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Runoff reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff after reduction (in.) | 4.12 | | N/A | | N/A | | N/A | | N/A | |
| 3.3 Adjusted ACN | 89.53 | | N/A | | N/A | | N/A | | N/A | |
| 3.4 Event-based runoff reduction (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate Cv with BMP Reductions*** | | | | | | | | | | |
| 4.1 Cv runoff volume after all reductions (in.) | 2.84 | | N/A | | N/A | | N/A | | N/A | |
| 4.2 Total Cv runoff reduction (%) | 31% | | N/A | | N/A | | N/A | | N/A | |
| 4.3 Adjusted RCN for H&H modeling | 76.58 | | N/A | | N/A | | N/A | | N/A | |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #1
**LOCATION (County):** Sussex

## FLOODING EVENT (Fv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 1-C Underground Infiltration | Type: | -- | Type: | -- | Type: | -- | Type: | -- |
| ***Step 1 - Calculate Initial Fv*** | Data | | Data | | Data | | Data | | Data | |
| 1.1 Total contributing area to BMP (ac) | 10.21 | | 10.21 | | 10.21 | | 10.21 | | 10.21 | |
| 1.2 Initial RCN | 89.53 | | | | | | | | | |
| 1.3 100-Year Rainfall (in.) | 9.2 | | | | | | | | | |
| 1.4 Fv runoff volume (in.) | 7.93 | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Storage volume (cu. ft.) | 47390.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.2 Storage volume (ac-ft) | 1.09 | | N/A | | N/A | | N/A | | N/A | |
| 2.3 Storage volume (in.) | 1.28 | | N/A | | N/A | | N/A | | N/A | |
| 2.4 Runoff volume after reduction (in.) | 6.65 | | N/A | | N/A | | N/A | | N/A | |
| 2.5 CN* | 79.16 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Runoff reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff after reduction (in.) | 7.93 | | N/A | | N/A | | N/A | | N/A | |
| 3.3 Adjusted ACN | 89.53 | | N/A | | N/A | | N/A | | N/A | |
| 3.4 Event-based runoff reduction (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate Fv with BMP Reductions*** | | | | | | | | | | |
| 4.1 Fv runoff volume after all reductions (in.) | 6.65 | | N/A | | N/A | | N/A | | N/A | |
| 4.2 Total Fv runoff reduction (%) | 16% | | N/A | | N/A | | N/A | | N/A | |
| 4.3 Adjusted RCN for H&H modeling | 79.16 | | N/A | | N/A | | N/A | | N/A | |

| | | | | |
|---|---|---|---|---|
| **PROJECT:** | Bridgeville | | | |
| **DRAINAGE SUBAREA ID:** | POI #1 | | | |
| **COUNTY:** | Sussex | **UNIT HYDROGRAPH:** | STD | |
| **TMDL Watershed:** | Nanticoke River | **VERSION:** | **DURMM v2.51.220414** | |

## DURMM OUTPUT WORKSHEET

***Site Data***

| | | | | |
|---|---|---|---|---|
| Contributing Area to BMPs (ac.) | 10.21 | | | |
| C.A. RCN | 89.53 | | | |
| Subarea LOD (ac.) | 8.07 | | | |
| Subarea RCN | 97.10 | | | |
| Upstream Subarea ID | N/A | N/A | N/A | N/A |
| Upstream Subarea LOD (ac.) | 0.00 | 0.00 | 0.00 | 0.00 |
| Combined LOD with Upstream Areas (ac.) | 8.07 | | | |
| Combined RCN with Upstream Areas (ac.) | 97.10 | | | |
| Watershed TMDL-TN (lb/ac/yr) | 6.58 | | | |
| Watershed TMDL-TP (lb/ac/yr) | 0.58 | | | |
| Watershed TMDL-TSS (lb/ac/yr) | 129 | | | |

***BMP Data***

| | **BMP 1** | **BMP 2** | **BMP 3** | **BMP 4** | **BMP 5** |
|---|---|---|---|---|---|
| | 1-C Underground Infiltration | -- | -- | -- | -- |
| RPv runoff volume after all reductions (in.) | 0.55 | N/A | N/A | N/A | N/A |
| Total RPv runoff reduction (in.) | 1.36 | N/A | N/A | N/A | N/A |
| Total RPv runoff reduction (%) | 71% | N/A | N/A | N/A | N/A |
| RPv Compliance Met Through Runoff Reduction? | YES | N/A | N/A | N/A | N/A |
| RPv Residual Volume (cu. ft.) | N/A | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TN (lb/ac/yr) | 4.36 | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TP (lb/ac/yr) | 0.76 | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TSS (lb/ac/yr) | 140.07 | N/A | N/A | N/A | N/A |
| Cv runoff volume after all reductions (in.) | 2.84 | N/A | N/A | N/A | N/A |
| Fv runoff volume after all reductions (in.) | 6.65 | N/A | N/A | N/A | N/A |

***Resource Protection Event (RPV)***

| | | |
|---|---|---|
| RPv for Contributing Area (in.) | 1.91 | |
| Annual Runoff for Contributing Area (in.) | 27.17 | |
| Req'd RPv to be Managed for Contributing Area (in.) | 0.79 | |
| Req'd RPv to be Managed for Contributing Area (%) | 41% | |
| RPv Runoff Management Required (cu. Ft.) | 29294 | |
| RPv Runoff Management Provided (cu. Ft.) | 50355 | |
| RPv Residual Volume (cu.ft.) | -21061 | CREDIT |
| C.A. RPv avg. discharge rate (cfs) | 0.00 | |
| C.A. RPv max. discharge rate (cfs) | 0.00 | |
| TN Pollutant Load (lb/yr) | 44.49 | |
| TP Pollutant Load (lb/yr) | 7.79 | |
| TSS Pollutant Load (lb/yr) | 1430 | |

***Conveyance Event (Cv)***

| | |
|---|---|
| Cv runoff volume (in.) | 4.12 |
| Adjusted RCN for H&H Modeling (CN*) | 76.58 |

***Flooding Event (Fv)***

| | |
|---|---|
| Fv runoff volume (in.) | 7.93 |
| Equivalent RCN for H&H Modeling (CN*) | 79.16 |

***Adjusted Subarea Data for Downstream DURMM Modeling***

| | |
|---|---|
| Subarea ID | POI #1 |
| Contributing Area (ac.) | 10.21 |
| Weighted Target Runoff (in.) | 0.61 |
| Adjusted CN after all reductions | 60.44 |
| Adjusted RPv (in.) | 0.55 |
| Adjusted Cv (in.) | 2.84 |
| Adjusted Fv (in.) | 6.65 |

***Adjusted Subarea Data for Nutrient Protocol Modeling***

| | |
|---|---|
| Contributing Area (ac.) | 10.21 |
| LOD Area (ac.) | 8.07 |
| TN Pollutant Load (lb/yr) | 44.49 |
| TP Pollutant Load (lb/yr) | 7.79 |
| TSS Pollutant Load (lb/yr) | 1430 |
| Percent Impervious Cover | 100% |

***Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest***

| | | |
|---|---|---|
| Subarea ID | POI #1 | |
| Contributing Area (ac.) | 10.21 | |
| RPv Residual Volume (cu.ft.) | -21061 | CREDIT |
| Adjusted CN after all reductions | 60.44 | |
| Cv RCN for H&H Modeling | 76.58 | |
| Fv RCN for H&H Modeling | 79.16 | |
| TN Pollutant Load (lb/yr) | 44.49 | |
| TP Pollutant Load (lb/yr) | 7.79 | |
| TSS Pollutant Load (lb/yr) | 1430 | |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #2 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

**CONTRIBUTING AREA RUNOFF CURVE NUMBER (C.A. RCN) WORKSHEET**

| Cover Type | Treatment | Hydrologic Condition | Curve Numbers for Hydrologic Soil Type A Acres | A RCN | B Acres | B RCN | C Acres | C RCN | D Acres | D RCN |
|---|---|---|---|---|---|---|---|---|---|---|
| **CULTIVATED AGRICULTURAL LANDS** | | | | | | | | | | |
| Fallow | Bare soil | ---- | | 77 | | 86 | | 91 | | 94 |
| | Crop residue (CR) | poor | | 76 | | 85 | | 90 | | 93 |
| | Crop residue (CR) | good | | 74 | | 83 | | 88 | | 90 |
| Row Crops | Straight row (SR) | poor | | 72 | | 81 | | 88 | | 91 |
| | Straight row (SR) | good | | 67 | | 78 | | 85 | | 89 |
| | SR + Crop residue | poor | | 71 | | 80 | | 87 | | 90 |
| | SR + Crop residue | good | | 64 | | 75 | | 82 | | 85 |
| | Contoured (C) | poor | | 70 | | 79 | | 84 | | 88 |
| | Contoured (C) | good | | 65 | | 75 | | 82 | | 86 |
| | C + Crop residue | poor | | 69 | | 78 | | 83 | | 87 |
| | C + Crop residue | good | | 64 | | 74 | | 81 | | 85 |
| | Cont & terraced(C&T) | poor | | 66 | | 74 | | 80 | | 82 |
| | Cont & terraced(C&T) | good | | 62 | | 71 | | 78 | | 81 |
| | C&T + Crop residue | poor | | 65 | | 73 | | 79 | | 81 |
| | C&T + Crop residue | good | | 61 | | 70 | | 77 | | 80 |
| Small Grain | Straight row (SR) | poor | | 65 | | 76 | | 84 | | 88 |
| | Straight row (SR) | good | | 63 | | 75 | | 83 | | 87 |
| | SR + Crop residue | poor | | 64 | | 75 | | 83 | | 86 |
| | SR + Crop residue | good | | 60 | | 72 | | 80 | | 84 |
| | Contoured (C) | poor | | 63 | | 74 | | 82 | | 85 |
| | Contoured (C) | good | | 61 | | 73 | | 81 | | 84 |
| | C + Crop residue | poor | | 62 | | 73 | | 81 | | 84 |
| | C + Crop residue | good | | 60 | | 72 | | 80 | | 83 |
| | Cont & terraced(C&T) | poor | | 61 | | 72 | | 79 | | 82 |
| | Cont & terraces(C&T) | good | | 59 | | 70 | | 78 | | 81 |
| | C&T + Crop residue | poor | | 60 | | 71 | | 78 | | 81 |
| | C&T + Crop residue | good | | 58 | | 69 | | 77 | | 80 |
| Close-seeded | Straight row | poor | | 66 | | 77 | | 85 | | 89 |
| or broadcast | Straight row | good | | 58 | | 72 | | 81 | | 85 |
| legumes or | Contoured | poor | | 64 | | 75 | | 83 | | 85 |
| rotation | Contoured | good | | 55 | | 69 | | 78 | | 83 |
| meadow | Cont & terraced | poor | | 63 | | 73 | | 80 | | 83 |
| | Cont & terraced | good | | 51 | | 67 | | 76 | | 80 |
| **OTHER AGRICULTURAL LANDS** | | | | | | | | | | |
| | Pasture, grassland or range | poor | | 68 | | 79 | | 86 | | 89 |
| | | fair | | 49 | | 69 | | 79 | | 84 |
| | | good | | 39 | | 61 | | 74 | | 80 |
| | Meadow -cont. grass (non grazed) | ---- | | 30 | | 58 | | 71 | | 78 |
| | Brush - brush, weed, grass mix | poor | | 48 | | 67 | | 77 | | 83 |
| | | fair | | 35 | | 56 | | 70 | | 77 |
| | | good | | 30 | | 48 | | 65 | | 73 |
| | Woods - grass combination | poor | | 57 | | 73 | | 82 | | 86 |
| | | fair | | 43 | | 65 | | 76 | | 82 |
| | | good | | 32 | | 58 | | 72 | | 79 |
| | Woods | poor | | 45 | | 66 | | 77 | | 83 |
| | | fair | | 36 | | 60 | | 73 | | 79 |
| | | good | | 30 | | 55 | | 70 | | 77 |
| | Farmsteads | ---- | | 59 | | 74 | | 82 | | 86 |
| **FULLY DEVELOPED URBAN AREAS (Veg Established)** | | | | | | | | | | |
| Open space (Lawns,parks etc.) | | | | | | | | | | |
| | Poor condition; grass cover < 50% | | | 68 | | 79 | | 86 | | 89 |
| | Fair condition; grass cover 50% to 75 % | | | 49 | | 69 | | 79 | | 84 |
| | Good condition; grass cover > 75% | | 0.16 | 39 | 2.79 | 61 | 2.2 | 74 | | 80 |
| Impervious Areas | | | | | | | | | | |
| | Paved parking lots, roofs, driveways | | 0.23 | 98 | 5.64 | 98 | 3.19 | 98 | | 98 |
| | Streets and roads | | | | | | | | | |
| | Paved; curbs and storm sewers | | | 98 | | 98 | | 98 | | 98 |
| | Paved; open ditches (w/right-of-way) | | | 83 | | 89 | | 92 | | 93 |
| | Gravel (w/ right-of-way) | | | 76 | | 85 | | 89 | | 91 |
| | Dirt (w/ right-of-way) | | | 72 | | 82 | | 87 | | 89 |
| Urban Districts | | Avg % impervious | | | | | | | | |
| | Commercial & business | 85 | | 89 | | 92 | | 94 | | 95 |
| | Industrial | 72 | | 81 | | 88 | | 91 | | 93 |
| Residential districts by average lot size | | Avg % impervious | | | | | | | | |
| | 1/8 acre (town houses) | 65 | | 77 | | 85 | | 90 | | 92 |
| | 1/4 acre | 38 | | 61 | | 75 | | 83 | | 87 |
| | 1/3 acre | 30 | | 57 | | 72 | | 81 | | 86 |
| | 1/2 acre | 25 | | 54 | | 70 | | 80 | | 85 |
| | 1 acre | 20 | | 51 | | 68 | | 79 | | 84 |
| | 2 acre | 12 | | 46 | | 65 | | 77 | | 82 |
| **DEVELOPING URBAN AREA (No Vegetation)** | | | | | | | | | | |
| | Newly graded area (pervious only) | | | 77 | | 86 | | 91 | | 94 |
| **USER DEFINED** | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Subarea Contributing Area per Soil Type (ac)** | 0.39 | 8.43 | 5.39 | 0 |
| **Subarea Contributing Area (ac)** | 14.21 | | | |
| **Subarea Weighted RCN** | 86 | | | |

| **UPSTREAM CONTRIBUTING AREAS** | *Subarea ID* | *Acres* | *RCN* |
|---|---|---|---|
| Upstream Contributing Area 1 | | | |
| Upstream Contributing Area 2 | | | |
| Upstream Contributing Area 3 | | | |
| Upstream Contributing Area 4 | | | |

| | |
|---|---|
| **Total Contributing Area w. Upstream Areas (ac)** | 14.2 |
| **Weighted Runoff Curve Number (RCN)** | 86 |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #2 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

## LIMIT OF DISTURBANCE (LOD) WORKSHEET

| **Step 1 - Subarea LOD Data** | **HSG A** | **HSG B** | **HSG C** | **HSG D** |
|---|---|---|---|---|
| 1.1 HSG Area Within LOD (ac) | 0.39 | 8.43 | 5.39 | |
| 1.2 Pre-Developed Woods/Meadow Within LOD (ac) | 0 | 0 | 0 | |
| 1.3 Pre-Developed Impervious Within LOD (ac) | 0.03 | 0.21 | 0.12 | |
| 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); ***OR*** | 0.23 | 5.64 | 3.19 | |
| 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%) | 59% | 67% | 59% | 0% |

| **Step 2 - Subarea LOD Runoff Calculations** | | | | |
|---|---|---|---|---|
| 2.1 RCN per HSG | 73.79 | 85.75 | 88.20 | 0.00 |
| 2.2 RPv per HSG (in.) | 1.05 | 1.60 | 1.75 | 0.00 |
| 2.3 Target RCN per HSG | 42.86 | 61.78 | 74.45 | 0.00 |
| 2.4 Target Runoff per HSG (in.) | 0.27 | 0.67 | 1.07 | 0.00 |

| | |
|---|---|
| 2.5 Subarea LOD (ac) | 14.21 |
| 2.6 Subarea Weighted RCN | 86.36 |
| 2.7 Subarea Weighted RPv (in.) | 1.64 |
| 2.8 Subarea Weighted Target Runoff (in.) | 0.81 |

| **Step 3 - Upstream LOD Areas** ***(from previous DURMM Report as applicable)*** | **Area 1** | **Area 2** | **Area 3** | **Area 4** |
|---|---|---|---|---|
| 3.1 Upstream Sub-Area ID | | | | |
| 3.2 Upstream Contributing Area (ac) | | | | |
| 3.3 Target Runoff for Upstream Area (in.) | | | | |
| 3.4 Adjusted CN after all reductions | | | | |
| 3.5 Adjusted RPv (in.) | | | | |
| 3.6 Adjusted Cv (in.) | | | | |
| 3.7 Adjusted Fv (in.) | | | | |

| **Step 4 - RPv Calculations for Combined LOD** | |
|---|---|
| 4.1 Combined LOD (ac) | 14.21 |
| 4.2 Weighted RCN | 86.36 |
| 4.3 Weighted RPv (in.) | 1.64 |
| 4.4 Weighted Target Runoff (in.) | 0.81 |
| 4.5 Estimated Annual Runoff (in.) | 23.94 |
| 4.6 Req'd Runoff to be Managed within LOD (in.) | 0.83 |
| 4.7 Req'd Runoff to be Managed within LOD (%) | 51% |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #2 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

**OUTSIDE LIMIT OF DISTURBANCE (OLOD) WORKSHEET**

## Step 1 - Site Data

| | |
|---|---|
| 1.1 Total Contributing Area (ac) | N/A |
| 1.2 C.A. RCN | N/A |
| 1.3 LOD Area (ac) | N/A |
| 1.4 LOD RCN | N/A |
| 1.5 Outside LOD Area (ac) | N/A |
| 1.6 Outside LOD RCN | N/A |

## Step 2 - Time of Concentration

| FLOW TYPE | 2.1 LENGTH (feet) | 2.2 SLOPE (ft./ft.) | 2.3 SURFACE CODE | 2.4 MANNINGS "n" | 2.5 VELOCITY (ft./sec.) | 2.6 TRAVEL TIME (hrs) |
|---|---|---|---|---|---|---|
| *Sheet* | | | | ---------- | N/A | 0.00 |
| | | | | ---------- | N/A | 0.00 |
| | | | | ---------- | N/A | 0.00 |
| *Shallow Concentrated* | | | | N/A | ---------- | 0.00 |
| | | | | N/A | ---------- | 0.00 |
| | | | | N/A | ---------- | 0.00 |
| *Open Channel* | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |

2.7 Time of Concentration (Tc) 0.10

***Sheet Flow Surface Codes***

a smooth surface
b fallow (no residue)
c cultivated < 20% Res.
d cultivated > 20% Res.
e grass - range, short
f grass, dense
g grass, bermuda
h woods, light
i woods, dense
j range, natural

***Shallow Concentrated Surface Codes***

u unpaved surface
p paved surface

## Step 3 - Peak Discharge

| | | |
|---|---|---|
| 3.1 Unit Hydrograph Type | STD | |
| 3.2 Frequency (yr) | 10 | 100 |
| 3.3 24-HR Rainfall, P (in.) | 5.3 | 9.2 |
| 3.4 Initial Abstraction, Ia (in.) | #N/A | #N/A |
| 3.5 Ia/P ratio | #N/A | #N/A |
| 3.6 Unit Peak Discharge, qu (csm/in) | #N/A | #N/A |
| 3.7 Runoff (in.) | #VALUE! | #VALUE! |
| 3.8 Peak Discharge, qp (cfs) | #VALUE! | #VALUE! |
| 3.9 Equiv. unit peak discharge (cfs/ac) | 0.00 | 0.00 |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #2
**LOCATION (County):** Sussex

## RESOURCE PROTECTION EVENT (RPv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type | 1-C Underground Infiltration | Type | -- | Type | -- | Type | -- | Type | -- |
| ***Step 1 - Calculate Initial RPv*** | Data | | | | | | | | | |
| 1.1 Total contributing area to BMP (ac) | 14.21 | | | | | | | | | |
| 1.2 Initial RCN | 86.36 | | | | | | | | | |
| 1.3 RPv for Contributing Area (in.) | 1.64 | | | | | | | | | |
| 1.4 Req'd RPv to be Managed for Contributing Area (in.) | 0.83 | | | | | | | | | |
| 1.5 Req'd RPv to be Managed for Contributing Area (%) | 51% | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Retention volume provided (cu. ft.) | 74561 | | | | | | | | | |
| 2.2 Retention reduction allowance (%) | 100% | | N/A | | N/A | | N/A | | N/A | |
| 2.3 Retention reduction volume (ac-ft) | 1.71 | | N/A | | N/A | | N/A | | N/A | |
| 2.4 Retention reduction volume (in.) | 1.45 | | N/A | | N/A | | N/A | | N/A | |
| 2.5 Runoff volume after retention reduction (in.) | 0.19 | | N/A | | N/A | | N/A | | N/A | |
| 2.6 Adjusted CN* | 37.96 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Annual CN (ACN) | 86.36 | | N/A | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff (in.) | 23.94 | | N/A | | N/A | | N/A | | N/A | |
| 3.3 Proportion A/B soils in BMP footprint (%) | 0% | | 0% | | 0% | | 0% | | 0% | |
| 3.4 Annual runoff reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 3.5 Annual runoff after reduction (in.) | 23.94 | | N/A | | N/A | | N/A | | N/A | |
| 3.6 Adjusted ACN | 86.36 | | N/A | | N/A | | N/A | | N/A | |
| 3.7 Annual Runoff Reduction Allowance for RPv (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate RPv with BMP Reductions*** | | | | | | | | | | |
| 4.1 RPv Runoff Manangement Provided (cu. ft.) | 74561 | | N/A | | N/A | | N/A | | N/A | |
| 4.2 RPv runoff volume after all reductions (in.) | 0.19 | | N/A | | N/A | | N/A | | N/A | |
| 4.3 RPv runoff volume after all reductions (cu.ft.) | 10,034 | | N/A | | N/A | | N/A | | N/A | |
| 4.4 Total RPv runoff reduction (in.) | 1.45 | | N/A | | N/A | | N/A | | N/A | |
| 4.5 Total RPv runoff reduction (%) | 88% | | N/A | | N/A | | N/A | | N/A | |
| 4.6 Adjusted CN after all reductions* | 37.96 | | N/A | | N/A | | N/A | | N/A | |
| 4.7 Adjusted equivalent annual runoff (in.) | 1.35 | | N/A | | N/A | | N/A | | N/A | |
| 4.8 RPv Compliance Met Through Runoff Reduction? | YES | | N/A | | N/A | | N/A | | N/A | |
| 4.9 Runoff Reduction Credit, if Applicable (cu.ft) | -31729.46 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 5 - Determine Residual Volume to be Managed or Offset*** | | | | | | | | | | |
| 5.1 RPv Residual Volume (in.) | N/A | | N/A | | N/A | | N/A | | N/A | |
| 5.2 RPv Residual Volume (cu.ft./ac) | N/A | | N/A | | N/A | | N/A | | N/A | |
| 5.3 Residual Volume to be Managed or Offset (cu.ft.) | N/A | | N/A | | N/A | | N/A | | N/A | |
| 5.4 RPv avg. discharge rate for 48-hr detention (cfs) | N/A | | N/A | | N/A | | N/A | | N/A | |
| 5.5 RPv max. discharge rate for 48-hr detention (cfs) | N/A | | N/A | | N/A | | N/A | | N/A | |

***NOTE: No additional runoff reduction credit can be taken for surface recharge practices once the "Adjusted CN after all reductions" (Step 4.6) reaches the equivalent CN for the native soil-cover condition of the BMP footprint itself (i.e. for Sheet Flow to Turf Filter Strip on B soils Step 4.6 cannot be below 61). If this occurs contact the DNREC – SSP for further guidance.**

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #2
**TMDL WATERSHED:** Nanticoke River

## TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET

| | BMP 1 | | | | BMP 2 | | | | BMP 3 | | | | BMP 4 | | | | BMP 5 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 1-C Underground Infiltration | | | Type: | -- | | | Type: | -- | | | Type: | -- | | | Type: | -- | | |
| ***Step 1 - Calculate Annual Runoff Volume*** | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS |
| 1.1 Total contributing area to BMP (ac) | 14.21 | | | | | | | | | | | | | | | | | | | |
| 1.2 Initial RCN | 86 | | | | | | | | | | | | | | | | | | | |
| 1.3 Annual runoff volume (in.) | 23.94 | | | | | | | | | | | | | | | | | | | |
| 1.4 Annual runoff volume (liters) | 3.50E+07 | | | | | | | | | | | | | | | | | | | |
| ***Step 2 - Calculate Annual Pollutant Load*** | | | | | | | | | | | | | | | | | | | | |
| 2.1 EMC (mg/L) | | 2.80 | 0.49 | 90 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 2.2 Load (mg/yr) | | 9.79E+07 | 1.71E+07 | 3.15E+09 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 2.3 Stormwater Load (lb/ac/yr) | | 15.19 | 2.66 | 488 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| ***Step 3 - Adjust for Pollutant Reduction*** | | | | | | | | | | | | | | | | | | | | |
| 3.1 BMP annual runoff reduction (%) | 94% | | | | N/A | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.2 Adjusted annual runoff volume (in) | 1.35 | | | | N/A | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.3 Adjusted annual runoff volume (liters) | 1.97E+06 | | | | N/A | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.4 Adjusted load from annual reductions (lb/ac/yr) | | 0.86 | 0.15 | 27.50 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.5 BMP removal efficiency (%) | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.6 BMP effluent concentration (mg/L) | | 2.80 | 0.49 | 90.00 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.7 Final Adjusted load (lb/ac/yr) | | 0.86 | 0.15 | 28 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| ***Step 4 - Pollutant Reduction Met?*** *(For Informational Purposes)* | | | | | | | | | | | | | | | | | | | | |
| 4.1 TMDL (lb/ac/yr) | | 6.58 | 0.58 | 129 | | | | | | | | | | | | | | | | |
| 4.2 Reduction met? | | YES | YES | YES | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 4.3 Final Adjusted Load (lb/yr) | | 12.16 | 2.13 | 391 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |

**PROJECT:** Bridgeville

**DRAINAGE SUBAREA ID:** POI #2

**LOCATION (County):** Sussex

## CONVEYANCE EVENT (Cv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 1-C Underground Infiltration | Type: | -- | Type: | -- | Type: | -- | Type: | -- |
| ***Step 1 - Calculate Initial Cv*** | Data | | Data | | Data | | Data | | Data | |
| 1.1 Total contributing area to BMP (ac) | 14.21 | | 14.21 | | 14.21 | | 14.21 | | 14.21 | |
| 1.2 Initial RCN | 86.36 | | | | | | | | | |
| 1.3 10-Year Rainfall (in.) | 5.3 | | | | | | | | | |
| 1.4 Cv runoff volume (in.) | 3.78 | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Storage volume (cu. ft.) | 74561.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.2 Storage volume (ac-ft) | 1.71 | | N/A | | N/A | | N/A | | N/A | |
| 2.3 Storage volume (in.) | 1.45 | | N/A | | N/A | | N/A | | N/A | |
| 2.4 Runoff volume after reduction (in.) | 2.34 | | N/A | | N/A | | N/A | | N/A | |
| 2.5 CN* | 70.92 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Runoff reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff after reduction (in.) | 3.78 | | N/A | | N/A | | N/A | | N/A | |
| 3.3 Adjusted ACN | 86.36 | | N/A | | N/A | | N/A | | N/A | |
| 3.4 Event-based runoff reduction (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate Cv with BMP Reductions*** | | | | | | | | | | |
| 4.1 Cv runoff volume after all reductions (in.) | 2.34 | | N/A | | N/A | | N/A | | N/A | |
| 4.2 Total Cv runoff reduction (%) | 38% | | N/A | | N/A | | N/A | | N/A | |
| 4.3 Adjusted RCN for H&H modeling | 70.92 | | N/A | | N/A | | N/A | | N/A | |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #2
**LOCATION (County):** Sussex

## FLOODING EVENT (Fv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 1-C Underground Infiltration | Type: | -- | Type: | -- | Type: | -- | Type: | -- |
| ***Step 1 - Calculate Initial Fv*** | Data | | Data | | Data | | Data | | Data | |
| 1.1 Total contributing area to BMP (ac) | 14.21 | | 14.21 | | 14.21 | | 14.21 | | 14.21 | |
| 1.2 Initial RCN | 86.36 | | | | | | | | | |
| 1.3 100-Year Rainfall (in.) | 9.2 | | | | | | | | | |
| 1.4 Fv runoff volume (in.) | 7.54 | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Storage volume (cu. ft.) | 74561.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.2 Storage volume (ac-ft) | 1.71 | | N/A | | N/A | | N/A | | N/A | |
| 2.3 Storage volume (in.) | 1.45 | | N/A | | N/A | | N/A | | N/A | |
| 2.4 Runoff volume after reduction (in.) | 6.10 | | N/A | | N/A | | N/A | | N/A | |
| 2.5 CN* | 74.68 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Runoff reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff after reduction (in.) | 7.54 | | N/A | | N/A | | N/A | | N/A | |
| 3.3 Adjusted ACN | 86.36 | | N/A | | N/A | | N/A | | N/A | |
| 3.4 Event-based runoff reduction (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate Fv with BMP Reductions*** | | | | | | | | | | |
| 4.1 Fv runoff volume after all reductions (in.) | 6.10 | | N/A | | N/A | | N/A | | N/A | |
| 4.2 Total Fv runoff reduction (%) | 19% | | N/A | | N/A | | N/A | | N/A | |
| 4.3 Adjusted RCN for H&H modeling | 74.68 | | N/A | | N/A | | N/A | | N/A | |

| | | | | |
|---|---|---|---|---|
| **PROJECT:** | Bridgeville | | | |
| **DRAINAGE SUBAREA ID:** | POI #2 | | | |
| **COUNTY:** | Sussex | **UNIT HYDROGRAPH:** | STD | |
| **TMDL Watershed:** | Nanticoke River | **VERSION:** | **DURMM v2.51.220414** | |

**DURMM OUTPUT WORKSHEET**

***Site Data***

| | | | | |
|---|---|---|---|---|
| Contributing Area to BMPs (ac.) | 14.21 | | | |
| C.A. RCN | 86.36 | | | |
| Subarea LOD (ac.) | 14.21 | | | |
| Subarea RCN | 86.36 | | | |
| Upstream Subarea ID | N/A | N/A | N/A | N/A |
| Upstream Subarea LOD (ac.) | 0.00 | 0.00 | 0.00 | 0.00 |
| Combined LOD with Upstream Areas (ac.) | 14.21 | | | |
| Combined RCN with Upstream Areas (ac.) | 86.36 | | | |
| Watershed TMDL-TN (lb/ac/yr) | 6.58 | | | |
| Watershed TMDL-TP (lb/ac/yr) | 0.58 | | | |
| Watershed TMDL-TSS (lb/ac/yr) | 129 | | | |

***BMP Data***

| | **BMP 1** | **BMP 2** | **BMP 3** | **BMP 4** | **BMP 5** |
|---|---|---|---|---|---|
| | 1-C Underground Infiltration | -- | -- | -- | -- |
| RPv runoff volume after all reductions (in.) | 0.19 | N/A | N/A | N/A | N/A |
| Total RPv runoff reduction (in.) | 1.45 | N/A | N/A | N/A | N/A |
| Total RPv runoff reduction (%) | 88% | N/A | N/A | N/A | N/A |
| RPv Compliance Met Through Runoff Reduction? | YES | N/A | N/A | N/A | N/A |
| RPv Residual Volume (cu. ft.) | N/A | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TN (lb/ac/yr) | 0.86 | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TP (lb/ac/yr) | 0.15 | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TSS (lb/ac/yr) | 27.50 | N/A | N/A | N/A | N/A |
| Cv runoff volume after all reductions (in.) | 2.34 | N/A | N/A | N/A | N/A |
| Fv runoff volume after all reductions (in.) | 6.10 | N/A | N/A | N/A | N/A |

***Resource Protection Event (RPV)***

| | | |
|---|---|---|
| RPv for Contributing Area (in.) | 1.64 | |
| Annual Runoff for Contributing Area (in.) | 23.94 | |
| Req'd RPv to be Managed for Contributing Area (in.) | 0.83 | |
| Req'd RPv to be Managed for Contributing Area (%) | 51% | |
| RPv Runoff Management Required (cu. Ft.) | 42832 | |
| RPv Runoff Management Provided (cu. Ft.) | 74561 | |
| RPv Residual Volume (cu.ft.) | -31729 | CREDIT |
| C.A. RPv avg. discharge rate (cfs) | 0.00 | |
| C.A. RPv max. discharge rate (cfs) | 0.00 | |
| TN Pollutant Load (lb/yr) | 12.16 | |
| TP Pollutant Load (lb/yr) | 2.13 | |
| TSS Pollutant Load (lb/yr) | 391 | |

***Conveyance Event (Cv)***

| | |
|---|---|
| Cv runoff volume (in.) | 3.78 |
| Adjusted RCN for H&H Modeling (CN*) | 70.92 |

***Flooding Event (Fv)***

| | |
|---|---|
| Fv runoff volume (in.) | 7.54 |
| Equivalent RCN for H&H Modeling (CN*) | 74.68 |

***Adjusted Subarea Data for Downstream DURMM Modeling***

| | |
|---|---|
| Subarea ID | POI #2 |
| Contributing Area (ac.) | 14.21 |
| Weighted Target Runoff (in.) | 0.81 |
| Adjusted CN after all reductions | 37.96 |
| Adjusted RPv (in.) | 0.19 |
| Adjusted Cv (in.) | 2.34 |
| Adjusted Fv (in.) | 6.10 |

***Adjusted Subarea Data for Nutrient Protocol Modeling***

| | |
|---|---|
| Contributing Area (ac.) | 14.21 |
| LOD Area (ac.) | 14.21 |
| TN Pollutant Load (lb/yr) | 12.16 |
| TP Pollutant Load (lb/yr) | 2.13 |
| TSS Pollutant Load (lb/yr) | 391 |
| Percent Impervious Cover | 64% |

***Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest***

| | | |
|---|---|---|
| Subarea ID | POI #2 | |
| Contributing Area (ac.) | 14.21 | |
| RPv Residual Volume (cu.ft.) | -31729 | CREDIT |
| Adjusted CN after all reductions | 37.96 | |
| Cv RCN for H&H Modeling | 70.92 | |
| Fv RCN for H&H Modeling | 74.68 | |
| TN Pollutant Load (lb/yr) | 12.16 | |
| TP Pollutant Load (lb/yr) | 2.13 | |
| TSS Pollutant Load (lb/yr) | 391 | |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #3 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

**CONTRIBUTING AREA RUNOFF CURVE NUMBER (C.A. RCN) WORKSHEET**

| Cover Type | Treatment | Hydrologic Condition | Curve Numbers for Hydrologic Soil Type: A Acres | A RCN | B Acres | B RCN | C Acres | C RCN | D Acres | D RCN |
|---|---|---|---|---|---|---|---|---|---|---|
| **CULTIVATED AGRICULTURAL LANDS** | | | | | | | | | | |
| Fallow | Bare soil | ---- | | 77 | | 86 | | 91 | | 94 |
| | Crop residue (CR) | poor | | 76 | | 85 | | 90 | | 93 |
| | Crop residue (CR) | good | | 74 | | 83 | | 88 | | 90 |
| Row Crops | Straight row (SR) | poor | | 72 | | 81 | | 88 | | 91 |
| | Straight row (SR) | good | | 67 | | 78 | | 85 | | 89 |
| | SR + Crop residue | poor | | 71 | | 80 | | 87 | | 90 |
| | SR + Crop residue | good | | 64 | | 75 | | 82 | | 85 |
| | Contoured (C) | poor | | 70 | | 79 | | 84 | | 88 |
| | Contoured (C) | good | | 65 | | 75 | | 82 | | 86 |
| | C + Crop residue | poor | | 69 | | 78 | | 83 | | 87 |
| | C + Crop residue | good | | 64 | | 74 | | 81 | | 85 |
| | Cont & terraced(C&T) | poor | | 66 | | 74 | | 80 | | 82 |
| | Cont & terraced(C&T) | good | | 62 | | 71 | | 78 | | 81 |
| | C&T + Crop residue | poor | | 65 | | 73 | | 79 | | 81 |
| | C&T + Crop residue | good | | 61 | | 70 | | 77 | | 80 |
| Small Grain | Straight row (SR) | poor | | 65 | | 76 | | 84 | | 88 |
| | Straight row (SR) | good | | 63 | | 75 | | 83 | | 87 |
| | SR + Crop residue | poor | | 64 | | 75 | | 83 | | 86 |
| | SR + Crop residue | good | | 60 | | 72 | | 80 | | 84 |
| | Contoured (C) | poor | | 63 | | 74 | | 82 | | 85 |
| | Contoured (C) | good | | 61 | | 73 | | 81 | | 84 |
| | C + Crop residue | poor | | 62 | | 73 | | 81 | | 84 |
| | C + Crop residue | good | | 60 | | 72 | | 80 | | 83 |
| | Cont & terraced(C&T) | poor | | 61 | | 72 | | 79 | | 82 |
| | Cont & terraces(C&T) | good | | 59 | | 70 | | 78 | | 81 |
| | C&T + Crop residue | poor | | 60 | | 71 | | 78 | | 81 |
| | C&T + Crop residue | good | | 58 | | 69 | | 77 | | 80 |
| Close-seeded | Straight row | poor | | 66 | | 77 | | 85 | | 89 |
| or broadcast | Straight row | good | | 58 | | 72 | | 81 | | 85 |
| legumes or | Contoured | poor | | 64 | | 75 | | 83 | | 85 |
| rotation | Contoured | good | | 55 | | 69 | | 78 | | 83 |
| meadow | Cont & terraced | poor | | 63 | | 73 | | 80 | | 83 |
| | Cont & terraced | good | | 51 | | 67 | | 76 | | 80 |
| **OTHER AGRICULTURAL LANDS** | | | | | | | | | | |
| | Pasture, grassland or range | poor | | 68 | | 79 | | 86 | | 89 |
| | | fair | | 49 | | 69 | | 79 | | 84 |
| | | good | | 39 | | 61 | | 74 | | 80 |
| | Meadow -cont. grass (non grazed) | ---- | | 30 | | 58 | | 71 | | 78 |
| | Brush - brush, weed, grass mix | poor | | 48 | | 67 | | 77 | | 83 |
| | | fair | | 35 | | 56 | | 70 | | 77 |
| | | good | | 30 | | 48 | | 65 | | 73 |
| | Woods - grass combination | poor | | 57 | | 73 | | 82 | | 86 |
| | | fair | | 43 | | 65 | | 76 | | 82 |
| | | good | | 32 | | 58 | | 72 | | 79 |
| | Woods | poor | | 45 | | 66 | | 77 | | 83 |
| | | fair | | 36 | | 60 | | 73 | | 79 |
| | | good | | 30 | | 55 | | 70 | | 77 |
| | Farmsteads | ---- | | 59 | | 74 | | 82 | | 86 |
| **FULLY DEVELOPED URBAN AREAS (Veg Established)** | | | | | | | | | | |
| Open space (Lawns,parks etc.) | | | | | | | | | | |
| | Poor condition; grass cover < 50% | | | 68 | | 79 | | 86 | | 89 |
| | Fair condition; grass cover 50% to 75 % | | | 49 | | 69 | | 79 | | 84 |
| | Good condition; grass cover > 75% | | 5.42 | 39 | 3.14 | 61 | 1.97 | 74 | | 80 |
| Impervious Areas | | | | | | | | | | |
| | Paved parking lots, roofs, driveways | | 7.76 | 98 | 5.92 | 98 | 0.46 | 98 | | 98 |
| | Streets and roads | | | | | | | | | |
| | Paved; curbs and storm sewers | | | 98 | | 98 | | 98 | | 98 |
| | Paved; open ditches (w/right-of-way) | | | 83 | | 89 | | 92 | | 93 |
| | Gravel (w/ right-of-way) | | | 76 | | 85 | | 89 | | 91 |
| | Dirt (w/ right-of-way) | | | 72 | | 82 | | 87 | | 89 |
| Urban Districts | | Avg % impervious | | | | | | | | |
| | Commercial & business | 85 | | 89 | | 92 | | 94 | | 95 |
| | Industrial | 72 | | 81 | | 88 | | 91 | | 93 |
| Residential districts by average lot size | | Avg % impervious | | | | | | | | |
| | 1/8 acre (town houses) | 65 | | 77 | | 85 | | 90 | | 92 |
| | 1/4 acre | 38 | | 61 | | 75 | | 83 | | 87 |
| | 1/3 acre | 30 | | 57 | | 72 | | 81 | | 86 |
| | 1/2 acre | 25 | | 54 | | 70 | | 80 | | 85 |
| | 1 acre | 20 | | 51 | | 68 | | 79 | | 84 |
| | 2 acre | 12 | | 46 | | 65 | | 77 | | 82 |
| **DEVELOPING URBAN AREA (No Vegetation)** | | | | | | | | | | |
| | Newly graded area (pervious only) | | | 77 | | 86 | | 91 | | 94 |
| **USER DEFINED** | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| **Subarea Contributing Area per Soil Type (ac)** | 13.18 | 9.06 | 2.43 | 0 |
| **Subarea Contributing Area (ac)** | 24.67 | | | |
| **Subarea Weighted RCN** | 78 | | | |

| **UPSTREAM CONTRIBUTING AREAS** | *Subarea ID* | *Acres* | *RCN* |
|---|---|---|---|
| Upstream Contributing Area 1 | | | |
| Upstream Contributing Area 2 | | | |
| Upstream Contributing Area 3 | | | |
| Upstream Contributing Area 4 | | | |

| | |
|---|---|
| **Total Contributing Area w. Upstream Areas (ac)** | 24.7 |
| **Weighted Runoff Curve Number (RCN)** | 78 |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #3 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

**OUTSIDE LIMIT OF DISTURBANCE (OLOD) WORKSHEET**

## Step 1 - Site Data

| | |
|---|---|
| 1.1 Total Contributing Area (ac) | 24.67 |
| 1.2 C.A. RCN | 78 |
| 1.3 LOD Area (ac) | 23.41 |
| 1.4 LOD RCN | 80 |
| 1.5 Outside LOD Area (ac) | 1.26 |
| 1.6 Outside LOD RCN | 48 |

## Step 2 - Time of Concentration

| FLOW TYPE | 2.1 LENGTH (feet) | 2.2 SLOPE (ft./ft.) | 2.3 SURFACE CODE | 2.4 MANNINGS "n" | 2.5 VELOCITY (ft./sec.) | 2.6 TRAVEL TIME (hrs) |
|---|---|---|---|---|---|---|
| *Sheet* | | | | ---------- | N/A | 0.00 |
| | | | | ---------- | N/A | 0.00 |
| | | | | ---------- | N/A | 0.00 |
| *Shallow Concentrated* | | | | N/A | ---------- | 0.00 |
| | | | | N/A | ---------- | 0.00 |
| | | | | N/A | ---------- | 0.00 |
| *Open Channel* | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |

2.7 Time of Concentration (Tc) 0.10

***Sheet Flow Surface Codes***

a smooth surface
b fallow (no residue)
c cultivated < 20% Res.
d cultivated > 20% Res.
e grass - range, short
f grass, dense
g grass, bermuda
h woods, light
i woods, dense
j range, natural

***Shallow Concentrated Surface Codes***

u unpaved surface
p paved surface

## Step 3 - Peak Discharge

| | | |
|---|---|---|
| 3.1 Unit Hydrograph Type | STD | |
| 3.2 Frequency (yr) | 10 | 100 |
| 3.3 24-HR Rainfall, P (in.) | 5.3 | 9.2 |
| 3.4 Initial Abstraction, Ia (in.) | 2.255 | 2.255 |
| 3.5 Ia/P ratio | 0.43 | 0.25 |
| 3.6 Unit Peak Discharge, qu (csm/in) | 731 | 1017 |
| 3.7 Runoff (in.) | 0.68 | 2.72 |
| 3.8 Peak Discharge, qp (cfs) | 0.98 | 5.44 |
| 3.9 Equiv. unit peak discharge (cfs/ac) | 0.77 | 4.32 |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #3 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

## LIMIT OF DISTURBANCE (LOD) WORKSHEET

| **Step 1 - Subarea LOD Data** | **HSG A** | **HSG B** | **HSG C** | **HSG D** |
|---|---|---|---|---|
| 1.1 HSG Area Within LOD (ac) | 12.25 | 8.73 | 2.43 | |
| 1.2 Pre-Developed Woods/Meadow Within LOD (ac) | 0 | 0 | 0 | |
| 1.3 Pre-Developed Impervious Within LOD (ac) | 0 | 0 | 0 | |
| 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); ***OR*** | 7.7 | 5.92 | 0.46 | |
| 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%) | 63% | 68% | 19% | 0% |

| **Step 2 - Subarea LOD Runoff Calculations** | | | | |
|---|---|---|---|---|
| 2.1 RCN per HSG | 76.09 | 86.09 | 78.54 | 0.00 |
| 2.2 RPv per HSG (in.) | 1.14 | 1.62 | 1.24 | 0.00 |
| 2.3 Target RCN per HSG | 39.00 | 61.00 | 74.00 | 0.00 |
| 2.4 Target Runoff per HSG (in.) | 0.21 | 0.65 | 1.06 | 0.00 |

| | |
|---|---|
| 2.5 Subarea LOD (ac) | 23.41 |
| 2.6 Subarea Weighted RCN | 80.07 |
| 2.7 Subarea Weighted RPv (in.) | 1.31 |
| 2.8 Subarea Weighted Target Runoff (in.) | 0.46 |

| **Step 3 - Upstream LOD Areas** ***(from previous DURMM Report as applicable)*** | **Area 1** | **Area 2** | **Area 3** | **Area 4** |
|---|---|---|---|---|
| 3.1 Upstream Sub-Area ID | | | | |
| 3.2 Upstream Contributing Area (ac) | | | | |
| 3.3 Target Runoff for Upstream Area (in.) | | | | |
| 3.4 Adjusted CN after all reductions | | | | |
| 3.5 Adjusted RPv (in.) | | | | |
| 3.6 Adjusted Cv (in.) | | | | |
| 3.7 Adjusted Fv (in.) | | | | |

| **Step 4 - RPv Calculations for Combined LOD** | |
|---|---|
| 4.1 Combined LOD (ac) | 23.41 |
| 4.2 Weighted RCN | 80.07 |
| 4.3 Weighted RPv (in.) | 1.31 |
| 4.4 Weighted Target Runoff (in.) | 0.46 |
| 4.5 Estimated Annual Runoff (in.) | 18.38 |
| 4.6 Req'd Runoff to be Managed within LOD (in.) | 0.85 |
| 4.7 Req'd Runoff to be Managed within LOD (%) | 65% |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #3
**LOCATION (County):** Sussex

## RESOURCE PROTECTION EVENT (RPv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type | 1-C Underground Infiltration | Type | 1-B Infiltration Basin | Type | -- | Type | -- | Type | -- |
| ***Step 1 - Calculate Initial RPv*** | Data | | | | | | | | | |
| 1.1 Total contributing area to BMP (ac) | 24.67 | | | | | | | | | |
| 1.2 Initial RCN | 78.41 | | | | | | | | | |
| 1.3 RPv for Contributing Area (in.) | 1.24 | | | | | | | | | |
| 1.4 Req'd RPv to be Managed for Contributing Area (in.) | 0.81 | | | | | | | | | |
| 1.5 Req'd RPv to be Managed for Contributing Area (%) | 65% | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Retention volume provided (cu. ft.) | 27154 | | 71607 | | | | | | | |
| 2.2 Retention reduction allowance (%) | 100% | | 100% | | N/A | | N/A | | N/A | |
| 2.3 Retention reduction volume (ac-ft) | 0.62 | | 1.64 | | N/A | | N/A | | N/A | |
| 2.4 Retention reduction volume (in.) | 0.30 | | 0.80 | | N/A | | N/A | | N/A | |
| 2.5 Runoff volume after retention reduction (in.) | 0.94 | | 0.14 | | N/A | | N/A | | N/A | |
| 2.6 Adjusted CN* | 70.72 | | 33.66 | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Annual CN (ACN) | 78.41 | | 70.72 | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff (in.) | 17.08 | | 11.89 | | N/A | | N/A | | N/A | |
| 3.3 Proportion A/B soils in BMP footprint (%) | 0% | | 0% | | 0% | | 0% | | 0% | |
| 3.4 Annual runoff reduction allowance (%) | 0% | | 0% | | N/A | | N/A | | N/A | |
| 3.5 Annual runoff after reduction (in.) | 17.08 | | 11.89 | | N/A | | N/A | | N/A | |
| 3.6 Adjusted ACN | 78.41 | | 70.72 | | N/A | | N/A | | N/A | |
| 3.7 Annual Runoff Reduction Allowance for RPv (in.) | 0.00 | | 0.30 | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate RPv with BMP Reductions*** | | | | | | | | | | |
| 4.1 RPv Runoff Manangement Provided (cu. ft.) | 27154 | | 98761 | | N/A | | N/A | | N/A | |
| 4.2 RPv runoff volume after all reductions (in.) | 0.94 | | 0.14 | | N/A | | N/A | | N/A | |
| 4.3 RPv runoff volume after all reductions (cu.ft.) | 83,891 | | 12,284 | | N/A | | N/A | | N/A | |
| 4.4 Total RPv runoff reduction (in.) | 0.30 | | 1.10 | | N/A | | N/A | | N/A | |
| 4.5 Total RPv runoff reduction (%) | 24% | | 89% | | N/A | | N/A | | N/A | |
| 4.6 Adjusted CN after all reductions* | 70.72 | | 33.66 | | N/A | | N/A | | N/A | |
| 4.7 Adjusted equivalent annual runoff (in.) | 11.89 | | 0.88 | | N/A | | N/A | | N/A | |
| 4.8 RPv Compliance Met Through Runoff Reduction? | NO | | YES | | N/A | | N/A | | N/A | |
| 4.9 Runoff Reduction Credit, if Applicable (cu.ft) | N/A | | -26529.43 | | N/A | | N/A | | N/A | |
| ***Step 5 - Determine Residual Volume to be Managed or Offset*** | | | | | | | | | | |
| 5.1 RPv Residual Volume (in.) | 0.50 | | N/A | | N/A | | N/A | | N/A | |
| 5.2 RPv Residual Volume (cu.ft./ac) | 1,827 | | N/A | | N/A | | N/A | | N/A | |
| 5.3 Residual Volume to be Managed or Offset (cu.ft.) | 45,078 | | N/A | | N/A | | N/A | | N/A | |
| 5.4 RPv avg. discharge rate for 48-hr detention (cfs) | 0.261 | | N/A | | N/A | | N/A | | N/A | |
| 5.5 RPv max. discharge rate for 48-hr detention (cfs) | 1.304 | | N/A | | N/A | | N/A | | N/A | |

***NOTE: No additional runoff reduction credit can be taken for surface recharge practices once the "Adjusted CN after all reductions" (Step 4.6) reaches the equivalent CN for the native soil-cover condition of the BMP footprint itself (i.e. for Sheet Flow to Turf Filter Strip on B soils Step 4.6 cannot be below 61). If this occurs contact the DNREC – SSP for further guidance.**

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #3
**TMDL WATERSHED:** Nanticoke River

## TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET

| | BMP 1 | | | | BMP 2 | | | | BMP 3 | | | | BMP 4 | | | | BMP 5 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 1-C Underground Infiltration | | | Type: | 1-B Infiltration Basin | | | Type: | -- | | | Type: | -- | | | Type: | -- | | |
| ***Step 1 - Calculate Annual Runoff Volume*** | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS |
| 1.1 Total contributing area to BMP (ac) | 24.67 | | | | | | | | | | | | | | | | | | | |
| 1.2 Initial RCN | 78 | | | | | | | | | | | | | | | | | | | |
| 1.3 Annual runoff volume (in.) | 17.08 | | | | | | | | | | | | | | | | | | | |
| 1.4 Annual runoff volume (liters) | 4.33E+07 | | | | | | | | | | | | | | | | | | | |
| ***Step 2 - Calculate Annual Pollutant Load*** | | | | | | | | | | | | | | | | | | | | |
| 2.1 EMC (mg/L) | | 2.80 | 0.49 | 90 | | 2.80 | 0.49 | 90 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 2.2 Load (mg/yr) | | 1.21E+08 | 2.12E+07 | 3.90E+09 | | 8.45E+07 | 1.48E+07 | 2.71E+09 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 2.3 Stormwater Load (lb/ac/yr) | | 10.84 | 1.90 | 348 | | 7.55 | 1.32 | 243 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| ***Step 3 - Adjust for Pollutant Reduction*** | | | | | | | | | | | | | | | | | | | | |
| 3.1 BMP annual runoff reduction (%) | 30% | | | | 93% | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.2 Adjusted annual runoff volume (in) | 11.89 | | | | 0.88 | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.3 Adjusted annual runoff volume (liters) | 3.02E+07 | | | | 2.24E+06 | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.4 Adjusted load from annual reductions (lb/ac/yr) | | 7.55 | 1.32 | 242.64 | | 0.56 | 0.10 | 18.05 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.5 BMP removal efficiency (%) | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.6 BMP effluent concentration (mg/L) | | 2.80 | 0.49 | 90.00 | | 2.80 | 0.49 | 90.00 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.7 Final Adjusted load (lb/ac/yr) | | 7.55 | 1.32 | 243 | | 0.56 | 0.10 | 18 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| ***Step 4 - Pollutant Reduction Met?*** ***(For Informational Purposes)*** | | | | | | | | | | | | | | | | | | | | |
| 4.1 TMDL (lb/ac/yr) | | 6.58 | 0.58 | 129 | | | | | | | | | | | | | | | | |
| 4.2 Reduction met? | | NO | NO | NO | | YES | YES | YES | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 4.3 Final Adjusted Load (lb/yr) | | 186.23 | 32.59 | 5986 | | 13.85 | 2.42 | 445 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #3
**LOCATION (County):** Sussex

## CONVEYANCE EVENT (Cv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 1-C Underground Infiltration | Type: | 1-B Infiltration Basin | Type: | -- | Type: | -- | Type: | -- |
| ***Step 1 - Calculate Initial Cv*** | Data | | Data | | Data | | Data | | Data | |
| 1.1 Total contributing area to BMP (ac) | 24.67 | | 24.67 | | 24.67 | | 24.67 | | 24.67 | |
| 1.2 Initial RCN | 78.41 | | | | | | | | | |
| 1.3 10-Year Rainfall (in.) | 5.3 | | | | | | | | | |
| 1.4 Cv runoff volume (in.) | 3.01 | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Storage volume (cu. ft.) | 27154.00 | | 71607.00 | | N/A | | N/A | | N/A | |
| 2.2 Storage volume (ac-ft) | 0.62 | | 1.64 | | N/A | | N/A | | N/A | |
| 2.3 Storage volume (in.) | 0.30 | | 0.80 | | N/A | | N/A | | N/A | |
| 2.4 Runoff volume after reduction (in.) | 2.70 | | 1.90 | | N/A | | N/A | | N/A | |
| 2.5 CN* | 75.10 | | 65.60 | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Runoff reduction allowance (%) | 0% | | 0% | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff after reduction (in.) | 3.01 | | 2.70 | | N/A | | N/A | | N/A | |
| 3.3 Adjusted ACN | 78.41 | | 75.10 | | N/A | | N/A | | N/A | |
| 3.4 Event-based runoff reduction (in.) | 0.00 | | 0.30 | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate Cv with BMP Reductions*** | | | | | | | | | | |
| 4.1 Cv runoff volume after all reductions (in.) | 2.70 | | 1.90 | | N/A | | N/A | | N/A | |
| 4.2 Total Cv runoff reduction (%) | 10% | | 37% | | N/A | | N/A | | N/A | |
| 4.3 Adjusted RCN for H&H modeling | 75.10 | | 65.60 | | N/A | | N/A | | N/A | |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #3
**LOCATION (County):** Sussex

## FLOODING EVENT (Fv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 1-C Underground Infiltration | Type: | 1-B Infiltration Basin | Type: | -- | Type: | -- | Type: | -- |
| ***Step 1 - Calculate Initial Fv*** | Data | | Data | | Data | | Data | | Data | |
| 1.1 Total contributing area to BMP (ac) | 24.67 | | 24.67 | | 24.67 | | 24.67 | | 24.67 | |
| 1.2 Initial RCN | 78.41 | | | | | | | | | |
| 1.3 100-Year Rainfall (in.) | 9.2 | | | | | | | | | |
| 1.4 Fv runoff volume (in.) | 6.56 | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Storage volume (cu. ft.) | 27154.00 | | 71607.00 | | N/A | | N/A | | N/A | |
| 2.2 Storage volume (ac-ft) | 0.62 | | 1.64 | | N/A | | N/A | | N/A | |
| 2.3 Storage volume (in.) | 0.30 | | 0.80 | | N/A | | N/A | | N/A | |
| 2.4 Runoff volume after reduction (in.) | 6.26 | | 5.46 | | N/A | | N/A | | N/A | |
| 2.5 CN* | 75.97 | | 69.57 | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Runoff reduction allowance (%) | 0% | | 0% | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff after reduction (in.) | 6.56 | | 6.26 | | N/A | | N/A | | N/A | |
| 3.3 Adjusted ACN | 78.41 | | 75.97 | | N/A | | N/A | | N/A | |
| 3.4 Event-based runoff reduction (in.) | 0.00 | | 0.30 | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate Fv with BMP Reductions*** | | | | | | | | | | |
| 4.1 Fv runoff volume after all reductions (in.) | 6.26 | | 5.46 | | N/A | | N/A | | N/A | |
| 4.2 Total Fv runoff reduction (%) | 5% | | 17% | | N/A | | N/A | | N/A | |
| 4.3 Adjusted RCN for H&H modeling | 75.97 | | 69.57 | | N/A | | N/A | | N/A | |

| | | | | |
|---|---|---|---|---|
| **PROJECT:** | Bridgeville | | | |
| **DRAINAGE SUBAREA ID:** | POI #3 | | | |
| **COUNTY:** | Sussex | **UNIT HYDROGRAPH:** | STD | |
| **TMDL Watershed:** | Nanticoke River | **VERSION:** | **DURMM v2.51.220414** | |

## DURMM OUTPUT WORKSHEET

***Site Data***

| | | | | |
|---|---|---|---|---|
| Contributing Area to BMPs (ac.) | 24.67 | | | |
| C.A. RCN | 78.41 | | | |
| Subarea LOD (ac.) | 23.41 | | | |
| Subarea RCN | 80.07 | | | |
| Upstream Subarea ID | N/A | N/A | N/A | N/A |
| Upstream Subarea LOD (ac.) | 0.00 | 0.00 | 0.00 | 0.00 |
| Combined LOD with Upstream Areas (ac.) | 23.41 | | | |
| Combined RCN with Upstream Areas (ac.) | 80.07 | | | |
| Watershed TMDL-TN (lb/ac/yr) | 6.58 | | | |
| Watershed TMDL-TP (lb/ac/yr) | 0.58 | | | |
| Watershed TMDL-TSS (lb/ac/yr) | 129 | | | |

***BMP Data***

| | **BMP 1** | **BMP 2** | **BMP 3** | **BMP 4** | **BMP 5** |
|---|---|---|---|---|---|
| | 1-C Underground Infiltration | 1-B Infiltration Basin | -- | -- | -- |
| RPv runoff volume after all reductions (in.) | 0.94 | 0.14 | N/A | N/A | N/A |
| Total RPv runoff reduction (in.) | 0.30 | 1.10 | N/A | N/A | N/A |
| Total RPv runoff reduction (%) | 24% | 89% | N/A | N/A | N/A |
| RPv Compliance Met Through Runoff Reduction? | NO | YES | N/A | N/A | N/A |
| RPv Residual Volume (cu. ft.) | 45,078 | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TN (lb/ac/yr) | 7.55 | 0.56 | N/A | N/A | N/A |
| Adjusted pollutant load, TP (lb/ac/yr) | 1.32 | 0.10 | N/A | N/A | N/A |
| Adjusted pollutant load, TSS (lb/ac/yr) | 242.64 | 18.05 | N/A | N/A | N/A |
| Cv runoff volume after all reductions (in.) | 2.70 | 1.90 | N/A | N/A | N/A |
| Fv runoff volume after all reductions (in.) | 6.26 | 5.46 | N/A | N/A | N/A |

***Resource Protection Event (RPV)***

| | | |
|---|---|---|
| RPv for Contributing Area (in.) | 1.24 | |
| Annual Runoff for Contributing Area (in.) | 17.08 | |
| Req'd RPv to be Managed for Contributing Area (in.) | 0.81 | |
| Req'd RPv to be Managed for Contributing Area (%) | 65% | |
| RPv Runoff Management Required (cu. Ft.) | 72232 | |
| RPv Runoff Management Provided (cu. Ft.) | 98761 | |
| RPv Residual Volume (cu.ft.) | -26529 | CREDIT |
| C.A. RPv avg. discharge rate (cfs) | 0.26 | |
| C.A. RPv max. discharge rate (cfs) | 1.30 | |
| TN Pollutant Load (lb/yr) | 13.85 | |
| TP Pollutant Load (lb/yr) | 2.42 | |
| TSS Pollutant Load (lb/yr) | 445 | |

***Conveyance Event (Cv)***

| | |
|---|---|
| Cv runoff volume (in.) | 3.01 |
| Adjusted RCN for H&H Modeling (CN*) | 65.60 |

***Flooding Event (Fv)***

| | |
|---|---|
| Fv runoff volume (in.) | 6.56 |
| Equivalent RCN for H&H Modeling (CN*) | 69.57 |

***Adjusted Subarea Data for Downstream DURMM Modeling***

| | |
|---|---|
| Subarea ID | POI #3 |
| Contributing Area (ac.) | 24.67 |
| Weighted Target Runoff (in.) | 0.46 |
| Adjusted CN after all reductions | 33.66 |
| Adjusted RPv (in.) | 0.14 |
| Adjusted Cv (in.) | 1.90 |
| Adjusted Fv (in.) | 5.46 |

***Adjusted Subarea Data for Nutrient Protocol Modeling***

| | |
|---|---|
| Contributing Area (ac.) | 24.67 |
| LOD Area (ac.) | 23.41 |
| TN Pollutant Load (lb/yr) | 13.85 |
| TP Pollutant Load (lb/yr) | 2.42 |
| TSS Pollutant Load (lb/yr) | 445 |
| Percent Impervious Cover | 60% |

***Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest***

| | | |
|---|---|---|
| Subarea ID | POI #3 | |
| Contributing Area (ac.) | 24.67 | |
| RPv Residual Volume (cu.ft.) | -26529 | CREDIT |
| Adjusted CN after all reductions | 33.66 | |
| Cv RCN for H&H Modeling | 65.60 | |
| Fv RCN for H&H Modeling | 69.57 | |
| TN Pollutant Load (lb/yr) | 13.85 | |
| TP Pollutant Load (lb/yr) | 2.42 | |
| TSS Pollutant Load (lb/yr) | 445 | |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #4 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

## CONTRIBUTING AREA RUNOFF CURVE NUMBER (C.A. RCN) WORKSHEET

| Cover Type | Treatment | Hydrologic Condition | Curve Numbers for Hydrologic Soil Type A Acres | A RCN | B Acres | B RCN | C Acres | C RCN | D Acres | D RCN |
|---|---|---|---|---|---|---|---|---|---|---|
| **CULTIVATED AGRICULTURAL LANDS** | | | | | | | | | | |
| Fallow | Bare soil | ---- | | 77 | | 86 | | 91 | | 94 |
| | Crop residue (CR) | poor | | 76 | | 85 | | 90 | | 93 |
| | Crop residue (CR) | good | | 74 | | 83 | | 88 | | 90 |
| Row Crops | Straight row (SR) | poor | | 72 | | 81 | | 88 | | 91 |
| | Straight row (SR) | good | | 67 | | 78 | | 85 | | 89 |
| | SR + Crop residue | poor | | 71 | | 80 | | 87 | | 90 |
| | SR + Crop residue | good | | 64 | | 75 | | 82 | | 85 |
| | Contoured (C) | poor | | 70 | | 79 | | 84 | | 88 |
| | Contoured (C) | good | | 65 | | 75 | | 82 | | 86 |
| | C + Crop residue | poor | | 69 | | 78 | | 83 | | 87 |
| | C + Crop residue | good | | 64 | | 74 | | 81 | | 85 |
| | Cont & terraced(C&T) | poor | | 66 | | 74 | | 80 | | 82 |
| | Cont & terraced(C&T) | good | | 62 | | 71 | | 78 | | 81 |
| | C&T + Crop residue | poor | | 65 | | 73 | | 79 | | 81 |
| | C&T + Crop residue | good | | 61 | | 70 | | 77 | | 80 |
| Small Grain | Straight row (SR) | poor | | 65 | | 76 | | 84 | | 88 |
| | Straight row (SR) | good | | 63 | | 75 | | 83 | | 87 |
| | SR + Crop residue | poor | | 64 | | 75 | | 83 | | 86 |
| | SR + Crop residue | good | | 60 | | 72 | | 80 | | 84 |
| | Contoured (C) | poor | | 63 | | 74 | | 82 | | 85 |
| | Contoured (C) | good | | 61 | | 73 | | 81 | | 84 |
| | C + Crop residue | poor | | 62 | | 73 | | 81 | | 84 |
| | C + Crop residue | good | | 60 | | 72 | | 80 | | 83 |
| | Cont & terraced(C&T) | poor | | 61 | | 72 | | 79 | | 82 |
| | Cont & terraces(C&T) | good | | 59 | | 70 | | 78 | | 81 |
| | C&T + Crop residue | poor | | 60 | | 71 | | 78 | | 81 |
| | C&T + Crop residue | good | | 58 | | 69 | | 77 | | 80 |
| Close-seeded | Straight row | poor | | 66 | | 77 | | 85 | | 89 |
| or broadcast | Straight row | good | | 58 | | 72 | | 81 | | 85 |
| legumes or | Contoured | poor | | 64 | | 75 | | 83 | | 85 |
| rotation | Contoured | good | | 55 | | 69 | | 78 | | 83 |
| meadow | Cont & terraced | poor | | 63 | | 73 | | 80 | | 83 |
| | Cont & terraced | good | | 51 | | 67 | | 76 | | 80 |
| **OTHER AGRICULTURAL LANDS** | | | | | | | | | | |
| | Pasture, grassland or range | poor | | 68 | | 79 | | 86 | | 89 |
| | | fair | | 49 | | 69 | | 79 | | 84 |
| | | good | | 39 | | 61 | | 74 | | 80 |
| | Meadow -cont. grass (non grazed) | ---- | | 30 | | 58 | | 71 | | 78 |
| | Brush - brush, weed, grass mix | poor | | 48 | | 67 | | 77 | | 83 |
| | | fair | | 35 | | 56 | | 70 | | 77 |
| | | good | | 30 | | 48 | | 65 | | 73 |
| | Woods - grass combination | poor | | 57 | | 73 | | 82 | | 86 |
| | | fair | | 43 | | 65 | | 76 | | 82 |
| | | good | | 32 | | 58 | | 72 | | 79 |
| | Woods | poor | | 45 | | 66 | | 77 | | 83 |
| | | fair | | 36 | | 60 | | 73 | | 79 |
| | | good | | 30 | | 55 | | 70 | | 77 |
| | Farmsteads | ---- | | 59 | | 74 | | 82 | | 86 |
| **FULLY DEVELOPED URBAN AREAS (Veg Established)** | | | | | | | | | | |
| Open space (Lawns,parks etc.) | | | | | | | | | | |
| | Poor condition; grass cover < 50% | | | 68 | | 79 | | 86 | | 89 |
| | Fair condition; grass cover 50% to 75 % | | | 49 | | 69 | | 79 | | 84 |
| | Good condition; grass cover > 75% | | 0.28 | 39 | 0.38 | 61 | 0.2 | 74 | | 80 |
| Impervious Areas | | | | | | | | | | |
| | Paved parking lots, roofs, driveways | | 0.38 | 98 | 0.11 | 98 | 0 | 98 | | 98 |
| | Streets and roads | | | | | | | | | |
| | Paved; curbs and storm sewers | | | 98 | | 98 | | 98 | | 98 |
| | Paved; open ditches (w/right-of-way) | | | 83 | | 89 | | 92 | | 93 |
| | Gravel (w/ right-of-way) | | | 76 | | 85 | | 89 | | 91 |
| | Dirt (w/ right-of-way) | | | 72 | | 82 | | 87 | | 89 |
| Urban Districts | | Avg % impervious | | | | | | | | |
| | Commercial & business | 85 | | 89 | | 92 | | 94 | | 95 |
| | Industrial | 72 | | 81 | | 88 | | 91 | | 93 |
| Residential districts by average lot size | | Avg % impervious | | | | | | | | |
| | 1/8 acre (town houses) | 65 | | 77 | | 85 | | 90 | | 92 |
| | 1/4 acre | 38 | | 61 | | 75 | | 83 | | 87 |
| | 1/3 acre | 30 | | 57 | | 72 | | 81 | | 86 |
| | 1/2 acre | 25 | | 54 | | 70 | | 80 | | 85 |
| | 1 acre | 20 | | 51 | | 68 | | 79 | | 84 |
| | 2 acre | 12 | | 46 | | 65 | | 77 | | 82 |
| **DEVELOPING URBAN AREA (No Vegetation)** | | | | | | | | | | |
| | Newly graded area (pervious only) | | | 77 | | 86 | | 91 | | 94 |
| **USER DEFINED** | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Subarea Contributing Area per Soil Type (ac)** | | 0.66 | 0.49 | 0.2 | 0 |
| **Subarea Contributing Area (ac)** | 1.35 | | | | |
| **Subarea Weighted RCN** | 72 | | | | |

| **UPSTREAM CONTRIBUTING AREAS** | *Subarea ID* | *Acres* | *RCN* |
|---|---|---|---|
| Upstream Contributing Area 1 | | | |
| Upstream Contributing Area 2 | | | |
| Upstream Contributing Area 3 | | | |
| Upstream Contributing Area 4 | | | |

| | |
|---|---|
| **Total Contributing Area w. Upstream Areas (ac)** | 1.35 |
| **Weighted Runoff Curve Number (RCN)** | 72 |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #4 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

## LIMIT OF DISTURBANCE (LOD) WORKSHEET

| **Step 1 - Subarea LOD Data** | **HSG A** | **HSG B** | **HSG C** | **HSG D** |
|---|---|---|---|---|
| 1.1 HSG Area Within LOD (ac) | 0.66 | 0.49 | 0.2 | |
| 1.2 Pre-Developed Woods/Meadow Within LOD (ac) | 0 | 0 | 0 | |
| 1.3 Pre-Developed Impervious Within LOD (ac) | 0.38 | 0.11 | 0 | |
| 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); ***OR*** | 0.38 | 0.11 | 0 | |
| 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%) | 58% | 22% | 0% | 0% |

| **Step 2 - Subarea LOD Runoff Calculations** | | | | |
|---|---|---|---|---|
| 2.1 RCN per HSG | 72.97 | 69.31 | 74.00 | 0.00 |
| 2.2 RPv per HSG (in.) | 1.02 | 0.89 | 1.06 | 0.00 |
| 2.3 Target RCN per HSG | 67.87 | 68.06 | 74.00 | 0.00 |
| 2.4 Target Runoff per HSG (in.) | 0.84 | 0.85 | 1.06 | 0.00 |

| | |
|---|---|
| 2.5 Subarea LOD (ac) | 1.35 |
| 2.6 Subarea Weighted RCN | 71.79 |
| 2.7 Subarea Weighted RPv (in.) | 0.97 |
| 2.8 Subarea Weighted Target Runoff (in.) | 0.88 |

| **Step 3 - Upstream LOD Areas** ***(from previous DURMM Report as applicable)*** | **Area 1** | **Area 2** | **Area 3** | **Area 4** |
|---|---|---|---|---|
| 3.1 Upstream Sub-Area ID | | | | |
| 3.2 Upstream Contributing Area (ac) | | | | |
| 3.3 Target Runoff for Upstream Area (in.) | | | | |
| 3.4 Adjusted CN after all reductions | | | | |
| 3.5 Adjusted RPv (in.) | | | | |
| 3.6 Adjusted Cv (in.) | | | | |
| 3.7 Adjusted Fv (in.) | | | | |

| **Step 4 - RPv Calculations for Combined LOD** | |
|---|---|
| 4.1 Combined LOD (ac) | 1.35 |
| 4.2 Weighted RCN | 71.79 |
| 4.3 Weighted RPv (in.) | 0.97 |
| 4.4 Weighted Target Runoff (in.) | 0.88 |
| 4.5 Estimated Annual Runoff (in.) | 12.54 |
| 4.6 Req'd Runoff to be Managed within LOD (in.) | 0.09 |
| 4.7 Req'd Runoff to be Managed within LOD (%) | 10% |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #4 |
| **LOCATION (County):** | Sussex |
| **UNIT HYDROGRAPH:** | STD |

**OUTSIDE LIMIT OF DISTURBANCE (OLOD) WORKSHEET**

## Step 1 - Site Data

| | |
|---|---|
| 1.1 Total Contributing Area (ac) | N/A |
| 1.2 C.A. RCN | N/A |
| 1.3 LOD Area (ac) | N/A |
| 1.4 LOD RCN | N/A |
| 1.5 Outside LOD Area (ac) | N/A |
| 1.6 Outside LOD RCN | N/A |

## Step 2 - Time of Concentration

| FLOW TYPE | 2.1 LENGTH (feet) | 2.2 SLOPE (ft./ft.) | 2.3 SURFACE CODE | 2.4 MANNINGS "n" | 2.5 VELOCITY (ft./sec.) | 2.6 TRAVEL TIME (hrs) |
|---|---|---|---|---|---|---|
| *Sheet* | | | | ---------- | N/A | 0.00 |
| | | | | ---------- | N/A | 0.00 |
| | | | | ---------- | N/A | 0.00 |
| *Shallow Concentrated* | | | | N/A | ---------- | 0.00 |
| | | | | N/A | ---------- | 0.00 |
| | | | | N/A | ---------- | 0.00 |
| *Open Channel* | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |
| | | | N/A | | | 0.00 |

2.7 Time of Concentration (Tc) 0.10

***Sheet Flow Surface Codes***

a smooth surface
b fallow (no residue)
c cultivated < 20% Res.
d cultivated > 20% Res.
e grass - range, short
f grass, dense
g grass, bermuda
h woods, light
i woods, dense
j range, natural

***Shallow Concentrated Surface Codes***

u unpaved surface
p paved surface

## Step 3 - Peak Discharge

| | | |
|---|---|---|
| 3.1 Unit Hydrograph Type | STD | |
| 3.2 Frequency (yr) | 10 | 100 |
| 3.3 24-HR Rainfall, P (in.) | 5.3 | 9.2 |
| 3.4 Initial Abstraction, Ia (in.) | #N/A | #N/A |
| 3.5 Ia/P ratio | #N/A | #N/A |
| 3.6 Unit Peak Discharge, qu (csm/in) | #N/A | #N/A |
| 3.7 Runoff (in.) | #VALUE! | #VALUE! |
| 3.8 Peak Discharge, qp (cfs) | #VALUE! | #VALUE! |
| 3.9 Equiv. unit peak discharge (cfs/ac) | 0.00 | 0.00 |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #4
**LOCATION (County):** Sussex

## RESOURCE PROTECTION EVENT (RPv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Type | 0-No BMP | Type | -- | Type | -- | Type | -- | Type | -- |
| ***Step 1 - Calculate Initial RPv*** | **Data** | | | | | | | | | |
| 1.1 Total contributing area to BMP (ac) | 1.35 | | | | | | | | | |
| 1.2 Initial RCN | 71.79 | | | | | | | | | |
| 1.3 RPv for Contributing Area (in.) | 0.97 | | | | | | | | | |
| 1.4 Req'd RPv to be Managed for Contributing Area (in.) | 0.09 | | | | | | | | | |
| 1.5 Req'd RPv to be Managed for Contributing Area (%) | 10% | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Retention volume provided (cu. ft.) | | | | | | | | | | |
| 2.2 Retention reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 2.3 Retention reduction volume (ac-ft) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.4 Retention reduction volume (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.5 Runoff volume after retention reduction (in.) | 0.97 | | N/A | | N/A | | N/A | | N/A | |
| 2.6 Adjusted CN* | 71.67 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Annual CN (ACN) | 71.79 | | N/A | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff (in.) | 12.54 | | N/A | | N/A | | N/A | | N/A | |
| 3.3 Proportion A/B soils in BMP footprint (%) | 0% | | 0% | | 0% | | 0% | | 0% | |
| 3.4 Annual runoff reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 3.5 Annual runoff after reduction (in.) | 12.54 | | N/A | | N/A | | N/A | | N/A | |
| 3.6 Adjusted ACN | 71.79 | | N/A | | N/A | | N/A | | N/A | |
| 3.7 Annual Runoff Reduction Allowance for RPv (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate RPv with BMP Reductions*** | | | | | | | | | | |
| 4.1 RPv Runoff Manangement Provided (cu. ft.) | 0 | | N/A | | N/A | | N/A | | N/A | |
| 4.2 RPv runoff volume after all reductions (in.) | 0.97 | | N/A | | N/A | | N/A | | N/A | |
| 4.3 RPv runoff volume after all reductions (cu.ft.) | 4,753 | | N/A | | N/A | | N/A | | N/A | |
| 4.4 Total RPv runoff reduction (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| 4.5 Total RPv runoff reduction (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 4.6 Adjusted CN after all reductions* | 71.67 | | N/A | | N/A | | N/A | | N/A | |
| 4.7 Adjusted equivalent annual runoff (in.) | 12.47 | | N/A | | N/A | | N/A | | N/A | |
| 4.8 RPv Compliance Met Through Runoff Reduction? | NO | | N/A | | N/A | | N/A | | N/A | |
| 4.9 Runoff Reduction Credit, if Applicable (cu.ft) | N/A | | N/A | | N/A | | N/A | | N/A | |
| ***Step 5 - Determine Residual Volume to be Managed or Offset*** | | | | | | | | | | |
| 5.1 RPv Residual Volume (in.) | 0.09 | | N/A | | N/A | | N/A | | N/A | |
| 5.2 RPv Residual Volume (cu.ft./ac) | 338 | | N/A | | N/A | | N/A | | N/A | |
| 5.3 Residual Volume to be Managed or Offset (cu.ft.) | 457 | | N/A | | N/A | | N/A | | N/A | |
| 5.4 RPv avg. discharge rate for 48-hr detention (cfs) | 0.003 | | N/A | | N/A | | N/A | | N/A | |
| 5.5 RPv max. discharge rate for 48-hr detention (cfs) | 0.013 | | N/A | | N/A | | N/A | | N/A | |

***NOTE: No additional runoff reduction credit can be taken for surface recharge practices once the "Adjusted CN after all reductions" (Step 4.6) reaches the equivalent CN for the native soil-cover condition of the BMP footprint itself (i.e. for Sheet Flow to Turf Filter Strip on B soils Step 4.6 cannot be below 61). If this occurs contact the DNREC – SSP for further guidance.**

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #4
**TMDL WATERSHED:** Nanticoke River

## TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET

| | BMP 1 | | | | BMP 2 | | | | BMP 3 | | | | BMP 4 | | | | BMP 5 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type: | 0-No BMP | | | Type: | -- | | | Type: | -- | | | Type: | -- | | | Type: | -- | | |
| ***Step 1 - Calculate Annual Runoff Volume*** | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS | Data | TN | TP | TSS |
| 1.1 Total contributing area to BMP (ac) | 1.35 | | | | | | | | | | | | | | | | | | | |
| 1.2 Initial RCN | 72 | | | | | | | | | | | | | | | | | | | |
| 1.3 Annual runoff volume (in.) | 12.54 | | | | | | | | | | | | | | | | | | | |
| 1.4 Annual runoff volume (liters) | 1.74E+06 | | | | | | | | | | | | | | | | | | | |
| ***Step 2 - Calculate Annual Pollutant Load*** | | | | | | | | | | | | | | | | | | | | |
| 2.1 EMC (mg/L) | | 2.80 | 0.49 | 90 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 2.2 Load (mg/yr) | | 4.87E+06 | 8.53E+05 | 1.57E+08 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 2.3 Stormwater Load (lb/ac/yr) | | 7.96 | 1.39 | 256 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| ***Step 3 - Adjust for Pollutant Reduction*** | | | | | | | | | | | | | | | | | | | | |
| 3.1 BMP annual runoff reduction (%) | 1% | | | | N/A | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.2 Adjusted annual runoff volume (in) | 12.47 | | | | N/A | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.3 Adjusted annual runoff volume (liters) | 1.73E+06 | | | | N/A | | | | N/A | | | | N/A | | | | N/A | | | |
| 3.4 Adjusted load from annual reductions (lb/ac/yr) | | 7.91 | 1.38 | 254.28 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.5 BMP removal efficiency (%) | | 0% | 0% | 0% | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.6 BMP effluent concentration (mg/L) | | 2.80 | 0.49 | 90.00 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 3.7 Final Adjusted load (lb/ac/yr) | | 7.91 | 1.38 | 254 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| ***Step 4 - Pollutant Reduction Met?*** *(For Informational Purposes)* | | | | | | | | | | | | | | | | | | | | |
| 4.1 TMDL (lb/ac/yr) | | 6.58 | 0.58 | 129 | | | | | | | | | | | | | | | | |
| 4.2 Reduction met? | | NO | NO | NO | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |
| 4.3 Final Adjusted Load (lb/yr) | | 10.68 | 1.87 | 343 | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A | | N/A | N/A | N/A |

| | |
|---|---|
| **PROJECT:** | Bridgeville |
| **DRAINAGE SUBAREA ID:** | POI #4 |
| **LOCATION (County):** | Sussex |

## CONVEYANCE EVENT (Cv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Type:** | **0-No BMP** | **Type:** | **--** | **Type:** | **--** | **Type:** | **--** | **Type:** | **--** |
| ***Step 1 - Calculate Initial Cv*** | **Data** | | **Data** | | **Data** | | **Data** | | **Data** | |
| 1.1 Total contributing area to BMP (ac) | 1.35 | | 1.35 | | 1.35 | | 1.35 | | 1.35 | |
| 1.2 Initial RCN | 71.79 | | | | | | | | | |
| 1.3 10-Year Rainfall (in.) | 5.3 | | | | | | | | | |
| 1.4 Cv runoff volume (in.) | 2.41 | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Storage volume (cu. ft.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.2 Storage volume (ac-ft) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.3 Storage volume (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.4 Runoff volume after reduction (in.) | 2.41 | | N/A | | N/A | | N/A | | N/A | |
| 2.5 CN* | 71.79 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Runoff reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff after reduction (in.) | 2.41 | | N/A | | N/A | | N/A | | N/A | |
| 3.3 Adjusted ACN | 71.79 | | N/A | | N/A | | N/A | | N/A | |
| 3.4 Event-based runoff reduction (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate Cv with BMP Reductions*** | | | | | | | | | | |
| 4.1 Cv runoff volume after all reductions (in.) | 2.41 | | N/A | | N/A | | N/A | | N/A | |
| 4.2 Total Cv runoff reduction (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 4.3 Adjusted RCN for H&H modeling | 71.79 | | N/A | | N/A | | N/A | | N/A | |

**PROJECT:** Bridgeville
**DRAINAGE SUBAREA ID:** POI #4
**LOCATION (County):** Sussex

## FLOODING EVENT (Fv) WORKSHEET

| | BMP 1 | | BMP 2 | | BMP 3 | | BMP 4 | | BMP 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Type:** | **0-No BMP** | **Type:** | **--** | **Type:** | **--** | **Type:** | **--** | **Type:** | **--** |
| ***Step 1 - Calculate Initial Fv*** | **Data** | | **Data** | | **Data** | | **Data** | | **Data** | |
| 1.1 Total contributing area to BMP (ac) | 1.35 | | 1.35 | | 1.35 | | 1.35 | | 1.35 | |
| 1.2 Initial RCN | 71.79 | | | | | | | | | |
| 1.3 100-Year Rainfall (in.) | 9.2 | | | | | | | | | |
| 1.4 Fv runoff volume (in.) | 5.74 | | | | | | | | | |
| ***Step 2 - Adjust for Retention Reduction*** | | | | | | | | | | |
| 2.1 Storage volume (cu. ft.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.2 Storage volume (ac-ft) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.3 Storage volume (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| 2.4 Runoff volume after reduction (in.) | 5.74 | | N/A | | N/A | | N/A | | N/A | |
| 2.5 CN* | 71.79 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 3 - Adjust for Annual Runoff Reduction*** | | | | | | | | | | |
| 3.1 Runoff reduction allowance (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 3.2 Annual runoff after reduction (in.) | 5.74 | | N/A | | N/A | | N/A | | N/A | |
| 3.3 Adjusted ACN | 71.79 | | N/A | | N/A | | N/A | | N/A | |
| 3.4 Event-based runoff reduction (in.) | 0.00 | | N/A | | N/A | | N/A | | N/A | |
| ***Step 4 - Calculate Fv with BMP Reductions*** | | | | | | | | | | |
| 4.1 Fv runoff volume after all reductions (in.) | 5.74 | | N/A | | N/A | | N/A | | N/A | |
| 4.2 Total Fv runoff reduction (%) | 0% | | N/A | | N/A | | N/A | | N/A | |
| 4.3 Adjusted RCN for H&H modeling | 71.79 | | N/A | | N/A | | N/A | | N/A | |

| | | | | |
|---|---|---|---|---|
| **PROJECT:** | Bridgeville | | | |
| **DRAINAGE SUBAREA ID:** | POI #4 | | | |
| **COUNTY:** | Sussex | **UNIT HYDROGRAPH:** | STD | |
| **TMDL Watershed:** | Nanticoke River | **VERSION:** | **DURMM v2.51.220414** | |

## DURMM OUTPUT WORKSHEET

***Site Data***

| | | | | |
|---|---|---|---|---|
| Contributing Area to BMPs (ac.) | 1.35 | | | |
| C.A. RCN | 71.79 | | | |
| Subarea LOD (ac.) | 1.35 | | | |
| Subarea RCN | 71.79 | | | |
| Upstream Subarea ID | N/A | N/A | N/A | N/A |
| Upstream Subarea LOD (ac.) | 0.00 | 0.00 | 0.00 | 0.00 |
| Combined LOD with Upstream Areas (ac.) | 1.35 | | | |
| Combined RCN with Upstream Areas (ac.) | 71.79 | | | |
| Watershed TMDL-TN (lb/ac/yr) | 6.58 | | | |
| Watershed TMDL-TP (lb/ac/yr) | 0.58 | | | |
| Watershed TMDL-TSS (lb/ac/yr) | 129 | | | |

***BMP Data***

| | **BMP 1** | **BMP 2** | **BMP 3** | **BMP 4** | **BMP 5** |
|---|---|---|---|---|---|
| | 0-No BMP | -- | -- | -- | -- |
| RPv runoff volume after all reductions (in.) | 0.97 | N/A | N/A | N/A | N/A |
| Total RPv runoff reduction (in.) | 0.00 | N/A | N/A | N/A | N/A |
| Total RPv runoff reduction (%) | 0% | N/A | N/A | N/A | N/A |
| RPv Compliance Met Through Runoff Reduction? | NO | N/A | N/A | N/A | N/A |
| RPv Residual Volume (cu. ft.) | 457 | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TN (lb/ac/yr) | 7.91 | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TP (lb/ac/yr) | 1.38 | N/A | N/A | N/A | N/A |
| Adjusted pollutant load, TSS (lb/ac/yr) | 254.28 | N/A | N/A | N/A | N/A |
| Cv runoff volume after all reductions (in.) | 2.41 | N/A | N/A | N/A | N/A |
| Fv runoff volume after all reductions (in.) | 5.74 | N/A | N/A | N/A | N/A |

***Resource Protection Event (RPV)***

| | | | |
|---|---|---|---|
| RPv for Contributing Area (in.) | 0.97 | | |
| Annual Runoff for Contributing Area (in.) | 12.54 | | |
| Req'd RPv to be Managed for Contributing Area (in.) | 0.09 | | |
| Req'd RPv to be Managed for Contributing Area (%) | 10% | | |
| RPv Runoff Management Required (cu. Ft.) | 457 | | |
| RPv Runoff Management Provided (cu. Ft.) | 0 | | |
| RPv Residual Volume (cu.ft.) | 457 | SHORTFALL | (Requires additional management or offset) |
| C.A. RPv avg. discharge rate (cfs) | 0.00 | | |
| C.A. RPv max. discharge rate (cfs) | 0.01 | | |
| TN Pollutant Load (lb/yr) | 10.68 | | |
| TP Pollutant Load (lb/yr) | 1.87 | | |
| TSS Pollutant Load (lb/yr) | 343 | | |

***Conveyance Event (Cv)***

| | |
|---|---|
| Cv runoff volume (in.) | 2.41 |
| Adjusted RCN for H&H Modeling (CN*) | 71.79 |

***Flooding Event (Fv)***

| | |
|---|---|
| Fv runoff volume (in.) | 5.74 |
| Equivalent RCN for H&H Modeling (CN*) | 71.79 |

***Adjusted Subarea Data for Downstream DURMM Modeling***

| | |
|---|---|
| Subarea ID | POI #4 |
| Contributing Area (ac.) | 1.35 |
| Weighted Target Runoff (in.) | 0.88 |
| Adjusted CN after all reductions | 71.67 |
| Adjusted RPv (in.) | 0.97 |
| Adjusted Cv (in.) | 2.41 |
| Adjusted Fv (in.) | 5.74 |

***Adjusted Subarea Data for Nutrient Protocol Modeling***

| | |
|---|---|
| Contributing Area (ac.) | 1.35 |
| LOD Area (ac.) | 1.35 |
| TN Pollutant Load (lb/yr) | 10.68 |
| TP Pollutant Load (lb/yr) | 1.87 |
| TSS Pollutant Load (lb/yr) | 343 |
| Percent Impervious Cover | 36% |

***Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest***

| | | | |
|---|---|---|---|
| Subarea ID | POI #4 | | |
| Contributing Area (ac.) | 1.35 | | |
| RPv Residual Volume (cu.ft.) | 457 | SHORTFALL | (Requires additional management or offset) |
| Adjusted CN after all reductions | 71.67 | | |
| Cv RCN for H&H Modeling | 71.79 | | |
| Fv RCN for H&H Modeling | 71.79 | | |
| TN Pollutant Load (lb/yr) | 10.68 | | |
| TP Pollutant Load (lb/yr) | 1.87 | | |
| TSS Pollutant Load (lb/yr) | 343 | | |

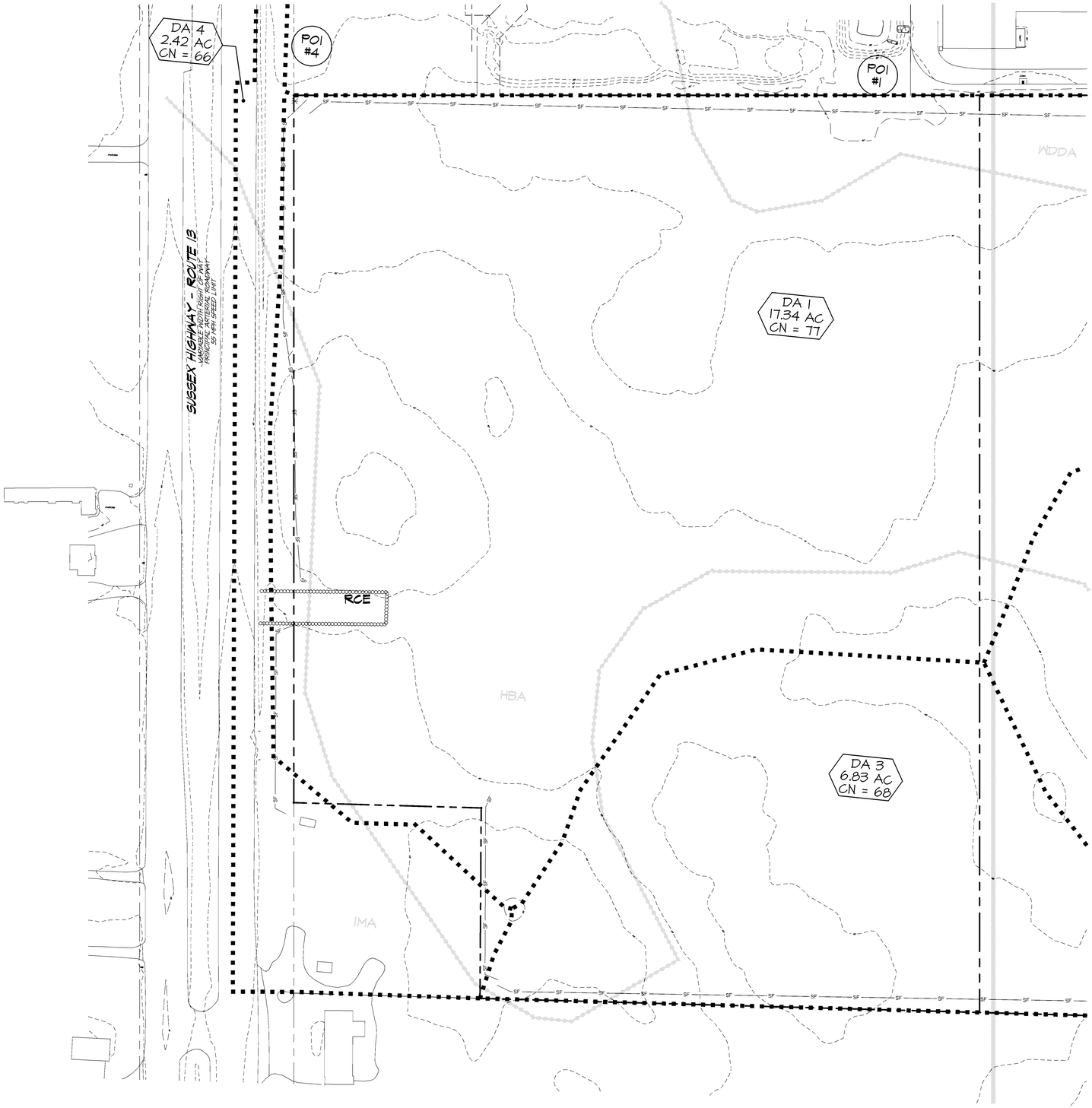
## Summary Table for Site RPv Compliance[1]

| Project: | Bridgeville | | | | TMDL WS: | Namticoke River | | | Rel. 1 |
|---|---|---|---|---|---|---|---|---|---|
| Ref. # | Sub-Area ID[2] | Contributing Area[3] (ac) | Runoff[4] (in) | Runoff (cf) | RPv Runoff Management (cf) | | TN Pollutant Load[7] (lb/yr) | TP Pollutant Load[7] (lb/yr) | TSS Pollutant Load[7] (lb/yr) |
| | | | | | Required[5] | Provided[6] | | | |
| *Section I - Complete this section for total site LOD management requirement* | | | | | | | | | |
| 0 | Total Site LOD | | | 0.0 | | | | | |
| *Section II - Complete this section for BMPs provided for partial LOD management OR sub-area by sub-area management* | | | | | | | | | |
| 1 | POI #1 | 10.21 | 1.91 | 70789.0 | 29294 | 50355 | 44.49 | 7.79 | 1430 |
| 2 | POI #2 | 14.21 | 1.64 | 84595.0 | 42832 | 74561 | 12.16 | 2.13 | 391 |
| 3 | POI #3 | 24.67 | 1.24 | 111044.6 | 72232 | 98761 | 13.85 | 2.42 | 445 |
| 4 | POI #4 | 1.35 | 0.97 | 4753.5 | 457 | 0 | 10.68 | 1.87 | 343 |
| 5 | | | | 0.0 | | | | | |
| 6 | | | | 0.0 | | | | | |
| 7 | | | | 0.0 | | | | | |
| 8 | | | | 0.0 | | | | | |
| 9 | | | | 0.0 | | | | | |
| 10 | | | | 0.0 | | | | | |
| 11 | | | | 0.0 | | | | | |
| 12 | | | | 0.0 | | | | | |
| 13 | | | | 0.0 | | | | | |
| 14 | | | | 0.0 | | | | | |
| 15 | | | | 0.0 | | | | | |
| 16 | | | | 0.0 | | | | | |
| 17 | | | | 0.0 | | | | | |
| 18 | | | | 0.0 | | | | | |
| 19 | | | | 0.0 | | | | | |
| 20 | | | | 0.0 | | | | | |
| **Totals** | | | | | **144815 cf** | **223677 cf** | **81.18 lb/yr** | **14.21 lb/yr** | **2609 lb/yr** |
| **RPv Runoff Reduction Goal Met?** | | **YES** | | | | | | | |
| **Total Credit/Shortfall** | | **78862 cf** | **Credit** | | | | | | |

Notes:
1. All subareas must lie within the same HUC 8 watershed.
2. Only the most downstream sub-area information should be entered for a series of sub-areas that drain to each other or for a treatment train.
3. From DURMM v2.5 Report, Line 7 OR Approved Hydrologic Software Report
4. From DURMM v2.5 Report, Line 35 OR Approved Hydrologic Software Report
5. From DURMM v2.5 Report, Line 39 OR Approved Hydrologic Software Report
6. From DURMM v2.5 Report, Line 40 OR Approved Hydrologic Software Report
7. From DURMM v2.5 Report, Lines 44-46 OR Complete Sheet 2

# Appendix D

Drainage Area Plans




## SOIL LEGEND

| SYMBOL | NAME | HSG |
|---|---|---|
| IgA | INGLESIDE SANDY LOAM, 0-2% SLOPES | A |
| ImB | INGLESIDE-HAMMONTON-FALLSINGTON COMPLEX, 0-5% SLOPES | A |
| HbA | HAMBROOK SANDY LOAM, 0-2% SLOPES | B |
| WddA | WOODSTOWN SANDY LOAM, 0-2% SLOPES, NORTHERN TIDEWATER AREA | C |

0 30 60 120 180
GRAPHIC SCALE
1"=60'

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ANYWHERE IN *DELAWARE*
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FAX: 610.274.0567

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BRIDGEVILLE TOWN CENTER
NORTHWEST FORK HUNDRED
SUSSEX COUNTY, DELAWARE

DATE: 7-15-21
DRAWN BY: DBH
CHECKD. BY: CMK
PROJ. NO.: 4210
SCALE: 1" = 60'
CAD FILE NAME: 4210SDP.PRO

DWG. NO.
SWM 2

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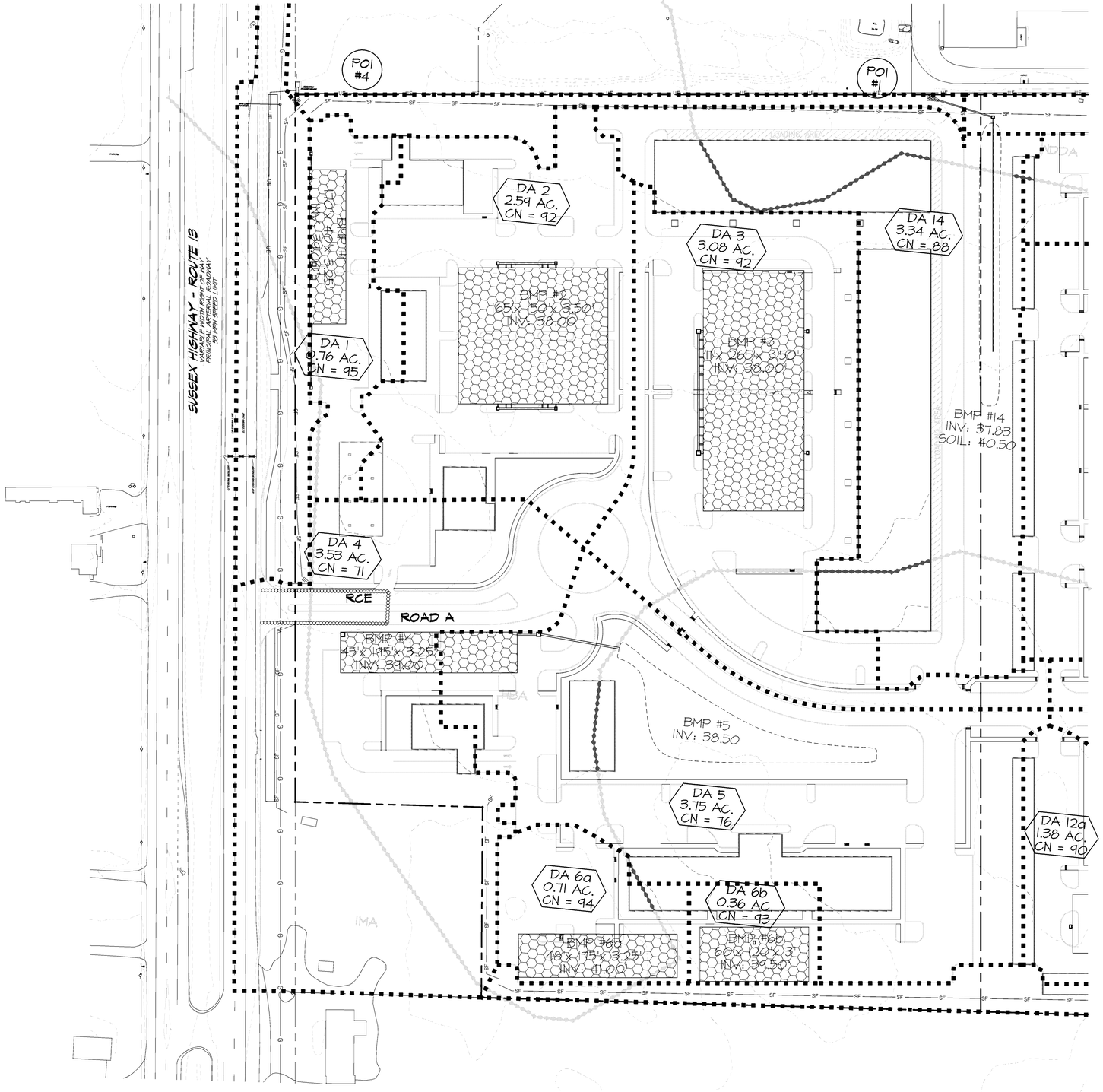
| | |
|---|---|
| DATE: | 7-15-21 |
| DRAWN BY: | DBH |
| CHECKD. BY: | CMK |
| PROJ. NO.: | 4270 |
| SCALE: | 1" = 60' |
| CAD FILE NAME: | 4270SDP.PRO |

DWG. NO.
SWM 3




0 30 60 120 180
GRAPHIC SCALE
1"=60'

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SUSSEX COUNTY, DELAWARE

DATE: 7-15-21
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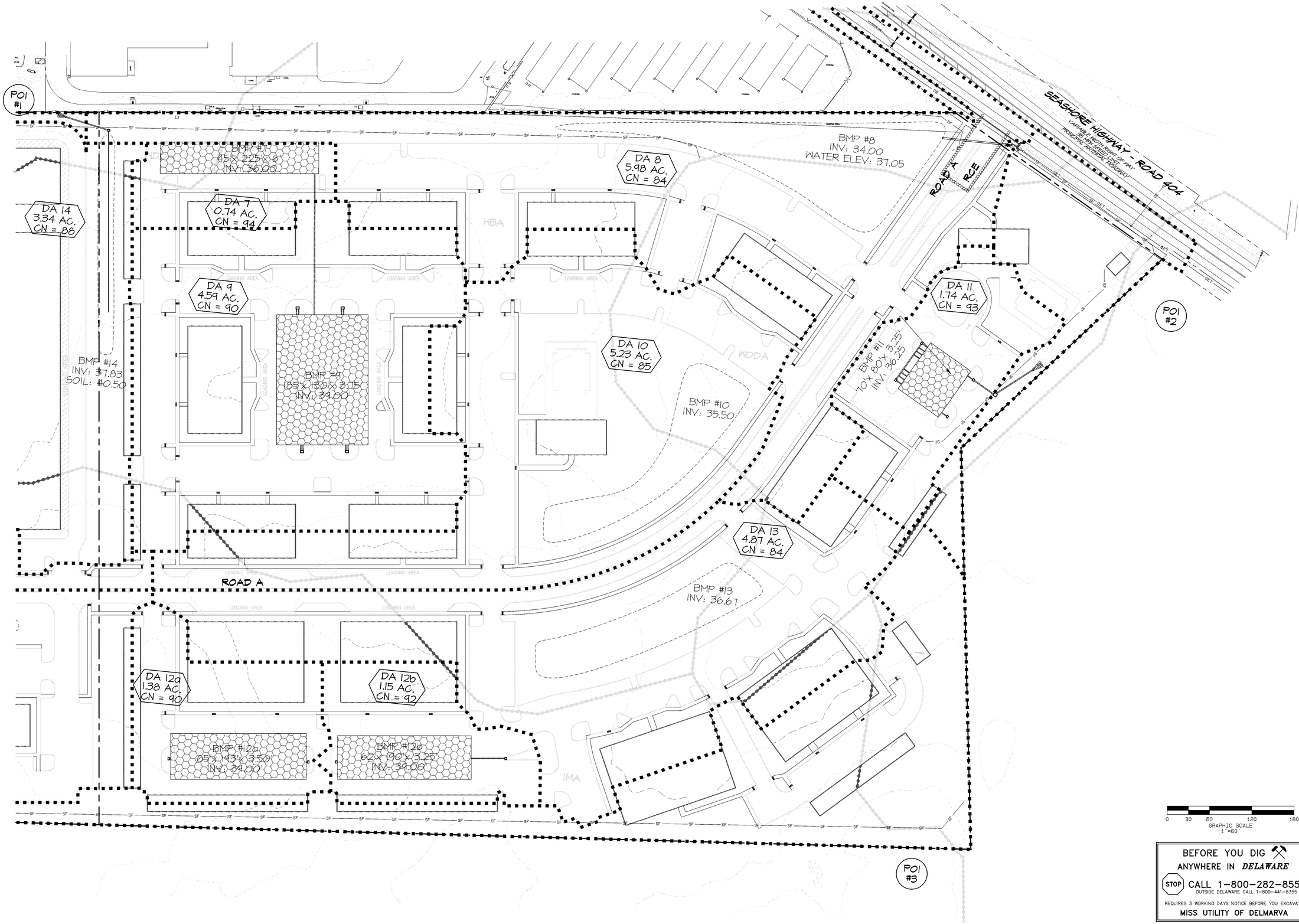
CHECKD. BY: CMK
PROJ. NO.: 4210
SCALE: 1" = 60'
CAD FILE NAME: 4210SDP.PRO

DWG. NO.
SWM 4




0 30 60 120 180
GRAPHIC SCALE
1"=60'

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SUSSEX COUNTY, DELAWARE

DATE: 7-15-21
DRAWN BY: DBH
CHECKD. BY: CMK
PROJ. NO.: 4270
SCALE: 1" = 60'
CAD FILE NAME: 4270SSP.PRO

DWG. NO.
SWM 5