DRAINAGE ANALYSIS

for

KONA MANSION SUBDIVISION

September 2018
Revised December 11, 2018

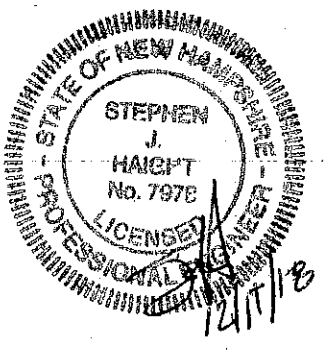
Prepared For:

50 Jacobs Road, LLC Terry Anderton
c/o TMS Architects, Shannon Alther
1 Cate Street
Portsmouth, NH 03801

Prepared By:

Civilworks New England
181 Watson Road, P.O. Box 1166
Dover, NH 03820

Stephen J. Haight, PE



CONTENTS

1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcel, Tax Map 115 Lot 14. The parcel is located at 50 Jacobs Street, Moultonborough, NH. The site contains approximately 80.55 acres and is bounded on the east by Jacobs Road and Colby Road, bounded to the west by Kona Farm Road, and bounded to the south (southwest) by Boathouse Road, abutting residences, and Lake Winnipesaukee. The watershed of the parcel includes area on the site as well as small areas from Tax Map 221 Lot 61, Tax Map 215 Lot 15, and Tax Map 215 Lot 16. On these supplemental lots, there are existing single family dwellings and driveways. The main parcel, Tax Map 215 Lot 14, contains several buildings, the Hotel "Kona Mansion", a nine-hole golf course, woods, wetlands, and grass. On site soils are a mix of colonel, metacomet, naumburg, paxton, pillsbury, woodstock-bice, and whitman with a hydrologic group D used for this design.

The existing conditions within the property and its watersheds have been analyzed using analysis points to compare the pre-development runoff to post-development. The parcel is located upon a large hill. Approximately half of the site flows toward Lake Winnipesaukee and the remaining portion flows into two separate wetland areas in a valley between the Kona Mansion and Jacobs Road. These wetland areas feed into two separate culverts that allow water to exit the parcel to the west and east via culverts beneath Colby Road and Kona Farm Road respectively. Three analysis points were used due to the size and configuration of the lot. The 15" culvert which crosses under Colby Road is designated as Analysis Point A and the 30" culvert crossing Kona Farm Road is designated as Analysis Point B. For the purposes of this subdivision, these are the main two analysis points in question. The remainder of the site drains down the hill, on the Lake Winnipesaukee side, and is listed as Analysis Point C. There is no change to Analysis Point C from pre-development to post-development.

Analysis Point A is made up of the uplands and wetland area which is east of the existing access road leading to the Kona Mansion. This existing watershed is made up of sub-catchments A1, A2, A3, A4 which ultimately discharge at the 15" culvert leading underneath Colby Road. This watershed mainly consists of uplands draining to a wetland system in the middle. (2) Existing Ponds and several reaches were used to model this watershed. Analysis Point B consists of the uplands and wetland area west of the existing access road. Similarly this analysis point incorporates sub-catchment B1. This watershed discharges to the culvert leading across Kona Farm Road.

The proposed subdivision incorporates the improvement of the existing access road, creating a 22' wide travelway and 3 foot shoulders leading from Jacobs Road to the emergency vehicle access connecting to Colby Road. A short cul-de-sac with a hammerhead turnaround for emergency vehicles is proposed within the interior of the parcel and is designed with an 18' travel way and two foot shoulders. A total of 15 new lots will be created in addition to the "parent" Kona Mansion Lot. (13) lots are to be accessed by means of the two proposed interior roads. The proposed lots will have on-

site well and septic systems. Overall site disturbance is going to be approximately +/- 212,000 s.f.

In the post development conditions the analysis points remain the same. Analysis point A is depicted utilizing subcatchments A1-A13, several reaches, existing ponds ex-1 and ex-2, ponds P1, P2, and WP1, treatment swales 1-3, and the closed stormdrain system leading from subcatchments A8 and A13 discharging to WP1. Subcatchments A1 and A4 lead to separate culverts which convey water beneath Mansion Court and into their respective treatment swales, TS1 and TS2. Subcatchment A2 conveys stormwater from Mansion Road in a roadside ditch leading to TS 1. Subcatchment A5 conveys stormwater to TS2. A portion of Subcatchment A7 includes the end of Mansion Court which drains through a roadside buffer while the remaining portion of the subcatchment flows to Analysis Point A. Subcatchments A8, A11, and A13 flow ultimately to WP1 and Analysis point A. Subcatchment A12 includes the porous pavement emergency access and flows overland through reaches to Analysis Point A. The remaining A series subcatchments flow overland to paths leading through existing ponds and reaches.

Analysis Point B, has a very similar watershed in the post-developed condition than the pre-developed condition. The B1 subcatchment consists of the western half of the proposed Mansion Road and land which flows to TS 3. Subcatchment B2 includes the remainder of the watershed area within Analysis Point B. Analysis point C is the same in the post developed condition with the entire watershed draining to Lake Winnepesaukee.

2.0 DRAINAGE ANALYSIS

A comprehensive hydrologic study of this site has been performed utilizing nationally recognized runoff estimating techniques developed by the USDA, Soil Conservation Services (SCS). The technique and runoff models are described in various SCS publications and references as follows:

"Stormwater Management and Erosion Sediment Control Handbook for Urban and Developing Areas in New Hampshire"

"New Hampshire Stormwater Manual Volume 2 - Post-Construction Best Management Practices Selection & Design"

"Civil Engineering Reference Manual, Fifth Edition"

"Open-Channel Hydraulics" Chow.

"Stormwater Modeling System" HydroCAD Ver. 10.0

2.1 DRAINAGE DESIGN PARAMETERS

A brief review of the procedures and parameters used in the drainage study follows:

2.1.1 Watersheds

The watershed and subcatchment areas were delineated using aerial topographic data provided by Eastern Topographics with boundary and supplemental topography provided by Civilworks NE.

2.1.2 Soils

Onsite soil information used to estimate the runoff curve numbers was provided by Michael Cuomo, certified wetland scientist:

Hydrologic Drainage Class D: Colonel
Metacomet
Naumberg
Paxton
Pillsbury
Woodstock-Bice
Whitman

2.1.3 Rainfall Data

Extreme precipitation estimate values from the Northeast Regional Climate Center were utilized in this analysis. The analysis has been performed for the 2-year, 10-year, 25-year, and 50-year storm events with 2.78", 4.03", 4.98", and 5.84" rainfall depths respectively. The detention pond has been sized to accommodate the 50-yr storm event.

2.1.4 Runoff Curve Numbers

The SCS runoff curve numbers were used and are summarized within each subcatchment drainage summary in Appendix A.

2.2 EXISTING CONDTIONS

For purposes of this analysis the subject parcel was analyzed as 3 sub-watershed areas.

2.2.1 Table A – Existing Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Pre-Development Volume (af)**	**Pre Development Peak Flows (cfs)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	2.12	10.6	24.1	36.2	50.3
B	2.97	16.9	34.4	48.9	62.5
C	1.92	17.1	33.4	46.8	58.8

2.3 DEVELOPED CONDITIONS

The post development watershed was analyzed with 3 sub-watershed areas. Post development watersheds have the same summing points as the pre development analysis.

2.3.1 Table B – Developed Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Post-Development Volume (af)**	**Post Development Peak Flows (cfs)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	2.23	10.6	22.4	34.5	46.8
B	3.01	16.6	34.1	48.6	62.2
C	1.92	17.1	33.4	46.8	58.8

Comparison Chart

Watershed	Pre/**Post-Development Volume (af)**	Pre/**Post Development Peak Flows (cfs)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	2.12/**2.23**	10.6/**10.6**	24.1/**22.4**	36.2/**34.5**	50.3/**46.8**
B	2.97/**3.01**	16.9/**16.6**	34.4/**34.1**	48.9/**48.6**	62.5/**62.2**
C	1.92/**1.92**	17.1/**17.1**	33.4/**33.4**	46.8/**46.8**	58.8/**58.8**

APPENDIX A

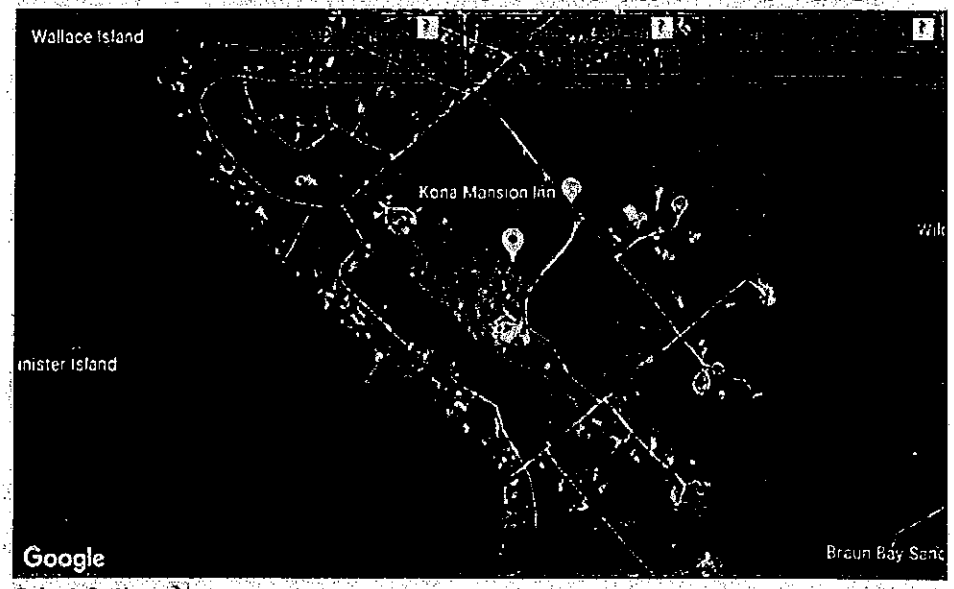
HYDROLOGIC CALCULATIONS

About this Project **Data & Products** **Daily Monitoring** **Documentation**

Select Product

- Extreme Precipitation Tables - HTML
- Extreme Precipitation Tables - Text/CSV
- Partial Duration Series - by Point
- Partial Duration Series - by Station
- Distribution Curves - Graphical
- Distribution Curves - Text/TBL
- Intensity Frequency Duration Graphs
- Precipitation Frequency Duration Graphs
- GIS Data Files
- Regional/State Maps

Select Location



Select Options

Smoothing	Delivery
Yes	Popup

Submit

This project is a joint collaboration between:

Northeast Regional Climate Center (NRCC) Cornell University

Natural Resources Conservation Service (NRCS) USDA NRCS

Contact: precip@cornell.edu

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	71.400 degrees West
Latitude	43.687 degrees North
Elevation	0 feet
Date/Time	Fri, 21 Sep 2018 06:10:47 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.39	0.49	0.64	0.80	1.00	1yr	0.69	0.95	1.16	1.46	1.85	2.34	2.64	1yr	2.08	2.54	2.94	3.59	4.11	1yr
2yr	0.31	0.48	0.59	0.78	0.99	1.24	2yr	0.85	1.14	1.43	1.79	2.23	2.78	3.13	2yr	2.46	3.01	3.48	4.22	4.81	2yr
5yr	0.37	0.57	0.72	0.96	1.23	1.55	5yr	1.06	1.42	1.80	2.24	2.78	3.43	3.92	5yr	3.04	3.77	4.34	5.17	5.83	5yr
10yr	0.41	0.65	0.82	1.11	1.45	1.85	10yr	1.25	1.69	2.14	2.67	3.29	4.03	4.65	10yr	3.56	4.47	5.14	6.04	6.76	10yr
25yr	0.49	0.77	0.98	1.36	1.80	2.32	25yr	1.56	2.12	2.69	3.34	4.10	4.98	5.84	25yr	4.40	5.61	6.42	7.41	8.21	25yr
50yr	0.55	0.89	1.13	1.58	2.13	2.75	50yr	1.84	2.52	3.20	3.97	4.85	5.84	6.93	50yr	5.17	6.67	7.60	8.66	9.51	50yr
100yr	0.62	1.01	1.30	1.85	2.53	3.28	100yr	2.18	3.00	3.82	4.72	5.73	6.86	8.24	100yr	6.08	7.92	9.01	10.12	11.03	100yr
200yr	0.72	1.17	1.51	2.17	2.99	3.90	200yr	2.58	3.58	4.54	5.60	6.77	8.07	9.79	200yr	7.14	9.41	10.68	11.84	12.80	200yr
500yr	0.86	1.41	1.84	2.67	3.74	4.91	500yr	3.23	4.52	5.72	7.03	8.45	10.00	12.31	500yr	8.85	11.83	13.38	14.57	15.58	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.22	0.34	0.41	0.55	0.68	0.88	1yr	0.59	0.86	0.95	1.27	1.52	2.00	2.21	1yr	1.77	2.12	2.55	2.97	3.55	1yr
2yr	0.30	0.46	0.57	0.77	0.95	1.14	2yr	0.82	1.11	1.29	1.71	2.19	2.70	3.03	2yr	2.39	2.92	3.38	4.06	4.64	2yr
5yr	0.34	0.53	0.66	0.91	1.15	1.37	5yr	0.99	1.34	1.55	2.03	2.61	3.16	3.62	5yr	2.80	3.48	4.03	4.83	5.44	5yr
10yr	0.38	0.59	0.73	1.02	1.32	1.58	10yr	1.14	1.54	1.77	2.29	2.94	3.55	4.13	10yr	3.15	3.97	4.60	5.46	6.06	10yr
25yr	0.45	0.68	0.84	1.20	1.58	1.91	25yr	1.37	1.87	2.12	2.71	3.38	4.16	4.94	25yr	3.68	4.75	5.48	6.06	6.85	25yr
50yr	0.50	0.76	0.94	1.36	1.83	2.22	50yr	1.58	2.17	2.43	3.07	3.75	4.66	5.66	50yr	4.13	5.45	6.26	6.75	7.70	50yr
100yr	0.56	0.85	1.06	1.53	2.10	2.57	100yr	1.81	2.52	2.79	3.51	4.17	5.23	6.51	100yr	4.63	6.26	7.17	7.51	8.57	100yr
200yr	0.63	0.95	1.20	1.74	2.42	2.99	200yr	2.09	2.93	3.21	3.99	4.62	5.86	7.49	200yr	5.19	7.20	8.23	8.32	9.57	200yr
500yr	0.74	1.10	1.41	2.06	2.92	3.69	500yr	2.52	3.61	3.88	4.76	5.29	6.79	9.04	500yr	6.01	8.70	9.90	9.55	11.07	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.05	1yr	0.75	1.02	1.20	1.59	2.00	2.57	2.90	1yr	2.28	2.79	3.23	3.90	4.45	1yr
2yr	0.32	0.50	0.61	0.83	1.02	1.20	2yr	0.88	1.17	1.38	1.82	2.41	2.92	3.26	2yr	2.58	3.13	3.64	4.41	4.99	2yr
5yr	0.39	0.60	0.74	1.02	1.30	1.55	5yr	1.12	1.51	1.76	2.33	2.98	3.71	4.22	5yr	3.29	4.06	4.67	5.54	6.24	5yr
10yr	0.46	0.71	0.88	1.23	1.59	1.88	10yr	1.37	1.84	2.13	2.80	3.57	4.47	5.13	10yr	3.96	4.94	5.70	6.64	7.42	10yr
25yr	0.59	0.89	1.11	1.58	2.08	2.44	25yr	1.80	2.39	2.76	3.62	4.59	5.76	6.67	25yr	5.10	6.41	7.40	9.07	9.35	25yr
50yr	0.70	1.06	1.32	1.90	2.56	2.97	50yr	2.21	2.91	3.36	4.37	5.57	7.00	8.14	50yr	6.19	7.83	9.01	11.09	11.78	50yr
100yr	0.84	1.27	1.58	2.29	3.14	3.62	100yr	2.71	3.54	4.08	5.33	6.74	8.50	9.93	100yr	7.53	9.55	10.98	13.56	14.18	100yr
200yr	1.00	1.51	1.91	2.76	3.86	4.41	200yr	3.33	4.31	4.96	6.45	8.32	10.34	12.10	200yr	9.15	11.64	13.39	16.59	17.08	200yr
500yr	1.27	1.89	2.43	3.53	5.03	5.73	500yr	4.34	5.60	6.40	8.30	10.77	13.41	15.73	500yr	11.87	15.13	17.39	21.70	21.86	500yr

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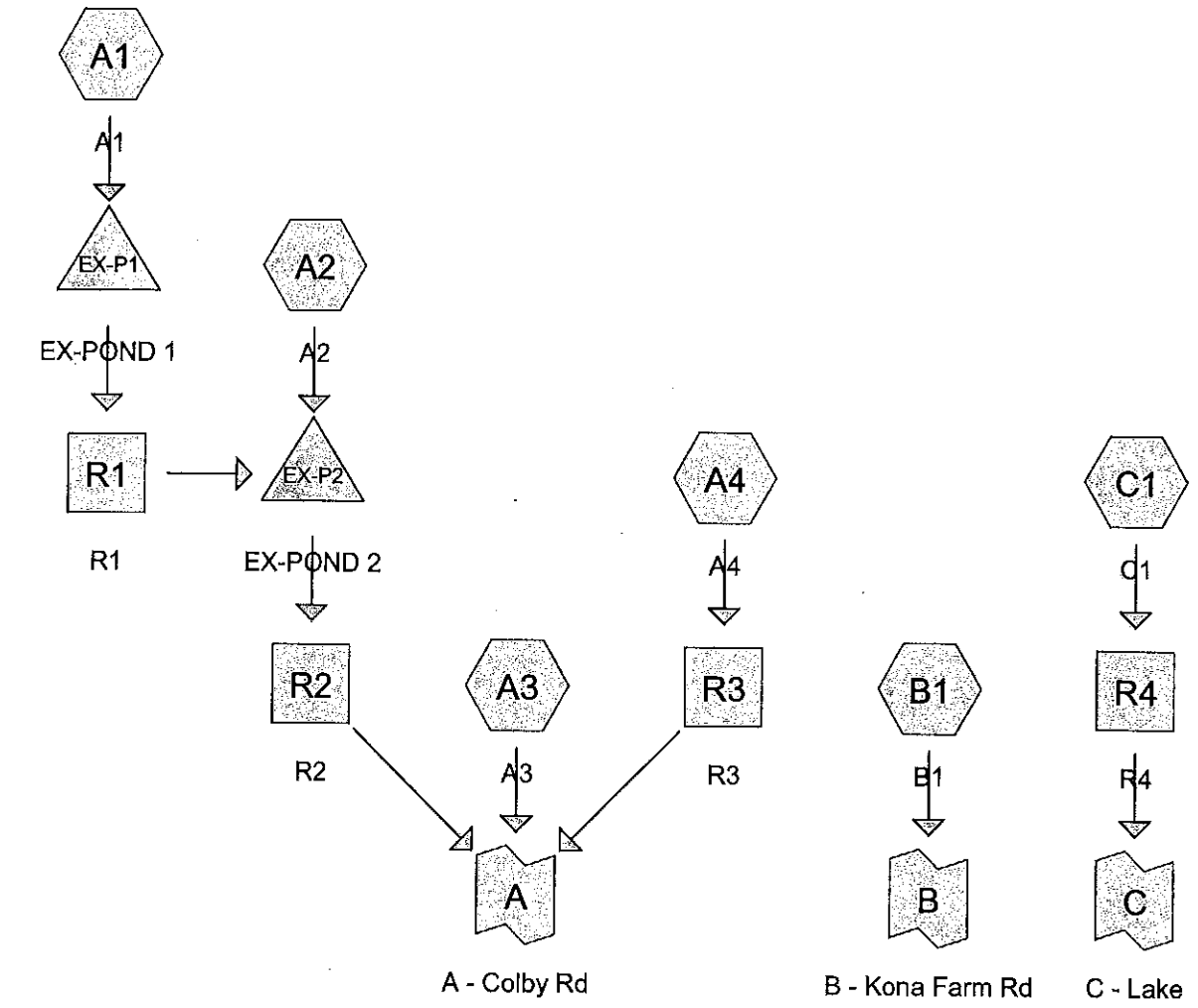
Northeast Regional Climate Center

A-1

EXISTING WATERSHEDS



Subcat Reach Pond Link

Routing Diagram for 1781 - Pre_jpg

Prepared by {enter your company name here}, Printed 12/3/2018

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
62.137	77	Woods, Good, HSG D (A1, A2, A3, A4, B1, C1)
21.851	80	>75% Grass cover, Good, HSG D (A1, A2, A3, A4, B1, C1)
0.761	96	Gravel surface, HSG D (A2, A4, B1, C1)
1.326	98	Paved parking, HSG D (A1, A4, B1, C1)
0.524	98	Unconnected roofs, HSG D (A2, A3, B1, C1)
0.035	98	Water Surface, HSG D (B1)
86.635	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
86.635	HSG D	A1, A2, A3, A4, B1, C1
0.000	Other	
86.635		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	21.851	0.000	21.851	>75% Grass cover, Good	A1, A2, A3, A4, B1, C1
0.000	0.000	0.000	1.326	0.000	1.326	Paved parking	A1, A4, B1, C1
0.000	0.000	0.000	0.524	0.000	0.524	Unconnected roofs	A2, A3, B1, C1
0.000	0.000	0.000	0.761	0.000	0.761	Gravel surface	A2, A4, B1, C1
0.000	0.000	0.000	62.137	0.000	62.137	Woods, Good	A1, A2, A3, A4, B1, C1
0.000	0.000	0.000	0.035	0.000	0.035	Water Surface	B1
0.000	**0.000**	**0.000**	**86.635**	**0.000**	**86.635**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	EX-P1	553.80	554.00	16.5	-0.0121	0.025	15.0	0.0	0.0
2	EX-P2	545.40	545.40	17.8	0.0000	0.025	15.0	0.0	0.0

A – 1

NODE LISTING – 2-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=377,870 sf 1.65% Impervious Runoff Depth>0.96"
Flow Length=864' Tc=28.2 min CN=78 Runoff=4.97 cfs 0.697 af

Subcatchment A2: A2 Runoff Area=207,735 sf 0.92% Impervious Runoff Depth>0.91"
Flow Length=468' Tc=19.3 min CN=77 Runoff=3.09 cfs 0.363 af

Subcatchment A3: A3 Runoff Area=371,694 sf 0.35% Impervious Runoff Depth>0.91"
Flow Length=906' Tc=25.7 min CN=77 Runoff=4.78 cfs 0.648 af

Subcatchment A4: A4 Runoff Area=215,589 sf 4.25% Impervious Runoff Depth>1.08"
Flow Length=1,036' Tc=25.7 min CN=80 Runoff=3.38 cfs 0.444 af

Subcatchment B1: B1 Runoff Area=1,618,645 sf 1.10% Impervious Runoff Depth>0.96"
Flow Length=1,724' Tc=43.1 min CN=78 Runoff=16.93 cfs 2.965 af

Subcatchment C1: C1 Runoff Area=982,300 sf 4.66% Impervious Runoff Depth>1.02"
Flow Length=860' Tc=18.4 min UI Adjusted CN=79 Runoff=17.17 cfs 1.922 af

Reach R1: R1 Avg. Flow Depth=0.31' Max Vel=1.00 fps Inflow=4.62 cfs 0.691 af
n=0.100 L=232.0' S=0.0371 '/' Capacity=58.16 cfs Outflow=4.55 cfs 0.688 af

Reach R2: R2 Avg. Flow Depth=0.39' Max Vel=0.77 fps Inflow=5.09 cfs 1.043 af
n=0.100 L=464.0' S=0.0162 '/' Capacity=38.40 cfs Outflow=4.94 cfs 1.032 af

Reach R3: R3 Avg. Flow Depth=0.50' Max Vel=5.04 fps Inflow=3.38 cfs 0.444 af
n=0.030 L=563.0' S=0.0539 '/' Capacity=57.24 cfs Outflow=3.36 cfs 0.443 af

Reach R4: R4 Avg. Flow Depth=0.36' Max Vel=5.90 fps Inflow=17.17 cfs 1.922 af
n=0.030 L=275.0' S=0.0945 '/' Capacity=154.29 cfs Outflow=17.14 cfs 1.920 af

Pond EX-P1: EX-POND 1 Peak Elev=555.78' Storage=1,647 cf Inflow=4.97 cfs 0.697 af
Primary=4.62 cfs 0.691 af Secondary=0.00 cfs 0.000 af Outflow=4.62 cfs 0.691 af

Pond EX-P2: EX-POND 2 Peak Elev=547.57' Storage=5,224 cf Inflow=6.46 cfs 1.052 af
Primary=5.09 cfs 1.043 af Secondary=0.00 cfs 0.000 af Outflow=5.09 cfs 1.043 af

Link A: A - Colby Rd Inflow=10.61 cfs 2.123 af
Primary=10.61 cfs 2.123 af

Link B: B - Kona Farm Rd Inflow=16.93 cfs 2.965 af
Primary=16.93 cfs 2.965 af

Link C: C - Lake Inflow=17.14 cfs 1.920 af
Primary=17.14 cfs 1.920 af

Total Runoff Area = 86.635 ac Runoff Volume = 7.039 af Average Runoff Depth = 0.98"
97.82% Pervious = 84.749 ac 2.18% Impervious = 1.886 ac

A – 1

NODE LISTING – 10-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=377,870 sf 1.65% Impervious Runoff Depth>1.89"
Flow Length=864' Tc=28.2 min CN=78 Runoff=10.00 cfs 1.368 af

Subcatchment A2: A2 Runoff Area=207,735 sf 0.92% Impervious Runoff Depth>1.82"
Flow Length=468' Tc=19.3 min CN=77 Runoff=6.31 cfs 0.724 af

Subcatchment A3: A3 Runoff Area=371,694 sf 0.35% Impervious Runoff Depth>1.82"
Flow Length=906' Tc=25.7 min CN=77 Runoff=9.85 cfs 1.293 af

Subcatchment A4: A4 Runoff Area=215,589 sf 4.25% Impervious Runoff Depth>2.05"
Flow Length=1,036' Tc=25.7 min CN=80 Runoff=6.50 cfs 0.845 af

Subcatchment B1: B1 Runoff Area=1,618,645 sf 1.10% Impervious Runoff Depth>1.88"
Flow Length=1,724' Tc=43.1 min CN=78 Runoff=34.36 cfs 5.827 af

Subcatchment C1: C1 Runoff Area=982,300 sf 4.66% Impervious Runoff Depth>1.98"
Flow Length=860' Tc=18.4 min UI Adjusted CN=79 Runoff=33.44 cfs 3.712 af

Reach R1: R1 Avg. Flow Depth=0.39' Max Vel=1.16 fps Inflow=7.49 cfs 1.361 af
n=0.100 L=232.0' S=0.0371 '/' Capacity=58.16 cfs Outflow=7.48 cfs 1.357 af

Reach R2: R2 Avg. Flow Depth=0.55' Max Vel=0.97 fps Inflow=11.59 cfs 2.068 af
n=0.100 L=464.0' S=0.0162 '/' Capacity=38.40 cfs Outflow=10.68 cfs 2.052 af

Reach R3: R3 Avg. Flow Depth=0.68' Max Vel=6.05 fps Inflow=6.50 cfs 0.845 af
n=0.030 L=563.0' S=0.0539 '/' Capacity=57.24 cfs Outflow=6.47 cfs 0.844 af

Reach R4: R4 Avg. Flow Depth=0.49' Max Vel=7.24 fps Inflow=33.44 cfs 3.712 af
n=0.030 L=275.0' S=0.0945 '/' Capacity=154.29 cfs Outflow=33.39 cfs 3.710 af

Pond EX-P1: EX-POND 1 Peak Elev=557.20' Storage=4,960 cf Inflow=10.00 cfs 1.368 af
Primary=7.49 cfs 1.361 af Secondary=0.00 cfs 0.000 af Outflow=7.49 cfs 1.361 af

Pond EX-P2: EX-POND 2 Peak Elev=548.02' Storage=7,307 cf Inflow=11.89 cfs 2.081 af
Primary=6.23 cfs 1.832 af Secondary=5.37 cfs 0.236 af Outflow=11.59 cfs 2.068 af

Link A: A - Colby Rd Inflow=24.15 cfs 4.189 af
Primary=24.15 cfs 4.189 af

Link B: B - Kona Farm Rd Inflow=34.36 cfs 5.827 af
Primary=34.36 cfs 5.827 af

Link C: C - Lake Inflow=33.39 cfs 3.710 af
Primary=33.39 cfs 3.710 af

Total Runoff Area = 86.635 ac Runoff Volume = 13.770 af Average Runoff Depth = 1.91"
97.82% Pervious = 84.749 ac 2.18% Impervious = 1.886 ac

A – 1

10-YR STORM SUMMARY

Summary for Subcatchment A1: A1

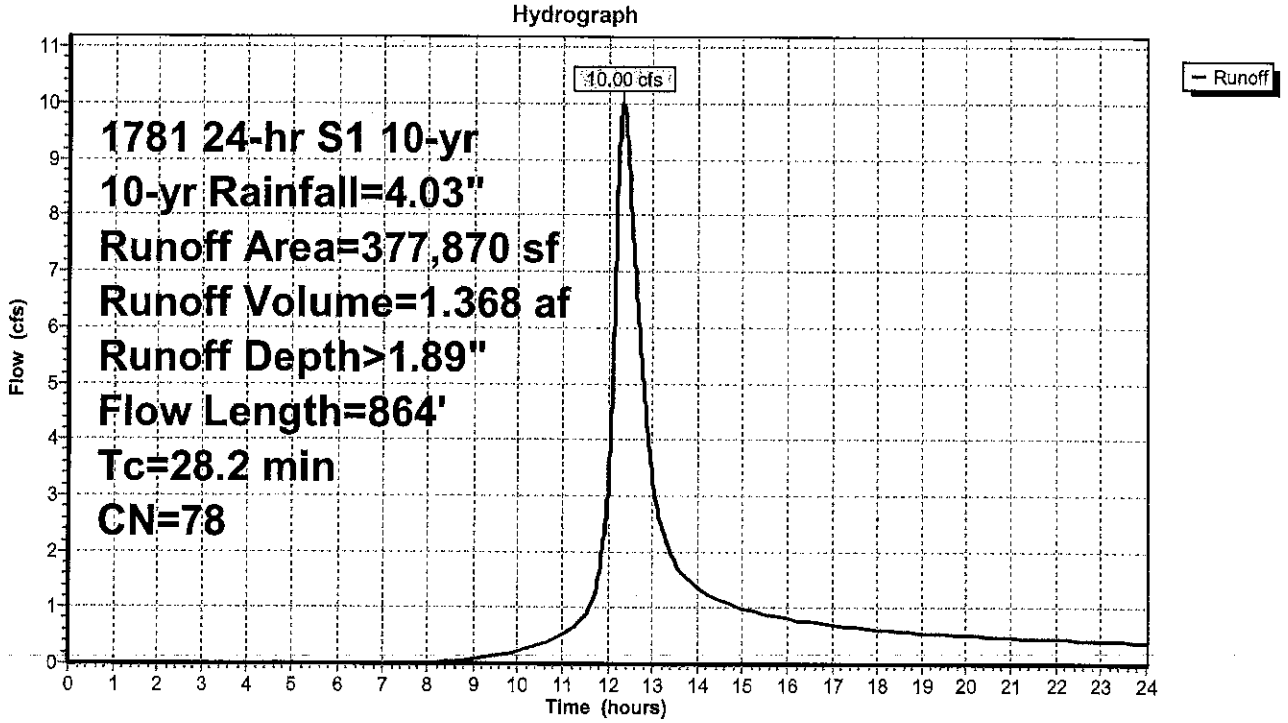
Runoff = 10.00 cfs @ 12.35 hrs, Volume= 1.368 af, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
341,321	77	Woods, Good, HSG D
30,333	80	>75% Grass cover, Good, HSG D
6,216	98	Paved parking, HSG D
377,870	78	Weighted Average
371,654		98.35% Pervious Area
6,216		1.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	100	0.0330	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
4.9	313	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.4	451	0.0230	1.72	45.81	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
28.2	864	Total			

Subcatchment A1: A1



Summary for Subcatchment A2: A2

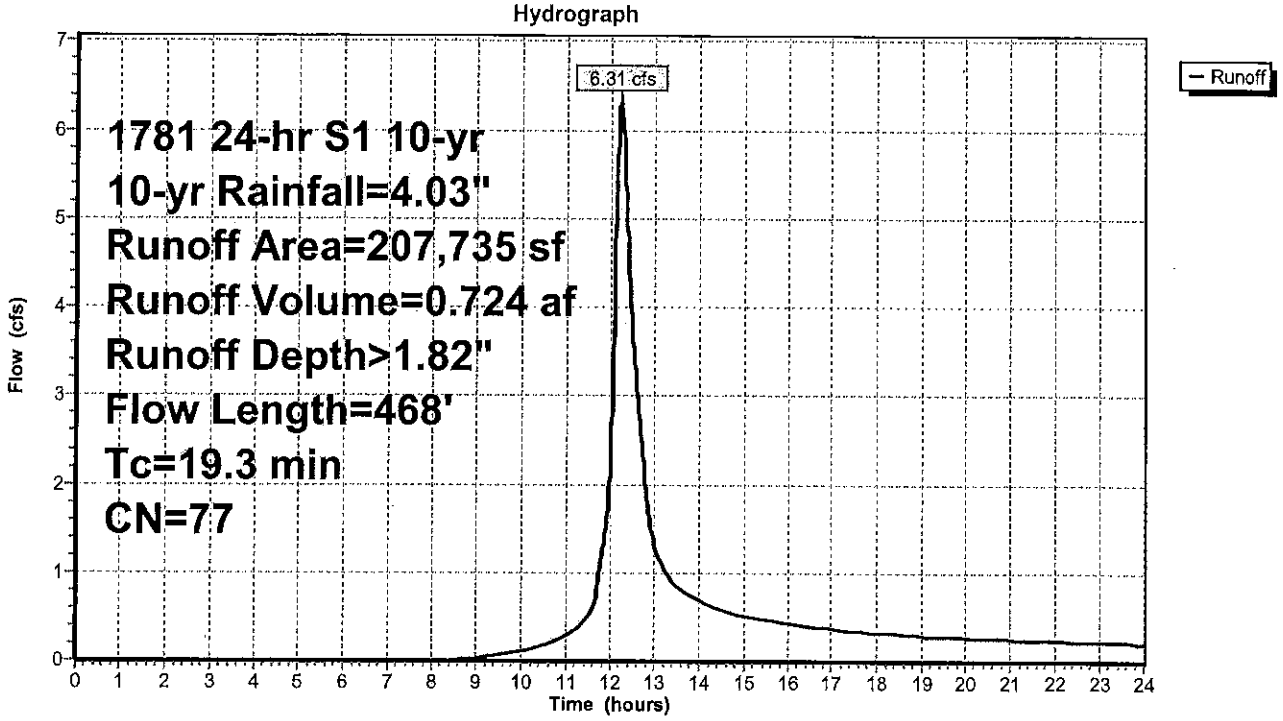
Runoff = 6.31 cfs @ 12.22 hrs, Volume= 0.724 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
200,802	77	Woods, Good, HSG D
4,370	80	>75% Grass cover, Good, HSG D
656	96	Gravel surface, HSG D
1,907	98	Unconnected roofs, HSG D
207,735	77	Weighted Average
205,828		99.08% Pervious Area
1,907		0.92% Impervious Area
1,907		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
2.2	200	0.0950	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	168	0.0510	2.56	68.22	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
19.3	468	Total			

Subcatchment A2: A2



Summary for Subcatchment A3: A3

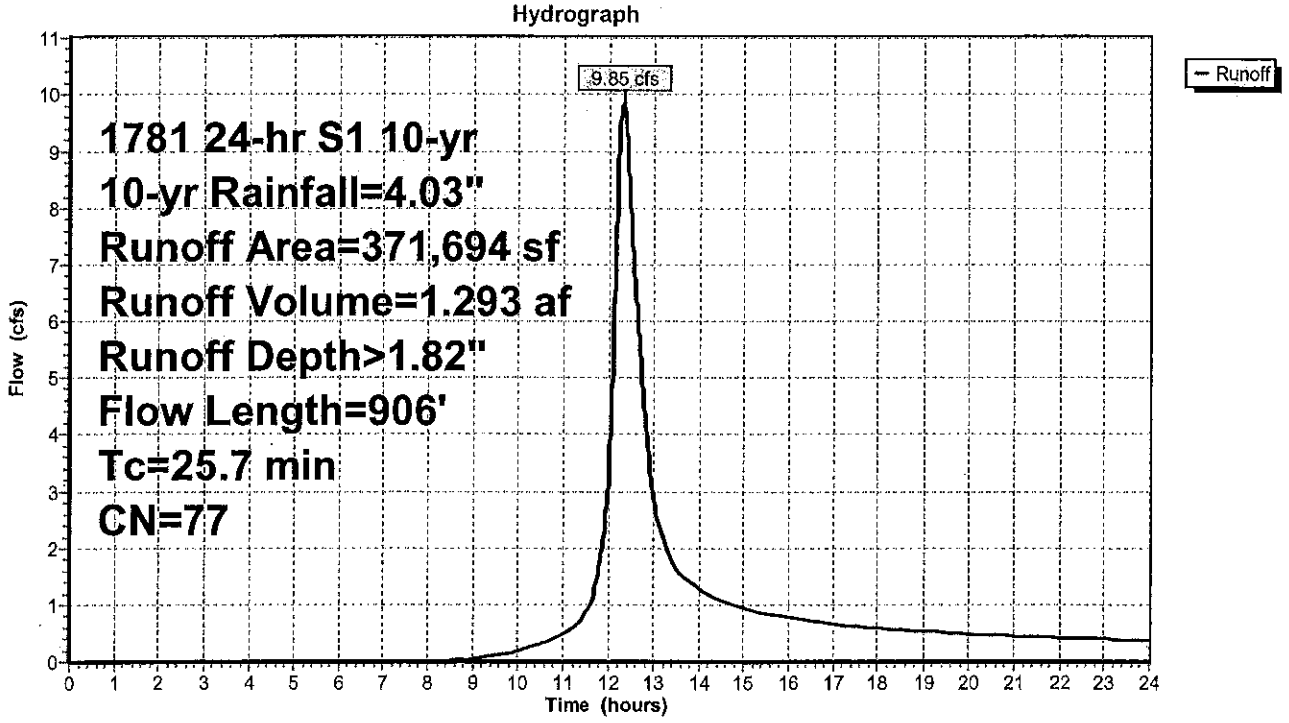
Runoff = 9.85 cfs @ 12.31 hrs, Volume= 1.293 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
358,438	77	Woods, Good, HSG D
11,943	80	>75% Grass cover, Good, HSG D
1,313	98	Unconnected roofs, HSG D
371,694	77	Weighted Average
370,381		99.65% Pervious Area
1,313		0.35% Impervious Area
1,313		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	100	0.0550	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
8.2	605	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.1	201	0.0200	1.60	42.72	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
25.7	906	Total			

Subcatchment A3: A3



Summary for Subcatchment A4: A4

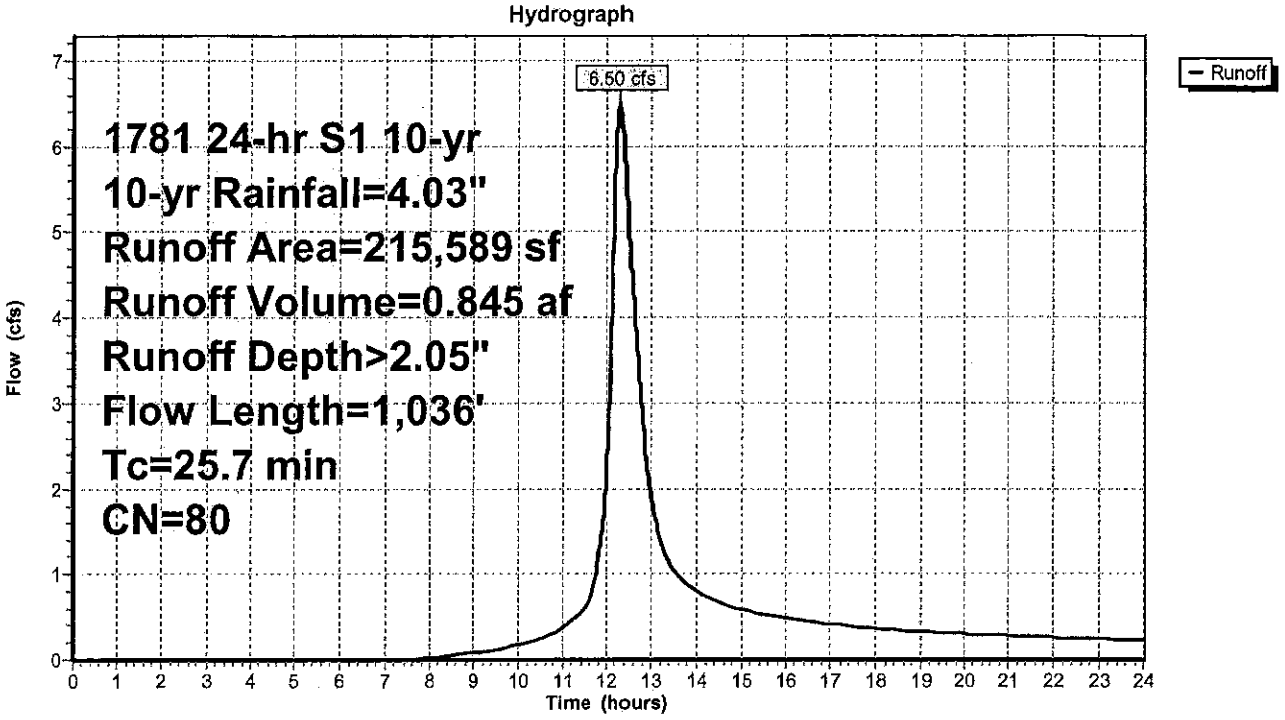
Runoff = 6.50 cfs @ 12.31 hrs, Volume= 0.845 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
97,780	77	Woods, Good, HSG D
100,155	80	>75% Grass cover, Good, HSG D
8,500	96	Gravel surface, HSG D
6,349	98	Paved parking, HSG D
2,805	98	Paved parking, HSG D
215,589	80	Weighted Average
206,435		95.75% Pervious Area
9,154		4.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
5.8	392	0.0510	1.13		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	60	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.4	251	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	233	0.0090	3.27	8.72	**Parabolic Channel,** W=4.00' D=1.00' Area=2.7 sf Perim=4.6' n= 0.030 Earth, dense weeds
25.7	1,036	Total			

Subcatchment A4: A4



Summary for Subcatchment B1: B1

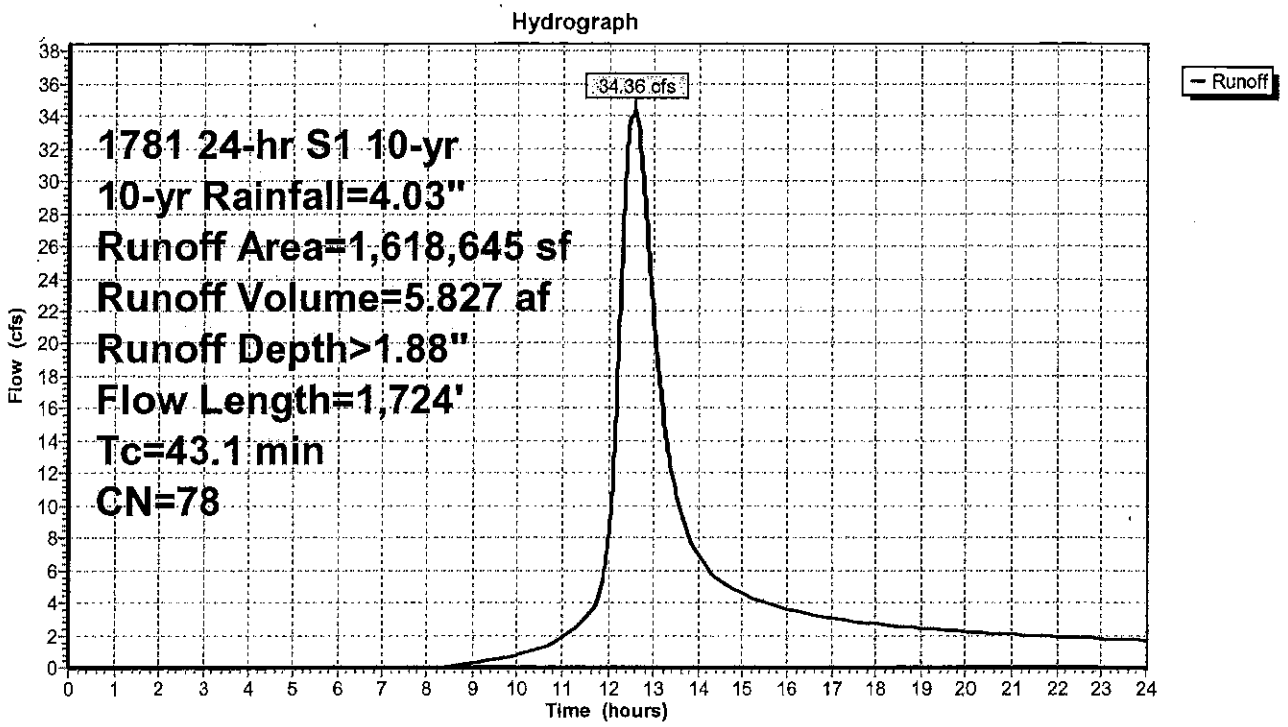
Runoff = 34.36 cfs @ 12.59 hrs, Volume= 5.827 af, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
1,224,156	77	Woods, Good, HSG D
369,471	80	>75% Grass cover, Good, HSG D
7,227	96	Gravel surface, HSG D
11,677	98	Paved parking, HSG D
4,577	98	Unconnected roofs, HSG D
1,537	98	Water Surface, HSG D
1,618,645	78	Weighted Average
1,600,854		98.90% Pervious Area
17,791		1.10% Impervious Area
4,577		25.73% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.0	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
8.2	449	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.9	1,175	0.0210	1.64	43.77	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
43.1	1,724	Total			

Subcatchment B1: B1



Summary for Subcatchment C1: C1

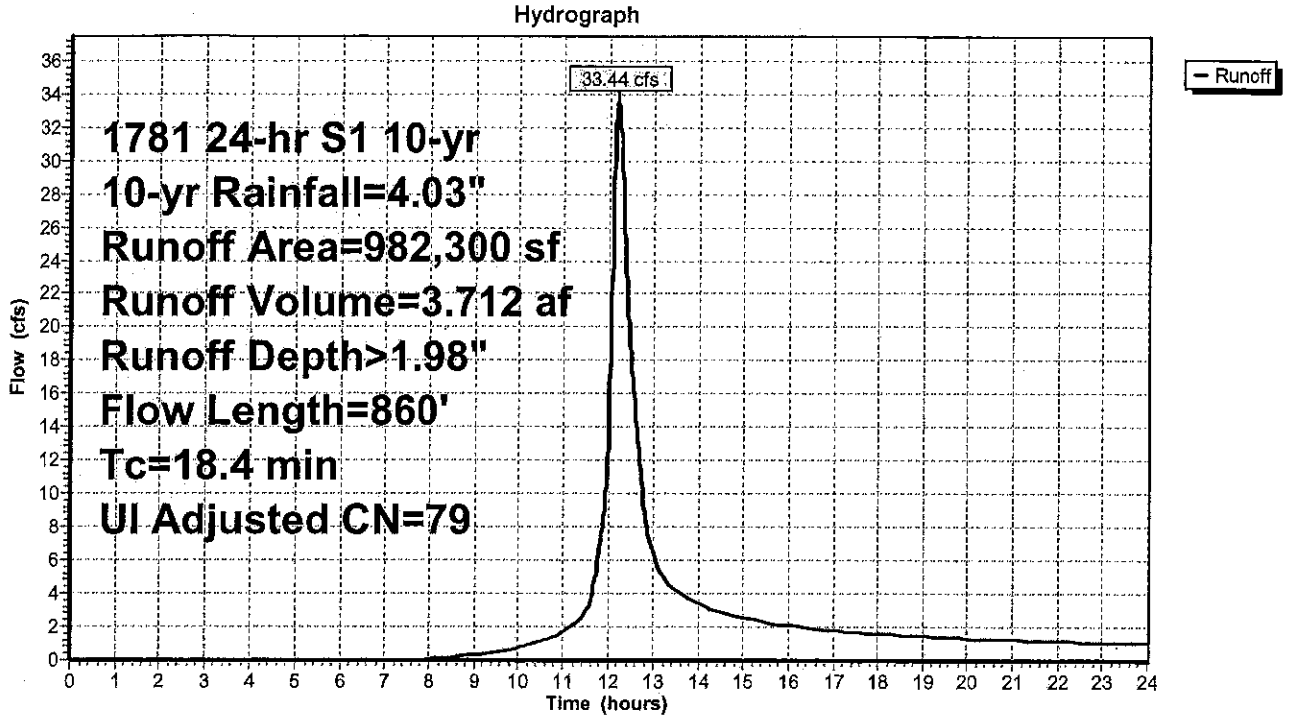
Runoff = 33.44 cfs @ 12.21 hrs, Volume= 3.712 af, Depth> 1.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
484,198	77	Woods, Good, HSG D
435,550	80	>75% Grass cover, Good, HSG D
16,773	96	Gravel surface, HSG D
30,733	98	Paved parking, HSG D
15,046	98	Unconnected roofs, HSG D
982,300	80	Weighted Average, UI Adjusted CN = 79
936,521		95.34% Pervious Area
45,779		4.66% Impervious Area
15,046		32.87% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"
4.1	455	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.7	305	0.1440	1.90		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.4	860	Total			

Subcatchment C1: C1



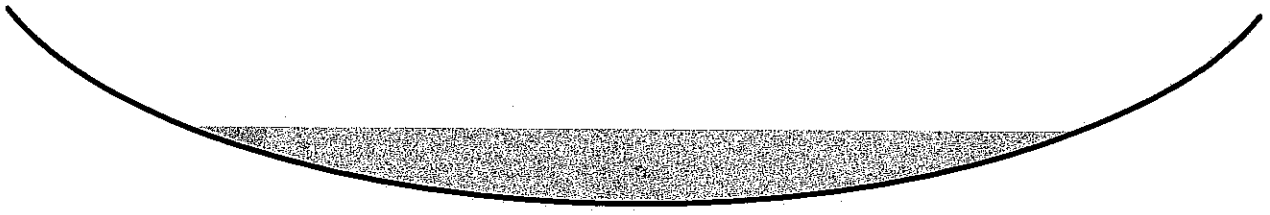
Summary for Reach R1: R1

Inflow Area = 8.675 ac, 1.65% Impervious, Inflow Depth > 1.88" for 10-yr event
Inflow = 7.49 cfs @ 12.58 hrs, Volume= 1.361 af
Outflow = 7.48 cfs @ 12.62 hrs, Volume= 1.357 af, Atten= 0%, Lag= 2.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.16 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.56 fps, Avg. Travel Time= 6.9 min

Peak Storage= 1,495 cf @ 12.62 hrs
Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 58.16 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 232.0' Slope= 0.0371 '/'
Inlet Invert= 554.00', Outlet Invert= 545.40'



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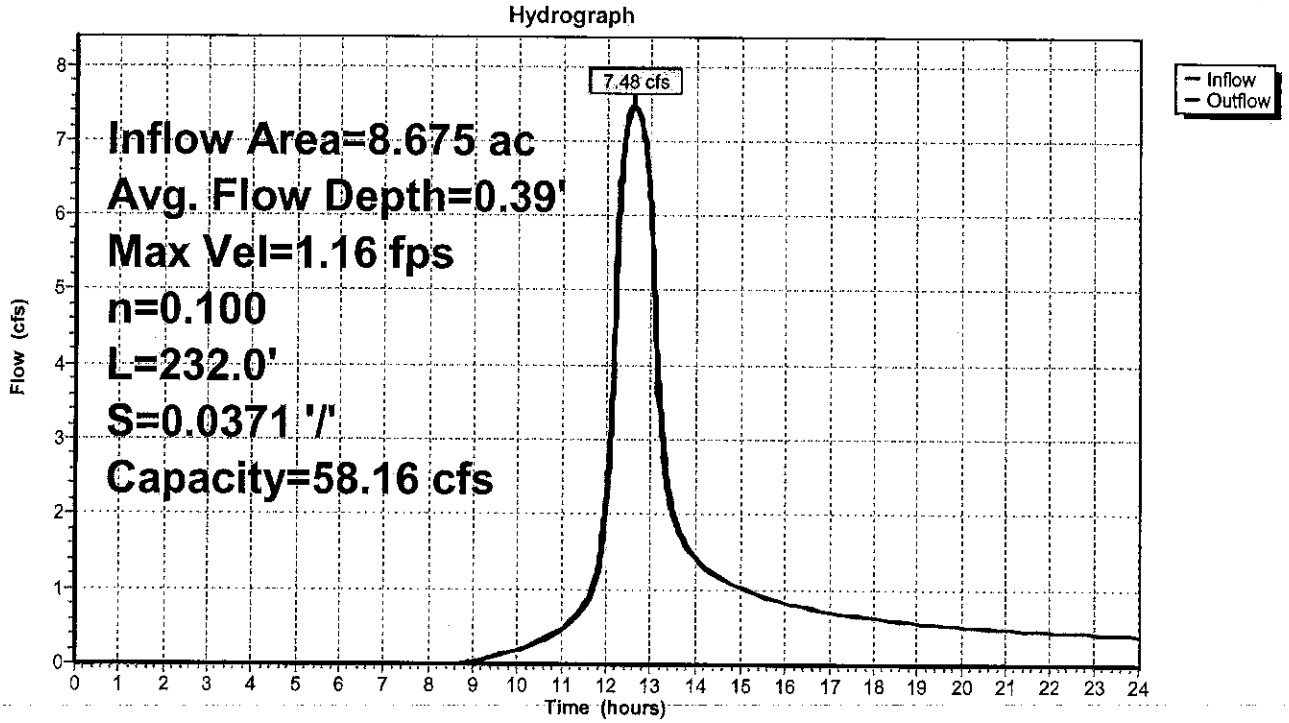
Reach R1: R1



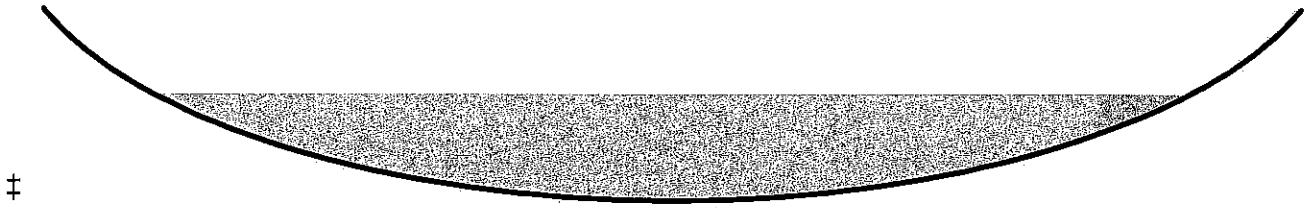
Summary for Reach R2: R2

Inflow Area = 13.444 ac, 1.39% Impervious, Inflow Depth > 1.85" for 10-yr event
Inflow = 11.59 cfs @ 12.38 hrs, Volume= 2.068 af
Outflow = 10.68 cfs @ 12.59 hrs, Volume= 2.052 af, Atten= 8%, Lag= 12.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.97 fps, Min. Travel Time= 8.0 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 16.4 min

Peak Storage= 5,099 cf @ 12.59 hrs
Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 38.40 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 464.0' Slope= 0.0162 '/'
Inlet Invert= 545.40', Outlet Invert= 537.90'



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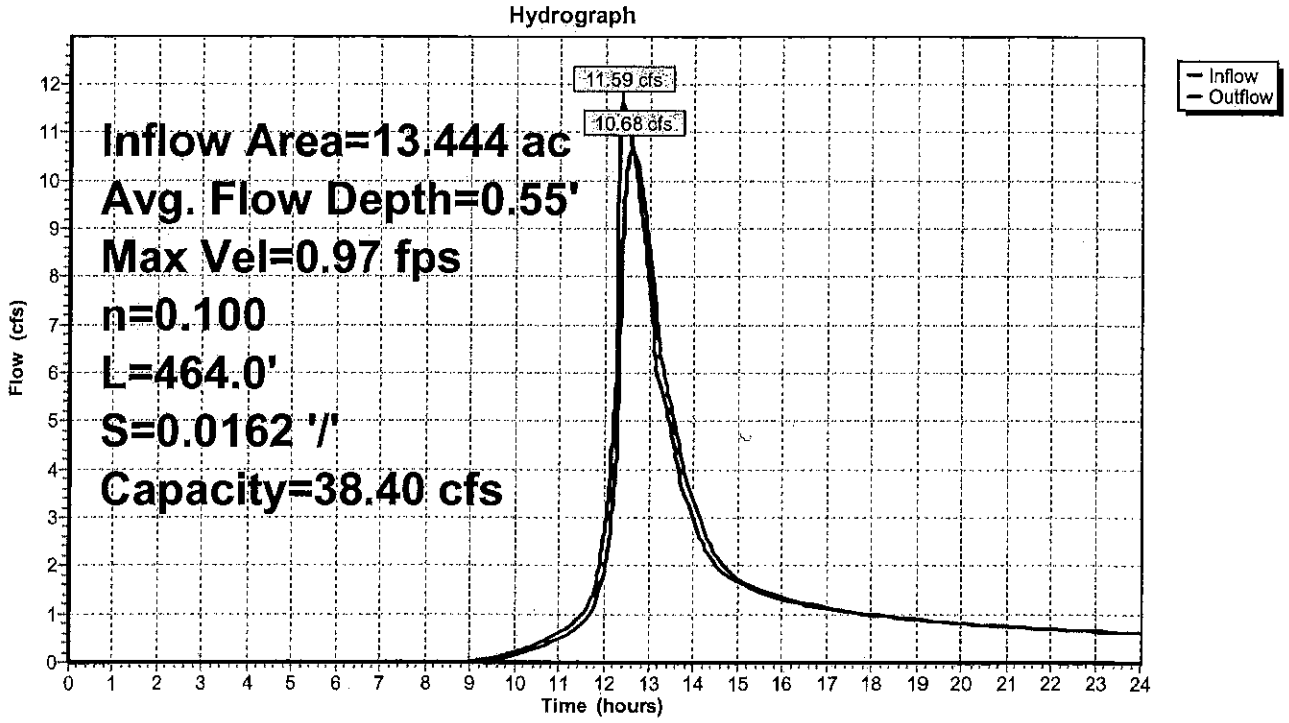
Reach R2: R2



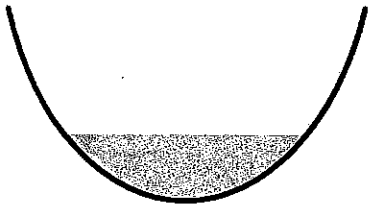
Summary for Reach R3: R3

Inflow Area = 4.949 ac, 4.25% Impervious, Inflow Depth > 2.05" for 10-yr event
Inflow = 6.50 cfs @ 12.31 hrs, Volume= 0.845 af
Outflow = 6.47 cfs @ 12.33 hrs, Volume= 0.844 af, Atten= 1%, Lag= 1.1 min

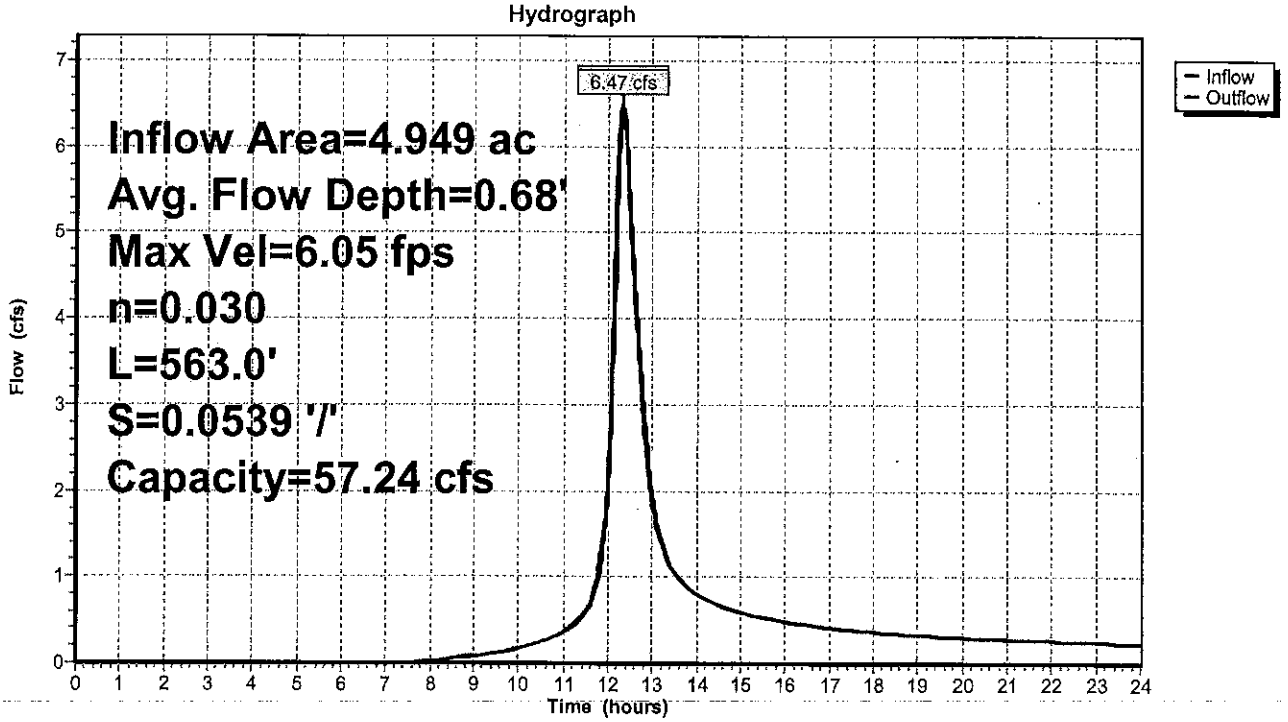
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.05 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 2.67 fps, Avg. Travel Time= 3.5 min

Peak Storage= 602 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.68'
Bank-Full Depth= 2.00' Flow Area= 5.3 sf, Capacity= 57.24 cfs

4.00' x 2.00' deep Parabolic Channel, n= 0.030 Earth, dense weeds
Length= 563.0' Slope= 0.0539 '/'
Inlet Invert= 568.25', Outlet Invert= 537.90'



Reach R3: R3



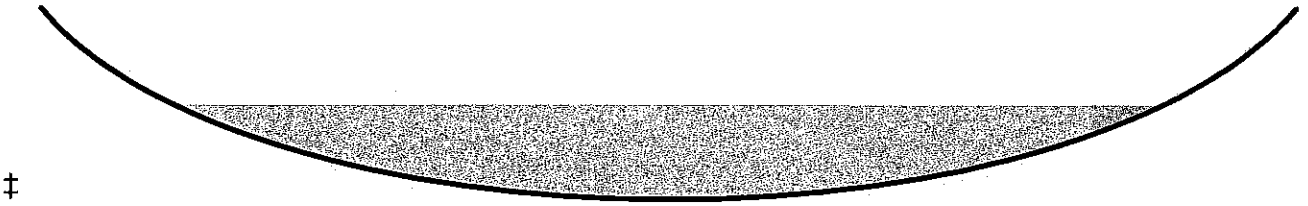
Summary for Reach R4: R4

Inflow Area = 22.551 ac, 4.66% Impervious, Inflow Depth > 1.98" for 10-yr event
Inflow = 33.44 cfs @ 12.21 hrs, Volume= 3.712 af
Outflow = 33.39 cfs @ 12.22 hrs, Volume= 3.710 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.24 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.91 fps, Avg. Travel Time= 1.6 min

Peak Storage= 1,269 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 1.00' Flow Area= 13.3 sf, Capacity= 154.29 cfs

20.00' x 1.00' deep Parabolic Channel, n= 0.030 Earth, clean & winding
Length= 275.0' Slope= 0.0945 '/'
Inlet Invert= 530.00', Outlet Invert= 504.00'



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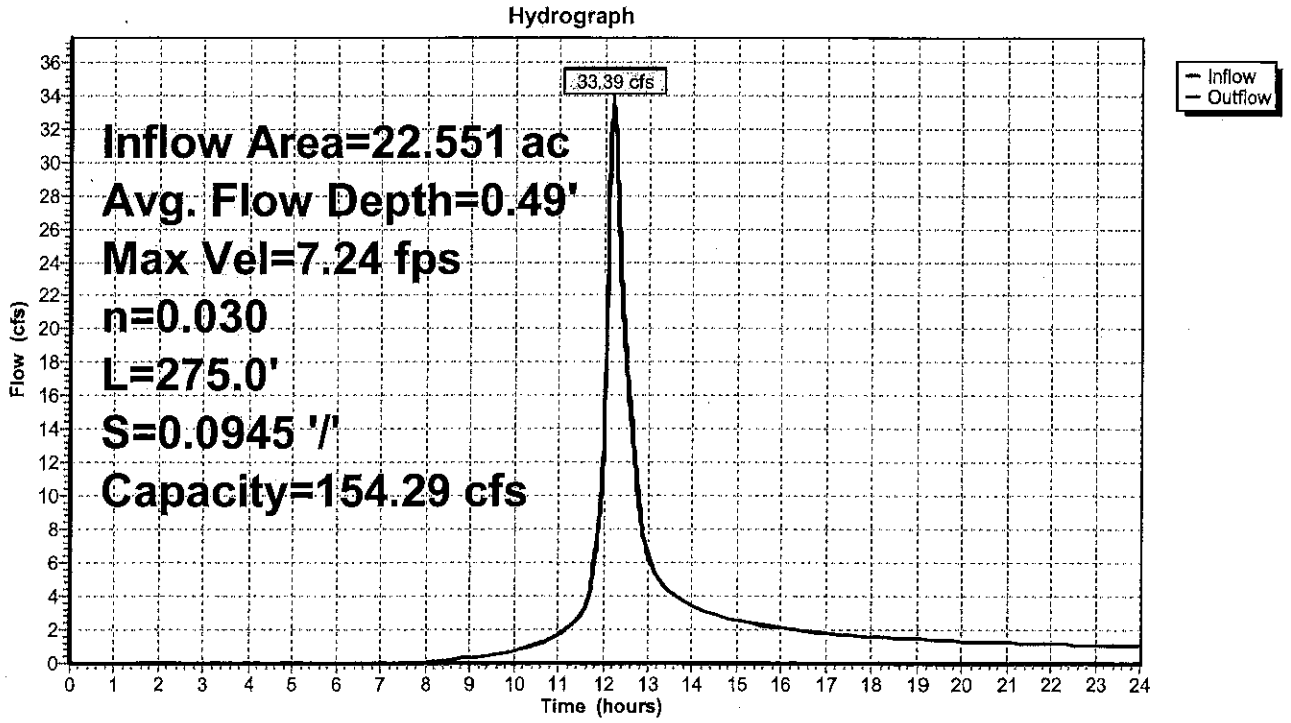
Reach R4: R4



Summary for Pond EX-P1: EX-POND 1

Inflow Area = 8.675 ac, 1.65% Impervious, Inflow Depth > 1.89" for 10-yr event
Inflow = 10.00 cfs @ 12.35 hrs, Volume= 1.368 af
Outflow = 7.49 cfs @ 12.58 hrs, Volume= 1.361 af, Atten= 25%, Lag= 13.8 min
Primary = 7.49 cfs @ 12.58 hrs, Volume= 1.361 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 557.20' @ 12.58 hrs Surf.Area= 4,123 sf Storage= 4,960 cf
Flood Elev= 558.00' Surf.Area= 6,968 sf Storage= 9,322 cf

Plug-Flow detention time= 8.8 min calculated for 1.361 af (99% of inflow)
Center-of-Mass det. time= 6.1 min (879.9 - 873.8)

Volume	Invert	Avail.Storage	Storage Description
#1	553.80'	9,322 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

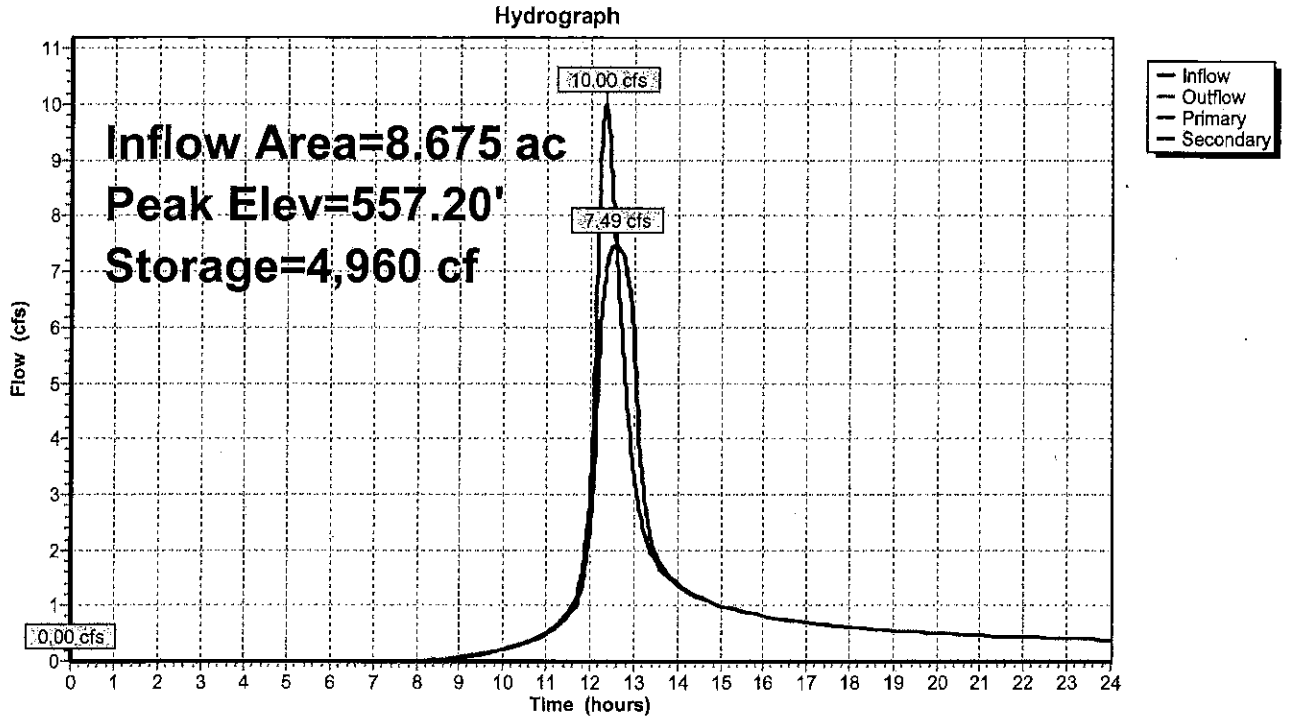
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
553.80	54	34.7	0	0	54
554.00	651	108.3	59	59	892
556.00	1,228	143.6	1,849	1,908	1,643
558.00	6,968	326.9	7,414	9,322	8,522

Device	Routing	Invert	Outlet Devices
#1	Primary	554.00'	**15.0" Round Culvert** L= 16.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 553.80' / 554.00' S= -0.0121 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	557.40'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=7.49 cfs @ 12.58 hrs HW=557.20' TW=554.39' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 7.49 cfs @ 6.11 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=553.80' TW=554.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond EX-P1: EX-POND 1



Summary for Pond EX-P2: EX-POND 2

Inflow Area = 13.444 ac, 1.39% Impervious, Inflow Depth > 1.86" for 10-yr event
Inflow = 11.89 cfs @ 12.29 hrs, Volume= 2.081 af
Outflow = 11.59 cfs @ 12.38 hrs, Volume= 2.068 af, Atten= 2%, Lag= 5.2 min
Primary = 6.23 cfs @ 12.38 hrs, Volume= 1.832 af
Secondary = 5.37 cfs @ 12.38 hrs, Volume= 0.236 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 548.02' @ 12.38 hrs Surf.Area= 5,015 sf Storage= 7,307 cf
Flood Elev= 550.00' Surf.Area= 10,659 sf Storage= 22,455 cf

Plug-Flow detention time= 14.3 min calculated for 2.068 af (99% of inflow)
Center-of-Mass det. time= 10.9 min (889.9 - 879.0)

Volume	Invert	Avail.Storage	Storage Description
#1	545.40'	22,455 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

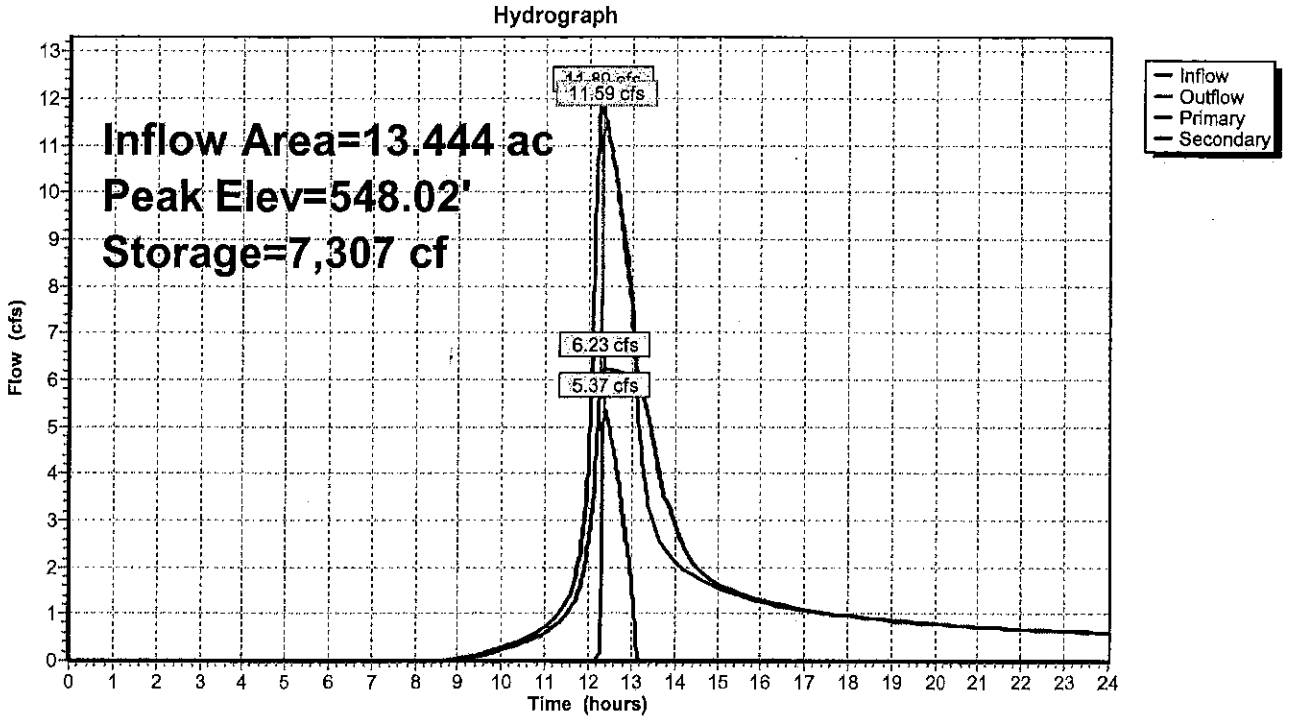
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
545.40	257	79.7	0	0	257
546.00	1,900	206.6	571	571	3,149
548.00	4,962	313.4	6,622	7,193	7,599
550.00	10,659	458.5	15,262	22,455	16,546

Device	Routing	Invert	Outlet Devices
#1	Primary	545.40'	**15.0" Round Culvert** L= 17.8' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 545.40' / 545.40' S= 0.0000 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	547.90'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.23 cfs @ 12.38 hrs HW=548.02' TW=545.89' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 6.23 cfs @ 5.07 fps)

Secondary OutFlow Max=5.37 cfs @ 12.38 hrs HW=548.02' TW=545.89' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 5.37 cfs @ 0.87 fps)

Pond EX-P2: EX-POND 2

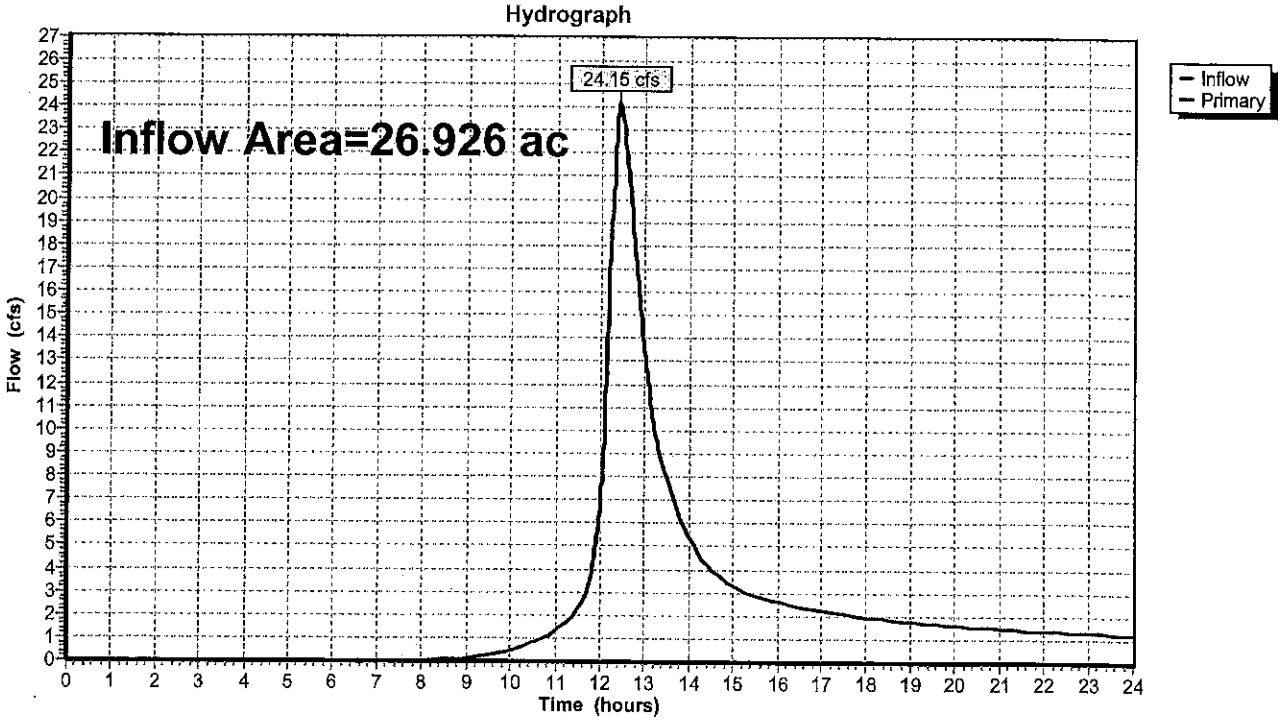


Summary for Link A: A - Colby Rd

Inflow Area = 26.926 ac, 1.58% Impervious, Inflow Depth > 1.87" for 10-yr event
Inflow = 24.15 cfs @ 12.42 hrs, Volume= 4.189 af
Primary = 24.15 cfs @ 12.42 hrs, Volume= 4.189 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: A - Colby Rd

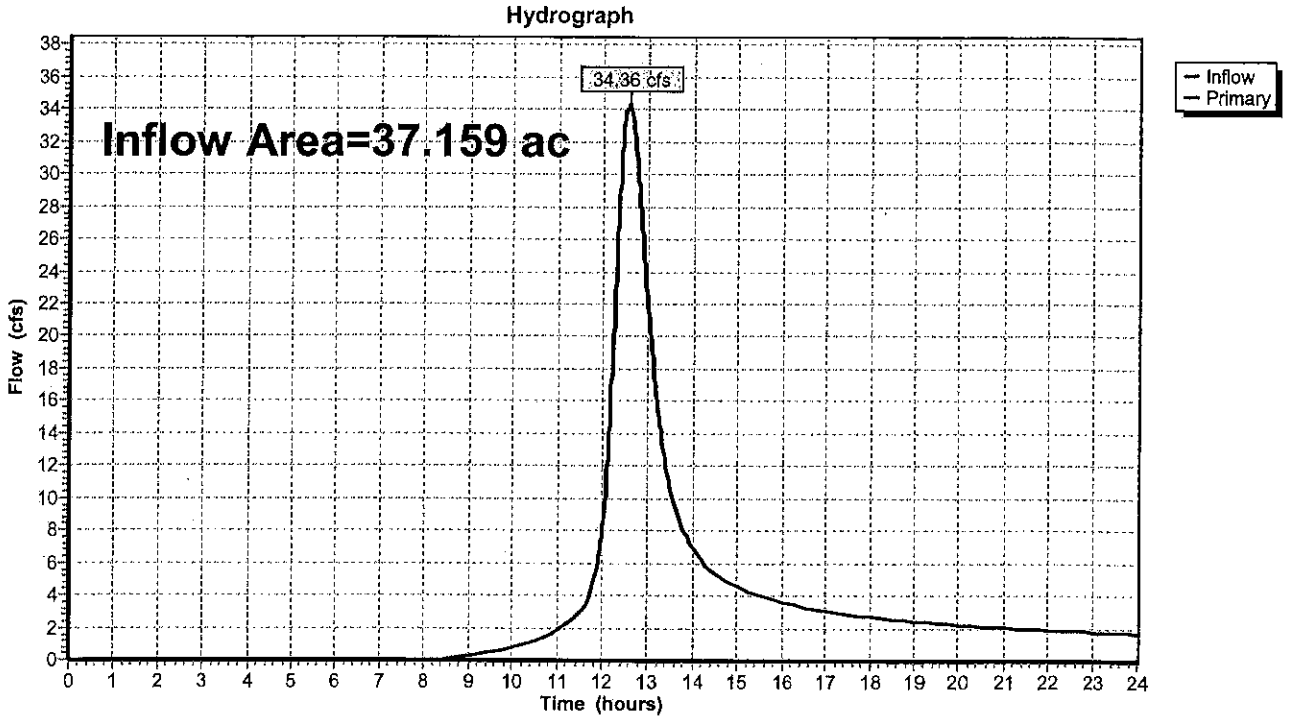


Summary for Link B: B - Kona Farm Rd

Inflow Area = 37.159 ac, 1.10% Impervious, Inflow Depth > 1.88" for 10-yr event
Inflow = 34.36 cfs @ 12.59 hrs, Volume= 5.827 af
Primary = 34.36 cfs @ 12.59 hrs, Volume= 5.827 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link B: B - Kona Farm Rd

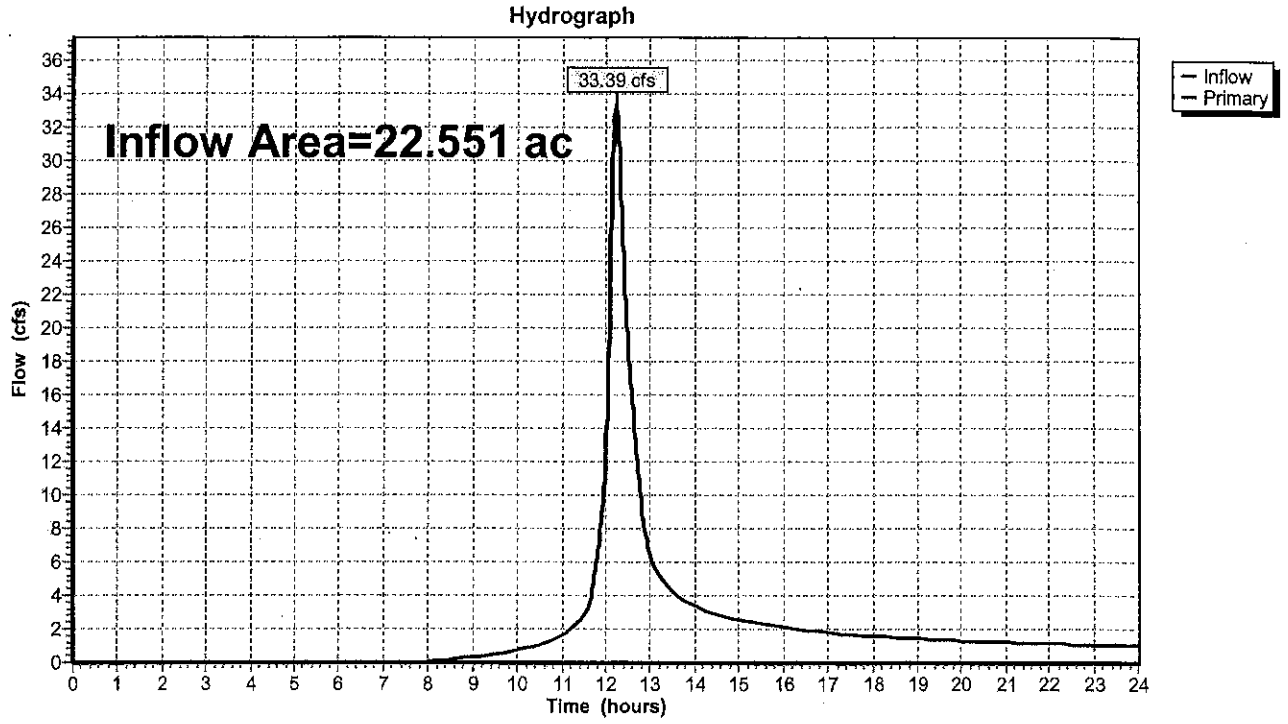


Summary for Link C: C - Lake

Inflow Area = 22.551 ac, 4.66% Impervious, Inflow Depth > 1.97" for 10-yr event
Inflow = 33.39 cfs @ 12.22 hrs, Volume= 3.710 af
Primary = 33.39 cfs @ 12.22 hrs, Volume= 3.710 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link C: C - Lake



A – 1

NODE LISTING – 25-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=377,870 sf 1.65% Impervious Runoff Depth>2.67"
Flow Length=864' Tc=28.2 min CN=78 Runoff=14.18 cfs 1.930 af

Subcatchment A2: A2 Runoff Area=207,735 sf 0.92% Impervious Runoff Depth>2.59"
Flow Length=468' Tc=19.3 min CN=77 Runoff=9.01 cfs 1.029 af

Subcatchment A3: A3 Runoff Area=371,694 sf 0.35% Impervious Runoff Depth>2.58"
Flow Length=906' Tc=25.7 min CN=77 Runoff=14.10 cfs 1.838 af

Subcatchment A4: A4 Runoff Area=215,589 sf 4.25% Impervious Runoff Depth>2.85"
Flow Length=1,036' Tc=25.7 min CN=80 Runoff=9.06 cfs 1.176 af

Subcatchment B1: B1 Runoff Area=1,618,645 sf 1.10% Impervious Runoff Depth>2.66"
Flow Length=1,724' Tc=43.1 min CN=78 Runoff=48.85 cfs 8.227 af

Subcatchment C1: C1 Runoff Area=982,300 sf 4.66% Impervious Runoff Depth>2.77"
Flow Length=860' Tc=18.4 min UI Adjusted CN=79 Runoff=46.86 cfs 5.202 af

Reach R1: R1 Avg. Flow Depth=0.50' Max Vel=1.38 fps Inflow=13.71 cfs 1.923 af
n=0.100 L=232.0' S=0.0371 '/' Capacity=58.16 cfs Outflow=13.24 cfs 1.918 af

Reach R2: R2 Avg. Flow Depth=0.70' Max Vel=1.13 fps Inflow=18.89 cfs 2.930 af
n=0.100 L=464.0' S=0.0162 '/' Capacity=38.40 cfs Outflow=17.66 cfs 2.911 af

Reach R3: R3 Avg. Flow Depth=0.80' Max Vel=6.63 fps Inflow=9.06 cfs 1.176 af
n=0.030 L=563.0' S=0.0539 '/' Capacity=57.24 cfs Outflow=9.02 cfs 1.175 af

Reach R4: R4 Avg. Flow Depth=0.58' Max Vel=8.03 fps Inflow=46.86 cfs 5.202 af
n=0.030 L=275.0' S=0.0945 '/' Capacity=154.29 cfs Outflow=46.80 cfs 5.199 af

Pond EX-P1: EX-POND 1 Peak Elev=557.53' Storage=6,468 cf Inflow=14.18 cfs 1.930 af
Primary=7.95 cfs 1.807 af Secondary=5.76 cfs 0.116 af Outflow=13.71 cfs 1.923 af

Pond EX-P2: EX-POND 2 Peak Elev=548.12' Storage=7,780 cf Inflow=18.99 cfs 2.947 af
Primary=6.43 cfs 2.344 af Secondary=12.45 cfs 0.587 af Outflow=18.89 cfs 2.930 af

Link A: A - Colby Rd Inflow=36.32 cfs 5.923 af
Primary=36.32 cfs 5.923 af

Link B: B - Kona Farm Rd Inflow=48.85 cfs 8.227 af
Primary=48.85 cfs 8.227 af

Link C: C - Lake Inflow=46.80 cfs 5.199 af
Primary=46.80 cfs 5.199 af

Total Runoff Area = 86.635 ac Runoff Volume = 19.402 af Average Runoff Depth = 2.69"
97.82% Pervious = 84.749 ac 2.18% Impervious = 1.886 ac

A – 1

NODE LISTING – 50-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=377,870 sf 1.65% Impervious Runoff Depth>3.41"
Flow Length=864' Tc=28.2 min CN=78 Runoff=18.03 cfs 2.464 af

Subcatchment A2: A2 Runoff Area=207,735 sf 0.92% Impervious Runoff Depth>3.32"
Flow Length=468' Tc=19.3 min CN=77 Runoff=11.47 cfs 1.319 af

Subcatchment A3: A3 Runoff Area=371,694 sf 0.35% Impervious Runoff Depth>3.31"
Flow Length=906' Tc=25.7 min CN=77 Runoff=18.01 cfs 2.356 af

Subcatchment A4: A4 Runoff Area=215,589 sf 4.25% Impervious Runoff Depth>3.61"
Flow Length=1,036' Tc=25.7 min CN=80 Runoff=11.38 cfs 1.489 af

Subcatchment B1: B1 Runoff Area=1,618,645 sf 1.10% Impervious Runoff Depth>3.39"
Flow Length=1,724' Tc=43.1 min CN=78 Runoff=62.46 cfs 10.504 af

Subcatchment C1: C1 Runoff Area=982,300 sf 4.66% Impervious Runoff Depth>3.52"
Flow Length=860' Tc=18.4 min UI Adjusted CN=79 Runoff=58.90 cfs 6.611 af

Reach R1: R1 Avg. Flow Depth=0.58' Max Vel=1.51 fps Inflow=17.96 cfs 2.456 af
n=0.100 L=232.0' S=0.0371 '/' Capacity=58.16 cfs Outflow=17.69 cfs 2.450 af

Reach R2: R2 Avg. Flow Depth=0.81' Max Vel=1.25 fps Inflow=26.05 cfs 3.750 af
n=0.100 L=464.0' S=0.0162 '/' Capacity=38.40 cfs Outflow=24.46 cfs 3.728 af

Reach R3: R3 Avg. Flow Depth=0.90' Max Vel=7.05 fps Inflow=11.38 cfs 1.489 af
n=0.030 L=563.0' S=0.0539 '/' Capacity=57.24 cfs Outflow=11.33 cfs 1.487 af

Reach R4: R4 Avg. Flow Depth=0.64' Max Vel=8.61 fps Inflow=58.90 cfs 6.611 af
n=0.030 L=275.0' S=0.0945 '/' Capacity=154.29 cfs Outflow=58.84 cfs 6.607 af

Pond EX-P1: EX-POND 1 Peak Elev=557.59' Storage=6,767 cf Inflow=18.03 cfs 2.464 af
Primary=8.03 cfs 2.161 af Secondary=9.94 cfs 0.295 af Outflow=17.96 cfs 2.456 af

Pond EX-P2: EX-POND 2 Peak Elev=548.19' Storage=8,166 cf Inflow=26.13 cfs 3.769 af
Primary=6.59 cfs 2.780 af Secondary=19.46 cfs 0.970 af Outflow=26.05 cfs 3.750 af

Link A: A - Colby Rd Inflow=50.47 cfs 7.571 af
Primary=50.47 cfs 7.571 af

Link B: B - Kona Farm Rd Inflow=62.46 cfs 10.504 af
Primary=62.46 cfs 10.504 af

Link C: C - Lake Inflow=58.84 cfs 6.607 af
Primary=58.84 cfs 6.607 af

Total Runoff Area = 86.635 ac Runoff Volume = 24.742 af Average Runoff Depth = 3.43"
97.82% Pervious = 84.749 ac 2.18% Impervious = 1.886 ac

A – 1

50-YR STORM SUMMARY

Summary for Subcatchment A1: A1

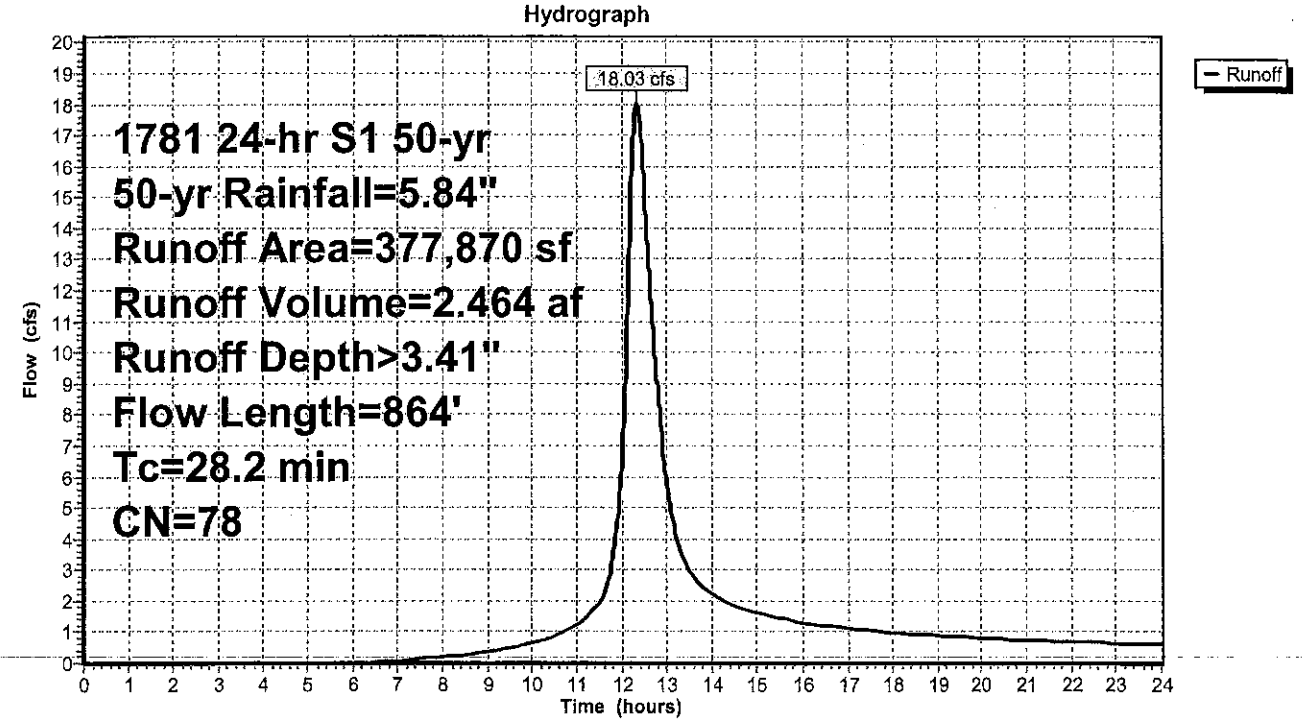
Runoff = 18.03 cfs @ 12.34 hrs, Volume= 2.464 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
341,321	77	Woods, Good, HSG D
30,333	80	>75% Grass cover, Good, HSG D
6,216	98	Paved parking, HSG D
377,870	78	Weighted Average
371,654		98.35% Pervious Area
6,216		1.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	100	0.0330	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
4.9	313	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.4	451	0.0230	1.72	45.81	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
28.2	864	Total			

Subcatchment A1: A1



Summary for Subcatchment A2: A2

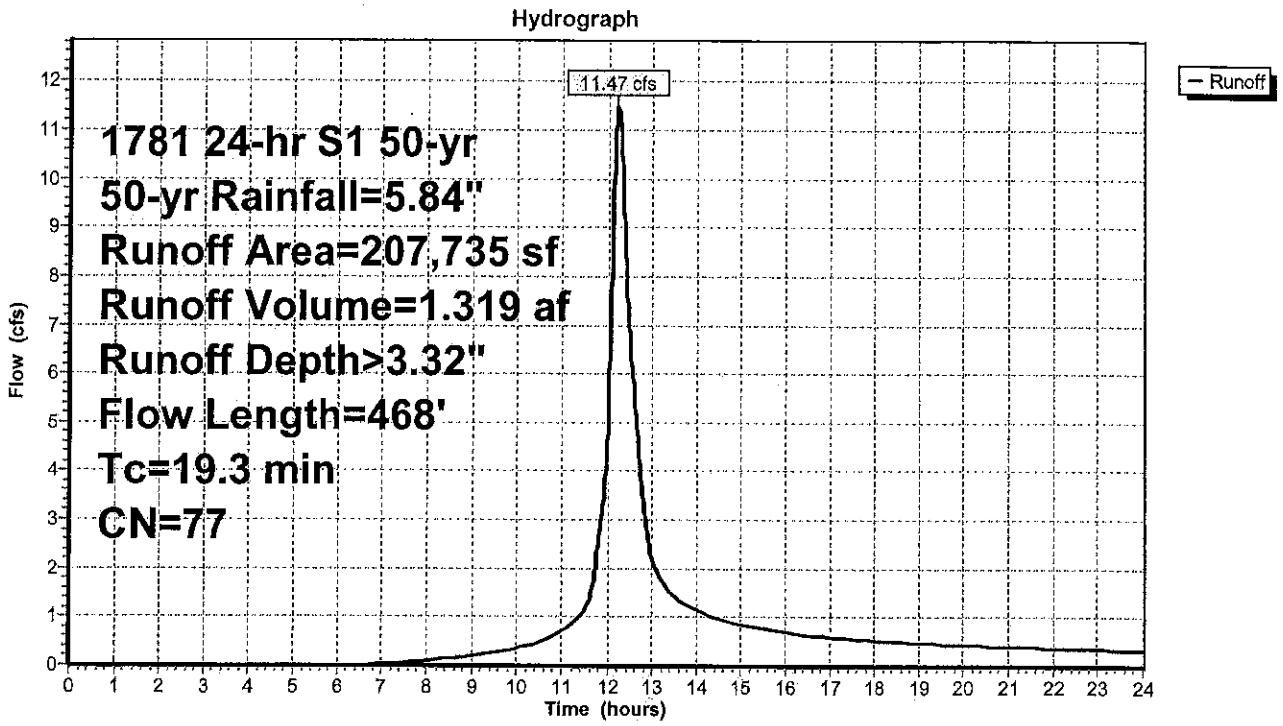
Runoff = 11.47 cfs @ 12.22 hrs, Volume= 1.319 af, Depth> 3.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
200,802	77	Woods, Good, HSG D
4,370	80	>75% Grass cover, Good, HSG D
656	96	Gravel surface, HSG D
1,907	98	Unconnected roofs, HSG D
207,735	77	Weighted Average
205,828		99.08% Pervious Area
1,907		0.92% Impervious Area
1,907		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
2.2	200	0.0950	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	168	0.0510	2.56	68.22	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
19.3	468	Total			

Subcatchment A2: A2



Summary for Subcatchment A3: A3

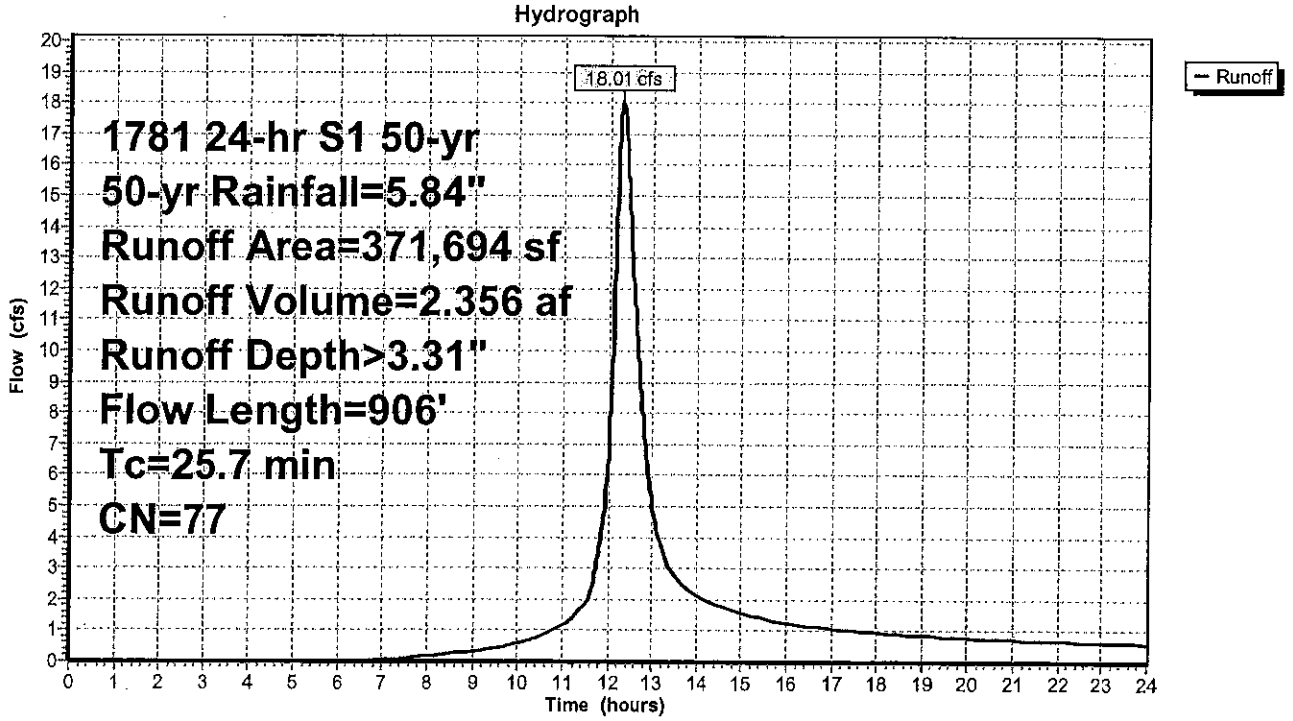
Runoff = 18.01 cfs @ 12.31 hrs, Volume= 2.356 af, Depth> 3.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
358,438	77	Woods, Good, HSG D
11,943	80	>75% Grass cover, Good, HSG D
1,313	98	Unconnected roofs, HSG D
371,694	77	Weighted Average
370,381		99.65% Pervious Area
1,313		0.35% Impervious Area
1,313		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	100	0.0550	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
8.2	605	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.1	201	0.0200	1.60	42.72	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
25.7	906	Total			

Subcatchment A3: A3



Summary for Subcatchment A4: A4

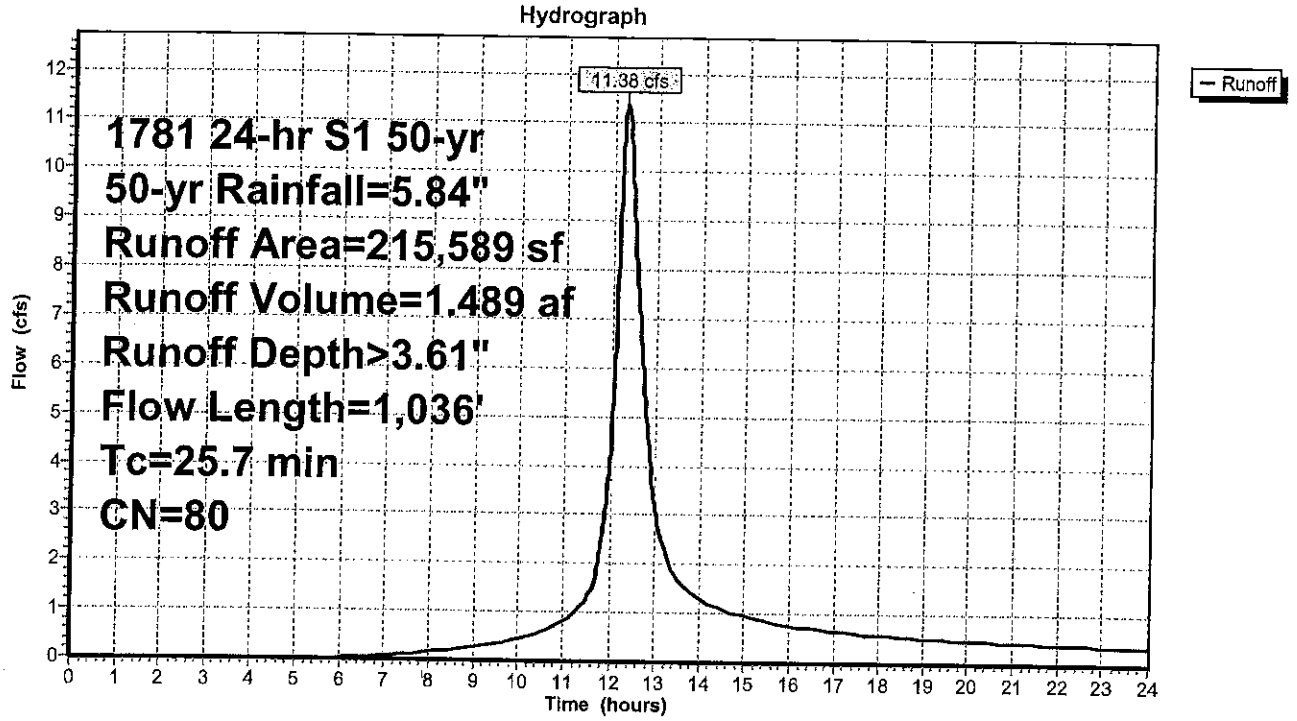
Runoff = 11.38 cfs @ 12.31 hrs, Volume= 1.489 af, Depth> 3.61"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
97,780	77	Woods, Good, HSG D
100,155	80	>75% Grass cover, Good, HSG D
8,500	96	Gravel surface, HSG D
6,349	98	Paved parking, HSG D
2,805	98	Paved parking, HSG D
215,589	80	Weighted Average
206,435		95.75% Pervious Area
9,154		4.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
5.8	392	0.0510	1.13		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	60	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.4	251	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	233	0.0090	3.27	8.72	**Parabolic Channel,** W=4.00' D=1.00' Area=2.7 sf Perim=4.6' n= 0.030 Earth, dense weeds
25.7	1,036	Total			

Subcatchment A4: A4



Summary for Subcatchment B1: B1

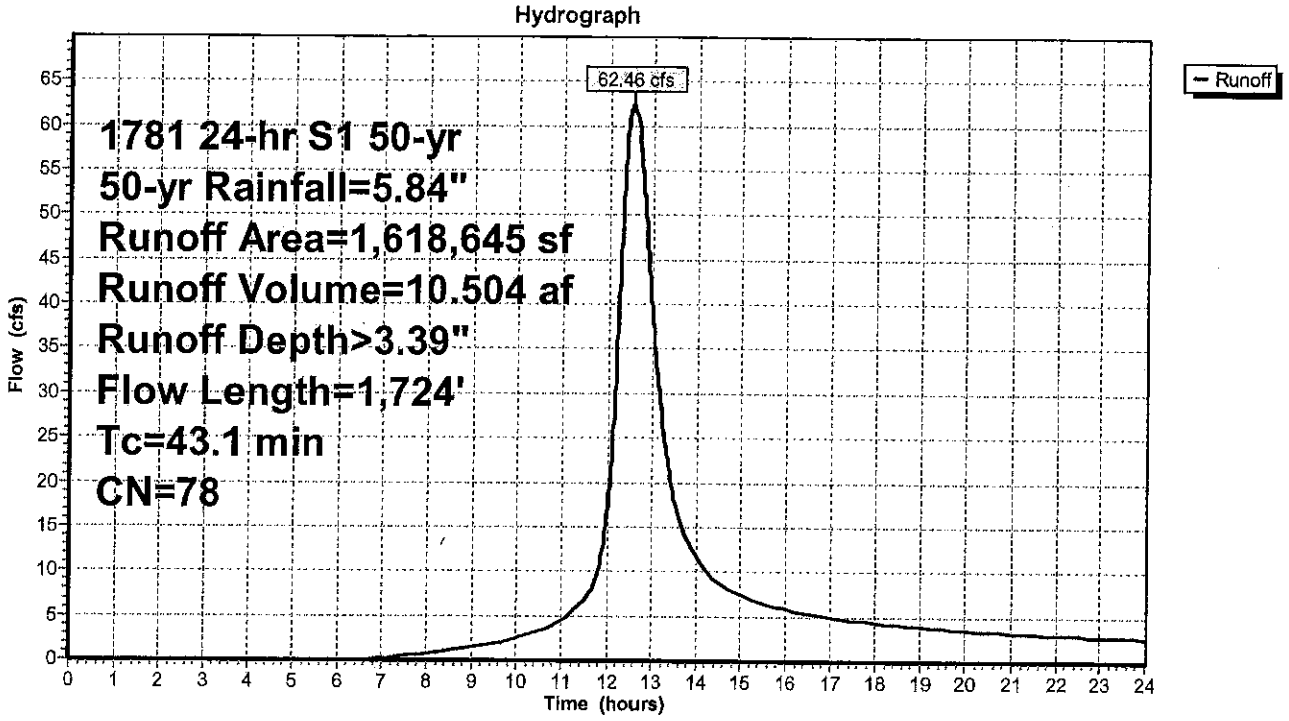
Runoff = 62.46 cfs @ 12.55 hrs, Volume= 10.504 af, Depth> 3.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
1,224,156	77	Woods, Good, HSG D
369,471	80	>75% Grass cover, Good, HSG D
7,227	96	Gravel surface, HSG D
11,677	98	Paved parking, HSG D
4,577	98	Unconnected roofs, HSG D
1,537	98	Water Surface, HSG D
1,618,645	78	Weighted Average
1,600,854		98.90% Pervious Area
17,791		1.10% Impervious Area
4,577		25.73% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.0	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
8.2	449	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.9	1,175	0.0210	1.64	43.77	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
43.1	1,724	Total			

Subcatchment B1: B1



Summary for Subcatchment C1: C1

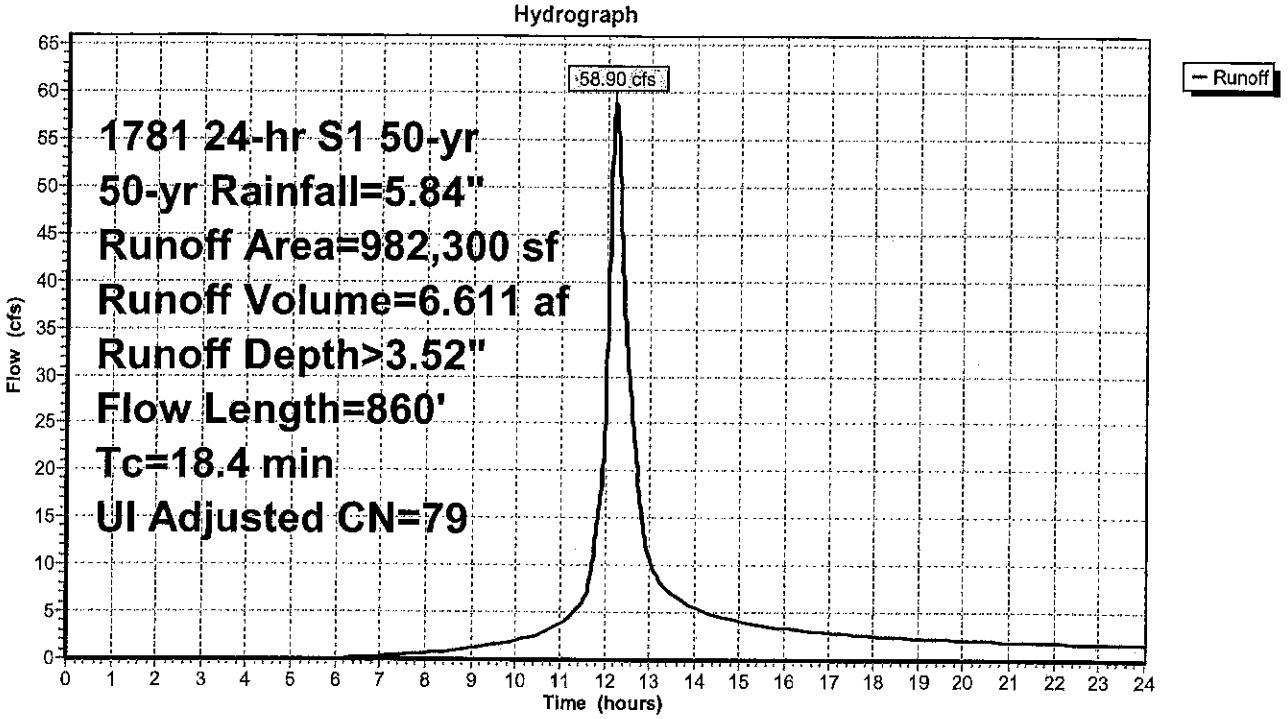
Runoff = 58.90 cfs @ 12.21 hrs, Volume= 6.611 af, Depth> 3.52"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
484,198	77	Woods, Good, HSG D
435,550	80	>75% Grass cover, Good, HSG D
16,773	96	Gravel surface, HSG D
30,733	98	Paved parking, HSG D
15,046	98	Unconnected roofs, HSG D
982,300	80	Weighted Average, UI Adjusted CN = 79
936,521		95.34% Pervious Area
45,779		4.66% Impervious Area
15,046		32.87% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"
4.1	455	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.7	305	0.1440	1.90		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.4	860	Total			

Subcatchment C1: C1



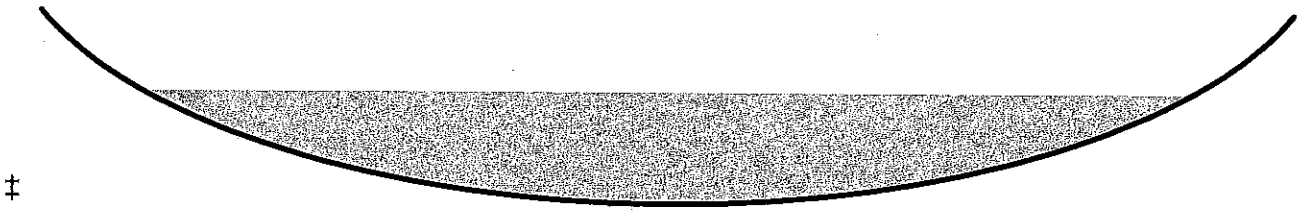
Summary for Reach R1: R1

Inflow Area = 8.675 ac, 1.65% Impervious, Inflow Depth > 3.40" for 50-yr event
Inflow = 17.96 cfs @ 12.37 hrs, Volume= 2.456 af
Outflow = 17.69 cfs @ 12.41 hrs, Volume= 2.450 af, Atten= 2%, Lag= 2.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.51 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.64 fps, Avg. Travel Time= 6.0 min

Peak Storage= 2,713 cf @ 12.41 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 58.16 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 232.0' Slope= 0.0371 '/'
Inlet Invert= 554.00', Outlet Invert= 545.40'



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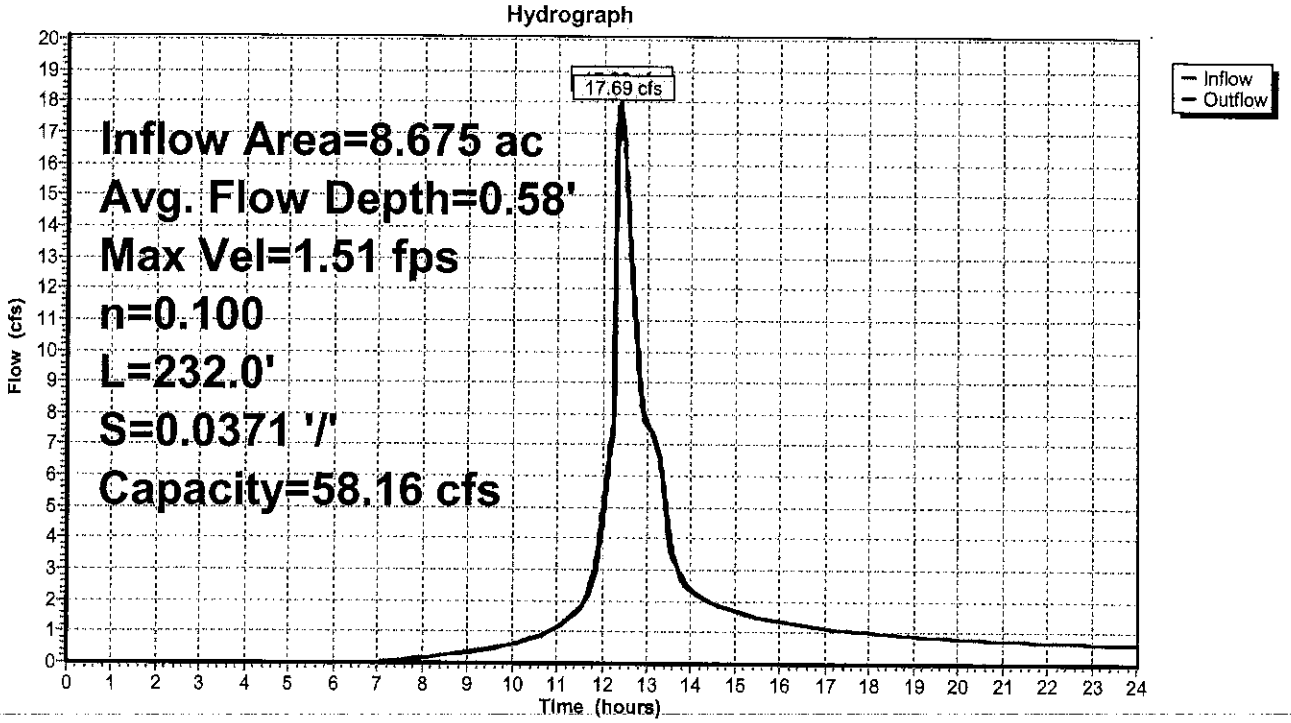
Reach R1: R1



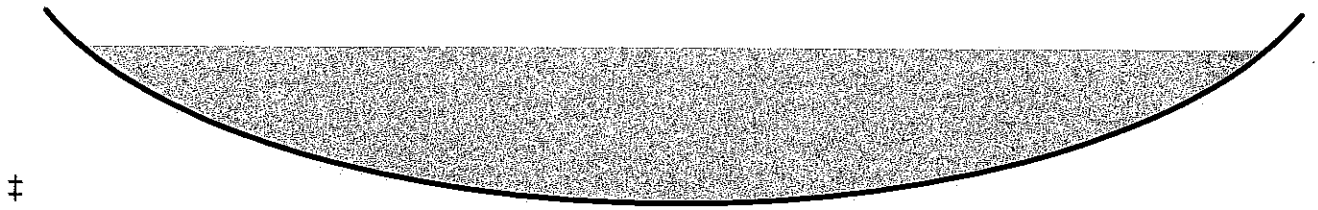
Summary for Reach R2: R2

Inflow Area = 13.444 ac, 1.39% Impervious, Inflow Depth > 3.35" for 50-yr event
Inflow = 26.05 cfs @ 12.39 hrs, Volume= 3.750 af
Outflow = 24.46 cfs @ 12.48 hrs, Volume= 3.728 af, Atten= 6%, Lag= 5.1 min

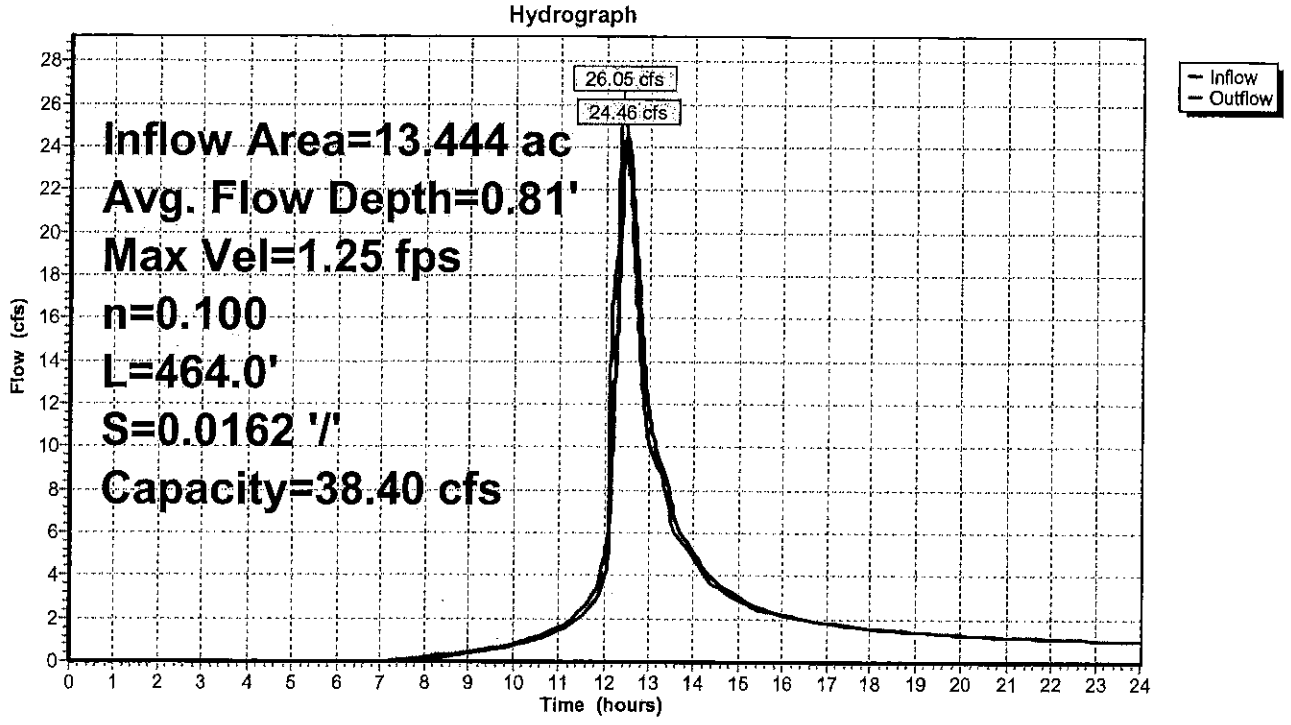
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.25 fps, Min. Travel Time= 6.2 min
Avg. Velocity = 0.54 fps, Avg. Travel Time= 14.4 min

Peak Storage= 9,053 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.81'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 38.40 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 464.0' Slope= 0.0162 '/'
Inlet Invert= 545.40', Outlet Invert= 537.90'



Reach R2: R2



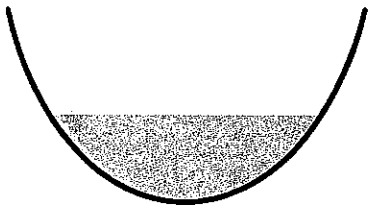
Summary for Reach R3: R3

Inflow Area = 4.949 ac, 4.25% Impervious, Inflow Depth > 3.61" for 50-yr event
Inflow = 11.38 cfs @ 12.31 hrs, Volume= 1.489 af
Outflow = 11.33 cfs @ 12.32 hrs, Volume= 1.487 af, Atten= 0%, Lag= 0.8 min

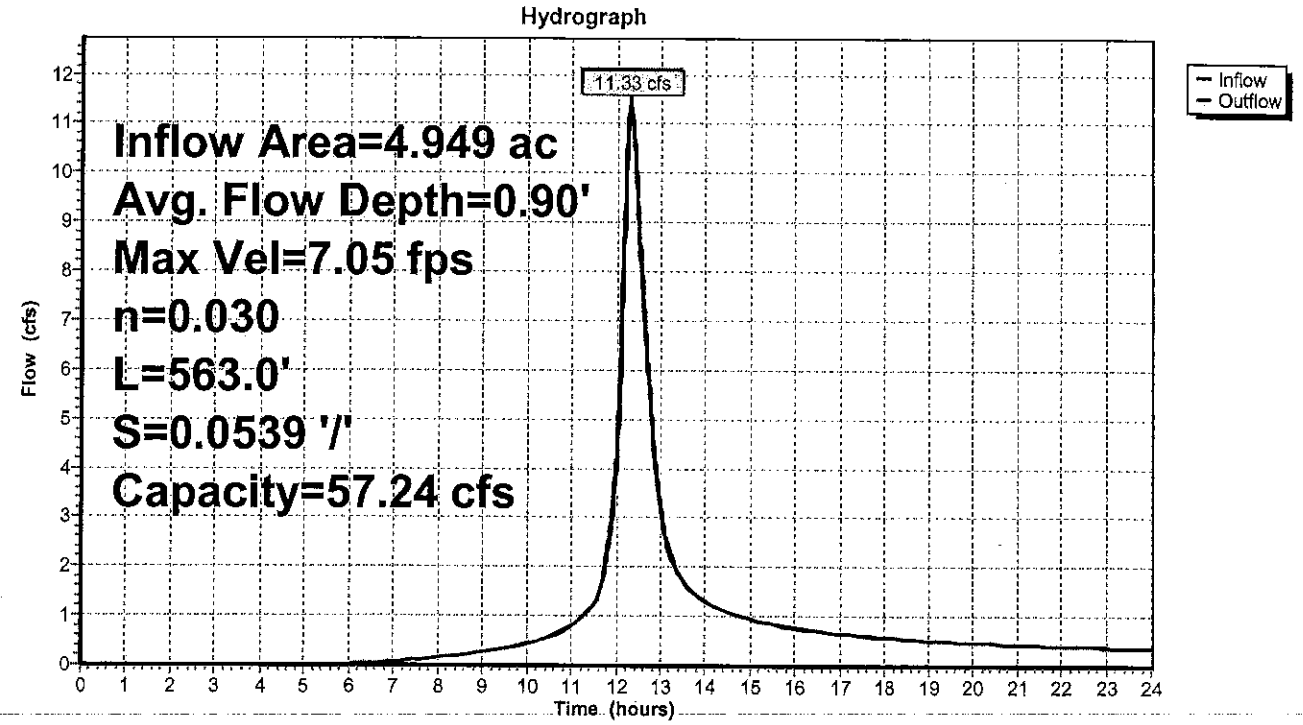
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.05 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 3.03 fps, Avg. Travel Time= 3.1 min

Peak Storage= 904 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.90'
Bank-Full Depth= 2.00' Flow Area= 5.3 sf, Capacity= 57.24 cfs

4.00' x 2.00' deep Parabolic Channel, n= 0.030 Earth, dense weeds
Length= 563.0' Slope= 0.0539 '/'
Inlet Invert= 568.25', Outlet Invert= 537.90'



Reach R3: R3



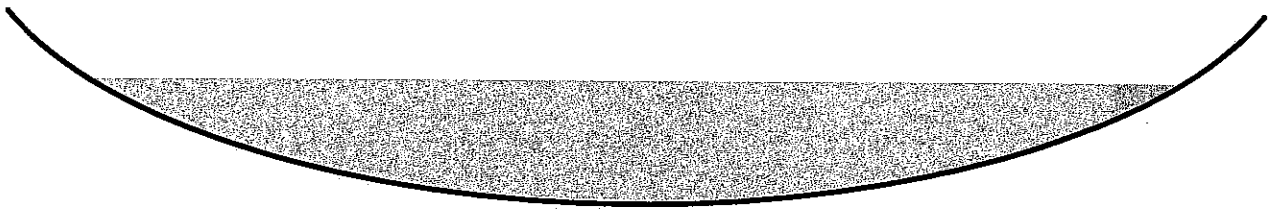
Summary for Reach R4: R4

Inflow Area = 22.551 ac, 4.66% Impervious, Inflow Depth > 3.52" for 50-yr event
Inflow = 58.90 cfs @ 12.21 hrs, Volume= 6.611 af
Outflow = 58.84 cfs @ 12.21 hrs, Volume= 6.607 af, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.61 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 3.32 fps, Avg. Travel Time= 1.4 min

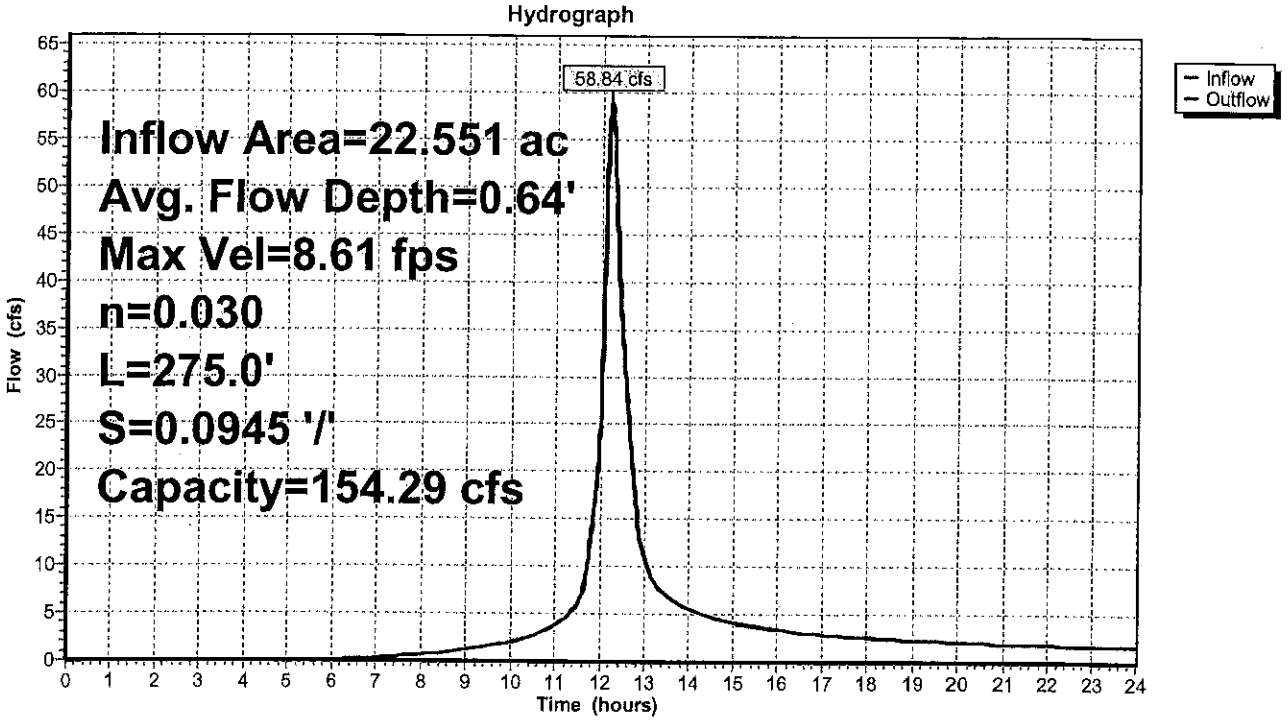
Peak Storage= 1,879 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.64'
Bank-Full Depth= 1.00' Flow Area= 13.3 sf, Capacity= 154.29 cfs

20.00' x 1.00' deep Parabolic Channel, n= 0.030 Earth, clean & winding
Length= 275.0' Slope= 0.0945 '/'
Inlet Invert= 530.00', Outlet Invert= 504.00'



‡

Reach R4: R4



Summary for Pond EX-P1: EX-POND 1

Inflow Area = 8.675 ac, 1.65% Impervious, Inflow Depth > 3.41" for 50-yr event
Inflow = 18.03 cfs @ 12.34 hrs, Volume= 2.464 af
Outflow = 17.96 cfs @ 12.37 hrs, Volume= 2.456 af, Atten= 0%, Lag= 1.5 min
Primary = 8.03 cfs @ 12.37 hrs, Volume= 2.161 af
Secondary = 9.94 cfs @ 12.37 hrs, Volume= 0.295 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 557.59' @ 12.37 hrs Surf.Area= 5,393 sf Storage= 6,767 cf
Flood Elev= 558.00' Surf.Area= 6,968 sf Storage= 9,322 cf

Plug-Flow detention time= 7.9 min calculated for 2.455 af (100% of inflow)
Center-of-Mass det. time= 6.0 min (858.4 - 852.3)

Volume	Invert	Avail.Storage	Storage Description
#1	553.80'	9,322 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

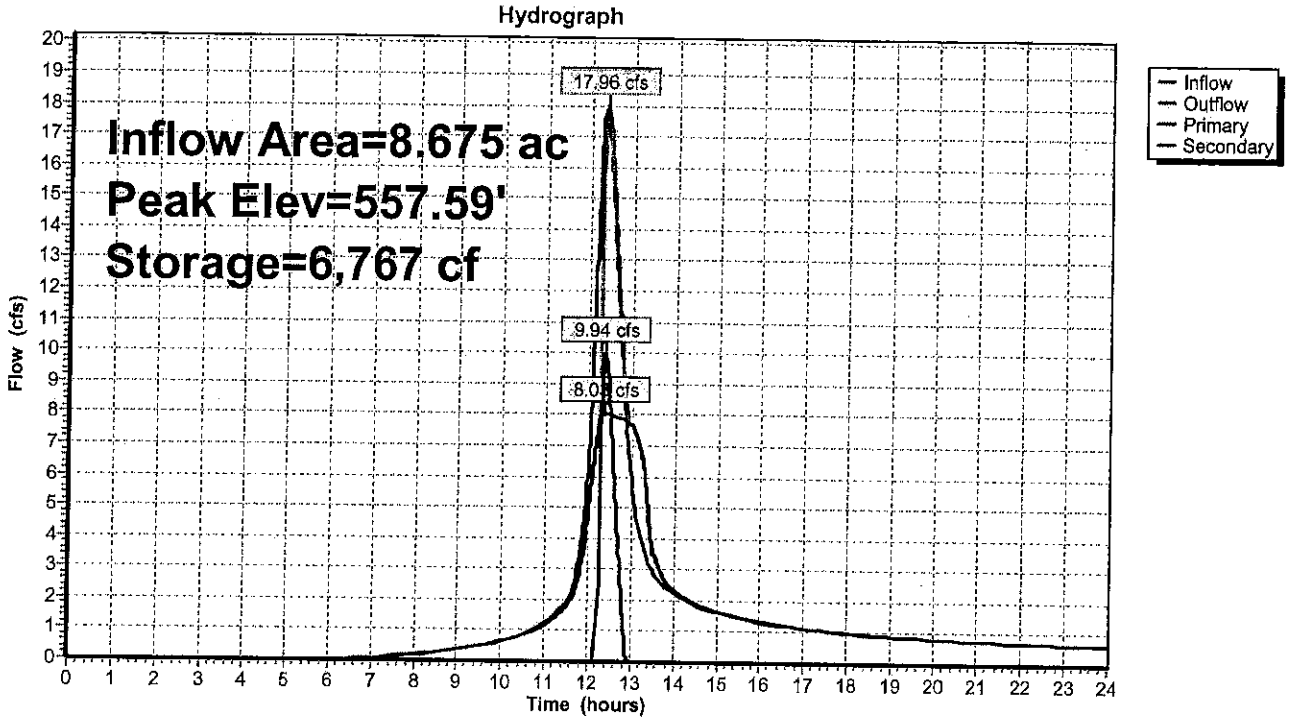
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
553.80	54	34.7	0	0	54
554.00	651	108.3	59	59	892
556.00	1,228	143.6	1,849	1,908	1,643
558.00	6,968	326.9	7,414	9,322	8,522

Device	Routing	Invert	Outlet Devices
#1	Primary	554.00'	**15.0" Round Culvert** L= 16.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 553.80' / 554.00' S= -0.0121 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	557.40'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=8.03 cfs @ 12.37 hrs HW=557.59' TW=554.57' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 8.03 cfs @ 6.54 fps)

Secondary OutFlow Max=9.94 cfs @ 12.37 hrs HW=557.59' TW=554.57' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 9.94 cfs @ 1.07 fps)

Pond EX-P1: EX-POND 1



Summary for Pond EX-P2: EX-POND 2

Inflow Area = 13.444 ac, 1.39% Impervious, Inflow Depth > 3.36" for 50-yr event
Inflow = 26.13 cfs @ 12.37 hrs, Volume= 3.769 af
Outflow = 26.05 cfs @ 12.39 hrs, Volume= 3.750 af, Atten= 0%, Lag= 1.0 min
Primary = 6.59 cfs @ 12.39 hrs, Volume= 2.780 af
Secondary = 19.46 cfs @ 12.39 hrs, Volume= 0.970 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 548.19' @ 12.39 hrs Surf.Area= 5,405 sf Storage= 8,166 cf
Flood Elev= 550.00' Surf.Area= 10,659 sf Storage= 22,455 cf

Plug-Flow detention time= 12.0 min calculated for 3.748 af (99% of inflow)
Center-of-Mass det. time= 9.0 min (866.0 - 857.0)

Volume	Invert	Avail.Storage	Storage Description
#1	545.40'	22,455 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

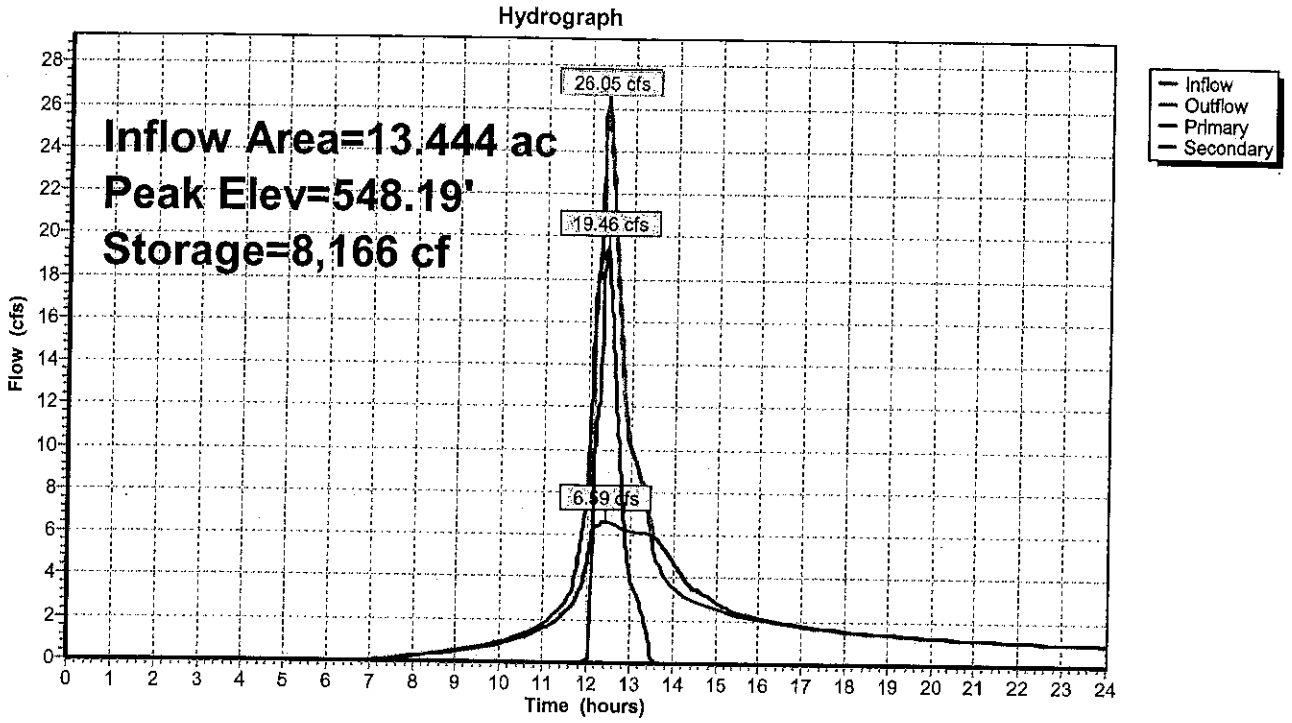
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
545.40	257	79.7	0	0	257
546.00	1,900	206.6	571	571	3,149
548.00	4,962	313.4	6,622	7,193	7,599
550.00	10,659	458.5	15,262	22,455	16,546

Device	Routing	Invert	Outlet Devices
#1	Primary	545.40'	**15.0" Round Culvert** L= 17.8' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 545.40' / 545.40' S= 0.0000 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	547.90'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.59 cfs @ 12.39 hrs HW=548.19' TW=546.18' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 6.59 cfs @ 5.37 fps)

Secondary OutFlow Max=19.46 cfs @ 12.39 hrs HW=548.19' TW=546.18' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 19.46 cfs @ 1.35 fps)

Pond EX-P2: EX-POND 2

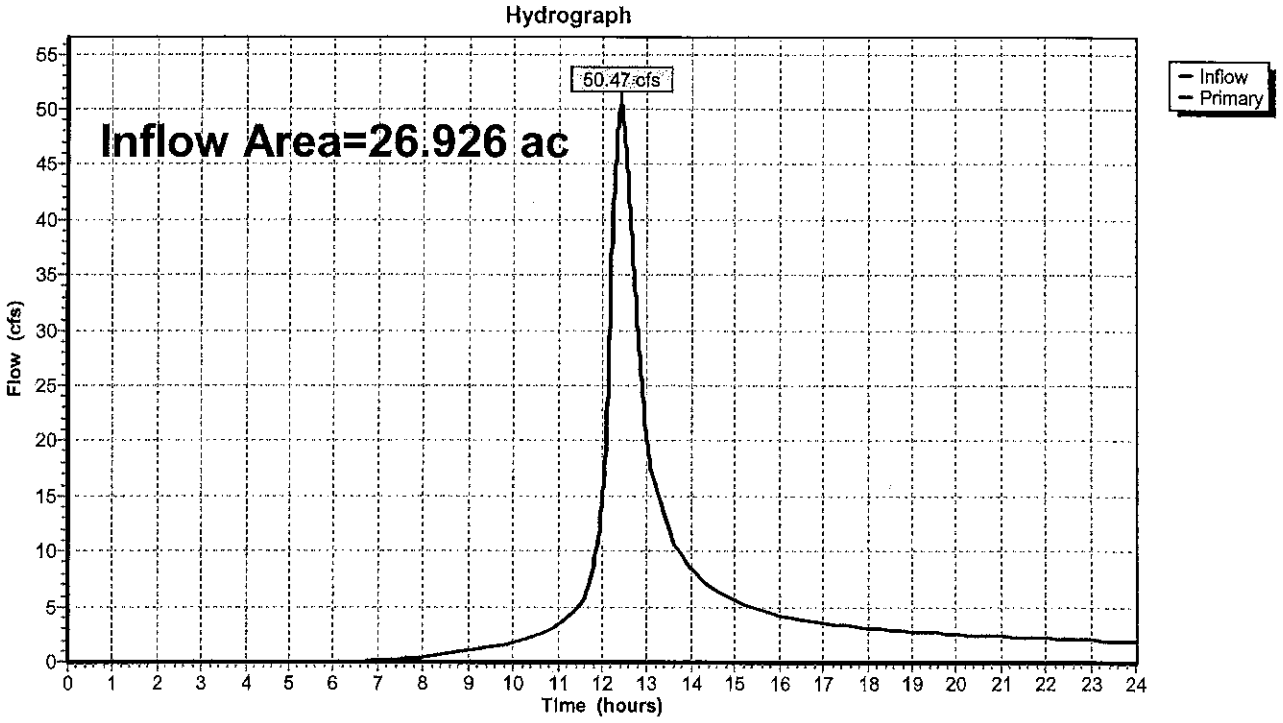


Summary for Link A: A - Colby Rd

Inflow Area = 26.926 ac, 1.58% Impervious, Inflow Depth > 3.37" for 50-yr event
Inflow = 50.47 cfs @ 12.41 hrs, Volume= 7.571 af
Primary = 50.47 cfs @ 12.41 hrs, Volume= 7.571 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: A - Colby Rd

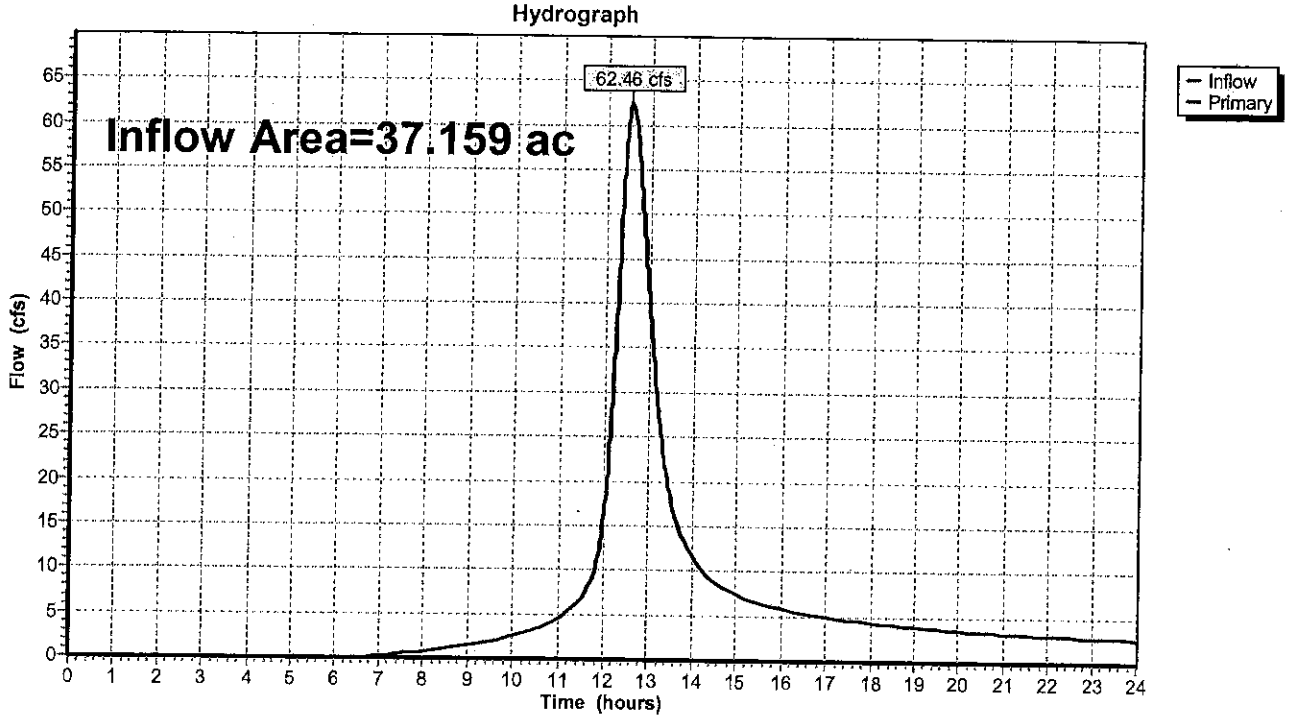


Summary for Link B: B - Kona Farm Rd

Inflow Area = 37.159 ac, 1.10% Impervious, Inflow Depth > 3.39" for 50-yr event
Inflow = 62.46 cfs @ 12.55 hrs, Volume= 10.504 af
Primary = 62.46 cfs @ 12.55 hrs, Volume= 10.504 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link B: B - Kona Farm Rd

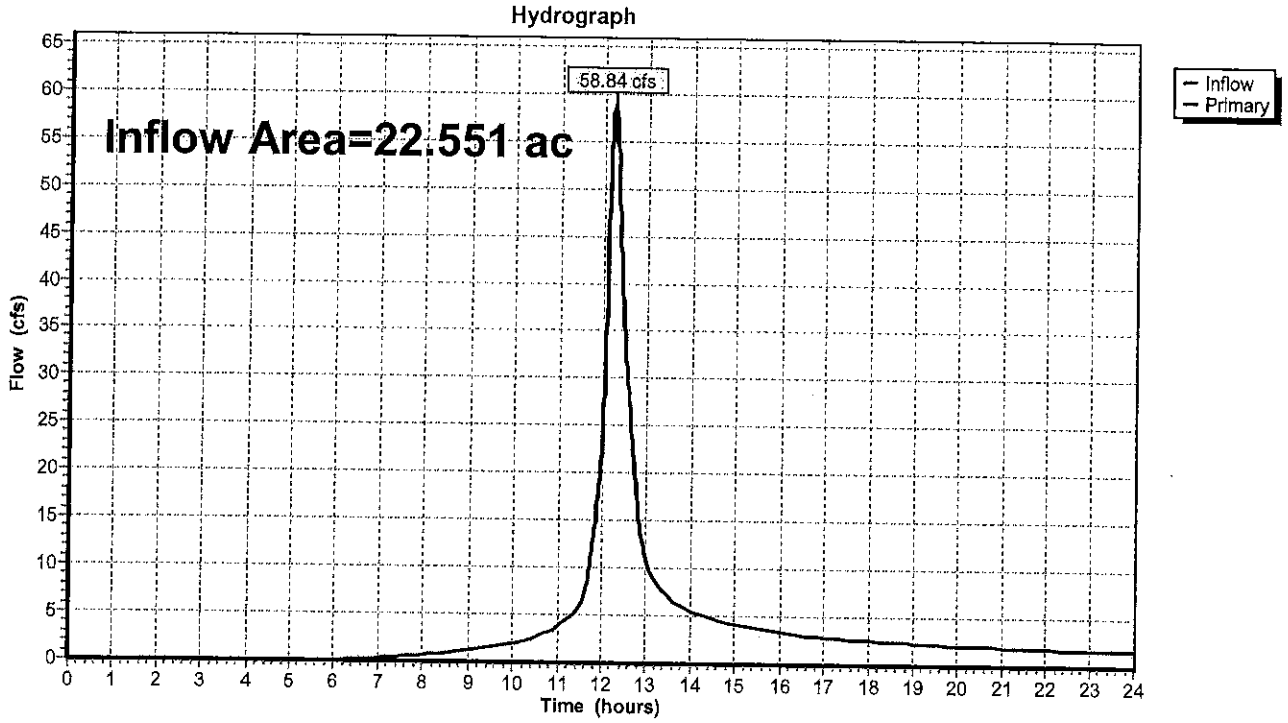


Summary for Link C: C - Lake

Inflow Area = 22.551 ac, 4.66% Impervious, Inflow Depth > 3.52" for 50-yr event
Inflow = 58.84 cfs @ 12.21 hrs, Volume= 6.607 af
Primary = 58.84 cfs @ 12.21 hrs, Volume= 6.607 af, Atten= 0%, Lag= 0.0 min

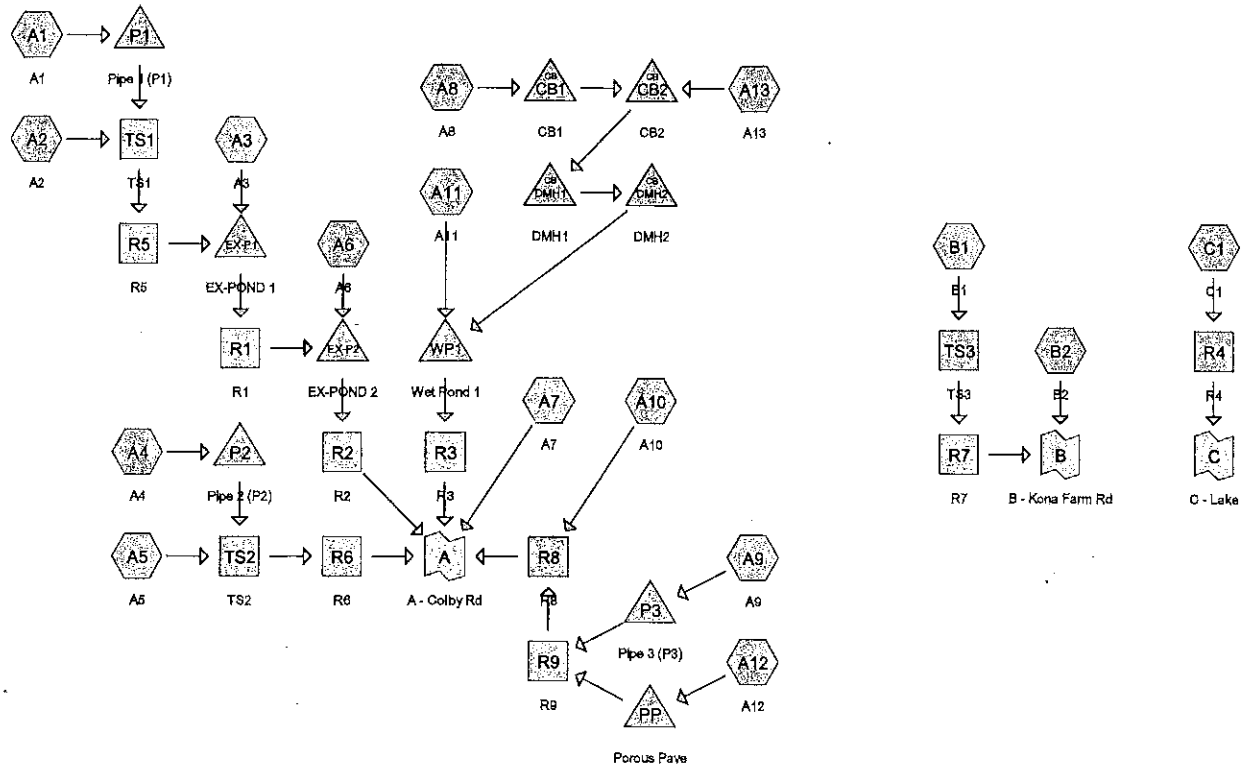
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link C: C - Lake



A-2

DEVELOPED WATERSHEDS



Subcat Reach Pond Link

Routing Diagram for 1781 - Post_jpg

Prepared by {enter your company name here}, Printed 12/3/2018

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
58.365	77	Woods, Good, HSG D (A1, A10, A11, A13, A2, A3, A4, A5, A6, A7, A8, A9, B1, B2, C1)
24.710	80	>75% Grass cover, Good, HSG D (A1, A10, A11, A13, A2, A3, A4, A5, A6, A7, A8, A9, B1, B2, C1)
0.551	96	Gravel surface, HSG D (B2, C1)
2.494	98	Paved parking, HSG D (A1, A10, A12, A13, A2, A4, A5, A7, A8, A9, B1, C1)
0.480	98	Unconnected roofs, HSG D (A11, B1, B2, C1)
0.035	98	Water Surface, HSG D (B2)
86.635	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
86.635	HSG D	A1, A10, A11, A12, A13, A2, A3, A4, A5, A6, A7, A8, A9, B1, B2, C1
0.000	Other	
86.635		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	24.710	0.000	24.710	>75% Grass cover, Good	A1, A10, A11, A13, A2, A3, A4, A5, A6, A7, A8, A9, B1, B2, C1
0.000	0.000	0.000	2.494	0.000	2.494	Paved parking	A1, A10, A12, A13, A2, A4, A5, A7, A8, A9, B1, C1
0.000	0.000	0.000	0.480	0.000	0.480	Unconnected roofs	A11, B1, B2, C1
0.000	0.000	0.000	0.551	0.000	0.551	Gravel surface	B2, C1
0.000	0.000	0.000	58.365	0.000	58.365	Woods, Good	A1, A10, A11, A13, A2, A3, A4, A5, A6, A7, A8, A9, B1, B2, C1
0.000	0.000	0.000	0.035	0.000	0.035	Water Surface	B2
0.000	**0.000**	**0.000**	**86.635**	**0.000**	**86.635**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	CB1	569.50	569.00	42.1	0.0119	0.012	18.0	0.0	0.0
2	CB2	568.90	555.00	332.0	0.0419	0.012	18.0	0.0	0.0
3	DMH1	554.90	551.00	182.6	0.0214	0.012	18.0	0.0	0.0
4	DMH2	550.90	550.00	47.3	0.0190	0.012	18.0	0.0	0.0
5	EX-P1	553.80	554.00	16.5	-0.0121	0.025	15.0	0.0	0.0
6	EX-P2	545.40	545.40	17.8	0.0000	0.025	15.0	0.0	0.0
7	P1	563.00	562.70	45.0	0.0067	0.012	18.0	0.0	0.0
8	P2	561.50	561.10	43.0	0.0093	0.012	18.0	0.0	0.0
9	P3	565.00	564.75	50.0	0.0050	0.013	12.0	0.0	0.0
10	PP	566.00	565.50	32.0	0.0156	0.012	6.0	0.0	0.0
11	WP1	546.00	545.25	50.0	0.0150	0.012	12.0	0.0	0.0

A – 2

NODE LISTING – 2-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=118,958 sf 6.67% Impervious Runoff Depth>1.02"
Flow Length=384' Tc=22.3 min CN=79 Runoff=1.89 cfs 0.232 af

Subcatchment A10: A10 Runoff Area=52,652 sf 4.24% Impervious Runoff Depth>0.97"
Flow Length=529' Tc=21.8 min CN=78 Runoff=0.79 cfs 0.097 af

Subcatchment A11: A11 Runoff Area=48,409 sf 2.71% Impervious Runoff Depth>0.97"
Flow Length=290' Tc=13.7 min CN=78 Runoff=0.91 cfs 0.090 af

Subcatchment A12: A12 Runoff Area=2,650 sf 100.00% Impervious Runoff Depth>2.55"
Flow Length=1' Tc=0.0 min CN=98 Runoff=0.20 cfs 0.013 af

Subcatchment A13: A13 Runoff Area=24,765 sf 30.51% Impervious Runoff Depth>1.40"
Flow Length=490' Tc=10.2 min CN=85 Runoff=0.81 cfs 0.066 af

Subcatchment A2: A2 Runoff Area=40,497 sf 26.38% Impervious Runoff Depth>1.40"
Flow Length=679' Slope=0.0680 '/' Tc=1.0 min CN=85 Runoff=2.00 cfs 0.109 af

Subcatchment A3: A3 Runoff Area=177,460 sf 0.00% Impervious Runoff Depth>0.91"
Flow Length=671' Tc=35.1 min CN=77 Runoff=1.93 cfs 0.308 af

Subcatchment A4: A4 Runoff Area=58,353 sf 5.94% Impervious Runoff Depth>1.08"
Flow Length=467' Tc=16.3 min CN=80 Runoff=1.15 cfs 0.121 af

Subcatchment A5: A5 Runoff Area=17,254 sf 14.22% Impervious Runoff Depth>1.21"
Flow Length=67' Tc=7.1 min CN=82 Runoff=0.55 cfs 0.040 af

Subcatchment A6: A6 Runoff Area=175,331 sf 0.00% Impervious Runoff Depth>0.91"
Flow Length=487' Tc=17.9 min CN=77 Runoff=2.71 cfs 0.307 af

Subcatchment A7: A7 Runoff Area=316,640 sf 1.66% Impervious Runoff Depth>0.96"
Flow Length=906' Tc=25.7 min CN=78 Runoff=4.36 cfs 0.584 af

Subcatchment A8: A8 Runoff Area=71,509 sf 13.25% Impervious Runoff Depth>1.20"
Flow Length=722' Tc=21.0 min CN=82 Runoff=1.41 cfs 0.164 af

Subcatchment A9: A9 Runoff Area=65,389 sf 11.16% Impervious Runoff Depth>1.20"
Flow Length=869' Tc=23.6 min CN=82 Runoff=1.21 cfs 0.150 af

Subcatchment B1: B1 Runoff Area=155,738 sf 12.41% Impervious Runoff Depth>1.13"
Flow Length=425' Tc=29.2 min CN=81 Runoff=2.43 cfs 0.338 af

Subcatchment B2: B2 Runoff Area=1,465,936 sf 0.39% Impervious Runoff Depth>0.96"
Flow Length=1,724' Tc=43.1 min CN=78 Runoff=15.33 cfs 2.685 af

Subcatchment C1: C1 Runoff Area=982,300 sf 4.66% Impervious Runoff Depth>1.02"
Flow Length=860' Tc=18.4 min UI Adjusted CN=79 Runoff=17.17 cfs 1.922 af

Reach R1: R1 Avg. Flow Depth=0.28' Max Vel=0.94 fps Inflow=3.79 cfs 0.641 af
n=0.100 L=232.0' S=0.0371 '/' Capacity=58.16 cfs Outflow=3.73 cfs 0.638 af

Reach R2: R2 Avg. Flow Depth=0.36' Max Vel=0.73 fps Inflow=4.43 cfs 0.938 af
n=0.100 L=464.0' S=0.0162 '/' Capacity=38.40 cfs Outflow=4.30 cfs 0.927 af

Reach R3: R3 Avg. Flow Depth=0.20' Max Vel=0.48 fps Inflow=1.18 cfs 0.317 af
n=0.100 L=464.0' S=0.0158 '/' Capacity=38.02 cfs Outflow=1.13 cfs 0.313 af

Reach R4: R4 Avg. Flow Depth=0.36' Max Vel=5.90 fps Inflow=17.17 cfs 1.922 af
n=0.030 L=275.0' S=0.0945 '/' Capacity=154.29 cfs Outflow=17.14 cfs 1.920 af

Reach R5: R5 Avg. Flow Depth=0.21' Max Vel=0.88 fps Inflow=2.23 cfs 0.339 af
n=0.100 L=125.0' S=0.0496 '/' Capacity=67.27 cfs Outflow=2.21 cfs 0.338 af

Reach R6: R6 Avg. Flow Depth=0.17' Max Vel=0.56 fps Inflow=1.42 cfs 0.160 af
n=0.100 L=541.0' S=0.0267 '/' Capacity=49.37 cfs Outflow=1.03 cfs 0.157 af

Reach R7: R7 Avg. Flow Depth=0.21' Max Vel=0.57 fps Inflow=2.39 cfs 0.336 af
n=0.100 L=1,298.0' S=0.0207 '/' Capacity=43.49 cfs Outflow=1.41 cfs 0.323 af

Reach R8: R8 Avg. Flow Depth=0.40' Max Vel=4.12 fps Inflow=1.99 cfs 0.252 af
n=0.030 L=563.0' S=0.0469 '/' Capacity=53.39 cfs Outflow=1.97 cfs 0.251 af

Reach R9: R9 Avg. Flow Depth=0.37' Max Vel=1.91 fps Inflow=1.21 cfs 0.155 af
n=0.022 L=112.0' S=0.0054 '/' Capacity=25.10 cfs Outflow=1.21 cfs 0.155 af

Reach TS1: TS1 Avg. Flow Depth=0.38' Max Vel=0.64 fps Inflow=2.47 cfs 0.341 af
n=0.080 L=150.0' S=0.0050 '/' Capacity=45.05 cfs Outflow=2.23 cfs 0.339 af

Reach TS2: TS2 Avg. Flow Depth=0.32' Max Vel=0.64 fps Inflow=1.46 cfs 0.160 af
n=0.070 L=130.0' S=0.0050 '/' Capacity=10.96 cfs Outflow=1.42 cfs 0.160 af

Reach TS3: TS3 Avg. Flow Depth=0.40' Max Vel=0.65 fps Inflow=2.43 cfs 0.338 af
n=0.080 L=150.0' S=0.0050 '/' Capacity=12.12 cfs Outflow=2.39 cfs 0.336 af

Pond CB1: CB1 Peak Elev=570.05' Inflow=1.41 cfs 0.164 af
18.0" Round Culvert n=0.012 L=42.1' S=0.0119 '/' Outflow=1.41 cfs 0.164 af

Pond CB2: CB2 Peak Elev=569.53' Inflow=1.91 cfs 0.230 af
18.0" Round Culvert n=0.012 L=332.0' S=0.0419 '/' Outflow=1.91 cfs 0.230 af

Pond DMH1: DMH1 Peak Elev=555.53' Inflow=1.91 cfs 0.230 af
18.0" Round Culvert n=0.012 L=182.6' S=0.0214 '/' Outflow=1.91 cfs 0.230 af

Pond DMH2: DMH2 Peak Elev=551.53' Inflow=1.91 cfs 0.230 af
18.0" Round Culvert n=0.012 L=47.3' S=0.0190 '/' Outflow=1.91 cfs 0.230 af

Pond EX-P1: EX-POND 1 Peak Elev=555.54' Storage=1,379 cf Inflow=4.05 cfs 0.646 af
Primary=3.79 cfs 0.641 af Secondary=0.00 cfs 0.000 af Outflow=3.79 cfs 0.641 af

Pond EX-P2: EX-POND 2 Peak Elev=547.35' Storage=4,335 cf Inflow=5.19 cfs 0.945 af
Primary=4.43 cfs 0.938 af Secondary=0.00 cfs 0.000 af Outflow=4.43 cfs 0.938 af

Pond P1: Pipe 1 (P1) Peak Elev=563.69' Storage=185 cf Inflow=1.89 cfs 0.232 af
18.0" Round Culvert n=0.012 L=45.0' S=0.0067 '/' Outflow=1.87 cfs 0.232 af

Pond P2: Pipe 2 (P2) Peak Elev=562.00' Storage=0 cf Inflow=1.15 cfs 0.121 af
18.0" Round Culvert n=0.012 L=43.0' S=0.0093 '/' Outflow=1.15 cfs 0.121 af

Pond P3: Pipe 3 (P3) Peak Elev=566.00' Storage=0 cf Inflow=1.21 cfs 0.150 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0050 '/' Outflow=1.21 cfs 0.150 af

Pond PP: Porous Pave Peak Elev=566.06' Storage=377 cf Inflow=0.20 cfs 0.013 af
6.0" Round Culvert n=0.012 L=32.0' S=0.0156 '/' Outflow=0.01 cfs 0.005 af

Pond WP1: Wet Pond 1 Peak Elev=548.22' Storage=5,687 cf Inflow=2.80 cfs 0.320 af
Primary=1.18 cfs 0.317 af Secondary=0.00 cfs 0.000 af Outflow=1.18 cfs 0.317 af

Link A: A - Colby Rd Inflow=10.55 cfs 2.233 af
Primary=10.55 cfs 2.233 af

Link B: B - Kona Farm Rd Inflow=16.61 cfs 3.009 af
Primary=16.61 cfs 3.009 af

Link C: C - Lake Inflow=17.14 cfs 1.920 af
Primary=17.14 cfs 1.920 af

Total Runoff Area = 86.635 ac Runoff Volume = 7.226 af Average Runoff Depth = 1.00"
96.53% Pervious = 83.626 ac 3.47% Impervious = 3.010 ac

A – 2

NODE LISTING – 10-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=118,958 sf 6.67% Impervious Runoff Depth>1.97"
Flow Length=384' Tc=22.3 min CN=79 Runoff=3.69 cfs 0.449 af

Subcatchment A10: A10 Runoff Area=52,652 sf 4.24% Impervious Runoff Depth>1.90"
Flow Length=529' Tc=21.8 min CN=78 Runoff=1.58 cfs 0.191 af

Subcatchment A11: A11 Runoff Area=48,409 sf 2.71% Impervious Runoff Depth>1.90"
Flow Length=290' Tc=13.7 min CN=78 Runoff=1.80 cfs 0.176 af

Subcatchment A12: A12 Runoff Area=2,650 sf 100.00% Impervious Runoff Depth>3.80"
Flow Length=1' Tc=0.0 min CN=98 Runoff=0.28 cfs 0.019 af

Subcatchment A13: A13 Runoff Area=24,765 sf 30.51% Impervious Runoff Depth>2.48"
Flow Length=490' Tc=10.2 min CN=85 Runoff=1.38 cfs 0.117 af

Subcatchment A2: A2 Runoff Area=40,497 sf 26.38% Impervious Runoff Depth>2.48"
Flow Length=679' Slope=0.0680 '/' Tc=1.0 min CN=85 Runoff=3.22 cfs 0.192 af

Subcatchment A3: A3 Runoff Area=177,460 sf 0.00% Impervious Runoff Depth>1.81"
Flow Length=671' Tc=35.1 min CN=77 Runoff=4.02 cfs 0.615 af

Subcatchment A4: A4 Runoff Area=58,353 sf 5.94% Impervious Runoff Depth>2.06"
Flow Length=467' Tc=16.3 min CN=80 Runoff=2.18 cfs 0.229 af

Subcatchment A5: A5 Runoff Area=17,254 sf 14.22% Impervious Runoff Depth>2.22"
Flow Length=67' Tc=7.1 min CN=82 Runoff=0.99 cfs 0.073 af

Subcatchment A6: A6 Runoff Area=175,331 sf 0.00% Impervious Runoff Depth>1.82"
Flow Length=487' Tc=17.9 min CN=77 Runoff=5.52 cfs 0.612 af

Subcatchment A7: A7 Runoff Area=316,640 sf 1.66% Impervious Runoff Depth>1.89"
Flow Length=906' Tc=25.7 min CN=78 Runoff=8.78 cfs 1.147 af

Subcatchment A8: A8 Runoff Area=71,509 sf 13.25% Impervious Runoff Depth>2.21"
Flow Length=722' Tc=21.0 min CN=82 Runoff=2.58 cfs 0.303 af

Subcatchment A9: A9 Runoff Area=65,389 sf 11.16% Impervious Runoff Depth>2.21"
Flow Length=869' Tc=23.6 min CN=82 Runoff=2.23 cfs 0.277 af

Subcatchment B1: B1 Runoff Area=155,738 sf 12.41% Impervious Runoff Depth>2.13"
Flow Length=425' Tc=29.2 min CN=81 Runoff=4.59 cfs 0.633 af

Subcatchment B2: B2 Runoff Area=1,465,936 sf 0.39% Impervious Runoff Depth>1.88"
Flow Length=1,724' Tc=43.1 min CN=78 Runoff=31.11 cfs 5.277 af

Subcatchment C1: C1 Runoff Area=982,300 sf 4.66% Impervious Runoff Depth>1.98"
Flow Length=860' Tc=18.4 min UI Adjusted CN=79 Runoff=33.44 cfs 3.712 af

Reach R1: R1 Avg. Flow Depth=0.37' Max Vel=1.13 fps Inflow=6.83 cfs 1.246 af
n=0.100 L=232.0' S=0.0371 '/' Capacity=58.16 cfs Outflow=6.81 cfs 1.242 af

Reach R2: R2 Avg. Flow Depth=0.52' Max Vel=0.93 fps Inflow=9.98 cfs 1.842 af
n=0.100 L=464.0' S=0.0162 '/' Capacity=38.40 cfs Outflow=9.30 cfs 1.828 af

Reach R3: R3 Avg. Flow Depth=0.24' Max Vel=0.55 fps Inflow=1.81 cfs 0.590 af
n=0.100 L=464.0' S=0.0158 '/' Capacity=38.02 cfs Outflow=1.72 cfs 0.584 af

Reach R4: R4 Avg. Flow Depth=0.49' Max Vel=7.24 fps Inflow=33.44 cfs 3.712 af
n=0.030 L=275.0' S=0.0945 '/' Capacity=154.29 cfs Outflow=33.39 cfs 3.710 af

Reach R5: R5 Avg. Flow Depth=0.28' Max Vel=1.08 fps Inflow=4.32 cfs 0.638 af
n=0.100 L=125.0' S=0.0496 '/' Capacity=67.27 cfs Outflow=4.29 cfs 0.637 af

Reach R6: R6 Avg. Flow Depth=0.24' Max Vel=0.71 fps Inflow=2.66 cfs 0.302 af
n=0.100 L=541.0' S=0.0267 '/' Capacity=49.37 cfs Outflow=2.15 cfs 0.298 af

Reach R7: R7 Avg. Flow Depth=0.29' Max Vel=0.72 fps Inflow=4.53 cfs 0.631 af
n=0.100 L=1,298.0' S=0.0207 '/' Capacity=43.49 cfs Outflow=3.05 cfs 0.613 af

Reach R8: R8 Avg. Flow Depth=0.55' Max Vel=4.97 fps Inflow=3.84 cfs 0.479 af
n=0.030 L=563.0' S=0.0469 '/' Capacity=53.39 cfs Outflow=3.81 cfs 0.478 af

Reach R9: R9 Avg. Flow Depth=0.50' Max Vel=2.26 fps Inflow=2.28 cfs 0.288 af
n=0.022 L=112.0' S=0.0054 '/' Capacity=25.10 cfs Outflow=2.28 cfs 0.288 af

Reach TS1: TS1 Avg. Flow Depth=0.56' Max Vel=0.79 fps Inflow=4.43 cfs 0.641 af
n=0.080 L=150.0' S=0.0050 '/' Capacity=45.05 cfs Outflow=4.32 cfs 0.638 af

Reach TS2: TS2 Avg. Flow Depth=0.46' Max Vel=0.79 fps Inflow=2.70 cfs 0.303 af
n=0.070 L=130.0' S=0.0050 '/' Capacity=10.96 cfs Outflow=2.66 cfs 0.302 af

Reach TS3: TS3 Avg. Flow Depth=0.58' Max Vel=0.81 fps Inflow=4.59 cfs 0.633 af
n=0.080 L=150.0' S=0.0050 '/' Capacity=12.12 cfs Outflow=4.53 cfs 0.631 af

Pond CB1: CB1 Peak Elev=570.31' Inflow=2.58 cfs 0.303 af
18.0" Round Culvert n=0.012 L=42.1' S=0.0119 '/' Outflow=2.58 cfs 0.303 af

Pond CB2: CB2 Peak Elev=569.78' Inflow=3.46 cfs 0.420 af
18.0" Round Culvert n=0.012 L=332.0' S=0.0419 '/' Outflow=3.46 cfs 0.420 af

Pond DMH1: DMH1 Peak Elev=555.78' Inflow=3.46 cfs 0.420 af
18.0" Round Culvert n=0.012 L=182.6' S=0.0214 '/' Outflow=3.46 cfs 0.420 af

Pond DMH2: DMH2 Peak Elev=551.78' Inflow=3.46 cfs 0.420 af
18.0" Round Culvert n=0.012 L=47.3' S=0.0190 '/' Outflow=3.46 cfs 0.420 af

Pond EX-P1: EX-POND 1 Peak Elev=556.77' Storage=3,448 cf Inflow=8.11 cfs 1.252 af
Primary=6.83 cfs 1.246 af Secondary=0.00 cfs 0.000 af Outflow=6.83 cfs 1.246 af

Pond EX-P2: EX-POND 2 Peak Elev=548.00' Storage=7,182 cf Inflow=10.37 cfs 1.854 af
Primary=6.17 cfs 1.697 af Secondary=3.81 cfs 0.146 af Outflow=9.98 cfs 1.842 af

Pond P1: Pipe 1 (P1) Peak Elev=564.02' Storage=358 cf Inflow=3.69 cfs 0.449 af
18.0" Round Culvert n=0.012 L=45.0' S=0.0067 '/' Outflow=3.65 cfs 0.448 af

Pond P2: Pipe 2 (P2) Peak Elev=562.20' Storage=48 cf Inflow=2.18 cfs 0.229 af
18.0" Round Culvert n=0.012 L=43.0' S=0.0093 '/' Outflow=2.17 cfs 0.229 af

Pond P3: Pipe 3 (P3) Peak Elev=566.07' Storage=8 cf Inflow=2.23 cfs 0.277 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0050 '/' Outflow=2.22 cfs 0.277 af

Pond PP: Porous Pave Peak Elev=566.15' Storage=465 cf Inflow=0.28 cfs 0.019 af
6.0" Round Culvert n=0.012 L=32.0' S=0.0156 '/' Outflow=0.05 cfs 0.011 af

Pond WP1: Wet Pond 1 Peak Elev=549.29' Storage=9,549 cf Inflow=5.21 cfs 0.596 af
Primary=1.81 cfs 0.590 af Secondary=0.00 cfs 0.000 af Outflow=1.81 cfs 0.590 af

Link A: A - Colby Rd Inflow=22.40 cfs 4.334 af
Primary=22.40 cfs 4.334 af

Link B: B - Kona Farm Rd Inflow=34.07 cfs 5.891 af
Primary=34.07 cfs 5.891 af

Link C: C - Lake Inflow=33.39 cfs 3.710 af
Primary=33.39 cfs 3.710 af

Total Runoff Area = 86.635 ac Runoff Volume = 14.025 af Average Runoff Depth = 1.94"
96.53% Pervious = 83.626 ac 3.47% Impervious = 3.010 ac

A – 2

10-YR STORM SUMMARY

Summary for Subcatchment A1: A1

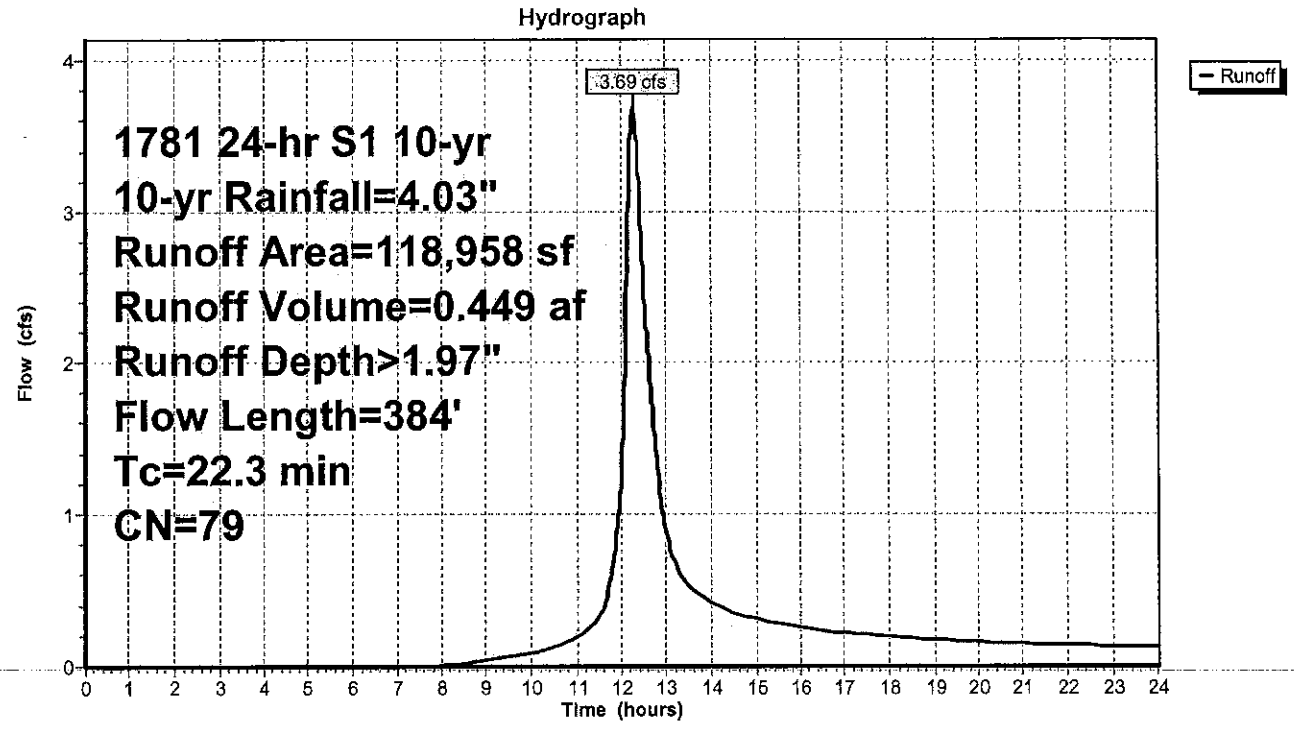
Runoff = 3.69 cfs @ 12.27 hrs, Volume= 0.449 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
94,144	77	Woods, Good, HSG D
16,884	80	>75% Grass cover, Good, HSG D
7,930	98	Paved parking, HSG D
118,958	79	Weighted Average
111,028		93.33% Pervious Area
7,930		6.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	100	0.0330	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
3.1	209	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	75	0.0600	3.67		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
22.3	384	Total			

Subcatchment A1: A1



Summary for Subcatchment A2: A2

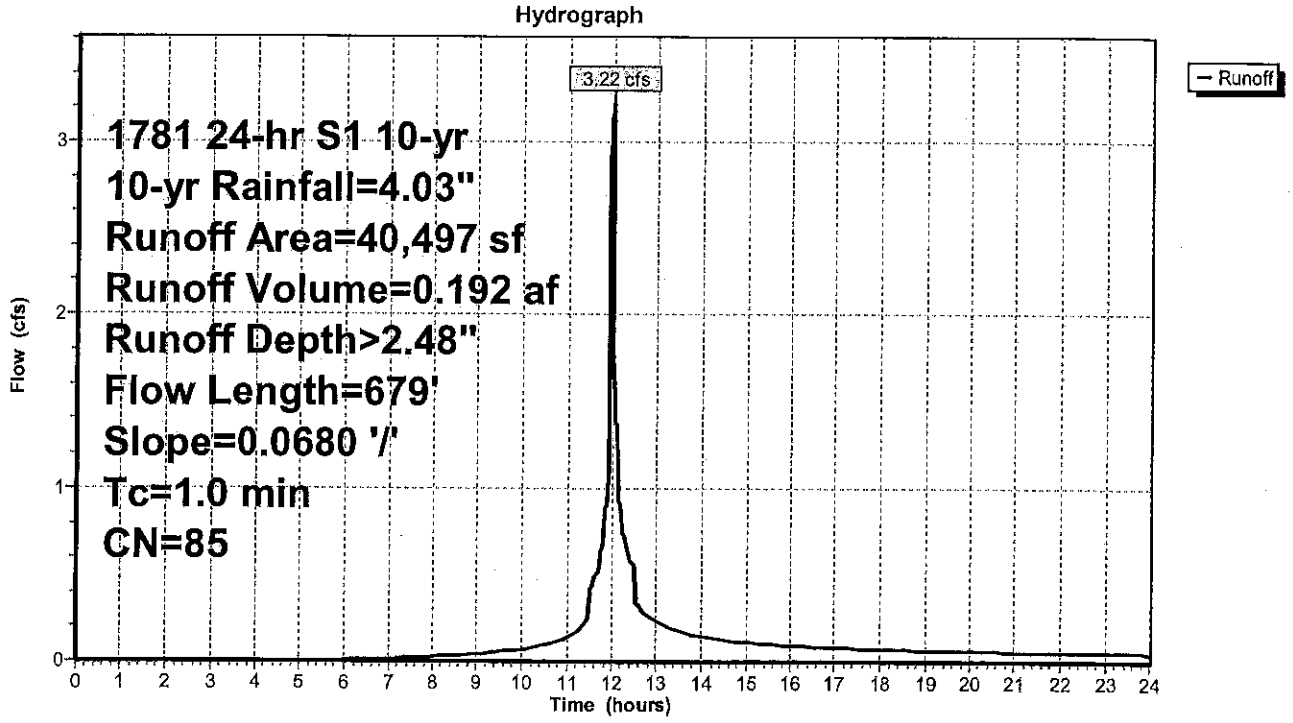
Runoff = 3.22 cfs @ 12.00 hrs, Volume= 0.192 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
27,810	80	>75% Grass cover, Good, HSG D
10,684	98	Paved parking, HSG D
2,003	77	Woods, Good, HSG D
40,497	85	Weighted Average
29,813		73.62% Pervious Area
10,684		26.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	679	0.0680	11.03	55.17	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=1.00' Z= 3.0 '/' Top.W=8.00' n= 0.025 Earth, grassed & winding

Subcatchment A2: A2



Summary for Subcatchment A3: A3

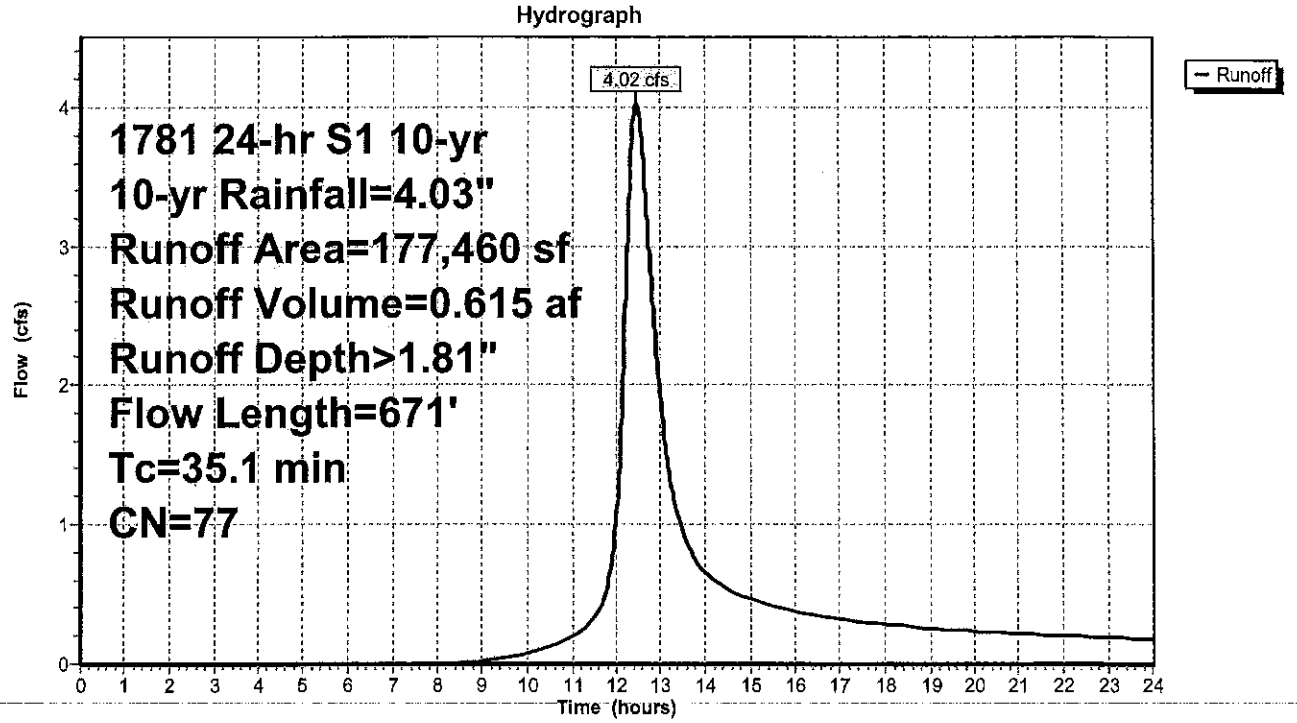
Runoff = 4.02 cfs @ 12.44 hrs, Volume= 0.615 af, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
170,197	77	Woods, Good, HSG D
7,263	80	>75% Grass cover, Good, HSG D
177,460	77	Weighted Average
177,460		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.3	100	0.0110	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
3.3	317	0.1010	1.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	254	0.0230	1.72	45.81	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
35.1	671	Total			

Subcatchment A3: A3



Summary for Subcatchment A4: A4

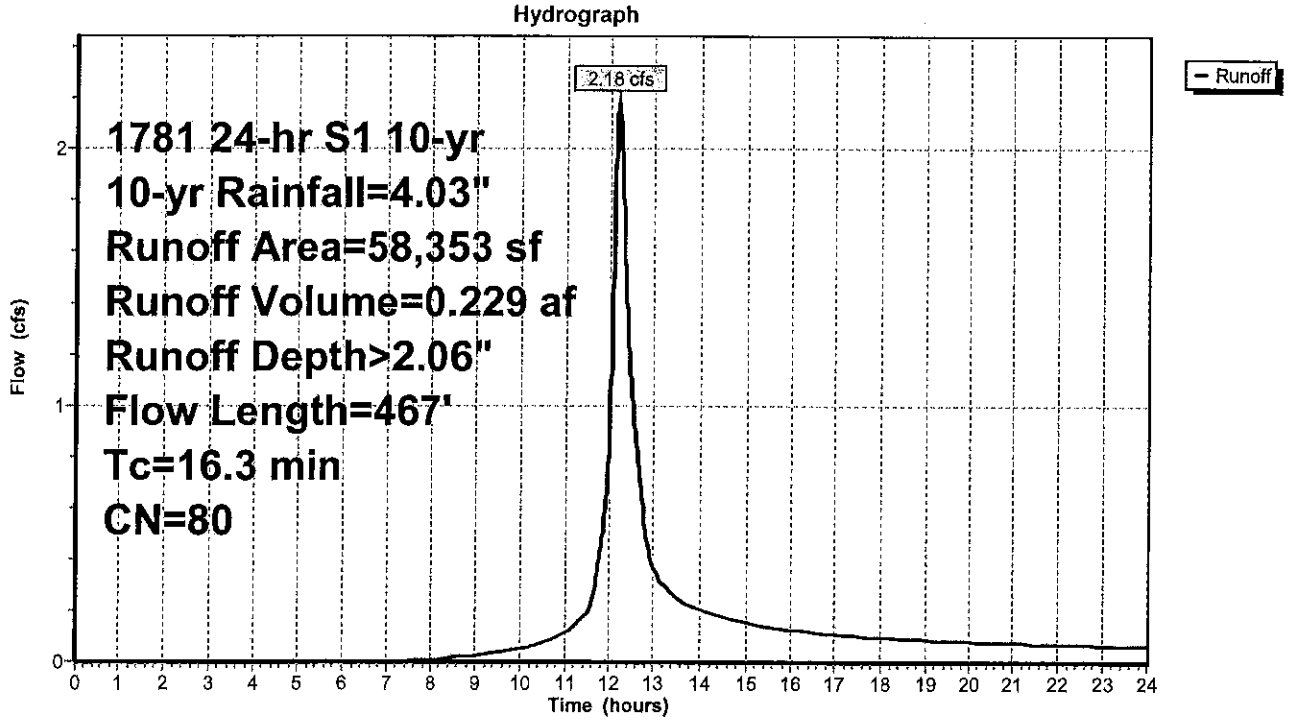
Runoff = 2.18 cfs @ 12.18 hrs, Volume= 0.229 af, Depth> 2.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
30,122	77	Woods, Good, HSG D
24,766	80	>75% Grass cover, Good, HSG D
3,465	98	Paved parking, HSG D
58,353	80	Weighted Average
54,888		94.06% Pervious Area
3,465		5.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	100	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"
0.8	75	0.0470	1.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	112	0.0510	1.13		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	180	0.0560	3.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
16.3	467	Total			

Subcatchment A4: A4



Summary for Subcatchment A5: A5

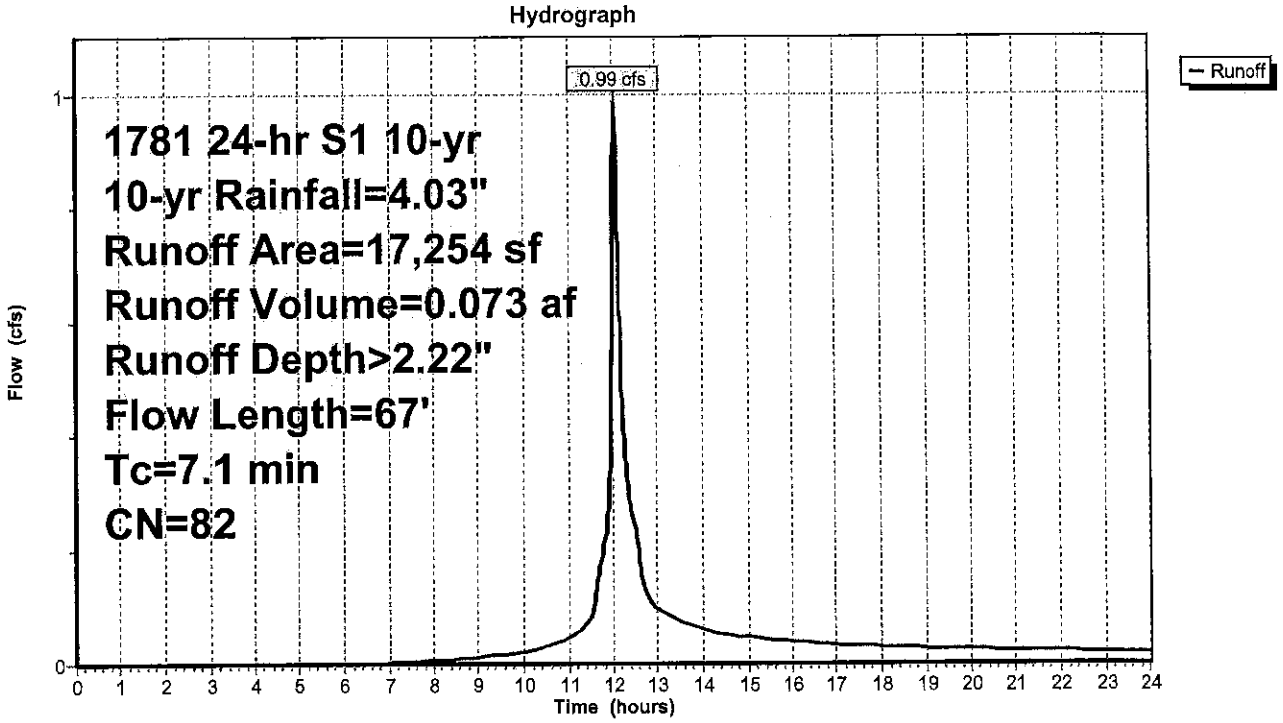
Runoff = 0.99 cfs @ 12.05 hrs, Volume= 0.073 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
2,517	77	Woods, Good, HSG D
12,283	80	>75% Grass cover, Good, HSG D
2,454	98	Paved parking, HSG D
17,254	82	Weighted Average
14,800		85.78% Pervious Area
2,454		14.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	45	0.1780	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
2.0	22	0.1590	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"
7.1	67	Total			

Subcatchment A5: A5



Summary for Subcatchment A6: A6

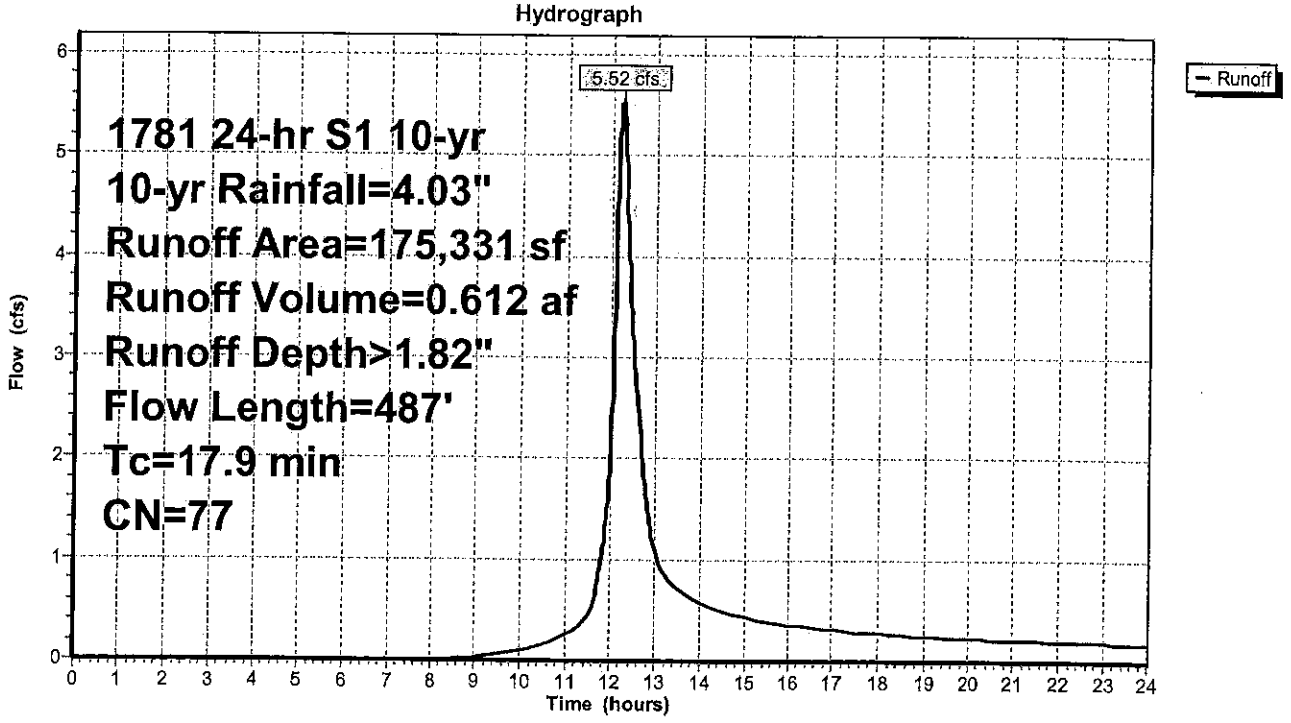
Runoff = 5.52 cfs @ 12.20 hrs, Volume= 0.612 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
168,408	77	Woods, Good, HSG D
6,923	80	>75% Grass cover, Good, HSG D
175,331	77	Weighted Average
175,331		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0750	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
4.3	387	0.0890	1.49		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.9	487	Total			

Subcatchment A6: A6



Summary for Subcatchment A7: A7

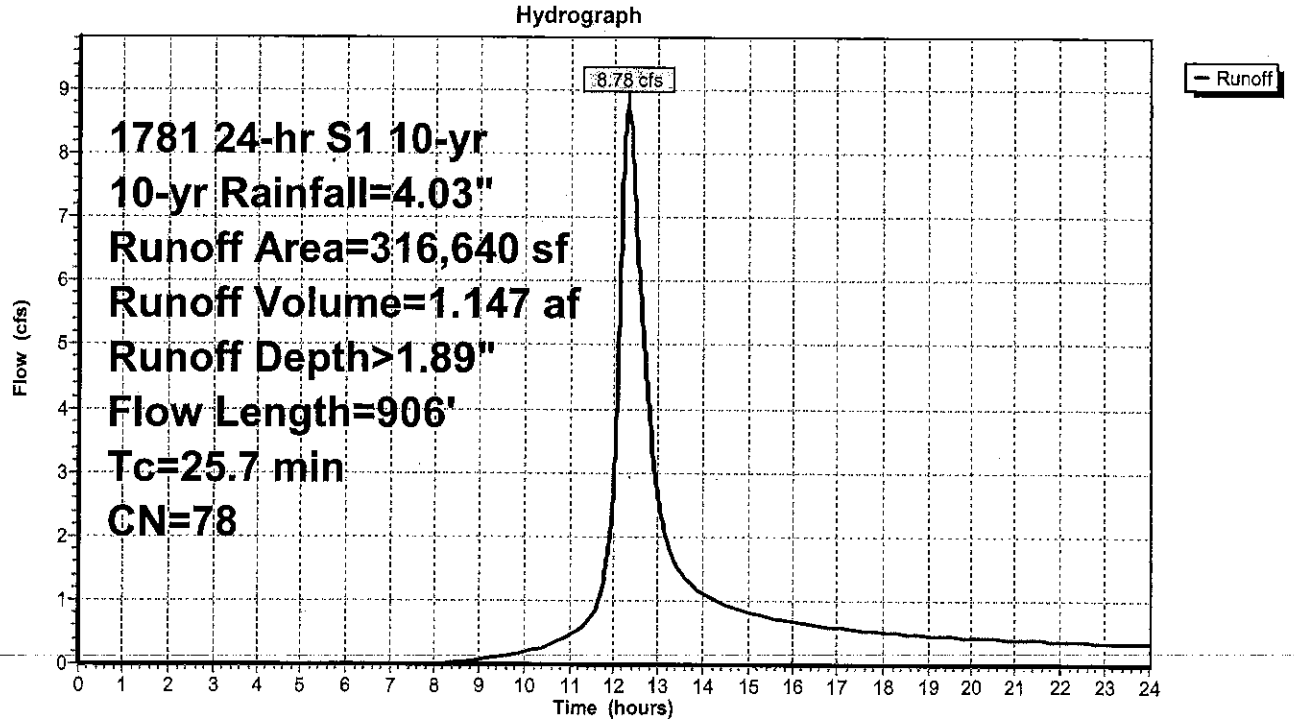
Runoff = 8.78 cfs @ 12.31 hrs, Volume= 1.147 af, Depth> 1.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
285,878	77	Woods, Good, HSG D
25,497	80	>75% Grass cover, Good, HSG D
5,265	98	Paved parking, HSG D
316,640	78	Weighted Average
311,375		98.34% Pervious Area
5,265		1.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	100	0.0550	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
8.2	605	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.1	201	0.0200	1.60	42.72	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
25.7	906	Total			

Subcatchment A7: A7



Summary for Subcatchment A8: A8

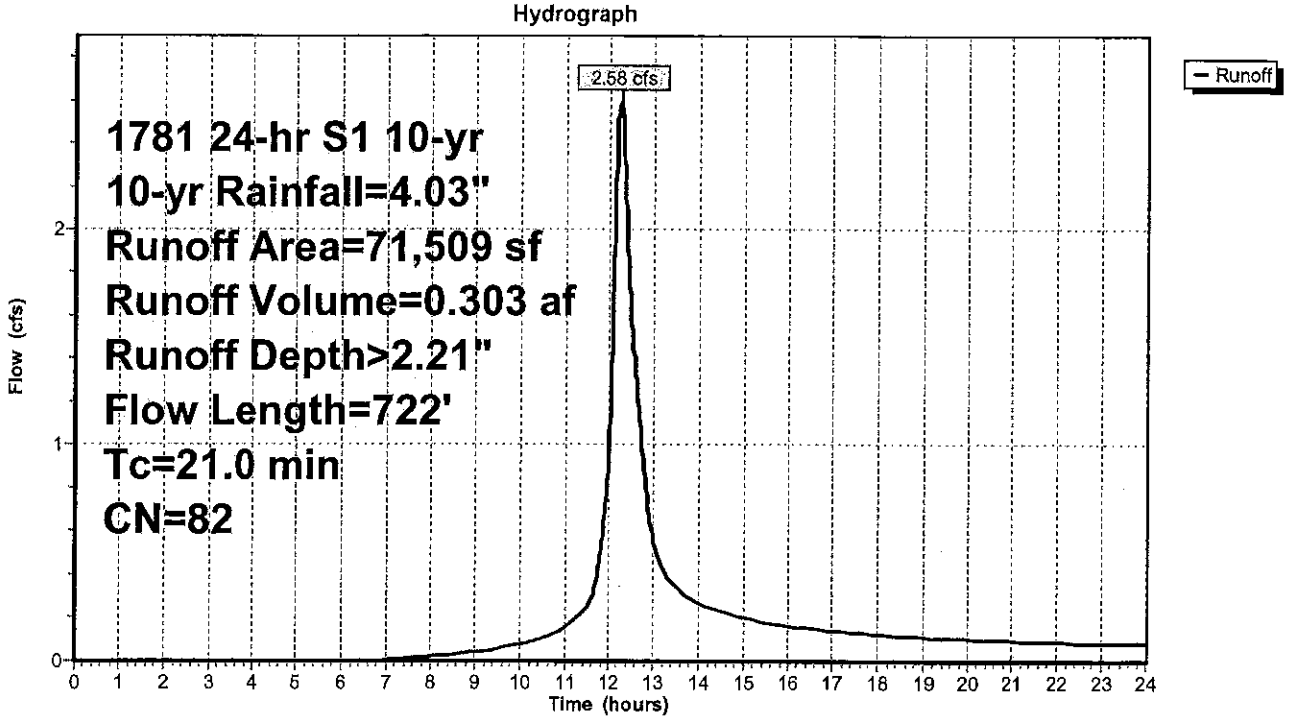
Runoff = 2.58 cfs @ 12.25 hrs, Volume= 0.303 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
2,708	77	Woods, Good, HSG D
59,329	80	>75% Grass cover, Good, HSG D
9,472	98	Paved parking, HSG D
71,509	82	Weighted Average
62,037		86.75% Pervious Area
9,472		13.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
7.0	622	0.0450	1.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
21.0	722	Total			

Subcatchment A8: A8



Summary for Subcatchment A9: A9

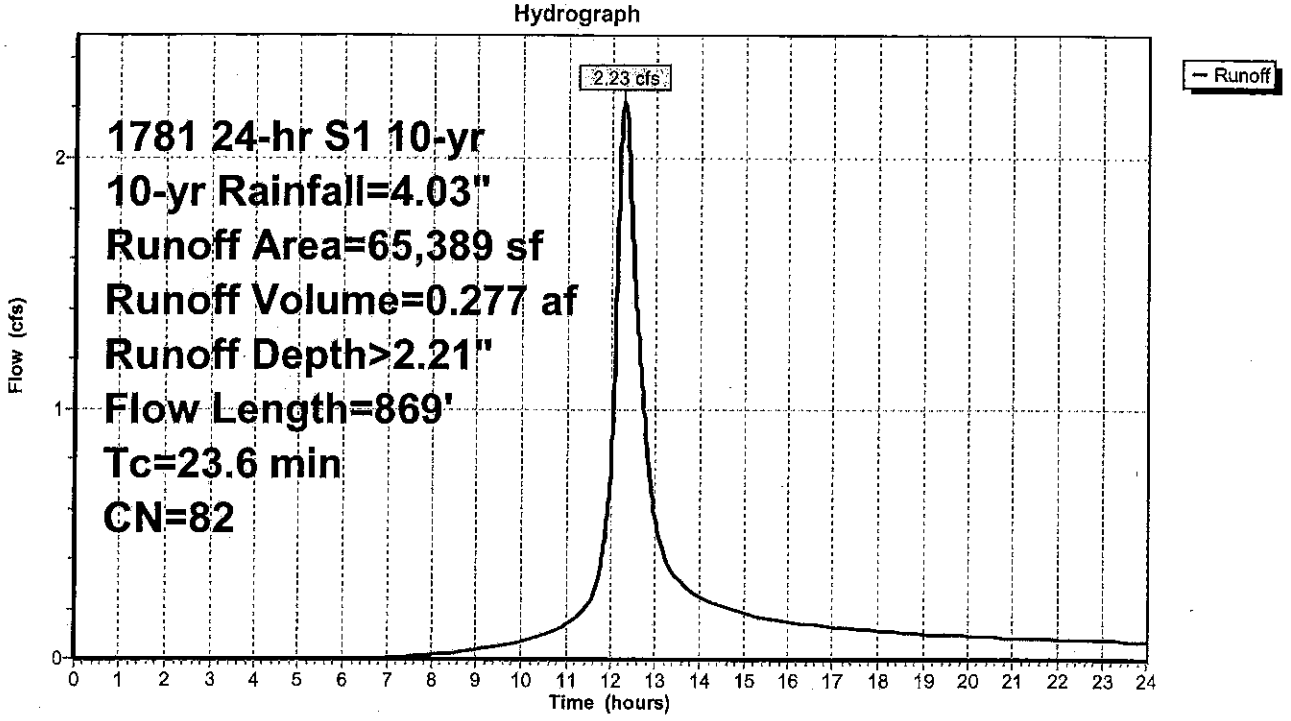
Runoff = 2.23 cfs @ 12.28 hrs, Volume= 0.277 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
7,832	77	Woods, Good, HSG D
50,260	80	>75% Grass cover, Good, HSG D
7,297	98	Paved parking, HSG D
65,389	82	Weighted Average
58,092		88.84% Pervious Area
7,297		11.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
0.2	13	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.1	573	0.0367	1.34		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	183	0.0370	11.65	113.56	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=1.50' Z= 3.0 '/' Top.W=11.00' n= 0.022 Earth, clean & straight
23.6	869	Total			

Subcatchment A9: A9



Summary for Subcatchment A10: A10

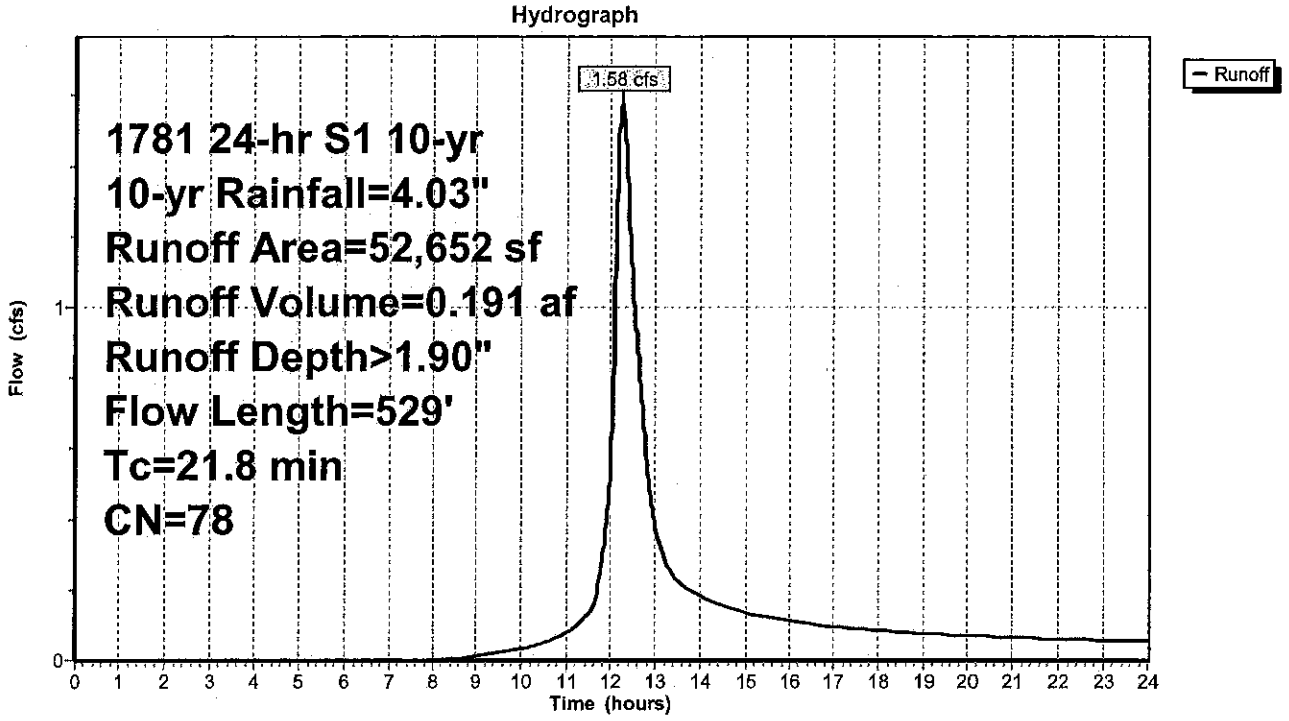
Runoff = 1.58 cfs @ 12.26 hrs, Volume= 0.191 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
44,427	77	Woods, Good, HSG D
5,995	80	>75% Grass cover, Good, HSG D
2,230	98	Paved parking, HSG D
52,652	78	Weighted Average
50,422		95.76% Pervious Area
2,230		4.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	100	0.0400	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
3.3	188	0.0370	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.9	129	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	112	0.0500	12.78	76.68	**Trap/Vee/Rect Channel Flow,** Bot.W=1.00' D=1.50' Z= 2.0 '/' Top.W=7.00' n= 0.022 Earth, clean & straight
21.8	529	Total			

Subcatchment A10: A10



Summary for Subcatchment A11: A11

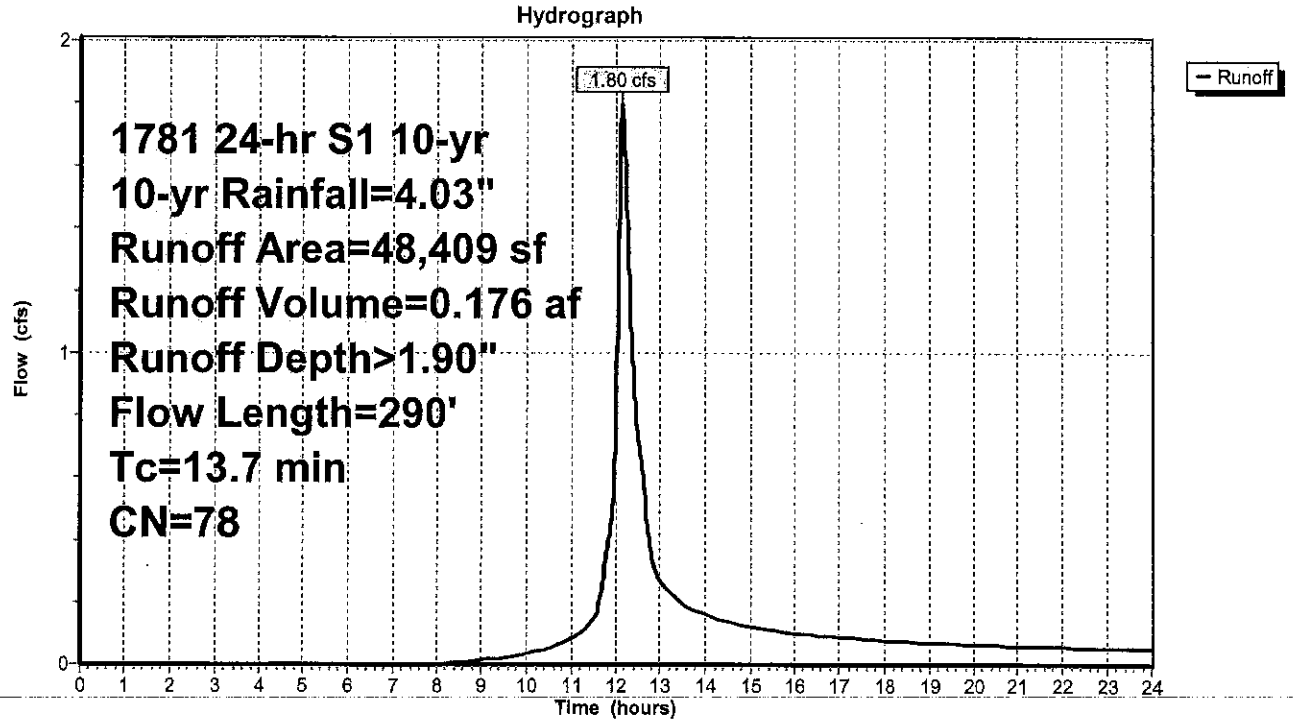
Runoff = 1.80 cfs @ 12.14 hrs, Volume= 0.176 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
39,729	77	Woods, Good, HSG D
7,367	80	>75% Grass cover, Good, HSG D
1,313	98	Unconnected roofs, HSG D
48,409	78	Weighted Average
47,096		97.29% Pervious Area
1,313		2.71% Impervious Area
1,313		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.1050	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
1.8	190	0.1210	1.74		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	290	Total			

Subcatchment A11: A11



Summary for Subcatchment A12: A12

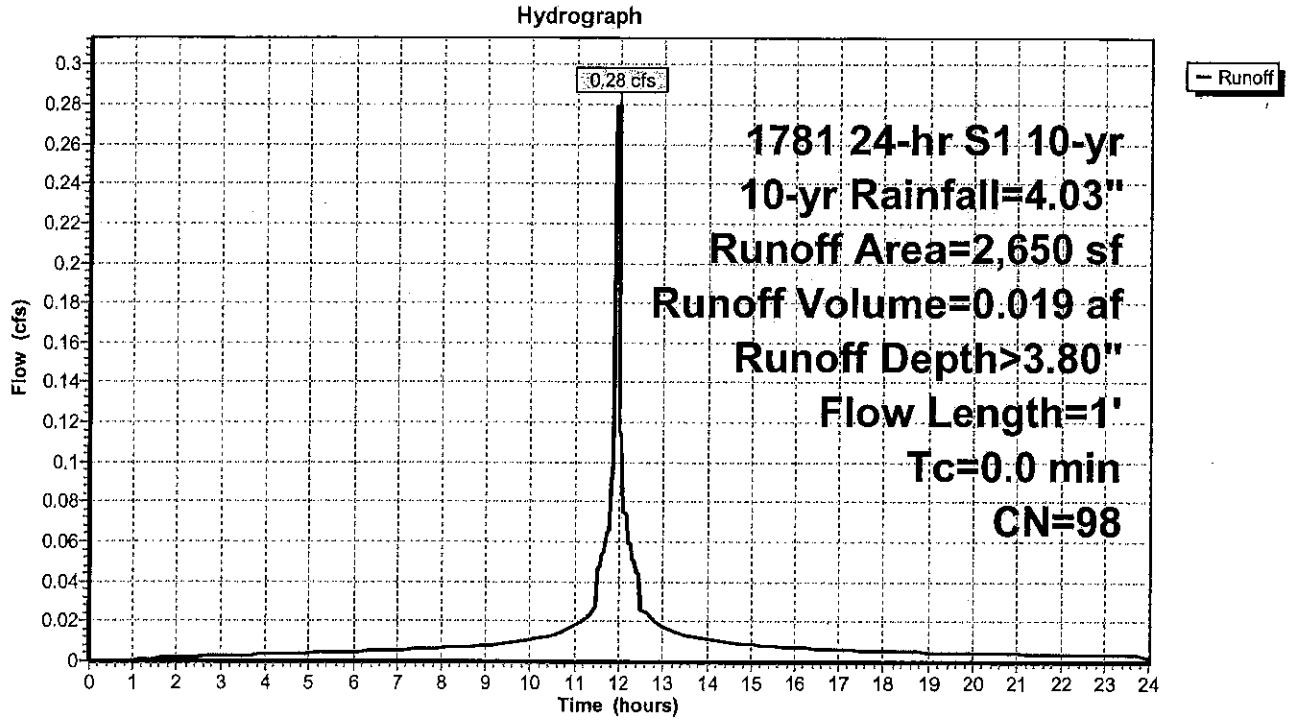
Runoff = 0.28 cfs @ 11.99 hrs, Volume= 0.019 af, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
2,650	98	Paved parking, HSG D
2,650		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0	1		10.00		**Direct Entry, Porous Pavement**

Subcatchment A12: A12



Summary for Subcatchment A13: A13

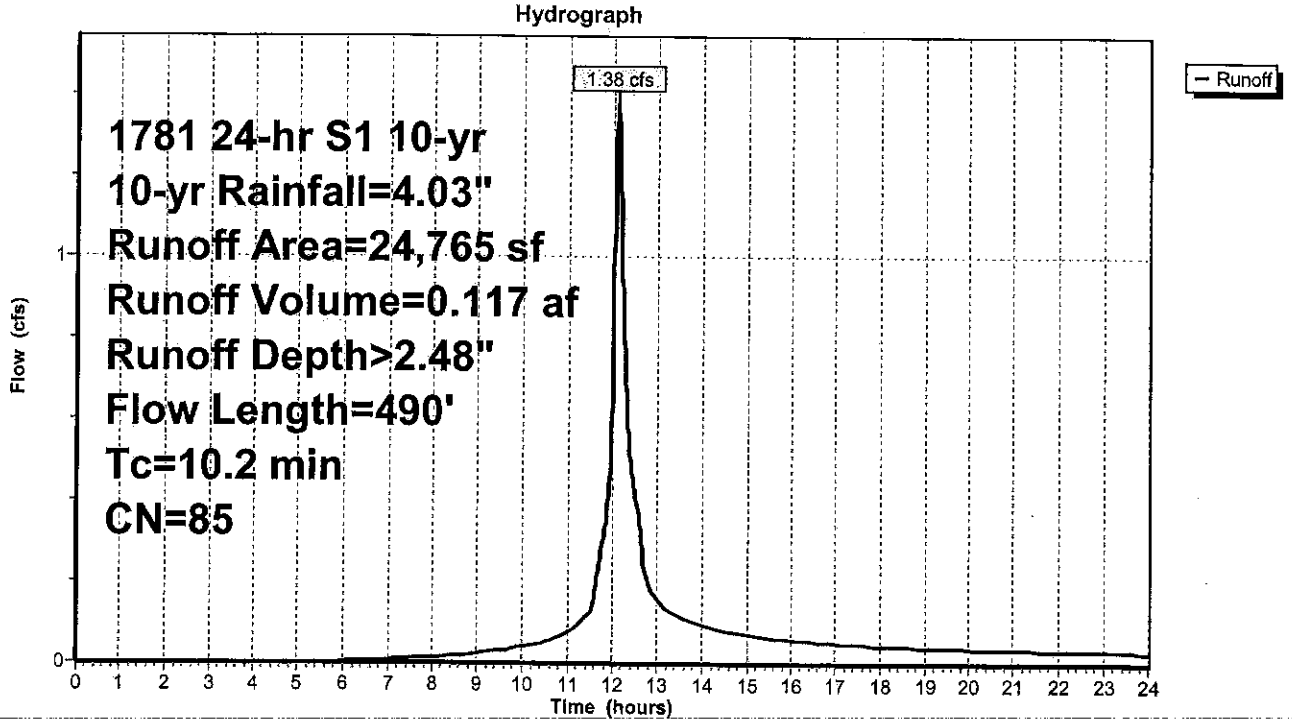
Runoff = 1.38 cfs @ 12.09 hrs, Volume= 0.117 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
2,388	77	Woods, Good, HSG D
7,557	98	Paved parking, HSG D
14,820	80	>75% Grass cover, Good, HSG D
24,765	85	Weighted Average
17,208		69.49% Pervious Area
7,557		30.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	61	0.0660	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
0.6	429	0.0440	12.70	123.84	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=1.50' Z= 3.0 '/' Top.W=11.00' n= 0.022 Earth, clean & straight
10.2	490	Total			

Subcatchment A13: A13



Summary for Subcatchment B1: B1

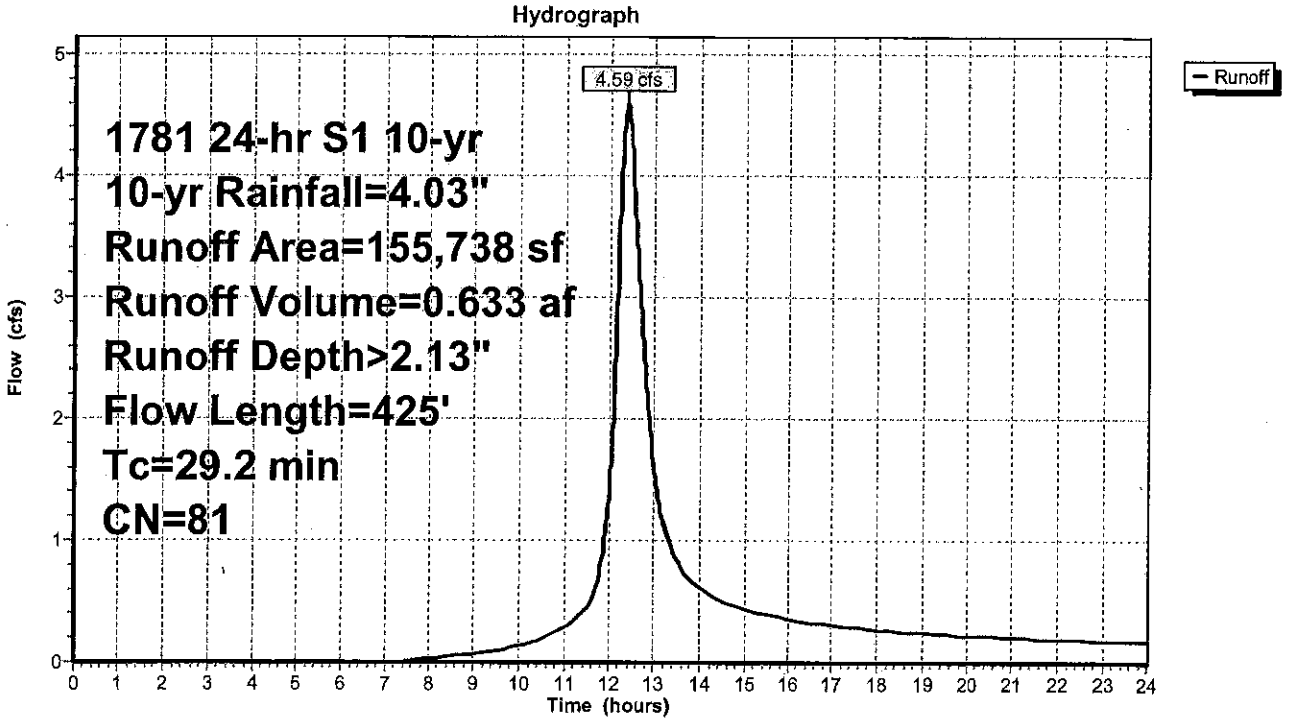
Runoff = 4.59 cfs @ 12.36 hrs, Volume= 0.633 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
49,841	77	Woods, Good, HSG D
86,567	80	>75% Grass cover, Good, HSG D
18,920	98	Paved parking, HSG D
410	98	Unconnected roofs, HSG D
155,738	81	Weighted Average
136,408		87.59% Pervious Area
19,330		12.41% Impervious Area
410		2.12% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.0	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
6.2	325	0.0310	0.88		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	425	Total			

Subcatchment B1: B1



Summary for Subcatchment B2: B2

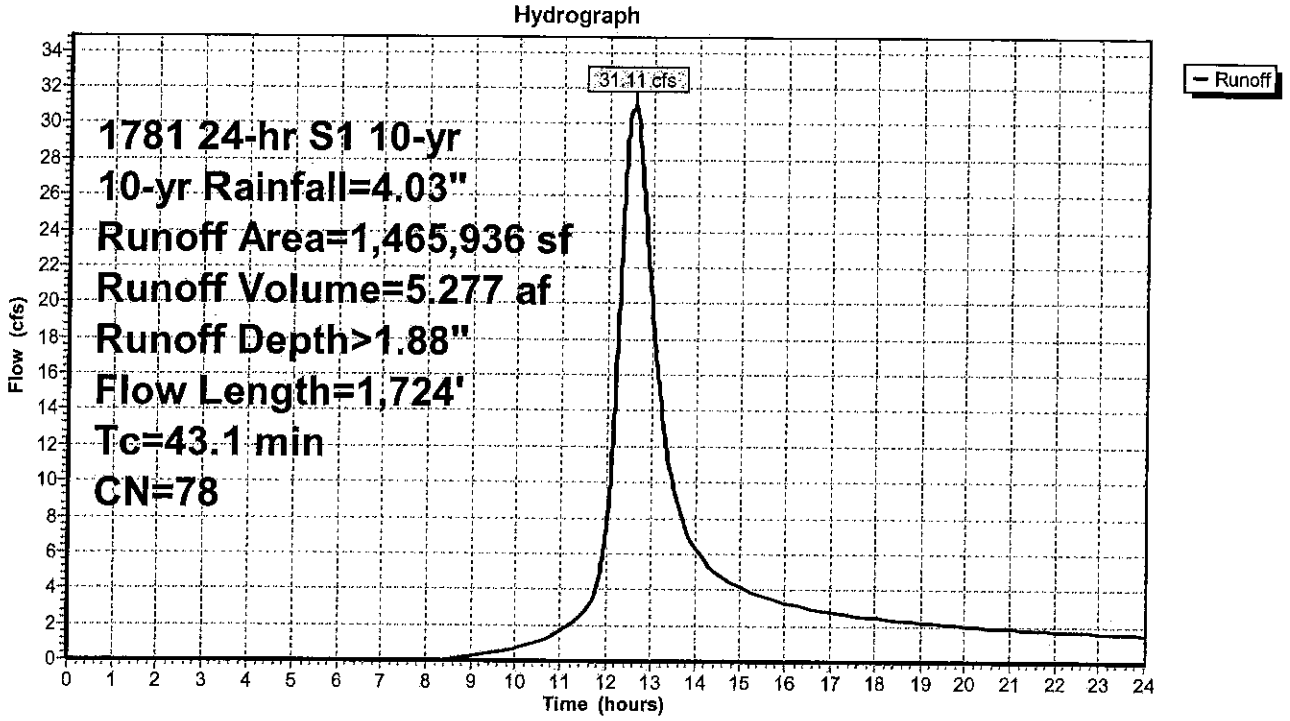
Runoff = 31.11 cfs @ 12.59 hrs, Volume= 5.277 af, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
1,157,990	77	Woods, Good, HSG D
295,039	80	>75% Grass cover, Good, HSG D
7,227	96	Gravel surface, HSG D
4,143	98	Unconnected roofs, HSG D
1,537	98	Water Surface, HSG D
1,465,936	78	Weighted Average
1,460,256		99.61% Pervious Area
5,680		0.39% Impervious Area
4,143		72.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.0	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
8.2	449	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.9	1,175	0.0210	1.64	43.77	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
43.1	1,724	Total			

Subcatchment B2: B2



Summary for Subcatchment C1: C1

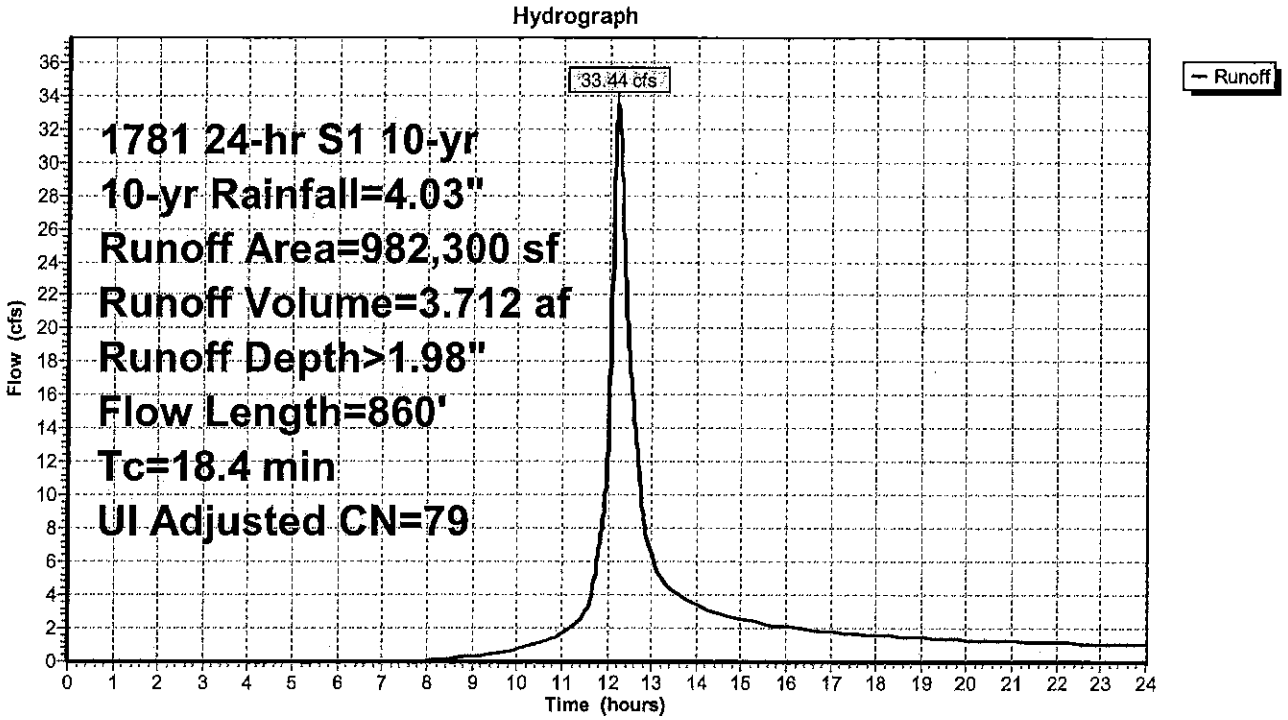
Runoff = 33.44 cfs @ 12.21 hrs, Volume= 3.712 af, Depth> 1.98"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 10-yr 10-yr Rainfall=4.03"

Area (sf)	CN	Description
484,198	77	Woods, Good, HSG D
435,550	80	>75% Grass cover, Good, HSG D
16,773	96	Gravel surface, HSG D
30,733	98	Paved parking, HSG D
15,046	98	Unconnected roofs, HSG D
982,300	80	Weighted Average, UI Adjusted CN = 79
936,521		95.34% Pervious Area
45,779		4.66% Impervious Area
15,046		32.87% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"
4.1	455	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.7	305	0.1440	1.90		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.4	860	Total			

Subcatchment C1: C1



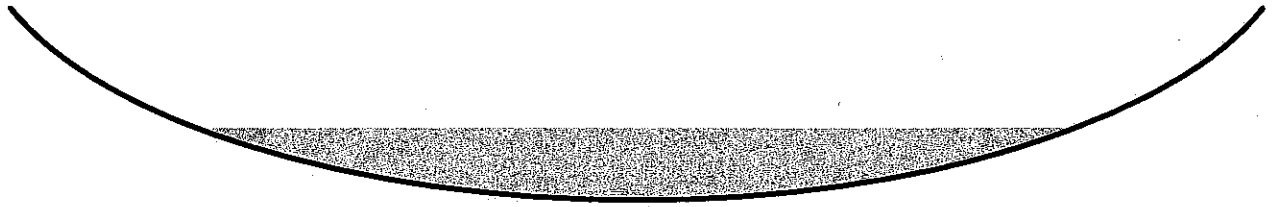
Summary for Reach R1: R1

Inflow Area = 7.735 ac, 5.52% Impervious, Inflow Depth > 1.93" for 10-yr event
Inflow = 6.83 cfs @ 12.57 hrs, Volume= 1.246 af
Outflow = 6.81 cfs @ 12.61 hrs, Volume= 1.242 af, Atten= 0%, Lag= 2.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.13 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.53 fps, Avg. Travel Time= 7.2 min

Peak Storage= 1,401 cf @ 12.61 hrs
Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 58.16 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 232.0' Slope= 0.0371 '/'
Inlet Invert= 554.00', Outlet Invert= 545.40'



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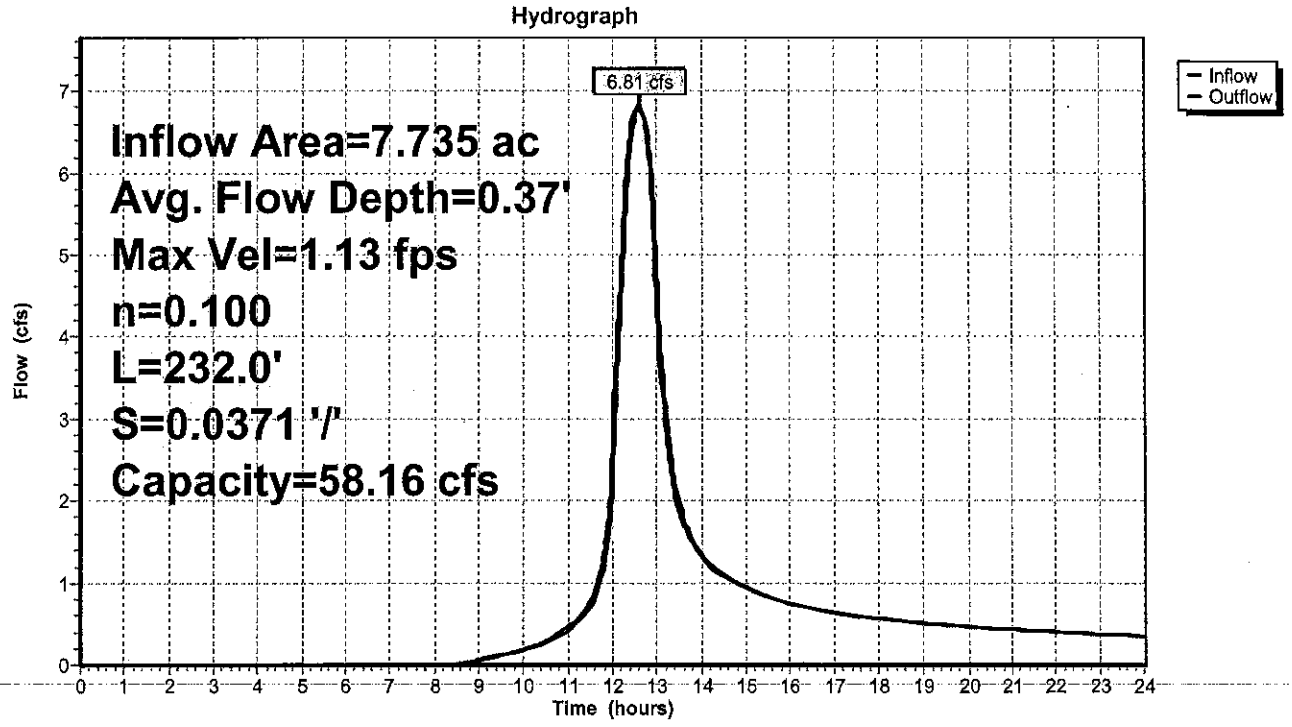
Reach R1: R1



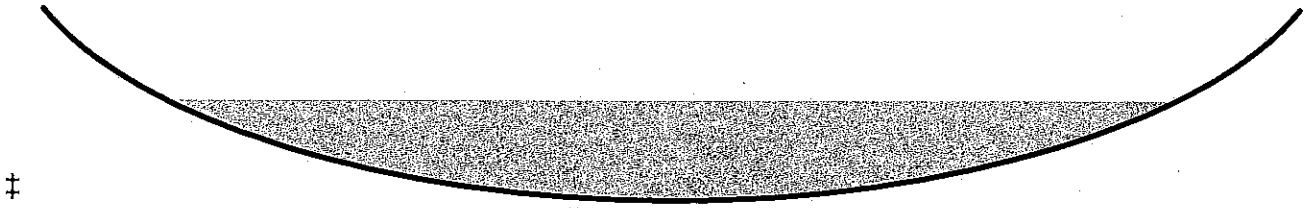
Summary for Reach R2: R2

Inflow Area = 11.760 ac, 3.63% Impervious, Inflow Depth > 1.88" for 10-yr event
Inflow = 9.98 cfs @ 12.40 hrs, Volume= 1.842 af
Outflow = 9.30 cfs @ 12.61 hrs, Volume= 1.828 af, Atten= 7%, Lag= 12.6 min

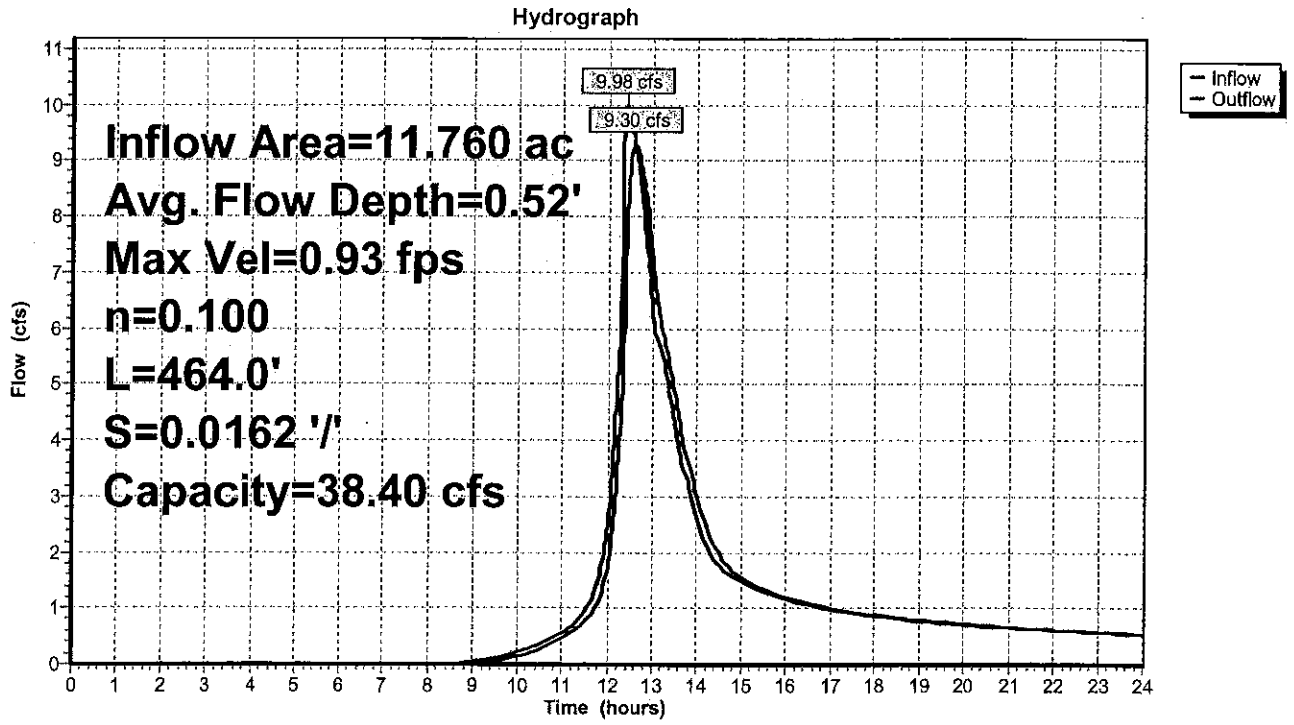
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.93 fps, Min. Travel Time= 8.3 min
Avg. Velocity = 0.46 fps, Avg. Travel Time= 17.0 min

Peak Storage= 4,634 cf @ 12.61 hrs
Average Depth at Peak Storage= 0.52'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 38.40 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 464.0' Slope= 0.0162 '/'
Inlet Invert= 545.40', Outlet Invert= 537.90'



Reach R2: R2



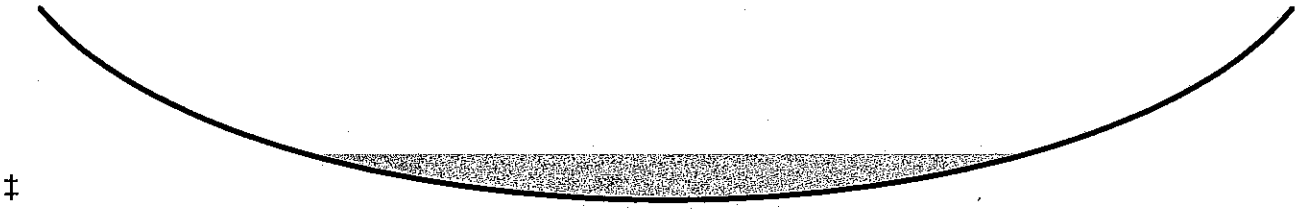
Summary for Reach R3: R3

Inflow Area = 3.321 ac, 12.68% Impervious, Inflow Depth > 2.13" for 10-yr event
Inflow = 1.73 cfs @ 12.69 hrs, Volume= 0.591 af
Outflow = 1.68 cfs @ 12.88 hrs, Volume= 0.584 af, Atten= 3%, Lag= 11.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.55 fps, Min. Travel Time= 14.1 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 26.3 min

Peak Storage= 1,429 cf @ 12.88 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 38.02 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 464.0' Slope= 0.0158 '/'
Inlet Invert= 545.25', Outlet Invert= 537.90'



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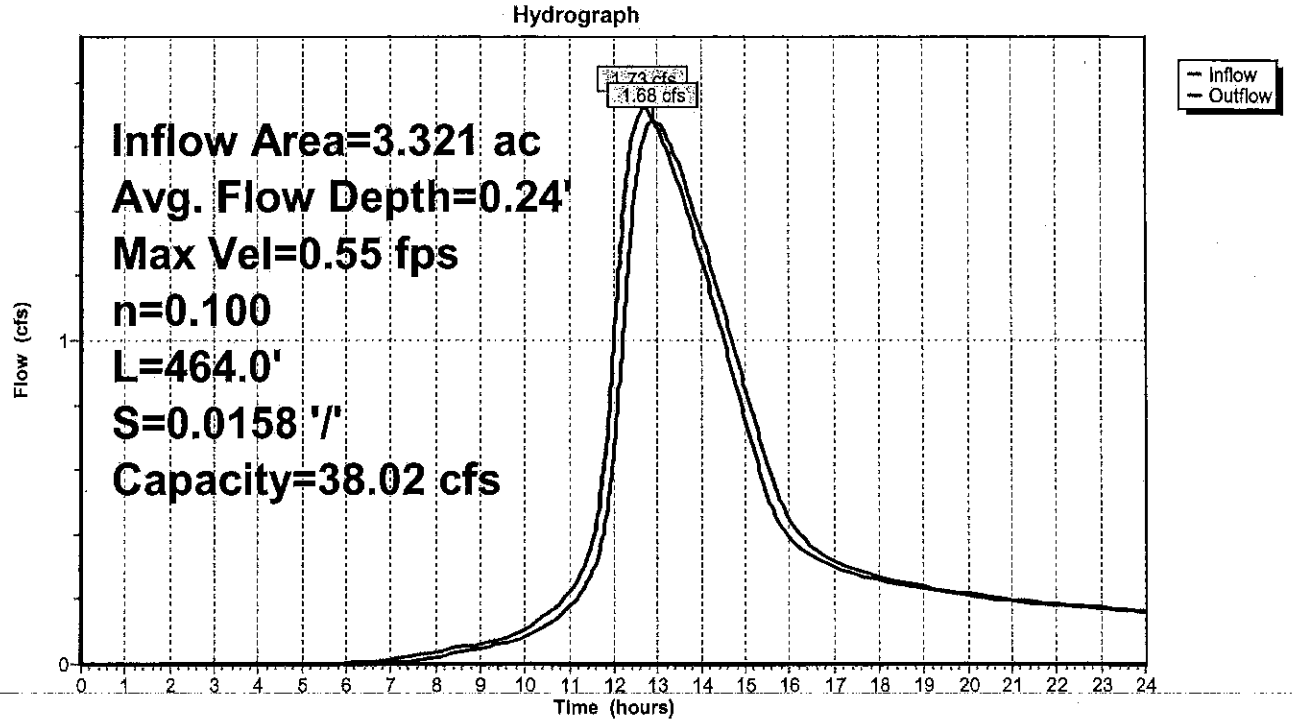
Reach R3: R3



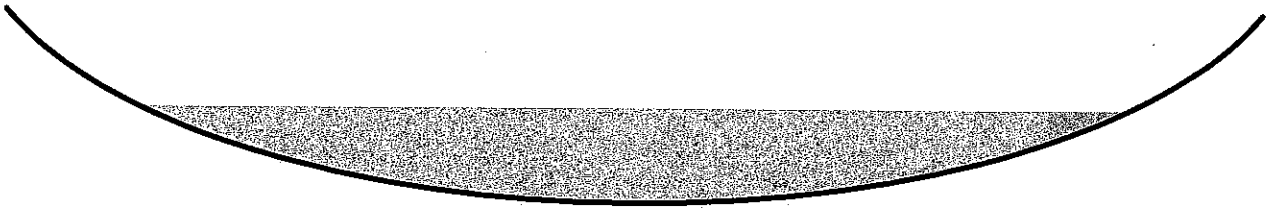
Summary for Reach R4: R4

Inflow Area = 22.551 ac, 4.66% Impervious, Inflow Depth > 1.98" for 10-yr event
Inflow = 33.44 cfs @ 12.21 hrs, Volume= 3.712 af
Outflow = 33.39 cfs @ 12.22 hrs, Volume= 3.710 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.24 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.91 fps, Avg. Travel Time= 1.6 min

Peak Storage= 1,269 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 1.00' Flow Area= 13.3 sf, Capacity= 154.29 cfs

20.00' x 1.00' deep Parabolic Channel, n= 0.030 Earth, clean & winding
Length= 275.0' Slope= 0.0945 '/'
Inlet Invert= 530.00', Outlet Invert= 504.00'



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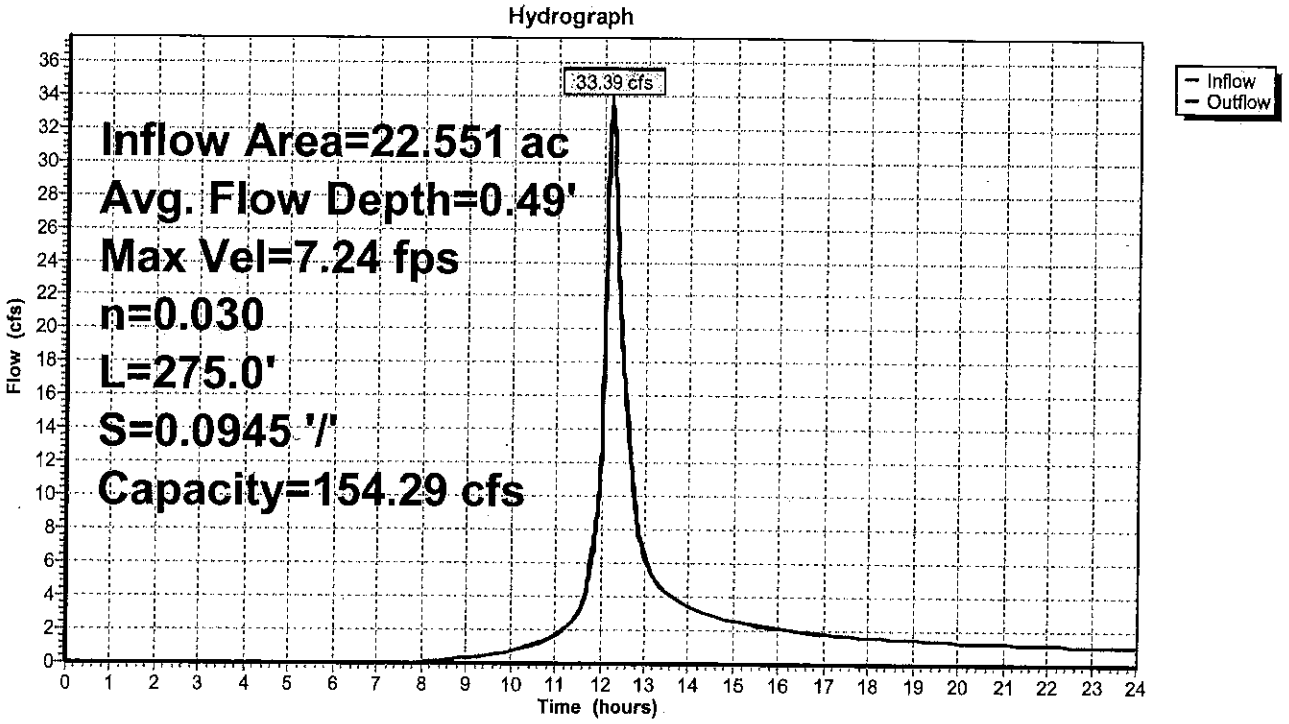
Reach R4: R4



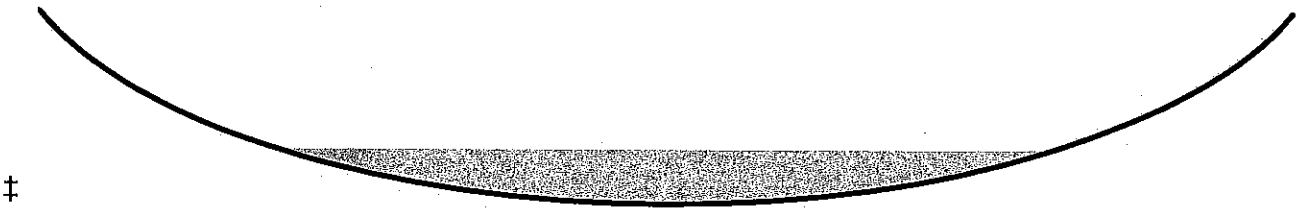
Summary for Reach R5: R5

Inflow Area = 3.661 ac, 11.67% Impervious, Inflow Depth > 2.09" for 10-yr event
Inflow = 4.32 cfs @ 12.31 hrs, Volume= 0.638 af
Outflow = 4.29 cfs @ 12.34 hrs, Volume= 0.637 af, Atten= 1%, Lag= 1.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.08 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.44 fps, Avg. Travel Time= 4.7 min

Peak Storage= 495 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 67.27 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 125.0' Slope= 0.0496 '/'
Inlet Invert= 560.00', Outlet Invert= 553.80'



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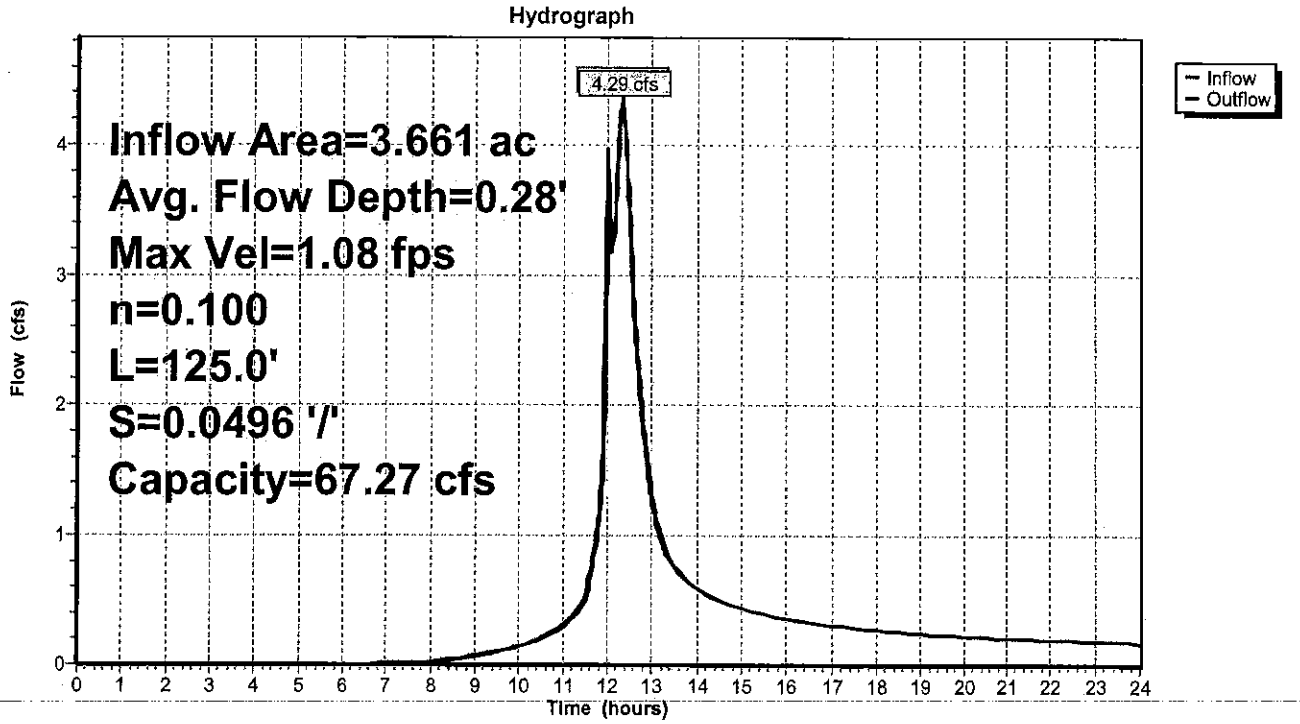
Reach R5: R5



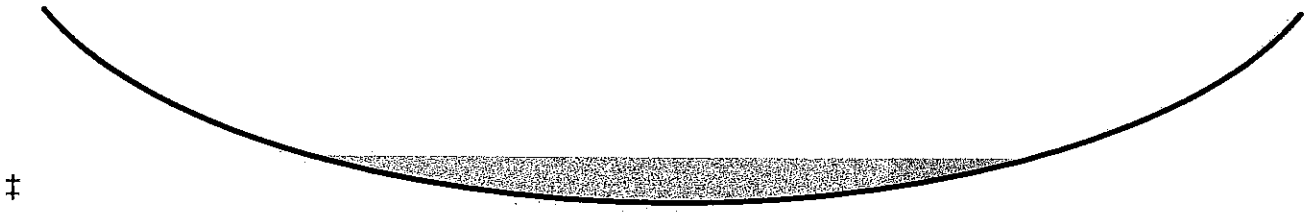
Summary for Reach R6: R6

Inflow Area = 1.736 ac, 7.83% Impervious, Inflow Depth > 2.09" for 10-yr event
Inflow = 2.66 cfs @ 12.20 hrs, Volume= 0.302 af
Outflow = 2.15 cfs @ 12.33 hrs, Volume= 0.298 af, Atten= 19%, Lag= 7.9 min

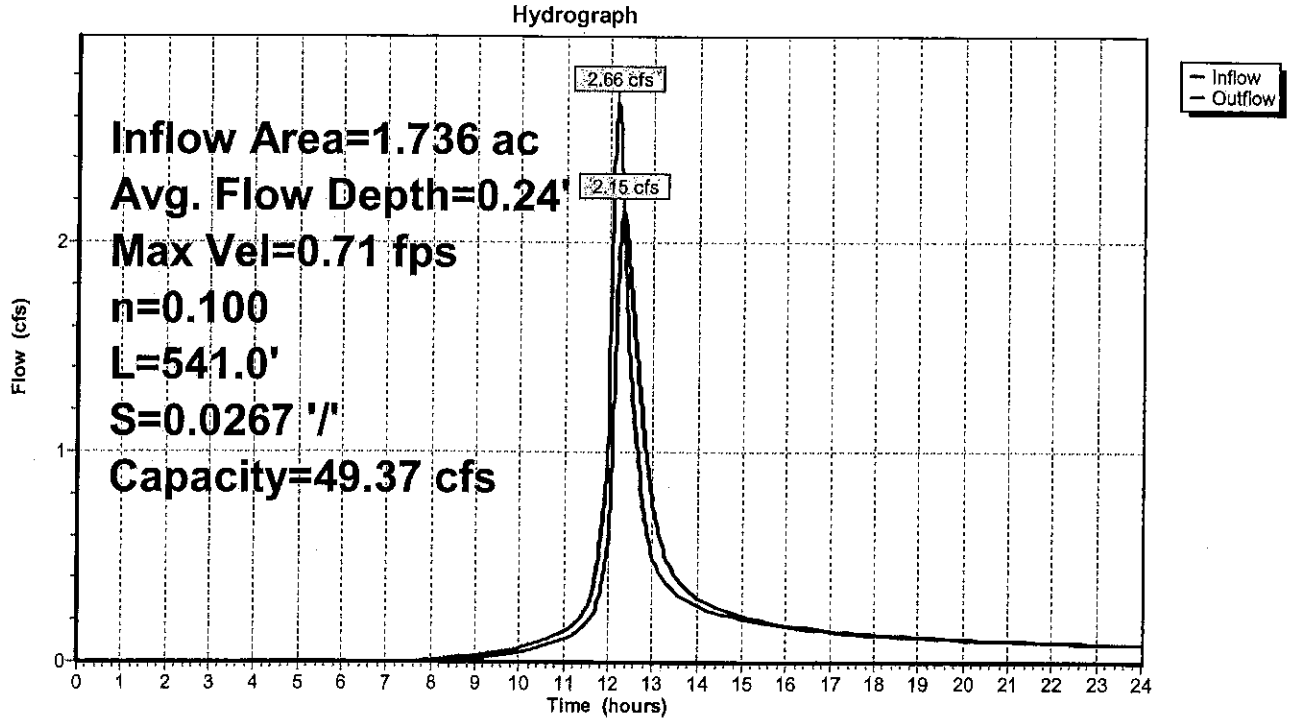
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.71 fps, Min. Travel Time= 12.8 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 30.7 min

Peak Storage= 1,644 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 49.37 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 541.0' Slope= 0.0267 '/'
Inlet Invert= 552.35', Outlet Invert= 537.90'



Reach R6: R6



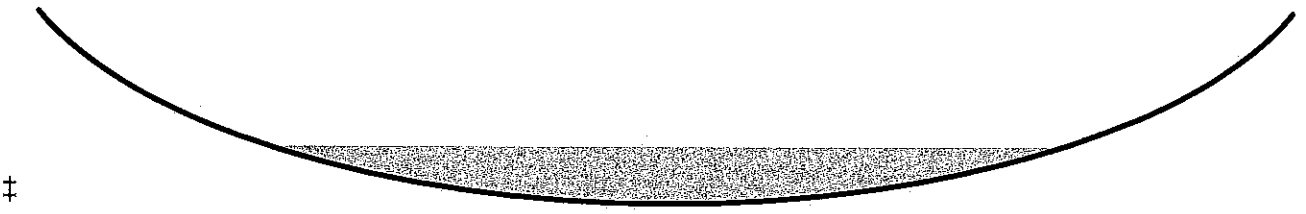
Summary for Reach R7: R7

Inflow Area = 3.575 ac, 12.41% Impervious, Inflow Depth > 2.12" for 10-yr event
Inflow = 4.53 cfs @ 12.39 hrs, Volume= 0.631 af
Outflow = 3.05 cfs @ 12.70 hrs, Volume= 0.613 af, Atten= 33%, Lag= 18.2 min

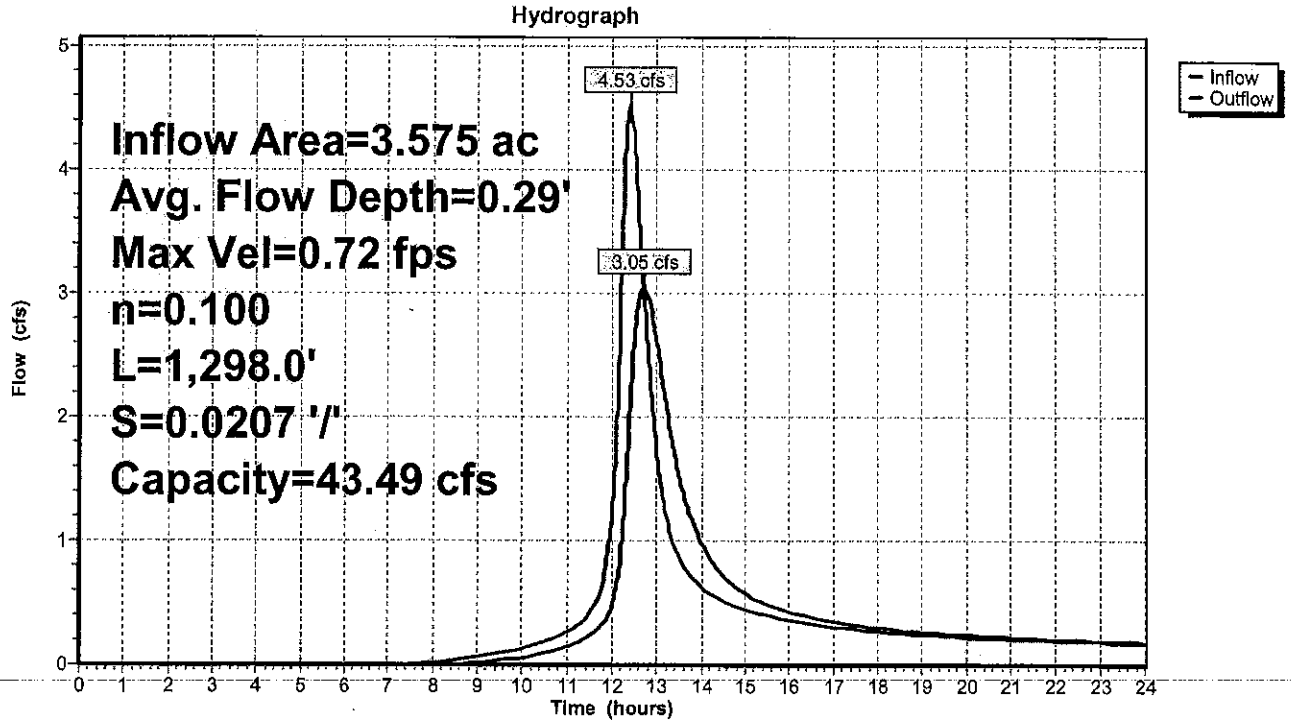
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.72 fps, Min. Travel Time= 30.0 min
Avg. Velocity = 0.34 fps, Avg. Travel Time= 63.9 min

Peak Storage= 5,500 cf @ 12.70 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 43.49 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 1,298.0' Slope= 0.0207 '/'
Inlet Invert= 560.00', Outlet Invert= 533.10'



Reach R7: R7



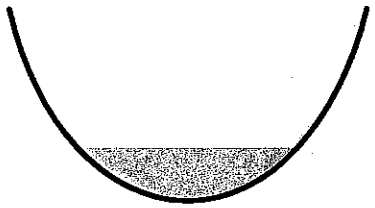
Summary for Reach R8: R8

Inflow Area = 2.771 ac, 10.09% Impervious, Inflow Depth > 2.07" for 10-yr event
Inflow = 3.84 cfs @ 12.28 hrs, Volume= 0.479 af
Outflow = 3.81 cfs @ 12.31 hrs, Volume= 0.478 af, Atten= 1%, Lag= 1.5 min

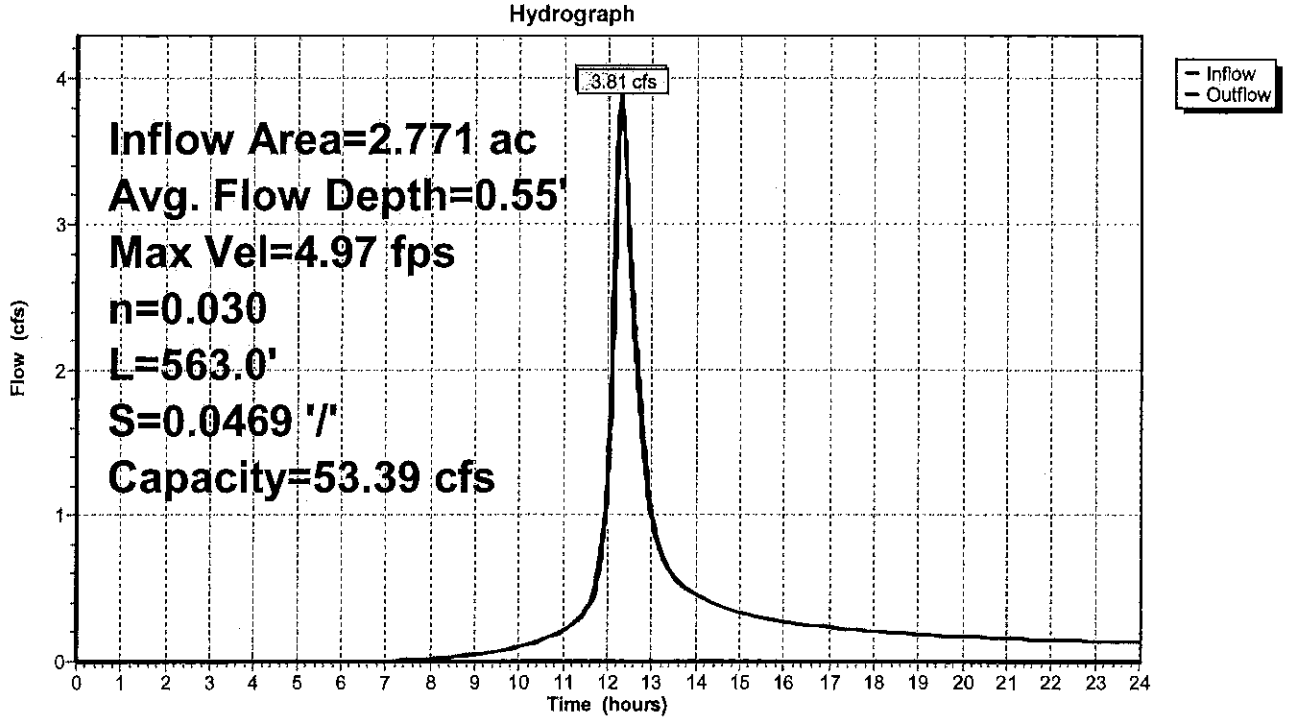
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.97 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 2.12 fps, Avg. Travel Time= 4.4 min

Peak Storage= 432 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 2.00' Flow Area= 5.3 sf, Capacity= 53.39 cfs

4.00' x 2.00' deep Parabolic Channel, n= 0.030 Earth, dense weeds
Length= 563.0' Slope= 0.0469 '/'
Inlet Invert= 564.30', Outlet Invert= 537.90'



Reach R8: R8



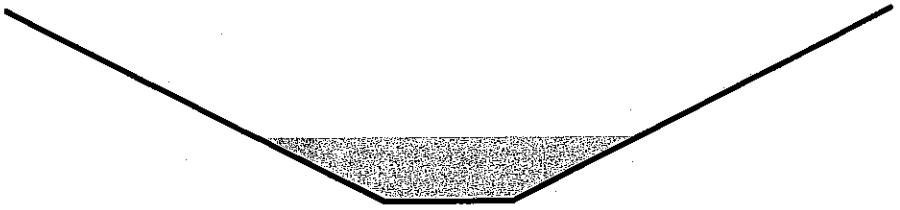
Summary for Reach R9: R9

Inflow Area = 1.562 ac, 14.62% Impervious, Inflow Depth > 2.21" for 10-yr event
Inflow = 2.28 cfs @ 12.30 hrs, Volume= 0.288 af
Outflow = 2.28 cfs @ 12.30 hrs, Volume= 0.288 af, Atten= 0%, Lag= 0.5 min

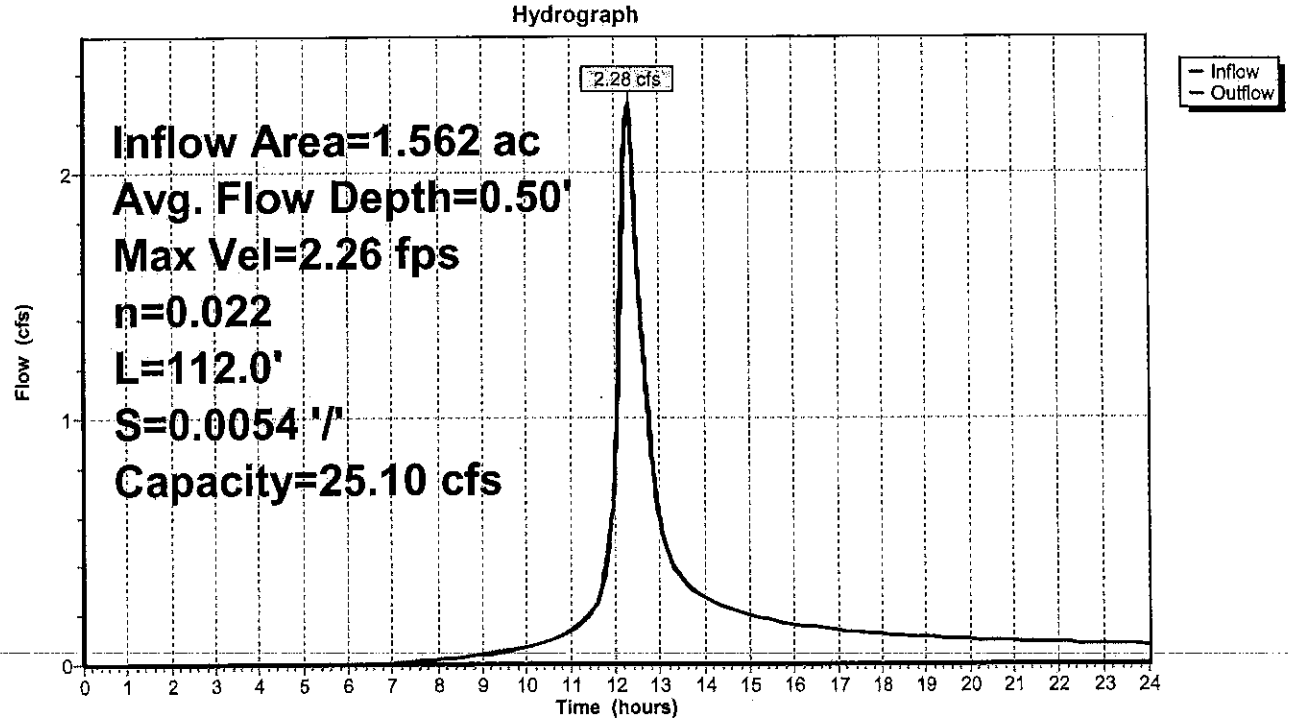
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.26 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.96 fps, Avg. Travel Time= 1.9 min

Peak Storage= 113 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.50'
Bank-Full Depth= 1.50' Flow Area= 6.0 sf, Capacity= 25.10 cfs

1.00' x 1.50' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 2.0 '/' Top Width= 7.00'
Length= 112.0' Slope= 0.0054 '/'
Inlet Invert= 565.00', Outlet Invert= 564.40'



Reach R9: R9



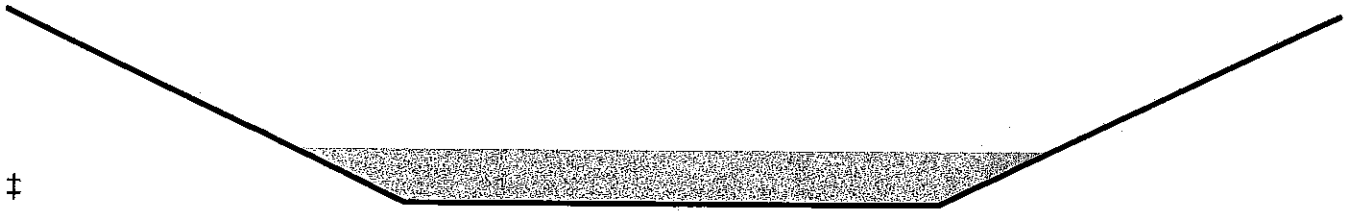
Summary for Reach TS1: TS1

Inflow Area = 3.661 ac, 11.67% Impervious, Inflow Depth > 2.10" for 10-yr event
Inflow = 4.43 cfs @ 12.00 hrs, Volume= 0.641 af
Outflow = 4.32 cfs @ 12.31 hrs, Volume= 0.638 af, Atten= 2%, Lag= 19.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.79 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 8.7 min

Peak Storage= 815 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.56'
Bank-Full Depth= 2.00' Flow Area= 28.0 sf, Capacity= 45.05 cfs

8.00' x 2.00' deep channel, n= 0.080
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 150.0' Slope= 0.0050 '/'
Inlet Invert= 561.00', Outlet Invert= 560.25'



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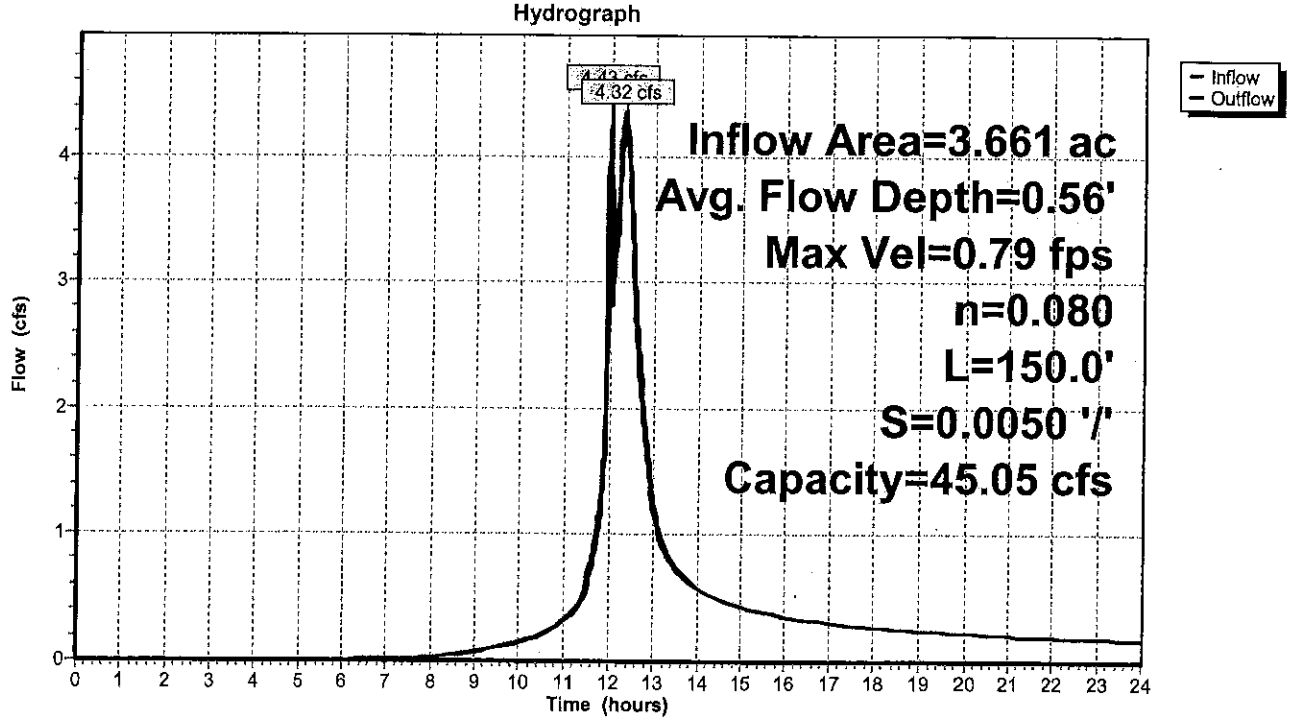
Reach TS1: TS1



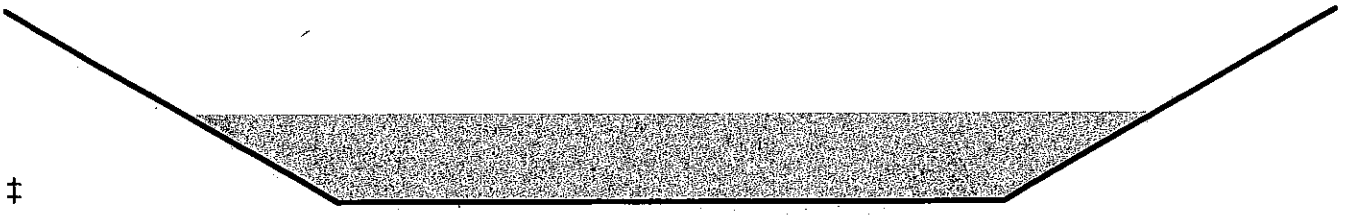
Summary for Reach TS2: TS2

Inflow Area = 1.736 ac, 7.83% Impervious, Inflow Depth > 2.09" for 10-yr event
Inflow = 2.70 cfs @ 12.17 hrs, Volume= 0.303 af
Outflow = 2.66 cfs @ 12.20 hrs, Volume= 0.302 af, Atten= 2%, Lag= 1.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.79 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.27 fps, Avg. Travel Time= 8.1 min

Peak Storage= 439 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.46'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 10.96 cfs

6.00' x 1.00' deep channel, n= 0.070
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 130.0' Slope= 0.0050 '/'
Inlet Invert= 553.00', Outlet Invert= 552.35'



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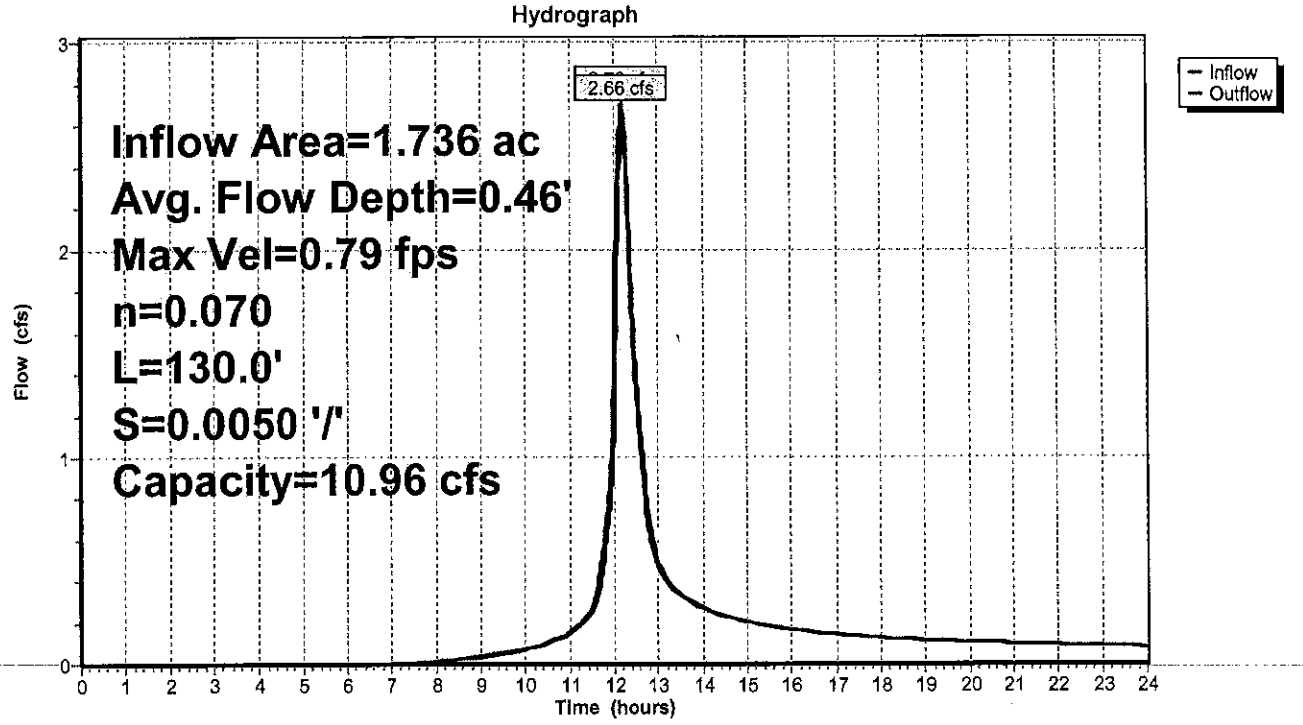
Reach TS2: TS2



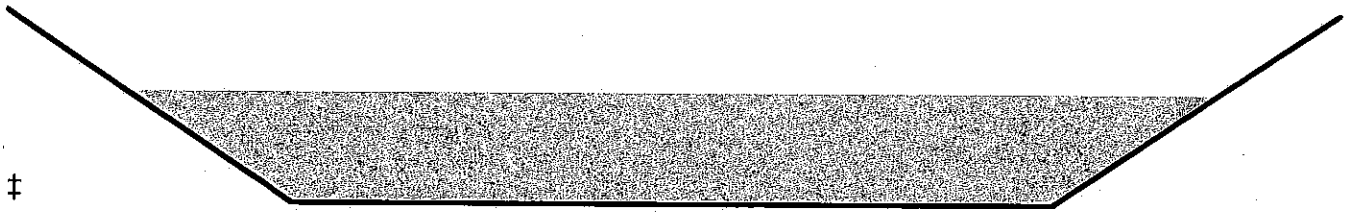
Summary for Reach TS3: TS3

Inflow Area = 3.575 ac, 12.41% Impervious, Inflow Depth > 2.13" for 10-yr event
Inflow = 4.59 cfs @ 12.36 hrs, Volume= 0.633 af
Outflow = 4.53 cfs @ 12.39 hrs, Volume= 0.631 af, Atten= 1%, Lag= 2.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.81 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.30 fps, Avg. Travel Time= 8.3 min

Peak Storage= 842 cf @ 12.39 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 1.00' Flow Area= 11.0 sf, Capacity= 12.12 cfs

8.00' x 1.00' deep channel, n= 0.080
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 150.0' Slope= 0.0050 '/'
Inlet Invert= 561.00', Outlet Invert= 560.25'



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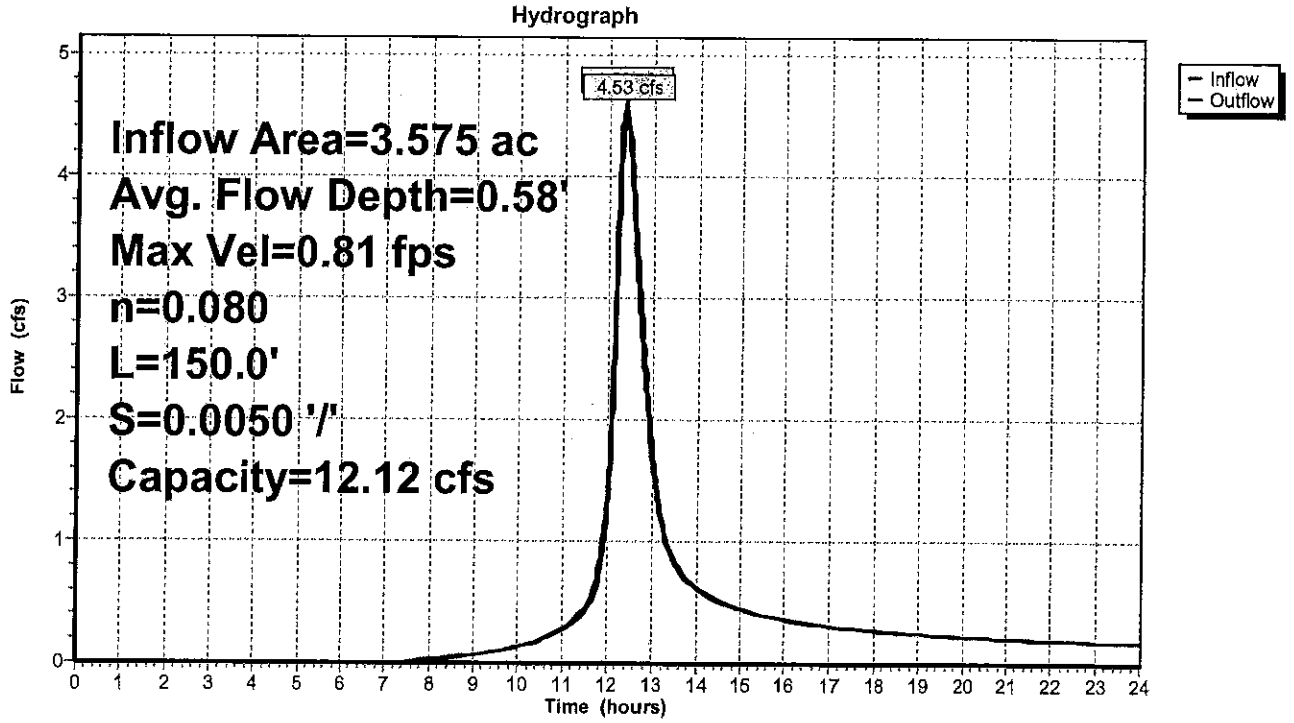
Reach TS3: TS3



Summary for Pond CB1: CB1

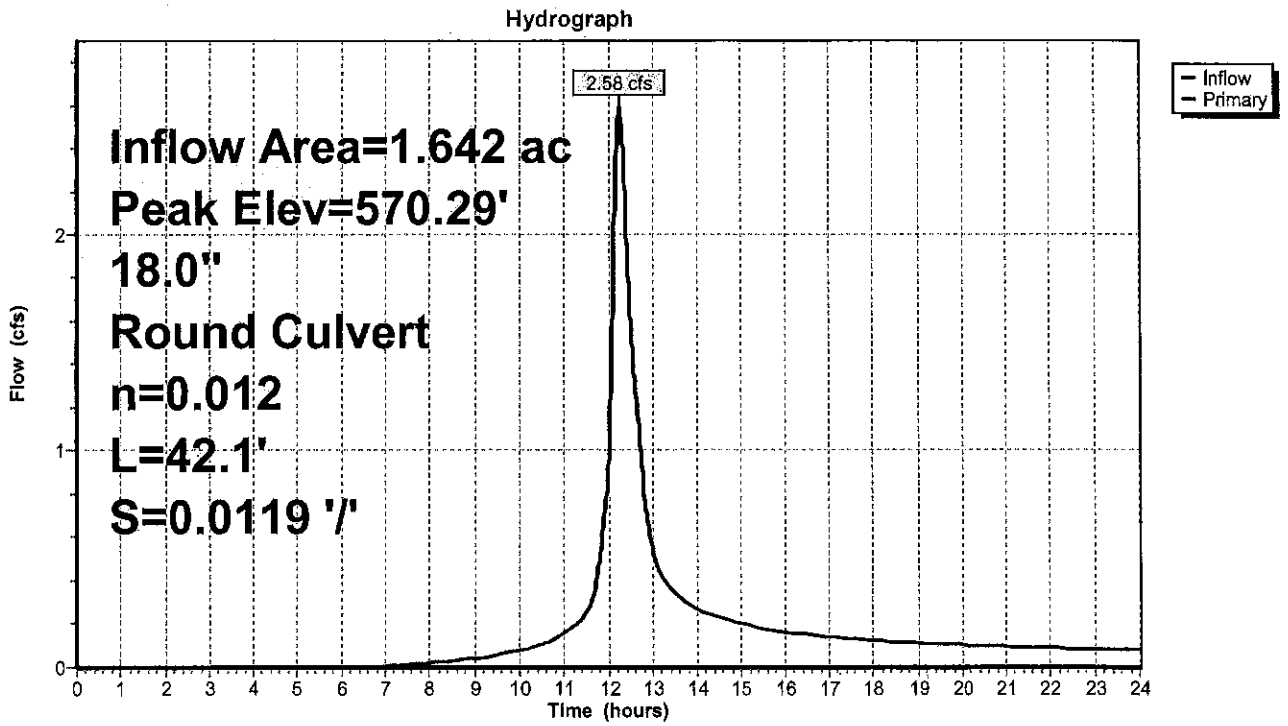
Inflow Area = 1.642 ac, 13.25% Impervious, Inflow Depth > 2.21" for 10-yr event
Inflow = 2.58 cfs @ 12.25 hrs, Volume= 0.303 af
Outflow = 2.58 cfs @ 12.25 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min
Primary = 2.58 cfs @ 12.25 hrs, Volume= 0.303 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 570.29' @ 12.25 hrs
Flood Elev= 573.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	569.50'	**18.0" Round Culvert** L= 42.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.50' / 569.00' S= 0.0119 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.58 cfs @ 12.25 hrs HW=570.29' TW=569.72' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.58 cfs @ 3.98 fps)

Pond CB1: CB1



Summary for Pond CB2: CB2

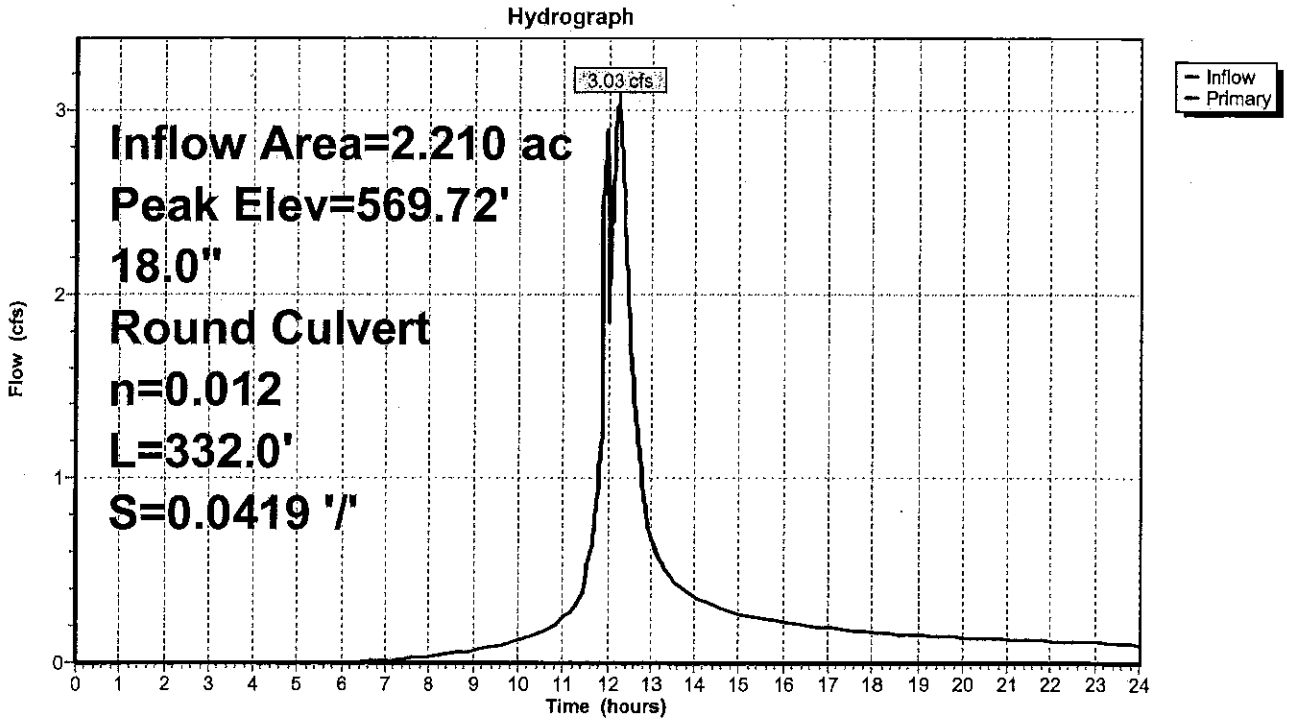
Inflow Area = 2.210 ac, 17.69% Impervious, Inflow Depth > 2.28" for 10-yr event
Inflow = 3.03 cfs @ 12.25 hrs, Volume= 0.421 af
Outflow = 3.03 cfs @ 12.25 hrs, Volume= 0.421 af, Atten= 0%, Lag= 0.0 min
Primary = 3.03 cfs @ 12.25 hrs, Volume= 0.421 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 569.72' @ 12.25 hrs
Flood Elev= 573.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	568.90'	**18.0" Round Culvert** L= 332.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 568.90' / 555.00' S= 0.0419 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.03 cfs @ 12.25 hrs HW=569.72' TW=555.72' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 3.03 cfs @ 3.08 fps)

Pond CB2: CB2



Summary for Pond DMH1: DMH1

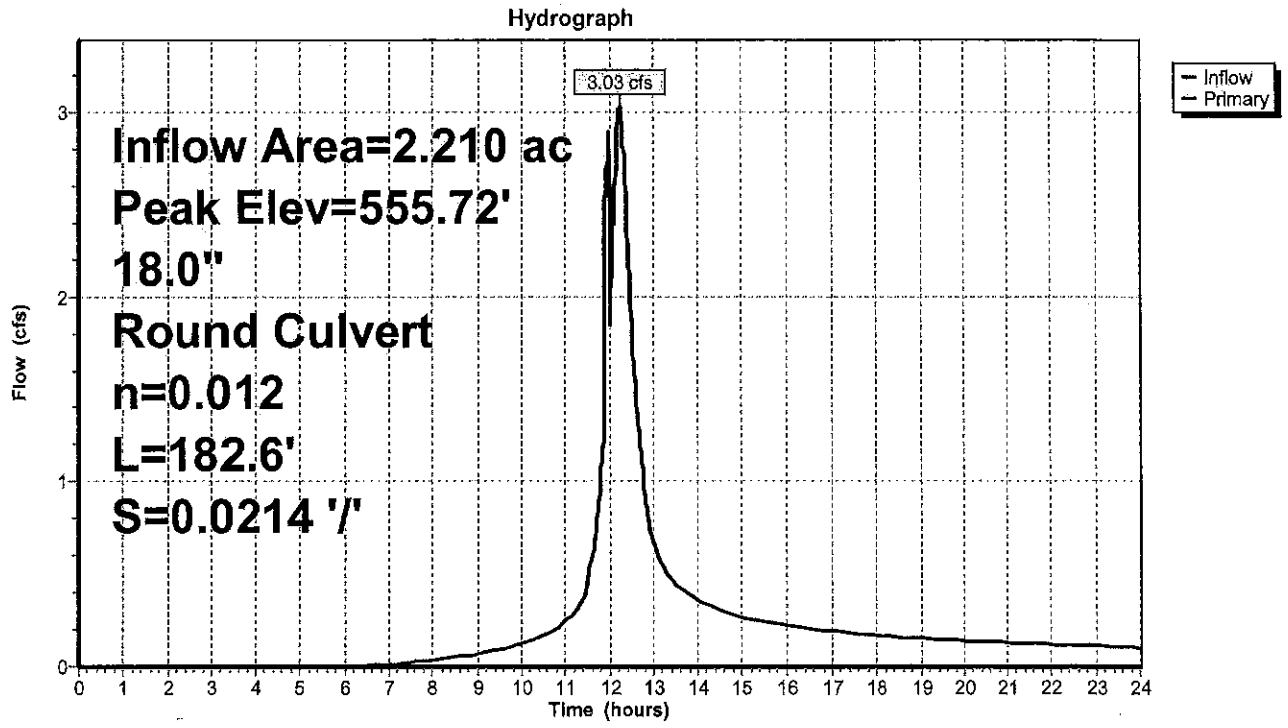
Inflow Area = 2.210 ac, 17.69% Impervious, Inflow Depth > 2.28" for 10-yr event
Inflow = 3.03 cfs @ 12.25 hrs, Volume= 0.421 af
Outflow = 3.03 cfs @ 12.25 hrs, Volume= 0.421 af, Atten= 0%, Lag= 0.0 min
Primary = 3.03 cfs @ 12.25 hrs, Volume= 0.421 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 555.72' @ 12.25 hrs
Flood Elev= 559.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	554.90'	**18.0" Round Culvert** L= 182.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 554.90' / 551.00' S= 0.0214 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.03 cfs @ 12.25 hrs HW=555.72' TW=551.72' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 3.03 cfs @ 3.08 fps)

Pond DMH1: DMH1



Summary for Pond DMH2: DMH2

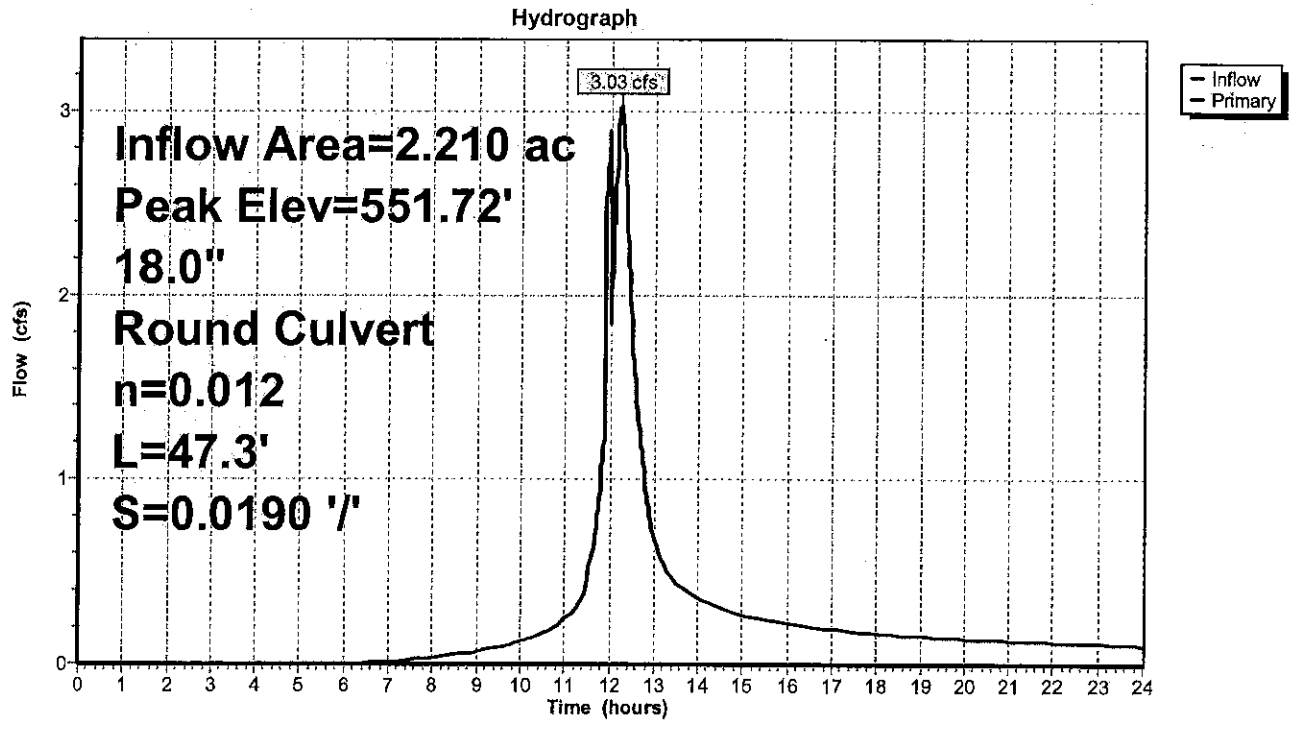
Inflow Area = 2.210 ac, 17.69% Impervious, Inflow Depth > 2.28" for 10-yr event
Inflow = 3.03 cfs @ 12.25 hrs, Volume= 0.421 af
Outflow = 3.03 cfs @ 12.25 hrs, Volume= 0.421 af, Atten= 0%, Lag= 0.0 min
Primary = 3.03 cfs @ 12.25 hrs, Volume= 0.421 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 551.72' @ 12.25 hrs
Flood Elev= 555.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	550.90'	**18.0" Round Culvert** L= 47.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 550.90' / 550.00' S= 0.0190 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.03 cfs @ 12.25 hrs HW=551.72' TW=548.74' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.03 cfs @ 3.08 fps)

Pond DMH2: DMH2



Summary for Pond EX-P1: EX-POND 1

Inflow Area = 7.735 ac, 5.52% Impervious, Inflow Depth > 1.94" for 10-yr event
Inflow = 8.11 cfs @ 12.38 hrs, Volume= 1.252 af
Outflow = 6.83 cfs @ 12.57 hrs, Volume= 1.246 af, Atten= 16%, Lag= 11.3 min
Primary = 6.83 cfs @ 12.57 hrs, Volume= 1.246 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 556.77' @ 12.57 hrs Surf.Area= 2,884 sf Storage= 3,448 cf
Flood Elev= 558.00' Surf.Area= 6,968 sf Storage= 9,322 cf

Plug-Flow detention time= 8.4 min calculated for 1.246 af (100% of inflow)
Center-of-Mass det. time= 5.6 min (877.4 - 871.8)

Volume	Invert	Avail.Storage	Storage Description
#1	553.80'	9,322 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

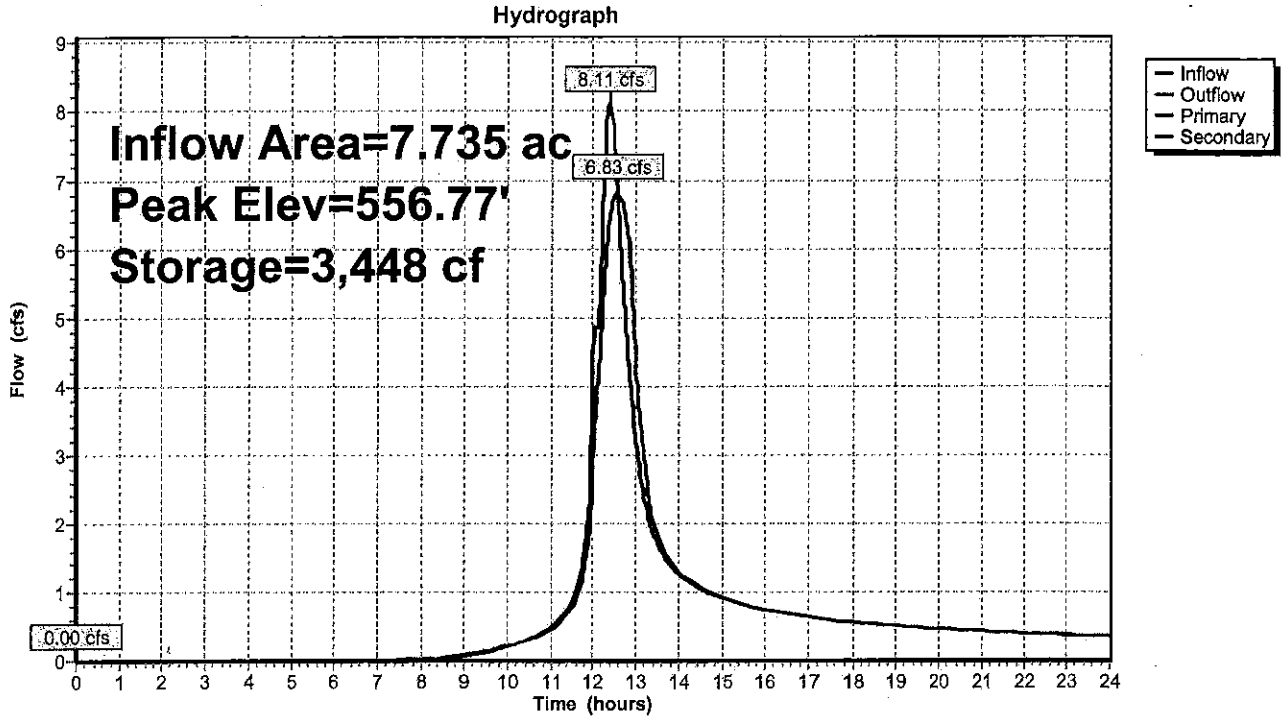
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
553.80	54	34.7	0	0	54
554.00	651	108.3	59	59	892
556.00	1,228	143.6	1,849	1,908	1,643
558.00	6,968	326.9	7,414	9,322	8,522

Device	Routing	Invert	Outlet Devices
#1	Primary	554.00'	**15.0" Round Culvert** L= 16.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 553.80' / 554.00' S= -0.0121 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	557.40'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.83 cfs @ 12.57 hrs HW=556.77' TW=554.37' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 6.83 cfs @ 5.57 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=553.80' TW=554.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond EX-P1: EX-POND 1



Summary for Pond EX-P2: EX-POND 2

Inflow Area = 11.760 ac, 3.63% Impervious, Inflow Depth > 1.89" for 10-yr event
Inflow = 10.37 cfs @ 12.27 hrs, Volume= 1.854 af
Outflow = 9.98 cfs @ 12.40 hrs, Volume= 1.842 af, Atten= 4%, Lag= 8.1 min
Primary = 6.17 cfs @ 12.40 hrs, Volume= 1.697 af
Secondary = 3.81 cfs @ 12.40 hrs, Volume= 0.146 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 548.00' @ 12.40 hrs Surf.Area= 4,958 sf Storage= 7,182 cf
Flood Elev= 550.00' Surf.Area= 10,659 sf Storage= 22,455 cf

Plug-Flow detention time= 14.9 min calculated for 1.842 af (99% of inflow)
Center-of-Mass det. time= 11.5 min (888.8 - 877.3)

Volume	Invert	Avail.Storage	Storage Description
#1	545.40'	22,455 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

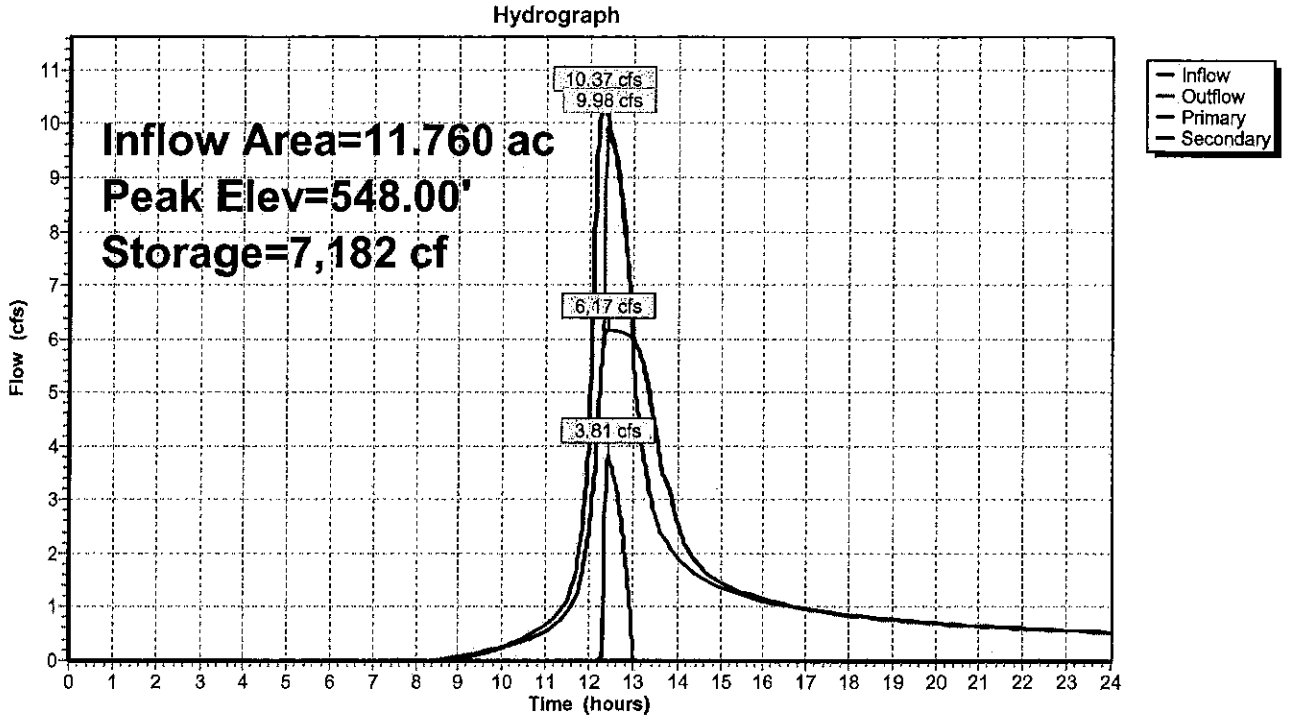
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
545.40	257	79.7	0	0	257
546.00	1,900	206.6	571	571	3,149
548.00	4,962	313.4	6,622	7,193	7,599
550.00	10,659	458.5	15,262	22,455	16,546

Device	Routing	Invert	Outlet Devices
#1	Primary	545.40'	**15.0" Round Culvert** L= 17.8' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 545.40' / 545.40' S= 0.0000 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	547.90'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.17 cfs @ 12.40 hrs HW=548.00' TW=545.87' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 6.17 cfs @ 5.03 fps)

Secondary OutFlow Max=3.81 cfs @ 12.40 hrs HW=548.00' TW=545.87' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 3.81 cfs @ 0.78 fps)

Pond EX-P2: EX-POND 2



Summary for Pond P1: Pipe 1 (P1)

Inflow Area = 2.731 ac, 6.67% Impervious, Inflow Depth > 1.97" for 10-yr event
Inflow = 3.69 cfs @ 12.27 hrs, Volume= 0.449 af
Outflow = 3.65 cfs @ 12.29 hrs, Volume= 0.448 af, Atten= 1%, Lag= 1.7 min
Primary = 3.65 cfs @ 12.29 hrs, Volume= 0.448 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 564.02' @ 12.29 hrs Surf.Area= 622 sf Storage= 358 cf
Flood Elev= 566.80' Surf.Area= 3,360 sf Storage= 4,672 cf

Plug-Flow detention time= 2.3 min calculated for 0.448 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (867.6 - 866.1)

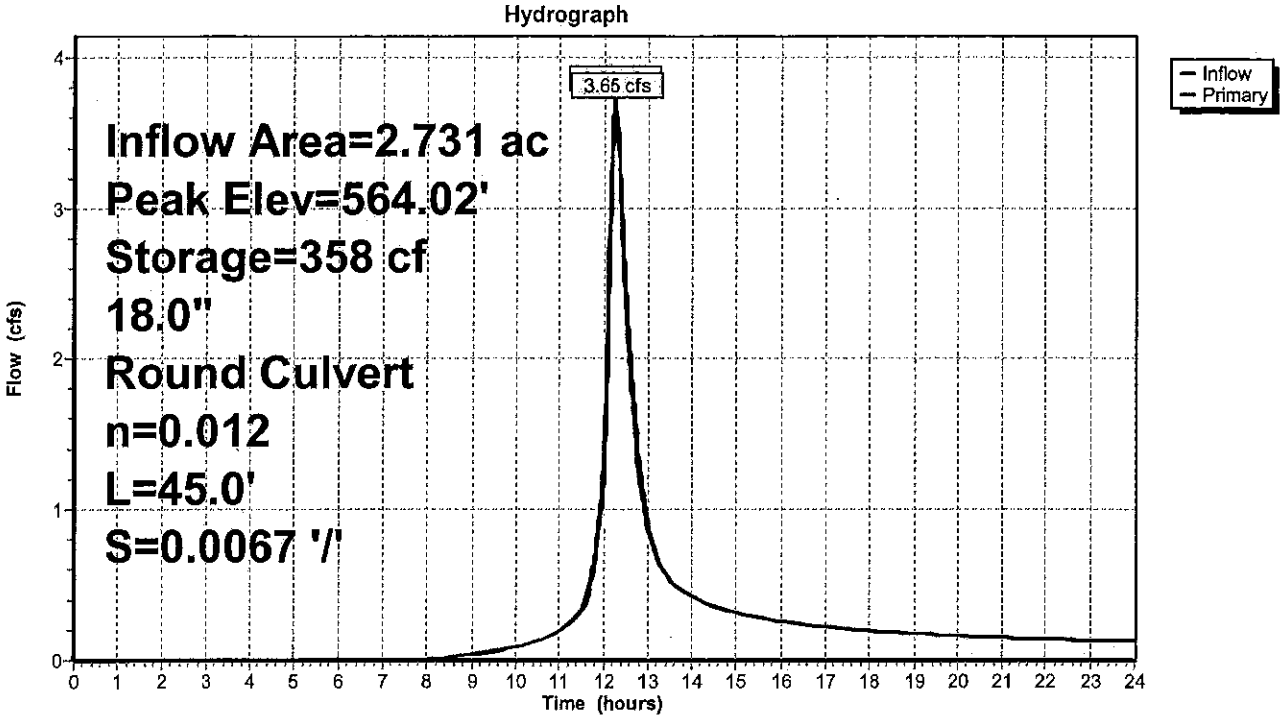
Volume	Invert	Avail.Storage	Storage Description
#1	563.00'	4,672 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
563.00	137	171.0	0	0	137
564.00	614	279.0	347	347	4,011
566.00	1,787	306.0	2,299	2,646	5,397
566.80	3,360	380.6	2,026	4,672	9,483

Device	Routing	Invert	Outlet Devices
#1	Primary	563.00'	**18.0" Round Culvert** L= 45.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 563.00' / 562.70' S= 0.0067 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.65 cfs @ 12.29 hrs HW=564.02' TW=561.56' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 3.65 cfs @ 4.04 fps)

Pond P1: Pipe 1 (P1)



Summary for Pond P2: Pipe 2 (P2)

Inflow Area = 1.340 ac, 5.94% Impervious, Inflow Depth > 2.06" for 10-yr event
Inflow = 2.18 cfs @ 12.18 hrs, Volume= 0.229 af
Outflow = 2.17 cfs @ 12.20 hrs, Volume= 0.229 af, Atten= 0%, Lag= 0.7 min
Primary = 2.17 cfs @ 12.20 hrs, Volume= 0.229 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 562.20' @ 12.20 hrs Surf.Area= 273 sf Storage= 48 cf
Flood Elev= 565.20' Surf.Area= 3,151 sf Storage= 4,238 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (858.2 - 858.2)

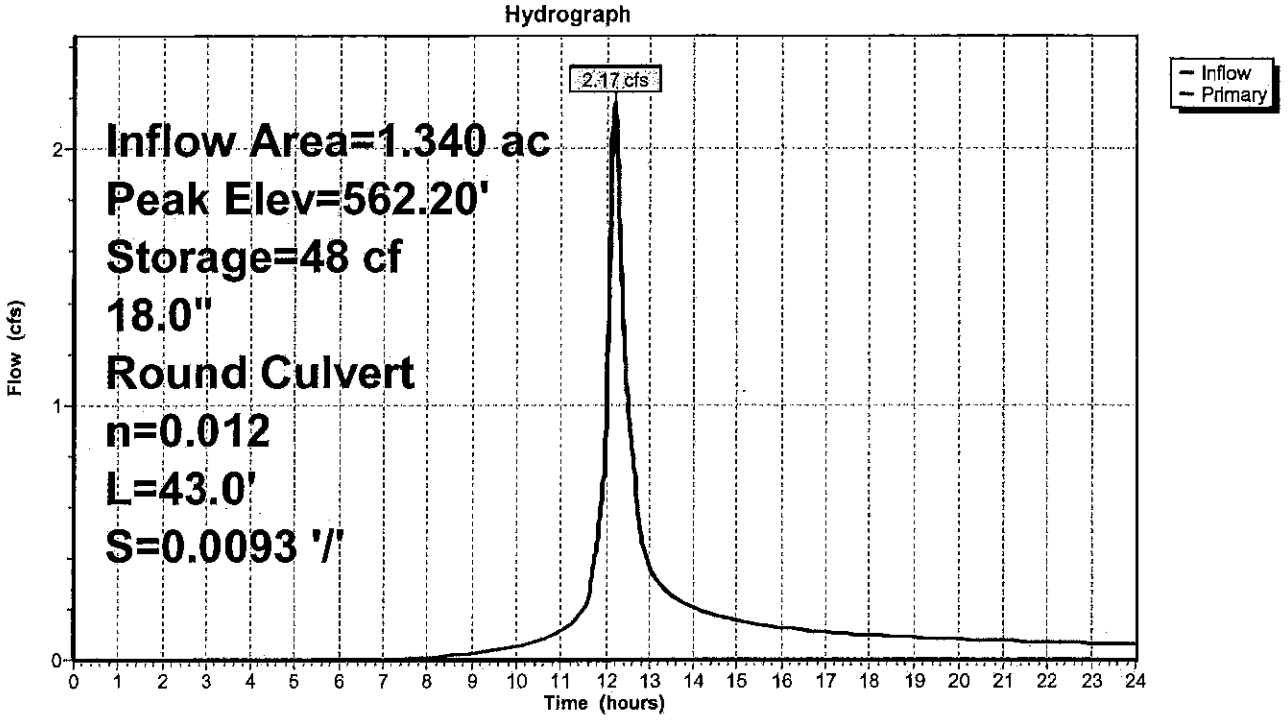
Volume	Invert	Avail.Storage	Storage Description
#1	562.00'	4,238 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
562.00	195	199.0	0	0	195
564.00	1,512	238.5	1,500	1,500	1,638
565.20	3,151	355.0	2,738	4,238	7,152

Device	Routing	Invert	Outlet Devices
#1	Primary	561.50'	**18.0" Round Culvert** L= 43.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 561.50' / 561.10' S= 0.0093 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.17 cfs @ 12.20 hrs HW=562.20' TW=553.46' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.17 cfs @ 3.90 fps)

Pond P2: Pipe 2 (P2)



Summary for Pond P3: Pipe 3 (P3)

Inflow Area = 1.501 ac, 11.16% Impervious, Inflow Depth > 2.21" for 10-yr event
Inflow = 2.23 cfs @ 12.28 hrs, Volume= 0.277 af
Outflow = 2.22 cfs @ 12.30 hrs, Volume= 0.277 af, Atten= 0%, Lag= 0.7 min
Primary = 2.22 cfs @ 12.30 hrs, Volume= 0.277 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 566.07' @ 12.30 hrs Surf.Area= 110 sf Storage= 8 cf
Flood Elev= 568.50' Surf.Area= 578 sf Storage= 670 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (856.2 - 856.2)

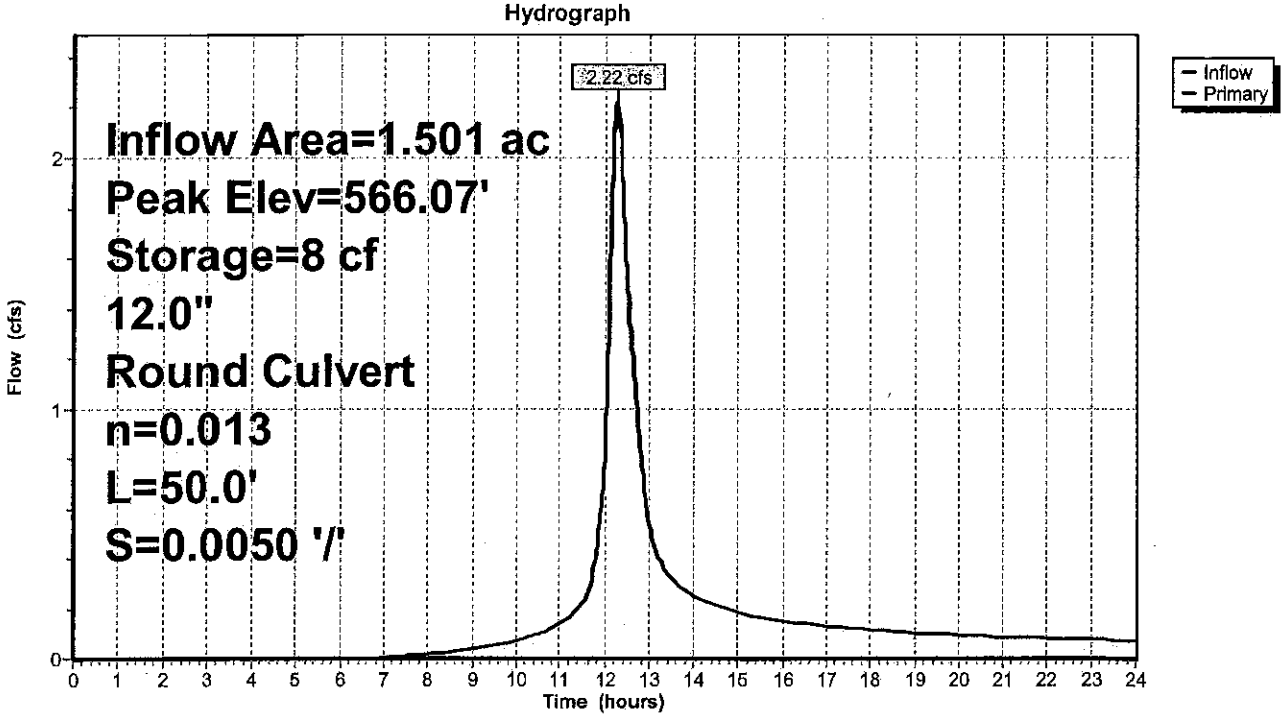
Volume	Invert	Avail.Storage	Storage Description
#1	566.00'	670 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
566.00	92	0	0
568.00	578	670	670

Device	Routing	Invert	Outlet Devices
#1	Primary	565.00'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 565.00' / 564.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.22 cfs @ 12.30 hrs HW=566.07' TW=565.50' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.22 cfs @ 3.28 fps)

Pond P3: Pipe 3 (P3)



Summary for Pond PP: Porous Pave

Inflow Area = 0.061 ac,100.00% Impervious, Inflow Depth > 3.80" for 10-yr event
Inflow = 0.28 cfs @ 11.99 hrs, Volume= 0.019 af
Outflow = 0.05 cfs @ 12.30 hrs, Volume= 0.011 af, Atten= 81%, Lag= 18.7 min
Primary = 0.05 cfs @ 12.30 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 566.15' @ 12.30 hrs Surf.Area= 2,650 sf Storage= 465 cf
Flood Elev= 568.76' Surf.Area= 2,650 sf Storage= 2,324 cf

Plug-Flow detention time= 305.5 min calculated for 0.011 af (58% of inflow)
Center-of-Mass det. time= 166.4 min (914.3 - 747.9)

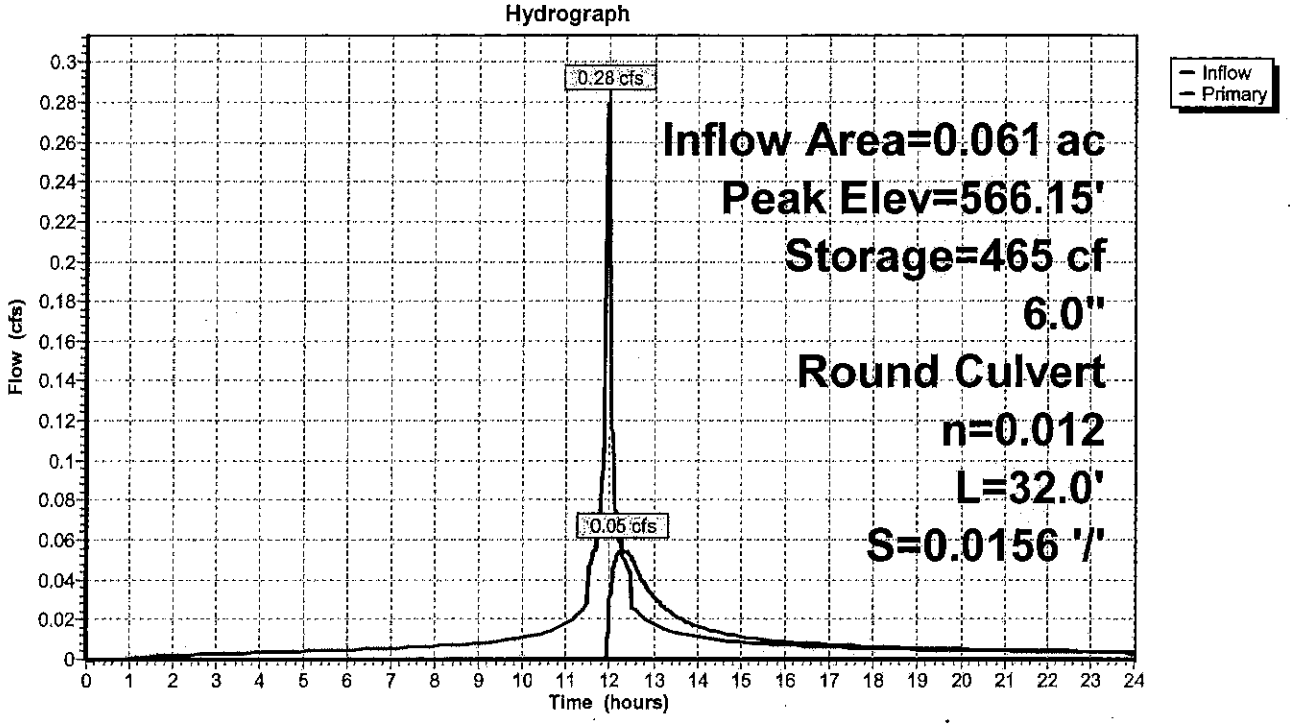
Volume	Invert	Avail.Storage	Storage Description
#1	565.68'	2,324 cf	**., (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
565.68	2,650	406.0	0.0	0	0	2,650
566.85	2,650	406.0	37.0	1,147	1,147	3,125
567.10	2,650	406.0	25.0	166	1,313	3,227
568.10	2,650	406.0	20.0	530	1,843	3,633
568.43	2,650	406.0	25.0	219	2,061	3,767
568.76	2,650	406.0	30.0	262	2,324	3,900

Device	Routing	Invert	Outlet Devices
#1	Primary	566.00'	**6.0" Round Culvert** L= 32.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 566.00' / 565.50' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.05 cfs @ 12.30 hrs HW=566.15' TW=565.50' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.05 cfs @ 1.06 fps)

Pond PP: Porous Pave



Summary for Pond WP1: Wet Pond 1

Inflow Area = 3.321 ac, 12.68% Impervious, Inflow Depth > 2.16" for 10-yr event
Inflow = 4.72 cfs @ 12.19 hrs, Volume= 0.597 af
Outflow = 1.73 cfs @ 12.69 hrs, Volume= 0.591 af, Atten= 63%, Lag= 30.0 min
Primary = 1.73 cfs @ 12.69 hrs, Volume= 0.591 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 547.00' Surf.Area= 1,877 sf Storage= 2,686 cf
Peak Elev= 549.27' @ 12.69 hrs Surf.Area= 5,958 sf Storage= 9,457 cf (6,771 cf above start)
Flood Elev= 551.00' Surf.Area= 7,656 sf Storage= 17,990 cf (15,304 cf above start)

Plug-Flow detention time= 120.3 min calculated for 0.529 af (89% of inflow)
Center-of-Mass det. time= 35.6 min (887.2 - 851.6)

Volume	Invert	Avail.Storage	Storage Description
#1	546.00'	330 cf	**Forebay (Irregular)** Listed below
#2	544.00'	2,356 cf	**Perm Pool (Irregular)** Listed below (Recalc)
#3	547.10'	15,304 cf	**Overall Pond (Irregular)** Listed below (Recalc)
		17,990 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
546.00	192	74.0	0	0	192
547.00	491	103.0	330	330	610

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
544.00	291	87.0	0	0	291
546.00	962	131.0	1,188	1,188	1,085
547.00	1,386	150.0	1,168	2,356	1,532

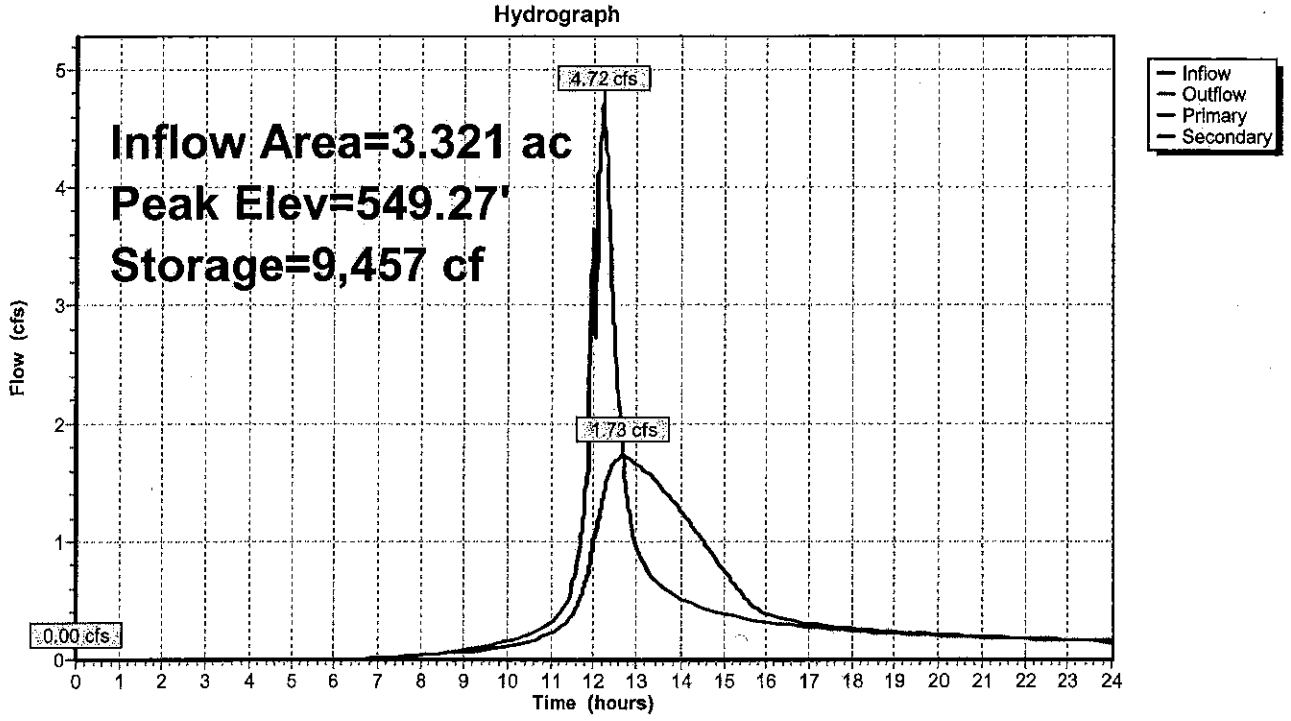
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
547.10	2,179	252.0	0	0	2,179
548.00	2,987	282.0	2,315	2,315	3,476
550.00	4,794	319.0	7,710	10,025	5,345
551.00	5,779	337.0	5,279	15,304	6,340

Device	Routing	Invert	Outlet Devices
#1	Primary	546.00'	**12.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 546.00' / 545.25' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	547.00'	**6.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#3	Device 1	549.25'	**48.0" W x 48.0" H Vert. Orifice/Grate** C= 0.600
#4	Secondary	550.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.73 cfs @ 12.69 hrs HW=549.27' TW=545.48' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.73 cfs of 6.29 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.71 cfs @ 6.83 fps)
  └─**3=Orifice/Grate** (Orifice Controls 0.03 cfs @ 0.41 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=547.00' TW=545.25' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond WP1: Wet Pond 1

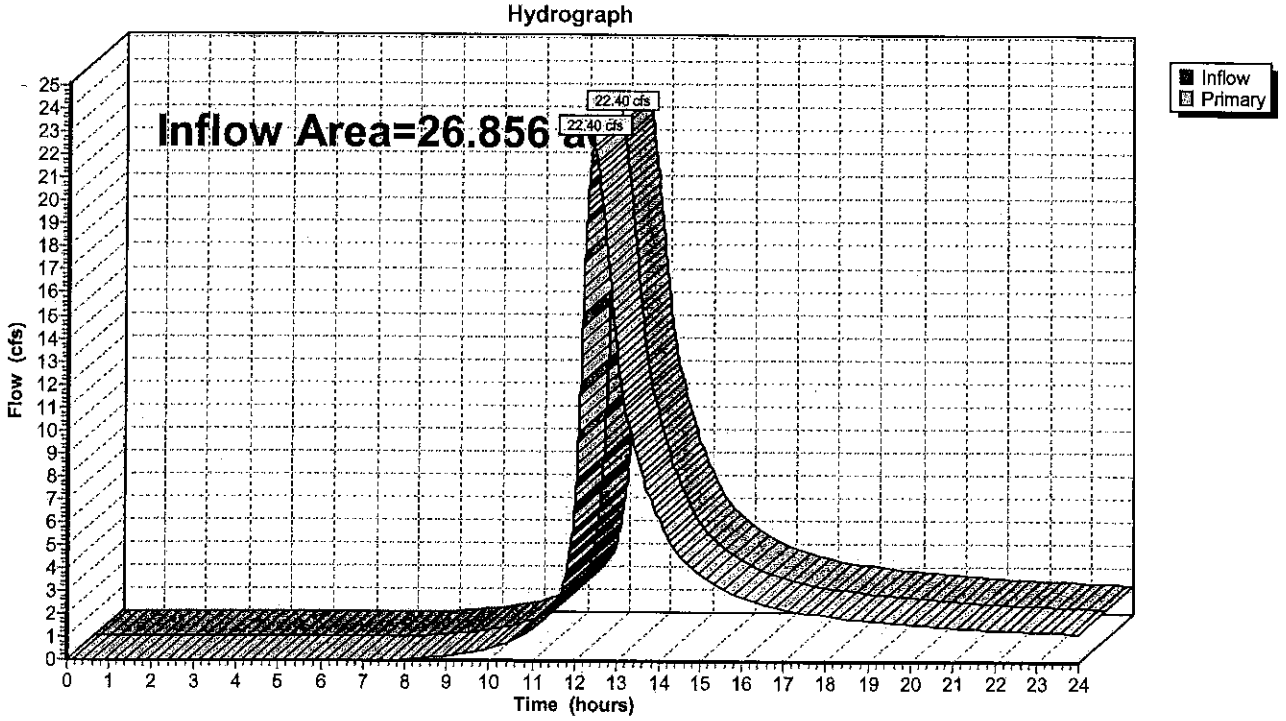


Summary for Link A: A - Colby Rd

Inflow Area = 26.856 ac, 5.16% Impervious, Inflow Depth > 1.94" for 10-yr event
Inflow = 22.40 cfs @ 12.42 hrs, Volume= 4.334 af
Primary = 22.40 cfs @ 12.42 hrs, Volume= 4.334 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: A - Colby Rd

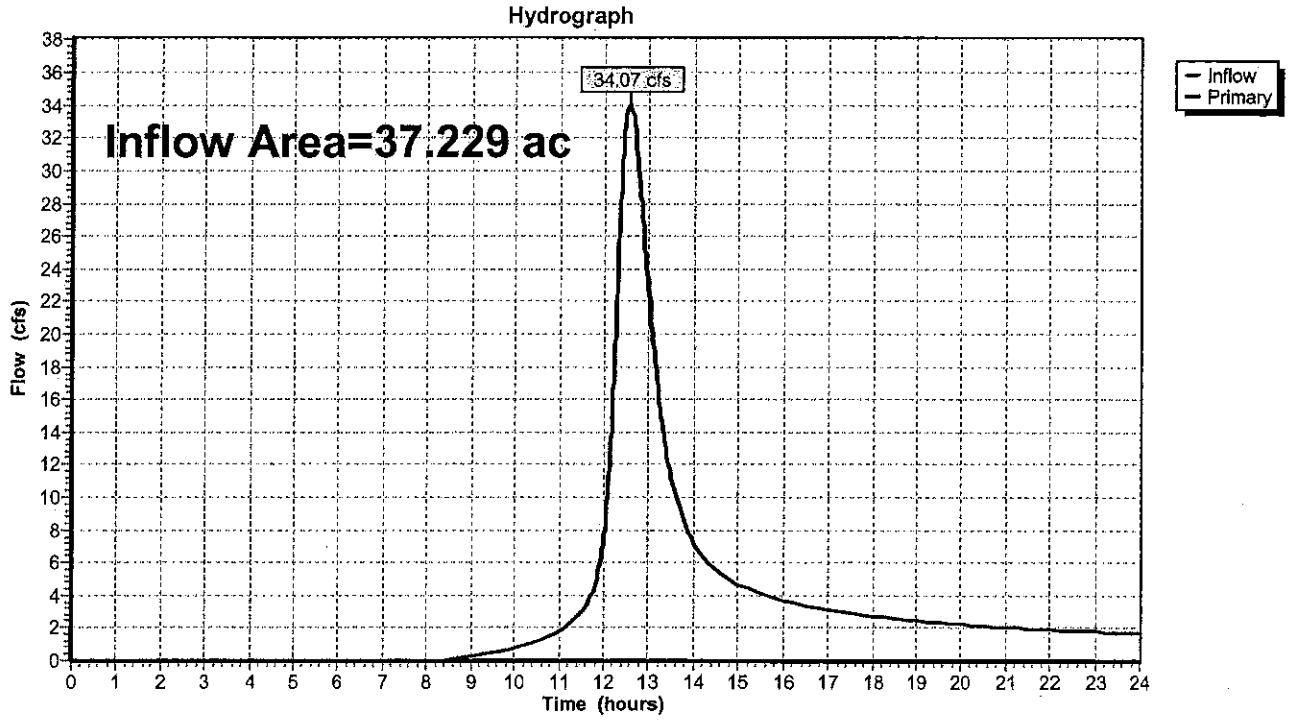


Summary for Link B: B - Kona Farm Rd

Inflow Area = 37.229 ac, 1.54% Impervious, Inflow Depth > 1.90" for 10-yr event
Inflow = 34.07 cfs @ 12.59 hrs, Volume= 5.891 af
Primary = 34.07 cfs @ 12.59 hrs, Volume= 5.891 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link B: B - Kona Farm Rd

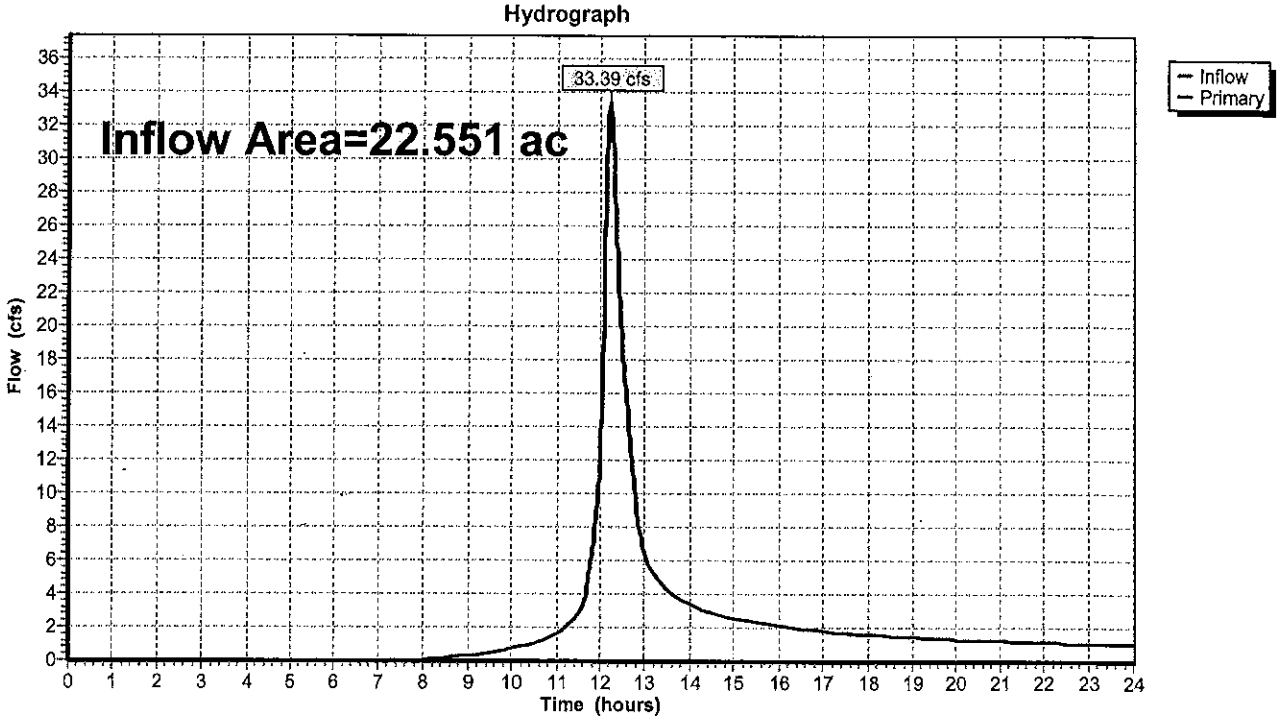


Summary for Link C: C - Lake

Inflow Area = 22.551 ac, 4.66% Impervious, Inflow Depth > 1.97" for 10-yr event
Inflow = 33.39 cfs @ 12.22 hrs, Volume= 3.710 af
Primary = 33.39 cfs @ 12.22 hrs, Volume= 3.710 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link C: C - Lake



A – 2

NODE LISTING – 25-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=118,958 sf 6.67% Impervious Runoff Depth>2.76"
Flow Length=384' Tc=22.3 min CN=79 Runoff=5.18 cfs 0.629 af

Subcatchment A10: A10 Runoff Area=52,652 sf 4.24% Impervious Runoff Depth>2.68"
Flow Length=529' Tc=21.8 min CN=78 Runoff=2.23 cfs 0.270 af

Subcatchment A11: A11 Runoff Area=48,409 sf 2.71% Impervious Runoff Depth>2.68"
Flow Length=290' Tc=13.7 min CN=78 Runoff=2.54 cfs 0.248 af

Subcatchment A12: A12 Runoff Area=2,650 sf 100.00% Impervious Runoff Depth>4.74"
Flow Length=1' Tc=0.0 min CN=98 Runoff=0.34 cfs 0.024 af

Subcatchment A13: A13 Runoff Area=24,765 sf 30.51% Impervious Runoff Depth>3.34"
Flow Length=490' Tc=10.2 min CN=85 Runoff=1.83 cfs 0.158 af

Subcatchment A2: A2 Runoff Area=40,497 sf 26.38% Impervious Runoff Depth>3.35"
Flow Length=679' Slope=0.0680 '/' Tc=1.0 min CN=85 Runoff=4.23 cfs 0.259 af

Subcatchment A3: A3 Runoff Area=177,460 sf 0.00% Impervious Runoff Depth>2.58"
Flow Length=671' Tc=35.1 min CN=77 Runoff=5.77 cfs 0.875 af

Subcatchment A4: A4 Runoff Area=58,353 sf 5.94% Impervious Runoff Depth>2.86"
Flow Length=467' Tc=16.3 min CN=80 Runoff=3.02 cfs 0.319 af

Subcatchment A5: A5 Runoff Area=17,254 sf 14.22% Impervious Runoff Depth>3.05"
Flow Length=67' Tc=7.1 min CN=82 Runoff=1.34 cfs 0.101 af

Subcatchment A6: A6 Runoff Area=175,331 sf 0.00% Impervious Runoff Depth>2.59"
Flow Length=487' Tc=17.9 min CN=77 Runoff=7.88 cfs 0.869 af

Subcatchment A7: A7 Runoff Area=316,640 sf 1.66% Impervious Runoff Depth>2.67"
Flow Length=906' Tc=25.7 min CN=78 Runoff=12.44 cfs 1.619 af

Subcatchment A8: A8 Runoff Area=71,509 sf 13.25% Impervious Runoff Depth>3.04"
Flow Length=722' Tc=21.0 min CN=82 Runoff=3.53 cfs 0.416 af

Subcatchment A9: A9 Runoff Area=65,389 sf 11.16% Impervious Runoff Depth>3.04"
Flow Length=869' Tc=23.6 min CN=82 Runoff=3.05 cfs 0.380 af

Subcatchment B1: B1 Runoff Area=155,738 sf 12.41% Impervious Runoff Depth>2.94"
Flow Length=425' Tc=29.2 min CN=81 Runoff=6.34 cfs 0.876 af

Subcatchment B2: B2 Runoff Area=1,465,936 sf 0.39% Impervious Runoff Depth>2.66"
Flow Length=1,724' Tc=43.1 min CN=78 Runoff=44.24 cfs 7.450 af

Subcatchment C1: C1 Runoff Area=982,300 sf 4.66% Impervious Runoff Depth>2.77"
Flow Length=860' Tc=18.4 min UI Adjusted CN=79 Runoff=46.86 cfs 5.202 af

Reach R1: R1 Avg. Flow Depth=0.44' Max Vel=1.27 fps Inflow=10.37 cfs 1.751 af
n=0.100 L=232.0' S=0.0371 '/' Capacity=58.16 cfs Outflow=10.05 cfs 1.746 af

Reach R2: R2 Avg. Flow Depth=0.61' Max Vel=1.04 fps Inflow=13.90 cfs 2.601 af
n=0.100 L=464.0' S=0.0162 '/' Capacity=38.40 cfs Outflow=13.29 cfs 2.583 af

Reach R3: R3 Avg. Flow Depth=0.34' Max Vel=0.70 fps Inflow=4.30 cfs 0.815 af
n=0.100 L=464.0' S=0.0158 '/' Capacity=38.02 cfs Outflow=3.71 cfs 0.807 af

Reach R4: R4 Avg. Flow Depth=0.58' Max Vel=8.03 fps Inflow=46.86 cfs 5.202 af
n=0.030 L=275.0' S=0.0945 '/' Capacity=154.29 cfs Outflow=46.80 cfs 5.199 af

Reach R5: R5 Avg. Flow Depth=0.33' Max Vel=1.20 fps Inflow=6.01 cfs 0.885 af
n=0.100 L=125.0' S=0.0496 '/' Capacity=67.27 cfs Outflow=5.97 cfs 0.884 af

Reach R6: R6 Avg. Flow Depth=0.28' Max Vel=0.79 fps Inflow=3.68 cfs 0.419 af
n=0.100 L=541.0' S=0.0267 '/' Capacity=49.37 cfs Outflow=3.07 cfs 0.414 af

Reach R7: R7 Avg. Flow Depth=0.35' Max Vel=0.81 fps Inflow=6.28 cfs 0.873 af
n=0.100 L=1,298.0' S=0.0207 '/' Capacity=43.49 cfs Outflow=4.44 cfs 0.853 af

Reach R8: R8 Avg. Flow Depth=0.64' Max Vel=5.43 fps Inflow=5.25 cfs 0.665 af
n=0.030 L=563.0' S=0.0469 '/' Capacity=53.39 cfs Outflow=5.22 cfs 0.664 af

Reach R9: R9 Avg. Flow Depth=0.58' Max Vel=2.45 fps Inflow=3.08 cfs 0.396 af
n=0.022 L=112.0' S=0.0054 '/' Capacity=25.10 cfs Outflow=3.08 cfs 0.396 af

Reach TS1: TS1 Avg. Flow Depth=0.68' Max Vel=0.88 fps Inflow=6.09 cfs 0.888 af
n=0.080 L=150.0' S=0.0050 '/' Capacity=45.05 cfs Outflow=6.01 cfs 0.885 af

Reach TS2: TS2 Avg. Flow Depth=0.55' Max Vel=0.87 fps Inflow=3.73 cfs 0.420 af
n=0.070 L=130.0' S=0.0050 '/' Capacity=10.96 cfs Outflow=3.68 cfs 0.419 af

Reach TS3: TS3 Avg. Flow Depth=0.69' Max Vel=0.90 fps Inflow=6.34 cfs 0.876 af
n=0.080 L=150.0' S=0.0050 '/' Capacity=12.12 cfs Outflow=6.28 cfs 0.873 af

Pond CB1: CB1 Peak Elev=570.49' Inflow=3.53 cfs 0.416 af
18.0" Round Culvert n=0.012 L=42.1' S=0.0119 '/' Outflow=3.53 cfs 0.416 af

Pond CB2: CB2 Peak Elev=569.96' Inflow=4.70 cfs 0.574 af
18.0" Round Culvert n=0.012 L=332.0' S=0.0419 '/' Outflow=4.70 cfs 0.574 af

Pond DMH1: DMH1 Peak Elev=555.96' Inflow=4.70 cfs 0.574 af
18.0" Round Culvert n=0.012 L=182.6' S=0.0214 '/' Outflow=4.70 cfs 0.574 af

Pond DMH2: DMH2 Peak Elev=551.96' Inflow=4.70 cfs 0.574 af
18.0" Round Culvert n=0.012 L=47.3' S=0.0190 '/' Outflow=4.70 cfs 0.574 af

Pond EX-P1: EX-POND 1 Peak Elev=557.47' Storage=6,187 cf Inflow=11.47 cfs 1.758 af
Primary=7.87 cfs 1.717 af Secondary=2.50 cfs 0.034 af Outflow=10.37 cfs 1.751 af

Pond EX-P2: EX-POND 2 Peak Elev=548.06' Storage=7,469 cf Inflow=14.07 cfs 2.615 af
Primary=6.30 cfs 2.176 af Secondary=7.60 cfs 0.425 af Outflow=13.90 cfs 2.601 af

Pond P1: Pipe 1 (P1) Peak Elev=564.26' Storage=522 cf Inflow=5.18 cfs 0.629 af
18.0" Round Culvert n=0.012 L=45.0' S=0.0067 '/' Outflow=5.11 cfs 0.628 af

Pond P2: Pipe 2 (P2) Peak Elev=562.36' Storage=93 cf Inflow=3.02 cfs 0.319 af
18.0" Round Culvert n=0.012 L=43.0' S=0.0093 '/' Outflow=3.01 cfs 0.319 af

Pond P3: Pipe 3 (P3) Peak Elev=566.58' Storage=95 cf Inflow=3.05 cfs 0.380 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0050 '/' Outflow=2.99 cfs 0.380 af

Pond PP: Porous Pave Peak Elev=566.22' Storage=530 cf Inflow=0.34 cfs 0.024 af
6.0" Round Culvert n=0.012 L=32.0' S=0.0156 '/' Outflow=0.11 cfs 0.016 af

Pond WP1: Wet Pond 1 Peak Elev=549.58' Storage=10,797 cf Inflow=7.18 cfs 0.823 af
Primary=4.30 cfs 0.815 af Secondary=0.00 cfs 0.000 af Outflow=4.30 cfs 0.815 af

Link A: A - Colby Rd Inflow=34.50 cfs 6.087 af
Primary=34.50 cfs 6.087 af

Link B: B - Kona Farm Rd Inflow=48.55 cfs 8.303 af
Primary=48.55 cfs 8.303 af

Link C: C - Lake Inflow=46.80 cfs 5.199 af
Primary=46.80 cfs 5.199 af

Total Runoff Area = 86.635 ac Runoff Volume = 19.697 af Average Runoff Depth = 2.73"
96.53% Pervious = 83.626 ac 3.47% Impervious = 3.010 ac

A – 2

NODE LISTING – 50-YR

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=118,958 sf 6.67% Impervious Runoff Depth>3.51"
Flow Length=384' Tc=22.3 min CN=79 Runoff=6.53 cfs 0.800 af

Subcatchment A10: A10 Runoff Area=52,652 sf 4.24% Impervious Runoff Depth>3.42"
Flow Length=529' Tc=21.8 min CN=78 Runoff=2.83 cfs 0.344 af

Subcatchment A11: A11 Runoff Area=48,409 sf 2.71% Impervious Runoff Depth>3.42"
Flow Length=290' Tc=13.7 min CN=78 Runoff=3.20 cfs 0.317 af

Subcatchment A12: A12 Runoff Area=2,650 sf 100.00% Impervious Runoff Depth>5.60"
Flow Length=1' Tc=0.0 min CN=98 Runoff=0.39 cfs 0.028 af

Subcatchment A13: A13 Runoff Area=24,765 sf 30.51% Impervious Runoff Depth>4.14"
Flow Length=490' Tc=10.2 min CN=85 Runoff=2.21 cfs 0.196 af

Subcatchment A2: A2 Runoff Area=40,497 sf 26.38% Impervious Runoff Depth>4.15"
Flow Length=679' Slope=0.0680 '/' Tc=1.0 min CN=85 Runoff=5.04 cfs 0.322 af

Subcatchment A3: A3 Runoff Area=177,460 sf 0.00% Impervious Runoff Depth>3.30"
Flow Length=671' Tc=35.1 min CN=77 Runoff=7.40 cfs 1.121 af

Subcatchment A4: A4 Runoff Area=58,353 sf 5.94% Impervious Runoff Depth>3.62"
Flow Length=467' Tc=16.3 min CN=80 Runoff=3.77 cfs 0.404 af

Subcatchment A5: A5 Runoff Area=17,254 sf 14.22% Impervious Runoff Depth>3.83"
Flow Length=67' Tc=7.1 min CN=82 Runoff=1.63 cfs 0.127 af

Subcatchment A6: A6 Runoff Area=175,331 sf 0.00% Impervious Runoff Depth>3.32"
Flow Length=487' Tc=17.9 min CN=77 Runoff=10.02 cfs 1.114 af

Subcatchment A7: A7 Runoff Area=316,640 sf 1.66% Impervious Runoff Depth>3.41"
Flow Length=906' Tc=25.7 min CN=78 Runoff=15.80 cfs 2.066 af

Subcatchment A8: A8 Runoff Area=71,509 sf 13.25% Impervious Runoff Depth>3.82"
Flow Length=722' Tc=21.0 min CN=82 Runoff=4.37 cfs 0.522 af

Subcatchment A9: A9 Runoff Area=65,389 sf 11.16% Impervious Runoff Depth>3.81"
Flow Length=869' Tc=23.6 min CN=82 Runoff=3.78 cfs 0.477 af

Subcatchment B1: B1 Runoff Area=155,738 sf 12.41% Impervious Runoff Depth>3.71"
Flow Length=425' Tc=29.2 min CN=81 Runoff=7.94 cfs 1.104 af

Subcatchment B2: B2 Runoff Area=1,465,936 sf 0.39% Impervious Runoff Depth>3.39"
Flow Length=1,724' Tc=43.1 min CN=78 Runoff=56.57 cfs 9.513 af

Subcatchment C1: C1 Runoff Area=982,300 sf 4.66% Impervious Runoff Depth>3.52"
Flow Length=860' Tc=18.4 min UI Adjusted CN=79 Runoff=58.90 cfs 6.611 af

Reach R1: R1 Avg. Flow Depth=0.52' Max Vel=1.42 fps Inflow=14.50 cfs 2.229 af
n=0.100 L=232.0' S=0.0371 '/' Capacity=58.16 cfs Outflow=14.26 cfs 2.224 af

Reach R2: R2 Avg. Flow Depth=0.73' Max Vel=1.17 fps Inflow=20.34 cfs 3.320 af
n=0.100 L=464.0' S=0.0162 '/' Capacity=38.40 cfs Outflow=19.36 cfs 3.300 af

Reach R3: R3 Avg. Flow Depth=0.41' Max Vel=0.79 fps Inflow=6.59 cfs 1.026 af
n=0.100 L=464.0' S=0.0158 '/' Capacity=38.02 cfs Outflow=5.63 cfs 1.017 af

Reach R4: R4 Avg. Flow Depth=0.64' Max Vel=8.61 fps Inflow=58.90 cfs 6.611 af
n=0.030 L=275.0' S=0.0945 '/' Capacity=154.29 cfs Outflow=58.84 cfs 6.607 af

Reach R5: R5 Avg. Flow Depth=0.36' Max Vel=1.29 fps Inflow=7.55 cfs 1.117 af
n=0.100 L=125.0' S=0.0496 '/' Capacity=67.27 cfs Outflow=7.52 cfs 1.116 af

Reach R6: R6 Avg. Flow Depth=0.31' Max Vel=0.85 fps Inflow=4.59 cfs 0.529 af
n=0.100 L=541.0' S=0.0267 '/' Capacity=49.37 cfs Outflow=3.92 cfs 0.524 af

Reach R7: R7 Avg. Flow Depth=0.39' Max Vel=0.88 fps Inflow=7.87 cfs 1.101 af
n=0.100 L=1,298.0' S=0.0207 '/' Capacity=43.49 cfs Outflow=5.78 cfs 1.078 af

Reach R8: R8 Avg. Flow Depth=0.71' Max Vel=5.74 fps Inflow=6.44 cfs 0.841 af
n=0.030 L=563.0' S=0.0469 '/' Capacity=53.39 cfs Outflow=6.42 cfs 0.840 af

Reach R9: R9 Avg. Flow Depth=0.64' Max Vel=2.58 fps Inflow=3.74 cfs 0.497 af
n=0.022 L=112.0' S=0.0054 '/' Capacity=25.10 cfs Outflow=3.73 cfs 0.497 af

Reach TS1: TS1 Avg. Flow Depth=0.77' Max Vel=0.95 fps Inflow=7.64 cfs 1.120 af
n=0.080 L=150.0' S=0.0050 '/' Capacity=45.05 cfs Outflow=7.55 cfs 1.117 af

Reach TS2: TS2 Avg. Flow Depth=0.62' Max Vel=0.94 fps Inflow=4.65 cfs 0.531 af
n=0.070 L=130.0' S=0.0050 '/' Capacity=10.96 cfs Outflow=4.59 cfs 0.529 af

Reach TS3: TS3 Avg. Flow Depth=0.79' Max Vel=0.96 fps Inflow=7.94 cfs 1.104 af
n=0.080 L=150.0' S=0.0050 '/' Capacity=12.12 cfs Outflow=7.87 cfs 1.101 af

Pond CB1: CB1 Peak Elev=570.66' Inflow=4.37 cfs 0.522 af
18.0" Round Culvert n=0.012 L=42.1' S=0.0119 '/' Outflow=4.37 cfs 0.522 af

Pond CB2: CB2 Peak Elev=570.12' Inflow=5.82 cfs 0.718 af
18.0" Round Culvert n=0.012 L=332.0' S=0.0419 '/' Outflow=5.82 cfs 0.718 af

Pond DMH1: DMH1 Peak Elev=556.12' Inflow=5.82 cfs 0.718 af
18.0" Round Culvert n=0.012 L=182.6' S=0.0214 '/' Outflow=5.82 cfs 0.718 af

Pond DMH2: DMH2 Peak Elev=552.12' Inflow=5.82 cfs 0.718 af
18.0" Round Culvert n=0.012 L=47.3' S=0.0190 '/' Outflow=5.82 cfs 0.718 af

Pond EX-P1: EX-POND 1 Peak Elev=557.54' Storage=6,527 cf Inflow=14.59 cfs 2.237 af
Primary=7.96 cfs 2.054 af Secondary=6.54 cfs 0.175 af Outflow=14.50 cfs 2.229 af

Pond EX-P2: EX-POND 2 Peak Elev=548.13' Storage=7,862 cf Inflow=20.41 cfs 3.338 af
Primary=6.47 cfs 2.573 af Secondary=13.87 cfs 0.747 af Outflow=20.34 cfs 3.320 af

Pond P1: Pipe 1 (P1) Peak Elev=564.48' Storage=691 cf Inflow=6.53 cfs 0.800 af
18.0" Round Culvert n=0.012 L=45.0' S=0.0067 '/' Outflow=6.41 cfs 0.799 af

Pond P2: Pipe 2 (P2) Peak Elev=562.48' Storage=139 cf Inflow=3.77 cfs 0.404 af
18.0" Round Culvert n=0.012 L=43.0' S=0.0093 '/' Outflow=3.75 cfs 0.404 af

Pond P3: Pipe 3 (P3) Peak Elev=567.10' Storage=250 cf Inflow=3.78 cfs 0.477 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0050 '/' Outflow=3.62 cfs 0.477 af

Pond PP: Porous Pave Peak Elev=566.27' Storage=578 cf Inflow=0.39 cfs 0.028 af
6.0" Round Culvert n=0.012 L=32.0' S=0.0156 '/' Outflow=0.15 cfs 0.020 af

Pond WP1: Wet Pond 1 Peak Elev=549.76' Storage=11,592 cf Inflow=8.93 cfs 1.035 af
Primary=6.59 cfs 1.026 af Secondary=0.00 cfs 0.000 af Outflow=6.59 cfs 1.026 af

Link A: A - Colby Rd Inflow=47.03 cfs 7.747 af
Primary=47.03 cfs 7.747 af

Link B: B - Kona Farm Rd Inflow=62.20 cfs 10.591 af
Primary=62.20 cfs 10.591 af

Link C: C - Lake Inflow=58.84 cfs 6.607 af
Primary=58.84 cfs 6.607 af

Total Runoff Area = 86.635 ac Runoff Volume = 25.066 af Average Runoff Depth = 3.47"
96.53% Pervious = 83.626 ac 3.47% Impervious = 3.010 ac

A – 2

50-YR STORM SUMMARY

Summary for Subcatchment A1: A1

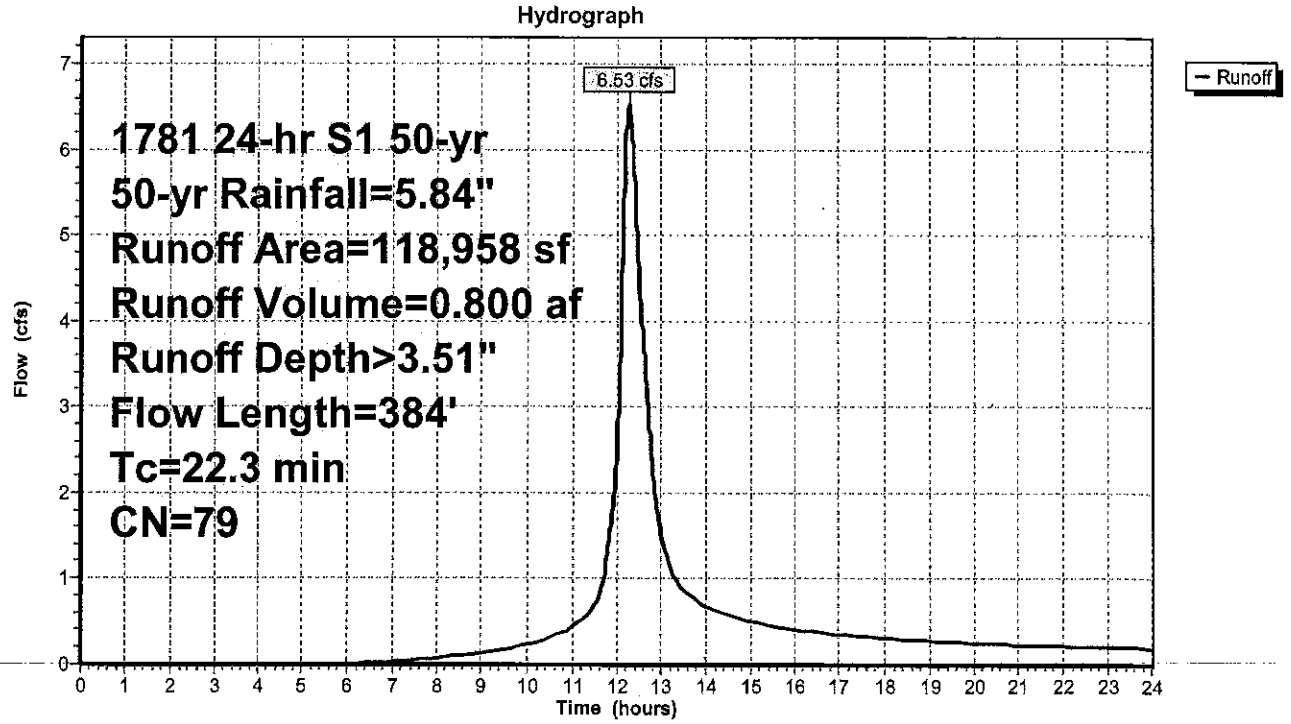
Runoff = 6.53 cfs @ 12.26 hrs, Volume= 0.800 af, Depth> 3.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
94,144	77	Woods, Good, HSG D
16,884	80	>75% Grass cover, Good, HSG D
7,930	98	Paved parking, HSG D
118,958	79	Weighted Average
111,028		93.33% Pervious Area
7,930		6.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	100	0.0330	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
3.1	209	0.0490	1.11		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	75	0.0600	3.67		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
22.3	384	Total			

Subcatchment A1: A1



Summary for Subcatchment A2: A2

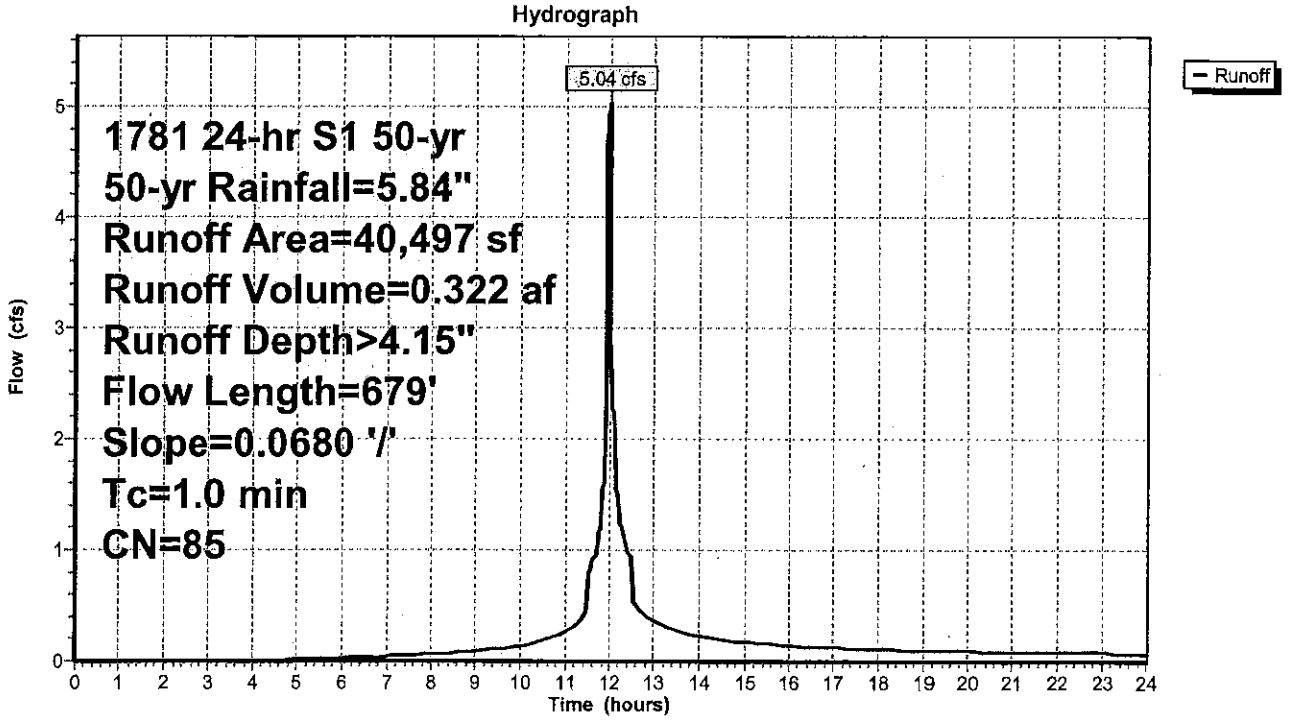
Runoff = 5.04 cfs @ 12.00 hrs, Volume= 0.322 af, Depth> 4.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
27,810	80	>75% Grass cover, Good, HSG D
10,684	98	Paved parking, HSG D
2,003	77	Woods, Good, HSG D
40,497	85	Weighted Average
29,813		73.62% Pervious Area
10,684		26.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	679	0.0680	11.03	55.17	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=1.00' Z= 3.0 '/' Top.W=8.00' n= 0.025 Earth, grassed & winding

Subcatchment A2: A2



Summary for Subcatchment A3: A3

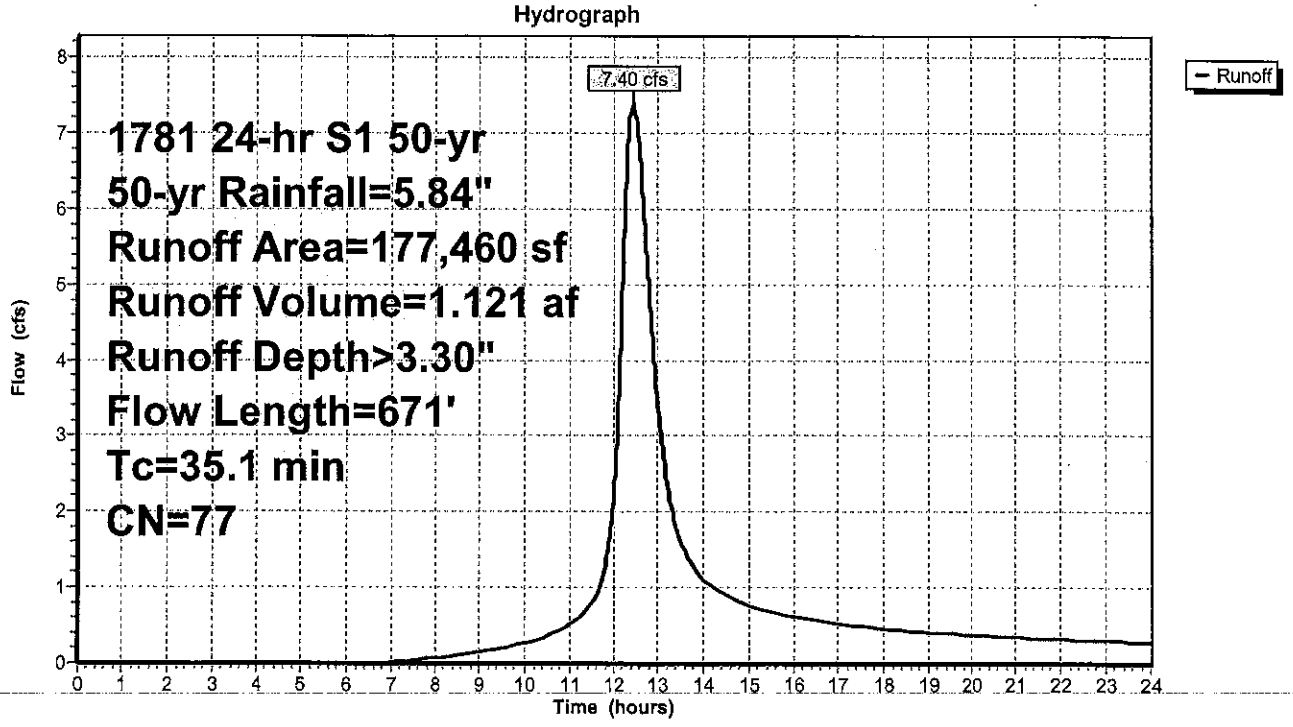
Runoff = 7.40 cfs @ 12.44 hrs, Volume= 1.121 af, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
170,197	77	Woods, Good, HSG D
7,263	80	>75% Grass cover, Good, HSG D
177,460	77	Weighted Average
177,460		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.3	100	0.0110	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
3.3	317	0.1010	1.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	254	0.0230	1.72	45.81	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
35.1	671	Total			

Subcatchment A3: A3



Summary for Subcatchment A4: A4

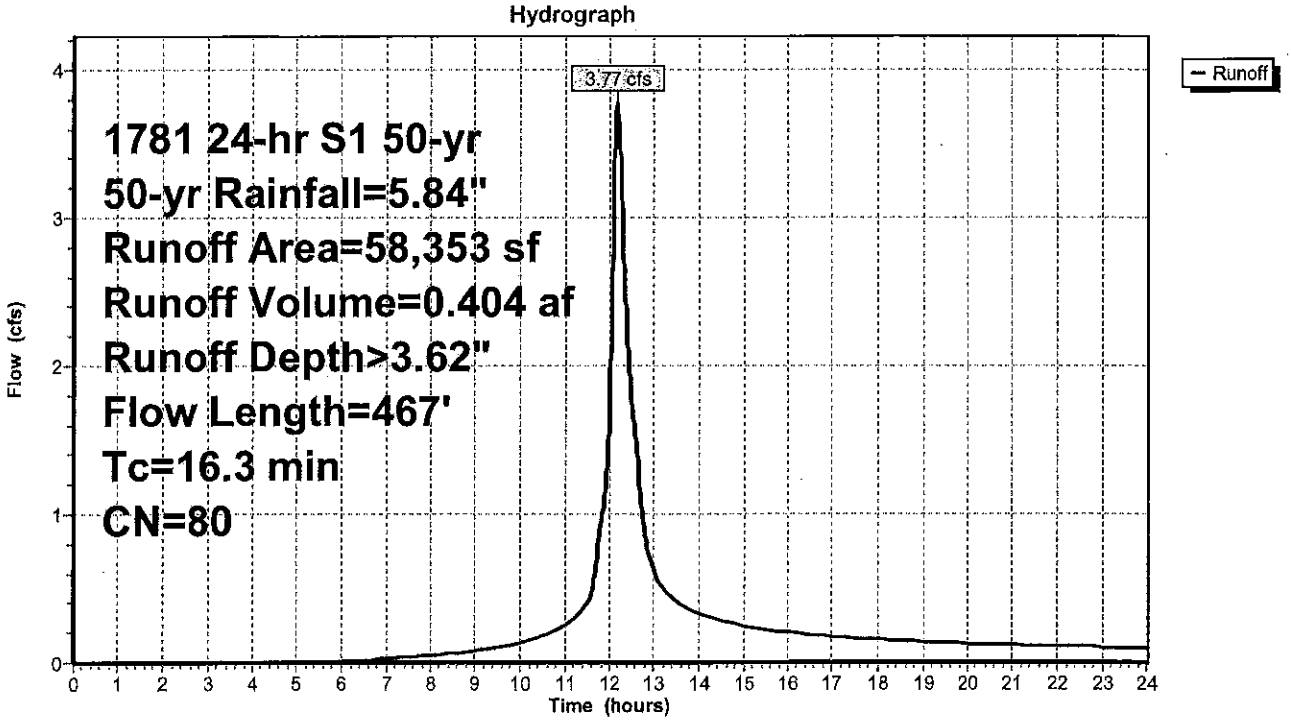
Runoff = 3.77 cfs @ 12.18 hrs, Volume= 0.404 af, Depth> 3.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
30,122	77	Woods, Good, HSG D
24,766	80	>75% Grass cover, Good, HSG D
3,465	98	Paved parking, HSG D
58,353	80	Weighted Average
54,888		94.06% Pervious Area
3,465		5.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	100	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"
0.8	75	0.0470	1.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	112	0.0510	1.13		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	180	0.0560	3.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
16.3	467	Total			

Subcatchment A4: A4



Summary for Subcatchment A5: A5

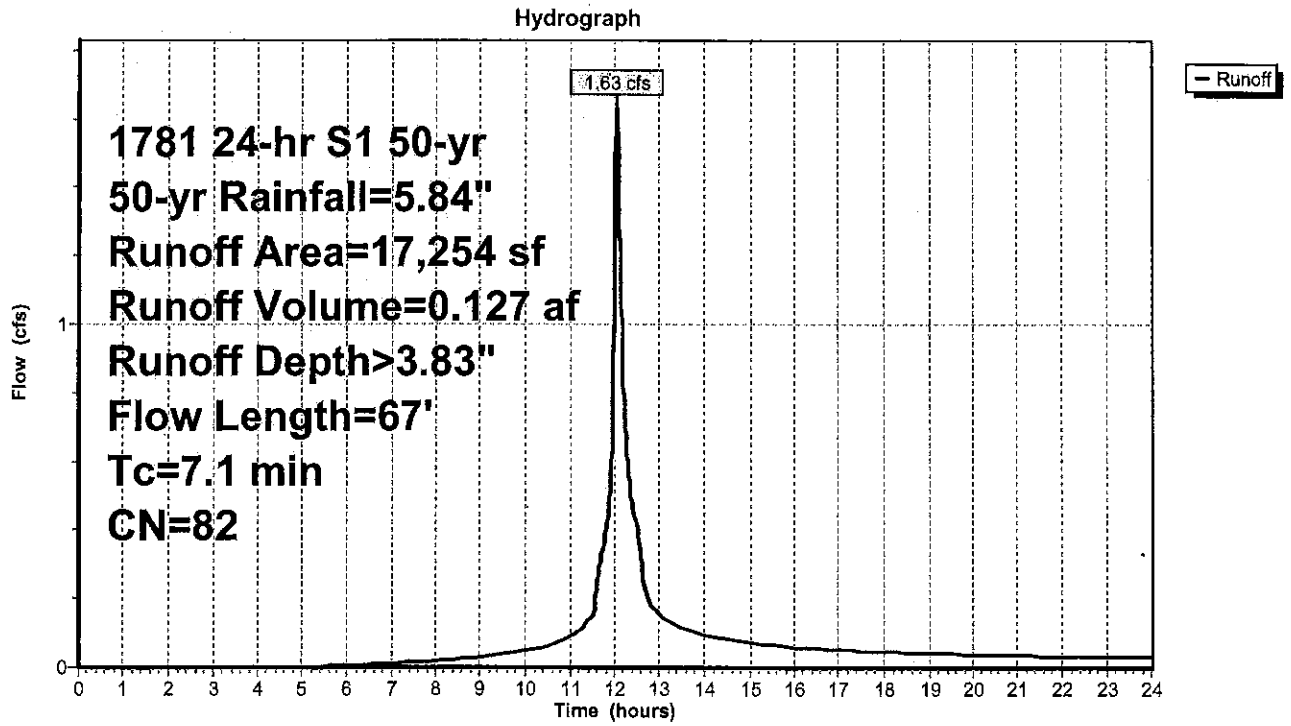
Runoff = 1.63 cfs @ 12.05 hrs, Volume= 0.127 af, Depth> 3.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
2,517	77	Woods, Good, HSG D
12,283	80	>75% Grass cover, Good, HSG D
2,454	98	Paved parking, HSG D
17,254	82	Weighted Average
14,800		85.78% Pervious Area
2,454		14.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	45	0.1780	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
2.0	22	0.1590	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"
7.1	67	Total			

Subcatchment A5: A5



Summary for Subcatchment A6: A6

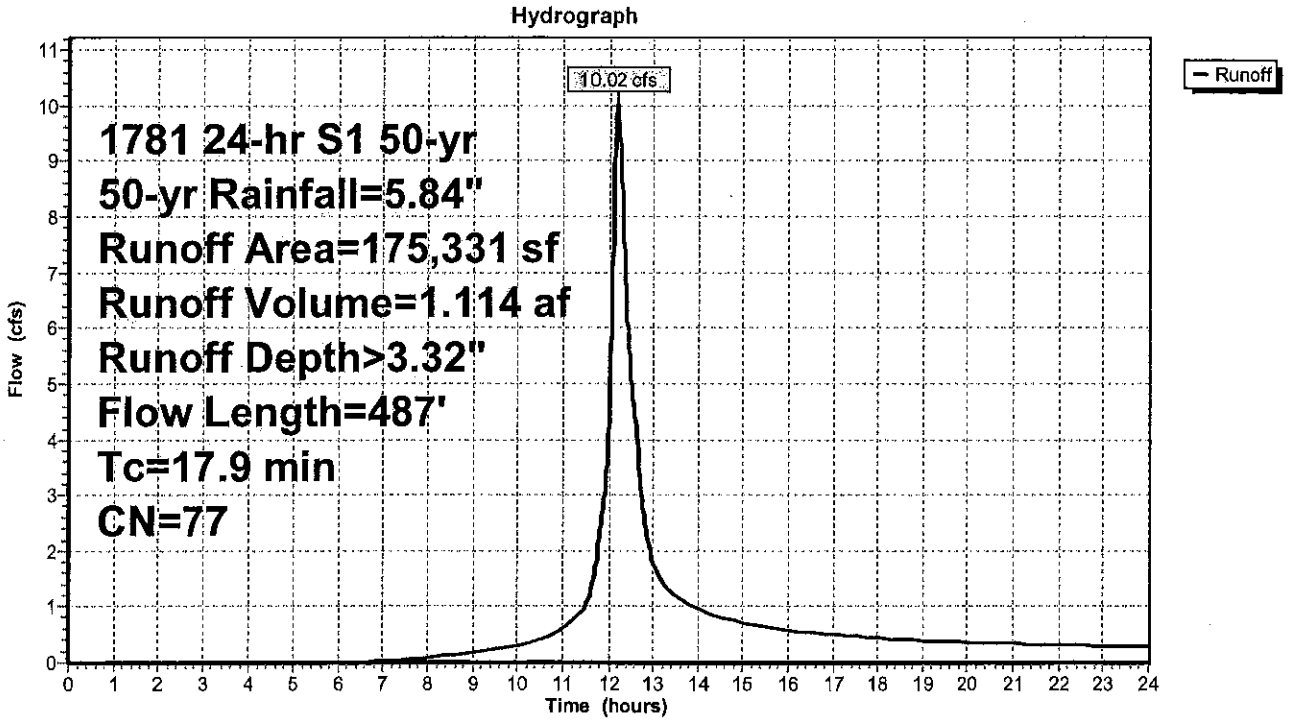
Runoff = 10.02 cfs @ 12.20 hrs, Volume= 1.114 af, Depth> 3.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
168,408	77	Woods, Good, HSG D
6,923	80	>75% Grass cover, Good, HSG D
175,331	77	Weighted Average
175,331		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0750	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
4.3	387	0.0890	1.49		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.9	487	Total			

Subcatchment A6: A6



Summary for Subcatchment A7: A7

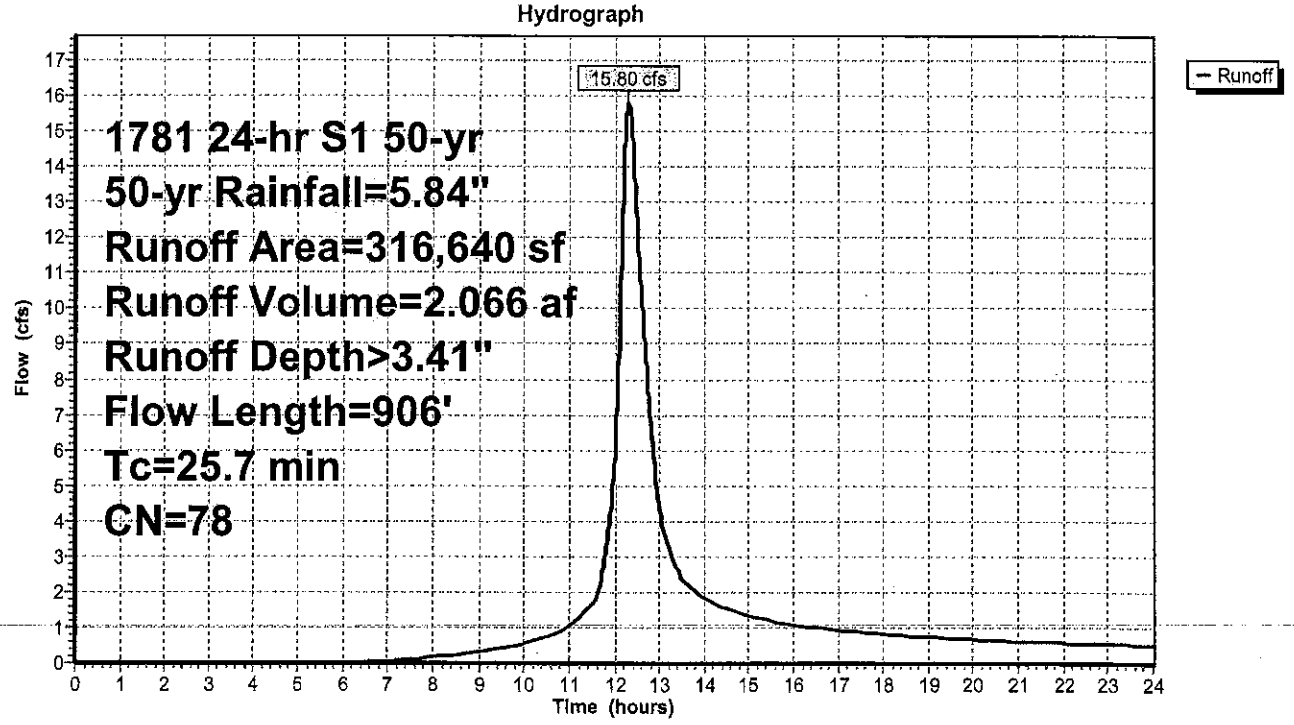
Runoff = 15.80 cfs @ 12.31 hrs, Volume= 2.066 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
285,878	77	Woods, Good, HSG D
25,497	80	>75% Grass cover, Good, HSG D
5,265	98	Paved parking, HSG D
316,640	78	Weighted Average
311,375		98.34% Pervious Area
5,265		1.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	100	0.0550	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
8.2	605	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.1	201	0.0200	1.60	42.72	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
25.7	906	Total			

Subcatchment A7: A7



Summary for Subcatchment A8: A8

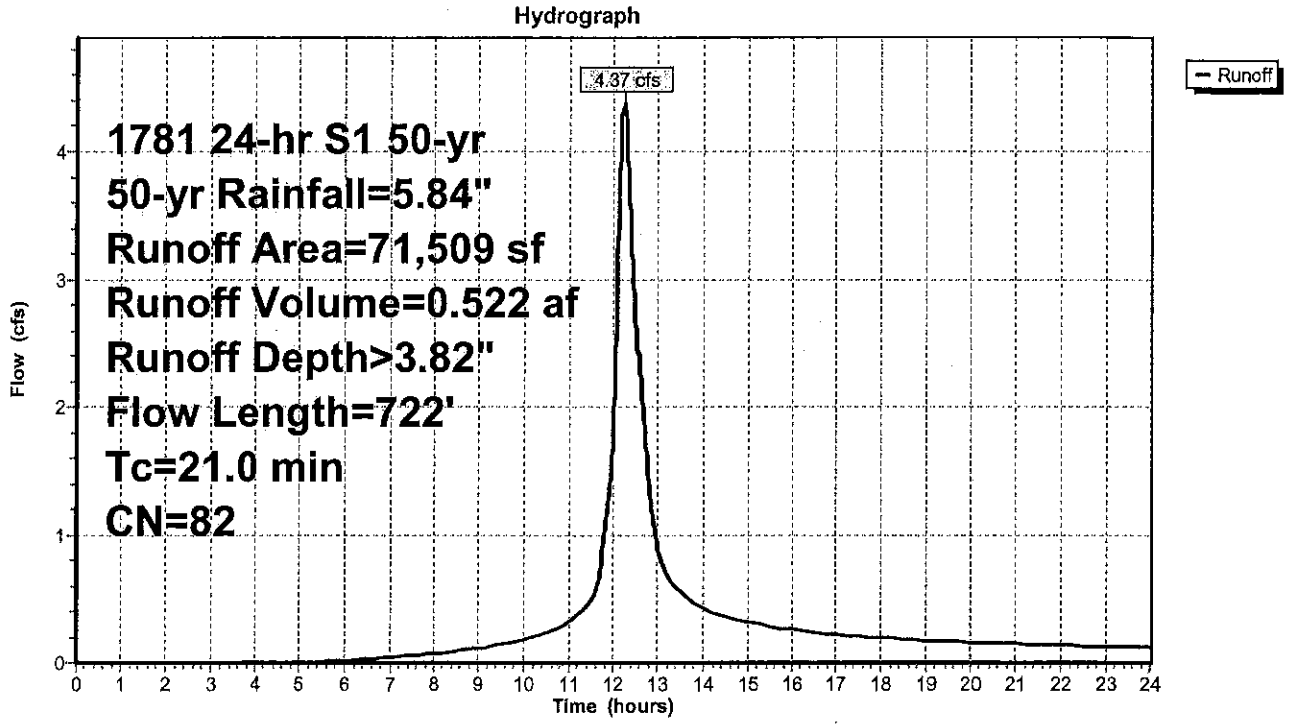
Runoff = 4.37 cfs @ 12.25 hrs, Volume= 0.522 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
2,708	77	Woods, Good, HSG D
59,329	80	>75% Grass cover, Good, HSG D
9,472	98	Paved parking, HSG D
71,509	82	Weighted Average
62,037		86.75% Pervious Area
9,472		13.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
7.0	622	0.0450	1.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
21.0	722	Total			

Subcatchment A8: A8



Summary for Subcatchment A9: A9

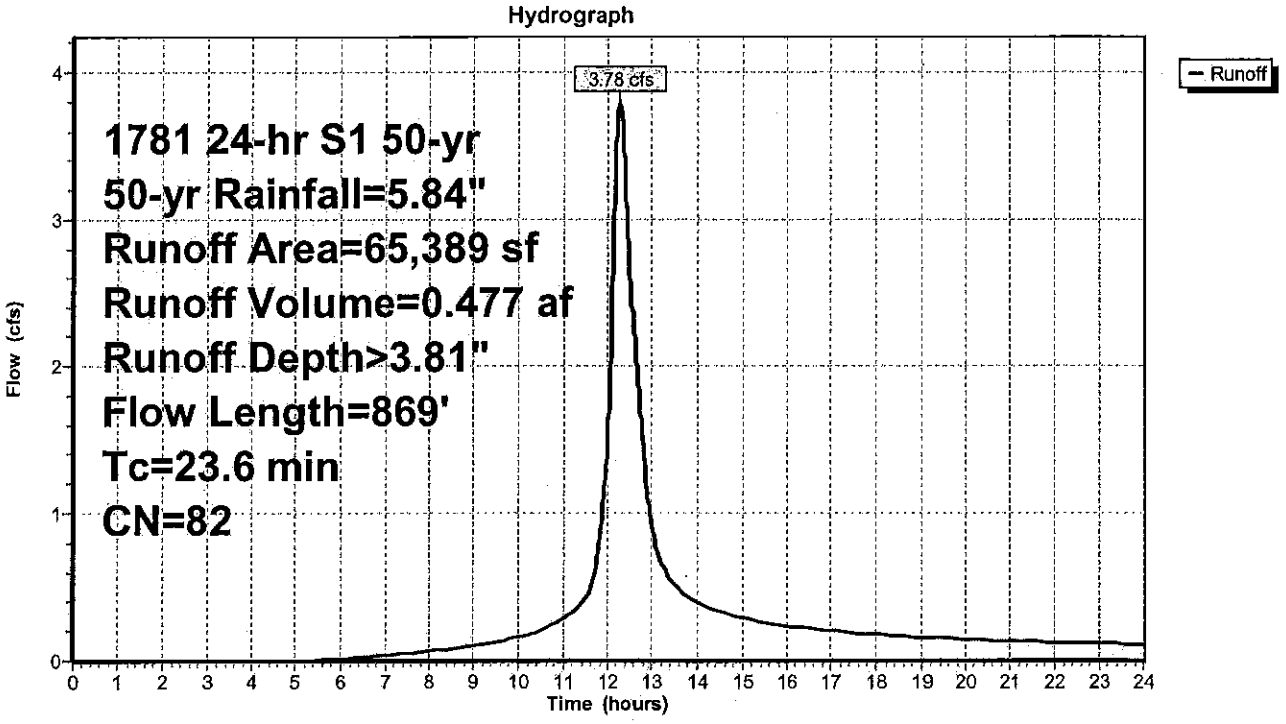
Runoff = 3.78 cfs @ 12.27 hrs, Volume= 0.477 af, Depth> 3.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
7,832	77	Woods, Good, HSG D
50,260	80	>75% Grass cover, Good, HSG D
7,297	98	Paved parking, HSG D
65,389	82	Weighted Average
58,092		88.84% Pervious Area
7,297		11.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
0.2	13	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.1	573	0.0367	1.34		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	183	0.0370	11.65	113.56	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=1.50' Z= 3.0 '/' Top.W=11.00' n= 0.022 Earth, clean & straight
23.6	869	Total			

Subcatchment A9: A9



Summary for Subcatchment A10: A10

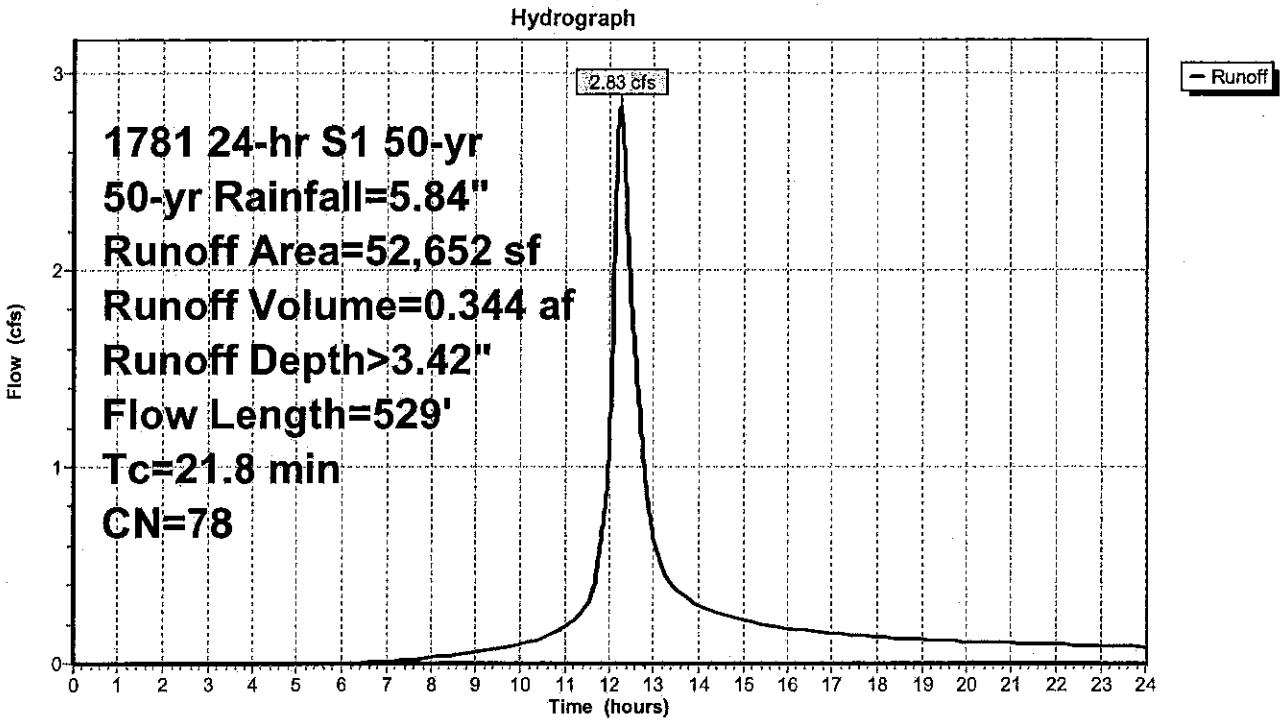
Runoff = 2.83 cfs @ 12.26 hrs, Volume= 0.344 af, Depth> 3.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
44,427	77	Woods, Good, HSG D
5,995	80	>75% Grass cover, Good, HSG D
2,230	98	Paved parking, HSG D
52,652	78	Weighted Average
50,422		95.76% Pervious Area
2,230		4.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	100	0.0400	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
3.3	188	0.0370	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.9	129	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	112	0.0500	12.78	76.68	**Trap/Vee/Rect Channel Flow,** Bot.W=1.00' D=1.50' Z= 2.0 '/' Top.W=7.00' n= 0.022 Earth, clean & straight
21.8	529	Total			

Subcatchment A10: A10



Summary for Subcatchment A11: A11

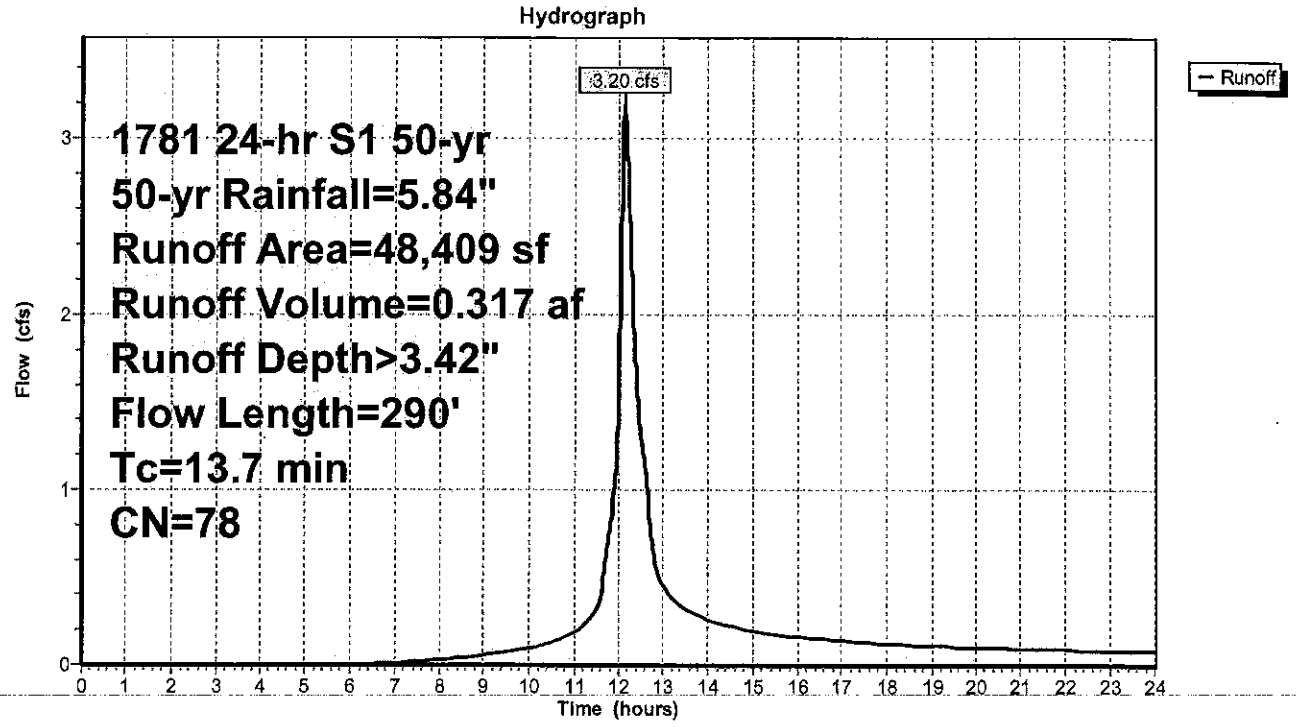
Runoff = 3.20 cfs @ 12.14 hrs, Volume= 0.317 af, Depth> 3.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
39,729	77	Woods, Good, HSG D
7,367	80	>75% Grass cover, Good, HSG D
1,313	98	Unconnected roofs, HSG D
48,409	78	Weighted Average
47,096		97.29% Pervious Area
1,313		2.71% Impervious Area
1,313		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.1050	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
1.8	190	0.1210	1.74		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	290	Total			

Subcatchment A11: A11



Summary for Subcatchment A12: A12

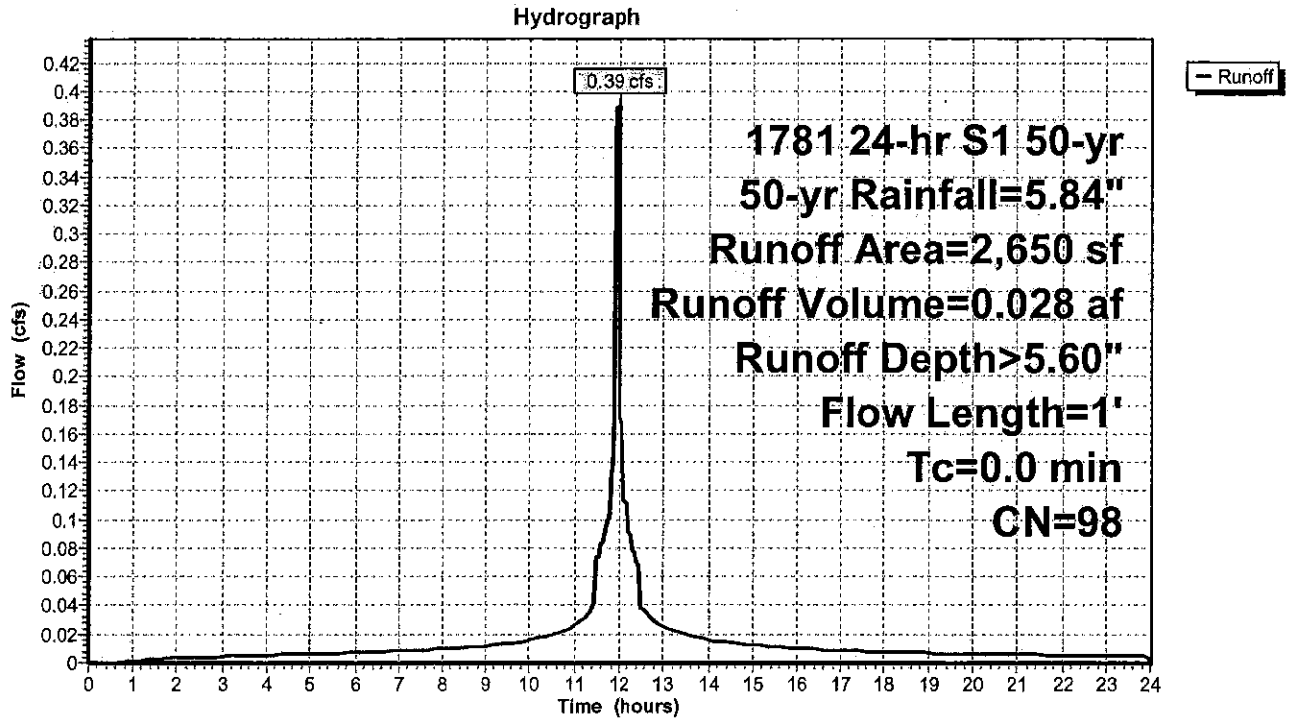
Runoff = 0.39 cfs @ 11.99 hrs, Volume= 0.028 af, Depth> 5.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
2,650	98	Paved parking, HSG D
2,650		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0	1		10.00		**Direct Entry, Porous Pavement**

Subcatchment A12: A12



Summary for Subcatchment A13: A13

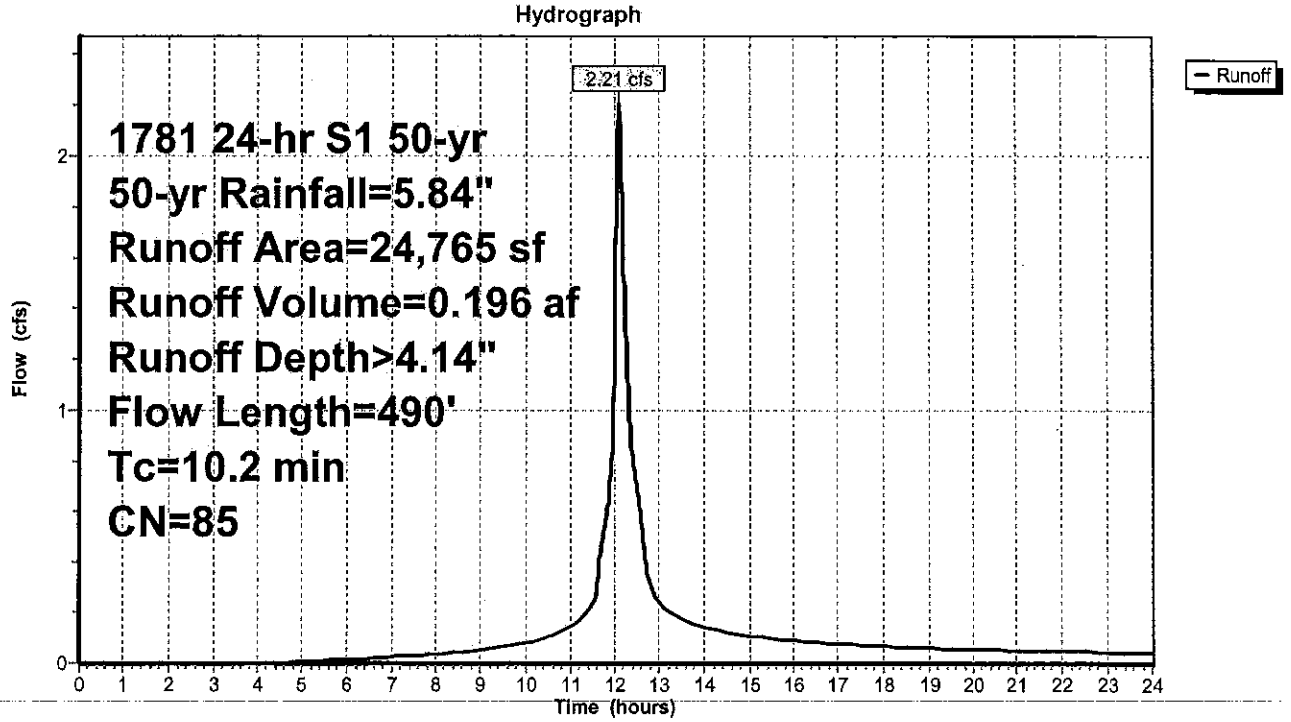
Runoff = 2.21 cfs @ 12.09 hrs, Volume= 0.196 af, Depth> 4.14"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
2,388	77	Woods, Good, HSG D
7,557	98	Paved parking, HSG D
14,820	80	>75% Grass cover, Good, HSG D
24,765	85	Weighted Average
17,208		69.49% Pervious Area
7,557		30.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	61	0.0660	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
0.6	429	0.0440	12.70	123.84	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=1.50' Z= 3.0 '/' Top.W=11.00' n= 0.022 Earth, clean & straight
10.2	490	Total			

Subcatchment A13: A13



Summary for Subcatchment B1: B1

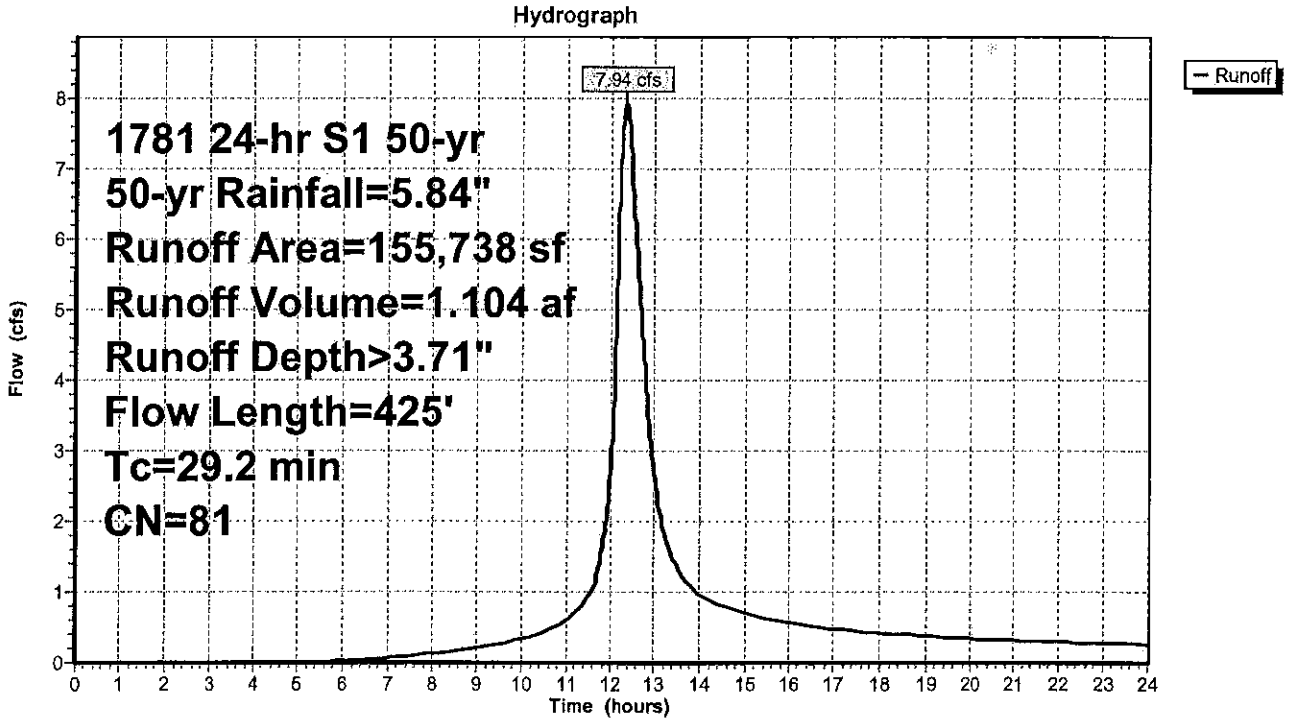
Runoff = 7.94 cfs @ 12.36 hrs, Volume= 1.104 af, Depth> 3.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
49,841	77	Woods, Good, HSG D
86,567	80	>75% Grass cover, Good, HSG D
18,920	98	Paved parking, HSG D
410	98	Unconnected roofs, HSG D
155,738	81	Weighted Average
136,408		87.59% Pervious Area
19,330		12.41% Impervious Area
410		2.12% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.0	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
6.2	325	0.0310	0.88		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	425	Total			

Subcatchment B1: B1



Summary for Subcatchment B2: B2

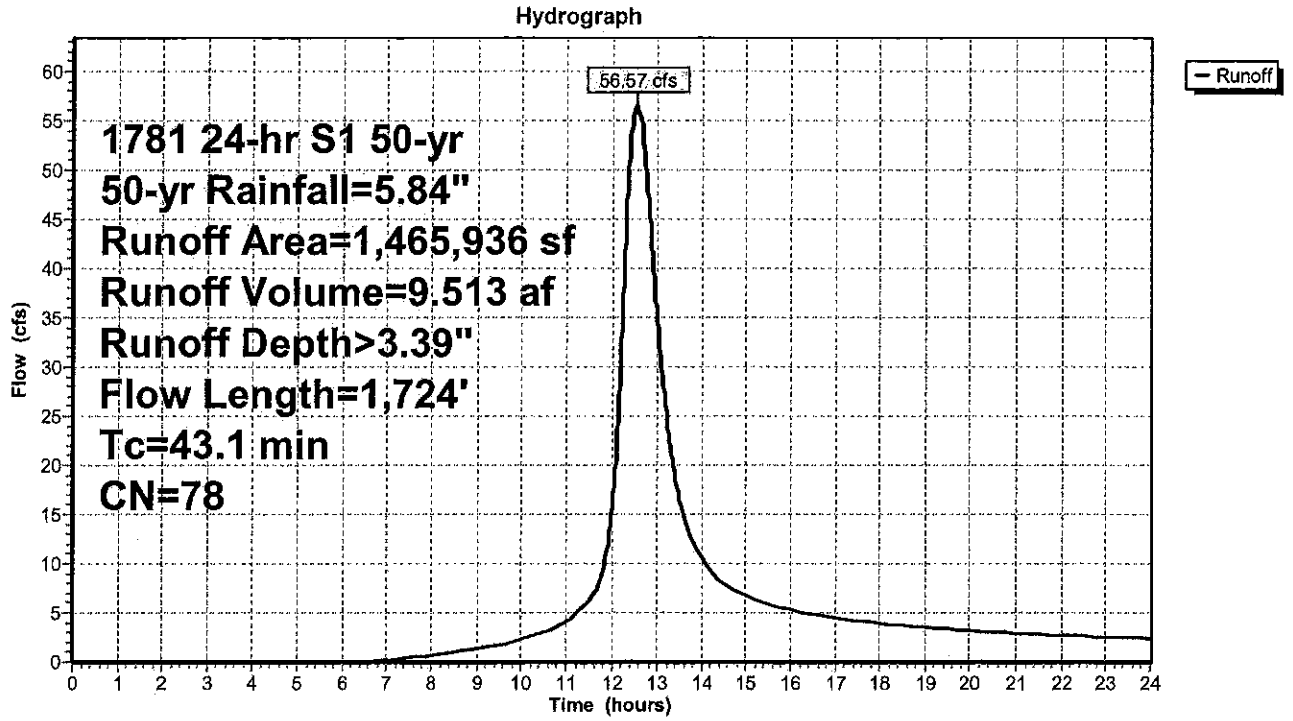
Runoff = 56.57 cfs @ 12.55 hrs, Volume= 9.513 af, Depth> 3.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
1,157,990	77	Woods, Good, HSG D
295,039	80	>75% Grass cover, Good, HSG D
7,227	96	Gravel surface, HSG D
4,143	98	Unconnected roofs, HSG D
1,537	98	Water Surface, HSG D
1,465,936	78	Weighted Average
1,460,256		99.61% Pervious Area
5,680		0.39% Impervious Area
4,143		72.94% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.0	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.78"
8.2	449	0.0330	0.91		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.9	1,175	0.0210	1.64	43.77	**Parabolic Channel,** W=40.00' D=1.00' Area=26.7 sf Perim=40.1' n= 0.100 Very weedy reaches w/pools
43.1	1,724	Total			

Subcatchment B2: B2



Summary for Subcatchment C1: C1

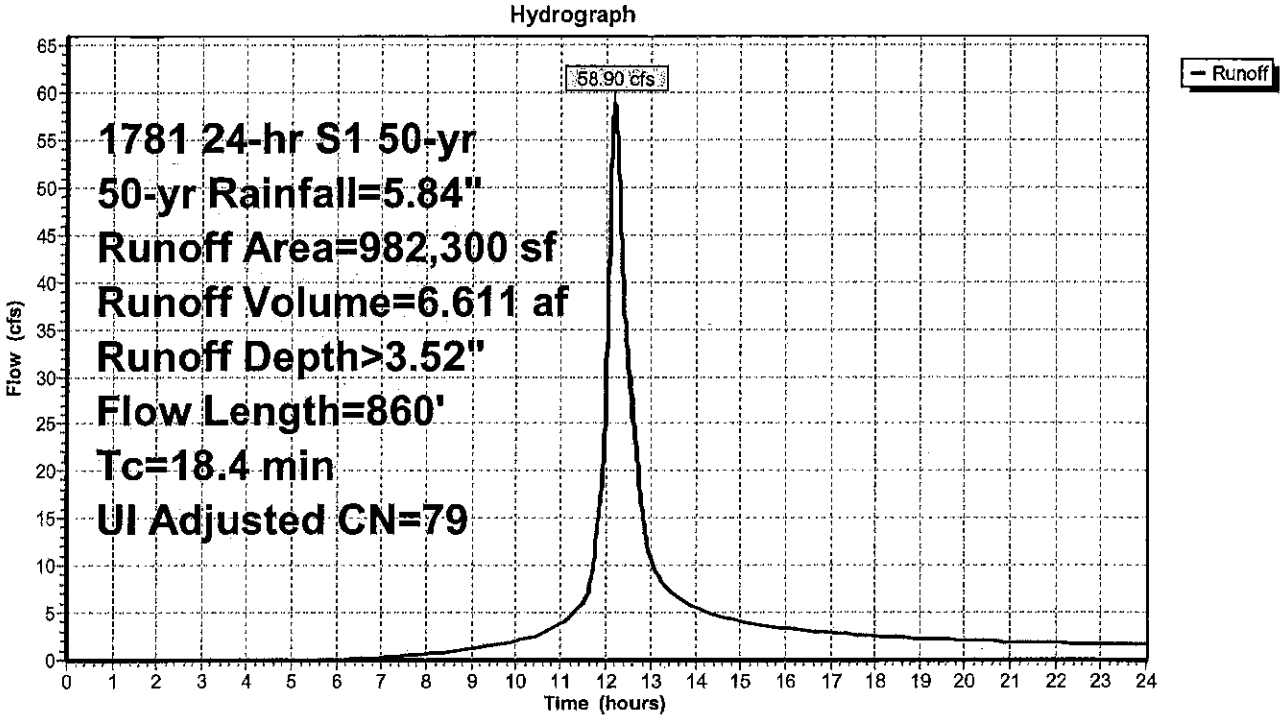
Runoff = 58.90 cfs @ 12.21 hrs, Volume= 6.611 af, Depth> 3.52"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
1781 24-hr S1 50-yr 50-yr Rainfall=5.84"

Area (sf)	CN	Description
484,198	77	Woods, Good, HSG D
435,550	80	>75% Grass cover, Good, HSG D
16,773	96	Gravel surface, HSG D
30,733	98	Paved parking, HSG D
15,046	98	Unconnected roofs, HSG D
982,300	80	Weighted Average, UI Adjusted CN = 79
936,521		95.34% Pervious Area
45,779		4.66% Impervious Area
15,046		32.87% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"
4.1	455	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.7	305	0.1440	1.90		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.4	860	Total			

Subcatchment C1: C1



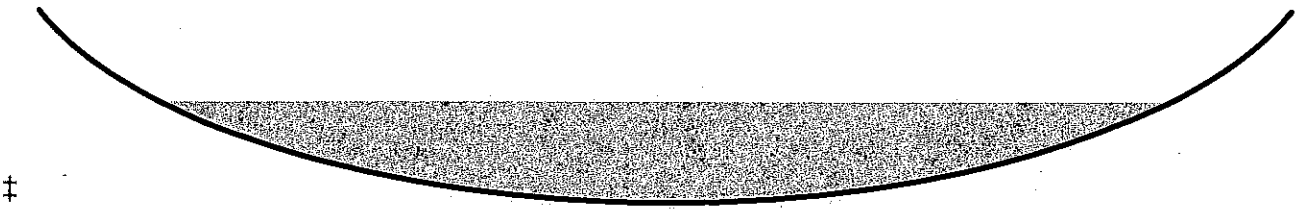
Summary for Reach R1: R1

Inflow Area = 7.735 ac, 5.52% Impervious, Inflow Depth > 3.46" for 50-yr event
Inflow = 14.50 cfs @ 12.41 hrs, Volume= 2.229 af
Outflow = 14.26 cfs @ 12.46 hrs, Volume= 2.224 af, Atten= 2%, Lag= 2.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.42 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.61 fps, Avg. Travel Time= 6.3 min

Peak Storage= 2,337 cf @ 12.46 hrs
Average Depth at Peak Storage= 0.52'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 58.16 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 232.0' Slope= 0.0371 '/'
Inlet Invert= 554.00', Outlet Invert= 545.40'



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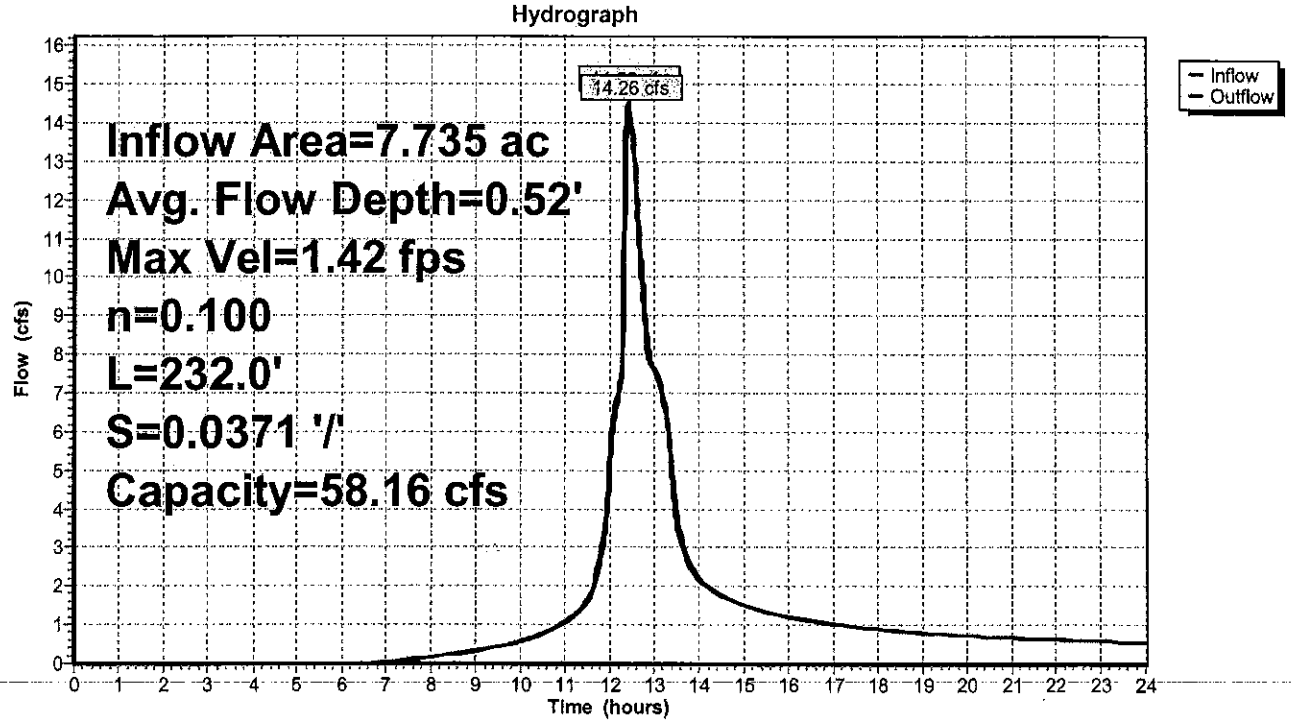
Reach R1: R1



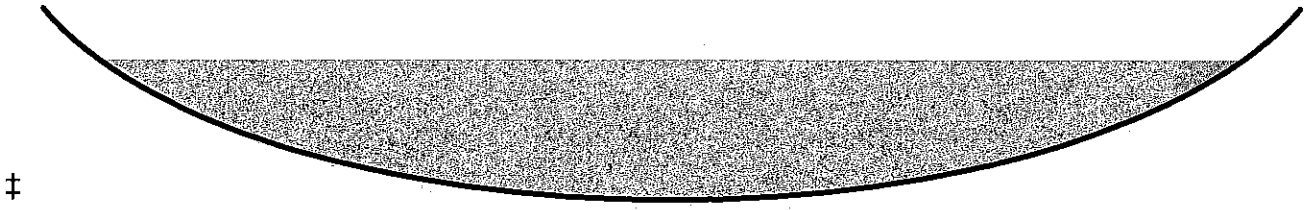
Summary for Reach R2: R2

Inflow Area = 11.760 ac, 3.63% Impervious, Inflow Depth > 3.39" for 50-yr event
Inflow = 20.34 cfs @ 12.44 hrs, Volume= 3.320 af
Outflow = 19.36 cfs @ 12.52 hrs, Volume= 3.300 af, Atten= 5%, Lag= 4.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.17 fps, Min. Travel Time= 6.6 min
Avg. Velocity = 0.52 fps, Avg. Travel Time= 14.9 min

Peak Storage= 7,699 cf @ 12.52 hrs
Average Depth at Peak Storage= 0.73'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 38.40 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 464.0' Slope= 0.0162 '/'
Inlet Invert= 545.40', Outlet Invert= 537.90'



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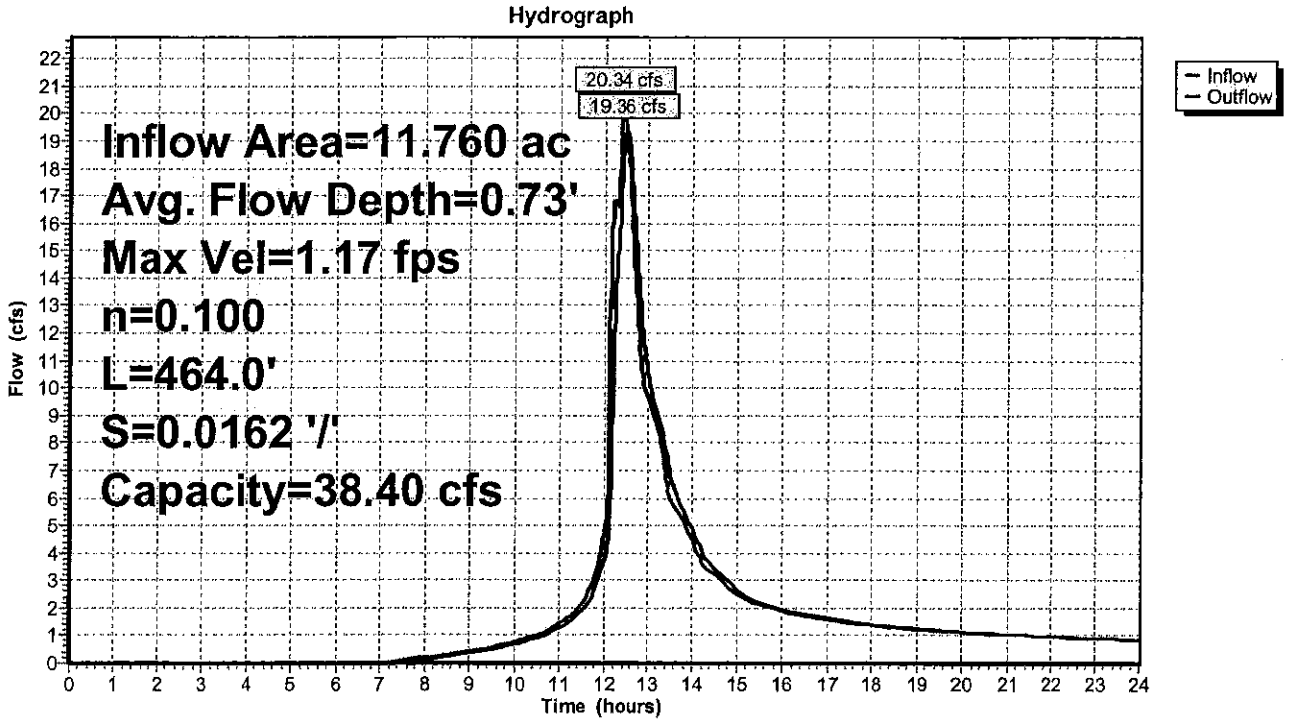
Reach R2: R2



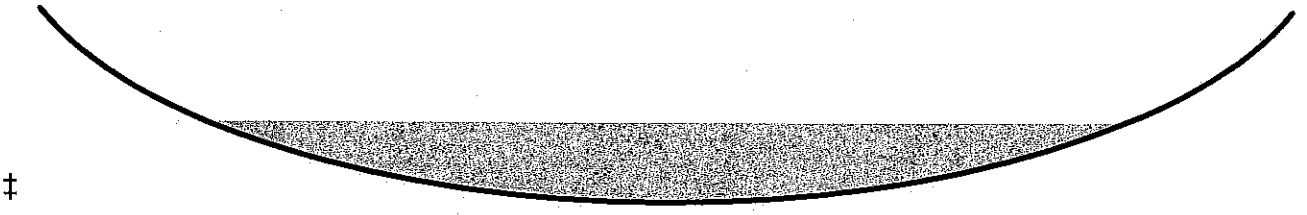
Summary for Reach R3: R3

Inflow Area = 3.321 ac, 12.68% Impervious, Inflow Depth > 3.71" for 50-yr event
Inflow = 6.45 cfs @ 12.34 hrs, Volume= 1.026 af
Outflow = 5.57 cfs @ 12.48 hrs, Volume= 1.018 af, Atten= 14%, Lag= 8.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.79 fps, Min. Travel Time= 9.8 min
Avg. Velocity = 0.34 fps, Avg. Travel Time= 22.9 min

Peak Storage= 3,270 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.41'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 38.02 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 464.0' Slope= 0.0158 '/'
Inlet Invert= 545.25', Outlet Invert= 537.90'



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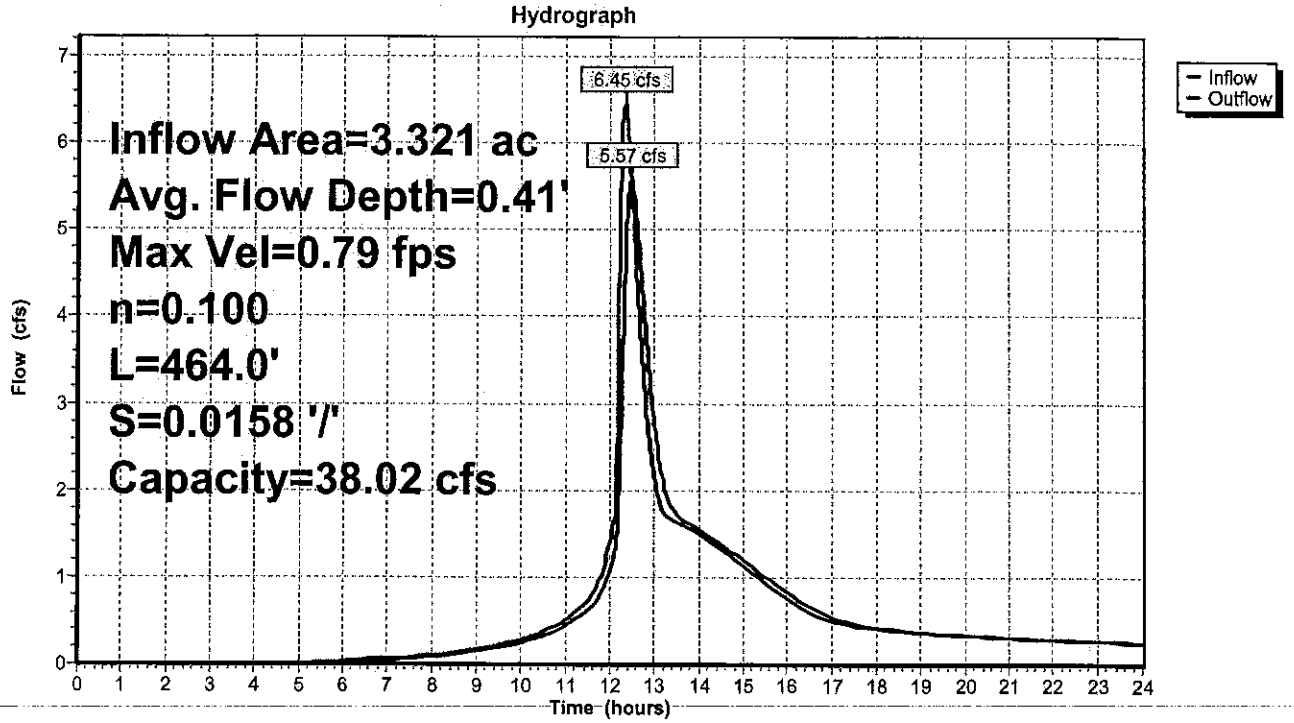
Reach R3: R3



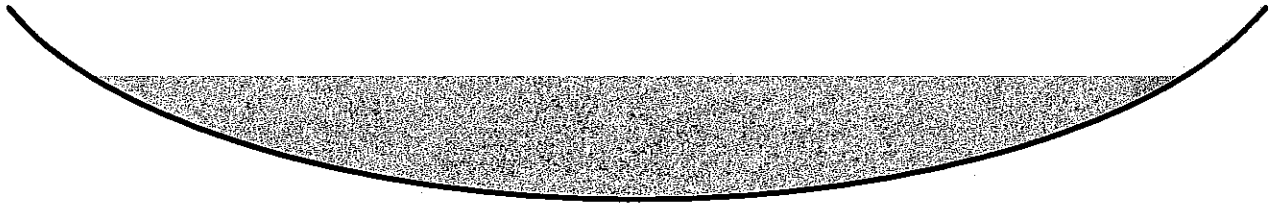
Summary for Reach R4: R4

Inflow Area = 22.551 ac, 4.66% Impervious, Inflow Depth > 3.52" for 50-yr event
Inflow = 58.90 cfs @ 12.21 hrs, Volume= 6.611 af
Outflow = 58.84 cfs @ 12.21 hrs, Volume= 6.607 af, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.61 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 3.32 fps, Avg. Travel Time= 1.4 min

Peak Storage= 1,879 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.64'
Bank-Full Depth= 1.00' Flow Area= 13.3 sf, Capacity= 154.29 cfs

20.00' x 1.00' deep Parabolic Channel, n= 0.030 Earth, clean & winding
Length= 275.0' Slope= 0.0945 '/'
Inlet Invert= 530.00', Outlet Invert= 504.00'



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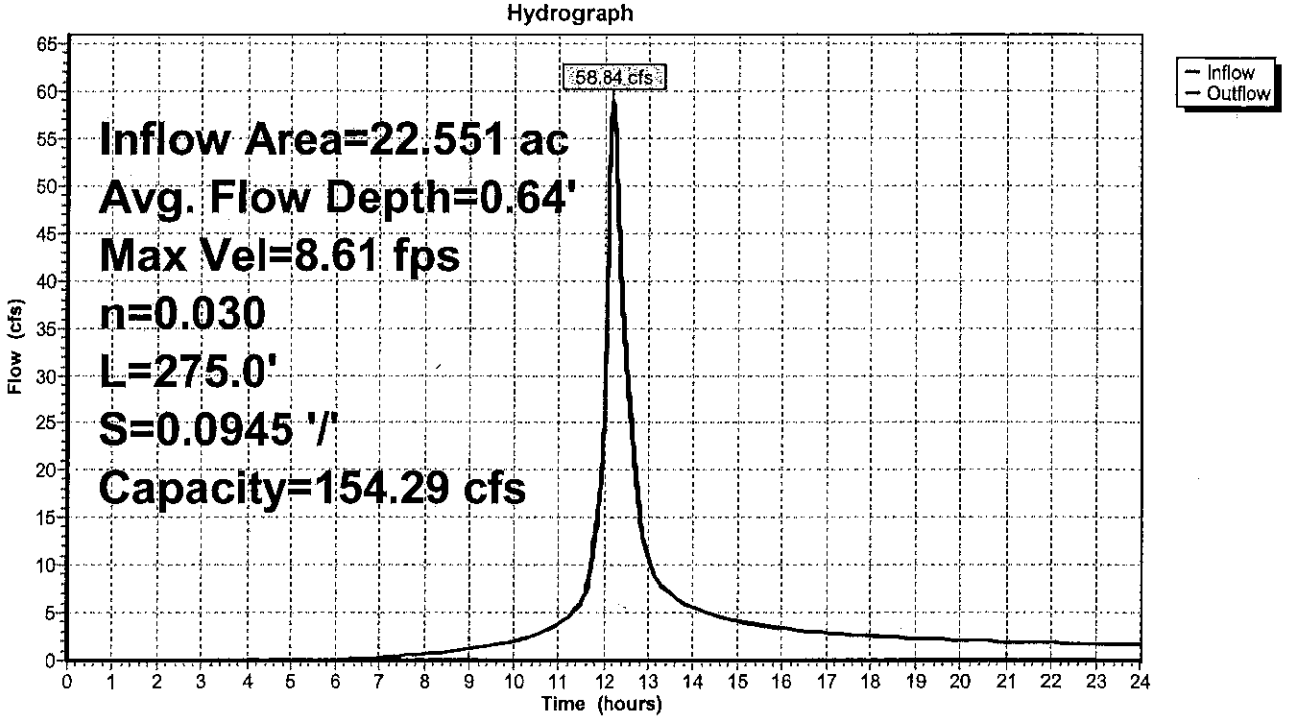
Reach R4: R4



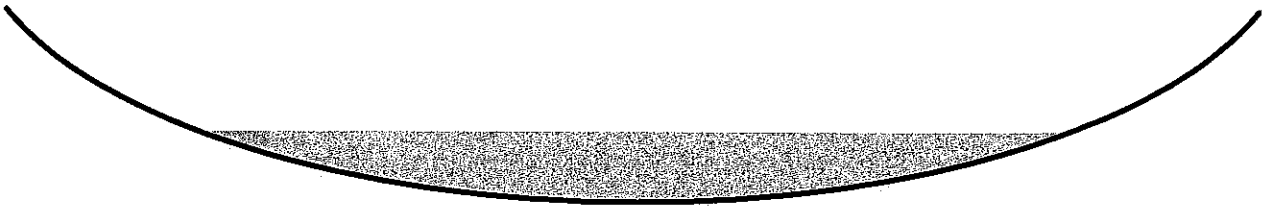
Summary for Reach R5: R5

Inflow Area = 3.661 ac, 11.67% Impervious, Inflow Depth > 3.66" for 50-yr event
Inflow = 7.55 cfs @ 12.31 hrs, Volume= 1.117 af
Outflow = 7.52 cfs @ 12.33 hrs, Volume= 1.116 af, Atten= 1%, Lag= 1.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.29 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.51 fps, Avg. Travel Time= 4.1 min

Peak Storage= 730 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 67.27 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 125.0' Slope= 0.0496 '/'
Inlet Invert= 560.00', Outlet Invert= 553.80'



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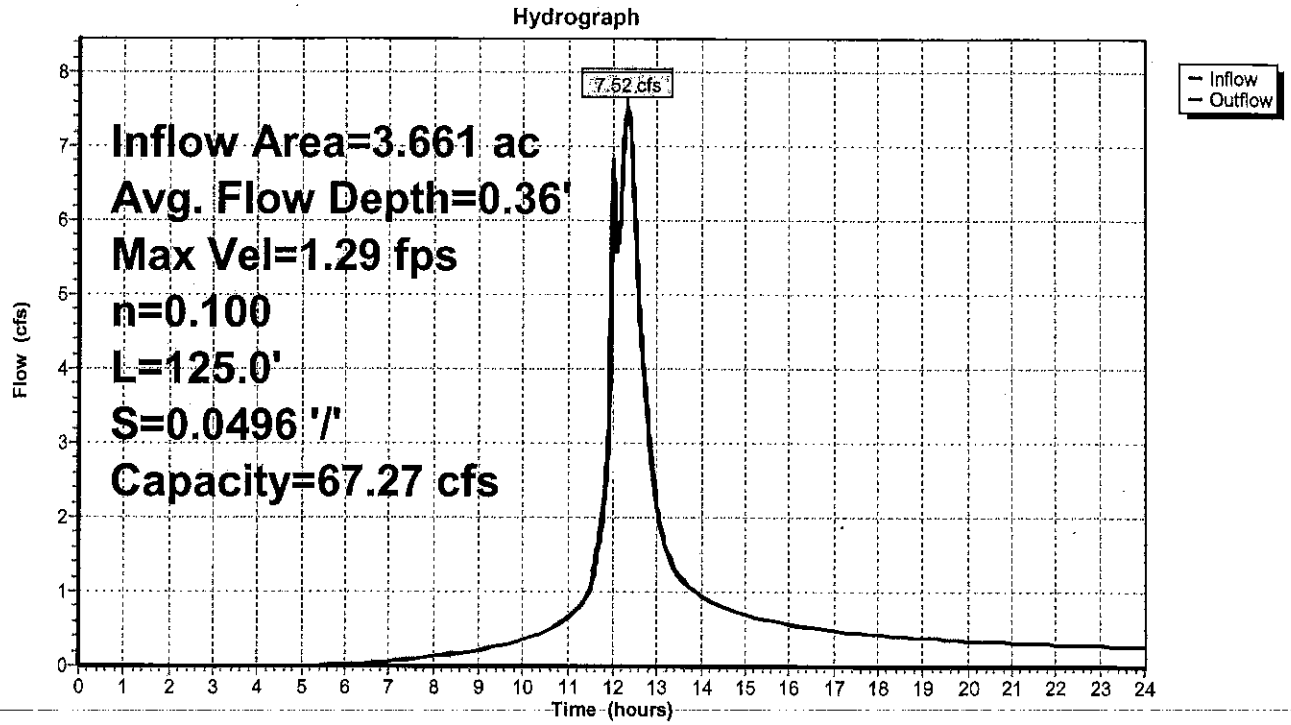
Reach R5: R5



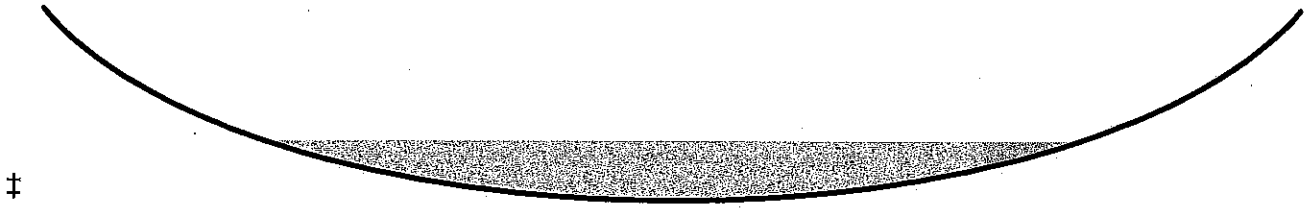
Summary for Reach R6: R6

Inflow Area = 1.736 ac, 7.83% Impervious, Inflow Depth > 3.66" for 50-yr event
Inflow = 4.59 cfs @ 12.19 hrs, Volume= 0.529 af
Outflow = 3.92 cfs @ 12.30 hrs, Volume= 0.524 af, Atten= 15%, Lag= 6.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.85 fps, Min. Travel Time= 10.6 min
Avg. Velocity = 0.34 fps, Avg. Travel Time= 26.8 min

Peak Storage= 2,496 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 49.37 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 541.0' Slope= 0.0267 '/'
Inlet Invert= 552.35', Outlet Invert= 537.90'



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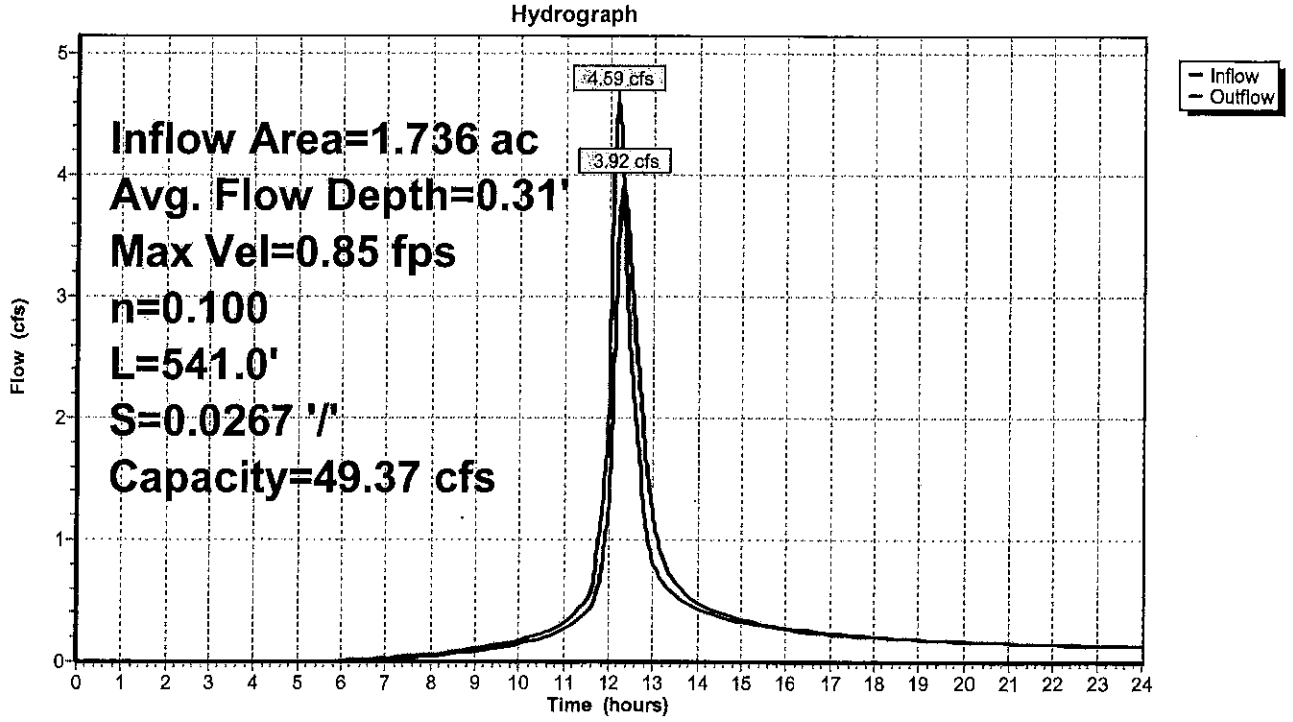
Reach R6: R6



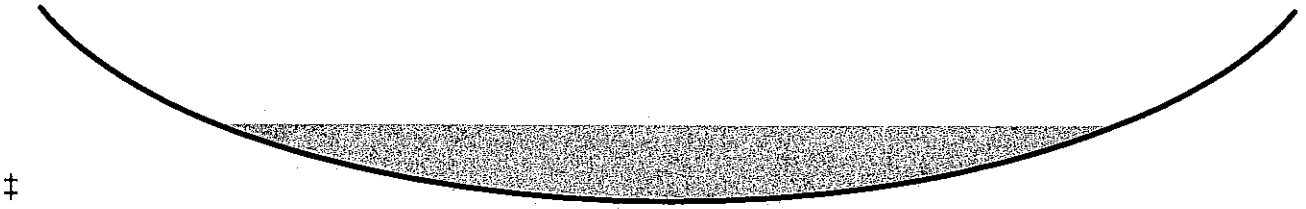
Summary for Reach R7: R7

Inflow Area = 3.575 ac, 12.41% Impervious, Inflow Depth > 3.70" for 50-yr event
Inflow = 7.87 cfs @ 12.38 hrs, Volume= 1.101 af
Outflow = 5.78 cfs @ 12.64 hrs, Volume= 1.078 af, Atten= 27%, Lag= 15.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.88 fps, Min. Travel Time= 24.7 min
Avg. Velocity = 0.39 fps, Avg. Travel Time= 56.0 min

Peak Storage= 8,552 cf @ 12.64 hrs
Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 1.00' Flow Area= 26.7 sf, Capacity= 43.49 cfs

40.00' x 1.00' deep Parabolic Channel, n= 0.100 Earth, dense brush, high stage
Length= 1,298.0' Slope= 0.0207 '/'
Inlet Invert= 560.00', Outlet Invert= 533.10'



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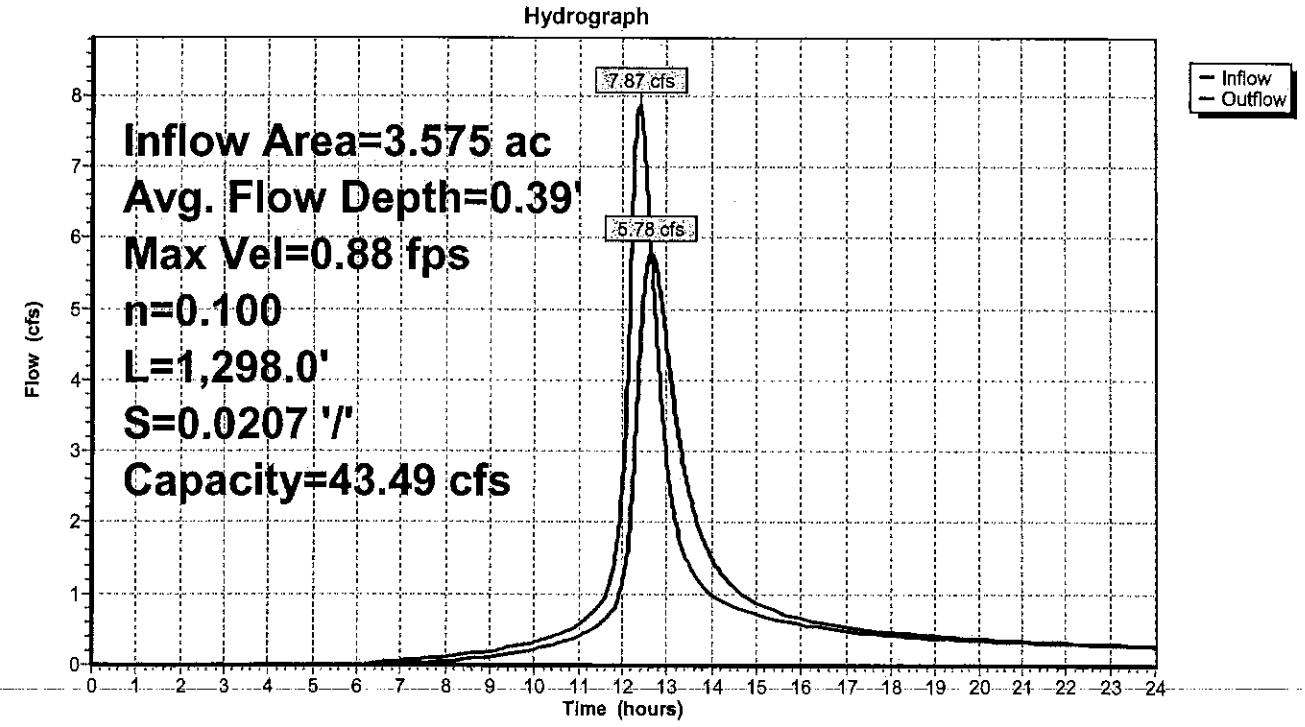
Reach R7: R7



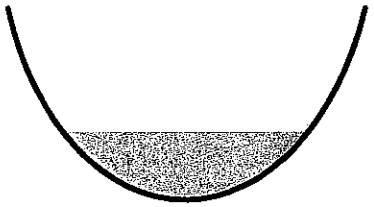
Summary for Reach R8: R8

Inflow Area = 2.771 ac, 10.09% Impervious, Inflow Depth > 3.64" for 50-yr event
Inflow = 6.44 cfs @ 12.29 hrs, Volume= 0.841 af
Outflow = 6.42 cfs @ 12.32 hrs, Volume= 0.840 af, Atten= 0%, Lag= 1.3 min

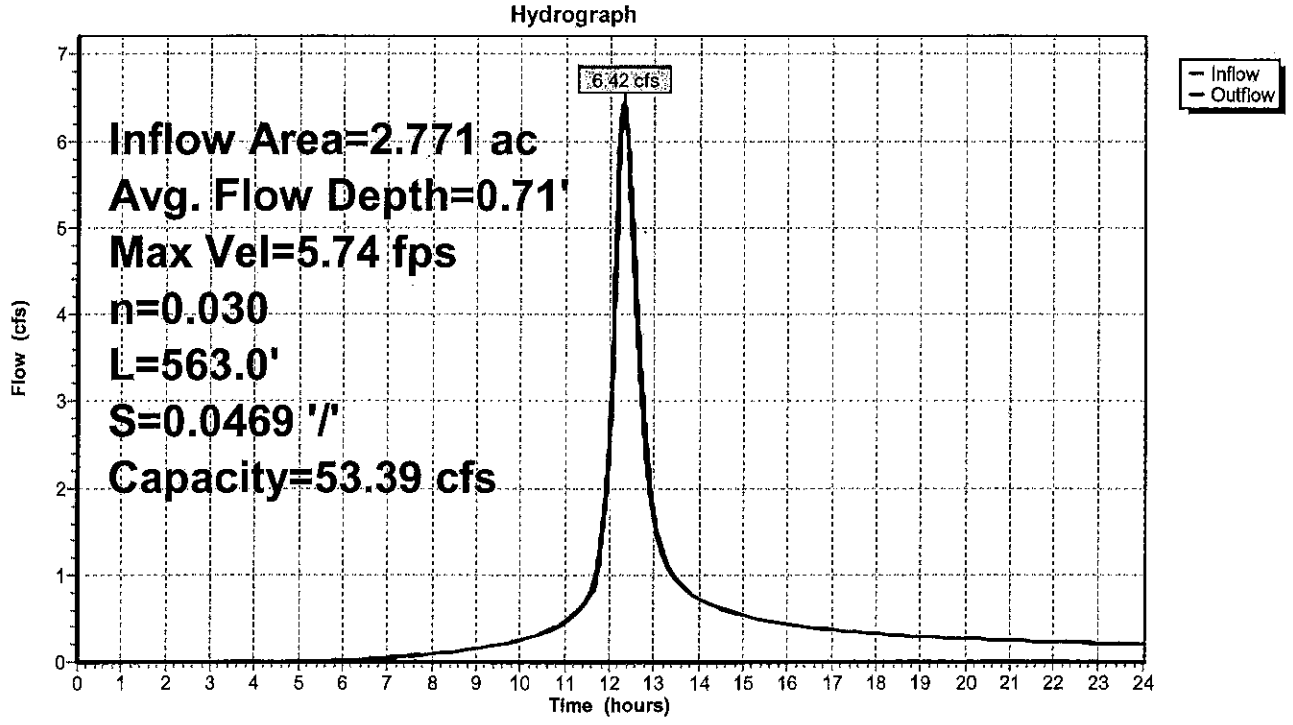
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.74 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 2.40 fps, Avg. Travel Time= 3.9 min

Peak Storage= 629 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.71'
Bank-Full Depth= 2.00' Flow Area= 5.3 sf, Capacity= 53.39 cfs

4.00' x 2.00' deep Parabolic Channel, n= 0.030 Earth, dense weeds
Length= 563.0' Slope= 0.0469 '/'
Inlet Invert= 564.30', Outlet Invert= 537.90'



Reach R8: R8



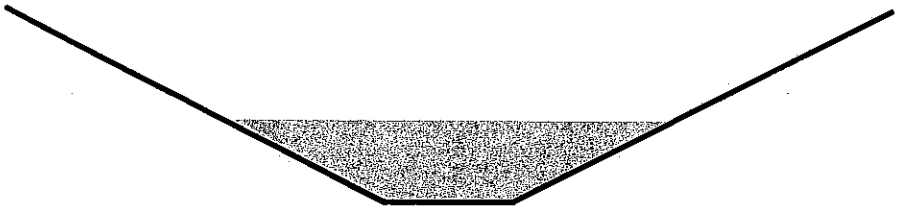
Summary for Reach R9: R9

Inflow Area = 1.562 ac, 14.62% Impervious, Inflow Depth > 3.82" for 50-yr event
Inflow = 3.74 cfs @ 12.34 hrs, Volume= 0.497 af
Outflow = 3.73 cfs @ 12.35 hrs, Volume= 0.497 af, Atten= 0%, Lag= 0.5 min

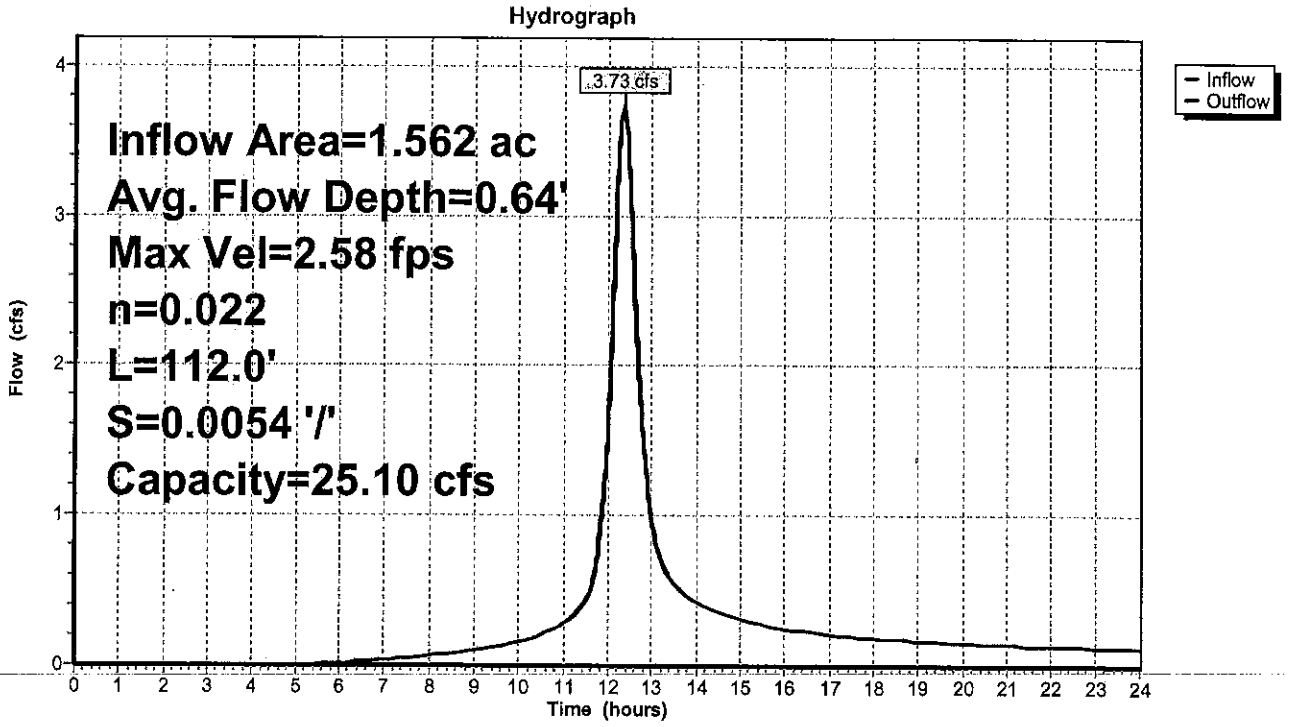
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.58 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.10 fps, Avg. Travel Time= 1.7 min

Peak Storage= 162 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.64'
Bank-Full Depth= 1.50' Flow Area= 6.0 sf, Capacity= 25.10 cfs

1.00' x 1.50' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 2.0 '/' Top Width= 7.00'
Length= 112.0' Slope= 0.0054 '/'
Inlet Invert= 565.00', Outlet Invert= 564.40'



Reach R9: R9



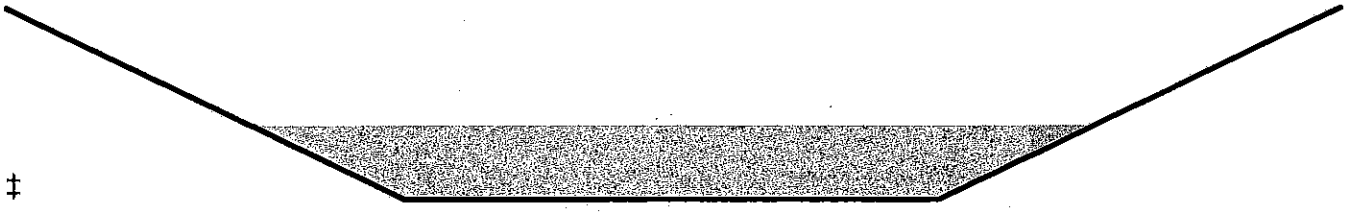
Summary for Reach TS1: TS1

Inflow Area = 3.661 ac, 11.67% Impervious, Inflow Depth > 3.67" for 50-yr event
Inflow = 7.64 cfs @ 12.30 hrs, Volume= 1.120 af
Outflow = 7.55 cfs @ 12.31 hrs, Volume= 1.117 af, Atten= 1%, Lag= 1.0 min

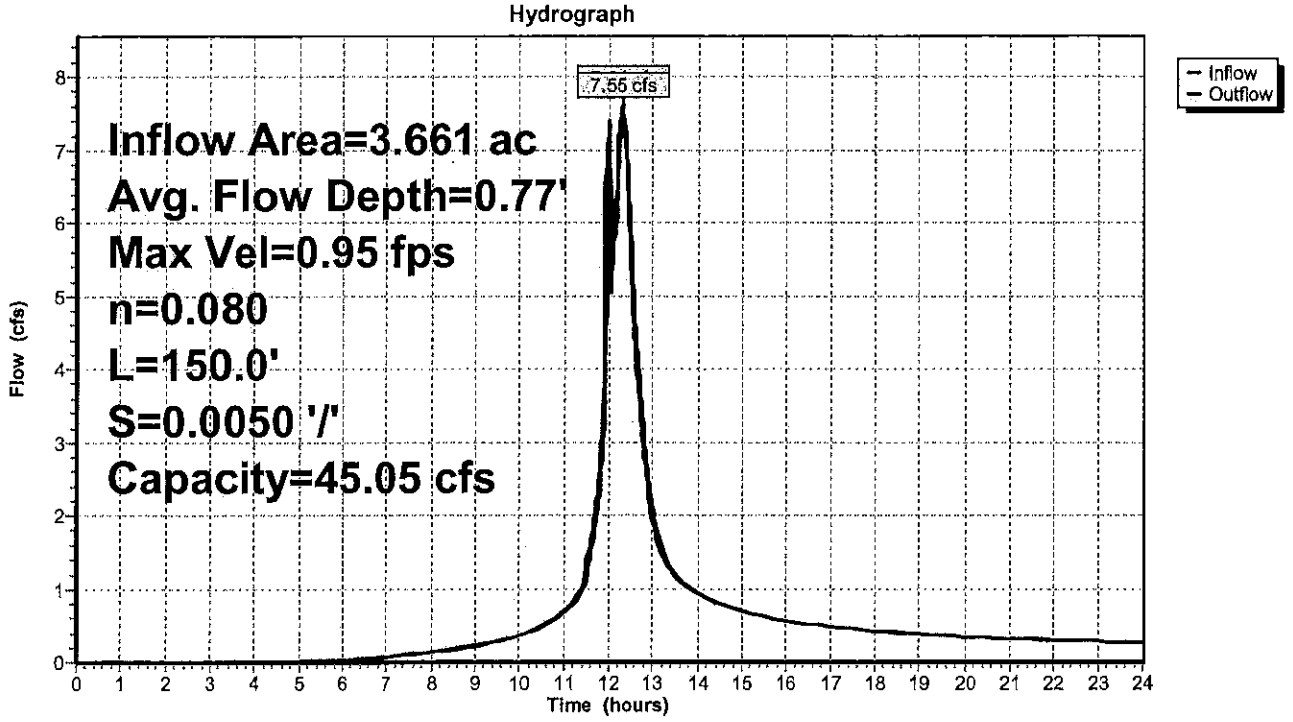
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.95 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.34 fps, Avg. Travel Time= 7.4 min

Peak Storage= 1,190 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.77'
Bank-Full Depth= 2.00' Flow Area= 28.0 sf, Capacity= 45.05 cfs

8.00' x 2.00' deep channel, n= 0.080
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 150.0' Slope= 0.0050 '/'
Inlet Invert= 561.00', Outlet Invert= 560.25'



Reach TS1: TS1



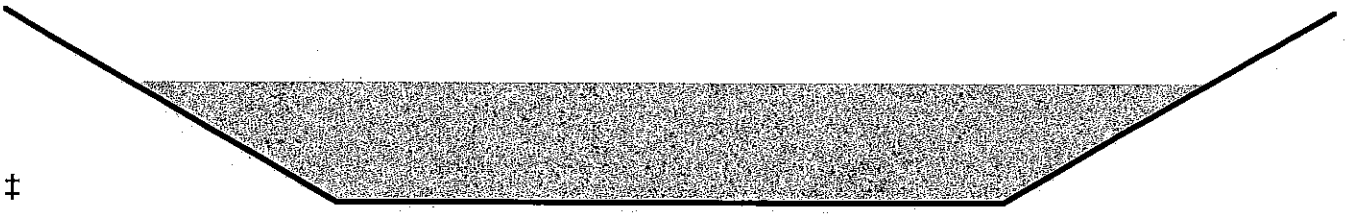
Summary for Reach TS2: TS2

Inflow Area = 1.736 ac, 7.83% Impervious, Inflow Depth > 3.67" for 50-yr event
Inflow = 4.65 cfs @ 12.17 hrs, Volume= 0.531 af
Outflow = 4.59 cfs @ 12.19 hrs, Volume= 0.529 af, Atten= 1%, Lag= 1.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.94 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 0.32 fps, Avg. Travel Time= 6.9 min

Peak Storage= 637 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.62'
Bank-Full Depth= 1.00' Flow Area= 9.0 sf, Capacity= 10.96 cfs

6.00' x 1.00' deep channel, n= 0.070
Side Slope Z-value= 3.0 '/' Top Width= 12.00'
Length= 130.0' Slope= 0.0050 '/'
Inlet Invert= 553.00', Outlet Invert= 552.35'



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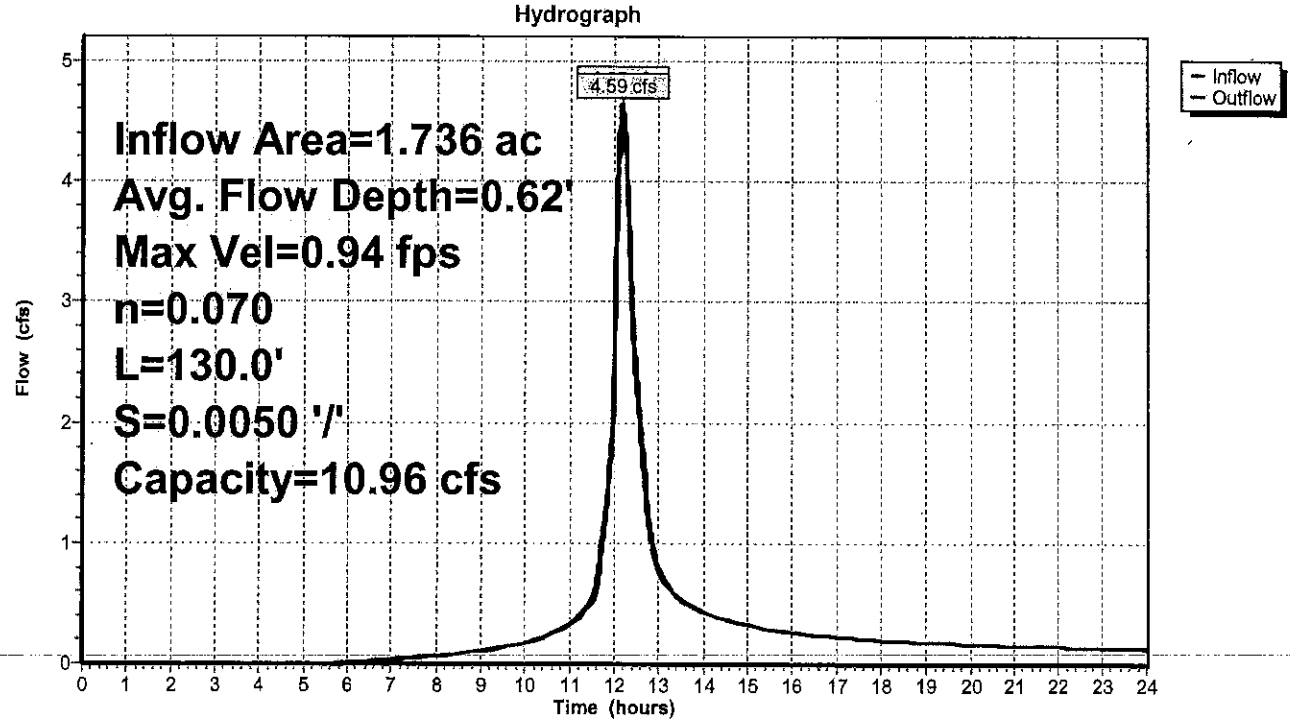
Reach TS2: TS2



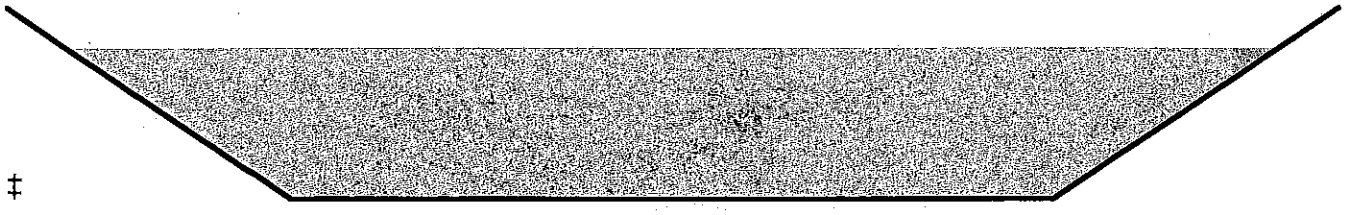
Summary for Reach TS3: TS3

Inflow Area = 3.575 ac, 12.41% Impervious, Inflow Depth > 3.71" for 50-yr event
Inflow = 7.94 cfs @ 12.36 hrs, Volume= 1.104 af
Outflow = 7.87 cfs @ 12.38 hrs, Volume= 1.101 af, Atten= 1%, Lag= 1.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.96 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.35 fps, Avg. Travel Time= 7.1 min

Peak Storage= 1,224 cf @ 12.38 hrs
Average Depth at Peak Storage= 0.79'
Bank-Full Depth= 1.00' Flow Area= 11.0 sf, Capacity= 12.12 cfs

8.00' x 1.00' deep channel, n= 0.080
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 150.0' Slope= 0.0050 '/'
Inlet Invert= 561.00', Outlet Invert= 560.25'



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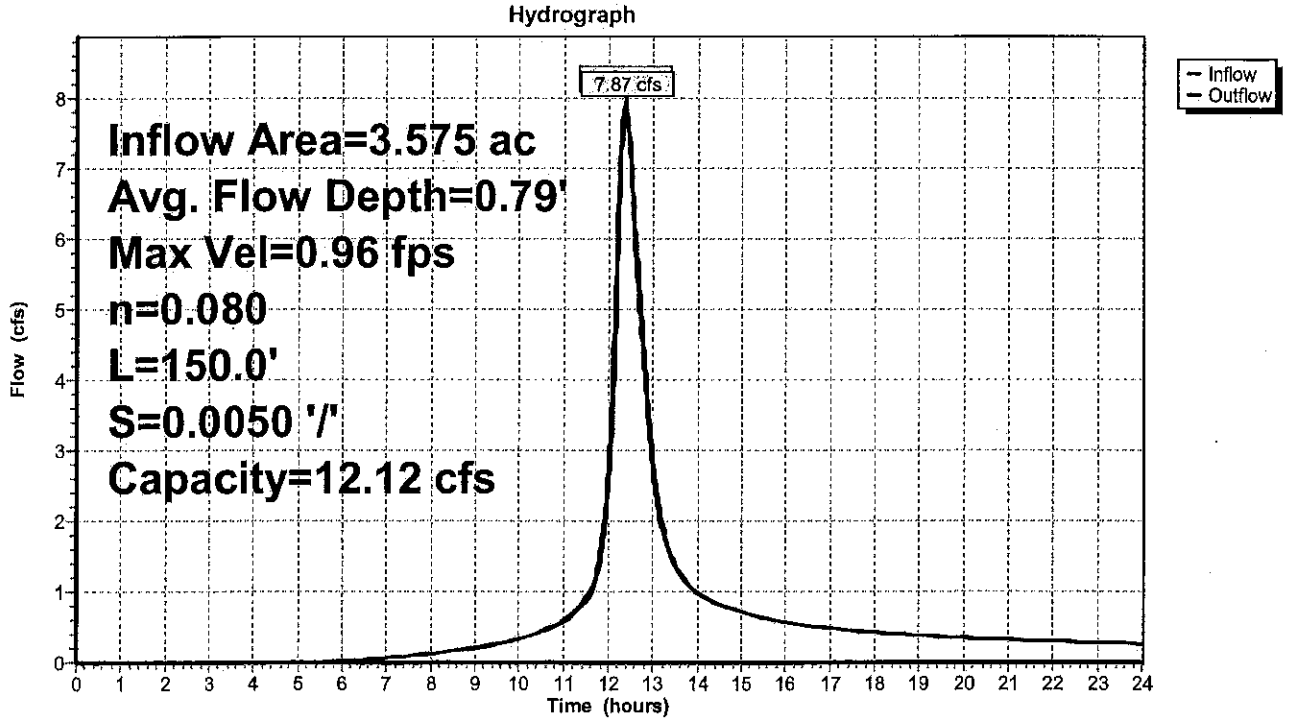
Reach TS3: TS3



Summary for Pond CB1: CB1

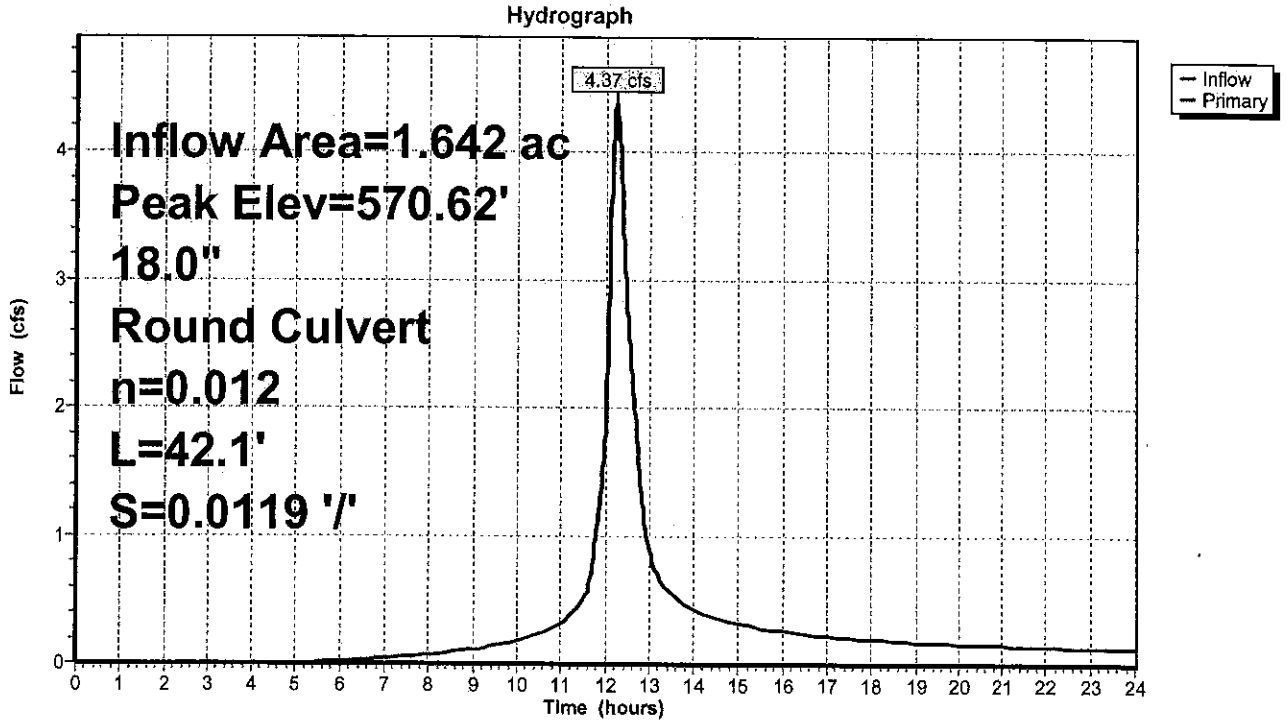
Inflow Area = 1.642 ac, 13.25% Impervious, Inflow Depth > 3.82" for 50-yr event
Inflow = 4.37 cfs @ 12.25 hrs, Volume= 0.522 af
Outflow = 4.37 cfs @ 12.25 hrs, Volume= 0.522 af, Atten= 0%, Lag= 0.0 min
Primary = 4.37 cfs @ 12.25 hrs, Volume= 0.522 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 570.62' @ 12.25 hrs
Flood Elev= 573.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	569.50'	**18.0" Round Culvert** L= 42.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 569.50' / 569.00' S= 0.0119 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=4.37 cfs @ 12.25 hrs HW=570.62' TW=570.02' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.37 cfs @ 4.28 fps)

Pond CB1: CB1



Summary for Pond CB2: CB2

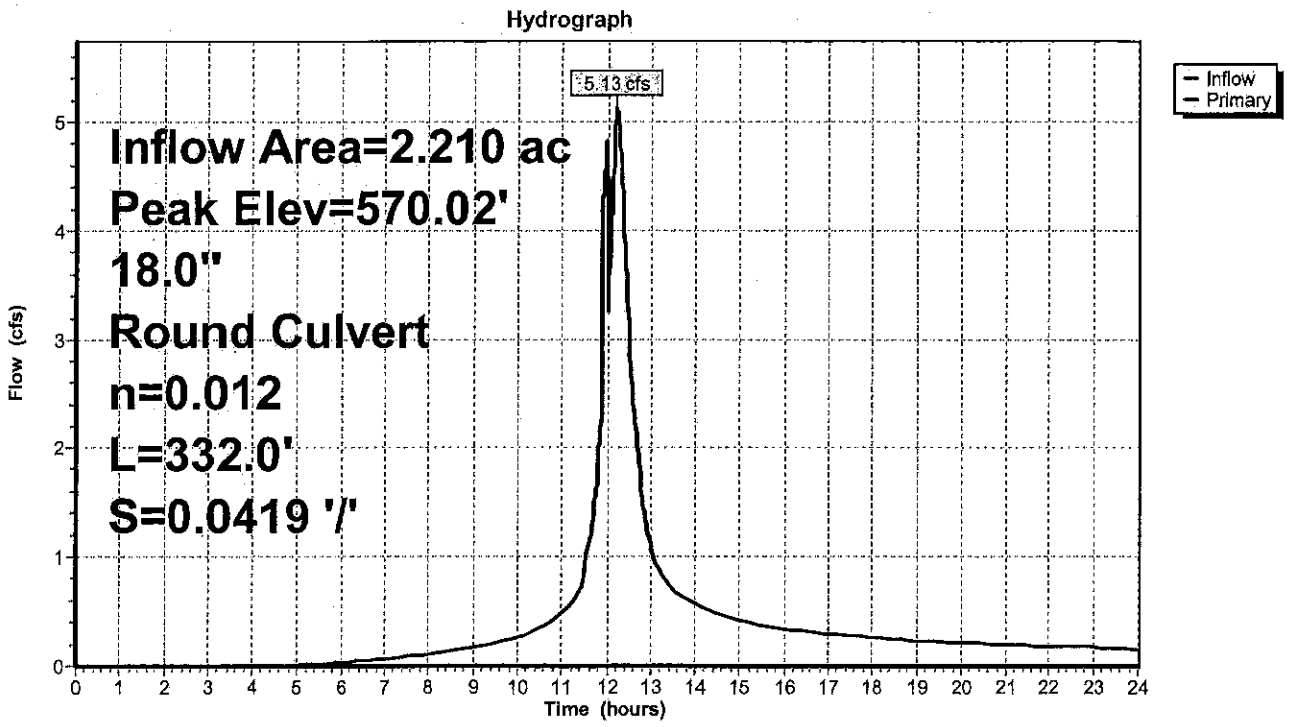
Inflow Area = 2.210 ac, 17.69% Impervious, Inflow Depth > 3.90" for 50-yr event
Inflow = 5.13 cfs @ 12.19 hrs, Volume= 0.719 af
Outflow = 5.13 cfs @ 12.19 hrs, Volume= 0.719 af, Atten= 0%, Lag= 0.0 min
Primary = 5.13 cfs @ 12.19 hrs, Volume= 0.719 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 570.02' @ 12.19 hrs
Flood Elev= 573.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	568.90'	**18.0" Round Culvert** L= 332.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 568.90' / 555.00' S= 0.0419 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=5.12 cfs @ 12.19 hrs HW=570.02' TW=556.02' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 5.12 cfs @ 3.61 fps)

Pond CB2: CB2



Summary for Pond DMH1: DMH1

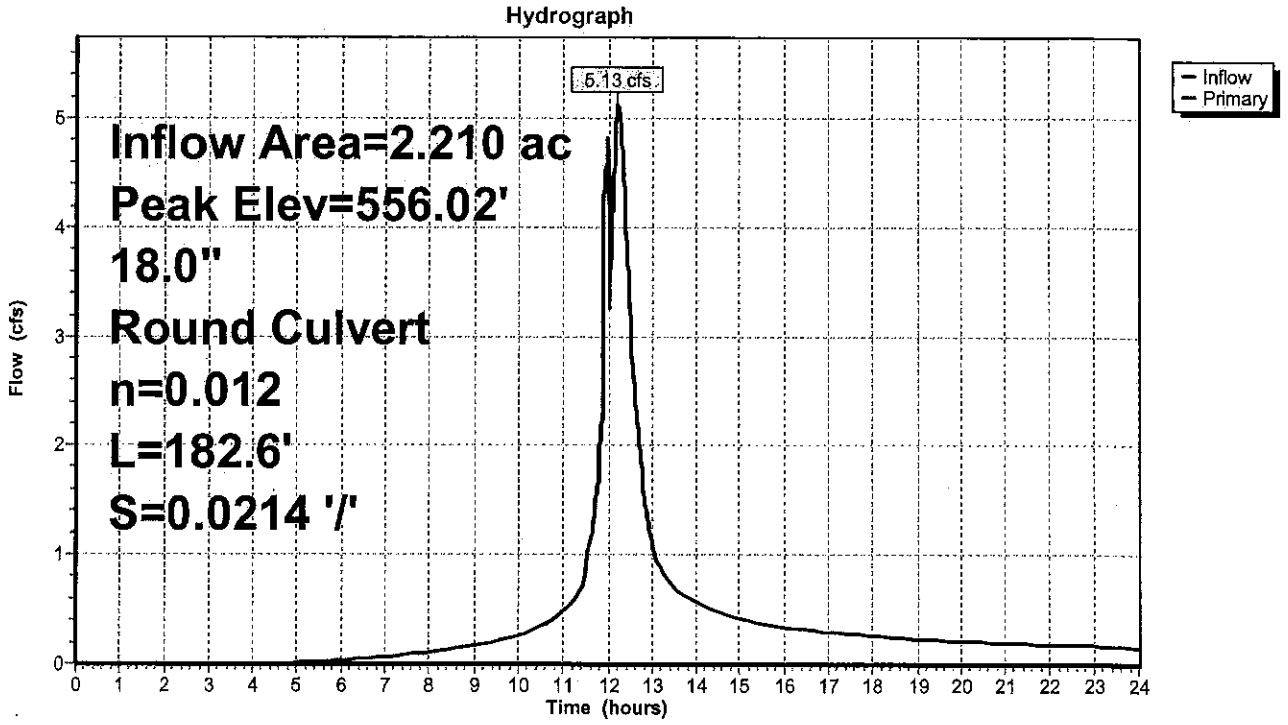
Inflow Area = 2.210 ac, 17.69% Impervious, Inflow Depth > 3.90" for 50-yr event
Inflow = 5.13 cfs @ 12.19 hrs, Volume= 0.719 af
Outflow = 5.13 cfs @ 12.19 hrs, Volume= 0.719 af, Atten= 0%, Lag= 0.0 min
Primary = 5.13 cfs @ 12.19 hrs, Volume= 0.719 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 556.02' @ 12.19 hrs
Flood Elev= 559.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	554.90'	**18.0" Round Culvert** L= 182.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 554.90' / 551.00' S= 0.0214 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=5.12 cfs @ 12.19 hrs HW=556.02' TW=552.02' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.12 cfs @ 3.61 fps)

Pond DMH1: DMH1



Summary for Pond DMH2: DMH2

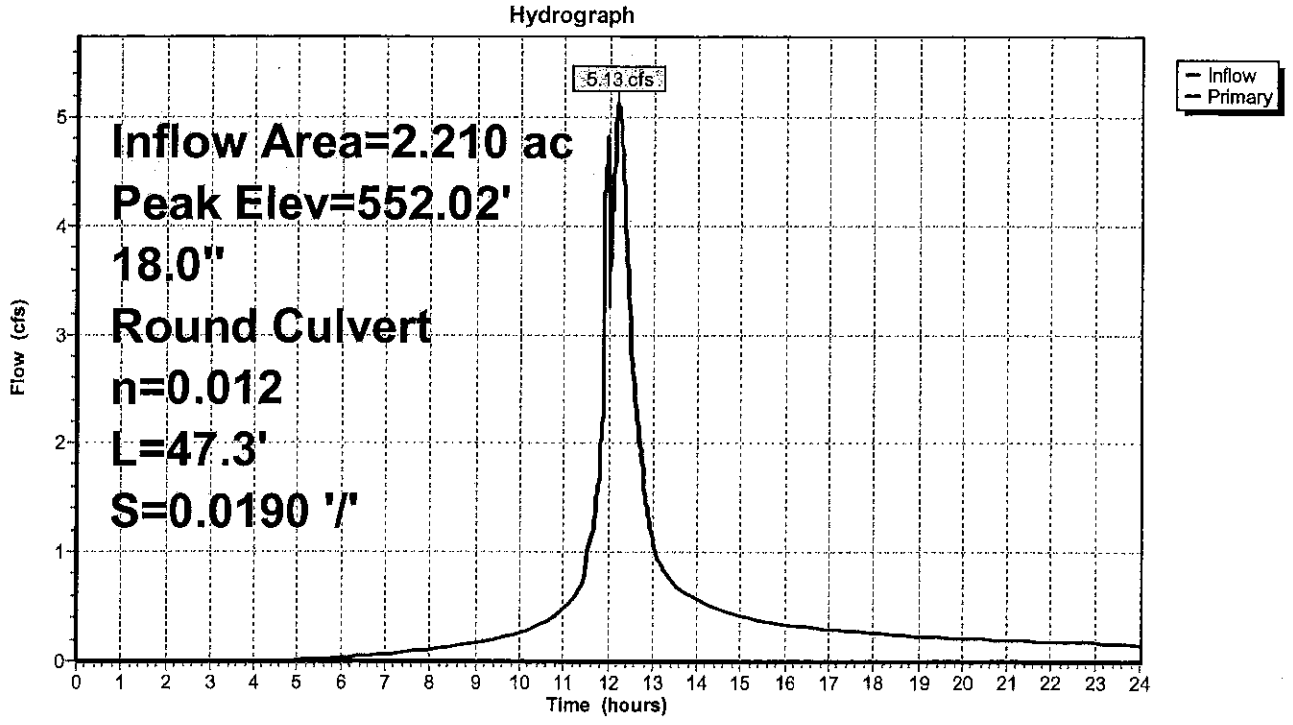
Inflow Area = 2.210 ac, 17.69% Impervious, Inflow Depth > 3.90" for 50-yr event
Inflow = 5.13 cfs @ 12.19 hrs, Volume= 0.719 af
Outflow = 5.13 cfs @ 12.19 hrs, Volume= 0.719 af, Atten= 0%, Lag= 0.0 min
Primary = 5.13 cfs @ 12.19 hrs, Volume= 0.719 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 552.02' @ 12.19 hrs
Flood Elev= 555.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	550.90'	**18.0" Round Culvert** L= 47.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 550.90' / 550.00' S= 0.0190 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=5.12 cfs @ 12.19 hrs HW=552.02' TW=549.55' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 5.12 cfs @ 3.61 fps)

Pond DMH2: DMH2



Summary for Pond EX-P1: EX-POND 1

Inflow Area = 7.735 ac, 5.52% Impervious, Inflow Depth > 3.47" for 50-yr event
Inflow = 14.59 cfs @ 12.37 hrs, Volume= 2.237 af
Outflow = 14.50 cfs @ 12.41 hrs, Volume= 2.229 af, Atten= 1%, Lag= 2.3 min
Primary = 7.96 cfs @ 12.41 hrs, Volume= 2.054 af
Secondary = 6.54 cfs @ 12.41 hrs, Volume= 0.175 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 557.54' @ 12.41 hrs Surf.Area= 5,233 sf Storage= 6,527 cf
Flood Elev= 558.00' Surf.Area= 6,968 sf Storage= 9,322 cf

Plug-Flow detention time= 8.4 min calculated for 2.228 af (100% of inflow)
Center-of-Mass det. time= 6.5 min (857.2 - 850.7)

Volume	Invert	Avail.Storage	Storage Description
#1	553.80'	9,322 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

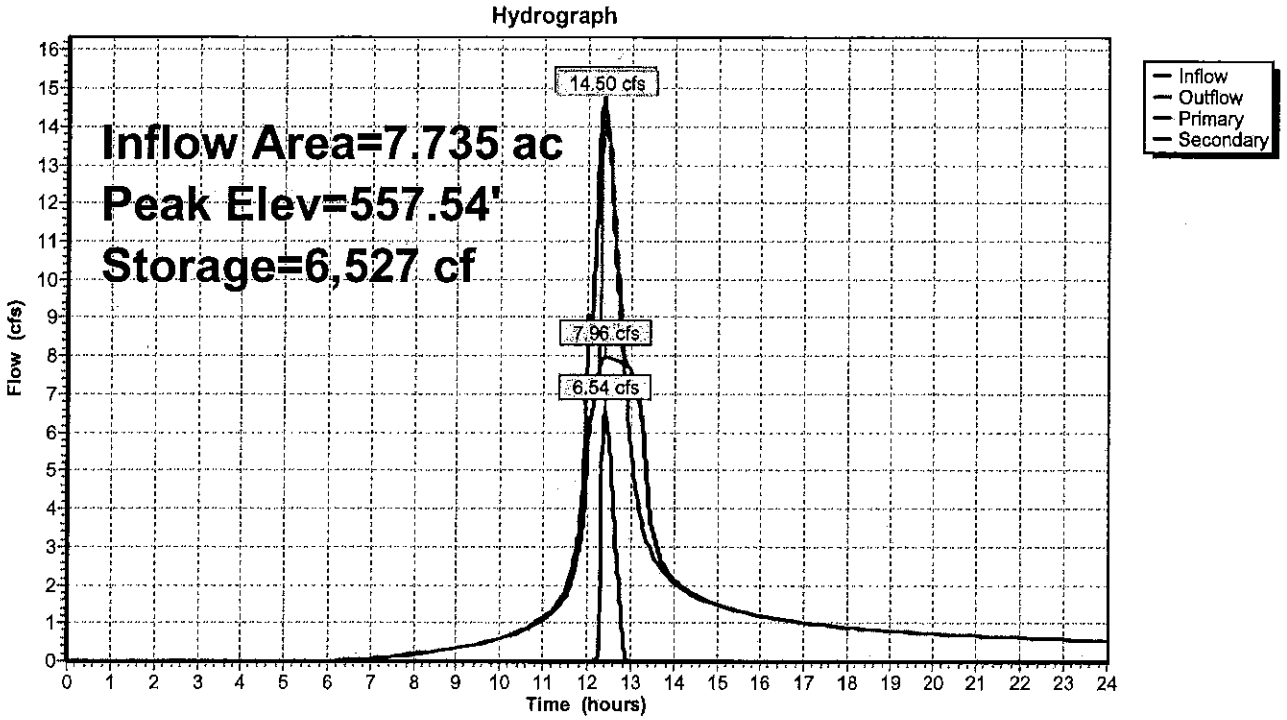
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
553.80	54	34.7	0	0	54
554.00	651	108.3	59	59	892
556.00	1,228	143.6	1,849	1,908	1,643
558.00	6,968	326.9	7,414	9,322	8,522

Device	Routing	Invert	Outlet Devices
#1	Primary	554.00'	**15.0" Round Culvert** L= 16.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 553.80' / 554.00' S= -0.0121 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	557.40'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=7.96 cfs @ 12.41 hrs HW=557.54' TW=554.52' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 7.96 cfs @ 6.49 fps)

Secondary OutFlow Max=6.54 cfs @ 12.41 hrs HW=557.54' TW=554.52' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 6.54 cfs @ 0.93 fps)

Pond EX-P1: EX-POND 1



Summary for Pond EX-P2: EX-POND 2

Inflow Area = 11.760 ac, 3.63% Impervious, Inflow Depth > 3.41" for 50-yr event
Inflow = 20.41 cfs @ 12.42 hrs, Volume= 3.338 af
Outflow = 20.34 cfs @ 12.44 hrs, Volume= 3.320 af, Atten= 0%, Lag= 1.1 min
Primary = 6.47 cfs @ 12.44 hrs, Volume= 2.573 af
Secondary = 13.87 cfs @ 12.44 hrs, Volume= 0.747 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 548.13' @ 12.44 hrs Surf.Area= 5,269 sf Storage= 7,862 cf
Flood Elev= 550.00' Surf.Area= 10,659 sf Storage= 22,455 cf

Plug-Flow detention time= 12.6 min calculated for 3.319 af (99% of inflow)
Center-of-Mass det. time= 9.6 min (865.7 - 856.2)

Volume	Invert	Avail.Storage	Storage Description
#1	545.40'	22,455 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

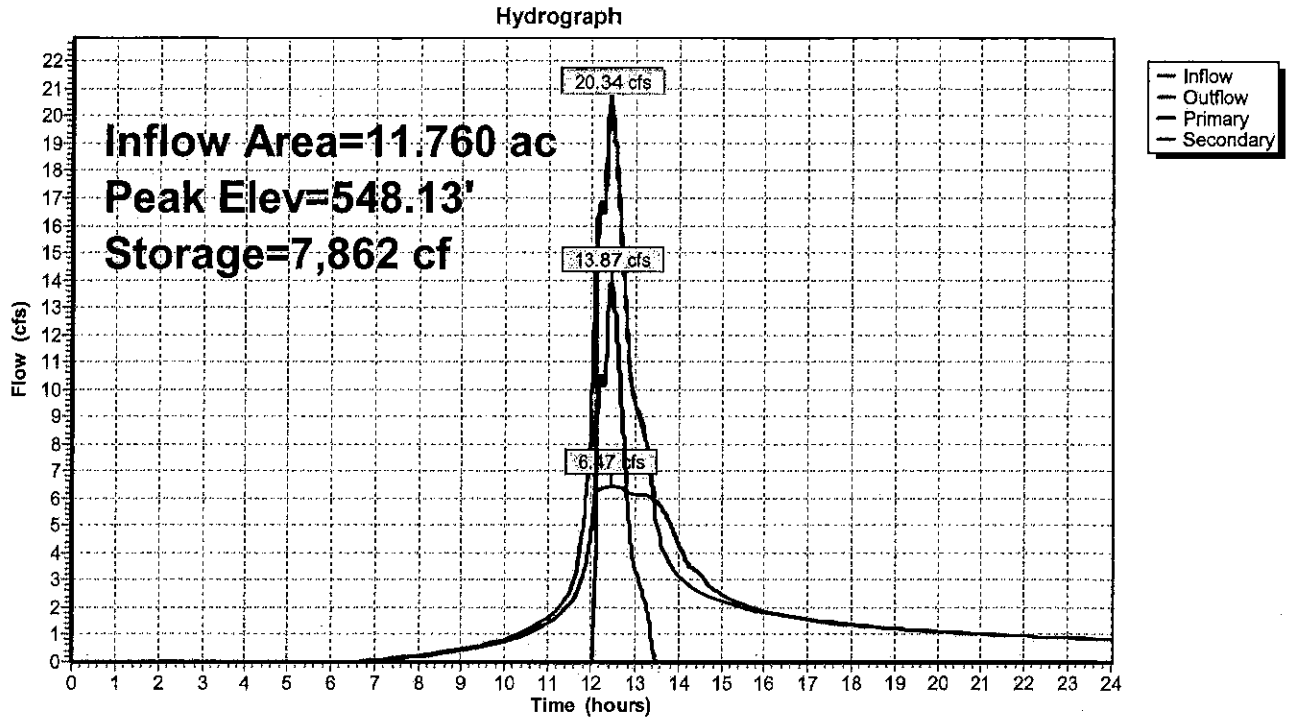
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
545.40	257	79.7	0	0	257
546.00	1,900	206.6	571	571	3,149
548.00	4,962	313.4	6,622	7,193	7,599
550.00	10,659	458.5	15,262	22,455	16,546

Device	Routing	Invert	Outlet Devices
#1	Primary	545.40'	**15.0" Round Culvert** L= 17.8' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 545.40' / 545.40' S= 0.0000 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	547.90'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.47 cfs @ 12.44 hrs HW=548.13' TW=546.11' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 6.47 cfs @ 5.27 fps)

Secondary OutFlow Max=13.87 cfs @ 12.44 hrs HW=548.13' TW=546.11' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 13.87 cfs @ 1.20 fps)

Pond EX-P2: EX-POND 2



Summary for Pond P1: Pipe 1 (P1)

Inflow Area = 2.731 ac, 6.67% Impervious, Inflow Depth > 3.51" for 50-yr event
Inflow = 6.53 cfs @ 12.26 hrs, Volume= 0.800 af
Outflow = 6.41 cfs @ 12.30 hrs, Volume= 0.799 af, Atten= 2%, Lag= 2.1 min
Primary = 6.41 cfs @ 12.30 hrs, Volume= 0.799 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 564.48' @ 12.30 hrs Surf.Area= 838 sf Storage= 691 cf
Flood Elev= 566.80' Surf.Area= 3,360 sf Storage= 4,672 cf

Plug-Flow detention time= 2.1 min calculated for 0.798 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (846.4 - 844.9)

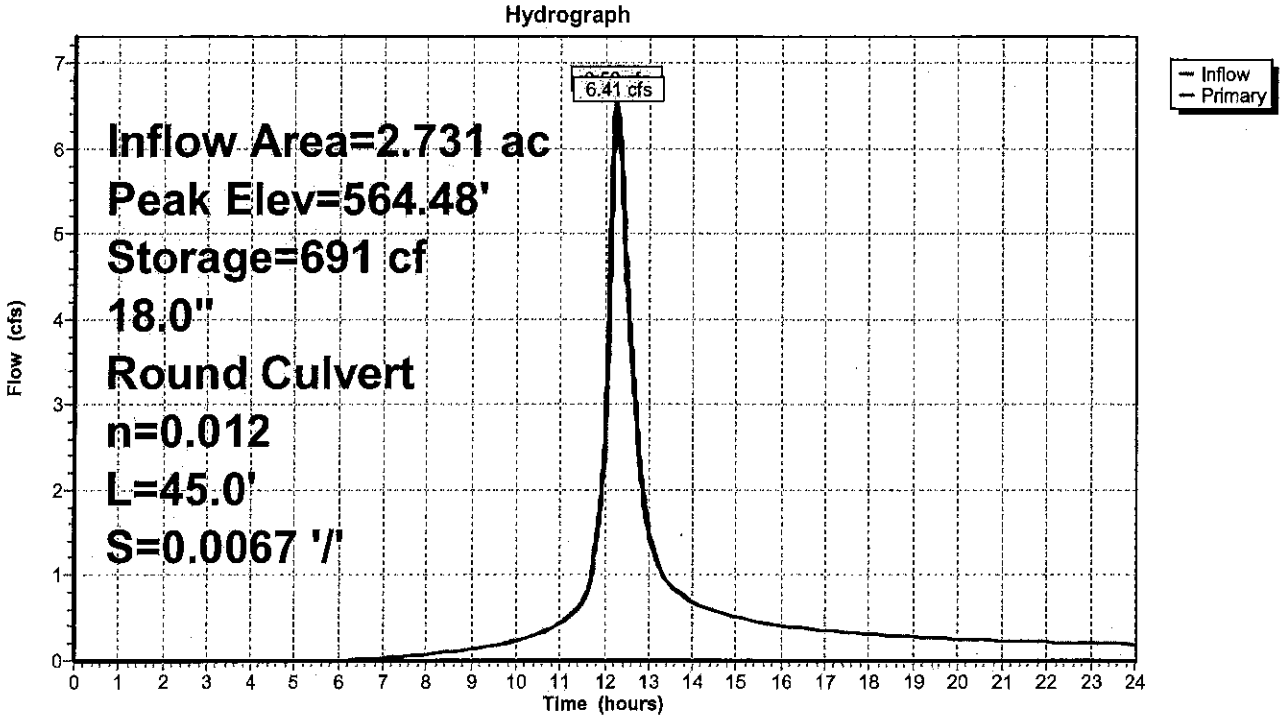
Volume	Invert	Avail.Storage	Storage Description
#1	563.00'	4,672 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
563.00	137	171.0	0	0	137
564.00	614	279.0	347	347	4,011
566.00	1,787	306.0	2,299	2,646	5,397
566.80	3,360	380.6	2,026	4,672	9,483

Device	Routing	Invert	Outlet Devices
#1	Primary	563.00'	**18.0" Round Culvert** L= 45.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 563.00' / 562.70' S= 0.0067 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=6.41 cfs @ 12.30 hrs HW=564.48' TW=561.77' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 6.41 cfs @ 4.59 fps)

Pond P1: Pipe 1 (P1)



Summary for Pond P2: Pipe 2 (P2)

Inflow Area = 1.340 ac, 5.94% Impervious, Inflow Depth > 3.62" for 50-yr event
Inflow = 3.77 cfs @ 12.18 hrs, Volume= 0.404 af
Outflow = 3.75 cfs @ 12.20 hrs, Volume= 0.404 af, Atten= 1%, Lag= 1.0 min
Primary = 3.75 cfs @ 12.20 hrs, Volume= 0.404 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 562.48' @ 12.20 hrs Surf.Area= 397 sf Storage= 139 cf
Flood Elev= 565.20' Surf.Area= 3,151 sf Storage= 4,238 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (837.5 - 837.3)

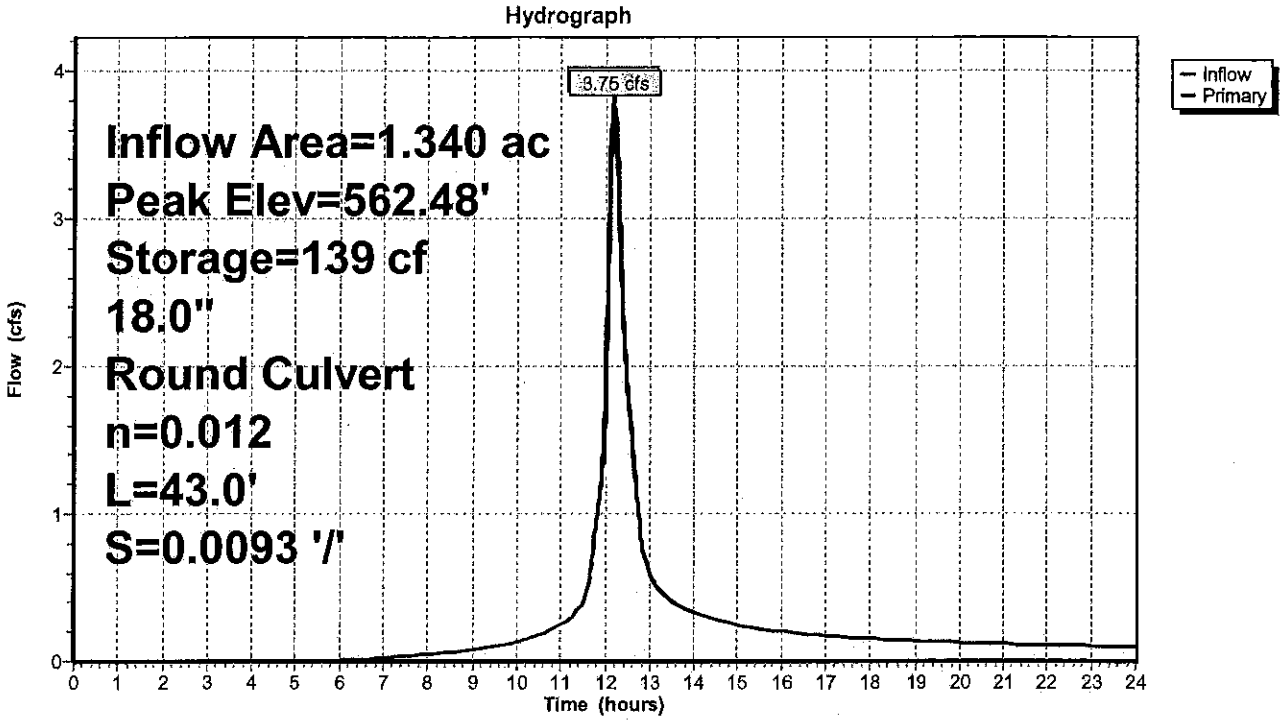
Volume	Invert	Avail.Storage	Storage Description
#1	562.00'	4,238 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
562.00	195	199.0	0	0	195
564.00	1,512	238.5	1,500	1,500	1,638
565.20	3,151	355.0	2,738	4,238	7,152

Device	Routing	Invert	Outlet Devices
#1	Primary	561.50'	**18.0" Round Culvert** L= 43.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 561.50' / 561.10' S= 0.0093 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.75 cfs @ 12.20 hrs HW=562.48' TW=553.62' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 3.75 cfs @ 4.36 fps)

Pond P2: Pipe 2 (P2)



Summary for Pond P3: Pipe 3 (P3)

Inflow Area = 1.501 ac, 11.16% Impervious, Inflow Depth > 3.81" for 50-yr event
Inflow = 3.78 cfs @ 12.27 hrs, Volume= 0.477 af
Outflow = 3.62 cfs @ 12.34 hrs, Volume= 0.477 af, Atten= 4%, Lag= 4.0 min
Primary = 3.62 cfs @ 12.34 hrs, Volume= 0.477 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 567.10' @ 12.34 hrs Surf.Area= 360 sf Storage= 250 cf
Flood Elev= 568.50' Surf.Area= 578 sf Storage= 670 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (836.5 - 836.3)

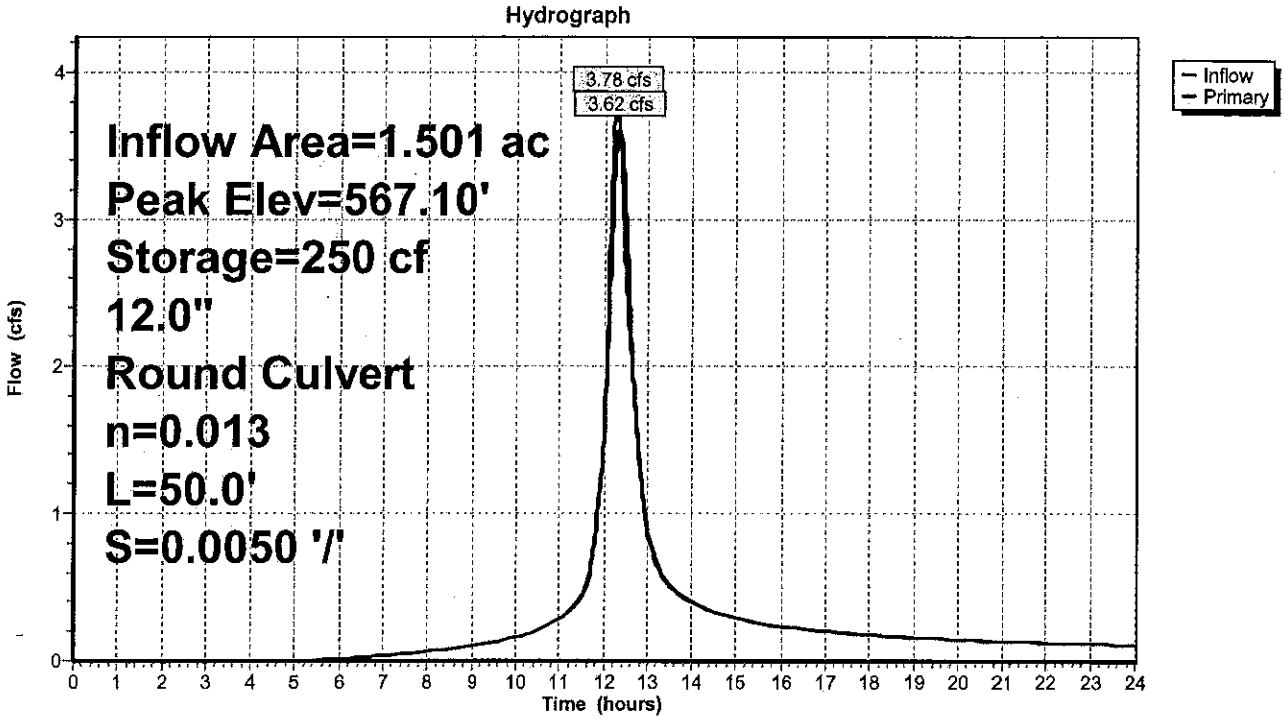
Volume	Invert	Avail.Storage	Storage Description
#1	566.00'	670 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
566.00	92	0	0
568.00	578	670	670

Device	Routing	Invert	Outlet Devices
#1	Primary	565.00'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 565.00' / 564.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.62 cfs @ 12.34 hrs HW=567.10' TW=565.64' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 3.62 cfs @ 4.60 fps)

Pond P3: Pipe 3 (P3)



Summary for Pond PP: Porous Pave

Inflow Area = 0.061 ac,100.00% Impervious, Inflow Depth > 5.60" for 50-yr event
Inflow = 0.39 cfs @ 11.99 hrs, Volume= 0.028 af
Outflow = 0.15 cfs @ 12.10 hrs, Volume= 0.020 af, Atten= 61%, Lag= 6.4 min
Primary = 0.15 cfs @ 12.10 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 566.27' @ 12.10 hrs Surf.Area= 2,650 sf Storage= 578 cf
Flood Elev= 568.76' Surf.Area= 2,650 sf Storage= 2,324 cf

Plug-Flow detention time= 245.2 min calculated for 0.020 af (71% of inflow)
Center-of-Mass det. time= 131.5 min (872.2 - 740.7)

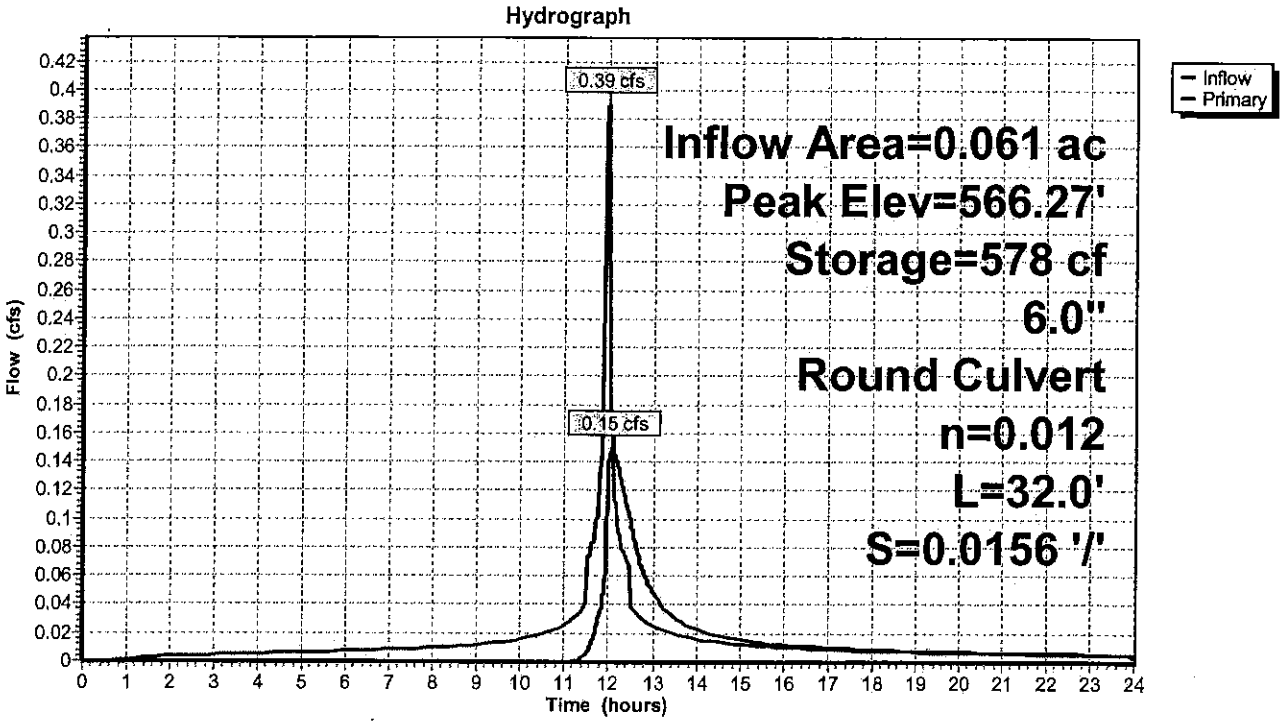
Volume	Invert	Avail.Storage	Storage Description
#1	565.68'	2,324 cf	., **(Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
565.68	2,650	406.0	0.0	0	0	2,650
566.85	2,650	406.0	37.0	1,147	1,147	3,125
567.10	2,650	406.0	25.0	166	1,313	3,227
568.10	2,650	406.0	20.0	530	1,843	3,633
568.43	2,650	406.0	25.0	219	2,061	3,767
568.76	2,650	406.0	30.0	262	2,324	3,900

Device	Routing	Invert	Outlet Devices
#1	Primary	566.00'	**6.0" Round Culvert** L= 32.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 566.00' / 565.50' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.15 cfs @ 12.10 hrs HW=566.27' TW=565.51' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.15 cfs @ 1.39 fps)

Pond PP: Porous Pave



Summary for Pond WP1: Wet Pond 1

Inflow Area = 3.321 ac, 12.68% Impervious, Inflow Depth > 3.74" for 50-yr event
Inflow = 8.13 cfs @ 12.19 hrs, Volume= 1.036 af
Outflow = 6.45 cfs @ 12.34 hrs, Volume= 1.026 af, Atten= 21%, Lag= 9.1 min
Primary = 6.45 cfs @ 12.34 hrs, Volume= 1.026 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 547.00' Surf.Area= 1,877 sf Storage= 2,686 cf
Peak Elev= 549.75' @ 12.34 hrs Surf.Area= 6,422 sf Storage= 11,546 cf (8,860 cf above start)
Flood Elev= 551.00' Surf.Area= 7,656 sf Storage= 17,990 cf (15,304 cf above start)

Plug-Flow detention time= 88.8 min calculated for 0.964 af (93% of inflow)
Center-of-Mass det. time= 31.2 min (862.8 - 831.6)

Volume	Invert	Avail.Storage	Storage Description
#1	546.00'	330 cf	**Forebay (Irregular)** Listed below
#2	544.00'	2,356 cf	**Perm Pool (Irregular)** Listed below (Recalc)
#3	547.10'	15,304 cf	**Overall Pond (Irregular)** Listed below (Recalc)
		17,990 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
546.00	192	74.0	0	0	192
547.00	491	103.0	330	330	610

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
544.00	291	87.0	0	0	291
546.00	962	131.0	1,188	1,188	1,085
547.00	1,386	150.0	1,168	2,356	1,532

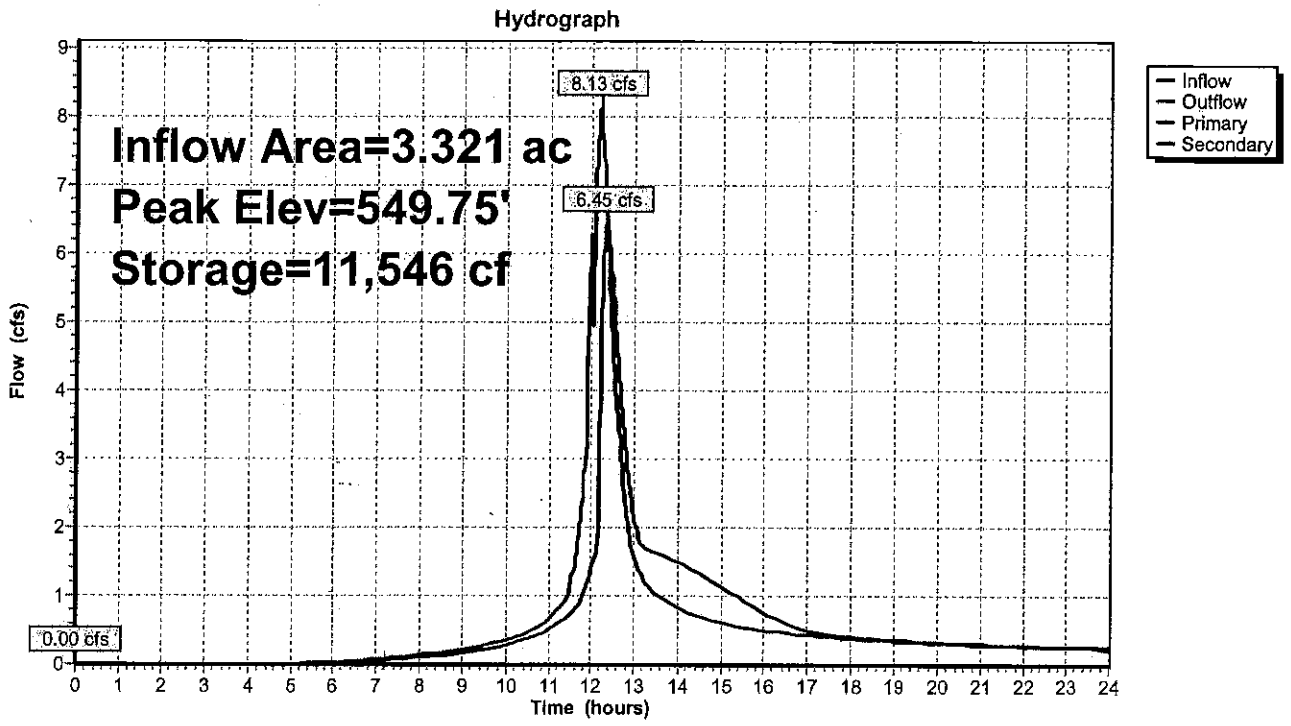
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
547.10	2,179	252.0	0	0	2,179
548.00	2,987	282.0	2,315	2,315	3,476
550.00	4,794	319.0	7,710	10,025	5,345
551.00	5,779	337.0	5,279	15,304	6,340

Device	Routing	Invert	Outlet Devices
#1	Primary	546.00'	**12.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 546.00' / 545.25' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	547.00'	**6.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#3	Device 1	549.25'	**48.0" W x 48.0" H Vert. Orifice/Grate** C= 0.600
#4	Secondary	550.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.45 cfs @ 12.34 hrs HW=549.75' TW=545.62' (Dynamic Tailwater)
└─**1=Culvert** (Passes 6.45 cfs of 6.82 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.90 cfs @ 7.61 fps)
  └─**3=Orifice/Grate** (Orifice Controls 4.54 cfs @ 2.27 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=547.00' TW=545.25' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond WP1: Wet Pond 1

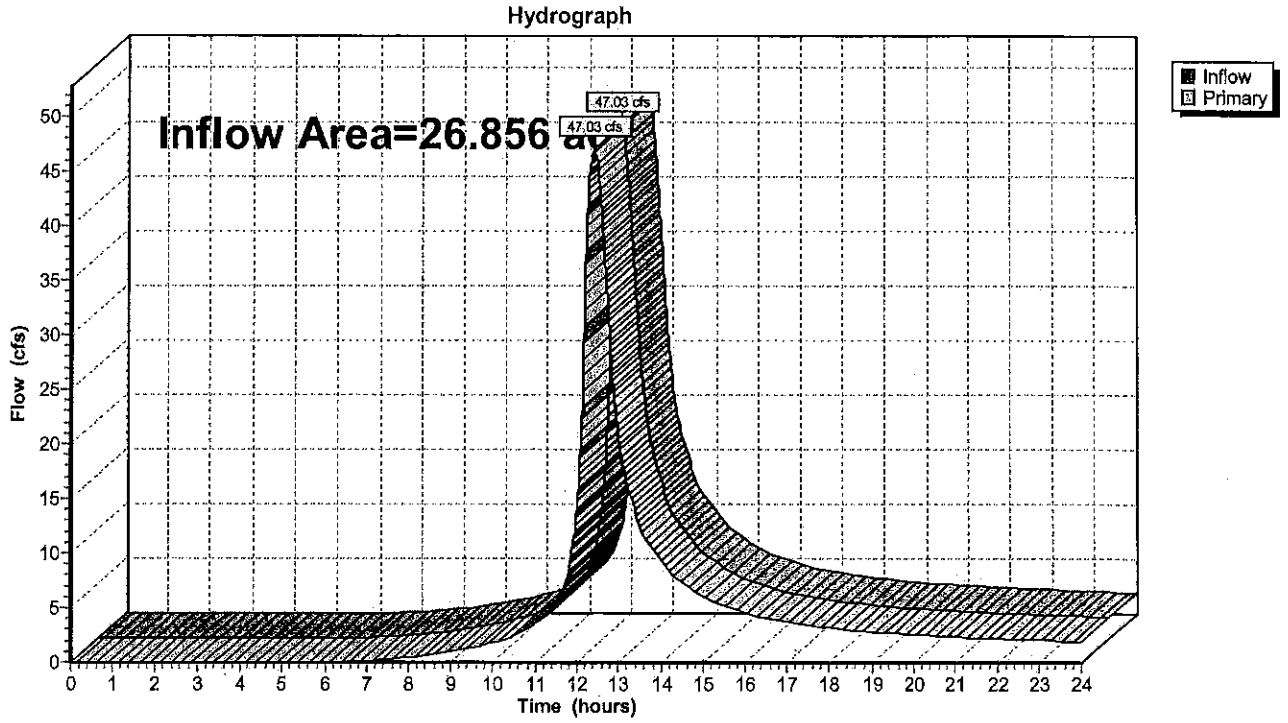


Summary for Link A: A - Colby Rd

Inflow Area = 26.856 ac, 5.16% Impervious, Inflow Depth > 3.46" for 50-yr event
Inflow = 47.03 cfs @ 12.42 hrs, Volume= 7.747 af
Primary = 47.03 cfs @ 12.42 hrs, Volume= 7.747 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link A: A - Colby Rd

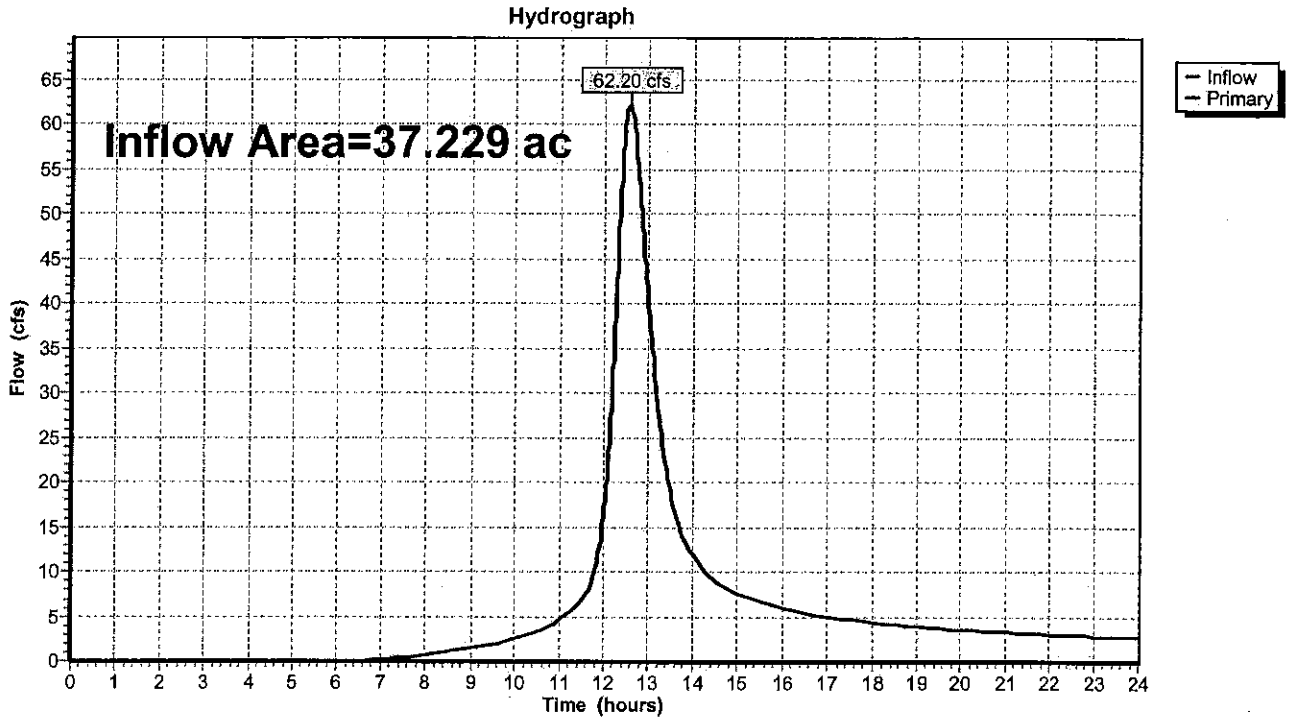


Summary for Link B: B - Kona Farm Rd

Inflow Area = 37.229 ac, 1.54% Impervious, Inflow Depth > 3.41" for 50-yr event
Inflow = 62.20 cfs @ 12.56 hrs, Volume= 10.591 af
Primary = 62.20 cfs @ 12.56 hrs, Volume= 10.591 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link B: B - Kona Farm Rd

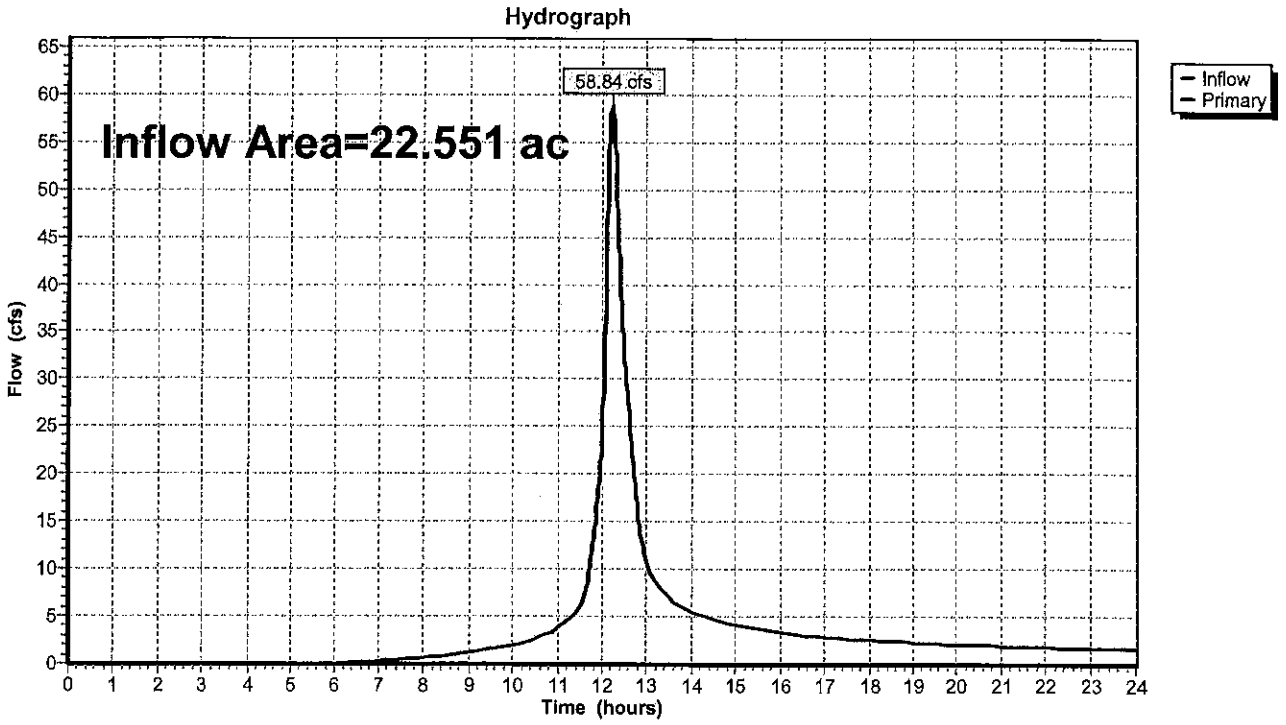


Summary for Link C: C - Lake

Inflow Area = 22.551 ac, 4.66% Impervious, Inflow Depth > 3.52" for 50-yr event
Inflow = 58.84 cfs @ 12.21 hrs, Volume= 6.607 af
Primary = 58.84 cfs @ 12.21 hrs, Volume= 6.607 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link C: C - Lake



APPENDIX B

MAPS

B – 1

PRE-DEVELOPED CONDITIONS

B – 2

POST-DEVELOPED CONDITIONS