

## **APPENDIX**

### **Appendix A – Watershed Analysis**

HydroCAD – 2, 10, 25, and 100-year Storm Events

Hydraflow – Pipe Capacity Analysis

### **Appendix B – Silver Creek Analysis**

HydroCAD – 2, 10, and 100-year Storm Events

HEC-RAS

### **Appendix C – Problem Areas**

### **Appendix D – Estimates**

### **Appendix E – Map of Study Area**

**Appendix A – Watershed Analysis**  
HydroCAD – 2, 10, 25, and 100-year Storm Events  
Hydraflow – Pipe Capacity Analysis



**Legend**

-  Existing Drain Pipes
-  Drainage System Watersheds
-  Silver Creek Watershed

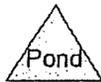
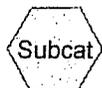
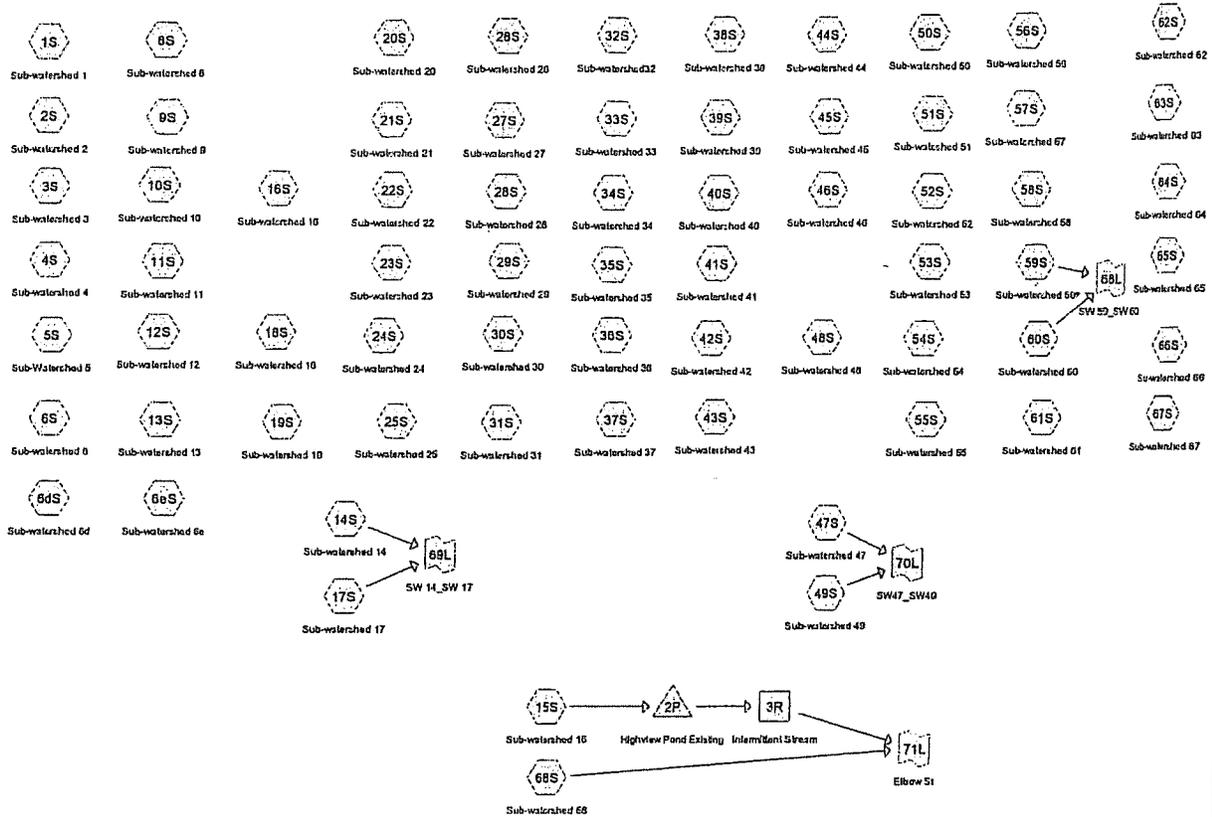
**Town of Bristol  
Rhode Island**

Silver Creek  
NOT TO SCALE

**Appendix**

Closed Drainage System Watersheds

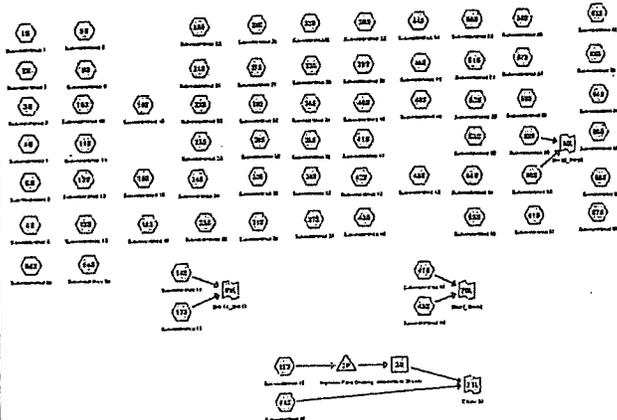
HydroCAD – 2, 10, 25, and 100-year Storm Events



**Drainage Diagram for 3416 Watershed Yield**  
 Prepared by BETA Group, Inc. 9/18/2007  
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**2-Year Storm**

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points  
 Runoff by SGS TR-20 method, UH+SGS  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method



Subcatchment	Sub-watershed	Runoff Area	Runoff Depth	Flow Length	Tc	CN	Runoff	cs
Subcatchment 1S	Sub-watershed 1	18,400 ac	>2.73"	1,460'	20.1 min	94	38.24	4.185 af
Subcatchment 2S	Sub-watershed 2	3,220 ac	>2.73"	792'	10.2 min	94	8.58	0.734 af
Subcatchment 3S	Sub-watershed 3	27,500 ac	>1.69"	2,500'	39.3 min	82	27.16	3.863 af
Subcatchment 4S	Sub-watershed 4	8,310 ac	>2.24"	3,098'	50.9 min	89	10.02	0.544 af
Subcatchment 5S	Sub-watershed 5	2,340 ac	>1.55"	5.0 min	80	4.39	0.363 af	
Subcatchment 6S	Sub-watershed 6d	630 ac	>2.74"	5.0 min	94	1.99	0.144 af	
Subcatchment 6eS	Sub-watershed 6e	600 ac	>2.74"	5.0 min	94	1.58	0.114 af	
Subcatchment 6S	Sub-watershed 6	10,610 ac	>2.17"	1,636'	11.4 min	88	22.54	1.922 af
Subcatchment 8S	Sub-watershed 8	2,070 ac	>1.55"	419'	11.8 min	89	3.11	0.268 af
Subcatchment 9S	Sub-watershed 9	3,780 ac	>2.00"	633'	16.8 min	86	6.45	0.831 af
Subcatchment 10S	Sub-watershed 10	8,740 ac	>1.77"	1,337'	19.3 min	83	12.41	1.287 af
Subcatchment 11S	Sub-watershed 11	24,480 ac	>2.25"	1,757'	26.1 min	89	38.80	4.595 af
Subcatchment 12S	Sub-watershed 12	3,040 ac	>2.44"	996'	15.8 min	91	6.37	0.618 af
Subcatchment 13S	Sub-watershed 13	8,780 ac	>1.83"	5.0 min	81	13.29	0.916 af	
Subcatchment 14S	Sub-watershed 14	8,650 ac	>1.48"	1,715'	11.8 min	79	11.47	0.997 af



Drainage Diagram for 3416 Watershed Yield  
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Subcatchment 15S	Sub-watershed 15	21,680 ac	>1.62"	1,259'	22.2 min	81	26.53	2.927 af
Subcatchment 16S	Sub-watershed 16	2,740 ac	>1.70"	709'	13.2 min	82	4.32	0.367 af
Subcatchment 17S	Sub-watershed 17	7,200 ac	>1.55"	1,430'	21.6 min	80	8.50	0.930 af
Subcatchment 18S	Sub-watershed 18	13,850 ac	>1.55"	1,868'	11.2 min	80	21.07	1.793 af
Subcatchment 19S	Sub-watershed 19	29,160 ac	>1.33"	2,101'	63.7 min	77	32.43	3.243 af
Subcatchment 20S	Sub-watershed 20	11,220 ac	>1.62"	1,264'	17.0 min	81	15.31	1.517 af
Subcatchment 21S	Sub-watershed 21	2,540 ac	>2.74"	496'	5.6 min	94	7.90	0.579 af
Subcatchment 22S	Sub-watershed 22	6,280 ac	>2.74"	1,184'	7.2 min	94	18.43	1.432 af
Subcatchment 23S	Sub-watershed 23	9,900 ac	>2.74"	5.0 min	94	2.85	0.205 af	
Subcatchment 24S	Sub-watershed 24	5,430 ac	>2.44"	1,015'	12.7 min	81	12.33	1.105 af
Subcatchment 25S	Sub-watershed 25	7,910 ac	>1.55"	943'	13.6 min	80	11.22	1.024 af
Subcatchment 26S	Sub-watershed 26	9,040 ac	>3.16"	5.0 min	98	0.14	0.011 af	
Subcatchment 27S	Sub-watershed 27	9,090 ac	>1.77"	5.0 min	83	0.19	0.013 af	
Subcatchment 28S	Sub-watershed 28	4,430 ac	>1.55"	1,025'	22.5 min	80	5.14	0.572 af
Subcatchment 29S	Sub-watershed 29	9,890 ac	>1.70"	1,194'	11.1 min	82	16.57	1.398 af
Subcatchment 30S	Sub-watershed 30	1,680 ac	>1.62"	716'	13.0 min	81	2.54	0.227 af
Subcatchment 31S	Sub-watershed 31	27,350 ac	>1.35"	1,762'	27.7 min	77	24.80	3.071 af

Subcatchment 32S	Sub-watershed 32	45,010 ac	>1.16"	1,805'	26.8 min	74	35.08	4.393 af
Subcatchment 33S	Sub-watershed 33	27,500 ac	>1.62"	1,541'	10.0 min	81	44.28	3.722 af
Subcatchment 34S	Sub-watershed 34	5,470 ac	>1.62"	967'	16.4 min	81	7.58	0.739 af
Subcatchment 35S	Sub-watershed 35	2,020 ac	>2.17"	401'	11.6 min	88	4.27	0.366 af
Subcatchment 36S	Sub-watershed 36	114,100 ac	>1.76"	4,314'	29.2 min	83	135.85	16.770 af
Subcatchment 37S	Sub-watershed 37	4,120 ac	>2.01"	852'	9.7 min	88	8.55	0.689 af
Subcatchment 38S	Sub-watershed 38	1,590 ac	>2.26"	5.0 min	89	4.32	0.300 af	
Subcatchment 39S	Sub-watershed 39	10,480 ac	>1.62"	1,018'	12.8 min	81	16.95	1.418 af
Subcatchment 40S	Sub-watershed 40	9,240 ac	>1.63"	1,189'	6.6 min	81	0.45	0.033 af
Subcatchment 41S	Sub-watershed 41	9,290 ac	>2.01"	1,182'	8.2 min	88	8.68	0.649 af
Subcatchment 42S	Sub-watershed 42	9,070 ac	>2.01"	1,178'	6.9 min	88	0.16	0.012 af
Subcatchment 43S	Sub-watershed 43	2,850 ac	>1.62"	570'	10.1 min	81	4.71	0.386 af
Subcatchment 44S	Sub-watershed 44	1,720 ac	>1.35"	760'	20.2 min	77	1.79	0.184 af
Subcatchment 45S	Sub-watershed 45	3,670 ac	>1.17"	865'	21.2 min	74	3.16	0.356 af
Subcatchment 46S	Sub-watershed 46	1,370 ac	>1.16"	727'	25.0 min	74	1.10	0.133 af
Subcatchment 47S	Sub-watershed 47	7,620 ac	>1.49"	701'	8.1 min	79	12.21	0.944 af
Subcatchment 48S	Sub-watershed 48	1,320 ac	>1.85"	449'	6.7 min	84	2.61	0.203 af

Subcatchment 49S: Sub-watershed 49	Runoff Area=0.300 ac Flow Length=130' Tc=7.3 min CN=79 Runoff=0.49 cfs 0.037 af
Subcatchment 50S: Sub-watershed 50	Runoff Area=1.900 ac Flow Length=555' Tc=11.3 min CN=79 Runoff=2.74 cfs 0.235 af
Subcatchment 51S: Sub-watershed 51	Runoff Area=3.850 ac Flow Length=584' Tc=9.2 min CN=91 Runoff=11.18 cfs 0.784 af
Subcatchment 52S: Sub-watershed 52	Runoff Area=3.900 ac Flow Length=598' Tc=9.6 min CN=89 Runoff=9.06 cfs 0.735 af
Subcatchment 53S: Sub-watershed 53	Runoff Area=4.840 ac Flow Length=584' Tc=9.2 min CN=80 Runoff=11.82 cfs 0.946 af
Subcatchment 54S: Sub-watershed 54	Runoff Area=0.590 ac Flow Length=774' Tc=17.4 min CN=81 Runoff=4.63 cfs 0.462 af
Subcatchment 55S: Sub-watershed 55	Runoff Area=1.880 ac Flow Length=592' Tc=17.0 min CN=91 Runoff=3.83 cfs 0.382 af
Subcatchment 56S: Sub-watershed 56	Runoff Area=9.220 ac Flow Length=951' Tc=22.1 min CN=81 Runoff=11.08 cfs 1.244 af
Subcatchment 57S: Sub-watershed 57	Runoff Area=2.690 ac Flow Length=659' Tc=16.2 min CN=81 Runoff=3.75 cfs 0.364 af
Subcatchment 58S: Sub-watershed 58	Runoff Area=3.420 ac Flow Length=774' Tc=17.4 min CN=81 Runoff=4.63 cfs 0.462 af
Subcatchment 59S: Sub-watershed 59	Runoff Area=90.930 ac Flow Length=3,728' Tc=74.5 min CN=83 Runoff=65.15 cfs 13.221 af
Subcatchment 60S: Sub-watershed 60	Runoff Area=18.370 ac Flow Length=2,475' Tc=20.6 min CN=93 Runoff=36.61 cfs 4.025 af
Subcatchment 61S: Sub-watershed 61	Runoff Area=15.630 ac Flow Length=1,028' Tc=9.6 min CN=82 Runoff=27.45 cfs 2.210 af
Subcatchment 62S: Sub-watershed 62	Runoff Area=9.320 ac Flow Length=891' Tc=22.5 min CN=81 Runoff=11.34 cfs 1.258 af
Subcatchment 63S: Sub-watershed 63	Runoff Area=9.850 ac Flow Length=1,245' Tc=12.1 min CN=81 Runoff=15.29 cfs 1.333 af
Subcatchment 64S: Sub-watershed 64	Runoff Area=0.720 ac Flow Length=133' Tc=8.7 min CN=91 Runoff=1.79 cfs 0.147 af
Subcatchment 65S: Sub-watershed 65	Runoff Area=4.080 ac Flow Length=1,220' Tc=15.0 min CN=81 Runoff=5.85 cfs 0.552 af

Subcatchment 66S: Su-watershed 66	Runoff Area=4.660 ac Flow Length=863' Tc=22.0 min CN=81 Runoff=5.73 cfs 0.629 af
Subcatchment 67S: Sub-watershed 67	Runoff Area=3.140 ac Flow Length=869' Tc=28.6 min CN=84 Runoff=3.93 cfs 0.462 af
Subcatchment 68S: Sub-watershed 68	Runoff Area=20.630 ac Flow Length=1,184' Tc=18.0 min CN=80 Runoff=28.25 cfs
Reach 3R: Intermittent Stream	Avg. Depth=0.40' Max Vel=1.85 fps Inflow=15.60 cfs 2.891 af n=0.070 L=725.0' S=0.0283% Capacity=253.16 cfs Outflow=15.47 cfs 2.868 af
Pond 2P: Highview Pond Existing	Peak Elev=110.11' Storage=24,195 cf Inflow=26.53 cfs 2.927 af Outflow=15.60 cfs 2.891 af
Link 68L: SW 59_SW 60	Inflow=72.05 cfs 17.246 af Primary=72.05 cfs 17.246 af
Link 69L: SW 14_SW 17	Inflow=18.31 cfs 1.927 af Primary=18.31 cfs 1.927 af
Link 70L: SW47_SW49	Inflow=12.70 cfs 0.981 af Primary=12.70 cfs 0.981 af
Link 71L: Elbow St	Inflow=32.37 cfs 5.535 af Primary=32.37 cfs 5.535 af

Total Runoff Area = 746.870 ac Runoff Volume = 110.032 af Average Runoff Depth = 1.77"  
 66.54% Pervious Area = 498.954 ac 33.46% Impervious Area = 249.916 ac

Subcatchment 1S: Sub-watershed 1

Runoff = 38.24 cfs @ 12.26 hrs, Volume= 4.185 af, Depth> 2.73"

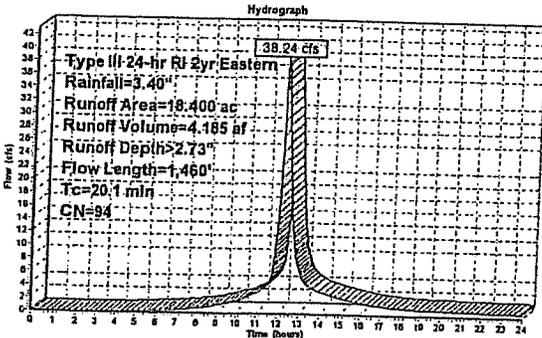
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
18.400	94	Urban commercial, 85% imp, HSG C
2.760		Pervious Area
15.640		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0150	0.16		Sheet Flow, A-B
8.9	1,240	0.0210	2.33		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
0.5	120	0.0330	3.69		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, C-D
20.1	1,460				Paved Kv= 20.3 fps
					Total

Subcatchment 1S: Sub-watershed 1



Subcatchment 2S: Sub-watershed 2

Runoff = 8.58 cfs @ 12.14 hrs, Volume= 0.734 af, Depth> 2.73"

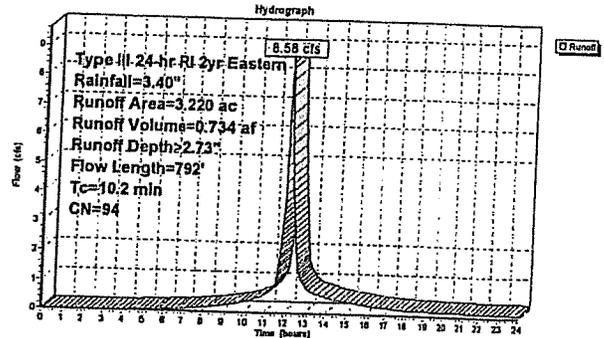
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
3.220	94	Urban commercial, 85% imp, HSG C
0.483		Pervious Area
2.737		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0500	0.27		Sheet Flow, A-B
2.4	394	0.0280	2.69		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
1.7	298	0.0200	2.87		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
					Total

Subcatchment 2S: Sub-watershed 2



Subcatchment 3S: Sub-watershed 3

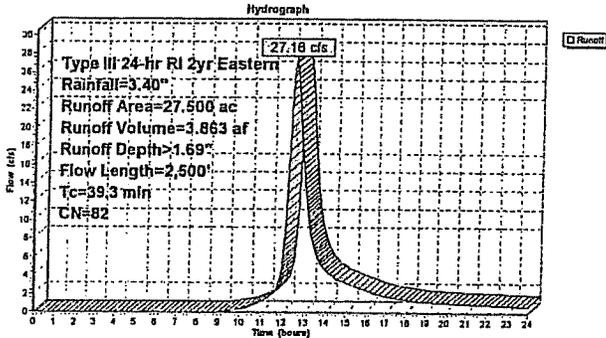
Runoff = 27.16 cfs @ 12.55 hrs, Volume= 3.863 af, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

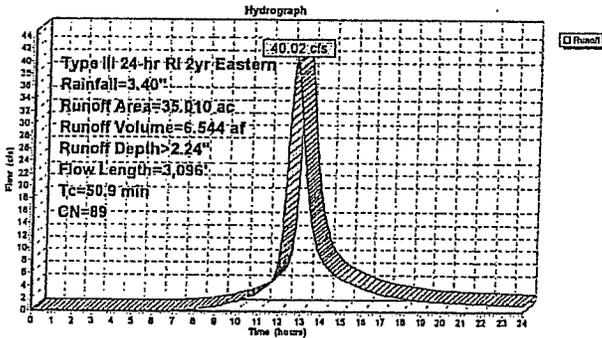
Area (ac)	CN	Description
13.750	86	Pasture/grassland/range, Poor, HSG C
10.750	80	1/2 acre lots, 25% imp, HSG C
3.000	73	Woods, Fair, HSG C
27.500	82	Weighted Average
24.813		Pervious Area
2.688		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	100	0.0100	0.28		Sheet Flow, A-B
19.4	1,200	0.0217	1.03		Cultivated: Residue=20% n=0.060 P2=3.40" Shallow Concentrated Flow, B-C
13.9	1,200	0.0050	1.44		Short Grass Pasture Kv=7.0 fps Shallow Concentrated Flow, C-D
39.3	2,500				Paved Kv=20.3 fps

Subcatchment 3S: Sub-watershed 3



Subcatchment 4S: Sub-watershed 4



Subcatchment 4S: Sub-watershed 4

Runoff = 40.02 cfs @ 12.69 hrs, Volume= 6.544 af, Depth= 2.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
5.301	90	Fallow, crop residue, Poor, HSG C
17.070	94	Urban commercial, 85% imp, HSG C
5.647	79	Pasture/grassland/range, Fair, HSG C
3.680	79	1 acre lots, 20% imp, HSG C
2.712	81	Urban Industrial, 72% imp, HSG C
35.010	89	Weighted Average
17.812		Pervious Area
17.198		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	100	0.0200	0.18		Sheet Flow, A-B
1.8	106	0.0190	0.98		Grass: Short n=0.150 P2=3.40" Shallow Concentrated Flow, B-C
0.2	30	0.0170	2.65		Short Grass Pasture Kv=7.0 fps Shallow Concentrated Flow, C-D
0.6	70	0.0860	2.05		Paved Kv=20.3 fps Shallow Concentrated Flow, D-E
0.7	82	0.0100	2.03		Short Grass Pasture Kv=7.0 fps Shallow Concentrated Flow, E-F
24.2	322	0.0010	0.22		Paved Kv=20.3 fps Shallow Concentrated Flow, F-G
13.9	2,389	0.0200	2.87		Short Grass Pasture Kv=7.0 fps Shallow Concentrated Flow, G-H
50.9	3,096				Paved Kv=20.3 fps

Subcatchment 5S: Sub-Watershed 5

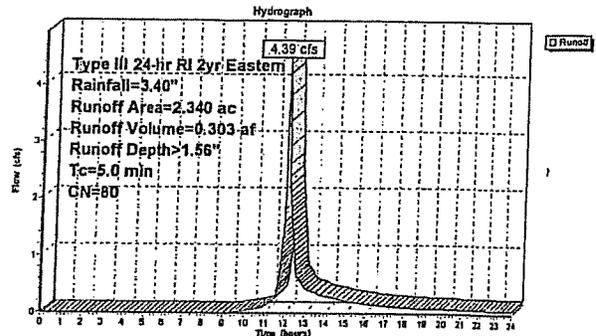
Runoff = 4.39 cfs @ 12.08 hrs, Volume= 0.303 af, Depth= 1.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
2.340	80	1/2 acre lots, 25% imp, HSG C
1.755		Pervious Area
0.585		Impervious Area

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

Subcatchment 5S: Sub-Watershed 5



Subcatchment 6dS: Sub-watershed 6d

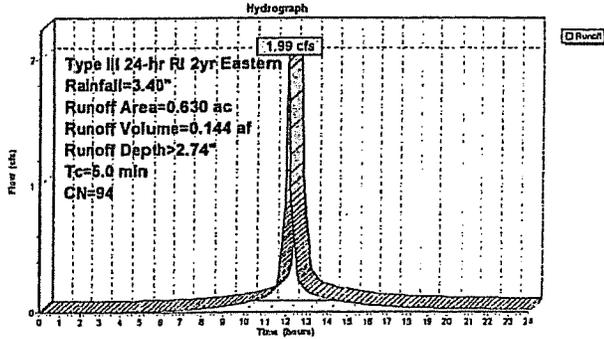
Runoff = 1.89 cfs @ 12.07 hrs, Volume= 0.144 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.630	84	Urban commercial, 85% imp, HSG C
0.095		Pervious Area
0.535		Impervious Area

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

Subcatchment 6dS: Sub-watershed 6d



Subcatchment 6eS: Sub-watershed 6e

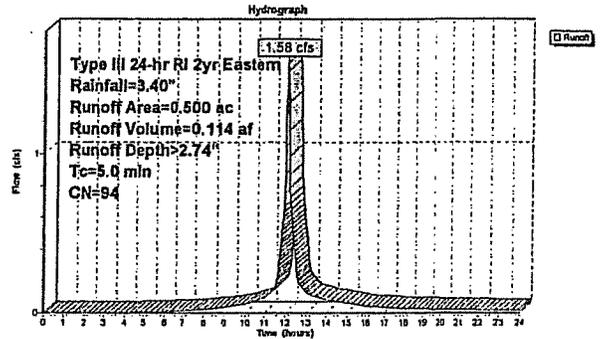
Runoff = 1.58 cfs @ 12.07 hrs, Volume= 0.114 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.500	84	Urban commercial, 85% imp, HSG C
0.075		Pervious Area
0.425		Impervious Area

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

Subcatchment 6eS: Sub-watershed 6e



Subcatchment 6S: Sub-watershed 6

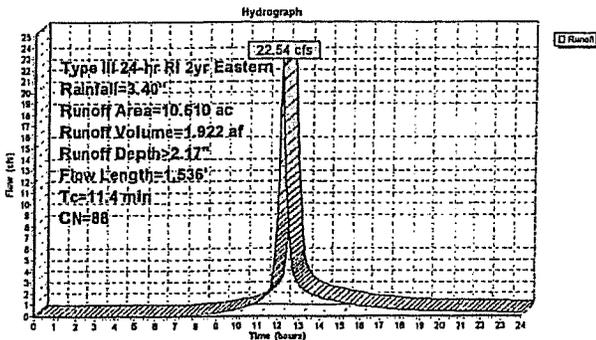
Runoff = 22.54 cfs @ 12.16 hrs, Volume= 1.922 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
8.380	87	Dirt roads, HSG C
2.230	84	Urban commercial, 85% imp, HSG C
10.510	88	Weighted Average
8.714		Pervious Area
1.895		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	100	0.0900	2.59		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
10.8	1,436	0.0120	2.22		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
11.4	1,536				Total

Subcatchment 6S: Sub-watershed 6



Subcatchment 8S: Sub-watershed 8

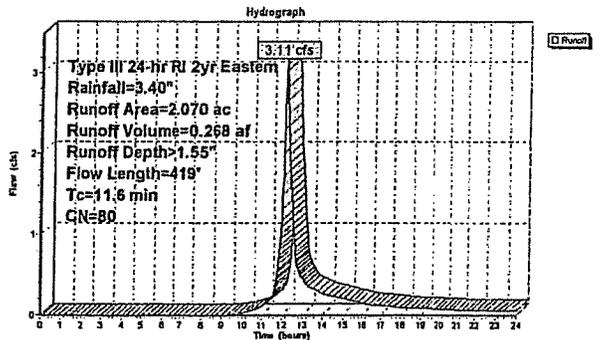
Runoff = 3.11 cfs @ 12.16 hrs, Volume= 0.268 af, Depth> 1.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
2.070	80	1/2 acre lots, 25% imp, HSG C
1.552		Pervious Area
0.517		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
3.1	228	0.0300	1.21		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.4	91	0.0400	4.06		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
11.6	419				Total

Subcatchment 8S: Sub-watershed 8



Subcatchment 9S: Sub-watershed 9

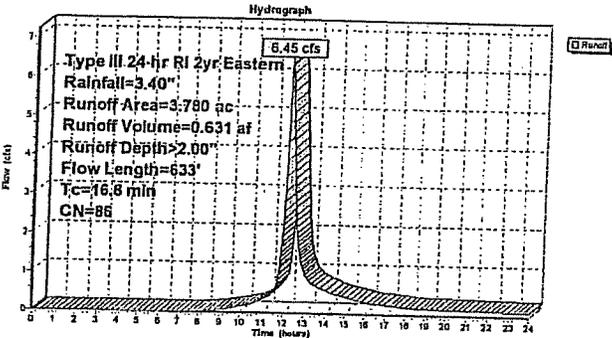
Runoff = 8.45 cfs @ 12.23 hrs, Volume= 0.631 af, Depth> 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
2.990	90	1/8 acre lots, 65% Imp, HSG C
0.780	73	Woods, Fair, HSG C
3.780	88	Weighted Average
1.837		Pervious Area
1.944		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
					Shallow Concentrated Flow, B-C
4.7	200	0.0200	0.71		Woodland Kv= 5.0 fps
					Shallow Concentrated Flow, B-C
1.7	160	0.0500	1.57		Short Grass Pasture Kv= 7.0 fps
					Shallow Concentrated Flow, B-C
0.9	173	0.0230	3.08		Short Grass Pasture Kv= 7.0 fps
					Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
16.8	633	Total			

Subcatchment 9S: Sub-watershed 9



Subcatchment 10S: Sub-watershed 10

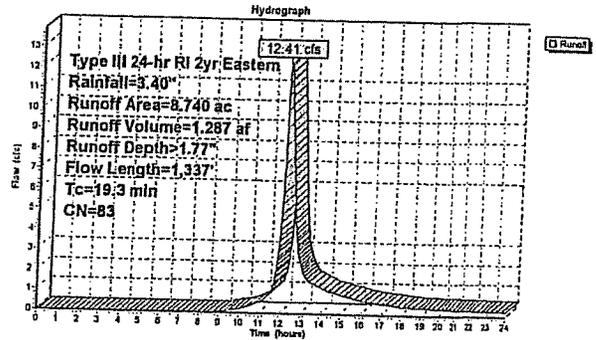
Runoff = 12.41 cfs @ 12.27 hrs, Volume= 1.287 af, Depth> 1.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
8.740	83	1/4 acre lots, 38% Imp, HSG C
5.419		Pervious Area
3.321		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
					Shallow Concentrated Flow, B-C
3.8	196	0.0150	0.86		Short Grass Pasture Kv= 7.0 fps
					Shallow Concentrated Flow, B-C
6.0	1,041	0.0200	2.87		Shallow Concentrated Flow, B-C
					Paved Kv= 20.3 fps
19.3	1,337	Total			

Subcatchment 10S: Sub-watershed 10



Subcatchment 11S: Sub-watershed 11

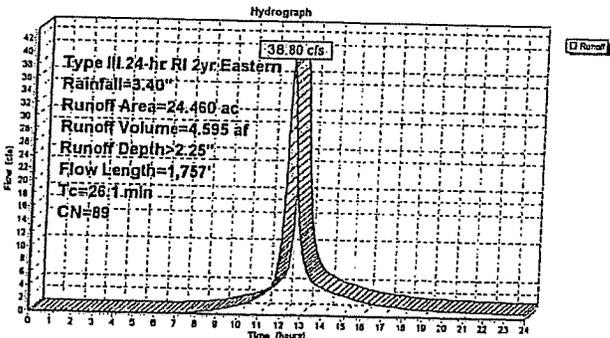
Runoff = 38.80 cfs @ 12.35 hrs, Volume= 4.595 af, Depth> 2.25"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
5.370	90	Fallow, crop residue, Poor, HSG C
10.340	94	Urban commercial, 85% Imp, HSG C
8.750	83	1/4 acre lots, 38% Imp, HSG C
24.480	89	Weighted Average
12.346		Pervious Area
12.114		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.0200	0.36		Sheet Flow, A-B
					Cultivated: Residue<=20% n= 0.060 P2= 3.40"
					Shallow Concentrated Flow, B-C
12.0	504	0.0100	0.70		Short Grass Pasture Kv= 7.0 fps
					Shallow Concentrated Flow, C-D
9.5	1,153	0.0100	2.03		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
26.1	1,757	Total			

Subcatchment 11S: Sub-watershed 11



Subcatchment 12S: Sub-watershed 12

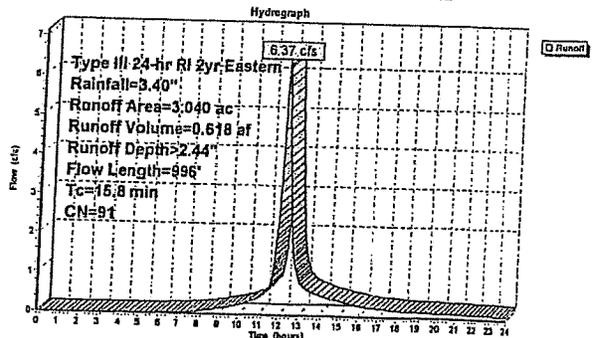
Runoff = 6.37 cfs @ 12.21 hrs, Volume= 0.618 af, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
2.130	94	Urban commercial, 85% Imp, HSG C
0.910	83	1/4 acre lots, 38% Imp, HSG C
3.040	91	Weighted Average
0.884		Pervious Area
2.156		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
					Shallow Concentrated Flow, A-B
5.5	462	0.0400	1.40		Short Grass Pasture Kv= 7.0 fps
					Shallow Concentrated Flow, C-D
2.2	434	0.0270	3.34		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
15.8	998	Total			

Subcatchment 12S: Sub-watershed 12



Subcatchment 13S: Sub-watershed 13

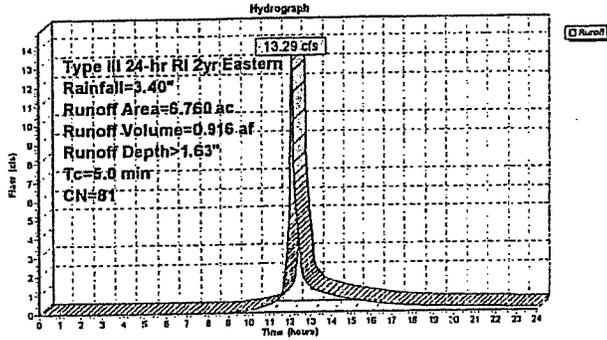
Runoff = 13.29 cfs @ 12.08 hrs, Volume= 0.916 af, Depth> 1.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
6.760	81	1/3 acre lots, 30% Imp, HSG C
4.732		Pervious Area
2.028		Impervious Area

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

Subcatchment 13S: Sub-watershed 13



Subcatchment 14S: Sub-watershed 14

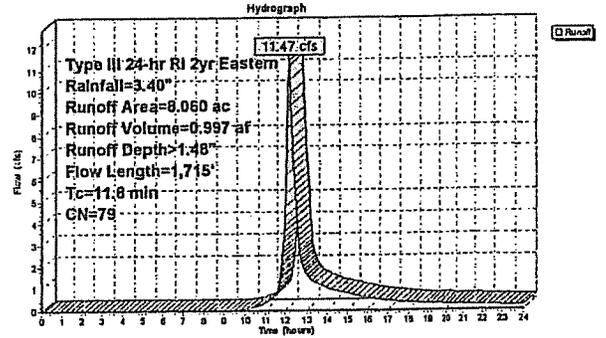
Runoff = 11.47 cfs @ 12.17 hrs, Volume= 0.997 af, Depth> 1.48"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.240	94	Urban commercial, 85% Imp, HSG C
7.820	79	1 acre lots, 20% Imp, HSG C
8.060	79	Weighted Average
6.292		Pervious Area
1.768		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.07		Sheet Flow, A-B Smooth surfaces n=0.011 P2=3.40"
10.2	1,615	0.0170	2.65		Shallow Concentrated Flow, B-C Paved Kv=20.3 fps
11.8					Total

Subcatchment 14S: Sub-watershed 14



Subcatchment 15S: Sub-watershed 15

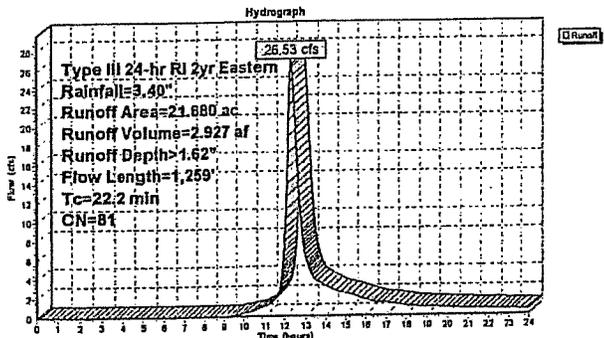
Runoff = 26.53 cfs @ 12.31 hrs, Volume= 2.927 af, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
15.390	79	1 acre lots, 20% Imp, HSG C
5.080	90	1/8 acre lots, 65% Imp, HSG C
1.200	76	Woods/grass comb, Falr, HSG C
21.680	81	Weighted Average
15.294		Pervious Area
6.387		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B Grass: Short n=0.150 P2=3.40"
1.3	168	0.0120	2.22		Shallow Concentrated Flow, B-C Paved Kv=20.3 fps
12.8	991	0.0340	1.29		Shallow Concentrated Flow, C-D Short Grass Pasture Kv=7.0 fps
22.2					Total

Subcatchment 15S: Sub-watershed 15



Subcatchment 16S: Sub-watershed 16

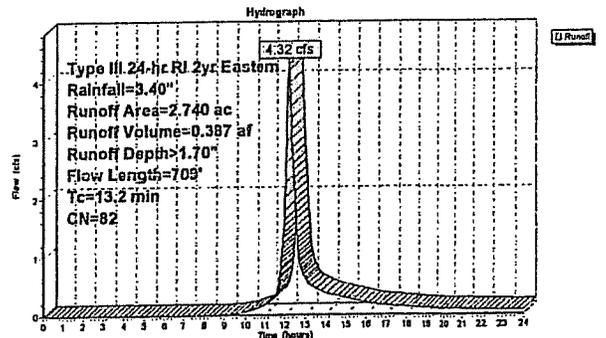
Runoff = 4.32 cfs @ 12.18 hrs, Volume= 0.387 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
2.330	81	1/3 acre lots, 30% Imp, HSG C
0.410	91	Fallow, bare soil, HSG C
2.740	82	Weighted Average
2.041		Pervious Area
0.699		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n=0.150 P2=3.40"
2.0	161	0.0370	1.35		Shallow Concentrated Flow, B-C Short Grass Pasture Kv=7.0 fps
1.7	448	0.0450	4.31		Shallow Concentrated Flow, C-D Paved Kv=20.3 fps
13.2					Total

Subcatchment 16S: Sub-watershed 16



**Subcatchment 17S: Sub-watershed 17**

Runoff = 8.50 cfs @ 12.31 hrs, Volume= 0.930 af, Depth= 1.55"

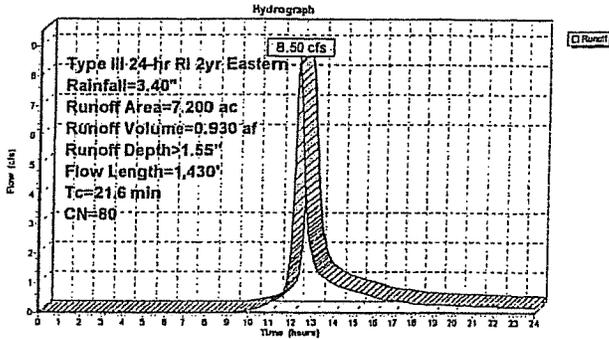
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
7.200	80	1/2 acre lots, 25% imp, HSG C
5.400		Pervious Area
1.800		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-C Grass: Short n= 0.150 P2= 3.40"
1.8	338	0.0240	3.14		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.5	125	0.0400	4.08		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	260	0.0460	1.50		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
3.9	607	0.0160	2.57		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
21.6	1,430	Total			

**Subcatchment 17S: Sub-watershed 17**



**Subcatchment 18S: Sub-watershed 18**

Runoff = 21.07 cfs @ 12.16 hrs, Volume= 1.793 af, Depth= 1.55"

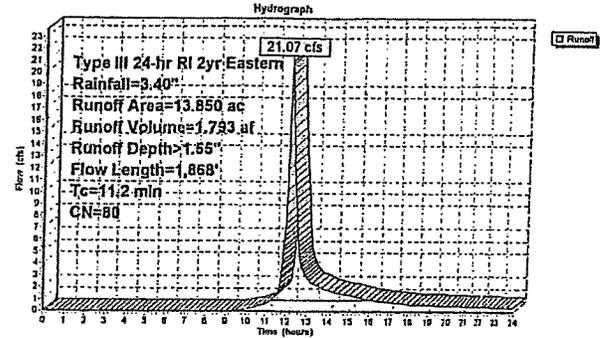
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
13.160	80	1/2 acre lots, 25% imp, HSG C
0.690	73	Woods, Fair, HSG C
13.850	80	Weighted Average
10.560		Pervious Area
3.290		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.05		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
3.3	299	0.0470	1.52		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
7.1	1,469	0.0290	3.46		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.2	1,868	Total			

**Subcatchment 18S: Sub-watershed 18**



**Subcatchment 19S: Sub-watershed 19**

Runoff = 17.07 cfs @ 12.89 hrs, Volume= 3.243 af, Depth= 1.33"

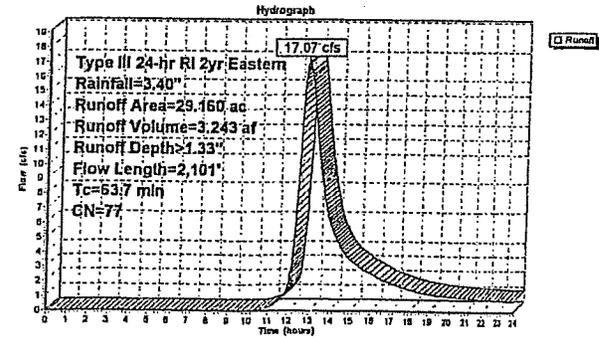
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
1.460	94	Urban commercial, 85% imp, HSG C
1.460	80	1/2 acre lots, 25% imp, HSG C
26.240	76	Woods/grass comb., Fair, HSG C
29.160	77	Weighted Average
27.554		Pervious Area
1.606		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0160	0.11		Sheet Flow, A-B Grass: Dense n= 0.240 P2= 3.40"
2.9	161	0.0170	0.91		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.1	17	0.0230	3.08		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
1.2	80	0.0250	1.11		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
0.1	13	0.0200	2.87		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
35.7	678	0.0040	0.32		Shallow Concentrated Flow, F-G Woodland Kv= 5.0 fps
8.6	1,052	0.0100	2.03		Shallow Concentrated Flow, G-H Paved Kv= 20.3 fps
63.7	2,101	Total			

**Subcatchment 19S: Sub-watershed 19**



Subcatchment 20S: Sub-watershed 20

Runoff = 15.31 cfs @ 12.24 hrs, Volume= 1.517 af, Depth> 1.62"

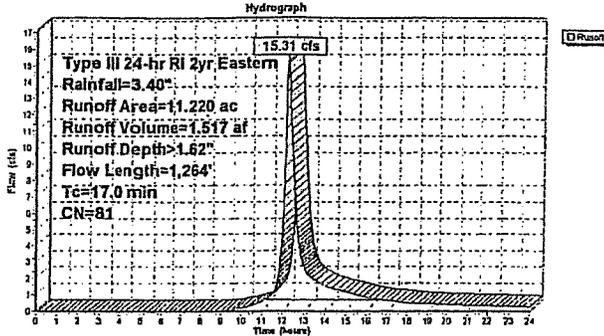
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
11.220	81	1/3 acre lots, 30% imp, HSG C
7.854		Pervious Area
3.366		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
4.0	174	0.0110	0.73		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
4.9	990	0.0280	3.40		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
17.0	1,264	Total			

Subcatchment 20S: Sub-watershed 20



Subcatchment 21S: Sub-watershed 21

Runoff = 7.90 cfs @ 12.08 hrs, Volume= 0.579 af, Depth> 2.74"

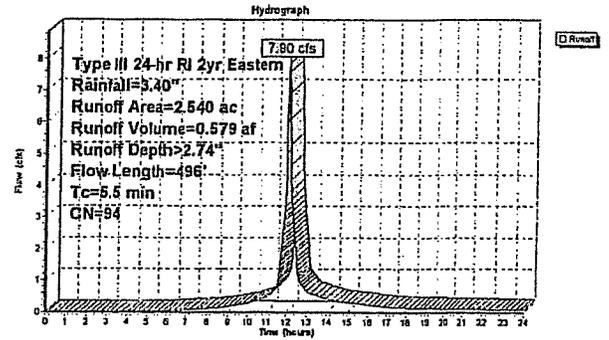
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
2.540	84	Urban commercial, 85% imp, HSG C
0.381		Pervious Area
2.159		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	70	0.1000	0.31		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.2	30	0.1200	2.28		Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.40"
1.5	386	0.0450	4.31		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
5.5	496	Total			

Subcatchment 21S: Sub-watershed 21



Subcatchment 22S: Sub-watershed 22

Runoff = 18.43 cfs @ 12.10 hrs, Volume= 1.432 af, Depth> 2.74"

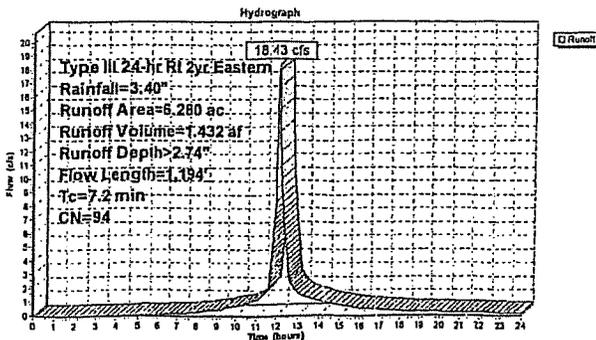
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
6.280	94	Urban commercial, 85% imp, HSG C
0.942		Pervious Area
5.338		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0800	2.47		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
6.5	1,094	0.0190	2.80		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
7.2	1,194	Total			

Subcatchment 22S: Sub-watershed 22



Subcatchment 23S: Sub-watershed 23

Runoff = 2.85 cfs @ 12.07 hrs, Volume= 0.205 af, Depth> 2.74"

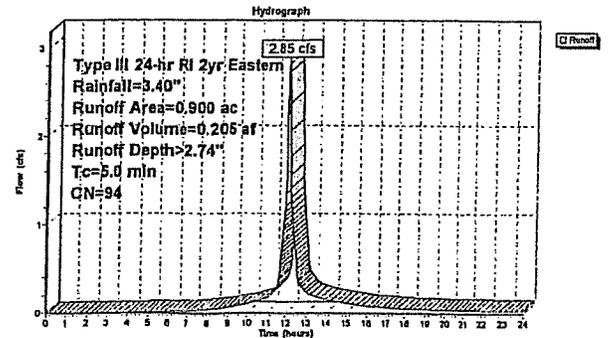
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.900	64	Urban commercial, 85% imp, HSG C
0.135		Pervious Area
0.765		Impervious Area

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

Subcatchment 23S: Sub-watershed 23



Subcatchment 24S: Sub-watershed 24

Runoff = 12.33 cfs @ 12.17 hrs, Volume= 1.105 af, Depth> 2.44"

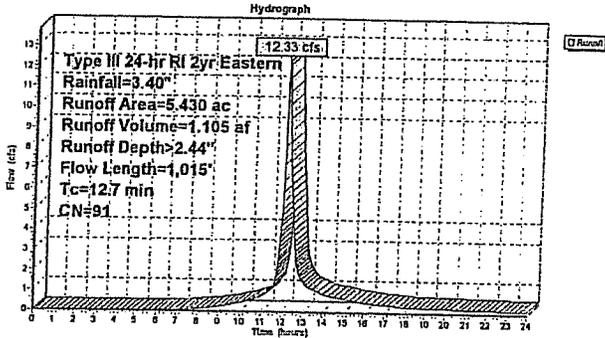
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
4.340	94	Urban commercial, 85% imp, HSG C
1.090	81	1/3 acre lots, 30% imp, HSG C
5.430	91	Weighted Average
1.414		Pervious Area
4.016		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0800	0.31		Sheet Flow, A-B
3.7	397	0.0650	1.78		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
3.5	518	0.0150	2.49		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
12.7	1,015				Total Paved Kv= 20.3 fps

Subcatchment 24S: Sub-watershed 24



Subcatchment 25S: Sub-watershed 25

Runoff = 11.22 cfs @ 12.19 hrs, Volume= 1.024 af, Depth> 1.55"

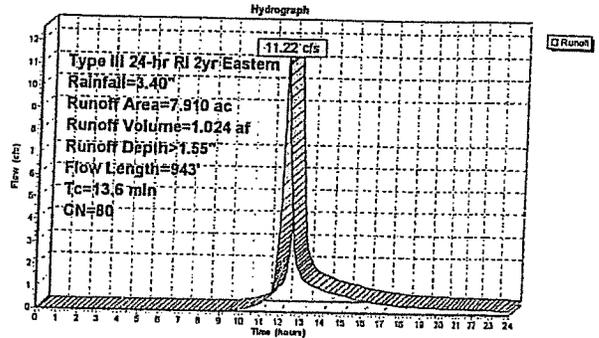
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
7.120	81	1/3 acre lots, 30% imp, HSG C
0.790	73	Woods, Fair, HSG C
7.910	80	Weighted Average
5.774		Pervious Area
2.136		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B
3.5	276	0.0360	1.33		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
2.9	567	0.0250	3.21		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
13.6	943				Total Paved Kv= 20.3 fps

Subcatchment 25S: Sub-watershed 25



Subcatchment 26S: Sub-watershed 26

Runoff = 0.14 cfs @ 12.07 hrs, Volume= 0.011 af, Depth> 3.16"

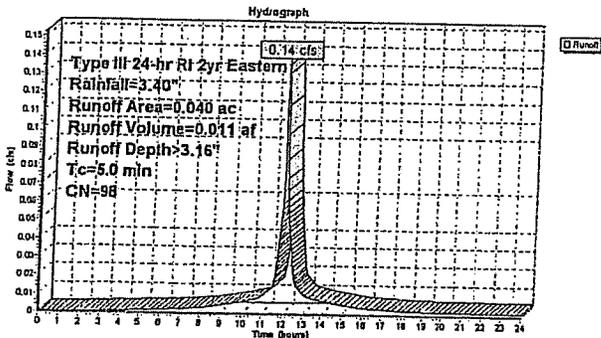
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.040	98	Paved parking & roofs
0.040		Impervious Area

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

Subcatchment 26S: Sub-watershed 26



Subcatchment 27S: Sub-watershed 27

Runoff = 0.19 cfs @ 12.08 hrs, Volume= 0.013 af, Depth> 1.77"

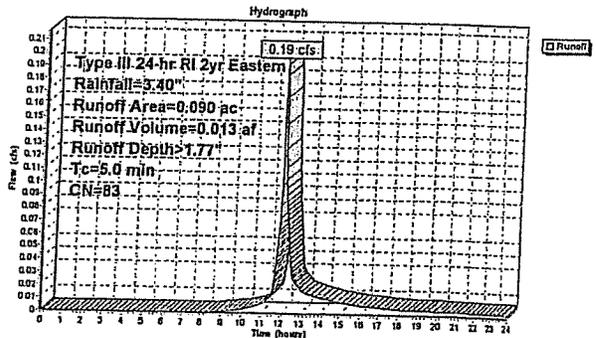
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.090	83	1/4 acre lots, 38% imp, HSG C
0.056		Pervious Area
0.034		Impervious Area

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

Subcatchment 27S: Sub-watershed 27



Subcatchment 28S: Sub-watershed 28

Runoff = 5.14 cfs @ 12.32 hrs, Volume= 0.572 af, Depth= 1.55"

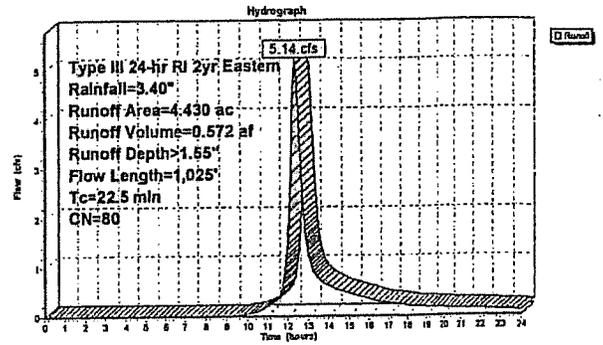
Runoff by SCS TR-20 method, LH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
3.990	81	1/3 acre lots, 30% Imp, HSG C
0.440	73	Woods, Fair, HSG C
4.430	80	Weighted Average
3.233		Pervious Area
1.197		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.4	23	0.0220	1.04		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.1	19	0.0200	2.87		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
0.4	23	0.0200	0.99		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
0.1	22	0.0200	2.87		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
7.5	426	0.0360	0.95		Shallow Concentrated Flow, F-G Woodland Kv= 5.0 fps
1.2	100	0.0400	1.40		Shallow Concentrated Flow, G-H Short Grass Pasture Kv= 7.0 fps
3.3	312	0.0080	1.57		Shallow Concentrated Flow, H-I Paved Kv= 20.3 fps
22.5	1,025	Total			

Subcatchment 28S: Sub-watershed 28



Subcatchment 29S: Sub-watershed 29

Runoff = 16.57 cfs @ 12.16 hrs, Volume= 1.398 af, Depth= 1.70"

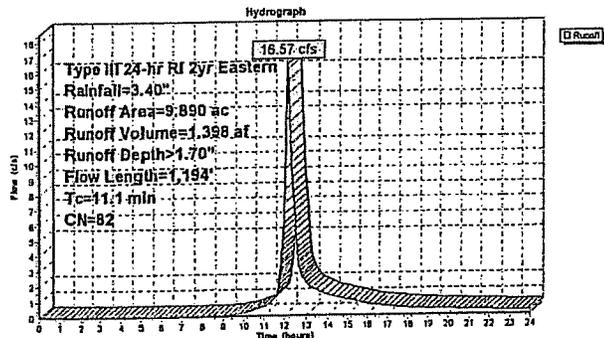
Runoff by SCS TR-20 method, LH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.490	74	>75% Grass cover, Good, HSG C
0.980	94	Urban commercial, 85% Imp, HSG C
8.420	81	1/3 acre lots, 30% Imp, HSG C
9.890	82	Weighted Average
6.531		Pervious Area
3.359		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0110	1.12		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
6.7	453	0.0260	1.13		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.9	641	0.0330	3.69		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.1	1,194	Total			

Subcatchment 29S: Sub-watershed 29



Subcatchment 30S: Sub-watershed 30

Runoff = 2.54 cfs @ 12.18 hrs, Volume= 0.227 af, Depth= 1.62"

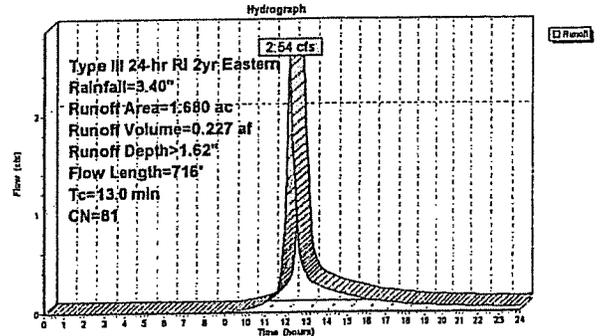
Runoff by SCS TR-20 method, LH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
1.680	81	1/3 acre lots, 30% Imp, HSG C
1.176		Pervious Area
0.504		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.2	118	0.0510	1.58		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.3	498	0.0320	3.63		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
13.0	716	Total			

Subcatchment 30S: Sub-watershed 30



Subcatchment 31S: Sub-watershed 31

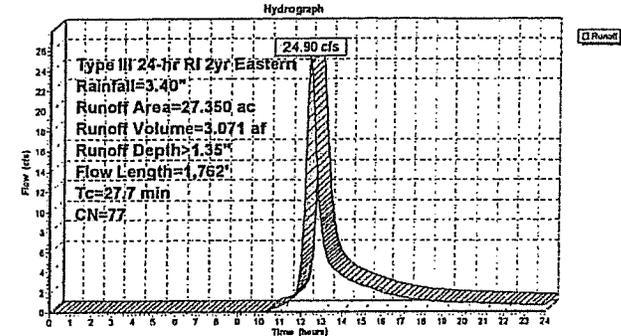
Runoff = 24.90 cfs @ 12.40 hrs, Volume= 3,071 af, Depth> 1.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dl= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
12.350	81	1/3 acre lots, 30% Imp, HSG C
15.000	74	>75% Grass cover, Good, HSG C
27.350	77	Weighted Average
23.645		Pervious Area
3.705		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0500	0.25		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
15.3	1,075	0.0280	1.17		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.8	587	0.0070	1.70		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
27.7	1,762	Total			

Subcatchment 31S: Sub-watershed 31



Subcatchment 32S: Sub-watershed 32

Runoff = 35.08 cfs @ 12.40 hrs, Volume= 4,363 af, Depth> 1.16"

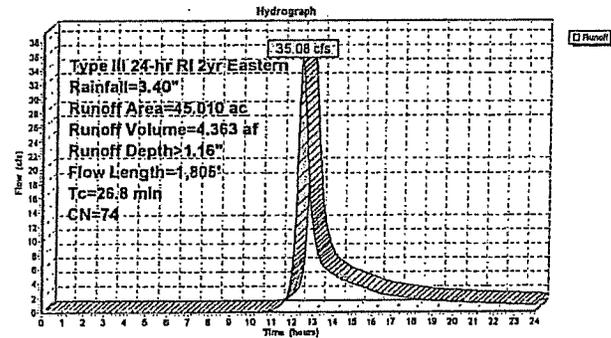
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dl= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
14.440	81	1/3 acre lots, 30% Imp, HSG C
13.320	69	50-75% Grass cover, Fair, HSG B
15.110	73	Woods, Fair, HSG C
0.800	88	Fallow, crop residue, Good, HSG C
1.240	56	Brush, Fair, HSG B
45.010	74	Weighted Average
40.678		Pervious Area
4.332		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0840	0.14		Sheet Flow, A-B Grass: Bermuda n= 0.410 P2= 3.40"
2.3	179	0.0698	1.32		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
2.9	654	0.0528	3.70		Shallow Concentrated Flow, C-D Unpaved Kv= 16.1 fps
5.8	474	0.0738	1.36		Shallow Concentrated Flow, D-E Woodland Kv= 5.0 fps
3.8	398	0.0075	1.76		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
26.8	1,805	Total			



Subcatchment 32S: Sub-watershed 32



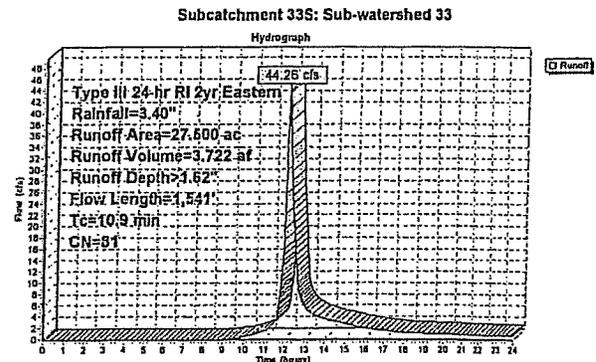
Subcatchment 33S: Sub-watershed 33

Runoff = 44.26 cfs @ 12.15 hrs, Volume= 3,722 af, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dl= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.960	94	Urban commercial, 85% Imp, HSG C
26.540	81	1/3 acre lots, 30% Imp, HSG C
27.500	81	Weighted Average
18.722		Pervious Area
8.778		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1200	0.36		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.0	154	0.1400	2.62		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.3	1,287	0.0400	4.06		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
10.9	1,541	Total			



Subcatchment 34S: Sub-watershed 34

Runoff = 7.58 cfs @ 12.23 hrs, Volume= 0.739 af, Depth> 1.62"

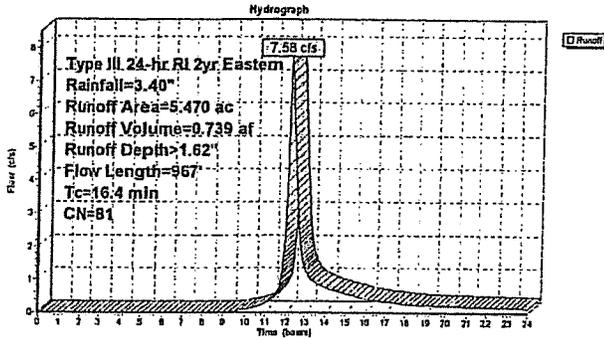
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
5.470	81	1/3 acre lots, 30% Imp, HSG C
3.829		Pervious Area
1.641		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.8	131	0.0300	1.21		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.1	738	0.0140	2.40		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
16.4	967	Total			

Subcatchment 34S: Sub-watershed 34



Subcatchment 35S: Sub-watershed 35

Runoff = 4.27 cfs @ 12.16 hrs, Volume= 0.368 af, Depth> 2.17"

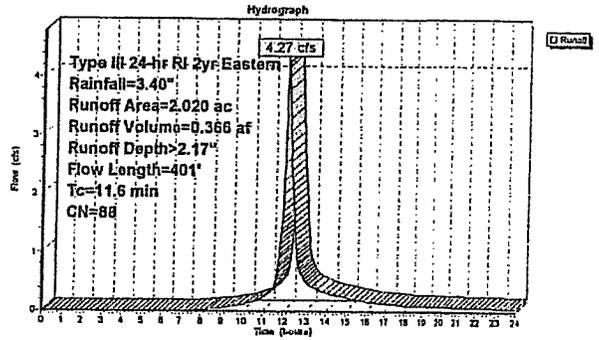
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
1.010	84	Urban commercial, 85% Imp, HSG C
1.010	81	1/3 acre lots, 30% Imp, HSG C
2.020	88	Weighted Average
0.859		Pervious Area
1.161		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0300	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
2.0	111	0.0180	0.94		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.5	190	0.0110	2.13		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.6	401	Total			

Subcatchment 35S: Sub-watershed 35



Subcatchment 36S: Sub-watershed 36

Runoff = 135.65 cfs @ 12.41 hrs, Volume= 16.770 af, Depth> 1.76"

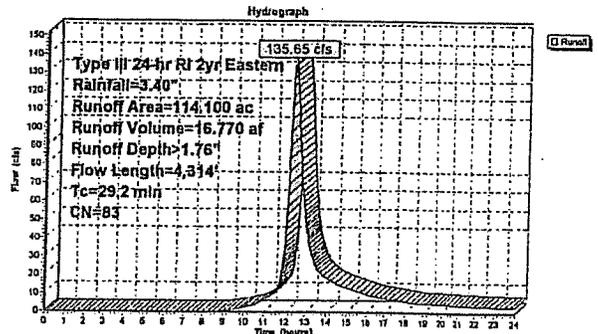
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
81.170	83	1/4 acre lots, 38% Imp, HSG C
9.230	94	Urban commercial, 85% Imp, HSG C
6.090	60	Woods, Fair, HSG B
0.440	69	50-75% Grass cover, Fair, HSG B
4.180	56	Brush, Fair, HSG B
12.990	91	Urban industrial, 72% Imp, HSG C
114.100	83	Weighted Average
66.057		Pervious Area
48.043		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.4	172	0.0810	1.89		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
18.3	4,042	0.0330	3.69		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
29.2	4,314	Total			

Subcatchment 36S: Sub-watershed 36



Subcatchment 37S: Sub-watershed 37

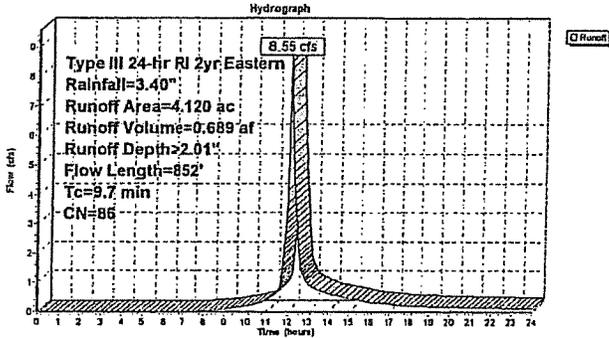
Runoff = 8.55 cfs @ 12.14 hrs, Volume= 0.689 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
1.240	81	1/3 acre lots, 30% Imp, HSG C
2.470	81	Urban Industrial, 72% Imp, HSG C
0.410	74	>75% Grass covar, Good, HSG C
4.120	86	Weighted Average
1.970		Pervious Area
2.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.67		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
6.7	752	0.0050	1.44		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.7	852				Total

Subcatchment 37S: Sub-watershed 37



Subcatchment 38S: Sub-watershed 38

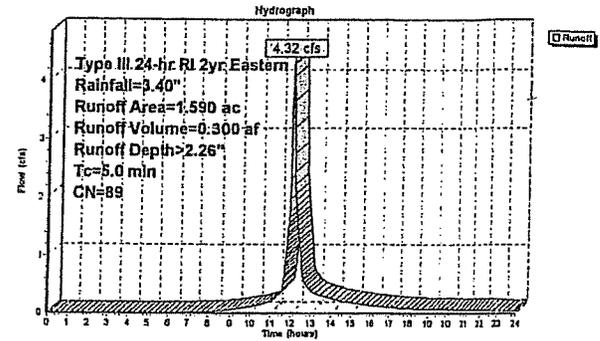
Runoff = 4.32 cfs @ 12.07 hrs, Volume= 0.300 af, Depth> 2.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.160	91	Urban Industrial, 72% Imp, HSG C
0.320	79	Pasture/grassland/range, Fair, HSG C
1.110	91	Urban Industrial, 72% Imp, HSG C
1.590	89	Weighted Average
0.676		Pervious Area
0.914		Impervious Area

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

Subcatchment 38S: Sub-watershed 38



Subcatchment 39S: Sub-watershed 39

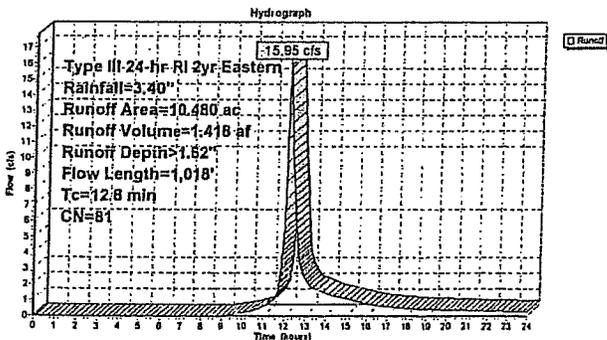
Runoff = 15.95 cfs @ 12.18 hrs, Volume= 1.418 af, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.520	79	Pasture/grassland/range, Fair, HSG C
9.950	81	1/3 acre lots, 30% Imp, HSG C
10.480	81	Weighted Average
7.492		Pervious Area
2.988		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0800	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.8	212	0.0750	1.92		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.0	387	0.0260	3.27		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	319	0.0690	1.84		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
12.8	1,018				Total

Subcatchment 39S: Sub-watershed 39



Subcatchment 40S: Sub-watershed 40

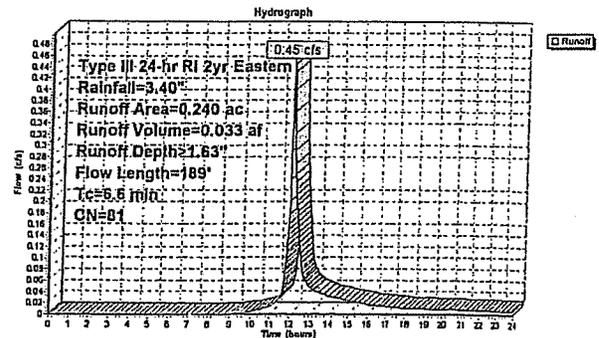
Runoff = 0.45 cfs @ 12.10 hrs, Volume= 0.033 af, Depth> 1.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.240	81	1/3 acre lots, 30% Imp, HSG C
0.168		Pervious Area
0.072		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0800	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.5	89	0.1500	2.71		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
6.6	189				Total

Subcatchment 40S: Sub-watershed 40



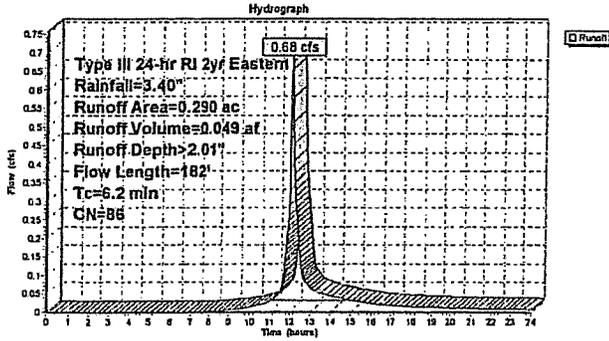
Subcatchment 41S: Sub-watershed 41

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.049 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description			
0.290	86	Pasture/grassland/range, Poor, HSG C			
Pervious Area					
Tc Length Slope Velocity Capacity Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
5.5	100	0.0800	0.31		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.7	82	0.0730	1.89		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
6.2	182	Total			

Subcatchment 41S: Sub-watershed 41



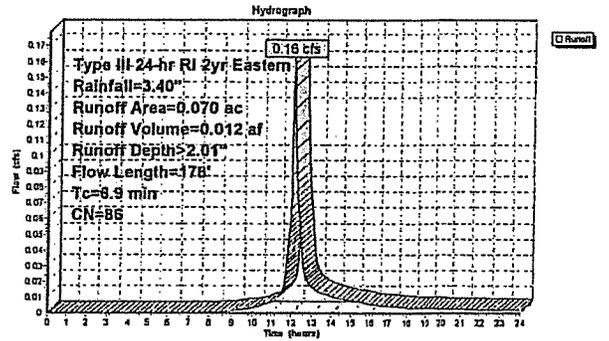
Subcatchment 42S: Sub-watershed 42

Runoff = 0.16 cfs @ 12.10 hrs, Volume= 0.012 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description			
0.070	86	Pasture/grassland/range, Poor, HSG C			
Pervious Area					
Tc Length Slope Velocity Capacity Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
6.1	100	0.0600	0.27		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.8	78	0.0510	1.58		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
6.9	178	Total			

Subcatchment 42S: Sub-watershed 42



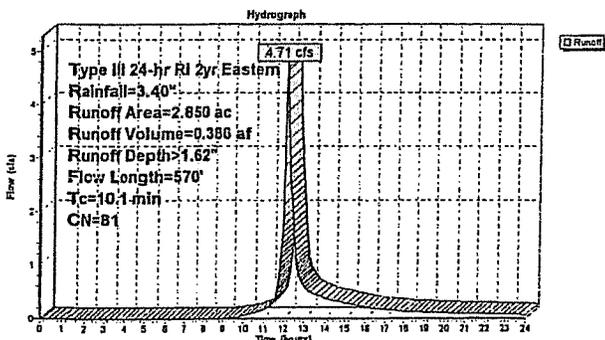
Subcatchment 43S: Sub-watershed 43

Runoff = 4.71 cfs @ 12.14 hrs, Volume= 0.386 af, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description			
2.850	81	1/3 acre lots, 30% imp, HSG C			
1.895		Pervious Area			
0.855		Impervious Area			
Tc Length Slope Velocity Capacity Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
6.1	100	0.0600	0.27		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.8	228	0.0880	2.08		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
1.7	206	0.0100	2.03		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.5	36	0.0280	1.17		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
10.1	570	Total			

Subcatchment 43S: Sub-watershed 43



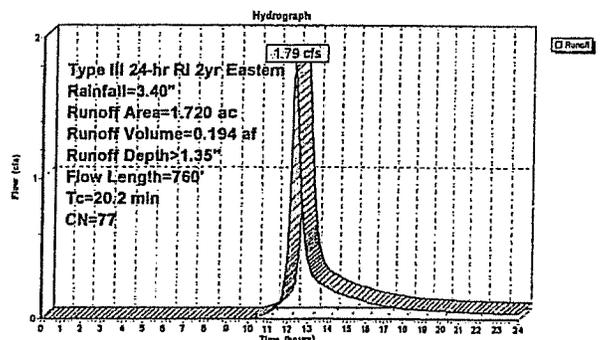
Subcatchment 44S: Sub-watershed 44

Runoff = 1.79 cfs @ 12.29 hrs, Volume= 0.194 af, Depth> 1.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description			
0.860	81	1/3 acre lots, 30% imp, HSG C			
0.880	73	Woods, Fair, HSG C			
1.720	77	Weighted Average			
1.482		Pervious Area			
0.258		Impervious Area			
Tc Length Slope Velocity Capacity Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
14.4	100	0.0500	0.12		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
4.3	262	0.0420	1.02		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
1.5	398	0.0450	4.31		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
20.2	760	Total			

Subcatchment 44S: Sub-watershed 44



Subcatchment 45S: Sub-watershed 45

Runoff = 3.18 cfs @ 12.32 hrs, Volume= 0.356 af, Depth> 1.17"

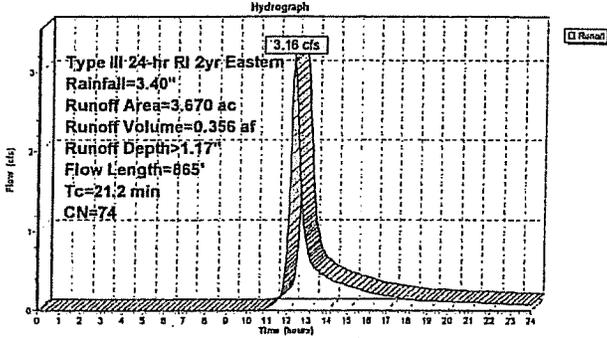
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
3.120	73	Woods, Fair, HSG C
0.180	81	1/3 acre lots, 30% Imp, HSG C
0.370	82	Woods/grass comb., Poor, HSG C
3.670	74	Weighted Average
3.618		Pervious Area
0.054		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
					Grass: Short n=0.150 P2= 3.40"
13.1	765	0.0380	0.97		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
21.2	865				Total

Subcatchment 45S: Sub-watershed 45



Subcatchment 46S: Sub-watershed 46

Runoff = 1.10 cfs @ 12.37 hrs, Volume= 0.133 af, Depth> 1.16"

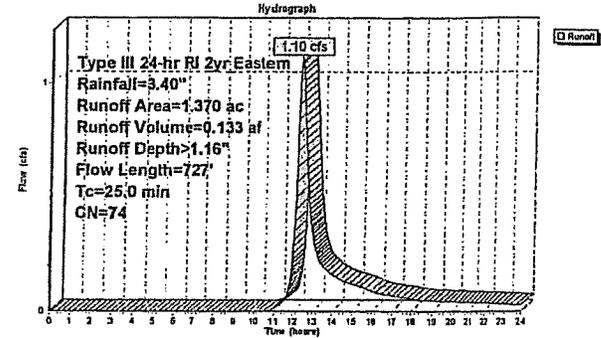
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
1.230	73	Woods, Fair, HSG C
0.140	82	Woods/grass comb., Poor, HSG C
1.370	74	Weighted Average
1.370		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0400	0.11		Sheet Flow, A-B
					Woods: Light underbrush n=0.400 P2= 3.40"
7.6	373	0.0270	0.82		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
1.6	254	0.0160	2.57		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
25.0	727				Total

Subcatchment 46S: Sub-watershed 46



Subcatchment 47S: Sub-watershed 47

Runoff = 12.21 cfs @ 12.12 hrs, Volume= 0.944 af, Depth> 1.49"

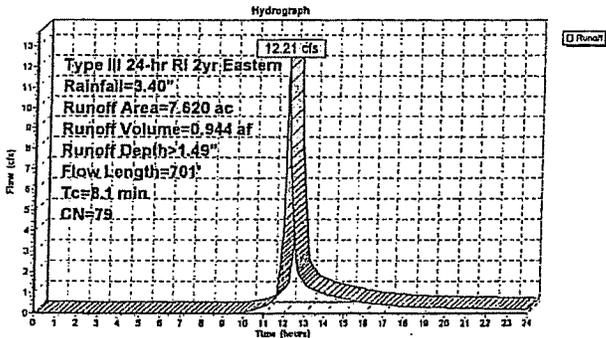
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
7.620	79	50-75% Grass cover, Fair, HSG C
7.620		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	100	0.1000	0.33		Sheet Flow, A-B
					Grass: Short n=0.150 P2= 3.40"
0.2	20	0.0500	1.57		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
2.9	581	0.0280	3.40		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
8.1	701				Total

Subcatchment 47S: Sub-watershed 47



Subcatchment 48S: Sub-watershed 48

Runoff = 2.61 cfs @ 12.12 hrs, Volume= 0.203 af, Depth> 1.85"

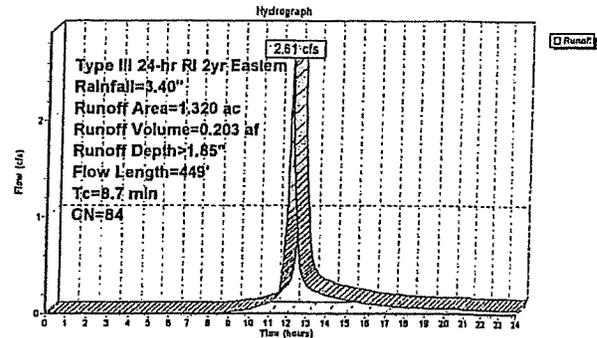
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
1.320	84	50-75% Grass cover, Fair, HSG D
1.320		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0500	0.27		Sheet Flow, A-B
					Grass: Short n=0.150 P2= 3.40"
0.4	39	0.0510	1.58		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
2.2	310	0.0130	2.31		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
8.7	449				Total

Subcatchment 48S: Sub-watershed 48



Subcatchment 49S: Sub-watershed 49

Runoff = 0.49 cfs @ 12.11 hrs, Volume= 0.037 af, Depth> 1.49"

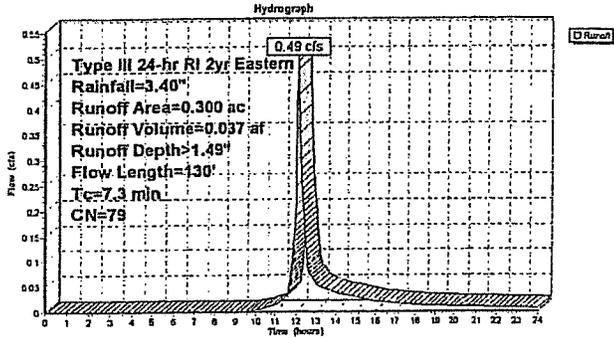
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastem Rainfall=3.40"

Area (ac)	CN	Description
0.300	79	50-75% Grass cover, Fair, HSG C
Pervious Area		

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.1	11	0.1800	2.97		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.0	19	0.1100	6.73		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
7.3	130	Total			

Subcatchment 49S: Sub-watershed 49



Subcatchment 50S: Sub-watershed 50

Runoff = 2.74 cfs @ 12.16 hrs, Volume= 0.235 af, Depth> 1.48"

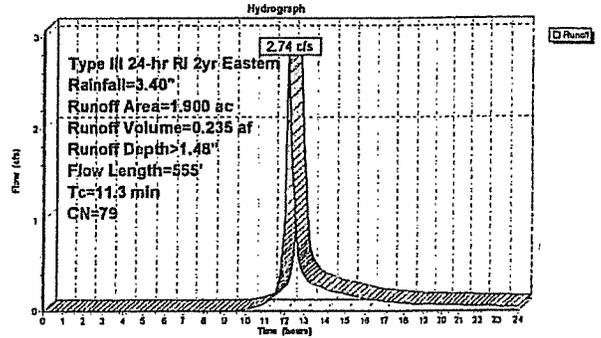
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastem Rainfall=3.40"

Area (ac)	CN	Description
1.900	79	50-75% Grass cover, Fair, HSG C
Pervious Area		

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0500	0.25		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
4.5	419	0.0500	1.57		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.2	36	0.0170	2.65		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
11.3	555	Total			

Subcatchment 50S: Sub-watershed 50



Subcatchment 51S: Sub-watershed 51

Runoff = 11.18 cfs @ 12.07 hrs, Volume= 0.784 af, Depth> 2.44"

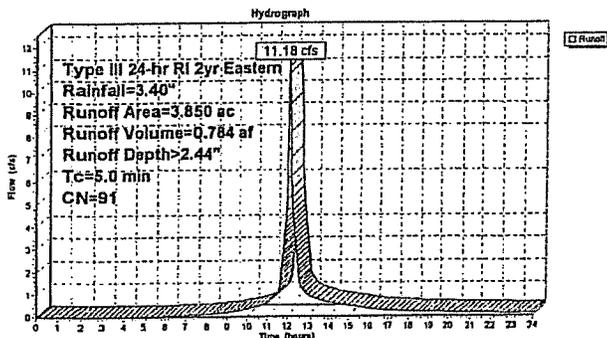
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastem Rainfall=3.40"

Area (ac)	CN	Description
3.850	91	Urban Industrial, 72% Imp, HSG C
1.078		Pervious Area
2.772		Impervious Area

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

Subcatchment 51S: Sub-watershed 51



Subcatchment 52S: Sub-watershed 52

Runoff = 9.08 cfs @ 12.13 hrs, Volume= 0.735 af, Depth> 2.26"

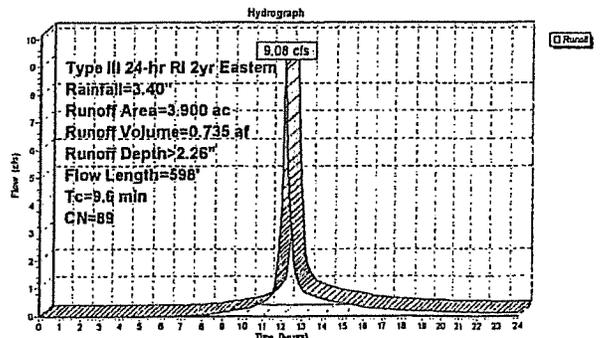
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastem Rainfall=3.40"

Area (ac)	CN	Description
3.510	80	1/8 acre lots, 65% Imp, HSG C
0.390	79	50-75% Grass cover, Fair, HSG C
3.900	89	Weighted Average
1.618		Pervious Area
2.282		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1200	0.36		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.9	108	0.0190	0.86		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
2.8	361	0.0110	2.13		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.3	29	0.0690	1.84		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
9.6	598	Total			

Subcatchment 52S: Sub-watershed 52



**Subcatchment 63S: Sub-watershed 63**

Runoff = 11.82 cfs @ 12.13 hrs, Volume= 0.948 af, Depth> 2.35"

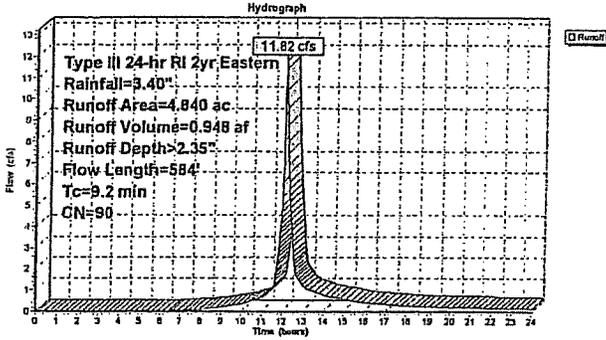
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
4.840	90	1/8 acre lots, 65% Imp, HSG C
1.894		Pervious Area
3.146		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.25		Sheet Flow, A-B
0.3	33	0.0610	1.73		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
2.3	451	0.0270	3.34		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
9.2	584				Paved Kv= 20.3 fps
584 Total					

**Subcatchment 63S: Sub-watershed 63**



**Subcatchment 64S: Sub-watershed 64**

Runoff = 1.27 cfs @ 12.08 hrs, Volume= 0.087 af, Depth> 1.77"

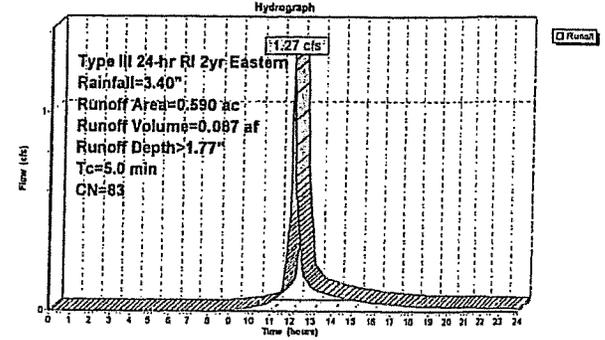
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.590	83	1/4 acre lots, 38% Imp, HSG C
0.366		Pervious Area
0.224		Impervious Area

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

**Subcatchment 64S: Sub-watershed 64**



**Subcatchment 55S: Sub-watershed 55**

Runoff = 3.83 cfs @ 12.23 hrs, Volume= 0.382 af, Depth> 2.44"

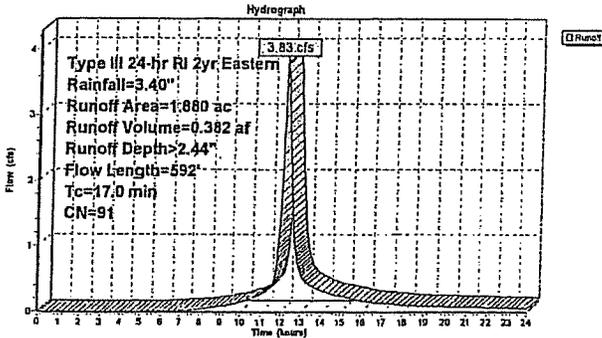
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
1.880	91	Urban Industrial, 72% Imp, HSG C
0.526		Pervious Area
1.354		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B
4.5	492	0.0080	1.62		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
17.0	592				Paved Kv= 20.3 fps
592 Total					

**Subcatchment 55S: Sub-watershed 55**



**Subcatchment 66S: Sub-watershed 66**

Runoff = 11.08 cfs @ 12.33 hrs, Volume= 1.244 af, Depth> 1.62"

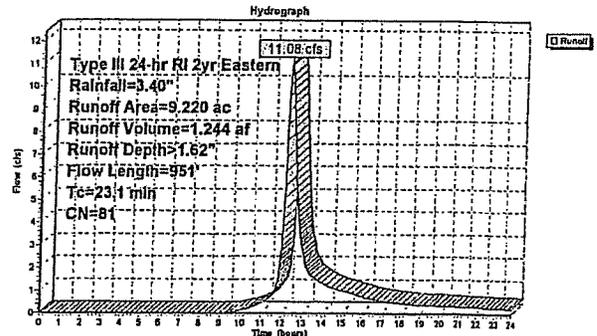
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
9.220	81	1/3 acre lots, 30% Imp, HSG C
6.454		Pervious Area
2.766		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B
5.7	228	0.0090	0.66		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
4.9	623	0.0110	2.13		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
23.1	951				Paved Kv= 20.3 fps
951 Total					

**Subcatchment 66S: Sub-watershed 66**



Subcatchment 57S: Sub-watershed 57

Runoff = 3.75 cfs @ 12.23 hrs, Volume= 0.364 af, Depth> 1.62"

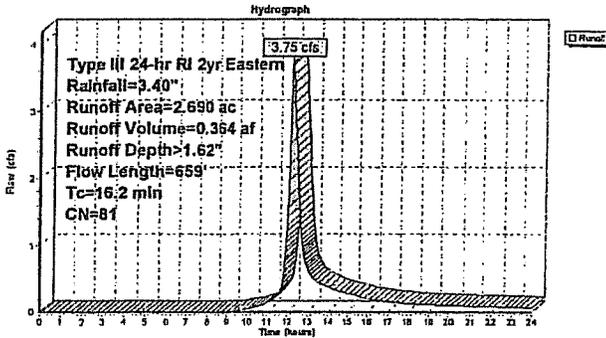
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
2.690	81	1/3 acre lots, 30% Imp, HSG C
1.883		Pervious Area
0.807		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.0370	0.22		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
8.4	180	0.0050	0.49		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
2.2	349	0.0170	2.65		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.2	20	0.0500	1.57		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
16.2	659				Total

Subcatchment 57S: Sub-watershed 57



Subcatchment 68S: Sub-watershed 68

Runoff = 4.63 cfs @ 12.24 hrs, Volume= 0.462 af, Depth> 1.62"

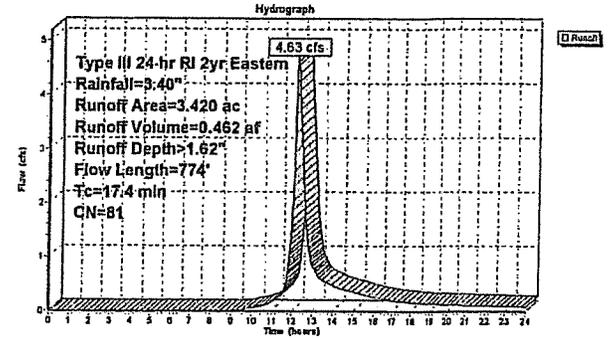
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
3.420	81	1/3 acre lots, 30% Imp, HSG C
2.394		Pervious Area
1.026		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.1	74	0.0270	1.15		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
3.8	600	0.0170	2.65		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
17.4	774				Total

Subcatchment 68S: Sub-watershed 68



Subcatchment 69S: Sub-watershed 69

Runoff = 65.15 cfs @ 13.00 hrs, Volume= 13.221 af, Depth> 1.74"

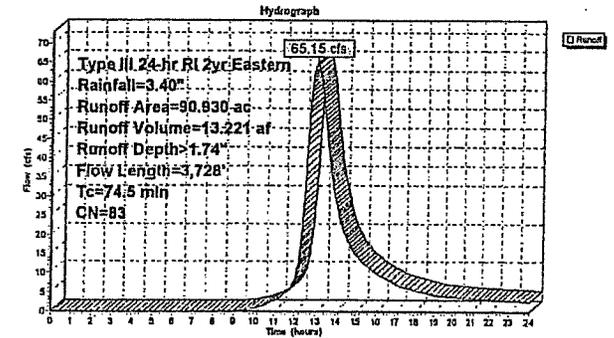
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
35.570	83	1/4 acre lots, 38% imp, HSG C
15.400	79	Pasture/grassland/range, Fair, HSG C
13.820	84	Urban commercial, 85% imp, HSG C
2.410	91	Urban industrial, 72% imp, HSG C
8.840	85	Woods/grass comb., Poor, HSG D
12.190	73	Woods, Fair, HSG C
2.700	79	Pasture/grassland/range, Fair, HSG C
80.930	83	Weighted Average
63.931		Pervious Area
26.899		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0050	0.10		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
49.4	2,858	0.0190	0.96		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
1.2	48	0.0010	0.64		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
2.9	164	0.0180	0.94		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
3.5	377	0.0080	1.82		Shallow Concentrated Flow, E-F
					Paved Kv= 20.3 fps
1.0	181	0.0220	3.01		Shallow Concentrated Flow, F-G
					Paved Kv= 20.3 fps
74.5	3,728				Total

Subcatchment 69S: Sub-watershed 69



Subcatchment 60S: Sub-watershed 60

Runoff = 36.61 cfs @ 12.28 hrs, Volume= 4.025 af, Depth= 2.63"

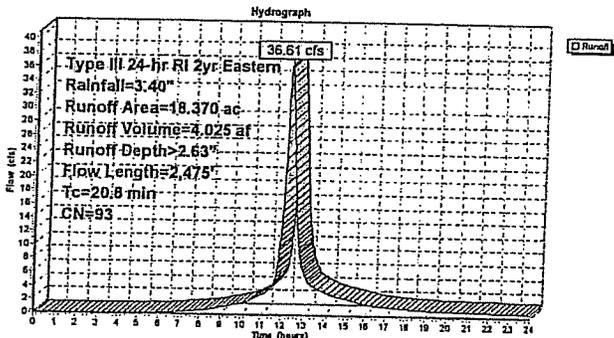
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
5.510	91	Urban Industrial, 72% Imp, HSG C
12.860	94	Urban commercial, 85% Imp, HSG C
18.370	93	Weighted Average
3.472		Pervious Area
14.898		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B
0.6	83	0.1100	2.32		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
13.0	2,292	0.0210	2.84		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
20.8	2,475				Paved Kv= 20.3 fps
20.8 2,475 Total					

Subcatchment 60S: Sub-watershed 60



Subcatchment 61S: Sub-watershed 61

Runoff = 27.46 cfs @ 12.14 hrs, Volume= 2.210 af, Depth= 1.70"

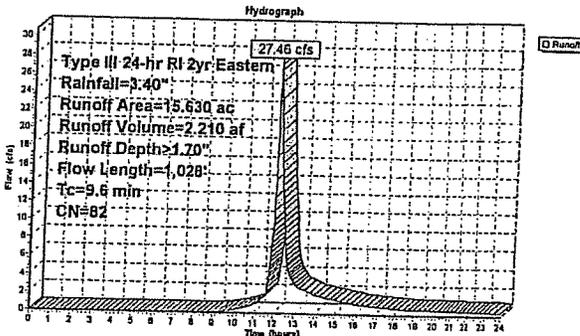
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
14.070	81	1/3 acre lots, 30% Imp, HSG C
1.560	94	Urban commercial, 85% Imp, HSG C
15.630	82	Weighted Average
10.083		Pervious Area
5.547		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0700	0.29		Sheet Flow, A-B
1.2	132	0.0700	1.85		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
2.6	796	0.0630	5.10		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
9.6	1,028				Paved Kv= 20.3 fps
9.6 1,028 Total					

Subcatchment 61S: Sub-watershed 61



Subcatchment 62S: Sub-watershed 62

Runoff = 11.34 cfs @ 12.32 hrs, Volume= 1.258 af, Depth= 1.62"

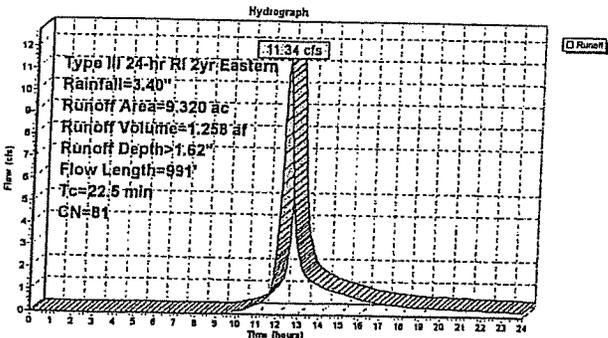
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
9.320	81	1/3 acre lots, 30% Imp, HSG C
6.524		Pervious Area
2.796		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B
5.2	169	0.0060	0.54		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
4.8	722	0.0150	2.49		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
22.5	991				Paved Kv= 20.3 fps
22.5 991 Total					

Subcatchment 62S: Sub-watershed 62



Subcatchment 63S: Sub-watershed 63

Runoff = 15.29 cfs @ 12.17 hrs, Volume= 1.333 af, Depth= 1.62"

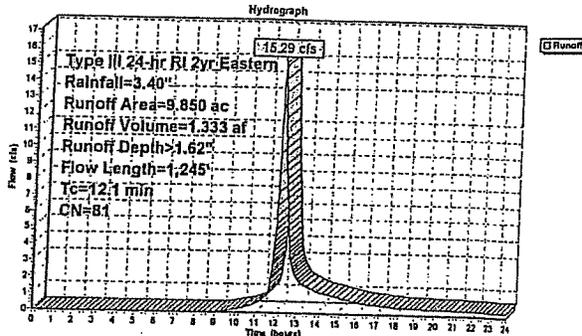
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
9.850	81	1/3 acre lots, 30% Imp, HSG C
6.895		Pervious Area
2.955		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	37	0.0540	0.21		Sheet Flow, A-B
0.6	63	0.0480	1.83		Grass: Short n= 0.150 P2= 3.40" Sheet Flow, B-C
0.6	118	0.0250	3.21		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, C-D
2.0	188	0.0480	1.53		Paved Kv= 20.3 fps Shallow Concentrated Flow, D-E
6.0	839	0.0130	2.31		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, E-F
12.1	1,245				Paved Kv= 20.3 fps
12.1 1,245 Total					

Subcatchment 63S: Sub-watershed 63



Subcatchment 64S: Sub-watershed 64

Runoff = 1.79 cfs @ 12.13 hrs, Volume= 0.147 af, Depth> 2.44"

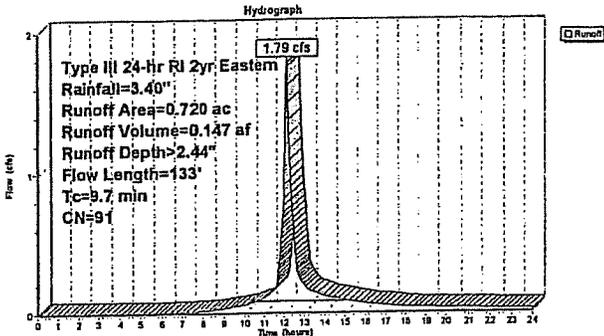
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.720	91	Urban Industrial, 72% Imp, HSG C
0.202		Pervious Area
0.518		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
2.5	33	0.0010	0.22		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
9.7	133				Total

Subcatchment 64S: Sub-watershed 64



Subcatchment 65S: Sub-watershed 65

Runoff = 5.85 cfs @ 12.21 hrs, Volume= 0.552 af, Depth> 1.62"

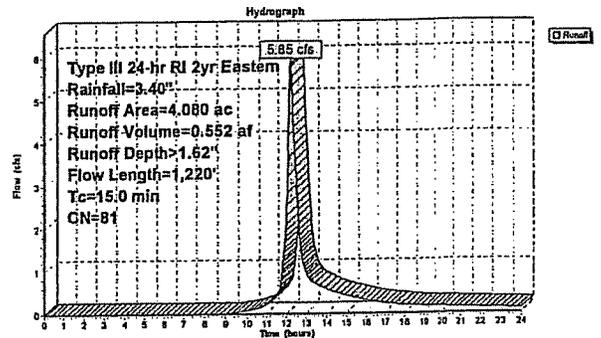
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
4.080	61	1/3 acre lots, 30% Imp, HSG C
2.856		Pervious Area
1.224		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	86	0.0300	0.20		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.3	14	0.0100	0.73		Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.40"
7.5	1,120	0.0150	2.49		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
15.0	1,220				Total

Subcatchment 65S: Sub-watershed 65



Subcatchment 66S: Su-watershed 66

Runoff = 5.73 cfs @ 12.31 hrs, Volume= 0.629 af, Depth> 1.62"

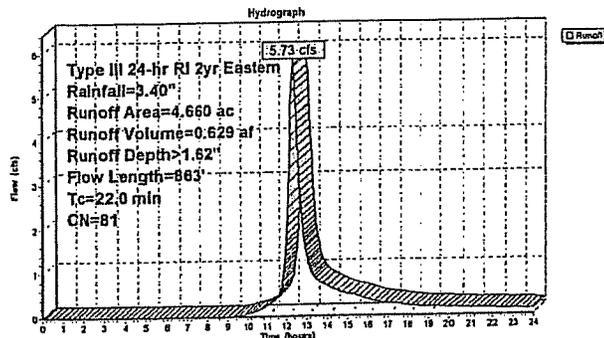
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
4.660	81	1/3 acre lots, 30% Imp, HSG C
3.262		Pervious Area
1.398		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	100	0.0060	0.11		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.2	103	0.0390	1.38		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.4	660	0.0100	2.03		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
22.0	863				Total

Subcatchment 66S: Su-watershed 66



Subcatchment 67S: Sub-watershed 67

Runoff = 3.93 cfs @ 12.40 hrs, Volume= 0.482 af, Depth> 1.84"

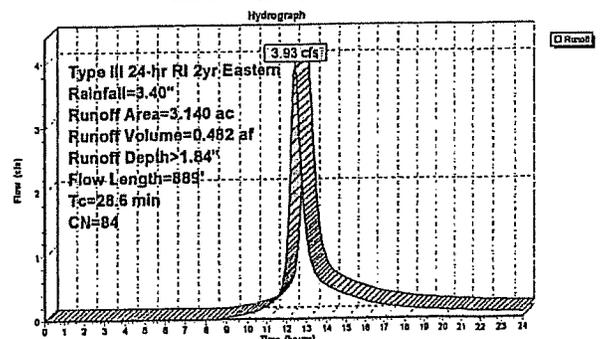
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
0.780	81	1/3 acre lots, 30% Imp, HSG C
1.880	88	Fallow, crop residue, Good, HSG C
0.470	73	Woods, Fair, HSG C
3.140	84	Weighted Average
2.903		Pervious Area
0.237		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
4.7	199	0.0200	0.71		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
10.7	490	0.0120	0.77		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
0.7	100	0.0120	2.22		Shallow Concentrated Flow, D-E Paved Kv= 20.3 fps
28.6	889				Total

Subcatchment 67S: Sub-watershed 67



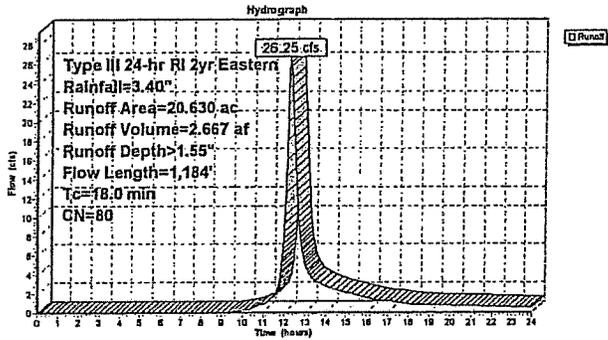
**Subcatchment 68S: Sub-watershed 68**

Runoff = 26.25 cfs @ 12.26 hrs, Volume= 2.667 af, Depth= 1.55"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 2yr Eastern Rainfall=3.40"

Area (ac)	CN	Description
2.350	79	Pasture/grassland/range, Fair, HSG C
2.470	88	Fallow, crop residue, Good, HSG C
1.970	70	Brush, Fair, HSG C
5.490	82	Woods/grass comb., Poor, HSG C
2.460	73	Woods, Fair, HSG C
5.890	81	1/3 acre lots, 30% imp, HSG C
20.630	80	Weighted Average
18.863		Pervious Area
1.767		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0850	0.31		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
12.7	1,084	0.0410	1.42		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
18.0	1,184	Total			

**Subcatchment 68S: Sub-watershed 68**



**Reach 3R: Intermittent Stream**

Inflow Area = 21.680 ac, Inflow Depth > 1.60" for RI 2yr Eastern event  
 Inflow = 15.60 cfs @ 12.62 hrs, Volume= 2.891 af  
 Outflow = 15.47 cfs @ 12.81 hrs, Volume= 2.868 af, Atten= 1%, Lag= 11.1 min

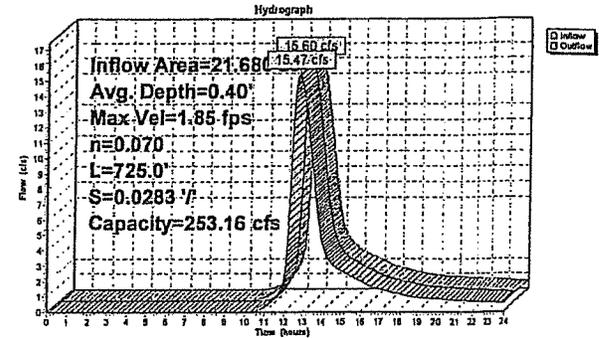
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Max. Velocity= 1.85 fps, Min. Travel Time= 6.5 min  
 Avg. Velocity= 0.75 fps, Avg. Travel Time= 16.1 min

Peak Storage= 5,071 cf @ 12.70 hrs, Average Depth at Peak Storage= 0.40'  
 Bank-Full Depth= 2.00', Capacity at Bank-Full= 253.16 cfs

20.00' x 2.00' deep channel, n= 0.070 Medium-dense brush, winter  
 Side Slope Z-values= 3.0 ' Top Width= 32.00'  
 Length= 725.0' Slope= 0.0283 ' / -  
 Inlet Invert= 113.50', Outlet Invert= 83.00'



**Reach 3R: Intermittent Stream**



**Pond 2P: Highview Pond Existing**

Inflow Area = 21.680 ac, Inflow Depth > 1.62" for RI 2yr Eastern event  
 Inflow = 26.53 cfs @ 12.31 hrs, Volume= 2.927 af  
 Outflow = 15.60 cfs @ 12.62 hrs, Volume= 2.891 af, Atten= 41%, Lag= 18.6 min  
 Primary = 15.60 cfs @ 12.62 hrs, Volume= 2.891 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2  
 Peak Elev= 119.11' @ 12.62 hrs Surf.Area= 7,030 sf Storage= 24,195 cf

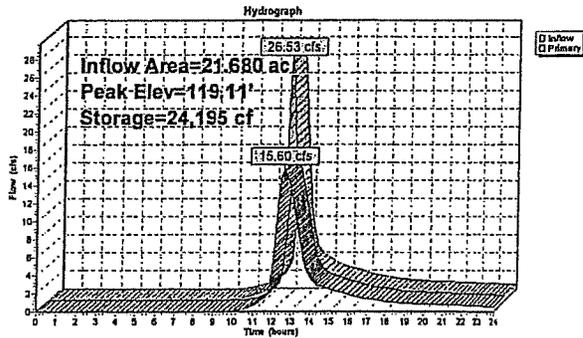
Plug-Flow detention time= 25.4 min calculated for 2.891 af (99% of Inflow)  
 Center-of-Mass det. time= 18.4 min (897.0 - 848.6')

Volume	Invert	Avail. Storage	Storage Description
#1	115.00'	42,295 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
115.00	4,620	0	0
118.00	6,498	16,674	16,674
121.00	7,936	21,648	38,322
122.00	10	3,973	42,295

Device	Routing	Invert	Outlet Devices
#1	Primary	115.00'	18.0" x 40.0' long Culvert RCP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 114.40' S= 0.0150 ' / - Cc= 0.900 n= 0.013
#2	Primary	121.00'	128.0' long x 1.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max= 15.60 cfs @ 12.62 hrs HW= 119.11' (Free Discharge)  
 1=Culvert (Inlet Controls) 15.60 cfs @ 8.83 fps  
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

**Pond 2P: Highview Pond Existing**

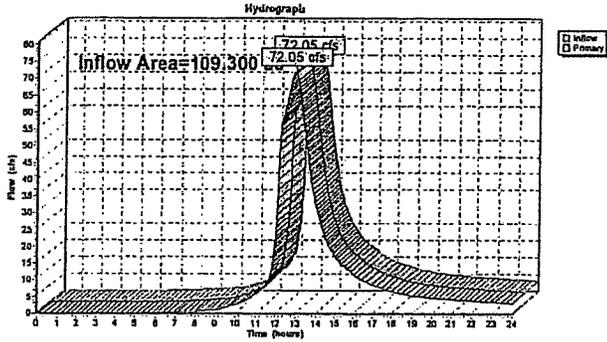


Link 68L: SW 69\_SW 60

Inflow Area = 109.300 ac, Inflow Depth > 1.89" for RI 2yr Eastern event  
 Inflow = 72.05 cfs @ 12.98 hrs, Volume= 17.246 af  
 Primary = 72.05 cfs @ 12.98 hrs, Volume= 17.246 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 68L: SW 59\_SW 60

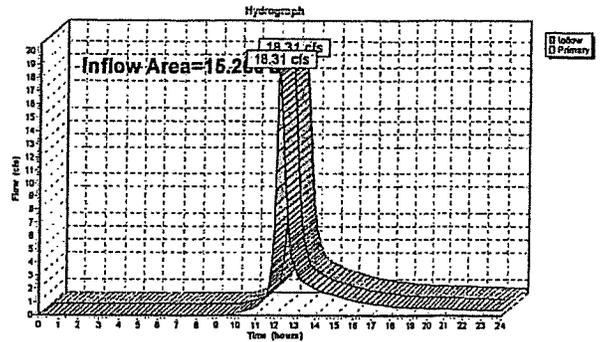


Link 69L: SW 14\_SW 17

Inflow Area = 15.260 ac, Inflow Depth > 1.52" for RI 2yr Eastern event  
 Inflow = 18.31 cfs @ 12.21 hrs, Volume= 1.927 af  
 Primary = 18.31 cfs @ 12.21 hrs, Volume= 1.927 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 69L: SW 14\_SW 17

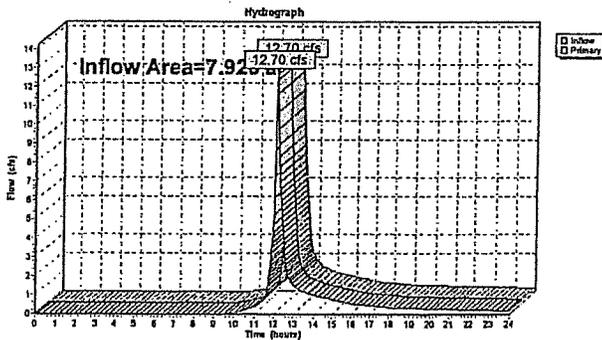


Link 70L: SW47\_SW49

Inflow Area = 7.920 ac, Inflow Depth > 1.49" for RI 2yr Eastern event  
 Inflow = 12.70 cfs @ 12.12 hrs, Volume= 0.981 af  
 Primary = 12.70 cfs @ 12.12 hrs, Volume= 0.981 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 70L: SW47\_SW49

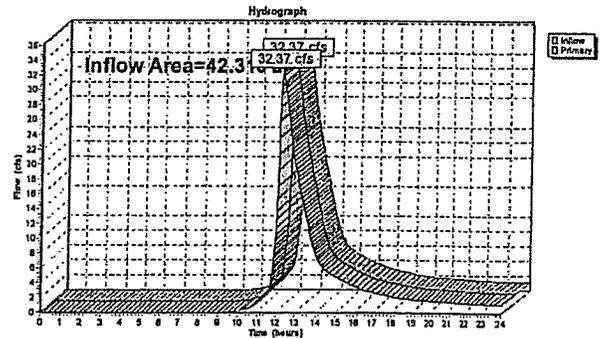


Link 71L: Elbow St

Inflow Area = 42.310 ac, Inflow Depth > 1.57" for RI 2yr Eastern event  
 Inflow = 32.37 cfs @ 12.29 hrs, Volume= 5.535 af  
 Primary = 32.37 cfs @ 12.29 hrs, Volume= 5.535 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 71L: Elbow St



**10-Year Storm**



3416 Watershed Yield

Prepared by BETA Group, Inc.  
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Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Page 1  
9/18/2007

Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Table with 3 columns: Subcatchment ID, Runoff Area, and Runoff Depth. Rows include subcatchments 15S through 14S.

3416 Watershed Yield

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Type III 24-hr RI 10yr Eastern Rainfall=4.90"

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Table with 3 columns: Subcatchment ID, Runoff Area, and Runoff Depth. Rows include subcatchments 15S through 31S.

3416 Watershed Yield

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Type III 24-hr RI 10yr Eastern Rainfall=4.90"

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Table with 3 columns: Subcatchment ID, Runoff Area, and Runoff Depth. Rows include subcatchments 32S through 48S.

3416 Watershed Yield

Prepared by BETA Group, Inc.  
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Type III 24-hr RI 10yr Eastern Rainfall=4.90"

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Table with 3 columns: Subcatchment ID, Runoff Area, and Runoff Depth. Rows include subcatchments 49S through 65S.

<b>Subcatchment 66S: Su-watershed 66</b>	Runoff Area=4.660 ac Runoff Depth>2.86" Flow Length=863' Tc=22.0 min CN=81 Runoff=10.26 cfs 1.120 af
<b>Subcatchment 67S: Sub-watershed 67</b>	Runoff Area=3.140 ac Runoff Depth>3.16" Flow Length=880' Tc=28.6 min CN=84 Runoff=8.73 cfs 0.827 af
<b>Subcatchment 68S: Sub-watershed 68</b>	Runoff Area=20.630 ac Runoff Depth>2.80" Flow Length=1,184' Tc=18.0 min CN=80 Runoff=47.75 cfs 4.807 af
<b>Reach 3R: Intermittent Stream</b>	Avg. Depth=0.65' Max Vel=2.55 fps Inflow=43.97 cfs 5.169 af n=0.070 L=725.0' S=0.0283' Capacity=253.16 cfs Outflow=37.11 cfs 5.139 af
<b>Pond 2P: Highview Pond Existing</b>	Peak Elev=121.16' Storage=39,519 cf Inflow=47.53 cfs 5.211 af Outflow=43.97 cfs 5.169 af
<b>Link 68L: SW 59_SW 60</b>	Inflow=124.02 cfs 29,288 af Primary=124.02 cfs 29,288 af
<b>Link 69L: SW 14_SW 17</b>	Inflow=33.76 cfs 3,496 af Primary=33.76 cfs 3,496 af
<b>Link 70L: SW47_SW49</b>	Inflow=23.43 cfs 1,790 af Primary=23.43 cfs 1,790 af
<b>Link 71L: Elbow St</b>	Inflow=62.54 cfs 9,845 af Primary=62.54 cfs 9,845 af

Total Runoff Area = 746.870 ac Runoff Volume = 190.298 af Average Runoff Depth = 3.06"  
 66.54% Pervious Area = 496.954 ac 33.46% Impervious Area = 249.916 ac

**Subcatchment 15: Sub-watershed 1**

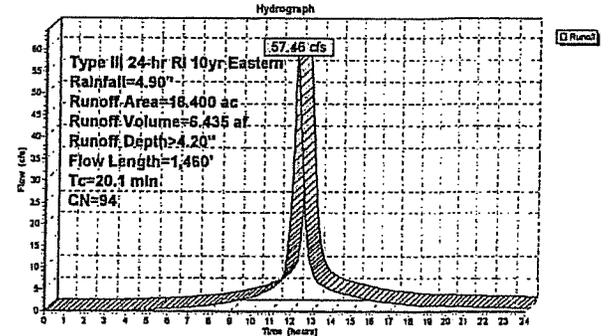
Runoff = 57.46 cfs @ 12.26 hrs, Volume= 6.435 af, Depth> 4.20"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
16.400	84	Urban commercial, 85% Imp, HSG C
2.760		Pervious Area
15.840		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0150	0.16		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
8.9	1,240	0.0210	2.33		Shallow Concentrated Flow, B-C Unpaved Kv= 16.1 fps
0.5	120	0.0330	3.69		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
20.1	1,460				Total

**Subcatchment 15: Sub-watershed 1**



**Subcatchment 2S: Sub-watershed 2**

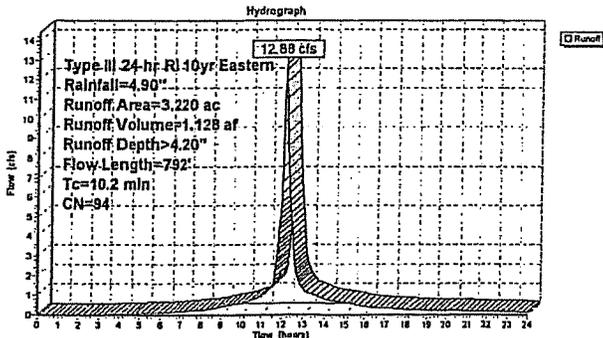
Runoff = 12.88 cfs @ 12.14 hrs, Volume= 1.128 af, Depth> 4.20"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
3.220	84	Urban commercial, 85% Imp, HSG C
0.483		Pervious Area
2.737		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
2.4	394	0.0280	2.69		Shallow Concentrated Flow, B-C Unpaved Kv= 16.1 fps
1.7	298	0.0200	2.67		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
10.2	792				Total

**Subcatchment 2S: Sub-watershed 2**



**Subcatchment 3S: Sub-watershed 3**

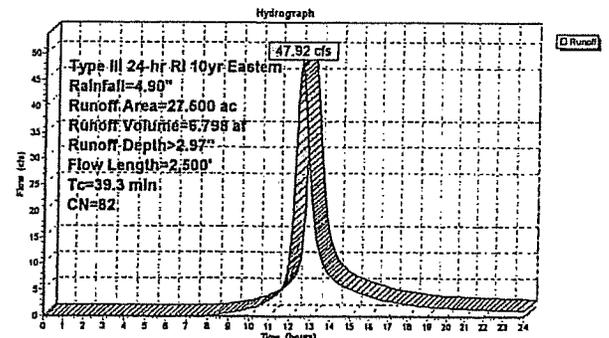
Runoff = 47.92 cfs @ 12.54 hrs, Volume= 6.798 af, Depth> 2.97"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
13.750	86	Pasture/grassland/range, Poor, HSG C
10.750	80	1/2 acre lots, 25% imp, HSG C
3.000	73	Woods, Fair, HSG C
27.500	82	Weighted Average
24.813		Pervious Area
2.688		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	100	0.0100	0.28		Sheet Flow, A-B Cultivated: Residuo<=20% n= 0.060 P2= 3.40"
19.4	1,200	0.0217	1.03		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
13.9	1,200	0.0050	1.44		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
39.3	2,500				Total

**Subcatchment 3S: Sub-watershed 3**



Subcatchment 4S: Sub-watershed 4

Runoff = 84.02 cfs @ 12.67 hrs, Volume= 10.630 af, Depth> 3.64"

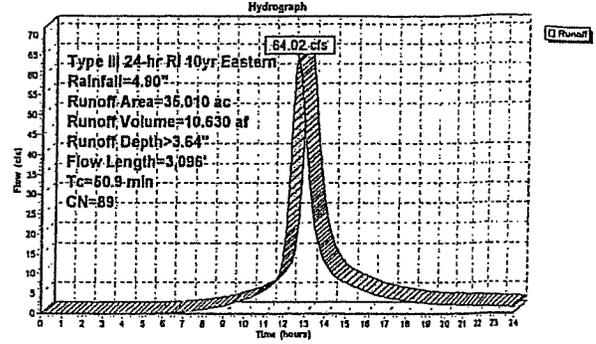
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
5.901	90	Fallow, crop residue, Poor, HSG C
17.070	94	Urban commercial, 85% imp, HSG C
5.647	79	Pasture/grassland/range, Fair, HSG C
3.680	79	1 acre lots, 20% imp, HSG C
2.712	91	Urban Industrial, 72% imp, HSG C
35.010	89	Weighted Average
17.812		Pervious Area
17.198		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.8	106	0.0190	0.96		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.2	30	0.0170	2.65		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.6	70	0.0860	2.05		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
0.7	82	0.0100	2.03		Shallow Concentrated Flow, E-F
					Paved Kv= 20.3 fps
24.2	322	0.0010	0.22		Shallow Concentrated Flow, F-G
					Short Grass Pasture Kv= 7.0 fps
13.9	2,386	0.0200	2.87		Shallow Concentrated Flow, G-H
					Paved Kv= 20.3 fps
50.9	3,096				Total

Subcatchment 4S: Sub-watershed 4



Subcatchment 6S: Sub-Watershed 6

Runoff = 7.96 cfs @ 12.08 hrs, Volume= 0.547 af, Depth> 2.80"

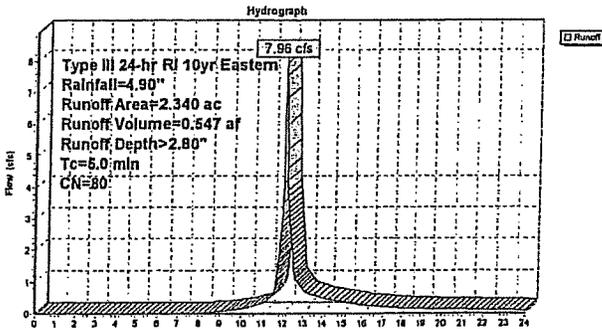
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
2.340	80	1/2 acre lots, 25% imp, HSG C
1.755		Pervious Area
0.585		Impervious Area

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

Subcatchment 6S: Sub-Watershed 6



Subcatchment 6dS: Sub-watershed 6d

Runoff = 2.99 cfs @ 12.07 hrs, Volume= 0.221 af, Depth> 4.21"

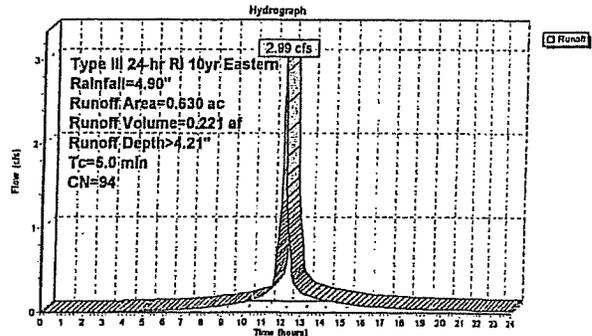
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.630	94	Urban commercial, 85% imp, HSG C
0.095		Pervious Area
0.535		Impervious Area

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

Subcatchment 6dS: Sub-watershed 6d



Subcatchment 6eS: Sub-watershed 6e

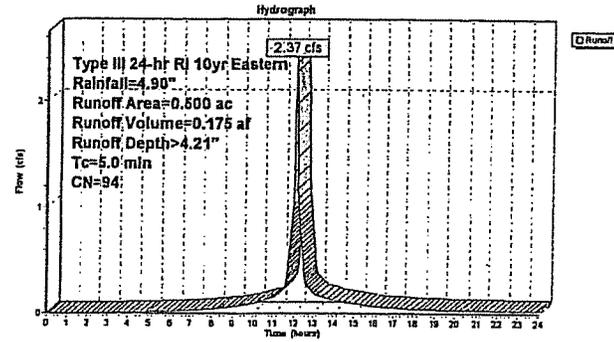
Runoff = 2.37 cfs @ 12.07 hrs, Volume= 0.175 af, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.500	94	Urban commercial, 85% Imp, HSG C
0.075		Pervious Area
0.425		Impervious Area

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

Subcatchment 6eS: Sub-watershed 6e



Subcatchment 6S: Sub-watershed 6

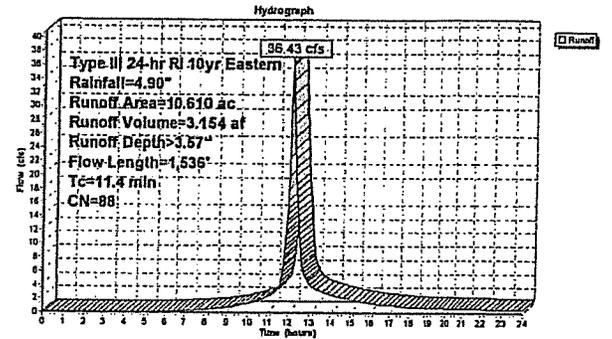
Runoff = 36.43 cfs @ 12.15 hrs, Volume= 3.154 af, Depth> 3.57"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
8.380	87	Dirt roads, HSG C
2.230	94	Urban commercial, 85% Imp, HSG C
10.810	88	Weighted Average
5.714		Pervious Area
1.895		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	100	0.0800	2.59		Sheet Flow, A-B
10.8	1,438	0.0120	2.22		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
11.4	1,536	Total			

Subcatchment 6S: Sub-watershed 6



Subcatchment 8S: Sub-watershed 8

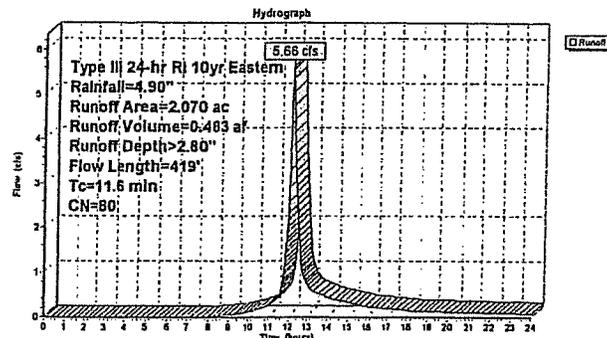
Runoff = 5.66 cfs @ 12.16 hrs, Volume= 0.483 af, Depth> 2.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
2.070	80	1/2 acre lots, 25% Imp, HSG C
1.552		Pervious Area
0.517		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
3.1	228	0.0300	1.21		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
0.4	91	0.0400	4.08		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
11.6	419	Total			

Subcatchment 8S: Sub-watershed 8



Subcatchment 9S: Sub-watershed 9

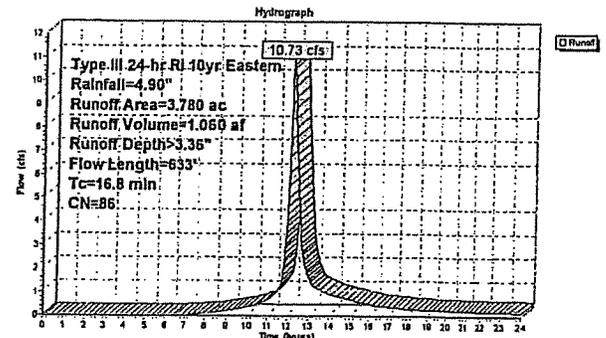
Runoff = 10.73 cfs @ 12.23 hrs, Volume= 1.060 af, Depth> 3.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
2.990	90	1/8 acre lots, 65% Imp, HSG C
0.790	73	Woods, Fair, HSG C
3.780	86	Weighted Average
1.637		Pervious Area
1.944		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
4.7	200	0.0200	0.71		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
1.7	160	0.0500	1.57		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
0.9	173	0.0230	3.08		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
16.8	633	Total			

Subcatchment 9S: Sub-watershed 9



Subcatchment 10S: Sub-watershed 10

Runoff = 21.56 cfs @ 12.26 hrs, Volume= 2,238 af, Depth> 3.07"

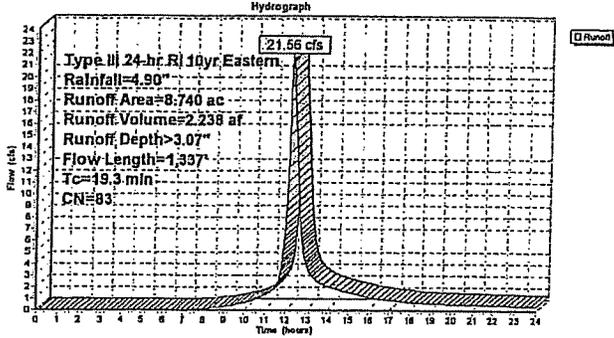
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
8.740	83	1/4 acre lots, 38% imp, HSG C
5.419		Pervious Area
3.321		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
3.8	196	0.0150	0.66		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
6.0	1,041	0.0200	2.87		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, B-C
19.3	1,337				Paved Kv= 20.3 fps

Subcatchment 10S: Sub-watershed 10



Subcatchment 11S: Sub-watershed 11

Runoff = 62.00 cfs @ 12.35 hrs, Volume= 7,460 af, Depth> 3.66"

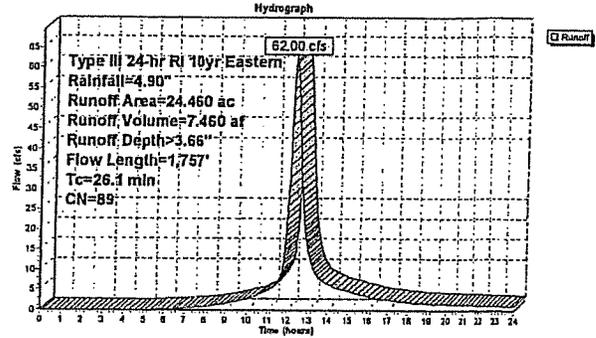
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
5.370	90	Fallow, crop residue, Poor, HSG C
10.340	94	Urban commercial, 85% imp, HSG C
8.750	83	1/4 acre lots, 38% imp, HSG C
24.460	89	Weighted Average
12.346		Pervious Area
12.114		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	100	0.0200	0.36		Sheet Flow, A-B
12.0	504	0.0100	0.70		Cultivated: Residue=20% n= 0.050 P2= 3.40" Shallow Concentrated Flow, B-C
9.5	1,153	0.0100	2.03		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
26.1	1,757				Paved Kv= 20.3 fps

Subcatchment 11S: Sub-watershed 11



Subcatchment 12S: Sub-watershed 12

Runoff = 9.91 cfs @ 12.21 hrs, Volume= 0,982 af, Depth> 3.88"

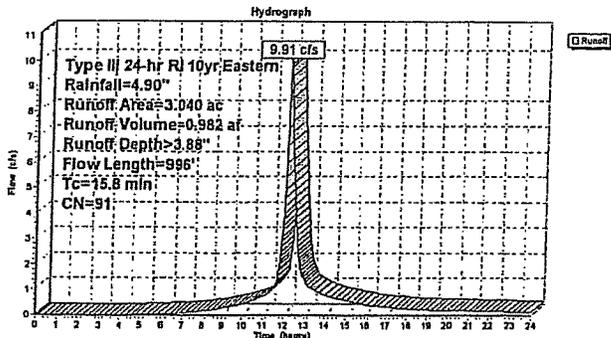
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
2.130	94	Urban commercial, 85% imp, HSG C
0.910	83	1/4 acre lots, 38% imp, HSG C
3.040	91	Weighted Average
0.884		Pervious Area
2.156		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0300	0.21		Sheet Flow, A-B
5.5	462	0.0400	1.40		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, A-B
2.2	434	0.0270	3.34		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
15.8	996				Paved Kv= 20.3 fps

Subcatchment 12S: Sub-watershed 12



Subcatchment 13S: Sub-watershed 13

Runoff = 23.72 cfs @ 12.07 hrs, Volume= 1,631 af, Depth> 2.89"

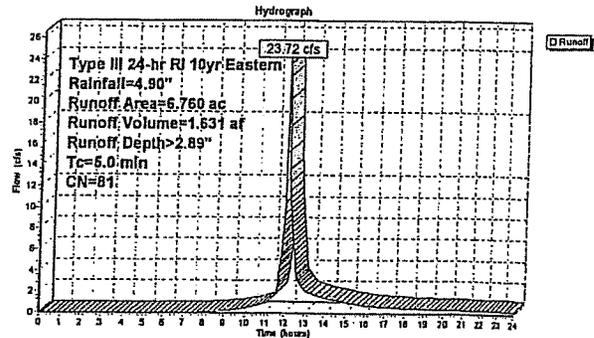
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
6.760	81	1/3 acre lots, 30% imp, HSG C
4.732		Pervious Area
2.028		Impervious Area

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

Subcatchment 13S: Sub-watershed 13



Subcatchment 14S: Sub-watershed 14

Runoff = 21.20 cfs @ 12.16 hrs, Volume= 1.820 af, Depth= 2.71"

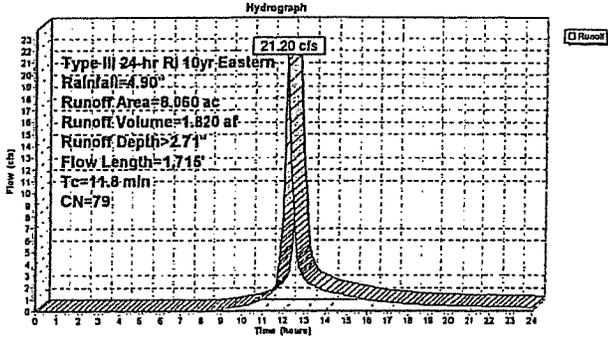
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.240	84	Urban commercial, 85% Imp, HSG C
7.820	79	1 acre lots, 20% Imp, HSG C
8.060	79	Weighted Average
8.292		Pervious Area
1.768		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.07		Sheet Flow, A-B
10.2	1,615	0.0170	2.65		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
11.8	1,715				Total

Subcatchment 14S: Sub-watershed 14



Subcatchment 15S: Sub-watershed 15

Runoff = 47.53 cfs @ 12.31 hrs, Volume= 5.211 af, Depth= 2.88"

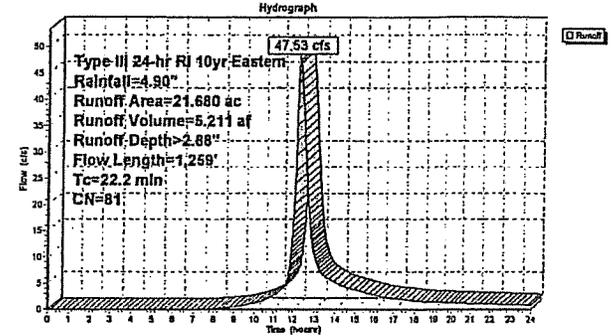
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
15.390	79	1 acre lots, 20% Imp, HSG C
5.090	80	1/8 acre lots, 65% Imp, HSG C
1.200	76	Woods/grass comb, Fall, HSG C
21.680	81	Weighted Average
15.294		Pervious Area
6.387		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
1.3	168	0.0120	2.22		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
12.8	991	0.0340	1.29		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
22.2	1,259				Total

Subcatchment 15S: Sub-watershed 15



Subcatchment 16S: Sub-watershed 16

Runoff = 7.61 cfs @ 12.18 hrs, Volume= 0.681 af, Depth= 2.98"

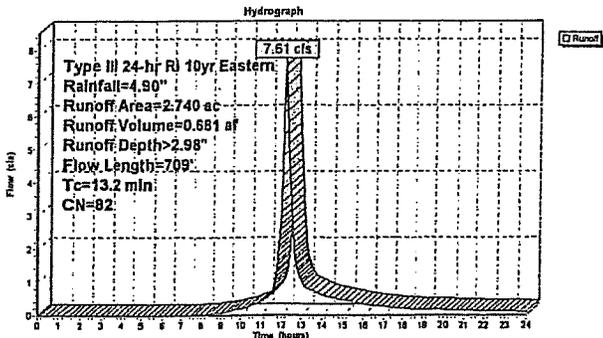
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
2.330	81	1/3 acre lots, 30% Imp, HSG C
0.410	91	Fallow, bare soil, HSG C
2.740	82	Weighted Average
2.041		Pervious Area
0.699		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
2.0	161	0.0370	1.35		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.7	448	0.0450	4.31		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
13.2	709				Total

Subcatchment 16S: Sub-watershed 16



Subcatchment 17S: Sub-watershed 17

Runoff = 15.46 cfs @ 12.30 hrs, Volume= 1.676 af, Depth= 2.79"

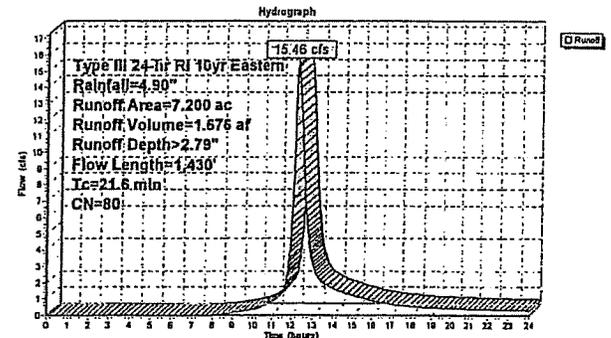
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
7.200	80	1/2 acre lots, 25% Imp, HSG C
5.400		Pervious Area
1.800		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-C
1.8	338	0.0240	3.14		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.5	125	0.0400	4.06		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	260	0.0460	1.50		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
3.9	607	0.0160	2.57		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
21.6	1,430				Total

Subcatchment 17S: Sub-watershed 17



Subcatchment 18S: Sub-watershed 18

Runoff = 38.31 cfs @ 12.16 hrs, Volume= 3.231 af, Depth= 2.80"

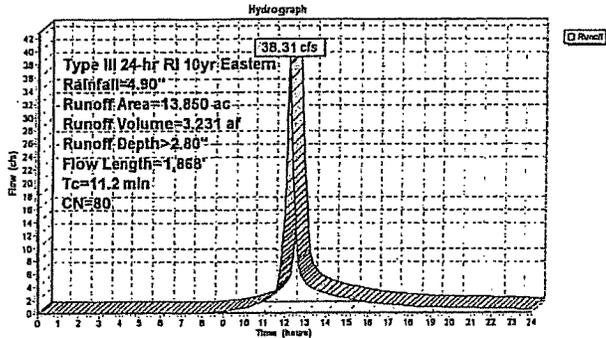
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.80"

Area (ac)	CN	Description
13.160	80	1/2 acre lots, 25% Imp, HSG C
0.690	73	Woods, Fair, HSG C
13.850	80	Weighted Average
10.560		Pervious Area
3.290		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.05		Sheet Flow, A-B
3.3	299	0.0470	1.52		Smooth surfaces n= 0.011 P2= 3.40"
7.1	1,469	0.0290	3.46		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.2	1,868	Total			

Subcatchment 18S: Sub-watershed 18



Subcatchment 19S: Sub-watershed 19

Subcatchment 19S: Sub-watershed 19

Runoff = 32.77 cfs @ 12.87 hrs, Volume= 6.083 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
1.460	84	Urban commercial, 85% Imp, HSG C
1.460	80	1/2 acre lots, 25% Imp, HSG C
26.240	76	Woods/grass comb, Fair, HSG C
29.160	77	Weighted Average
27.554		Pervious Area
1.606		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0160	0.11		Sheet Flow, A-B
2.9	161	0.0170	0.91		Grass: Dense n= 0.240 P2= 3.40"
0.1	17	0.0230	3.08		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
1.2	80	0.0250	1.11		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
0.1	13	0.0200	2.87		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
35.7	678	0.0040	0.32		Shallow Concentrated Flow, F-G Woodland Kv= 5.0 fps
8.6	1,052	0.0100	2.03		Shallow Concentrated Flow, G-H Paved Kv= 20.3 fps
63.7	2,101	Total			

Subcatchment 20S: Sub-watershed 20

Runoff = 27.43 cfs @ 12.23 hrs, Volume= 2.700 af, Depth= 2.69"

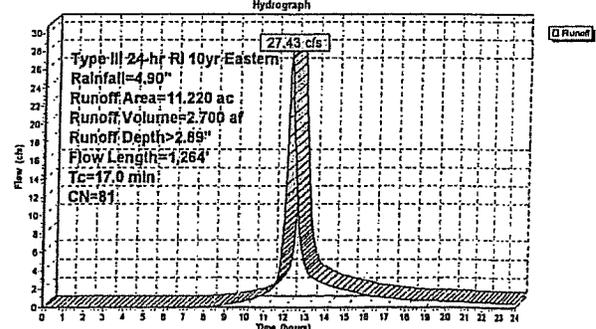
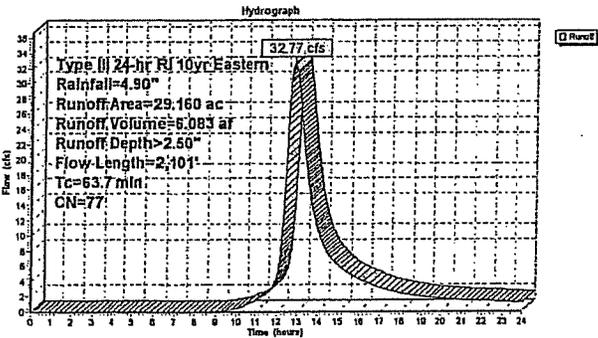
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
11.220	81	1/3 acre lots, 30% Imp, HSG C
7.854		Pervious Area
3.386		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
4.0	174	0.0110	0.73		Grass: Short n= 0.150 P2= 3.40"
4.9	990	0.0260	3.40		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
17.0	1,264	Total			

Subcatchment 20S: Sub-watershed 20



Subcatchment 21S: Sub-watershed 21

Runoff = 11.85 cfs @ 12.08 hrs, Volume= 0.890 af, Depth> 4.21"

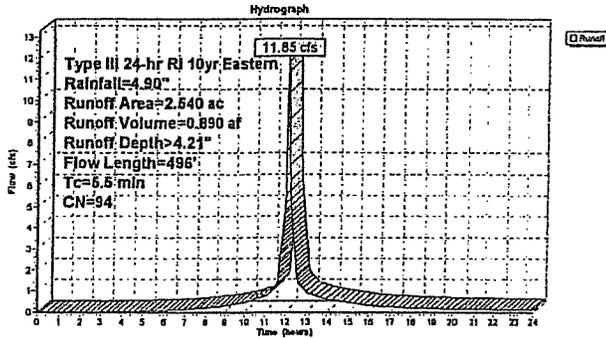
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
2.540	84	Urban commercial, 85% Imp, HSG C
0.381		Pervious Area
2.159		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	70	0.1000	0.31		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.2	30	0.1200	2.28		Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.40"
1.5	398	0.0450	4.31		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
5.5	498	Total			

Subcatchment 21S: Sub-watershed 21



Subcatchment 22S: Sub-watershed 22

Runoff = 27.65 cfs @ 12.10 hrs, Volume= 2.201 af, Depth> 4.21"

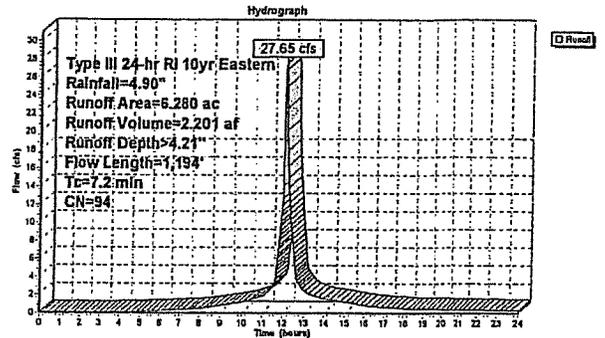
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
6.280	94	Urban commercial, 85% Imp, HSG C
0.942		Pervious Area
5.338		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0800	2.47		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
6.5	1,094	0.0190	2.80		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
7.2	1,194	Total			

Subcatchment 22S: Sub-watershed 22



Subcatchment 23S: Sub-watershed 23

Runoff = 4.27 cfs @ 12.07 hrs, Volume= 0.315 af, Depth> 4.21"

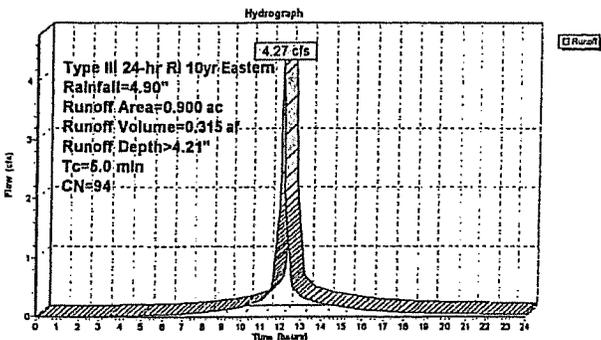
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.900	94	Urban commercial, 85% Imp, HSG C
0.135		Pervious Area
0.765		Impervious Area

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

Subcatchment 23S: Sub-watershed 23



Subcatchment 24S: Sub-watershed 24

Runoff = 19.18 cfs @ 12.17 hrs, Volume= 1.755 af, Depth> 3.88"

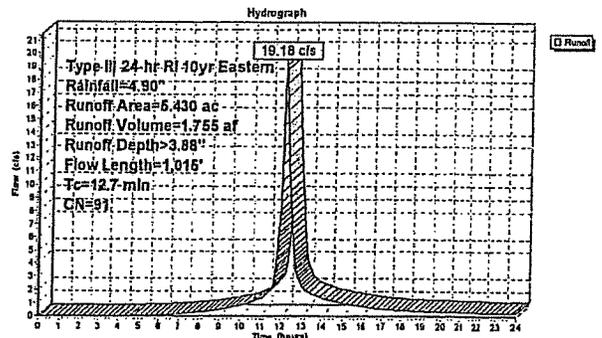
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
4.340	94	Urban commercial, 85% Imp, HSG C
1.090	81	1/3 acre lots, 30% Imp, HSG C
5.430	81	Weighted Average
1.414		Pervious Area
4.016		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0800	0.31		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
3.7	397	0.0650	1.78		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
3.5	518	0.0150	2.49		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
12.7	1,015	Total			

Subcatchment 24S: Sub-watershed 24



Subcatchment 25S: Sub-watershed 25

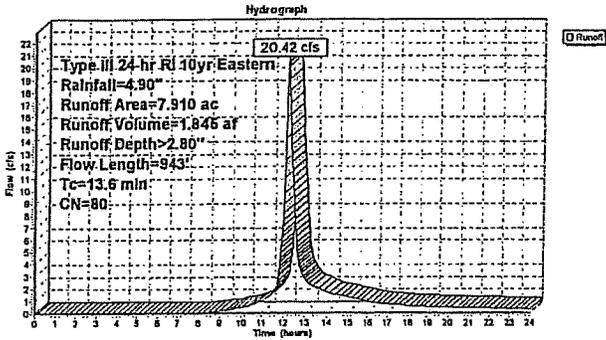
Runoff = 20.42 cfs @ 12.19 hrs, Volume= 1.845 af, Depth> 2.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
7.120	81	1/3 acre lots, 30% Imp, HSG C
0.790	73	Woods, Fair, HSG C
7.910	80	Weighted Average
5.774		Pervious Area
2.136		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
3.5	276	0.0360	1.33		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.9	567	0.0250	3.21		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
13.6	943				Total

Subcatchment 25S: Sub-watershed 25



Subcatchment 26S: Sub-watershed 26

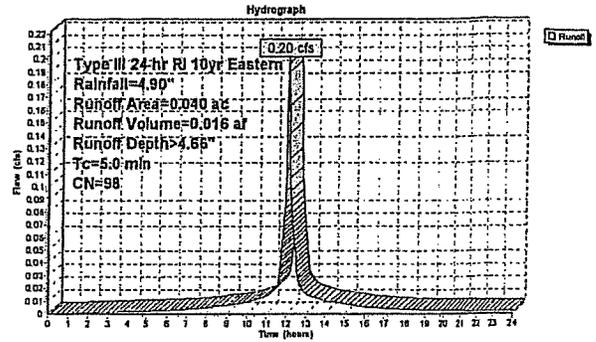
Runoff = 0.20 cfs @ 12.07 hrs, Volume= 0.016 af, Depth> 4.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.040	98	Paved parking & roofs
0.040		Impervious Area

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

Subcatchment 26S: Sub-watershed 26



Subcatchment 27S: Sub-watershed 27

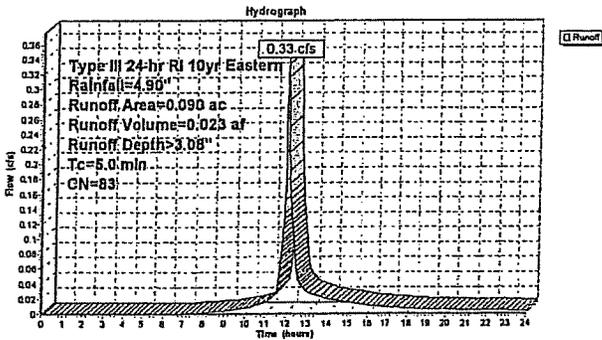
Runoff = 0.33 cfs @ 12.07 hrs, Volume= 0.023 af, Depth> 3.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.090	83	1/4 acre lots, 38% Imp, HSG C
0.056		Pervious Area
0.034		Impervious Area

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

Subcatchment 27S: Sub-watershed 27



Subcatchment 28S: Sub-watershed 28

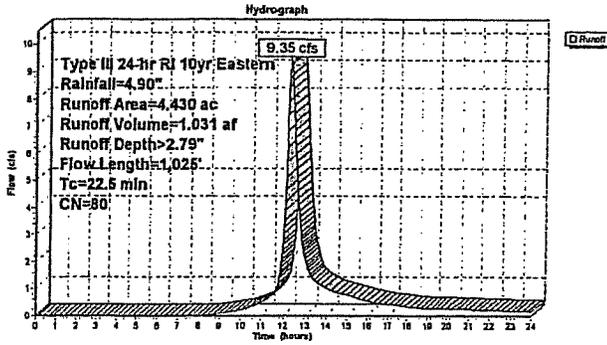
Runoff = 9.35 cfs @ 12.31 hrs, Volume= 1.031 af, Depth> 2.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
3.990	81	1/3 acre lots, 30% Imp, HSG C
0.440	73	Woods, Fair, HSG C
4.430	80	Weighted Average
3.233		Pervious Area
1.197		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.16		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.4	23	0.0220	1.04		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.1	19	0.0200	2.87		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
0.4	23	0.0200	0.99		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
0.1	22	0.0200	2.87		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
7.5	426	0.0360	0.95		Shallow Concentrated Flow, F-G Woodland Kv= 5.0 fps
1.2	100	0.0400	1.40		Shallow Concentrated Flow, G-H Short Grass Pasture Kv= 7.0 fps
3.3	312	0.0060	1.57		Shallow Concentrated Flow, H-I Paved Kv= 20.3 fps
22.5	1,025				Total

Subcatchment 28S: Sub-watershed 28



Subcatchment 29S: Sub-watershed 29

Runoff = 29.18 cfs @ 12.15 hrs, Volume= 2,459 af, Depth> 2.88"

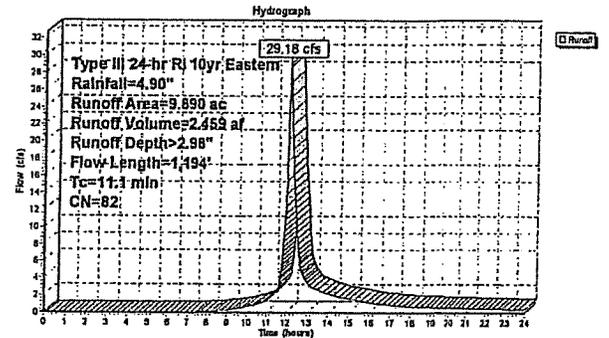
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.480	74	>75% Grass cover, Good, HSG C
0.880	84	Urban commercial, 85% Imp, HSG C
8.420	81	1/3 acre lots, 30% Imp, HSG C
8.890	82	Weighted Average
6.531		Pervious Area
3.359		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0110	1.12		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
6.7	453	0.0260	1.13		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.9	641	0.0330	3.69		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.1	1,194	Total			

Subcatchment 29S: Sub-watershed 29



Subcatchment 30S: Sub-watershed 30

Runoff = 4.55 cfs @ 12.18 hrs, Volume= 0.405 af, Depth> 2.89"

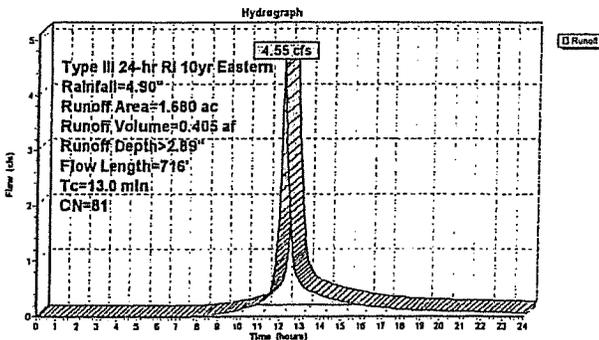
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
1.680	81	1/3 acre lots, 30% Imp, HSG C
1.176		Pervious Area
0.504		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.2	118	0.0510	1.58		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.3	498	0.0320	3.63		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
13.0	716	Total			

Subcatchment 30S: Sub-watershed 30



Subcatchment 31S: Sub-watershed 31

Runoff = 47.63 cfs @ 12.39 hrs, Volume= 5,754 af, Depth> 2.52"

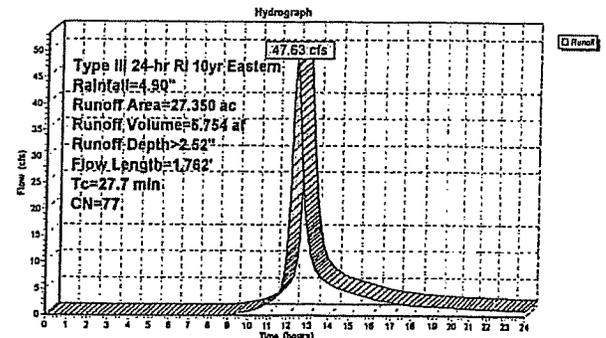
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
12.350	81	1/3 acre lots, 30% Imp, HSG C
15.000	74	>75% Grass cover, Good, HSG C
27.350	77	Weighted Average
23.645		Pervious Area
3.705		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.25		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
15.3	1,075	0.0280	1.17		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.8	587	0.0070	1.70		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
27.7	1,762	Total			

Subcatchment 31S: Sub-watershed 31



Subcatchment 32S: Sub-watershed32

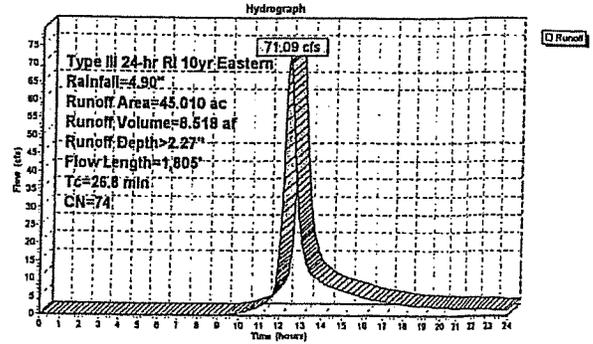
Runoff = 71.09 cfs @ 12.38 hrs, Volume= 8.518 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
14.440	81	1/3 acre lots, 30% imp, HSG C
13.320	69	50-75% Grass cover, Fair, HSG B
15.110	73	Woods, Fair, HSG C
0.900	88	Fallow, crop residue, Good, HSG C
1.240	56	Brush, Fair, HSG B
45.010	74	Weighted Average
40.678		Pervious Area
4.332		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0840	0.14		Sheet Flow, A-B Grass: Bermuda n= 0.410 P2= 3.40"
2.3	179	0.0698	1.32		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
2.9	654	0.0528	3.70		Shallow Concentrated Flow, C-D Unpaved Kv= 16.1 fps
5.8	474	0.0738	1.35		Shallow Concentrated Flow, D-E Woodland Kv= 5.0 fps
3.8	398	0.0075	1.76		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
26.8	1,805	Total			

Subcatchment 32S: Sub-watershed32



Subcatchment 33S: Sub-watershed 33

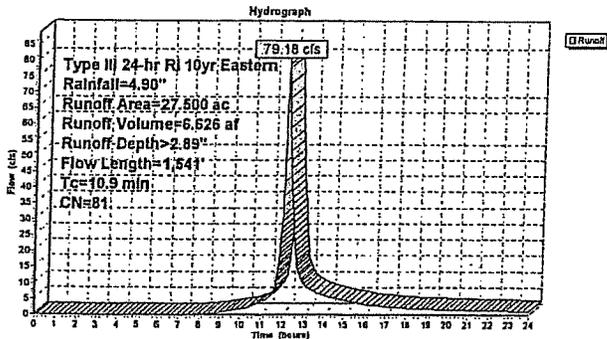
Runoff = 79.18 cfs @ 12.15 hrs, Volume= 6.626 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.950	94	Urban commercial, 85% imp, HSG C
26.540	81	1/3 acre lots, 30% imp, HSG C
27.500	81	Weighted Average
18.722		Pervious Area
8.778		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1200	0.36		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.0	154	0.1400	2.62		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.3	1,287	0.0400	4.08		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
10.9	1,541	Total			

Subcatchment 33S: Sub-watershed 33



Subcatchment 34S: Sub-watershed 34

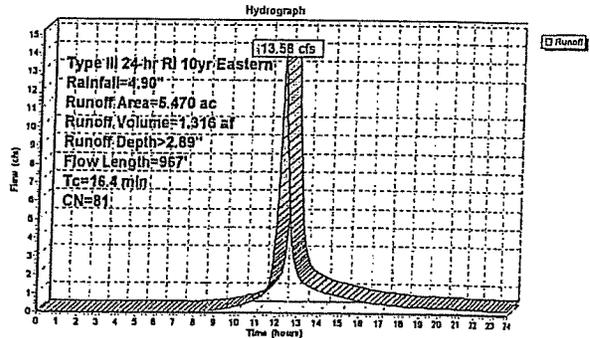
Runoff = 13.58 cfs @ 12.22 hrs, Volume= 1.316 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
5.470	81	1/3 acre lots, 30% imp, HSG C
3.829		Pervious Area
1.641		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.8	131	0.0300	1.21		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.1	736	0.0140	2.40		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
16.4	967	Total			

Subcatchment 34S: Sub-watershed 34



Subcatchment 35S: Sub-watershed 35

Runoff = 6.90 cfs @ 12.16 hrs, Volume= 0.600 af, Depth> 3.57"

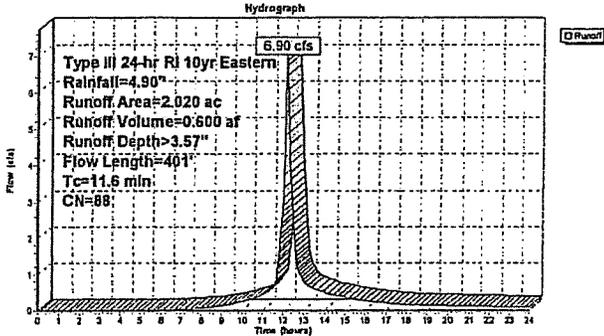
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
1.010	84	Urban commercial, 85% imp, HSG C
1.010	81	1/3 acre lots, 30% imp, HSG C
2.020	88	Weighted Average
0.859		Pervious Area
1.161		Impervious Area

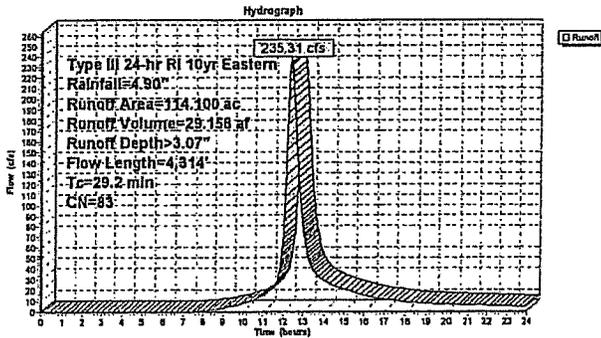
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
2.0	111	0.0180	0.94		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
1.5	180	0.0110	2.13		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.6	401	Total			

Subcatchment 36S: Sub-watershed 35



Subcatchment 36S: Sub-watershed 36



Subcatchment 36S: Sub-watershed 36

Runoff = 235.31 cfs @ 12.40 hrs, Volume= 29.156 af, Depth> 3.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
81.170	83	1/4 acre lots, 38% imp, HSG C
9.230	84	Urban commercial, 85% imp, HSG C
6.090	60	Woods, Fair, HSG B
0.440	69	50-75% Grass cover, Fair, HSG B
4.180	56	Brush, Fair, HSG B
12.990	81	Urban Industrial, 72% imp, HSG C
114.100	83	Weighted Average
66.057		Pervious Area
48.043		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
1.4	172	0.0810	1.99		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
16.3	4,042	0.0330	3.69		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
29.2	4,314	Total			

Subcatchment 37S: Sub-watershed 37

Runoff = 14.19 cfs @ 12.13 hrs, Volume= 1.156 af, Depth> 3.37"

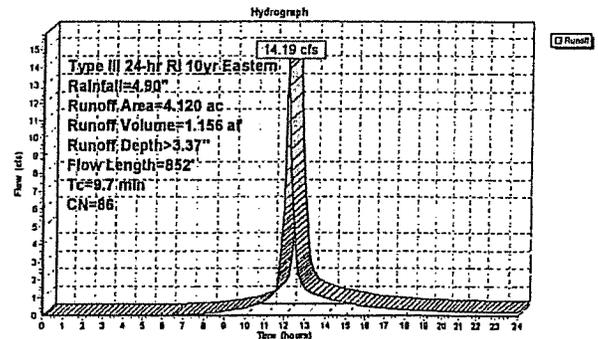
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
1.240	81	1/3 acre lots, 30% imp, HSG C
2.470	91	Urban Industrial, 72% imp, HSG C
0.410	74	>75% Grass cover, Good, HSG C
4.120	88	Weighted Average
1.970		Pervious Area
2.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.67		Sheet Flow, A-B
8.7	752	0.0050	1.44		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C
9.7	852	Total			Paved Kv= 20.3 fps

Subcatchment 37S: Sub-watershed 37



Subcatchment 38S: Sub-watershed 38

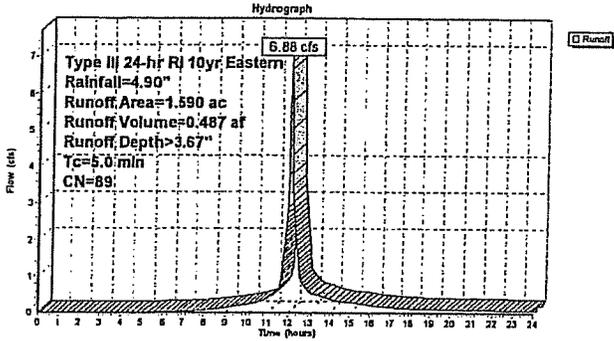
Runoff = 6.88 cfs @ 12.07 hrs, Volume= 0.487 af, Depth> 3.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.160	91	Urban Industrial, 72% Imp, HSG C
0.320	79	Pasture/grassland/range, Fair, HSG C
1.110	91	Urban Industrial, 72% Imp, HSG C
1.590	89	Weighted Average
0.676		Pervious Area
0.914		Impervious Area

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

Subcatchment 38S: Sub-watershed 38



Subcatchment 39S: Sub-watershed 39

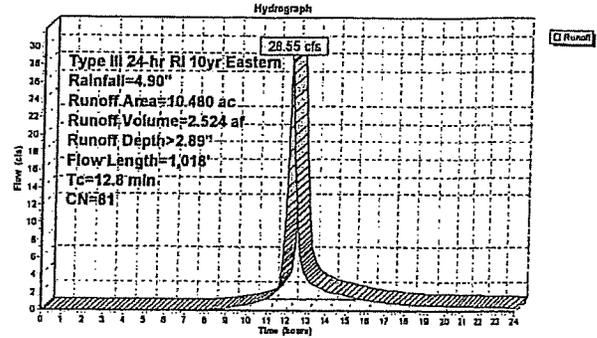
Runoff = 28.55 cfs @ 12.18 hrs, Volume= 2.524 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.520	79	Pasture/grassland/range, Fair, HSG C
9.950	81	1/3 acre lots, 30% Imp, HSG C
10.480	81	Weighted Average
7.482		Pervious Area
2.988		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B
1.8	212	0.0750	1.92		Grass: Short n= 0.150 P2= 3.40"
2.0	387	0.0260	3.27		Shallow Concentrated Flow, B-C
2.9	319	0.0690	1.84		Short Grass Pasture Kv= 7.0 fps
					Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
					Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
12.8	1,018	Total			

Subcatchment 39S: Sub-watershed 39



Subcatchment 40S: Sub-watershed 40

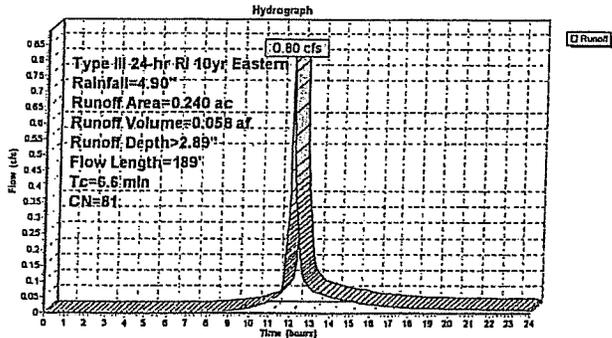
Runoff = 0.80 cfs @ 12.10 hrs, Volume= 0.058 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.240	81	1/3 acre lots, 30% Imp, HSG C
0.168		Pervious Area
0.072		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B
0.5	89	0.1500	2.71		Grass: Short n= 0.150 P2= 3.40"
					Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
6.6	189	Total			

Subcatchment 40S: Sub-watershed 40



Subcatchment 41S: Sub-watershed 41

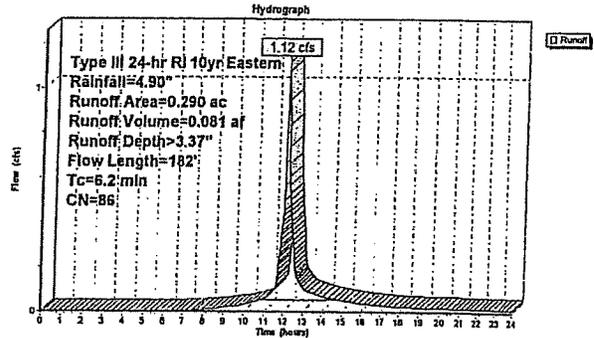
Runoff = 1.12 cfs @ 12.09 hrs, Volume= 0.081 af, Depth> 3.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.290	88	Pasture/grassland/range, Poor, HSG C
0.290		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0800	0.31		Sheet Flow, A-B
0.7	82	0.0730	1.89		Grass: Short n= 0.150 P2= 3.40"
					Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
6.2	182	Total			

Subcatchment 41S: Sub-watershed 41



Subcatchment 42S: Sub-watershed 42

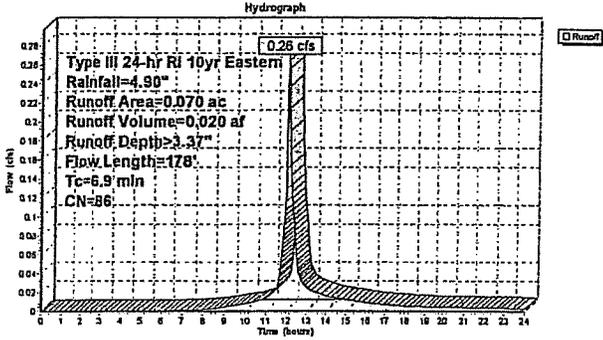
Runoff = 0.26 cfs @ 12.10 hrs, Volume= 0.020 af, Depth> 3.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.070	86	Pasture/grassland/range, Poor, HSG C
0.070		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B
0.8	78	0.0510	1.58		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
6.9	178				Total

Subcatchment 42S: Sub-watershed 42



Subcatchment 43S: Sub-watershed 43

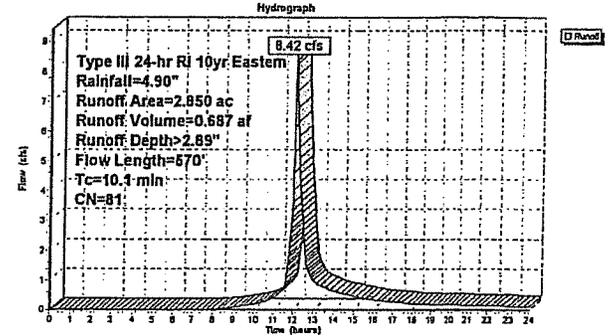
Runoff = 8.42 cfs @ 12.14 hrs, Volume= 0.687 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
2.850	81	1/3 acre lots, 30% imp, HSG C
1.995		Pervious Area
0.855		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B
1.8	228	0.0880	2.08		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.7	208	0.0100	2.03		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
0.5	36	0.0280	1.17		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
10.1	570				Total

Subcatchment 43S: Sub-watershed 43



Subcatchment 44S: Sub-watershed 44

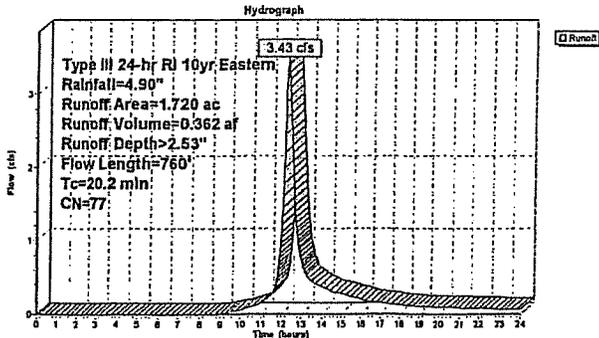
Runoff = 3.43 cfs @ 12.28 hrs, Volume= 0.362 af, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.860	81	1/3 acre lots, 30% imp, HSG C
0.860	73	Woods, Fair, HSG C
1.720	77	Weighted Average
1.462		Pervious Area
0.258		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0500	0.12		Sheet Flow, A-B
4.3	262	0.0420	1.02		Woods: Light underbrush n= 0.400 P2= 3.40" Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
1.5	398	0.0450	4.31		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
20.2	760				Total

Subcatchment 44S: Sub-watershed 44



Subcatchment 45S: Sub-watershed 45

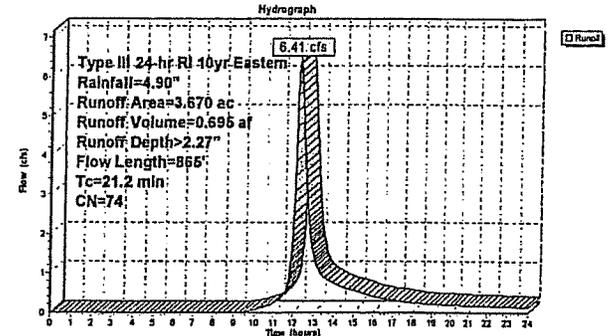
Runoff = 8.41 cfs @ 12.30 hrs, Volume= 0.695 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
3.120	73	Woods, Fair, HSG C
0.180	81	1/3 acre lots, 30% imp, HSG C
0.370	82	Woods/grass comb., Poor, HSG C
3.670	74	Weighted Average
3.618		Pervious Area
0.054		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
13.1	765	0.0380	0.97		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
21.2	865				Total

Subcatchment 45S: Sub-watershed 45



Subcatchment 46S: Sub-watershed 46

Runoff = 2.23 cfs @ 12.36 hrs, Volume= 0.259 af, Depth> 2.27"

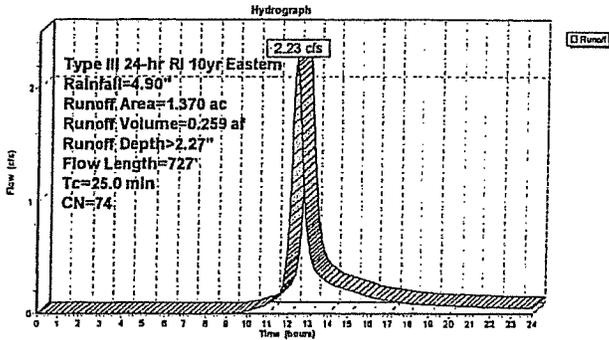
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
1.230	73	Woods, Fair, HSG C
0.140	82	Woods/grass comb., Poor, HSG C
1.370	74	Weighted Average
1.370		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0400	0.11		Sheet Flow, A-B
7.6	373	0.0270	0.82		Woods: Light underbrush n= 0.400 P2= 3.40" Shallow Concentrated Flow, B-C
1.6	254	0.0160	2.57		Woodland Kv= 5.0 fps Shallow Concentrated Flow, C-D
25.0	727				Paved Kv= 20.3 fps

Subcatchment 46S: Sub-watershed 46



Subcatchment 47S: Sub-watershed 47

Runoff = 22.53 cfs @ 12.12 hrs, Volume= 1.722 af, Depth> 2.71"

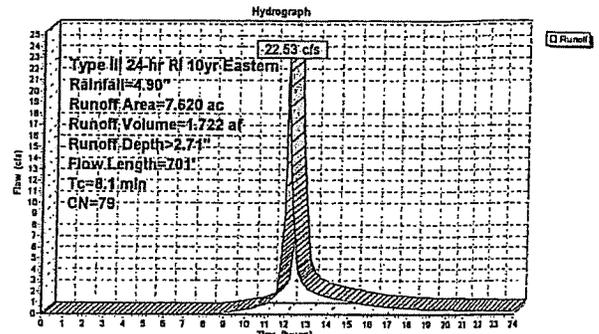
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
7.620	79	50-75% Grass cover, Fair, HSG C
7.620		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	100	0.1000	0.33		Sheet Flow, A-B
0.2	20	0.0500	1.57		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
2.9	581	0.0280	3.40		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
8.1	701				Paved Kv= 20.3 fps

Subcatchment 47S: Sub-watershed 47



Subcatchment 48S: Sub-watershed 48

Runoff = 4.45 cfs @ 12.12 hrs, Volume= 0.349 af, Depth> 3.17"

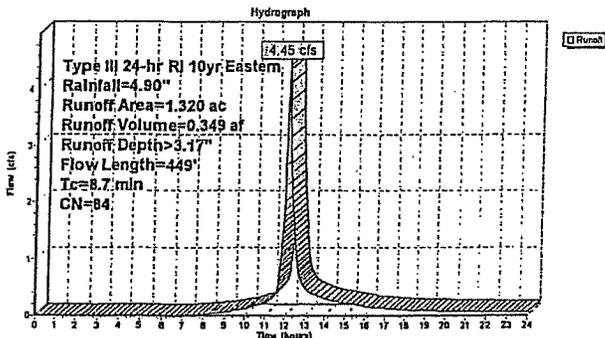
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
1.320	84	50-75% Grass cover, Fair, HSG D
1.320		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B
0.4	39	0.0510	1.58		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
2.2	310	0.0130	2.31		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
8.7	449				Paved Kv= 20.3 fps

Subcatchment 48S: Sub-watershed 48



Subcatchment 49S: Sub-watershed 49

Runoff = 0.91 cfs @ 12.11 hrs, Volume= 0.068 af, Depth> 2.71"

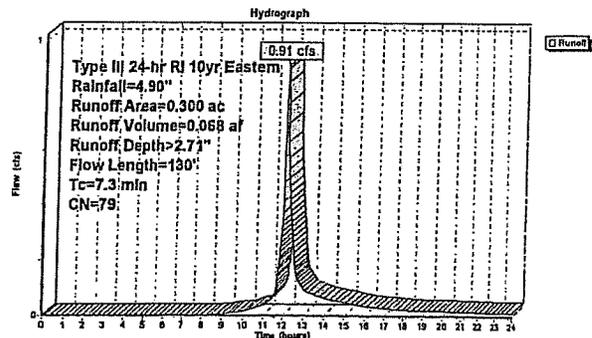
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.300	79	50-75% Grass cover, Fair, HSG C
0.300		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B
0.1	11	0.1800	2.97		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
0.0	19	0.1100	6.73		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
7.3	130				Paved Kv= 20.3 fps

Subcatchment 49S: Sub-watershed 49



Subcatchment 50S: Sub-watershed 50

Runoff = 5.07 cfs @ 12.16 hrs, Volume= 0.429 af, Depth> 2.71"

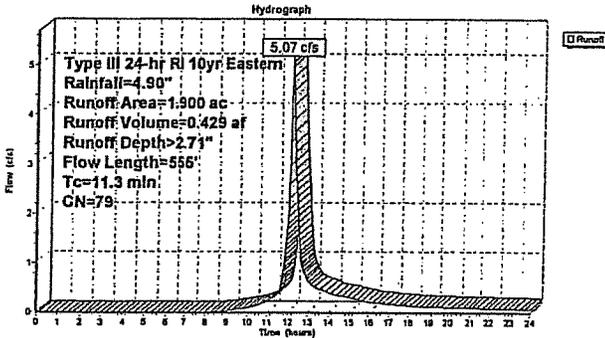
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
1.900	79	50-75% Grass cover, Fair, HSG C
1.900		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0500	0.25		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
4.5	419	0.0500	1.57		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.2	36	0.0170	2.65		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.3	555				Total

Subcatchment 50S: Sub-watershed 50



Subcatchment 51S: Sub-watershed 51

Runoff = 17.36 cfs @ 12.07 hrs, Volume= 1.246 af, Depth> 3.88"

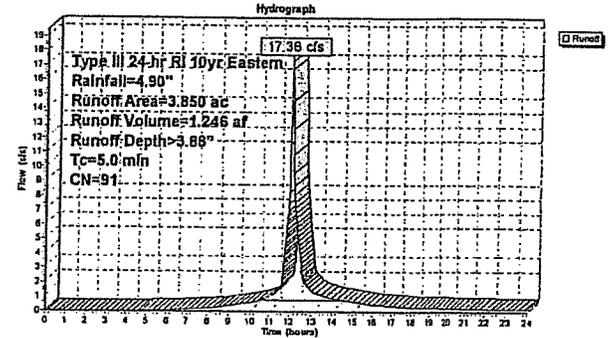
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
3.850	81	Urban industrial, 72% imp, HSG C
1.078		Pervious Area
2.772		Impervious Area

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

Subcatchment 51S: Sub-watershed 51



Subcatchment 52S: Sub-watershed 52

Runoff = 14.47 cfs @ 12.13 hrs, Volume= 1.193 af, Depth> 3.67"

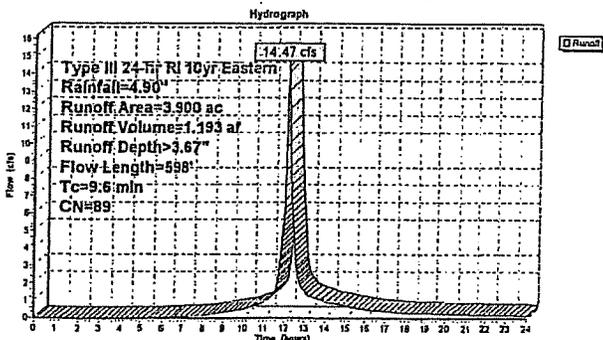
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
3.510	90	1/8 acre lots, 65% imp, HSG C
0.390	79	50-75% Grass cover, Fair, HSG C
3.900	89	Weighted Average
1.618		Pervious Area
2.282		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1200	0.36		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.9	108	0.0190	0.96		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.8	361	0.0110	2.13		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
0.3	29	0.0690	1.84		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
9.6	598				Total

Subcatchment 52S: Sub-watershed 52



Subcatchment 53S: Sub-watershed 53

Runoff = 18.59 cfs @ 12.13 hrs, Volume= 1.522 af, Depth> 3.77"

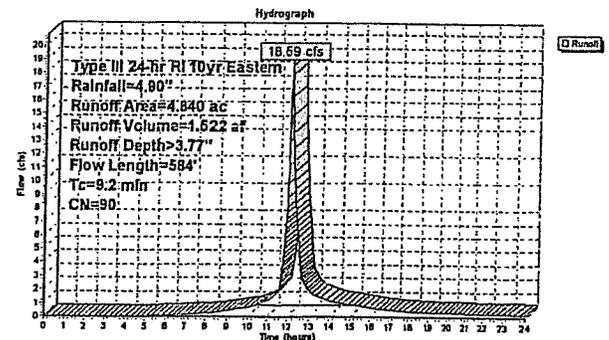
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
4.840	90	1/8 acre lots, 65% imp, HSG C
1.694		Pervious Area
3.146		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.25		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.3	33	0.0610	1.73		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.3	451	0.0270	3.34		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
9.2	584				Total

Subcatchment 53S: Sub-watershed 53



Subcatchment 54S: Sub-watershed 54

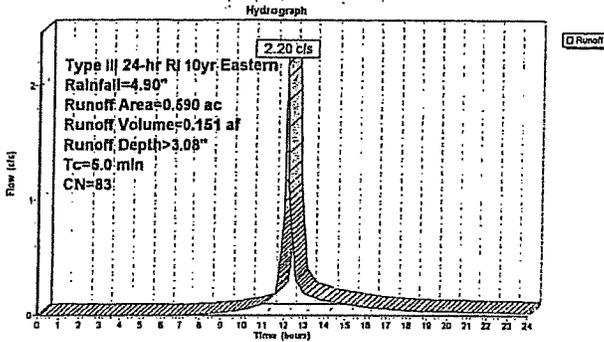
Runoff = 2.20 cfs @ 12.07 hrs, Volume= 0.151 af, Depth> 3.06"

Runoff by SCS TR-20 method, UH-SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.590	83	1/4 acre lots, 38% imp, HSG C
0.366		Pervious Area
0.224		Impervious Area

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

Subcatchment 54S: Sub-watershed 54



Subcatchment 55S: Sub-watershed 55

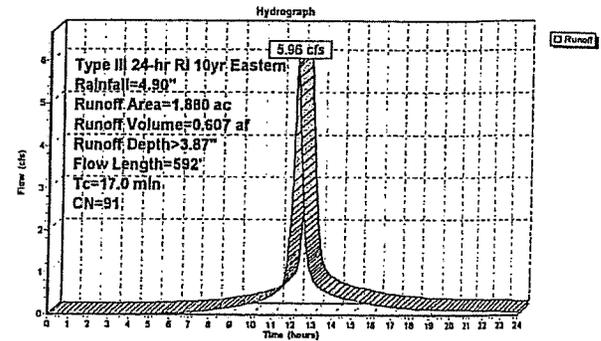
Runoff = 5.96 cfs @ 12.22 hrs, Volume= 0.607 af, Depth> 3.87"

Runoff by SCS TR-20 method, UH-SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
1.880	91	Urban Industrial, 72% imp, HSG C
0.526		Pervious Area
1.354		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B
4.5	492	0.0080	1.82		Grass: Short n=0.150 P2=3.40" Shallow Concentrated Flow, B-C Paved Kv=20.3 fps
17.0	592				Total

Subcatchment 55S: Sub-watershed 55



Subcatchment 56S: Sub-watershed 56

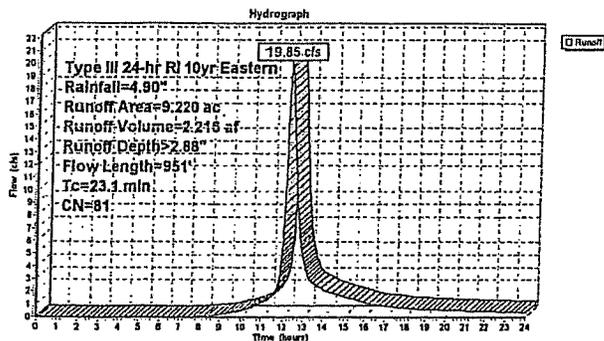
Runoff = 19.85 cfs @ 12.32 hrs, Volume= 2.216 af, Depth> 2.88"

Runoff by SCS TR-20 method, UH-SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
9.220	81	1/3 acre lots, 30% imp, HSG C
6.454		Pervious Area
2.766		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B
5.7	228	0.0090	0.66		Grass: Short n=0.150 P2=3.40" Shallow Concentrated Flow, B-C
4.9	623	0.0110	2.13		Short Grass Pasture Kv=7.0 fps Shallow Concentrated Flow, C-D Paved Kv=20.3 fps
23.1	951				Total

Subcatchment 56S: Sub-watershed 56



Subcatchment 57S: Sub-watershed 57

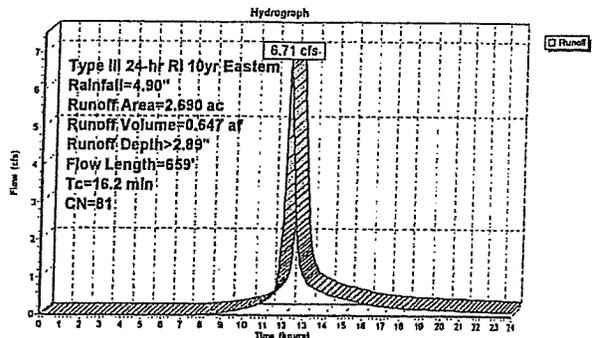
Runoff = 6.71 cfs @ 12.22 hrs, Volume= 0.647 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH-SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
2.690	81	1/3 acre lots, 30% imp, HSG C
1.883		Pervious Area
0.807		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.0370	0.22		Sheet Flow, A-B
6.4	190	0.0050	0.49		Grass: Short n=0.150 P2=3.40" Shallow Concentrated Flow, B-C
2.2	349	0.0170	2.65		Short Grass Pasture Kv=7.0 fps Shallow Concentrated Flow, C-D Paved Kv=20.3 fps
0.2	20	0.0500	1.57		Shallow Concentrated Flow, D-E Short Grass Pasture Kv=7.0 fps
16.2	659				Total

Subcatchment 57S: Sub-watershed 57



Subcatchment 58S: Sub-watershed 58

Runoff = 8.29 cfs @ 12.24 hrs, Volume= 0.823 af, Depth> 2.89"

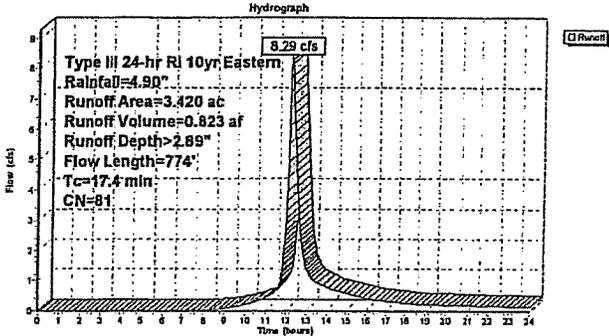
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
3.420	81	1/3 acre lots, 30% Imp, HSG C
2.394		Pervious Area
1.026		Impervious Area

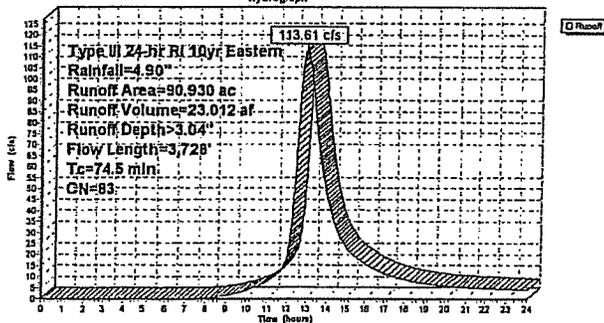
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.1	74	0.0270	1.15		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
3.8	600	0.0170	2.65		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
17.4	774	Total			

Subcatchment 58S: Sub-watershed 58



Subcatchment 59S: Sub-watershed 59



Subcatchment 69S: Sub-watershed 59

Runoff = 113.61 cfs @ 13.00 hrs, Volume= 23.012 af, Depth> 3.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
35.570	83	1/4 acre lots, 38% Imp, HSG C
15.400	79	Pasture/grassland/range, Fair, HSG C
13.820	94	Urban commercial, 85% Imp, HSG C
2.410	91	Urban industrial, 72% Imp, HSG C
8.840	88	Woods/grass comb., Poor, HSG D
12.190	73	Woods, Fair, HSG C
2.700	78	Pasture/grassland/range, Fair, HSG C
80.930	83	Weighted Average
63.931		Pervious Area
26.999		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0050	0.10		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
49.4	2,858	0.0190	0.96		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.2	48	0.0010	0.64		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	164	0.0180	0.94		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
3.5	377	0.0080	1.82		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
1.0	181	0.0220	3.01		Shallow Concentrated Flow, F-G Paved Kv= 20.3 fps
74.5	3,728	Total			

Subcatchment 60S: Sub-watershed 60

Runoff = 55.63 cfs @ 12.27 hrs, Volume= 6.256 af, Depth> 4.09"

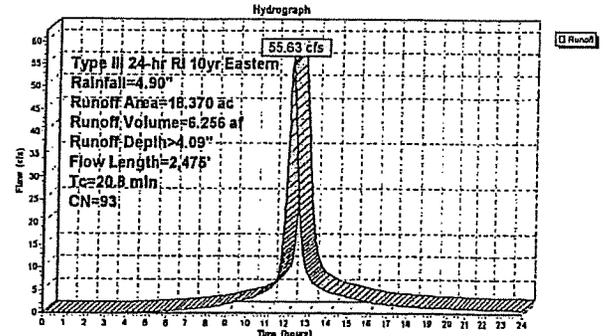
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
5.510	81	Urban industrial, 72% Imp, HSG C
12.860	94	Urban commercial, 85% Imp, HSG C
18.370	83	Weighted Average
3.472		Pervious Area
14.898		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.6	83	0.1100	2.32		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
13.0	2,292	0.0210	2.94		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
20.8	2,475	Total			

Subcatchment 60S: Sub-watershed 60



Subcatchment 61S: Sub-watershed 61

Runoff = 48.33 cfs @ 12.13 hrs, Volume= 3.887 af, Depth> 2.98"

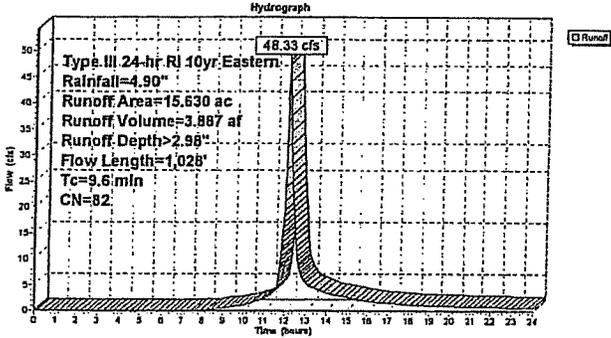
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
14.070	81	1/3 acre lots, 30% Imp, HSG C
1.560	94	Urban commercial, 85% Imp, HSG C
15.630	82	Weighted Average
10.083		Pervious Area
5.547		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0700	0.29		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.2	132	0.0700	1.85		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.6	796	0.0630	5.10		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
9.6	1,028	Total			

Subcatchment 61S: Sub-watershed 61



Subcatchment 62S: Sub-watershed 62

Runoff = 20.31 cfs @ 12.31 hrs, Volume= 2.240 af, Depth> 2.88"

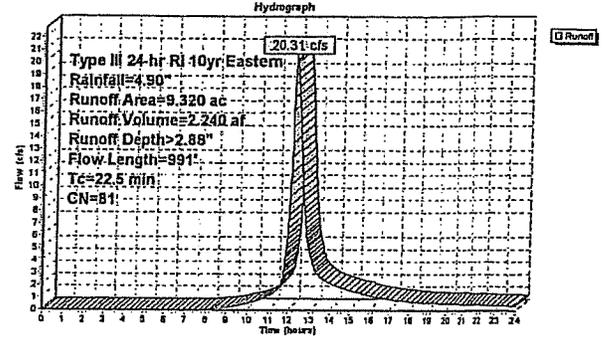
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
9.320	81	1/3 acre lots, 30% Imp, HSG C
6.524		Pervious Area
2.796		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
5.2	169	0.0060	0.54		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
4.8	722	0.0150	2.49		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
22.5	991	Total			

Subcatchment 62S: Sub-watershed 62



Subcatchment 63S: Sub-watershed 63

Runoff = 27.39 cfs @ 12.17 hrs, Volume= 2.373 af, Depth> 2.89"

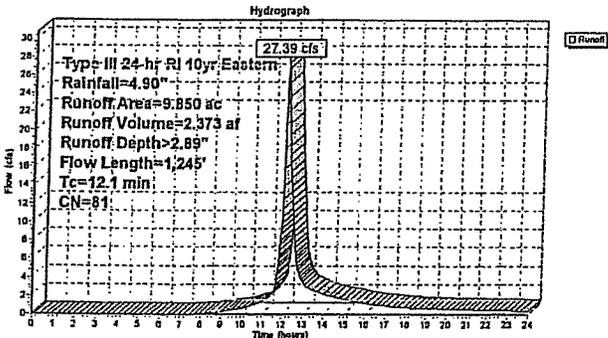
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
9.850	81	1/3 acre lots, 30% Imp, HSG C
6.895		Pervious Area
2.955		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	37	0.0540	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.6	63	0.0480	1.83		Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.40"
0.6	118	0.0250	3.21		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.0	188	0.0480	1.53		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
6.0	838	0.0130	2.31		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
12.1	1,245	Total			

Subcatchment 63S: Sub-watershed 63



Subcatchment 64S: Sub-watershed 64

Runoff = 2.78 cfs @ 12.13 hrs, Volume= 0.233 af, Depth> 3.88"

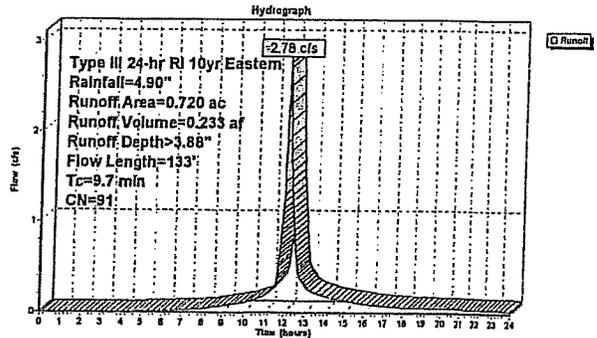
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.720	91	Urban Industrial, 72% Imp, HSG C
0.202		Pervious Area
0.518		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
2.5	33	0.0010	0.22		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
9.7	133	Total			

Subcatchment 64S: Sub-watershed 64



Subcatchment 65S: Sub-watershed 65

Runoff = 10.47 cfs @ 12.21 hrs, Volume= 0.982 af, Depth= 2.89"

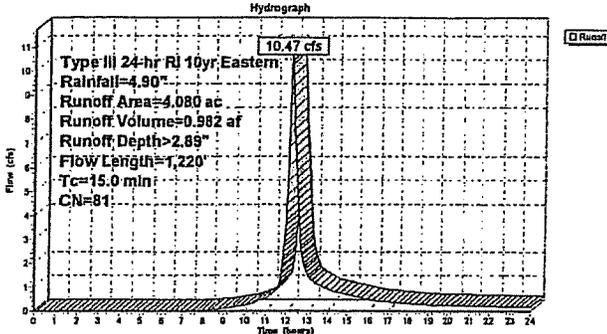
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
4.080	81	1/3 acre lots, 30% Imp, HSG C
2.856		Pervious Area
1.224		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	86	0.0300	0.20		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.3	14	0.0100	0.73		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
7.5	1,120	0.0150	2.49		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
15.0	1,220	Total			

Subcatchment 65S: Sub-watershed 65



Subcatchment 66S: Su-watershed 66

Runoff = 10.26 cfs @ 12.30 hrs, Volume= 1.120 af, Depth= 2.88"

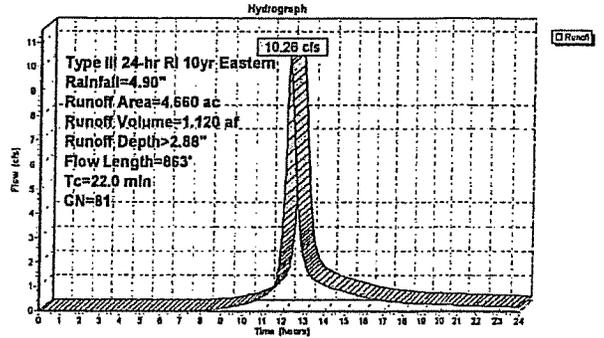
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
4.660	81	1/3 acre lots, 30% Imp, HSG C
3.262		Pervious Area
1.398		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	100	0.0060	0.11		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.2	103	0.0390	1.38		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
5.4	660	0.0100	2.03		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
22.0	863	Total			

Subcatchment 66S: Su-watershed 66



Subcatchment 67S: Sub-watershed 67

Runoff = 6.73 cfs @ 12.39 hrs, Volume= 0.627 af, Depth= 3.16"

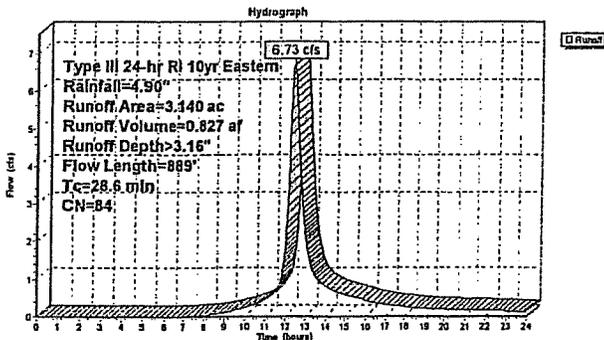
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
0.790	81	1/3 acre lots, 30% Imp, HSG C
1.880	88	Fallow, crop residue, Good, HSG C
0.470	73	Woods, Fair, HSG C
3.140	84	Weighted Average
2.903		Pervious Area
0.237		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
4.7	199	0.0200	0.71		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
10.7	490	0.0120	0.77		Shallow Concentrated Flow, C-D
					Short Grass Pasture Kv= 7.0 fps
0.7	100	0.0120	2.22		Shallow Concentrated Flow, D-E
					Paved Kv= 20.3 fps
28.6	889	Total			

Subcatchment 67S: Sub-watershed 67



Subcatchment 68S: Sub-watershed 68

Runoff = 47.75 cfs @ 12.25 hrs, Volume= 4.807 af, Depth= 2.80"

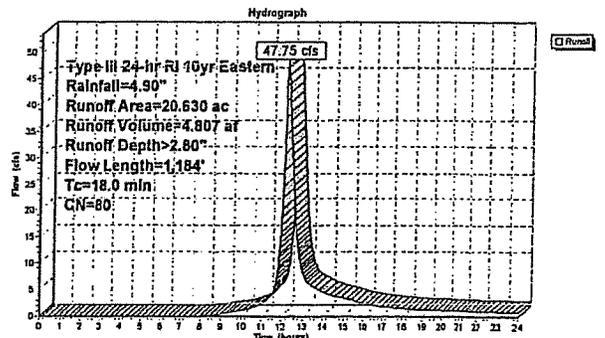
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 10yr Eastern Rainfall=4.90"

Area (ac)	CN	Description
2.350	79	Pasture/grassland/range, Fair, HSG C
2.470	88	Fallow, crop residue, Good, HSG C
1.970	70	Brush, Fair, HSG C
5.490	82	Woods/grass comb., Poor, HSG C
2.460	73	Woods, Fair, HSG C
5.890	81	1/3 acre lots, 30% Imp, HSG C
20.630	80	Weighted Average
18.863		Pervious Area
1.767		Impervious Area

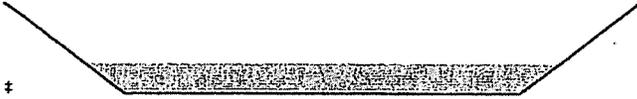
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0850	0.31		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
12.7	1,084	0.0410	1.42		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
18.0	1,184	Total			

Subcatchment 68S: Sub-watershed 68

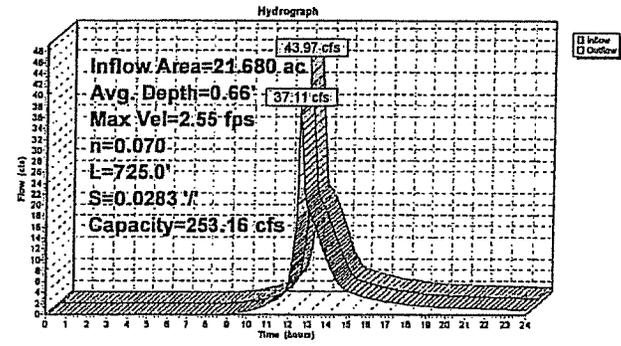


Reach 3R: Intermittent Stream

Inflow Area = 21.680 ac, Inflow Depth > 2.88" for RI 10yr Eastern event  
 Inflow = 43.97 cfs @ 12.41 hrs, Volume= 5.169 af  
 Outflow = 37.11 cfs @ 12.57 hrs, Volume= 5.139 af, Atten= 16%, Lag= 9.8 min  
 Routing by Star-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Velocity= 2.55 fps, Min. Travel Time= 4.7 min  
 . Velocity = 0.89 fps, Avg. Travel Time= 13.6 min  
 Peak Storage= 10,569 cf @ 12.49 hrs, Average Depth at Peak Storage= 0.66'  
 Bank-Full Depth= 2.00', Capacity at Bank-Full= 253.16 cfs  
 20.00' x 2.00' deep channel, n= 0.070 Medium-dense brush, winter  
 Side Slope Z-value= 3.0 Y' Top Width= 32.00'  
 Length= 725.0' Slope= 0.0283 Y'  
 Inlet Invert= 113.50', Outlet Invert= 93.00'



Reach 3R: Intermittent Stream



Pond 2P: Highview Pond Existing

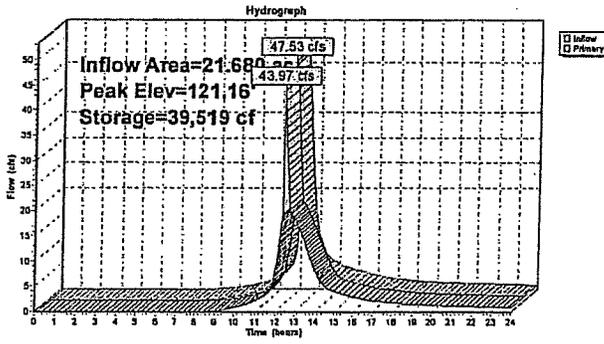
Inflow Area = 21.680 ac, Inflow Depth > 2.88" for RI 10yr Eastern event  
 Inflow = 47.53 cfs @ 12.31 hrs, Volume= 5.211 af  
 Outflow = 43.87 cfs @ 12.41 hrs, Volume= 5.169 af, Atten= 7%, Lag= 6.3 min  
 Primary = 43.97 cfs @ 12.41 hrs, Volume= 5.169 af  
 Routing by Star-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2  
 Peak Elev= 121.16' @ 12.40 hrs Surf.Area= 6,633 sf Storage= 39,519 cf  
 Plug-Flow detention time= 24.0 min calculated for 5.169 af (99% of inflow)  
 Center-of-Mass del. time= 19.2 min (851.4 - 832.3)

Volume	Invert	Avail. Storage	Storage Description
#1	115.00'	42,295 cf	Custom Stgae Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
115.00	4,620	0	0
118.00	6,496	16,674	16,674
121.00	7,936	21,648	38,322
122.00	10	3,973	42,295

Device	Routing	Invert	Outlet Devices
#1	Primary	115.00'	18.0" x 40.0" long Culvert RCP, end-section conforming to fill, K <sub>a</sub> = 0.500 Outlet Invert= 114.40' S= 0.0150 Y' C <sub>c</sub> = 0.900 n= 0.013
#2	Primary	121.00'	128.0' long x 1.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

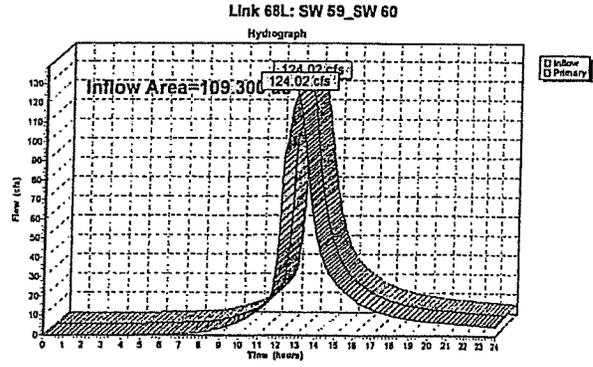
Primary Outflow Max=42.62 cfs @ 12.41 hrs HW=121.16' (Free Discharge)  
 1=Culvert (Inlet Controls 19.80 cfs @ 11.20 fps)  
 2=Broad-Crested Rectangular Weir (Weir Controls 22.83 cfs @ 1.09 fps)

Pond 2P: Highview Pond Existing



Link 68L: SW 59\_SW 60

Inflow Area = 109.300 ac, Inflow Depth > 3.21" for RI 10yr Eastern event  
 Inflow = 124.02 cfs @ 12.93 hrs, Volume= 29.266 af  
 Primary = 124.02 cfs @ 12.93 hrs, Volume= 29.266 af, Atten= 0%, Lag= 0.0 min  
 Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs



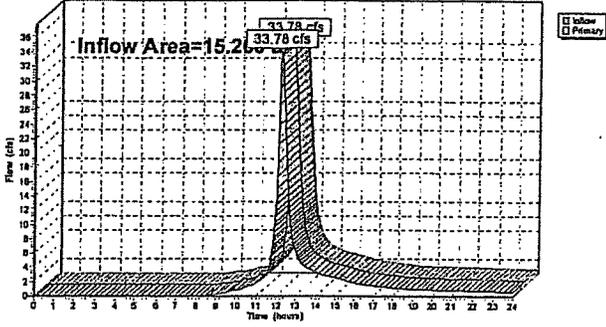
Link 69L: SW 14\_SW 17

Inflow Area = 15.260 ac, Inflow Depth > 2.75" for RI 10yr Eastem event  
 Inflow = 33.78 cfs @ 12.20 hrs, Volume= 3.496 af  
 Primary = 33.78 cfs @ 12.20 hrs, Volume= 3.496 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 69L: SW 14\_SW 17

Hydrograph



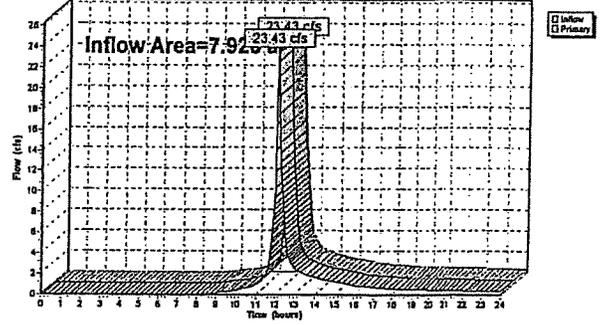
Link 70L: SW47\_SW49

Inflow Area = 7.920 ac, Inflow Depth > 2.71" for RI 10yr Eastem event  
 Inflow = 23.43 cfs @ 12.12 hrs, Volume= 1.790 af  
 Primary = 23.43 cfs @ 12.12 hrs, Volume= 1.790 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 70L: SW47\_SW49

Hydrograph



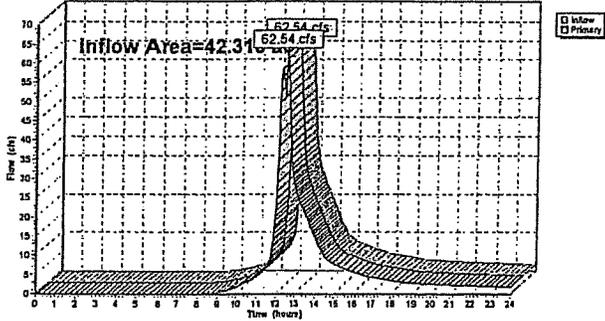
Link 71L: Elbow St

Inflow Area = 42.310 ac, Inflow Depth > 2.62" for RI 10yr Eastem event  
 Inflow = 62.54 cfs @ 12.54 hrs, Volume= 8.945 af  
 Primary = 62.54 cfs @ 12.54 hrs, Volume= 8.945 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 71L: Elbow St

Hydrograph



**25-Year Storm**



Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Sub-watershed 1	Runoff Area=16,400 ac Runoff Depth>4.98" Flow Length=1,460' Tc=20.1 min CN=94 Runoff=67.63 cfs 7.643 af
Subcatchment 2S: Sub-watershed 2	Runoff Area=3,220 ac Runoff Depth>4.99" Flow Length=792' Tc=10.2 min CN=94 Runoff=15.16 cfs 1,340 af
Subcatchment 3S: Sub-watershed 3	Runoff Area=27,500 ac Runoff Depth>3.68" Flow Length=2,500' Tc=39.3 min CN=82 Runoff=59.31 cfs 8,443 af
Subcatchment 4S: Sub-watershed 4	Runoff Area=35,010 ac Runoff Depth>4.41" Flow Length=3,096' Tc=50.9 min CN=89 Runoff=76.81 cfs 12,656 af
Subcatchment 5S: Sub-watershed 5	Runoff Area=2,340 ac Runoff Depth>3.51" Tc=5.0 min CN=80 Runoff=9.93 cfs 0.684 af
Subcatchment 6S: Sub-watershed 6	Runoff Area=0,630 ac Runoff Depth>5.00" Tc=5.0 min CN=94 Runoff=3.51 cfs 0.262 af
Subcatchment 6eS: Sub-watershed 6e	Runoff Area=0,500 ac Runoff Depth>5.00" Tc=5.0 min CN=94 Runoff=2.79 cfs 0.208 af
Subcatchment 6S: Sub-watershed 6	Runoff Area=10,610 ac Runoff Depth>4.33" Flow Length=1,536' Tc=11.4 min CN=88 Runoff=43.84 cfs 3,828 af
Subcatchment 8S: Sub-watershed 8	Runoff Area=2,070 ac Runoff Depth>3.60" Flow Length=418' Tc=11.6 min CN=80 Runoff=7.07 cfs 0.604 af
Subcatchment 9S: Sub-watershed 9	Runoff Area=3,780 ac Runoff Depth>4.11" Flow Length=633' Tc=16.8 min CN=86 Runoff=13.03 cfs 1,296 af
Subcatchment 10S: Sub-watershed 10	Runoff Area=8,740 ac Runoff Depth>3.60" Flow Length=1,337' Tc=19.3 min CN=83 Runoff=28.56 cfs 2,768 af
Subcatchment 11S: Sub-watershed 11	Runoff Area=24,460 ac Runoff Depth>4.43" Flow Length=1,757' Tc=26.1 min CN=89 Runoff=74.35 cfs 9,022 af
Subcatchment 12S: Sub-watershed 12	Runoff Area=3,040 ac Runoff Depth>4.65" Flow Length=996' Tc=15.8 min CN=91 Runoff=11.78 cfs 1,179 af
Subcatchment 13S: Sub-watershed 13	Runoff Area=8,760 ac Runoff Depth>3.61" Tc=5.0 min CN=81 Runoff=28.45 cfs 2,033 af
Subcatchment 14S: Sub-watershed 14	Runoff Area=8,060 ac Runoff Depth>3.41" Flow Length=1,715' Tc=11.9 min CN=79 Runoff=28.63 cfs 2,287 af

Subcatchment 15S: Sub-watershed 15	Runoff Area=21,880 ac Runoff Depth>3.60" Flow Length=1,259' Tc=22.2 min CN=81 Runoff=59.12 cfs 8,488 af
Subcatchment 16S: Sub-watershed 16	Runoff Area=2,740 ac Runoff Depth>3.70" Flow Length=709' Tc=13.2 min CN=92 Runoff=9.42 cfs 0,846 af
Subcatchment 17S: Sub-watershed 17	Runoff Area=7,200 ac Runoff Depth>3.50" Flow Length=1,430' Tc=21.6 min CN=80 Runoff=19.32 cfs 2,098 af
Subcatchment 18S: Sub-watershed 18	Runoff Area=13,850 ac Runoff Depth>3.50" Flow Length=1,868' Tc=11.2 min CN=80 Runoff=47.86 cfs 4,045 af
Subcatchment 19S: Sub-watershed 19	Runoff Area=29,160 ac Runoff Depth>3.17" Flow Length=2,101' Tc=63.7 min CN=77 Runoff=41.65 cfs 7,714 af
Subcatchment 20S: Sub-watershed 20	Runoff Area=11,220 ac Runoff Depth>3.60" Flow Length=1,264' Tc=17.0 min CN=81 Runoff=34.15 cfs 3,366 af
Subcatchment 21S: Sub-watershed 21	Runoff Area=2,540 ac Runoff Depth>5.00" Flow Length=486' Tc=5.5 min CN=94 Runoff=13.84 cfs 1,057 af
Subcatchment 22S: Sub-watershed 22	Runoff Area=6,280 ac Runoff Depth>4.99" Flow Length=1,194' Tc=7.2 min CN=94 Runoff=32.52 cfs 2,614 af
Subcatchment 23S: Sub-watershed 23	Runoff Area=0,900 ac Runoff Depth>5.00" Tc=5.0 min CN=94 Runoff=5.02 cfs 0.375 af
Subcatchment 24S: Sub-watershed 24	Runoff Area=5,430 ac Runoff Depth>4.65" Flow Length=1,015' Tc=12.7 min CN=81 Runoff=22.80 cfs 2,109 af
Subcatchment 25S: Sub-watershed 25	Runoff Area=7,910 ac Runoff Depth>3.50" Flow Length=943' Tc=13.6 min CN=80 Runoff=25.52 cfs 2,309 af
Subcatchment 26S: Sub-watershed 26	Runoff Area=0,040 ac Runoff Depth>5.46" Tc=5.0 min CN=83 Runoff=0.23 cfs 0.018 af
Subcatchment 27S: Sub-watershed 27	Runoff Area=0,090 ac Runoff Depth>3.81" Tc=5.0 min CN=83 Runoff=0.41 cfs 0,029 af
Subcatchment 28S: Sub-watershed 28	Runoff Area=4,430 ac Runoff Depth>3.50" Flow Length=1,025' Tc=22.5 min CN=80 Runoff=11.69 cfs 1,291 af
Subcatchment 29S: Sub-watershed 29	Runoff Area=9,890 ac Runoff Depth>3.70" Flow Length=1,194' Tc=11.1 min CN=82 Runoff=36.09 cfs 3,053 af
Subcatchment 30S: Sub-watershed 30	Runoff Area=1,680 ac Runoff Depth>3.60" Flow Length=716' Tc=13.0 min CN=81 Runoff=5.66 cfs 0,504 af
Subcatchment 31S: Sub-watershed 31	Runoff Area=27,350 ac Runoff Depth>3.20" Flow Length=1,762' Tc=27.1 min CN=77 Runoff=60.47 cfs 7,284 af

Subcatchment 32S: Sub-watershed 32	Runoff Area=45,010 ac Runoff Depth>2.92" Flow Length=1,805' Tc=26.8 min CN=74 Runoff=91.88 cfs 10,943 af
Subcatchment 33S: Sub-watershed 33	Runoff Area=27,500 ac Runoff Depth>3.60" Flow Length=1,541' Tc=10.8 min CN=81 Runoff=98.48 cfs 8,250 af
Subcatchment 34S: Sub-watershed 34	Runoff Area=5,470 ac Runoff Depth>3.60" Flow Length=967' Tc=16.4 min CN=81 Runoff=16.88 cfs 1,641 af
Subcatchment 35S: Sub-watershed 35	Runoff Area=2,020 ac Runoff Depth>4.33" Flow Length=401' Tc=11.8 min CN=88 Runoff=8.30 cfs 0,729 af
Subcatchment 36S: Sub-watershed 36	Runoff Area=114,100 ac Runoff Depth>3.78" Flow Length=4,314' Tc=29.2 min CN=83 Runoff=289.78 cfs 36,069 af
Subcatchment 37S: Sub-watershed 37	Runoff Area=4,120 ac Runoff Depth>4.12" Flow Length=852' Tc=9.7 min CN=86 Runoff=17.22 cfs 1,414 af
Subcatchment 38S: Sub-watershed 38	Runoff Area=1,590 ac Runoff Depth>4.44" Tc=5.0 min CN=89 Runoff=8.24 cfs 0,589 af
Subcatchment 39S: Sub-watershed 39	Runoff Area=10,480 ac Runoff Depth>3.60" Flow Length=1,018' Tc=12.8 min CN=81 Runoff=35.50 cfs 3,147 af
Subcatchment 40S: Sub-watershed 40	Runoff Area=0,240 ac Runoff Depth>3.61" Flow Length=189' Tc=6.6 min CN=81 Runoff=0.99 cfs 0,072 af
Subcatchment 41S: Sub-watershed 41	Runoff Area=0,280 ac Runoff Depth>4.12" Flow Length=182' Tc=6.2 min CN=86 Runoff=1.36 cfs 0,100 af
Subcatchment 42S: Sub-watershed 42	Runoff Area=0,070 ac Runoff Depth>4.12" Flow Length=178' Tc=6.9 min CN=86 Runoff=0.32 cfs 0,024 af
Subcatchment 43S: Sub-watershed 43	Runoff Area=2,850 ac Runoff Depth>3.60" Flow Length=570' Tc=10.1 min CN=81 Runoff=10.48 cfs 8,856 af
Subcatchment 44S: Sub-watershed 44	Runoff Area=1,720 ac Runoff Depth>3.21" Flow Length=760' Tc=20.2 min CN=77 Runoff=4.36 cfs 0,459 af
Subcatchment 45S: Sub-watershed 45	Runoff Area=3,670 ac Runoff Depth>2.92" Flow Length=865' Tc=21.2 min CN=74 Runoff=8.28 cfs 0,893 af
Subcatchment 46S: Sub-watershed 46	Runoff Area=1,370 ac Runoff Depth>2.92" Flow Length=727' Tc=25.0 min CN=74 Runoff=2.88 cfs 0,333 af
Subcatchment 47S: Sub-watershed 47	Runoff Area=7,620 ac Runoff Depth>3.41" Flow Length=701' Tc=8.1 min CN=79 Runoff=28.28 cfs 2,154 af
Subcatchment 48S: Sub-watershed 48	Runoff Area=1,320 ac Runoff Depth>3.91" Flow Length=440' Tc=8.7 min CN=84 Runoff=5.45 cfs 0,430 af

Subcatchment 49S: Sub-watershed 49	Runoff Area=0,300 ac Runoff Depth>3.41" Flow Length=130' Tc=7.3 min CN=78 Runoff=1.14 cfs 0,085 af
Subcatchment 50S: Sub-watershed 50	Runoff Area=1,900 ac Runoff Depth>3.41" Flow Length=555' Tc=11.3 min CN=79 Runoff=6.37 cfs 0,539 af
Subcatchment 51S: Sub-watershed 51	Runoff Area=3,650 ac Runoff Depth>4.65" Tc=5.0 min CN=91 Runoff=20.63 cfs 1,495 af
Subcatchment 52S: Sub-watershed 52	Runoff Area=3,900 ac Runoff Depth>4.44" Flow Length=508' Tc=9.8 min CN=89 Runoff=17.34 cfs 1,443 af
Subcatchment 53S: Sub-watershed 53	Runoff Area=4,840 ac Runoff Depth>4.65" Flow Length=584' Tc=9.2 min CN=90 Runoff=22.18 cfs 1,834 af
Subcatchment 54S: Sub-watershed 54	Runoff Area=0,590 ac Runoff Depth>3.81" Tc=5.0 min CN=83 Runoff=2.70 cfs 0,187 af
Subcatchment 55S: Sub-watershed 55	Runoff Area=1,880 ac Runoff Depth>4.65" Flow Length=532' Tc=17.0 min CN=81 Runoff=7.09 cfs 0,729 af
Subcatchment 56S: Sub-watershed 56	Runoff Area=9,220 ac Runoff Depth>3.60" Flow Length=951' Tc=23.3 min CN=81 Runoff=24.69 cfs 2,763 af
Subcatchment 57S: Sub-watershed 57	Runoff Area=2,690 ac Runoff Depth>3.60" Flow Length=659' Tc=16.2 min CN=81 Runoff=8.35 cfs 0,807 af
Subcatchment 58S: Sub-watershed 58	Runoff Area=3,420 ac Runoff Depth>3.60" Flow Length=774' Tc=17.4 min CN=81 Runoff=10.31 cfs 1,028 af
Subcatchment 59S: Sub-watershed 59	Runoff Area=90,930 ac Runoff Depth>3.76" Flow Length=3,728' Tc=74.5 min CN=83 Runoff=140.11 cfs 28,477 af
Subcatchment 60S: Sub-watershed 60	Runoff Area=18,370 ac Runoff Depth>4.87" Flow Length=2,475' Tc=20.8 min CN=93 Runoff=55.69 cfs 7,457 af
Subcatchment 61S: Sub-watershed 61	Runoff Area=15,630 ac Runoff Depth>3.71" Flow Length=1,028' Tc=9.6 min CN=82 Runoff=58.76 cfs 4,827 af
Subcatchment 62S: Sub-watershed 62	Runoff Area=9,320 ac Runoff Depth>3.60" Flow Length=991' Tc=22.5 min CN=81 Runoff=26.24 cfs 2,793 af
Subcatchment 63S: Sub-watershed 63	Runoff Area=9,850 ac Runoff Depth>3.60" Flow Length=1,245' Tc=12.1 min CN=81 Runoff=34.05 cfs 2,958 af
Subcatchment 64S: Sub-watershed 64	Runoff Area=0,720 ac Runoff Depth>4.65" Flow Length=133' Tc=9.7 min CN=91 Runoff=3.30 cfs 0,279 af
Subcatchment 65S: Sub-watershed 65	Runoff Area=4,080 ac Runoff Depth>3.60" Flow Length=1,220' Tc=15.0 min CN=81 Runoff=13.02 cfs 1,225 af

Subcatchment 66S: Su-watershed 66 Runoff Area=4.660 ac Runoff Depth>3.60"  
 Flow Length=863' Tc=22.0 min CN=91 Runoff=12.76 cfs 1.397 af

Subcatchment 67S: Sub-watershed 67 Runoff Area=3.140 ac Runoff Depth>3.90"  
 Flow Length=888' Tc=28.6 min CN=84 Runoff=8.25 cfs 1.020 af

Subcatchment 68S: Sub-watershed 68 Runoff Area=20.630 ac Runoff Depth>3.50"  
 Flow Length=1,184' Tc=18.0 min CN=80 Runoff=59.68 cfs 6.017 af

Reach 3R: Intermittent Stream Avg. Depth=0.81' Max Vel=2.89 fps Inflow=58.87 cfs 6.445 af  
 n=0.070 L=725.0' S=0.0283' Capacity=253.16 cfs Outflow=52.64 cfs 6.412 af

Pond 2P: Highview Pond Existing Peak Elev=121.23' Storage=39,958 cf Inflow=59.12 cfs 6.498 af  
 Outflow=58.87 cfs 6.445 af

Link 68L: SW 59\_SW 60 Inflow=152.48 cfs 35.934 af  
 Primary=152.48 cfs 35.934 af

Link 69L: SW 14\_SW 17 Inflow=42.40 cfs 4.386 af  
 Primary=42.40 cfs 4.386 af

Link 70L: SW47\_SW49 Inflow=29.41 cfs 2.249 af  
 Primary=29.41 cfs 2.249 af

Link 71L: Elbow St Inflow=81.35 cfs 12.428 af  
 Primary=81.35 cfs 12.428 af

Total Runoff Area = 746.870 ac Runoff Volume = 235.154 af Average Runoff Depth = 3.78"  
 66.54% Pervious Area = 496.954 ac 33.46% Impervious Area = 249.916 ac

Subcatchment 1S: Sub-watershed 1

Runoff = 67.63 cfs @ 12.26 hrs, Volume= 7.643 af, Depth> 4.98"

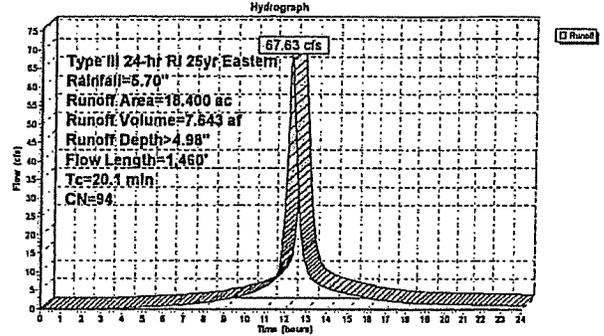
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
18.400	84	Urban commercial, 85% Imp, HSG C
2.760		Pervious Area
15.640		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0150	0.16		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
8.8	1,240	0.0210	2.33		Shallow Concentrated Flow, B-C Unpaved Kv= 16.1 fps
0.5	120	0.0330	3.69		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
20.1	1,480				Total

Subcatchment 1S: Sub-watershed 1



Subcatchment 2S: Sub-watershed 2

Runoff = 15.15 cfs @ 12.14 hrs, Volume= 1.340 af, Depth> 4.99"

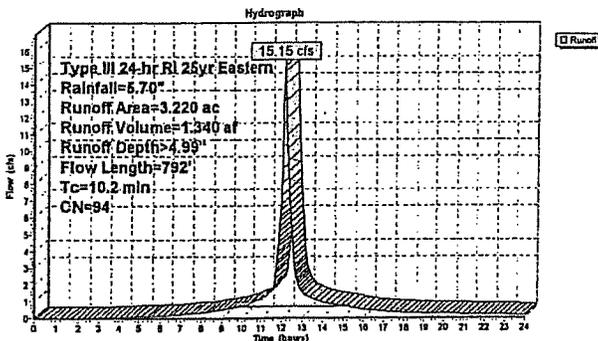
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
3.220	84	Urban commercial, 85% Imp, HSG C
0.483		Pervious Area
2.737		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
2.4	394	0.0280	2.69		Shallow Concentrated Flow, B-C Unpaved Kv= 16.1 fps
1.7	286	0.0200	2.87		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
10.2	792				Total

Subcatchment 2S: Sub-watershed 2



Subcatchment 3S: Sub-watershed 3

Runoff = 59.31 cfs @ 12.54 hrs, Volume= 8.443 af, Depth> 3.68"

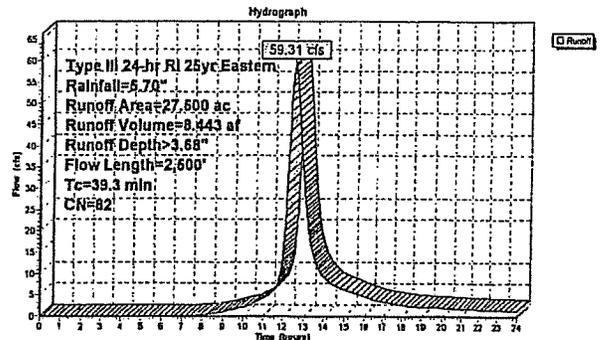
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
13.750	86	Pasture/grassland/range, Poor, HSG C
10.750	80	1/2 acre lots, 25% Imp, HSG C
3.000	73	Woods, Fair, HSG C
27.500	82	Weighted Average
24.813		Pervious Area
2.688		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	100	0.0100	0.28		Sheet Flow, A-B Cultivated: Residue<=20% n= 0.060 P2= 3.40"
19.4	1,200	0.0217	1.03		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
13.9	1,200	0.0050	1.44		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
39.3	2,500				Total

Subcatchment 3S: Sub-watershed 3



Subcatchment 4S: Sub-watershed 4

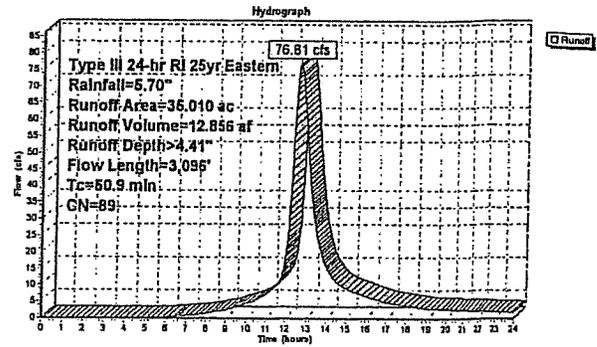
Runoff = 76.81 cfs @ 12.67 hrs, Volume= 12.856 af, Depth> 4.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

area (ac)	CN	Description
5.901	80	Fallow, crop residue, Poor, HSG C
17.070	84	Urban commercial, 85% Imp, HSG C
5.647	79	Pasture/grassland/range, Fair, HSG C
3.680	79	1 acre lots, 20% Imp, HSG C
2.712	81	Urban industrial, 72% Imp, HSG C
35.010	89	Weighted Average
17.812		Pervious Area
17.198		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.8	106	0.0190	0.96		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.2	30	0.0170	2.65		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.6	70	0.0860	2.05		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
0.7	82	0.0100	2.03		Shallow Concentrated Flow, E-F
					Paved Kv= 20.3 fps
24.2	322	0.0010	0.22		Shallow Concentrated Flow, F-G
					Short Grass Pasture Kv= 7.0 fps
13.9	2,386	0.0200	2.87		Shallow Concentrated Flow, G-H
					Paved Kv= 20.3 fps
50.9	3,096	Total			

Subcatchment 4S: Sub-watershed 4



Subcatchment 6S: Sub-Watershed 6

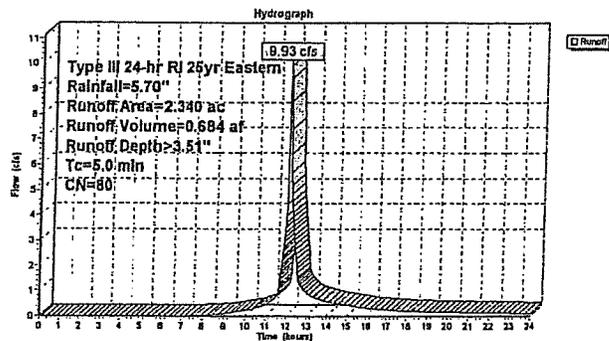
Runoff = 9.93 cfs @ 12.07 hrs, Volume= 0.684 af, Depth> 3.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
2.340	80	1/2 acre lots, 25% Imp, HSG C
1.755		Pervious Area
0.585		Impervious Area

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

Subcatchment 6S: Sub-Watershed 6



Subcatchment 6dS: Sub-watershed 6d

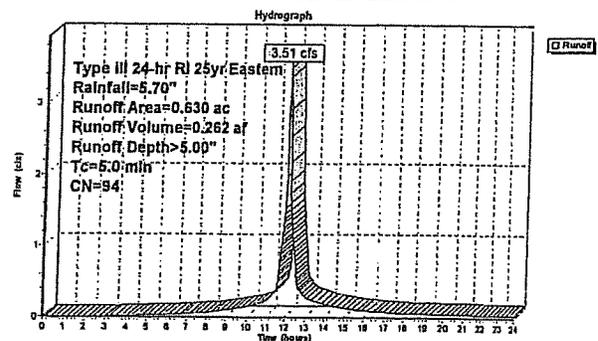
Runoff = 3.51 cfs @ 12.07 hrs, Volume= 0.262 af, Depth> 5.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.630	94	Urban commercial, 85% Imp, HSG C
0.095		Pervious Area
0.535		Impervious Area

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

Subcatchment 6dS: Sub-watershed 6d



Subcatchment 6eS: Sub-watershed 6e

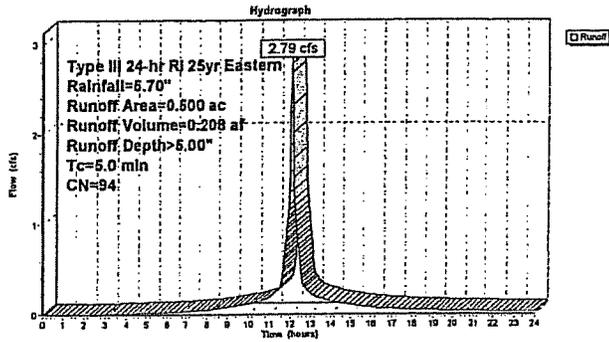
Runoff = 2.79 cfs @ 12.07 hrs, Volume= 0.208 af, Depth> 5.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.500	94	Urban commercial, 85% Imp, HSG C
0.075		Pervious Area
0.425		Impervious Area

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

Subcatchment 6eS: Sub-watershed 6e



Subcatchment 6S: Sub-watershed 6

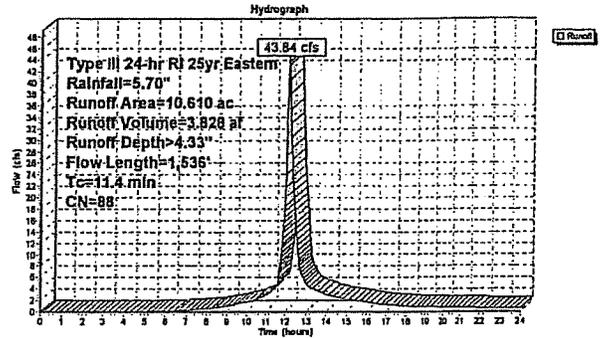
Runoff = 43.84 cfs @ 12.15 hrs, Volume= 3.828 af, Depth> 4.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
8.380	87	Dirt roads, HSG C
2.230	94	Urban commercial, 85% Imp, HSG C
10.610	88	Weighted Average
8.714		Pervious Area
1.895		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	100	0.0900	2.59		Sheet Flow, A-B
10.8	1,438	0.0120	2.22		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
11.4	1,536	Total			

Subcatchment 6S: Sub-watershed 6



Subcatchment 8S: Sub-watershed 8

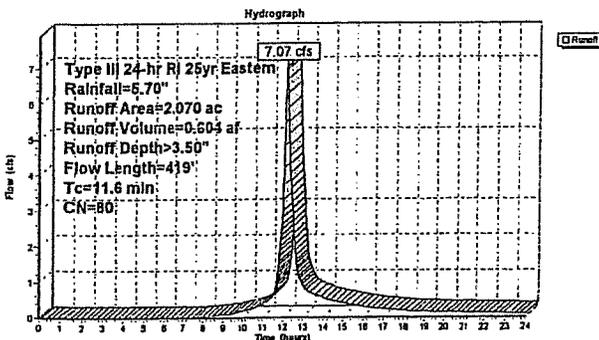
Runoff = 7.07 cfs @ 12.16 hrs, Volume= 0.604 af, Depth> 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
2.070	80	1/2 acre lots, 25% Imp, HSG C
1.552		Pervious Area
0.517		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
3.1	228	0.0300	1.21		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.4	81	0.0400	4.08		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
11.8	419	Total			

Subcatchment 8S: Sub-watershed 8



Subcatchment 9S: Sub-watershed 9

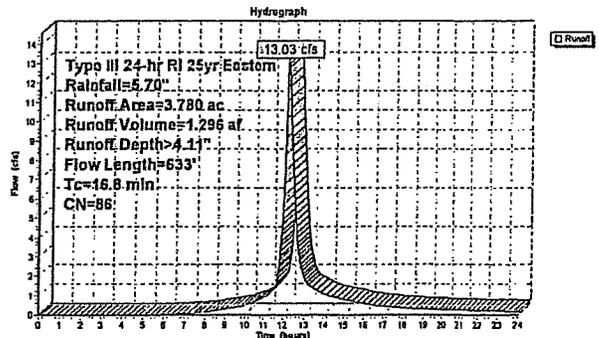
Runoff = 13.03 cfs @ 12.22 hrs, Volume= 1.296 af, Depth> 4.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
2.990	90	1/8 acre lots, 65% Imp, HSG C
0.790	73	Woods, Fair, HSG C
3.780	86	Weighted Average
1.837		Pervious Area
1.944		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
4.7	200	0.0200	0.71		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
1.7	160	0.0500	1.57		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.9	173	0.0230	3.08		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
16.8	633	Total			

Subcatchment 9S: Sub-watershed 9



**Subcatchment 10S: Sub-watershed 10**

Runoff = 26.56 cfs @ 12.26 hrs, Volume= 2.768 af, Depth> 3.80"

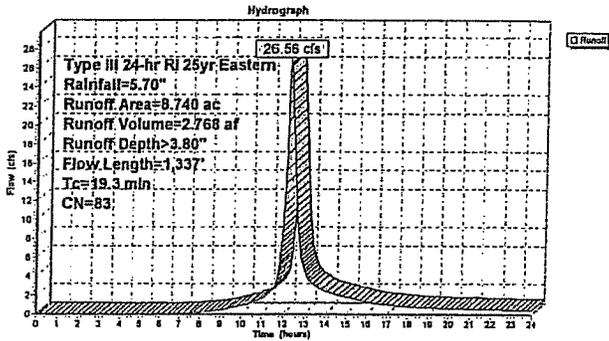
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
8.740	83	1/4 acre lots, 38% imp, HSG C
5.419		Pervious Area
3.321		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
3.8	195	0.0150	0.86		Shallow Concentrated Flow, B-C Short Grass Pasture K <sub>v</sub> = 7.0 fps
6.0	1,041	0.0200	2.87		Shallow Concentrated Flow, B-C Paved K <sub>v</sub> = 20.3 fps
19.3	1,337				Total

**Subcatchment 10S: Sub-watershed 10**



**Subcatchment 11S: Sub-watershed 11**

Runoff = 74.35 cfs @ 12.35 hrs, Volume= 9.022 af, Depth> 4.43"

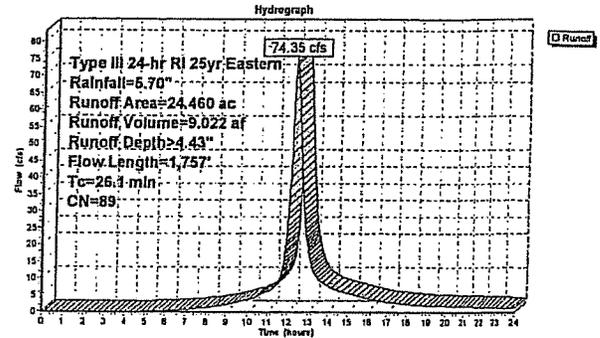
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
5.370	90	Fallow, crop residue, Poor, HSG C
10.340	94	Urban commercial, 85% imp, HSG C
8.750	83	1/4 acre lots, 38% imp, HSG C
24.460	89	Weighted Average
12.345		Pervious Area
12.114		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.0200	0.36		Sheet Flow, A-B Cultivated: Residue<=20% n= 0.060 P2= 3.40"
12.0	504	0.0100	0.70		Shallow Concentrated Flow, B-C Short Grass Pasture K <sub>v</sub> = 7.0 fps
9.5	1,153	0.0100	2.03		Shallow Concentrated Flow, C-D Paved K <sub>v</sub> = 20.3 fps
26.1	1,757				Total

**Subcatchment 11S: Sub-watershed 11**



**Subcatchment 12S: Sub-watershed 12**

Runoff = 11.78 cfs @ 12.21 hrs, Volume= 1.179 af, Depth> 4.65"

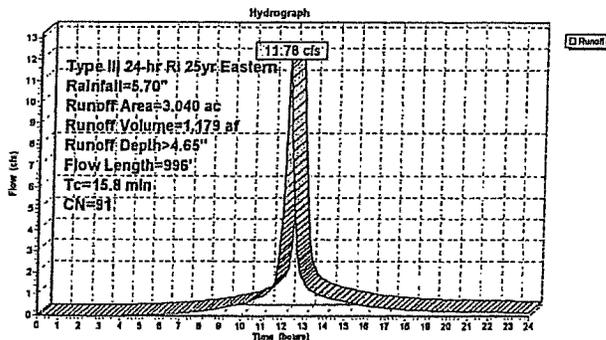
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
2.130	94	Urban commercial, 85% imp, HSG C
0.910	83	1/4 acre lots, 38% imp, HSG C
3.040	91	Weighted Average
0.884		Pervious Area
2.156		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
5.5	462	0.0400	1.40		Shallow Concentrated Flow, A-B Short Grass Pasture K <sub>v</sub> = 7.0 fps
2.2	434	0.0270	3.34		Shallow Concentrated Flow, C-D Paved K <sub>v</sub> = 20.3 fps
15.8	996				Total

**Subcatchment 12S: Sub-watershed 12**



**Subcatchment 13S: Sub-watershed 13**

Runoff = 29.45 cfs @ 12.07 hrs, Volume= 2.033 af, Depth> 3.51"

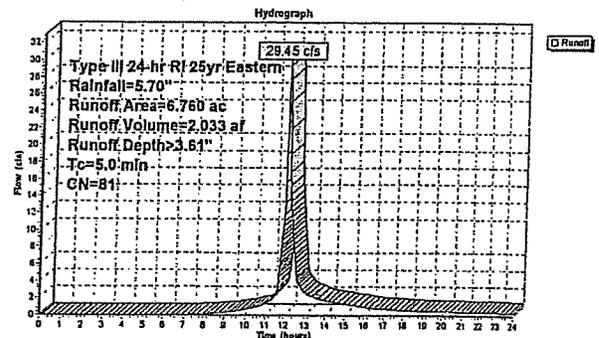
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
6.760	81	1/3 acre lots, 30% imp, HSG C
4.732		Pervious Area
2.028		Impervious Area

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

**Subcatchment 13S: Sub-watershed 13**



Subcatchment 14S: Sub-watershed 14

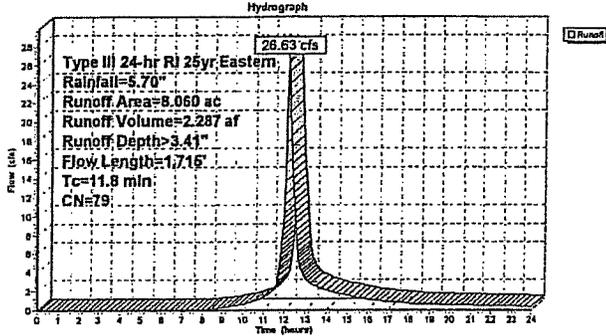
Runoff = 26.63 cfs @ 12.16 hrs, Volume= 2.287 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.240	94	Urban commercial, 85% imp, HSG C
7.820	79	1 acre lots, 20% imp, HSG C
8.060	79	Weighted Average
6.292		Pervious Area
1.768		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	1.07		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
10.2	1,615	0.0170	2.65		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
11.8	1,715				Total

Subcatchment 14S: Sub-watershed 14



Subcatchment 15S: Sub-watershed 15

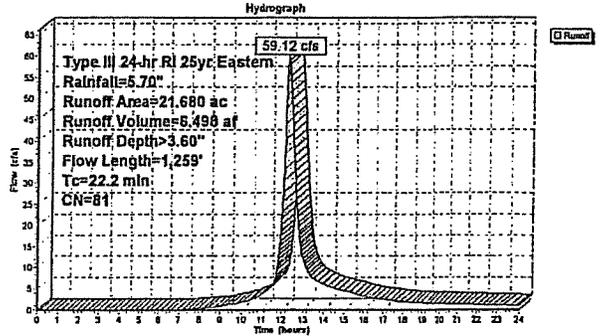
Runoff = 59.12 cfs @ 12.30 hrs, Volume= 6.498 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
15.390	79	1 acre lots, 20% imp, HSG C
5.090	90	1/8 acre lots, 65% imp, HSG C
1.200	76	Woods/grass comb. Fair, HSG C
21.680	81	Weighted Average
15.294		Pervious Area
6.387		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.3	168	0.0120	2.22		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
12.8	991	0.0340	1.29		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
22.2	1,259				Total

Subcatchment 15S: Sub-watershed 15



Subcatchment 16S: Sub-watershed 16

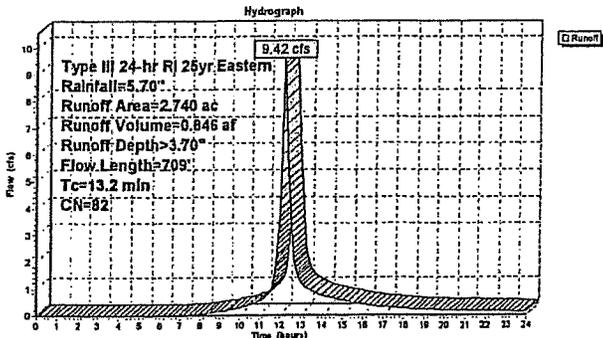
Runoff = 9.42 cfs @ 12.18 hrs, Volume= 0.846 af, Depth> 3.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
2.330	81	1/3 acre lots, 30% imp, HSG C
0.410	91	Fallow, bare soil, HSG C
2.740	82	Weighted Average
2.041		Pervious Area
0.699		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
2.0	161	0.0370	1.35		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.7	448	0.0450	4.31		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
13.2	709				Total

Subcatchment 16S: Sub-watershed 16



Subcatchment 17S: Sub-watershed 17

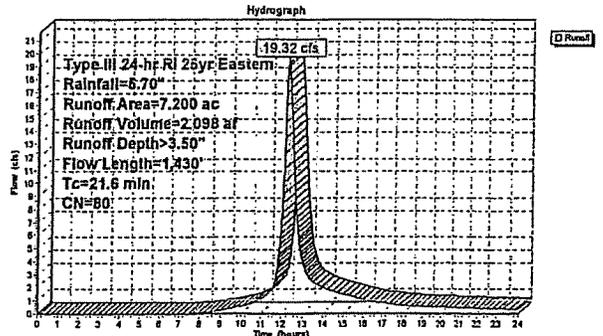
Runoff = 19.32 cfs @ 12.30 hrs, Volume= 2.098 af, Depth> 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
7.200	80	1/2 acre lots, 25% imp, HSG C
5.400		Pervious Area
1.800		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-C Grass: Short n= 0.150 P2= 3.40"
1.8	338	0.0240	3.14		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.5	125	0.0400	4.06		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	260	0.0460	1.50		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
3.8	607	0.0160	2.57		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
21.6	1,430				Total

Subcatchment 17S: Sub-watershed 17



Subcatchment 18S: Sub-watershed 18

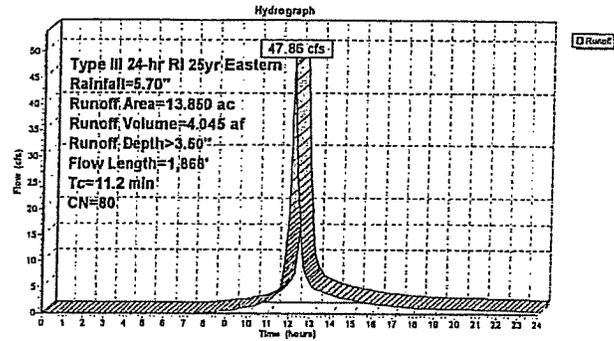
Runoff = 47.86 cfs @ 12.15 hrs, Volume= 4.045 af, Depth> 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

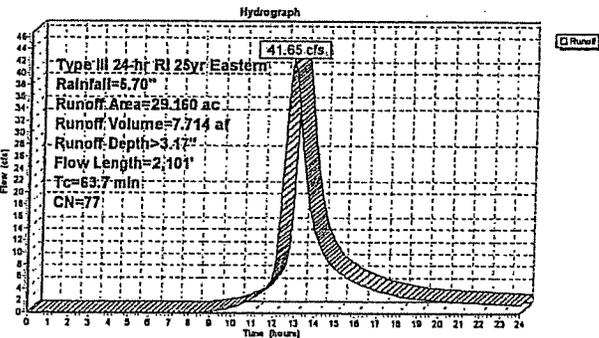
Area (ac)	CN	Description
13.160	80	1/2 acre lots, 25% Imp, HSG C
0.690	73	Woods, Fair, HSG C
13.850	80	Weighted Average
10.560		Pervious Area
3.290		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.05		Sheet Flow, A-B
					Smooth surfaces n= 0.011 P2= 3.40"
3.3	299	0.0470	1.52		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
7.1	1,469	0.0290	3.46		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
11.2	1,868				Total

Subcatchment 18S: Sub-watershed 18



Subcatchment 19S: Sub-watershed 19



Subcatchment 19S: Sub-watershed 19

Runoff = 41.65 cfs @ 12.86 hrs, Volume= 7.714 af, Depth> 3.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
1.460	94	Urban commercial, 85% Imp, HSG C
1.460	80	1/2 acre lots, 25% Imp, HSG C
26.240	76	Woods/grass comb, Fair, HSG C
29.160	77	Weighted Average
27.554		Pervious Area
1.606		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0160	0.11		Sheet Flow, A-B
					Grass: Dense n= 0.240 P2= 3.40"
2.9	161	0.0170	0.91		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
0.1	17	0.0230	3.08		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
1.2	80	0.0250	1.11		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
0.1	13	0.0200	2.87		Shallow Concentrated Flow, E-F
					Paved Kv= 20.3 fps
35.7	678	0.0040	0.32		Shallow Concentrated Flow, F-G
					Woodland Kv= 5.0 fps
8.6	1,052	0.0100	2.03		Shallow Concentrated Flow, G-H
					Paved Kv= 20.3 fps
63.7	2,101				Total

Subcatchment 20S: Sub-watershed 20

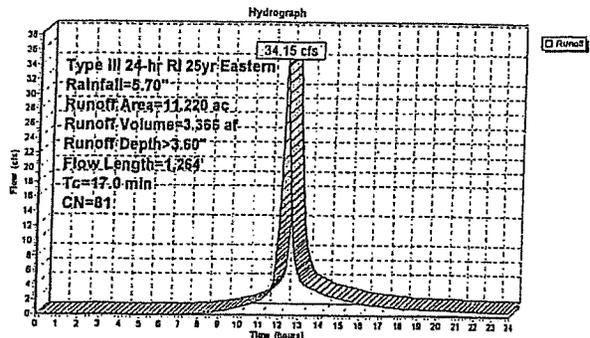
Runoff = 34.15 cfs @ 12.23 hrs, Volume= 3.366 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
11.220	81	1/3 acre lots, 30% Imp, HSG C
7.854		Pervious Area
3.366		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
4.0	174	0.0110	0.73		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
4.9	990	0.0280	3.40		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
17.0	1,264				Total

Subcatchment 20S: Sub-watershed 20



Subcatchment 21S: Sub-watershed 21

Runoff = 13.94 cfs @ 12.08 hrs, Volume= 1.057 af, Depth> 5.00"

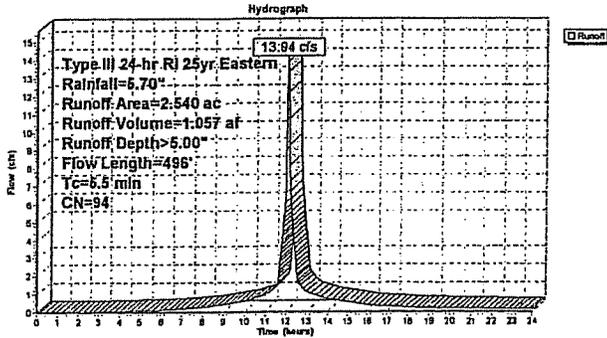
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
2.540	94	Urban commercial, 85% imp, HSG C
0.381		Pervious Area
2.159		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	70	0.1000	0.31		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.2	30	0.1200	2.28		Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.40"
1.5	396	0.0450	4.31		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
5.5	496	Total			

Subcatchment 21S: Sub-watershed 21



Subcatchment 22S: Sub-watershed 22

Runoff = 32.52 cfs @ 12.10 hrs, Volume= 2.614 af, Depth> 4.89"

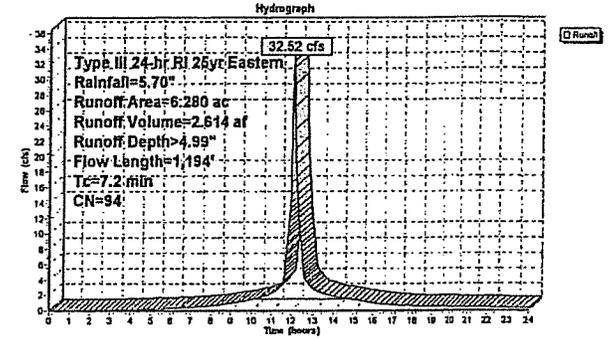
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
6.280	94	Urban commercial, 85% imp, HSG C
0.942		Pervious Area
5.338		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0800	2.47		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
6.5	1,094	0.0190	2.80		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
7.2	1,194	Total			

Subcatchment 22S: Sub-watershed 22



Subcatchment 23S: Sub-watershed 23

Runoff = 5.02 cfs @ 12.07 hrs, Volume= 0.375 af, Depth> 5.00"

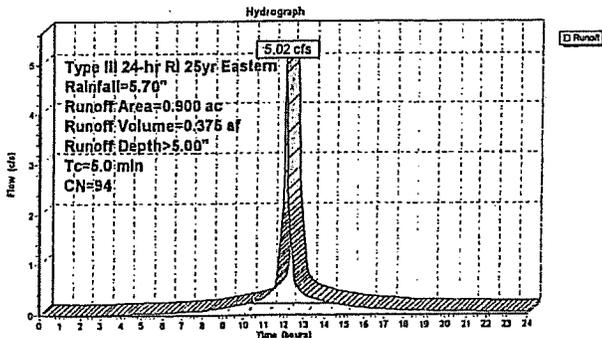
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.900	94	Urban commercial, 85% imp, HSG C
0.135		Pervious Area
0.765		Impervious Area

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

Subcatchment 23S: Sub-watershed 23



Subcatchment 24S: Sub-watershed 24

Runoff = 22.80 cfs @ 12.17 hrs, Volume= 2.105 af, Depth> 4.65"

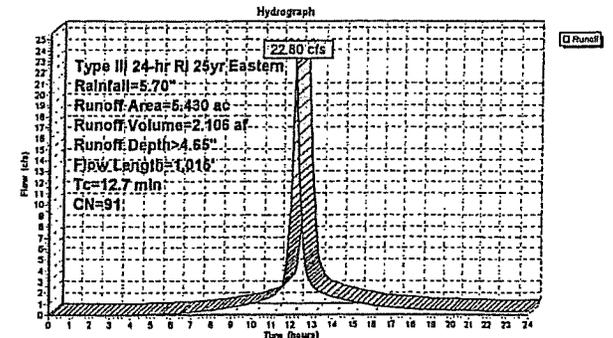
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
4.340	94	Urban commercial, 85% imp, HSG C
1.090	81	1/3 acre lots, 30% imp, HSG C
5.430	91	Weighted Average
1.414		Pervious Area
4.016		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0800	0.31		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
3.7	397	0.0650	1.78		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
3.5	518	0.0150	2.49		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
12.7	1,015	Total			

Subcatchment 24S: Sub-watershed 24



Subcatchment 26S: Sub-watershed 26

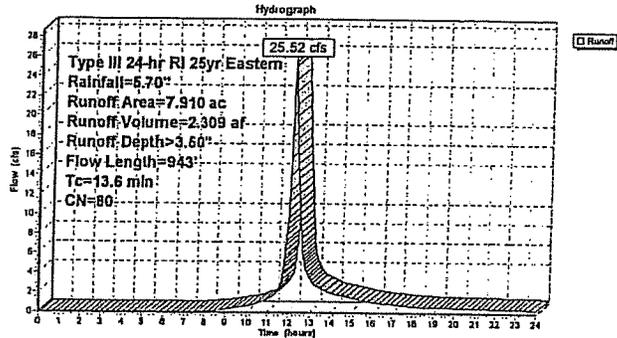
Runoff = 25.52 cfs @ 12.19 hrs, Volume= 2.309 af, Depth> 3.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
7.120	81	1/3 acre lots, 30% imp, HSG C
0.790	73	Woods, Fair, HSG C
7.910	60	Weighted Average
5.774		Pervious Area
2.136		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n=0.150 P2=3.40"
3.5	276	0.0360	1.33		Shallow Concentrated Flow, B-C Short Grass Pasture Kv=7.0 fps
2.9	567	0.0250	3.21		Shallow Concentrated Flow, C-D Paved Kv=20.3 fps
13.6	943				Total

Subcatchment 26S: Sub-watershed 26



Subcatchment 26S: Sub-watershed 26

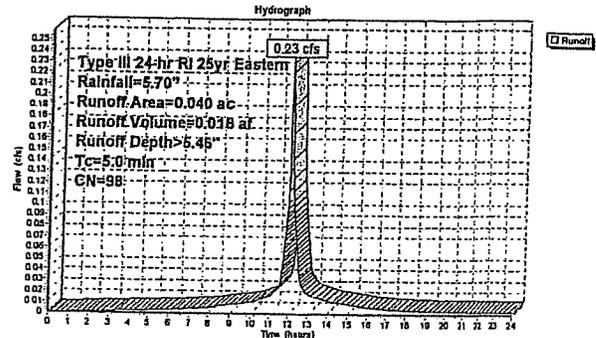
Runoff = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af, Depth> 5.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.040	98	Paved parking & roofs
0.040		Impervious Area

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

Subcatchment 26S: Sub-watershed 26



Subcatchment 27S: Sub-watershed 27

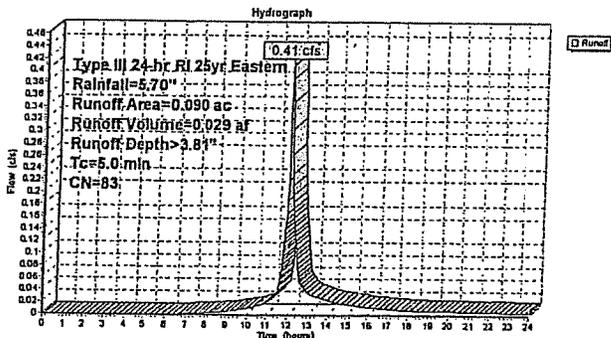
Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.029 af, Depth> 3.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.090	83	1/4 acre lots, 38% imp, HSG C
0.056		Pervious Area
0.034		Impervious Area

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

Subcatchment 27S: Sub-watershed 27



Subcatchment 28S: Sub-watershed 28

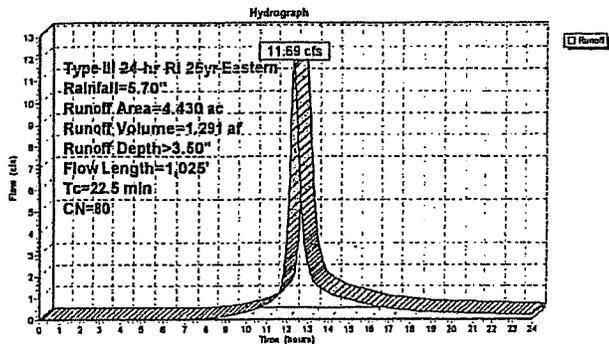
Runoff = 11.69 cfs @ 12.31 hrs, Volume= 1.291 af, Depth> 3.58"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
3.990	81	1/3 acre lots, 30% imp, HSG C
0.440	73	Woods, Fair, HSG C
4.430	60	Weighted Average
3.233		Pervious Area
1.197		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n=0.150 P2=3.40"
0.4	23	0.0220	1.04		Shallow Concentrated Flow, B-C Short Grass Pasture Kv=7.0 fps
0.1	19	0.0200	2.87		Shallow Concentrated Flow, C-D Paved Kv=20.3 fps
0.4	23	0.0200	0.99		Shallow Concentrated Flow, D-E Short Grass Pasture Kv=7.0 fps
0.1	22	0.0200	2.87		Shallow Concentrated Flow, E-F Paved Kv=20.3 fps
7.5	426	0.0360	0.95		Shallow Concentrated Flow, F-G Woodland Kv=5.0 fps
1.2	100	0.0400	1.40		Shallow Concentrated Flow, G-H Short Grass Pasture Kv=7.0 fps
3.3	312	0.0060	1.57		Shallow Concentrated Flow, H-I Paved Kv=20.3 fps
22.5	1,025				Total

Subcatchment 28S: Sub-watershed 28



Subcatchment 29S: Sub-watershed 29

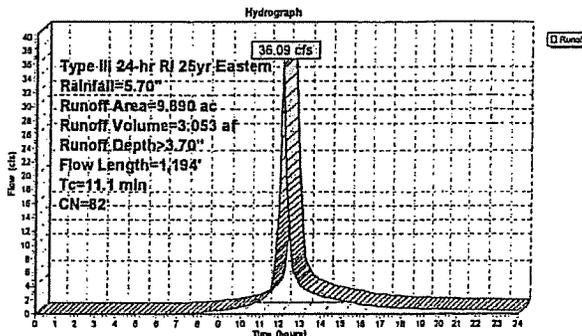
Runoff = 36.09 cfs @ 12.15 hrs, Volume= 3.053 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.480	74	>75% Grass cover, Good, HSG C
0.980	84	Urban commercial, 85% imp, HSG C
8.420	81	1/3 acre lots, 30% imp, HSG C
8.880	82	Weighted Average
6.531		Pervious Area
3.359		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0110	1.12		Sheet Flow, A-B Smooth surfaces n= 0.011 P2= 3.40"
6.7	453	0.0260	1.13		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.9	641	0.0330	3.69		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.1	1,194	Total			

Subcatchment 29S: Sub-watershed 29



Subcatchment 30S: Sub-watershed 30

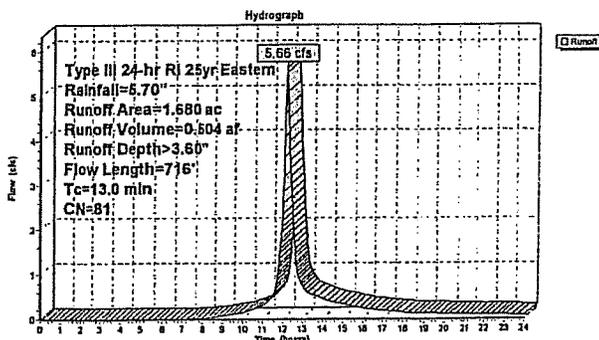
Runoff = 5.66 cfs @ 12.18 hrs, Volume= 0.504 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
1.680	81	1/3 acre lots, 30% imp, HSG C
1.176		Pervious Area
0.504		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.2	118	0.0510	1.58		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.3	488	0.0320	3.63		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
13.0	716	Total			

Subcatchment 30S: Sub-watershed 30



Subcatchment 31S: Sub-watershed 31

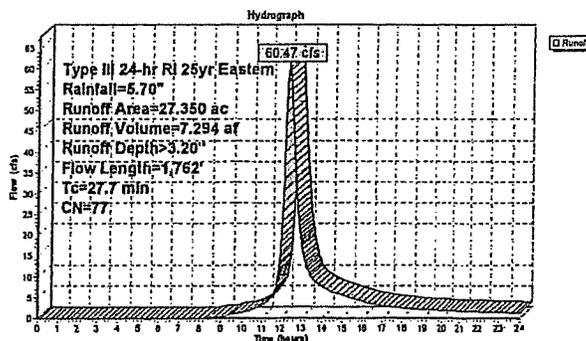
Runoff = 60.47 cfs @ 12.39 hrs, Volume= 7.294 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
12.350	81	1/3 acre lots, 30% imp, HSG C
15.000	74	>75% Grass cover, Good, HSG C
27.350	77	Weighted Average
23.645		Pervious Area
3.705		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0500	0.25		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
15.3	1,075	0.0280	1.17		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.8	587	0.0070	1.70		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
27.7	1,762	Total			

Subcatchment 31S: Sub-watershed 31



Subcatchment 32S: Sub-watershed32

Runoff = 91.88 cfs @ 12.37 hrs, Volume= 10.943 af, Depth> 2.92"

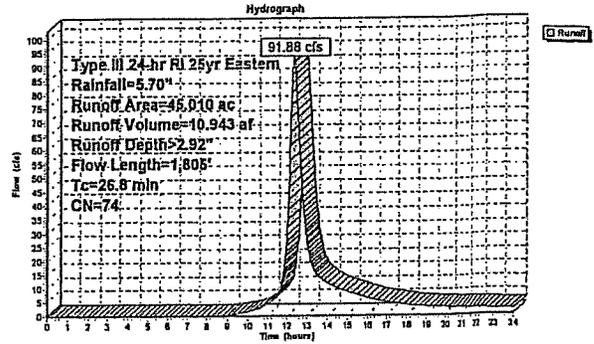
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
14.440	81	1/3 acre lots, 30% Imp, HSG C
13.320	69	50-75% Grass cover, Fair, HSG B
15.110	73	Woods, Fair, HSG C
0.900	88	Fallow, crop residue, Good, HSG C
1.240	56	Brush, Fair, HSG B
45.010	74	Weighted Average
40.678		Pervious Area
4.332		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0840	0.14		Sheet Flow, A-B Grass: Bermuda n= 0.410 P2= 3.40"
2.3	179	0.0698	1.32		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
2.9	654	0.0528	3.70		Shallow Concentrated Flow, C-D Unpaved Kv= 16.1 fps
5.8	474	0.0738	1.36		Shallow Concentrated Flow, D-E Woodland Kv= 5.0 fps
3.8	398	0.0075	1.76		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
26.8	1,805	Total			

Subcatchment 32S: Sub-watershed32



Subcatchment 33S: Sub-watershed 33

Runoff = 98.48 cfs @ 12.15 hrs, Volume= 8.260 af, Depth> 3.60"

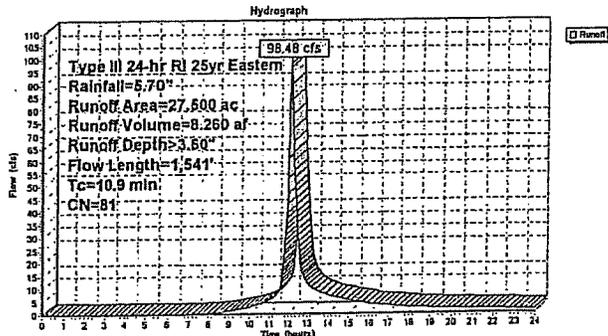
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.950	94	Urban commercial, 85% Imp, HSG C
26.540	81	1/3 acre lots, 30% Imp, HSG C
27.500	81	Weighted Average
18.722		Pervious Area
8.778		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1200	0.36		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.0	154	0.1400	2.62		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.3	1,287	0.0400	4.06		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
10.9	1,541	Total			

Subcatchment 33S: Sub-watershed 33



Subcatchment 34S: Sub-watershed 34

Runoff = 16.88 cfs @ 12.22 hrs, Volume= 1.641 af, Depth> 3.60"

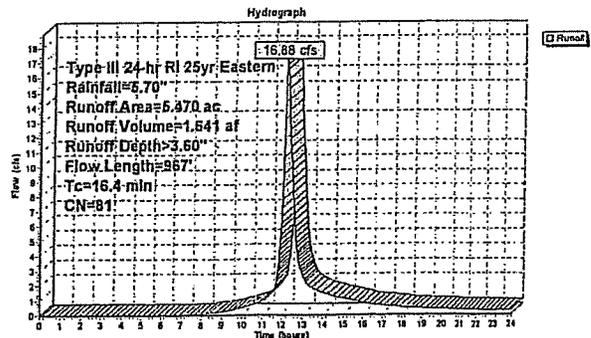
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
5.470	81	1/3 acre lots, 30% Imp, HSG C
3.829		Pervious Area
1.641		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.8	131	0.0300	1.21		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.1	736	0.0140	2.40		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
16.4	967	Total			

Subcatchment 34S: Sub-watershed 34



Subcatchment 35S: Sub-watershed 35

Runoff = 8.30 cfs @ 12.16 hrs, Volume= 0.729 af, Depth= 4.33"

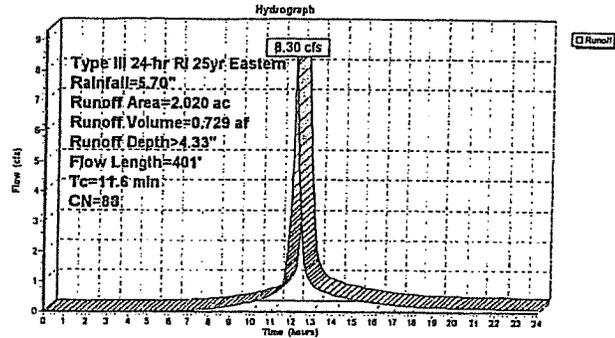
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
1.010	84	Urban commercial, 85% imp, HSG C
1.010	81	1/3 acre lots, 30% imp, HSG C
2.020	88	Weighted Average
0.859		Pervious Area
1.161		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
2.0	111	0.0180	0.94		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
1.5	190	0.0110	2.13		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.6	401	Total			

Subcatchment 36S: Sub-watershed 36



Subcatchment 36S: Sub-watershed 36

Runoff = 289.78 cfs @ 12.40 hrs, Volume= 36.069 af, Depth= 3.76"

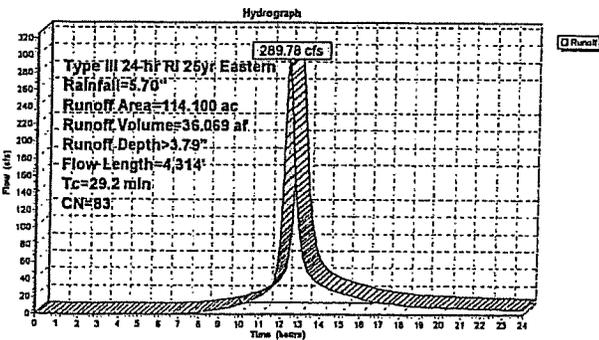
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
81.170	83	1/4 acre lots, 38% imp, HSG C
9.230	84	Urban commercial, 85% imp, HSG C
6.090	60	Woods, Fair, HSG B
0.440	69	50-75% Grass cover, Fair, HSG B
4.180	56	Brush, Fair, HSG B
12.990	81	Urban Industrial, 72% imp, HSG C
114.100	83	Weighted Average
66.057		Pervious Area
48.043		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
1.4	172	0.0810	1.99		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
18.3	4,042	0.0330	3.69		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
29.2	4,314	Total			

Subcatchment 36S: Sub-watershed 36



Subcatchment 37S: Sub-watershed 37

Runoff = 17.22 cfs @ 12.13 hrs, Volume= 1.414 af, Depth= 4.12"

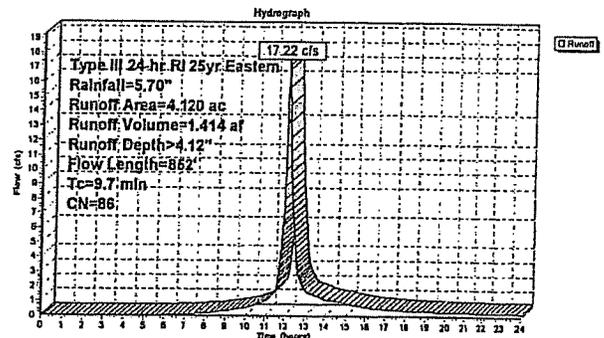
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
1.240	81	1/3 acre lots, 30% imp, HSG C
2.470	91	Urban Industrial, 72% imp, HSG C
0.410	74	>75% Grass cover, Good, HSG C
4.120	88	Weighted Average
1.970		Pervious Area
2.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.67		Sheet Flow, A-B
8.7	752	0.0050	1.44		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
9.7	852	Total			

Subcatchment 37S: Sub-watershed 37



Subcatchment 38S: Sub-watershed 38

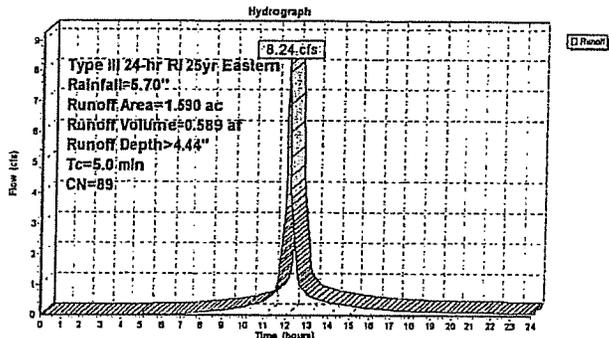
Runoff = 8.24 cfs @ 12.07 hrs, Volume= 0.589 af, Depth> 4.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.160	91	Urban Industrial, 72% imp, HSG C
0.320	79	Pasture/grassland/range, Fair, HSG C
1.110	91	Urban Industrial, 72% imp, HSG C
1.590	89	Weighted Average
0.676		Pervious Area
0.914		Impervious Area

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

Subcatchment 38S: Sub-watershed 38



Subcatchment 39S: Sub-watershed 39

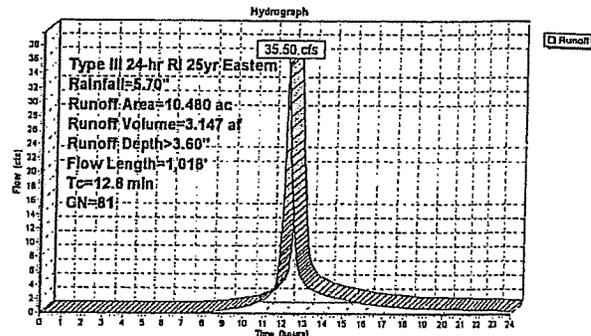
Runoff = 35.50 cfs @ 12.17 hrs, Volume= 3.147 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.520	79	Pasture/grassland/range, Fair, HSG C
9.960	81	1/3 acre lots, 30% imp, HSG C
10.480	81	Weighted Average
7.492		Pervious Area
2.988		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.8	212	0.0750	1.92		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.0	387	0.0260	3.27		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	319	0.0690	1.84		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
12.8	1,018	Total			

Subcatchment 39S: Sub-watershed 39



Subcatchment 40S: Sub-watershed 40

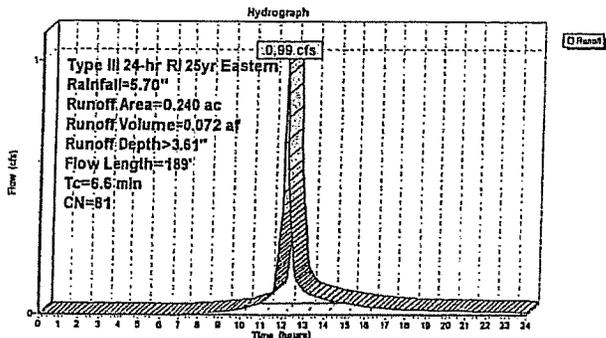
Runoff = 0.99 cfs @ 12.10 hrs, Volume= 0.072 af, Depth> 3.61"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.240	81	1/3 acre lots, 30% imp, HSG C
0.168		Pervious Area
0.072		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.5	89	0.1500	2.71		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
6.6	189	Total			

Subcatchment 40S: Sub-watershed 40



Subcatchment 41S: Sub-watershed 41

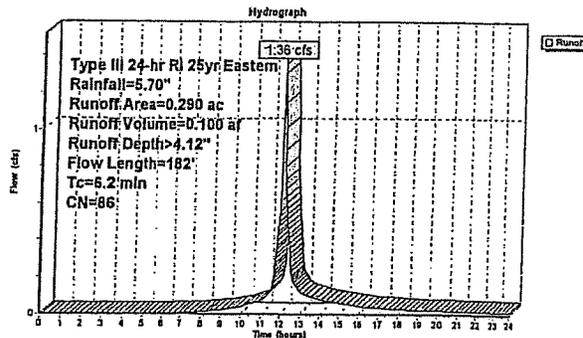
Runoff = 1.36 cfs @ 12.09 hrs, Volume= 0.100 af, Depth> 4.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.290	86	Pasture/grassland/range, Poor, HSG C
0.290		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0600	0.31		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.7	82	0.0730	1.89		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
6.2	182	Total			

Subcatchment 41S: Sub-watershed 41



Subcatchment 42S: Sub-watershed 42

Runoff = 0.32 cfs @ 12.10 hrs, Volume= 0.024 af, Depth> 4.12"

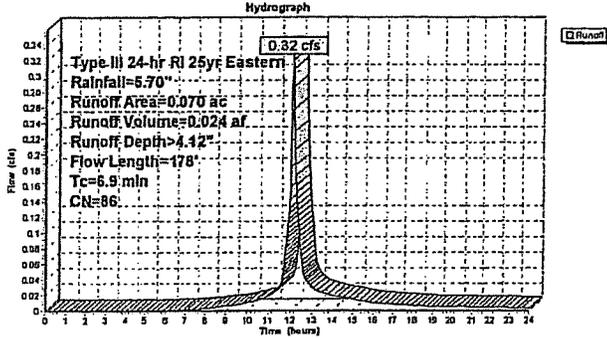
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.070	88	Pasture/grassland/range, Poor, HSG C
0.070		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.8	78	0.0510	1.58		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
6.9	178	Total			

Subcatchment 42S: Sub-watershed 42



Subcatchment 43S: Sub-watershed 43

Runoff = 10.46 cfs @ 12.14 hrs, Volume= 0.858 af, Depth> 3.60"

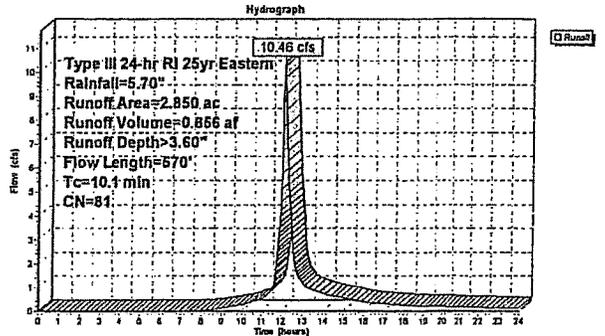
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
2.850	81	1/3 acre lots, 30% Imp, HSG C
1.995		Pervious Area
0.855		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0600	0.27		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
1.8	228	0.0880	2.08		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
1.7	206	0.0100	2.03		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
0.5	36	0.0280	1.17		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
10.1	570	Total			

Subcatchment 43S: Sub-watershed 43



Subcatchment 44S: Sub-watershed 44

Runoff = 4.36 cfs @ 12.28 hrs, Volume= 0.459 af, Depth> 3.21"

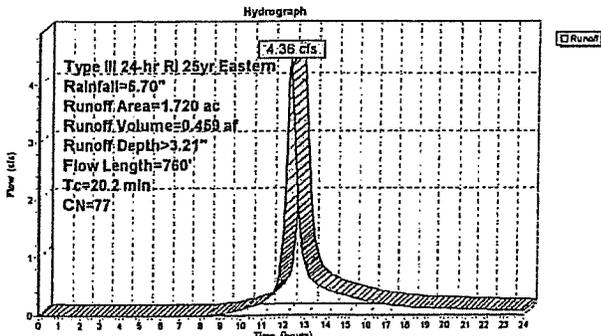
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.860	81	1/3 acre lots, 30% Imp, HSG C
0.860	73	Woods, Fair, HSG C
1.720	77	Weighted Average
1.462		Pervious Area
0.258		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0500	0.12		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
4.3	262	0.0420	1.02		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
1.5	398	0.0450	4.31		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
20.2	760	Total			

Subcatchment 44S: Sub-watershed 44



Subcatchment 45S: Sub-watershed 45

Runoff = 8.28 cfs @ 12.30 hrs, Volume= 0.893 af, Depth> 2.92"

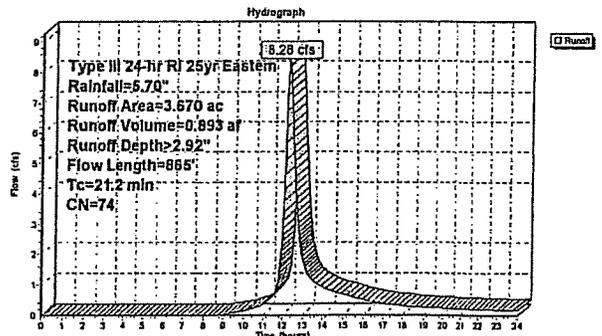
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
3.120	73	Woods, Fair, HSG C
0.180	81	1/3 acre lots, 30% Imp, HSG C
0.370	82	Woods/grass comb., Poor, HSG C
3.670	74	Weighted Average
3.816		Pervious Area
0.054		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
13.1	765	0.0380	0.97		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
21.2	865	Total			

Subcatchment 45S: Sub-watershed 45



Subcatchment 46S: Sub-watershed 46

Runoff = 2.88 cfs @ 12.35 hrs, Volume= 0.333 af, Depth> 2.92"

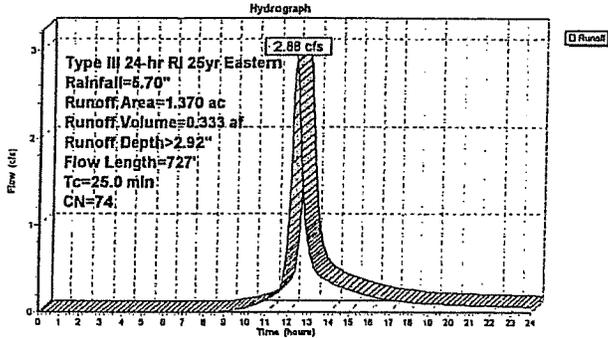
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
1.230	73	Woods, Fair, HSG C
0.140	82	Woods/grass comb. Poor, HSG C
1.370	74	Weighted Average
1.370		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0400	0.11		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.40"
7.6	373	0.0270	0.82		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
1.6	254	0.0160	2.57		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
25.0	727				Total

Subcatchment 46S: Sub-watershed 46



Subcatchment 47S: Sub-watershed 47

Runoff = 28.28 cfs @ 12.12 hrs, Volume= 2.164 af, Depth> 3.41"

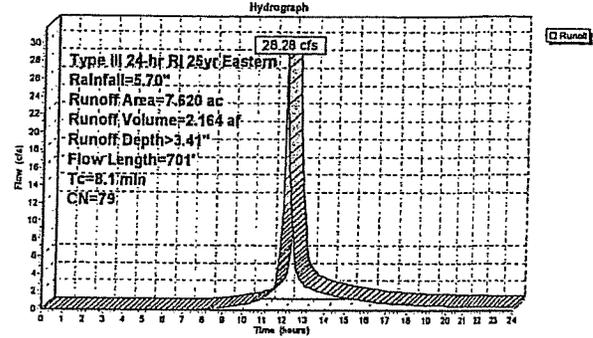
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
7.620	79	50-75% Grass cover, Fair, HSG C
7.620		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	100	0.1000	0.33		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.2	20	0.0500	1.57		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.9	581	0.0280	3.40		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
8.1	701				Total

Subcatchment 47S: Sub-watershed 47



Subcatchment 48S: Sub-watershed 48

Runoff = 5.45 cfs @ 12.12 hrs, Volume= 0.430 af, Depth> 3.91"

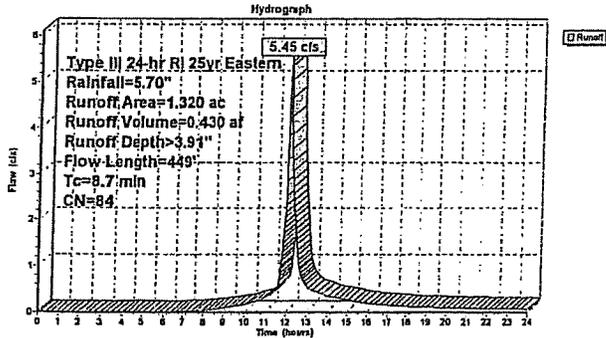
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
1.320	84	50-75% Grass cover, Fair, HSG D
1.320		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.4	39	0.0510	1.58		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.2	310	0.0130	2.31		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
8.7	449				Total

Subcatchment 48S: Sub-watershed 48



Subcatchment 49S: Sub-watershed 49

Runoff = 1.14 cfs @ 12.10 hrs, Volume= 0.085 af, Depth> 3.41"

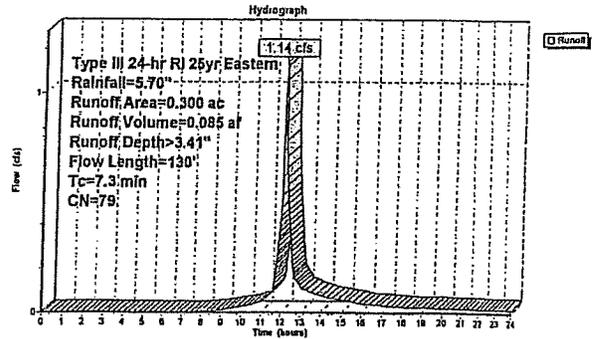
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.300	79	50-75% Grass cover, Fair, HSG C
0.300		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.1	11	0.1800	2.97		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.0	19	0.1100	6.73		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
7.3	130				Total

Subcatchment 49S: Sub-watershed 49



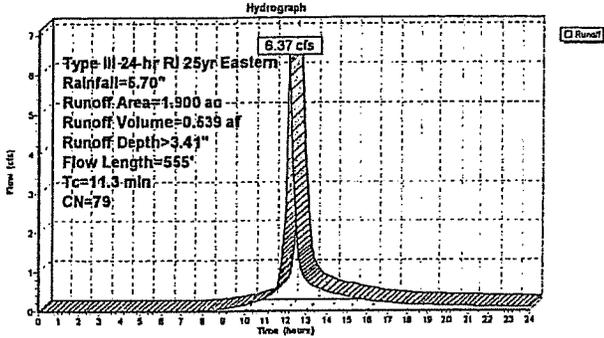
Subcatchment 50S: Sub-watershed 50

Runoff = 6.37 cfs @ 12.16 hrs, Volume= 0.539 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description			
1.900	79	50-75% Grass cover, Fair, HSG C			
Pervious Area					
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0500	0.25		Sheet Flow, A-B
4.5	419	0.0500	1.57		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
0.2	36	0.0170	2.65		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
11.3	555	Total			

Subcatchment 50S: Sub-watershed 50



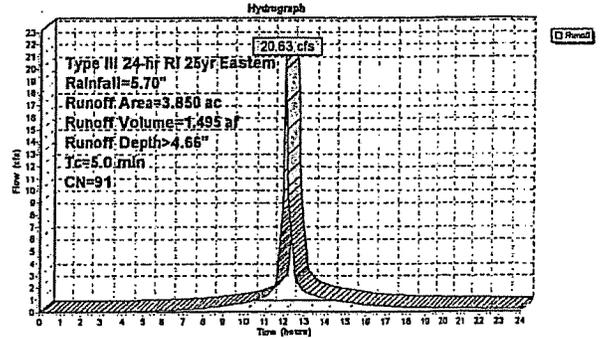
Subcatchment 51S: Sub-watershed 51

Runoff = 20.63 cfs @ 12.07 hrs, Volume= 1.495 af, Depth> 4.66"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description			
3.850	91	Urban industrial, 72% Imp, HSG C			
1.078		Pervious Area			
2.772		Impervious Area			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, A-C

Subcatchment 51S: Sub-watershed 51



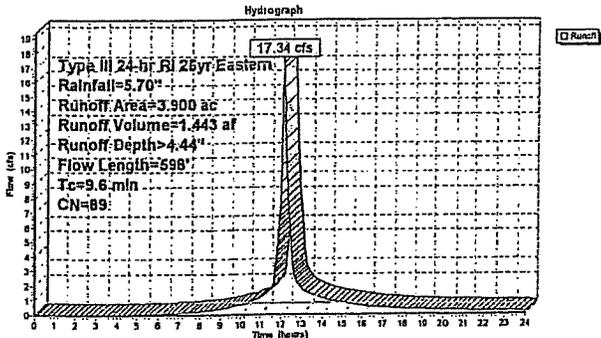
Subcatchment 52S: Sub-watershed 52

Runoff = 17.34 cfs @ 12.13 hrs, Volume= 1.443 af, Depth> 4.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description			
3.510	90	1/8 acre lots, 65% Imp, HSG C			
0.390	79	50-75% Grass cover, Fair, HSG C			
Weighted Average					
3.800	89				
1.618		Pervious Area			
2.282		Impervious Area			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1200	0.36		Sheet Flow, A-B
1.9	108	0.0190	0.96		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
2.8	361	0.0110	2.13		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
0.3	29	0.0690	1.84		Paved Kv= 20.3 fps Shallow Concentrated Flow, D-E
9.6	598	Total			

Subcatchment 52S: Sub-watershed 52



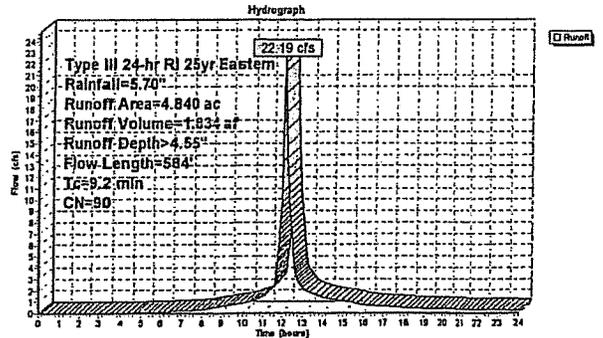
Subcatchment 53S: Sub-watershed 53

Runoff = 22.19 cfs @ 12.13 hrs, Volume= 1.834 af, Depth> 4.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description			
4.840	90	1/8 acre lots, 65% Imp, HSG C			
1.654		Pervious Area			
3.186		Impervious Area			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0500	0.25		Sheet Flow, A-B
0.3	33	0.0610	1.73		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
2.3	451	0.0270	3.34		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
9.2	584	Total			

Subcatchment 53S: Sub-watershed 53



Subcatchment 54S: Sub-watershed 54

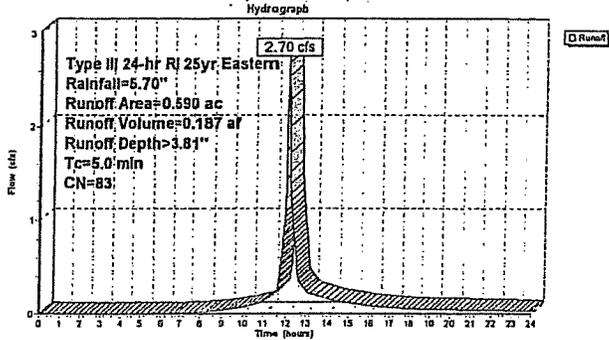
Runoff = 2.70 cfs @ 12.07 hrs, Volume= 0.187 af, Depth> 3.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.590	83	1/4 acre lots, 38% Imp, HSG C
0.366		Pervious Area
0.224		Impervious Area

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

Subcatchment 54S: Sub-watershed 54



Subcatchment 55S: Sub-watershed 55

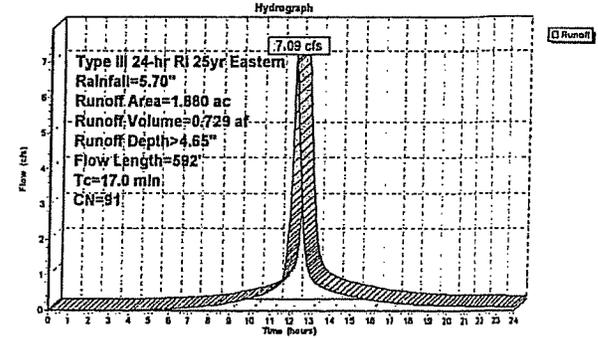
Runoff = 7.09 cfs @ 12.22 hrs, Volume= 0.729 af, Depth> 4.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
1.880	91	Urban Industrial, 72% Imp, HSG C
0.528		Pervious Area
1.354		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n=0.150 P2=3.40"
4.5	492	0.0080	1.62		Shallow Concentrated Flow, B-C Paved Kv=20.3 fps
17.0	592				Total

Subcatchment 55S: Sub-watershed 55



Subcatchment 56S: Sub-watershed 56

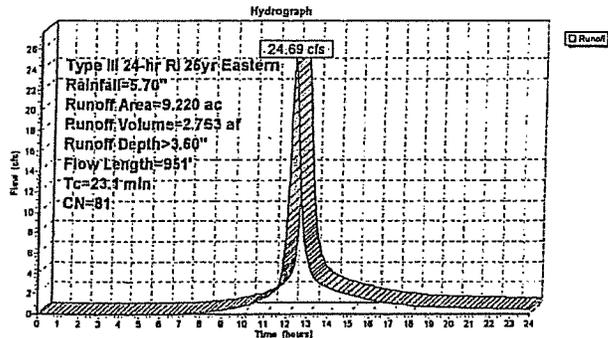
Runoff = 24.69 cfs @ 12.31 hrs, Volume= 2.763 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
9.220	81	1/3 acre lots, 30% Imp, HSG C
6.454		Pervious Area
2.766		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n=0.150 P2=3.40"
5.7	226	0.0090	0.66		Shallow Concentrated Flow, B-C Short Grass Pasture Kv=7.0 fps
4.9	623	0.0110	2.13		Shallow Concentrated Flow, C-D Paved Kv=20.3 fps
23.1	951				Total

Subcatchment 56S: Sub-watershed 56



Subcatchment 67S: Sub-watershed 67

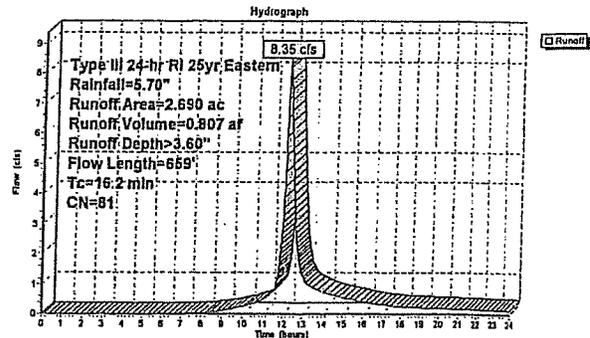
Runoff = 8.35 cfs @ 12.22 hrs, Volume= 0.807 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
2.690	81	1/3 acre lots, 30% Imp, HSG C
1.883		Pervious Area
0.807		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.0370	0.22		Sheet Flow, A-B Grass: Short n=0.150 P2=3.40"
6.4	190	0.0050	0.49		Shallow Concentrated Flow, B-C Short Grass Pasture Kv=7.0 fps
2.2	349	0.0170	2.65		Shallow Concentrated Flow, C-D Paved Kv=20.3 fps
0.2	20	0.0500	1.57		Shallow Concentrated Flow, D-E Short Grass Pasture Kv=7.0 fps
16.2	659				Total

Subcatchment 67S: Sub-watershed 67



Subcatchment 58S: Sub-watershed 58

Runoff = 10.31 cfs @ 12.24 hrs, Volume= 1.026 af, Depth= 3.60"

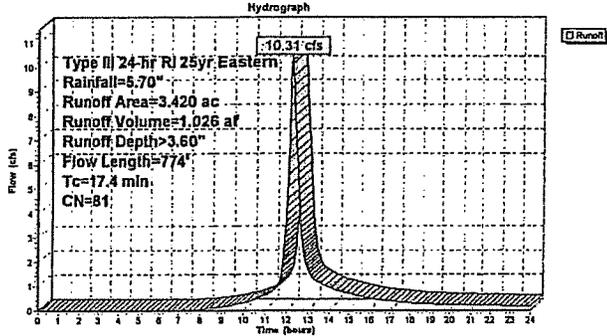
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
3.420	81	1/3 acre lots, 30% Imp, HSG C
2.394		Pervious Area
1.026		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.1	74	0.0270	1.15		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
3.8	600	0.0170	2.65		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
17.4	774	Total			

Subcatchment 58S: Sub-watershed 58



Subcatchment 59S: Sub-watershed 59

Runoff = 140.11 cfs @ 12.99 hrs, Volume= 28.477 af, Depth= 3.76"

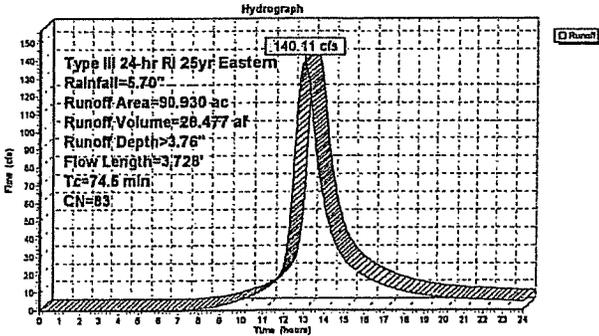
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
35.570	83	1/4 acre lots, 38% Imp, HSG C
15.400	79	Pasture/grassland/range, Fair, HSG C
13.820	84	Urban commercial, 65% Imp, HSG C
2.410	91	Urban industrial, 72% Imp, HSG C
8.840	86	Woods/grass comb., Poor, HSG D
12.190	73	Woods, Fair, HSG C
2.700	79	Pasture/grassland/range, Fair, HSG C
80.930	83	Weighted Average
63.931		Pervious Area
26.999		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0050	0.10		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
49.4	2,858	0.0190	0.98		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.2	48	0.0010	0.64		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	164	0.0180	0.94		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
3.5	377	0.0080	1.82		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
1.0	181	0.0220	3.01		Shallow Concentrated Flow, F-G Paved Kv= 20.3 fps
74.5	3,728	Total			

Subcatchment 59S: Sub-watershed 59



Subcatchment 60S: Sub-watershed 60

Runoff = 65.69 cfs @ 12.27 hrs, Volume= 7.457 af, Depth= 4.87"

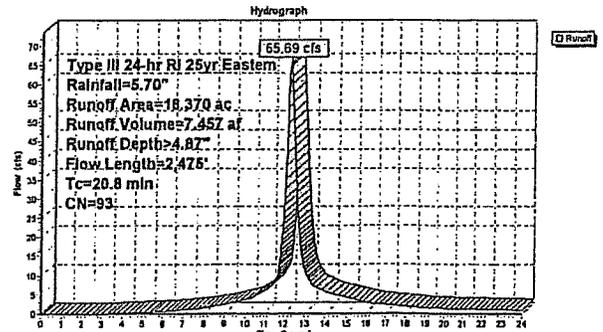
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
5.510	91	Urban industrial, 72% Imp, HSG C
12.880	84	Urban commercial, 65% Imp, HSG C
18.370	93	Weighted Average
3.472		Pervious Area
14.898		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.6	83	0.1100	2.32		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
13.0	2,292	0.0210	2.94		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
20.8	2,475	Total			

Subcatchment 60S: Sub-watershed 60



**Subcatchment 61S: Sub-watershed 61**

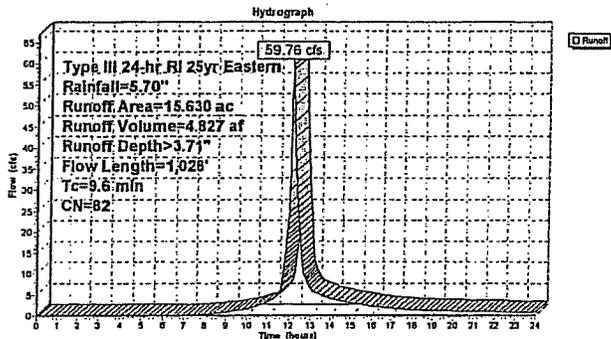
Runoff = 59.76 cfs @ 12.13 hrs, Volume= 4.827 af, Depth> 3.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
14,070	81	1/3 acre lots, 30% Imp, HSG C
1,580	94	Urban commercial, 85% Imp, HSG C
15,630	82	Weighted Average
10,083		Pervious Area
5,547		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0700	0.28		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.2	132	0.0700	1.85		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.6	796	0.0630	5.10		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
9.6	1,028	Total			

**Subcatchment 61S: Sub-watershed 61**



**Subcatchment 62S: Sub-watershed 62**

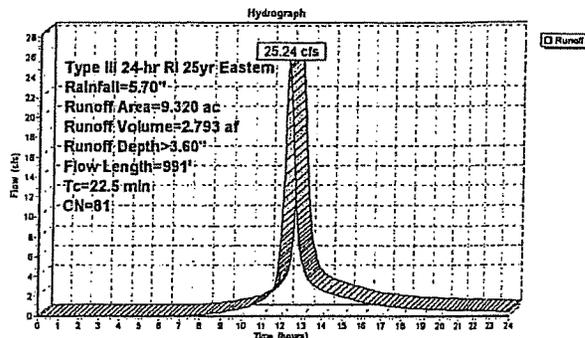
Runoff = 25.24 cfs @ 12.31 hrs, Volume= 2.793 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
9,320	81	1/3 acre lots, 30% Imp, HSG C
6,524		Pervious Area
2,796		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
5.2	169	0.0060	0.54		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
4.8	722	0.0150	2.49		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
22.5	991	Total			

**Subcatchment 62S: Sub-watershed 62**



**Subcatchment 63S: Sub-watershed 63**

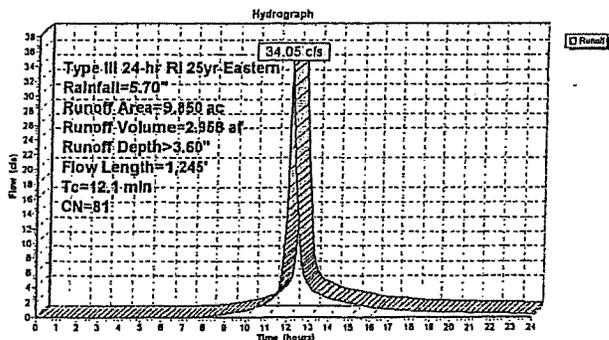
Runoff = 34.05 cfs @ 12.17 hrs, Volume= 2.958 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
9,850	81	1/3 acre lots, 30% Imp, HSG C
6,895		Pervious Area
2,955		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	37	0.0540	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.6	63	0.0480	1.83		Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.40"
0.6	118	0.0250	3.21		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.0	188	0.0480	1.53		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
6.0	839	0.0130	2.31		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
12.1	1,245	Total			

**Subcatchment 63S: Sub-watershed 63**



**Subcatchment 64S: Sub-watershed 64**

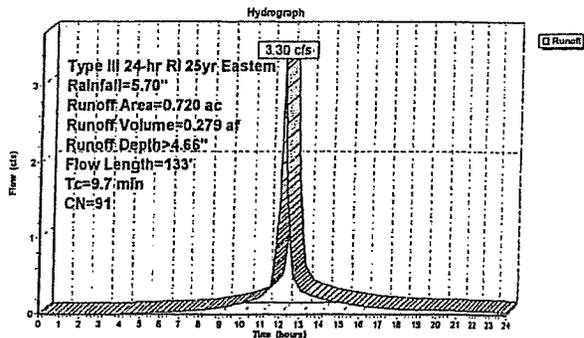
Runoff = 3.30 cfs @ 12.13 hrs, Volume= 0.278 af, Depth> 4.66"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0,720	91	Urban Industrial, 72% Imp, HSG C
0,202		Pervious Area
0,518		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
2.5	33	0.0010	0.22		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
9.7	133	Total			

**Subcatchment 64S: Sub-watershed 64**



Subcatchment 65S: Sub-watershed 65

Runoff = 13.02 cfs @ 12.20 hrs, Volume= 1.225 af, Depth> 3.60"

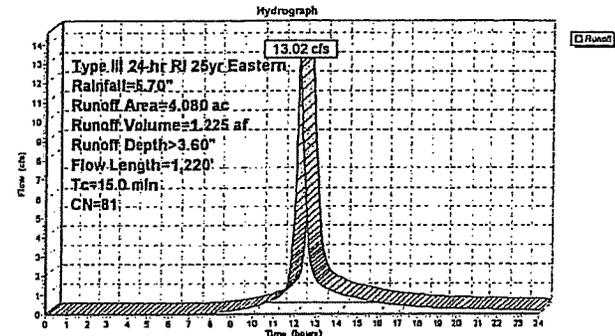
Runoff by SCS TR-20 method, UH-SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
4.080	81	1/3 acre lots, 30% Imp, HSG C
2.858		Pervious Area
1.224		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	85	0.0300	0.20		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.3	14	0.0100	0.73		Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.40"
7.5	1,120	0.0150	2.49		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
15.0	1,220	Total			

Subcatchment 65S: Sub-watershed 65



Subcatchment 66S: Su-watershed 66

Runoff = 12.76 cfs @ 12.30 hrs, Volume= 1.397 af, Depth> 3.60"

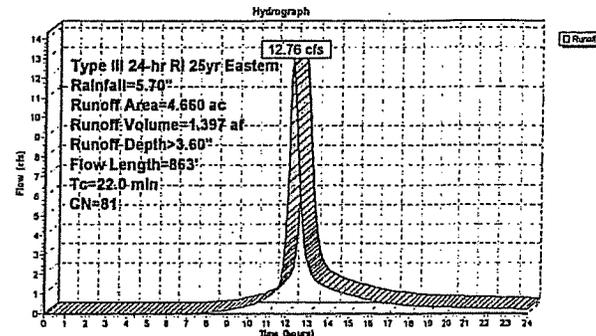
Runoff by SCS TR-20 method, UH-SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
4.660	81	1/3 acre lots, 30% Imp, HSG C
3.262		Pervious Area
1.398		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	100	0.0080	0.11		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.2	103	0.0390	1.38		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.4	660	0.0100	2.03		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
22.0	863	Total			

Subcatchment 66S: Su-watershed 66



Subcatchment 67S: Sub-watershed 67

Runoff = 8.25 cfs @ 12.38 hrs, Volume= 1.020 af, Depth> 3.90"

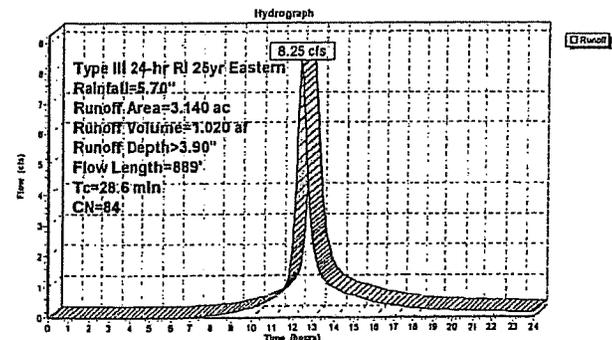
Runoff by SCS TR-20 method, UH-SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
0.790	81	1/3 acre lots, 30% Imp, HSG C
1.880	88	Fallow, crop residue, Good, HSG C
0.470	73	Woods, Fair, HSG C
3.140	84	Weighted Average
2.903		Pervious Area
0.237		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
4.7	199	0.0200	0.71		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
10.7	490	0.0120	0.77		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
0.7	100	0.0120	2.22		Shallow Concentrated Flow, D-E Paved Kv= 20.3 fps
28.6	889	Total			

Subcatchment 67S: Sub-watershed 67



Subcatchment 68S: Sub-watershed 68

Runoff = 59.68 cfs @ 12.25 hrs, Volume= 6.017 af, Depth> 3.50"

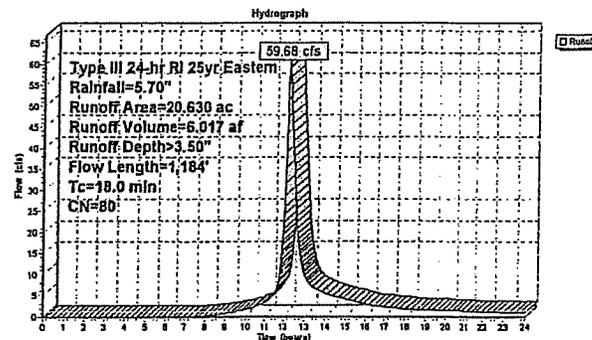
Runoff by SCS TR-20 method, UH-SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 25yr Eastern Rainfall=5.70"

Area (ac)	CN	Description
2.350	79	Pasture/grassland/range, Fair, HSG C
2.470	88	Fallow, crop residue, Good, HSG C
1.970	70	Brush, Fair, HSG C
5.490	82	Woods/grass comb., Poor, HSG C
2.460	73	Woods, Fair, HSG C
5.890	81	1/3 acre lots, 30% Imp, HSG C
20.630	80	Weighted Average
18.863		Pervious Area
1.767		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0850	0.31		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
12.7	1,084	0.0410	1.42		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
18.0	1,184	Total			

Subcatchment 68S: Sub-watershed 68



**Reach 3R: Intermittent Stream**

Inflow Area = 21.680 ac, Inflow Depth > 3.57' for RI 25yr Eastern event  
 Inflow = 58.87 cfs @ 12.32 hrs, Volume= 6.445 af  
 Outflow = 52.64 cfs @ 12.49 hrs, Volume= 6.412 af, Atten= 11%, Lag= 10.2 min

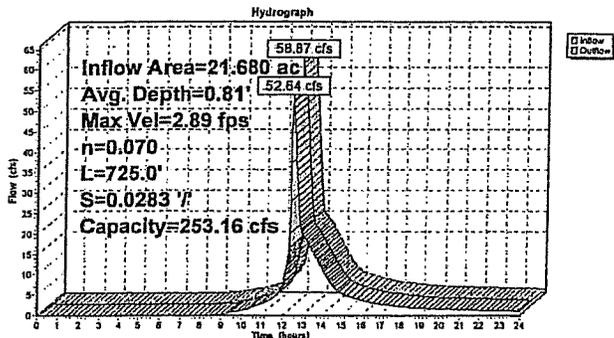
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Velocity= 2.89 fps, Min. Travel Time= 4.2 min  
 Velocity = 0.95 fps, Avg. Travel Time= 12.8 min

Peak Storage= 13,255 cf @ 12.42 hrs, Average Depth at Peak Storage= 0.81'  
 Bank-Full Depth= 2.00', Capacity at Bank-Full= 253.16 cfs

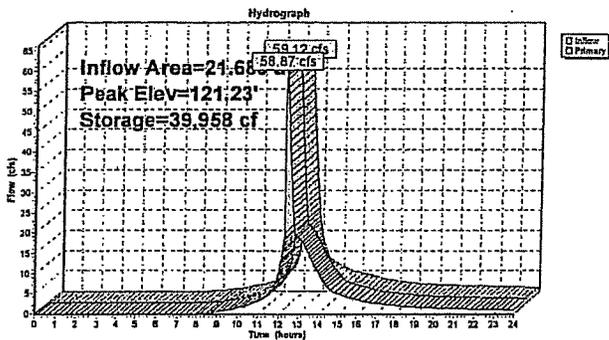
20.00' x 2.00' deep channel, n= 0.070 Medium-dense brush, winter  
 Side Slope Z-value= 3.0 / Top Width= 32.00'  
 Length= 725.0' Slope= 0.0283 /  
 Inlet Invert= 113.50', Outlet Invert= 93.00'



**Reach 3R: Intermittent Stream**



**Pond 2P: Highview Pond Existing**



**Pond 2P: Highview Pond Existing**

Inflow Area = 21.680 ac, Inflow Depth > 3.60' for RI 25yr Eastern event  
 Inflow = 59.12 cfs @ 12.30 hrs, Volume= 6.488 af  
 Outflow = 58.87 cfs @ 12.32 hrs, Volume= 6.445 af, Atten= 0%, Lag= 1.0 min  
 Primary = 58.87 cfs @ 12.32 hrs, Volume= 6.445 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2  
 Peak Elev= 121.23' @ 12.32 hrs Surf Area= 6,087 sf Storage= 39,958 cf

Plug-Flow detention time= 22.6 min calculated for 6,445 af (99% of Inflow)  
 Center-of-Mass del. Time= 17.8 min (843.8 - 826.1)

Volume	Invert	Avail. Storage	Storage Description
#1	115.00'	42,295 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
115.00	4,620	0	0
118.00	6,496	16,674	16,674
121.00	7,936	21,648	38,322
122.00	10	3,973	42,295

Device	Routing	Invert	Outlet Devices
#1	Primary	115.00'	18.0" x 40.0' long Culvert RCP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 114.40' S= 0.0150 / Cc= 0.900 n= 0.013
#2	Primary	121.00'	128.0' long x 1.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.99 3.08 3.20 3.28 3.31 3.30 3.31 3.32

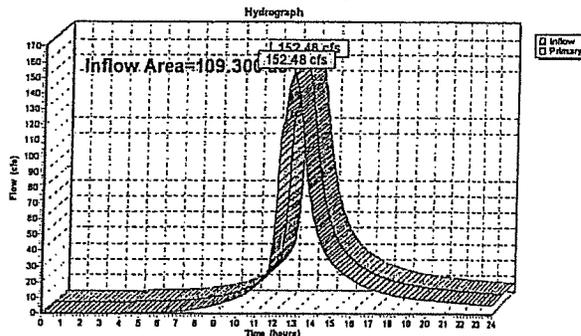
Primary OutFlow Max=58.81 cfs @ 12.32 hrs HW=121.23' (Free Discharge)  
 1=Culvert (Inlet Controls 19.92 cfs @ 11.28 fps)  
 2=Broad-Crested Rectangular Weir (Weir Controls 38.88 cfs @ 1.30 fps)

**Link 68L: SW 59\_SW 60**

Inflow Area = 109.300 ac, Inflow Depth > 3.95' for RI 25yr Eastern event  
 Inflow = 152.48 cfs @ 12.92 hrs, Volume= 35.934 af  
 Primary = 152.48 cfs @ 12.92 hrs, Volume= 35.934 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

**Link 68L: SW 59\_SW 60**

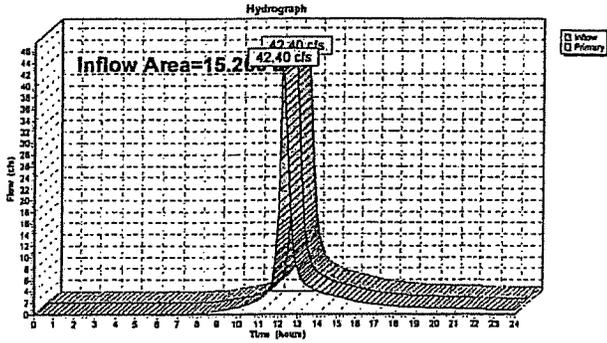


Link 69L: SW 14\_SW 17

Inflow Area = 15.260 ac, Inflow Depth > 3.45" for RI 25yr Eastern event  
 Inflow = 42.40 cfs @ 12.19 hrs, Volume= 4.386 af  
 Primary = 42.40 cfs @ 12.19 hrs, Volume= 4.386 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 69L: SW 14\_SW 17

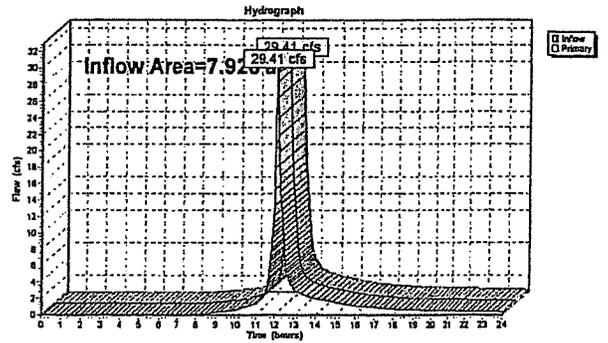


Link 70L: SW47\_SW49

Inflow Area = 7.920 ac, Inflow Depth > 3.41" for RI 25yr Eastern event  
 Inflow = 28.41 cfs @ 12.11 hrs, Volume= 2.249 af  
 Primary = 28.41 cfs @ 12.11 hrs, Volume= 2.249 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 70L: SW47\_SW49

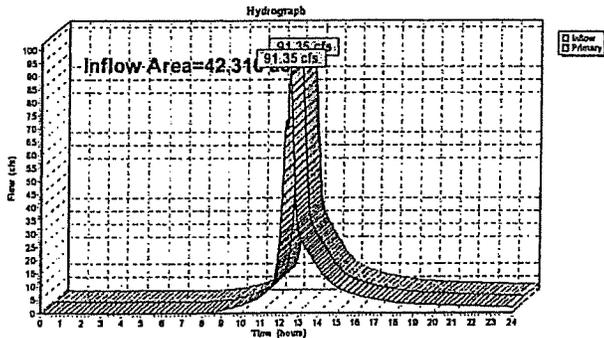


Link 71L: Elbow St

Inflow Area = 42.310 ac, Inflow Depth > 3.52" for RI 25yr Eastern event  
 Inflow = 91.35 cfs @ 12.46 hrs, Volume= 12.428 af  
 Primary = 91.35 cfs @ 12.46 hrs, Volume= 12.428 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 71L: Elbow St



**100-Year Storm**

3416 Watershed Yield

Type III 24-hr RI 100yr Eastern Rainfall=7.10"

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Time span=0.00-24.00 hrs, dt=0.02 hrs, 1201 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Table listing subcatchments 1S through 14S with columns for Runoff Area, Runoff Depth, Flow Length, Tc, CN, and Runoff. Includes subcatchments 1S, 2S, 3S, 4S, 5S, 6S, 8S, 9S, 10S, 11S, 12S, 13S, and 14S.

3416 Watershed Yield

Type III 24-hr RI 100yr Eastern Rainfall=7.10"

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Table listing subcatchments 15S through 31S with columns for Runoff Area, Runoff Depth, Flow Length, Tc, CN, and Runoff. Includes subcatchments 15S, 16S, 17S, 18S, 19S, 20S, 21S, 22S, 23S, 24S, 25S, 26S, 27S, 28S, 29S, 30S, and 31S.

3416 Watershed Yield

Type III 24-hr RI 100yr Eastern Rainfall=7.10"

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Table listing subcatchments 32S through 48S with columns for Runoff Area, Runoff Depth, Flow Length, Tc, CN, and Runoff. Includes subcatchments 32S, 33S, 34S, 35S, 36S, 37S, 38S, 39S, 40S, 41S, 42S, 43S, 44S, 45S, 46S, 47S, and 48S.

3416 Watershed Yield

Type III 24-hr RI 100yr Eastern Rainfall=7.10"

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Table listing subcatchments 49S through 65S with columns for Runoff Area, Runoff Depth, Flow Length, Tc, CN, and Runoff. Includes subcatchments 49S, 50S, 51S, 52S, 53S, 54S, 55S, 56S, 57S, 58S, 59S, 60S, 61S, 62S, 63S, 64S, and 65S.

Subcatchment 66S: Su-watershed 66	Runoff Area=4.660 ac Runoff Depth>4.88" Flow Length=863' Tc=22.0 min CN=81 Runoff=17.19 cfs 1,895 af
Subcatchment 67S: Sub-watershed 67	Runoff Area=3.140 ac Runoff Depth>5.21" Flow Length=889' Tc=28.6 min CN=84 Runoff=10.92 cfs 1,363 af
Subcatchment 68S: Sub-watershed 68	Runoff Area=20.630 ac Runoff Depth>4.77" Flow Length=1,184' Tc=18.0 min CN=80 Runoff=80.86 cfs 8,203 af
Reach 3R: Intermittent Stream	Avg. Depth=1.01' Max Vel=3.28 fps Inflow=79.54 cfs 8,762 af n=0.070 L=725.0' S=0.0283 1' Capacity=253.16 cfs Outflow=76.68 cfs 8,724 af
Pond 2P: Highview Pond Existing	Peak Elev=121.31' Storage=40,393 cf Inflow=79.62 cfs 8,815 af Outflow=79.54 cfs 8,762 af
Link 68L: SW 69_SW 60	Inflow=202.69 cfs 47,844 af Primary=202.68 cfs 47,844 af
Link 69L: SW 14_SW 17	Inflow=57.76 cfs 6,995 af Primary=57.76 cfs 6,995 af
Link 70L: SW47_SW49	Inflow=40.05 cfs 3,082 af Primary=40.05 cfs 3,082 af
Link 71L: Elbow St	Inflow=138.70 cfs 16,927 af Primary=138.70 cfs 16,927 af

Total Runoff Area = 746.870 ac Runoff Volume = 315.669 af Average Runoff Depth = 5.07"  
 66.54% Pervious Area = 496.954 ac 33.46% Impervious Area = 249.916 ac

Subcatchment 1S: Sub-watershed 1

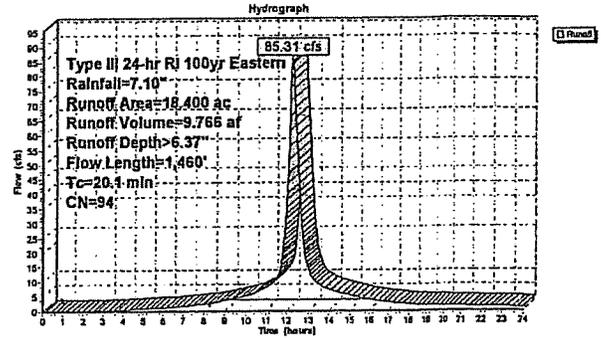
Runoff = 85.31 cfs @ 12.26 hrs, Volume= 9,766 af, Depth= 6.37"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, di= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
18.400	84	Urban commercial, 85% Imp, HSG C
2.760		Pervious Area
15.640		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0150	0.16		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
8.9	1,240	0.0210	2.33		Shallow Concentrated Flow, B-C Unpaved Kvs= 18.1 fps
0.5	120	0.0330	3.69		Shallow Concentrated Flow, C-D Paved Kvs= 20.3 fps
20.1	1,460		Total		

Subcatchment 1S: Sub-watershed 1



Subcatchment 2S: Sub-watershed 2

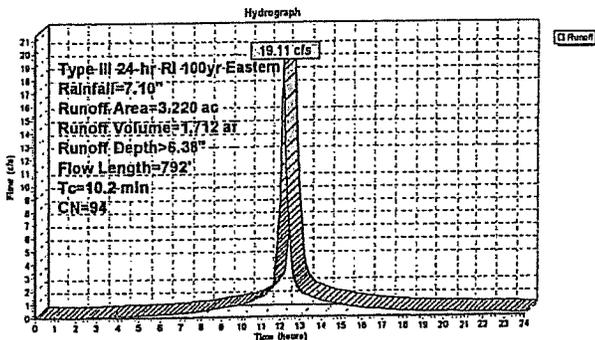
Runoff = 19.11 cfs @ 12.14 hrs, Volume= 1,712 af, Depth> 6.38"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, di= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
3.220	84	Urban commercial, 85% Imp, HSG C
0.483		Pervious Area
2.737		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
2.4	394	0.0280	2.69		Shallow Concentrated Flow, B-C Unpaved Kvs= 18.1 fps
1.7	298	0.0200	2.87		Shallow Concentrated Flow, C-D Paved Kvs= 20.3 fps
10.2	792		Total		

Subcatchment 2S: Sub-watershed 2



Subcatchment 3S: Sub-watershed 3

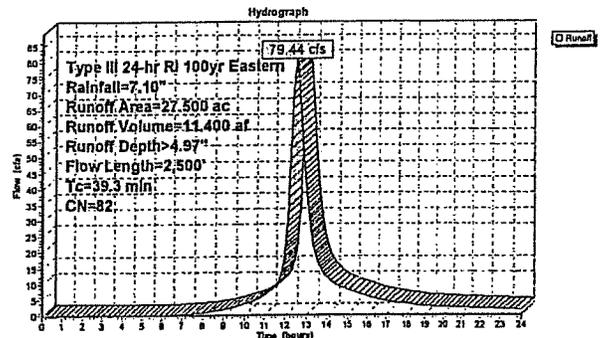
Runoff = 79.44 cfs @ 12.53 hrs, Volume= 11,400 af, Depth> 4.97"  
 Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, di= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
13.750	86	Pasture/grassland/range, Poor, HSG C
10.750	80	1/2 acre lots, 25% Imp, HSG C
3.000	73	Woods, Fair, HSG C
27.500	82	Weighted Average
24.813		Pervious Area
2.688		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	100	0.0100	0.28		Sheet Flow, A-B Cultivated: Residue=20% n= 0.060 P2= 3.40"
19.4	1,200	0.0217	1.03		Shallow Concentrated Flow, B-C Short Grass Pasture Kvs= 7.0 fps
13.9	1,200	0.0050	1.44		Shallow Concentrated Flow, C-D Paved Kvs= 20.3 fps
39.3	2,500		Total		

Subcatchment 3S: Sub-watershed 3



**3416 Watershed Yield**

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Type III 24-hr RI 100yr Eastern Rainfall=7.10"  
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**Subcatchment 4S: Sub-watershed 4**

Runoff = 89.11 cfs @ 12.67 hrs, Volume= 16,796 af, Depth> 5.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
5.801	80	Fallow, crop residue, Poor, HSG C
17.070	84	Urban commercial, 85% imp, HSG C
5.647	79	Pasture/grassland/range, Fair, HSG C
3.680	79	1 acre lots, 20% imp, HSG C
2.712	91	Urban industrial, 72% imp, HSG C

35.010	89	Weighted Average
17.812		Pervious Area
17.198		Impervious Area

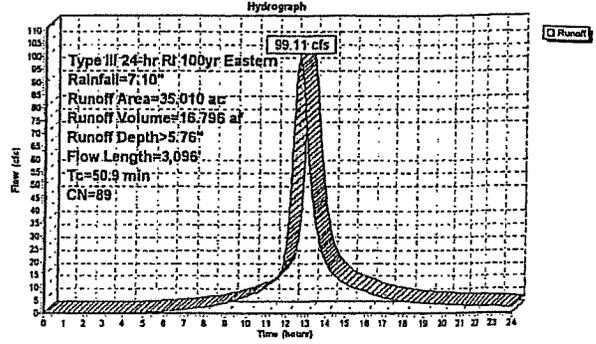
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
					Grass: Short n=0.150 P2=3.40"
1.8	106	0.0190	0.96		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv=7.0 fps
0.2	30	0.0170	2.65		Shallow Concentrated Flow, C-D
					Paved Kv=20.3 fps
0.6	70	0.0860	2.05		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv=7.0 fps
0.7	82	0.0100	2.03		Shallow Concentrated Flow, E-F
					Paved Kv=20.3 fps
24.2	322	0.0010	0.22		Shallow Concentrated Flow, F-G
					Short Grass Pasture Kv=7.0 fps
13.9	2,386	0.0200	2.67		Shallow Concentrated Flow, G-H
					Paved Kv=20.3 fps
50.9	3,096	Total			

**3416 Watershed Yield**

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**Subcatchment 4S: Sub-watershed 4**



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Type III 24-hr RI 100yr Eastern Rainfall=7.10"  
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**Subcatchment 5S: Sub-Watershed 5**

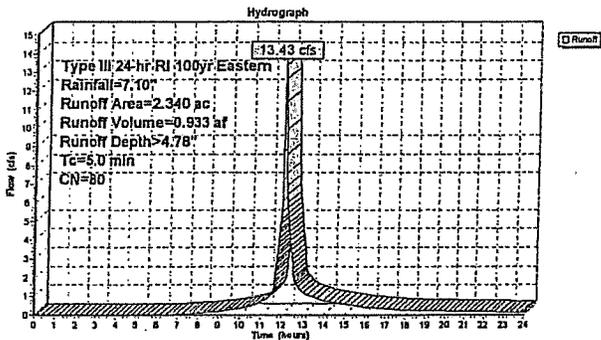
Runoff = 13.43 cfs @ 12.07 hrs, Volume= 0.933 af, Depth> 4.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
2,340	80	1/2 acre lots, 25% imp, HSG C
1,755		Pervious Area
0,585		Impervious Area

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

**Subcatchment 5S: Sub-Watershed 5**



**3416 Watershed Yield**

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Type III 24-hr RI 100yr Eastern Rainfall=7.10"  
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**Subcatchment 6dS: Sub-watershed 6d**

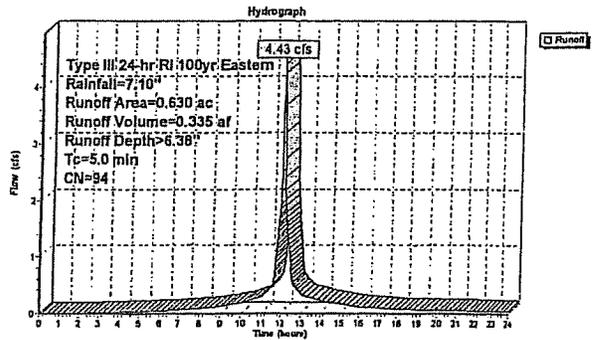
Runoff = 4.43 cfs @ 12.07 hrs, Volume= 0.335 af, Depth> 6.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0,630	94	Urban commercial, 85% imp, HSG C
0,095		Pervious Area
0,535		Impervious Area

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

**Subcatchment 6dS: Sub-watershed 6d**



Subcatchment 6eS: Sub-watershed 6e

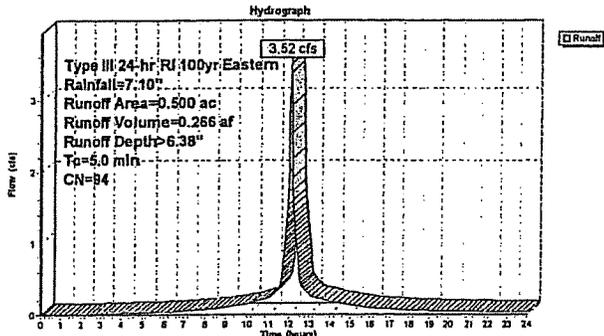
Runoff = 3.52 cfs @ 12.07 hrs, Volume= 0.266 af, Depth= 6.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.500	84	Urban commercial, 85% imp, HSG C
0.075		Pervious Area
0.425		Impervious Area

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

Subcatchment 6eS: Sub-watershed 6e



Subcatchment 6S: Sub-watershed 6

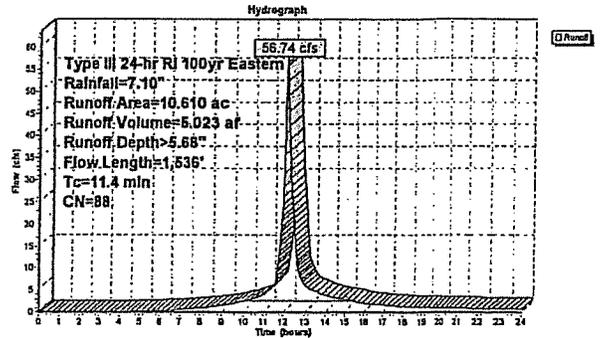
Runoff = 56.74 cfs @ 12.15 hrs, Volume= 5.023 af, Depth= 5.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
8.380	87	Dir roads, HSG C
2.230	94	Urban commercial, 85% imp, HSG C
10.610	88	Weighted Average
8.714		Pervious Area
1.895		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	100	0.0900	2.59		Sheet Flow, A-B
10.8	1,436	0.0120	2.22		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C
11.4	1,536				Paved Kv= 20.3 fps

Subcatchment 6S: Sub-watershed 6



Subcatchment 8S: Sub-watershed 8

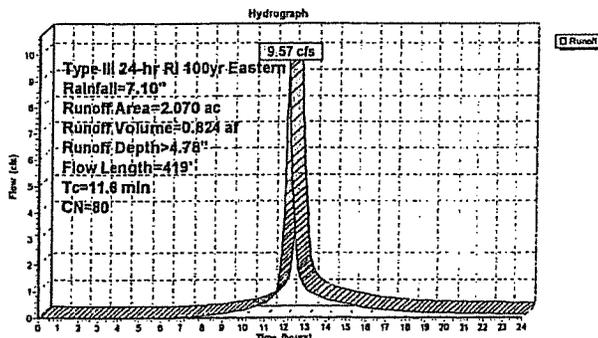
Runoff = 9.57 cfs @ 12.16 hrs, Volume= 0.824 af, Depth= 4.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
2.070	80	1/2 acre lots, 25% imp, HSG C
1.552		Pervious Area
0.517		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
3.1	228	0.0300	1.21		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
0.4	91	0.0400	4.06		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, B-C
11.6	419				Paved Kv= 20.3 fps

Subcatchment 8S: Sub-watershed 8



Subcatchment 9S: Sub-watershed 9

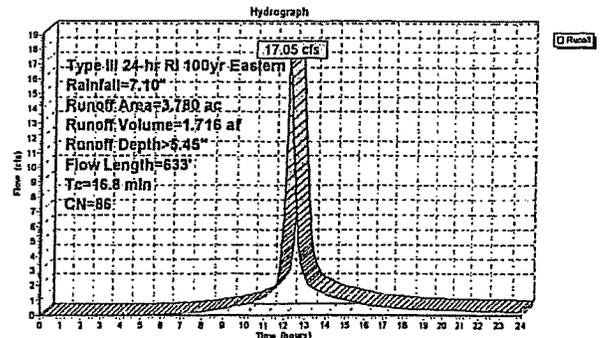
Runoff = 17.05 cfs @ 12.22 hrs, Volume= 1.716 af, Depth= 5.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
2.990	80	1/8 acre lots, 65% imp, HSG C
0.790	73	Woods, Fair, HSG C
3.780	86	Weighted Average
1.837		Pervious Area
1.944		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
4.7	200	0.0200	0.71		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
1.7	160	0.0500	1.57		Woodland Kv= 5.0 fps Shallow Concentrated Flow, B-C
0.9	173	0.0230	3.08		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
16.8	633				Paved Kv= 20.3 fps

Subcatchment 9S: Sub-watershed 9



**Subcatchment 10S: Sub-watershed 10**

Runoff = 35.35 cfs @ 12.26 hrs, Volume= 3.718 af, Depth> 5.11"

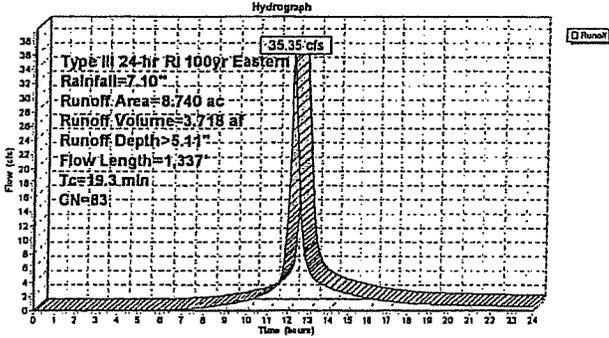
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
8.740	83	1/4 acre lots, 38% imp, HSG C
5.419		Pervious Area
3.321		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
3.8	196	0.0150	0.86		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
6.0	1,041	0.0200	2.87		Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
19.3	1,337	Total			

**Subcatchment 10S: Sub-watershed 10**



**Subcatchment 11S: Sub-watershed 11**

Runoff = 95.85 cfs @ 12.34 hrs, Volume= 11.785 af, Depth> 5.78"

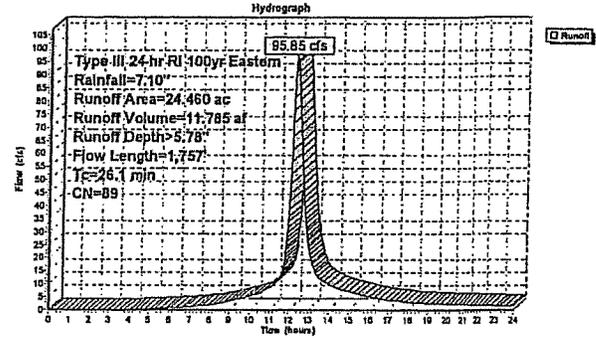
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
5.370	90	Fallow, crop residue, Poor, HSG C
10.340	94	Urban commercial, 85% imp, HSG C
8.750	83	1/4 acre lots, 38% imp, HSG C
24.460	89	Weighted Average
12.346		Pervious Area
12.114		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.0200	0.39		Sheet Flow, A-B Cultivated Residue n= 0.060 P2= 3.40"
12.0	504	0.0100	0.70		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
9.5	1,153	0.0100	2.03		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
28.1	1,757	Total			

**Subcatchment 11S: Sub-watershed 11**



**Subcatchment 12S: Sub-watershed 12**

Runoff = 15.04 cfs @ 12.21 hrs, Volume= 1.528 af, Depth> 6.02"

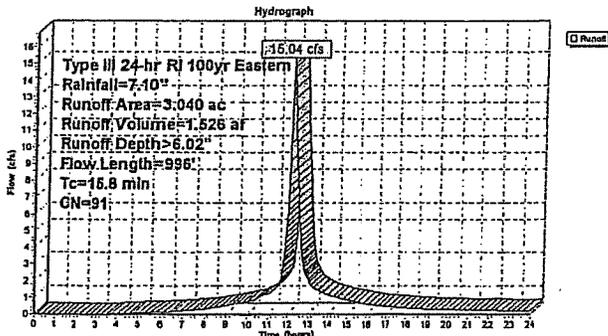
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
2.130	94	Urban commercial, 85% imp, HSG C
0.910	83	1/4 acre lots, 38% imp, HSG C
3.040	81	Weighted Average
0.884		Pervious Area
2.156		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
5.5	462	0.0400	1.40		Shallow Concentrated Flow, A-B Short Grass Pasture Kv= 7.0 fps
2.2	434	0.0270	3.34		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
15.8	996	Total			

**Subcatchment 12S: Sub-watershed 12**



**Subcatchment 13S: Sub-watershed 13**

Runoff = 39.68 cfs @ 12.07 hrs, Volume= 2.757 af, Depth> 4.89"

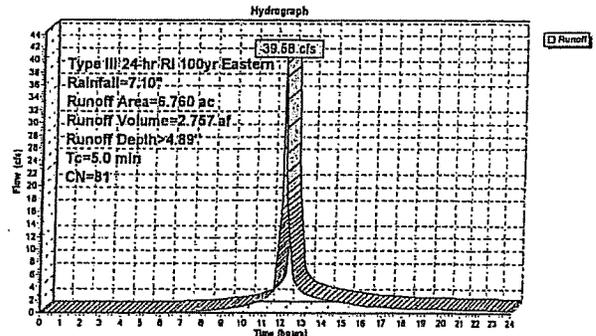
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
6.760	81	1/3 acre lots, 30% imp, HSG C
4.732		Pervious Area
2.028		Impervious Area

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

**Subcatchment 13S: Sub-watershed 13**



Subcatchment 14S: Sub-watershed 14

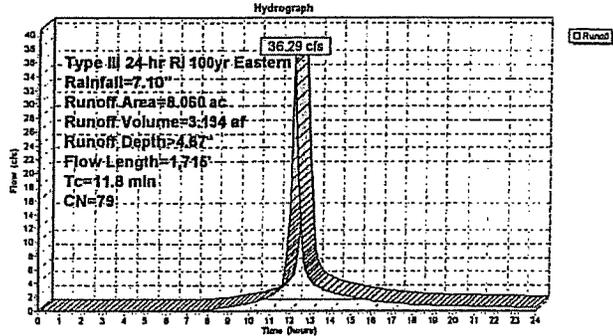
Runoff = 36.29 cfs @ 12.16 hrs, Volume= 3.134 af, Depth= 4.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.240	94	Urban commercial, 85% imp, HSG C
7.820	79	1 acre lots, 20% imp, HSG C
8.060	78	Weighted Average
6.292		Pervious Area
1.768		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	100	0.0100	1.07		Sheet Flow, A-B
10.2	1,615	0.0170	2.65		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
11.8	1,715				Total

Subcatchment 14S: Sub-watershed 14



Subcatchment 15S: Sub-watershed 15

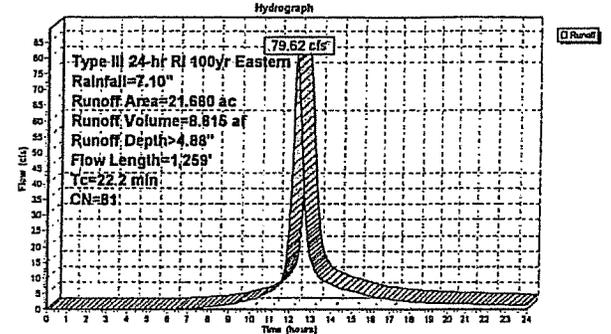
Runoff = 79.62 cfs @ 12.30 hrs, Volume= 8.815 af, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
15.390	79	1 acre lots, 20% imp, HSG C
5.090	90	1/8 acre lots, 65% imp, HSG C
1.200	76	Woods/grass comb., Fair, HSG C
21.680	81	Weighted Average
15.294		Pervious Area
6.387		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
1.3	168	0.0120	2.22		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
12.8	891	0.0340	1.28		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
22.2	1,259				Total

Subcatchment 15S: Sub-watershed 15



Subcatchment 16S: Sub-watershed 16

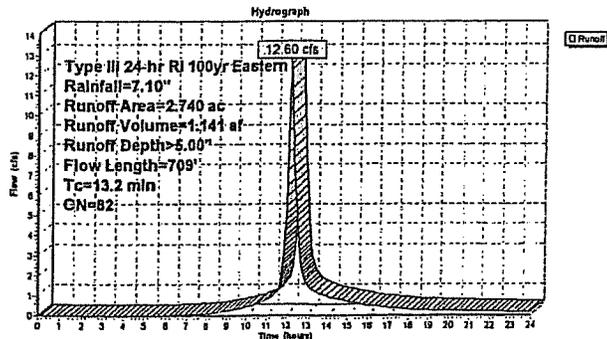
Runoff = 12.60 cfs @ 12.18 hrs, Volume= 1.141 af, Depth= 5.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
2.330	81	1/3 acre lots, 30% imp, HSG C
0.410	91	Fallow, bare soil, HSG C
2.740	82	Weighted Average
2.041		Pervious Area
0.699		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
2.0	161	0.0370	1.35		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.7	448	0.0450	4.31		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
13.2	709				Total

Subcatchment 16S: Sub-watershed 16



Subcatchment 17S: Sub-watershed 17

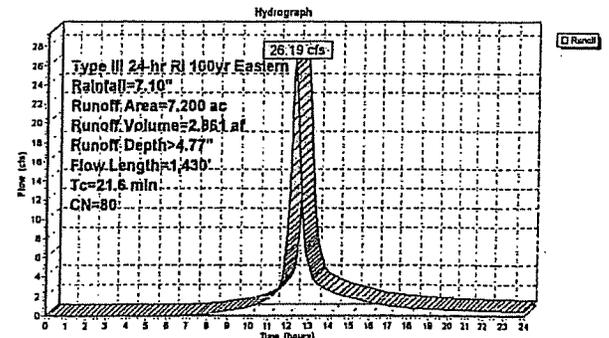
Runoff = 26.19 cfs @ 12.29 hrs, Volume= 2.861 af, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
7.200	80	1/2 acre lots, 25% imp, HSG C
5.400		Pervious Area
1.800		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-C
1.8	338	0.0240	3.14		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
0.5	125	0.0400	4.08		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	260	0.0460	1.50		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
3.9	607	0.0160	2.57		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
21.6	1,430				Total

Subcatchment 17S: Sub-watershed 17



Subcatchment 18S: Sub-watershed 18

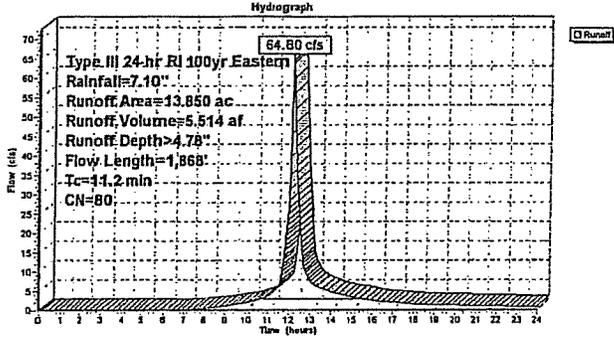
Runoff = 64.80 cfs @ 12.15 hrs, Volume= 5.514 af, Depth= 4.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

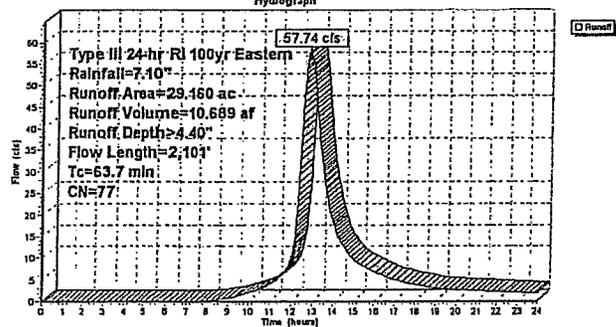
Area (ac)	CN	Description
13.160	80	1/2 acre lots, 25% Imp, HSG C
0.690	73	Woods, Fair, HSG C
13.850	80	Weighted Average
10.580		Pervious Area
3.290		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.05		Sheet Flow, A-B
3.3	299	0.0470	1.52		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C
7.1	1,469	0.0290	3.46		Short Grass Pasture Kv= 7.0 f/s Shallow Concentrated Flow, C-D Paved Kv= 20.3 f/s
11.2	1,888				Total

Subcatchment 18S: Sub-watershed 18



Subcatchment 19S: Sub-watershed 19



Subcatchment 19S: Sub-watershed 19

Runoff = 57.74 cfs @ 12.83 hrs, Volume= 10.689 af, Depth= 4.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
1.460	94	Urban commercial, 85% Imp, HSG C
1.460	80	1/2 acre lots, 25% Imp, HSG C
26.240	76	Woods/grass comb., Fair, HSG C
29.160	77	Weighted Average
27.554		Pervious Area
1.606		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0160	0.11		Sheet Flow, A-B
2.9	161	0.0170	0.91		Grass: Dense n= 0.240 P2= 3.40" Shallow Concentrated Flow, B-C
0.1	17	0.0230	3.08		Short Grass Pasture Kv= 7.0 f/s Shallow Concentrated Flow, C-D Paved Kv= 20.3 f/s
1.2	80	0.0250	1.11		Shallow Concentrated Flow, D-E
0.1	13	0.0200	2.87		Short Grass Pasture Kv= 7.0 f/s Shallow Concentrated Flow, E-F Paved Kv= 20.3 f/s
35.7	678	0.0040	0.32		Shallow Concentrated Flow, F-G Woodland Kv= 5.0 f/s
8.8	1,052	0.0100	2.03		Shallow Concentrated Flow, G-H Paved Kv= 20.3 f/s
63.7	2,101				Total

Subcatchment 20S: Sub-watershed 20

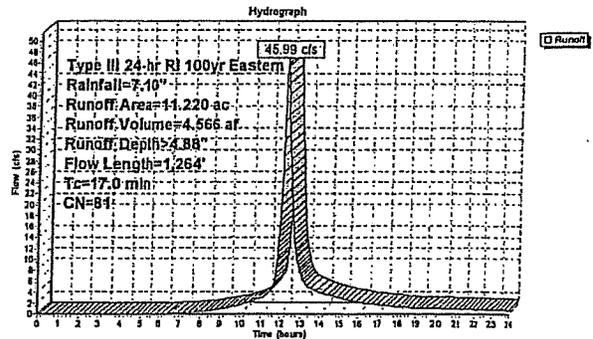
Runoff = 45.99 cfs @ 12.23 hrs, Volume= 4.566 af, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
11.220	81	1/3 acre lots, 30% Imp, HSG C
7.854		Pervious Area
3.366		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
4.0	174	0.0110	0.73		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
4.9	990	0.0280	3.40		Short Grass Pasture Kv= 7.0 f/s Shallow Concentrated Flow, C-D Paved Kv= 20.3 f/s
17.0	1,264				Total

Subcatchment 20S: Sub-watershed 20



Subcatchment 21S: Sub-watershed 21

Runoff = 17.57 cfs @ 12.08 hrs, Volume= 1.351 af, Depth= 6.38"

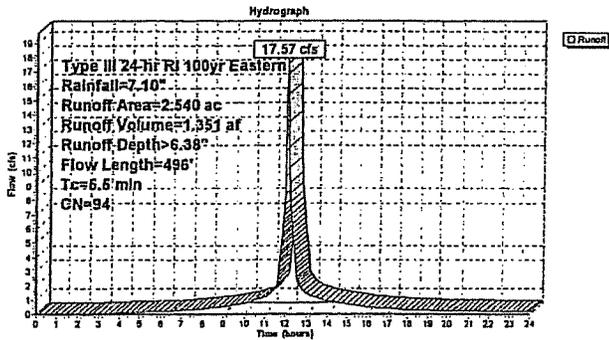
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
2.540	94	Urban commercial, 85% Imp, HSG C
0.381		Pervious Area
2.159		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	70	0.1000	0.31		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
0.2	30	0.1200	2.28		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
1.5	396	0.0450	4.31		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
5.5	496	Total			

Subcatchment 21S: Sub-watershed 21



Subcatchment 22S: Sub-watershed 22

Runoff = 41.00 cfs @ 12.10 hrs, Volume= 3.340 af, Depth= 6.38"

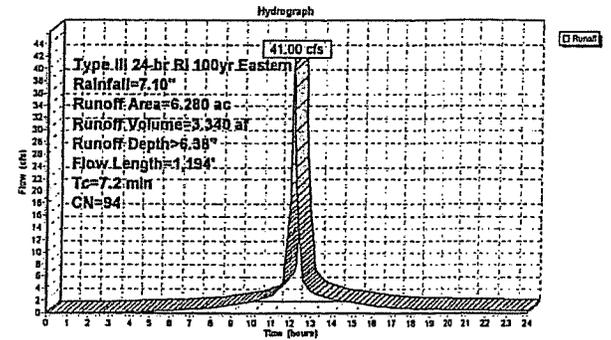
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
6.280	94	Urban commercial, 85% Imp, HSG C
0.942		Pervious Area
5.338		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0800	2.47		Sheet Flow, A-B
					Smooth surfaces n= 0.011 P2= 3.40"
6.5	1,094	0.0190	2.80		Shallow Concentrated Flow, B-C
					Paved Kv= 20.3 fps
7.2	1,194	Total			

Subcatchment 22S: Sub-watershed 22



Subcatchment 23S: Sub-watershed 23

Runoff = 6.33 cfs @ 12.07 hrs, Volume= 0.479 af, Depth= 6.38"

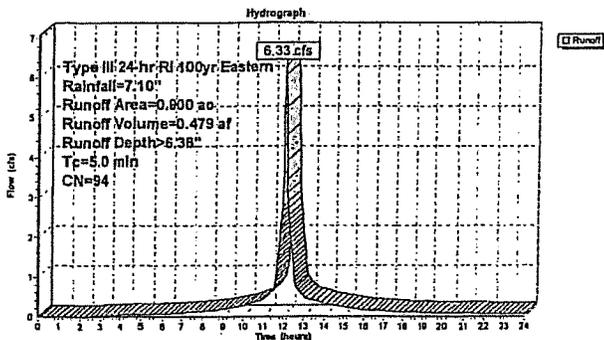
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.800	94	Urban commercial, 85% Imp, HSG C
0.135		Pervious Area
0.765		Impervious Area

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

Subcatchment 23S: Sub-watershed 23



Subcatchment 24S: Sub-watershed 24

Runoff = 29.10 cfs @ 12.17 hrs, Volume= 2.727 af, Depth= 6.03"

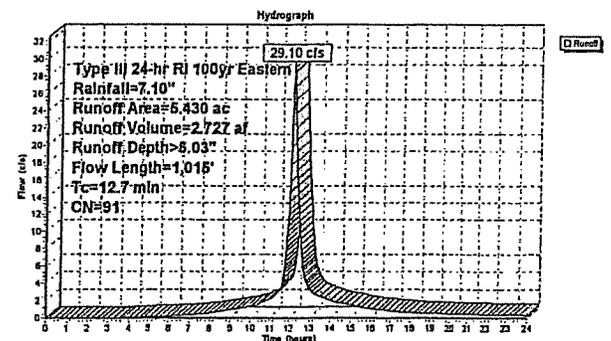
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
4.340	94	Urban commercial, 85% Imp, HSG C
1.090	81	1/3 acre lots, 30% Imp, HSG C
5.430	91	Weighted Average
1.414		Pervious Area
4.016		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0800	0.31		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
3.7	397	0.0650	1.78		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
3.5	518	0.0150	2.49		Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
12.7	1,015	Total			

Subcatchment 24S: Sub-watershed 24



**3416 Watershed Yield**

Type III 24-hr RI 100yr Eastern Rainfall=7.10"

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**Subcatchment 25S: Sub-watershed 25**

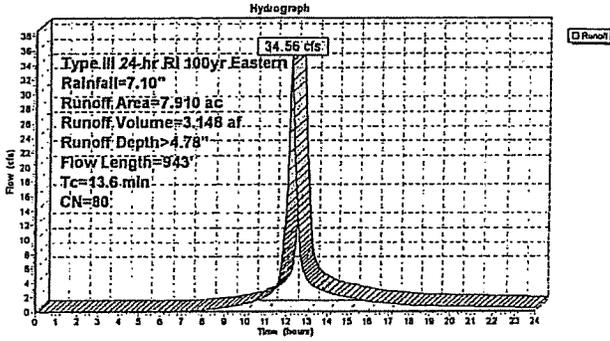
Runoff = 34.56 cfs @ 12.18 hrs, Volume= 3.148 af, Depth= 4.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
7.120	81	1/3 acre lots, 30% imp, HSG C
0.780	73	Woods, Fair, HSG C
7.910	80	Weighted Average
5.774		Pervious Area
2.136		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
3.5	276	0.0360	1.33		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.9	567	0.0250	3.21		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
13.6	943				Total

**Subcatchment 25S: Sub-watershed 25**



**3416 Watershed Yield**

Type III 24-hr RI 100yr Eastern Rainfall=7.10"

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**Subcatchment 27S: Sub-watershed 27**

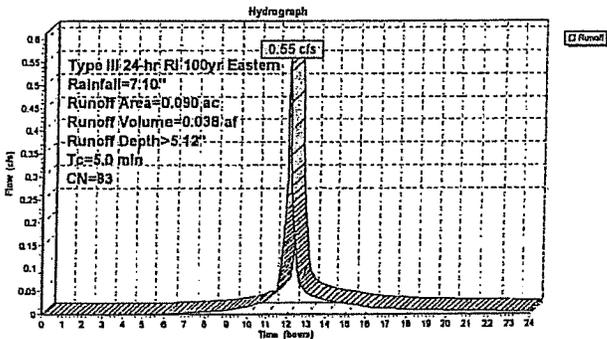
Runoff = 0.55 cfs @ 12.07 hrs, Volume= 0.038 af, Depth= 5.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.090	83	1/4 acre lots, 38% imp, HSG C
0.056		Pervious Area
0.034		Impervious Area

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

**Subcatchment 27S: Sub-watershed 27**



**3416 Watershed Yield**

Type III 24-hr RI 100yr Eastern Rainfall=7.10"

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**Subcatchment 26S: Sub-watershed 26**

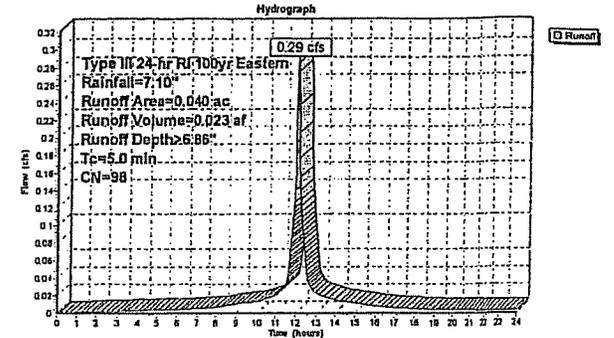
Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.040	98	Paved parking & roofs
0.040		Impervious Area

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

**Subcatchment 26S: Sub-watershed 26**



**3416 Watershed Yield**

Type III 24-hr RI 100yr Eastern Rainfall=7.10"

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**Subcatchment 28S: Sub-watershed 28**

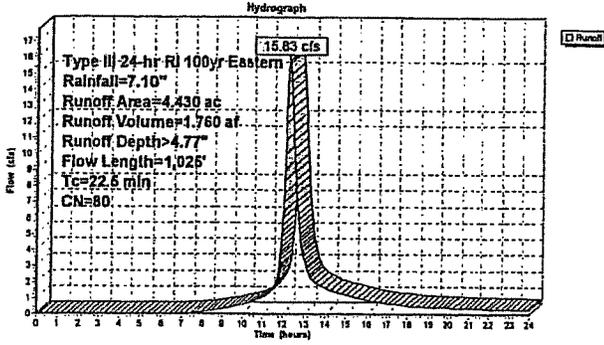
Runoff = 15.83 cfs @ 12.31 hrs, Volume= 1.760 af, Depth= 4.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
3.990	81	1/3 acre lots, 30% imp, HSG C
0.440	73	Woods, Fair, HSG C
4.430	80	Weighted Average
3.233		Pervious Area
1.197		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.4	23	0.0220	1.04		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.1	19	0.0200	2.87		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
0.4	23	0.0200	0.99		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
0.1	22	0.0200	2.87		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
7.5	426	0.0360	0.95		Shallow Concentrated Flow, F-G Woodland Kv= 5.0 fps
1.2	100	0.0400	1.40		Shallow Concentrated Flow, G-H Short Grass Pasture Kv= 7.0 fps
3.3	312	0.0060	1.57		Shallow Concentrated Flow, H-I Paved Kv= 20.3 fps
22.5	1,025				Total

Subcatchment 28S: Sub-watershed 28



Subcatchment 29S: Sub-watershed 29

Runoff = 48.28 cfs @ 12.15 hrs, Volume= 4.121 af, Depth> 5.00"

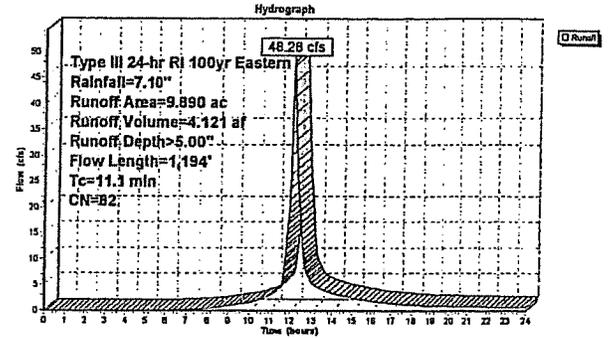
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.490	74	>75% Grass cover, Good, HSG C
0.880	84	Urban commercial, 85% imp, HSG C
6.420	81	1/3 acre lots, 30% imp, HSG C
9.890	82	Weighted Average
6.531		Pervious Area
3.359		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0110	1.12		Sheet Flow, A-B
6.7	453	0.0260	1.13		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C
2.9	641	0.0330	3.69		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.1	1,194	Total			

Subcatchment 29S: Sub-watershed 29



Subcatchment 30S: Sub-watershed 30

Runoff = 7.62 cfs @ 12.18 hrs, Volume= 0.684 af, Depth> 4.89"

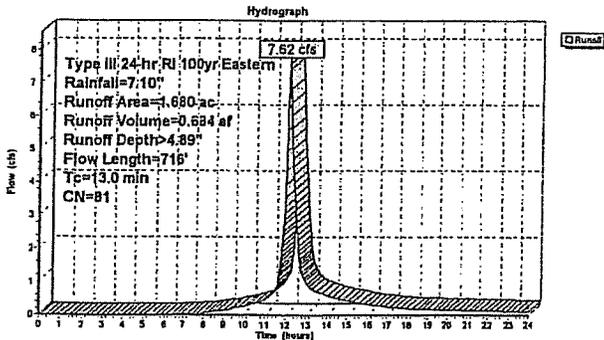
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
1.680	81	1/3 acre lots, 30% imp, HSG C
1.176		Pervious Area
0.504		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
1.2	118	0.0510	1.58		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
2.3	498	0.0320	3.63		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
13.0	716	Total			

Subcatchment 30S: Sub-watershed 30



Subcatchment 31S: Sub-watershed 31

Runoff = 83.46 cfs @ 12.38 hrs, Volume= 10.102 af, Depth> 4.43"

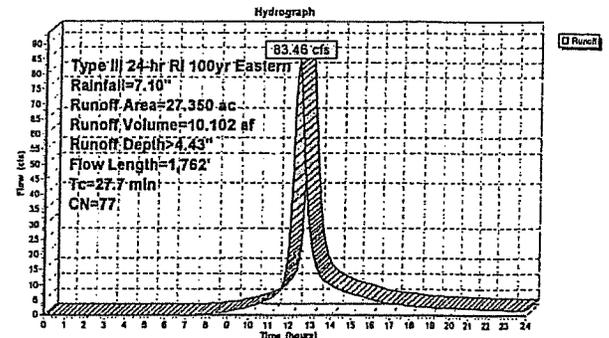
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
12.350	81	1/3 acre lots, 30% imp, HSG C
15.000	74	>75% Grass cover, Good, HSG C
27.350	77	Weighted Average
23.645		Pervious Area
3.705		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.25		Sheet Flow, A-B
15.3	1,075	0.0280	1.17		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
5.8	587	0.0070	1.70		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
27.7	1,762	Total			

Subcatchment 31S: Sub-watershed 31



Subcatchment 32S: Sub-watershed32

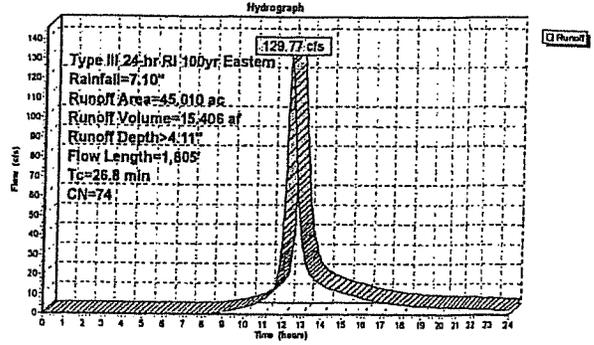
Runoff = 129.77 cfs @ 12.37 hrs, Volume= 15,406 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
14.440	81	1/3 acre lots, 30% Imp, HSG C
13.320	69	50-75% Grass cover, Fair, HSG B
15.110	73	Woods, Fair, HSG C
0.800	88	Fallow, crop residue, Good, HSG C
1.240	58	Brush, Fair, HSG B
45.010	74	Weighted Average
40.678		Pervious Area
4.332		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0840	0.14		Sheet Flow, A-B Grass: Bermuda n=0.410 P2=3.40"
2.3	179	0.0698	1.32		Shallow Concentrated Flow, B-C Woodland Kv=5.0 fps
2.9	654	0.0528	3.70		Shallow Concentrated Flow, C-D Unpaved Kv=16.1 fps
5.8	474	0.0738	1.36		Shallow Concentrated Flow, D-E Woodland Kv=5.0 fps
3.8	398	0.0075	1.76		Shallow Concentrated Flow, E-F Paved Kv=20.3 fps
26.8	1,805	Total			

Subcatchment 32S: Sub-watershed32



Subcatchment 33S: Sub-watershed 33

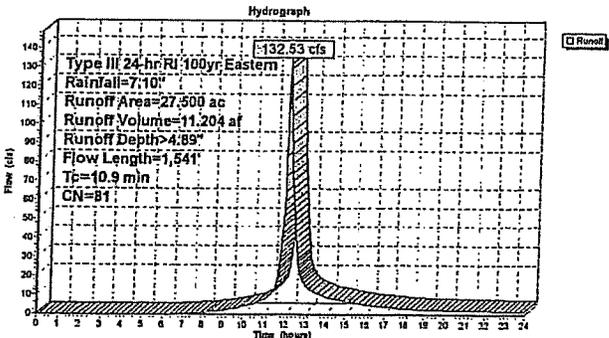
Runoff = 132.53 cfs @ 12.15 hrs, Volume= 11,204 af, Depth= 4.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.960	84	Urban commercial, 85% Imp, HSG C
26.540	81	1/3 acre lots, 30% Imp, HSG C
27.500	81	Weighted Average
18.722		Pervious Area
8.778		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1200	0.36		Sheet Flow, A-B Grass: Short n=0.150 P2=3.40"
1.0	154	0.1400	2.62		Shallow Concentrated Flow, B-C Short Grass Pasture Kv=7.0 fps
5.3	1,287	0.0400	4.06		Shallow Concentrated Flow, C-D Paved Kv=20.3 fps
10.9	1,541	Total			

Subcatchment 33S: Sub-watershed 33



Subcatchment 34S: Sub-watershed 34

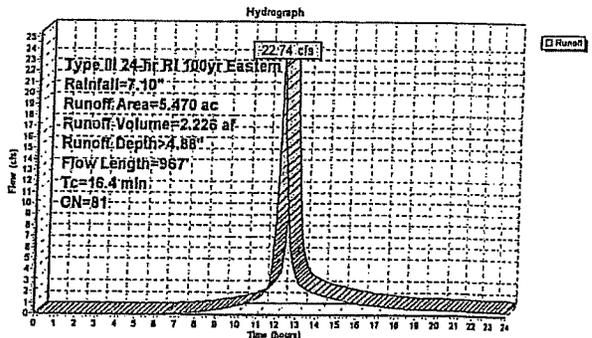
Runoff = 22.74 cfs @ 12.22 hrs, Volume= 2,226 af, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
5.470	81	1/3 acre lots, 30% Imp, HSG C
3.629		Pervious Area
1.641		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B Grass: Short n=0.150 P2=3.40"
1.8	131	0.0300	1.21		Shallow Concentrated Flow, B-C Short Grass Pasture Kv=7.0 fps
5.1	736	0.0140	2.40		Shallow Concentrated Flow, C-D Paved Kv=20.3 fps
16.4	967	Total			

Subcatchment 34S: Sub-watershed 34



Subcatchment 35S: Sub-watershed 35

Runoff = 10.75 cfs @ 12.16 hrs, Volume= 0.956 af, Depth= 5.68"

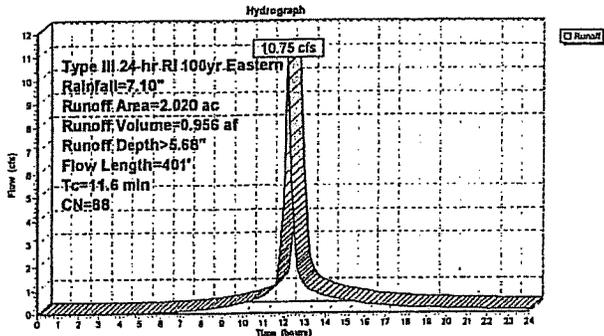
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
1.010	94	Urban commercial, 85% imp, HSG C
1.010	81	1/3 acre lots, 30% imp, HSG C
2.020	88	Weighted Average
0.858		Pervious Area
1.161		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
2.0	111	0.0180	0.94		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
1.5	190	0.0110	2.13		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
11.6	401				Paved Kv= 20.3 fps
					Total

Subcatchment 35S: Sub-watershed 35



Subcatchment 36S: Sub-watershed 36

Subcatchment 36S: Sub-watershed 36

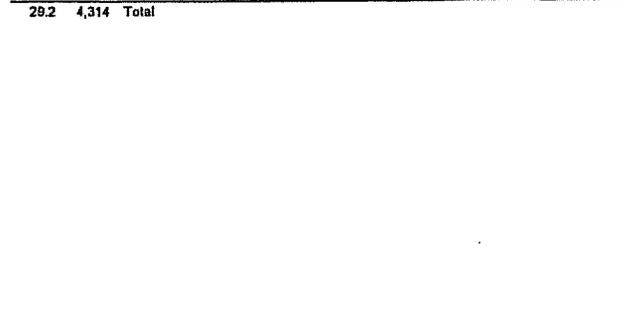
Runoff = 385.76 cfs @ 12.39 hrs, Volume= 48.456 af, Depth= 5.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
81.170	83	1/4 acre lots, 38% imp, HSG C
9.230	94	Urban commercial, 85% imp, HSG C
6.090	60	Woods, Fair, HSG B
0.440	69	50-75% Grass cover, Fair, HSG B
4.180	56	Brush, Fair, HSG B
12.990	91	Urban Industrial, 72% imp, HSG C
114.100	83	Weighted Average
66.057		Pervious Area
48.043		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, A-B
1.4	172	0.0810	1.99		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
18.3	4,042	0.0330	3.69		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
29.2	4,314				Paved Kv= 20.3 fps
					Total



Subcatchment 37S: Sub-watershed 37

Subcatchment 37S: Sub-watershed 37

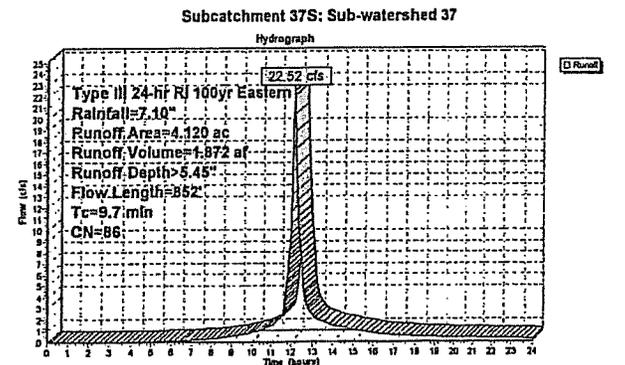
Runoff = 22.52 cfs @ 12.13 hrs, Volume= 1.872 af, Depth= 5.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
1.240	81	1/3 acre lots, 30% imp, HSG C
2.470	91	Urban Industrial, 72% imp, HSG C
0.410	74	>75% Grass cover, Good, HSG C
4.120	86	Weighted Average
1.970		Pervious Area
2.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.67		Sheet Flow, A-B
8.7	752	0.0050	1.44		Smooth surfaces n= 0.011 P2= 3.40" Shallow Concentrated Flow, B-C
9.7	852				Paved Kv= 20.3 fps
					Total



Subcatchment 38S: Sub-watershed 38

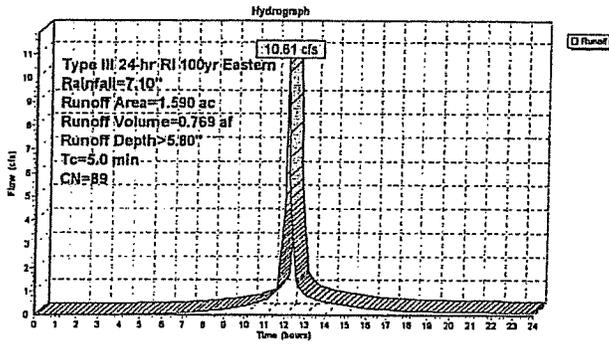
Runoff = 10.61 cfs @ 12.07 hrs, Volume= 0.769 af, Depth> 5.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.160	91	Urban industrial, 72% Imp, HSG C
0.320	79	Pasture/grassland/range, Fair, HSG C
1.110	91	Urban Industrial, 72% Imp, HSG C
1.590	89	Weighted Average
0.676		Pervious Area
0.914		Impervious Area

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

Subcatchment 38S: Sub-watershed 38



Subcatchment 39S: Sub-watershed 39

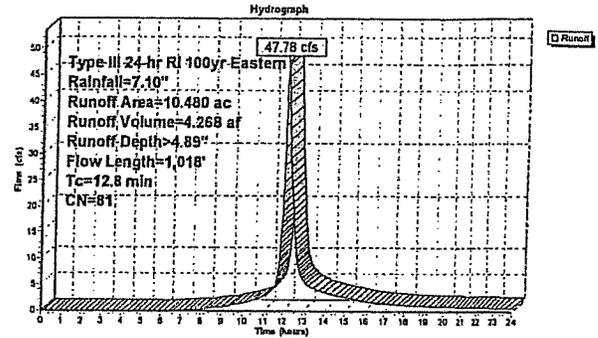
Runoff = 47.78 cfs @ 12.17 hrs, Volume= 4.268 af, Depth> 4.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.520	79	Pasture/grassland/range, Fair, HSG C
9.960	81	1/3 acre lots, 30% Imp, HSG C
10.480	81	Weighted Average
7.492		Pervious Area
2.988		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.8	212	0.0750	1.92		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.0	387	0.0260	3.27		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	319	0.0890	1.84		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
12.8	1,018	Total			

Subcatchment 39S: Sub-watershed 39



Subcatchment 40S: Sub-watershed 40

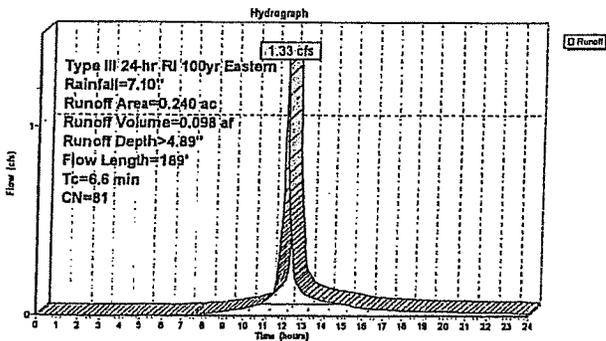
Runoff = 1.33 cfs @ 12.09 hrs, Volume= 0.098 af, Depth> 4.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.240	81	1/3 acre lots, 30% Imp, HSG C
0.168		Pervious Area
0.072		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.5	89	0.1500	2.71		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
6.6	189	Total			

Subcatchment 40S: Sub-watershed 40



Subcatchment 41S: Sub-watershed 41

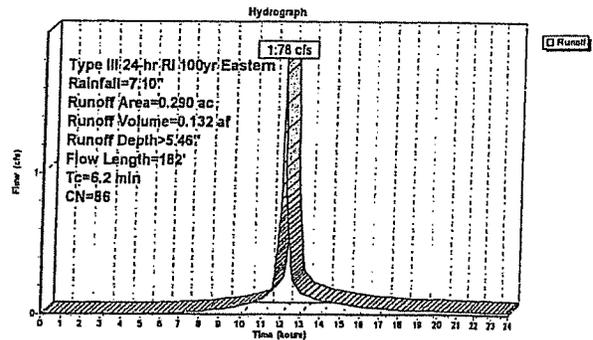
Runoff = 1.78 cfs @ 12.09 hrs, Volume= 0.132 af, Depth> 5.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.290	86	Pasture/grassland/range, Poor, HSG C
0.280		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0600	0.31		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.7	82	0.0730	1.89		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
6.2	182	Total			

Subcatchment 41S: Sub-watershed 41



Subcatchment 42S: Sub-watershed 42

Runoff = 0.42 cfs @ 12.10 hrs, Volume= 0.032 af, Depth> 5.46"

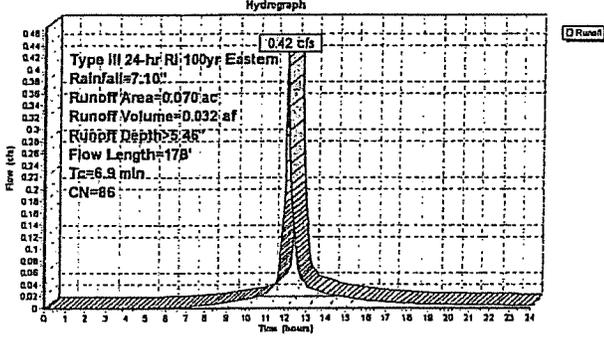
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.070	86	Pasture/grassland/range, Poor, HSG C
0.070		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B
0.8	78	0.0510	1.58		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
6.9	178				Total

Subcatchment 42S: Sub-watershed 42



Subcatchment 43S: Sub-watershed 43

Runoff = 14.07 cfs @ 12.14 hrs, Volume= 1.161 af, Depth> 4.89"

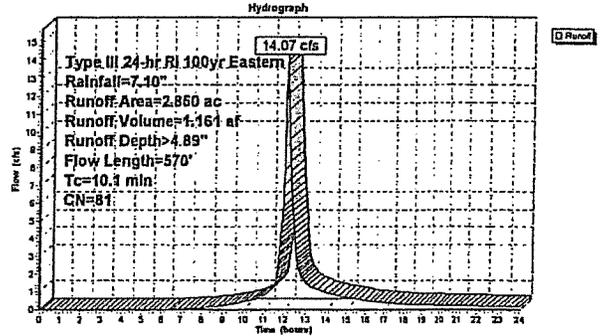
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
2.850	81	1/3 acre lots, 30% imp, HSG C
1.995		Pervious Area
0.855		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B
1.8	228	0.0880	2.08		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.7	206	0.0100	2.03		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
0.5	38	0.0280	1.17		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
10.1	570				Total

Subcatchment 43S: Sub-watershed 43



Subcatchment 44S: Sub-watershed 44

Runoff = 6.02 cfs @ 12.28 hrs, Volume= 0.636 af, Depth> 4.44"

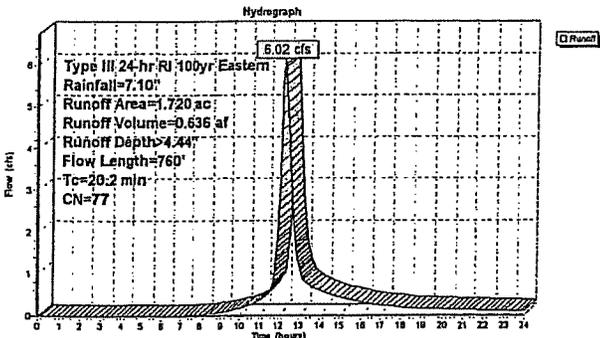
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.860	81	1/3 acre lots, 30% imp, HSG C
0.860	73	Woods, Fair, HSG C
1.720	77	Weighted Average
1.462		Pervious Area
0.258		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0500	0.12		Sheet Flow, A-B
4.3	262	0.0420	1.02		Woods: Light underbrush n= 0.400 P2= 3.40" Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
1.5	398	0.0450	4.31		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
20.2	760				Total

Subcatchment 44S: Sub-watershed 44



Subcatchment 45S: Sub-watershed 45

Runoff = 11.69 cfs @ 12.29 hrs, Volume= 1.258 af, Depth> 4.11"

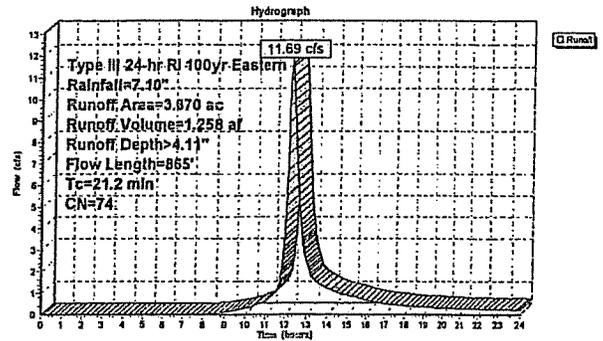
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
3.120	73	Woods, Fair, HSG C
0.180	81	1/3 acre lots, 30% imp, HSG C
0.370	82	Woods/grass comb., Poor, HSG C
3.670	74	Weighted Average
3.616		Pervious Area
0.054		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, A-B
13.1	765	0.0380	0.97		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
21.2	865				Total

Subcatchment 45S: Sub-watershed 45



Subcatchment 46S: Sub-watershed 46

Runoff = 4.07 cfs @ 12.35 hrs, Volume= 0.469 af, Depth= 4.11"

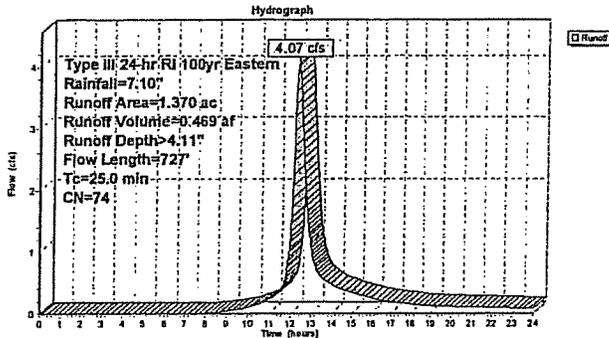
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
1.230	73	Woods, Fair, HSG C
0.140	82	Woods/grass comb., Poor, HSG C
1.370	74	Weighted Average
1.370		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0400	0.11		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
					Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
					Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
25.0	727				Total

Subcatchment 46S: Sub-watershed 46



Subcatchment 48S: Sub-watershed 48

Runoff = 7.21 cfs @ 12.12 hrs, Volume= 0.575 af, Depth= 5.23"

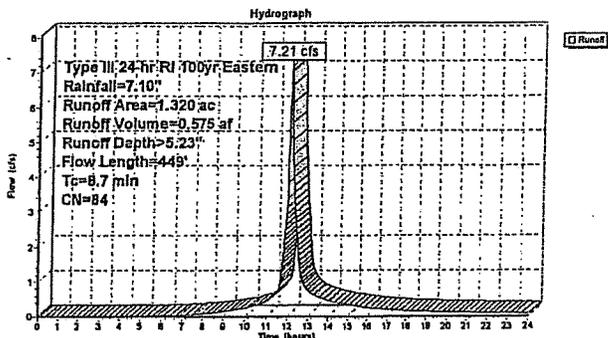
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
1.320	84	50-75% Grass cover, Fair, HSG D
1.320		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
					Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
					Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
8.7	449				Total

Subcatchment 48S: Sub-watershed 48



Subcatchment 47S: Sub-watershed 47

Runoff = 38.50 cfs @ 12.11 hrs, Volume= 2.965 af, Depth= 4.67"

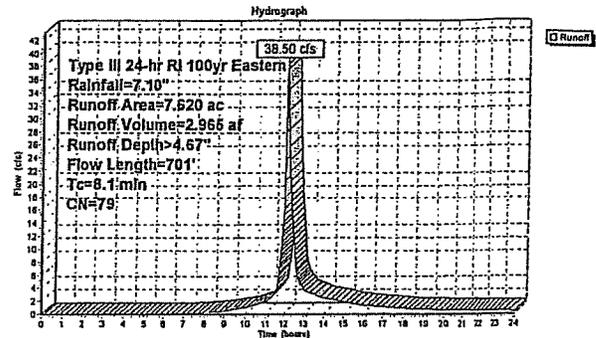
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
7.620	79	50-75% Grass cover, Fair, HSG C
7.620		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	100	0.1000	0.33		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
					Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
					Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
8.1	701				Total

Subcatchment 47S: Sub-watershed 47



Subcatchment 49S: Sub-watershed 49

Runoff = 1.56 cfs @ 12.10 hrs, Volume= 0.117 af, Depth= 4.67"

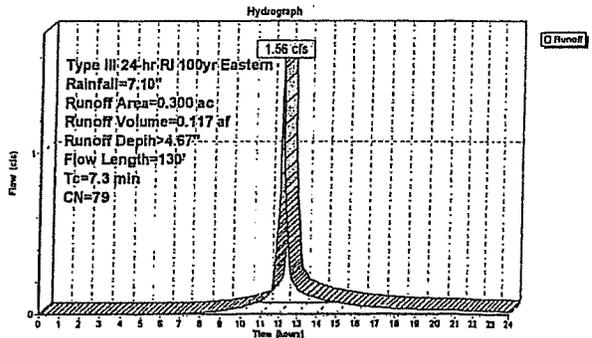
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.300	79	50-75% Grass cover, Fair, HSG C
0.300		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.40"
					Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
					Shallow Concentrated Flow, C-D
					Paved Kv= 20.3 fps
7.3	130				Total

Subcatchment 49S: Sub-watershed 49



Subcatchment 60S: Sub-watershed 50

Runoff = 8.68 cfs @ 12.15 hrs, Volume= 0.739 af, Depth> 4.67"

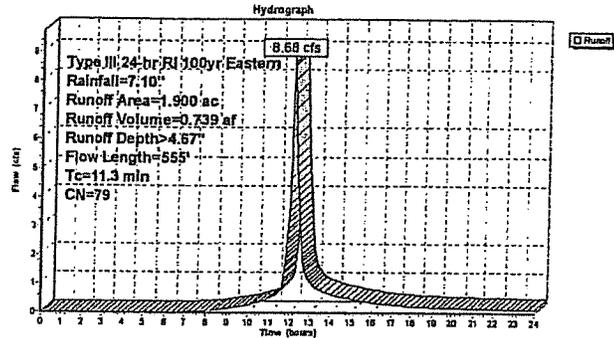
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
1.900	79	50-75% Grass cover, Fair, HSG C
1.800		Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0500	0.25		Sheet Flow, A-B
4.5	419	0.0500	1.57		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
0.2	36	0.0170	2.65		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
11.3	555				Total

Subcatchment 60S: Sub-watershed 50



Subcatchment 51S: Sub-watershed 51

Runoff = 26.31 cfs @ 12.07 hrs, Volume= 1.936 af, Depth> 6.03"

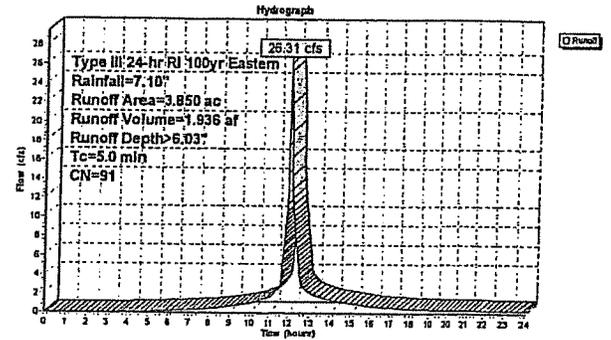
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
3.850	91	Urban Industrial, 72% Imp, HSG C
1.078		Pervious Area
2.772		Impervious Area

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

Subcatchment 51S: Sub-watershed 51



Subcatchment 62S: Sub-watershed 52

Runoff = 22.34 cfs @ 12.13 hrs, Volume= 1.884 af, Depth> 5.80"

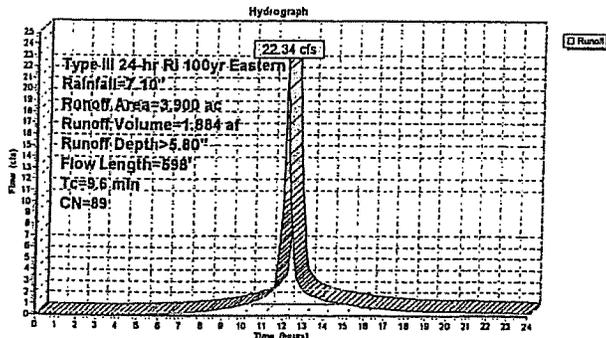
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
3.510	90	1/8 acre lots, 65% Imp, HSG C
0.390	79	50-75% Grass cover, Fair, HSG C
3.900	89	Weighted Average
1.818		Pervious Area
2.282		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1200	0.36		Sheet Flow, A-B
1.9	108	0.0190	0.96		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.8	361	0.0110	2.13		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
0.3	29	0.0690	1.84		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
9.6	598				Total

Subcatchment 62S: Sub-watershed 52



Subcatchment 53S: Sub-watershed 53

Runoff = 28.43 cfs @ 12.12 hrs, Volume= 2.385 af, Depth> 5.91"

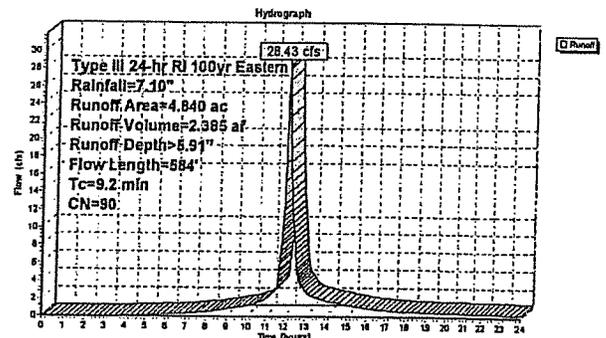
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
4.840	90	1/8 acre lots, 65% Imp, HSG C
1.694		Pervious Area
3.146		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0500	0.25		Sheet Flow, A-B
0.3	33	0.0610	1.73		Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.3	451	0.0270	3.34		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
9.2	584				Total

Subcatchment 53S: Sub-watershed 53



Subcatchment 54S: Sub-watershed 54

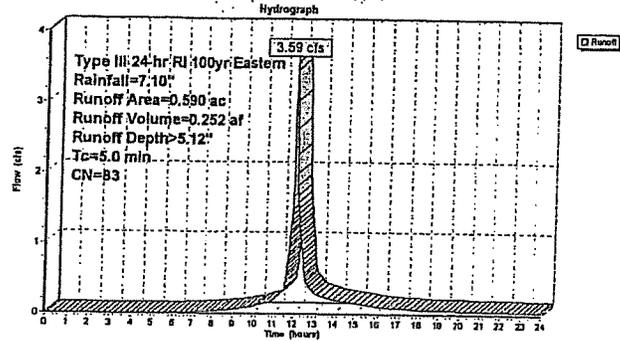
Runoff = 3.59 cfs @ 12.07 hrs, Volume= 0.252 af, Depth> 5.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.590	83	1/4 acre lots, 38% Imp, HSG C
0.366		Pervious Area
0.224		Impervious Area

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

Subcatchment 54S: Sub-watershed 54



Subcatchment 55S: Sub-watershed 55

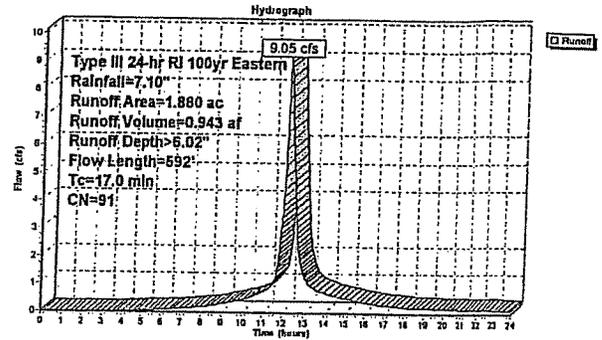
Runoff = 9.05 cfs @ 12.22 hrs, Volume= 0.943 af, Depth> 6.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
1.880	91	Urban Industrial, 72% Imp, HSG C
0.526		Pervious Area
1.354		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C Paved Kv= 20.3 fps
4.5	492	0.0080	1.82		
17.0	592	Total			

Subcatchment 55S: Sub-watershed 55



Subcatchment 56S: Sub-watershed 56

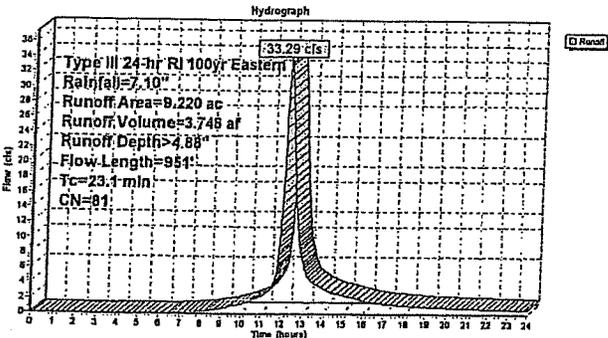
Runoff = 33.29 cfs @ 12.31 hrs, Volume= 3.746 af, Depth> 4.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
9.220	81	1/3 acre lots, 30% Imp, HSG C
6.454		Pervious Area
2.766		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
5.7	228	0.0090	0.89		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
4.9	623	0.0110	2.13		Paved Kv= 20.3 fps
23.1	951	Total			

Subcatchment 56S: Sub-watershed 56



Subcatchment 57S: Sub-watershed 57

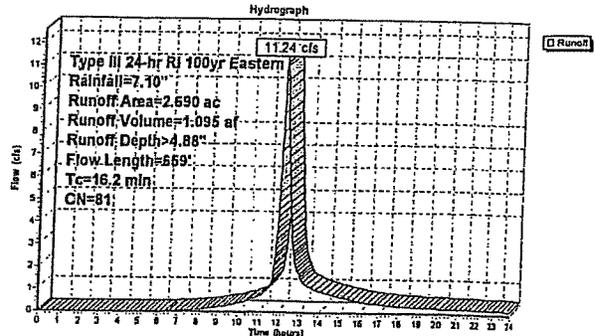
Runoff = 11.24 cfs @ 12.22 hrs, Volume= 1.095 af, Depth> 4.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
2.690	81	1/3 acre lots, 30% Imp, HSG C
1.883		Pervious Area
0.807		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.0370	0.22		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40" Shallow Concentrated Flow, B-C
6.4	190	0.0050	0.49		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, C-D
2.2	349	0.0170	2.65		Paved Kv= 20.3 fps Shallow Concentrated Flow, D-E
0.2	20	0.0500	1.57		Short Grass Pasture Kv= 7.0 fps
16.2	659	Total			

Subcatchment 57S: Sub-watershed 57



Subcatchment 58S: Sub-watershed 58

Runoff = 13.89 cfs @ 12.23 hrs, Volume= 1.392 af, Depth> 4.88"

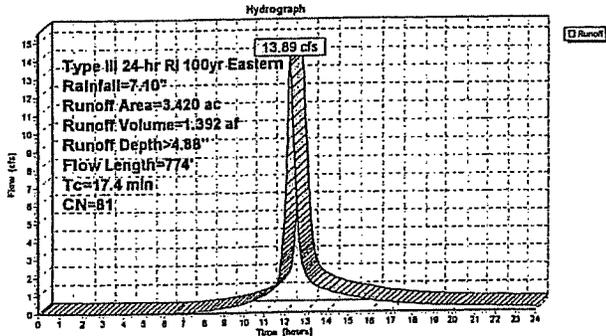
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
3.420	81	1/3 acre lots, 30% Imp, HSG C
2.394		Pervious Area
1.026		Impervious Area

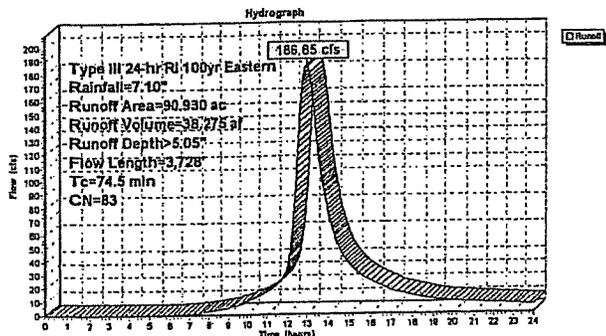
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.1	74	0.0270	1.15		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
3.8	600	0.0170	2.65		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
17.4	774	Total			

Subcatchment 58S: Sub-watershed 58



Subcatchment 59S: Sub-watershed 59



Subcatchment 59S: Sub-watershed 59

Runoff = 186.85 cfs @ 12.89 hrs, Volume= 38.275 af, Depth> 5.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
35.570	83	1/4 acre lots, 38% Imp, HSG C
15.400	70	Pasture/grassland/range, Fair, HSG C
13.820	94	Urban commercial, 85% Imp, HSG C
2.410	91	Urban Industrial, 72% Imp, HSG C
8.840	88	Woods/grass comb., Poor, HSG D
12.190	73	Woods, Fair, HSG C
2.700	79	Pasture/grassland/range, Fair, HSG C
90.930	83	Weighted Average
63.931		Pervious Area
28.999		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	100	0.0050	0.10		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
49.4	2,858	0.0150	0.96		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
1.2	48	0.0010	0.64		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.9	164	0.0180	0.94		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
3.5	377	0.0080	1.82		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
1.0	181	0.0220	3.01		Shallow Concentrated Flow, F-G Paved Kv= 20.3 fps
74.5	3,728	Total			

Subcatchment 60S: Sub-watershed 60

Runoff = 83.17 cfs @ 12.27 hrs, Volume= 9.570 af, Depth> 6.25"

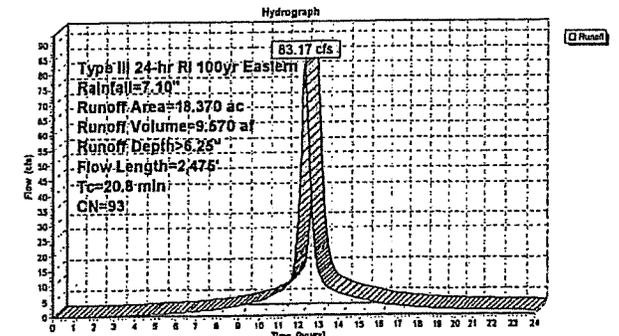
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
5.510	91	Urban Industrial, 72% Imp, HSG C
12.860	94	Urban commercial, 85% Imp, HSG C
18.370	83	Weighted Average
3.472		Pervious Area
14.898		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.6	83	0.1100	2.32		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
13.0	2,292	0.0210	2.94		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
20.8	2,475	Total			

Subcatchment 60S: Sub-watershed 60



Subcatchment 61S: Sub-watershed 61

Runoff = 79.92 cfs @ 12.13 hrs, Volume= 6.515 af, Depth> 5.00"

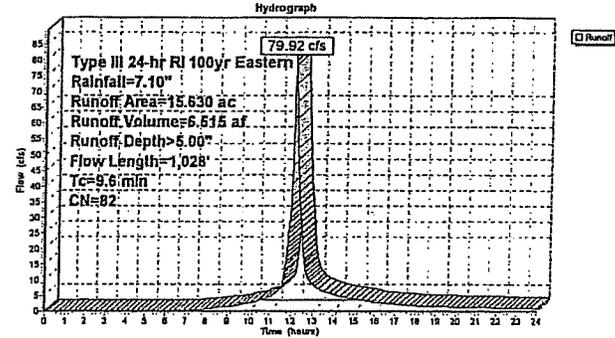
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
14.070	81	1/3 acre lots, 30% imp, HSG C
1.560	94	Urban commercial, 85% imp, HSG C
15.630	82	Weighted Average
10.083		Pervious Area
5.547		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0700	0.29		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.2	132	0.0700	1.85		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
2.6	796	0.0630	5.10		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
9.6	1,028	Total			

Subcatchment 61S: Sub-watershed 61



Subcatchment 62S: Sub-watershed 62

Runoff = 34.00 cfs @ 12.30 hrs, Volume= 3.789 af, Depth> 4.88"

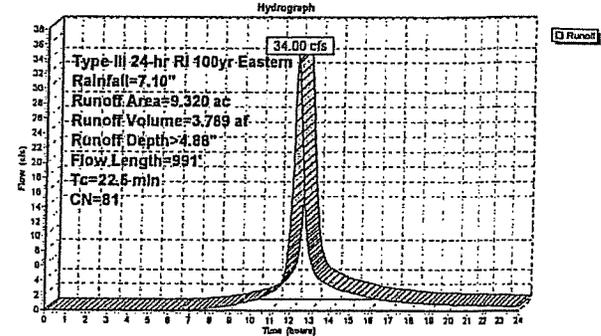
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
9.320	81	1/3 acre lots, 30% imp, HSG C
6.524		Pervious Area
2.786		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
5.2	169	0.0060	0.54		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
4.8	722	0.0150	2.49		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
22.5	891	Total			

Subcatchment 62S: Sub-watershed 62



Subcatchment 63S: Sub-watershed 63

Runoff = 45.83 cfs @ 12.16 hrs, Volume= 4.012 af, Depth> 4.89"

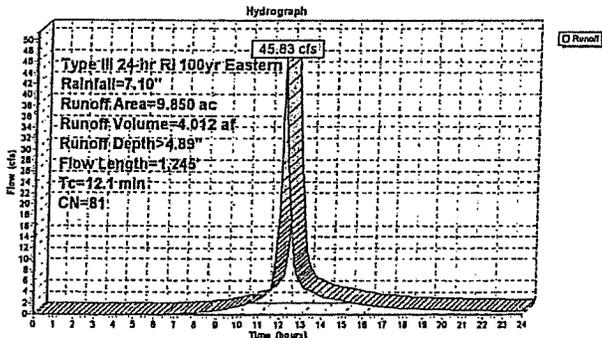
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
9.850	81	1/3 acre lots, 30% imp, HSG C
6.895		Pervious Area
2.955		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	37	0.0540	0.21		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.6	63	0.0480	1.83		Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.40"
0.6	118	0.0250	3.21		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
2.0	186	0.0480	1.53		Shallow Concentrated Flow, D-E Short Grass Pasture Kv= 7.0 fps
6.0	839	0.0130	2.31		Shallow Concentrated Flow, E-F Paved Kv= 20.3 fps
12.1	1,245	Total			

Subcatchment 63S: Sub-watershed 63



Subcatchment 64S: Sub-watershed 64

Runoff = 4.21 cfs @ 12.13 hrs, Volume= 0.362 af, Depth> 6.03"

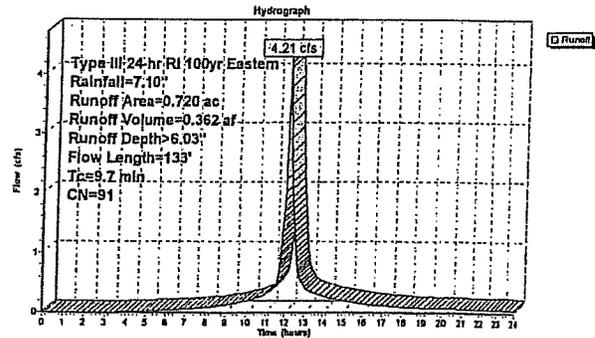
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.720	91	Urban Industrial, 72% imp, HSG C
0.202		Pervious Area
0.518		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
2.5	33	0.0010	0.22		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
9.7	133	Total			

Subcatchment 64S: Sub-watershed 64



Subcatchment 65S: Sub-watershed 65

Runoff = 17.54 cfs @ 12.20 hrs, Volume= 1.661 af, Depth= 4.89"

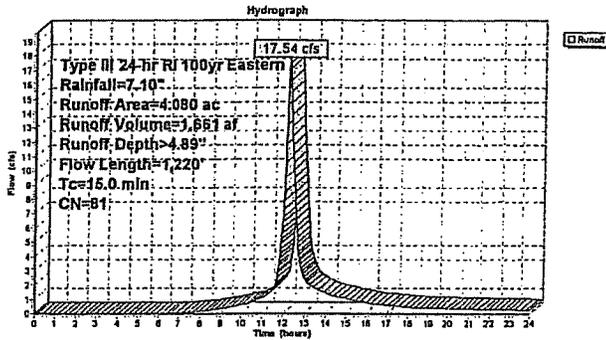
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
4.080	81	1/3 acre lots, 30% Imp, HSG C
2.856		Pervious Area
1.224		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	86	0.0300	0.20		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
0.3	14	0.0100	0.73		Sheet Flow, B-C Smooth surfaces n= 0.011 P2= 3.40"
7.5	1,120	0.0150	2.49		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
15.0	1,220				Total

Subcatchment 65S: Sub-watershed 65



Subcatchment 66S: Su-watershed 66

Runoff = 17.19 cfs @ 12.30 hrs, Volume= 1.895 af, Depth= 4.88"

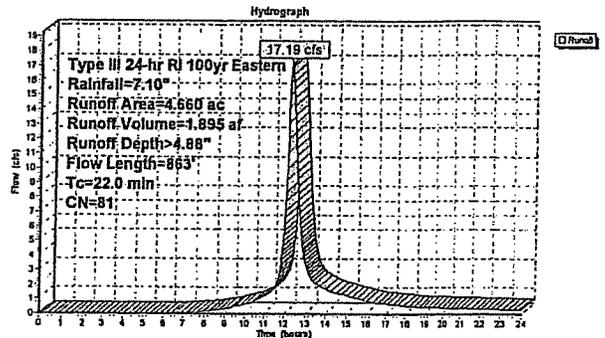
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
4.660	81	1/3 acre lots, 30% Imp, HSG C
3.262		Pervious Area
1.398		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	100	0.0060	0.11		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
1.2	103	0.0380	1.38		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
5.4	660	0.0100	2.03		Shallow Concentrated Flow, C-D Paved Kv= 20.3 fps
22.0	863				Total

Subcatchment 66S: Su-watershed 66



Subcatchment 67S: Sub-watershed 67

Runoff = 10.92 cfs @ 12.38 hrs, Volume= 1.363 af, Depth= 5.21"

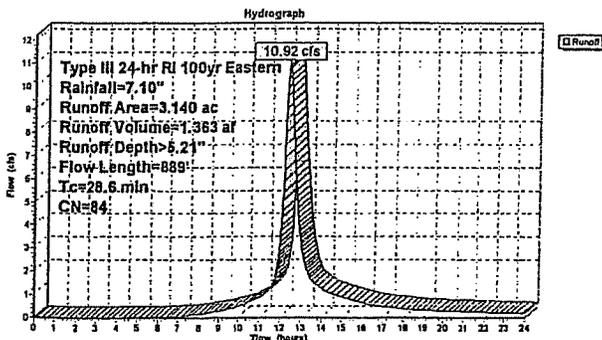
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
0.780	81	1/3 acre lots, 30% Imp, HSG C
1.880	88	Fallow, crop residue, Good, HSG C
0.470	73	Woods, Fair, HSG C
3.140	84	Weighted Average
2.803		Pervious Area
0.237		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0100	0.13		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
4.7	199	0.0200	0.71		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
10.7	490	0.0120	0.77		Shallow Concentrated Flow, C-D Short Grass Pasture Kv= 7.0 fps
0.7	100	0.0120	2.22		Shallow Concentrated Flow, D-E Paved Kv= 20.3 fps
28.6	889				Total

Subcatchment 67S: Sub-watershed 67



Subcatchment 68S: Sub-watershed 68

Runoff = 80.86 cfs @ 12.24 hrs, Volume= 8.203 af, Depth= 4.77"

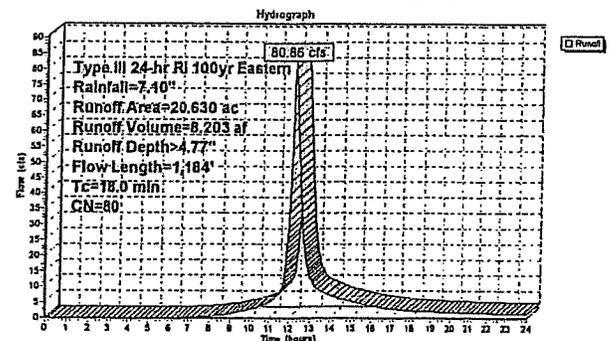
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Type III 24-hr RI 100yr Eastern Rainfall=7.10"

Area (ac)	CN	Description
2.350	79	Pasture/grassland/range, Fair, HSG C
2.470	88	Fallow, crop residue, Good, HSG C
1.970	70	Brush, Fair, HSG C
5.490	82	Woods/grass comb., Poor, HSG C
2.460	73	Woods, Fair, HSG C
5.890	81	1/3 acre lots, 30% Imp, HSG C
20.630	80	Weighted Average
18.863		Pervious Area
1.767		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0850	0.31		Sheet Flow, A-B Grass: Short n= 0.150 P2= 3.40"
12.7	1,084	0.0410	1.42		Shallow Concentrated Flow, B-C Short Grass Pasture Kv= 7.0 fps
18.0	1,184				Total

Subcatchment 68S: Sub-watershed 68



Reach 3R: Intermittent Stream

Inflow Area = 21.680 ac, Inflow Depth > 4.85" for RI 100yr Eastern event  
 Inflow = 79.54 cfs @ 12.30 hrs, Volume= 8.762 af  
 Outflow = 76.68 cfs @ 12.43 hrs, Volume= 8.724 af, Atten= 4%, Lag= 7.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs  
 Velocity= 3.29 fps, Min. Travel Time= 3.7 min  
 Velocity = 1.03 fps, Avg. Travel Time= 11.7 min

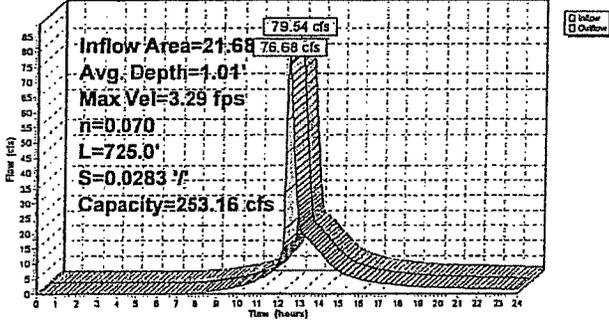
Peak Storage= 16,917 cf @ 12.36 hrs, Average Depth at Peak Storage= 1.01'  
 Bank-Full Depth= 2.00', Capacity at Bank-Full= 253.16 cfs

20.00' x 2.00' deep channel, n= 0.070 Medium-dense brush, winter  
 Side Slope Z-value= 3.0 ' Top Width= 32.00'  
 Length= 725.0' Slope= 0.0283 '/  
 Inlet Invert= 113.50', Outlet Invert= 93.00'



Reach 3R: Intermittent Stream

Hydrograph



Pond 2P: Highview Pond Existing

Inflow Area = 21.680 ac, Inflow Depth > 4.88" for RI 100yr Eastern event  
 Inflow = 79.62 cfs @ 12.30 hrs, Volume= 8.815 af  
 Outflow = 79.54 cfs @ 12.30 hrs, Volume= 8.762 af, Atten= 0%, Lag= 0.3 min  
 Primary = 79.54 cfs @ 12.30 hrs, Volume= 8.762 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs / 2  
 Peak Elev= 121.31' @ 12.30 hrs Surf.Area= 5,491 sf Storage= 40,393 cf

Plug-Flow detention time= 19.4 min calculated for 8.762 af (98% of inflow)  
 Center-of-Mass det. time= 15.8 min ( 833.3 - 817.5 )

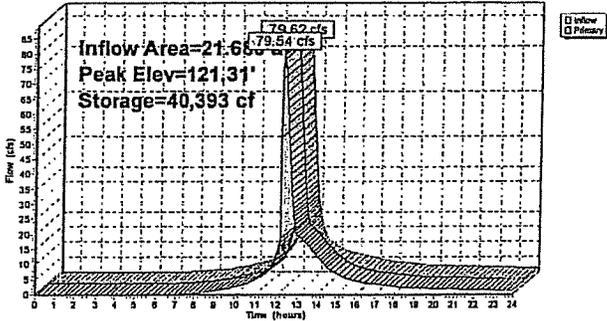
Volume #1	Invert	Avail. Storage	Storage Description
#1	115.00'	42,295 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
115.00	4,620	0	0
118.00	6,496	16,674	16,674
121.00	7,936	21,648	38,322
122.00	10	3,973	42,295

Device	Routing	Invert	Outlet Devices
#1	Primary	115.00'	18.0" x 40.0' long Culvert RCP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 114.40' S= 0.0150 ' Cc= 0.900 n= 0.013
#2	Primary	121.00'	128.0' long x 1.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=79.35 cfs @ 12.30 hrs HW=121.31' (Free Discharge)  
 1=Culvert (Inlet Controls 20.08 cfs @ 11.35 fps)  
 2=Broad-Crested Rectangular Weir (Weir Controls 59.29 cfs @ 1.50 fps)

Pond 2P: Highview Pond Existing

Hydrograph



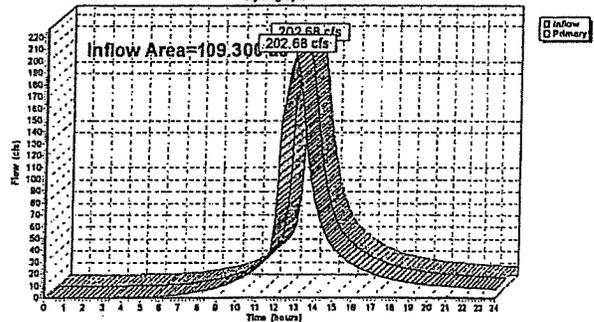
Link 68L: SW 69\_SW 60

Inflow Area = 109.300 ac, Inflow Depth > 5.25" for RI 100yr Eastern event  
 Inflow = 202.68 cfs @ 12.92 hrs, Volume= 47.844 af  
 Primary = 202.68 cfs @ 12.92 hrs, Volume= 47.844 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 68L: SW 69\_SW 60

Hydrograph

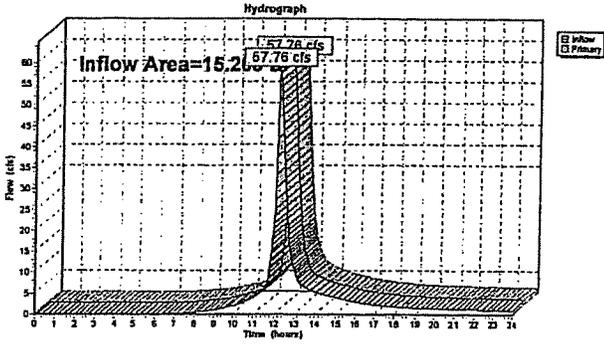


Link 69L: SW 14\_SW 17

Inflow Area = 15.260 ac, Inflow Depth > 4.71" for RI 100yr Eastern event  
 Inflow = 57.76 cfs @ 12.19 hrs, Volume= 5.995 af  
 Primary = 57.76 cfs @ 12.19 hrs, Volume= 5.995 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 69L: SW 14\_SW 17

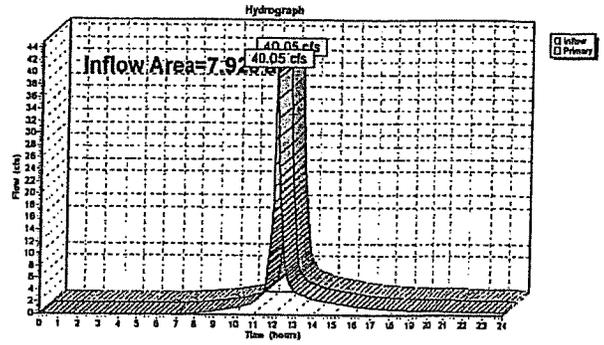


Link 70L: SW47\_SW49

Inflow Area = 7.920 ac, Inflow Depth > 4.67" for RI 100yr Eastern event  
 Inflow = 40.05 cfs @ 12.11 hrs, Volume= 3.082 af  
 Primary = 40.05 cfs @ 12.11 hrs, Volume= 3.082 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 70L: SW47\_SW49

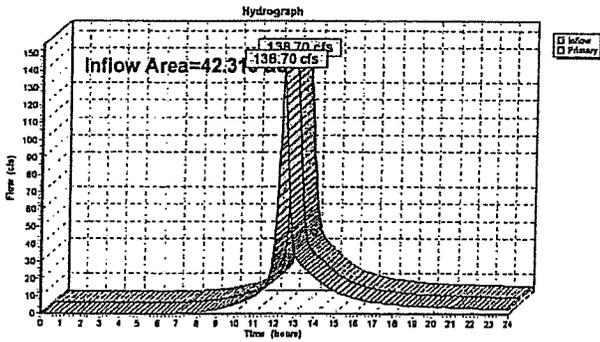


Link 71L: Elbow St

Inflow Area = 42.310 ac, Inflow Depth > 4.80" for RI 100yr Eastern event  
 Inflow = 138.70 cfs @ 12.37 hrs, Volume= 16.927 af  
 Primary = 138.70 cfs @ 12.37 hrs, Volume= 16.927 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs

Link 71L: Elbow St



## Hydraflow - Pipe Capacity Analysis



