October 12, 2022

STORM WATER MANAGEMENT REPORT

DHL Supply Chain

Ashville Logistic Park - Leatherwood

Ashville, Ohio

PREPARED FOR:

DHL SUPPLY CHAIN
360 WESTAR BOULEVARD
WESTERVILLE, OH 43082

PREPARED BY:

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PN# 2022 4880.001A

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Ashville Logistics Park
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1.0 INTRODUCTION:

This report was prepared for the proposed DHL Supply Chain Ashville Logistics Park on SR 752 in Ashville, Ohio. This report will provide calculations to analyze the existing conditions/drainage, the proposed drainage system and for compliance with the Village of Ashville requirements. (See proposed site plan included in Appendix A).

2.0 SITE LOCATION:

The site is located on the South side of SR 752 on the west side of the Village of Ashville. The site is bounded on the north and south by agricultural land and by a mix of residential commercial and industrial on the other sides.

Site coordination's are: North Side: Latitude – 39.7295 N; Longitude – 82.9719 W.
(See Site location map is included in Appendix B).

3.0 EXISTING CONDITIONS:

The site consists of approximately 40.38 acres of agricultural land on the south side of SR 752. This site has an elevation difference of over 8' from east to west. Soils consist of predominately Hydrological Soils Group of B & C. Ground cover consist of good straight row crop residual. There is an existing detention basin which serves the Commerce Park development located south of SR 752. This basin drains west thru an unnamed drainage way to Mud Run. Soils consist of mainly Hydrological Soils Group B & C.

Existing Soil Data				
Map Unit Symbol	Soil Name	Acres	Percent	HSG
CRA	Crosby Silt Loam. Southern Ohio Till Plain	21.19	52.5	C
KO	Kokomo Silty Clay Loam	13.75	34	B/D
MKB	Miamian – Kendallville Silt Loam	5.44	13.5	C
TOTAL		40.38	100.0%	

Per the City Engineer for Ashville Hydrological Soil Group C was assumed for entire site for pre-developed conditions.

See Pre-existing condition plan included in (Appendix D).

4.0 PROPOSED CONDITIONS:

The project will consist of the construction of a 572,460 s.f. building, along with required employee parking, truck parking/docs, access road and utilities.

The stormwater management system for the Ashville Logistics Park project consists of an underground pipe system which will be directed to a detention basin. Surface runoff is collected using curb and gutter inlets in the streets, employee parking and truck dock areas and catch basin in green areas outside of pavement areas. Stormwater will be released from the detention basin through an outlet control structure. The outlet control structure will regulate the release rate to meet the requirements set in the City of Columbus Stormwater Drainage Manual and ultimately discharges to Mud Run.

There will be off-site drainage that will be routed thru the stormwater management system. The Commerce Park drainage discharges to a detention basin on the east end of the site.. This basin will be removed, and additional volume will be added to proposed basin. Additionally there is a 24" storm sewer which bisects the site which will be directed thru the proposed detention system.

The critical storm (25-year) for discharge limitation was determined per Chapter 3.2.2 of the City of Columbus Stormwater Drainage Manual. The discharge for all storms up to and including the critical storm is less than the allowable discharge for the 1-year storm for the pre-developed condition plus additional flow that will pass thru from the 24" storm sewer.. The discharge for the events greater than the critical storm is less than the pre-developed runoff rate for the 10-year pre-developed condition.

Water quality requirements are met using the detention pond as a dry extended detention basin, with Water Quality Volume provided at the bottom of the pond Forebays are provided at the pond inlet pipes, providing more than the required sediment storage volume. Micro pools are provided at the pond outlets in order to provide a submerged non-clogging outlet for the Extended Detention Storage volume.

5.0 STORMWATER ANALYSIS ASSUMPTION:

Design Storm	-	5 Years	(2 Year Requirement)
HGL/EGL Check	-	10 Years	(5 Year Requirement)
* Min. Time of Concentration	t_c	=	10 Minutes
Pipe roughness coefficient	*n*	=	.01 for HDPE Pipe .013 for Concrete Pipe

* Assumed for all drainage areas.

(Storm sewer pipe design and sizing is not included at this time).

HYDROLOGIC ANALYSIS:

Hydrologic parameter such as Runoff Curve Number (RCN) and Time of Concentration were determined using standard Natural Resources Conservation Services (NRCS) methodology. The 1-, 2-, 5-, 10-, 25-, 50-, and 100-year discharge amounts were calculated using the NRCS TR-55 method. This analysis reflects the NRCS Type II distribution, 24-hour storm duration. Rainfall depths were obtained from Atlas 14. The peak flow rates were computed using Hydro CAD v10.0. Per the Ashville requirements a Runoff Curve Number for pre-existing condition is assumed 78.

PRE-DEVELOPED ANALYSIS:

The existing peak flow rates are shown on Table 1. The Hydro CAD output has been provided.

The pre-developed runoff conditions for the project are consistent throughout the entire project. The site has gently undulating topography with elevation difference of approximately 20' or more. The existing ground consist of good straight row crop residue and soils are typically Hydrological Group B or C. The pre-developed drainage map (Appendix H) delineates the different drainage areas onsite. Additional mapping also delineates off-site drainage which impacts the site.

The drainage area for the pre-developed conditions was reduced by the area on the west side which will continue to drain off site to the west and the area which encompasses the unnamed ditch along the southern property line. This ditch will remain un-disturbed and will continue to drain west. These reductions reduce the acreage used to calculate pre-existing allowable discharge from 40.38 acres to 38.48 acres for the DHL portion.

The total area including Commerce Park is approximately 54.2 acres

The runoff peak flow rates were calculated from storms of 1 year thru 100 years using the Hydra-CADD. In general, the run-offs flow in a westerly and/or southerly direction as indicated on the pre-developed drainage maps.

Table 1

Existing Peak Flow Rates	
Storm Event (Yrs.)	**Peak Flow Rates (cfs)**
1	**9.46 cfs**
2	**14.80 cfs**
5	**23.39 cfs**
10	**30.91 cfs**
25	**42.44 cfs**
50	**52.08 cfs**
100	**62.85 cfs**

POST-DEVELOPED ANALYSIS:

For the post developed analysis the area to the west and the south were deducted from the overall drainage area as these areas are undeveloped and will continue to drain off-site. The area around the original detention basin (4.04 acres) was included in the site developed run-off but was reduced on the Commerce Park analysis (it cannot be accounted for twice) so the Commerce Park area was reduced by 4.04 acres.

6.0 STORMWATER MANAGEMENT:

Stormwater Management for the post developed runoff will be directed to the detention pond. The discharge will be limited to the pre-developed discharge.

The Hydro CAD program was utilized to determine storage requirements. A time of concentration was estimated by assuming the velocity of flow would be at least 2ft./sec. and determining the longest distance to the outlet.

Tc -

L = 6,800' +/-
V = 2' / sec.

Tc = 6,800' / 2' sec. / 60 sec. minimum
= 56.6 min. Use 60 min.

The critical storm calculation requires the runoff from a 50-year storm be retained with the discharge limited to a 1 year pre-develop. The outlets will be controlled thru the appropriate size orifices. The allowable and post-developed peak flows are shown in Table #2.

The flow for the 24" sewer was estimated using StreamStats as well as the HydroCADD program. The results of the 1 thru 100 year run-off rate is indicated in Table 3 and are the results from the HydroCADD program.

Table 2

Allowable and Proposed Peak Flow Rates including 24" Storm Pass Thru. (See Section 6.2.3)

Storm Event (yr.)	Existing Peak Flow Rates (cfs)	Allowable Peak Flow Rates (cfs) *	Pass Thru Flow Rates (cfs)	Total Flow Rates	Proposed Peak Flow Rates (cfs)	Peak Elevation
1	9.46	9.46	32.31	46.77	9.47	691.01
2	14.80	9.46	42.20	51.66	9.47	693.06
5	23.39	9.46	56.55	66.01	9.47	695.56
10	30.91	9.46	68.22	77.68	13.83	697.15
25	42.44	9.46	85.23	94.69	43.53	697.64
50	52.08	30.91	98.92	129.83	69.71	697.94
100	62.85	30.91	113.77	144.60	97.48	698.21

Because of the depth required in the detention basin compared to the depth of the outlet channel the discharge from the detention basin will be regulated through a stormwater pump station. Multiple pumps will be utilized.

The initial pump will be sized for the WQv flow rate. The Water Quality rate of flow is .56 cfs (see attached Water Quality Spreadsheet in Appendix G) or 252 gpm.

The second stage pump will be sized for the allowable 1 year pre-developed discharge from Leatherwood/Commerce Park less the WQ rate of .56 of 8.9 cfs or 3,994.32 gpm. Use 4,000 gpm.

6.1.0 Critical Storm Calculations

For pre-developed condition a CN of 78 was used (per Village code) and a Hydrological So8ils Group of C was assumed for the entire site.

24 hours 1 Year Rainfall = 2.20"

This basin will provide storage for Leatherwood site as well as Commerce Park.

Pre-Developed:

(Leatherwood and Commerce Park)

Per the attached Hydro CADD for the proposed development pre-developed flow.. This area (less the area that will drain off site after development) was used to determine the 1 year runoff volume.

Area	=	54195 Acres
Flow	=	9.46 cfs
Volume	=	2.433 acre ft.

Post Developed:

The post developed flow includes the proposed development area as well as Commerce Park for a total of 54.2 acres. An average of CN of 92 was calculated for the Leatherwood Property and a CN of 9 was obtained from the original report for Commerce Park. The resulting flows are

Area	=	54.195 Acres
Flow	=	41.24 cfs.
Volume	=	6.735 ac. Ft.

Critical Storm:

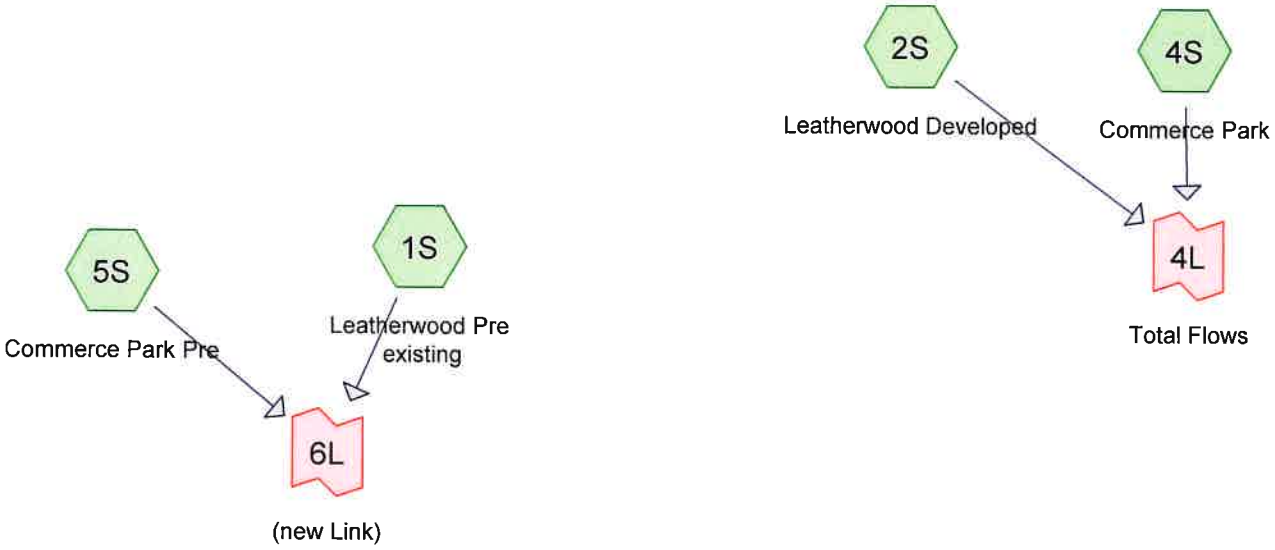
$$\frac{6.735 \text{ ac. Ft.} - 2.433 \text{ ac. Ft.}}{2.437 \text{ ac. Ft.}} = 177\%$$

Use 25 year Storm

6.1.0 CRITICAL STORM

PRE-DEVLEOPED 1 THRU 100-YEAR RUN-OFF

POST DEVELOPED 1 THRU 100-YEAR RUN-OFF



Subcat Reach Pond Link

Routing Diagram for DHL-LeatherwoodCritical Storm
Prepared by Poggemeyer Design Group, Printed 10/19/2022

Project Notes

Rainfall events imported from "DHL-Ashly Pre exisitng.hcp"

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	2.20	2
2	2-Year	Type II 24-hr		Default	24.00	1	2.63	2
3	5-Year	Type II 24-hr		Default	24.00	1	3.24	2
4	10-Year	Type II 24-hr		Default	24.00	1	3.73	2
5	25-Year	Type II 24-hr		Default	24.00	1	4.44	2
6	50-Year	Type II 24-hr		Default	24.00	1	5.01	2
7	100-Year	Type II 24-hr		Default	24.00	1	5.63	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
15.720	91	(4S)
15.750	77	(5S)
7.800	80	>75% Grass cover, Good, HSG D (2S)
27.553	98	Paved roads w/curbs & sewers, HSG D (2S)
38.480	77	Small grain, C&T + CR, Poor, HSG C (1S)
3.122	98	Water Surface, HSG D (2S)
108.425	**85**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
38.480	HSG C	1S
38.475	HSG D	2S
31.470	Other	4S, 5S
108.425		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchme Numbers
0.000	0.000	0.000	0.000	31.470	31.470		4S, 5S
0.000	0.000	0.000	7.800	0.000	7.800	>75% Grass cover, Good	2S
0.000	0.000	0.000	27.553	0.000	27.553	Paved roads w/curbs & sewers	2S
0.000	0.000	38.480	0.000	0.000	38.480	Small grain, C&T + CR, Poor	1S
0.000	0.000	0.000	3.122	0.000	3.122	Water Surface	2S
0.000	**0.000**	**38.480**	**38.475**	**31.470**	**108.425**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Leatherwood Pre Runoff Area=38.480 ac 0.00% Impervious Runoff Depth>0.54"
Flow Length=2,100' Tc=102.4 min CN=77 Runoff=6.59 cfs 1.722 af

Subcatchment 2S: Leatherwood Runoff Area=38.475 ac 79.73% Impervious Runoff Depth>1.56"
Tc=60.0 min CN=94 Runoff=32.48 cfs 5.012 af

Subcatchment 4S: Commerce Park Runoff Area=15.720 ac 0.00% Impervious Runoff Depth>1.32"
Tc=75.0 min CN=91 Runoff=9.54 cfs 1.723 af

Subcatchment 5S: Commerce Park Pre Runoff Area=15.750 ac 0.00% Impervious Runoff Depth>0.54"
Tc=84.0 min CN=77 Runoff=3.10 cfs 0.710 af

Link 4L: Total Flows Inflow=41.24 cfs 6.735 af
Primary=41.24 cfs 6.735 af

Link 6L: (new Link) Inflow=9.46 cfs 2.433 af
Primary=9.46 cfs 2.433 af

Total Runoff Area = 108.425 ac Runoff Volume = 9.167 af Average Runoff Depth = 1.01"
71.71% Pervious = 77.750 ac 28.29% Impervious = 30.675 ac

Summary for Subcatchment 1S: Leatherwood Pre existing

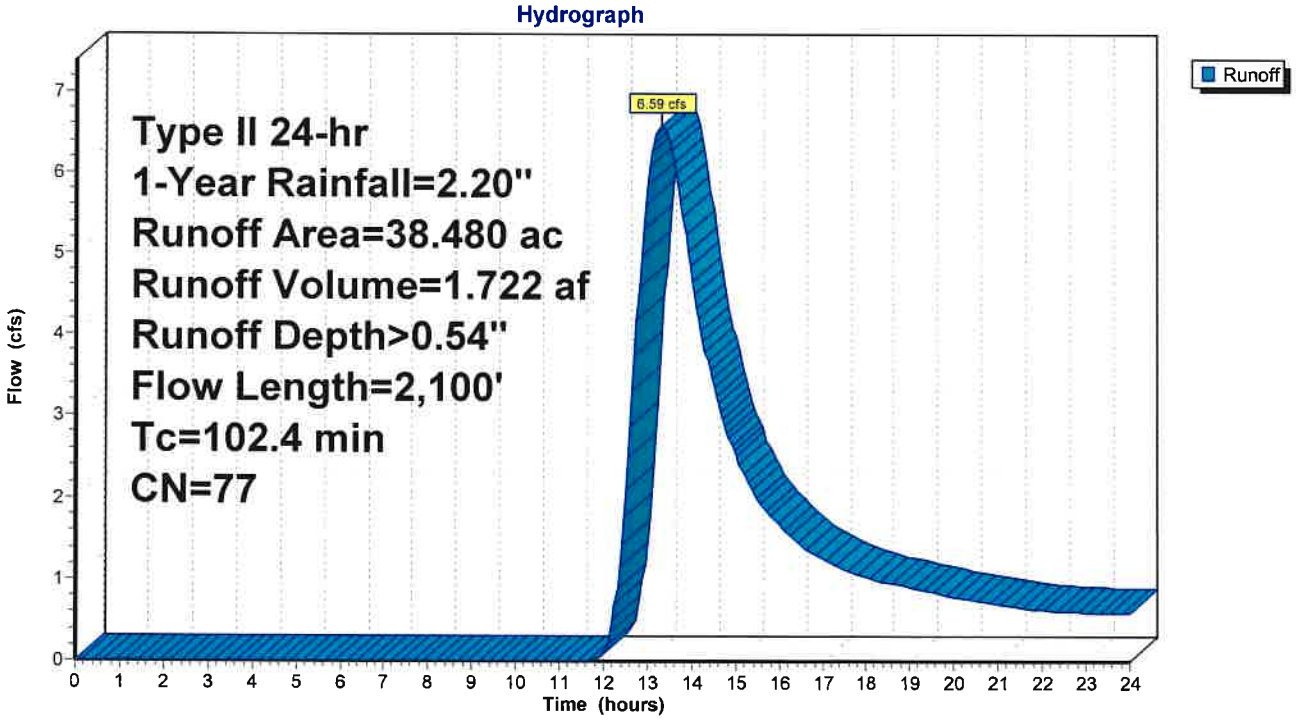
Runoff = 6.59 cfs @ 13.31 hrs, Volume= 1.722 af, Depth> 0.54"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

	Area (ac)	CN	Description
*	38.480	77	Small grain, C&T + CR, Poor, HSG C
	38.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	300	0.0100	0.12		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.20"
60.9	1,800	0.0030	0.49		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
102.4	2,100	Total			

Subcatchment 1S: Leatherwood Pre existing



Summary for Subcatchment 2S: Leatherwood Developed

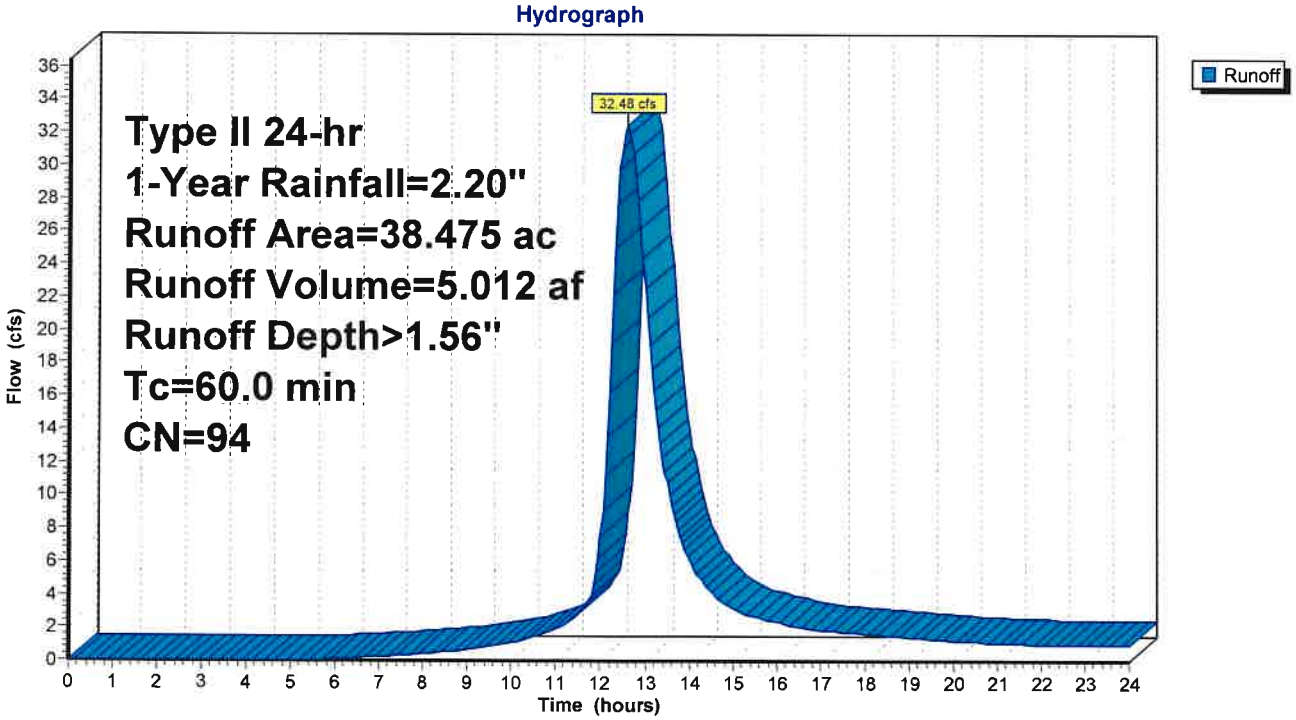
Runoff = 32.48 cfs @ 12.61 hrs, Volume= 5.012 af, Depth> 1.56"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
27.553	98	Paved roads w/curbs & sewers, HSG D
3.122	98	Water Surface, HSG D
7.800	80	>75% Grass cover, Good, HSG D
38.475	94	Weighted Average
7.800		20.27% Pervious Area
30.675		79.73% Impervious Area

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

Subcatchment 2S: Leatherwood Developed



Summary for Subcatchment 4S: Commerce Park

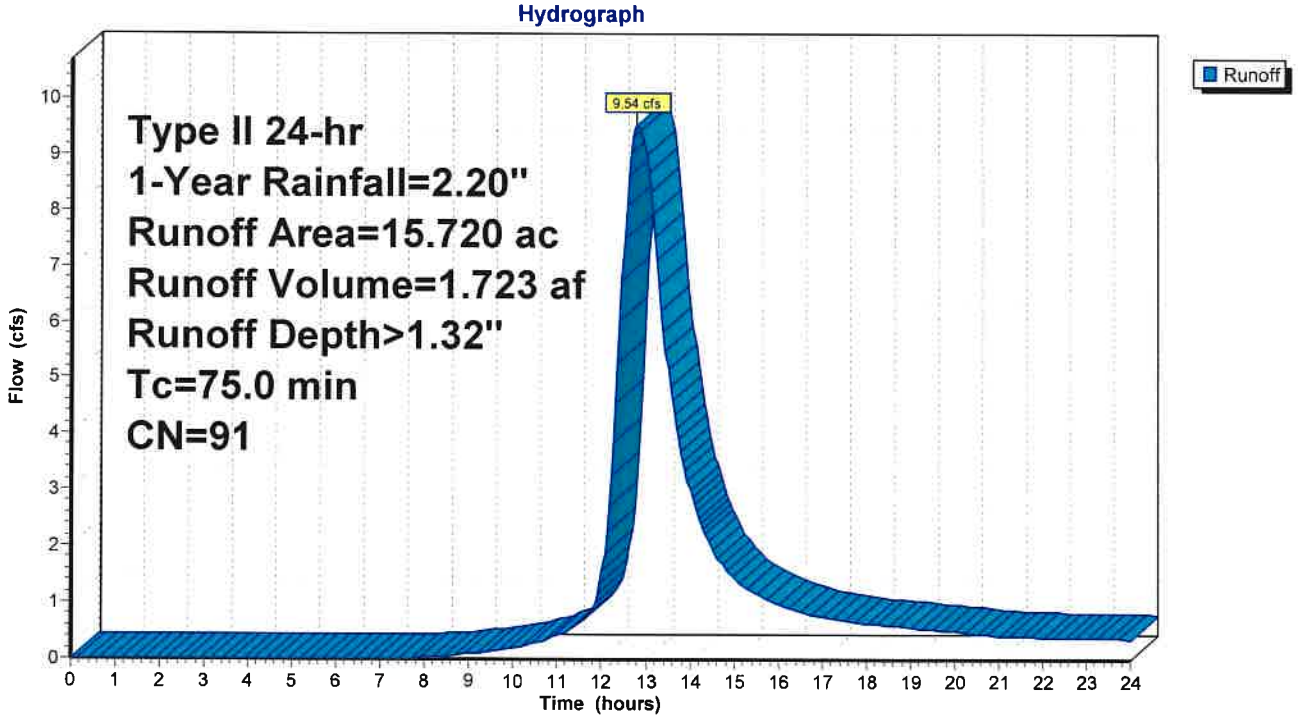
Runoff = 9.54 cfs @ 12.81 hrs, Volume= 1.723 af, Depth> 1.32"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

	Area (ac)	CN	Description
*	15.720	91	
	15.720		100.00% Pervious Area

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

Subcatchment 4S: Commerce Park



Summary for Subcatchment 5S: Commerce Park Pre

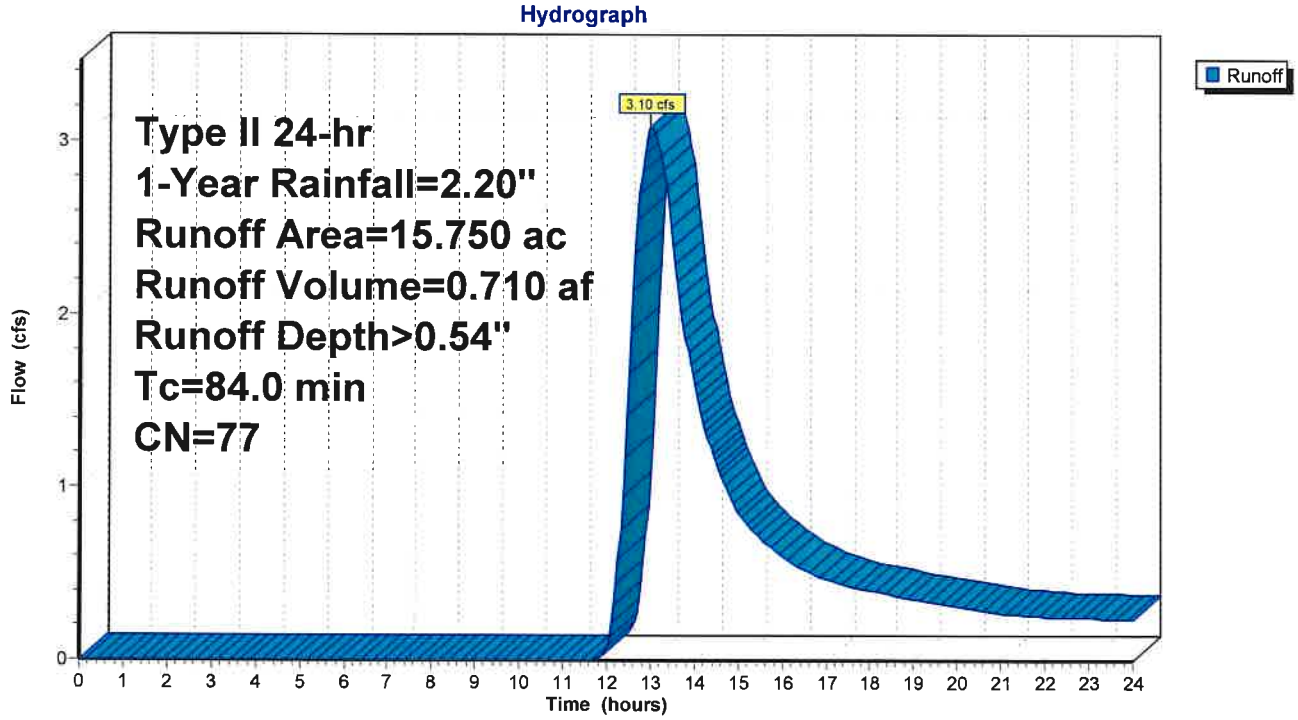
Runoff = 3.10 cfs @ 13.02 hrs, Volume= 0.710 af, Depth> 0.54"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

	Area (ac)	CN	Description
*	15.750	77	
	15.750		100.00% Pervious Area

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

Subcatchment 5S: Commerce Park Pre

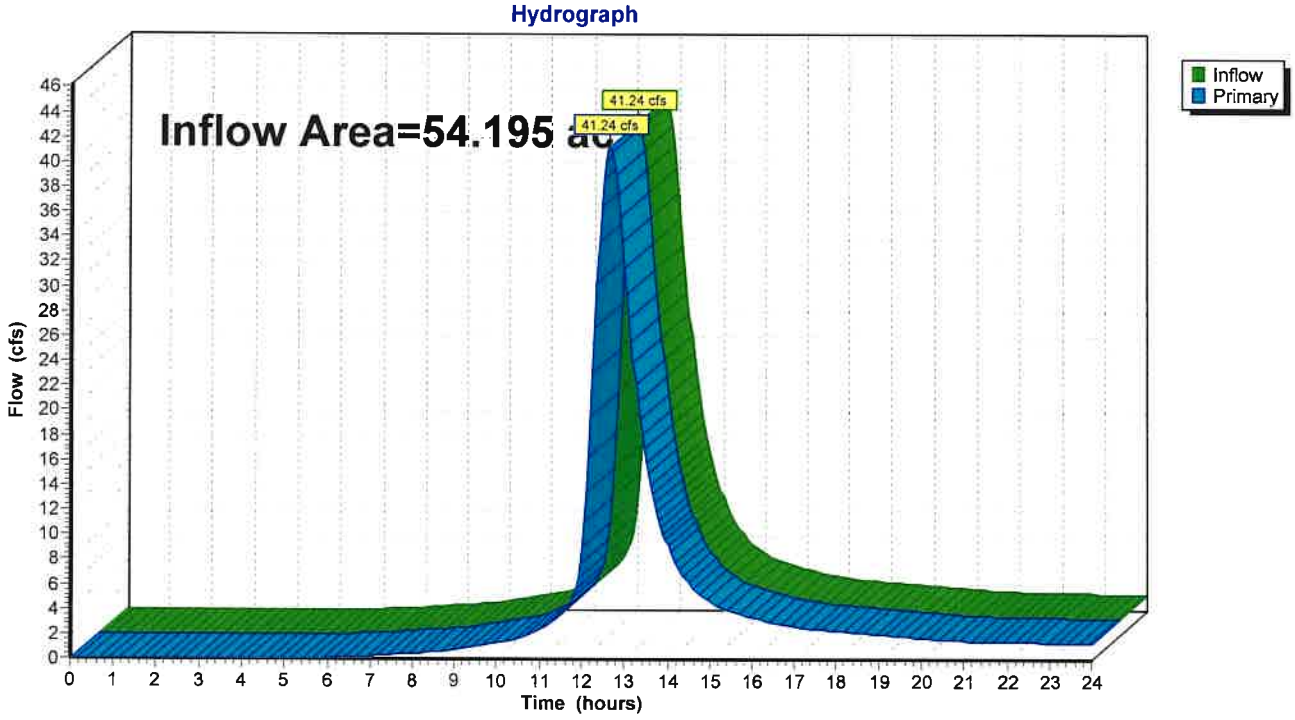


Summary for Link 4L: Total Flows

Inflow Area = 54.195 ac, 56.60% Impervious, Inflow Depth > 1.49" for 1-Year event
Inflow = 41.24 cfs @ 12.64 hrs, Volume= 6.735 af
Primary = 41.24 cfs @ 12.64 hrs, Volume= 6.735 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Total Flows

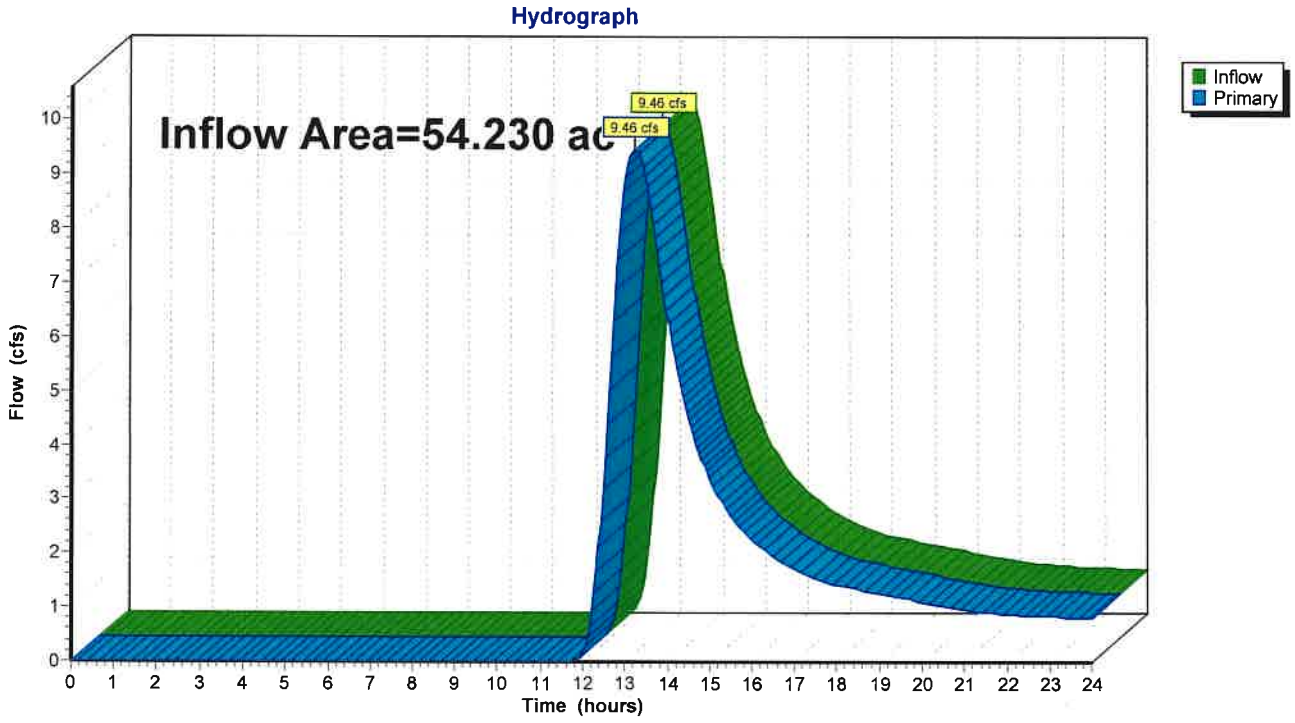


Summary for Link 6L: (new Link)

Inflow Area = 54.230 ac, 0.00% Impervious, Inflow Depth > 0.54" for 1-Year event
Inflow = 9.46 cfs @ 13.22 hrs, Volume= 2.433 af
Primary = 9.46 cfs @ 13.22 hrs, Volume= 2.433 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: (new Link)



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Leatherwood Pre Runoff Area=38.480 ac 0.00% Impervious Runoff Depth>0.79"
Flow Length=2,100' Tc=102.4 min CN=77 Runoff=10.29 cfs 2.542 af

Subcatchment 2S: Leatherwood Runoff Area=38.475 ac 79.73% Impervious Runoff Depth>1.97"
Tc=60.0 min CN=94 Runoff=40.63 cfs 6.310 af

Subcatchment 4S: Commerce Park Runoff Area=15.720 ac 0.00% Impervious Runoff Depth>1.70"
Tc=75.0 min CN=91 Runoff=12.32 cfs 2.225 af

Subcatchment 5S: Commerce Park Pre Runoff Area=15.750 ac 0.00% Impervious Runoff Depth>0.80"
Tc=84.0 min CN=77 Runoff=4.87 cfs 1.048 af

Link 4L: Total Flows Inflow=51.98 cfs 8.535 af
Primary=51.98 cfs 8.535 af

Link 6L: (new Link) Inflow=14.80 cfs 3.591 af
Primary=14.80 cfs 3.591 af

Total Runoff Area = 108.425 ac Runoff Volume = 12.125 af Average Runoff Depth = 1.34"
71.71% Pervious = 77.750 ac 28.29% Impervious = 30.675 ac

Summary for Subcatchment 1S: Leatherwood Pre existing

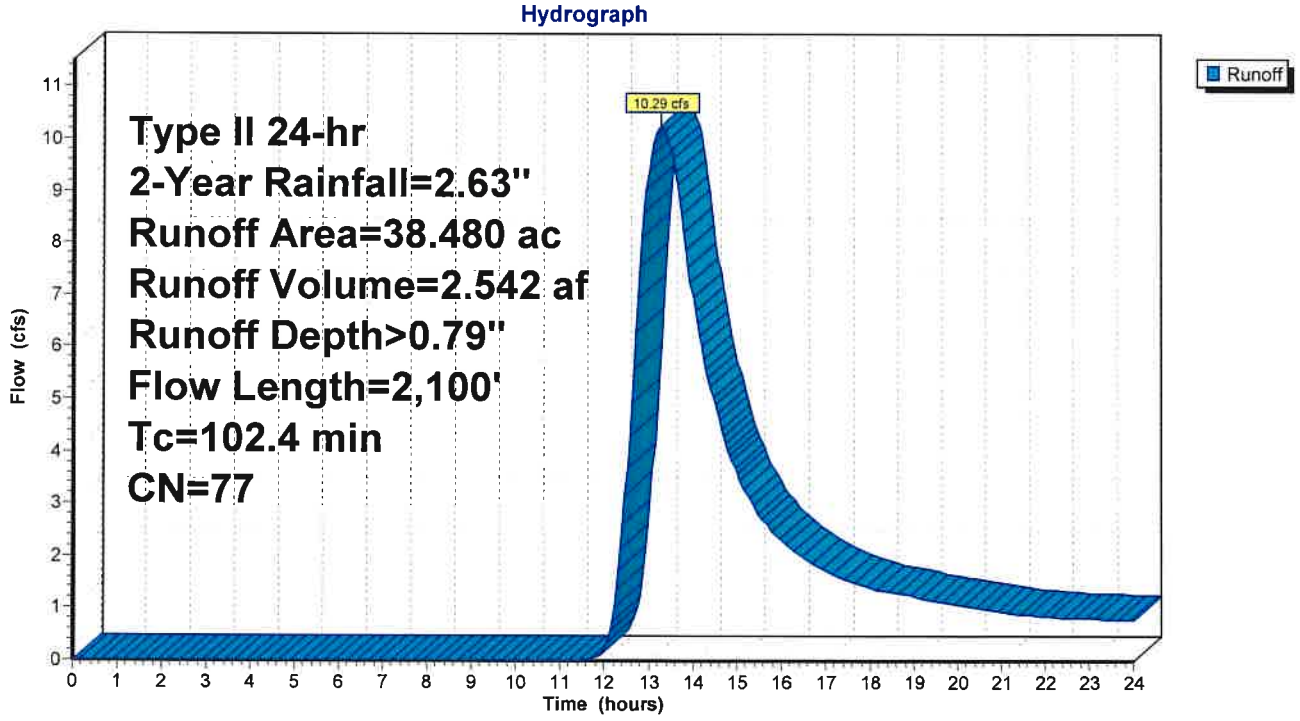
Runoff = 10.29 cfs @ 13.30 hrs, Volume= 2.542 af, Depth> 0.79"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.63"

	Area (ac)	CN	Description
*	38.480	77	Small grain, C&T + CR, Poor, HSG C
	38.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	300	0.0100	0.12		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.20"
60.9	1,800	0.0030	0.49		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
102.4	2,100	Total			

Subcatchment 1S: Leatherwood Pre existing



Summary for Subcatchment 2S: Leatherwood Developed

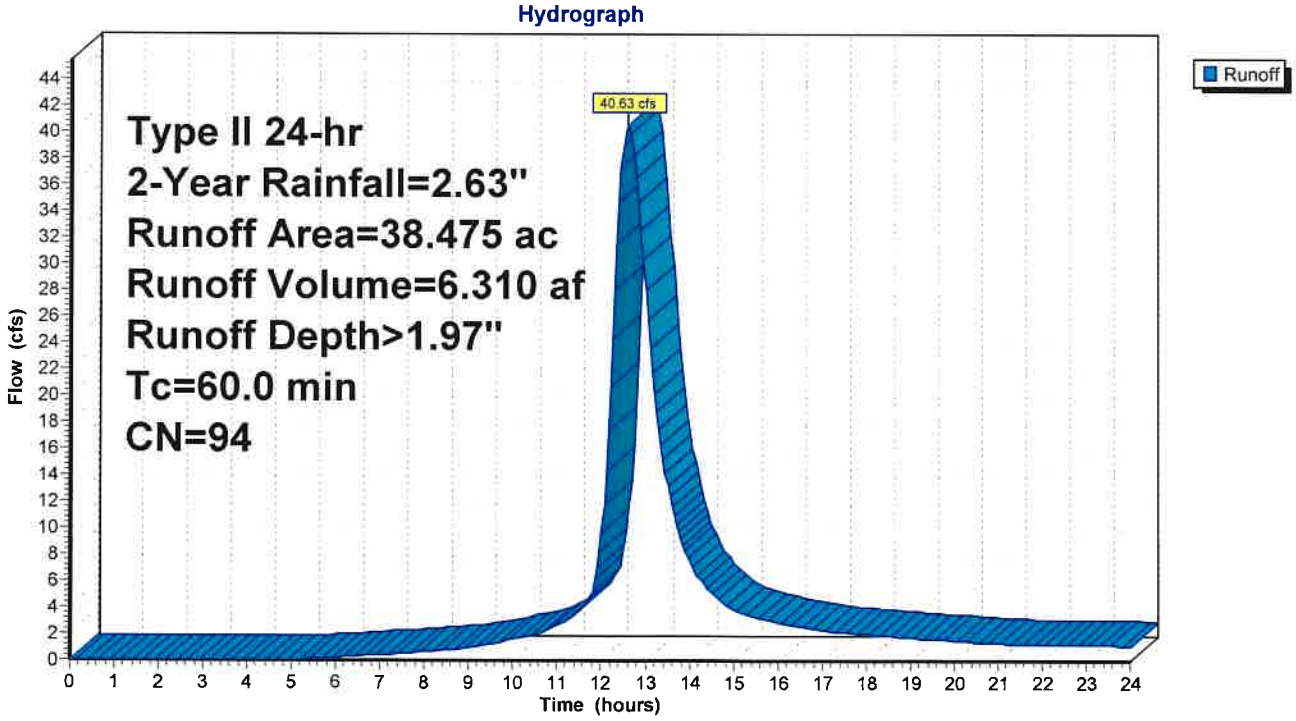
Runoff = 40.63 cfs @ 12.60 hrs, Volume= 6.310 af, Depth> 1.97"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.63"

Area (ac)	CN	Description
27.553	98	Paved roads w/curbs & sewers, HSG D
3.122	98	Water Surface, HSG D
7.800	80	>75% Grass cover, Good, HSG D
38.475	94	Weighted Average
7.800		20.27% Pervious Area
30.675		79.73% Impervious Area

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

Subcatchment 2S: Leatherwood Developed



Summary for Subcatchment 4S: Commerce Park

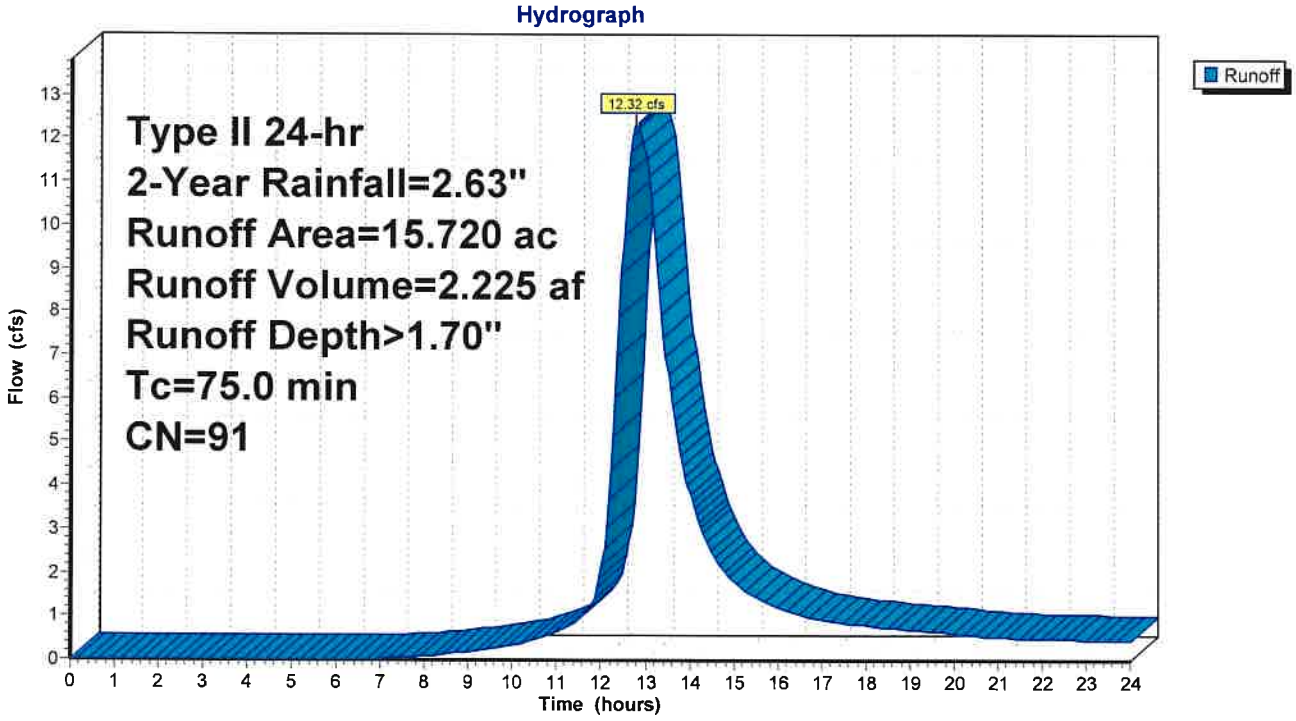
Runoff = 12.32 cfs @ 12.80 hrs, Volume= 2.225 af, Depth> 1.70"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.63"

	Area (ac)	CN	Description
*	15.720	91	
	15.720		100.00% Pervious Area

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

Subcatchment 4S: Commerce Park



Summary for Subcatchment 5S: Commerce Park Pre

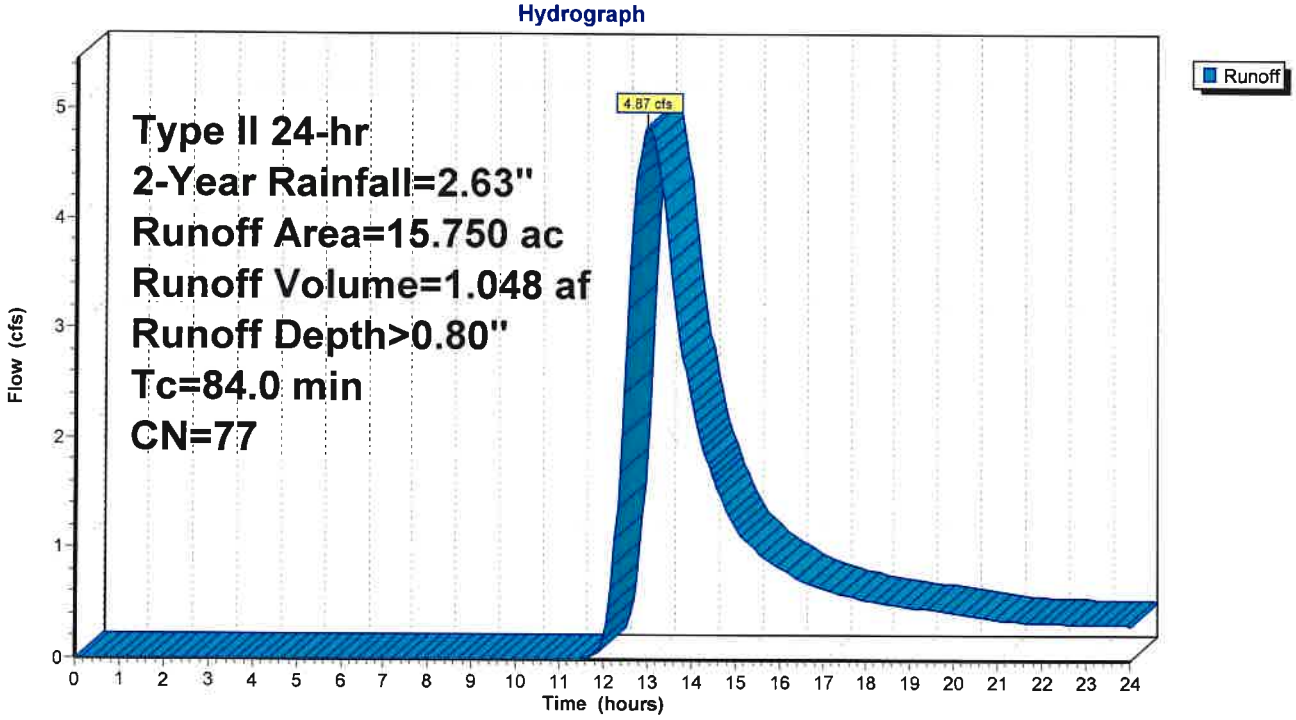
Runoff = 4.87 cfs @ 12.99 hrs, Volume= 1.048 af, Depth> 0.80"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.63"

	Area (ac)	CN	Description
*	15.750	77	
	15.750		100.00% Pervious Area

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

Subcatchment 5S: Commerce Park Pre

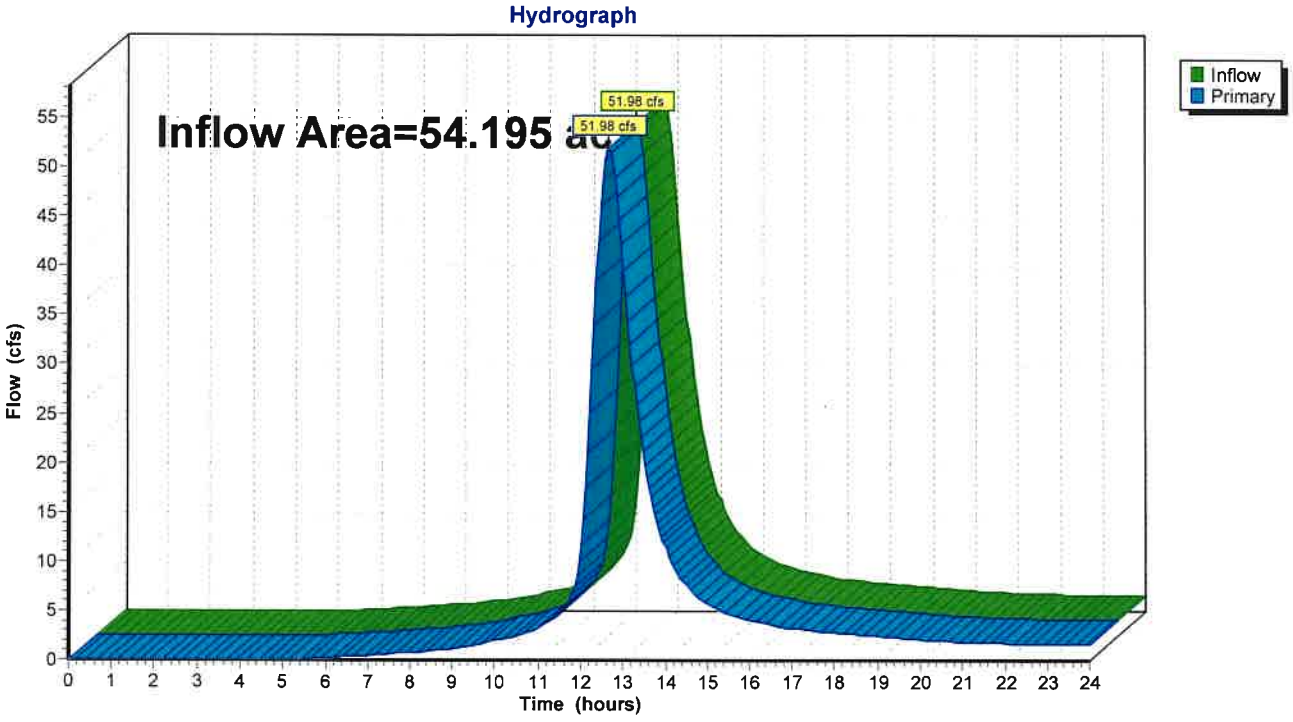


Summary for Link 4L: Total Flows

Inflow Area = 54.195 ac, 56.60% Impervious, Inflow Depth > 1.89" for 2-Year event
Inflow = 51.98 cfs @ 12.64 hrs, Volume= 8.535 af
Primary = 51.98 cfs @ 12.64 hrs, Volume= 8.535 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Total Flows

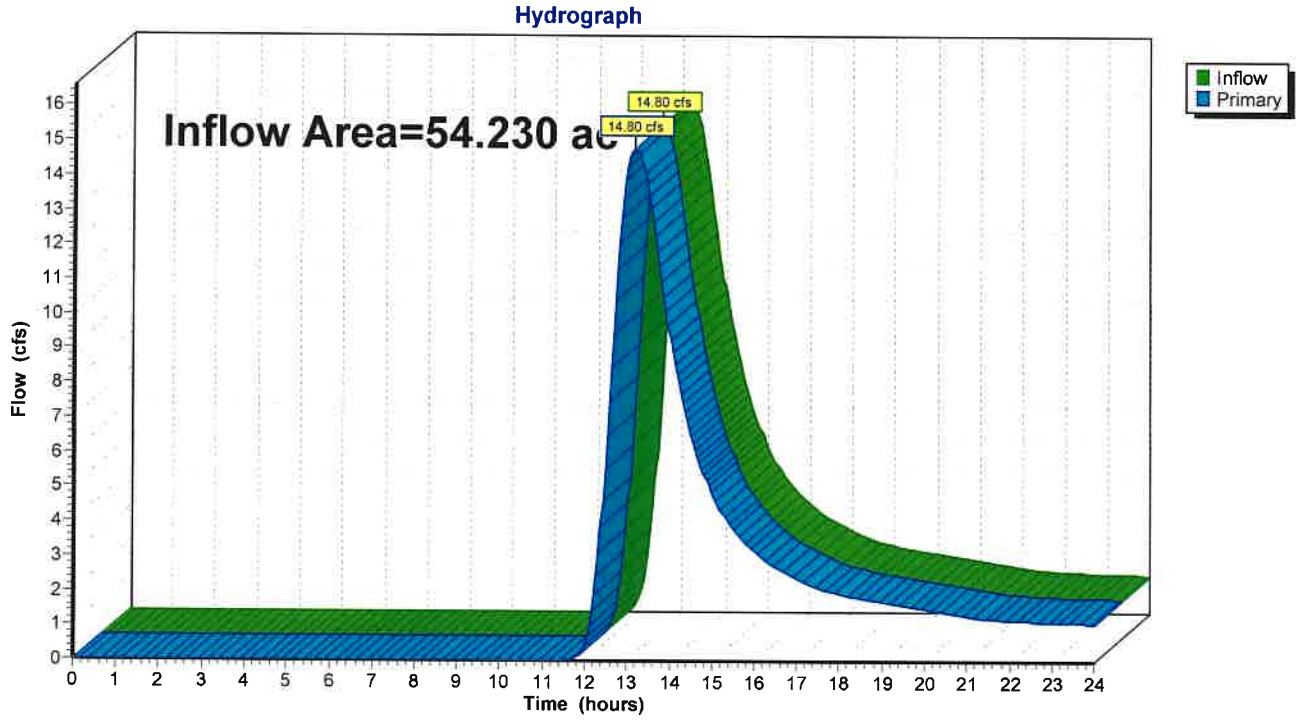


Summary for Link 6L: (new Link)

Inflow Area = 54.230 ac, 0.00% Impervious, Inflow Depth > 0.79" for 2-Year event
Inflow = 14.80 cfs @ 13.18 hrs, Volume= 3.591 af
Primary = 14.80 cfs @ 13.18 hrs, Volume= 3.591 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: (new Link)



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Leatherwood Pre Runoff Area=38.480 ac 0.00% Impervious Runoff Depth>1.20"
Flow Length=2,100' Tc=102.4 min CN=77 Runoff=16.20 cfs 3.845 af

Subcatchment 2S: Leatherwood Runoff Area=38.475 ac 79.73% Impervious Runoff Depth>2.55"
Tc=60.0 min CN=94 Runoff=52.17 cfs 8.178 af

Subcatchment 4S: Commerce Park Runoff Area=15.720 ac 0.00% Impervious Runoff Depth>2.26"
Tc=75.0 min CN=91 Runoff=16.31 cfs 2.956 af

Subcatchment 5S: Commerce Park Pre Runoff Area=15.750 ac 0.00% Impervious Runoff Depth>1.21"
Tc=84.0 min CN=77 Runoff=7.71 cfs 1.584 af

Link 4L: Total Flows Inflow=67.24 cfs 11.134 af
Primary=67.24 cfs 11.134 af

Link 6L: (new Link) Inflow=23.39 cfs 5.429 af
Primary=23.39 cfs 5.429 af

Total Runoff Area = 108.425 ac Runoff Volume = 16.563 af Average Runoff Depth = 1.83"
71.71% Pervious = 77.750 ac 28.29% Impervious = 30.675 ac

Summary for Subcatchment 1S: Leatherwood Pre existing

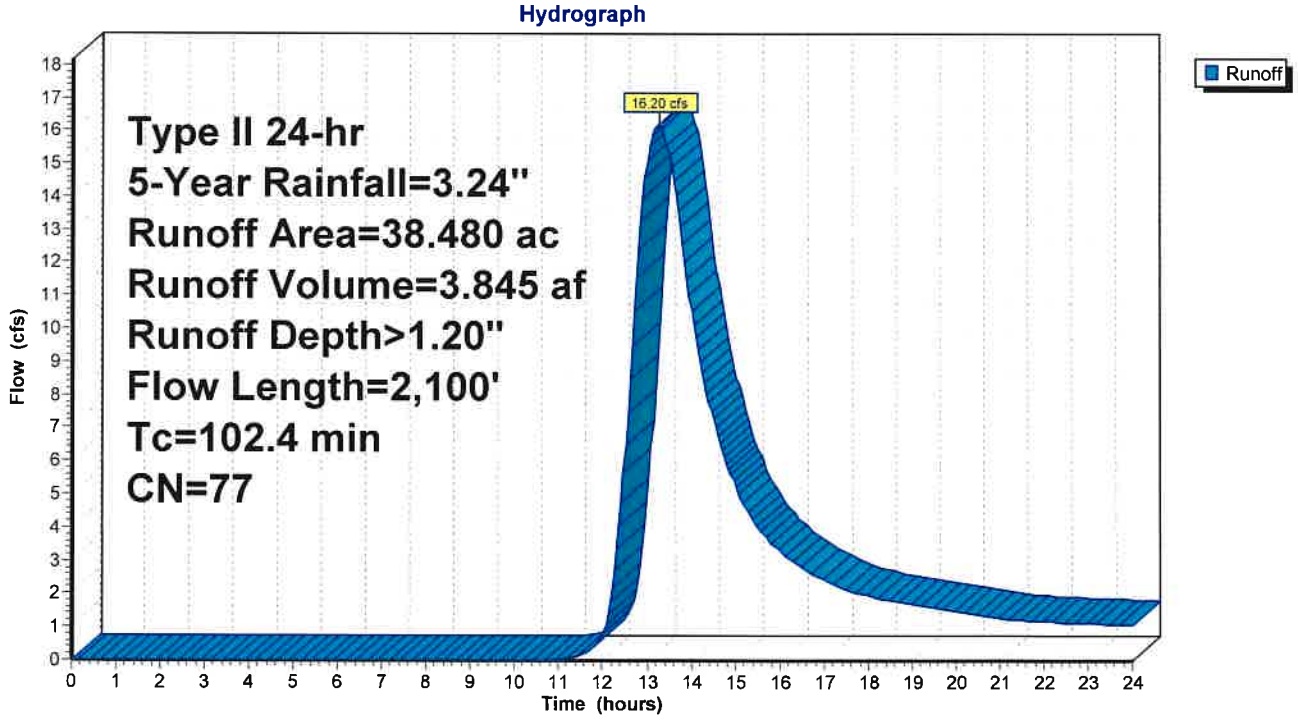
Runoff = 16.20 cfs @ 13.28 hrs, Volume= 3.845 af, Depth> 1.20"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.24"

	Area (ac)	CN	Description
*	38.480	77	Small grain, C&T + CR, Poor, HSG C
	38.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	300	0.0100	0.12		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.20"
60.9	1,800	0.0030	0.49		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
102.4	2,100	Total			

Subcatchment 1S: Leatherwood Pre existing



Summary for Subcatchment 2S: Leatherwood Developed

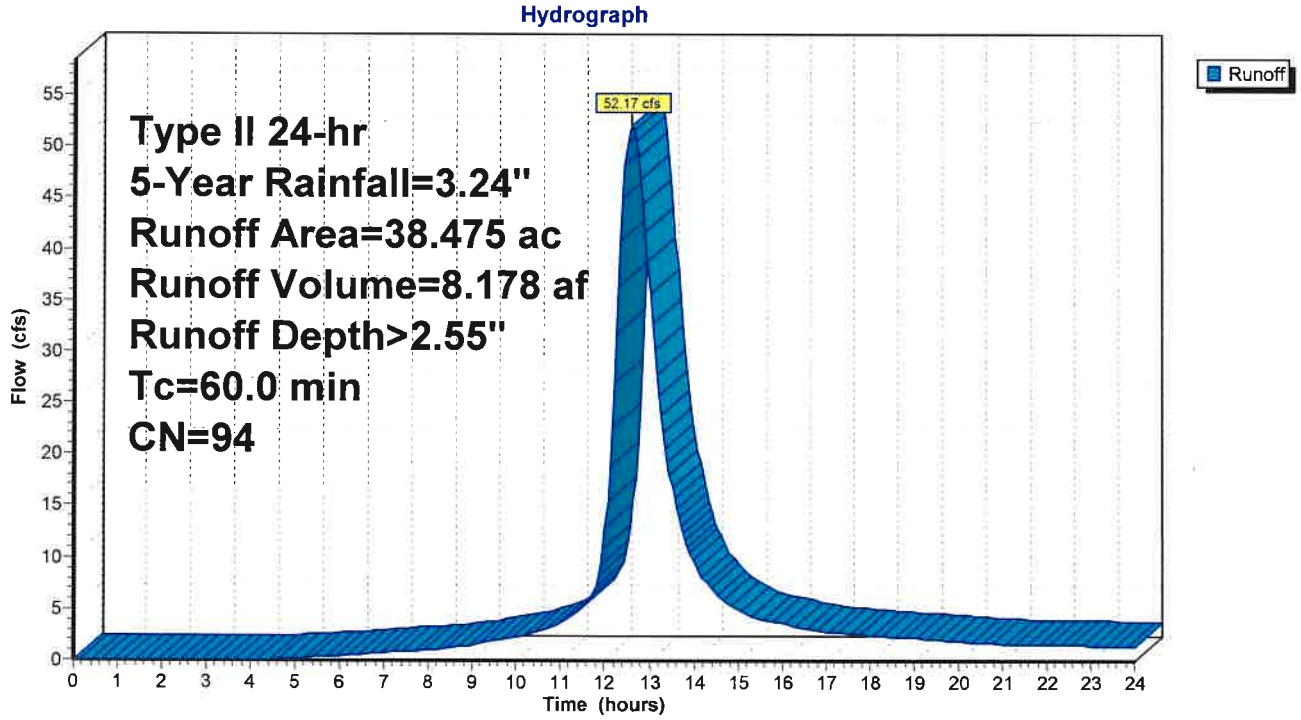
Runoff = 52.17 cfs @ 12.60 hrs, Volume= 8.178 af, Depth> 2.55"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.24"

Area (ac)	CN	Description
27.553	98	Paved roads w/curbs & sewers, HSG D
3.122	98	Water Surface, HSG D
7.800	80	>75% Grass cover, Good, HSG D
38.475	94	Weighted Average
7.800		20.27% Pervious Area
30.675		79.73% Impervious Area

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

Subcatchment 2S: Leatherwood Developed



Summary for Subcatchment 4S: Commerce Park

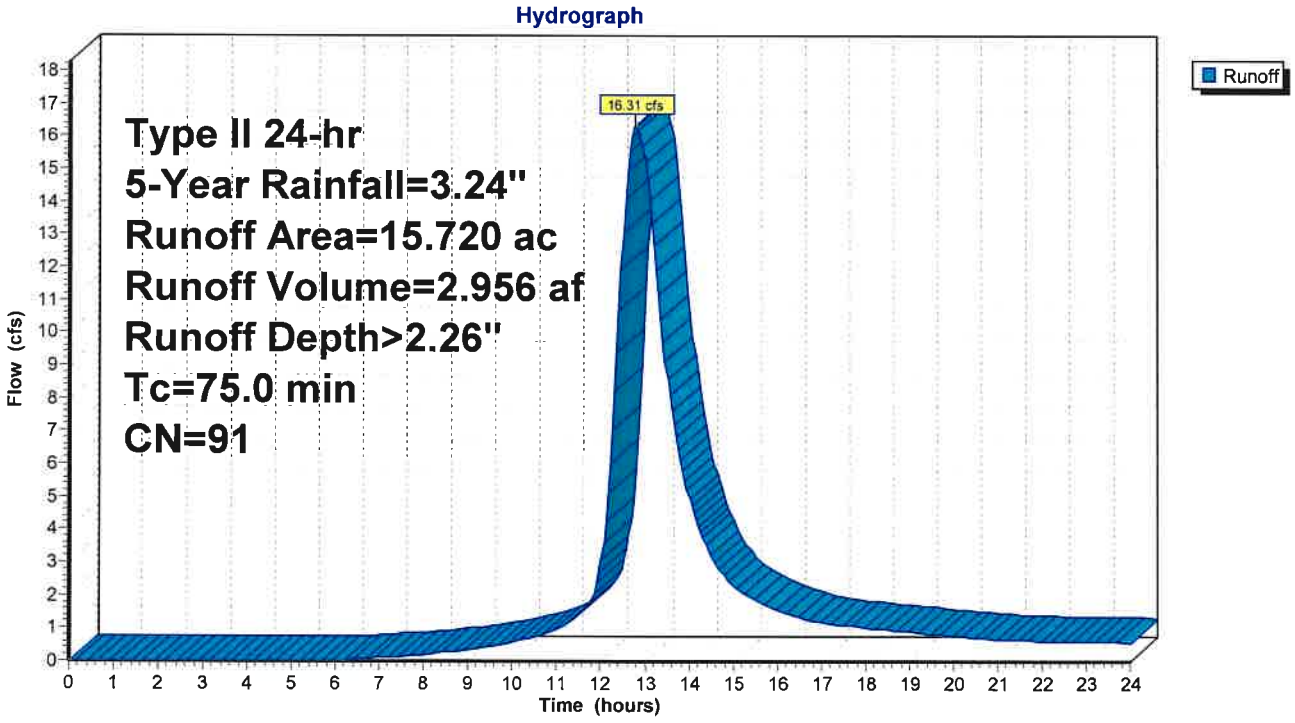
Runoff = 16.31 cfs @ 12.79 hrs, Volume= 2.956 af, Depth> 2.26"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.24"

	Area (ac)	CN	Description
*	15.720	91	
	15.720		100.00% Pervious Area

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

Subcatchment 4S: Commerce Park



Summary for Subcatchment 5S: Commerce Park Pre

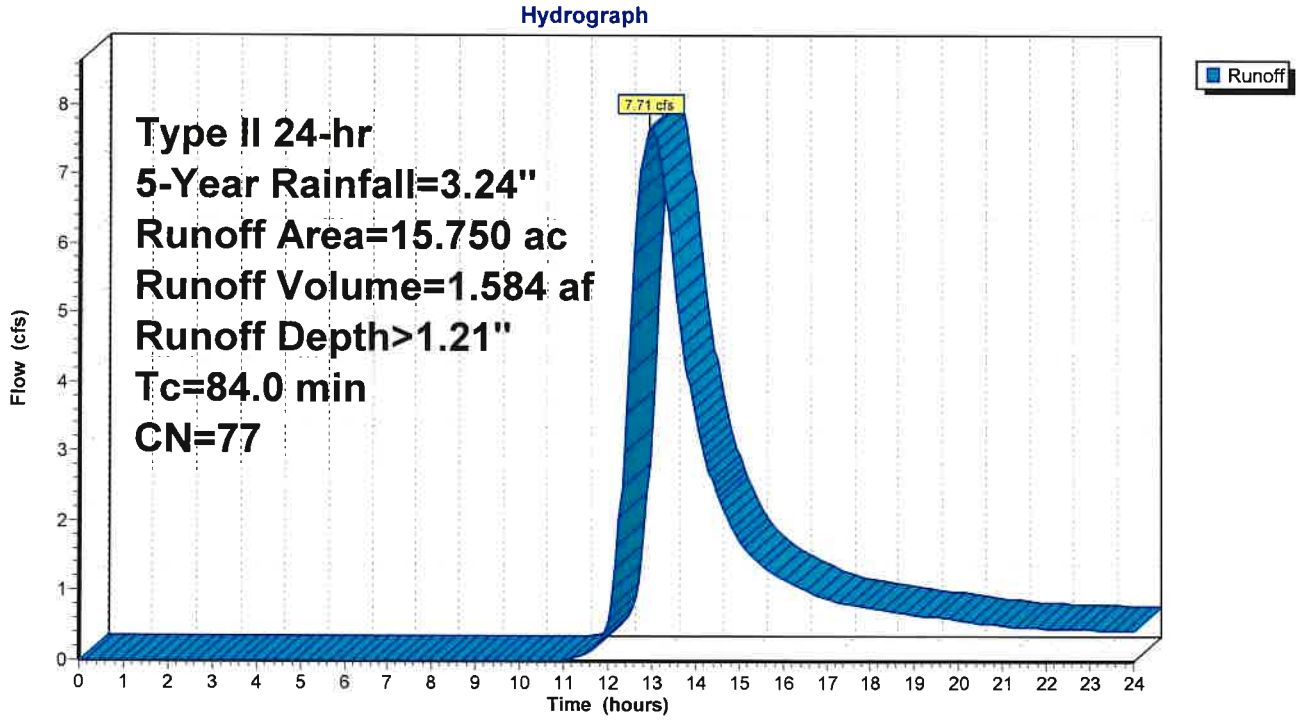
Runoff = 7.71 cfs @ 12.97 hrs, Volume= 1.584 af, Depth> 1.21"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.24"

	Area (ac)	CN	Description
*	15.750	77	
	15.750		100.00% Pervious Area

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

Subcatchment 5S: Commerce Park Pre

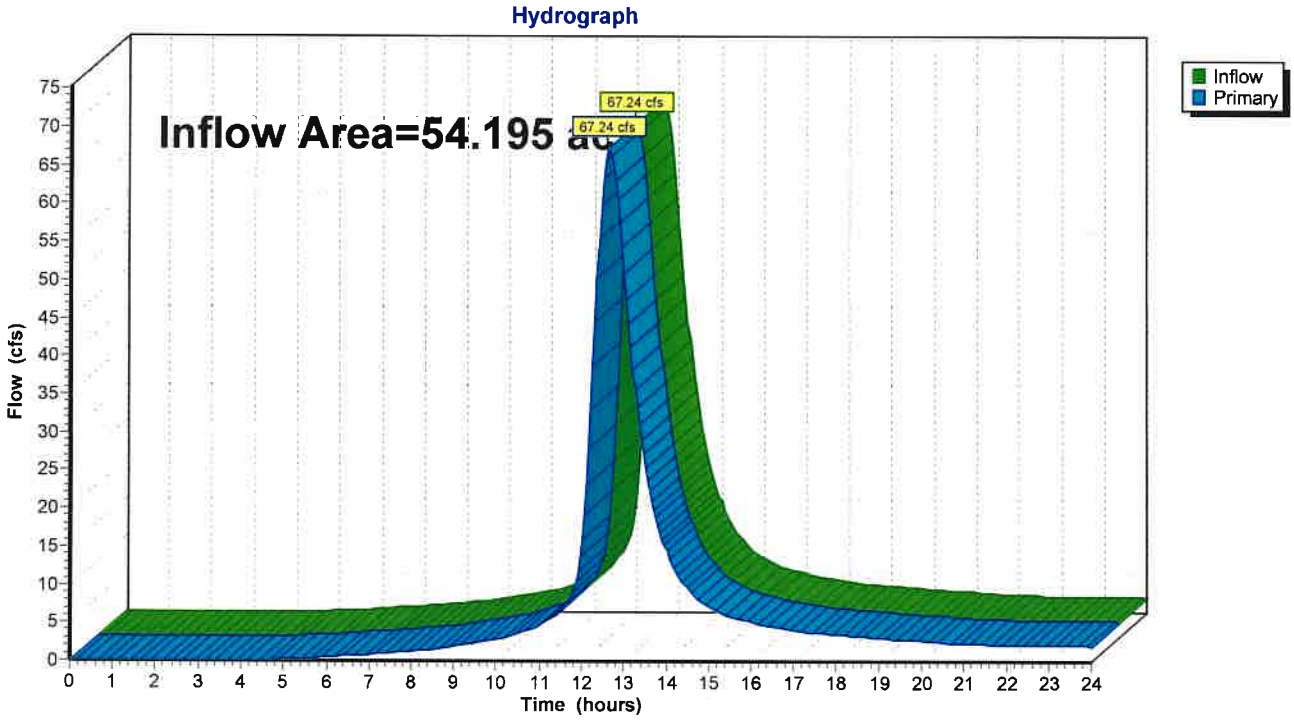


Summary for Link 4L: Total Flows

Inflow Area = 54.195 ac, 56.60% Impervious, Inflow Depth > 2.47" for 5-Year event
Inflow = 67.24 cfs @ 12.63 hrs, Volume= 11.134 af
Primary = 67.24 cfs @ 12.63 hrs, Volume= 11.134 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Total Flows

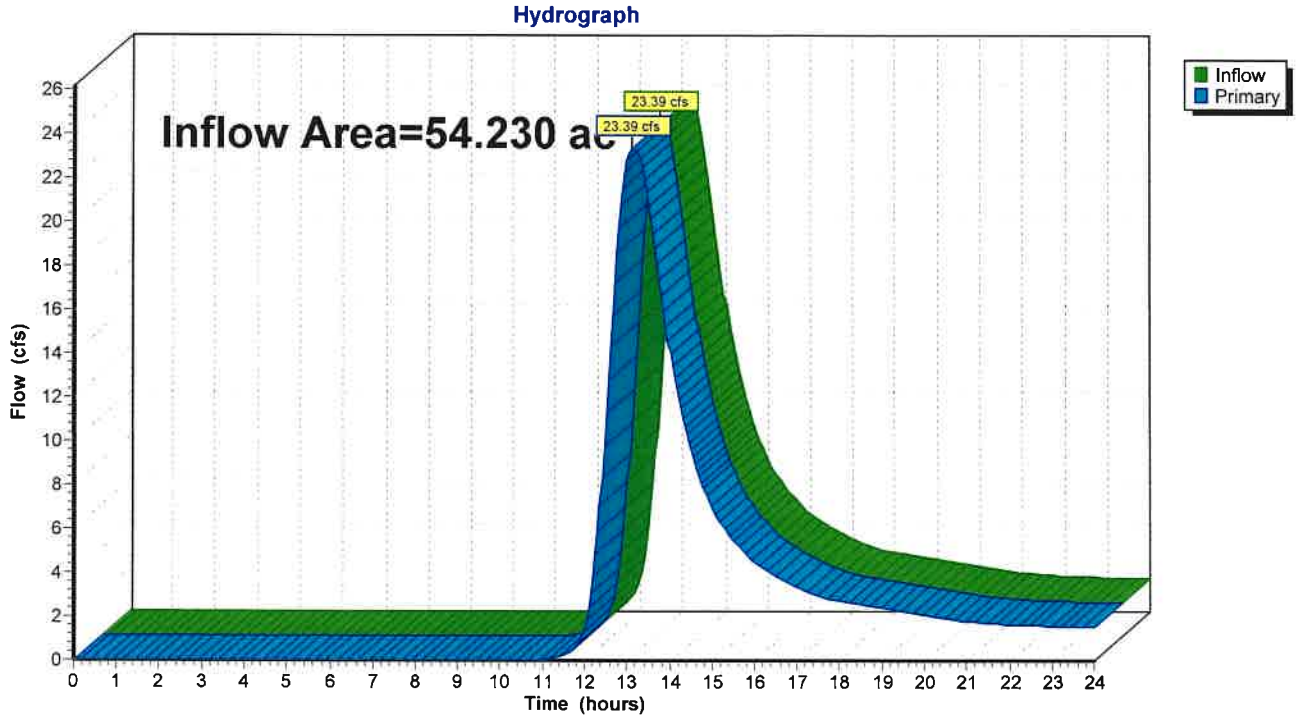


Summary for Link 6L: (new Link)

Inflow Area = 54.230 ac, 0.00% Impervious, Inflow Depth > 1.20" for 5-Year event
Inflow = 23.39 cfs @ 13.13 hrs, Volume= 5.429 af
Primary = 23.39 cfs @ 13.13 hrs, Volume= 5.429 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: (new Link)



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Leatherwood Pre Runoff Area=38.480 ac 0.00% Impervious Runoff Depth>1.55"
Flow Length=2,100' Tc=102.4 min CN=77 Runoff=21.33 cfs 4.980 af

Subcatchment 2S: Leatherwood Runoff Area=38.475 ac 79.73% Impervious Runoff Depth>3.02"
Tc=60.0 min CN=94 Runoff=61.40 cfs 9.693 af

Subcatchment 4S: Commerce Park Runoff Area=15.720 ac 0.00% Impervious Runoff Depth>2.71"
Tc=75.0 min CN=91 Runoff=19.53 cfs 3.555 af

Subcatchment 5S: Commerce Park Pre Runoff Area=15.750 ac 0.00% Impervious Runoff Depth>1.56"
Tc=84.0 min CN=77 Runoff=10.17 cfs 2.051 af

Link 4L: Total Flows Inflow=79.48 cfs 13.248 af
Primary=79.48 cfs 13.248 af

Link 6L: (new Link) Inflow=30.91 cfs 7.031 af
Primary=30.91 cfs 7.031 af

Total Runoff Area = 108.425 ac Runoff Volume = 20.278 af Average Runoff Depth = 2.24"
71.71% Pervious = 77.750 ac 28.29% Impervious = 30.675 ac

Summary for Subcatchment 1S: Leatherwood Pre existing

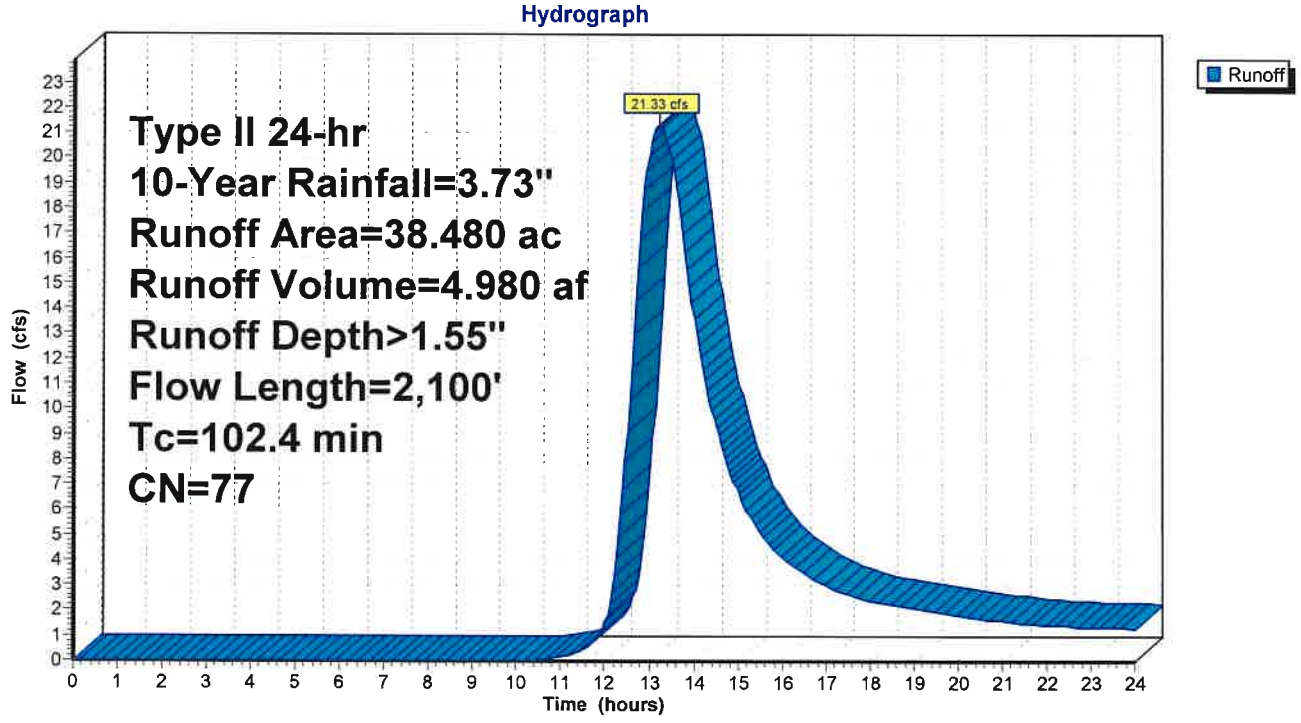
Runoff = 21.33 cfs @ 13.24 hrs, Volume= 4.980 af, Depth> 1.55"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.73"

	Area (ac)	CN	Description
*	38.480	77	Small grain, C&T + CR, Poor, HSG C
	38.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	300	0.0100	0.12		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.20"
60.9	1,800	0.0030	0.49		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
102.4	2,100	Total			

Subcatchment 1S: Leatherwood Pre existing



Summary for Subcatchment 2S: Leatherwood Developed

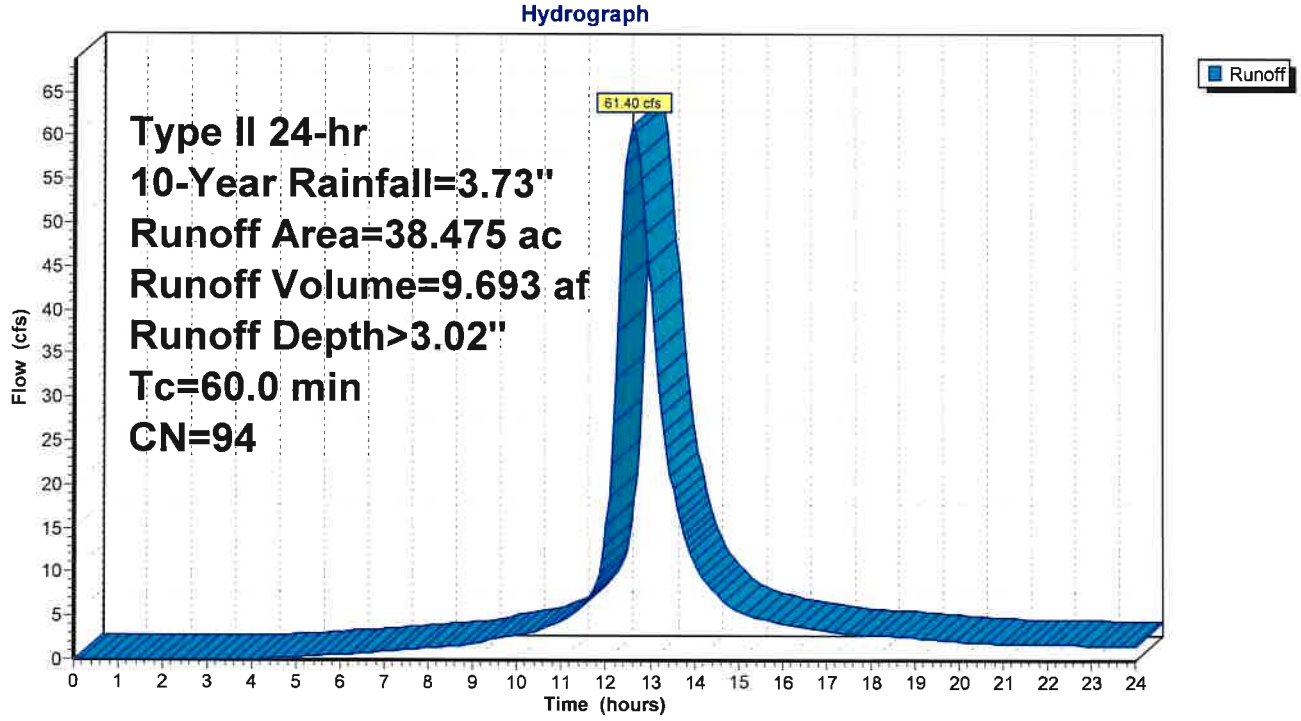
Runoff = 61.40 cfs @ 12.60 hrs, Volume= 9.693 af, Depth> 3.02"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.73"

Area (ac)	CN	Description
27.553	98	Paved roads w/curbs & sewers, HSG D
3.122	98	Water Surface, HSG D
7.800	80	>75% Grass cover, Good, HSG D
38.475	94	Weighted Average
7.800		20.27% Pervious Area
30.675		79.73% Impervious Area

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

Subcatchment 2S: Leatherwood Developed



Summary for Subcatchment 4S: Commerce Park

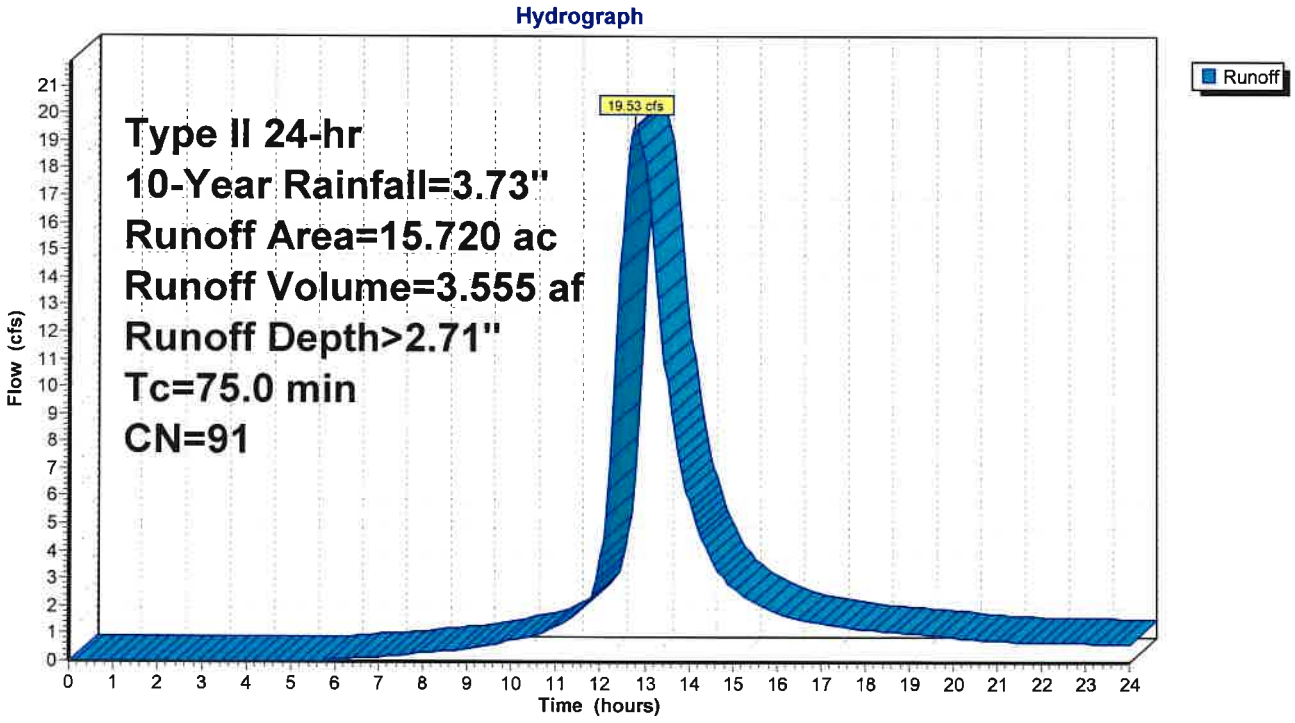
Runoff = 19.53 cfs @ 12.78 hrs, Volume= 3.555 af, Depth> 2.71"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.73"

	Area (ac)	CN	Description
*	15.720	91	
	15.720		100.00% Pervious Area

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

Subcatchment 4S: Commerce Park



Summary for Subcatchment 5S: Commerce Park Pre

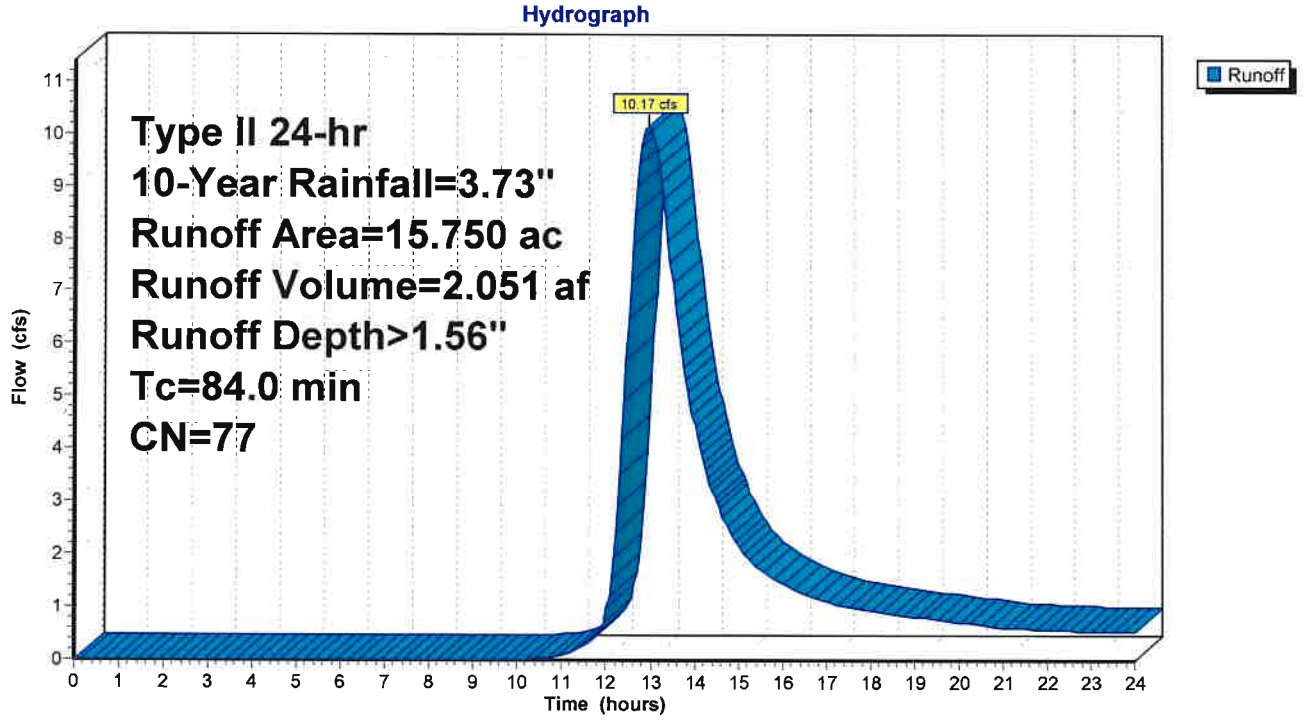
Runoff = 10.17 cfs @ 12.96 hrs, Volume= 2.051 af, Depth> 1.56"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.73"

	Area (ac)	CN	Description
*	15.750	77	
	15.750		100.00% Pervious Area

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

Subcatchment 5S: Commerce Park Pre

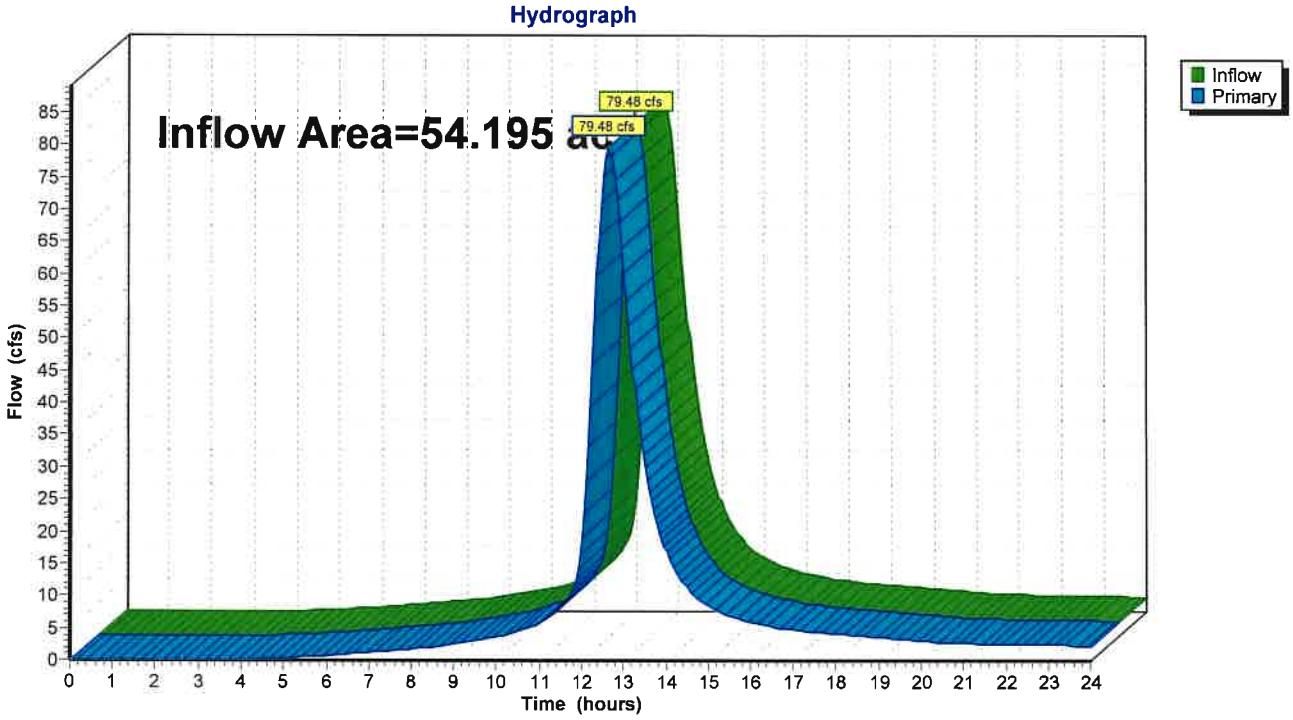


Summary for Link 4L: Total Flows

Inflow Area = 54.195 ac, 56.60% Impervious, Inflow Depth > 2.93" for 10-Year event
Inflow = 79.48 cfs @ 12.63 hrs, Volume= 13.248 af
Primary = 79.48 cfs @ 12.63 hrs, Volume= 13.248 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Total Flows

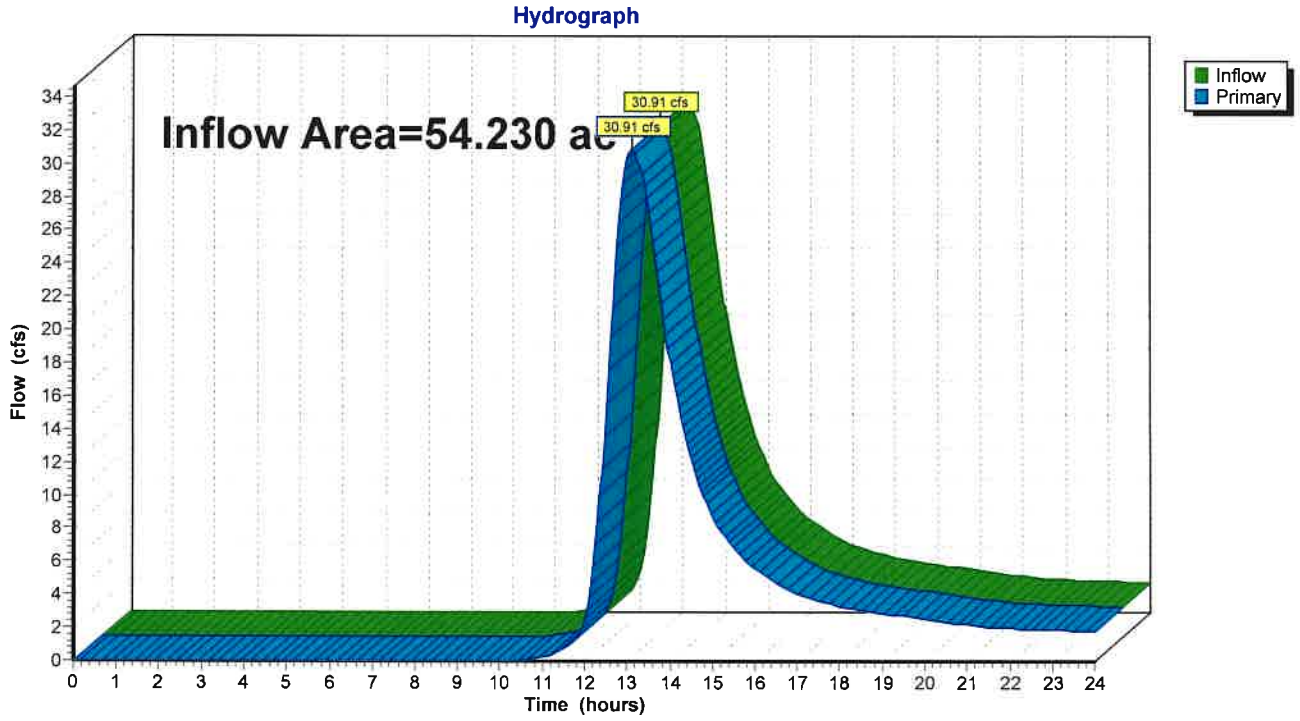


Summary for Link 6L: (new Link)

Inflow Area = 54.230 ac, 0.00% Impervious, Inflow Depth > 1.56" for 10-Year event
Inflow = 30.91 cfs @ 13.12 hrs, Volume= 7.031 af
Primary = 30.91 cfs @ 13.12 hrs, Volume= 7.031 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: (new Link)



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Leatherwood Pre Runoff Area=38.480 ac 0.00% Impervious Runoff Depth>2.10"
Flow Length=2,100' Tc=102.4 min CN=77 Runoff=29.26 cfs 6.728 af

Subcatchment 2S: Leatherwood Runoff Area=38.475 ac 79.73% Impervious Runoff Depth>3.71"
Tc=60.0 min CN=94 Runoff=74.72 cfs 11.901 af

Subcatchment 4S: Commerce Park Runoff Area=15.720 ac 0.00% Impervious Runoff Depth>3.39"
Tc=75.0 min CN=91 Runoff=24.24 cfs 4.434 af

Subcatchment 5S: Commerce Park Pre Runoff Area=15.750 ac 0.00% Impervious Runoff Depth>2.11"
Tc=84.0 min CN=77 Runoff=13.95 cfs 2.769 af

Link 4L: Total Flows Inflow=97.17 cfs 16.336 af
Primary=97.17 cfs 16.336 af

Link 6L: (new Link) Inflow=42.44 cfs 9.497 af
Primary=42.44 cfs 9.497 af

Total Runoff Area = 108.425 ac Runoff Volume = 25.833 af Average Runoff Depth = 2.86"
71.71% Pervious = 77.750 ac 28.29% Impervious = 30.675 ac

Summary for Subcatchment 1S: Leatherwood Pre existing

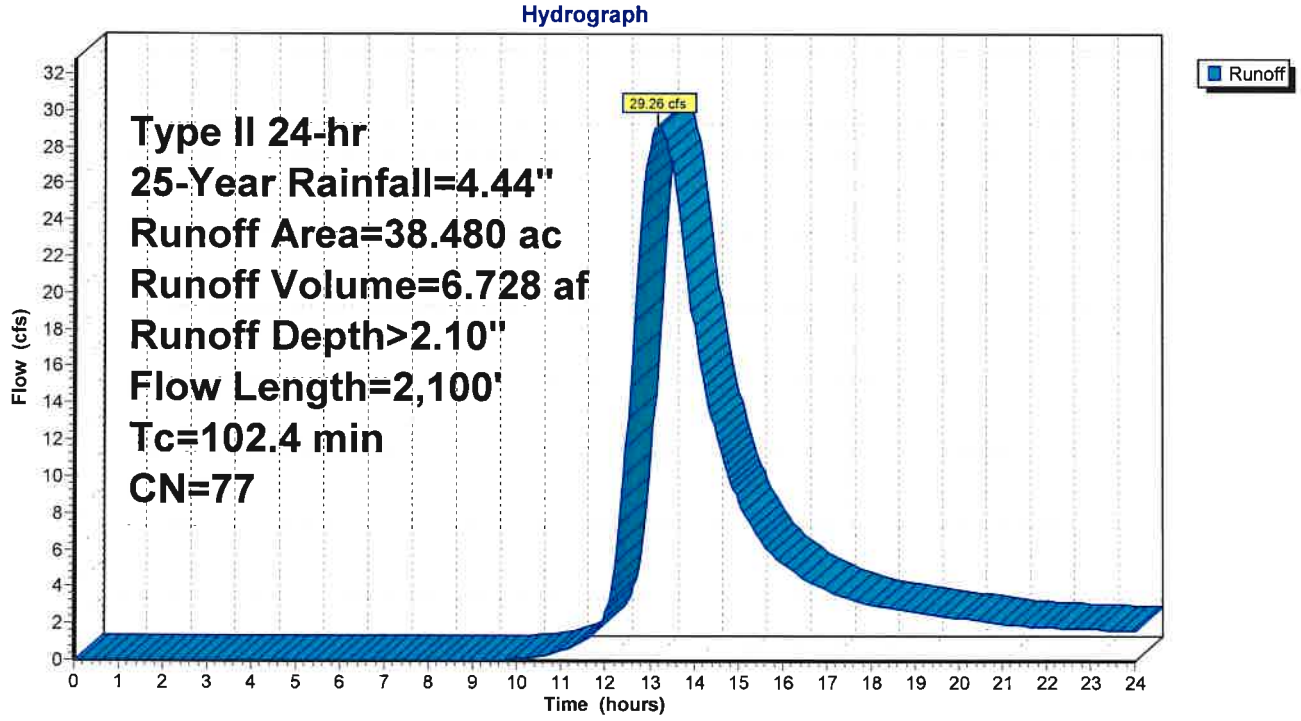
Runoff = 29.26 cfs @ 13.21 hrs, Volume= 6.728 af, Depth> 2.10"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.44"

	Area (ac)	CN	Description
*	38.480	77	Small grain, C&T + CR, Poor, HSG C
	38.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	300	0.0100	0.12		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.20"
60.9	1,800	0.0030	0.49		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
102.4	2,100	Total			

Subcatchment 1S: Leatherwood Pre existing



Summary for Subcatchment 2S: Leatherwood Developed

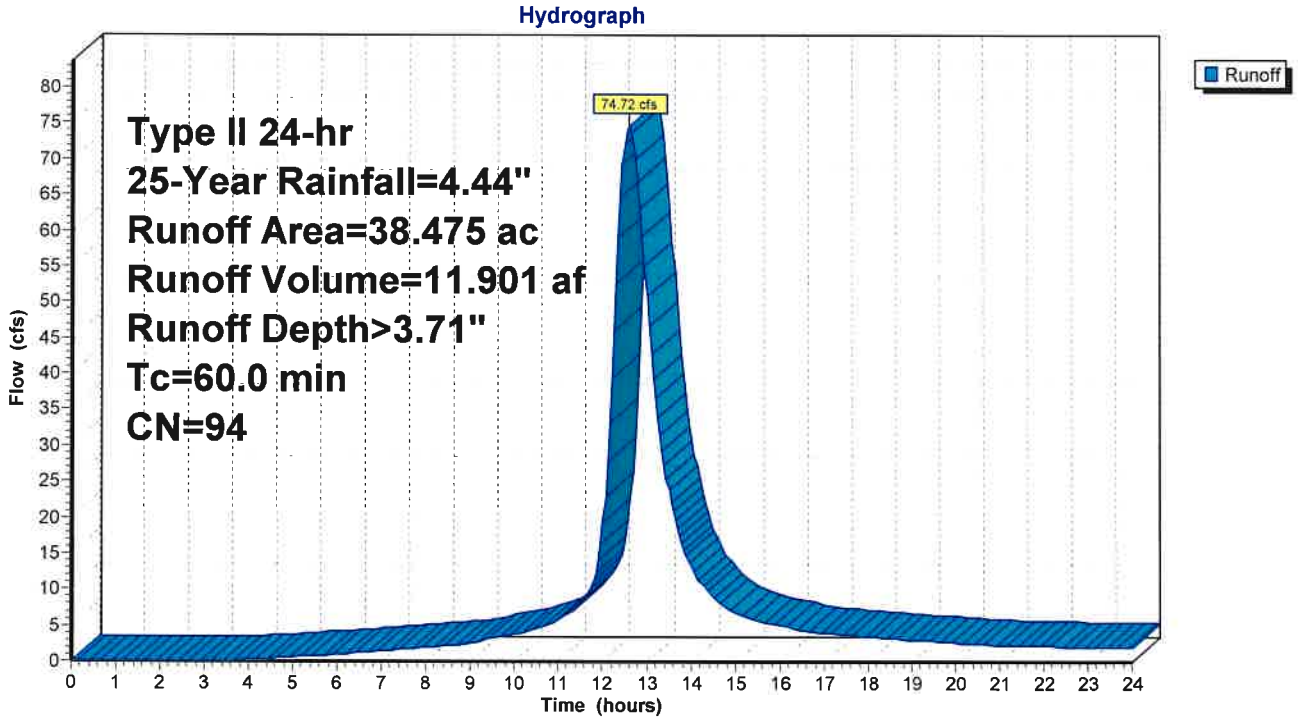
Runoff = 74.72 cfs @ 12.60 hrs, Volume= 11.901 af, Depth> 3.71"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.44"

Area (ac)	CN	Description
27.553	98	Paved roads w/curbs & sewers, HSG D
3.122	98	Water Surface, HSG D
7.800	80	>75% Grass cover, Good, HSG D
38.475	94	Weighted Average
7.800		20.27% Pervious Area
30.675		79.73% Impervious Area

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

Subcatchment 2S: Leatherwood Developed



Summary for Subcatchment 4S: Commerce Park

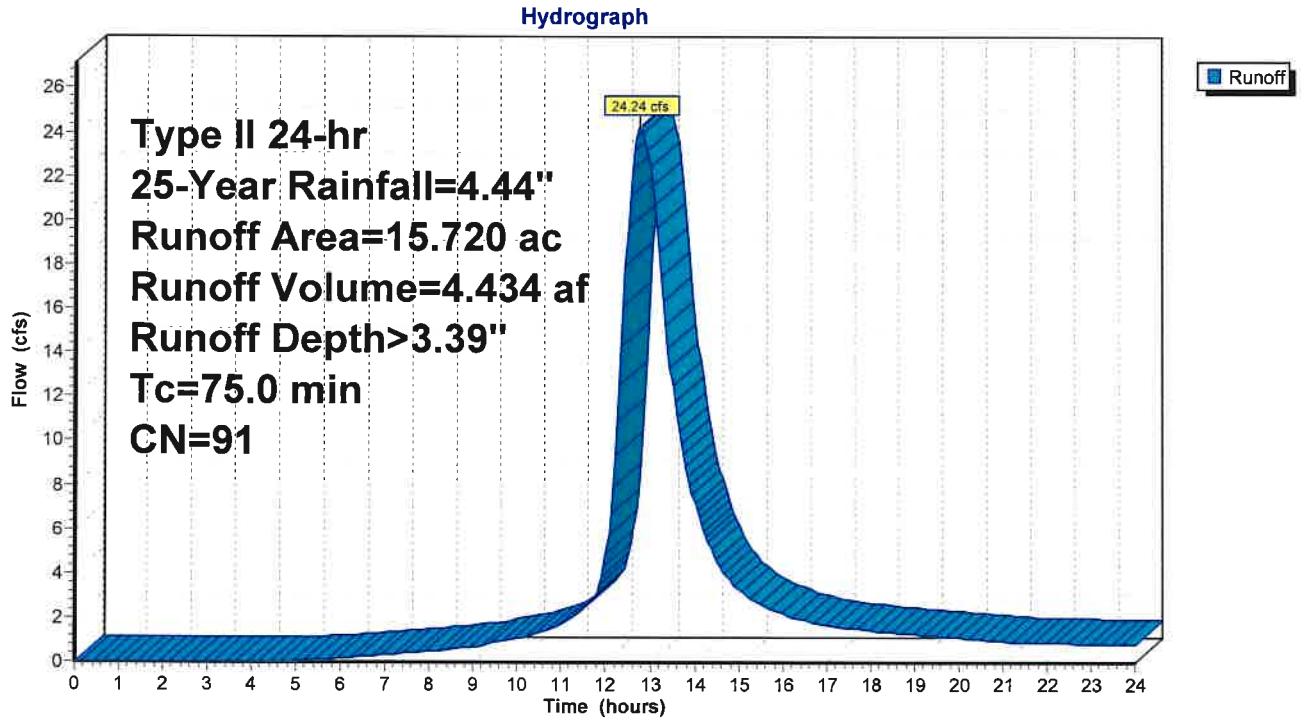
Runoff = 24.24 cfs @ 12.77 hrs, Volume= 4.434 af, Depth> 3.39"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.44"

	Area (ac)	CN	Description
*	15.720	91	
	15.720		100.00% Pervious Area

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

Subcatchment 4S: Commerce Park



Summary for Subcatchment 5S: Commerce Park Pre

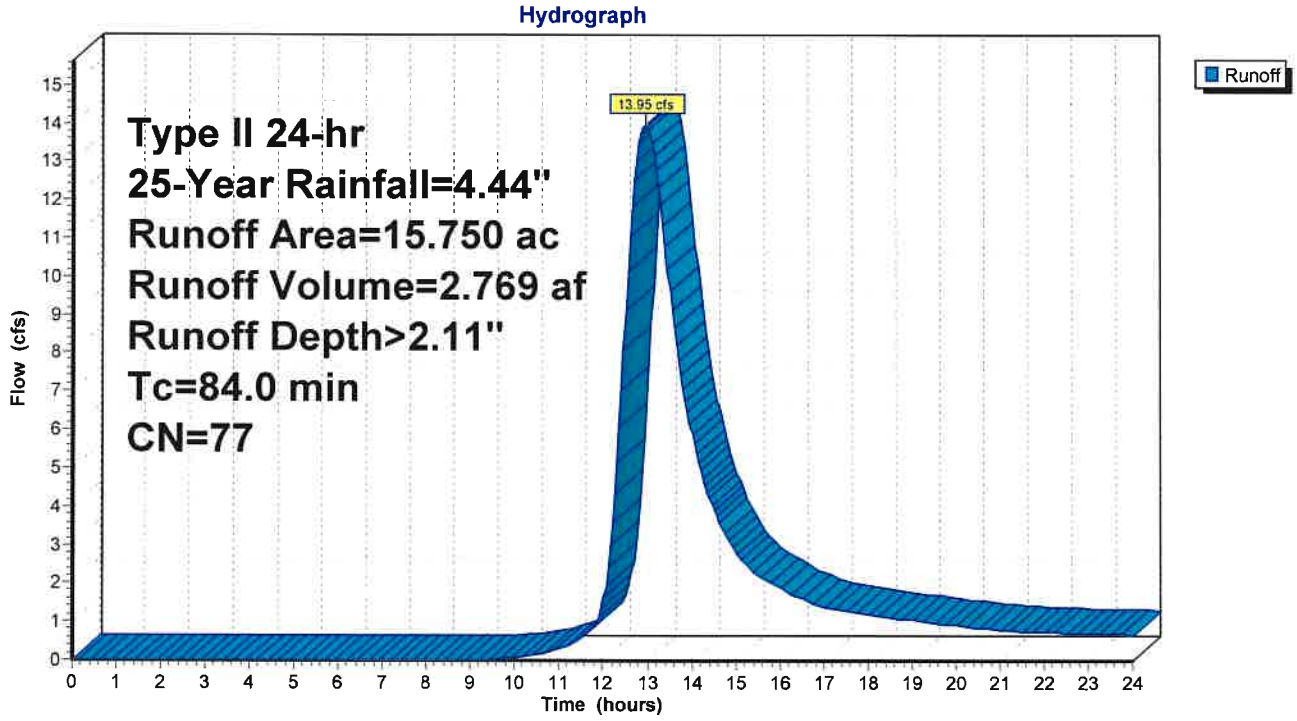
Runoff = 13.95 cfs @ 12.95 hrs, Volume= 2.769 af, Depth> 2.11"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.44"

	Area (ac)	CN	Description
*	15.750	77	
	15.750		100.00% Pervious Area

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

Subcatchment 5S: Commerce Park Pre

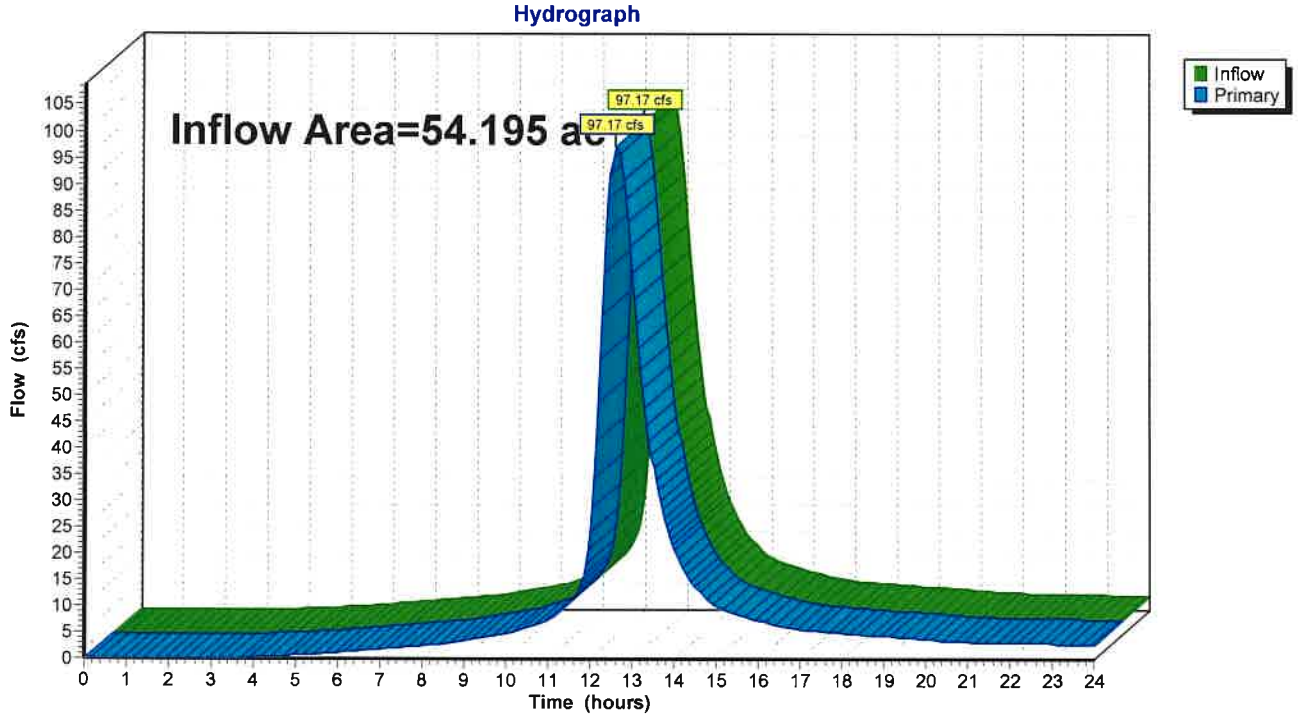


Summary for Link 4L: Total Flows

Inflow Area = 54.195 ac, 56.60% Impervious, Inflow Depth > 3.62" for 25-Year event
Inflow = 97.17 cfs @ 12.63 hrs, Volume= 16.336 af
Primary = 97.17 cfs @ 12.63 hrs, Volume= 16.336 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Total Flows

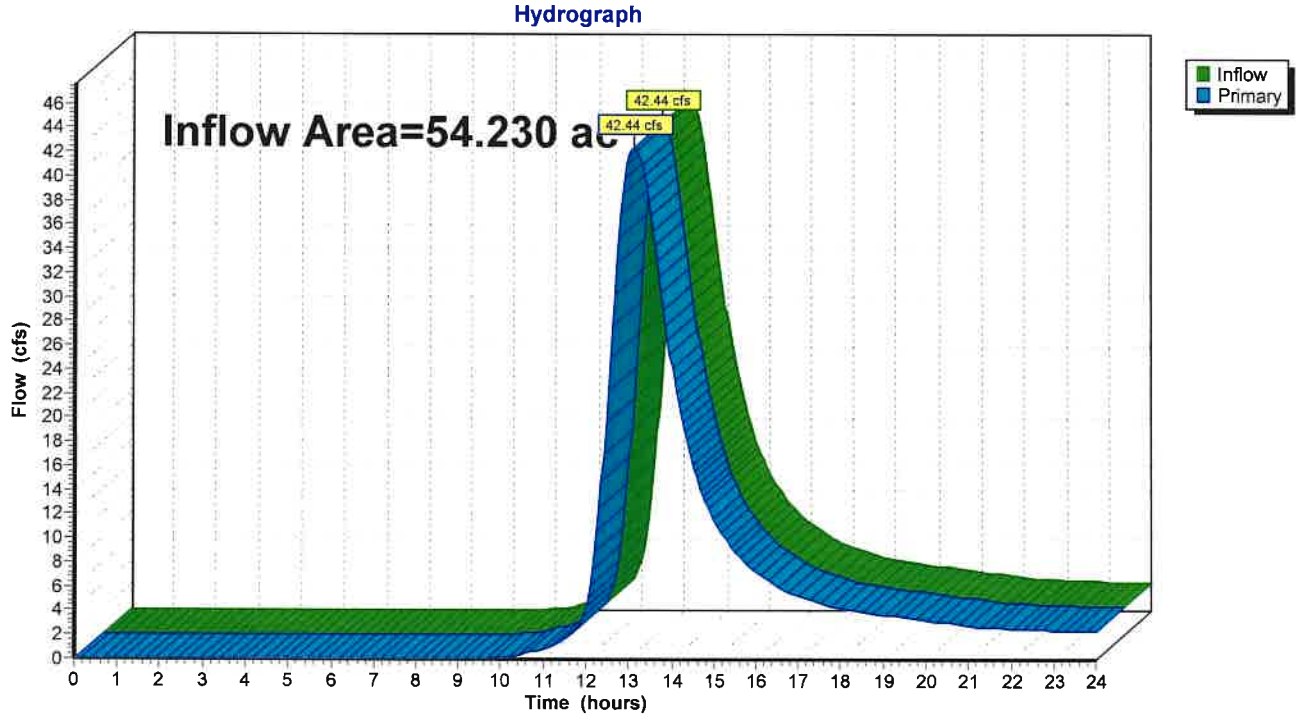


Summary for Link 6L: (new Link)

Inflow Area = 54.230 ac, 0.00% Impervious, Inflow Depth > 2.10" for 25-Year event
Inflow = 42.44 cfs @ 13.11 hrs, Volume= 9.497 af
Primary = 42.44 cfs @ 13.11 hrs, Volume= 9.497 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: (new Link)



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Leatherwood Pre Runoff Area=38.480 ac 0.00% Impervious Runoff Depth>2.56"
Flow Length=2,100' Tc=102.4 min CN=77 Runoff=35.88 cfs 8.198 af

Subcatchment 2S: Leatherwood Runoff Area=38.475 ac 79.73% Impervious Runoff Depth>4.27"
Tc=60.0 min CN=94 Runoff=85.35 cfs 13.683 af

Subcatchment 4S: Commerce Park Runoff Area=15.720 ac 0.00% Impervious Runoff Depth>3.93"
Tc=75.0 min CN=91 Runoff=27.99 cfs 5.147 af

Subcatchment 5S: Commerce Park Pre Runoff Area=15.750 ac 0.00% Impervious Runoff Depth>2.57"
Tc=84.0 min CN=77 Runoff=17.12 cfs 3.374 af

Link 4L: Total Flows Inflow=111.31 cfs 18.830 af
Primary=111.31 cfs 18.830 af

Link 6L: (new Link) Inflow=52.08 cfs 11.572 af
Primary=52.08 cfs 11.572 af

Total Runoff Area = 108.425 ac Runoff Volume = 30.402 af Average Runoff Depth = 3.36"
71.71% Pervious = 77.750 ac 28.29% Impervious = 30.675 ac

Summary for Subcatchment 1S: Leatherwood Pre existing

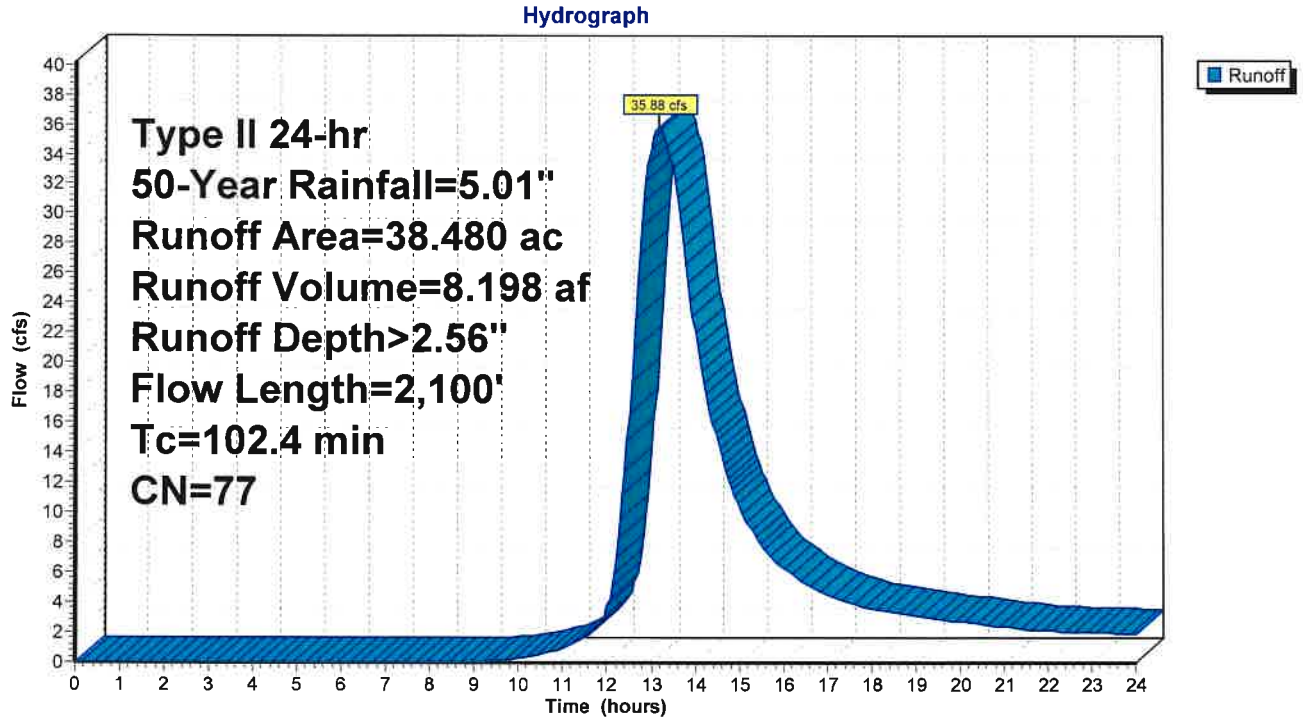
Runoff = 35.88 cfs @ 13.20 hrs, Volume= 8.198 af, Depth> 2.56"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-Year Rainfall=5.01"

	Area (ac)	CN	Description
*	38.480	77	Small grain, C&T + CR, Poor, HSG C
	38.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	300	0.0100	0.12		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.20"
60.9	1,800	0.0030	0.49		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
102.4	2,100	Total			

Subcatchment 1S: Leatherwood Pre existing



Summary for Subcatchment 2S: Leatherwood Developed

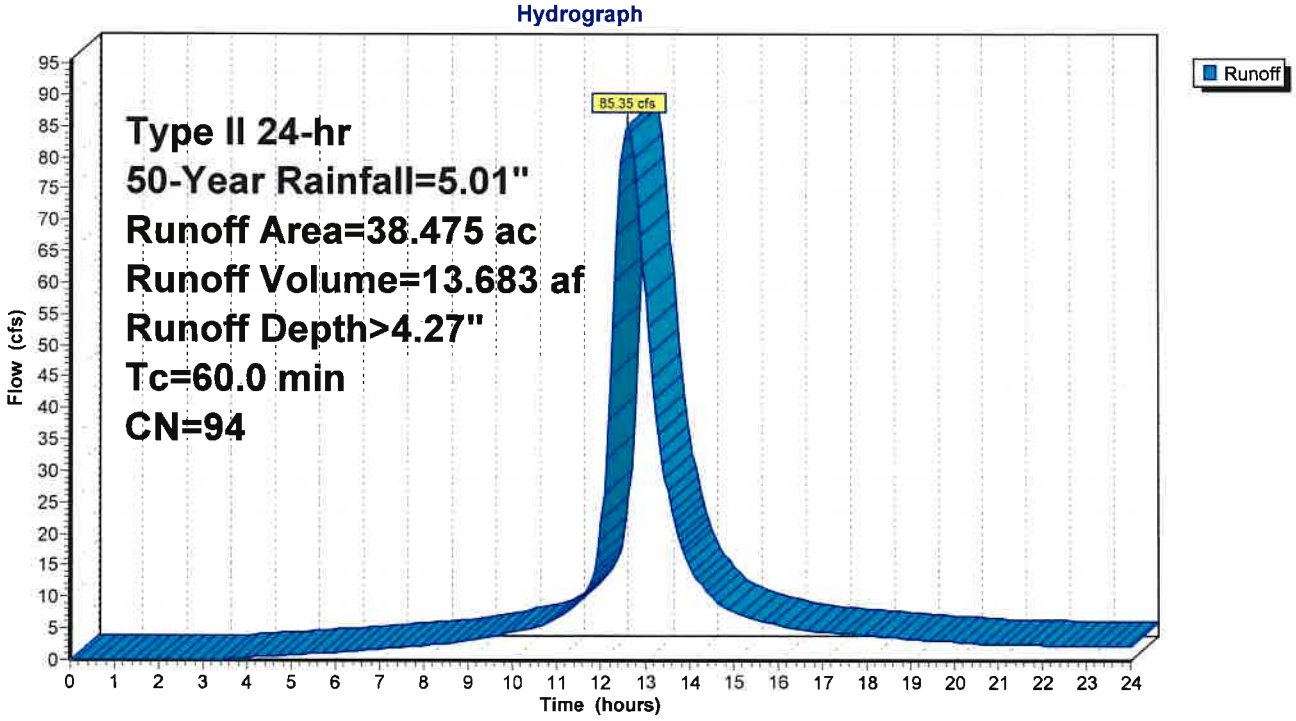
Runoff = 85.35 cfs @ 12.60 hrs, Volume= 13.683 af, Depth> 4.27"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-Year Rainfall=5.01"

Area (ac)	CN	Description
27.553	98	Paved roads w/curbs & sewers, HSG D
3.122	98	Water Surface, HSG D
7.800	80	>75% Grass cover, Good, HSG D
38.475	94	Weighted Average
7.800		20.27% Pervious Area
30.675		79.73% Impervious Area

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

Subcatchment 2S: Leatherwood Developed



Summary for Subcatchment 4S: Commerce Park

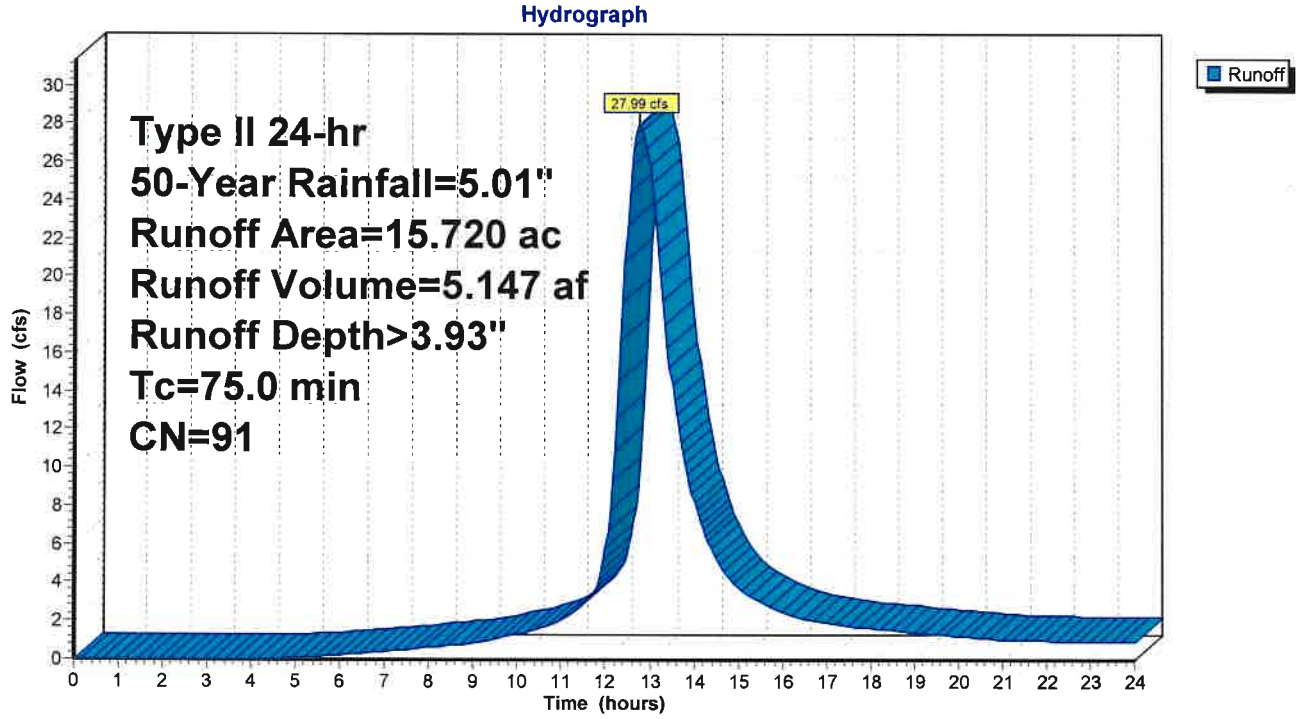
Runoff = 27.99 cfs @ 12.77 hrs, Volume= 5.147 af, Depth> 3.93"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-Year Rainfall=5.01"

	Area (ac)	CN	Description
*	15.720	91	
	15.720		100.00% Pervious Area

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

Subcatchment 4S: Commerce Park



Summary for Subcatchment 5S: Commerce Park Pre

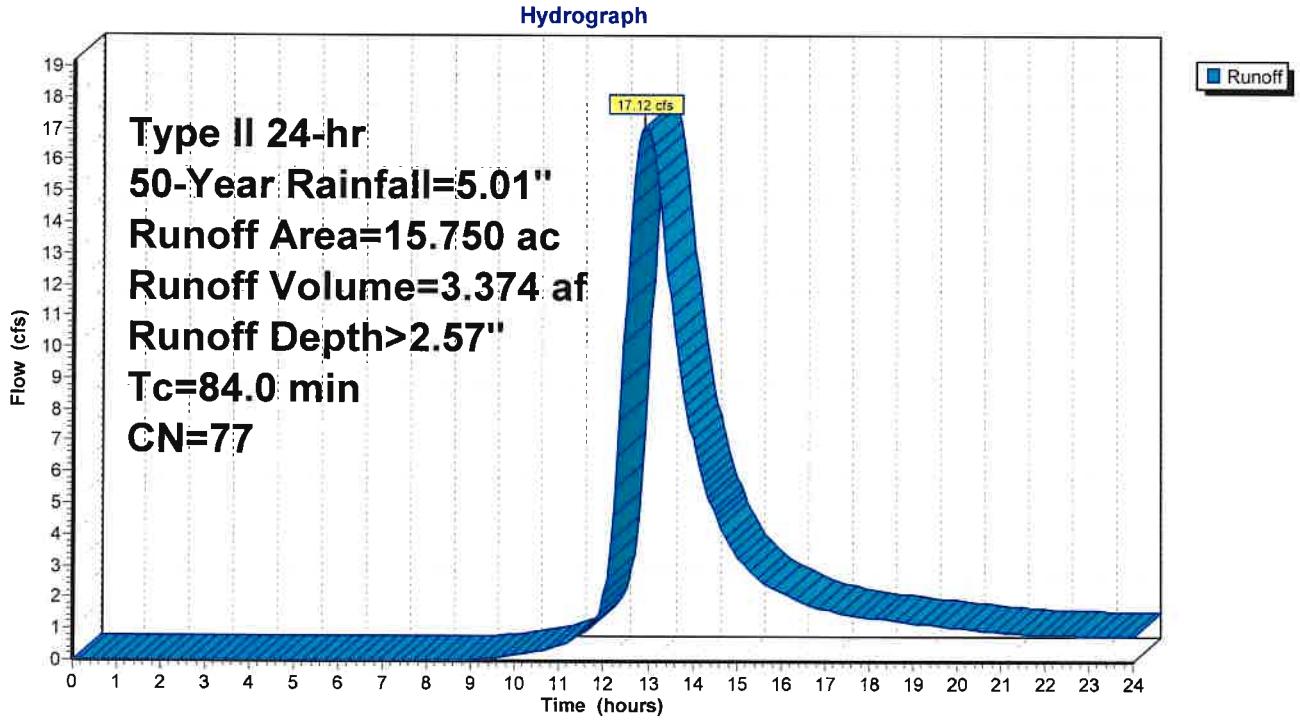
Runoff = 17.12 cfs @ 12.95 hrs, Volume= 3.374 af, Depth> 2.57"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-Year Rainfall=5.01"

	Area (ac)	CN	Description
*	15.750	77	
	15.750		100.00% Pervious Area

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

Subcatchment 5S: Commerce Park Pre

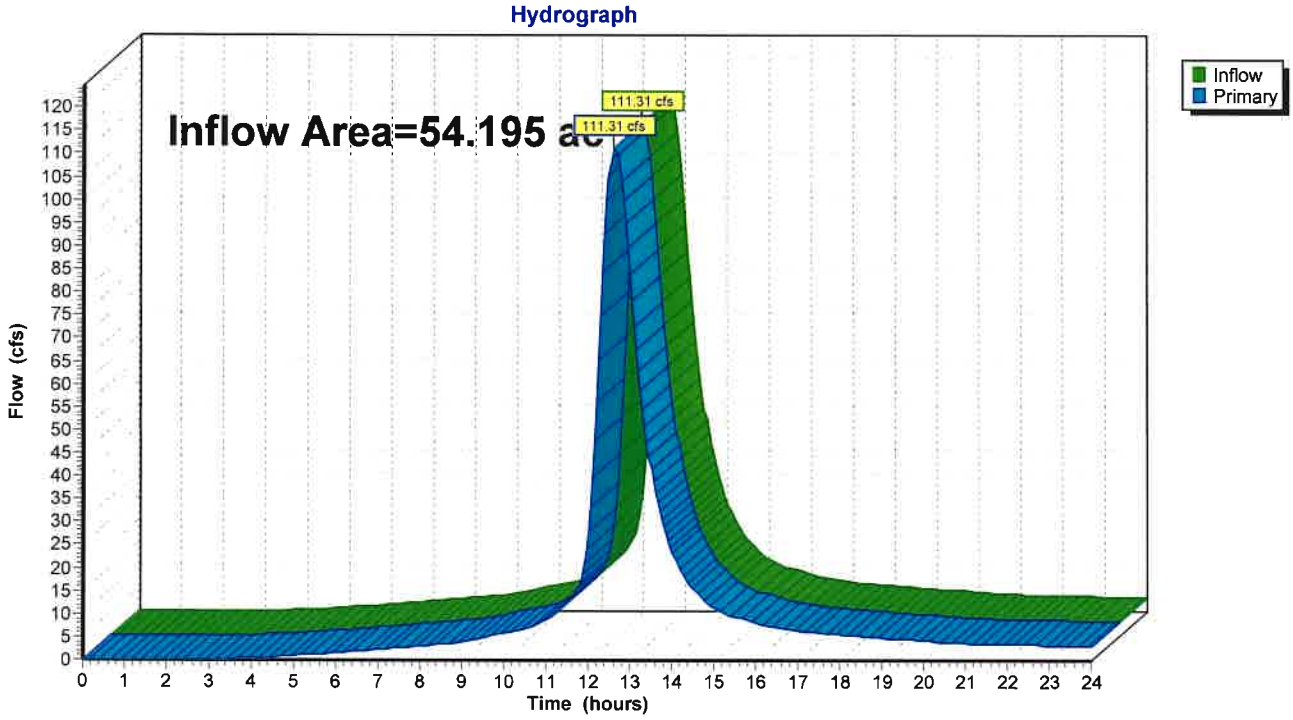


Summary for Link 4L: Total Flows

Inflow Area = 54.195 ac, 56.60% Impervious, Inflow Depth > 4.17" for 50-Year event
Inflow = 111.31 cfs @ 12.63 hrs, Volume= 18.830 af
Primary = 111.31 cfs @ 12.63 hrs, Volume= 18.830 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Total Flows

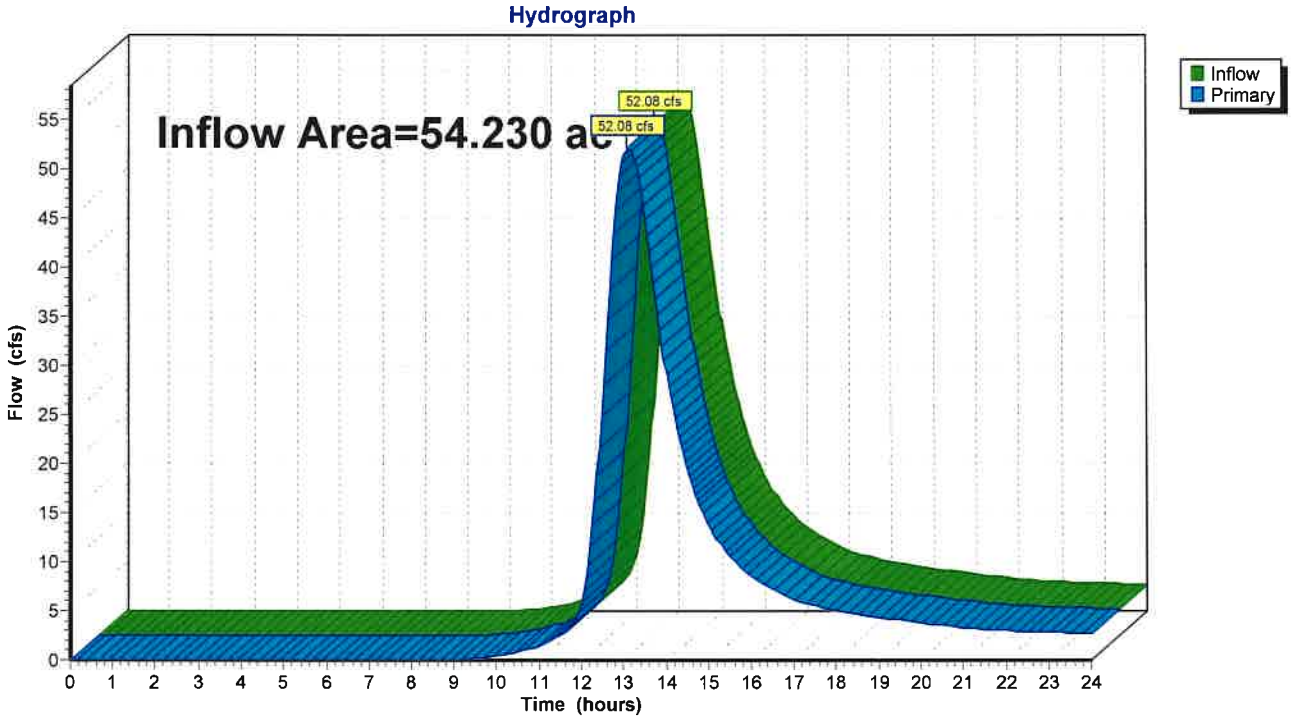


Summary for Link 6L: (new Link)

Inflow Area = 54.230 ac, 0.00% Impervious, Inflow Depth > 2.56" for 50-Year event
Inflow = 52.08 cfs @ 13.10 hrs, Volume= 11.572 af
Primary = 52.08 cfs @ 13.10 hrs, Volume= 11.572 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: (new Link)



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Leatherwood Pre Runoff Area=38.480 ac 0.00% Impervious Runoff Depth>3.07"
Flow Length=2,100' Tc=102.4 min CN=77 Runoff=43.29 cfs 9.850 af

Subcatchment 2S: Leatherwood Runoff Area=38.475 ac 79.73% Impervious Runoff Depth>4.87"
Tc=60.0 min CN=94 Runoff=96.88 cfs 15.626 af

Subcatchment 4S: Commerce Park Runoff Area=15.720 ac 0.00% Impervious Runoff Depth>4.52"
Tc=75.0 min CN=91 Runoff=32.06 cfs 5.927 af

Subcatchment 5S: Commerce Park Pre Runoff Area=15.750 ac 0.00% Impervious Runoff Depth>3.09"
Tc=84.0 min CN=77 Runoff=20.65 cfs 4.053 af

Link 4L: Total Flows Inflow=126.78 cfs 21.554 af
Primary=126.78 cfs 21.554 af

Link 6L: (new Link) Inflow=62.85 cfs 13.903 af
Primary=62.85 cfs 13.903 af

Total Runoff Area = 108.425 ac Runoff Volume = 35.456 af Average Runoff Depth = 3.92"
71.71% Pervious = 77.750 ac 28.29% Impervious = 30.675 ac

Summary for Subcatchment 1S: Leatherwood Pre existing

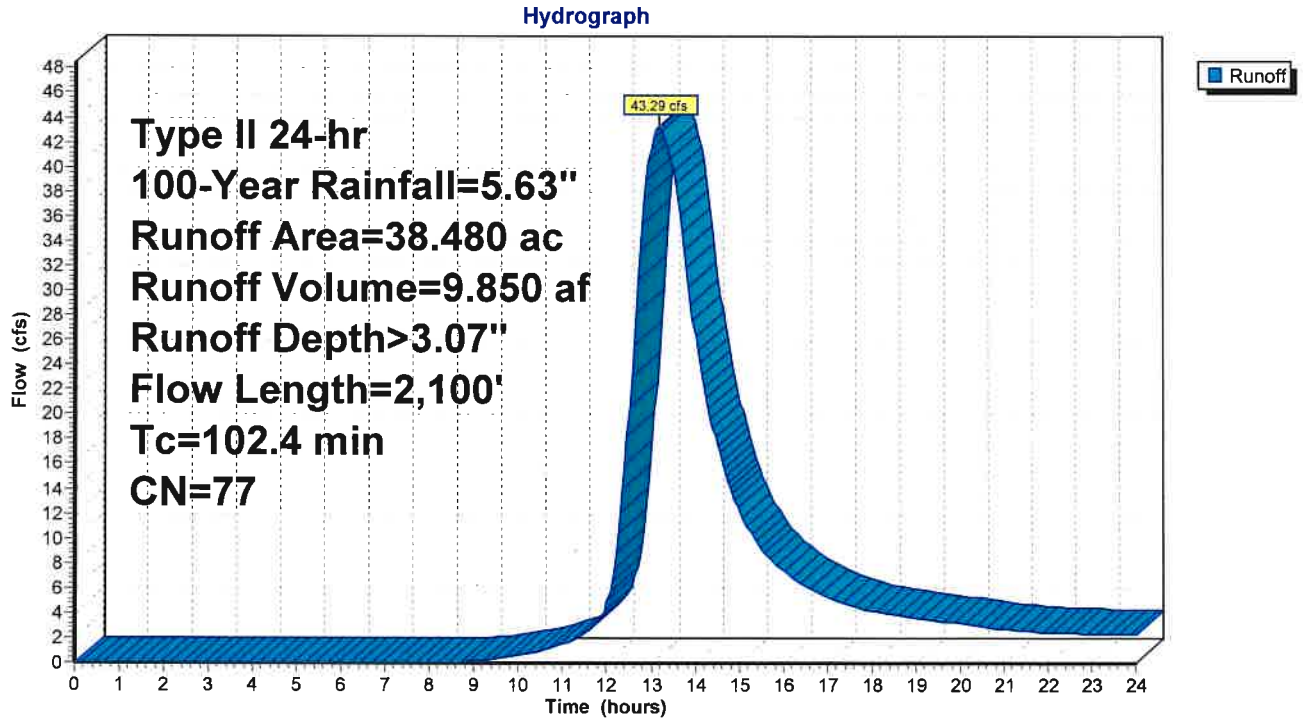
Runoff = 43.29 cfs @ 13.19 hrs, Volume= 9.850 af, Depth> 3.07"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.63"

	Area (ac)	CN	Description
*	38.480	77	Small grain, C&T + CR, Poor, HSG C
	38.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	300	0.0100	0.12		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.20"
60.9	1,800	0.0030	0.49		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
102.4	2,100	Total			

Subcatchment 1S: Leatherwood Pre existing



Summary for Subcatchment 2S: Leatherwood Developed

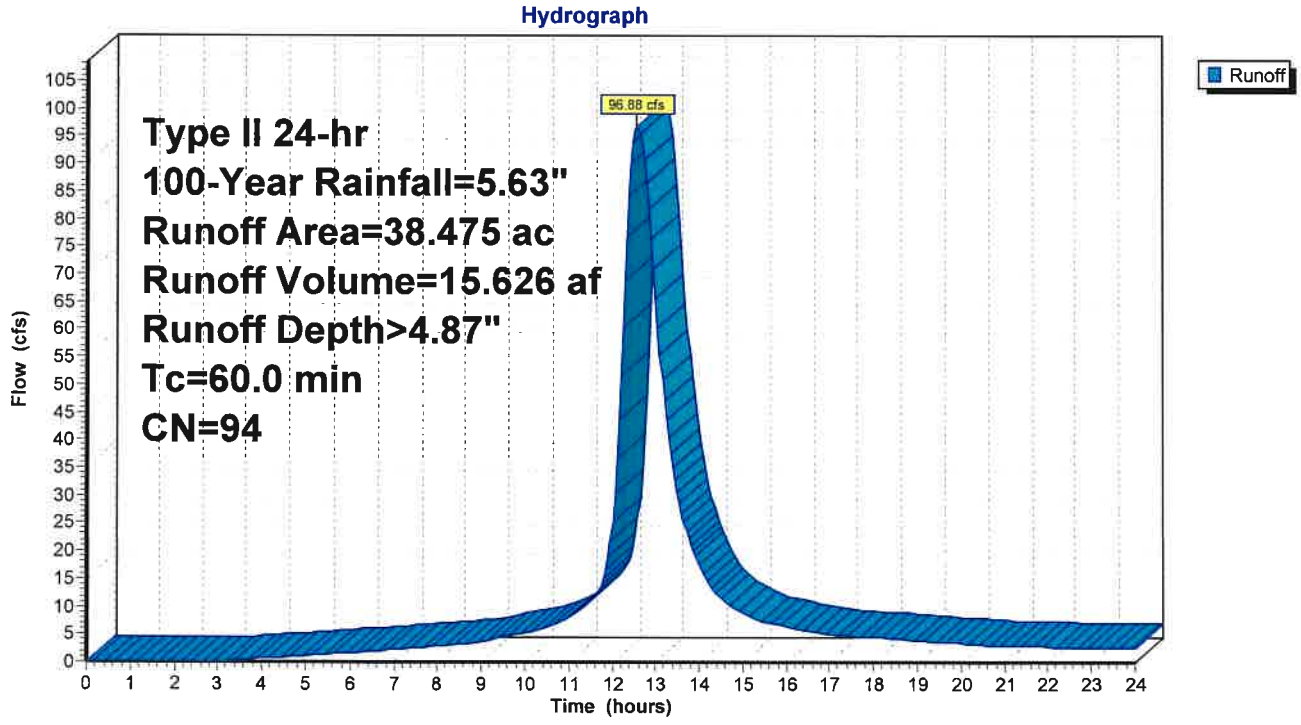
Runoff = 96.88 cfs @ 12.60 hrs, Volume= 15.626 af, Depth> 4.87"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.63"

Area (ac)	CN	Description
27.553	98	Paved roads w/curbs & sewers, HSG D
3.122	98	Water Surface, HSG D
7.800	80	>75% Grass cover, Good, HSG D
38.475	94	Weighted Average
7.800		20.27% Pervious Area
30.675		79.73% Impervious Area

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

Subcatchment 2S: Leatherwood Developed



Summary for Subcatchment 4S: Commerce Park

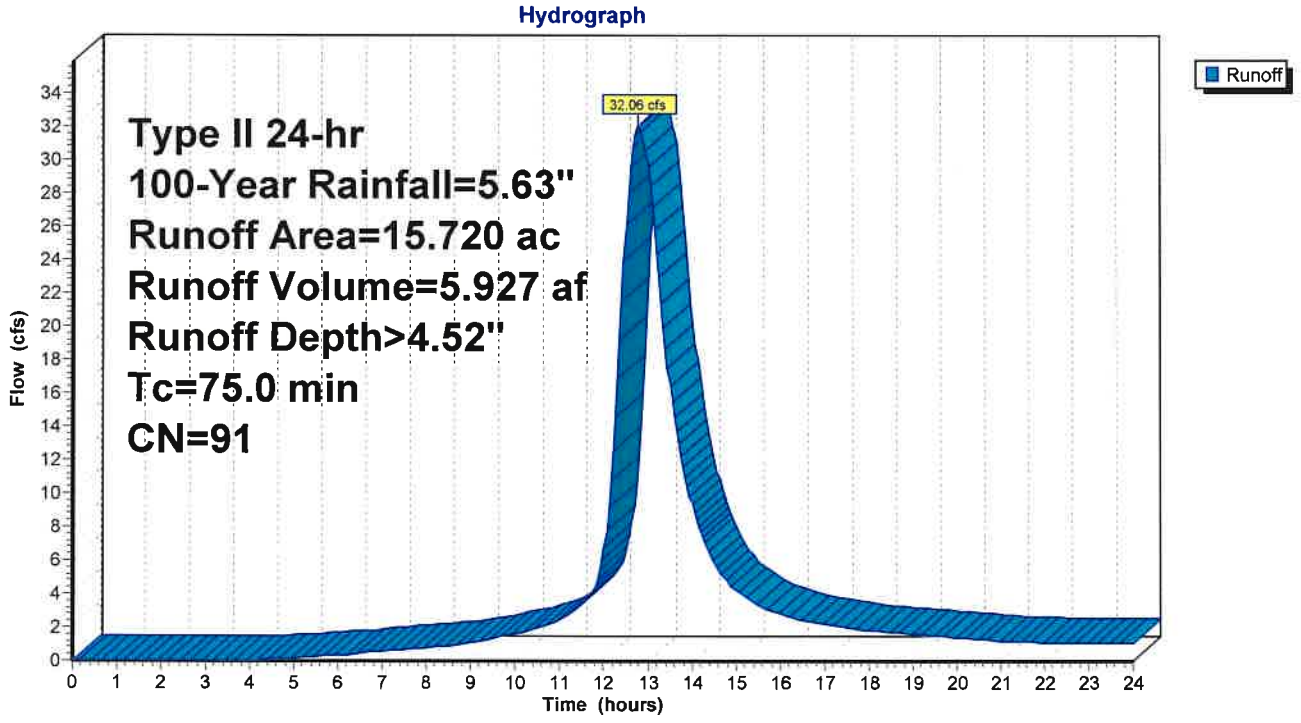
Runoff = 32.06 cfs @ 12.77 hrs, Volume= 5.927 af, Depth> 4.52"
Routed to Link 4L : Total Flows

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.63"

	Area (ac)	CN	Description
*	15.720	91	
	15.720		100.00% Pervious Area

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

Subcatchment 4S: Commerce Park



Summary for Subcatchment 5S: Commerce Park Pre

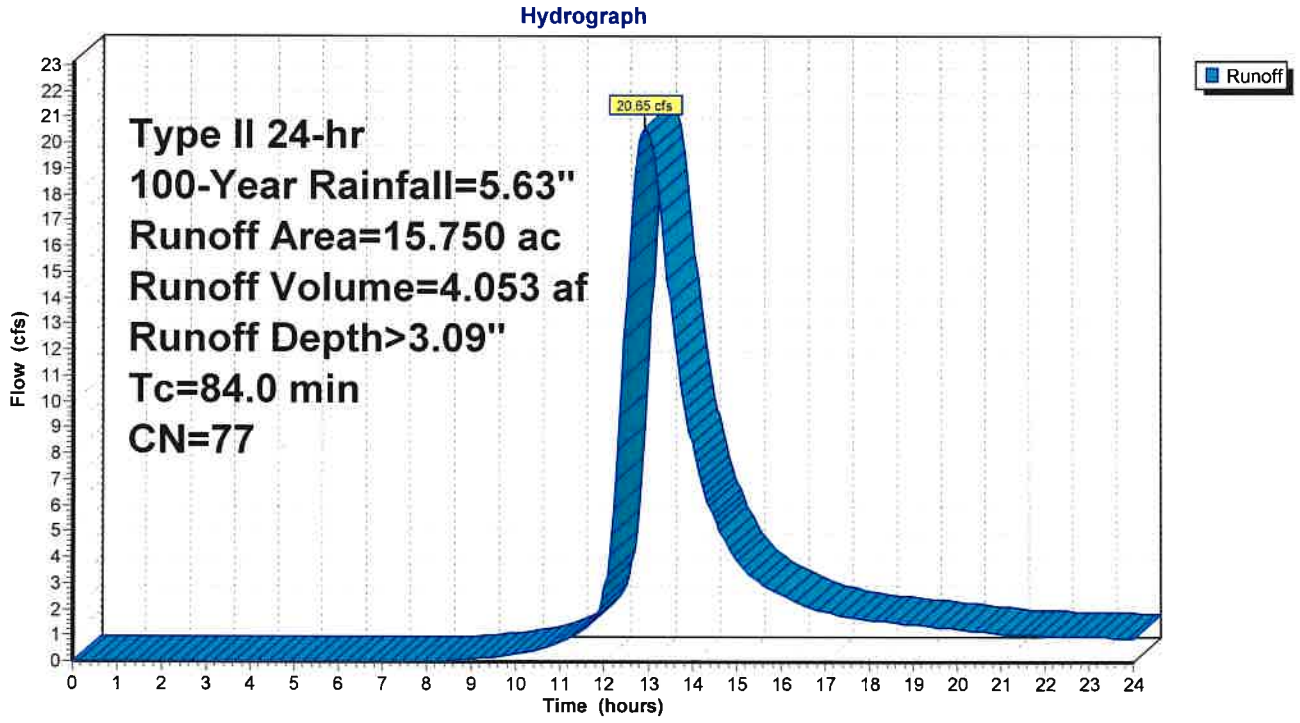
Runoff = 20.65 cfs @ 12.94 hrs, Volume= 4.053 af, Depth> 3.09"
Routed to Link 6L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.63"

	Area (ac)	CN	Description
*	15.750	77	
	15.750		100.00% Pervious Area

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

Subcatchment 5S: Commerce Park Pre

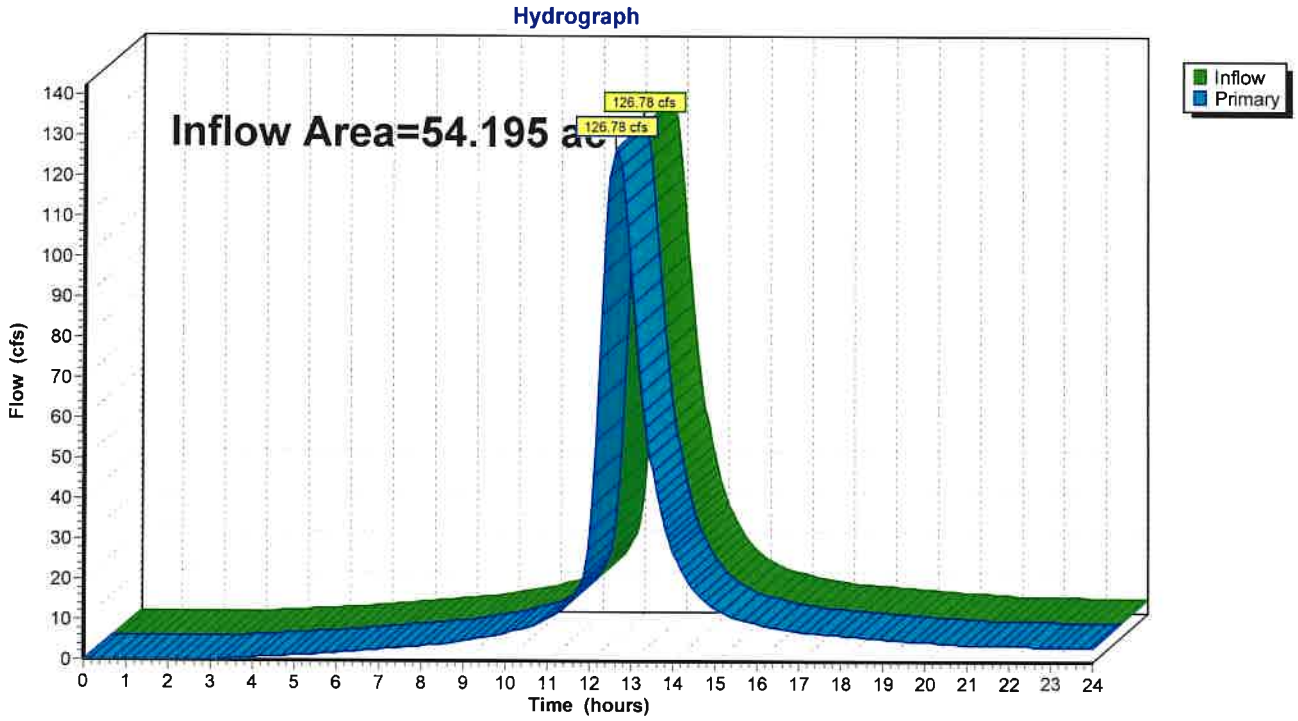


Summary for Link 4L: Total Flows

Inflow Area = 54.195 ac, 56.60% Impervious, Inflow Depth > 4.77" for 100-Year event
Inflow = 126.78 cfs @ 12.62 hrs, Volume= 21.554 af
Primary = 126.78 cfs @ 12.62 hrs, Volume= 21.554 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Total Flows

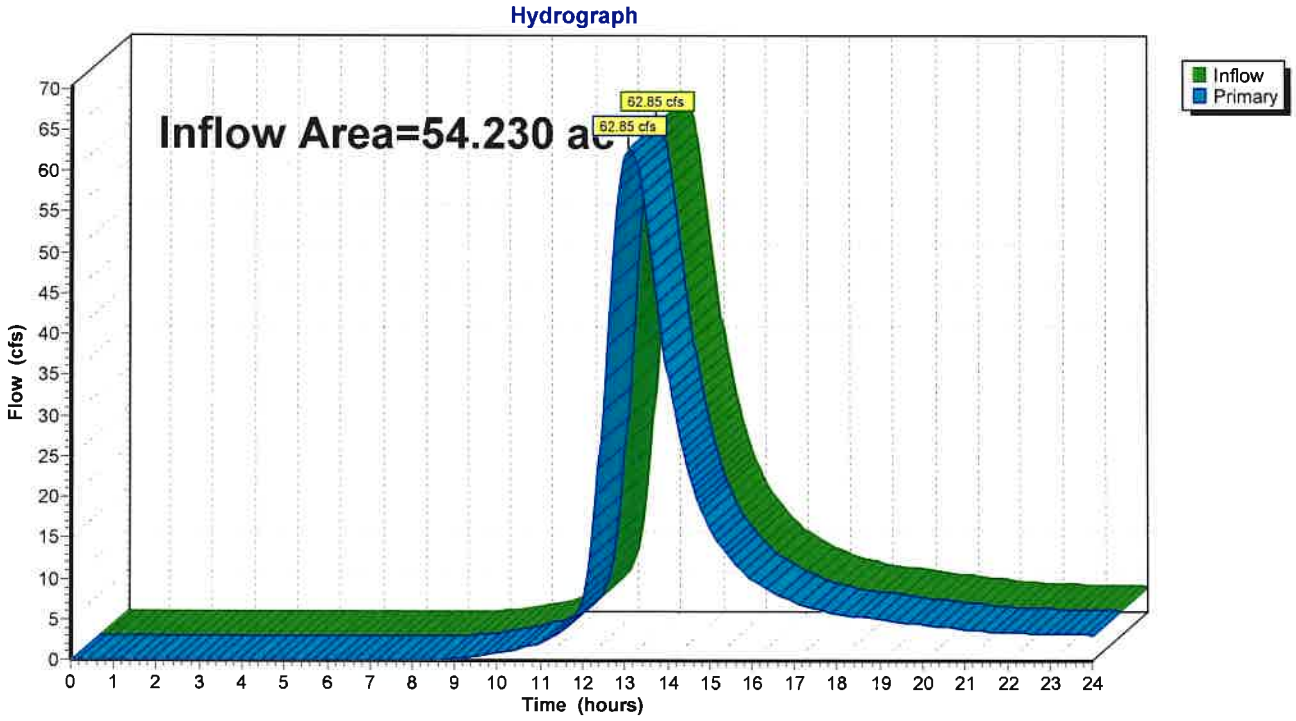


Summary for Link 6L: (new Link)

Inflow Area = 54.230 ac, 0.00% Impervious, Inflow Depth > 3.08" for 100-Year event
Inflow = 62.85 cfs @ 13.10 hrs, Volume= 13.903 af
Primary = 62.85 cfs @ 13.10 hrs, Volume= 13.903 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 6L: (new Link)



6.1.1 Impervious Area Calculations

Total Area	=	1,675,971.00	s.f.	=	38.475 acres
Building Area	=	572,400 s.f.		=	13.147 acres
Pavement Parking Area	=	623,370 s.f.		=	14.311 acres
Pond Surface	=	136,000 s.f.		=	3.122 acres
Total Impervious			s.f.		30.58 acres

% Impervious = 79

Total Pervious: 17.895

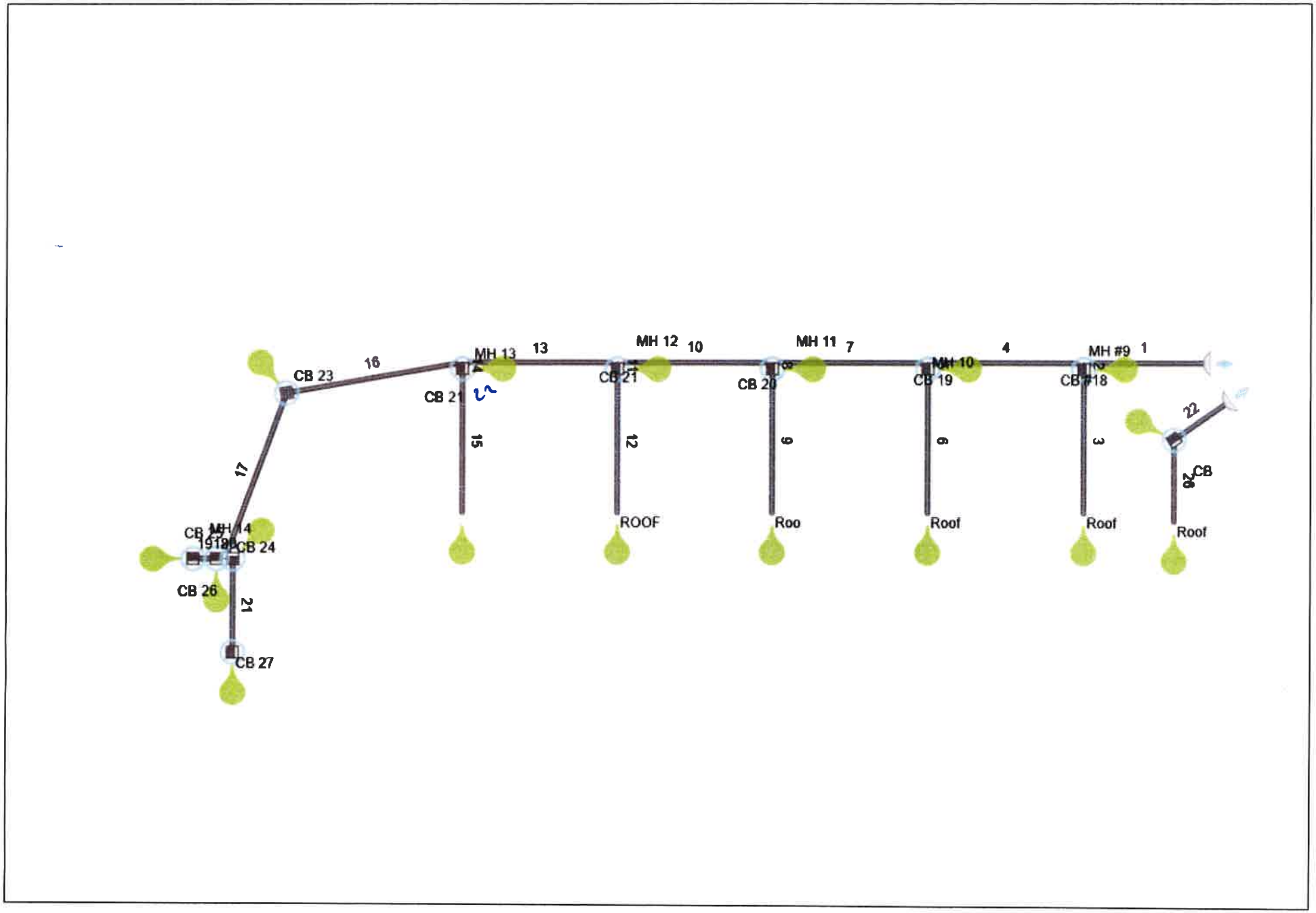
6.1.2 Storm Sewer Calculations

Plan View

Stormwater Studio 2022 v 3.0.0.29

Project Name: Enter Project Name...

09-06-2022



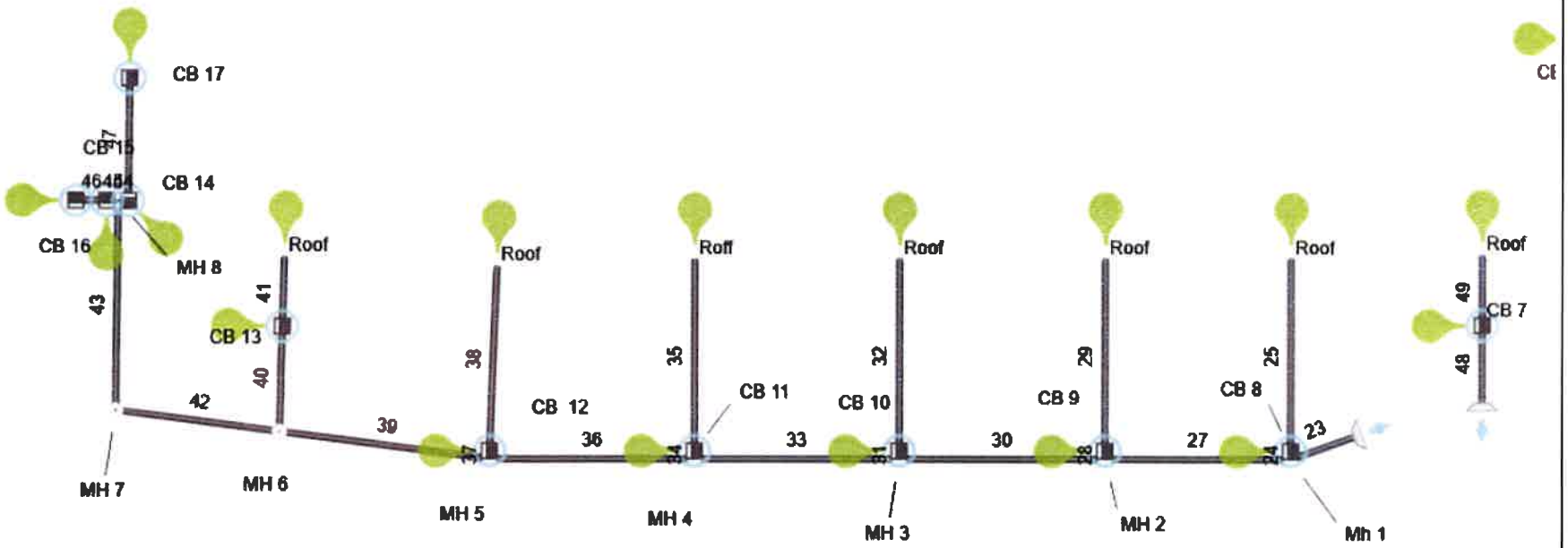
Project File: DHLLeatherwoodrevidedfinal.sws

Plan View

Stormwater Studio 2022 v 3.0.0.29

Project Name: Enter Project Name...

09-06-2022

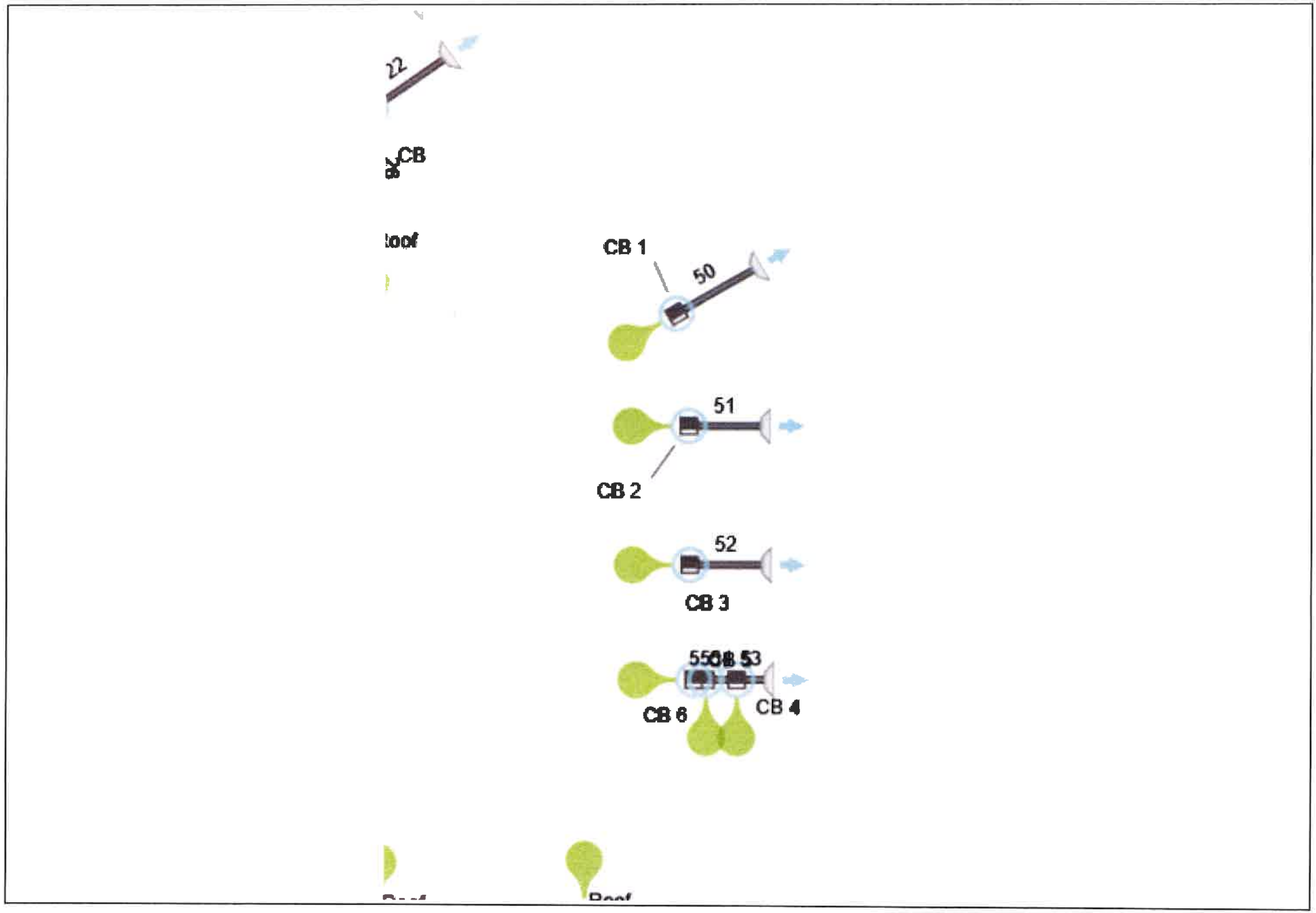


Plan View

Stormwater Studio 2022 v 3.0.0.29

Project Name: Enter Project Name...

09-06-2022



Project File: DHLLeatherwoodrevidedfinal.sws

Storm Sewer Tabulation*

Project Name: Enter Project Name...

Stormwater Studio 2022 v 3.0.0.29

09-06-2022

Line ID	Length	Drng Area		Rational	C x A		Tc		Intensity	Total Q	Capacity	Velocity	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	154.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	43.35	0.00	36	0.25	685.39	685.00	0.00	0.00	698.00	685.00	1
2	8.00	0.880	0.000	0.94	0.83	0.00	10.0	0.00	0.00	0.00	8.52	0.00	18	0.39	686.92	686.89	0.00	0.00	697.00	698.00	2
3	185.00	1.079	0.000	0.94	1.01	0.00	10.0	0.00	0.00	0.00	6.11	0.00	18	0.20	687.29	686.92	0.00	0.00	700.00	697.00	3
4	200.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	38.77	0.00	36	0.20	685.79	685.39	0.00	0.00	698.00	698.00	4
5	8.00	0.875	0.000	0.94	0.82	0.00	10.0	0.00	0.00	0.00	8.41	0.00	18	0.38	687.32	687.29	0.00	0.00	697.00	698.00	5
6	185.00	1.079	0.000	0.94	1.01	0.00	10.0	0.00	0.00	0.00	6.11	0.00	18	0.20	687.69	687.32	0.00	0.00	7.00	697.00	6
7	200.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	36.78	0.00	36	0.18	686.19	685.83	0.00	0.00	698.00	698.00	7
8	8.00	0.875	0.000	0.94	0.82	0.00	10.0	0.00	0.00	0.00	8.52	0.00	18	0.39	687.72	687.69	0.00	0.00	697.00	698.00	8
9	185.00	1.079	0.000	0.94	1.01	0.00	10.0	0.00	0.00	0.00	6.11	0.00	18	0.20	688.09	687.72	0.00	0.00	700.00	697.00	9
10	200.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	32.44	0.00	36	0.14	686.47	686.19	0.00	0.00	698.00	698.00	10
11	8.00	0.875	0.000	0.95	0.83	0.00	10.0	0.00	0.00	0.00	8.53	0.00	18	0.39	688.00	687.97	0.00	0.00	697.00	698.00	11
12	185.00	1.079	0.000	0.94	1.01	0.00	10.0	0.00	0.00	0.00	6.11	0.00	18	0.20	688.37	688.00	0.00	0.00	700.00	697.00	12
13	200.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	14.70	0.00	24	0.25	688.09	687.59	0.00	0.00	698.00	698.00	13
14	8.00	0.850	0.000	0.94	0.80	0.00	10.0	0.00	0.00	0.00	13.15	0.00	24	0.20	688.11	688.09	0.00	0.00	697.00	698.00	14
15	185.00	1.523	0.000	0.94	1.43	0.00	10.0	0.00	0.00	0.00	6.83	0.00	18	0.25	689.07	688.61	0.00	0.00	700.00	697.00	15
16	229.00	0.850	0.000	0.36	0.31	0.00	10.0	0.00	0.00	0.00	6.11	0.00	18	0.20	689.53	689.07	0.00	0.00	695.00	698.00	16
17	229.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	3.94	0.00	15	0.22	690.53	690.03	0.00	0.00	700.00	695.00	17
18	11.00	0.124	0.000	0.94	0.12	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.85	690.82	0.00	0.00	697.50	700.00	18
19	30.00	0.245	0.000	0.62	0.15	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.93	690.85	0.00	0.00	697.50	697.50	19
20	10.00	0.362	0.000	0.77	0.28	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.85	690.82	0.00	0.00	700.80	700.00	20
21	120.00	0.374	0.000	0.79	0.30	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	691.16	690.85	0.00	0.00	701.10	700.80	21
22	80.00	0.714	0.000	0.71	0.51	0.00	10.0	0.00	0.00	0.00	6.10	0.00	18	0.20	685.16	685.00	0.00	0.00	699.00	690.00	22

* Results NOT current with inputs.

Project File: DHLLeatherwoodrevidedfinal.sws

Storm Sewer Tabulation*

Project Name: Enter Project Name...

Stormwater Studio 2022 v 3.0.0.29

09-06-2022

Line ID	Length	Drng Area		Rational	C x A		Tc		Intensity	Total Q	Capacity	Velocity	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
23	65.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	45.05	0.00	36	0.27	685.18	685.00	0.00	0.00	698.00	685.00	23
24	8.00	0.721	0.000	0.94	0.68	0.00	10.0	0.00	0.00	0.00	6.83	0.00	18	0.25	686.70	686.68	0.00	0.00	697.20	698.00	24
25	185.00	0.865	0.000	0.94	0.81	0.00	10.0	0.00	0.00	0.00	3.94	0.00	15	0.22	687.36	686.95	0.00	0.00	700.00	697.20	25
26	105.00	0.732	0.000	0.94	0.69	0.00	10.0	0.00	0.00	0.00	3.75	0.00	15	0.20	685.62	685.41	0.00	0.00	700.00	699.00	26
Line 27	180.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	39.73	0.00	36	0.21	685.56	685.18	0.00	0.00	698.00	698.00	27
28	8.00	0.941	0.000	0.94	0.88	0.00	10.0	0.00	0.00	0.00	8.85	0.00	18	0.42	687.09	687.06	0.00	0.00	697.00	698.00	28
29	185.00	1.079	0.000	0.94	1.01	0.00	10.0	0.00	0.00	0.00	6.11	0.00	18	0.20	687.39	687.02	0.00	0.00	700.00	697.00	29
30	200.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	35.75	0.00	36	0.17	685.90	685.56	0.00	0.00	698.00	698.00	30
31	8.00	0.941	0.000	0.94	0.88	0.00	10.0	0.00	0.00	0.00	8.86	0.00	18	0.42	687.43	687.40	0.00	0.00	697.00	698.00	31
32	185.00	1.079	0.000	0.94	1.01	0.00	10.0	0.00	0.00	0.00	6.11	0.00	18	0.20	687.80	687.43	0.00	0.00	700.00	697.00	32
33	200.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	33.58	0.00	36	0.15	686.20	685.90	0.00	0.00	698.00	698.00	33
34	8.00	0.941	0.000	0.94	0.88	0.00	10.0	0.00	0.00	0.00	8.84	0.00	18	0.42	687.73	687.70	0.00	0.00	697.00	698.00	34
35	185.00	1.079	0.000	0.94	1.01	0.00	10.0	0.00	0.00	0.00	6.11	0.00	18	0.20	688.10	687.73	0.00	0.00	700.00	697.00	35
36	200.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	17.40	0.00	24	0.35	688.40	687.70	0.00	0.00	698.00	698.00	36
37	8.00	1.338	0.000	0.86	1.15	0.00	10.0	0.00	0.00	0.00	13.15	0.00	24	0.20	688.42	688.40	0.00	0.00	697.00	698.00	37
38	177.73	1.218	0.000	0.94	1.14	0.00	10.0	0.00	0.00	0.00	6.11	0.00	18	0.20	689.28	688.92	0.00	0.00	700.00	697.00	38
39	206.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	8.08	0.00	18	0.35	689.62	688.90	0.00	0.00	0.00	698.00	39
40	103.00	0.260	0.000	0.67	0.17	0.00	10.0	0.00	0.00	0.00	3.75	0.00	15	0.20	690.06	689.85	0.00	0.00	700.44	0.00	40
41	65.00	0.626	0.000	0.94	0.59	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.48	690.31	0.00	0.00	703.00	700.44	41
42	160.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	5.95	0.00	18	0.19	689.92	689.62	0.00	0.00	0.00	0.00	42
43	206.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	0.00	5.95	0.00	18	0.19	690.31	689.92	0.00	0.00	0.00	0.00	43
44	10.00	0.352	0.000	0.74	0.26	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.86	690.83	0.00	0.00	0.00	0.00	44

* Results NOT current with inputs.

Project File: DHLLeatherwoodrevidedfinal.sws

Storm Sewer Tabulation*

Project Name: Enter Project Name...

Stormwater Studio 2022 v 3.0.0.29

09-06-2022

Line ID	Length	Drng Area		Rational	C x A		Tc		Intensity	Total Q	Capacity	Velocity	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
45	11.00	0.138	0.000	0.94	0.13	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.86	690.83	0.00	0.00	0.00	0.00	45
46	30.00	0.711	0.000	0.56	0.40	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.94	690.86	0.00	0.00	0.00	0.00	46
47	120.00	0.374	0.000	0.79	0.30	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	691.17	690.86	0.00	0.00	0.00	0.00	47
48	75.00	0.260	0.000	0.67	0.17	0.00	10.0	0.00	0.00	0.00	3.75	0.00	15	0.20	690.15	690.00	0.00	0.00	700.44	685.00	48
49	65.00	0.626	0.000	0.94	0.59	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.57	690.40	0.00	0.00	703.00	700.44	49
50	80.00	0.322	0.000	0.83	0.27	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	695.21	695.00	0.00	0.00	700.80	695.00	50
51	65.00	0.335	0.000	0.86	0.29	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	695.17	695.00	0.00	0.00	701.10	0.00	51
52	65.00	0.335	0.000	0.86	0.29	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	695.17	695.00	0.00	0.00	701.10	695.00	52
53	25.00	0.224	0.000	0.94	0.21	0.00	10.0	0.00	0.00	0.00	3.75	0.00	15	0.20	690.05	690.00	0.00	0.00	698.52	690.00	53
54	28.00	0.350	0.000	0.72	0.25	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.37	690.30	0.00	0.00	698.52	698.52	54
55	11.00	0.322	0.000	0.83	0.27	0.00	10.0	0.00	0.00	0.00	2.36	0.00	12	0.26	690.40	690.37	0.00	0.00	700.80	698.52	55

* Results NOT current with inputs.

Project File: DHLLeatherwoodrevidedfinal.sws

Storm Sewer Tabulation

Project Name: Enter Project Name...

Stormwater Studio 2022 v 3.0.0.29

09-06-2022

Line ID	Length	Drng Area		Rational	C x A		Tc		Intensity	Total Q	Capacity	Velocity	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	154.00	0.000	12.149	0.00	0.00	10.74	0.0	16.30	4.27	45.82	43.35	6.48	36	0.25	685.39	685.00	688.38	688.00	698.00	685.00	1
2	8.00	0.880	1.959	0.94	0.83	1.84	10.0	11.00	5.15	9.48	8.52	5.37	18	0.39	686.92	686.89	689.03	688.99	697.00	698.00	2
3	185.00	1.079	1.079	0.94	1.01	1.01	10.0	10.00	5.37	5.44	6.11	3.08	18	0.20	687.29	686.92	690.24	689.94	700.00	697.00	3
4	200.00	0.000	10.190	0.00	0.00	8.90	0.0	15.69	4.35	38.71	38.77	5.48	36	0.20	685.79	685.39	689.38	688.98	698.00	698.00	4
5	8.00	0.875	1.954	0.94	0.82	1.84	10.0	11.00	5.15	9.46	8.41	5.35	18	0.38	687.32	687.29	689.79	689.75	697.00	698.00	5
6	185.00	1.079	1.079	0.94	1.01	1.01	10.0	10.00	5.37	5.44	6.11	3.08	18	0.20	687.69	687.32	690.94	690.65	7.00	697.00	6
7	200.00	0.000	8.236	0.00	0.00	7.06	0.0	14.94	4.46	31.48	36.78	4.45	36	0.18	686.19	685.83	690.10	689.83	698.00	698.00	7
8	8.00	0.875	1.954	0.94	0.82	1.84	10.0	11.00	5.15	9.46	8.52	5.35	18	0.39	687.72	687.69	690.31	690.27	697.00	698.00	8
9	185.00	1.079	1.079	0.94	1.01	1.01	10.0	10.00	5.37	5.44	6.11	3.08	18	0.20	688.09	687.72	691.43	691.13	700.00	697.00	9
10	200.00	0.000	6.282	0.00	0.00	5.22	0.0	13.96	4.61	24.09	32.44	3.41	36	0.14	686.47	686.19	690.58	690.43	698.00	698.00	10
11	8.00	0.875	1.954	0.95	0.83	1.85	10.0	11.00	5.15	9.50	8.53	5.38	18	0.39	688.00	687.97	690.62	690.58	697.00	698.00	11
12	185.00	1.079	1.079	0.94	1.01	1.01	10.0	10.00	5.37	5.44	6.11	3.08	18	0.20	688.37	688.00	691.73	691.43	700.00	697.00	12
13	200.00	0.000	4.328	0.00	0.00	3.38	0.0	13.31	4.72	15.94	14.70	5.08	24	0.25	688.09	687.59	691.19	690.61	698.00	698.00	13
14	8.00	0.850	2.373	0.94	0.80	2.23	10.0	10.71	5.21	11.62	13.15	3.70	24	0.20	688.11	688.09	691.77	691.75	697.00	698.00	14
15	185.00	1.523	1.523	0.94	1.43	1.43	10.0	10.00	5.37	7.68	6.83	4.35	18	0.25	689.07	688.61	692.54	691.95	700.00	697.00	15
16	229.00	0.850	1.955	0.36	0.31	1.15	10.0	12.12	4.93	5.66	6.11	3.21	18	0.20	689.53	689.07	692.18	691.79	695.00	698.00	16
17	229.00	0.000	1.105	0.00	0.00	0.84	0.0	11.03	5.14	4.33	3.94	3.53	15	0.22	690.53	690.03	692.88	692.27	700.00	695.00	17
18	11.00	0.124	0.369	0.94	0.12	0.27	10.0	10.48	5.26	1.41	2.36	1.80	12	0.26	690.85	690.82	693.23	693.22	697.50	700.00	18
19	30.00	0.245	0.245	0.62	0.15	0.15	10.0	10.00	5.37	0.82	2.36	1.04	12	0.26	690.93	690.85	693.31	693.30	697.50	697.50	19
20	10.00	0.362	0.736	0.77	0.28	0.57	10.0	10.99	5.15	2.96	2.36	3.77	12	0.26	690.85	690.82	693.16	693.11	700.80	700.00	20
21	120.00	0.374	0.374	0.79	0.30	0.30	10.0	10.00	5.37	1.59	2.36	2.02	12	0.26	691.16	690.85	693.69	693.55	701.10	700.80	21
22	80.00	0.714	1.446	0.71	0.51	1.20	10.0	10.58	5.24	6.26	6.10	3.54	18	0.20	685.16	685.00	686.66	686.50	699.00	690.00	22

Notes: IDF File = Ashville-DHL.idf, Return Period = 10-yrs.

Project File: DHLLeatherwoodrevidedfinal.sws

Storm Sewer Tabulation

Project Name: Enter Project Name...

Stormwater Studio 2022 v 3.0.0.29

09-06-2022

Line ID	Length	Drng Area		Rational	C x A		Tc		Intensity	Total Q	Capacity	Velocity	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
23	65.00	0.000	12.663	0.00	0.00	11.33	0.0	16.26	4.27	48.39	45.05	6.85	36	0.27	685.18	685.00	688.17	688.00	698.00	685.00	23
24	8.00	0.721	1.586	0.94	0.68	1.49	10.0	10.87	5.18	7.72	6.83	4.37	18	0.25	686.70	686.68	689.10	689.07	697.20	698.00	24
25	185.00	0.865	0.865	0.94	0.81	0.81	10.0	10.00	5.37	4.36	3.94	3.56	15	0.22	687.36	686.95	690.15	689.65	700.00	697.20	25
26	105.00	0.732	0.732	0.94	0.69	0.69	10.0	10.00	5.37	3.69	3.75	3.01	15	0.20	685.62	685.41	687.33	687.13	700.00	699.00	26
Line 27	180.00	0.000	11.077	0.00	0.00	9.84	0.0	15.76	4.34	42.70	39.73	6.04	36	0.21	685.56	685.18	689.34	688.91	698.00	698.00	27
28	8.00	0.941	2.020	0.94	0.88	1.90	10.0	11.00	5.15	9.78	8.85	5.53	18	0.42	687.09	687.06	689.87	689.83	697.00	698.00	28
29	185.00	1.079	1.079	0.94	1.01	1.01	10.0	10.00	5.37	5.44	6.11	3.08	18	0.20	687.39	687.02	691.08	690.79	700.00	697.00	29
30	200.00	0.000	9.057	0.00	0.00	7.94	0.0	15.09	4.44	35.22	35.75	4.98	36	0.17	685.90	685.56	690.22	689.88	698.00	698.00	30
31	8.00	0.941	2.020	0.94	0.88	1.90	10.0	11.00	5.15	9.78	8.86	5.53	18	0.42	687.43	687.40	690.51	690.47	697.00	698.00	31
32	185.00	1.079	1.079	0.94	1.01	1.01	10.0	10.00	5.37	5.44	6.11	3.08	18	0.20	687.80	687.43	691.68	691.38	700.00	697.00	32
33	200.00	0.000	7.037	0.00	0.00	6.04	0.0	14.24	4.57	27.58	33.58	3.90	36	0.15	686.20	685.90	690.81	690.61	698.00	698.00	33
34	8.00	0.941	2.020	0.94	0.88	1.90	10.0	11.00	5.15	9.78	8.84	5.53	18	0.42	687.73	687.70	690.91	690.87	697.00	698.00	34
35	185.00	1.079	1.079	0.94	1.01	1.01	10.0	10.00	5.37	5.44	6.11	3.08	18	0.20	688.10	687.73	692.05	691.76	700.00	697.00	35
36	200.00	0.000	5.017	0.00	0.00	4.14	0.0	13.69	4.65	19.27	17.40	6.14	24	0.35	688.40	687.70	691.67	690.81	698.00	698.00	36
37	8.00	1.338	2.556	0.86	1.15	2.30	10.0	10.85	5.18	11.89	13.15	3.79	24	0.20	688.42	688.40	692.51	692.50	697.00	698.00	37
38	177.73	1.218	1.218	0.94	1.14	1.14	10.0	10.00	5.37	6.15	6.11	3.48	18	0.20	689.28	688.92	693.12	692.76	700.00	697.00	38
39	206.00	0.000	2.461	0.00	0.00	1.85	0.0	13.01	4.77	8.81	8.08	4.98	18	0.35	689.62	688.90	693.25	692.40	0.00	698.00	39
40	103.00	0.260	0.886	0.67	0.17	0.76	10.0	10.27	5.31	4.05	3.75	3.30	15	0.20	690.06	689.85	693.97	693.73	700.44	0.00	40
41	65.00	0.626	0.626	0.94	0.59	0.59	10.0	10.00	5.37	3.16	2.36	4.02	12	0.26	690.48	690.31	694.50	694.19	703.00	700.44	41
42	160.00	0.000	1.575	0.00	0.00	1.08	0.0	12.12	4.93	5.34	5.95	3.02	18	0.19	689.92	689.62	693.99	693.75	0.00	0.00	42
43	206.00	0.000	1.575	0.00	0.00	1.08	0.0	11.04	5.14	5.57	5.95	3.15	18	0.19	690.31	689.92	694.50	694.16	0.00	0.00	43
44	10.00	0.352	0.726	0.74	0.26	0.56	10.0	10.99	5.15	2.86	2.36	3.65	12	0.26	690.86	690.83	694.70	694.66	0.00	0.00	44

Notes: IDF File = Ashville-DHL.idf, Return Period = 10-yrs.

Project File: DHLLeatherwoodrevidedfinal.sws

Storm Sewer Tabulation

Project Name: Enter Project Name...

Stormwater Studio 2022 v 3.0.0.29

09-06-2022

Line ID	Length	Drng Area		Rational	C x A		Tc		Intensity	Total Q	Capacity	Velocity	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
45	11.00	0.138	0.849	0.94	0.13	0.53	10.0	10.18	5.33	2.81	2.36	3.58	12	0.26	690.86	690.83	694.71	694.67	0.00	0.00	45
46	30.00	0.711	0.711	0.56	0.40	0.40	10.0	10.00	5.37	2.14	2.36	2.72	12	0.26	690.94	690.86	694.94	694.88	0.00	0.00	46
47	120.00	0.374	0.374	0.79	0.30	0.30	10.0	10.00	5.37	1.59	2.36	2.02	12	0.26	691.17	690.86	695.05	694.91	0.00	0.00	47
48	75.00	0.260	0.886	0.67	0.17	0.76	10.0	10.27	5.31	4.05	3.75	3.30	15	0.20	690.15	690.00	691.40	691.25	700.44	685.00	48
49	65.00	0.626	0.626	0.94	0.59	0.59	10.0	10.00	5.37	3.16	2.36	4.02	12	0.26	690.57	690.40	692.00	691.69	703.00	700.44	49
50	80.00	0.322	0.322	0.83	0.27	0.27	10.0	10.00	5.37	1.43	2.36	1.91	12	0.26	695.21	695.00	696.06	696.00	700.80	695.00	50
51	65.00	0.335	0.335	0.86	0.29	0.29	10.0	10.00	5.37	1.55	2.36	2.03	12	0.26	695.17	695.00	696.06	696.00	701.10	0.00	51
52	65.00	0.335	0.335	0.86	0.29	0.29	10.0	10.00	5.37	1.55	2.36	2.03	12	0.26	695.17	695.00	696.06	696.00	701.10	695.00	52
53	25.00	0.224	0.896	0.94	0.21	0.73	10.0	10.23	5.31	3.88	3.75	3.16	15	0.20	690.05	690.00	691.30	691.25	698.52	690.00	53
54	28.00	0.350	0.672	0.72	0.25	0.52	10.0	10.10	5.34	2.78	2.36	3.53	12	0.26	690.37	690.30	691.52	691.42	698.52	698.52	54
55	11.00	0.322	0.322	0.83	0.27	0.27	10.0	10.00	5.37	1.43	2.36	1.83	12	0.26	690.40	690.37	691.86	691.85	700.80	698.52	55

Notes: IDF File = Ashville-DHL.idf, Return Period = 10-yrs.

Project File: DHLLeatherwoodrevidedfinal.sws

6.1.3 Off-site Flows thru Detention Basin

24" STORM OUTLET

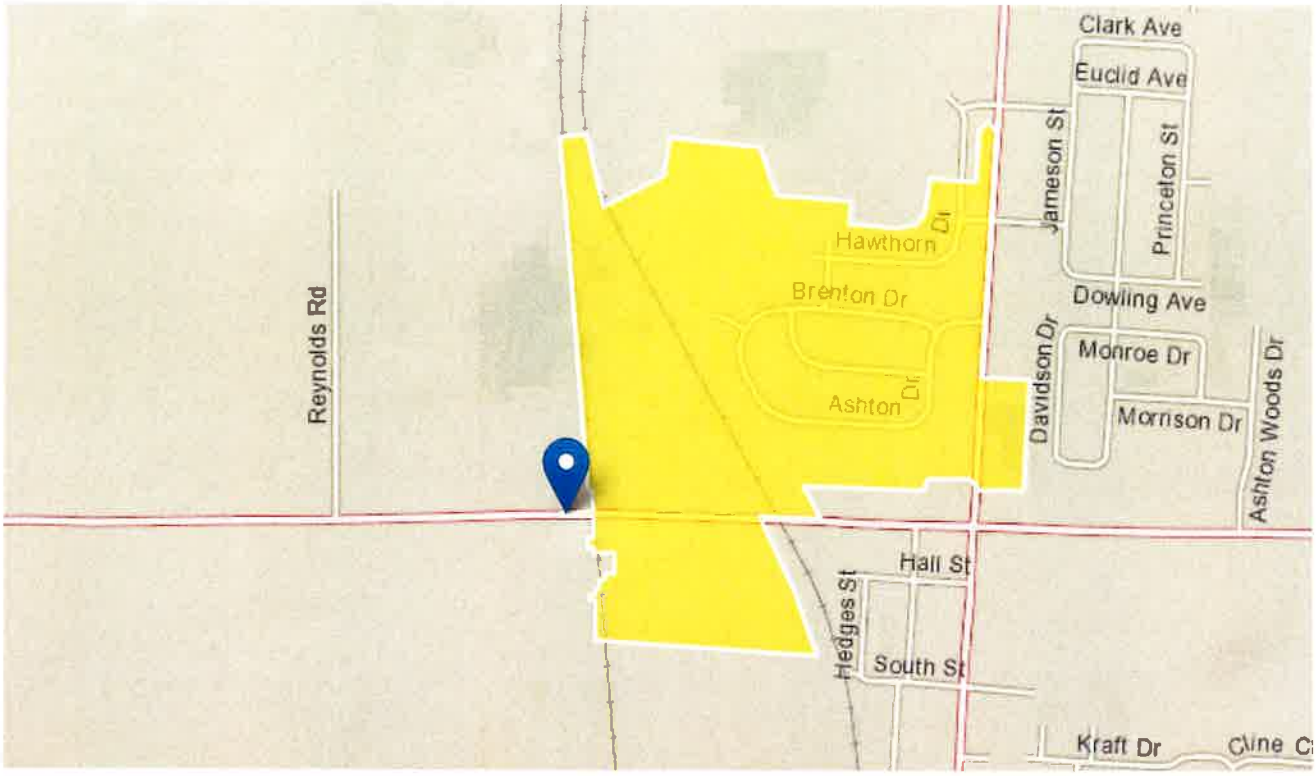
There is an existing 24" storm outlet which cuts diagonally thru a portion of the site. This 24" provided drainage to areas north of SR 752 and to the east to areas of the Village east of the railroad. An analysis of the drainage area was completed using StreamStats and the HydroCADD program, and input from the Village Engineer (on tributary area) to determine run-off for storm events 1 year thru 100 year as follows:

Table 3

24" Culvert		
	Stream Stats	Hydro CADD
1 Year	N/A	32.31
2 Year	28.1 cfs	42.20
5 Year	48.8 cfs	56.55
10 Year	65.5 cfs	68.22
25 Year	90 cfs	85.23
50 Year	110 cfs	98.92
100 Year	133 cfs	113.77

StreamStats Report

Region ID: OH
Workspace ID: OH20220330114751870000
Clicked Point (Latitude, Longitude): 39.72366, -82.96210
Time: 2022-03-30 07:48:29 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CSL1085LFP	Change in elevation divided by length between points 10 and 85 percent of distance along the longest flow path to the basin divide, LFP from 2D grid	10.7	feet per mi
DRNAREA	Area that drains to a point on a stream	0.23	square miles
LC92STOR	Percentage of water bodies and wetlands determined from the NLCD	0.3	percent
OHREGA	Ohio Region A Indicator	1	dimensionless
OHREGC	Ohio Region C Indicator	0	dimensionless

6.2.5 Stream Stats Report

General Disclaimers

This watershed has been edited, computed flows and basin characteristics may not apply. For more information, submit a support request from the 'Help' button in the upper-right of the screen, attach a pdf of this report and request assistance from your local streamstats regional representative.

Peak-Flow Statistics Parameters [Peak Flow Full Model Reg A SIR2019 5018]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.23	square miles	0.04	5989
OHREGC	Ohio Region C Indicator 1 if in C else 0	0	dimensionless	0	1
OHREGA	Ohio Region A Indicator 1 if in A else 0	1	dimensionless	0	1
CSL1085LFP	Stream Slope 10 and 85 Longest Flow Path	10.7	feet per mi	1.53	516
LC92STOR	Percent Storage from NLCD1992	0.3	percent	0	25.35

Peak-Flow Statistics Flow Report [Peak Flow Full Model Reg A SIR2019 5018]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	ASEp
50-percent AEP flood	28.1	ft^3/s	14.6	54	40.1
20-percent AEP flood	48.8	ft^3/s	26.5	89.8	37.2
10-percent AEP flood	65.5	ft^3/s	35.4	121	37.6
4-percent AEP flood	89.9	ft^3/s	48.1	168	38.1
2-percent AEP flood	110	ft^3/s	58.1	208	37.8
1-percent AEP flood	133	ft^3/s	69.4	255	39.6
0.2-percent AEP flood	192	ft^3/s	98.7	374	40.3

Peak-Flow Statistics Citations

Koltun, G.F.,2019, Flood-frequency estimates for Ohio streamgages based on data through water year 2015 and techniques for estimating flood-frequency characteristics of rural, unregulated Ohio streams: U.S. Geological Survey Scientific Investigations Report 2019–5018, 25 p. (https://dx.doi.org/10.3133/sir20195018)

Application Version: 4.8.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	2.20	2
2	2-Year	Type II 24-hr		Default	24.00	1	2.63	2
3	5-Year	Type II 24-hr		Default	24.00	1	3.24	2
4	10-Year	Type II 24-hr		Default	24.00	1	3.73	2
5	25-Year	Type II 24-hr		Default	24.00	1	4.44	2
6	50-Year	Type II 24-hr		Default	24.00	1	5.01	2
7	100-Year	Type II 24-hr		Default	24.00	1	5.63	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
147.000	90	(5S)
147.000	**90**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
147.000	Other	5S
147.000		**TOTAL AREA**

Ground Covers (selected 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	0.000	147.000	147.000		5S
0.000	**0.000**	**0.000**	**0.000**	**147.000**	**147.000**	**TOTAL AREA**	

Summary for Subcatchment 5S: 24" Storm

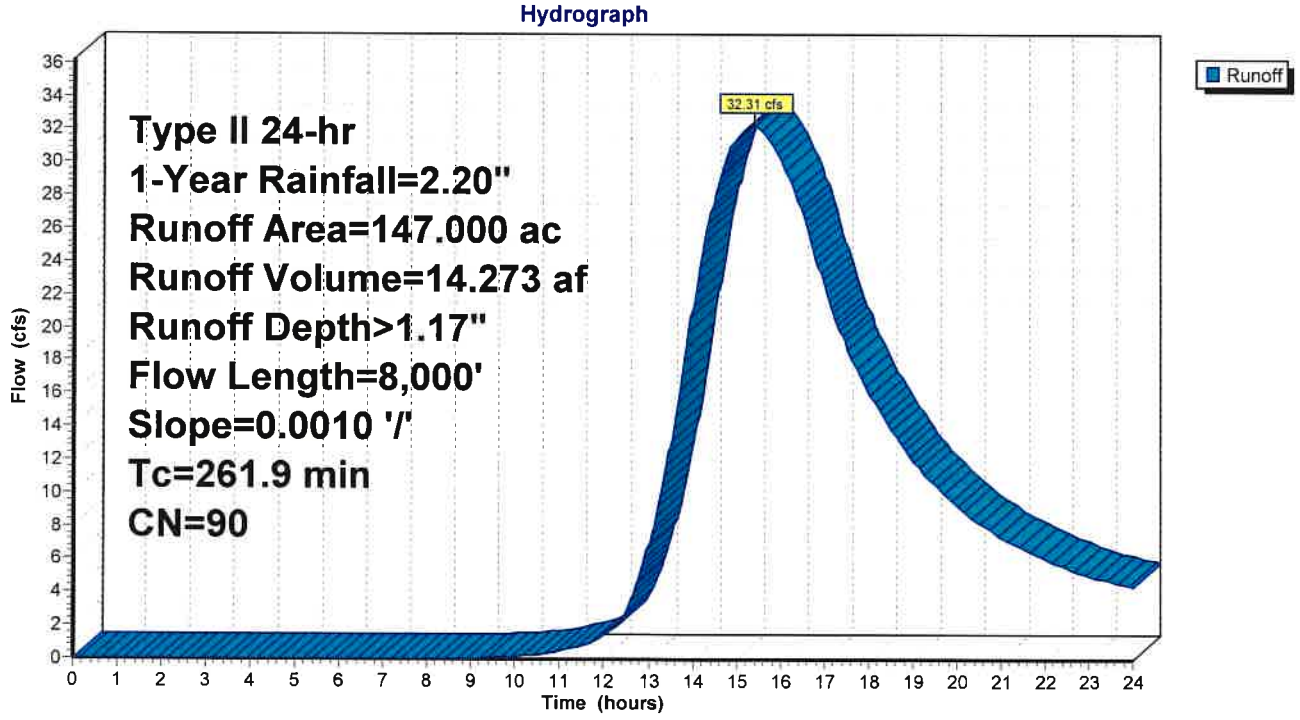
Runoff = 32.31 cfs @ 15.40 hrs, Volume= 14.273 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.20"

	Area (ac)	CN	Description
*	147.000	90	
	147.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
261.9	8,000	0.0010	0.51		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps

Subcatchment 5S: 24" Storm



Summary for Subcatchment 5S: 24" Storm

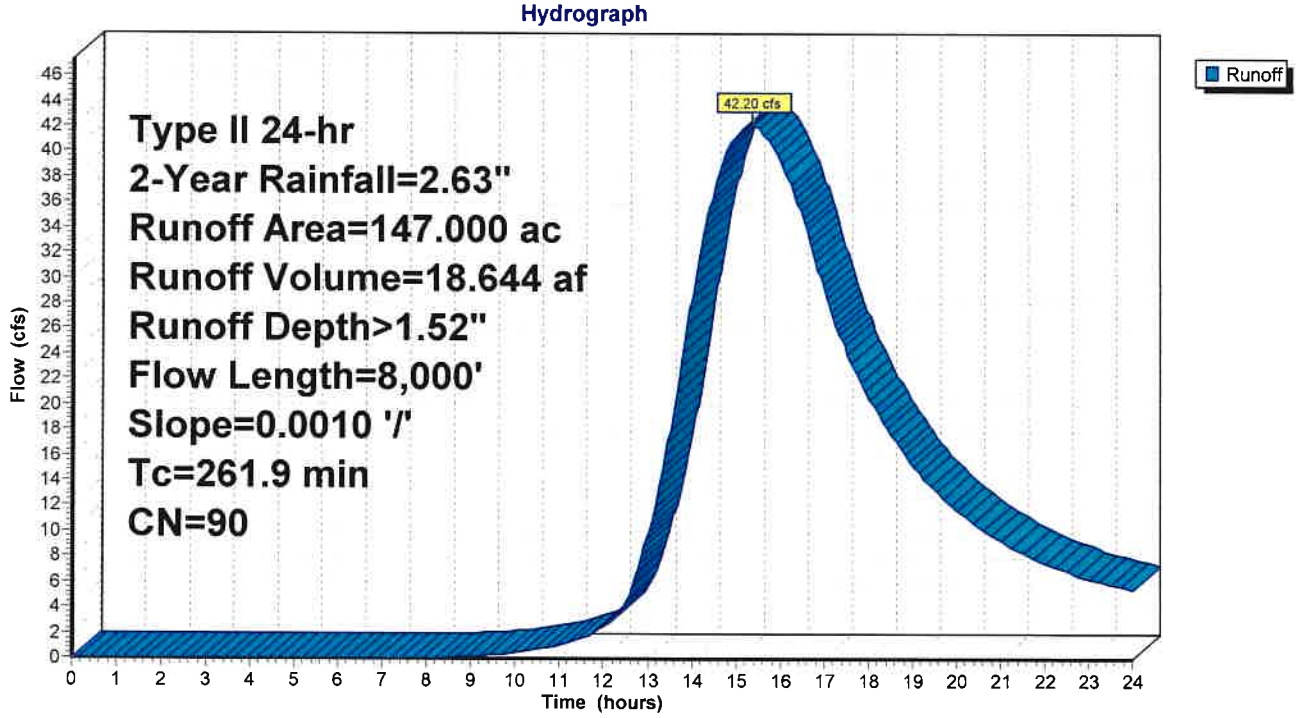
Runoff = 42.20 cfs @ 15.40 hrs, Volume= 18.644 af, Depth> 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.63"

	Area (ac)	CN	Description
*	147.000	90	
	147.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
261.9	8,000	0.0010	0.51		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps

Subcatchment 5S: 24" Storm



Summary for Subcatchment 5S: 24" Storm

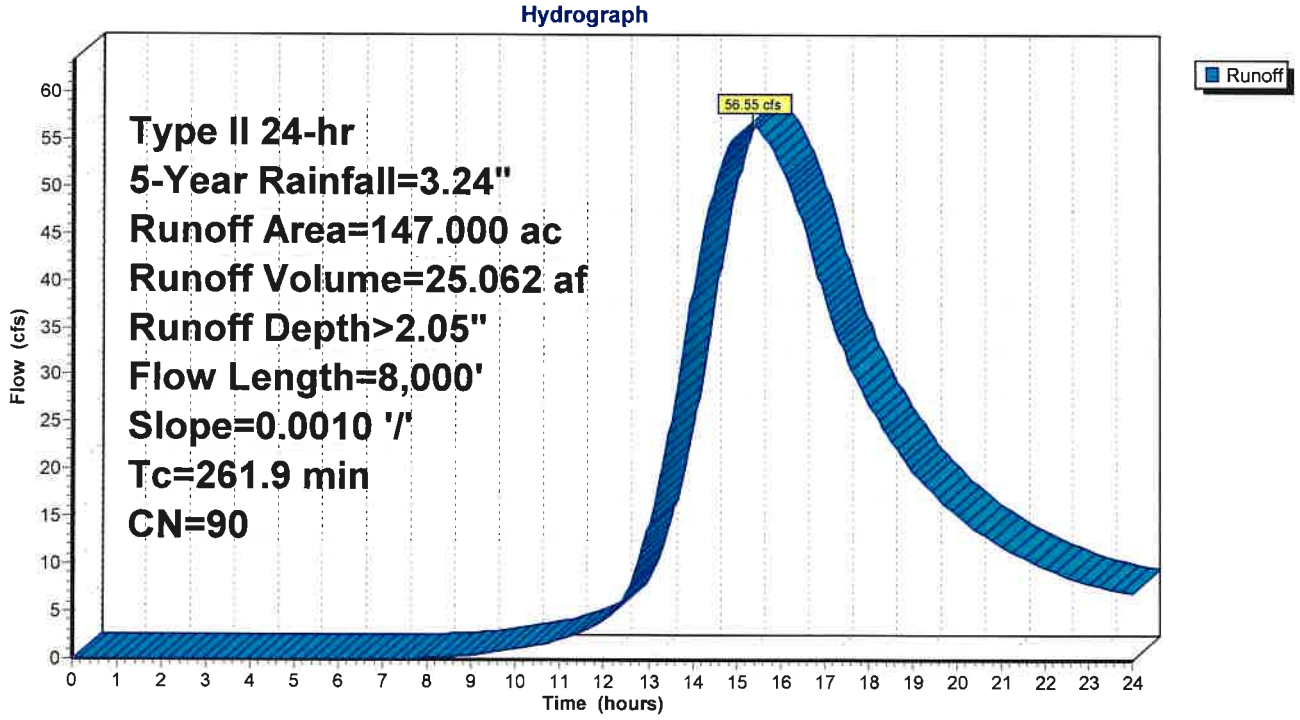
Runoff = 56.55 cfs @ 15.39 hrs, Volume= 25.062 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.24"

	Area (ac)	CN	Description
*	147.000	90	
	147.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
261.9	8,000	0.0010	0.51		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps

Subcatchment 5S: 24" Storm



Summary for Subcatchment 5S: 24" Storm

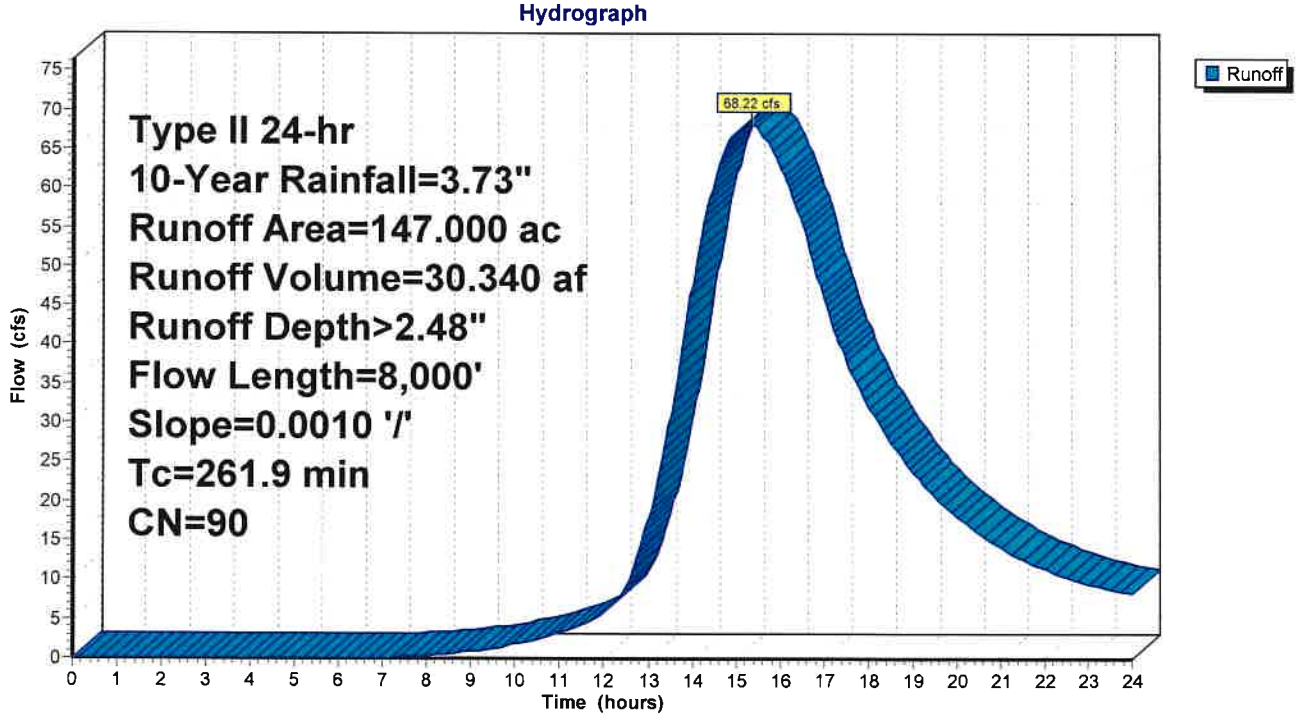
Runoff = 68.22 cfs @ 15.39 hrs, Volume= 30.340 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=3.73"

	Area (ac)	CN	Description
*	147.000	90	
	147.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
261.9	8,000	0.0010	0.51		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps

Subcatchment 5S: 24" Storm



Summary for Subcatchment 5S: 24" Storm

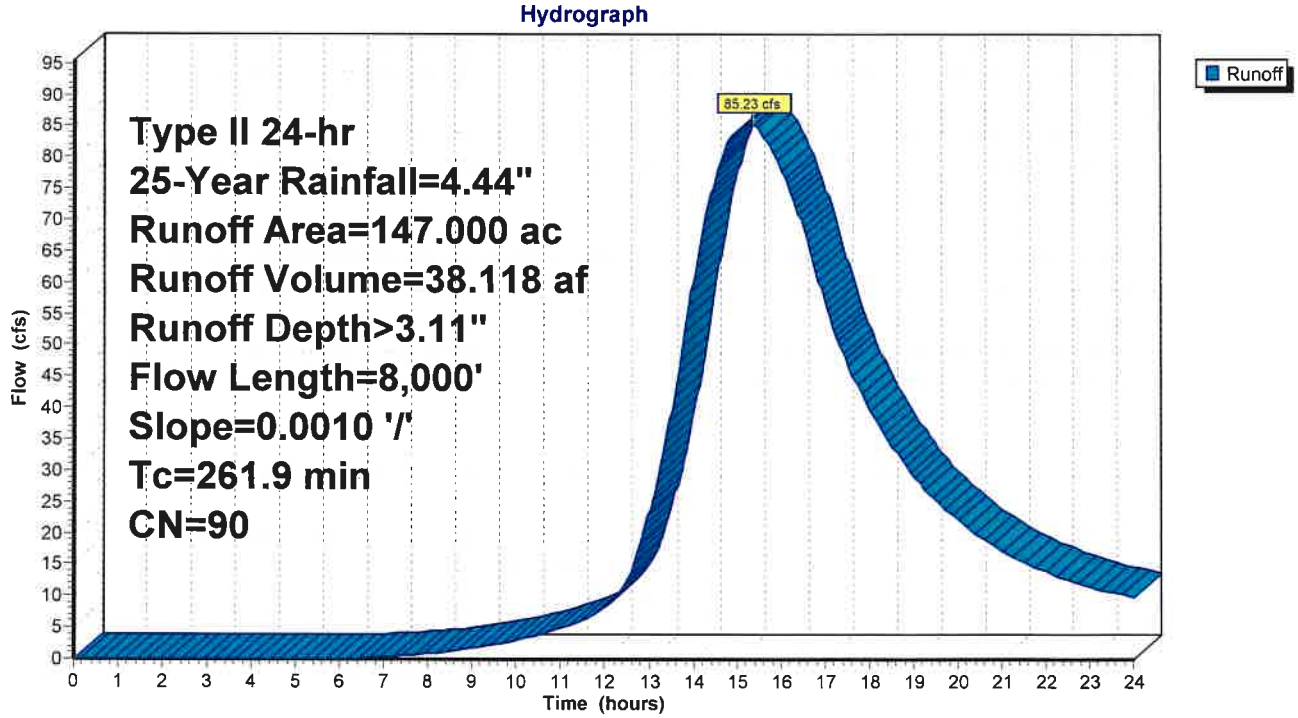
Runoff = 85.23 cfs @ 15.38 hrs, Volume= 38.118 af, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.44"

	Area (ac)	CN	Description
*	147.000	90	
	147.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
261.9	8,000	0.0010	0.51		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps

Subcatchment 5S: 24" Storm



Summary for Subcatchment 5S: 24" Storm

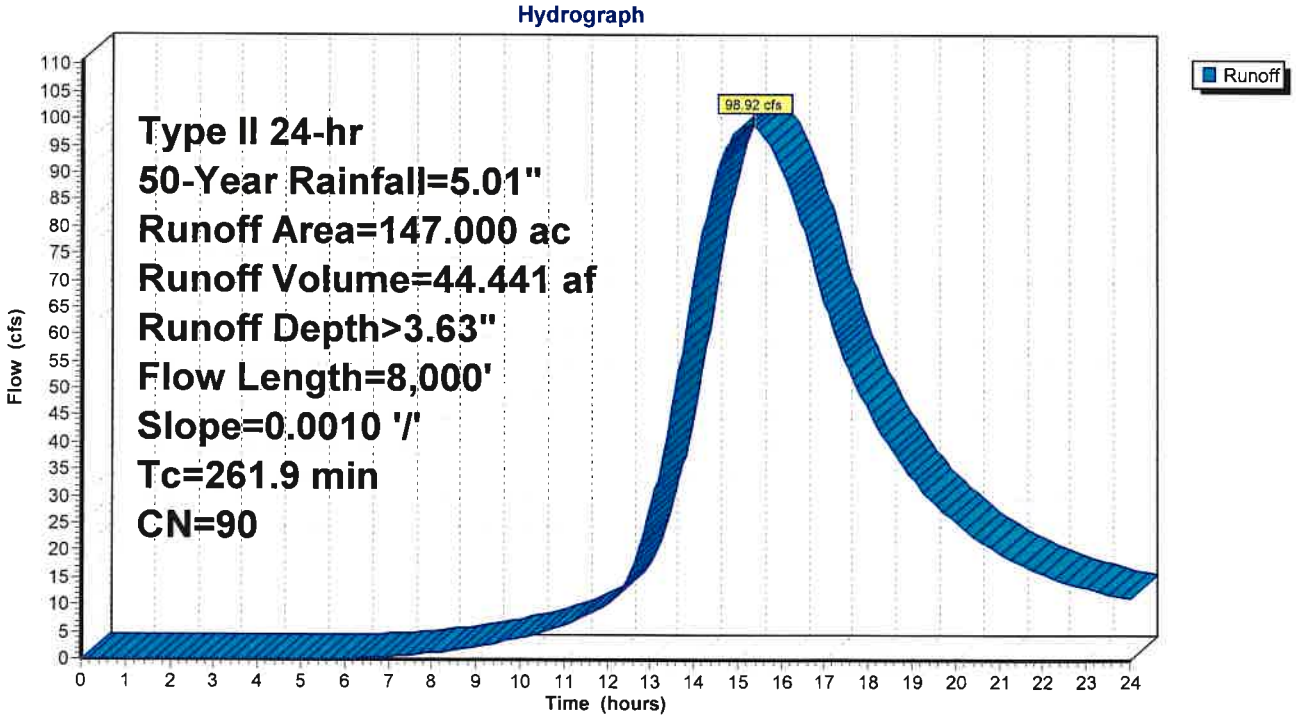
Runoff = 98.92 cfs @ 15.38 hrs, Volume= 44.441 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-Year Rainfall=5.01"

	Area (ac)	CN	Description
*	147.000	90	
	147.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
261.9	8,000	0.0010	0.51		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps

Subcatchment 5S: 24" Storm



Summary for Subcatchment 5S: 24" Storm

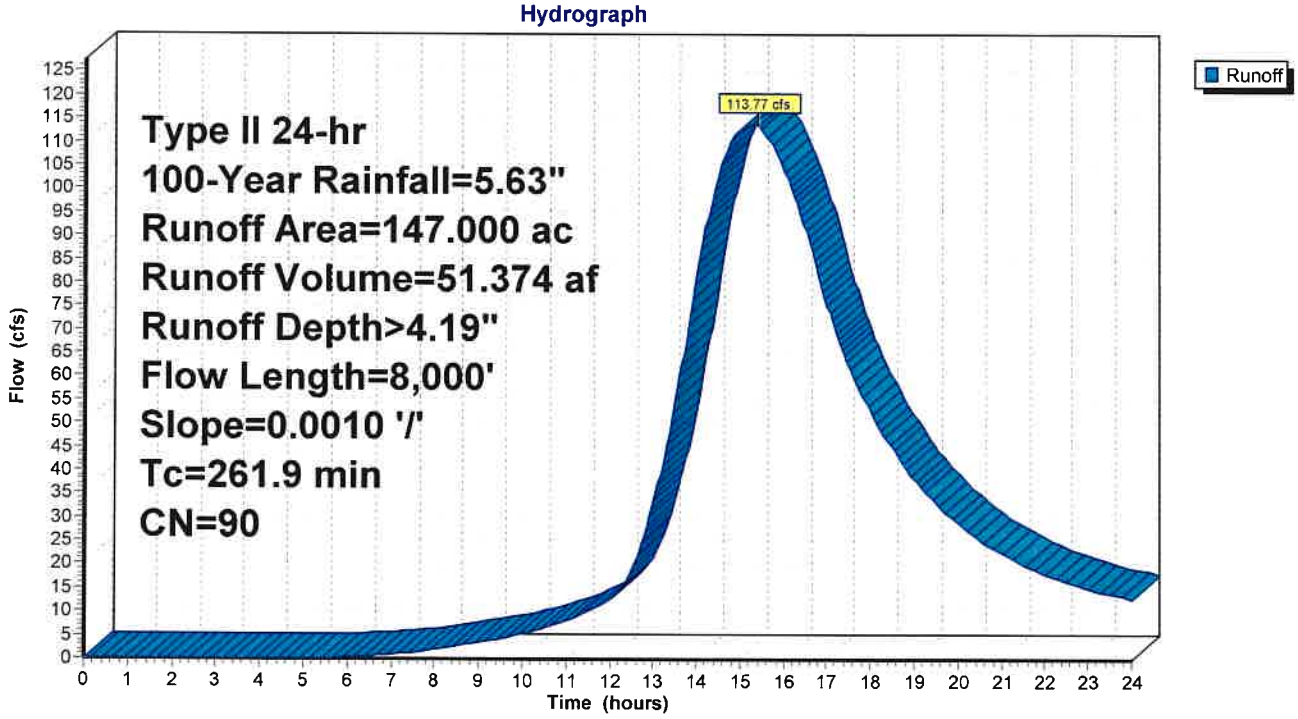
Runoff = 113.77 cfs @ 15.40 hrs, Volume= 51.374 af, Depth> 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=5.63"

	Area (ac)	CN	Description
*	147.000	90	
	147.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
261.9	8,000	0.0010	0.51		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps

Subcatchment 5S: 24" Storm



6.1.4 Storm Water Detention Calculations

The release rate for the detention basin was based on the 1 year pre-developed flow. For the proposed site this rate was calculated at 6.47 cfs and per the previous calcs from Commerce Park the release rate is 7.0 cfs for a total release rate of 13.47 cfs.

The 1 year flow for 24" culver is 32.31 cfs. This s a total 1 year flow of 46.56 cfs.

Table 3

24" Culvert		
	Stream Stats	Hydro CADD
1 Year	N/A	32.31
2 Year	28.1 cfs	42.20
5 Year	48.8 cfs	56.55
10 Year	65.5 cfs	68.22
25 Year	90 cfs	85.23
50 Year	110 cfs	98.92
100 Year	133 cfs	113.77

Due to the depth of the pond versus the outlet ditch a stormwater pump station will be utilized for controlling the discharge of the detention basin.

Initial pump will be sized for the WQ flow (see Appendix G) this form is used to determine allowable flow only) of .56 cfs. (252 gpm) The second pump will be sized for the allowable discharge plus the discharge of the 24" storm sewer for a total flow of 46.56 cfs. See Appendix G for Hydroflow Outputs.

6.1.5 Water Quality Volume (WQv) Calculations

See attached OEPA spreadsheet.

6.1.6 Construction Sedimentation Basin Calcs

Pond #1:

Total Disturbed and Tributary Area = Acres

Sediment Storage	=	40 x 1,000 c.f.	=	40,000 c.f.
Dewatering Storage	=	40 x 1,800 c.f.	=	72,000 c.f.

WATER QUALITY

Project : DHL
Location: Ashville, Ohio

Calculated By: KAM
Date: 9/13/2022

Rv = 0.05 + 0.9 * i = 0.7610

WQ_v = Rv * P * A/12

BMP= Dry Pond (48 Hr. drawdown)

WQv = Water Quality Volume in acre-feet
Rv = Volumetric Runoff Coefficient
P = 0.90 inch precipitation depth
A = Area draining into the BMP in acres
i = fraction of post-construction impervious surface

WQ_v = **2.1957 ac-ft**

i= 0.7900
Rv= 0.7610
P= 0.9
A= 38.47

WQ_v = **95,644 ft^3**

Release rate = WQ_v(ft^3) / (48 hr * 3600 s/hr)
Release rate = **0.5535 cfs**

ORIFICE FLOW: CIRCULAR ORIFICE (Q= K*A*(64.4*H)^0.5)

Orifice Size (inch):

Invert = #REF!
K= 0.66
A= 0.0000
H= 2.74

# OF ORIFICES 1
Qavg = **0.0000 cfs**

Drawdown Time (Hour): #DIV/0!

Table 1

Runoff Coefficients Based on the Type of Land Use

Land Use	Runoff Coefficient
Industrial & Commercial	0.8
High Density Residential (>8 dwellings/acre)	0.5
Medium Density Residential (4 to 8 dwellings/acre)	0.4
Low Density Residential (<4 dwellings/acre)	0.3
Open Space and Recreational Areas	0.2

Where the land use will be mixed, the runoff coefficient should be calculated using a weighted average.

Table 2

Target Draw Down (Drain) Times for Structural Post-Construction Treatment Control Practices

Best Management Practice	Drain Time of WQ_v
Infiltration	24-48 hours
Vegetated Swale and Filter Strip	24 hours
Extended Detention Basin (Dry Basins)	48 hours
Retention Basins (Wet Basins)*	24 hours
Constructed Wetland (Above Permanent pool)	24 hours
Media Filtration, Bioretention	40 hours

* Provide both a permanent pool and an extended detention volume above the permanent pool, each sized at 0.75* WQ_v

6.2 Subsurface Investigation Report

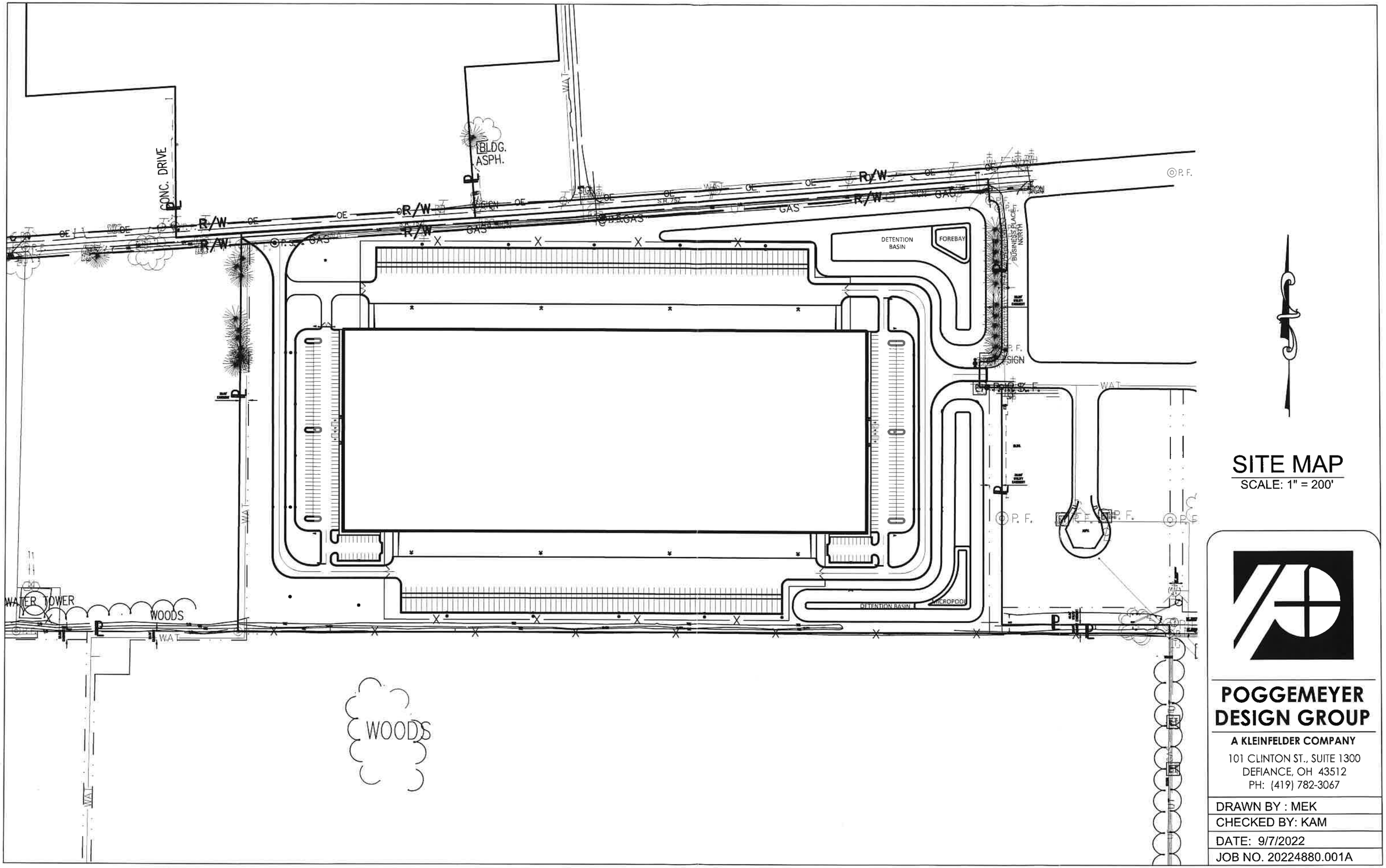
See Appendix I for Geotechnical Report.

6.3 Non-City Submittals/Permits

- Notice of Intent for coverage under the OEPA NPDES Construction General Permit.
- ODOT permit for SR361 crossing.

APPENDIX A

SITE PLAN



SITE MAP

SCALE: 1" = 200'

POGGEMEYER DESIGN GROUP

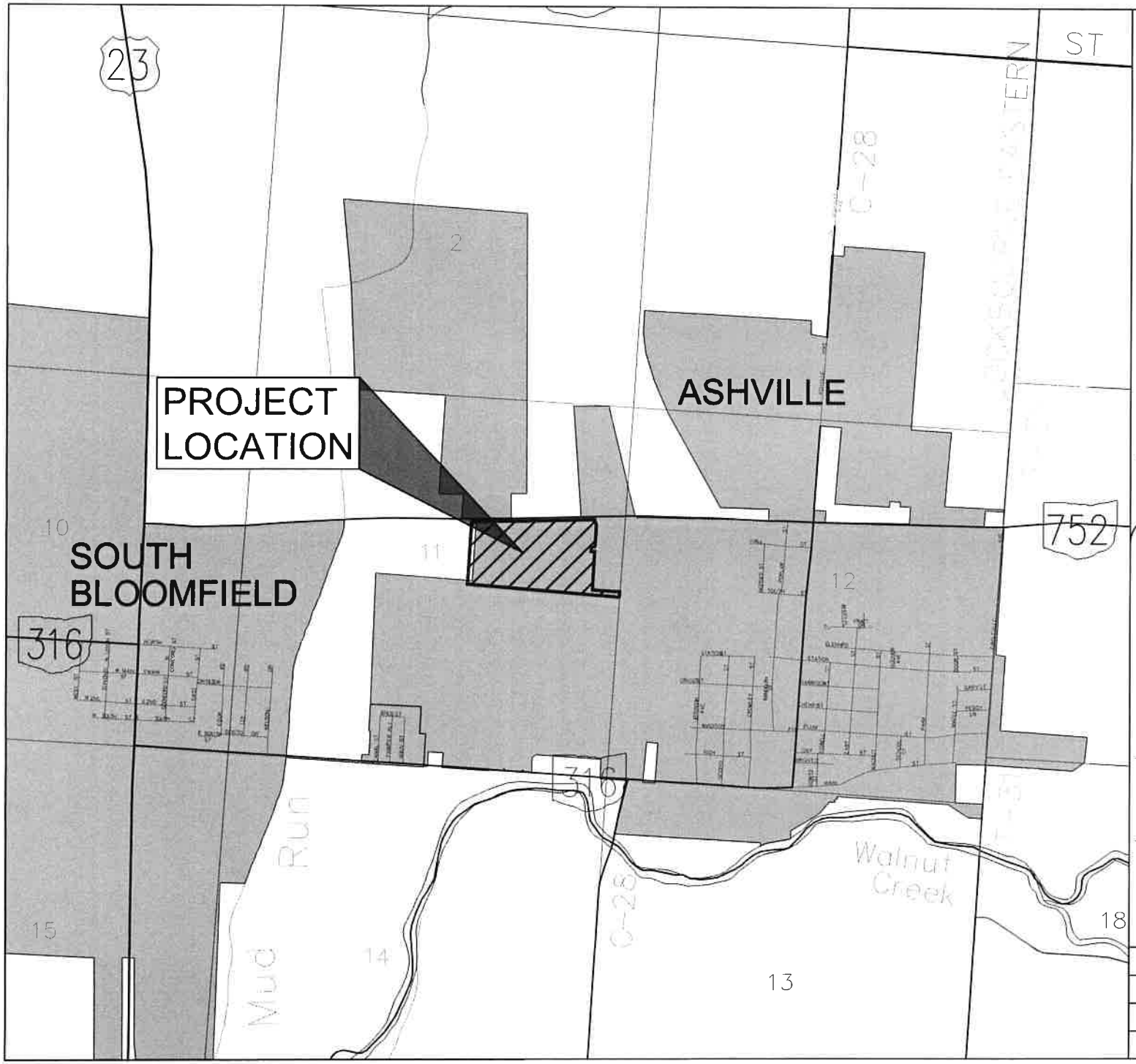
A KLEINFELDER COMPANY

101 CLINTON ST., SUITE 1300
DEFIANCE, OH 43512
PH: (419) 782-3067

DRAWN BY :	MEK
CHECKED BY:	KAM
DATE:	9/7/2022
JOB NO.	20224880.001A

APPENDIX B

SITE LOCATION MAP



LOCATION MAP

SCALE: 1" = 2000'

POGGEMEYER DESIGN GROUP

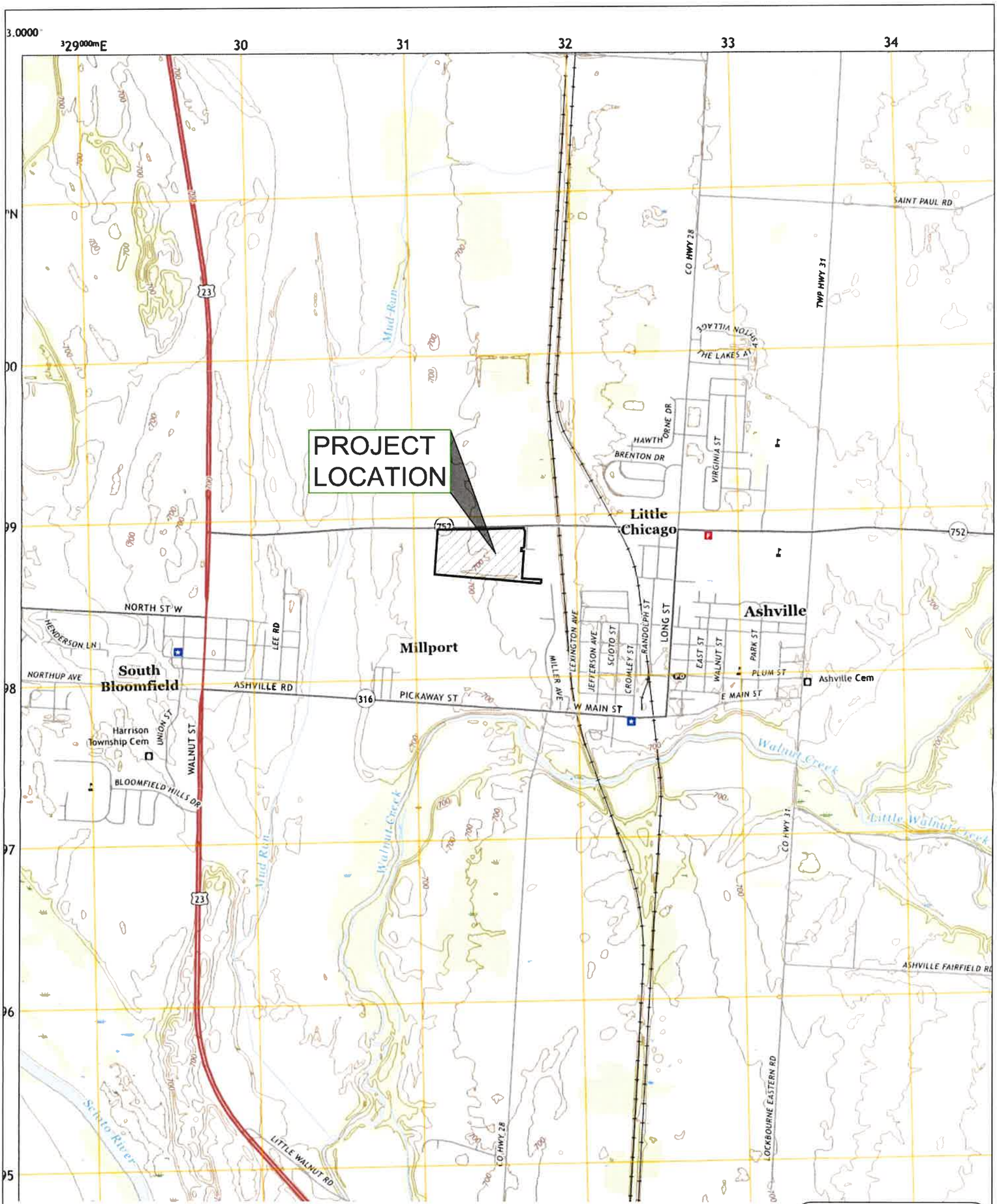
A KLEINFELDER COMPANY

101 CLINTON ST., SUITE 1300
DEFIANCE, OH 43512
PH: (419) 782-3067

DRAWN BY :	MEK
CHECKED BY:	KAM
DATE:	9/7/2022
JOB NO.	20224880.001A

APPENDIX C

USGS LOCATION MAP



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 17S
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery	NAIP, July 2015 - October 2015
Roads	U.S. Census Bureau, 2016
Names	GNIS, 1979 - 2019
Hydrography	National Hydrography Dataset, 2006
Contours	National Elevation Dataset, 2010
Boundaries	Multiple sources; see metadata file 2017 - 2018
Public Land Survey System	BLM, 2017
Wetlands	FWS National Wetlands Inventory 2004 - 2007

ASHVILLE, OH
2019

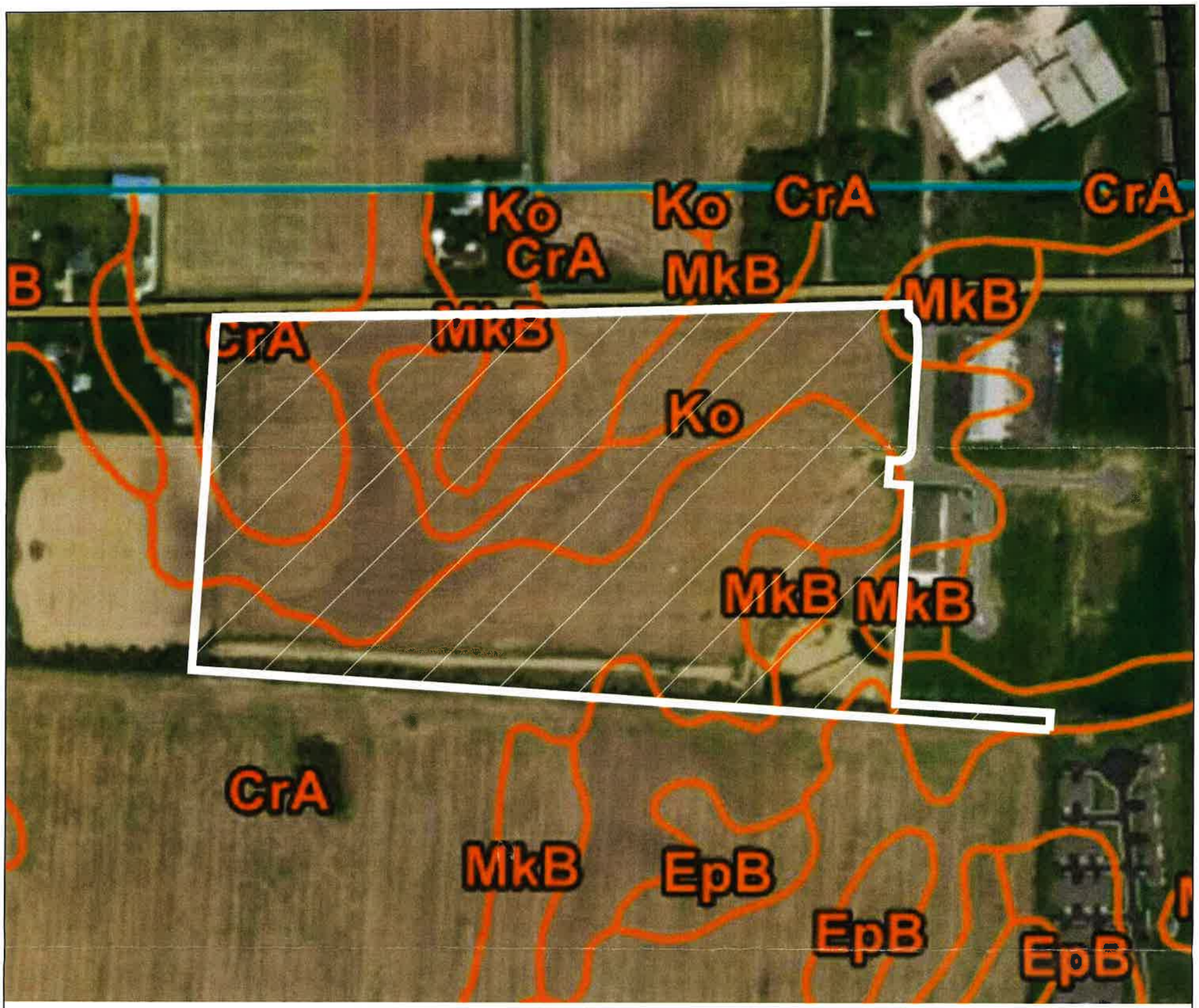
USGS MAP
SCALE: 1" = 2000'

POGGEMEYER DESIGN GROUP
A KLEINFELDER COMPANY
101 CLINTON ST., SUITE 1300
DEFIANCE, OH 43512
PH: (419) 782-3067

DRAWN BY :	MEK
CHECKED BY:	KAM
DATE:	9/7/2022
JOB NO.	20224880.001A

APPENDIX D

SOILS MAP



SOIL TYPE LEGEND

CRA	21.19 AC.	CROSBY SILT LOAM, SOUTHERN OHIO TILL PLAIN 0 TO 2 PERCENT SLOPES
KO	13.75 AC.	KOKOMO SILTY CLAY LOAM 0 TO 2 PERCENT SLOPES
MKB	5.44 AC.	MIAMIAN–KENDALLVILLE SILT LOAMS 2 TO 6 PERCENT SLOPES

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pickaway County, Ohio
Survey Area Data: Version 22, Sep 10, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 5, 2012—Mar 7, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

SOUTH SITE SOILS MAP

SCALE: 1" = 300'

POGGEMEYER DESIGN GROUP
A KLEINFELDER COMPANY
101 CLINTON ST., SUITE 1300
DEFIANCE, OH 43512
PH: (419) 782-3067

DRAWN BY : MEK
CHECKED BY: KAM
DATE: 9/7/2022
JOB NO. 20224880.001A

APPENDIX E

FIRM MAP

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee See Notes Zone X
- Area with Flood Risk due to Levee Zone X

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.g Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey. The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on 10/20/22 10:29 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/115418.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

FEMA
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

PANEL 180 OF 450

Panel Contains:

COMMUNITY	NUMBER	PANEL
VILLAGE OF ASHVILLE	390446	0180
PICKAWAY COUNTY	390445	0180
VILLAGE OF SOUTH BLOOMFIELD	390449	0180

MAP NUMBER
39129C0180J
EFFECTIVE DATE
July 22, 2010

FIRM MAP
SCALE: 1" = 2000'

POGGEMEYER DESIGN GROUP
A KLEINFELDER COMPANY
101 CLINTON ST., SUITE 1300
DEFIANCE, OH 43512
PH: (419) 782-3067

DRAWN BY :	MEK
CHECKED BY:	KAM
DATE:	9/7/2022
JOB NO.	20224880.001A

APPENDIX F

ORIGINAL COMMERCE PARK CALCS

Table of Contents

Ashville Commerce Center Phase 1
Stormwater Management Narrative

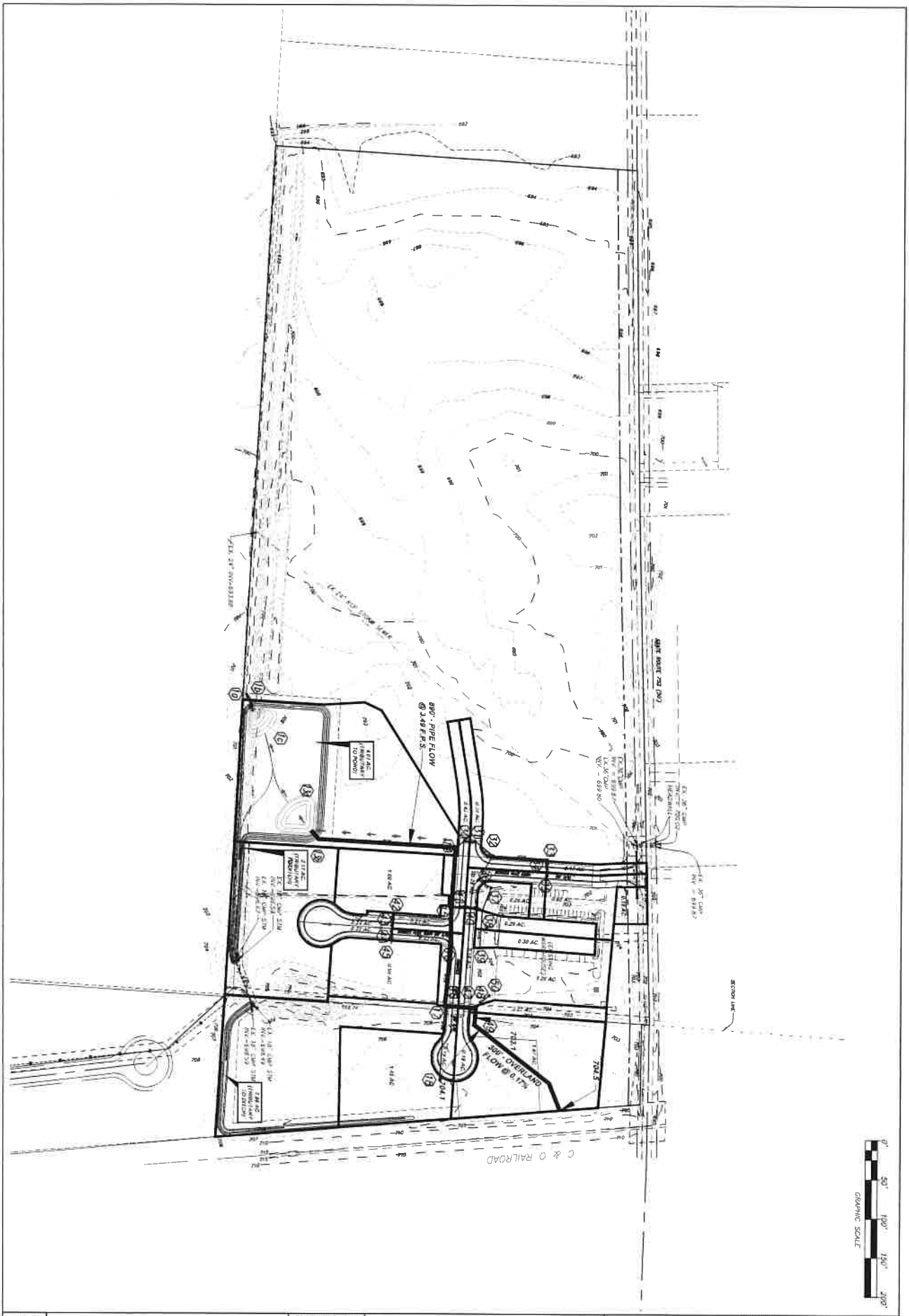
The stormwater management system for the Ashville Commerce Center project consists of an underground pipe storm sewer system, which is directed to a large dry storm detention pond in the southwest corner of Phase 1. Surface runoff is collected using curb & gutter inlets in the streets, and catch basins in areas outside of the street right-of-way. Stormwater is released from the detention basin through an outlet control structure at the southwest corner of the pond. This outlet control structure throttles back the release rate to meet requirements set in the City of Columbus Stormwater Drainage Manual, and ultimately discharges to the existing ditch at the southwest corner of the property.

The street right-of-way, as well as all lots in Phase 1, will be served by the Phase 1 detention pond. No lots will require on-site detention. The allowable release rates have been calculated using a runoff curve number of 77.

No runoff from upstream areas passes through the project. The existing drainage culverts which cross State Route 752 from Columbus Industries (to the north of Phase 1) will remain until future phases of Ashville Commerce Center are constructed.

The critical storm (25-year) for discharge limitation was determined per Chapter 3.2.2 of the City of Columbus Stormwater Drainage Manual. The discharge for all storms up to and including the critical storm is less than the allowable discharge for the 1-year storm for the pre-developed condition. The discharge for the events greater than the critical storm is less than the pre-developed runoff rate for the 10-year pre-developed condition.

Water quality requirements are met using the detention pond as a dry extended detention basin, with the Water Quality Volume provided at the bottom of the pond. A forebay is provided at the pond inlet pipe, providing more than the required sediment storage volume. A micropool is provided at the pond outlet in order to provide a submerged, non-clogging outlet for the Extended Detention Storage volume.



1 of 1	ASHVILLE COMMERCE CENTER PHASE 1 DEVELOPED TRIBUTARY MAP	SCALE: HORIZ. - 1"=50' VERT. - N/A DATE: MARCH, 2008 PROJECT NO. DRAWN BY: W.C. CHECKED: M.P.	PIZZINO ENGINEERING & CONSULTING, LLC 8455 ST. RT. 161 PLAIN CITY, OHIO 43064 (614) 325-2462	NO. / DATE / BY	REVISIONS DESCRIPTION

Ashville Commerce Center
Phase 1
Runoff Summary

Design Year	1	2	5	10	25	50	100
Predeveloped	**4**	7	10	**14**	19	24	30
Developed							
Onsite	13	17	23	28	35	41	48
Thru Basin	0.34	0.98	2.32	3.01	**3.91**	5.47	**8.37**

***Critical Storm is 25 Year**

All numbers are cubic feet per second (C.F.S.)

As required by the Columbus Stormwater Design Manual, the Developed runoff from the Critical Storm does not exceed that of the Predeveloped runoff from the 1 year storm, and the Developed runoff from the 100 year storm does not exceed the Predeveloped runoff from the 10 year storm.

Table 3-1

Critical Storm Determination

If the percent of increase in runoff volume is		The critical storm runoff rate will be limited to:
Equal to or greater than	**And less than**	
--	10	1-year
10	20	2-year
20	50	5-year
50	100	10-year
100	250	25-year
250	500	50-year
500	--	100-year

Runoff from storm events less than or equal to the critical storm event shall be released from the site at a rate no greater than the peak runoff during a 1-year storm event under pre-developed conditions[2]. Additionally, the peak runoff rate during the 100-year storm event shall be released at a rate less than or equal to the peak runoff rate during the 10-year storm event under pre-developed conditions (where the critical storm is more frequent than a 100-year storm).

The Administrator, or the Administrator's designee, reserves the right to require more stringent stormwater controls if it is determined that flood control benefits can be achieved in downstream portions of the watershed where flooding problems have been identified as existing prior to the proposed development. To encourage the redevelopment of existing developed parcels within the City, the Division of Sewerage and Drainage will consider less stringent stormwater quantity controls than those required in this section so long as the volume of stormwater generated from the site after redevelopment is not increased. The SWMS will work with Applicants on a case-by-case basis to identify opportunities where a reduction in stormwater flow can be achieved on redevelopment projects while allowing the parcel to be utilized for its intended purpose.

[2] For development sites discharging into a field tile system, the release rate for any storm up to and including the critical storm event shall be the equal to the development's fair-share of the field tile's full-flow capacity. Refer to Section 2.1.4 for more information. In no instance shall the release rate for any storm, up to and including the critical storm event, exceed the 1-year storm event under pre-developed conditions.

Critical Storm Calculation

Using the method described in the M.O.R.P.C. Stormwater Design Manual for determining the critical storm, the calculations are as follows:

"Cn" used

"Cn" used for predeveloped area – 77

"Cn" used for developed area – 91

Runoff in inches

Runoff from 1-year storm before development=42,689 C.F.*
Runoff from 1-year storm after development =94,961 C.F.*
*Obtained from TR-55 Worksheet 2

Percentage of increase

94,961-42,689 =52,272
52,272 divided by 42,689 = 1.225 ***(122.5% increase)***

Critical storm for discharge limitation = ***25-year event.*** (See Page G-3)

All developed storm discharges from the 1-year through the 25-year event have been restricted to a rate that is less than the discharge for the predeveloped 1-year event. The 50-year through 100-year events discharge at a rate less than the predeveloped rate for each respective storm event.

Table 2-7

Runoff Curve Numbers (CN) for Typical Land Uses in Columbus (SCS, 1986 except as noted)

Cover Type and Hydrologic Condition	Average percent impervious area (6)	Curve Numbers for Hydrologic Soil Group			
		A	B	C	D
Fully developed urban areas (vegetation established) (1)					
Impervious areas: Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Open space (lawns, parks, golf courses, cemeteries, etc)					
Poor condition (grass cover, 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover >75%)		39	61	74	80
Commercial and business (TND – TC) (7)	85	89	92	94	95
Industrial	72	81	88	91	93
Residential Districts by Average Lot Size (7):					
Multi-family (TND – NC) (9)	80	86	91	93	94
1/12 to 1/6 acre lots (TND – NG) (9)	75	83	89	92	94
1/8 acre (TND – NE)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
Undeveloped or agricultural lands (1)					
Cultivated Land: (8)					
Without conservation treatment		72	81	88	91
With conservation treatment		62	71	78	81
Pasture, grassland, or range – continuous forage for grazing. (2)	Hydrologic condition:				
	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow – continuous grass, protected from grazing and generally mowed for hay.	–	30	58	71	78
Brush – brush-weed-grass mixture with brush the major element. (3)	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 (4)	48	65	73
Woods. (5)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 (4)	55	70	77
Farmsteads – buildings, lanes, driveways, and surrounding lots.	–	59	74	82	86

Notes:

(1) Average runoff conditions, and I_a=0.2s.

(2) Poor: <50% ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: >75% ground cover and lightly or only occasionally grazed.

(3) Poor: <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

(4) Actual curve number is less than 30; use CN=30 for runoff computations.

(5) Poor. Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

(6) The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition.

(7) Acronyms for zoning of residential districts are as follows:
TND – TC: Traditional Neighborhood Development – Town Center
TND – NC: Traditional Neighborhood Development – Neighborhood Center
TND – NG: Traditional Neighborhood Development – Neighborhood General
TND – NE: Traditional Neighborhood Development – Neighborhood Edge

(8) Source: SCS National Engineering Handbook, Section 4, Hydrology, Chapter 9, August 1972.

(9) Source: Curve numbers were calculated based upon percent of impervious area.

DEVELOPED CONDITION

Worksheet 2: Runoff curve number and runoff

Project	By	Date
Ashville Commerce Center Phase 1	W.D.	4/8/2009
Location	**Checked**	**Date**
Ashville, Ohio		

Check one: ☐ Present ☒ Developed

OFFSITE

1. Runoff curve number

Soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Figure 2-3	CN 1/ Figure 2-4	Area ☒ acres ☐ mi² ☐ %	Product of CN x area
CrA - Group C	Row crops - Good condition	91			19.78	1799.98
Ko - Group D	Row crops - Good condition					0
MkB - Group C	.Row crops - Good condition					0
CrA - Group C	Open Space (fair) & impervious					0
Ko - Group D	Open Space (fair) & impervious					0
MkB - Group C	Open Space (fair) & impervious					0
						0
				Totals ➡	19.78	1799.98

1/ Use only one CN source per line

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{1799.98}{19.78} = 91$; Use CN ➡ 91

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency	yr	1		
Rainfall, P (24-hour)	in	2.17		
Runoff, Q	in	1.32		

(Use P and CN with table 2-1, figure 2-1, or equations 2-3 and 2-4)

Table 2-1 Runoff depth for selected CN's and rainfall amounts [1/]

Rainfall	Runoff depth for curve number of—												
	40	45	50	55	60	65	70	75	80	85	90	95	98
	inches												
1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.08	0.17	0.32	0.56	0.79
1.2	.00	.00	.00	.00	.00	.00	.03	.07	.15	.27	.46	.74	.99
1.4	.00	.00	.00	.00	.00	.02	.06	.13	.24	.39	.61	.92	1.18
1.6	.00	.00	.00	.00	.01	.05	.11	.20	.34	.52	.76	1.11	1.38
1.8	.00	.00	.00	.00	.03	.09	.17	.29	.44	.65	.93	1.29	1.58
2.0	.00	.00	.00	.02	.06	.14	.24	.38	.56	.80	1.09	1.48	1.77
2.5	.00	.00	.02	.08	.17	.30	.46	.65	.89	1.18	1.53	1.96	2.27
3.0	.00	.02	.09	.19	.33	.51	.71	.96	1.25	1.59	1.98	2.45	2.77
3.5	.02	.08	.20	.35	.53	.75	1.01	1.30	1.64	2.02	2.45	2.94	3.27
4.0	.06	.18	.33	.53	.76	1.03	1.33	1.67	2.04	2.46	2.92	3.43	3.77
4.5	.14	.30	.50	.74	1.02	1.33	1.67	2.05	2.46	2.91	3.40	3.92	4.26
5.0	.24	.44	.69	.98	1.30	1.65	2.04	2.45	2.89	3.37	3.88	4.42	4.76
6.0	.50	.80	1.14	1.52	1.92	2.35	2.81	3.28	3.78	4.30	4.85	5.41	5.76
7.0	.84	1.24	1.68	2.12	2.60	3.10	3.62	4.15	4.69	5.25	5.82	6.41	6.76
8.0	1.25	1.74	2.25	2.78	3.33	3.89	4.46	5.04	5.63	6.21	6.81	7.40	7.76
9.0	1.71	2.29	2.88	3.49	4.10	4.72	5.33	5.95	6.57	7.18	7.79	8.40	8.76
10.0	2.23	2.89	3.56	4.23	4.90	5.56	6.22	6.88	7.52	8.16	8.78	9.40	9.76
11.0	2.78	3.52	4.26	5.00	5.72	6.43	7.13	7.81	8.48	9.13	9.77	10.39	10.76
12.0	3.38	4.19	5.00	5.79	6.56	7.32	8.05	8.76	9.45	10.11	10.76	11.39	11.76
13.0	4.00	4.89	5.76	6.61	7.42	8.21	8.98	9.71	10.42	11.10	11.76	12.39	12.76
14.0	4.65	5.62	6.55	7.44	8.30	9.12	9.91	10.67	11.39	12.08	12.75	13.39	13.76
15.0	5.33	6.36	7.35	8.29	9.19	10.04	10.85	11.63	12.37	13.07	13.74	14.39	14.76

[1/] Interpolate the values shown to obtain runoff depths for CN's or rainfall amounts not shown.

TOTAL RUNOFF VOLUME COMPUTATION WORKSHEET

Design Storm Frequency 1 year Rainfall Depth 2.17 Inches (see below)

Direct Runoff Depth 1.32 Inches (Ohio Supplement Figure OH-2)

Total Runoff Volume = Runoff Depth x Drainage Area

= 1.32 Inches x 19.78 acres x 1/12

= 2.18 acre-feet

= 2.18 x 43,560 = 94,961 cubic feet

Frequency	Rainfall Depth Pickaway County
1	2.17
2	2.70
5	3.35
10	3.86
25	4.64
50	5.33
100	6.06


MkB
MkB
MkB
Ko
CrA
CrA
CrA
Ko
CrA
MkB
MkB
Ko

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Political Features

Municipalities
- Cities
- Urban Areas

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails

Roads
- Interstate Highways
- US Routes
- State Highways
- Local Roads
- Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 17N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pickaway County, Ohio
Survey Area Data: Version 8, Dec 12, 2007

Date(s) aerial images were photographed: 3/23/1994

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Pickaway County, Ohio				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CrA	Crosby silt loam, 0 to 2 percent slopes	C	32.5	57.0%
Ko	Kokomo silty clay loam	B/D	16.9	29.6%
MkB	Miamian-Kendallville silt loams, 2 to 6 percent slopes	C	7.6	13.4%
Totals for Area of Interest (AOI)			56.9	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

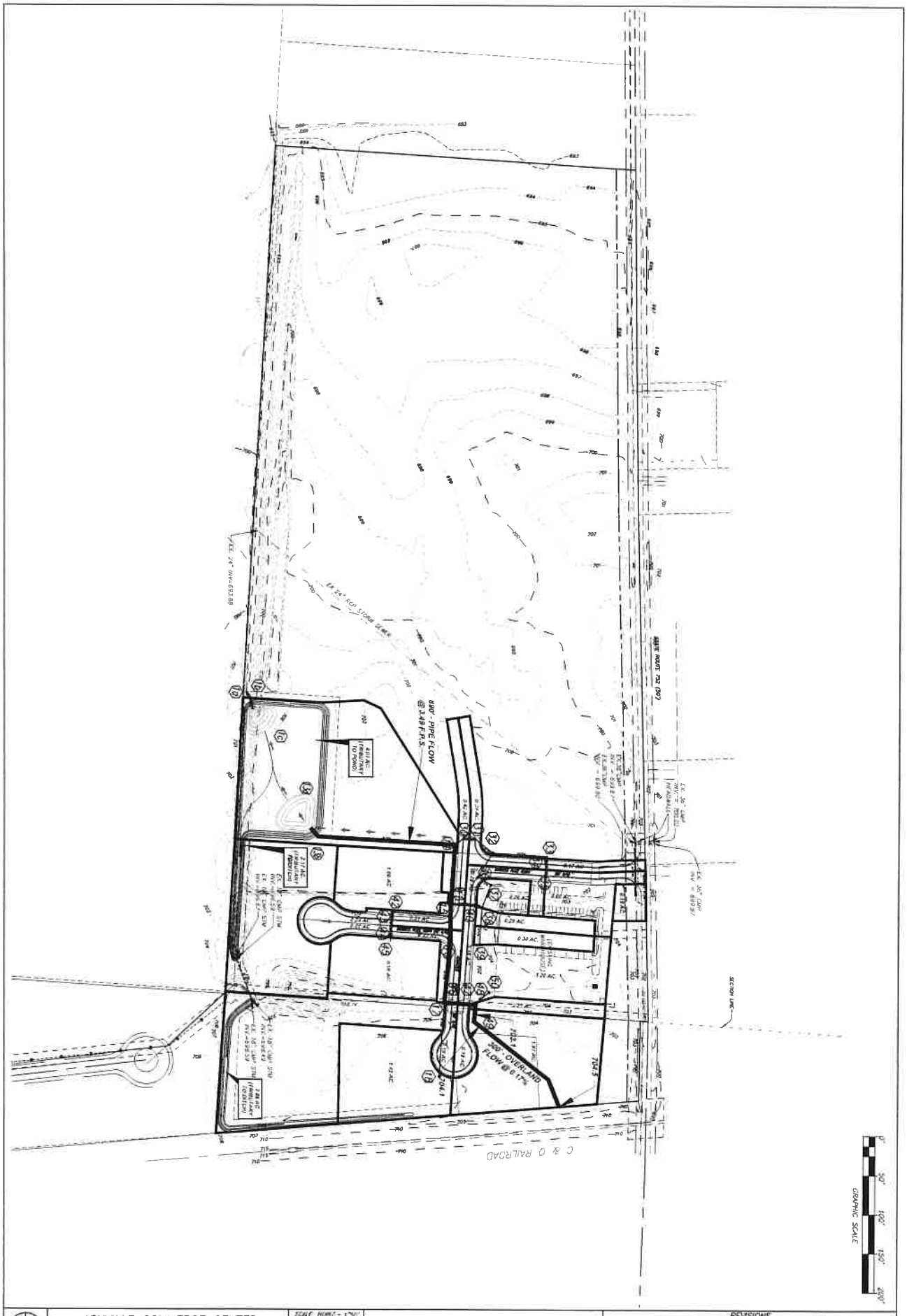
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Storm Sewers



	ASHVILLE COMMERCE CENTER	SCALE: HORIZ. - 1"=50' VERT. - N/A	PIZZINO ENGINEERING & CONSULTING, LLC	REVISIONS	
	PHASE 1 DEVELOPED TRIBUTARY MAP	DATE: MARCH, 2008	9495 ST. RT. 161	NO. DATE BY	DESCRIPTION
		PROJECT NO.	PLAIN CITY, OHIO 43064		
		DRAWN BY: M.D.	(614) 325-2462		
		CHECKED: M.P.			

Table 2-5

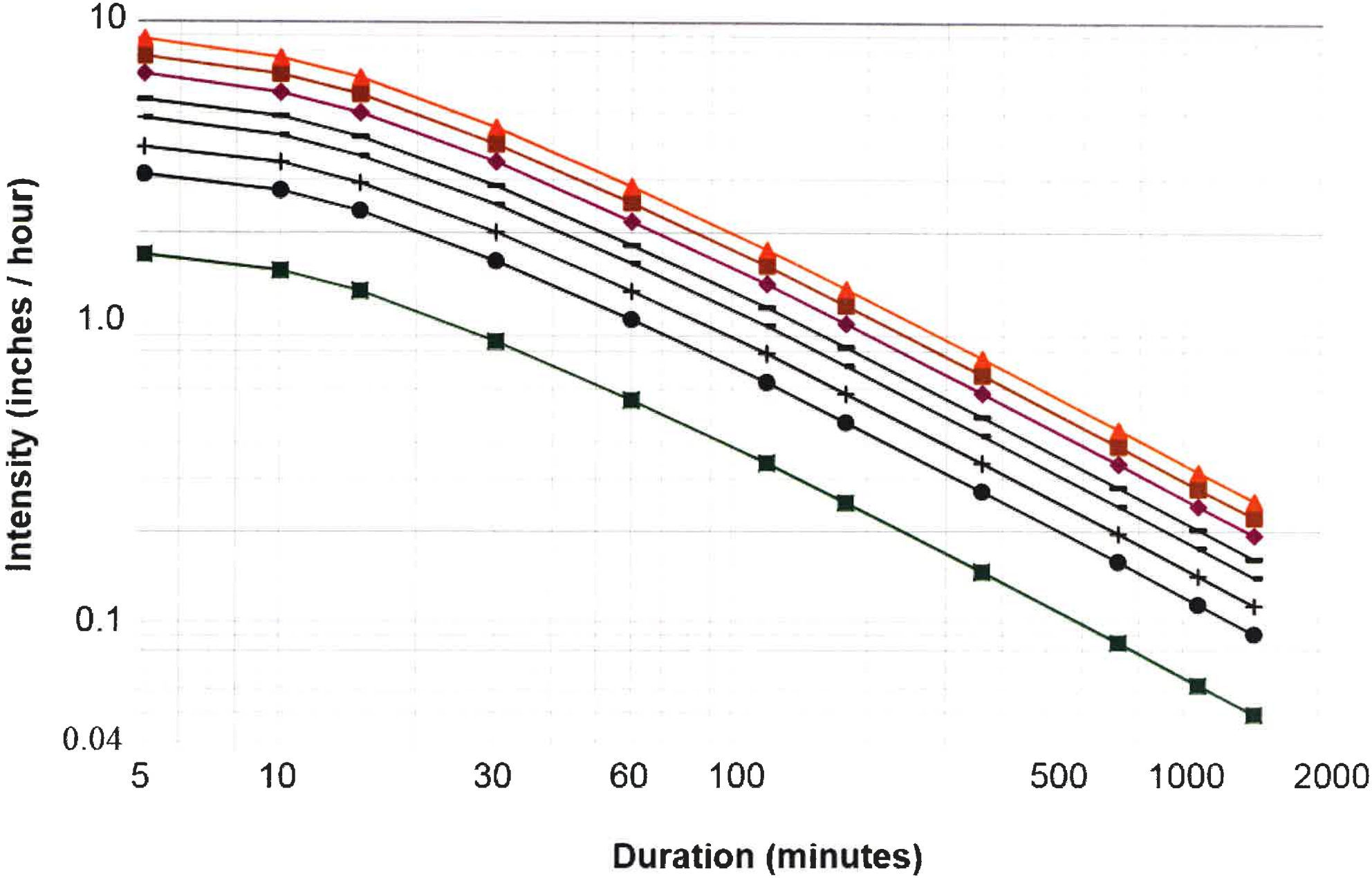
Runoff Coefficients "C" for Typical Land Uses in Columbus

Cover Type and Hydrologic Condition	Average percent impervious area (5)	Runoff Coefficient for Hydrologic Soil Group (7)			
		A	B	C	D
Fully developed urban areas (vegetation established) (1)					
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		0.94	0.94	0.94	0.94
Open space (lawns, parks, golf courses, cemeteries, etc)					
Poor condition (grass cover, 50%)		0.29	0.48	0.63	0.70
Fair condition (grass cover 50% to 75%)		0.07	0.30	0.48	0.58
Good condition (grass cover >75%)		NA	0.19	0.39	0.50
Commercial and business (TND – TC) (6)	85	0.70	0.77	0.83	0.85
Industrial	72	0.52	0.67	0.75	0.80
Residential Districts by Average Lot Size (6):					
Multi-family (TND – NC)	80	0.63	0.75	0.80	0.83
1/12 to 1/6 acre lots (TND – NG)	75	0.56	0.70	0.77	0.83
1/8 acre (TND – NE)	65	0.44	0.60	0.72	0.77
1/4 acre	38	0.19	0.40	0.56	0.65
1/2 acre	25	0.11	0.32	0.50	0.60
1 acre	20	0.08	0.29	0.48	0.58
Undeveloped or agricultural lands(1)					
Cultivated Land:					
Without conservation treatment		0.35	0.52	0.67	0.75
With conservation treatment		0.21	0.34	0.46	0.52
Pasture, grassland, or range – continuous forage for grazing. (2)	Hydrologic condition:				
	Poor	0.29	0.48	0.63	0.70
	Fair	0.07	0.30	0.48	0.58
	Good	NA	0.19	0.39	0.50
Meadow – continuous grass, protected from grazing and generally mowed for hay.	--	NA	0.16	0.34	0.46
Brush – brush-weed-grass mixture with brush the major element. (3)	Poor	0.06	0.27	0.44	0.56
	Fair	NA	0.13	0.32	0.44
	Good	NA	0.06	0.25	0.37
Woods. (4)	Poor	0.04	0.26	0.44	0.56
	Fair	NA	0.18	0.37	0.48
	Good	NA	0.12	0.32	0.44
Farmsteads – buildings, lanes, driveways, and surrounding lots.	--	0.17	0.39	0.54	0.63

Notes:
NA – Method to derive value is not applicable for curve number values less than 40.
(1) Average runoff condition, and Ia=0.2s.
(2) Poor: <50% ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: >75% ground cover and lightly or only occasionally grazed.
(3) Poor: <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.
(4) Poor: Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.
(5) The average percent impervious area shown was used to develop the composite CN's which were then used to derive runoff coefficient values. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a runoff coefficient of 0.94 (or CN of 98), and pervious areas are considered equivalent to open space in good hydrologic condition.
(6) Acronyms for zoning of residential districts are as follows:
TND – TC: Traditional Neighborhood Development – Town Center
TND – NC: Traditional Neighborhood Development – Neighborhood Center
TND – NG: Traditional Neighborhood Development – Neighborhood General
TND – NE: Traditional Neighborhood Development – Neighborhood Edge
(7) These runoff coefficients were calculated from CN's drawn from the NRCS (SCS) Peak Discharge Method from TR-55 assuming a 10-year, 24-hour storm. For larger design storms, the runoff coefficients should be increased using the following C value correction factors:
1.0 for the 10-year design storm and less
1.1 for the 25-year design storm
1.2 for the 50-year design storm
1.3 for the 100-year design storm

Figure 2-1

Intensity Duration Frequency (IDF) Curves
Central Ohio (Section 05)



L.W. ASSOCIATES, INC.
184 WEST MAIN STREET
ASHVILLE, OHIO 43103
Phone:(740)983-4566
Fax:(740)983-2932

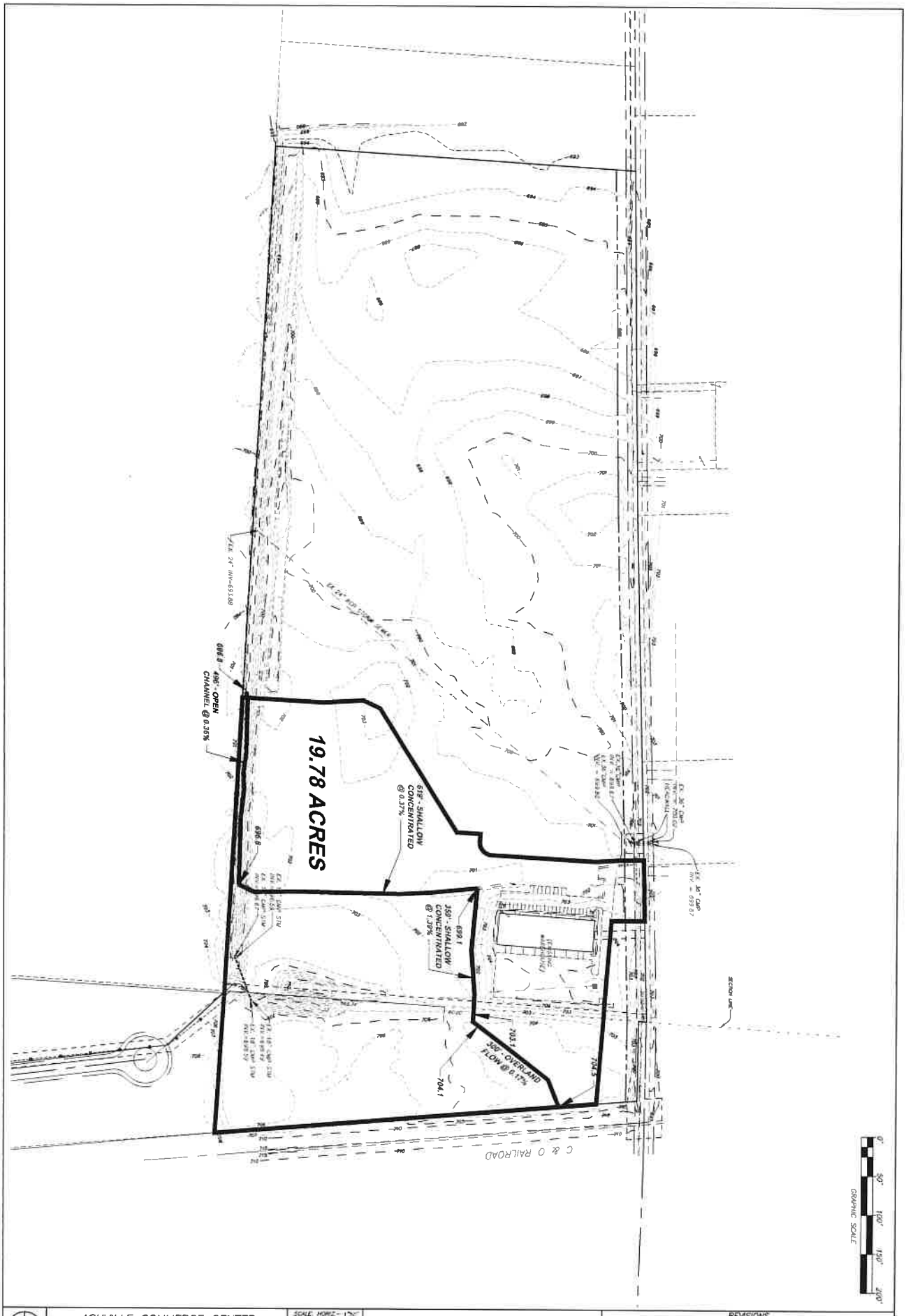
STORM SEWER DESIGN
ASHVILLE COMMERCE BUILDING

Designed: WD
Date: 4/12/09
File #:
City: ASHVILLE
State: OHIO
Street: S.R. 752

N= 0.012 | Design Frequency = 5 year | 10 Year Hydraulic Grade Line

Struct. Number	Struct. Type	Trib. Area Delta Acres "A"	Trib. Area Sigma Acres "A"	Time Delta Min. "T"	Time Sigma Min. "T"	Rainfall Intensity "I" In./Hr.	C	CA	Sigma CA	Total Runoff CFS	Slope FL/ 100'	Pipe Size Inches	Capacity Full CFS	Velocity Full FPS	Pipe Length FL	Top of Casting	Invert In	Invert Out	Invert Out-2	Pipe Cover	Rainfall Intensity In./Hr.	"Q" Runoff CFS	HGL Friction Slope	HGL Elev.
50	CB	1.20	1.20	10.0	10.0	4.25	0.48	0.58	0.58	2.45						703.00	698.66			3.17	4.90	2.82		699.46
											0.45	12	2.59	3.30	46.52								0.00	
48																702.00	697.95	698.45						699.25
49	CB	1.97	1.97	10.0	10.0	4.25	0.48	0.95	0.95	4.02						703.00	698.29			3.27	4.90	4.63		699.34
											0.35	15	4.14	3.37	24.00								0.44	
48	CB	1.47	3.44	0.1	10.1	4.24	0.48	0.71	1.65	6.99						702.00	697.95	698.20		2.36	4.89	8.07		699.24
											0.40	18	7.20	4.07	31.00								0.50	
47	AA-S125	0.19	3.63	0.1	10.2	4.22	0.48	0.09	1.74	7.35						703.55	697.93	697.93		4.01	4.87	8.49		699.08
											0.45	18	7.63	4.32	28.00								0.56	
46	AA-S125	0.19	3.82	0.1	10.4	4.21	0.48	0.09	1.83	7.71						703.55	697.75	697.75		4.14	4.86	8.90		698.93
											0.50	18	8.05	4.55	21.00								0.61	
17																704.20	697.10	697.60						698.80
45	BH	0.98	0.98	10.0	10.0	4.25	0.48	0.47	0.47	2.00						N/A	698.39			N/A	4.90	2.30		699.16
											0.40	12	2.44	3.11	24.00								0.36	
44	AA-S125	0.22	1.20	0.1	10.1	4.24	0.48	0.11	0.58	2.44						703.24	698.30	698.30		3.78	4.89	2.81		699.07
											0.40	12	2.44	3.11	28.00								0.53	
43	AA-S125	0.24	1.44	0.2	10.3	4.22	0.48	0.12	0.69	2.92						703.24	698.19	698.19		3.89	4.87	3.37		698.92
											0.60	12	2.99	3.81	21.00								0.75	
42	MH	1.00	2.44	0.1	10.4	4.21	0.48	0.48	1.17	4.92						703.80	697.56	698.06		4.57	4.86	5.69		698.75
											0.25	18	5.69	3.22	147.94								0.25	
15																702.90	695.69	697.19						698.39
41	AA-S125	0.21	0.21	10.0	10.0	4.25	0.48	0.10	0.10	0.43						702.29	698.88			2.24	4.90	0.49		699.66
											0.40	12	2.44	3.11	28.00								0.02	
40	AA-S125	0.18	0.39	0.2	10.2	4.24	0.48	0.09	0.19	0.79						702.29	698.77	698.77		2.35	4.89	0.91		699.57
											0.40	12	2.44	3.11	31.28								0.05	
38																702.00	698.64	698.64						699.44
39	CB	0.30	0.30	10.0	10.0	4.25	0.48	0.14	0.14	0.61						702.00	699.02			1.81	4.90	0.71		699.97
											0.40	12	2.44	3.11	94.43								0.03	
38	CB	0.68	0.98	0.5	10.5	4.19	0.48	0.33	0.47	1.96						702.00	698.64	698.64		2.19	4.83	2.27		699.59
											0.40	12	2.44	3.11	62.13								0.35	
37	CB	0.26	1.24	0.3	10.8	4.13	0.48	0.12	0.60	2.46						702.00	698.39	698.39		2.44	4.78	2.85		699.34
											0.45	12	2.59	3.30	38.75								0.54	
36	AA-S125	0.28	1.52	0.2	11.0	4.10	0.48	0.13	0.73	2.99						701.38	698.22	698.22		1.99	4.75	3.47		699.13
											0.65	12	3.11	3.96	72.20								0.81	
32																702.40	698.75	697.75						698.55
35	AA-S125	0.60	0.60	10.0	10.0	4.25	0.48	0.29	0.29	1.22						702.55	698.16			3.23	4.90	1.41		2.23
											0.40	12	2.44	3.11	28.00								0.13	
34	AA-S125	0.17	0.77	0.2	10.2	4.24	0.48	0.08	0.37	1.57						702.55	698.05	698.05		3.34	4.89	1.81		2.12
											0.40	12	2.44	3.11	21.00								0.22	
33	MH	0.00	0.77	0.1	10.3	4.22	0.48	0.00	0.37	1.57						703.20	696.96	697.96		4.07	4.87	1.80		2.04
											0.15	24	9.49	3.02	140.49								0.01	
32	MH	1.52	2.29	0.8	11.0	4.10	0.48	0.73	1.10	4.51						702.40	696.75	696.75		3.40	4.75	5.22		1.83
											0.21	24	11.23	3.57	58.53								0.05	
31	AA-S125	0.39	2.68	0.3	11.3	4.07	0.48	0.19	1.29	5.24						701.56	696.63	696.63		2.98	4.71	6.05		1.70
											0.21	24	11.23	3.57	28.00								0.06	
30	AA-S125	0.42	3.10	0.1	11.4	4.06	0.48	0.20	1.49	6.04						701.56	696.57	696.57		2.74	4.69	6.98		1.64
											0.21	24	11.23	3.57	21.00								0.09	
14																702.29	695.53	696.53		3.51				1.60
18	MH	1.45	1.45	10.0	10.0	4.25	0.48	0.70	0.70	2.96						704.99	698.01			5.18	4.90	3.41		4.02
											0.22	18	5.34	3.02	188.00								0.09	
17	MH	3.82	5.27	1.0	11.0	4.10	0.48	1.83	2.53	10.37						704.20	697.10	697.63		4.89	4.75	12.02		3.60
											0.18	24	10.40	3.31	163.46								0.24	
16	AA-S125	0.33	5.60	0.3	11.9	4.02	0.48	0.16	2.69	10.81						702.03	696.91	696.91		2.97	4.63	12.45		3.21
											0.20	24	10.96	3.49	57.93								0.25	
15	MH	2.44	8.04	0.3	12.1	3.99	0.48	1.17	3.86	15.40						702.90	695.69	696.69		3.96	4.59	17.71		3.06
											0.09	36	21.68	3.07	182.52								0.05	
14	MH	3.10	11.14	1.0	13.1	3.89	0.48	1.49	5.35	20.77						702.29	695.53	695.53		3.43	4.49	24.01		2.90
											0.13	36	26.05	3.69	352.00								0.11	
13b	MH	0.00	11.14	1.6	14.7	3.68	0.48	0.00	5.35	20.77						701.50	695.07	695.07		3.10	4.30	22.97		2.44
											0.13	36	26.05	3.69	28.95								0.10	
13a	HW	0.00	11.14	0.1	14.9	3.67	0.48	0.00	5.35	20.77						N/A		695.03			4.28	22.89		2.48
1C	MH															N/A	694.00							
											-10.00	3			15.00									
1B	MH															703.40	695.50	695.50						
											0.50	12	2.73	3.47	24.00									
1A	MH															N/A		695.38						

Predeveloped



1 / 1	ASHVILLE COMMERCE CENTER PHASE 1 PREDEVELOPED TRIBUTARY MAP	SCALE: HORIZ. - 1"= VERT. - N/A DATE: MARCH, 2008 PROJECT NO. DRAWN BY: W.D. CHECKED: M.P.	PIZZINO ENGINEERING & CONSULTING, LLC 3495 ST. RT. 161 PLAIN CITY, OHIO 43064 (614) 325-2462	NO. DATE BY	REVISIONS DESCRIPTION

TIME OF CONCENTRATION AND TRAVEL TIME Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: PREDEVELOPED CONDITION PHASE 1

Subarea #1 - PH1

Flow Type	2 year rain	Length (ft)	Slope (ft/ft)	Surface code	n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet	2.7	300	.0017	E					1.148
Shallow Concent'd		359	.0139	U					0.052
Shallow Concent'd		619	.0037	U					0.175
Open Channel		496	.0036		0.037	4.8	38.2		0.030
								Time of Concentration =	1.40*

--- Sheet Flow Surface Codes ---

A Smooth Surface	F Grass, Dense	--- Shallow Concentrated ---
B Fallow (No Res.)	G Grass, Burmuda	--- Surface Codes ---
C Cultivated < 20 % Res.	H Woods, Light	P Paved
D Cultivated > 20 % Res.	I Woods, Dense	U Unpaved
E Grass-Range, Short	J Range, Natural	

* - Generated for use by TABULAR method

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: PREDEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 1 years

---------- Subareas ----------

	PH1
Area(sq mi)	0.03*
Rainfall(in)	2.2
Curve number	77*
Runoff(in)	0.54
Tc (hrs)	1.40*
(Used)	1.50
TimeToOutlet	0.00
Ia/P	0.28

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs) PH1
11.0	0	0
11.3	0	0
11.6	0	0
11.9	0	0
12.0	0	0
12.1	0	0
12.2	0	0
12.3	0	0
12.4	1	1
12.5	1	1
12.6	1	1
12.7	2	2
12.8	3	3
13.0	3	3
13.2	4P	4P
13.4	4	4
13.6	3	3
13.8	3	3
14.0	2	2
14.3	2	2
14.6	1	1
15.0	1	1
15.5	1	1
16.0	1	1
16.5	1	1
17.0	1	1
17.5	1	1
18.0	1	1
19.0	0	0
20.0	0	0
22.0	0	0
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: PREDEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 2 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	2.7
Curve number	77*
Runoff(in)	0.87
Tc (hrs)	1.40*
(Used)	1.50
TimeToOutlet	0.00
Ia/P	0.22

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs) PH1
11.0	0	0
11.3	0	0
11.6	0	0
11.9	0	0
12.0	0	0
12.1	0	0
12.2	1	1
12.3	1	1
12.4	1	1
12.5	2	2
12.6	3	3
12.7	4	4
12.8	5	5
13.0	6	6
13.2	7P	7P
13.4	6	6
13.6	5	5
13.8	4	4
14.0	4	4
14.3	3	3
14.6	2	2
15.0	2	2
15.5	1	1
16.0	1	1
16.5	1	1
17.0	1	1
17.5	1	1
18.0	1	1
19.0	1	1
20.0	1	1
22.0	0	0
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: PREDEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 5 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	3.3
Curve number	77*
Runoff(in)	1.32
Tc (hrs)	1.40*
(Used)	1.50
TimeToOutlet	0.00
Ia/P	0.18

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs)
		PH1
11.0	0	0
11.3	0	0
11.6	0	0
11.9	1	1
12.0	1	1
12.1	1	1
12.2	1	1
12.3	2	2
12.4	3	3
12.5	4	4
12.6	5	5
12.7	6	6
12.8	8	8
13.0	9	9
13.2	10P	10P
13.4	9	9
13.6	8	8
13.8	6	6
14.0	5	5
14.3	4	4
14.6	3	3
15.0	3	3
15.5	2	2
16.0	2	2
16.5	1	1
17.0	1	1
17.5	1	1
18.0	1	1
19.0	1	1
20.0	1	1
22.0	1	1
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: PREDEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 10 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	3.9
Curve number	77*
Runoff(in)	1.70
Tc (hrs)	1.40*
(Used)	1.50
TimeToOutlet	0.00
Ia/P	0.15

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs) PH1
11.0	0	0
11.3	0	0
11.6	1	1
11.9	1	1
12.0	1	1
12.1	1	1
12.2	2	2
12.3	2	2
12.4	4	4
12.5	5	5
12.6	7	7
12.7	9	9
12.8	10	10
13.0	13	13
13.2	14P	14P
13.4	12	12
13.6	10	10
13.8	8	8
14.0	7	7
14.3	5	5
14.6	4	4
15.0	3	3
15.5	2	2
16.0	2	2
16.5	2	2
17.0	1	1
17.5	1	1
18.0	1	1
19.0	1	1
20.0	1	1
22.0	1	1
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: PREDEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 25 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	4.6
Curve number	77*
Runoff(in)	2.32
Tc (hrs)	1.40*
(Used)	1.50
TimeToOutlet	0.00
Ia/P	0.13

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs) PH1
11.0	1	1
11.3	1	1
11.6	1	1
11.9	1	1
12.0	2	2
12.1	2	2
12.2	3	3
12.3	4	4
12.4	5	5
12.5	7	7
12.6	10	10
12.7	13	13
12.8	15	15
13.0	18	18
13.2	19P	19P
13.4	17	17
13.6	14	14
13.8	11	11
14.0	9	9
14.3	7	7
14.6	6	6
15.0	4	4
15.5	3	3
16.0	3	3
16.5	2	2
17.0	2	2
17.5	2	2
18.0	2	2
19.0	1	1
20.0	1	1
22.0	1	1
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: PREDEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 50 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	5.3
Curve number	77*
Runoff(in)	2.90
Tc (hrs)	1.40*
(Used)	1.50
TimeToOutlet	0.00
Ia/P	0.11

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs)
		PH1
11.0	1	1
11.3	1	1
11.6	1	1
11.9	2	2
12.0	2	2
12.1	3	3
12.2	4	4
12.3	5	5
12.4	7	7
12.5	10	10
12.6	13	13
12.7	16	16
12.8	19	19
13.0	23	23
13.2	24P	24P
13.4	21	21
13.6	18	18
13.8	14	14
14.0	12	12
14.3	9	9
14.6	7	7
15.0	5	5
15.5	4	4
16.0	3	3
16.5	3	3
17.0	2	2
17.5	2	2
18.0	2	2
19.0	2	2
20.0	2	2
22.0	1	1
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: PREDEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 100 years

Subareas

	PH1
Area(sq mi)	0.03*
Rainfall(in)	6.1
Curve number	77*
Runoff(in)	3.53
Tc (hrs)	1.40*
(Used)	1.50
TimeToOutlet	0.00
Ia/P	0.10
(Used)	0.10

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs) PH1
11.0	1	1
11.3	1	1
11.6	2	2
11.9	2	2
12.0	3	3
12.1	3	3
12.2	4	4
12.3	6	6
12.4	9	9
12.5	12	12
12.6	16	16
12.7	20	20
12.8	24	24
13.0	28	28
13.2	30P	30P
13.4	26	26
13.6	22	22
13.8	17	17
14.0	14	14
14.3	11	11
14.6	8	8
15.0	6	6
15.5	5	5
16.0	4	4
16.5	3	3
17.0	3	3
17.5	3	3
18.0	2	2
19.0	2	2
20.0	2	2
22.0	1	1
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TIME OF CONCENTRATION AND TRAVEL TIME Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: DEVELOPED CONDITION PHASE 1

Subarea #1 - PH1

Flow Type	2 year rain	Length (ft)	Slope (ft/ft)	Surface code	n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet	2.7	300	.0017	E					1.148
Shallow Concent'd		37	.027	U					0.004
Open Channel		890						3.49	0.071
								Time of Concentration =	1.22*

--- Sheet Flow Surface Codes ---

A Smooth Surface
B Fallow (No Res.)
C Cultivated < 20 % Res.
D Cultivated > 20 % Res.
E Grass-Range, Short
F Grass, Dense
G Grass, Burmuda
H Woods, Light
I Woods, Dense
J Range, Natural

--- Shallow Concentrated --- Surface Codes ---

P Paved
U Unpaved

* - Generated for use by TABULAR method

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: DEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 1 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	2.2
Curve number	91*
Runoff(in)	1.31
Tc (hrs)	1.22*
(Used)	1.25
TimeToOutlet	0.00
Ia/P	0.09
(Used)	0.10

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs)
		PH1
11.0	0	0
11.3	1	1
11.6	1	1
11.9	1	1
12.0	1	1
12.1	2	2
12.2	2	2
12.3	3	3
12.4	5	5
12.5	7	7
12.6	9	9
12.7	10	10
12.8	12	12
13.0	13P	13P
13.2	11	11
13.4	9	9
13.6	7	7
13.8	5	5
14.0	4	4
14.3	3	3
14.6	2	2
15.0	2	2
15.5	2	2
16.0	1	1
16.5	1	1
17.0	1	1
17.5	1	1
18.0	1	1
19.0	1	1
20.0	1	1
22.0	0	0
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

Developed

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: DEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 2 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	2.7
Curve number	91*
Runoff(in)	1.79
Tc (hrs)	1.22*
(Used)	1.25
TimeToOutlet	0.00
Ia/P	0.07
(Used)	0.10

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs) PH1
11.0	1	1
11.3	1	1
11.6	1	1
11.9	1	1
12.0	2	2
12.1	2	2
12.2	3	3
12.3	4	4
12.4	7	7
12.5	9	9
12.6	12	12
12.7	14	14
12.8	16	16
13.0	17P	17P
13.2	15	15
13.4	12	12
13.6	9	9
13.8	7	7
14.0	6	6
14.3	4	4
14.6	3	3
15.0	3	3
15.5	2	2
16.0	2	2
16.5	1	1
17.0	1	1
17.5	1	1
18.0	1	1
19.0	1	1
20.0	1	1
22.0	1	1
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: DEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 5 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	3.3
Curve number	91*
Runoff(in)	2.40
Tc (hrs)	1.22*
(Used)	1.25
TimeToOutlet	0.00
Ia/P	0.06
(Used)	0.10

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs)
		PH1
11.0	1	1
11.3	1	1
11.6	1	1
11.9	2	2
12.0	2	2
12.1	3	3
12.2	4	4
12.3	6	6
12.4	9	9
12.5	12	12
12.6	16	16
12.7	19	19
12.8	21	21
13.0	23P	23P
13.2	20	20
13.4	16	16
13.6	12	12
13.8	10	10
14.0	8	8
14.3	6	6
14.6	5	5
15.0	3	3
15.5	3	3
16.0	2	2
16.5	2	2
17.0	2	2
17.5	2	2
18.0	1	1
19.0	1	1
20.0	1	1
22.0	1	1
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: DEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 10 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	3.9
Curve number	91*
Runoff(in)	2.88
Tc (hrs)	1.22*
(Used)	1.25
TimeToOutlet	0.00
Ia/P	0.05
(Used)	0.10

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs)
		PH1
11.0	1	1
11.3	1	1
11.6	2	2
11.9	2	2
12.0	3	3
12.1	3	3
12.2	5	5
12.3	7	7
12.4	11	11
12.5	15	15
12.6	19	19
12.7	23	23
12.8	25	25
13.0	28P	28P
13.2	24	24
13.4	19	19
13.6	15	15
13.8	12	12
14.0	9	9
14.3	7	7
14.6	5	5
15.0	4	4
15.5	3	3
16.0	3	3
16.5	2	2
17.0	2	2
17.5	2	2
18.0	2	2
19.0	2	2
20.0	1	1
22.0	1	1
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: DEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 25 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	4.6
Curve number	91*
Runoff(in)	3.63
Tc (hrs)	1.22*
(Used)	1.25
TimeToOutlet	0.00
Ia/P	0.04
(Used)	0.10

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs)
		PH1
11.0	1	1
11.3	1	1
11.6	2	2
11.9	3	3
12.0	3	3
12.1	4	4
12.2	6	6
12.3	9	9
12.4	13	13
12.5	18	18
12.6	24	24
12.7	29	29
12.8	32	32
13.0	35P	35P
13.2	30	30
13.4	24	24
13.6	18	18
13.8	15	15
14.0	12	12
14.3	9	9
14.6	7	7
15.0	5	5
15.5	4	4
16.0	3	3
16.5	3	3
17.0	3	3
17.5	2	2
18.0	2	2
19.0	2	2
20.0	2	2
22.0	1	1
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: DEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 50 years

Subareas

	PH1
Area(sq mi)	0.03*
Rainfall(in)	5.3
Curve number	91*
Runoff(in)	4.30
Tc (hrs)	1.22*
(Used)	1.25
TimeToOutlet	0.00
Ia/P	0.04
(Used)	0.10

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs) PH1
11.0	1	1
11.3	2	2
11.6	2	2
11.9	3	3
12.0	4	4
12.1	5	5
12.2	7	7
12.3	11	11
12.4	16	16
12.5	22	22
12.6	28	28
12.7	34	34
12.8	38	38
13.0	41P	41P
13.2	35	35
13.4	28	28
13.6	22	22
13.8	17	17
14.0	14	14
14.3	10	10
14.6	8	8
15.0	6	6
15.5	5	5
16.0	4	4
16.5	4	4
17.0	3	3
17.5	3	3
18.0	3	3
19.0	2	2
20.0	2	2
22.0	2	2
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

TABULAR HYDROGRAPH METHOD Version 2.10

Project : ASHVILLE COMMERCE CENTER User: W.D. Date: 05-16-2008
County : PICKAWAY State: OH Checked: ____ Date: _____
Subtitle: DEVELOPED CONDITION PHASE 1

Total watershed area: 0.031 sq mi Rainfall type: II Frequency: 100 years

	Subareas
	PH1
Area(sq mi)	0.03*
Rainfall(in)	6.1
Curve number	91*
Runoff(in)	5.02
Tc (hrs)	1.22*
(Used)	1.25
TimeToOutlet	0.00
Ia/P	0.03
(Used)	0.10

Time (hr)	Total Flow	Subarea Contribution to Total Flow (cfs)
		PH1
11.0	2	2
11.3	2	2
11.6	3	3
11.9	4	4
12.0	5	5
12.1	6	6
12.2	8	8
12.3	13	13
12.4	18	18
12.5	25	25
12.6	33	33
12.7	40	40
12.8	44	44
13.0	48P	48P
13.2	41	41
13.4	33	33
13.6	25	25
13.8	20	20
14.0	16	16
14.3	12	12
14.6	9	9
15.0	7	7
15.5	6	6
16.0	5	5
16.5	4	4
17.0	4	4
17.5	3	3
18.0	3	3
19.0	3	3
20.0	2	2
22.0	2	2
26.0	0	0

P - Peak Flow * - value(s) provided from TR-55 system routines

Detention Pond

RESERVOIR REPORT

Reservoir Number: 1
Name: Phase 1 Pond

[RATING CURVE LIMIT]

Minimum Elevation	=	695.00 (ft)
Maximum Elevation	=	700.00 (ft)
Elevation Increment	=	0.10 (ft)

[STAGE STORAGE INFORMATION]
Storage Method: User-Defined Storage

Input Method: Area

Number	Elevation (ft)	Area (sq ft)	Ave Area (sq ft)	Volume (cu ft)	Cumulative Volume (cu ft)
1	696.00	0.00	0.00	0.00	0.00
2	697.00	63526.00	31763.00	31763.00	31763.00
3	698.00	69302.00	66414.00	66414.00	98177.00
4	699.00	75018.00	72160.00	72160.00	170337.00
5	700.00	80806.00	77912.00	77912.00	248249.00

[DISCHARGE INFORMATION]
Structure Number: 1
Type:
Name: Stand Pipe

[RESERVOIR STAGE STORAGE/DISCHARGE]

Elevation (ft)	Stage (ft)	Area (sq ft)	Storage (cu ft)	Discharge (cfs)
695.00	0.00	0.00	0.00	0.00
695.10	0.10	0.00	0.00	0.00
695.20	0.20	0.00	0.00	0.00
695.30	0.30	0.00	0.00	0.00
695.40	0.40	0.00	0.00	0.00
695.50	0.50	0.00	0.00	0.00
695.60	0.60	0.00	0.00	0.00
695.70	0.70	0.00	0.00	0.00
695.80	0.80	0.00	0.00	0.00
695.90	0.90	0.00	0.00	0.00
696.00	1.00	0.00	0.00	0.00
696.10	1.10	6352.60	317.63	0.00
696.20	1.20	12705.20	1270.52	0.00
696.30	1.30	19057.80	2858.67	0.06
696.40	1.40	25410.40	5082.08	0.21
696.50	1.50	31763.00	7940.75	0.22
696.60	1.60	38115.60	11434.68	0.23
696.70	1.70	44468.20	15563.87	0.24
696.80	1.80	50820.80	20328.32	0.26
696.90	1.90	57173.40	25728.03	0.27
697.00	2.00	63526.00	31763.00	0.28
697.10	2.10	64103.60	38144.48	0.29
697.20	2.20	64681.20	44583.72	0.30
697.30	2.30	65258.80	51080.72	0.31
697.40	2.40	65836.40	57635.48	0.31
697.50	2.50	66414.00	64248.00	0.32
697.60	2.60	66991.60	70918.28	0.33
697.70	2.70	67569.20	77646.32	0.34

697.80	2.80	68146.80	84432.12	0.35
697.90	2.90	68724.40	91275.68	0.36
698.00	3.00	69302.00	98177.00	0.36

[RESERVOIR STAGE STORAGE/DISCHARGE]

Elevation (ft)	Stage (ft)	Area (sq ft)	Storage (cu ft)	Discharge (cfs)
698.10	3.10	69873.60	105135.78	0.69
698.20	3.20	70445.20	112151.72	1.29
698.30	3.30	71016.80	119224.82	1.90
698.40	3.40	71588.40	126355.08	2.29
698.50	3.50	72160.00	133542.50	2.61
698.60	3.60	72731.60	140787.08	2.90
698.70	3.70	73303.20	148088.82	3.15
698.80	3.80	73874.80	155447.72	3.39
698.90	3.90	74446.40	162863.78	3.61
699.00	4.00	75018.00	170337.00	3.81
699.10	4.10	75596.80	177867.74	4.00
699.20	4.20	76175.60	185456.36	4.51
699.30	4.30	76754.40	193102.86	5.20
699.40	4.40	77333.20	200807.24	5.67
699.50	4.50	77912.00	208569.50	6.08
699.60	4.60	78490.80	216389.64	6.44
699.70	4.70	79069.60	224267.66	6.77
699.80	4.80	79648.40	232203.56	7.68
699.90	4.90	80227.20	240197.34	10.47
700.00	5.00	80806.00	248249.00	14.31

Maximum Storage = 248249.00 (cu ft)
Maximum Discharge = 14.31 (cfs)

OUTLET STRUCTURE REPORT

Structure Number : 1
Type : Stand Pipe
Name : Stand Pipe

[RATING CURVE LIMIT]

Minimum Elevation	=	695.50	(ft)
Maximum Elevation	=	700.00	(ft)
Elevation Increment	=	0.10	(ft)

[STAND PIPE INFORMATION]

[ORIFICE INFORMATION]

Height	=	4.00	(ft)
Width	=	4.00	(ft)
Crest Length	=	16.00	(ft)
Effective Crest Length	=	16.00	(ft)
Orifice Coefficient	=	0.60	
Fractional Open Area	=	1.00	

[ORIFICE EQUATION]

$Q = Co*A((2gh)/k)^{0.5}$

[DEFINITIONS]

Co = Orifice Coefficient
A = Wetted Area, (sq ft)

[WEIR INFORMATION]

Crest Elevation	=	699.75	(ft)
Weir Coefficient	=	3.33	
Exponential	=	1.50	

[WEIR EQUATION]

$Q = Cw * L * H^{exp}$

[DEFINITIONS]

Cw = Weir Coefficient
H = Headwater depth above inlet control section invert ft
L = Crest lenght ft

[OPTIONAL ORIFICE INFORMATION]

Structure Number : 1
Type : Circular Orifice

[OPTIONAL ORIFICE INFORMATION]

Diameter	=	0.25	(ft)
Invert Elevation	=	695.50	(ft)
Orifice Coefficient	=	0.60	
Number of Openings	=	1	

[ORIFICE EQUATION]
Q = Co*A((2gh)/k)^0.5

[DEFINITIONS]
Co = Orifice Coefficient
A = Wetted Area, (cfs)
k = 1

Structure Number : 2
Type : Rectangular Orifice

[OPTIONAL ORIFICE INFORMATION]

Height	=	0.25	(ft)
Width	=	3.00	(ft)
Invert Elevation	=	698.00	(ft)
Orifice Coefficient	=	0.60	
Number of Openings	=	1	

[ORIFICE EQUATION]
Q = Co*A((2gh)/k)^0.5

[DEFINITIONS]
Co = Orifice Coefficient
A = Wetted Area, (cfs)
k = 1

Structure Number : 3
Type : Rectangular Orifice

[OPTIONAL ORIFICE INFORMATION]

Height	=	0.17	(ft)
Width	=	3.00	(ft)
Invert Elevation	=	699.10	(ft)
Orifice Coefficient	=	0.60	
Number of Openings	=	1	

[ORIFICE EQUATION]
Q = Co*A((2gh)/k)^0.5

[DEFINITIONS]
Co = Orifice Coefficient
A = Wetted Area, (cfs)
k = 1

[CULVERT INFORMATION]

Type : Circular Concrete - Square Edge with Headwall

[OUTLET STRUCTURE INFORMATION]

Diameter	=	21.00	(in)
Invert Elevation	=	695.50	(ft)
Pipe Length	=	24.00	(ft)
Slope	=	0.01	
Manning's n Value	=	0.01	
Orifice Coefficient	=	0.60	
Tailwater Elevation	=	695.00	(ft)
Number of Barrels	=	1	

[UNSUBMERGED EQUATION]

H/Diam = Hc/Diam+K*(Q/(A*Diam^0.5))^M-0.5*S

Coefficient K	=	0.01
Coefficient M	=	2.00
Q Maximum	=	11.14

[SUBMERGED EQUATION]

H/Diam = c*(Q/(A*Diam^0.5))^2+Y-0.5*S

Coefficient c	=	0.04
Coefficient Y	=	0.67
Q Minimum	=	12.73

[DEFINITIONS]

H	= Headwater depth above inlet control section invert, (ft)
Diam	= Interior height of culvert barrel, (ft)
Hc	= Specific head at critical depth (dc+Vc^2/2g), (ft)
Q	= Discharge, (cfs)
A	= Full cross sectional area of culvert barrel, (sq ft)
S	= Culvert barrel slope, (ft/ft)

[STAND PIPE STAGE VS. DISCHARGE]

Elevation (ft)	Stage (ft)	Weirs (cfs)	Orifices (cfs)	Stand Pipe (cfs)	Culvert (cfs)	Total (cfs)
695.50	0.00	0.00	0.00	0.00	0.00	0.00
695.60	0.10	0.00	0.07	0.00	0.00	0.00
695.70	0.20	0.00	0.06	0.00	0.00	0.00
695.80	0.30	0.00	0.10	0.00	0.00	0.00
695.90	0.40	0.00	0.12	0.00	0.00	0.00
696.00	0.50	0.00	0.14	0.00	0.00	0.00
696.10	0.60	0.00	0.16	0.00	0.00	0.00
696.20	0.70	0.00	0.18	0.00	0.00	0.00
696.30	0.80	0.00	0.19	0.00	0.06	0.06
696.40	0.90	0.00	0.21	0.00	0.62	0.21
696.50	1.00	0.00	0.22	0.00	1.60	0.22
696.60	1.10	0.00	0.23	0.00	2.77	0.23
696.70	1.20	0.00	0.24	0.00	3.93	0.24
696.80	1.30	0.00	0.26	0.00	5.04	0.26
696.90	1.40	0.00	0.27	0.00	6.07	0.27
697.00	1.50	0.00	0.28	0.00	7.02	0.28
697.10	1.60	0.00	0.29	0.00	7.92	0.29
697.20	1.70	0.00	0.30	0.00	8.76	0.30
697.30	1.80	0.00	0.31	0.00	9.51	0.31
697.40	1.90	0.00	0.31	0.00	10.22	0.31
697.50	2.00	0.00	0.32	0.00	10.94	0.32
697.60	2.10	0.00	0.33	0.00	11.14	0.33
697.70	2.20	0.00	0.34	0.00	12.14	0.34
697.80	2.30	0.00	0.35	0.00	12.83	0.35
697.90	2.40	0.00	0.36	0.00	13.38	0.36
698.00	2.50	0.00	0.36	0.00	13.91	0.36
698.10	2.60	0.00	0.69	0.00	14.43	0.69
698.20	2.70	0.00	1.29	0.00	14.92	1.29
698.30	2.80	0.00	1.90	0.00	15.40	1.90
698.40	2.90	0.00	2.29	0.00	15.87	2.29
698.50	3.00	0.00	2.61	0.00	16.32	2.61
698.60	3.10	0.00	2.90	0.00	16.76	2.90
698.70	3.20	0.00	3.15	0.00	17.19	3.15
698.80	3.30	0.00	3.39	0.00	17.60	3.39
698.90	3.40	0.00	3.61	0.00	18.01	3.61
699.00	3.50	0.00	3.81	0.00	18.41	3.81
699.10	3.60	0.00	4.00	0.00	18.80	4.00
699.20	3.70	0.00	4.51	0.00	19.18	4.51
699.30	3.80	0.00	5.20	0.00	19.56	5.20
699.40	3.90	0.00	5.67	0.00	19.93	5.67
699.50	4.00	0.00	6.08	0.00	20.29	6.08
699.60	4.10	0.00	6.44	0.00	20.64	6.44
699.70	4.20	0.00	6.77	0.00	20.99	6.77
699.80	4.30	0.00	7.08	0.60	21.34	7.68
699.90	4.40	0.00	7.37	3.10	21.67	10.47
700.00	4.50	0.00	7.65	6.66	22.01	14.31

[WEIR STAGE VS. DISCHARGE]

Elevation (ft)	Stage (ft)	Weir 1 (cfs)	Weir 2 (cfs)	Weir 3 (cfs)	Weir 4 (cfs)	Total (cfs)
695.50	0.00	0.00	0.00	0.00	0.00	0.00
695.60	0.10	0.00	0.00	0.00	0.00	0.00
695.70	0.20	0.00	0.00	0.00	0.00	0.00
695.80	0.30	0.00	0.00	0.00	0.00	0.00
695.90	0.40	0.00	0.00	0.00	0.00	0.00
696.00	0.50	0.00	0.00	0.00	0.00	0.00
696.10	0.60	0.00	0.00	0.00	0.00	0.00
696.20	0.70	0.00	0.00	0.00	0.00	0.00
696.30	0.80	0.00	0.00	0.00	0.00	0.00
696.40	0.90	0.00	0.00	0.00	0.00	0.00
696.50	1.00	0.00	0.00	0.00	0.00	0.00
696.60	1.10	0.00	0.00	0.00	0.00	0.00
696.70	1.20	0.00	0.00	0.00	0.00	0.00
696.80	1.30	0.00	0.00	0.00	0.00	0.00
696.90	1.40	0.00	0.00	0.00	0.00	0.00
697.00	1.50	0.00	0.00	0.00	0.00	0.00
697.10	1.60	0.00	0.00	0.00	0.00	0.00
697.20	1.70	0.00	0.00	0.00	0.00	0.00
697.30	1.80	0.00	0.00	0.00	0.00	0.00
697.40	1.90	0.00	0.00	0.00	0.00	0.00
697.50	2.00	0.00	0.00	0.00	0.00	0.00
697.60	2.10	0.00	0.00	0.00	0.00	0.00
697.70	2.20	0.00	0.00	0.00	0.00	0.00
697.80	2.30	0.00	0.00	0.00	0.00	0.00
697.90	2.40	0.00	0.00	0.00	0.00	0.00
698.00	2.50	0.00	0.00	0.00	0.00	0.00
698.10	2.60	0.00	0.00	0.00	0.00	0.00
698.20	2.70	0.00	0.00	0.00	0.00	0.00
698.30	2.80	0.00	0.00	0.00	0.00	0.00
698.40	2.90	0.00	0.00	0.00	0.00	0.00
698.50	3.00	0.00	0.00	0.00	0.00	0.00
698.60	3.10	0.00	0.00	0.00	0.00	0.00
698.70	3.20	0.00	0.00	0.00	0.00	0.00
698.80	3.30	0.00	0.00	0.00	0.00	0.00
698.90	3.40	0.00	0.00	0.00	0.00	0.00
699.00	3.50	0.00	0.00	0.00	0.00	0.00
699.10	3.60	0.00	0.00	0.00	0.00	0.00
699.20	3.70	0.00	0.00	0.00	0.00	0.00
699.30	3.80	0.00	0.00	0.00	0.00	0.00
699.40	3.90	0.00	0.00	0.00	0.00	0.00
699.50	4.00	0.00	0.00	0.00	0.00	0.00
699.60	4.10	0.00	0.00	0.00	0.00	0.00
699.70	4.20	0.00	0.00	0.00	0.00	0.00
699.80	4.30	0.00	0.00	0.00	0.00	0.00
699.90	4.40	0.00	0.00	0.00	0.00	0.00
700.00	4.50	0.00	0.00	0.00	0.00	0.00

[ORIFICE STAGE VS. DISCHARGE]

Elevation (ft)	Stage (ft)	Orifice 1 (cfs)	Orifice 2 (cfs)	Orifice 3 (cfs)	Orifice 4 (cfs)	Total (cfs)
695.50	0.00	0.00	0.00	0.00	0.00	0.00
695.60	0.10	0.07	0.00	0.00	0.00	0.07
695.70	0.20	0.06	0.00	0.00	0.00	0.06
695.80	0.30	0.10	0.00	0.00	0.00	0.10
695.90	0.40	0.12	0.00	0.00	0.00	0.12
696.00	0.50	0.14	0.00	0.00	0.00	0.14
696.10	0.60	0.16	0.00	0.00	0.00	0.16
696.20	0.70	0.18	0.00	0.00	0.00	0.18
696.30	0.80	0.19	0.00	0.00	0.00	0.19
696.40	0.90	0.21	0.00	0.00	0.00	0.21
696.50	1.00	0.22	0.00	0.00	0.00	0.22
696.60	1.10	0.23	0.00	0.00	0.00	0.23
696.70	1.20	0.24	0.00	0.00	0.00	0.24
696.80	1.30	0.26	0.00	0.00	0.00	0.26
696.90	1.40	0.27	0.00	0.00	0.00	0.27
697.00	1.50	0.28	0.00	0.00	0.00	0.28
697.10	1.60	0.29	0.00	0.00	0.00	0.29
697.20	1.70	0.30	0.00	0.00	0.00	0.30
697.30	1.80	0.31	0.00	0.00	0.00	0.31
697.40	1.90	0.31	0.00	0.00	0.00	0.31
697.50	2.00	0.32	0.00	0.00	0.00	0.32
697.60	2.10	0.33	0.00	0.00	0.00	0.33
697.70	2.20	0.34	0.00	0.00	0.00	0.34
697.80	2.30	0.35	0.00	0.00	0.00	0.35
697.90	2.40	0.36	0.00	0.00	0.00	0.36
698.00	2.50	0.36	0.00	0.00	0.00	0.36
698.10	2.60	0.37	0.32	0.00	0.00	0.69
698.20	2.70	0.38	0.91	0.00	0.00	1.29
698.30	2.80	0.39	1.51	0.00	0.00	1.90
698.40	2.90	0.39	1.89	0.00	0.00	2.29
698.50	3.00	0.40	2.21	0.00	0.00	2.61
698.60	3.10	0.41	2.49	0.00	0.00	2.90
698.70	3.20	0.41	2.74	0.00	0.00	3.15
698.80	3.30	0.42	2.97	0.00	0.00	3.39
698.90	3.40	0.43	3.18	0.00	0.00	3.61
699.00	3.50	0.43	3.38	0.00	0.00	3.81
699.10	3.60	0.44	3.56	0.00	0.00	4.00
699.20	3.70	0.45	3.74	0.32	0.00	4.51
699.30	3.80	0.45	3.91	0.83	0.00	5.20
699.40	3.90	0.46	4.08	1.14	0.00	5.67
699.50	4.00	0.47	4.23	1.38	0.00	6.08
699.60	4.10	0.47	4.38	1.58	0.00	6.44
699.70	4.20	0.48	4.53	1.76	0.00	6.77
699.80	4.30	0.48	4.67	1.92	0.00	7.08
699.90	4.40	0.49	4.81	2.08	0.00	7.37
700.00	4.50	0.49	4.94	2.22	0.00	7.65

UNIT HYDROGRAPH REPORT

Number	Name	Type	Defined
<None>			

Hydrograph Number: 8
Name: 1 Year Thru Phase 1 Pond
Type: Reservoir: Storage Indication

[HYDROGRAPH INFORMATION]

Peak Flow (Qp)	=	1.18 (cfs)
Time to Peak (Tp)	=	1110.00 (min)
Time of Base (Tb)	=	13690.00 (min)
Volume	=	3.20 (ac-ft)
Time Step	=	10.00 (min)
Peak Elevation	=	698.18 (ft)
Detention Time	=	NA

[EQUATION]

$0.5(I1+I2)dt + S1-0.5(O2)dt$

Where:

I1 = Previous Inflow
I2 = Current Inflow
dt = Time increment
S1 = Previous Storage
S2 = Current Storage
O1 = Previous Outflow
O2 = Current Outflow

$A = 0.5\ (I1+I2)\ dt$
$B = S1 - 0.5\ (O1)\ dt$
$C = S2 + 0.5\ (O2)\ dt$

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
1	30.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
2	60.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
3	90.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
4	120.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
5	150.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
6	180.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
7	210.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
8	240.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
9	270.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
10	300.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
11	330.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
12	360.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
13	390.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
14	420.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
15	450.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
16	480.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
17	510.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
18	540.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
19	570.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
20	600.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
21	630.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
22	660.00	0.00	0.00	0.00	0.00	0.00	0.00	695.00
23	690.00	1.00	2.00	126.67	246.67	0.00	1233.33	696.20
24	720.00	1.00	2.00	481.13	594.03	0.07	2970.50	696.31
25	750.00	1.00	2.00	808.35	909.44	0.17	4548.08	696.38
26	780.00	2.00	4.00	1281.05	1495.07	0.22	7476.46	696.48
27	810.00	5.00	8.67	2141.18	2633.04	0.24	13166.40	696.64
28	840.00	9.67	18.67	4253.56	5341.97	0.27	26711.18	696.92
29	870.00	12.17	24.17	7775.19	9189.99	0.30	45951.43	697.22
30	900.00	11.00	22.33	12085.89	13387.16	0.33	66937.43	697.54
31	930.00	8.00	17.00	15666.92	16645.62	0.35	83229.84	697.78
32	960.00	5.00	11.33	18261.17	18898.18	0.36	94492.72	697.95
33	990.00	3.44	7.44	19926.94	20315.96	0.53	101582.44	698.05
34	1020.00	2.33	5.22	20912.04	21140.66	0.74	105707.03	698.11
35	1050.00	2.00	4.00	21445.84	21577.62	0.93	107892.74	698.14
36	1080.00	2.00	4.00	21821.80	21934.84	1.08	109679.59	698.16
37	1110.00	1.33	3.00	22124.80	22164.25	1.18	110827.16	698.18
38	1140.00	1.00	2.00	22141.84	22121.96	1.16	110615.63	698.18
39	1170.00	1.00	2.00	22085.14	22068.09	1.14	110346.15	698.17
40	1200.00	1.00	2.00	22036.50	22021.88	1.12	110114.99	698.17
41	1230.00	1.00	2.00	21994.78	21982.24	1.10	109916.71	698.17
42	1260.00	1.00	2.00	21959.00	21948.24	1.09	109746.63	698.17
43	1290.00	1.00	2.00	21928.30	21919.07	1.07	109600.73	698.16
44	1320.00	1.00	2.00	21901.97	21894.05	1.06	109475.58	698.16
45	1350.00	1.00	2.00	21879.38	21872.59	1.06	109368.23	698.16
46	1380.00	0.83	1.75	21855.13	21834.93	1.04	109179.85	698.16
47	1410.00	0.58	1.25	21768.74	21723.61	0.99	108623.00	698.15
48	1440.00	0.33	0.75	21611.22	21544.70	0.92	107728.06	698.14
49	1470.00	0.08	0.25	21392.68	21307.81	0.81	106543.11	698.12
50	1500.00	0.00	0.00	21126.67	21040.44	0.70	105205.70	698.10
51	1530.00	0.00	0.00	20877.51	20799.54	0.64	104000.90	698.08
52	1560.00	0.00	0.00	20650.10	20578.52	0.59	102895.55	698.07
53	1590.00	0.00	0.00	20441.33	20375.61	0.54	101880.76	698.05
54	1620.00	0.00	0.00	20249.66	20189.33	0.50	100949.11	698.04
55	1650.00	0.00	0.00	20073.70	20018.30	0.46	100093.80	698.03
56	1680.00	0.00	0.00	19912.15	19861.29	0.42	99308.56	698.02
57	1710.00	0.00	0.00	19763.83	19717.15	0.38	98587.66	698.01
58	1740.00	0.00	0.00	19627.57	19583.90	0.36	97921.30	698.00
59	1770.00	0.00	0.00	19496.64	19453.06	0.36	97267.10	697.99
60	1800.00	0.00	0.00	19365.98	19322.48	0.36	96614.22	697.98

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
61	1830.00	0.00	0.00	19235.58	19192.17	0.36	95962.65	697.97
62	1860.00	0.00	0.00	19105.44	19062.12	0.36	95312.41	697.96
63	1890.00	0.00	0.00	18975.57	18932.33	0.36	94663.47	697.95
64	1920.00	0.00	0.00	18845.96	18802.81	0.36	94015.84	697.94
65	1950.00	0.00	0.00	18716.61	18673.55	0.36	93369.53	697.93
66	1980.00	0.00	0.00	18587.52	18544.54	0.36	92724.51	697.92
67	2010.00	0.00	0.00	18458.69	18415.80	0.36	92080.80	697.91
68	2040.00	0.00	0.00	18330.12	18287.32	0.36	91438.39	697.90
69	2070.00	0.00	0.00	18201.81	18159.10	0.36	90797.29	697.89
70	2100.00	0.00	0.00	18073.77	18031.15	0.36	90157.51	697.88
71	2130.00	0.00	0.00	17945.99	17903.46	0.35	89519.07	697.87
72	2160.00	0.00	0.00	17818.48	17776.04	0.35	88881.96	697.87
73	2190.00	0.00	0.00	17691.24	17648.88	0.35	88246.18	697.86
74	2220.00	0.00	0.00	17564.26	17521.99	0.35	87611.71	697.85
75	2250.00	0.00	0.00	17437.54	17395.36	0.35	86978.57	697.84
76	2280.00	0.00	0.00	17311.09	17269.00	0.35	86346.75	697.83
77	2310.00	0.00	0.00	17184.90	17142.90	0.35	85716.24	697.82
78	2340.00	0.00	0.00	17058.98	17017.06	0.35	85087.04	697.81
79	2370.00	0.00	0.00	16933.31	16891.48	0.35	84459.15	697.80
80	2400.00	0.00	0.00	16807.91	16766.17	0.35	83832.59	697.79
81	2430.00	0.00	0.00	16682.78	16641.13	0.35	83207.37	697.78
82	2460.00	0.00	0.00	16557.91	16516.35	0.35	82583.50	697.77
83	2490.00	0.00	0.00	16433.32	16391.85	0.35	81960.96	697.76
84	2520.00	0.00	0.00	16308.99	16267.61	0.34	81339.76	697.75
85	2550.00	0.00	0.00	16184.93	16143.64	0.34	80719.90	697.75
86	2580.00	0.00	0.00	16061.14	16019.93	0.34	80101.37	697.74
87	2610.00	0.00	0.00	15937.61	15896.49	0.34	79484.16	697.73
88	2640.00	0.00	0.00	15814.34	15773.31	0.34	78868.28	697.72
89	2670.00	0.00	0.00	15691.34	15650.40	0.34	78253.72	697.71
90	2700.00	0.00	0.00	15568.61	15527.76	0.34	77640.49	697.70
91	2730.00	0.00	0.00	15446.14	15405.38	0.34	77028.59	697.69
92	2760.00	0.00	0.00	15323.94	15283.27	0.34	76418.05	697.68
93	2790.00	0.00	0.00	15202.02	15161.43	0.34	75808.86	697.67
94	2820.00	0.00	0.00	15080.36	15039.87	0.34	75201.03	697.66
95	2850.00	0.00	0.00	14958.97	14918.57	0.34	74594.54	697.65
96	2880.00	0.00	0.00	14837.86	14797.54	0.34	73989.40	697.65
97	2910.00	0.00	0.00	14717.01	14676.79	0.34	73385.60	697.64
98	2940.00	0.00	0.00	14596.43	14556.29	0.33	72783.14	697.63
99	2970.00	0.00	0.00	14476.12	14436.07	0.33	72182.02	697.62
100	3000.00	0.00	0.00	14356.07	14316.11	0.33	71582.23	697.61
101	3030.00	0.00	0.00	14236.29	14196.42	0.33	70983.78	697.60
102	3060.00	0.00	0.00	14116.78	14077.00	0.33	70386.67	697.59
103	3090.00	0.00	0.00	13997.54	13957.85	0.33	69790.93	697.58
104	3120.00	0.00	0.00	13878.57	13838.98	0.33	69196.55	697.57
105	3150.00	0.00	0.00	13759.88	13720.38	0.33	68603.54	697.57
106	3180.00	0.00	0.00	13641.46	13602.05	0.33	68011.89	697.56
107	3210.00	0.00	0.00	13523.32	13483.99	0.33	67421.60	697.55
108	3240.00	0.00	0.00	13405.44	13366.21	0.33	66832.67	697.54
109	3270.00	0.00	0.00	13287.83	13248.69	0.33	66245.08	697.53
110	3300.00	0.00	0.00	13170.50	13131.44	0.33	65658.85	697.52
111	3330.00	0.00	0.00	13053.43	13014.47	0.32	65073.96	697.51
112	3360.00	0.00	0.00	12936.63	12897.76	0.32	64490.41	697.50
113	3390.00	0.00	0.00	12820.10	12781.32	0.32	63908.21	697.49
114	3420.00	0.00	0.00	12703.85	12665.16	0.32	63327.39	697.49
115	3450.00	0.00	0.00	12587.87	12549.27	0.32	62747.95	697.48
116	3480.00	0.00	0.00	12472.16	12433.66	0.32	62169.89	697.47
117	3510.00	0.00	0.00	12356.74	12318.32	0.32	61593.20	697.46
118	3540.00	0.00	0.00	12241.58	12203.26	0.32	61017.89	697.45
119	3570.00	0.00	0.00	12126.70	12088.47	0.32	60443.94	697.44
120	3600.00	0.00	0.00	12012.09	11973.95	0.32	59871.35	697.43

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
121	3630.00	0.00	0.00	11897.76	11859.71	0.32	59300.13	697.43
122	3660.00	0.00	0.00	11783.70	11745.74	0.32	58730.27	697.42
123	3690.00	0.00	0.00	11669.91	11632.04	0.32	58161.76	697.41
124	3720.00	0.00	0.00	11556.39	11518.61	0.31	57594.60	697.40
125	3750.00	0.00	0.00	11443.14	11405.45	0.31	57028.82	697.39
126	3780.00	0.00	0.00	11330.17	11292.58	0.31	56464.44	697.38
127	3810.00	0.00	0.00	11217.48	11179.98	0.31	55901.45	697.37
128	3840.00	0.00	0.00	11105.07	11067.66	0.31	55339.85	697.36
129	3870.00	0.00	0.00	10992.93	10955.62	0.31	54779.63	697.36
130	3900.00	0.00	0.00	10881.07	10843.85	0.31	54220.80	697.35
131	3930.00	0.00	0.00	10769.49	10732.36	0.31	53663.34	697.34
132	3960.00	0.00	0.00	10658.18	10621.14	0.31	53107.26	697.33
133	3990.00	0.00	0.00	10547.15	10510.20	0.31	52552.55	697.32
134	4020.00	0.00	0.00	10436.39	10399.54	0.31	51999.21	697.31
135	4050.00	0.00	0.00	10325.91	10289.14	0.31	51447.24	697.31
136	4080.00	0.00	0.00	10215.70	10179.02	0.31	50896.63	697.30
137	4110.00	0.00	0.00	10105.76	10069.18	0.30	50347.42	697.29
138	4140.00	0.00	0.00	9996.11	9959.62	0.30	49799.62	697.28
139	4170.00	0.00	0.00	9886.74	9850.34	0.30	49253.22	697.27
140	4200.00	0.00	0.00	9777.64	9741.34	0.30	48708.22	697.26
141	4230.00	0.00	0.00	9668.83	9632.62	0.30	48164.63	697.26
142	4260.00	0.00	0.00	9560.30	9524.18	0.30	47622.42	697.25
143	4290.00	0.00	0.00	9452.04	9416.02	0.30	47081.61	697.24
144	4320.00	0.00	0.00	9344.07	9308.14	0.30	46542.18	697.23
145	4350.00	0.00	0.00	9236.37	9200.53	0.30	46004.14	697.22
146	4380.00	0.00	0.00	9128.94	9093.20	0.30	45467.48	697.21
147	4410.00	0.00	0.00	9021.80	8986.14	0.30	44932.19	697.21
148	4440.00	0.00	0.00	8914.92	8879.36	0.30	44398.28	697.20
149	4470.00	0.00	0.00	8808.33	8772.86	0.30	43865.78	697.19
150	4500.00	0.00	0.00	8702.02	8666.65	0.29	43334.70	697.18
151	4530.00	0.00	0.00	8595.99	8560.72	0.29	42805.05	697.17
152	4560.00	0.00	0.00	8490.25	8455.07	0.29	42276.81	697.16
153	4590.00	0.00	0.00	8384.79	8349.70	0.29	41749.97	697.16
154	4620.00	0.00	0.00	8279.62	8244.62	0.29	41224.55	697.15
155	4650.00	0.00	0.00	8174.72	8139.82	0.29	40700.53	697.14
156	4680.00	0.00	0.00	8070.10	8035.29	0.29	40177.91	697.13
157	4710.00	0.00	0.00	7965.76	7931.05	0.29	39656.68	697.12
158	4740.00	0.00	0.00	7861.71	7827.08	0.29	39136.85	697.12
159	4770.00	0.00	0.00	7757.92	7723.39	0.29	38618.40	697.11
160	4800.00	0.00	0.00	7654.42	7619.98	0.29	38101.34	697.10
161	4830.00	0.00	0.00	7551.20	7516.85	0.29	37585.70	697.09
162	4860.00	0.00	0.00	7448.26	7414.01	0.29	37071.49	697.08
163	4890.00	0.00	0.00	7345.61	7311.46	0.28	36558.72	697.08
164	4920.00	0.00	0.00	7243.25	7209.19	0.28	36047.38	697.07
165	4950.00	0.00	0.00	7141.17	7107.21	0.28	35537.46	697.06
166	4980.00	0.00	0.00	7039.38	7005.51	0.28	35028.96	697.05
167	5010.00	0.00	0.00	6937.87	6904.09	0.28	34521.88	697.04
168	5040.00	0.00	0.00	6836.64	6802.96	0.28	34016.22	697.04
169	5070.00	0.00	0.00	6735.70	6702.11	0.28	33511.96	697.03
170	5100.00	0.00	0.00	6635.03	6601.54	0.28	33009.11	697.02
171	5130.00	0.00	0.00	6534.65	6501.25	0.28	32507.66	697.01
172	5160.00	0.00	0.00	6434.55	6401.24	0.28	32007.61	697.00
173	5190.00	0.00	0.00	6334.73	6301.52	0.28	31508.97	697.00
174	5220.00	0.00	0.00	6235.20	6202.09	0.28	31011.84	696.99
175	5250.00	0.00	0.00	6135.98	6102.97	0.27	30516.23	696.98
176	5280.00	0.00	0.00	6037.06	6004.15	0.27	30022.14	696.97
177	5310.00	0.00	0.00	5938.44	5905.64	0.27	29529.55	696.96
178	5340.00	0.00	0.00	5840.13	5807.42	0.27	29038.47	696.95
179	5370.00	0.00	0.00	5742.11	5709.51	0.27	28548.89	696.95
180	5400.00	0.00	0.00	5644.40	5611.89	0.27	28060.81	696.94

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
181	5430.00	0.00	0.00	5546.98	5514.57	0.27	27574.22	696.93
182	5460.00	0.00	0.00	5449.86	5417.55	0.27	27089.12	696.92
183	5490.00	0.00	0.00	5353.04	5320.83	0.27	26605.50	696.91
184	5520.00	0.00	0.00	5256.51	5224.40	0.27	26123.36	696.91
185	5550.00	0.00	0.00	5160.28	5128.27	0.27	25642.69	696.90
186	5580.00	0.00	0.00	5064.36	5032.47	0.27	25163.66	696.89
187	5610.00	0.00	0.00	4968.78	4937.00	0.26	24686.32	696.88
188	5640.00	0.00	0.00	4873.54	4841.87	0.26	24210.68	696.87
189	5670.00	0.00	0.00	4778.64	4747.08	0.26	23736.73	696.86
190	5700.00	0.00	0.00	4684.08	4652.63	0.26	23264.46	696.85
191	5730.00	0.00	0.00	4589.85	4558.51	0.26	22793.87	696.85
192	5760.00	0.00	0.00	4495.96	4464.73	0.26	22324.96	696.84
193	5790.00	0.00	0.00	4402.39	4371.28	0.26	21857.71	696.83
194	5820.00	0.00	0.00	4309.17	4278.16	0.26	21392.11	696.82
195	5850.00	0.00	0.00	4216.27	4185.38	0.26	20928.18	696.81
196	5880.00	0.00	0.00	4123.70	4092.92	0.26	20465.89	696.80
197	5910.00	0.00	0.00	4031.47	4000.81	0.26	20005.31	696.79
198	5940.00	0.00	0.00	3939.61	3909.08	0.25	19546.66	696.78
199	5970.00	0.00	0.00	3848.14	3817.73	0.25	19089.93	696.77
200	6000.00	0.00	0.00	3757.05	3726.77	0.25	18635.12	696.76
201	6030.00	0.00	0.00	3666.34	3636.19	0.25	18182.23	696.75
202	6060.00	0.00	0.00	3576.02	3546.00	0.25	17731.23	696.75
203	6090.00	0.00	0.00	3486.07	3456.18	0.25	17282.13	696.74
204	6120.00	0.00	0.00	3396.51	3366.73	0.25	16834.91	696.73
205	6150.00	0.00	0.00	3307.32	3277.67	0.25	16389.57	696.72
206	6180.00	0.00	0.00	3218.50	3188.98	0.25	15946.11	696.71
207	6210.00	0.00	0.00	3130.05	3100.66	0.24	15504.51	696.70
208	6240.00	0.00	0.00	3042.01	3012.76	0.24	15065.01	696.69
209	6270.00	0.00	0.00	2954.41	2925.30	0.24	14627.73	696.68
210	6300.00	0.00	0.00	2867.25	2838.29	0.24	14192.68	696.67
211	6330.00	0.00	0.00	2780.53	2751.73	0.24	13759.83	696.66
212	6360.00	0.00	0.00	2694.26	2665.60	0.24	13329.18	696.65
213	6390.00	0.00	0.00	2608.42	2579.90	0.24	12900.71	696.64
214	6420.00	0.00	0.00	2523.02	2494.65	0.24	12474.42	696.63
215	6450.00	0.00	0.00	2438.05	2409.82	0.24	12050.29	696.61
216	6480.00	0.00	0.00	2353.51	2325.43	0.23	11628.32	696.60
217	6510.00	0.00	0.00	2269.41	2241.48	0.23	11208.57	696.59
218	6540.00	0.00	0.00	2185.80	2158.05	0.23	10791.40	696.58
219	6570.00	0.00	0.00	2102.72	2075.14	0.23	10376.87	696.57
220	6600.00	0.00	0.00	2020.17	1992.76	0.23	9964.95	696.56
221	6630.00	0.00	0.00	1938.13	1910.90	0.23	9555.64	696.55
222	6660.00	0.00	0.00	1856.61	1829.55	0.23	9148.90	696.53
223	6690.00	0.00	0.00	1775.61	1748.72	0.22	8744.73	696.52
224	6720.00	0.00	0.00	1695.12	1668.40	0.22	8343.12	696.51
225	6750.00	0.00	0.00	1615.13	1588.59	0.22	7944.03	696.50
226	6780.00	0.00	0.00	1535.69	1509.35	0.22	7547.83	696.49
227	6810.00	0.00	0.00	1456.88	1430.75	0.22	7154.86	696.47
228	6840.00	0.00	0.00	1378.72	1352.80	0.22	6765.10	696.46
229	6870.00	0.00	0.00	1301.19	1275.49	0.21	6378.51	696.45
230	6900.00	0.00	0.00	1224.30	1198.80	0.21	5995.09	696.43
231	6930.00	0.00	0.00	1148.03	1122.75	0.21	5614.79	696.42
232	6960.00	0.00	0.00	1072.39	1047.31	0.21	5237.59	696.41
233	6990.00	0.00	0.00	997.70	973.92	0.19	4870.59	696.39
234	7020.00	0.00	0.00	929.05	907.88	0.17	4540.26	696.38
235	7050.00	0.00	0.00	867.92	849.07	0.15	4246.13	696.36
236	7080.00	0.00	0.00	813.49	796.71	0.14	3984.24	696.35
237	7110.00	0.00	0.00	765.03	750.09	0.12	3751.06	696.34
238	7140.00	0.00	0.00	721.88	708.58	0.11	3543.43	696.33
239	7170.00	0.00	0.00	683.46	671.62	0.10	3358.56	696.32
240	7200.00	0.00	0.00	649.25	638.70	0.09	3193.95	696.32

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
241	7230.00	0.00	0.00	618.79	609.40	0.08	3047.39	696.31
242	7260.00	0.00	0.00	591.67	583.31	0.07	2916.88	696.30
243	7290.00	0.00	0.00	567.49	559.93	0.06	2799.99	696.30
244	7320.00	0.00	0.00	545.36	538.34	0.06	2691.98	696.29
245	7350.00	0.00	0.00	524.79	518.27	0.05	2591.60	696.28
246	7380.00	0.00	0.00	505.68	499.61	0.05	2498.31	696.28
247	7410.00	0.00	0.00	487.91	482.27	0.05	2411.61	696.27
248	7440.00	0.00	0.00	471.40	466.16	0.04	2331.02	696.27
249	7470.00	0.00	0.00	456.06	451.19	0.04	2256.13	696.26
250	7500.00	0.00	0.00	441.80	437.27	0.04	2186.53	696.26
251	7530.00	0.00	0.00	428.54	424.33	0.03	2121.85	696.25
252	7560.00	0.00	0.00	416.22	412.31	0.03	2061.73	696.25
253	7590.00	0.00	0.00	404.77	401.14	0.03	2005.86	696.25
254	7620.00	0.00	0.00	394.13	390.76	0.03	1953.93	696.24
255	7650.00	0.00	0.00	384.25	381.11	0.03	1905.67	696.24
256	7680.00	0.00	0.00	375.06	372.14	0.02	1860.81	696.24
257	7710.00	0.00	0.00	366.51	363.80	0.02	1819.13	696.23
258	7740.00	0.00	0.00	358.58	356.06	0.02	1780.39	696.23
259	7770.00	0.00	0.00	351.20	348.86	0.02	1744.38	696.23
260	7800.00	0.00	0.00	344.34	342.17	0.02	1710.92	696.23
261	7830.00	0.00	0.00	337.97	335.95	0.02	1679.82	696.23
262	7860.00	0.00	0.00	332.05	330.17	0.02	1650.92	696.22
263	7890.00	0.00	0.00	326.54	324.80	0.01	1624.05	696.22
264	7920.00	0.00	0.00	321.43	319.80	0.01	1599.09	696.22
265	7950.00	0.00	0.00	316.67	315.16	0.01	1575.89	696.22
266	7980.00	0.00	0.00	312.26	310.85	0.01	1554.32	696.22
267	8010.00	0.00	0.00	308.15	306.85	0.01	1534.28	696.22
268	8040.00	0.00	0.00	304.33	303.12	0.01	1515.65	696.22
269	8070.00	0.00	0.00	300.79	299.66	0.01	1498.34	696.21
270	8100.00	0.00	0.00	297.49	296.44	0.01	1482.26	696.21
271	8130.00	0.00	0.00	294.42	293.45	0.01	1467.30	696.21
272	8160.00	0.00	0.00	291.58	290.67	0.01	1453.41	696.21
273	8190.00	0.00	0.00	288.93	288.09	0.01	1440.49	696.21
274	8220.00	0.00	0.00	286.47	285.69	0.01	1428.49	696.21
275	8250.00	0.00	0.00	284.19	283.46	0.01	1417.33	696.21
276	8280.00	0.00	0.00	282.06	281.39	0.01	1406.97	696.21
277	8310.00	0.00	0.00	280.09	279.46	0.01	1397.33	696.21
278	8340.00	0.00	0.00	278.25	277.67	0.00	1388.38	696.21

UNIT HYDROGRAPH REPORT

Number	Name	Type	Defined
<None>			

Hydrograph Number: 9
Name: 2 Year Thru Phase 1 Pond
Type: Reservoir: Storage Indication

[HYDROGRAPH INFORMATION]

Peak Flow (Qp)	=	2.97 (cfs)
Time to Peak (Tp)	=	1060.00 (min)
Time of Base (Tb)	=	13920.00 (min)
Volume	=	4.89 (ac-ft)
Time Step	=	10.00 (min)
Peak Elevation	=	698.63 (ft)
Detention Time	=	NA

[RESERVOIR STRUCTURE INFORMATION]

Number	=	1
Name	=	Phase 1 Pond
Storage Type	=	User-Defined Area
Maximum Storage	=	248249.00 (cu ft)
Maximum Discharge	=	14.31 (cfs)

[INFLOW HYDROGRAPH INFORMATION]

Number	=	2
Name	=	2 Year Developed
Peak Flow (Qp)	=	17.00 (cfs)
Time to Peak (Tp)	=	780.00 (min)
Time of Base (Tb)	=	1560.00 (min)
Volume	=	4.92 (ac-ft)
Flow Multiplier	=	1.00

[EQUATION]

$0.5(I1+I2)dt + S1-0.5(O2)dt$

Where:

I1 = Previous Inflow
I2 = Current Inflow
dt = Time increment
S1 = Previous Storage
S2 = Current Storage
O1 = Previous Outflow
O2 = Current Outflow

$A = 0.5\ (I1+I2)\ dt$
$B = S1 - 0.5\ (O1)\ dt$
$C = S2 + 0.5\ (O2)\ dt$

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
1	30.00	0.05	0.08	3.64	8.18	0.00	40.91	696.01
2	60.00	0.09	0.17	22.73	32.73	0.00	163.64	696.05
3	90.00	0.14	0.26	58.18	73.64	0.00	368.18	696.11
4	120.00	0.18	0.35	110.00	130.91	0.00	654.55	696.14
5	150.00	0.23	0.44	178.18	204.55	0.00	1022.73	696.17
6	180.00	0.27	0.53	262.62	293.84	0.01	1469.26	696.21
7	210.00	0.32	0.62	359.39	393.67	0.03	1968.49	696.24
8	240.00	0.36	0.71	465.11	502.22	0.05	2511.37	696.28
9	270.00	0.41	0.80	579.08	618.45	0.08	3092.63	696.31
10	300.00	0.45	0.89	698.04	738.24	0.12	3691.78	696.34
11	330.00	0.50	0.98	819.40	860.35	0.16	4302.52	696.36
12	360.00	0.55	1.08	942.91	984.52	0.20	4923.57	696.39
13	390.00	0.59	1.17	1069.65	1114.48	0.21	5573.44	696.42
14	420.00	0.64	1.26	1209.22	1259.12	0.21	6296.67	696.44
15	450.00	0.68	1.35	1363.95	1418.88	0.22	7095.47	696.47
16	480.00	0.73	1.44	1533.72	1593.63	0.22	7969.26	696.50
17	510.00	0.77	1.53	1718.48	1783.44	0.22	8918.31	696.53
18	540.00	0.82	1.62	1918.38	1988.36	0.23	9942.93	696.56
19	570.00	0.86	1.71	2133.32	2208.30	0.23	11042.64	696.59
20	600.00	0.91	1.80	2363.24	2443.22	0.24	12217.30	696.62
21	630.00	0.95	1.89	2608.24	2693.27	0.24	13467.52	696.65
22	660.00	1.00	1.98	2868.33	2958.36	0.24	14793.01	696.68
23	690.00	1.00	2.00	3139.79	3230.29	0.25	16152.67	696.71
24	720.00	1.00	2.00	3410.91	3501.03	0.25	17506.42	696.74
25	750.00	2.00	3.00	3680.90	3830.60	0.25	19154.27	696.78
26	780.00	3.00	5.67	4289.20	4598.02	0.26	22991.38	696.85
27	810.00	7.00	12.00	5494.32	6181.59	0.28	30909.33	696.99
28	840.00	13.33	25.33	8333.56	9817.84	0.30	49090.73	697.27
29	870.00	16.17	32.17	13182.42	15072.62	0.34	75364.79	697.67
30	900.00	15.00	30.33	18918.84	20680.24	0.61	103404.26	698.08
31	930.00	10.50	22.50	23569.63	24684.90	2.13	123435.12	698.36
32	960.00	7.00	15.33	26332.31	26941.14	2.66	134718.98	698.52
33	990.00	4.89	10.89	27880.26	28188.95	2.90	140959.27	698.60
34	1020.00	3.33	7.22	28492.18	28570.12	2.97	142865.45	698.63
35	1050.00	3.00	6.00	28596.95	28600.16	2.97	143015.65	698.63
36	1080.00	2.33	5.00	28586.58	28530.64	2.96	142668.00	698.63
37	1110.00	2.00	4.00	28324.11	28214.27	2.91	141085.88	698.60
38	1140.00	1.33	3.00	27981.95	27820.50	2.83	139116.66	698.58
39	1170.00	1.00	2.00	27410.89	27203.44	2.71	136030.73	698.53
40	1200.00	1.00	2.00	26802.90	26609.77	2.59	133061.79	698.49
41	1230.00	1.00	2.00	26238.52	26060.31	2.47	130313.86	698.46
42	1260.00	1.00	2.00	25718.05	25553.75	2.35	127780.48	698.42
43	1290.00	1.00	2.00	25238.29	25087.42	2.24	125448.30	698.39
44	1320.00	1.00	2.00	24800.14	24663.42	2.12	123327.73	698.36
45	1350.00	1.00	2.00	24403.09	24279.19	2.02	121406.03	698.33
46	1380.00	1.00	2.00	24043.27	23930.99	1.92	119664.56	698.31
47	1410.00	1.00	2.00	23718.71	23620.08	1.80	118109.39	698.28
48	1440.00	1.00	2.00	23437.35	23352.78	1.69	116772.33	698.27
49	1470.00	1.00	2.00	23196.10	23123.58	1.59	115625.86	698.25
50	1500.00	0.92	1.88	22986.80	22917.43	1.50	114594.67	698.23
51	1530.00	0.79	1.63	22774.55	22701.16	1.41	113512.87	698.22
52	1560.00	0.67	1.38	22550.84	22474.02	1.31	112376.67	698.20
53	1590.00	0.54	1.13	22317.32	22237.53	1.21	111193.68	698.19
54	1620.00	0.42	0.88	22075.30	21992.95	1.11	109970.30	698.17
55	1650.00	0.29	0.63	21825.99	21741.45	1.00	108712.26	698.15
56	1680.00	0.17	0.38	21570.43	21484.01	0.89	107424.50	698.13
57	1710.00	0.04	0.13	21309.50	21221.47	0.78	106111.23	698.11
58	1740.00	0.00	0.00	21046.41	20963.47	0.68	104820.75	698.10
59	1770.00	0.00	0.00	20804.96	20729.02	0.62	103648.23	698.08
60	1800.00	0.00	0.00	20583.49	20513.78	0.57	102571.77	698.06

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
61	1830.00	0.00	0.00	20380.18	20316.18	0.53	101583.51	698.05
62	1860.00	0.00	0.00	20193.52	20134.76	0.48	100676.22	698.04
63	1890.00	0.00	0.00	20022.15	19968.21	0.44	99843.26	698.02
64	1920.00	0.00	0.00	19864.83	19815.30	0.41	99078.55	698.01
65	1950.00	0.00	0.00	19720.39	19674.92	0.37	98376.49	698.00
66	1980.00	0.00	0.00	19587.00	19543.36	0.36	97718.60	697.99
67	2010.00	0.00	0.00	19456.16	19412.60	0.36	97064.81	697.98
68	2040.00	0.00	0.00	19325.57	19282.10	0.36	96412.33	697.97
69	2070.00	0.00	0.00	19195.26	19151.87	0.36	95761.18	697.96
70	2100.00	0.00	0.00	19065.20	19021.91	0.36	95111.34	697.96
71	2130.00	0.00	0.00	18935.41	18892.20	0.36	94462.81	697.95
72	2160.00	0.00	0.00	18805.88	18762.76	0.36	93815.59	697.94
73	2190.00	0.00	0.00	18676.61	18633.58	0.36	93169.67	697.93
74	2220.00	0.00	0.00	18547.60	18504.65	0.36	92525.06	697.92
75	2250.00	0.00	0.00	18418.85	18375.99	0.36	91881.75	697.91
76	2280.00	0.00	0.00	18290.36	18247.59	0.36	91239.74	697.90
77	2310.00	0.00	0.00	18162.14	18119.45	0.36	90599.05	697.89
78	2340.00	0.00	0.00	18034.18	17991.58	0.35	89959.69	697.88
79	2370.00	0.00	0.00	17906.48	17863.98	0.35	89321.66	697.87
80	2400.00	0.00	0.00	17779.06	17736.64	0.35	88684.96	697.86
81	2430.00	0.00	0.00	17651.89	17609.56	0.35	88049.59	697.85
82	2460.00	0.00	0.00	17525.00	17482.76	0.35	87415.53	697.84
83	2490.00	0.00	0.00	17398.36	17356.21	0.35	86782.80	697.83
84	2520.00	0.00	0.00	17271.99	17229.93	0.35	86151.38	697.83
85	2550.00	0.00	0.00	17145.88	17103.91	0.35	85521.28	697.82
86	2580.00	0.00	0.00	17020.04	16978.15	0.35	84892.49	697.81
87	2610.00	0.00	0.00	16894.46	16852.65	0.35	84265.01	697.80
88	2640.00	0.00	0.00	16769.14	16727.42	0.35	83638.86	697.79
89	2670.00	0.00	0.00	16644.09	16602.46	0.35	83014.06	697.78
90	2700.00	0.00	0.00	16519.31	16477.77	0.35	82390.60	697.77
91	2730.00	0.00	0.00	16394.80	16353.35	0.35	81768.48	697.76
92	2760.00	0.00	0.00	16270.55	16229.19	0.34	81147.69	697.75
93	2790.00	0.00	0.00	16146.57	16105.30	0.34	80528.24	697.74
94	2820.00	0.00	0.00	16022.86	15981.68	0.34	79910.12	697.73
95	2850.00	0.00	0.00	15899.41	15858.32	0.34	79293.33	697.72
96	2880.00	0.00	0.00	15776.23	15735.23	0.34	78677.86	697.72
97	2910.00	0.00	0.00	15653.31	15612.40	0.34	78063.71	697.71
98	2940.00	0.00	0.00	15530.66	15489.84	0.34	77450.88	697.70
99	2970.00	0.00	0.00	15408.28	15367.54	0.34	76839.40	697.69
100	3000.00	0.00	0.00	15286.16	15245.52	0.34	76229.28	697.68
101	3030.00	0.00	0.00	15164.32	15123.77	0.34	75620.51	697.67
102	3060.00	0.00	0.00	15042.75	15002.28	0.34	75013.10	697.66
103	3090.00	0.00	0.00	14921.44	14881.07	0.34	74407.03	697.65
104	3120.00	0.00	0.00	14800.41	14760.13	0.34	73802.30	697.64
105	3150.00	0.00	0.00	14679.64	14639.45	0.33	73198.92	697.63
106	3180.00	0.00	0.00	14559.15	14519.04	0.33	72596.88	697.62
107	3210.00	0.00	0.00	14438.92	14398.90	0.33	71996.17	697.62
108	3240.00	0.00	0.00	14318.95	14279.03	0.33	71396.79	697.61
109	3270.00	0.00	0.00	14199.26	14159.42	0.33	70798.75	697.60
110	3300.00	0.00	0.00	14079.83	14040.08	0.33	70202.06	697.59
111	3330.00	0.00	0.00	13960.68	13921.02	0.33	69606.74	697.58
112	3360.00	0.00	0.00	13841.80	13802.23	0.33	69012.79	697.57
113	3390.00	0.00	0.00	13723.19	13683.71	0.33	68420.21	697.56
114	3420.00	0.00	0.00	13604.85	13565.47	0.33	67828.98	697.55
115	3450.00	0.00	0.00	13486.79	13447.49	0.33	67239.11	697.54
116	3480.00	0.00	0.00	13369.00	13329.79	0.33	66650.59	697.54
117	3510.00	0.00	0.00	13251.47	13212.36	0.33	66063.42	697.53
118	3540.00	0.00	0.00	13134.22	13095.20	0.33	65477.60	697.52
119	3570.00	0.00	0.00	13017.24	12978.30	0.32	64893.13	697.51
120	3600.00	0.00	0.00	12900.52	12861.68	0.32	64310.00	697.50

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
121	3630.00	0.00	0.00	12784.08	12745.32	0.32	63728.22	697.49
122	3660.00	0.00	0.00	12667.91	12629.24	0.32	63147.83	697.48
123	3690.00	0.00	0.00	12552.01	12513.44	0.32	62568.82	697.47
124	3720.00	0.00	0.00	12436.39	12397.92	0.32	61991.18	697.47
125	3750.00	0.00	0.00	12321.05	12282.66	0.32	61414.92	697.46
126	3780.00	0.00	0.00	12205.98	12167.69	0.32	60840.03	697.45
127	3810.00	0.00	0.00	12091.19	12052.98	0.32	60266.50	697.44
128	3840.00	0.00	0.00	11976.66	11938.55	0.32	59694.34	697.43
129	3870.00	0.00	0.00	11862.41	11824.39	0.32	59123.54	697.42
130	3900.00	0.00	0.00	11748.44	11710.50	0.32	58554.10	697.41
131	3930.00	0.00	0.00	11634.73	11596.89	0.32	57986.01	697.41
132	3960.00	0.00	0.00	11521.29	11483.54	0.31	57419.27	697.40
133	3990.00	0.00	0.00	11408.13	11370.47	0.31	56853.93	697.39
134	4020.00	0.00	0.00	11295.25	11257.68	0.31	56289.97	697.38
135	4050.00	0.00	0.00	11182.64	11145.17	0.31	55727.41	697.37
136	4080.00	0.00	0.00	11070.32	11032.94	0.31	55166.24	697.36
137	4110.00	0.00	0.00	10958.27	10920.98	0.31	54606.45	697.35
138	4140.00	0.00	0.00	10846.50	10809.30	0.31	54048.05	697.35
139	4170.00	0.00	0.00	10735.00	10697.89	0.31	53491.02	697.34
140	4200.00	0.00	0.00	10623.78	10586.76	0.31	52935.36	697.33
141	4230.00	0.00	0.00	10512.83	10475.91	0.31	52381.08	697.32
142	4260.00	0.00	0.00	10402.16	10365.33	0.31	51828.16	697.31
143	4290.00	0.00	0.00	10291.76	10255.02	0.31	51276.61	697.30
144	4320.00	0.00	0.00	10181.63	10144.98	0.31	50726.43	697.29
145	4350.00	0.00	0.00	10071.78	10035.23	0.30	50177.65	697.29
146	4380.00	0.00	0.00	9962.21	9925.75	0.30	49630.29	697.28
147	4410.00	0.00	0.00	9852.93	9816.56	0.30	49084.32	697.27
148	4440.00	0.00	0.00	9743.92	9707.65	0.30	48539.76	697.26
149	4470.00	0.00	0.00	9635.20	9599.02	0.30	47996.60	697.25
150	4500.00	0.00	0.00	9526.75	9490.66	0.30	47454.82	697.24
151	4530.00	0.00	0.00	9418.58	9382.59	0.30	46914.44	697.24
152	4560.00	0.00	0.00	9310.69	9274.79	0.30	46375.44	697.23
153	4590.00	0.00	0.00	9203.08	9167.27	0.30	45837.83	697.22
154	4620.00	0.00	0.00	9095.74	9060.02	0.30	45301.59	697.21
155	4650.00	0.00	0.00	8988.68	8953.05	0.30	44766.73	697.20
156	4680.00	0.00	0.00	8881.89	8846.35	0.30	44233.25	697.19
157	4710.00	0.00	0.00	8775.38	8739.94	0.30	43701.19	697.19
158	4740.00	0.00	0.00	8669.16	8633.82	0.29	43170.56	697.18
159	4770.00	0.00	0.00	8563.22	8527.97	0.29	42641.34	697.17
160	4800.00	0.00	0.00	8457.57	8422.41	0.29	42113.53	697.16
161	4830.00	0.00	0.00	8352.20	8317.14	0.29	41587.14	697.15
162	4860.00	0.00	0.00	8247.11	8212.14	0.29	41062.15	697.15
163	4890.00	0.00	0.00	8142.30	8107.42	0.29	40538.56	697.14
164	4920.00	0.00	0.00	8037.77	8002.98	0.29	40016.37	697.13
165	4950.00	0.00	0.00	7933.51	7898.83	0.29	39495.58	697.12
166	4980.00	0.00	0.00	7829.54	7794.95	0.29	38976.17	697.11
167	5010.00	0.00	0.00	7725.85	7691.34	0.29	38458.16	697.10
168	5040.00	0.00	0.00	7622.43	7588.02	0.29	37941.53	697.10
169	5070.00	0.00	0.00	7519.29	7484.98	0.29	37426.33	697.09
170	5100.00	0.00	0.00	7416.45	7382.23	0.29	36912.57	697.08
171	5130.00	0.00	0.00	7313.89	7279.76	0.28	36400.24	697.07
172	5160.00	0.00	0.00	7211.61	7177.58	0.28	35889.34	697.06
173	5190.00	0.00	0.00	7109.62	7075.69	0.28	35379.86	697.06
174	5220.00	0.00	0.00	7007.92	6974.08	0.28	34871.80	697.05
175	5250.00	0.00	0.00	6906.50	6872.75	0.28	34365.16	697.04
176	5280.00	0.00	0.00	6805.36	6771.71	0.28	33859.93	697.03
177	5310.00	0.00	0.00	6704.50	6670.94	0.28	33356.11	697.02
178	5340.00	0.00	0.00	6603.92	6570.46	0.28	32853.70	697.02
179	5370.00	0.00	0.00	6503.63	6470.26	0.28	32352.68	697.01
180	5400.00	0.00	0.00	6403.61	6370.34	0.28	31853.06	697.00

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
181	5430.00	0.00	0.00	6303.88	6270.70	0.28	31354.89	696.99
182	5460.00	0.00	0.00	6204.45	6171.37	0.28	30858.23	696.99
183	5490.00	0.00	0.00	6105.32	6072.34	0.27	30363.09	696.98
184	5520.00	0.00	0.00	6006.49	5973.62	0.27	29869.46	696.97
185	5550.00	0.00	0.00	5907.97	5875.19	0.27	29377.34	696.96
186	5580.00	0.00	0.00	5809.75	5777.07	0.27	28886.72	696.95
187	5610.00	0.00	0.00	5711.82	5679.25	0.27	28397.61	696.94
188	5640.00	0.00	0.00	5614.20	5581.73	0.27	27909.99	696.94
189	5670.00	0.00	0.00	5516.88	5484.50	0.27	27423.86	696.93
190	5700.00	0.00	0.00	5419.85	5387.57	0.27	26939.22	696.92
191	5730.00	0.00	0.00	5323.12	5290.94	0.27	26456.05	696.91
192	5760.00	0.00	0.00	5226.69	5194.61	0.27	25974.37	696.90
193	5790.00	0.00	0.00	5130.55	5098.57	0.27	25494.19	696.90
194	5820.00	0.00	0.00	5034.73	5002.87	0.27	25015.68	696.89
195	5850.00	0.00	0.00	4939.26	4907.51	0.26	24538.87	696.88
196	5880.00	0.00	0.00	4844.12	4812.49	0.26	24063.75	696.87
197	5910.00	0.00	0.00	4749.33	4717.80	0.26	23590.32	696.86
198	5940.00	0.00	0.00	4654.87	4623.45	0.26	23118.58	696.85
199	5970.00	0.00	0.00	4560.74	4529.44	0.26	22648.51	696.84
200	6000.00	0.00	0.00	4466.95	4435.76	0.26	22180.10	696.83
201	6030.00	0.00	0.00	4373.49	4342.41	0.26	21713.37	696.83
202	6060.00	0.00	0.00	4280.37	4249.40	0.26	21248.29	696.82
203	6090.00	0.00	0.00	4187.57	4156.72	0.26	20784.86	696.81
204	6120.00	0.00	0.00	4095.11	4064.36	0.26	20323.08	696.80
205	6150.00	0.00	0.00	4002.99	3972.36	0.26	19863.09	696.79
206	6180.00	0.00	0.00	3911.25	3880.75	0.25	19405.04	696.78
207	6210.00	0.00	0.00	3819.89	3789.53	0.25	18948.91	696.77
208	6240.00	0.00	0.00	3728.92	3698.69	0.25	18494.69	696.76
209	6270.00	0.00	0.00	3638.34	3608.23	0.25	18042.38	696.75
210	6300.00	0.00	0.00	3548.13	3518.14	0.25	17591.97	696.74
211	6330.00	0.00	0.00	3458.30	3428.44	0.25	17143.45	696.73
212	6360.00	0.00	0.00	3368.85	3339.12	0.25	16696.82	696.72
213	6390.00	0.00	0.00	3279.77	3250.17	0.25	16252.06	696.71
214	6420.00	0.00	0.00	3191.07	3161.59	0.25	15809.17	696.71
215	6450.00	0.00	0.00	3102.75	3073.39	0.24	15368.19	696.70
216	6480.00	0.00	0.00	3014.84	2985.63	0.24	14929.37	696.68
217	6510.00	0.00	0.00	2927.37	2898.32	0.24	14492.79	696.67
218	6540.00	0.00	0.00	2840.35	2811.44	0.24	14058.42	696.66
219	6570.00	0.00	0.00	2753.77	2725.01	0.24	13626.25	696.65
220	6600.00	0.00	0.00	2667.63	2639.02	0.24	13196.28	696.64
221	6630.00	0.00	0.00	2581.93	2553.46	0.24	12768.49	696.63
222	6660.00	0.00	0.00	2496.66	2468.34	0.24	12342.87	696.62
223	6690.00	0.00	0.00	2411.83	2383.65	0.23	11919.41	696.61
224	6720.00	0.00	0.00	2327.42	2299.39	0.23	11498.09	696.60
225	6750.00	0.00	0.00	2243.46	2215.59	0.23	11079.12	696.59
226	6780.00	0.00	0.00	2160.02	2132.32	0.23	10662.77	696.58
227	6810.00	0.00	0.00	2077.10	2049.58	0.23	10249.05	696.57
228	6840.00	0.00	0.00	1994.71	1967.36	0.23	9837.94	696.55
229	6870.00	0.00	0.00	1912.83	1885.66	0.23	9429.42	696.54
230	6900.00	0.00	0.00	1831.48	1804.47	0.22	9023.48	696.53
231	6930.00	0.00	0.00	1750.63	1723.80	0.22	8620.11	696.52
232	6960.00	0.00	0.00	1670.30	1643.63	0.22	8219.28	696.51
233	6990.00	0.00	0.00	1590.47	1563.98	0.22	7821.01	696.50
234	7020.00	0.00	0.00	1511.22	1484.94	0.22	7425.81	696.48
235	7050.00	0.00	0.00	1432.61	1406.55	0.22	7033.84	696.47
236	7080.00	0.00	0.00	1354.64	1328.80	0.22	6645.06	696.45
237	7110.00	0.00	0.00	1277.31	1251.68	0.21	6259.46	696.44
238	7140.00	0.00	0.00	1200.62	1175.19	0.21	5877.00	696.43
239	7170.00	0.00	0.00	1124.54	1099.32	0.21	5497.67	696.41
240	7200.00	0.00	0.00	1049.09	1024.08	0.21	5121.42	696.40

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
241	7230.00	0.00	0.00	975.60	952.66	0.19	4764.24	696.39
242	7260.00	0.00	0.00	909.37	888.95	0.17	4445.57	696.37
243	7290.00	0.00	0.00	850.40	832.22	0.15	4161.82	696.36
244	7320.00	0.00	0.00	797.89	781.70	0.13	3909.17	696.35
245	7350.00	0.00	0.00	751.14	736.73	0.12	3684.22	696.34
246	7380.00	0.00	0.00	709.51	696.68	0.10	3483.92	696.33
247	7410.00	0.00	0.00	672.45	661.02	0.09	3305.57	696.32
248	7440.00	0.00	0.00	639.45	629.27	0.08	3146.77	696.31
249	7470.00	0.00	0.00	610.06	601.00	0.07	3005.37	696.31
250	7500.00	0.00	0.00	583.90	575.83	0.07	2879.48	696.30
251	7530.00	0.00	0.00	560.47	553.08	0.06	2765.72	696.29
252	7560.00	0.00	0.00	538.84	531.97	0.06	2660.13	696.29
253	7590.00	0.00	0.00	518.73	512.35	0.05	2562.00	696.28
254	7620.00	0.00	0.00	500.04	494.11	0.05	2470.80	696.28
255	7650.00	0.00	0.00	482.67	477.16	0.05	2386.04	696.27
256	7680.00	0.00	0.00	466.53	461.41	0.04	2307.26	696.27
257	7710.00	0.00	0.00	451.53	446.77	0.04	2234.05	696.26
258	7740.00	0.00	0.00	437.59	433.17	0.04	2166.01	696.26
259	7770.00	0.00	0.00	424.63	420.52	0.03	2102.77	696.25
260	7800.00	0.00	0.00	412.59	408.77	0.03	2044.00	696.25
261	7830.00	0.00	0.00	401.40	397.85	0.03	1989.38	696.25
262	7860.00	0.00	0.00	391.00	387.70	0.03	1938.61	696.24
263	7890.00	0.00	0.00	381.33	378.26	0.03	1891.44	696.24
264	7920.00	0.00	0.00	372.35	369.49	0.02	1847.59	696.24
265	7950.00	0.00	0.00	364.00	361.35	0.02	1806.84	696.23
266	7980.00	0.00	0.00	356.24	353.77	0.02	1768.96	696.23
267	8010.00	0.00	0.00	349.02	346.73	0.02	1733.77	696.23
268	8040.00	0.00	0.00	342.32	340.19	0.02	1701.05	696.23
269	8070.00	0.00	0.00	336.09	334.11	0.02	1670.65	696.23
270	8100.00	0.00	0.00	330.30	328.46	0.02	1642.39	696.22
271	8130.00	0.00	0.00	324.92	323.21	0.01	1616.13	696.22
272	8160.00	0.00	0.00	319.92	318.33	0.01	1591.73	696.22
273	8190.00	0.00	0.00	315.27	313.80	0.01	1569.04	696.22
274	8220.00	0.00	0.00	310.95	309.58	0.01	1547.96	696.22
275	8250.00	0.00	0.00	306.94	305.66	0.01	1528.37	696.22
276	8280.00	0.00	0.00	303.21	302.02	0.01	1510.16	696.22
277	8310.00	0.00	0.00	299.74	298.64	0.01	1493.24	696.21
278	8340.00	0.00	0.00	296.52	295.49	0.01	1477.51	696.21
279	8370.00	0.00	0.00	293.52	292.57	0.01	1462.89	696.21
280	8400.00	0.00	0.00	290.74	289.85	0.01	1449.31	696.21
281	8430.00	0.00	0.00	288.15	287.33	0.01	1436.68	696.21
282	8460.00	0.00	0.00	285.75	284.98	0.01	1424.95	696.21
283	8490.00	0.00	0.00	283.51	282.80	0.01	1414.04	696.21
284	8520.00	0.00	0.00	281.44	280.78	0.01	1403.91	696.21
285	8550.00	0.00	0.00	279.51	278.89	0.01	1394.49	696.21
286	8580.00	0.00	0.00	277.71	277.14	0.00	1385.73	696.21

UNIT HYDROGRAPH REPORT

Number	Name	Type	Defined
<None>			

Hydrograph Number: 10
Name: 5 Year Thru Phase 1 Pond
Type: Reservoir: Storage Indication

[HYDROGRAPH INFORMATION]

Peak Flow (Qp)	=	4.41 (cfs)
Time to Peak (Tp)	=	1040.00 (min)
Time of Base (Tb)	=	14030.00 (min)
Volume	=	6.33 (ac-ft)
Time Step	=	10.00 (min)
Peak Elevation	=	699.18 (ft)
Detention Time	=	NA

[RESERVOIR STRUCTURE INFORMATION]

Number	=	1
Name	=	Phase 1 Pond
Storage Type	=	User-Defined Area
Maximum Storage	=	248249.00 (cu ft)
Maximum Discharge	=	14.31 (cfs)

[INFLOW HYDROGRAPH INFORMATION]

Number	=	3
Name	=	5 Year Developed
Peak Flow (Qp)	=	23.00 (cfs)
Time to Peak (Tp)	=	780.00 (min)
Time of Base (Tb)	=	1560.00 (min)
Volume	=	6.36 (ac-ft)
Flow Multiplier	=	1.00

[EQUATION]

$0.5(I1+I2)dt + S1-0.5(O2)dt$

Where:

I1 = Previous Inflow
I2 = Current Inflow
dt = Time increment
S1 = Previous Storage
S2 = Current Storage
O1 = Previous Outflow
O2 = Current Outflow

$A = 0.5\ (I1+I2)\ dt$
$B = S1 - 0.5\ (O1)\ dt$
$C = S2 + 0.5\ (O2)\ dt$

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
1	30.00	0.05	0.08	3.64	8.18	0.00	40.91	696.01
2	60.00	0.09	0.17	22.73	32.73	0.00	163.64	696.05
3	90.00	0.14	0.26	58.18	73.64	0.00	368.18	696.11
4	120.00	0.18	0.35	110.00	130.91	0.00	654.55	696.14
5	150.00	0.23	0.44	178.18	204.55	0.00	1022.73	696.17
6	180.00	0.27	0.53	262.62	293.84	0.01	1469.26	696.21
7	210.00	0.32	0.62	359.39	393.67	0.03	1968.49	696.24
8	240.00	0.36	0.71	465.11	502.22	0.05	2511.37	696.28
9	270.00	0.41	0.80	579.08	618.45	0.08	3092.63	696.31
10	300.00	0.45	0.89	698.04	738.24	0.12	3691.78	696.34
11	330.00	0.50	0.98	819.40	860.35	0.16	4302.52	696.36
12	360.00	0.55	1.08	942.91	984.52	0.20	4923.57	696.39
13	390.00	0.59	1.17	1069.65	1114.48	0.21	5573.44	696.42
14	420.00	0.64	1.26	1209.22	1259.12	0.21	6296.67	696.44
15	450.00	0.68	1.35	1363.95	1418.88	0.22	7095.47	696.47
16	480.00	0.73	1.44	1533.72	1593.63	0.22	7969.26	696.50
17	510.00	0.77	1.53	1718.48	1783.44	0.22	8918.31	696.53
18	540.00	0.82	1.62	1918.38	1988.36	0.23	9942.93	696.56
19	570.00	0.86	1.71	2133.32	2208.30	0.23	11042.64	696.59
20	600.00	0.91	1.80	2363.24	2443.22	0.24	12217.30	696.62
21	630.00	0.95	1.89	2608.24	2693.27	0.24	13467.52	696.65
22	660.00	1.00	1.98	2868.33	2958.36	0.24	14793.01	696.68
23	690.00	1.00	2.00	3139.79	3230.29	0.25	16152.67	696.71
24	720.00	1.22	2.22	3410.91	3514.36	0.25	17573.04	696.74
25	750.00	2.00	4.00	3860.65	4070.06	0.26	20351.56	696.80
26	780.00	4.00	7.67	4707.88	5136.13	0.27	25681.96	696.90
27	810.00	9.00	16.00	6450.86	7377.09	0.28	36886.86	697.08
28	840.00	18.00	34.00	10246.31	12248.76	0.32	61245.41	697.45
29	870.00	21.33	42.33	16788.67	19286.05	0.36	96432.07	697.97
30	900.00	20.00	40.50	24285.61	26440.94	2.55	132217.46	698.48
31	930.00	14.00	30.00	29982.98	31384.30	3.43	156938.64	698.82
32	960.00	10.00	21.33	33482.49	34307.99	3.84	171559.18	699.02
33	990.00	6.89	14.89	35604.21	36007.35	4.15	180057.52	699.13
34	1020.00	5.33	11.22	36477.31	36630.51	4.36	183174.33	699.17
35	1050.00	3.83	8.50	36777.38	36758.71	4.40	183815.55	699.18
36	1080.00	3.00	6.00	36482.39	36328.32	4.26	181662.87	699.15
37	1110.00	2.33	5.00	36018.52	35823.89	4.09	179139.91	699.12
38	1140.00	2.00	4.00	35358.25	35122.80	3.95	175633.73	699.07
39	1170.00	2.00	4.00	34662.67	34437.89	3.86	172208.76	699.02
40	1200.00	2.00	4.00	33998.66	33784.25	3.77	168940.11	698.98
41	1230.00	1.33	3.00	33346.05	33082.80	3.68	165432.37	698.93
42	1260.00	1.00	2.00	32470.68	32162.55	3.55	160830.47	698.87
43	1290.00	1.00	2.00	31562.40	31270.20	3.41	156368.05	698.81
44	1320.00	1.00	2.00	30701.51	30425.17	3.28	152142.27	698.76
45	1350.00	1.00	2.00	29888.15	29627.26	3.15	148152.06	698.70
46	1380.00	1.00	2.00	29121.17	28875.99	3.02	144395.08	698.65
47	1410.00	1.00	2.00	28400.86	28170.70	2.90	140867.97	698.60
48	1440.00	1.00	2.00	27725.69	27510.92	2.77	137568.42	698.56
49	1470.00	1.00	2.00	27096.24	26896.11	2.65	134493.78	698.51
50	1500.00	0.92	1.88	26507.61	26314.80	2.52	131586.63	698.47
51	1530.00	0.79	1.63	25929.85	25737.70	2.39	128700.45	698.43
52	1560.00	0.67	1.38	25353.99	25162.74	2.26	125824.99	698.39
53	1590.00	0.54	1.13	24783.50	24595.68	2.10	122988.92	698.35
54	1620.00	0.42	0.88	24223.45	24038.96	1.95	120204.54	698.31
55	1650.00	0.29	0.63	23674.62	23497.79	1.75	117497.68	698.28
56	1680.00	0.17	0.38	23155.81	22990.28	1.53	114959.08	698.24
57	1710.00	0.04	0.13	22669.25	22513.42	1.33	112573.74	698.21
58	1740.00	0.00	0.00	22212.76	22072.39	1.14	110367.67	698.17
59	1770.00	0.00	0.00	21812.30	21691.89	0.98	108464.35	698.15
60	1800.00	0.00	0.00	21468.79	21365.50	0.84	106831.71	698.12

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
61	1830.00	0.00	0.00	21174.12	21085.53	0.72	105431.25	698.10
62	1860.00	0.00	0.00	20919.62	20840.47	0.65	104205.59	698.09
63	1890.00	0.00	0.00	20688.77	20616.10	0.60	103083.47	698.07
64	1920.00	0.00	0.00	20476.82	20410.11	0.55	102053.28	698.06
65	1950.00	0.00	0.00	20282.25	20221.00	0.50	101107.50	698.04
66	1980.00	0.00	0.00	20103.61	20047.38	0.46	100239.21	698.03
67	2010.00	0.00	0.00	19939.61	19887.99	0.42	99442.06	698.02
68	2040.00	0.00	0.00	19789.05	19741.65	0.39	98710.22	698.01
69	2070.00	0.00	0.00	19650.82	19606.92	0.36	98036.41	698.00
70	2100.00	0.00	0.00	19519.63	19476.03	0.36	97381.97	697.99
71	2130.00	0.00	0.00	19388.92	19345.41	0.36	96728.86	697.98
72	2160.00	0.00	0.00	19258.47	19215.05	0.36	96077.07	697.97
73	2190.00	0.00	0.00	19128.29	19084.96	0.36	95426.59	697.96
74	2220.00	0.00	0.00	18998.37	18955.12	0.36	94777.42	697.95
75	2250.00	0.00	0.00	18868.71	18825.55	0.36	94129.56	697.94
76	2280.00	0.00	0.00	18739.32	18696.24	0.36	93483.02	697.93
77	2310.00	0.00	0.00	18610.18	18567.20	0.36	92837.77	697.92
78	2340.00	0.00	0.00	18481.31	18438.41	0.36	92193.83	697.91
79	2370.00	0.00	0.00	18352.70	18309.88	0.36	91551.19	697.90
80	2400.00	0.00	0.00	18224.34	18181.62	0.36	90909.86	697.89
81	2430.00	0.00	0.00	18096.25	18053.62	0.36	90269.85	697.89
82	2460.00	0.00	0.00	17968.43	17925.88	0.35	89631.18	697.88
83	2490.00	0.00	0.00	17840.87	17798.41	0.35	88993.83	697.87
84	2520.00	0.00	0.00	17713.58	17671.21	0.35	88357.82	697.86
85	2550.00	0.00	0.00	17586.56	17544.27	0.35	87723.12	697.85
86	2580.00	0.00	0.00	17459.79	17417.60	0.35	87089.75	697.84
87	2610.00	0.00	0.00	17333.29	17291.19	0.35	86457.69	697.83
88	2640.00	0.00	0.00	17207.06	17165.04	0.35	85826.95	697.82
89	2670.00	0.00	0.00	17081.09	17039.15	0.35	85197.52	697.81
90	2700.00	0.00	0.00	16955.38	16913.53	0.35	84569.40	697.80
91	2730.00	0.00	0.00	16829.93	16788.17	0.35	83942.60	697.79
92	2760.00	0.00	0.00	16704.75	16663.08	0.35	83317.15	697.78
93	2790.00	0.00	0.00	16579.84	16538.26	0.35	82693.04	697.77
94	2820.00	0.00	0.00	16455.20	16413.71	0.35	82070.27	697.77
95	2850.00	0.00	0.00	16330.82	16289.42	0.34	81448.84	697.76
96	2880.00	0.00	0.00	16206.71	16165.40	0.34	80828.74	697.75
97	2910.00	0.00	0.00	16082.87	16041.65	0.34	80209.97	697.74
98	2940.00	0.00	0.00	15959.30	15918.16	0.34	79592.53	697.73
99	2970.00	0.00	0.00	15835.99	15794.94	0.34	78976.42	697.72
100	3000.00	0.00	0.00	15712.94	15671.99	0.34	78361.63	697.71
101	3030.00	0.00	0.00	15590.16	15549.29	0.34	77748.16	697.70
102	3060.00	0.00	0.00	15467.64	15426.87	0.34	77136.03	697.69
103	3090.00	0.00	0.00	15345.40	15304.71	0.34	76525.25	697.68
104	3120.00	0.00	0.00	15223.42	15182.83	0.34	75915.82	697.67
105	3150.00	0.00	0.00	15101.72	15061.21	0.34	75307.75	697.67
106	3180.00	0.00	0.00	14980.29	14939.87	0.34	74701.03	697.66
107	3210.00	0.00	0.00	14859.12	14818.79	0.34	74095.65	697.65
108	3240.00	0.00	0.00	14738.23	14697.99	0.34	73491.62	697.64
109	3270.00	0.00	0.00	14617.60	14577.45	0.33	72888.93	697.63
110	3300.00	0.00	0.00	14497.24	14457.18	0.33	72287.57	697.62
111	3330.00	0.00	0.00	14377.15	14337.18	0.33	71687.55	697.61
112	3360.00	0.00	0.00	14257.32	14217.44	0.33	71088.86	697.60
113	3390.00	0.00	0.00	14137.76	14097.97	0.33	70491.51	697.59
114	3420.00	0.00	0.00	14018.48	13978.77	0.33	69895.52	697.58
115	3450.00	0.00	0.00	13899.46	13859.85	0.33	69300.91	697.58
116	3480.00	0.00	0.00	13780.72	13741.20	0.33	68707.66	697.57
117	3510.00	0.00	0.00	13662.25	13622.83	0.33	68115.77	697.56
118	3540.00	0.00	0.00	13544.06	13504.72	0.33	67525.24	697.55
119	3570.00	0.00	0.00	13426.13	13386.89	0.33	66936.07	697.54
120	3600.00	0.00	0.00	13308.48	13269.32	0.33	66348.25	697.53

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
121	3630.00	0.00	0.00	13191.10	13152.03	0.33	65761.78	697.52
122	3660.00	0.00	0.00	13073.98	13035.01	0.32	65176.65	697.51
123	3690.00	0.00	0.00	12957.14	12918.25	0.32	64592.87	697.51
124	3720.00	0.00	0.00	12840.56	12801.76	0.32	64010.43	697.50
125	3750.00	0.00	0.00	12724.26	12685.55	0.32	63429.36	697.49
126	3780.00	0.00	0.00	12608.23	12569.61	0.32	62849.68	697.48
127	3810.00	0.00	0.00	12492.48	12453.95	0.32	62271.38	697.47
128	3840.00	0.00	0.00	12377.00	12338.57	0.32	61694.45	697.46
129	3870.00	0.00	0.00	12261.80	12223.46	0.32	61118.89	697.45
130	3900.00	0.00	0.00	12146.87	12108.62	0.32	60544.71	697.44
131	3930.00	0.00	0.00	12032.22	11994.06	0.32	59971.88	697.44
132	3960.00	0.00	0.00	11917.83	11879.77	0.32	59400.42	697.43
133	3990.00	0.00	0.00	11803.72	11765.75	0.32	58830.32	697.42
134	4020.00	0.00	0.00	11689.89	11652.00	0.32	58261.57	697.41
135	4050.00	0.00	0.00	11576.32	11538.52	0.31	57694.18	697.40
136	4080.00	0.00	0.00	11463.02	11425.32	0.31	57128.16	697.39
137	4110.00	0.00	0.00	11350.00	11312.39	0.31	56563.53	697.38
138	4140.00	0.00	0.00	11237.26	11199.75	0.31	56000.29	697.38
139	4170.00	0.00	0.00	11124.80	11087.38	0.31	55438.45	697.37
140	4200.00	0.00	0.00	11012.62	10975.29	0.31	54877.99	697.36
141	4230.00	0.00	0.00	10900.71	10863.47	0.31	54318.91	697.35
142	4260.00	0.00	0.00	10789.08	10751.93	0.31	53761.21	697.34
143	4290.00	0.00	0.00	10677.73	10640.67	0.31	53204.89	697.33
144	4320.00	0.00	0.00	10566.65	10529.68	0.31	52649.94	697.32
145	4350.00	0.00	0.00	10455.84	10418.96	0.31	52096.36	697.32
146	4380.00	0.00	0.00	10345.31	10308.52	0.31	51544.14	697.31
147	4410.00	0.00	0.00	10235.05	10198.35	0.31	50993.29	697.30
148	4440.00	0.00	0.00	10125.06	10088.46	0.30	50443.84	697.29
149	4470.00	0.00	0.00	10015.36	9978.85	0.30	49895.79	697.28
150	4500.00	0.00	0.00	9905.94	9869.53	0.30	49349.14	697.27
151	4530.00	0.00	0.00	9796.80	9760.48	0.30	48803.90	697.26
152	4560.00	0.00	0.00	9687.94	9651.71	0.30	48260.06	697.26
153	4590.00	0.00	0.00	9579.35	9543.22	0.30	47717.61	697.25
154	4620.00	0.00	0.00	9471.05	9435.01	0.30	47176.55	697.24
155	4650.00	0.00	0.00	9363.02	9327.08	0.30	46636.88	697.23
156	4680.00	0.00	0.00	9255.28	9219.42	0.30	46098.60	697.22
157	4710.00	0.00	0.00	9147.80	9112.04	0.30	45561.69	697.22
158	4740.00	0.00	0.00	9040.61	9004.94	0.30	45026.16	697.21
159	4770.00	0.00	0.00	8933.68	8898.11	0.30	44492.01	697.20
160	4800.00	0.00	0.00	8827.04	8791.56	0.30	43959.26	697.19
161	4830.00	0.00	0.00	8720.68	8685.29	0.29	43427.94	697.18
162	4860.00	0.00	0.00	8614.61	8579.31	0.29	42898.03	697.17
163	4890.00	0.00	0.00	8508.82	8473.61	0.29	42369.54	697.17
164	4920.00	0.00	0.00	8403.31	8368.20	0.29	41842.46	697.16
165	4950.00	0.00	0.00	8298.08	8263.07	0.29	41316.79	697.15
166	4980.00	0.00	0.00	8193.13	8158.21	0.29	40792.52	697.14
167	5010.00	0.00	0.00	8088.47	8053.64	0.29	40269.65	697.13
168	5040.00	0.00	0.00	7984.08	7949.35	0.29	39748.18	697.12
169	5070.00	0.00	0.00	7879.97	7845.33	0.29	39228.11	697.12
170	5100.00	0.00	0.00	7776.14	7741.60	0.29	38709.42	697.11
171	5130.00	0.00	0.00	7672.59	7638.14	0.29	38192.11	697.10
172	5160.00	0.00	0.00	7569.32	7534.96	0.29	37676.22	697.09
173	5190.00	0.00	0.00	7466.33	7432.07	0.29	37161.76	697.08
174	5220.00	0.00	0.00	7363.63	7329.46	0.28	36648.73	697.08
175	5250.00	0.00	0.00	7261.22	7227.14	0.28	36137.14	697.07
176	5280.00	0.00	0.00	7159.09	7125.11	0.28	35626.97	697.06
177	5310.00	0.00	0.00	7057.25	7023.36	0.28	35118.22	697.05
178	5340.00	0.00	0.00	6955.69	6921.90	0.28	34610.90	697.04
179	5370.00	0.00	0.00	6854.41	6820.72	0.28	34104.98	697.04
180	5400.00	0.00	0.00	6753.42	6719.82	0.28	33600.48	697.03

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
181	5430.00	0.00	0.00	6652.71	6619.20	0.28	33097.38	697.02
182	5460.00	0.00	0.00	6552.27	6518.86	0.28	32595.69	697.01
183	5490.00	0.00	0.00	6452.12	6418.80	0.28	32095.39	697.01
184	5520.00	0.00	0.00	6352.25	6319.02	0.28	31596.50	697.00
185	5550.00	0.00	0.00	6252.67	6219.54	0.28	31099.10	696.99
186	5580.00	0.00	0.00	6153.39	6120.37	0.28	30603.22	696.98
187	5610.00	0.00	0.00	6054.42	6021.50	0.27	30108.86	696.97
188	5640.00	0.00	0.00	5955.75	5922.93	0.27	29616.01	696.96
189	5670.00	0.00	0.00	5857.38	5824.66	0.27	29124.67	696.96
190	5700.00	0.00	0.00	5759.32	5726.69	0.27	28634.82	696.95
191	5730.00	0.00	0.00	5661.55	5629.02	0.27	28146.48	696.94
192	5760.00	0.00	0.00	5564.08	5531.66	0.27	27659.63	696.93
193	5790.00	0.00	0.00	5466.91	5434.58	0.27	27174.26	696.92
194	5820.00	0.00	0.00	5370.03	5337.81	0.27	26690.38	696.92
195	5850.00	0.00	0.00	5273.46	5241.33	0.27	26207.98	696.91
196	5880.00	0.00	0.00	5177.17	5145.14	0.27	25727.05	696.90
197	5910.00	0.00	0.00	5081.20	5049.28	0.27	25247.72	696.89
198	5940.00	0.00	0.00	4985.56	4953.75	0.26	24770.08	696.88
199	5970.00	0.00	0.00	4890.26	4858.57	0.26	24294.15	696.87
200	6000.00	0.00	0.00	4795.30	4763.72	0.26	23819.90	696.86
201	6030.00	0.00	0.00	4700.67	4669.21	0.26	23347.34	696.86
202	6060.00	0.00	0.00	4606.38	4575.03	0.26	22876.45	696.85
203	6090.00	0.00	0.00	4512.43	4481.19	0.26	22407.24	696.84
204	6120.00	0.00	0.00	4418.81	4387.68	0.26	21939.70	696.83
205	6150.00	0.00	0.00	4325.53	4294.50	0.26	21473.81	696.82
206	6180.00	0.00	0.00	4232.57	4201.66	0.26	21009.59	696.81
207	6210.00	0.00	0.00	4139.95	4109.14	0.26	20547.01	696.80
208	6240.00	0.00	0.00	4047.65	4016.97	0.26	20086.12	696.79
209	6270.00	0.00	0.00	3955.73	3925.17	0.25	19627.12	696.79
210	6300.00	0.00	0.00	3864.19	3833.76	0.25	19170.06	696.78
211	6330.00	0.00	0.00	3773.03	3742.73	0.25	18714.91	696.77
212	6360.00	0.00	0.00	3682.26	3652.08	0.25	18261.68	696.76
213	6390.00	0.00	0.00	3591.87	3561.82	0.25	17810.35	696.75
214	6420.00	0.00	0.00	3501.85	3471.93	0.25	17360.92	696.74
215	6450.00	0.00	0.00	3412.22	3382.43	0.25	16913.37	696.73
216	6480.00	0.00	0.00	3322.96	3293.29	0.25	16467.70	696.72
217	6510.00	0.00	0.00	3234.08	3204.54	0.25	16023.91	696.71
218	6540.00	0.00	0.00	3145.57	3116.15	0.25	15581.97	696.70
219	6570.00	0.00	0.00	3057.45	3028.17	0.24	15142.08	696.69
220	6600.00	0.00	0.00	2969.77	2940.64	0.24	14704.41	696.68
221	6630.00	0.00	0.00	2882.53	2853.55	0.24	14268.97	696.67
222	6660.00	0.00	0.00	2795.74	2766.91	0.24	13835.73	696.66
223	6690.00	0.00	0.00	2709.39	2680.70	0.24	13404.70	696.65
224	6720.00	0.00	0.00	2623.47	2594.93	0.24	12975.85	696.64
225	6750.00	0.00	0.00	2538.00	2509.60	0.24	12549.18	696.63
226	6780.00	0.00	0.00	2452.95	2424.70	0.24	12124.67	696.62
227	6810.00	0.00	0.00	2368.34	2340.23	0.23	11702.32	696.61
228	6840.00	0.00	0.00	2284.16	2256.20	0.23	11282.14	696.60
229	6870.00	0.00	0.00	2200.45	2172.67	0.23	10864.52	696.58
230	6900.00	0.00	0.00	2117.28	2089.67	0.23	10449.52	696.57
231	6930.00	0.00	0.00	2034.63	2007.20	0.23	10037.15	696.56
232	6960.00	0.00	0.00	1952.51	1925.25	0.23	9627.37	696.55
233	6990.00	0.00	0.00	1870.90	1843.81	0.23	9220.19	696.54
234	7020.00	0.00	0.00	1789.81	1762.89	0.22	8815.57	696.53
235	7050.00	0.00	0.00	1709.23	1682.48	0.22	8413.51	696.51
236	7080.00	0.00	0.00	1629.15	1602.57	0.22	8013.98	696.50
237	7110.00	0.00	0.00	1549.60	1523.23	0.22	7617.23	696.49
238	7140.00	0.00	0.00	1470.68	1444.52	0.22	7223.69	696.47
239	7170.00	0.00	0.00	1392.41	1366.46	0.22	6833.37	696.46
240	7200.00	0.00	0.00	1314.77	1289.03	0.21	6446.23	696.45

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
241	7230.00	0.00	0.00	1237.76	1212.24	0.21	6062.24	696.43
242	7260.00	0.00	0.00	1161.39	1136.07	0.21	5681.40	696.42
243	7290.00	0.00	0.00	1085.64	1060.52	0.21	5303.66	696.41
244	7320.00	0.00	0.00	1010.60	986.34	0.20	4932.68	696.39
245	7350.00	0.00	0.00	940.54	918.93	0.18	4595.55	696.38
246	7380.00	0.00	0.00	878.15	858.92	0.16	4295.36	696.36
247	7410.00	0.00	0.00	822.60	805.48	0.14	4028.08	696.35
248	7440.00	0.00	0.00	773.14	757.89	0.12	3790.09	696.34
249	7470.00	0.00	0.00	729.11	715.53	0.11	3578.18	696.33
250	7500.00	0.00	0.00	689.89	677.80	0.10	3389.51	696.32
251	7530.00	0.00	0.00	654.98	644.21	0.09	3221.51	696.32
252	7560.00	0.00	0.00	623.89	614.31	0.08	3071.92	696.31
253	7590.00	0.00	0.00	596.21	587.68	0.07	2938.73	696.30
254	7620.00	0.00	0.00	571.56	563.91	0.06	2819.85	696.30
255	7650.00	0.00	0.00	549.15	542.03	0.06	2710.44	696.29
256	7680.00	0.00	0.00	528.31	521.70	0.05	2608.76	696.28
257	7710.00	0.00	0.00	508.95	502.80	0.05	2514.26	696.28
258	7740.00	0.00	0.00	490.95	485.24	0.05	2426.43	696.27
259	7770.00	0.00	0.00	474.23	468.92	0.04	2344.80	696.27
260	7800.00	0.00	0.00	458.68	453.75	0.04	2268.94	696.26
261	7830.00	0.00	0.00	444.23	439.65	0.04	2198.43	696.26
262	7860.00	0.00	0.00	430.81	426.55	0.04	2132.91	696.25
263	7890.00	0.00	0.00	418.33	414.37	0.03	2072.01	696.25
264	7920.00	0.00	0.00	406.73	403.05	0.03	2015.41	696.25
265	7950.00	0.00	0.00	395.95	392.53	0.03	1962.81	696.24
266	7980.00	0.00	0.00	385.94	382.76	0.03	1913.92	696.24
267	8010.00	0.00	0.00	376.63	373.67	0.02	1868.48	696.24
268	8040.00	0.00	0.00	367.97	365.23	0.02	1826.26	696.23
269	8070.00	0.00	0.00	359.93	357.38	0.02	1787.01	696.23
270	8100.00	0.00	0.00	352.46	350.09	0.02	1750.54	696.23
271	8130.00	0.00	0.00	345.51	343.31	0.02	1716.64	696.23
272	8160.00	0.00	0.00	339.06	337.01	0.02	1685.14	696.23
273	8190.00	0.00	0.00	333.06	331.16	0.02	1655.86	696.22
274	8220.00	0.00	0.00	327.48	325.71	0.01	1628.65	696.22
275	8250.00	0.00	0.00	322.30	320.66	0.01	1603.36	696.22
276	8280.00	0.00	0.00	317.49	315.96	0.01	1579.85	696.22
277	8310.00	0.00	0.00	313.01	311.59	0.01	1558.01	696.22
278	8340.00	0.00	0.00	308.85	307.53	0.01	1537.71	696.22
279	8370.00	0.00	0.00	304.98	303.76	0.01	1518.84	696.22
280	8400.00	0.00	0.00	301.39	300.25	0.01	1501.30	696.21
281	8430.00	0.00	0.00	298.05	296.99	0.01	1485.01	696.21
282	8460.00	0.00	0.00	294.95	293.96	0.01	1469.86	696.21
283	8490.00	0.00	0.00	292.06	291.15	0.01	1455.78	696.21
284	8520.00	0.00	0.00	289.38	288.53	0.01	1442.70	696.21
285	8550.00	0.00	0.00	286.89	286.10	0.01	1430.54	696.21
286	8580.00	0.00	0.00	284.58	283.84	0.01	1419.24	696.21
287	8610.00	0.00	0.00	282.43	281.74	0.01	1408.74	696.21
288	8640.00	0.00	0.00	280.43	279.79	0.01	1398.98	696.21
289	8670.00	0.00	0.00	278.57	277.98	0.00	1389.91	696.21

UNIT HYDROGRAPH REPORT

Number	Name	Type	Defined
<None>			

Hydrograph Number: 11
Name: 10 Year Thru Phase 1 Pond
Type: Reservoir: Storage Indication

[HYDROGRAPH INFORMATION]

Peak Flow (Qp)	=	6.15 (cfs)
Time to Peak (Tp)	=	1020.00 (min)
Time of Base (Tb)	=	14100.00 (min)
Volume	=	7.48 (ac-ft)
Time Step	=	10.00 (min)
Peak Elevation	=	699.52 (ft)
Detention Time	=	NA

[RESERVOIR STRUCTURE INFORMATION]

Number	=	1
Name	=	Phase 1 Pond
Storage Type	=	User-Defined Area
Maximum Storage	=	248249.00 (cu ft)
Maximum Discharge	=	14.31 (cfs)

[INFLOW HYDROGRAPH INFORMATION]

Number	=	4
Name	=	10 Year Developed
Peak Flow (Qp)	=	28.00 (cfs)
Time to Peak (Tp)	=	780.00 (min)
Time of Base (Tb)	=	1560.00 (min)
Volume	=	7.51 (ac-ft)
Flow Multiplier	=	1.00

[EQUATION]

$0.5(I1+I2)dt + S1-0.5(O2)dt$

Where:

I1 = Previous Inflow
I2 = Current Inflow
dt = Time increment
S1 = Previous Storage
S2 = Current Storage
O1 = Previous Outflow
O2 = Current Outflow

$A = 0.5\ (I1+I2)\ dt$
$B = S1 - 0.5\ (O1)\ dt$
$C = S2 + 0.5\ (O2)\ dt$

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
1	30.00	0.05	0.08	3.64	8.18	0.00	40.91	696.01
2	60.00	0.09	0.17	22.73	32.73	0.00	163.64	696.05
3	90.00	0.14	0.26	58.18	73.64	0.00	368.18	696.11
4	120.00	0.18	0.35	110.00	130.91	0.00	654.55	696.14
5	150.00	0.23	0.44	178.18	204.55	0.00	1022.73	696.17
6	180.00	0.27	0.53	262.62	293.84	0.01	1469.26	696.21
7	210.00	0.32	0.62	359.39	393.67	0.03	1968.49	696.24
8	240.00	0.36	0.71	465.11	502.22	0.05	2511.37	696.28
9	270.00	0.41	0.80	579.08	618.45	0.08	3092.63	696.31
10	300.00	0.45	0.89	698.04	738.24	0.12	3691.78	696.34
11	330.00	0.50	0.98	819.40	860.35	0.16	4302.52	696.36
12	360.00	0.55	1.08	942.91	984.52	0.20	4923.57	696.39
13	390.00	0.59	1.17	1069.65	1114.48	0.21	5573.44	696.42
14	420.00	0.64	1.26	1209.22	1259.12	0.21	6296.67	696.44
15	450.00	0.68	1.35	1363.95	1418.88	0.22	7095.47	696.47
16	480.00	0.73	1.44	1533.72	1593.63	0.22	7969.26	696.50
17	510.00	0.77	1.53	1718.48	1783.44	0.22	8918.31	696.53
18	540.00	0.82	1.62	1918.38	1988.36	0.23	9942.93	696.56
19	570.00	0.86	1.71	2133.32	2208.30	0.23	11042.64	696.59
20	600.00	0.91	1.80	2363.24	2443.22	0.24	12217.30	696.62
21	630.00	0.95	1.89	2608.24	2693.27	0.24	13467.52	696.65
22	660.00	1.00	1.98	2868.33	2958.36	0.24	14793.01	696.68
23	690.00	1.11	2.11	3139.79	3236.95	0.25	16185.98	696.71
24	720.00	2.00	4.00	3564.05	3773.87	0.25	18870.63	696.77
25	750.00	3.00	5.00	4192.65	4461.60	0.26	22309.32	696.84
26	780.00	5.00	9.33	5198.37	5726.03	0.27	28631.51	696.95
27	810.00	11.00	19.33	7299.35	8424.71	0.29	42125.00	697.16
28	840.00	21.67	40.67	11951.59	14352.54	0.33	71764.36	697.61
29	870.00	25.50	50.50	19826.03	22744.81	1.43	113731.17	698.22
30	900.00	24.00	48.67	28562.86	31101.09	3.39	155522.38	698.80
31	930.00	17.00	36.00	35273.58	36927.55	4.46	184660.04	699.19
32	960.00	12.00	26.00	39387.31	40278.56	5.71	201421.32	699.41
33	990.00	7.89	16.89	41507.69	41793.81	6.10	208999.51	699.51
34	1020.00	5.67	12.44	42042.98	42051.18	6.15	210286.67	699.52
35	1050.00	4.42	9.25	41810.11	41635.79	6.06	208209.21	699.50
36	1080.00	3.33	7.00	41161.42	40873.90	5.86	204398.79	699.45
37	1110.00	3.00	6.00	40227.76	39910.48	5.60	199580.41	699.38
38	1140.00	2.33	5.00	39290.05	38947.74	5.30	194765.20	699.32
39	1170.00	2.00	4.00	38207.25	37855.08	4.86	189299.70	699.25
40	1200.00	2.00	4.00	37205.15	36904.27	4.45	184543.58	699.19
41	1230.00	2.00	4.00	36339.07	36073.04	4.17	180386.05	699.13
42	1260.00	2.00	4.00	35571.95	35333.19	3.97	176685.81	699.08
43	1290.00	2.00	4.00	34866.65	34638.74	3.88	173213.15	699.04
44	1320.00	1.67	3.50	34183.44	33936.32	3.79	169700.54	698.99
45	1350.00	1.17	2.50	33394.82	33101.03	3.68	165523.52	698.94
46	1380.00	1.00	2.00	32478.56	32170.29	3.55	160869.18	698.87
47	1410.00	1.00	2.00	31569.87	31277.53	3.41	156404.75	698.81
48	1440.00	1.00	2.00	30708.58	30432.11	3.28	152176.94	698.76
49	1470.00	1.00	2.00	29894.82	29633.81	3.15	148184.80	698.70
50	1500.00	0.92	1.88	29124.98	28872.30	3.02	144376.62	698.65
51	1530.00	0.79	1.63	28367.90	28116.21	2.89	140595.47	698.60
52	1560.00	0.67	1.38	27615.03	27365.77	2.74	136842.57	698.55
53	1590.00	0.54	1.13	26869.81	26623.22	2.59	133129.05	698.49
54	1620.00	0.42	0.88	26134.41	25892.40	2.43	129474.12	698.44
55	1650.00	0.29	0.63	25412.94	25175.69	2.26	125889.74	698.39
56	1680.00	0.17	0.38	24708.53	24478.87	2.07	122404.71	698.34
57	1710.00	0.04	0.13	24026.97	23804.91	1.88	119033.96	698.30
58	1740.00	0.00	0.00	23378.43	23179.85	1.61	115907.32	698.25
59	1770.00	0.00	0.00	22811.96	22641.69	1.38	113215.36	698.22
60	1800.00	0.00	0.00	22326.23	22180.21	1.19	110906.98	698.18

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
61	1830.00	0.00	0.00	21909.63	21784.38	1.02	108926.97	698.15
62	1860.00	0.00	0.00	21552.28	21444.83	0.87	107228.53	698.13
63	1890.00	0.00	0.00	21245.74	21153.58	0.75	105771.64	698.11
64	1920.00	0.00	0.00	20982.31	20901.39	0.66	104510.27	698.09
65	1950.00	0.00	0.00	20746.31	20672.03	0.61	103363.19	698.07
66	1980.00	0.00	0.00	20529.66	20461.46	0.56	102310.08	698.06
67	2010.00	0.00	0.00	20330.75	20268.14	0.51	101343.26	698.05
68	2040.00	0.00	0.00	20148.14	20090.66	0.47	100455.65	698.03
69	2070.00	0.00	0.00	19980.49	19927.72	0.43	99640.77	698.02
70	2100.00	0.00	0.00	19826.58	19778.13	0.40	98892.65	698.01
71	2130.00	0.00	0.00	19685.28	19640.80	0.37	98205.82	698.00
72	2160.00	0.00	0.00	19553.39	19509.77	0.36	97550.65	697.99
73	2190.00	0.00	0.00	19422.61	19379.08	0.36	96897.19	697.98
74	2220.00	0.00	0.00	19292.10	19248.65	0.36	96245.06	697.97
75	2250.00	0.00	0.00	19161.84	19118.49	0.36	95594.24	697.96
76	2280.00	0.00	0.00	19031.86	18988.59	0.36	94944.73	697.95
77	2310.00	0.00	0.00	18902.13	18858.95	0.36	94296.54	697.94
78	2340.00	0.00	0.00	18772.67	18729.57	0.36	93649.65	697.93
79	2370.00	0.00	0.00	18643.47	18600.46	0.36	93004.08	697.93
80	2400.00	0.00	0.00	18514.52	18471.60	0.36	92359.80	697.92
81	2430.00	0.00	0.00	18385.84	18343.01	0.36	91716.82	697.91
82	2460.00	0.00	0.00	18257.42	18214.67	0.36	91075.15	697.90
83	2490.00	0.00	0.00	18129.26	18086.60	0.36	90434.80	697.89
84	2520.00	0.00	0.00	18001.37	17958.80	0.35	89795.78	697.88
85	2550.00	0.00	0.00	17873.75	17831.27	0.35	89158.10	697.87
86	2580.00	0.00	0.00	17746.39	17703.99	0.35	88521.74	697.86
87	2610.00	0.00	0.00	17619.29	17576.99	0.35	87886.70	697.85
88	2640.00	0.00	0.00	17492.46	17450.25	0.35	87252.99	697.84
89	2670.00	0.00	0.00	17365.90	17323.77	0.35	86620.59	697.83
90	2700.00	0.00	0.00	17239.59	17197.55	0.35	85989.51	697.82
91	2730.00	0.00	0.00	17113.55	17071.60	0.35	85359.74	697.81
92	2760.00	0.00	0.00	16987.78	16945.91	0.35	84731.29	697.80
93	2790.00	0.00	0.00	16862.26	16820.48	0.35	84104.15	697.80
94	2820.00	0.00	0.00	16737.01	16695.32	0.35	83478.34	697.79
95	2850.00	0.00	0.00	16612.03	16570.43	0.35	82853.89	697.78
96	2880.00	0.00	0.00	16487.32	16445.81	0.35	82230.77	697.77
97	2910.00	0.00	0.00	16362.88	16321.45	0.35	81608.99	697.76
98	2940.00	0.00	0.00	16238.70	16197.37	0.34	80988.55	697.75
99	2970.00	0.00	0.00	16114.79	16073.54	0.34	80369.44	697.74
100	3000.00	0.00	0.00	15991.15	15949.99	0.34	79751.66	697.73
101	3030.00	0.00	0.00	15867.77	15826.70	0.34	79135.21	697.72
102	3060.00	0.00	0.00	15744.65	15703.67	0.34	78520.08	697.71
103	3090.00	0.00	0.00	15621.80	15580.91	0.34	77906.27	697.70
104	3120.00	0.00	0.00	15499.22	15458.42	0.34	77293.78	697.69
105	3150.00	0.00	0.00	15376.90	15336.19	0.34	76682.66	697.69
106	3180.00	0.00	0.00	15254.86	15214.24	0.34	76072.88	697.68
107	3210.00	0.00	0.00	15133.09	15092.55	0.34	75464.46	697.67
108	3240.00	0.00	0.00	15011.58	14971.14	0.34	74857.39	697.66
109	3270.00	0.00	0.00	14890.35	14850.00	0.34	74251.67	697.65
110	3300.00	0.00	0.00	14769.38	14729.12	0.34	73647.29	697.64
111	3330.00	0.00	0.00	14648.69	14608.52	0.33	73044.25	697.63
112	3360.00	0.00	0.00	14528.26	14488.18	0.33	72442.55	697.62
113	3390.00	0.00	0.00	14408.10	14368.10	0.33	71842.18	697.61
114	3420.00	0.00	0.00	14288.20	14248.30	0.33	71243.15	697.60
115	3450.00	0.00	0.00	14168.57	14128.76	0.33	70645.45	697.60
116	3480.00	0.00	0.00	14049.22	14009.49	0.33	70049.11	697.59
117	3510.00	0.00	0.00	13930.13	13890.50	0.33	69454.15	697.58
118	3540.00	0.00	0.00	13811.32	13771.78	0.33	68860.55	697.57
119	3570.00	0.00	0.00	13692.78	13653.33	0.33	68268.31	697.56
120	3600.00	0.00	0.00	13574.52	13535.16	0.33	67677.43	697.55

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
121	3630.00	0.00	0.00	13456.52	13417.25	0.33	67087.90	697.54
122	3660.00	0.00	0.00	13338.80	13299.62	0.33	66499.73	697.53
123	3690.00	0.00	0.00	13221.35	13182.26	0.33	65912.91	697.52
124	3720.00	0.00	0.00	13104.16	13065.16	0.32	65327.44	697.52
125	3750.00	0.00	0.00	12987.25	12948.34	0.32	64743.31	697.51
126	3780.00	0.00	0.00	12870.60	12831.78	0.32	64160.52	697.50
127	3810.00	0.00	0.00	12754.23	12715.50	0.32	63579.10	697.49
128	3840.00	0.00	0.00	12638.13	12599.49	0.32	62999.07	697.48
129	3870.00	0.00	0.00	12522.31	12483.76	0.32	62420.41	697.47
130	3900.00	0.00	0.00	12406.76	12368.30	0.32	61843.12	697.46
131	3930.00	0.00	0.00	12291.49	12253.12	0.32	61267.21	697.45
132	3960.00	0.00	0.00	12176.49	12138.22	0.32	60692.67	697.45
133	3990.00	0.00	0.00	12061.76	12023.58	0.32	60119.50	697.44
134	4020.00	0.00	0.00	11947.31	11909.22	0.32	59547.69	697.43
135	4050.00	0.00	0.00	11833.13	11795.13	0.32	58977.24	697.42
136	4080.00	0.00	0.00	11719.22	11681.31	0.32	58408.14	697.41
137	4110.00	0.00	0.00	11605.58	11567.76	0.32	57840.40	697.40
138	4140.00	0.00	0.00	11492.22	11454.49	0.31	57274.02	697.39
139	4170.00	0.00	0.00	11379.13	11341.49	0.31	56709.03	697.39
140	4200.00	0.00	0.00	11266.32	11228.77	0.31	56145.43	697.38
141	4230.00	0.00	0.00	11153.78	11116.33	0.31	55583.23	697.37
142	4260.00	0.00	0.00	11041.53	11004.17	0.31	55022.41	697.36
143	4290.00	0.00	0.00	10929.55	10892.29	0.31	54462.98	697.35
144	4320.00	0.00	0.00	10817.85	10780.68	0.31	53904.92	697.34
145	4350.00	0.00	0.00	10706.42	10669.34	0.31	53348.25	697.33
146	4380.00	0.00	0.00	10595.27	10558.28	0.31	52792.95	697.33
147	4410.00	0.00	0.00	10484.39	10447.50	0.31	52239.01	697.32
148	4440.00	0.00	0.00	10373.79	10336.98	0.31	51686.45	697.31
149	4470.00	0.00	0.00	10263.46	10226.74	0.31	51135.24	697.30
150	4500.00	0.00	0.00	10153.40	10116.78	0.31	50585.42	697.29
151	4530.00	0.00	0.00	10043.63	10007.10	0.30	50037.01	697.28
152	4560.00	0.00	0.00	9934.13	9897.70	0.30	49490.00	697.28
153	4590.00	0.00	0.00	9824.92	9788.58	0.30	48944.40	697.27
154	4620.00	0.00	0.00	9715.99	9679.74	0.30	48400.20	697.26
155	4650.00	0.00	0.00	9607.33	9571.18	0.30	47857.39	697.25
156	4680.00	0.00	0.00	9498.96	9462.89	0.30	47315.97	697.24
157	4710.00	0.00	0.00	9390.86	9354.89	0.30	46775.95	697.23
158	4740.00	0.00	0.00	9283.04	9247.16	0.30	46237.30	697.23
159	4770.00	0.00	0.00	9175.50	9139.71	0.30	45700.04	697.22
160	4800.00	0.00	0.00	9068.23	9032.53	0.30	45164.16	697.21
161	4830.00	0.00	0.00	8961.24	8925.63	0.30	44629.65	697.20
162	4860.00	0.00	0.00	8854.52	8819.01	0.30	44096.53	697.19
163	4890.00	0.00	0.00	8748.09	8712.67	0.29	43564.84	697.18
164	4920.00	0.00	0.00	8641.94	8606.62	0.29	43034.57	697.18
165	4950.00	0.00	0.00	8536.08	8500.85	0.29	42505.72	697.17
166	4980.00	0.00	0.00	8430.49	8395.36	0.29	41978.27	697.16
167	5010.00	0.00	0.00	8325.19	8290.16	0.29	41452.24	697.15
168	5040.00	0.00	0.00	8220.17	8185.23	0.29	40927.61	697.14
169	5070.00	0.00	0.00	8115.44	8080.59	0.29	40404.38	697.14
170	5100.00	0.00	0.00	8010.98	7976.22	0.29	39882.55	697.13
171	5130.00	0.00	0.00	7906.80	7872.13	0.29	39362.11	697.12
172	5160.00	0.00	0.00	7802.90	7768.33	0.29	38843.07	697.11
173	5190.00	0.00	0.00	7699.27	7664.79	0.29	38325.41	697.10
174	5220.00	0.00	0.00	7595.93	7561.54	0.29	37809.14	697.09
175	5250.00	0.00	0.00	7492.87	7458.58	0.29	37294.31	697.09
176	5280.00	0.00	0.00	7390.09	7355.90	0.28	36780.92	697.08
177	5310.00	0.00	0.00	7287.61	7253.51	0.28	36268.96	697.07
178	5340.00	0.00	0.00	7185.40	7151.40	0.28	35758.42	697.06
179	5370.00	0.00	0.00	7083.49	7049.58	0.28	35249.31	697.05
180	5400.00	0.00	0.00	6981.86	6948.04	0.28	34741.61	697.05

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
181	5430.00	0.00	0.00	6880.51	6846.79	0.28	34235.34	697.04
182	5460.00	0.00	0.00	6779.44	6745.81	0.28	33730.47	697.03
183	5490.00	0.00	0.00	6678.66	6645.12	0.28	33227.01	697.02
184	5520.00	0.00	0.00	6578.15	6544.71	0.28	32724.95	697.02
185	5550.00	0.00	0.00	6477.93	6444.58	0.28	32224.30	697.01
186	5580.00	0.00	0.00	6377.98	6344.73	0.28	31725.04	697.00
187	5610.00	0.00	0.00	6278.33	6245.17	0.28	31227.25	696.99
188	5640.00	0.00	0.00	6178.97	6145.92	0.28	30730.98	696.98
189	5670.00	0.00	0.00	6079.92	6046.97	0.27	30236.23	696.97
190	5700.00	0.00	0.00	5981.17	5948.32	0.27	29742.99	696.97
191	5730.00	0.00	0.00	5882.73	5849.98	0.27	29251.25	696.96
192	5760.00	0.00	0.00	5784.58	5751.93	0.27	28761.02	696.95
193	5790.00	0.00	0.00	5686.74	5654.19	0.27	28272.29	696.94
194	5820.00	0.00	0.00	5589.19	5556.74	0.27	27785.06	696.93
195	5850.00	0.00	0.00	5491.94	5459.59	0.27	27299.31	696.93
196	5880.00	0.00	0.00	5394.99	5362.74	0.27	26815.05	696.92
197	5910.00	0.00	0.00	5298.34	5266.19	0.27	26332.26	696.91
198	5940.00	0.00	0.00	5201.98	5169.92	0.27	25850.96	696.90
199	5970.00	0.00	0.00	5105.92	5073.97	0.27	25371.19	696.89
200	6000.00	0.00	0.00	5010.19	4978.36	0.27	24893.12	696.88
201	6030.00	0.00	0.00	4914.80	4883.08	0.26	24416.74	696.88
202	6060.00	0.00	0.00	4819.76	4788.15	0.26	23942.06	696.87
203	6090.00	0.00	0.00	4725.05	4693.55	0.26	23469.07	696.86
204	6120.00	0.00	0.00	4630.67	4599.29	0.26	22997.75	696.85
205	6150.00	0.00	0.00	4536.63	4505.36	0.26	22528.11	696.84
206	6180.00	0.00	0.00	4442.93	4411.77	0.26	22060.13	696.83
207	6210.00	0.00	0.00	4349.56	4318.51	0.26	21593.82	696.82
208	6240.00	0.00	0.00	4256.52	4225.58	0.26	21129.17	696.81
209	6270.00	0.00	0.00	4163.81	4132.98	0.26	20666.16	696.81
210	6300.00	0.00	0.00	4071.43	4040.71	0.26	20204.82	696.80
211	6330.00	0.00	0.00	3979.40	3948.81	0.25	19745.33	696.79
212	6360.00	0.00	0.00	3887.76	3857.30	0.25	19287.77	696.78
213	6390.00	0.00	0.00	3796.51	3766.17	0.25	18832.13	696.77
214	6420.00	0.00	0.00	3705.63	3675.43	0.25	18378.40	696.76
215	6450.00	0.00	0.00	3615.14	3585.07	0.25	17926.58	696.75
216	6480.00	0.00	0.00	3525.03	3495.08	0.25	17476.66	696.74
217	6510.00	0.00	0.00	3435.30	3405.48	0.25	17028.63	696.73
218	6540.00	0.00	0.00	3345.95	3316.25	0.25	16582.47	696.72
219	6570.00	0.00	0.00	3256.97	3227.39	0.25	16138.20	696.71
220	6600.00	0.00	0.00	3168.36	3138.91	0.25	15695.78	696.70
221	6630.00	0.00	0.00	3080.14	3050.82	0.24	15255.33	696.69
222	6660.00	0.00	0.00	2992.34	2963.17	0.24	14817.09	696.68
223	6690.00	0.00	0.00	2904.99	2875.97	0.24	14381.07	696.67
224	6720.00	0.00	0.00	2818.08	2789.21	0.24	13947.27	696.66
225	6750.00	0.00	0.00	2731.62	2702.89	0.24	13515.67	696.65
226	6780.00	0.00	0.00	2645.59	2617.01	0.24	13086.25	696.64
227	6810.00	0.00	0.00	2560.00	2531.57	0.24	12659.02	696.63
228	6840.00	0.00	0.00	2474.84	2446.56	0.24	12233.96	696.62
229	6870.00	0.00	0.00	2390.12	2361.98	0.23	11811.05	696.61
230	6900.00	0.00	0.00	2305.83	2277.83	0.23	11390.30	696.60
231	6930.00	0.00	0.00	2221.99	2194.17	0.23	10971.99	696.59
232	6960.00	0.00	0.00	2138.69	2111.03	0.23	10556.31	696.57
233	6990.00	0.00	0.00	2055.90	2028.42	0.23	10143.27	696.56
234	7020.00	0.00	0.00	1973.64	1946.34	0.23	9732.82	696.55
235	7050.00	0.00	0.00	1891.90	1864.77	0.23	9324.97	696.54
236	7080.00	0.00	0.00	1810.68	1783.71	0.22	8919.69	696.53
237	7110.00	0.00	0.00	1729.96	1703.17	0.22	8516.97	696.52
238	7140.00	0.00	0.00	1649.76	1623.14	0.22	8116.79	696.51
239	7170.00	0.00	0.00	1570.07	1543.63	0.22	7719.26	696.49
240	7200.00	0.00	0.00	1490.98	1464.76	0.22	7324.89	696.48

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
241	7230.00	0.00	0.00	1412.54	1386.53	0.22	6933.74	696.46
242	7260.00	0.00	0.00	1334.73	1308.94	0.21	6545.78	696.45
243	7290.00	0.00	0.00	1257.57	1231.98	0.21	6160.99	696.44
244	7320.00	0.00	0.00	1181.03	1155.66	0.21	5779.33	696.42
245	7350.00	0.00	0.00	1105.12	1079.95	0.21	5400.79	696.41
246	7380.00	0.00	0.00	1029.82	1005.06	0.20	5026.34	696.40
247	7410.00	0.00	0.00	957.87	935.61	0.18	4678.94	696.38
248	7440.00	0.00	0.00	893.58	873.76	0.16	4369.62	696.37
249	7470.00	0.00	0.00	836.34	818.69	0.14	4094.19	696.36
250	7500.00	0.00	0.00	785.38	769.66	0.13	3848.96	696.34
251	7530.00	0.00	0.00	740.00	726.01	0.11	3630.60	696.33
252	7560.00	0.00	0.00	699.59	687.13	0.10	3436.18	696.33
253	7590.00	0.00	0.00	663.62	652.52	0.09	3263.06	696.32
254	7620.00	0.00	0.00	631.58	621.70	0.08	3108.92	696.31
255	7650.00	0.00	0.00	603.06	594.26	0.07	2971.67	696.31
256	7680.00	0.00	0.00	577.66	569.82	0.06	2849.40	696.30
257	7710.00	0.00	0.00	554.77	547.52	0.06	2737.91	696.29
258	7740.00	0.00	0.00	533.54	526.80	0.06	2634.28	696.29
259	7770.00	0.00	0.00	513.81	507.54	0.05	2537.98	696.28
260	7800.00	0.00	0.00	495.47	489.65	0.05	2448.47	696.27
261	7830.00	0.00	0.00	478.42	473.01	0.04	2365.29	696.27
262	7860.00	0.00	0.00	462.58	457.55	0.04	2287.98	696.26
263	7890.00	0.00	0.00	447.86	443.19	0.04	2216.13	696.26
264	7920.00	0.00	0.00	434.18	429.83	0.04	2149.35	696.26
265	7950.00	0.00	0.00	421.46	417.43	0.03	2087.29	696.25
266	7980.00	0.00	0.00	409.64	405.89	0.03	2029.61	696.25
267	8010.00	0.00	0.00	398.66	395.17	0.03	1976.01	696.24
268	8040.00	0.00	0.00	388.45	385.21	0.03	1926.19	696.24
269	8070.00	0.00	0.00	378.96	375.95	0.02	1879.89	696.24
270	8100.00	0.00	0.00	370.15	367.35	0.02	1836.86	696.24
271	8130.00	0.00	0.00	361.95	359.35	0.02	1796.86	696.23
272	8160.00	0.00	0.00	354.34	351.92	0.02	1759.69	696.23
273	8190.00	0.00	0.00	347.26	345.01	0.02	1725.15	696.23
274	8220.00	0.00	0.00	340.68	338.59	0.02	1693.04	696.23
275	8250.00	0.00	0.00	334.57	332.63	0.02	1663.21	696.22
276	8280.00	0.00	0.00	328.88	327.08	0.01	1635.48	696.22
277	8310.00	0.00	0.00	323.60	321.93	0.01	1609.70	696.22
278	8340.00	0.00	0.00	318.70	317.14	0.01	1585.75	696.22
279	8370.00	0.00	0.00	314.13	312.69	0.01	1563.49	696.22
280	8400.00	0.00	0.00	309.89	308.55	0.01	1542.80	696.22
281	8430.00	0.00	0.00	305.96	304.70	0.01	1523.57	696.22
282	8460.00	0.00	0.00	302.29	301.13	0.01	1505.70	696.21
283	8490.00	0.00	0.00	298.89	297.81	0.01	1489.10	696.21
284	8520.00	0.00	0.00	295.73	294.72	0.01	1473.66	696.21
285	8550.00	0.00	0.00	292.79	291.86	0.01	1459.32	696.21
286	8580.00	0.00	0.00	290.06	289.19	0.01	1445.98	696.21
287	8610.00	0.00	0.00	287.52	286.71	0.01	1433.59	696.21
288	8640.00	0.00	0.00	285.16	284.41	0.01	1422.08	696.21
289	8670.00	0.00	0.00	282.97	282.27	0.01	1411.37	696.21
290	8700.00	0.00	0.00	280.93	280.28	0.01	1401.43	696.21
291	8730.00	0.00	0.00	279.03	278.43	0.00	1392.18	696.21

UNIT HYDROGRAPH REPORT

Number	Name	Type	Defined
<None>			

Hydrograph Number: 12
Name: 25 Year Thru Phase 1 Pond
Type: Reservoir: Storage Indication

[HYDROGRAPH INFORMATION]

Peak Flow (Qp)	=	11.90 (cfs)
Time to Peak (Tp)	=	980.00 (min)
Time of Base (Tb)	=	14160.00 (min)
Volume	=	9.23 (ac-ft)
Time Step	=	10.00 (min)
Peak Elevation	=	699.94 (ft)
Detention Time	=	NA

[RESERVOIR STRUCTURE INFORMATION]

Number	=	1
Name	=	Phase 1 Pond
Storage Type	=	User-Defined Area
Maximum Storage	=	248249.00 (cu ft)
Maximum Discharge	=	14.31 (cfs)

[INFLOW HYDROGRAPH INFORMATION]

Number	=	5
Name	=	25 Year Developed
Peak Flow (Qp)	=	35.00 (cfs)
Time to Peak (Tp)	=	780.00 (min)
Time of Base (Tb)	=	1560.00 (min)
Volume	=	9.26 (ac-ft)
Flow Multiplier	=	1.00

[EQUATION]

$0.5(I1+I2)dt + S1-0.5(O2)dt$

Where:

I1 = Previous Inflow
I2 = Current Inflow
dt = Time increment
S1 = Previous Storage
S2 = Current Storage
O1 = Previous Outflow
O2 = Current Outflow

$A = 0.5\ (I1+I2)\ dt$
$B = S1 - 0.5\ (O1)\ dt$
$C = S2 + 0.5\ (O2)\ dt$

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
1	30.00	0.05	0.08	3.64	8.18	0.00	40.91	696.01
2	60.00	0.09	0.17	22.73	32.73	0.00	163.64	696.05
3	90.00	0.14	0.26	58.18	73.64	0.00	368.18	696.11
4	120.00	0.18	0.35	110.00	130.91	0.00	654.55	696.14
5	150.00	0.23	0.44	178.18	204.55	0.00	1022.73	696.17
6	180.00	0.27	0.53	262.62	293.84	0.01	1469.26	696.21
7	210.00	0.32	0.62	359.39	393.67	0.03	1968.49	696.24
8	240.00	0.36	0.71	465.11	502.22	0.05	2511.37	696.28
9	270.00	0.41	0.80	579.08	618.45	0.08	3092.63	696.31
10	300.00	0.45	0.89	698.04	738.24	0.12	3691.78	696.34
11	330.00	0.50	0.98	819.40	860.35	0.16	4302.52	696.36
12	360.00	0.55	1.08	942.91	984.52	0.20	4923.57	696.39
13	390.00	0.59	1.17	1069.65	1114.48	0.21	5573.44	696.42
14	420.00	0.64	1.26	1209.22	1259.12	0.21	6296.67	696.44
15	450.00	0.68	1.35	1363.95	1418.88	0.22	7095.47	696.47
16	480.00	0.73	1.44	1533.72	1593.63	0.22	7969.26	696.50
17	510.00	0.77	1.53	1718.48	1783.44	0.22	8918.31	696.53
18	540.00	0.82	1.62	1918.38	1988.36	0.23	9942.93	696.56
19	570.00	0.86	1.71	2133.32	2208.30	0.23	11042.64	696.59
20	600.00	0.91	1.80	2363.24	2443.22	0.24	12217.30	696.62
21	630.00	0.95	1.89	2608.24	2693.27	0.24	13467.52	696.65
22	660.00	1.00	1.98	2868.33	2958.36	0.24	14793.01	696.68
23	690.00	1.11	2.11	3139.79	3236.95	0.25	16185.98	696.71
24	720.00	2.22	4.22	3564.05	3787.20	0.25	18937.25	696.77
25	750.00	3.00	6.00	4372.42	4701.13	0.26	23506.94	696.86
26	780.00	6.00	11.33	5617.18	6264.35	0.28	31323.13	696.99
27	810.00	13.00	23.33	8256.29	9620.69	0.30	48104.98	697.25
28	840.00	27.33	51.33	13925.05	16964.27	0.35	84823.11	697.81
29	870.00	32.50	64.50	23806.54	27398.01	2.75	137003.77	698.55
30	900.00	30.00	60.83	34593.05	37721.57	4.80	188631.81	699.24
31	930.00	21.00	45.00	42723.75	44641.21	6.73	223239.70	699.69
32	960.00	15.00	32.00	47231.00	47982.17	10.39	239962.77	699.90
33	990.00	10.33	22.33	48628.76	48551.56	11.72	242816.39	699.93
34	1020.00	7.67	16.44	48094.12	47835.97	10.13	239230.48	699.89
35	1050.00	5.83	12.50	47232.69	46926.41	8.54	234674.74	699.83
36	1080.00	4.33	9.00	46237.68	45882.43	7.36	229448.98	699.77
37	1110.00	3.33	7.00	45127.61	44727.43	6.74	223670.86	699.69
38	1140.00	3.00	6.00	43870.73	43448.63	6.47	217275.51	699.61
39	1170.00	3.00	6.00	42637.10	42247.78	6.20	211269.90	699.53
40	1200.00	2.33	5.00	41481.40	41065.95	5.91	205359.28	699.46
41	1230.00	2.00	4.00	40175.58	39742.27	5.55	198739.06	699.37
42	1260.00	2.00	4.00	38922.17	38535.00	5.16	192700.83	699.29
43	1290.00	2.00	4.00	37815.66	37484.02	4.69	187443.54	699.23
44	1320.00	2.00	4.00	36870.50	36583.56	4.34	182939.52	699.17
45	1350.00	2.00	4.00	36043.10	35788.71	4.08	178963.93	699.11
46	1380.00	1.83	3.75	35300.74	35051.29	3.94	175276.12	699.07
47	1410.00	1.58	3.25	34534.19	34266.73	3.84	171352.84	699.01
48	1440.00	1.33	2.75	33714.70	33430.55	3.72	167171.39	698.96
49	1470.00	1.08	2.25	32846.53	32546.83	3.60	162752.17	698.90
50	1500.00	0.92	1.88	31935.71	31629.53	3.47	158164.98	698.84
51	1530.00	0.79	1.63	31018.45	30713.81	3.33	153585.68	698.77
52	1560.00	0.67	1.38	30107.02	29804.84	3.18	149040.10	698.71
53	1590.00	0.54	1.13	29203.41	28904.58	3.03	144538.05	698.65
54	1620.00	0.42	0.88	28310.73	28015.83	2.87	140093.48	698.59
55	1650.00	0.29	0.63	27431.37	27141.92	2.70	135723.07	698.53
56	1680.00	0.17	0.38	26568.60	26285.38	2.52	131439.50	698.47
57	1710.00	0.04	0.13	25726.81	25451.30	2.33	127268.14	698.41
58	1740.00	0.00	0.00	24911.52	24653.17	2.12	123276.46	698.36
59	1770.00	0.00	0.00	24161.24	23927.12	1.92	119645.20	698.31
60	1800.00	0.00	0.00	23487.12	23283.11	1.66	116423.84	698.26

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
61	1830.00	0.00	0.00	22905.16	22730.23	1.42	113658.26	698.22
62	1860.00	0.00	0.00	22406.15	22256.14	1.22	111286.82	698.19
63	1890.00	0.00	0.00	21978.19	21849.51	1.05	109252.78	698.16
64	1920.00	0.00	0.00	21611.08	21500.71	0.90	107508.02	698.13
65	1950.00	0.00	0.00	21296.19	21201.51	0.77	106011.37	698.11
66	1980.00	0.00	0.00	21026.07	20943.92	0.67	104722.97	698.09
67	2010.00	0.00	0.00	20786.49	20711.07	0.62	103558.46	698.08
68	2040.00	0.00	0.00	20566.54	20497.30	0.57	102489.36	698.06
69	2070.00	0.00	0.00	20364.61	20301.05	0.52	101507.85	698.05
70	2100.00	0.00	0.00	20179.23	20120.87	0.48	100606.76	698.03
71	2130.00	0.00	0.00	20009.03	19955.46	0.44	99779.49	698.02
72	2160.00	0.00	0.00	19852.78	19803.60	0.40	99020.00	698.01
73	2190.00	0.00	0.00	19709.33	19664.18	0.37	98322.74	698.00
74	2220.00	0.00	0.00	19576.42	19532.78	0.36	97665.71	697.99
75	2250.00	0.00	0.00	19445.59	19402.04	0.36	97012.02	697.98
76	2280.00	0.00	0.00	19315.03	19271.57	0.36	96359.65	697.97
77	2310.00	0.00	0.00	19184.73	19141.36	0.36	95708.60	697.96
78	2340.00	0.00	0.00	19054.70	19011.41	0.36	95058.87	697.95
79	2370.00	0.00	0.00	18924.93	18881.73	0.36	94410.44	697.95
80	2400.00	0.00	0.00	18795.42	18752.31	0.36	93763.33	697.94
81	2430.00	0.00	0.00	18666.17	18623.15	0.36	93117.52	697.93
82	2460.00	0.00	0.00	18537.18	18494.25	0.36	92473.02	697.92
83	2490.00	0.00	0.00	18408.46	18365.61	0.36	91829.81	697.91
84	2520.00	0.00	0.00	18279.99	18237.23	0.36	91187.91	697.90
85	2550.00	0.00	0.00	18151.78	18109.11	0.36	90547.32	697.89
86	2580.00	0.00	0.00	18023.85	17981.26	0.35	89908.07	697.88
87	2610.00	0.00	0.00	17896.17	17853.68	0.35	89270.15	697.87
88	2640.00	0.00	0.00	17768.77	17726.36	0.35	88633.56	697.86
89	2670.00	0.00	0.00	17641.63	17599.31	0.35	87998.29	697.85
90	2700.00	0.00	0.00	17514.75	17472.52	0.35	87364.34	697.84
91	2730.00	0.00	0.00	17388.14	17345.99	0.35	86731.72	697.83
92	2760.00	0.00	0.00	17261.79	17219.73	0.35	86100.40	697.82
93	2790.00	0.00	0.00	17135.70	17093.73	0.35	85470.41	697.82
94	2820.00	0.00	0.00	17009.88	16968.00	0.35	84841.72	697.81
95	2850.00	0.00	0.00	16884.32	16842.52	0.35	84214.35	697.80
96	2880.00	0.00	0.00	16759.02	16717.31	0.35	83588.31	697.79
97	2910.00	0.00	0.00	16633.99	16592.38	0.35	82963.62	697.78
98	2940.00	0.00	0.00	16509.23	16467.71	0.35	82340.26	697.77
99	2970.00	0.00	0.00	16384.74	16343.31	0.35	81718.25	697.76
100	3000.00	0.00	0.00	16260.52	16219.17	0.34	81097.57	697.75
101	3030.00	0.00	0.00	16136.56	16095.30	0.34	80478.23	697.74
102	3060.00	0.00	0.00	16012.87	15971.70	0.34	79860.22	697.73
103	3090.00	0.00	0.00	15889.45	15848.36	0.34	79243.53	697.72
104	3120.00	0.00	0.00	15766.29	15725.29	0.34	78628.17	697.71
105	3150.00	0.00	0.00	15643.39	15602.48	0.34	78014.12	697.71
106	3180.00	0.00	0.00	15520.76	15479.94	0.34	77401.41	697.70
107	3210.00	0.00	0.00	15398.40	15357.67	0.34	76790.04	697.69
108	3240.00	0.00	0.00	15276.30	15235.67	0.34	76180.03	697.68
109	3270.00	0.00	0.00	15154.48	15113.94	0.34	75571.37	697.67
110	3300.00	0.00	0.00	15032.93	14992.48	0.34	74964.06	697.66
111	3330.00	0.00	0.00	14911.65	14871.28	0.34	74358.10	697.65
112	3360.00	0.00	0.00	14790.64	14750.36	0.34	73753.48	697.64
113	3390.00	0.00	0.00	14669.90	14629.71	0.33	73150.21	697.63
114	3420.00	0.00	0.00	14549.42	14509.32	0.33	72548.27	697.62
115	3450.00	0.00	0.00	14429.21	14389.20	0.33	71947.67	697.62
116	3480.00	0.00	0.00	14309.27	14269.35	0.33	71348.41	697.61
117	3510.00	0.00	0.00	14189.59	14149.76	0.33	70750.47	697.60
118	3540.00	0.00	0.00	14070.19	14030.45	0.33	70153.89	697.59
119	3570.00	0.00	0.00	13951.06	13911.41	0.33	69558.69	697.58
120	3600.00	0.00	0.00	13832.20	13792.64	0.33	68964.84	697.57

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
121	3630.00	0.00	0.00	13713.61	13674.14	0.33	68372.37	697.56
122	3660.00	0.00	0.00	13595.30	13555.92	0.33	67781.25	697.55
123	3690.00	0.00	0.00	13477.26	13437.97	0.33	67191.49	697.54
124	3720.00	0.00	0.00	13359.49	13320.29	0.33	66603.08	697.54
125	3750.00	0.00	0.00	13241.99	13202.88	0.33	66016.02	697.53
126	3780.00	0.00	0.00	13124.75	13085.74	0.33	65430.31	697.52
127	3810.00	0.00	0.00	13007.79	12968.86	0.32	64845.95	697.51
128	3840.00	0.00	0.00	12891.10	12852.26	0.32	64262.92	697.50
129	3870.00	0.00	0.00	12774.68	12735.93	0.32	63681.26	697.49
130	3900.00	0.00	0.00	12658.53	12619.87	0.32	63100.98	697.48
131	3930.00	0.00	0.00	12542.66	12504.09	0.32	62522.08	697.47
132	3960.00	0.00	0.00	12427.06	12388.59	0.32	61944.55	697.47
133	3990.00	0.00	0.00	12311.74	12273.36	0.32	61368.40	697.46
134	4020.00	0.00	0.00	12196.69	12158.41	0.32	60793.62	697.45
135	4050.00	0.00	0.00	12081.92	12043.72	0.32	60220.21	697.44
136	4080.00	0.00	0.00	11967.42	11929.31	0.32	59648.15	697.43
137	4110.00	0.00	0.00	11853.19	11815.18	0.32	59077.46	697.42
138	4140.00	0.00	0.00	11739.24	11701.31	0.32	58508.13	697.41
139	4170.00	0.00	0.00	11625.55	11587.71	0.32	57940.15	697.40
140	4200.00	0.00	0.00	11512.13	11474.39	0.31	57373.53	697.40
141	4230.00	0.00	0.00	11399.00	11361.34	0.31	56808.29	697.39
142	4260.00	0.00	0.00	11286.14	11248.58	0.31	56244.45	697.38
143	4290.00	0.00	0.00	11173.55	11136.09	0.31	55682.00	697.37
144	4320.00	0.00	0.00	11061.25	11023.88	0.31	55120.94	697.36
145	4350.00	0.00	0.00	10949.22	10911.94	0.31	54561.27	697.35
146	4380.00	0.00	0.00	10837.47	10800.28	0.31	54002.97	697.34
147	4410.00	0.00	0.00	10726.00	10688.90	0.31	53446.05	697.34
148	4440.00	0.00	0.00	10614.80	10577.79	0.31	52890.51	697.33
149	4470.00	0.00	0.00	10503.87	10466.96	0.31	52336.33	697.32
150	4500.00	0.00	0.00	10393.22	10356.40	0.31	51783.53	697.31
151	4530.00	0.00	0.00	10282.84	10246.11	0.31	51232.09	697.30
152	4560.00	0.00	0.00	10172.74	10136.10	0.31	50682.02	697.29
153	4590.00	0.00	0.00	10062.91	10026.37	0.30	50133.36	697.29
154	4620.00	0.00	0.00	9953.37	9916.92	0.30	49586.11	697.28
155	4650.00	0.00	0.00	9844.11	9807.75	0.30	49040.26	697.27
156	4680.00	0.00	0.00	9735.12	9698.86	0.30	48495.81	697.26
157	4710.00	0.00	0.00	9626.42	9590.25	0.30	47952.75	697.25
158	4740.00	0.00	0.00	9518.00	9481.92	0.30	47411.09	697.24
159	4770.00	0.00	0.00	9409.85	9373.86	0.30	46870.82	697.24
160	4800.00	0.00	0.00	9301.98	9266.09	0.30	46331.94	697.23
161	4830.00	0.00	0.00	9194.39	9158.59	0.30	45794.43	697.22
162	4860.00	0.00	0.00	9087.07	9051.36	0.30	45258.31	697.21
163	4890.00	0.00	0.00	8980.03	8944.41	0.30	44723.55	697.20
164	4920.00	0.00	0.00	8873.27	8837.74	0.30	44190.19	697.19
165	4950.00	0.00	0.00	8766.79	8731.35	0.30	43658.25	697.19
166	4980.00	0.00	0.00	8660.59	8625.25	0.29	43127.73	697.18
167	5010.00	0.00	0.00	8554.67	8519.43	0.29	42598.62	697.17
168	5040.00	0.00	0.00	8449.04	8413.89	0.29	42070.93	697.16
169	5070.00	0.00	0.00	8343.69	8308.64	0.29	41544.65	697.15
170	5100.00	0.00	0.00	8238.62	8203.66	0.29	41019.78	697.14
171	5130.00	0.00	0.00	8133.84	8098.97	0.29	40496.30	697.14
172	5160.00	0.00	0.00	8029.33	7994.56	0.29	39974.23	697.13
173	5190.00	0.00	0.00	7925.10	7890.42	0.29	39453.54	697.12
174	5220.00	0.00	0.00	7821.15	7786.56	0.29	38934.25	697.11
175	5250.00	0.00	0.00	7717.48	7682.98	0.29	38416.35	697.10
176	5280.00	0.00	0.00	7614.08	7579.68	0.29	37899.84	697.10
177	5310.00	0.00	0.00	7510.97	7476.66	0.29	37384.75	697.09
178	5340.00	0.00	0.00	7408.15	7373.94	0.28	36871.11	697.08
179	5370.00	0.00	0.00	7305.61	7271.49	0.28	36358.89	697.07
180	5400.00	0.00	0.00	7203.36	7169.34	0.28	35848.11	697.06

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
181	5430.00	0.00	0.00	7101.39	7067.47	0.28	35338.74	697.06
182	5460.00	0.00	0.00	6999.71	6965.88	0.28	34830.80	697.05
183	5490.00	0.00	0.00	6898.31	6864.57	0.28	34324.27	697.04
184	5520.00	0.00	0.00	6797.19	6763.55	0.28	33819.16	697.03
185	5550.00	0.00	0.00	6696.36	6662.81	0.28	33315.45	697.02
186	5580.00	0.00	0.00	6595.81	6562.35	0.28	32813.15	697.02
187	5610.00	0.00	0.00	6495.53	6462.17	0.28	32312.25	697.01
188	5640.00	0.00	0.00	6395.54	6362.27	0.28	31812.74	697.00
189	5670.00	0.00	0.00	6295.83	6262.66	0.28	31314.69	696.99
190	5700.00	0.00	0.00	6196.42	6163.35	0.28	30818.15	696.98
191	5730.00	0.00	0.00	6097.32	6064.35	0.27	30323.13	696.98
192	5760.00	0.00	0.00	5998.52	5965.65	0.27	29829.62	696.97
193	5790.00	0.00	0.00	5900.02	5867.25	0.27	29337.63	696.96
194	5820.00	0.00	0.00	5801.82	5769.15	0.27	28847.13	696.95
195	5850.00	0.00	0.00	5703.92	5671.36	0.27	28358.14	696.94
196	5880.00	0.00	0.00	5606.32	5573.86	0.27	27870.64	696.94
197	5910.00	0.00	0.00	5509.02	5476.66	0.27	27384.63	696.93
198	5940.00	0.00	0.00	5412.02	5379.75	0.27	26900.11	696.92
199	5970.00	0.00	0.00	5315.32	5283.15	0.27	26417.07	696.91
200	6000.00	0.00	0.00	5218.90	5186.83	0.27	25935.50	696.90
201	6030.00	0.00	0.00	5122.79	5090.82	0.27	25455.45	696.89
202	6060.00	0.00	0.00	5027.00	4995.15	0.27	24977.08	696.89
203	6090.00	0.00	0.00	4931.56	4899.82	0.26	24500.40	696.88
204	6120.00	0.00	0.00	4836.45	4804.82	0.26	24025.42	696.87
205	6150.00	0.00	0.00	4741.68	4710.16	0.26	23552.13	696.86
206	6180.00	0.00	0.00	4647.25	4615.84	0.26	23080.52	696.85
207	6210.00	0.00	0.00	4553.15	4521.86	0.26	22610.58	696.84
208	6240.00	0.00	0.00	4459.38	4428.20	0.26	22142.32	696.83
209	6270.00	0.00	0.00	4365.95	4334.88	0.26	21675.71	696.82
210	6300.00	0.00	0.00	4272.86	4241.90	0.26	21210.77	696.82
211	6330.00	0.00	0.00	4180.09	4149.24	0.26	20747.48	696.81
212	6360.00	0.00	0.00	4087.65	4056.91	0.26	20285.83	696.80
213	6390.00	0.00	0.00	3995.56	3964.95	0.25	19826.00	696.79
214	6420.00	0.00	0.00	3903.85	3873.37	0.25	19368.10	696.78
215	6450.00	0.00	0.00	3812.53	3782.17	0.25	18912.12	696.77
216	6480.00	0.00	0.00	3721.59	3691.36	0.25	18458.06	696.76
217	6510.00	0.00	0.00	3631.03	3600.93	0.25	18005.91	696.75
218	6540.00	0.00	0.00	3540.86	3510.88	0.25	17555.65	696.74
219	6570.00	0.00	0.00	3451.06	3421.21	0.25	17107.29	696.73
220	6600.00	0.00	0.00	3361.64	3331.91	0.25	16660.81	696.72
221	6630.00	0.00	0.00	3272.59	3242.99	0.25	16216.20	696.71
222	6660.00	0.00	0.00	3183.92	3154.45	0.25	15773.46	696.70
223	6690.00	0.00	0.00	3095.62	3066.28	0.24	15332.64	696.69
224	6720.00	0.00	0.00	3007.75	2978.56	0.24	14894.01	696.68
225	6750.00	0.00	0.00	2920.32	2891.28	0.24	14457.60	696.67
226	6780.00	0.00	0.00	2833.34	2804.44	0.24	14023.41	696.66
227	6810.00	0.00	0.00	2746.79	2718.04	0.24	13591.42	696.65
228	6840.00	0.00	0.00	2660.69	2632.09	0.24	13161.62	696.64
229	6870.00	0.00	0.00	2575.02	2546.56	0.24	12734.01	696.63
230	6900.00	0.00	0.00	2489.79	2461.48	0.24	12308.56	696.62
231	6930.00	0.00	0.00	2404.99	2376.82	0.23	11885.28	696.61
232	6960.00	0.00	0.00	2320.62	2292.59	0.23	11464.14	696.60
233	6990.00	0.00	0.00	2236.70	2208.84	0.23	11045.37	696.59
234	7020.00	0.00	0.00	2153.30	2125.62	0.23	10629.23	696.58
235	7050.00	0.00	0.00	2070.42	2042.92	0.23	10215.72	696.57
236	7080.00	0.00	0.00	1988.07	1960.74	0.23	9804.82	696.55
237	7110.00	0.00	0.00	1906.24	1879.08	0.23	9396.52	696.54
238	7140.00	0.00	0.00	1824.92	1797.93	0.22	8990.79	696.53
239	7170.00	0.00	0.00	1744.12	1717.30	0.22	8587.62	696.52
240	7200.00	0.00	0.00	1663.83	1637.18	0.22	8186.99	696.51

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 10.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
241	7230.00	0.00	0.00	1584.04	1557.57	0.22	7788.95	696.49
242	7260.00	0.00	0.00	1504.84	1478.58	0.22	7394.01	696.48
243	7290.00	0.00	0.00	1426.29	1400.24	0.22	7002.30	696.47
244	7320.00	0.00	0.00	1348.37	1322.54	0.21	6613.78	696.45
245	7350.00	0.00	0.00	1271.09	1245.47	0.21	6228.43	696.44
246	7380.00	0.00	0.00	1194.44	1169.03	0.21	5846.23	696.43
247	7410.00	0.00	0.00	1118.42	1093.22	0.21	5467.14	696.41
248	7440.00	0.00	0.00	1043.02	1018.02	0.21	5091.15	696.40
249	7470.00	0.00	0.00	969.89	947.17	0.19	4736.79	696.38
250	7500.00	0.00	0.00	904.29	884.06	0.17	4421.13	696.37
251	7530.00	0.00	0.00	845.88	827.86	0.15	4140.06	696.36
252	7560.00	0.00	0.00	793.87	777.83	0.13	3889.80	696.35
253	7590.00	0.00	0.00	747.56	733.28	0.12	3666.96	696.34
254	7620.00	0.00	0.00	706.32	693.61	0.10	3468.55	696.33
255	7650.00	0.00	0.00	669.61	658.29	0.09	3291.89	696.32
256	7680.00	0.00	0.00	636.92	626.84	0.08	3134.59	696.31
257	7710.00	0.00	0.00	607.81	598.83	0.07	2994.53	696.31
258	7740.00	0.00	0.00	581.89	573.90	0.07	2869.82	696.30
259	7770.00	0.00	0.00	558.65	551.30	0.06	2756.81	696.29
260	7800.00	0.00	0.00	537.14	530.31	0.06	2651.85	696.29
261	7830.00	0.00	0.00	517.15	510.81	0.05	2554.30	696.28
262	7860.00	0.00	0.00	498.58	492.68	0.05	2463.65	696.28
263	7890.00	0.00	0.00	481.31	475.83	0.05	2379.39	696.27
264	7920.00	0.00	0.00	465.27	460.17	0.04	2301.08	696.26
265	7950.00	0.00	0.00	450.36	445.62	0.04	2228.31	696.26
266	7980.00	0.00	0.00	436.50	432.10	0.04	2160.67	696.26
267	8010.00	0.00	0.00	423.62	419.53	0.03	2097.81	696.25
268	8040.00	0.00	0.00	411.65	407.85	0.03	2039.39	696.25
269	8070.00	0.00	0.00	400.52	396.99	0.03	1985.10	696.24
270	8100.00	0.00	0.00	390.18	386.90	0.03	1934.63	696.24
271	8130.00	0.00	0.00	380.57	377.52	0.03	1887.74	696.24
272	8160.00	0.00	0.00	371.64	368.81	0.02	1844.15	696.24
273	8190.00	0.00	0.00	363.34	360.71	0.02	1803.64	696.23
274	8220.00	0.00	0.00	355.63	353.18	0.02	1765.99	696.23
275	8250.00	0.00	0.00	348.46	346.18	0.02	1731.00	696.23
276	8280.00	0.00	0.00	341.79	339.68	0.02	1698.49	696.23
277	8310.00	0.00	0.00	335.60	333.64	0.02	1668.26	696.23
278	8340.00	0.00	0.00	329.85	328.02	0.02	1640.18	696.22
279	8370.00	0.00	0.00	324.50	322.80	0.01	1614.07	696.22
280	8400.00	0.00	0.00	319.53	317.95	0.01	1589.81	696.22
281	8430.00	0.00	0.00	314.91	313.44	0.01	1567.26	696.22
282	8460.00	0.00	0.00	310.61	309.25	0.01	1546.31	696.22
283	8490.00	0.00	0.00	306.62	305.36	0.01	1526.83	696.22
284	8520.00	0.00	0.00	302.91	301.74	0.01	1508.73	696.21
285	8550.00	0.00	0.00	299.47	298.37	0.01	1491.91	696.21
286	8580.00	0.00	0.00	296.26	295.25	0.01	1476.28	696.21
287	8610.00	0.00	0.00	293.29	292.34	0.01	1461.75	696.21
288	8640.00	0.00	0.00	290.52	289.64	0.01	1448.24	696.21
289	8670.00	0.00	0.00	287.95	287.13	0.01	1435.69	696.21
290	8700.00	0.00	0.00	285.56	284.80	0.01	1424.03	696.21
291	8730.00	0.00	0.00	283.34	282.63	0.01	1413.19	696.21
292	8760.00	0.00	0.00	281.27	280.62	0.01	1403.11	696.21
293	8790.00	0.00	0.00	279.35	278.75	0.01	1393.75	696.21
294	8820.00	0.00	0.00	277.57	277.00	0.00	1385.05	696.21

UNIT HYDROGRAPH REPORT

Number	Name	Type	Defined
<None>			

Hydrograph Number: 13
Name: 50 Year Thru Phase 1 Pond
Type: Reservoir: Storage Indication

[HYDROGRAPH INFORMATION]

Peak Flow (Qp)	=	10.24 (cfs)
Time to Peak (Tp)	=	930.00 (min)
Time of Base (Tb)	=	7200.00 (min)
Volume	=	9.02 (ac-ft)
Time Step	=	5.00 (min)
Peak Elevation	=	699.89 (ft)
Detention Time	=	NA

[RESERVOIR STRUCTURE INFORMATION]

Number	=	1
Name	=	Phase 1 Pond
Storage Type	=	User-Defined Area
Maximum Storage	=	248249.00 (cu ft)
Maximum Discharge	=	14.31 (cfs)

[INFLOW HYDROGRAPH INFORMATION]

Number	=	6
Name	=	50 Year Developed
Peak Flow (Qp)	=	41.00 (cfs)
Time to Peak (Tp)	=	780.00 (min)
Time of Base (Tb)	=	1560.00 (min)
Volume	=	9.21 (ac-ft)
Flow Multiplier	=	1.00

[EQUATION]

$0.5(I1+I2)dt + S1-0.5(O2)dt$

Where:

I1 = Previous Inflow
I2 = Current Inflow
dt = Time increment
S1 = Previous Storage
S2 = Current Storage
O1 = Previous Outflow
O2 = Current Outflow

$A = 0.5\ (I1+I2)\ dt$
$B = S1 - 0.5\ (O1)\ dt$
$C = S2 + 0.5\ (O2)\ dt$

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 5.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
1	30.00	0.05	0.08	11.36	16.36	0.00	40.91	696.01
2	60.00	0.09	0.17	55.00	65.45	0.00	163.64	696.05
3	90.00	0.14	0.27	131.36	147.27	0.00	368.18	696.11
4	120.00	0.18	0.36	240.45	261.82	0.00	654.55	696.14
5	150.00	0.23	0.45	382.27	409.09	0.00	1022.73	696.17
6	180.00	0.27	0.54	556.31	587.80	0.01	1469.52	696.21
7	210.00	0.32	0.63	752.95	787.47	0.03	1968.76	696.24
8	240.00	0.36	0.72	967.26	1004.60	0.05	2511.63	696.28
9	270.00	0.41	0.81	1197.68	1237.13	0.08	3093.02	696.31
10	300.00	0.45	0.90	1436.46	1476.73	0.12	3692.13	696.34
11	330.00	0.50	0.99	1679.97	1720.98	0.16	4302.84	696.36
12	360.00	0.55	1.08	1927.69	1969.35	0.20	4923.87	696.39
13	390.00	0.59	1.17	2183.84	2229.10	0.21	5573.28	696.42
14	420.00	0.64	1.27	2468.07	2518.39	0.21	6296.51	696.44
15	450.00	0.68	1.36	2782.57	2837.91	0.22	7095.32	696.47
16	480.00	0.73	1.45	3127.10	3187.42	0.22	7969.10	696.50
17	510.00	0.77	1.54	3501.67	3567.04	0.22	8918.16	696.53
18	540.00	0.82	1.63	3906.49	3976.89	0.23	9942.79	696.56
19	570.00	0.86	1.72	4341.38	4416.77	0.23	11042.51	696.59
20	600.00	0.91	1.81	4806.22	4886.63	0.24	12217.17	696.62
21	630.00	0.95	1.90	5301.27	5386.72	0.24	13467.39	696.65
22	660.00	1.00	1.99	5826.46	5916.91	0.24	14792.88	696.68
23	690.00	2.00	4.00	6749.80	6959.96	0.25	17400.52	696.74
24	720.00	2.78	5.28	8065.20	8351.09	0.26	20878.37	696.81
25	750.00	6.33	11.33	10460.69	11108.43	0.27	27771.74	696.93
26	780.00	17.00	33.00	17040.16	18984.50	0.30	47462.00	697.24
27	810.00	36.00	70.00	34929.72	39086.79	0.36	97717.88	697.99
28	840.00	36.00	74.50	61203.41	65257.77	3.61	163153.45	698.90
29	870.00	25.00	52.50	81471.60	83904.05	6.13	209775.45	699.52
30	900.00	16.50	33.50	92346.94	93415.87	8.15	233560.05	699.82
31	930.00	10.00	20.67	95801.15	95812.36	10.24	239556.51	699.89
32	960.00	7.67	15.67	95163.94	94953.82	9.49	237408.28	699.87
33	990.00	5.67	11.50	93587.91	93297.44	8.05	233263.72	699.81
34	1020.00	4.67	9.50	91865.95	91554.88	7.30	228905.46	699.76
35	1050.00	4.00	8.00	89877.78	89543.55	6.75	223875.75	699.70
36	1080.00	3.67	7.50	87933.61	87595.90	6.55	219006.12	699.63
37	1110.00	3.00	6.00	85687.91	85290.26	6.29	213241.39	699.56
38	1140.00	3.00	6.00	83382.59	83017.02	6.02	207557.60	699.49
39	1170.00	2.83	5.75	81267.09	80919.28	5.75	202312.59	699.42
40	1200.00	2.33	4.75	79119.13	78748.99	5.43	196886.05	699.35
41	1230.00	2.00	4.00	76859.10	76490.50	5.03	191238.82	699.28
42	1260.00	2.00	4.00	74789.23	74475.59	4.58	186200.43	699.21
43	1290.00	2.00	4.00	73012.24	72736.97	4.27	181853.10	699.15
44	1320.00	2.00	4.00	71440.48	71196.43	4.01	178001.10	699.10
45	1350.00	2.00	4.00	70014.25	69783.31	3.92	174468.07	699.05
46	1380.00	2.00	4.00	68655.04	68434.57	3.83	171096.00	699.01
47	1410.00	1.92	3.88	67355.68	67138.20	3.74	167854.86	698.97
48	1440.00	1.67	3.38	66003.41	65767.15	3.65	164426.99	698.92
49	1470.00	1.42	2.88	64541.21	64287.52	3.54	160727.66	698.87
50	1500.00	1.17	2.38	62978.39	62708.60	3.43	156780.06	698.82
51	1530.00	0.92	1.88	61322.02	61037.69	3.30	152602.46	698.76
52	1560.00	0.67	1.38	59582.50	59284.91	3.16	148220.16	698.70
53	1590.00	0.42	0.88	57768.59	57459.96	3.00	143657.39	698.64
54	1620.00	0.17	0.38	55891.45	55573.36	2.82	138940.46	698.57
55	1650.00	0.00	0.00	53966.96	53649.02	2.63	134129.14	698.51
56	1680.00	0.00	0.00	52119.21	51825.44	2.43	129569.69	698.44
57	1710.00	0.00	0.00	50415.05	50144.96	2.23	125367.99	698.39
58	1740.00	0.00	0.00	48859.07	48614.31	2.02	121540.83	698.33
59	1770.00	0.00	0.00	47450.23	47231.59	1.80	118083.48	698.28
60	1800.00	0.00	0.00	46218.64	46031.17	1.54	115081.78	698.24

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 5.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
61	1830.00	0.00	0.00	45162.59	45001.83	1.32	112507.88	698.21
62	1860.00	0.00	0.00	44256.96	44119.08	1.13	110300.53	698.17
63	1890.00	0.00	0.00	43480.12	43361.84	0.97	108407.04	698.15
64	1920.00	0.00	0.00	42813.74	42712.28	0.83	106782.79	698.12
65	1950.00	0.00	0.00	42242.12	42155.08	0.72	105389.50	698.10
66	1980.00	0.00	0.00	41745.20	41666.82	0.65	104168.67	698.09
67	2010.00	0.00	0.00	41291.22	41219.25	0.60	103049.63	698.07
68	2040.00	0.00	0.00	40874.43	40808.36	0.55	102022.26	698.06
69	2070.00	0.00	0.00	40491.78	40431.13	0.50	101079.07	698.04
70	2100.00	0.00	0.00	40140.48	40084.80	0.46	100213.15	698.03
71	2130.00	0.00	0.00	39817.97	39766.85	0.42	99418.17	698.02
72	2160.00	0.00	0.00	39521.88	39474.94	0.39	98688.32	698.01
73	2190.00	0.00	0.00	39249.90	39206.22	0.36	98016.46	698.00
74	2220.00	0.00	0.00	38988.05	38944.46	0.36	97362.06	697.99
75	2250.00	0.00	0.00	38726.73	38683.23	0.36	96708.99	697.98
76	2280.00	0.00	0.00	38465.95	38422.53	0.36	96057.23	697.97
77	2310.00	0.00	0.00	38205.68	38162.36	0.36	95406.80	697.96
78	2340.00	0.00	0.00	37945.95	37902.71	0.36	94757.67	697.95
79	2370.00	0.00	0.00	37686.73	37643.58	0.36	94109.85	697.94
80	2400.00	0.00	0.00	37428.04	37384.98	0.36	93463.34	697.93
81	2430.00	0.00	0.00	37169.88	37126.90	0.36	92818.14	697.92
82	2460.00	0.00	0.00	36912.23	36869.34	0.36	92174.24	697.91
83	2490.00	0.00	0.00	36655.10	36612.30	0.36	91531.64	697.90
84	2520.00	0.00	0.00	36398.50	36355.78	0.36	90890.34	697.89
85	2550.00	0.00	0.00	36142.42	36099.80	0.36	90250.38	697.89
86	2580.00	0.00	0.00	35886.88	35844.34	0.35	89611.75	697.88
87	2610.00	0.00	0.00	35631.87	35589.42	0.35	88974.44	697.87
88	2640.00	0.00	0.00	35377.39	35335.03	0.35	88338.46	697.86
89	2670.00	0.00	0.00	35123.45	35081.17	0.35	87703.81	697.85
90	2700.00	0.00	0.00	34870.02	34827.84	0.35	87070.48	697.84
91	2730.00	0.00	0.00	34617.13	34575.03	0.35	86438.46	697.83
92	2760.00	0.00	0.00	34364.76	34322.75	0.35	85807.76	697.82
93	2790.00	0.00	0.00	34112.92	34071.00	0.35	85178.37	697.81
94	2820.00	0.00	0.00	33861.60	33819.77	0.35	84550.29	697.80
95	2850.00	0.00	0.00	33610.81	33569.07	0.35	83923.53	697.79
96	2880.00	0.00	0.00	33360.56	33318.90	0.35	83298.12	697.78
97	2910.00	0.00	0.00	33110.84	33069.27	0.35	82674.05	697.77
98	2940.00	0.00	0.00	32861.66	32820.18	0.35	82051.32	697.76
99	2970.00	0.00	0.00	32613.02	32571.63	0.34	81429.93	697.76
100	3000.00	0.00	0.00	32364.90	32323.60	0.34	80809.87	697.75
101	3030.00	0.00	0.00	32117.33	32076.12	0.34	80191.15	697.74
102	3060.00	0.00	0.00	31870.28	31829.16	0.34	79573.75	697.73
103	3090.00	0.00	0.00	31623.76	31582.73	0.34	78957.68	697.72
104	3120.00	0.00	0.00	31377.78	31336.83	0.34	78342.93	697.71
105	3150.00	0.00	0.00	31132.32	31091.46	0.34	77729.50	697.70
106	3180.00	0.00	0.00	30887.39	30846.62	0.34	77117.40	697.69
107	3210.00	0.00	0.00	30643.01	30602.33	0.34	76506.67	697.68
108	3240.00	0.00	0.00	30399.16	30358.58	0.34	75897.28	697.67
109	3270.00	0.00	0.00	30155.86	30115.36	0.34	75289.25	697.66
110	3300.00	0.00	0.00	29913.10	29872.69	0.34	74682.57	697.66
111	3330.00	0.00	0.00	29670.88	29630.56	0.34	74077.23	697.65
112	3360.00	0.00	0.00	29429.19	29388.96	0.34	73473.24	697.64
113	3390.00	0.00	0.00	29188.04	29147.90	0.33	72870.59	697.63
114	3420.00	0.00	0.00	28947.43	28907.38	0.33	72269.27	697.62
115	3450.00	0.00	0.00	28707.35	28667.38	0.33	71669.29	697.61
116	3480.00	0.00	0.00	28467.80	28427.92	0.33	71070.64	697.60
117	3510.00	0.00	0.00	28228.78	28189.00	0.33	70473.33	697.59
118	3540.00	0.00	0.00	27990.32	27950.63	0.33	69877.39	697.58
119	3570.00	0.00	0.00	27752.40	27712.80	0.33	69282.82	697.58
120	3600.00	0.00	0.00	27515.02	27475.52	0.33	68689.61	697.57

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 5.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
121	3630.00	0.00	0.00	27278.20	27238.78	0.33	68097.77	697.56
122	3660.00	0.00	0.00	27041.91	27002.58	0.33	67507.28	697.55
123	3690.00	0.00	0.00	26806.17	26766.93	0.33	66918.15	697.54
124	3720.00	0.00	0.00	26570.97	26531.82	0.33	66330.36	697.53
125	3750.00	0.00	0.00	26336.31	26297.25	0.33	65743.93	697.52
126	3780.00	0.00	0.00	26102.18	26063.21	0.32	65158.85	697.51
127	3810.00	0.00	0.00	25868.60	25829.72	0.32	64575.11	697.50
128	3840.00	0.00	0.00	25635.55	25596.76	0.32	63992.71	697.50
129	3870.00	0.00	0.00	25403.05	25364.35	0.32	63411.69	697.49
130	3900.00	0.00	0.00	25171.10	25132.50	0.32	62832.05	697.48
131	3930.00	0.00	0.00	24939.71	24901.19	0.32	62253.79	697.47
132	3960.00	0.00	0.00	24708.86	24670.44	0.32	61676.90	697.46
133	3990.00	0.00	0.00	24478.56	24440.23	0.32	61101.38	697.45
134	4020.00	0.00	0.00	24248.81	24210.58	0.32	60527.24	697.44
135	4050.00	0.00	0.00	24019.61	23981.46	0.32	59954.46	697.44
136	4080.00	0.00	0.00	23790.95	23752.90	0.32	59383.04	697.43
137	4110.00	0.00	0.00	23562.84	23524.87	0.32	58812.98	697.42
138	4140.00	0.00	0.00	23335.27	23297.39	0.32	58244.27	697.41
139	4170.00	0.00	0.00	23108.24	23070.45	0.31	57676.92	697.40
140	4200.00	0.00	0.00	22881.75	22844.06	0.31	57110.94	697.39
141	4230.00	0.00	0.00	22655.83	22618.23	0.31	56546.35	697.38
142	4260.00	0.00	0.00	22430.46	22392.95	0.31	55983.16	697.37
143	4290.00	0.00	0.00	22205.64	22168.23	0.31	55421.35	697.37
144	4320.00	0.00	0.00	21981.39	21944.06	0.31	54860.94	697.36
145	4350.00	0.00	0.00	21757.68	21720.45	0.31	54301.90	697.35
146	4380.00	0.00	0.00	21534.53	21497.39	0.31	53744.25	697.34
147	4410.00	0.00	0.00	21311.92	21274.88	0.31	53187.97	697.33
148	4440.00	0.00	0.00	21089.87	21052.92	0.31	52633.06	697.32
149	4470.00	0.00	0.00	20868.37	20831.50	0.31	52079.52	697.32
150	4500.00	0.00	0.00	20647.41	20610.63	0.31	51527.35	697.31
151	4530.00	0.00	0.00	20426.99	20390.31	0.31	50976.54	697.30
152	4560.00	0.00	0.00	20207.13	20170.54	0.30	50427.12	697.29
153	4590.00	0.00	0.00	19987.84	19951.34	0.30	49879.12	697.28
154	4620.00	0.00	0.00	19769.10	19732.70	0.30	49332.52	697.27
155	4650.00	0.00	0.00	19550.93	19514.62	0.30	48787.32	697.26
156	4680.00	0.00	0.00	19333.32	19297.10	0.30	48243.52	697.26
157	4710.00	0.00	0.00	19116.26	19080.14	0.30	47701.11	697.25
158	4740.00	0.00	0.00	18899.77	18863.74	0.30	47160.09	697.24
159	4770.00	0.00	0.00	18683.82	18647.89	0.30	46620.47	697.23
160	4800.00	0.00	0.00	18468.43	18432.59	0.30	46082.22	697.22
161	4830.00	0.00	0.00	18253.60	18217.85	0.30	45545.36	697.21
162	4860.00	0.00	0.00	18039.31	18003.65	0.30	45009.87	697.21
163	4890.00	0.00	0.00	17825.58	17790.01	0.30	44475.76	697.20
164	4920.00	0.00	0.00	17612.40	17576.93	0.30	43943.05	697.19
165	4950.00	0.00	0.00	17399.79	17364.41	0.29	43411.77	697.18
166	4980.00	0.00	0.00	17187.76	17152.47	0.29	42881.91	697.17
167	5010.00	0.00	0.00	16976.28	16941.09	0.29	42353.46	697.17
168	5040.00	0.00	0.00	16765.37	16730.28	0.29	41826.43	697.16
169	5070.00	0.00	0.00	16555.03	16520.03	0.29	41300.80	697.15
170	5100.00	0.00	0.00	16345.25	16310.34	0.29	40776.57	697.14
171	5130.00	0.00	0.00	16136.03	16101.21	0.29	40253.75	697.13
172	5160.00	0.00	0.00	15927.36	15892.64	0.29	39732.32	697.12
173	5190.00	0.00	0.00	15719.26	15684.63	0.29	39212.29	697.12
174	5220.00	0.00	0.00	15511.71	15477.17	0.29	38693.64	697.11
175	5250.00	0.00	0.00	15304.71	15270.26	0.29	38176.38	697.10
176	5280.00	0.00	0.00	15098.27	15063.92	0.29	37660.52	697.09
177	5310.00	0.00	0.00	14892.41	14858.16	0.29	37146.11	697.08
178	5340.00	0.00	0.00	14687.13	14652.97	0.28	36633.13	697.08
179	5370.00	0.00	0.00	14482.41	14448.35	0.28	36121.58	697.07
180	5400.00	0.00	0.00	14278.27	14244.30	0.28	35611.45	697.06

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 5.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
181	5430.00	0.00	0.00	14074.69	14040.82	0.28	35102.75	697.05
182	5460.00	0.00	0.00	13871.68	13837.90	0.28	34595.46	697.04
183	5490.00	0.00	0.00	13669.24	13635.56	0.28	34089.59	697.04
184	5520.00	0.00	0.00	13467.36	13433.77	0.28	33585.13	697.03
185	5550.00	0.00	0.00	13266.05	13232.55	0.28	33082.08	697.02
186	5580.00	0.00	0.00	13065.30	13031.89	0.28	32580.43	697.01
187	5610.00	0.00	0.00	12865.10	12831.79	0.28	32080.17	697.00
188	5640.00	0.00	0.00	12665.47	12632.25	0.28	31581.33	697.00
189	5670.00	0.00	0.00	12466.43	12433.31	0.28	31083.97	696.99
190	5700.00	0.00	0.00	12268.00	12234.98	0.28	30588.14	696.98
191	5730.00	0.00	0.00	12070.17	12037.26	0.27	30093.83	696.97
192	5760.00	0.00	0.00	11872.95	11840.14	0.27	29601.02	696.96
193	5790.00	0.00	0.00	11676.33	11643.62	0.27	29109.72	696.96
194	5820.00	0.00	0.00	11480.31	11447.70	0.27	28619.93	696.95
195	5850.00	0.00	0.00	11284.89	11252.38	0.27	28131.63	696.94
196	5880.00	0.00	0.00	11090.07	11057.66	0.27	27644.82	696.93
197	5910.00	0.00	0.00	10895.84	10863.53	0.27	27159.50	696.92
198	5940.00	0.00	0.00	10702.21	10670.00	0.27	26675.67	696.92
199	5970.00	0.00	0.00	10509.17	10477.06	0.27	26193.31	696.91
200	6000.00	0.00	0.00	10316.72	10284.70	0.27	25712.43	696.90
201	6030.00	0.00	0.00	10124.90	10092.99	0.27	25233.14	696.89
202	6060.00	0.00	0.00	9933.75	9901.96	0.26	24755.56	696.88
203	6090.00	0.00	0.00	9743.28	9711.61	0.26	24279.68	696.87
204	6120.00	0.00	0.00	9553.50	9521.93	0.26	23805.48	696.86
205	6150.00	0.00	0.00	9364.38	9332.93	0.26	23332.97	696.86
206	6180.00	0.00	0.00	9175.94	9144.59	0.26	22862.14	696.85
207	6210.00	0.00	0.00	8988.16	8956.93	0.26	22392.98	696.84
208	6240.00	0.00	0.00	8801.05	8769.93	0.26	21925.48	696.83
209	6270.00	0.00	0.00	8614.61	8583.60	0.26	21459.65	696.82
210	6300.00	0.00	0.00	8428.83	8397.93	0.26	20995.47	696.81
211	6330.00	0.00	0.00	8243.71	8212.92	0.26	20532.94	696.80
212	6360.00	0.00	0.00	8059.26	8028.59	0.26	20072.11	696.79
213	6390.00	0.00	0.00	7875.56	7845.01	0.25	19613.17	696.78
214	6420.00	0.00	0.00	7692.63	7662.21	0.25	19156.17	696.78
215	6450.00	0.00	0.00	7510.47	7480.18	0.25	18701.08	696.77
216	6480.00	0.00	0.00	7329.07	7298.91	0.25	18247.90	696.76
217	6510.00	0.00	0.00	7148.43	7118.40	0.25	17796.63	696.75
218	6540.00	0.00	0.00	6968.56	6938.65	0.25	17347.25	696.74
219	6570.00	0.00	0.00	6789.44	6759.66	0.25	16899.77	696.73
220	6600.00	0.00	0.00	6611.07	6581.42	0.25	16454.16	696.72
221	6630.00	0.00	0.00	6433.45	6403.92	0.25	16010.42	696.71
222	6660.00	0.00	0.00	6256.58	6227.17	0.24	15568.54	696.70
223	6690.00	0.00	0.00	6080.50	6051.24	0.24	15128.71	696.69
224	6720.00	0.00	0.00	5905.31	5876.20	0.24	14691.11	696.68
225	6750.00	0.00	0.00	5731.02	5702.05	0.24	14255.74	696.67
226	6780.00	0.00	0.00	5557.60	5528.79	0.24	13822.57	696.66
227	6810.00	0.00	0.00	5385.07	5356.40	0.24	13391.60	696.65
228	6840.00	0.00	0.00	5213.41	5184.89	0.24	12962.82	696.64
229	6870.00	0.00	0.00	5042.63	5014.25	0.24	12536.21	696.63
230	6900.00	0.00	0.00	4872.71	4844.47	0.24	12111.77	696.62
231	6930.00	0.00	0.00	4703.65	4675.56	0.23	11689.48	696.61
232	6960.00	0.00	0.00	4535.46	4507.52	0.23	11269.38	696.60
233	6990.00	0.00	0.00	4368.27	4340.50	0.23	10851.83	696.58
234	7020.00	0.00	0.00	4202.13	4174.54	0.23	10436.92	696.57
235	7050.00	0.00	0.00	4037.04	4009.62	0.23	10024.62	696.56
236	7080.00	0.00	0.00	3872.99	3845.75	0.23	9614.93	696.55
237	7110.00	0.00	0.00	3709.97	3682.90	0.23	9207.82	696.54
238	7140.00	0.00	0.00	3547.99	3521.09	0.22	8803.28	696.52
239	7170.00	0.00	0.00	3387.02	3360.30	0.22	8401.30	696.51
240	7200.00	0.00	0.00	3227.08	3200.52	0.22	8001.85	696.50

FLOOD HYDROGRAPH REPORT

Hydrograph Number: 14
Name: 100 Year Thru Phase 1 Pond
Type: Reservoir: Storage Indication

[HYDROGRAPH INFORMATION]

Peak Flow (Qp)	=	8.37 (cfs)
Time to Peak (Tp)	=	885.00 (min)
Time of Base (Tb)	=	4320.00 (min)
Volume	=	7.66 (ac-ft)
Time Step	=	3.00 (min)
Peak Elevation	=	699.82 (ft)
Detention Time	=	NA

[RESERVOIR STRUCTURE INFORMATION]

Number	=	1
Name	=	Phase 1 Pond
Storage Type	=	User-Defined Area
Maximum Storage	=	248249.00 (cu ft)
Maximum Discharge	=	14.31 (cfs)

[INFLOW HYDROGRAPH INFORMATION]

Number	=	7
Name	=	100 Year Developed
Peak Flow (Qp)	=	48.00 (cfs)
Time to Peak (Tp)	=	780.00 (min)
Time of Base (Tb)	=	1560.00 (min)
Volume	=	8.89 (ac-ft)
Flow Multiplier	=	1.00

[EQUATION]

$0.5(I1+I2)dt + S1-0.5(O2)dt$

Where:

I1 = Previous Inflow
I2 = Current Inflow
dt = Time increment
S1 = Previous Storage
S2 = Current Storage
O1 = Previous Outflow
O2 = Current Outflow

$A = 0.5\ (I1+I2)\ dt$
$B = S1 - 0.5\ (O1)\ dt$
$C = S2 + 0.5\ (O2)\ dt$

Computation of Reservoir Outflow Table of Storage Indication Method

[The time interval is 3.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
1	30.00	0.09	0.17	44.18	54.55	0.00	81.82	696.03
2	60.00	0.18	0.35	196.91	218.18	0.00	327.27	696.10
3	90.00	0.27	0.54	458.73	490.91	0.00	736.36	696.14
4	120.00	0.36	0.72	829.64	872.63	0.00	1308.95	696.20
5	150.00	0.45	0.90	1294.26	1344.80	0.03	2017.24	696.25
6	180.00	0.55	1.08	1831.32	1888.81	0.06	2833.30	696.30
7	210.00	0.64	1.26	2426.18	2487.84	0.12	3731.95	696.34
8	240.00	0.73	1.45	3059.05	3124.25	0.18	4686.65	696.38
9	270.00	0.82	1.63	3734.66	3807.02	0.21	5710.85	696.42
10	300.00	0.91	1.81	4504.60	4587.23	0.22	6881.17	696.46
11	330.00	1.00	1.99	5376.90	5469.75	0.22	8204.96	696.51
12	360.00	1.09	2.17	6351.77	6454.91	0.23	9682.71	696.55
13	390.00	1.18	2.35	7429.24	7542.60	0.23	11314.26	696.60
14	420.00	1.27	2.54	8609.16	8732.81	0.24	13099.57	696.64
15	450.00	1.36	2.72	9891.88	10025.79	0.24	15039.04	696.69
16	480.00	1.45	2.90	11277.16	11421.35	0.25	17132.40	696.73
17	510.00	1.55	3.08	12765.40	12919.88	0.25	19380.20	696.78
18	540.00	1.64	3.26	14356.39	14521.16	0.26	21782.12	696.83
19	570.00	1.73	3.45	16050.49	16225.56	0.26	24338.74	696.87
20	600.00	1.82	3.63	17847.54	18032.92	0.27	27049.78	696.92
21	630.00	1.91	3.81	19747.84	19943.55	0.27	29915.74	696.97
22	660.00	2.00	3.99	21751.29	21957.31	0.28	32936.38	697.02
23	690.00	2.67	5.17	23903.78	24179.73	0.28	36270.02	697.07
24	720.00	5.00	9.50	27579.12	28114.04	0.29	42171.50	697.16
25	750.00	25.00	46.50	39397.97	42149.63	0.32	63224.94	697.48
26	780.00	48.00	95.00	83570.28	88979.51	2.61	133473.17	698.50
27	810.00	29.00	60.00	127900.91	130871.62	5.40	196315.52	699.34
28	840.00	16.00	33.00	148149.82	149323.34	6.76	223995.15	699.70
29	870.00	10.00	20.50	155465.86	155724.32	8.16	233598.72	699.82
30	900.00	7.00	14.25	155849.00	155720.72	8.16	233593.32	699.82
31	930.00	6.00	12.10	154332.71	154149.10	7.56	231235.00	699.79
32	960.00	5.00	10.10	152149.55	151891.61	7.18	227848.19	699.75
33	990.00	4.00	8.10	149286.22	148962.88	6.73	223454.43	699.69
34	1020.00	4.00	8.00	146108.54	145803.26	6.53	218714.70	699.63
35	1050.00	3.00	6.10	142684.94	142293.26	6.30	213449.34	699.56
36	1080.00	3.00	6.00	138858.74	138493.10	6.03	207748.70	699.49
37	1110.00	3.00	6.00	135351.41	135018.34	5.76	202536.15	699.42
38	1140.00	3.00	6.00	132164.77	131864.55	5.49	197805.06	699.36
39	1170.00	2.50	5.05	129072.37	128749.61	5.20	193132.21	699.30
40	1200.00	2.00	4.05	125803.53	125472.72	4.76	188216.21	699.24
41	1230.00	2.00	4.00	122692.66	122404.27	4.39	183612.99	699.18
42	1260.00	2.00	4.00	119959.22	119703.54	4.12	179561.48	699.12
43	1290.00	2.00	4.00	117518.44	117283.32	3.95	175930.92	699.07
44	1320.00	2.00	4.00	115215.62	114991.16	3.87	172492.54	699.03
45	1350.00	1.75	3.52	112897.67	112655.74	3.77	168989.28	698.98
46	1380.00	1.50	3.02	110398.50	110138.97	3.67	165213.96	698.93
47	1410.00	1.25	2.52	107727.67	107451.75	3.56	161182.96	698.88
48	1440.00	1.00	2.02	104900.53	104609.66	3.43	156919.63	698.82
49	1470.00	0.75	1.52	101929.50	101625.25	3.29	152442.81	698.76
50	1500.00	0.50	1.02	98831.84	98515.51	3.14	147777.97	698.70
51	1530.00	0.25	0.53	95624.07	95298.01	2.97	142951.47	698.63
52	1560.00	0.00	0.03	92324.53	91990.59	2.79	137990.07	698.56
53	1590.00	0.00	0.00	89075.89	88763.47	2.59	133149.09	698.49
54	1620.00	0.00	0.00	86062.80	85774.75	2.39	128665.71	698.43
55	1650.00	0.00	0.00	83287.84	83024.09	2.19	124539.42	698.37
56	1680.00	0.00	0.00	80763.70	80524.69	1.98	120790.01	698.32
57	1710.00	0.00	0.00	78488.81	78278.14	1.74	117419.82	698.27
58	1740.00	0.00	0.00	76521.02	76340.37	1.49	114512.80	698.23
59	1770.00	0.00	0.00	74833.67	74678.77	1.28	112020.07	698.20
60	1800.00	0.00	0.00	73386.55	73253.67	1.10	109882.16	698.17

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 3.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
61	1830.00	0.00	0.00	72145.19	72031.20	0.94	108048.22	698.14
62	1860.00	0.00	0.00	71080.33	70982.55	0.81	106475.04	698.12
63	1890.00	0.00	0.00	70166.88	70082.98	0.69	105125.51	698.10
64	1920.00	0.00	0.00	69361.54	69284.76	0.64	103928.09	698.08
65	1950.00	0.00	0.00	68622.42	68551.93	0.59	102828.77	698.07
66	1980.00	0.00	0.00	67943.86	67879.14	0.54	101819.51	698.05
67	2010.00	0.00	0.00	67320.88	67261.46	0.49	100892.94	698.04
68	2040.00	0.00	0.00	66748.95	66694.40	0.45	100042.27	698.03
69	2070.00	0.00	0.00	66223.87	66173.79	0.42	99261.30	698.02
70	2100.00	0.00	0.00	65741.81	65695.83	0.38	98544.32	698.01
71	2130.00	0.00	0.00	65296.94	65253.29	0.36	97880.47	698.00
72	2160.00	0.00	0.00	64860.77	64817.21	0.36	97226.35	697.99
73	2190.00	0.00	0.00	64425.49	64382.01	0.36	96573.55	697.98
74	2220.00	0.00	0.00	63991.08	63947.69	0.36	95922.07	697.97
75	2250.00	0.00	0.00	63557.55	63514.24	0.36	95271.91	697.96
76	2280.00	0.00	0.00	63124.89	63081.67	0.36	94623.05	697.95
77	2310.00	0.00	0.00	62693.11	62649.98	0.36	93975.51	697.94
78	2340.00	0.00	0.00	62262.20	62219.16	0.36	93329.27	697.93
79	2370.00	0.00	0.00	61832.16	61789.20	0.36	92684.34	697.92
80	2400.00	0.00	0.00	61402.98	61360.12	0.36	92040.71	697.91
81	2430.00	0.00	0.00	60974.68	60931.90	0.36	91398.38	697.90
82	2460.00	0.00	0.00	60547.24	60504.55	0.36	90757.36	697.89
83	2490.00	0.00	0.00	60120.70	60078.09	0.36	90117.67	697.88
84	2520.00	0.00	0.00	59695.04	59652.52	0.35	89479.31	697.87
85	2550.00	0.00	0.00	59270.26	59227.83	0.35	88842.28	697.86
86	2580.00	0.00	0.00	58846.37	58804.03	0.35	88206.58	697.86
87	2610.00	0.00	0.00	58423.37	58381.11	0.35	87572.20	697.85
88	2640.00	0.00	0.00	58001.24	57959.07	0.35	86939.14	697.84
89	2670.00	0.00	0.00	57579.99	57537.91	0.35	86307.40	697.83
90	2700.00	0.00	0.00	57159.62	57117.63	0.35	85676.97	697.82
91	2730.00	0.00	0.00	56740.12	56698.22	0.35	85047.85	697.81
92	2760.00	0.00	0.00	56321.50	56279.68	0.35	84420.05	697.80
93	2790.00	0.00	0.00	55903.75	55862.03	0.35	83793.57	697.79
94	2820.00	0.00	0.00	55486.91	55445.28	0.35	83168.43	697.78
95	2850.00	0.00	0.00	55070.96	55029.42	0.35	82544.64	697.77
96	2880.00	0.00	0.00	54655.90	54614.45	0.35	81922.19	697.76
97	2910.00	0.00	0.00	54241.74	54200.37	0.34	81301.08	697.75
98	2940.00	0.00	0.00	53828.46	53787.19	0.34	80681.29	697.74
99	2970.00	0.00	0.00	53416.08	53374.89	0.34	80062.84	697.74
100	3000.00	0.00	0.00	53004.57	52963.47	0.34	79445.72	697.73
101	3030.00	0.00	0.00	52593.95	52552.94	0.34	78829.92	697.72
102	3060.00	0.00	0.00	52184.22	52143.29	0.34	78215.45	697.71
103	3090.00	0.00	0.00	51775.36	51734.52	0.34	77602.29	697.70
104	3120.00	0.00	0.00	51367.39	51326.65	0.34	76990.48	697.69
105	3150.00	0.00	0.00	50960.33	50919.68	0.34	76380.03	697.68
106	3180.00	0.00	0.00	50554.18	50513.61	0.34	75770.92	697.67
107	3210.00	0.00	0.00	50148.92	50108.44	0.34	75163.17	697.66
108	3240.00	0.00	0.00	49744.56	49704.18	0.34	74556.77	697.65
109	3270.00	0.00	0.00	49341.10	49300.81	0.34	73951.71	697.65
110	3300.00	0.00	0.00	48938.54	48898.33	0.34	73348.00	697.64
111	3330.00	0.00	0.00	48536.87	48496.75	0.33	72745.63	697.63
112	3360.00	0.00	0.00	48136.09	48096.06	0.33	72144.59	697.62
113	3390.00	0.00	0.00	47736.20	47696.26	0.33	71544.88	697.61
114	3420.00	0.00	0.00	47337.19	47297.34	0.33	70946.51	697.60
115	3450.00	0.00	0.00	46939.08	46899.32	0.33	70349.48	697.59
116	3480.00	0.00	0.00	46541.89	46502.22	0.33	69753.83	697.58
117	3510.00	0.00	0.00	46145.61	46106.03	0.33	69159.54	697.57
118	3540.00	0.00	0.00	45750.23	45710.75	0.33	68566.61	697.56
119	3570.00	0.00	0.00	45355.77	45316.37	0.33	67975.05	697.56
120	3600.00	0.00	0.00	44962.21	44922.90	0.33	67384.84	697.55

Computation of Reservoir Outflow Table of Storage Indication Method
[The time interval is 3.00 min]

Intv	Time (min)	Inflow (cfs)	A (cfs)	B (cfs)	C (cfs)	Outflow (cfs)	Storage (cu ft)	Elev (ft)
121	3630.00	0.00	0.00	44569.55	44530.33	0.33	66795.99	697.54
122	3660.00	0.00	0.00	44177.79	44138.67	0.33	66208.49	697.53
123	3690.00	0.00	0.00	43786.94	43747.90	0.33	65622.34	697.52
124	3720.00	0.00	0.00	43396.98	43358.03	0.32	65037.53	697.51
125	3750.00	0.00	0.00	43007.91	42969.06	0.32	64454.07	697.50
126	3780.00	0.00	0.00	42619.75	42580.98	0.32	63871.95	697.49
127	3810.00	0.00	0.00	42232.50	42193.82	0.32	63291.22	697.49
128	3840.00	0.00	0.00	41846.17	41807.59	0.32	62711.87	697.48
129	3870.00	0.00	0.00	41460.76	41422.27	0.32	62133.89	697.47
130	3900.00	0.00	0.00	41076.27	41037.87	0.32	61557.29	697.46
131	3930.00	0.00	0.00	40692.69	40654.39	0.32	60982.06	697.45
132	3960.00	0.00	0.00	40310.03	40271.81	0.32	60408.20	697.44
133	3990.00	0.00	0.00	39928.27	39890.15	0.32	59835.70	697.43
134	4020.00	0.00	0.00	39547.43	39509.39	0.32	59264.56	697.42
135	4050.00	0.00	0.00	39167.48	39129.54	0.32	58694.78	697.42
136	4080.00	0.00	0.00	38788.44	38750.59	0.32	58126.36	697.41
137	4110.00	0.00	0.00	38410.31	38372.54	0.31	57559.29	697.40
138	4140.00	0.00	0.00	38033.09	37995.42	0.31	56993.59	697.39
139	4170.00	0.00	0.00	37656.80	37619.22	0.31	56429.30	697.38
140	4200.00	0.00	0.00	37281.44	37243.95	0.31	55866.39	697.37
141	4230.00	0.00	0.00	36907.00	36869.61	0.31	55304.88	697.36
142	4260.00	0.00	0.00	36533.49	36496.19	0.31	54744.75	697.36
143	4290.00	0.00	0.00	36160.90	36123.69	0.31	54186.00	697.35
144	4320.00	0.00	0.00	35789.23	35752.11	0.31	53628.63	697.34