Revised Stormwater Management Plan for Hampton Inn - Eglin Parkway Okaloosa County, Florida Revised Underground Stormwater, Added 803.31 SF, Added 2,5,10 Year Storm Events

Prepared by: David Forstrom, P.E.

FL P.E. #86671

Date: March 9, 2026

David M Forstrom

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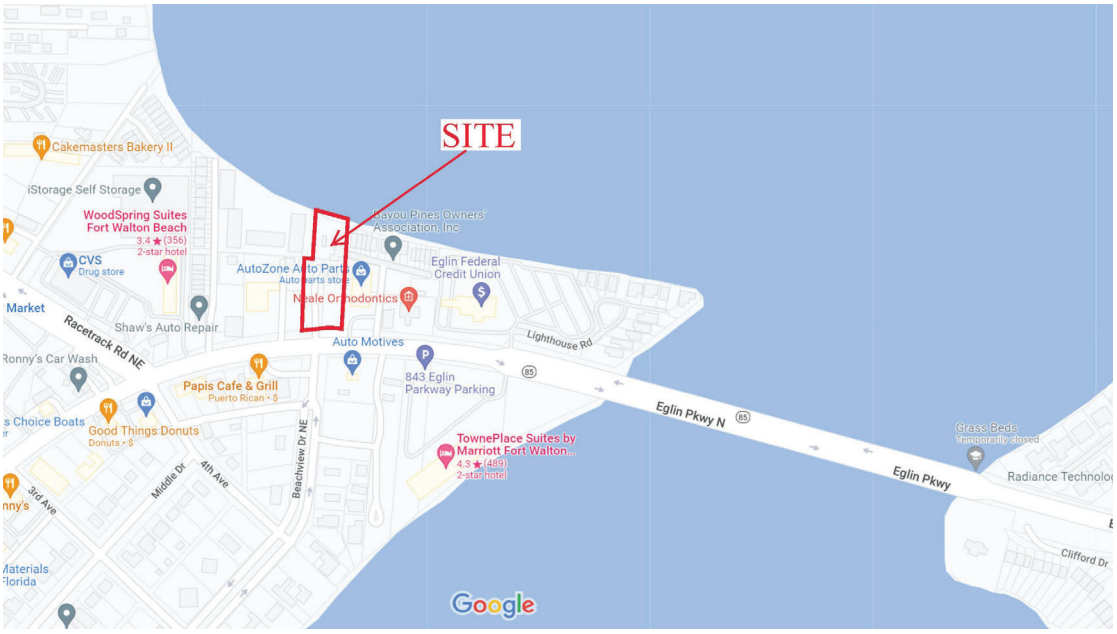
1. INTRODUCTION AND PROJECT DESCRIPTION

The following is a stormwater evaluation for the Hampton Inn - Eglin Parkway which is a proposed 84 room hotel located in unincorporated Okaloosa County, Florida. This site is 63,268 SF (1.452 acres). The site is located on Eglin Parkway and was previously a single family dwelling with accessory buildings. The parcel is located within Section 6, Township 02 South, and Range 23 West. The applicant and current owner of the property is Jai Prabhu LLC Of NW Florida, 79 John Sims Pkwy S, Valparaiso, FL 32580.

An 84 room hotel and associated infrastructure are proposed for this project. Associated infrastructure will include the development of parking lot, access drives, utilities, stormwater, etc. The proposed stormwater management method for the site will be accomplished with an underground exfiltration system. This report will provide the information outlining the design, regulatory, and performance standards of the proposed stormwater management facilities.

This stormwater evaluation will be performed using the Soil Conservation Service Method. In accordance with the Okaloosa County requirements, the 1-inch volume associated with the runoff from the developed basin area will be retained on-site. Additionally, the post-developed runoff will not exceed the pre-development runoff for a 25-year storm event and in fact there will be zero post - development runoff for all 25-year storm events.

The system recovery of the required treatment volume, attenuation of the critical storm event, and pre- and post-development discharge rates have been determined utilizing the stormwater modeling software HydroCad®, version 10.01.



PROJECT SITE (NTS)

2. EXISTING DRAINAGE BASIN NARRATIVE

The 1.452 acre site drains from the south to the north toward Garniers Bayou based on the topographical survey. Even though the existing area has multiple buildings and impervious surface, the pre-development area was conservatively assumed to be 100% pervious for the pre-development drainage calculations for an additional safety factor in the stormwater design.

Existing pre-development drainage did not contain runoff from outside the development area.

A SCS runoff curve number for open spaces with greater than 75% grass cover of C=39 for was chosen for 100% pervious area of the existing site for the pre-development stormwater modeling calculations.

Below is a summary of the **Pre-Developed Conditions***:

BASIN	RAINFALL DISTRIBUTION	CRITICAL DURATION	RAINFALL (IN)	CN	FLOWRATE (CFS)
1.452 Acres	**Point Precipitation Frequency Estimates of the NOAA, National Weather Service**	**25 YR – 8 HR**	**8.13**	**39**	**0.85**

*Refer to existing conditions HydroGraphs in the Appendix "HYDROCAD® STORMWATER MODELING 25 YEAR STORM EVENT"

3. DEVELOPED DRAINAGE AREA NARRATIVE

Okaloosa County requires stormwater attenuation such that the Post-Development runoff does not exceed the Pre-Development runoff for the 25 year storm up to and including a 24 hour duration storm event.

The GeoTechnical Report completed by NOVA has been previously submitted.

The proposed exfiltration system is located adjacent to the Bayou and as such the Seasonal High Water Table (SHWT) is 0.0'. The exfiltration system has been designed with a minimum 3' separation from the SHWT with a bottom elevation of 3.0'.

The design infiltration rate of 20 inches per hour is based on installing clean well-drained quartz beach sand to the water table with a specified infiltration rate of at least 40 ft/day and a 2:1 safety factor.

3.1 Table 1: Watershed Data for Drainage Area

	Curve Number	Area (Acres)	Time of Concentration (Mins)
Pre-Development	**39**	**1.452**	**10**
Post-Development	**82**	**1.452**	**10**

Post-Development Weighted Average Curve Number of 82 was calculated based on:

Impervious Surface = 45,941 SF (CN = 98)
Grass Area = 17,327 SF (CN = 39)

3.2 Table 2: Precipitation Data in Inches for 2, 5, 10, and 25 Year Storm Events*

DURATION	2 YR.	5 YR.	10 YR.	25 YR.
1-Hour (SCS)	**2.41**	**2.84**	**3.22**	**3.79**
2-Hour (SCS)	**3.09**	**3.60**	**4.07**	**4.80**
4-Hour (SCS)	**3.79**	**4.49**	**5.14**	**6.17**
8-Hour (SCS)	**4.58**	**5.63**	**6.61**	**8.13**
24-Hour (SCS)	**5.97**	**7.69**	**9.33**	**11.90**

*Point Precipitation Frequency Estimates of the NOAA, National Weather Service. See Appendix "HYDROCAD® STORMWATER MODELING 25 YEAR STORM EVENT" for complete precipitation data.

3.3 Table 3: Peak Flow Summary for Detention Drainage Area

DURATION		25 YEAR (CFS)	Peak Elev.	Max Elev.
25 Year up to 24-Hour (8 Hour Critical Event)	Pre-Improvement	0.85	N/A	N/A
	Post-Improvement	0.00	5.85’	7.00’

4. WATER QUALITY

Okaloosa County requires that water quality treatment must be provided by treating 1" of rainfall on the site. The Developed Area is 63,268 SF and the volume required for water quality treatment is calculated below:

Storage Volume Required for 1” Rainfall = 63,268 X 1/12 = **5,273 Cubic Feet**

The proposed stormwater retention system has a **TOTAL STORAGE VOLUME of 5,898 Cubic Feet** which exceeds the Water Quality volume storage requirements.

The maximum stormwater retention system drawdown time is 72 hours and the calculations below show this requirement is met.

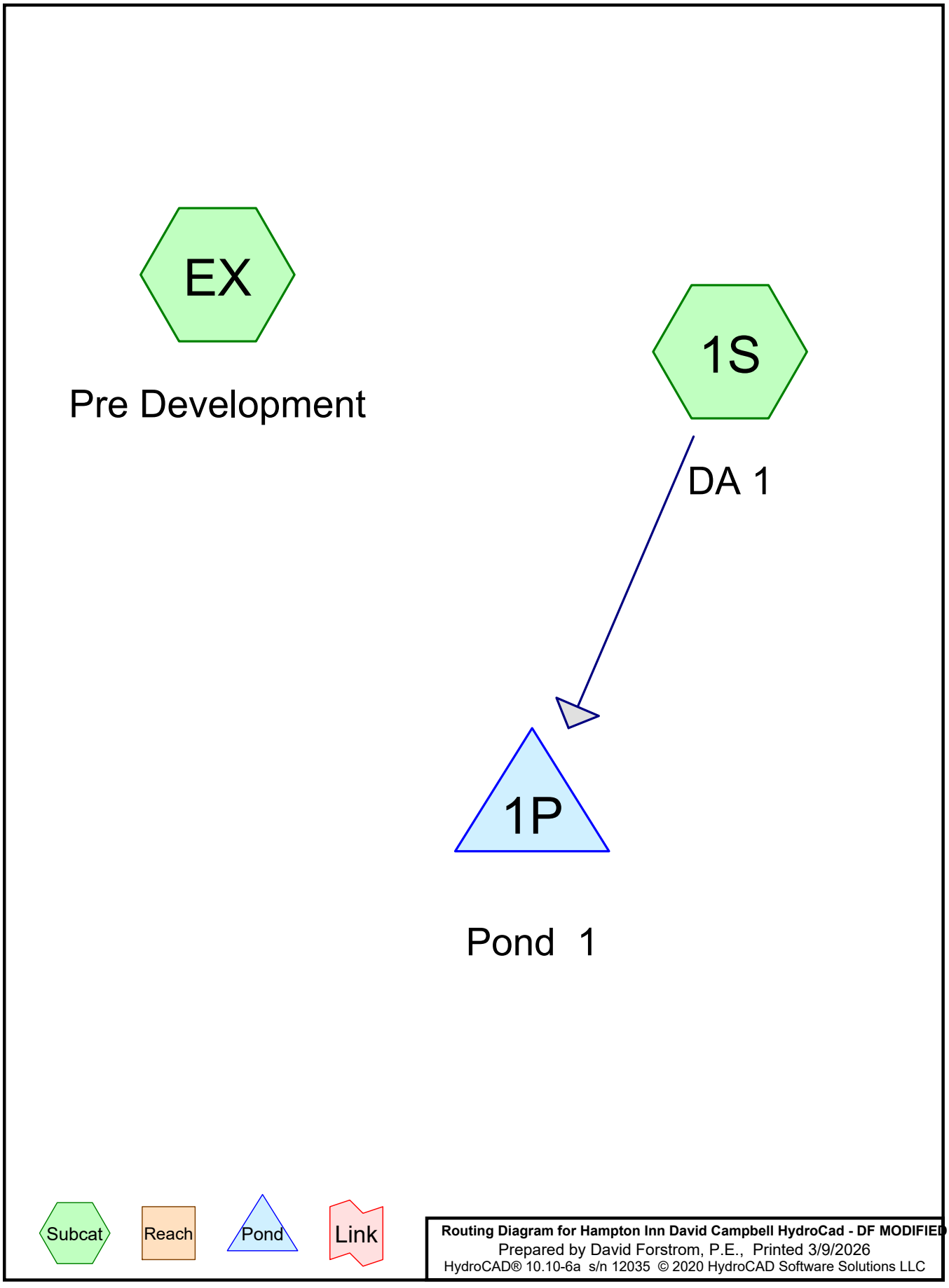
Maximum Stormwater Retention System Water Depth = 4 Feet = 48 Inches

Stormwater Retentions System Infiltration Rate = 20.0 inches per hour = 48/20 = 2.4 hours maximum drawdown time.

The proposed stormwater retention system has a **MAXIMUM DRAWDOWN TIME of 2.4 Hours** which exceeds the maximum drawdown time of 72 hours.

5. CONCLUSION

The proposed Stormwater Management System exceeds all Okaloosa County Stormwater Performance Criteria.



Routing Diagram for Hampton Inn David Campbell HydroCad - DF MODIFIED
Prepared by David Forstrom, P.E., Printed 3/9/2026
HydroCAD® 10.10-6a s/n 12035 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: DA 1

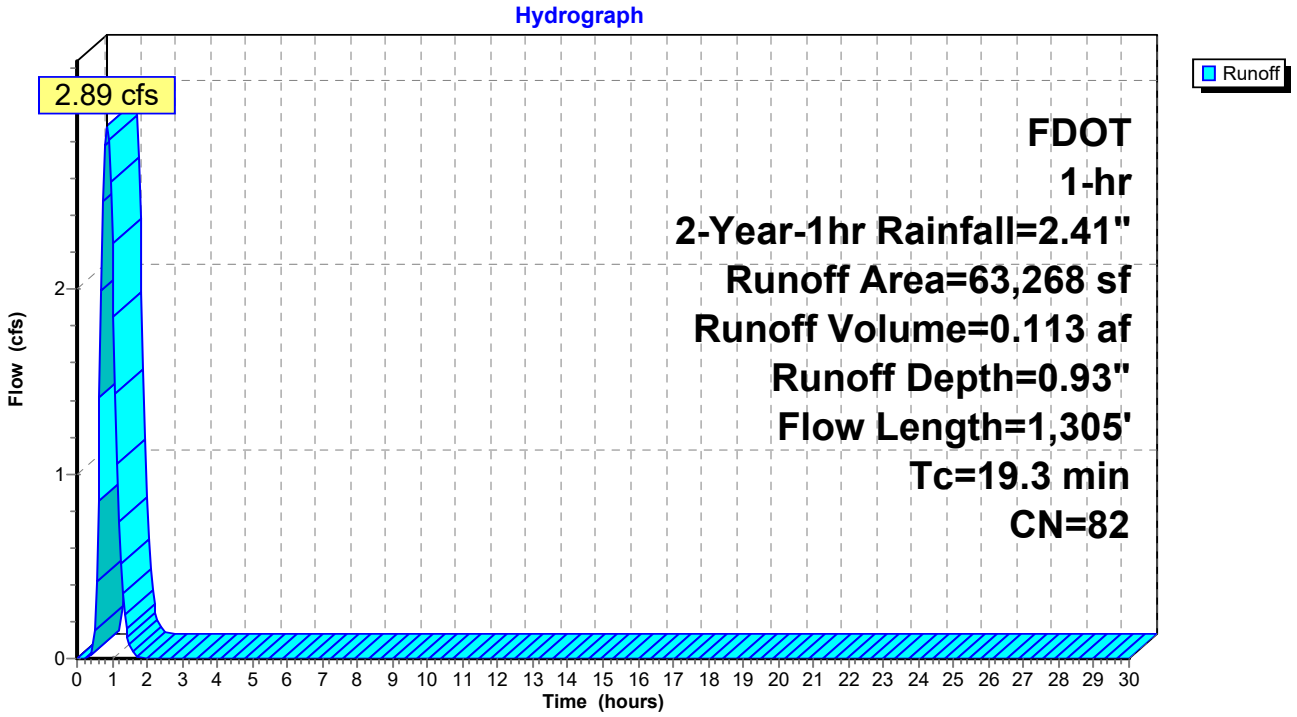
Runoff = 2.89 cfs @ 0.85 hrs, Volume= 0.113 af, Depth= 0.93"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 1-hr 2-Year-1hr Rainfall=2.41"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.25	0.22	**0.15**
1.00	**2.41**	**0.93**	**2.25**
1.50	2.41	0.93	0.08
2.00	2.41	0.93	0.00
2.50	2.41	0.93	0.00
3.00	2.41	0.93	0.00
3.50	2.41	0.93	0.00
4.00	2.41	0.93	0.00
4.50	2.41	0.93	0.00
5.00	2.41	0.93	0.00
5.50	2.41	0.93	0.00
6.00	2.41	0.93	0.00
6.50	2.41	0.93	0.00
7.00	2.41	0.93	0.00
7.50	2.41	0.93	0.00
8.00	2.41	0.93	0.00
8.50	2.41	0.93	0.00
9.00	2.41	0.93	0.00
9.50	2.41	0.93	0.00
10.00	2.41	0.93	0.00
10.50	2.41	0.93	0.00
11.00	2.41	0.93	0.00
11.50	2.41	0.93	0.00
12.00	2.41	0.93	0.00
12.50	2.41	0.93	0.00
13.00	2.41	0.93	0.00
13.50	2.41	0.93	0.00
14.00	2.41	0.93	0.00
14.50	2.41	0.93	0.00
15.00	2.41	0.93	0.00
15.50	2.41	0.93	0.00
16.00	2.41	0.93	0.00
16.50	2.41	0.93	0.00
17.00	2.41	0.93	0.00
17.50	2.41	0.93	0.00
18.00	2.41	0.93	0.00
18.50	2.41	0.93	0.00
19.00	2.41	0.93	0.00
19.50	2.41	0.93	0.00
20.00	2.41	0.93	0.00
20.50	2.41	0.93	0.00
21.00	2.41	0.93	0.00
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23.50	2.41	0.93	0.00
24.00	2.41	0.93	0.00
24.50	2.41	0.93	0.00
25.00	2.41	0.93	0.00
25.50	2.41	0.93	0.00
26.00	2.41	0.93	0.00
26.50	2.41	0.93	0.00
27.00	2.41	0.93	0.00
27.50	2.41	0.93	0.00
28.00	2.41	0.93	0.00
28.50	2.41	0.93	0.00
29.00	2.41	0.93	0.00
29.50	2.41	0.93	0.00
30.00	2.41	0.93	0.00

Summary for Subcatchment EX: Pre Development

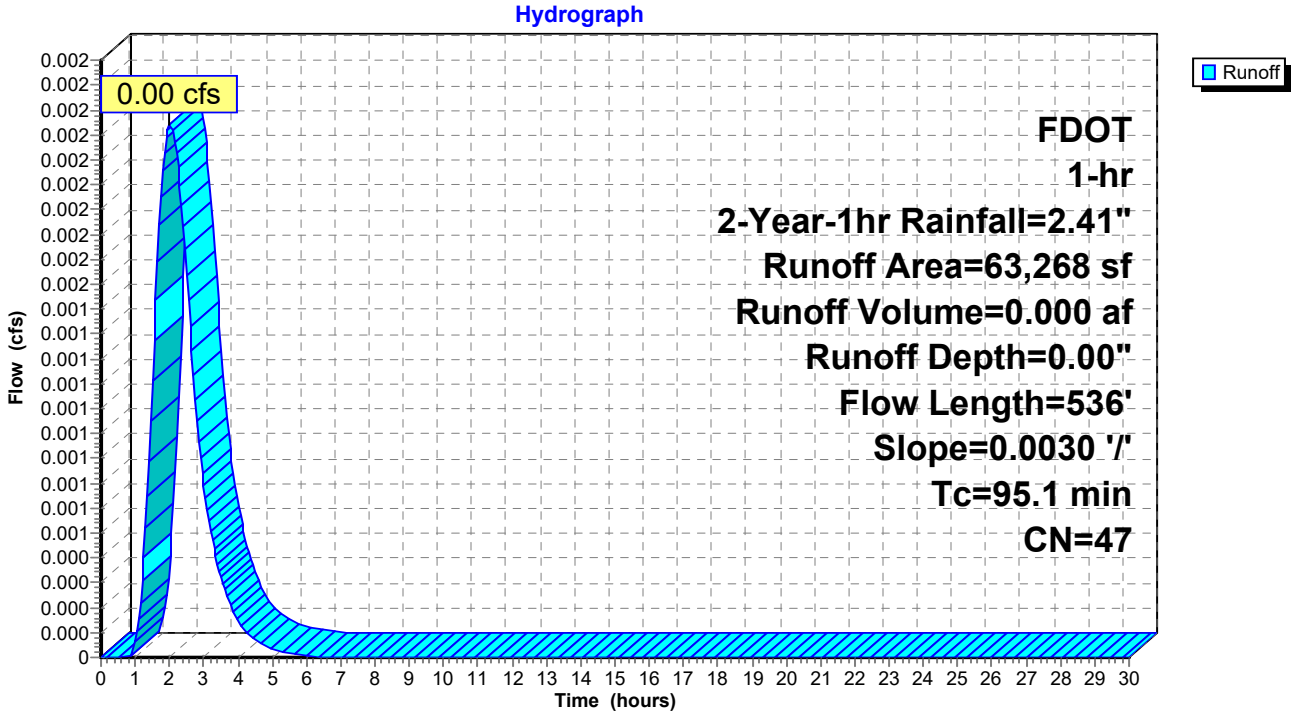
Runoff = 0.00 cfs @ 2.01 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 1-hr 2-Year-1hr Rainfall=2.41"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.25	0.00	0.00
1.00	**2.41**	**0.00**	0.00
1.50	2.41	0.00	0.00
2.00	2.41	0.00	**0.00**
2.50	2.41	0.00	0.00
3.00	2.41	0.00	0.00
3.50	2.41	0.00	0.00
4.00	2.41	0.00	0.00
4.50	2.41	0.00	0.00
5.00	2.41	0.00	0.00
5.50	2.41	0.00	0.00
6.00	2.41	0.00	0.00
6.50	2.41	0.00	0.00
7.00	2.41	0.00	0.00
7.50	2.41	0.00	0.00
8.00	2.41	0.00	0.00
8.50	2.41	0.00	0.00
9.00	2.41	0.00	0.00
9.50	2.41	0.00	0.00
10.00	2.41	0.00	0.00
10.50	2.41	0.00	0.00
11.00	2.41	0.00	0.00
11.50	2.41	0.00	0.00
12.00	2.41	0.00	0.00
12.50	2.41	0.00	0.00
13.00	2.41	0.00	0.00
13.50	2.41	0.00	0.00
14.00	2.41	0.00	0.00
14.50	2.41	0.00	0.00
15.00	2.41	0.00	0.00
15.50	2.41	0.00	0.00
16.00	2.41	0.00	0.00
16.50	2.41	0.00	0.00
17.00	2.41	0.00	0.00
17.50	2.41	0.00	0.00
18.00	2.41	0.00	0.00
18.50	2.41	0.00	0.00
19.00	2.41	0.00	0.00
19.50	2.41	0.00	0.00
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20.50	2.41	0.00	0.00
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25.50	2.41	0.00	0.00
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27.00	2.41	0.00	0.00
27.50	2.41	0.00	0.00
28.00	2.41	0.00	0.00
28.50	2.41	0.00	0.00
29.00	2.41	0.00	0.00
29.50	2.41	0.00	0.00
30.00	2.41	0.00	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 0.93" for 2-Year-1hr event
Inflow = 2.89 cfs @ 0.85 hrs, Volume= 0.113 af
Outflow = 1.86 cfs @ 1.05 hrs, Volume= 0.114 af, Atten= 35%, Lag= 11.7 min
Discarded = 1.86 cfs @ 1.05 hrs, Volume= 0.114 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 4.05' @ 1.05 hrs Surf.Area= 2,832 sf Storage= 1,202 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 6.6 min (60.8 - 54.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.86 cfs @ 1.05 hrs HW=4.05' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.86 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

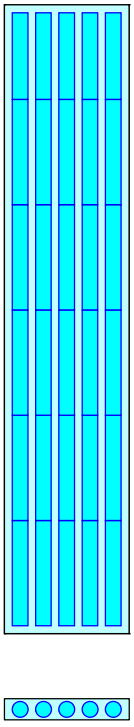
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

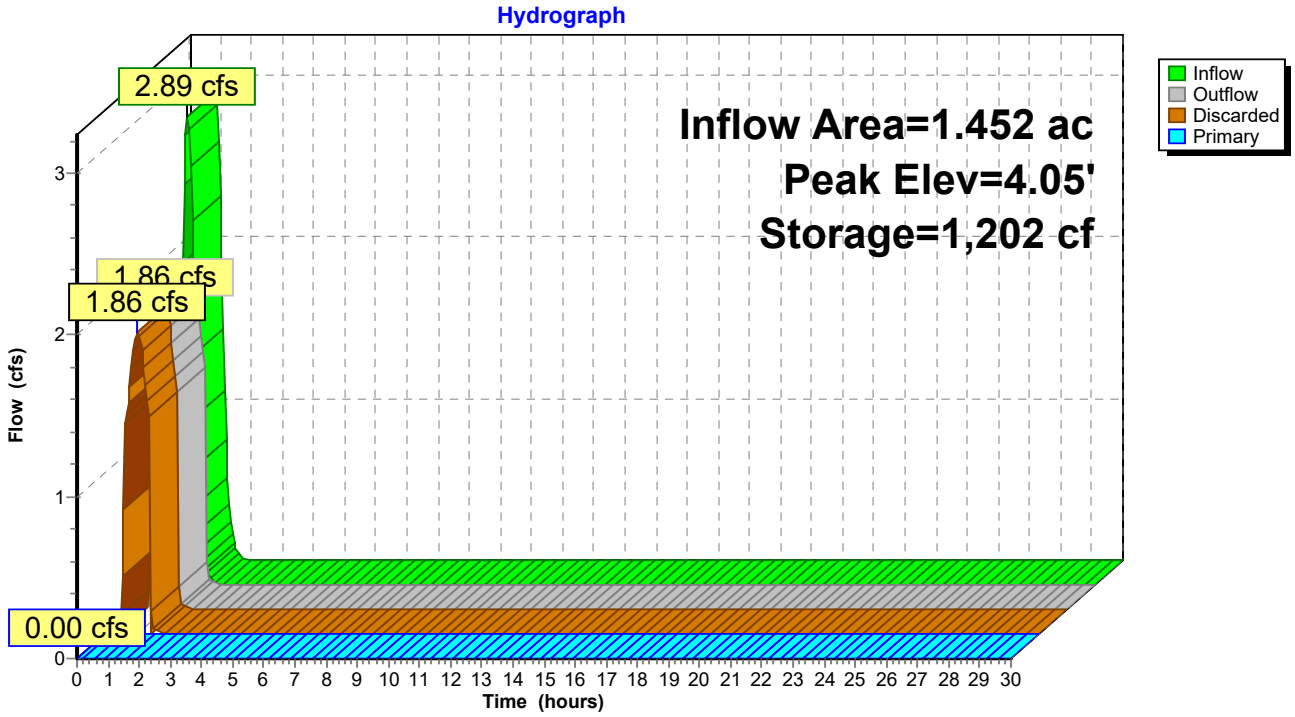
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	0	3.00	0.00	0.00	**0.00**
1.00	**2.25**	**1,168**	**4.03**	**1.85**	**1.85**	0.00
2.00	0.00	**0**	**3.00**	**0.00**	**0.00**	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.00	0	3.00	0.00	0.00	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

Runoff = 2.73 cfs @ 1.07 hrs, Volume= 0.176 af, Depth= 1.45"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 2-hr 2-Year-2hr Rainfall=3.09"

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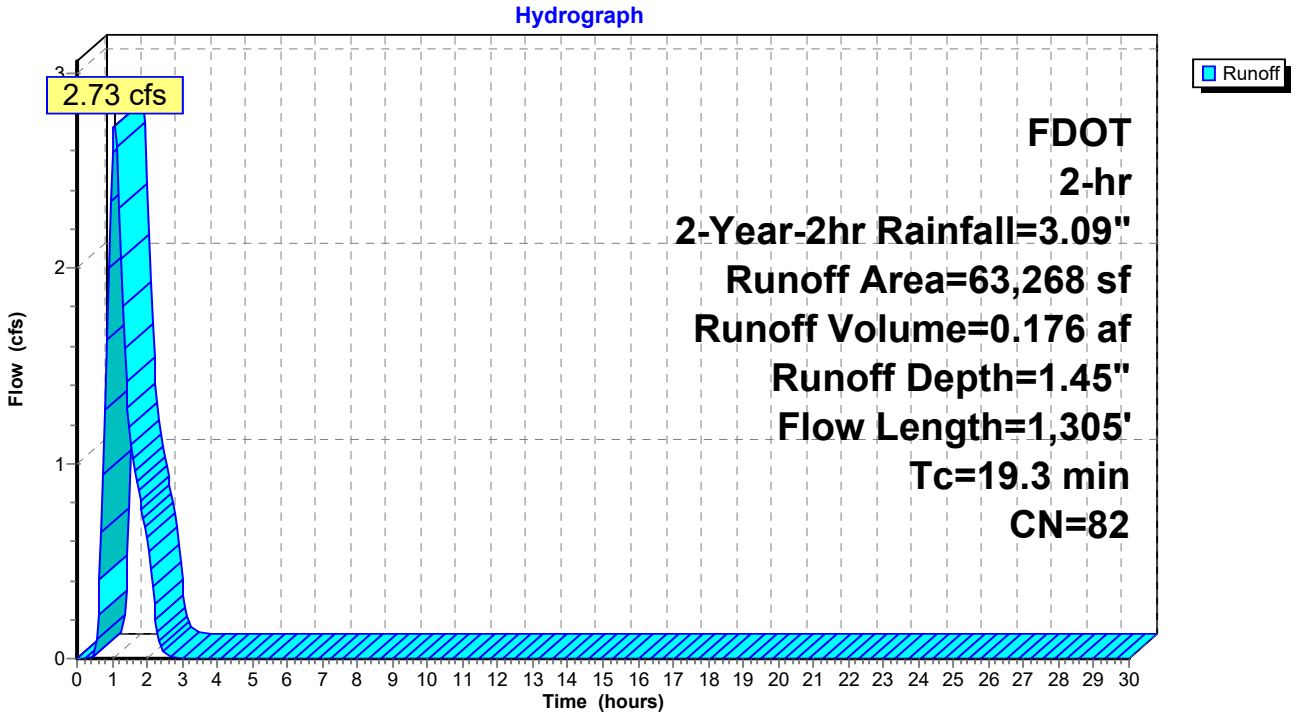
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.82	0.06	0.03
1.00	2.38	0.91	**2.60**
1.50	2.86	1.27	**1.18**
2.00	**3.09**	**1.45**	0.62
2.50	3.09	1.45	0.03
3.00	3.09	1.45	0.00
3.50	3.09	1.45	0.00
4.00	3.09	1.45	0.00
4.50	3.09	1.45	0.00
5.00	3.09	1.45	0.00
5.50	3.09	1.45	0.00
6.00	3.09	1.45	0.00
6.50	3.09	1.45	0.00
7.00	3.09	1.45	0.00
7.50	3.09	1.45	0.00
8.00	3.09	1.45	0.00
8.50	3.09	1.45	0.00
9.00	3.09	1.45	0.00
9.50	3.09	1.45	0.00
10.00	3.09	1.45	0.00
10.50	3.09	1.45	0.00
11.00	3.09	1.45	0.00
11.50	3.09	1.45	0.00
12.00	3.09	1.45	0.00
12.50	3.09	1.45	0.00
13.00	3.09	1.45	0.00
13.50	3.09	1.45	0.00
14.00	3.09	1.45	0.00
14.50	3.09	1.45	0.00
15.00	3.09	1.45	0.00
15.50	3.09	1.45	0.00
16.00	3.09	1.45	0.00
16.50	3.09	1.45	0.00
17.00	3.09	1.45	0.00
17.50	3.09	1.45	0.00
18.00	3.09	1.45	0.00
18.50	3.09	1.45	0.00
19.00	3.09	1.45	0.00
19.50	3.09	1.45	0.00
20.00	3.09	1.45	0.00
20.50	3.09	1.45	0.00
21.00	3.09	1.45	0.00
21.50	3.09	1.45	0.00
22.00	3.09	1.45	0.00
22.50	3.09	1.45	0.00
23.00	3.09	1.45	0.00
23.50	3.09	1.45	0.00
24.00	3.09	1.45	0.00
24.50	3.09	1.45	0.00
25.00	3.09	1.45	0.00
25.50	3.09	1.45	0.00
26.00	3.09	1.45	0.00
26.50	3.09	1.45	0.00
27.00	3.09	1.45	0.00
27.50	3.09	1.45	0.00
28.00	3.09	1.45	0.00
28.50	3.09	1.45	0.00
29.00	3.09	1.45	0.00
29.50	3.09	1.45	0.00
30.00	3.09	1.45	0.00

Summary for Subcatchment EX: Pre Development

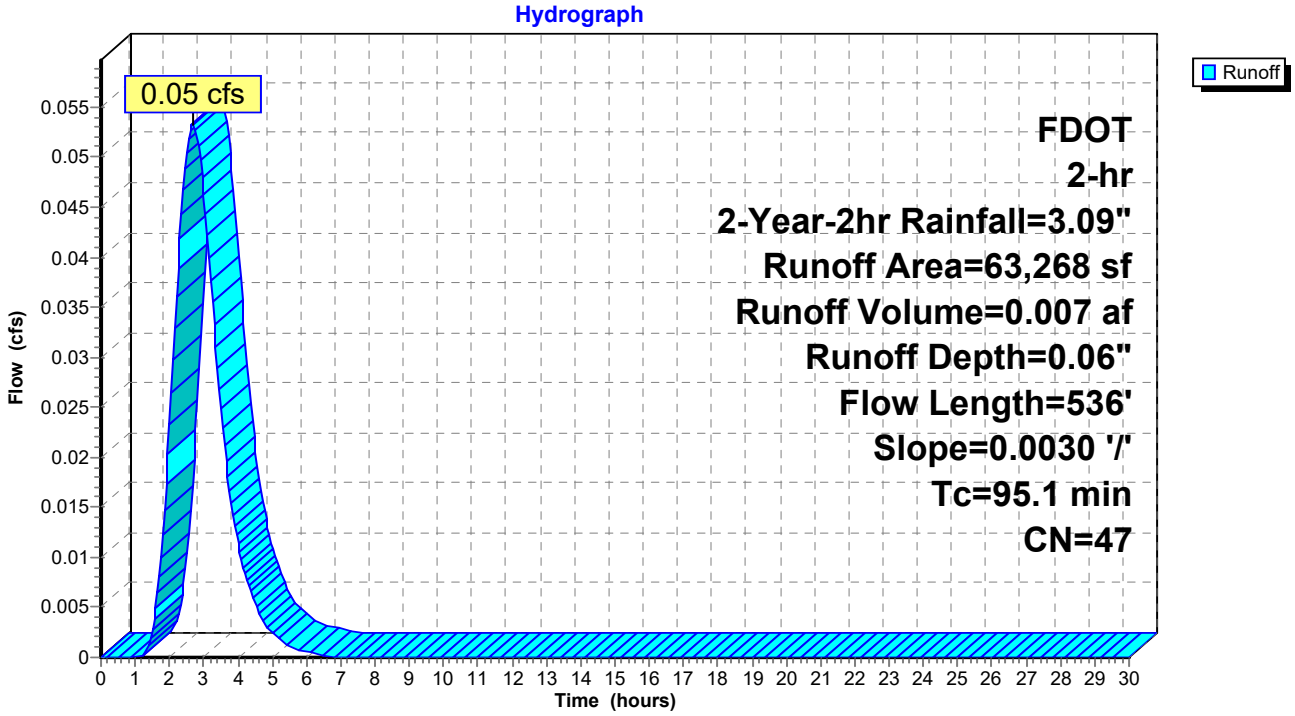
Runoff = 0.05 cfs @ 2.67 hrs, Volume= 0.007 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 2-hr 2-Year-2hr Rainfall=3.09"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.82	0.00	0.00
1.00	2.38	0.00	0.00
1.50	2.86	0.03	0.00
2.00	**3.09**	**0.06**	0.02
2.50	3.09	0.06	**0.05**
3.00	3.09	0.06	**0.05**
3.50	3.09	0.06	0.02
4.00	3.09	0.06	0.01
4.50	3.09	0.06	0.01
5.00	3.09	0.06	0.00
5.50	3.09	0.06	0.00
6.00	3.09	0.06	0.00
6.50	3.09	0.06	0.00
7.00	3.09	0.06	0.00
7.50	3.09	0.06	0.00
8.00	3.09	0.06	0.00
8.50	3.09	0.06	0.00
9.00	3.09	0.06	0.00
9.50	3.09	0.06	0.00
10.00	3.09	0.06	0.00
10.50	3.09	0.06	0.00
11.00	3.09	0.06	0.00
11.50	3.09	0.06	0.00
12.00	3.09	0.06	0.00
12.50	3.09	0.06	0.00
13.00	3.09	0.06	0.00
13.50	3.09	0.06	0.00
14.00	3.09	0.06	0.00
14.50	3.09	0.06	0.00
15.00	3.09	0.06	0.00
15.50	3.09	0.06	0.00
16.00	3.09	0.06	0.00
16.50	3.09	0.06	0.00
17.00	3.09	0.06	0.00
17.50	3.09	0.06	0.00
18.00	3.09	0.06	0.00
18.50	3.09	0.06	0.00
19.00	3.09	0.06	0.00
19.50	3.09	0.06	0.00
20.00	3.09	0.06	0.00
20.50	3.09	0.06	0.00
21.00	3.09	0.06	0.00
21.50	3.09	0.06	0.00
22.00	3.09	0.06	0.00
22.50	3.09	0.06	0.00
23.00	3.09	0.06	0.00
23.50	3.09	0.06	0.00
24.00	3.09	0.06	0.00
24.50	3.09	0.06	0.00
25.00	3.09	0.06	0.00
25.50	3.09	0.06	0.00
26.00	3.09	0.06	0.00
26.50	3.09	0.06	0.00
27.00	3.09	0.06	0.00
27.50	3.09	0.06	0.00
28.00	3.09	0.06	0.00
28.50	3.09	0.06	0.00
29.00	3.09	0.06	0.00
29.50	3.09	0.06	0.00
30.00	3.09	0.06	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 1.45" for 2-Year-2hr event
Inflow = 2.73 cfs @ 1.07 hrs, Volume= 0.176 af
Outflow = 1.86 cfs @ 1.29 hrs, Volume= 0.176 af, Atten= 32%, Lag= 13.4 min
Discarded = 1.86 cfs @ 1.29 hrs, Volume= 0.176 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 4.04' @ 1.29 hrs Surf.Area= 2,832 sf Storage= 1,184 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 5.8 min (82.8 - 77.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.86 cfs @ 1.29 hrs HW=4.04' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.86 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

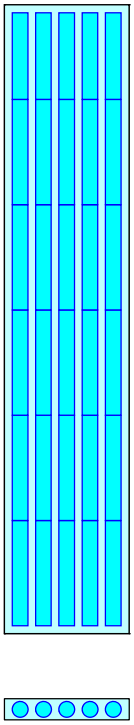
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

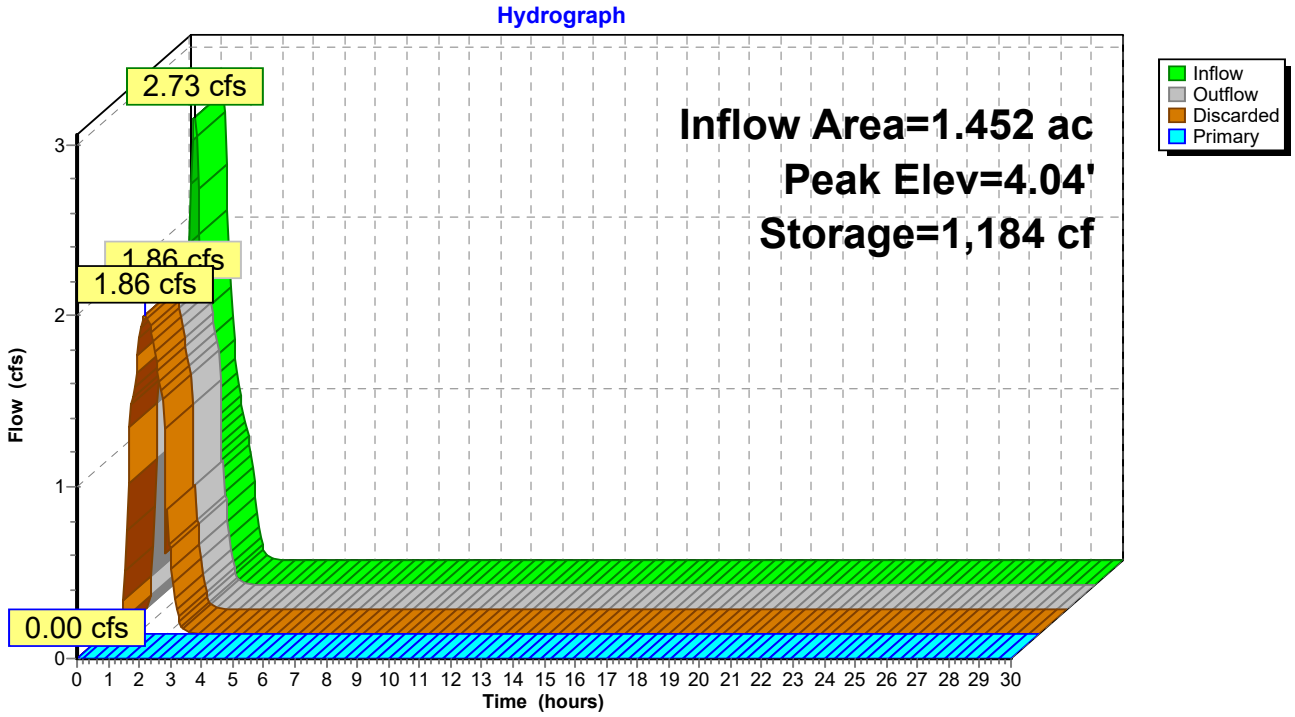
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	**2.60**	**466**	**3.41**	**1.53**	**1.53**	0.00
2.00	**0.62**	**25**	**3.02**	**0.72**	**0.72**	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.00	0	3.00	0.00	0.00	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

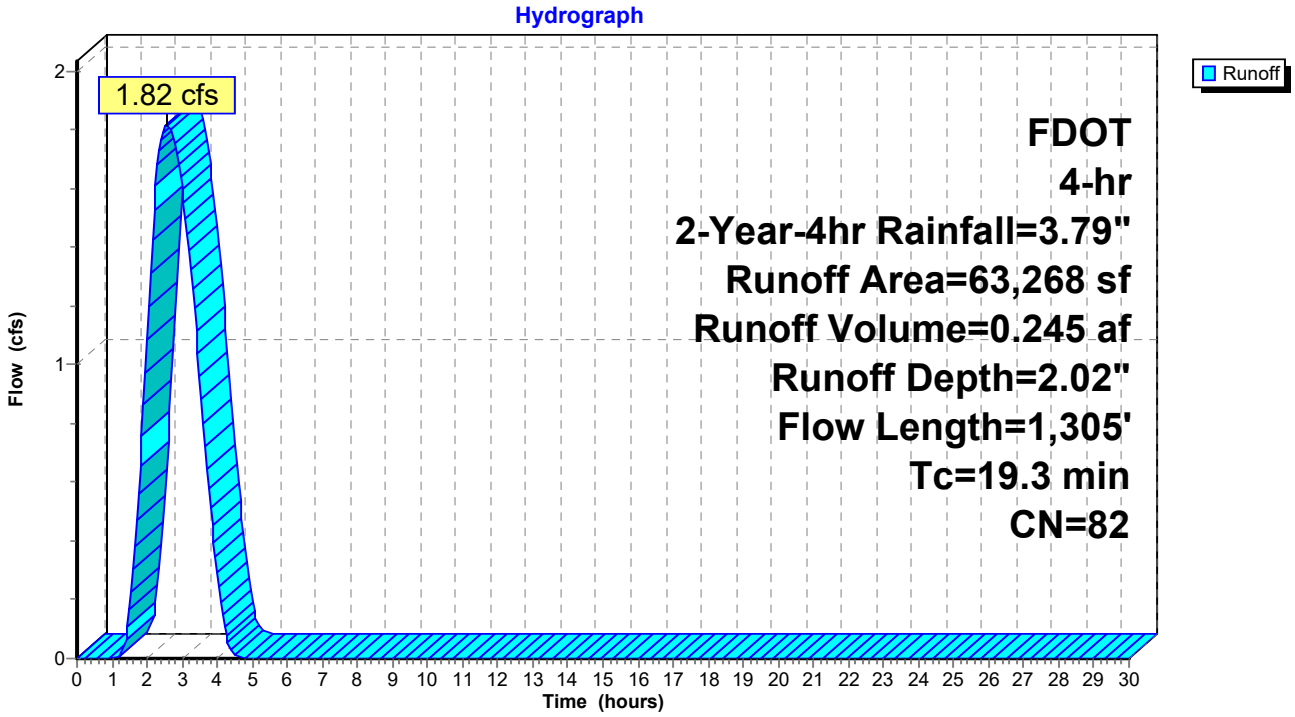
Runoff = 1.82 cfs @ 2.58 hrs, Volume= 0.245 af, Depth= 2.02"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 4-hr 2-Year-4hr Rainfall=3.79"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.08	0.00	0.00
1.00	0.35	0.00	0.00
1.50	0.89	0.08	0.16
2.00	1.74	0.48	1.09
2.50	2.65	1.11	**1.81**
3.00	3.33	1.64	**1.60**
3.50	3.69	1.94	0.96
4.00	**3.79**	**2.02**	0.29
4.50	3.79	2.02	0.01
5.00	3.79	2.02	0.00
5.50	3.79	2.02	0.00
6.00	3.79	2.02	0.00
6.50	3.79	2.02	0.00
7.00	3.79	2.02	0.00
7.50	3.79	2.02	0.00
8.00	3.79	2.02	0.00
8.50	3.79	2.02	0.00
9.00	3.79	2.02	0.00
9.50	3.79	2.02	0.00
10.00	3.79	2.02	0.00
10.50	3.79	2.02	0.00
11.00	3.79	2.02	0.00
11.50	3.79	2.02	0.00
12.00	3.79	2.02	0.00
12.50	3.79	2.02	0.00
13.00	3.79	2.02	0.00
13.50	3.79	2.02	0.00
14.00	3.79	2.02	0.00
14.50	3.79	2.02	0.00
15.00	3.79	2.02	0.00
15.50	3.79	2.02	0.00
16.00	3.79	2.02	0.00
16.50	3.79	2.02	0.00
17.00	3.79	2.02	0.00
17.50	3.79	2.02	0.00
18.00	3.79	2.02	0.00
18.50	3.79	2.02	0.00
19.00	3.79	2.02	0.00
19.50	3.79	2.02	0.00
20.00	3.79	2.02	0.00
20.50	3.79	2.02	0.00
21.00	3.79	2.02	0.00
21.50	3.79	2.02	0.00
22.00	3.79	2.02	0.00
22.50	3.79	2.02	0.00
23.00	3.79	2.02	0.00
23.50	3.79	2.02	0.00
24.00	3.79	2.02	0.00
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25.50	3.79	2.02	0.00
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26.50	3.79	2.02	0.00
27.00	3.79	2.02	0.00
27.50	3.79	2.02	0.00
28.00	3.79	2.02	0.00
28.50	3.79	2.02	0.00
29.00	3.79	2.02	0.00
29.50	3.79	2.02	0.00
30.00	3.79	2.02	0.00

Summary for Subcatchment EX: Pre Development

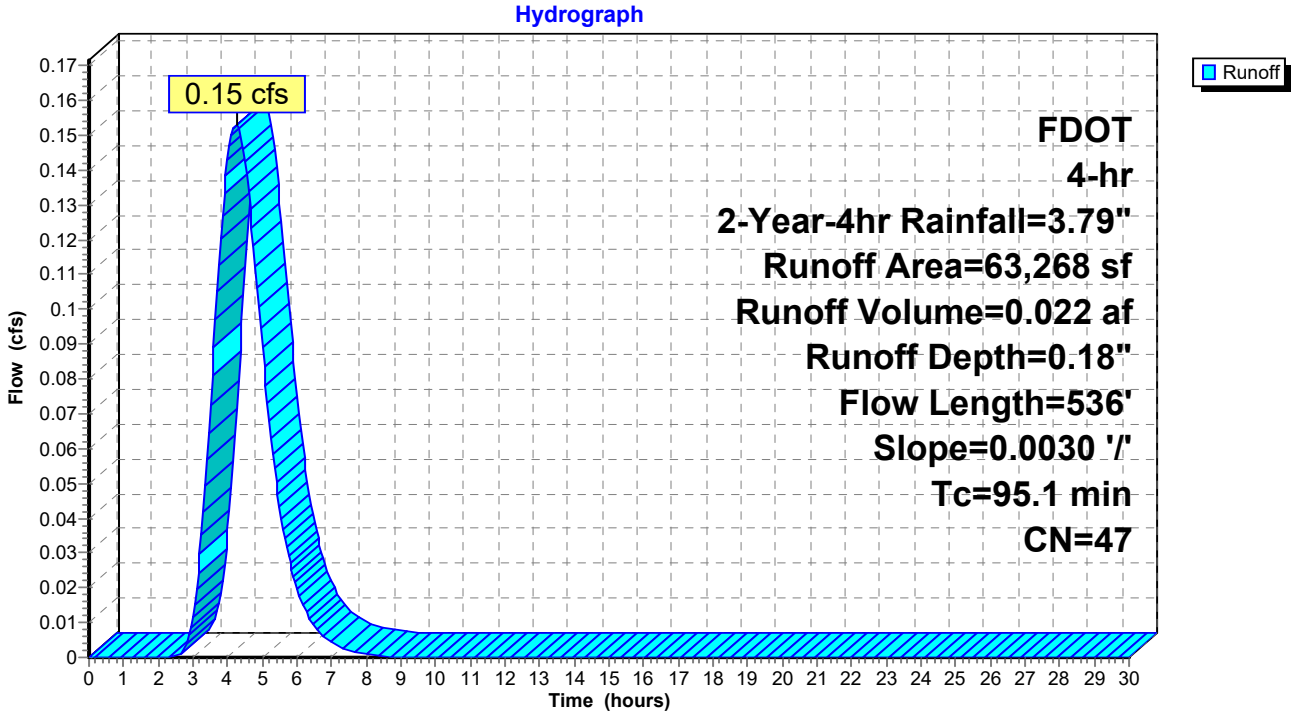
Runoff = 0.15 cfs @ 4.24 hrs, Volume= 0.022 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 4-hr 2-Year-4hr Rainfall=3.79"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.08	0.00	0.00
1.00	0.35	0.00	0.00
1.50	0.89	0.00	0.00
2.00	1.74	0.00	0.00
2.50	2.65	0.01	0.00
3.00	3.33	0.09	0.01
3.50	3.69	0.16	0.07
4.00	**3.79**	**0.18**	**0.14**
4.50	3.79	0.18	**0.14**
5.00	3.79	0.18	0.09
5.50	3.79	0.18	0.04
6.00	3.79	0.18	0.02
6.50	3.79	0.18	0.01
7.00	3.79	0.18	0.00
7.50	3.79	0.18	0.00
8.00	3.79	0.18	0.00
8.50	3.79	0.18	0.00
9.00	3.79	0.18	0.00
9.50	3.79	0.18	0.00
10.00	3.79	0.18	0.00
10.50	3.79	0.18	0.00
11.00	3.79	0.18	0.00
11.50	3.79	0.18	0.00
12.00	3.79	0.18	0.00
12.50	3.79	0.18	0.00
13.00	3.79	0.18	0.00
13.50	3.79	0.18	0.00
14.00	3.79	0.18	0.00
14.50	3.79	0.18	0.00
15.00	3.79	0.18	0.00
15.50	3.79	0.18	0.00
16.00	3.79	0.18	0.00
16.50	3.79	0.18	0.00
17.00	3.79	0.18	0.00
17.50	3.79	0.18	0.00
18.00	3.79	0.18	0.00
18.50	3.79	0.18	0.00
19.00	3.79	0.18	0.00
19.50	3.79	0.18	0.00
20.00	3.79	0.18	0.00
20.50	3.79	0.18	0.00
21.00	3.79	0.18	0.00
21.50	3.79	0.18	0.00
22.00	3.79	0.18	0.00
22.50	3.79	0.18	0.00
23.00	3.79	0.18	0.00
23.50	3.79	0.18	0.00
24.00	3.79	0.18	0.00
24.50	3.79	0.18	0.00
25.00	3.79	0.18	0.00
25.50	3.79	0.18	0.00
26.00	3.79	0.18	0.00
26.50	3.79	0.18	0.00
27.00	3.79	0.18	0.00
27.50	3.79	0.18	0.00
28.00	3.79	0.18	0.00
28.50	3.79	0.18	0.00
29.00	3.79	0.18	0.00
29.50	3.79	0.18	0.00
30.00	3.79	0.18	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 2.02" for 2-Year-4hr event
Inflow = 1.82 cfs @ 2.58 hrs, Volume= 0.245 af
Outflow = 1.64 cfs @ 2.95 hrs, Volume= 0.245 af, Atten= 10%, Lag= 22.3 min
Discarded = 1.64 cfs @ 2.95 hrs, Volume= 0.245 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 3.63' @ 2.95 hrs Surf.Area= 2,832 sf Storage= 690 cf

Plug-Flow detention time= 3.8 min calculated for 0.245 af (100% of inflow)
Center-of-Mass det. time= 3.8 min (168.9 - 165.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.64 cfs @ 2.95 hrs HW=3.63' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.64 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

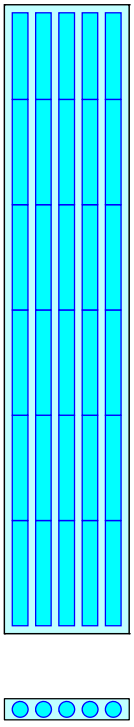
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

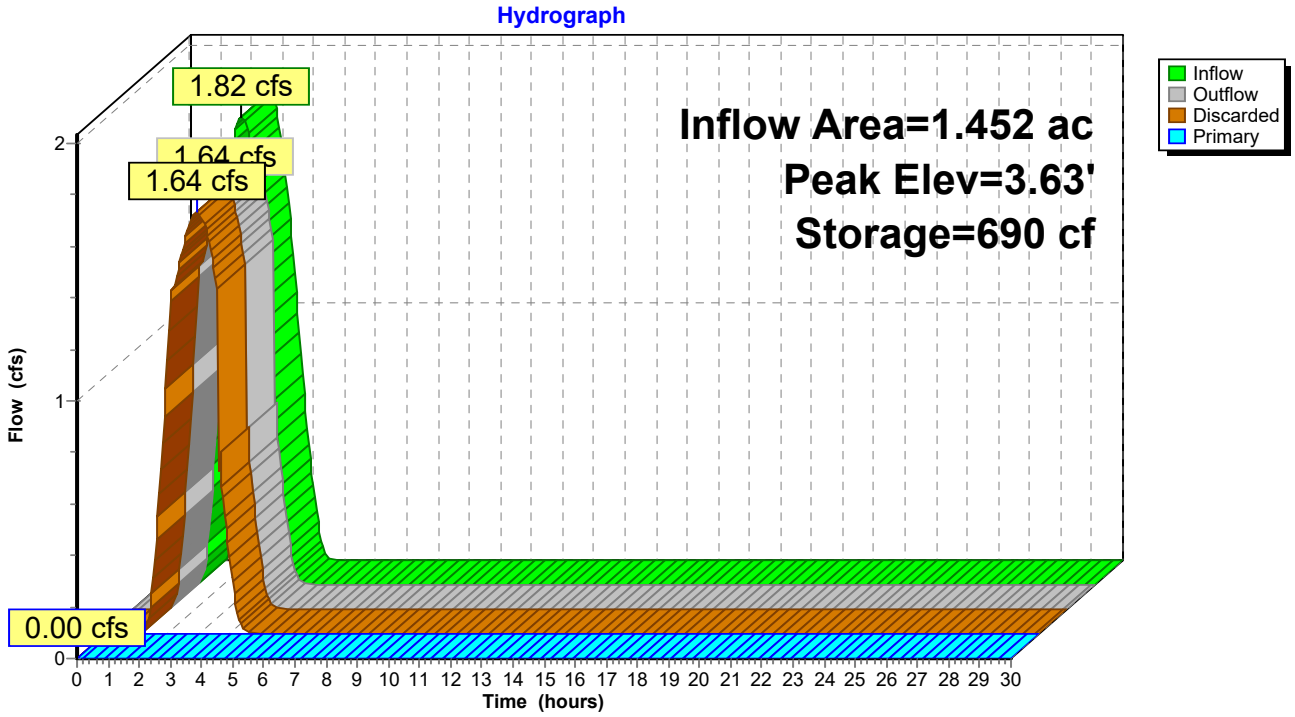
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	**1.09**	**36**	**3.03**	**1.06**	**1.06**	0.00
3.00	**1.60**	**686**	**3.62**	**1.64**	**1.64**	0.00
4.00	0.29	10	3.01	0.30	0.30	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

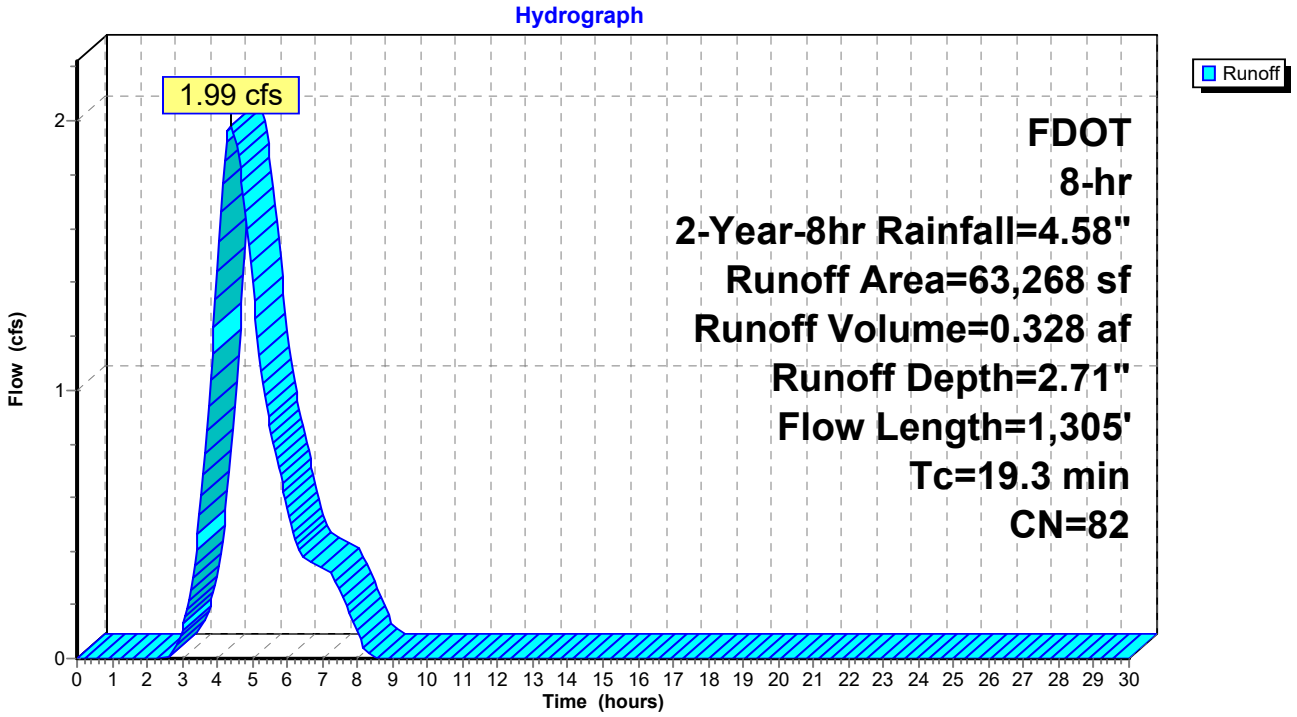
Runoff = 1.99 cfs @ 4.38 hrs, Volume= 0.328 af, Depth= 2.71"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 8-hr 2-Year-8hr Rainfall=4.58"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.12	0.00	0.00
2.00	0.25	0.00	0.00
2.50	0.45	0.00	0.00
3.00	0.77	0.04	0.11
3.50	1.31	0.25	0.53
4.00	2.19	0.78	**1.44**
4.50	3.07	1.44	**1.95**
5.00	3.63	1.89	1.40
5.50	3.97	2.18	0.87
6.00	4.18	2.36	0.56
6.50	4.32	2.48	0.37
7.00	4.46	2.60	0.34
7.50	4.55	2.68	0.25
8.00	**4.58**	**2.71**	0.10
8.50	4.58	2.71	0.00
9.00	4.58	2.71	0.00
9.50	4.58	2.71	0.00
10.00	4.58	2.71	0.00
10.50	4.58	2.71	0.00
11.00	4.58	2.71	0.00
11.50	4.58	2.71	0.00
12.00	4.58	2.71	0.00
12.50	4.58	2.71	0.00
13.00	4.58	2.71	0.00
13.50	4.58	2.71	0.00
14.00	4.58	2.71	0.00
14.50	4.58	2.71	0.00
15.00	4.58	2.71	0.00
15.50	4.58	2.71	0.00
16.00	4.58	2.71	0.00
16.50	4.58	2.71	0.00
17.00	4.58	2.71	0.00
17.50	4.58	2.71	0.00
18.00	4.58	2.71	0.00
18.50	4.58	2.71	0.00
19.00	4.58	2.71	0.00
19.50	4.58	2.71	0.00
20.00	4.58	2.71	0.00
20.50	4.58	2.71	0.00
21.00	4.58	2.71	0.00
21.50	4.58	2.71	0.00
22.00	4.58	2.71	0.00
22.50	4.58	2.71	0.00
23.00	4.58	2.71	0.00
23.50	4.58	2.71	0.00
24.00	4.58	2.71	0.00
24.50	4.58	2.71	0.00
25.00	4.58	2.71	0.00
25.50	4.58	2.71	0.00
26.00	4.58	2.71	0.00
26.50	4.58	2.71	0.00
27.00	4.58	2.71	0.00
27.50	4.58	2.71	0.00
28.00	4.58	2.71	0.00
28.50	4.58	2.71	0.00
29.00	4.58	2.71	0.00
29.50	4.58	2.71	0.00
30.00	4.58	2.71	0.00

Summary for Subcatchment EX: Pre Development

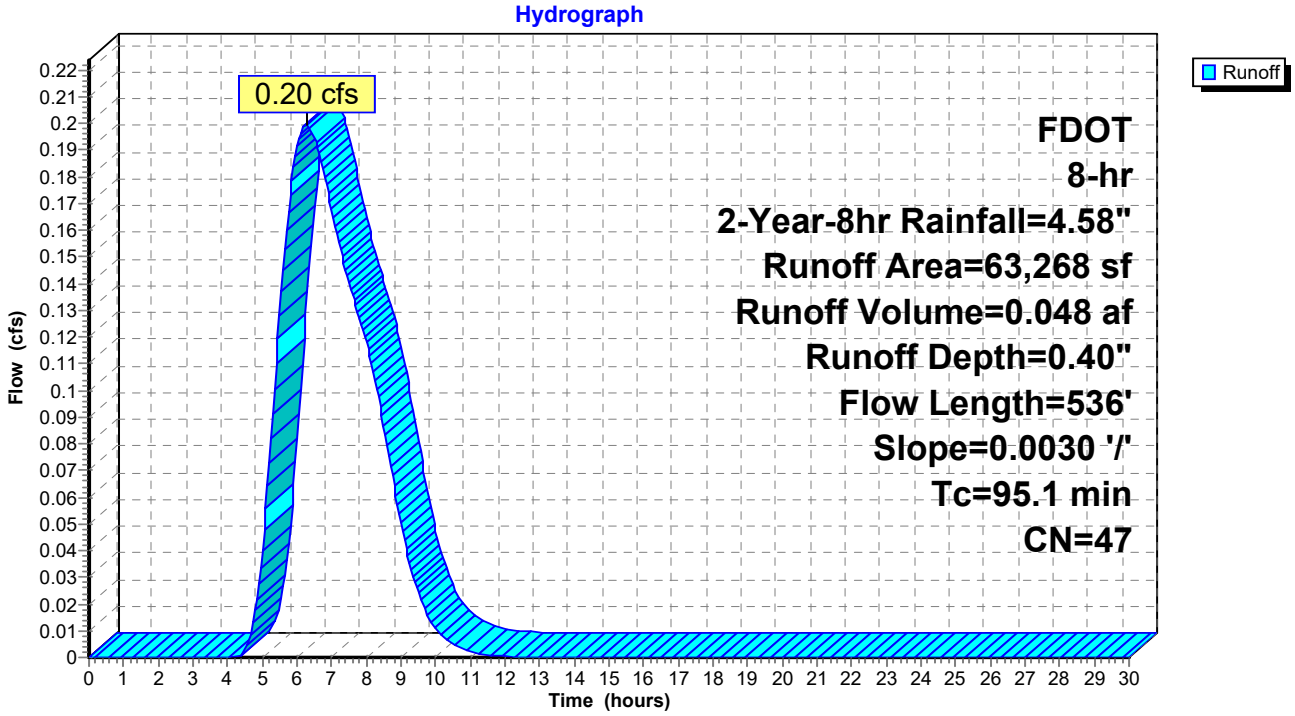
Runoff = 0.20 cfs @ 6.26 hrs, Volume= 0.048 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 8-hr 2-Year-8hr Rainfall=4.58"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.12	0.00	0.00
2.00	0.25	0.00	0.00
2.50	0.45	0.00	0.00
3.00	0.77	0.00	0.00
3.50	1.31	0.00	0.00
4.00	2.19	0.00	0.00
4.50	3.07	0.06	0.00
5.00	3.63	0.15	0.04
5.50	3.97	0.23	0.13
6.00	4.18	0.28	**0.19**
6.50	4.32	0.32	**0.20**
7.00	4.46	0.36	0.17
7.50	4.55	0.39	0.14
8.00	**4.58**	**0.40**	0.12
8.50	4.58	0.40	0.09
9.00	4.58	0.40	0.05
9.50	4.58	0.40	0.02
10.00	4.58	0.40	0.01
10.50	4.58	0.40	0.00
11.00	4.58	0.40	0.00
11.50	4.58	0.40	0.00
12.00	4.58	0.40	0.00
12.50	4.58	0.40	0.00
13.00	4.58	0.40	0.00
13.50	4.58	0.40	0.00
14.00	4.58	0.40	0.00
14.50	4.58	0.40	0.00
15.00	4.58	0.40	0.00
15.50	4.58	0.40	0.00
16.00	4.58	0.40	0.00
16.50	4.58	0.40	0.00
17.00	4.58	0.40	0.00
17.50	4.58	0.40	0.00
18.00	4.58	0.40	0.00
18.50	4.58	0.40	0.00
19.00	4.58	0.40	0.00
19.50	4.58	0.40	0.00
20.00	4.58	0.40	0.00
20.50	4.58	0.40	0.00
21.00	4.58	0.40	0.00
21.50	4.58	0.40	0.00
22.00	4.58	0.40	0.00
22.50	4.58	0.40	0.00
23.00	4.58	0.40	0.00
23.50	4.58	0.40	0.00
24.00	4.58	0.40	0.00
24.50	4.58	0.40	0.00
25.00	4.58	0.40	0.00
25.50	4.58	0.40	0.00
26.00	4.58	0.40	0.00
26.50	4.58	0.40	0.00
27.00	4.58	0.40	0.00
27.50	4.58	0.40	0.00
28.00	4.58	0.40	0.00
28.50	4.58	0.40	0.00
29.00	4.58	0.40	0.00
29.50	4.58	0.40	0.00
30.00	4.58	0.40	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 2.71" for 2-Year-8hr event
Inflow = 1.99 cfs @ 4.38 hrs, Volume= 0.328 af
Outflow = 1.73 cfs @ 4.75 hrs, Volume= 0.328 af, Atten= 13%, Lag= 22.1 min
Discarded = 1.73 cfs @ 4.75 hrs, Volume= 0.328 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 3.79' @ 4.75 hrs Surf.Area= 2,832 sf Storage= 832 cf

Plug-Flow detention time= 3.5 min calculated for 0.327 af (100% of inflow)
Center-of-Mass det. time= 3.4 min (301.3 - 297.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.73 cfs @ 4.75 hrs HW=3.79' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.73 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

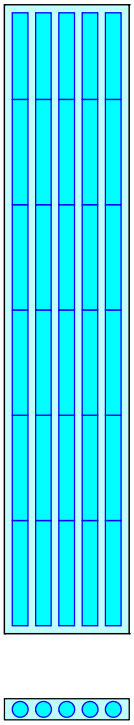
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

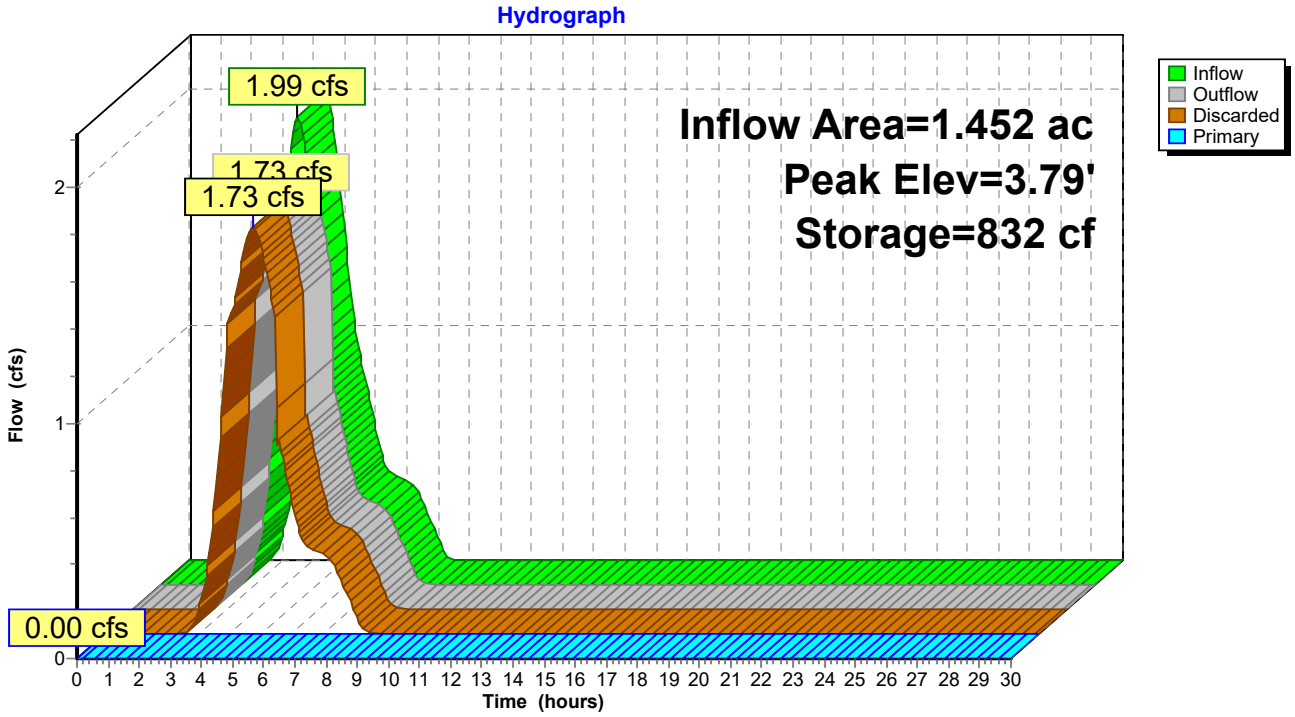
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	0.00	0	3.00	0.00	0.00	0.00
3.00	0.11	3	3.00	0.10	0.10	0.00
4.00	**1.44**	**56**	**3.05**	**1.34**	**1.34**	0.00
5.00	**1.40**	**711**	**3.65**	**1.65**	**1.65**	0.00
6.00	0.56	19	3.02	0.57	0.57	0.00
7.00	0.34	11	3.01	0.34	0.34	0.00
8.00	0.10	3	3.00	0.10	0.10	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

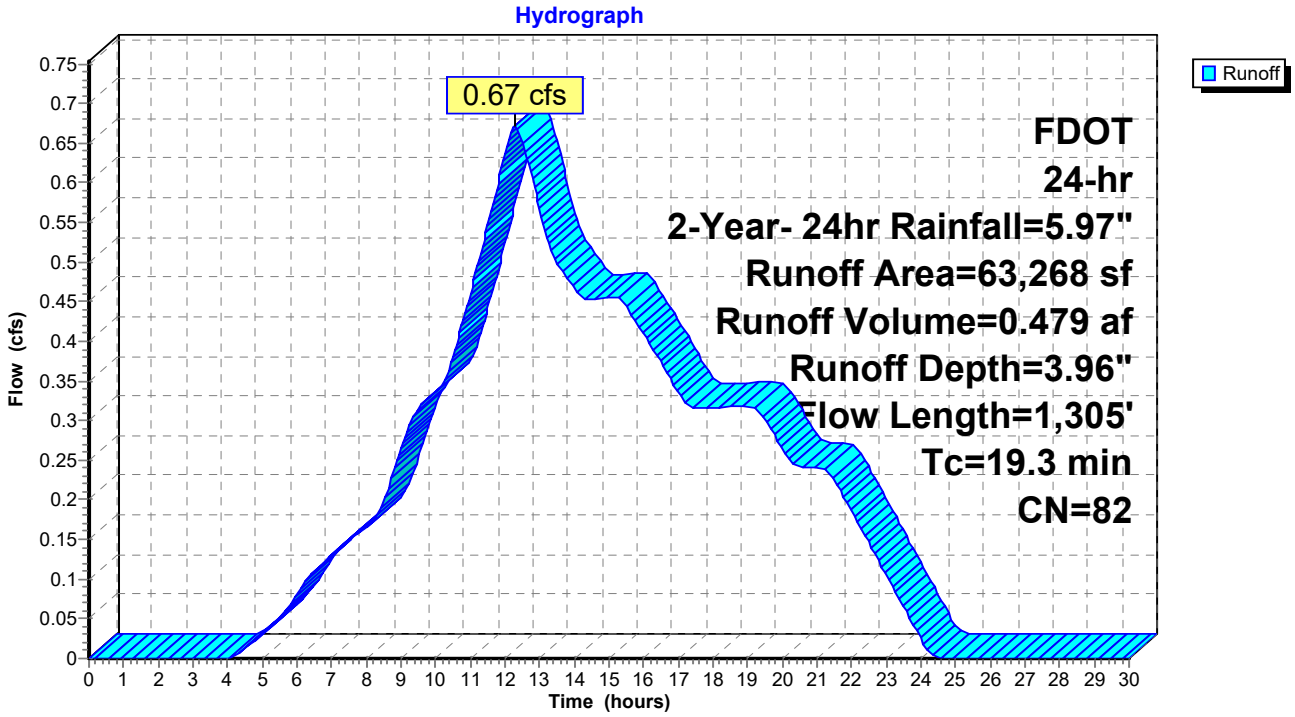
Runoff = 0.67 cfs @ 12.28 hrs, Volume= 0.479 af, Depth= 3.96"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 24-hr 2-Year- 24hr Rainfall=5.97"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.07	0.00	0.00
2.00	0.12	0.00	0.00
2.50	0.19	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.36	0.00	0.00
4.00	0.45	0.00	0.00
4.50	0.54	0.00	0.01
5.00	0.63	0.02	0.03
5.50	0.73	0.03	0.05
6.00	0.84	0.06	0.08
6.50	0.96	0.10	0.11
7.00	1.09	0.15	0.13
7.50	1.21	0.20	0.15
8.00	1.33	0.26	0.17
8.50	1.46	0.33	0.20
9.00	1.63	0.42	0.26
9.50	1.81	0.53	0.32
10.00	1.99	0.64	0.34
10.50	2.19	0.77	0.38
11.00	2.41	0.93	0.46
11.50	2.67	1.12	0.55
12.00	2.95	1.34	**0.64**
12.50	3.23	1.57	**0.65**
13.00	3.47	1.76	0.57
13.50	3.67	1.92	0.50
14.00	3.86	2.08	0.47
14.50	4.04	2.24	0.45
15.00	4.22	2.39	0.46
15.50	4.39	2.54	0.44
16.00	4.55	2.68	0.41
16.50	4.70	2.81	0.37
17.00	4.82	2.92	0.34
17.50	4.94	3.03	0.32
18.00	5.07	3.14	0.32
18.50	5.19	3.25	0.32
19.00	5.31	3.35	0.32
19.50	5.42	3.46	0.30
20.00	5.52	3.55	0.26
20.50	5.61	3.63	0.24
21.00	5.70	3.71	0.24
21.50	5.78	3.79	0.22
22.00	5.85	3.85	0.19
22.50	5.90	3.90	0.15
23.00	5.94	3.93	0.11
23.50	5.96	3.95	0.06
24.00	**5.97**	**3.96**	0.02
24.50	5.97	3.96	0.00
25.00	5.97	3.96	0.00
25.50	5.97	3.96	0.00
26.00	5.97	3.96	0.00
26.50	5.97	3.96	0.00
27.00	5.97	3.96	0.00
27.50	5.97	3.96	0.00
28.00	5.97	3.96	0.00
28.50	5.97	3.96	0.00
29.00	5.97	3.96	0.00
29.50	5.97	3.96	0.00
30.00	5.97	3.96	0.00

Summary for Subcatchment EX: Pre Development

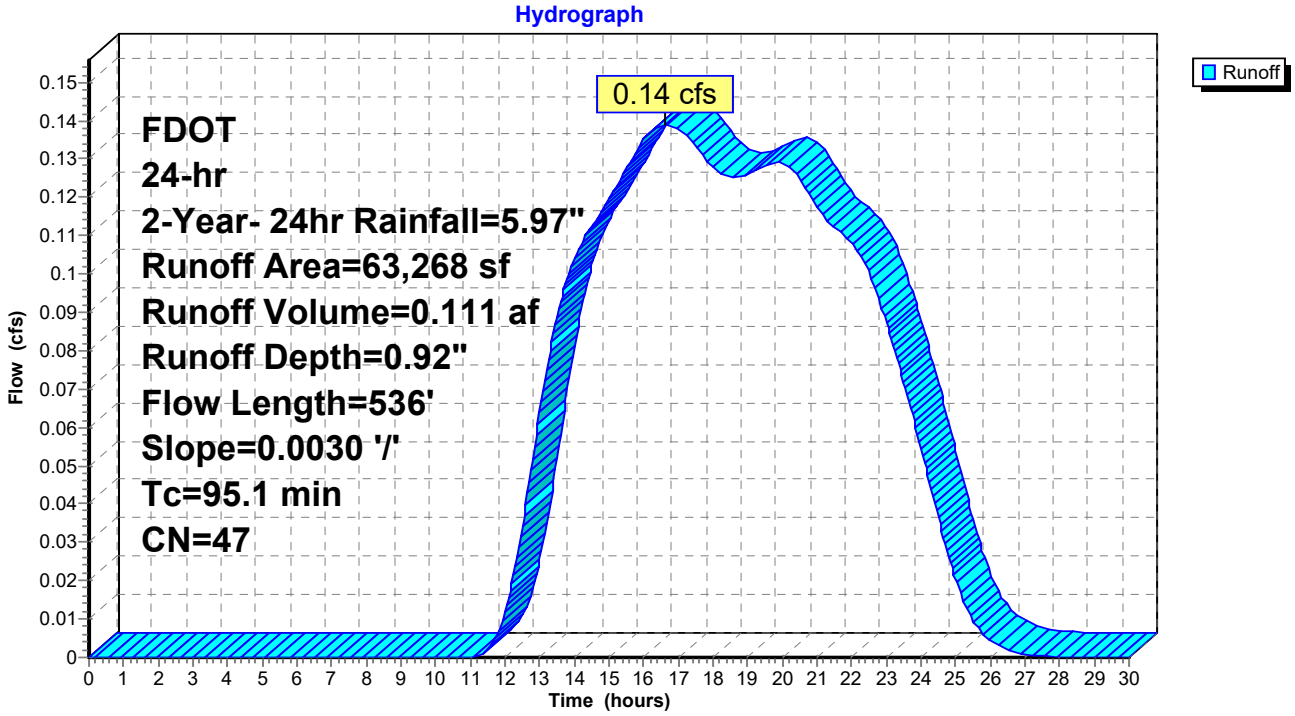
Runoff = 0.14 cfs @ 16.60 hrs, Volume= 0.111 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 24-hr 2-Year- 24hr Rainfall=5.97"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.07	0.00	0.00
2.00	0.12	0.00	0.00
2.50	0.19	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.36	0.00	0.00
4.00	0.45	0.00	0.00
4.50	0.54	0.00	0.00
5.00	0.63	0.00	0.00
5.50	0.73	0.00	0.00
6.00	0.84	0.00	0.00
6.50	0.96	0.00	0.00
7.00	1.09	0.00	0.00
7.50	1.21	0.00	0.00
8.00	1.33	0.00	0.00
8.50	1.46	0.00	0.00
9.00	1.63	0.00	0.00
9.50	1.81	0.00	0.00
10.00	1.99	0.00	0.00
10.50	2.19	0.00	0.00
11.00	2.41	0.00	0.00
11.50	2.67	0.01	0.00
12.00	2.95	0.04	0.01
12.50	3.23	0.08	0.03
13.00	3.47	0.12	0.06
13.50	3.67	0.16	0.09
14.00	3.86	0.20	0.10
14.50	4.04	0.24	0.11
15.00	4.22	0.29	0.12
15.50	4.39	0.34	0.13
16.00	4.55	0.39	0.14
16.50	4.70	0.43	**0.14**
17.00	4.82	0.48	**0.14**
17.50	4.94	0.52	0.13
18.00	5.07	0.56	0.13
18.50	5.19	0.60	0.13
19.00	5.31	0.65	0.13
19.50	5.42	0.69	0.13
20.00	5.52	0.73	0.13
20.50	5.61	0.77	0.12
21.00	5.70	0.81	0.12
21.50	5.78	0.84	0.11
22.00	5.85	0.87	0.11
22.50	5.90	0.89	0.10
23.00	5.94	0.91	0.09
23.50	5.96	0.92	0.07
24.00	**5.97**	**0.92**	0.05
24.50	5.97	0.92	0.04
25.00	5.97	0.92	0.02
25.50	5.97	0.92	0.01
26.00	5.97	0.92	0.00
26.50	5.97	0.92	0.00
27.00	5.97	0.92	0.00
27.50	5.97	0.92	0.00
28.00	5.97	0.92	0.00
28.50	5.97	0.92	0.00
29.00	5.97	0.92	0.00
29.50	5.97	0.92	0.00
30.00	5.97	0.92	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 3.96" for 2-Year- 24hr event
Inflow = 0.67 cfs @ 12.28 hrs, Volume= 0.479 af
Outflow = 0.67 cfs @ 12.29 hrs, Volume= 0.479 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.67 cfs @ 12.29 hrs, Volume= 0.479 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 3.02' @ 12.29 hrs Surf.Area= 2,832 sf Storage= 23 cf

Plug-Flow detention time= 0.6 min calculated for 0.478 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (865.0 - 864.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.32 cfs @ 12.29 hrs HW=3.02' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.32 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

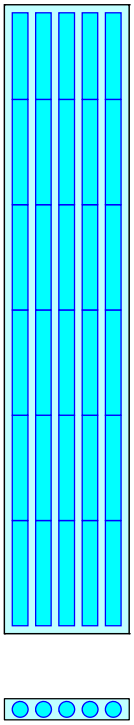
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

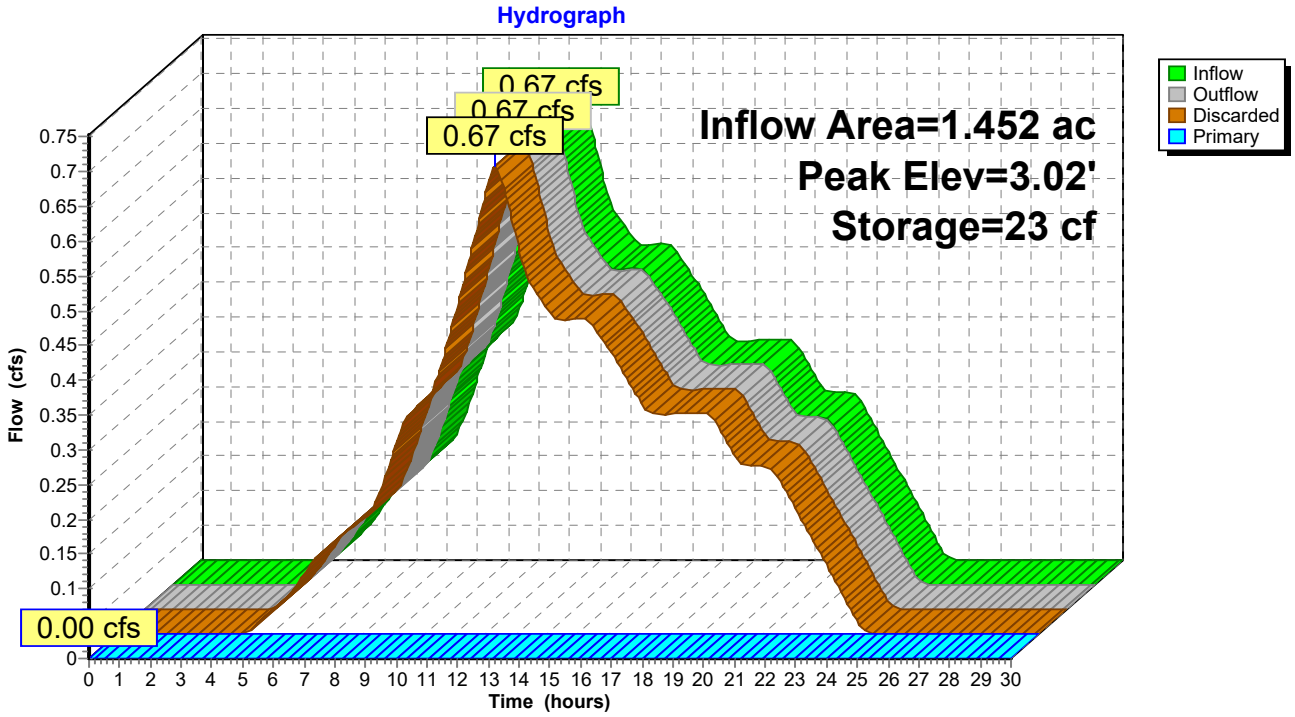
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	0.00	0	3.00	0.00	0.00	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.00	0	3.00	0.00	0.00	0.00
5.00	0.03	1	3.00	0.03	0.03	0.00
6.00	0.08	3	3.00	0.08	0.08	0.00
7.00	0.13	4	3.00	0.13	0.13	0.00
8.00	0.17	6	3.00	0.17	0.17	0.00
9.00	0.26	9	3.01	0.26	0.26	0.00
10.00	0.34	11	3.01	0.34	0.34	0.00
11.00	0.46	16	3.01	0.46	0.46	0.00
12.00	**0.64**	**22**	**3.02**	**0.63**	**0.63**	0.00
13.00	**0.57**	**19**	**3.02**	**0.57**	**0.57**	0.00
14.00	0.47	16	3.01	0.47	0.47	0.00
15.00	0.46	15	3.01	0.46	0.46	0.00
16.00	0.41	14	3.01	0.41	0.41	0.00
17.00	0.34	11	3.01	0.34	0.34	0.00
18.00	0.32	11	3.01	0.32	0.32	0.00
19.00	0.32	11	3.01	0.32	0.32	0.00
20.00	0.26	9	3.01	0.27	0.27	0.00
21.00	0.24	8	3.01	0.24	0.24	0.00
22.00	0.19	6	3.01	0.19	0.19	0.00
23.00	0.11	4	3.00	0.11	0.11	0.00
24.00	0.02	1	3.00	0.02	0.02	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

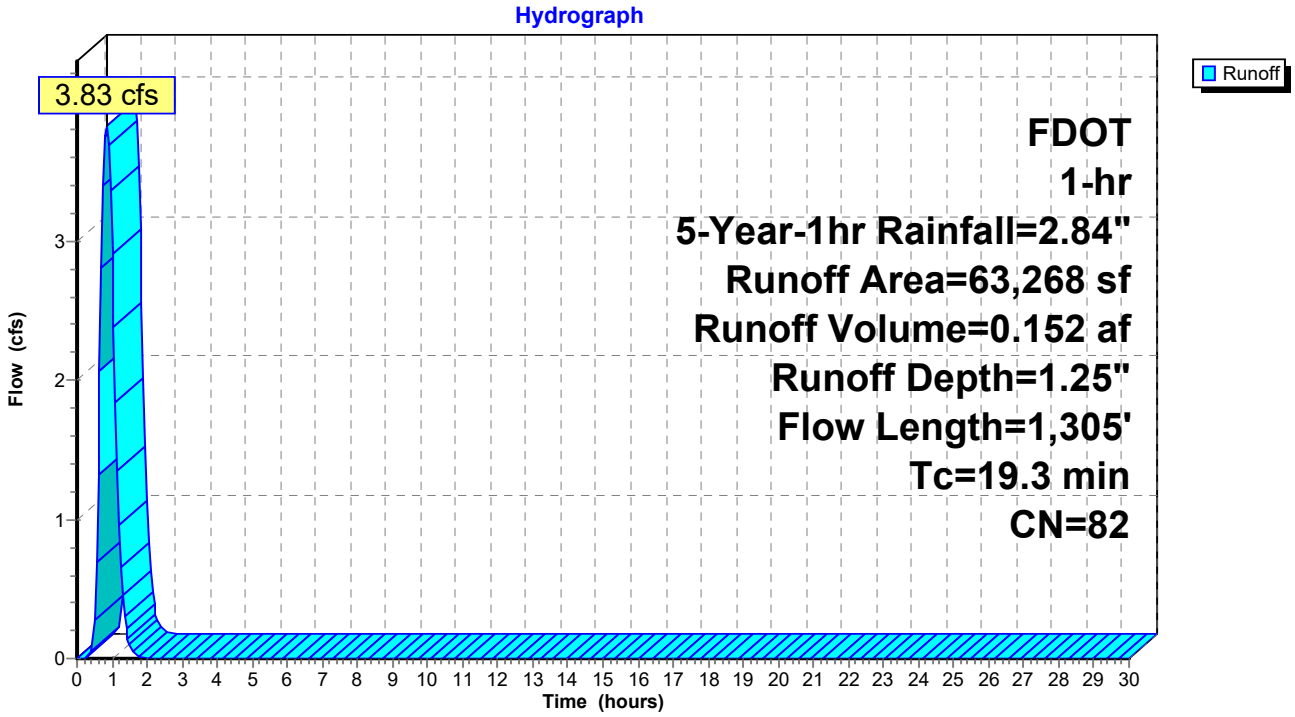
Runoff = 3.83 cfs @ 0.84 hrs, Volume= 0.152 af, Depth= 1.25"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 1-hr 5-Year-1hr Rainfall=2.84"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.48	0.33	**0.28**
1.00	**2.84**	**1.25**	**2.91**
1.50	2.84	1.25	0.10
2.00	2.84	1.25	0.00
2.50	2.84	1.25	0.00
3.00	2.84	1.25	0.00
3.50	2.84	1.25	0.00
4.00	2.84	1.25	0.00
4.50	2.84	1.25	0.00
5.00	2.84	1.25	0.00
5.50	2.84	1.25	0.00
6.00	2.84	1.25	0.00
6.50	2.84	1.25	0.00
7.00	2.84	1.25	0.00
7.50	2.84	1.25	0.00
8.00	2.84	1.25	0.00
8.50	2.84	1.25	0.00
9.00	2.84	1.25	0.00
9.50	2.84	1.25	0.00
10.00	2.84	1.25	0.00
10.50	2.84	1.25	0.00
11.00	2.84	1.25	0.00
11.50	2.84	1.25	0.00
12.00	2.84	1.25	0.00
12.50	2.84	1.25	0.00
13.00	2.84	1.25	0.00
13.50	2.84	1.25	0.00
14.00	2.84	1.25	0.00
14.50	2.84	1.25	0.00
15.00	2.84	1.25	0.00
15.50	2.84	1.25	0.00
16.00	2.84	1.25	0.00
16.50	2.84	1.25	0.00
17.00	2.84	1.25	0.00
17.50	2.84	1.25	0.00
18.00	2.84	1.25	0.00
18.50	2.84	1.25	0.00
19.00	2.84	1.25	0.00
19.50	2.84	1.25	0.00
20.00	2.84	1.25	0.00
20.50	2.84	1.25	0.00
21.00	2.84	1.25	0.00
21.50	2.84	1.25	0.00
22.00	2.84	1.25	0.00
22.50	2.84	1.25	0.00
23.00	2.84	1.25	0.00
23.50	2.84	1.25	0.00
24.00	2.84	1.25	0.00
24.50	2.84	1.25	0.00
25.00	2.84	1.25	0.00
25.50	2.84	1.25	0.00
26.00	2.84	1.25	0.00
26.50	2.84	1.25	0.00
27.00	2.84	1.25	0.00
27.50	2.84	1.25	0.00
28.00	2.84	1.25	0.00
28.50	2.84	1.25	0.00
29.00	2.84	1.25	0.00
29.50	2.84	1.25	0.00
30.00	2.84	1.25	0.00

Summary for Subcatchment EX: Pre Development

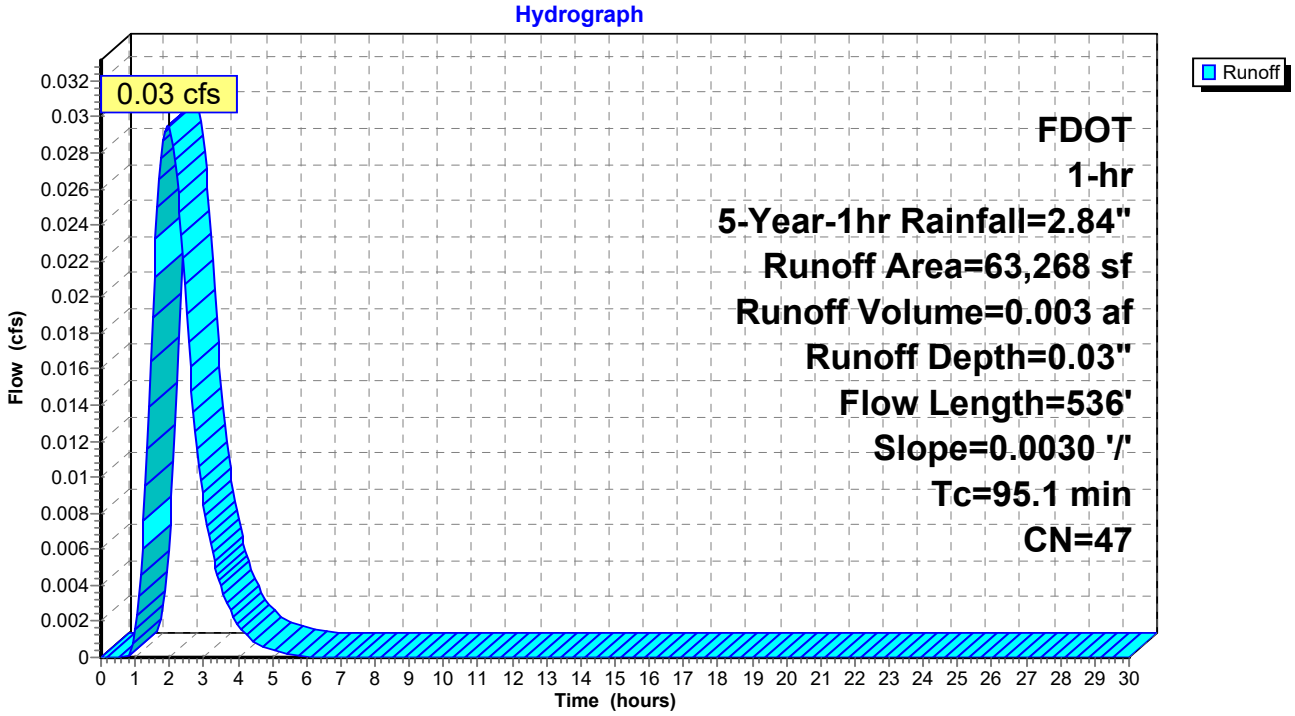
Runoff = 0.03 cfs @ 1.97 hrs, Volume= 0.003 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 1-hr 5-Year-1hr Rainfall=2.84"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.48	0.00	0.00
1.00	**2.84**	**0.03**	0.00
1.50	2.84	0.03	**0.02**
2.00	2.84	0.03	**0.03**
2.50	2.84	0.03	0.02
3.00	2.84	0.03	0.01
3.50	2.84	0.03	0.00
4.00	2.84	0.03	0.00
4.50	2.84	0.03	0.00
5.00	2.84	0.03	0.00
5.50	2.84	0.03	0.00
6.00	2.84	0.03	0.00
6.50	2.84	0.03	0.00
7.00	2.84	0.03	0.00
7.50	2.84	0.03	0.00
8.00	2.84	0.03	0.00
8.50	2.84	0.03	0.00
9.00	2.84	0.03	0.00
9.50	2.84	0.03	0.00
10.00	2.84	0.03	0.00
10.50	2.84	0.03	0.00
11.00	2.84	0.03	0.00
11.50	2.84	0.03	0.00
12.00	2.84	0.03	0.00
12.50	2.84	0.03	0.00
13.00	2.84	0.03	0.00
13.50	2.84	0.03	0.00
14.00	2.84	0.03	0.00
14.50	2.84	0.03	0.00
15.00	2.84	0.03	0.00
15.50	2.84	0.03	0.00
16.00	2.84	0.03	0.00
16.50	2.84	0.03	0.00
17.00	2.84	0.03	0.00
17.50	2.84	0.03	0.00
18.00	2.84	0.03	0.00
18.50	2.84	0.03	0.00
19.00	2.84	0.03	0.00
19.50	2.84	0.03	0.00
20.00	2.84	0.03	0.00
20.50	2.84	0.03	0.00
21.00	2.84	0.03	0.00
21.50	2.84	0.03	0.00
22.00	2.84	0.03	0.00
22.50	2.84	0.03	0.00
23.00	2.84	0.03	0.00
23.50	2.84	0.03	0.00
24.00	2.84	0.03	0.00
24.50	2.84	0.03	0.00
25.00	2.84	0.03	0.00
25.50	2.84	0.03	0.00
26.00	2.84	0.03	0.00
26.50	2.84	0.03	0.00
27.00	2.84	0.03	0.00
27.50	2.84	0.03	0.00
28.00	2.84	0.03	0.00
28.50	2.84	0.03	0.00
29.00	2.84	0.03	0.00
29.50	2.84	0.03	0.00
30.00	2.84	0.03	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 1.25" for 5-Year-1hr event
Inflow = 3.83 cfs @ 0.84 hrs, Volume= 0.152 af
Outflow = 2.15 cfs @ 1.07 hrs, Volume= 0.152 af, Atten= 44%, Lag= 13.7 min
Discarded = 2.15 cfs @ 1.07 hrs, Volume= 0.152 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 4.60' @ 1.07 hrs Surf.Area= 2,832 sf Storage= 2,166 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 10.6 min (64.2 - 53.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.15 cfs @ 1.07 hrs HW=4.59' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.15 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

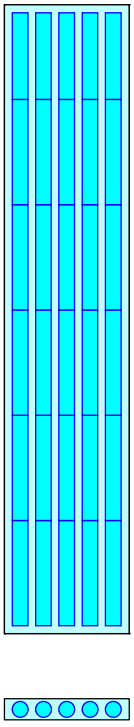
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

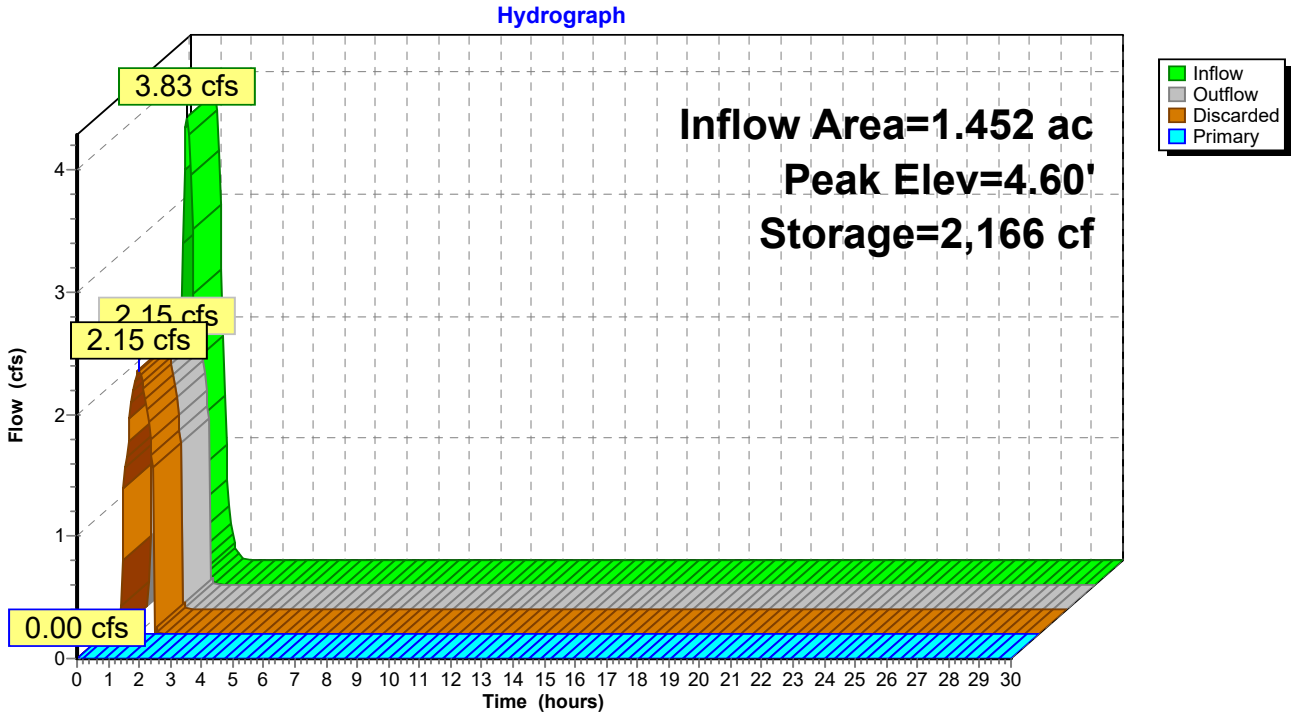
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	0	3.00	0.00	0.00	**0.00**
1.00	**2.91**	**2,064**	**4.54**	**2.12**	**2.12**	0.00
2.00	0.00	**0**	**3.00**	**0.00**	**0.00**	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.00	0	3.00	0.00	0.00	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

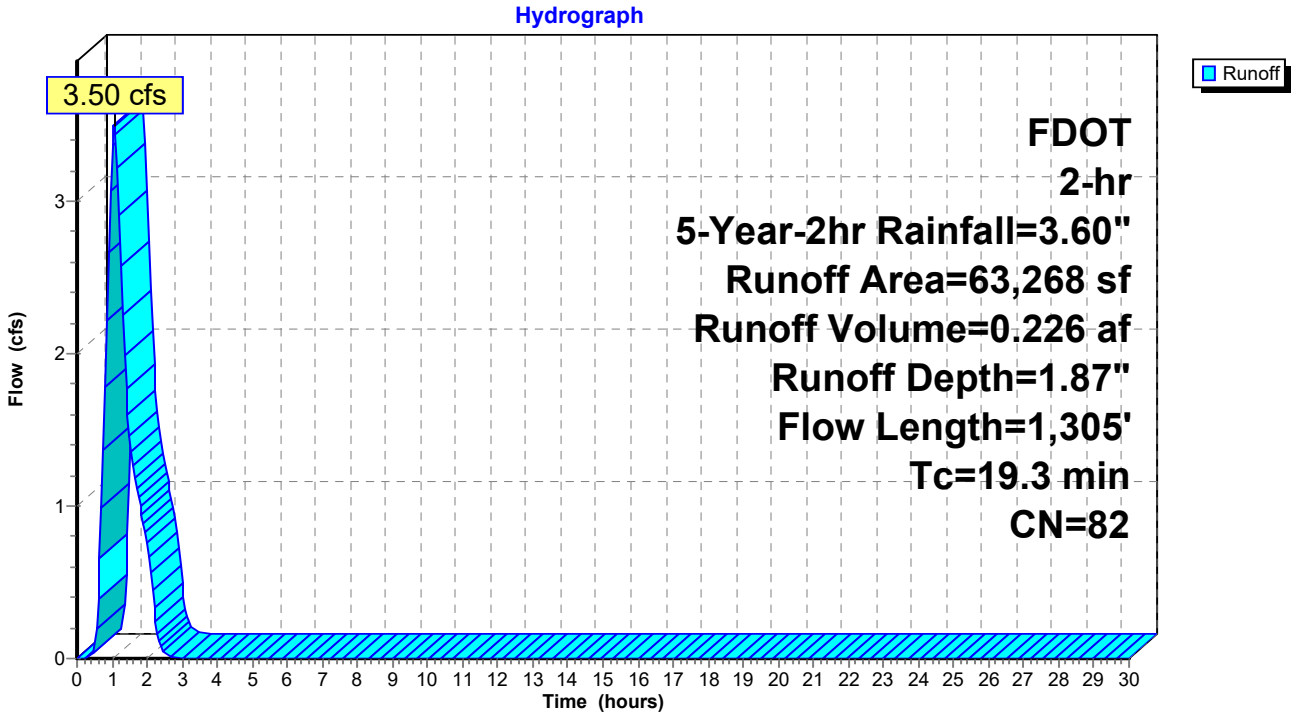
Runoff = 3.50 cfs @ 1.06 hrs, Volume= 0.226 af, Depth= 1.87"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 2-hr 5-Year-2hr Rainfall=3.60"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.96	0.10	0.08
1.00	2.77	1.20	**3.37**
1.50	3.33	1.65	**1.46**
2.00	**3.60**	**1.87**	0.75
2.50	3.60	1.87	0.03
3.00	3.60	1.87	0.00
3.50	3.60	1.87	0.00
4.00	3.60	1.87	0.00
4.50	3.60	1.87	0.00
5.00	3.60	1.87	0.00
5.50	3.60	1.87	0.00
6.00	3.60	1.87	0.00
6.50	3.60	1.87	0.00
7.00	3.60	1.87	0.00
7.50	3.60	1.87	0.00
8.00	3.60	1.87	0.00
8.50	3.60	1.87	0.00
9.00	3.60	1.87	0.00
9.50	3.60	1.87	0.00
10.00	3.60	1.87	0.00
10.50	3.60	1.87	0.00
11.00	3.60	1.87	0.00
11.50	3.60	1.87	0.00
12.00	3.60	1.87	0.00
12.50	3.60	1.87	0.00
13.00	3.60	1.87	0.00
13.50	3.60	1.87	0.00
14.00	3.60	1.87	0.00
14.50	3.60	1.87	0.00
15.00	3.60	1.87	0.00
15.50	3.60	1.87	0.00
16.00	3.60	1.87	0.00
16.50	3.60	1.87	0.00
17.00	3.60	1.87	0.00
17.50	3.60	1.87	0.00
18.00	3.60	1.87	0.00
18.50	3.60	1.87	0.00
19.00	3.60	1.87	0.00
19.50	3.60	1.87	0.00
20.00	3.60	1.87	0.00
20.50	3.60	1.87	0.00
21.00	3.60	1.87	0.00
21.50	3.60	1.87	0.00
22.00	3.60	1.87	0.00
22.50	3.60	1.87	0.00
23.00	3.60	1.87	0.00
23.50	3.60	1.87	0.00
24.00	3.60	1.87	0.00
24.50	3.60	1.87	0.00
25.00	3.60	1.87	0.00
25.50	3.60	1.87	0.00
26.00	3.60	1.87	0.00
26.50	3.60	1.87	0.00
27.00	3.60	1.87	0.00
27.50	3.60	1.87	0.00
28.00	3.60	1.87	0.00
28.50	3.60	1.87	0.00
29.00	3.60	1.87	0.00
29.50	3.60	1.87	0.00
30.00	3.60	1.87	0.00

Summary for Subcatchment EX: Pre Development

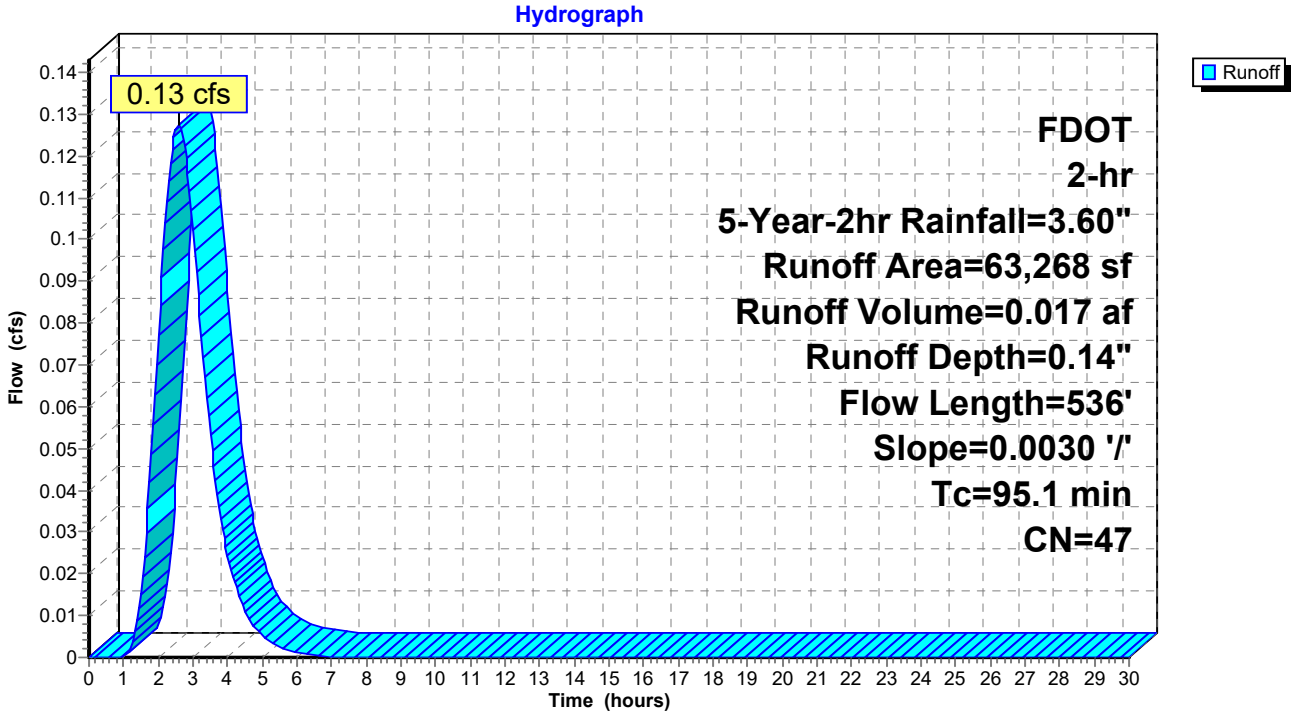
Runoff = 0.13 cfs @ 2.58 hrs, Volume= 0.017 af, Depth= 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 2-hr 5-Year-2hr Rainfall=3.60"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.96	0.00	0.00
1.00	2.77	0.02	0.00
1.50	3.33	0.09	0.02
2.00	**3.60**	**0.14**	0.08
2.50	3.60	0.14	**0.13**
3.00	3.60	0.14	**0.10**
3.50	3.60	0.14	0.05
4.00	3.60	0.14	0.02
4.50	3.60	0.14	0.01
5.00	3.60	0.14	0.01
5.50	3.60	0.14	0.00
6.00	3.60	0.14	0.00
6.50	3.60	0.14	0.00
7.00	3.60	0.14	0.00
7.50	3.60	0.14	0.00
8.00	3.60	0.14	0.00
8.50	3.60	0.14	0.00
9.00	3.60	0.14	0.00
9.50	3.60	0.14	0.00
10.00	3.60	0.14	0.00
10.50	3.60	0.14	0.00
11.00	3.60	0.14	0.00
11.50	3.60	0.14	0.00
12.00	3.60	0.14	0.00
12.50	3.60	0.14	0.00
13.00	3.60	0.14	0.00
13.50	3.60	0.14	0.00
14.00	3.60	0.14	0.00
14.50	3.60	0.14	0.00
15.00	3.60	0.14	0.00
15.50	3.60	0.14	0.00
16.00	3.60	0.14	0.00
16.50	3.60	0.14	0.00
17.00	3.60	0.14	0.00
17.50	3.60	0.14	0.00
18.00	3.60	0.14	0.00
18.50	3.60	0.14	0.00
19.00	3.60	0.14	0.00
19.50	3.60	0.14	0.00
20.00	3.60	0.14	0.00
20.50	3.60	0.14	0.00
21.00	3.60	0.14	0.00
21.50	3.60	0.14	0.00
22.00	3.60	0.14	0.00
22.50	3.60	0.14	0.00
23.00	3.60	0.14	0.00
23.50	3.60	0.14	0.00
24.00	3.60	0.14	0.00
24.50	3.60	0.14	0.00
25.00	3.60	0.14	0.00
25.50	3.60	0.14	0.00
26.00	3.60	0.14	0.00
26.50	3.60	0.14	0.00
27.00	3.60	0.14	0.00
27.50	3.60	0.14	0.00
28.00	3.60	0.14	0.00
28.50	3.60	0.14	0.00
29.00	3.60	0.14	0.00
29.50	3.60	0.14	0.00
30.00	3.60	0.14	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 1.87" for 5-Year-2hr event
Inflow = 3.50 cfs @ 1.06 hrs, Volume= 0.226 af
Outflow = 2.12 cfs @ 1.32 hrs, Volume= 0.226 af, Atten= 39%, Lag= 15.9 min
Discarded = 2.12 cfs @ 1.32 hrs, Volume= 0.226 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 4.55' @ 1.32 hrs Surf.Area= 2,832 sf Storage= 2,074 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 9.8 min (85.7 - 75.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.12 cfs @ 1.32 hrs HW=4.55' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.12 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

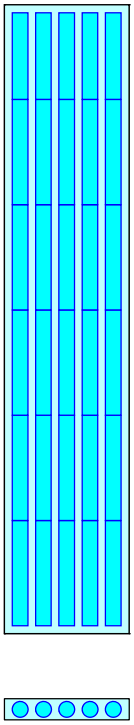
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

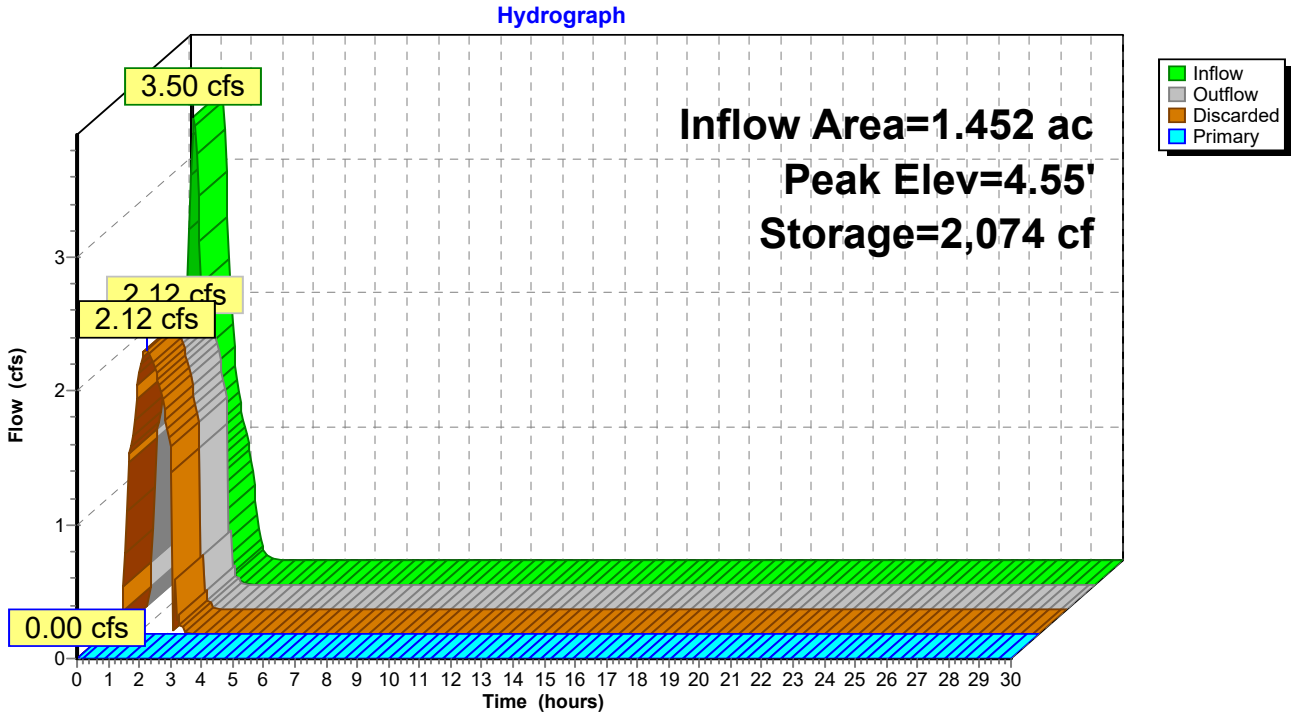
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	**3.37**	**896**	**3.84**	**1.75**	**1.75**	0.00
2.00	**0.75**	**473**	**3.42**	**1.53**	**1.53**	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.00	0	3.00	0.00	0.00	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

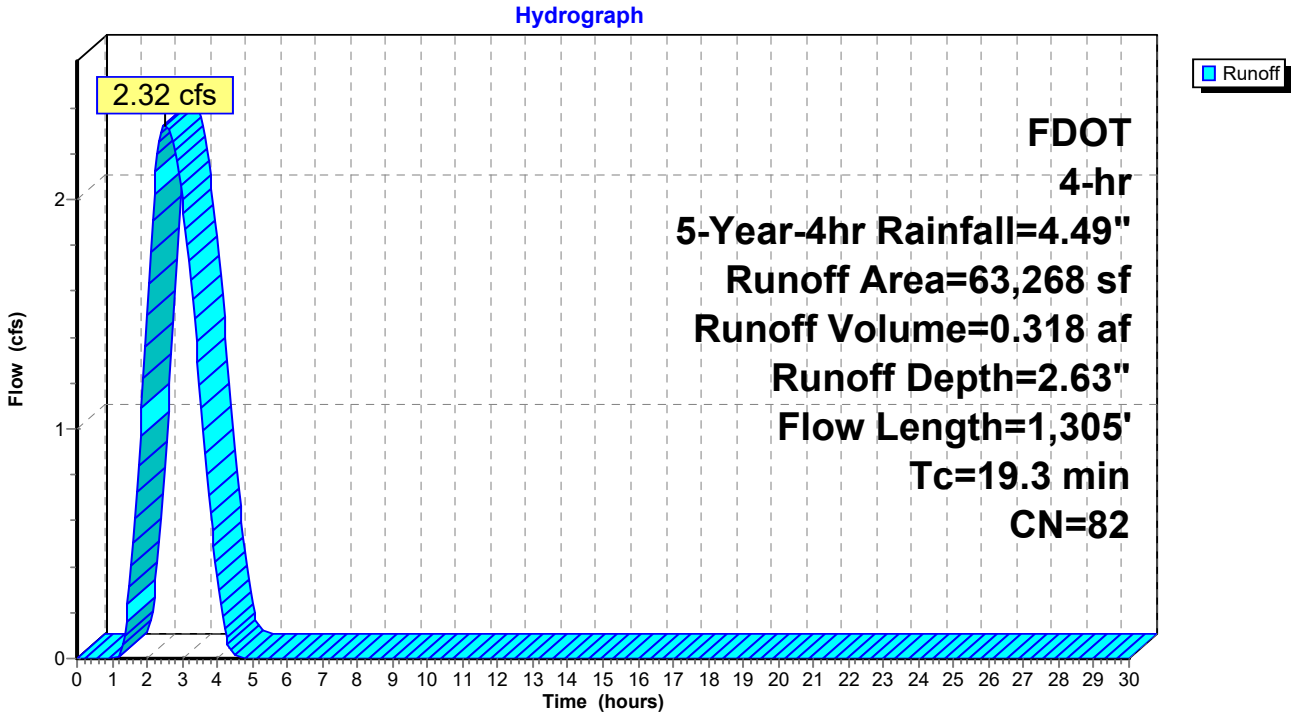
Runoff = 2.32 cfs @ 2.53 hrs, Volume= 0.318 af, Depth= 2.63"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 4-hr 5-Year-4hr Rainfall=4.49"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.09	0.00	0.00
1.00	0.41	0.00	0.00
1.50	1.05	0.13	0.31
2.00	2.06	0.69	1.49
2.50	3.14	1.49	**2.32**
3.00	3.94	2.15	**2.00**
3.50	4.38	2.53	1.19
4.00	**4.49**	**2.63**	0.36
4.50	4.49	2.63	0.01
5.00	4.49	2.63	0.00
5.50	4.49	2.63	0.00
6.00	4.49	2.63	0.00
6.50	4.49	2.63	0.00
7.00	4.49	2.63	0.00
7.50	4.49	2.63	0.00
8.00	4.49	2.63	0.00
8.50	4.49	2.63	0.00
9.00	4.49	2.63	0.00
9.50	4.49	2.63	0.00
10.00	4.49	2.63	0.00
10.50	4.49	2.63	0.00
11.00	4.49	2.63	0.00
11.50	4.49	2.63	0.00
12.00	4.49	2.63	0.00
12.50	4.49	2.63	0.00
13.00	4.49	2.63	0.00
13.50	4.49	2.63	0.00
14.00	4.49	2.63	0.00
14.50	4.49	2.63	0.00
15.00	4.49	2.63	0.00
15.50	4.49	2.63	0.00
16.00	4.49	2.63	0.00
16.50	4.49	2.63	0.00
17.00	4.49	2.63	0.00
17.50	4.49	2.63	0.00
18.00	4.49	2.63	0.00
18.50	4.49	2.63	0.00
19.00	4.49	2.63	0.00
19.50	4.49	2.63	0.00
20.00	4.49	2.63	0.00
20.50	4.49	2.63	0.00
21.00	4.49	2.63	0.00
21.50	4.49	2.63	0.00
22.00	4.49	2.63	0.00
22.50	4.49	2.63	0.00
23.00	4.49	2.63	0.00
23.50	4.49	2.63	0.00
24.00	4.49	2.63	0.00
24.50	4.49	2.63	0.00
25.00	4.49	2.63	0.00
25.50	4.49	2.63	0.00
26.00	4.49	2.63	0.00
26.50	4.49	2.63	0.00
27.00	4.49	2.63	0.00
27.50	4.49	2.63	0.00
28.00	4.49	2.63	0.00
28.50	4.49	2.63	0.00
29.00	4.49	2.63	0.00
29.50	4.49	2.63	0.00
30.00	4.49	2.63	0.00

Summary for Subcatchment EX: Pre Development

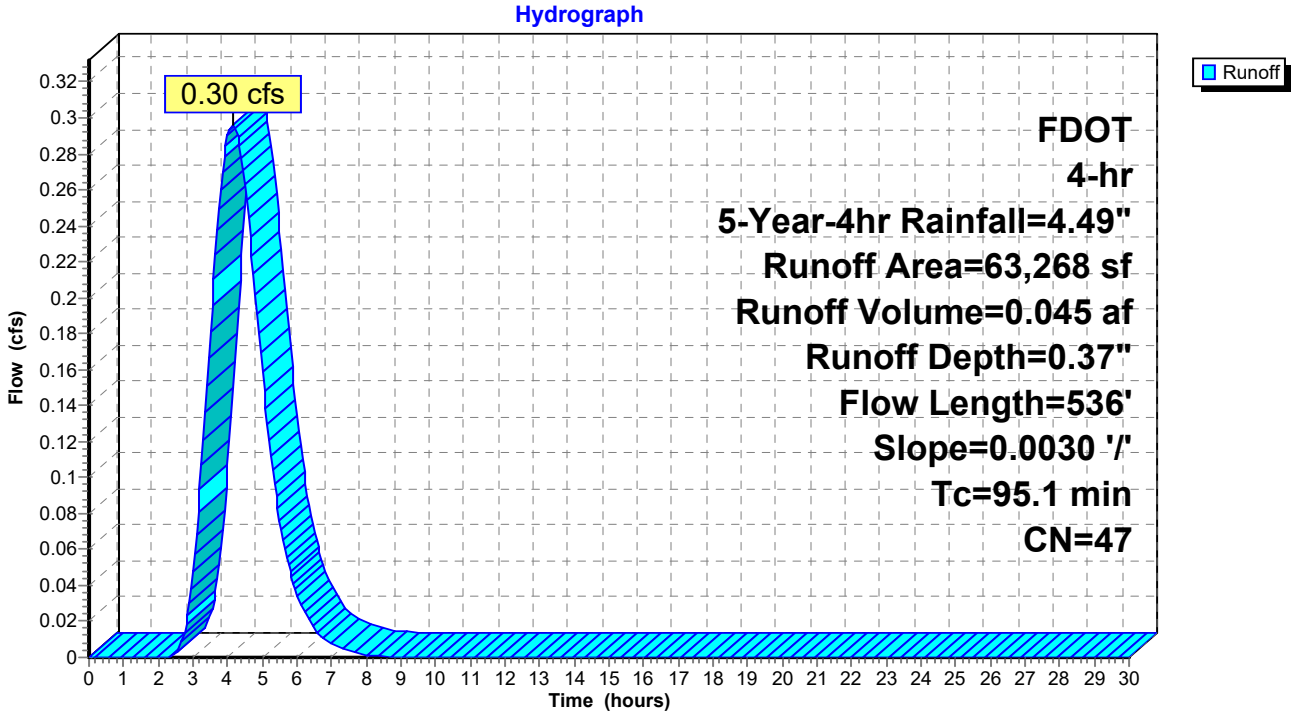
Runoff = 0.30 cfs @ 4.14 hrs, Volume= 0.045 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 4-hr 5-Year-4hr Rainfall=4.49"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.09	0.00	0.00
1.00	0.41	0.00	0.00
1.50	1.05	0.00	0.00
2.00	2.06	0.00	0.00
2.50	3.14	0.06	0.00
3.00	3.94	0.22	0.05
3.50	4.38	0.34	0.18
4.00	**4.49**	**0.37**	**0.29**
4.50	4.49	0.37	**0.26**
5.00	4.49	0.37	0.16
5.50	4.49	0.37	0.08
6.00	4.49	0.37	0.04
6.50	4.49	0.37	0.02
7.00	4.49	0.37	0.01
7.50	4.49	0.37	0.00
8.00	4.49	0.37	0.00
8.50	4.49	0.37	0.00
9.00	4.49	0.37	0.00
9.50	4.49	0.37	0.00
10.00	4.49	0.37	0.00
10.50	4.49	0.37	0.00
11.00	4.49	0.37	0.00
11.50	4.49	0.37	0.00
12.00	4.49	0.37	0.00
12.50	4.49	0.37	0.00
13.00	4.49	0.37	0.00
13.50	4.49	0.37	0.00
14.00	4.49	0.37	0.00
14.50	4.49	0.37	0.00
15.00	4.49	0.37	0.00
15.50	4.49	0.37	0.00
16.00	4.49	0.37	0.00
16.50	4.49	0.37	0.00
17.00	4.49	0.37	0.00
17.50	4.49	0.37	0.00
18.00	4.49	0.37	0.00
18.50	4.49	0.37	0.00
19.00	4.49	0.37	0.00
19.50	4.49	0.37	0.00
20.00	4.49	0.37	0.00
20.50	4.49	0.37	0.00
21.00	4.49	0.37	0.00
21.50	4.49	0.37	0.00
22.00	4.49	0.37	0.00
22.50	4.49	0.37	0.00
23.00	4.49	0.37	0.00
23.50	4.49	0.37	0.00
24.00	4.49	0.37	0.00
24.50	4.49	0.37	0.00
25.00	4.49	0.37	0.00
25.50	4.49	0.37	0.00
26.00	4.49	0.37	0.00
26.50	4.49	0.37	0.00
27.00	4.49	0.37	0.00
27.50	4.49	0.37	0.00
28.00	4.49	0.37	0.00
28.50	4.49	0.37	0.00
29.00	4.49	0.37	0.00
29.50	4.49	0.37	0.00
30.00	4.49	0.37	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 2.63" for 5-Year-4hr event
Inflow = 2.32 cfs @ 2.53 hrs, Volume= 0.318 af
Outflow = 1.97 cfs @ 3.02 hrs, Volume= 0.318 af, Atten= 15%, Lag= 29.6 min
Discarded = 1.97 cfs @ 3.02 hrs, Volume= 0.318 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 4.26' @ 3.02 hrs Surf.Area= 2,832 sf Storage= 1,540 cf

Plug-Flow detention time= 7.9 min calculated for 0.317 af (100% of inflow)
Center-of-Mass det. time= 7.8 min (170.9 - 163.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.97 cfs @ 3.02 hrs HW=4.26' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.97 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

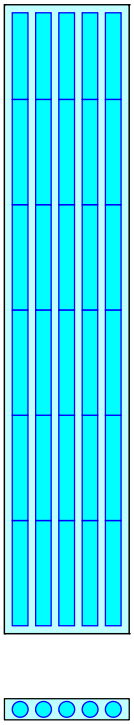
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

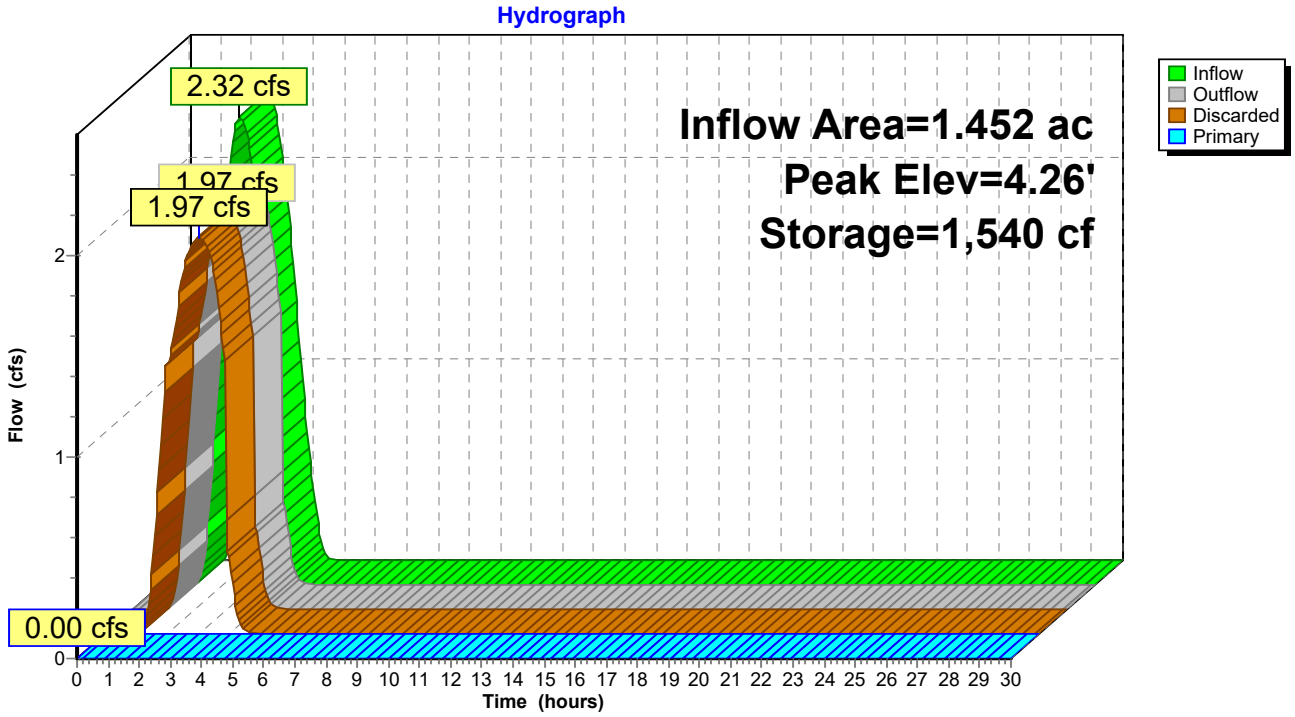
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	**1.49**	62	3.05	1.34	1.34	0.00
3.00	**2.00**	**1,539**	**4.26**	**1.97**	**1.97**	0.00
4.00	0.36	13	3.01	0.38	0.38	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

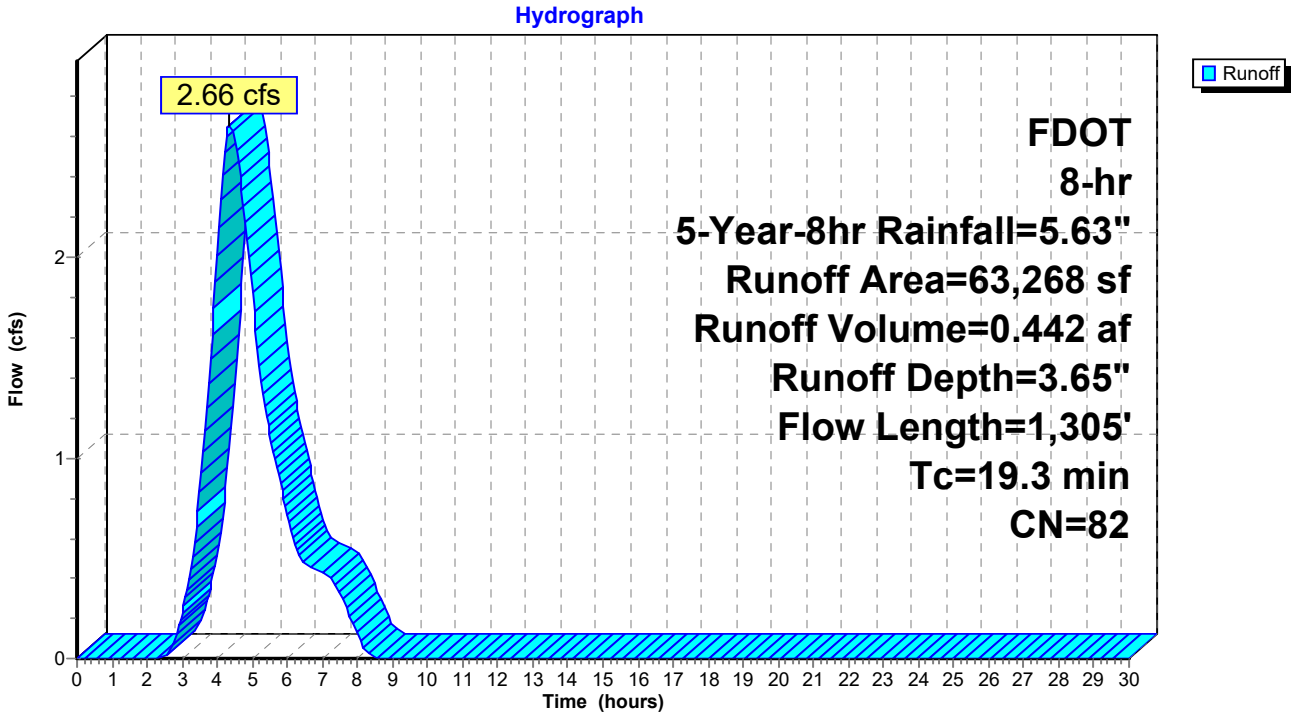
Runoff = 2.66 cfs @ 4.36 hrs, Volume= 0.442 af, Depth= 3.65"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 8-hr 5-Year-8hr Rainfall=5.63"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.06	0.00	0.00
1.50	0.15	0.00	0.00
2.00	0.31	0.00	0.00
2.50	0.56	0.01	0.01
3.00	0.95	0.10	0.23
3.50	1.61	0.41	0.83
4.00	2.69	1.14	**2.01**
4.50	3.78	2.02	**2.58**
5.00	4.47	2.61	1.82
5.50	4.88	2.97	1.12
6.00	5.14	3.20	0.72
6.50	5.32	3.36	0.48
7.00	5.48	3.51	0.43
7.50	5.59	3.61	0.32
8.00	**5.63**	**3.65**	0.12
8.50	5.63	3.65	0.00
9.00	5.63	3.65	0.00
9.50	5.63	3.65	0.00
10.00	5.63	3.65	0.00
10.50	5.63	3.65	0.00
11.00	5.63	3.65	0.00
11.50	5.63	3.65	0.00
12.00	5.63	3.65	0.00
12.50	5.63	3.65	0.00
13.00	5.63	3.65	0.00
13.50	5.63	3.65	0.00
14.00	5.63	3.65	0.00
14.50	5.63	3.65	0.00
15.00	5.63	3.65	0.00
15.50	5.63	3.65	0.00
16.00	5.63	3.65	0.00
16.50	5.63	3.65	0.00
17.00	5.63	3.65	0.00
17.50	5.63	3.65	0.00
18.00	5.63	3.65	0.00
18.50	5.63	3.65	0.00
19.00	5.63	3.65	0.00
19.50	5.63	3.65	0.00
20.00	5.63	3.65	0.00
20.50	5.63	3.65	0.00
21.00	5.63	3.65	0.00
21.50	5.63	3.65	0.00
22.00	5.63	3.65	0.00
22.50	5.63	3.65	0.00
23.00	5.63	3.65	0.00
23.50	5.63	3.65	0.00
24.00	5.63	3.65	0.00
24.50	5.63	3.65	0.00
25.00	5.63	3.65	0.00
25.50	5.63	3.65	0.00
26.00	5.63	3.65	0.00
26.50	5.63	3.65	0.00
27.00	5.63	3.65	0.00
27.50	5.63	3.65	0.00
28.00	5.63	3.65	0.00
28.50	5.63	3.65	0.00
29.00	5.63	3.65	0.00
29.50	5.63	3.65	0.00
30.00	5.63	3.65	0.00

Summary for Subcatchment EX: Pre Development

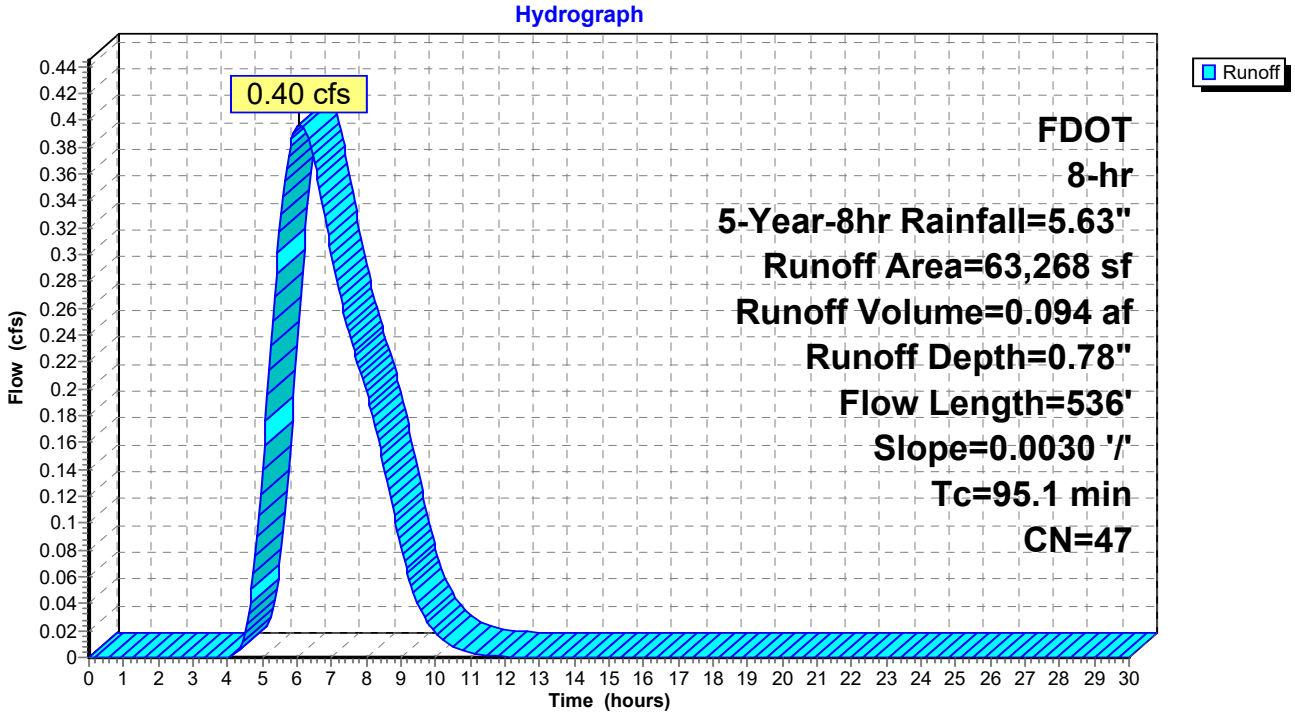
Runoff = 0.40 cfs @ 6.06 hrs, Volume= 0.094 af, Depth= 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 8-hr 5-Year-8hr Rainfall=5.63"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.06	0.00	0.00
1.50	0.15	0.00	0.00
2.00	0.31	0.00	0.00
2.50	0.56	0.00	0.00
3.00	0.95	0.00	0.00
3.50	1.61	0.00	0.00
4.00	2.69	0.02	0.00
4.50	3.78	0.18	0.02
5.00	4.47	0.36	0.14
5.50	4.88	0.50	0.32
6.00	5.14	0.59	**0.40**
6.50	5.32	0.65	**0.37**
7.00	5.48	0.72	0.30
7.50	5.59	0.76	0.24
8.00	**5.63**	**0.78**	0.20
8.50	5.63	0.78	0.14
9.00	5.63	0.78	0.08
9.50	5.63	0.78	0.04
10.00	5.63	0.78	0.02
10.50	5.63	0.78	0.01
11.00	5.63	0.78	0.00
11.50	5.63	0.78	0.00
12.00	5.63	0.78	0.00
12.50	5.63	0.78	0.00
13.00	5.63	0.78	0.00
13.50	5.63	0.78	0.00
14.00	5.63	0.78	0.00
14.50	5.63	0.78	0.00
15.00	5.63	0.78	0.00
15.50	5.63	0.78	0.00
16.00	5.63	0.78	0.00
16.50	5.63	0.78	0.00
17.00	5.63	0.78	0.00
17.50	5.63	0.78	0.00
18.00	5.63	0.78	0.00
18.50	5.63	0.78	0.00
19.00	5.63	0.78	0.00
19.50	5.63	0.78	0.00
20.00	5.63	0.78	0.00
20.50	5.63	0.78	0.00
21.00	5.63	0.78	0.00
21.50	5.63	0.78	0.00
22.00	5.63	0.78	0.00
22.50	5.63	0.78	0.00
23.00	5.63	0.78	0.00
23.50	5.63	0.78	0.00
24.00	5.63	0.78	0.00
24.50	5.63	0.78	0.00
25.00	5.63	0.78	0.00
25.50	5.63	0.78	0.00
26.00	5.63	0.78	0.00
26.50	5.63	0.78	0.00
27.00	5.63	0.78	0.00
27.50	5.63	0.78	0.00
28.00	5.63	0.78	0.00
28.50	5.63	0.78	0.00
29.00	5.63	0.78	0.00
29.50	5.63	0.78	0.00
30.00	5.63	0.78	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 3.65" for 5-Year-8hr event
Inflow = 2.66 cfs @ 4.36 hrs, Volume= 0.442 af
Outflow = 2.10 cfs @ 4.84 hrs, Volume= 0.442 af, Atten= 21%, Lag= 29.2 min
Discarded = 2.10 cfs @ 4.84 hrs, Volume= 0.442 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 4.51' @ 4.84 hrs Surf.Area= 2,832 sf Storage= 1,998 cf

Plug-Flow detention time= 7.8 min calculated for 0.441 af (100% of inflow)
Center-of-Mass det. time= 7.8 min (302.0 - 294.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.10 cfs @ 4.84 hrs HW=4.51' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

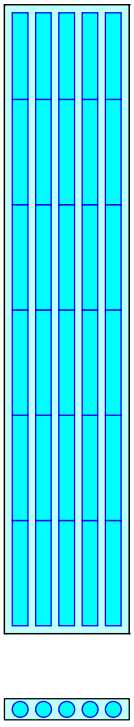
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

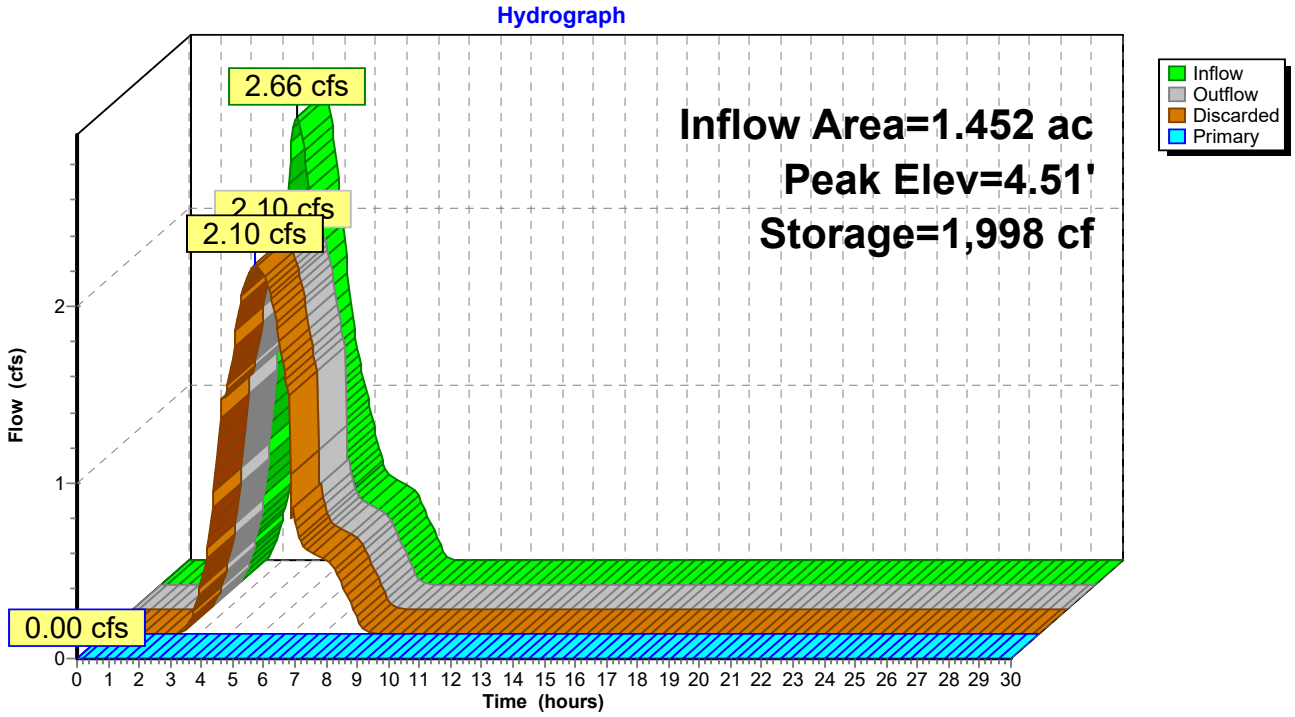
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	0.00	0	3.00	0.00	0.00	0.00
3.00	0.23	8	3.01	0.22	0.22	0.00
4.00	**2.01**	**323**	**3.28**	**1.46**	**1.46**	0.00
5.00	**1.82**	**1,924**	**4.47**	**2.08**	**2.08**	0.00
6.00	0.72	23	3.02	0.66	0.66	0.00
7.00	0.43	15	3.01	0.43	0.43	0.00
8.00	0.12	4	3.00	0.13	0.13	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

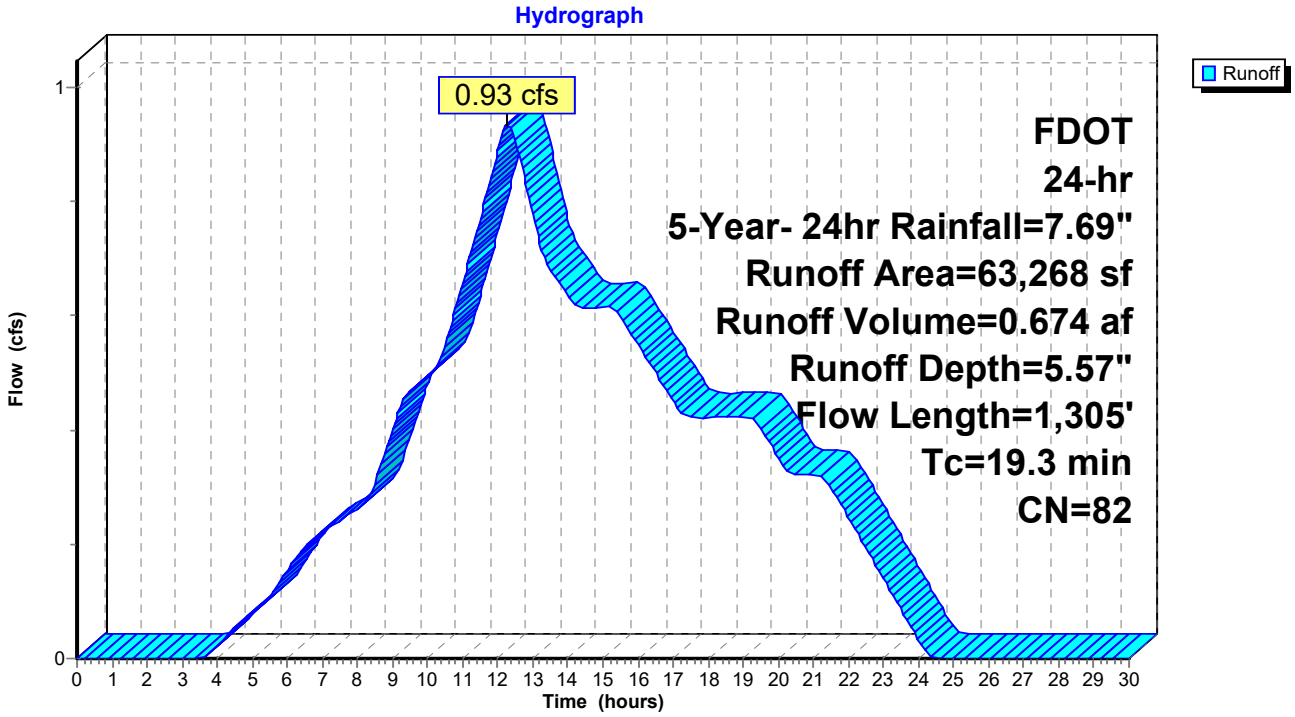
Runoff = 0.93 cfs @ 12.27 hrs, Volume= 0.674 af, Depth= 5.57"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 24-hr 5-Year- 24hr Rainfall=7.69"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.04	0.00	0.00
1.50	0.09	0.00	0.00
2.00	0.16	0.00	0.00
2.50	0.24	0.00	0.00
3.00	0.35	0.00	0.00
3.50	0.47	0.00	0.00
4.00	0.58	0.01	0.02
4.50	0.70	0.03	0.05
5.00	0.82	0.06	0.08
5.50	0.94	0.09	0.11
6.00	1.09	0.15	0.15
6.50	1.24	0.22	0.19
7.00	1.40	0.29	0.22
7.50	1.55	0.38	0.24
8.00	1.71	0.47	0.26
8.50	1.88	0.57	0.31
9.00	2.10	0.71	0.40
9.50	2.33	0.88	0.47
10.00	2.56	1.04	0.49
10.50	2.82	1.24	0.55
11.00	3.11	1.46	0.66
11.50	3.44	1.73	0.77
12.00	3.81	2.04	**0.89**
12.50	4.17	2.35	**0.91**
13.00	4.47	2.61	0.78
13.50	4.73	2.84	0.68
14.00	4.97	3.05	0.64
14.50	5.20	3.26	0.61
15.00	5.44	3.47	0.62
15.50	5.66	3.68	0.60
16.00	5.86	3.86	0.55
16.50	6.05	4.03	0.50
17.00	6.21	4.18	0.45
17.50	6.37	4.33	0.42
18.00	6.52	4.47	0.42
18.50	6.68	4.62	0.42
19.00	6.84	4.76	0.42
19.50	6.98	4.90	0.40
20.00	7.11	5.02	0.35
20.50	7.22	5.13	0.32
21.00	7.34	5.24	0.32
21.50	7.45	5.34	0.30
22.00	7.53	5.42	0.25
22.50	7.60	5.48	0.19
23.00	7.65	5.53	0.14
23.50	7.68	5.56	0.09
24.00	**7.69**	**5.57**	0.03
24.50	7.69	5.57	0.00
25.00	7.69	5.57	0.00
25.50	7.69	5.57	0.00
26.00	7.69	5.57	0.00
26.50	7.69	5.57	0.00
27.00	7.69	5.57	0.00
27.50	7.69	5.57	0.00
28.00	7.69	5.57	0.00
28.50	7.69	5.57	0.00
29.00	7.69	5.57	0.00
29.50	7.69	5.57	0.00
30.00	7.69	5.57	0.00

Summary for Subcatchment EX: Pre Development

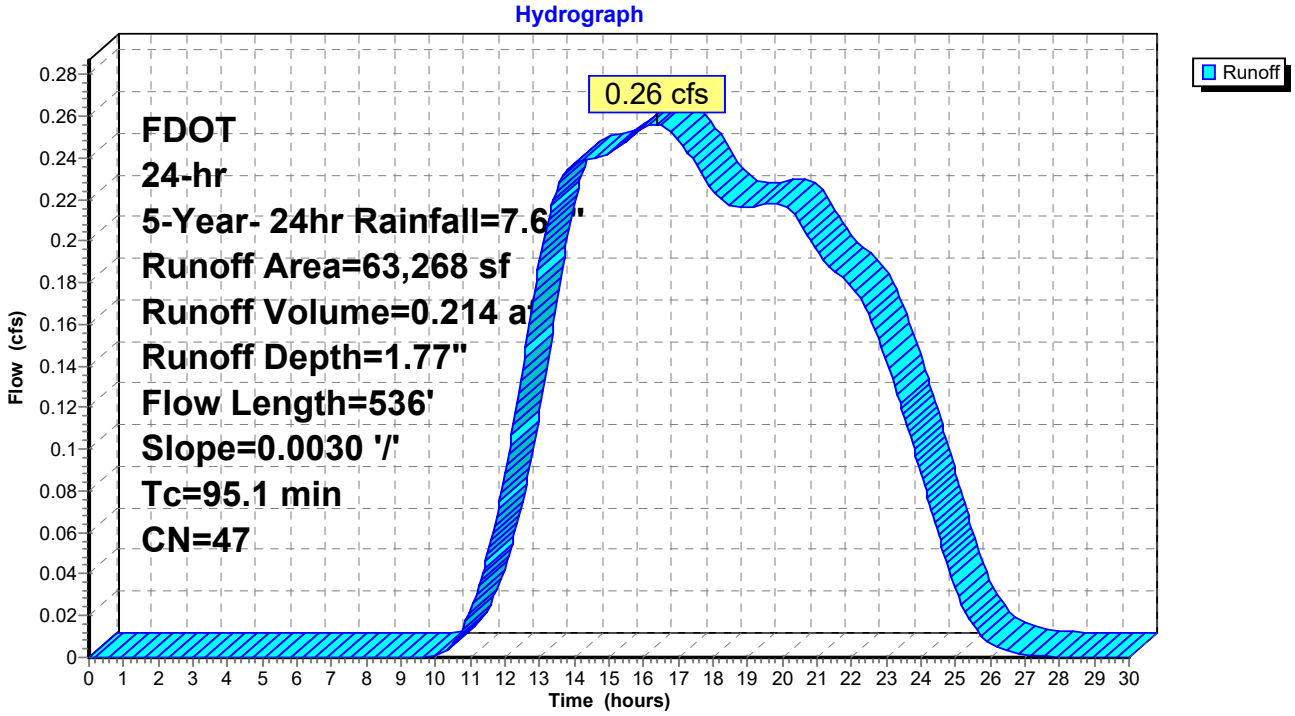
Runoff = 0.26 cfs @ 16.36 hrs, Volume= 0.214 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 24-hr 5-Year- 24hr Rainfall=7.69"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.04	0.00	0.00
1.50	0.09	0.00	0.00
2.00	0.16	0.00	0.00
2.50	0.24	0.00	0.00
3.00	0.35	0.00	0.00
3.50	0.47	0.00	0.00
4.00	0.58	0.00	0.00
4.50	0.70	0.00	0.00
5.00	0.82	0.00	0.00
5.50	0.94	0.00	0.00
6.00	1.09	0.00	0.00
6.50	1.24	0.00	0.00
7.00	1.40	0.00	0.00
7.50	1.55	0.00	0.00
8.00	1.71	0.00	0.00
8.50	1.88	0.00	0.00
9.00	2.10	0.00	0.00
9.50	2.33	0.00	0.00
10.00	2.56	0.01	0.00
10.50	2.82	0.03	0.01
11.00	3.11	0.06	0.02
11.50	3.44	0.11	0.05
12.00	3.81	0.19	0.09
12.50	4.17	0.28	0.14
13.00	4.47	0.36	0.19
13.50	4.73	0.44	0.22
14.00	4.97	0.53	0.24
14.50	5.20	0.61	0.24
15.00	5.44	0.70	0.24
15.50	5.66	0.79	0.25
16.00	5.86	0.88	**0.25**
16.50	6.05	0.96	**0.26**
17.00	6.21	1.03	0.25
17.50	6.37	1.10	0.24
18.00	6.52	1.17	0.22
18.50	6.68	1.25	0.22
19.00	6.84	1.32	0.22
19.50	6.98	1.40	0.22
20.00	7.11	1.46	0.22
20.50	7.22	1.52	0.21
21.00	7.34	1.58	0.20
21.50	7.45	1.64	0.19
22.00	7.53	1.68	0.18
22.50	7.60	1.72	0.16
23.00	7.65	1.75	0.14
23.50	7.68	1.76	0.12
24.00	**7.69**	**1.77**	0.09
24.50	7.69	1.77	0.06
25.00	7.69	1.77	0.03
25.50	7.69	1.77	0.02
26.00	7.69	1.77	0.01
26.50	7.69	1.77	0.00
27.00	7.69	1.77	0.00
27.50	7.69	1.77	0.00
28.00	7.69	1.77	0.00
28.50	7.69	1.77	0.00
29.00	7.69	1.77	0.00
29.50	7.69	1.77	0.00
30.00	7.69	1.77	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 5.57" for 5-Year- 24hr event
Inflow = 0.93 cfs @ 12.27 hrs, Volume= 0.674 af
Outflow = 0.93 cfs @ 12.28 hrs, Volume= 0.674 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.93 cfs @ 12.28 hrs, Volume= 0.674 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 3.03' @ 12.28 hrs Surf.Area= 2,832 sf Storage= 32 cf

Plug-Flow detention time= 0.6 min calculated for 0.673 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (848.0 - 847.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.33 cfs @ 12.28 hrs HW=3.03' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.33 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

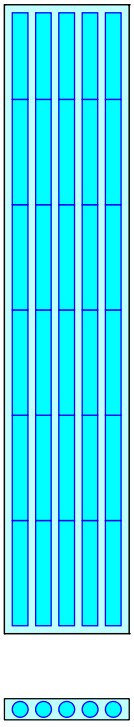
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

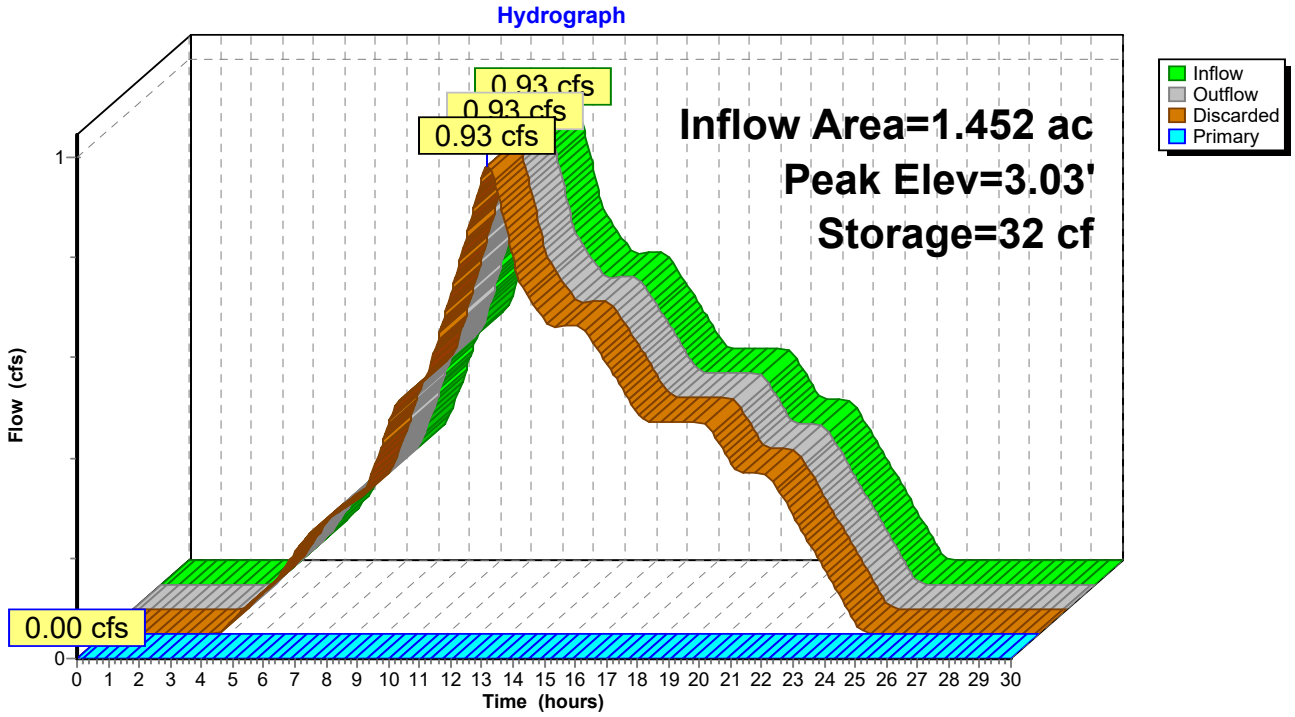
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	0.00	0	3.00	0.00	0.00	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.02	1	3.00	0.02	0.02	0.00
5.00	0.08	3	3.00	0.08	0.08	0.00
6.00	0.15	5	3.00	0.15	0.15	0.00
7.00	0.22	8	3.01	0.22	0.22	0.00
8.00	0.26	9	3.01	0.26	0.26	0.00
9.00	0.40	14	3.01	0.40	0.40	0.00
10.00	0.49	17	3.01	0.49	0.49	0.00
11.00	0.66	22	3.02	0.66	0.66	0.00
12.00	**0.89**	**30**	**3.03**	**0.89**	**0.89**	0.00
13.00	**0.78**	**27**	**3.02**	**0.78**	**0.78**	0.00
14.00	0.64	22	3.02	0.64	0.64	0.00
15.00	0.62	21	3.02	0.62	0.62	0.00
16.00	0.55	19	3.02	0.55	0.55	0.00
17.00	0.45	15	3.01	0.45	0.45	0.00
18.00	0.42	14	3.01	0.42	0.42	0.00
19.00	0.42	14	3.01	0.42	0.42	0.00
20.00	0.35	12	3.01	0.35	0.35	0.00
21.00	0.32	11	3.01	0.32	0.32	0.00
22.00	0.25	8	3.01	0.25	0.25	0.00
23.00	0.14	5	3.00	0.14	0.14	0.00
24.00	0.03	1	3.00	0.03	0.03	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

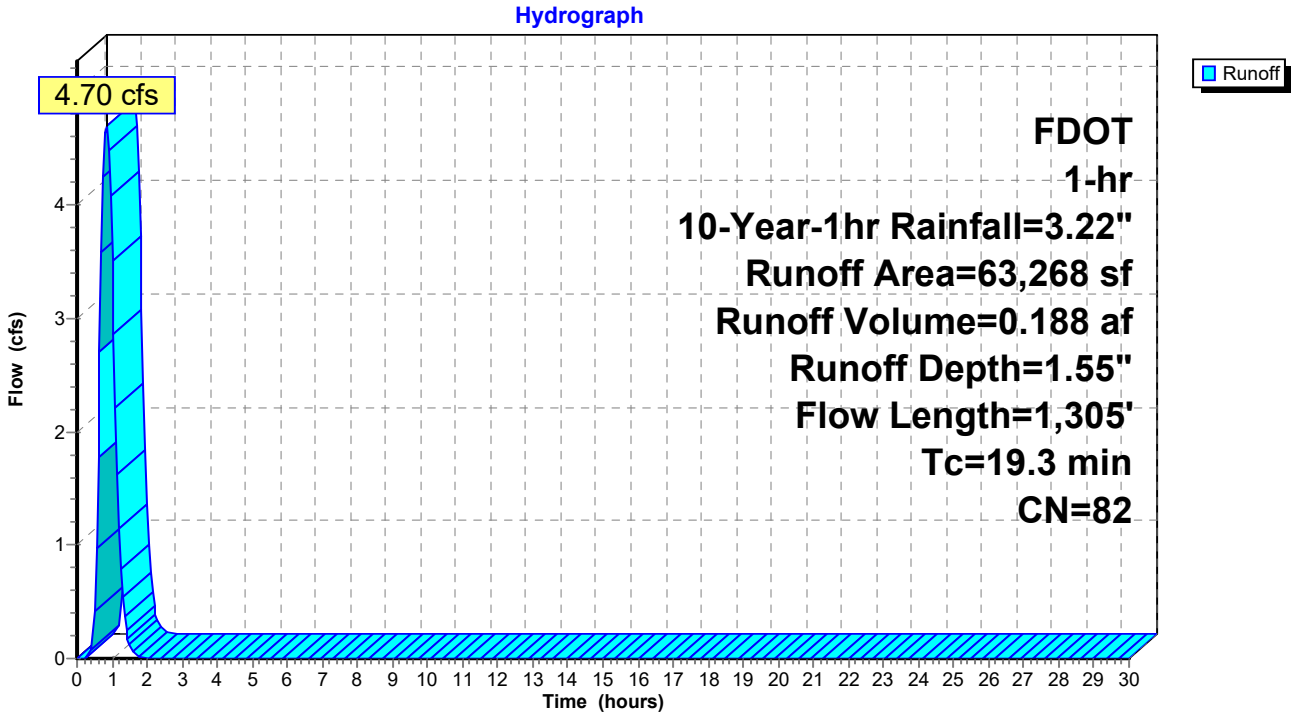
Runoff = 4.70 cfs @ 0.84 hrs, Volume= 0.188 af, Depth= 1.55"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 1-hr 10-Year-1hr Rainfall=3.22"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.67	0.45	**0.42**
1.00	**3.22**	**1.55**	**3.51**
1.50	3.22	1.55	0.12
2.00	3.22	1.55	0.00
2.50	3.22	1.55	0.00
3.00	3.22	1.55	0.00
3.50	3.22	1.55	0.00
4.00	3.22	1.55	0.00
4.50	3.22	1.55	0.00
5.00	3.22	1.55	0.00
5.50	3.22	1.55	0.00
6.00	3.22	1.55	0.00
6.50	3.22	1.55	0.00
7.00	3.22	1.55	0.00
7.50	3.22	1.55	0.00
8.00	3.22	1.55	0.00
8.50	3.22	1.55	0.00
9.00	3.22	1.55	0.00
9.50	3.22	1.55	0.00
10.00	3.22	1.55	0.00
10.50	3.22	1.55	0.00
11.00	3.22	1.55	0.00
11.50	3.22	1.55	0.00
12.00	3.22	1.55	0.00
12.50	3.22	1.55	0.00
13.00	3.22	1.55	0.00
13.50	3.22	1.55	0.00
14.00	3.22	1.55	0.00
14.50	3.22	1.55	0.00
15.00	3.22	1.55	0.00
15.50	3.22	1.55	0.00
16.00	3.22	1.55	0.00
16.50	3.22	1.55	0.00
17.00	3.22	1.55	0.00
17.50	3.22	1.55	0.00
18.00	3.22	1.55	0.00
18.50	3.22	1.55	0.00
19.00	3.22	1.55	0.00
19.50	3.22	1.55	0.00
20.00	3.22	1.55	0.00
20.50	3.22	1.55	0.00
21.00	3.22	1.55	0.00
21.50	3.22	1.55	0.00
22.00	3.22	1.55	0.00
22.50	3.22	1.55	0.00
23.00	3.22	1.55	0.00
23.50	3.22	1.55	0.00
24.00	3.22	1.55	0.00
24.50	3.22	1.55	0.00
25.00	3.22	1.55	0.00
25.50	3.22	1.55	0.00
26.00	3.22	1.55	0.00
26.50	3.22	1.55	0.00
27.00	3.22	1.55	0.00
27.50	3.22	1.55	0.00
28.00	3.22	1.55	0.00
28.50	3.22	1.55	0.00
29.00	3.22	1.55	0.00
29.50	3.22	1.55	0.00
30.00	3.22	1.55	0.00

Summary for Subcatchment EX: Pre Development

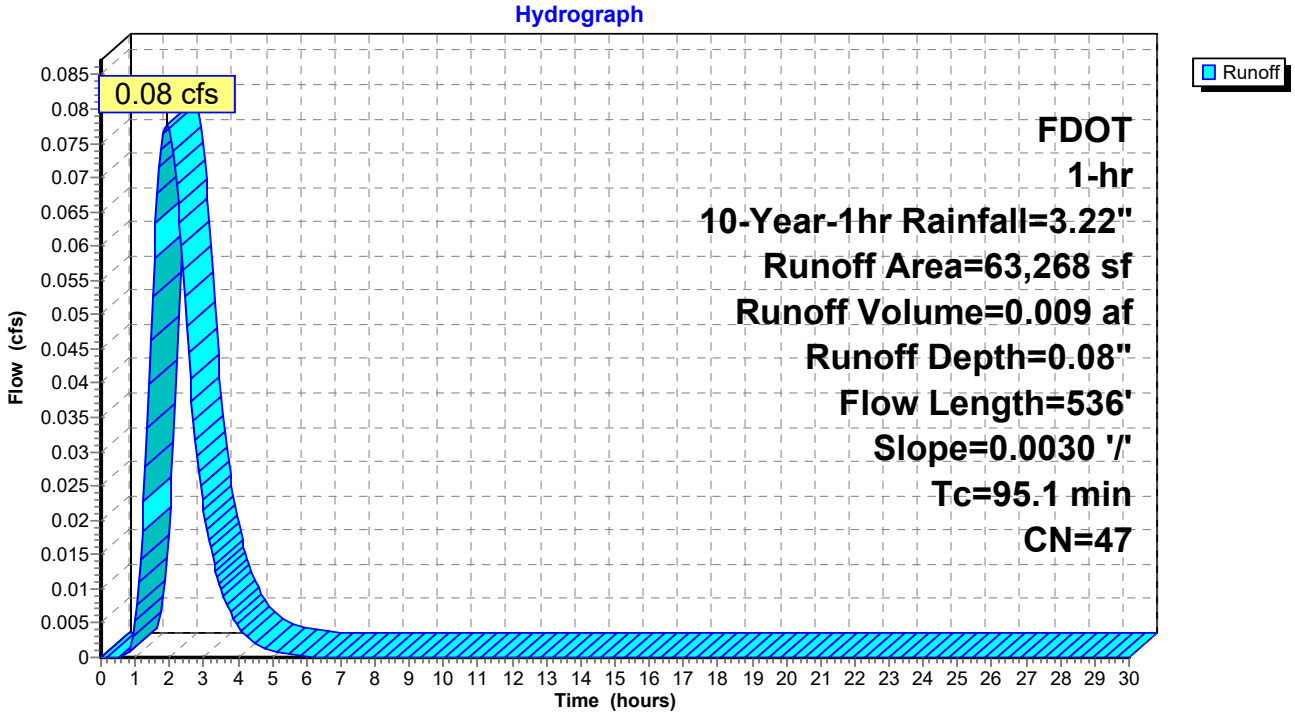
Runoff = 0.08 cfs @ 1.92 hrs, Volume= 0.009 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 1-hr 10-Year-1hr Rainfall=3.22"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.67	0.00	0.00
1.00	**3.22**	**0.08**	0.01
1.50	3.22	0.08	**0.05**
2.00	3.22	0.08	**0.08**
2.50	3.22	0.08	0.05
3.00	3.22	0.08	0.02
3.50	3.22	0.08	0.01
4.00	3.22	0.08	0.00
4.50	3.22	0.08	0.00
5.00	3.22	0.08	0.00
5.50	3.22	0.08	0.00
6.00	3.22	0.08	0.00
6.50	3.22	0.08	0.00
7.00	3.22	0.08	0.00
7.50	3.22	0.08	0.00
8.00	3.22	0.08	0.00
8.50	3.22	0.08	0.00
9.00	3.22	0.08	0.00
9.50	3.22	0.08	0.00
10.00	3.22	0.08	0.00
10.50	3.22	0.08	0.00
11.00	3.22	0.08	0.00
11.50	3.22	0.08	0.00
12.00	3.22	0.08	0.00
12.50	3.22	0.08	0.00
13.00	3.22	0.08	0.00
13.50	3.22	0.08	0.00
14.00	3.22	0.08	0.00
14.50	3.22	0.08	0.00
15.00	3.22	0.08	0.00
15.50	3.22	0.08	0.00
16.00	3.22	0.08	0.00
16.50	3.22	0.08	0.00
17.00	3.22	0.08	0.00
17.50	3.22	0.08	0.00
18.00	3.22	0.08	0.00
18.50	3.22	0.08	0.00
19.00	3.22	0.08	0.00
19.50	3.22	0.08	0.00
20.00	3.22	0.08	0.00
20.50	3.22	0.08	0.00
21.00	3.22	0.08	0.00
21.50	3.22	0.08	0.00
22.00	3.22	0.08	0.00
22.50	3.22	0.08	0.00
23.00	3.22	0.08	0.00
23.50	3.22	0.08	0.00
24.00	3.22	0.08	0.00
24.50	3.22	0.08	0.00
25.00	3.22	0.08	0.00
25.50	3.22	0.08	0.00
26.00	3.22	0.08	0.00
26.50	3.22	0.08	0.00
27.00	3.22	0.08	0.00
27.50	3.22	0.08	0.00
28.00	3.22	0.08	0.00
28.50	3.22	0.08	0.00
29.00	3.22	0.08	0.00
29.50	3.22	0.08	0.00
30.00	3.22	0.08	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 1.55" for 10-Year-1hr event
Inflow = 4.70 cfs @ 0.84 hrs, Volume= 0.188 af
Outflow = 2.41 cfs @ 1.09 hrs, Volume= 0.189 af, Atten= 49%, Lag= 15.0 min
Discarded = 2.41 cfs @ 1.09 hrs, Volume= 0.189 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 5.09' @ 1.09 hrs Surf.Area= 2,832 sf Storage= 3,127 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 14.1 min (67.4 - 53.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.41 cfs @ 1.09 hrs HW=5.09' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

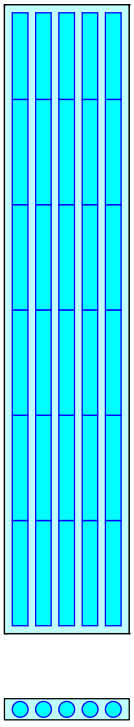
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

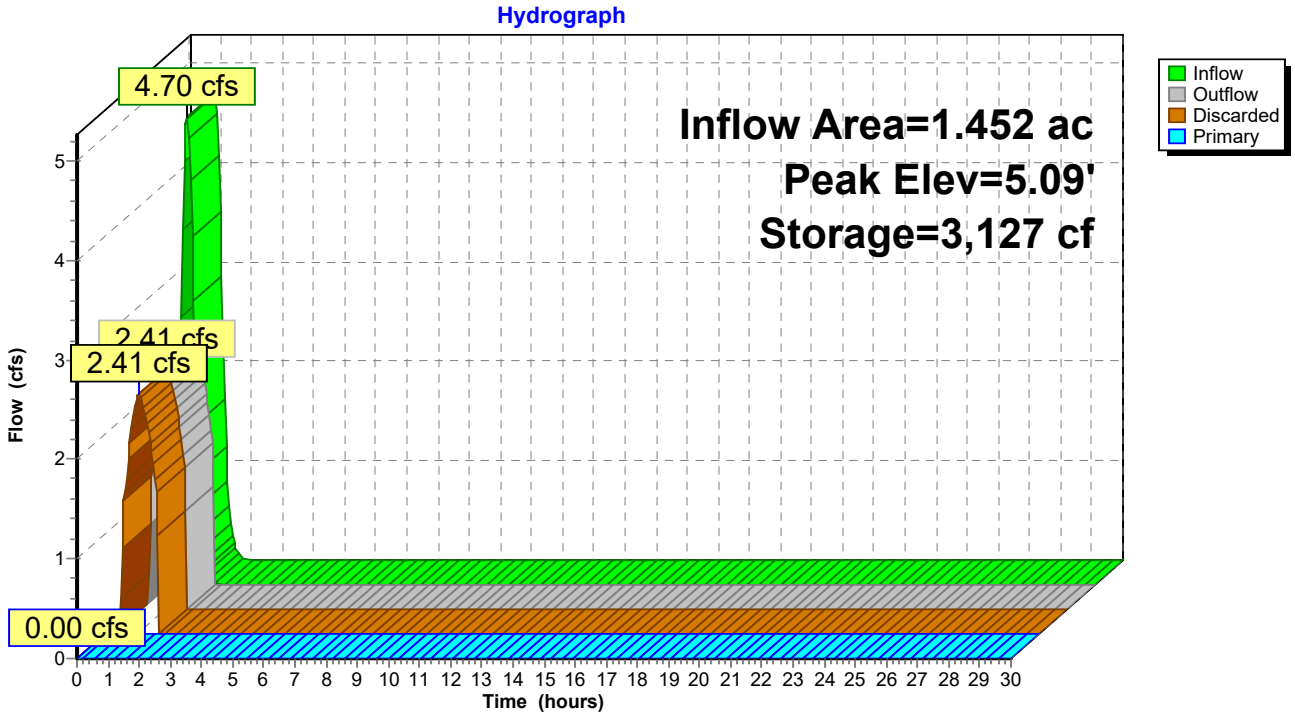
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	0	3.00	0.00	0.00	**0.00**
1.00	**3.51**	**2,955**	**5.00**	**2.36**	**2.36**	0.00
2.00	0.00	**0**	**3.00**	**0.00**	**0.00**	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.00	0	3.00	0.00	0.00	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

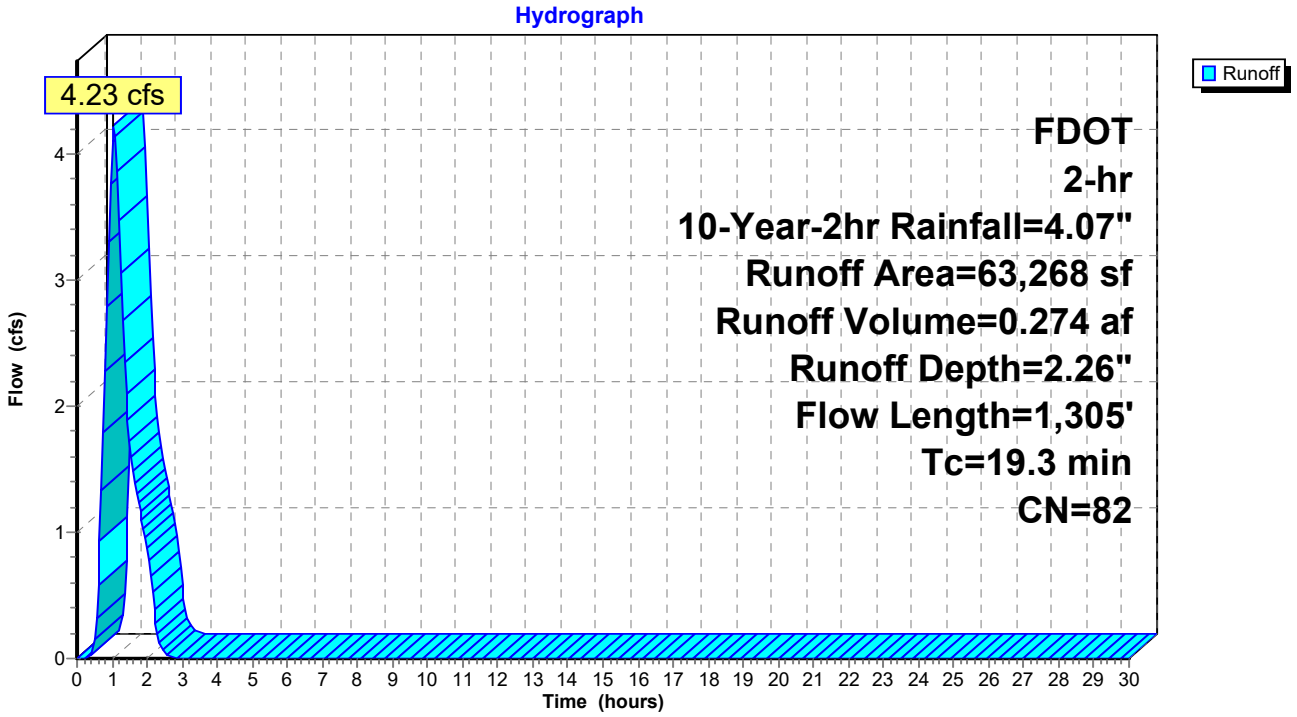
Runoff = 4.23 cfs @ 1.05 hrs, Volume= 0.274 af, Depth= 2.26"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 2-hr 10-Year-2hr Rainfall=4.07"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.08	0.15	0.15
1.00	3.13	1.48	**4.10**
1.50	3.77	2.01	**1.72**
2.00	**4.07**	**2.26**	0.88
2.50	4.07	2.26	0.04
3.00	4.07	2.26	0.00
3.50	4.07	2.26	0.00
4.00	4.07	2.26	0.00
4.50	4.07	2.26	0.00
5.00	4.07	2.26	0.00
5.50	4.07	2.26	0.00
6.00	4.07	2.26	0.00
6.50	4.07	2.26	0.00
7.00	4.07	2.26	0.00
7.50	4.07	2.26	0.00
8.00	4.07	2.26	0.00
8.50	4.07	2.26	0.00
9.00	4.07	2.26	0.00
9.50	4.07	2.26	0.00
10.00	4.07	2.26	0.00
10.50	4.07	2.26	0.00
11.00	4.07	2.26	0.00
11.50	4.07	2.26	0.00
12.00	4.07	2.26	0.00
12.50	4.07	2.26	0.00
13.00	4.07	2.26	0.00
13.50	4.07	2.26	0.00
14.00	4.07	2.26	0.00
14.50	4.07	2.26	0.00
15.00	4.07	2.26	0.00
15.50	4.07	2.26	0.00
16.00	4.07	2.26	0.00
16.50	4.07	2.26	0.00
17.00	4.07	2.26	0.00
17.50	4.07	2.26	0.00
18.00	4.07	2.26	0.00
18.50	4.07	2.26	0.00
19.00	4.07	2.26	0.00
19.50	4.07	2.26	0.00
20.00	4.07	2.26	0.00
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21.00	4.07	2.26	0.00
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25.00	4.07	2.26	0.00
25.50	4.07	2.26	0.00
26.00	4.07	2.26	0.00
26.50	4.07	2.26	0.00
27.00	4.07	2.26	0.00
27.50	4.07	2.26	0.00
28.00	4.07	2.26	0.00
28.50	4.07	2.26	0.00
29.00	4.07	2.26	0.00
29.50	4.07	2.26	0.00
30.00	4.07	2.26	0.00

Summary for Subcatchment EX: Pre Development

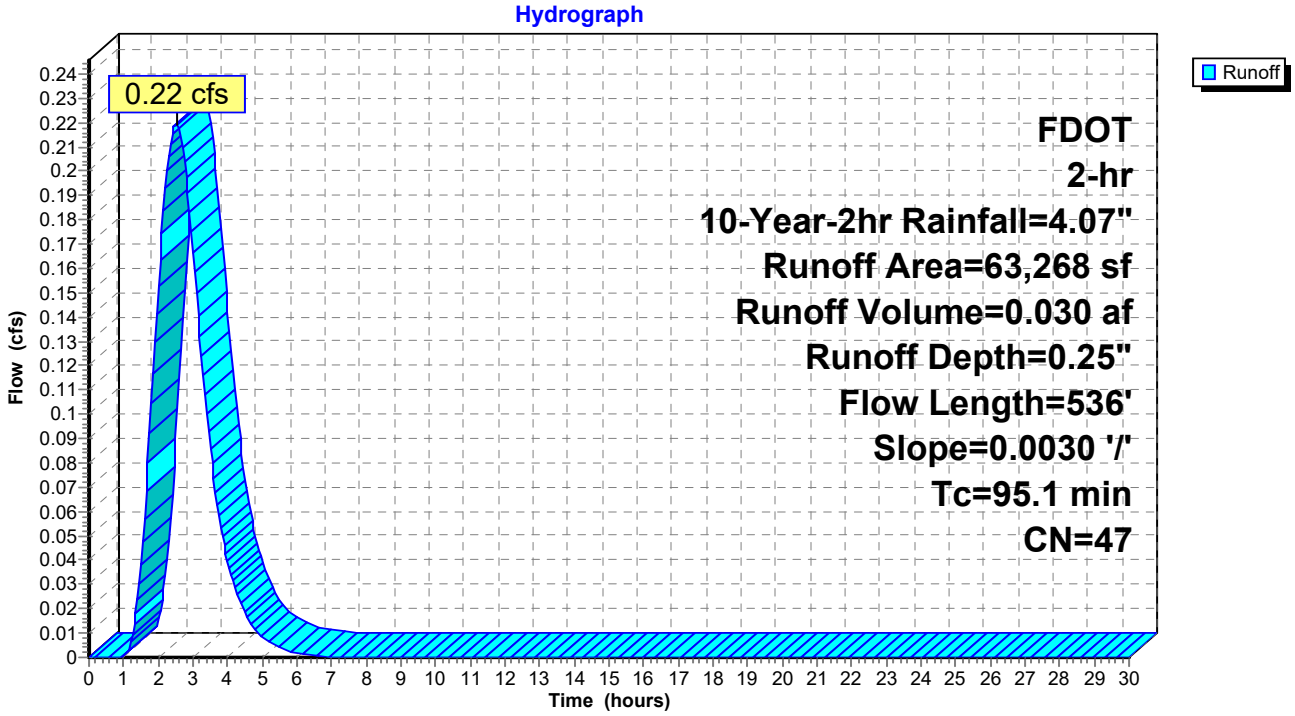
Runoff = 0.22 cfs @ 2.53 hrs, Volume= 0.030 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 2-hr 10-Year-2hr Rainfall=4.07"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.08	0.00	0.00
1.00	3.13	0.06	0.00
1.50	3.77	0.18	0.04
2.00	**4.07**	**0.25**	0.15
2.50	4.07	0.25	**0.22**
3.00	4.07	0.25	**0.17**
3.50	4.07	0.25	0.09
4.00	4.07	0.25	0.04
4.50	4.07	0.25	0.02
5.00	4.07	0.25	0.01
5.50	4.07	0.25	0.00
6.00	4.07	0.25	0.00
6.50	4.07	0.25	0.00
7.00	4.07	0.25	0.00
7.50	4.07	0.25	0.00
8.00	4.07	0.25	0.00
8.50	4.07	0.25	0.00
9.00	4.07	0.25	0.00
9.50	4.07	0.25	0.00
10.00	4.07	0.25	0.00
10.50	4.07	0.25	0.00
11.00	4.07	0.25	0.00
11.50	4.07	0.25	0.00
12.00	4.07	0.25	0.00
12.50	4.07	0.25	0.00
13.00	4.07	0.25	0.00
13.50	4.07	0.25	0.00
14.00	4.07	0.25	0.00
14.50	4.07	0.25	0.00
15.00	4.07	0.25	0.00
15.50	4.07	0.25	0.00
16.00	4.07	0.25	0.00
16.50	4.07	0.25	0.00
17.00	4.07	0.25	0.00
17.50	4.07	0.25	0.00
18.00	4.07	0.25	0.00
18.50	4.07	0.25	0.00
19.00	4.07	0.25	0.00
19.50	4.07	0.25	0.00
20.00	4.07	0.25	0.00
20.50	4.07	0.25	0.00
21.00	4.07	0.25	0.00
21.50	4.07	0.25	0.00
22.00	4.07	0.25	0.00
22.50	4.07	0.25	0.00
23.00	4.07	0.25	0.00
23.50	4.07	0.25	0.00
24.00	4.07	0.25	0.00
24.50	4.07	0.25	0.00
25.00	4.07	0.25	0.00
25.50	4.07	0.25	0.00
26.00	4.07	0.25	0.00
26.50	4.07	0.25	0.00
27.00	4.07	0.25	0.00
27.50	4.07	0.25	0.00
28.00	4.07	0.25	0.00
28.50	4.07	0.25	0.00
29.00	4.07	0.25	0.00
29.50	4.07	0.25	0.00
30.00	4.07	0.25	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 2.26" for 10-Year-2hr event
Inflow = 4.23 cfs @ 1.05 hrs, Volume= 0.274 af
Outflow = 2.38 cfs @ 1.35 hrs, Volume= 0.275 af, Atten= 44%, Lag= 17.7 min
Discarded = 2.38 cfs @ 1.35 hrs, Volume= 0.275 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 5.03' @ 1.35 hrs Surf.Area= 2,832 sf Storage= 3,010 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 13.7 min (88.8 - 75.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.38 cfs @ 1.35 hrs HW=5.03' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.38 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

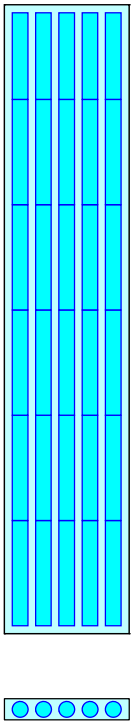
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

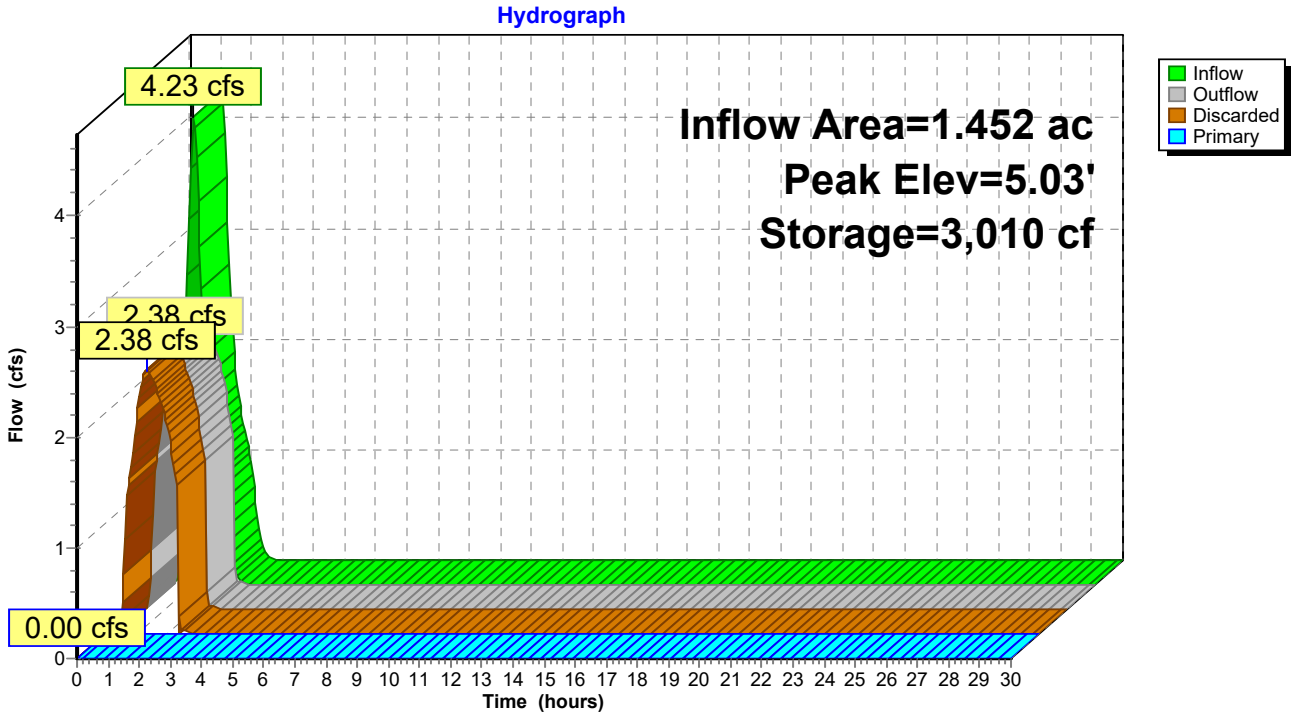
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	**4.10**	**1,374**	**4.16**	**1.92**	**1.92**	0.00
2.00	**0.88**	**1,257**	**4.09**	**1.88**	**1.88**	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.00	0	3.00	0.00	0.00	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

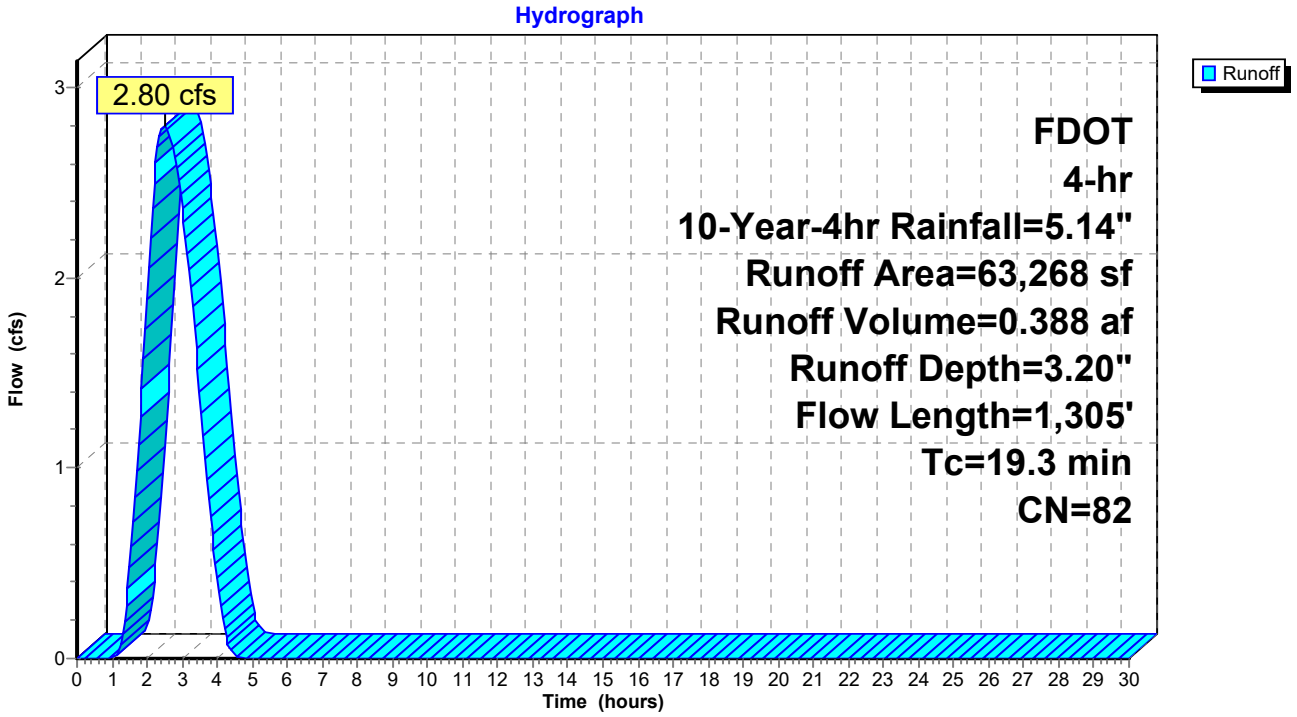
Runoff = 2.80 cfs @ 2.50 hrs, Volume= 0.388 af, Depth= 3.20"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 4-hr 10-Year-4hr Rainfall=5.14"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.10	0.00	0.00
1.00	0.47	0.00	0.00
1.50	1.21	0.20	0.48
2.00	2.36	0.90	1.89
2.50	3.59	1.86	**2.80**
3.00	4.51	2.65	2.37
3.50	5.01	3.09	1.40
4.00	**5.14**	**3.20**	0.42
4.50	5.14	3.20	0.02
5.00	5.14	3.20	0.00
5.50	5.14	3.20	0.00
6.00	5.14	3.20	0.00
6.50	5.14	3.20	0.00
7.00	5.14	3.20	0.00
7.50	5.14	3.20	0.00
8.00	5.14	3.20	0.00
8.50	5.14	3.20	0.00
9.00	5.14	3.20	0.00
9.50	5.14	3.20	0.00
10.00	5.14	3.20	0.00
10.50	5.14	3.20	0.00
11.00	5.14	3.20	0.00
11.50	5.14	3.20	0.00
12.00	5.14	3.20	0.00
12.50	5.14	3.20	0.00
13.00	5.14	3.20	0.00
13.50	5.14	3.20	0.00
14.00	5.14	3.20	0.00
14.50	5.14	3.20	0.00
15.00	5.14	3.20	0.00
15.50	5.14	3.20	0.00
16.00	5.14	3.20	0.00
16.50	5.14	3.20	0.00
17.00	5.14	3.20	0.00
17.50	5.14	3.20	0.00
18.00	5.14	3.20	0.00
18.50	5.14	3.20	0.00
19.00	5.14	3.20	0.00
19.50	5.14	3.20	0.00
20.00	5.14	3.20	0.00
20.50	5.14	3.20	0.00
21.00	5.14	3.20	0.00
21.50	5.14	3.20	0.00
22.00	5.14	3.20	0.00
22.50	5.14	3.20	0.00
23.00	5.14	3.20	0.00
23.50	5.14	3.20	0.00
24.00	5.14	3.20	0.00
24.50	5.14	3.20	0.00
25.00	5.14	3.20	0.00
25.50	5.14	3.20	0.00
26.00	5.14	3.20	0.00
26.50	5.14	3.20	0.00
27.00	5.14	3.20	0.00
27.50	5.14	3.20	0.00
28.00	5.14	3.20	0.00
28.50	5.14	3.20	0.00
29.00	5.14	3.20	0.00
29.50	5.14	3.20	0.00
30.00	5.14	3.20	0.00

Summary for Subcatchment EX: Pre Development

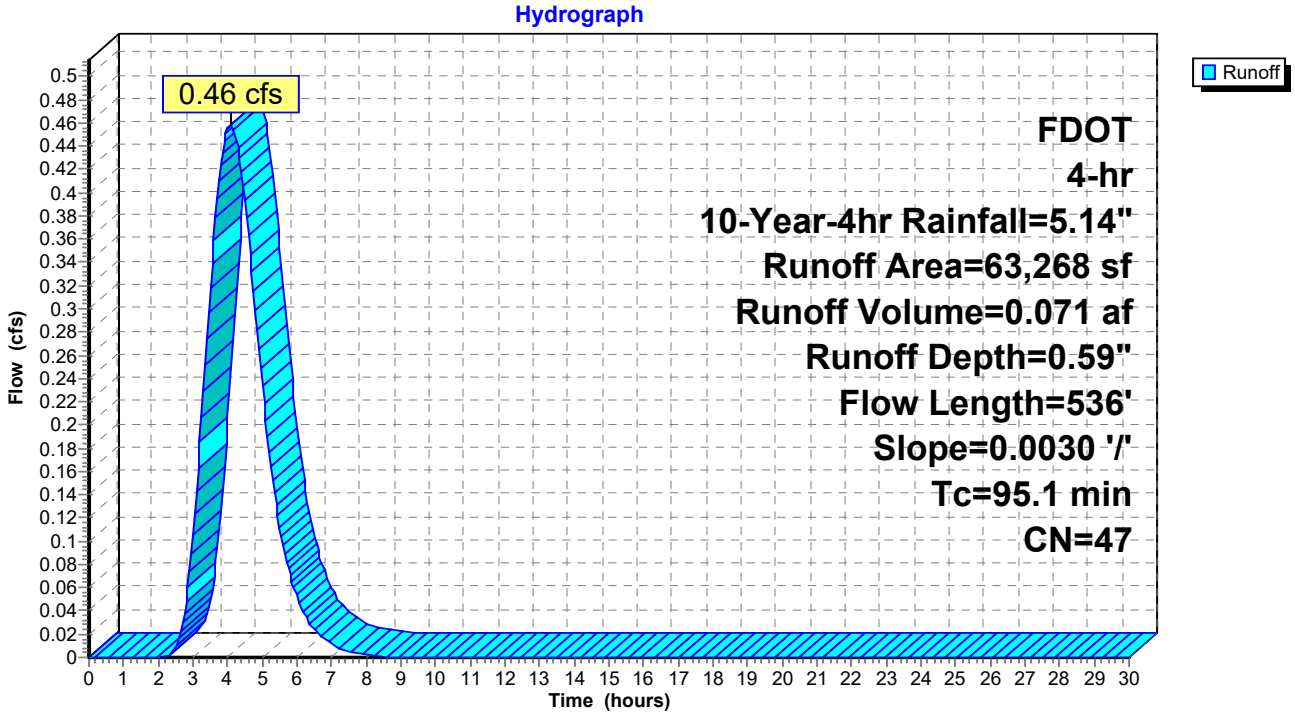
Runoff = 0.46 cfs @ 4.09 hrs, Volume= 0.071 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 4-hr 10-Year-4hr Rainfall=5.14"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.10	0.00	0.00
1.00	0.47	0.00	0.00
1.50	1.21	0.00	0.00
2.00	2.36	0.00	0.00
2.50	3.59	0.14	0.01
3.00	4.51	0.38	0.11
3.50	5.01	0.54	0.32
4.00	**5.14**	**0.59**	**0.46**
4.50	5.14	0.59	**0.39**
5.00	5.14	0.59	0.23
5.50	5.14	0.59	0.11
6.00	5.14	0.59	0.05
6.50	5.14	0.59	0.02
7.00	5.14	0.59	0.01
7.50	5.14	0.59	0.01
8.00	5.14	0.59	0.00
8.50	5.14	0.59	0.00
9.00	5.14	0.59	0.00
9.50	5.14	0.59	0.00
10.00	5.14	0.59	0.00
10.50	5.14	0.59	0.00
11.00	5.14	0.59	0.00
11.50	5.14	0.59	0.00
12.00	5.14	0.59	0.00
12.50	5.14	0.59	0.00
13.00	5.14	0.59	0.00
13.50	5.14	0.59	0.00
14.00	5.14	0.59	0.00
14.50	5.14	0.59	0.00
15.00	5.14	0.59	0.00
15.50	5.14	0.59	0.00
16.00	5.14	0.59	0.00
16.50	5.14	0.59	0.00
17.00	5.14	0.59	0.00
17.50	5.14	0.59	0.00
18.00	5.14	0.59	0.00
18.50	5.14	0.59	0.00
19.00	5.14	0.59	0.00
19.50	5.14	0.59	0.00
20.00	5.14	0.59	0.00
20.50	5.14	0.59	0.00
21.00	5.14	0.59	0.00
21.50	5.14	0.59	0.00
22.00	5.14	0.59	0.00
22.50	5.14	0.59	0.00
23.00	5.14	0.59	0.00
23.50	5.14	0.59	0.00
24.00	5.14	0.59	0.00
24.50	5.14	0.59	0.00
25.00	5.14	0.59	0.00
25.50	5.14	0.59	0.00
26.00	5.14	0.59	0.00
26.50	5.14	0.59	0.00
27.00	5.14	0.59	0.00
27.50	5.14	0.59	0.00
28.00	5.14	0.59	0.00
28.50	5.14	0.59	0.00
29.00	5.14	0.59	0.00
29.50	5.14	0.59	0.00
30.00	5.14	0.59	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 3.20" for 10-Year-4hr event
Inflow = 2.80 cfs @ 2.50 hrs, Volume= 0.388 af
Outflow = 2.25 cfs @ 3.08 hrs, Volume= 0.388 af, Atten= 20%, Lag= 34.8 min
Discarded = 2.25 cfs @ 3.08 hrs, Volume= 0.388 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 4.80' @ 3.08 hrs Surf.Area= 2,832 sf Storage= 2,552 cf

Plug-Flow detention time= 12.0 min calculated for 0.387 af (100% of inflow)
Center-of-Mass det. time= 12.0 min (173.6 - 161.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.25 cfs @ 3.08 hrs HW=4.80' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.25 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

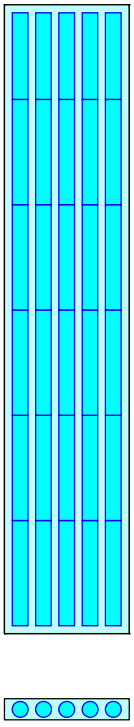
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

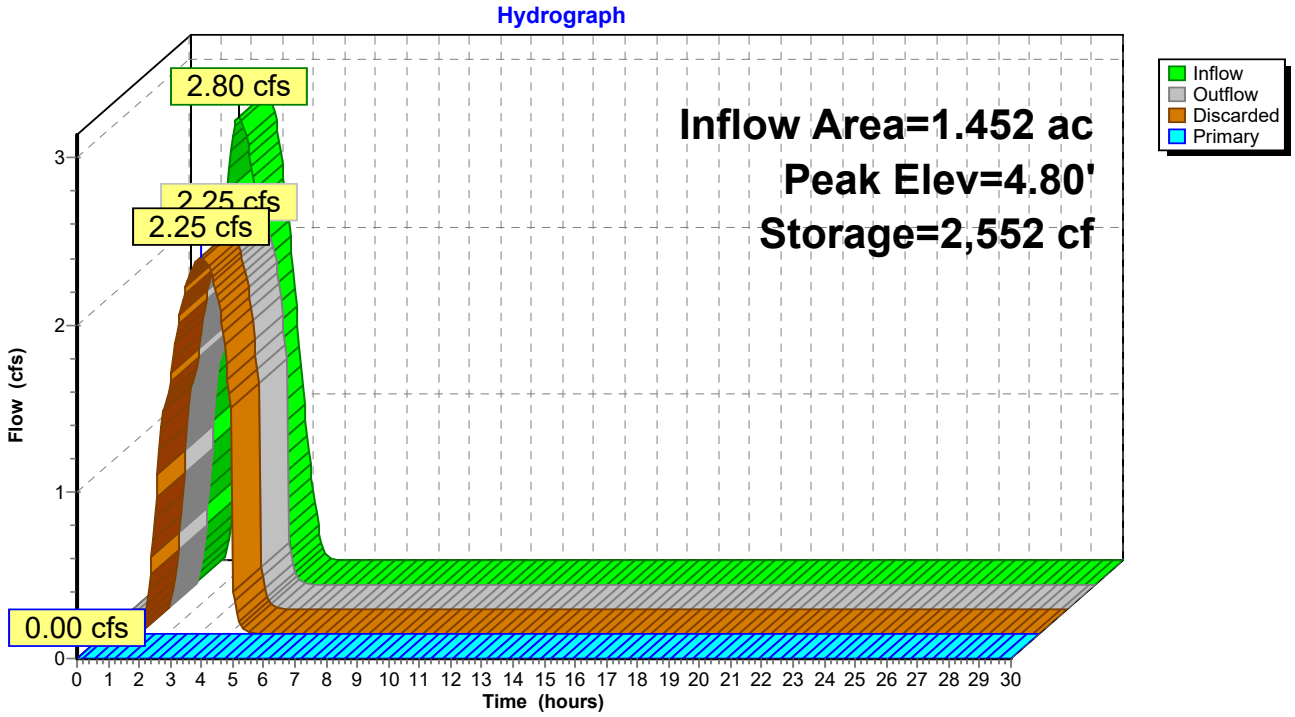
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	**1.89**	210	3.19	1.41	1.41	0.00
3.00	**2.37**	**2,535**	**4.79**	**2.25**	**2.25**	0.00
4.00	0.42	**279**	**3.25**	**1.44**	**1.44**	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

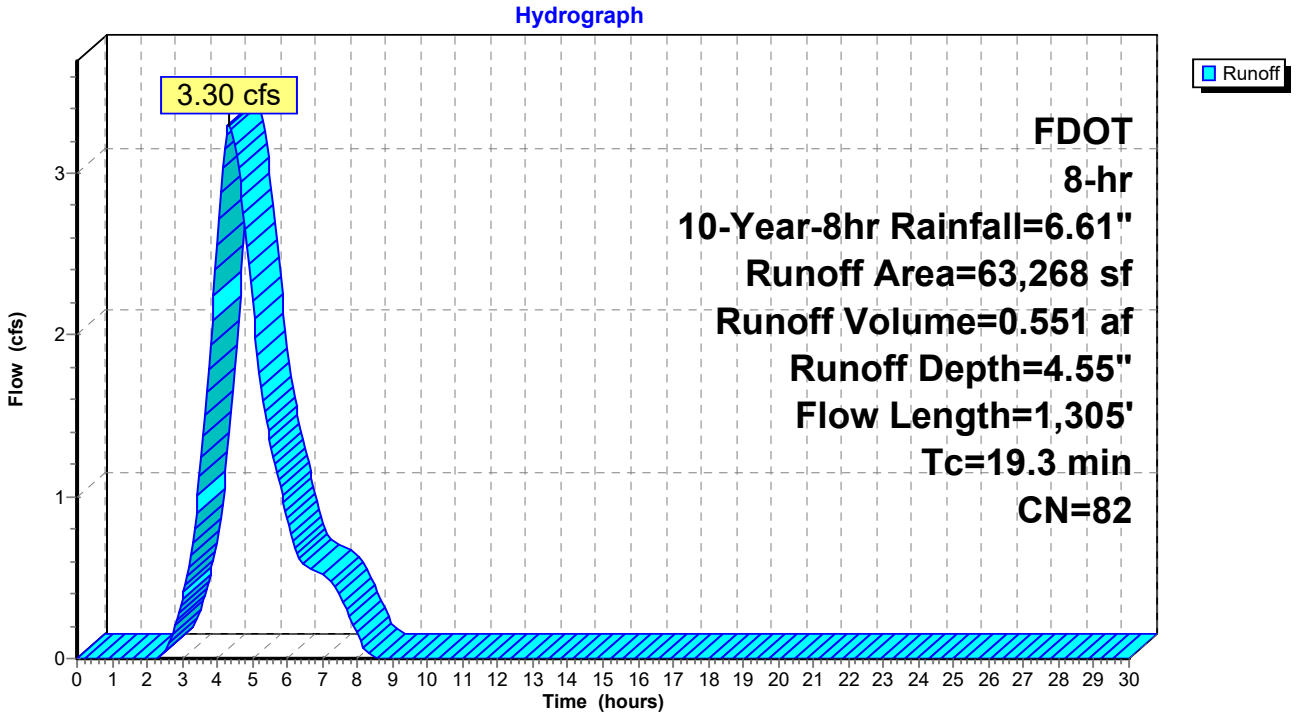
Runoff = 3.30 cfs @ 4.34 hrs, Volume= 0.551 af, Depth= 4.55"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 8-hr 10-Year-8hr Rainfall=6.61"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.07	0.00	0.00
1.50	0.18	0.00	0.00
2.00	0.36	0.00	0.00
2.50	0.66	0.02	0.04
3.00	1.11	0.16	0.36
3.50	1.89	0.58	1.12
4.00	3.16	1.51	**2.56**
4.50	4.44	2.58	**3.18**
5.00	5.24	3.30	2.21
5.50	5.73	3.74	1.35
6.00	6.04	4.02	0.87
6.50	6.24	4.21	0.57
7.00	6.43	4.38	0.52
7.50	6.57	4.51	0.39
8.00	**6.61**	**4.55**	0.15
8.50	6.61	4.55	0.01
9.00	6.61	4.55	0.00
9.50	6.61	4.55	0.00
10.00	6.61	4.55	0.00
10.50	6.61	4.55	0.00
11.00	6.61	4.55	0.00
11.50	6.61	4.55	0.00
12.00	6.61	4.55	0.00
12.50	6.61	4.55	0.00
13.00	6.61	4.55	0.00
13.50	6.61	4.55	0.00
14.00	6.61	4.55	0.00
14.50	6.61	4.55	0.00
15.00	6.61	4.55	0.00
15.50	6.61	4.55	0.00
16.00	6.61	4.55	0.00
16.50	6.61	4.55	0.00
17.00	6.61	4.55	0.00
17.50	6.61	4.55	0.00
18.00	6.61	4.55	0.00
18.50	6.61	4.55	0.00
19.00	6.61	4.55	0.00
19.50	6.61	4.55	0.00
20.00	6.61	4.55	0.00
20.50	6.61	4.55	0.00
21.00	6.61	4.55	0.00
21.50	6.61	4.55	0.00
22.00	6.61	4.55	0.00
22.50	6.61	4.55	0.00
23.00	6.61	4.55	0.00
23.50	6.61	4.55	0.00
24.00	6.61	4.55	0.00
24.50	6.61	4.55	0.00
25.00	6.61	4.55	0.00
25.50	6.61	4.55	0.00
26.00	6.61	4.55	0.00
26.50	6.61	4.55	0.00
27.00	6.61	4.55	0.00
27.50	6.61	4.55	0.00
28.00	6.61	4.55	0.00
28.50	6.61	4.55	0.00
29.00	6.61	4.55	0.00
29.50	6.61	4.55	0.00
30.00	6.61	4.55	0.00

Summary for Subcatchment EX: Pre Development

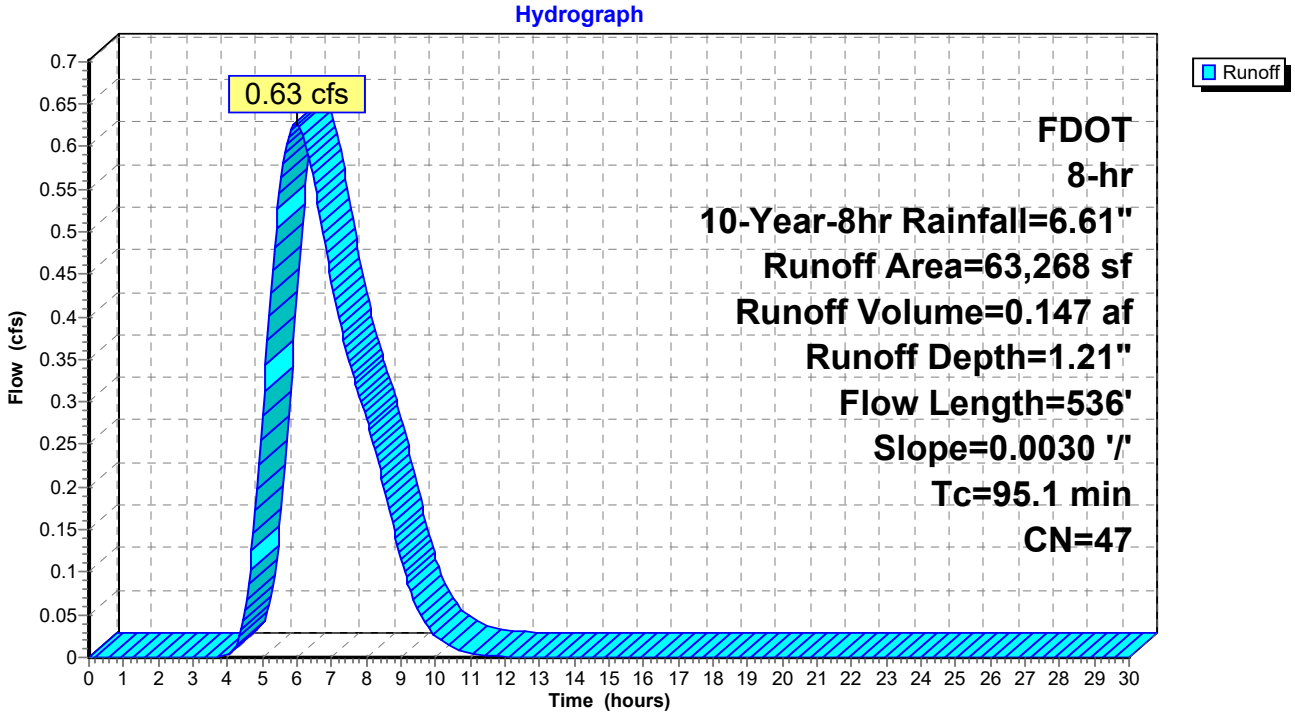
Runoff = 0.63 cfs @ 5.98 hrs, Volume= 0.147 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 8-hr 10-Year-8hr Rainfall=6.61"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.07	0.00	0.00
1.50	0.18	0.00	0.00
2.00	0.36	0.00	0.00
2.50	0.66	0.00	0.00
3.00	1.11	0.00	0.00
3.50	1.89	0.00	0.00
4.00	3.16	0.07	0.00
4.50	4.44	0.35	0.05
5.00	5.24	0.63	0.28
5.50	5.73	0.82	0.55
6.00	6.04	0.95	**0.63**
6.50	6.24	1.04	0.56
7.00	6.43	1.13	0.44
7.50	6.57	1.19	0.35
8.00	**6.61**	**1.21**	0.28
8.50	6.61	1.21	0.20
9.00	6.61	1.21	0.12
9.50	6.61	1.21	0.06
10.00	6.61	1.21	0.02
10.50	6.61	1.21	0.01
11.00	6.61	1.21	0.00
11.50	6.61	1.21	0.00
12.00	6.61	1.21	0.00
12.50	6.61	1.21	0.00
13.00	6.61	1.21	0.00
13.50	6.61	1.21	0.00
14.00	6.61	1.21	0.00
14.50	6.61	1.21	0.00
15.00	6.61	1.21	0.00
15.50	6.61	1.21	0.00
16.00	6.61	1.21	0.00
16.50	6.61	1.21	0.00
17.00	6.61	1.21	0.00
17.50	6.61	1.21	0.00
18.00	6.61	1.21	0.00
18.50	6.61	1.21	0.00
19.00	6.61	1.21	0.00
19.50	6.61	1.21	0.00
20.00	6.61	1.21	0.00
20.50	6.61	1.21	0.00
21.00	6.61	1.21	0.00
21.50	6.61	1.21	0.00
22.00	6.61	1.21	0.00
22.50	6.61	1.21	0.00
23.00	6.61	1.21	0.00
23.50	6.61	1.21	0.00
24.00	6.61	1.21	0.00
24.50	6.61	1.21	0.00
25.00	6.61	1.21	0.00
25.50	6.61	1.21	0.00
26.00	6.61	1.21	0.00
26.50	6.61	1.21	0.00
27.00	6.61	1.21	0.00
27.50	6.61	1.21	0.00
28.00	6.61	1.21	0.00
28.50	6.61	1.21	0.00
29.00	6.61	1.21	0.00
29.50	6.61	1.21	0.00
30.00	6.61	1.21	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 4.55" for 10-Year-8hr event
Inflow = 3.30 cfs @ 4.34 hrs, Volume= 0.551 af
Outflow = 2.46 cfs @ 4.89 hrs, Volume= 0.551 af, Atten= 25%, Lag= 32.8 min
Discarded = 2.46 cfs @ 4.89 hrs, Volume= 0.551 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 5.19' @ 4.89 hrs Surf.Area= 2,832 sf Storage= 3,325 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 12.1 min (303.8 - 291.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.46 cfs @ 4.89 hrs HW=5.19' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.46 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

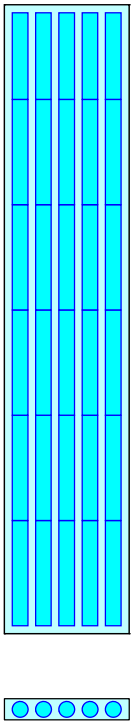
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

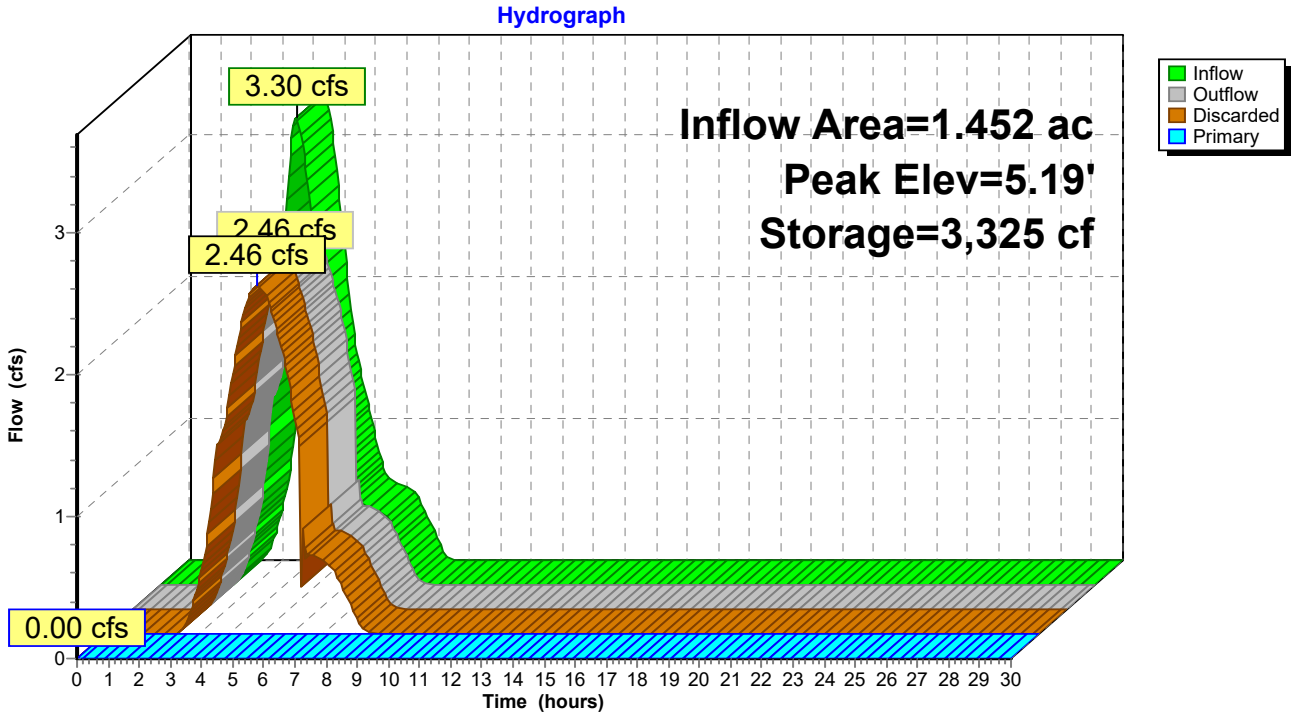
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	0.00	0	3.00	0.00	0.00	0.00
3.00	0.36	12	3.01	0.36	0.36	0.00
4.00	**2.56**	**759**	**3.71**	**1.68**	**1.68**	0.00
5.00	**2.21**	**3,277**	**5.17**	**2.45**	**2.45**	0.00
6.00	0.87	700	3.64	1.65	1.65	0.00
7.00	0.52	18	3.02	0.52	0.52	0.00
8.00	0.15	5	3.00	0.15	0.15	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

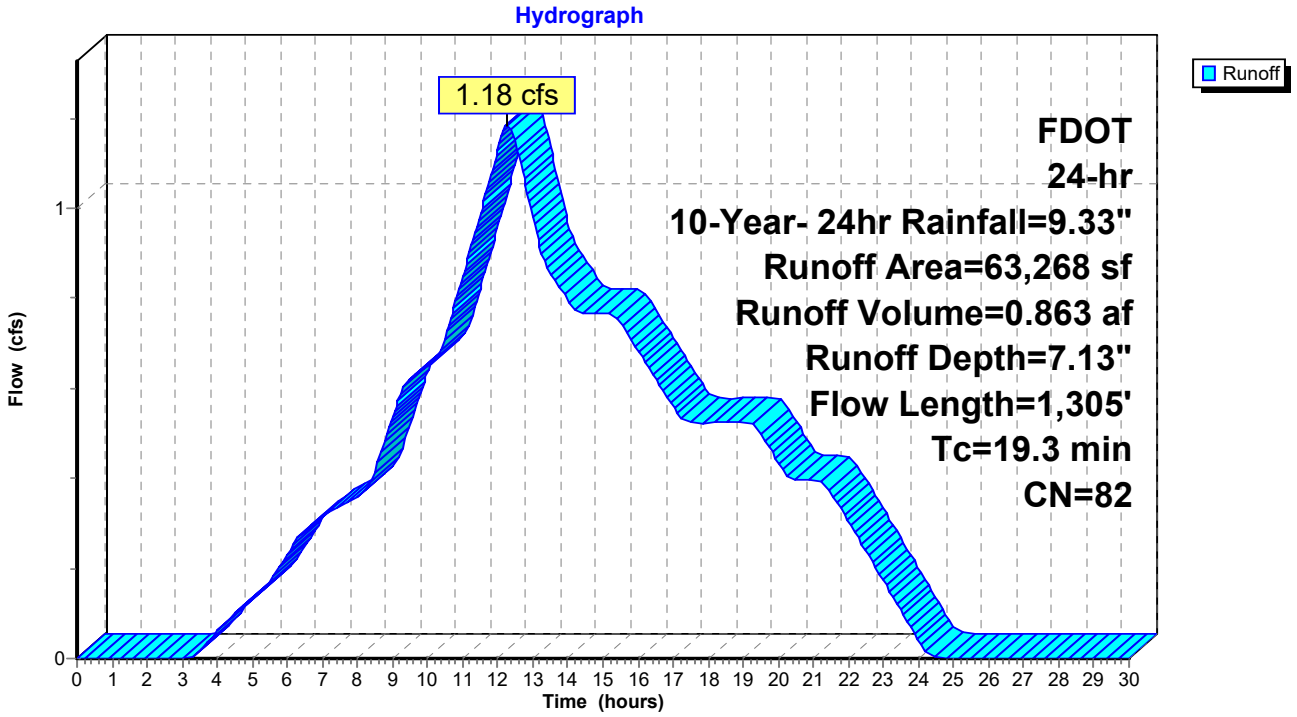
Runoff = 1.18 cfs @ 12.27 hrs, Volume= 0.863 af, Depth= 7.13"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 24-hr 10-Year- 24hr Rainfall=9.33"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.11	0.00	0.00
2.00	0.19	0.00	0.00
2.50	0.29	0.00	0.00
3.00	0.42	0.00	0.00
3.50	0.57	0.01	0.02
4.00	0.71	0.03	0.06
4.50	0.85	0.06	0.10
5.00	0.99	0.11	0.13
5.50	1.14	0.17	0.17
6.00	1.32	0.25	0.23
6.50	1.51	0.35	0.28
7.00	1.70	0.46	0.31
7.50	1.88	0.57	0.34
8.00	2.07	0.70	0.36
8.50	2.29	0.84	0.42
9.00	2.54	1.03	0.54
9.50	2.83	1.24	0.62
10.00	3.11	1.47	0.65
10.50	3.42	1.71	0.72
11.00	3.77	2.01	0.85
11.50	4.17	2.35	0.99
12.00	4.62	2.74	**1.13**
12.50	5.05	3.13	**1.14**
13.00	5.42	3.46	0.98
13.50	5.74	3.75	0.86
14.00	6.03	4.02	0.80
14.50	6.31	4.28	0.77
15.00	6.60	4.54	0.77
15.50	6.87	4.79	0.74
16.00	7.12	5.02	0.69
16.50	7.34	5.23	0.62
17.00	7.54	5.42	0.56
17.50	7.73	5.60	0.52
18.00	7.92	5.78	0.52
18.50	8.10	5.96	0.52
19.00	8.29	6.14	0.53
19.50	8.47	6.31	0.50
20.00	8.62	6.45	0.43
20.50	8.76	6.59	0.40
21.00	8.91	6.72	0.40
21.50	9.04	6.85	0.37
22.00	9.14	6.95	0.30
22.50	9.22	7.03	0.24
23.00	9.28	7.09	0.17
23.50	9.32	7.12	0.11
24.00	**9.33**	**7.13**	0.04
24.50	9.33	7.13	0.00
25.00	9.33	7.13	0.00
25.50	9.33	7.13	0.00
26.00	9.33	7.13	0.00
26.50	9.33	7.13	0.00
27.00	9.33	7.13	0.00
27.50	9.33	7.13	0.00
28.00	9.33	7.13	0.00
28.50	9.33	7.13	0.00
29.00	9.33	7.13	0.00
29.50	9.33	7.13	0.00
30.00	9.33	7.13	0.00

Summary for Subcatchment EX: Pre Development

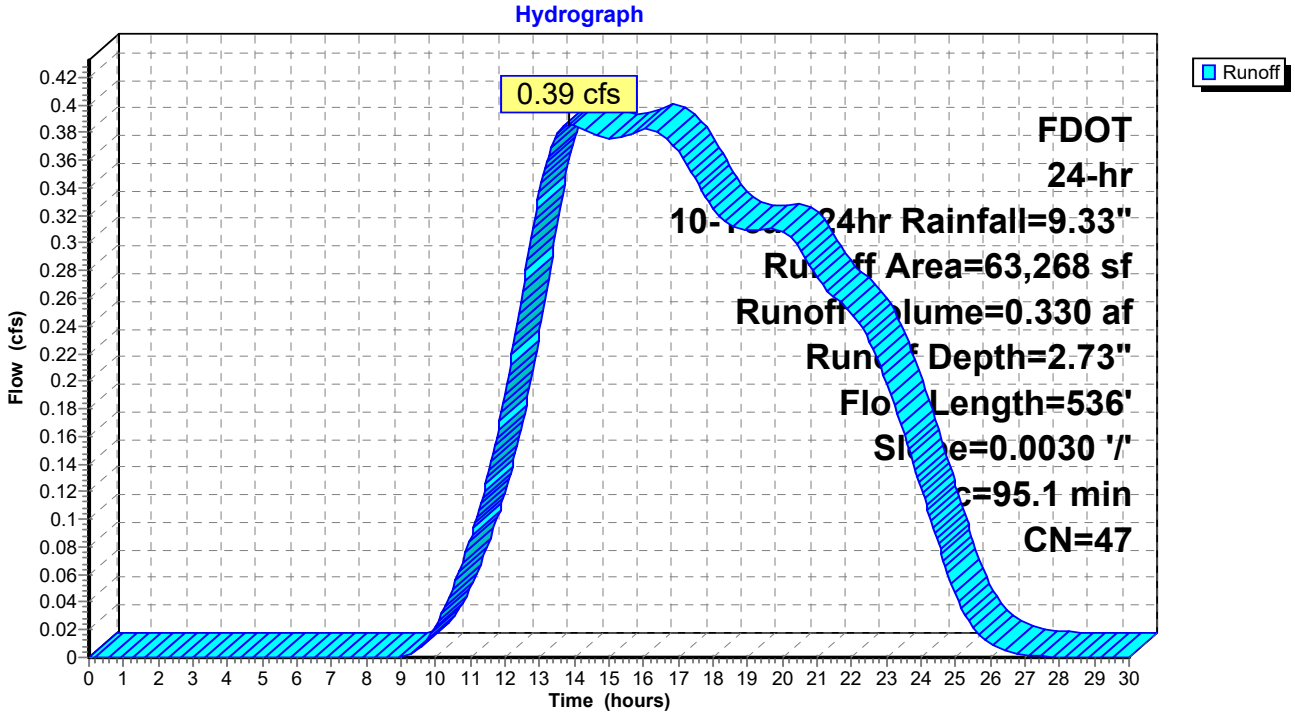
Runoff = 0.39 cfs @ 13.86 hrs, Volume= 0.330 af, Depth= 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 24-hr 10-Year- 24hr Rainfall=9.33"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.11	0.00	0.00
2.00	0.19	0.00	0.00
2.50	0.29	0.00	0.00
3.00	0.42	0.00	0.00
3.50	0.57	0.00	0.00
4.00	0.71	0.00	0.00
4.50	0.85	0.00	0.00
5.00	0.99	0.00	0.00
5.50	1.14	0.00	0.00
6.00	1.32	0.00	0.00
6.50	1.51	0.00	0.00
7.00	1.70	0.00	0.00
7.50	1.88	0.00	0.00
8.00	2.07	0.00	0.00
8.50	2.29	0.00	0.00
9.00	2.54	0.01	0.00
9.50	2.83	0.03	0.01
10.00	3.11	0.06	0.02
10.50	3.42	0.11	0.05
11.00	3.77	0.18	0.09
11.50	4.17	0.28	0.13
12.00	4.62	0.41	0.19
12.50	5.05	0.56	0.26
13.00	5.42	0.69	0.34
13.50	5.74	0.82	**0.38**
14.00	6.03	0.95	**0.39**
14.50	6.31	1.07	0.38
15.00	6.60	1.21	0.37
15.50	6.87	1.34	0.38
16.00	7.12	1.46	0.38
16.50	7.34	1.58	0.38
17.00	7.54	1.69	0.37
17.50	7.73	1.79	0.35
18.00	7.92	1.89	0.33
18.50	8.10	2.00	0.31
19.00	8.29	2.11	0.31
19.50	8.47	2.21	0.31
20.00	8.62	2.30	0.31
20.50	8.76	2.38	0.30
21.00	8.91	2.47	0.28
21.50	9.04	2.55	0.26
22.00	9.14	2.61	0.25
22.50	9.22	2.66	0.23
23.00	9.28	2.70	0.20
23.50	9.32	2.72	0.16
24.00	**9.33**	**2.73**	0.12
24.50	9.33	2.73	0.08
25.00	9.33	2.73	0.05
25.50	9.33	2.73	0.02
26.00	9.33	2.73	0.01
26.50	9.33	2.73	0.00
27.00	9.33	2.73	0.00
27.50	9.33	2.73	0.00
28.00	9.33	2.73	0.00
28.50	9.33	2.73	0.00
29.00	9.33	2.73	0.00
29.50	9.33	2.73	0.00
30.00	9.33	2.73	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 7.13" for 10-Year- 24hr event
Inflow = 1.18 cfs @ 12.27 hrs, Volume= 0.863 af
Outflow = 1.18 cfs @ 12.28 hrs, Volume= 0.863 af, Atten= 0%, Lag= 0.6 min
Discarded = 1.18 cfs @ 12.28 hrs, Volume= 0.863 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 3.04' @ 12.28 hrs Surf.Area= 2,832 sf Storage= 40 cf

Plug-Flow detention time= 0.6 min calculated for 0.862 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (836.2 - 835.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.33 cfs @ 12.28 hrs HW=3.04' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.33 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

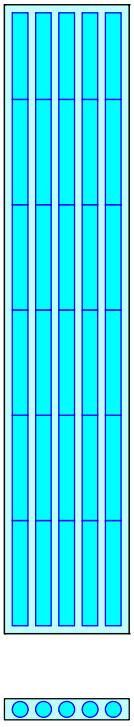
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

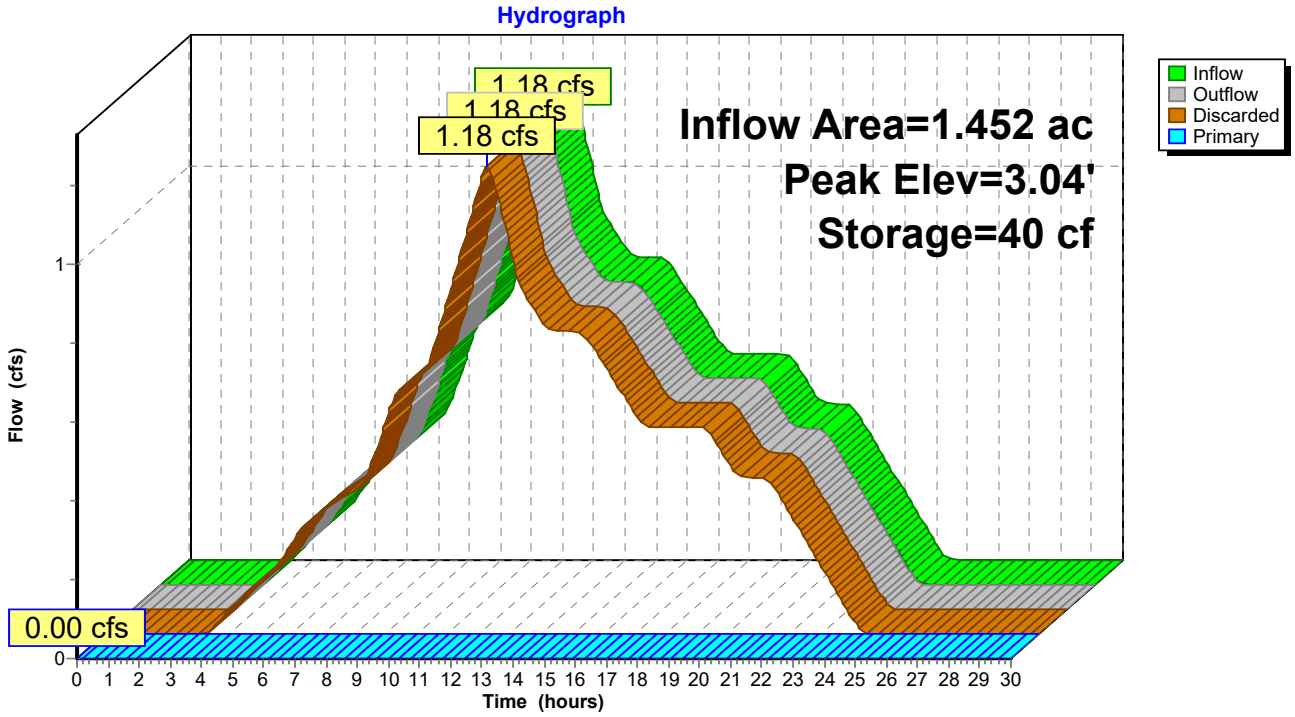
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31

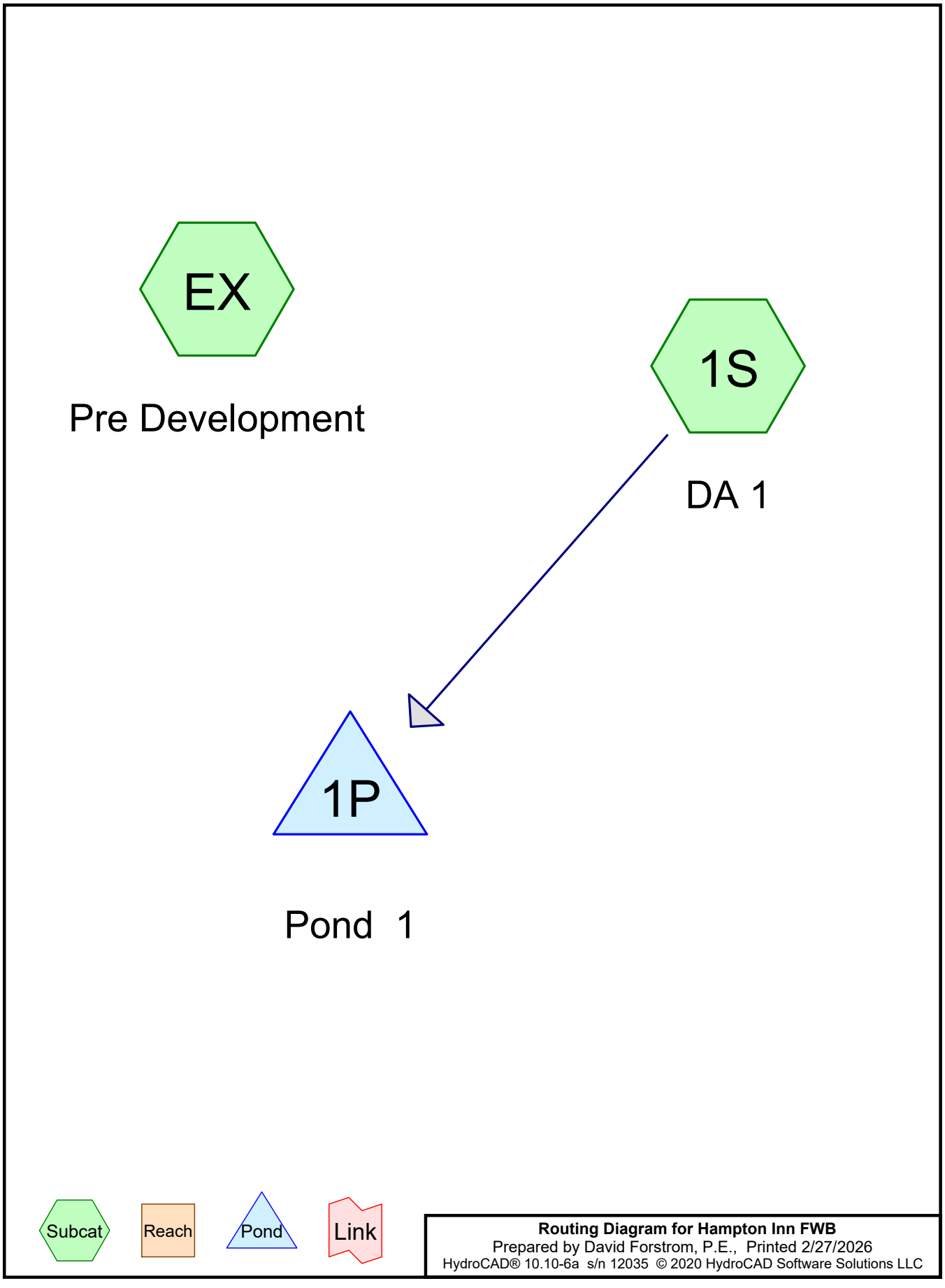


Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	0.00	0	3.00	0.00	0.00	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.06	2	3.00	0.06	0.06	0.00
5.00	0.13	4	3.00	0.13	0.13	0.00
6.00	0.23	8	3.01	0.23	0.23	0.00
7.00	0.31	11	3.01	0.31	0.31	0.00
8.00	0.36	12	3.01	0.36	0.36	0.00
9.00	0.54	18	3.02	0.53	0.53	0.00
10.00	0.65	22	3.02	0.65	0.65	0.00
11.00	0.85	29	3.03	0.84	0.84	0.00
12.00	**1.13**	**38**	**3.03**	**1.13**	**1.13**	0.00
13.00	**0.98**	**33**	**3.03**	**0.98**	**0.98**	0.00
14.00	0.80	27	3.02	0.80	0.80	0.00
15.00	0.77	26	3.02	0.77	0.77	0.00
16.00	0.69	23	3.02	0.69	0.69	0.00
17.00	0.56	19	3.02	0.56	0.56	0.00
18.00	0.52	18	3.02	0.52	0.52	0.00
19.00	0.53	18	3.02	0.53	0.53	0.00
20.00	0.43	15	3.01	0.44	0.44	0.00
21.00	0.40	13	3.01	0.40	0.40	0.00
22.00	0.30	10	3.01	0.31	0.31	0.00
23.00	0.17	6	3.01	0.17	0.17	0.00
24.00	0.04	1	3.00	0.04	0.04	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00



Routing Diagram for Hampton Inn FWB
Prepared by David Forstrom, P.E., Printed 2/27/2026
HydroCAD® 10.10-6a s/n 12035 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: DA 1

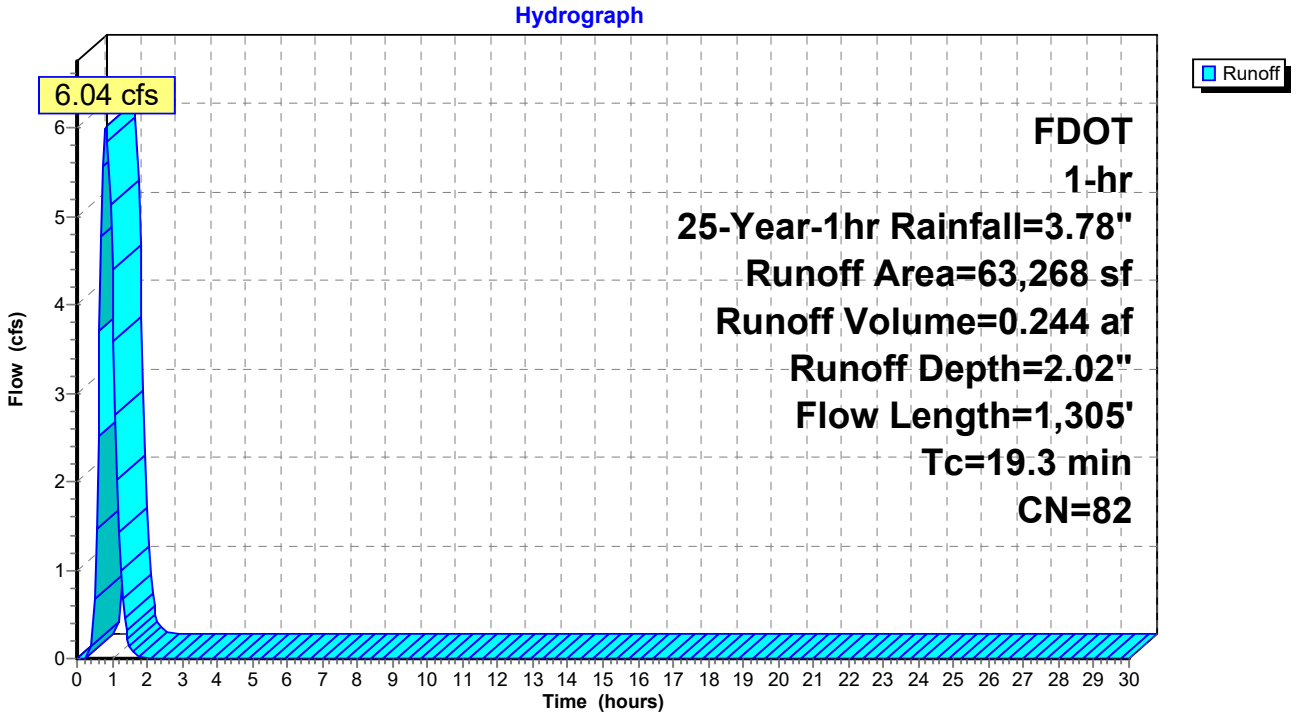
Runoff = 6.04 cfs @ 0.83 hrs, Volume= 0.244 af, Depth= 2.02"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 1-hr 25-Year-1hr Rainfall=3.78"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.97	0.63	**0.68**
1.00	**3.78**	**2.02**	**4.41**
1.50	3.78	2.02	0.14
2.00	3.78	2.02	0.00
2.50	3.78	2.02	0.00
3.00	3.78	2.02	0.00
3.50	3.78	2.02	0.00
4.00	3.78	2.02	0.00
4.50	3.78	2.02	0.00
5.00	3.78	2.02	0.00
5.50	3.78	2.02	0.00
6.00	3.78	2.02	0.00
6.50	3.78	2.02	0.00
7.00	3.78	2.02	0.00
7.50	3.78	2.02	0.00
8.00	3.78	2.02	0.00
8.50	3.78	2.02	0.00
9.00	3.78	2.02	0.00
9.50	3.78	2.02	0.00
10.00	3.78	2.02	0.00
10.50	3.78	2.02	0.00
11.00	3.78	2.02	0.00
11.50	3.78	2.02	0.00
12.00	3.78	2.02	0.00
12.50	3.78	2.02	0.00
13.00	3.78	2.02	0.00
13.50	3.78	2.02	0.00
14.00	3.78	2.02	0.00
14.50	3.78	2.02	0.00
15.00	3.78	2.02	0.00
15.50	3.78	2.02	0.00
16.00	3.78	2.02	0.00
16.50	3.78	2.02	0.00
17.00	3.78	2.02	0.00
17.50	3.78	2.02	0.00
18.00	3.78	2.02	0.00
18.50	3.78	2.02	0.00
19.00	3.78	2.02	0.00
19.50	3.78	2.02	0.00
20.00	3.78	2.02	0.00
20.50	3.78	2.02	0.00
21.00	3.78	2.02	0.00
21.50	3.78	2.02	0.00
22.00	3.78	2.02	0.00
22.50	3.78	2.02	0.00
23.00	3.78	2.02	0.00
23.50	3.78	2.02	0.00
24.00	3.78	2.02	0.00
24.50	3.78	2.02	0.00
25.00	3.78	2.02	0.00
25.50	3.78	2.02	0.00
26.00	3.78	2.02	0.00
26.50	3.78	2.02	0.00
27.00	3.78	2.02	0.00
27.50	3.78	2.02	0.00
28.00	3.78	2.02	0.00
28.50	3.78	2.02	0.00
29.00	3.78	2.02	0.00
29.50	3.78	2.02	0.00
30.00	3.78	2.02	0.00

Summary for Subcatchment EX: Pre Development

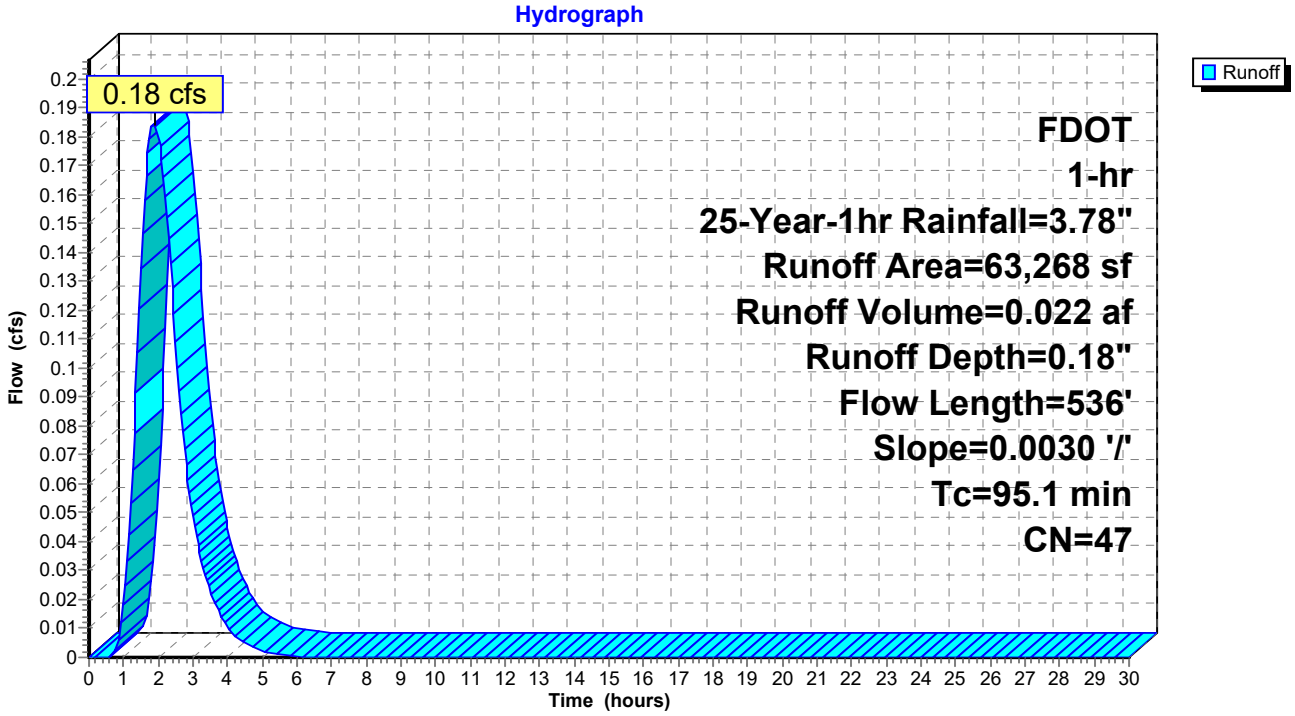
Runoff = 0.18 cfs @ 1.88 hrs, Volume= 0.022 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 1-hr 25-Year-1hr Rainfall=3.78"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.50	3.78	0.18	0.00
0.50	1.97	0.00	0.00	27.00	3.78	0.18	0.00
1.00	**3.78**	**0.18**	0.02	27.50	3.78	0.18	0.00
1.50	3.78	0.18	**0.13**	28.00	3.78	0.18	0.00
2.00	3.78	0.18	**0.18**	28.50	3.78	0.18	0.00
2.50	3.78	0.18	0.11	29.00	3.78	0.18	0.00
3.00	3.78	0.18	0.05	29.50	3.78	0.18	0.00
3.50	3.78	0.18	0.02	30.00	3.78	0.18	0.00
4.00	3.78	0.18	0.01				
4.50	3.78	0.18	0.00				
5.00	3.78	0.18	0.00				
5.50	3.78	0.18	0.00				
6.00	3.78	0.18	0.00				
6.50	3.78	0.18	0.00				
7.00	3.78	0.18	0.00				
7.50	3.78	0.18	0.00				
8.00	3.78	0.18	0.00				
8.50	3.78	0.18	0.00				
9.00	3.78	0.18	0.00				
9.50	3.78	0.18	0.00				
10.00	3.78	0.18	0.00				
10.50	3.78	0.18	0.00				
11.00	3.78	0.18	0.00				
11.50	3.78	0.18	0.00				
12.00	3.78	0.18	0.00				
12.50	3.78	0.18	0.00				
13.00	3.78	0.18	0.00				
13.50	3.78	0.18	0.00				
14.00	3.78	0.18	0.00				
14.50	3.78	0.18	0.00				
15.00	3.78	0.18	0.00				
15.50	3.78	0.18	0.00				
16.00	3.78	0.18	0.00				
16.50	3.78	0.18	0.00				
17.00	3.78	0.18	0.00				
17.50	3.78	0.18	0.00				
18.00	3.78	0.18	0.00				
18.50	3.78	0.18	0.00				
19.00	3.78	0.18	0.00				
19.50	3.78	0.18	0.00				
20.00	3.78	0.18	0.00				
20.50	3.78	0.18	0.00				
21.00	3.78	0.18	0.00				
21.50	3.78	0.18	0.00				
22.00	3.78	0.18	0.00				
22.50	3.78	0.18	0.00				
23.00	3.78	0.18	0.00				
23.50	3.78	0.18	0.00				
24.00	3.78	0.18	0.00				
24.50	3.78	0.18	0.00				
25.00	3.78	0.18	0.00				
25.50	3.78	0.18	0.00				
26.00	3.78	0.18	0.00				

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 2.02" for 25-Year-1hr event
Inflow = 6.04 cfs @ 0.83 hrs, Volume= 0.244 af
Outflow = 2.84 cfs @ 1.10 hrs, Volume= 0.244 af, Atten= 53%, Lag= 16.2 min
Discarded = 2.84 cfs @ 1.10 hrs, Volume= 0.244 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 5.92' @ 1.10 hrs Surf.Area= 2,832 sf Storage= 4,646 cf

Plug-Flow detention time= 18.2 min calculated for 0.244 af (100% of inflow)
Center-of-Mass det. time= 18.2 min (71.0 - 52.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.84 cfs @ 1.10 hrs HW=5.92' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.84 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

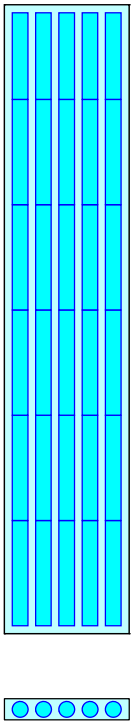
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

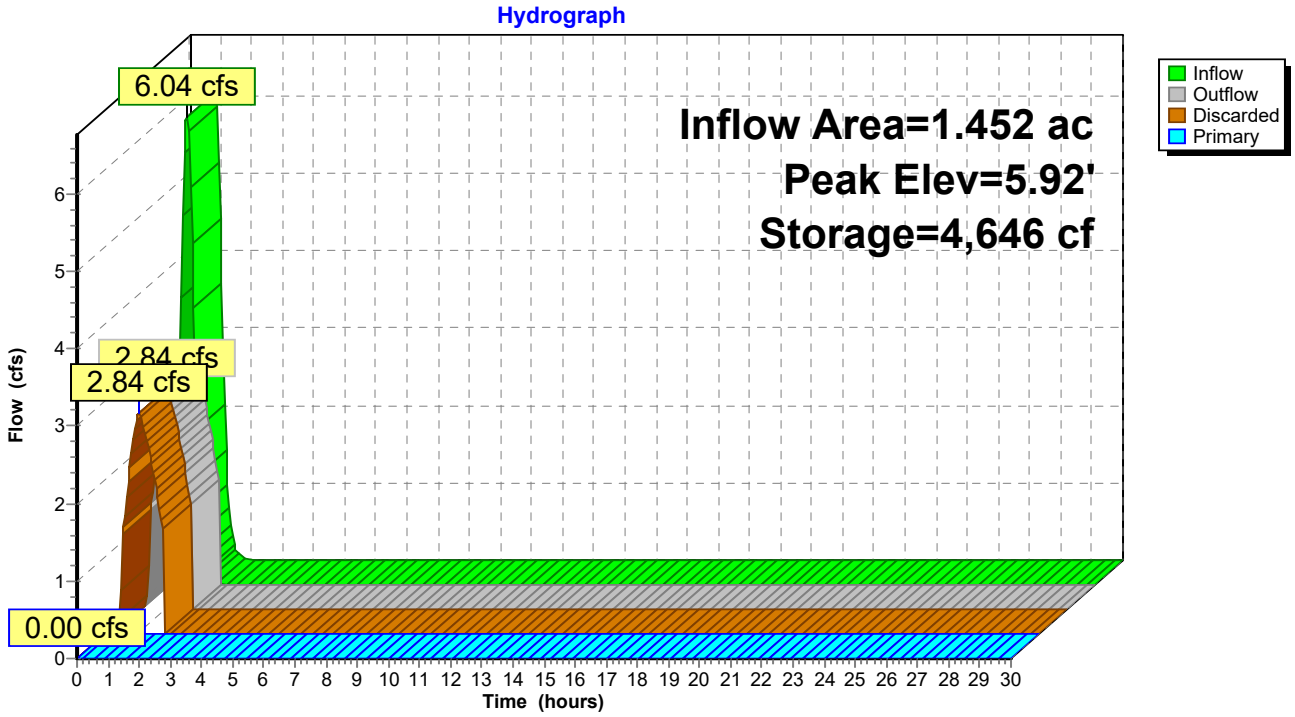
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	0	3.00	0.00	0.00	**0.00**
1.00	**4.41**	**4,368**	**5.75**	**2.76**	**2.76**	0.00
2.00	0.00	**0**	**3.00**	**0.00**	**0.00**	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.00	0	3.00	0.00	0.00	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

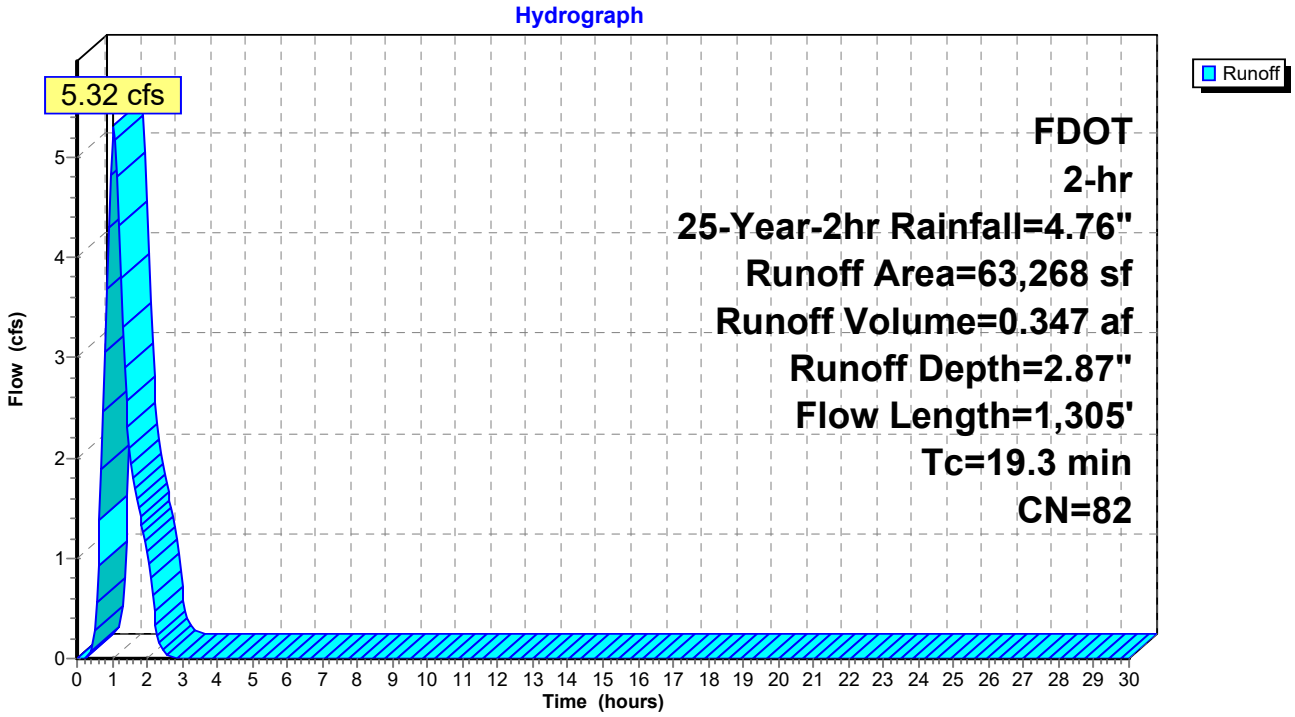
Runoff = 5.32 cfs @ 1.05 hrs, Volume= 0.347 af, Depth= 2.87"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 2-hr 25-Year-2hr Rainfall=4.76"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.26	0.23	0.28
1.00	3.66	1.92	**5.20**
1.50	4.41	2.55	**2.10**
2.00	**4.76**	**2.87**	1.07
2.50	4.76	2.87	0.05
3.00	4.76	2.87	0.00
3.50	4.76	2.87	0.00
4.00	4.76	2.87	0.00
4.50	4.76	2.87	0.00
5.00	4.76	2.87	0.00
5.50	4.76	2.87	0.00
6.00	4.76	2.87	0.00
6.50	4.76	2.87	0.00
7.00	4.76	2.87	0.00
7.50	4.76	2.87	0.00
8.00	4.76	2.87	0.00
8.50	4.76	2.87	0.00
9.00	4.76	2.87	0.00
9.50	4.76	2.87	0.00
10.00	4.76	2.87	0.00
10.50	4.76	2.87	0.00
11.00	4.76	2.87	0.00
11.50	4.76	2.87	0.00
12.00	4.76	2.87	0.00
12.50	4.76	2.87	0.00
13.00	4.76	2.87	0.00
13.50	4.76	2.87	0.00
14.00	4.76	2.87	0.00
14.50	4.76	2.87	0.00
15.00	4.76	2.87	0.00
15.50	4.76	2.87	0.00
16.00	4.76	2.87	0.00
16.50	4.76	2.87	0.00
17.00	4.76	2.87	0.00
17.50	4.76	2.87	0.00
18.00	4.76	2.87	0.00
18.50	4.76	2.87	0.00
19.00	4.76	2.87	0.00
19.50	4.76	2.87	0.00
20.00	4.76	2.87	0.00
20.50	4.76	2.87	0.00
21.00	4.76	2.87	0.00
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22.00	4.76	2.87	0.00
22.50	4.76	2.87	0.00
23.00	4.76	2.87	0.00
23.50	4.76	2.87	0.00
24.00	4.76	2.87	0.00
24.50	4.76	2.87	0.00
25.00	4.76	2.87	0.00
25.50	4.76	2.87	0.00
26.00	4.76	2.87	0.00
26.50	4.76	2.87	0.00
27.00	4.76	2.87	0.00
27.50	4.76	2.87	0.00
28.00	4.76	2.87	0.00
28.50	4.76	2.87	0.00
29.00	4.76	2.87	0.00
29.50	4.76	2.87	0.00
30.00	4.76	2.87	0.00

Summary for Subcatchment EX: Pre Development

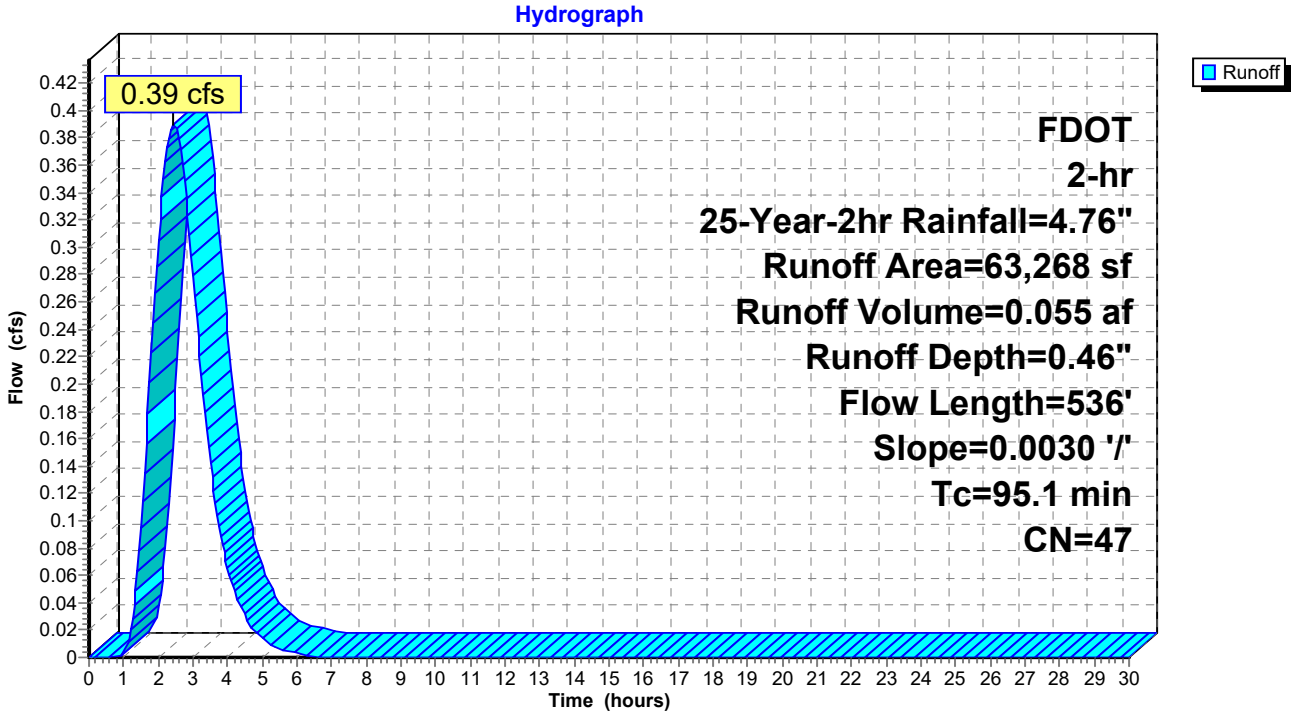
Runoff = 0.39 cfs @ 2.44 hrs, Volume= 0.055 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 2-hr 25-Year-2hr Rainfall=4.76"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	1.26	0.00	0.00
1.00	3.66	0.16	0.00
1.50	4.41	0.34	0.09
2.00	**4.76**	**0.46**	**0.30**
2.50	4.76	0.46	**0.39**
3.00	4.76	0.46	0.28
3.50	4.76	0.46	0.14
4.00	4.76	0.46	0.07
4.50	4.76	0.46	0.03
5.00	4.76	0.46	0.01
5.50	4.76	0.46	0.01
6.00	4.76	0.46	0.00
6.50	4.76	0.46	0.00
7.00	4.76	0.46	0.00
7.50	4.76	0.46	0.00
8.00	4.76	0.46	0.00
8.50	4.76	0.46	0.00
9.00	4.76	0.46	0.00
9.50	4.76	0.46	0.00
10.00	4.76	0.46	0.00
10.50	4.76	0.46	0.00
11.00	4.76	0.46	0.00
11.50	4.76	0.46	0.00
12.00	4.76	0.46	0.00
12.50	4.76	0.46	0.00
13.00	4.76	0.46	0.00
13.50	4.76	0.46	0.00
14.00	4.76	0.46	0.00
14.50	4.76	0.46	0.00
15.00	4.76	0.46	0.00
15.50	4.76	0.46	0.00
16.00	4.76	0.46	0.00
16.50	4.76	0.46	0.00
17.00	4.76	0.46	0.00
17.50	4.76	0.46	0.00
18.00	4.76	0.46	0.00
18.50	4.76	0.46	0.00
19.00	4.76	0.46	0.00
19.50	4.76	0.46	0.00
20.00	4.76	0.46	0.00
20.50	4.76	0.46	0.00
21.00	4.76	0.46	0.00
21.50	4.76	0.46	0.00
22.00	4.76	0.46	0.00
22.50	4.76	0.46	0.00
23.00	4.76	0.46	0.00
23.50	4.76	0.46	0.00
24.00	4.76	0.46	0.00
24.50	4.76	0.46	0.00
25.00	4.76	0.46	0.00
25.50	4.76	0.46	0.00
26.00	4.76	0.46	0.00
26.50	4.76	0.46	0.00
27.00	4.76	0.46	0.00
27.50	4.76	0.46	0.00
28.00	4.76	0.46	0.00
28.50	4.76	0.46	0.00
29.00	4.76	0.46	0.00
29.50	4.76	0.46	0.00
30.00	4.76	0.46	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 2.87" for 25-Year-2hr event
Inflow = 5.32 cfs @ 1.05 hrs, Volume= 0.347 af
Outflow = 2.79 cfs @ 1.37 hrs, Volume= 0.348 af, Atten= 47%, Lag= 19.1 min
Discarded = 2.79 cfs @ 1.37 hrs, Volume= 0.348 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 5.83' @ 1.37 hrs Surf.Area= 2,832 sf Storage= 4,496 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 18.6 min (92.7 - 74.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.79 cfs @ 1.37 hrs HW=5.82' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.79 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

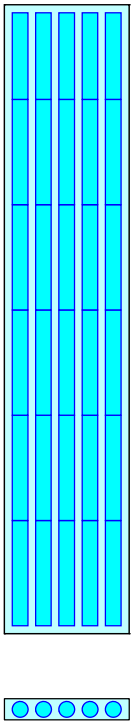
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

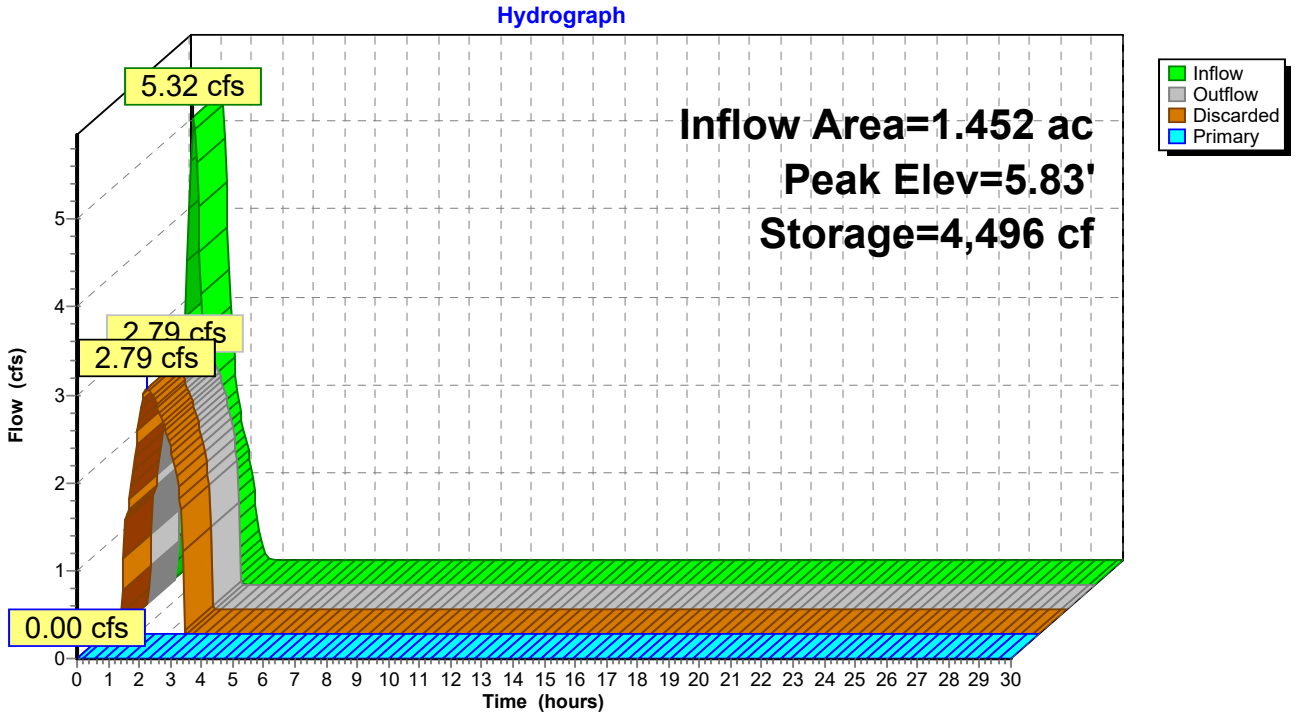
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	**5.20**	**2,187**	**4.61**	**2.15**	**2.15**	0.00
2.00	**1.07**	**2,548**	**4.80**	**2.25**	**2.25**	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.00	0	3.00	0.00	0.00	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

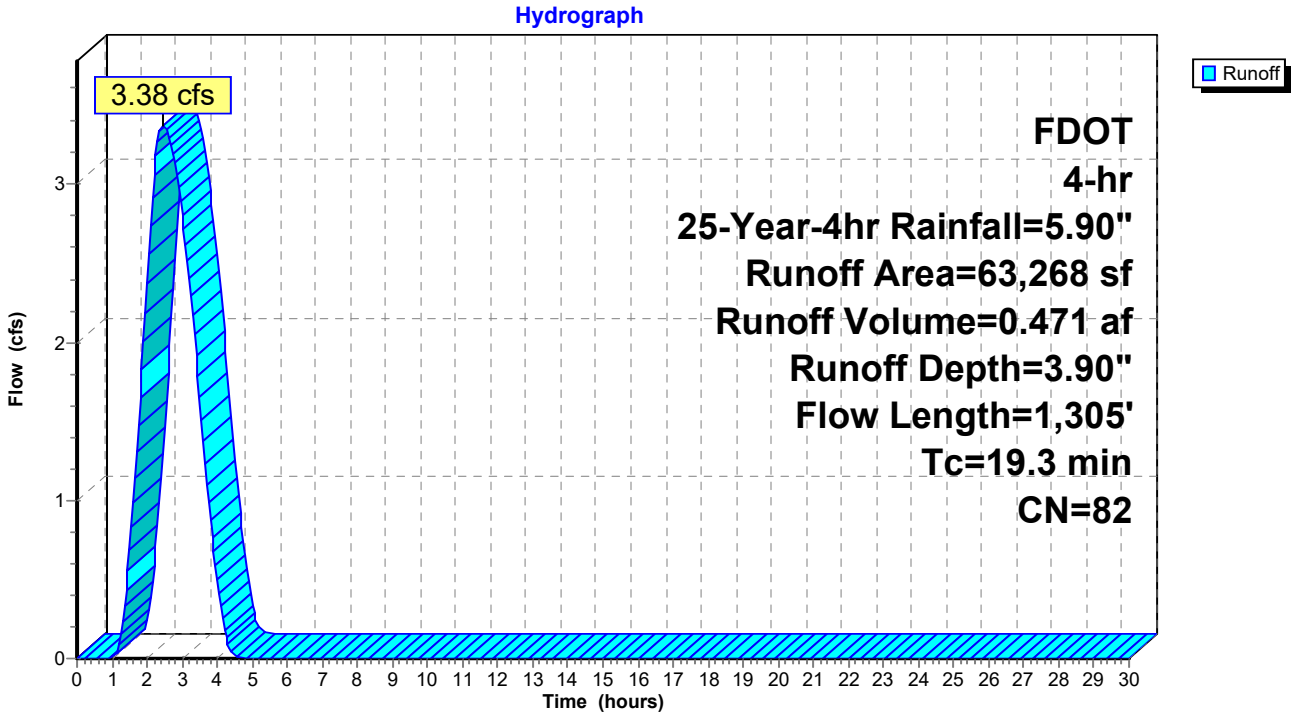
Runoff = 3.38 cfs @ 2.46 hrs, Volume= 0.471 af, Depth= 3.90"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 4-hr 25-Year-4hr Rainfall=5.90"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.12	0.00	0.00
1.00	0.54	0.00	0.00
1.50	1.38	0.28	0.69
2.00	2.71	1.15	**2.37**
2.50	4.12	2.31	**3.37**
3.00	5.18	3.24	2.81
3.50	5.75	3.76	1.65
4.00	**5.90**	**3.90**	0.50
4.50	5.90	3.90	0.02
5.00	5.90	3.90	0.00
5.50	5.90	3.90	0.00
6.00	5.90	3.90	0.00
6.50	5.90	3.90	0.00
7.00	5.90	3.90	0.00
7.50	5.90	3.90	0.00
8.00	5.90	3.90	0.00
8.50	5.90	3.90	0.00
9.00	5.90	3.90	0.00
9.50	5.90	3.90	0.00
10.00	5.90	3.90	0.00
10.50	5.90	3.90	0.00
11.00	5.90	3.90	0.00
11.50	5.90	3.90	0.00
12.00	5.90	3.90	0.00
12.50	5.90	3.90	0.00
13.00	5.90	3.90	0.00
13.50	5.90	3.90	0.00
14.00	5.90	3.90	0.00
14.50	5.90	3.90	0.00
15.00	5.90	3.90	0.00
15.50	5.90	3.90	0.00
16.00	5.90	3.90	0.00
16.50	5.90	3.90	0.00
17.00	5.90	3.90	0.00
17.50	5.90	3.90	0.00
18.00	5.90	3.90	0.00
18.50	5.90	3.90	0.00
19.00	5.90	3.90	0.00
19.50	5.90	3.90	0.00
20.00	5.90	3.90	0.00
20.50	5.90	3.90	0.00
21.00	5.90	3.90	0.00
21.50	5.90	3.90	0.00
22.00	5.90	3.90	0.00
22.50	5.90	3.90	0.00
23.00	5.90	3.90	0.00
23.50	5.90	3.90	0.00
24.00	5.90	3.90	0.00
24.50	5.90	3.90	0.00
25.00	5.90	3.90	0.00
25.50	5.90	3.90	0.00
26.00	5.90	3.90	0.00
26.50	5.90	3.90	0.00
27.00	5.90	3.90	0.00
27.50	5.90	3.90	0.00
28.00	5.90	3.90	0.00
28.50	5.90	3.90	0.00
29.00	5.90	3.90	0.00
29.50	5.90	3.90	0.00
30.00	5.90	3.90	0.00

Summary for Subcatchment EX: Pre Development

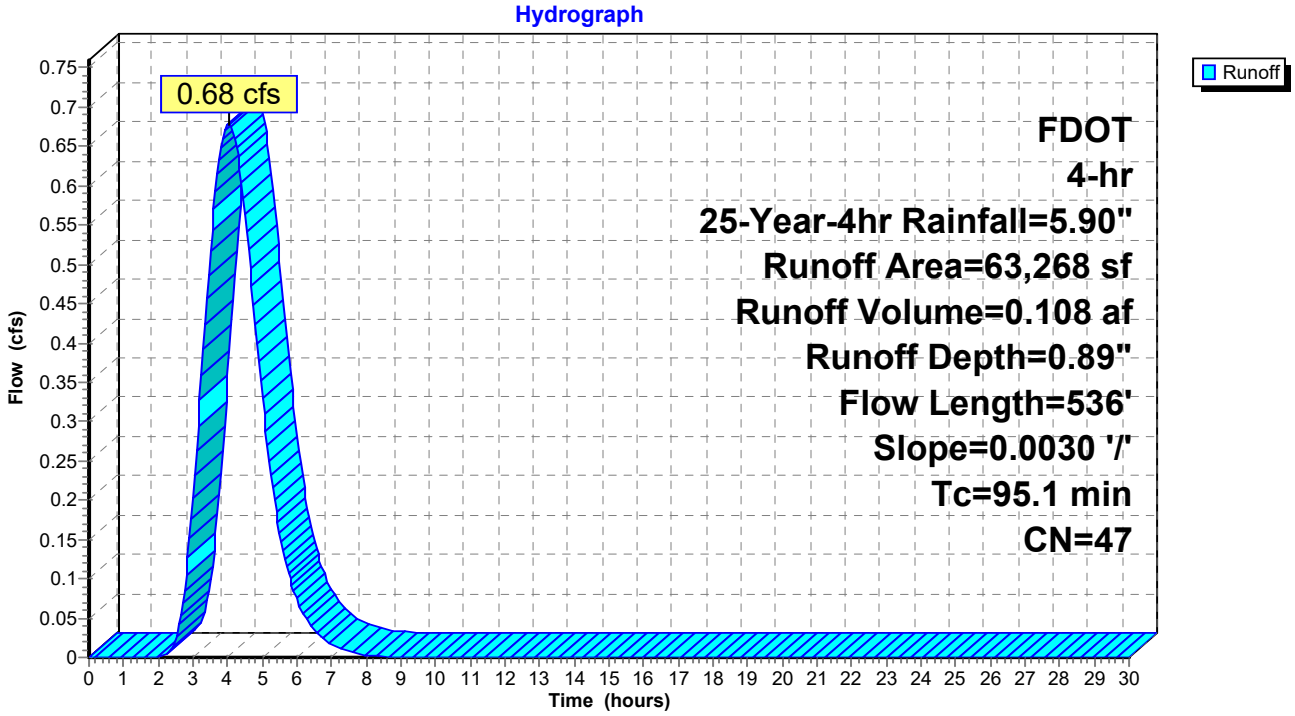
Runoff = 0.68 cfs @ 4.02 hrs, Volume= 0.108 af, Depth= 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 4-hr 25-Year-4hr Rainfall=5.90"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.12	0.00	0.00
1.00	0.54	0.00	0.00
1.50	1.38	0.00	0.00
2.00	2.71	0.02	0.00
2.50	4.12	0.27	0.02
3.00	5.18	0.60	0.20
3.50	5.75	0.83	0.52
4.00	**5.90**	**0.89**	**0.68**
4.50	5.90	0.89	0.56
5.00	5.90	0.89	0.33
5.50	5.90	0.89	0.16
6.00	5.90	0.89	0.07
6.50	5.90	0.89	0.03
7.00	5.90	0.89	0.02
7.50	5.90	0.89	0.01
8.00	5.90	0.89	0.00
8.50	5.90	0.89	0.00
9.00	5.90	0.89	0.00
9.50	5.90	0.89	0.00
10.00	5.90	0.89	0.00
10.50	5.90	0.89	0.00
11.00	5.90	0.89	0.00
11.50	5.90	0.89	0.00
12.00	5.90	0.89	0.00
12.50	5.90	0.89	0.00
13.00	5.90	0.89	0.00
13.50	5.90	0.89	0.00
14.00	5.90	0.89	0.00
14.50	5.90	0.89	0.00
15.00	5.90	0.89	0.00
15.50	5.90	0.89	0.00
16.00	5.90	0.89	0.00
16.50	5.90	0.89	0.00
17.00	5.90	0.89	0.00
17.50	5.90	0.89	0.00
18.00	5.90	0.89	0.00
18.50	5.90	0.89	0.00
19.00	5.90	0.89	0.00
19.50	5.90	0.89	0.00
20.00	5.90	0.89	0.00
20.50	5.90	0.89	0.00
21.00	5.90	0.89	0.00
21.50	5.90	0.89	0.00
22.00	5.90	0.89	0.00
22.50	5.90	0.89	0.00
23.00	5.90	0.89	0.00
23.50	5.90	0.89	0.00
24.00	5.90	0.89	0.00
24.50	5.90	0.89	0.00
25.00	5.90	0.89	0.00
25.50	5.90	0.89	0.00
26.00	5.90	0.89	0.00
26.50	5.90	0.89	0.00
27.00	5.90	0.89	0.00
27.50	5.90	0.89	0.00
28.00	5.90	0.89	0.00
28.50	5.90	0.89	0.00
29.00	5.90	0.89	0.00
29.50	5.90	0.89	0.00
30.00	5.90	0.89	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 3.90" for 25-Year-4hr event
Inflow = 3.38 cfs @ 2.46 hrs, Volume= 0.471 af
Outflow = 2.61 cfs @ 3.11 hrs, Volume= 0.472 af, Atten= 23%, Lag= 38.5 min
Discarded = 2.61 cfs @ 3.11 hrs, Volume= 0.472 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 5.47' @ 3.11 hrs Surf.Area= 2,832 sf Storage= 3,850 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 16.6 min (176.7 - 160.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.61 cfs @ 3.11 hrs HW=5.47' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.61 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

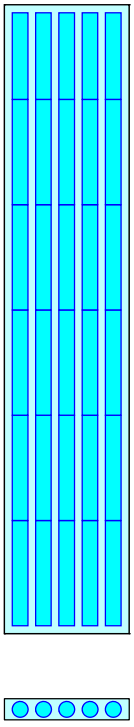
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

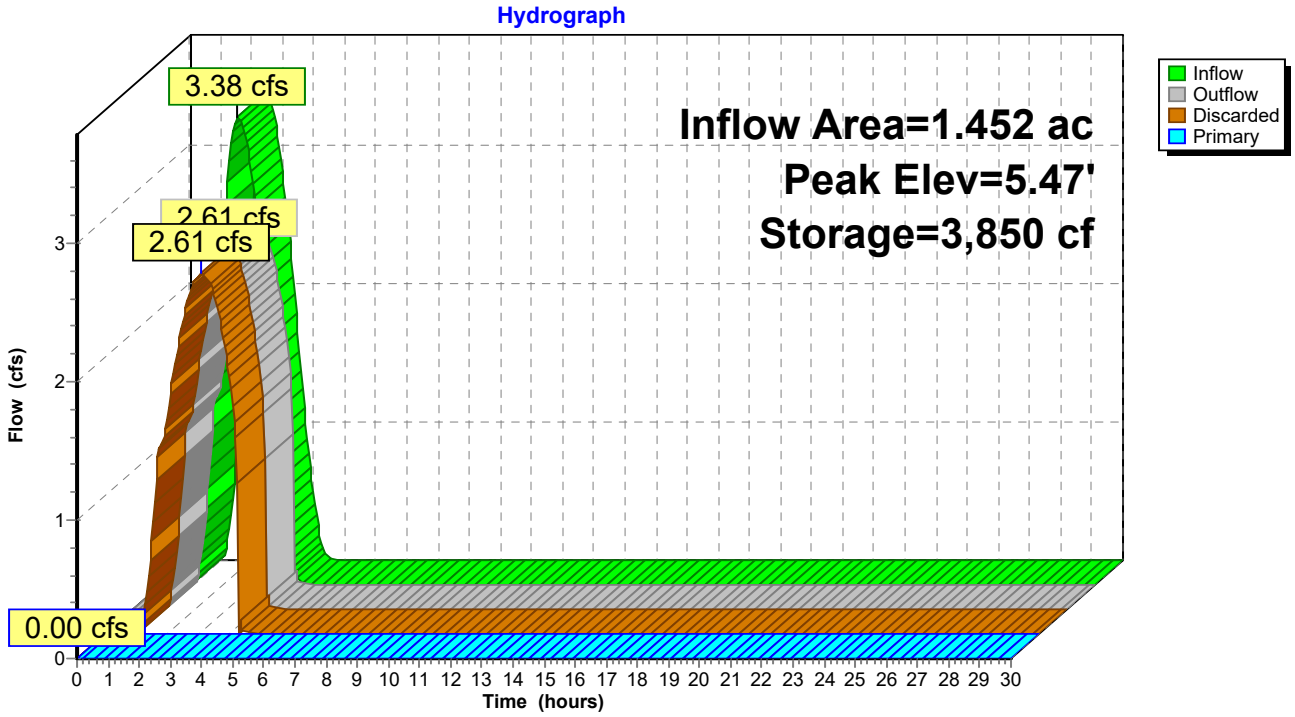
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	**2.37**	507	3.45	1.55	1.55	0.00
3.00	**2.81**	**3,810**	**5.45**	**2.59**	**2.59**	0.00
4.00	0.50	**1,179**	**4.04**	**1.86**	**1.86**	0.00
5.00	0.00	0	3.00	0.00	0.00	0.00
6.00	0.00	0	3.00	0.00	0.00	0.00
7.00	0.00	0	3.00	0.00	0.00	0.00
8.00	0.00	0	3.00	0.00	0.00	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

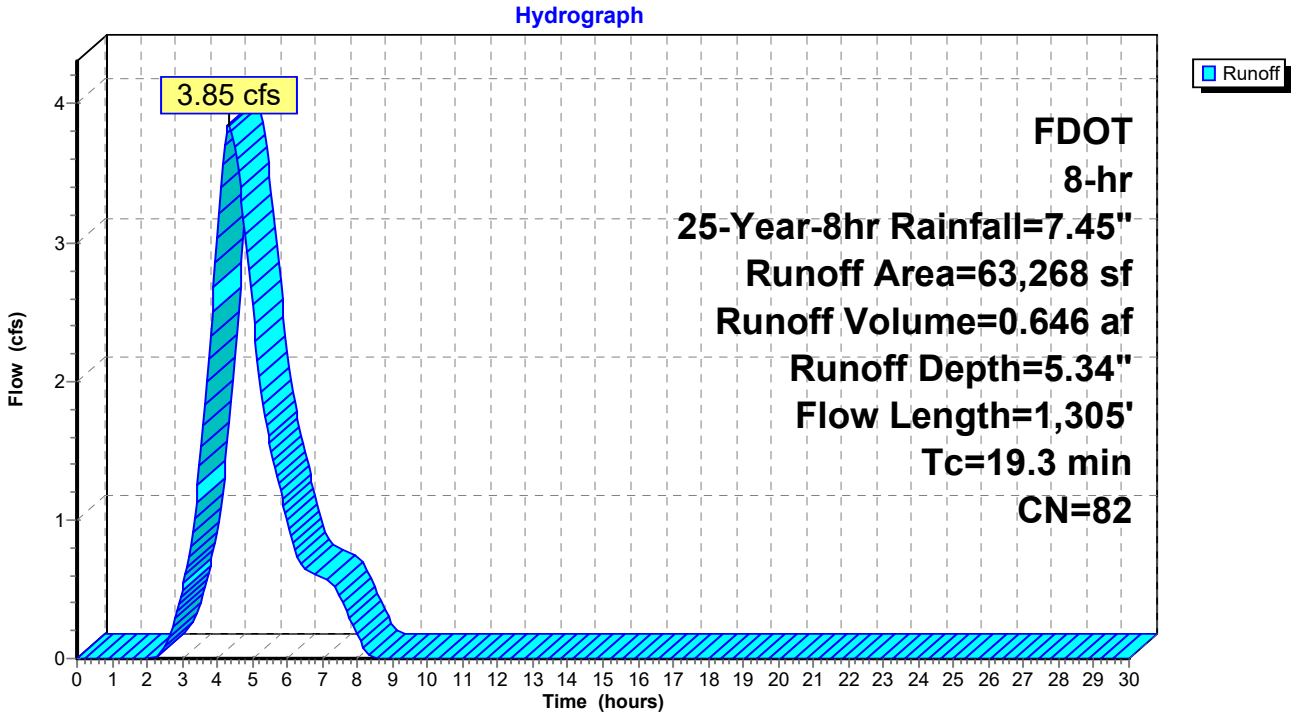
Runoff = 3.85 cfs @ 4.33 hrs, Volume= 0.646 af, Depth= 5.34"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 8-hr 25-Year-8hr Rainfall=7.45"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.20	0.00	0.00
2.00	0.40	0.00	0.00
2.50	0.74	0.04	0.08
3.00	1.26	0.22	0.49
3.50	2.14	0.74	1.39
4.00	3.56	1.83	**3.03**
4.50	5.00	3.08	**3.69**
5.00	5.91	3.91	2.55
5.50	6.46	4.41	1.55
6.00	6.80	4.73	0.99
6.50	7.03	4.95	0.65
7.00	7.25	5.15	0.59
7.50	7.40	5.29	0.44
8.00	**7.45**	**5.34**	0.17
8.50	7.45	5.34	0.01
9.00	7.45	5.34	0.00
9.50	7.45	5.34	0.00
10.00	7.45	5.34	0.00
10.50	7.45	5.34	0.00
11.00	7.45	5.34	0.00
11.50	7.45	5.34	0.00
12.00	7.45	5.34	0.00
12.50	7.45	5.34	0.00
13.00	7.45	5.34	0.00
13.50	7.45	5.34	0.00
14.00	7.45	5.34	0.00
14.50	7.45	5.34	0.00
15.00	7.45	5.34	0.00
15.50	7.45	5.34	0.00
16.00	7.45	5.34	0.00
16.50	7.45	5.34	0.00
17.00	7.45	5.34	0.00
17.50	7.45	5.34	0.00
18.00	7.45	5.34	0.00
18.50	7.45	5.34	0.00
19.00	7.45	5.34	0.00
19.50	7.45	5.34	0.00
20.00	7.45	5.34	0.00
20.50	7.45	5.34	0.00
21.00	7.45	5.34	0.00
21.50	7.45	5.34	0.00
22.00	7.45	5.34	0.00
22.50	7.45	5.34	0.00
23.00	7.45	5.34	0.00
23.50	7.45	5.34	0.00
24.00	7.45	5.34	0.00
24.50	7.45	5.34	0.00
25.00	7.45	5.34	0.00
25.50	7.45	5.34	0.00
26.00	7.45	5.34	0.00
26.50	7.45	5.34	0.00
27.00	7.45	5.34	0.00
27.50	7.45	5.34	0.00
28.00	7.45	5.34	0.00
28.50	7.45	5.34	0.00
29.00	7.45	5.34	0.00
29.50	7.45	5.34	0.00
30.00	7.45	5.34	0.00

Summary for Subcatchment EX: Pre Development

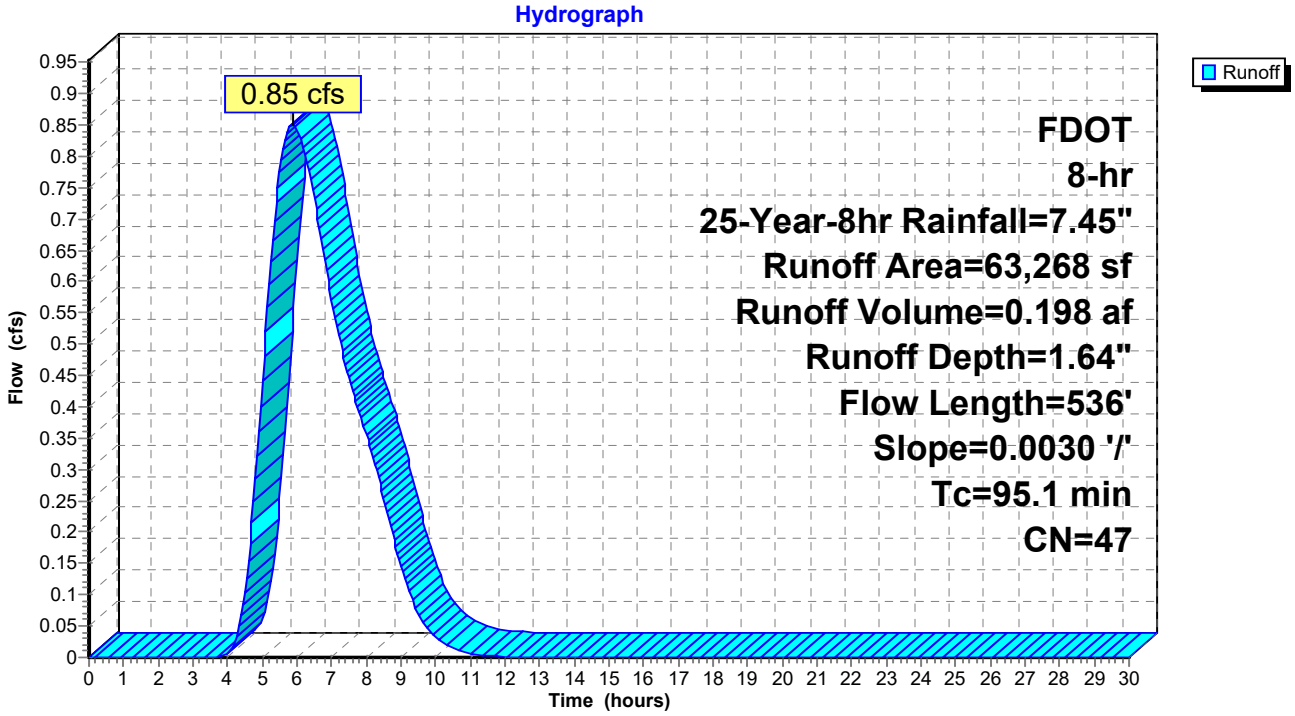
Runoff = 0.85 cfs @ 5.87 hrs, Volume= 0.198 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 8-hr 25-Year-8hr Rainfall=7.45"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.08	0.00	0.00
1.50	0.20	0.00	0.00
2.00	0.40	0.00	0.00
2.50	0.74	0.00	0.00
3.00	1.26	0.00	0.00
3.50	2.14	0.00	0.00
4.00	3.56	0.14	0.00
4.50	5.00	0.54	0.10
5.00	5.91	0.90	0.44
5.50	6.46	1.14	**0.77**
6.00	6.80	1.31	**0.85**
6.50	7.03	1.42	0.73
7.00	7.25	1.53	0.57
7.50	7.40	1.61	0.45
8.00	**7.45**	**1.64**	0.36
8.50	7.45	1.64	0.26
9.00	7.45	1.64	0.15
9.50	7.45	1.64	0.07
10.00	7.45	1.64	0.03
10.50	7.45	1.64	0.01
11.00	7.45	1.64	0.01
11.50	7.45	1.64	0.00
12.00	7.45	1.64	0.00
12.50	7.45	1.64	0.00
13.00	7.45	1.64	0.00
13.50	7.45	1.64	0.00
14.00	7.45	1.64	0.00
14.50	7.45	1.64	0.00
15.00	7.45	1.64	0.00
15.50	7.45	1.64	0.00
16.00	7.45	1.64	0.00
16.50	7.45	1.64	0.00
17.00	7.45	1.64	0.00
17.50	7.45	1.64	0.00
18.00	7.45	1.64	0.00
18.50	7.45	1.64	0.00
19.00	7.45	1.64	0.00
19.50	7.45	1.64	0.00
20.00	7.45	1.64	0.00
20.50	7.45	1.64	0.00
21.00	7.45	1.64	0.00
21.50	7.45	1.64	0.00
22.00	7.45	1.64	0.00
22.50	7.45	1.64	0.00
23.00	7.45	1.64	0.00
23.50	7.45	1.64	0.00
24.00	7.45	1.64	0.00
24.50	7.45	1.64	0.00
25.00	7.45	1.64	0.00
25.50	7.45	1.64	0.00
26.00	7.45	1.64	0.00
26.50	7.45	1.64	0.00
27.00	7.45	1.64	0.00
27.50	7.45	1.64	0.00
28.00	7.45	1.64	0.00
28.50	7.45	1.64	0.00
29.00	7.45	1.64	0.00
29.50	7.45	1.64	0.00
30.00	7.45	1.64	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 5.34" for 25-Year-8hr event
Inflow = 3.85 cfs @ 4.33 hrs, Volume= 0.646 af
Outflow = 2.80 cfs @ 4.90 hrs, Volume= 0.646 af, Atten= 27%, Lag= 34.2 min
Discarded = 2.80 cfs @ 4.90 hrs, Volume= 0.646 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 5.85' @ 4.90 hrs Surf.Area= 2,832 sf Storage= 4,524 cf

Plug-Flow detention time= 15.4 min calculated for 0.645 af (100% of inflow)
Center-of-Mass det. time= 15.4 min (305.3 - 289.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=2.80 cfs @ 4.90 hrs HW=5.84' (Free Discharge)
↑—**1=Exfiltration** (Controls 2.80 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

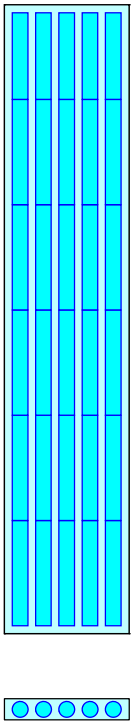
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

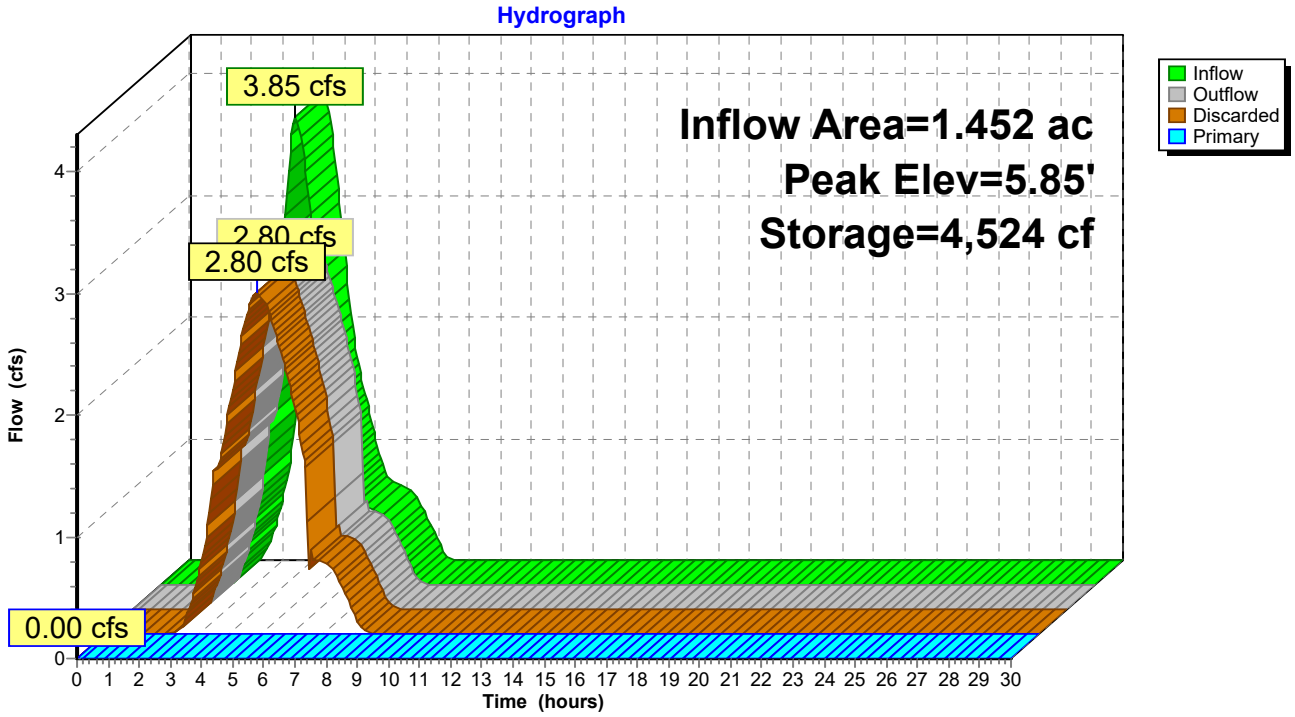
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	0.00	0	3.00	0.00	0.00	0.00
3.00	0.49	16	3.01	0.48	0.48	0.00
4.00	**3.03**	**1,208**	**4.06**	**1.87**	**1.87**	0.00
5.00	**2.55**	**4,481**	**5.82**	**2.79**	**2.79**	0.00
6.00	0.99	1,559	4.27	1.98	1.98	0.00
7.00	0.59	20	3.02	0.59	0.59	0.00
8.00	0.17	6	3.01	0.17	0.17	0.00
9.00	0.00	0	3.00	0.00	0.00	0.00
10.00	0.00	0	3.00	0.00	0.00	0.00
11.00	0.00	0	3.00	0.00	0.00	0.00
12.00	0.00	0	3.00	0.00	0.00	0.00
13.00	0.00	0	3.00	0.00	0.00	0.00
14.00	0.00	0	3.00	0.00	0.00	0.00
15.00	0.00	0	3.00	0.00	0.00	0.00
16.00	0.00	0	3.00	0.00	0.00	0.00
17.00	0.00	0	3.00	0.00	0.00	0.00
18.00	0.00	0	3.00	0.00	0.00	0.00
19.00	0.00	0	3.00	0.00	0.00	0.00
20.00	0.00	0	3.00	0.00	0.00	0.00
21.00	0.00	0	3.00	0.00	0.00	0.00
22.00	0.00	0	3.00	0.00	0.00	0.00
23.00	0.00	0	3.00	0.00	0.00	0.00
24.00	0.00	0	3.00	0.00	0.00	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

Summary for Subcatchment 1S: DA 1

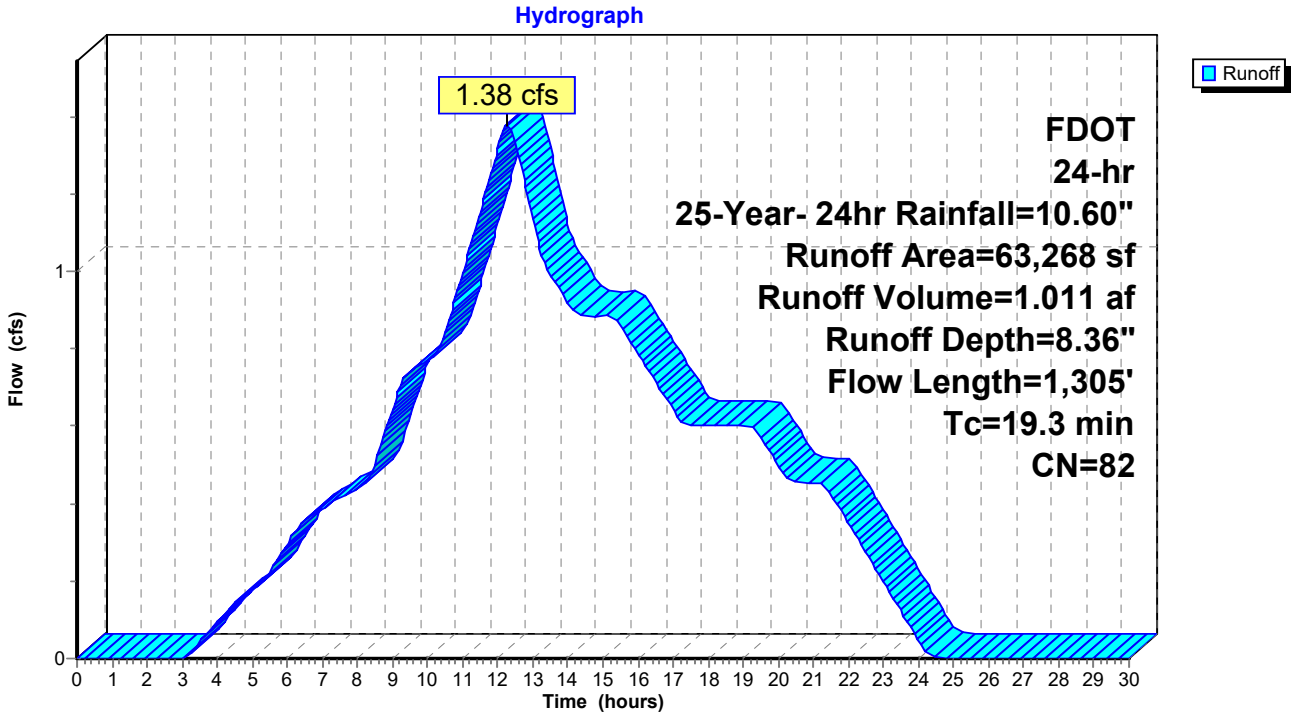
Runoff = 1.38 cfs @ 12.26 hrs, Volume= 1.011 af, Depth= 8.36"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 24-hr 25-Year- 24hr Rainfall=10.60"

Area (sf)	CN	Description
45,941	98	Roofs, HSG A
17,327	39	>75% Grass cover, Good, HSG A
63,268	82	Weighted Average
17,327		27.39% Pervious Area
45,941		72.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	120	0.0050	0.14		**Sheet Flow, OVERLAND FLOW** Grass: Short n= 0.150 P2= 6.00"
1.3	125	0.0060	1.57		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
2.4	660	0.0030	4.66	14.64	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
1.2	400	0.0044	5.65	17.73	**Pipe Channel, PIPE FLOW** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
19.3	1,305	Total			

Subcatchment 1S: DA 1



Hydrograph for Subcatchment 1S: DA 1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.12	0.00	0.00
2.00	0.21	0.00	0.00
2.50	0.33	0.00	0.00
3.00	0.48	0.00	0.00
3.50	0.64	0.02	0.04
4.00	0.80	0.05	0.10
4.50	0.96	0.10	0.14
5.00	1.12	0.16	0.18
5.50	1.30	0.24	0.22
6.00	1.50	0.35	0.30
6.50	1.71	0.47	0.36
7.00	1.93	0.60	0.39
7.50	2.14	0.74	0.41
8.00	2.36	0.89	0.44
8.50	2.60	1.07	0.50
9.00	2.89	1.29	0.64
9.50	3.21	1.55	0.74
10.00	3.53	1.81	0.77
10.50	3.88	2.10	0.84
11.00	4.28	2.45	0.99
11.50	4.74	2.85	1.15
12.00	5.25	3.30	**1.32**
12.50	5.74	3.75	**1.33**
13.00	6.16	4.13	1.14
13.50	6.52	4.47	0.99
14.00	6.85	4.78	0.92
14.50	7.17	5.08	0.88
15.00	7.49	5.38	0.89
15.50	7.80	5.67	0.86
16.00	8.08	5.94	0.79
16.50	8.34	6.18	0.72
17.00	8.57	6.40	0.64
17.50	8.78	6.60	0.60
18.00	8.99	6.81	0.60
18.50	9.21	7.01	0.60
19.00	9.42	7.22	0.60
19.50	9.62	7.41	0.57
20.00	9.80	7.58	0.50
20.50	9.96	7.73	0.46
21.00	10.12	7.89	0.45
21.50	10.27	8.03	0.42
22.00	10.39	8.15	0.35
22.50	10.48	8.24	0.27
23.00	10.55	8.30	0.20
23.50	10.59	8.34	0.12
24.00	**10.60**	**8.36**	0.05
24.50	10.60	8.36	0.00
25.00	10.60	8.36	0.00
25.50	10.60	8.36	0.00
26.00	10.60	8.36	0.00
26.50	10.60	8.36	0.00
27.00	10.60	8.36	0.00
27.50	10.60	8.36	0.00
28.00	10.60	8.36	0.00
28.50	10.60	8.36	0.00
29.00	10.60	8.36	0.00
29.50	10.60	8.36	0.00
30.00	10.60	8.36	0.00

Summary for Subcatchment EX: Pre Development

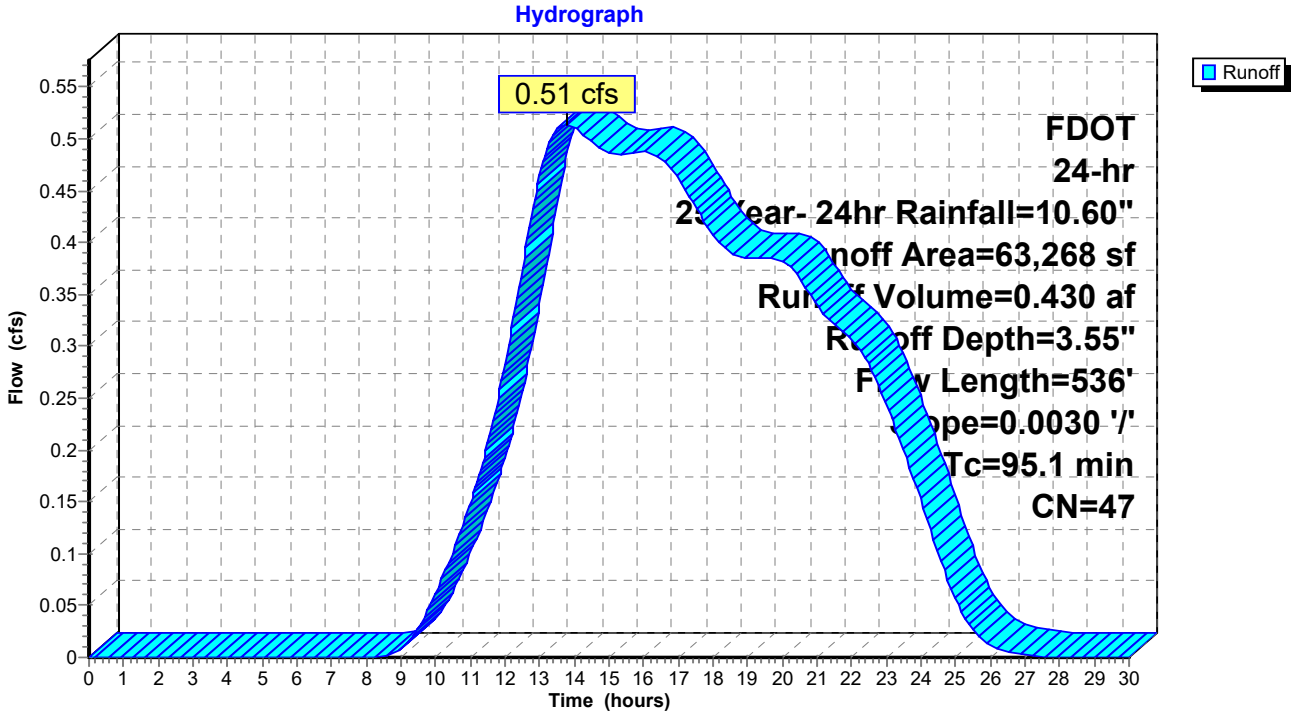
Runoff = 0.51 cfs @ 13.80 hrs, Volume= 0.430 af, Depth= 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
FDOT 24-hr 25-Year- 24hr Rainfall=10.60"

Area (sf)	CN	Description
3,000	98	Roofs, HSG A
2,000	76	Gravel roads, HSG A
58,268	43	Woods/grass comb., Fair, HSG A
63,268	47	Weighted Average
60,268		95.26% Pervious Area
3,000		4.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
80.7	300	0.0030	0.06		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 6.00"
14.4	236	0.0030	0.27		**Shallow Concentrated Flow, Shallow Flow** Woodland Kv= 5.0 fps
95.1	536	Total			

Subcatchment EX: Pre Development



Hydrograph for Subcatchment EX: Pre Development

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.12	0.00	0.00
2.00	0.21	0.00	0.00
2.50	0.33	0.00	0.00
3.00	0.48	0.00	0.00
3.50	0.64	0.00	0.00
4.00	0.80	0.00	0.00
4.50	0.96	0.00	0.00
5.00	1.12	0.00	0.00
5.50	1.30	0.00	0.00
6.00	1.50	0.00	0.00
6.50	1.71	0.00	0.00
7.00	1.93	0.00	0.00
7.50	2.14	0.00	0.00
8.00	2.36	0.00	0.00
8.50	2.60	0.01	0.00
9.00	2.89	0.03	0.01
9.50	3.21	0.07	0.03
10.00	3.53	0.13	0.06
10.50	3.88	0.20	0.10
11.00	4.28	0.31	0.15
11.50	4.74	0.45	0.21
12.00	5.25	0.63	0.28
12.50	5.74	0.82	0.38
13.00	6.16	1.00	0.46
13.50	6.52	1.17	**0.51**
14.00	6.85	1.33	**0.51**
14.50	7.17	1.49	0.50
15.00	7.49	1.66	0.49
15.50	7.80	1.83	0.48
16.00	8.08	1.99	0.49
16.50	8.34	2.13	0.48
17.00	8.57	2.26	0.46
17.50	8.78	2.39	0.43
18.00	8.99	2.52	0.41
18.50	9.21	2.65	0.39
19.00	9.42	2.78	0.39
19.50	9.62	2.91	0.39
20.00	9.80	3.02	0.38
20.50	9.96	3.13	0.37
21.00	10.12	3.23	0.34
21.50	10.27	3.33	0.32
22.00	10.39	3.41	0.31
22.50	10.48	3.47	0.28
23.00	10.55	3.51	0.24
23.50	10.59	3.54	0.20
24.00	**10.60**	**3.55**	0.15
24.50	10.60	3.55	0.10
25.00	10.60	3.55	0.06
25.50	10.60	3.55	0.03
26.00	10.60	3.55	0.01
26.50	10.60	3.55	0.01
27.00	10.60	3.55	0.00
27.50	10.60	3.55	0.00
28.00	10.60	3.55	0.00
28.50	10.60	3.55	0.00
29.00	10.60	3.55	0.00
29.50	10.60	3.55	0.00
30.00	10.60	3.55	0.00

Summary for Pond 1P: Pond 1

Inflow Area = 1.452 ac, 72.61% Impervious, Inflow Depth = 8.36" for 25-Year- 24hr event
Inflow = 1.38 cfs @ 12.26 hrs, Volume= 1.011 af
Outflow = 1.35 cfs @ 12.44 hrs, Volume= 1.011 af, Atten= 2%, Lag= 10.5 min
Discarded = 1.35 cfs @ 12.44 hrs, Volume= 1.011 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 3.07' @ 12.44 hrs Surf.Area= 2,832 sf Storage= 78 cf

Plug-Flow detention time= 0.6 min calculated for 1.010 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (829.0 - 828.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	3.00'	3,035 cf	**23.70'W x 119.50'L x 4.00'H Field A** 11,326 cf Overall - 3,737 cf Embedded = 7,588 cf x 40.0% Voids
#2A	3.50'	2,854 cf	**ADS N-12 30"** x 30 Inside #1 Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf Row Length Adjustment= -3.50' x 4.90 sf x 5 rows
		5,890 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	3.00'	**20.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.50'
#2	Primary	6.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.35 cfs @ 12.44 hrs HW=3.07' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.35 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=3.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Pond 1 - Chamber Wizard Field A

Chamber Model = ADS N-12 30" (ADS N-12® Pipe)
Inside= 30.0"W x 30.0"H => 4.90 sf x 20.00'L = 98.0 cf
Outside= 36.0"W x 36.0"H => 6.41 sf x 20.00'L = 128.3 cf
Row Length Adjustment= -3.50' x 4.90 sf x 5 rows

36.0" Wide + 17.1" Spacing = 53.1" C-C Row Spacing

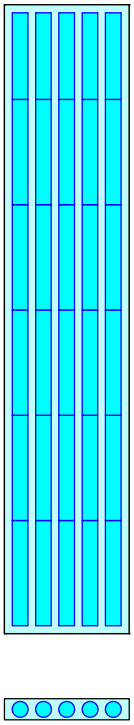
6 Chambers/Row x 20.00' Long -3.50' Row Adjustment = 116.50' Row Length +18.0" End Stone x 2 = 119.50' Base Length
5 Rows x 36.0" Wide + 17.1" Spacing x 4 + 18.0" Side Stone x 2 = 23.70' Base Width
6.0" Stone Base + 36.0" Chamber Height + 6.0" Stone Cover = 4.00' Field Height

30 Chambers x 98.0 cf -3.50' Row Adjustment x 4.90 sf x 5 Rows = 2,854.3 cf Chamber Storage
30 Chambers x 128.3 cf -3.50' Row Adjustment x 6.41 sf x 5 Rows = 3,735.7 cf Displacement

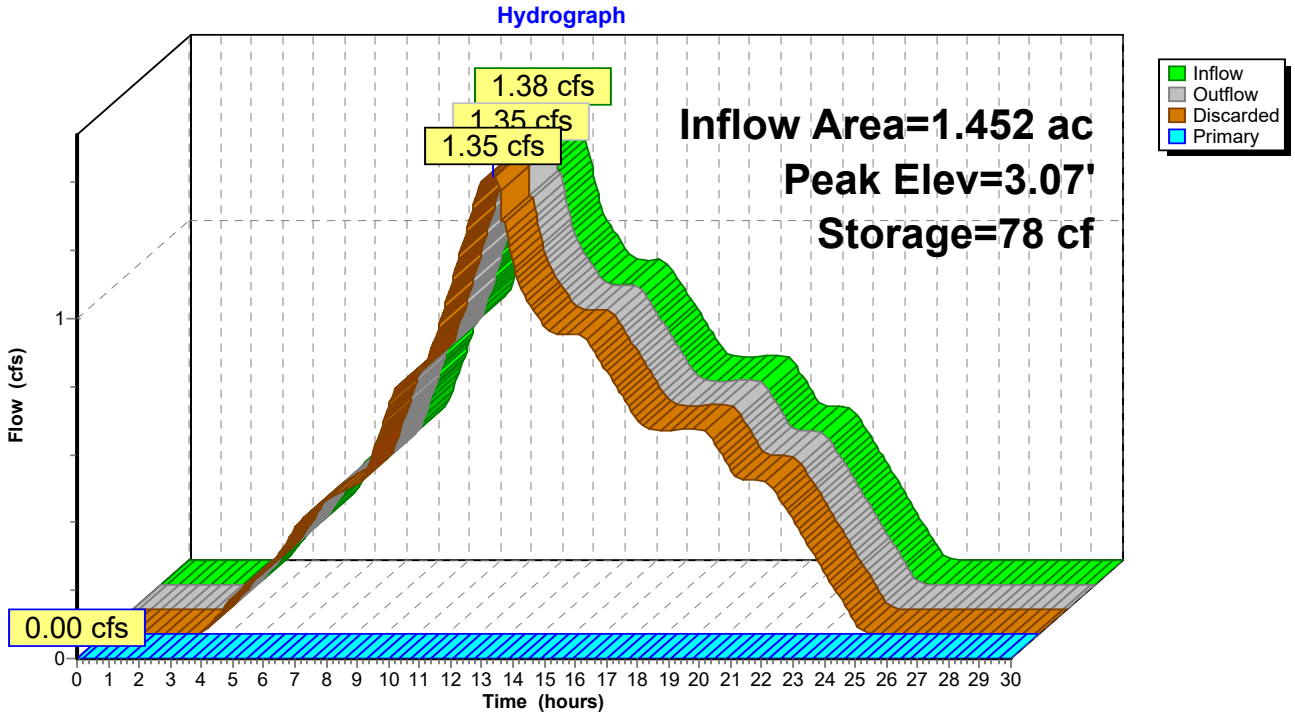
11,325.7 cf Field - 3,735.7 cf Chambers = 7,590.0 cf Stone x 40.0% Voids = 3,036.0 cf Stone Storage

Chamber Storage + Stone Storage = 5,890.3 cf = 0.135 af
Overall Storage Efficiency = 52.0%
Overall System Size = 119.50' x 23.70' x 4.00'

30 Chambers @ $ 1,200.00 /ea = $ 36,000.00
419.5 cy Field Excavation @ $ 20.00 /cy = $ 8,389.40
281.1 cy Stone @ $ 160.00 /cy = $ 44,977.91
Total Cost = $ 89,367.31



Pond 1P: Pond 1



Hydrograph for Pond 1P: Pond 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	3.00	0.00	0.00	**0.00**
1.00	0.00	0	3.00	0.00	0.00	0.00
2.00	0.00	0	3.00	0.00	0.00	0.00
3.00	0.00	0	3.00	0.00	0.00	0.00
4.00	0.10	3	3.00	0.10	0.10	0.00
5.00	0.18	6	3.01	0.18	0.18	0.00
6.00	0.30	10	3.01	0.29	0.29	0.00
7.00	0.39	13	3.01	0.39	0.39	0.00
8.00	0.44	15	3.01	0.44	0.44	0.00
9.00	0.64	22	3.02	0.64	0.64	0.00
10.00	0.77	26	3.02	0.77	0.77	0.00
11.00	0.99	34	3.03	0.99	0.99	0.00
12.00	**1.32**	**45**	**3.04**	**1.31**	**1.31**	0.00
13.00	**1.14**	**39**	**3.03**	**1.14**	**1.14**	0.00
14.00	0.92	31	3.03	0.92	0.92	0.00
15.00	0.89	30	3.03	0.89	0.89	0.00
16.00	0.79	27	3.02	0.79	0.79	0.00
17.00	0.64	22	3.02	0.64	0.64	0.00
18.00	0.60	20	3.02	0.60	0.60	0.00
19.00	0.60	20	3.02	0.60	0.60	0.00
20.00	0.50	17	3.02	0.50	0.50	0.00
21.00	0.45	15	3.01	0.45	0.45	0.00
22.00	0.35	12	3.01	0.35	0.35	0.00
23.00	0.20	7	3.01	0.20	0.20	0.00
24.00	0.05	2	3.00	0.05	0.05	0.00
25.00	0.00	0	3.00	0.00	0.00	0.00
26.00	0.00	0	3.00	0.00	0.00	0.00
27.00	0.00	0	3.00	0.00	0.00	0.00
28.00	0.00	0	3.00	0.00	0.00	0.00
29.00	0.00	0	3.00	0.00	0.00	0.00
30.00	0.00	0	3.00	0.00	0.00	0.00

NOAA Atlas 14, Volume 9, Version 2
Location name: Fort Walton Beach, Florida, USA*
Latitude: 30.4422°, Longitude: -86.5954°
Elevation: 4.98 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.540** (0.457-0.651)	**0.624** (0.528-0.754)	**0.758** (0.638-0.918)	**0.865** (0.723-1.05)	**1.01** (0.804-1.26)	**1.11** (0.864-1.41)	**1.21** (0.904-1.58)	**1.31** (0.929-1.76)	**1.43** (0.970-1.98)	**1.52** (1.00-2.15)
10-min	**0.790** (0.669-0.953)	**0.914** (0.773-1.10)	**1.11** (0.934-1.34)	**1.27** (1.06-1.54)	**1.47** (1.18-1.84)	**1.63** (1.27-2.06)	**1.77** (1.32-2.31)	**1.91** (1.36-2.57)	**2.09** (1.42-2.90)	**2.22** (1.47-3.15)
15-min	**0.963** (0.816-1.16)	**1.11** (0.942-1.35)	**1.35** (1.14-1.64)	**1.54** (1.29-1.88)	**1.80** (1.44-2.24)	**1.98** (1.54-2.52)	**2.16** (1.62-2.82)	**2.33** (1.66-3.14)	**2.55** (1.73-3.54)	**2.71** (1.79-3.84)
30-min	**1.54** (1.30-1.86)	**1.74** (1.47-2.10)	**2.08** (1.75-2.52)	**2.37** (1.98-2.88)	**2.77** (2.23-3.50)	**3.09** (2.42-3.96)	**3.42** (2.57-4.50)	**3.76** (2.69-5.09)	**4.22** (2.88-5.89)	**4.57** (3.02-6.49)
60-min	**2.17** (1.84-2.62)	**2.41** (2.04-2.91)	**2.84** (2.39-3.44)	**3.22** (2.69-3.92)	**3.79** (3.06-4.81)	**4.26** (3.34-5.48)	**4.76** (3.58-6.29)	**5.29** (3.79-7.20)	**6.04** (4.13-8.47)	**6.65** (4.39-9.44)
2-hr	**2.80** (2.38-3.36)	**3.09** (2.62-3.70)	**3.60** (3.04-4.33)	**4.07** (3.42-4.93)	**4.80** (3.92-6.08)	**5.42** (4.29-6.96)	**6.09** (4.62-8.03)	**6.82** (4.93-9.26)	**7.87** (5.42-11.0)	**8.72** (5.80-12.3)
3-hr	**3.21** (2.73-3.83)	**3.53** (3.00-4.22)	**4.13** (3.50-4.95)	**4.69** (3.96-5.65)	**5.58** (4.57-7.06)	**6.34** (5.04-8.12)	**7.17** (5.46-9.43)	**8.09** (5.86-11.0)	**9.41** (6.51-13.1)	**10.5** (7.01-14.7)
6-hr	**3.83** (3.29-4.55)	**4.31** (3.69-5.12)	**5.20** (4.43-6.19)	**6.04** (5.11-7.22)	**7.35** (6.06-9.27)	**8.48** (6.77-10.8)	**9.71** (7.44-12.7)	**11.1** (8.08-14.9)	**13.0** (9.09-18.1)	**14.7** (9.85-20.5)
12-hr	**4.38** (3.77-5.17)	**5.12** (4.40-6.04)	**6.48** (5.55-7.66)	**7.74** (6.59-9.21)	**9.70** (8.03-12.2)	**11.4** (9.12-14.4)	**13.2** (10.2-17.2)	**15.2** (11.1-20.3)	**18.0** (12.6-24.8)	**20.4** (13.8-28.2)
24-hr	**5.05** (4.37-5.92)	**5.97** (5.16-7.00)	**7.69** (6.62-9.04)	**9.33** (7.98-11.0)	**11.9** (9.93-14.9)	**14.1** (11.4-17.9)	**16.6** (12.8-21.5)	**19.3** (14.2-25.7)	**23.1** (16.3-31.7)	**26.3** (17.9-36.3)
2-day	**5.93** (5.16-6.90)	**6.84** (5.94-7.97)	**8.65** (7.49-10.1)	**10.5** (8.99-12.3)	**13.4** (11.3-16.8)	**16.0** (13.1-20.3)	**19.0** (14.8-24.6)	**22.3** (16.6-29.6)	**27.1** (19.3-37.1)	**31.2** (21.4-42.7)
3-day	**6.39** (5.58-7.41)	**7.34** (6.39-8.51)	**9.23** (8.00-10.7)	**11.1** (9.59-13.0)	**14.2** (12.1-17.8)	**17.0** (13.9-21.4)	**20.1** (15.8-26.0)	**23.6** (17.7-31.3)	**28.8** (20.6-39.2)	**33.1** (22.8-45.2)
4-day	**6.78** (5.92-7.83)	**7.71** (6.73-8.92)	**9.62** (8.36-11.2)	**11.5** (9.97-13.5)	**14.7** (12.5-18.4)	**17.6** (14.4-22.1)	**20.8** (16.4-26.7)	**24.4** (18.3-32.2)	**29.7** (21.3-40.3)	**34.2** (23.6-46.5)
7-day	**7.88** (6.91-9.06)	**8.69** (7.61-10.00)	**10.4** (9.10-12.0)	**12.3** (10.6-14.2)	**15.4** (13.2-19.2)	**18.3** (15.1-22.9)	**21.6** (17.1-27.7)	**25.3** (19.1-33.3)	**30.9** (22.3-41.8)	**35.6** (24.7-48.2)
10-day	**8.85** (7.78-10.1)	**9.65** (8.47-11.1)	**11.4** (9.94-13.1)	**13.2** (11.5-15.2)	**16.3** (13.9-20.1)	**19.1** (15.8-23.8)	**22.3** (17.8-28.5)	**26.0** (19.7-34.1)	**31.6** (22.9-42.5)	**36.2** (25.2-48.8)
20-day	**11.5** (10.1-13.1)	**12.7** (11.2-14.5)	**15.0** (13.2-17.1)	**17.0** (14.9-19.6)	**20.2** (17.2-24.3)	**22.9** (18.9-28.0)	**25.9** (20.6-32.4)	**29.1** (22.0-37.5)	**33.7** (24.4-44.7)	**37.4** (26.2-50.1)
30-day	**13.8** (12.2-15.6)	**15.4** (13.7-17.5)	**18.2** (16.0-20.7)	**20.6** (18.0-23.5)	**23.9** (20.2-28.3)	**26.6** (21.9-32.0)	**29.3** (23.2-36.2)	**32.2** (24.4-40.9)	**36.0** (26.1-47.3)	**39.1** (27.5-52.1)
45-day	**17.0** (15.1-19.2)	**19.0** (16.9-21.5)	**22.3** (19.7-25.2)	**24.9** (21.9-28.3)	**28.5** (24.0-33.3)	**31.1** (25.7-37.1)	**33.8** (26.8-41.3)	**36.4** (27.5-45.8)	**39.7** (28.8-51.6)	**42.2** (29.8-56.0)
60-day	**19.9** (17.7-22.4)	**22.1** (19.7-24.9)	**25.6** (22.7-29.0)	**28.4** (25.0-32.3)	**32.2** (27.2-37.4)	**34.9** (28.8-41.4)	**37.5** (29.8-45.7)	**40.1** (30.4-50.3)	**43.3** (31.5-56.0)	**45.6** (32.3-60.3)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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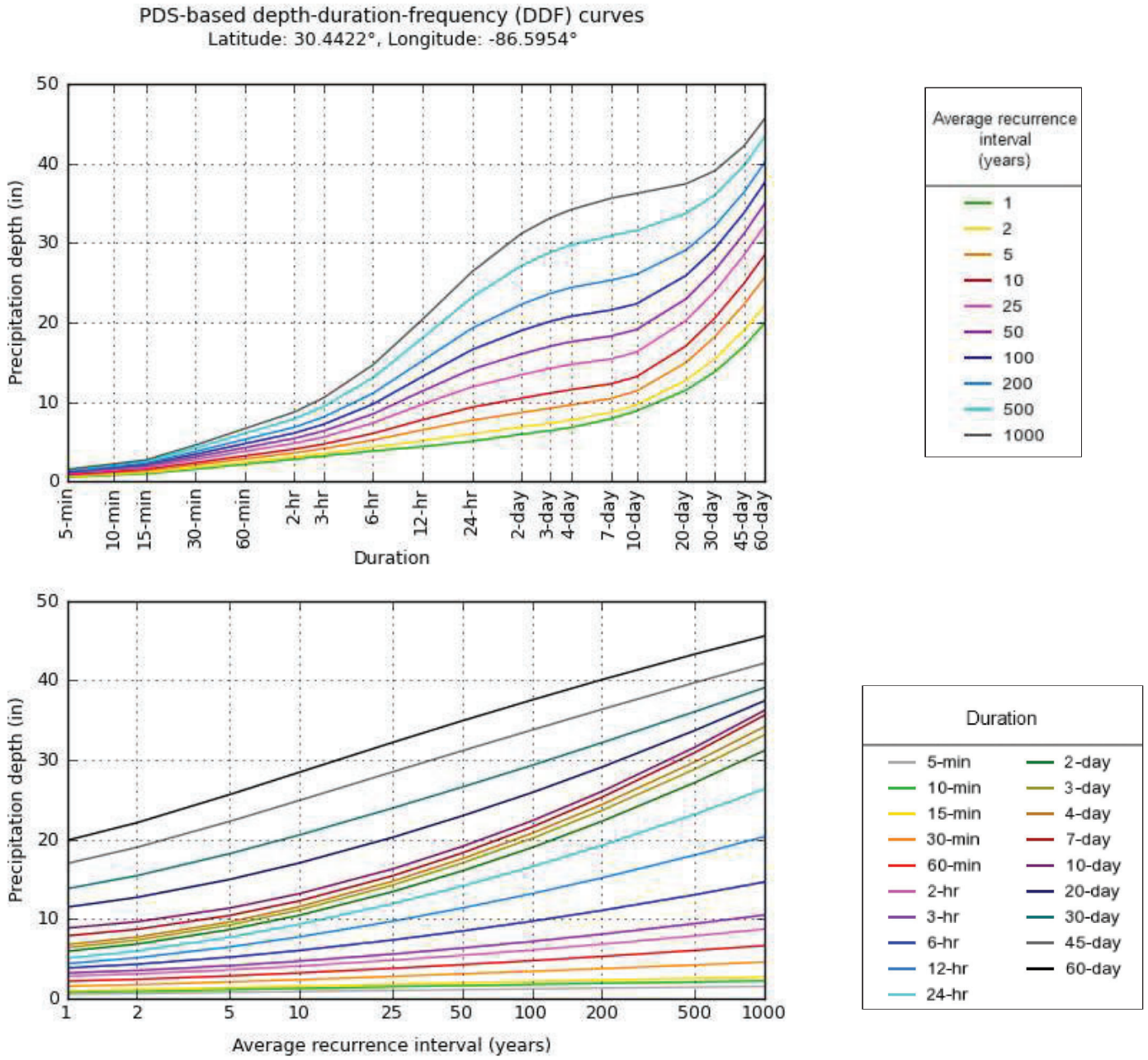
PF graphical



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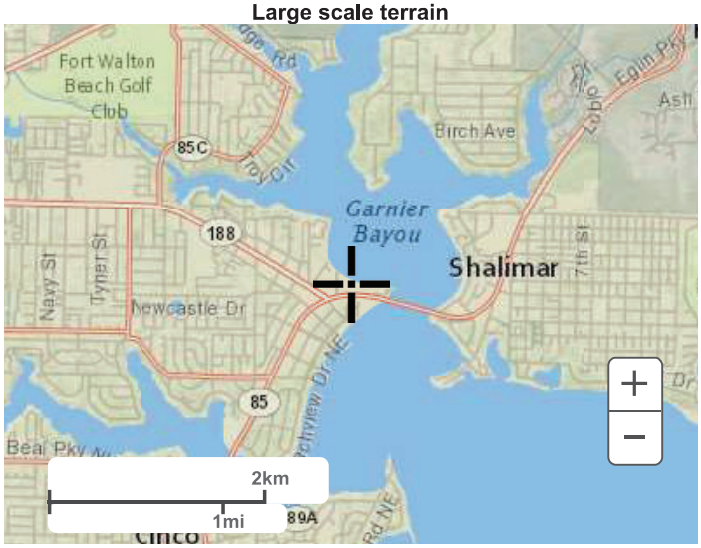
Maps & aerials

Small scale terrain

Large scale terrain



Large scale map

Large scale aerial

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