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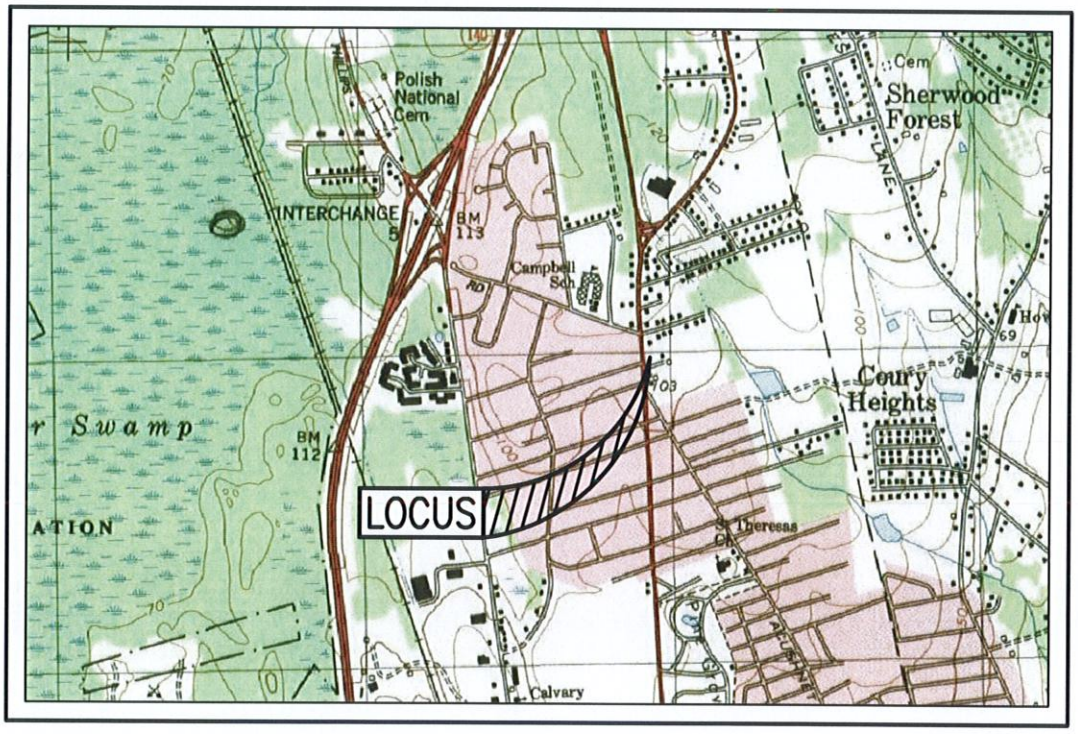
STORMWATER MANAGEMENT REPORT

SITE PLAN

ASSESSORS MAP 130D LOTS 117, 247, 248, & 447
2904 & 2914 ACUSHNET AVENUE
NEW BEDFORD, MASSACHUSETTS



PREPARED FOR:

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STORMWATER MANAGEMENT REPORT AND HYDROLOGIC ANALYSIS

Proposed Site Plan – Cumberland Farms
2904 & 2914 Acushnet Ave, New Bedford, Massachusetts

Project Summary

The project area associated with this project is bordered by Acushnet Avenue to the West of the site, commercial abutters to the North and South, and a new residential subdivision to the East of the site in New Bedford, Massachusetts. The parcel is situated in the Mixed Use Business (MUB) District. The total parcel area is approximately 98,041 S.F.

The applicant is seeking permission to construct a 5,275 S.F convenience store with a gas station and 2,640 S.F. car wash that includes a bituminous pavement parking lot containing a total of 50 spaces with associated grading. Stormwater associated with the development will be controlled via deep-sump hooded catch basins, water quality units and a cultec subsurface recharge drainage system.

Methodology

Drainage computations were performed using the Natural Resources Conservation Services (NRCS) TR-20 method and HydroCAD® Drainage Calculation Software. Sketches of the existing and proposed watershed areas, HydroCAD® Report, and copies of the calculation sheets are included as appendices to this report.

Existing Conditions

The soils underlying the site are identified in the Soil Survey of Bristol County. The Site soils are classified as Paxton Fine Sandy Loam. Paxton soils are well suited to cultivate crops, hay and improved pasture. Paxton soils have a high water capacity and are well suited for intensive agriculture and woodland production.

Proposed Conditions/Stormwater Management Overview

Under proposed conditions, roof drains will collect and direct roof runoff and runoff from the canopy above the gas station area to a subsurface recharge system which, in large storm events, will overflow to a drain manhole and will ultimately tie into the city drainage system. Runoff from the parking areas and grassed area will be collected by two deep sump catch basins which flows to a Contech CDS Water Quality Unit before ultimately flowing to the city drainage system.

The design of the stormwater system was designed for the post-development conditions to handle all storms' peak discharges and runoff volume to include the 2, 10, 25 and 100-year storm events. The site drainage system was designed in consideration of the structural standards and techniques of the Best Management Practices (BMP) and Low Impact Development (LID) outlined in the "Stormwater Management Handbook".

The results of site drainage calculations are presented in the following Tables. The results are based upon evaluation of Pre-development conditions and the design of proposed surface and subsurface drainage systems for the Post-development condition. These results show the Post-Development offsite volume and runoff rates are reduced to less than the Pre-development conditions, thus meeting the BMP guidelines for this site development.

Table 1 - Comparison of Pre- versus Post-Development Offsite Runoff Rate, cfs

Frequency Storm	2-Year	10-Year	25-Year	100-Year
Pre-Development	2.18	4.27	5.56	7.91
Post-Development	0.80	1.54	1.99	2.81

Table 2 - Comparison of Pre- versus Post-Development Offsite Runoff Volume, af

Frequency Storm	2-Year	10-Year	25-Year	100-Year
Pre-Development	0.220	0.413	0.534	0.758
Post-Development	0.071	0.133	0.171	0.241

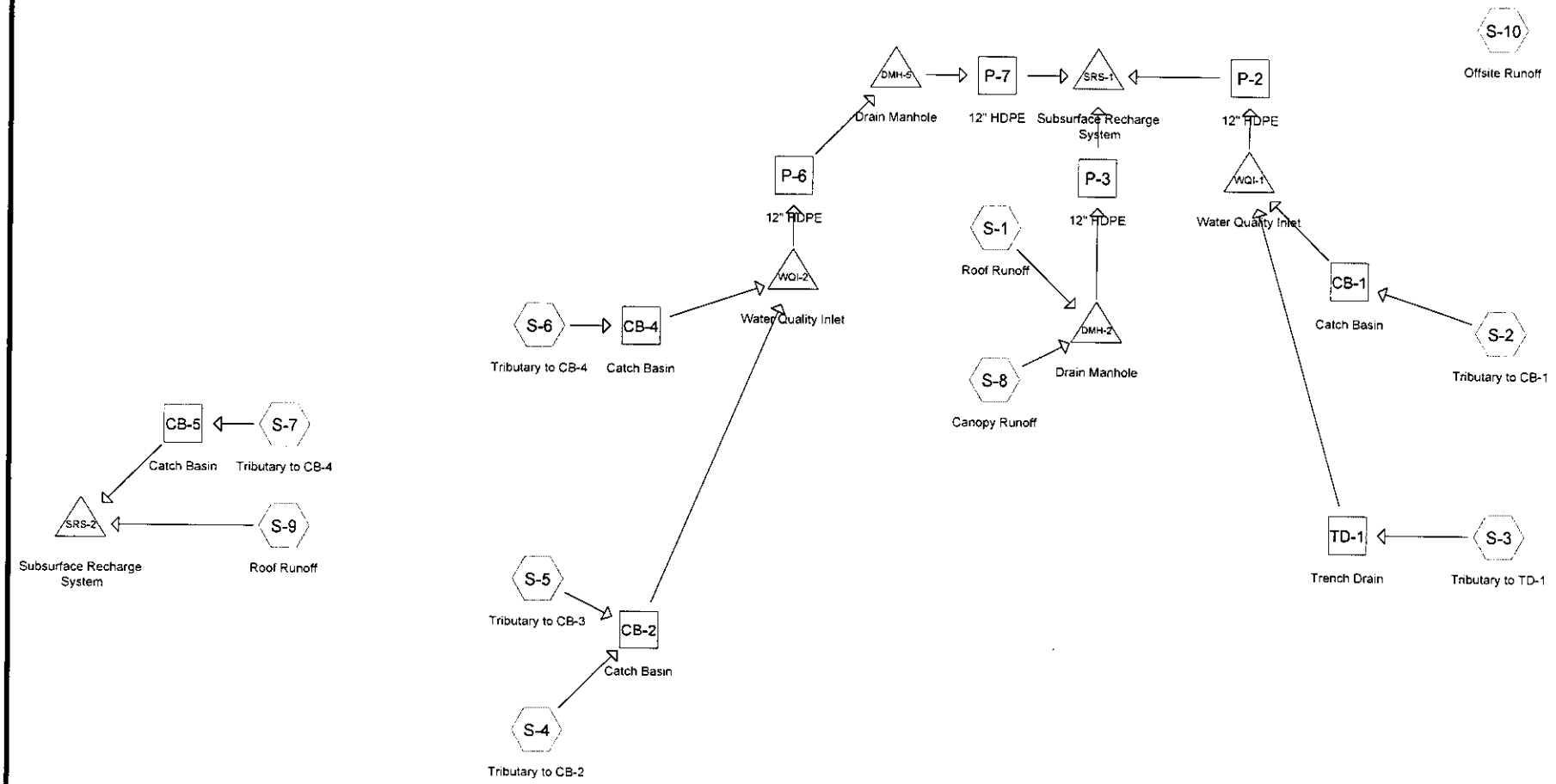
Groundwater recharge is a factor in the design of the subsurface drainage system. Table-3 below presents the minimum recharge required and the proposed recharge of stormwater based upon the BMP methods of the "Stormwater Management Handbook". The proposed recharge quantities meet or exceed the required minimum recharges.

Table 3 - Drainage Recharge Calculation (Required Recharge = 0.10" Total Site Runoff for Class-C Soils)

Required Recharge	Proposed Recharge
1.51 Acres x 0.10"/12 = 0.0125AF = 548 CF	11,006 CF = 0.253 AF

Total Suspended Solids Removal

In accordance with the guidelines of the Stormwater Management Policy, the Total Suspended Solids (TSS) Removal exceeds the minimum 80% requirement.



Routing Diagram for 171134POST

Prepared by Farland Corporation, Inc., Printed 4/3/2019

Summary for Subcatchment S-1: Roof Runoff

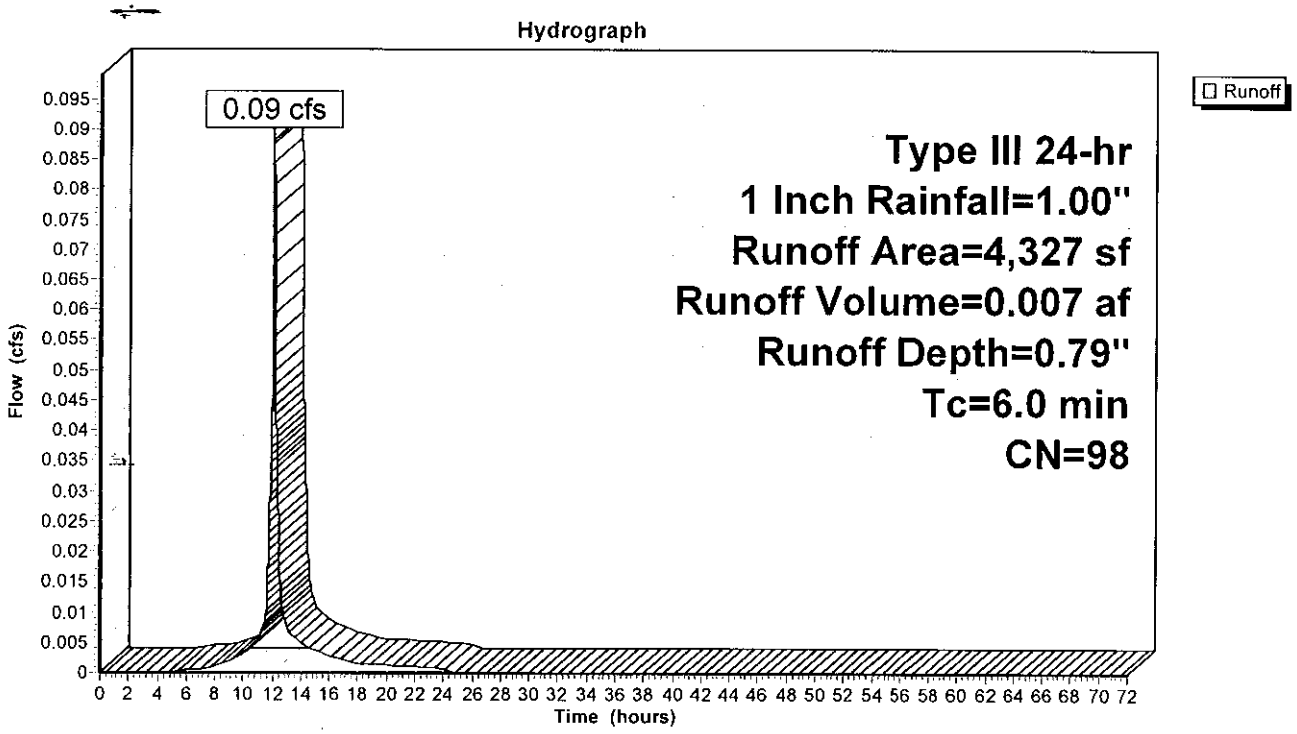
Runoff = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	4,327	98	Rooftop
	4,327		100.00% Impervious Area

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

Subcatchment S-1: Roof Runoff



Summary for Subcatchment S-10: Offsite Runoff

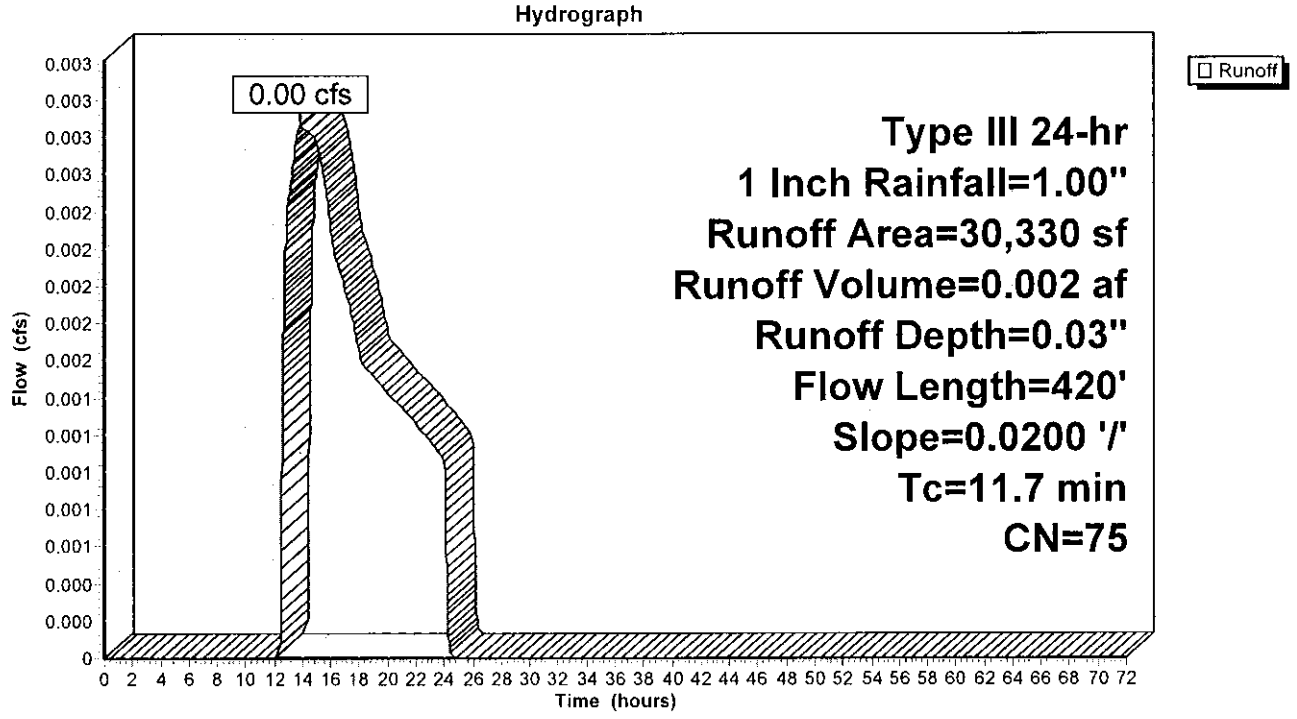
Runoff = 0.00 cfs @ 13.87 hrs, Volume= 0.002 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

Area (sf)	CN	Description
29,246	74	>75% Grass cover, Good, HSG C
1,084	98	Paved parking & roofs
30,330	75	Weighted Average
29,246		96.43% Pervious Area
1,084		3.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
6.2	370	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.7	420	Total			

Subcatchment S-10: Offsite Runoff



Summary for Subcatchment S-2: Tributary to CB-1

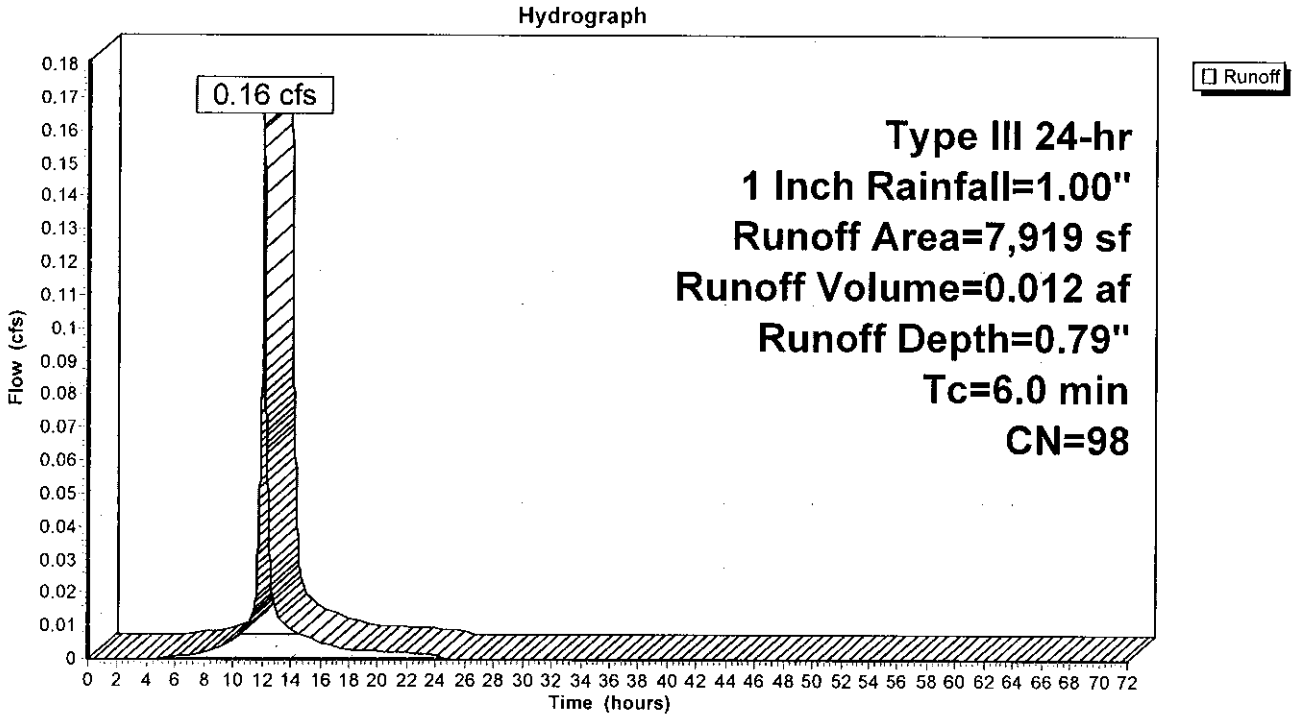
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

Area (sf)	CN	Description
160	74	>75% Grass cover, Good, HSG C
7,759	98	Paved parking
7,919	98	Weighted Average
160		2.02% Pervious Area
7,759		97.98% Impervious Area

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

Subcatchment S-2: Tributary to CB-1



Summary for Subcatchment S-3: Tributary to TD-1

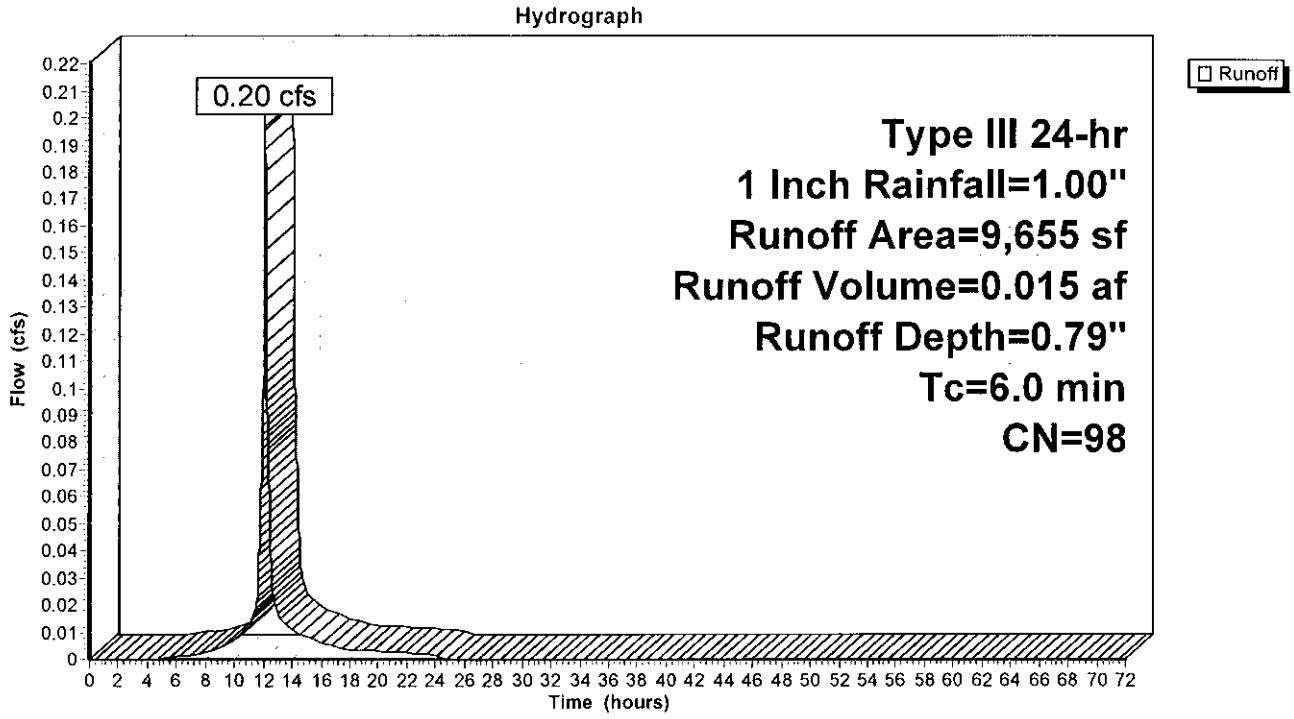
Runoff = 0.20 cfs @ 12.08 hrs, Volume= 0.015 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

Area (sf)	CN	Description
9,505	98	Paved parking
150	74	>75% Grass cover, Good, HSG C
9,655	98	Weighted Average
150		1.55% Pervious Area
9,505		98.45% Impervious Area

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

Subcatchment S-3: Tributary to TD-1



Summary for Subcatchment S-4: Tributary to CB-2

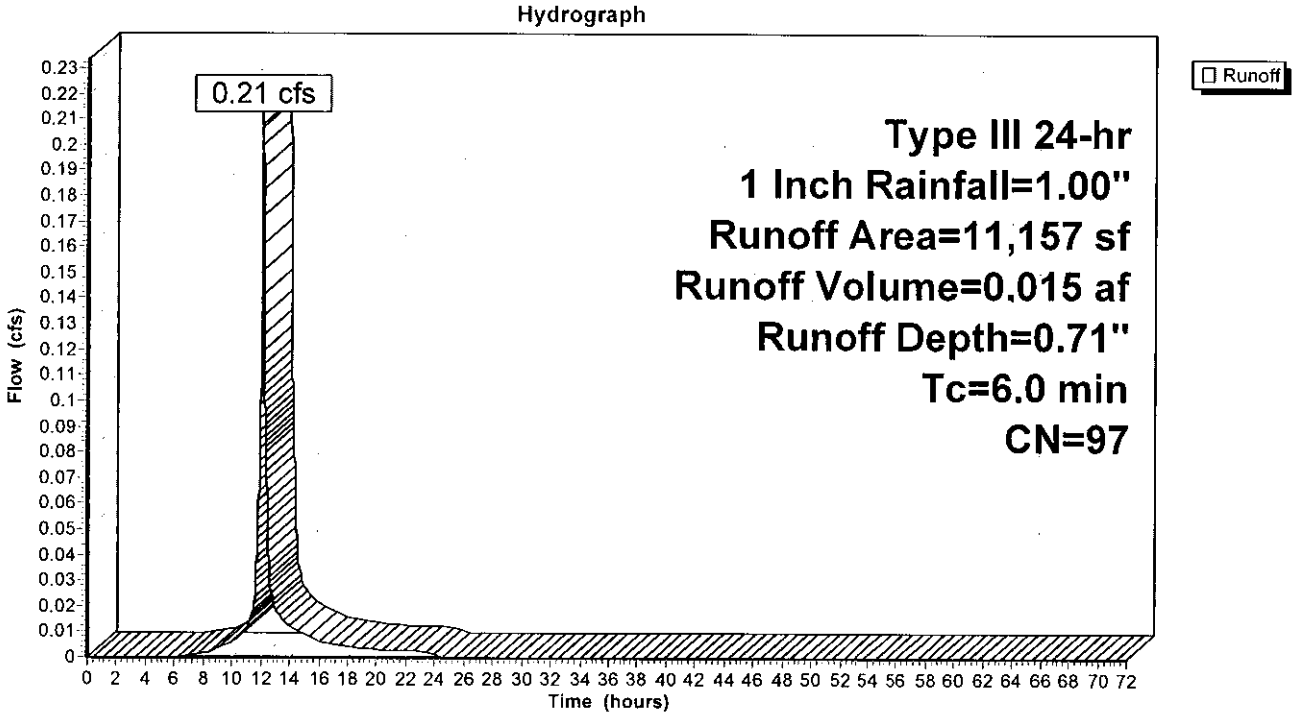
Runoff = 0.21 cfs @ 12.09 hrs, Volume= 0.015 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

Area (sf)	CN	Description
265	74	>75% Grass cover, Good, HSG C
10,892	98	Paved parking
11,157	97	Weighted Average
265		2.38% Pervious Area
10,892		97.62% Impervious Area

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

Subcatchment S-4: Tributary to CB-2



Summary for Subcatchment S-5: Tributary to CB-3

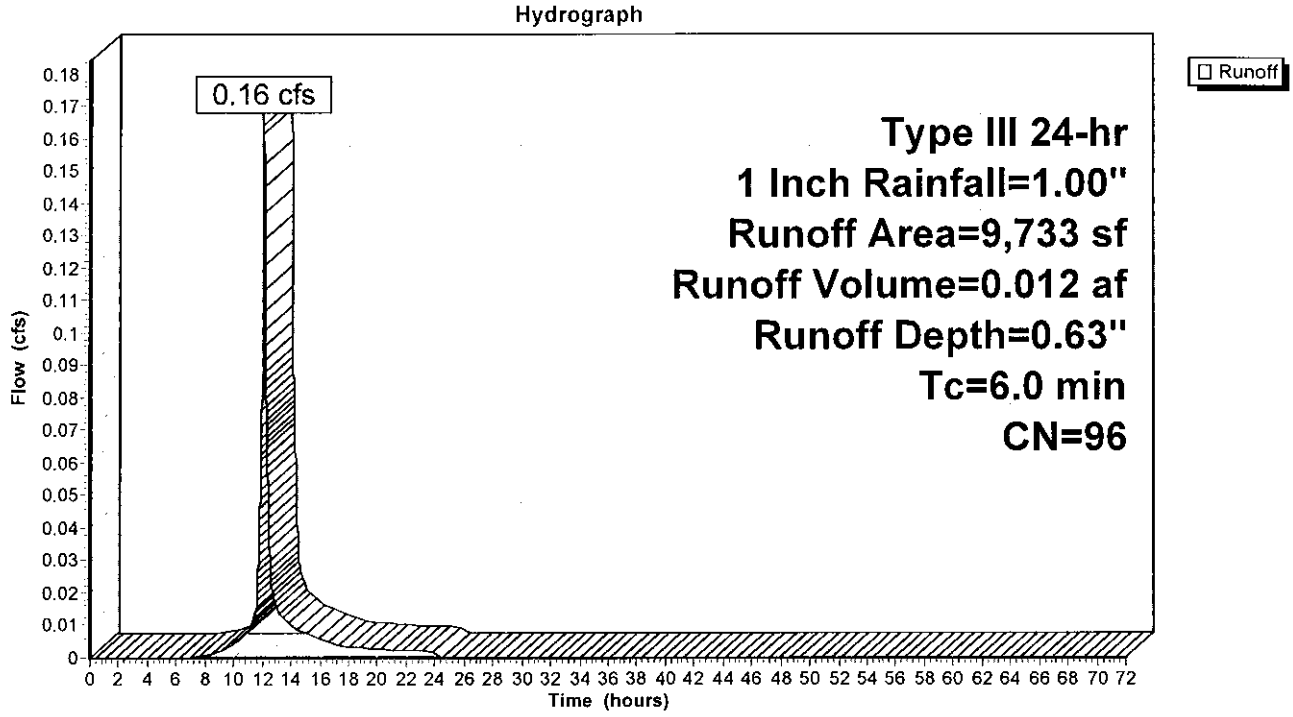
Runoff = 0.16 cfs @ 12.09 hrs, Volume= 0.012 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

Area (sf)	CN	Description
8,903	98	Paved parking
830	74	>75% Grass cover, Good, HSG C
9,733	96	Weighted Average
830		8.53% Pervious Area
8,903		91.47% Impervious Area

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

Subcatchment S-5: Tributary to CB-3



Summary for Subcatchment S-6: Tributary to CB-4

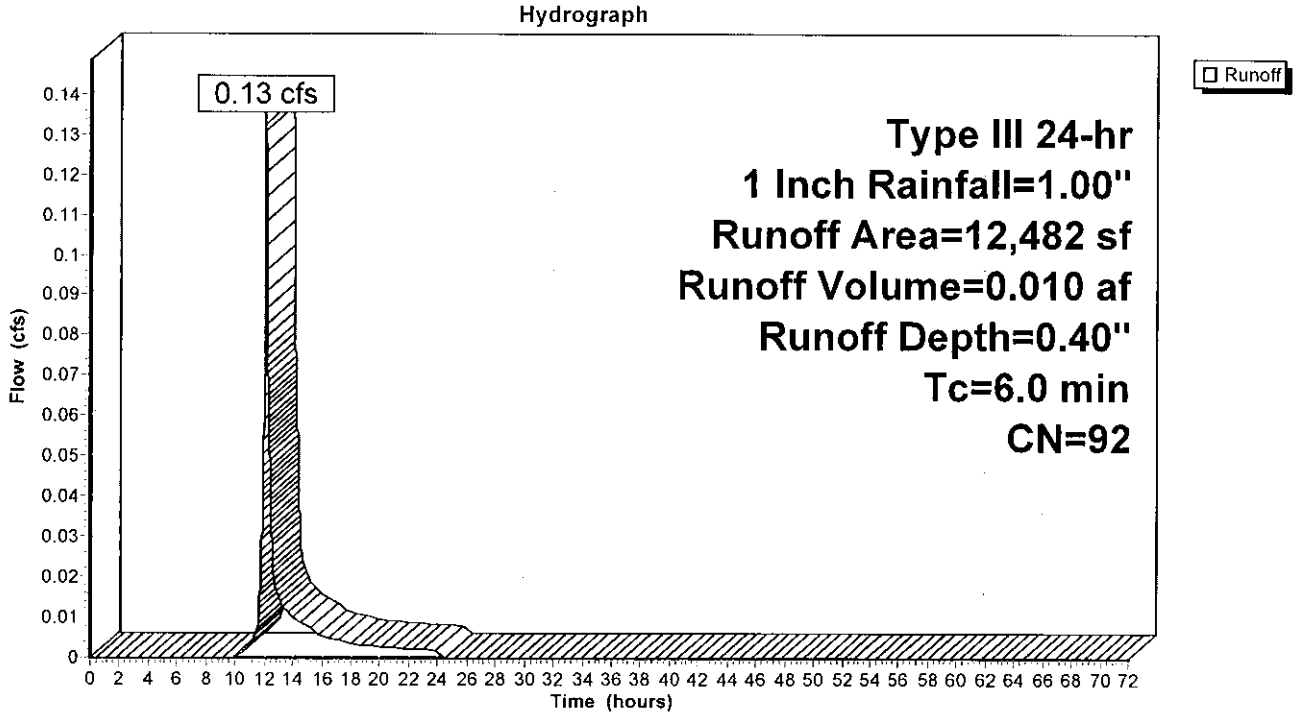
Runoff = 0.13 cfs @ 12.09 hrs, Volume= 0.010 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

Area (sf)	CN	Description
9,382	98	Paved parking
3,100	74	>75% Grass cover, Good, HSG C
12,482	92	Weighted Average
3,100		24.84% Pervious Area
9,382		75.16% Impervious Area

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

Subcatchment S-6: Tributary to CB-4



Summary for Subcatchment S-7: Tributary to CB-4

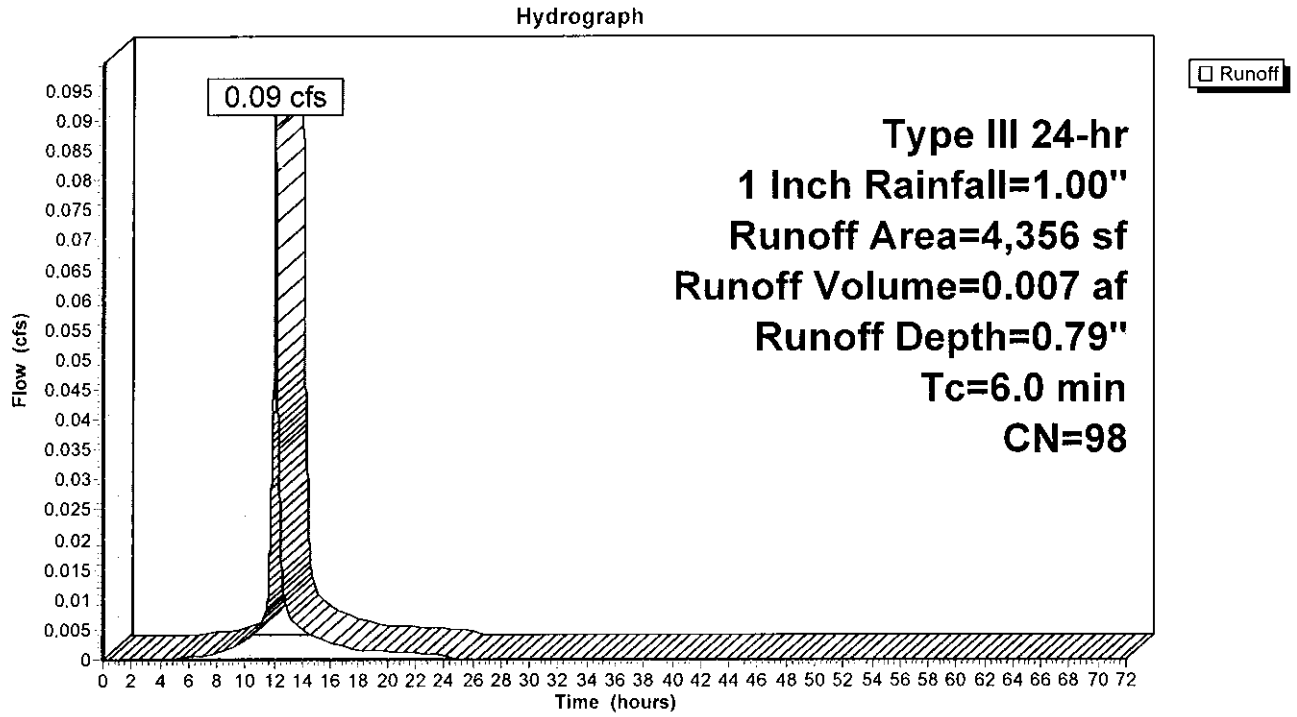
Runoff = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

Area (sf)	CN	Description
4,356	98	Paved parking
4,356		100.00% Impervious Area

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

Subcatchment S-7: Tributary to CB-4



Summary for Subcatchment S-8: Canopy Runoff

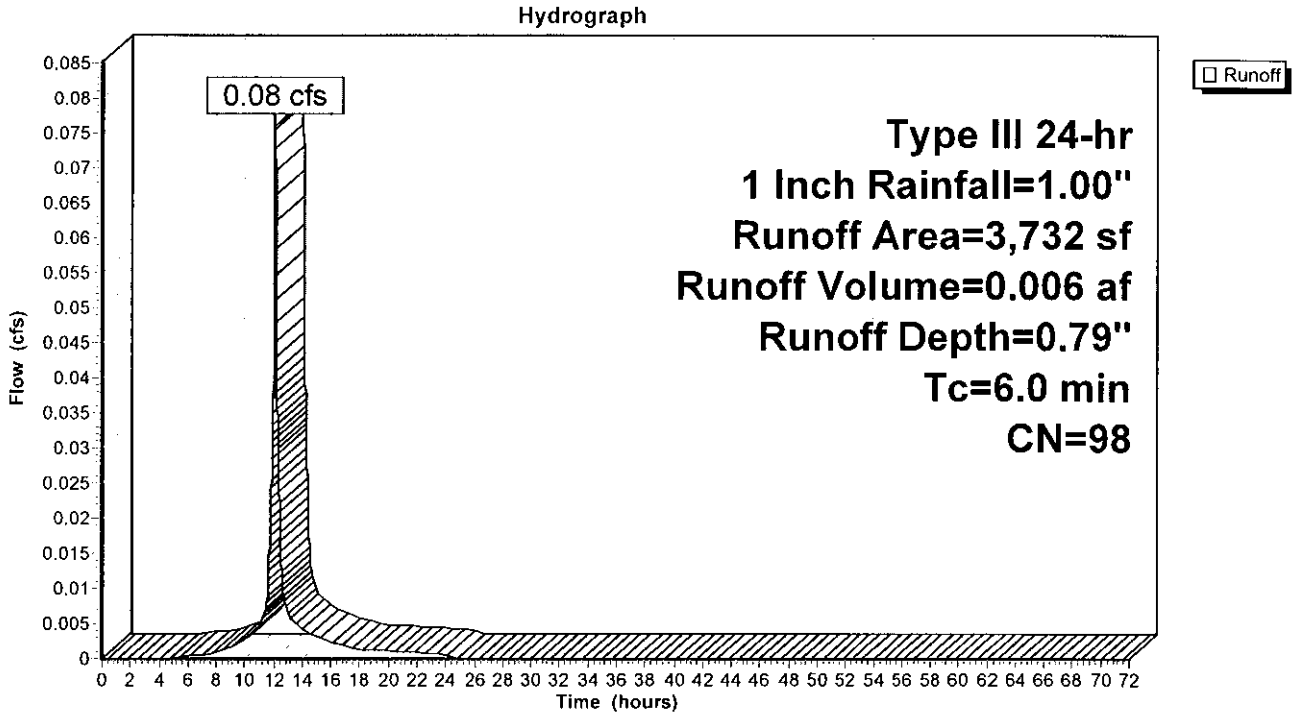
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.006 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	3,732	98	Canopy
	3,732		100.00% Impervious Area

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

Subcatchment S-8: Canopy Runoff



Summary for Subcatchment S-9: Roof Runoff

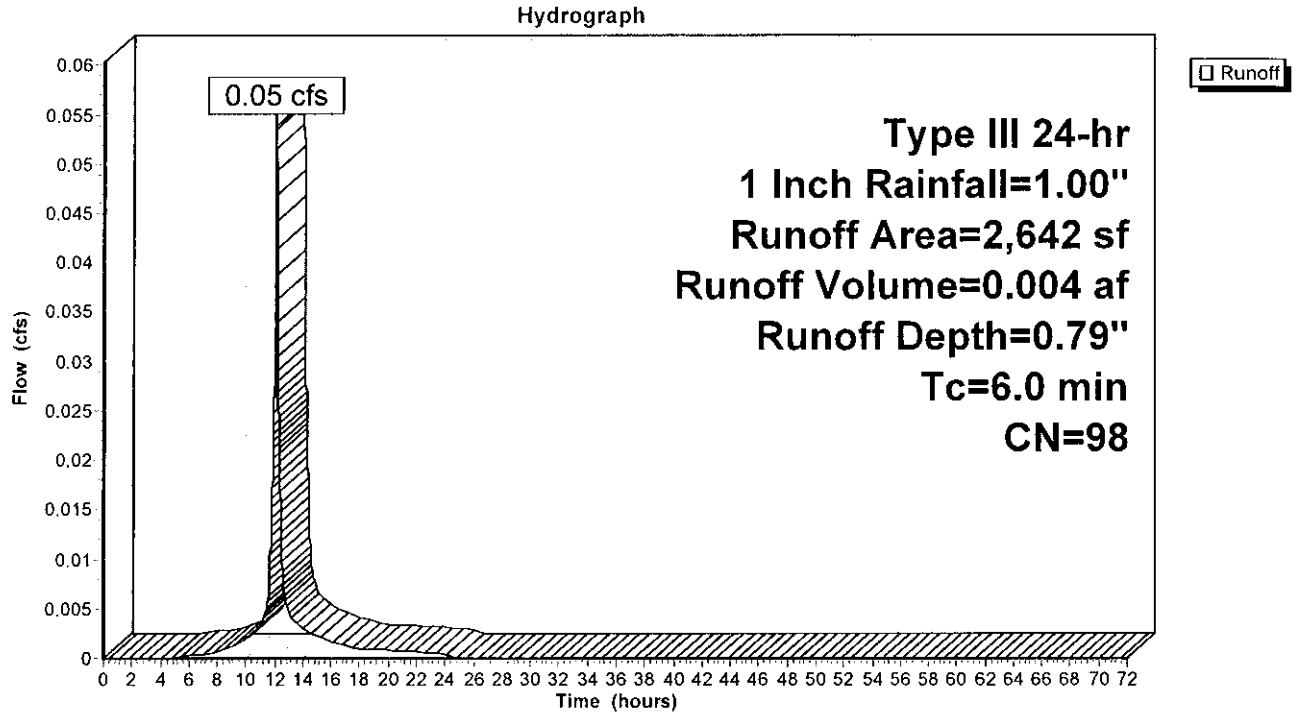
Runoff = 0.05 cfs @ 12.08 hrs, Volume= 0.004 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1 Inch Rainfall=1.00"

	Area (sf)	CN	Description
*	2,642	98	Rooftop
	2,642		100.00% Impervious Area

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

Subcatchment S-9: Roof Runoff



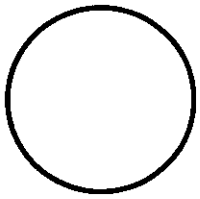
Summary for Reach CB-1: Catch Basin

Inflow Area = 0.182 ac, 97.98% Impervious, Inflow Depth = 0.79" for 1 Inch event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.16 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.3 min

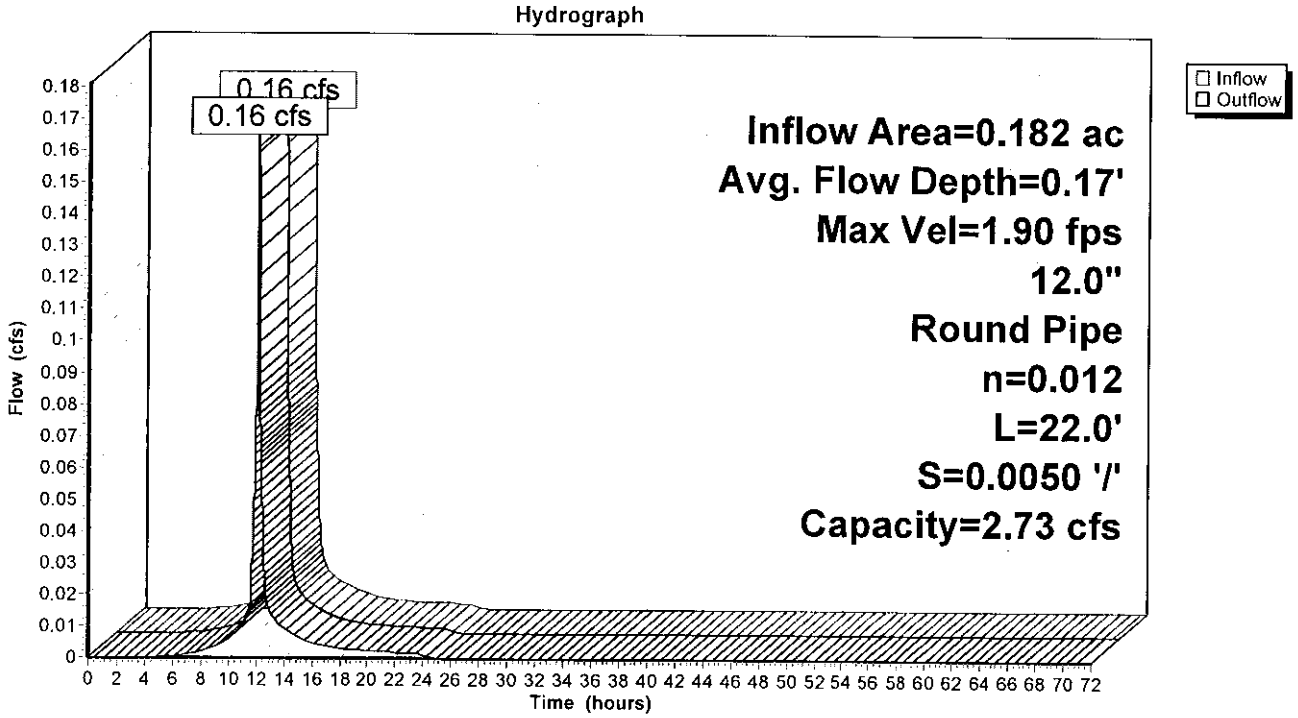
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.90 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 0.62 fps, Avg. Travel Time= 0.6 min

Peak Storage= 2 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 22.0' Slope= 0.0050 '/'
Inlet Invert= 95.00', Outlet Invert= 94.89'



Reach CB-1: Catch Basin



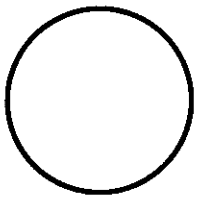
Summary for Reach CB-2: Catch Basin

Inflow Area = 0.480 ac, 94.76% Impervious, Inflow Depth = 0.67" for 1 Inch event
Inflow = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af
Outflow = 0.37 cfs @ 12.11 hrs, Volume= 0.027 af, Atten= 1%, Lag= 1.3 min

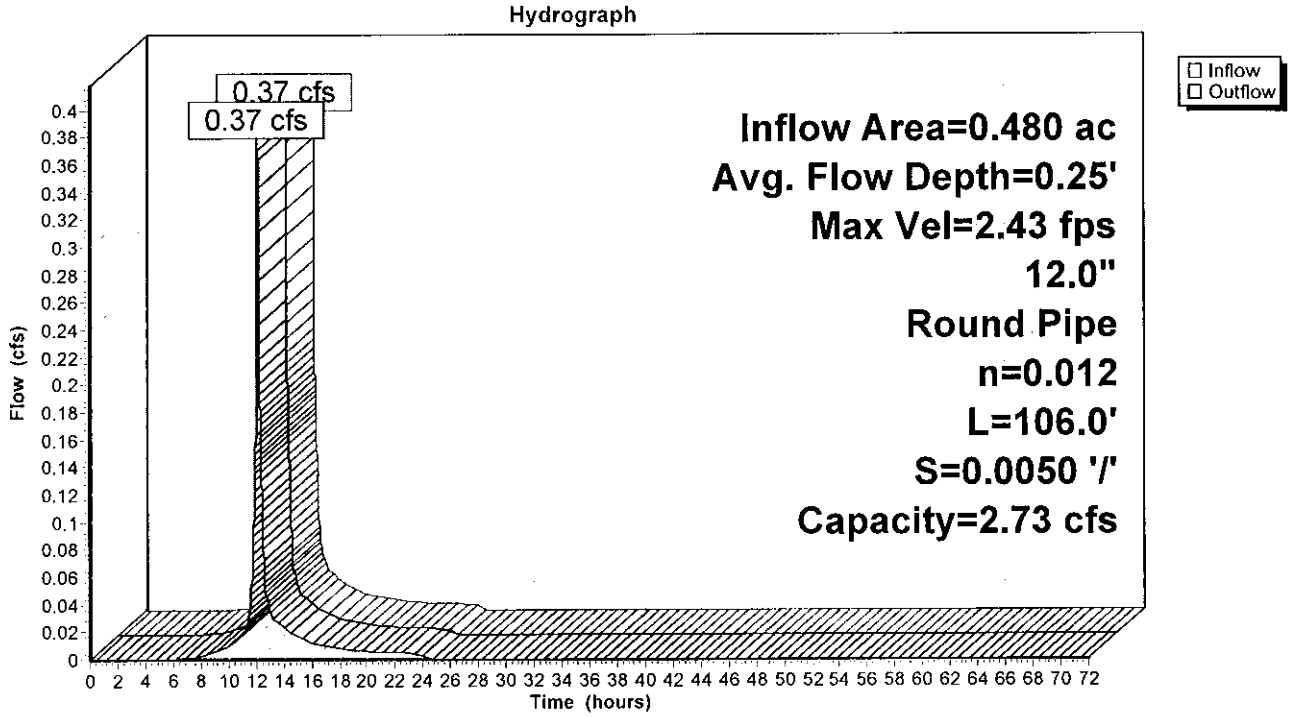
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.43 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.80 fps, Avg. Travel Time= 2.2 min

Peak Storage= 16 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 106.0' Slope= 0.0050 '/'
Inlet Invert= 95.90', Outlet Invert= 95.37'



Reach CB-2: Catch Basin



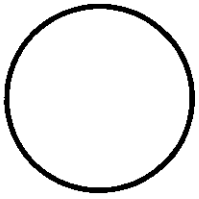
Summary for Reach CB-4: Catch Basin

Inflow Area = 0.287 ac, 75.16% Impervious, Inflow Depth = 0.40" for 1 Inch event
Inflow = 0.13 cfs @ 12.09 hrs, Volume= 0.010 af
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.3 min

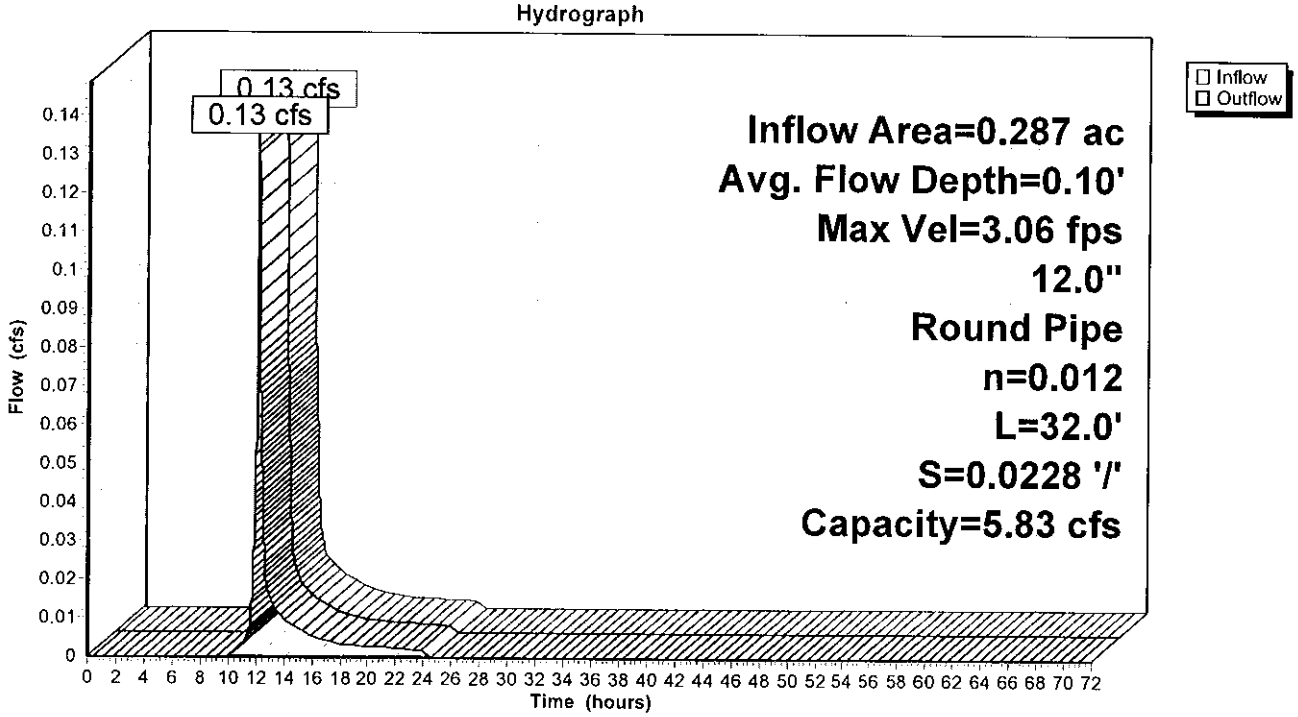
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.06 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.15 fps, Avg. Travel Time= 0.5 min

Peak Storage= 1 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.83 cfs

12.0" Round Pipe
n= 0.012
Length= 32.0' Slope= 0.0228 '/'
Inlet Invert= 96.10', Outlet Invert= 95.37'



Reach CB-4: Catch Basin



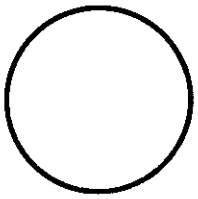
Summary for Reach CB-5: Catch Basin

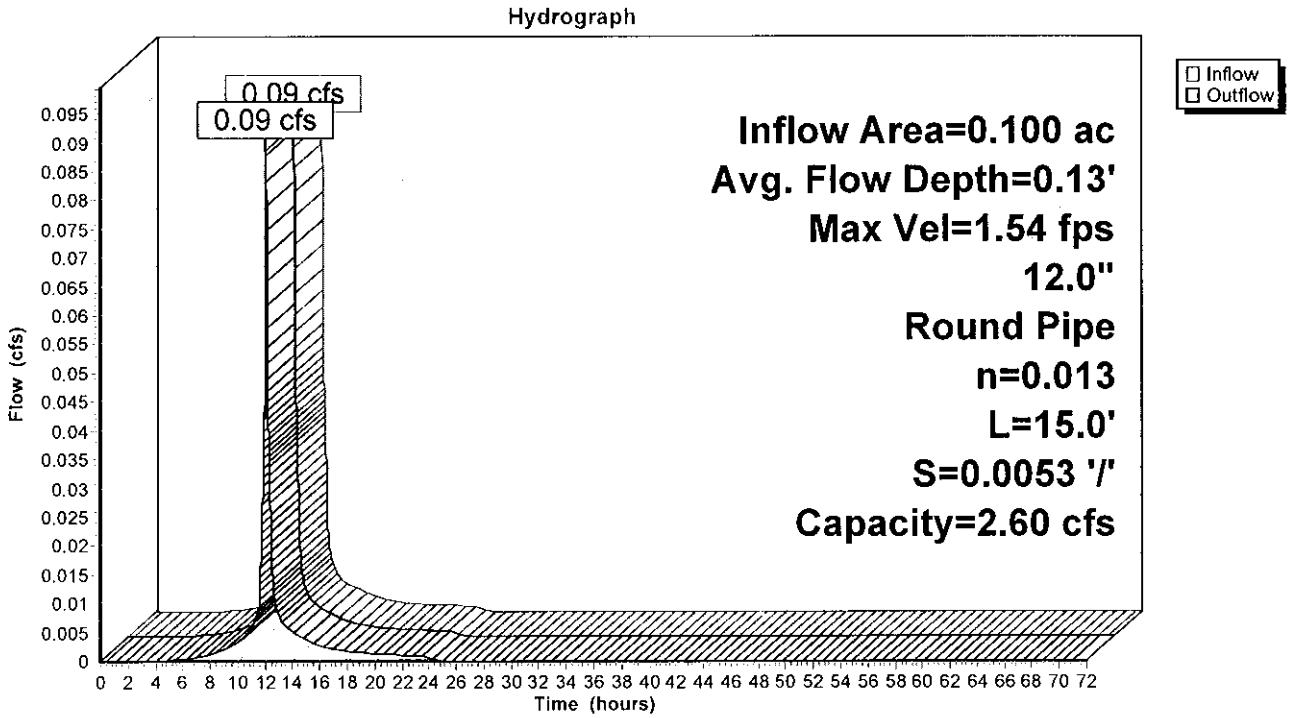
Inflow Area = 0.100 ac,100.00% Impervious, Inflow Depth = 0.79" for 1 Inch event
Inflow = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af
Outflow = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.54 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 0.51 fps, Avg. Travel Time= 0.5 min

Peak Storage= 1 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.60 cfs

12.0" Round Pipe
n= 0.013
Length= 15.0' Slope= 0.0053 '/'
Inlet Invert= 97.34', Outlet Invert= 97.26'





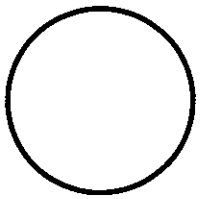
Summary for Reach P-2: 12" HDPE

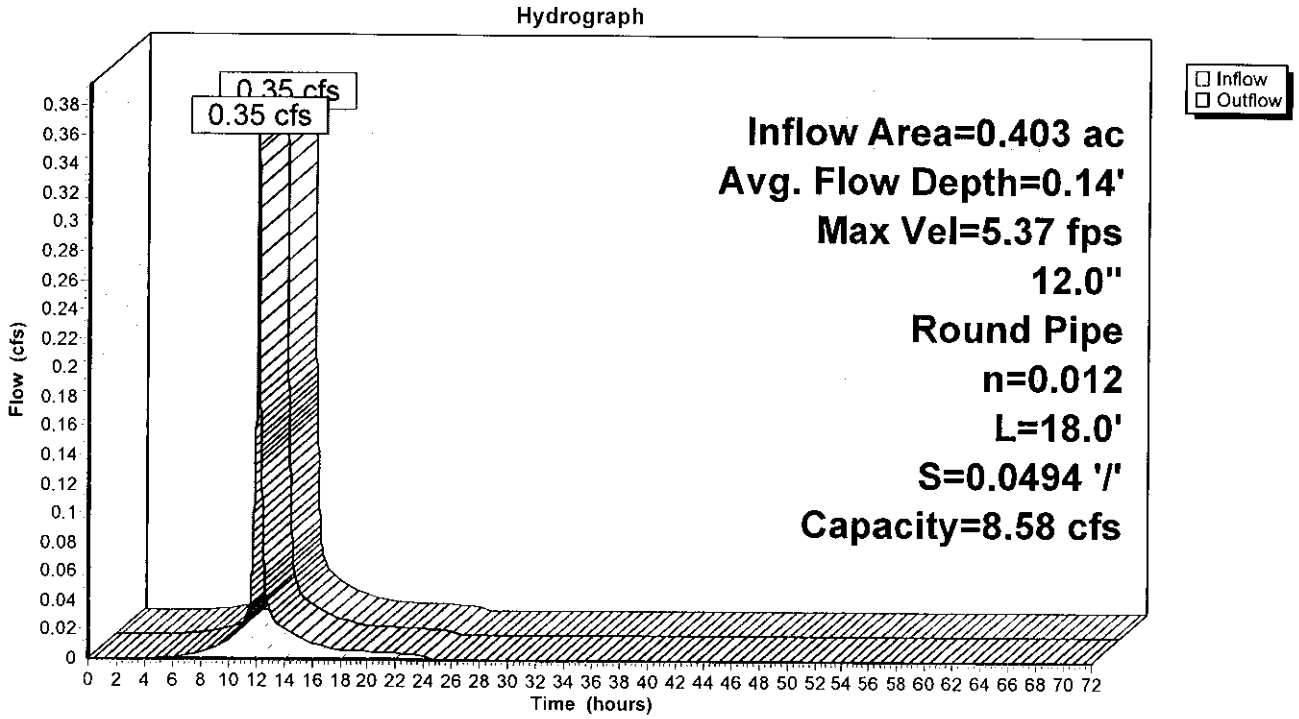
Inflow Area = 0.403 ac, 98.24% Impervious, Inflow Depth = 0.79" for 1 Inch event
Inflow = 0.35 cfs @ 12.10 hrs, Volume= 0.027 af
Outflow = 0.35 cfs @ 12.11 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.37 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.78 fps, Avg. Travel Time= 0.2 min

Peak Storage= 1 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.58 cfs

12.0" Round Pipe
n= 0.012
Length= 18.0' Slope= 0.0494 '/'
Inlet Invert= 94.89', Outlet Invert= 94.00'





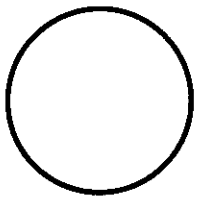
Summary for Reach P-3: 12" HDPE

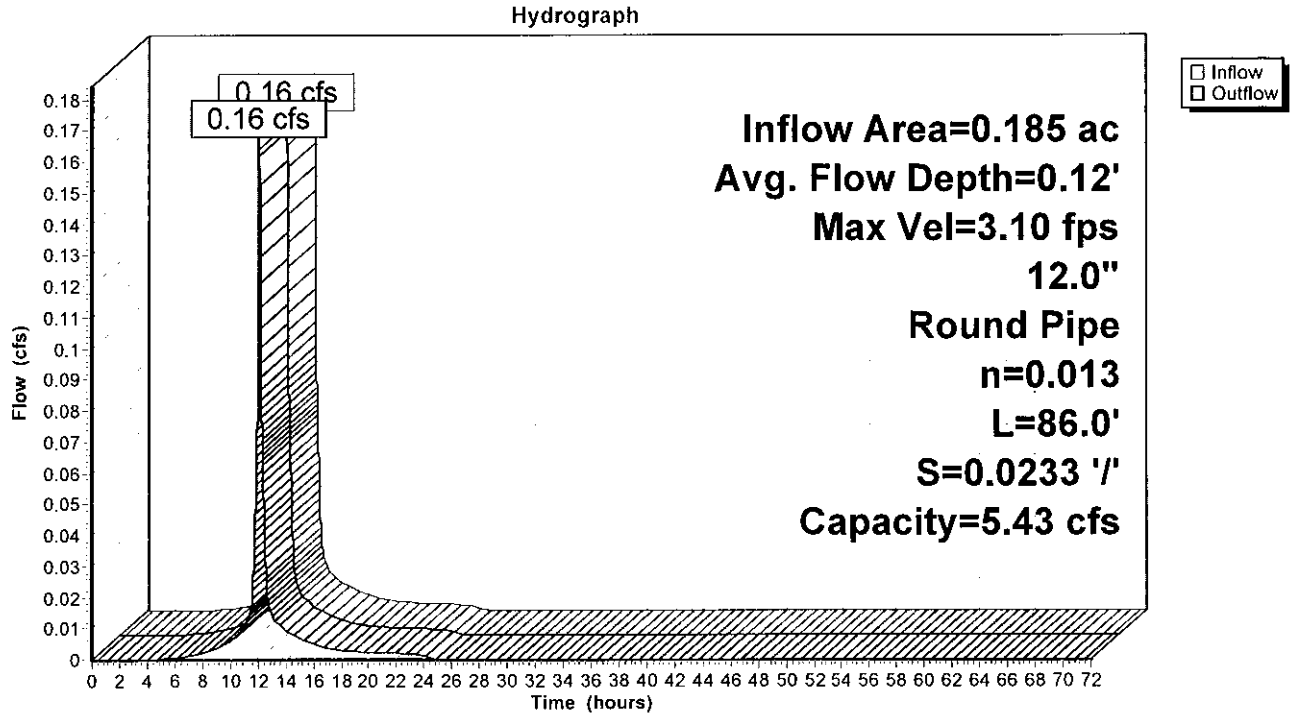
Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth = 0.79" for 1 Inch event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.16 cfs @ 12.10 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.10 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.04 fps, Avg. Travel Time= 1.4 min

Peak Storage= 5 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.43 cfs

12.0" Round Pipe
n= 0.013
Length= 86.0' Slope= 0.0233 '/'
Inlet Invert= 96.00', Outlet Invert= 94.00'





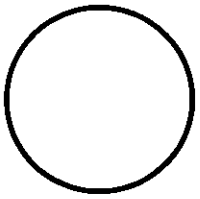
Summary for Reach P-6: 12" HDPE

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 0.57" for 1 Inch event
Inflow = 0.50 cfs @ 12.10 hrs, Volume= 0.036 af
Outflow = 0.50 cfs @ 12.11 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.4 min

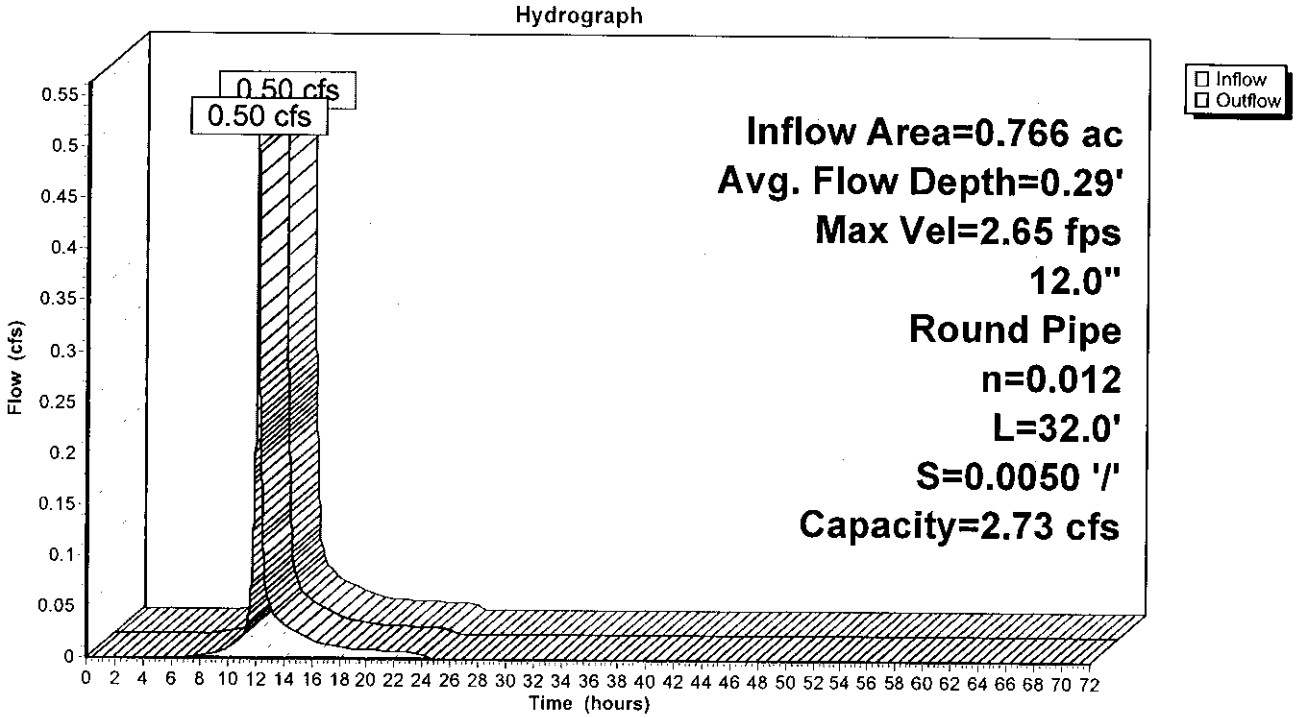
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.65 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 0.6 min

Peak Storage= 6 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 32.0' Slope= 0.0050 '/'
Inlet Invert= 95.37', Outlet Invert= 95.21'



Reach P-6: 12" HDPE



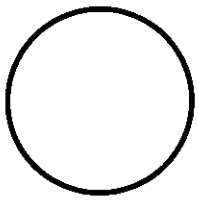
Summary for Reach P-7: 12" HDPE

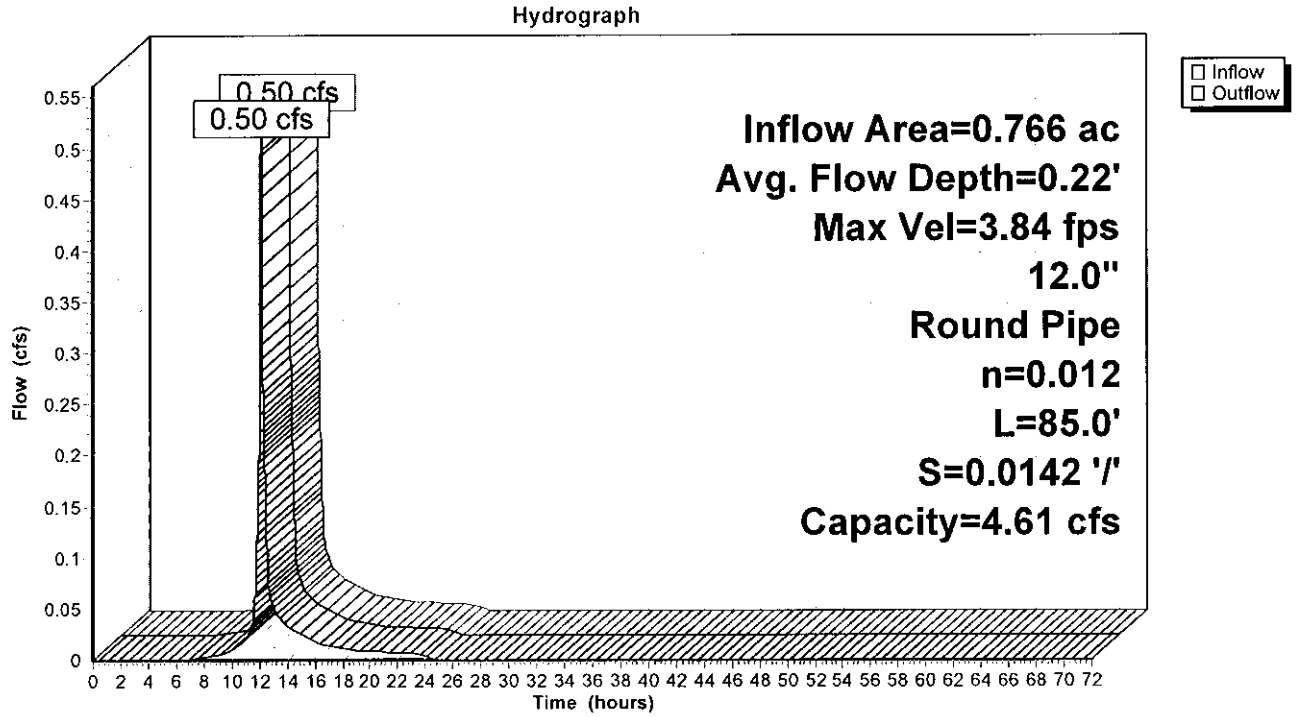
Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 0.57" for 1 Inch event
Inflow = 0.50 cfs @ 12.11 hrs, Volume= 0.036 af
Outflow = 0.50 cfs @ 12.12 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.84 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.27 fps, Avg. Travel Time= 1.1 min

Peak Storage= 11 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.61 cfs

12.0" Round Pipe
n= 0.012
Length= 85.0' Slope= 0.0142 '/'
Inlet Invert= 95.21', Outlet Invert= 94.00'





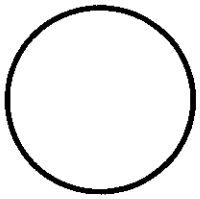
Summary for Reach TD-1: Trench Drain

Inflow Area = 0.222 ac, 98.45% Impervious, Inflow Depth = 0.79" for 1 Inch event
Inflow = 0.20 cfs @ 12.08 hrs, Volume= 0.015 af
Outflow = 0.19 cfs @ 12.11 hrs, Volume= 0.015 af, Atten= 1%, Lag= 1.8 min

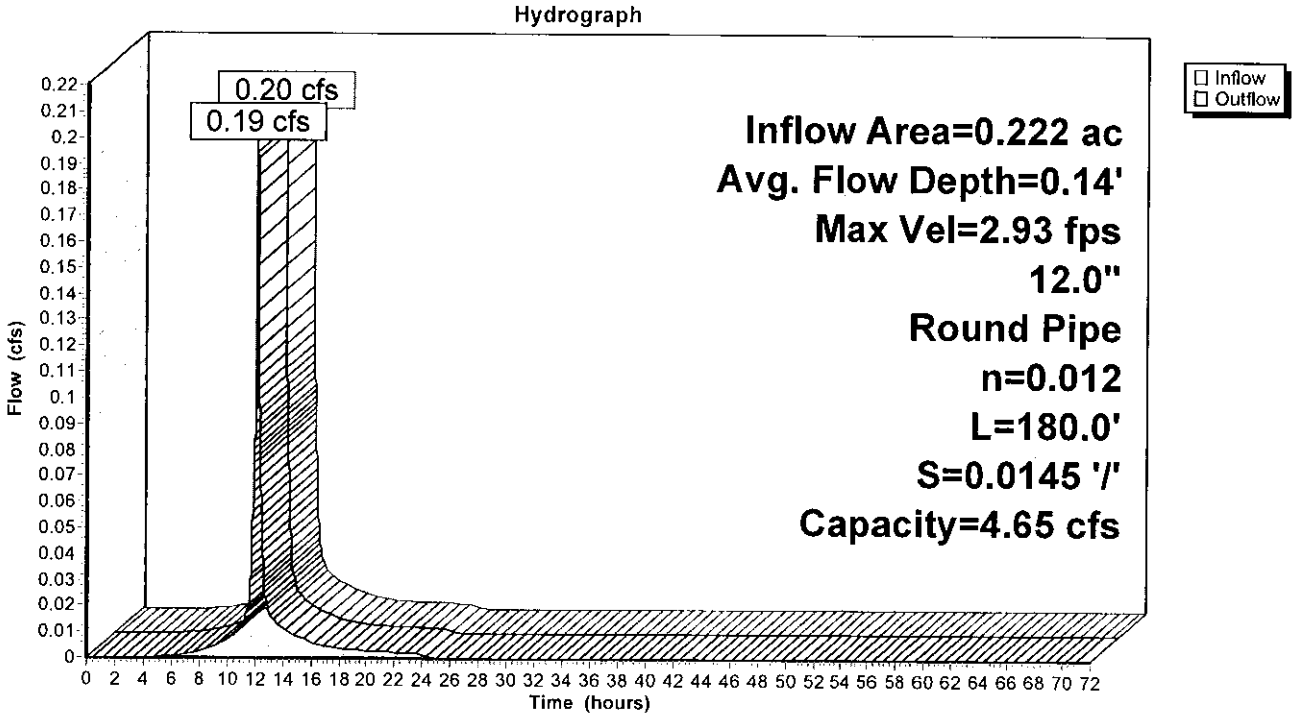
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.93 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 0.97 fps, Avg. Travel Time= 3.1 min

Peak Storage= 12 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.65 cfs

12.0" Round Pipe
n= 0.012
Length= 180.0' Slope= 0.0145 '/'
Inlet Invert= 97.50', Outlet Invert= 94.89'



Reach TD-1: Trench Drain

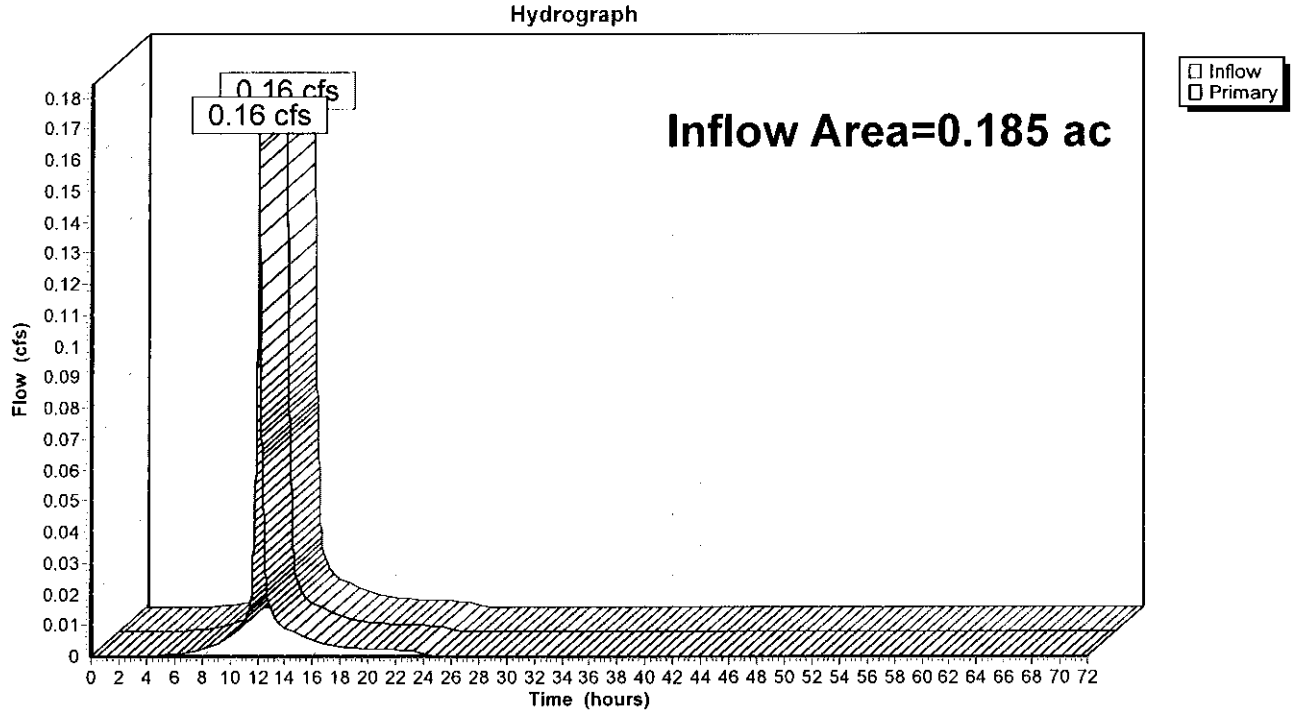


Summary for Pond DMH-2: Drain Manhole

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth = 0.79" for 1 Inch event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af
Primary = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond DMH-2: Drain Manhole

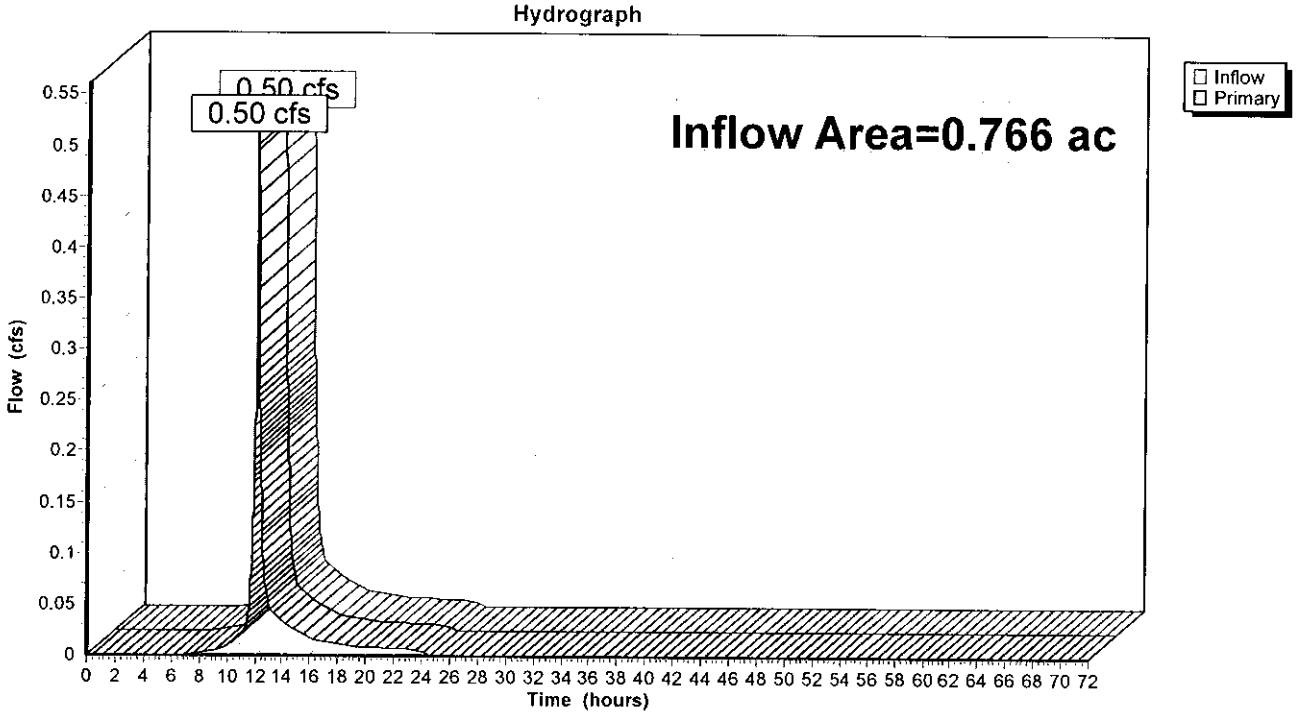


Summary for Pond DMH-5: Drain Manhole

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 0.57" for 1 Inch event
Inflow = 0.50 cfs @ 12.11 hrs, Volume= 0.036 af
Primary = 0.50 cfs @ 12.11 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond DMH-5: Drain Manhole



Summary for Pond SRS-1: Subsurface Recharge System

Inflow Area = 1.355 ac, 92.37% Impervious, Inflow Depth = 0.67" for 1 Inch event
Inflow = 1.01 cfs @ 12.11 hrs, Volume= 0.075 af
Outflow = 0.01 cfs @ 9.52 hrs, Volume= 0.074 af, Atten= 99%, Lag= 0.0 min
Discarded = 0.01 cfs @ 9.52 hrs, Volume= 0.074 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 94.93' @ 21.57 hrs Surf.Area= 2,242 sf Storage= 2,478 cf

Plug-Flow detention time= 1,604.4 min calculated for 0.074 af (98% of inflow)
Center-of-Mass det. time= 1,595.4 min (2,400.7 - 805.3)

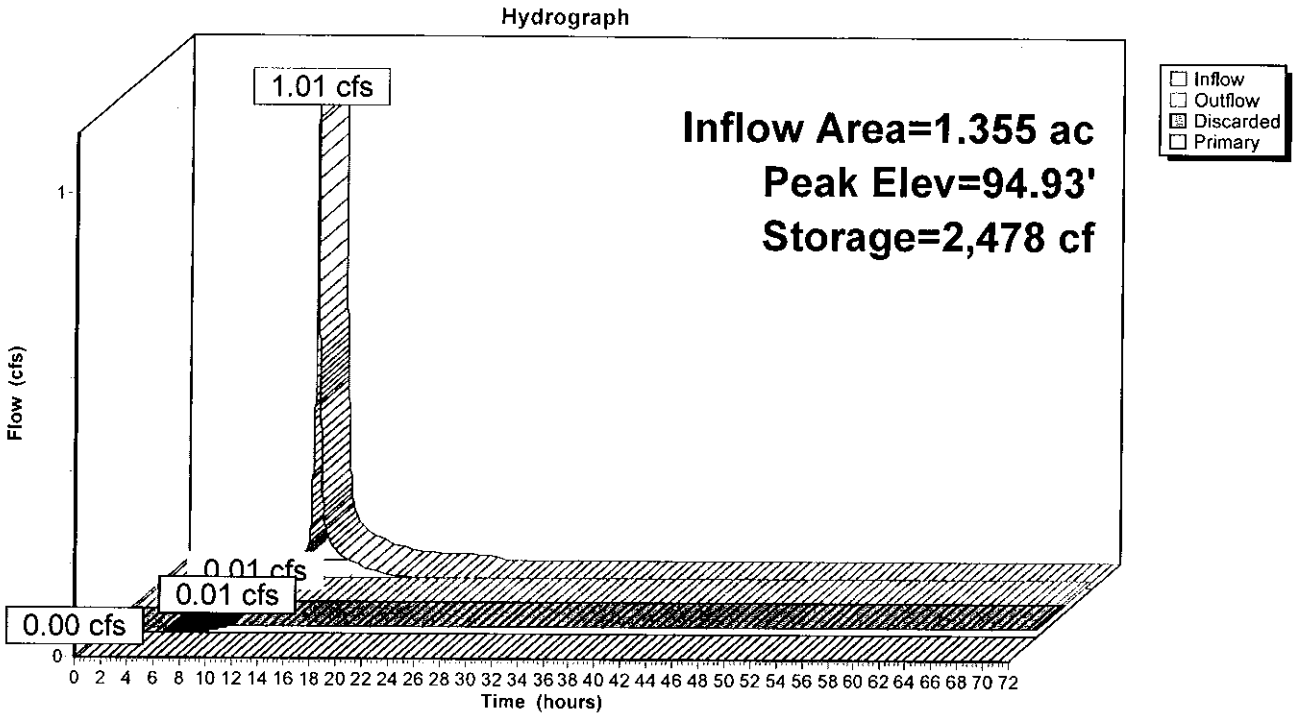
Volume	Invert	Avail.Storage	Storage Description
#1	93.25'	2,975 cf	**21.40'W x 104.76'L x 5.75'H Prismatoid** 12,891 cf Overall - 5,454 cf Embedded = 7,436 cf x 40.0% Voids
#2	94.00'	5,454 cf	**Cultec R-902HD** x 84 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 84 Chambers in 3 Rows Cap Storage= +2.8 cf x 2 x 3 rows = 16.6 cf
		8,429 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	93.25'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	97.00'	**12.0" Round Culvert X 3.00** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 97.00' / 96.80' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Discarded OutFlow Max=0.01 cfs @ 9.52 hrs HW=93.31' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.25' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond SRS-1: Subsurface Recharge System



Summary for Pond SRS-2: Subsurface Recharge System

Inflow Area = 0.161 ac,100.00% Impervious, Inflow Depth = 0.79" for 1 Inch event
Inflow = 0.14 cfs @ 12.09 hrs, Volume= 0.011 af
Outflow = 0.00 cfs @ 9.30 hrs, Volume= 0.011 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.00 cfs @ 9.30 hrs, Volume= 0.011 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 97.69' @ 18.34 hrs Surf.Area= 391 sf Storage= 329 cf

Plug-Flow detention time= 1,243.2 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 1,243.2 min (2,031.3 - 788.2)

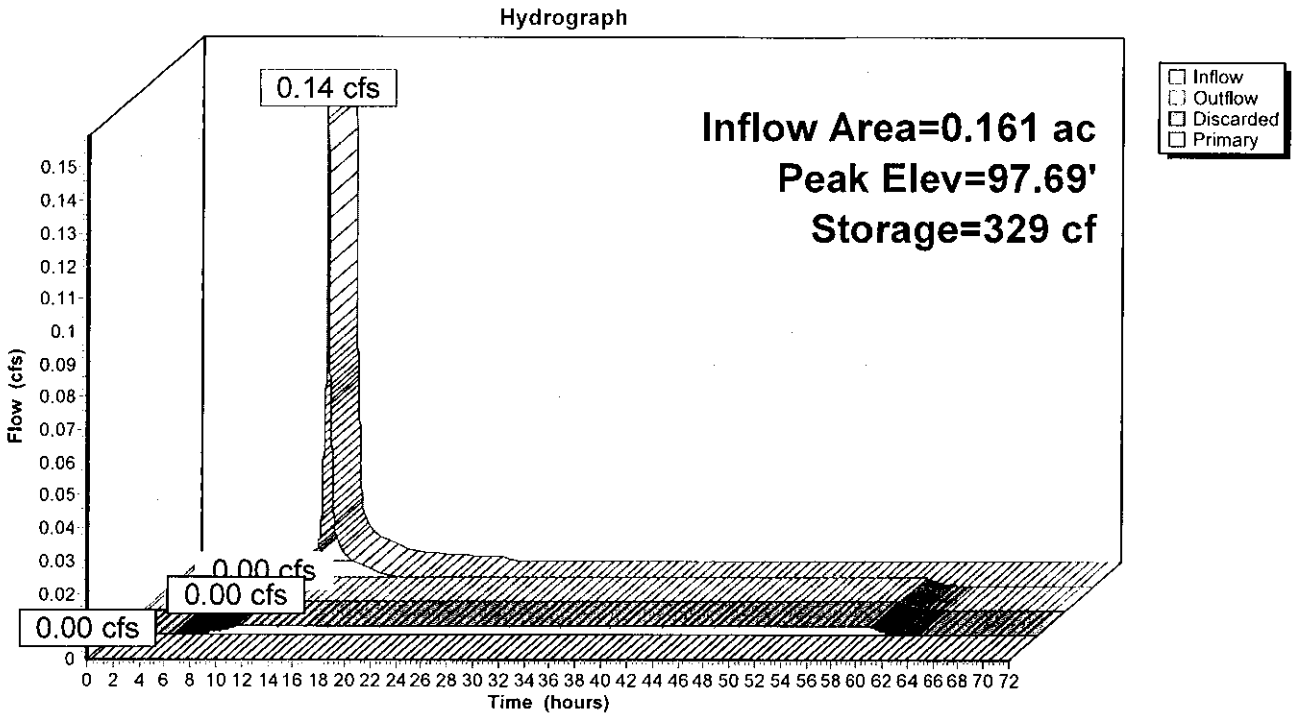
Volume	Invert	Avail.Storage	Storage Description
#1	96.25'	587 cf	**8.50'W x 46.04'L x 5.75'H Prismatoid** 2,250 cf Overall - 782 cf Embedded = 1,468 cf x 40.0% Voids
#2	97.00'	782 cf	**Cultec R-902HD** x 12 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap Cap Storage= +2.8 cf x 2 x 1 rows = 5.5 cf
		1,369 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.25'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**12.0" Round Culvert** L= 28.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 99.00' / 94.20' S= 0.1714 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Discarded OutFlow Max=0.00 cfs @ 9.30 hrs HW=96.31' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=96.25' (Free Discharge)
↑**2=Culvert** (Controls 0.00 cfs)

Pond SRS-2: Subsurface Recharge System

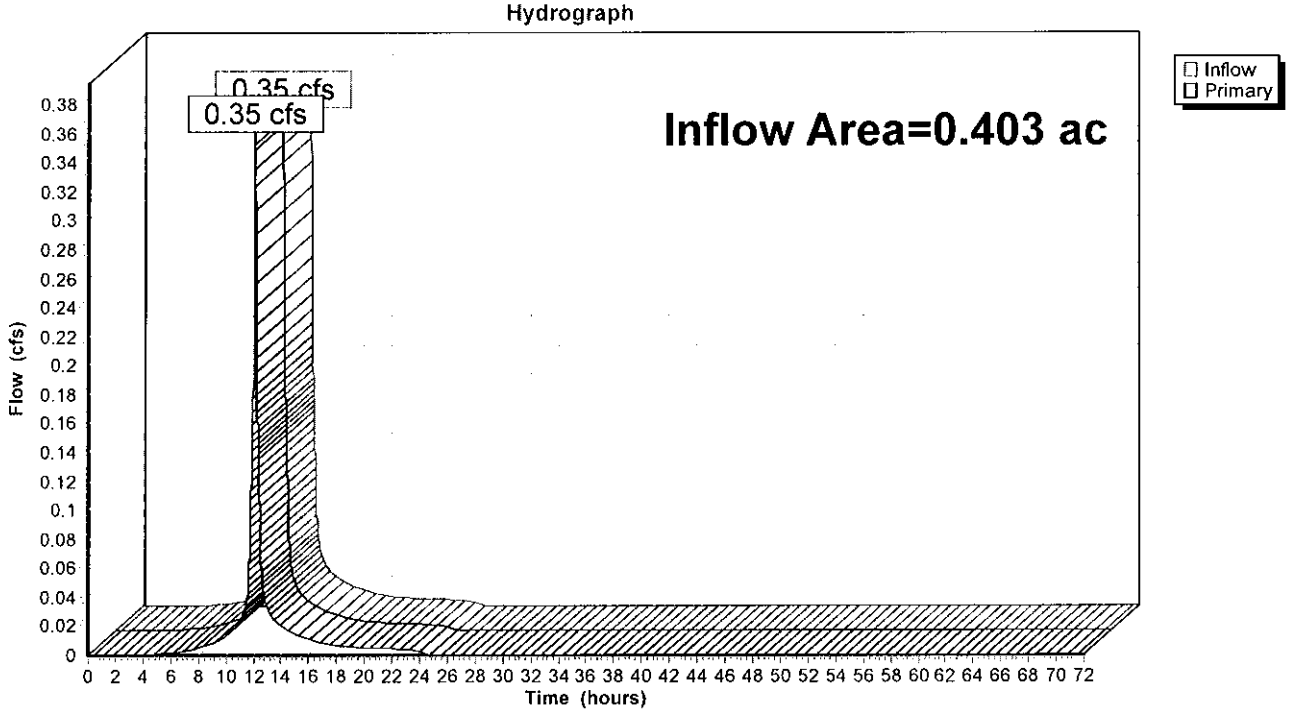


Summary for Pond WQI-1: Water Quality Inlet

Inflow Area = 0.403 ac, 98.24% Impervious, Inflow Depth = 0.79" for 1 Inch event
Inflow = 0.35 cfs @ 12.10 hrs, Volume= 0.027 af
Primary = 0.35 cfs @ 12.10 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond WQI-1: Water Quality Inlet

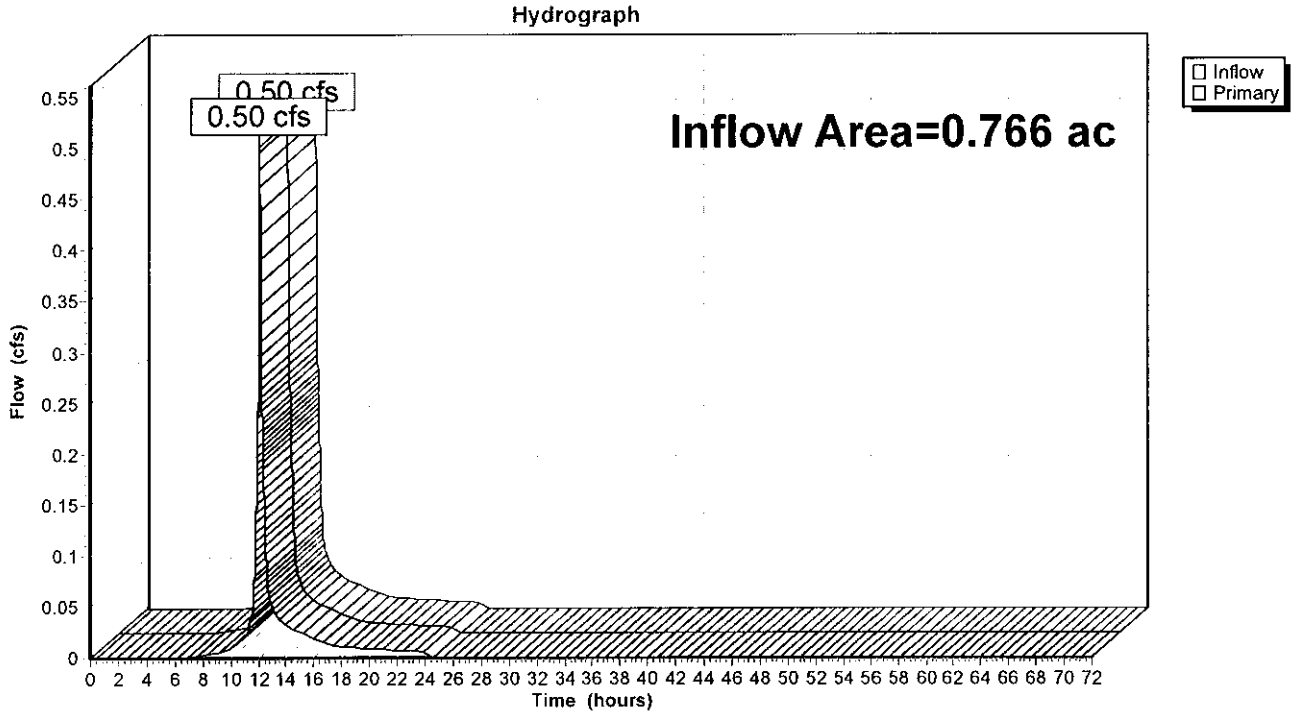


Summary for Pond WQI-2: Water Quality Inlet

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 0.57" for 1 Inch event
Inflow = 0.50 cfs @ 12.10 hrs, Volume= 0.036 af
Primary = 0.50 cfs @ 12.10 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond WQI-2: Water Quality Inlet



Summary for Subcatchment S-1: Roof Runoff

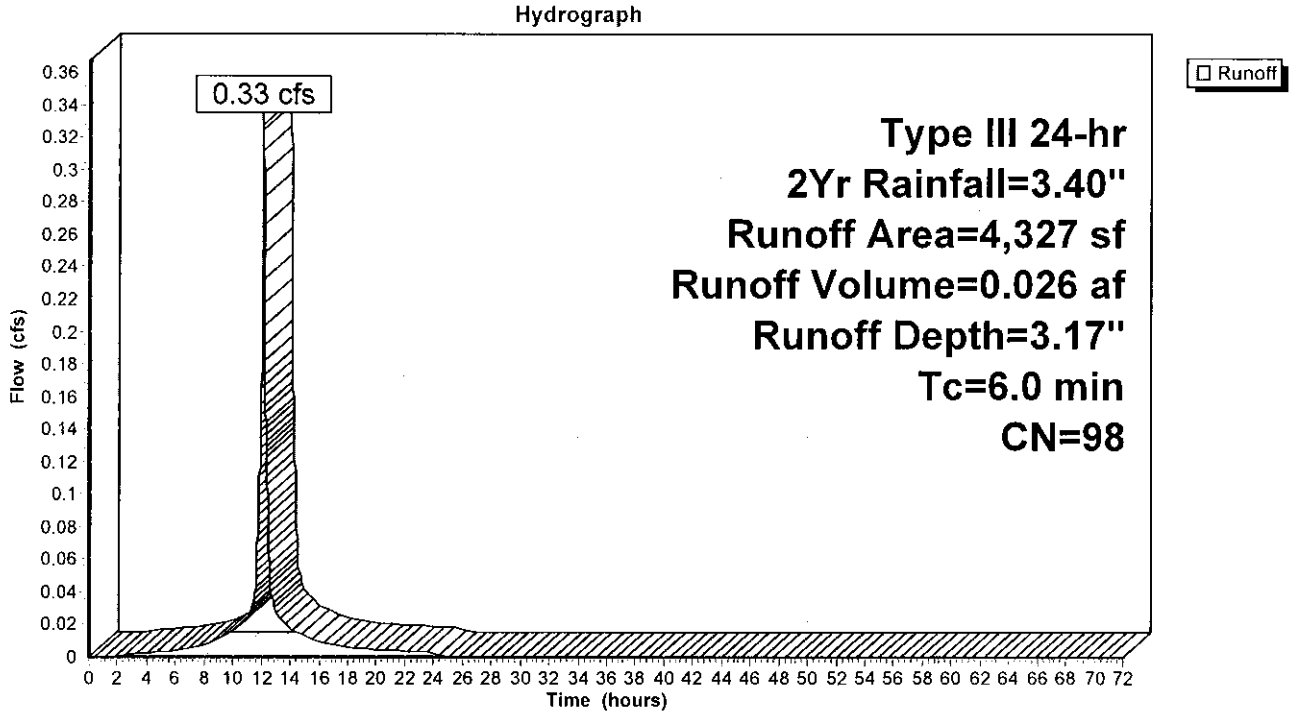
Runoff = 0.33 cfs @ 12.08 hrs, Volume= 0.026 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

	Area (sf)	CN	Description
*	4,327	98	Rooftop
	4,327		100.00% Impervious Area

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

Subcatchment S-1: Roof Runoff



Summary for Subcatchment S-10: Offsite Runoff

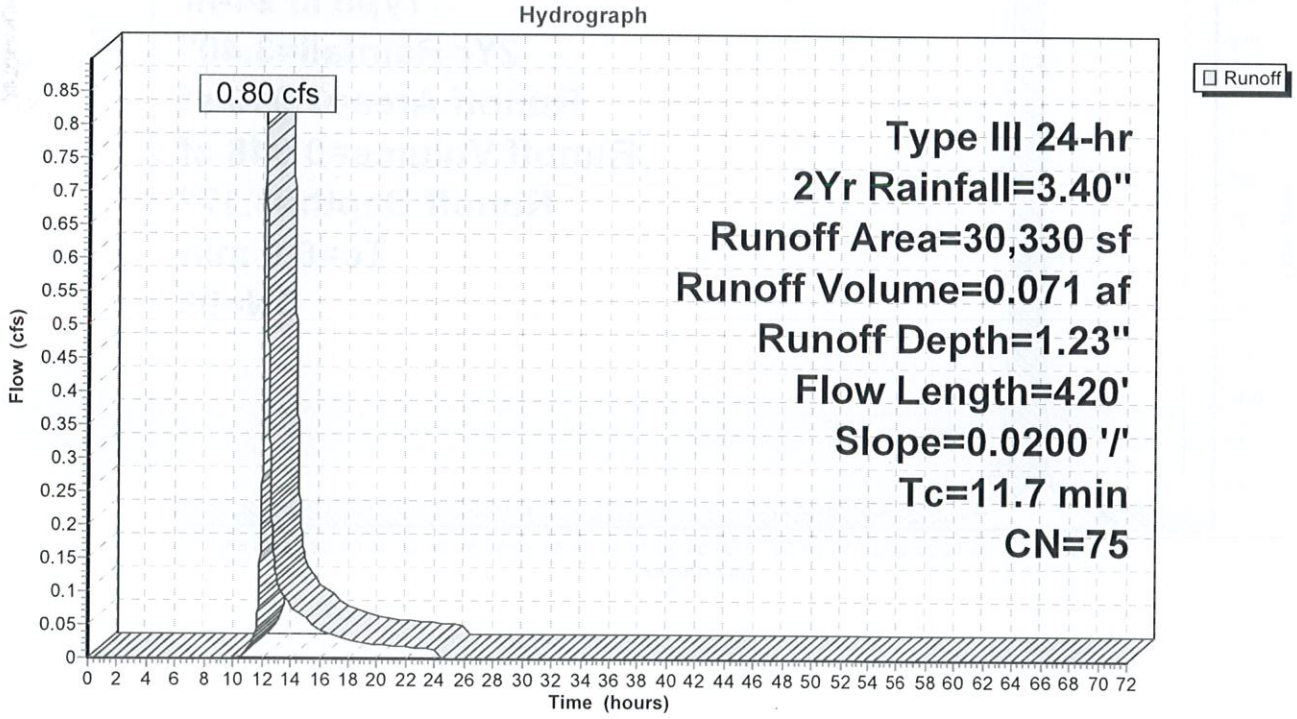
Runoff = 0.80 cfs @ 12.17 hrs, Volume= 0.071 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

Area (sf)	CN	Description
29,246	74	>75% Grass cover, Good, HSG C
1,084	98	Paved parking & roofs
30,330	75	Weighted Average
29,246		96.43% Pervious Area
1,084		3.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
6.2	370	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.7	420	Total			

Subcatchment S-10: Offsite Runoff



Summary for Subcatchment S-2: Tributary to CB-1

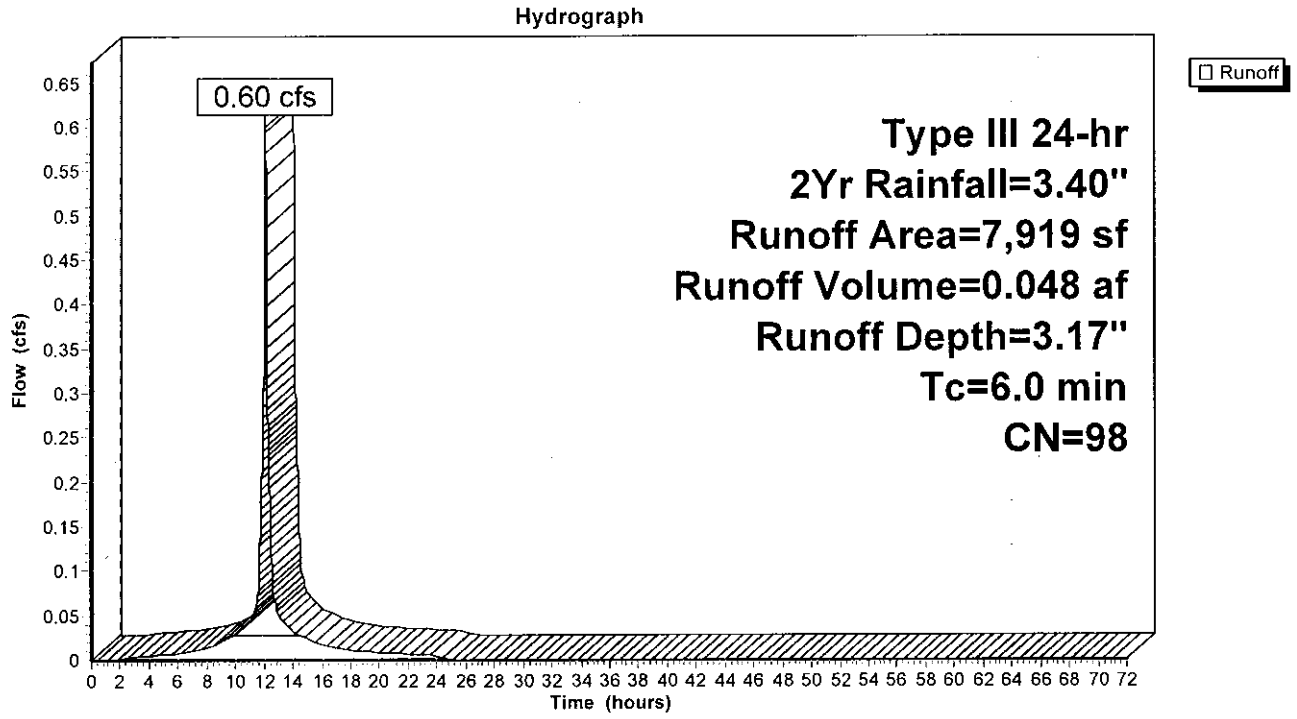
Runoff = 0.60 cfs @ 12.08 hrs, Volume= 0.048 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

Area (sf)	CN	Description
160	74	>75% Grass cover, Good, HSG C
7,759	98	Paved parking
7,919	98	Weighted Average
160		2.02% Pervious Area
7,759		97.98% Impervious Area

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

Subcatchment S-2: Tributary to CB-1



Summary for Subcatchment S-3: Tributary to TD-1

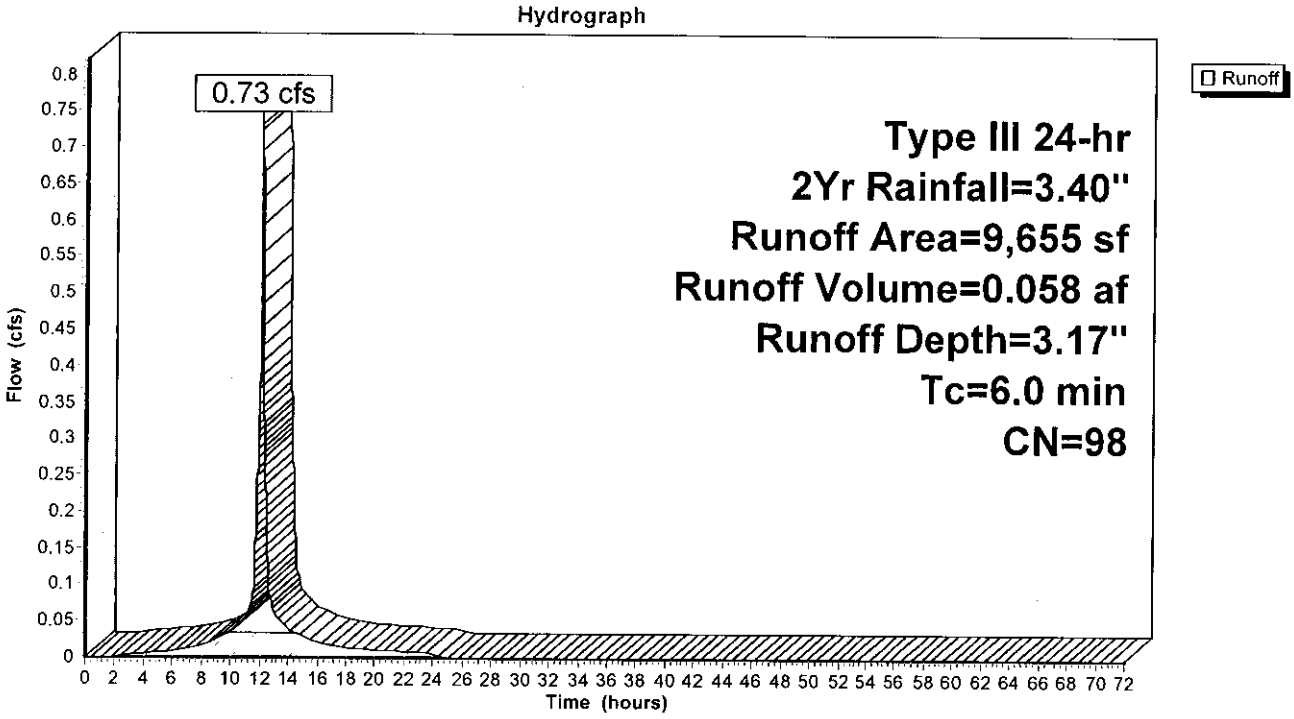
Runoff = 0.73 cfs @ 12.08 hrs, Volume= 0.058 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

Area (sf)	CN	Description
9,505	98	Paved parking
150	74	>75% Grass cover, Good, HSG C
9,655	98	Weighted Average
150		1.55% Pervious Area
9,505		98.45% Impervious Area

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

Subcatchment S-3: Tributary to TD-1



Summary for Subcatchment S-4: Tributary to CB-2

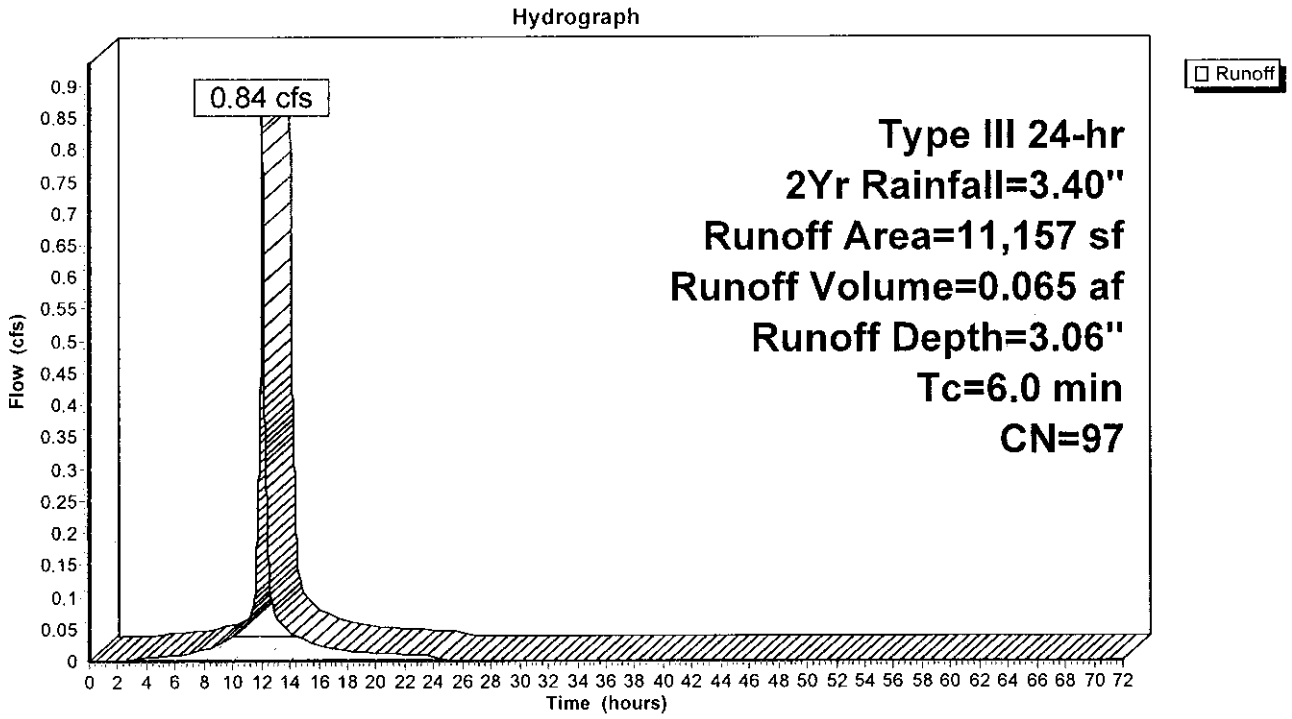
Runoff = 0.84 cfs @ 12.08 hrs, Volume= 0.065 af, Depth= 3.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

Area (sf)	CN	Description
265	74	>75% Grass cover, Good, HSG C
10,892	98	Paved parking
11,157	97	Weighted Average
265		2.38% Pervious Area
10,892		97.62% Impervious Area

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

Subcatchment S-4: Tributary to CB-2



Summary for Subcatchment S-5: Tributary to CB-3

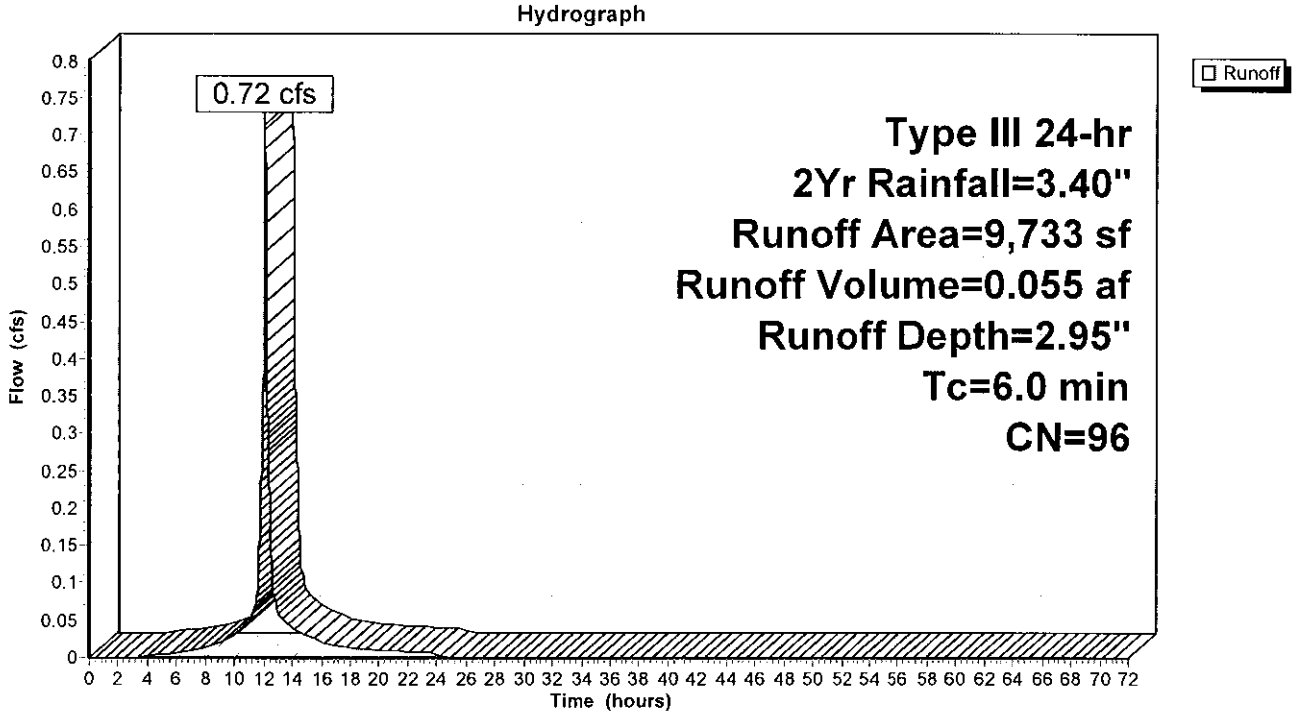
Runoff = 0.72 cfs @ 12.08 hrs, Volume= 0.055 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

Area (sf)	CN	Description
8,903	98	Paved parking
830	74	>75% Grass cover, Good, HSG C
9,733	96	Weighted Average
830		8.53% Pervious Area
8,903		91.47% Impervious Area

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

Subcatchment S-5: Tributary to CB-3



Summary for Subcatchment S-6: Tributary to CB-4

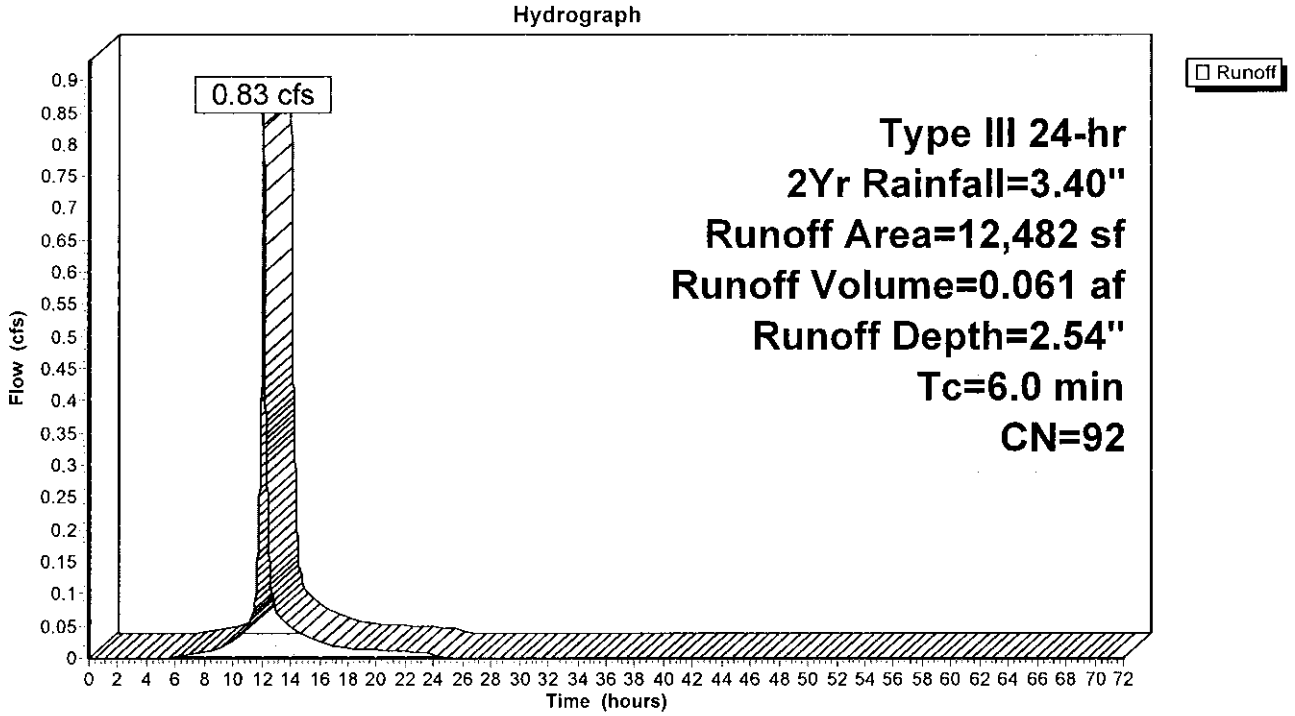
Runoff = 0.83 cfs @ 12.09 hrs, Volume= 0.061 af, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

Area (sf)	CN	Description
9,382	98	Paved parking
3,100	74	>75% Grass cover, Good, HSG C
12,482	92	Weighted Average
3,100		24.84% Pervious Area
9,382		75.16% Impervious Area

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

Subcatchment S-6: Tributary to CB-4



Summary for Subcatchment S-7: Tributary to CB-4

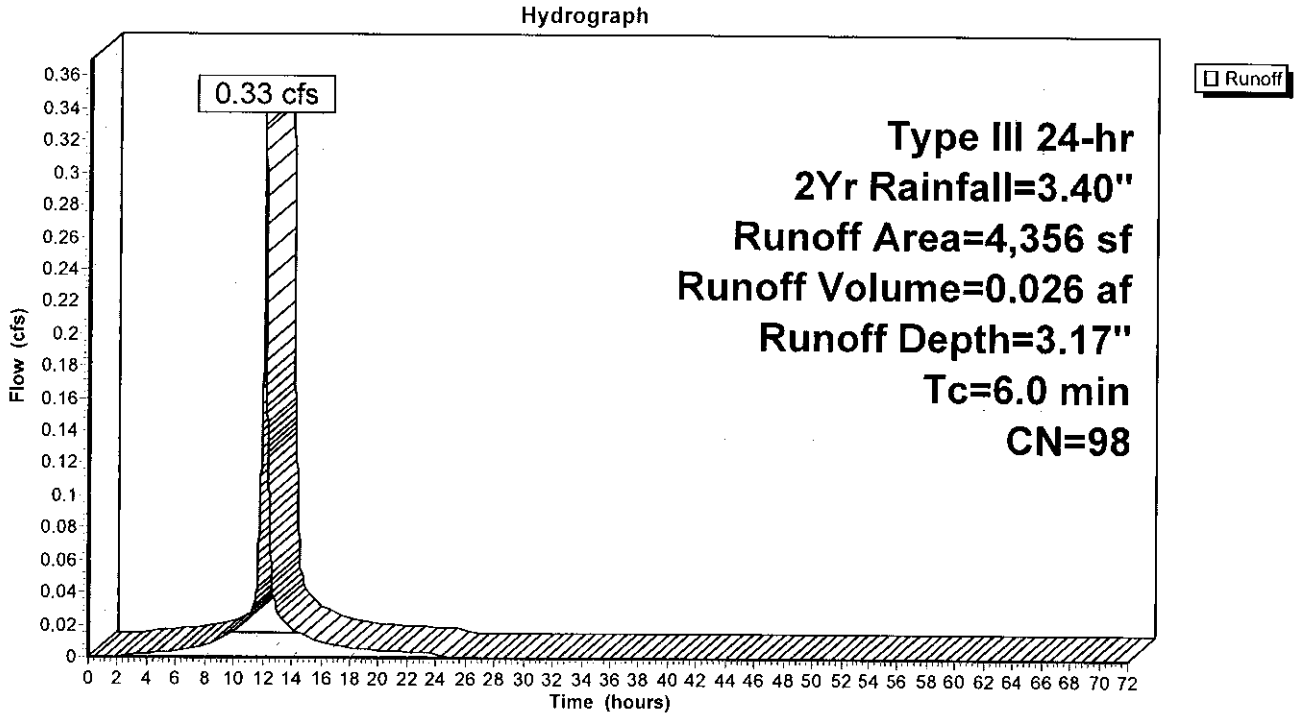
Runoff = 0.33 cfs @ 12.08 hrs, Volume= 0.026 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

Area (sf)	CN	Description
4,356	98	Paved parking
4,356		100.00% Impervious Area

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

Subcatchment S-7: Tributary to CB-4



Summary for Subcatchment S-8: Canopy Runoff

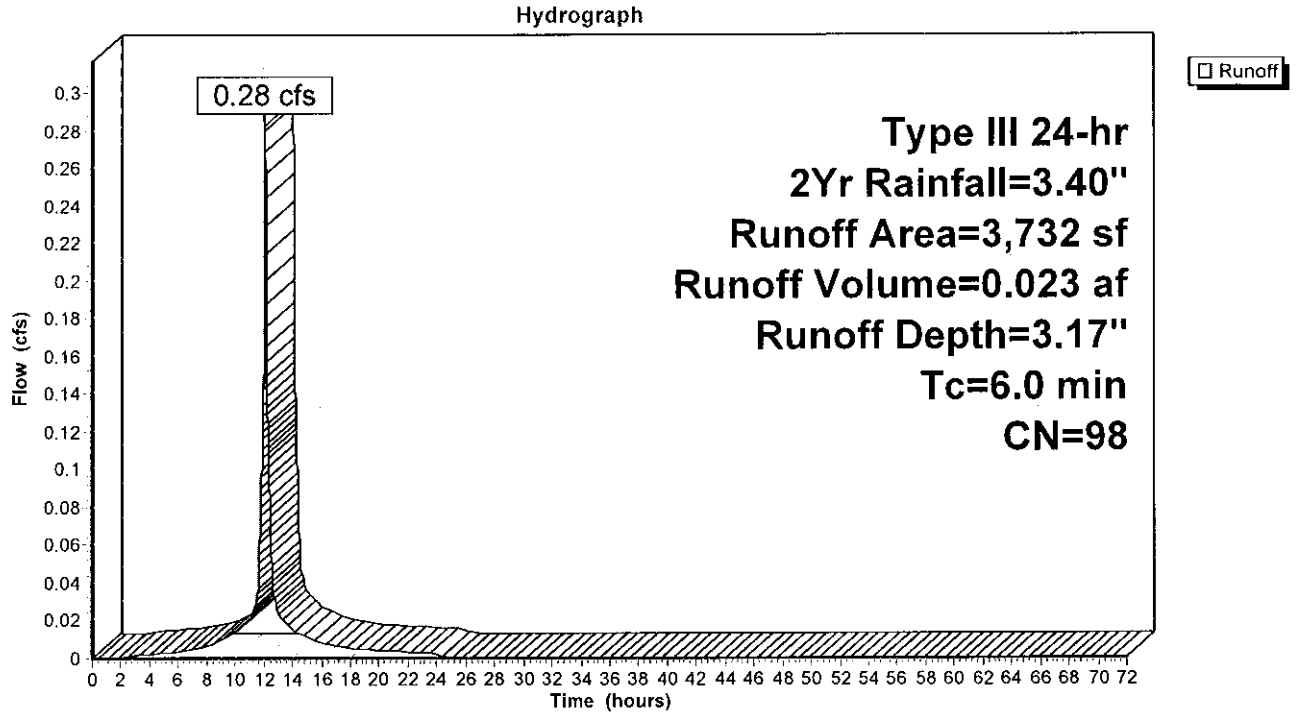
Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.023 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

	Area (sf)	CN	Description
*	3,732	98	Canopy
	3,732		100.00% Impervious Area

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

Subcatchment S-8: Canopy Runoff



Summary for Subcatchment S-9: Roof Runoff

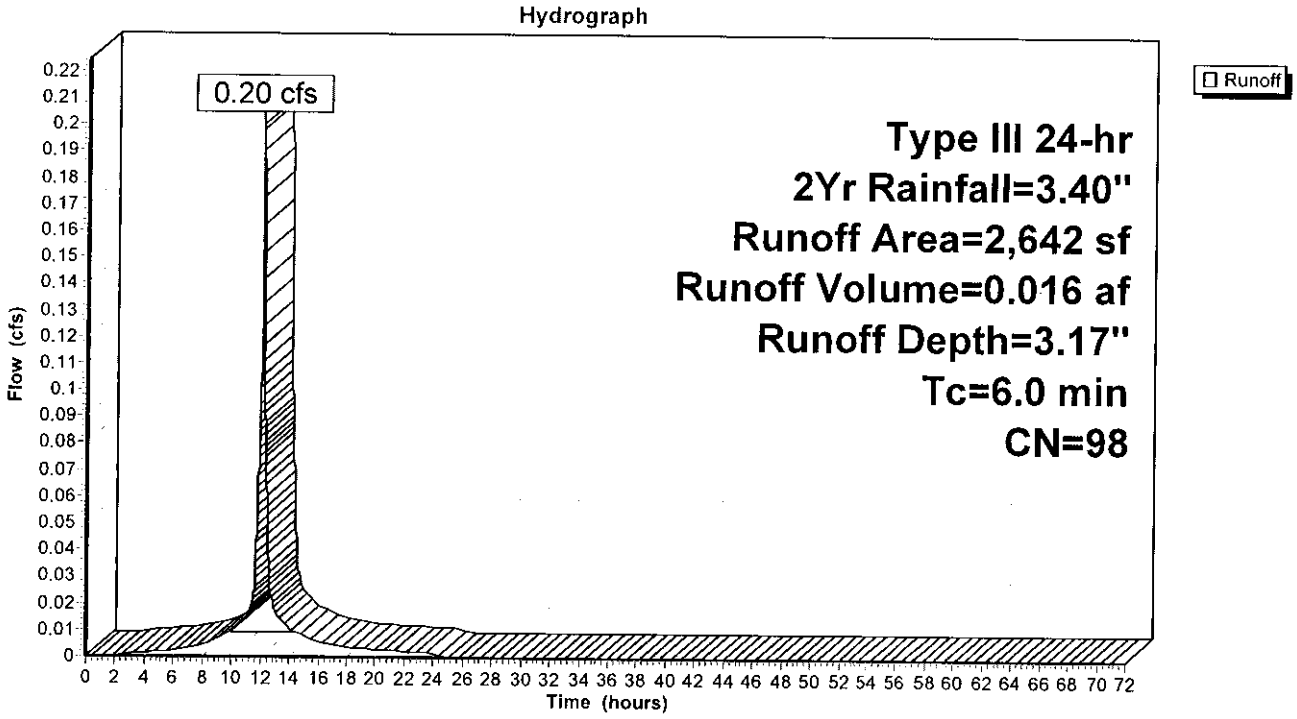
Runoff = 0.20 cfs @ 12.08 hrs, Volume= 0.016 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2Yr Rainfall=3.40"

	Area (sf)	CN	Description
*	2,642	98	Rooftop
	2,642		100.00% Impervious Area

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

Subcatchment S-9: Roof Runoff



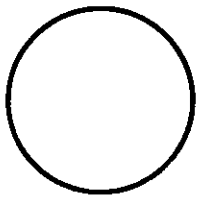
Summary for Reach CB-1: Catch Basin

Inflow Area = 0.182 ac, 97.98% Impervious, Inflow Depth = 3.17" for 2Yr event
Inflow = 0.60 cfs @ 12.08 hrs, Volume= 0.048 af
Outflow = 0.60 cfs @ 12.09 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.2 min

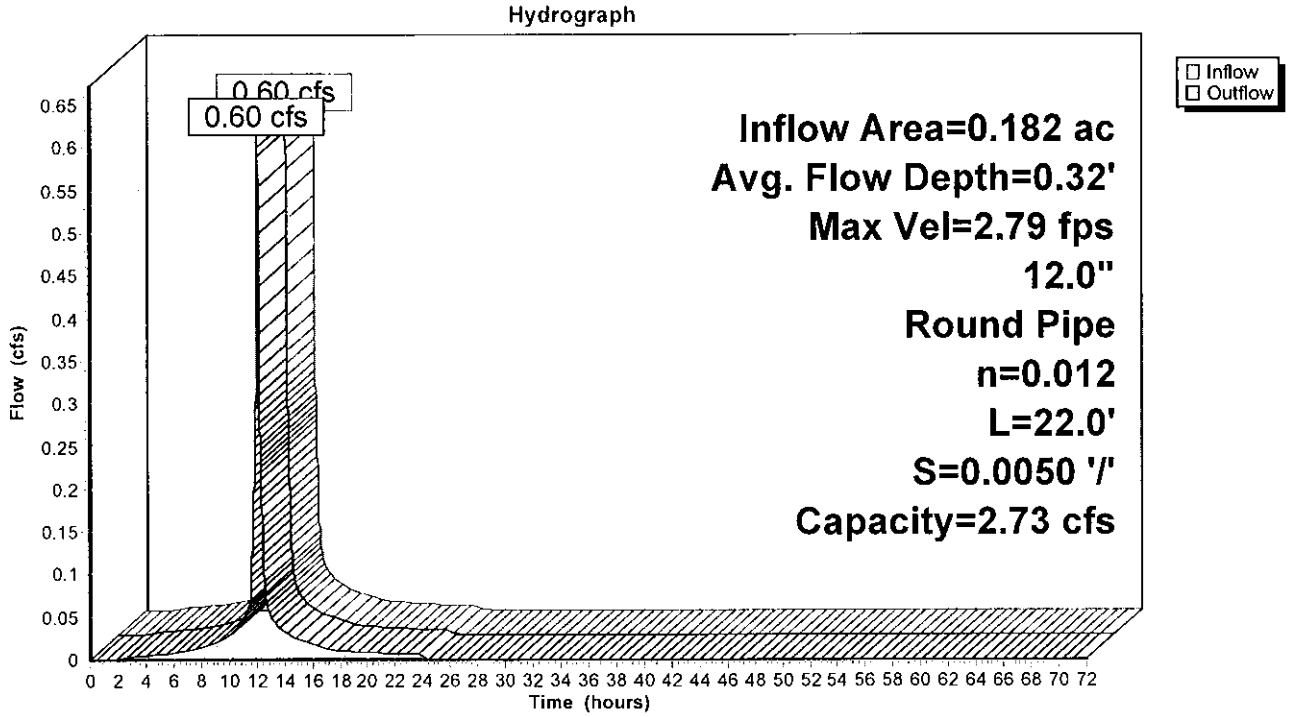
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.79 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.92 fps, Avg. Travel Time= 0.4 min

Peak Storage= 5 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 22.0' Slope= 0.0050 '/'
Inlet Invert= 95.00', Outlet Invert= 94.89'



Reach CB-1: Catch Basin



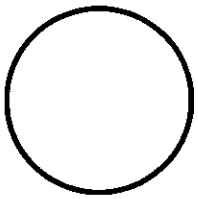
Summary for Reach CB-2: Catch Basin

Inflow Area = 0.480 ac, 94.76% Impervious, Inflow Depth = 3.00" for 2Yr event
Inflow = 1.55 cfs @ 12.08 hrs, Volume= 0.120 af
Outflow = 1.54 cfs @ 12.10 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.9 min

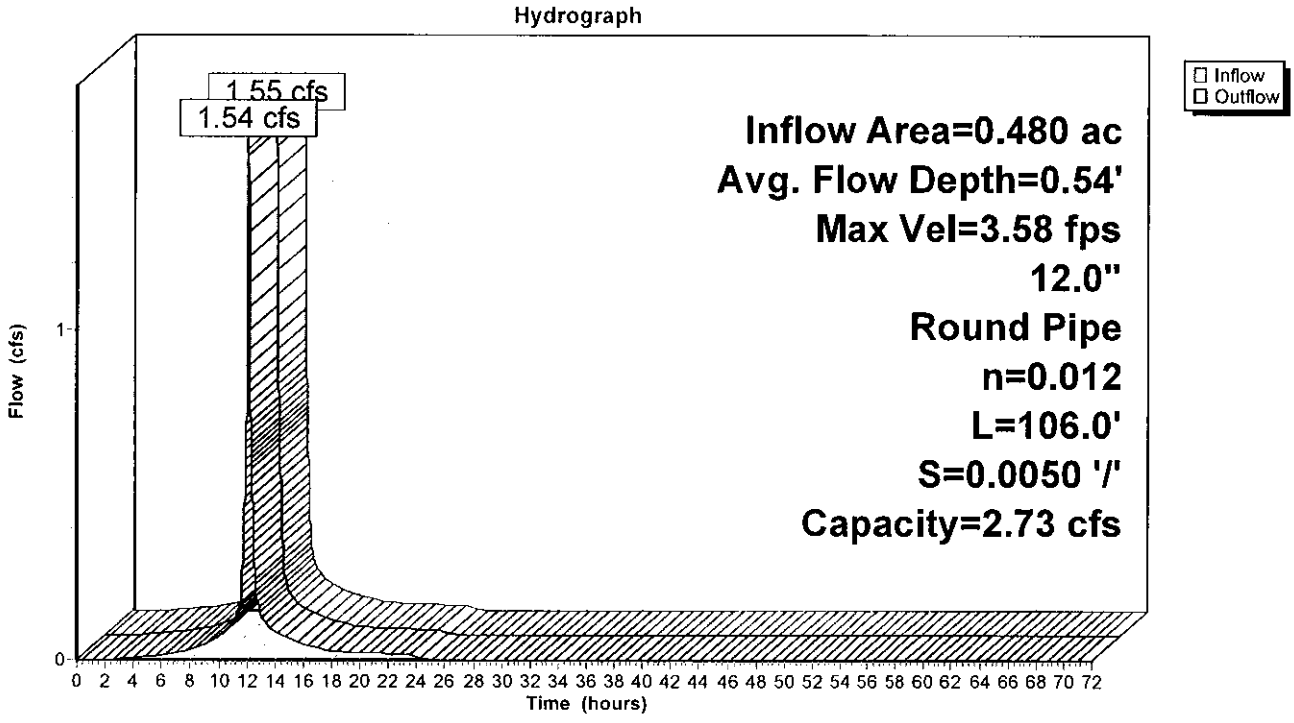
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.58 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 1.5 min

Peak Storage= 46 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.54'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 106.0' Slope= 0.0050 '/'
Inlet Invert= 95.90', Outlet Invert= 95.37'



Reach CB-2: Catch Basin



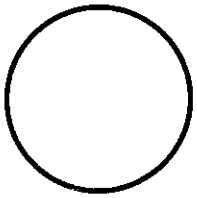
Summary for Reach CB-4: Catch Basin

Inflow Area = 0.287 ac, 75.16% Impervious, Inflow Depth = 2.54" for 2Yr event
Inflow = 0.83 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 0.83 cfs @ 12.09 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.2 min

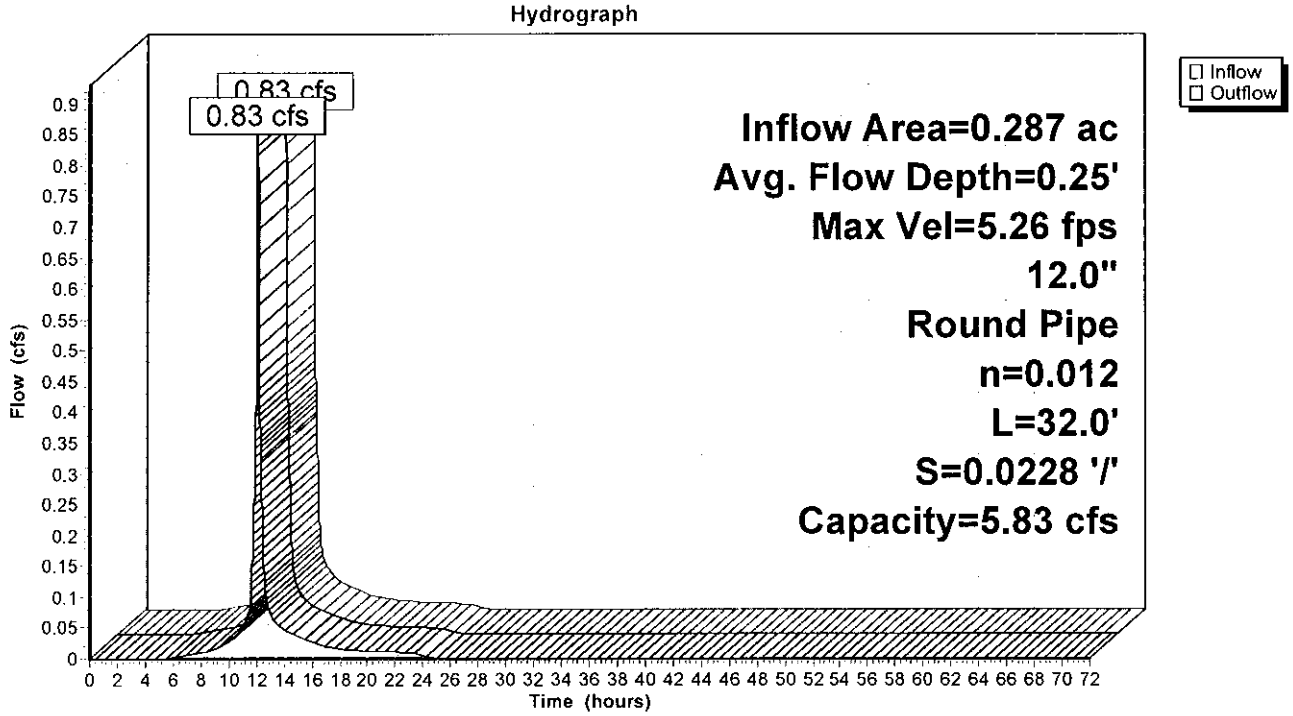
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.26 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.74 fps, Avg. Travel Time= 0.3 min

Peak Storage= 5 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.83 cfs

12.0" Round Pipe
n= 0.012
Length= 32.0' Slope= 0.0228 '/'
Inlet Invert= 96.10', Outlet Invert= 95.37'



Reach CB-4: Catch Basin



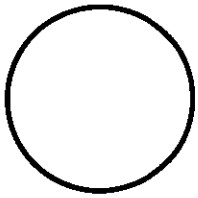
Summary for Reach CB-5: Catch Basin

Inflow Area = 0.100 ac,100.00% Impervious, Inflow Depth = 3.17" for 2Yr event
Inflow = 0.33 cfs @ 12.08 hrs, Volume= 0.026 af
Outflow = 0.33 cfs @ 12.09 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.2 min

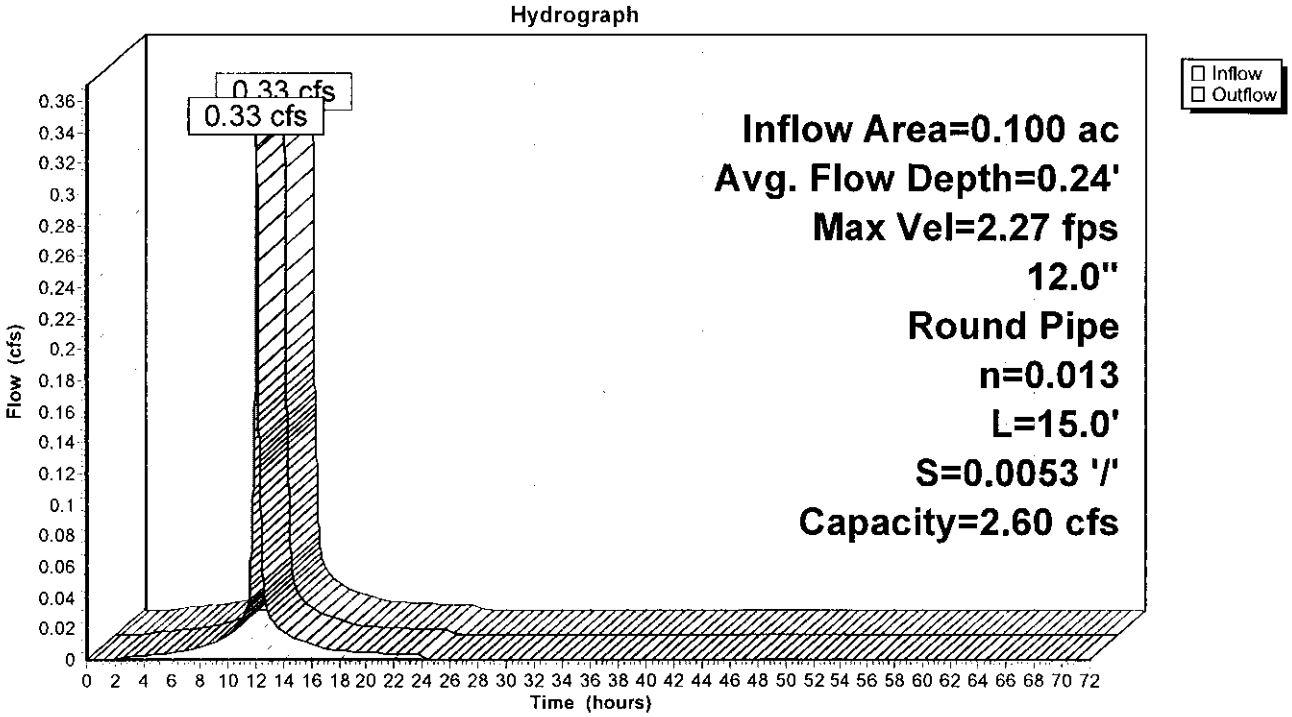
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.27 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 0.3 min

Peak Storage= 2 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.60 cfs

12.0" Round Pipe
n= 0.013
Length= 15.0' Slope= 0.0053 '/'
Inlet Invert= 97.34', Outlet Invert= 97.26'



Reach CB-5: Catch Basin



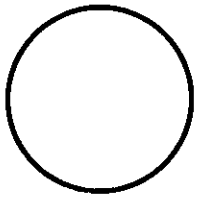
Summary for Reach P-2: 12" HDPE

Inflow Area = 0.403 ac, 98.24% Impervious, Inflow Depth = 3.17" for 2Yr event
Inflow = 1.32 cfs @ 12.10 hrs, Volume= 0.106 af
Outflow = 1.32 cfs @ 12.10 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.1 min

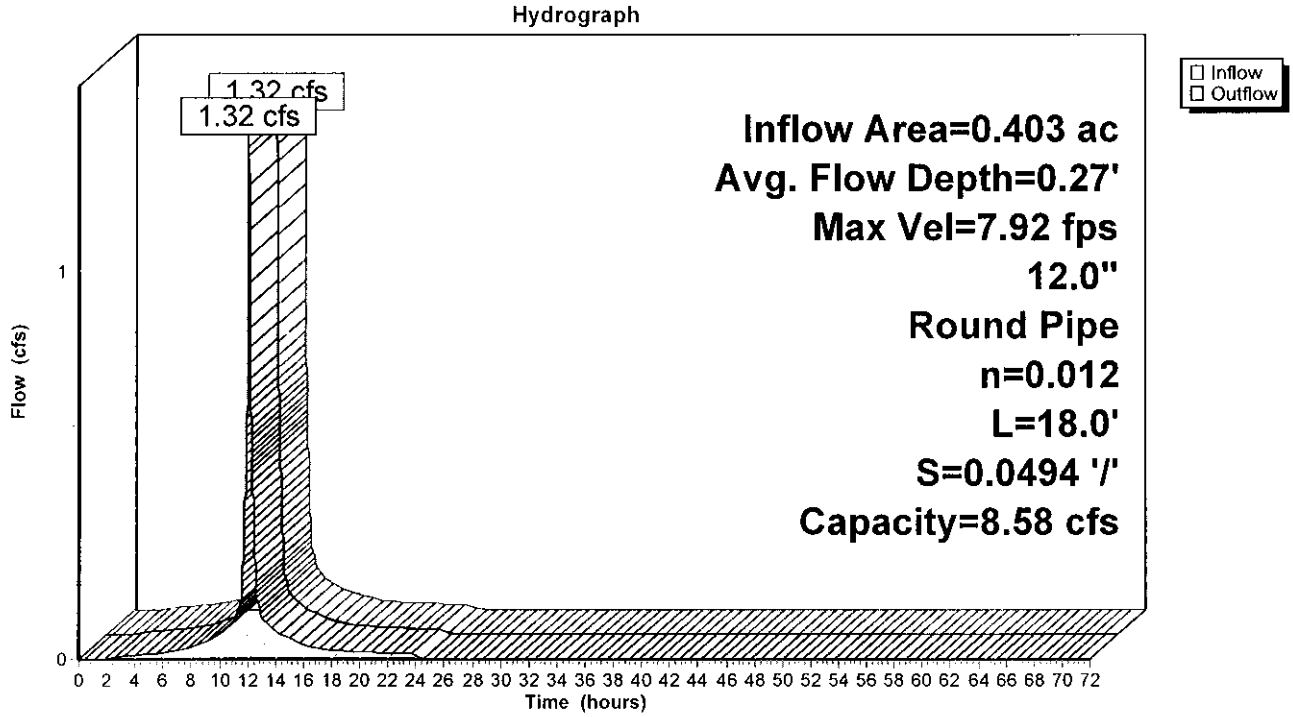
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.92 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.59 fps, Avg. Travel Time= 0.1 min

Peak Storage= 3 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.58 cfs

12.0" Round Pipe
n= 0.012
Length= 18.0' Slope= 0.0494 '/'
Inlet Invert= 94.89', Outlet Invert= 94.00'



Reach P-2: 12" HDPE



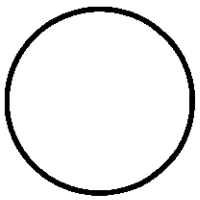
Summary for Reach P-3: 12" HDPE

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth = 3.17" for 2Yr event
Inflow = 0.61 cfs @ 12.08 hrs, Volume= 0.049 af
Outflow = 0.61 cfs @ 12.09 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.5 min

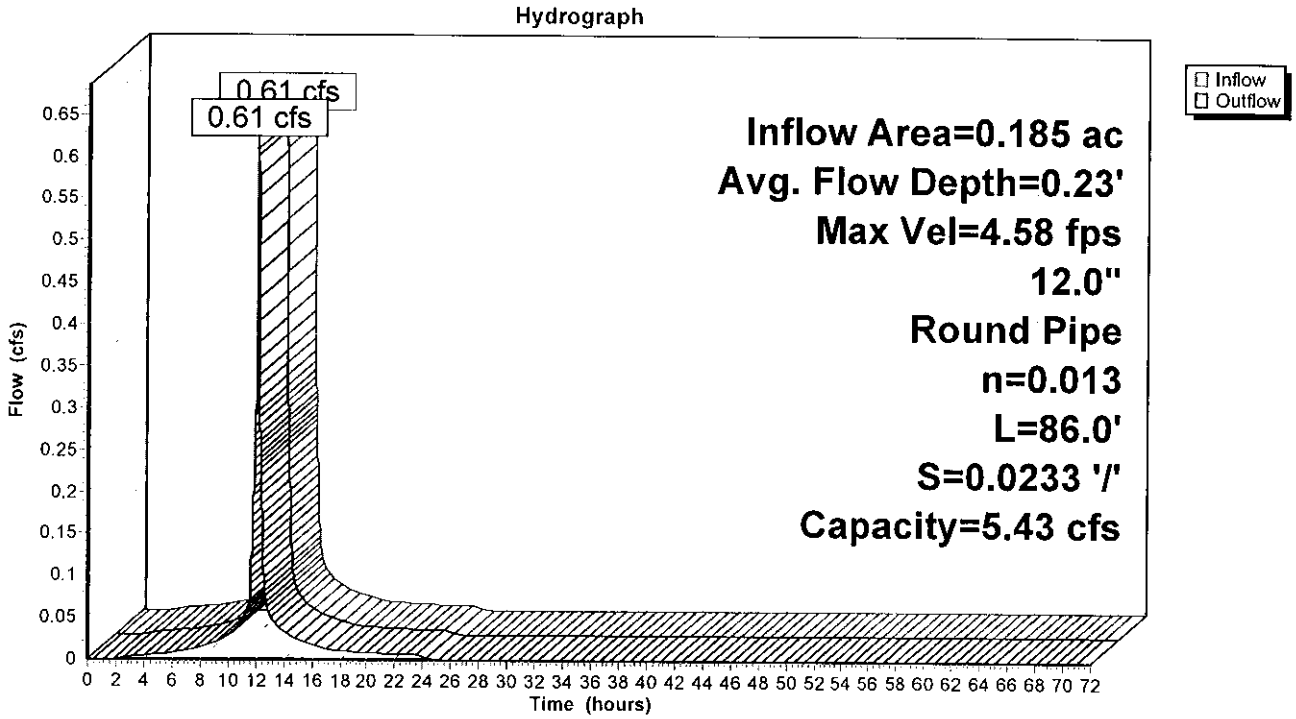
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.58 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.49 fps, Avg. Travel Time= 1.0 min

Peak Storage= 11 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.43 cfs

12.0" Round Pipe
n= 0.013
Length= 86.0' Slope= 0.0233 '/'
Inlet Invert= 96.00', Outlet Invert= 94.00'



Reach P-3: 12" HDPE



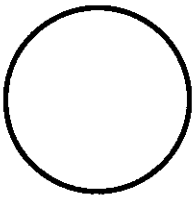
Summary for Reach P-6: 12" HDPE

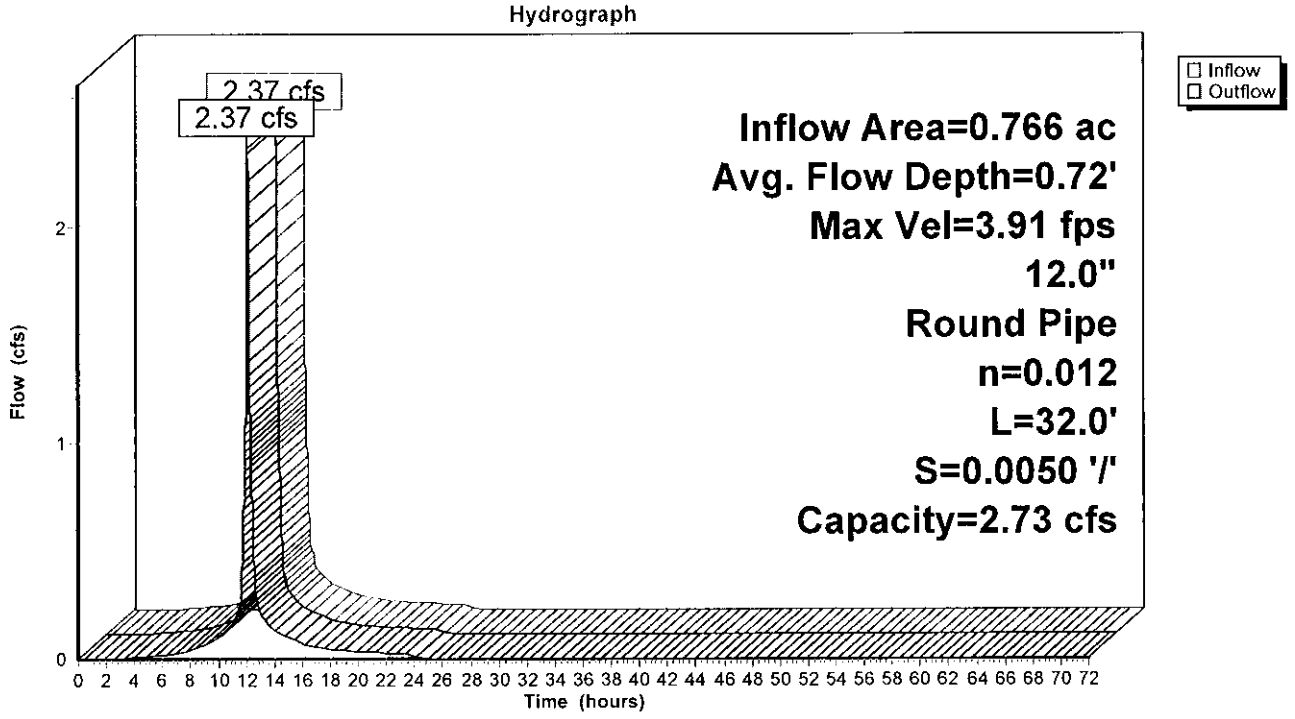
Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 2.83" for 2Yr event
Inflow = 2.37 cfs @ 12.09 hrs, Volume= 0.181 af
Outflow = 2.37 cfs @ 12.10 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.91 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.32 fps, Avg. Travel Time= 0.4 min

Peak Storage= 19 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.72'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 32.0' Slope= 0.0050 '/'
Inlet Invert= 95.37', Outlet Invert= 95.21'





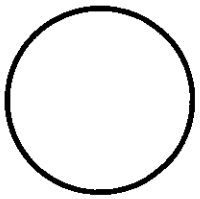
Summary for Reach P-7: 12" HDPE

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 2.83" for 2Yr event
Inflow = 2.37 cfs @ 12.10 hrs, Volume= 0.181 af
Outflow = 2.36 cfs @ 12.11 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.4 min

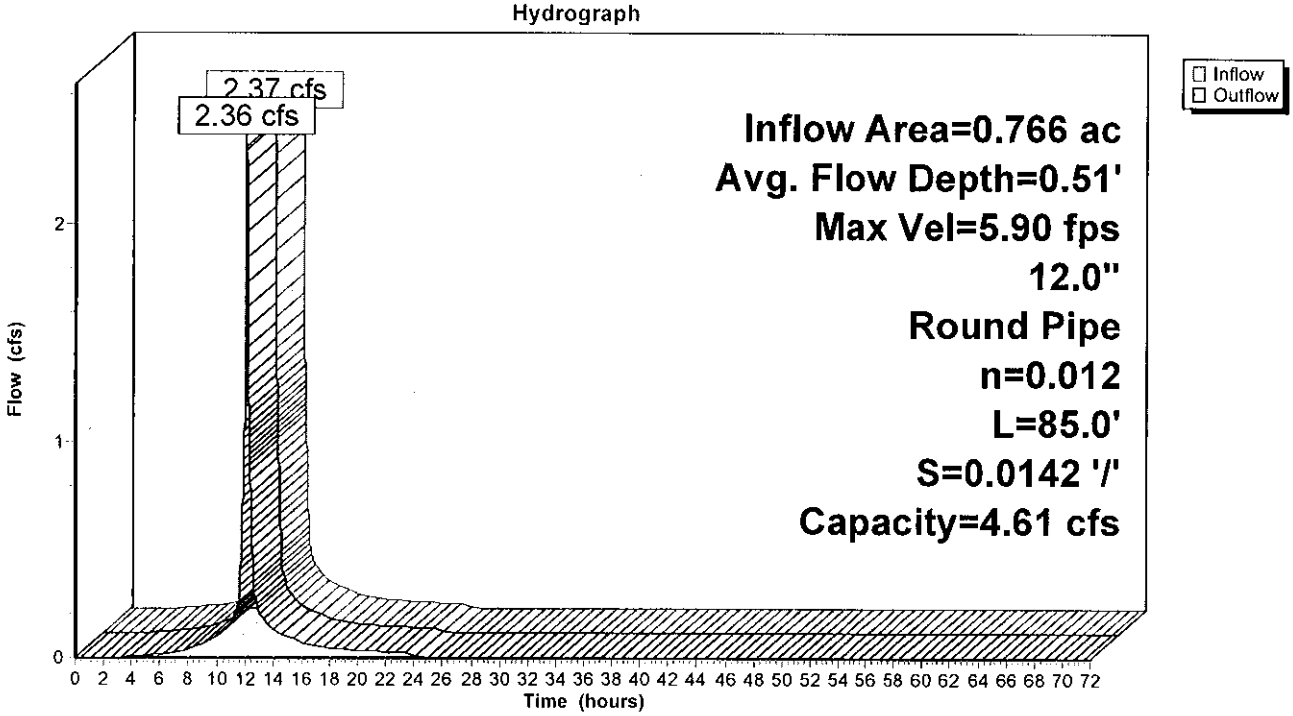
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.90 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.92 fps, Avg. Travel Time= 0.7 min

Peak Storage= 34 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.51'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.61 cfs

12.0" Round Pipe
n= 0.012
Length= 85.0' Slope= 0.0142 '/'
Inlet Invert= 95.21', Outlet Invert= 94.00'



Reach P-7: 12" HDPE



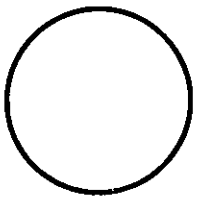
Summary for Reach TD-1: Trench Drain

Inflow Area = 0.222 ac, 98.45% Impervious, Inflow Depth = 3.17" for 2Yr event
Inflow = 0.73 cfs @ 12.08 hrs, Volume= 0.058 af
Outflow = 0.73 cfs @ 12.10 hrs, Volume= 0.058 af, Atten= 1%, Lag= 1.2 min

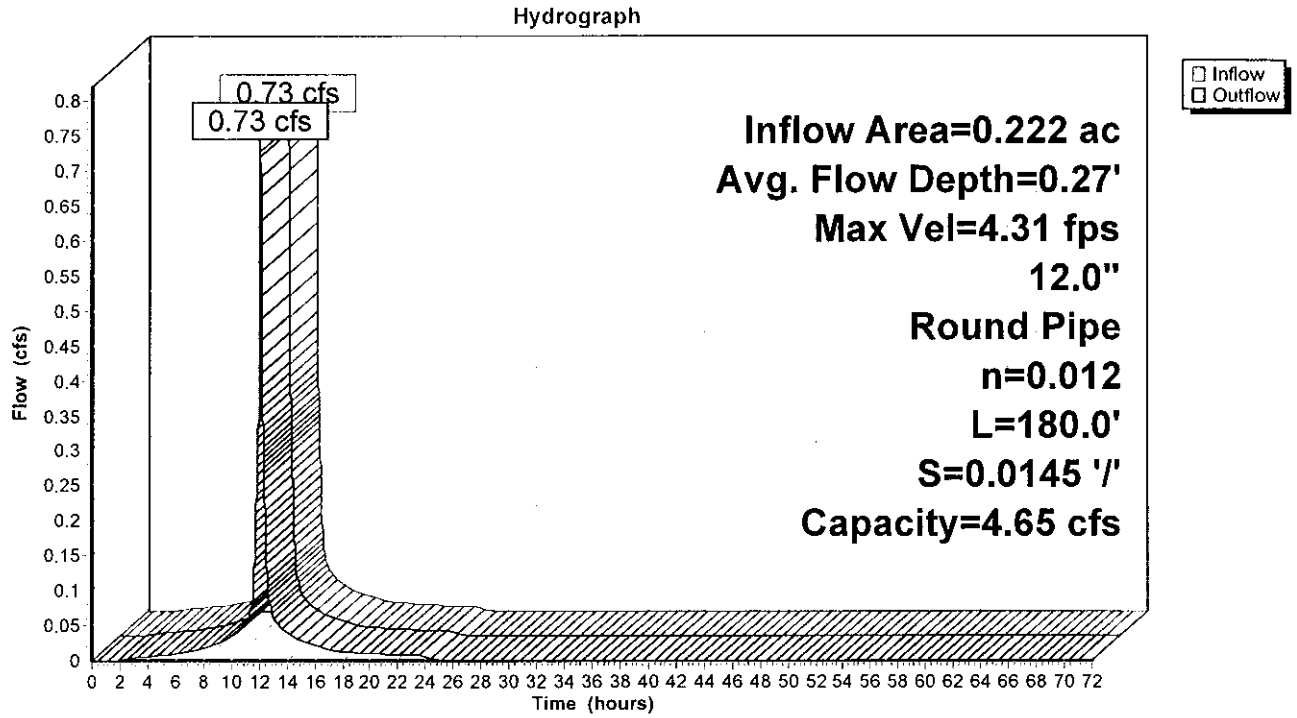
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.31 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.41 fps, Avg. Travel Time= 2.1 min

Peak Storage= 30 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.65 cfs

12.0" Round Pipe
n= 0.012
Length= 180.0' Slope= 0.0145 '/'
Inlet Invert= 97.50', Outlet Invert= 94.89'



Reach TD-1: Trench Drain

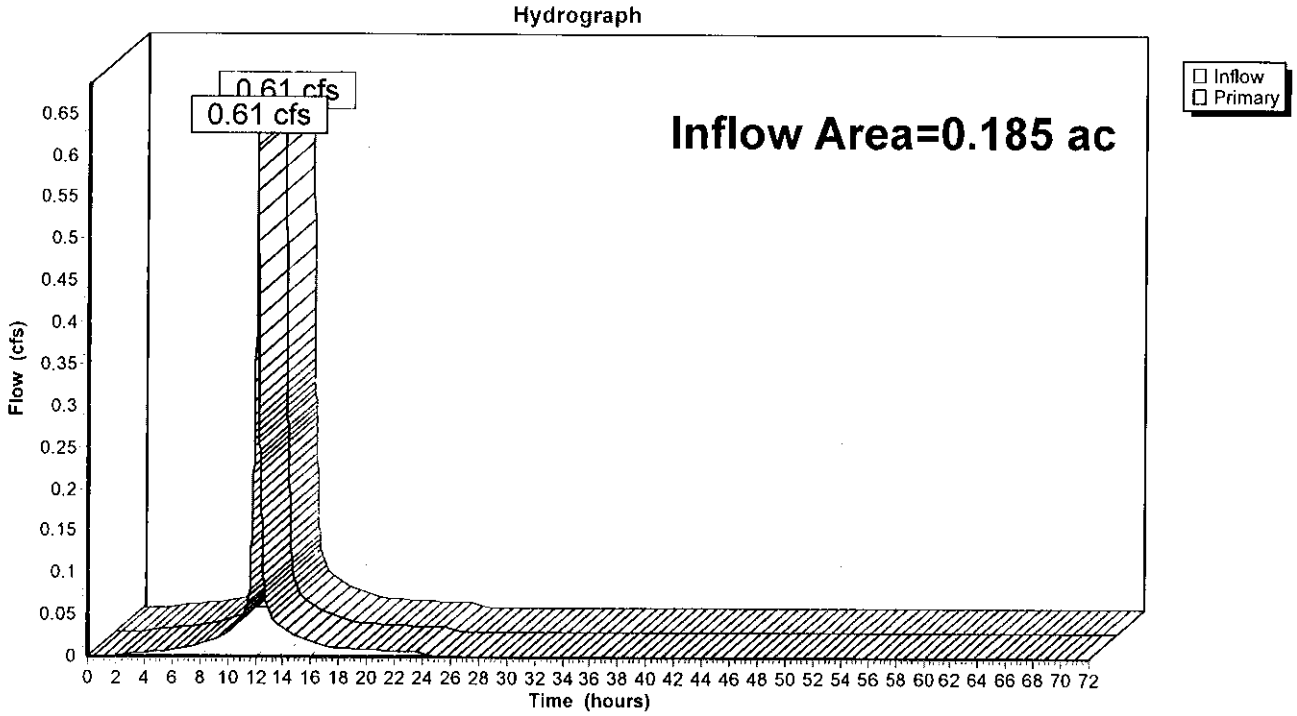


Summary for Pond DMH-2: Drain Manhole

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth = 3.17" for 2Yr event
Inflow = 0.61 cfs @ 12.08 hrs, Volume= 0.049 af
Primary = 0.61 cfs @ 12.08 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond DMH-2: Drain Manhole

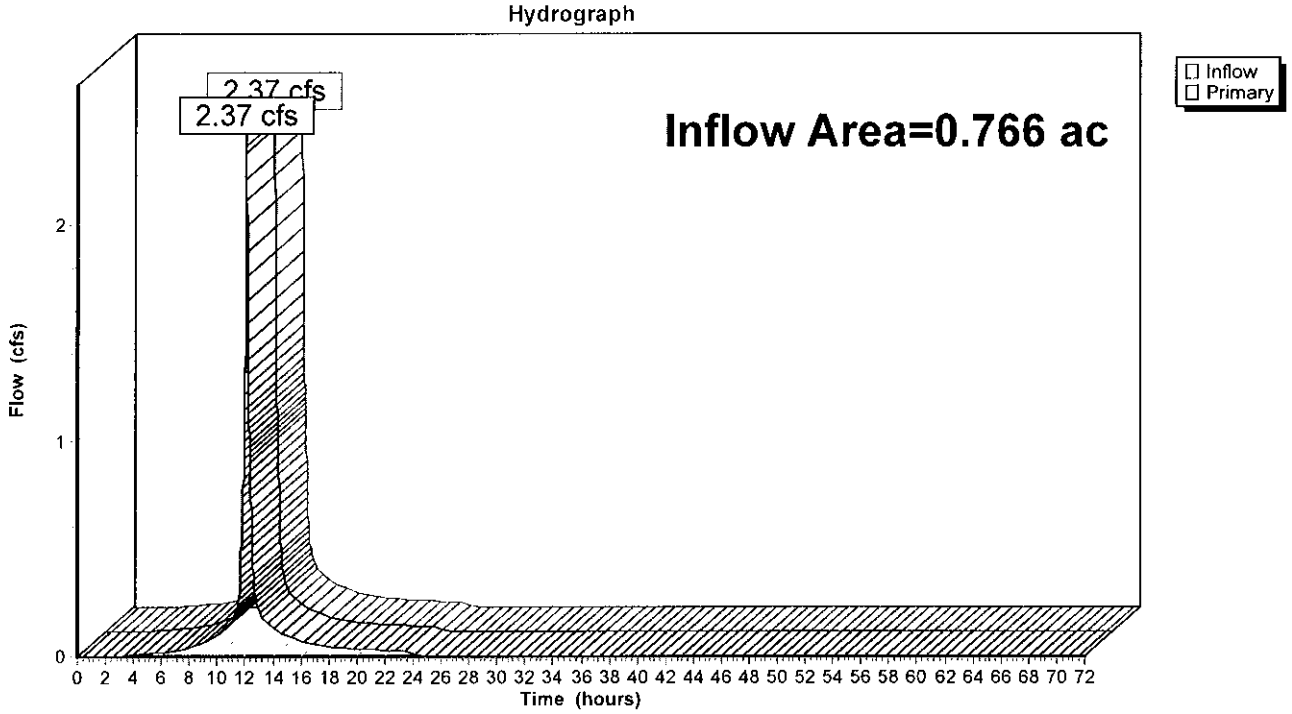


Summary for Pond DMH-5: Drain Manhole

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 2.83" for 2Yr event
Inflow = 2.37 cfs @ 12.10 hrs, Volume= 0.181 af
Primary = 2.37 cfs @ 12.10 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond DMH-5: Drain Manhole



Summary for Pond SRS-1: Subsurface Recharge System

Inflow Area = 1.355 ac, 92.37% Impervious, Inflow Depth = 2.98" for 2Yr event
Inflow = 4.28 cfs @ 12.10 hrs, Volume= 0.336 af
Outflow = 2.15 cfs @ 12.25 hrs, Volume= 0.248 af, Atten= 50%, Lag= 8.8 min
Discarded = 0.01 cfs @ 4.20 hrs, Volume= 0.080 af
Primary = 2.13 cfs @ 12.25 hrs, Volume= 0.168 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 97.51' @ 12.25 hrs Surf.Area= 2,242 sf Storage= 6,983 cf

Plug-Flow detention time= 636.8 min calculated for 0.248 af (74% of inflow)
Center-of-Mass det. time= 548.8 min (1,317.7 - 768.9)

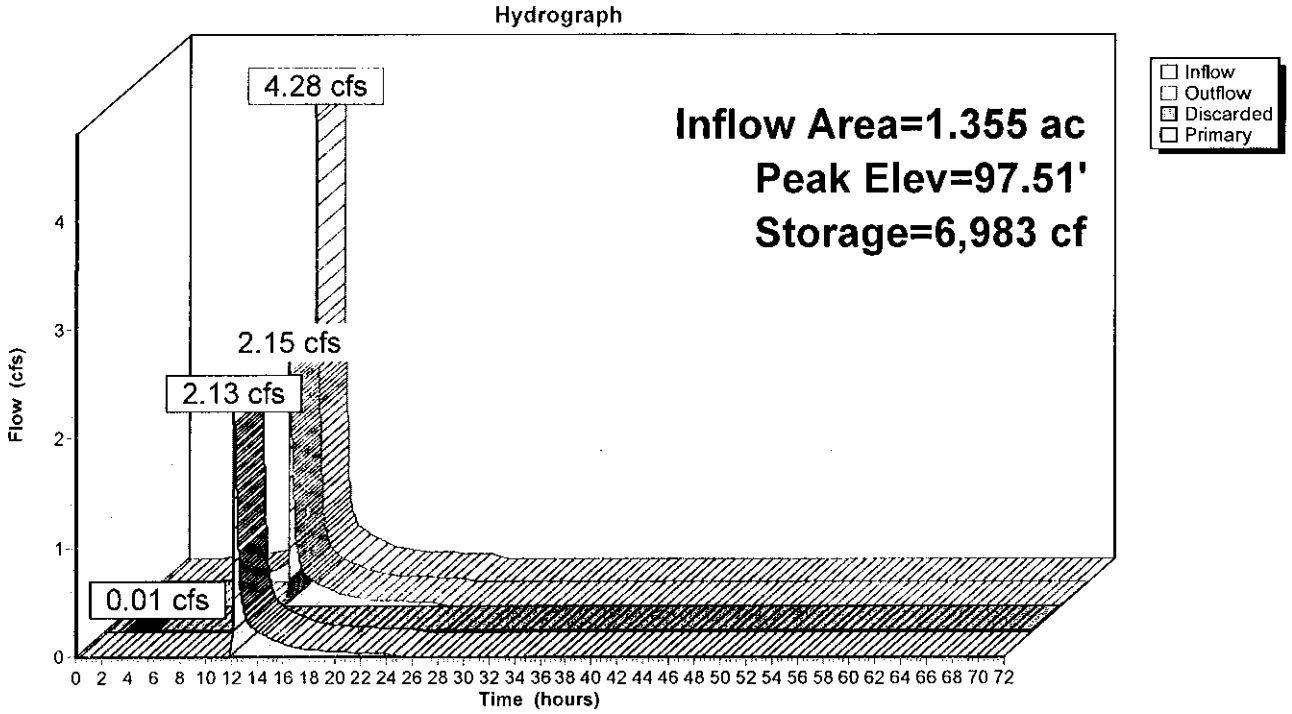
Volume	Invert	Avail.Storage	Storage Description
#1	93.25'	2,975 cf	**21.40'W x 104.76'L x 5.75'H Prismatoid** 12,891 cf Overall - 5,454 cf Embedded = 7,436 cf x 40.0% Voids
#2	94.00'	5,454 cf	**Cultec R-902HD** x 84 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 84 Chambers in 3 Rows Cap Storage= +2.8 cf x 2 x 3 rows = 16.6 cf
		8,429 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	93.25'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	97.00'	**12.0" Round Culvert X 3.00** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 97.00' / 96.80' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Discarded OutFlow Max=0.01 cfs @ 4.20 hrs HW=93.31' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=2.13 cfs @ 12.25 hrs HW=97.51' (Free Discharge)
↑—**2=Culvert** (Barrel Controls 2.13 cfs @ 2.55 fps)

Pond SRS-1: Subsurface Recharge System



Summary for Pond SRS-2: Subsurface Recharge System

Inflow Area = 0.161 ac,100.00% Impervious, Inflow Depth = 3.17" for 2Yr event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.042 af
Outflow = 0.38 cfs @ 12.16 hrs, Volume= 0.035 af, Atten= 29%, Lag= 4.7 min
Discarded = 0.00 cfs @ 3.91 hrs, Volume= 0.014 af
Primary = 0.37 cfs @ 12.16 hrs, Volume= 0.021 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 99.34' @ 12.16 hrs Surf.Area= 391 sf Storage= 817 cf

Plug-Flow detention time= 711.0 min calculated for 0.035 af (84% of inflow)
Center-of-Mass det. time= 643.2 min (1,398.6 - 755.4)

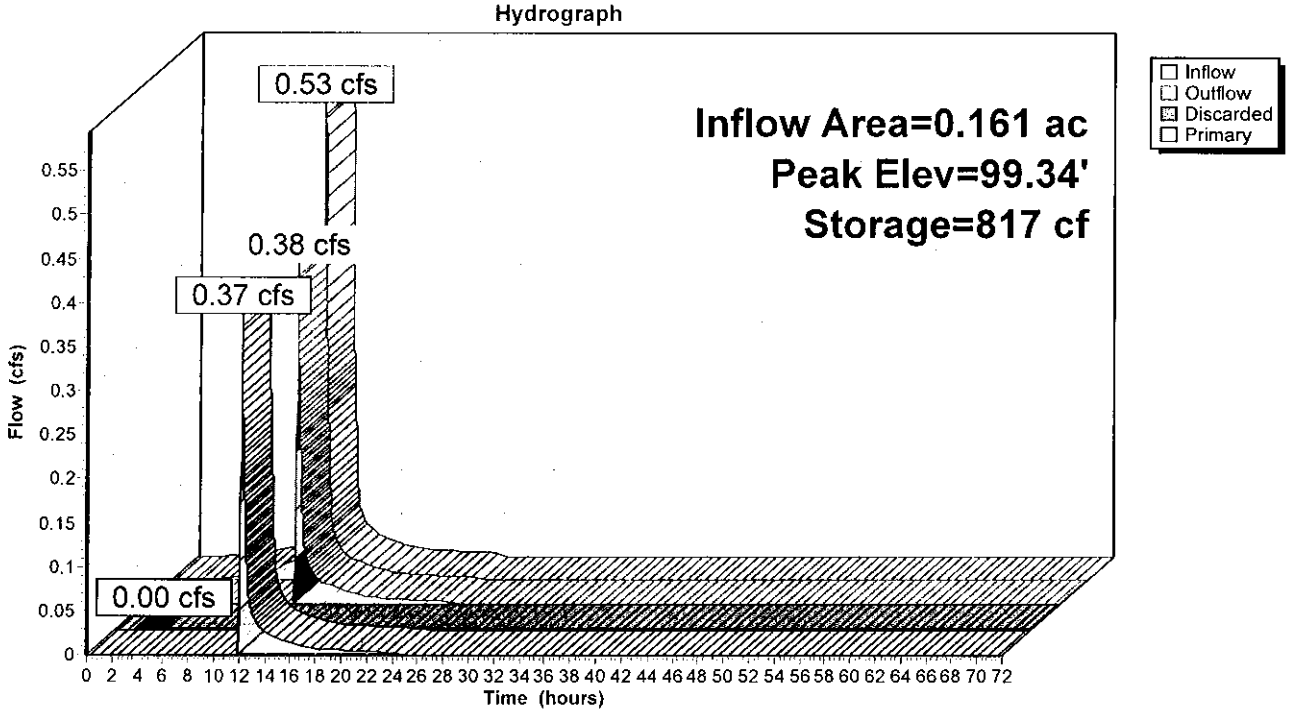
Volume	Invert	Avail.Storage	Storage Description
#1	96.25'	587 cf	**8.50'W x 46.04'L x 5.75'H Prismatoid** 2,250 cf Overall - 782 cf Embedded = 1,468 cf x 40.0% Voids
#2	97.00'	782 cf	**Cultec R-902HD** x 12 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap Cap Storage= +2.8 cf x 2 x 1 rows = 5.5 cf
		1,369 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.25'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**12.0" Round Culvert** L= 28.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 99.00' / 94.20' S= 0.1714 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Discarded OutFlow Max=0.00 cfs @ 3.91 hrs HW=96.31' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.37 cfs @ 12.16 hrs HW=99.34' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 0.37 cfs @ 1.57 fps)

Pond SRS-2: Subsurface Recharge System

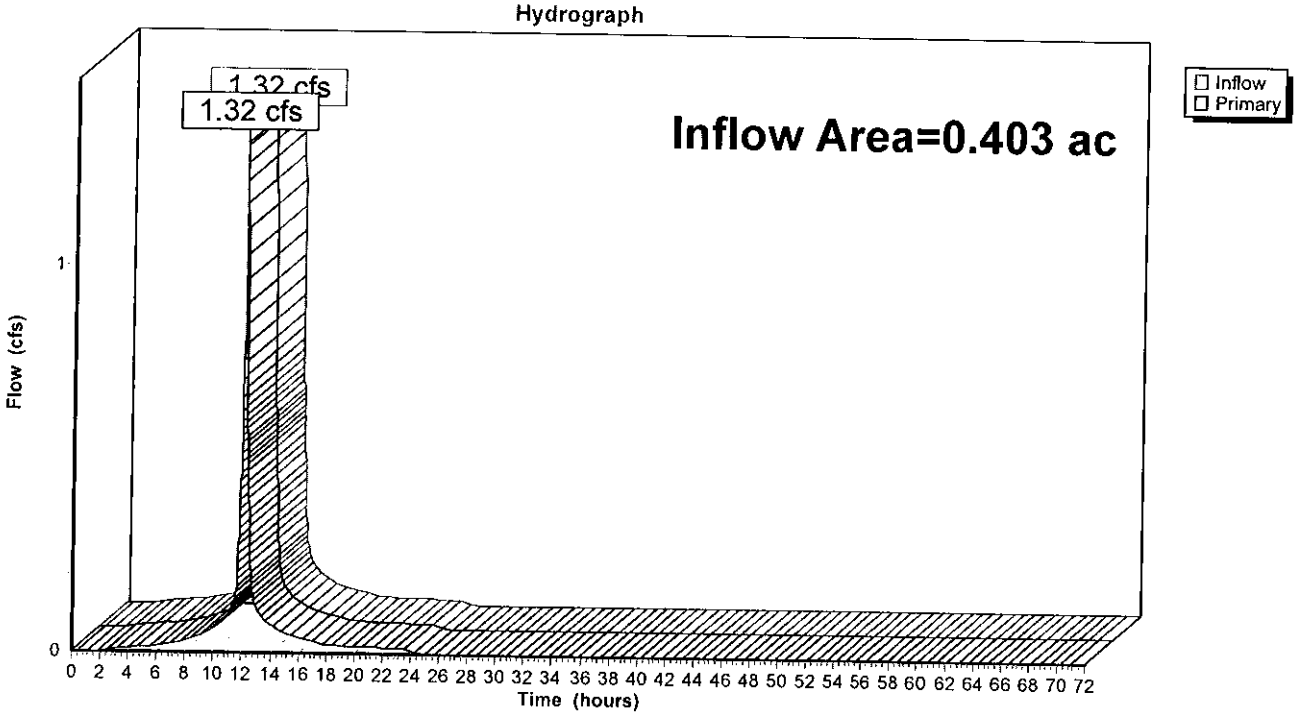


Summary for Pond WQI-1: Water Quality Inlet

Inflow Area = 0.403 ac, 98.24% Impervious, Inflow Depth = 3.17" for 2Yr event
Inflow = 1.32 cfs @ 12.10 hrs, Volume= 0.106 af
Primary = 1.32 cfs @ 12.10 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond WQI-1: Water Quality Inlet

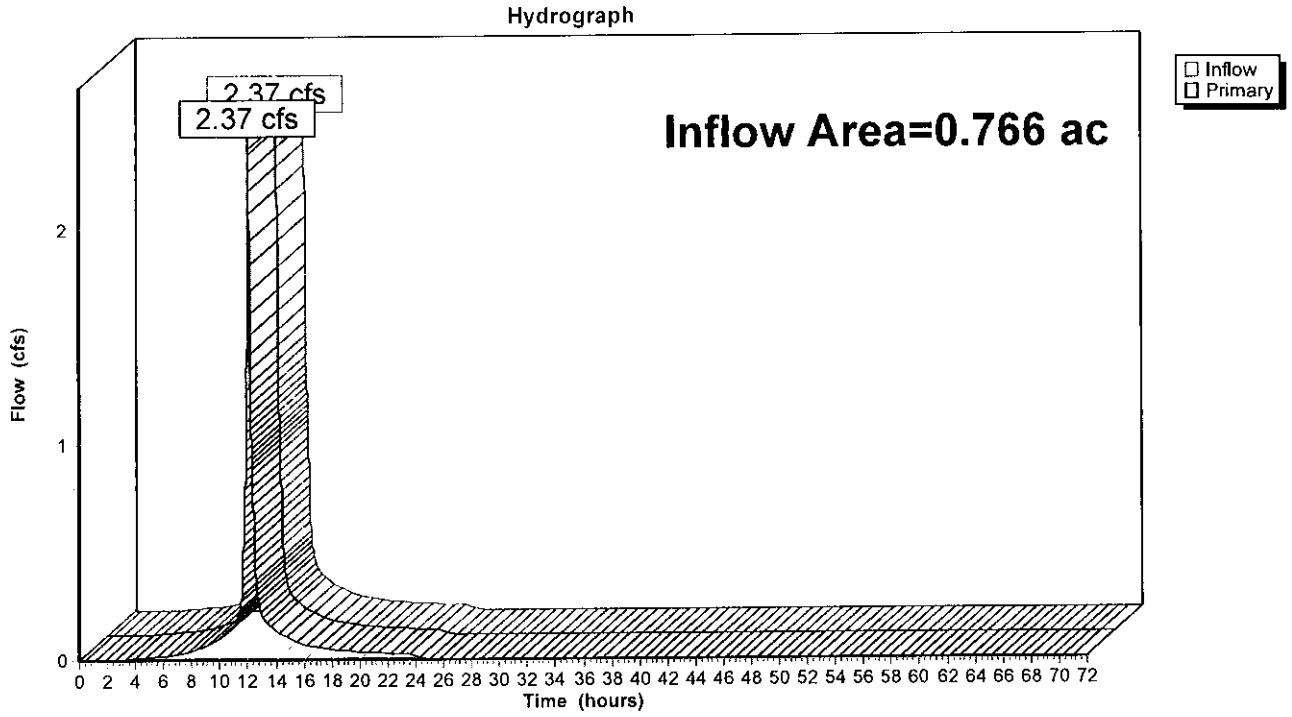


Summary for Pond WQI-2: Water Quality Inlet

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 2.83" for 2Yr event
Inflow = 2.37 cfs @ 12.09 hrs, Volume= 0.181 af
Primary = 2.37 cfs @ 12.09 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond WQI-2: Water Quality Inlet



Summary for Subcatchment S-1: Roof Runoff

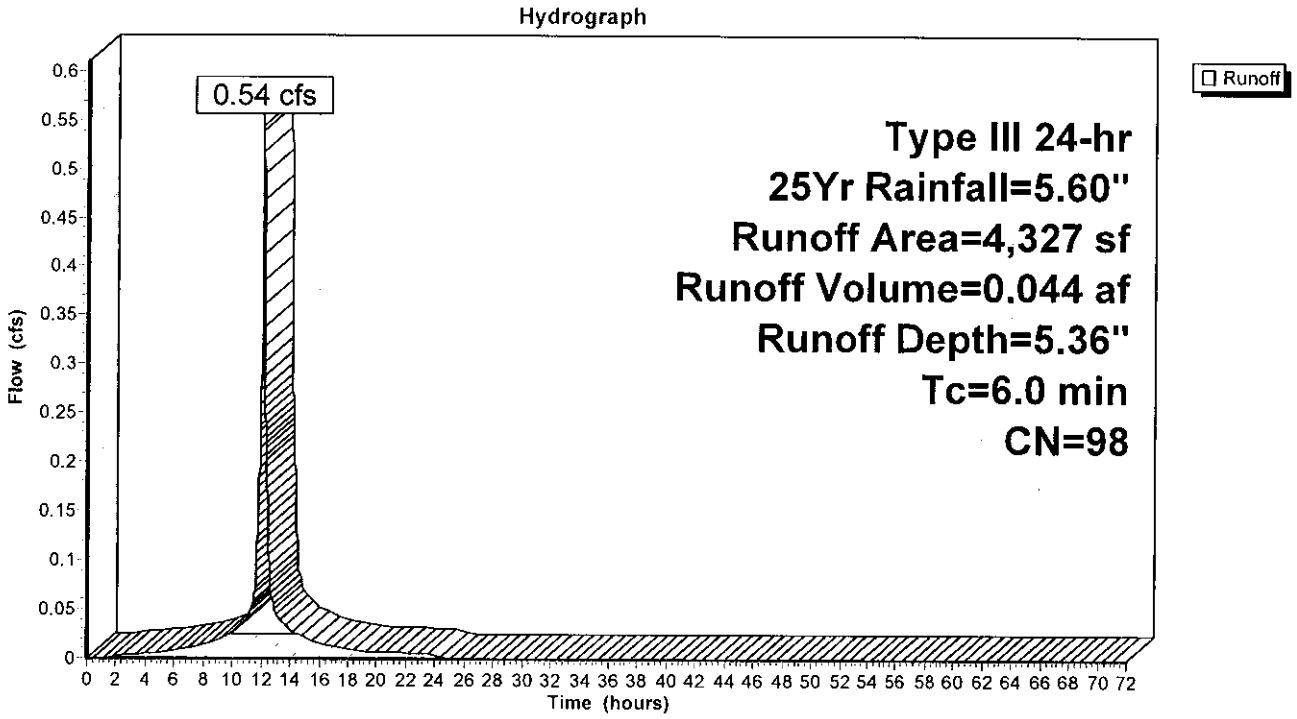
Runoff = 0.54 cfs @ 12.08 hrs, Volume= 0.044 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

	Area (sf)	CN	Description
*	4,327	98	Rooftop
	4,327		100.00% Impervious Area

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

Subcatchment S-1: Roof Runoff



Summary for Subcatchment S-10: Offsite Runoff

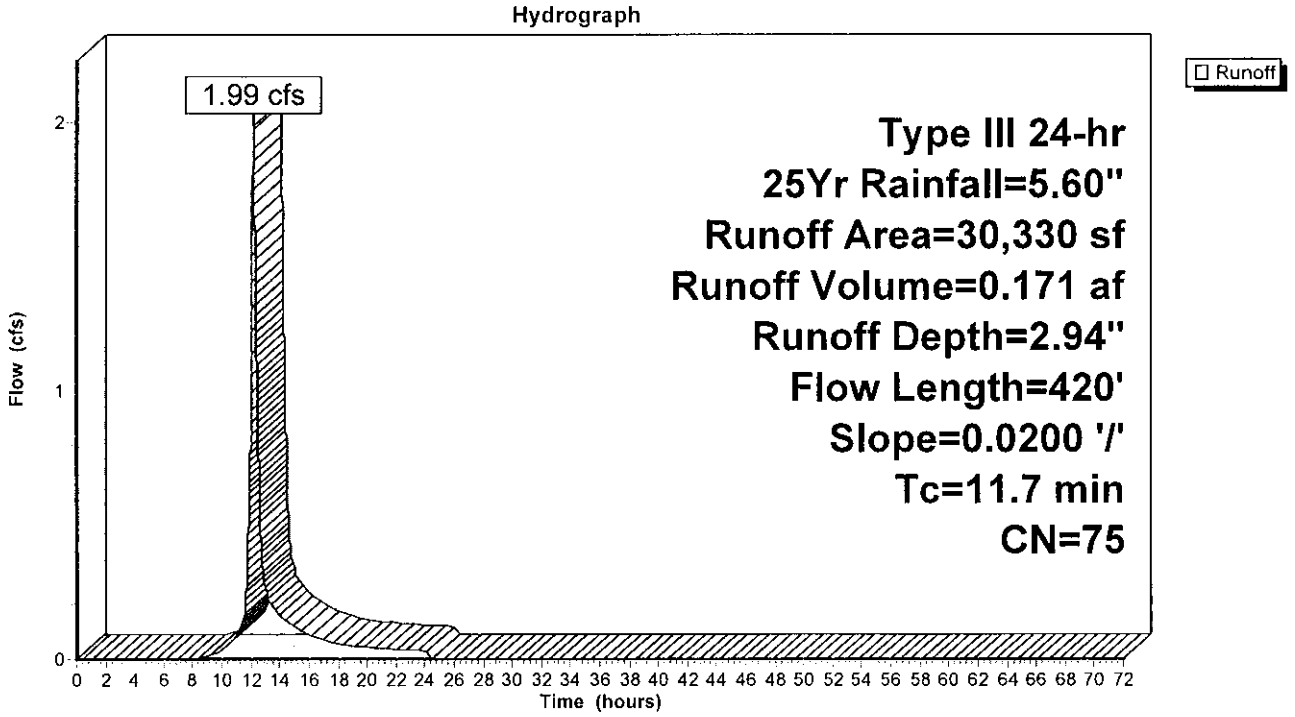
Runoff = 1.99 cfs @ 12.16 hrs, Volume= 0.171 af, Depth= 2.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

Area (sf)	CN	Description
29,246	74	>75% Grass cover, Good, HSG C
1,084	98	Paved parking & roofs
30,330	75	Weighted Average
29,246		96.43% Pervious Area
1,084		3.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
6.2	370	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.7	420	Total			

Subcatchment S-10: Offsite Runoff



Summary for Subcatchment S-2: Tributary to CB-1

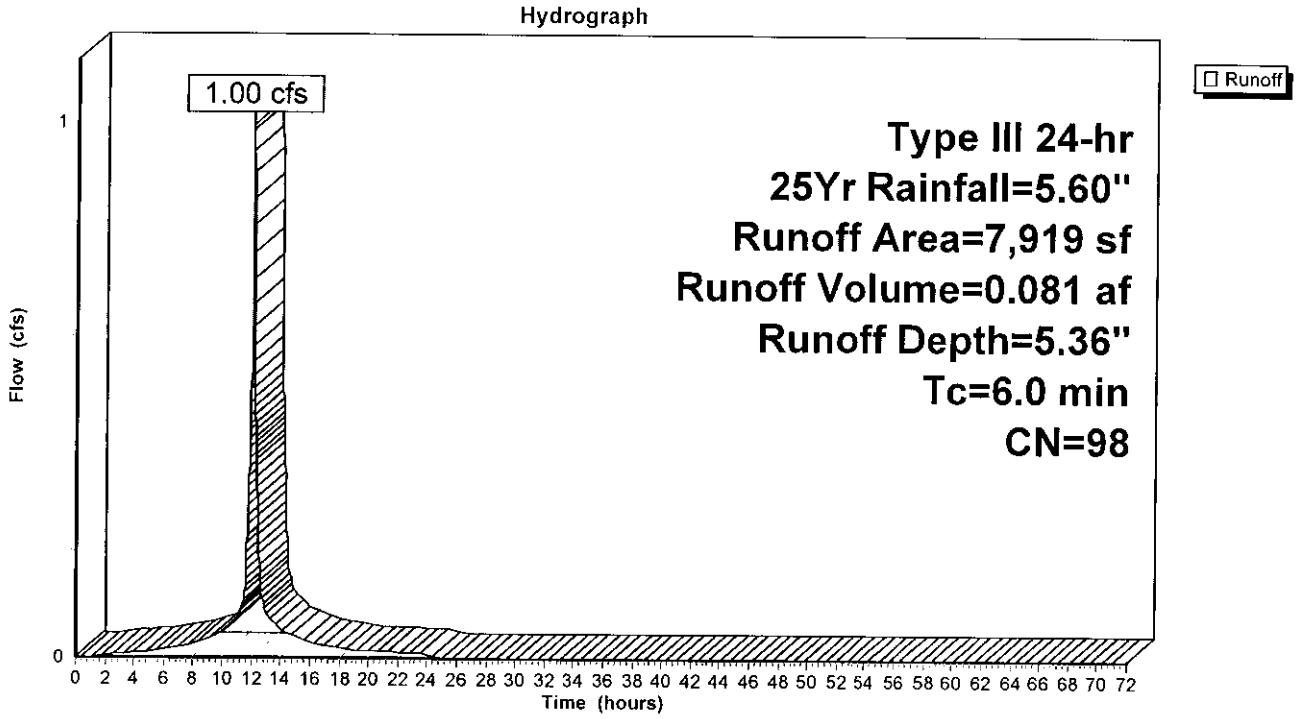
Runoff = 1.00 cfs @ 12.08 hrs, Volume= 0.081 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

Area (sf)	CN	Description
160	74	>75% Grass cover, Good, HSG C
7,759	98	Paved parking
7,919	98	Weighted Average
160		2.02% Pervious Area
7,759		97.98% Impervious Area

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

Subcatchment S-2: Tributary to CB-1



Summary for Subcatchment S-3: Tributary to TD-1

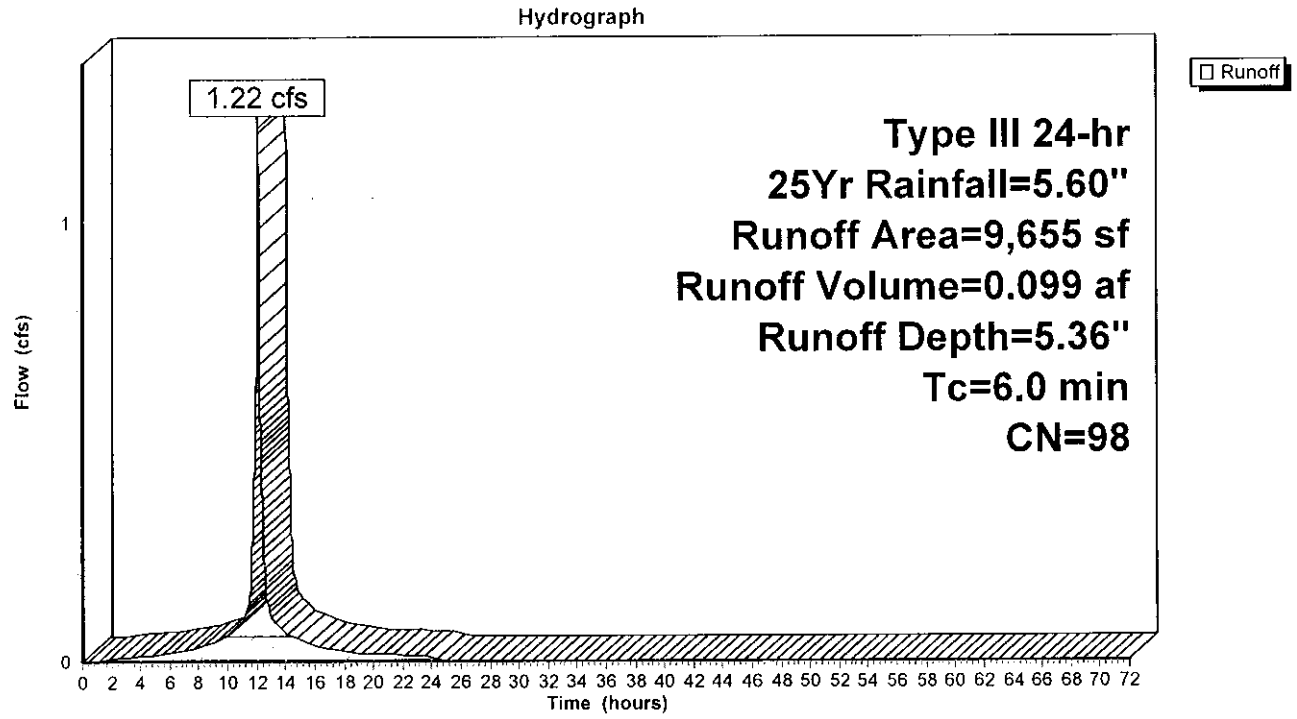
Runoff = 1.22 cfs @ 12.08 hrs, Volume= 0.099 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

Area (sf)	CN	Description
9,505	98	Paved parking
150	74	>75% Grass cover, Good, HSG C
9,655	98	Weighted Average
150		1.55% Pervious Area
9,505		98.45% Impervious Area

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

Subcatchment S-3: Tributary to TD-1



Summary for Subcatchment S-4: Tributary to CB-2

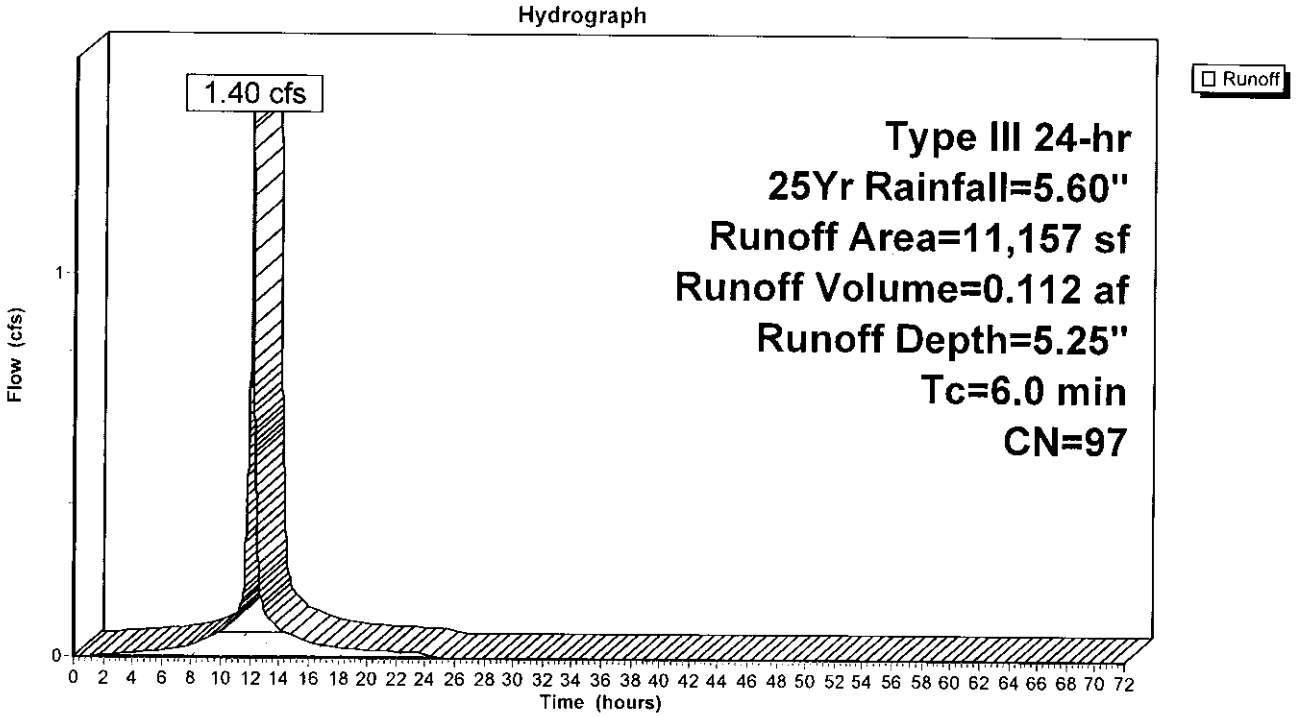
Runoff = 1.40 cfs @ 12.08 hrs, Volume= 0.112 af, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

Area (sf)	CN	Description
265	74	>75% Grass cover, Good, HSG C
10,892	98	Paved parking
11,157	97	Weighted Average
265		2.38% Pervious Area
10,892		97.62% Impervious Area

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

Subcatchment S-4: Tributary to CB-2



Summary for Subcatchment S-5: Tributary to CB-3

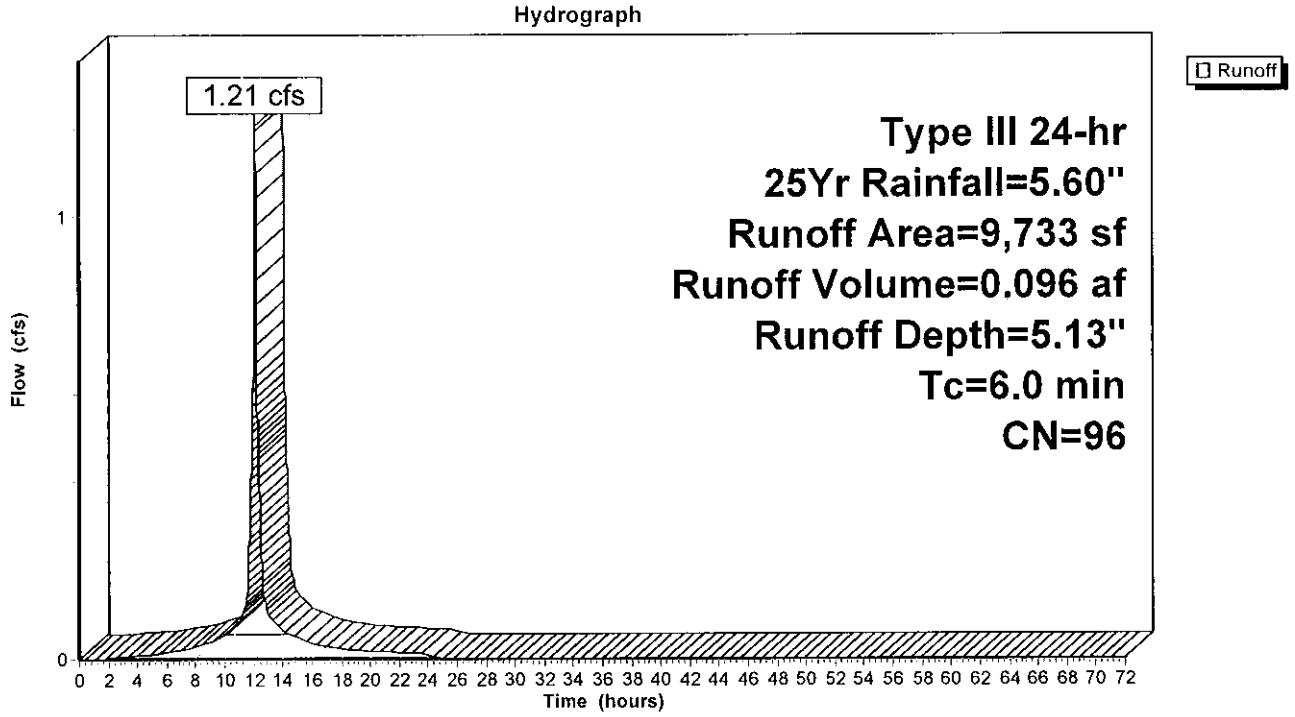
Runoff = 1.21 cfs @ 12.08 hrs, Volume= 0.096 af, Depth= 5.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

Area (sf)	CN	Description
8,903	98	Paved parking
830	74	>75% Grass cover, Good, HSG C
9,733	96	Weighted Average
830		8.53% Pervious Area
8,903		91.47% Impervious Area

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

Subcatchment S-5: Tributary to CB-3



Summary for Subcatchment S-6: Tributary to CB-4

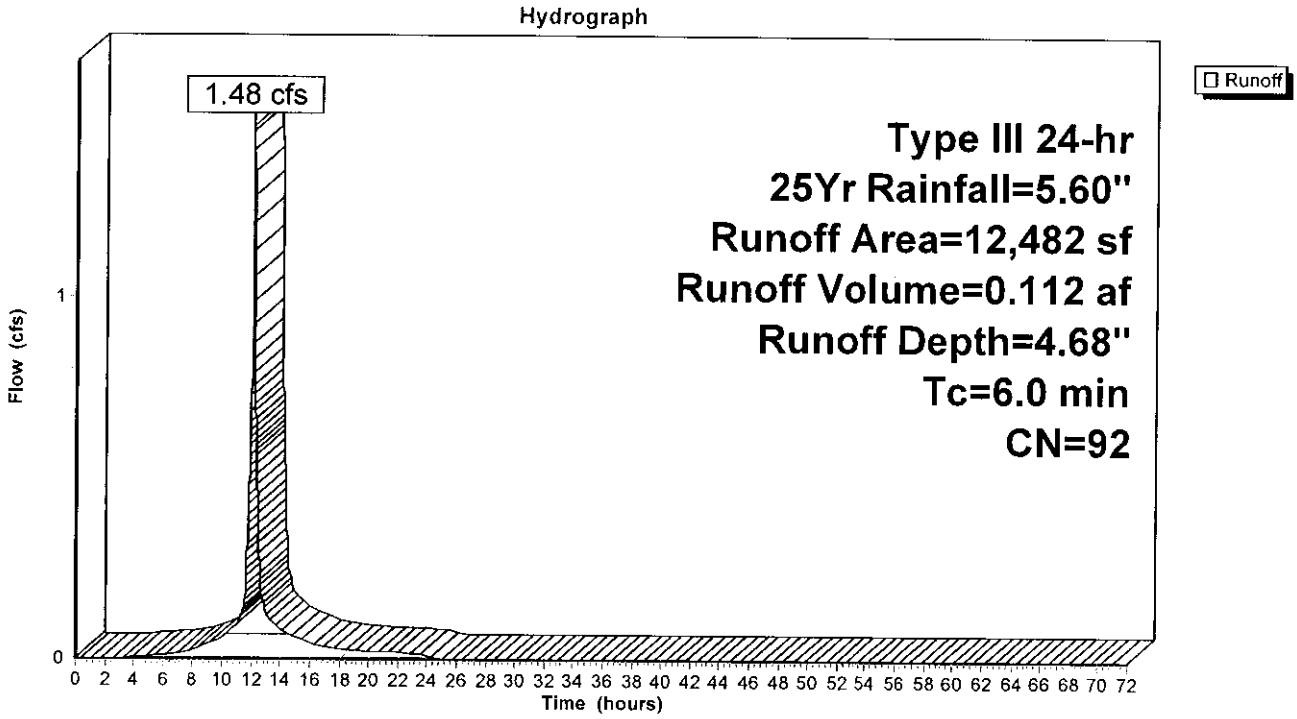
Runoff = 1.48 cfs @ 12.08 hrs, Volume= 0.112 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

Area (sf)	CN	Description
9,382	98	Paved parking
3,100	74	>75% Grass cover, Good, HSG C
12,482	92	Weighted Average
3,100		24.84% Pervious Area
9,382		75.16% Impervious Area

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

Subcatchment S-6: Tributary to CB-4



Summary for Subcatchment S-7: Tributary to CB-4

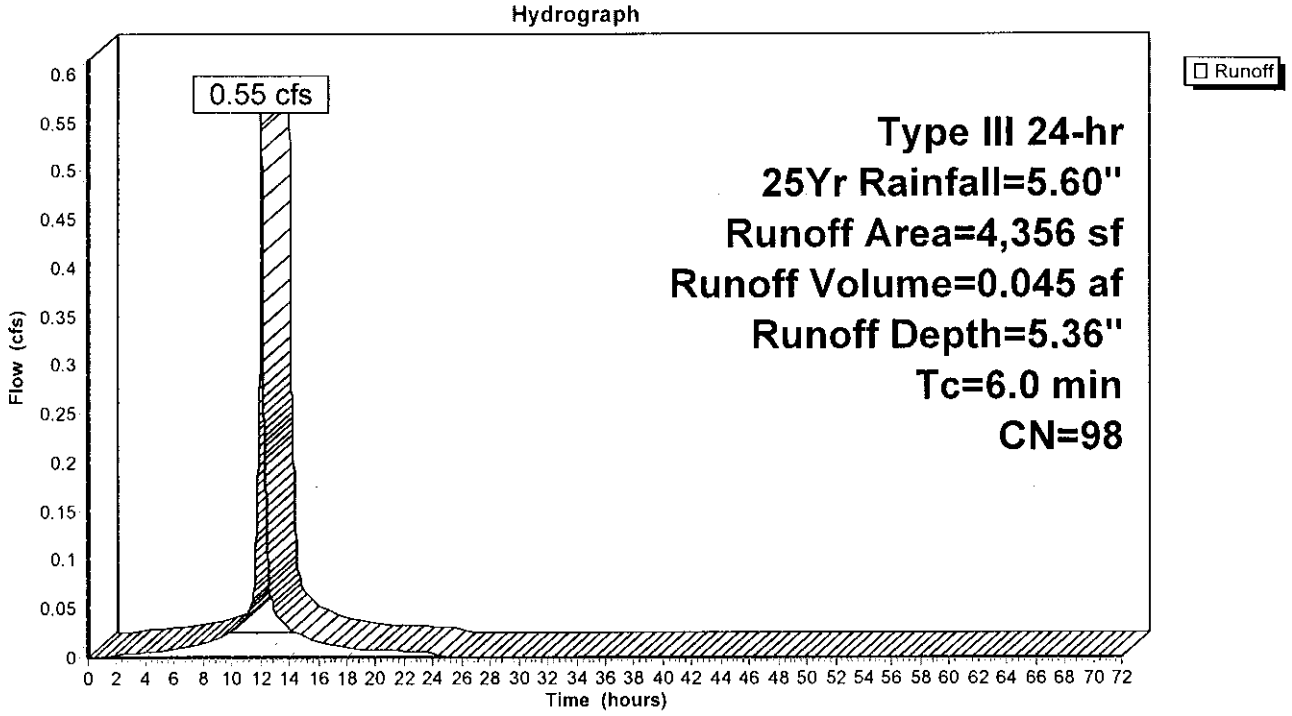
Runoff = 0.55 cfs @ 12.08 hrs, Volume= 0.045 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

Area (sf)	CN	Description
4,356	98	Paved parking
4,356		100.00% Impervious Area

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

Subcatchment S-7: Tributary to CB-4



Summary for Subcatchment S-8: Canopy Runoff

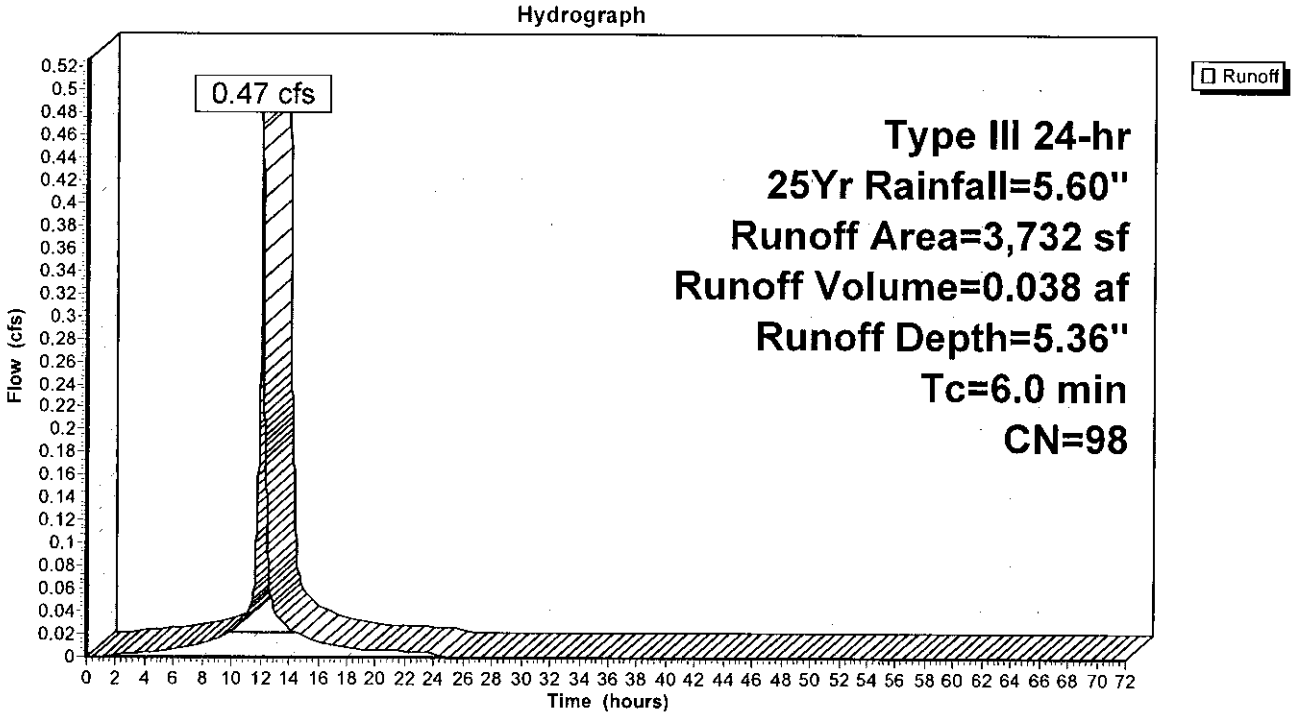
Runoff = 0.47 cfs @ 12.08 hrs, Volume= 0.038 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

	Area (sf)	CN	Description
*	3,732	98	Canopy
	3,732		100.00% Impervious Area

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

Subcatchment S-8: Canopy Runoff



Summary for Subcatchment S-9: Roof Runoff

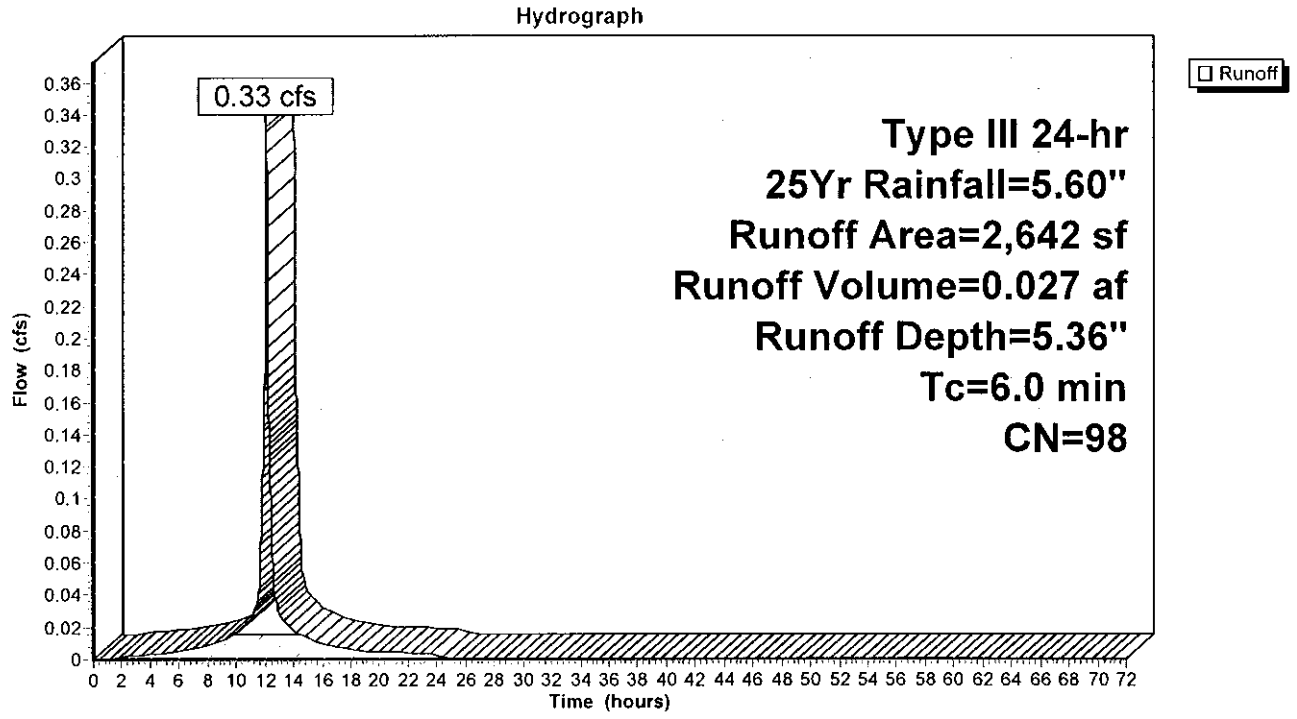
Runoff = 0.33 cfs @ 12.08 hrs, Volume= 0.027 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25Yr Rainfall=5.60"

	Area (sf)	CN	Description
*	2,642	98	Rooftop
	2,642		100.00% Impervious Area

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

Subcatchment S-9: Roof Runoff



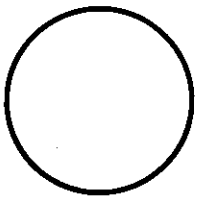
Summary for Reach CB-1: Catch Basin

Inflow Area = 0.182 ac, 97.98% Impervious, Inflow Depth = 5.36" for 25Yr event
Inflow = 1.00 cfs @ 12.08 hrs, Volume= 0.081 af
Outflow = 1.00 cfs @ 12.09 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.2 min

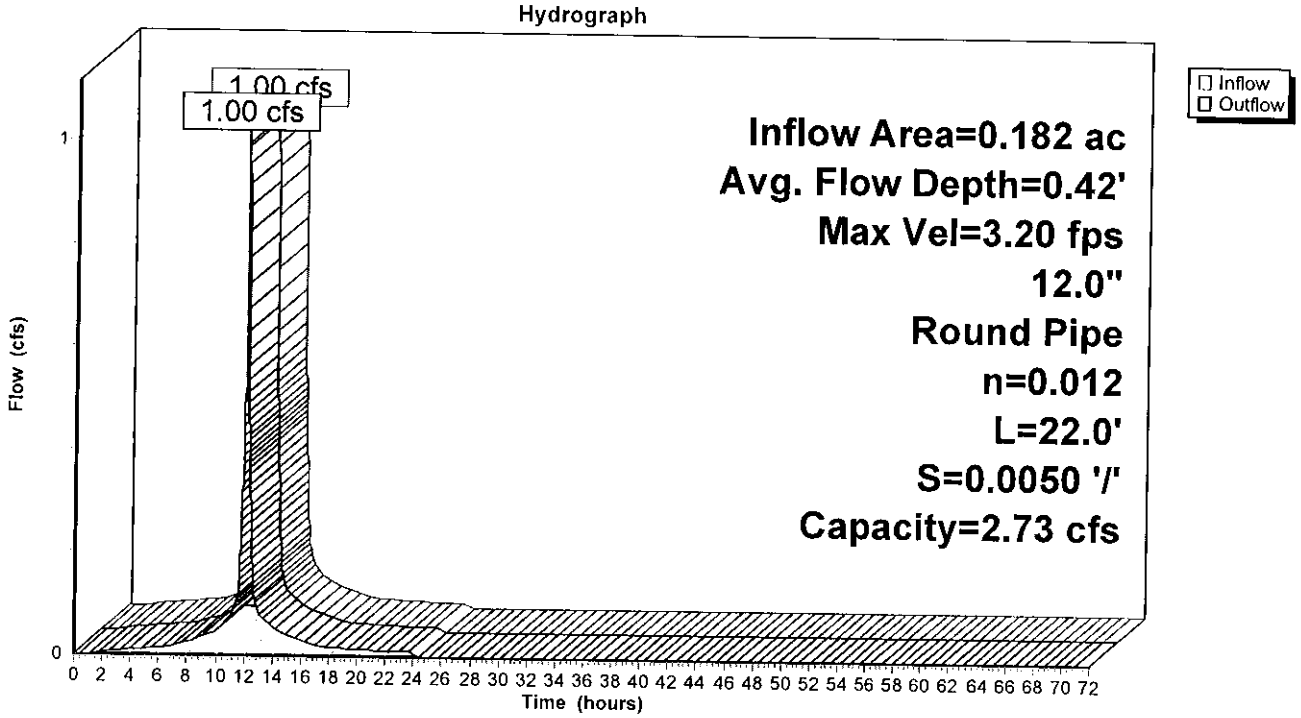
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.20 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 0.3 min

Peak Storage= 7 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 22.0' Slope= 0.0050 '/'
Inlet Invert= 95.00', Outlet Invert= 94.89'



Reach CB-1: Catch Basin



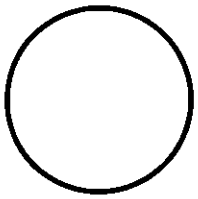
Summary for Reach CB-2: Catch Basin

Inflow Area = 0.480 ac, 94.76% Impervious, Inflow Depth = 5.19" for 25Yr event
Inflow = 2.61 cfs @ 12.08 hrs, Volume= 0.207 af
Outflow = 2.59 cfs @ 12.10 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.9 min

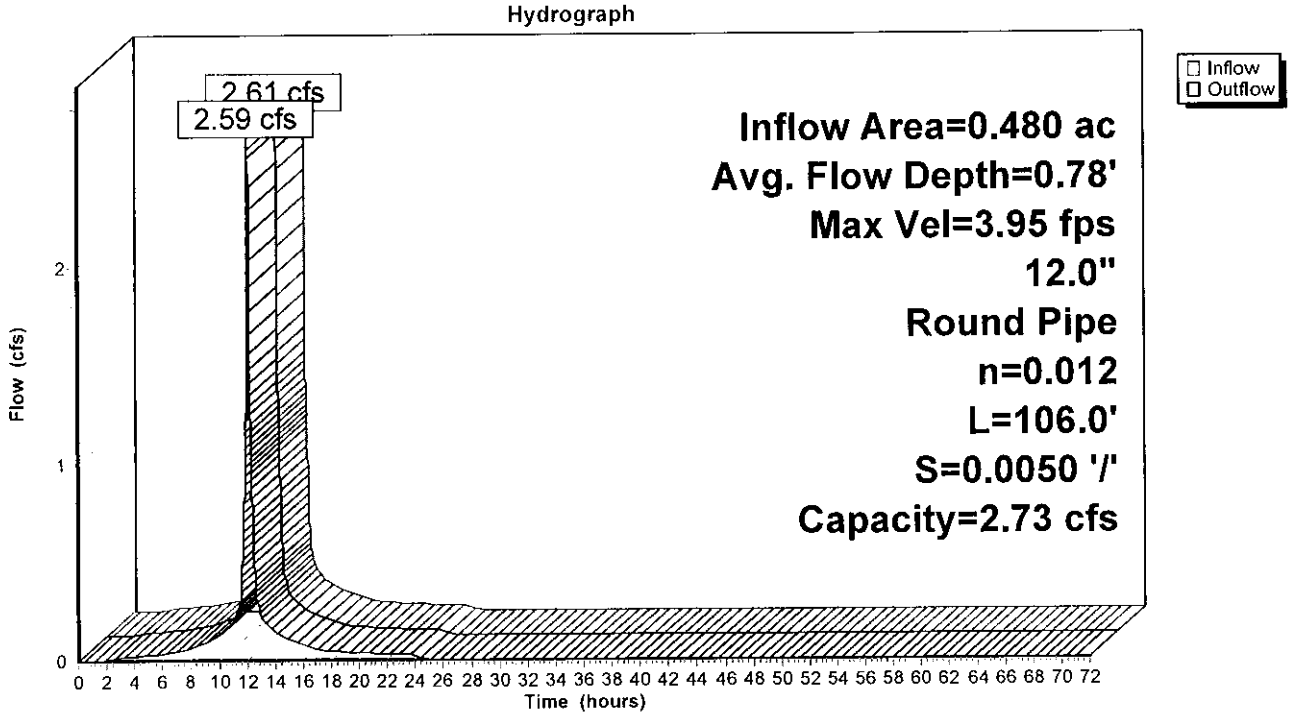
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.95 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.40 fps, Avg. Travel Time= 1.3 min

Peak Storage= 70 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.78'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 106.0' Slope= 0.0050 '/'
Inlet Invert= 95.90', Outlet Invert= 95.37'



Reach CB-2: Catch Basin



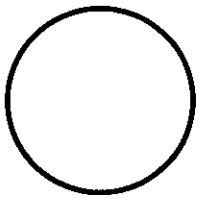
Summary for Reach CB-4: Catch Basin

Inflow Area = 0.287 ac, 75.16% Impervious, Inflow Depth = 4.68" for 25Yr event
Inflow = 1.48 cfs @ 12.08 hrs, Volume= 0.112 af
Outflow = 1.48 cfs @ 12.09 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.1 min

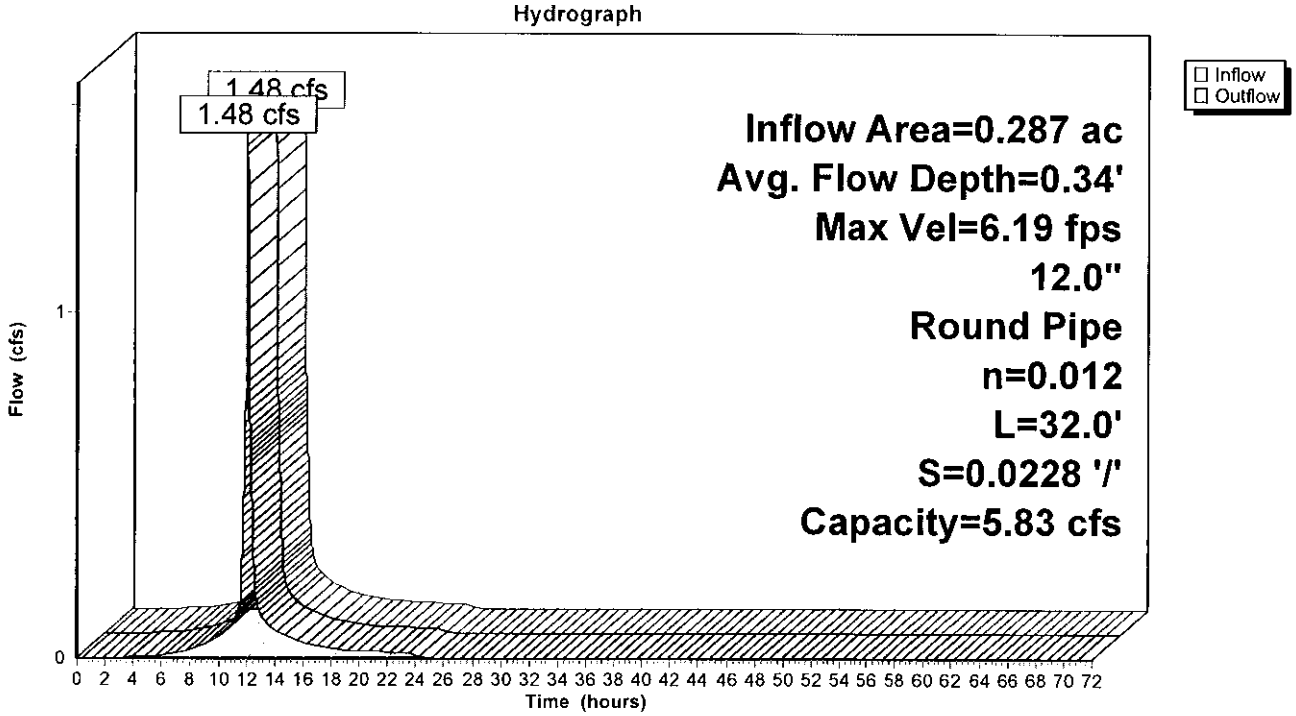
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.19 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.03 fps, Avg. Travel Time= 0.3 min

Peak Storage= 8 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.83 cfs

12.0" Round Pipe
n= 0.012
Length= 32.0' Slope= 0.0228 '/'
Inlet Invert= 96.10', Outlet Invert= 95.37'



Reach CB-4: Catch Basin



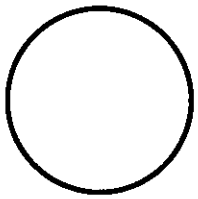
Summary for Reach CB-5: Catch Basin

Inflow Area = 0.100 ac,100.00% Impervious, Inflow Depth = 5.36" for 25Yr event
Inflow = 0.55 cfs @ 12.08 hrs, Volume= 0.045 af
Outflow = 0.55 cfs @ 12.09 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.2 min

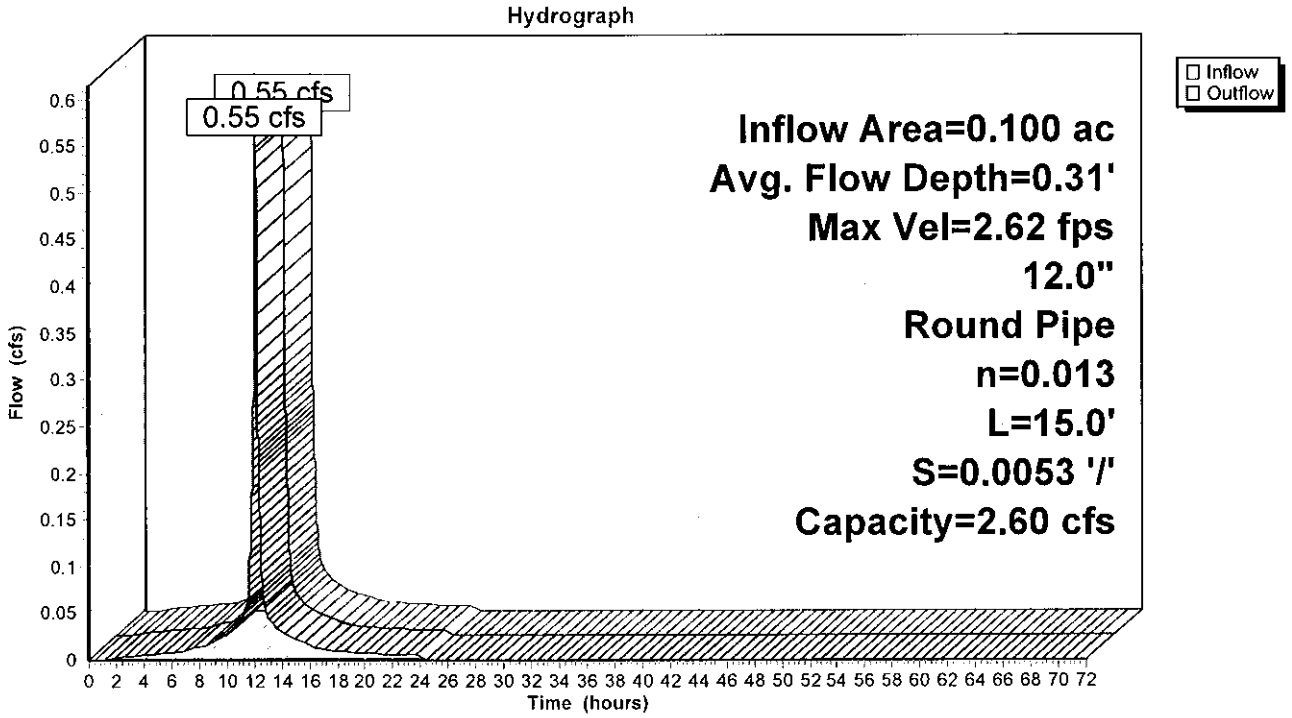
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.62 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 0.3 min

Peak Storage= 3 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.60 cfs

12.0" Round Pipe
n= 0.013
Length= 15.0' Slope= 0.0053 '/'
Inlet Invert= 97.34', Outlet Invert= 97.26'



Reach CB-5: Catch Basin



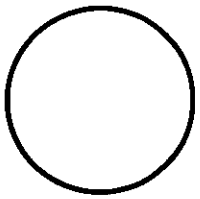
Summary for Reach P-2: 12" HDPE

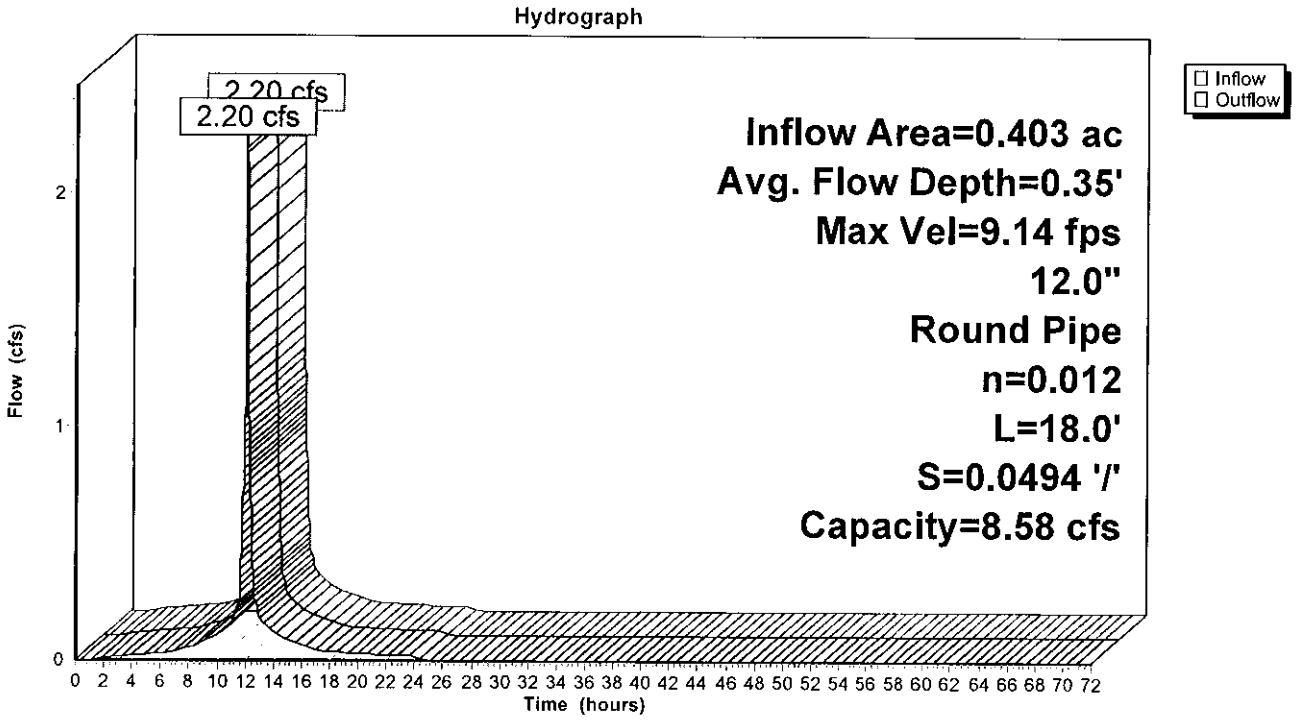
Inflow Area = 0.403 ac, 98.24% Impervious, Inflow Depth = 5.36" for 25Yr event
Inflow = 2.20 cfs @ 12.09 hrs, Volume= 0.180 af
Outflow = 2.20 cfs @ 12.10 hrs, Volume= 0.180 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.14 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.03 fps, Avg. Travel Time= 0.1 min

Peak Storage= 4 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.58 cfs

12.0" Round Pipe
n= 0.012
Length= 18.0' Slope= 0.0494 '/'
Inlet Invert= 94.89', Outlet Invert= 94.00'





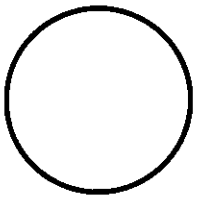
Summary for Reach P-3: 12" HDPE

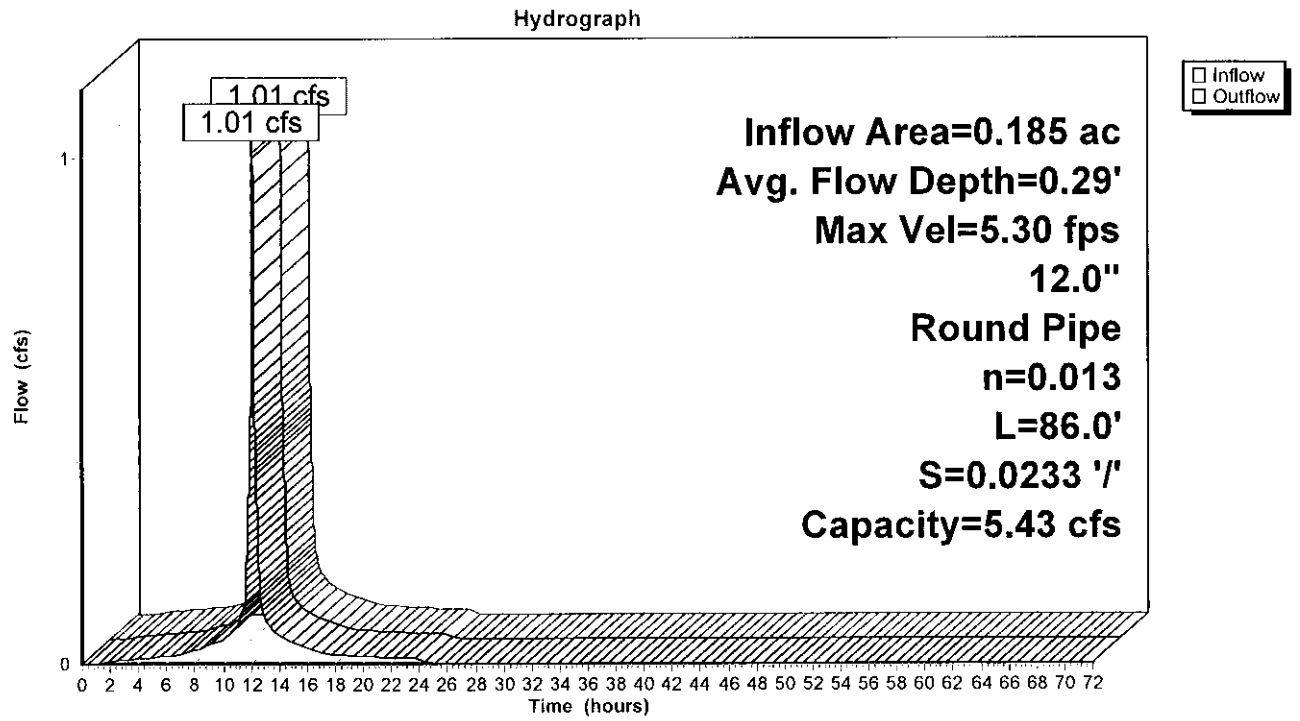
Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth = 5.36" for 25Yr event
Inflow = 1.01 cfs @ 12.08 hrs, Volume= 0.083 af
Outflow = 1.01 cfs @ 12.09 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.30 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.75 fps, Avg. Travel Time= 0.8 min

Peak Storage= 16 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.43 cfs

12.0" Round Pipe
n= 0.013
Length= 86.0' Slope= 0.0233 '/'
Inlet Invert= 96.00', Outlet Invert= 94.00'





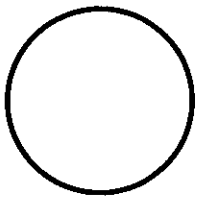
Summary for Reach P-6: 12" HDPE

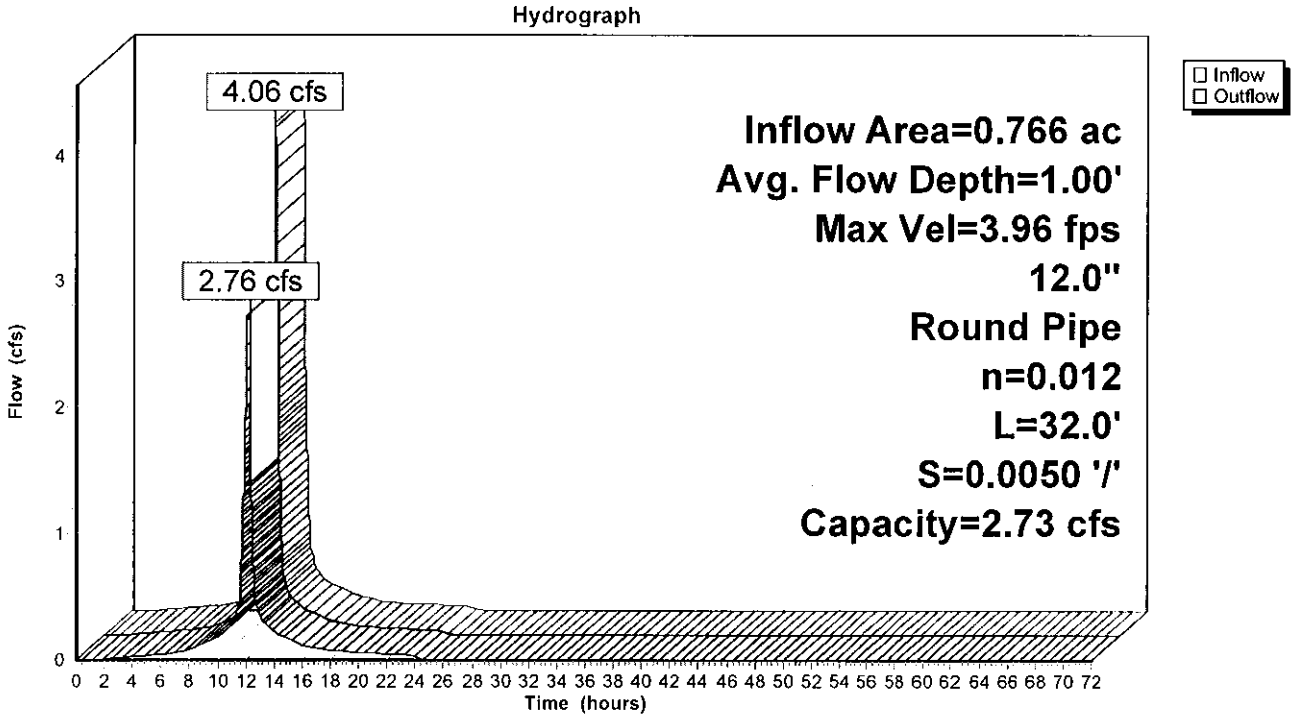
Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 5.00" for 25Yr event
Inflow = 4.06 cfs @ 12.09 hrs, Volume= 0.319 af
Outflow = 2.76 cfs @ 12.34 hrs, Volume= 0.319 af, Atten= 32%, Lag= 14.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.96 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.56 fps, Avg. Travel Time= 0.3 min

Peak Storage= 25 cf @ 12.03 hrs
Average Depth at Peak Storage= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 32.0' Slope= 0.0050 '/'
Inlet Invert= 95.37', Outlet Invert= 95.21'





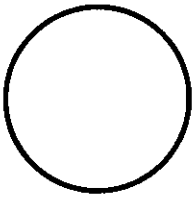
Summary for Reach P-7: 12" HDPE

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 5.00" for 25Yr event
Inflow = 2.76 cfs @ 12.34 hrs, Volume= 0.319 af
Outflow = 2.74 cfs @ 12.34 hrs, Volume= 0.319 af, Atten= 1%, Lag= 0.0 min

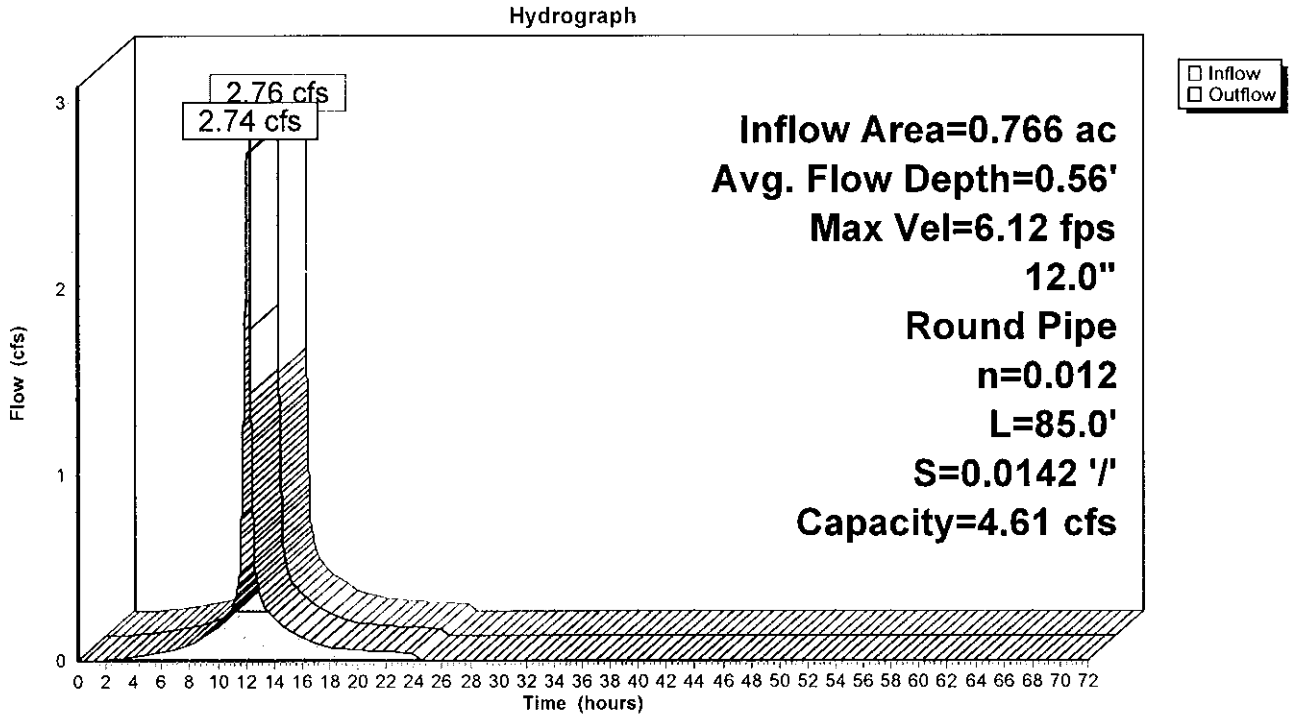
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.12 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.27 fps, Avg. Travel Time= 0.6 min

Peak Storage= 38 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.56'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.61 cfs

12.0" Round Pipe
n= 0.012
Length= 85.0' Slope= 0.0142 '/'
Inlet Invert= 95.21', Outlet Invert= 94.00'



Reach P-7: 12" HDPE



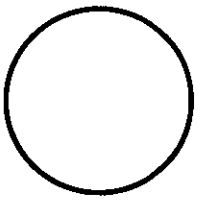
Summary for Reach TD-1: Trench Drain

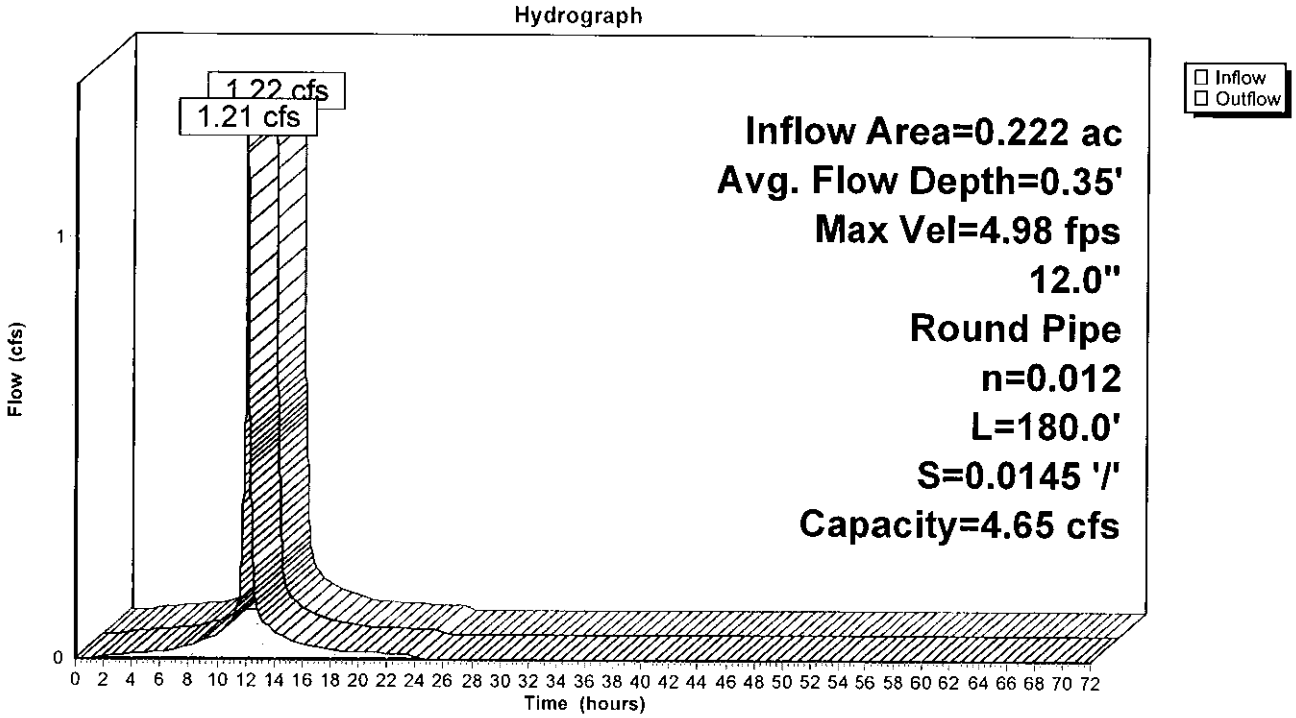
Inflow Area = 0.222 ac, 98.45% Impervious, Inflow Depth = 5.36" for 25Yr event
Inflow = 1.22 cfs @ 12.08 hrs, Volume= 0.099 af
Outflow = 1.21 cfs @ 12.10 hrs, Volume= 0.099 af, Atten= 0%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.98 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.64 fps, Avg. Travel Time= 1.8 min

Peak Storage= 44 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.65 cfs

12.0" Round Pipe
n= 0.012
Length= 180.0' Slope= 0.0145 '/'
Inlet Invert= 97.50', Outlet Invert= 94.89'



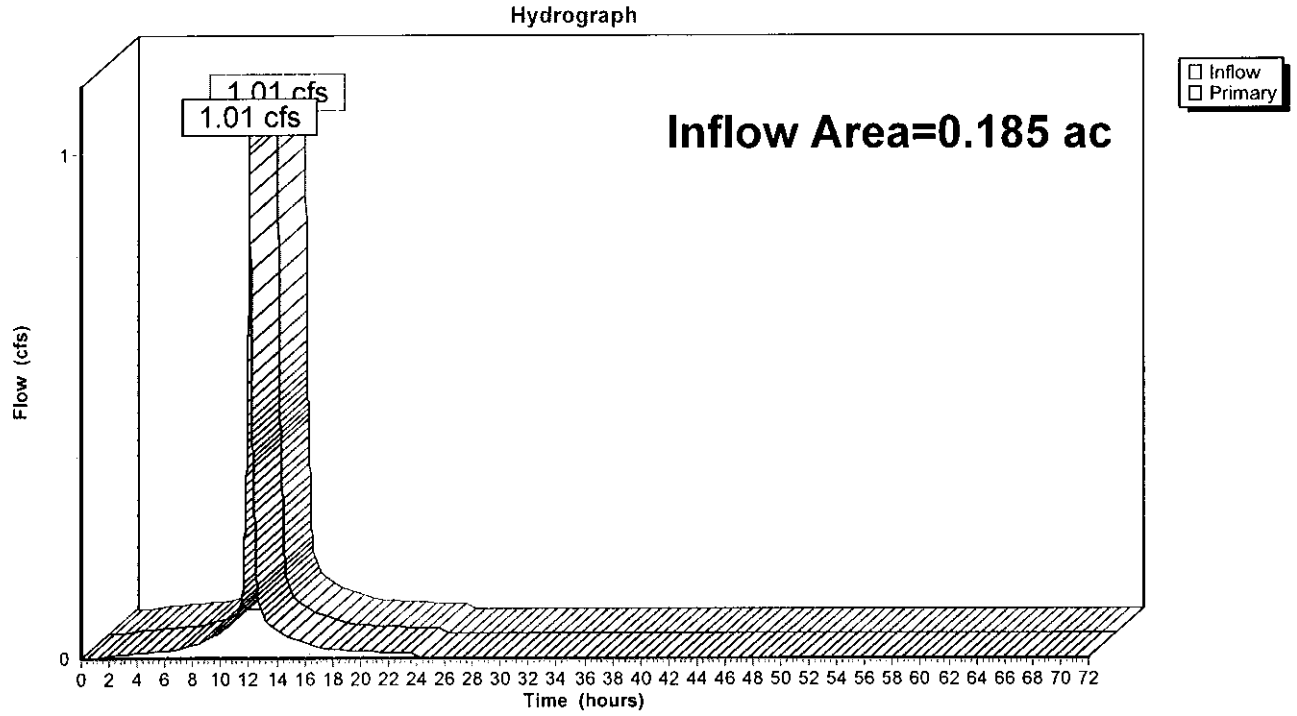


Summary for Pond DMH-2: Drain Manhole

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth = 5.36" for 25Yr event
Inflow = 1.01 cfs @ 12.08 hrs, Volume= 0.083 af
Primary = 1.01 cfs @ 12.08 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond DMH-2: Drain Manhole

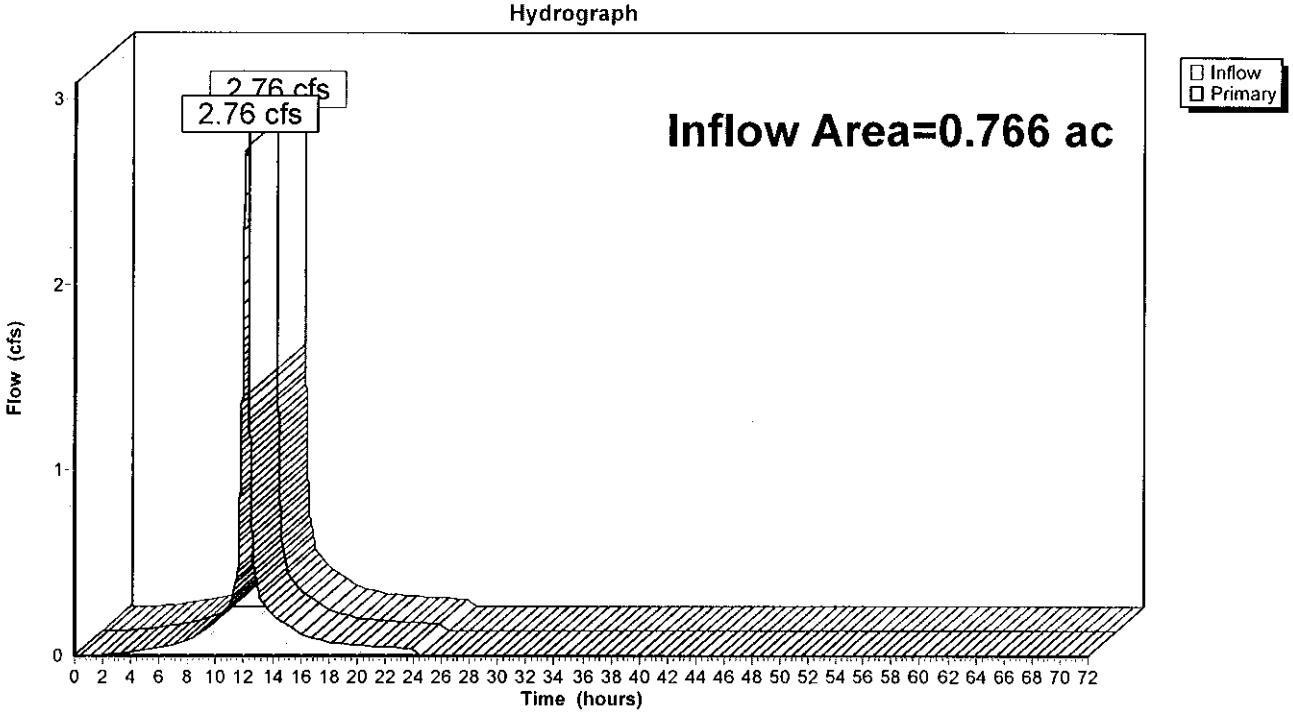


Summary for Pond DMH-5: Drain Manhole

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 5.00" for 25Yr event
Inflow = 2.76 cfs @ 12.34 hrs, Volume= 0.319 af
Primary = 2.76 cfs @ 12.34 hrs, Volume= 0.319 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond DMH-5: Drain Manhole



Summary for Pond SRS-1: Subsurface Recharge System

Inflow Area = 1.355 ac, 92.37% Impervious, Inflow Depth = 5.16" for 25Yr event
Inflow = 5.94 cfs @ 12.09 hrs, Volume= 0.582 af
Outflow = 5.73 cfs @ 12.13 hrs, Volume= 0.494 af, Atten= 4%, Lag= 1.9 min
Discarded = 0.01 cfs @ 2.57 hrs, Volume= 0.081 af
Primary = 5.71 cfs @ 12.13 hrs, Volume= 0.412 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 97.95' @ 12.13 hrs Surf.Area= 2,242 sf Storage= 7,481 cf

Plug-Flow detention time= 366.5 min calculated for 0.493 af (85% of inflow)
Center-of-Mass det. time= 301.5 min (1,059.4 - 758.0)

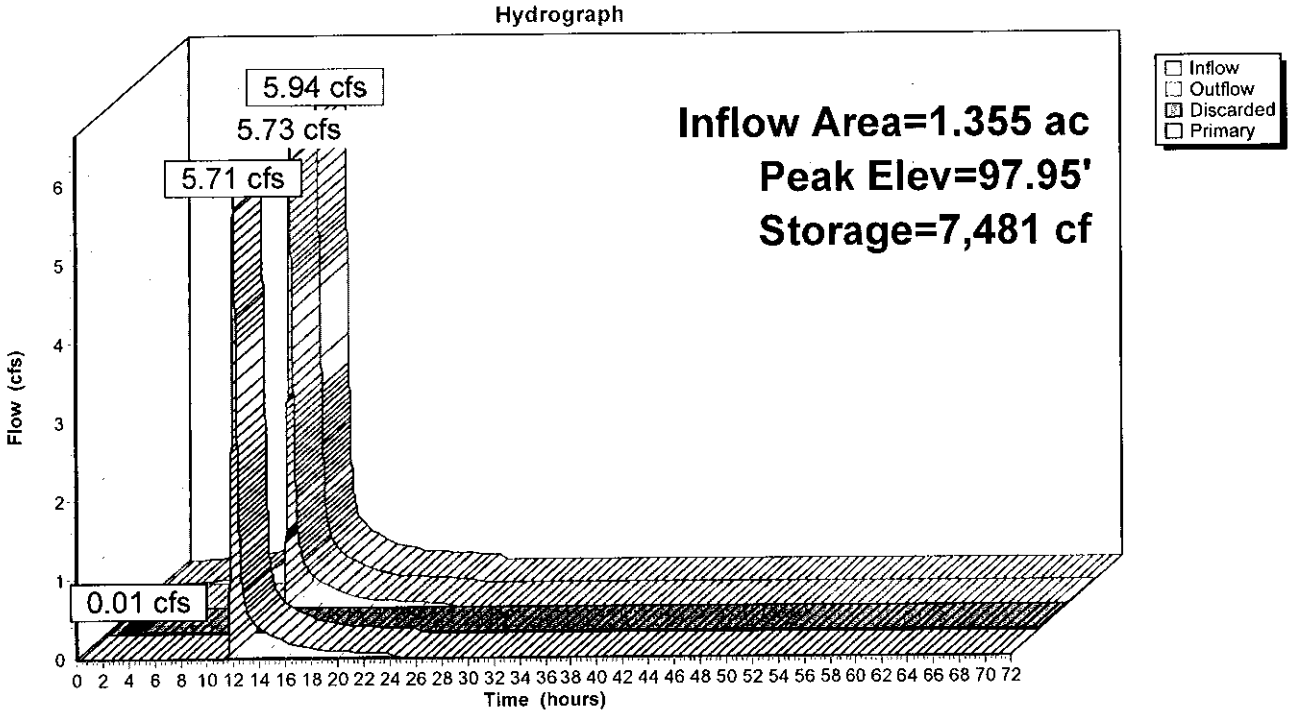
Volume	Invert	Avail.Storage	Storage Description
#1	93.25'	2,975 cf	**21.40'W x 104.76'L x 5.75'H Prismatoid** 12,891 cf Overall - 5,454 cf Embedded = 7,436 cf x 40.0% Voids
#2	94.00'	5,454 cf	**Cultec R-902HD** x 84 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 84 Chambers in 3 Rows Cap Storage= +2.8 cf x 2 x 3 rows = 16.6 cf
		8,429 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	93.25'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	97.00'	**12.0" Round Culvert X 3.00** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 97.00' / 96.80' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Discarded OutFlow Max=0.01 cfs @ 2.57 hrs HW=93.31' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=5.71 cfs @ 12.13 hrs HW=97.95' (Free Discharge)
↑—**2=Culvert** (Barrel Controls 5.71 cfs @ 3.20 fps)

Pond SRS-1: Subsurface Recharge System



Summary for Pond SRS-2: Subsurface Recharge System

Inflow Area = 0.161 ac,100.00% Impervious, Inflow Depth = 5.36" for 25Yr event
Inflow = 0.88 cfs @ 12.08 hrs, Volume= 0.072 af
Outflow = 0.84 cfs @ 12.11 hrs, Volume= 0.065 af, Atten= 5%, Lag= 1.6 min
Discarded = 0.00 cfs @ 2.33 hrs, Volume= 0.014 af
Primary = 0.83 cfs @ 12.11 hrs, Volume= 0.051 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 99.53' @ 12.11 hrs Surf.Area= 391 sf Storage= 870 cf

Plug-Flow detention time= 426.6 min calculated for 0.065 af (90% of inflow)
Center-of-Mass det. time= 377.9 min (1,124.3 - 746.4)

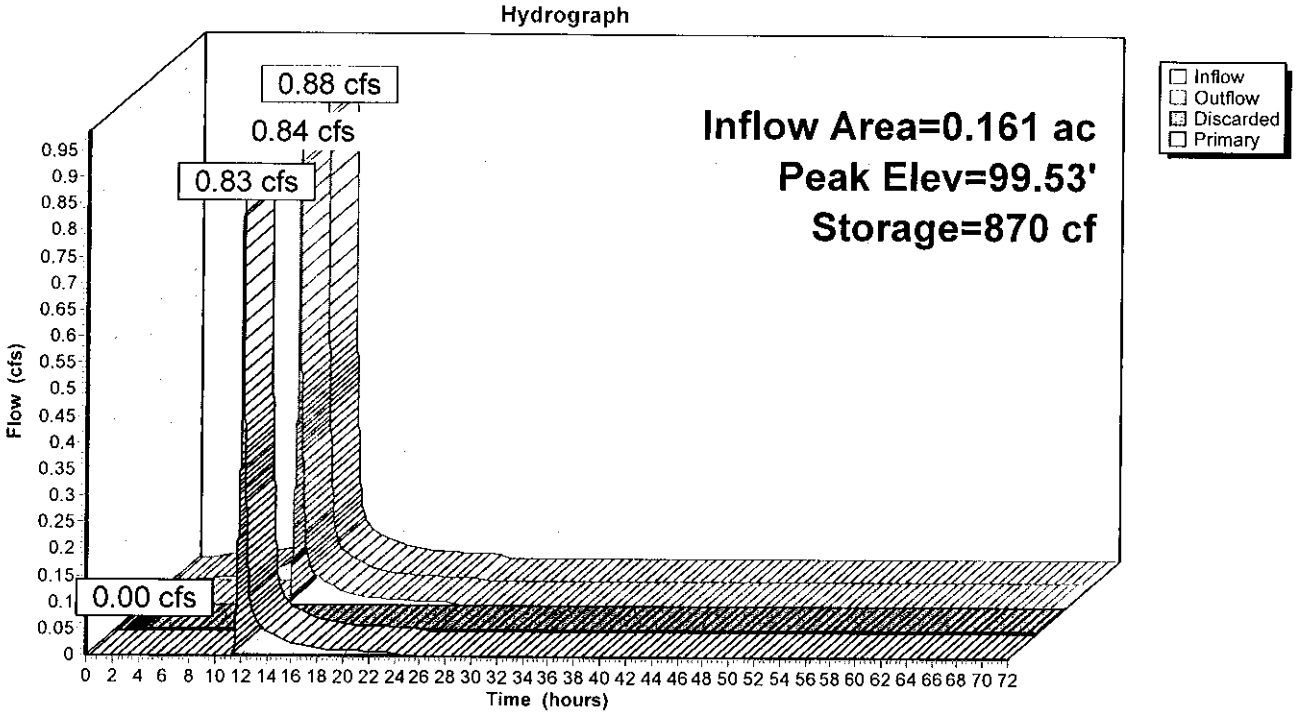
Volume	Invert	Avail.Storage	Storage Description
#1	96.25'	587 cf	**8.50'W x 46.04'L x 5.75'H Prismatoid** 2,250 cf Overall - 782 cf Embedded = 1,468 cf x 40.0% Voids
#2	97.00'	782 cf	**Cultec R-902HD** x 12 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap Cap Storage= +2.8 cf x 2 x 1 rows = 5.5 cf
		1,369 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.25'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**12.0" Round Culvert** L= 28.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 99.00' / 94.20' S= 0.1714 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Discarded OutFlow Max=0.00 cfs @ 2.33 hrs HW=96.31' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.83 cfs @ 12.11 hrs HW=99.53' (Free Discharge)
↑**2=Culvert** (Inlet Controls 0.83 cfs @ 1.96 fps)

Pond SRS-2: Subsurface Recharge System

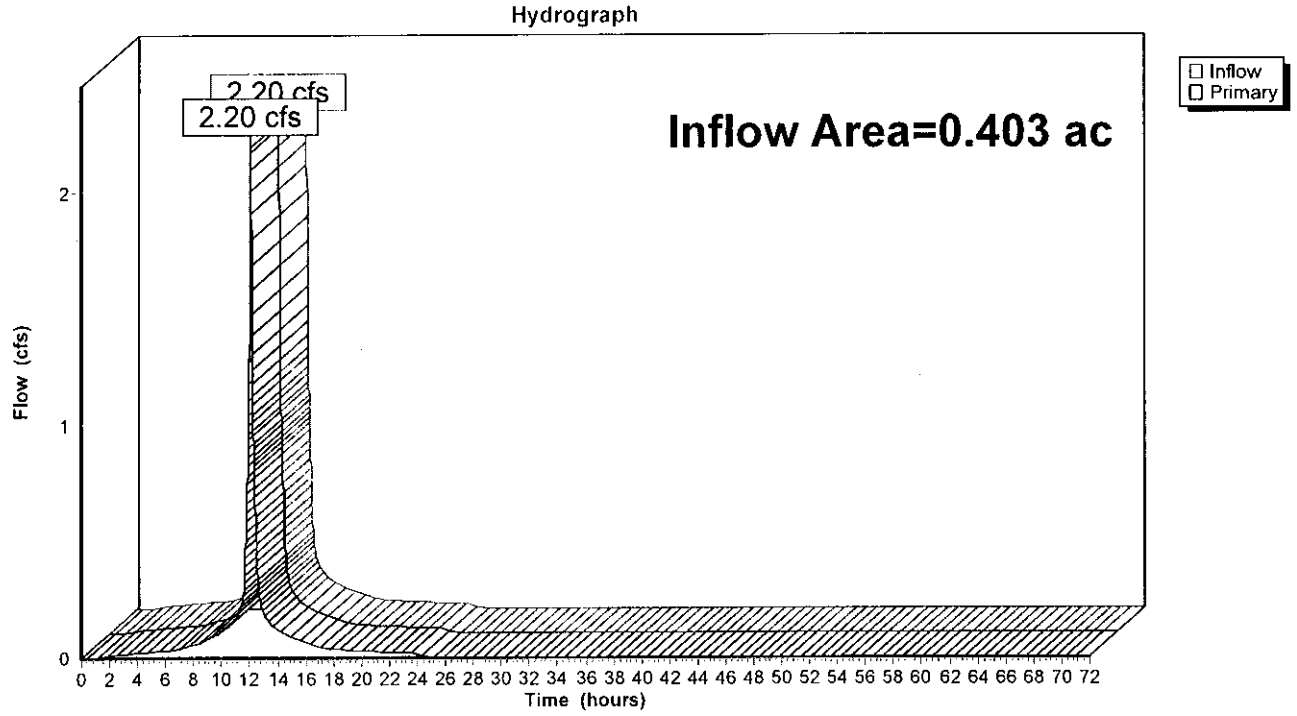


Summary for Pond WQI-1: Water Quality Inlet

Inflow Area = 0.403 ac, 98.24% Impervious, Inflow Depth = 5.36" for 25Yr event
Inflow = 2.20 cfs @ 12.09 hrs, Volume= 0.180 af
Primary = 2.20 cfs @ 12.09 hrs, Volume= 0.180 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond WQI-1: Water Quality Inlet

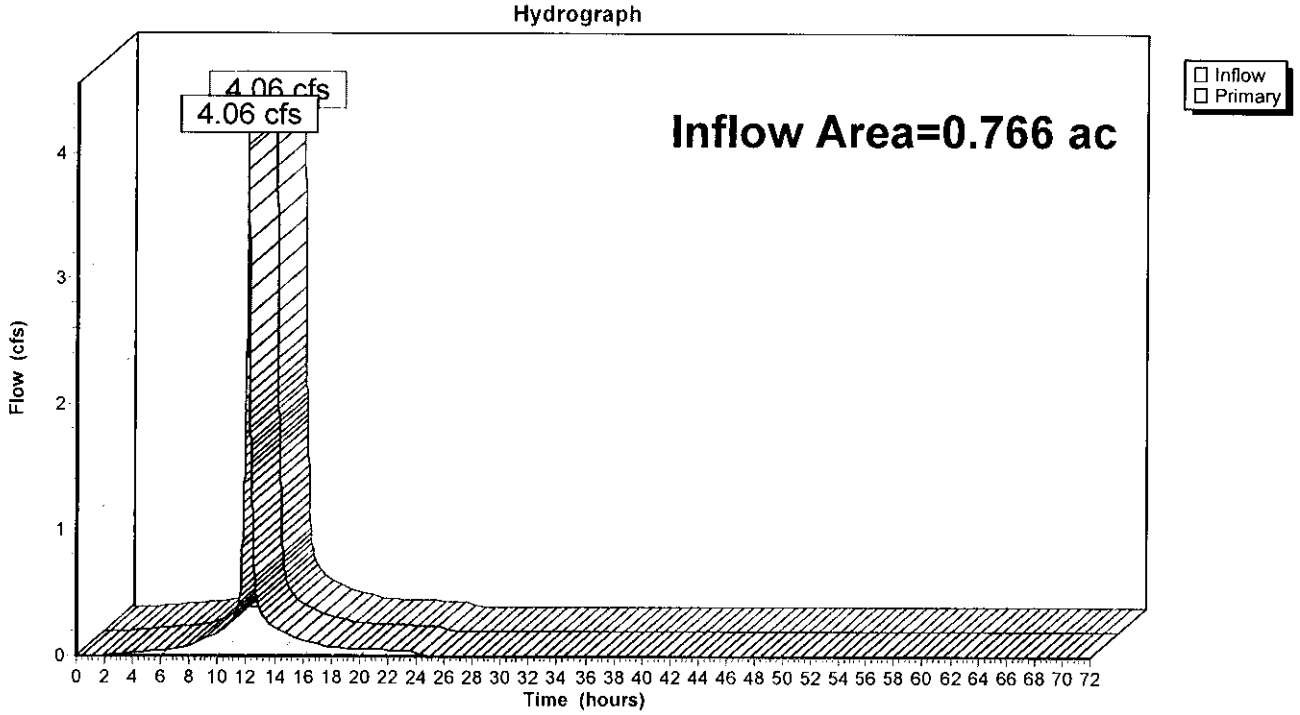


Summary for Pond WQI-2: Water Quality Inlet

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 5.00" for 25Yr event
Inflow = 4.06 cfs @ 12.09 hrs, Volume= 0.319 af
Primary = 4.06 cfs @ 12.09 hrs, Volume= 0.319 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond WQI-2: Water Quality Inlet



Summary for Subcatchment S-1: Roof Runoff

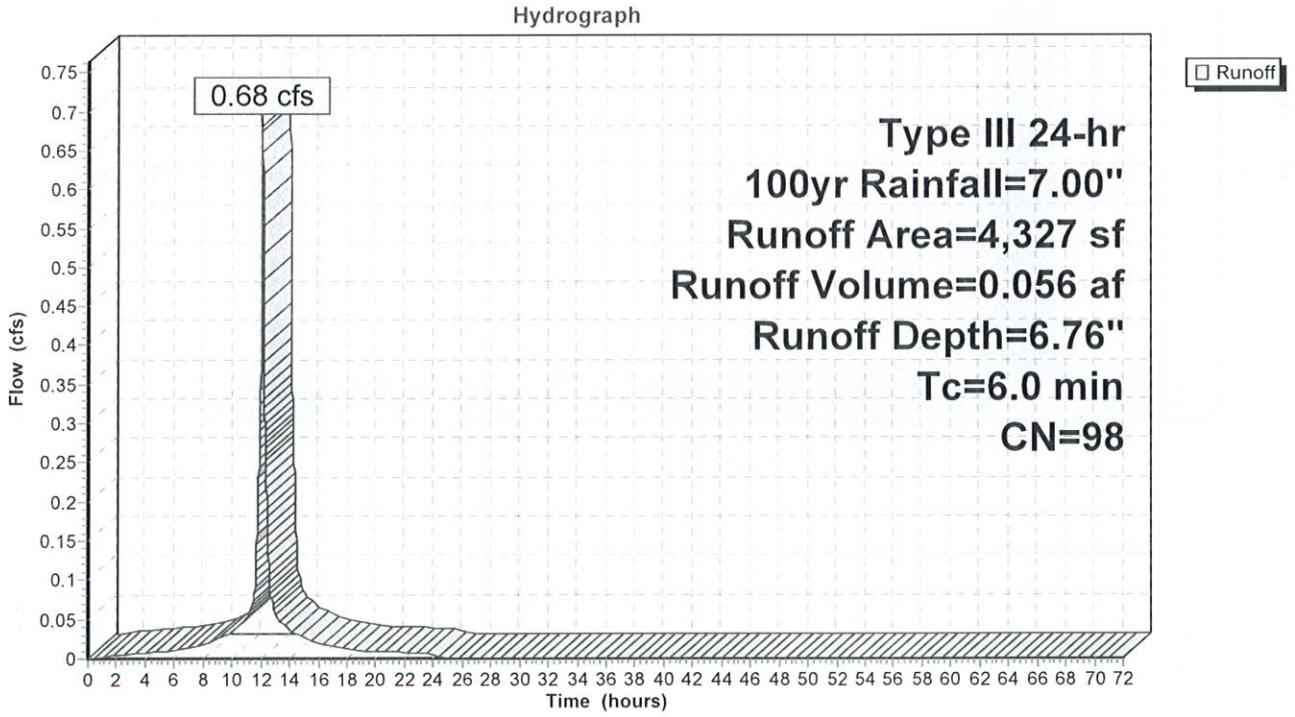
Runoff = 0.68 cfs @ 12.08 hrs, Volume= 0.056 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

	Area (sf)	CN	Description
*	4,327	98	Rooftop
	4,327		100.00% Impervious Area

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

Subcatchment S-1: Roof Runoff



Summary for Subcatchment S-10: Offsite Runoff

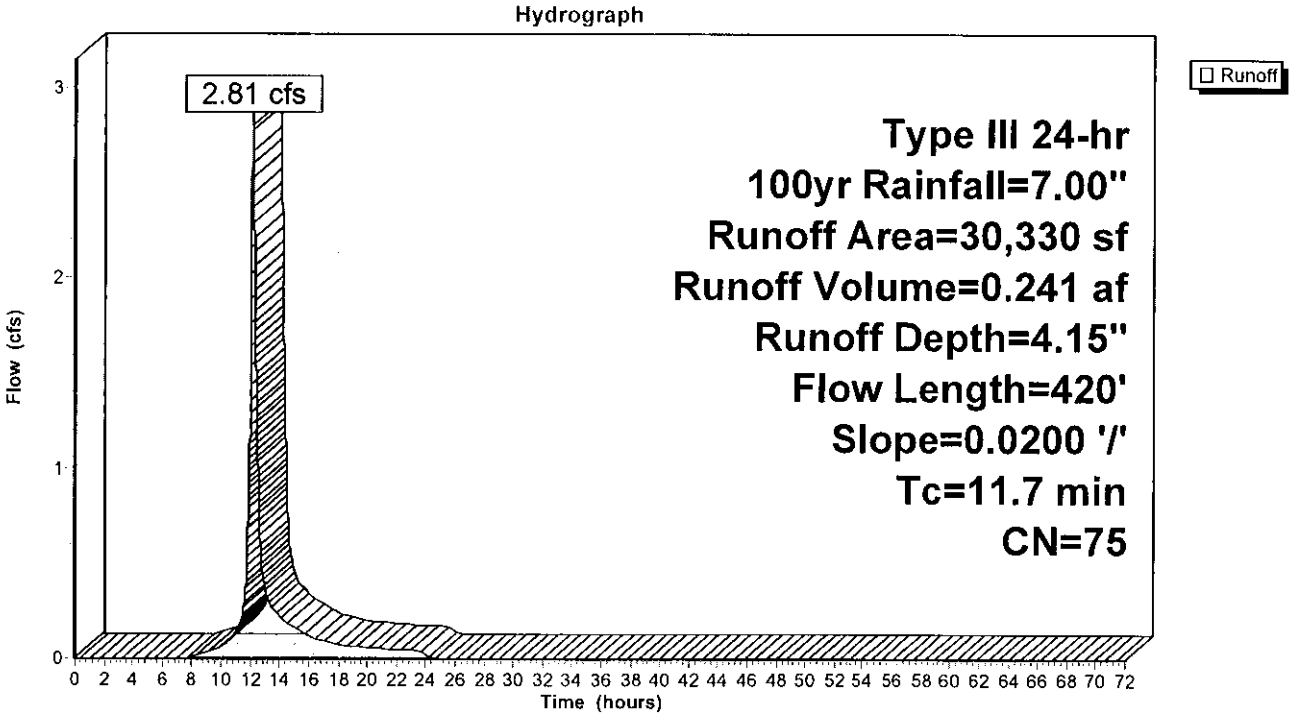
Runoff = 2.81 cfs @ 12.16 hrs, Volume= 0.241 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

Area (sf)	CN	Description
29,246	74	>75% Grass cover, Good, HSG C
1,084	98	Paved parking & roofs
30,330	75	Weighted Average
29,246		96.43% Pervious Area
1,084		3.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.40"
6.2	370	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.7	420	Total			

Subcatchment S-10: Offsite Runoff



Summary for Subcatchment S-2: Tributary to CB-1

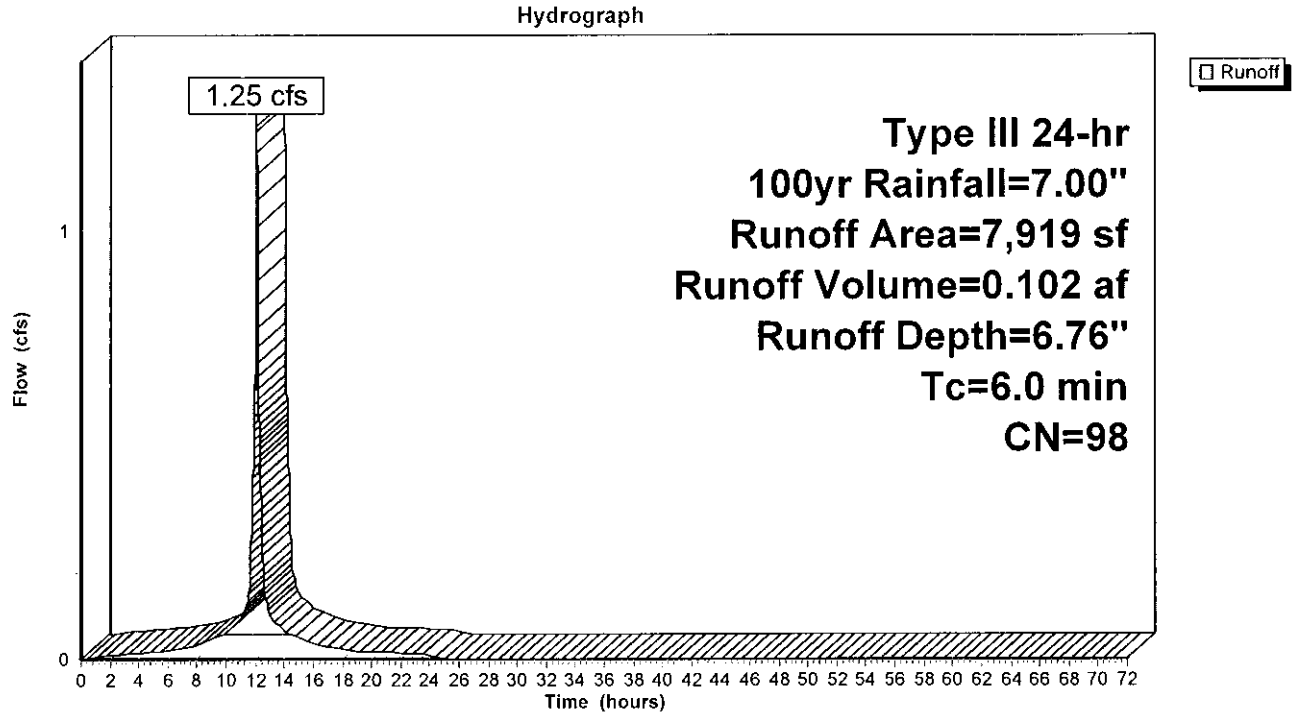
Runoff = 1.25 cfs @ 12.08 hrs, Volume= 0.102 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

Area (sf)	CN	Description
160	74	>75% Grass cover, Good, HSG C
7,759	98	Paved parking
7,919	98	Weighted Average
160		2.02% Pervious Area
7,759		97.98% Impervious Area

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

Subcatchment S-2: Tributary to CB-1



Summary for Subcatchment S-3: Tributary to TD-1

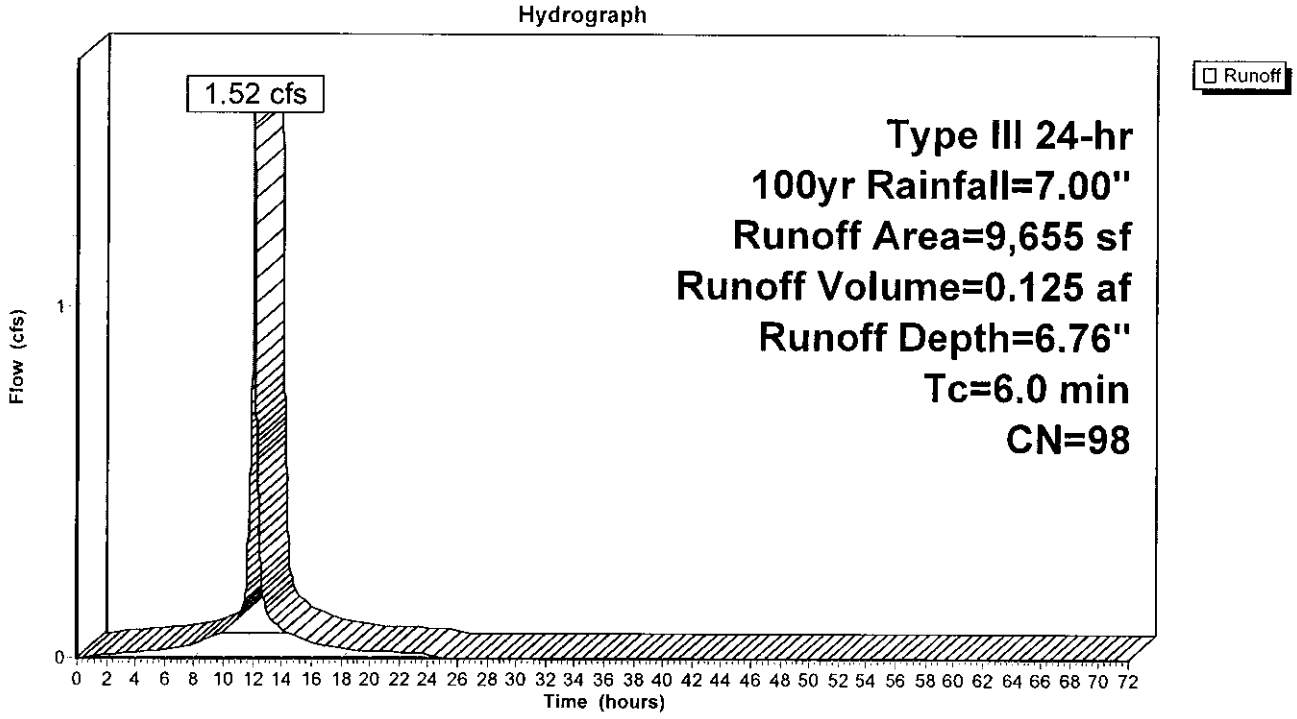
Runoff = 1.52 cfs @ 12.08 hrs, Volume= 0.125 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

Area (sf)	CN	Description
9,505	98	Paved parking
150	74	>75% Grass cover, Good, HSG C
9,655	98	Weighted Average
150		1.55% Pervious Area
9,505		98.45% Impervious Area

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

Subcatchment S-3: Tributary to TD-1



Summary for Subcatchment S-4: Tributary to CB-2

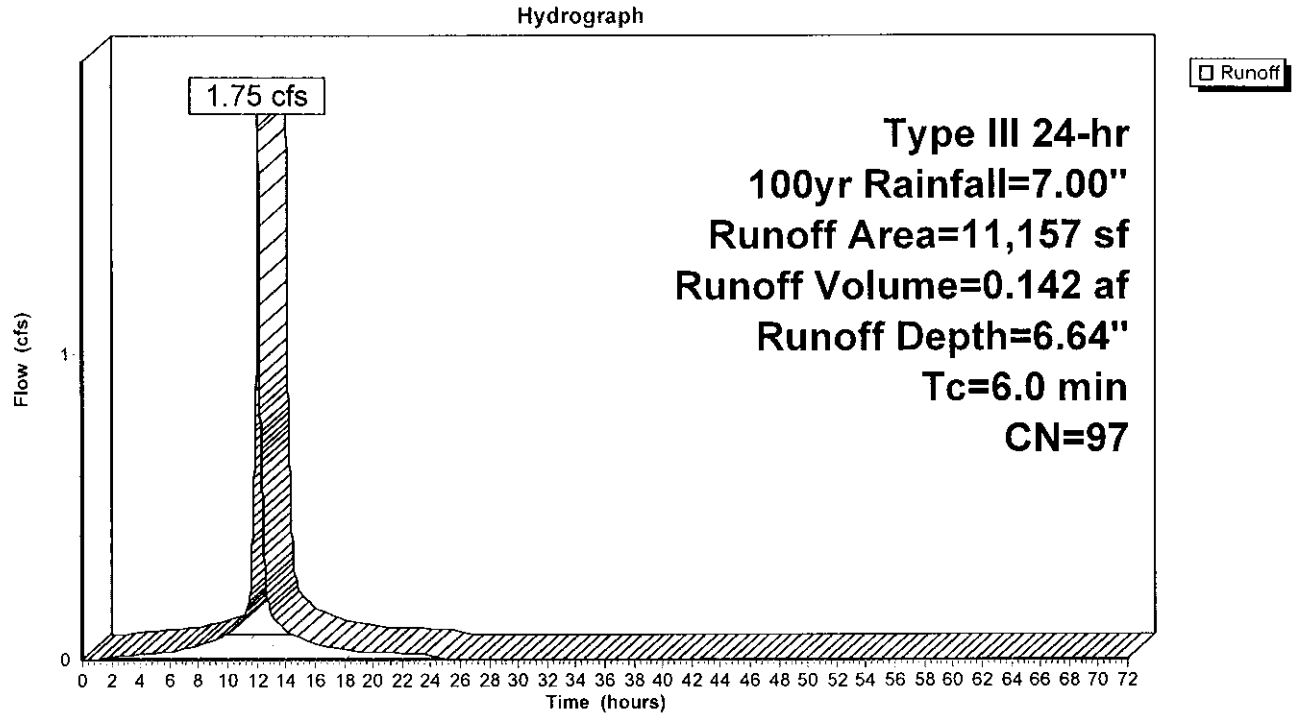
Runoff = 1.75 cfs @ 12.08 hrs, Volume= 0.142 af, Depth= 6.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

Area (sf)	CN	Description
265	74	>75% Grass cover, Good, HSG C
10,892	98	Paved parking
11,157	97	Weighted Average
265		2.38% Pervious Area
10,892		97.62% Impervious Area

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

Subcatchment S-4: Tributary to CB-2



Summary for Subcatchment S-5: Tributary to CB-3

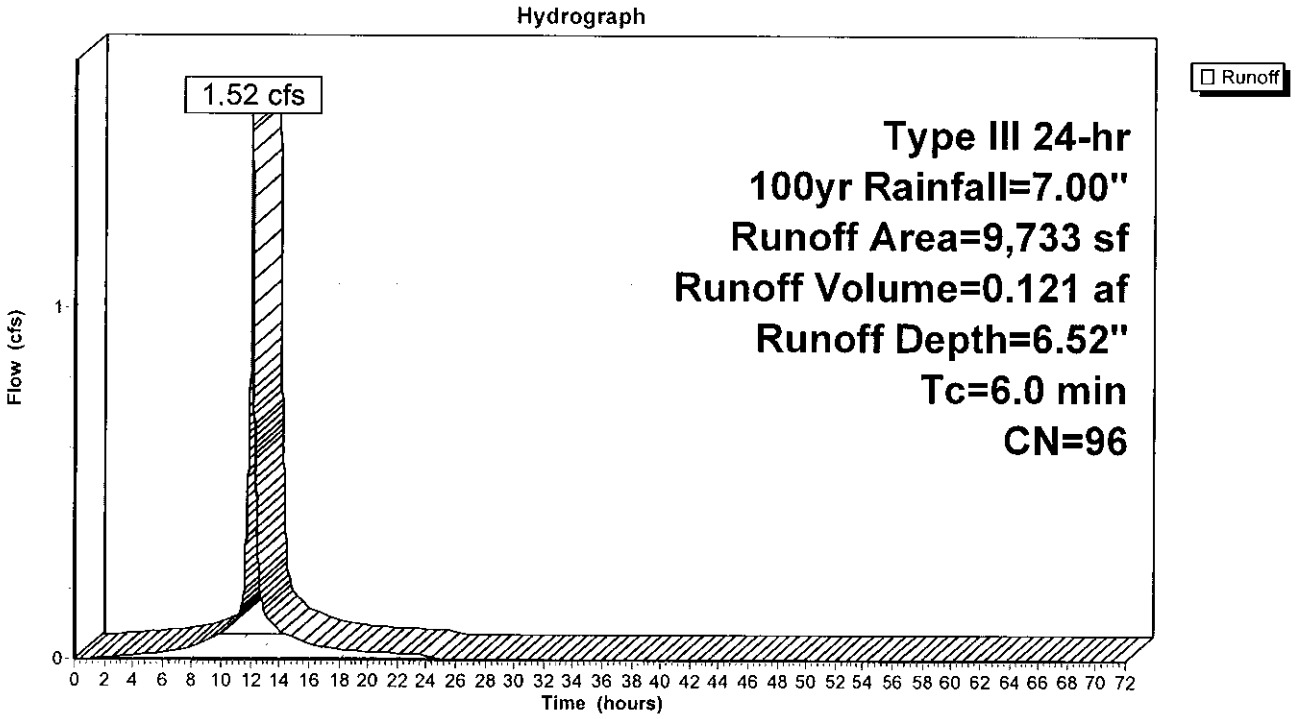
Runoff = 1.52 cfs @ 12.08 hrs, Volume= 0.121 af, Depth= 6.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

Area (sf)	CN	Description
8,903	98	Paved parking
830	74	>75% Grass cover, Good, HSG C
9,733	96	Weighted Average
830		8.53% Pervious Area
8,903		91.47% Impervious Area

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

Subcatchment S-5: Tributary to CB-3



Summary for Subcatchment S-6: Tributary to CB-4

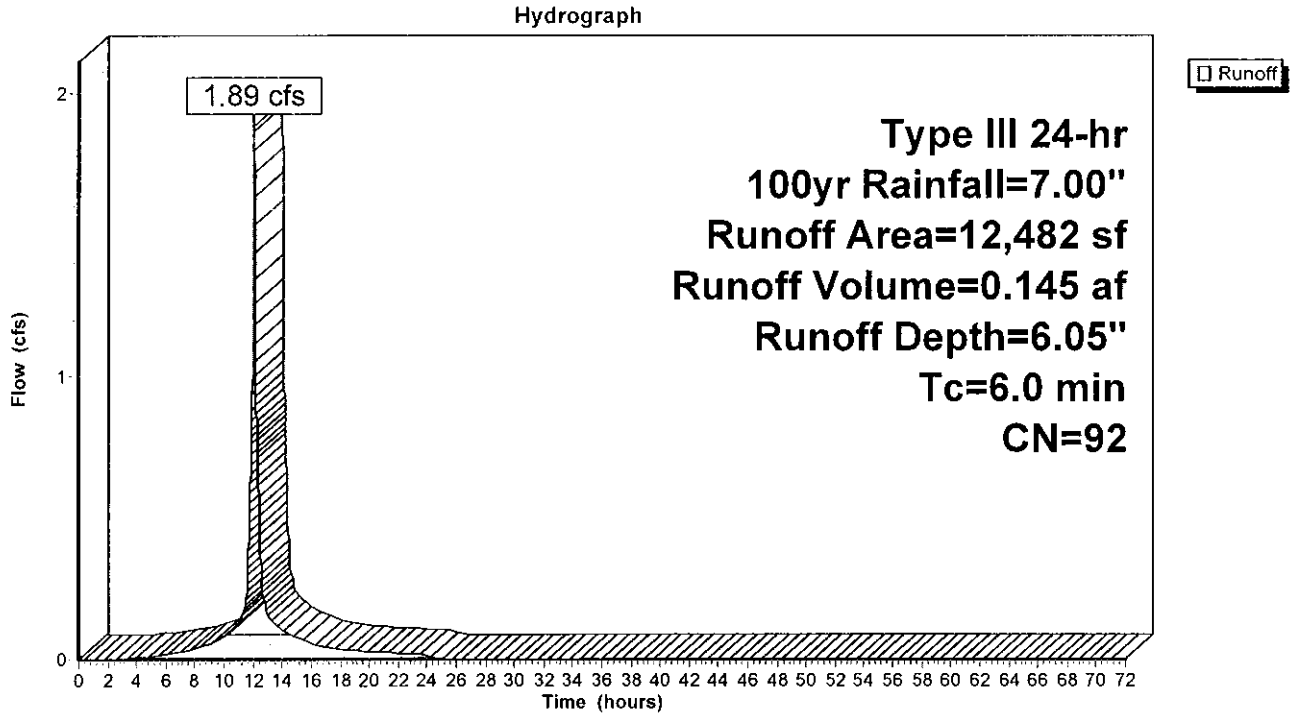
Runoff = 1.89 cfs @ 12.08 hrs, Volume= 0.145 af, Depth= 6.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

Area (sf)	CN	Description
9,382	98	Paved parking
3,100	74	>75% Grass cover, Good, HSG C
12,482	92	Weighted Average
3,100		24.84% Pervious Area
9,382		75.16% Impervious Area

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

Subcatchment S-6: Tributary to CB-4



Summary for Subcatchment S-7: Tributary to CB-4

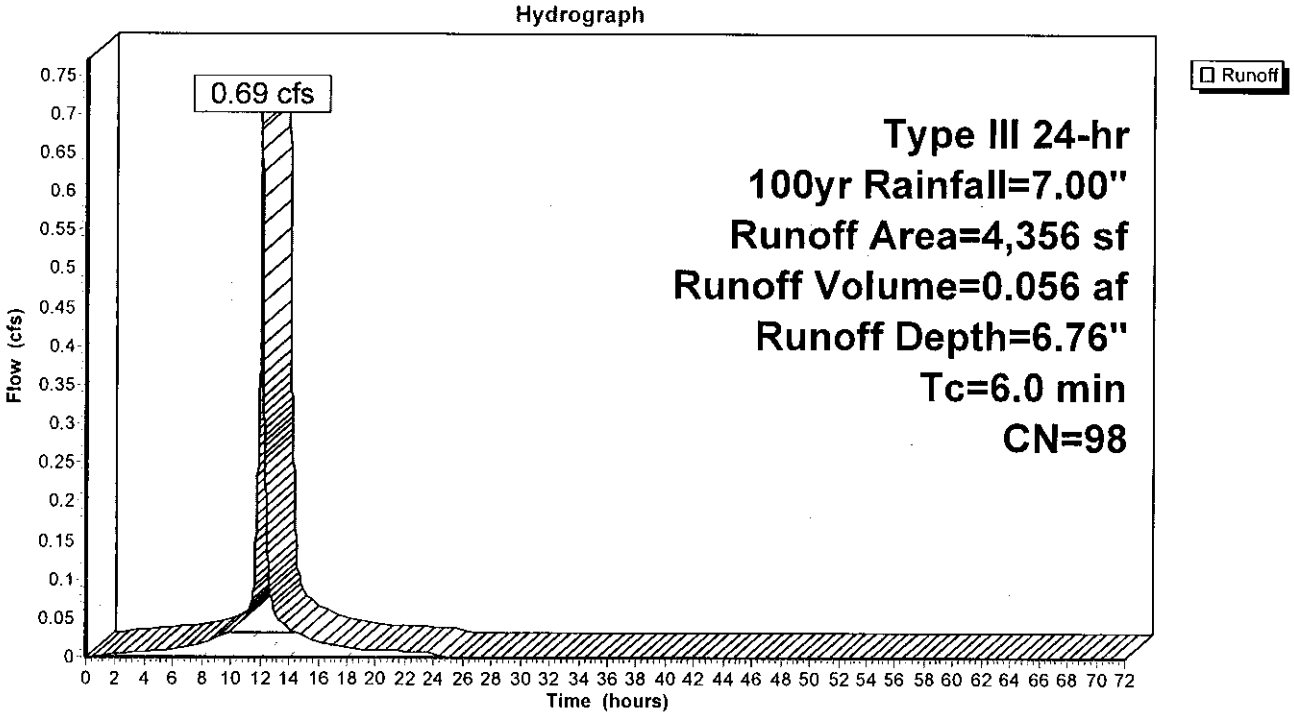
Runoff = 0.69 cfs @ 12.08 hrs, Volume= 0.056 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

Area (sf)	CN	Description
4,356	98	Paved parking
4,356		100.00% Impervious Area

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

Subcatchment S-7: Tributary to CB-4



Summary for Subcatchment S-8: Canopy Runoff

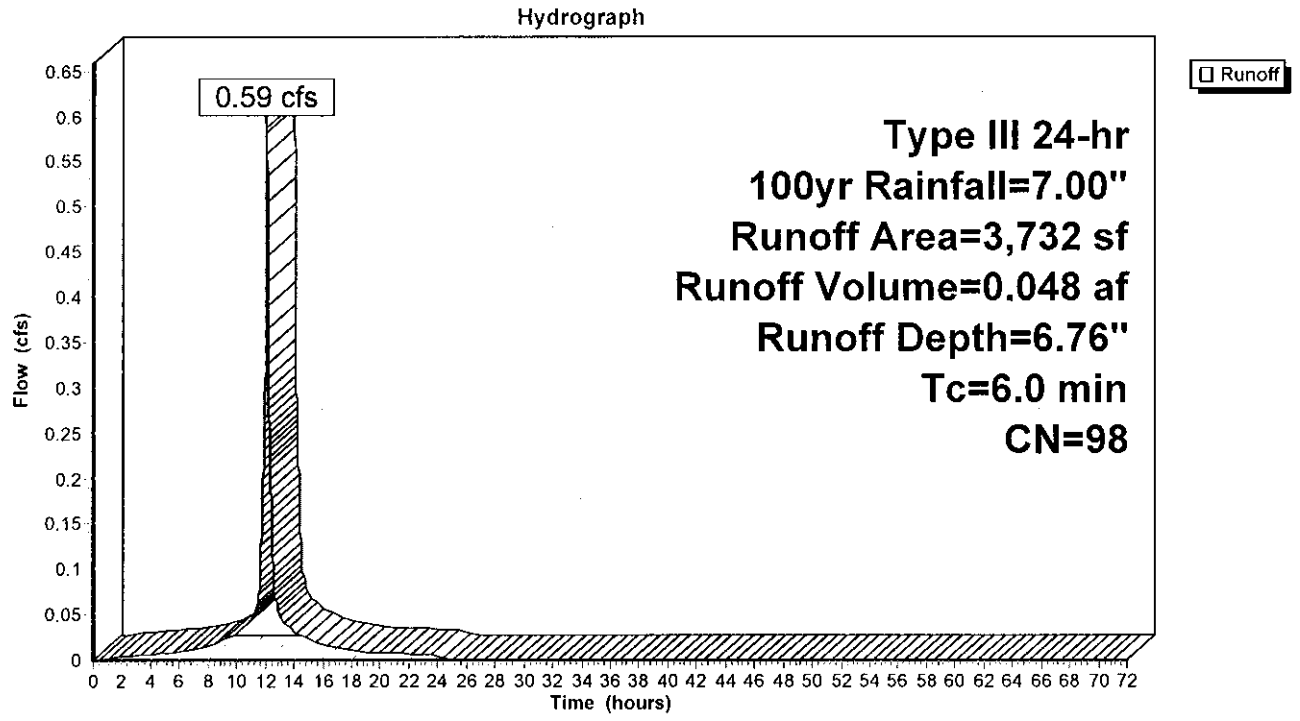
Runoff = 0.59 cfs @ 12.08 hrs, Volume= 0.048 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

	Area (sf)	CN	Description
*	3,732	98	Canopy
	3,732		100.00% Impervious Area

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

Subcatchment S-8: Canopy Runoff



Summary for Subcatchment S-9: Roof Runoff

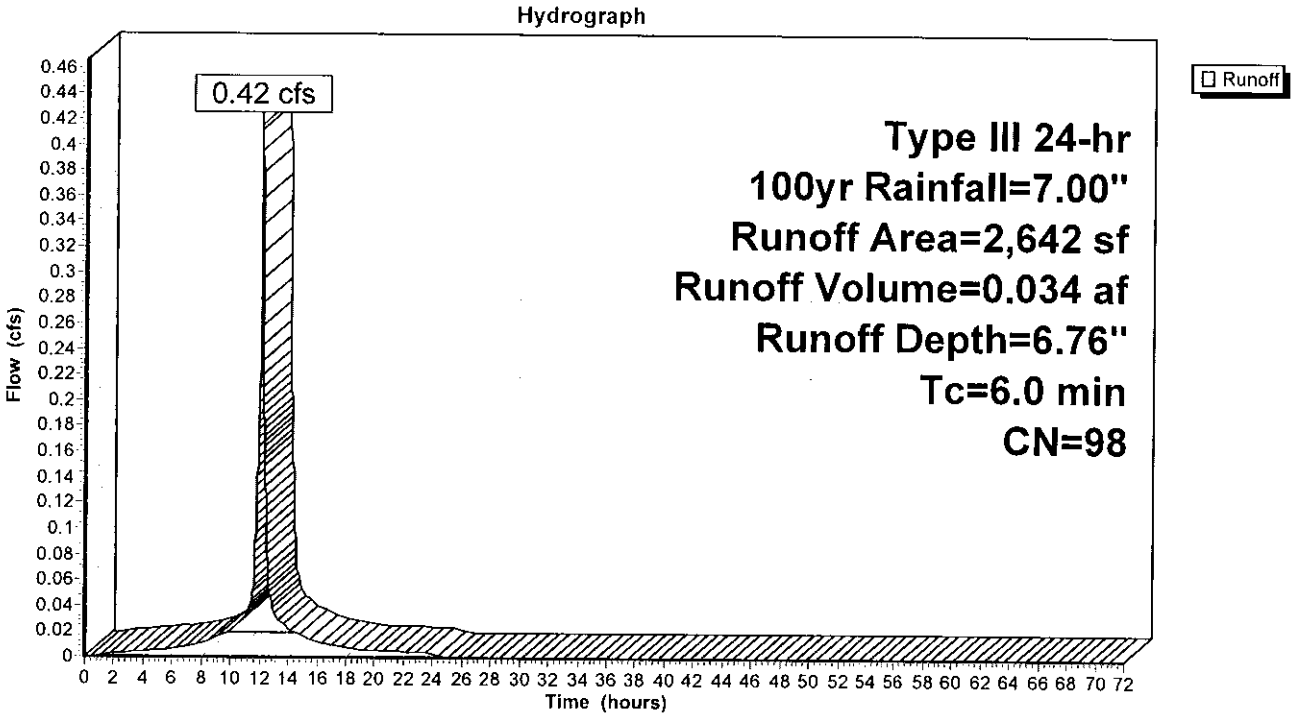
Runoff = 0.42 cfs @ 12.08 hrs, Volume= 0.034 af, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=7.00"

	Area (sf)	CN	Description
*	2,642	98	Rooftop
	2,642		100.00% Impervious Area

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

Subcatchment S-9: Roof Runoff



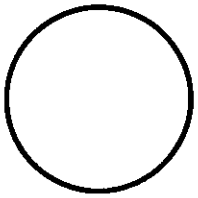
Summary for Reach CB-1: Catch Basin

Inflow Area = 0.182 ac, 97.98% Impervious, Inflow Depth = 6.76" for 100yr event
Inflow = 1.25 cfs @ 12.08 hrs, Volume= 0.102 af
Outflow = 1.25 cfs @ 12.09 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.2 min

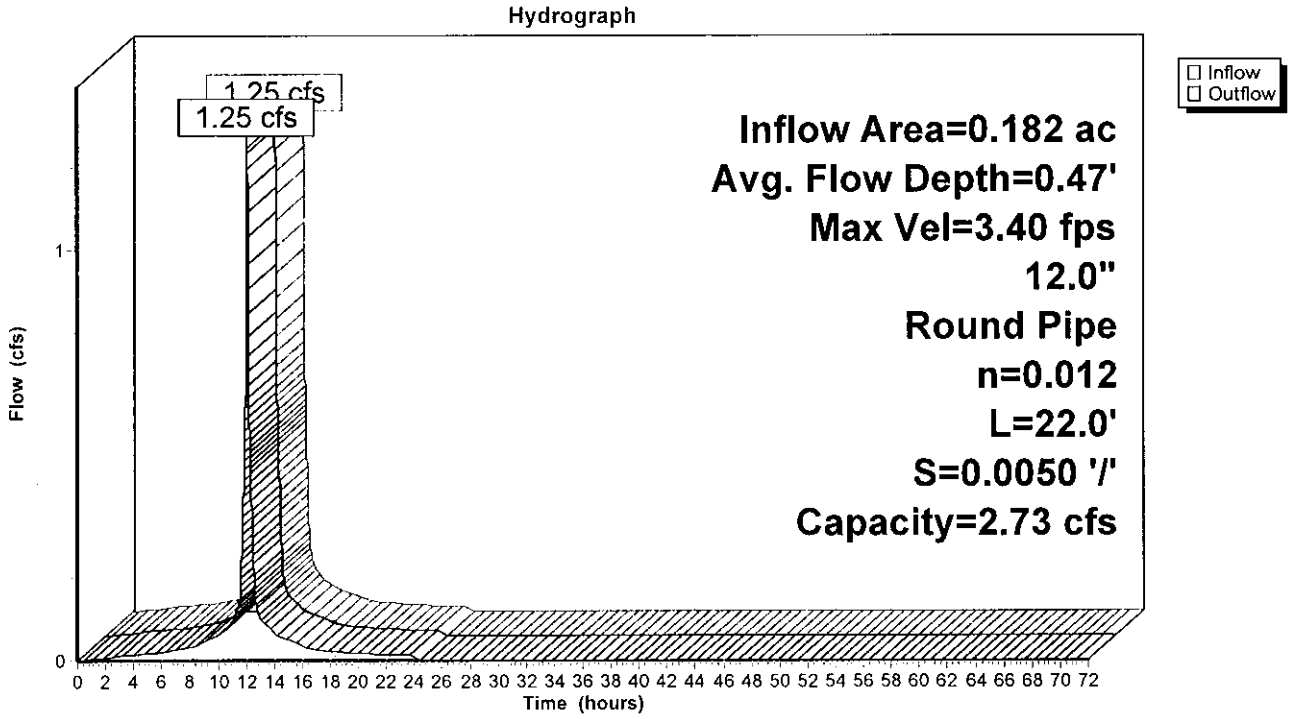
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.40 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.15 fps, Avg. Travel Time= 0.3 min

Peak Storage= 8 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.47'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 22.0' Slope= 0.0050 '/'
Inlet Invert= 95.00', Outlet Invert= 94.89'



Reach CB-1: Catch Basin



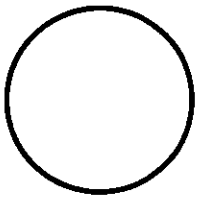
Summary for Reach CB-2: Catch Basin

Inflow Area = 0.480 ac, 94.76% Impervious, Inflow Depth = 6.59" for 100yr event
Inflow = 3.27 cfs @ 12.08 hrs, Volume= 0.263 af
Outflow = 2.82 cfs @ 12.06 hrs, Volume= 0.263 af, Atten= 14%, Lag= 0.0 min

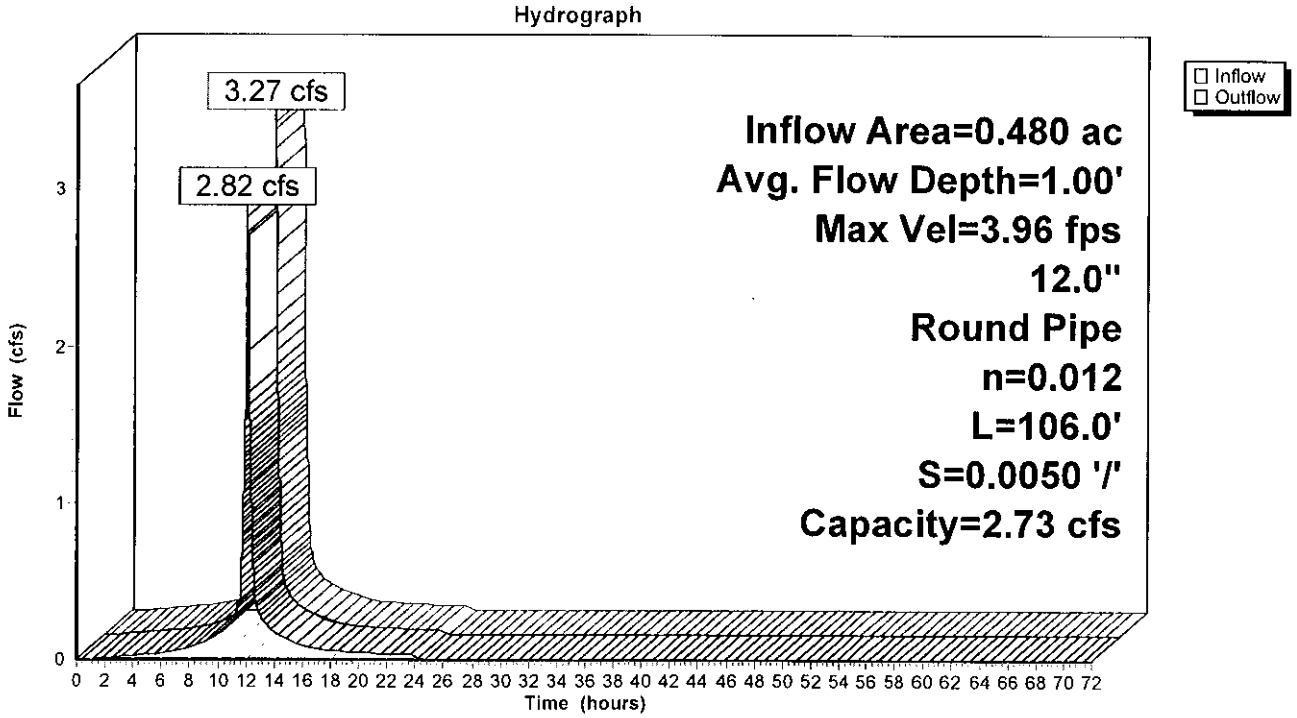
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.96 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.50 fps, Avg. Travel Time= 1.2 min

Peak Storage= 83 cf @ 12.06 hrs
Average Depth at Peak Storage= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 106.0' Slope= 0.0050 '/'
Inlet Invert= 95.90', Outlet Invert= 95.37'



Reach CB-2: Catch Basin



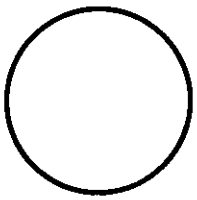
Summary for Reach CB-4: Catch Basin

Inflow Area = 0.287 ac, 75.16% Impervious, Inflow Depth = 6.05" for 100yr event
Inflow = 1.89 cfs @ 12.08 hrs, Volume= 0.145 af
Outflow = 1.89 cfs @ 12.09 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.1 min

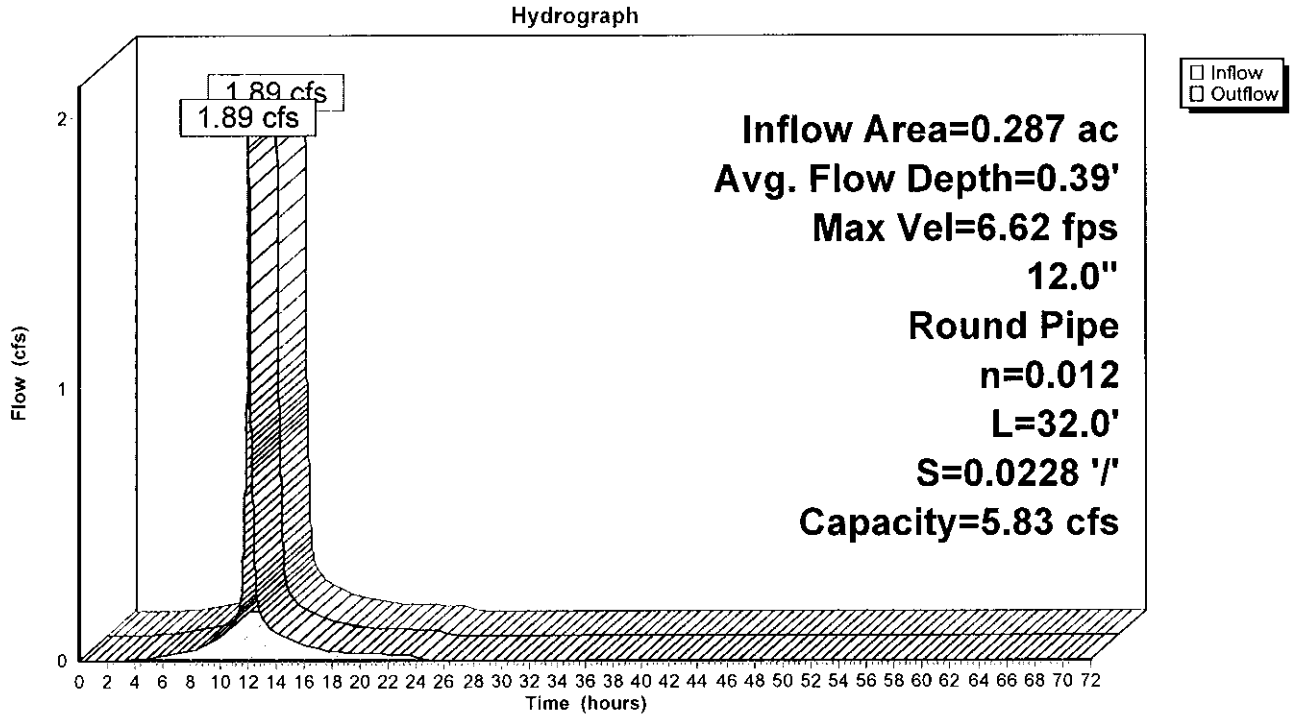
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.62 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.18 fps, Avg. Travel Time= 0.2 min

Peak Storage= 9 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.83 cfs

12.0" Round Pipe
n= 0.012
Length= 32.0' Slope= 0.0228 '/'
Inlet Invert= 96.10', Outlet Invert= 95.37'



Reach CB-4: Catch Basin



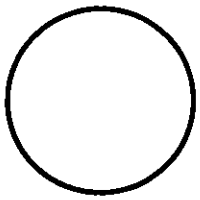
Summary for Reach CB-5: Catch Basin

Inflow Area = 0.100 ac,100.00% Impervious, Inflow Depth = 6.76" for 100yr event
Inflow = 0.69 cfs @ 12.08 hrs, Volume= 0.056 af
Outflow = 0.69 cfs @ 12.09 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.2 min

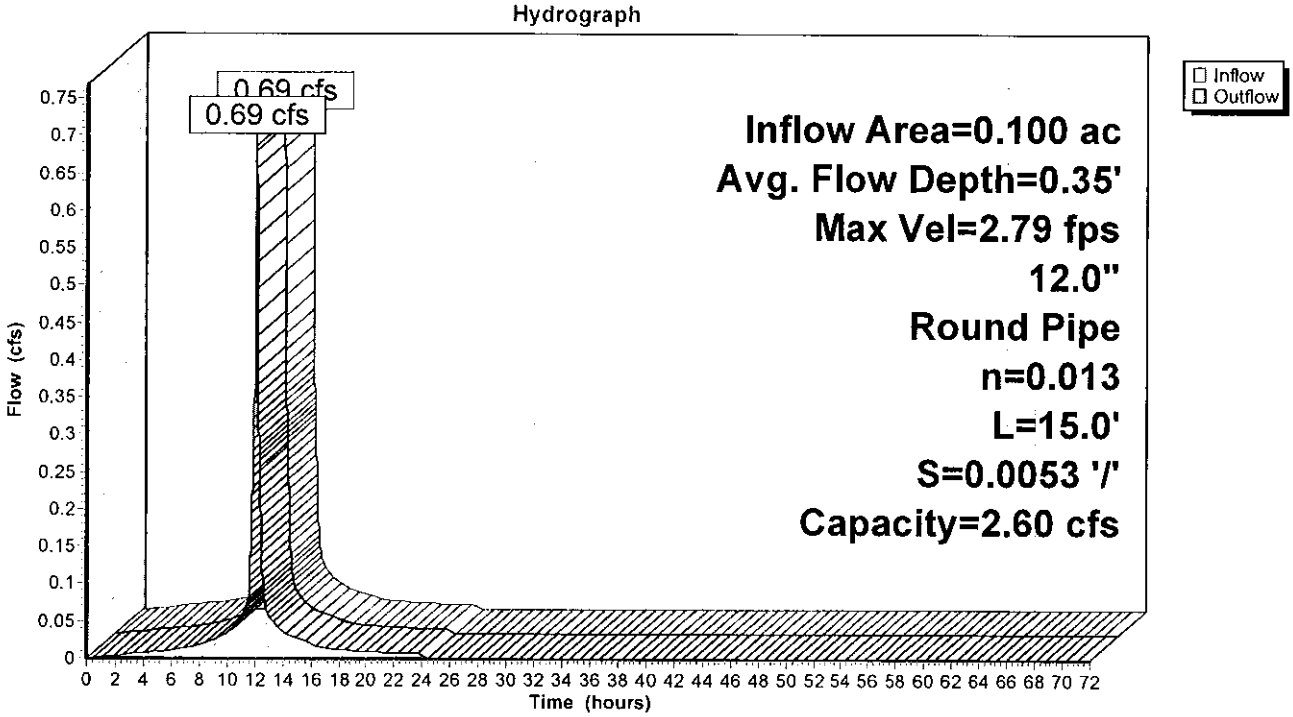
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.79 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.93 fps, Avg. Travel Time= 0.3 min

Peak Storage= 4 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.60 cfs

12.0" Round Pipe
n= 0.013
Length= 15.0' Slope= 0.0053 '/'
Inlet Invert= 97.34', Outlet Invert= 97.26'



Reach CB-5: Catch Basin



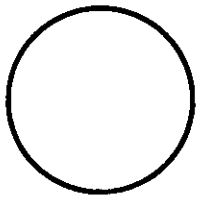
Summary for Reach P-2: 12" HDPE

Inflow Area = 0.403 ac, 98.24% Impervious, Inflow Depth = 6.76" for 100yr event
Inflow = 2.75 cfs @ 12.09 hrs, Volume= 0.227 af
Outflow = 2.75 cfs @ 12.09 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.1 min

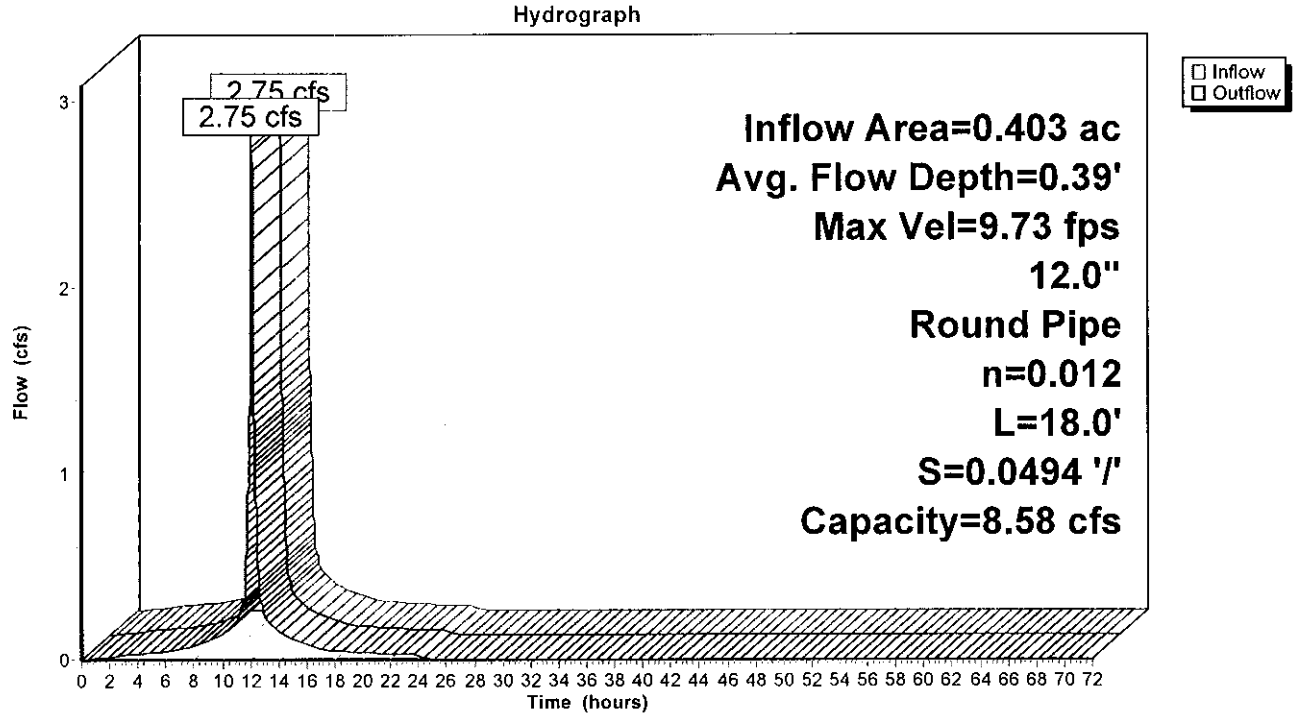
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.73 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.25 fps, Avg. Travel Time= 0.1 min

Peak Storage= 5 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.58 cfs

12.0" Round Pipe
n= 0.012
Length= 18.0' Slope= 0.0494 '/'
Inlet Invert= 94.89', Outlet Invert= 94.00'



Reach P-2: 12" HDPE



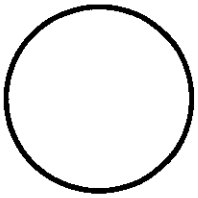
Summary for Reach P-3: 12" HDPE

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth = 6.76" for 100yr event
Inflow = 1.27 cfs @ 12.08 hrs, Volume= 0.104 af
Outflow = 1.27 cfs @ 12.09 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.4 min

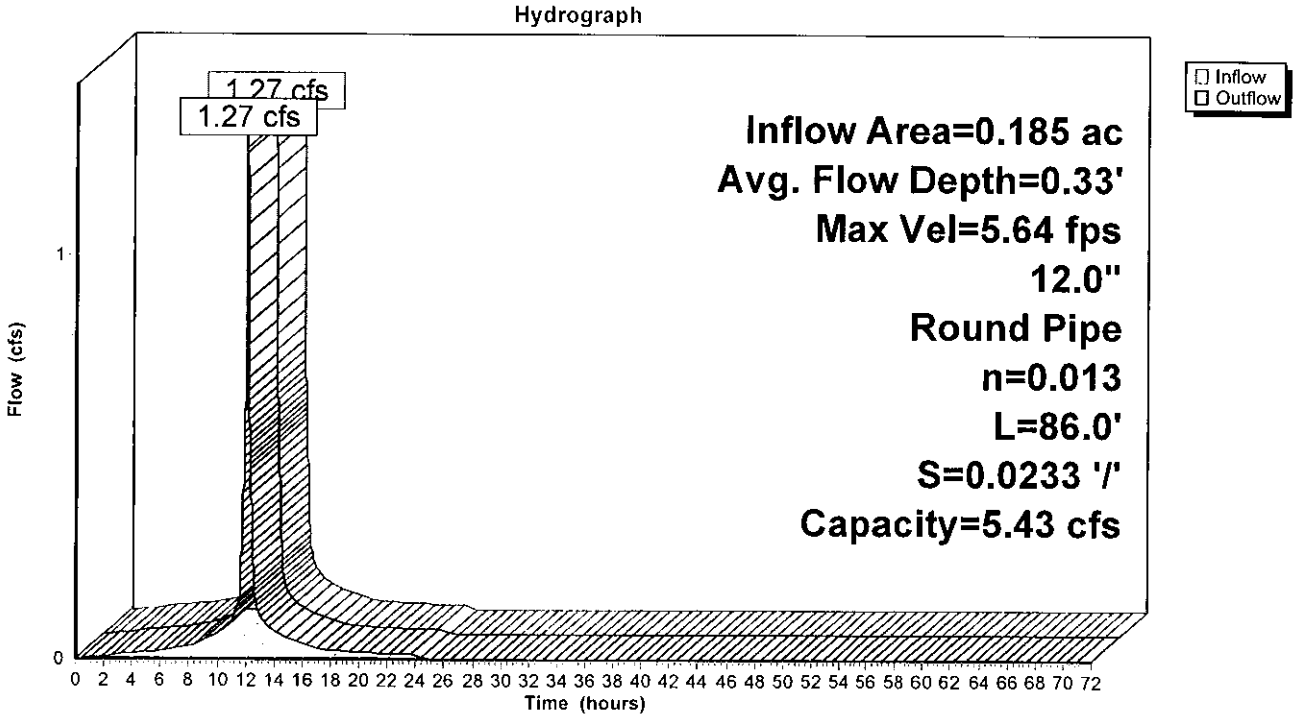
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.64 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.87 fps, Avg. Travel Time= 0.8 min

Peak Storage= 19 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.43 cfs

12.0" Round Pipe
n= 0.013
Length= 86.0' Slope= 0.0233 '/'
Inlet Invert= 96.00', Outlet Invert= 94.00'



Reach P-3: 12" HDPE



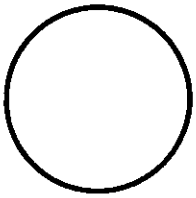
Summary for Reach P-6: 12" HDPE

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 6.39" for 100yr event
Inflow = 4.62 cfs @ 12.09 hrs, Volume= 0.408 af
Outflow = 2.89 cfs @ 12.00 hrs, Volume= 0.408 af, Atten= 37%, Lag= 0.0 min

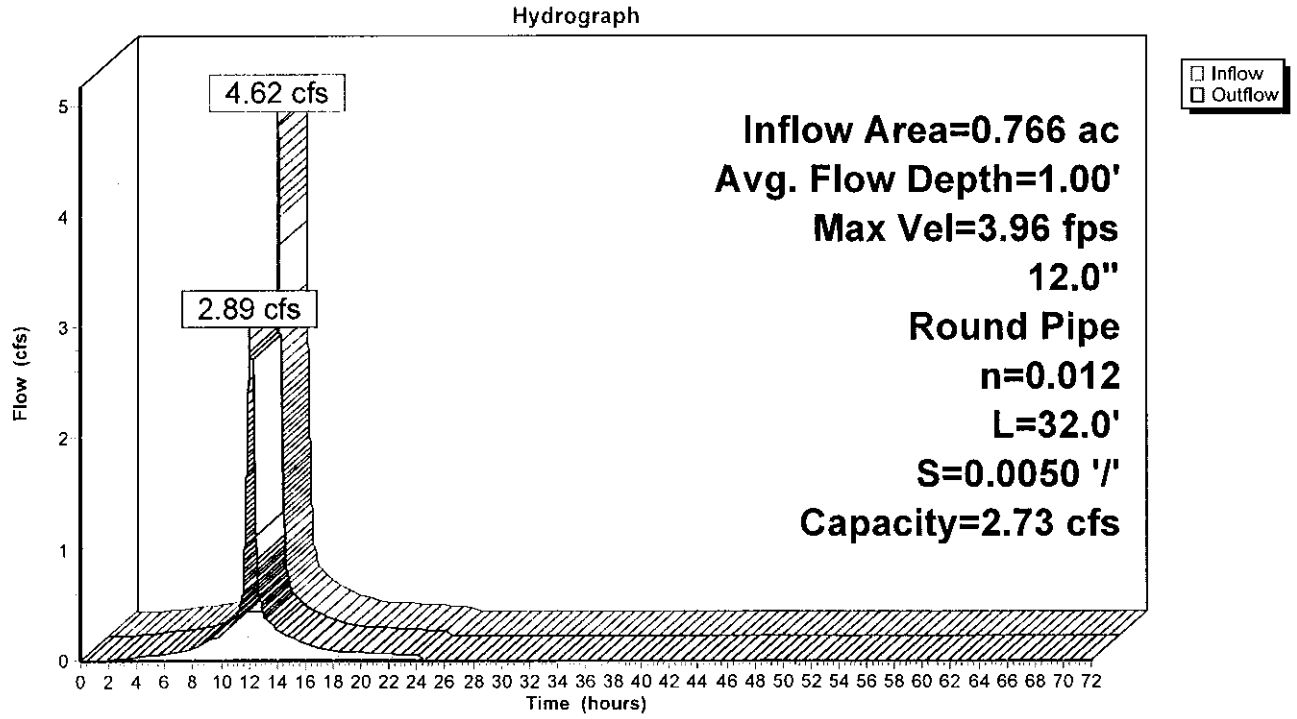
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.96 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.67 fps, Avg. Travel Time= 0.3 min

Peak Storage= 25 cf @ 12.01 hrs
Average Depth at Peak Storage= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.73 cfs

12.0" Round Pipe
n= 0.012
Length= 32.0' Slope= 0.0050 '/'
Inlet Invert= 95.37', Outlet Invert= 95.21'



Reach P-6: 12" HDPE



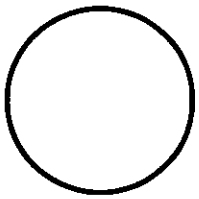
Summary for Reach P-7: 12" HDPE

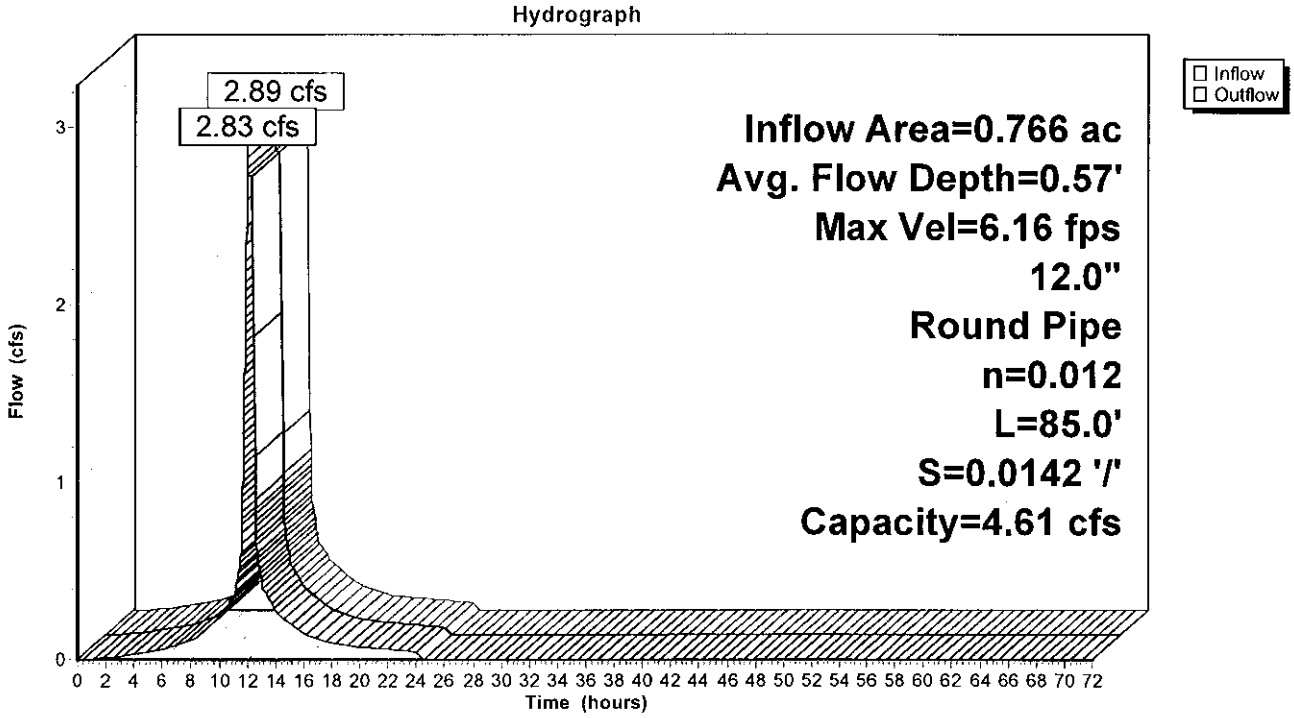
Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 6.39" for 100yr event
Inflow = 2.89 cfs @ 12.00 hrs, Volume= 0.408 af
Outflow = 2.83 cfs @ 12.01 hrs, Volume= 0.408 af, Atten= 2%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.16 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.44 fps, Avg. Travel Time= 0.6 min

Peak Storage= 39 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.57'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.61 cfs

12.0" Round Pipe
n= 0.012
Length= 85.0' Slope= 0.0142 '/'
Inlet Invert= 95.21', Outlet Invert= 94.00'





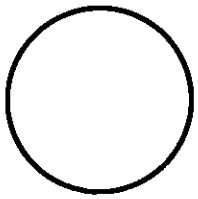
Summary for Reach TD-1: Trench Drain

Inflow Area = 0.222 ac, 98.45% Impervious, Inflow Depth = 6.76" for 100yr event
Inflow = 1.52 cfs @ 12.08 hrs, Volume= 0.125 af
Outflow = 1.52 cfs @ 12.10 hrs, Volume= 0.125 af, Atten= 0%, Lag= 1.0 min

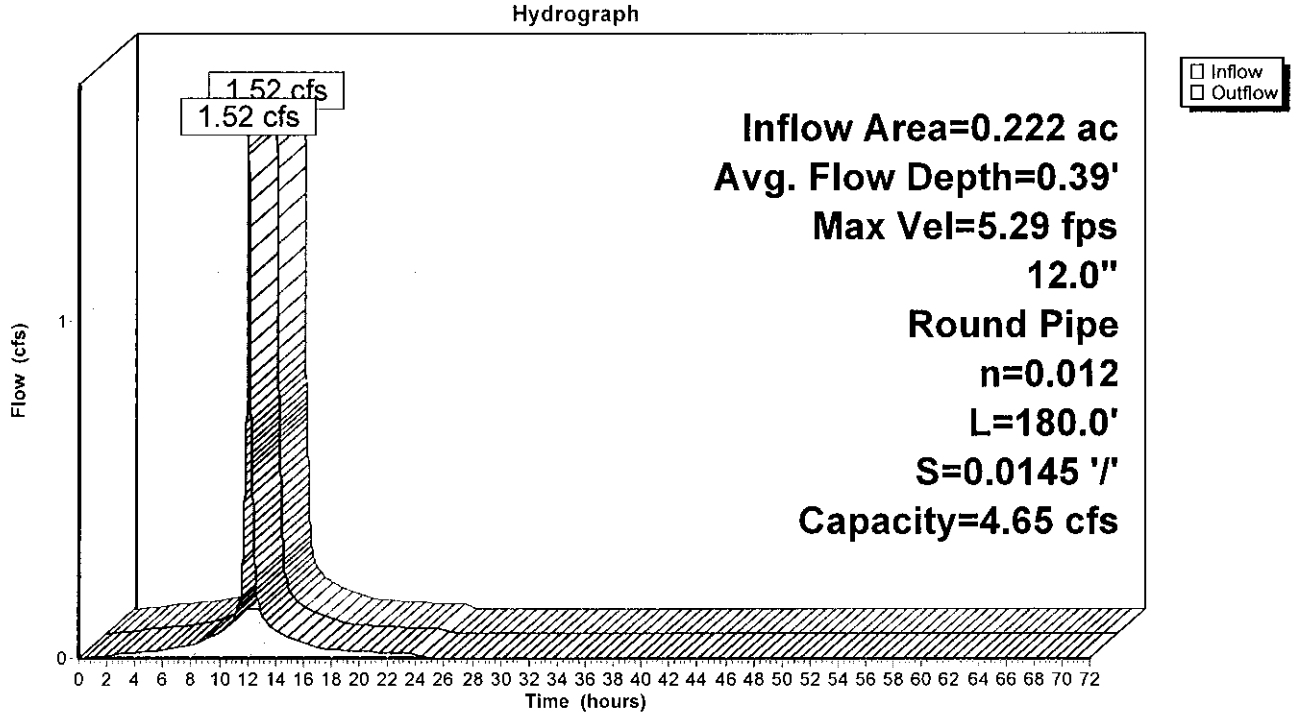
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.29 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.76 fps, Avg. Travel Time= 1.7 min

Peak Storage= 52 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.65 cfs

12.0" Round Pipe
n= 0.012
Length= 180.0' Slope= 0.0145 '/'
Inlet Invert= 97.50', Outlet Invert= 94.89'



Reach TD-1: Trench Drain

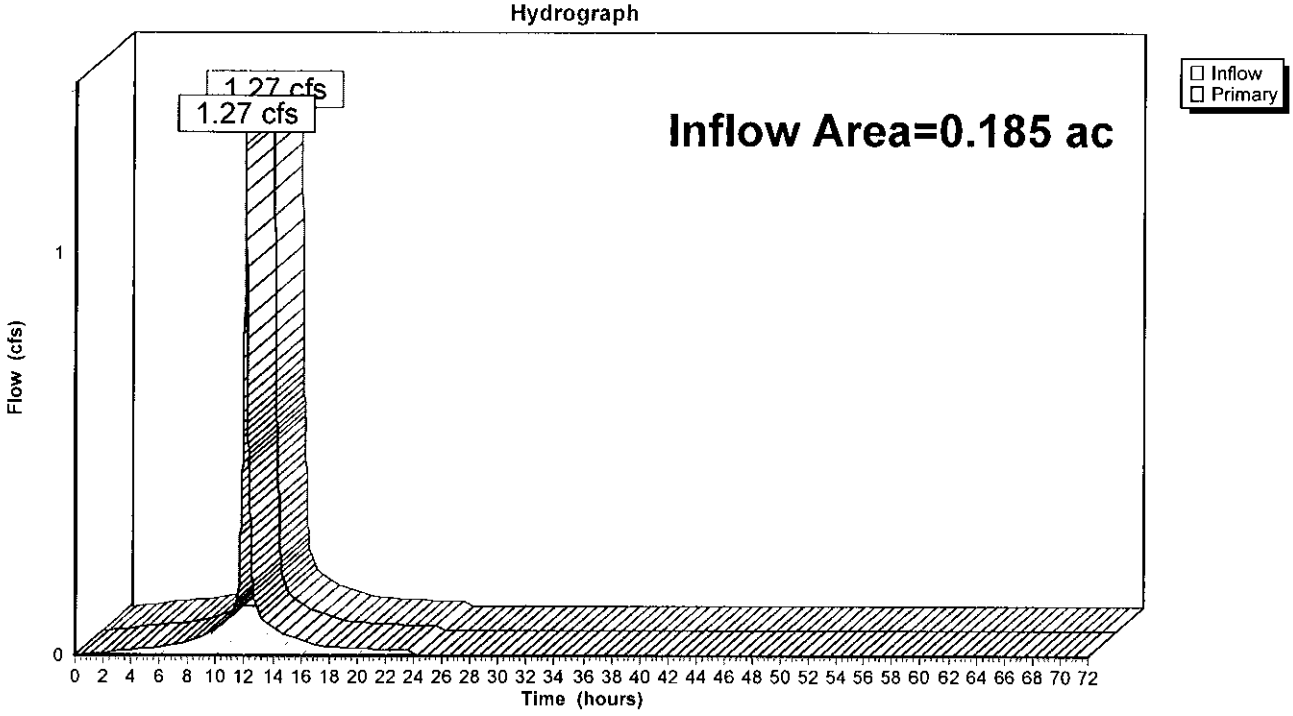


Summary for Pond DMH-2: Drain Manhole

Inflow Area = 0.185 ac,100.00% Impervious, Inflow Depth = 6.76" for 100yr event
Inflow = 1.27 cfs @ 12.08 hrs, Volume= 0.104 af
Primary = 1.27 cfs @ 12.08 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond DMH-2: Drain Manhole

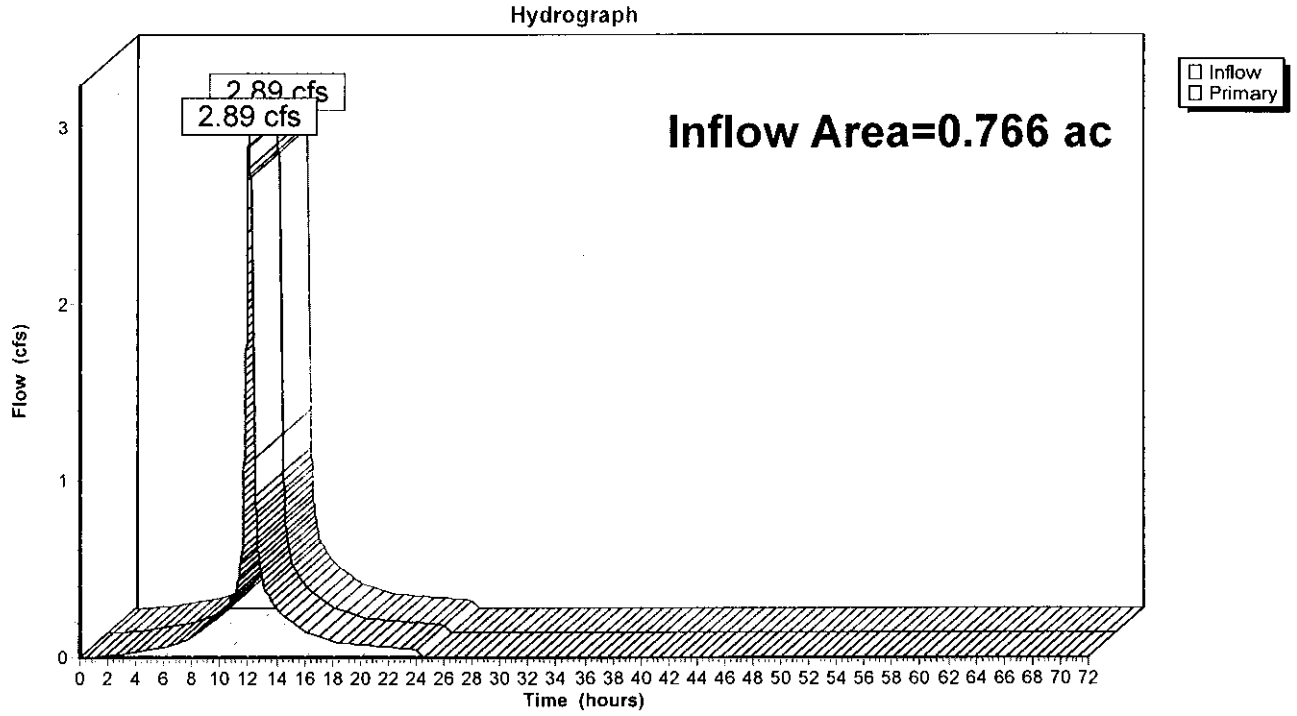


Summary for Pond DMH-5: Drain Manhole

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 6.39" for 100yr event
Inflow = 2.89 cfs @ 12.00 hrs, Volume= 0.408 af
Primary = 2.89 cfs @ 12.00 hrs, Volume= 0.408 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond DMH-5: Drain Manhole



Summary for Pond SRS-1: Subsurface Recharge System

Inflow Area = 1.355 ac, 92.37% Impervious, Inflow Depth = 6.55" for 100yr event
Inflow = 6.75 cfs @ 12.09 hrs, Volume= 0.739 af
Outflow = 6.53 cfs @ 12.12 hrs, Volume= 0.651 af, Atten= 3%, Lag= 1.7 min
Discarded = 0.01 cfs @ 2.03 hrs, Volume= 0.082 af
Primary = 6.51 cfs @ 12.12 hrs, Volume= 0.569 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 98.04' @ 12.12 hrs Surf.Area= 2,242 sf Storage= 7,570 cf

Plug-Flow detention time= 296.8 min calculated for 0.651 af (88% of inflow)
Center-of-Mass det. time= 240.8 min (994.9 - 754.1)

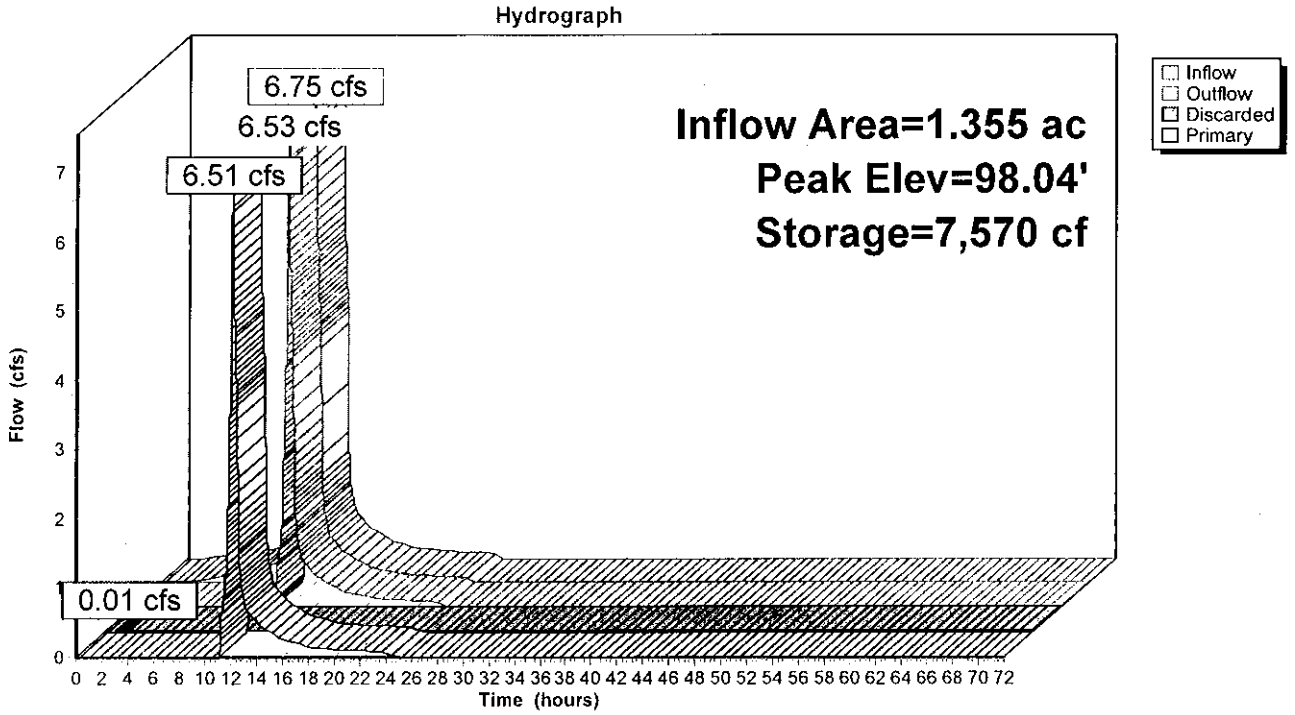
Volume	Invert	Avail.Storage	Storage Description
#1	93.25'	2,975 cf	**21.40'W x 104.76'L x 5.75'H Prismatoid** 12,891 cf Overall - 5,454 cf Embedded = 7,436 cf x 40.0% Voids
#2	94.00'	5,454 cf	**Cultec R-902HD** x 84 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 84 Chambers in 3 Rows Cap Storage= +2.8 cf x 2 x 3 rows = 16.6 cf
		8,429 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	93.25'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	97.00'	**12.0" Round Culvert X 3.00** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 97.00' / 96.80' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Discarded OutFlow Max=0.01 cfs @ 2.03 hrs HW=93.31' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=6.51 cfs @ 12.12 hrs HW=98.04' (Free Discharge)
↑—**2=Culvert** (Barrel Controls 6.51 cfs @ 3.30 fps)

Pond SRS-1: Subsurface Recharge System



Summary for Pond SRS-2: Subsurface Recharge System

Inflow Area = 0.161 ac,100.00% Impervious, Inflow Depth = 6.76" for 100yr event
Inflow = 1.10 cfs @ 12.08 hrs, Volume= 0.091 af
Outflow = 1.05 cfs @ 12.11 hrs, Volume= 0.084 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.00 cfs @ 1.82 hrs, Volume= 0.014 af
Primary = 1.05 cfs @ 12.11 hrs, Volume= 0.069 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 99.61' @ 12.11 hrs Surf.Area= 391 sf Storage= 891 cf

Plug-Flow detention time= 346.1 min calculated for 0.084 af (92% of inflow)
Center-of-Mass det. time= 304.8 min (1,048.0 - 743.1)

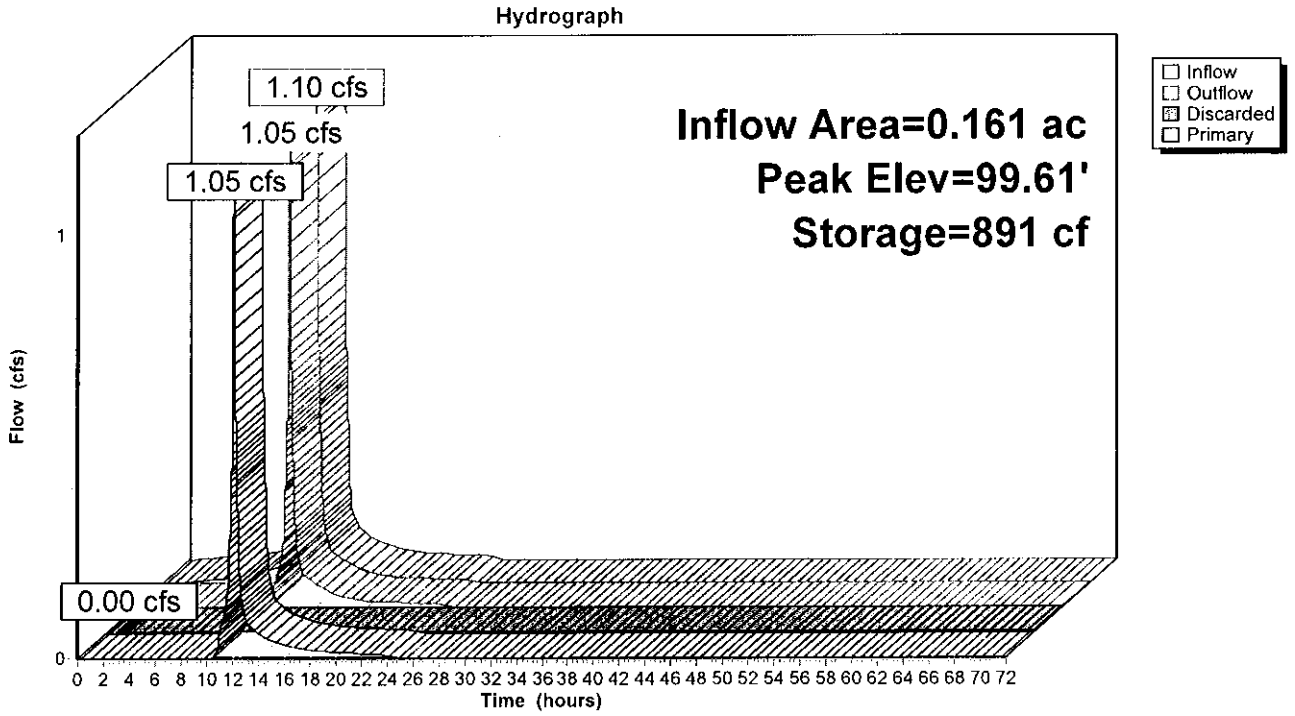
Volume	Invert	Avail.Storage	Storage Description
#1	96.25'	587 cf	**8.50'W x 46.04'L x 5.75'H Prismatoid** 2,250 cf Overall - 782 cf Embedded = 1,468 cf x 40.0% Voids
#2	97.00'	782 cf	**Cultec R-902HD** x 12 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap Cap Storage= +2.8 cf x 2 x 1 rows = 5.5 cf
		1,369 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.25'	**0.270 in/hr Exfiltration over Surface area**
#2	Primary	99.00'	**12.0" Round Culvert** L= 28.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 99.00' / 94.20' S= 0.1714 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Discarded OutFlow Max=0.00 cfs @ 1.82 hrs HW=96.31' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.05 cfs @ 12.11 hrs HW=99.61' (Free Discharge)
↑**2=Culvert** (Inlet Controls 1.05 cfs @ 2.10 fps)

Pond SRS-2: Subsurface Recharge System

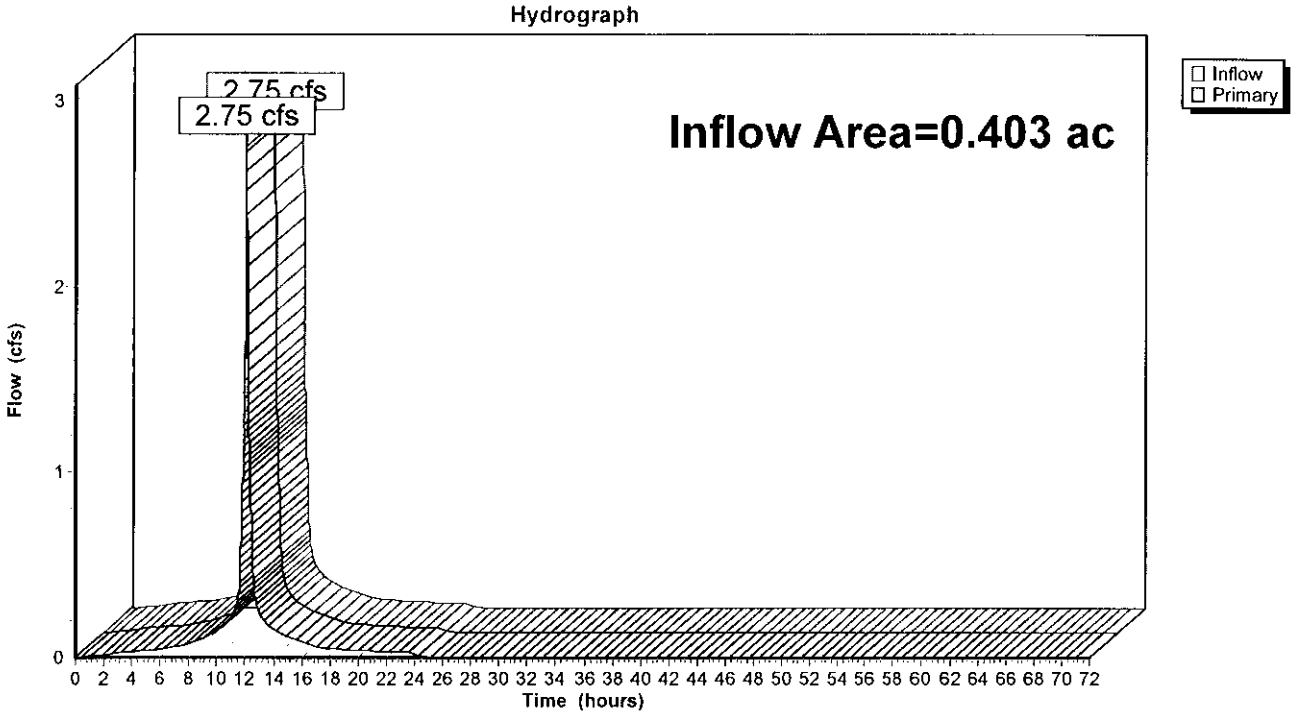


Summary for Pond WQI-1: Water Quality Inlet

Inflow Area = 0.403 ac, 98.24% Impervious, Inflow Depth = 6.76" for 100yr event
Inflow = 2.75 cfs @ 12.09 hrs, Volume= 0.227 af
Primary = 2.75 cfs @ 12.09 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond WQI-1: Water Quality Inlet

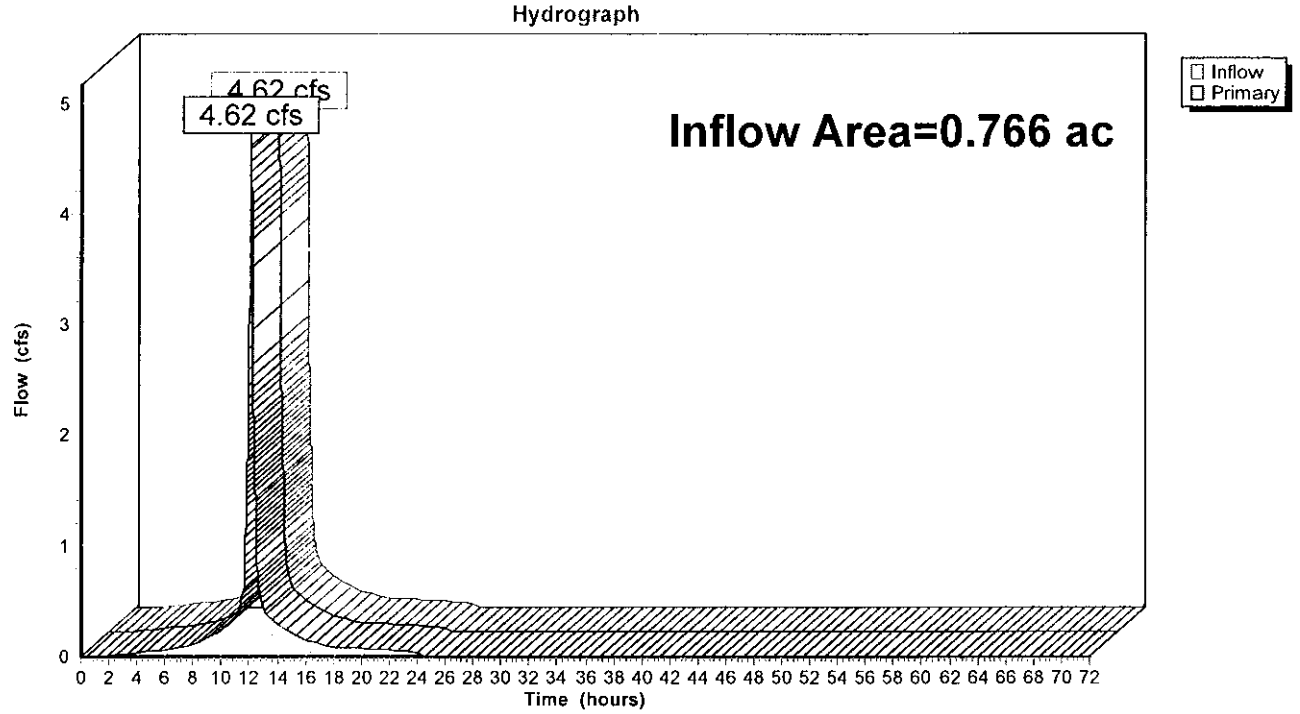


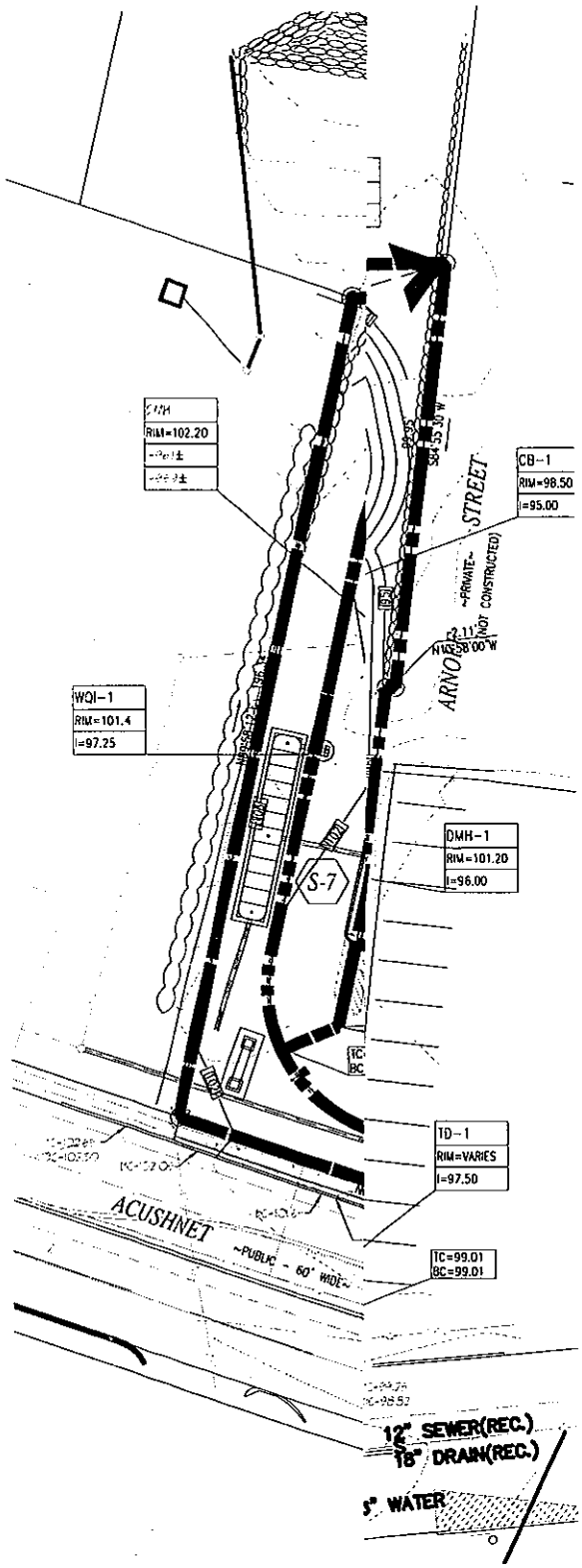
Summary for Pond WQI-2: Water Quality Inlet

Inflow Area = 0.766 ac, 87.43% Impervious, Inflow Depth = 6.39" for 100yr event
Inflow = 4.62 cfs @ 12.09 hrs, Volume= 0.408 af
Primary = 4.62 cfs @ 12.09 hrs, Volume= 0.408 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Pond WQI-2: Water Quality Inlet





0' 20' 40' 60'

1" = 20'

REVISIONS

1	12/07/18	PER COMMENTS
2	01/25/19	PER DPI COMMENTS
3	4/3/19	PER DPI COMMENTS

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CHECKED BY: CAF

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PREPARED FOR: T.M. CROWLEY & ASSOCIATES
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NOVEMBER 7, 2018

SCALE: 1"=20'

JOB NO. 17-1134

LATEST REVISION:
4/3/19

POST-SUBCATCHMENT PLAN

CFG05.1