

# **Bridgeville Town Center**

Town of Bridgeville

Sussex County, Delaware

# **STORMWATER REPORT**

July 2022

HC#4270

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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 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.

Charma	POI #1			POI #2		POI #3			POI #4			
Storm	Peak Rate (cfs)		Peak Rate (cfs)		Peak Rate (cfs)			Peak Rate (cfs)				
event	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

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

#### Include DURMM RPv Summary Table.

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

Drainage	Contributing	Runoff	Runoff	Requ	uired
Area	Area (ac)	(in)	(cf)	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

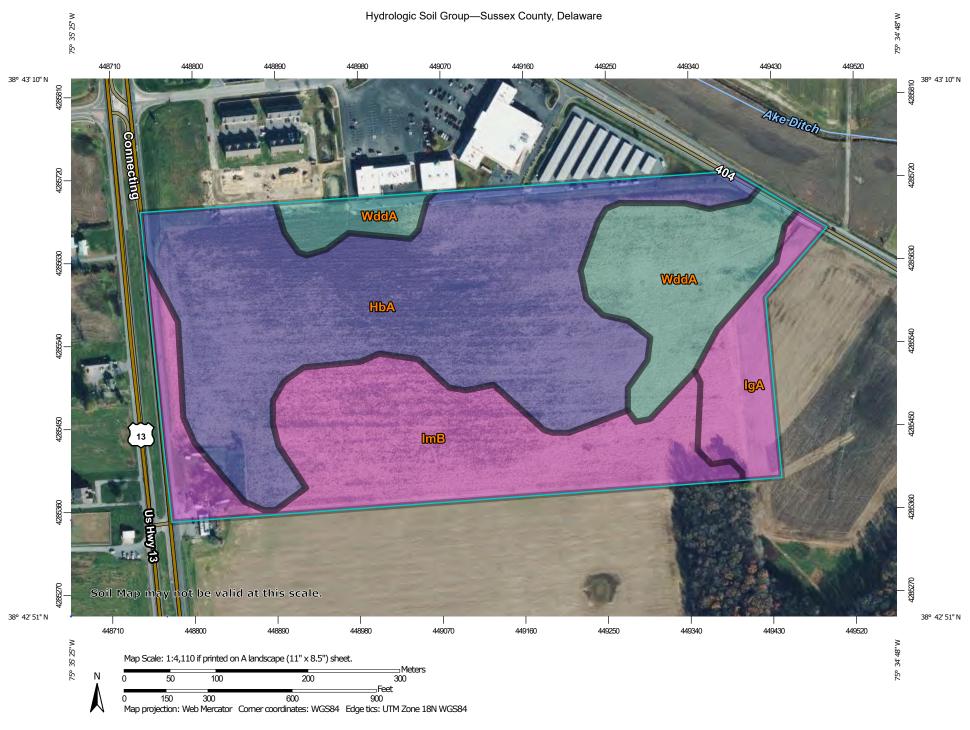
# Sizing information for the BMP(s) meeting sizing guidelines according to Post Construction Stormwater BMP Standards and Specifications.

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.

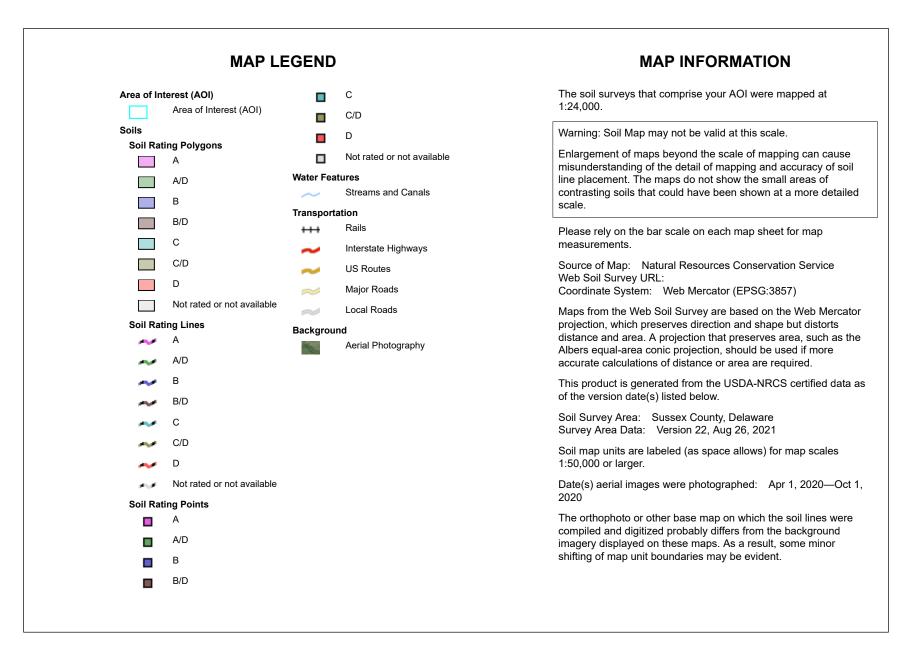
#### BMP capacity information for any detention practices to be used.

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

### Appendix A Soil Data



USDA Natural Resources Conservation Service Web Soll Survey National Cooperative Soil Survey





### 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	В	27.4	48.3%
IgA	Ingleside sandy loam, 0 to 2 percent slopes	Α	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 Inter	rest	1	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.

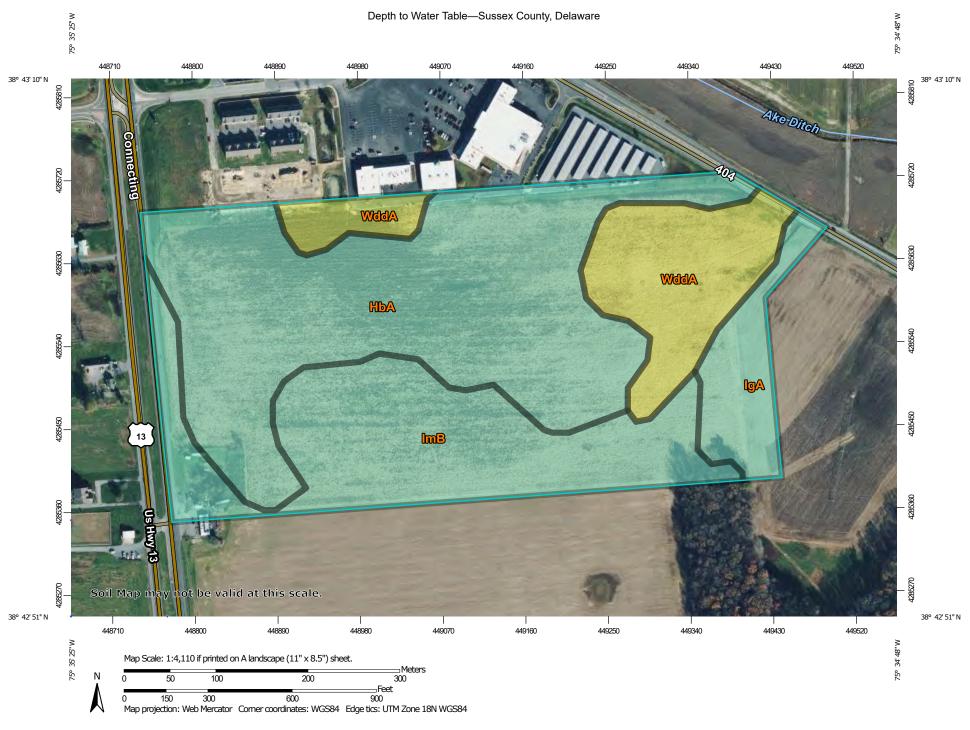
Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over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

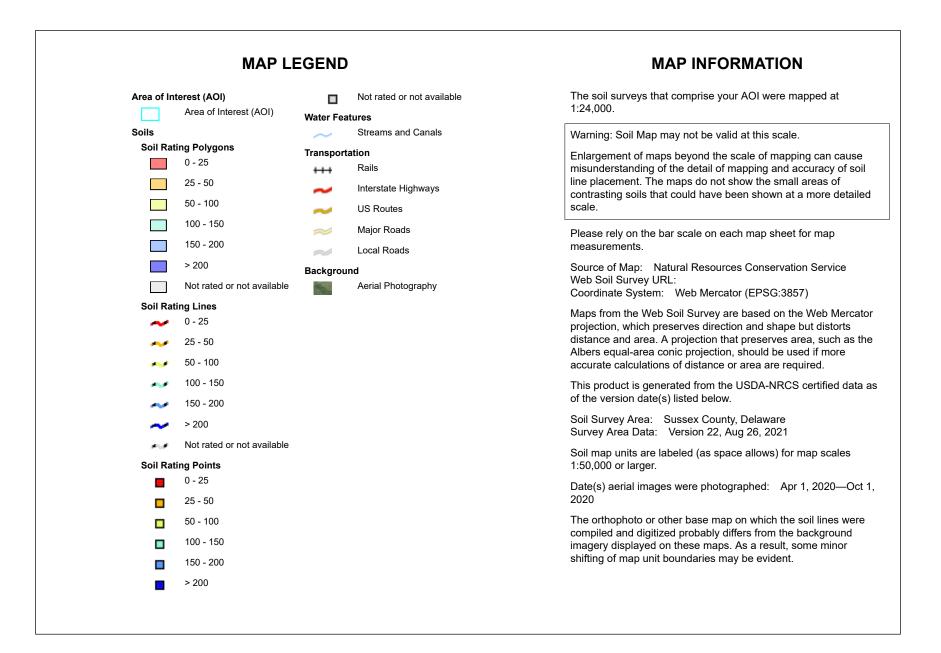
### **Rating Options**

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher

JSDA



USDA Natural Resources Conservation Service Web Sdill Survey National Cooperative Soil Survey





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 Inter	rest	56.9	100.0%	

### Depth to Water Table

### Description

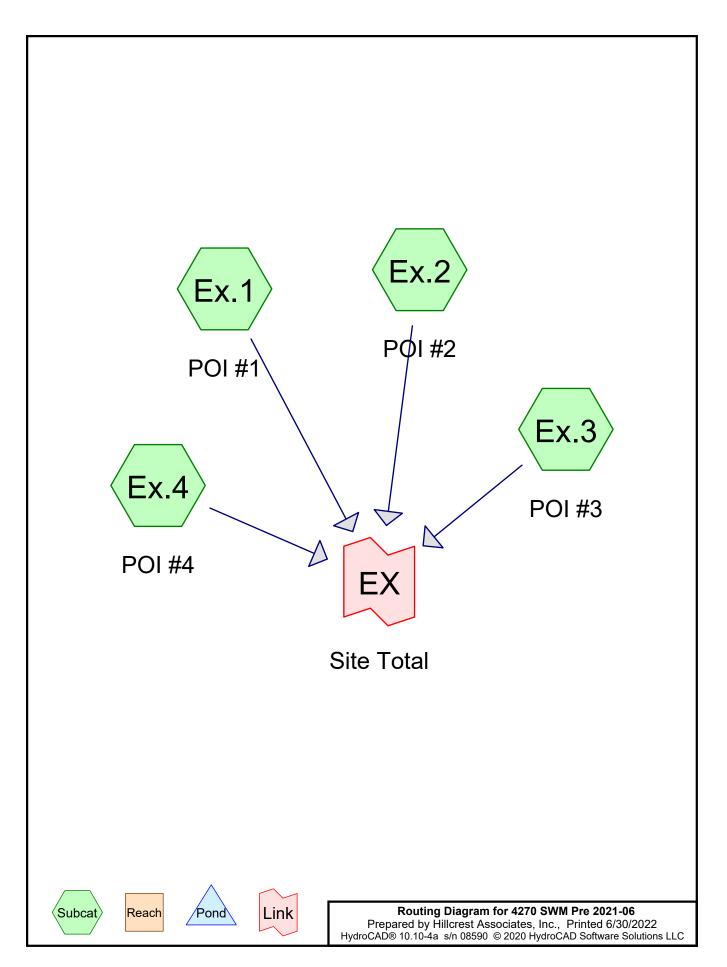
"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone 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<sup>™</sup> Models



4270 SWM Pre 2021-06	NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05
Prepared by Hillcrest Associates, Inc.	Printed 6/30/2022
HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Softw	are Solutions LLC Page 2

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

SubcatchmentEx.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 sf2.65% 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"

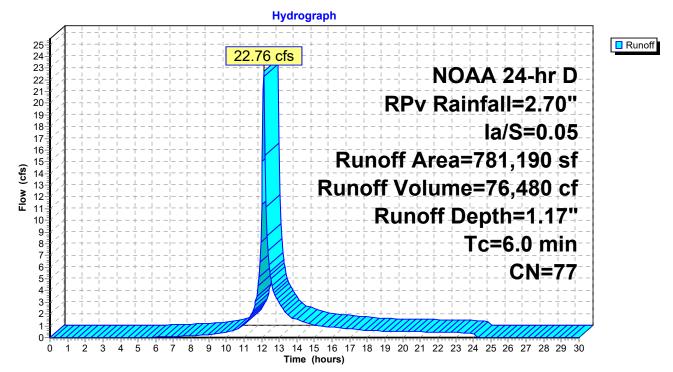
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

	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 Length (min) (feet)	Slop (ft/	



**Direct Entry, Minimum** 

#### Subcatchment Ex.1: POI #1



#### 4270 SWM Pre 2021-06

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

Industry         Industry         Industry         Industry         Industry         Industry           0.00         0.00         0.00         0.00         27.00         2.70         1.17         0.00           1.00         0.03         0.00         0.00         27.00         2.70         1.17         0.00           2.00         0.06         0.00         0.00         28.00         2.70         1.17         0.00           2.50         0.08         0.00         0.00         28.50         2.70         1.17         0.00           3.50         0.12         0.00         0.00         29.50         2.70         1.17         0.00           4.00         0.14         0.00         0.00         29.50         2.70         1.17         0.00           5.50         0.21         0.00         0.00         30.00         2.70         1.17         0.00           4.50         0.16         0.00         0.00         30.00         2.70         1.17         0.00           5.50         0.21         0.00         0.02         30.00         2.70         1.17         0.00           5.60         0.28         0.01         0.12	Time	Precip.	Excess	Runoff	Time	Precip.	Excess	Runoff
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	<u>(hours)</u> 0.00	(inches) 0.00	(inches) 0.00	(cfs) 0.00	(hours) 26.50	(inches) 2 70	(inches) 1 17	(cfs) 0.00
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2.00       0.06       0.00       0.00       28.50       2.70       1.17       0.00         3.00       0.10       0.00       0.00       29.50       2.70       1.17       0.00         3.50       0.12       0.00       0.00       30.00       2.70       1.17       0.00         4.00       0.14       0.00       0.00       30.00       2.70       1.17       0.00         4.50       0.16       0.00       0.00       30.00       2.70       1.17       0.00         5.50       0.14       0.00       0.00       30.00       2.70       1.17       0.00         5.50       0.21       0.00       0.02       2.70       1.17       0.00         6.00       0.28       0.01       0.02       2.70       1.17       0.00         7.50       0.32       0.01       0.12       0.02       1.17       0.00         7.50       0.32       0.01       0.12       0.12       1.14       1.15       1.15         8.50       0.48       0.02       0.24       9.50       1.11       1.15       1.15         10.50       0.60       0.64       1.13       1.14 <td< td=""><td></td><td></td><td></td><td></td><td>27.50</td><td></td><td></td><td></td></td<>					27.50			
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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       0.26       0.00       0.06         7.00       0.28       0.01       0.09         7.50       0.32       0.01       0.15         8.50       0.35       0.01       0.15         8.50       0.39       0.02       0.24         9.50       0.48       0.03       0.34         10.00       0.54       0.04       0.47         10.50       0.60       0.64         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 <b>5.33</b> 13.00       2.00       0.71       1.93         14.00       2.16       0.81       1.53         15.50       2.31       0.91       0.95         16.00       2.44       1.								
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24.00 <b>2.701.17</b> 0.3824.502.701.170.0025.002.701.170.0025.502.701.170.00								
24.502.701.170.0025.002.701.170.0025.502.701.170.00								
25.00 2.70 1.17 0.00 25.50 2.70 1.17 0.00								
	25.00	2.70	1.17	0.00				
20.00 2.70 1.17 0.00								
	20.00	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"

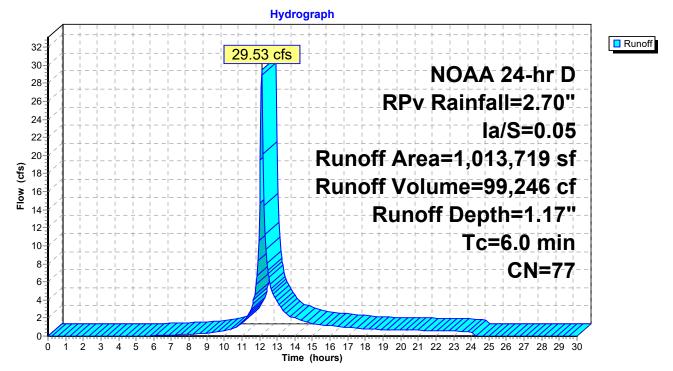
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05

	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 Length	Slop	
	(min) (feet)	(ft/	t) (ft/sec) (cfs)



#### **Direct Entry, Minimum**

#### Subcatchment Ex.2: POI #2



#### 4270 SWM Pre 2021-06

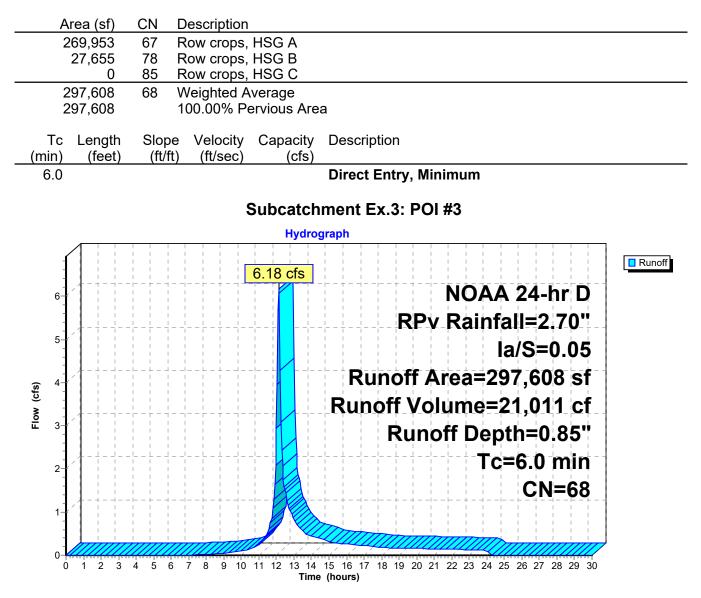
#### Hydrograph for Subcatchment Ex.2: POI #2

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7.500.320.010.158.000.350.010.208.500.390.020.25	
8.00 0.35 0.01 0.20 8.50 0.39 0.02 0.25	
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 <b>14.71</b>	
12.50 1.84 0.61 <b>6.92</b>	
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 <b>2.70 1.17</b> 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	
I	

#### 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



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

Time	Precip.	Excess	Runoff	Time	Precip.	Excess	Runoff
(hours)	(inches)	(inches)	(cfs)	(hours)	(inches)	(inches)	(cfs)
0.00	0.00	0.00	0.00	26.50	2.70	0.85	0.00
0.50	0.02	0.00	0.00	27.00	2.70	0.85	0.00
1.00	0.03	0.00	0.00	27.50	2.70	0.85	0.00
1.50	0.05	0.00	0.00	28.00	2.70	0.85	0.00
2.00	0.06	0.00	0.00	28.50	2.70	0.85	0.00
2.50	0.08	0.00	0.00	29.00	2.70	0.85	0.00
3.00	0.10	0.00	0.00	29.50	2.70	0.85	0.00
3.50	0.12	0.00	0.00	30.00	2.70	0.85	0.00
4.00	0.14	0.00	0.00				
4.50	0.16	0.00	0.00				
5.00 5.50	0.18 0.21	0.00 0.00	0.00 0.00				
6.00	0.21	0.00	0.00				
6.50	0.23	0.00	0.00				
7.00	0.20	0.00	0.00				
7.50	0.32	0.00	0.01				
8.00	0.35	0.00	0.02				
8.50	0.39	0.00	0.02				
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 15.00	2.22 2.27	0.59	0.38 0.32				
15.00	2.27	0.62 0.64	0.32				
16.00	2.31	0.66	0.26				
16.50	2.38	0.67	0.24				
17.00	2.42	0.69	0.24				
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 23.50	2.67 2.68	0.83 0.84	0.13 0.12				
23.50	2.00 <b>2.70</b>	0.84 <b>0.85</b>	0.12				
24.00	2.70	0.85	0.12				
25.00	2.70	0.85	0.00				
25.50	2.70	0.85	0.00				
26.00	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, <sup>-</sup>	196		Ex. Roadwa	ау		
*		670		Ex. Drivewa			
*		970		Grass, HSG			
*		579		Grass, HSC			
	8,: 20,9	555 050		Grass, HSG			
		950 174		Row crops, Row crops,			
	Γ,	0		Row crops,			
*	2.4	487		Ex. Drivewa		urbed)	
*	25,			Grass, HSG			
*	9,3	328		Grass, HSG			
	125,6			Veighted A			
	82,3			5.51% Per			
	43,3	353		34.49% Imp	pervious Ar	rea	
	Tc Le	ngth	Slope	Velocity	Capacity	Description	
		feet)	(ft/ft)	(ft/sec)	(cfs)	Decemption	
	6.0	,				Direct Entry, Minimum	
				5	Subcatch	hment Ex.4: POI #4	
					Hydro	ograph	
							un off
		+	+		2.93 cfs	· - ⊢ - + ⊢ - + - + + - + - + - +	Runoff
	3-*					NOAA 24-hr D	
						RPv Rainfall=2.70"	
	1					la/S=0.05	
		+	- +	 -			
	2- 					Runoff Area=125,688 sf	
	Flow (cfs)					Runoff Volume=9,915 cf	
	<u>0</u>						
	<b>"</b>					Runoff Depth=0.95"	
	1/-	+				Tc=6.0 min	
	1-*					IC-0.0 IIIII	
						<b>CN=71</b>	
	] ]						
	0						
		2 3 4	156	7 8 9 10		4 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 ne (hours)	
			-				

#### 4270 SWM Pre 2021-06

#### Prepared by Hillcrest Associates, Inc. HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Software Solutions LLC

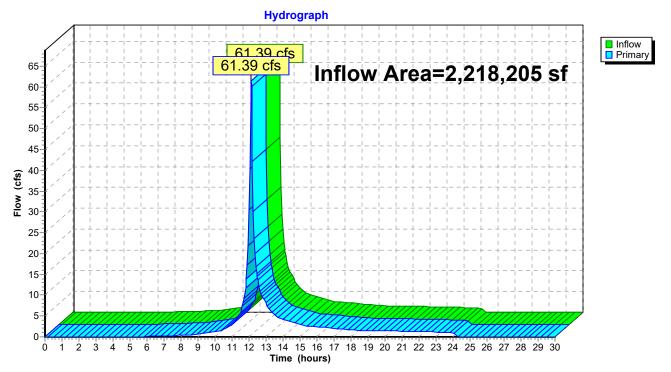
#### Hydrograph for Subcatchment Ex.4: POI #4

Time	Precip.	Excess	Runoff	Time	Precip.	Excess	Runoff
(hours)	(inches)	(inches)	(cfs)	(hours)	(inches)	(inches)	(cfs)
0.00	0.00	0.00	0.00	26.50	2.70	0.95	0.00
0.50	0.02	0.00	0.00	27.00	2.70	0.95	0.00
1.00	0.03	0.00	0.00	27.50	2.70	0.95	0.00
1.50	0.05	0.00	0.00	28.00	2.70	0.95	0.00
2.00	0.06	0.00	0.00	28.50	2.70	0.95	0.00
2.50	0.08	0.00	0.00	29.00	2.70	0.95	0.00
3.00	0.10	0.00	0.00	29.50	2.70	0.95	0.00
3.50	0.12	0.00	0.00	30.00	2.70	0.95	0.00
4.00	0.14	0.00	0.00				
4.50 5.00	0.16 0.18	0.00 0.00	0.00 0.00				
5.50	0.18	0.00	0.00				
6.00	0.21	0.00	0.00				
6.50	0.26	0.00	0.00				
7.00	0.28	0.00	0.00				
7.50	0.32	0.00	0.01				
8.00	0.35	0.00	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 15.00	2.22 2.27	0.67 0.69	0.18 0.15				
15.00	2.27	0.09	0.13				
16.00	2.31	0.72	0.13				
16.50	2.38	0.74	0.12				
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 2.67	0.92	0.06 0.06				
23.00 23.50	2.67	0.93 0.94	0.06				
23.50	2.00 <b>2.70</b>	0.94 <b>0.95</b>	0.00				
24.00	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				

#### Summary for Link EX: Site Total

Inflow Area	a =	2,218,205 sf,	2.65% Impervious,	Inflow Depth = 1.12"	for RPv event
Inflow	=	61.39 cfs @ 1	12.13 hrs, Volume=	206,651 cf	
Primary	=	61.39 cfs @ 1	12.13 hrs, Volume=	206,651 cf, Atter	n= 0%, Lag= 0.0 min

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



#### Link EX: Site Total

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### Hydrograph for Link EX: Site Total

			<b>.</b>	I —:			<b>.</b> .
Time (houro)	Inflow	Elevation	Primary	Time	Inflow	Elevation	Primary
<u>(hours)</u> 0.00	(cfs) 0.00	(feet) 0.00	<u>(cfs)</u> 0.00	(hours) 26.50	(cfs) 0.00	(feet) 0.00	(cfs) 0.00
0.50	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.50	0.00	0.00	0.00
1.50	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.50	0.00	0.00	0.00
2.50	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.50	0.00	0.00	0.00
3.50	0.00	0.00	0.00	30.00	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 6.00	0.07 0.10	0.00 0.00	0.07 0.10				
6.50	0.10	0.00	0.10				
7.00	0.13	0.00	0.13				
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 12.00	5.65 <b>30.41</b>	0.00 0.00	5.65 <b>30.41</b>				
12.00	14.47	0.00	30.41 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 17.50	2.04 1.85	0.00 0.00	2.04 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 23.00	1.19 1.14	0.00 0.00	1.19 1.14				
23.00	1.14	0.00	1.14				
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				
				I			

4270 SWM Pre 2021-06	NOAA 24-hr D	Cv Rainfall=5.30"
Prepared by Hillcrest Associates, Inc.		Printed 6/30/2022
HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Software Solutions LL	.C	Page 13
		-

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 cfAverage Runoff Depth = 2.74"97.35% Pervious = 2,159,343 sf2.65% 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"

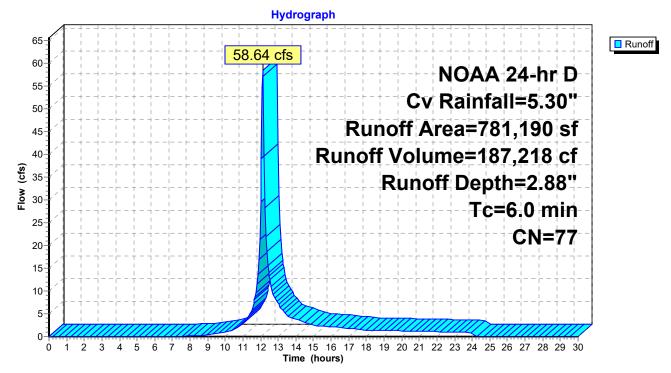
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs NOAA 24-hr D Cv Rainfall=5.30"

	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 Length	Slop	
	(min) (feet)	(ft/	t) (ft/sec) (cfs)



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"

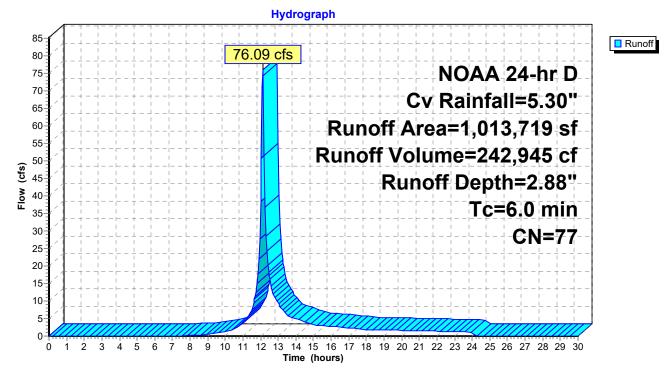
	Area (sf)	CN	Description
*	15,509	98	Ex.Roadway
*	1,542	39	Grass, HSG A
*	9,265	61	Grass, HSG B
*	4,076	74	Grass, HSG C
	265,752	67	Row crops, HSG A
	401,050	78	Row crops, HSG B
	316,525	85	Row crops, HSG C
	1,013,719	77	Weighted Average
	998,210		98.47% Pervious Area
	15,509		1.53% Impervious Area
	Tc Length	Slop	
_	(min) (feet)	(ft/	t) (ft/sec) (cfs)

(feet)	(ft/ft)	(ft/sec)	(cfs)
(1001)	(1410)	(10000)	(010)



#### **Direct Entry, Minimum**

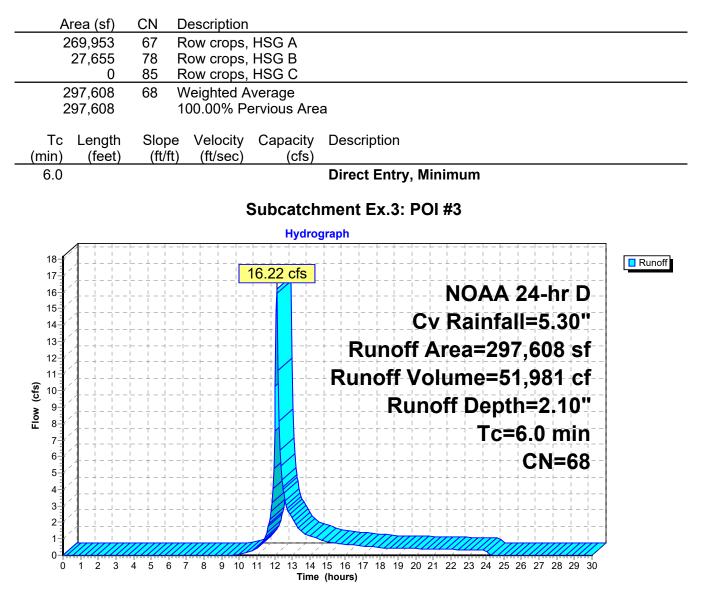
#### Subcatchment Ex.2: POI #2



#### 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"



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

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

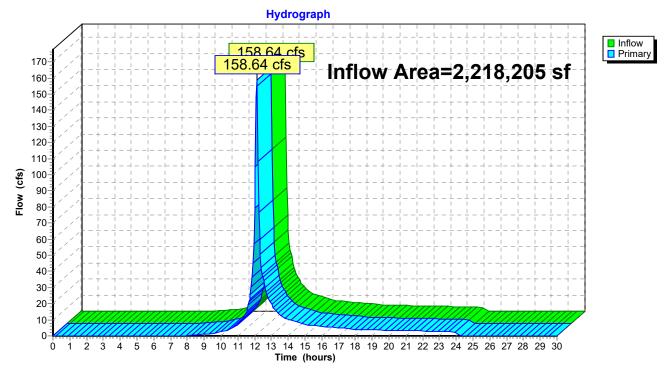
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs NOAA 24-hr D Cv Rainfall=5.30"

	A	rea (sf)	CN E	Description			
*		39,196		Ex. Roadwa			
*		1,670		Ex. Drivewa			
*		3,970 6,579		Grass, HSG Grass, HSG			
*		8,555		Grass, HSC			
		20,950		Row crops,			
		7,174	78 F	Row crops,	HSG B		
*		0		Row crops,		rh a d)	
*		2,487 25,779			ay (Undistu S A (Undistu		
*		9,328			B (Undist		
	1	25,688		Veighted A		·	
		82,335			vious Area		
		43,353	3	34.49% Imp	pervious Ar	ea	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
	6.0	()	(1211)	(1	(0.0)	Direct Entry, Minimum	
				5	Subcatch	iment Ex.4: POI #4	
					Hydrog	aranh	
						giupii	
	1					<u></u>	
	- - 8-*				7.71 cfs		Runoff
	- - 8- - -					NOAA 24-hr [	
	8- 8- 7-						
	1					NOAA 24-hr I Cv Rainfall=5.30 Runoff Area=125,688 s	D
	7-					NOAA 24-hr I Cv Rainfall=5.30 Runoff Area=125,688 s Runoff Volume=24,570 c	) " " if if
	7- 6-					NOAA 24-hr I Cv Rainfall=5.30 Runoff Area=125,688 s Runoff Volume=24,570 c Runoff Depth=2.35	) 
	Flow (cfs)					NOAA 24-hr I Cv Rainfall=5.30 Runoff Area=125,688 s Runoff Volume=24,570 c	) 
	7-					NOAA 24-hr I Cv Rainfall=5.30 Runoff Area=125,688 s Runoff Volume=24,570 c Runoff Depth=2.35	) " if :f :f 
	Flow (cfs)					NOAA 24-hr I Cv Rainfall=5.30 Runoff Area=125,688 s Runoff Volume=24,570 c Runoff Depth=2.35 Tc=6.0 min	) " if :f :f 
	-7 -6 -4 -3 -3					NOAA 24-hr I Cv Rainfall=5.30 Runoff Area=125,688 s Runoff Volume=24,570 c Runoff Depth=2.35 Tc=6.0 min	) " if :f :f 
	7 6 5 4 4 3 2					NOAA 24-hr I Cv Rainfall=5.30 Runoff Area=125,688 s Runoff Volume=24,570 c Runoff Depth=2.35 Tc=6.0 min	) " if :f :f 
	7 6 5 4 4 3 2				<b>7.71 cfs</b>	NOAA 24-hr I Cv Rainfall=5.30 Runoff Area=125,688 s Runoff Volume=24,570 c Runoff Depth=2.35 Tc=6.0 min	D 

#### Summary for Link EX: Site Total

Inflow Are	a =	2,218,205 sf,	2.65% Impervious,	Inflow Depth = 2.74"	for Cv event
Inflow	=	158.64 cfs @ 1	12.13 hrs, Volume=	506,714 cf	
Primary	=	158.64 cfs @ 1	12.13 hrs, Volume=	506,714 cf, Atter	n= 0%, Lag= 0.0 min

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



#### Link EX: Site Total

4270 SWM Pre 2021-06	NOAA 24-hr D	Fv Rainfall=9.20"
Prepared by Hillcrest Associates, Inc.		Printed 6/30/2022
HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Software Solutions LL	.C	Page 19

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"

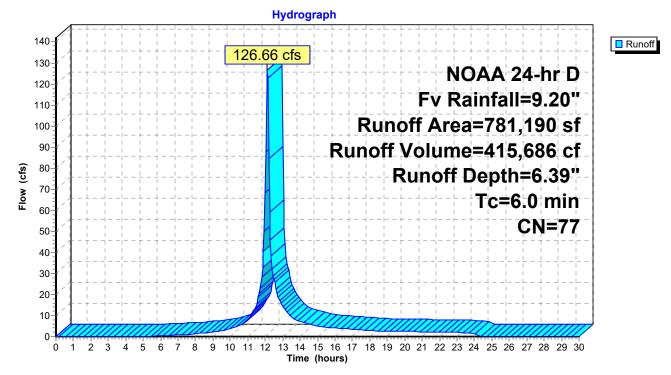
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs NOAA 24-hr D Fv Rainfall=9.20"

	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 Length (min) (feet)	Sloj	pe Velocity Capacity Description /ft) (ft/sec) (cfs)	
_		(10		



### 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"

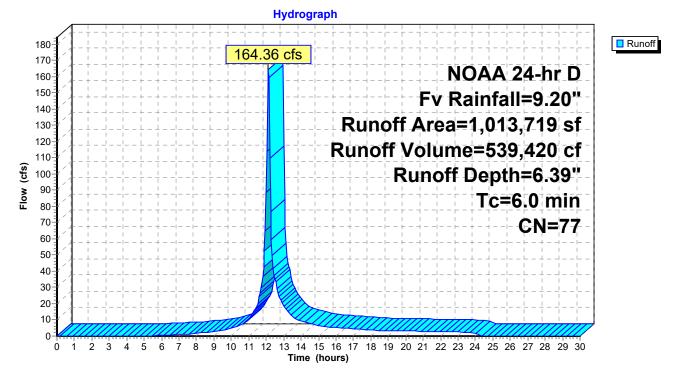
	Area (sf)	CN	Description
*	15,509	98	Ex.Roadway
*	1,542	39	Grass, HSG A
*	9,265	61	Grass, HSG B
*	4,076	74	Grass, HSG C
	265,752	67	Row crops, HSG A
	401,050	78	Row crops, HSG B
	316,525	85	Row crops, HSG C
	1,013,719	77	Weighted Average
	998,210		98.47% Pervious Area
	15,509		1.53% Impervious Area
	<b>-</b>		
	Tc Length	Slop	
	(min) (feet)	(ft/	t) (ft/sec) (cfs)

10	Longu	i olope	> volooity	Oupdoity	
in)	(feet)	) (ft/ft)	) (ft/sec)	(cfs)	)



#### **Direct Entry, Minimum**

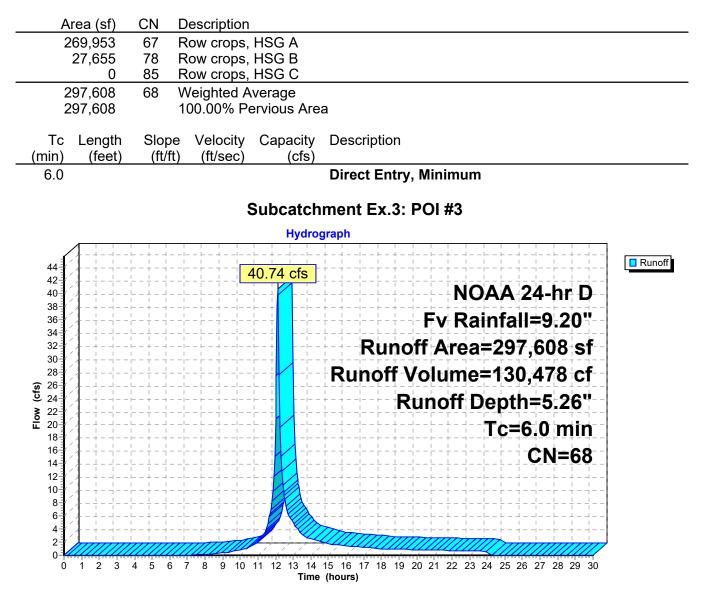
## Subcatchment Ex.2: POI #2



#### 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"



CN=7'

### 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 9,328	<ul><li>39 Grass, HSG A (Undisturbed)</li><li>61 Grass, HSG B (Undisturbed)</li></ul>	
	125,688 82,335	71 Weighted Average 65.51% Pervious Area	
	43,353	34.49% Impervious Area	
	+0,000		
	Tc Length	Slope Velocity Capacity Description	
	(min) (feet)	(ft/ft) (ft/sec) (cfs)	
	6.0	Direct Entry, Minimum	
		Outra station and Fee 4. DOI #4	
		Subcatchment Ex.4: POI #4	
		Hydrograph	
	20		Runoff
	19	18.32 cfs	
	18	NOAA 24-hr D	
		<b>Fy Rainfall=9.20</b> "	
	14	Runoff Area=125,688 sf	
		Runoff Volume=59,039 cf	
	(cl) (cl) (cl) (cl) (cl) (cl) (cl) (cl)	Runoff Depth=5.64"	
	<b>Sj</b> 11		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Time (hours)

7.

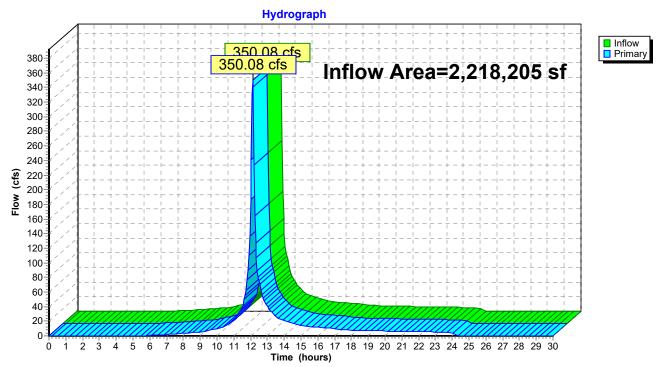
6-5-3-2-1-0-

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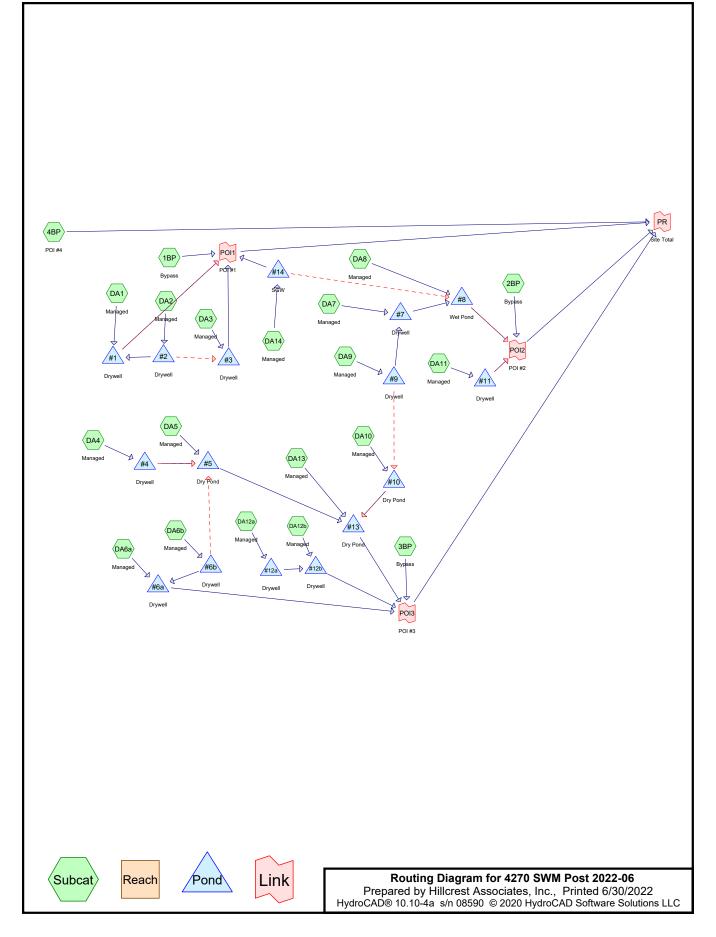
## Summary for Link EX: Site Total

Inflow Are	a =	2,218,205 sf,	2.65% Impervious,	Inflow Depth = 6.19"	for Fv event
Inflow	=	350.08 cfs @ 1	12.13 hrs, Volume=	1,144,623 cf	
Primary	=	350.08 cfs @ 1	12.13 hrs, Volume=	1,144,623 cf, Atter	n= 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=0.00-96.00 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

Subcatchment1BP: 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
Subcatchment2BP: 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
Subcatchment3BP: 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
SubcatchmentDA1: 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
SubcatchmentDA10: 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
SubcatchmentDA12a: 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
SubcatchmentDA12b: 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
SubcatchmentDA13: 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
SubcatchmentDA14: 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
SubcatchmentDA2: 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
SubcatchmentDA3: 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
SubcatchmentDA4: 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
SubcatchmentDA5: 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

#### 4270 SWM Post 2022-06 NOAA 24-hr D RPv Rainfall=2.70". Ia/S=0.05 Printed 6/30/2022 Prepared by Hillcrest Associates, Inc. HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Software Solutions LLC Page 3 Runoff Area=15,793 sf 91.49% Impervious Runoff Depth=2.08" Subcatchment DA6b: Managed Tc=6.0 min CN=93 Runoff=0.82 cfs 2,732 cf Runoff Area=32,319 sf 87.77% Impervious Runoff Depth=2.15" Subcatchment DA7: Managed Tc=6.0 min CN=94 Runoff=1.73 cfs 5,799 cf Runoff Area=260,488 sf 54.51% Impervious Runoff Depth=1.50" Subcatchment DA8: Managed 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 Peak Elev=39.41' Storage=1,124 cf Inflow=1.82 cfs 6,160 cf Pond #1: Drywell 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 Peak Elev=37.64' Storage=4,725 cf Inflow=3.34 cfs 11,104 cf Pond #11: Drywell 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 Peak Elev=39.38' Storage=1,777 cf Inflow=2.53 cfs 8,364 cf Pond #12b: Drywell 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 Peak Elev=38.55' Storage=5,996 cf Inflow=5.70 cfs 18,826 cf Pond #2: Drywell 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 Peak Elev=38.64' Storage=9,305 cf Inflow=6.78 cfs 22,393 cf Pond #3: Drywell 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 Peak Elev=41.47' Storage=1,582 cf Inflow=1.65 cfs 5,524 cf Pond #6a: Drywell Discarded=0.19 cfs 5,525 cf Primary=0.00 cfs 0 cf Outflow=0.19 cfs 5,525 cf Peak Elev=39.97' Storage=1,342 cf Inflow=0.82 cfs 2,732 cf Pond #6b: Drywell 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

<b>4270 SWM Post 2022-06</b> Prepared by Hillcrest Associates, Inc. HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Softwa	NOAA 24-hr D RPv Rainfall=2.70", Ia/S=0.05 Printed 6/30/2022 are Solutions LLC Page 4
	=37.54' Storage=43,264 cf Inflow=10.08 cfs 32,660 cf Secondary=0.00 cfs 0 cf Outflow=0.81 cfs 30,794 cf
	ev=39.74' Storage=0.195 af Inflow=9.47 cfs 31,006 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	βA					
*	4,558		Grass, HSG						
*	0		Grass, HSC						
	19,408		Weighted A						
	19,408		100.00% Pe	ervious Area	а				
	Ta Lawath	01.000	V al a situ	0 : + -					
	Tc Length (min) (feet)	Slope (ft/ft)		Capacity (cfs)	Description	on			
	(min) (feet) 6.0	(ועונ		(015)	Direct Er	tur Min	1		
	0.0				Direct Er	itry, wiin	limum		
			c	Subcatch	mont 1R		266		
			Ľ			. Бур	455		
				Hydrog	grapn				
			$ \frac{1}{1} \frac{1}{1} \frac{1}{1}$		$-\frac{1}{1} \frac{1}{1}\frac{1}{1}$	$\frac{1}{1}\frac{1}{1}$	$   \frac{1}{1}$ $  \frac{1}{1}$ $  \frac{1}{1}$ $  \frac{1}{1}$ $  \frac{1}{1}$	[ <u> </u>	Runoff
	- //	3 cfs		+		· +	++++	<b> </b>  +	
	0.13			·	· -   +  ·	· +	NOAA 24-hr		
	0.12					-00-4	- Deinfell-9-70		
	0.11					RPV	Rainfall=2.70		
	0.1					+   	la/S=0.0	)5	
	0.09			·		noff	Area=19,408 s	ef	
	<b>3</b> 0.08				1 I I	I I		L L	
	60.08 0.07 0.07			·   +       	Ru	noff	Volume=466	Ċſ	
	Ĕ 0.06			· <sub>I</sub> <sub>T</sub>		Runo	off Depth=0.29	9"	
	0.05								
	0.04		++ 	·   + 		+   	Tc=6.0-mi		
	0.03			·	·	·	CN=4	4	
	0.02			·'	· _ ·	       			
	0.01			+       		+         	+		

65

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70 75

80 85

90 95

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5 10

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30 35

40

45

50 55

Time (hours)

### 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

	A	rea (sf)	CN E	Description						
*		3,148 1,657		Roof Pavement						
*		5,920		Sidewalk						
*		5,931	39 C	Grass, HSG						
*		7,283		Grass, HSC						
*		31,454 6,710		Grass, HSG Ex. Roadwa						
		62,103	76 V	Veighted A	verage					
		44,668			rvious Area					
		17,435	2	8.07% Imp	pervious Ar	ea				
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Descript	ion			
	6.0	(1001)	(14,11)	(10000)	(0.0)	Direct E	ntry, Mi	nimum		
				ç	Subcatch	ment 2F	RP· Rvn	228		
					Hydro		, . Dyp			
	2-		· ـ	· +   + ·			L			
	2	1.80	<mark>) cfs</mark>							Runoff
	-							<b>NOAA 24</b>	-hr D	
	-						RΡν	/ Rainfall=2	2.70"	
	-							la/S=	=0.05	
									1 Ī Ī I	
	cfs)	 			, , , , , , , , , , , , , , , , , , ,	1 I	I I	Area=62,1	1 I I	
	Flow (cfs) 					Rur	off V	olume=5,8	67 cf	
	Ĕ,						Rund	off Depth=	1.13"	
								Tc=6.0	I I I	
	-							i i i i	i i i	
	-							CI	N=76	
	-									
	0- <del> </del> 0	5 10	15 20	25 30	35 40 45	50 55	60 65	70 75 80 85	90 95	
					Lime	(hours)				

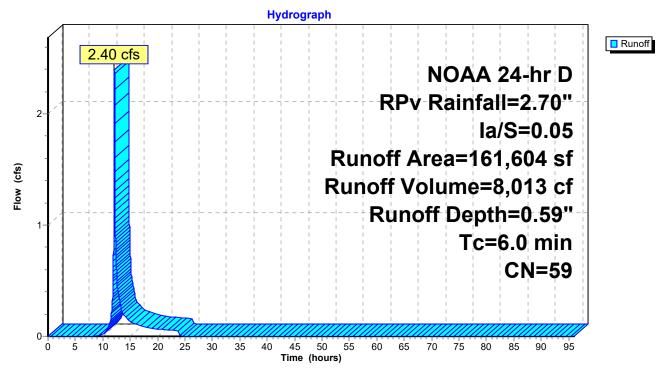
#### Summary for Subcatchment 3BP: Bypass

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

	A	rea (sf)	CN	Description		
*		30,567	98	Roof		
*		19,555	98	Pavement		
*		2,610	98	Sidewalk		
*	1	05,358	39	Grass, HSC	θA	
*		3,155	61	Grass, HSC	βB	
*		359	74	Grass, HSC	ЭC	
	1	61,604	59	Weighted A	verage	
	1	08,872		67.37% Per	vious Area	
		52,732		32.63% Imp	pervious Are	ea
	Тс	Length	Slope		Capacity	Description
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
	6.0					Direct Entry, Minimum

#### Subcatchment 3BP: Bypass

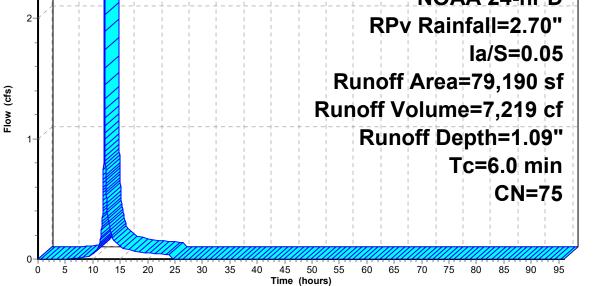


### Summary for Subcatchment 4BP: POI #4

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

	A	rea (sf)	CN	Description				
*		0	98	Roof				
*		3,356		Pavement				
*		5,503		Sidewalk				
*		16,262	39	Grass, HSG				
*		16,847	61	Grass, HSG				
*		8,555		Grass, HSC				
_		28,667	98	Existing Ro				
		79,190	75	Weighted A				
		41,664		52.61% Per				
		37,526		47.39% Imp	pervious Ar	ea		
	Tc (min)	Length (feet)	Slope (ft/ft		Capacity (cfs)	Description		
_	6.0			//		Direct Entry	r, Minimum	
					Subcatch	ment 4BP:	POI #4	
					Hydro	graph		
	ſ							Runoff
	-	2.22	2 cfs					Runoi
	-						NOAA 24-hr D	
	2-						RPv Rainfall=2.70"	
	-							



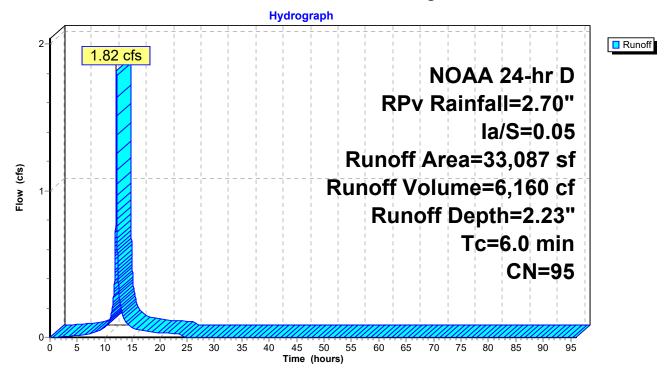
### Summary for Subcatchment DA1: Managed

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

	A	rea (sf)	CN	Description		
*		5,119	98	Roof		
*		24,140	98	Pavement		
*		1,098	98	Sidewalk		
*		0	39	Grass, HSG	θA	
*		2,730	61	Grass, HSG	βB	
*		0	74	Grass, HSC	ЭC	
		33,087	95	Weighted A	verage	
		2,730		8.25% Perv	ious Area	
		30,357		91.75% Imp	pervious Are	ea
				-		
	Tc	Length	Slop	e Velocity	Capacity	Description
(	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)	
	6.0					Direct Entry, Minimum

#### Subcatchment DA1: Managed



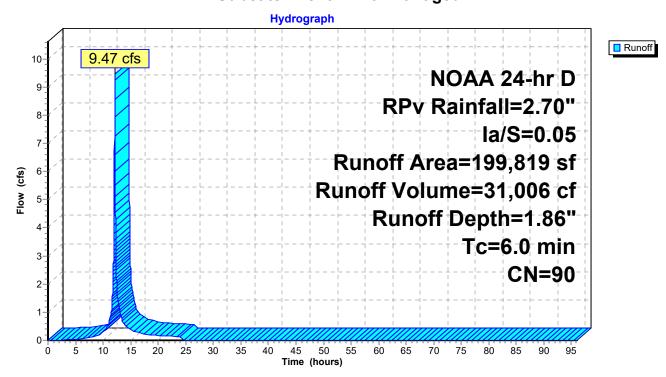
### Summary for Subcatchment DA10: Managed

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

	A	rea (sf)	CN	Description		
*		45,831	98	Roof		
*		99,756	98	Pavement		
*		11,069	98	Sidewalk		
*		1,120	39	Grass, HSC	θA	
*		42,043	61	Grass, HSC	βB	
*		0	74	Grass, HSC	ЭC	
	1	99,819	90	Weighted A	verage	
		43,163		21.60% Pe	rvious Area	
	1	56,656		78.40% Imp	pervious Ar	ea
	_		-			
	Tc	Length	Slope		Capacity	Description
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
	6.0					Direct Entry, Minimum





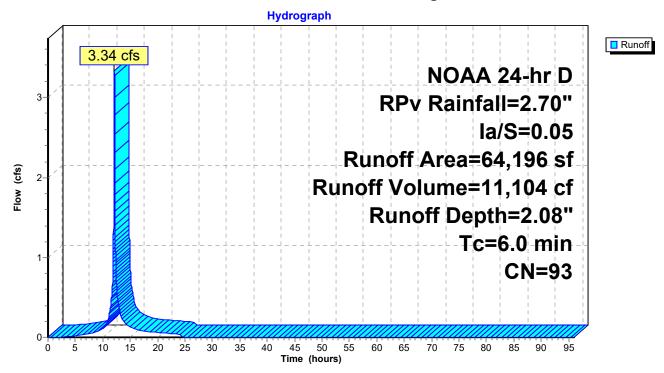
#### Summary for Subcatchment DA11: Managed

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

	A	rea (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, HSC	ЭC			
		64,196	93	Weighted A	verage			
		14,029		21.85% Per	rvious Area			
		50,167		78.15% Imp	pervious Are	ea		
	Тс	Length	Slop		Capacity	Description		
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA11: Managed



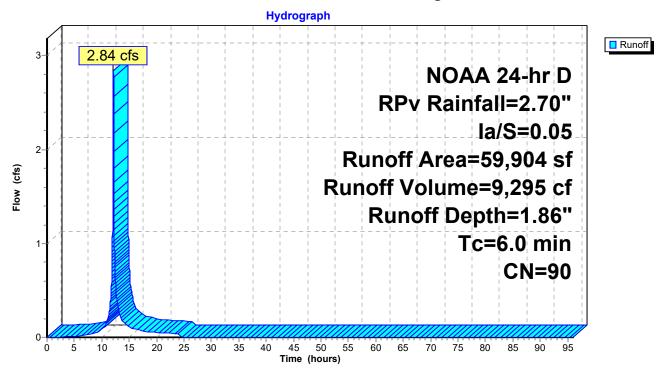
#### Summary for Subcatchment DA12a: Managed

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

	A	rea (sf)	CN	Description				
*		14,960	98	Roof				
*		35,092	98	Pavement				
*		1,991	98	Sidewalk				
*		7,861	39	Grass, HSG				
*		0	61	Grass, HSG B				
*		0	74	Grass, HSC	ЭC			
		59,904	90	Weighted A	verage			
		7,861		13.12% Per	vious Area			
		52,043		86.88% Imp	pervious Are	ea		
	Тс	Length	Slop		Capacity	Description		
(I	min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA12a: Managed



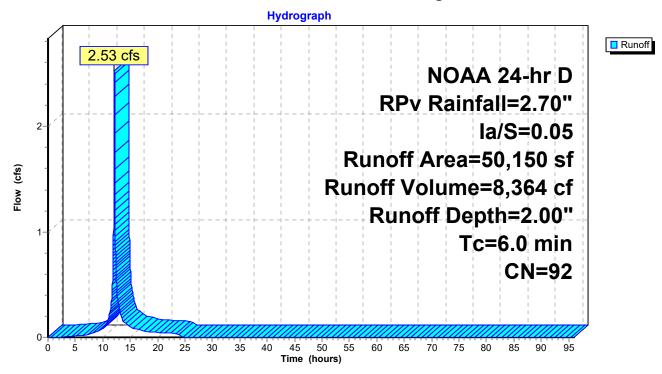
### Summary for Subcatchment DA12b: Managed

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

	Α	rea (sf)	CN	Description					
*		12,223	98	Roof					
*		31,728	98	Pavement					
*		1,032	98	Sidewalk	Sidewalk				
*		5,167	39	Grass, HSC	Grass, HSG A				
*		0	61	Grass, HSC	Grass, HSG B				
*		0	74	Grass, HSC	ЭC				
		50,150	92	Weighted A	verage				
		5,167		10.30% Pe	rvious Area				
		44,983		89.70% Im	pervious Are	ea			
	Тс	Length	Slop	e Velocity	Capacity	Description			
(r	nin)	(feet)	(ft/1	ft) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

#### Subcatchment DA12b: Managed



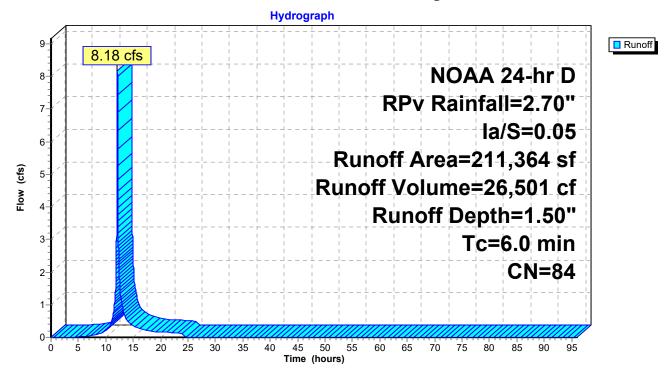
### Summary for Subcatchment DA13: Managed

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

	A	rea (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% Per	rvious Area			
	1	33,908		63.35% Imp	pervious Are	ea		
	Тс	Length	Slope		Capacity	Description		
(	min)	(feet)	(ft/ft	) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA13: Managed



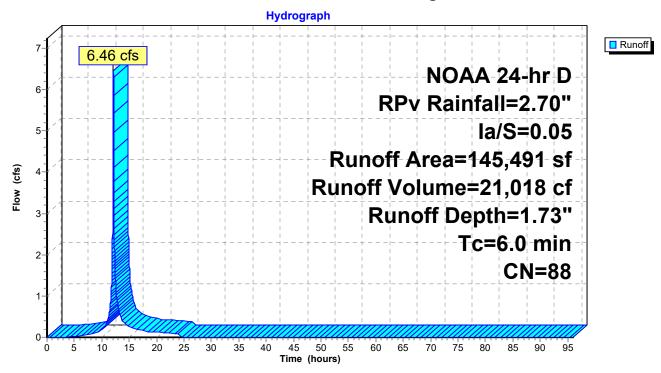
### Summary for Subcatchment DA14: Managed

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

	A	rea (sf)	CN	Description					
*		67,744	98	Roof					
*		37,879	98	Pavement	Pavement				
*		2,866	98	Sidewalk					
*		8,381	39	Grass, HSG A					
*		25,644	61	Grass, HSG B					
*		2,977	74	Grass, HSC	G C				
	145,491 88 Weighted Average								
		37,002		25.43% Per	rvious Area				
	1	08,489		74.57% Imp	pervious Are	ea			
	Тс	Length	Slop	e Velocity	Capacity	Description			
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

#### Subcatchment DA14: Managed



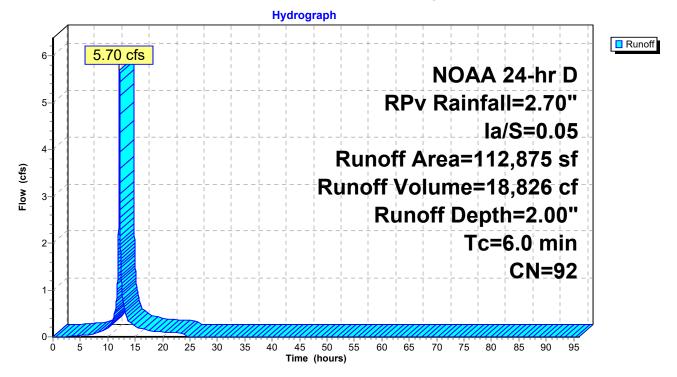
### Summary for Subcatchment DA2: Managed

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						
9,69	5 98	Roof	Roof					
79,428	3 98	Pavement	Pavement					
6,694	4 98	Sidewalk	Sidewalk					
17,05	7 61	Grass, HSC	Э В					
112,87	5 92	Weighted A	verage					
17,05	7	15.11% Pe	rvious Area	l de la constante de				
95,818	3	84.89% Imp	pervious Ar	ea				
		,	Capacity	Description				
(min) (fee	et) (ft/	ft) (ft/sec)	(cfs)					
6.0				Direct Entry, Minimum				
	9,696 79,428 6,694 17,055 112,875 17,055 95,818 Tc Leng (min) (fee	9,696 98 79,428 98 6,694 98 <u>17,057 61</u> 112,875 92 17,057 95,818 Tc Length Slop (min) (feet) (ft/	9,696 98 Roof 79,428 98 Pavement 6,694 98 Sidewalk 17,057 61 Grass, HSC 112,875 92 Weighted A 17,057 15.11% Per 95,818 84.89% Imp Tc Length Slope Velocity (min) (feet) (ft/ft) (ft/sec)	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 Ar           Tc         Length         Slope         Velocity         Capacity           (min)         (feet)         (ft/ft)         (ft/sec)         (cfs)				

### Subcatchment DA2: Managed



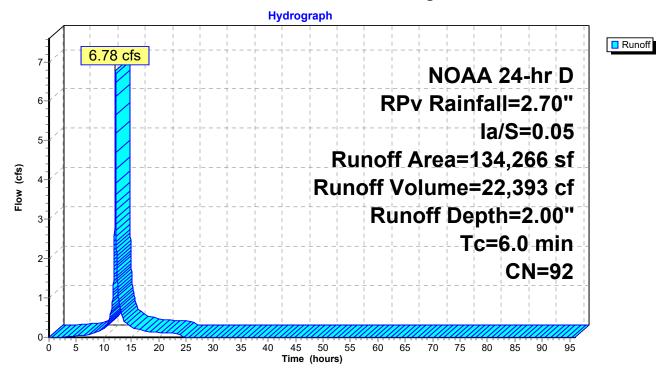
#### Summary for Subcatchment DA3: Managed

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

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

	Α	rea (sf)	CN	Description					
*		152	98	Roof					
*		92,770	98	Pavement	Pavement				
*		22,763	98	Sidewalk					
*		8,191	39	Grass, HSG A					
*		10,390	61	Grass, HSC	Grass, HSG B				
*		0	74	Grass, HSC	ЭC				
	1	34,266	92	Weighted A	verage				
		18,581		13.84% Per	vious Area				
	1	15,685		86.16% Imp	pervious Are	ea			
	Тс	Length	Slop	e Velocity	Capacity	Description			
_	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
	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

	Ai	rea (sf)	CN [	Description							
*		6,897		Roof							
*		40,222		Pavement							
*		4,998 17,113		Sidewalk Grass, HSO	2 Δ						
*		29,223		Grass, HSC							
*		0		Grass, HSG C							
*		10,529		Existing Roadway							
*		1,670 2,487		Existing Dri		turbod)					
*		2,407 26,157			ous (Undist 3 A (Undist						
*		14,463			G B (Undist						
		53,759	71 V	Neighted A	verage						
		86,956			rvious Area						
		66,803	2	13.45% Imp	pervious Ar	ea					
	Тс	Length	Slope	Velocity	Capacity	Descript	tion				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	· ·					
	6.0					Direct E	Entry, Minim	um			
				c	ubootobr	nont DA	1. Manage	a d			
				3		nent DA	4: Manage	a			
	Hydrograph										
			1 1	1 1 1	Hydro	graph	1 1 1	1 1	1 1	1	
	4-		· +		Hydro	graph - +				 	
	4-	3.7	1 cfs		Hydro	graph				  	Runoff
	4	3.7	1 cfs		Hydro	graph	N	ΙΟΑ	<b>A 24-</b>	hr D	Runoff
	4	3.7	1 cfs		Hydro	graph	I I I	1 I.	- I I	1	Runoff
	4-* - 3-*	3.7	1 cfs		Hydro	graph	N RPv.R	Rainf	all=2	2.70"	
	4	3.7	1 cfs		Hydro	graph	I I I	Rainf	- I I	2.70"	Runoff
	-	3.7	1 cfs		Hydro		I I I	Rainf	all=2 Ia/S=	2.70" 0.05	
	-	3.7	1 cfs		Hydro	Ru	RPv R	Rainf ea=1	all=2 la/S= 53,75	2.70" 0.05 59 sf	Runoff
	Flow (cfs)	3.7	1 cfs		Hydro	Ru	RPv R noff Are off Volu	Rainf ea=1 me=	all=2 la/S= 53,75 12,12	2.70" 0.05 59 sf 29 cf	
	-	3.7	1 cfs		Hydro	Ru	RPv R	Rainf ea=1 me=	all=2 la/S= 53,75 12,12	2.70" 0.05 59 sf 29 cf	Runoff
	-	3.7	1 cfs		Hydro	Ru	RPv R noff Are off Volu	Rainf ea=1 me= Dep	all=2 la/S= 53,75 12,12	2.70" 0.05 59 sf 29 cf 0.95"	Runoff
	-	3.7	1 cfs		Hydro	Ru	RPv R noff Are off Volu	Rainf ea=1 me= Dep	all=2 la/S= 53,75 12,12 oth=0 =6.0	2.70" 0.05 59 sf 29 cf 0.95" min	Runoff
		3.7	1 cfs		Hydro	Ru	RPv R noff Are off Volu	Rainf ea=1 me= Dep	all=2 la/S= 53,75 12,12 oth=0 =6.0	2.70" 0.05 59 sf 29 cf 0.95"	Runoff
		3.7	1 cfs		Hydro	Ru	RPv R noff Are off Volu	Rainf ea=1 me= Dep	all=2 la/S= 53,75 12,12 oth=0 =6.0	2.70" 0.05 59 sf 29 cf 0.95" min	Runoff
		3.7	1 cfs		Hydro	Ru	RPv R noff Are off Volu	Rainf ea=1 me= Dep	all=2 la/S= 53,75 12,12 oth=0 =6.0	2.70" 0.05 59 sf 29 cf 0.95" min	
			1 cfs			Runc	RPv R noff Are off Volu	Rainf me=1 Der To	all=2 la/S= 53,75 12,12 oth=0 =6.0	2.70" 0.05 59 sf 29 cf 0.95" min	

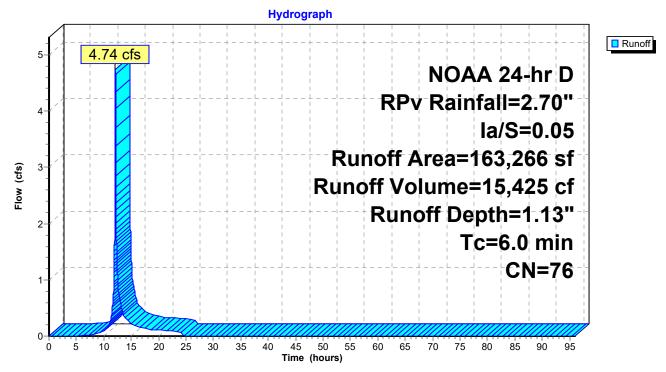
### Summary for Subcatchment DA5: Managed

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	βA	
9,445	61	Grass, HSG	БB	
0	74	Grass, HSG	G C	
163,266	76	Weighted A	verage	
63,220		38.72% Per	vious Area	
100,046		61.28% Imp	ervious Are	ea
Tc Length (min) (feet)			Capacity (cfs)	Description
6.0				Direct Entry, Minimum
	10,386 11,095 70,449 8,116 53,775 9,445 0 163,266 63,220 100,046 Tc Length (min) (feet)	10,386         98           11,095         98           70,449         98           8,116         98           53,775         39           9,445         61           0         74           163,266         76           63,220         100,046           Tc         Length         Slop           (min)         (feet)         (ft/f	10,386         98         Roof           11,095         98         Roof+           70,449         98         Pavement           8,116         98         Sidewalk           53,775         39         Grass, HSG           9,445         61         Grass, HSG           0         74         Grass, HSG           0         74         Grass, HSG           163,266         76         Weighted A           63,220         38.72%         Per           100,046         61.28%         Imp           Tc         Length         Slope         Velocity           (min)         (feet)         (ft/ft)         (ft/sec)	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 C           163,266         76         Weighted Average           63,220         38.72%         Pervious Area           100,046         61.28%         Impervious Area           100,046         Slope         Velocity         Capacity           (min)         (feet)         (ft/ft)         (ft/sec)         (cfs)

## Subcatchment DA5: Managed



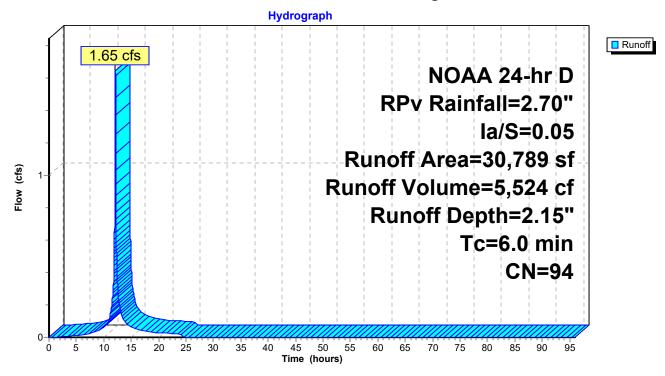
#### Summary for Subcatchment DA6a: Managed

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

	A	rea (sf)	CN	Description					
*		1,985	98	Roof					
*		24,381	98	Pavement	Pavement				
*		1,251	98	Sidewalk	Sidewalk				
*		609	39	Grass, HSC	ΞA				
*		2,563	61	Grass, HSC	Grass, HSG B				
*		0	74	Grass, HSC	ЭC				
		30,789	94	Weighted A	verage				
		3,172		10.30% Pe	rvious Area				
		27,617		89.70% Im	pervious Are	ea			
				-					
	Тс	Length	Slop	e Velocity	Capacity	Description			
(n	nin)	(feet)	(ft/f	ft) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

#### Subcatchment DA6a: Managed



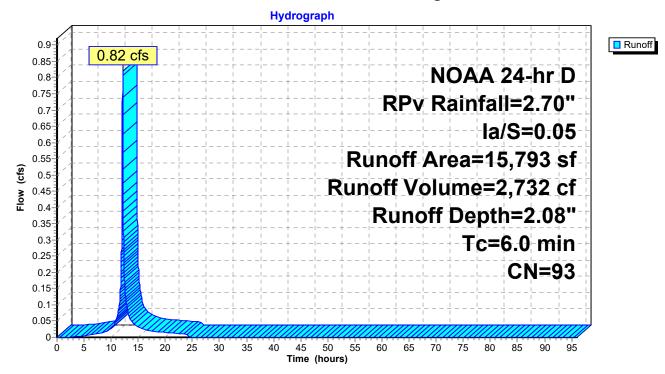
### Summary for Subcatchment DA6b: Managed

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

	Α	rea (sf)	CN	Description		
*		4,320	98	Roof		
*		9,409	98	Pavement		
*		720	98	Sidewalk		
*		1,344	39	Grass, HSC	θA	
*		0	61	Grass, HSC	βB	
*		0	74	Grass, HSC	G C	
		15,793	93	Weighted A	verage	
		1,344		8.51% Perv	vious Area	
		14,449		91.49% Imp	pervious Are	ea
	Тс	Length	Slop		Capacity	Description
(n	nin)	(feet)	(ft/f	t) (ft/sec)	(cfs)	
	6.0					Direct Entry, Minimum

#### Subcatchment DA6b: Managed



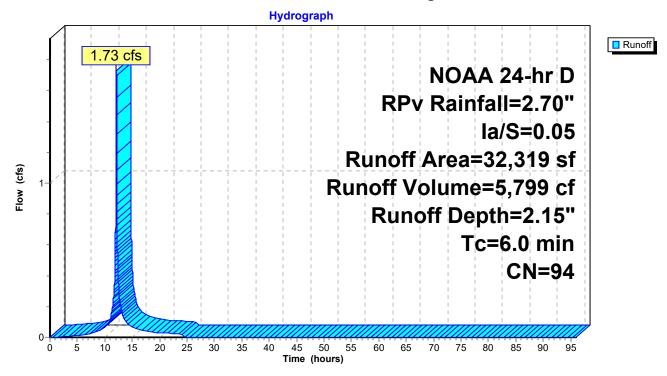
#### Summary for Subcatchment DA7: Managed

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

	A	rea (sf)	CN	Description				
*		7,045	98	Roof				
*		19,833	98	Pavement				
*		1,490	98	Sidewalk				
*		0	39	Grass, HSC	θA			
*		3,693	61	Grass, HSC	Grass, HSG B			
*		258	74	Grass, HSC	ЭC			
		32,319	94	Weighted A	verage			
		3,951		12.23% Pe	vious Area			
		28,368		87.77% Imp	pervious Are	ea		
				-				
	Тс	Length	Slop	e Velocity	Capacity	Description		
(	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	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

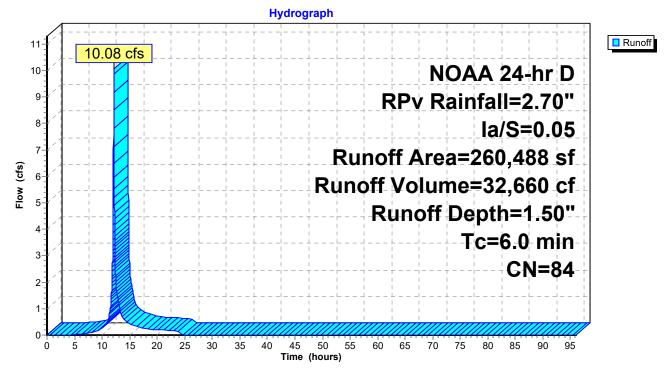
	Area (sf)	CN	Description							
*	28,409	98	Roof							
*	91,663	98	ement							
*	13,109	98	Sidewalk							
*	0	39	Grass, HSG A							
*	68,342	61	Grass, HSG B							
*	50,167	74	Grass, HSG C							
*	8,798	98	Ex.Roadway							
	260,488	84	Weighted Average							
	118,509		45.49% Pervious Area					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

_			Capacity (cfs)	Desc	cription	
						_



# Direct Entry, Minimum

## Subcatchment DA8: Managed



### Summary for Subcatchment DA9: Managed

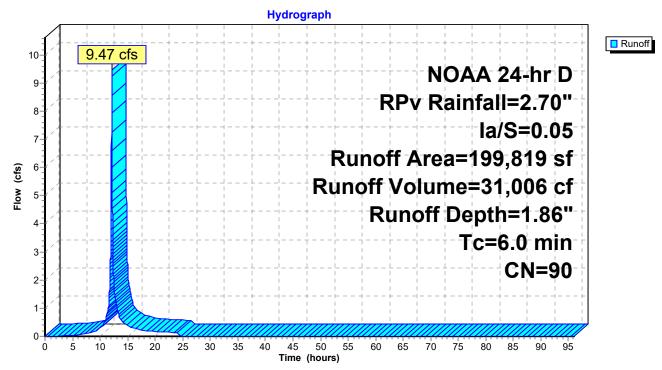
Runoff = 9.47 cfs @ 12.13 hrs, Volume= 31,006 cf, Depth= 1.86"

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

	A	rea (sf)	CN	Description		
*		45,831	98	Roof		
*		99,756	98	Pavement		
*		11,069	98	Sidewalk		
*		1,120	39	Grass, HSG	θA	
*		42,043	61	Grass, HSG	βB	
*		0	74	Grass, HSC	ЭC	
	1	99,819	90	Weighted A	verage	
		43,163		21.60% Per	vious Area	
	1	56,656		78.40% Imp	pervious Are	ea
				-		
	Tc	Length	Slop	e Velocity	Capacity	Description
(	min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
	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

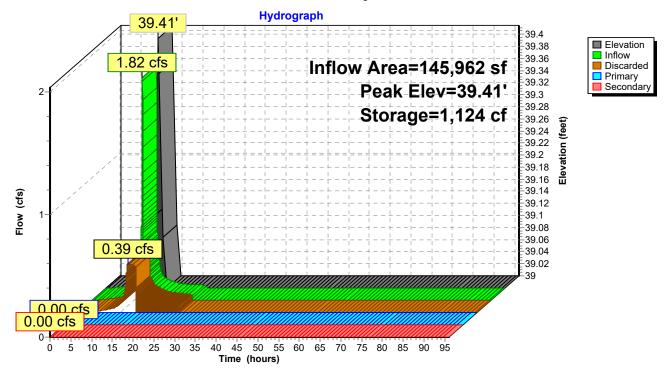
Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 13.5 min (792.6 - 779.1)

Volume	Invert	Avail.Stor	age St	Storage Description	
#1	39.00'	8,61		40.00'W x 170.00'L x 3.25'H Field A	
			22,100 cf Overall - 560 cf Embedded = 21,540 cf x 40.0% Void	ds	
#2	39.50'	17		ADS_StormTech SC-310 +Cap x 12 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf	
				Dverall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap	
				12 Chambers in 2 Rows	
#3	39.50'	38		ADS_StormTech SC-310 +Cap x 26 Inside #1	
				Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf	
				Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap	
#4	39.75'	Б	-	26 Chambers in 2 Rows	
#4 #5	43.00'			2.00'W x 2.83'L x 3.25'H CB # x 3 -Impervious Above Ground (Prismatic)Listed below (Recalc) -Impervious	
#0	+0.00	13,30		Total Available Storage	—
		10,00	201 10		
Elevatio	on Su	rf.Area	Inc.Sto	Store Cum.Store	
(fee	et)	(sq-ft)	(cubic-fe	feet) (cubic-feet)	
43.0		17		0 0	
43.2		15,525	,	,943 1,943	
43.4	40	12,842	2,1	4,070	
Device	Routing	Invert	Outlet D	Devices	
#1	Discarded	39.00'	2.500 in	in/hr Exfiltration over Surface area	
#2	Secondary	43.50'		long x 0.7' breadth Top of Curb	
			· · ·	(feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	
			2.50	(English) 2.76 2.82 2.02 2.00 2.18 2.22 2.27 2.20 2.22	
			3.31 3.3	(English) 2.76 2.82 2.93 3.09 3.18 3.22 3.27 3.30 3.32	
#3 Primary 4		41.50'		Round Over Drain X 0.00 L= 50.0' Ke= 0.500	
	, <b>,</b>			Outlet Invert= 41.50' / 41.30' S= 0.0040 '/' Cc= 0.900	
				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)



### Pond #1: Drywell

## 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	Inver	t Avail.Sto	rage Sto	rage Desc	cription	
#1	35.50	' 117,56	67 cf <b>Dry</b>	Pond (P	rismatic)Li	isted below (Recalc)
Elevatio	et)	urf.Area (sq-ft)	Inc.Stor (cubic-fee	et) (o	Cum.Store	
35.5		20,002		0	0	
36.0	00	21,260	10,31		10,316	
37.0	00	23,817	22,53	39	32,854	
38.0	00	26,430	25,12	24	57,978	
39.0	00	29,833	28,13	32	86,109	
40.0	00	33,082	31,45		117,567	
Device	Routing	Invert	Outlet De	evices		
#1	Discarded	35.50'	0.800 in/	hr Exfiltra	ation over	Surface area
#2	Primary	40.75'	24.0' lon	g x 10.0'	breadth B	road-Crested Rectangular Weir
	-		Head (fe	et) 0.20 (	0.40 0.60	0.80 1.00 1.20 1.40 1.60
						70 2.69 2.68 2.69 2.67 2.64

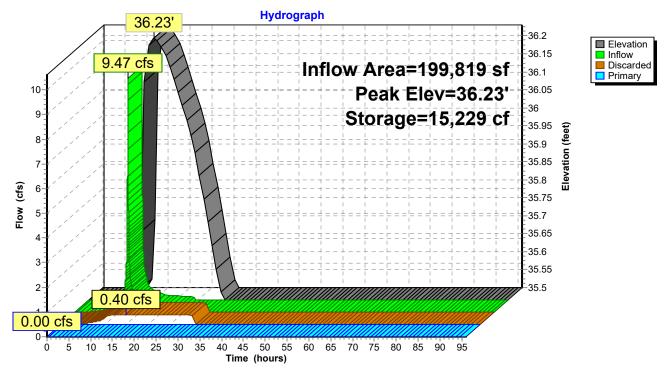
**Discarded OutFlow** Max=0.40 cfs @ 14.78 hrs HW=36.23' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.40 cfs)

**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)

### 4270 SWM Post 2022-06

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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

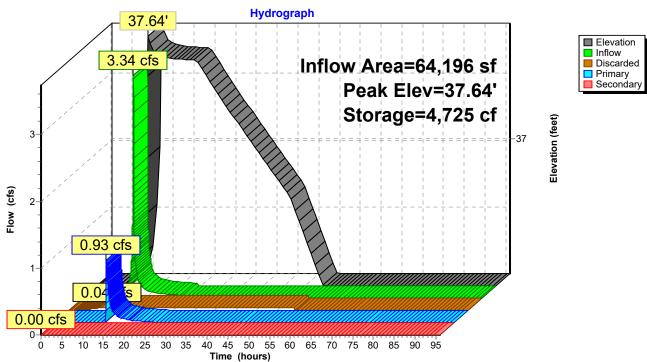
Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 638.8 min (1,428.3 - 789.5)

Volume	Invert	Avail.Sto	rage	Storage	e Description	
#1 36.25' 6,059 cf			59 cf		W x 80.00'L x 3.25'H Field A	
					) cf Overall - 3,052 cf Embedded = 15,148 cf x 40.0% Voids	
#2	36.75'		55 cf		/ x 2.83'L x 3.25'H CB # x 3 -Impervious	
#3	36.75'		52 cf		/ x 4.00'L x 3.25'H CB #-Impervious	
#4	40.00'	2,69	92 cf		e Ground (Prismatic)Listed below (Recalc) - Impervious	
#5	36.75'	26	65 cf	ADS_S	StormTech SC-310 +Cap x 18 Inside #1	
				Effectiv	ve Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf	
				Overall	ll Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap	
					ambers in 2 Rows	
#6	36.75'	2 78	36 cf		StormTech SC-310 +Cap x 189 Inside #1	
110	00110	_,. 、			ve Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf	
					Il Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap	
				189 Chambers in 21 Rows		
		11.02	10 cf			
		11,9		TOTALA	Available Storage	
Elevatio	n Si	urf.Area	Inc	.Store	Cum.Store	
(fee		(sq-ft)		c-feet)	(cubic-feet)	
· · · · ·	_/		(Cubi			
40.0		39		0	0	
40.2		1,685		216	216	
40.5	50	18,126		2,476	2,692	
Device	Routing	Invert	-	et Device		
#1	Discarded	36.25'	0.30	0 in/hr E	Exfiltration over Surface area	
#2	Primary	36.75'	15.0	" Round	nd Culvert L= 105.0' Ke= 0.500	
			Inlet	et / Outlet Invert= 36.75' / 36.00' S= 0.0071 '/' Cc= 0.900		
			n= 0	.012, Fl	low Area= 1.23 sf	
#3	Device 2	37.50'	5.5'	lona x 0	0.75' rise Outlet Weir 2 End Contraction(s)	
#4 Secondary 40.57' <b>Roadway Crown, C=</b>						
	j				0.00 0.00 24.00 24.00	
					) 0.50 0.00 0.12 0.50	
			1.019	, (1001)		

**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)



Pond #11: Drywell

## 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 )

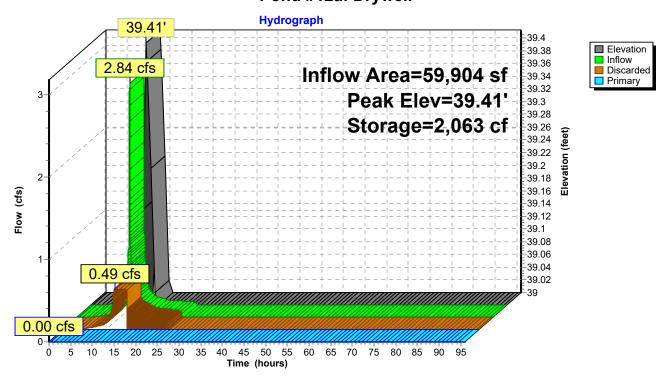
Volume	Invert	Avail.Sto	rage	Storag	e Description				
#1	39.00'	16,6	44 cf	65.00"	W x 193.00'L x 3.	50'H Field A			
				43,908	3 cf Overall - 2,297	cf Embedded = 41,610 cf x 40.0% Voids			
#2	39.50'	2,2	97 cf			Cap x 50 Inside #1			
					-	x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf			
						30.0"H x 7.56'L with 0.44' Overlap			
				50 Chambers in 2 Rows					
#3	39.50'		45 cf			I CB# x 2 -Impervious			
#4	43.50'	5	96 cf	Above Ground (Prismatic)Listed below (Recalc) -Impervious					
		19,5	82 cf	Total A	Available Storage				
Elevatio		rf.Area		Store.	Cum.Store				
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)				
43.5	50	11		0	0				
43.7	75	157		21	21				
44.(	00	670		103	124				
44.2	25	3,101		471	596				
Device	Routing	Invert	Outl	et Devic	es				
#1	Discarded	39.00'	1.70	0 in/hr	Exfiltration over	Surface area			
#2	Primary	44.41'	24.0	long x	x 10.0' breadth Bi	road-Crested Rectangular Weir			
			Hea	d (feet)	0.20 0.40 0.60 (	0.80 1.00 1.20 1.40 1.60			
			Coe	f. (Engli	sh) 2.49 2.56 2.7	70 2.69 2.68 2.69 2.67 2.64			
					s HW=39.06' (Fre	ee Discharge)			
└─1=Ex	T-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)

### 4270 SWM Post 2022-06

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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
			38,285 cf Overall - 767 cf Embedded = 37,518 cf x 40.0% Voids
#2	39.50'	767 cf	
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			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

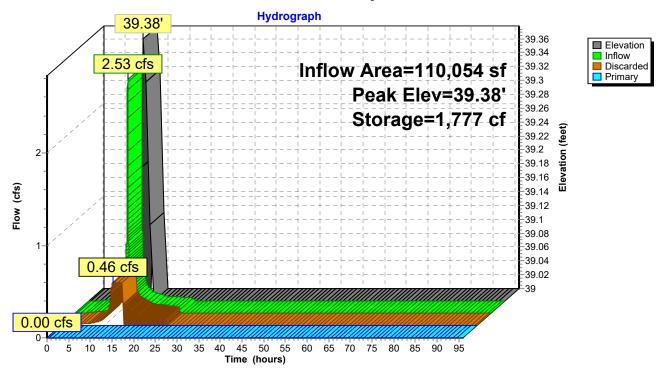
DeviceRoutingInvertOutlet Devices#1Discarded39.00'1.700 in/hr Exfiltration over Surface area#2Primary43.39'24.0' long x 10.0' breadth Broad-Crested Rectangular Weir<br/>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br/>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**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)

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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 )

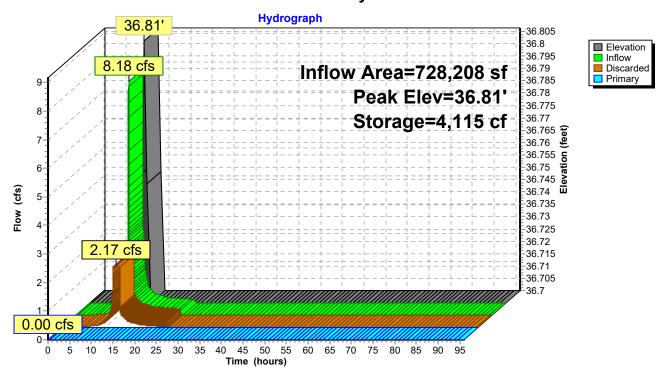
Volume	Invert	Avail.Sto	rage Storage D	escription		
#1	36.70'	50,58	81 cf Custom S	Stage Data (P	Prismatic)Listed below (Recalc)	
		50,58	81 cf x 2.00 =	101,163 cf 1	Total Available Storage	
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
36.7	0	19,271	0	0		
37.0	0	20,025	5,894	5,894		
38.0	0	22,329	21,177	27,071		
39.0	00	24,691	23,510	50,581		
Device	Routing	Invert	Outlet Devices			
#1	Discarded	36.70'	2.400 in/hr Exf	iltration over	r Surface area	
#2	Primary	39.50'	10.0' long x 10	0.0' breadth E	Broad-Crested Rectangular Weir	
			Head (feet) 0.2	20 0.40 0.60	0.80 1.00 1.20 1.40 1.60	
			Coef. (English)	2.49 2.56 2	2.70 2.69 2.68 2.69 2.67 2.64	
Discard	Discarded OutFlow Max=2.17 cfs @ 12.39 hrs HW=36.81' (Free Discharge)					

**Discarded Out⊢Iow** Max–2.17 Gis @ 12.09 ma **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)

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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	Ava	il.Stora	age Storage Desci	ription	
#1	37.83'		24,299	9 cf Custom Stag	e Data (Prismatic)	Listed below (Recalc)
Elevatio		urf.Area	Void		Cum.Store	
(fee		(sq-ft)	(%		(cubic-feet)	
37.8		6,915	0.0		0	
39.8		6,915	40.0		5,532	
40.5	50	6,915	1.0		5,578	
41.0	00	8,691	100.0	) 3,902	9,480	
41.5	50	13,739	100.0	) 5,608	15,087	
42.0	00	23,108	100.0	) 9,212	24,299	
Device	Routing	lr		Outlet Devices		
#1	Primary	40	).00'	15.0" Round Culve	ert L= 66.0' Ke= (	0.500
						= 0.0039 '/' Cc= 0.900
				n= 0.012, Flow Are	a= 1.23 sf	
#2	Device 1	40	).17'	4.0" Horiz. Under [	<b>Drain Rim</b> C= 0.60	00
				Limited to weir flow	at low heads	
#3	Device 1	40	).75'	24.0" W x 12.0" H \	Vert. Low Flow We	eir C= 0.600
				Limited to weir flow	at low heads	
#4	Device 1	41	1.75'	24.0" x 34.0" Horiz	. Top of Inlet C=	0.600
				Limited to weir flow	at low heads	
#5	Secondary	41	1.50'	20.0' long x 6.0' bi	readth Broad-Cres	sted Rectangular Weir
				Head (feet) 0.20 0	.40 0.60 0.80 1.0	0 1.20 1.40 1.60 1.80 2.00
				2.50 3.00 3.50 4.0	0 4.50 5.00 5.50	
				Coef. (English) 2.3	7 2.51 2.70 2.68	2.68 2.67 2.65 2.65 2.65
				2.65 2.66 2.66 2.6	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)

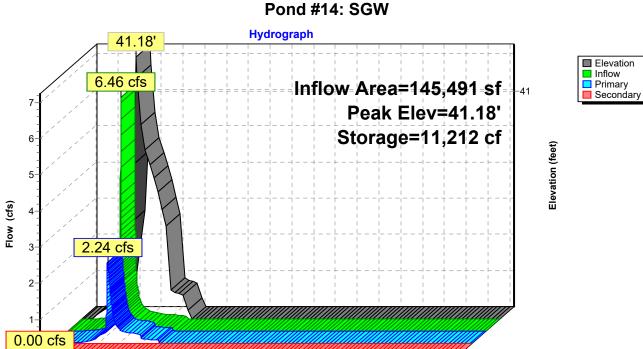
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=40.17' TW=37.05' (Dynamic Tailwater) 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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0 5

10 15 20 25 30 35 40 45 50 55

Time (hours)



60 65 70 75 80 85 90 95

### 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
			86,625 cf Overall - 14,152 cf Embedded = 72,473 cf x 40.0% Voids
#2	38.50'	14,152 cf	
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			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

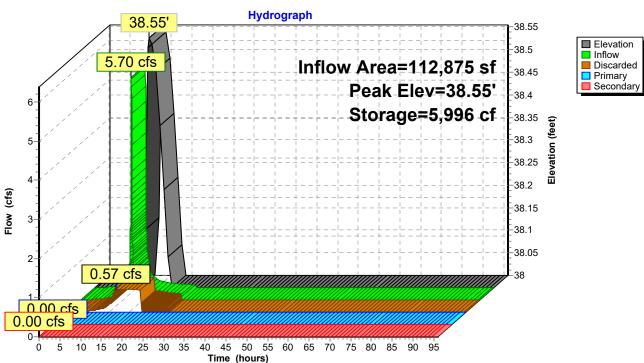
Device	Routing	Invert	Outlet Devices
#1	Discarded	38.00'	1.000 in/hr Exfiltration over Surface area
#2	Primary	43.41'	Asymmetrical Weir, C= 3.27
	-		Offset (feet) 0.00 0.00 24.00 24.00
			Height (feet) 0.50 0.00 0.12 0.50
#3	Secondary	43.46'	Asymmetrical Weir, C= 3.27
			Offset (feet) 0.00 0.00 24.00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

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

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# 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

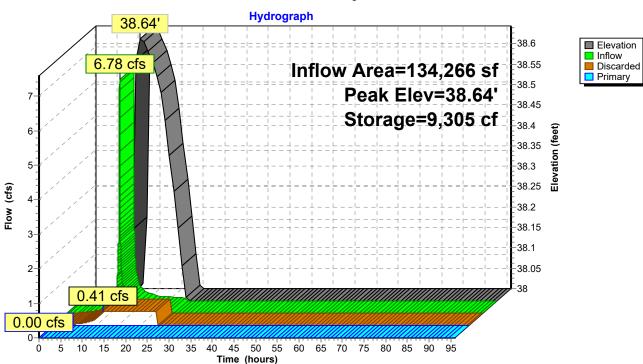
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 38.64' @ 13.73 hrs Surf.Area= 29,415 sf Storage= 9,305 cf

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

Volume	Invert	Avail.Stora	ge Storag	ge Description
#1	38.00'	26,848	cf 265.00	0'W x 111.00'L x 3.50'H Field A
			102,95	53 cf Overall - 35,833 cf Embedded = 67,119 cf x 40.0% Voids
#2	38.50'	42	cf 2.00'V	<b>W x 2.83'L x 3.75'H CB #</b> x 2 -Impervious
#3	38.50'	120	cf 4.00'V	W x 4.00'L x 3.75'H CB # x 2 -Impervious
#4	42.25'	2,419	cf Above	e Ground (Prismatic)Listed below (Recalc) -Impervious
#5	38.50'	35,833		StormTech SC-740 +Cap x 780 Inside #1
			Effecti	tive Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
			Overa	all Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
			780 C	Chambers in 52 Rows
		65,262	cf Total /	Available Storage
Elevatio		f.Area	Inc.Store	Cum.Store
(fee	et)	(sq-ft) (c	cubic-feet)	(cubic-feet)
42.2	25	43	0	0
42.5	50	874	115	115
42.7	75 1	7,561	2,304	2,419
Device	Routing	Invert C	Dutlet Devic	ces
#1	Discarded	38.00' <b>0</b>	).600 in/hr	Exfiltration over Surface area
#2	Primary	43.00' 2	24.0' long	x 10.0' breadth Broad-Crested Rectangular Weir
		F	Head (feet)	0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
		(	Coef. (Engli	lish) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
		/lax=0.41 cfs ( iltration Contro		rs HW=38.05' (Free Discharge) s)

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)

#### 4270 SWM Post 2022-06 Prepared by Hillcrest Associates, Inc.



# 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
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			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
			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

17,760 cf Total Available Storage

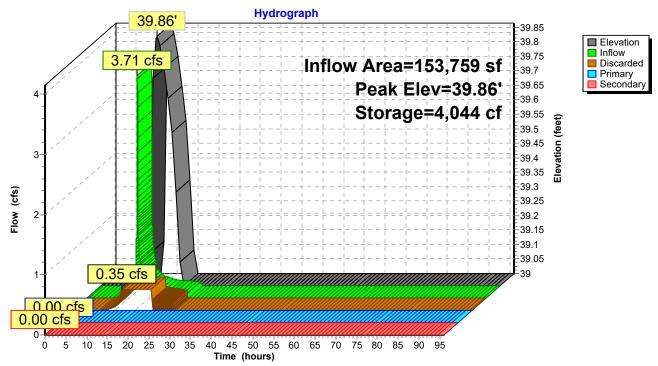
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.15	6	0	0
43.25	175	9	9
43.50	2,939	389	398
43.75	6,476	1,177	1,575
44.00	9,673	2,019	3,594

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
	-		Offset (feet) 0.00 0.00 24.00 24.00
			Height (feet) 0.50 0.00 0.30 0.50
#3	Primary	40.01'	12.0" Vert. 12" Over Drain C= 0.600
			Limited to weir flow at low heads
#4	Primary	40.01'	18.0" Vert. 15" Over Drain C= 0.600
	-		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

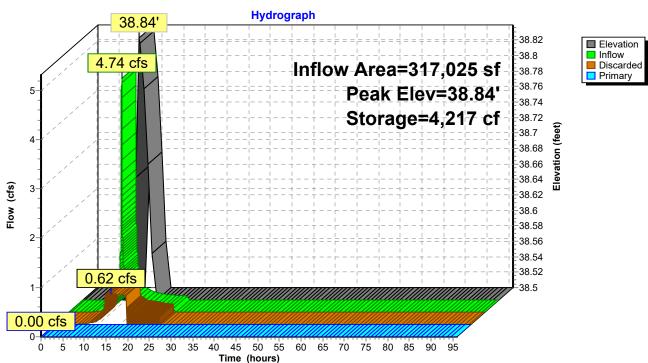
Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 46.7 min ( 884.2 - 837.5 )

Volume	Invert	Avail.Sto	rage Stora	ge Description		
#1	38.50'	100,21	15 cf Dry F	ond (Prismatic)L	isted below (Recalc)	
#2	39.50'	5			H CB #-Impervious	
#3	43.15'	1,79	93 cf Abov	e Ground (Prisma	atic)Listed below (Recalc) -Impervious	
#4	38.50'			Round Culvert-		
			L= 89	0.0' S= 0.0112 '/'		
		102,34	15 cf Total	Available Storage		
Elevatio	n Si	ırf.Area	Inc.Store	Cum.Store		
(fee		(sq-ft)	(cubic-feet)	(cubic-feet)		
38.5	0	12,091	0			
39.0		13,149	6,310	6,310		
40.0		15,319	14,234	20,544		
41.0	0	17,557	16,438	36,982		
42.0	0	19,866	18,712	55,694		
43.0	0	22,243	21,055	76,748		
44.0	0	24,690	23,467	100,215		
Elevatio	n Su	ırf.Area	Inc.Store	Cum.Store		
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)		
43.1	5	6	0	0		
43.2	5	151	8	8		
43.5	0	1,336	186	194		
43.7	5	3,192	566	760		
44.0	0	5,073	1,033	1,793		
Device	Routing	Invert	Outlet Devi	ces		
#1	Discarded	38.50'	2.100 in/hr	Exfiltration over	Surface area	
#2	Primary	45.72'	Top of Cu	rb, C= 3.27		
	-		Offset (feet	) 0.00 9.59 19.1	7 24.92 30.87 40.79 50.71	
			Height (fee	t) 0.13 0.07 0.02	0.00 0.02 0.07 0.13	
Discoud	ad 0	Max-0.60 af	<b>D</b> iscourded <b>O</b> ut <b>F</b> low Mov-0.62 of $(2, 26, 20, 10, 10, 10, 10, 10, 10, 10, 10, 10, 1$			

**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)

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# 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
			27,300 cf Overall - 564 cf Embedded = 26,736 cf x 40.0% Voids
#2	41.50'	501 cf	
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			34 Chambers in 2 Rows
#3	41.50'	38 cf	2.50'W x 5.50'L x 2.75'H CB # Inside #1
			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

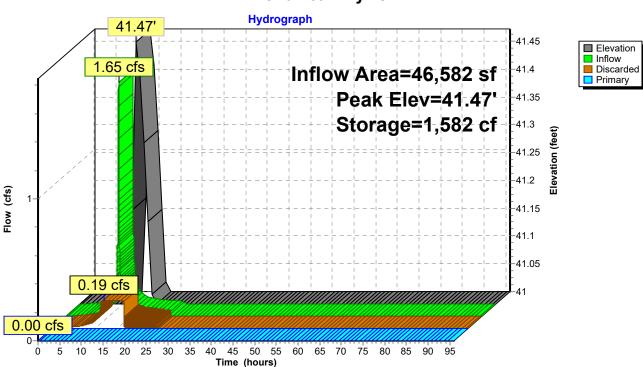
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.75	16	0	0
45.00	141	20	20
45.25	5,306	681	701
45.50	14,035	2,418	3,118
45.75	22,283	4,540	7,658

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
			Offset (feet) 0.00 9.59 19.17 24.92 30.87 40.79 50.71
			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)

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# 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
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			14 Chambers in 2 Rows
#3	40.00'	44 cf	
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			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
			29 cf Overall - 6.0" Wall Thickness = 14 cf
#5	42.50'	16 cf	
#6	45.38'	1,144 cf	Above Ground (Prismatic)Listed below (Recalc) -Impervious
		9,953 cf	Total Available Storage

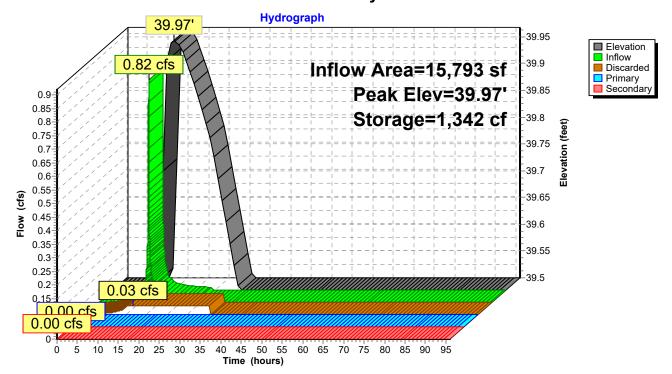
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.38	6	0	0
45.50	733	44	44
45.75	8,064	1,100	1,144

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	
			Offset (feet) 0.00 20.00 28.00	
			Height (feet) 0.04 0.00 0.04	
#3	Secondary	45.74'	Weir Outlet, C= 3.27	
			Offset (feet) 0.00 20.00 28.00	
			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)



### Pond #6b: Drywell

### 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 )

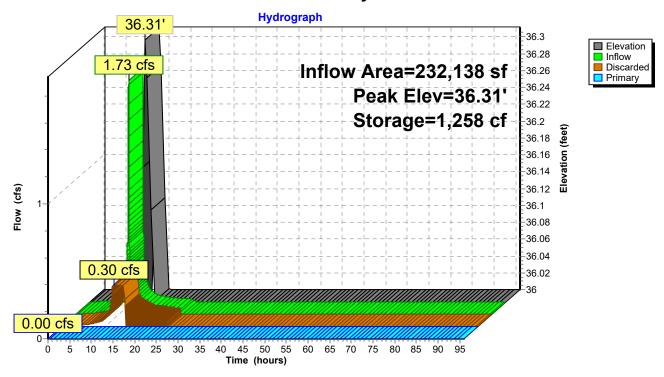
Volume	Invert	Avail.Stora	ge Storag	e Description
#1	36.00'	16,584		N x 225.00'L x 6.00'H Field A
				cf Overall - 19,291 cf Embedded = 41,459 cf x 40.0% Voids
#2	36.75'	3,028		StormTech MC-3500 d +Cap x 27 Inside #1
				/e Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
				l Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap ambers in 2 Rows
			-	orage= $+14.9$ cf x 2 x 2 rows = 59.6 cf
#3	36.75'	16,092		StormTech MC-3500 d +Cap x 145 Inside #1
		,		/e Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
			Overal	Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
				ambers in 5 Rows
				orage= +14.9 cf x 2 x 5 rows = 149.0 cf
#4	36.75'	116		x 5.50'L x 5.25'H CB # Inside #1
	40.00	00		Overall - 6.0" Wall Thickness = 116 cf
#5 #6	42.00' 43.34'			x 5.50'L x 1.34'H CB #-Impervious
#0	43.34	1,003		Ground (Prismatic)Listed below (Recalc) - Impervious
		36,852	CI TOLALA	vailable Storage
Elevatio	on Su	rf.Area	Inc.Store	Cum.Store
(fee	et)	(sq-ft) (	cubic-feet)	(cubic-feet)
43.3	34	6	0	0
43.5	50	245	20	20
43.7	-	1,632	235	255
44.(	00	4,355	748	1,003
Device	Routing	Invert	Outlet Devic	es
#1	Discarded	36.00'	1.300 in/hr I	Exfiltration over Surface area
#2	Primary	43.84'	Fop of Curb	o, C= 3.27
	-			0.00 83.50 167.00
			Height (feet)	0.41 0.00 0.41
Discard	led OutFlow	Max=0.30 cfs	@ 12 05 hrs	HW=36.09' (Free Discharge)

**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)

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Pond #7: Drywell



# Summary for Pond #8: Wet Pond

Inflow Ar Inflow Outflow Primary Seconda	= 10.08 = 0.8 = 0.8	8 cfs @ 12 1 cfs @ 13 1 cfs @ 13	i6.38% Impervio 2.13 hrs, Volun 3.45 hrs, Volun 3.45 hrs, Volun 3.45 hrs, Volun	ne= 32, ne= 30, ne= 30,	660 cf	for RPv event n= 92%, Lag= 79.3 min
Starting	Elev= 37.05'	Surf.Area=	Fime Span= 0.0 35,833 sf Stor surf.Area= 38,12	age= 25,059 cf		18,205 cf above start)
			min calculated nin ( 1,391.4 - 8		8% of inflow)	
Volume	Invert	Avail.Sto	rage Storage	Description		
#1	36.00'	104,09	96 cf Pond (P	rismatic) Listed	l below (Reca	alc)
#2	38.25'	2,14	10 cf Roadwa	y Ponding (Pri	smatic)Liste	d below (Recalc)
		106,23	35 cf Total Av	ailable Storage		
Elevatio	on Surf.	Area	Inc.Store	Cum.Store		
(fee	et) (:	sq-ft)	(cubic-feet)	(cubic-feet)		
36.0	0 22	2,109	0	0		
37.0		1,969	23,539	23,539		
37.0		5,833	1,520	25,059		
38.0		),259	36,144	61,203		
39.0	0 45	5,527	42,893	104,096		
Elevatio	on Surf.	Area	Inc.Store	Cum.Store		
(fee	et) (:	sq-ft)	(cubic-feet)	(cubic-feet)		
38.2	25	11	0	0		
38.5	50 1	1,429	180	180		
38.7		3,297	591	771		
39.0	0 7	7,653	1,369	2,140		
Device	Routing	Invert	Outlet Devices	6		
#1	Primary	37.05'			Elliptical RC	P_Elliptical 23x14
	,					o fill, Ke= 0.500
			Inlet / Outlet Ir	nvert= 37.05' / 3	37.00' S=0.0	0005 '/' Cc= 0.900
				w Area= 1.83 st		
#2	Secondary	38.75'		0' breadth Cur		
					0.80 1.00 1	.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.5		<b></b>	
						5 2.64 2.64 2.68 2.68
			2.72 2.81 2.9	02 2.97 3.07 3	5.32	

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)

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Hydrograph 37.54' Elevation . -37.5 Inflow
 Primary
 Secondary 10.08 cfs Inflow Area=492,626 sf -37.45 11 Peak Elev=37.54' -37.4 10 Storage=43,264 cf -37.35 Elevation (feet) 9 8 37.3 7 -37.25 Flow (cfs) 6 -37.2 5 -37.15 4 -37.1 3-37.05 0.81 cfs 2 0.00 cfs 0-144 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 Time (hours)

### 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 )

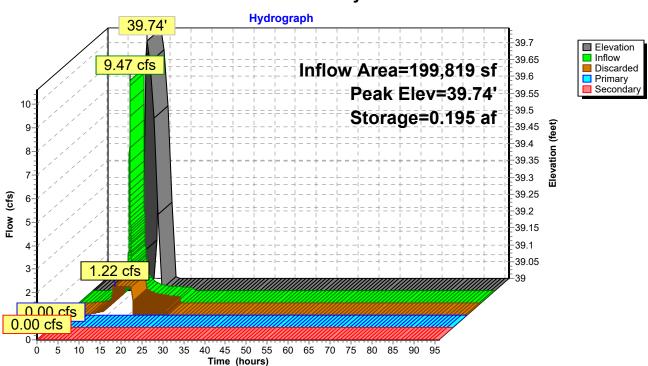
Volume	Invert A	vail.Stora	ge S	torage Description			
#1	39.00'	0.809	-	30.00'W x 185.00'L x 4.00'H Field A			
				2.208 af Overall - 0.186 af Embedded = 2.022 af x 40.0% Voids			
#2	39.50'	0.186		DS_StormTech SC-310 +Cap x 550 Inside #1			
				Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf			
				Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap			
#3	39.50'	0.002	•	50 Chambers in 22 Rows . <b>00'W x 2.83'L x 3.50'H CB #</b> x 4 -Impervious			
#3 #4	43.00'	0.002		<b>Sove Ground (Prismatic)</b> Listed below (Recalc) -Impervious			
	40.00	1.106		otal Available Storage			
		1.100					
Elevatio	on Surf.Area	Inc	c.Store	e Cum.Store			
(fee	et) (acres)	(acr	e-feet)	) (acre-feet)			
43.0	0.001		0.000	0.000			
43.2	0.017		0.002				
43.5			0.008				
43.7			0.020				
44.0	0 0.517		0.079	9 0.109			
Device	Pouting	Invert	Outlot	t Devices			
	Routing		-				
#1 #2	Discarded Secondary	39.00' 44.59'		in/hr Exfiltration over Surface area			
#2	Secondary	44.59		t (feet) 0.00 0.00 24.00 24.00			
				t (feet) 0.50 0.00 0.12 0.50			
#3	Primary	40.50'		<b>15.0" Round Over Drain</b> L= 199.0' Ke= 0.500			
110	1 milery	10.00		Inlet / Outlet Invert= 40.50' / 37.00' S= 0.0176 '/' Cc= 0.900			
			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)

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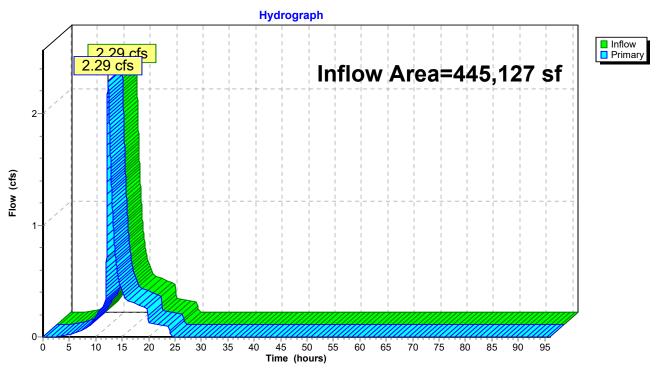


# Pond #9: Drywell

## 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

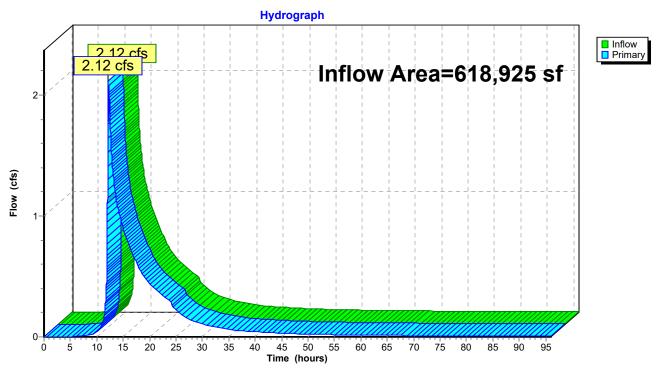


### Link POI1: POI #1

# Summary for Link POI2: POI #2

Inflow Are	a =	618,925 sf, 63.76%	6 Impervious,	Inflow Depth >	0.79"	for RPv event
Inflow	=	2.12 cfs @ 12.14 h	rs, Volume=	40,820 c	f	
Primary	=	2.12 cfs @ 12.14 h	rs, Volume=	40,820 c	f, Atter	n= 0%, Lag= 0.0 min

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

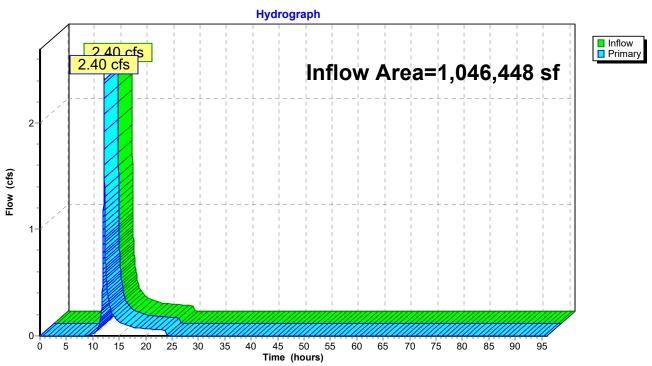


### Link POI2: POI #2

## 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

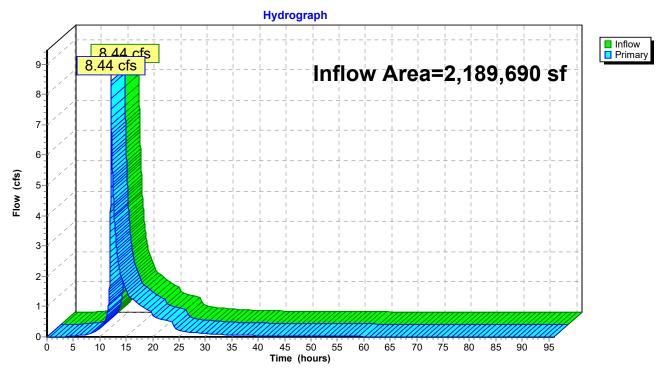


### Link POI3: POI #3

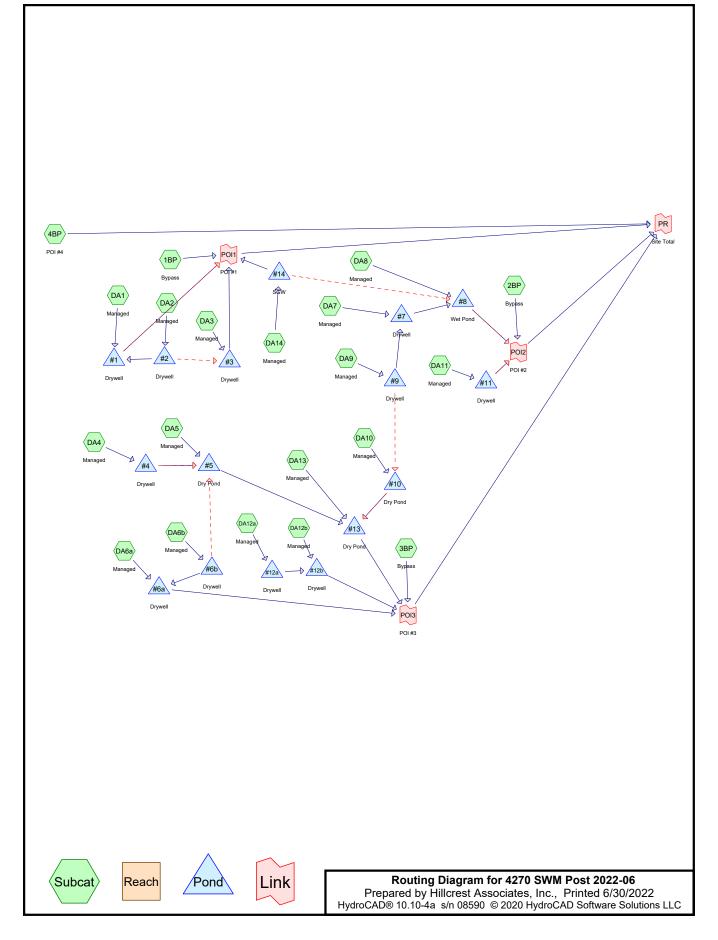
### Summary for Link PR: Site Total

Inflow Area =	=	2,189,690 sf,	65.38% Impervious,	Inflow Depth >	0.42" for RPv event
Inflow =	:	8.44 cfs @ 1	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



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

Subcatchment1BP: 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
Subcatchment2BP: 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
Subcatchment3BP: 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
Subcatchment4BP: 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
SubcatchmentDA1: 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
SubcatchmentDA10: 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
SubcatchmentDA11: 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
SubcatchmentDA12a: 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
SubcatchmentDA12b: 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
SubcatchmentDA13: 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
SubcatchmentDA14: 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
SubcatchmentDA2: 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
SubcatchmentDA3: 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
SubcatchmentDA4: 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
SubcatchmentDA5: 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
SubcatchmentDA6a: 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

<b>4270 SWM Post 2022-0</b> Prepared by Hillcrest Asso HydroCAD® 10.10-4a s/n 085	ociates, Inc.		<i>Cv Rainfall=5.30"</i> Printed 6/30/2022 Page 63
SubcatchmentDA6b: Mana	aged Runoff Area	a=15,793 sf 91.49% Impervious Tc=6.0 min CN=93 Run	
SubcatchmentDA7: Manag	ged Runoff Area	a=32,319 sf 87.77% Impervious Tc=6.0 min CN=94 Runo	•
SubcatchmentDA8: Manag	ged Runoff Area	=260,488 sf 54.51% Impervious Tc=6.0 min CN=84 Runoff	
SubcatchmentDA9: Manag	ged Runoff Area	=199,819 sf  78.40% Impervious Tc=6.0 min  CN=90  Runoff	•
Pond #1: Drywell Discarded=0.39 cfs 13,0		v=40.35' Storage=3,955 cf Inflov Secondary=0.00 cfs 0 cf Outflov	
Pond #10: Dry Pond		37.48' Storage=44,563 cf Inflow cf Primary=0.00 cfs 0 cf Outflov	
Pond #11: Drywell Discarded=0.04 cfs 7,170 cf		v=38.17' Storage=6,170 cf Inflov Secondary=0.00 cfs 0 cf Outflov	
Pond #12a: Drywell		v=40.41' Storage=7,757 cf Inflov cf Primary=0.00 cfs 0 cf Outflov	
Pond #12b: Drywell		v=40.29' Storage=6,465 cf Inflov cf Primary=0.00 cfs 0 cf Outflov	
Pond #13: Dry Pond		37.19' Storage=19,321 cf Inflow cf Primary=0.00 cfs 0 cf Outflov	
Pond #14: SGW Prin		41.65' Storage=17,320 cf Inflow ondary=2.69 cfs 2,142 cf Outflow	•
Pond #2: Drywell Discarded=0.57 cfs 41,2		39.27' Storage=19,288 cf Inflow Secondary=0.00 cfs 0 cf Outflow	
Pond #3: Drywell		39.44' Storage=28,022 cf Inflow cf Primary=0.00 cfs 0 cf Outflov	
<b>Pond #4: Drywell</b> Discarded=0.35 cfs 19,526 cf		v=40.62' Storage=8,280 cf Inflov Secondary=0.00 cfs 0 cf Outflov	
Pond #5: Dry Pond		40.32' Storage=25,753 cf Inflow cf Primary=0.00 cfs 0 cf Outflov	
Pond #6a: Drywell		v=42.41' Storage=5,021 cf Inflov cf Primary=0.00 cfs 0 cf Outflov	
Pond #6b: Drywell Discarded=0.03 cfs 5,		ev=40.79' Storage=3,833 cf Inflo Secondary=0.00 cfs 0 cf Outflo	
Pond #7: Drywell		=37.81' Storage=11,834 cf Inflov cf Primary=0.00 cfs 0 cf Outflov	

<b>4270 SWM Post 2022-0</b> Prepared by Hillcrest Ass <u>HydroCAD® 10.10-4a s/n 085</u>	ociates, Inc.		D Cv Rainfall=5.30" Printed 6/30/2022 Page 64
Pond #8: Wet Pond		=38.09' Storage=64,846 cf In Secondary=0.00 cfs 0 cf Oເ	
Pond #9: Drywell Discarded=1.22 cfs 61,083 c		/=41.12' Storage=0.580 af In Secondary=0.00 cfs 0 cf Oเ	
Link POI1: POI #1			nflow=5.01 cfs  46,597 cf imary=5.01 cfs  46,597 cf
Link POI2: POI #2			ow=11.55 cfs  108,470 cf ary=11.55 cfs  108,470 cf
Link POI3: POI #3			nflow=5.80 cfs 18,961 cf imary=5.80 cfs 18,961 cf
Link PR: Site Total			ow=27.95 cfs 191,811 cf ary=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"

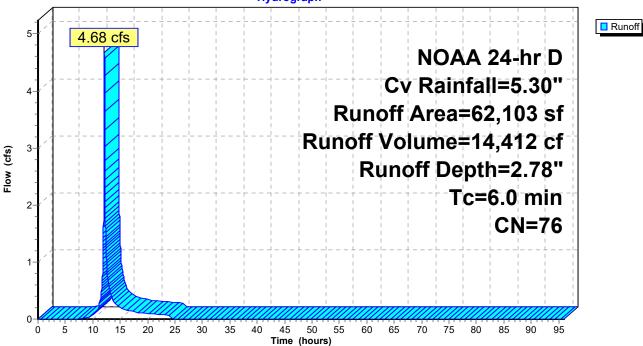
Area (sf)         CN         Description           *         0         98         Roof           *         0         98         Pavement           *         0         98         Sidewalk           *         14,850         39         Grass, HSG A           *         4,558         61         Grass, HSG B           *         0         74         Grass, HSG C           19,408         44         Weighted Average           19,408         100.00%         Pervious Area           Tc         Length         Slope         Velocity         Capacity         Description           (min)         (feet)         (ft/ft)         (ft/sec)         (cfs)         Direct Entry, Minimum	
*         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         Length         Slope         Velocity         Capacity         Description           (min)         (feet)         (ft/ft)         (ft/sec)         (cfs)         Direct Entry, Minimum	
*       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       Length       Slope       Velocity       Capacity       Description         (min)       (feet)       (ft/ft)       (ft/sec)       (cfs)       Direct Entry, Minimum	
*       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 Length (ft/ft)         (min)       (feet)         6.0       Direct Entry, Minimum	
*       4,558       61       Grass, HSG B         *       0       74       Grass, HSG C         19,408       44       Weighted Average         19,408       100.00% Pervious Area         Tc       Length       Slope       Velocity       Capacity       Description         (min)       (feet)       (ft/ft)       (ft/sec)       (cfs)         6.0       Direct Entry, Minimum	
*     0     74     Grass, HSG C       19,408     44     Weighted Average       19,408     100.00% Pervious Area       Tc     Length     Slope     Velocity     Capacity     Description       (min)     (feet)     (ft/ft)     (ft/sec)     (cfs)       6.0     Direct Entry, Minimum	
19,408 19,40844 100.00%Weighted Average Pervious AreaTc (min)Slope (ft/ft)Velocity (ft/sec)Description (cfs)6.0Direct Entry, Minimum	
19,408100.00% Pervious AreaTc LengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)6.0Direct Entry, Minimum	
TcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)6.0Direct Entry, Minimum	
(min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry, Minimum	
(min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry, Minimum	
Subcatchment 1BP: Bypass	
Hydrograph	
	⊢ └_ <b>□</b> Runoff
0.115 0.11 0.11 cfs	+
0.105 1/4	
0.095 0.09	
	<u>L</u>
0.08 0.075 Runoff Area=19,408 s	F - H
B 0.065	+
B.0.05 B.0.05 B.0.05 C.05	
0.01	
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 Time (hours)	95

### 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"

	A	rea (sf)	CN	Description				
*		3,148	98	Roof				
*		1,657	98	Pavement				
*		5,920	98	Sidewalk				
*		5,931	39	Grass, HSG	βA			
*		7,283	61	Grass, HSG	βB			
*		31,454	74	Grass, HSG	G C			
*		6,710	98	Ex. Roadwa	ау			
		62,103	76	Weighted A	verage			
	44,668 71.93% Pervious Area							
		17,435 28.07% Impervious Area						
	Тс	Length	Slop		Capacity	Description		
_	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		
				S	Subcatch	ment 2BP: Bypass		
	Hydrograph							



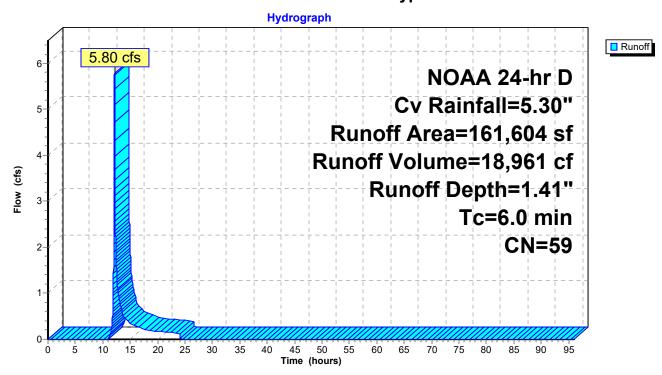
### Summary for Subcatchment 3BP: Bypass

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"

	A	rea (sf)	CN	Description		
*		30,567	98	Roof		
*		19,555	98	Pavement		
*		2,610	98	Sidewalk		
*	1	05,358	39	Grass, HSG	βA	
*		3,155	61	Grass, HSG	βB	
*		359	74	Grass, HSC	ЭC	
	1	61,604	59	Weighted A	verage	
	1	08,872		67.37% Per	vious Area	
	52,732 32.63% Impervious Area			32.63% Imp	pervious Are	ea
	Тс	Length	Slop	e Velocity	Capacity	Description
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)	
	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"

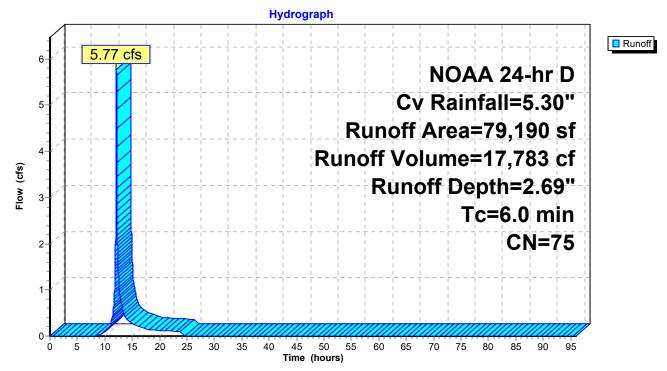
	Area (sf)	CN	Description
*	0	98	Roof
*	3,356	98	Pavement
*	5,503	98	Sidewalk
*	16,262	39	Grass, HSG A
*	16,847	61	Grass, HSG B
*	8,555	74	Grass, HSG C
*	28,667	98	Existing Roadway
	79,190	75	Weighted Average
	41,664		52.61% Pervious Area
	37,526		47.39% Impervious Area
	Tc Length (min) (feet)	Slop (ft/	

(feet)	(ft/ft)	(ft/sec)	(cfs)
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### **Direct Entry, Minimum**

### Subcatchment 4BP: POI #4



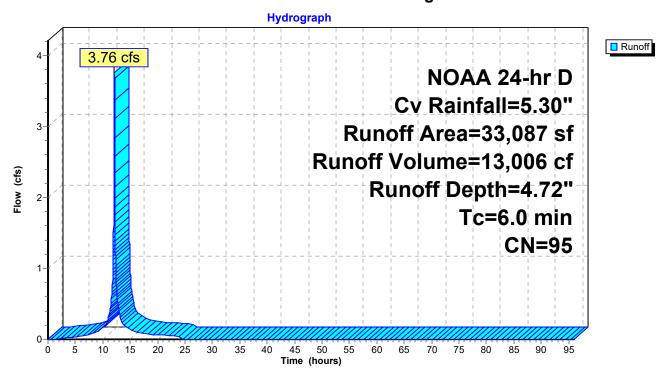
### Summary for Subcatchment DA1: Managed

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"

	A	rea (sf)	CN	Description				
*		5,119	98	Roof	Roof			
*		24,140	98	Pavement				
*		1,098	98	Sidewalk				
*		0	39	Grass, HSG A				
*		2,730	61	Grass, HSC	Grass, HSG B			
*		0	74	Grass, HSC	ЭC			
		33,087	95	Weighted A	verage			
		2,730		8.25% Perv	vious Area			
		30,357		91.75% Im	pervious Are	ea		
	Тс	Length	Slop	e Velocity	Capacity	Description		
(	min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA1: Managed



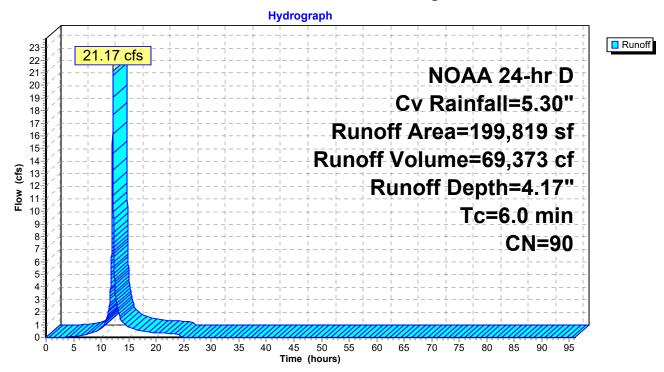
#### Summary for Subcatchment DA10: Managed

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"

	A	rea (sf)	CN	Description				
*		45,831	98	Roof	Roof			
*		99,756	98	Pavement	Pavement			
*		11,069	98	Sidewalk	Sidewalk			
*		1,120	39	Grass, HSG A				
*		42,043	61	Grass, HSC	Grass, HSG B			
*		0	74	Grass, HSG C				
	1	99,819	90	90 Weighted Average				
		43,163		21.60% Pe	rvious Area			
	1	56,656		78.40% Imp	pervious Are	ea		
	Тс	Length	Slop	e Velocity	Capacity	Description		
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA10: Managed



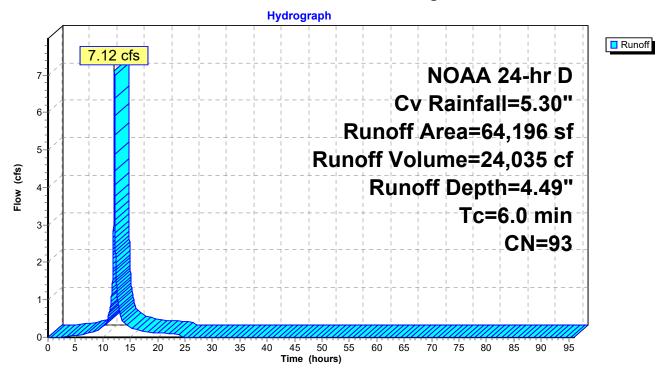
### Summary for Subcatchment DA11: Managed

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"

	A	rea (sf)	CN	Description				
*		6,876	98	Roof				
*		35,655	98	Pavement				
*		7,636	98	Sidewalk				
*		0	39	Grass, HSG A				
*		0	61	Grass, HSC	Grass, HSG B			
*		14,029	74	Grass, HSC	Grass, HSG C			
		64,196	93	93 Weighted Average				
		14,029		21.85% Pe	rvious Area			
		50,167		78.15% Imp	pervious Are	ea		
	Тс	Length	Slop		Capacity	Description		
(r	nin)	(feet)	(ft/ft	i) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA11: Managed



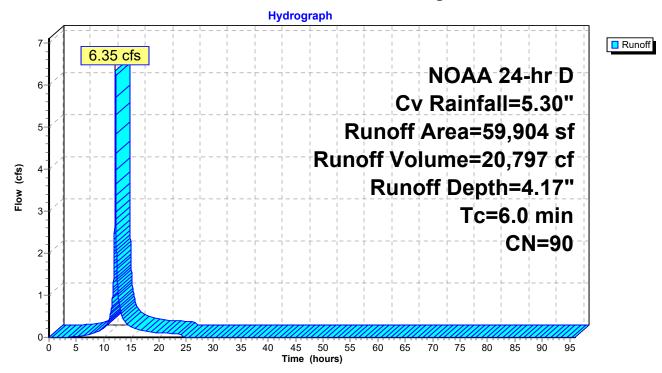
#### Summary for Subcatchment DA12a: Managed

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"

	A	rea (sf)	CN	Description				
*		14,960	98	Roof	Roof			
*		35,092	98	Pavement	Pavement			
*		1,991	98	Sidewalk	Sidewalk			
*		7,861	39	Grass, HSG	Grass, HSG A			
*		0	61	Grass, HSG	Grass, HSG B			
*		0	74	Grass, HSG C				
		59,904	90	Weighted Average				
		7,861		13.12% Per	vious Area			
		52,043		86.88% Imp	pervious Are	ea		
	Тс	Length	Slop	e Velocity	Capacity	Description		
(	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA12a: Managed



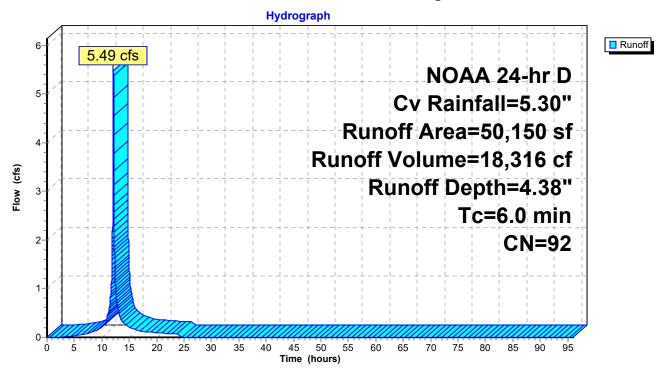
#### Summary for Subcatchment DA12b: Managed

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"

	A	rea (sf)	CN	Description				
*		12,223	98	Roof	Roof			
*		31,728	98	Pavement				
*		1,032	98	Sidewalk				
*		5,167	39	Grass, HSC	Grass, HSG A			
*		0	61	Grass, HSC	Grass, HSG B			
*		0	74	Grass, HSG C				
		50,150	92	92 Weighted Average				
		5,167		10.30% Per	vious Area			
		44,983		89.70% Imp	pervious Are	ea		
	Tc	Length	Slop		Capacity	Description		
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA12b: Managed



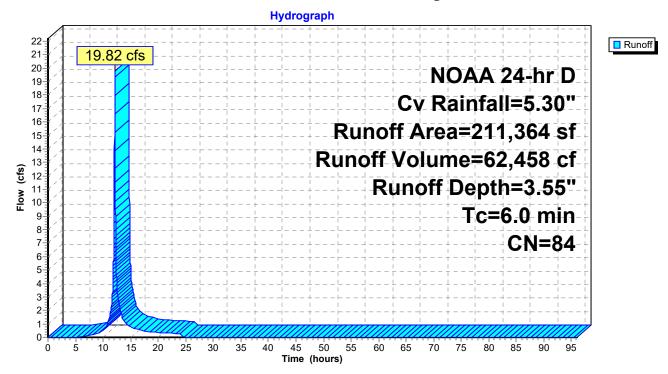
#### Summary for Subcatchment DA13: Managed

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"

	A	rea (sf)	CN	Description					
*		43,108	98	Roof	Roof				
*		81,796	98	Pavement					
*		9,004	98	Sidewalk					
*		16,604	39	Grass, HSC	ΞA				
*		45,260	61	Grass, HSC	Grass, HSG B				
*		15,592	74	Grass, HSG C					
	2	11,364	84	Weighted A	verage				
		77,456		36.65% Pe	rvious Area				
	1	33,908		63.35% Imp	pervious Are	ea			
	Тс	Length	Slop	e Velocity	Capacity	Description			
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

#### Subcatchment DA13: Managed



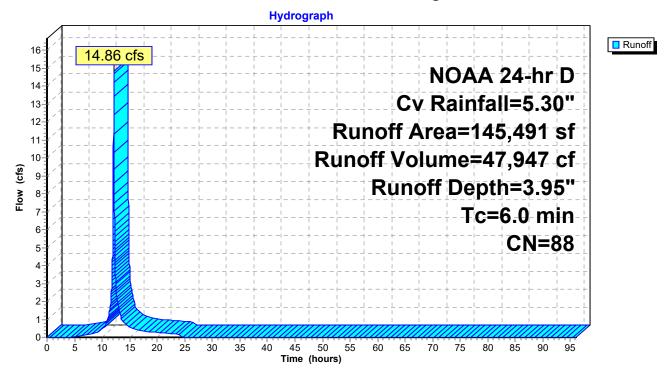
#### Summary for Subcatchment DA14: Managed

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"

	A	rea (sf)	CN	Description				
*		67,744	98	Roof	Roof			
*		37,879	98	Pavement	Pavement			
*		2,866	98	Sidewalk	Sidewalk			
*		8,381	39	Grass, HSG A				
*		25,644	61	Grass, HSG B				
*		2,977	74	Grass, HSG C				
	1	45,491	88	3 Weighted Average				
		37,002		25.43% Pei	vious Area			
	1	08,489		74.57% Imp	pervious Are	ea		
	Тс	Length	Slop	e Velocity	Capacity	Description		
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA14: Managed



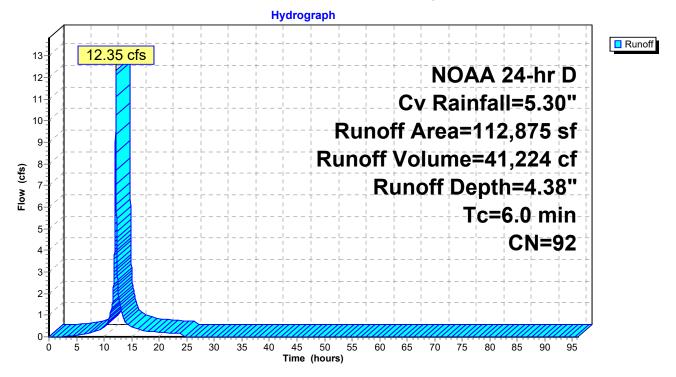
#### Summary for Subcatchment DA2: Managed

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 I	Description			
9,6	696	98	Roof			
79,4	128	98 I	Pavement			
6,6	694	98	Sidewalk			
17,0	)57	61 (	Grass, HSG B			
112,8	375	92	Neighted A	verage		
17,0	)57		15.11% Per	vious Area		
95,8	318	ł	34.89% Imp	pervious Are	ea	
				Capacity	Description	
nin) (	feet)	(ft/ft)	(ft/sec)	(cfs)		
6.0					Direct Entry, Minimum	
	9,6 79,2 6,6 17,0 112,8 17,0 95,8 Tc Len nin) (1	nin) (feet)	9,696 98 F 79,428 98 F 6,694 98 5 17,057 61 0 112,875 92 V 17,057 92 V 17,057 95,818 8 Tc Length Slope nin) (feet) (ft/ft)	9,696 98 Roof 79,428 98 Pavement 6,694 98 Sidewalk 17,057 61 Grass, HSC 112,875 92 Weighted A 17,057 15.11% Per 95,818 84.89% Imp Tc Length Slope Velocity nin) (feet) (ft/ft) (ft/sec)	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 Ar Tc Length Slope Velocity Capacity nin) (feet) (ft/ft) (ft/sec) (cfs)	

#### Subcatchment DA2: Managed



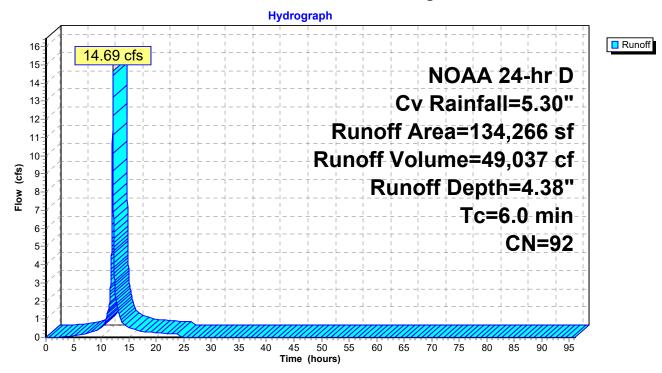
#### Summary for Subcatchment DA3: Managed

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"

	A	rea (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% Per	vious Area			
	1	15,685		86.16% Imp	pervious Are	ea		
	Тс	Length	Slope		Capacity	Description		
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)			
	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"

	A	Area (sf)	CN [	Description							
*		6,897		Roof							
*		40,222		Pavement							
*		4,998									
*		17,113		Grass, HSG A							
*		29,223 0		Grass, HSG B							
*		10,529		Grass, HSG C Existing Roadway							
*		1,670		Existing Dri							
*		2,487			ous (Úndisi	turbed)					
*		26,157			G A (Ündist						
*		14,463			G B (Undist	urbed)					
		153,759		Veighted A							
		86,956			rvious Area						
		66,803	2	13.45% IM	pervious Ar	ed					
	Тс	Length	Slope	Velocity	Capacity	Descripti	on				
()	min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	I					
	6.0					Direct E	ntry, Mi	nimum			
				S	ubcatchn	nent DA4	4: Mana	aged			
					Hydro	graph					
	6										
					I I						
		21 <sup>-1</sup> 97	5 cfs	+	+	+	+	+	-  <del>-</del>	· – – – – – –	+ Runoff
	10-	/ 1 - 1 9.7	5 cfs	+	+        		+		Δ 21	 _hr Γ	
	10 9	<b>9.7</b>	5 cfs					L L	<b>\A 24</b>	1 I I	
	9		5 cfs				C\	L L	A 24 fall=	1 I I	
	-		5 cfs					/ Raiı	nfall=	5.30'	)
	9- 	9.7	5 cfs				noff A	/ Raiı \rea=	nfall= 153,7	5.30' 59 si	) 
	9 8 7	9.7	5 cfs				noff A	/ Raiı \rea=	nfall= 153,7	5.30' 59 si	) 
(rife)	9 8 7		5 cfs				noff A off Vo	/ Raiı \rea= lume	nfall= 153,7 =30,0	5.30' 59 si 58 ci	)- ;- ;- f- ;- f- ;-
low (rfs)	9 8 7	9.7	5 cfs				noff A off Vo	/ Raiı \rea= lume	nfall= 153,7	5.30' 59 si 58 ci	)- ;- ;- f- ;- f- ;-
Elow (rfs)	9 8 7						noff A off Vo	/ Raii Area= lume off De	nfall= 153,7 =30,0 epth=	5.30' 59 si 58 ci 2.35'	)
Elow (rfs)	9 8 7		5 cfs 				noff A off Vo	/ Raii Area= lume off De	nfall= 153,7 =30,0 >pth= c=6.0	5.30' 59 si 58 ci 2.35' ) mir	)- ¦ ¦ f- ¦ f- ¦ ¦ ¦ ¦ ¦
Flow (rfs)	9 8 7 6 6 5		5 cfs 				noff A off Vo	/ Raii Area= lume off De	nfall= 153,7 =30,0 >pth= c=6.0	5.30' 59 si 58 ci 2.35'	)- ¦ ¦ f- ¦ f- ¦ ¦ ¦ ¦ ¦
Elow (rfs)	9 8 7 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5 cfs 				noff A off Vo	/ Raii Area= lume off De	nfall= 153,7 =30,0 >pth= c=6.0	5.30' 59 si 58 ci 2.35' ) mir	)- ¦ ¦ f- ¦ f- ¦ ¦ ¦ ¦ ¦
Flow (refs.)	9 8 7 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5 cfs 				noff A off Vo	/ Raii Area= lume off De	nfall= 153,7 =30,0 >pth= c=6.0	5.30' 59 si 58 ci 2.35' ) mir	)- ¦ ¦ f- ¦ f- ¦ ¦ ¦ ¦ ¦
Elow (rfs)	9 8 7 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5 cfs 				noff A off Vo	/ Raii Area= lume off De	nfall= 153,7 =30,0 >pth= c=6.0	5.30' 59 si 58 ci 2.35' ) mir	)- ¦ ¦ f- ¦ f- ¦ ¦ ¦ ¦ ¦
Flow (rfs)	9 8 7 6 1 3 2 1 2		5 cfs 				noff A off Vo	/ Raii Area= lume off De	nfall= 153,7 =30,0 >pth= c=6.0	5.30' 59 si 58 ci 2.35' ) mir	)- ¦ ¦ f- ¦ f- ¦ ¦ ¦ ¦ ¦
Flow (refs.)	9 8 7 6 1 3 2 1 2		5 cfs 				noff A off Vo	/ Raii Area= lume off De	nfall= 153,7 =30,0 >pth= c=6.0	5.30' 59 si 58 ci 2.35' ) mir	<b>b</b> -

#### Summary for Subcatchment DA5: Managed

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

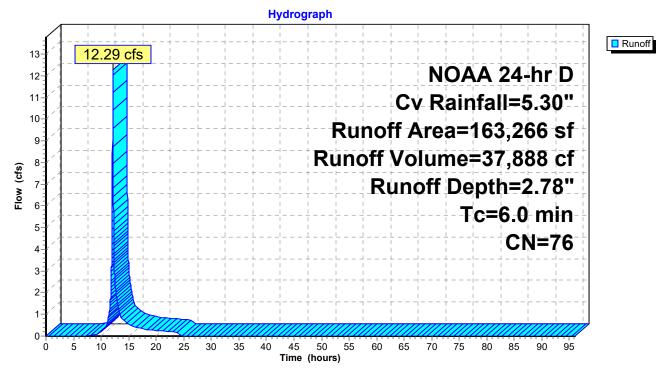
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs NOAA 24-hr D Cv Rainfall=5.30"

	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 Length (min) (feet)	Slop (ft/					



# Direct Entry, Minimum

# Subcatchment DA5: Managed



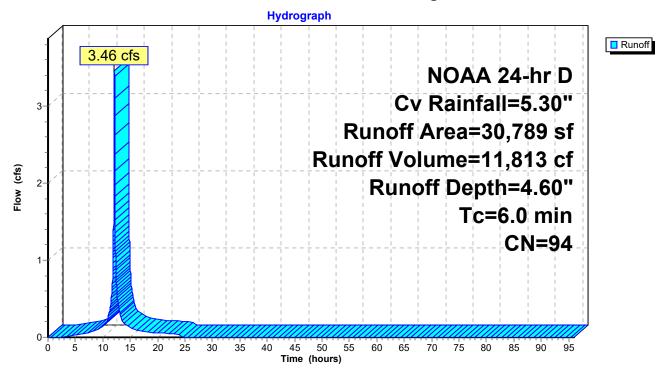
### Summary for Subcatchment DA6a: Managed

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"

	A	rea (sf)	CN	Description					
*		1,985	98	Roof	Roof				
*		24,381	98	Pavement	Pavement				
*		1,251	98	Sidewalk	Sidewalk				
*		609	39	Grass, HSG A					
*		2,563	61	Grass, HSC	Grass, HSG B				
*		0	74	Grass, HSC	Grass, HSG C				
		30,789	94	Weighted A	verage				
		3,172		10.30% Pe	rvious Area				
		27,617		89.70% Imp	pervious Are	ea			
	Тс	Length	Slop	e Velocity	Capacity	Description			
(r	min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

#### Subcatchment DA6a: Managed



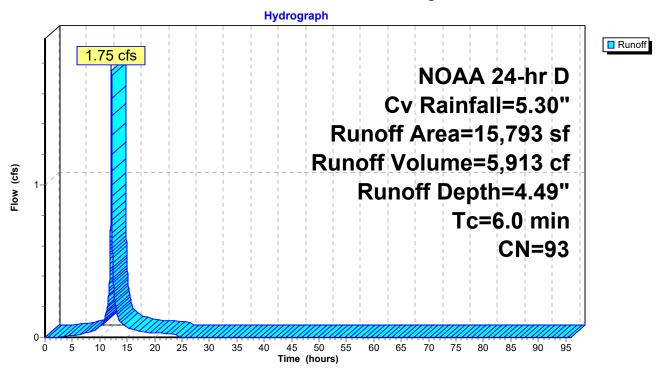
#### Summary for Subcatchment DA6b: Managed

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 (s	sf) C	N D	escription				
*	4,32	20 9	98 F	Roof				
*	9,40	)9 9	98 F	avement				
*	72	20 9	98 S	idewalk				
*	1,34	14 3	39 G	Grass, HSG A				
*		0 6	61 G	Grass, HSG	βB			
*		0 7	74 🤆	Grass, HSG	G C			
	15,79	93 9	93 V	Veighted A	verage			
	1,34	14	8	.51% Perv	ious Area			
	14,44	19	9	1.49% Imp	ervious Are	ea		
	Tc Len		Slope	Velocity	Capacity	Description		
<u>(m</u>	in) (fe	et)	(ft/ft)	(ft/sec)	(cfs)			
6	5.0					Direct Entry, Minimum		

#### Subcatchment DA6b: Managed



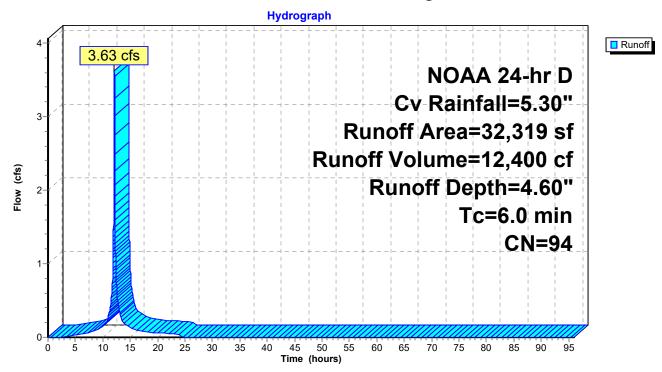
#### Summary for Subcatchment DA7: Managed

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"

	Α	rea (sf)	CN	Description				
*		7,045	98	Roof				
*		19,833	98	Pavement				
*		1,490	98	Sidewalk				
*		0	39	Grass, HS	Grass, HSG A			
*		3,693	61	Grass, HS0	ЭB			
*		258	74	Grass, HS	ЭC			
		32,319	94	Weighted A	verage			
		3,951		12.23% Pe	rvious Area	l		
		28,368		87.77% lm	pervious Are	ea		
	Тс	Length	Slop	e Velocity	Capacity	Description		
(r	min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	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"

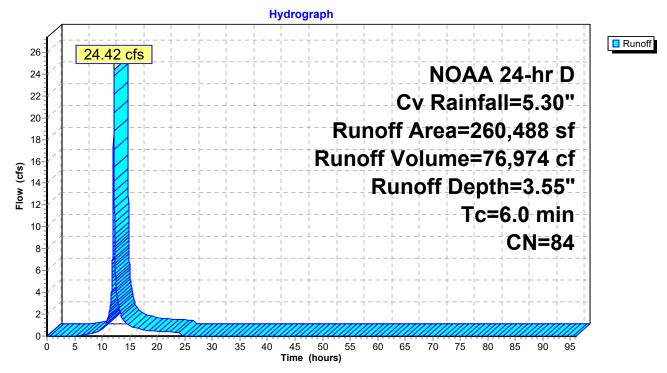
	Area (sf)	CN	Description					
*	28,409	98	Roof					
*	91,663	98	Pavement					
*	13,109	98	Sidewalk					
*	0	39	Grass, HSG A					
*	68,342	61	Grass, HSG B					
*	50,167	74	Grass, HSG C					
*	8,798	98	Ex.Roadway					
	260,488	84	Weighted Average					
	118,509		45.49% Pervious Area					
	141,979		54.51%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

(feet)	) (	ft/ft)	) (	(ft/sec)	) (	(cfs)	



#### **Direct Entry, Minimum**

# Subcatchment DA8: Managed



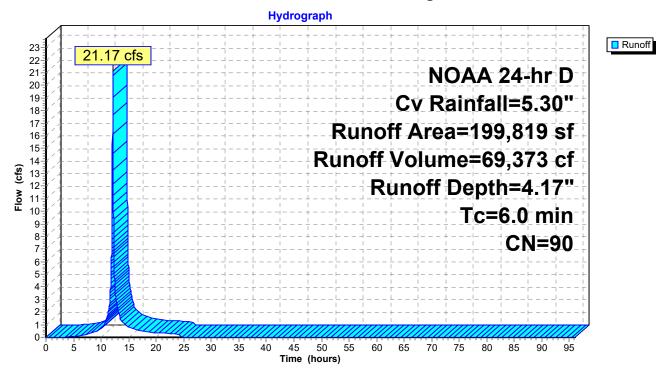
#### Summary for Subcatchment DA9: Managed

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"

	A	rea (sf)	CN	Description		
*		45,831	98	Roof		
*		99,756	98	Pavement		
*		11,069	98	Sidewalk		
*		1,120	39	Grass, HSC	θA	
*		42,043	61	Grass, HSC	βB	
*		0	74	Grass, HSC	ЭC	
	1	99,819	90	Weighted A	verage	
		43,163		21.60% Per	vious Area	
	1	56,656		78.40% Imp	pervious Are	ea
	Tc	Length	Slop	e Velocity	Capacity	Description
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)	
	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

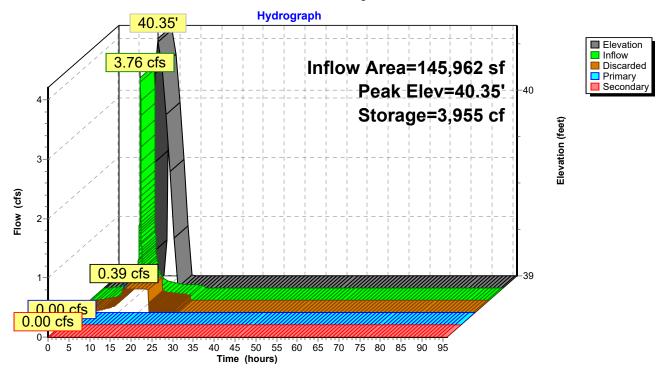
Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 64.2 min (833.8 - 769.7)

Volume	Invert	Avail.Stor	age Stora	ge Description	
#1	39.00'	8,61	6 cf <b>40.00</b>	'W x 170.00'L x 3.2	25'H Field A
					f Embedded = $21,540 \text{ cf } x 40.0\%$ Voids
#2	39.50'	17			<b>0 +Cap</b> x 12 Inside #1
					(16.0"H => 2.07  sf x  7.12'L = 14.7  cf
				ambers in 2 Rows	16.0"H x 7.56'L with 0.44' Overlap
#3	39.50'	38	-		1 <b>0 +Cap</b> x 26 Inside #1
110	00.00	00			(16.0"H => 2.07  sf x  7.12'L = 14.7  cf
			Overa	all Size= 34.0"W x 1	16.0"H x 7.56'L with 0.44' Overlap
				ambers in 2 Rows	
#4	39.75'				<b>I CB #</b> x 3 -Impervious
#5	43.00'				tic)Listed below (Recalc) -Impervious
		13,30	2 cf I otal	Available Storage	
Elevatio	n Su	rf.Area	Inc.Store	Cum.Store	
(fee			(cubic-feet)	(cubic-feet)	
43.0		17	0	0	
43.2		15,525	1,943	1,943	
43.4		12,842	2,128	4,070	
Device	Routing		Outlet Devi		
#1	Discarded	39.00'		Exfiltration over	
#2	Secondary	43.50'		<b>x 0.7' breadth T</b> o	
			100 (1001) 2.50	0.20 0.40 0.60 0	0.80 1.00 1.20 1.40 1.60 1.80 2.00
				lish) 276 282 20	93 3.09 3.18 3.22 3.27 3.30 3.32
			3.31 3.32	1011) 2.70 2.02 2.0	0.00 0.10 0.22 0.27 0.00 0.02
#3	Primary	41.50'		nd Over Drain X 0	.00 L= 50.0' Ke= 0.500
	-		Inlet / Outle	et Invert= 41.50' / 4	1.30' S= 0.0040 '/' Cc= 0.900
			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)



## Pond #1: Drywell

### 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 $\overline{@}$ 0.00 hrs, Volume=	0 cf

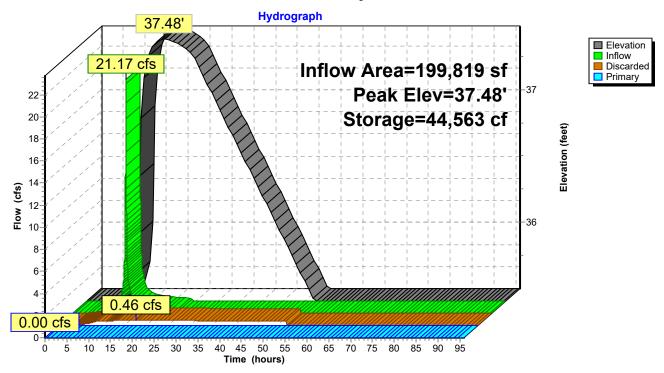
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 37.48' @ 17.65 hrs Surf.Area= 25,069 sf Storage= 44,563 cf

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

Volume	Inver	t Avail.Sto	rage Storage	Description	
#1	35.50	' 117,50	67 cf Dry Po	n <b>d (Prismatic)</b> Li	sted below (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
35.5	50	20,002	0	0	
36.0	00	21,260	10,316	10,316	
37.0	00	23,817	22,539	32,854	
38.0	00	26,430	25,124	57,978	
39.0	00	29,833	28,132	86,109	
40.0	00	33,082	31,458	117,567	
Device	Routing	Invert	Outlet Device	es	
#1	Discarded	35.50'	0.800 in/hr E	xfiltration over	Surface area
#2	Primary	40.75'			road-Crested Rectangular Weir
					0.80 1.00 1.20 1.40 1.60
			Coef. (Englis	h) 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

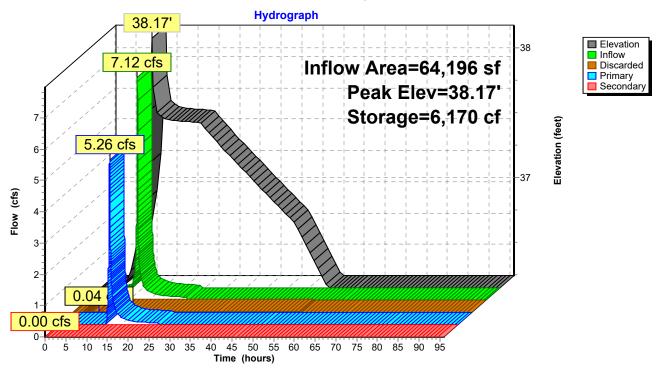
Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 318.4 min ( 1,098.9 - 780.5 )

Volume	Invert	Avail.Sto	rage	Storage	e Description
#1	36.25'	6,05	59 cf		W x 80.00'L x 3.25'H Field A
	~~				cf Overall - $3,052$ cf Embedded = $15,148$ cf x 40.0% Voids
#2	36.75'		55 cf		<b>x 2.83'L x 3.25'H CB #</b> x 3 -Impervious
#3	36.75'		52 cf		/ x 4.00'L x 3.25'H CB #-Impervious
#4	40.00'				Ground (Prismatic)Listed below (Recalc) -Impervious
#5	36.75'	26	65 cf		StormTech SC-310 +Cap x 18 Inside #1
					/e Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
				Overall	l Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
				18 Cha	ambers in 2 Rows
#6	36.75'	2,78	36 cf		StormTech SC-310 +Cap x 189 Inside #1
					/e Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
				Overall	I Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
				189 Ch	nambers in 21 Rows
		11,9 <sup>-</sup>	10 cf	Total Av	vailable Storage
					-
Elevatio	on Su	ırf.Area	Inc	.Store	Cum.Store
(fee	et)	(sq-ft)	(cubio	c-feet)	(cubic-feet)
40.0	00	39		0	0
40.2	25	1,685		216	216
40.5	50	18,126		2,476	2,692
		- ) -		, -	,
Device	Routing	Invert	Outle	et Device	es
#1	Discarded	36.25'	0.30	0 in/hr E	Exfiltration over Surface area
#2	Primary	36.75'		-	d Culvert L= 105.0' Ke= 0.500
	, <b>,</b>				Invert= 36.75' / 36.00' S= 0.0071 '/' Cc= 0.900
					low Area= 1.23 sf
#3	Device 2	37.50'		,	<b>0.75' rise Outlet Weir</b> 2 End Contraction(s)
#4	Secondary	40.57'			rown, C= 3.27
	eeeenaary	10101			0.00 0.00 24.00 24.00
					0.50 0.00 0.12 0.50
			i ioig		

**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)



# Pond #11: Drywell

# Summary for Pond #12a: Drywell

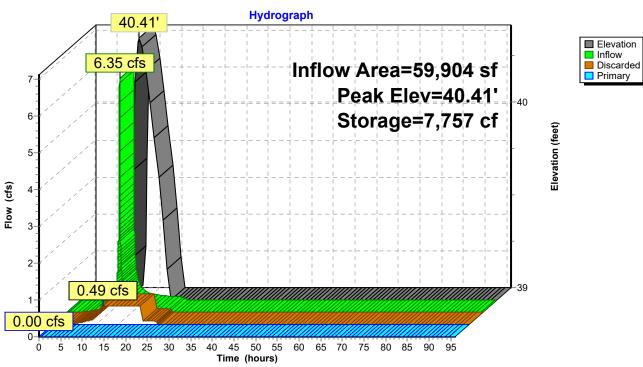
Inflow Area =	59,904 sf, 86.88% Impervious,	Inflow Depth = 4.17" for Cv event
Inflow =	6.35 cfs @ 12.13 hrs, Volume=	20,797 cf
Outflow =	0.49 cfs @ 11.57 hrs, Volume=	20,797 cf, Atten= 92%, Lag= 0.0 min
Discarded =	0.49 cfs @ 11.57 hrs, Volume=	20,797 cf
Primary =	0.00 cfs @ 0.00 hrs, Volume=	0 cf

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.Sto	rage	Storag	ge Description	
#1	39.00'	16,64	14 cf	65.00'W x 193.00'L x 3.50'H Field A		
				43,908	$08 \text{ cf Overall} - 2,297 \text{ cf Embedded} = 41,610 \text{ cf } \times 40.0\% \text{ Voids}$	
#2	39.50'	2,29	97 cf	SC-74	40 Isolator Row +Cap x 50 Inside #1	
				Effecti	tive Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf	
				Overa	all Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap	
				50 Ch	nambers in 2 Rows	
#3	39.50'	4	45 cf	2.00'V	W x 2.83'L x 4.00'H CB# x 2 -Impervious	
#4	43.50'	59	96 cf	Above	e Ground (Prismatic)Listed below (Recalc) -Impervious	
		19,58	32 cf	Total /	Available Storage	
Elevatio	on Su	rf.Area	Inc	.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
43.5	50	11		0	0	
43.7	'5	157		21	21	
44.0	00	670		103	124	
44.2	25	3,101		471	596	
Device	Routing	Invert	Outle	et Devid	ices	
#1	Discarded	39.00'	1.70	0 in/hr	r Exfiltration over Surface area	
#2	Primary	44.41'	24.0	' long	x 10.0' breadth Broad-Crested Rectangular Weir	
	-				) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60	
			Coet	f. (Engli	lish) 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)					

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)

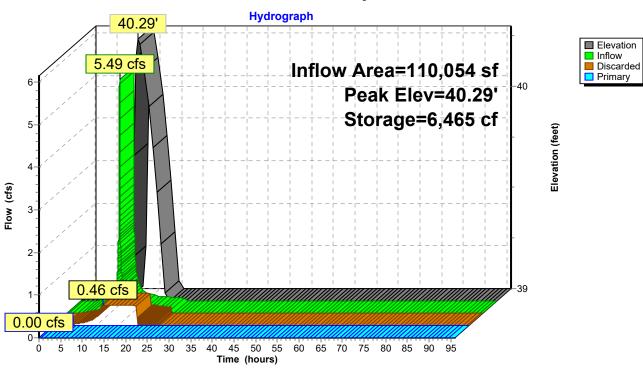
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	15,007 cf	62.00'W x 190.00'L x 3.25'H Field A
			38,285 cf Overall - 767 cf Embedded = 37,518 cf x 40.0% Voids
#2	39.50'	767 cf	SC-310 Isolator Row+Cap x 52 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			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
	-		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**Discarded OutFlow** Max=0.46 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 $\overline{@}$ 0.00 hrs, Volume=	0 cf

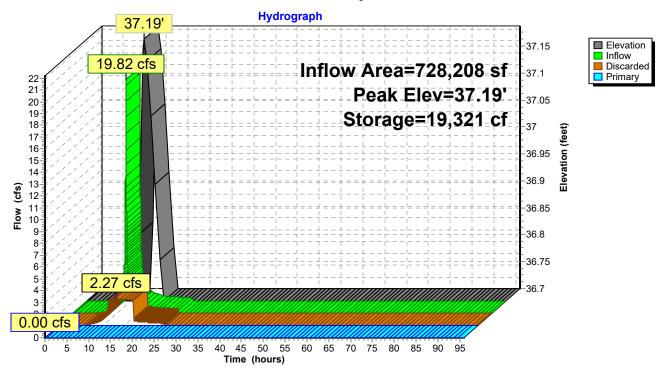
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 37.19' @ 12.98 hrs Surf.Area= 40,907 sf Storage= 19,321 cf

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

Volume	Invert	Avail.Sto	rage Storage	e Description		
#1	36.70	50,58	B1 cf Custon	n Stage Data (P	Prismatic)Listed below (Recalc)	
		50,58	31 cf x 2.00	= 101,163 cf 1	Total Available Storage	
Elevatio (fee 36.7	/0	urf.Area (sq-ft) 19,271	Inc.Store (cubic-feet) 0	Cum.Store (cubic-feet) 0		
37.0 38.0	-	20,025 22,329	5,894 21,177	5,894 27,071		
39.0	-	24,691	23,510	50,581		
Device	Routing	Invert	Outlet Device	es		
#1 #2	Discarded Primary	36.70' 39.50'	<b>10.0' long x</b> Head (feet) (	0.20 0.40 0.60	r Surface area Broad-Crested Rectangular Weir 0.80 1.00 1.20 1.40 1.60 2.70 2.69 2.68 2.69 2.67 2.64	
Discard	<b>Discarded OutFlow</b> Max=2.27 cfs @ 12.98 hrs HW=37.19' (Free Discharge)					

**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			Storage Descrip		
#1	37.83'	24	299 cf	Custom Stage	Data (Prismatic)Lis	sted below (Recalc)
Elevatio		rf.Area V		Inc.Store	Cum.Store	
(fee	1	(sq-ft)	<u>(%)</u>	(cubic-feet)	(cubic-feet)	
37.8		6,915	0.0	0	0	
39.8		,	0.0	5,532	5,532	
40.5	-	6,915	1.0	46	5,578	
41.0		,	0.0	3,902	9,480	
41.5		-,	0.0	5,608	15,087	
42.0	00	23,108 10	0.0	9,212	24,299	
Device	Routing	Inver	t Out	et Devices		
#1	Primary	40.00	' 15.0	" Round Culver	rt L= 66.0' Ke= 0.8	500
			Inle	t / Outlet Invert= 4	40.00' / 39.74' S= (	0.0039 '/' Cc= 0.900
			n= (	0.012, Flow Area	= 1.23 sf	
#2	Device 1	40.17	4.0'	' Horiz. Under Dr	rain Rim C= 0.600	1
			Lim	ited to weir flow a	t low heads	
#3	Device 1	40.75	24.0	)" W x 12.0" H Ve	ert. Low Flow Weir	C= 0.600
			Lim	ited to weir flow a	t low heads	
#4	Device 1	41.75	24.0	)" x 34.0" Horiz. ˈ	Top of Inlet C= 0.	600
			Lim	ited to weir flow a	t low heads	
#5	Secondary	41.50	20.0	)' long x 6.0' bre	adth Broad-Creste	ed Rectangular Weir
						1.20 1.40 1.60 1.80 2.00
			2.50	3.00 3.50 4.00	4.50 5.00 5.50	
			Coe	f. (English) 2.37	2.51 2.70 2.68 2	.68 2.67 2.65 2.65 2.65
			2.65	5 2.66 2.66 2.67	2.69 2.72 2.76 2	2.83

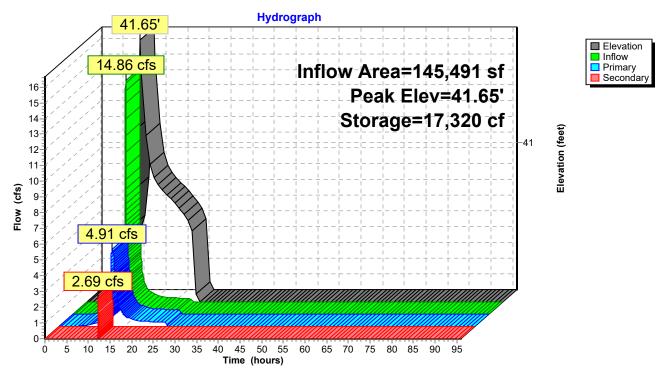
**Primary OutFlow** Max=4.91 cfs @ 12.28 hrs HW=41.64' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 4.91 cfs @ 4.02 fps)

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



# 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
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			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

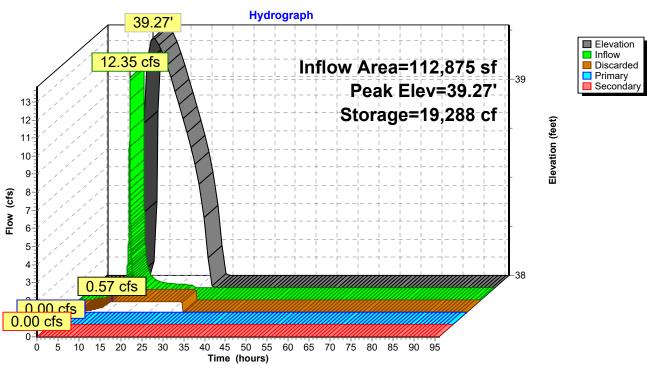
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	23	0	0
42.25	194	27	27
42.50	528	90	117
42.75	5,743	784	901
43.00	29,071	4,352	5,253

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
	-		Offset (feet) 0.00 0.00 24.00 24.00
			Height (feet) 0.50 0.00 0.12 0.50
#3	Secondary	43.46'	Asymmetrical Weir, C= 3.27
			Offset (feet) 0.00 0.00 24.00 24.00
			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)

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

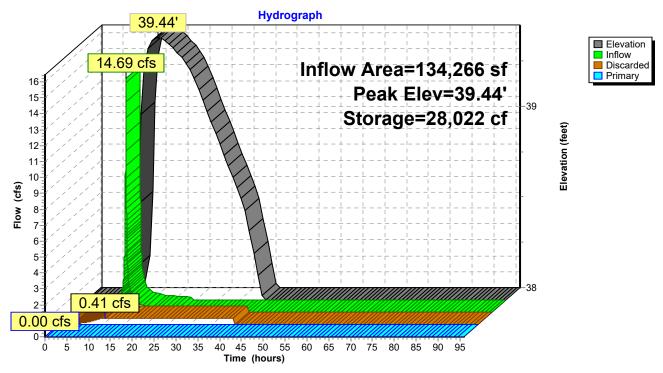
Inflow Area =	134,266 sf, 86.16% Impervious,	Inflow Depth = 4.38" for Cv event
Inflow =	14.69 cfs @ 12.13 hrs, Volume=	49,037 cf
Outflow =	0.41 cfs @ 10.51 hrs, Volume=	49,040 cf, Atten= 97%, Lag= 0.0 min
Discarded =	0.41 cfs @ 10.51 hrs, Volume=	49,040 cf
Primary =	0.00 cfs @ 0.00 hrs, Volume=	0 cf

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.Stora	ge Storage	ge Description		
#1	38.00'	26,848	cf 265.00	0'W x 111.00'L x 3.50'H Field A		
			102,95	53 cf Overall - 35,833 cf Embedded = 67,119 cf x 40.0% Voids		
#2	38.50'	42	cf 2.00'W	2.00'W x 2.83'L x 3.75'H CB # x 2 -Impervious		
#3	38.50'	120	cf 4.00'W	4.00'W x 4.00'L x 3.75'H CB # x 2 -Impervious		
#4	42.25'	2,419	cf Above	Above Ground (Prismatic)Listed below (Recalc) - Impervious		
#5	38.50'	35,833	cf ADS_S	StormTech SC-740 +Cap x 780 Inside #1		
			Effectiv	ive Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf		
			Overall	ll Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap		
				hambers in 52 Rows		
-		65,262	cf Total A	Available Storage		
		,		5		
Elevatio	n Sur	f.Area	Inc.Store	Cum.Store		
(feet	t)	(sq-ft) (c	cubic-feet)	(cubic-feet)		
42.2	5	43	0	0		
42.5		874	115	115		
42.7		7,561	2,304	2,419		
	-	)	<b>y</b>	, -		
Device	Routing	Invert (	Outlet Device	ces		
#1	Discarded	38.00' (	).600 in/hr E	Exfiltration over Surface area		
#2	Primary			x 10.0' breadth Broad-Crested Rectangular Weir		
				0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60		
				ish) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64		
			Less (Englis	,		
<b>Discarded OutFlow</b> Max=0.41 cfs @ 10.51 hrs HW=38.05' (Free Discharge) <b>1=Exfiltration</b> (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 $\overline{@}$ 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
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			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
			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

17,760 cf Total Available Storage

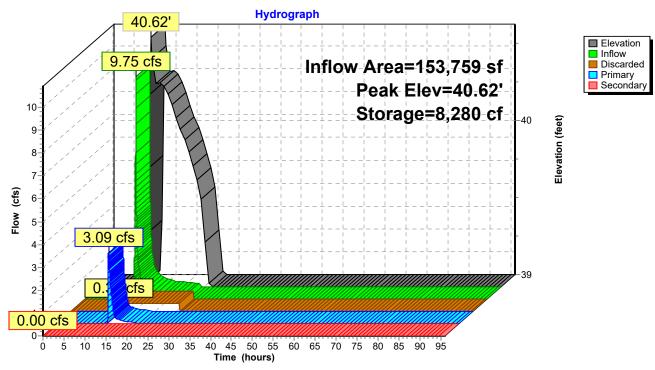
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.15	6	0	0
43.25	175	9	9
43.50	2,939	389	398
43.75	6,476	1,177	1,575
44.00	9,673	2,019	3,594

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
	-		Offset (feet) 0.00 0.00 24.00 24.00
			Height (feet) 0.50 0.00 0.30 0.50
#3	Primary	40.01'	12.0" Vert. 12" Over Drain C= 0.600
			Limited to weir flow at low heads
#4	Primary	40.01'	18.0" Vert. 15" Over Drain C= 0.600
			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)



# Pond #4: Drywell

## 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

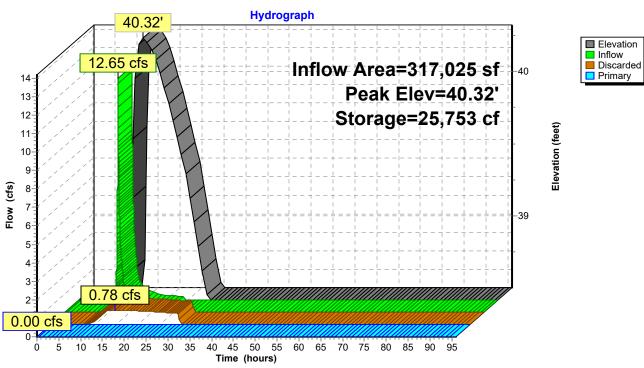
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 40.32' @ 14.69 hrs Surf.Area= 16,033 sf Storage= 25,753 cf

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

		ail.Storage St	
#1	38.50'	100,215 cf <b>D</b>	ry 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 A	bove Ground (Prismatic)Listed below (Recalc) -Impervious
#4	38.50'	280 cf 24	I.0" Round Culvert-Impervious
		L=	= 89.0' S= 0.0112 '/'
		102,345 cf To	otal Available Storage
Elevation	Surf Area	Inc St	ore Cum Store
			-
		(cubic-ic	
	,	6.0	•
	,		
	,	· · ·	
44.00	24,090	23,2	100,215
Elevation	Surf.Area	Inc.St	ore Cum.Store
(feet)	(sq-ft)	(cubic-fe	et) (cubic-feet)
43.15	6		0 0
43.25	151		8 8
43.50	1,336	1	86 194
43.75	3,192	Ę	566 760
44.00	5,073	1,0	033 1,793
Device Ro	outina I	nvert Outlet	Devices
			h/hr Exfiltration over Surface area
		(	/
			,
Elevation (feet) 38.50 39.00 40.00 41.00 42.00 43.00 44.00 Elevation (feet) 43.15 43.25 43.50 43.75 43.50 43.75 44.00 Device Ro #1 Di	Surf.Area (sq-ft)           12,091           13,149           15,319           17,557           19,866           22,243           24,690           Surf.Area (sq-ft)           6           151           1,336           3,192           5,073           outing         I           iscarded         3           rimary         4	L= 102,345 cf To Inc.Str (cubic-fe 6,3 14,2 16,4 18,7 21,0 23,4 Inc.Str (cubic-fe 1 5.72' Outlet I 8.50' <b>2.100 in</b> 5.72' <b>Top of</b> Offset (	89.0' S= 0.0112 '/'         otal Available Storage         ore       Cum.Store         eet)       (cubic-feet)         0       0         310       6,310         234       20,544         38       36,982         712       55,694         955       76,748         167       100,215         ore       Cum.Store         eet)       (cubic-feet)         0       0         8       8         86       194         666       760         033       1,793         Devices       0         0       0         933       1,793         Devices       0         0.00       9.59         19.17       24.92       30.87       40.79       50.71         (feet)       0.13       0.07       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
			27,300 cf Overall - 564 cf Embedded = 26,736 cf x 40.0% Voids
#2	41.50'	501 cf	
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			34 Chambers in 2 Rows
#3	41.50'	38 cf	2.50'W x 5.50'L x 2.75'H CB # Inside #1
			63 cf Overall - 6.0" Wall Thickness = 38 cf
#4	44.25'		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

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

**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)

Hydrograph 42.41 Elevation
 Inflow
 Discarded 3.46 cfs Inflow Area=46,582 sf Primary Peak Elev=42.41' -42 Storage=5,021 cf Elevation (feet) 3-Flow (cfs) 2 1 41 0.19 cfs 0.00 cfs 0-<mark>|4</mark> 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 Time (hours)

# 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
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			14 Chambers in 2 Rows
#3	40.00'	44 cf	ADS_StormTech SC-310 +Cap x 3 Inside #1
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			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
			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

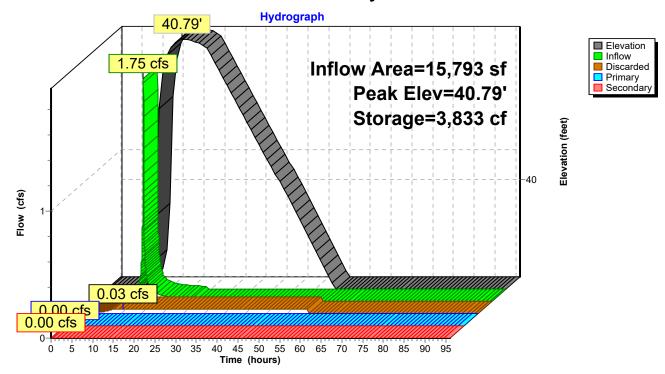
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.38	6	0	0
45.50	733	44	44
45.75	8,064	1,100	1,144

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	
			Offset (feet) 0.00 20.00 28.00	
			Height (feet) 0.04 0.00 0.04	
#3	Secondary	45.74'	Weir Outlet, C= 3.27	
	-		Offset (feet) 0.00 20.00 28.00	
			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)



#### Pond #6b: Drywell

## 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

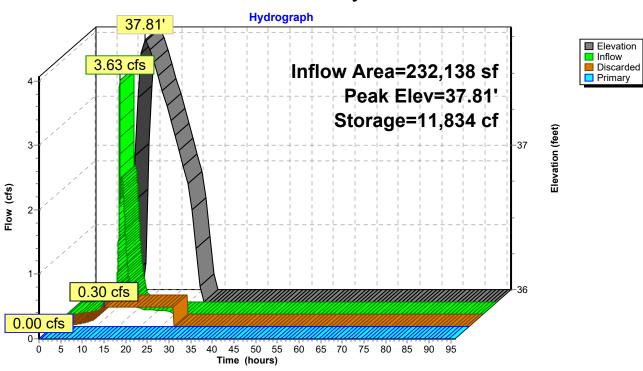
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 37.81' @ 14.79 hrs Surf.Area= 10,125 sf Storage= 11,834 cf

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.Sto	orage	Storag	ge Description		
#1	36.00'	16,5	84 cf		45.00'W x 225.00'L x 6.00'H Field A		
			~~ <i>c</i>		0 cf Overall - 19,291 cf Embedded = 41,459 cf x 40.0% Voids		
#2	36.75'	3,0	028 cf ADS_StormTech MC-3500 d +Cap x 27 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cl				
					Ill Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap		
					ambers in 2 Rows		
				Cap St	otorage= +14.9 cf x 2 x 2 rows = 59.6 cf		
#3	36.75'	16,0	92 cf		StormTech MC-3500 d +Cap x 145 Inside #1		
					ive Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf		
					III Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap hambers in 5 Rows		
					Storage= +14.9 cf x 2 x 5 rows = 149.0 cf		
#4	36.75'	1	16 cf		<b>V x 5.50'L x 5.25'H CB #</b> Inside #1		
				171 cf	f Overall - 6.0" Wall Thickness = 116 cf		
#5	42.00'		29 cf		V x 5.50'L x 1.34'H CB #-Impervious		
#6	43.34'	1,0	03 cf	Above	e Ground (Prismatic)Listed below (Recalc) -Impervious		
		36,8	52 cf	Total A	Available Storage		
Elevatio	on Su	ırf.Area	Inc	.Store	Cum.Store		
(fee		(sq-ft)		c-feet)	(cubic-feet)		
43.3	34	6		0	0		
43.5	50	245		20	20		
43.7	-	1,632		235	255		
44.0	00	4,355		748	1,003		
Device	Routing	Invert	Outl	et Devic	ces		
#1	Discarded	36.00'	1.30	0 in/hr l	Exfiltration over Surface area		
#2	Primary	43.84'			b, C= 3.27		
					0.00 83.50 167.00		
			Heig	ght (feet)	t) 0.41 0.00 0.41		
Discord		Max=0.30 c	ፍ <i>ଲ</i> 1	1 71 bro	s HW-36 08' (Free Discharge)		

**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)



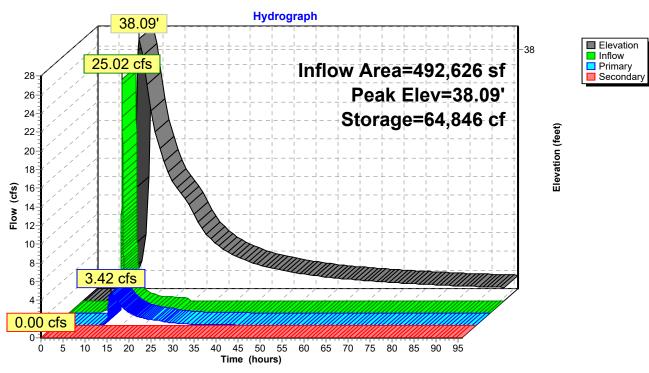
# Pond #7: Drywell

## Summary for Pond #8: Wet Pond

Inflow Ard Inflow Outflow Primary Seconda	= 25.02 c = 3.42 c = 3.42 c	ofs @ 12 ofs @ 12 ofs @ 12	6.38% Impervi 2.14 hrs, Volur 2.76 hrs, Volur 2.76 hrs, Volur 2.76 hrs, Volur 0.00 hrs, Volur	me= 77, me= 77,	115 cf	for Cv event n= 86%, Lag= 37.3 min
Starting E	oy Dyn-Stor-Ind r Elev= 37.05' Su v= 38.09' @ 12.7	rf.Area=	35,833 sf Sto	rage= 25,059 cf		(39,787 cf above start)
	w detention time f-Mass det. time				% of inflow)	
Volume	Invert	Avail.Sto	rage Storage	Description		
#1	36.00'	104,09		Prismatic)Listed		
#2	38.25'					ed below (Recalc)
		106,23	35 cf Total Av	ailable Storage		
Elevatio	n Surf.Ar	ea	Inc.Store	Cum.Store		
(feet			(cubic-feet)	(cubic-feet)		
36.0			0	0		
37.0	,		23,539	23,539		
37.0	,		1,520	25,059		
38.0	,		36,144	61,203		
39.0	0 45,5	27	42,893	104,096		
Elevatio	n Surf.Ar	ea	Inc.Store	Cum.Store		
(feet			(cubic-feet)	(cubic-feet)		
38.2		11	0			
38.5			180	180		
38.7			591	771		
39.0	0 7,6	53	1,369	2,140		
Device	Routing	Invert	Outlet Device	S		
#1	Primary	37.05'			Elliptical RC	CP_Elliptical 23x14
	,		L= 106.0' CF	PP, end-section	conforming t	to fill, Ke= 0.500
						0005 '/' Cc= 0.900
	<b>.</b> .	~~		ow Area= 1.83 st		
#2	Secondary	38.75'		.0' breadth Cur		
					0.80 1.00 1	1.20 1.40 1.60 1.80 2.00
				50 4.00 4.50	68 267 26	65 2.64 2.64 2.68 2.68
				92 2.97 3.07 3		J 2.04 2.04 2.00 2.00
			2.12 2.01 Z.	02 2.07 0.07 0		

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 $\overline{@}$ 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

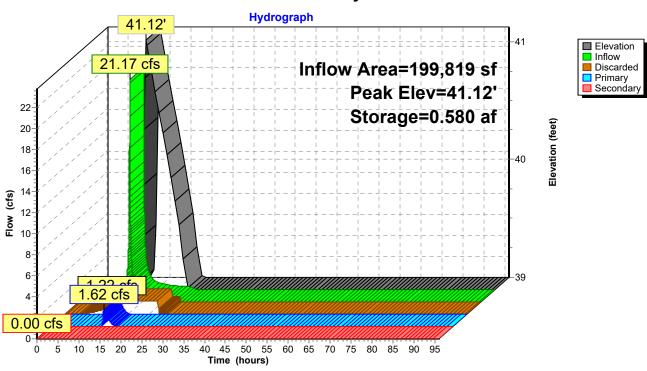
Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 131.7 min (925.8 - 794.1)

Volume	Invert A	vail.Storag	e Stor	age Description			
#1	39.00'	0.809	af <b>130</b> .	.00'W x 185.00'L x 4.00'H Field A			
			-	8 af Overall - 0.186 af Embedded = 2.022 af x 40.0% Voids			
#2	39.50'	0.186		S_StormTech SC-310 +Cap x 550 Inside #1			
				ctive Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf			
				rall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap			
		0.000		Chambers in 22 Rows			
#3	39.50'	0.002		VW x 2.83'L x 3.50'H CB # x 4 -Impervious			
#4	43.00'	0.109		ve Ground (Prismatic)Listed below (Recalc) -Impervious			
		1.106	af lota	al Available Storage			
Elevatio	on Surf.Area	Inc	.Store	Cum.Store			
			e-feet)	(acre-feet)			
		(acit	0.000	0.000			
43.00 0.001 43.25 0.017			0.000	0.002			
43.25 0.017			0.002	0.010			
43.7			0.000	0.030			
44.0			0.079 0.109				
	0.011		0.070	0.100			
Device	Routing	Invert	Outlet D	evices			
#1	Discarded	39.00'	2.200 in	/hr Exfiltration over Surface area			
#2	Secondary	44.59'	Asymme	etrical Weir X 2.00, C= 3.27			
			Offset (fe	eet) 0.00 0.00 24.00 24.00			
				feet) 0.50 0.00 0.12 0.50			
#3	Primary	imary 40.50' <b>1</b>		5.0" Round Over Drain L= 199.0' Ke= 0.500			
				utlet Invert= 40.50' / 37.00' S= 0.0176 '/' Cc= 0.900			
			n= 0.012	2, 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)



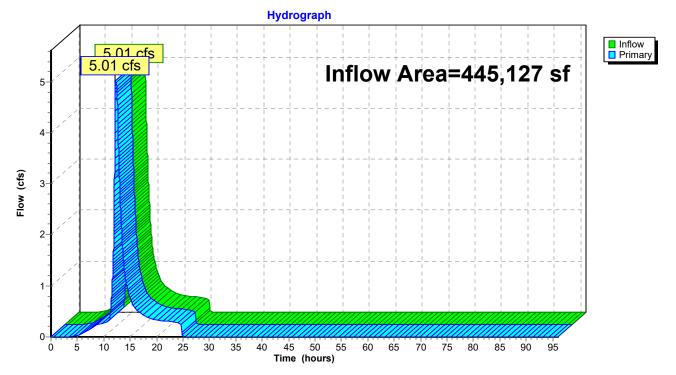
# Pond #9: Drywell

# Summary for Link POI1: POI #1

Inflow Area	a =	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 $\overline{@}$ 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

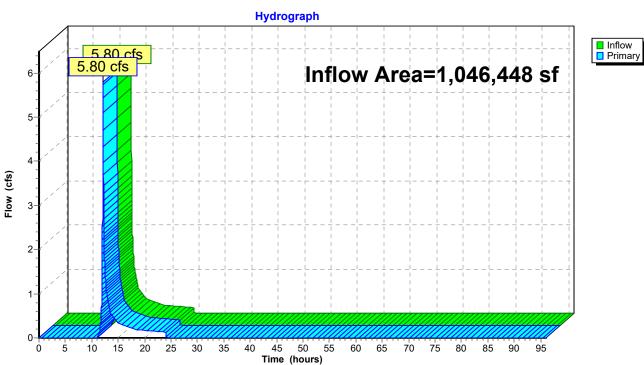
#### Hydrograph Inflow Primary 11.55 cfs 11.55 cfs Inflow Area=618,925 sf 12-11 10-9 8-Flow (cfs) 7. 6 5 4-3-2 1 0-15 20 25 35 55 60 70 75 80 90 95 Ó 5 10 30 40 45 50 65 85 Time (hours)

#### 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	a =	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

#### Hydrograph Inflow Primary 27 95 cfs 27.95 cfs Inflow Area=2,189,690 sf Flow (cfs) 10-8-0-Ó Time (hours)

#### 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

Subcatchment1BP: 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
Subcatchment2BP: 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
Subcatchment3BP: 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

<b>4270 SWM Post 2022-06</b>	NOAA 24-hr D Fv Rainfall=9.20"
Prepared by Hillcrest Associate	es, Inc. Printed 6/30/2022
HydroCAD® 10.10-4a s/n 08590 ©	2020 HydroCAD Software Solutions LLC Page 122
SubcatchmentDA6b: 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
SubcatchmentDA7: 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
SubcatchmentDA8: 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
SubcatchmentDA9: 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
Discard	ded=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 Prima	ary=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
Disc	arded=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
Disc	arded=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
Discard	ded=2.48 cfs 127,751 cf Primary=0.00 cfs 0 cf Outflow=2.48 cfs 127,751 cf
Pond #14: SGW Primary=5.71	Peak Elev=41.93' Storage=22,819 cf Inflow=27.90 cfs 93,894 cf 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
Disc	arded=0.41 cfs 92,122 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 92,122 cf
<b>Pond #4: Drywell</b>	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
Discard	ded=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
Disc	arded=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
Discard	ded=0.30 cfs 52,281 cf Primary=0.04 cfs 107 cf Outflow=0.34 cfs 52,388 cf

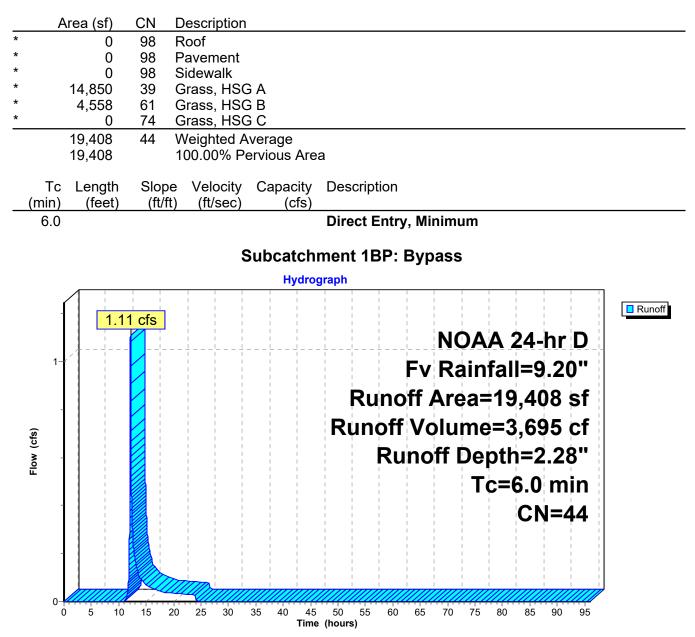
<b>4270 SWM Post 2022-06</b> Prepared by Hillcrest Associates, Inc. <u>HydroCAD® 10.10-4a s/n 08590 © 2020 HydroCAD Software Solutic</u>	NOAA 24-hr D Fv Rainfall=9.20" Printed 6/30/2022 ons LLC Page 123
Pond #8: Wet Pond Peak Elev=40.21' Stor Primary=11.70 cfs 161,927 cf Secondary=23.48	rage=106,235 cf Inflow=60.11 cfs 174,768 cf cfs 10,884 cf Outflow=35.19 cfs 172,811 cf
Pond #9: DrywellPeak Elev=43.86' SDiscarded=1.22 cfs103,592 cfPrimary=9.54 cfs29,557 cfSecondary	torage=1.048 af Inflow=38.95 cfs 133,030 cf =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"



#### 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"

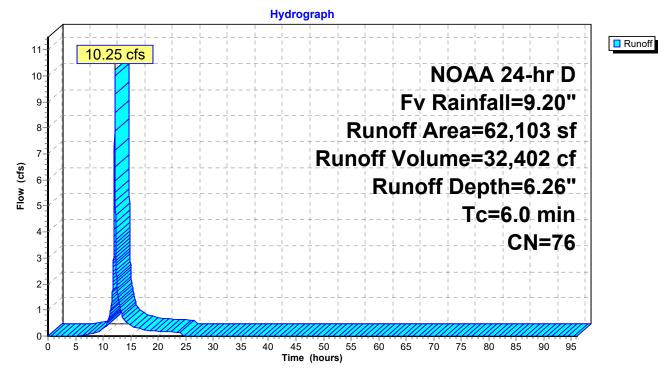
	Area (sf)	CN	Description
*	3,148	98	Roof
*	1,657	98	Pavement
*	5,920	98	Sidewalk
*	5,931	39	Grass, HSG A
*	7,283	61	Grass, HSG B
*	31,454	74	Grass, HSG C
*	6,710	98	Ex. Roadway
	62,103	76	Weighted Average
	44,668		71.93% Pervious Area
	17,435		28.07% Impervious Area
	To Length	Slor	ne Velocity Canacity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

Тс	Length	Slope	Velocity	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	-	



## Direct Entry, Minimum

## Subcatchment 2BP: Bypass



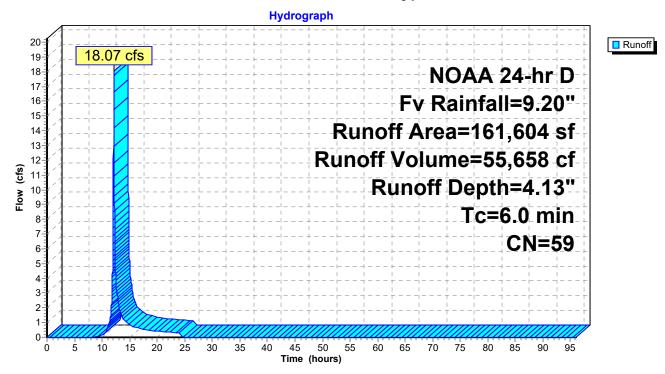
## Summary for Subcatchment 3BP: Bypass

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"

	A	rea (sf)	CN	Description				
*		30,567	98	Roof				
*		19,555	98	Pavement				
*		2,610	98	Sidewalk				
*	1	05,358	39	Grass, HSC	Grass, HSG A			
*		3,155	61	Grass, HSC	βB			
*		359	74	Grass, HSC	ЭC			
	1	161,604 59 Weighted Average						
	1	08,872		67.37% Per	vious Area			
		52,732		32.63% Imp	pervious Are	ea		
	Тс	Length	Slop		Capacity	Description		
(	min)	(feet)	(ft/ft	:) (ft/sec)	(cfs)			
	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"

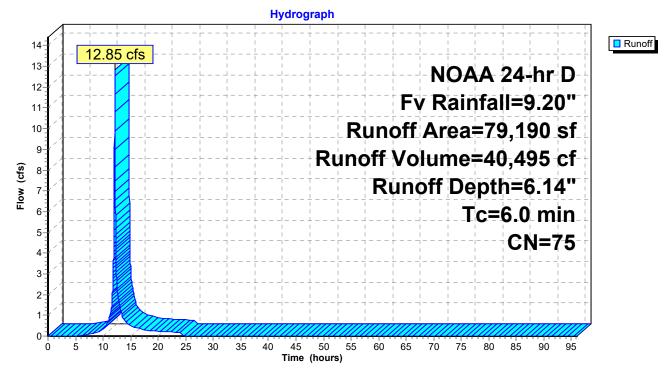
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs NOAA 24-hr D Fv Rainfall=9.20"

	Area (sf)	CN	N 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	5 74	Grass, HSG C					
*	28,667	98	Existing Roadway					
	79,190	75	Weighted Average					
	41,664		52.61% Pervious Area					
	37,526	i	47.39% Impervious Area					
	Tc Lengt (min) (fee							



# Direct Entry, Minimum

## Subcatchment 4BP: POI #4



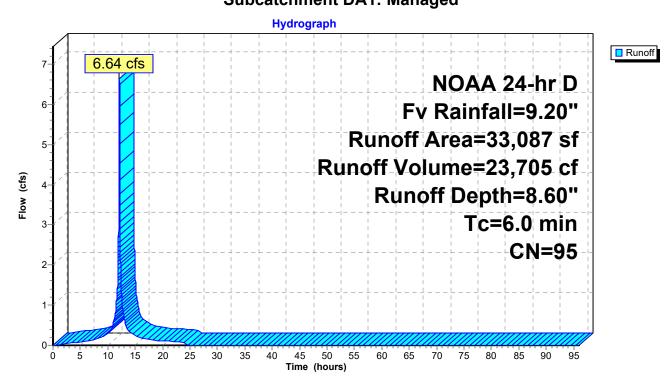
## Summary for Subcatchment DA1: Managed

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"

	Α	rea (sf)	CN	Description					
*		5,119	98	Roof					
*		24,140	98	Pavement					
*		1,098	98	Sidewalk	Sidewalk				
*		0	39	Grass, HSC	Grass, HSG A				
*		2,730	61	Grass, HSC	βB				
*		0	74	Grass, HSC	ЭC				
		33,087	95	Weighted A	verage				
		2,730		8.25% Perv	vious Area				
		30,357		91.75% Imp	pervious Are	ea			
	Тс	Length	Slop	e Velocity	Capacity	Description			
(r	min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

Subcatchment DA1: Managed



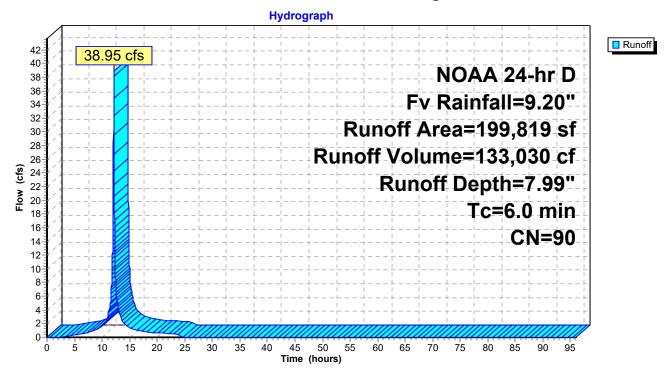
## Summary for Subcatchment DA10: Managed

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"

	Ai	rea (sf)	CN	Description					
*		45,831	98	Roof					
*		99,756	98	Pavement					
*		11,069	98	Sidewalk	Sidewalk				
*		1,120	39	Grass, HSC	θA				
*		42,043	61	Grass, HSC	βB				
*		0	74	Grass, HSC	Grass, HSG C				
	1	99,819	90	Weighted A	verage				
		43,163		21.60% Pe	vious Area				
	1	56,656		78.40% Imp	pervious Are	ea			
				-					
	Тс	Length	Slop	e Velocity	Capacity	Description			
_	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

#### Subcatchment DA10: Managed



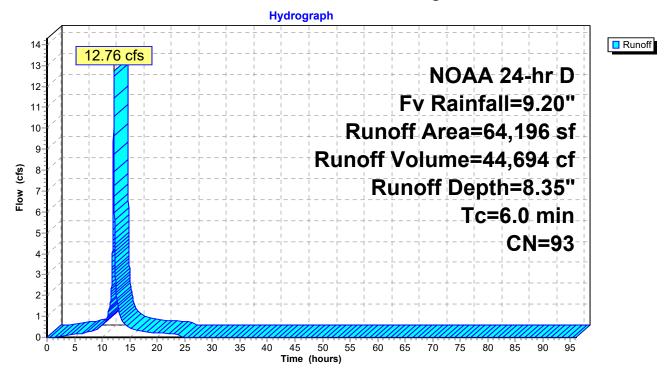
## Summary for Subcatchment DA11: Managed

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"

	A	rea (sf)	CN	Description				
*		6,876	98	Roof				
*		35,655	98	Pavement				
*		7,636	98	Sidewalk				
*		0	39	Grass, HSC	Grass, HSG A			
*		0	61	Grass, HSC	ЭB			
*		14,029	74	Grass, HSG C				
		64,196	93	Weighted A	verage			
		14,029		21.85% Pe	rvious Area			
		50,167		78.15% lm	pervious Are	ea		
				-				
	Тс	Length	Slop	e Velocity	Capacity	Description		
(	min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA11: Managed



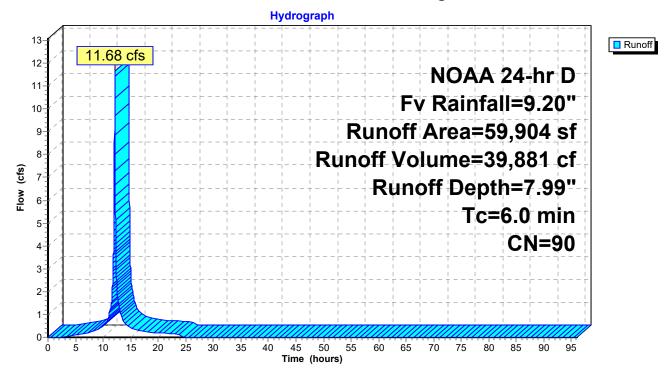
## Summary for Subcatchment DA12a: Managed

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"

	A	rea (sf)	CN	Description					
*		14,960	98	Roof					
*		35,092	98	Pavement					
*		1,991	98	Sidewalk					
*		7,861	39	Grass, HSC	Grass, HSG A				
*		0	61	Grass, HSC	Grass, HSG B				
*		0	74	Grass, HSG C					
		59,904	90	Weighted A	verage				
		7,861		13.12% Pe	vious Area				
		52,043		86.88% Imp	pervious Are	ea			
	Тс	Length	Slop	e Velocity	Capacity	Description			
(r	min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

#### Subcatchment DA12a: Managed



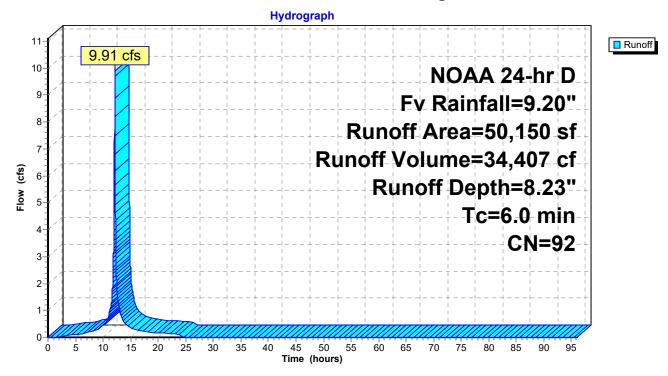
#### Summary for Subcatchment DA12b: Managed

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"

	A	rea (sf)	CN	Description					
*		12,223	98	Roof					
*		31,728	98	Pavement					
*		1,032	98	Sidewalk	Sidewalk				
*		5,167	39	Grass, HSC	Grass, HSG A				
*		0	61	Grass, HSC	Grass, HSG B				
*		0	74	Grass, HSG C					
		50,150	92	Weighted A	verage				
		5,167		10.30% Pe	rvious Area				
		44,983		89.70% Imp	pervious Are	ea			
	Тс	Length	Slop		Capacity	Description			
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

#### Subcatchment DA12b: Managed



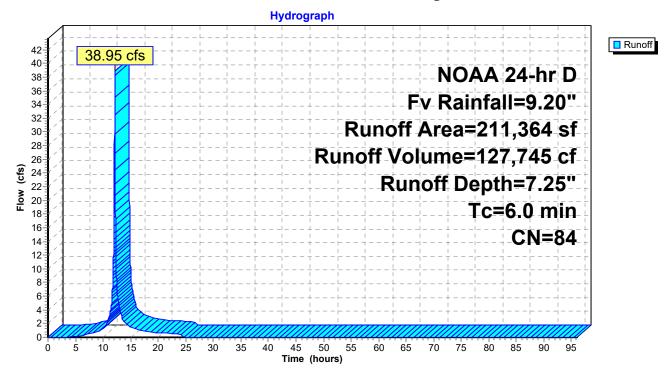
## Summary for Subcatchment DA13: Managed

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"

	A	rea (sf)	CN	Description			
*		43,108	98	Roof			
*		81,796	98	Pavement			
*		9,004	98	Sidewalk			
*		16,604	39	Grass, HSC	βA		
*		45,260	61	Grass, HSC	βB		
*		15,592	74	Grass, HSG C			
	2	11,364	84	Weighted A	verage		
		77,456		36.65% Per	vious Area		
	1	33,908		63.35% Imp	pervious Are	ea	
				-			
	Тс	Length	Slope	e Velocity	Capacity	Description	
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)		
	6.0					Direct Entry, Minimum	

#### Subcatchment DA13: Managed



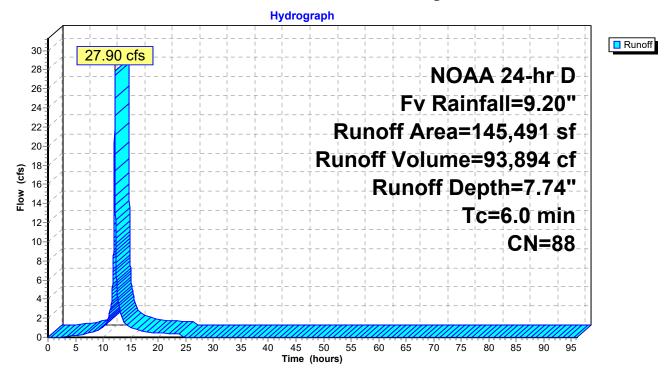
## Summary for Subcatchment DA14: Managed

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"

	A	rea (sf)	CN	Description					
*		67,744	98	Roof					
*		37,879	98	Pavement					
*		2,866	98	Sidewalk	Sidewalk				
*		8,381	39	Grass, HSC	θA				
*		25,644	61	Grass, HSC	βB				
*		2,977	74	Grass, HSC	ЭC				
	1	45,491	88	Weighted A	verage				
		37,002		25.43% Pe	vious Area				
	1	08,489		74.57% Imp	pervious Are	ea			
	Тс	Length	Slop	e Velocity	Capacity	Description			
_	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
	6.0					Direct Entry, Minimum			

#### Subcatchment DA14: Managed



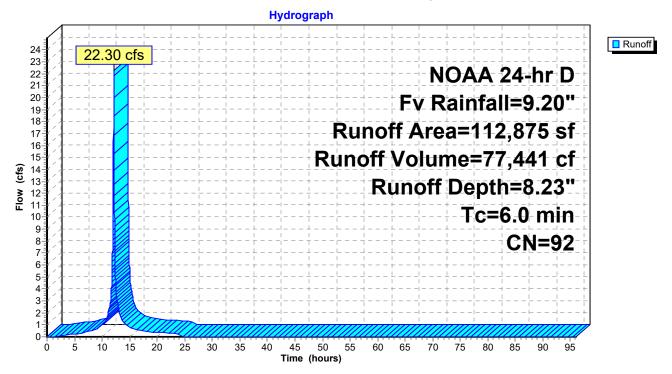
## Summary for Subcatchment DA2: Managed

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	Sidewalk			
*	17,057	61	Grass, HSC	Grass, HSG B			
	112,875	92	Weighted A	verage			
	17,057		15.11% Per	vious Area			
	95,818		84.89% Imp	pervious Are	ea		
	Tc Length	Slop		Capacity	Description		
(	min) (feet)	(ft/	ft) (ft/sec)	(cfs)			
	6.0				Direct Entry, Minimum		

#### Subcatchment DA2: Managed



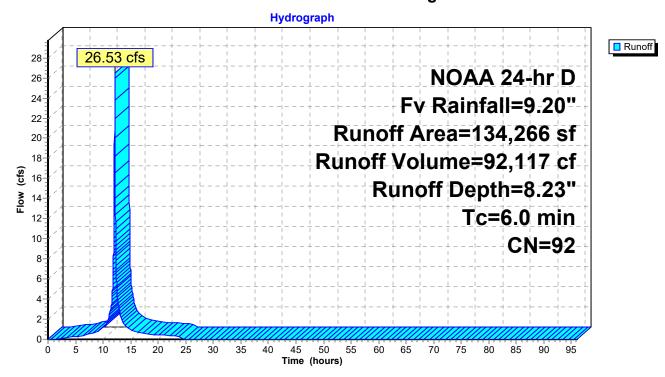
#### Summary for Subcatchment DA3: Managed

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"

	Are	ea (sf)	CN	Description				
*		152	98	Roof				
*	9	2,770	98	Pavement				
*	2	2,763	98	Sidewalk				
*		8,191	39	Grass, HSG	Grass, HSG A			
*	1	0,390	61	Grass, HSG	Grass, HSG B			
*		0	74	Grass, HSC	G C			
	13	4,266	92	Weighted A	verage			
	1	8,581		13.84% Per	vious Area			
	11	5,685		86.16% Imp	pervious Are	ea		
	Тс	Length	Slope	e Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA3: Managed

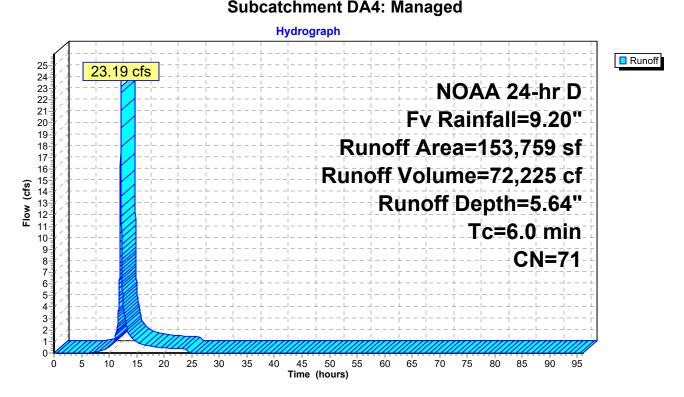


## Summary for Subcatchment DA4: Managed

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	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 Length	Slop	pe Velocity Capacity Description					
_	(min) (feet)	(ft/	(ft) (ft/sec) (cfs)					
	6.0		Direct Entry, Minimum					
			- -					
			Orch a stalk was wet DA 4. Mana was d					



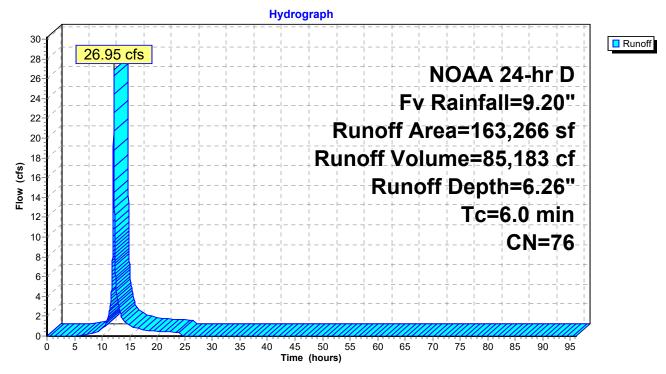
## Summary for Subcatchment DA5: Managed

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"

	A	rea (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				
	1	63,266	76	Weighted A	verage			
63,220			38.72% Pervious Area					
100,046			61.28% Impervious Area					
	Тс	Length	Slop	e Velocity	Capacity	Description		
	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

# Subcatchment DA5: Managed



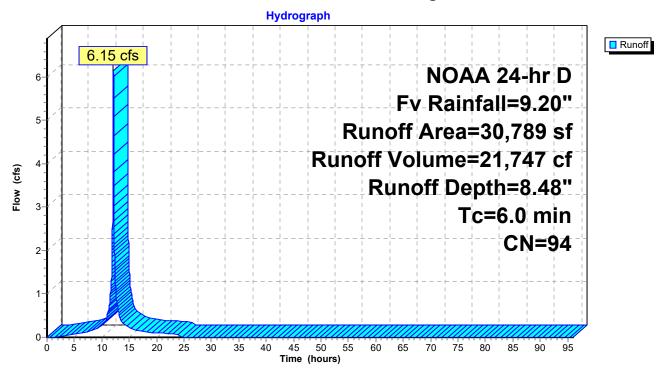
## Summary for Subcatchment DA6a: Managed

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"

	A	rea (sf)	CN	Description				
*		1,985	98	Roof				
*		24,381	98	Pavement				
*		1,251	98	Sidewalk				
*		609	39	Grass, HSG	βA			
*		2,563	61	Grass, HSG	βB			
*		0	74	Grass, HSC	ЭC			
		30,789	94	Weighted A	verage			
		3,172		10.30% Per	vious Area			
		27,617		89.70% Imp	pervious Are	ea		
	Тс	Length	Slop		Capacity	Description		
(	(min)	(feet)	(ft/f	t) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA6a: Managed



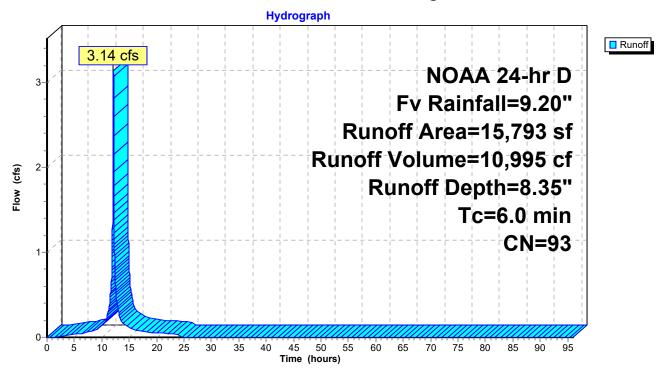
## Summary for Subcatchment DA6b: Managed

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"

	A	rea (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, HSC	ЭC			
		15,793	93	Weighted A	verage			
		1,344		8.51% Perv	vious Area			
		14,449		91.49% Imp	pervious Are	ea		
	Тс	Length	Slop	e Velocity	Capacity	Description		
(	min)	(feet)	(ft/1	ft) (ft/sec)	(cfs)			
	6.0					Direct Entry, Minimum		

#### Subcatchment DA6b: Managed



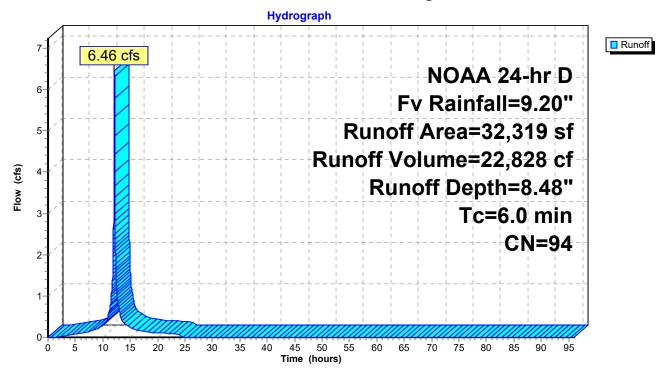
### Summary for Subcatchment DA7: Managed

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"

	A	rea (sf)	CN	Description					
*		7,045	98	Roof					
*		19,833	98	Pavement					
*		1,490	98	Sidewalk					
*		0	39	Grass, HSC	Grass, HSG A				
*		3,693	61	Grass, HSC	Grass, HSG B				
*		258	74	Grass, HSC	Grass, HSG C				
		32,319	94	Weighted A	verage				
		3,951		12.23% Pe	rvious Area				
		28,368		87.77% lmp	pervious Are	ea			
	Тс	Length	Slop		Capacity	Description			
(	min)	(feet)	(ft/f	t) (ft/sec)	(cfs)				
	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"

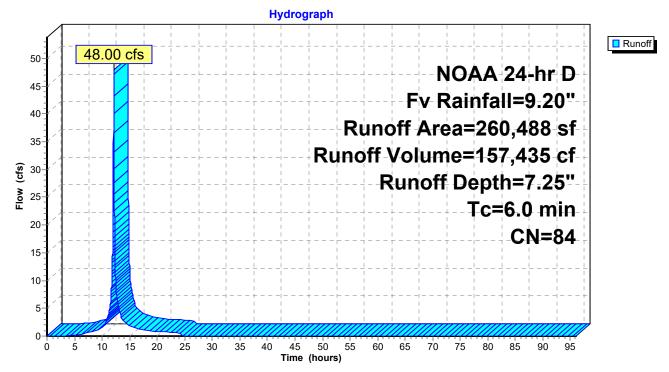
	Area (sf)	CN	Description						
*	28,409	98	Roof						
*	91,663	98	Pavement						
*	13,109	98	Sidewalk						
*	0	39	Grass, HSG A						
*	68,342	61	Grass, HSG B						
*	50,167	74	Grass, HSG C						
*	8,798	98	Ex.Roadway						
	260,488	260,488 84 Weighted Average							
	118,509 45.49% Pervious Area								
	141,979		54.51% Impervious Area						
	T. I. wash	0							
	Tc Length	Slop							
	(min) (feet)	(ft/	ft) (ft/sec) (cfs)						

	5		,	-	,	
(	(feet)	(ft/ft)	) (ft/sec)		(cfs)	



#### **Direct Entry, Minimum**

### Subcatchment DA8: Managed



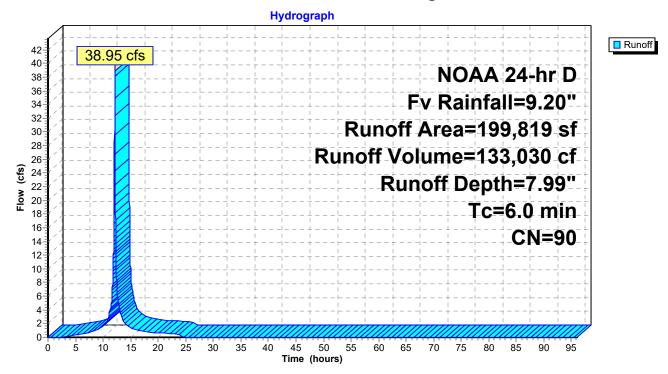
### Summary for Subcatchment DA9: Managed

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"

	A	rea (sf)	CN	Description						
*		45,831	98	Roof	Roof					
*		99,756	98	Pavement	Pavement					
*		11,069	98	Sidewalk						
*		1,120	39	Grass, HSC	Grass, HSG A					
*		42,043	61	Grass, HSC	Grass, HSG B					
*		0	74	Grass, HSC	Grass, HSG C					
	1	99,819	90	Weighted A	verage					
		43,163		21.60% Pe	rvious Area					
	1	56,656		78.40% Imp	pervious Are	ea				
				-						
	Тс	Length	Slop	e Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft	t) (ft/sec)	(cfs)					
	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 $\overline{@}$ 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

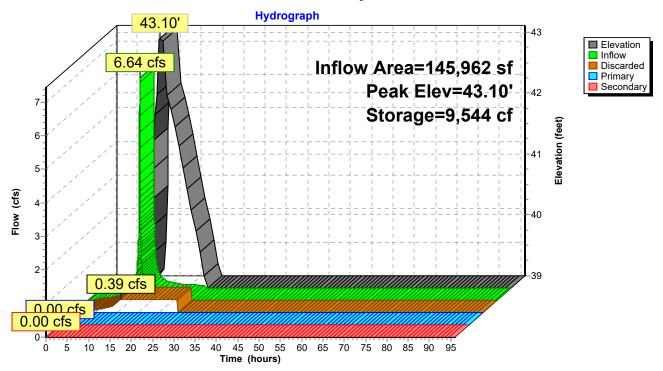
Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 186.5 min ( 942.5 - 755.9 )

Volume	Invert	Avail.Stora	age Stora	rage Description	
#1	39.00'	8,61	6 cf <b>40.00</b>	00'W x 170.00'L x 3.25'H Field A	
				100 cf Overall - 560 cf Embedded = 21,540 cf x 40.0% Void	ls
#2	39.50'	17		<b>S_StormTech SC-310 +Cap</b> x 12 Inside #1	
				ective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf erall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap	
				Chambers in 2 Rows	
#3	39.50'	38	-	S_StormTech SC-310 +Cap x 26 Inside #1	
				ctive Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf	
				erall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap	
		_		Chambers in 2 Rows	
#4	39.75'			<b>D'W x 2.83'L x 3.25'H CB #</b> x 3 -Impervious	
#5	43.00'			ove Ground (Prismatic)Listed below (Recalc) -Impervious	—
		13,30	z ci i olai	al Available Storage	
Elevatio	on Su	rf.Area	Inc.Store	e Cum.Store	
(fee			(cubic-feet)	-	
43.0	00	17	0	0 0	
43.2		15,525	1,943		
43.4	10	12,842	2,128	8 4,070	
Davias	Deutine	luniant		viene -	
Device	Routing		Outlet Dev		—
#1 #2	Discarded Secondary	39.00' 43.50'		hr Exfiltration over Surface area ng  x 0.7' breadth Top of Curb	
#2	Secondary	43.50		et) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00	
			2.50		
				glish) 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'		ound Over Drain X 0.00 L= 50.0' Ke= 0.500	
			n= 0.012,	FIOW Area= U./9 ST	
	, <b>,</b>		Inlet / Outle	tlet Invert= 41.50' / 41.30' S= 0.0040 '/' Cc= 0.900 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)



### Pond #1: Drywell

### 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

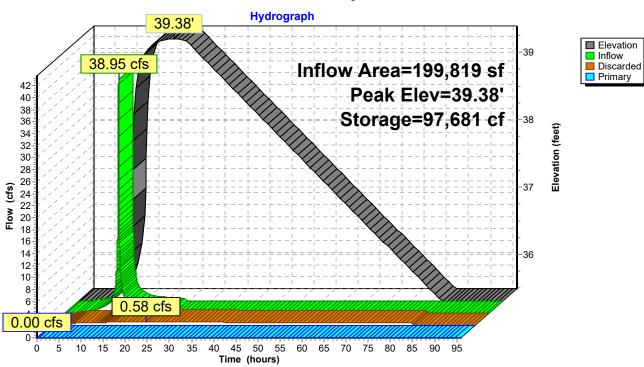
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 39.38' @ 21.56 hrs Surf.Area= 31,068 sf Storage= 97,681 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 1,699.6 min (2,475.0 - 775.4)

Volume	Inver	t Avail.Sto	rage Sto	rage Description	
#1	35.50	' 117,56	67 cf Dry	<pre>Pond (Prismatic)Li</pre>	isted below (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Inc.Stor (cubic-fee		
35.5	50	20,002		0 0	
36.0	00	21,260	10,31	6 10,316	
37.0	00	23,817	22,53	32,854	
38.0	00	26,430	25,12	24 57,978	
39.0	00	29,833	28,13	86,109	
40.0	00	33,082	31,45	58 117,567	
Device	Routing	Invert	Outlet De	evices	
#1	Discarded	35.50'	0.800 in/	hr Exfiltration over	Surface area
#2	Primary	40.75'	24.0' lon	g x 10.0' breadth B	road-Crested Rectangular Weir
			Head (fee	et) 0.20 0.40 0.60	0.80 1.00 1.20 1.40 1.60
			Coef. (Er	nglish) 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

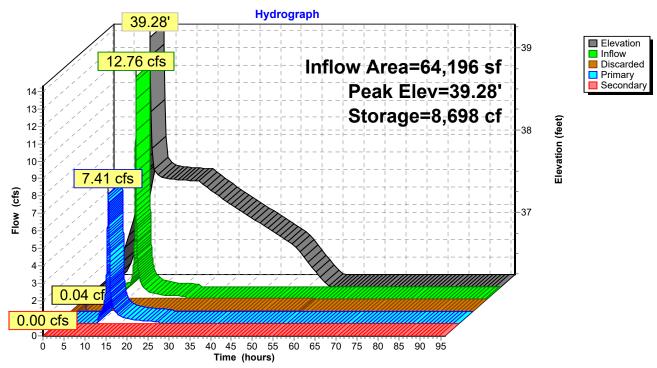
Plug-Flow detention time= 190.6 min calculated for 44,690 cf (100% of inflow) Center-of-Mass det. time= 190.8 min ( 955.2 - 764.4 )

Volume	Volume Invert Avail.Storage			Storage	e Description
#1	36.25'	6,05	59 cf		W x 80.00'L x 3.25'H Field A
					of Overall - $3,052$ cf Embedded = $15,148$ cf x 40.0% Voids
#2	36.75'		55 cf		/ x 2.83'L x 3.25'H CB # x 3 -Impervious
#3	36.75'		52 cf		/ x 4.00'L x 3.25'H CB #-Impervious
#4	40.00'				Ground (Prismatic)Listed below (Recalc) -Impervious
#5	36.75'	26	65 cf	ADS_S	StormTech SC-310 +Cap x 18 Inside #1
				Effectiv	ve Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
				Overall	l Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
				18 Chambers in 2 Rows	
#6	36.75'	2.78	36 cf		StormTech SC-310 +Cap x 189 Inside #1
		_,			ve Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
					I Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
					nambers in 21 Rows
		11.0/	10 of		Vailable Storage
		11,9		TUIALA	Wallable Storage
Elevatio	n Si	ırf.Area	Inc	Store	Cum.Store
(fee		(sq-ft)	(cubic-feet)		(cubic-feet)
· · · · · ·			(Cubi		
40.0				0	0
40.2	,		216		216
40.5	50	18,126	2,476		2,692
D	Denting	It	0.4		
Device	Routing	Invert	-	et Device	
#1	Discarded	36.25'			
#2	Primary	36.75'			id Culvert L= 105.0' Ke= 0.500
			Inlet	/ Outlet	Invert= 36.75' / 36.00' S= 0.0071 '/' Cc= 0.900
			n= 0	.012, Fl	low Area= 1.23 sf
#3	Device 2	37.50'	5.5'	long x 0	0.75' rise Outlet Weir 2 End Contraction(s)
#4	Secondary	40.57'			rown, C= 3.27
	,				0.00 0.00 24.00 24.00
					0.50 0.00 0.12 0.50
			eig		

**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)



Pond #11: Drywell

### Summary for Pond #12a: Drywell

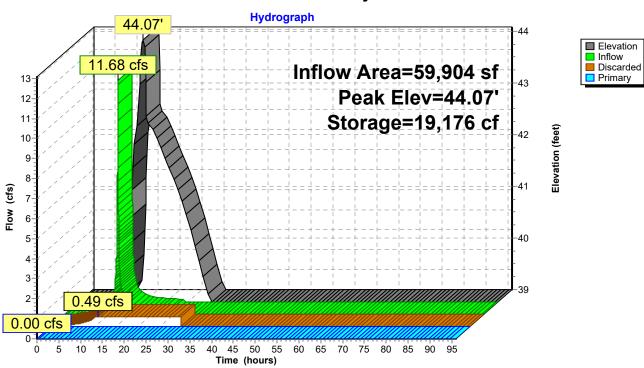
Inflow Area =	59,904 sf, 86.88% Impervious,	Inflow Depth = 7.99" for Fv event
Inflow =	11.68 cfs @ 12.13 hrs, Volume=	39,881 cf
Outflow =	0.49 cfs @ 10.81 hrs, Volume=	39,886 cf, Atten= 96%, Lag= 0.0 min
Discarded =	0.49 cfs @ 10.81 hrs, Volume=	39,886 cf
Primary =	0.00 cfs @ 0.00 hrs, Volume=	0 cf

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.Sto	rage	Storag	ge Description	
#1 39.00' 16,64		l4 cf	65.00"	'W x 193.00'L x 3.50'H Field A		
				43,908	8 cf Overall - 2,297 cf Embedded = 41,610 cf x 40.0% Voids	
#2	39.50'	2,29	97 cf		IO Isolator Row +Cap x 50 Inside #1	
					ive Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf	
					ll Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap	
					ambers in 2 Rows	
#3	39.50'		15 cf		V x 2.83'L x 4.00'H CB# x 2 -Impervious	
#4	43.50'	59	96 cf	Above	e Ground (Prismatic)Listed below (Recalc) - Impervious	
		19,58	32 cf	Total A	Available Storage	
Elevatio	on Su	rf.Area	Inc	Store.	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
43.5	50	11		0	0	
43.7	75	157		21	21	
44.0	00	670		103	124	
44.2	25	3,101		471	596	
Device	Routing	Invert	Outl	et Devic	ces	
#1	Discarded	39.00'	1.70	0 in/hr	Exfiltration over Surface area	
#2	Primary	44.41'	24.0	long >	x 10.0' breadth Broad-Crested Rectangular Weir	
	-				0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60	
					ish) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64	
	<b>Discarded OutFlow</b> Max=0.49 cfs @ 10.81 hrs HW=39.06' (Free Discharge) <b>1=Exfiltration</b> (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
			38,285 cf Overall - 767 cf Embedded = 37,518 cf x 40.0% Voids
#2	39.50'	767 cf	
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			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

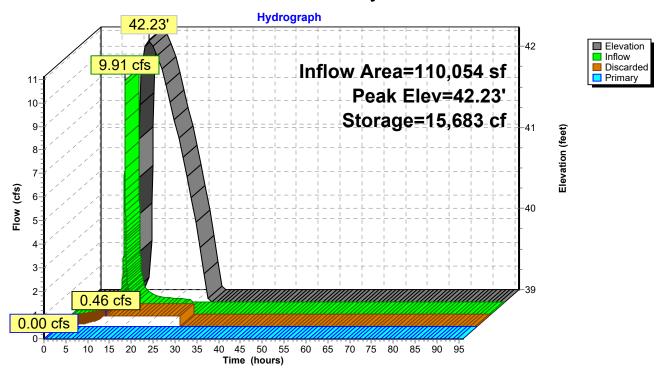
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.50	6	0	0
43.75	75	10	10
44.00	203	35	45
44.25	417	78	122
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.00	6	0	0
43.25	2,391	300	300

Device Routina 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 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**Discarded OutFlow** Max=0.46 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 $\overline{@}$ 0.00 hrs, Volume=	0 cf

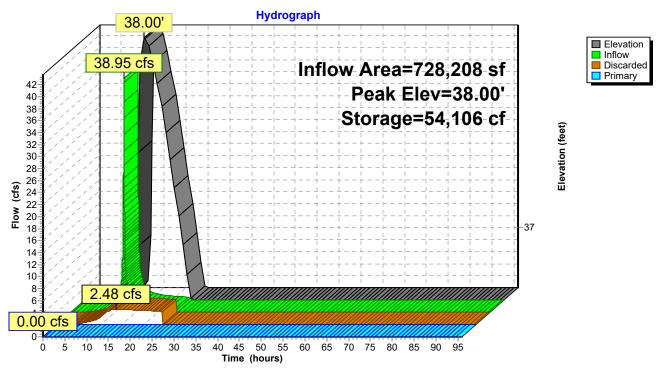
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 38.00' @ 13.58 hrs Surf.Area= 44,654 sf Storage= 54,106 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 188.4 min ( 982.0 - 793.6 )

Volume	Invert	Avail.Sto	rage Storage	Description		
#1	36.70	50,58	B1 cf Custom	Stage Data (P	Prismatic)Listed below (Recalc)	
		50,58	31 cf x 2.00	= 101,163 cf 1	Total Available Storage	
Elevatio (fee		urf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)		
36.7	0	19,271	0	0		
37.0	0	20,025	5,894	5,894		
38.0	0	22,329	21,177	27,071		
39.0	00	24,691	23,510	50,581		
Device	Routing	Invert	Outlet Device	S		
#1	Discarded	36.70'	2.400 in/hr E	xfiltration over	· Surface area	
#2	Primary	39.50'	10.0' long x	10.0' breadth E	Broad-Crested Rectangular Weir	
			Head (feet) 0	0.20 0.40 0.60	0.80 1.00 1.20 1.40 1.60	
			Coef. (English	n) 2.49 2.56 2	.70 2.69 2.68 2.69 2.67 2.64	
Discard	Discarded OutFlow Max=2.48 cfs @ 13.58 hrs HW=38.00' (Free Discharge)					

**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.	.Stora	ge Storage Descr	iption	
#1	37.83'	2	24,299	cf Custom Stage	e Data (Prismatic	Listed below (Recalc)
Elevatio	on Su		Voids		Cum.Store	
(fee	et)	(sq-ft)	(%)	(cubic-feet)	(cubic-feet)	
37.8	33	6,915	0.0	0	0	
39.8	33	6,915	40.0	5,532	5,532	
40.5	-	6,915	1.0		5,578	
41.0	00	8,691	100.0	3,902	9,480	
41.5	50	,	100.0		15,087	
42.0	00	23,108	100.0	9,212	24,299	
Davias	Devetinger					
Device	Routing			Dutlet Devices		
#1	Primary	40.0		5.0" Round Culve		
						= 0.0039 '/' Cc= 0.900
40	Devise 1	10		n= 0.012, Flow Are		
#2	Device 1	40.1		1.0" Horiz. Under E		00
#2	Davias 1	40 -		imited to weir flow		
#3	Device 1	40.		24.0" W x 12.0" H \ _imited to weir flow		er C = 0.000
#4	Device 1	11 -		24.0" x 34.0" Horiz		0 600
<del>#4</del>	Device I	41.		imited to weir flow		0.000
#5	Secondary	41 !				sted Rectangular Weir
#0	occondary	71.				00 1.20 1.40 1.60 1.80 2.00
				2.50 3.00 3.50 4.0		
						2.68 2.67 2.65 2.65 2.65
				2.65 2.66 2.66 2.6		
			-	<b></b>		

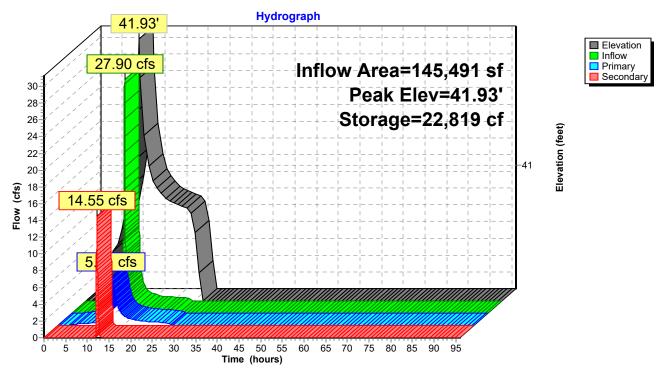
**Primary OutFlow** Max=5.71 cfs @ 12.18 hrs HW=41.93' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 5.71 cfs @ 4.65 fps)

**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



### 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
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			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

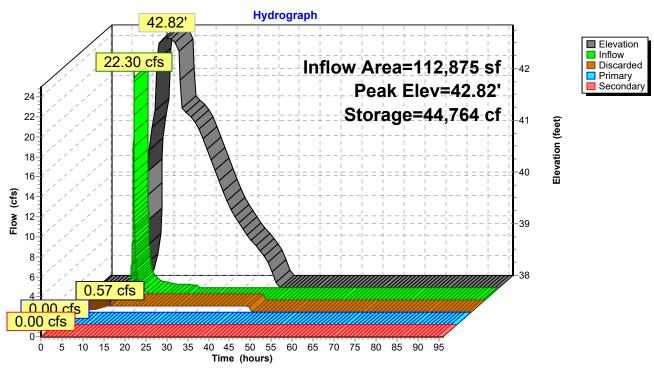
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	23	0	0
42.25	194	27	27
42.50	528	90	117
42.75	5,743	784	901
43.00	29,071	4,352	5,253

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
	-		Offset (feet) 0.00 0.00 24.00 24.00
			Height (feet) 0.50 0.00 0.12 0.50
#3	Secondary	43.46'	Asymmetrical Weir, C= 3.27
			Offset (feet) 0.00 0.00 24.00 24.00
			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)

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

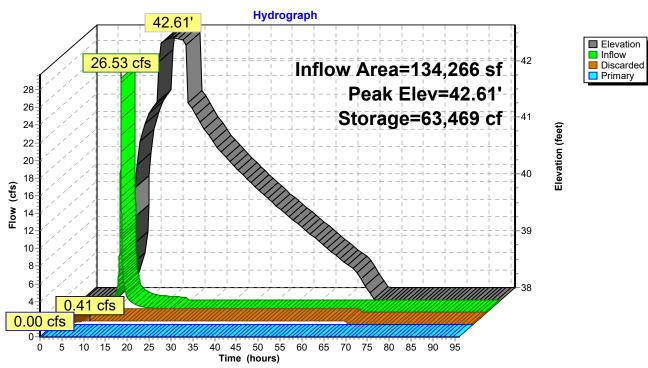
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 42.61' @ 20.94 hrs Surf.Area= 29,415 sf Storage= 63,469 cf

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.Stora	ge Storage	e Description	
#1	38.00'	26,848	cf 265.00"	265.00'W x 111.00'L x 3.50'H Field A	
			102,953	3 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 <b>4.00'W</b>	<b>x 4.00'L x 3.75'H CB #</b> x 2 -Impervious	
#4	42.25'	2,419	cf Above	Ground (Prismatic)Listed below (Recalc) - Impervious	
#5	38.50'	35,833	cf ADS_S	StormTech SC-740 +Cap x 780 Inside #1	
			Effective	/e Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf	
			Overall	Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap	
			780 Cha	ambers in 52 Rows	
		65,262	cf Total A	vailable Storage	
Elevatio	on Su	rf.Area	Inc.Store	Cum.Store	
(fee	et)	(sq-ft) (d	cubic-feet)	(cubic-feet)	
42.2	25	43	0	0	
42.5	50	874	115	115	
42.7	75	17,561	2,304	2,419	
Device	Routing	Invert (	Outlet Device	es	
#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		
		I	Head (feet) (	0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60	
Coef. (Eng		Coef. (Englisl	sh) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64		
			. –		
Discard	ed OutFlow	Max=0.41 cfs (	@ 8.25 hrs H	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 $\overline{@}$ 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
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			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
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			286 Chambers in 11 Rows
#4	40.00'	13 cf	
			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	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(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

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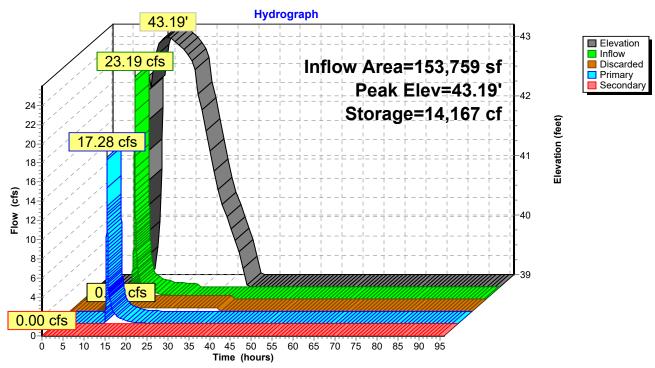
Device	Routing	Invert	Outlet Devices
#1	Discarded	39.00'	1.700 in/hr Exfiltration over Surface area
#2	Secondary	44.11'	Asymmetrical Weir, C= 3.27
	-		Offset (feet) 0.00 0.00 24.00 24.00
			Height (feet) 0.50 0.00 0.30 0.50
#3	Primary	40.01'	12.0" Vert. 12" Over Drain C= 0.600
			Limited to weir flow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

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**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 $\overline{@}$ 0.00 hrs, Volume=	0 cf

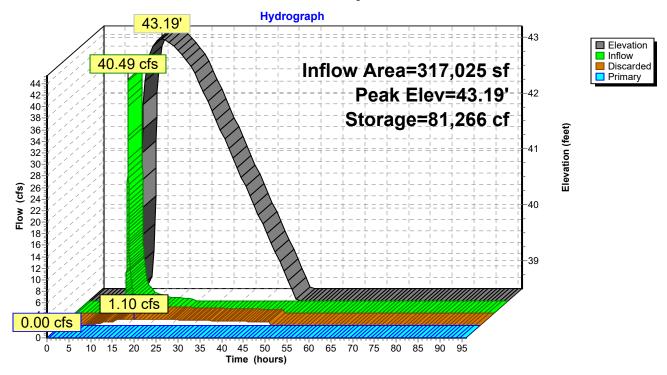
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 43.19' @ 16.68 hrs Surf.Area= 22,698 sf Storage= 81,266 cf

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.Stor	rage Storag	ge Description	
#1	38.50'	100,21	15 cf Dry P	ond (Prismatic)Li	isted below (Recalc)
#2	39.50'				H CB #-Impervious
#3	43.15'	1,79	93 cf Abov	e Ground (Prisma	atic)Listed below (Recalc) -Impervious
#4	38.50'	28	30 cf <b>24.0</b> "	Round Culvert-	mpervious
				.0' S= 0.0112 '/'	
		102,34	15 cf Total	Available Storage	
Elevatio	n S	urf.Area	Inc.Store	Cum.Store	
(feet	t)	(sq-ft)	(cubic-feet)	(cubic-feet)	
38.5	0	12,091	0	0	
39.0	0	13,149	6,310	6,310	
40.0	0	15,319	14,234	20,544	
41.0	0	17,557	16,438	36,982	
42.0	0	19,866	18,712	55,694	
43.0	0	22,243	21,055	76,748	
44.0	0	24,690	23,467	100,215	
Elevatio	n S	urf.Area	Inc.Store	Cum.Store	
(feet	t)	(sq-ft)	(cubic-feet)	(cubic-feet)	
43.1	5	6	0	0	
43.2	5	151	8	8	
43.5	0	1,336	186	194	
43.7	5	3,192	566	760	
44.0	0	5,073	1,033	1,793	
Device	Routing	Invert	Outlet Devi	ces	
#1	Discarded	38.50'	2.100 in/hr	<b>Exfiltration over</b>	Surface area
#2	Primary	45.72'	Top of Cur	b, C= 3.27	
	-		Offset (feet	) 0.00 9.59 19.17	7 24.92 30.87 40.79 50.71
			Height (feel	:) 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)

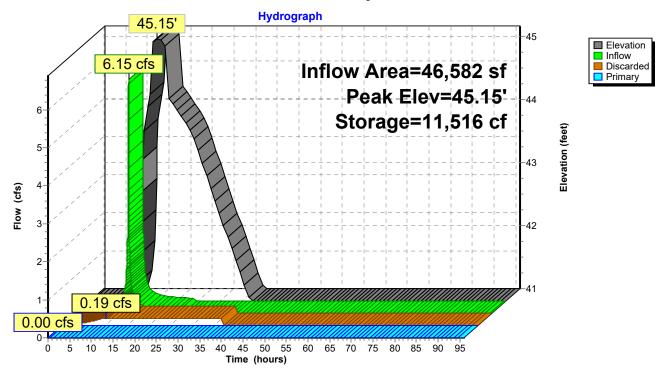
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	10,694 cf	48.00'W x 175.00'L x 3.25'H Field A
			27,300 cf Overall - 564 cf Embedded = 26,736 cf x 40.0% Voids
#2	41.50'	501 cf	
			Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap
			34 Chambers in 2 Rows
#3	41.50'	38 cf	2.50'W x 5.50'L x 2.75'H CB # Inside #1
			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

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

**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 )

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

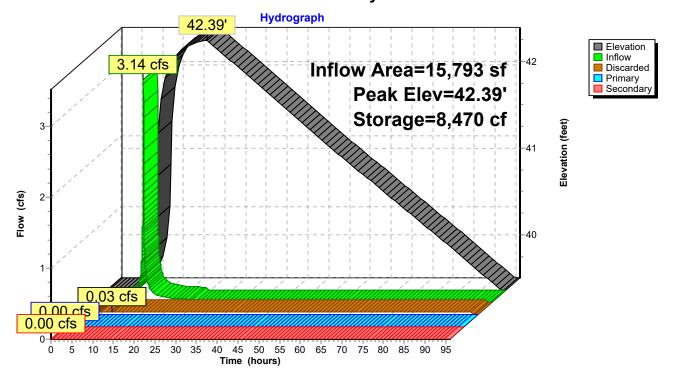
Elevation Surf.Area Inc.Store Cum.Store (cubic-feet) (feet) (sq-ft) (cubic-feet) 45.38 0 0 6 45.50 733 44 44 45.75 8,064 1,100 1,144

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
			Offset (feet) 0.00 20.00 28.00
			Height (feet) 0.04 0.00 0.04
#3	Secondary	45.74'	Weir Outlet, C= 3.27
	-		Offset (feet) 0.00 20.00 28.00
			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)



Pond #6b: Drywell

### Summary for Pond #7: Drywell

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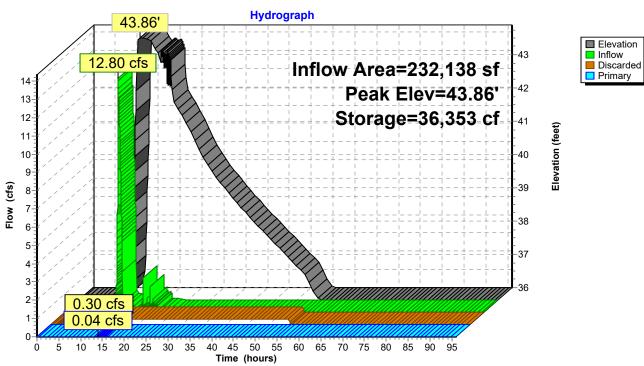
Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 43.86' @ 13.95 hrs Surf.Area= 10,125 sf Storage= 36,353 cf

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.Stora	ge Storage Description			
#1	36.00'	16,584	45.00'W x 225.00'L x 6.00'H Field A			
			60,750 cf Overall - 19,291 cf Embedded = 41,459 cf x 40.0% Voids			
#2	36.75'	3,028	ADS_StormTech MC-3500 d +Cap x 27 Inside #1			
			Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf			
			Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap			
			27 Chambers in 2 Rows Cap Storage= +14.9 cf x 2 x 2 rows = 59.6 cf			
#3	36.75'	16,092				
#3	30.75	10,092	Effective Size= $70.4$ "W x 45.0"H => $15.33$ sf x $7.17$ 'L = $110.0$ cf			
			Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap			
			145 Chambers in 5 Rows			
			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			
			171 cf Overall - 6.0" Wall Thickness = 116 cf			
#5	42.00'	29				
#6	43.34'	1,003	cf Above Ground (Prismatic)Listed below (Recalc) -Impervious			
		36,852	cf Total Available Storage			
Elevatio	on Su	rf.Area	Inc.Store Cum.Store			
(fee	et)	(sq-ft) (c	cubic-feet) (cubic-feet)			
43.3	34	6	0 0			
43.5		245	20 20			
43.7		1,632	235 255			
44.(	00	4,355	748 1,003			
Device	Routing	Invert C	Dutlet Devices			
#1	Discarded	36.00' 1	.300 in/hr Exfiltration over Surface area			
#2	Primary		Fop of Curb, C= 3.27			
			Offset (feet) 0.00 83.50 167.00			
		ŀ	leight (feet) 0.41 0.00 0.41			
Discard	led OutFlow	Max=0.30 cfs (	@ 11.09 hrs HW=36.08' (Free Discharge)			

**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)



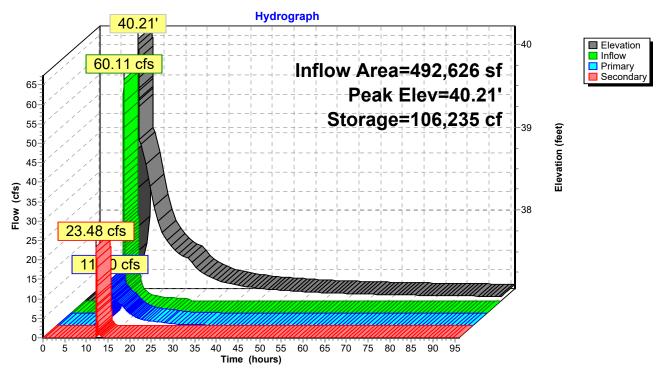
# Pond #7: Drywell

### Summary for Pond #8: Wet Pond

Inflow Ar Inflow Outflow Primary Seconda	= 60.1 <sup>2</sup> = 35.19 = 11.70	1 cfs @ 12 9 cfs @ 12 0 cfs @ 12	6.38% Imperv 2.14 hrs, Volu 2.32 hrs, Volu 2.32 hrs, Volu 2.32 hrs, Volu	ıme= 172, ıme= 161,	768 cf	for Fv event n= 41%, Lag= 10.9 min	
Starting I	Elev= 37.05' S	Surf.Area=	35,833 sf Sto	.00-96.00 hrs, dt- orage= 25,059 cf 180 sf Storage=		(81,176 cf above start)	
	w detention tim f-Mass det. tim			for 147,736 cf (8 788.0)	5% of inflow)		
Volume	Invert	Avail.Sto	rage Storage	e Description			
#1	36.00'	104,09		Prismatic)Listed			
#2	38.25'					d below (Recalc)	
		106,23	35 cf Total A	vailable Storage			
Elevatio	n Surf.	Δrea	Inc.Store	Cum.Store			
(fee		sq-ft)	(cubic-feet)	(cubic-feet)			
36.0		2,109	0				
37.0		,969	23,539	23,539			
37.0		i,833	1,520	25,059			
	38.00 40,259		36,144	61,203			
39.0	39.00 45,527 42,893 104,096						
Elevatio	Elevation Surf.Area Inc.Store Cum.Store						
(fee		sq-ft)	(cubic-feet)	(cubic-feet)			
38.2	5	11	0	0			
38.5	0 1	,429	180	180			
38.7		3,297	591	771			
39.0	0 7	,653	1,369	2,140			
Device	Routing	Invert	Outlet Devic	es			
#1	Primary	37.05'			Elliptical RC	P_Elliptical 23x14	
	,		L= 106.0' C	PP, end-section	conforming t	o fill, Ke= 0.500	
						0005 '/' Cc= 0.900	
	- ·	~~		low Area= 1.83 s			
#2	Secondary	38.75'		3.0' breadth Cur		00 4 40 4 00 4 00 0 00	
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					.20 1.40 1.60 1.80 2.00		
					68 267 26	5 2.64 2.64 2.68 2.68	
				.92 2.97 3.07 3		5 2.07 2.07 2.00 2.00	

Primary OutFlow Max=11.70 cfs @ 12.32 hrs HW=40.21' TW=0.00' (Dynamic Tailwater) T=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 $\overline{@}$ 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

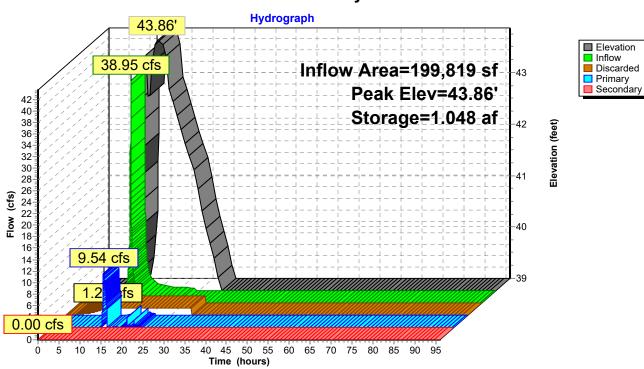
Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 255.0 min (1,030.4 - 775.4)

Volume	Invert A	vail.Storag	ge Storage Description				
#1	39.00'	0.809 a	130.00'W x 185.00'L x 4.00'H Field A				
			2.208 af Overall - 0.186 af Embedded = 2.022 af x 40.0% Voids				
#2	39.50'	0.186 a					
			Effective Size= $28.9$ "W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf				
			Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap				
#3	39.50'	0.002 a	550 Chambers in 22 Rows				
#3 #4	43.00'	0.002 a	· · · · · · · · · · · · · · · · · · ·				
<u></u>	+0.00						
	1.106 af Total Available Storage						
Elevatio	on Surf.Area	Inc	c.Store Cum.Store				
(fee	et) (acres)	(acre	re-feet) (acre-feet)				
43.0	0.001		0.000 0.000				
43.2	0.017		0.002 0.002				
43.5	0.043		0.008 0.010				
43.7			0.020 0.030				
44.0	0.517		0.079 0.109				
Davis	Deutina	luce and the	Outlet Devices				
Device	Routing		Outlet Devices				
#1	Discarded		2.200 in/hr Exfiltration over Surface area				
#2	Secondary		Asymmetrical Weir X 2.00, C= 3.27				
			Offset (feet) 0.00 0.00 24.00 24.00				
#3	Primary		Height (feet) 0.50 0.00 0.12 0.50 <b>15.0" Round Over Drain</b> L= 199.0' Ke= 0.500				
#5	тппату		Inlet / Outlet Invert= 40.50' / 37.00' S= 0.0176 '/' Cc= 0.900				
			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, Atte	n= 0%, Lag= 0.0 min

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

#### Hydrograph Inflow Primary 6 73 cfs 6.73 cfs Inflow Area=445,127 sf 7. 6 5 Flow (cfs) 4-3-2 1 0-70 5 10 15 20 25 30 35 55 60 40 45 50 65 75 80 85 90 95 0 Time (hours)

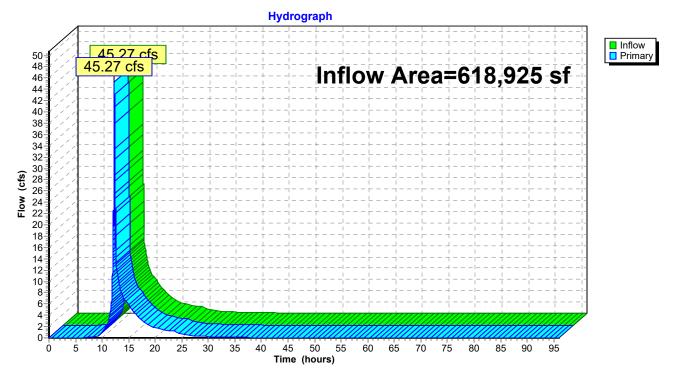
#### Link POI1: POI #1

## Summary for Link POI2: POI #2

Inflow Are	a =	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

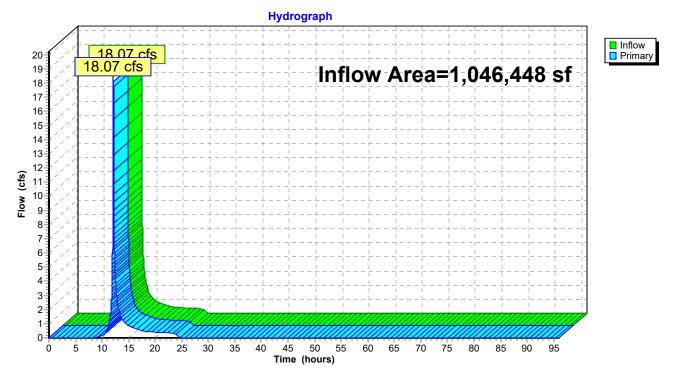


## Summary for Link POI3: POI #3

Inflow Area	a =	1,046,448 sf, 62.04% Impervious, Inflow Depth = 0.64" for Fv event	
Inflow	=	8.07 cfs @ 12.13 hrs, Volume= 55,658 cf	
Primary	=	8.07 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

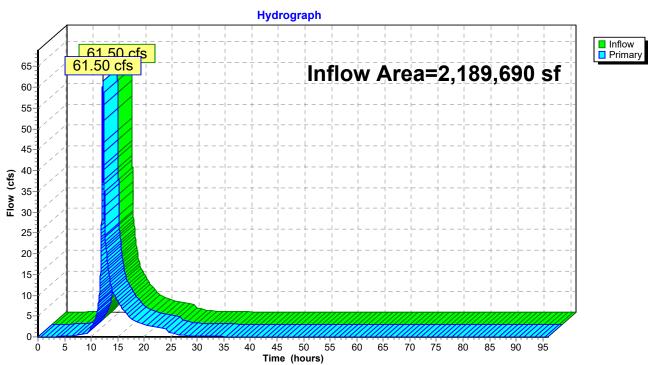
## Link POI3: POI #3



## Summary for Link PR: Site Total

Inflow Area	a =	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

#### Curve Numbers for Hydrologic Soil Type С D

Cover Type	Treatment	Hydrologic	Α	В	С	D
		Condition	Acres RCN	Acres RCN	Acres RCN	Acres RCI
CULTIVATED A	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
		0				
OTHER AGRIC	ULTURAL 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)

FULLIDEVEL	OPED ORDAN AREAS (Vey Established)									
Open space (La	awns,parks etc.)									
	Poor condition; grass cover < 50%			68		79		86		
	Fair condition; grass cover 50% to 75 %			49		69		79		
	Good condition; grass cover > 75%		0.38	39	1.62	61	0.17	74		
Impervious Area	as									
	Paved parking lots, roofs, driveways		0.93	98	6.56	98	0.55	98		
	Streets and roads								1	
	Paved; curbs and storm sewers			98		98		98		
	Paved; open ditches (w/right-of-way)			83		89		92		
	Gravel (w/ right-of-way)			76		85		89		
	Dirt (w/ right-of-way)			72		82		87		
Urban Districts		Avg % impervious								
	Commercial & business	85		89		92		94		
	Industrial	72		81		88		91		
Residential distr	ricts by average lot size	Avg % impervious								
	1/8 acre (town houses)	65		77		85		90		
	1/4 acre	38		61		75		83		
	1/3 acre	30	-	57		72		81		
	1/2 acre	25		54		70		80		-
	1 acre	20		51		68		79		-
	2 acre	12		46		65		77		-
	URBAN AREA (No Vegetation)									
	Newly graded area (pervious only)			77		86		91		
	, , , , , , , , , , , , , , , , , , ,						<u> </u>			
USER DEFINED	ם									
			-							
	Subarea Contributing Area per S	oil Type (ac)	4.04	1	0.40	T	0.70	l		1
		10.21	1.31		8.18	<u> </u>	0.72	1	0	
	Subarea Contributing Area (ac)									
	Subarea Weighted RCN	90								
		0 / 10		DOM						
UPSTREAM CO		Subarea ID	Acres	RCN						
	Upstream Contributing Area 1									
	Upstream Contributing Area 2									
	Upstream Contributing Area 3									
	Upstream Contributing Area 4									
								1		
		Total Contributing	Area w. U	pstrea	am Area	s (ac)	10.2			
		Weighted R	unoff Curv	ve Nur	nber (R0	CN)	90	1		
		•						ł		

77	86	91	94
76	85	90	93
74	83	88	90
72	81	88	91
67	78	85	89
71	80	87	90
64	75	82	85
70	79	84	88
65	75	82	86
69	78	83	87
64	74	81	85
66	74	80	82
62	71	78	81
65	73	79	81
61	70	77	80
65	76	84	88
63	75	83	87
 64	75	83	86
60	72	80	84
63	74	82	85
61	73	81	84
62	73	81	84
60	72	80	83
61	72	79	82
59	70	78	81
60	71	78	81
58	69	77	80
66	77	85	89
58	72	81	85
64	75	83	85
55	69	78	83
63	73	80	83
51	67	76	80

68		79	86	89
49		69	79	84
39		61	74	80
30		58	71	78
48		67	77	83
35		56	70	77
30		48	65	73
57	'	73	82	86
43	5	65	76	82
32		58	72	79
45	5	66	77	83
36		60	73	79
30		55	70	77
59		74	82	86

Open space (Law	/ns,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	1		-							
	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 distric	cts 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 U	RBAN AREA (No Vegetation) Newly graded area (pervious only)			77		86		91		94
USER DEFINED				-						
									L	
				1		r				1
	Subarea Contributing Area per So		1.31		8.18		0.72		0	
	Subarea Contributing Area (ac)	10.21								
	Subarea Weighted RCN	90								
		Outrans ID	4							
UPSTREAM CON		Subarea ID	Acres	RCN						
	Upstream Contributing Area 1									
	Upstream Contributing Area 2		-							
	Upstream Contributing Area 3		-							
	Upstream Contributing Area 4									
		Total Contributing A	Area w. U	pstrea	am Areas	s (ac)	10.2			
			" •							
		Weighted Ru	inoff Cur	ve Nur	nber (RC	SN)	90			

**DRAINAGE SUBAREA ID:** 

LOCATION (County): Sussex

UNIT HYDROGRAPH: STD

POI #1

## LIMIT OF DISTURBANCE (LOD) WORKSHEET

## Step 1 - Subarea LOD Data

1.1 HSG Area Within LOD (ac)

1.2 Pre-Developed Woods/Meadow Within LOD (ac)

1.3 Pre-Developed Impervious Within LOD (ac)

1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); OR

1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%)

## Step 2 - Subarea LOD Runoff Calculations

- 2.1 RCN per HSG
- 2.2 RPv per HSG (in.)
- 2.3 Target RCN per HSG
- 2.4 Target Runoff per HSG (in.)

2.5 Subarea LOD (ac)

2.6 Subarea Weighted RCN

2.7 Subarea Weighted RPv (in.)

2.8 Subarea Weighted Target Runoff (in.)

#### Step 3 - Upstream LOD Areas (from previous DURMM Report as applicable)

- 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)
- 4.2 Weighted RCN
- 4.3 Weighted RPv (in.)
- 4.4 Weighted Target Runoff (in.)
- 4.5 Estimated Annual Runoff (in.)
- 4.6 Req'd Runoff to be Managed within LOD (in.)

4.7 Req'd Runoff to be Managed within LOD (%)

HSG A	HSG B	HSG C	HSG D
1.31	6.04	0.72	
0	0	0	
0	0	0	
0.93	6.56	0.55	
71%	109%	76%	0%

80.89	101.19	92.33	0.00
1.35	2.83	2.03	0.00
39.00	61.00	74.00	0.00
0.21	0.65	1.06	0.00

8.07
97.10
2.42
0.61

Area 1	Area 2	Area 3	Area 4

8.07
97.10
2.42
0.61
36.09
1.00
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	2.1	2.2	2.3	2.4	2.5	2.6
	LENGTH	SLOPE	SURFACE	MANNINGS	VELOCITY	TRAVEL
FLOW TYPE	(feet)	(ft./ft.)	CODE	"n"	(ft./sec.)	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	ST	D
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 la/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

DRAINAGE SUBAREA ID: POI #1

LOCATION (County): Sussex

#### **RESOURCE PROTECTION EVENT (RPv) WORKSHEET**

		BMP 1		BMP 2		BMP 3		BMP 4		BMP 5
	Туре	1-C Underground Infiltration	Туре		Туре		Туре	-	Туре	
-	Data		- 76 -		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	10.21									
	89.53									
	1.91									
	0.79									
	41%									

#### Step 1 - Calculate Initial RPv

- 1.1 Total contributing area to BMP (ac)
- 1.2 Initial RCN
- 1.3 RPv for Contributing Area (in.)
- 1.4 Req'd RPv to be Managed for Contributing Area (in.)
- 1.5 Req'd RPv to be Managed for Contributing Area (%)

#### Step 2 - Adjust for Retention Reduction

- 2.1 Retention volume provided (cu. ft.)
- 2.2 Retention reduction allowance (%)
- 2.3 Retention reduction volume (ac-ft)
- 2.4 Retention reduction volume (in.)
- 2.5 Runoff volume after retention reduction (in.)
- 2.6 Adjusted CN\*

#### Step 3 - Adjust for Annual Runoff Reduction

- 3.1 Annual CN (ACN)
- 3.2 Annual runoff (in.)
- 3.3 Proportion A/B soils in BMP footprint (%)
- 3.4 Annual runoff reduction allowance (%)
- 3.5 Annual runoff after reduction (in.)
- 3.6 Adjusted ACN
- 3.7 Annual Runoff Reduction Allowance for RPv (in.)

#### Step 4 - Calculate RPv with BMP Reductions

- 4.1 RPv Runoff Manangement Provided (cu. ft.)
- 4.2 RPv runoff volume after all reductions (in.)
- 4.3 RPv runoff volume after all reductions (cu.ft.)
- 4.4 Total RPv runoff reduction (in.)
- 4.5 Total RPv runoff reduction (%)
- 4.6 Adjusted CN after all reductions\*
- 4.7 Adjusted equivalent annual runoff (in.)
- 4.8 RPv Compliance Met Through Runoff Reduction?
- 4.9 Runoff Reduction Credit, if Applicable (cu.ft)

#### Step 5 - Determine Residual Volume to be Managed or Offset

- 5.1 RPv Residual Volume (in.)
- 5.2 RPv Residual Volume (cu.ft./ac)
- 5.3 Residual Volume to be Managed or Offset (cu.ft.)
- 5.4 RPv avg. discharge rate for 48-hr detention (cfs)
- 5.5 RPv max. discharge rate for 48-hr detention (cfs)

47390					
100%	N/A	N/A	N/A	N/A	
1.09	N/A	N/A	N/A	N/A	
1.28	N/A	N/A	N/A	N/A	
0.63	N/A	N/A	N/A	N/A	
60.44	N/A	N/A	N/A	N/A	

_					
	89.53	N/A	N/A	N/A	
	27.17	N/A	N/A	N/A	
	0%	0%	0%	0%	
	0%	N/A	N/A	N/A	
	27.17	N/A	N/A	N/A	
	89.53	N/A	N/A	N/A	
	0.08	N/A	N/A	N/A	

50355	N/A	N/A	N/A	N/A
0.55	N/A	N/A	N/A	N/A
20,434	N/A	N/A	N/A	N/A
1.36	N/A	N/A	N/A	N/A
71%	N/A	N/A	N/A	N/A
60.44	N/A	N/A	N/A	N/A
6.87	N/A	N/A	N/A	N/A
YES	N/A	N/A	N/A	N/A
-21060.88	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	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	

\*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.

N/A	
N/A	
0%	
N/A	
N/A	
N/A N/A	
N/A	

Type:

Data

10.21

90 27.17

2.85E+07

BMP 1

TN

44.49

7.79

1-C Underground Infiltration

ТР

TSS

DRAINAGE SUBAREA ID: POI #1

TMDL WATERSHED: Nanticoke River

TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET

#### Step 1 - Calculate Annual Runoff Volume

1.1 Total contributing area to BMP (ac)

- 1.2 Initial RCN
- 1.3 Annual runoff volume (in.)
- 1.4 Annual runoff volume (liters)

#### Step 2 - Calculate Annual Pollutant Load

- 2.1 EMC (mg/L)
- 2.2 Load (mg/yr)
- 2.3 Stormwater Load (lb/ac/yr)

| 2.80     | 0.49     | 90       | N/A |
|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 7.98E+07 | 1.40E+07 | 2.57E+09 | N/A |
| 17.24    | 3.02     | 554      | N/A |

BMP 3

TN

---

ТР

Type:

Data

TN

N/A

N/A

TSS

N/A

N/A

Type:

Data

#### Step 3 - Adjust for Pollutant Reduction

3.1 BMP annual runoff reduction (%)

3.2 Adjusted annual runoff volume (in)

3.3 Adjusted annual runoff volume (liters)

3.4 Adjusted load from annual reductions (lb/ac/yr)

- 3.5 BMP removal efficiency (%)
- 3.6 BMP effluent concentration (mg/L)
- 3.7 Final Adjusted load (lb/ac/yr)

#### Step 4 - Pollutant Reduction Met? (For Informational Purposes)

- 4.1 TMDL (lb/ac/yr)
- 4.2 Reduction met?

4.3 Final Adjusted Load (lb/yr)

75%	/ D				N/A				N/A				N/A				N/A			
6.87	7				N/A				N/A				N/A				N/A			
7.21E+	+06				N/A				N/A				N/A				N/A			
		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		N/A	N/A	N/A		N/A	N/A	N/A
		2.80	0.49	90.00		N/A	N/A	N/A												
		4.36	0.76	140		N/A	N/A	N/A												

N/A

N/A

N/A

irposes)							
	6.58	0.58	129				
	YES	NO	NO	N/A	N/A	N/A	N/A

1430

Type:

Data

BMP 2

TN

N/A

N/A

N/A

---

TP

TSS

BM	IP 4			BMP 5							
			Type:								
	ТР	TSS	Data	TN	ТР	TSS					

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	
		1-C Underground								
	Type:	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.)
- 2.2 Storage volume (ac-ft)

2.3 Storage volume (in.)

- 2.4 Runoff volume after reduction (in.)
- 2.5 CN\*

## Step 3 - Adjust for Annual Runoff Reduction

3.1 Runoff reduction allowance (%)

3.2 Annual runoff after reduction (in.)

3.3 Adjusted ACN

3.4 Event-based runoff reduction (in.)

## Step 4 - Calculate Cv with BMP Reductions

4.1 Cv runoff volume after all reductions (in.)

- 4.2 Total Cv runoff reduction (%)
- 4.3 Adjusted RCN for H&H modeling

47390.00	N/A	N/A	N/A	N/A	
1.09	N/A	N/A	N/A	N/A	
1.28	N/A	N/A	N/A	N/A	
2.84	N/A	N/A	N/A	N/A	
76.58	N/A	N/A	N/A	N/A	

0%	N/A	N/A	N/A	N/A	
4.12	N/A	N/A	N/A	N/A	
89.53	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	

2.84	N/A	N/A	N/A	N/A	
31%	N/A	N/A	N/A	N/A	
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	
		1-C Underground								
	Type:	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.)
- 2.2 Storage volume (ac-ft)

2.3 Storage volume (in.)

- 2.4 Runoff volume after reduction (in.)
- 2.5 CN\*

## Step 3 - Adjust for Annual Runoff Reduction

3.1 Runoff reduction allowance (%)

3.2 Annual runoff after reduction (in.)

3.3 Adjusted ACN

3.4 Event-based runoff reduction (in.)

## Step 4 - Calculate Fv with BMP Reductions

4.1 Fv runoff volume after all reductions (in.)

- 4.2 Total Fv runoff reduction (%)
- 4.3 Adjusted RCN for H&H modeling

47390.00	N/A	N/A	N/A	N/A	
1.09	N/A	N/A	N/A	N/A	
1.28	N/A	N/A	N/A	N/A	
6.65	N/A	N/A	N/A	N/A	
79.16	N/A	N/A	N/A	N/A	

0%	N/A	N/A	N/A	N/A	
7.93	N/A	N/A	N/A	N/A	
89.53	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	

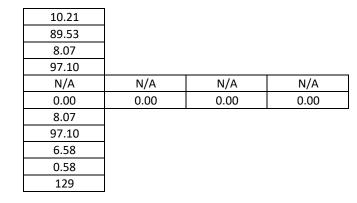
6.65	N/A	N/A	N/A	N/A	
16%	N/A	N/A	N/A	N/A	
79.16	N/A	N/A	N/A	N/A	

PROJECT:	Bridgeville			
DRAINAGE SUBAREA ID:	POI #1			
COUNTY:	Sussex	UNIT H	/DROGRAPH:	STD
TMDL Watershed:	Nanticoke River	VERSION:	DURMM	/2.51.220414
DURMM OUTPUT WORKSHEET				

BMP 1

#### Site Data

Contributing Area to BMPs (ac.) C.A. RCN Subarea LOD (ac.) Subarea RCN Upstream Subarea ID Upstream Subarea LOD (ac.) Combined LOD with Upstream Areas (ac.) Combined RCN with Upstream Areas (ac.) Watershed TMDL-TN (lb/ac/yr) Watershed TMDL-TP (lb/ac/yr) Watershed TMDL-TSS (lb/ac/yr)



BMP 2

#### **BMP** Data

	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

BMP 3

BMP 4

BMP 5

#### Resource Protection Event (RPV)

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	Υ.	
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 Subarea Data for Nutrient Protocol Modeling

Contributing Area (ac.)	
LOD Area (ac.)	

Adjusted Fv (in.)

TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr) Percent Impervious Cover

44.49	
7.79	
1430	
100%	

6.65

10.21 8.07

#### Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest

Subarea ID
Contributing Area (ac.)
RPv Residual Volume (cu.ft.)
Adjusted CN after all reductions
Cv RCN for H&H Modeling
Fv RCN for H&H Modeling
TN Pollutant Load (lb/yr)
TP Pollutant Load (lb/yr)
TSS Pollutant Load (lb/yr)

-	b braining to a	
	POI #1	
	10.21	
	-21061	CREDIT
	60.44	
	76.58	
	79.16	
	44.49	
	7.79	
	1430	

#### PROJECT: Bridgeville DRAINAGE SUBAREA ID: POI #2 LOCATION (County): Sussex

UNIT HYDROGRAPH: STD

Cover Type	(C.A. RCN) WORKS Treatment	Hydrologic	A		B		Hydrolog C	-	D	
cover type	Treatment	Condition	Acres	RCN	Acres	RCN	Acres	RCN	Acres	RCI
CULTIVATED AG	RICULTURAL LANDS	condition	10/00	non	/10/00	non	/10/00	non	/10/00	1101
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)	-		61		72		79		82
	Cont & terraces(C&T)	poor		59		70		78		81
	C&T + Crop residue	good		60		70		78		81
		poor		58		69		77		80
Close-seeded	C&T + Crop residue	good		66		77		85		89
	Straight row	poor		58		72		81		85
or broadcast	Straight row	good		50 64		72		83		00 85
legumes or	Contoured	poor		55		69		03 78		83
rotation	Contoured	good								
meadow	Cont & terraced	poor		63 51		73 67		80 76		83
	Cont & terraced	good		51		67		76		80
OTHER AGRICUL	TURAL 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
		ran	-	22		50		70		70

65 58 66 43 32 good 45 poor fair 36 60 30 55 good 59 74

72

77

73

70

82

79

83

79

77

86

#### FULLY DEVELOPED URBAN AREAS (Veg Established)

Woods

Farmsteads

Open space (Lav	viis, 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	S									
·	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 distric	cts 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
	2 0010	12		40	-	00	-			02
	RBAN AREA (No Vegetation)									
DEVELOPING	Newly graded area (pervious only)			77		86		91		94
	Newly graded area (pervicus only)			- 11		00	-	31		J4
USER DEFINED										
USER DEFINED										
				1		T				1
	Subarea Contributing Area per So		0.39		8.43		5.39		0	
	Subarea Contributing Area (ac)	14.21		-		-				-
	Subarea Weighted RCN	86								
UPSTREAM CO	NTRIBUTING 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. U	pstrea	am Areas	s (ac)	14.2			
		Weighted Ru	Inoff Curv	/e Nur	nber (R0	CN)	86			
							-			

-----

**DRAINAGE SUBAREA ID:** 

LOCATION (County): Sussex

POI #2

UNIT HYDROGRAPH: STD

## LIMIT OF DISTURBANCE (LOD) WORKSHEET

## Step 1 - Subarea LOD Data

1.1 HSG Area Within LOD (ac)

1.2 Pre-Developed Woods/Meadow Within LOD (ac)

1.3 Pre-Developed Impervious Within LOD (ac)

1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); OR

1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%)

## Step 2 - Subarea LOD Runoff Calculations

- 2.1 RCN per HSG
- 2.2 RPv per HSG (in.)
- 2.3 Target RCN per HSG
- 2.4 Target Runoff per HSG (in.)

2.5 Subarea LOD (ac)

2.6 Subarea Weighted RCN

2.7 Subarea Weighted RPv (in.)

2.8 Subarea Weighted Target Runoff (in.)

#### Step 3 - Upstream LOD Areas (from previous DURMM Report as applicable)

- 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)
- 4.2 Weighted RCN
- 4.3 Weighted RPv (in.)
- 4.4 Weighted Target Runoff (in.)
- 4.5 Estimated Annual Runoff (in.)
- 4.6 Req'd Runoff to be Managed within LOD (in.)

4.7 Req'd Runoff to be Managed within LOD (%)

HSG A	HSG B	HSG C	HSG D
0.39	8.43	5.39	
0	0	0	
0.03	0.21	0.12	
0.23	5.64	3.19	
59%	67%	59%	0%

73.79	85.75	88.20	0.00
1.05	1.60	1.75	0.00
42.86	61.78	74.45	0.00
0.27	0.67	1.07	0.00

14.21
86.36
1.64
0.81

Area 1	Area 2	Area 3	Area 4

14.21
86.36
1.64
0.81
23.94
0.83
51%
5170

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

/A	
/A	

## Step 2 - Time of Concentration

Step 2 - Time of Concentration	2.1	2.2	2.3	2.4	2.5	2.6
	LENGTH	SLOPE	SURFACE	MANNINGS	VELOCITY	TRAVEL
FLOW TYPE	(feet)	(ft./ft.)	CODE	"n"	(ft./sec.)	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	ST	D
3.2 Frequency (yr)	10	10
3.3 24-HR Rainfall, P (in.)	5.3	9
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	0.0

ST	D
10	100
5.3	9.2
#N/A	#N/A
#N/A	#N/A
#N/A	#N/A
#VALUE!	#VALUE!
#VALUE!	#VALUE!
0.00	0.00

DRAINAGE SUBAREA ID: POI #2

LOCATION (County): Sussex

## **RESOURCE PROTECTION EVENT (RPv) WORKSHEET**

	BMP 1		BMP 2		BMP 3		BMP 4	BMP 5		
	1-C Underground									
Туре	Infiltration	Туре		Туре		Туре		Туре		
Data										
14.21										
86.36										
1.64										
0.83										
51%										

#### Step 1 - Calculate Initial RPv

- 1.1 Total contributing area to BMP (ac)
- 1.2 Initial RCN
- 1.3 RPv for Contributing Area (in.)
- 1.4 Req'd RPv to be Managed for Contributing Area (in.)
- 1.5 Req'd RPv to be Managed for Contributing Area (%)

#### Step 2 - Adjust for Retention Reduction

- 2.1 Retention volume provided (cu. ft.)
- 2.2 Retention reduction allowance (%)
- 2.3 Retention reduction volume (ac-ft)
- 2.4 Retention reduction volume (in.)
- 2.5 Runoff volume after retention reduction (in.)
- 2.6 Adjusted CN\*

#### Step 3 - Adjust for Annual Runoff Reduction

- 3.1 Annual CN (ACN)
- 3.2 Annual runoff (in.)
- 3.3 Proportion A/B soils in BMP footprint (%)
- 3.4 Annual runoff reduction allowance (%)
- 3.5 Annual runoff after reduction (in.)
- 3.6 Adjusted ACN
- 3.7 Annual Runoff Reduction Allowance for RPv (in.)

#### Step 4 - Calculate RPv with BMP Reductions

- 4.1 RPv Runoff Manangement Provided (cu. ft.)
- 4.2 RPv runoff volume after all reductions (in.)
- 4.3 RPv runoff volume after all reductions (cu.ft.)
- 4.4 Total RPv runoff reduction (in.)
- 4.5 Total RPv runoff reduction (%)
- 4.6 Adjusted CN after all reductions\*
- 4.7 Adjusted equivalent annual runoff (in.)
- 4.8 RPv Compliance Met Through Runoff Reduction?
- 4.9 Runoff Reduction Credit, if Applicable (cu.ft)

#### Step 5 - Determine Residual Volume to be Managed or Offset

- 5.1 RPv Residual Volume (in.)
- 5.2 RPv Residual Volume (cu.ft./ac)
- 5.3 Residual Volume to be Managed or Offset (cu.ft.)
- 5.4 RPv avg. discharge rate for 48-hr detention (cfs)
- 5.5 RPv max. discharge rate for 48-hr detention (cfs)

7456						
100%	<b>,</b>	N/A	N/A	N/A	N/A	
1.71		N/A	N/A	N/A	N/A	
1.45		N/A	N/A	N/A	N/A	
0.19		N/A	N/A	N/A	N/A	
37.9	; · · · · · · · · · · · · · · · · · · ·	N/A	N/A	N/A	N/A	

-					
	86.36	N/A	N/A	N/A	
	23.94	N/A	N/A	N/A	
	0%	0%	0%	0%	
	0%	N/A	N/A	N/A	
	23.94	N/A	N/A	N/A	
	86.36	N/A	N/A	N/A	
	0.00	N/A	N/A	N/A	

74561	N/A	N/A	N/A	N/A
0.19	N/A	N/A	N/A	N/A
10,034	N/A	N/A	N/A	N/A
1.45	N/A	N/A	N/A	N/A
88%	N/A	N/A	N/A	N/A
37.96	N/A	N/A	N/A	N/A
1.35	N/A	N/A	N/A	N/A
YES	N/A	N/A	N/A	N/A
-31729.46	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	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	

\*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.

N/A	
N/A	
0%	
N/A	
N/A	
N/A N/A	
N/A	

Type:

Data

14.21

86 23.94 BMP 1

TN

1-C Underground Infiltration

ТР

TSS

DRAINAGE SUBAREA ID: POI #2

TMDL WATERSHED: Nanticoke River

TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET

#### Step 1 - Calculate Annual Runoff Volume

1.1 Total contributing area to BMP (ac)

- 1.2 Initial RCN
- 1.3 Annual runoff volume (in.)
- 1.4 Annual runoff volume (liters)

#### Step 2 - Calculate Annual Pollutant Load

- 2.1 EMC (mg/L)
- 2.2 Load (mg/yr)
- 2.3 Stormwater Load (lb/ac/yr)

3.50E+07															
	2.80	0.49	90	N/A											
	9.79E+07	1.71E+07	3.15E+09	N/A											
	15.19	2.66	488	N/A											

BMP 3

TN

---

ТР

TSS

Type:

Data

TN

N/A

N/A

Type:

Data

#### Step 3 - Adjust for Pollutant Reduction

3.1 BMP annual runoff reduction (%)

3.2 Adjusted annual runoff volume (in)

3.3 Adjusted annual runoff volume (liters)

3.4 Adjusted load from annual reductions (lb/ac/yr)

- 3.5 BMP removal efficiency (%)
- 3.6 BMP effluent concentration (mg/L)
- 3.7 Final Adjusted load (lb/ac/yr)

#### Step 4 - Pollutant Reduction Met? (For Informational Purposes)

- 4.1 TMDL (lb/ac/yr)
- 4.2 Reduction met?

4.3 Final Adjusted Load (lb/yr)

94%				N/A				N/A				N/A				N/A			
1.35				N/A				N/A				N/A				N/A			
1.97E+06				N/A				N/A				N/A				N/A			
	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		N/A	N/A	N/A		N/A	N/A	N/A
	2.80	0.49	90.00		N/A	N/A	N/A												
	0.86	0.15	28		N/A	N/A	N/A												

onnacional i al poses)										
	6.58	0.58	129							
	YES	YES	YES	N/A	N/A	N/A	N/A	N/A	N/A	
	12.16	2.13	391	N/A	N/A	N/A	N/A	N/A	N/A	

BMP 2

TN

---

TP

TSS

Type:

Data

BM	IP 4		BMP 5					
			Type:					
	ТР	TSS	Data	TN TP TSS				

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
		1-C Underground								
	Type:	Infiltration	Type:		Type:		Type:		Туре:	
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.)
- 2.2 Storage volume (ac-ft)
- 2.3 Storage volume (in.)
- 2.4 Runoff volume after reduction (in.)
- 2.5 CN\*

## Step 3 - Adjust for Annual Runoff Reduction

- 3.1 Runoff reduction allowance (%)
- 3.2 Annual runoff after reduction (in.)

3.3 Adjusted ACN

3.4 Event-based runoff reduction (in.)

## Step 4 - Calculate Cv with BMP Reductions

4.1 Cv runoff volume after all reductions (in.)

- 4.2 Total Cv runoff reduction (%)
- 4.3 Adjusted RCN for H&H modeling

74561.00	N/A	N/A	N/A	N/A	
1.71	N/A	N/A	N/A	N/A	
1.45	N/A	N/A	N/A	N/A	
2.34	N/A	N/A	N/A	N/A	
70.92	N/A	N/A	N/A	N/A	

0%	N/A	N/A	N/A	N/A	
3.78	N/A	N/A	N/A	N/A	
86.36	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	

2.34	N/A	N/A	N/A	N/A	
38%	N/A	N/A	N/A	N/A	
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
		1-C Underground								
	Type:	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.)
- 2.2 Storage volume (ac-ft)

2.3 Storage volume (in.)

- 2.4 Runoff volume after reduction (in.)
- 2.5 CN\*

## Step 3 - Adjust for Annual Runoff Reduction

3.1 Runoff reduction allowance (%)

3.2 Annual runoff after reduction (in.)

3.3 Adjusted ACN

3.4 Event-based runoff reduction (in.)

## Step 4 - Calculate Fv with BMP Reductions

4.1 Fv runoff volume after all reductions (in.)

- 4.2 Total Fv runoff reduction (%)
- 4.3 Adjusted RCN for H&H modeling

74561.00	N/A	N/A	N/A	N/A	
1.71	N/A	N/A	N/A	N/A	
1.45	N/A	N/A	N/A	N/A	
6.10	N/A	N/A	N/A	N/A	
74.68	N/A	N/A	N/A	N/A	

0%	N/A	N/A	N/A	N/A	
7.54	N/A	N/A	N/A	N/A	
86.36	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	

6.10	N/A	N/A	N/A	N/A	
19%	N/A	N/A	N/A	N/A	
74.68	N/A	N/A	N/A	N/A	

PROJECT:	Bridgeville			
DRAINAGE SUBAREA ID:	POI #2			
COUNTY:	Sussex	UNIT H	YDROGRAPH:	STD
TMDL Watershed:	Nanticoke River	VERSION:	DURMM	/2.51.220414
DURMM OUTPUT WORKSHEET				

#### Site Data

Contributing Area to BMPs (ac.) C.A. RCN Subarea LOD (ac.) Subarea RCN Upstream Subarea ID Upstream Subarea LOD (ac.) Combined LOD with Upstream Areas (ac.) Combined RCN with Upstream Areas (ac.) Watershed TMDL-TN (lb/ac/yr) Watershed TMDL-TP (lb/ac/yr) Watershed TMDL-TSS (lb/ac/yr)

RPv runoff volume after all reductions (in.)

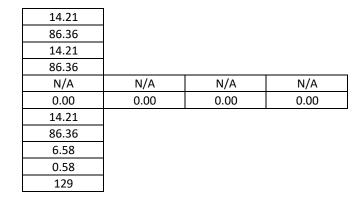
RPv Compliance Met Through Runoff Reduction?

Total RPv runoff reduction (in.)

Total RPv runoff reduction (%)

RPv Residual Volume (cu. ft.)

Adjusted pollutant load, TN (lb/ac/yr) Adjusted pollutant load, TP (lb/ac/yr) Adjusted pollutant load, TSS (lb/ac/yr) Cv runoff volume after all reductions (in.) Fv runoff volume after all reductions (in.)



#### **BMP** Data

BMP 1	BMP 2	BMP 3	BMP 4	BMP 5
1-C Underground Infiltration				
0.19	N/A	N/A	N/A	N/A
1.45	N/A	N/A	N/A	N/A
88%	N/A	N/A	N/A	N/A
YES	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
0.86	N/A	N/A	N/A	N/A
0.15	N/A	N/A	N/A	N/A
27.50	N/A	N/A	N/A	N/A
2.34	N/A	N/A	N/A	N/A
6.10	N/A	N/A	N/A	N/A

#### Resource Protection Event (RPV)

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)		1
Fv runoff volume (in.)	7.54	
Equivalent RCN for H&H Modeling (CN*)	74.68	
Adjusted Subarea Data for Downstream DURMM Modeling		I
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 Subarea Data for Nutrient Protocol Modeling

Contributing Area (ac.)	
LOD Area (ac.)	

TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr) Percent Impervious Cover

Adjusted Cv (in.)

Adjusted Fv (in.)

12.16	
2.13	
391	
64%	
64%	

2.34

6.10

14.21 14.21

#### Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest

Subarea ID
Contributing Area (ac.)
RPv Residual Volume (cu.ft.)
Adjusted CN after all reductions
Cv RCN for H&H Modeling
Fv RCN for H&H Modeling
TN Pollutant Load (lb/yr)
TP Pollutant Load (lb/yr)
TSS Pollutant Load (lb/yr)

 b braining to a	
POI #2	
14.21	
-31729	CREDIT
37.96	
70.92	
74.68	
12.16	
2.13	
391	

#### PROJECT: Bridgeville DRAINAGE SUBAREA ID: POI #3 LOCATION (County): Sussex

UNIT HYDROGRAPH: STD

CONTRIBUTING AREA RUNOFF CURVE NUMBER (C.A. RCN) WORKSHEET

#### Curve Numbers for Hydrologic Soil Type С D

	(C.A. RCN) WORKSI			Curve Numbers for Hydrologic Soil Ty							
Cover Type	Treatment	Hydrologic	A		В		C		D		
	AGRICULTURAL LANDS	Condition	Acres	RCN	Acres	RCN	Acres	RCN	Acres	RCI	
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	
Now Grops	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	
	ULTURAL LANDS										
	Pasture, grassland or range	noor		68		79		86		89	
	i asure, grassianu ur range	poor fair		49		69		79		84	
		good		39		61		74		80	
	Meadow -cont. grass (non grazed)			39		58		74		78	
	Brush - brush, weed, grass mix	poor		48		67		77		83	
	Drush - Drush, weeu, ylass mix	fair		35		56		70		77	
				30		48		65		73	
	Woods - grass combination	good		57		40 73		82		86	
	woods - grass combination	poor fair		43		65		82 76		82	
				43 32		58		76		84 79	
	Weede	good		32		00		77		75	

poor fair good

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Woods Farmsteads

#### FULLY DEVELOPED URBAN AREAS (Veg Established)

Open space (Law	ns,parks etc.)	
	Poor condition; grass cover < 50%	
	Fair condition; grass cover 50% to 75 %	
	Good condition; grass cover > 75%	
Impervious Areas		
	Paved parking lots, roofs, driveways	
	Streets and roads	
	Paved; curbs and storm sewers	
	Paved; open ditches (w/right-of-way)	
	Gravel (w/ right-of-way)	
	Dirt (w/ right-of-way)	
Urban Districts		Avg % i
	Commercial & business	85
	Industrial	72
Residential distric	ts by average lot size	Avg % i
	1/8 acre (town houses)	65
	1/4 acre	38
	1/3 acre	30

77	86	91	94
76	85	90	93
74	83	88	90
72	81	88	91
67	78	85	89
71	80	87	90
64	75	82	85
70	79	84	88
 65	75	82	86
69	78	83	87
64	74	81	85
66	74	80	82
62	71	78	81
65	73	79	81
61	70	77	80
65	76	84	88
63	75	83	87
64	75	83	86
60	72	80	84
63	74	82	85
61	73	81	84
62	73	81	84
60	72	80	83
61	72	79	82
59	70	78	81
60	71	78	81
58	69	77	80
66	77	85	89
58	72	81	85
64	75	83	85
55	69	78	83
63	73	80	83
51	67	76	80

68	79	86	89
49	69	79	84
39	61	74	80
30	58	71	78
48	67	77	83
35	56	70	77
30	48	65	73
57	73	82	86
43	65	76	82
32	58	72	79
45	66	77	83
36	60	73	79
30	55	70	77
59	74	82	86

Open space (Lawns,parks etc.)									
Poor condition; grass cover < 50%			68		79		86		89
Fair condition; grass cover 50% to 75 %	, D		49		69		79		84
Good condition; grass cover > 75%		5.42	39	3.14	61	1.97	74		80
Impervious Areas		8							
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
Newly graded area (pervious entry)				-	00		01		04
USER DEFINED									
	<b></b> / .		1		T		1		l
Subarea Contributing Area per S		13.18		9.06	l	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. U	pstrea	am Area	s (ac)	24.7			
	0		-		. ,	_	J		
	Weighted Ru	unoff Curv	/e Nur	nher (R(	CN)	78	1		

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	2.1	2.2	2.3	2.4	2.5	2.6
	LENGTH	SLOPE	SURFACE	MANNINGS	VELOCITY	TRAVEL
FLOW TYPE	(feet)	(ft./ft.)	CODE	"n"	(ft./sec.)	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
			_	6.5	(+ )	

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	ST	D
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

**DRAINAGE SUBAREA ID:** 

LOCATION (County): Sussex

UNIT HYDROGRAPH: STD

POI #3

## LIMIT OF DISTURBANCE (LOD) WORKSHEET

## Step 1 - Subarea LOD Data

1.1 HSG Area Within LOD (ac)

1.2 Pre-Developed Woods/Meadow Within LOD (ac)

1.3 Pre-Developed Impervious Within LOD (ac)

1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); OR

1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%)

## Step 2 - Subarea LOD Runoff Calculations

- 2.1 RCN per HSG
- 2.2 RPv per HSG (in.)
- 2.3 Target RCN per HSG
- 2.4 Target Runoff per HSG (in.)

2.5 Subarea LOD (ac)

2.6 Subarea Weighted RCN

2.7 Subarea Weighted RPv (in.)

2.8 Subarea Weighted Target Runoff (in.)

#### Step 3 - Upstream LOD Areas (from previous DURMM Report as applicable)

- 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)
- 4.2 Weighted RCN
- 4.3 Weighted RPv (in.)
- 4.4 Weighted Target Runoff (in.)
- 4.5 Estimated Annual Runoff (in.)
- 4.6 Req'd Runoff to be Managed within LOD (in.)

4.7 Req'd Runoff to be Managed within LOD (%)

HSG A	HSG B	HSG C	HSG D
12.25	8.73	2.43	
0	0	0	
0	0	0	
7.7	5.92	0.46	
63%	68%	19%	0%

76.09	86.09	78.54	0.00
1.14	1.62	1.24	0.00
39.00	61.00	74.00	0.00
0.21	0.65	1.06	0.00

23.41
80.07
1.31
0.46

Area 1	Area 2	Area 3	Area 4

23.41	
80.07	
1.31	
0.46	
18.38	
0.85	
65%	

DRAINAGE SUBAREA ID: POI #3

LOCATION (County): Sussex

## **RESOURCE PROTECTION EVENT (RPv) WORKSHEET**

BMP 1			BMP 2		BMP 3		BMP 4	BMP 5	
	1-C Underground								
Туре	Infiltration	Туре	1-B Infiltration Basin	Туре		Туре		Туре	
Data									
24.67									
78.41									
1.24									
0.81									
65%									

#### Step 1 - Calculate Initial RPv

- 1.1 Total contributing area to BMP (ac)
- 1.2 Initial RCN
- 1.3 RPv for Contributing Area (in.)
- 1.4 Req'd RPv to be Managed for Contributing Area (in.)
- 1.5 Req'd RPv to be Managed for Contributing Area (%)

#### Step 2 - Adjust for Retention Reduction

- 2.1 Retention volume provided (cu. ft.)
- 2.2 Retention reduction allowance (%)
- 2.3 Retention reduction volume (ac-ft)
- 2.4 Retention reduction volume (in.)
- 2.5 Runoff volume after retention reduction (in.)
- 2.6 Adjusted CN\*

#### Step 3 - Adjust for Annual Runoff Reduction

- 3.1 Annual CN (ACN)
- 3.2 Annual runoff (in.)
- 3.3 Proportion A/B soils in BMP footprint (%)
- 3.4 Annual runoff reduction allowance (%)
- 3.5 Annual runoff after reduction (in.)
- 3.6 Adjusted ACN
- 3.7 Annual Runoff Reduction Allowance for RPv (in.)

#### Step 4 - Calculate RPv with BMP Reductions

- 4.1 RPv Runoff Manangement Provided (cu. ft.)
- 4.2 RPv runoff volume after all reductions (in.)
- 4.3 RPv runoff volume after all reductions (cu.ft.)
- 4.4 Total RPv runoff reduction (in.)
- 4.5 Total RPv runoff reduction (%)
- 4.6 Adjusted CN after all reductions\*
- 4.7 Adjusted equivalent annual runoff (in.)
- 4.8 RPv Compliance Met Through Runoff Reduction?
- 4.9 Runoff Reduction Credit, if Applicable (cu.ft)

#### Step 5 - Determine Residual Volume to be Managed or Offset

- 5.1 RPv Residual Volume (in.)
- 5.2 RPv Residual Volume (cu.ft./ac)
- 5.3 Residual Volume to be Managed or Offset (cu.ft.)
- 5.4 RPv avg. discharge rate for 48-hr detention (cfs)
- 5.5 RPv max. discharge rate for 48-hr detention (cfs)

27154		71607				
100%		100%	N/A	N/A	N/A	
0.62		1.64	N/A	N/A	N/A	
0.30		0.80	N/A	N/A	N/A	
0.94	1	0.14	N/A	N/A	N/A	
70.72		33.66	N/A	N/A	N/A	

78.41	70.72	N/A	N/A	N/A	
17.08	11.89	N/A	N/A	N/A	
0%	0%	0%	0%	0%	
0%	0%	N/A	N/A	N/A	
17.08	11.89	N/A	N/A	N/A	
78.41	70.72	N/A	N/A	N/A	
0.00	0.30	N/A	N/A	N/A	

27154	98761	N/A	N/A	N/A
0.94	0.14	N/A	N/A	N/A
83,891	12,284	N/A	N/A	N/A
0.30	1.10	N/A	N/A	N/A
24%	89%	N/A	N/A	N/A
70.72	33.66	N/A	N/A	N/A
11.89	0.88	N/A	N/A	N/A
NO	YES	N/A	N/A	N/A
N/A	-26529.43	N/A	N/A	N/A

0.50		N/A	N/A	N/A	N/A	
1,827		N/A	N/A	N/A	N/A	
45,078	]	N/A	N/A	N/A	N/A	
0.261	]	N/A	N/A	N/A	N/A	
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.

Type:

Data

24.67

78

BMP 1

TN

10.84

1-C Underground Infiltration

1.90

ТР

TSS

348

DRAINAGE SUBAREA ID: POI #3

TMDL WATERSHED: Nanticoke River

TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET

#### Step 1 - Calculate Annual Runoff Volume

1.1 Total contributing area to BMP (ac)

- 1.2 Initial RCN
- 1.3 Annual runoff volume (in.)
- 1.4 Annual runoff volume (liters)

#### Step 2 - Calculate Annual Pollutant Load

- 2.1 EMC (mg/L)
- 2.2 Load (mg/yr)
- 2.3 Stormwater Load (lb/ac/yr)

17.08	t t										
4.33E+07											
	2.80	0.49	90	2.80	0.49	90	N/A	N/A	N/A	N/A	
	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	

TSS

243

BMP 2

TN

7.55

Type:

Data

1-B Infiltration Basin

ТР

1.32

#### Step 3 - Adjust for Pollutant Reduction

3.1 BMP annual runoff reduction (%)

3.2 Adjusted annual runoff volume (in)

3.3 Adjusted annual runoff volume (liters)

3.4 Adjusted load from annual reductions (lb/ac/yr)

- 3.5 BMP removal efficiency (%)
- 3.6 BMP effluent concentration (mg/L)
- 3.7 Final Adjusted load (lb/ac/yr)

#### Step 4 - Pollutant Reduction Met? (For Informational Purposes)

- 4.1 TMDL (lb/ac/yr)
- 4.2 Reduction met?

4.3 Final Adjusted Load (lb/yr)

30%				93%				N/A				N/A				N/A			
11.89				0.88				N/A				N/A				N/A			
3.02E+07				2.24E+06				N/A				N/A				N/A			
	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
	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
	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
	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

BMP 3

TN

N/A

---

ТР

N/A

Type:

Data

TN

N/A

N/A

N/A

TSS

N/A

Type:

Data

onui Purposesj										
	6.58	0.58	129							
	NO	NO	NO	YES	YES	YES	N/A	N/A	N/A	
	186.23	32.59	5986	13.85	2.42	445	N/A	N/A	N/A	

BM	IP 4			BM	IP 5	
			Type:			
	ТР	TSS	Data	TN	ТР	TSS

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

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 #3
LOCATION (County):	Sussex

CONVEYANCE EVENT (Cv) WORKSHEET

	BMP 1			BMP 2		BMP 3		BMP 4	BMP 5	
		1-C Underground								
	Type:	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.)
- 2.2 Storage volume (ac-ft)

2.3 Storage volume (in.)

- 2.4 Runoff volume after reduction (in.)
- 2.5 CN\*

## Step 3 - Adjust for Annual Runoff Reduction

3.1 Runoff reduction allowance (%)

3.2 Annual runoff after reduction (in.)

3.3 Adjusted ACN

3.4 Event-based runoff reduction (in.)

## Step 4 - Calculate Cv with BMP Reductions

4.1 Cv runoff volume after all reductions (in.)

4.2 Total Cv runoff reduction (%)

4.3 Adjusted RCN for H&H modeling

27154.00	7160	607.00	N/A	N/A	N/A	
0.62	1.	1.64	N/A	N/A	N/A	
0.30	0.	0.80	N/A	N/A	N/A	
2.70	1.	1.90	N/A	N/A	N/A	
75.10	65	55.60	N/A	N/A	N/A	

0%	0%	N/A	N/A	N/A	
3.01	2.70	N/A	N/A	N/A	
78.41	75.10	N/A	N/A	N/A	
0.00	0.30	N/A	N/A	N/A	

2.70	1.90	N/A	N/A	N/A	
10%	37%	N/A	N/A	N/A	
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	
		1-C Underground								
	Type:	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.)
- 2.2 Storage volume (ac-ft)
- 2.3 Storage volume (in.)
- 2.4 Runoff volume after reduction (in.)
- 2.5 CN\*

## Step 3 - Adjust for Annual Runoff Reduction

- 3.1 Runoff reduction allowance (%)
- 3.2 Annual runoff after reduction (in.)

3.3 Adjusted ACN

3.4 Event-based runoff reduction (in.)

## Step 4 - Calculate Fv with BMP Reductions

4.1 Fv runoff volume after all reductions (in.)

- 4.2 Total Fv runoff reduction (%)
- 4.3 Adjusted RCN for H&H modeling

27154.00	71607.00	N/A	N/A	N/A	
0.62	1.64	N/A	N/A	N/A	
0.30	0.80	N/A	N/A	N/A	
6.26	5.46	N/A	N/A	N/A	
75.97	69.57	N/A	N/A	N/A	

0%	0%	N/A	N/A	N/A	
6.56	6.26	N/A	N/A	N/A	
78.41	75.97	N/A	N/A	N/A	
0.00	0.30	N/A	N/A	N/A	

6.26	5.46	N/A	N/A	N/A	
5%	17%	N/A	N/A	N/A	
75.97	69.57	N/A	N/A	N/A	

PROJECT:	Bridgeville			
DRAINAGE SUBAREA ID:	POI #3			
COUNTY:	Sussex	UNIT HY	DROGRAPH:	STD
TMDL Watershed:	Nanticoke River	VERSION:	DURMM v	/2.51.220414
DURMM OUTPUT WORKSHEET				

BMP 1

#### Site Data

Contributing Area to BMPs (ac.) C.A. RCN Subarea LOD (ac.) Subarea RCN Upstream Subarea ID Upstream Subarea LOD (ac.) Combined LOD with Upstream Areas (ac.) Combined RCN with Upstream Areas (ac.) Watershed TMDL-TN (lb/ac/yr) Watershed TMDL-TP (lb/ac/yr) Watershed TMDL-TSS (lb/ac/yr)

24.67			
78.41			
23.41			
80.07			
N/A	N/A	N/A	N/A
0.00	0.00	0.00	0.00
23.41			
80.07			
6.58			
0.58			
129	]		

BMP 2

#### **BMP** Data

	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

BMP 3

BMP 4

BMP 5

## Protection Event (PDV)

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 Colomba Data for Development DUDATE State	-	
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 Subarea Data for Nutrient Protocol Modeling

Contributing Area (ac.)	
LOD Area (ac.)	

24.67
23.41

5.46

TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr) Percent Impervious Cover

Adjusted Fv (in.)

13.85	
2.42	
445	
60%	

#### Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest

Subarea ID
Contributing Area (ac.)
RPv Residual Volume (cu.ft.)
Adjusted CN after all reductions
Cv RCN for H&H Modeling
Fv RCN for H&H Modeling
TN Pollutant Load (lb/yr)
TP Pollutant Load (lb/yr)
TSS Pollutant Load (lb/yr)

 s braining to a	
POI #3	
24.67	
-26529	CREDIT
33.66	
65.60	
69.57	
13.85	
2.42	
445	

# PROJECT: Bridgeville DRAINAGE SUBAREA ID: POI #4 LOCATION (County): Sussex UNIT HYDROGRAPH: STD

CONTRIBUTING AREA RUNOFF CURVE NUMBER

(C.A. RCN) WORKSHEET

#### Curve Numbers for Hydrologic Soil Type

Cover Type	Treatment	Hydrologic	Α		В		C		D	)
		Condition	Acres	RCN	Acres	RCN	Acres	RCN	Acres	R
Fallow	Bare soil			77		86		91		9
	Crop residue (CR)	poor		76		85		90		9
	Crop residue (CR)	good		74		83		88		9
Row Crops	Straight row (SR)	poor		72		81		88		9
	Straight row (SR)	good		67		78		85		8
	SR + Crop residue	poor		71		80		87		9
	SR + Crop residue	good		64		75		82		8
	Contoured (C)	poor		70		79		84		8
	Contoured (C)	good		65		75		82		
	C + Crop residue	poor		69		78		83		
	C + Crop residue	good		64		74		81		
	Cont & terraced(C&T)	poor		66		74		80		
	Cont & terraced(C&T)	good		62		71		78		1
	C&T + Crop residue	poor		65		73		79		
	C&T + Crop residue	good		61		70		77		
Small Grain	Straight row (SR)	poor		65		76		84		
	Straight row (SR)	good		63		75		83		
	SR + Crop residue	poor		64		75		83		
	SR + Crop residue	good		60		72		80		
	Contoured (C)	poor		63		74		82		
	Contoured (C)	good		61		73		81		1
	C + Crop residue	poor		62		73		81		
	C + Crop residue	good		60		72		80		
	Cont & terraced(C&T)	poor		61		72		79		
	Cont & terraces(C&T)	good		59		70		78		1
	C&T + Crop residue	poor		60		71		78		
	C&T + Crop residue	good		58		69		77		
Close-seeded	Straight row	poor		66		77		85		
or broadcast	Straight row	good		58		72		81		
legumes or	Contoured	poor		64		75		83		
rotation	Contoured	good		55		69		78		
meadow	Cont & terraced	poor		63		73		80		
	Cont & terraced	good		51		67		76		
OTHER AGRIC	ULTURAL LANDS									
	Pasture, grassland or range	poor		68		79		86		
	- •	fair		49		69		79		
		good		39		61		74		
	Meadow -cont. grass (non grazed)			30		58		71		
	Brush - brush, weed, grass mix	poor		48		67		77		
		fair		35		56		70		
		good		30		48		65		
	Woods - grass combination	poor		57		73		82		1
	č	fair		43		65		76		
		good		32		58		72		
	Woods	poor		45		66		77		
		fair		36		60		73		
		good		30		55		70		-
	Farmsteads			59		74		82		

#### FULLY DEVELOPED URBAN AREAS (Veg Established)

Open space (l	Lawns,parks etc.)	
	Poor condition; grass cover < 50%	
	Fair condition; grass cover 50% to 75	%
	Good condition; grass cover > 75%	
Impervious Are	eas	
	Paved parking lots, roofs, driveways	
	Streets and roads	
	Paved; curbs and storm sewers	
	Paved; open ditches (w/right-of-way	)
	Gravel (w/ right-of-way)	
	Dirt (w/ right-of-way)	
Urban Districts	S	Avg % in
	Commercial & business	85
	Industrial	72
Residential dis	stricts by average lot size	Avg % in
	1/8 acre (town houses)	65
	1/4 acre	38
	1/3 acre	30

03	10	03	0/
64	74	81	85
66	74	80	82
62	71	78	81
65	73	79	81
61	70	77	80
65	76	84	88
63	75	83	87
64	75	83	86
60	72	80	84
63	74	82	85
61	73	81	84
62	73	81	84
60	72	80	83
61	72	79	82
59	70	78	81
60	71	78	81
58	69	77	80
66	77	85	89
58	72	81	85
64	75	83	85
55	69	78	83
63	73	80	83
51	67	76	80
68	79	86	89
49	69	79	84
39	61	74	80
30	58	71	78
48	67	77	83
35	56	70	77
30	48	65	73
57	73	82	86
43	65	76	82
32	58	72	79
45	66	77	83
36	60	73	79
30	55	70	77
50	74	00	00

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, drive	eways	0.38	98	0.11	98	0	98		98
Streets and roads	-								
Paved; curbs and storm sew	vers		98		98		98		98
Paved; open ditches (w/right			83		89		92		93
Gravel (w/ right-of-way)	57		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
	12								
DEVELOPING URBAN AREA (No Vegetation)									
Newly graded area (pervious on	lv)		77		86		91		94
, iony gradoù aloù (politioùo ol	.,,				•••		•••		
USER DEFINED									
Subaraa Contributing Ar	a nar Sail Tyma (aa)		1		T				
Subarea Contributing Ar	-	0.66		0.49	l	0.2		0	
Subarea Contributing Ar									
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 3							I		
Upstream Contributing Area 3	Total Contributing	Area w. U	pstrea	am Areas	s (ac)	1.35			
Upstream Contributing Area 3	Total Contributing	Area w. U	pstrea	am Areas	s (ac)	1.35			
Upstream Contributing Area 3	Total Contributing Weighted R		-			1.35			

**DRAINAGE SUBAREA ID:** 

LOCATION (County): Sussex

POI #4

UNIT HYDROGRAPH: STD

## LIMIT OF DISTURBANCE (LOD) WORKSHEET

## Step 1 - Subarea LOD Data

- 1.1 HSG Area Within LOD (ac)
- 1.2 Pre-Developed Woods/Meadow Within LOD (ac)
- 1.3 Pre-Developed Impervious Within LOD (ac)
- 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); OR
- 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%)

## Step 2 - Subarea LOD Runoff Calculations

- 2.1 RCN per HSG
- 2.2 RPv per HSG (in.)
- 2.3 Target RCN per HSG
- 2.4 Target Runoff per HSG (in.)

2.5 Subarea LOD (ac)

- 2.6 Subarea Weighted RCN
- 2.7 Subarea Weighted RPv (in.)
- 2.8 Subarea Weighted Target Runoff (in.)

#### Step 3 - Upstream LOD Areas (from previous DURMM Report as applicable)

- 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)
- 4.2 Weighted RCN
- 4.3 Weighted RPv (in.)
- 4.4 Weighted Target Runoff (in.)
- 4.5 Estimated Annual Runoff (in.)
- 4.6 Req'd Runoff to be Managed within LOD (in.)
- 4.7 Req'd Runoff to be Managed within LOD (%)

HSG A	HSG B	HSG C	HSG D
0.66	0.49	0.2	
0	0	0	
0.38	0.11	0	
0.38	0.11	0	
58%	22%	0%	0%

72.97	69.31	74.00	0.00
1.02	0.89	1.06	0.00
67.87	68.06	74.00	0.00
0.84	0.85	1.06	0.00

1.35
71.79
0.97
0.88

Area 1	Area 2	Area 3	Area 4

1.35
71.79
0.97
0.88
12.54
0.09
10%

PROJECT:	Bridgeville
DRAINAGE SUBAREA ID:	POI #4
LOCATION (County):	Sussex
UNIT HYDROGRAPH:	STD

**OUTSIDE LIMIT OF DISTURBANCE** (OLOD) WORKSHEET

## Step 1 - Site Data

iep 1 - Sile Dala	
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

I/A	
I/A	

## Step 2 - Time of Concentration

Step 2 - Time of Concentration	2.1	2.2	2.3	2.4	2.5	2.6
	LENGTH	SLOPE	SURFACE	MANNINGS	VELOCITY	TRAVEL
FLOW TYPE	(feet)	(ft./ft.)	CODE	"n"	(ft./sec.)	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	ST	D
3.2 Frequency (yr)	10	1(
3.3 24-HR Rainfall, P (in.)	5.3	9
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	0.0

ST	D
10	100
5.3	9.2
#N/A	#N/A
#N/A	#N/A
#N/A	#N/A
#VALUE!	#VALUE!
#VALUE!	#VALUE!
0.00	0.00

DRAINAGE SUBAREA ID: POI #4

LOCATION (County): Sussex

#### **RESOURCE PROTECTION EVENT (RPv) WORKSHEET**

		BMP 1		BMP 2		BMP 3		BMP 4		BMP 5
	Туре	0-No BMP	Туре		Туре		Туре		Туре	
Step 1 - Calculate Initial RPv	Data	0110 5111	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Type		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
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 (%)
- 2.3 Retention reduction volume (ac-ft)
- 2.4 Retention reduction volume (in.)
- 2.5 Runoff volume after retention reduction (in.)
- 2.6 Adjusted CN\*

#### Step 3 - Adjust for Annual Runoff Reduction

- 3.1 Annual CN (ACN)
- 3.2 Annual runoff (in.)
- 3.3 Proportion A/B soils in BMP footprint (%)
- 3.4 Annual runoff reduction allowance (%)
- 3.5 Annual runoff after reduction (in.)
- 3.6 Adjusted ACN
- 3.7 Annual Runoff Reduction Allowance for RPv (in.)

#### Step 4 - Calculate RPv with BMP Reductions

- 4.1 RPv Runoff Manangement Provided (cu. ft.)
- 4.2 RPv runoff volume after all reductions (in.)
- 4.3 RPv runoff volume after all reductions (cu.ft.)
- 4.4 Total RPv runoff reduction (in.)
- 4.5 Total RPv runoff reduction (%)
- 4.6 Adjusted CN after all reductions\*
- 4.7 Adjusted equivalent annual runoff (in.)
- 4.8 RPv Compliance Met Through Runoff Reduction?
- 4.9 Runoff Reduction Credit, if Applicable (cu.ft)

#### Step 5 - Determine Residual Volume to be Managed or Offset

- 5.1 RPv Residual Volume (in.)
- 5.2 RPv Residual Volume (cu.ft./ac)
- 5.3 Residual Volume to be Managed or Offset (cu.ft.)
- 5.4 RPv avg. discharge rate for 48-hr detention (cfs)
- 5.5 RPv max. discharge rate for 48-hr detention (cfs)

0%	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	
0.97	N/A	N/A	N/A	N/A	
71.67	N/A	N/A	N/A	N/A	

71.79	N/A	N/A	N/A	N/A	
12.54	N/A	N/A	N/A	N/A	
0%	0%	0%	0%	0%	
0%	N/A	N/A	N/A	N/A	
12.54	N/A	N/A	N/A	N/A	
71.79	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	

0	N/A	N/A	N/A	N/A
0.97	N/A	N/A	N/A	N/A
4,753	N/A	N/A	N/A	N/A
0.00	N/A	N/A	N/A	N/A
0%	N/A	N/A	N/A	N/A
71.67	N/A	N/A	N/A	N/A
12.47	N/A	N/A	N/A	N/A
NO	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

0.09	N/A	N/A	N/A	N/A	
338	N/A	N/A	N/A	N/A	
457	N/A	N/A	N/A	N/A	
0.003	N/A	N/A	N/A	N/A	
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.

Type:

Data

1.35

72 12.54

1.74E+06

BMP 1

TN

0-No BMP

ТР

TSS

DRAINAGE SUBAREA ID: POI #4

TMDL WATERSHED: Nanticoke River

TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET

#### Step 1 - Calculate Annual Runoff Volume

1.1 Total contributing area to BMP (ac)

- 1.2 Initial RCN
- 1.3 Annual runoff volume (in.)
- 1.4 Annual runoff volume (liters)

#### Step 2 - Calculate Annual Pollutant Load

- 2.1 EMC (mg/L)
- 2.2 Load (mg/yr)
- 2.3 Stormwater Load (lb/ac/yr)

#### 0.49 90 N/A N/A N/A 2.80 N/A N/A N/A N/A 8.53E+05 1.57E+08 4.87E+06 N/A N/A N/A N/A N/A N/A N/A 7.96 1.39 256 N/A N/A N/A N/A N/A N/A N/A

TSS

BMP 2

TN

---

TP

Type:

Data

#### Step 3 - Adjust for Pollutant Reduction

3.1 BMP annual runoff reduction (%)

3.2 Adjusted annual runoff volume (in)

3.3 Adjusted annual runoff volume (liters)

3.4 Adjusted load from annual reductions (lb/ac/yr)

- 3.5 BMP removal efficiency (%)
- 3.6 BMP effluent concentration (mg/L)
- 3.7 Final Adjusted load (lb/ac/yr)

#### Step 4 - Pollutant Reduction Met? (For Informational Purposes)

- 4.1 TMDL (lb/ac/yr)
- 4.2 Reduction met?

4.3 Final Adjusted Load (lb/yr)

1%					N/A				N/A				N/A				N/A			
12.4	7				N/A				N/A				N/A				N/A			
1.73E+	+06				N/A				N/A				N/A				N/A			
		7.91	1.38	254.28		N/A	N/A	N/A												
		0%	0%	0%		N/A	N/A	N/A												
		2.80	0.49	90.00		N/A	N/A	N/A												
		7.91	1.38	254		N/A	N/A	N/A												

BMP 3

TN

---

ТР

TSS

Type:

Data

TN

	6.58	0.58	129												
	NO	NO	NO	N/A											
lb/yr]	10.68	1.87	343	N/A											

Type:

Data

BM	IP 4			BMP 5							
			Type:								
	ТР	TSS	Data	TN	ТР	TSS					

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

_	
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	Туре:		Туре:		Type:		Туре:	
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.)
- 2.2 Storage volume (ac-ft)
- 2.3 Storage volume (in.)
- 2.4 Runoff volume after reduction (in.)
- 2.5 CN\*

## Step 3 - Adjust for Annual Runoff Reduction

- 3.1 Runoff reduction allowance (%)
- 3.2 Annual runoff after reduction (in.)

3.3 Adjusted ACN

3.4 Event-based runoff reduction (in.)

## Step 4 - Calculate Cv with BMP Reductions

4.1 Cv runoff volume after all reductions (in.)

- 4.2 Total Cv runoff reduction (%)
- 4.3 Adjusted RCN for H&H modeling

0.00	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	
2.41	N/A	N/A	N/A	N/A	
71.79	N/A	N/A	N/A	N/A	

0%	N/A	N/A	N/A	N/A	
2.41	N/A	N/A	N/A	N/A	
71.79	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	

2.41	N/A	N/A	N/A	N/A	
0%	N/A	N/A	N/A	N/A	
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:		Туре:		Туре:		Туре:	
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.)
- 2.2 Storage volume (ac-ft)
- 2.3 Storage volume (in.)
- 2.4 Runoff volume after reduction (in.)
- 2.5 CN\*

## Step 3 - Adjust for Annual Runoff Reduction

- 3.1 Runoff reduction allowance (%)
- 3.2 Annual runoff after reduction (in.)

3.3 Adjusted ACN

3.4 Event-based runoff reduction (in.)

## Step 4 - Calculate Fv with BMP Reductions

4.1 Fv runoff volume after all reductions (in.)

- 4.2 Total Fv runoff reduction (%)
- 4.3 Adjusted RCN for H&H modeling

0.00	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	
5.74	N/A	N/A	N/A	N/A	
71.79	N/A	N/A	N/A	N/A	

0%	N/A	N/A	N/A	N/A	
5.74	N/A	N/A	N/A	N/A	
71.79	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	

5.74	N/A	N/A	N/A	N/A	
0%	N/A	N/A	N/A	N/A	
71.79	N/A	N/A	N/A	N/A	

PROJECT:	Bridgeville			
DRAINAGE SUBAREA ID:	POI #4			
COUNTY:	Sussex UNIT HYDROGRAPH: STD			STD
TMDL Watershed:	: Nanticoke River VERSION: DURMM v2.5		/2.51.220414	
DURMM OUTPUT WORKSHEET				

#### Site Data

Contributing Area to BMPs (ac.) C.A. RCN Subarea LOD (ac.) Subarea RCN Upstream Subarea ID Upstream Subarea LOD (ac.) Combined LOD with Upstream Areas (ac.) Combined RCN with Upstream Areas (ac.) Watershed TMDL-TN (Ib/ac/yr) Watershed TMDL-TP (Ib/ac/yr) Watershed TMDL-TSS (Ib/ac/yr)

RPv runoff volume after all reductions (in.)

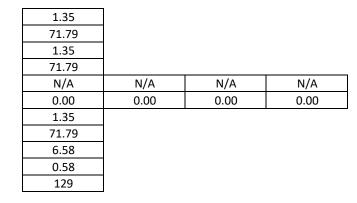
RPv Compliance Met Through Runoff Reduction?

Total RPv runoff reduction (in.) Total RPv runoff reduction (%)

RPv Residual Volume (cu. ft.)

Resource Protection Event (RPV)

Adjusted pollutant load, TN (lb/ac/yr) Adjusted pollutant load, TP (lb/ac/yr) Adjusted pollutant load, TSS (lb/ac/yr) Cv runoff volume after all reductions (in.) Fv runoff volume after all reductions (in.)



#### **BMP** Data

BMP 1	BMP 2	BMP 3	BMP 4	BMP 5
0-No BMP				
0.97	N/A	N/A	N/A	N/A
0.00	N/A	N/A	N/A	N/A
0%	N/A	N/A	N/A	N/A
NO	N/A	N/A	N/A	N/A
457	N/A	N/A	N/A	N/A
7.91	N/A	N/A	N/A	N/A
1.38	N/A	N/A	N/A	N/A
254.28	N/A	N/A	N/A	N/A
2.41	N/A	N/A	N/A	N/A
5.74	N/A	N/A	N/A	N/A

# RPv for Contributing Area (in.)0.97Annual Runoff for Contributing Area (in.)12.54Req'd RPv to be Managed for Contributing Area (in.)0.09Req'd RPv to be Managed for Contributing Area (%)10%RPv Runoff Management Required (cu. Ft.)457RPv Runoff Management Provided (cu. Ft.)0RPv Residual Volume (cu.ft.)0C.A. RPv avg. discharge rate (cfs)0.00C.A. RPv max. discharge rate (cfs)0.01TN Pollutant Load (lb/yr)10.68TP Pollutant Load (lb/yr)343

#### Conveyance Event (Cv)

Cv runoff volume (in.)	
Adjusted RCN for H&H Modeling (CN*)	

#### Flooding Event (Fv)

Fv runoff volume (in.)	
Equivalent RCN for H&H Modeling (CN*)	

#### 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	g Area (ac.)
LOD Area (a	c.)

0.57		
12.54		
0.09		
10%		
457		
0		
457	SHORTFALL	(Requires additional management or offset)
0.00		
0.01		
10.68		
1.87		
242		

2.41
71.79

5.74
71.79

TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr) Percent Impervious Cover

10.68	
1.87	
343	
36%	

1.35

1.35

#### Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest

Subarea ID Contributing Area (ac.) RPv Residual Volume (cu.ft.) Adjusted CN after all reductions Cv RCN for H&H Modeling Fv RCN for H&H Modeling TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr)

 <u> </u>		-,
POI #4		
1.35		
457	SHORTFALL	(Requires additional management or offset)
71.67		
71.79		
71.79		
10.68		
1.87		
343		
	-	

	Summary Table for Site RPv Compliance <sup>(1)</sup>								
	Project:	<u>Bridgeville</u>		TMDL WS:		Namticoke River		Rel. 1	
Ref. #	Sub-Area ID <sup>(2)</sup>	Contributing Area <sup>(3)</sup> Rur	Runoff <sup>(4)</sup>	Runoff	RPv Runoff Management (cf)		TN Pollutant Load <sup>(7)</sup>	TP Pollutant Load <sup>(7)</sup>	TSS Pollutant Load <sup>(7)</sup>
		(ac)	(in)	(cf)	Required <sup>(5)</sup>	Provided <sup>(6)</sup>	(lb/yr)	(lb/yr)	(lb/yr)
Section I -	Complete this section for total site LO	D management	requirement						
0	Total Site LOD			0.0					
	Complete this section for BMPs provi	ded for partial L	OD manageme	nt OR sub-area by	sub-area managem	ent			
	POI #1	10.21	1.91	70789.0	29294	50355	44.49	7.79	1430
	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 18				0.0					
18 19				0.0					
20				0.0					
20	Totals			0.0	144815 cf	223677 cf	81.18 lb/yr	14.21 lb/yr	2609 lb/yr
	RPv Runoff Reduction Goal Met?	YES			144013 (1	223077 0	01.10 lb/ yl	14.21 10/ yl	2003 10/ 91
	Total Credit/Shortfall	78862 cf	Credit	]					
Notes:									

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

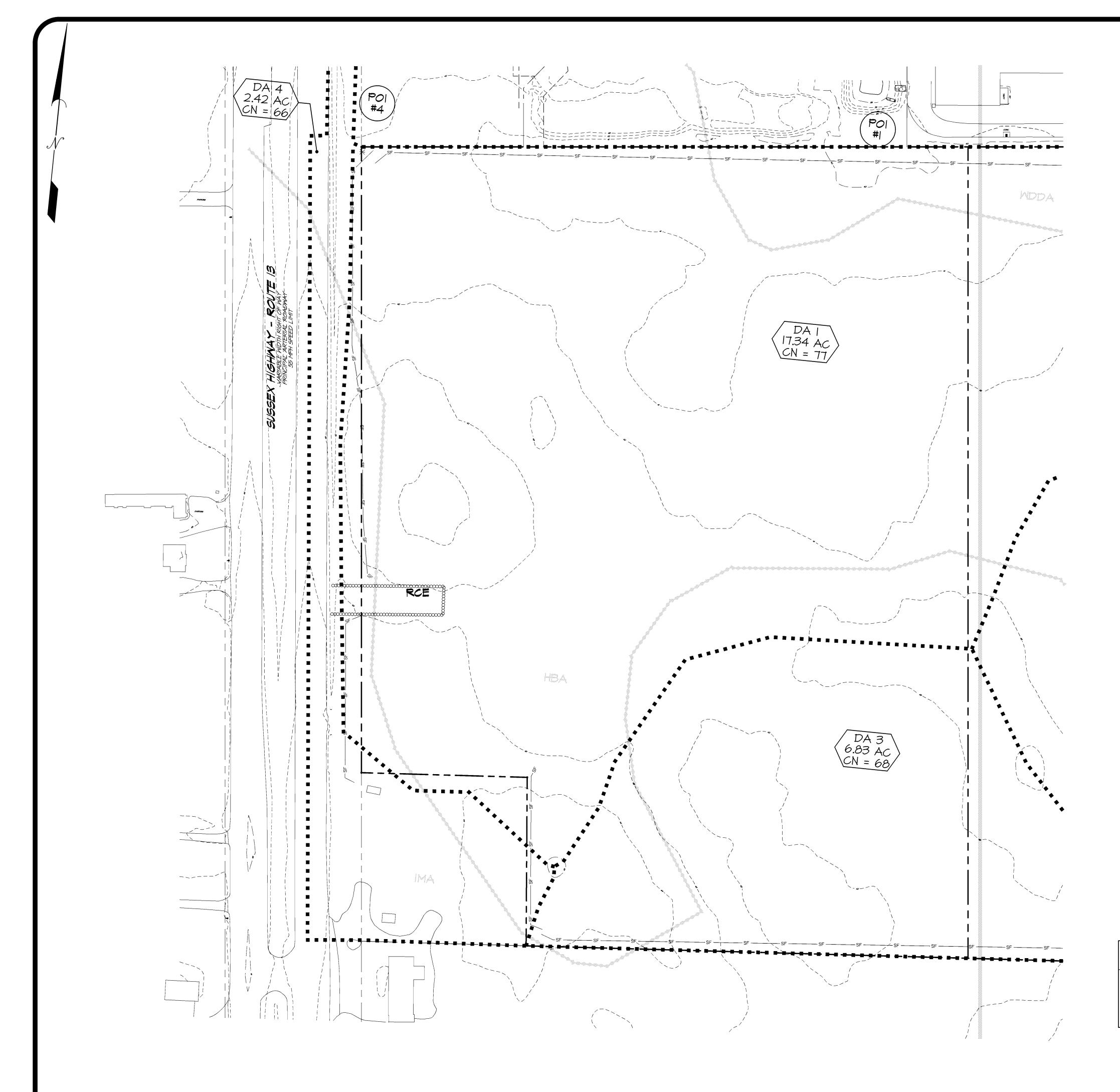
5. From DURMM v2.5 Report, Line 39 OR Approved Hydrologic Software Report

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

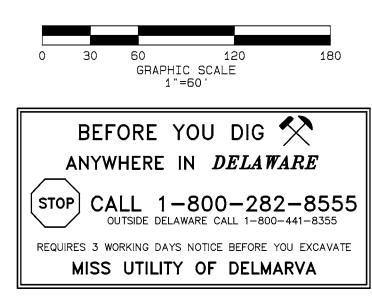
# <u>Appendix D</u>

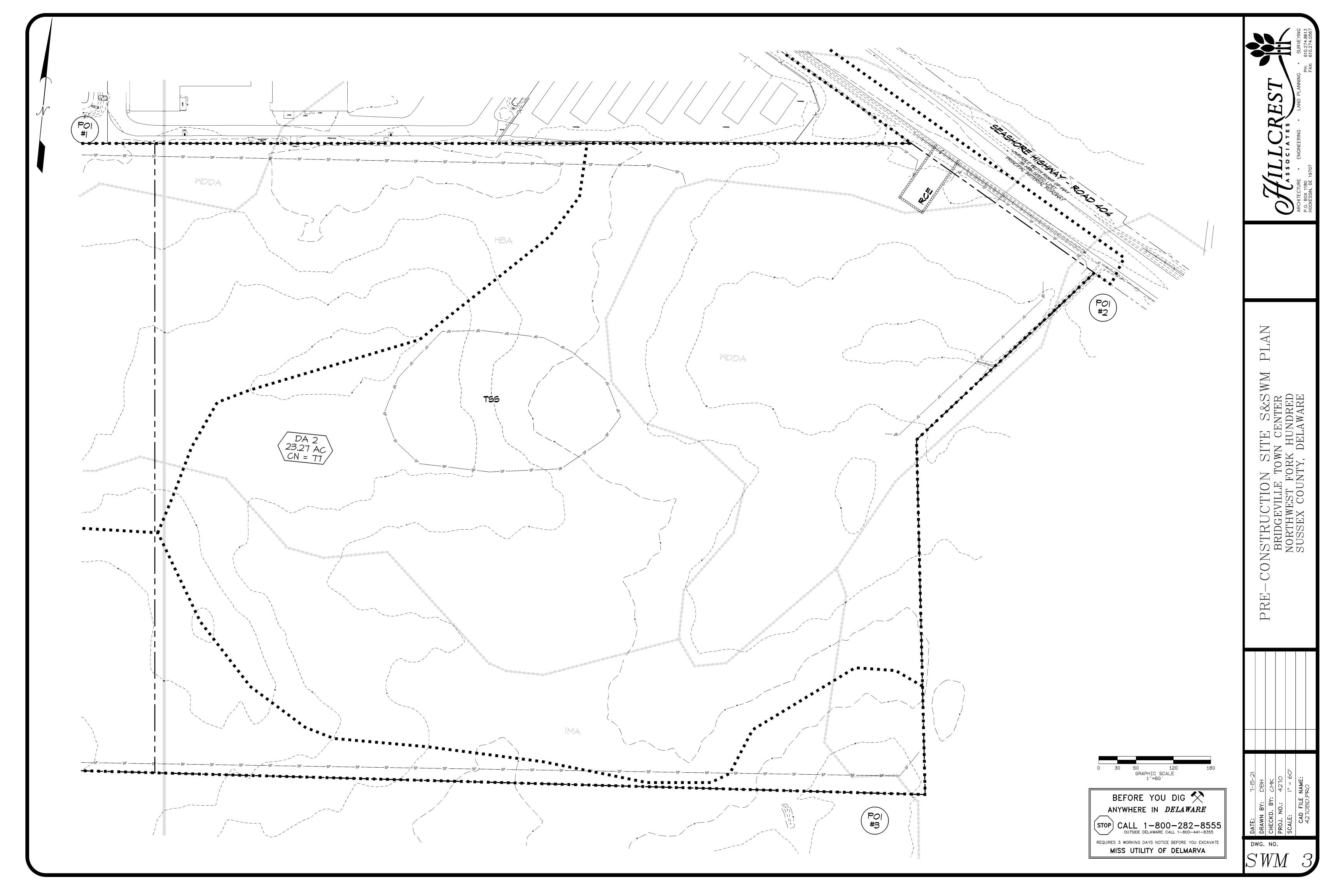
Drainage Area Plans

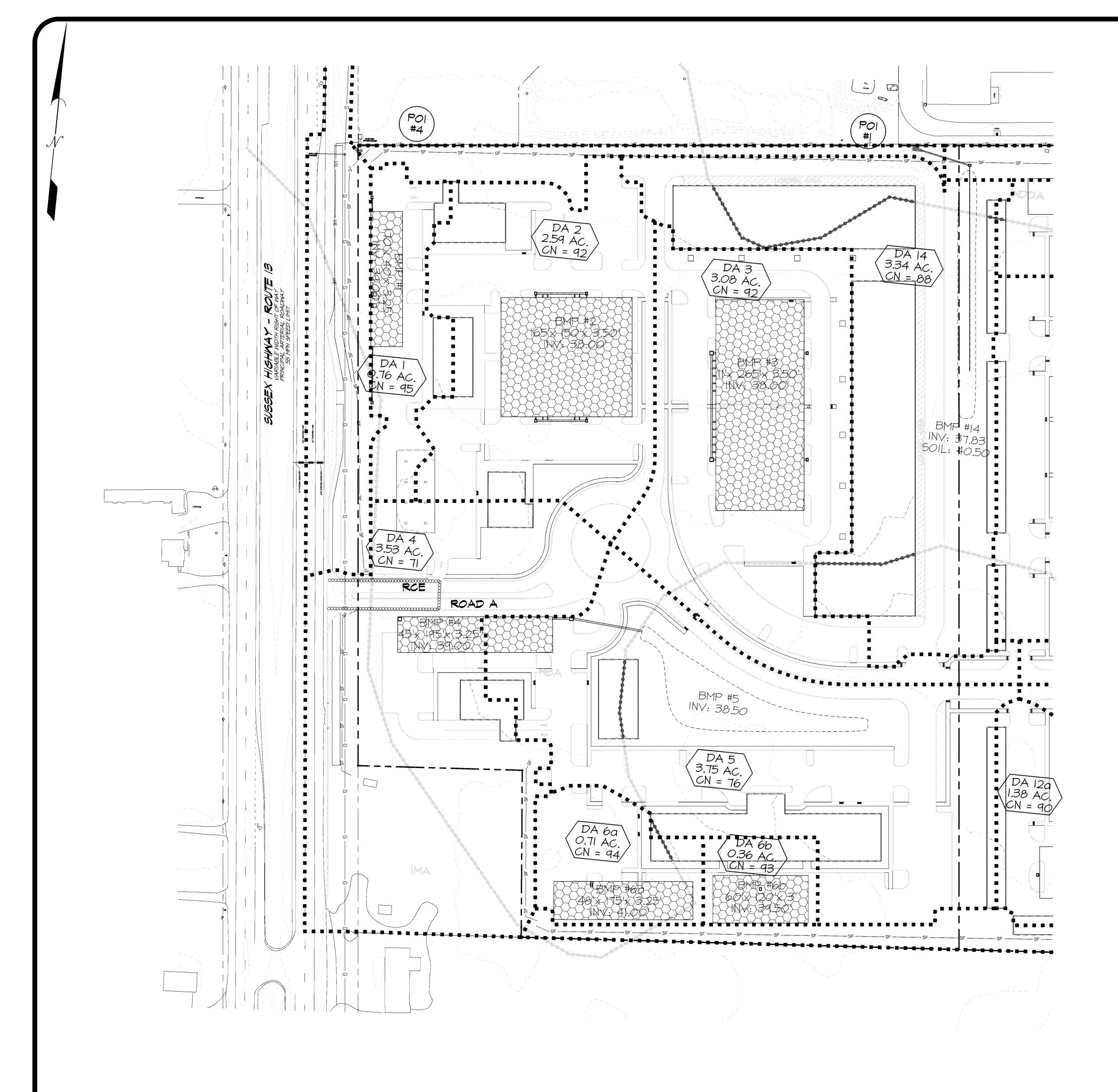


	SOIL LEGEND	
SYMBOL	NAME	HSG
IgA	INGLESIDE SANDY LOAM, 0-2% SLOPES	A
lmB	INGLESIDE-HAMMONTON-FALLSINGTON COMPLEX, 0-5% SLOPES	A
HbA	HAMBROOK SANDY LOAM, 0-2% SLOPES	В
NddA	WOODSTOWN SANDY LOAM, O-2% SLOPES, NORTHERN TIDEWATER AREA	С

ARCHITECTURE • ENGINEERING • LAND PLANNING • SURVEYING P.O. BOX 1180 P.O. BOX 1180 P.O
PRE-CONSTRUCTION SITE S&SWM PLAN BRIDGEVILLE TOWN CENTER NORTHWEST FORK HUNDRED SUSSEX COUNTY, DELAWARE
DATE: $7$ -I5-2IDRAWN BY:DBHDRAWN BY:DBHCHECKD. BY:CMKPROJ. NO.: $4270$ SCALE: $1^{"} = 60^{"}$ SCALE: $1^{"} = 60^{"}$ CAD FILE NAME: $4270BD.PRO$
dwg. no. SWM 2







D S	DATE: 7-15-21		
wg. 1	DRAWN BY: DBH	 DDF CONCTDITATION STUF S%SWN DIAN	
NC V	CHECKD. BY: CMK		
). M	PROJ. NO.: 4270	T	
[	<b>SCALE:</b> $  ^{"} = 60^{"}$	NORTHWEST FORK HUNDRED	
2	CAD FILE NAME:	SUSSEX COUNTY, DELAWARE	ARCHITECTURE • ENGINEERING • LAND PLANNING • SURVEYING
1	4270BD.PR0		19707 FAX:

0 30 60 120 GRAPHIC SCALE 1"=60'	180
BEFORE YOU DIG X ANYWHERE IN DELAWARE	7
STOP CALL 1-800-282-8 OUTSIDE DELAWARE CALL 1-800-441-8	<b>555</b> 3355
REQUIRES 3 WORKING DAYS NOTICE BEFORE YOU EXC MISS UTILITY OF DELMARVA	

