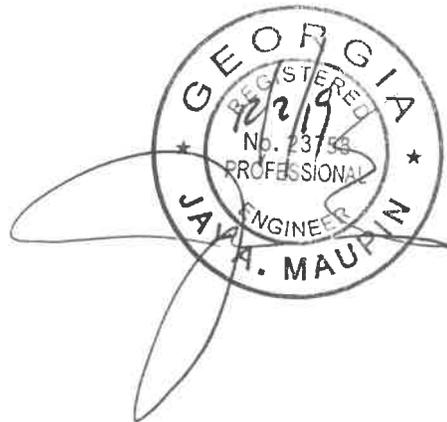


Hydrologic Report
Revised December 7, 2019



Sleep Inn



Prepared for:

Anil Patel
HOS Management
1000 Towne Center Boulevard
Pooler, Georgia 31322

Hydrologic Report

This site is located near the intersection of Highway 80 and Burnsed Boulevard in Garden City, Georgia. This site is not within a mapped floodplain.

The project consists of the construction of a new hotel. The proposed area of disturbance is approximately 2.06ac and consists of 1.29 ac of new impervious area. All basins drain to Garden City's MS4.

This hydrologic study was performed using the SCS method and HydroCAD software by Software Solutions, LLC. Please refer to the attached computer summary printouts and exhibits for Time of Concentration calculations and flow computations.

The post development flow does not exceed the pre development discharge for the storms indicated as required by Garden City's Stormwater Management Design Manual.

There are no wetlands or other significant natural resources or aquatic habitats associated with the site.

Pre and Post Development Hydrologic Analysis:

This hydrologic study was performed using the SCS method and HydroCAD software by Software Solutions, LLC. Please refer to the attached computer summary printouts and exhibits for Time of Concentration calculations and flow computations.

Storm water Runoff (Q cfs)

	Area (ac)	"CN"	Tc (min.)	1-year 3.60"	5-year 6.00"	10-year 6.72"	25-year 7.92"	50-year 8.88"	100-year 9.84"
Predevelopment									
Basin	1.94	79	12	3.02	6.82	8.01	9.99	11.58	13.17
Post-development									
Basin	1.04	97	5	2.64	4.47	5.02	5.92	6.65	7.38
Chambers	--	--	Q	1.25	3.22	3.72	4.56	5.27	6.26
			WSE	4.57	5.18	5.34	5.62	5.82	5.95
			V	6,535	8,295	8,642	9,167	9,539	9,770
Bypass	0.90	84	5	1.53	3.16	3.65	4.48	5.13	5.79
Combined Peak Flow	1.94			2.28	5.79	6.71	8.24	9.50	11.04

10% Downstream Analysis

The study point for the 10% analysis was taken as the yard inlet immediately downstream of the proposed development. This basin associated with this inlet is a total of 35 ac+/- . The proposed development is 1.94 ac or 6% of the basin area.

The pre to post development calculations at this study point show a decrease in the peak rate or volume of stormwater flow from the pre to the post development case.

Stormwater Runoff (Q cfs)					
	Area (ac)	1-year 3.60"	10-year 6.72"	50-year 8.88"	100-year 9.84"
Pre-Development	35	43.24	100.50	140.26	157.85
Post-Development	35	41.39	95.96	133.60	150.13

This AGREEMENT, made and entered into this ___ day of _____, 20____, by and between _____ HOS management, Inc _____ his successors and assigns, including but not limited to any homeowners association, commercial developer, holder of any portion of the below described property, and/or similar (hereinafter called the "Landowner"), and the City of Garden City, Georgia; hereinafter called the "City". WITNESSETH, that WHEREAS, the Landowner is the owner of certain real property described as (Chatham County Tax Map/Parcel Identification Number) _____ 6-0020-04-004 _____ and recorded by deed in the land records of Chatham County, Georgia, Deed Book _____ 41S _____ Page _____ 28 _____, hereinafter called the "Property".

WHEREAS, the Landowner is proceeding to develop the property and/or build upon the property; and

WHEREAS, the Stormwater Management and Operations and Maintenance (O&M) Plan; hereinafter called "the Plan", which is expressly made a part hereof, as approved or to be approved by the City, provides for management of stormwater runoff for the property; and

WHEREAS, the City and the Landowner, its successors and assigns, agree that the health, safety, and welfare of the residents of Garden City, Georgia, require that stormwater management facilities be constructed and maintained on the Property and in accordance with the Plan; and

WHEREAS, the City requires that stormwater management facilities as shown within the Plan be constructed and adequately maintained by the Landowner, its successors and assigns.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The stormwater management facilities shall be constructed and/or upgraded as well as maintained by the Landowner, its successors and assigns, in accordance with the specifications identified in the Plan.
2. The Landowner, its successors and assigns, shall adequately maintain the stormwater management facilities and perform the work necessary to keep those facilities in good working order at all times, as described in the Plan. This includes all pipes, channels or other conveyances built to convey stormwater to the facility, as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater runoff. Adequate maintenance is herein defined as good working condition so that these facilities are performing their approved design functions.
3. The Landowner, its successors and assigns, shall inspect the stormwater management facility and submit an inspection report annually to the City Manager (or his designee). The purpose of the inspection is to ensure safe and proper functioning of the stipulated facilities. The inspection shall cover all applicable stormwater management facilities, including but not limited to, conveyance measures, berms, outlet structures, pond areas, etc. Deficiencies shall be noted in the inspection report along with a schedule for repair. The inspection procedures, frequency and report shall follow the procedures established and approved in the Plan.

4. The Landowner, its successors and assigns, hereby grant permission to the City, its authorized agents and employees, to enter upon the Property and to inspect the stormwater management facilities whenever the City deems necessary and with reasonable notice having been given to the Landowner. The City shall provide the Landowner, its successors and assigns, copies of the inspection findings and a directive to commence with the repairs if necessary.

5. In the event the Landowner, its successors and assigns, fails to maintain the stormwater management facilities in good working condition acceptable to the City, the City may issue citations to the Landowner for resulting, continuing ordinance violations (as set forth in the Garden City Code of Ordinances), until such time as the issues are satisfactorily resolved. Additionally, the City may enter upon the Property and implement the necessary measures to correct deficiencies identified in the inspection report and to recover the costs of such repairs from the Landowner, its successors and assigns through the appropriate means. This provision shall not be construed to allow the City to erect any structure of permanent nature on the land of the Landowner outside of the easement for the stormwater management facilities. It is expressly understood and agreed that the City is under no obligation to routinely maintain or repair said facilities, and in no event shall this AGREEMENT be construed to impose any such obligation on the City.

6. Landowner, its successors and assigns, will perform the work necessary to keep these facilities in good working order as appropriate. In the event a maintenance schedule for the stormwater management facilities (including sediment removal) is outlined on the approved plan, the schedule will be followed.

7. In the event the City, pursuant to this AGREEMENT, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner, its successors and assigns, shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the City hereunder.

8. This Agreement imposes no liability of any kind whatsoever on the City and the Landowner agrees to hold the City harmless from any liability in the event the stormwater management facilities fail to operate properly.

9. This AGREEMENT shall be recorded among the land records of Chatham County, Georgia, and shall constitute a covenant running with the land, and shall be binding on the Landowner, its administrators, executors, assigns, heirs and any other successors in interests, including any homeowners association.

CERTIFICATION

OWNER:

WITNESS the following signatures and seals:

By: _____

Anil Patel - Owner
(Type Name and Title)

GARDEN CITY, GEORGIA:

By: _____

(Type Name and Title)

Date: _____

The foregoing AGREEMENT was acknowledged before me this ____ day of _____, 20____,
by

_____.

NOTARY PUBLIC

My Commission Expires: _____

National Flood Hazard Layer FIRMette



Legend

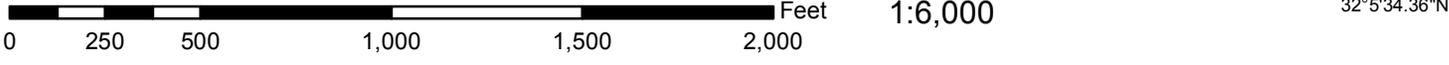
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

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

32°6'4.84"N
81°8'59.50"W



81°8'22.05"W

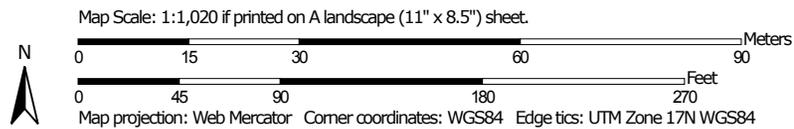


This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **1/23/2019 at 8:28:50 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Soil Map—Bryan and Chatham Counties, Georgia



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Bryan and Chatham Counties, Georgia

Survey Area Data: Version 13, Sep 13, 2018

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

Date(s) aerial images were photographed: Apr 30, 2015—May 21, 2015

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Okc	Ogeechee-Urban land complex	2.1	100.0%
Totals for Area of Interest		2.1	100.0%

Coastal Stormwater Supplement Site Planning & Design Worksheet

Revised July 2014

Site Data

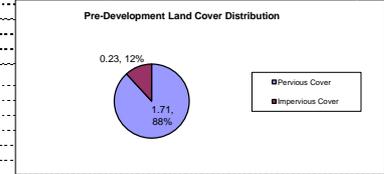
Site Name: **Sleep Inn - Garden City**

data input cells
calculation cells
constant values

Step 1: Enter Site Information

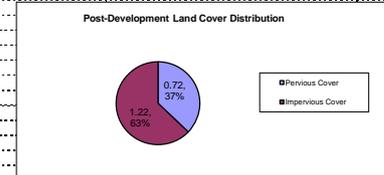
Pre-Development Land Cover (acres)

Land Cover Type	HSG A Soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	1.71	1.71
Impervious Cover	0.00	0.00	0.00	0.23	0.23
Total				1.94	

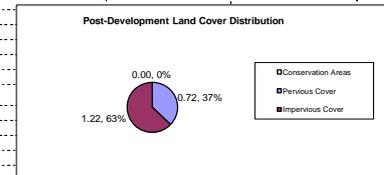


Post-Development Land Cover (acres)

Land Cover Type	HSG A Soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	0.72	0.72
Impervious Cover	0.00	0.00	0.00	1.22	1.22
Total				1.94	



Runoff Reduction Rainfall Event (inches)	1.2
Post-Development Site Imperviousness (%)	63%
Post-Development Site Runoff Coefficient, Rv	0.62
Target Runoff Reduction Volume, RRV (acre-feet)	0.12
Target Runoff Reduction Volume, RRV (cubic feet)	5,205



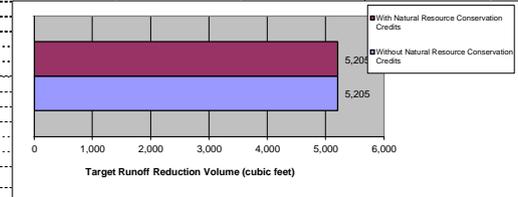
Step 2: Apply Better Site Planning Techniques

Natural Resource Conservation Credits

	HSG A Soils	HSG B Soils	HSG C Soils	HSG D Soils	Total
Primary Conservation Areas (acres)	0.0	0.0	0.0	0.0	0.0
Secondary Conservation Areas (acres)	0.0	0.0	0.0	0.0	0.0
Total (acres)					0.00

Target Runoff Reduction Volume with Natural Resource Conservation Credits, RRV

Target Runoff Reduction Volume, RRV (acre-feet)	0.12
Target Runoff Reduction Volume, RRV (cubic feet)	5,205



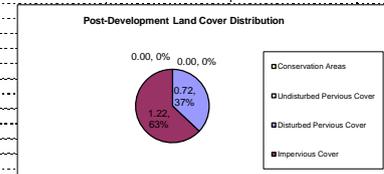
Step 3: Apply Better Site Design Techniques

Reduced Clearing and Grading Credits

	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Total
Undisturbed Pervious Cover (Acres)	0.0	0.0	0.0	0.0	0.00

Revised Post-Development Land Cover (acres)

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Conservation Areas	0.00	0.00	0.00	0.00	0.00
Undisturbed Pervious Cover	0.00	0.00	0.00	0.00	0.00
Disturbed Pervious Cover	0.00	0.00	0.00	0.72	0.72
Impervious Cover	0.00	0.00	0.00	1.22	1.22
Total				1.94	

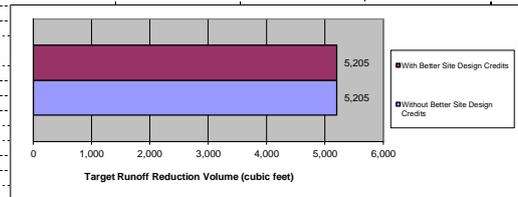


Restoration of Disturbed Pervious Surfaces

Soil Restoration (Acres)	0.0
Site Reforestation/Vegetation (Acres)	0.0
Soil Restoration w/ Site Reforestation/Revegetation (Acres)	0.0

Target Runoff Reduction Volume After Application of Better Site Design Credits, RRV

Target Runoff Reduction Volume, RRV (acre-feet)	0.12
Target Runoff Reduction Volume, RRV (cubic feet)	5,205



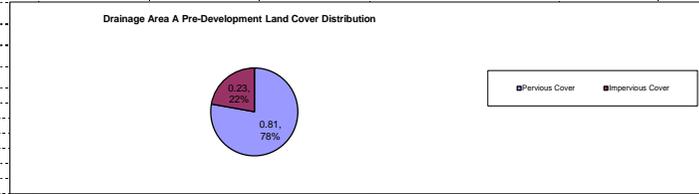
Note: Remainder of Better Site Design Techniques are considered to be "self-crediting."

Coastal Stormwater Supplement Site Planning & Design Worksheet
 Revised July 2014

Drainage Area A
Drainage Area Information

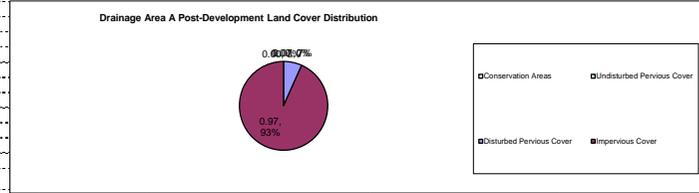
Drainage Area A Pre-Development Land Cover (acres)

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	0.81	0.81
Impervious Cover	0.00	0.00	0.00	0.23	0.23
				Total	1.04



Drainage Area A Post-Development Land Cover (acres)

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Conservation Areas	0.00	0.00	0.00	0.00	0.00
Undisturbed Pervious Cover	0.00	0.00	0.00	0.00	0.00
Disturbed Pervious Cover	0.00	0.00	0.00	0.07	0.07
Impervious Cover	0.00	0.00	0.00	0.97	0.97
				Total	1.04



Low Impact Development Practices

Alternatives to Impervious Surfaces

Low Impact Development Practice	Size of Contributing Drainage Area (acres)	Impervious Cover in Contributing Drainage Area (acres)	Direct Runoff Reduction Volume Received by Practice (cubic feet)	Description of Runoff Reduction Credit	Runoff Reduction Volume Received from Upstream Practices	Total Runoff Reduction Volume Received by Practice (cubic feet)	Treatment Volume Received from Upstream Practices (cubic feet)	Total Treatment Volume Received by Practice (cubic feet)	Method for Calculating Storage	Storage Volume Provided by Practice (cubic feet)	Adjustment to Runoff Reduction Volume (cubic feet)	Remaining Runoff Reduction Volume (cubic feet)	Adjustment to Treatment Volume (cubic feet)	Remaining Treatment Volume (cubic feet)	Downstream Practice to be Employed
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

"Receiving" Low Impact Development Practices

Dry Swale, Underdrained 1	1.04	0.97	4029.3	50% of storage volume	0.0	4029.3	0.0	4029.3	Surface Area x (Ponding Depth + Depth of Planting Bed x Void	4619.0	2309.5	1719.8	4029.3	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

Treatment Only Practices

None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

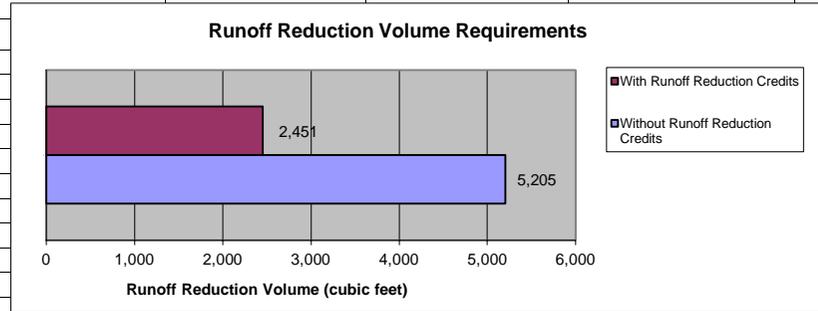
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
Totals	1.04	0.97										2309.5		4029.3		

Coastal Stormwater Supplement Site Planning & Design Worksheet

Revised July 2014

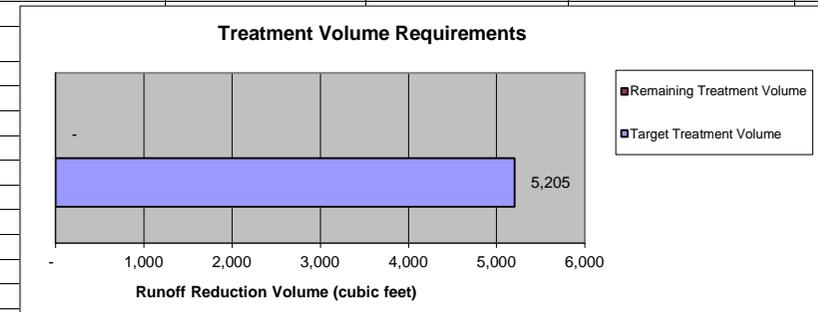
Stormwater Runoff Reduction Summary

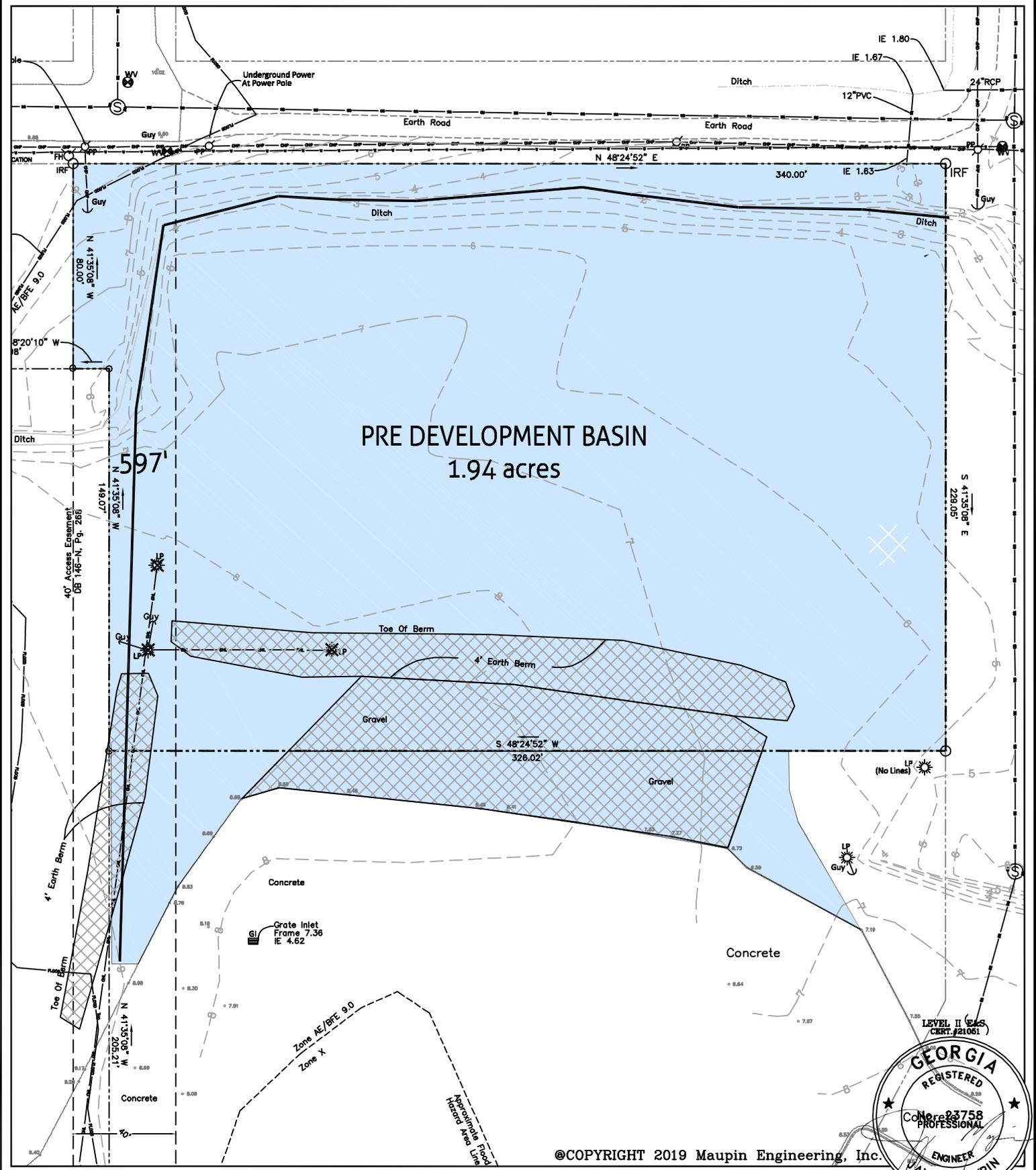
Target Runoff Reduction and Treatment Volume, RRv (cubic feet)	5,205
Total Adjustment to Runoff Reduction Volume, RRv (cubic feet)	2,754
Percentage of Target Runoff Reduction Volume Achieved	53%
Runoff Reduction Volume Achieved (in)	0.63
Runoff Reduction Volume Remaining (cubic feet)	2,451



Note: If any of the target runoff reduction volume cannot be reduced on the development site, due to site characteristics or constraints, it should be intercepted and treated in one or more stormwater management practices that: (1) provide for at least an 80 percent reduction in TSS loads; and (2) reduce nitrogen and bacteria loads to the maximum extent practical.

Treatment Volume Achieved (cubic feet)	5,274
Treatment Volume Remaining (cubic feet)	-



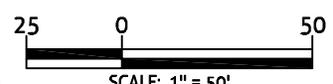


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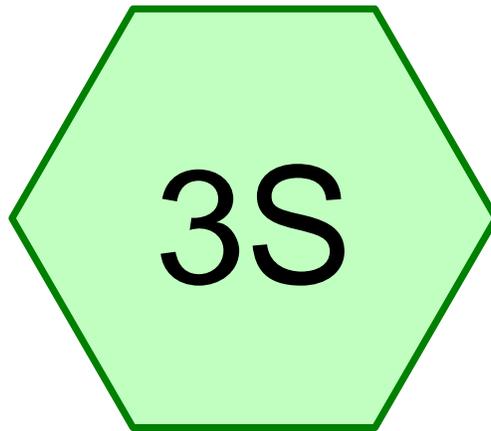
114 WEST 42ND STREET SAVANNAH, GA 31401 OFFICE PHONE (912) 235-2915 GENERAL@MAUPINENGINEERING.COM

PRE-DEVELOPMENT BASIN
Sleep Inn / Main Stay

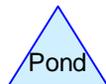
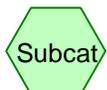


DRWN: MK 12-8-2019
CHK'D: JAM DATE

SHEET NO.
1 of 1
822-18-03
PROJECT NO.



Predevelopment



Routing Diagram for Sleep Inn PRE

Prepared by {enter your company name here}, Printed 12/8/2019
HydroCAD® 10.00-19 s/n 03510 © 2016 HydroCAD Software Solutions LLC

Sleep Inn PRE

Prepared by {enter your company name here}

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Project Notes

Rainfall events imported from "Post.hcp"

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Page 3

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.230	91	Gravel roads, HSG D (3S)
1.710	77	Woods, Good, HSG D (3S)
1.940	79	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
1.940	HSG D	3S
0.000	Other	
1.940		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.230	0.000	0.230	Gravel roads	3S
0.000	0.000	0.000	1.710	0.000	1.710	Woods, Good	3S
0.000	0.000	0.000	1.940	0.000	1.940	TOTAL	
						AREA	

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Type III 24-hr 1-Year Rainfall=3.60"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 3S: Predevelopment

Runoff Area=1.940 ac 0.00% Impervious Runoff Depth>1.52"
Tc=12.0 min CN=79 Runoff=3.02 cfs 0.245 af

Total Runoff Area = 1.940 ac Runoff Volume = 0.245 af Average Runoff Depth = 1.52"
100.00% Pervious = 1.940 ac 0.00% Impervious = 0.000 ac

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Type III 24-hr 1-Year Rainfall=3.60"

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Summary for Subcatchment 3S: Predevelopment

Runoff = 3.02 cfs @ 12.17 hrs, Volume= 0.245 af, Depth> 1.52"

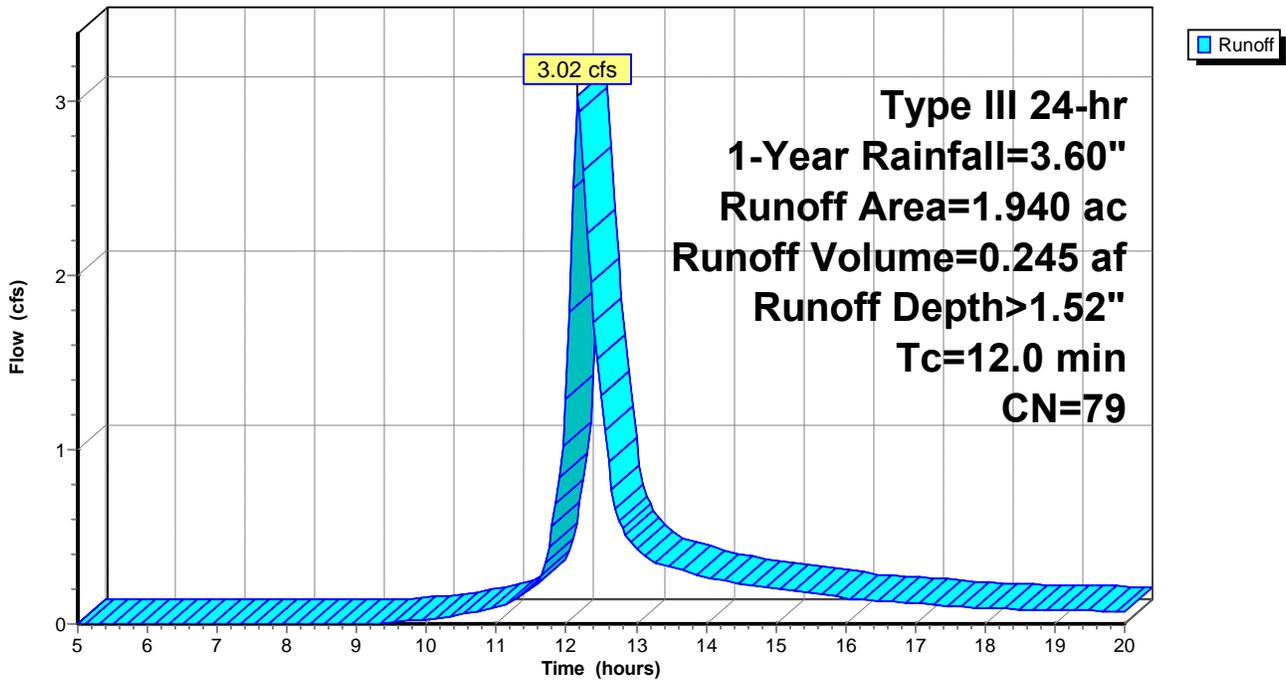
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=3.60"

Area (ac)	CN	Description
0.230	91	Gravel roads, HSG D
1.710	77	Woods, Good, HSG D
1.940	79	Weighted Average
1.940		100.00% Pervious Area

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

Subcatchment 3S: Predevelopment

Hydrograph



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Type III 24-hr 5-year Rainfall=6.00"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 3S: Predevelopment

Runoff Area=1.940 ac 0.00% Impervious Runoff Depth=3.44"
Tc=12.0 min CN=79 Runoff=6.82 cfs 0.556 af

Total Runoff Area = 1.940 ac Runoff Volume = 0.556 af Average Runoff Depth = 3.44"
100.00% Pervious = 1.940 ac 0.00% Impervious = 0.000 ac

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Type III 24-hr 5-year Rainfall=6.00"

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Summary for Subcatchment 3S: Predevelopment

Runoff = 6.82 cfs @ 12.17 hrs, Volume= 0.556 af, Depth> 3.44"

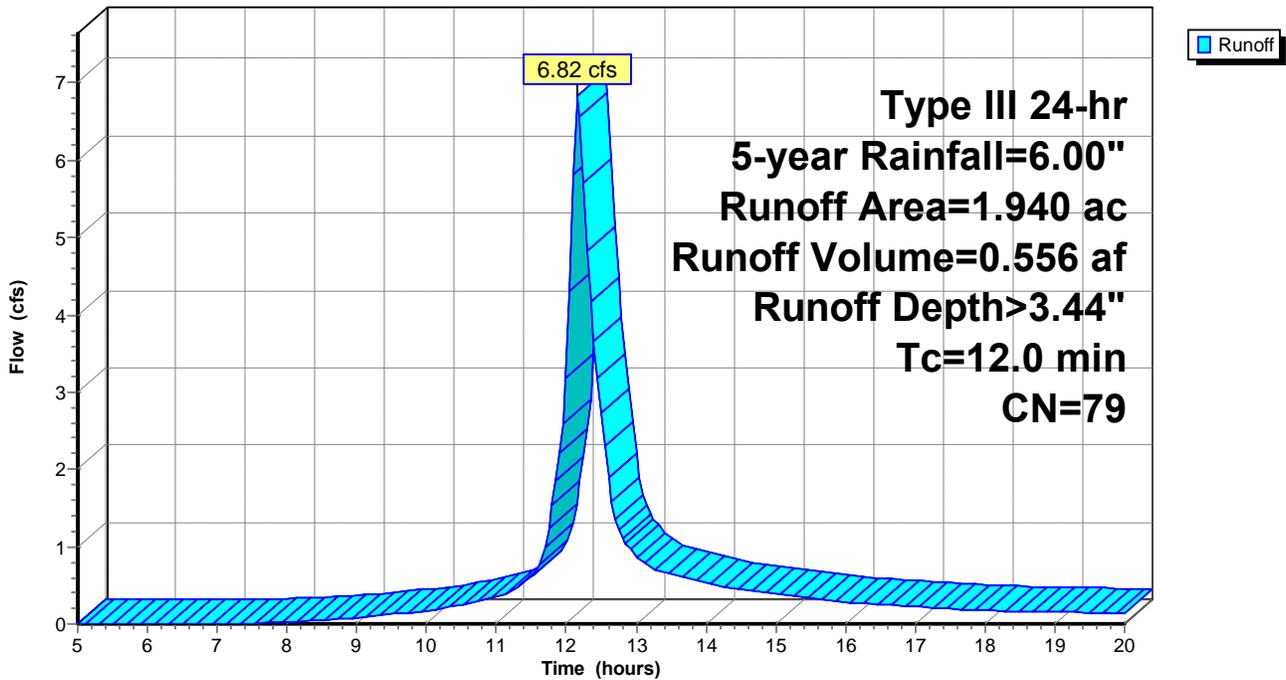
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=6.00"

Area (ac)	CN	Description
0.230	91	Gravel roads, HSG D
1.710	77	Woods, Good, HSG D
1.940	79	Weighted Average
1.940		100.00% Pervious Area

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

Subcatchment 3S: Predevelopment

Hydrograph



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Type III 24-hr 10-Year Rainfall=6.72"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 3S: Predevelopment

Runoff Area=1.940 ac 0.00% Impervious Runoff Depth>4.05"
Tc=12.0 min CN=79 Runoff=8.01 cfs 0.655 af

Total Runoff Area = 1.940 ac Runoff Volume = 0.655 af Average Runoff Depth = 4.05"
100.00% Pervious = 1.940 ac 0.00% Impervious = 0.000 ac

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Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Subcatchment 3S: Predevelopment

Runoff = 8.01 cfs @ 12.17 hrs, Volume= 0.655 af, Depth> 4.05"

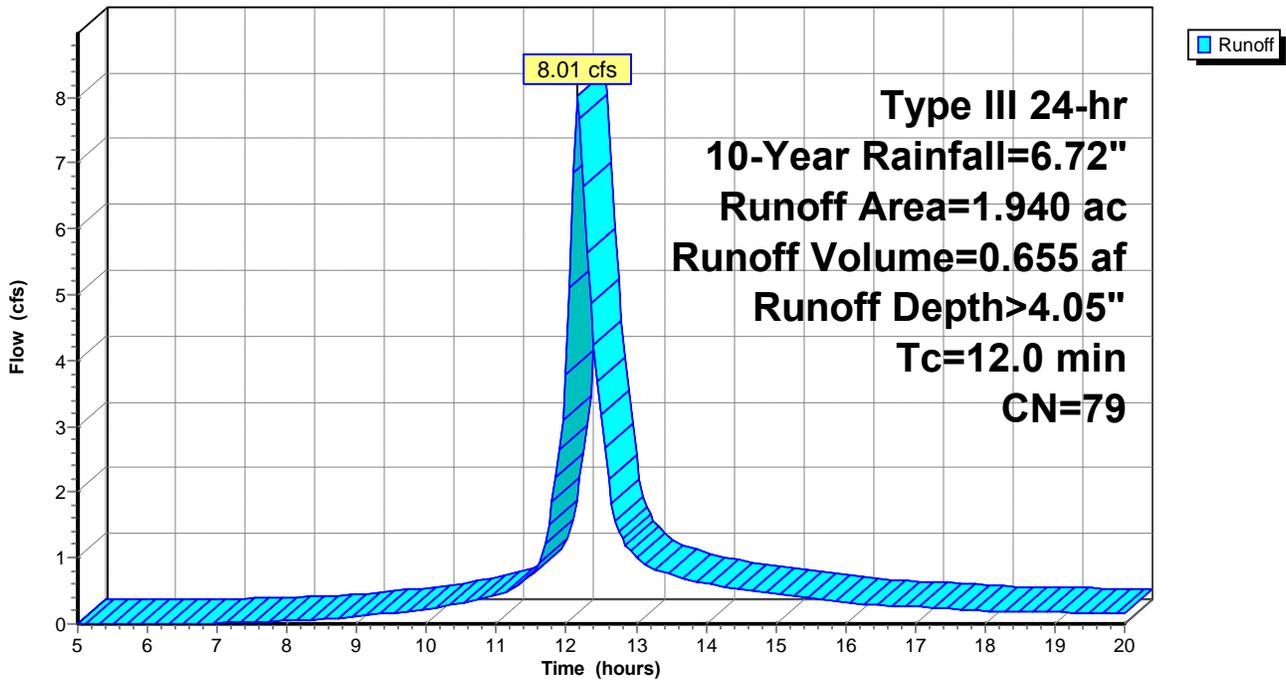
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=6.72"

Area (ac)	CN	Description
0.230	91	Gravel roads, HSG D
1.710	77	Woods, Good, HSG D
1.940	79	Weighted Average
1.940		100.00% Pervious Area

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

Subcatchment 3S: Predevelopment

Hydrograph



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Type III 24-hr 25-Year Rainfall=7.92"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 3S: Predevelopment

Runoff Area=1.940 ac 0.00% Impervious Runoff Depth=5.10"
Tc=12.0 min CN=79 Runoff=9.99 cfs 0.825 af

Total Runoff Area = 1.940 ac Runoff Volume = 0.825 af Average Runoff Depth = 5.10"
100.00% Pervious = 1.940 ac 0.00% Impervious = 0.000 ac

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Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Subcatchment 3S: Predevelopment

Runoff = 9.99 cfs @ 12.16 hrs, Volume= 0.825 af, Depth> 5.10"

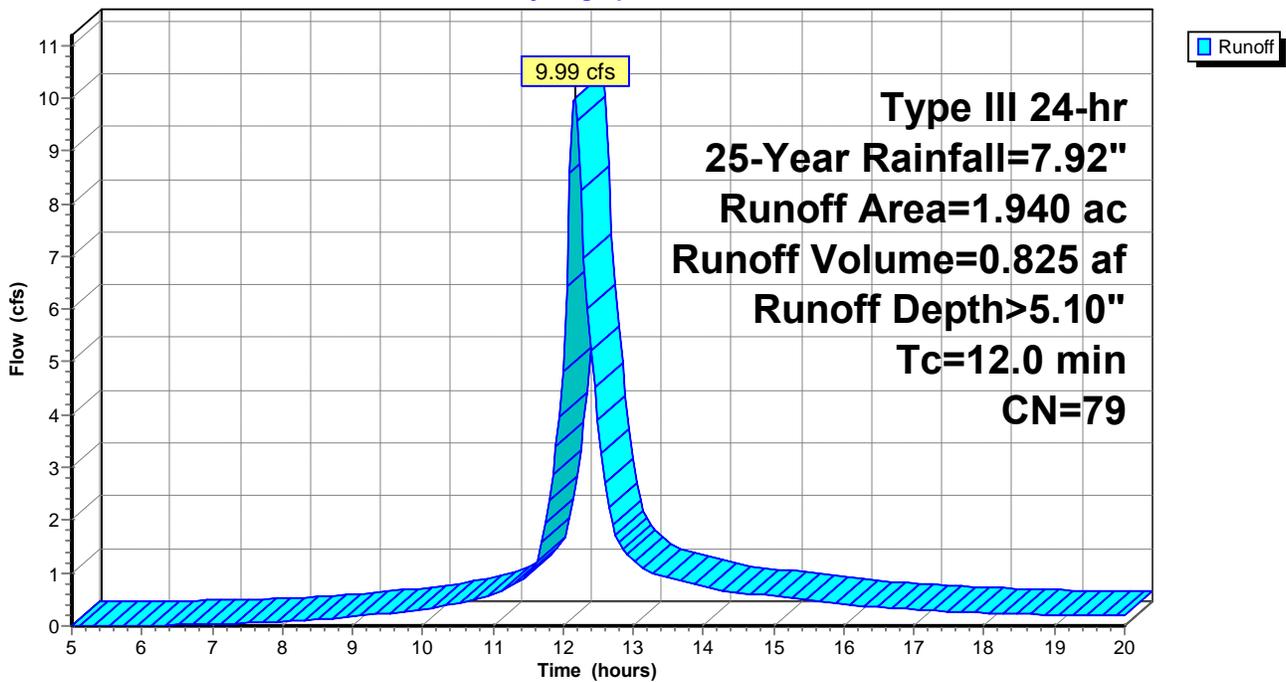
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=7.92"

Area (ac)	CN	Description
0.230	91	Gravel roads, HSG D
1.710	77	Woods, Good, HSG D
1.940	79	Weighted Average
1.940		100.00% Pervious Area

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

Subcatchment 3S: Predevelopment

Hydrograph



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Type III 24-hr 50-year Rainfall=8.88"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 3S: Predevelopment

Runoff Area=1.940 ac 0.00% Impervious Runoff Depth=5.96"
Tc=12.0 min CN=79 Runoff=11.58 cfs 0.963 af

Total Runoff Area = 1.940 ac Runoff Volume = 0.963 af Average Runoff Depth = 5.96"
100.00% Pervious = 1.940 ac 0.00% Impervious = 0.000 ac

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Type III 24-hr 50-year Rainfall=8.88"

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Summary for Subcatchment 3S: Predevelopment

Runoff = 11.58 cfs @ 12.16 hrs, Volume= 0.963 af, Depth> 5.96"

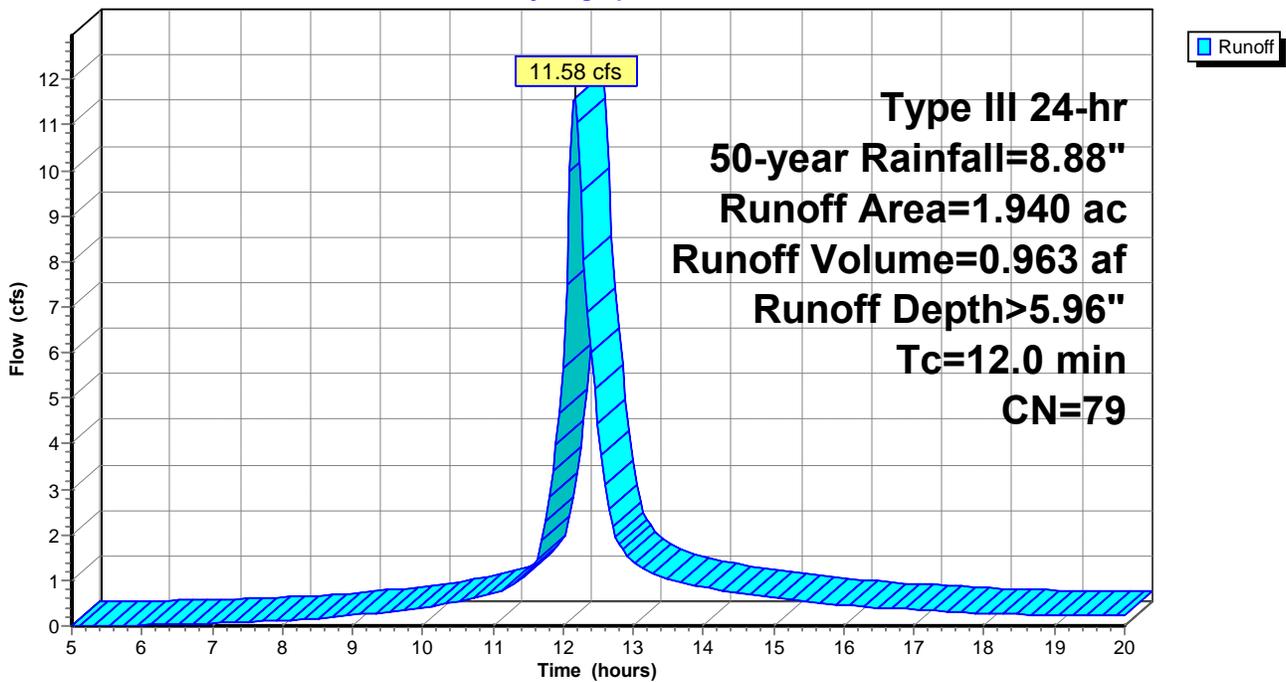
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=8.88"

Area (ac)	CN	Description
0.230	91	Gravel roads, HSG D
1.710	77	Woods, Good, HSG D
1.940	79	Weighted Average
1.940		100.00% Pervious Area

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

Subcatchment 3S: Predevelopment

Hydrograph



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Type III 24-hr 100-Year Rainfall=9.84"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 3S: Predevelopment

Runoff Area=1.940 ac 0.00% Impervious Runoff Depth=6.82"
Tc=12.0 min CN=79 Runoff=13.17 cfs 1.102 af

Total Runoff Area = 1.940 ac Runoff Volume = 1.102 af Average Runoff Depth = 6.82"
100.00% Pervious = 1.940 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 3S: Predevelopment

Runoff = 13.17 cfs @ 12.16 hrs, Volume= 1.102 af, Depth> 6.82"

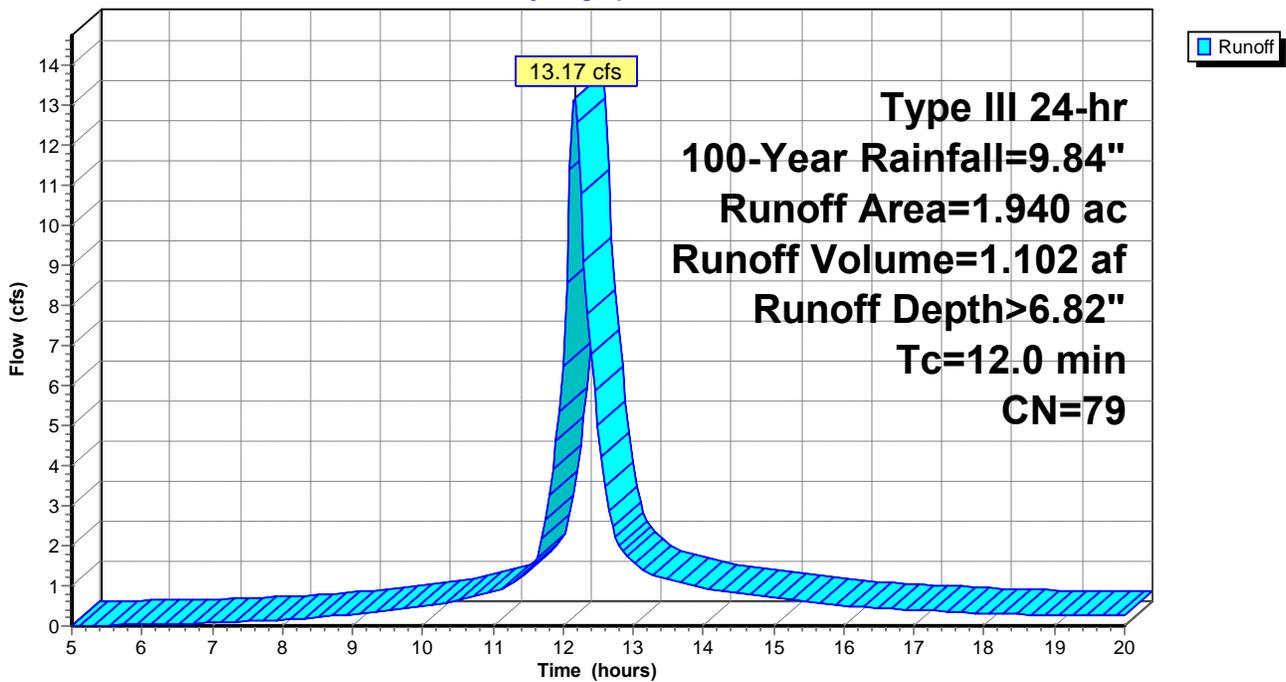
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-Year Rainfall=9.84"

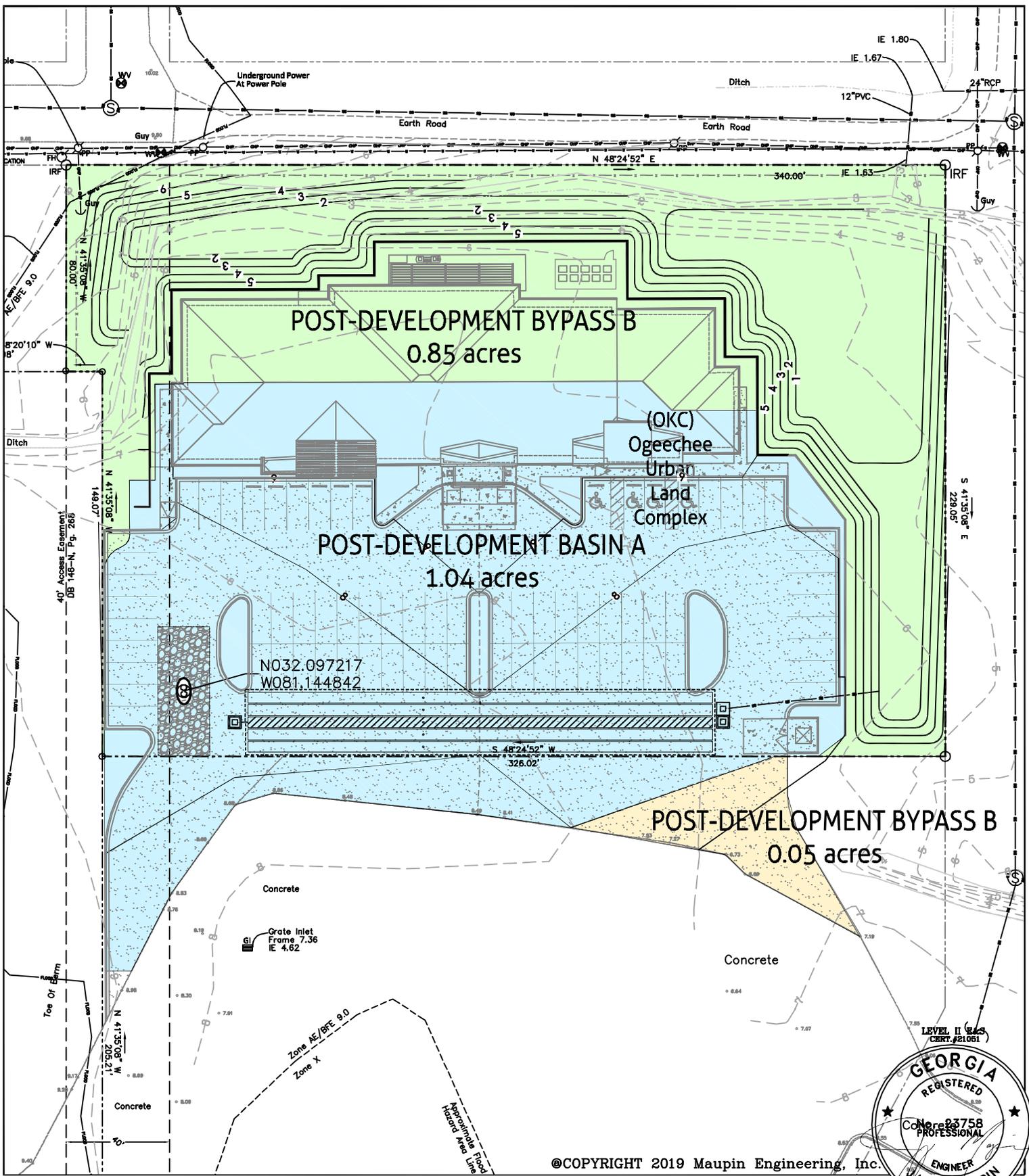
Area (ac)	CN	Description
0.230	91	Gravel roads, HSG D
1.710	77	Woods, Good, HSG D
1.940	79	Weighted Average
1.940		100.00% Pervious Area

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

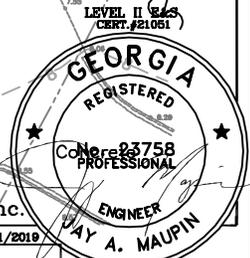
Subcatchment 3S: Predevelopment

Hydrograph





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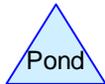
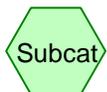
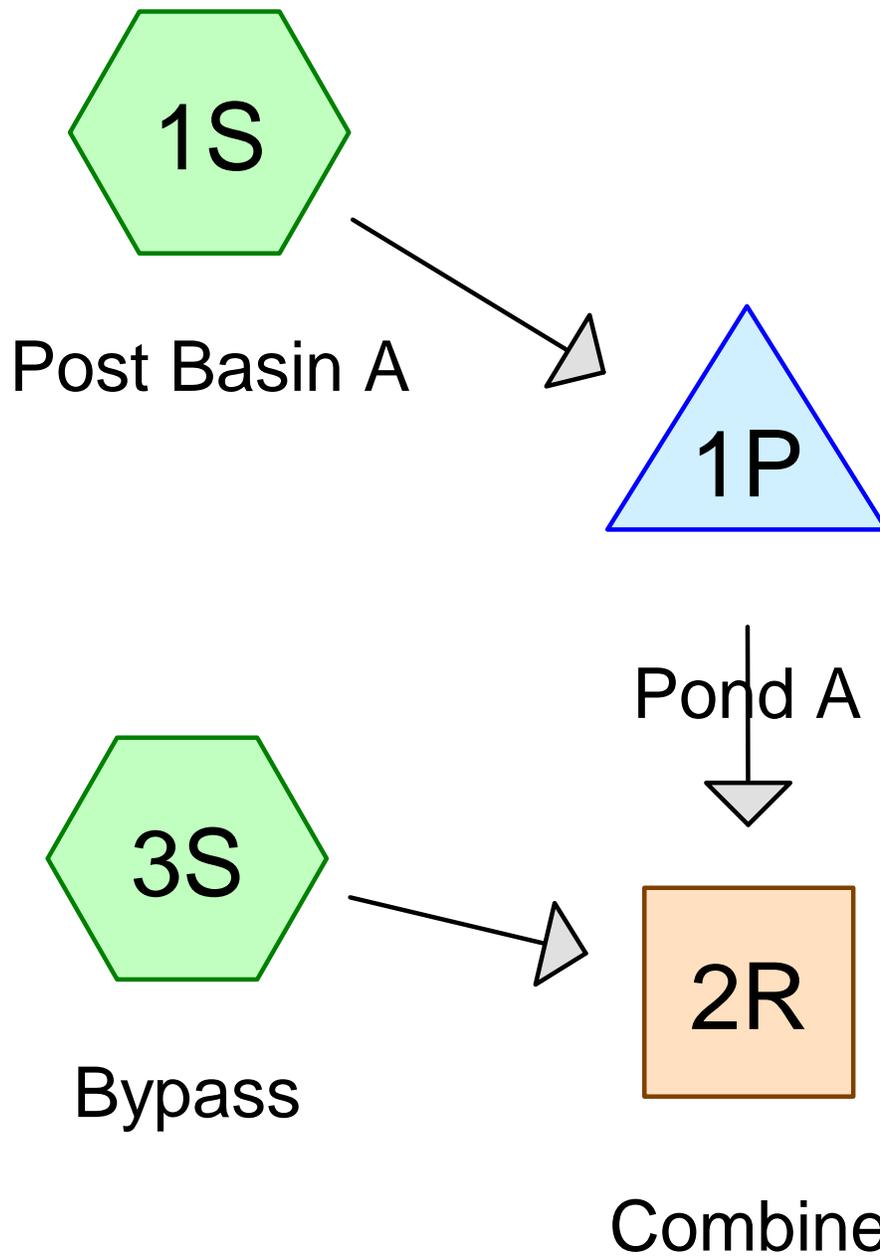


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 SAVANNAH, GA 31401 GENERAL@MAUPINENGINEERING.COM

POST-DEVELOPMENT BASINS
 Sleep Inn / Main Stay

25 0 50
 SCALE: 1" = 50'
 DRWN: MK 12-8-2019
 CHK'D: JAM DATE

SHEET NO.
1 of 1
 822-18-03
 PROJECT NO.



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Project Notes

Rainfall events imported from "Sleep Inn PRE.hcp"

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.760	80	>75% Grass cover, Good, HSG D (1S, 3S)
0.970	98	Paved parking & roofs (1S)
0.210	98	Roofs, HSG D (3S)
1.940	91	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.970	HSG D	1S, 3S
0.970	Other	1S
1.940		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.760	0.000	0.760	>75% Grass cover, Good	1S, 3S
0.000	0.000	0.000	0.000	0.970	0.970	Paved parking & roofs	1S
0.000	0.000	0.000	0.210	0.000	0.210	Roofs	3S
0.000	0.000	0.000	0.970	0.970	1.940	TOTAL AREA	

Sleep Inn Post

Type III 24-hr 1-Year Rainfall=3.60"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A

Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=97 Runoff=2.64 cfs 0.282 af

Subcatchment 3S: Bypass

Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>2.02"
Tc=5.0 min CN=84 Runoff=1.53 cfs 0.152 af

Reach 2R: Combine

Inflow=2.28 cfs 0.324 af
Outflow=2.28 cfs 0.324 af

Pond 1P: Pond A

Peak Elev=4.57' Storage=6,535 cf Inflow=2.64 cfs 0.282 af
Outflow=1.25 cfs 0.172 af

Total Runoff Area = 1.940 ac Runoff Volume = 0.434 af Average Runoff Depth = 2.68"
39.18% Pervious = 0.760 ac 60.82% Impervious = 1.180 ac

Sleep Inn Post

Type III 24-hr 1-Year Rainfall=3.60"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 2.64 cfs @ 12.05 hrs, Volume= 0.282 af, Depth> 3.25"

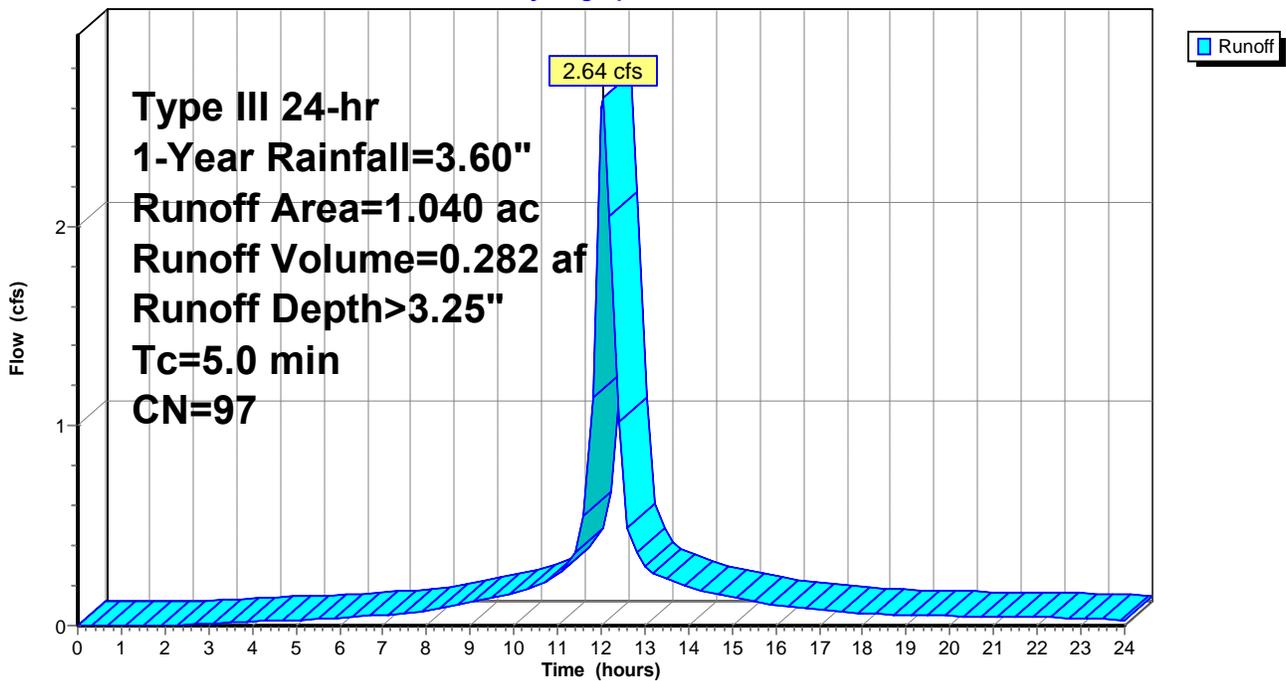
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, $dt= 0.20$ hrs
 Type III 24-hr 1-Year Rainfall=3.60"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



Sleep Inn Post

Type III 24-hr 1-Year Rainfall=3.60"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.53 cfs @ 12.07 hrs, Volume= 0.152 af, Depth> 2.02"

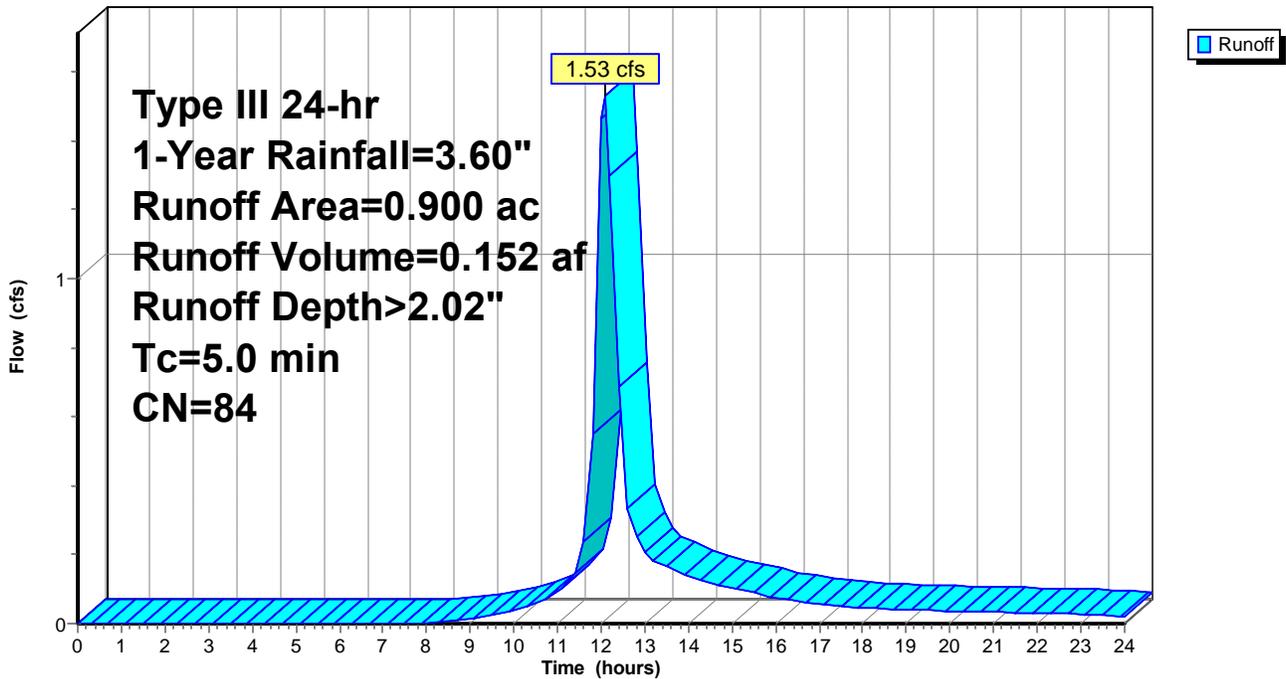
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, $dt= 0.20$ hrs
Type III 24-hr 1-Year Rainfall=3.60"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



Summary for Reach 2R: Combine

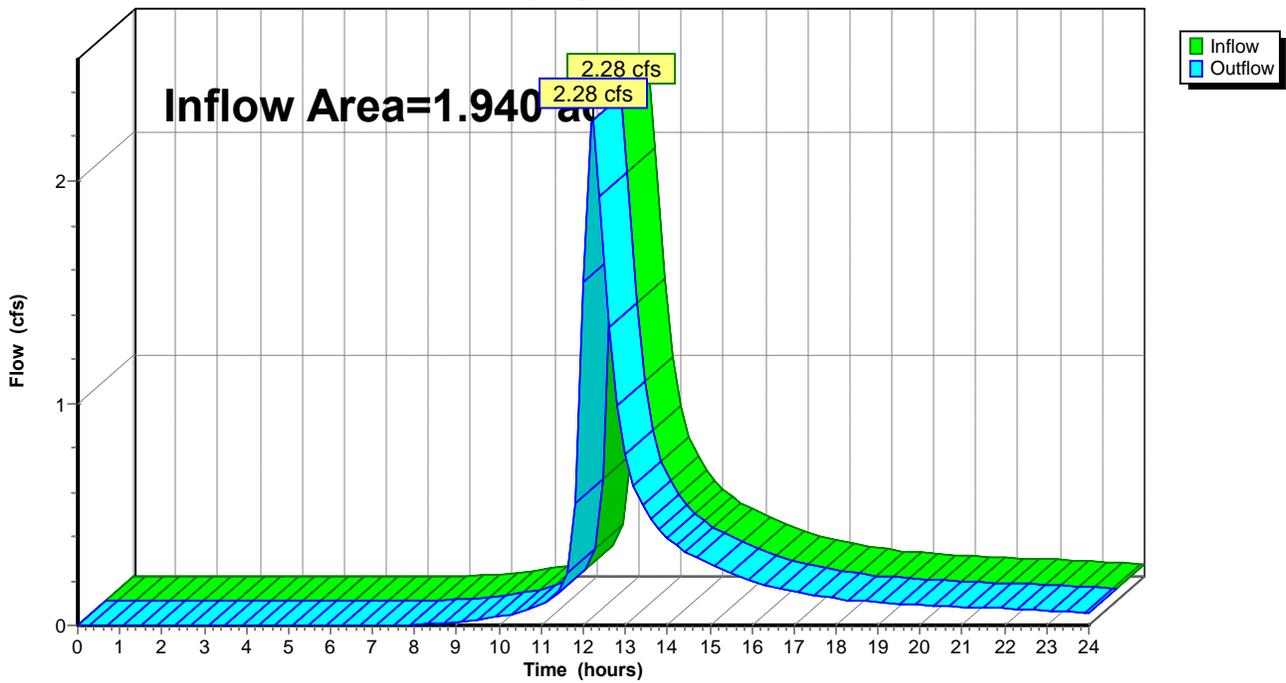
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.940 ac, 60.82% Impervious, Inflow Depth > 2.00" for 1-Year event
Inflow = 2.28 cfs @ 12.24 hrs, Volume= 0.324 af
Outflow = 2.28 cfs @ 12.24 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



Sleep Inn Post

Type III 24-hr 1-Year Rainfall=3.60"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 3.25" for 1-Year event
 Inflow = 2.64 cfs @ 12.05 hrs, Volume= 0.282 af
 Outflow = 1.25 cfs @ 12.41 hrs, Volume= 0.172 af, Atten= 53%, Lag= 21.7 min
 Primary = 1.25 cfs @ 12.41 hrs, Volume= 0.172 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 4.57' @ 12.41 hrs Surf.Area= 4,586 sf Storage= 6,535 cf

Plug-Flow detention time= 222.1 min calculated for 0.172 af (61% of inflow)
 Center-of-Mass det. time= 119.2 min (881.3 - 762.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=1.24 cfs @ 12.41 hrs HW=4.57' TW=0.00' (Dynamic Tailwater)

- └─1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- └─2=Sharp-Crested Rectangular Weir (Weir Controls 1.24 cfs @ 2.46 fps)

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Type III 24-hr 1-Year Rainfall=3.60"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

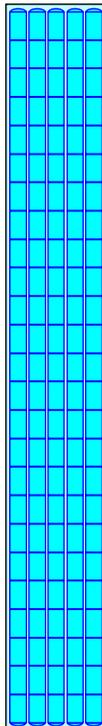
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

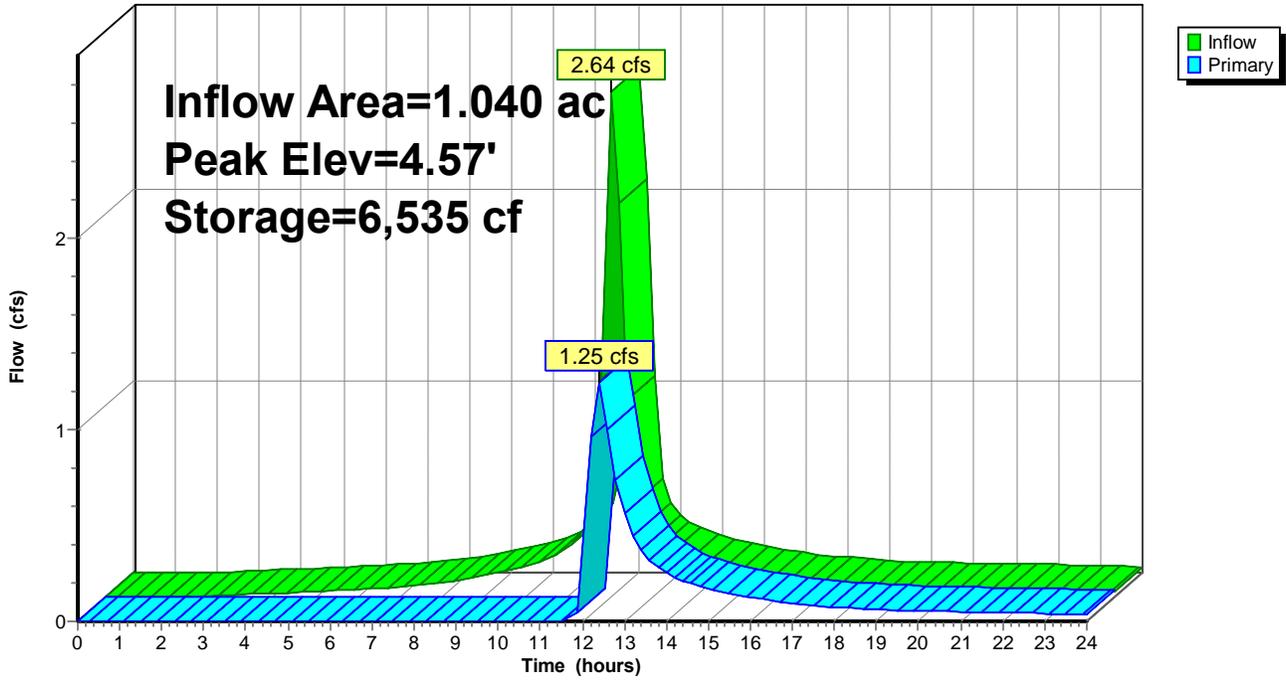
594.5 cy Field

381.8 cy Stone



Pond 1P: Pond A

Hydrograph



Sleep Inn Post

Type III 24-hr 5-year Rainfall=6.00"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A

Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>5.64"
Tc=5.0 min CN=97 Runoff=4.47 cfs 0.489 af

Subcatchment 3S: Bypass

Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>4.20"
Tc=5.0 min CN=84 Runoff=3.16 cfs 0.315 af

Reach 2R: Combine

Inflow=5.79 cfs 0.692 af
Outflow=5.79 cfs 0.692 af

Pond 1P: Pond A

Peak Elev=5.18' Storage=8,295 cf Inflow=4.47 cfs 0.489 af
Outflow=3.22 cfs 0.378 af

Total Runoff Area = 1.940 ac Runoff Volume = 0.804 af Average Runoff Depth = 4.97"
39.18% Pervious = 0.760 ac 60.82% Impervious = 1.180 ac

Sleep Inn Post

Type III 24-hr 5-year Rainfall=6.00"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 4.47 cfs @ 12.05 hrs, Volume= 0.489 af, Depth> 5.64"

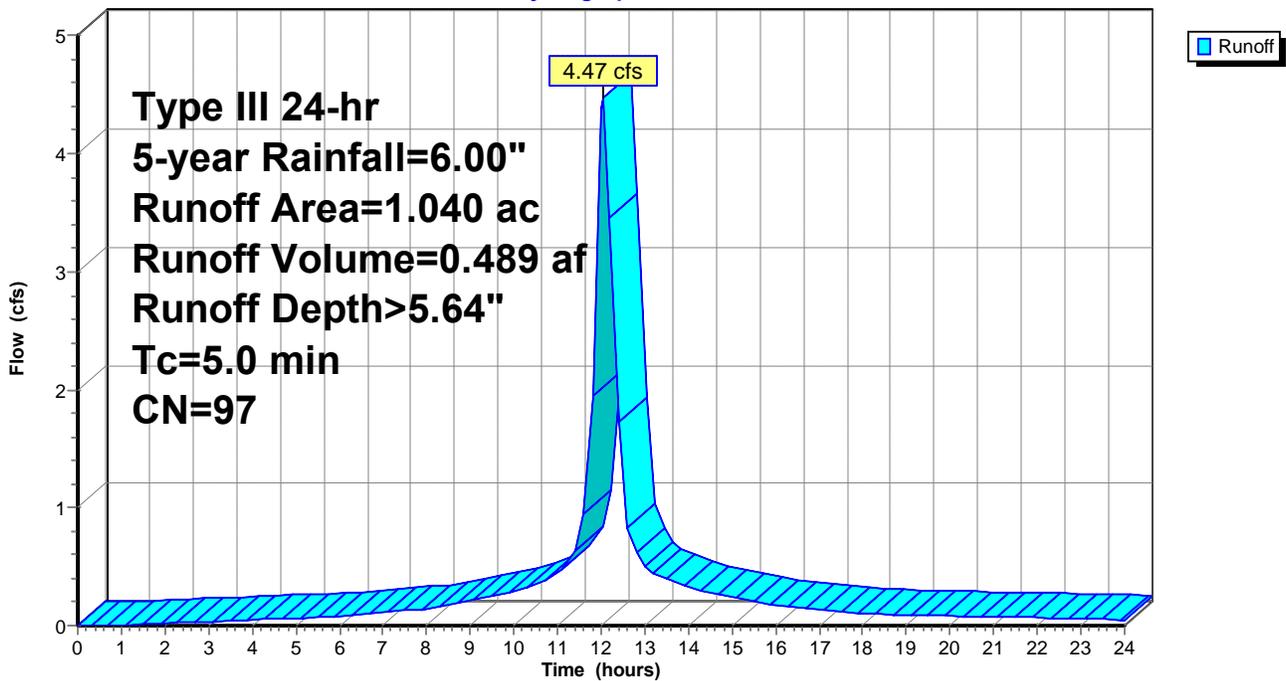
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Type III 24-hr 5-year Rainfall=6.00"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



Sleep Inn Post

Type III 24-hr 5-year Rainfall=6.00"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.16 cfs @ 12.06 hrs, Volume= 0.315 af, Depth> 4.20"

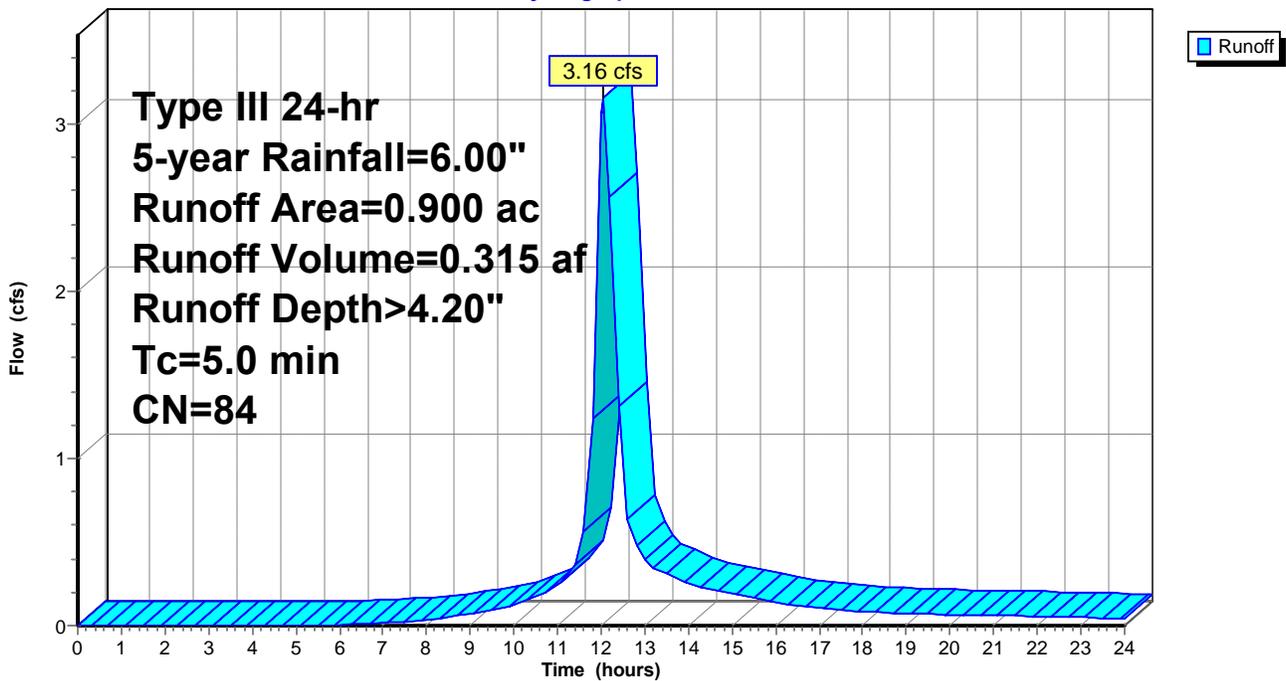
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, $dt= 0.20$ hrs
 Type III 24-hr 5-year Rainfall=6.00"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



Summary for Reach 2R: Combine

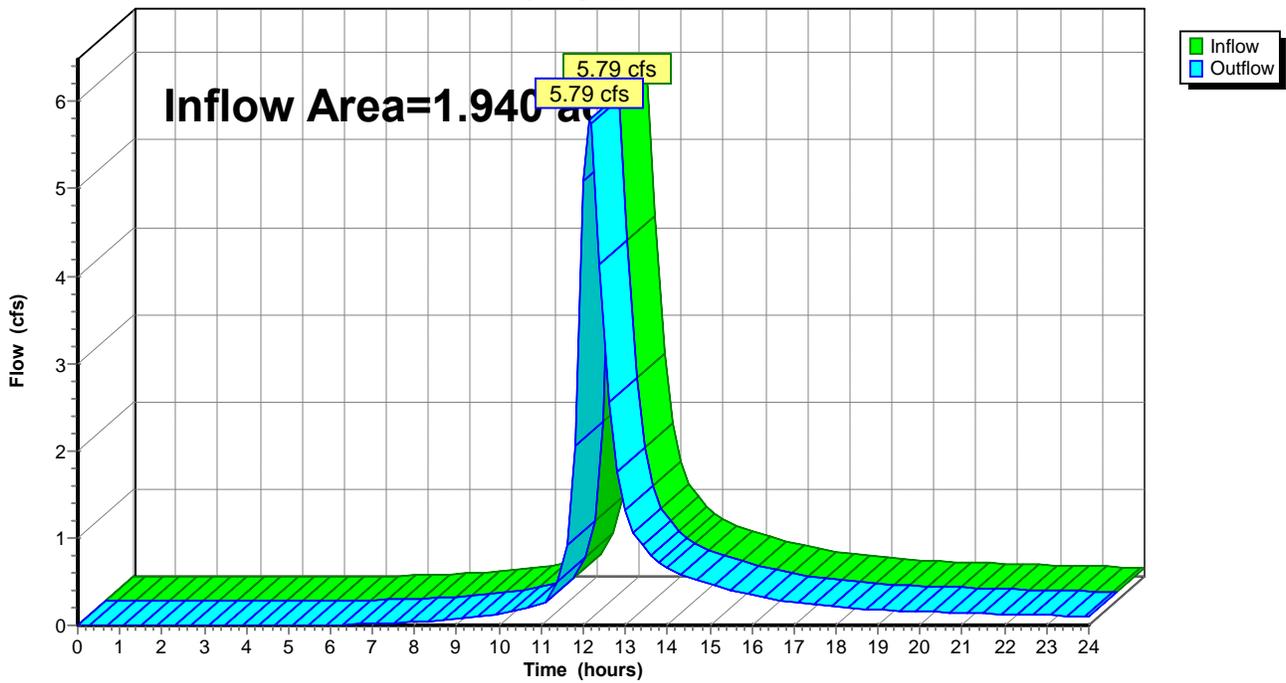
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.940 ac, 60.82% Impervious, Inflow Depth > 4.28" for 5-year event
Inflow = 5.79 cfs @ 12.16 hrs, Volume= 0.692 af
Outflow = 5.79 cfs @ 12.16 hrs, Volume= 0.692 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



Sleep Inn Post

Type III 24-hr 5-year Rainfall=6.00"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 5.64" for 5-year event
 Inflow = 4.47 cfs @ 12.05 hrs, Volume= 0.489 af
 Outflow = 3.22 cfs @ 12.25 hrs, Volume= 0.378 af, Atten= 28%, Lag= 12.4 min
 Primary = 3.22 cfs @ 12.25 hrs, Volume= 0.378 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.18' @ 12.25 hrs Surf.Area= 4,586 sf Storage= 8,295 cf

Plug-Flow detention time= 166.3 min calculated for 0.375 af (77% of inflow)
 Center-of-Mass det. time= 89.9 min (841.0 - 751.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=3.07 cfs @ 12.25 hrs HW=5.14' TW=0.00' (Dynamic Tailwater)

- └─1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- └─2=Sharp-Crested Rectangular Weir (Weir Controls 3.07 cfs @ 3.49 fps)

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Type III 24-hr 5-year Rainfall=6.00"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

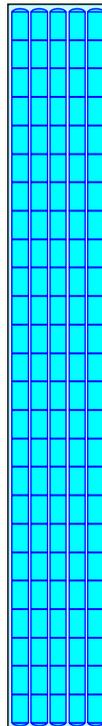
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

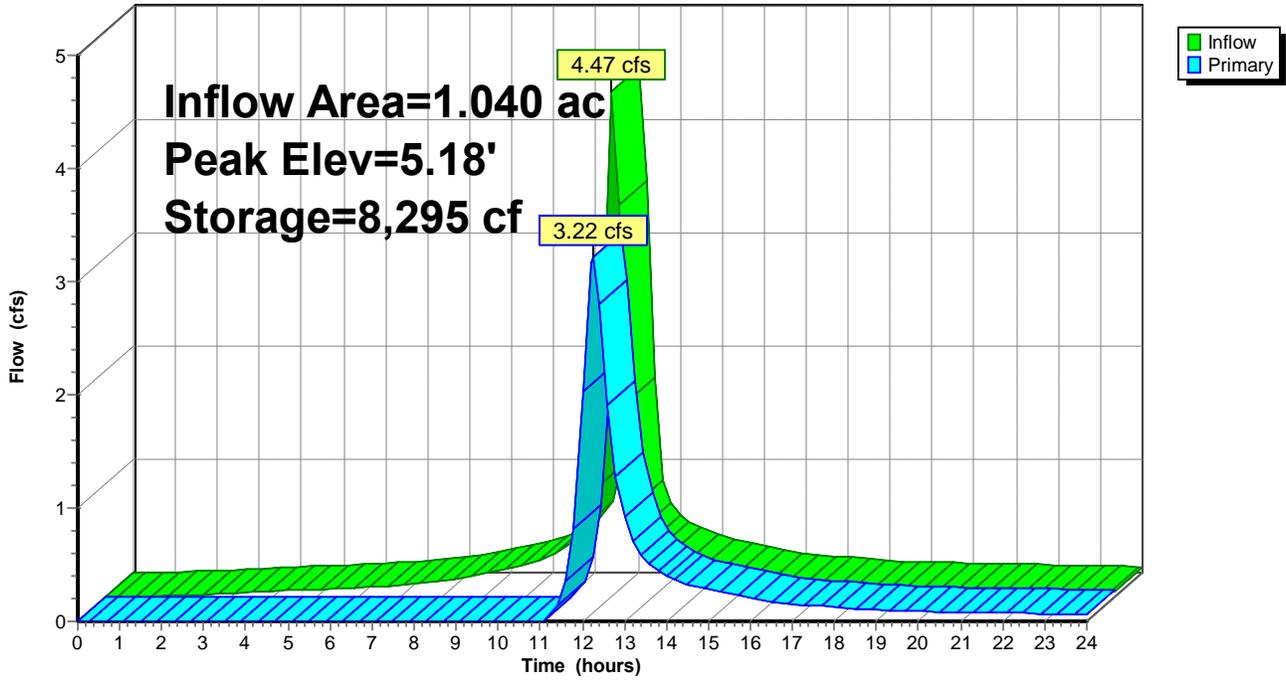
594.5 cy Field

381.8 cy Stone



Pond 1P: Pond A

Hydrograph



Sleep Inn Post

Type III 24-hr 10-Year Rainfall=6.72"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A

Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>6.36"
Tc=5.0 min CN=97 Runoff=5.02 cfs 0.551 af

Subcatchment 3S: Bypass

Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>4.87"
Tc=5.0 min CN=84 Runoff=3.65 cfs 0.366 af

Reach 2R: Combine

Inflow=6.71 cfs 0.805 af
Outflow=6.71 cfs 0.805 af

Pond 1P: Pond A

Peak Elev=5.34' Storage=8,642 cf Inflow=5.02 cfs 0.551 af
Outflow=3.72 cfs 0.440 af

Total Runoff Area = 1.940 ac Runoff Volume = 0.917 af Average Runoff Depth = 5.67"
39.18% Pervious = 0.760 ac 60.82% Impervious = 1.180 ac

Sleep Inn Post

Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 5.02 cfs @ 12.04 hrs, Volume= 0.551 af, Depth> 6.36"

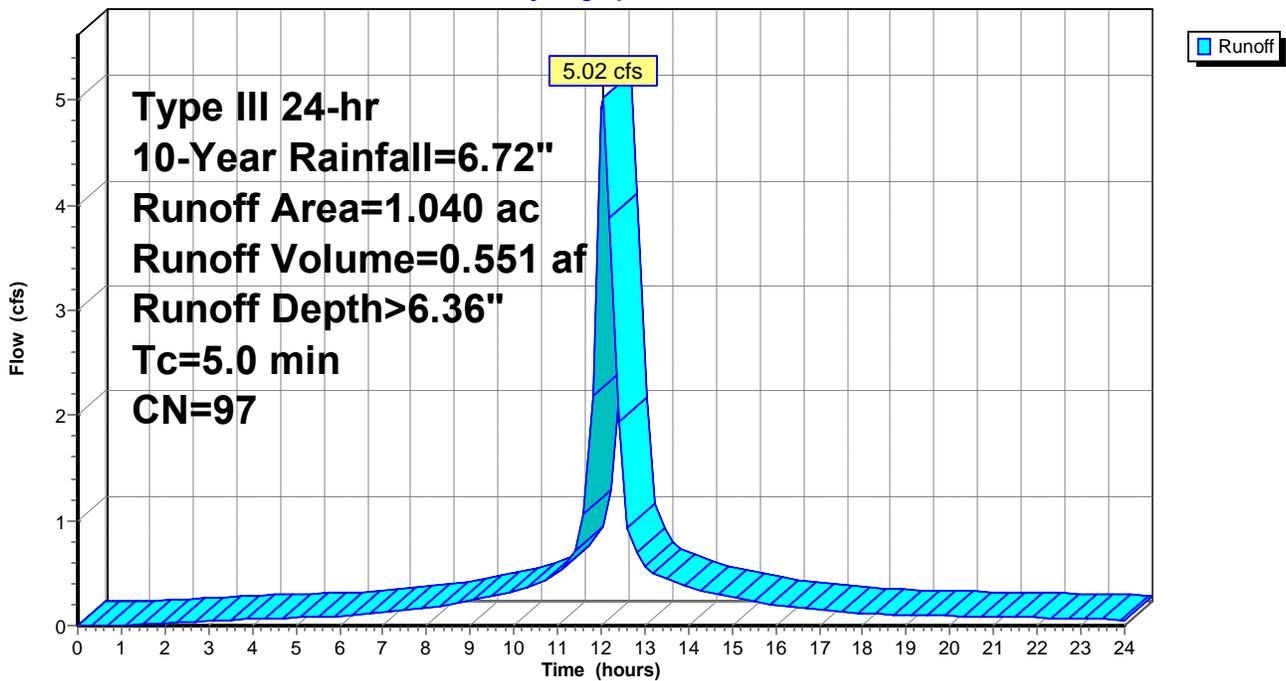
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Type III 24-hr 10-Year Rainfall=6.72"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



Sleep Inn Post

Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.65 cfs @ 12.06 hrs, Volume= 0.366 af, Depth> 4.87"

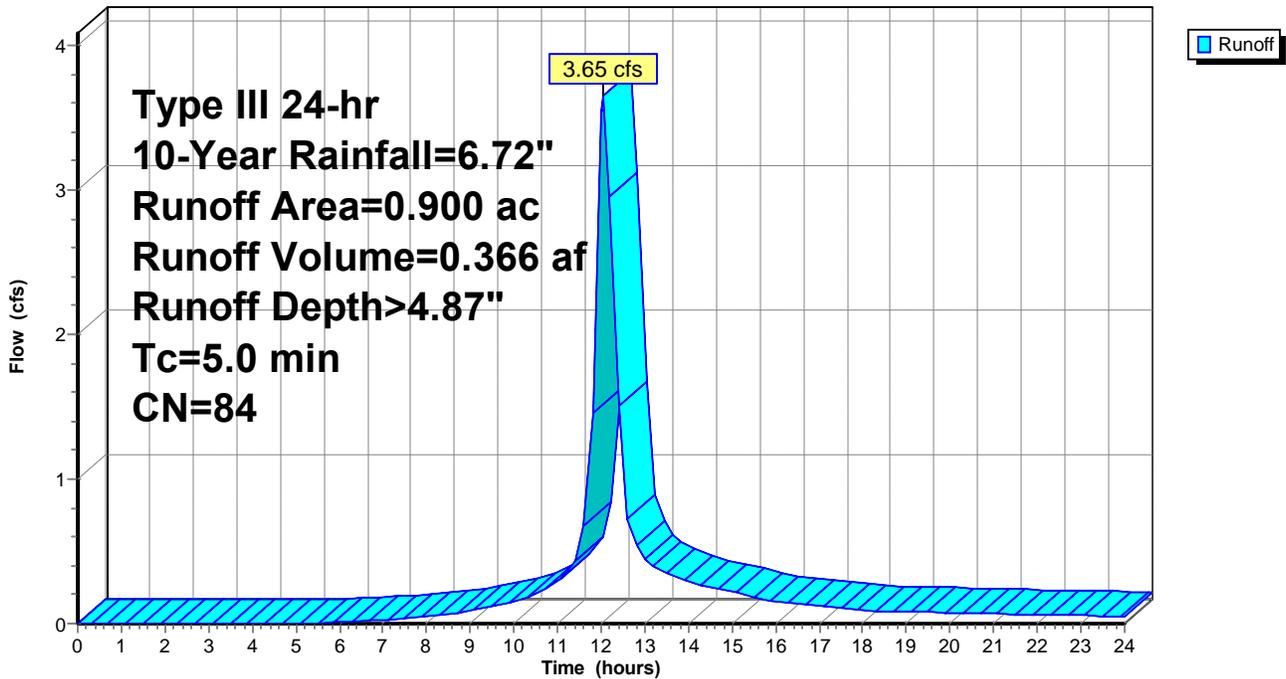
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, $dt= 0.20$ hrs
 Type III 24-hr 10-Year Rainfall=6.72"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



Summary for Reach 2R: Combine

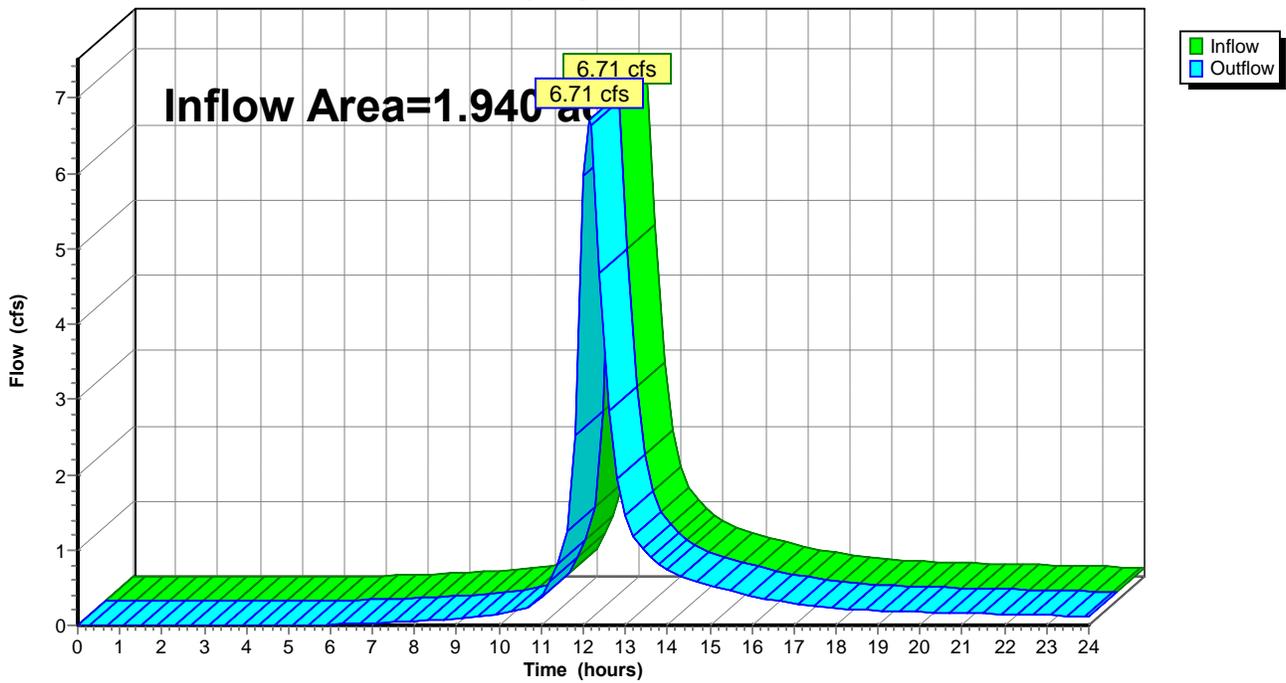
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.940 ac, 60.82% Impervious, Inflow Depth > 4.98" for 10-Year event
Inflow = 6.71 cfs @ 12.15 hrs, Volume= 0.805 af
Outflow = 6.71 cfs @ 12.15 hrs, Volume= 0.805 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



Sleep Inn Post

Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 6.36" for 10-Year event
 Inflow = 5.02 cfs @ 12.04 hrs, Volume= 0.551 af
 Outflow = 3.72 cfs @ 12.24 hrs, Volume= 0.440 af, Atten= 26%, Lag= 11.8 min
 Primary = 3.72 cfs @ 12.24 hrs, Volume= 0.440 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.34' @ 12.24 hrs Surf.Area= 4,586 sf Storage= 8,642 cf

Plug-Flow detention time= 160.9 min calculated for 0.440 af (80% of inflow)
 Center-of-Mass det. time= 85.6 min (834.7 - 749.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=3.57 cfs @ 12.24 hrs HW=5.30' TW=0.00' (Dynamic Tailwater)

- └─1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- └─2=Sharp-Crested Rectangular Weir (Weir Controls 3.57 cfs @ 3.72 fps)

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Type III 24-hr 10-Year Rainfall=6.72"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

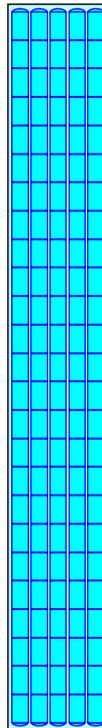
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

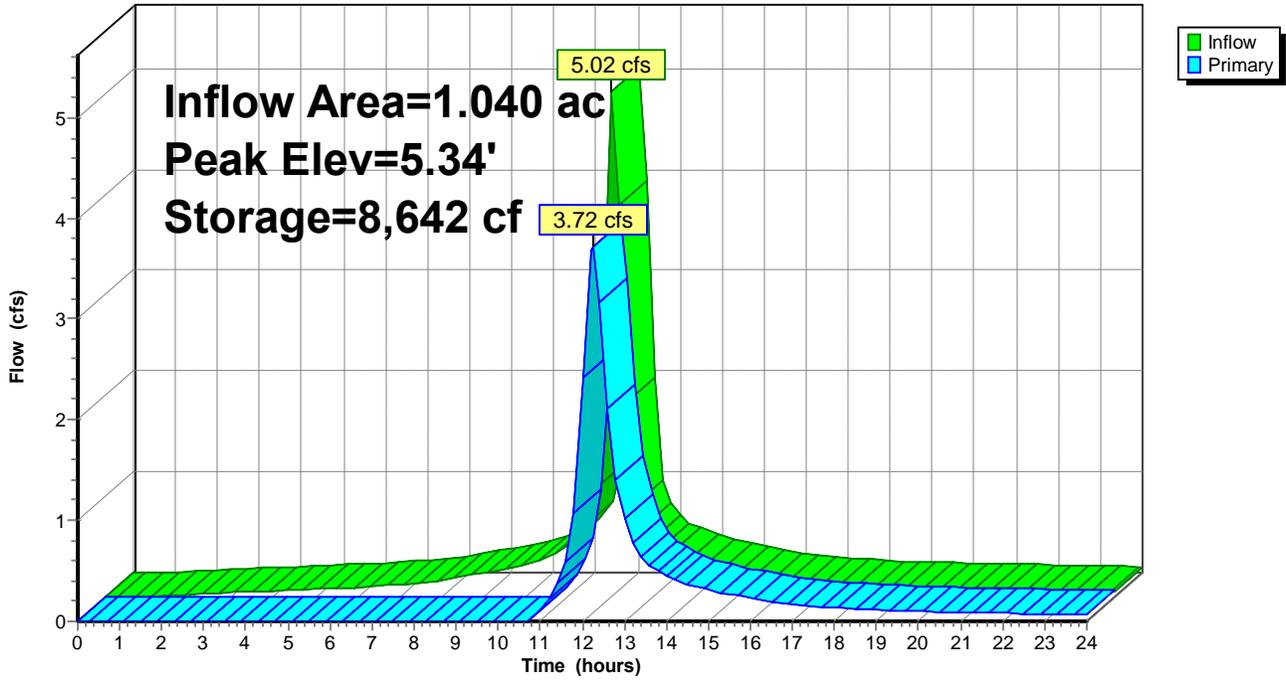
594.5 cy Field

381.8 cy Stone



Pond 1P: Pond A

Hydrograph



Sleep Inn Post

Type III 24-hr 25-Year Rainfall=7.92"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A

Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>7.56"
Tc=5.0 min CN=97 Runoff=5.92 cfs 0.655 af

Subcatchment 3S: Bypass

Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>6.02"
Tc=5.0 min CN=84 Runoff=4.48 cfs 0.451 af

Reach 2R: Combine

Inflow=8.24 cfs 0.994 af
Outflow=8.24 cfs 0.994 af

Pond 1P: Pond A

Peak Elev=5.62' Storage=9,167 cf Inflow=5.92 cfs 0.655 af
Outflow=4.56 cfs 0.543 af

Total Runoff Area = 1.940 ac Runoff Volume = 1.107 af Average Runoff Depth = 6.84"
39.18% Pervious = 0.760 ac 60.82% Impervious = 1.180 ac

Sleep Inn Post

Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 5.92 cfs @ 12.04 hrs, Volume= 0.655 af, Depth> 7.56"

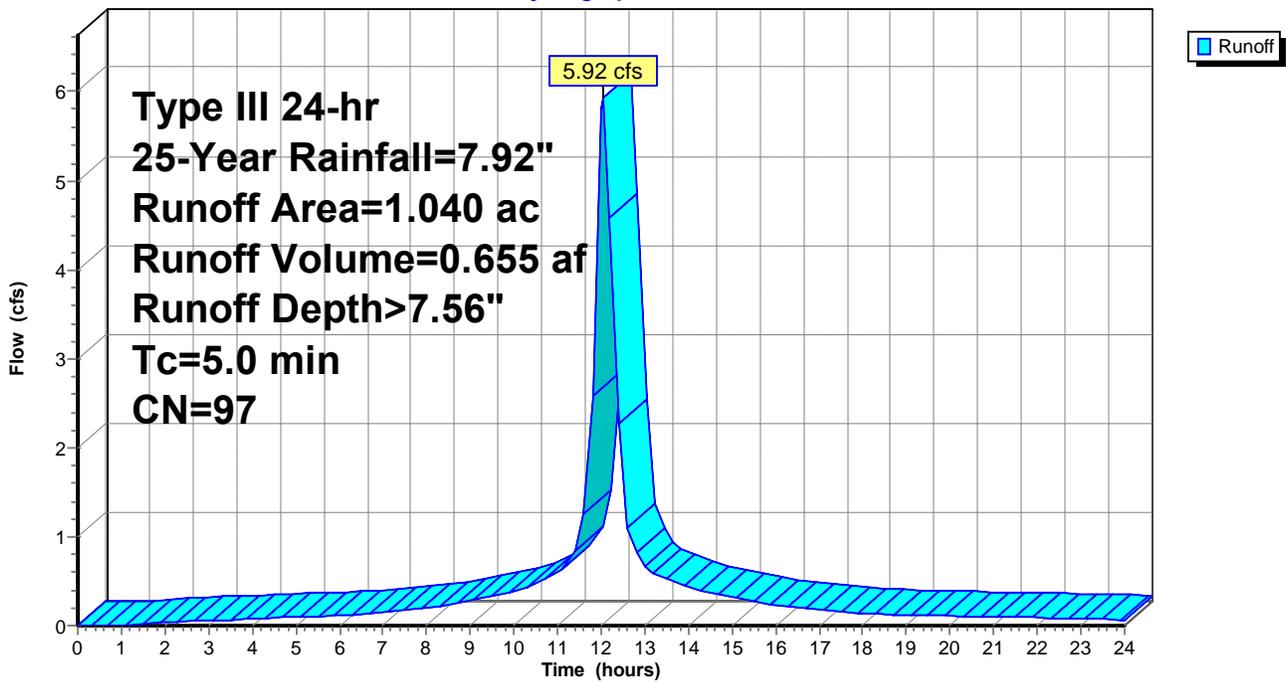
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Type III 24-hr 25-Year Rainfall=7.92"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



Sleep Inn Post

Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 4.48 cfs @ 12.05 hrs, Volume= 0.451 af, Depth> 6.02"

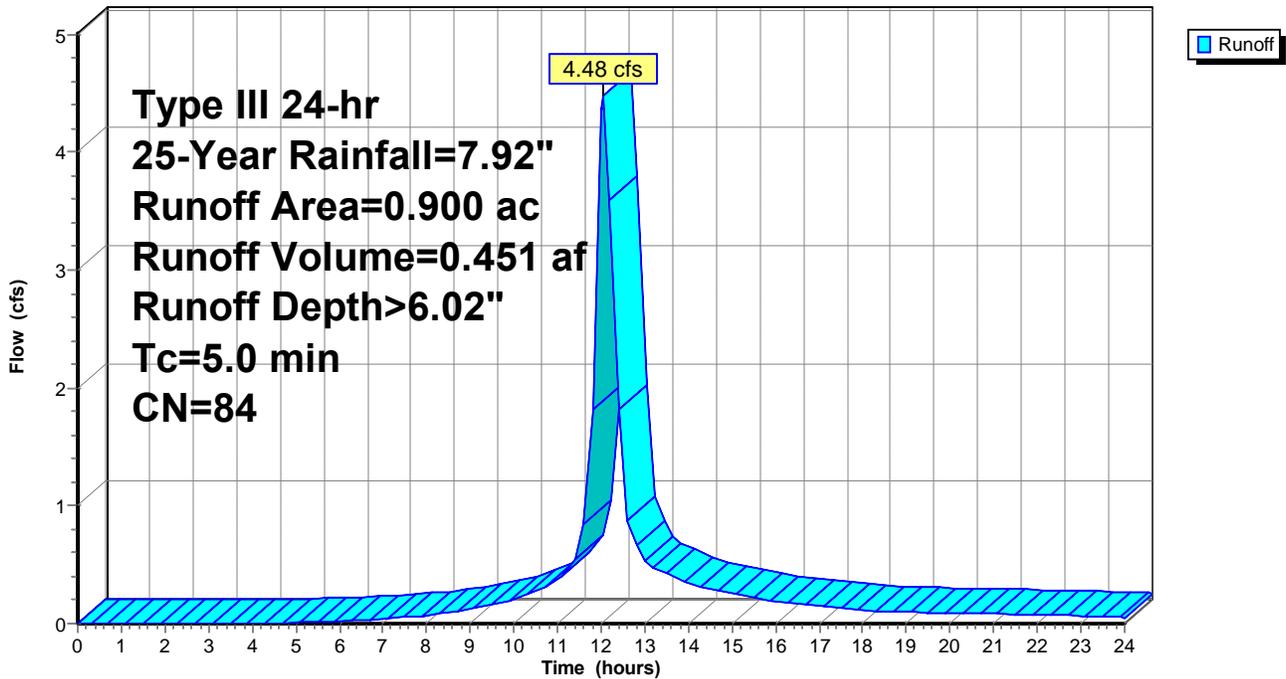
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, $dt= 0.20$ hrs
 Type III 24-hr 25-Year Rainfall=7.92"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



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Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Reach 2R: Combine

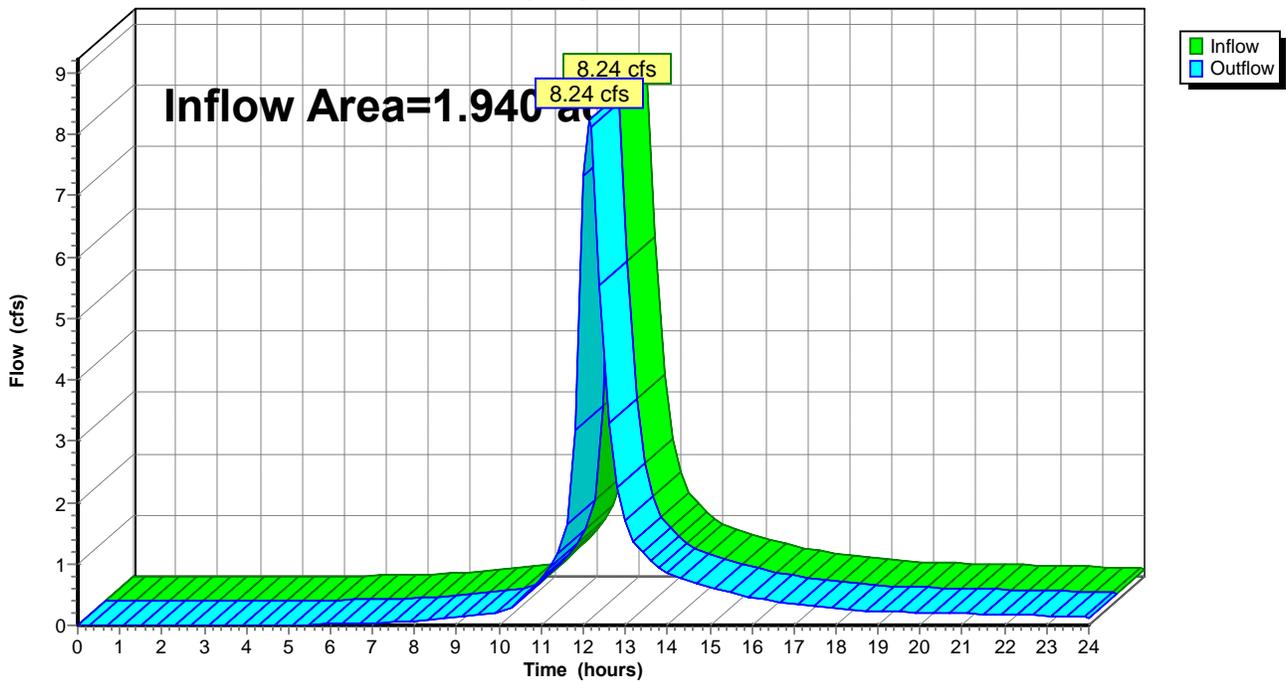
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.940 ac, 60.82% Impervious, Inflow Depth > 6.15" for 25-Year event
Inflow = 8.24 cfs @ 12.15 hrs, Volume= 0.994 af
Outflow = 8.24 cfs @ 12.15 hrs, Volume= 0.994 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



Sleep Inn Post

Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 7.56" for 25-Year event
 Inflow = 5.92 cfs @ 12.04 hrs, Volume= 0.655 af
 Outflow = 4.56 cfs @ 12.23 hrs, Volume= 0.543 af, Atten= 23%, Lag= 11.2 min
 Primary = 4.56 cfs @ 12.23 hrs, Volume= 0.543 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.62' @ 12.23 hrs Surf.Area= 4,586 sf Storage= 9,167 cf

Plug-Flow detention time= 144.9 min calculated for 0.538 af (82% of inflow)
 Center-of-Mass det. time= 79.7 min (825.9 - 746.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=4.41 cfs @ 12.23 hrs HW=5.57' TW=0.00' (Dynamic Tailwater)

- └─1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- └─2=Sharp-Crested Rectangular Weir (Weir Controls 4.41 cfs @ 4.09 fps)

Sleep Inn Post

Type III 24-hr 25-Year Rainfall=7.92"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

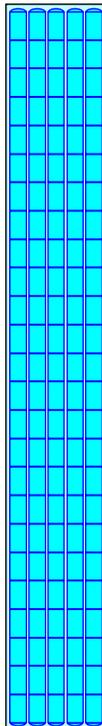
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

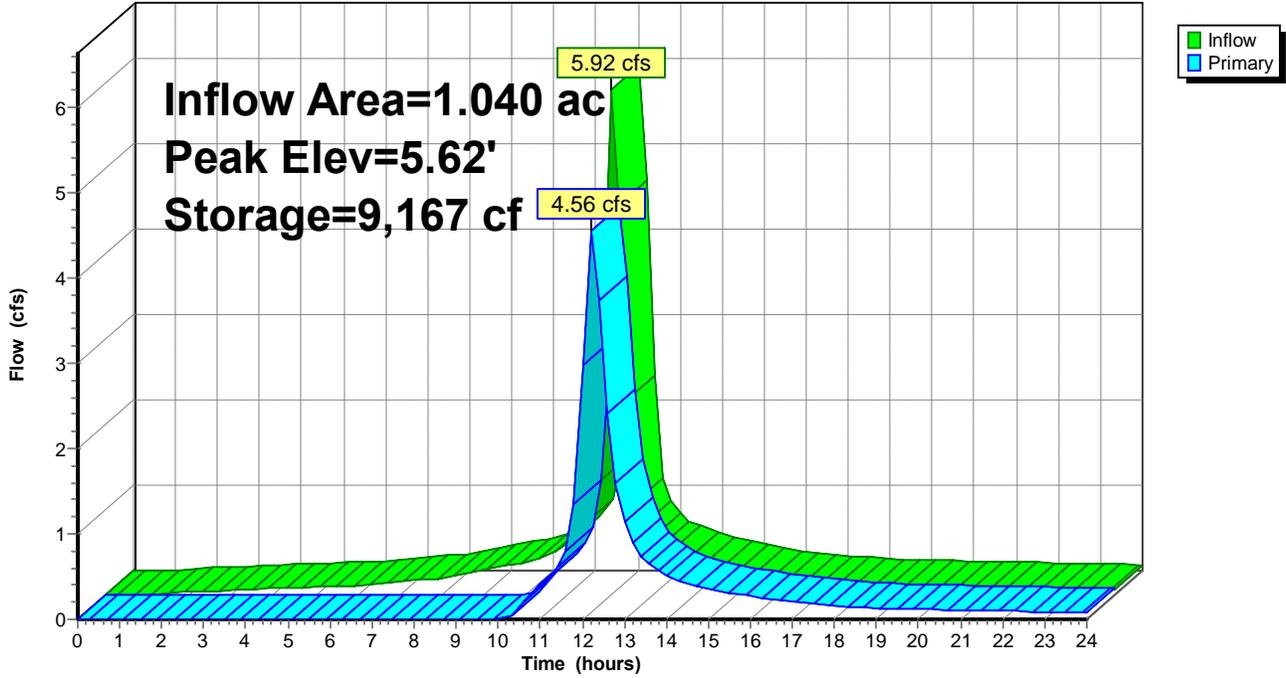
594.5 cy Field

381.8 cy Stone



Pond 1P: Pond A

Hydrograph



Sleep Inn Post

Type III 24-hr 50-year Rainfall=8.88"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A

Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>8.52"
Tc=5.0 min CN=97 Runoff=6.65 cfs 0.738 af

Subcatchment 3S: Bypass

Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>6.94"
Tc=5.0 min CN=84 Runoff=5.13 cfs 0.521 af

Reach 2R: Combine

Inflow=9.50 cfs 1.146 af
Outflow=9.50 cfs 1.146 af

Pond 1P: Pond A

Peak Elev=5.82' Storage=9,539 cf Inflow=6.65 cfs 0.738 af
Outflow=5.27 cfs 0.625 af

Total Runoff Area = 1.940 ac Runoff Volume = 1.259 af Average Runoff Depth = 7.79"
39.18% Pervious = 0.760 ac 60.82% Impervious = 1.180 ac

Sleep Inn Post

Type III 24-hr 50-year Rainfall=8.88"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 6.65 cfs @ 12.04 hrs, Volume= 0.738 af, Depth> 8.52"

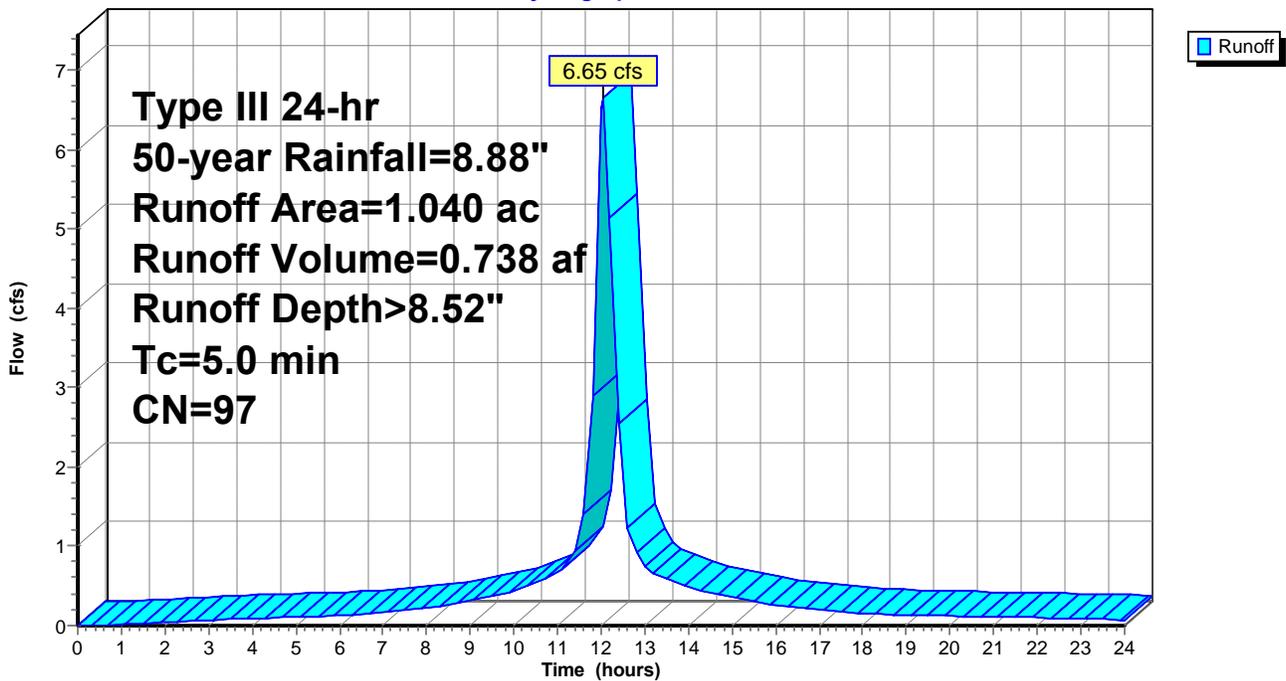
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-year Rainfall=8.88"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



Sleep Inn Post

Type III 24-hr 50-year Rainfall=8.88"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 5.13 cfs @ 12.05 hrs, Volume= 0.521 af, Depth> 6.94"

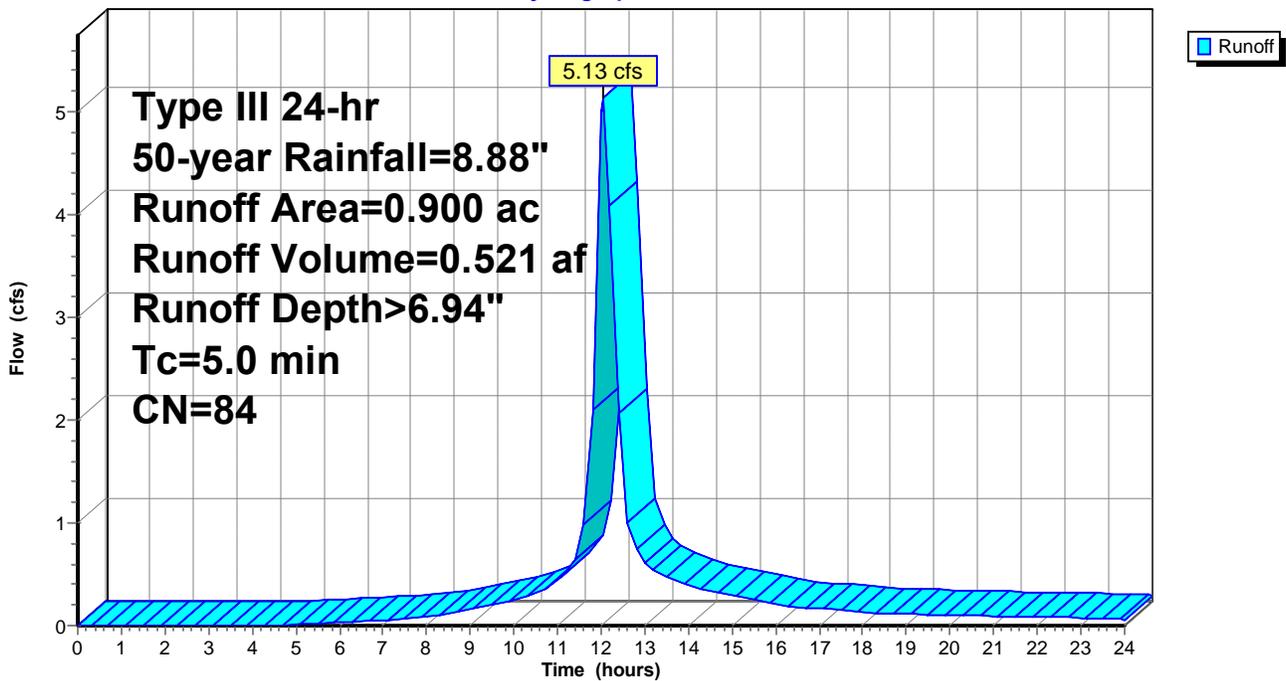
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, $dt= 0.20$ hrs
 Type III 24-hr 50-year Rainfall=8.88"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



Summary for Reach 2R: Combine

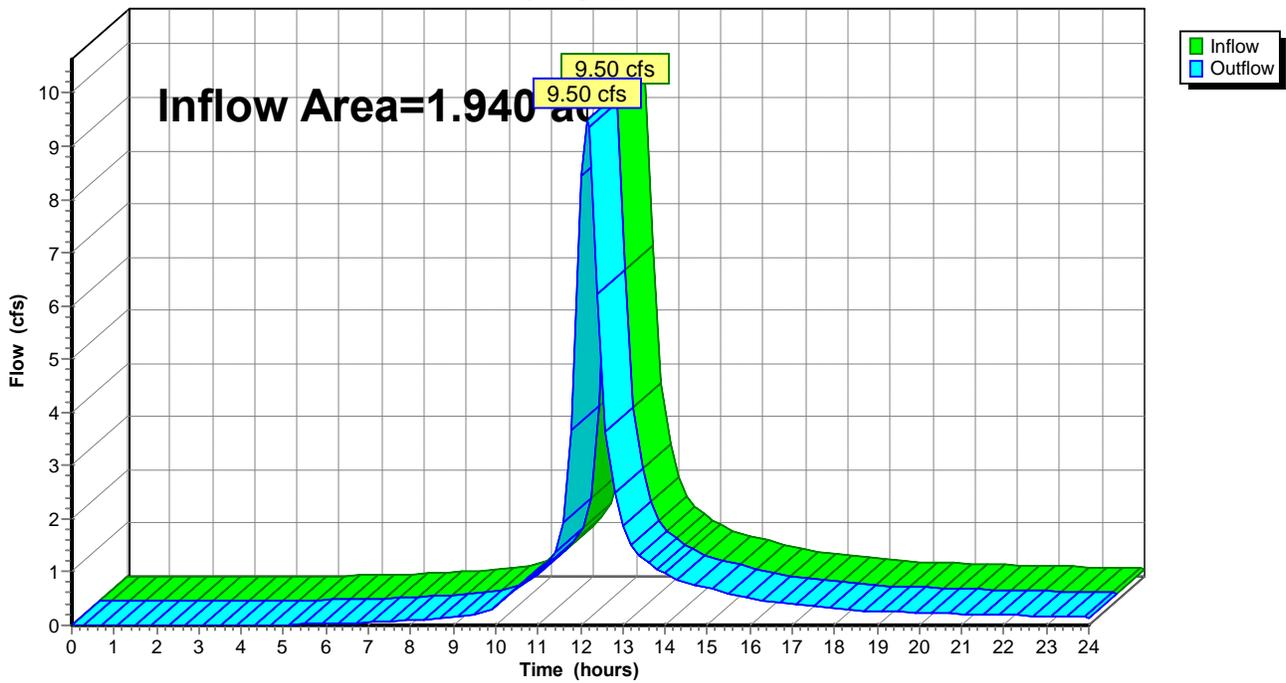
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.940 ac, 60.82% Impervious, Inflow Depth > 7.09" for 50-year event
Inflow = 9.50 cfs @ 12.14 hrs, Volume= 1.146 af
Outflow = 9.50 cfs @ 12.14 hrs, Volume= 1.146 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



Sleep Inn Post

Type III 24-hr 50-year Rainfall=8.88"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 8.52" for 50-year event
 Inflow = 6.65 cfs @ 12.04 hrs, Volume= 0.738 af
 Outflow = 5.27 cfs @ 12.22 hrs, Volume= 0.625 af, Atten= 21%, Lag= 10.8 min
 Primary = 5.27 cfs @ 12.22 hrs, Volume= 0.625 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.82' @ 12.23 hrs Surf.Area= 4,586 sf Storage= 9,539 cf

Plug-Flow detention time= 139.8 min calculated for 0.625 af (85% of inflow)
 Center-of-Mass det. time= 75.7 min (820.1 - 744.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=5.02 cfs @ 12.22 hrs HW=5.77' TW=0.00' (Dynamic Tailwater)

- ↑ 1=Sharp-Crested Rectangular Weir (Weir Controls 0.04 cfs @ 0.50 fps)
- └ 2=Sharp-Crested Rectangular Weir (Weir Controls 4.98 cfs @ 4.35 fps)

Sleep Inn Post

Type III 24-hr 50-year Rainfall=8.88"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

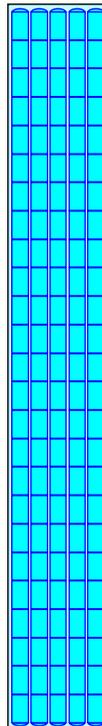
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

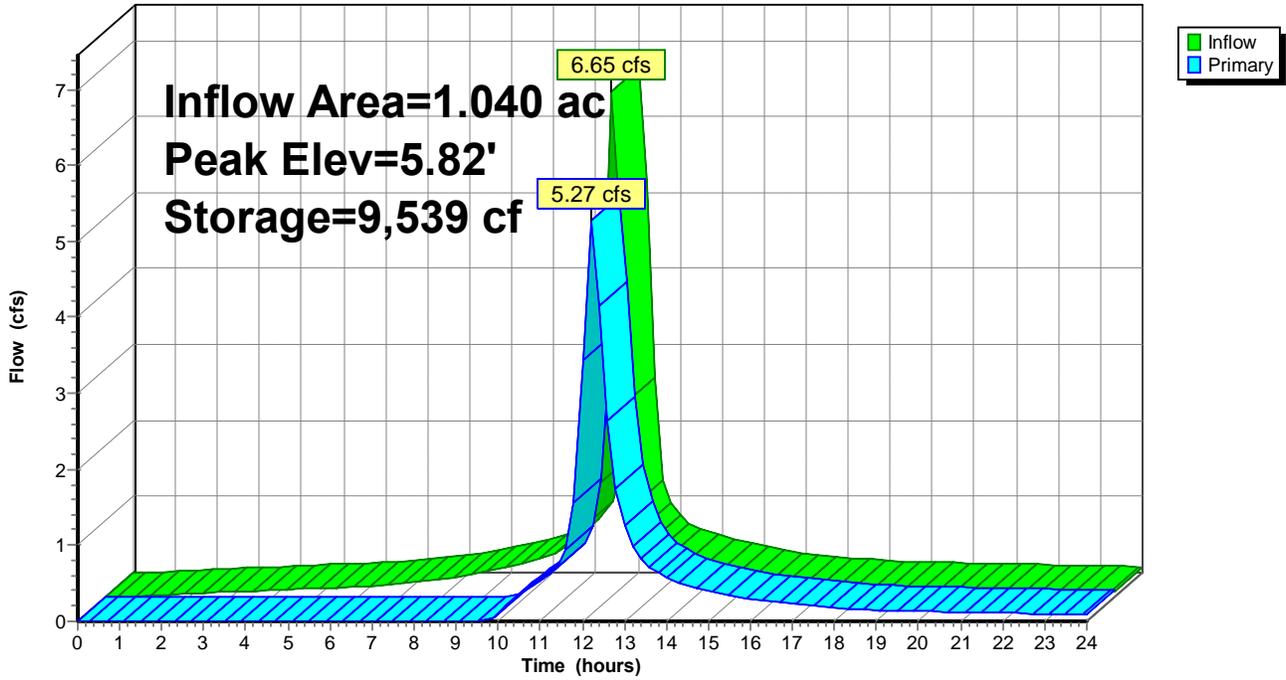
594.5 cy Field

381.8 cy Stone



Pond 1P: Pond A

Hydrograph



Sleep Inn Post

Type III 24-hr 100-Year Rainfall=9.84"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A

Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>9.48"
Tc=5.0 min CN=97 Runoff=7.38 cfs 0.821 af

Subcatchment 3S: Bypass

Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>7.87"
Tc=5.0 min CN=84 Runoff=5.79 cfs 0.590 af

Reach 2R: Combine

Inflow=11.04 cfs 1.298 af
Outflow=11.04 cfs 1.298 af

Pond 1P: Pond A

Peak Elev=5.95' Storage=9,770 cf Inflow=7.38 cfs 0.821 af
Outflow=6.26 cfs 0.708 af

Total Runoff Area = 1.940 ac Runoff Volume = 1.412 af Average Runoff Depth = 8.73"
39.18% Pervious = 0.760 ac 60.82% Impervious = 1.180 ac

Sleep Inn Post

Type III 24-hr 100-Year Rainfall=9.84"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 7.38 cfs @ 12.04 hrs, Volume= 0.821 af, Depth> 9.48"

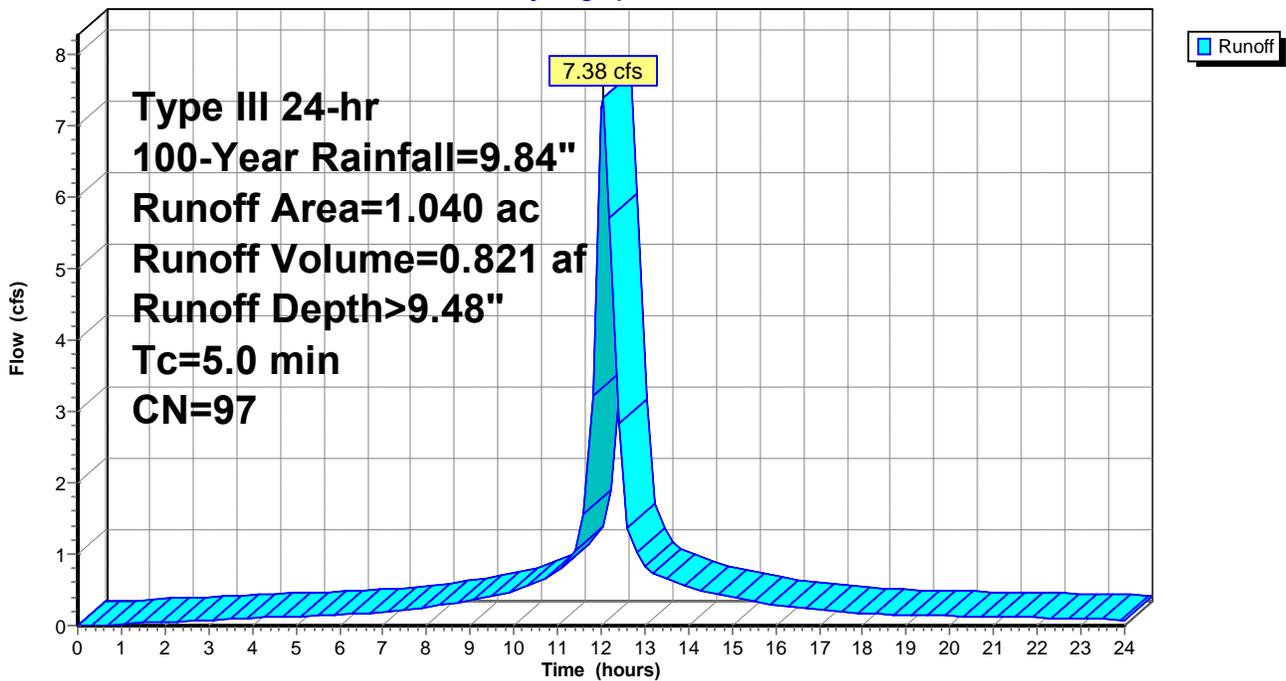
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=9.84"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



Sleep Inn Post

Type III 24-hr 100-Year Rainfall=9.84"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 5.79 cfs @ 12.05 hrs, Volume= 0.590 af, Depth> 7.87"

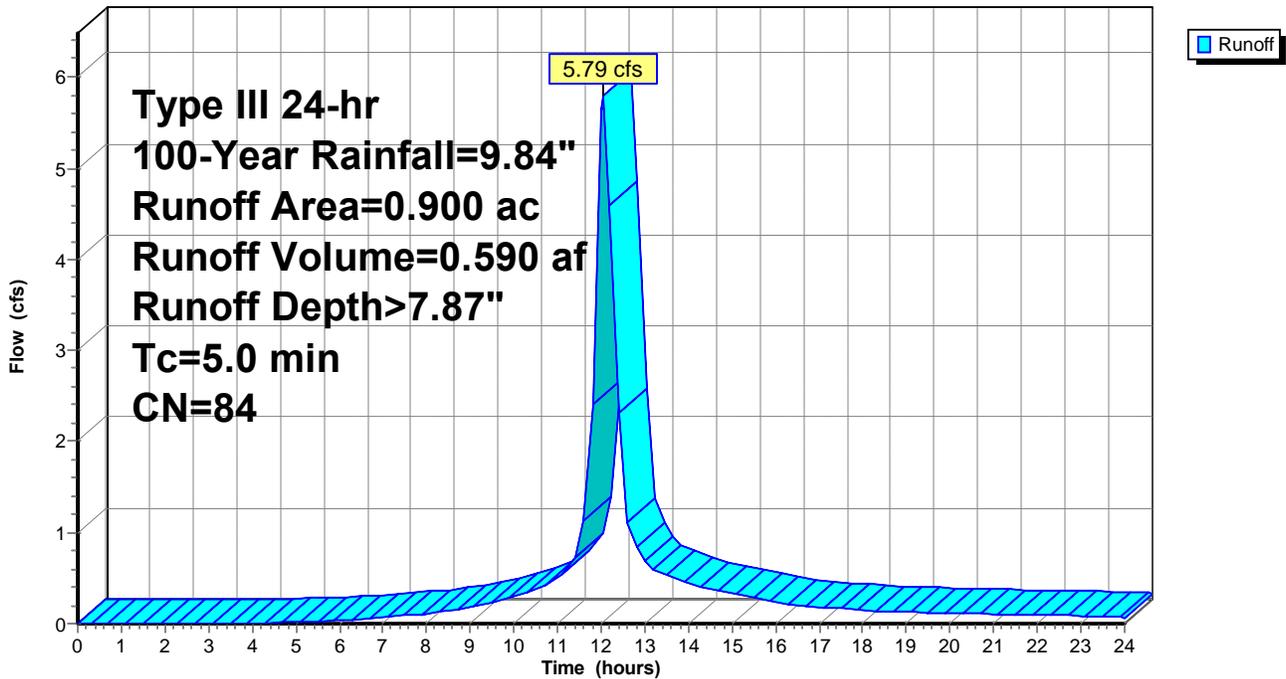
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, $dt= 0.20$ hrs
 Type III 24-hr 100-Year Rainfall=9.84"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



Summary for Reach 2R: Combine

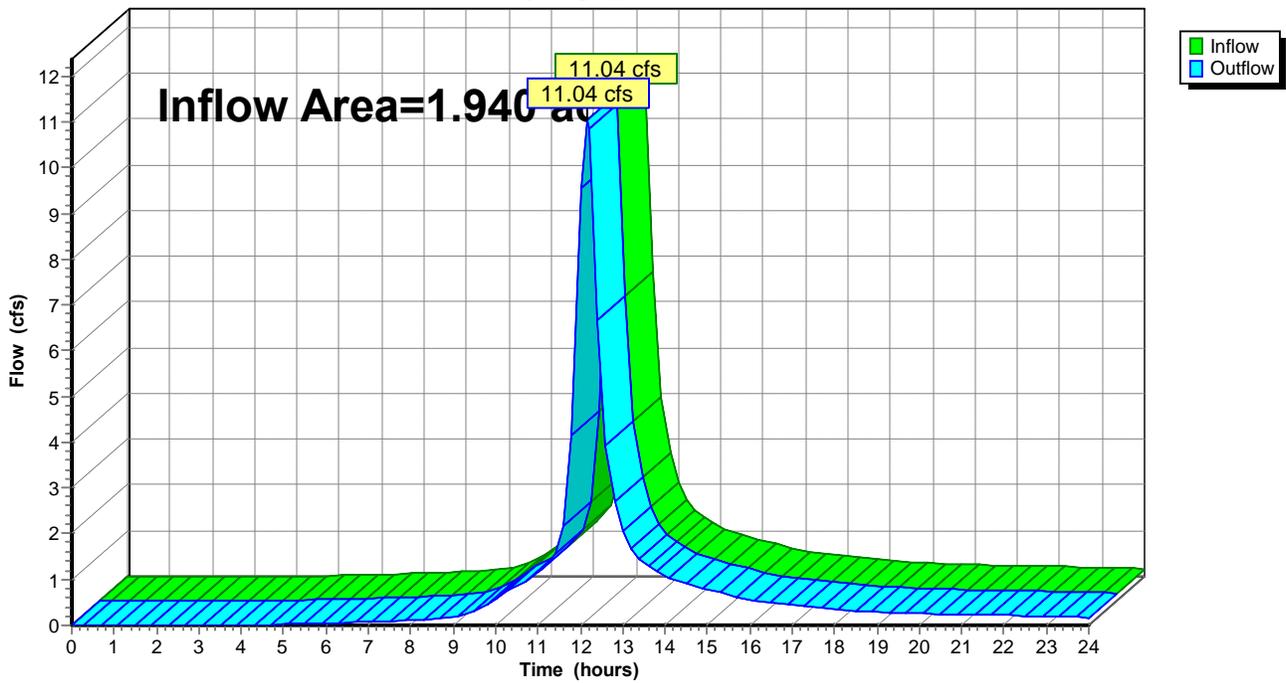
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.940 ac, 60.82% Impervious, Inflow Depth > 8.03" for 100-Year event
Inflow = 11.04 cfs @ 12.15 hrs, Volume= 1.298 af
Outflow = 11.04 cfs @ 12.15 hrs, Volume= 1.298 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



Sleep Inn Post

Type III 24-hr 100-Year Rainfall=9.84"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 9.48" for 100-Year event
 Inflow = 7.38 cfs @ 12.04 hrs, Volume= 0.821 af
 Outflow = 6.26 cfs @ 12.21 hrs, Volume= 0.708 af, Atten= 15%, Lag= 9.9 min
 Primary = 6.26 cfs @ 12.21 hrs, Volume= 0.708 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.95' @ 12.21 hrs Surf.Area= 4,586 sf Storage= 9,770 cf

Plug-Flow detention time= 129.1 min calculated for 0.702 af (85% of inflow)
 Center-of-Mass det. time= 72.0 min (815.0 - 743.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=6.09 cfs @ 12.21 hrs HW=5.93' TW=0.00' (Dynamic Tailwater)

- ↑ 1=Sharp-Crested Rectangular Weir (Weir Controls 0.71 cfs @ 1.37 fps)
- └ 2=Sharp-Crested Rectangular Weir (Weir Controls 5.37 cfs @ 4.54 fps)

Sleep Inn Post

Type III 24-hr 100-Year Rainfall=9.84"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

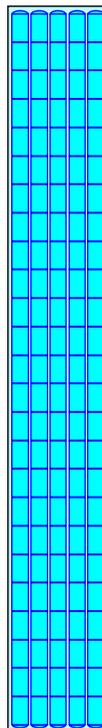
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

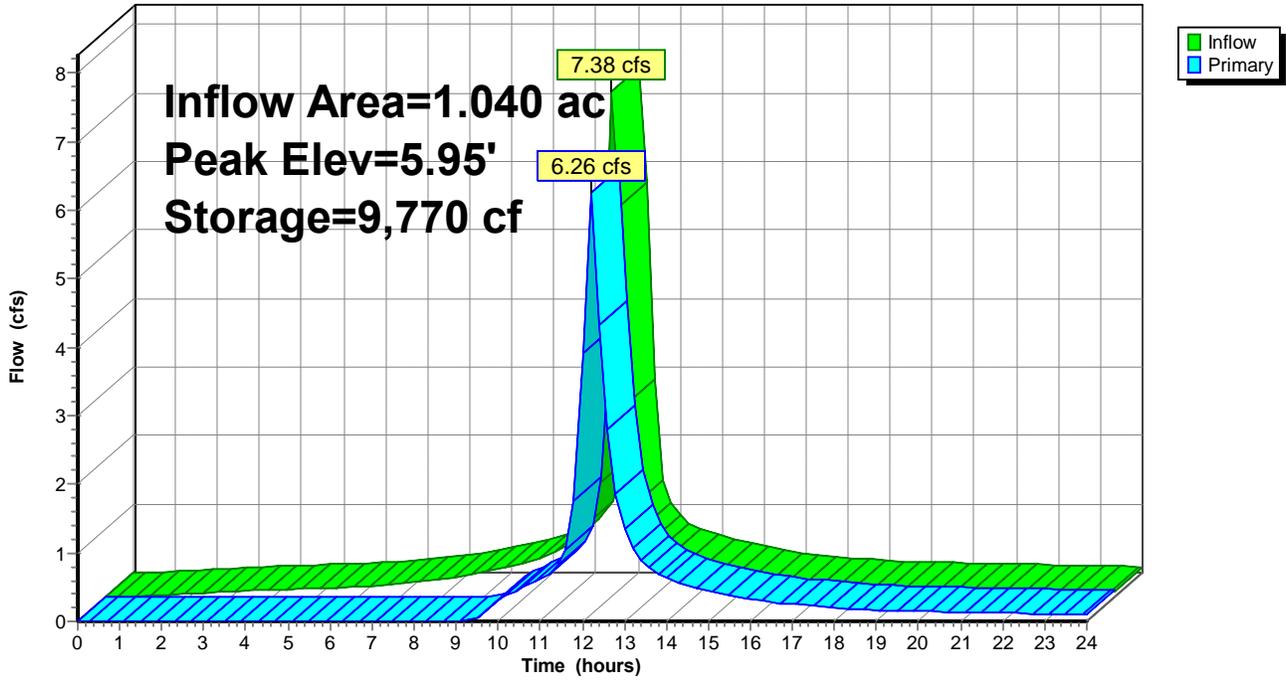
594.5 cy Field

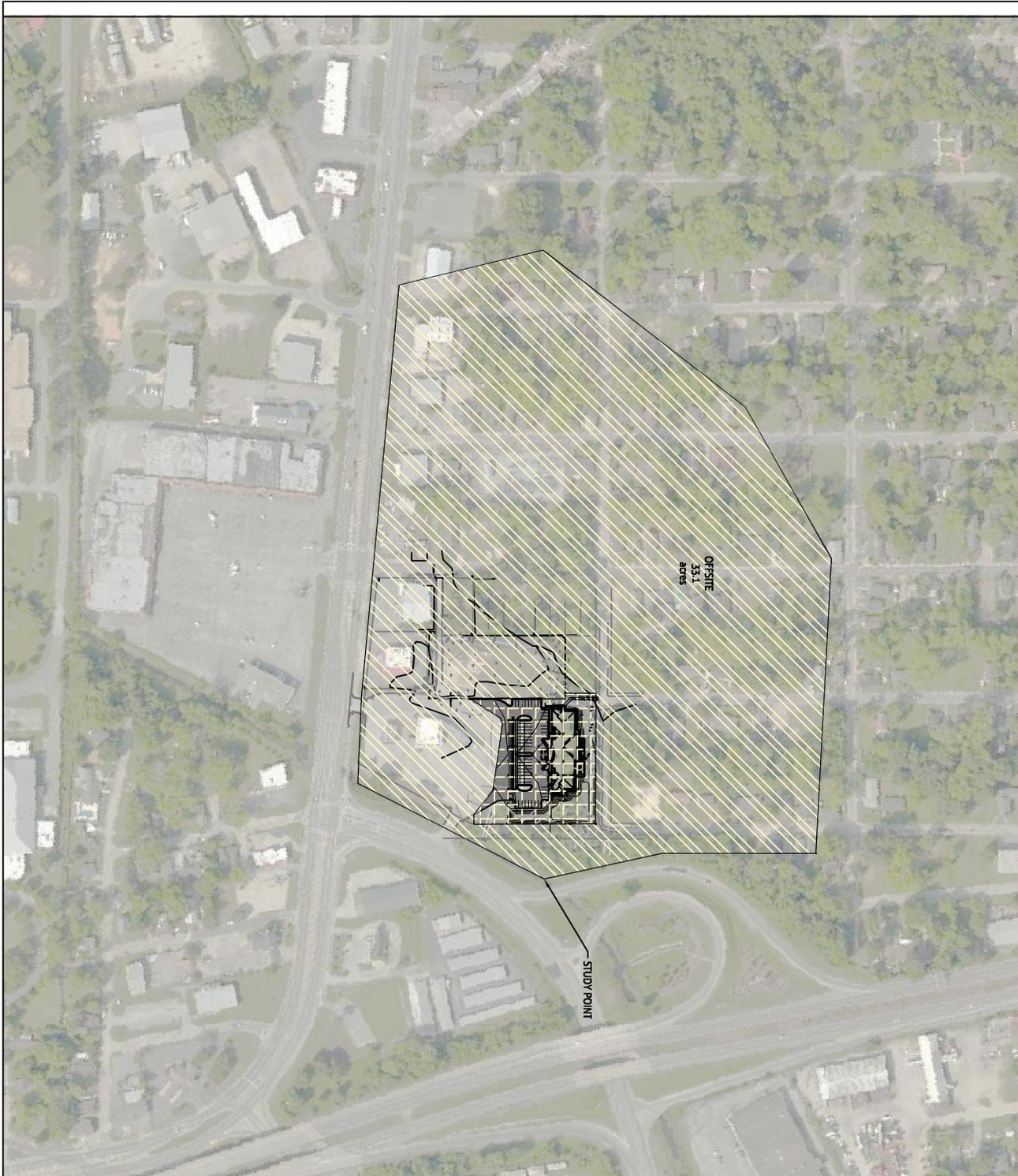
381.8 cy Stone



Pond 1P: Pond A

Hydrograph





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PROJECT NO.

SHEET NO.

DATE

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DATE

10%

822-18-03

SCALE

SKETCH



10% BASIN EXHIBIT

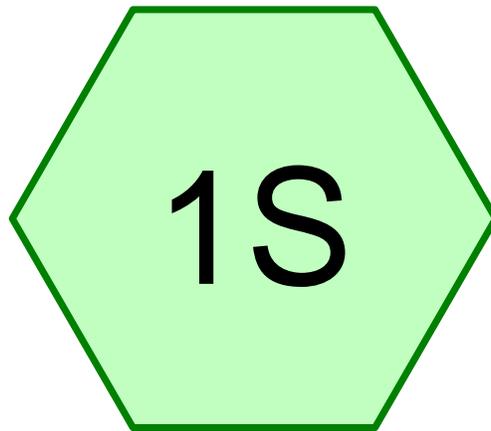
Sleep Inn / Main Stay

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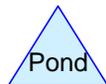
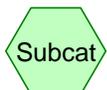
114 WEST 42ND STREET
SAVANNAH, GA 31401

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GENERAL@MAUPINENGINEERING.COM

REVISIONS		
NO.	DATE	DESCRIPTION



Pre - 10% Basin



pre - 10% basin Analysis

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
32.000	85	1/2 acre lots, 25% imp, HSG D (1S)
3.200	80	>75% Grass cover, Good, HSG D (1S)
35.200	85	TOTAL AREA

pre - 10% basin Analysis

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
35.200	HSG D	1S
0.000	Other	
35.200		TOTAL AREA

pre - 10% basin Analysis

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	32.000	0.000	32.000	1/2 acre lots, 25% imp	1S
0.000	0.000	0.000	3.200	0.000	3.200	>75% Grass cover, Good	1S
0.000	0.000	0.000	35.200	0.000	35.200	TOTAL AREA	

pre - 10% basin Analysis

Type III 24-hr 1-Year Rainfall=3.60"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 1S: Pre - 10% Basin

Runoff Area=35.200 ac 22.73% Impervious Runoff Depth>1.94"
Flow Length=1,877' Slope=0.0130 '/' Tc=39.1 min CN=85 Runoff=43.24 cfs 5.703 af

Total Runoff Area = 35.200 ac Runoff Volume = 5.703 af Average Runoff Depth = 1.94"
77.27% Pervious = 27.200 ac 22.73% Impervious = 8.000 ac

pre - 10% basin Analysis

Type III 24-hr 1-Year Rainfall=3.60"

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Summary for Subcatchment 1S: Pre - 10% Basin

Runoff = 43.24 cfs @ 12.54 hrs, Volume= 5.703 af, Depth> 1.94"

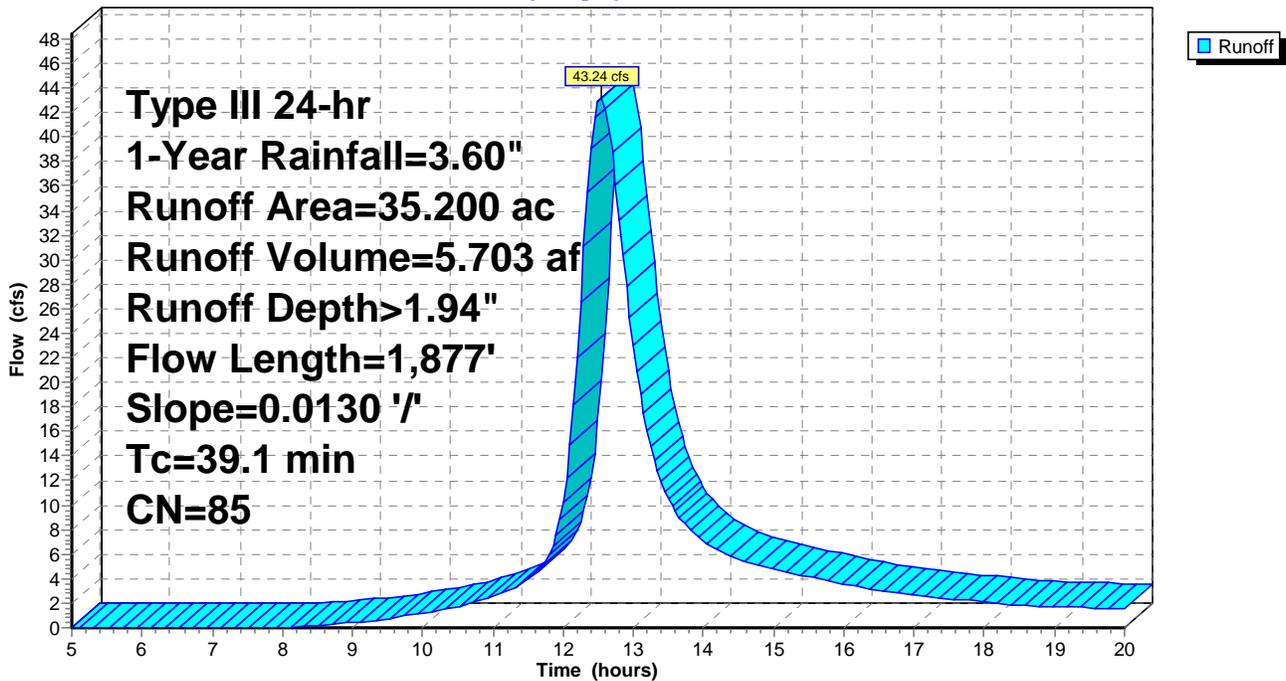
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=3.60"

Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
3.200	80	>75% Grass cover, Good, HSG D
35.200	85	Weighted Average
27.200		77.27% Pervious Area
8.000		22.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 1S: Pre - 10% Basin

Hydrograph



pre - 10% basin Analysis

Type III 24-hr 10-Year Rainfall=6.72"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 1S: Pre - 10% Basin

Runoff Area=35.200 ac 22.73% Impervious Runoff Depth>4.66"

Flow Length=1,877' Slope=0.0130 '/' Tc=39.1 min CN=85 Runoff=100.50 cfs 13.671 af

Total Runoff Area = 35.200 ac Runoff Volume = 13.671 af Average Runoff Depth = 4.66"
77.27% Pervious = 27.200 ac 22.73% Impervious = 8.000 ac

pre - 10% basin Analysis

Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Subcatchment 1S: Pre - 10% Basin

Runoff = 100.50 cfs @ 12.53 hrs, Volume= 13.671 af, Depth> 4.66"

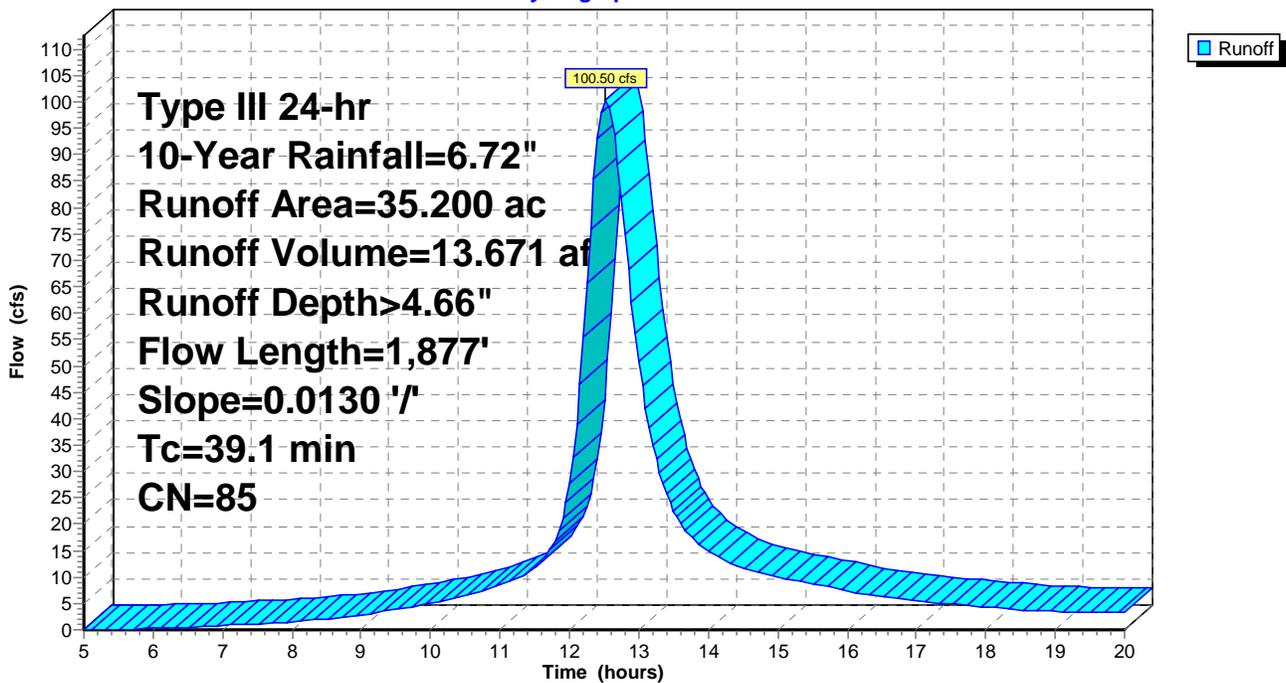
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=6.72"

Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
3.200	80	>75% Grass cover, Good, HSG D
35.200	85	Weighted Average
27.200		77.27% Pervious Area
8.000		22.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 1S: Pre - 10% Basin

Hydrograph



pre - 10% basin Analysis

Type III 24-hr 50-Year Rainfall=8.88"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 1S: Pre - 10% Basin

Runoff Area=35.200 ac 22.73% Impervious Runoff Depth>6.62"
Flow Length=1,877' Slope=0.0130 '/' Tc=39.1 min CN=85 Runoff=140.26 cfs 19.430 af

Total Runoff Area = 35.200 ac Runoff Volume = 19.430 af Average Runoff Depth = 6.62"
77.27% Pervious = 27.200 ac 22.73% Impervious = 8.000 ac

pre - 10% basin Analysis

Type III 24-hr 50-Year Rainfall=8.88"

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Summary for Subcatchment 1S: Pre - 10% Basin

Runoff = 140.26 cfs @ 12.52 hrs, Volume= 19.430 af, Depth> 6.62"

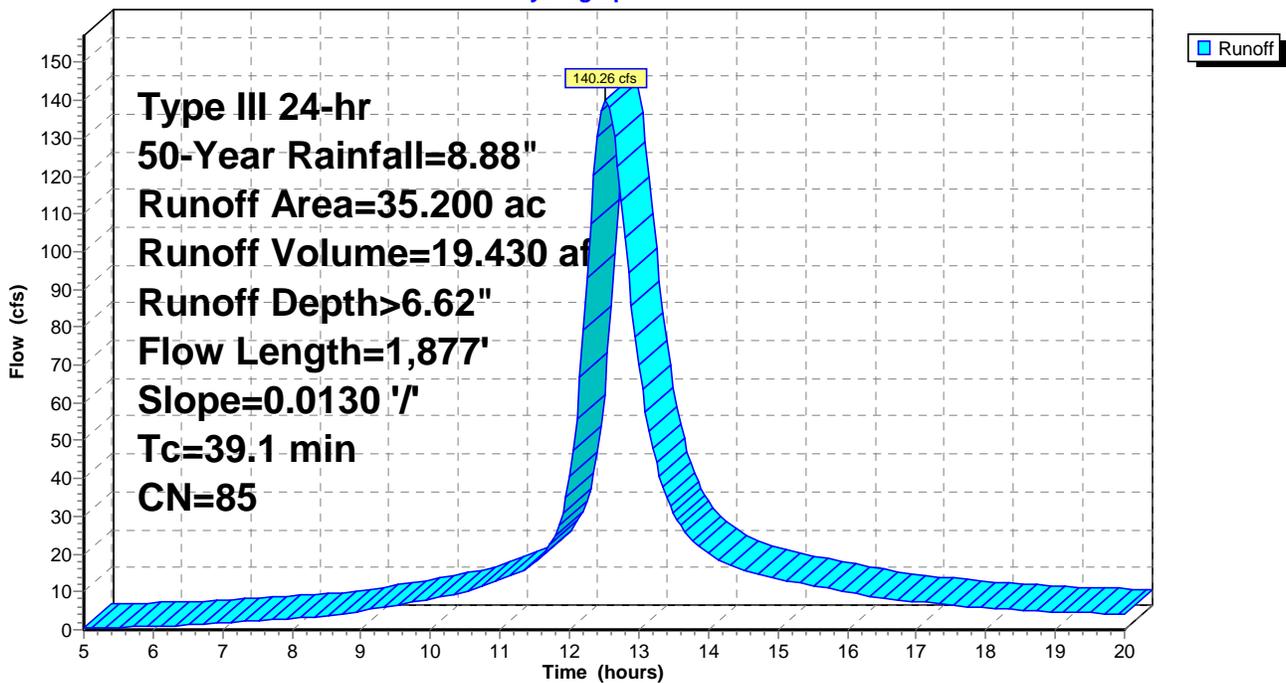
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=8.88"

Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
3.200	80	>75% Grass cover, Good, HSG D
35.200	85	Weighted Average
27.200		77.27% Pervious Area
8.000		22.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 1S: Pre - 10% Basin

Hydrograph



pre - 10% basin Analysis

Type III 24-hr 100-Year Rainfall=9.84"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 1S: Pre - 10% Basin

Runoff Area=35.200 ac 22.73% Impervious Runoff Depth>7.50"
Flow Length=1,877' Slope=0.0130 '/' Tc=39.1 min CN=85 Runoff=157.85 cfs 22.010 af

Total Runoff Area = 35.200 ac Runoff Volume = 22.010 af Average Runoff Depth = 7.50"
77.27% Pervious = 27.200 ac 22.73% Impervious = 8.000 ac

pre - 10% basin Analysis

Type III 24-hr 100-Year Rainfall=9.84"

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Summary for Subcatchment 1S: Pre - 10% Basin

Runoff = 157.85 cfs @ 12.52 hrs, Volume= 22.010 af, Depth> 7.50"

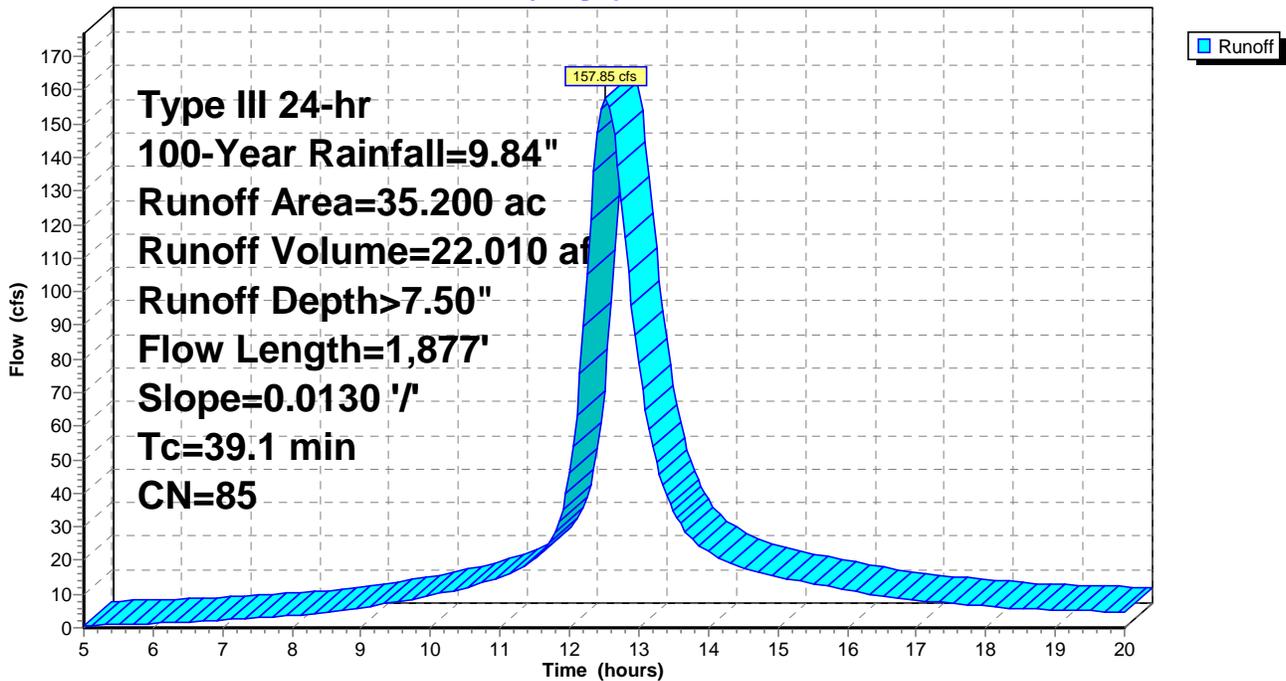
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=9.84"

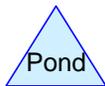
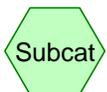
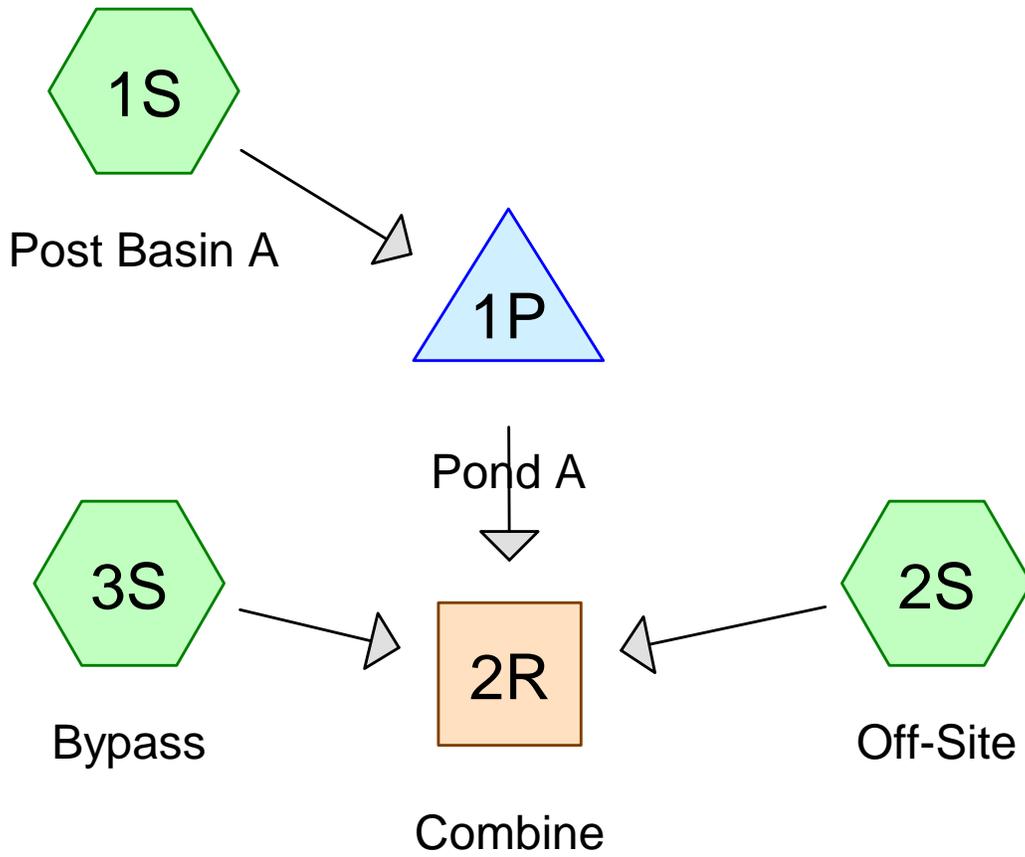
Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
3.200	80	>75% Grass cover, Good, HSG D
35.200	85	Weighted Average
27.200		77.27% Pervious Area
8.000		22.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 1S: Pre - 10% Basin

Hydrograph





Routing Diagram for post - 10% basin Analysis
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Project Notes

Rainfall events imported from "Sleep Inn PRE.hcp"

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
32.000	85	1/2 acre lots, 25% imp, HSG D (2S)
2.020	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S)
0.970	98	Paved parking & roofs (1S)
0.210	98	Roofs, HSG D (3S)
35.200	85	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
34.230	HSG D	1S, 2S, 3S
0.970	Other	1S
35.200		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	32.000	0.000	32.000	1/2 acre lots, 25% imp	2S
0.000	0.000	0.000	2.020	0.000	2.020	>75% Grass cover, Good	1S, 2S, 3S
0.000	0.000	0.000	0.000	0.970	0.970	Paved parking & roofs	1S
0.000	0.000	0.000	0.210	0.000	0.210	Roofs	3S
0.000	0.000	0.000	34.230	0.970	35.200	TOTAL AREA	

post - 10% basin Analysis

Type III 24-hr 1-Year Rainfall=3.60"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>3.25"
Tc=5.0 min CN=97 Runoff=2.64 cfs 0.282 af

Subcatchment 2S: Off-Site Runoff Area=33.260 ac 24.05% Impervious Runoff Depth>2.09"
Flow Length=1,877' Slope=0.0130 '/' Tc=39.1 min CN=85 Runoff=39.94 cfs 5.792 af

Subcatchment 3S: Bypass Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>2.02"
Tc=5.0 min CN=84 Runoff=1.53 cfs 0.152 af

Reach 2R: Combine Inflow=41.39 cfs 6.115 af
Outflow=41.39 cfs 6.115 af

Pond 1P: Pond A Peak Elev=4.57' Storage=6,535 cf Inflow=2.64 cfs 0.282 af
Outflow=1.25 cfs 0.172 af

Total Runoff Area = 35.200 ac Runoff Volume = 6.225 af Average Runoff Depth = 2.12"
73.92% Pervious = 26.020 ac 26.08% Impervious = 9.180 ac

post - 10% basin Analysis

Type III 24-hr 1-Year Rainfall=3.60"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.64 cfs @ 12.05 hrs, Volume= 0.282 af, Depth> 3.25"

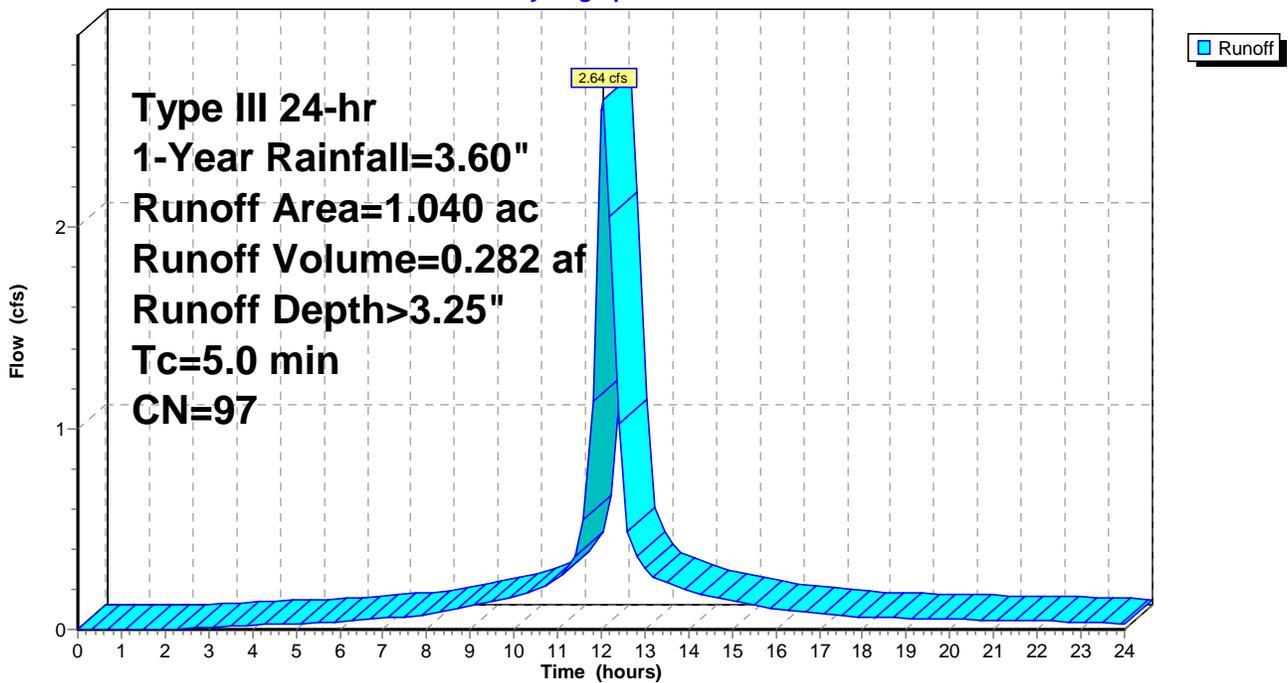
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 1-Year Rainfall=3.60"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 1-Year Rainfall=3.60"

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Summary for Subcatchment 2S: Off-Site

Runoff = 39.94 cfs @ 12.56 hrs, Volume= 5.792 af, Depth> 2.09"

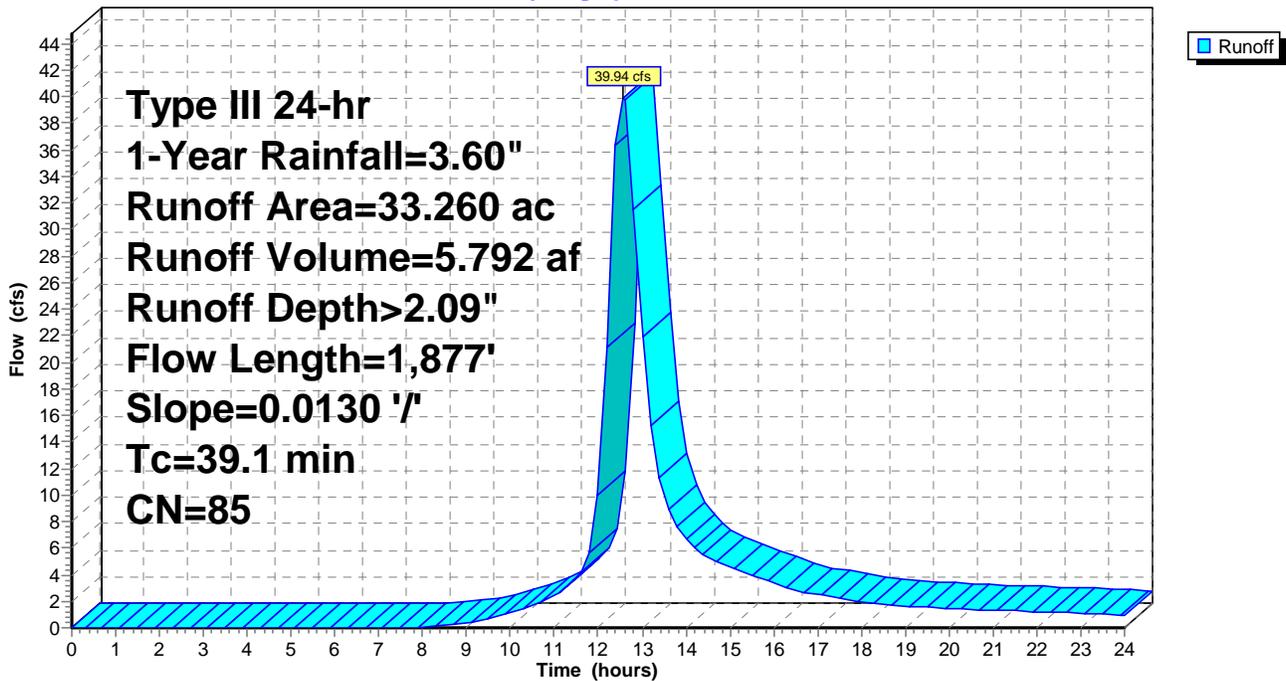
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 1-Year Rainfall=3.60"

Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
1.260	80	>75% Grass cover, Good, HSG D
33.260	85	Weighted Average
25.260		75.95% Pervious Area
8.000		24.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 2S: Off-Site

Hydrograph



post - 10% basin Analysis

Type III 24-hr 1-Year Rainfall=3.60"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.53 cfs @ 12.07 hrs, Volume= 0.152 af, Depth> 2.02"

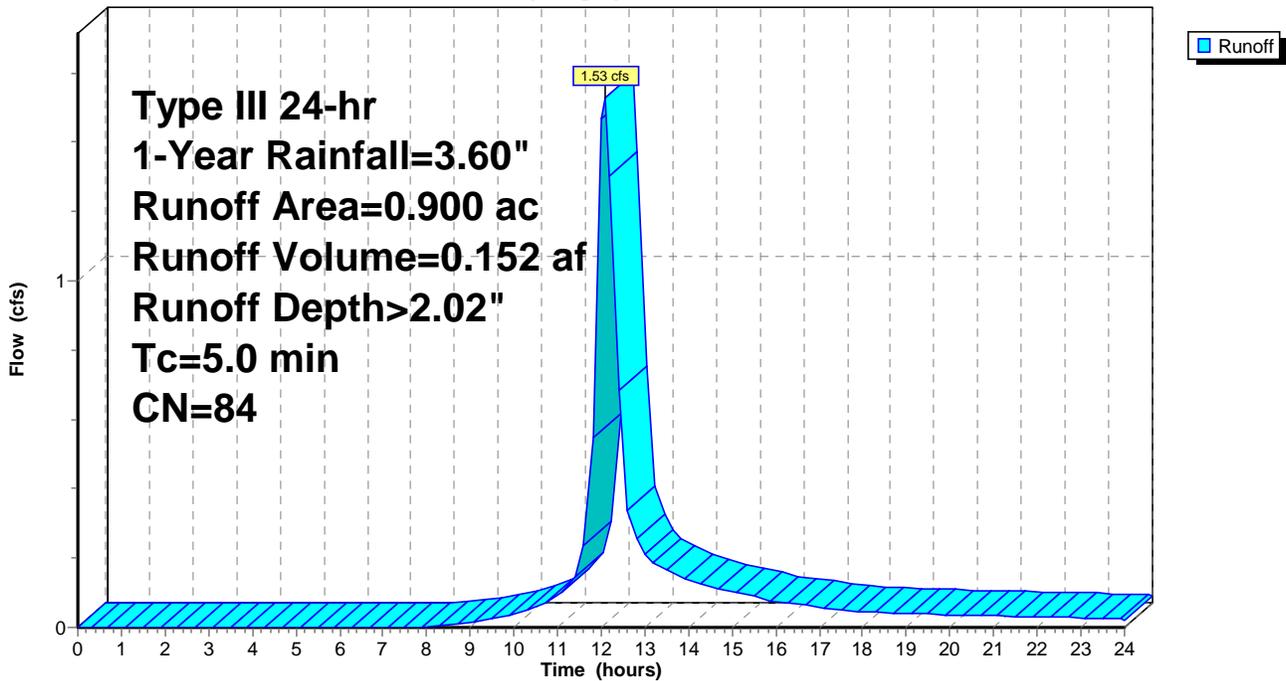
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 1-Year Rainfall=3.60"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



post - 10% basin Analysis

Type III 24-hr 1-Year Rainfall=3.60"

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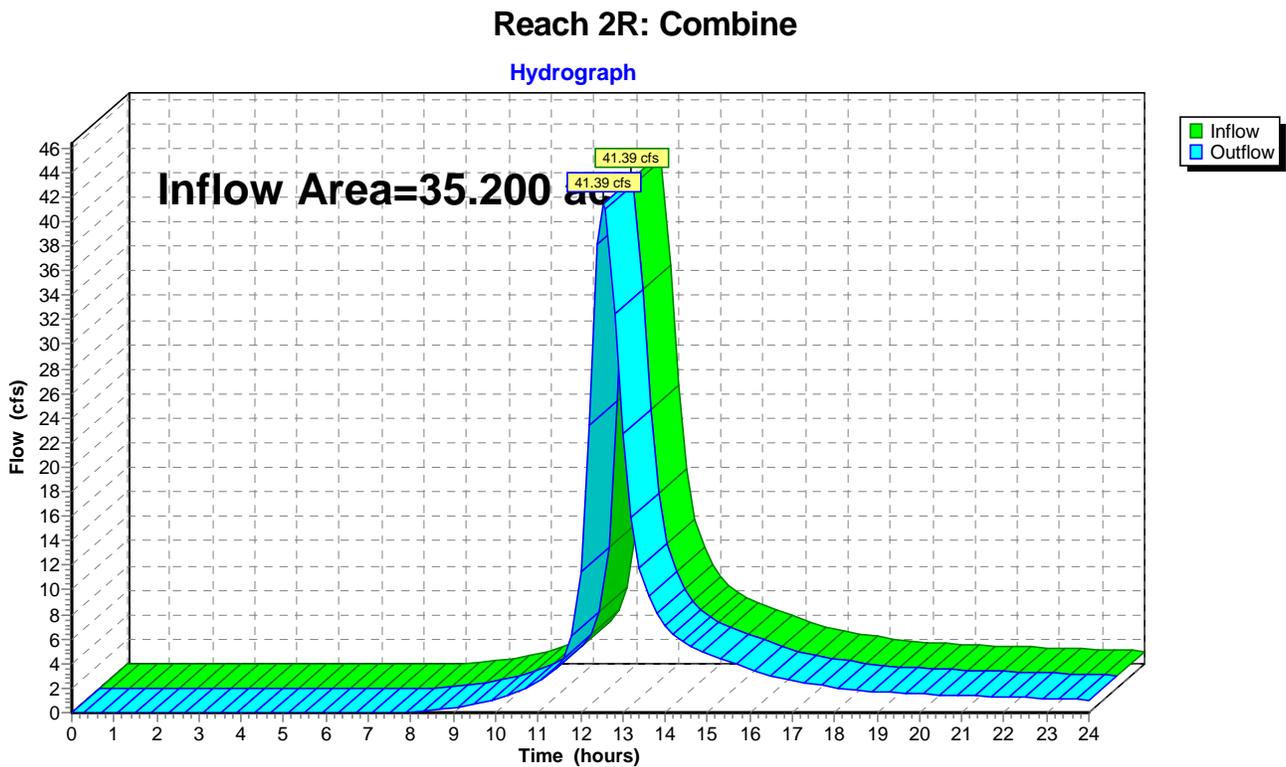
Page 10

Summary for Reach 2R: Combine

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 35.200 ac, 26.08% Impervious, Inflow Depth > 2.08" for 1-Year event
Inflow = 41.39 cfs @ 12.55 hrs, Volume= 6.115 af
Outflow = 41.39 cfs @ 12.55 hrs, Volume= 6.115 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs



post - 10% basin Analysis

Type III 24-hr 1-Year Rainfall=3.60"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 3.25" for 1-Year event
 Inflow = 2.64 cfs @ 12.05 hrs, Volume= 0.282 af
 Outflow = 1.25 cfs @ 12.41 hrs, Volume= 0.172 af, Atten= 53%, Lag= 21.7 min
 Primary = 1.25 cfs @ 12.41 hrs, Volume= 0.172 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 4.57' @ 12.41 hrs Surf.Area= 4,586 sf Storage= 6,535 cf

Plug-Flow detention time= 222.1 min calculated for 0.172 af (61% of inflow)
 Center-of-Mass det. time= 119.2 min (881.3 - 762.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=1.24 cfs @ 12.41 hrs HW=4.57' TW=0.00' (Dynamic Tailwater)

- └─1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- └─2=Sharp-Crested Rectangular Weir (Weir Controls 1.24 cfs @ 2.46 fps)

post - 10% basin Analysis

Type III 24-hr 1-Year Rainfall=3.60"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

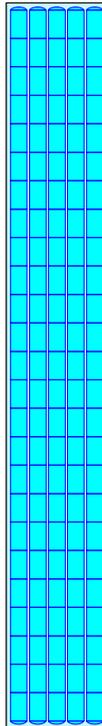
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

594.5 cy Field

381.8 cy Stone



post - 10% basin Analysis

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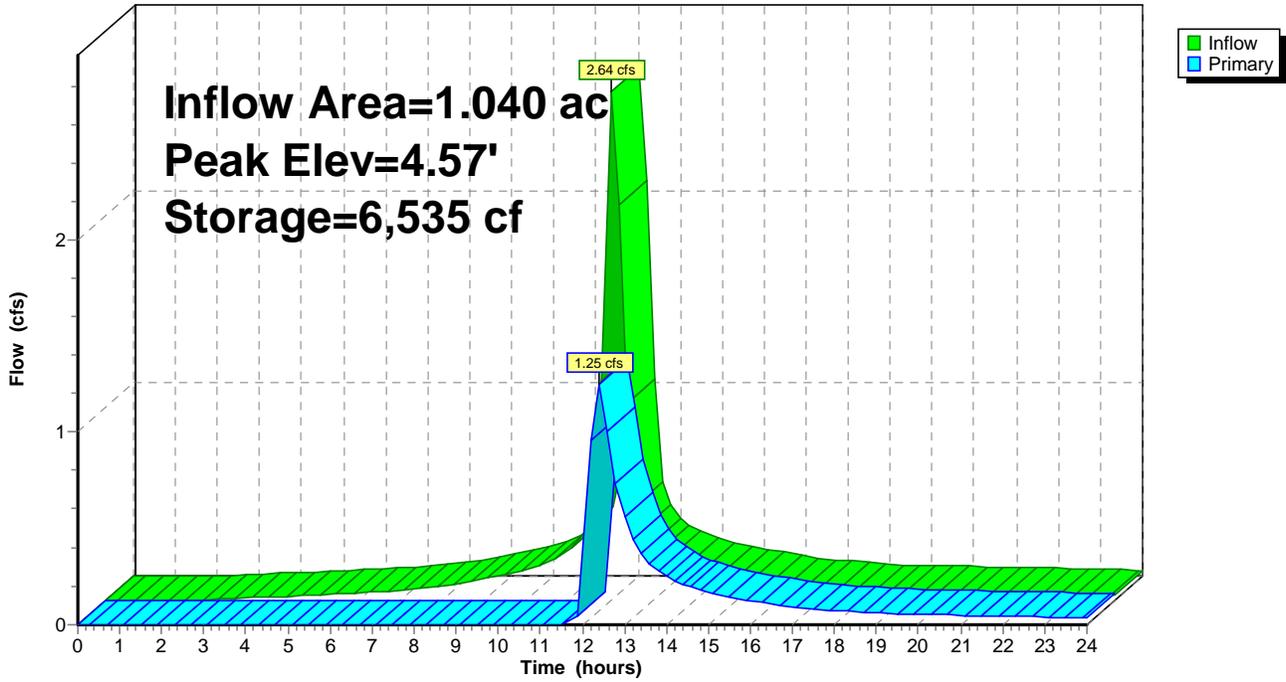
Type III 24-hr 1-Year Rainfall=3.60"

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Pond 1P: Pond A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 5-year Rainfall=6.00"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>5.64"
Tc=5.0 min CN=97 Runoff=4.47 cfs 0.489 af

Subcatchment 2S: Off-Site Runoff Area=33.260 ac 24.05% Impervious Runoff Depth>4.28"
Flow Length=1,877' Slope=0.0130 '/ Tc=39.1 min CN=85 Runoff=80.39 cfs 11.855 af

Subcatchment 3S: Bypass Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>4.20"
Tc=5.0 min CN=84 Runoff=3.16 cfs 0.315 af

Reach 2R: Combine Inflow=83.35 cfs 12.547 af
Outflow=83.35 cfs 12.547 af

Pond 1P: Pond A Peak Elev=5.18' Storage=8,295 cf Inflow=4.47 cfs 0.489 af
Outflow=3.22 cfs 0.378 af

Total Runoff Area = 35.200 ac Runoff Volume = 12.659 af Average Runoff Depth = 4.32"
73.92% Pervious = 26.020 ac 26.08% Impervious = 9.180 ac

post - 10% basin Analysis

Type III 24-hr 5-year Rainfall=6.00"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 4.47 cfs @ 12.05 hrs, Volume= 0.489 af, Depth> 5.64"

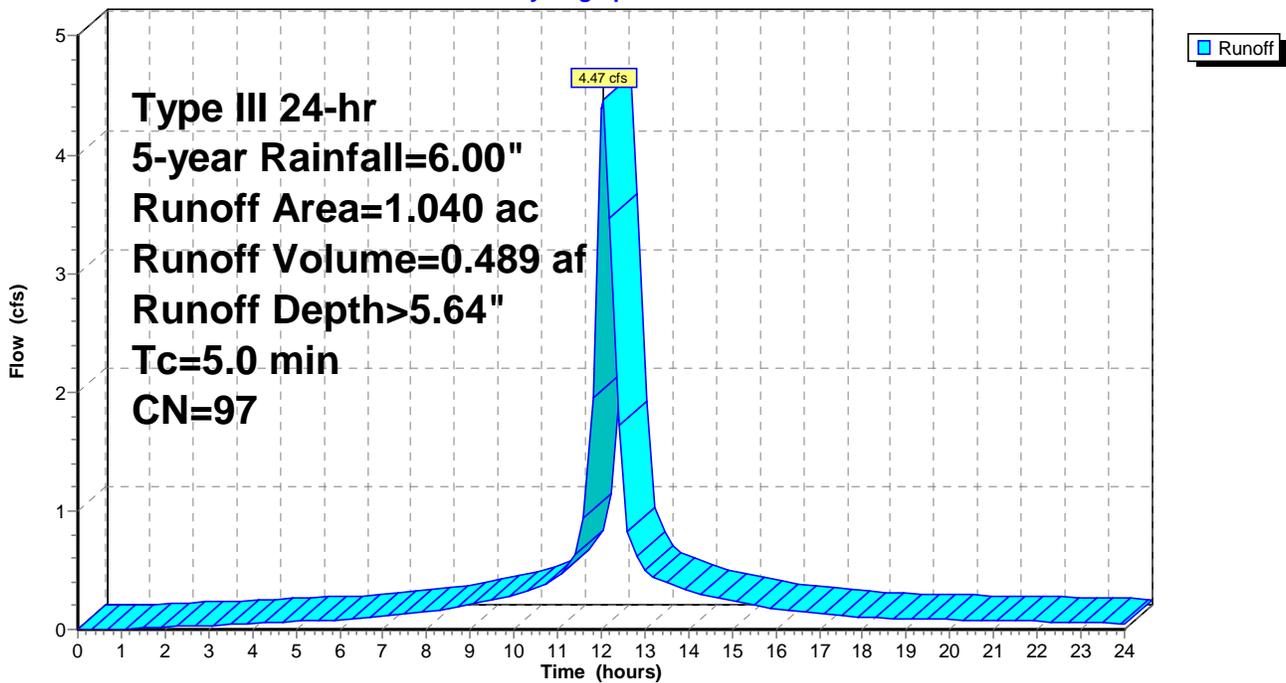
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Type III 24-hr 5-year Rainfall=6.00"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 5-year Rainfall=6.00"

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Summary for Subcatchment 2S: Off-Site

Runoff = 80.39 cfs @ 12.54 hrs, Volume= 11.855 af, Depth> 4.28"

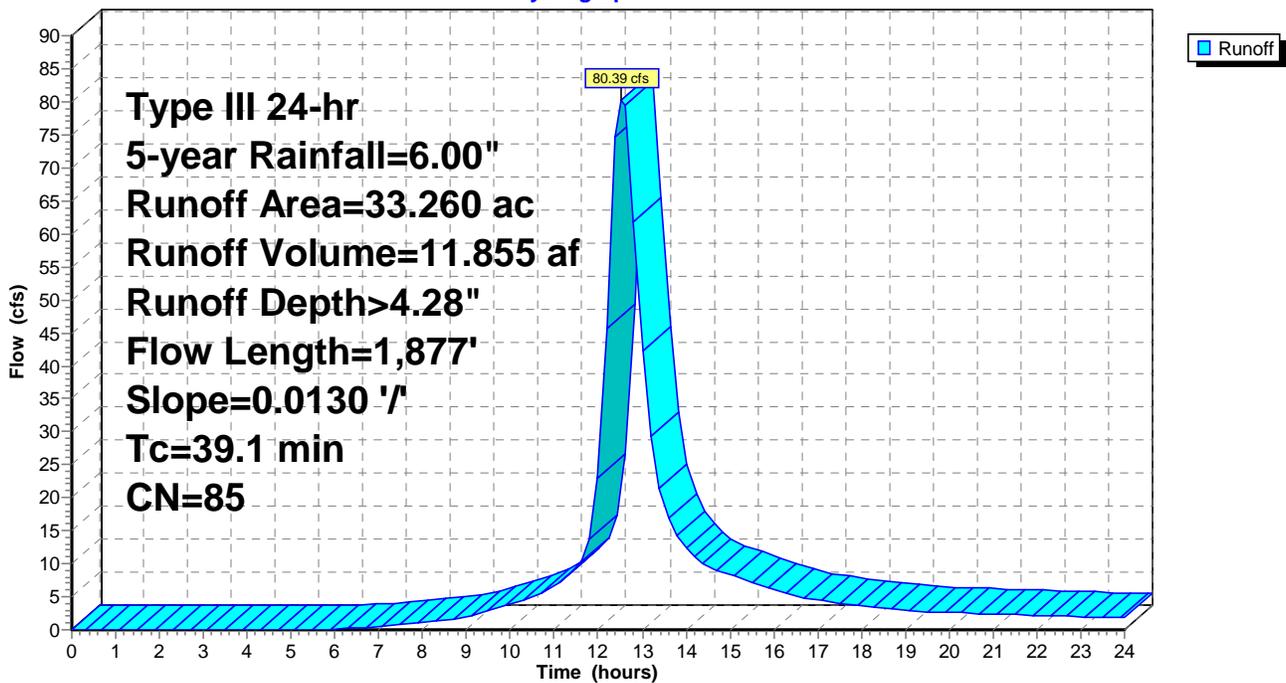
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 5-year Rainfall=6.00"

Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
1.260	80	>75% Grass cover, Good, HSG D
33.260	85	Weighted Average
25.260		75.95% Pervious Area
8.000		24.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 2S: Off-Site

Hydrograph



post - 10% basin Analysis

Type III 24-hr 5-year Rainfall=6.00"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.16 cfs @ 12.06 hrs, Volume= 0.315 af, Depth> 4.20"

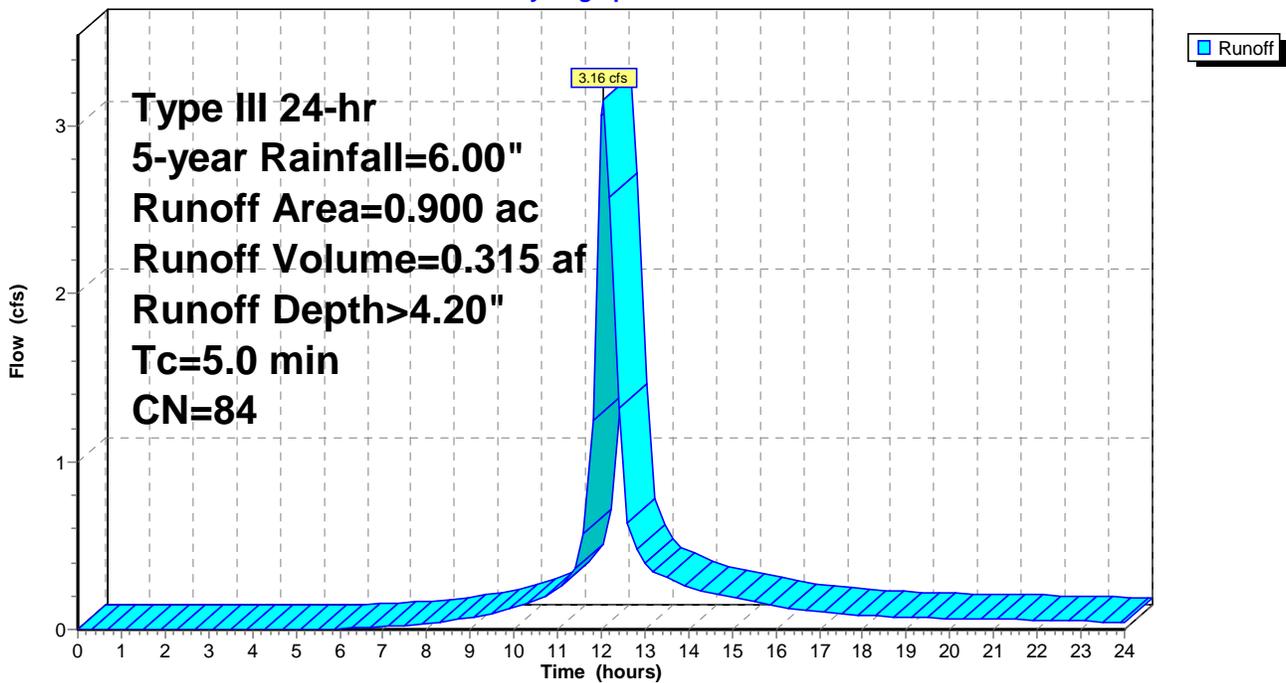
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, $dt=0.20$ hrs
 Type III 24-hr 5-year Rainfall=6.00"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



post - 10% basin Analysis

Type III 24-hr 5-year Rainfall=6.00"

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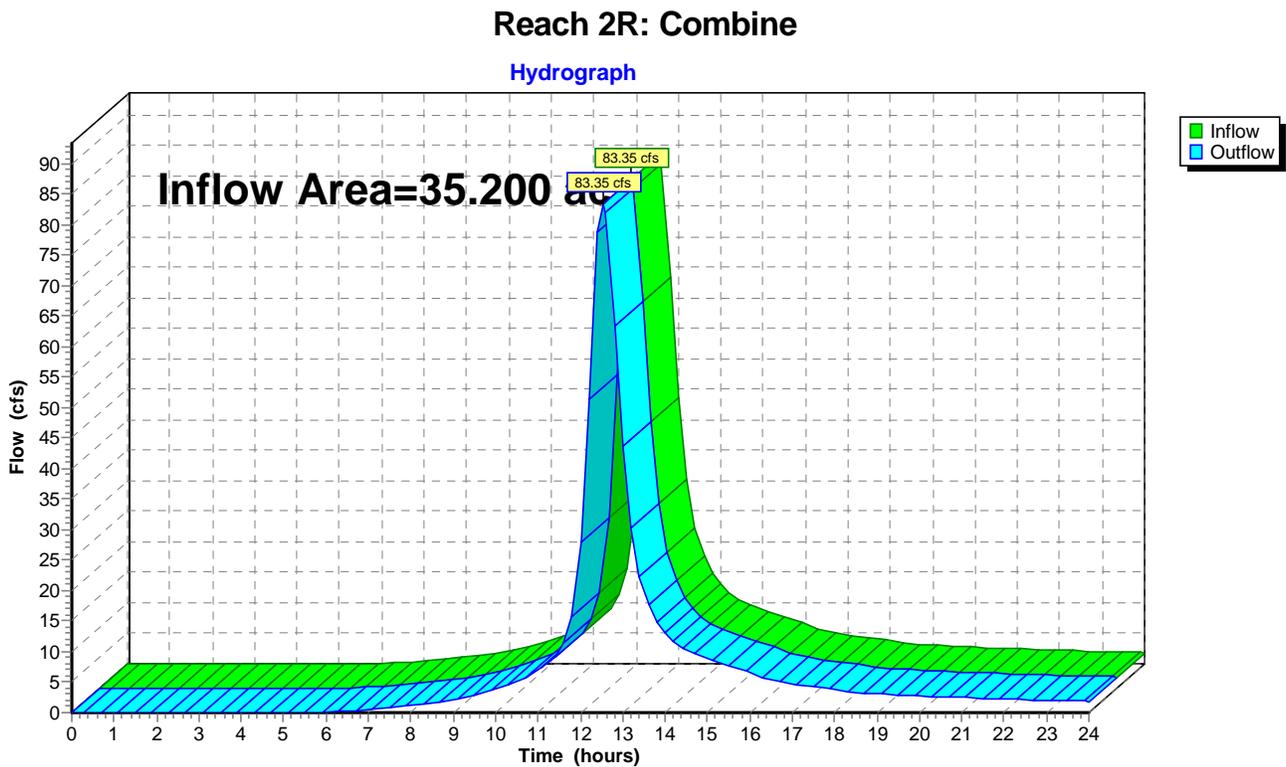
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Summary for Reach 2R: Combine

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 35.200 ac, 26.08% Impervious, Inflow Depth > 4.28" for 5-year event
Inflow = 83.35 cfs @ 12.53 hrs, Volume= 12.547 af
Outflow = 83.35 cfs @ 12.53 hrs, Volume= 12.547 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs



post - 10% basin Analysis

Type III 24-hr 5-year Rainfall=6.00"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 5.64" for 5-year event
 Inflow = 4.47 cfs @ 12.05 hrs, Volume= 0.489 af
 Outflow = 3.22 cfs @ 12.25 hrs, Volume= 0.378 af, Atten= 28%, Lag= 12.4 min
 Primary = 3.22 cfs @ 12.25 hrs, Volume= 0.378 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.18' @ 12.25 hrs Surf.Area= 4,586 sf Storage= 8,295 cf

Plug-Flow detention time= 166.3 min calculated for 0.375 af (77% of inflow)
 Center-of-Mass det. time= 89.9 min (841.0 - 751.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=3.07 cfs @ 12.25 hrs HW=5.14' TW=0.00' (Dynamic Tailwater)

- └─1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- └─2=Sharp-Crested Rectangular Weir (Weir Controls 3.07 cfs @ 3.49 fps)

post - 10% basin Analysis

Type III 24-hr 5-year Rainfall=6.00"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

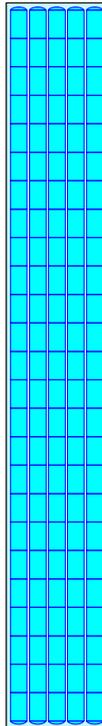
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

594.5 cy Field

381.8 cy Stone



post - 10% basin Analysis

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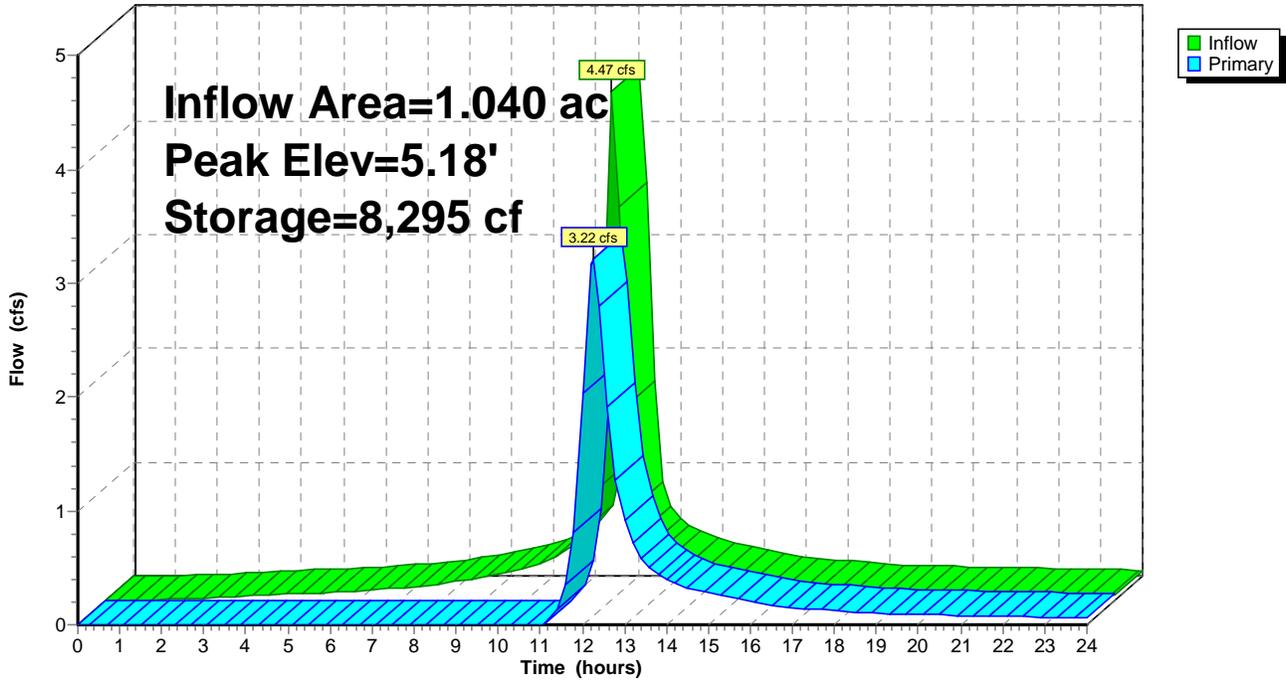
Type III 24-hr 5-year Rainfall=6.00"

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Pond 1P: Pond A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 10-Year Rainfall=6.72"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>6.36"
Tc=5.0 min CN=97 Runoff=5.02 cfs 0.551 af

Subcatchment 2S: Off-Site Runoff Area=33.260 ac 24.05% Impervious Runoff Depth>4.96"
Flow Length=1,877' Slope=0.0130 '/' Tc=39.1 min CN=85 Runoff=92.62 cfs 13.738 af

Subcatchment 3S: Bypass Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>4.87"
Tc=5.0 min CN=84 Runoff=3.65 cfs 0.366 af

Reach 2R: Combine Inflow=95.96 cfs 14.543 af
Outflow=95.96 cfs 14.543 af

Pond 1P: Pond A Peak Elev=5.34' Storage=8,642 cf Inflow=5.02 cfs 0.551 af
Outflow=3.72 cfs 0.440 af

Total Runoff Area = 35.200 ac Runoff Volume = 14.655 af Average Runoff Depth = 5.00"
73.92% Pervious = 26.020 ac 26.08% Impervious = 9.180 ac

post - 10% basin Analysis

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Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 5.02 cfs @ 12.04 hrs, Volume= 0.551 af, Depth> 6.36"

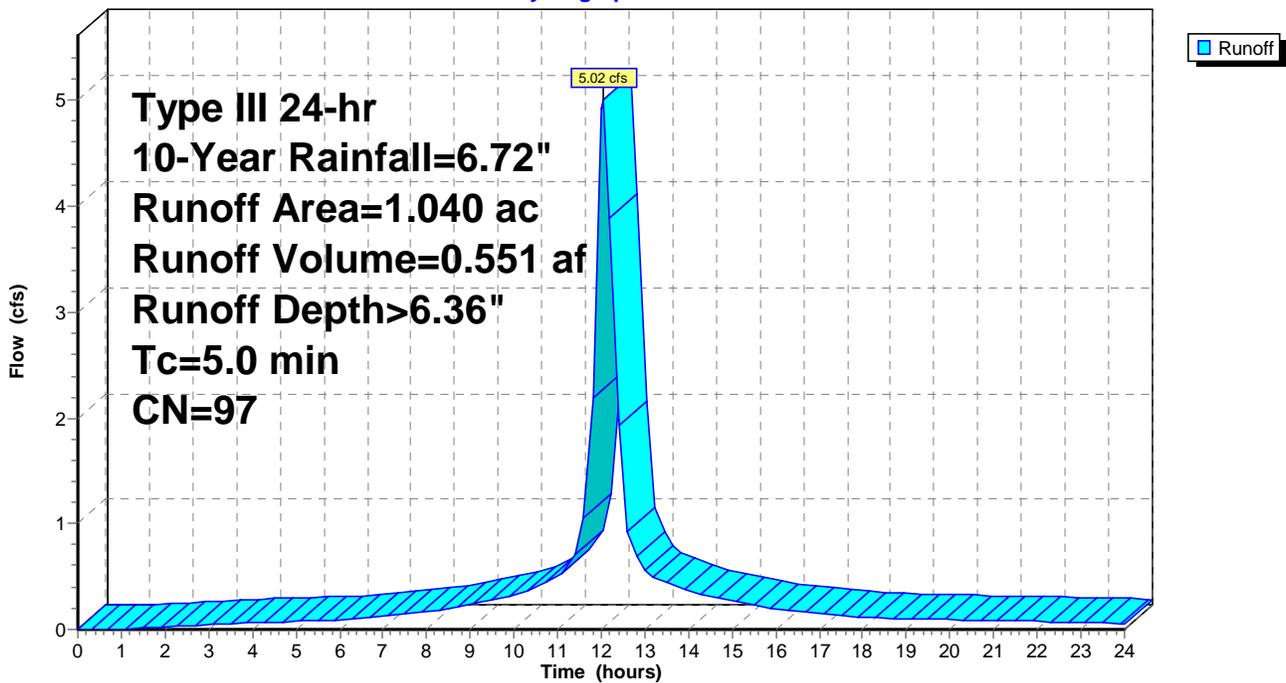
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=6.72"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Subcatchment 2S: Off-Site

Runoff = 92.62 cfs @ 12.54 hrs, Volume= 13.738 af, Depth> 4.96"

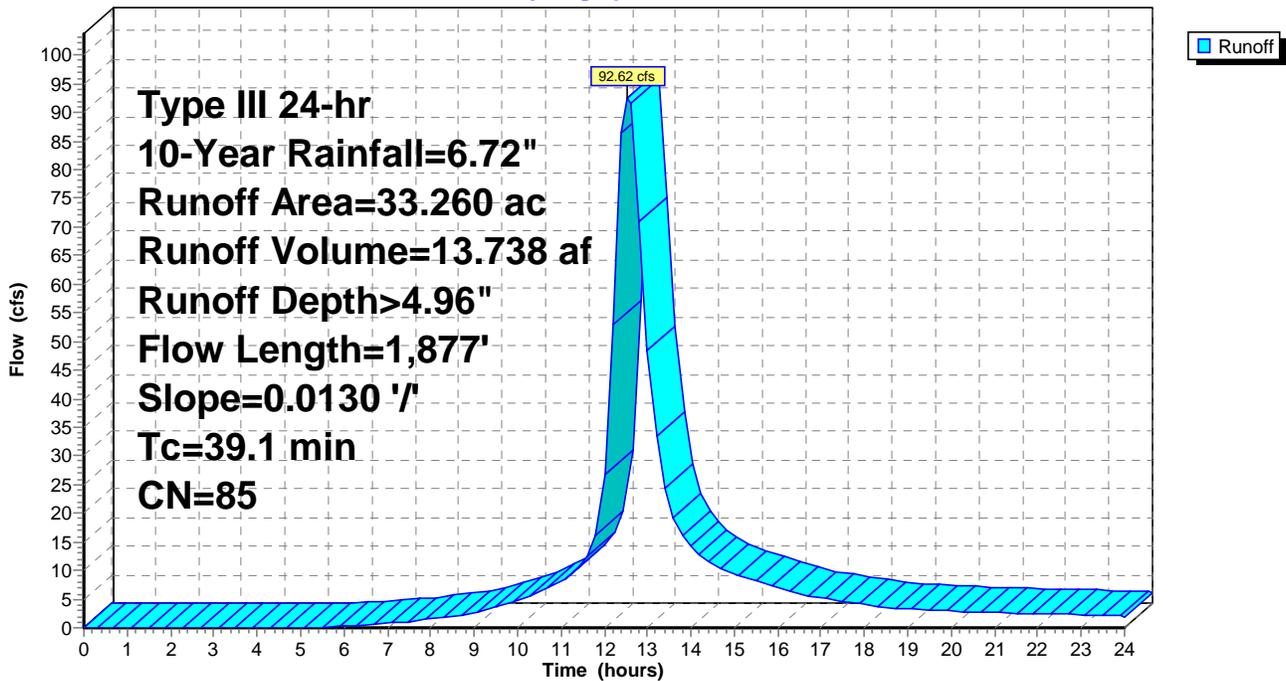
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=6.72"

Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
1.260	80	>75% Grass cover, Good, HSG D
33.260	85	Weighted Average
25.260		75.95% Pervious Area
8.000		24.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 2S: Off-Site

Hydrograph



post - 10% basin Analysis

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Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.65 cfs @ 12.06 hrs, Volume= 0.366 af, Depth> 4.87"

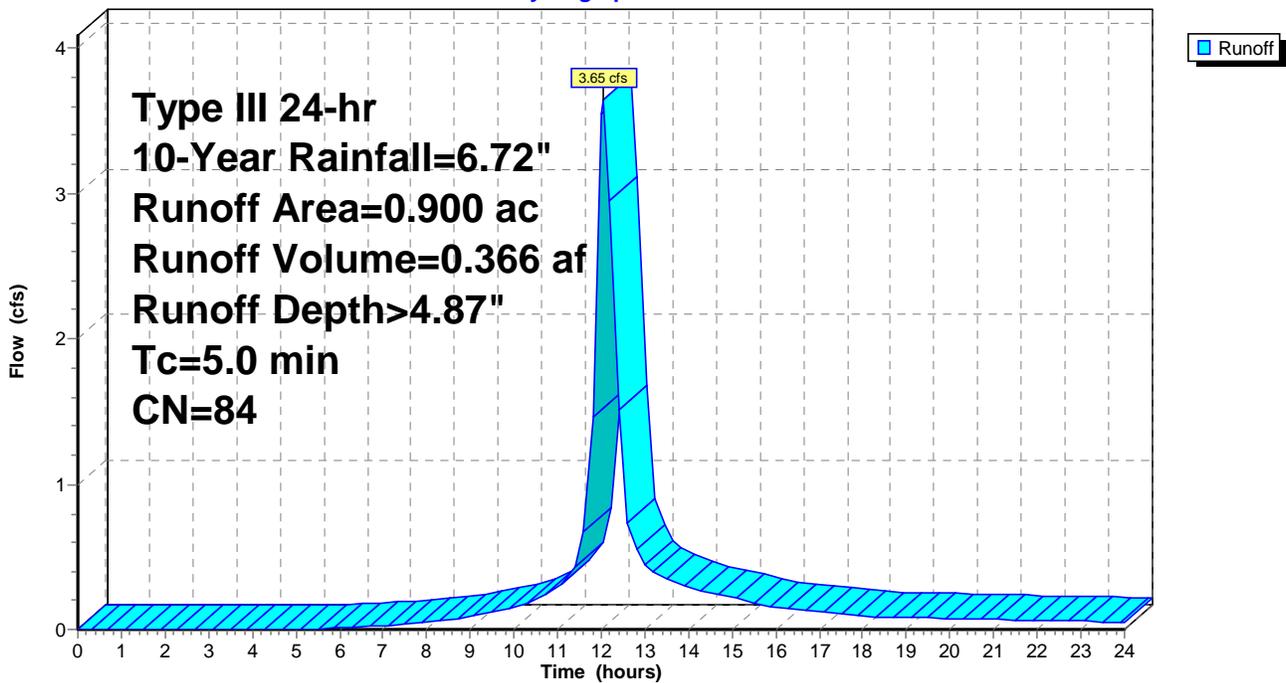
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 10-Year Rainfall=6.72"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



post - 10% basin Analysis

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Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Reach 2R: Combine

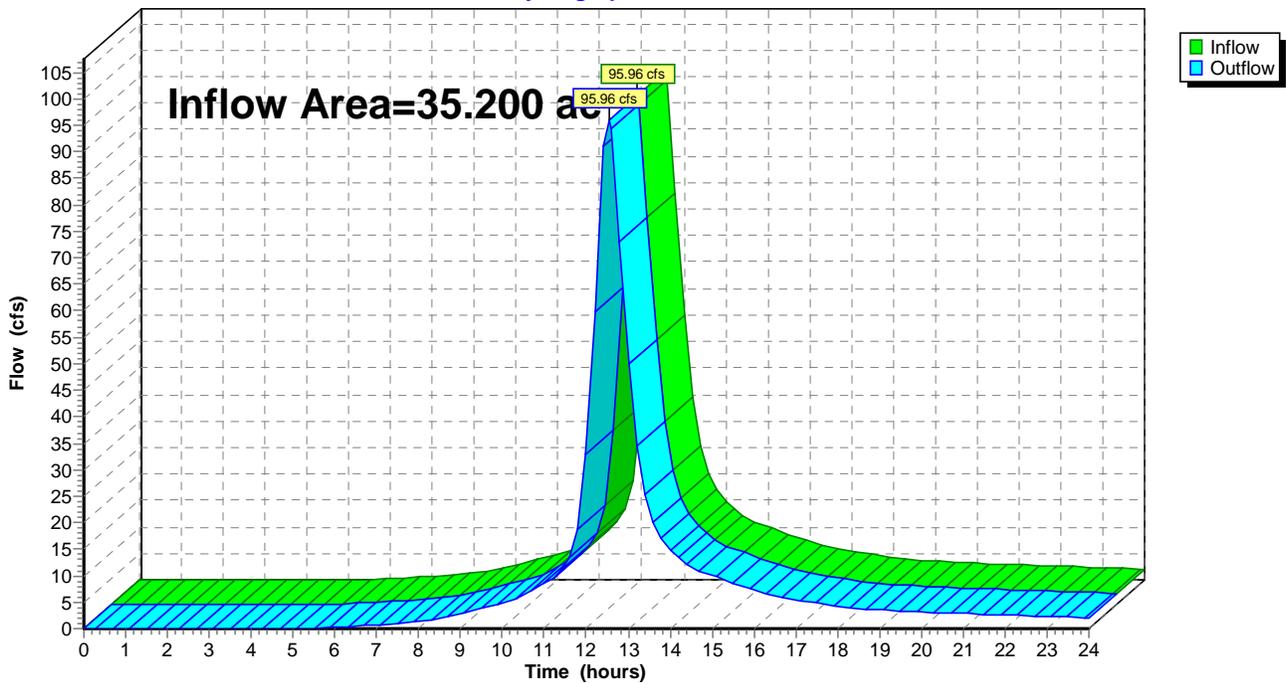
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 35.200 ac, 26.08% Impervious, Inflow Depth > 4.96" for 10-Year event
Inflow = 95.96 cfs @ 12.53 hrs, Volume= 14.543 af
Outflow = 95.96 cfs @ 12.53 hrs, Volume= 14.543 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



post - 10% basin Analysis

Type III 24-hr 10-Year Rainfall=6.72"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 6.36" for 10-Year event
 Inflow = 5.02 cfs @ 12.04 hrs, Volume= 0.551 af
 Outflow = 3.72 cfs @ 12.24 hrs, Volume= 0.440 af, Atten= 26%, Lag= 11.8 min
 Primary = 3.72 cfs @ 12.24 hrs, Volume= 0.440 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.34' @ 12.24 hrs Surf.Area= 4,586 sf Storage= 8,642 cf

Plug-Flow detention time= 160.9 min calculated for 0.440 af (80% of inflow)
 Center-of-Mass det. time= 85.6 min (834.7 - 749.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=3.57 cfs @ 12.24 hrs HW=5.30' TW=0.00' (Dynamic Tailwater)

- └─1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- └─2=Sharp-Crested Rectangular Weir (Weir Controls 3.57 cfs @ 3.72 fps)

post - 10% basin Analysis

Type III 24-hr 10-Year Rainfall=6.72"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

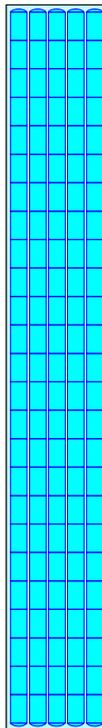
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

594.5 cy Field

381.8 cy Stone



post - 10% basin Analysis

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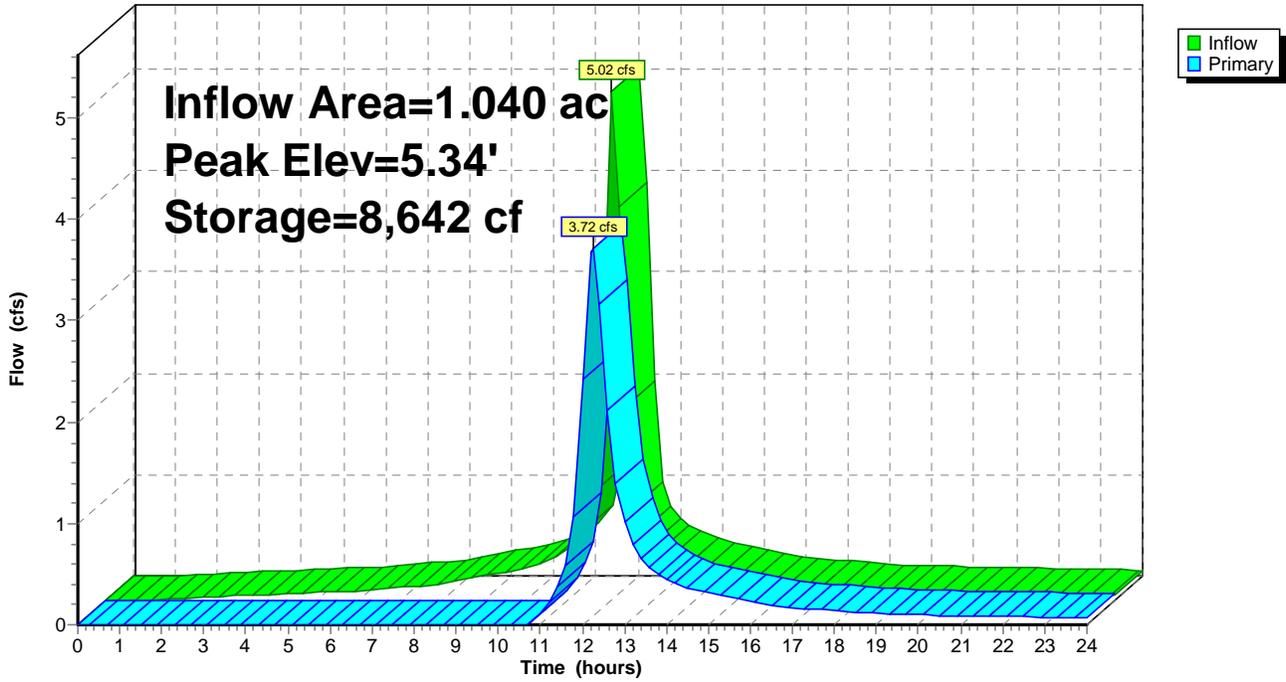
Type III 24-hr 10-Year Rainfall=6.72"

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Pond 1P: Pond A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 25-Year Rainfall=7.92"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A

Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>7.56"
Tc=5.0 min CN=97 Runoff=5.92 cfs 0.655 af

Subcatchment 2S: Off-Site

Runoff Area=33.260 ac 24.05% Impervious Runoff Depth>6.10"
Flow Length=1,877' Slope=0.0130 '/' Tc=39.1 min CN=85 Runoff=112.97 cfs 16.912 af

Subcatchment 3S: Bypass

Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>6.02"
Tc=5.0 min CN=84 Runoff=4.48 cfs 0.451 af

Reach 2R: Combine

Inflow=116.92 cfs 17.906 af
Outflow=116.92 cfs 17.906 af

Pond 1P: Pond A

Peak Elev=5.62' Storage=9,167 cf Inflow=5.92 cfs 0.655 af
Outflow=4.56 cfs 0.543 af

Total Runoff Area = 35.200 ac Runoff Volume = 18.019 af Average Runoff Depth = 6.14"
73.92% Pervious = 26.020 ac 26.08% Impervious = 9.180 ac

post - 10% basin Analysis

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Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.92 cfs @ 12.04 hrs, Volume= 0.655 af, Depth> 7.56"

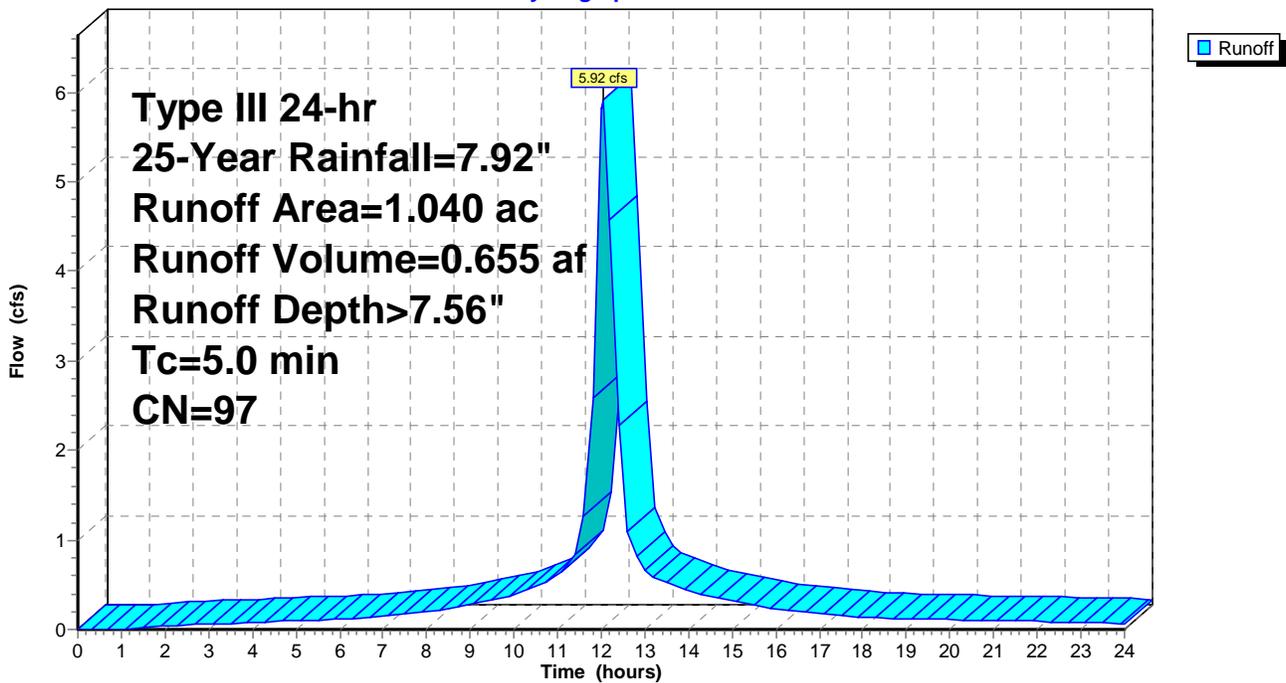
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=7.92"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Subcatchment 2S: Off-Site

Runoff = 112.97 cfs @ 12.54 hrs, Volume= 16.912 af, Depth> 6.10"

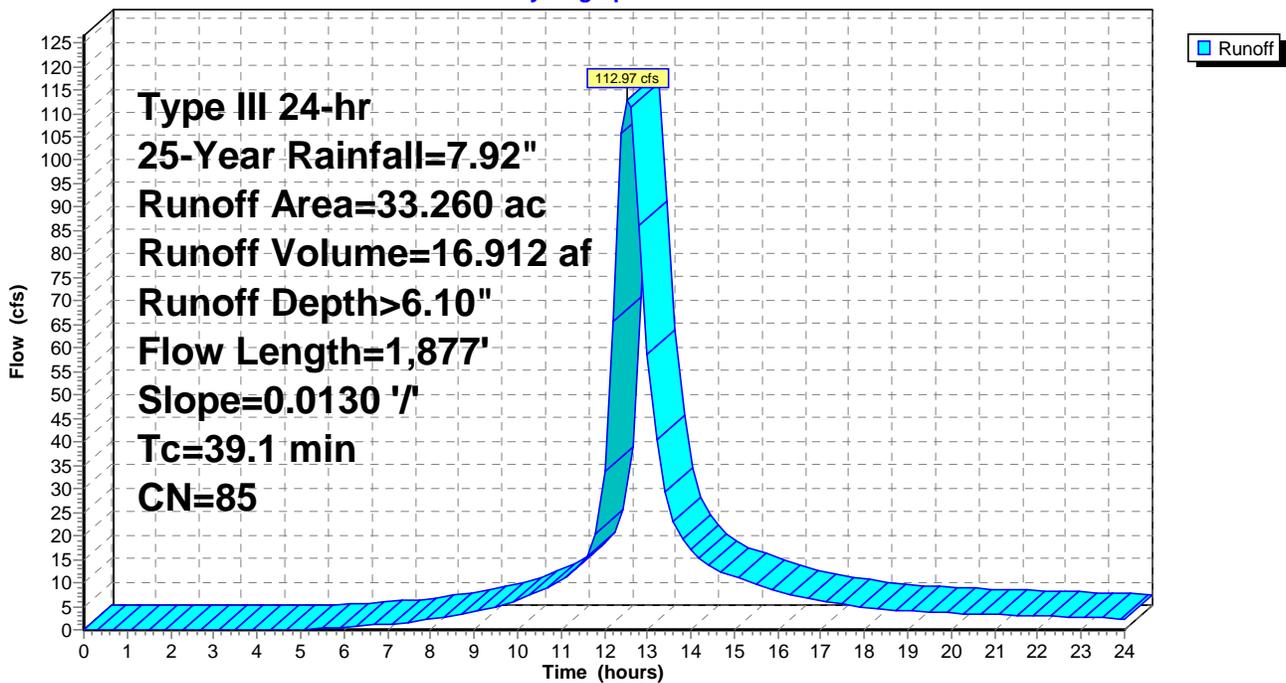
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=7.92"

Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
1.260	80	>75% Grass cover, Good, HSG D
33.260	85	Weighted Average
25.260		75.95% Pervious Area
8.000		24.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 2S: Off-Site

Hydrograph



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Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 4.48 cfs @ 12.05 hrs, Volume= 0.451 af, Depth> 6.02"

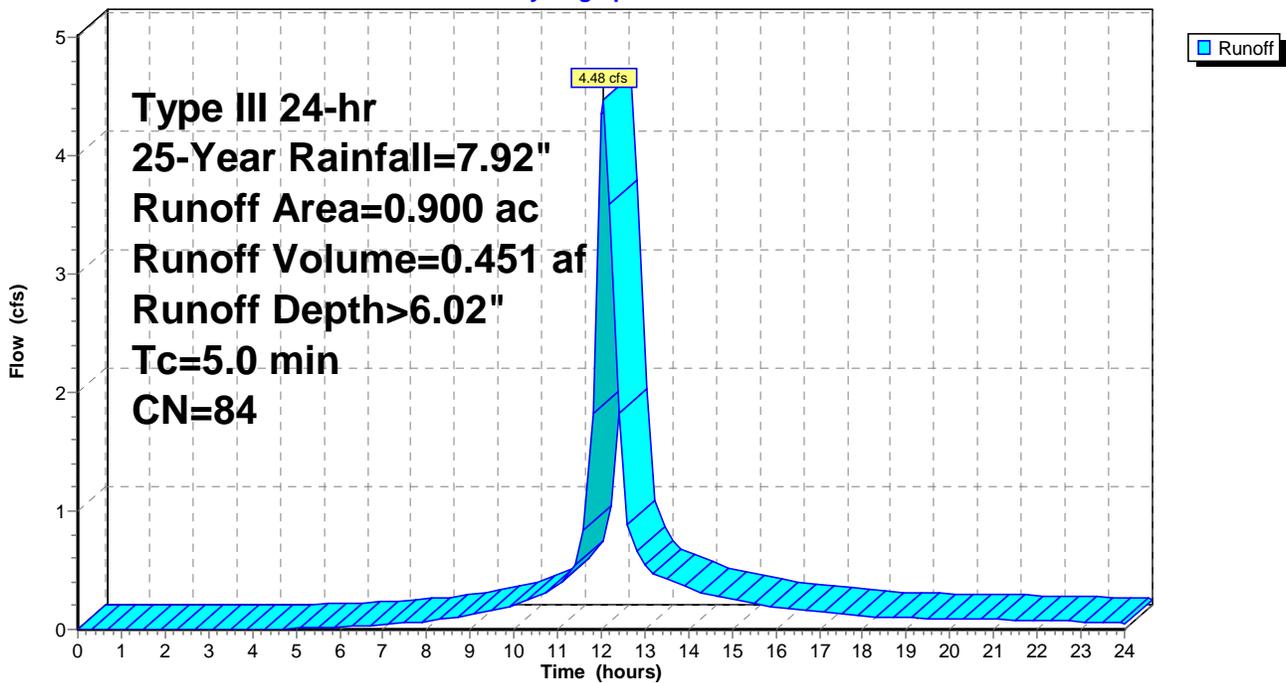
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 25-Year Rainfall=7.92"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



post - 10% basin Analysis

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Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Reach 2R: Combine

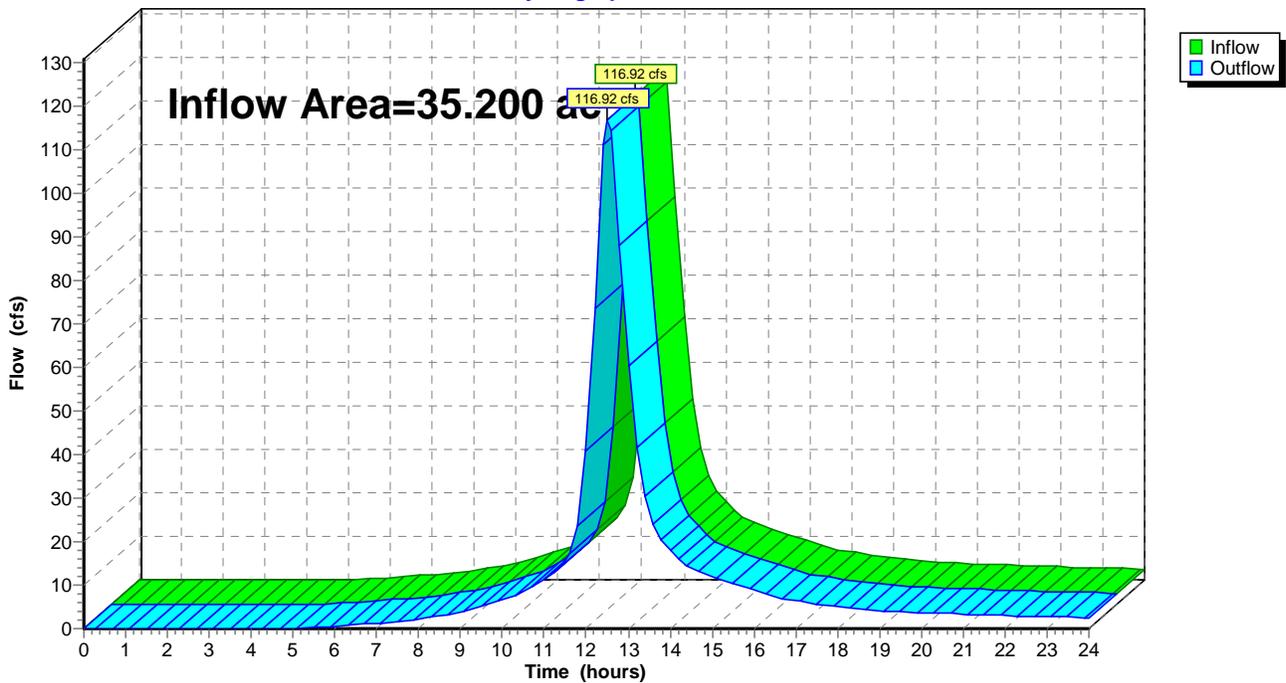
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 35.200 ac, 26.08% Impervious, Inflow Depth > 6.10" for 25-Year event
Inflow = 116.92 cfs @ 12.52 hrs, Volume= 17.906 af
Outflow = 116.92 cfs @ 12.52 hrs, Volume= 17.906 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



post - 10% basin Analysis

Type III 24-hr 25-Year Rainfall=7.92"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 7.56" for 25-Year event
 Inflow = 5.92 cfs @ 12.04 hrs, Volume= 0.655 af
 Outflow = 4.56 cfs @ 12.23 hrs, Volume= 0.543 af, Atten= 23%, Lag= 11.2 min
 Primary = 4.56 cfs @ 12.23 hrs, Volume= 0.543 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.62' @ 12.23 hrs Surf.Area= 4,586 sf Storage= 9,167 cf

Plug-Flow detention time= 144.9 min calculated for 0.538 af (82% of inflow)
 Center-of-Mass det. time= 79.7 min (825.9 - 746.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=4.41 cfs @ 12.23 hrs HW=5.57' TW=0.00' (Dynamic Tailwater)

- └─1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
- └─2=Sharp-Crested Rectangular Weir (Weir Controls 4.41 cfs @ 4.09 fps)

post - 10% basin Analysis

Type III 24-hr 25-Year Rainfall=7.92"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

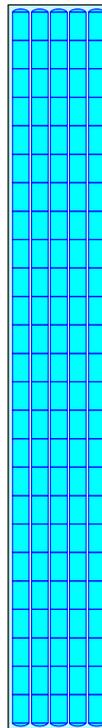
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

594.5 cy Field

381.8 cy Stone



post - 10% basin Analysis

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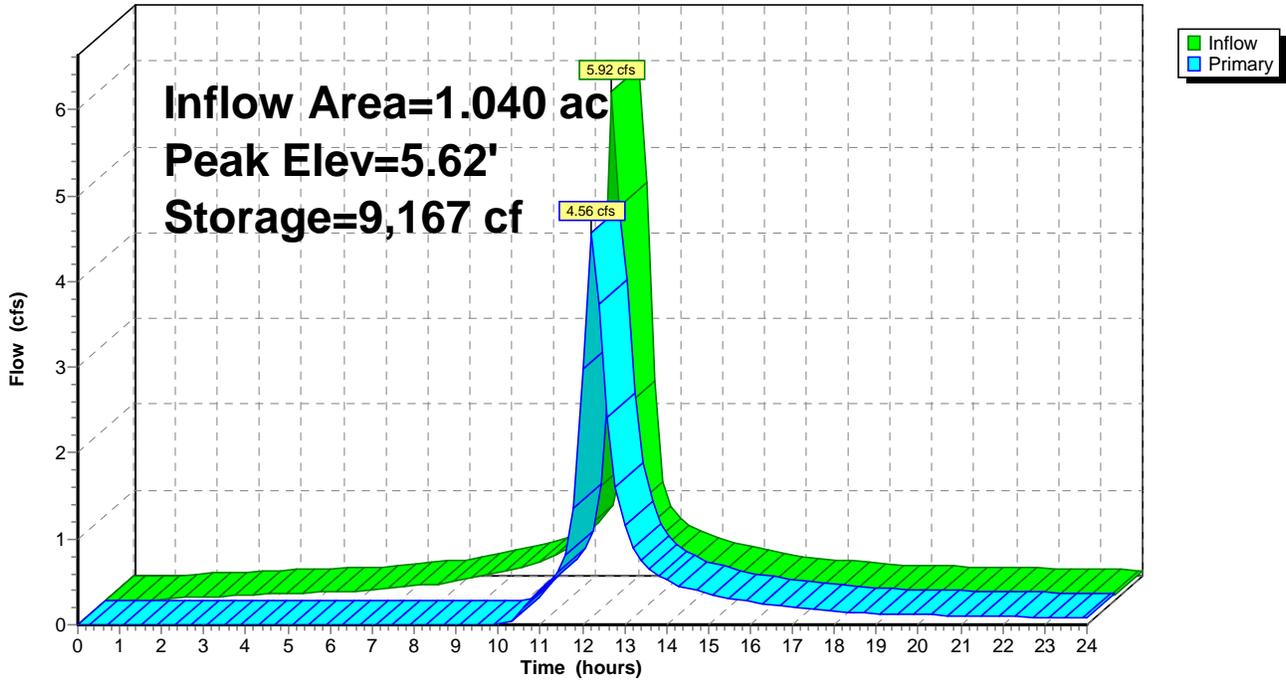
Type III 24-hr 25-Year Rainfall=7.92"

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Pond 1P: Pond A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 50-year Rainfall=8.88"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>8.52"
Tc=5.0 min CN=97 Runoff=6.65 cfs 0.738 af

Subcatchment 2S: Off-Site Runoff Area=33.260 ac 24.05% Impervious Runoff Depth>7.03"
Flow Length=1,877' Slope=0.0130 '/' Tc=39.1 min CN=85 Runoff=129.20 cfs 19.475 af

Subcatchment 3S: Bypass Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>6.94"
Tc=5.0 min CN=84 Runoff=5.13 cfs 0.521 af

Reach 2R: Combine Inflow=133.60 cfs 20.621 af
Outflow=133.60 cfs 20.621 af

Pond 1P: Pond A Peak Elev=5.82' Storage=9,539 cf Inflow=6.65 cfs 0.738 af
Outflow=5.27 cfs 0.625 af

Total Runoff Area = 35.200 ac Runoff Volume = 20.734 af Average Runoff Depth = 7.07"
73.92% Pervious = 26.020 ac 26.08% Impervious = 9.180 ac

post - 10% basin Analysis

Type III 24-hr 50-year Rainfall=8.88"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.65 cfs @ 12.04 hrs, Volume= 0.738 af, Depth> 8.52"

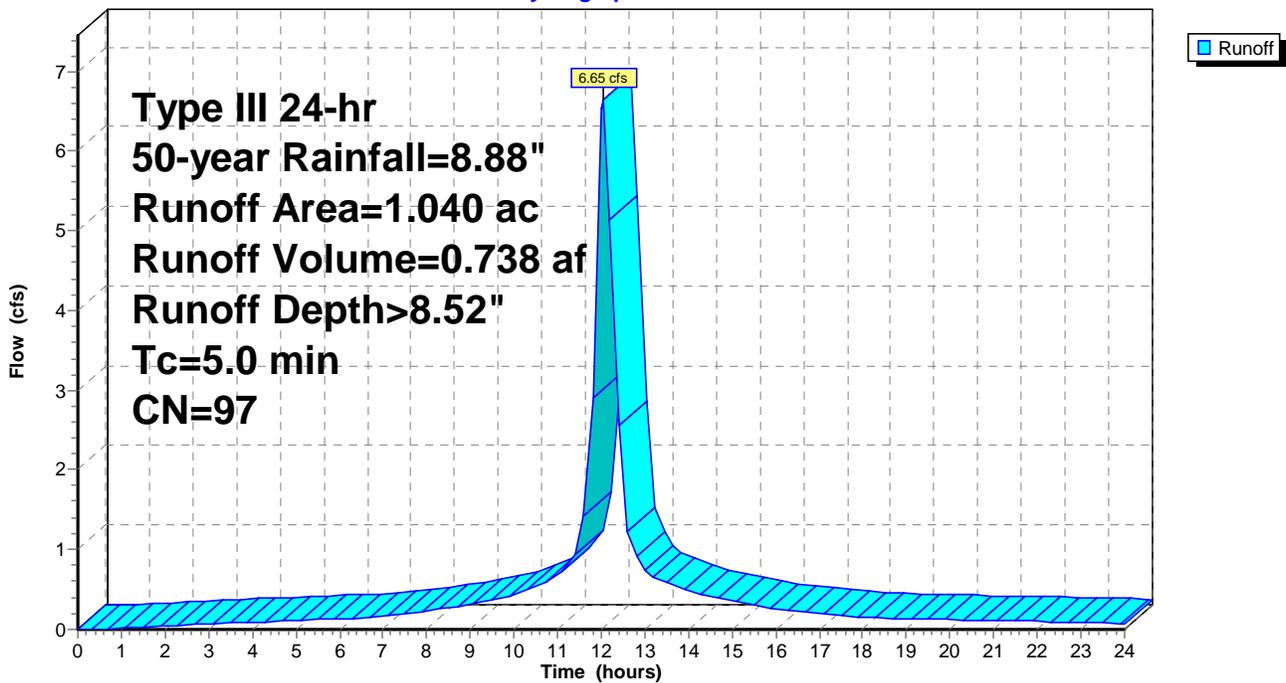
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-year Rainfall=8.88"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 50-year Rainfall=8.88"

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Summary for Subcatchment 2S: Off-Site

Runoff = 129.20 cfs @ 12.53 hrs, Volume= 19.475 af, Depth> 7.03"

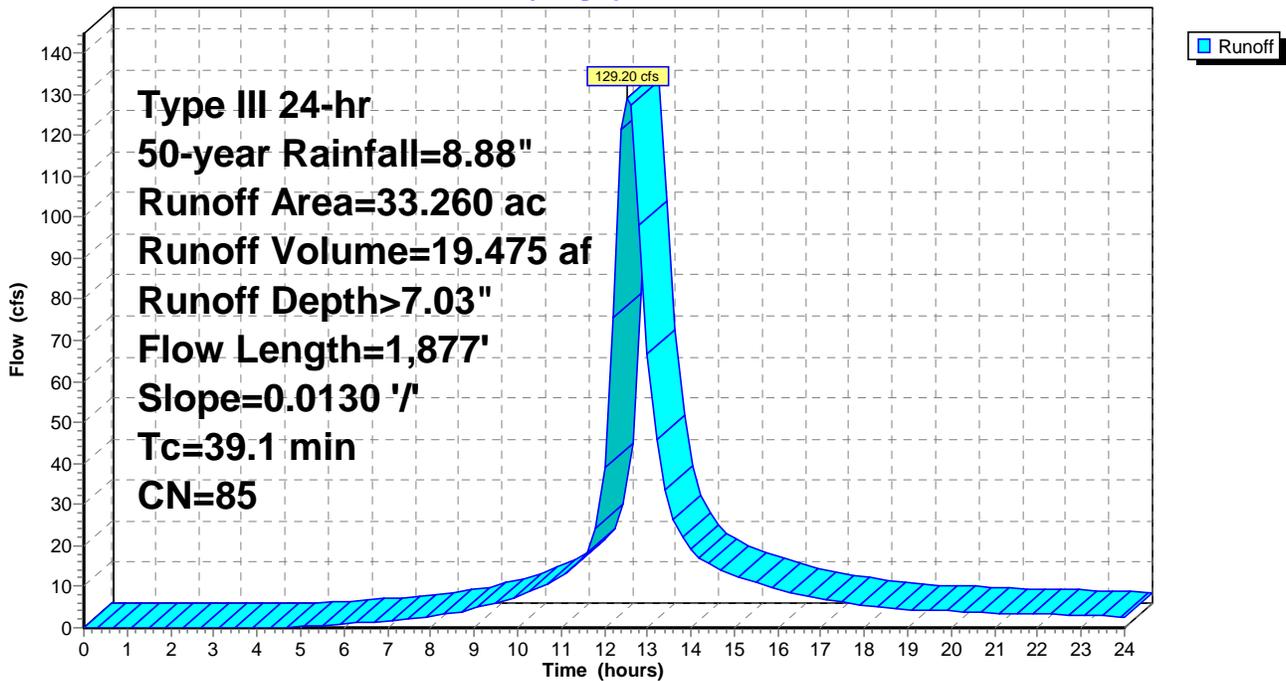
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Type III 24-hr 50-year Rainfall=8.88"

Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
1.260	80	>75% Grass cover, Good, HSG D
33.260	85	Weighted Average
25.260		75.95% Pervious Area
8.000		24.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 2S: Off-Site

Hydrograph



post - 10% basin Analysis

Type III 24-hr 50-year Rainfall=8.88"

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Summary for Subcatchment 3S: Bypass

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 5.13 cfs @ 12.05 hrs, Volume= 0.521 af, Depth> 6.94"

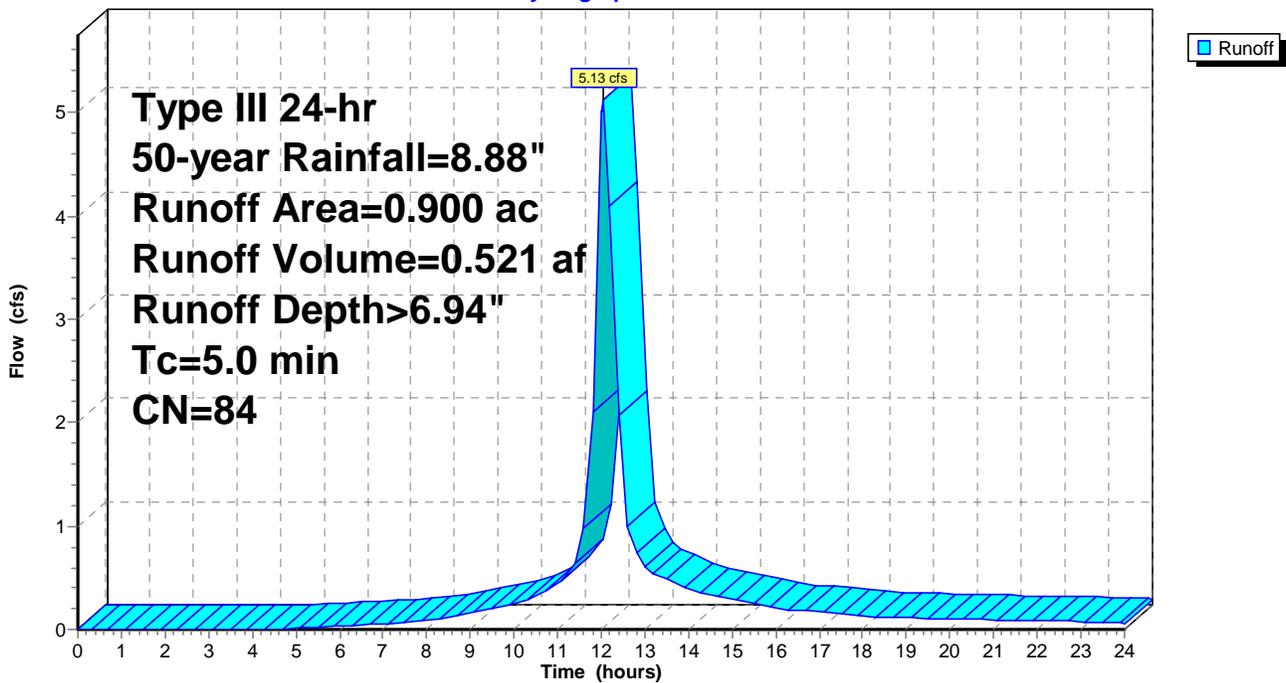
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 50-year Rainfall=8.88"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



post - 10% basin Analysis

Type III 24-hr 50-year Rainfall=8.88"

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Summary for Reach 2R: Combine

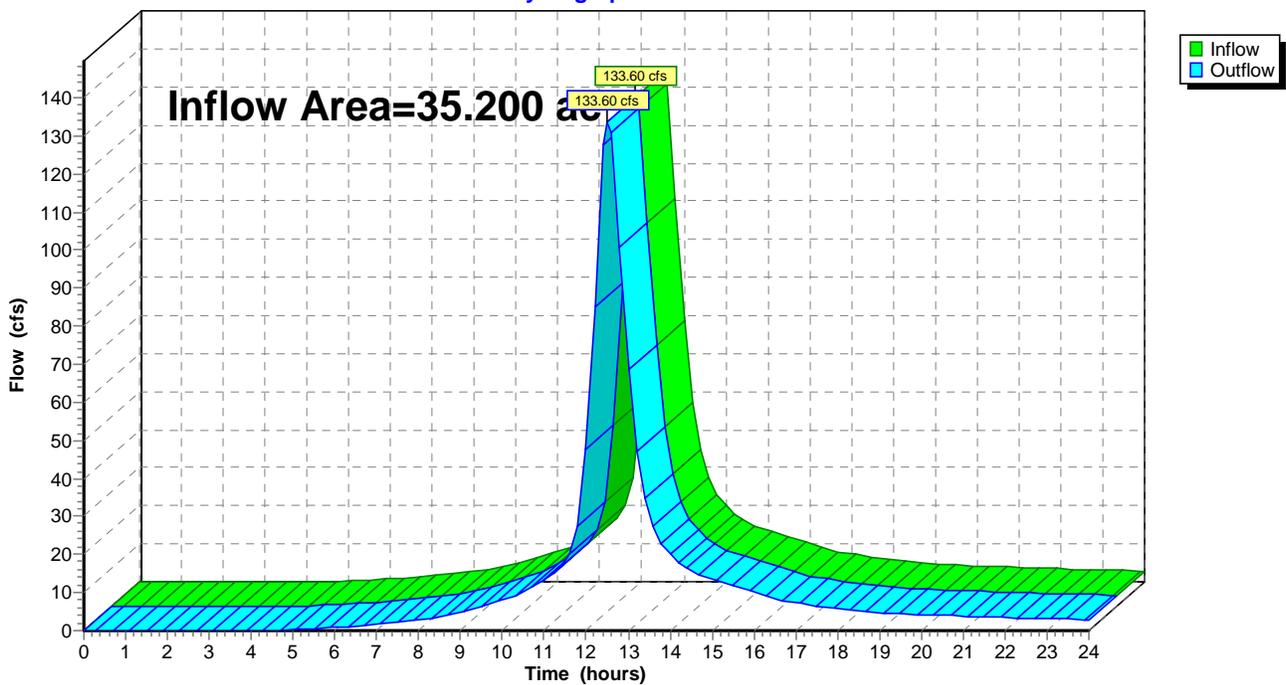
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 35.200 ac, 26.08% Impervious, Inflow Depth > 7.03" for 50-year event
Inflow = 133.60 cfs @ 12.52 hrs, Volume= 20.621 af
Outflow = 133.60 cfs @ 12.52 hrs, Volume= 20.621 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



post - 10% basin Analysis

Type III 24-hr 50-year Rainfall=8.88"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 8.52" for 50-year event
 Inflow = 6.65 cfs @ 12.04 hrs, Volume= 0.738 af
 Outflow = 5.27 cfs @ 12.22 hrs, Volume= 0.625 af, Atten= 21%, Lag= 10.8 min
 Primary = 5.27 cfs @ 12.22 hrs, Volume= 0.625 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.82' @ 12.23 hrs Surf.Area= 4,586 sf Storage= 9,539 cf

Plug-Flow detention time= 139.8 min calculated for 0.625 af (85% of inflow)
 Center-of-Mass det. time= 75.7 min (820.1 - 744.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=5.02 cfs @ 12.22 hrs HW=5.77' TW=0.00' (Dynamic Tailwater)

- └─1=Sharp-Crested Rectangular Weir (Weir Controls 0.04 cfs @ 0.50 fps)
- └─2=Sharp-Crested Rectangular Weir (Weir Controls 4.98 cfs @ 4.35 fps)

post - 10% basin Analysis

Type III 24-hr 50-year Rainfall=8.88"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

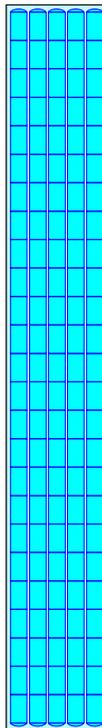
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

594.5 cy Field

381.8 cy Stone



post - 10% basin Analysis

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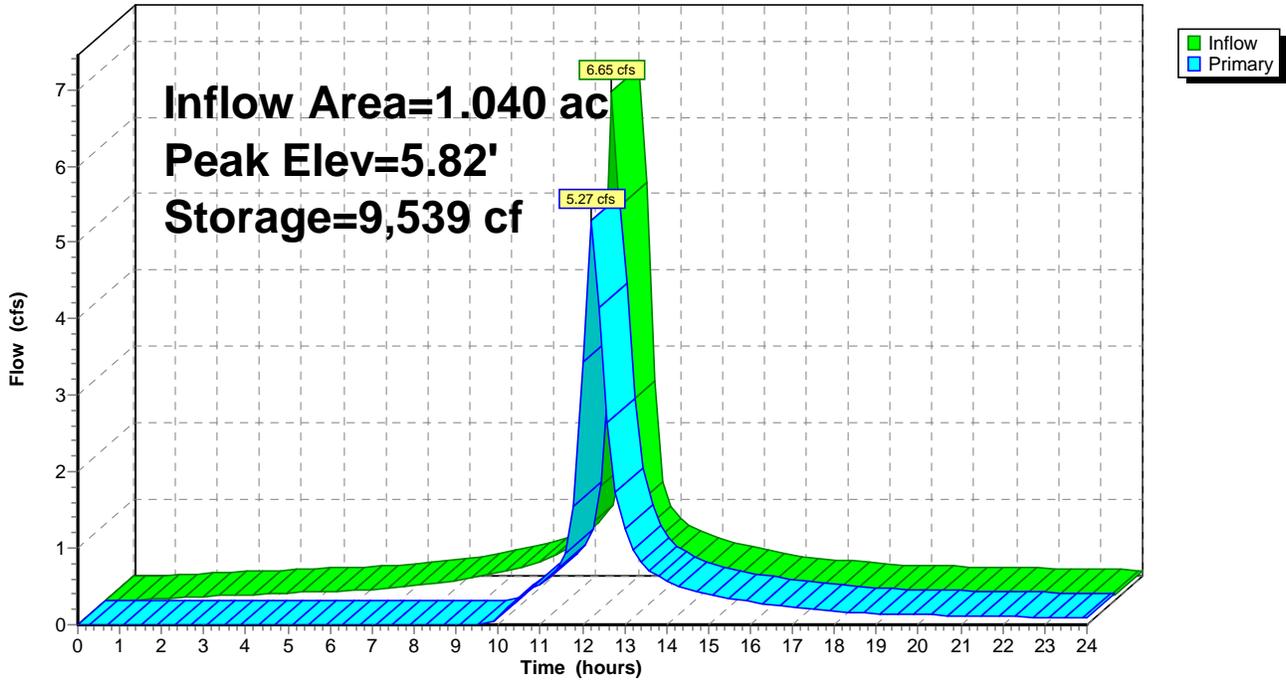
Type III 24-hr 50-year Rainfall=8.88"

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Pond 1P: Pond A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 100-Year Rainfall=9.84"

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Time span=0.00-24.00 hrs, dt=0.20 hrs, 121 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Post Basin A

Runoff Area=1.040 ac 93.27% Impervious Runoff Depth>9.48"
Tc=5.0 min CN=97 Runoff=7.38 cfs 0.821 af

Subcatchment 2S: Off-Site

Runoff Area=33.260 ac 24.05% Impervious Runoff Depth>7.96"
Flow Length=1,877' Slope=0.0130 '/' Tc=39.1 min CN=85 Runoff=145.38 cfs 22.052 af

Subcatchment 3S: Bypass

Runoff Area=0.900 ac 23.33% Impervious Runoff Depth>7.87"
Tc=5.0 min CN=84 Runoff=5.79 cfs 0.590 af

Reach 2R: Combine

Inflow=150.13 cfs 23.350 af
Outflow=150.13 cfs 23.350 af

Pond 1P: Pond A

Peak Elev=5.95' Storage=9,770 cf Inflow=7.38 cfs 0.821 af
Outflow=6.26 cfs 0.708 af

Total Runoff Area = 35.200 ac Runoff Volume = 23.464 af Average Runoff Depth = 8.00"
73.92% Pervious = 26.020 ac 26.08% Impervious = 9.180 ac

post - 10% basin Analysis

Type III 24-hr 100-Year Rainfall=9.84"

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Summary for Subcatchment 1S: Post Basin A

[49] Hint: Tc<2dt may require smaller dt

Runoff = 7.38 cfs @ 12.04 hrs, Volume= 0.821 af, Depth> 9.48"

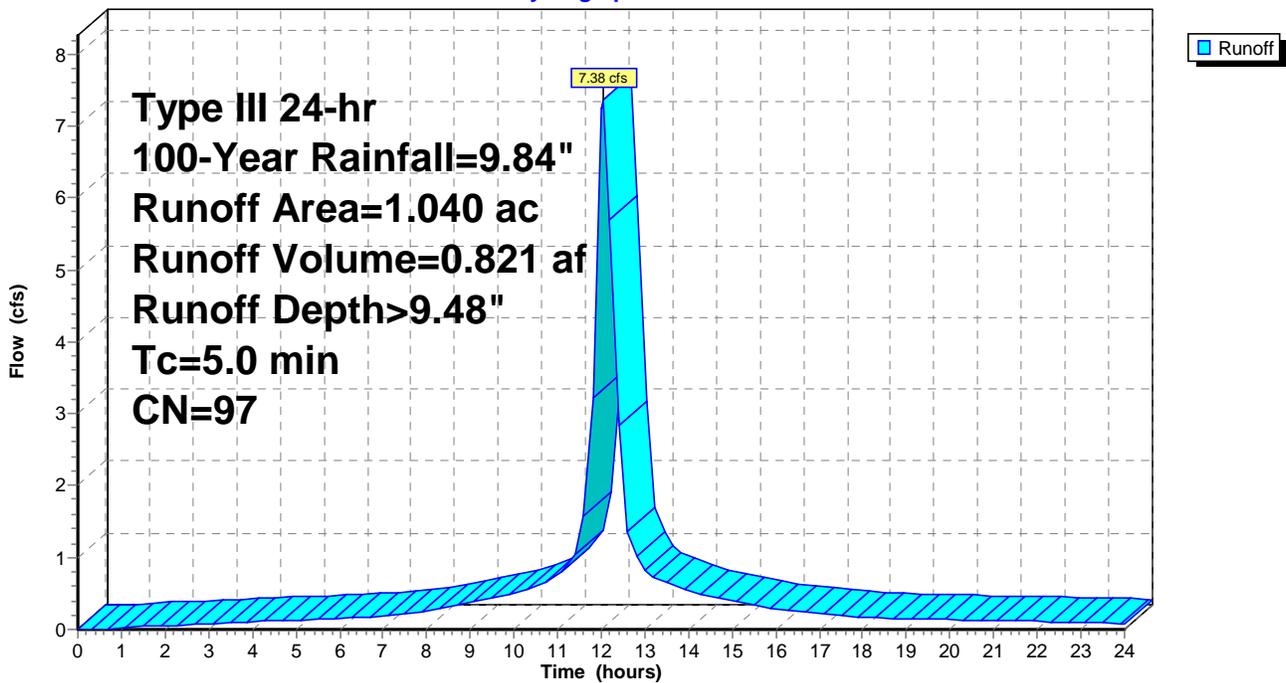
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=9.84"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.970	98	Paved parking & roofs
1.040	97	Weighted Average
0.070		6.73% Pervious Area
0.970		93.27% Impervious Area

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

Subcatchment 1S: Post Basin A

Hydrograph



post - 10% basin Analysis

Type III 24-hr 100-Year Rainfall=9.84"

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Summary for Subcatchment 2S: Off-Site

Runoff = 145.38 cfs @ 12.53 hrs, Volume= 22.052 af, Depth> 7.96"

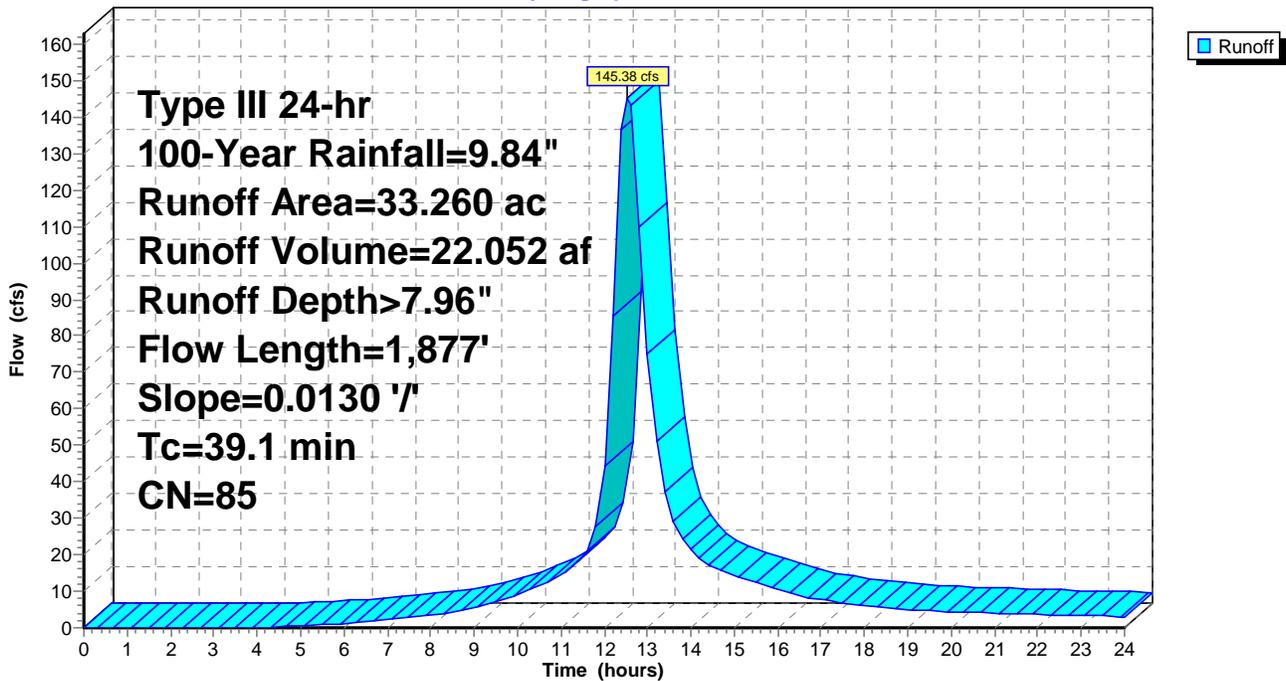
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=9.84"

Area (ac)	CN	Description
32.000	85	1/2 acre lots, 25% imp, HSG D
1.260	80	>75% Grass cover, Good, HSG D
33.260	85	Weighted Average
25.260		75.95% Pervious Area
8.000		24.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.1	1,877	0.0130	0.80		Lag/CN Method,

Subcatchment 2S: Off-Site

Hydrograph



post - 10% basin Analysis

Type III 24-hr 100-Year Rainfall=9.84"

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Summary for Subcatchment 3S: Bypass

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.79 cfs @ 12.05 hrs, Volume= 0.590 af, Depth> 7.87"

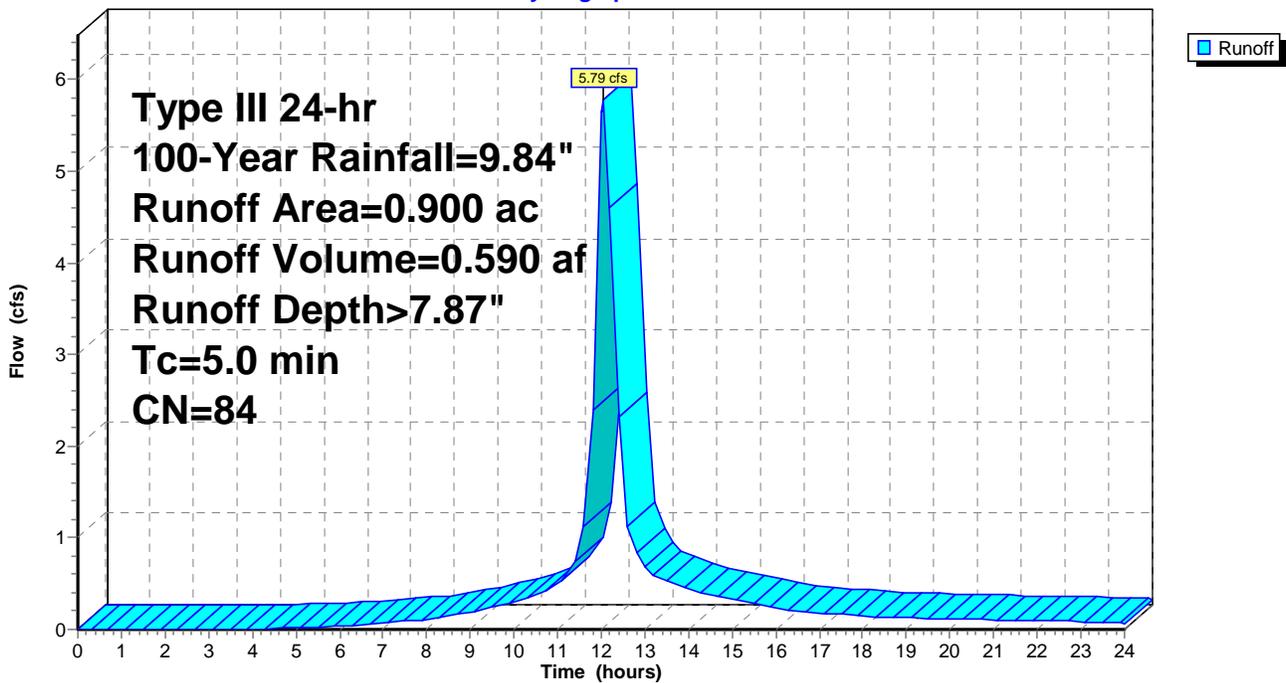
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
Type III 24-hr 100-Year Rainfall=9.84"

Area (ac)	CN	Description
0.690	80	>75% Grass cover, Good, HSG D
0.210	98	Roofs, HSG D
0.900	84	Weighted Average
0.690		76.67% Pervious Area
0.210		23.33% Impervious Area

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

Subcatchment 3S: Bypass

Hydrograph



post - 10% basin Analysis

Type III 24-hr 100-Year Rainfall=9.84"

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Summary for Reach 2R: Combine

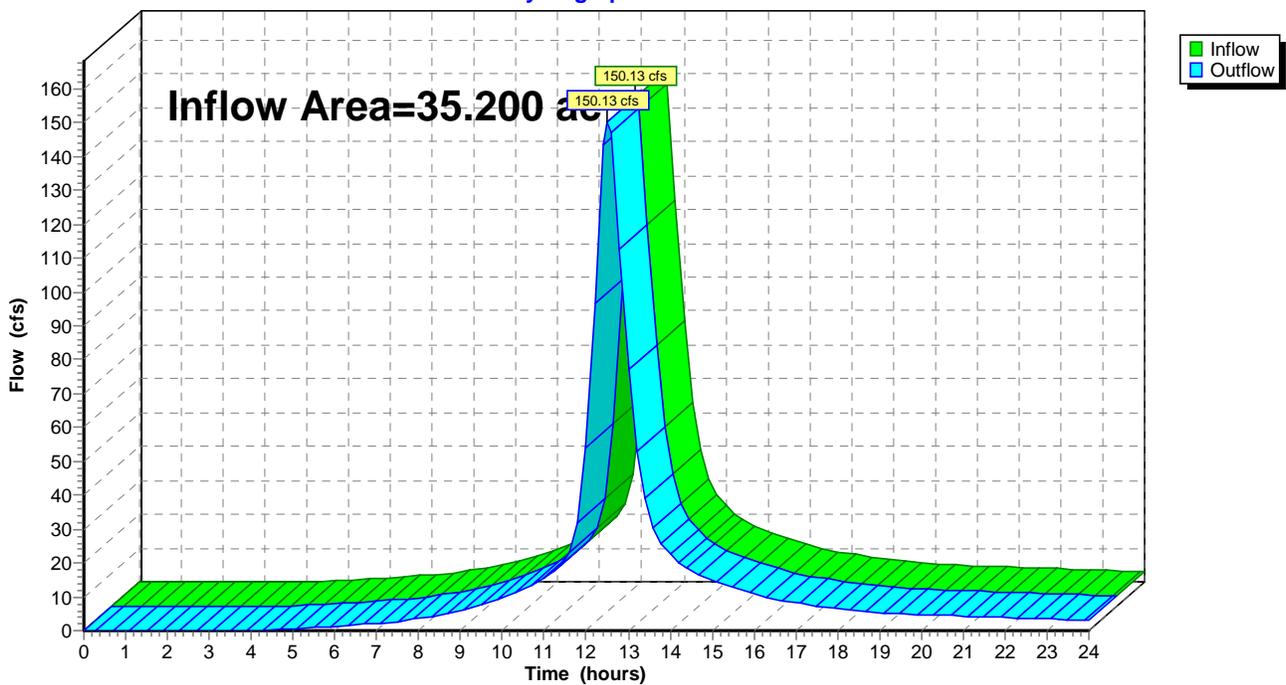
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 35.200 ac, 26.08% Impervious, Inflow Depth > 7.96" for 100-Year event
Inflow = 150.13 cfs @ 12.52 hrs, Volume= 23.350 af
Outflow = 150.13 cfs @ 12.52 hrs, Volume= 23.350 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs

Reach 2R: Combine

Hydrograph



post - 10% basin Analysis

Type III 24-hr 100-Year Rainfall=9.84"

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Summary for Pond 1P: Pond A

Inflow Area = 1.040 ac, 93.27% Impervious, Inflow Depth > 9.48" for 100-Year event
 Inflow = 7.38 cfs @ 12.04 hrs, Volume= 0.821 af
 Outflow = 6.26 cfs @ 12.21 hrs, Volume= 0.708 af, Atten= 15%, Lag= 9.9 min
 Primary = 6.26 cfs @ 12.21 hrs, Volume= 0.708 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.20 hrs
 Peak Elev= 5.95' @ 12.21 hrs Surf.Area= 4,586 sf Storage= 9,770 cf

Plug-Flow detention time= 129.1 min calculated for 0.702 af (85% of inflow)
 Center-of-Mass det. time= 72.0 min (815.0 - 743.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	2.50'	4,123 cf	25.25'W x 181.62'L x 3.50'H Field A 16,050 cf Overall - 5,743 cf Embedded = 10,308 cf x 40.0% Voids
#2A	3.00'	5,743 cf	ADS_StormTech SC-740 +Cap x 125 Inside #1 Effective 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 5 Rows of 25 Chambers
		9,866 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	5.75'	36.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	4.00'	12.0" long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=6.09 cfs @ 12.21 hrs HW=5.93' TW=0.00' (Dynamic Tailwater)

- 1=Sharp-Crested Rectangular Weir (Weir Controls 0.71 cfs @ 1.37 fps)
- 2=Sharp-Crested Rectangular Weir (Weir Controls 5.37 cfs @ 4.54 fps)

post - 10% basin Analysis

Type III 24-hr 100-Year Rainfall=9.84"

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Pond 1P: Pond A - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective 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

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

25 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 179.62' Row Length +12.0" End Stone x 2 = 181.62' Base Length

5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

125 Chambers x 45.9 cf = 5,742.5 cf Chamber Storage

16,050.4 cf Field - 5,742.5 cf Chambers = 10,307.9 cf Stone x 40.0% Voids = 4,123.1 cf Stone Storage

Chamber Storage + Stone Storage = 9,865.7 cf = 0.226 af

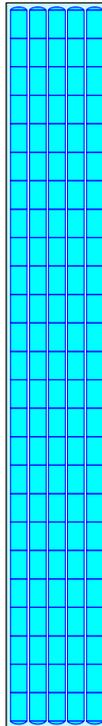
Overall Storage Efficiency = 61.5%

Overall System Size = 181.62' x 25.25' x 3.50'

125 Chambers

594.5 cy Field

381.8 cy Stone



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Type III 24-hr 100-Year Rainfall=9.84"

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Pond 1P: Pond A

Hydrograph

