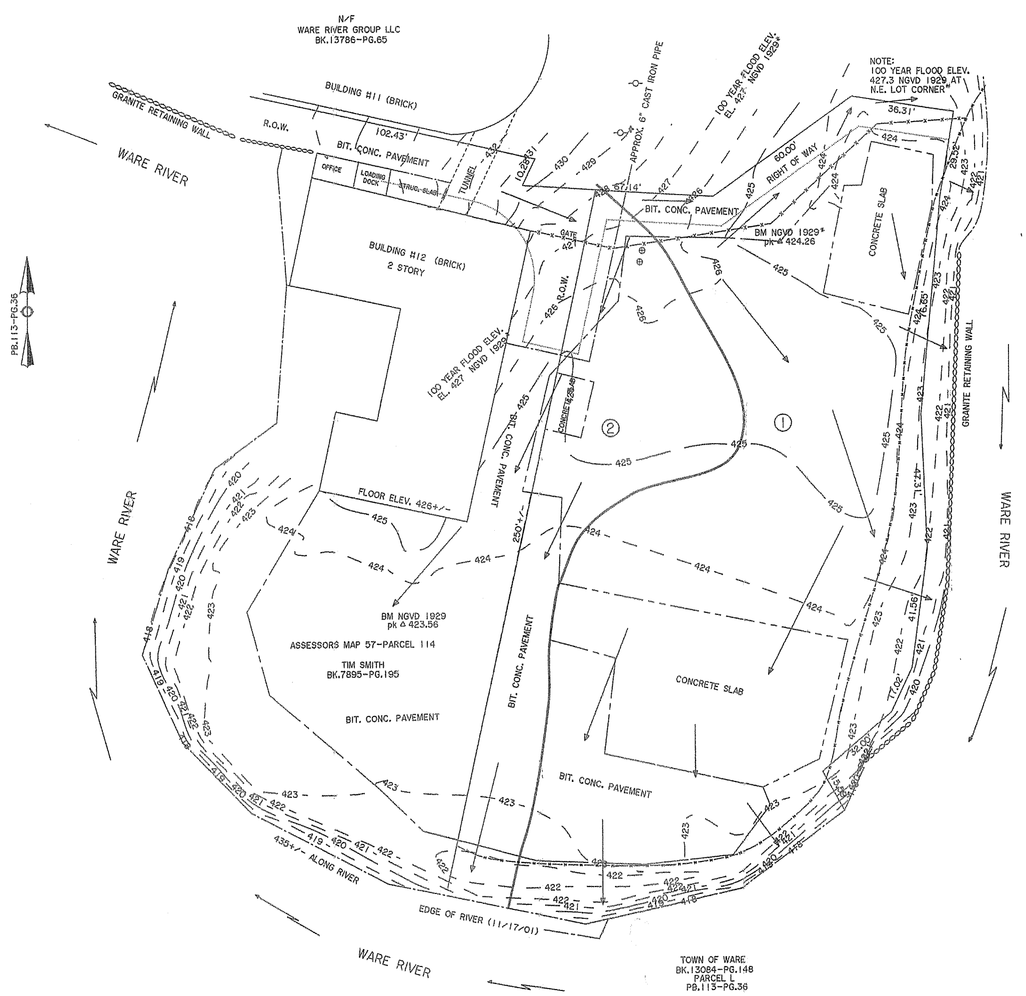
Runoff Calculations
Prepared For
Minuteman Farm LLC
in
The Ware Mill Yard

Runoff Calculations
For
The Existing Site Conditions
(pre construction)
Prepared For
Minuteman Farm LLC
in
The Ware Mill Yard



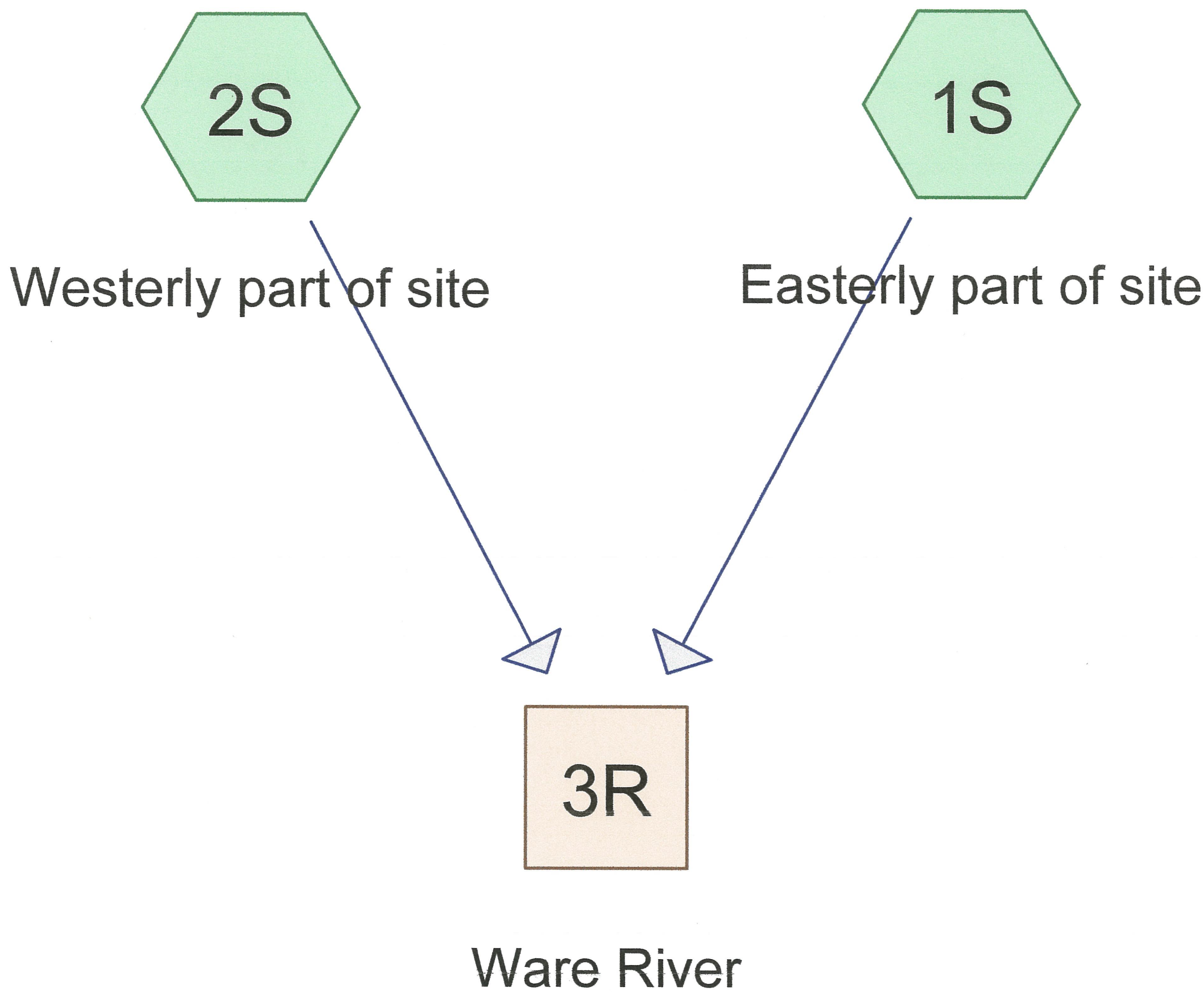
SITE PLAN 1"=20'

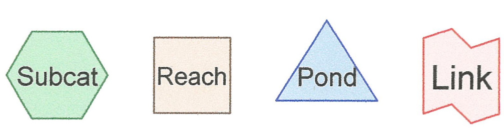
20 0 20 40 60
GRAPHIC SCALE - FEET

EXISTING FLOW PATHS
IN
THE WARE MILL YARD
AT THE
MINUTEMAN FARM LLC SITE

1"=20' MARCH 30, 2021
REV.11/15/21

R. H. LeMAITRE, PE, PLS
4 SKYVIEW DRIVE
WARE, MA 01082
(413) 967-7878





Drainage Diagram for Minuteman Farm LLC Existing
Prepared by Robert H. LeMaitre, PE, PLS, Printed 11/17/2021
HydroCAD® 9.10 s/n 03091 © 2010 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.149	48	Brush, Poor, HSG A (1S, 2S)
0.277	76	Gravel roads, HSG A (1S, 2S)
0.363	98	Pavement & Concrete (1S, 2S)
0.789		**TOTAL AREA**

Summary for Subcatchment 1S: Easterly part of site

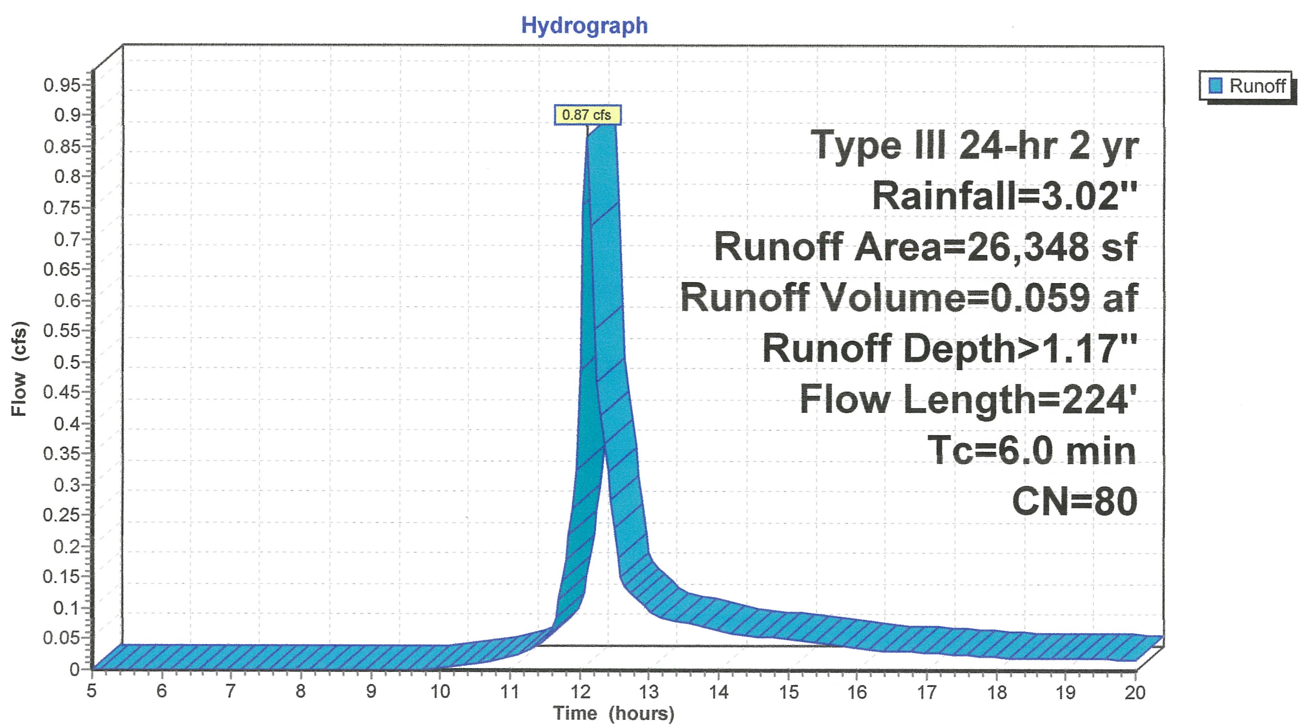
Runoff = 0.87 cfs @ 12.10 hrs, Volume= 0.059 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.02"

	Area (sf)	CN	Description
	8,067	76	Gravel roads, HSG A
*	12,226	98	Pavement & Concrete
	6,055	48	Brush, Poor, HSG A
	26,348	80	Weighted Average
	14,122		53.60% Pervious Area
	12,226		46.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	125	0.0200	1.40		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.0	75	0.0200	1.26		**Sheet Flow, Pavement & Concrete** Smooth surfaces n= 0.011 P2= 3.02"
3.0	24	0.1700	0.13		**Sheet Flow, brush** Woods: Light underbrush n= 0.400 P2= 3.02"
5.5	224	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Easterly part of site



Summary for Subcatchment 2S: Westerly part of site

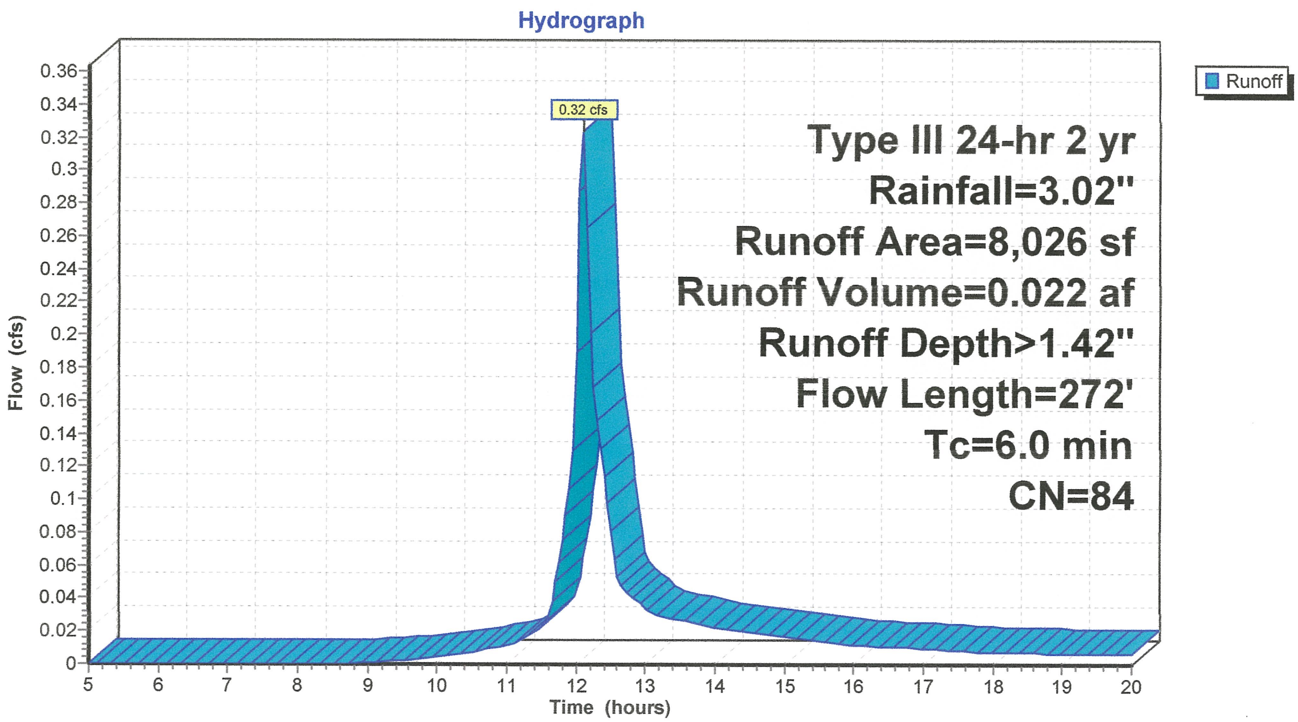
Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.022 af, Depth> 1.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.02"

	Area (sf)	CN	Description
	4,016	76	Gravel roads, HSG A
*	3,573	98	Pavement & Concrete
	437	48	Brush, Poor, HSG A
	8,026	84	Weighted Average
	4,453		55.48% Pervious Area
	3,573		44.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.34		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.7	150	0.0200	1.45		**Sheet Flow, Pavement & Concrte** Smooth surfaces n= 0.011 P2= 3.02"
2.8	22	0.1700	0.13		**Sheet Flow, Slope** Woods: Light underbrush n= 0.400 P2= 3.02"
5.7	272	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site

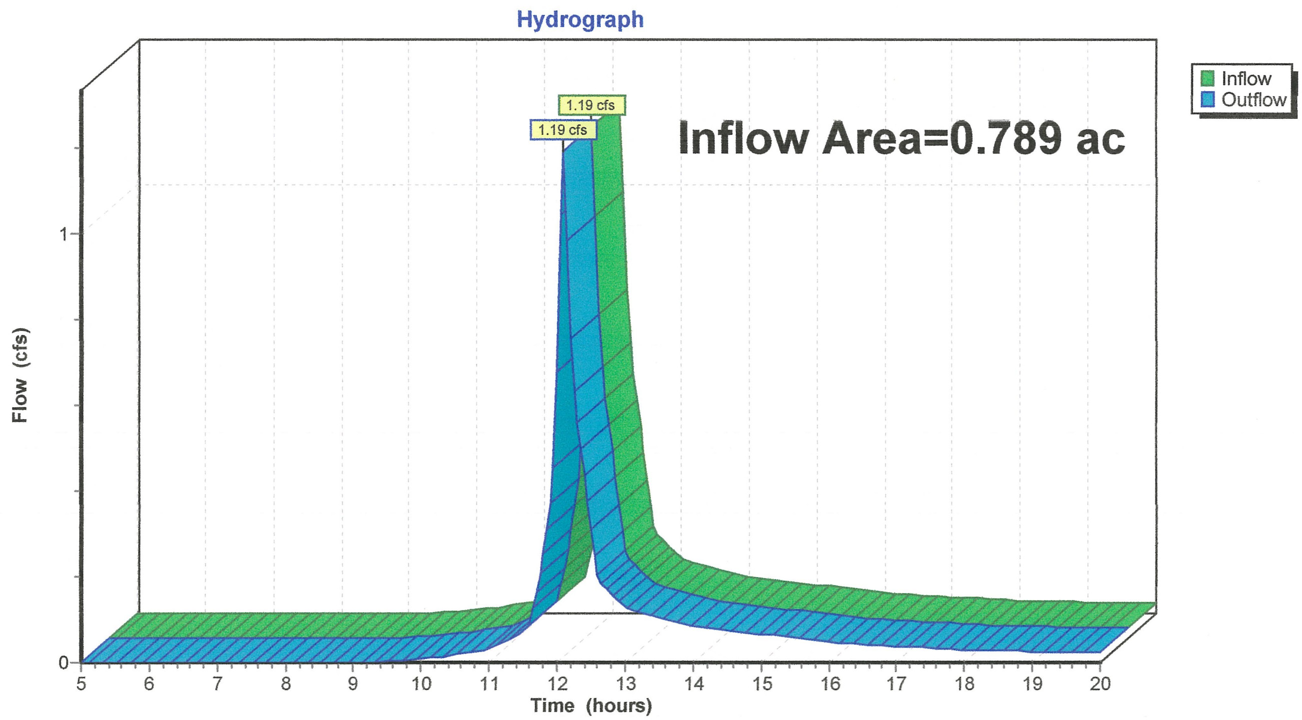


Summary for Reach 3R: Ware River

Inflow Area = 0.789 ac, 45.96% Impervious, Inflow Depth > 1.23" for 2 yr event
Inflow = 1.19 cfs @ 12.10 hrs, Volume= 0.081 af
Outflow = 1.19 cfs @ 12.10 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 3R: Ware River



Summary for Subcatchment 1S: Easterly part of site

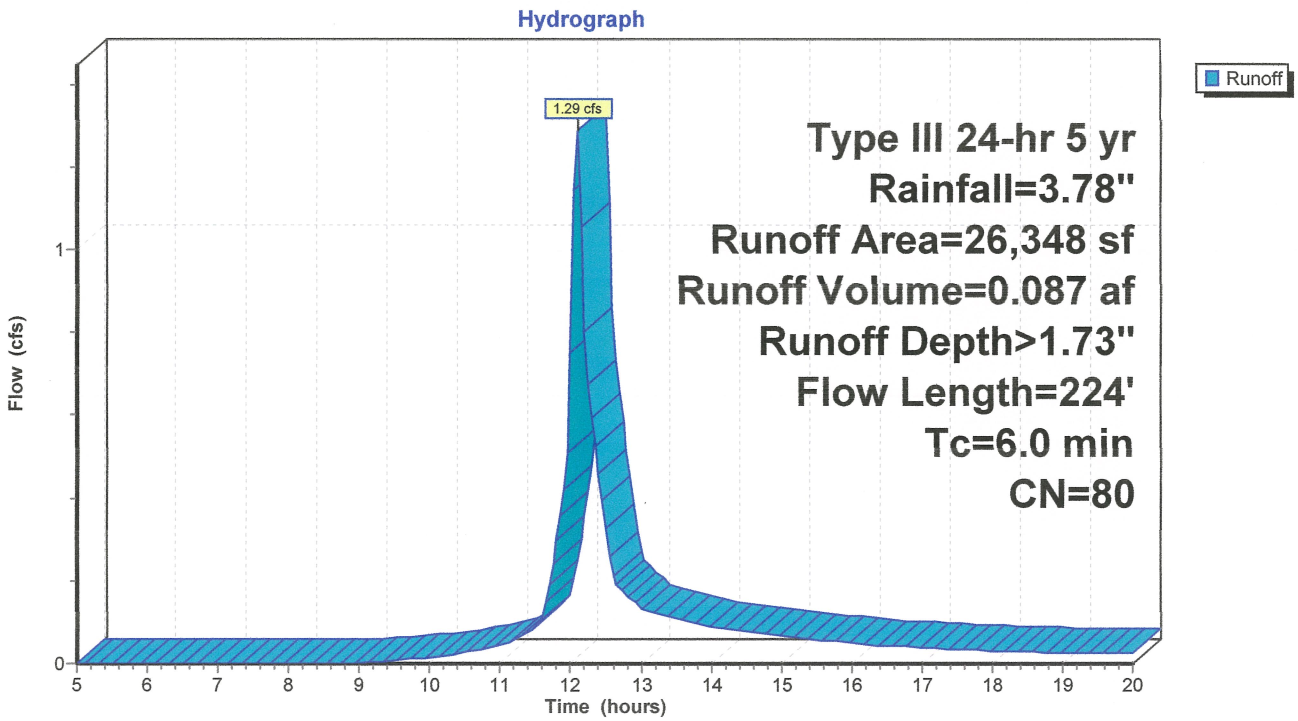
Runoff = 1.29 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 1.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5 yr Rainfall=3.78"

	Area (sf)	CN	Description
	8,067	76	Gravel roads, HSG A
*	12,226	98	Pavement & Concrete
	6,055	48	Brush, Poor, HSG A
	26,348	80	Weighted Average
	14,122		53.60% Pervious Area
	12,226		46.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	125	0.0200	1.40		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.0	75	0.0200	1.26		**Sheet Flow, Pavement & Concrete** Smooth surfaces n= 0.011 P2= 3.02"
3.0	24	0.1700	0.13		**Sheet Flow, brush** Woods: Light underbrush n= 0.400 P2= 3.02"
5.5	224	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Easterly part of site



Summary for Subcatchment 2S: Westerly part of site

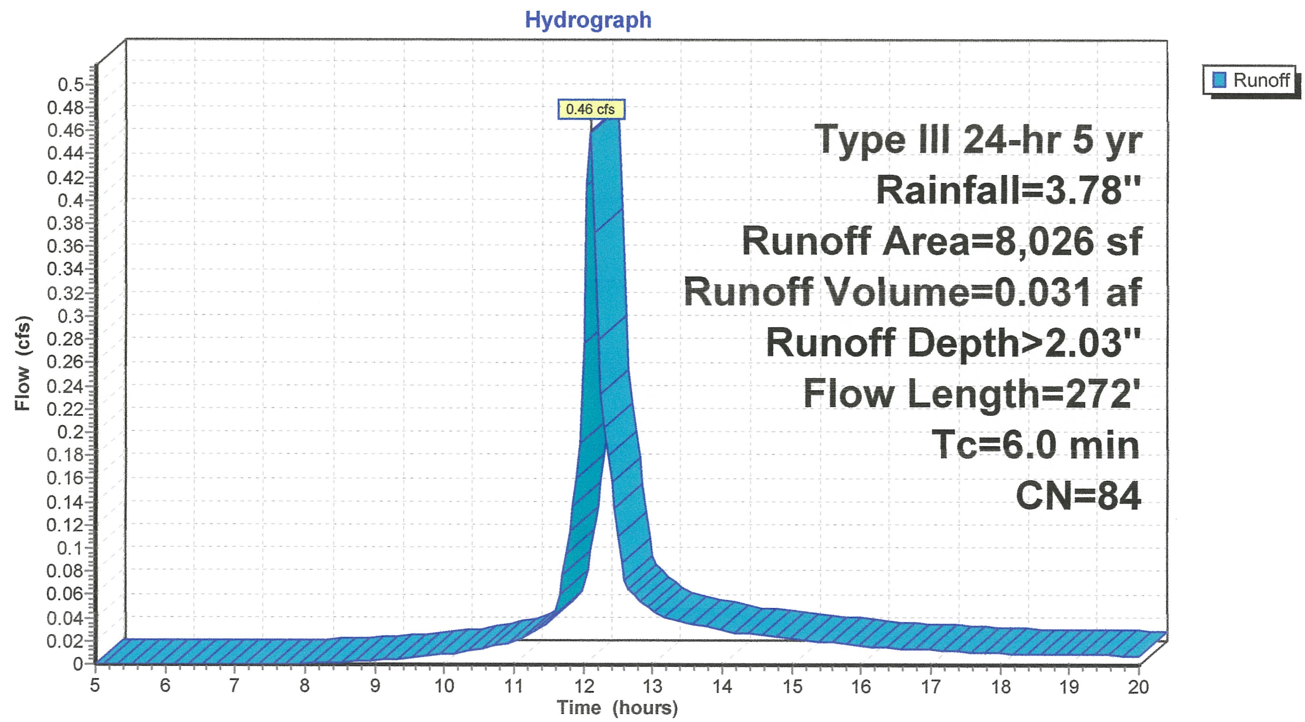
Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.031 af, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5 yr Rainfall=3.78"

	Area (sf)	CN	Description
	4,016	76	Gravel roads, HSG A
*	3,573	98	Pavement & Concrete
	437	48	Brush, Poor, HSG A
	8,026	84	Weighted Average
	4,453		55.48% Pervious Area
	3,573		44.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.34		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.7	150	0.0200	1.45		**Sheet Flow, Pavement & Concrte** Smooth surfaces n= 0.011 P2= 3.02"
2.8	22	0.1700	0.13		**Sheet Flow, Slope** Woods: Light underbrush n= 0.400 P2= 3.02"
5.7	272	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site

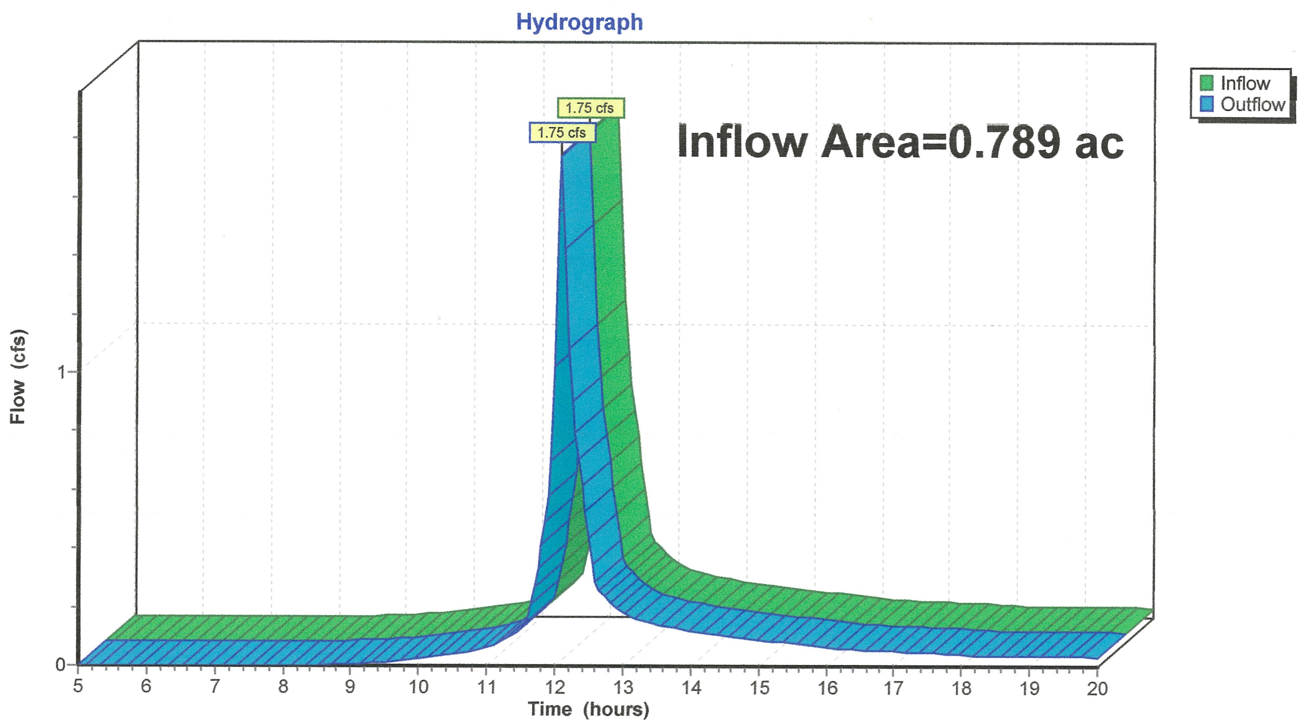


Summary for Reach 3R: Ware River

Inflow Area = 0.789 ac, 45.96% Impervious, Inflow Depth > 1.80" for 5 yr event
Inflow = 1.75 cfs @ 12.09 hrs, Volume= 0.118 af
Outflow = 1.75 cfs @ 12.09 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 3R: Ware River



Summary for Subcatchment 1S: Easterly part of site

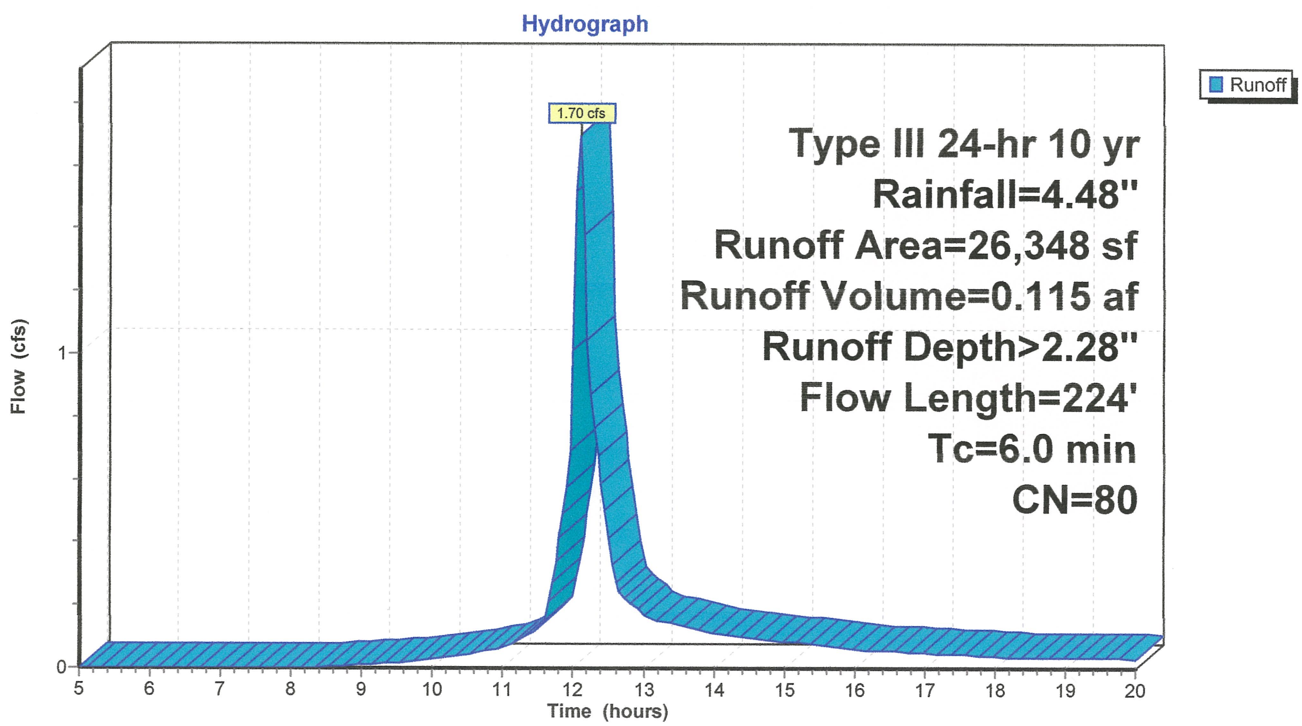
Runoff = 1.70 cfs @ 12.09 hrs, Volume= 0.115 af, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.48"

	Area (sf)	CN	Description
	8,067	76	Gravel roads, HSG A
*	12,226	98	Pavement & Concrete
	6,055	48	Brush, Poor, HSG A
	26,348	80	Weighted Average
	14,122		53.60% Pervious Area
	12,226		46.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	125	0.0200	1.40		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.0	75	0.0200	1.26		**Sheet Flow, Pavement & Concrete** Smooth surfaces n= 0.011 P2= 3.02"
3.0	24	0.1700	0.13		**Sheet Flow, brush** Woods: Light underbrush n= 0.400 P2= 3.02"
5.5	224	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Easterly part of site



Summary for Subcatchment 2S: Westerly part of site

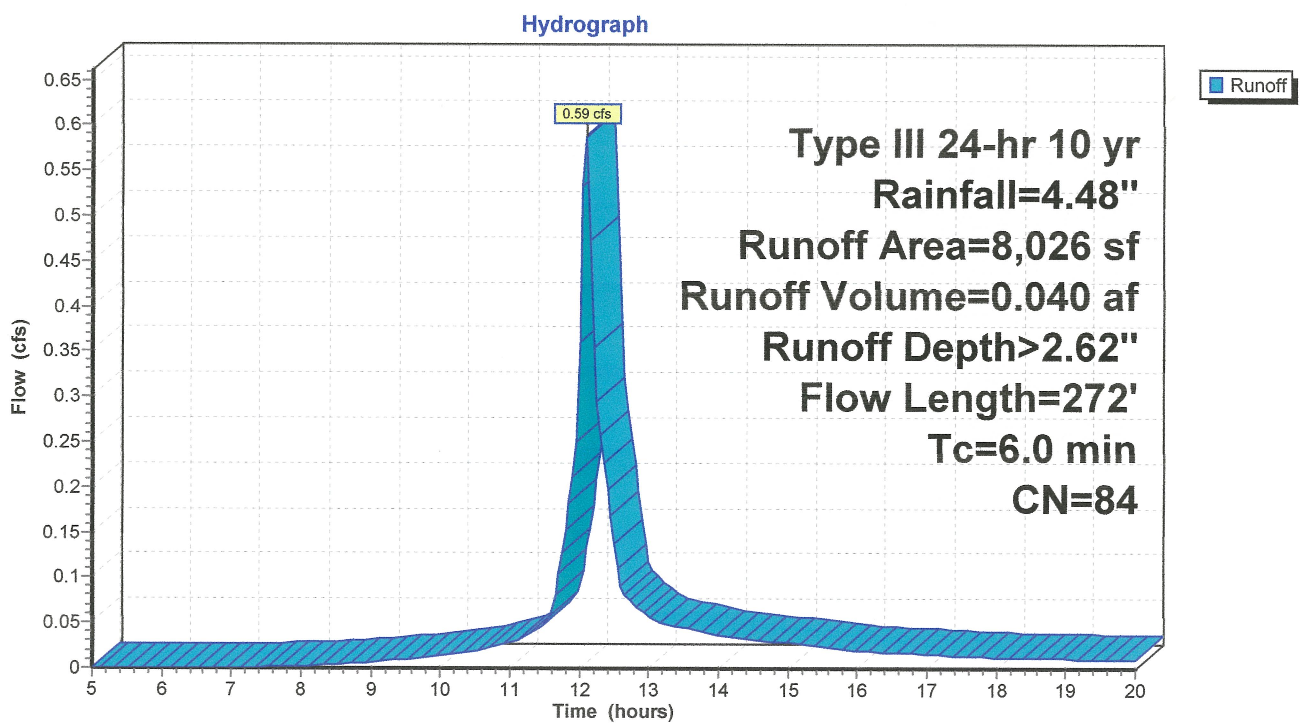
Runoff = 0.59 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.48"

	Area (sf)	CN	Description
	4,016	76	Gravel roads, HSG A
*	3,573	98	Pavement & Concrete
	437	48	Brush, Poor, HSG A
	8,026	84	Weighted Average
	4,453		55.48% Pervious Area
	3,573		44.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.34		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.7	150	0.0200	1.45		**Sheet Flow, Pavement & Concrte** Smooth surfaces n= 0.011 P2= 3.02"
2.8	22	0.1700	0.13		**Sheet Flow, Slope** Woods: Light underbrush n= 0.400 P2= 3.02"
5.7	272	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site

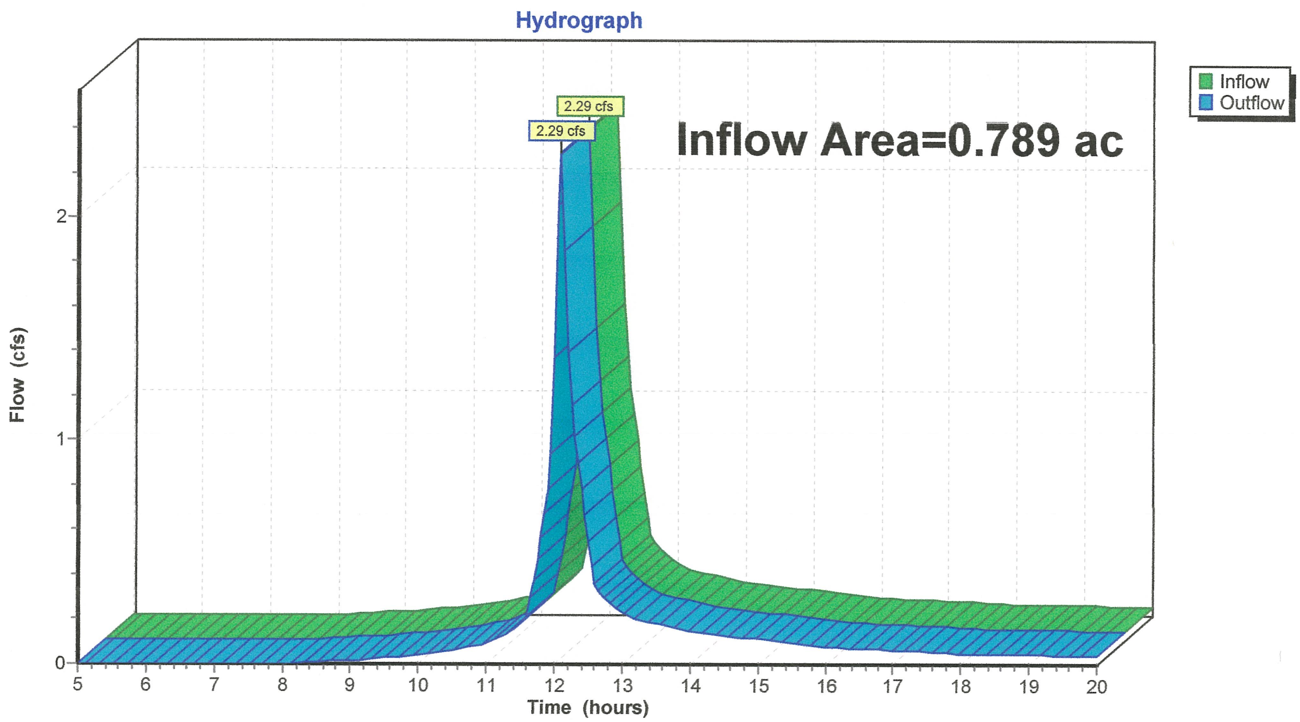


Summary for Reach 3R: Ware River

Inflow Area = 0.789 ac, 45.96% Impervious, Inflow Depth > 2.36" for 10 yr event
Inflow = 2.29 cfs @ 12.09 hrs, Volume= 0.155 af
Outflow = 2.29 cfs @ 12.09 hrs, Volume= 0.155 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 3R: Ware River



Summary for Subcatchment 1S: Easterly part of site

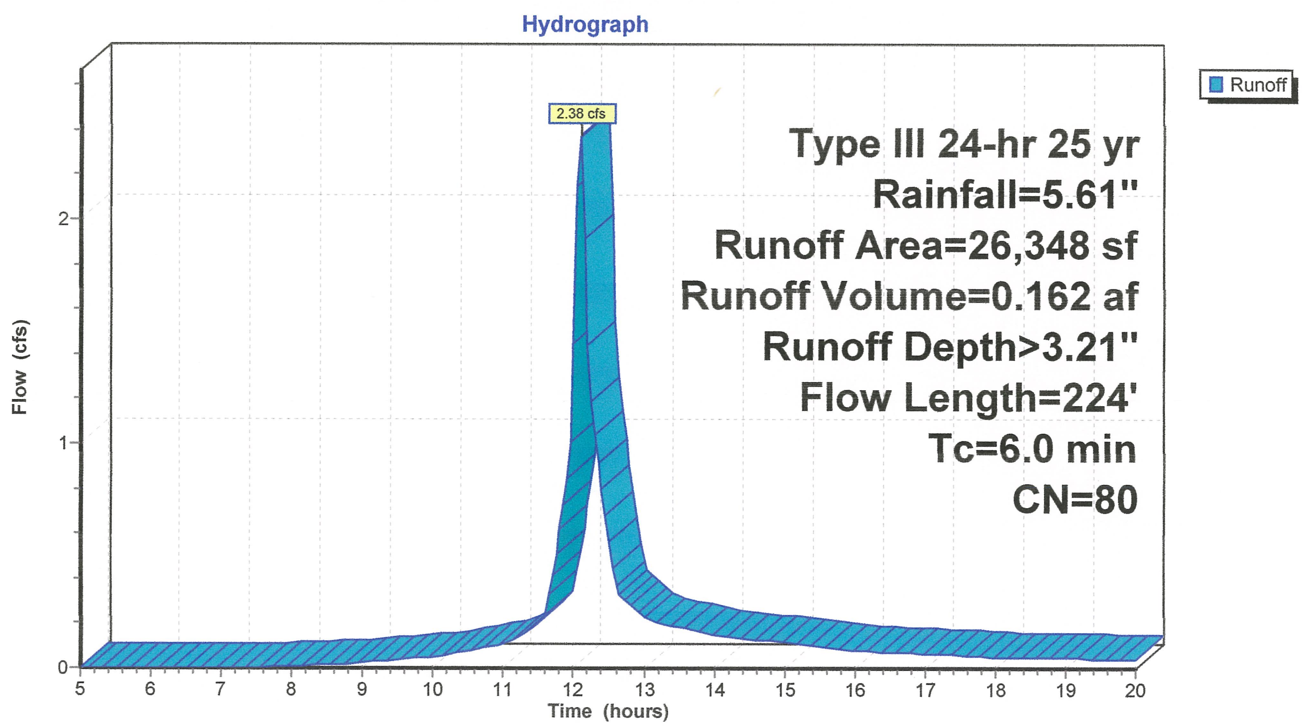
Runoff = 2.38 cfs @ 12.09 hrs, Volume= 0.162 af, Depth> 3.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.61"

	Area (sf)	CN	Description
	8,067	76	Gravel roads, HSG A
*	12,226	98	Pavement & Concrete
	6,055	48	Brush, Poor, HSG A
	26,348	80	Weighted Average
	14,122		53.60% Pervious Area
	12,226		46.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	125	0.0200	1.40		**Sheet Flow, gravel**
					Smooth surfaces n= 0.011 P2= 3.02"
1.0	75	0.0200	1.26		**Sheet Flow, Pavement & Concrete**
					Smooth surfaces n= 0.011 P2= 3.02"
3.0	24	0.1700	0.13		**Sheet Flow, brush**
					Woods: Light underbrush n= 0.400 P2= 3.02"
5.5	224	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Easterly part of site



Summary for Subcatchment 2S: Westerly part of site

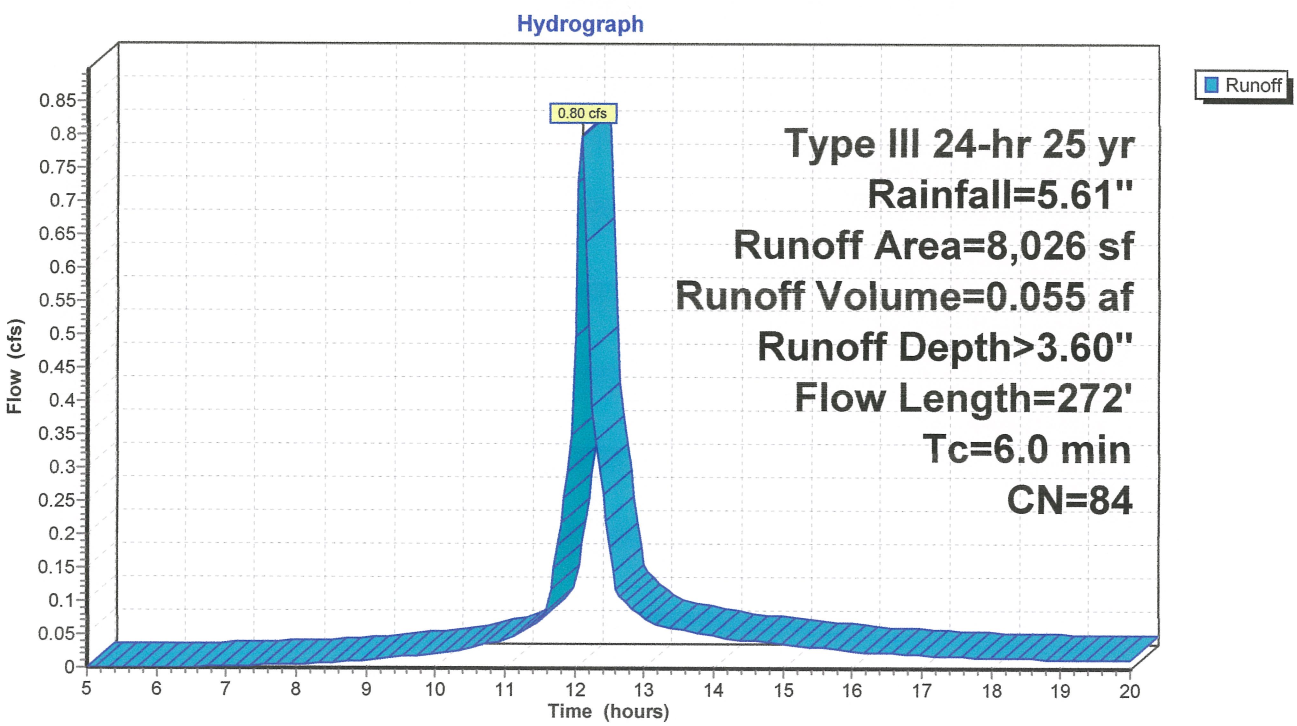
Runoff = 0.80 cfs @ 12.09 hrs, Volume= 0.055 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.61"

	Area (sf)	CN	Description
	4,016	76	Gravel roads, HSG A
*	3,573	98	Pavement & Concrete
	437	48	Brush, Poor, HSG A
	8,026	84	Weighted Average
	4,453		55.48% Pervious Area
	3,573		44.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.34		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.7	150	0.0200	1.45		**Sheet Flow, Pavement & Concrte** Smooth surfaces n= 0.011 P2= 3.02"
2.8	22	0.1700	0.13		**Sheet Flow, Slope** Woods: Light underbrush n= 0.400 P2= 3.02"
5.7	272	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site

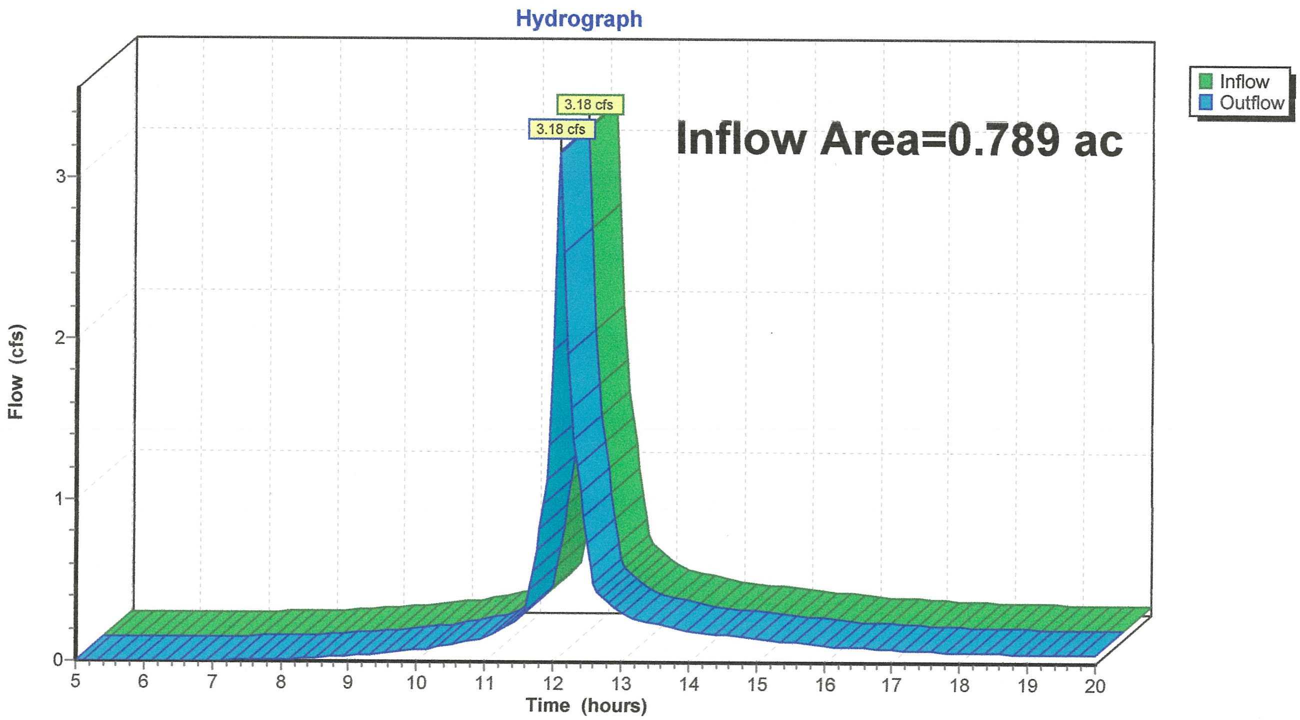


Summary for Reach 3R: Ware River

Inflow Area =	0.789 ac,	45.96% Impervious,	Inflow Depth > 3.30"	for 25 yr event
Inflow =	3.18 cfs @	12.09 hrs, Volume=	0.217 af	
Outflow =	3.18 cfs @	12.09 hrs, Volume=	0.217 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 3R: Ware River



Summary for Subcatchment 1S: Easterly part of site

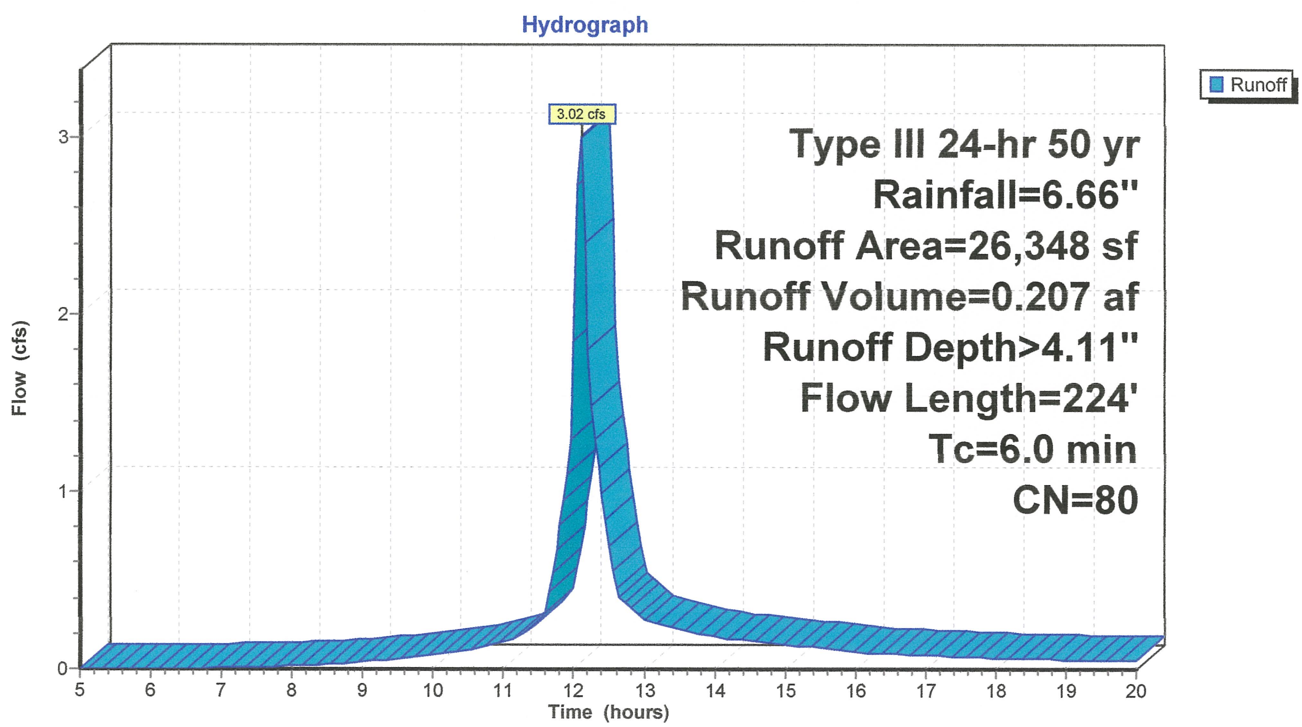
Runoff = 3.02 cfs @ 12.09 hrs, Volume= 0.207 af, Depth> 4.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 yr Rainfall=6.66"

	Area (sf)	CN	Description
	8,067	76	Gravel roads, HSG A
*	12,226	98	Pavement & Concrete
	6,055	48	Brush, Poor, HSG A
	26,348	80	Weighted Average
	14,122		53.60% Pervious Area
	12,226		46.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	125	0.0200	1.40		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.0	75	0.0200	1.26		**Sheet Flow, Pavement & Concrete** Smooth surfaces n= 0.011 P2= 3.02"
3.0	24	0.1700	0.13		**Sheet Flow, brush** Woods: Light underbrush n= 0.400 P2= 3.02"
5.5	224	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Easterly part of site



Summary for Subcatchment 2S: Westerly part of site

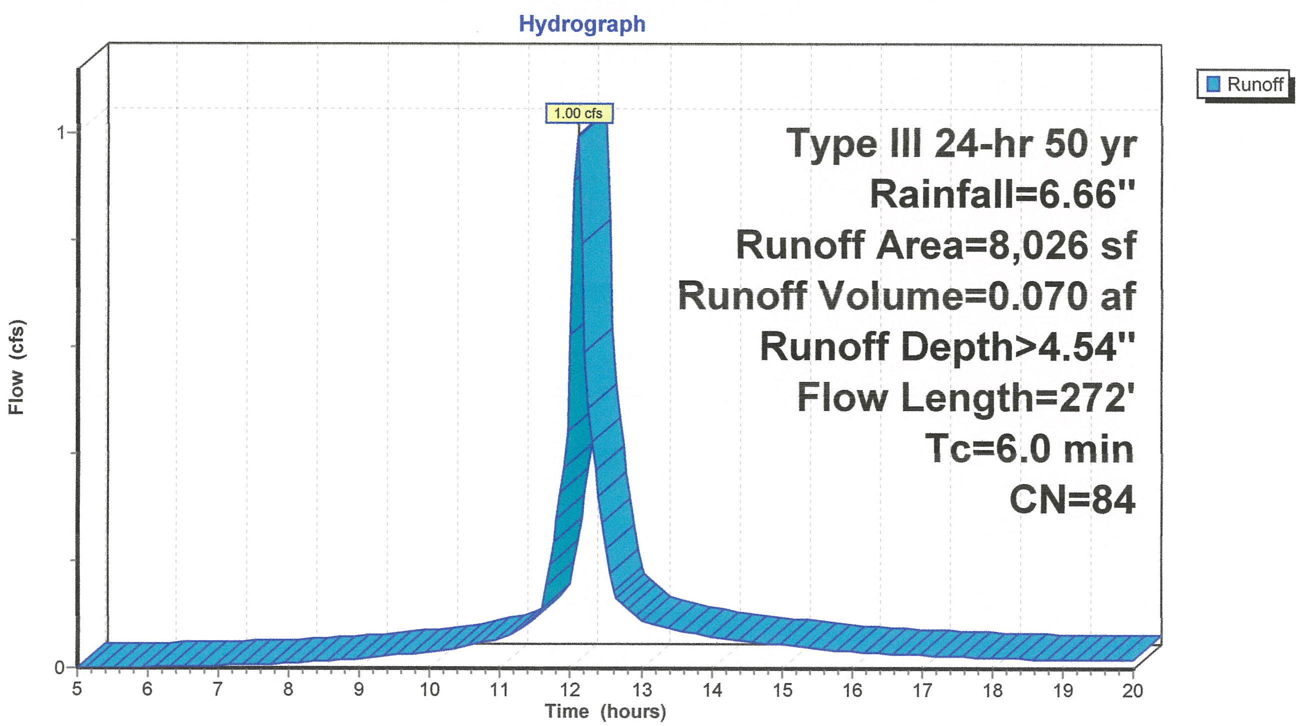
Runoff = 1.00 cfs @ 12.09 hrs, Volume= 0.070 af, Depth> 4.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 yr Rainfall=6.66"

	Area (sf)	CN	Description
	4,016	76	Gravel roads, HSG A
*	3,573	98	Pavement & Concrete
	437	48	Brush, Poor, HSG A
	8,026	84	Weighted Average
	4,453		55.48% Pervious Area
	3,573		44.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.34		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.7	150	0.0200	1.45		**Sheet Flow, Pavement & Concrte** Smooth surfaces n= 0.011 P2= 3.02"
2.8	22	0.1700	0.13		**Sheet Flow, Slope** Woods: Light underbrush n= 0.400 P2= 3.02"
5.7	272	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site

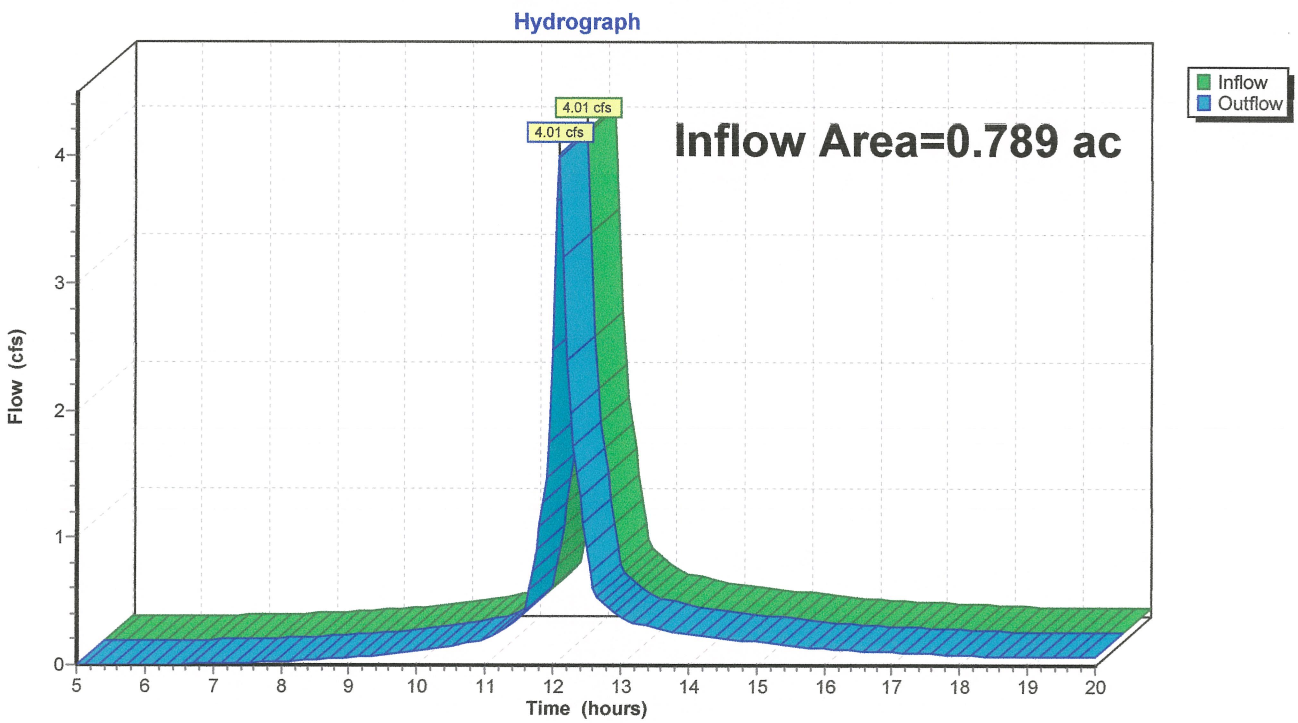


Summary for Reach 3R: Ware River

Inflow Area =	0.789 ac,	45.96% Impervious,	Inflow Depth >	4.21"	for 50 yr event
Inflow =	4.01 cfs @	12.09 hrs,	Volume=	0.277 af	
Outflow =	4.01 cfs @	12.09 hrs,	Volume=	0.277 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 3R: Ware River



Summary for Subcatchment 1S: Easterly part of site

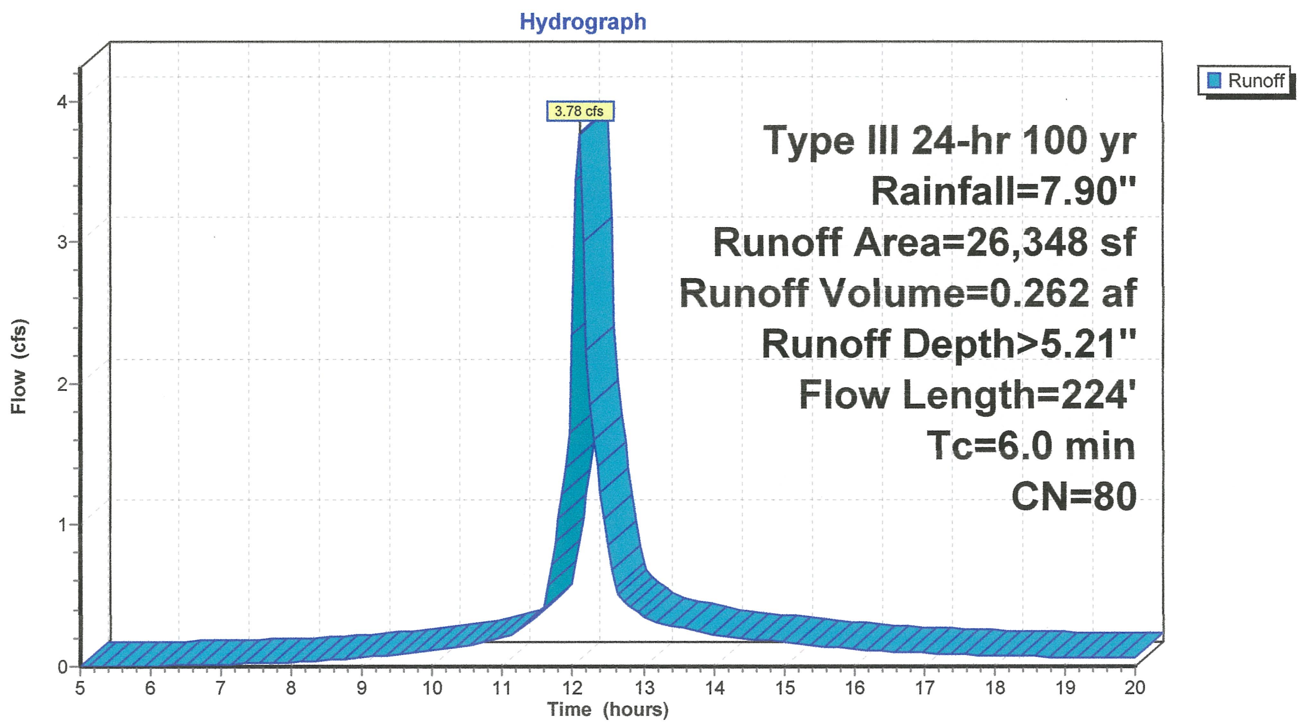
Runoff = 3.78 cfs @ 12.09 hrs, Volume= 0.262 af, Depth> 5.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=7.90"

	Area (sf)	CN	Description
	8,067	76	Gravel roads, HSG A
*	12,226	98	Pavement & Concrete
	6,055	48	Brush, Poor, HSG A
	26,348	80	Weighted Average
	14,122		53.60% Pervious Area
	12,226		46.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	125	0.0200	1.40		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.0	75	0.0200	1.26		**Sheet Flow, Pavement & Concrete** Smooth surfaces n= 0.011 P2= 3.02"
3.0	24	0.1700	0.13		**Sheet Flow, brush** Woods: Light underbrush n= 0.400 P2= 3.02"
5.5	224	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Easterly part of site



Summary for Subcatchment 2S: Westerly part of site

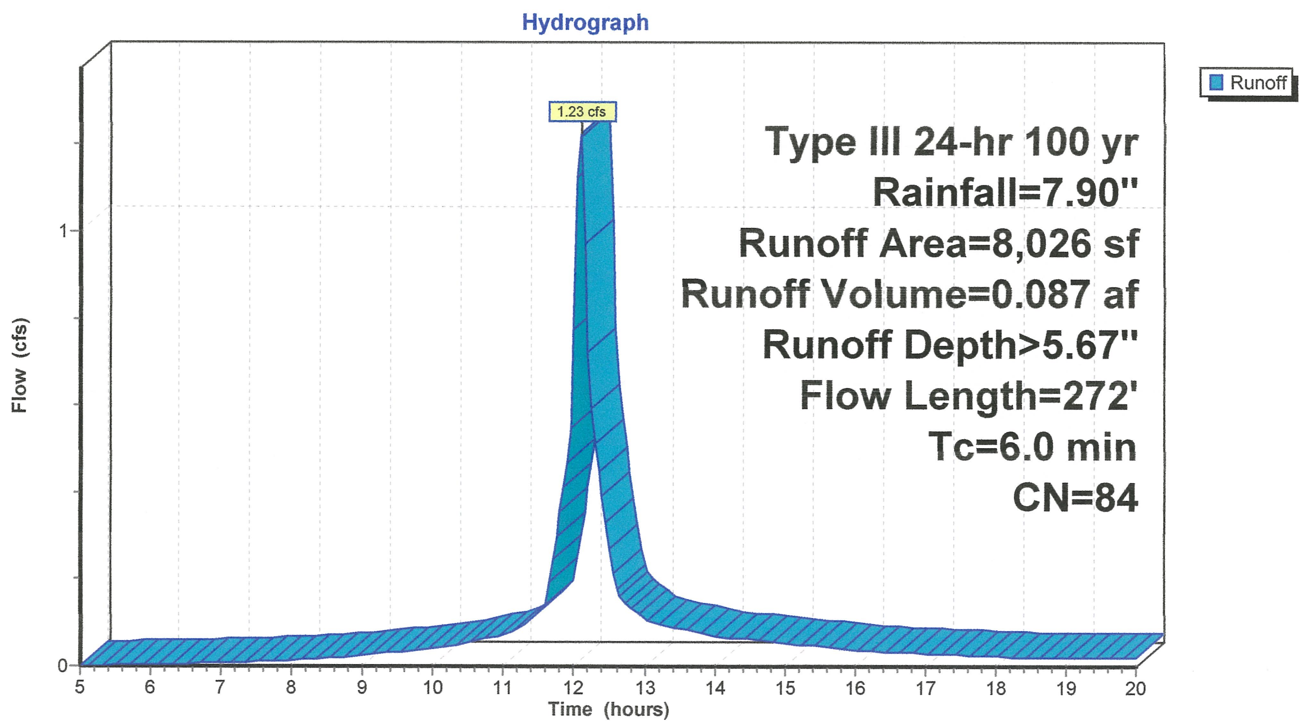
Runoff = 1.23 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 5.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=7.90"

	Area (sf)	CN	Description
	4,016	76	Gravel roads, HSG A
*	3,573	98	Pavement & Concrete
	437	48	Brush, Poor, HSG A
	8,026	84	Weighted Average
	4,453		55.48% Pervious Area
	3,573		44.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.34		**Sheet Flow, gravel** Smooth surfaces n= 0.011 P2= 3.02"
1.7	150	0.0200	1.45		**Sheet Flow, Pavement & Concrte** Smooth surfaces n= 0.011 P2= 3.02"
2.8	22	0.1700	0.13		**Sheet Flow, Slope** Woods: Light underbrush n= 0.400 P2= 3.02"
5.7	272	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site

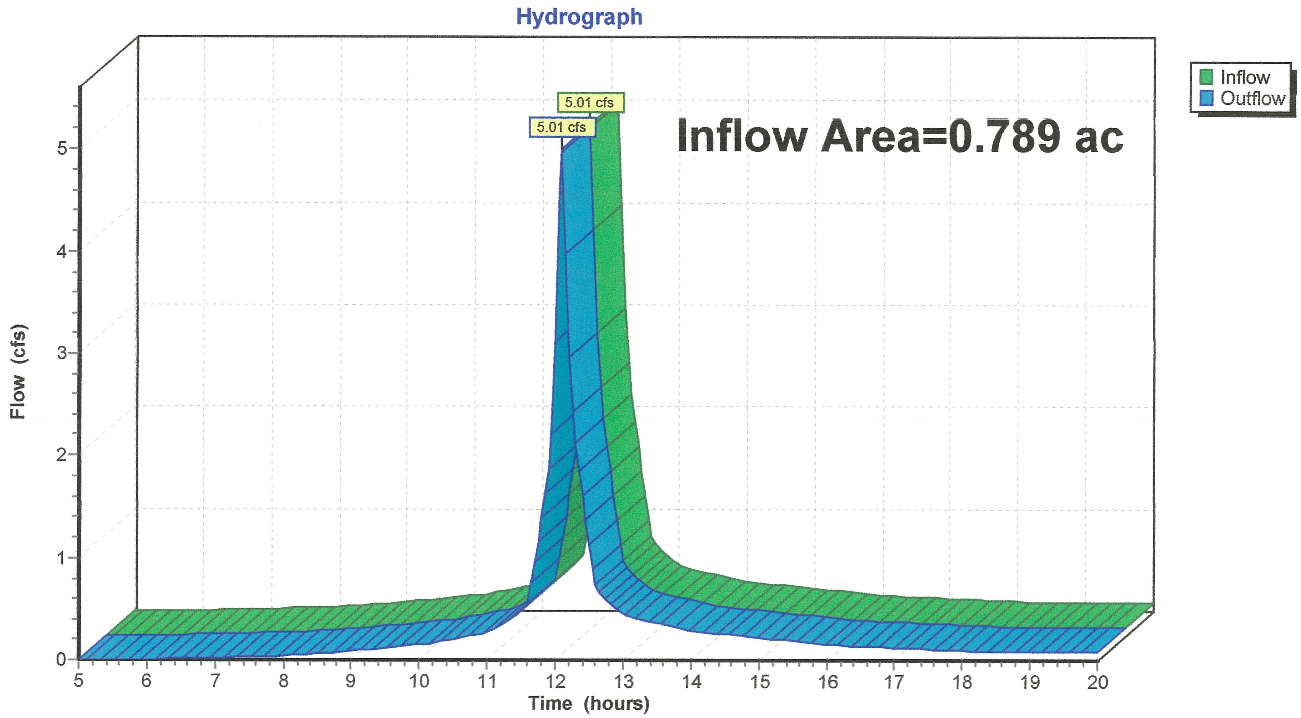


Summary for Reach 3R: Ware River

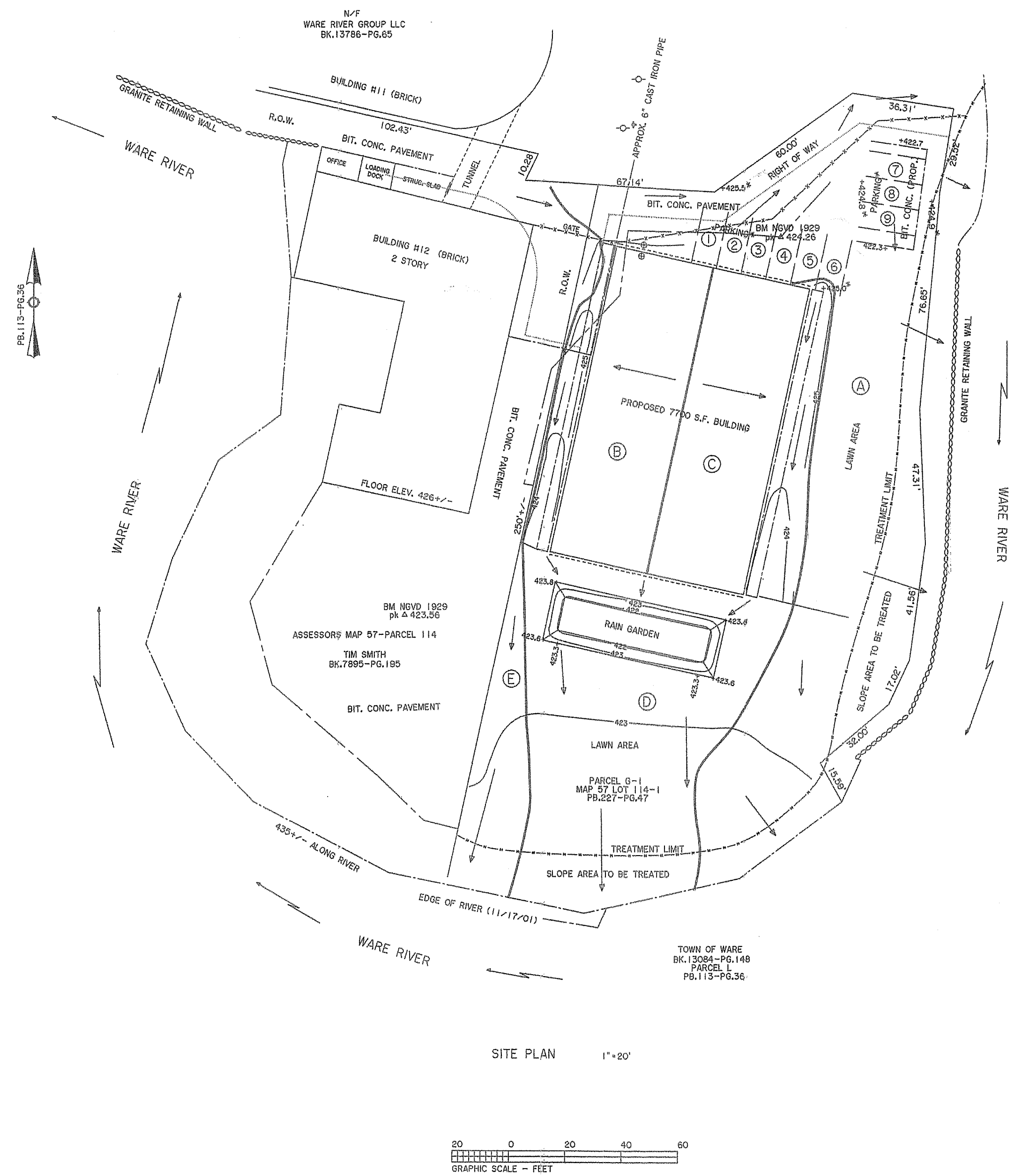
Inflow Area = 0.789 ac, 45.96% Impervious, Inflow Depth > 5.31" for 100 yr event
Inflow = 5.01 cfs @ 12.09 hrs, Volume= 0.349 af
Outflow = 5.01 cfs @ 12.09 hrs, Volume= 0.349 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 3R: Ware River



Runoff Calculations
For
The Proposed Site Conditions
(post construction)
Prepared For
Minuteman Farm LLC
in
The Ware Mill Yard



PROPOSED FLOW PATHS

IN

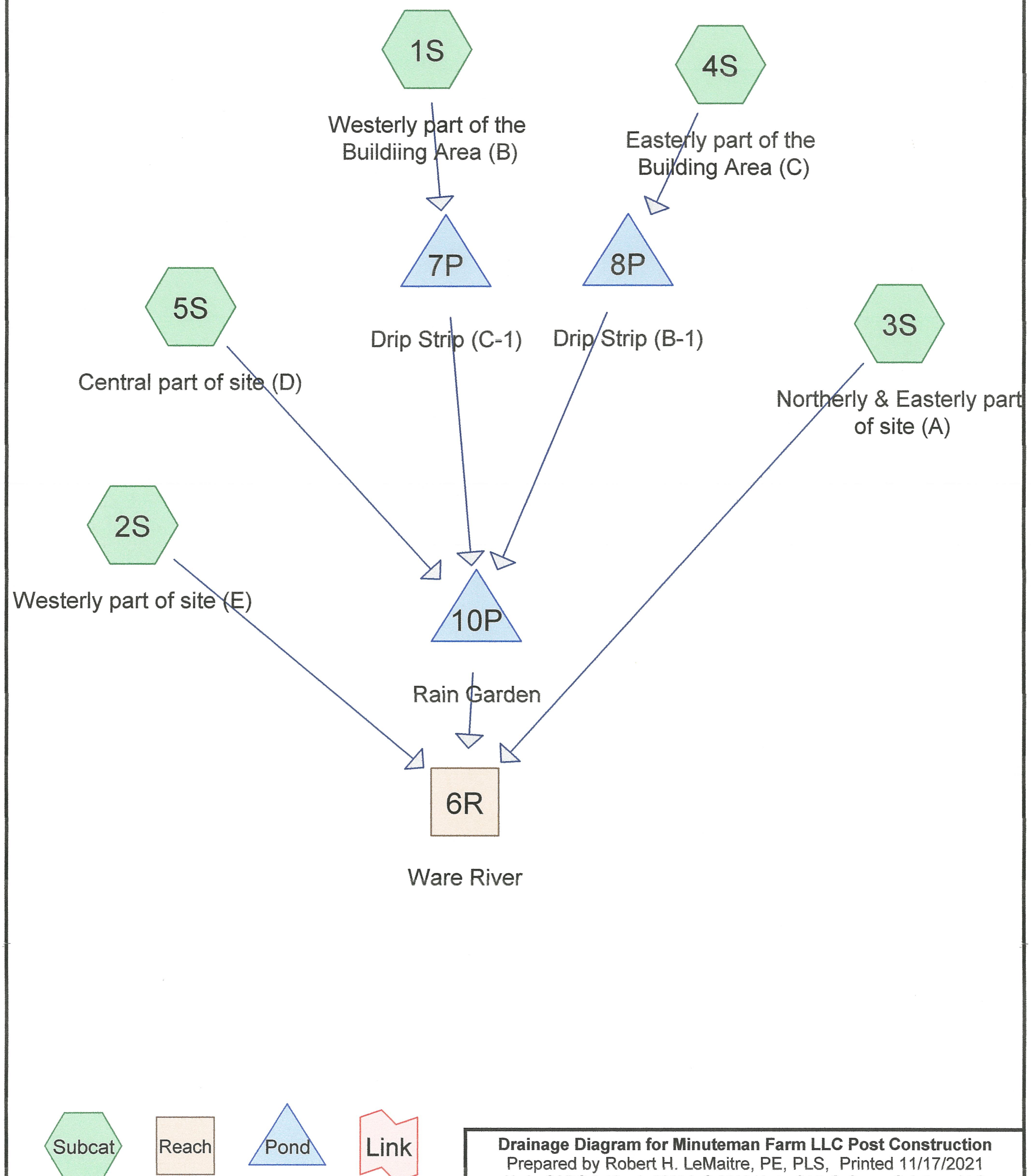
THE WARE MILL YARD

AT THE

MINUTEMAN FARM LLC SITE

1"=20' NOVEMBER 15, 2021

R. H. LeMAITRE, PE, PLS
4 SKYVIEW DRIVE
WARE, MA 01082
(413) 967-7876



Drainage Diagram for Minuteman Farm LLC Post Construction
Prepared by Robert H. LeMaitre, PE, PLS, Printed 11/17/2021
HydroCAD® 9.10 s/n 03091 © 2010 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.372	39	>75% Grass cover, Good, HSG A (2S, 3S, 5S)
0.114	48	Brush, Poor, HSG A (3S)
0.027	48	Brush, Poor, HSG A Slope to river (5S)
0.008	48	Brush, Poor, HSG A (slope to river) (2S)
0.093	98	Roof (1S)
0.083	98	pavement (3S)
0.093	98	roof (4S)
0.789		**TOTAL AREA**

Summary for Subcatchment 1S: Westerly part of the Buildiing Area (B)

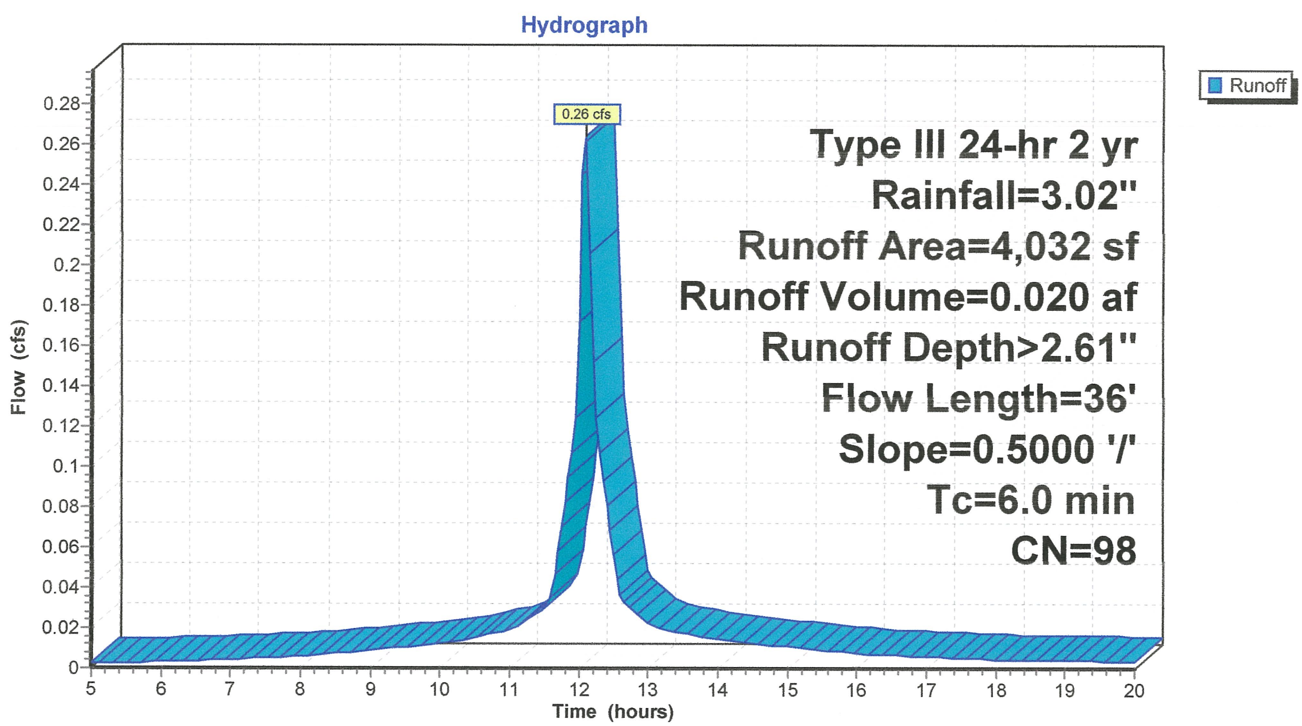
Runoff = 0.26 cfs @ 12.09 hrs, Volume= 0.020 af, Depth> 2.61"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.02"

	Area (sf)	CN	Description
*	4,032	98	Roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Westerly part of the Buildiing Area (B)



Summary for Subcatchment 2S: Westerly part of site (E)

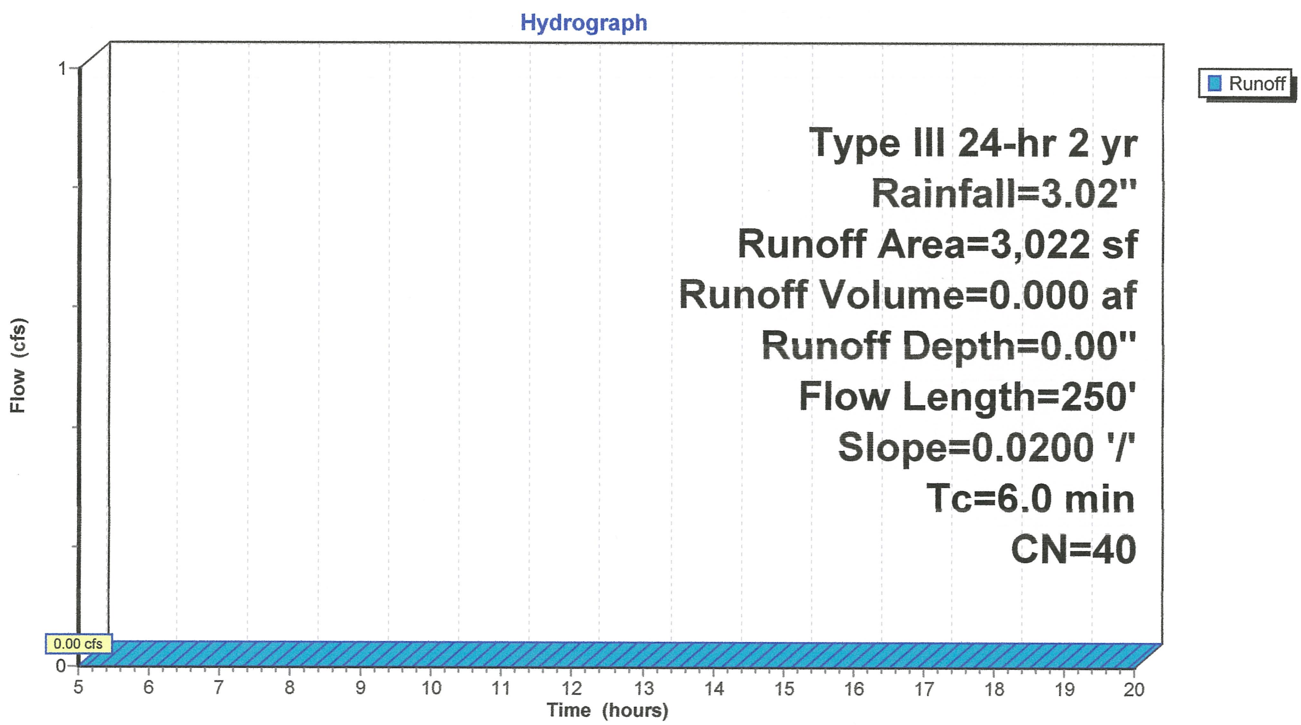
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.02"

	Area (sf)	CN	Description
	2,677	39	>75% Grass cover, Good, HSG A
*	345	48	Brush, Poor, HSG A (slope to river)
	3,022	40	Weighted Average
	3,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	125	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
0.9	125	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
1.6	250	Total,	Increased to minimum Tc = 6.0 min		

Subcatchment 2S: Westerly part of site (E)



Summary for Subcatchment 3S: Northerly & Easterly part of site (A)

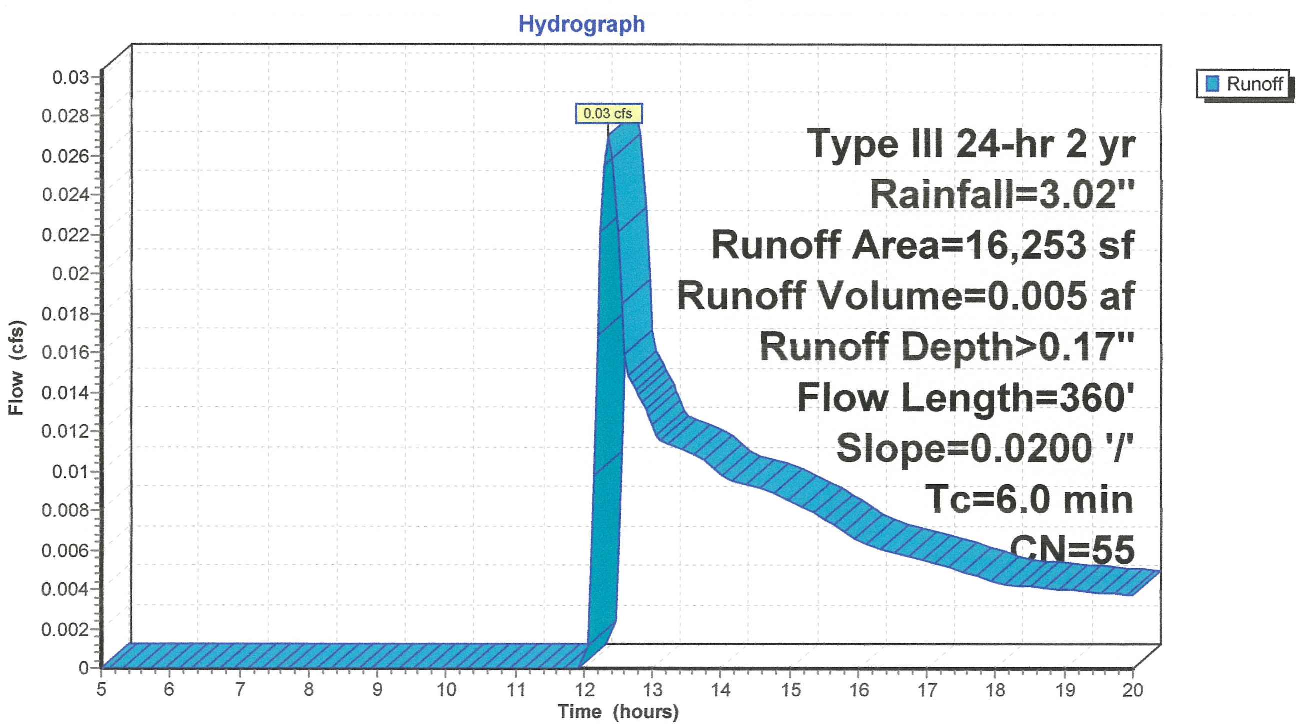
Runoff = 0.03 cfs @ 12.37 hrs, Volume= 0.005 af, Depth> 0.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.02"

	Area (sf)	CN	Description
*	3,635	98	pavement
	4,950	48	Brush, Poor, HSG A
	7,668	39	>75% Grass cover, Good, HSG A
	16,253	55	Weighted Average
	12,618		77.63% Pervious Area
	3,635		22.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	140	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
1.6	220	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
2.4	360	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 3S: Northerly & Easterly part of site (A)



Summary for Subcatchment 4S: Easterly part of the Building Area (C)

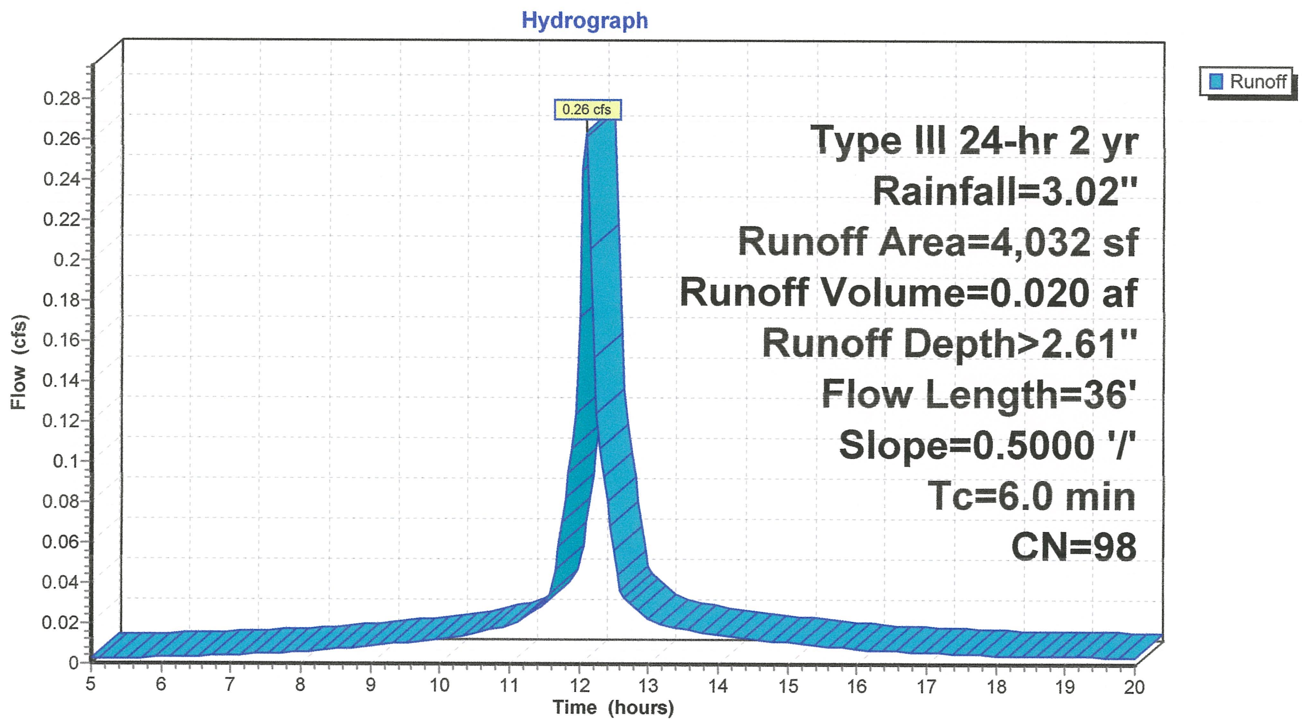
Runoff = 0.26 cfs @ 12.09 hrs, Volume= 0.020 af, Depth> 2.61"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.02"

	Area (sf)	CN	Description
*	4,032	98	roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, Building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 4S: Easterly part of the Building Area (C)



Summary for Subcatchment 5S: Central part of site (D)

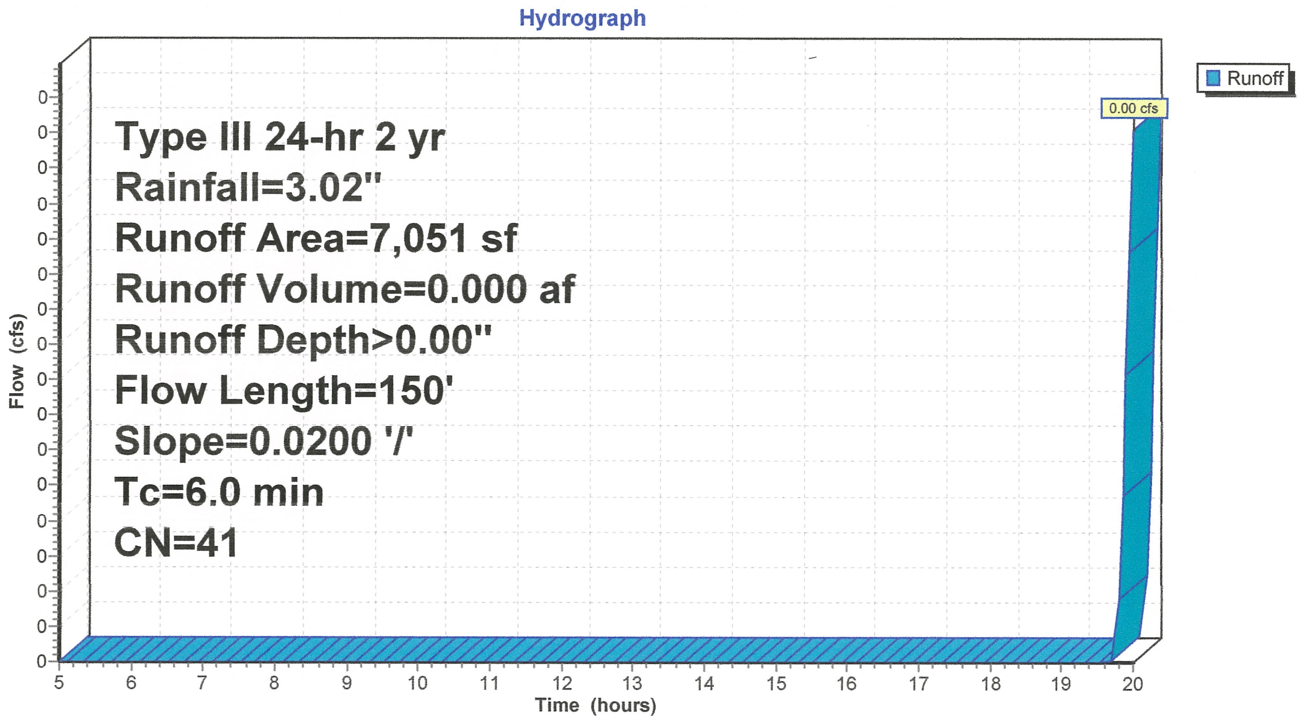
Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth> 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.02"

	Area (sf)	CN	Description
	5,854	39	>75% Grass cover, Good, HSG A
*	1,197	48	Brush, Poor, HSG A Slope to river
	7,051	41	Weighted Average
	7,051		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.0200	2.87		**Shallow Concentrated Flow, conc** Paved Kv= 20.3 fps
1.0	130	0.0200	2.28		**Shallow Concentrated Flow, overland** Unpaved Kv= 16.1 fps
1.1	150	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 5S: Central part of site (D)

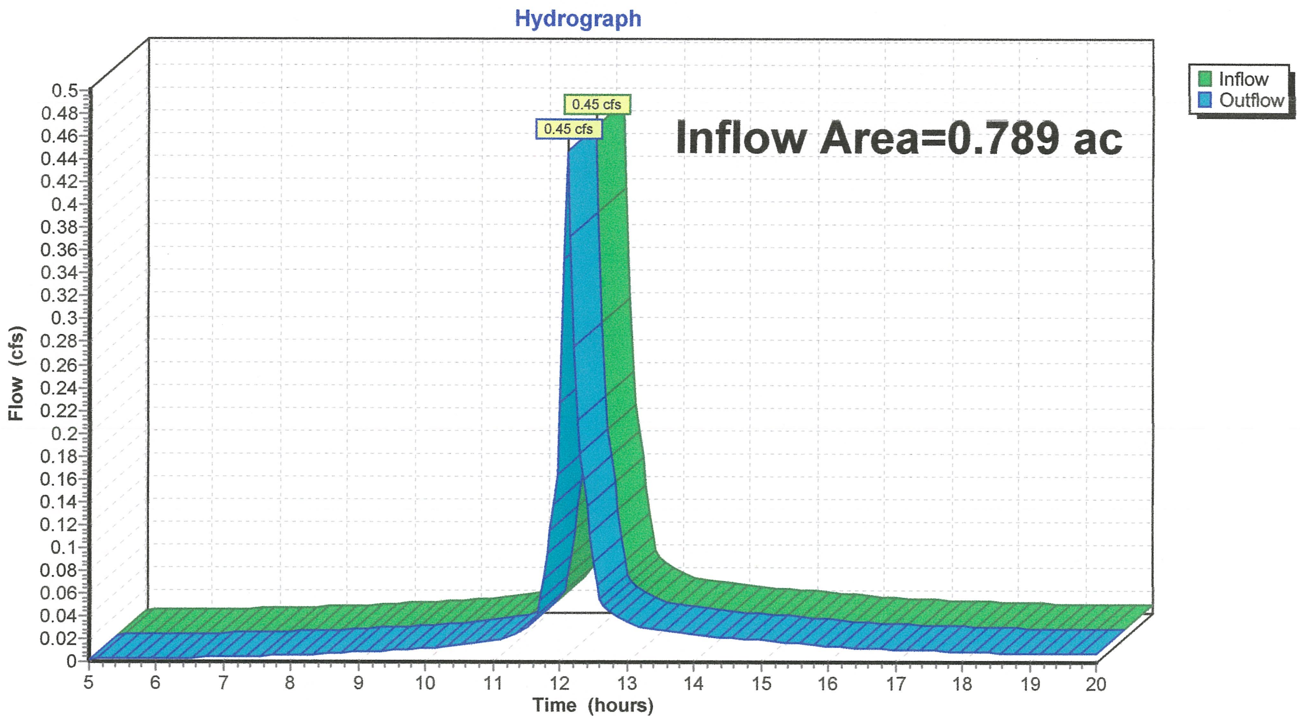


Summary for Reach 6R: Ware River

Inflow Area = 0.789 ac, 34.02% Impervious, Inflow Depth > 0.44" for 2 yr event
Inflow = 0.45 cfs @ 12.10 hrs, Volume= 0.029 af
Outflow = 0.45 cfs @ 12.10 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Ware River



Summary for Pond 7P: Drip Strip (C-1)

Inflow Area =	0.093 ac,100.00% Impervious,	Inflow Depth > 2.61"	for 2 yr event	
Inflow =	0.26 cfs @	12.09 hrs, Volume=	0.020 af	
Outflow =	0.26 cfs @	12.10 hrs, Volume=	0.020 af,	Atten= 0%, Lag= 0.6 min
Discarded =	0.03 cfs @	12.10 hrs, Volume=	0.007 af	
Primary =	0.24 cfs @	12.10 hrs, Volume=	0.013 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.08' @ 12.10 hrs Surf.Area= 460 sf Storage= 11 cf

Plug-Flow detention time= 0.9 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (739.8 - 739.1)

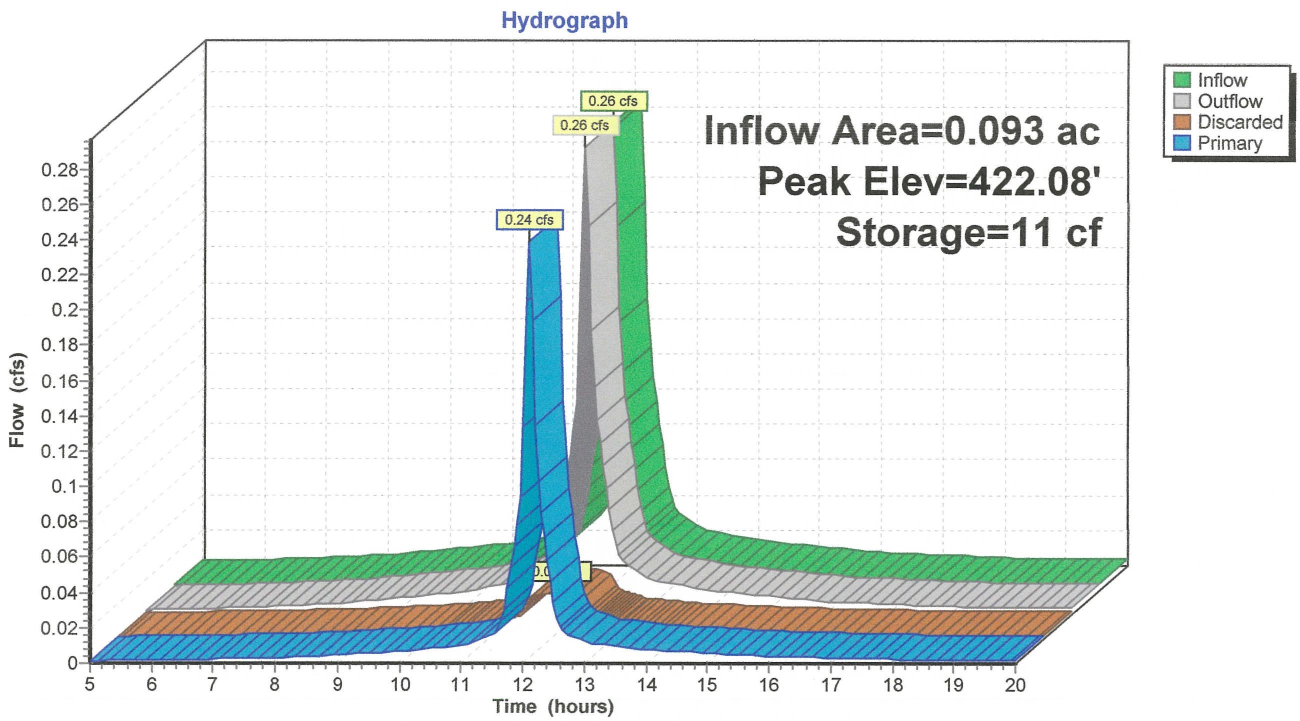
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.10 hrs HW=422.08' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.24 cfs @ 12.10 hrs HW=422.08' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.24 cfs @ 0.75 fps)

Pond 7P: Drip Strip (C-1)



Summary for Pond 8P: Drip Strip (B-1)

Inflow Area =	0.093 ac,100.00% Impervious,	Inflow Depth > 2.61"	for 2 yr event	
Inflow =	0.26 cfs @	12.09 hrs, Volume=	0.020 af	
Outflow =	0.26 cfs @	12.10 hrs, Volume=	0.020 af,	Atten= 0%, Lag= 0.6 min
Discarded =	0.03 cfs @	12.10 hrs, Volume=	0.007 af	
Primary =	0.24 cfs @	12.10 hrs, Volume=	0.013 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.08' @ 12.10 hrs Surf.Area= 460 sf Storage= 11 cf

Plug-Flow detention time= 0.9 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (739.8 - 739.1)

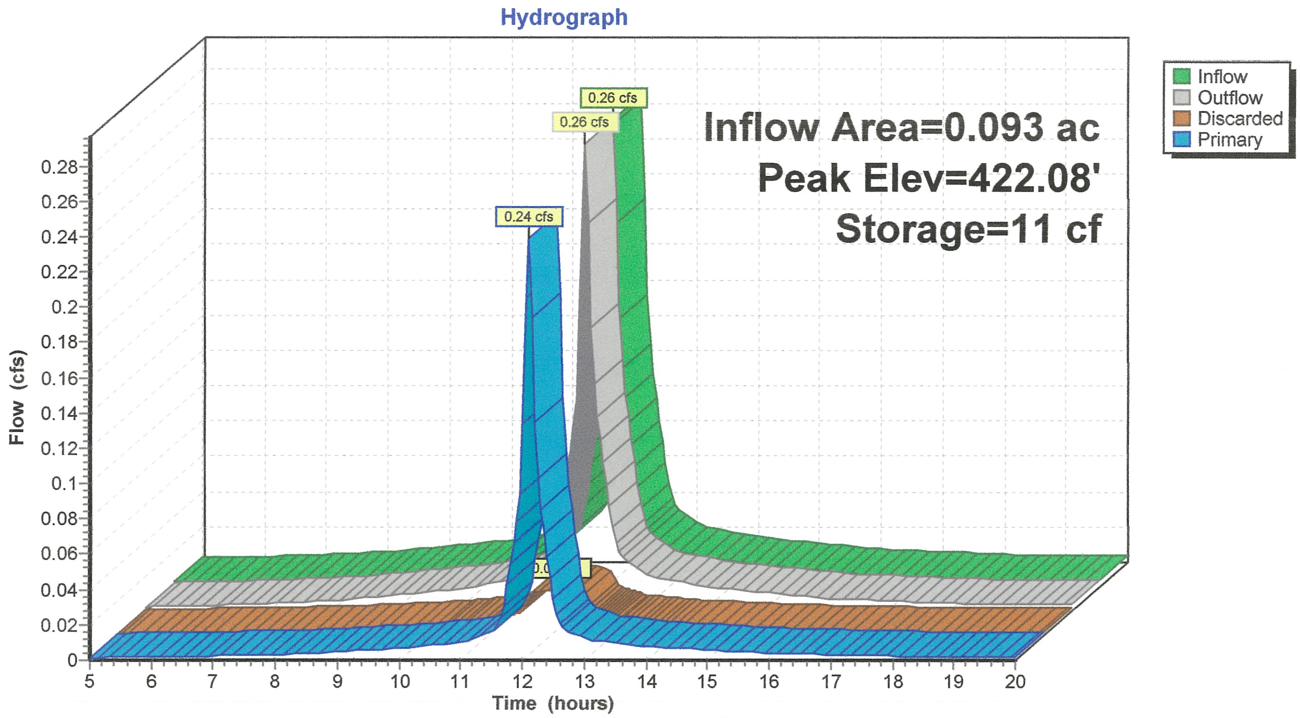
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.10 hrs HW=422.08' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.24 cfs @ 12.10 hrs HW=422.08' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.24 cfs @ 0.75 fps)

Pond 8P: Drip Strip (B-1)



Summary for Pond 10P: Rain Garden

Inflow Area =	0.347 ac, 53.35% Impervious, Inflow Depth > 0.91" for 2 yr event			
Inflow =	0.48 cfs @	12.10 hrs, Volume=	0.026 af	
Outflow =	0.48 cfs @	12.10 hrs, Volume=	0.026 af,	Atten= 0%, Lag= 0.3 min
Discarded =	0.04 cfs @	12.10 hrs, Volume=	0.003 af	
Primary =	0.45 cfs @	12.10 hrs, Volume=	0.024 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.02' @ 12.10 hrs Surf.Area= 643 sf Storage= 12 cf

Plug-Flow detention time= 0.5 min calculated for 0.026 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (738.1 - 737.7)

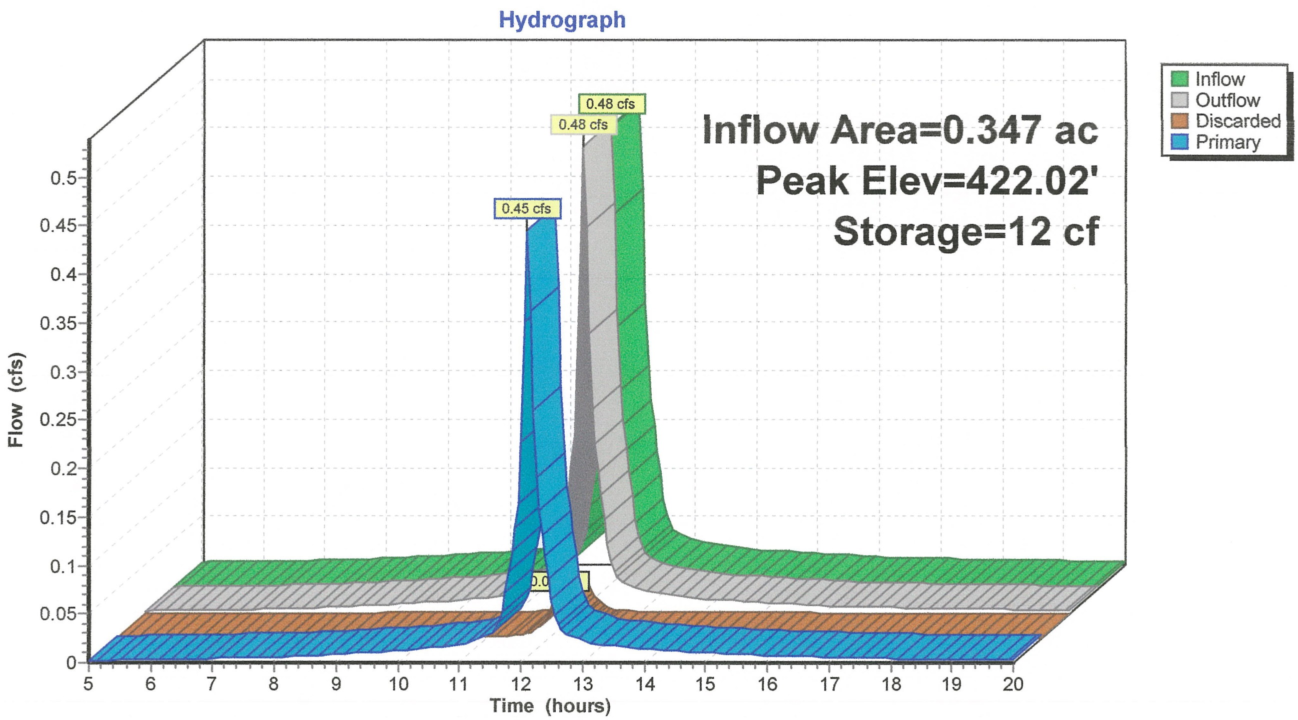
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,451 cf	**12.00'W x 53.00'L x 1.50'H Prismatoid Z=3.1**

Device	Routing	Invert	Outlet Devices
#1	Discarded	422.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	422.00'	**53.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.1' Crest Height

Discarded OutFlow Max=0.04 cfs @ 12.10 hrs HW=422.02' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.43 cfs @ 12.10 hrs HW=422.02' (Free Discharge)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.43 cfs @ 0.44 fps)

Pond 10P: Rain Garden



Summary for Subcatchment 1S: Westerly part of the Buildiing Area (B)

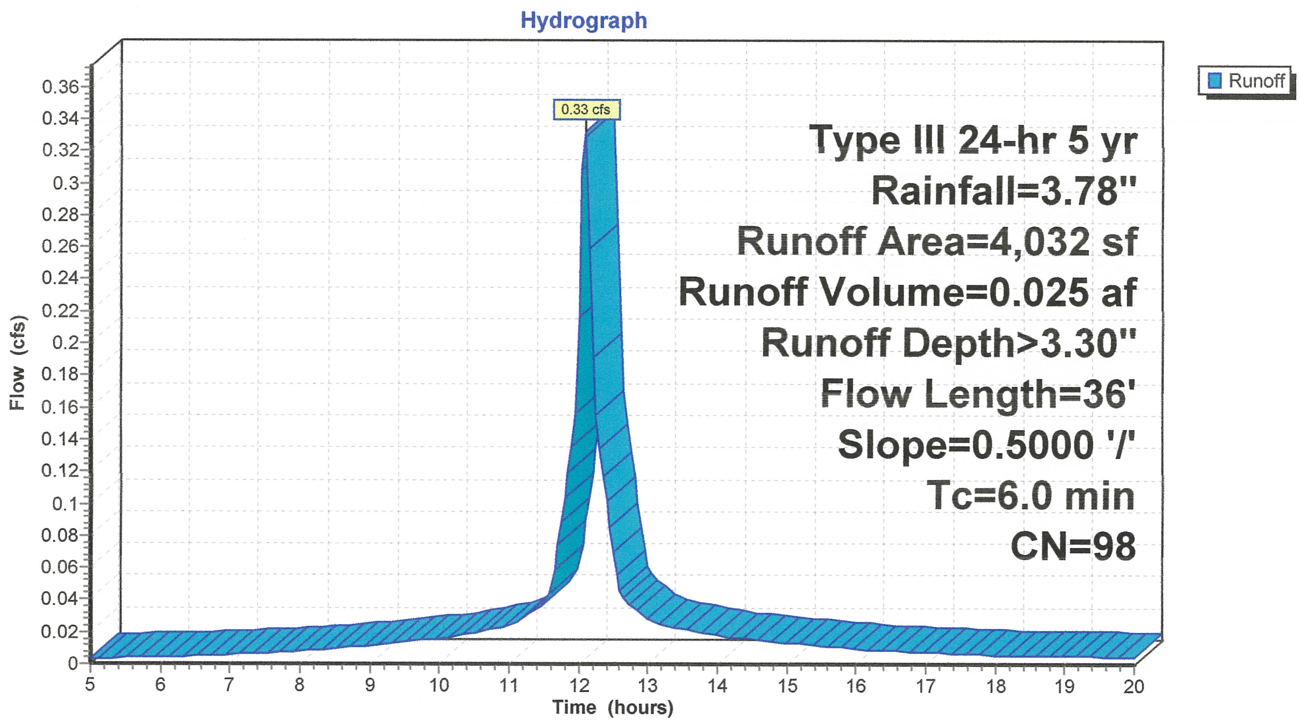
Runoff = 0.33 cfs @ 12.09 hrs, Volume= 0.025 af, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5 yr Rainfall=3.78"

	Area (sf)	CN	Description
*	4,032	98	Roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Westerly part of the Buildiing Area (B)



Summary for Subcatchment 2S: Westerly part of site (E)

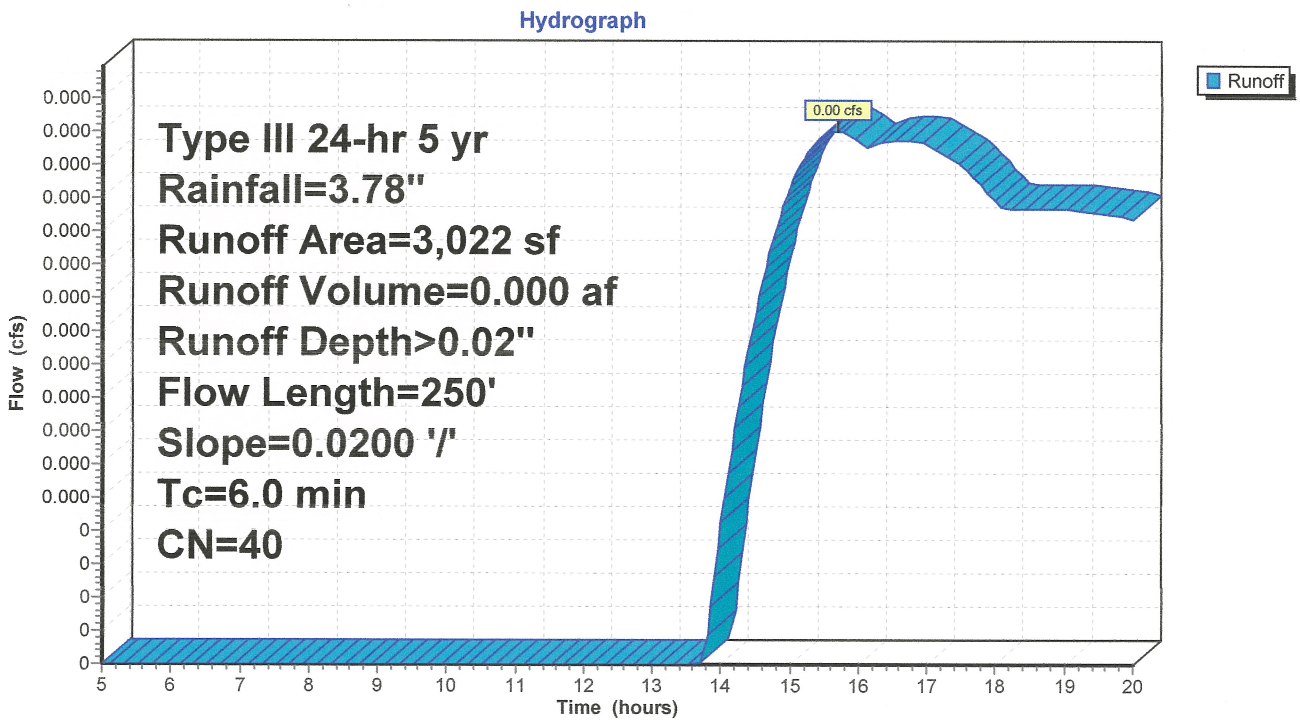
Runoff = 0.00 cfs @ 15.67 hrs, Volume= 0.000 af, Depth> 0.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5 yr Rainfall=3.78"

	Area (sf)	CN	Description
	2,677	39	>75% Grass cover, Good, HSG A
*	345	48	Brush, Poor, HSG A (slope to river)
	3,022	40	Weighted Average
	3,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	125	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
0.9	125	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
1.6	250	Total,	Increased to minimum Tc = 6.0 min		

Subcatchment 2S: Westerly part of site (E)



Summary for Subcatchment 3S: Northerly & Easterly part of site (A)

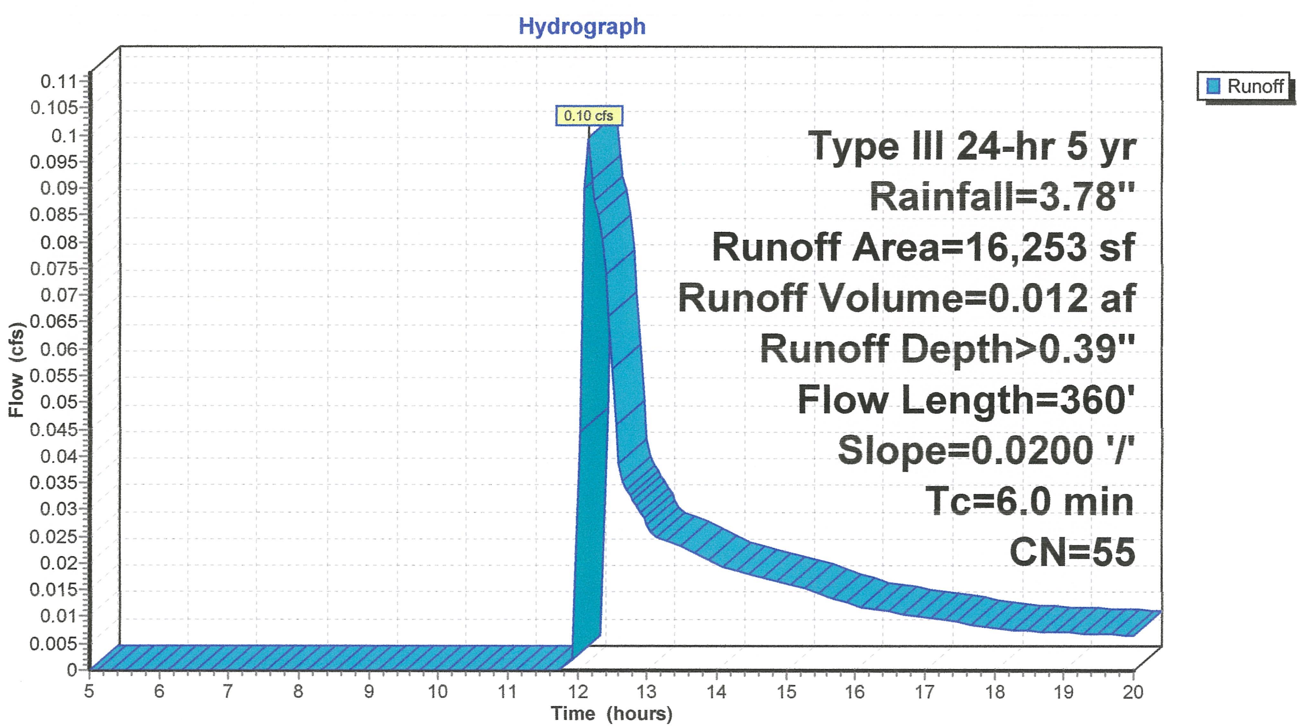
Runoff = 0.10 cfs @ 12.15 hrs, Volume= 0.012 af, Depth> 0.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5 yr Rainfall=3.78"

	Area (sf)	CN	Description
*	3,635	98	pavement
	4,950	48	Brush, Poor, HSG A
	7,668	39	>75% Grass cover, Good, HSG A
	16,253	55	Weighted Average
	12,618		77.63% Pervious Area
	3,635		22.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	140	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
1.6	220	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
2.4	360	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 3S: Northerly & Easterly part of site (A)



Summary for Subcatchment 4S: Easterly part of the Building Area (C)

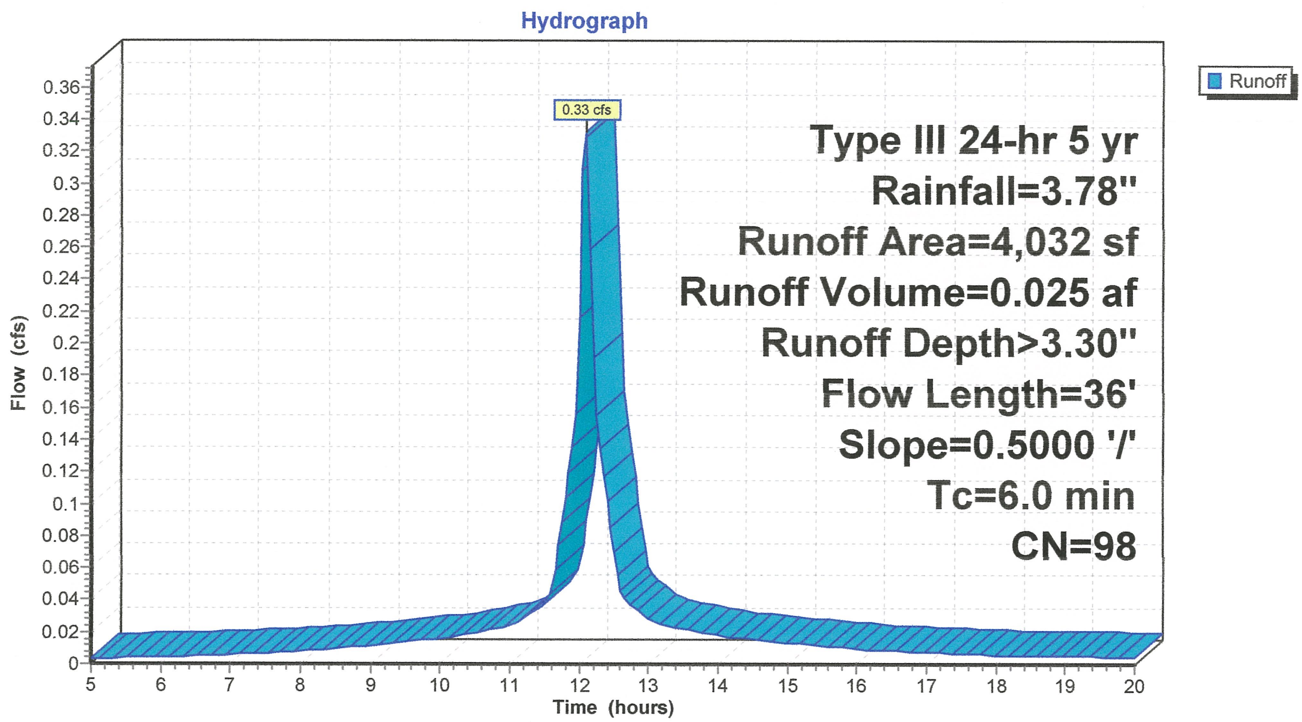
Runoff = 0.33 cfs @ 12.09 hrs, Volume= 0.025 af, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5 yr Rainfall=3.78"

	Area (sf)	CN	Description
*	4,032	98	roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, Building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 4S: Easterly part of the Building Area (C)



Summary for Subcatchment 5S: Central part of site (D)

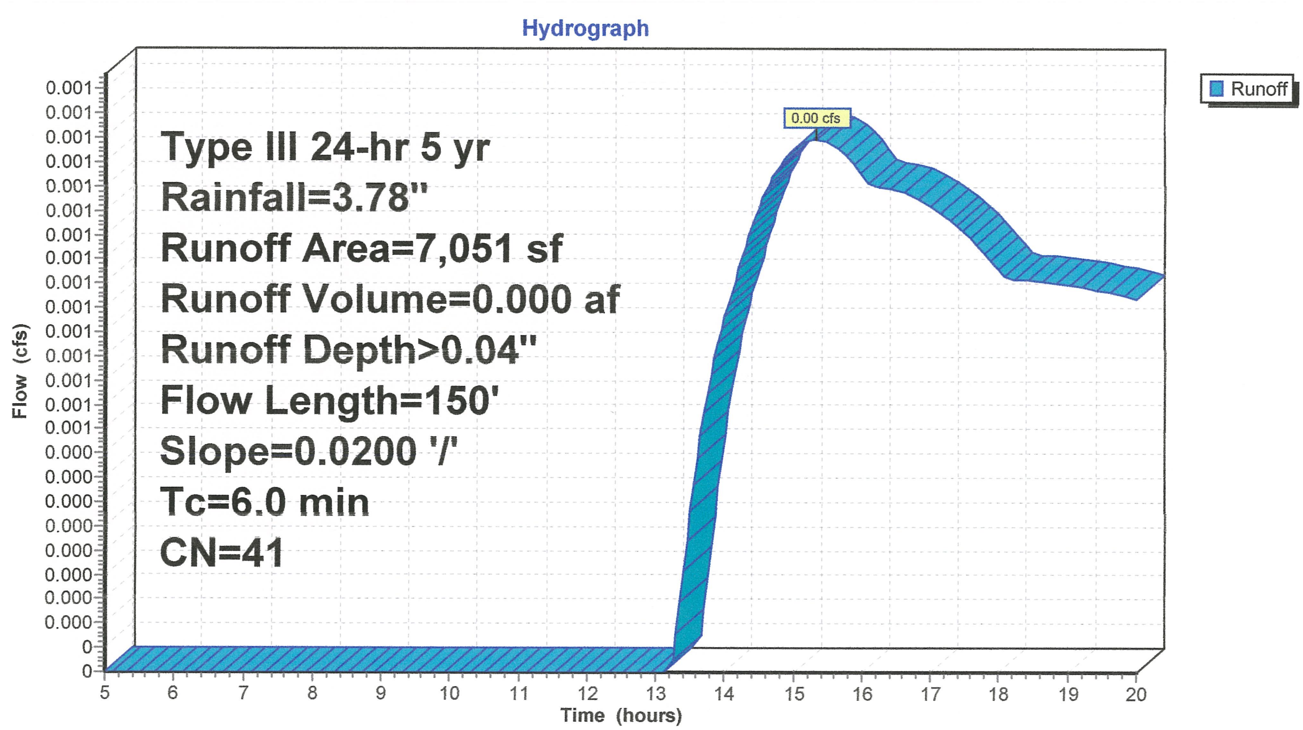
Runoff = 0.00 cfs @ 15.33 hrs, Volume= 0.000 af, Depth> 0.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5 yr Rainfall=3.78"

	Area (sf)	CN	Description
	5,854	39	>75% Grass cover, Good, HSG A
*	1,197	48	Brush, Poor, HSG A Slope to river
	7,051	41	Weighted Average
	7,051		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.0200	2.87		**Shallow Concentrated Flow, conc** Paved Kv= 20.3 fps
1.0	130	0.0200	2.28		**Shallow Concentrated Flow, overland** Unpaved Kv= 16.1 fps
1.1	150	Total, Increased to minimum Tc = 6.0 min			

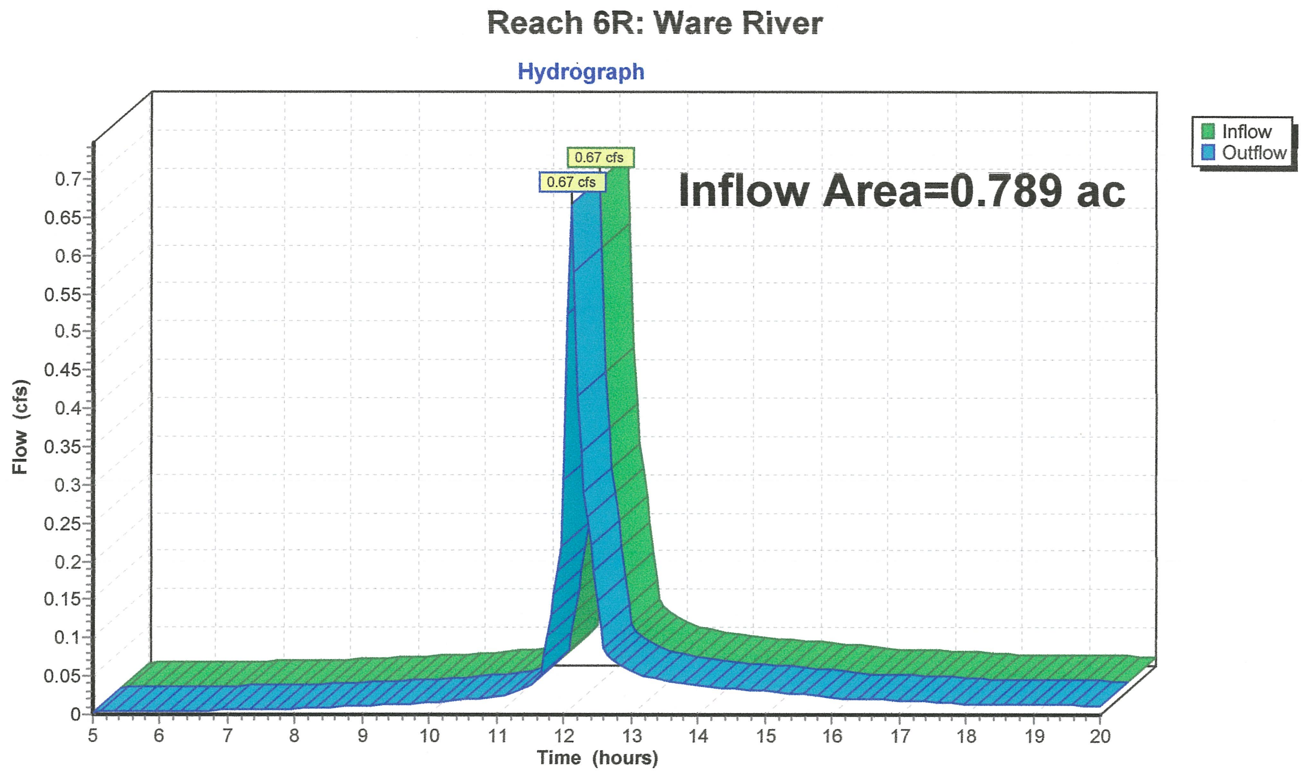
Subcatchment 5S: Central part of site (D)



Summary for Reach 6R: Ware River

Inflow Area = 0.789 ac, 34.02% Impervious, Inflow Depth > 0.66" for 5 yr event
Inflow = 0.67 cfs @ 12.11 hrs, Volume= 0.044 af
Outflow = 0.67 cfs @ 12.11 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Summary for Pond 7P: Drip Strip (C-1)

Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 3.30" for 5 yr event
Inflow = 0.33 cfs @ 12.09 hrs, Volume= 0.025 af
Outflow = 0.33 cfs @ 12.10 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.5 min
Discarded = 0.03 cfs @ 12.10 hrs, Volume= 0.008 af
Primary = 0.31 cfs @ 12.10 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.09' @ 12.10 hrs Surf.Area= 463 sf Storage= 13 cf

Plug-Flow detention time= 0.9 min calculated for 0.025 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (737.7 - 737.1)

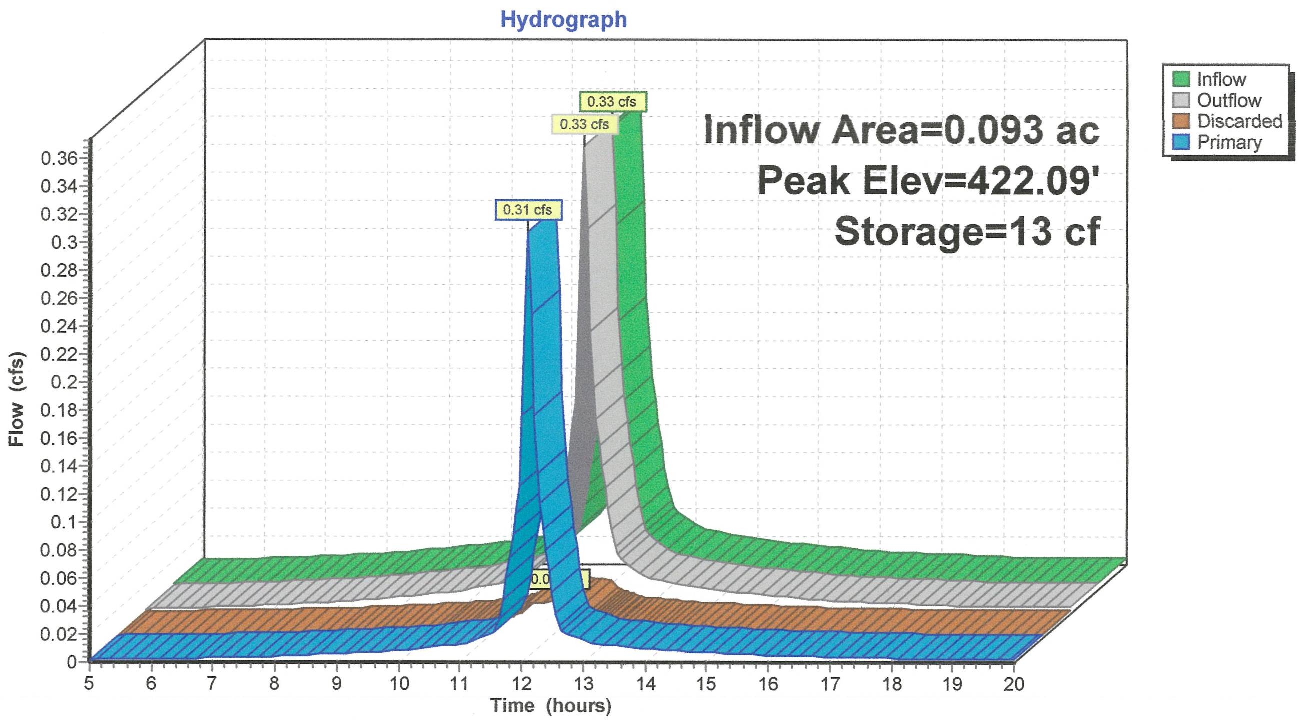
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.10 hrs HW=422.09' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.30 cfs @ 12.10 hrs HW=422.09' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 0.82 fps)

Pond 7P: Drip Strip (C-1)



Summary for Pond 8P: Drip Strip (B-1)

Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 3.30" for 5 yr event
Inflow = 0.33 cfs @ 12.09 hrs, Volume= 0.025 af
Outflow = 0.33 cfs @ 12.10 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.5 min
Discarded = 0.03 cfs @ 12.10 hrs, Volume= 0.008 af
Primary = 0.31 cfs @ 12.10 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.09' @ 12.10 hrs Surf.Area= 463 sf Storage= 13 cf

Plug-Flow detention time= 0.9 min calculated for 0.025 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (737.7 - 737.1)

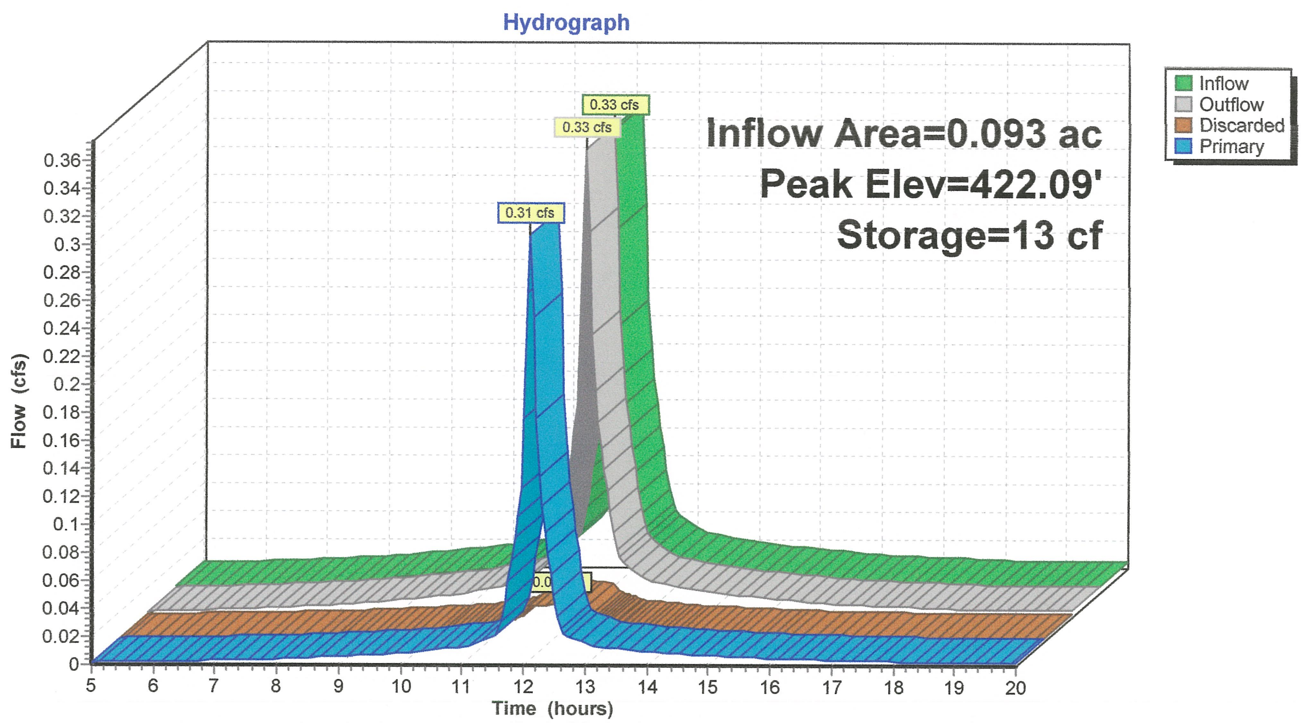
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.10 hrs HW=422.09' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.30 cfs @ 12.10 hrs HW=422.09' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 0.82 fps)

Pond 8P: Drip Strip (B-1)



Summary for Pond 10P: Rain Garden

Inflow Area =	0.347 ac, 53.35% Impervious, Inflow Depth > 1.20" for 5 yr event		
Inflow =	0.61 cfs @ 12.10 hrs, Volume=	0.035 af	
Outflow =	0.61 cfs @ 12.10 hrs, Volume=	0.035 af,	Atten= 0%, Lag= 0.3 min
Discarded =	0.04 cfs @ 12.10 hrs, Volume=	0.003 af	
Primary =	0.58 cfs @ 12.10 hrs, Volume=	0.032 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.02' @ 12.10 hrs Surf.Area= 645 sf Storage= 14 cf

Plug-Flow detention time= 0.5 min calculated for 0.035 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (739.7 - 739.3)

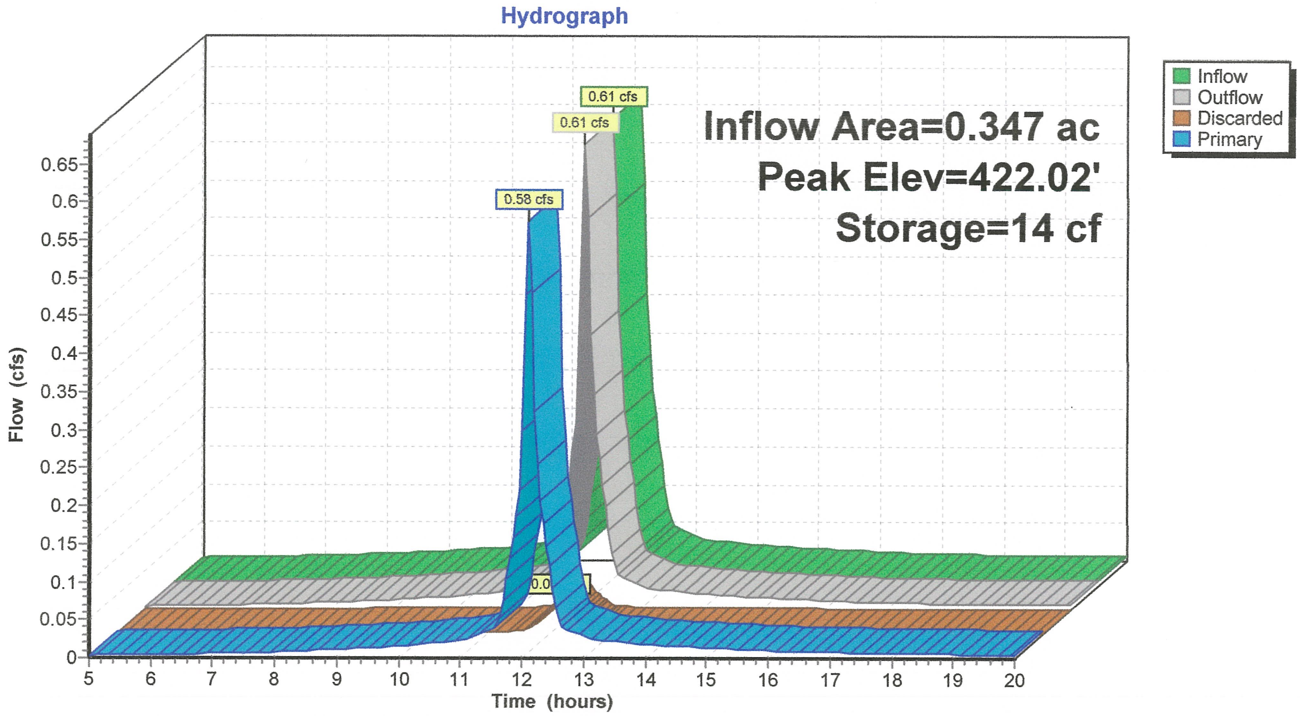
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,451 cf	**12.00'W x 53.00'L x 1.50'H Prismatoid Z=3.1**

Device	Routing	Invert	Outlet Devices
#1	Discarded	422.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	422.00'	**53.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.1' Crest Height

Discarded OutFlow Max=0.04 cfs @ 12.10 hrs HW=422.02' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.55 cfs @ 12.10 hrs HW=422.02' (Free Discharge)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.55 cfs @ 0.48 fps)

Pond 10P: Rain Garden



Summary for Subcatchment 1S: Westerly part of the Buildiing Area (B)

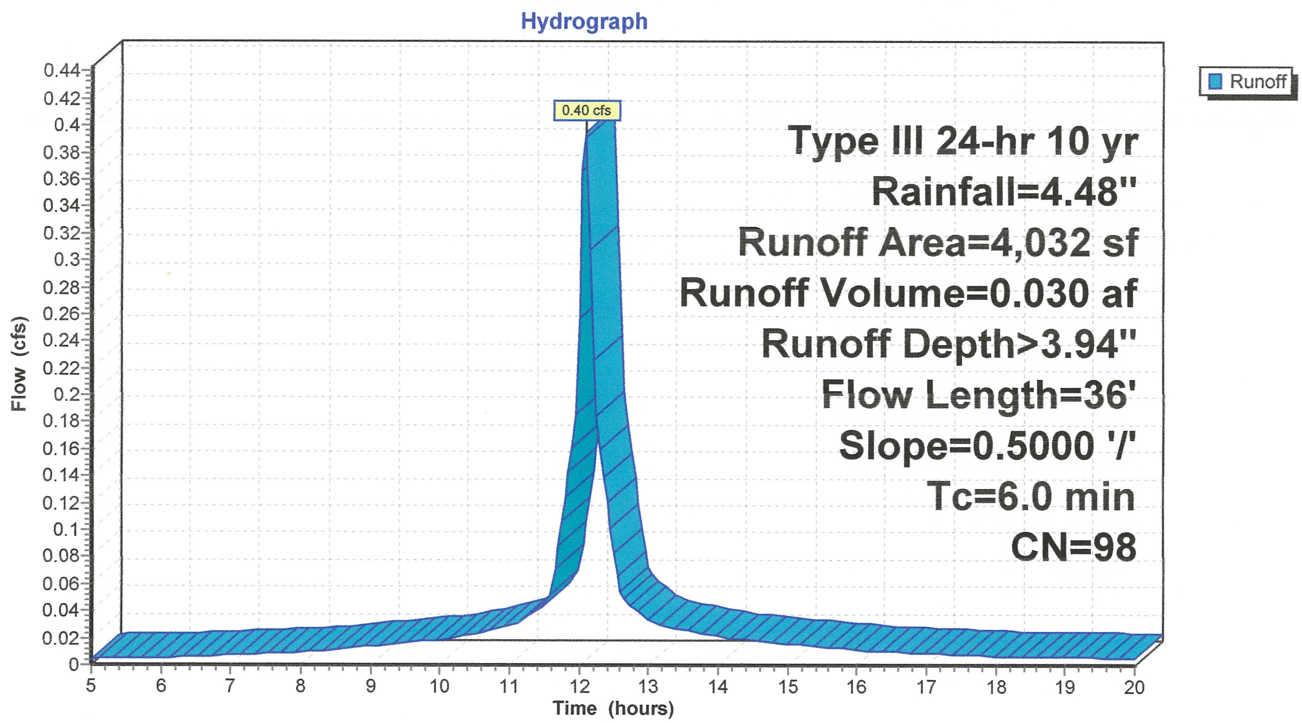
Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.030 af, Depth> 3.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.48"

	Area (sf)	CN	Description
*	4,032	98	Roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Westerly part of the Buildiing Area (B)



Summary for Subcatchment 2S: Westerly part of site (E)

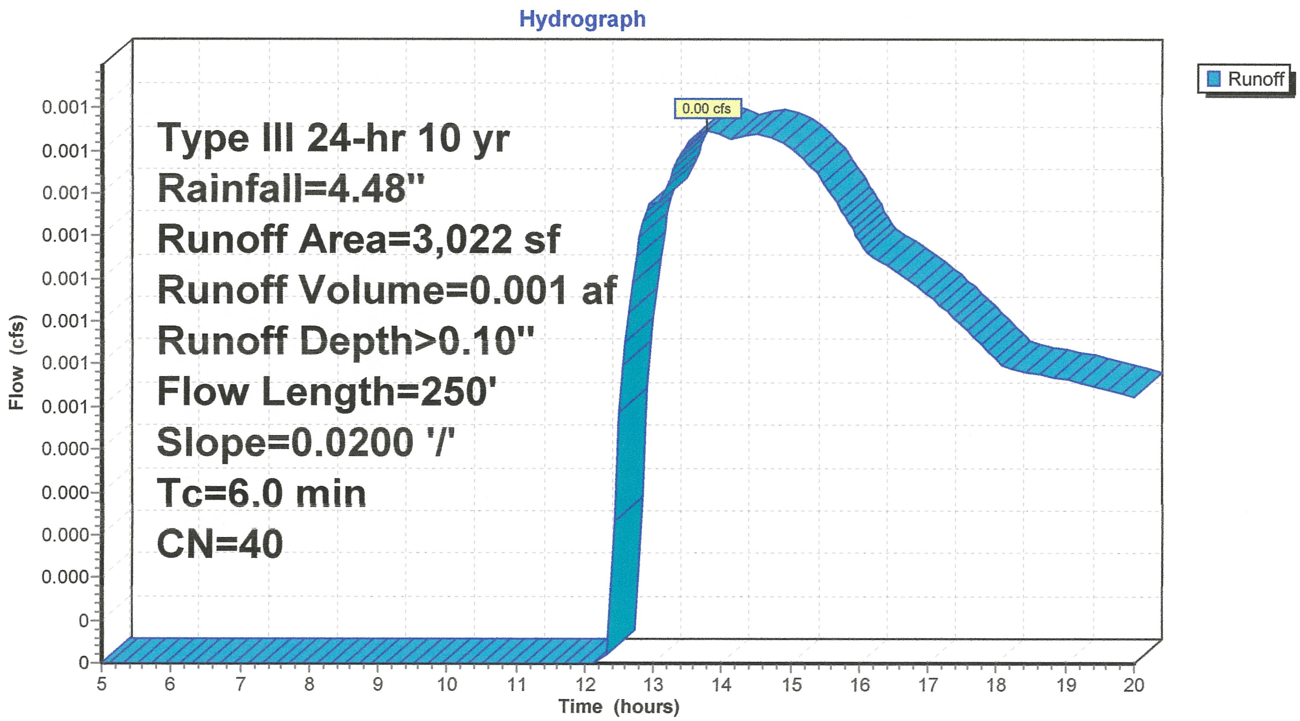
Runoff = 0.00 cfs @ 13.79 hrs, Volume= 0.001 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.48"

	Area (sf)	CN	Description
	2,677	39	>75% Grass cover, Good, HSG A
*	345	48	Brush, Poor, HSG A (slope to river)
	3,022	40	Weighted Average
	3,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	125	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
0.9	125	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
1.6	250	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site (E)



Summary for Subcatchment 3S: Northerly & Easterly part of site (A)

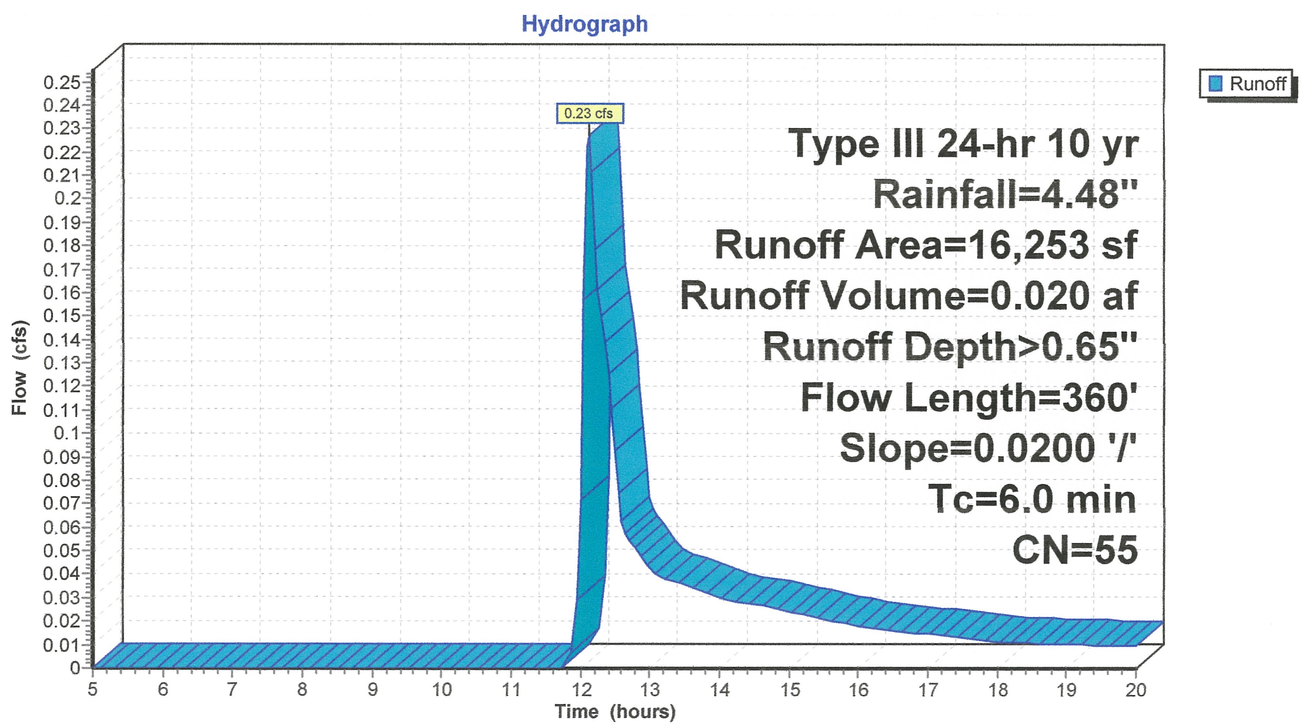
Runoff = 0.23 cfs @ 12.12 hrs, Volume= 0.020 af, Depth> 0.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.48"

	Area (sf)	CN	Description
*	3,635	98	pavement
	4,950	48	Brush, Poor, HSG A
	7,668	39	>75% Grass cover, Good, HSG A
	16,253	55	Weighted Average
	12,618		77.63% Pervious Area
	3,635		22.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	140	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
1.6	220	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
2.4	360	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 3S: Northerly & Easterly part of site (A)



Summary for Subcatchment 4S: Easterly part of the Building Area (C)

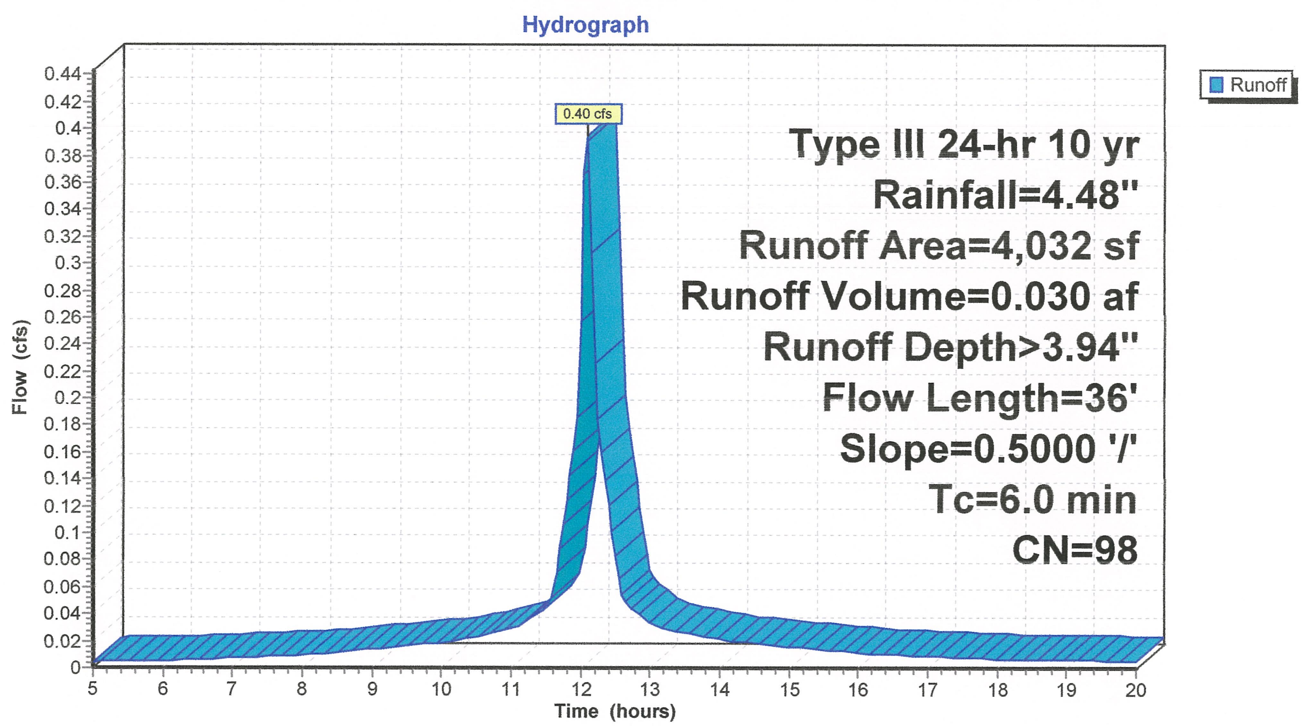
Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.030 af, Depth> 3.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.48"

	Area (sf)	CN	Description
*	4,032	98	roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, Building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 4S: Easterly part of the Building Area (C)



Summary for Subcatchment 5S: Central part of site (D)

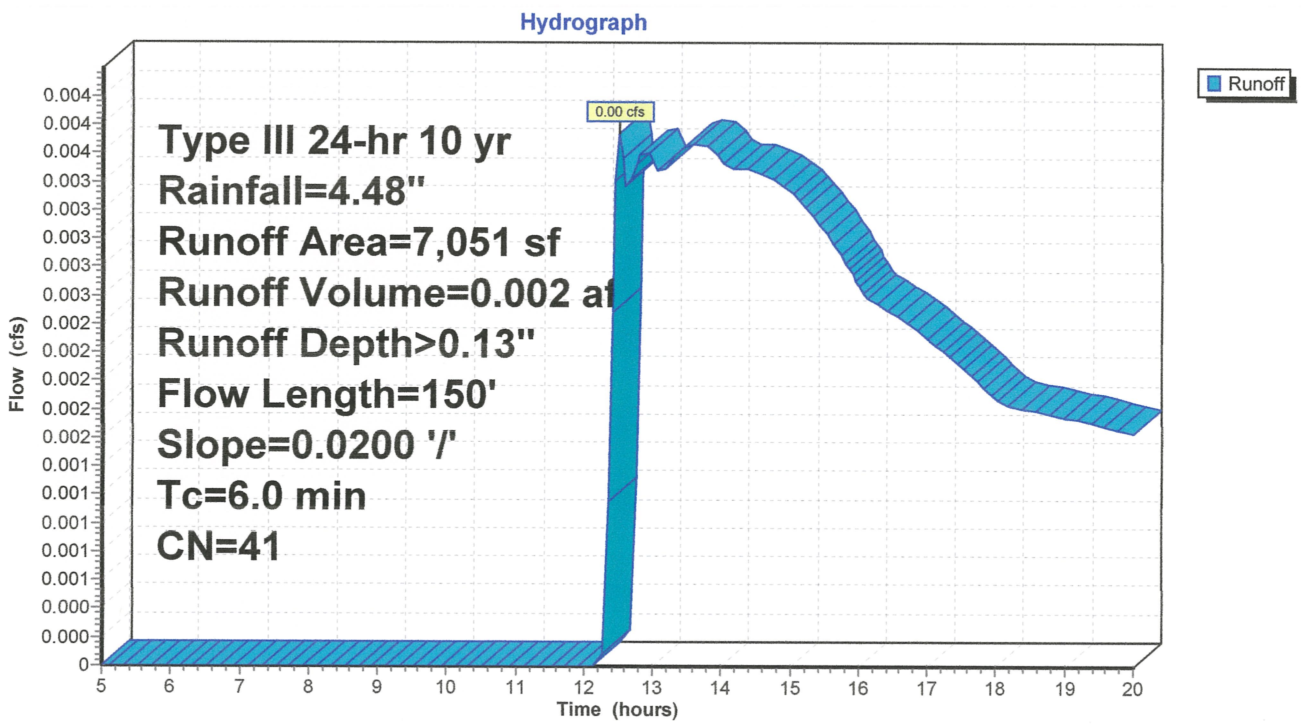
Runoff = 0.00 cfs @ 12.51 hrs, Volume= 0.002 af, Depth> 0.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.48"

	Area (sf)	CN	Description
	5,854	39	>75% Grass cover, Good, HSG A
*	1,197	48	Brush, Poor, HSG A Slope to river
	7,051	41	Weighted Average
	7,051		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.0200	2.87		**Shallow Concentrated Flow, conc** Paved Kv= 20.3 fps
1.0	130	0.0200	2.28		**Shallow Concentrated Flow, overland** Unpaved Kv= 16.1 fps
1.1	150	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 5S: Central part of site (D)

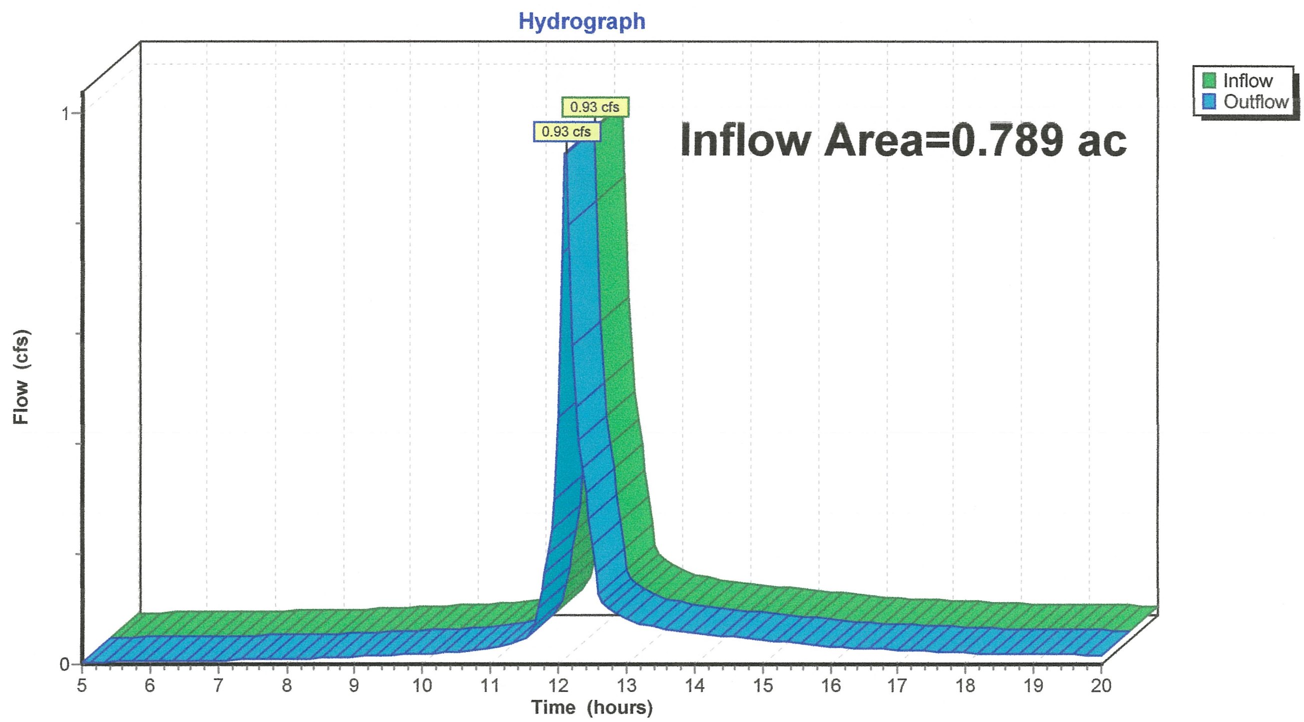


Summary for Reach 6R: Ware River

Inflow Area = 0.789 ac, 34.02% Impervious, Inflow Depth > 0.91" for 10 yr event
Inflow = 0.93 cfs @ 12.10 hrs, Volume= 0.060 af
Outflow = 0.93 cfs @ 12.10 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Ware River



Summary for Pond 7P: Drip Strip (C-1)

Inflow Area =	0.093 ac,100.00% Impervious,	Inflow Depth > 3.94"	for 10 yr event	
Inflow =	0.40 cfs @	12.09 hrs, Volume=	0.030 af	
Outflow =	0.40 cfs @	12.10 hrs, Volume=	0.030 af,	Atten= 0%, Lag= 0.5 min
Discarded =	0.03 cfs @	12.10 hrs, Volume=	0.010 af	
Primary =	0.37 cfs @	12.10 hrs, Volume=	0.021 af	

~~Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs~~
Peak Elev= 422.11' @ 12.10 hrs Surf.Area= 467 sf Storage= 14 cf

Plug-Flow detention time= 0.9 min calculated for 0.030 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (736.5 - 735.8)

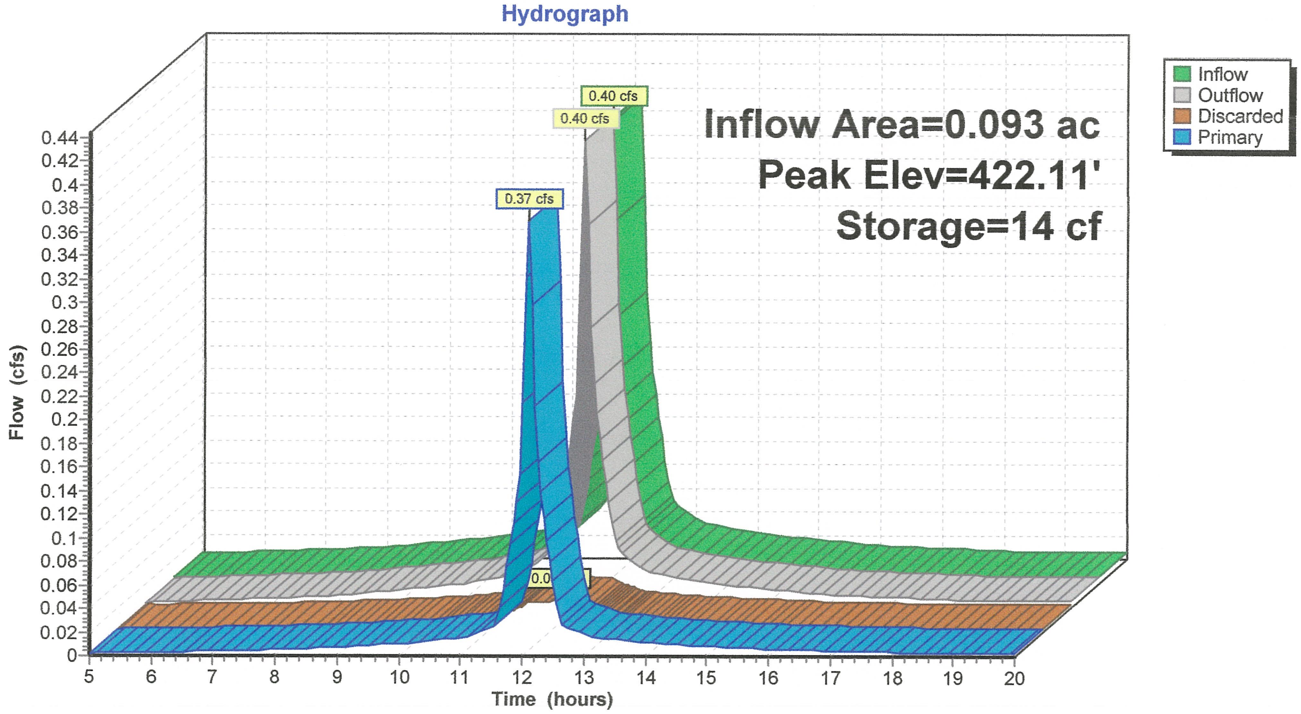
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.10 hrs HW=422.10' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.36 cfs @ 12.10 hrs HW=422.10' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.36 cfs @ 0.87 fps)

Pond 7P: Drip Strip (C-1)



Summary for Pond 8P: Drip Strip (B-1)

Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 3.94" for 10 yr event
Inflow = 0.40 cfs @ 12.09 hrs, Volume= 0.030 af
Outflow = 0.40 cfs @ 12.10 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.5 min
Discarded = 0.03 cfs @ 12.10 hrs, Volume= 0.010 af
Primary = 0.37 cfs @ 12.10 hrs, Volume= 0.021 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.11' @ 12.10 hrs Surf.Area= 467 sf Storage= 14 cf

Plug-Flow detention time= 0.9 min calculated for 0.030 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (736.5 - 735.8)

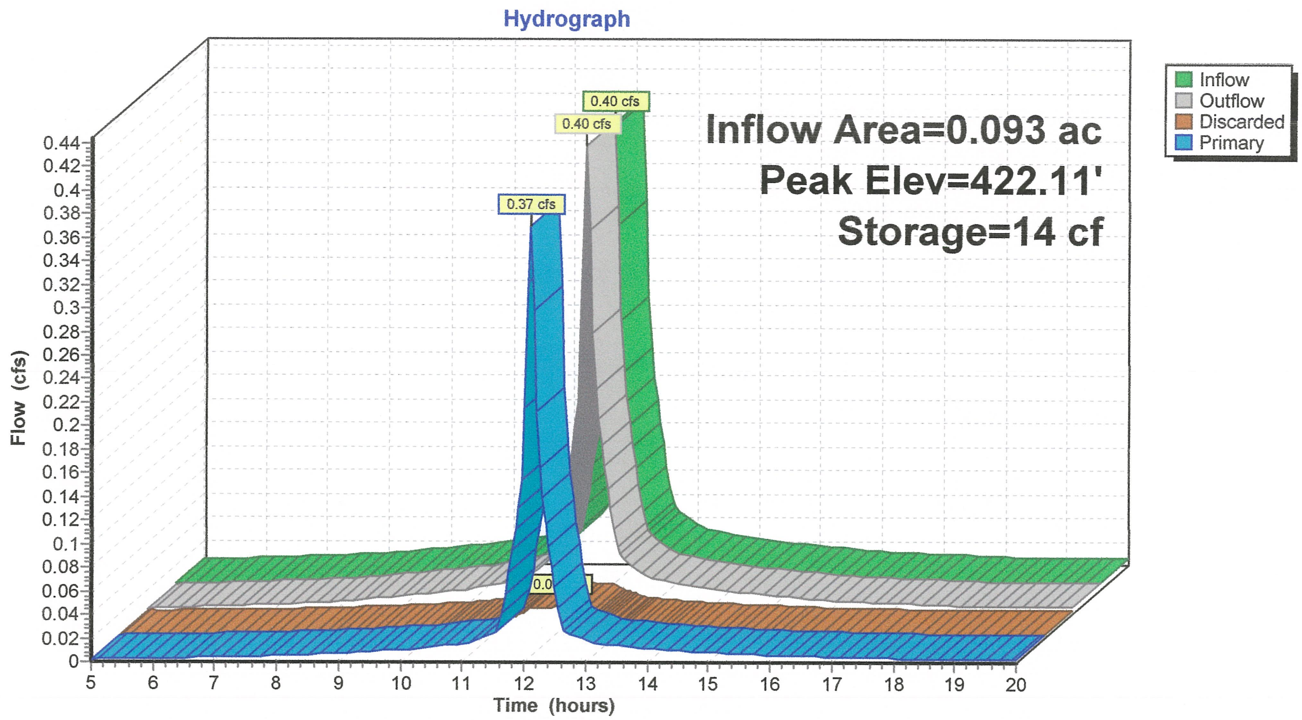
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.10 hrs HW=422.10' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.36 cfs @ 12.10 hrs HW=422.10' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.36 cfs @ 0.87 fps)

Pond 8P: Drip Strip (B-1)



Summary for Pond 10P: Rain Garden

Inflow Area =	0.347 ac,	53.35% Impervious,	Inflow Depth > 1.50"	for 10 yr event
Inflow =	0.74 cfs @	12.10 hrs, Volume=	0.043 af	
Outflow =	0.74 cfs @	12.10 hrs, Volume=	0.043 af,	Atten= 0%, Lag= 0.3 min
Discarded =	0.04 cfs @	12.10 hrs, Volume=	0.004 af	
Primary =	0.70 cfs @	12.10 hrs, Volume=	0.039 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.02' @ 12.10 hrs Surf.Area= 646 sf Storage= 16 cf

Plug-Flow detention time= 0.5 min calculated for 0.043 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (742.7 - 742.3)

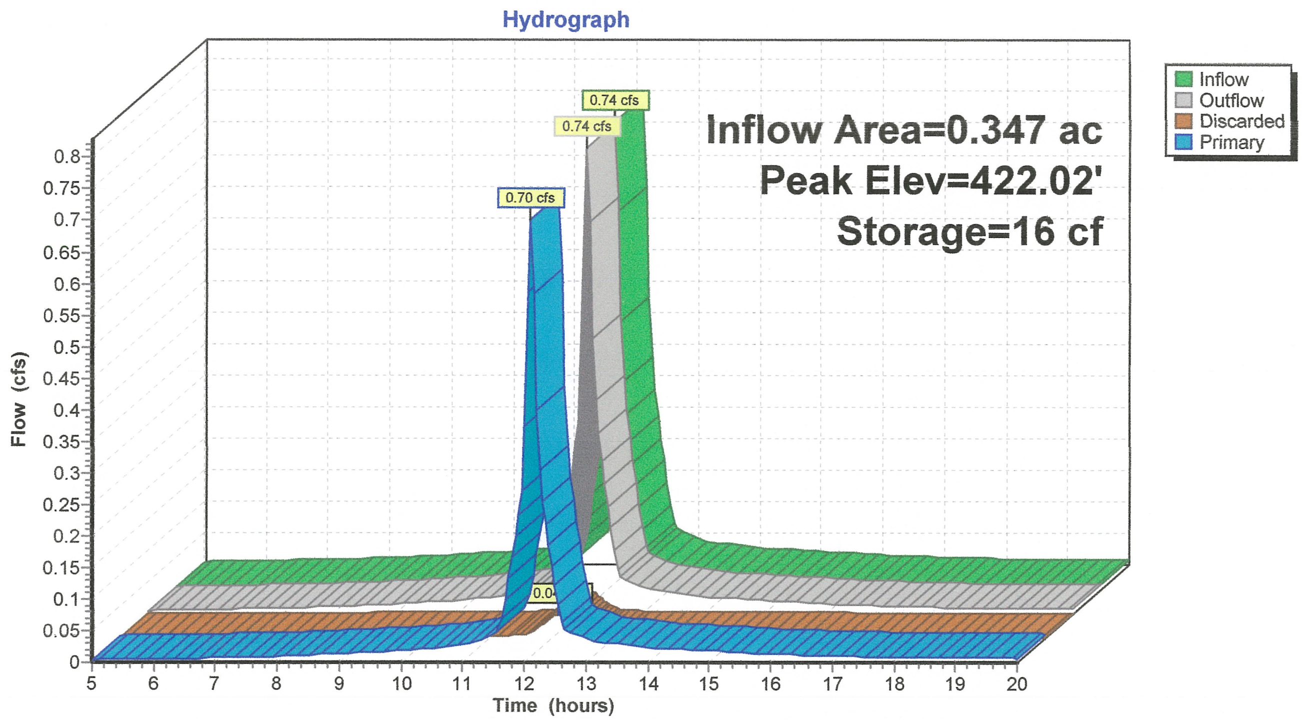
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,451 cf	**12.00'W x 53.00'L x 1.50'H Prismatoid Z=3.1**

Device	Routing	Invert	Outlet Devices
#1	Discarded	422.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	422.00'	**53.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.1' Crest Height

Discarded OutFlow Max=0.04 cfs @ 12.10 hrs HW=422.02' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.68 cfs @ 12.10 hrs HW=422.02' (Free Discharge)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.68 cfs @ 0.52 fps)

Pond 10P: Rain Garden



Summary for Subcatchment 1S: Westerly part of the Buildiing Area (B)

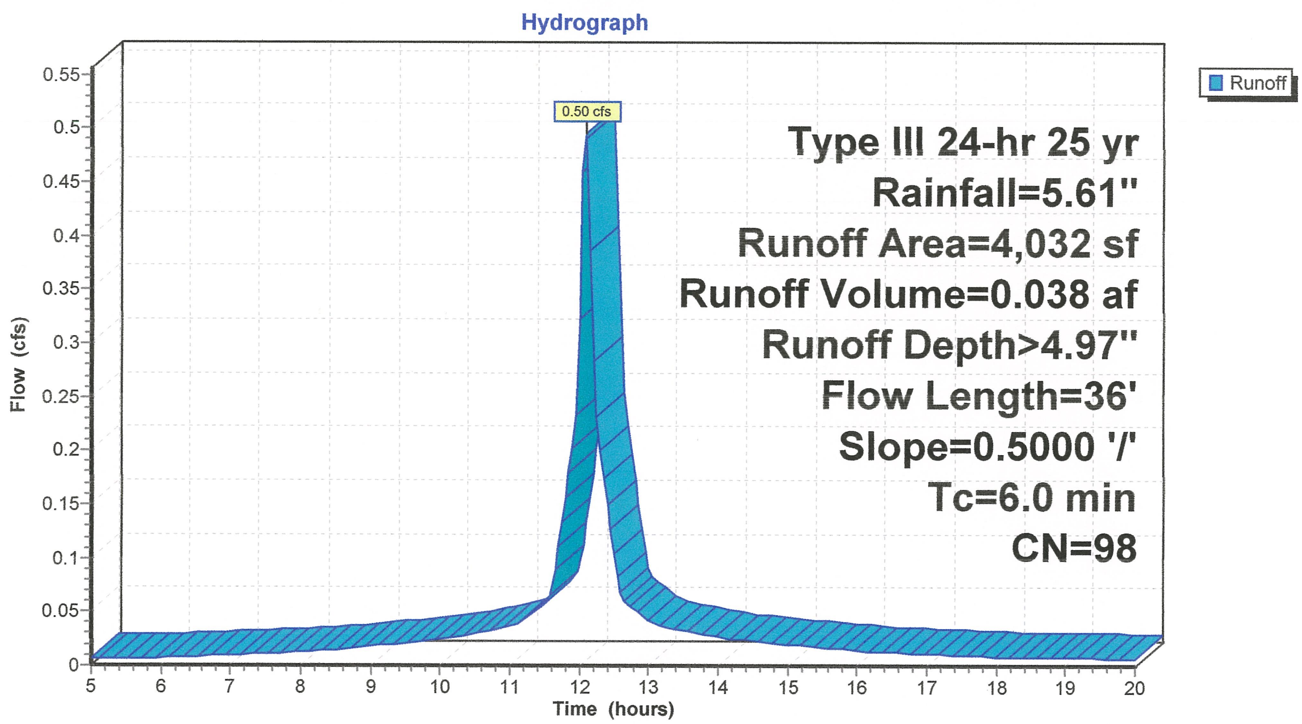
Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 4.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.61"

	Area (sf)	CN	Description
*	4,032	98	Roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Westerly part of the Buildiing Area (B)



Summary for Subcatchment 2S: Westerly part of site (E)

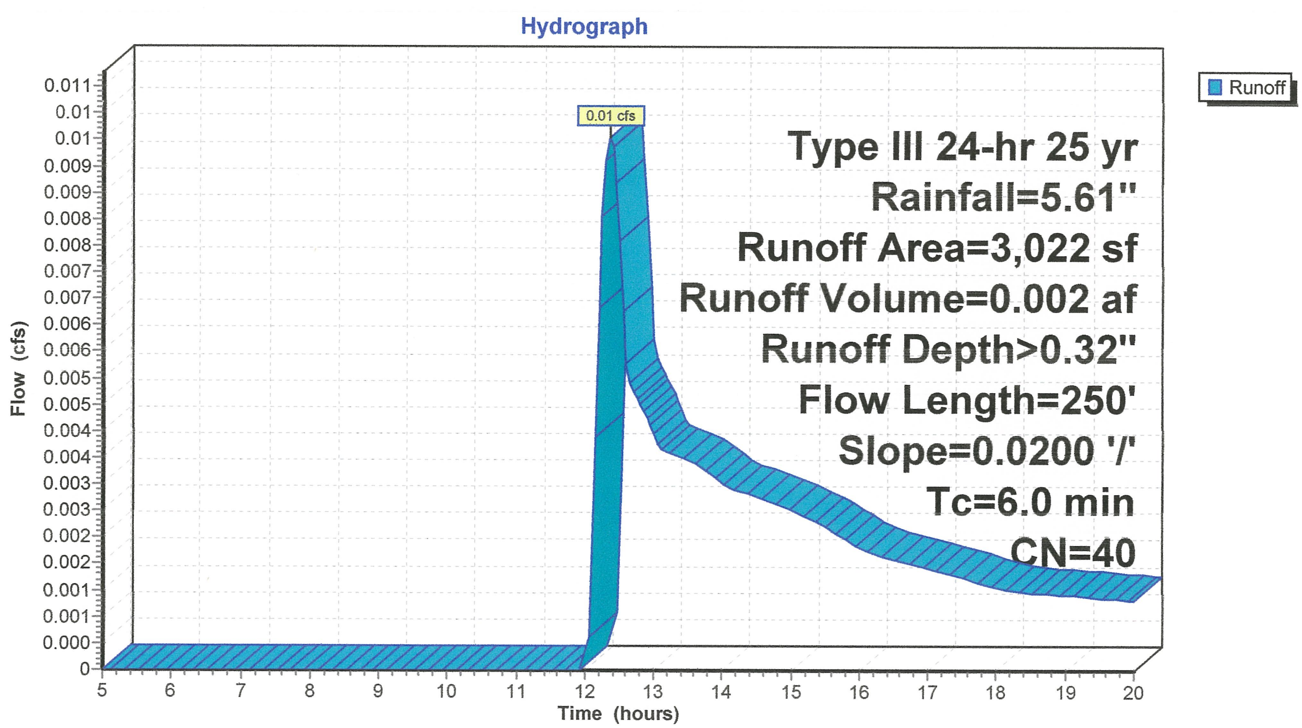
Runoff = 0.01 cfs @ 12.36 hrs, Volume= 0.002 af, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.61"

	Area (sf)	CN	Description
	2,677	39	>75% Grass cover, Good, HSG A
*	345	48	Brush, Poor, HSG A (slope to river)
	3,022	40	Weighted Average
	3,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	125	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
0.9	125	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
1.6	250	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site (E)



Summary for Subcatchment 3S: Northerly & Easterly part of site (A)

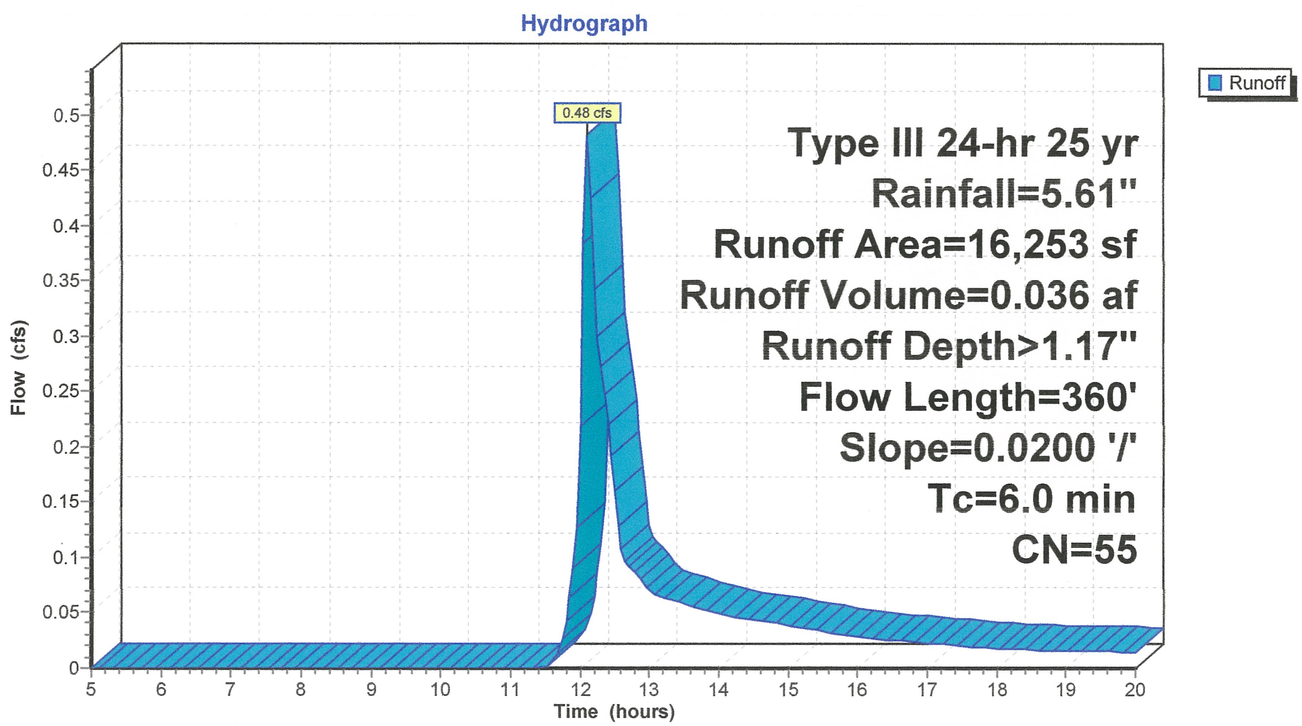
Runoff = 0.48 cfs @ 12.11 hrs, Volume= 0.036 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.61"

	Area (sf)	CN	Description
*	3,635	98	pavement
	4,950	48	Brush, Poor, HSG A
	7,668	39	>75% Grass cover, Good, HSG A
	16,253	55	Weighted Average
	12,618		77.63% Pervious Area
	3,635		22.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	140	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
1.6	220	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
2.4	360	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 3S: Northerly & Easterly part of site (A)



Summary for Subcatchment 4S: Easterly part of the Building Area (C)

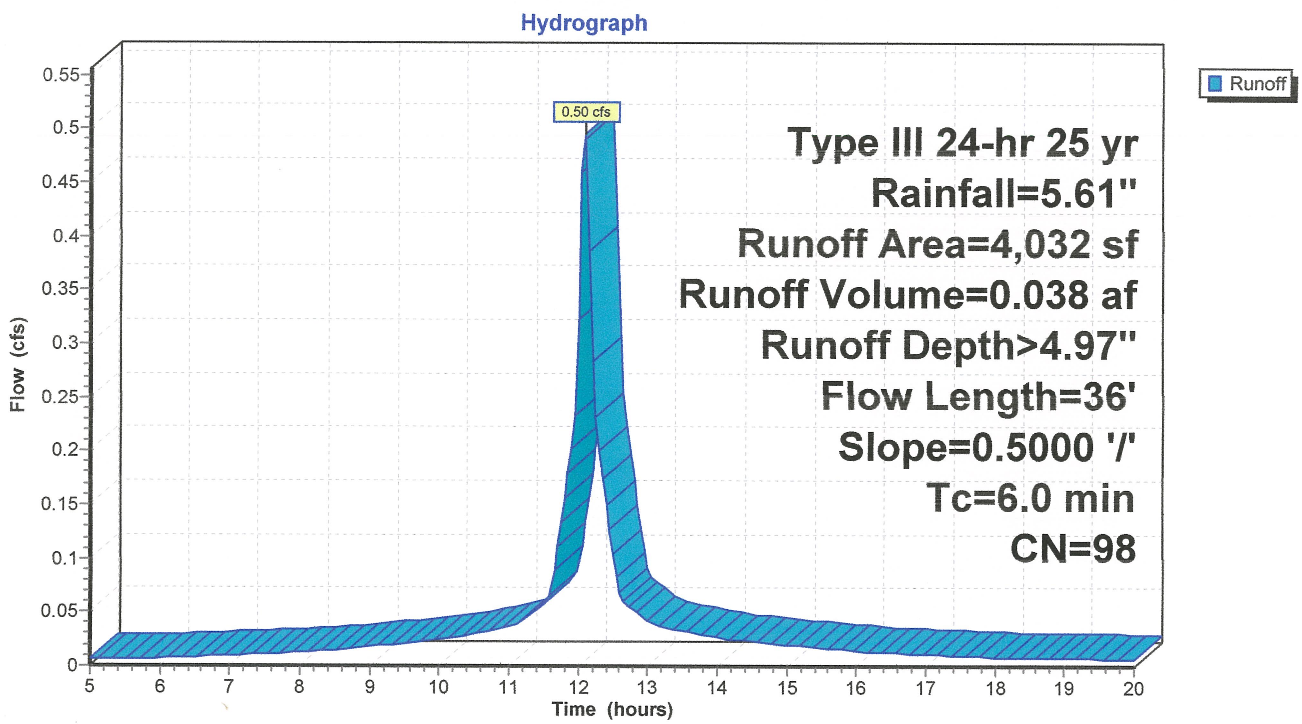
Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af, Depth> 4.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.61"

	Area (sf)	CN	Description
*	4,032	98	roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, Building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 4S: Easterly part of the Building Area (C)



Summary for Subcatchment 5S: Central part of site (D)

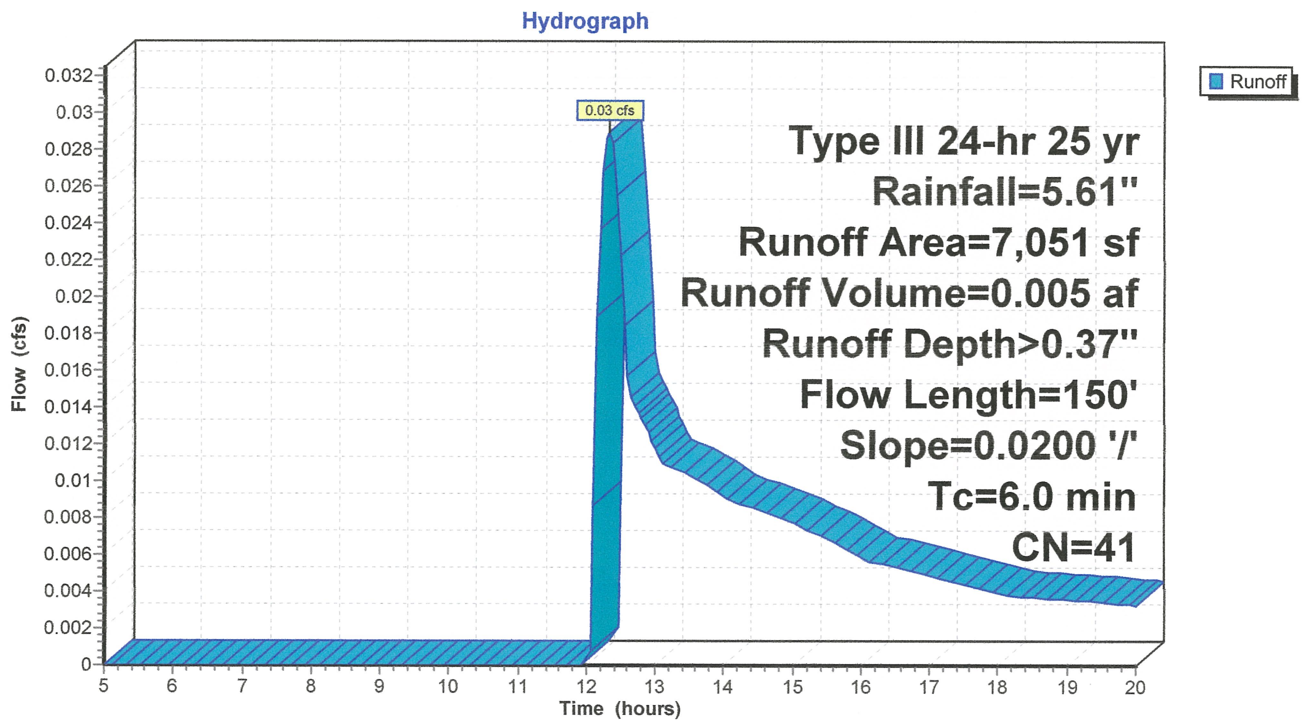
Runoff = 0.03 cfs @ 12.34 hrs, Volume= 0.005 af, Depth> 0.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.61"

	Area (sf)	CN	Description
	5,854	39	>75% Grass cover, Good, HSG A
*	1,197	48	Brush, Poor, HSG A Slope to river
	7,051	41	Weighted Average
	7,051		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.0200	2.87		**Shallow Concentrated Flow, conc** Paved Kv= 20.3 fps
1.0	130	0.0200	2.28		**Shallow Concentrated Flow, overland** Unpaved Kv= 16.1 fps
1.1	150	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 5S: Central part of site (D)

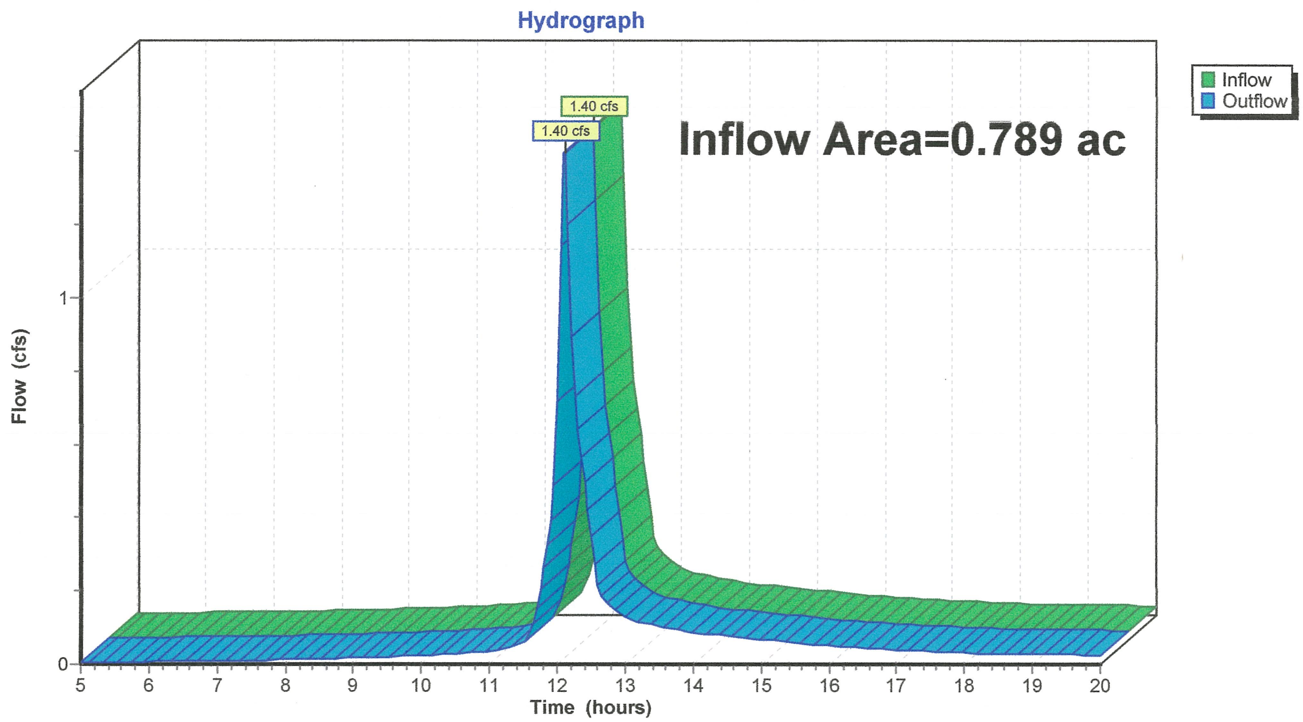


Summary for Reach 6R: Ware River

Inflow Area = 0.789 ac, 34.02% Impervious, Inflow Depth > 1.39" for 25 yr event
Inflow = 1.40 cfs @ 12.10 hrs, Volume= 0.092 af
Outflow = 1.40 cfs @ 12.10 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Ware River



Summary for Pond 7P: Drip Strip (C-1)

Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 4.97" for 25 yr event
Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.5 min
Discarded = 0.03 cfs @ 12.09 hrs, Volume= 0.012 af
Primary = 0.47 cfs @ 12.09 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.12' @ 12.09 hrs Surf.Area= 471 sf Storage= 17 cf

Plug-Flow detention time= 0.8 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (735.1 - 734.5)

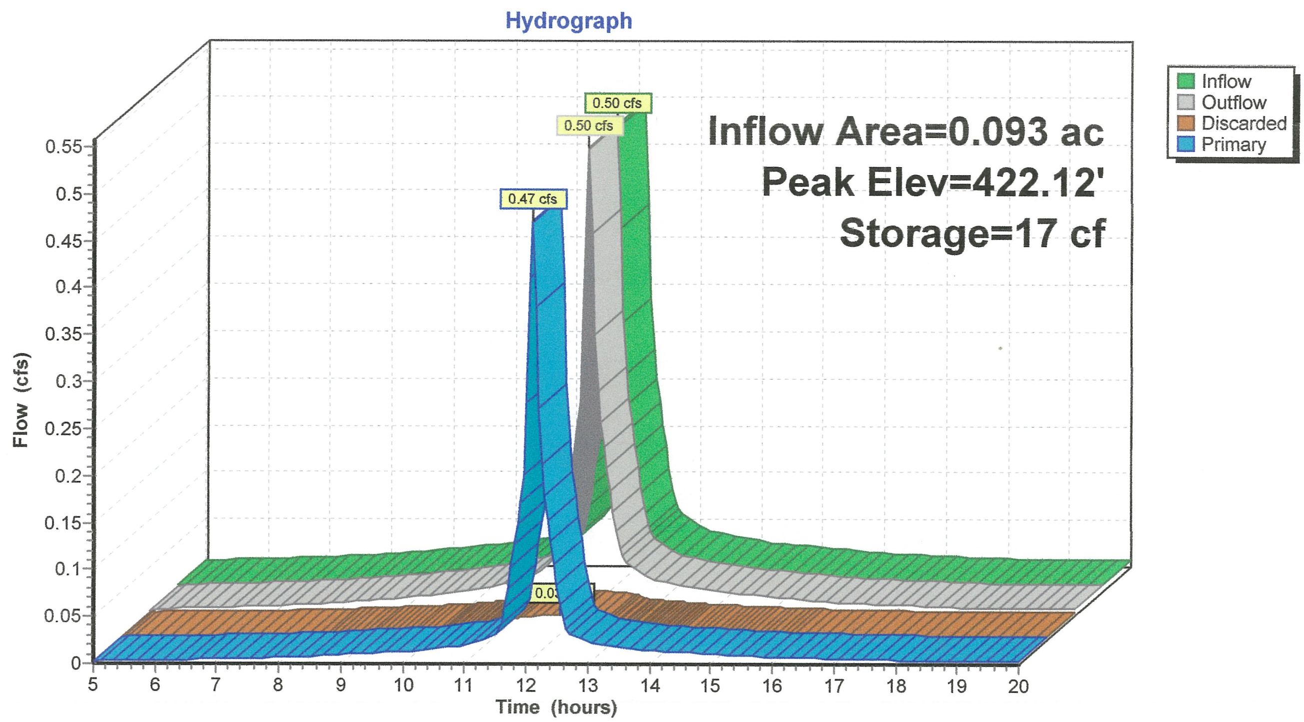
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=422.12' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.46 cfs @ 12.09 hrs HW=422.12' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.46 cfs @ 0.94 fps)

Pond 7P: Drip Strip (C-1)



Summary for Pond 8P: Drip Strip (B-1)

Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 4.97" for 25 yr event
Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.50 cfs @ 12.09 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.5 min
Discarded = 0.03 cfs @ 12.09 hrs, Volume= 0.012 af
Primary = 0.47 cfs @ 12.09 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.12' @ 12.09 hrs Surf.Area= 471 sf Storage= 17 cf

Plug-Flow detention time= 0.8 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (735.1 - 734.5)

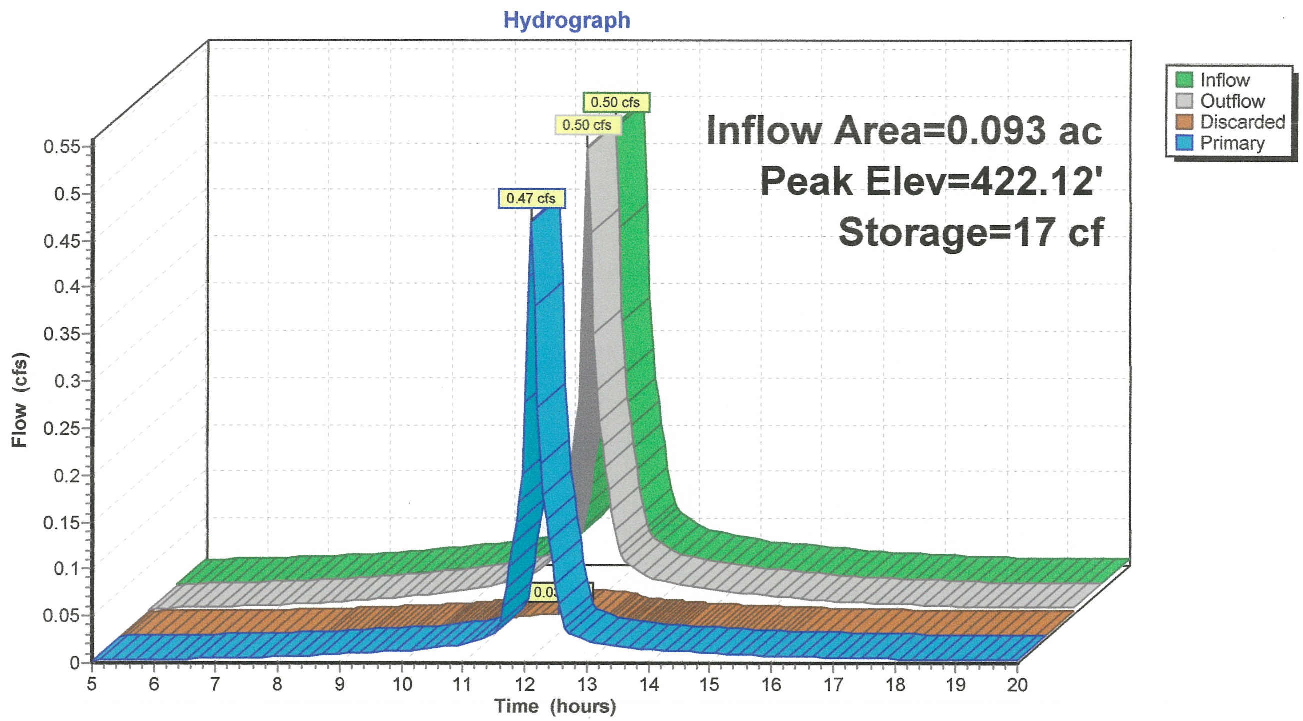
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=422.12' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.46 cfs @ 12.09 hrs HW=422.12' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.46 cfs @ 0.94 fps)

Pond 8P: Drip Strip (B-1)



Summary for Pond 10P: Rain Garden

Inflow Area = 0.347 ac, 53.35% Impervious, Inflow Depth > 2.03" for 25 yr event
Inflow = 0.95 cfs @ 12.10 hrs, Volume= 0.059 af
Outflow = 0.95 cfs @ 12.10 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.04 cfs @ 12.10 hrs, Volume= 0.005 af
Primary = 0.91 cfs @ 12.10 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.03' @ 12.10 hrs Surf.Area= 648 sf Storage= 19 cf

Plug-Flow detention time= 0.5 min calculated for 0.059 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (746.6 - 746.2)

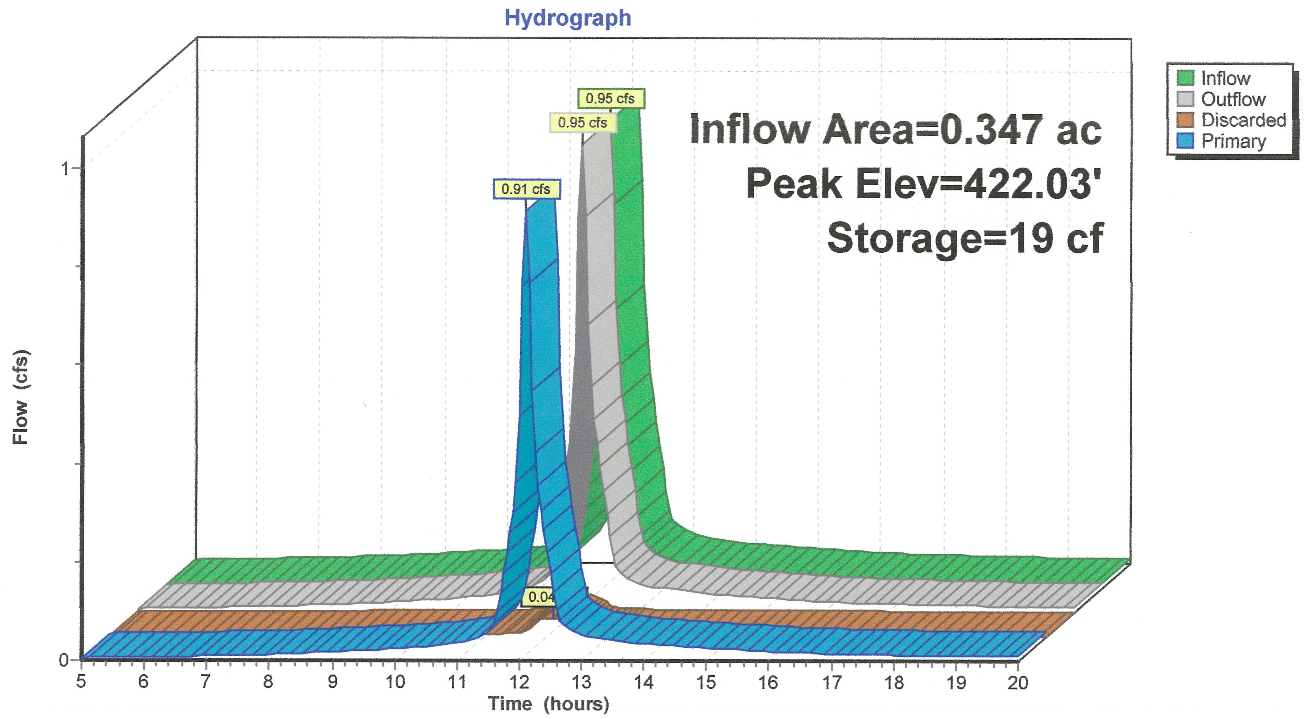
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,451 cf	**12.00'W x 53.00'L x 1.50'H Prismatoid Z=3.1**

Device	Routing	Invert	Outlet Devices
#1	Discarded	422.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	422.00'	**53.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.1' Crest Height

Discarded OutFlow Max=0.04 cfs @ 12.10 hrs HW=422.03' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.91 cfs @ 12.10 hrs HW=422.03' (Free Discharge)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.91 cfs @ 0.57 fps)

Pond 10P: Rain Garden



Summary for Subcatchment 1S: Westerly part of the Buildiing Area (B)

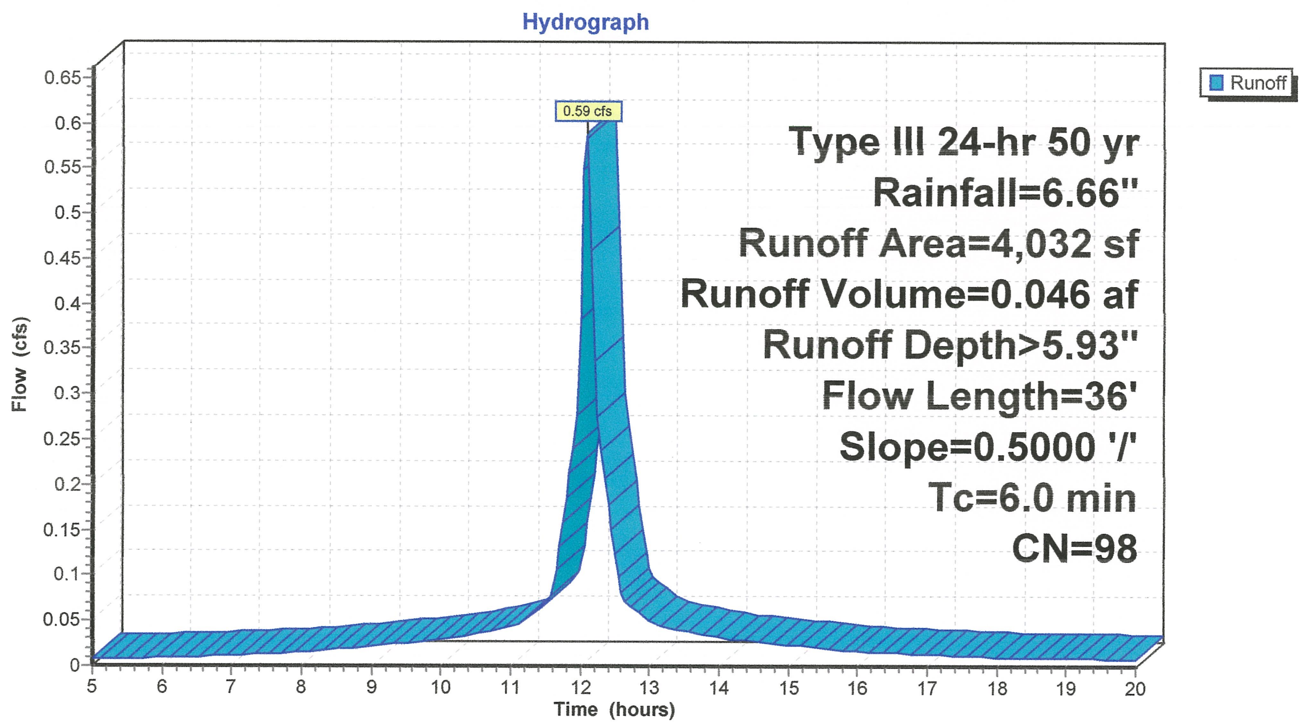
Runoff = 0.59 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 yr Rainfall=6.66"

	Area (sf)	CN	Description
*	4,032	98	Roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Westerly part of the Buildiing Area (B)



Summary for Subcatchment 2S: Westerly part of site (E)

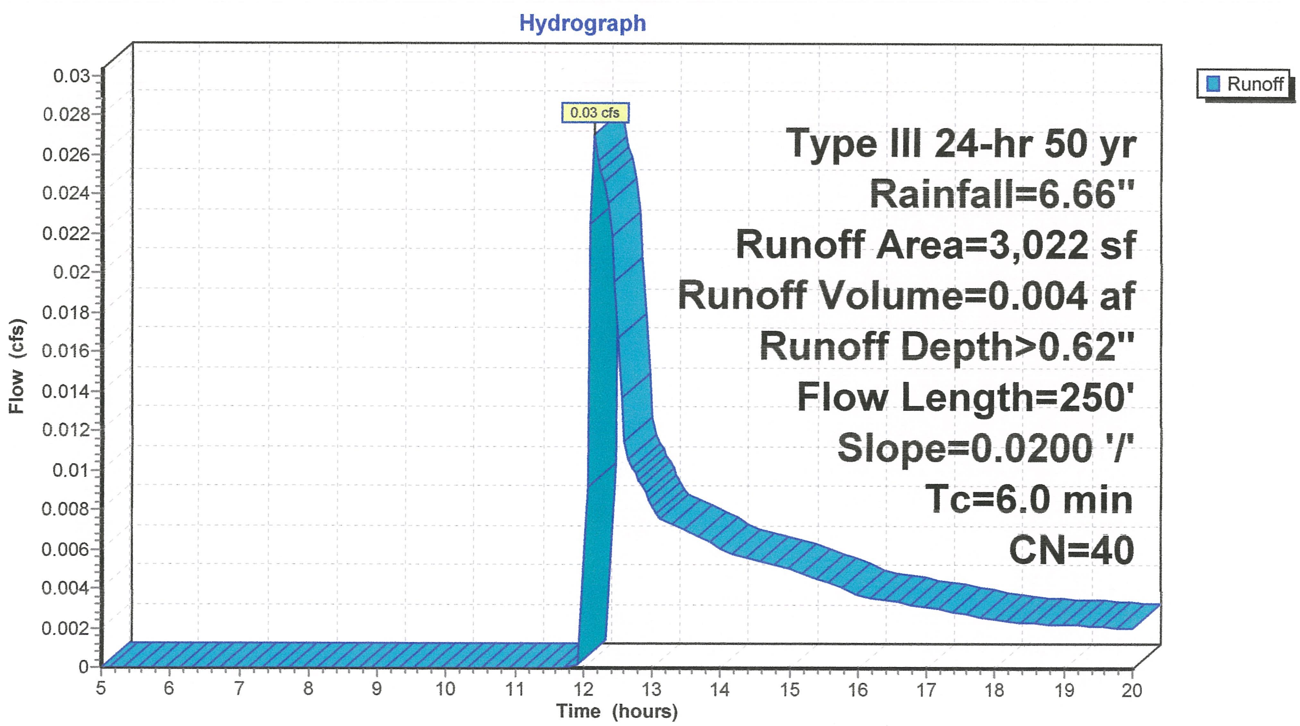
Runoff = 0.03 cfs @ 12.16 hrs, Volume= 0.004 af, Depth> 0.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 yr Rainfall=6.66"

	Area (sf)	CN	Description
	2,677	39	>75% Grass cover, Good, HSG A
*	345	48	Brush, Poor, HSG A (slope to river)
	3,022	40	Weighted Average
	3,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	125	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
0.9	125	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
1.6	250	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site (E)



Summary for Subcatchment 3S: Northerly & Easterly part of site (A)

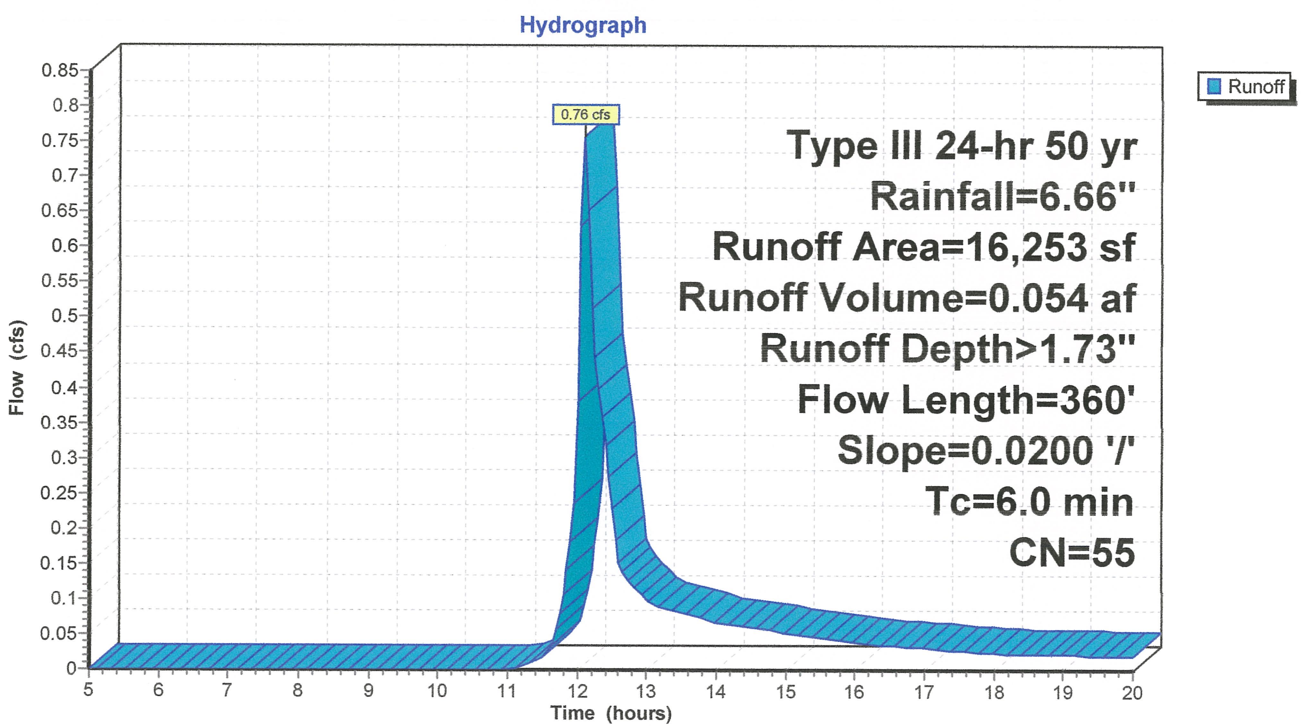
Runoff = 0.76 cfs @ 12.10 hrs, Volume= 0.054 af, Depth> 1.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 yr Rainfall=6.66"

	Area (sf)	CN	Description
*	3,635	98	pavement
	4,950	48	Brush, Poor, HSG A
	7,668	39	>75% Grass cover, Good, HSG A
	16,253	55	Weighted Average
	12,618		77.63% Pervious Area
	3,635		22.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	140	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
1.6	220	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
2.4	360	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 3S: Northerly & Easterly part of site (A)



Summary for Subcatchment 4S: Easterly part of the Building Area (C)

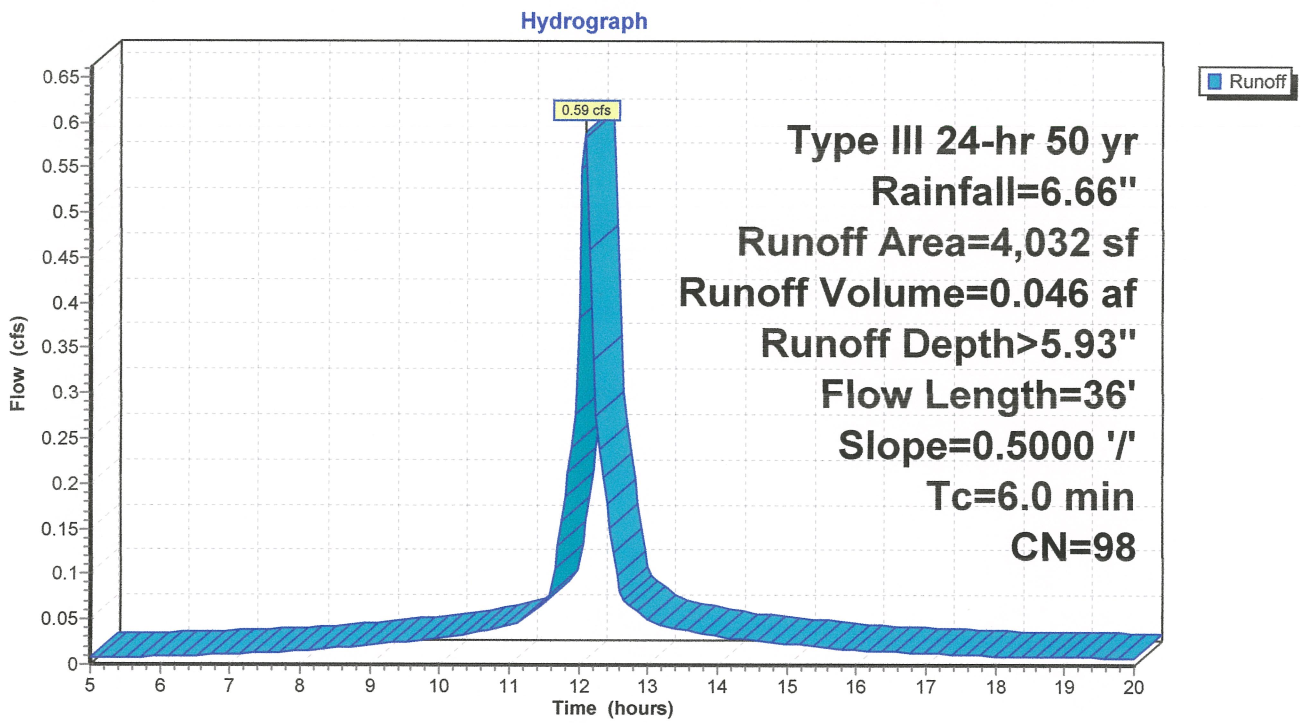
Runoff = 0.59 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 yr Rainfall=6.66"

	Area (sf)	CN	Description
*	4,032	98	roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, Building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 4S: Easterly part of the Building Area (C)



Summary for Subcatchment 5S: Central part of site (D)

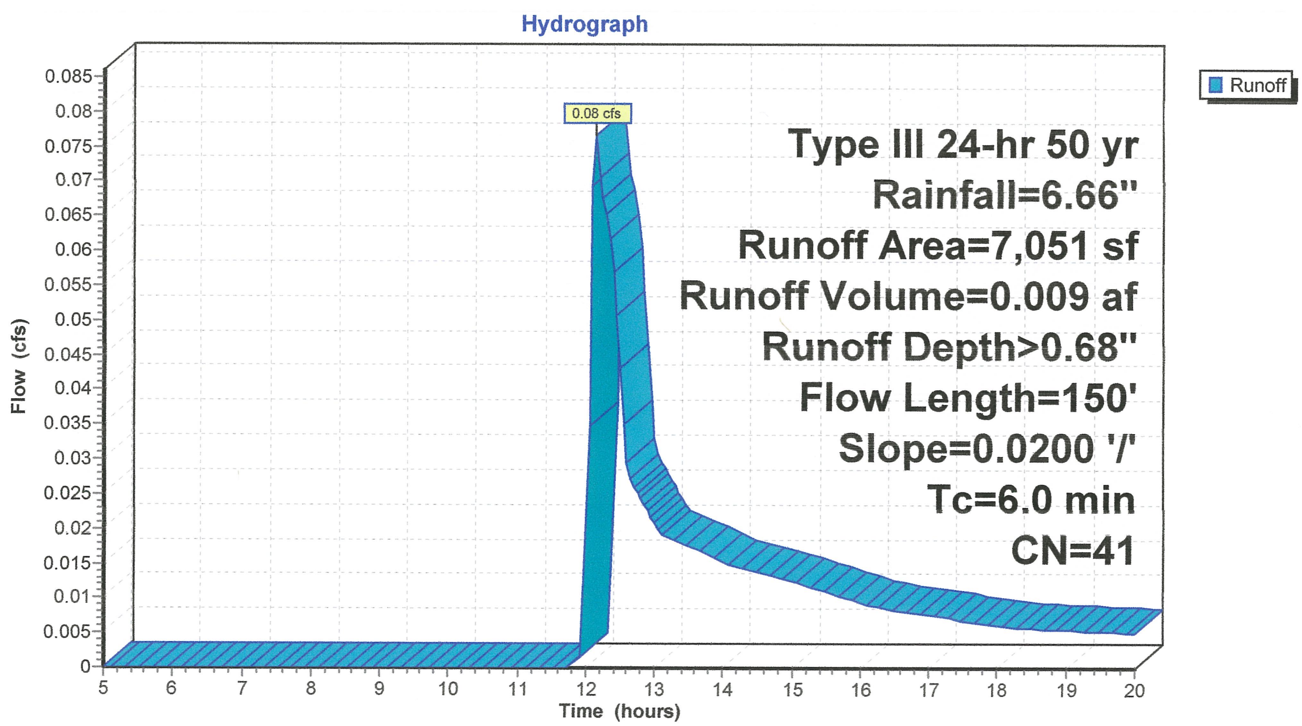
Runoff = 0.08 cfs @ 12.15 hrs, Volume= 0.009 af, Depth> 0.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 yr Rainfall=6.66"

	Area (sf)	CN	Description
	5,854	39	>75% Grass cover, Good, HSG A
*	1,197	48	Brush, Poor, HSG A Slope to river
	7,051	41	Weighted Average
	7,051		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.0200	2.87		**Shallow Concentrated Flow, conc** Paved Kv= 20.3 fps
1.0	130	0.0200	2.28		**Shallow Concentrated Flow, overland** Unpaved Kv= 16.1 fps
1.1	150	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 5S: Central part of site (D)

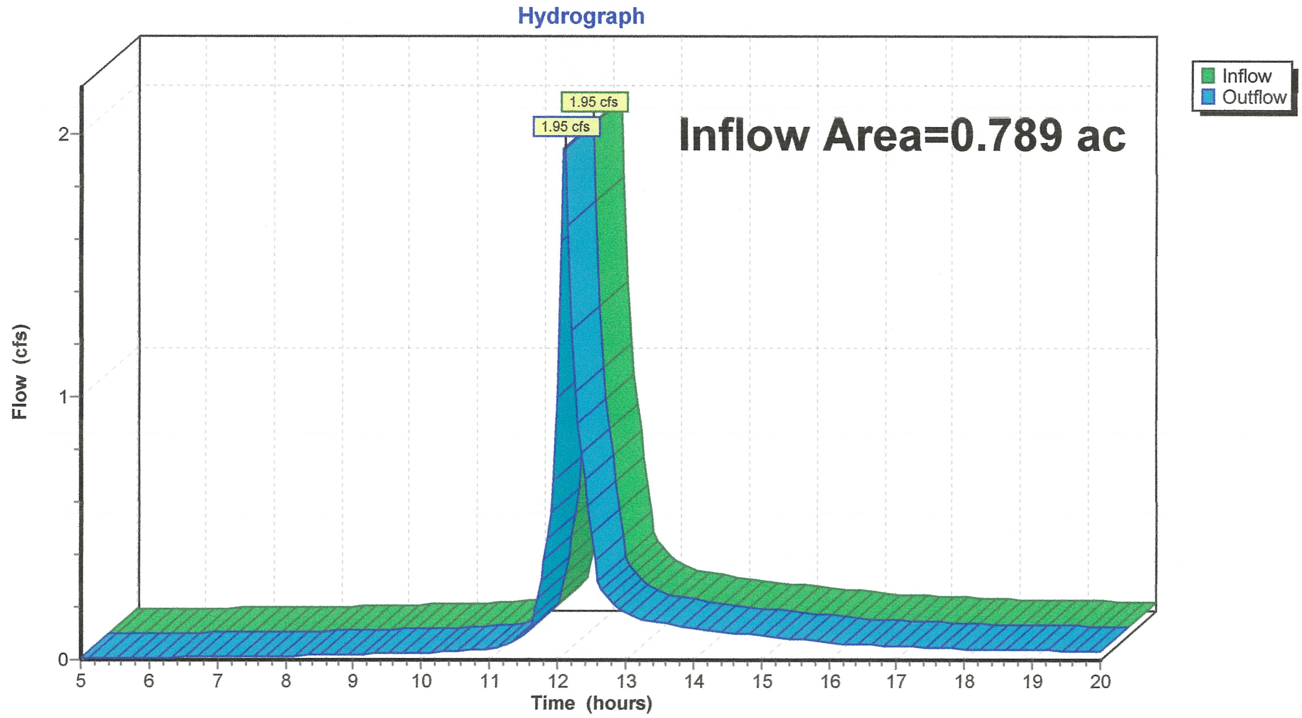


Summary for Reach 6R: Ware River

Inflow Area = 0.789 ac, 34.02% Impervious, Inflow Depth > 1.91" for 50 yr event
Inflow = 1.95 cfs @ 12.10 hrs, Volume= 0.126 af
Outflow = 1.95 cfs @ 12.10 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Ware River



Summary for Pond 7P: Drip Strip (C-1)

Inflow Area =	0.093 ac,100.00% Impervious,	Inflow Depth > 5.93"	for 50 yr event
Inflow =	0.59 cfs @ 12.09 hrs,	Volume=	0.046 af
Outflow =	0.59 cfs @ 12.09 hrs,	Volume=	0.046 af, Atten= 0%, Lag= 0.5 min
Discarded =	0.03 cfs @ 12.09 hrs,	Volume=	0.013 af
Primary =	0.56 cfs @ 12.09 hrs,	Volume=	0.033 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.14' @ 12.09 hrs Surf.Area= 475 sf Storage= 19 cf

Plug-Flow detention time= 0.8 min calculated for 0.046 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (734.4 - 733.7)

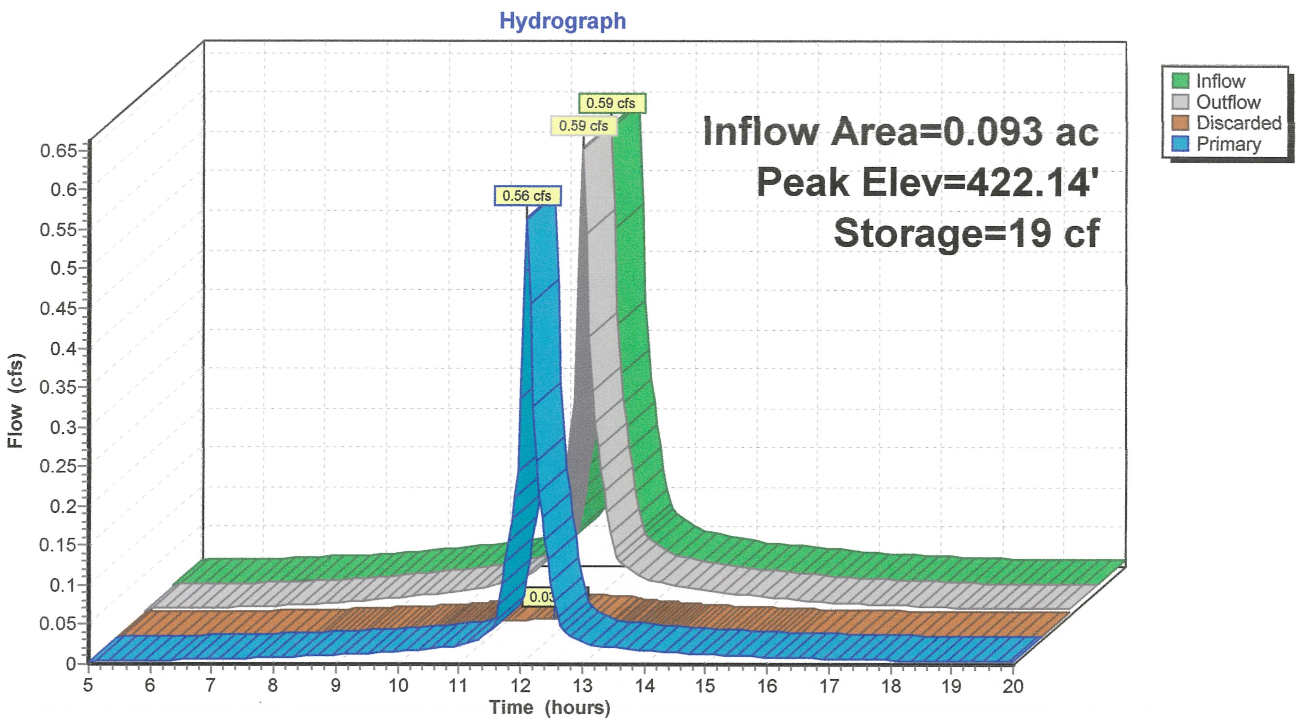
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=422.14' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.56 cfs @ 12.09 hrs HW=422.14' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.56 cfs @ 1.00 fps)

Pond 7P: Drip Strip (C-1)



Summary for Pond 8P: Drip Strip (B-1)

Inflow Area =	0.093 ac,100.00% Impervious,	Inflow Depth > 5.93" for 50 yr event			
Inflow =	0.59 cfs @	12.09 hrs,	Volume=	0.046 af	
Outflow =	0.59 cfs @	12.09 hrs,	Volume=	0.046 af,	Atten= 0%, Lag= 0.5 min
Discarded =	0.03 cfs @	12.09 hrs,	Volume=	0.013 af	
Primary =	0.56 cfs @	12.09 hrs,	Volume=	0.033 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.14' @ 12.09 hrs Surf.Area= 475 sf Storage= 19 cf

Plug-Flow detention time= 0.8 min calculated for 0.046 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (734.4 - 733.7)

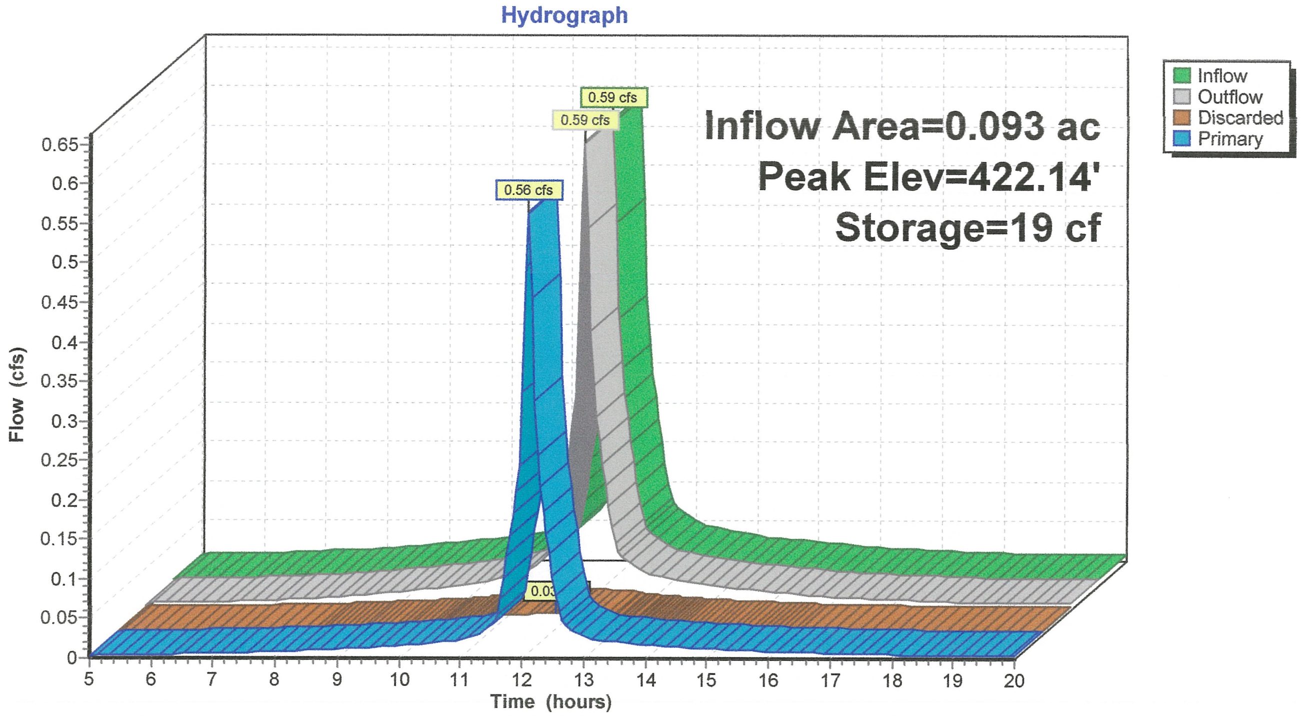
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=422.14' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.56 cfs @ 12.09 hrs HW=422.14' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.56 cfs @ 1.00 fps)

Pond 8P: Drip Strip (B-1)



Summary for Pond 10P: Rain Garden

Inflow Area = 0.347 ac, 53.35% Impervious, Inflow Depth > 2.57" for 50 yr event
Inflow = 1.20 cfs @ 12.10 hrs, Volume= 0.074 af
Outflow = 1.20 cfs @ 12.10 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.2 min
Discarded = 0.04 cfs @ 12.10 hrs, Volume= 0.006 af
Primary = 1.17 cfs @ 12.10 hrs, Volume= 0.068 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.04' @ 12.10 hrs Surf.Area= 650 sf Storage= 23 cf

Plug-Flow detention time= 0.4 min calculated for 0.074 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (749.3 - 748.9)

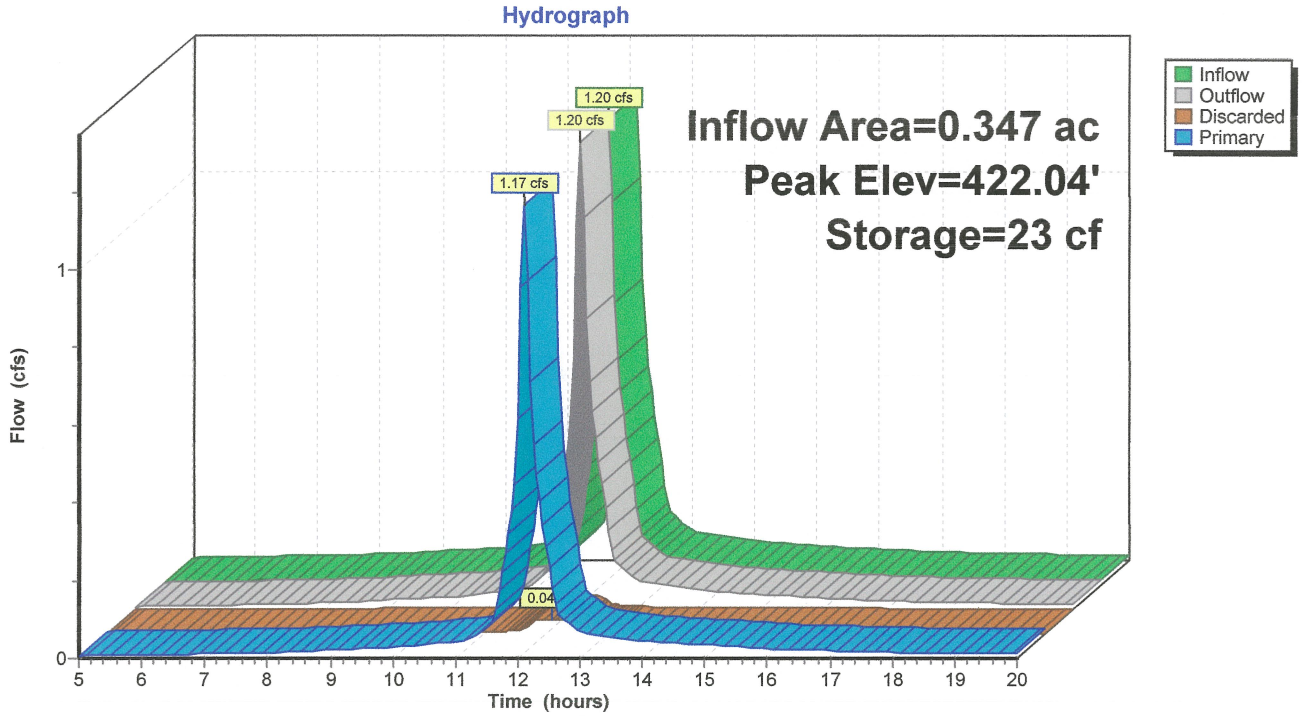
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,451 cf	**12.00'W x 53.00'L x 1.50'H Prismatoid Z=3.1**

Device	Routing	Invert	Outlet Devices
#1	Discarded	422.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	422.00'	**53.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.1' Crest Height

Discarded OutFlow Max=0.04 cfs @ 12.10 hrs HW=422.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=1.14 cfs @ 12.10 hrs HW=422.04' (Free Discharge)
↑**2=Sharp-Crested Rectangular Weir** (Weir Controls 1.14 cfs @ 0.62 fps)

Pond 10P: Rain Garden



Summary for Subcatchment 1S: Westerly part of the Buildiing Area (B)

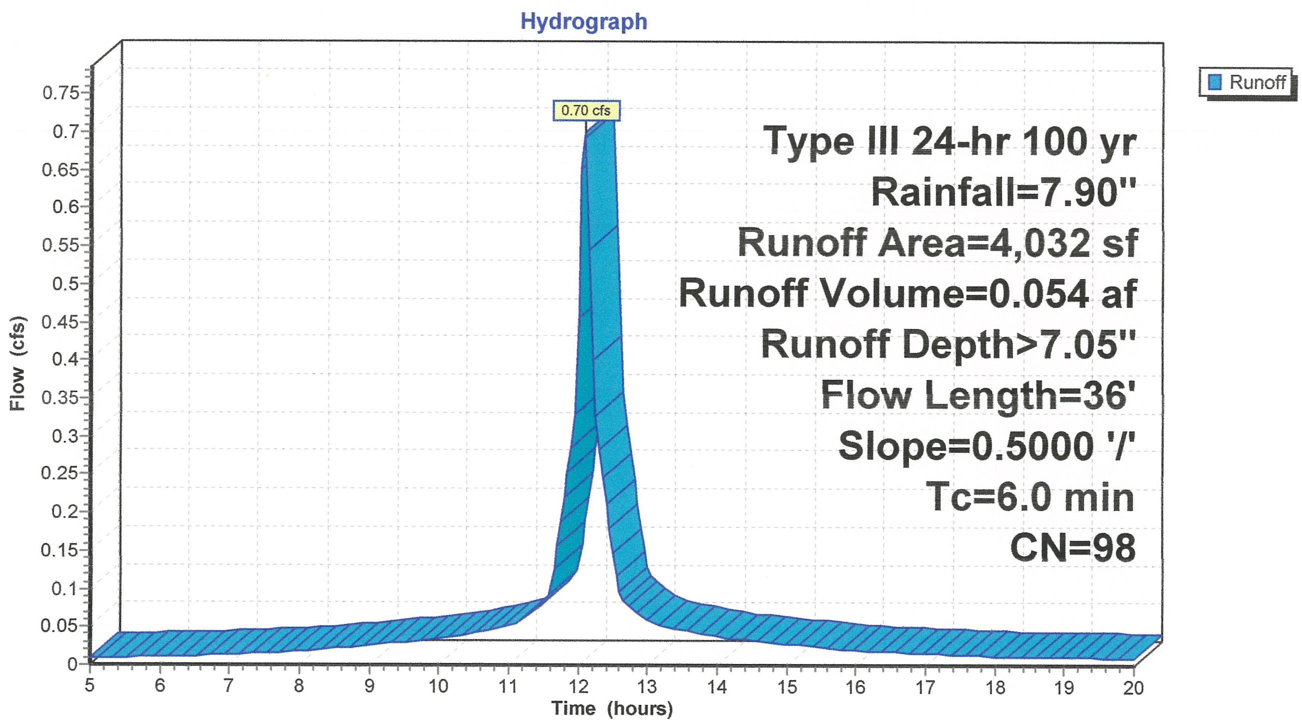
Runoff = 0.70 cfs @ 12.09 hrs, Volume= 0.054 af, Depth> 7.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=7.90"

	Area (sf)	CN	Description
*	4,032	98	Roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 1S: Westerly part of the Buildiing Area (B)



Summary for Subcatchment 2S: Westerly part of site (E)

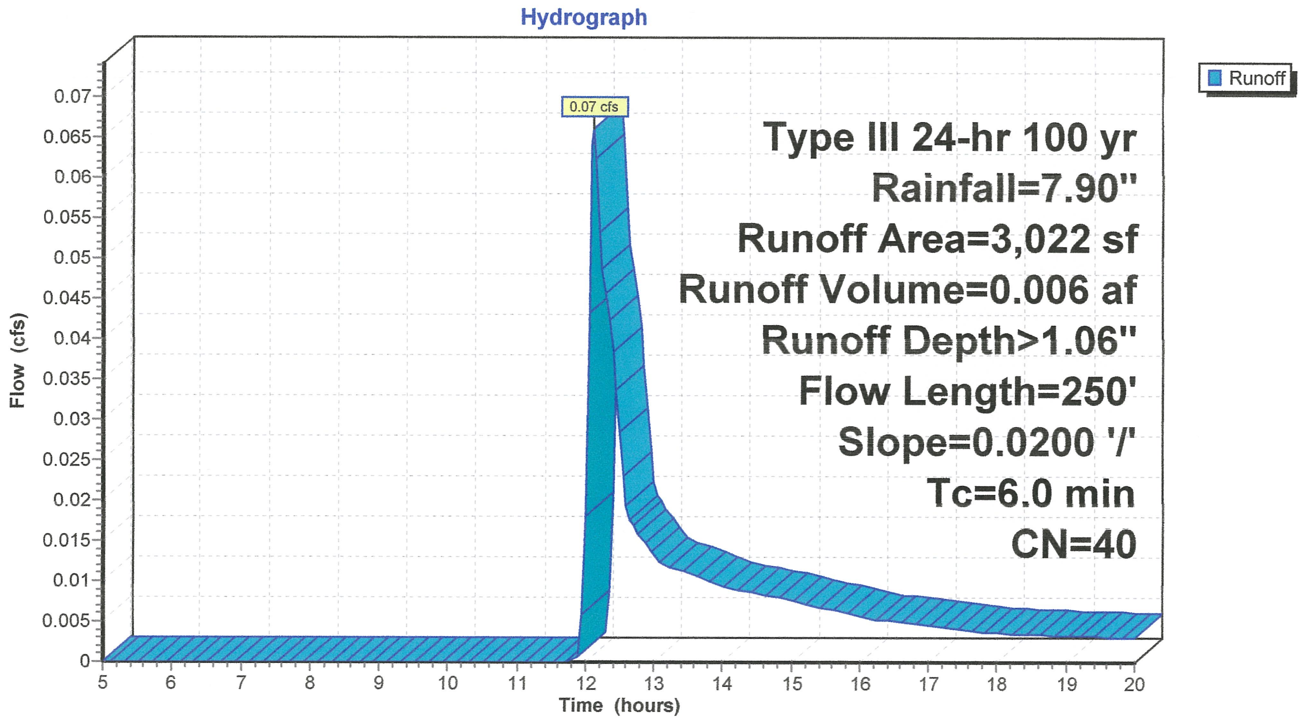
Runoff = 0.07 cfs @ 12.12 hrs, Volume= 0.006 af, Depth> 1.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=7.90"

	Area (sf)	CN	Description
	2,677	39	>75% Grass cover, Good, HSG A
*	345	48	Brush, Poor, HSG A (slope to river)
	3,022	40	Weighted Average
	3,022		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	125	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
0.9	125	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
1.6	250	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 2S: Westerly part of site (E)



Summary for Subcatchment 3S: Northerly & Easterly part of site (A)

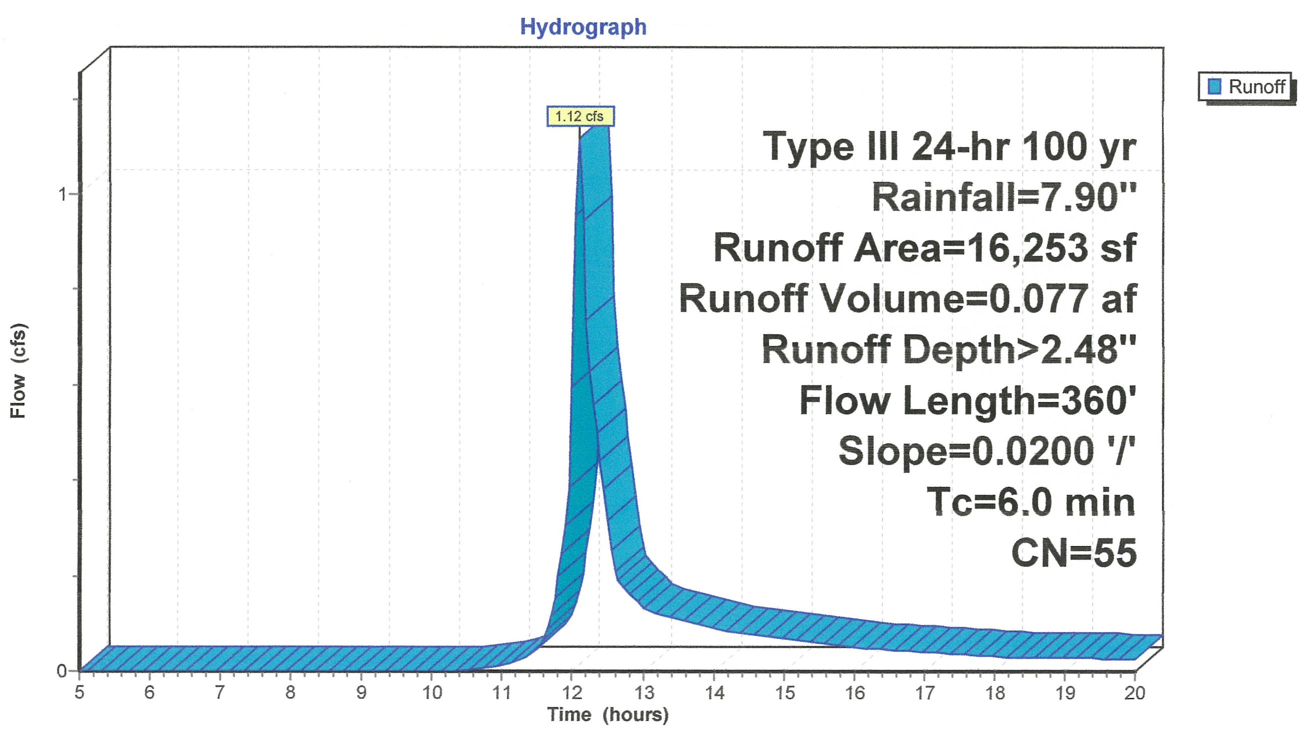
Runoff = 1.12 cfs @ 12.10 hrs, Volume= 0.077 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=7.90"

	Area (sf)	CN	Description
*	3,635	98	pavement
	4,950	48	Brush, Poor, HSG A
	7,668	39	>75% Grass cover, Good, HSG A
	16,253	55	Weighted Average
	12,618		77.63% Pervious Area
	3,635		22.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	140	0.0200	2.87		**Shallow Concentrated Flow, paved** Paved Kv= 20.3 fps
1.6	220	0.0200	2.28		**Shallow Concentrated Flow, earth** Unpaved Kv= 16.1 fps
2.4	360	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 3S: Northerly & Easterly part of site (A)



Summary for Subcatchment 4S: Easterly part of the Building Area (C)

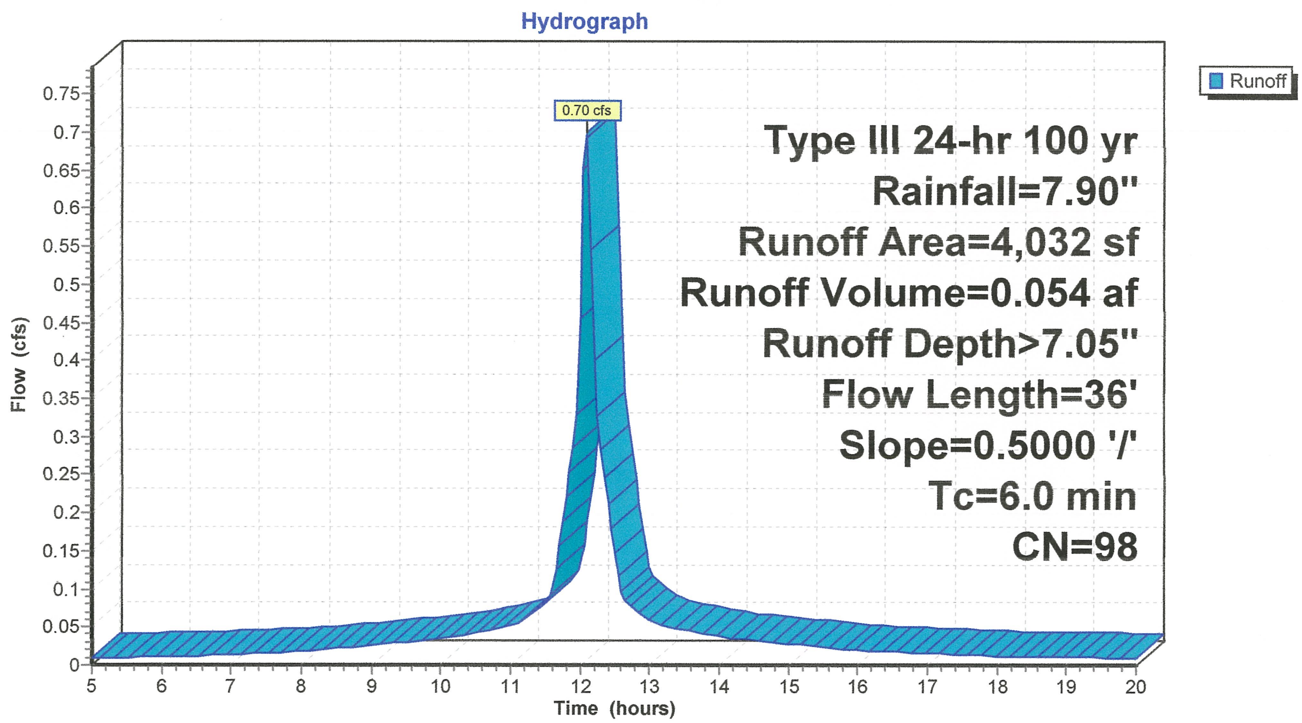
Runoff = 0.70 cfs @ 12.09 hrs, Volume= 0.054 af, Depth> 7.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=7.90"

	Area (sf)	CN	Description
*	4,032	98	roof
	4,032		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	36	0.5000	3.95		**Sheet Flow, Building** Smooth surfaces n= 0.011 P2= 3.02"
0.2	36	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 4S: Easterly part of the Building Area (C)



Summary for Subcatchment 5S: Central part of site (D)

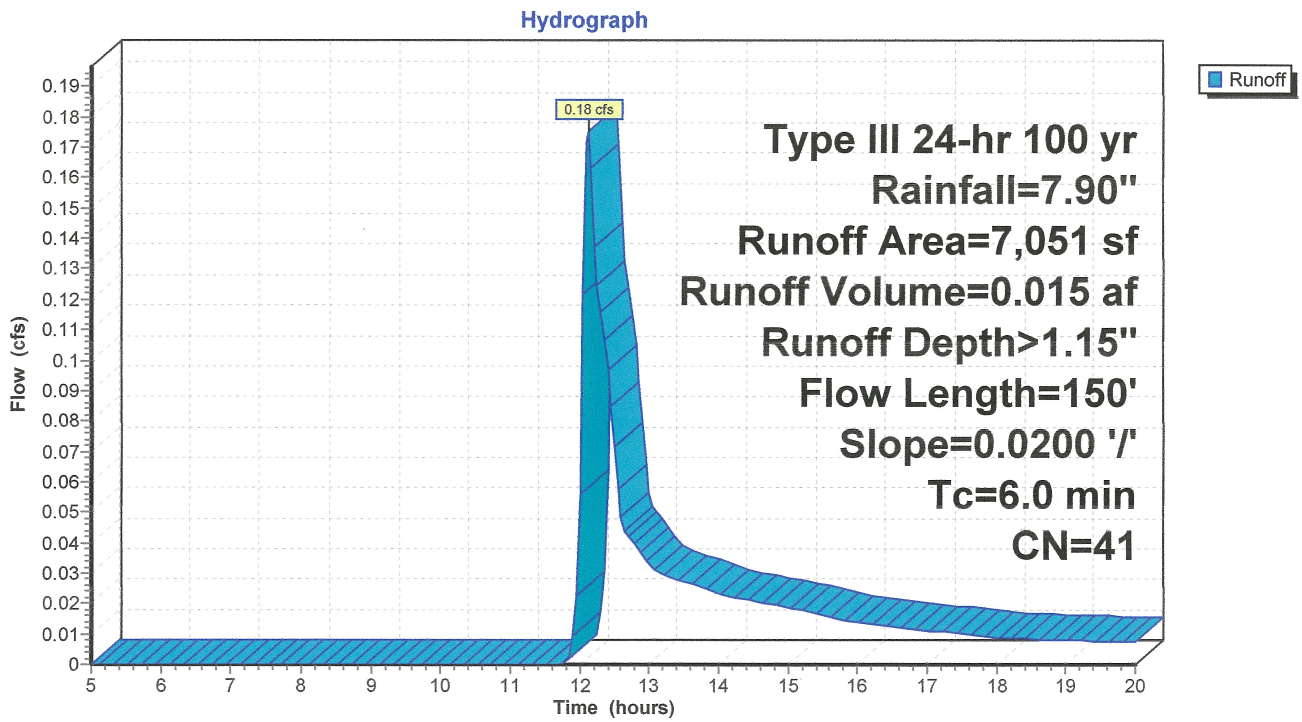
Runoff = 0.18 cfs @ 12.12 hrs, Volume= 0.015 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=7.90"

	Area (sf)	CN	Description
	5,854	39	>75% Grass cover, Good, HSG A
*	1,197	48	Brush, Poor, HSG A Slope to river
	7,051	41	Weighted Average
	7,051		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.0200	2.87		**Shallow Concentrated Flow, conc** Paved Kv= 20.3 fps
1.0	130	0.0200	2.28		**Shallow Concentrated Flow, overland** Unpaved Kv= 16.1 fps
1.1	150	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 5S: Central part of site (D)

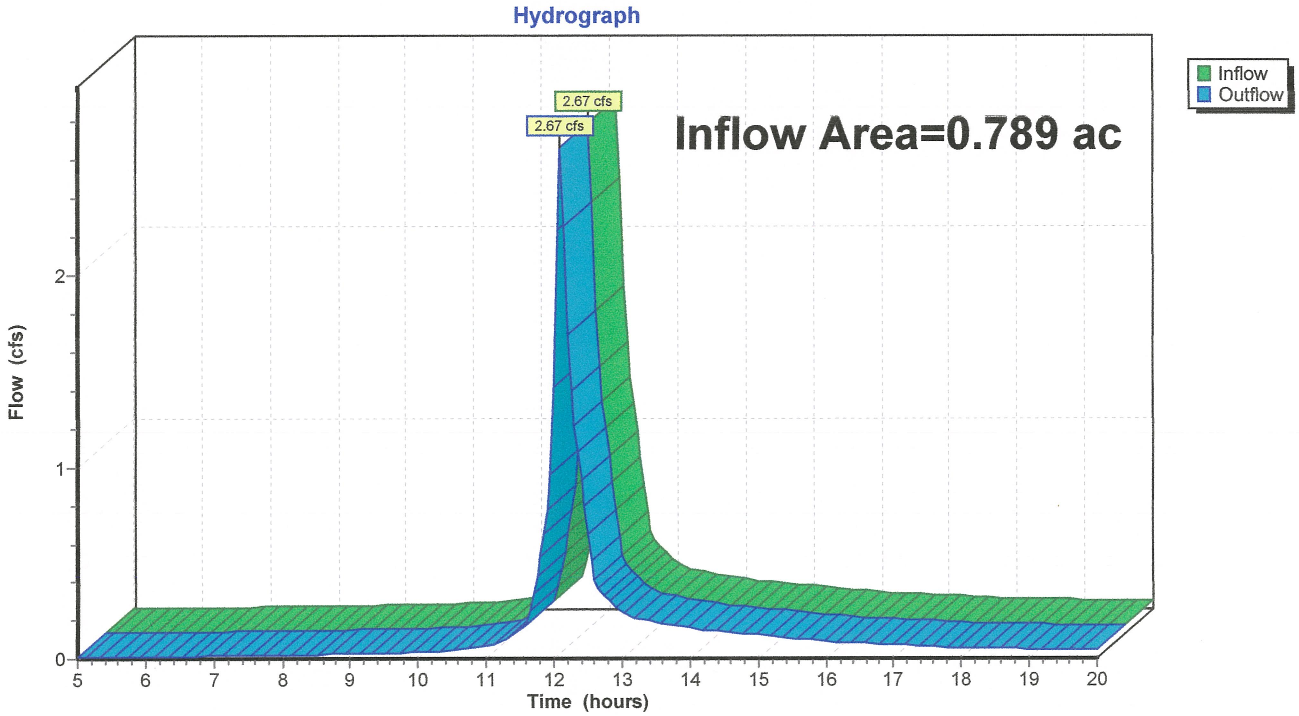


Summary for Reach 6R: Ware River

Inflow Area = 0.789 ac, 34.02% Impervious, Inflow Depth > 2.59" for 100 yr event
Inflow = 2.67 cfs @ 12.10 hrs, Volume= 0.170 af
Outflow = 2.67 cfs @ 12.10 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 6R: Ware River



Summary for Pond 7P: Drip Strip (C-1)

Inflow Area = 0.093 ac,100.00% Impervious, Inflow Depth > 7.05" for 100 yr event
Inflow = 0.70 cfs @ 12.09 hrs, Volume= 0.054 af
Outflow = 0.70 cfs @ 12.09 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.4 min
Discarded = 0.03 cfs @ 12.09 hrs, Volume= 0.015 af
Primary = 0.68 cfs @ 12.09 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.16' @ 12.09 hrs Surf.Area= 480 sf Storage= 22 cf

Plug-Flow detention time= 0.8 min calculated for 0.054 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (733.7 - 733.1)

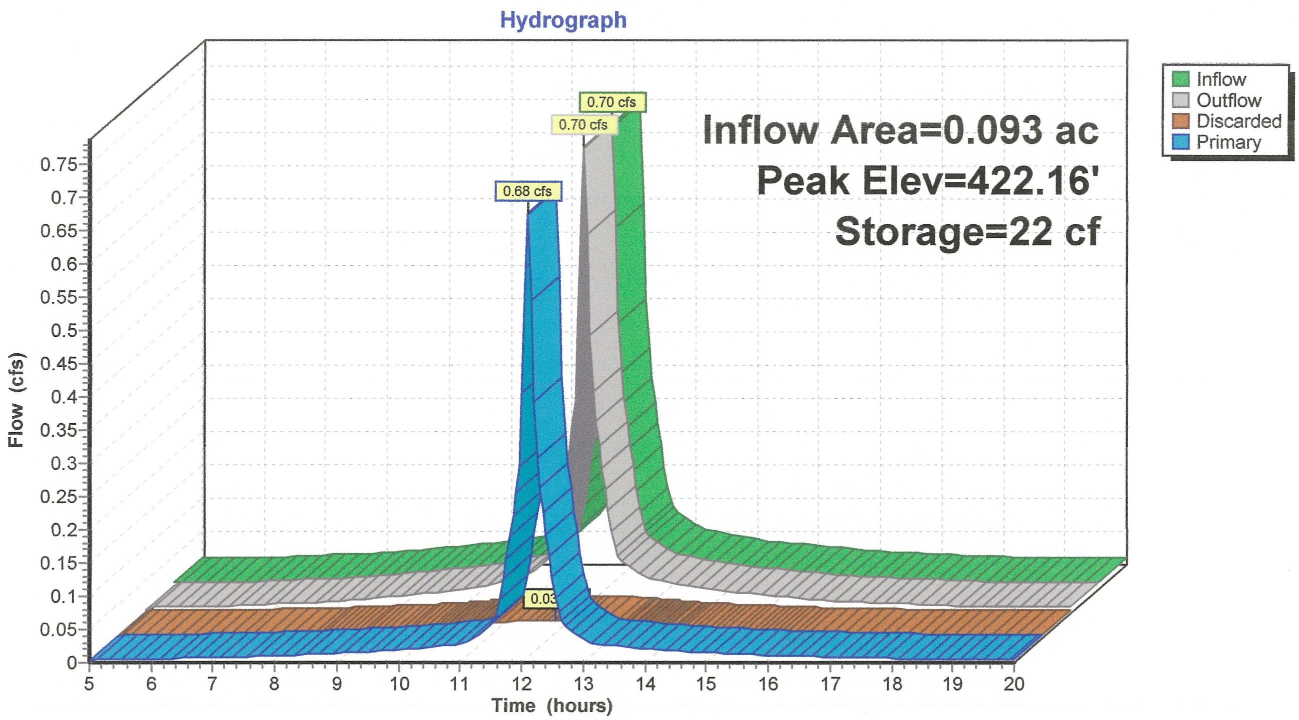
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=422.16' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.66 cfs @ 12.09 hrs HW=422.16' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.66 cfs @ 1.06 fps)

Pond 7P: Drip Strip (C-1)



Summary for Pond 8P: Drip Strip (B-1)

Inflow Area =	0.093 ac,100.00% Impervious,	Inflow Depth > 7.05"	for 100 yr event	
Inflow =	0.70 cfs @	12.09 hrs, Volume=	0.054 af	
Outflow =	0.70 cfs @	12.09 hrs, Volume=	0.054 af,	Atten= 0%, Lag= 0.4 min
Discarded =	0.03 cfs @	12.09 hrs, Volume=	0.015 af	
Primary =	0.68 cfs @	12.09 hrs, Volume=	0.039 af	

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.16' @ 12.09 hrs Surf.Area= 480 sf Storage= 22 cf

Plug-Flow detention time= 0.8 min calculated for 0.054 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (733.7 - 733.1)

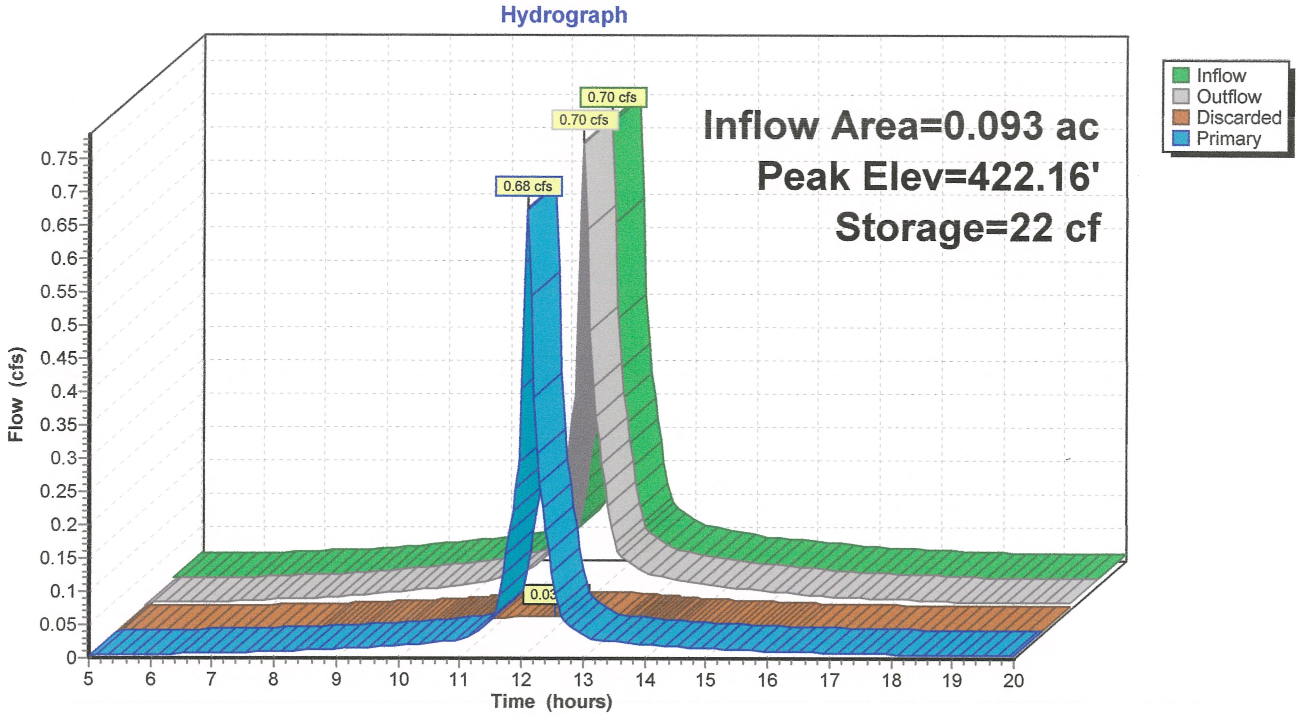
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	418 cf	**4.00'W x 110.00'L x 2.00'H Prismatoid Z=1.1** 1,395 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Primary	422.00'	**4.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	422.00'	**2.410 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=422.16' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.66 cfs @ 12.09 hrs HW=422.16' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.66 cfs @ 1.06 fps)

Pond 8P: Drip Strip (B-1)



Summary for Pond 10P: Rain Garden

Inflow Area = 0.347 ac, 53.35% Impervious, Inflow Depth > 3.26" for 100 yr event
Inflow = 1.52 cfs @ 12.10 hrs, Volume= 0.094 af
Outflow = 1.52 cfs @ 12.10 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.2 min
Discarded = 0.04 cfs @ 12.10 hrs, Volume= 0.007 af
Primary = 1.48 cfs @ 12.10 hrs, Volume= 0.087 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 422.04' @ 12.10 hrs Surf.Area= 653 sf Storage= 27 cf

Plug-Flow detention time= 0.4 min calculated for 0.094 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (751.5 - 751.1)

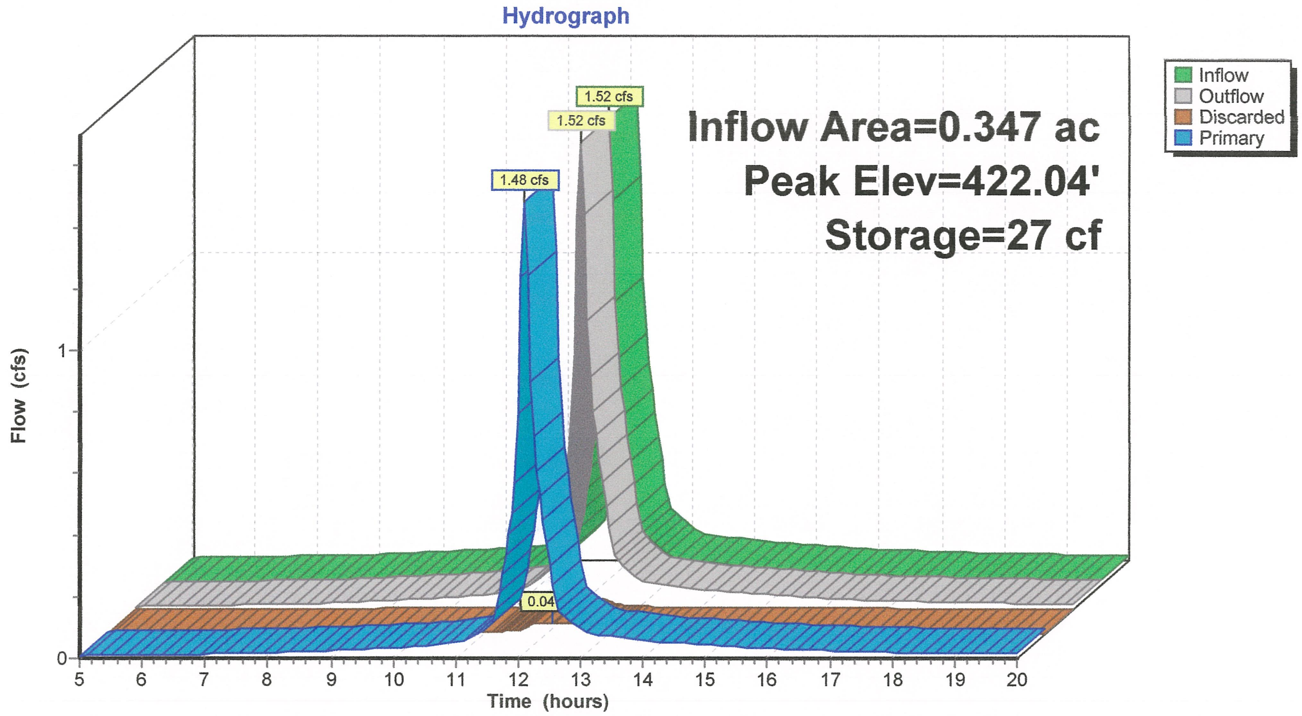
Volume	Invert	Avail.Storage	Storage Description
#1	422.00'	1,451 cf	**12.00'W x 53.00'L x 1.50'H Prismatoid Z=3.1**

Device	Routing	Invert	Outlet Devices
#1	Discarded	422.00'	**2.410 in/hr Exfiltration over Surface area**
#2	Primary	422.00'	**53.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 1.1' Crest Height

Discarded OutFlow Max=0.04 cfs @ 12.10 hrs HW=422.04' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=1.47 cfs @ 12.10 hrs HW=422.04' (Free Discharge)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 1.47 cfs @ 0.67 fps)

Pond 10P: Rain Garden



Offsite Flow Paths
At
Minuteman Farm LLC
Proposed Cannabis Growing Facility
In
The Ware Mill Yard
East Main St.
Ware, MA 01082

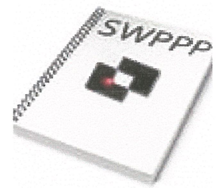
Offsite Stormwater Flow

Offsite runoff appears to have insignificant of little impact on the site.

The site topography is such that it is elevated from the adjoining properties

Stormwater Pollution Prevention Plan

According to 9 sources



conformgmt.com

SWPPP is an acronym for **Stormwater Pollution Prevention Plan**. When stormwater drains away from a surface, it accumulates debris, sediments, chemicals, and more as it flows over land and impervious surfaces.

What Is a SWPPP, and Why Do You Need One? - EWI
environmentalworks.com

A **Stormwater Pollution Prevention Plan** (SWPPP) is a site-specific, written document signed by a company executive that (1) identifies all of the activities and conditions at their site that could cause water pollution, and (2) details the steps the facility will take to prevent the discharge of any unpermitted polluti...

What is SWPPP (Stormwater Pollution Prevention Plan) ...
newpig.com

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