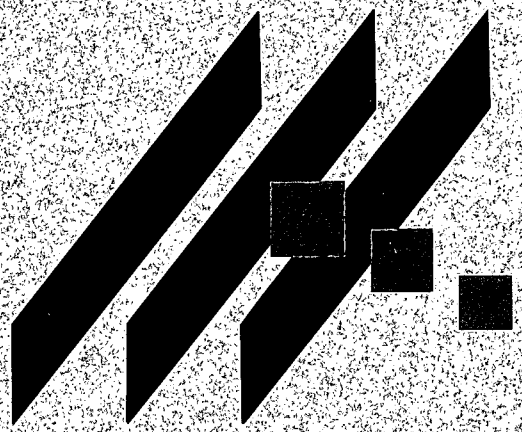
MKEC ENGINEERING CONSULTANTS, INC.



PRELIMINARY DRAINAGE REPORT

FOR

THE WATERFRONT ADDITION

JULY 2002

411 N. WEBB ROAD • WICHITA, KS 67206 • 316 684 9600 • FAX 316 684 5100

Preliminary Drainage Report for The Waterfront Addition
Wichita, Kansas

Location

The site is located in Wichita, Sedgwick County, Kansas, on the northeast corner of Webb Road and 13th Street North. It lies in the Southwest Quarter, Section 9, Township 27 South, Range 2 East. The total site area is approximately 67 acres. The site is bounded by Webb Road to the west, 13th Street to the south, and undeveloped meadow area to the east. The Burlington Northern Railroad abuts the property to the north, with the Eastminster Addition to the north of the railroad. The site is shown on the Andover, Kansas Quadrangle located in Appendix A.

Soils

According to the NRCS (SCS) Sedgwick County Soil Survey (Appendix B), most of the site is in the Irwin Series (Ia: Irwin silty clay loam, with 1 to 3 percent slopes) and the Rose Hill Series (Rd: silty clay, 1 to 3 percent slopes). A small portion in the northwest corner of the site is in the Vanoss Series (Va: Vanoss silt loam, with 1 to 3 percent slopes). The Hydrological Soil Group (HSG) for the Irwin and Rose Hill series soils is D. The HSG for the Vanoss series soil is B. The Vanoss series comprises a very small portion of the area, therefore the drainage calculations were based on soil group D.

Pre-developed Conditions

Current Development
The site is currently undeveloped pasture land. The site is currently being used as a recreational area.

Current Landform and Slope
Slopes across the site range from 1-4% from east to west. An existing lake covers approximately 14 acres of the site, with a 1.5 acre silt pond to the north of the lake. Elevations on the site range from 1386 ft. in the northeast corner to 1369 ft. at the lake water surface. The lake is controlled on the south by a bridge under 13th St. North. The bridge opening is 27' wide.

Current Drainage Conditions
An area surrounding the existing lake is designated as Zone A (FIRM Panel 150, Sedgwick County, June 3, 1986) (shown in Appendix C). The remainder of the site is in Zone C.

Upstream of Site
Approximately 555 acres drain into the existing lake. Approximately 225 acres drains from the north to the Eastminster Addition, directly north of the site. This runoff passes through an existing detention facility east of the Eastminster Presbyterian Church, north of the railroad. An additional 105 acres drains to the existing 11'x9' reinforced concrete box (RCB) which passes under the railroad tracks. The runoff then passes through an existing channel and into the silt pond on the site. An additional 28 acres drains to the silt pond. An existing earthen dam separates the silt pond from the lake. The runoff must pass around the dam to the west and into the lake. An additional 196 acres drains to the existing lake. This includes approximately 48 acres from the west side of Webb Road. This area drains through an existing RCB under Webb Road and into the lake. Most of the developable area upstream of the site is already developed, with the exception of the area just west of Webb Road, which is currently undeveloped pasture land.

Current Runoff Characteristics
The pre-developed watershed is divided into five different sub-watersheds: 1 is the area North of Eastminster, 2 is the tributary from the west, 3 is the area draining to the railroad, 4 is the area draining to the silt pond, and 5 is the area draining to the lake on site. These areas have been shown on the Andover Quadrangle map in Appendix A. Hydraflow software by Intellisolve calculated peak flows using the SCS Method (results are shown in Appendix D). The curve numbers used for the sub-watersheds were calculated based on percentage of development within each sub-watershed. They range from 84.4 to 90.6. Peak discharge from the sub-watersheds and watershed for the 2, 5, 10, and 100-year return periods under existing conditions are shown in Table 1.

Table 1. Pre-developed runoff.

Sub-Watershed	2-Year (cfs)	5-Year (cfs)	10-Year (cfs)	100-Year (cfs)
1	154	218	260	412
2	119	170	204	326
3	164	230	273	429
4	35	52	63	104
5	171	250	302	493
Total to North Lake	545	725	809	1283
Total Exiting North Lake	434	608	694	1064
Total to South Lake	548	767	902	1382
Total Exiting South Lake	300	481	625	1053

In order to correctly model the existing lake, the lake to the south was also included. The south lake was modeled based on an existing control structure and spillway at the south end of the lake. Rating curves for the weir on the south lake and bridge under 13th Street North were developed using the HY-8 computer software program.

Post-Developed Condition

Proposed Development
The site will develop as commercial lots. Uses anticipated include office buildings and possibly restaurants.

Proposed Landform and Slope
Proposed slopes are expected to range from 0.5% to 3%. A proposed street will be constructed along the east and north sides of the development. Drainage from the east and north will be conveyed under the street through RCB's as shown on the Drainage & Utility Plan in Appendix E. Existing drainage patterns west and south of the proposed road will remain the same as existing. Some fill will likely be required along the lake banks. The extent of the fill is not yet known. Permits for filling in the mapped floodplain will be obtained from the Kansas Dept. of Agriculture, Division of Water Resources. Other than fill along the bank areas, the existing lake will remain the same size and configuration.

Proposed Runoff Characteristics
Hydraflow software by Intellisolve calculated peak flows for the developed watersheds using the SCS Method (results are shown in Appendix F). One additional sub-watershed for the site was modeled for developed conditions. The sub-watershed includes approximately 40 acres draining to the existing lake, and is labeled as sub-watershed 5.1. Sub-watershed 4 was also changed to reflect developed conditions. A curve number of 95.0 was used for the proposed developed areas, with a time of concentration estimated at 20 minutes. The area and time of concentration for the remaining portion of sub-watershed 5 were adjusted accordingly. Runoff under the developed conditions for the 2, 5, 10, and 100-year return periods are shown in Table 2.

Table 2. Post-developed runoff.

Sub-Watershed	2-Year (cfs)	5-Year (cfs)	10-Year (cfs)	100-Year (cfs)
1	154	218	260	412
2	119	170	204	326
3	164	230	273	429
4	79	106	124	187
5.1	115	154	180	272
5	121	177	215	350
Total to North Lake	498	663	730	1132
Total Exiting North Lake	415	575	650	978
Total to South Lake	587	827	983	1498
Total Exiting South Lake	305	480	615	1023

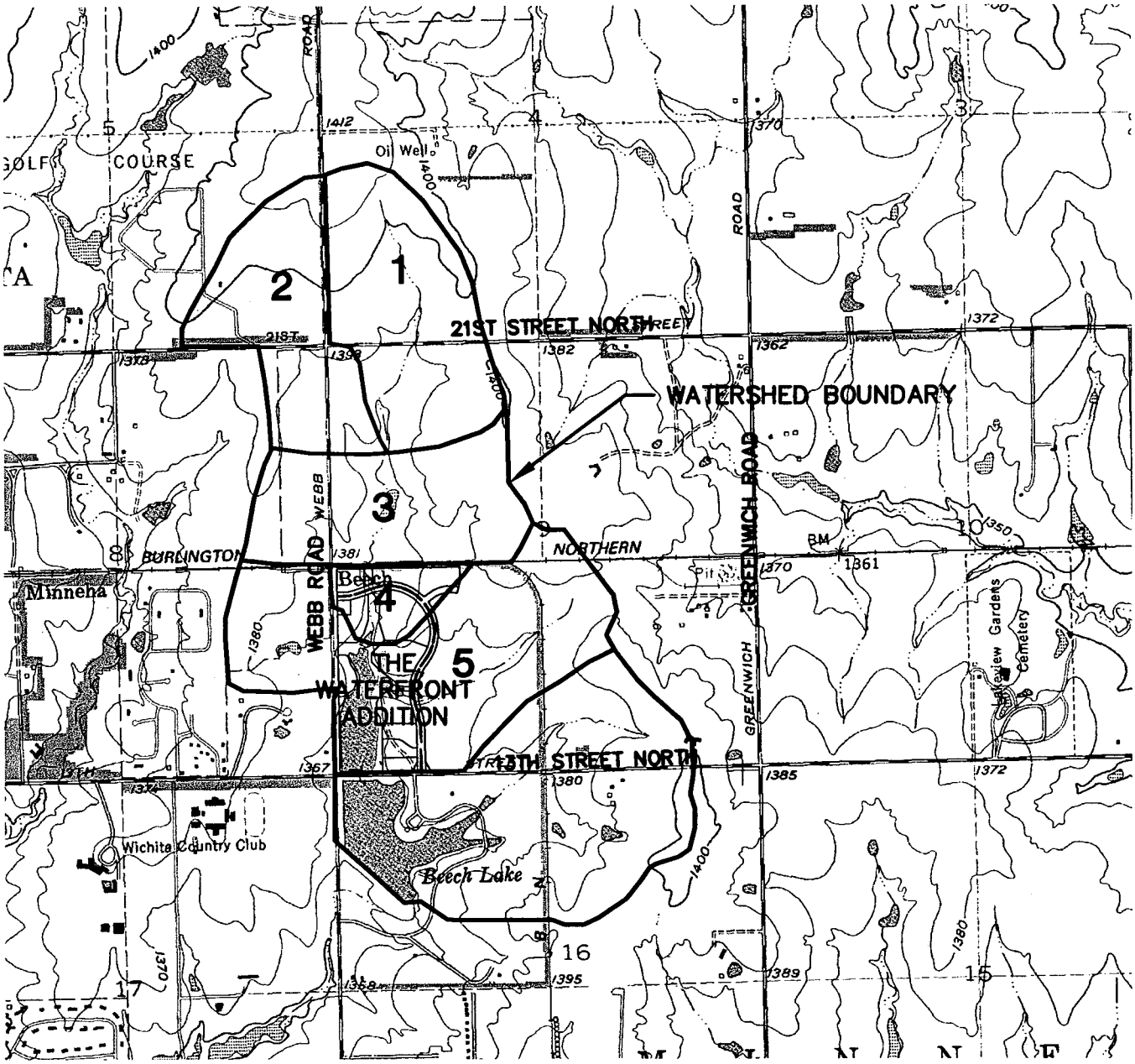
The additional runoff due to development of the site will have minimal impact on the watershed as whole. The short time of concentration for the developed area will allow the additional runoff to pass through the lake prior to the peak runoff from upstream. The flow out of the north lake will actually decrease by under proposed conditions. Discharge from the south lake will also decrease by approximately 30-cfs. Water surface elevations for the two lakes will remain nearly the same following development. Pond routing models show the north lake 100-year water surface at 1372.4, and the south lake 100-year water surface at 1372.2.

Summary

The Waterfront Addition is a proposed 67-acre development at the northeast corner of Webb Road and 13th St. North in Wichita, Kansas. The site is to be developed as commercial land uses. An existing 14-acre lake on the site will remain. Some fill and additional bank treatments are expected around the lake. Hydrologic models for existing and proposed conditions with this report have shown that the development of this property will have no effects on properties downstream. Discharge from the existing lake directly downstream of the site will actually decrease by 30-cfs as a result of this development. A hydraulic model to determine minimum pad elevations will be prepared prior to final platting. The required permits from the Division of Water Resources will also be obtained prior to filling in the mapped floodplain.

Appendix A

Quadrangle



SCALE 1:24 000

1 MILE 0 ½ 1

7000 FEET 6000 5000 4000 3000 2000 1000 0 1000

1 KILOMETER 0 .5 1

CONTOUR INTERVAL 10 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

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MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

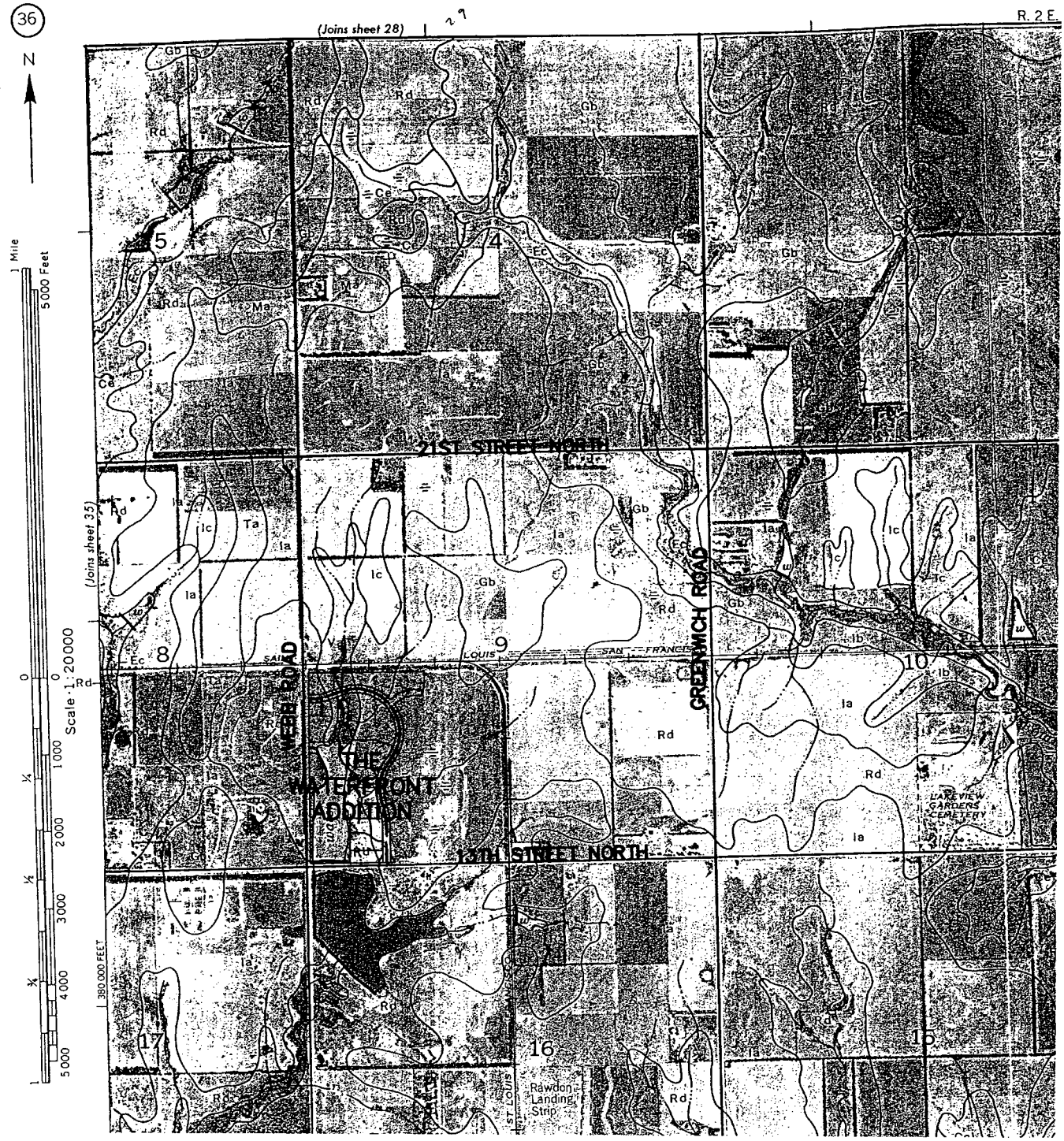
THE WATERFRONT ADDITION
PROJECT NAME

ANDOVER, KANSAS QUADRANGLE
SHEET TITLE

KLA	KLA	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
JULY 2002	02014	1 / 1
DATE	JOB NO.	SHEET/OF

Appendix B

Soil Survey



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MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

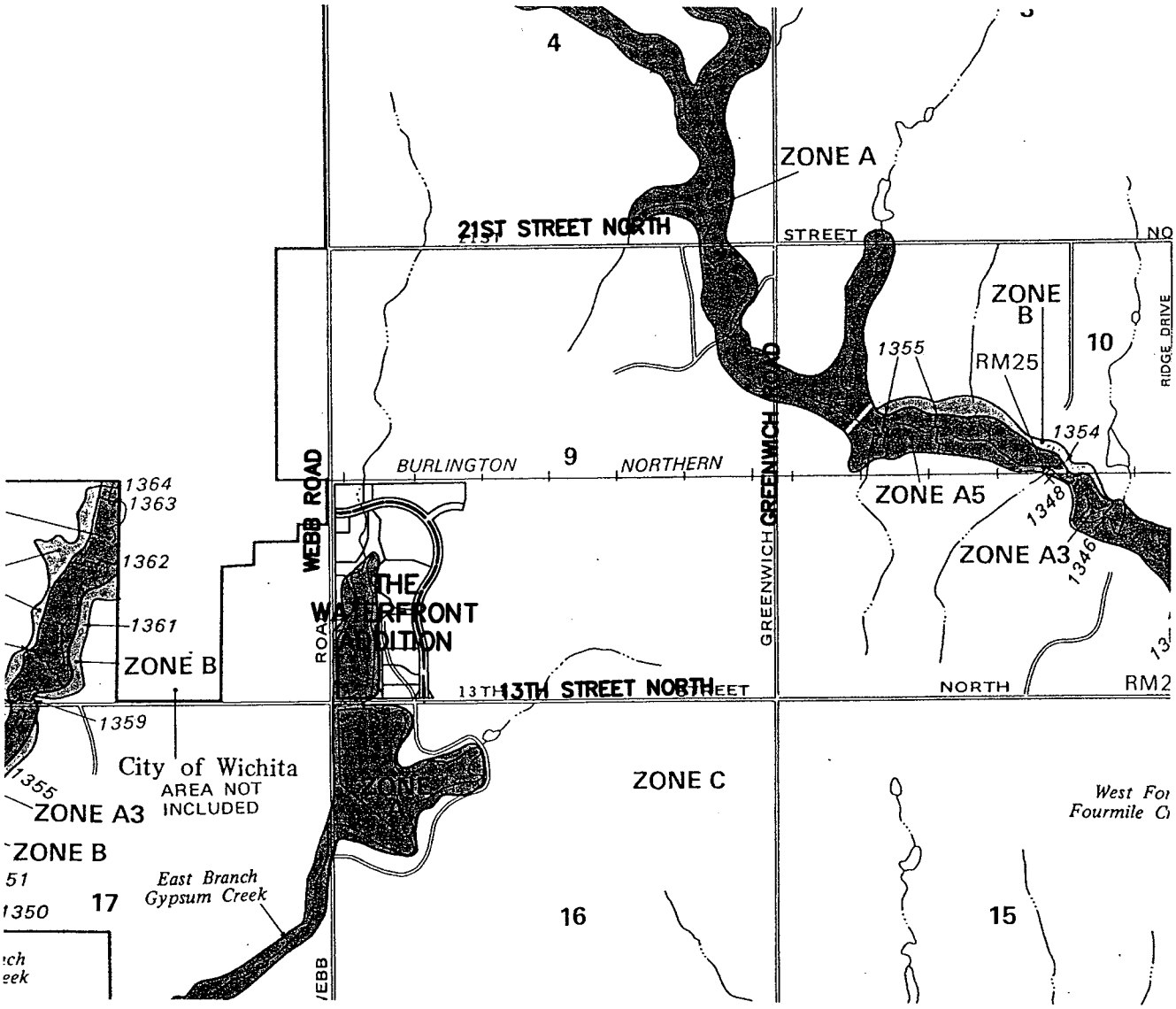
THE WATERFRONT ADDITION
PROJECT NAME

SOIL SURVEY OF SEDGWICK COUNTY, KANSAS
SHEET TITLE

KLA	KLA	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
JULY 2002	02014	1 / 1
DATE	JOB NO.	SHEET/OF

Appendix C

FIRM



NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

SEDGWICK COUNTY, KANSAS
(UNINCORPORATED AREAS)

PANEL 150 OF 300

COMMUNITY-PANEL NUMBER
200321 0150 A

EFFECTIVE DATE:
JUNE 3, 1986

Federal Emergency Management Agency

APPROXIMATE SCALE

2000 0 2000 FEET

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MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

THE WATERFRONT ADDITION
PROJECT NAME

FIRM PANEL 150 OF 300
SEDGWICK COUNTY, KANSAS
SHEET TITLE

KLA	KLA	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
JULY 2002	02014	1 / 1
DATE	JOB NO.	SHEET/OF

Appendix D

Pre-Developed Hydraflow Hydrographs Output

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	SCS Runoff	153.85	5	750	24.257	----	------	------	North of Eastminster (1)
2	SCS Runoff	118.82	5	750	18.713	----	------	------	Tributary From West (2)
3	Combine	272.68	5	750	42.970	1, 2	------	------	Combined North of Eastminster Lake
4	SCS Runoff	163.86	5	740	21.296	----	------	------	Drainage to RR Tracks (3)
5	Combine	420.02	5	750	64.266	3, 4	------	------	Combined to Eastminster Lake/RR R
6	Reservoir	385.44	5	760	64.266	5	1374.65	8.277	Eastminster Lake
7	SCS Runoff	79.23	5	725	6.727	----	------	------	Drainage to Silt Pond (4)
8	Combine	395.97	5	760	70.993	6, 7	------	------	Combined to Silt Pond
9	Reservoir	366.66	5	770	70.993	8	1372.38	5.662	Silt Pond Routing
10	SCS Runoff	115.19	5	725	9.780	----	------	------	Developed to North Pond (5.1)
11	SCS Runoff	121.36	5	760	23.098	----	------	------	Undeveloped to North Lake (5)
12	Combine	497.97	5	765	103.870	9, 10, 11	------	------	Combined to North Beech Lake
13	Reservoir	415.49	5	795	103.871	12	1371.16	159.588	North Pond Routing
14	SCS Runoff	354.59	5	740	46.156	----	------	------	Drainage to South Lake
15	Combine	587.32	5	755	150.026	13, 14	------	------	Combined to South Lake
16	Reservoir	304.72	5	835	150.026	15	1370.91	91.755	South Pond Routing

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	SCS Runoff	217.89	5	750	34.584	----	------	------	North of Eastminster (1)
2	SCS Runoff	170.02	5	750	26.902	----	------	------	Tributary From West (2)
3	Combine	387.91	5	750	61.486	1, 2	------	------	Combined North of Eastminster Lake
4	SCS Runoff	229.99	5	740	30.164	----	------	------	Drainage to RR Tracks (3)
5	Combine	593.60	5	750	91.650	3, 4	------	------	Combined to Eastminster Lake/RR R
6	Reservoir	543.52	5	760	91.650	5	1375.26	10.850	Eastminster Lake
7	SCS Runoff	106.14	5	725	9.157	----	------	------	Drainage to Silt Pond (4)
8	Combine	557.60	5	755	100.807	6, 7	------	------	Combined to Silt Pond
9	Reservoir	474.74	5	775	100.807	8	1373.24	9.866	Silt Pond Routing
10	SCS Runoff	154.31	5	725	13.313	----	------	------	Developed to North Pond (5.1)
11	SCS Runoff	177.46	5	760	33.737	----	------	------	Undeveloped to North Lake (5)
12	Combine	663.37	5	765	147.857	9, 10, 11	------	------	Combined to North Beech Lake
13	Reservoir	574.72	5	795	147.857	12	1371.51	166.655	North Pond Routing
14	SCS Runoff	495.25	5	740	65.109	----	------	------	Drainage to South Lake
15	Combine	827.34	5	745	212.967	13, 14	------	------	Combined to South Lake
16	Reservoir	480.13	5	830	212.966	15	1371.35	109.940	South Pond Routing

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	SCS Runoff	259.83	5	750	41.461	----	------	------	North of Eastminster (1)
2	SCS Runoff	203.64	5	750	32.370	----	------	------	Tributary From West (2)
3	Combine	463.47	5	750	73.831	1, 2	------	------	Combined North of Eastminster Lake
4	SCS Runoff	273.19	5	740	36.055	----	------	------	Drainage to RR Tracks (3)
5	Combine	708.03	5	745	109.886	3, 4	------	------	Combined to Eastminster Lake/RR R
6	Reservoir	626.92	5	760	109.886	5	1375.66	12.901	Eastminster Lake
7	SCS Runoff	123.63	5	725	10.754	----	------	------	Drainage to Silt Pond (4)
8	Combine	643.08	5	760	120.640	6, 7	------	------	Combined to Silt Pond
9	Reservoir	514.63	5	785	120.640	8	1373.88	14.333	Silt Pond Routing
10	SCS Runoff	179.74	5	725	15.635	----	------	------	Developed to North Pond (5.1)
11	SCS Runoff	214.59	5	760	40.885	----	------	------	Undeveloped to North Lake (5)
12	Combine	730.35	5	765	177.160	9, 10, 11	------	------	Combined to North Beech Lake
13	Reservoir	649.54	5	800	177.160	12	1371.67	169.976	North Pond Routing
14	SCS Runoff	587.01	5	740	77.684	----	------	------	Drainage to South Lake
15	Combine	983.14	5	745	254.844	13, 14	------	------	Combined to South Lake
16	Reservoir	615.35	5	830	254.844	15	1371.57	119.201	South Pond Routing

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	SCS Runoff	411.70	5	750	66.918	----	------	------	North of Eastminster (1)
2	SCS Runoff	325.69	5	750	52.672	----	------	------	Tributary From West (2)
3	Combine	737.39	5	750	119.590	1, 2	------	------	Combined North of Eastminster Lake
4	SCS Runoff	429.32	5	740	57.820	----	------	------	Drainage to RR Tracks (3)
5	Combine	1122.75	5	745	177.409	3, 4	------	------	Combined to Eastminster Lake/RR R
6	Reservoir	896.73	5	765	177.409	5	1377.23	23.447	Eastminster Lake
7	SCS Runoff	186.84	5	725	16.595	----	------	------	Drainage to Silt Pond (4)
8	Combine	918.04	5	765	194.004	6, 7	------	------	Combined to Silt Pond
9	Reservoir	820.86	5	785	194.004	8	1375.23	27.382	Silt Pond Routing
10	SCS Runoff	271.64	5	725	24.127	----	------	------	Developed to North Pond (5.1)
11	SCS Runoff	350.22	5	760	67.577	----	------	------	Undeveloped to North Lake (5)
12	Combine	1132.16	5	780	285.708	9, 10, 11	------	------	Combined to North Beech Lake
13	Reservoir	978.09	5	800	285.708	12	1372.28	184.369	North Pond Routing
14	SCS Runoff	918.50	5	740	124.081	----	------	------	Drainage to South Lake
15	Combine	1497.75	5	745	409.789	13, 14	------	------	Combined to South Lake
16	Reservoir	1022.74	5	820	409.788	15	1372.15	144.634	South Pond Routing

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 1

North of Eastminster (1)

Hydrograph type	= SCS Runoff	Peak discharge	= 411.70 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 125.00 ac	Curve number	= 89.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 66 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 66.918 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	
11.92	138.24	
12.00	184.30	
12.08	231.03	
12.17	278.10	
12.25	323.46	
12.33	363.81	
12.42	395.50	
12.50	411.70	<<
12.58	402.23	
12.67	379.91	
12.75	355.43	
12.83	329.02	
12.92	301.10	
13.00	272.01	
13.08	242.10	
13.17	211.75	
13.25	181.18	
13.33	151.17	

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 2

Tributary From West (2)

Hydrograph type	= SCS Runoff	Peak discharge	= 325.69 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 100.20 ac	Curve number	= 88.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 66.7 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 52.672 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
11.92	108.39
12.00	144.87
12.08	181.91
12.17	219.25
12.25	255.26
12.33	287.36
12.42	312.64
12.50	325.69 <<
12.58	318.36
12.67	300.82
12.75	281.54
12.83	260.72
12.92	238.70
13.00	215.73
13.08	192.10
13.17	168.10
13.25	143.93
13.33	120.17
13.42	97.81

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 3

Combined North of Eastminster Lake

Hydrograph type	= Combine	Peak discharge	= 737.39 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 1, 2		

Hydrograph Volume = 119.590 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 2 = (cfs)	Outflow (cfs)
11.92	138.24	108.39	246.64
12.00	184.30	144.87	329.17
12.08	231.03	181.91	412.94
12.17	278.10	219.25	497.35
12.25	323.46	255.26	578.71
12.33	363.81	287.36	651.16
12.42	395.50	312.64	708.14
12.50	411.70 <<	325.69 <<	737.39 <<
12.58	402.23	318.36	720.59
12.67	379.91	300.82	680.73
12.75	355.43	281.54	636.97
12.83	329.02	260.72	589.74
12.92	301.10	238.70	539.79
13.00	272.01	215.73	487.73
13.08	242.10	192.10	434.20
13.17	211.75	168.10	379.85
13.25	181.18	143.93	325.11
13.33	151.17	120.17	271.35

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 4

Drainage to RR Tracks (3)

Hydrograph type	= SCS Runoff	Peak discharge	= 429.32 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 104.80 ac	Curve number	= 90.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 46.5 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 57.820 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
11.92	172.93
12.00	239.16
12.08	303.51
12.17	361.07
12.25	406.39
12.33	429.32 <<
12.42	414.60
12.50	381.25
12.58	345.03
12.67	306.45
12.75	266.00
12.83	224.22
12.92	182.56
13.00	143.21

...End

Hydrograph Report

Hyd. No. 5

Combined to Eastminster Lake/RR RCB

Hydrograph type	= Combine	Peak discharge	= 1122.75 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 3, 4		

Hydrograph Volume = 177.409 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 3 + (cfs)	Hyd. 4 = (cfs)	Outflow (cfs)
11.92	246.64	172.93	419.57
12.00	329.17	239.16	568.33
12.08	412.94	303.51	716.45
12.17	497.35	361.07	858.41
12.25	578.71	406.39	985.10
12.33	651.16	429.32 <<	1080.49
12.42	708.14	414.60	1122.75 <<
12.50	737.39 <<	381.25	1118.64
12.58	720.59	345.03	1065.62
12.67	680.73	306.45	987.18
12.75	636.97	266.00	902.97
12.83	589.74	224.22	813.96
12.92	539.79	182.56	722.35
13.00	487.73	143.21	630.94
13.08	434.20	108.36	542.56
13.17	379.85	81.78	461.63
13.25	325.11	69.13	394.25

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 6

Eastminster Lake

Hydrograph type	= Reservoir	Peak discharge	= 896.73 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyd. No.	= 5	Reservoir name	= Eastminster Lake
Max. Elevation	= 1377.23 ft	Max. Storage	= 23.447 acft

Storage Indication method used.

Outflow hydrograph volume = 177.409 acft

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
12.00	568.33	1374.52	-----	-----	-----	-----	-----	-----	-----	-----	-----	351.34
12.08	716.45	1374.91	-----	-----	-----	-----	-----	-----	-----	-----	-----	452.99
12.17	858.41	1375.36	-----	-----	-----	-----	-----	-----	-----	-----	-----	569.79
12.25	985.10	1375.76	-----	-----	-----	-----	-----	-----	-----	-----	-----	644.42
12.33	1080.49	1376.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	721.93
12.42	1122.75 <<	1376.56	-----	-----	-----	-----	-----	-----	-----	-----	-----	785.85
12.50	1118.64	1376.83	-----	-----	-----	-----	-----	-----	-----	-----	-----	831.66
12.58	1065.62	1377.05	-----	-----	-----	-----	-----	-----	-----	-----	-----	867.30
12.67	987.18	1377.18	-----	-----	-----	-----	-----	-----	-----	-----	-----	889.06
12.75	902.97	1377.23 <<	-----	-----	-----	-----	-----	-----	-----	-----	-----	896.73 <<
12.83	813.96	1377.20	-----	-----	-----	-----	-----	-----	-----	-----	-----	891.49
12.92	722.35	1377.10	-----	-----	-----	-----	-----	-----	-----	-----	-----	874.62
13.00	630.94	1376.93	-----	-----	-----	-----	-----	-----	-----	-----	-----	847.53
13.08	542.56	1376.71	-----	-----	-----	-----	-----	-----	-----	-----	-----	811.86
13.17	461.63	1376.46	-----	-----	-----	-----	-----	-----	-----	-----	-----	769.48
13.25	394.25	1376.10	-----	-----	-----	-----	-----	-----	-----	-----	-----	705.66
13.33	334.67	1375.72	-----	-----	-----	-----	-----	-----	-----	-----	-----	637.55
13.42	279.20	1375.34	-----	-----	-----	-----	-----	-----	-----	-----	-----	565.24
13.50	230.21	1374.93	-----	-----	-----	-----	-----	-----	-----	-----	-----	456.79
13.58	192.19	1374.60	-----	-----	-----	-----	-----	-----	-----	-----	-----	371.02
13.67	172.00	1374.33	-----	-----	-----	-----	-----	-----	-----	-----	-----	302.96

...End

Reservoir Report

Hydraflow Hydrographs by Intelisolve

Reservoir No. 1 - Eastminster Lake

Pond Data

Pond storage is based on known values

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1369.40	00	0.000	0.000
1.00	1370.40	00	0.000	0.279
2.00	1371.40	00	0.000	1.093
3.00	1372.40	00	0.000	2.269
4.00	1373.40	00	0.000	3.606
5.00	1374.40	00	0.000	7.212
6.00	1375.40	00	0.000	11.444
7.00	1376.40	00	0.000	17.035
8.00	1377.40	00	0.000	24.773
9.00	1378.40	00	0.000	34.468
10.00	1379.40	00	0.000	46.441

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 0.0	0.0	0.0	0.0
Span in	= 0.0	0.0	0.0	0.0
No. Barrels	= 0	0	0	0
Invert El. ft	= 0.00	0.00	0.00	0.00
Length ft	= 0.0	0.0	0.0	0.0
Slope %	= 0.00	0.00	0.00	0.00
N-Value	= .000	.000	.000	.000
Orif. Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 0.00	0.00	0.00	0.00
Crest El. ft	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0.000	1369.40	---	---	---	---	---	---	---	---	---	0.00
1.00	0.279	1370.40	---	---	---	---	---	---	---	---	---	6.00
2.00	1.093	1371.40	---	---	---	---	---	---	---	---	---	14.00
3.00	2.269	1372.40	---	---	---	---	---	---	---	---	---	30.00
4.00	3.606	1373.40	---	---	---	---	---	---	---	---	---	60.00
5.00	7.212	1374.40	---	---	---	---	---	---	---	---	---	320.00
6.00	11.444	1375.40	---	---	---	---	---	---	---	---	---	580.00
7.00	17.035	1376.40	---	---	---	---	---	---	---	---	---	760.00
8.00	24.773	1377.40	---	---	---	---	---	---	---	---	---	925.00
9.00	34.468	1378.40	---	---	---	---	---	---	---	---	---	1085.00
10.00	46.441	1379.40	---	---	---	---	---	---	---	---	---	1240.00

Hydrograph Report

Hyd. No. 7

Drainage to Silt Pond (4)

Hydrograph type	= SCS Runoff	Peak discharge	= 186.84 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 27.65 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 16.595 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
11.83	77.58
11.92	123.19
12.00	166.74
12.08	186.84 <<
12.17	167.34
12.25	130.28
12.33	94.50
12.42	62.34

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 8

Combined to Silt Pond

Hydrograph type	= Combine	Peak discharge	= 918.04 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 6, 7		

Hydrograph Volume = 194.004 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 6 + (cfs)	Hyd. 7 = (cfs)	Outflow (cfs)
11.83	203.00	77.58	280.58
11.92	264.37	123.19	387.56
12.00	351.34	166.74	518.08
12.08	452.99	186.84 <<	639.82
12.17	569.79	167.34	737.12
12.25	644.42	130.28	774.69
12.33	721.93	94.50	816.44
12.42	785.85	62.34	848.19
12.50	831.66	38.00	869.67
12.58	867.30	27.79	895.08
12.67	889.06	24.22	913.28
12.75	896.73 <<	21.31	918.04 <<
12.83	891.49	19.11	910.60
12.92	874.62	17.47	892.08
13.00	847.53	16.21	863.75
13.08	811.86	15.22	827.08
13.17	769.48	14.36	783.84
13.25	705.66	13.58	719.24
13.33	637.55	12.91	650.46
13.42	565.24	12.31	577.55
13.50	456.79	11.76	468.55
13.58	371.02	11.25	382.28
13.67	302.96	10.77	313.74

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 9

Silt Pond Routing

Hydrograph type	= Reservoir	Peak discharge	= 820.86 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyd. No.	= 8	Reservoir name	= Silt Pond
Max. Elevation	= 1375.23 ft	Max. Storage	= 27.382 acft

Storage Indication method used.

Outflow hydrograph volume = 194.004 acft

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
11.92	387.56	1371.92	-----	-----	-----	-----	-----	-----	-----	-----	-----	287.90
12.00	518.08	1372.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	338.58
12.08	639.82	1372.55	-----	-----	-----	-----	-----	-----	-----	-----	-----	392.35
12.17	737.12	1372.99	-----	-----	-----	-----	-----	-----	-----	-----	-----	458.60
12.25	774.69	1373.28	-----	-----	-----	-----	-----	-----	-----	-----	-----	477.36
12.33	816.44	1373.59	-----	-----	-----	-----	-----	-----	-----	-----	-----	496.34
12.42	848.19	1373.91	-----	-----	-----	-----	-----	-----	-----	-----	-----	516.38
12.50	869.67	1374.17	-----	-----	-----	-----	-----	-----	-----	-----	-----	542.11
12.58	895.08	1374.40	-----	-----	-----	-----	-----	-----	-----	-----	-----	569.66
12.67	913.28	1374.63	-----	-----	-----	-----	-----	-----	-----	-----	-----	596.74
12.75	918.04 <<	1374.85	-----	-----	-----	-----	-----	-----	-----	-----	-----	622.56
12.83	910.60	1375.04	-----	-----	-----	-----	-----	-----	-----	-----	-----	669.60
12.92	892.08	1375.15	-----	-----	-----	-----	-----	-----	-----	-----	-----	759.40
13.00	863.75	1375.21	-----	-----	-----	-----	-----	-----	-----	-----	-----	805.32
13.08	827.08	1375.23 <<	-----	-----	-----	-----	-----	-----	-----	-----	-----	820.86 <<
13.17	783.84	1375.22	-----	-----	-----	-----	-----	-----	-----	-----	-----	814.89
13.25	719.24	1375.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	790.34
13.33	650.46	1375.14	-----	-----	-----	-----	-----	-----	-----	-----	-----	749.47
13.42	577.55	1375.07	-----	-----	-----	-----	-----	-----	-----	-----	-----	696.98
13.50	468.55	1374.98	-----	-----	-----	-----	-----	-----	-----	-----	-----	637.82
13.58	382.28	1374.84	-----	-----	-----	-----	-----	-----	-----	-----	-----	620.63
13.67	313.74	1374.65	-----	-----	-----	-----	-----	-----	-----	-----	-----	598.55
13.75	258.96	1374.44	-----	-----	-----	-----	-----	-----	-----	-----	-----	573.28
13.83	221.68	1374.21	-----	-----	-----	-----	-----	-----	-----	-----	-----	546.32
13.92	195.49	1373.96	-----	-----	-----	-----	-----	-----	-----	-----	-----	519.77
14.00	176.47	1373.64	-----	-----	-----	-----	-----	-----	-----	-----	-----	499.86
14.08	162.16	1373.33	-----	-----	-----	-----	-----	-----	-----	-----	-----	480.14
14.17	151.02	1373.01	-----	-----	-----	-----	-----	-----	-----	-----	-----	460.84
14.25	142.08	1372.55	-----	-----	-----	-----	-----	-----	-----	-----	-----	392.85
14.33	134.68	1372.17	-----	-----	-----	-----	-----	-----	-----	-----	-----	335.92
14.42	128.37	1371.80	-----	-----	-----	-----	-----	-----	-----	-----	-----	257.37

...End

Reservoir Report

Reservoir No. 2 - Silt Pond

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1369.00	6,700	0.000	0.000
1.00	1370.00	48,954	0.639	0.639
2.00	1371.00	65,749	1.317	1.955
3.00	1372.00	122,220	2.158	4.113
4.00	1373.00	235,083	4.101	8.214
5.00	1374.00	369,932	6.945	15.159
6.00	1375.00	469,149	9.631	24.790
7.00	1376.00	524,600	11.407	36.197

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 0.0	0.0	0.0	0.0
Span in	= 0.0	0.0	0.0	0.0
No. Barrels	= 0	0	0	0
Invert El. ft	= 0.00	0.00	0.00	0.00
Length ft	= 0.0	0.0	0.0	0.0
Slope %	= 0.00	0.00	0.00	0.00
N-Value	= .000	.000	.000	.000
Orif. Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 55.00	0.00	0.00	0.00
Crest El. ft	= 184.20	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	0.00	0.00
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 185.30 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0.000	1369.00	---	---	---	---	0.00	---	---	---	---	0.00
1.00	0.639	1370.00	---	---	---	---	0.00	---	---	---	---	38.00
2.00	1.955	1371.00	---	---	---	---	0.00	---	---	---	---	45.00
3.00	4.113	1372.00	---	---	---	---	0.00	---	---	---	---	310.00
4.00	8.214	1373.00	---	---	---	---	0.00	---	---	---	---	460.00
5.00	15.159	1374.00	---	---	---	---	0.00	---	---	---	---	522.00
6.00	24.790	1375.00	---	---	---	---	0.00	---	---	---	---	640.00
7.00	36.197	1376.00	---	---	---	---	0.00	---	---	---	---	1436.00

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 10

Developed to North Pond (5.1)

Hydrograph type	= SCS Runoff	Peak discharge	= 271.64 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 40.20 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 24.127 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	
11.83	112.79	
11.92	179.11	
12.00	242.42	
12.08	271.64	<<
12.17	243.29	
12.25	189.41	
12.33	137.40	
12.42	90.64	

...End

Hydrograph Report

Hyd. No. 11

Undeveloped to North Lake (5)

Hydrograph type	= SCS Runoff	Peak discharge	= 350.22 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 129.50 ac	Curve number	= 86.4
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 80.9 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 67.577 acft

Hydrograph Discharge Table

Time -- (hrs)	Outflow (cfs)
12.00	132.06
12.08	163.33
12.17	195.01
12.25	226.90
12.33	258.77
12.42	289.36
12.50	316.63
12.58	338.33
12.67	350.22 <<
12.75	345.79
12.83	333.06
12.92	318.83
13.00	303.27
13.08	286.59
13.17	269.00
13.25	250.73
13.33	231.94
13.42	212.83
13.50	193.45
13.58	173.88
13.67	154.18
13.75	134.43
13.83	115.08

...End

Hydrograph Report

Hyd. No. 12

Combined to North Beech Lake

Hydrograph type	= Combine	Peak discharge	= 1132.16 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 9, 10, 11		

Hydrograph Volume = 285.708 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 9 + (cfs)	Hyd. 10 + (cfs)	Hyd. 11 = (cfs)	Outflow (cfs)
11.83	220.22	112.79	75.78	408.79
11.92	287.90	179.11	101.43	568.44
12.00	338.58	242.42	132.06	713.06
12.08	392.35	271.64 <<	163.33	827.32
12.17	458.60	243.29	195.01	896.90
12.25	477.36	189.41	226.90	893.67
12.33	496.34	137.40	258.77	892.51
12.42	516.38	90.64	289.36	896.38
12.50	542.11	55.25	316.63	914.00
12.58	569.66	40.40	338.33	948.39
12.67	596.74	35.21	350.22 <<	982.18
12.75	622.56	30.98	345.79	999.33
12.83	669.60	27.79	333.06	1030.45
12.92	759.40	25.39	318.83	1103.62
13.00	805.32	23.57	303.27	1132.16 <<
13.08	820.86 <<	22.13	286.59	1129.57
13.17	814.89	20.87	269.00	1104.77
13.25	790.34	19.75	250.73	1060.82
13.33	749.47	18.77	231.94	1000.17
13.42	696.98	17.90	212.83	927.70
13.50	637.82	17.10	193.45	848.37
13.58	620.63	16.36	173.88	810.87
13.67	598.55	15.66	154.18	768.40
13.75	573.28	15.01	134.43	722.72
13.83	546.32	14.40	115.08	675.80
13.92	519.77	13.83	96.86	630.47
14.00	499.86	13.29	80.60	593.75
14.08	480.14	12.78	67.87	560.79
14.17	460.84	12.31	61.11	534.26
14.25	392.85	11.91	57.34	462.11
14.33	335.92	11.60	54.09	401.61

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 13

North Pond Routing

Hydrograph type	= Reservoir	Peak discharge	= 978.09 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyd. No.	= 12	Reservoir name	= North Beech Lake
Max. Elevation	= 1372.28 ft	Max. Storage	= 184.369 acft

Storage Indication method used.

Outflow hydrograph volume = 285.708 acft

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
12.00	713.06	1370.88	-----	-----	-----	-----	-----	-----	-----	-----	-----	304.99
12.08	827.32	1371.06	-----	-----	-----	-----	-----	-----	-----	-----	-----	372.13
12.17	896.90	1371.22	-----	-----	-----	-----	-----	-----	-----	-----	-----	442.68
12.25	893.67	1371.36	-----	-----	-----	-----	-----	-----	-----	-----	-----	507.86
12.33	892.51	1371.48	-----	-----	-----	-----	-----	-----	-----	-----	-----	563.33
12.42	896.38	1371.59	-----	-----	-----	-----	-----	-----	-----	-----	-----	611.01
12.50	914.00	1371.68	-----	-----	-----	-----	-----	-----	-----	-----	-----	653.37
12.58	948.39	1371.77	-----	-----	-----	-----	-----	-----	-----	-----	-----	693.38
12.67	982.18	1371.85	-----	-----	-----	-----	-----	-----	-----	-----	-----	732.54
12.75	999.33	1371.93	-----	-----	-----	-----	-----	-----	-----	-----	-----	769.72
12.83	1030.45	1372.01	-----	-----	-----	-----	-----	-----	-----	-----	-----	805.14
12.92	1103.62	1372.07	-----	-----	-----	-----	-----	-----	-----	-----	-----	843.71
13.00	1132.16	<<1372.13	-----	-----	-----	-----	-----	-----	-----	-----	-----	884.08
13.08	1129.57	1372.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	920.42
13.17	1104.77	1372.24	-----	-----	-----	-----	-----	-----	-----	-----	-----	949.40
13.25	1060.82	1372.27	-----	-----	-----	-----	-----	-----	-----	-----	-----	969.04
13.33	1000.17	1372.28 <<	-----	-----	-----	-----	-----	-----	-----	-----	-----	978.09 <<
13.42	927.70	1372.28	-----	-----	-----	-----	-----	-----	-----	-----	-----	976.01
13.50	848.37	1372.26	-----	-----	-----	-----	-----	-----	-----	-----	-----	963.05
13.58	810.87	1372.23	-----	-----	-----	-----	-----	-----	-----	-----	-----	943.40
13.67	768.40	1372.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	920.76
13.75	722.72	1372.15	-----	-----	-----	-----	-----	-----	-----	-----	-----	894.96
13.83	675.80	1372.11	-----	-----	-----	-----	-----	-----	-----	-----	-----	866.14
13.92	630.47	1372.06	-----	-----	-----	-----	-----	-----	-----	-----	-----	834.77
14.00	593.75	1372.00	-----	-----	-----	-----	-----	-----	-----	-----	-----	801.98
14.08	560.79	1371.93	-----	-----	-----	-----	-----	-----	-----	-----	-----	769.58
14.17	534.26	1371.86	-----	-----	-----	-----	-----	-----	-----	-----	-----	737.60
14.25	462.11	1371.79	-----	-----	-----	-----	-----	-----	-----	-----	-----	703.13
14.33	401.61	1371.70	-----	-----	-----	-----	-----	-----	-----	-----	-----	664.06
14.42	319.99	1371.61	-----	-----	-----	-----	-----	-----	-----	-----	-----	620.39
14.50	239.03	1371.50	-----	-----	-----	-----	-----	-----	-----	-----	-----	571.31
14.58	201.91	1371.39	-----	-----	-----	-----	-----	-----	-----	-----	-----	520.78
14.67	183.05	1371.28	-----	-----	-----	-----	-----	-----	-----	-----	-----	473.51
14.75	171.97	1371.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	430.88
14.83	164.38	1371.11	-----	-----	-----	-----	-----	-----	-----	-----	-----	393.05
14.92	158.51	1371.03	-----	-----	-----	-----	-----	-----	-----	-----	-----	359.70
15.00	153.60	1370.96	-----	-----	-----	-----	-----	-----	-----	-----	-----	330.32
15.08	149.29	1370.88	-----	-----	-----	-----	-----	-----	-----	-----	-----	304.47

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...End

Reservoir Report

Hydraflow Hydrographs by Intelisolve

Reservoir No. 3 - North Beech Lake

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1358.00	415,677	0.000	0.000
1.00	1359.00	431,002	9.719	9.719
2.00	1360.00	446,469	10.072	19.791
3.00	1361.00	462,078	10.429	30.219
4.00	1362.00	477,829	10.789	41.008
5.00	1363.00	493,714	11.152	52.160
6.00	1364.00	511,862	11.542	63.702
7.00	1365.00	528,306	11.939	75.642
8.00	1366.00	544,977	12.320	87.961
9.00	1367.00	561,947	12.706	100.667
10.00	1368.00	579,304	13.100	113.767
11.00	1369.00	596,211	13.493	127.260
12.00	1370.00	618,976	13.948	141.208
13.00	1371.00	709,720	15.251	156.460
14.00	1372.00	1,049,600	20.194	176.654
15.00	1373.00	1,328,290	27.294	203.948

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 156.0	0.0	0.0	0.0
Span in	= 324.0	0.0	0.0	0.0
No. Barrels	= 1	0	0	0
Invert El. ft	= 171.05	0.00	0.00	0.00
Length ft	= 72.0	0.0	0.0	0.0
Slope %	= 0.01	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 0.00	0.00	0.00	0.00
Crest El. ft	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 182.60 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0.000	1358.00	0.00	---	---	---	---	---	---	---	---	0.00
1.00	9.719	1359.00	0.00	---	---	---	---	---	---	---	---	0.00
2.00	19.791	1360.00	0.00	---	---	---	---	---	---	---	---	0.00
3.00	30.219	1361.00	0.00	---	---	---	---	---	---	---	---	0.00
4.00	41.008	1362.00	0.00	---	---	---	---	---	---	---	---	0.00
5.00	52.160	1363.00	0.00	---	---	---	---	---	---	---	---	0.00
6.00	63.702	1364.00	0.00	---	---	---	---	---	---	---	---	0.00
7.00	75.642	1365.00	0.00	---	---	---	---	---	---	---	---	0.00
8.00	87.961	1366.00	0.00	---	---	---	---	---	---	---	---	0.00
9.00	100.667	1367.00	0.00	---	---	---	---	---	---	---	---	0.00
10.00	113.767	1368.00	0.00	---	---	---	---	---	---	---	---	0.00
11.00	127.260	1369.00	0.00	---	---	---	---	---	---	---	---	0.00
12.00	141.208	1370.00	0.00	---	---	---	---	---	---	---	---	0.00
13.00	156.460	1371.00	0.00	---	---	---	---	---	---	---	---	345.00
14.00	176.654	1372.00	0.00	---	---	---	---	---	---	---	---	800.00
15.00	203.948	1373.00	0.00	---	---	---	---	---	---	---	---	1430.00

Hydrograph Report

Hyd. No. 14

Drainage to South Lake

Hydrograph type	= SCS Runoff	Peak discharge	= 918.50 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 222.91 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 48 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 124.081 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	
11.92	371.20	
12.00	512.79	
12.08	650.29	
12.17	773.17	
12.25	869.79	
12.33	918.50	<<
12.42	886.74	
12.50	815.23	
12.58	737.61	
12.67	654.97	
12.75	568.38	
12.83	478.94	
12.92	389.83	
13.00	305.69	

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 15

Combined to South Lake

Hydrograph type	= Combine	Peak discharge	= 1497.75 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 13, 14		

Hydrograph Volume = 409.789 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 13 + (cfs)	Hyd. 14 = (cfs)	Outflow (cfs)
11.83	207.66	252.64	460.30
11.92	248.26	371.20	619.46
12.00	304.99	512.79	817.78
12.08	372.13	650.29	1022.42
12.17	442.68	773.17	1215.85
12.25	507.86	869.79	1377.65
12.33	563.33	918.50 <<	1481.83
12.42	611.01	886.74	1497.75 <<
12.50	653.37	815.23	1468.60
12.58	693.38	737.61	1430.99
12.67	732.54	654.97	1387.50
12.75	769.72	568.38	1338.10
12.83	805.14	478.94	1284.08
12.92	843.71	389.83	1233.53
13.00	884.08	305.69	1189.77
13.08	920.42	231.20	1151.62
13.17	949.40	174.43	1123.82
13.25	969.04	147.44	1116.48
13.33	978.09 <<	135.03	1113.13
13.42	976.01	124.65	1100.66
13.50	963.05	116.05	1079.11
13.58	943.40	108.96	1052.37
13.67	920.76	103.05	1023.81
13.75	894.96	97.98	992.94
13.83	866.14	93.42	959.56
13.92	834.77	89.21	923.98
14.00	801.98	85.31	887.30
14.08	769.58	81.72	851.30
14.17	737.60	78.41	816.01
14.25	703.13	75.37	778.50
14.33	664.06	72.57	736.64
14.42	620.39	70.03	690.42
14.50	571.31	67.76	639.07
14.58	520.78	65.77	586.55
14.67	473.51	64.00	537.51
14.75	430.88	62.43	493.32
14.83	393.05	61.02	454.07

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 16

South Pond Routing

Hydrograph type	= Reservoir	Peak discharge	= 1022.74 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyd. No.	= 15	Reservoir name	= South Beech Lake
Max. Elevation	= 1372.15 ft	Max. Storage	= 144.634 acft

Storage Indication method used.

Outflow hydrograph volume = 409.788 acft

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
12.25	1377.65	1370.95	-----	-----	-----	-----	-----	-----	-----	-----	-----	318.75
12.33	1481.83	1371.13	-----	-----	-----	-----	-----	-----	-----	-----	-----	390.18
12.42	1497.75	<<1371.30	-----	-----	-----	-----	-----	-----	-----	-----	-----	460.88
12.50	1468.60	1371.46	-----	-----	-----	-----	-----	-----	-----	-----	-----	543.26
12.58	1430.99	1371.60	-----	-----	-----	-----	-----	-----	-----	-----	-----	638.04
12.67	1387.50	1371.71	-----	-----	-----	-----	-----	-----	-----	-----	-----	718.67
12.75	1338.10	1371.81	-----	-----	-----	-----	-----	-----	-----	-----	-----	786.02
12.83	1284.08	1371.89	-----	-----	-----	-----	-----	-----	-----	-----	-----	840.91
12.92	1233.53	1371.95	-----	-----	-----	-----	-----	-----	-----	-----	-----	884.61
13.00	1189.77	1372.00	-----	-----	-----	-----	-----	-----	-----	-----	-----	918.80
13.08	1151.62	1372.04	-----	-----	-----	-----	-----	-----	-----	-----	-----	945.14
13.17	1123.82	1372.07	-----	-----	-----	-----	-----	-----	-----	-----	-----	965.27
13.25	1116.48	1372.09	-----	-----	-----	-----	-----	-----	-----	-----	-----	981.46
13.33	1113.13	1372.11	-----	-----	-----	-----	-----	-----	-----	-----	-----	995.41
13.42	1100.66	1372.12	-----	-----	-----	-----	-----	-----	-----	-----	-----	1007.06
13.50	1079.11	1372.14	-----	-----	-----	-----	-----	-----	-----	-----	-----	1015.72
13.58	1052.37	1372.14	-----	-----	-----	-----	-----	-----	-----	-----	-----	1020.95
13.67	1023.81	1372.15 <<	-----	-----	-----	-----	-----	-----	-----	-----	-----	1022.74 <<
13.75	992.94	1372.15	-----	-----	-----	-----	-----	-----	-----	-----	-----	1021.24
13.83	959.56	1372.14	-----	-----	-----	-----	-----	-----	-----	-----	-----	1016.54
13.92	923.98	1372.13	-----	-----	-----	-----	-----	-----	-----	-----	-----	1008.72
14.00	887.30	1372.11	-----	-----	-----	-----	-----	-----	-----	-----	-----	997.94
14.08	851.30	1372.09	-----	-----	-----	-----	-----	-----	-----	-----	-----	984.49
14.17	816.01	1372.07	-----	-----	-----	-----	-----	-----	-----	-----	-----	968.72
14.25	778.50	1372.04	-----	-----	-----	-----	-----	-----	-----	-----	-----	950.79
14.33	736.64	1372.02	-----	-----	-----	-----	-----	-----	-----	-----	-----	930.59
14.42	690.42	1371.98	-----	-----	-----	-----	-----	-----	-----	-----	-----	907.90
14.50	639.07	1371.95	-----	-----	-----	-----	-----	-----	-----	-----	-----	882.48
14.58	586.55	1371.91	-----	-----	-----	-----	-----	-----	-----	-----	-----	854.28
14.67	537.51	1371.86	-----	-----	-----	-----	-----	-----	-----	-----	-----	823.73
14.75	493.32	1371.82	-----	-----	-----	-----	-----	-----	-----	-----	-----	791.49
14.83	454.07	1371.77	-----	-----	-----	-----	-----	-----	-----	-----	-----	758.27
14.92	419.44	1371.72	-----	-----	-----	-----	-----	-----	-----	-----	-----	724.65
15.00	388.88	1371.67	-----	-----	-----	-----	-----	-----	-----	-----	-----	691.14
15.08	361.92	1371.63	-----	-----	-----	-----	-----	-----	-----	-----	-----	658.13
15.17	338.17	1371.58	-----	-----	-----	-----	-----	-----	-----	-----	-----	625.92
15.25	317.20	1371.54	-----	-----	-----	-----	-----	-----	-----	-----	-----	594.74
15.33	298.64	1371.49	-----	-----	-----	-----	-----	-----	-----	-----	-----	564.75

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Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
15.42	282.16	1371.45	-----	-----	-----	-----	-----	-----	-----	-----	-----	536.07
15.50	267.48	1371.41	-----	-----	-----	-----	-----	-----	-----	-----	-----	508.75
15.58	254.38	1371.37	-----	-----	-----	-----	-----	-----	-----	-----	-----	489.45
15.67	242.64	1371.34	-----	-----	-----	-----	-----	-----	-----	-----	-----	473.96
15.75	232.08	1371.30	-----	-----	-----	-----	-----	-----	-----	-----	-----	458.75
15.83	222.54	1371.26	-----	-----	-----	-----	-----	-----	-----	-----	-----	443.87
15.92	213.88	1371.22	-----	-----	-----	-----	-----	-----	-----	-----	-----	429.36
16.00	205.98	1371.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	415.25
16.08	198.75	1371.15	-----	-----	-----	-----	-----	-----	-----	-----	-----	401.56
16.17	192.10	1371.12	-----	-----	-----	-----	-----	-----	-----	-----	-----	388.31
16.25	185.97	1371.09	-----	-----	-----	-----	-----	-----	-----	-----	-----	375.50
16.33	180.32	1371.06	-----	-----	-----	-----	-----	-----	-----	-----	-----	363.13
16.42	175.10	1371.03	-----	-----	-----	-----	-----	-----	-----	-----	-----	351.21
16.50	170.29	1371.00	-----	-----	-----	-----	-----	-----	-----	-----	-----	339.73
16.58	165.86	1370.97	-----	-----	-----	-----	-----	-----	-----	-----	-----	328.70
16.67	161.76	1370.95	-----	-----	-----	-----	-----	-----	-----	-----	-----	318.09
16.75	157.96	1370.92	-----	-----	-----	-----	-----	-----	-----	-----	-----	307.92

...End

Reservoir Report

Hydraflow Hydrographs by Intelisolve

Reservoir No. 4 - South Beech Lake

Pond Data

Pond storage is based on known values

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1368.70	00	0.000	0.000
1.30	1370.00	00	0.000	33.000
1.70	1370.40	00	0.000	70.530
2.70	1371.40	00	0.000	112.000
3.70	1372.40	00	0.000	155.700
4.20	1372.90	00	0.000	203.000

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 0.0	0.0	0.0	0.0
Span in	= 0.0	0.0	0.0	0.0
No. Barrels	= 0	0	0	0
Invert El. ft	= 0.00	0.00	0.00	0.00
Length ft	= 0.0	0.0	0.0	0.0
Slope %	= 0.00	0.00	0.00	0.00
N-Value	= .000	.000	.000	.000
Orif. Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 0.00	0.00	0.00	0.00
Crest El. ft	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0.000	1368.70	---	---	---	---	---	---	---	---	---	0.00
1.30	33.000	1370.00	---	---	---	---	---	---	---	---	---	0.00
1.70	70.530	1370.40	---	---	---	---	---	---	---	---	---	100.00
2.70	112.000	1371.40	---	---	---	---	---	---	---	---	---	500.00
3.70	155.700	1372.40	---	---	---	---	---	---	---	---	---	1200.00
4.20	203.000	1372.90	---	---	---	---	---	---	---	---	---	1700.00

Appendix E

Drainage and Utility Plan

Appendix F

Developed Hydraflow Hydrographs Output

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	SCS Runoff	153.85	5	750	24.257	----	------	------	North of Eastminster (1)
2	SCS Runoff	118.82	5	750	18.713	----	------	------	Tributary From West (2)
3	Combine	272.68	5	750	42.970	1, 2	------	------	Combined North of Eastminster Lake
4	SCS Runoff	163.86	5	740	21.296	----	------	------	Drainage to RR Tracks (3)
5	Combine	420.02	5	750	64.266	3, 4	------	------	Combined to Eastminster Lake/RR
6	Reservoir	385.44	5	760	64.266	5	1374.65	8.277	Eastminster Lake
7	SCS Runoff	34.60	5	740	4.495	----	------	------	Drainage to Silt Pond (4)
8	Combine	412.79	5	755	68.761	6, 7	------	------	Combined to Silt Pond
9	Reservoir	375.41	5	770	68.761	8	1372.44	5.902	Silt Pond Routing
10	SCS Runoff	170.76	5	765	34.229	----	------	------	Drainage to North Lake (5)
11	Combine	545.27	5	770	102.990	9, 10	------	------	Combined to North Beech Lake
12	Reservoir	434.33	5	795	102.990	11	1371.20	160.424	North Pond Routing
13	SCS Runoff	354.59	5	740	46.156	----	------	------	Drainage to South Lake
14	Combine	547.53	5	765	149.146	12, 13	------	------	Combined to South Lake
15	Reservoir	300.49	5	840	149.146	14	1370.90	91.316	South Pond Routing

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	SCS Runoff	217.89	5	750	34.584	----	------	------	North of Eastminster (1)
2	SCS Runoff	170.02	5	750	26.902	----	------	------	Tributary From West (2)
3	Combine	387.91	5	750	61.486	1, 2	------	------	Combined North of Eastminster Lake
4	SCS Runoff	229.99	5	740	30.164	----	------	------	Drainage to RR Tracks (3)
5	Combine	593.60	5	750	91.650	3, 4	------	------	Combined to Eastminster Lake/RR
6	Reservoir	543.52	5	760	91.650	5	1375.26	10.850	Eastminster Lake
7	SCS Runoff	51.59	5	740	6.679	----	------	------	Drainage to Silt Pond (4)
8	Combine	584.21	5	755	98.329	6, 7	------	------	Combined to Silt Pond
9	Reservoir	479.39	5	775	98.329	8	1373.31	10.387	Silt Pond Routing
10	SCS Runoff	249.70	5	765	49.995	----	------	------	Drainage to North Lake (5)
11	Combine	724.76	5	770	148.324	9, 10	------	------	Combined to North Beech Lake
12	Reservoir	608.47	5	800	148.324	11	1371.58	168.153	North Pond Routing
13	SCS Runoff	495.25	5	740	65.109	----	------	------	Drainage to South Lake
14	Combine	767.30	5	760	213.433	12, 13	------	------	Combined to South Lake
15	Reservoir	481.09	5	840	213.433	14	1371.35	110.040	South Pond Routing

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	SCS Runoff	259.83	5	750	41.461	----	------	------	North of Eastminster (1)
2	SCS Runoff	203.64	5	750	32.370	----	------	------	Tributary From West (2)
3	Combine	463.47	5	750	73.831	1, 2	------	------	Combined North of Eastminster Lake
4	SCS Runoff	273.19	5	740	36.055	----	------	------	Drainage to RR Tracks (3)
5	Combine	708.03	5	745	109.886	3, 4	------	------	Combined to Eastminster Lake/RR
6	Reservoir	626.92	5	760	109.886	5	1375.66	12.901	Eastminster Lake
7	SCS Runoff	62.90	5	740	8.156	----	------	------	Drainage to Silt Pond (4)
8	Combine	673.12	5	760	118.042	6, 7	------	------	Combined to Silt Pond
9	Reservoir	520.68	5	785	118.042	8	1373.98	15.011	Silt Pond Routing
10	SCS Runoff	301.96	5	765	60.587	----	------	------	Drainage to North Lake (5)
11	Combine	808.51	5	770	178.629	9, 10	------	------	Combined to North Beech Lake
12	Reservoir	694.39	5	805	178.629	11	1371.77	171.966	North Pond Routing
13	SCS Runoff	587.01	5	740	77.684	----	------	------	Drainage to South Lake
14	Combine	902.60	5	755	256.314	12, 13	------	------	Combined to South Lake
15	Reservoir	625.47	5	835	256.313	14	1371.58	119.833	South Pond Routing

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (acft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (acft)	Hydrograph description
1	SCS Runoff	411.70	5	750	66.918	----	------	------	North of Eastminster (1)
2	SCS Runoff	325.69	5	750	52.672	----	------	------	Tributary From West (2)
3	Combine	737.39	5	750	119.590	1, 2	------	------	Combined North of Eastminster Lake
4	SCS Runoff	429.32	5	740	57.820	----	------	------	Drainage to RR Tracks (3)
5	Combine	1122.75	5	745	177.409	3, 4	------	------	Combined to Eastminster Lake/RR
6	Reservoir	896.73	5	765	177.409	5	1377.23	23.447	Eastminster Lake
7	SCS Runoff	104.46	5	740	13.710	----	------	------	Drainage to Silt Pond (4)
8	Combine	964.58	5	760	191.119	6, 7	------	------	Combined to Silt Pond
9	Reservoir	842.94	5	785	191.119	8	1375.26	27.698	Silt Pond Routing
10	SCS Runoff	492.88	5	765	100.143	----	------	------	Drainage to North Lake (5)
11	Combine	1283.03	5	780	291.262	9, 10	------	------	Combined to North Beech Lake
12	Reservoir	1063.68	5	805	291.262	11	1372.42	188.078	North Pond Routing
13	SCS Runoff	918.50	5	740	124.081	----	------	------	Drainage to South Lake
14	Combine	1382.26	5	745	415.343	12, 13	------	------	Combined to South Lake
15	Reservoir	1053.03	5	830	415.342	14	1372.19	146.525	South Pond Routing

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 1

North of Eastminster (1)

Hydrograph type	= SCS Runoff	Peak discharge	= 411.70 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 125.00 ac	Curve number	= 89.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 66 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 66.918 acft

Hydrograph Discharge Table

Time (hrs)	Outflow cfs)	
11.92	138.24	
12.00	184.30	
12.08	231.03	
12.17	278.10	
12.25	323.46	
12.33	363.81	
12.42	395.50	
12.50	411.70	<<
12.58	402.23	
12.67	379.91	
12.75	355.43	
12.83	329.02	
12.92	301.10	
13.00	272.01	
13.08	242.10	
13.17	211.75	
13.25	181.18	
13.33	151.17	

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 2

Tributary From West (2)

Hydrograph type	= SCS Runoff	Peak discharge	= 325.69 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 100.20 ac	Curve number	= 88.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 66.7 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 52.672 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
11.92	108.39
12.00	144.87
12.08	181.91
12.17	219.25
12.25	255.26
12.33	287.36
12.42	312.64
12.50	325.69 <<
12.58	318.36
12.67	300.82
12.75	281.54
12.83	260.72
12.92	238.70
13.00	215.73
13.08	192.10
13.17	168.10
13.25	143.93
13.33	120.17
13.42	97.81

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 3

Combined North of Eastminster Lake

Hydrograph type	= Combine	Peak discharge	= 737.39 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 1, 2		

Hydrograph Volume = 119.590 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 2 = (cfs)	Outflow (cfs)
11.92	138.24	108.39	246.64
12.00	184.30	144.87	329.17
12.08	231.03	181.91	412.94
12.17	278.10	219.25	497.35
12.25	323.46	255.26	578.71
12.33	363.81	287.36	651.16
12.42	395.50	312.64	708.14
12.50	411.70 <<	325.69 <<	737.39 <<
12.58	402.23	318.36	720.59
12.67	379.91	300.82	680.73
12.75	355.43	281.54	636.97
12.83	329.02	260.72	589.74
12.92	301.10	238.70	539.79
13.00	272.01	215.73	487.73
13.08	242.10	192.10	434.20
13.17	211.75	168.10	379.85
13.25	181.18	143.93	325.11
13.33	151.17	120.17	271.35

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 4

Drainage to RR Tracks (3)

Hydrograph type	= SCS Runoff	Peak discharge	= 429.32 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 104.80 ac	Curve number	= 90.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 46.5 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 57.820 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
11.92	172.93
12.00	239.16
12.08	303.51
12.17	361.07
12.25	406.39
12.33	429.32 <<
12.42	414.60
12.50	381.25
12.58	345.03
12.67	306.45
12.75	266.00
12.83	224.22
12.92	182.56
13.00	143.21

...End

Hydrograph Report

Hyd. No. 5

Combined to Eastminster Lake/RR

Hydrograph type	= Combine	Peak discharge	= 1122.75 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 3, 4		

Hydrograph Volume = 177.409 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 3 + (cfs)	Hyd. 4 = (cfs)	Outflow (cfs)
11.92	246.64	172.93	419.57
12.00	329.17	239.16	568.33
12.08	412.94	303.51	716.45
12.17	497.35	361.07	858.41
12.25	578.71	406.39	985.10
12.33	651.16	429.32 <<	1080.49
12.42	708.14	414.60	1122.75 <<
12.50	737.39 <<	381.25	1118.64
12.58	720.59	345.03	1065.62
12.67	680.73	306.45	987.18
12.75	636.97	266.00	902.97
12.83	589.74	224.22	813.96
12.92	539.79	182.56	722.35
13.00	487.73	143.21	630.94
13.08	434.20	108.36	542.56
13.17	379.85	81.78	461.63
13.25	325.11	69.13	394.25

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 6

Eastminster Lake

Hydrograph type	= Reservoir	Peak discharge	= 896.73 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyd. No.	= 5	Reservoir name	= Eastminster Lake
Max. Elevation	= 1377.23 ft	Max. Storage	= 23.447 acft

Storage Indication method used.

Outflow hydrograph volume = 177.409 acft

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
12.00	568.33	1374.52	-----	-----	-----	-----	-----	-----	-----	-----	-----	351.34
12.08	716.45	1374.91	-----	-----	-----	-----	-----	-----	-----	-----	-----	452.99
12.17	858.41	1375.36	-----	-----	-----	-----	-----	-----	-----	-----	-----	569.79
12.25	985.10	1375.76	-----	-----	-----	-----	-----	-----	-----	-----	-----	644.42
12.33	1080.49	1376.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	721.93
12.42	1122.75 <<	1376.56	-----	-----	-----	-----	-----	-----	-----	-----	-----	785.85
12.50	1118.64	1376.83	-----	-----	-----	-----	-----	-----	-----	-----	-----	831.66
12.58	1065.62	1377.05	-----	-----	-----	-----	-----	-----	-----	-----	-----	867.30
12.67	987.18	1377.18	-----	-----	-----	-----	-----	-----	-----	-----	-----	889.06
12.75	902.97	1377.23 <<	-----	-----	-----	-----	-----	-----	-----	-----	-----	896.73 <<
12.83	813.96	1377.20	-----	-----	-----	-----	-----	-----	-----	-----	-----	891.49
12.92	722.35	1377.10	-----	-----	-----	-----	-----	-----	-----	-----	-----	874.62
13.00	630.94	1376.93	-----	-----	-----	-----	-----	-----	-----	-----	-----	847.53
13.08	542.56	1376.71	-----	-----	-----	-----	-----	-----	-----	-----	-----	811.86
13.17	461.63	1376.46	-----	-----	-----	-----	-----	-----	-----	-----	-----	769.48
13.25	394.25	1376.10	-----	-----	-----	-----	-----	-----	-----	-----	-----	705.66
13.33	334.67	1375.72	-----	-----	-----	-----	-----	-----	-----	-----	-----	637.55
13.42	279.20	1375.34	-----	-----	-----	-----	-----	-----	-----	-----	-----	565.24
13.50	230.21	1374.93	-----	-----	-----	-----	-----	-----	-----	-----	-----	456.79
13.58	192.19	1374.60	-----	-----	-----	-----	-----	-----	-----	-----	-----	371.02
13.67	172.00	1374.33	-----	-----	-----	-----	-----	-----	-----	-----	-----	302.96

...End

Reservoir Report

Hydraflow Hydrographs by Intelisolve

Reservoir No. 1 - Eastminster Lake

Pond Data

Pond storage is based on known values

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1369.40	00	0.000	0.000
1.00	1370.40	00	0.000	0.279
2.00	1371.40	00	0.000	1.093
3.00	1372.40	00	0.000	2.269
4.00	1373.40	00	0.000	3.606
5.00	1374.40	00	0.000	7.212
6.00	1375.40	00	0.000	11.444
7.00	1376.40	00	0.000	17.035
8.00	1377.40	00	0.000	24.773
9.00	1378.40	00	0.000	34.468
10.00	1379.40	00	0.000	46.441

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 0.0	0.0	0.0	0.0
Span in	= 0.0	0.0	0.0	0.0
No. Barrels	= 0	0	0	0
Invert El. ft	= 0.00	0.00	0.00	0.00
Length ft	= 0.0	0.0	0.0	0.0
Slope %	= 0.00	0.00	0.00	0.00
N-Value	= .000	.000	.000	.000
Orif. Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 0.00	0.00	0.00	0.00
Crest El. ft	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0.000	1369.40	---	---	---	---	---	---	---	---	---	0.00
1.00	0.279	1370.40	---	---	---	---	---	---	---	---	---	6.00
2.00	1.093	1371.40	---	---	---	---	---	---	---	---	---	14.00
3.00	2.269	1372.40	---	---	---	---	---	---	---	---	---	30.00
4.00	3.606	1373.40	---	---	---	---	---	---	---	---	---	60.00
5.00	7.212	1374.40	---	---	---	---	---	---	---	---	---	320.00
6.00	11.444	1375.40	---	---	---	---	---	---	---	---	---	580.00
7.00	17.035	1376.40	---	---	---	---	---	---	---	---	---	760.00
8.00	24.773	1377.40	---	---	---	---	---	---	---	---	---	925.00
9.00	34.468	1378.40	---	---	---	---	---	---	---	---	---	1085.00
10.00	46.441	1379.40	---	---	---	---	---	---	---	---	---	1240.00

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 7

Drainage to Silt Pond (4)

Hydrograph type	= SCS Runoff	Peak discharge	= 104.46 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 27.65 ac	Curve number	= 84.4
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 48.7 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 13.710 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
11.92	40.33
12.00	56.57
12.08	72.46
12.17	86.82
12.25	98.33
12.33	104.46 <<
12.42	101.27
12.50	93.39
12.58	84.76
12.67	75.52
12.75	65.77
12.83	55.66
12.92	45.53
13.00	35.90

...End

Hydrograph Report

Hyd. No. 8

Combined to Silt Pond

Hydrograph type	= Combine	Peak discharge	= 964.58 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 6, 7		

Hydrograph Volume = 191.119 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 6 + (cfs)	Hyd. 7 = (cfs)	Outflow (cfs)
11.92	264.37	40.33	304.71
12.00	351.34	56.57	407.92
12.08	452.99	72.46	525.44
12.17	569.79	86.82	656.61
12.25	644.42	98.33	742.75
12.33	721.93	104.46 <<	826.39
12.42	785.85	101.27	887.12
12.50	831.66	93.39	925.05
12.58	867.30	84.76	952.06
12.67	889.06	75.52	964.58 <<
12.75	896.73 <<	65.77	962.50
12.83	891.49	55.66	947.16
12.92	874.62	45.53	920.15
13.00	847.53	35.90	883.44
13.08	811.86	27.31	839.17
13.17	769.48	20.70	790.18
13.25	705.66	17.53	723.19
13.33	637.55	16.07	653.62
13.42	565.24	14.84	580.08
13.50	456.79	13.83	470.62
13.58	371.02	12.99	384.01
13.67	302.96	12.29	315.25

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 9

Silt Pond Routing

Hydrograph type	= Reservoir	Peak discharge	= 842.94 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyd. No.	= 8	Reservoir name	= Silt Pond
Max. Elevation	= 1375.26 ft	Max. Storage	= 27.698 acft

Storage Indication method used.

Outflow hydrograph volume = 191.119 acft

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
12.00	407.92	1371.99	-----	-----	-----	-----	-----	-----	-----	-----	-----	307.29
12.08	525.44	1372.23	-----	-----	-----	-----	-----	-----	-----	-----	-----	344.64
12.17	656.61	1372.60	-----	-----	-----	-----	-----	-----	-----	-----	-----	399.76
12.25	742.75	1373.03	-----	-----	-----	-----	-----	-----	-----	-----	-----	461.83
12.33	826.39	1373.34	-----	-----	-----	-----	-----	-----	-----	-----	-----	481.08
12.42	887.12	1373.70	-----	-----	-----	-----	-----	-----	-----	-----	-----	503.49
12.50	925.05	1374.06	-----	-----	-----	-----	-----	-----	-----	-----	-----	529.47
12.58	952.06	1374.34	-----	-----	-----	-----	-----	-----	-----	-----	-----	562.59
12.67	964.58 <<	1374.62	-----	-----	-----	-----	-----	-----	-----	-----	-----	594.63
12.75	962.50	1374.87	-----	-----	-----	-----	-----	-----	-----	-----	-----	624.50
12.83	947.16	1375.07	-----	-----	-----	-----	-----	-----	-----	-----	-----	693.81
12.92	920.15	1375.18	-----	-----	-----	-----	-----	-----	-----	-----	-----	786.75
13.00	883.44	1375.24	-----	-----	-----	-----	-----	-----	-----	-----	-----	831.33
13.08	839.17	1375.26 <<	-----	-----	-----	-----	-----	-----	-----	-----	-----	842.94 <<
13.17	790.18	1375.24	-----	-----	-----	-----	-----	-----	-----	-----	-----	831.99
13.25	723.19	1375.20	-----	-----	-----	-----	-----	-----	-----	-----	-----	802.81
13.33	653.62	1375.15	-----	-----	-----	-----	-----	-----	-----	-----	-----	758.48
13.42	580.08	1375.08	-----	-----	-----	-----	-----	-----	-----	-----	-----	703.60
13.50	470.62	1374.99	-----	-----	-----	-----	-----	-----	-----	-----	-----	638.86
13.58	384.01	1374.85	-----	-----	-----	-----	-----	-----	-----	-----	-----	621.73
13.67	315.25	1374.66	-----	-----	-----	-----	-----	-----	-----	-----	-----	599.70
13.75	260.33	1374.44	-----	-----	-----	-----	-----	-----	-----	-----	-----	574.45
13.83	222.92	1374.22	-----	-----	-----	-----	-----	-----	-----	-----	-----	547.50
13.92	196.63	1373.98	-----	-----	-----	-----	-----	-----	-----	-----	-----	520.64
14.00	177.52	1373.66	-----	-----	-----	-----	-----	-----	-----	-----	-----	500.74
14.08	163.13	1373.34	-----	-----	-----	-----	-----	-----	-----	-----	-----	481.03
14.17	151.93	1373.03	-----	-----	-----	-----	-----	-----	-----	-----	-----	461.74
14.25	142.90	1372.58	-----	-----	-----	-----	-----	-----	-----	-----	-----	396.19
14.33	135.38	1372.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	338.69
14.42	128.95	1371.82	-----	-----	-----	-----	-----	-----	-----	-----	-----	263.46

...End

Reservoir Report

Hydraflow Hydrographs by Intelisolve

Reservoir No. 2 - Silt Pond

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1369.00	6,700	0.000	0.000
1.00	1370.00	48,954	0.639	0.639
2.00	1371.00	65,749	1.317	1.955
3.00	1372.00	122,220	2.158	4.113
4.00	1373.00	235,083	4.101	8.214
5.00	1374.00	369,932	6.945	15.159
6.00	1375.00	469,149	9.631	24.790
7.00	1376.00	524,600	11.407	36.197

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 0.0	0.0	0.0	0.0
Span in	= 0.0	0.0	0.0	0.0
No. Barrels	= 0	0	0	0
Invert El. ft	= 0.00	0.00	0.00	0.00
Length ft	= 0.0	0.0	0.0	0.0
Slope %	= 0.00	0.00	0.00	0.00
N-Value	= .000	.000	.000	.000
Orif. Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 55.00	0.00	0.00	0.00
Crest El. ft	= 184.20	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	0.00	0.00
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 185.30 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0.000	1369.00	---	---	---	---	0.00	---	---	---	---	0.00
1.00	0.639	1370.00	---	---	---	---	0.00	---	---	---	---	38.00
2.00	1.955	1371.00	---	---	---	---	0.00	---	---	---	---	45.00
3.00	4.113	1372.00	---	---	---	---	0.00	---	---	---	---	310.00
4.00	8.214	1373.00	---	---	---	---	0.00	---	---	---	---	460.00
5.00	15.159	1374.00	---	---	---	---	0.00	---	---	---	---	522.00
6.00	24.790	1375.00	---	---	---	---	0.00	---	---	---	---	640.00
7.00	36.197	1376.00	---	---	---	---	0.00	---	---	---	---	1436.00

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 10

Drainage to North Lake (5)

Hydrograph type	= SCS Runoff	Peak discharge	= 492.88 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 196.54 ac	Curve number	= 86.4
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 86 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 100.143 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	
12.00	174.55	
12.08	214.43	
12.17	254.92	
12.25	295.74	
12.33	336.64	
12.42	377.31	
12.50	416.17	
12.58	450.68	
12.67	478.05	
12.75	492.88	<<
12.83	486.88	
12.92	470.29	
13.00	451.70	
13.08	431.39	
13.17	409.61	
13.25	386.64	
13.33	362.75	
13.42	338.22	
13.50	313.16	
13.58	287.71	
13.67	261.96	
13.75	236.00	
13.83	209.91	
13.92	183.80	
14.00	158.23	

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 11

Combined to North Beech Lake

Hydrograph type	= Combine	Peak discharge	= 1283.03 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 9, 10		

Hydrograph Volume = 291.262 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 9 + (cfs)	Hyd. 10 = (cfs)	Outflow (cfs)
12.00	307.29	174.55	481.85
12.08	344.64	214.43	559.07
12.17	399.76	254.92	654.68
12.25	461.83	295.74	757.57
12.33	481.08	336.64	817.72
12.42	503.49	377.31	880.80
12.50	529.47	416.17	945.64
12.58	562.59	450.68	1013.28
12.67	594.63	478.05	1072.68
12.75	624.50	492.88 <<	1117.38
12.83	693.81	486.88	1180.70
12.92	786.75	470.29	1257.03
13.00	831.33	451.70	1283.03 <<
13.08	842.94 <<	431.39	1274.33
13.17	831.99	409.61	1241.60
13.25	802.81	386.64	1189.45
13.33	758.48	362.75	1121.23
13.42	703.60	338.22	1041.82
13.50	638.86	313.16	952.01
13.58	621.73	287.71	909.44
13.67	599.70	261.96	861.66
13.75	574.45	236.00	810.44
13.83	547.50	209.91	757.41
13.92	520.64	183.80	704.44
14.00	500.74	158.23	658.98
14.08	481.03	134.16	615.20
14.17	461.74	112.66	574.40
14.25	396.19	95.80	492.00
14.33	338.69	86.74	425.43

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 12

North Pond Routing

Hydrograph type	= Reservoir	Peak discharge	= 1063.68 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyd. No.	= 11	Reservoir name	= North Beech Lake
Max. Elevation	= 1372.42 ft	Max. Storage	= 188.078 acft

Storage Indication method used.

Outflow hydrograph volume = 291.262 acft

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
12.17	654.68	1370.93	-----	-----	-----	-----	-----	-----	-----	-----	-----	321.37
12.25	757.57	1371.07	-----	-----	-----	-----	-----	-----	-----	-----	-----	376.86
12.33	817.72	1371.20	-----	-----	-----	-----	-----	-----	-----	-----	-----	436.02
12.42	880.80	1371.33	-----	-----	-----	-----	-----	-----	-----	-----	-----	495.52
12.50	945.64	1371.46	-----	-----	-----	-----	-----	-----	-----	-----	-----	555.67
12.58	1013.28	1371.60	-----	-----	-----	-----	-----	-----	-----	-----	-----	616.70
12.67	1072.68	1371.73	-----	-----	-----	-----	-----	-----	-----	-----	-----	678.08
12.75	1117.38	1371.86	-----	-----	-----	-----	-----	-----	-----	-----	-----	738.12
12.83	1180.70	1371.99	-----	-----	-----	-----	-----	-----	-----	-----	-----	797.30
12.92	1257.03	1372.09	-----	-----	-----	-----	-----	-----	-----	-----	-----	859.32
13.00	1283.03 <<	1372.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	919.80
13.08	1274.33	1372.27	-----	-----	-----	-----	-----	-----	-----	-----	-----	972.65
13.17	1241.60	1372.34	-----	-----	-----	-----	-----	-----	-----	-----	-----	1014.66
13.25	1189.45	1372.39	-----	-----	-----	-----	-----	-----	-----	-----	-----	1044.24
13.33	1121.23	1372.41	-----	-----	-----	-----	-----	-----	-----	-----	-----	1060.60
13.42	1041.82	1372.42 <<	-----	-----	-----	-----	-----	-----	-----	-----	-----	1063.68 <<
13.50	952.01	1372.40	-----	-----	-----	-----	-----	-----	-----	-----	-----	1053.85
13.58	909.44	1372.37	-----	-----	-----	-----	-----	-----	-----	-----	-----	1035.72
13.67	861.66	1372.34	-----	-----	-----	-----	-----	-----	-----	-----	-----	1013.61
13.75	810.44	1372.30	-----	-----	-----	-----	-----	-----	-----	-----	-----	987.46
13.83	757.41	1372.25	-----	-----	-----	-----	-----	-----	-----	-----	-----	957.49
13.92	704.44	1372.20	-----	-----	-----	-----	-----	-----	-----	-----	-----	924.12
14.00	658.98	1372.14	-----	-----	-----	-----	-----	-----	-----	-----	-----	888.43
14.08	615.20	1372.08	-----	-----	-----	-----	-----	-----	-----	-----	-----	851.41
14.17	574.40	1372.02	-----	-----	-----	-----	-----	-----	-----	-----	-----	813.62
14.25	492.00	1371.94	-----	-----	-----	-----	-----	-----	-----	-----	-----	772.94
14.33	425.43	1371.84	-----	-----	-----	-----	-----	-----	-----	-----	-----	727.69
14.42	345.08	1371.73	-----	-----	-----	-----	-----	-----	-----	-----	-----	678.38
14.50	259.01	1371.61	-----	-----	-----	-----	-----	-----	-----	-----	-----	624.19
14.58	218.94	1371.49	-----	-----	-----	-----	-----	-----	-----	-----	-----	568.72
14.67	198.17	1371.38	-----	-----	-----	-----	-----	-----	-----	-----	-----	516.85
14.75	185.76	1371.28	-----	-----	-----	-----	-----	-----	-----	-----	-----	470.07
14.83	177.17	1371.18	-----	-----	-----	-----	-----	-----	-----	-----	-----	428.51
14.92	170.49	1371.10	-----	-----	-----	-----	-----	-----	-----	-----	-----	391.84
15.00	164.88	1371.03	-----	-----	-----	-----	-----	-----	-----	-----	-----	359.56
15.08	159.98	1370.96	-----	-----	-----	-----	-----	-----	-----	-----	-----	331.12

...End

Reservoir Report

Reservoir No. 3 - North Beech Lake

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1358.00	415,677	0.000	0.000
1.00	1359.00	431,002	9.719	9.719
2.00	1360.00	446,469	10.072	19.791
3.00	1361.00	462,078	10.429	30.219
4.00	1362.00	477,829	10.789	41.008
5.00	1363.00	493,714	11.152	52.160
6.00	1364.00	511,862	11.542	63.702
7.00	1365.00	528,306	11.939	75.642
8.00	1366.00	544,977	12.320	87.961
9.00	1367.00	561,947	12.706	100.667
10.00	1368.00	579,304	13.100	113.767
11.00	1369.00	596,211	13.493	127.260
12.00	1370.00	618,976	13.948	141.208
13.00	1371.00	709,720	15.251	156.460
14.00	1372.00	1,049,600	20.194	176.654
15.00	1373.00	1,328,290	27.294	203.948

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 156.0	0.0	0.0	0.0
Span in	= 324.0	0.0	0.0	0.0
No. Barrels	= 1	0	0	0
Invert El. ft	= 171.05	0.00	0.00	0.00
Length ft	= 72.0	0.0	0.0	0.0
Slope %	= 0.01	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 0.00	0.00	0.00	0.00
Crest El. ft	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 182.60 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0.000	1358.00	0.00	---	---	---	---	---	---	---	---	0.00
1.00	9.719	1359.00	0.00	---	---	---	---	---	---	---	---	0.00
2.00	19.791	1360.00	0.00	---	---	---	---	---	---	---	---	0.00
3.00	30.219	1361.00	0.00	---	---	---	---	---	---	---	---	0.00
4.00	41.008	1362.00	0.00	---	---	---	---	---	---	---	---	0.00
5.00	52.160	1363.00	0.00	---	---	---	---	---	---	---	---	0.00
6.00	63.702	1364.00	0.00	---	---	---	---	---	---	---	---	0.00
7.00	75.642	1365.00	0.00	---	---	---	---	---	---	---	---	0.00
8.00	87.961	1366.00	0.00	---	---	---	---	---	---	---	---	0.00
9.00	100.667	1367.00	0.00	---	---	---	---	---	---	---	---	0.00
10.00	113.767	1368.00	0.00	---	---	---	---	---	---	---	---	0.00
11.00	127.260	1369.00	0.00	---	---	---	---	---	---	---	---	0.00
12.00	141.208	1370.00	0.00	---	---	---	---	---	---	---	---	0.00
13.00	156.460	1371.00	0.00	---	---	---	---	---	---	---	---	345.00
14.00	176.654	1372.00	0.00	---	---	---	---	---	---	---	---	800.00
15.00	203.948	1373.00	0.00	---	---	---	---	---	---	---	---	1430.00

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 13

Drainage to South Lake

Hydrograph type	= SCS Runoff	Peak discharge	= 918.50 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Drainage area	= 222.91 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 48 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 124.081 acft

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)
11.92	371.20
12.00	512.79
12.08	650.29
12.17	773.17
12.25	869.79
12.33	918.50 <<
12.42	886.74
12.50	815.23
12.58	737.61
12.67	654.97
12.75	568.38
12.83	478.94
12.92	389.83
13.00	305.69

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 14

Combined to South Lake

Hydrograph type	= Combine	Peak discharge	= 1382.26 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyds.	= 12, 13		

Hydrograph Volume = 415.343 acft

Hydrograph Discharge Table

Time (hrs)	Hyd. 12 + (cfs)	Hyd. 13 = (cfs)	Outflow (cfs)
11.83	175.92	252.64	428.56
11.92	198.39	371.20	569.59
12.00	231.35	512.79	744.14
12.08	273.13	650.29	923.43
12.17	321.37	773.17	1094.54
12.25	376.86	869.79	1246.65
12.33	436.02	918.50 <<	1354.51
12.42	495.52	886.74	1382.26 <<
12.50	555.67	815.23	1370.90
12.58	616.70	737.61	1354.31
12.67	678.08	654.97	1333.05
12.75	738.12	568.38	1306.51
12.83	797.30	478.94	1276.24
12.92	859.32	389.83	1249.14
13.00	919.80	305.69	1225.48
13.08	972.65	231.20	1203.85
13.17	1014.66	174.43	1189.09
13.25	1044.24	147.44	1191.69
13.33	1060.60	135.03	1195.64
13.42	1063.68 <<	124.65	1188.33
13.50	1053.85	116.05	1169.90
13.58	1035.72	108.96	1144.68
13.67	1013.61	103.05	1116.65
13.75	987.46	97.98	1085.44
13.83	957.49	93.42	1050.91
13.92	924.12	89.21	1013.33
14.00	888.43	85.31	973.74
14.08	851.41	81.72	933.13
14.17	813.62	78.41	892.04
14.25	772.94	75.37	848.31
14.33	727.69	72.57	800.27
14.42	678.38	70.03	748.41
14.50	624.19	67.76	691.95
14.58	568.72	65.77	634.48
14.67	516.85	64.00	580.86
14.75	470.07	62.43	532.50
14.83	428.51	61.02	489.53
14.92	391.84	59.74	451.57

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Hydrograph Discharge Table

Time (hrs)	Hyd. 12 + (cfs)	Hyd. 13 = (cfs)	Outflow (cfs)
15.00	359.56	58.56	418.11

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Hyd. No. 15

South Pond Routing

Hydrograph type	= Reservoir	Peak discharge	= 1053.03 cfs
Storm frequency	= 100 yrs	Time interval	= 5 min
Inflow hyd. No.	= 14	Reservoir name	= South Beech Lake
Max. Elevation	= 1372.19 ft	Max. Storage	= 146.525 acft

Storage Indication method used.

Outflow hydrograph volume = 415.342 acft

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
12.33	1354.51	1371.01	-----	-----	-----	-----	-----	-----	-----	-----	-----	343.59
12.42	1382.26	<<1371.17	-----	-----	-----	-----	-----	-----	-----	-----	-----	409.48
12.50	1370.90	1371.33	-----	-----	-----	-----	-----	-----	-----	-----	-----	471.66
12.58	1354.31	1371.47	-----	-----	-----	-----	-----	-----	-----	-----	-----	547.06
12.67	1333.05	1371.59	-----	-----	-----	-----	-----	-----	-----	-----	-----	630.35
12.75	1306.51	1371.69	-----	-----	-----	-----	-----	-----	-----	-----	-----	702.43
12.83	1276.24	1371.78	-----	-----	-----	-----	-----	-----	-----	-----	-----	764.01
12.92	1249.14	1371.85	-----	-----	-----	-----	-----	-----	-----	-----	-----	816.14
13.00	1225.48	1371.92	-----	-----	-----	-----	-----	-----	-----	-----	-----	860.18
13.08	1203.85	1371.97	-----	-----	-----	-----	-----	-----	-----	-----	-----	897.24
13.17	1189.09	1372.01	-----	-----	-----	-----	-----	-----	-----	-----	-----	928.53
13.25	1191.69	1372.05	-----	-----	-----	-----	-----	-----	-----	-----	-----	955.90
13.33	1195.64	1372.09	-----	-----	-----	-----	-----	-----	-----	-----	-----	980.76
13.42	1188.33	1372.12	-----	-----	-----	-----	-----	-----	-----	-----	-----	1002.85
13.50	1169.90	1372.15	-----	-----	-----	-----	-----	-----	-----	-----	-----	1021.28
13.58	1144.68	1372.17	-----	-----	-----	-----	-----	-----	-----	-----	-----	1035.50
13.67	1116.65	1372.18	-----	-----	-----	-----	-----	-----	-----	-----	-----	1045.45
13.75	1085.44	1372.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	1051.26
13.83	1050.91	1372.19 <<	-----	-----	-----	-----	-----	-----	-----	-----	-----	1053.03 <<
13.92	1013.33	1372.19	-----	-----	-----	-----	-----	-----	-----	-----	-----	1050.84
14.00	973.74	1372.18	-----	-----	-----	-----	-----	-----	-----	-----	-----	1044.85
14.08	933.13	1372.17	-----	-----	-----	-----	-----	-----	-----	-----	-----	1035.29
14.17	892.04	1372.15	-----	-----	-----	-----	-----	-----	-----	-----	-----	1022.46
14.25	848.31	1372.12	-----	-----	-----	-----	-----	-----	-----	-----	-----	1006.54
14.33	800.27	1372.10	-----	-----	-----	-----	-----	-----	-----	-----	-----	987.49
14.42	748.41	1372.07	-----	-----	-----	-----	-----	-----	-----	-----	-----	965.20
14.50	691.95	1372.03	-----	-----	-----	-----	-----	-----	-----	-----	-----	939.58
14.58	634.48	1371.99	-----	-----	-----	-----	-----	-----	-----	-----	-----	910.69
14.67	580.86	1371.94	-----	-----	-----	-----	-----	-----	-----	-----	-----	879.01
14.75	532.50	1371.89	-----	-----	-----	-----	-----	-----	-----	-----	-----	845.31
14.83	489.53	1371.84	-----	-----	-----	-----	-----	-----	-----	-----	-----	810.36
14.92	451.57	1371.79	-----	-----	-----	-----	-----	-----	-----	-----	-----	774.83
15.00	418.11	1371.74	-----	-----	-----	-----	-----	-----	-----	-----	-----	739.28
15.08	388.58	1371.69	-----	-----	-----	-----	-----	-----	-----	-----	-----	704.16
15.17	362.48	1371.64	-----	-----	-----	-----	-----	-----	-----	-----	-----	669.80
15.25	339.44	1371.60	-----	-----	-----	-----	-----	-----	-----	-----	-----	636.47
15.33	319.04	1371.55	-----	-----	-----	-----	-----	-----	-----	-----	-----	604.34
15.42	300.94	1371.51	-----	-----	-----	-----	-----	-----	-----	-----	-----	573.57

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Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
15.50	284.83	1371.46	-----	-----	-----	-----	-----	-----	-----	-----	-----	544.22
15.58	270.46	1371.42	-----	-----	-----	-----	-----	-----	-----	-----	-----	516.35
15.67	257.61	1371.39	-----	-----	-----	-----	-----	-----	-----	-----	-----	493.83
15.75	246.06	1371.35	-----	-----	-----	-----	-----	-----	-----	-----	-----	478.27
15.83	235.65	1371.31	-----	-----	-----	-----	-----	-----	-----	-----	-----	463.01
15.92	226.22	1371.27	-----	-----	-----	-----	-----	-----	-----	-----	-----	448.09
16.00	217.65	1371.23	-----	-----	-----	-----	-----	-----	-----	-----	-----	433.55
16.08	209.81	1371.20	-----	-----	-----	-----	-----	-----	-----	-----	-----	419.42
16.17	202.63	1371.16	-----	-----	-----	-----	-----	-----	-----	-----	-----	405.71
16.25	196.02	1371.13	-----	-----	-----	-----	-----	-----	-----	-----	-----	392.44
16.33	189.94	1371.10	-----	-----	-----	-----	-----	-----	-----	-----	-----	379.62
16.42	184.33	1371.07	-----	-----	-----	-----	-----	-----	-----	-----	-----	367.24
16.50	179.15	1371.04	-----	-----	-----	-----	-----	-----	-----	-----	-----	355.31
16.58	174.37	1371.01	-----	-----	-----	-----	-----	-----	-----	-----	-----	343.83
16.67	169.94	1370.98	-----	-----	-----	-----	-----	-----	-----	-----	-----	332.80
16.75	165.83	1370.96	-----	-----	-----	-----	-----	-----	-----	-----	-----	322.19

...End

Reservoir Report

Hydraflow Hydrographs by Intelisolve

Reservoir No. 4 - South Beech Lake

Pond Data

Pond storage is based on known values

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	1368.70	00	0.000	0.000
1.30	1370.00	00	0.000	33.000
1.70	1370.40	00	0.000	70.530
2.70	1371.40	00	0.000	112.000
3.70	1372.40	00	0.000	155.700
4.20	1372.90	00	0.000	203.000

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 0.0	0.0	0.0	0.0
Span in	= 0.0	0.0	0.0	0.0
No. Barrels	= 0	0	0	0
Invert El. ft	= 0.00	0.00	0.00	0.00
Length ft	= 0.0	0.0	0.0	0.0
Slope %	= 0.00	0.00	0.00	0.00
N-Value	= .000	.000	.000	.000
Orif. Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 0.00	0.00	0.00	0.00
Crest El. ft	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage acft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0.000	1368.70	---	---	---	---	---	---	---	---	---	0.00
1.30	33.000	1370.00	---	---	---	---	---	---	---	---	---	0.00
1.70	70.530	1370.40	---	---	---	---	---	---	---	---	---	100.00
2.70	112.000	1371.40	---	---	---	---	---	---	---	---	---	500.00
3.70	155.700	1372.40	---	---	---	---	---	---	---	---	---	1200.00
4.20	203.000	1372.90	---	---	---	---	---	---	---	---	---	1700.00