

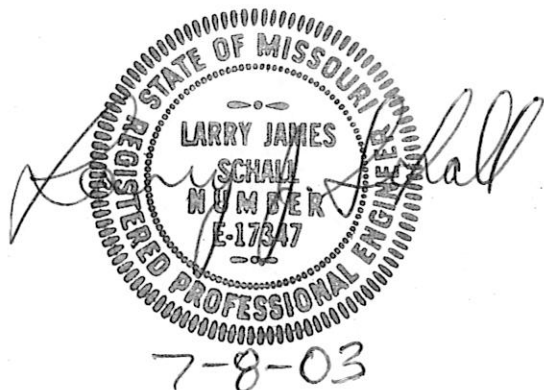
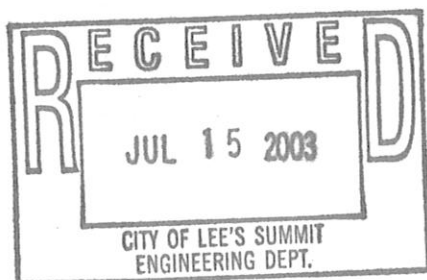
SAINT LUKE'S HOSPITAL OF LEE'S SUMMIT
STORM WATER DETENTION STUDY

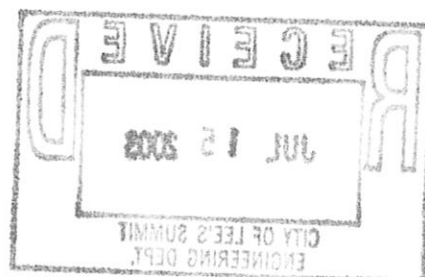
Highway I-470 and Douglas Street
Lee's Summit, Missouri

2002-324

Prepared by:

Shafer Kline & Warren, Inc.
December 12, 2002





**STORM WATER DETENTION STUDY
SAINT LUKE'S HOSPITAL OF LEE'S SUMMIT, MO
DECEMBER 12, 2002**

Project Description

The project consists of a proposed hospital and related medical buildings with parking lots and drives on 41.4 acres located at US Highway I-470 and Douglas Street.

Existing Conditions

The property is currently undeveloped with one residential building, gravel drive and an asphalt drive which leads to an existing pump station. The ground cover consists of weeds and grasses of inconsistent coverage. The site has a ridge line to the south and drains in two directions across the site, from south to north and east to west, at a 4 to 6 percent slope.

Analysis

In accordance with the City of Lee's Summit design criteria the site was analyzed for the 25 year return frequency storm. The storm water runoff detention basin was designed to detain the difference between the existing and proposed peak runoff. The basin is also designed to offset the runoff from a 15.2 acre portion of the site which drains to the offsite drainage ditch without passing through the detention basin. TR55 and Haestad Pond-2 were used to analyze the site and design the detention basin. The results of the analysis are as follows:

The existing 25 year peak runoff for the entire site is 252 cfs.

The full site developed 25 year peak runoff is 301 cfs.

The developed 25 year peak runoff for the portion which bypasses the basin is 110 cfs.

The developed 25 year peak runoff for the portion draining to the detention basin is 190 cfs.

The maximum basin outflow would be (existing minus bypass) 142 cfs.

A detention basin is required to detain the 25 year runoff with a maximum release rate of 142 cfs. The proposed detention basin is designed for a peak storage of 67,953 cu. ft. (1.56 ac-ft) and a peak outflow of 93.28 cfs for the 25 year storm, which is less than the maximum outflow of 142 cfs. Due to site conditions the storm drainage system is designed to convey the 100 year return frequency storm. The basin outlet and overflow weir are designed convey the 100 year overflow to the offsite drainage ditch. Refer to the attached calculations, tabular hydrographs and routing tables for detailed information on the analysis and design.

**REVISIONS TO
STORM WATER DETENTION STUDY
SAINT LUKE'S HOSPITAL OF LEE'S SUMMIT, MO
June 27, 2003**

At the request of the City, we have re-evaluated our curve number computations for the Saint Luke's Hospital site by using an older version of TR-55 (version 1.11) which gives a more detailed computation. The curve numbers are calculated using the actual impervious and pervious area for the developed site. The revised curve numbers are slightly different from those previously computed thru TR-55 version 5.46. Attached are the curve number computation summaries along with re-computed hydrographs and basin routings for the 25 year and 100 year return frequency storms. All offsite areas to the south and in Douglas Street are included. A revised summary is as follows:

Total site area is 41.3 acres

St Luke's property draining to the basin is 26.22 acres

Offsite area draining to the basin is 1.63 acres

St Luke's property which bypasses the basin is 15.1 acres

Existing 25 year peak runoff for the entire site is 239 cfs

Full site developed 25 year peak runoff is 302 cfs

The developed 25 year peak runoff which bypasses the basin (15.1 ac) is 105 cfs

The developed 25 year peak runoff draining to the detention basin (26.22 ac) is 197 cfs.

The maximum allowable 25 year release rate (existing - bypass) is 134 cfs

The peak release rate for a 25 year storm from the basin is 94.45 cfs

The peak storage for the detention basin is 72,310 cu ft

SAINT LUKE'S, LEE'S SUMMIT
DECEMBER 11, 02

PRELIMINARY VOLUME COMPUTATION

ELEV.	AREA	INCREMENTAL		STAGE	STAGE
	SQ.FT.	VOLUME		STORAGE	STORAGE
		CU. FT.		CU. FT.	AC-FT
960	0	0		0	0
961	500	250		250	0.0057392103
962	1000	750		1000	0.0229568411
963	2165	1582.5		2582.5	0.0592860422
964	3573	2869		5451.5	0.1251492195
965	6768	5170.5		10622	0.2438475666
966	8463	7615.5		18237.5	0.4186753903
967	13168	10815.5		29053	0.6669651056
968	17873	15520.5		44573.5	1.0232667585
969	21131	19502		64075.5	1.4709710744
970	24388	22759.5		86835	1.9934573003
971	26589	25488.5		112323.5	2.5785927456
972	28789	27689		140012.5	3.2142447199
0	0			140012.5	3.2142447199
0	0	ERR		ERR	ERR
0	0	ERR		ERR	ERR
0	0	ERR		ERR	ERR
0	0	ERR		ERR	ERR
0	0	ERR		ERR	ERR
0	0	ERR		ERR	ERR
0	0	ERR		ERR	ERR
0	0	ERR		ERR	ERR
0	0	ERR		ERR	ERR
0	0	ERR		ERR	ERR
					0
		TOTAL VOLUME		140012.5	

OUTFALL SIZING:
ST LUKE'S LEE'S SUMMIT HOSPITAL
12/11/02

ORIFICE PIPE		
	PIPE SIZE (IN)	36
	PIPE ELEV.	960
ELEVATION	HEIGHT	OUTFLOW
	H (FT)	Q (CFS)
962	0.50	23.83
963	1.50	41.27
964	2.50	53.28
965	3.50	63.04
966	4.50	71.48
967	5.50	79.02
968	6.50	85.91
969	7.50	92.28
970	8.50	98.24
971	9.50	103.86
972	10.50	109.19
973	11.50	114.27

OVERFLOW WEIR

$$Q = CLH^{3/2}$$

$$C = 3$$

$$L = 40'$$

$$H = 0.5, 1, 2$$

$$Q(.5) = 3 * 40 * (0.5)^{3/2}$$

$$Q(0.5) = 42.43 \text{ cfs}$$

$$Q(1) = 3 * 40 * (1)^{3/2}$$

$$Q(1) = 120 \text{ cfs}$$

$$Q(2) = 3 * 40 * (2)^{3/2}$$

$$Q(2) = 339.4 \text{ cfs}$$

Quick TR-55 Ver.5.46 S/N:
Executed: 14:26:51 06-26-2003

Saint Luke's Lee's Summit Hospital
existing conditions

RUNOFF CURVE NUMBER SUMMARY

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Subarea Description	Area (acres)	CN (weighted)
-----	-----	-----
exist	41.44	77

Quick TR-55 Ver.5.46 S/N:
Executed: 14:26:51 06-26-2003

Saint Luke's Lee's Summit Hospital
existing conditions

RUNOFF CURVE NUMBER DATA

.....

Composite Area: exist

SURFACE DESCRIPTION	AREA (acres)	CN
roads and building	0.47	98
Type B soil, grass, poor cond	20.49	69
Type D soil, grass, poor cond.	20.48	84
COMPOSITE AREA --->	41.44	76.7 (77)

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TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)Executed: 06-26-2003 14:29:07
Watershed file: --> EX32803R.MOP
Hydrograph file: --> 25EX803R.HYDSaint Luke's Lee's Summit Hospital
Existing conditions

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used
exist	41.44	77.0	0.10	0.00	6.20	3.65	I.1 .10

* Travel time from subarea outfall to composite watershed outfall point.
I -- Subarea where user specified interpolation between Ia/p tables.

Total area = 41.44 acres or 0.06475 sq.mi
Peak discharge = 239 cfs

>>>> Computer Modifications of Input Parameters <<<<

Subarea Description	Input Values		Rounded Values		Ia/p	Ia/p Messages
	Tc (hr)	* Tt (hr)	Tc (hr)	* Tt (hr)	Interpolated (Yes/No)	
exist	0.11	0.00	0.10	0.00	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)Executed: 06-26-2003 14:29:07
Watershed file: --> EX32803R.MOP
Hydrograph file: --> 25EX803R.HYDSaint Luke's Lee's Summit Hospital
Existing conditions

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
----- exist -----	----- 239 -----	----- 12.1 -----
Composite Watershed	239	12.1

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 14:29:07
Watershed file: --> EX32803R.MOP
Hydrograph file: --> 25EX803R.HYD

Saint Luke's Lee's Summit Hospital
Existing conditions

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
exist	6	8	13	79	153	239	148	51	35
Total (cfs)	6	8	13	79	153	239	148	51	35

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
exist	29	25	20	18	16	13	12	11	10
Total (cfs)	29	25	20	18	16	13	12	11	10

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
exist	9	8	8	7	6	5	5	5	4
Total (cfs)	9	8	8	7	6	5	5	5	4

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
exist	4	4	3	3	0
Total (cfs)	4	4	3	3	0

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)Executed: 06-26-2003 14:29:07
Watershed file: --> EX32803R.MOP
Hydrograph file: --> 25EX803R.HYDSaint Luke's Lee's Summit Hospital
Existing conditions

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	6	14.8	8
11.1	7	14.9	7
11.2	7	15.0	7
11.3	8	15.1	7
11.4	10	15.2	7
11.5	11	15.3	6
11.6	13	15.4	6
11.7	35	15.5	6
11.8	57	15.6	6
11.9	79	15.7	6
12.0	153	15.8	5
12.1	239	15.9	5
12.2	148	16.0	5
12.3	51	16.1	5
12.4	35	16.2	5
12.5	29	16.3	5
12.6	25	16.4	5
12.7	20	16.5	5
12.8	18	16.6	5
12.9	17	16.7	5
13.0	16	16.8	5
13.1	14	16.9	5
13.2	13	17.0	5
13.3	12	17.1	5
13.4	12	17.2	5
13.5	12	17.3	4
13.6	11	17.4	4
13.7	10	17.5	4
13.8	10	17.6	4
13.9	9	17.7	4
14.0	9	17.8	4
14.1	9	17.9	4
14.2	8	18.0	4
14.3	8	18.1	4
14.4	8	18.2	4
14.5	8	18.3	4
14.6	8	18.4	4
14.7	8	18.5	4

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 14:29:07

Watershed file: --> EX32803R.MOP

Hydrograph file: --> 25EX803R.HYD

Saint Luke's Lee's Summit Hospital
Existing conditions

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	4	22.4	3
18.7	4	22.5	3
18.8	4	22.6	3
18.9	4	22.7	2
19.0	4	22.8	2
19.1	4	22.9	2
19.2	4	23.0	2
19.3	4	23.1	2
19.4	4	23.2	2
19.5	4	23.3	2
19.6	3	23.4	2
19.7	3	23.5	2
19.8	3	23.6	2
19.9	3	23.7	2
20.0	3	23.8	2
20.1	3	23.9	2
20.2	3	24.0	2
20.3	3	24.1	1
20.4	3	24.2	1
20.5	3	24.3	1
20.6	3	24.4	1
20.7	3	24.5	1
20.8	3	24.6	1
20.9	3	24.7	1
21.0	3	24.8	1
21.1	3	24.9	1
21.2	3	25.0	1
21.3	3	25.1	1
21.4	3	25.2	1
21.5	3	25.3	1
21.6	3	25.4	0
21.7	3	25.5	0
21.8	3	25.6	0
21.9	3	25.7	0
22.0	3	25.8	0
22.1	3	25.9	0
22.2	3		
22.3	3		

TR-55 TABULAR HYDROGRAPH METHOD
 Type II. Distribution
 (24 hr. Duration Storm)

Executed: 06-26-2003 14:29:07
 Watershed file: --> EX32803R.MOP
 Hydrograph file: --> 100X803R.HYD

Saint Luke's Lee's Summit Hospital
 Existing conditions

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used
exist	41.44	77.0	0.10	0.00	7.70	5.00	I.08 .10

* Travel time from subarea outfall to composite watershed outfall point.
 I -- Subarea where user specified interpolation between Ia/p tables.

Total area = 41.44 acres or 0.06475 sq.mi
 Peak discharge = 327 cfs

>>>> Computer Modifications of Input Parameters <<<<

Subarea Description	Input Values		Rounded Values		Ia/p Interpolated	Ia/p Messages
	Tc (hr)	* Tt (hr)	Tc (hr)	* Tt (hr)	(Yes/No)	
exist	0.11	0.00	0.10	0.00	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 14:29:07
Watershed file: --> EX32803R.MOP
Hydrograph file: --> 100X803R.HYD

Saint Luke's Lee's Summit Hospital
Existing conditions

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
----- exist -----	----- 327 -----	----- 12.1 -----
Composite Watershed	327	12.1

TR-55 TABULAR HYDROGRAPH METHOD

Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 14:29:07

Watershed file: --> EX32803R.MOP

Hydrograph file: --> 100X803R.HYD

Saint Luke's Lee's Summit Hospital
Existing conditions

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
exist	8	11	17	108	209	327	203	70	48
Total (cfs)	8	11	17	108	209	327	203	70	48

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
exist	40	34	28	25	21	18	17	15	14
Total (cfs)	40	34	28	25	21	18	17	15	14

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
exist	12	11	10	9	8	7	7	6	6
Total (cfs)	12	11	10	9	8	7	7	6	6

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
exist	6	5	4	4	0
Total (cfs)	6	5	4	4	0

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 14:29:07
Watershed file: --> EX32803R.MOP
Hydrograph file: --> 100X803R.HYD

Saint Luke's Lee's Summit Hospital
Existing conditions

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	8	14.8	9
11.1	9	14.9	9
11.2	10	15.0	9
11.3	11	15.1	9
11.4	13	15.2	9
11.5	15	15.3	8
11.6	17	15.4	8
11.7	47	15.5	8
11.8	78	15.6	8
11.9	108	15.7	8
12.0	209	15.8	7
12.1	327	15.9	7
12.2	203	16.0	7
12.3	70	16.1	7
12.4	48	16.2	7
12.5	40	16.3	7
12.6	34	16.4	7
12.7	28	16.5	7
12.8	25	16.6	7
12.9	23	16.7	7
13.0	21	16.8	6
13.1	20	16.9	6
13.2	18	17.0	6
13.3	18	17.1	6
13.4	17	17.2	6
13.5	16	17.3	6
13.6	15	17.4	6
13.7	14	17.5	6
13.8	14	17.6	6
13.9	13	17.7	6
14.0	12	17.8	6
14.1	12	17.9	6
14.2	11	18.0	6
14.3	11	18.1	6
14.4	11	18.2	6
14.5	10	18.3	6
14.6	10	18.4	6
14.7	10	18.5	6

TR-55 TABULAR HYDROGRAPH METHOD
 Type II. Distribution
 (24 hr. Duration Storm)

Executed: 06-26-2003 14:29:07

Watershed file: --> EX32803R.MOP

Hydrograph file: --> 100X803R.HYD

Saint Luke's Lee's Summit Hospital
 Existing conditions

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	5	22.4	4
18.7	5	22.5	4
18.8	5	22.6	3
18.9	5	22.7	3
19.0	5	22.8	3
19.1	5	22.9	3
19.2	5	23.0	3
19.3	5	23.1	3
19.4	5	23.2	3
19.5	4	23.3	3
19.6	4	23.4	3
19.7	4	23.5	2
19.8	4	23.6	2
19.9	4	23.7	2
20.0	4	23.8	2
20.1	4	23.9	2
20.2	4	24.0	2
20.3	4	24.1	2
20.4	4	24.2	2
20.5	4	24.3	2
20.6	4	24.4	2
20.7	4	24.5	2
20.8	4	24.6	1
20.9	4	24.7	1
21.0	4	24.8	1
21.1	4	24.9	1
21.2	4	25.0	1
21.3	4	25.1	1
21.4	4	25.2	1
21.5	4	25.3	1
21.6	4	25.4	1
21.7	4	25.5	0
21.8	4	25.6	0
21.9	4	25.7	0
22.0	4	25.8	0
22.1	4	25.9	0
22.2	4		
22.3	4		

Quick TR-55 Ver.5.46 S/N:
Executed: 10:52:45 06-26-2003

Saint Luke's Lee's Summit Hospital
Proposed conditions
portion of site draining to
the detention basin (includes offsite)

RUNOFF CURVE NUMBER SUMMARY

.....

Subarea Description	Area (acres)	CN (weighted)
proposed site	27.85	85

Quick TR-55 Ver.5.46 S/N:
Executed: 10:52:45 06-26-2003

Saint Luke's Lee's Summit Hospital
Proposed conditions
portion of site draining to
the detention basin (includes offsite)

RUNOFF CURVE NUMBER DATA

.....

Composite Area: proposed site

SURFACE DESCRIPTION	AREA (acres)	CN
buildings, drives, parkinglot	13.00	98
Type B soil, grass area	6.73	61
Type D soil, grass area	6.72	80
Douglas St pavement	1.40	98
COMPOSITE AREA --->	27.85	84.7 (85)

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TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 10:55:11
Watershed file: --> PR803BNR.MOP
Hydrograph file: --> 803BNR25.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
portion which drains to the detention basin

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used
proposed site	27.85	85.0	0.10	0.00	6.20	4.49	I.06 .10

* Travel time from subarea outfall to composite watershed outfall point.
I -- Subarea where user specified interpolation between Ia/p tables.

Total area = 27.85 acres or 0.04352 sq.mi
Peak discharge = 197 cfs

>>>> Computer Modifications of Input Parameters <<<<

Subarea Description	Input Values		Rounded Values		Ia/p Interpolated	Ia/p Messages
	Tc (hr)	* Tt (hr)	Tc (hr)	* Tt (hr)	(Yes/No)	
proposed site	0.10	0.00	**	**	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.
** Tc & Tt are available in the hydrograph tables.

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 10:55:11
Watershed file: --> PR803BNR.MOP
Hydrograph file: --> 803BNR25.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
portion which drains to the detention basin

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
----- proposed site -----	----- 197 -----	----- 12.1 -----
Composite Watershed	197	12.1

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 10:55:11
Watershed file: --> PR803BNR.MOP
Hydrograph file: --> 803BNR25.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
portion which drains to the detention basin

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
proposed site	5	7	10	65	126	197	123	42	29
Total (cfs)	5	7	10	65	126	197	123	42	29

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
proposed site	24	20	17	15	13	11	10	9	8
Total (cfs)	24	20	17	15	13	11	10	9	8

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
proposed site	7	7	6	6	5	4	4	4	4
Total (cfs)	7	7	6	6	5	4	4	4	4

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
proposed site	4	3	3	2	0
Total (cfs)	4	3	3	2	0

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)Executed: 06-26-2003 10:55:11
Watershed file: --> PR803BNR.MOP
Hydrograph file: --> 803BNR25.HYDSaint Luke's Lee's Summit Hospital
proposed conditions
portion which drains to the detention basin

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	5	14.8	6
11.1	6	14.9	6
11.2	6	15.0	6
11.3	7	15.1	6
11.4	8	15.2	6
11.5	9	15.3	5
11.6	10	15.4	5
11.7	28	15.5	5
11.8	47	15.6	5
11.9	65	15.7	5
12.0	126	15.8	4
12.1	197	15.9	4
12.2	123	16.0	4
12.3	42	16.1	4
12.4	29	16.2	4
12.5	24	16.3	4
12.6	20	16.4	4
12.7	17	16.5	4
12.8	15	16.6	4
12.9	14	16.7	4
13.0	13	16.8	4
13.1	12	16.9	4
13.2	11	17.0	4
13.3	10	17.1	4
13.4	10	17.2	4
13.5	10	17.3	4
13.6	9	17.4	4
13.7	8	17.5	4
13.8	8	17.6	4
13.9	8	17.7	4
14.0	7	17.8	4
14.1	7	17.9	4
14.2	7	18.0	4
14.3	7	18.1	4
14.4	7	18.2	4
14.5	6	18.3	4
14.6	6	18.4	4
14.7	6	18.5	4

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 10:55:11

Watershed file: --> PR803BNR.MOP

Hydrograph file: --> 803BNR25.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
portion which drains to the detention basin

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	3	22.4	2
18.7	3	22.5	2
18.8	3	22.6	2
18.9	3	22.7	2
19.0	3	22.8	2
19.1	3	22.9	2
19.2	3	23.0	2
19.3	3	23.1	1
19.4	3	23.2	1
19.5	3	23.3	1
19.6	3	23.4	1
19.7	3	23.5	1
19.8	3	23.6	1
19.9	3	23.7	1
20.0	3	23.8	1
20.1	3	23.9	1
20.2	3	24.0	1
20.3	3	24.1	1
20.4	3	24.2	1
20.5	3	24.3	1
20.6	3	24.4	1
20.7	3	24.5	1
20.8	3	24.6	1
20.9	3	24.7	1
21.0	2	24.8	1
21.1	2	24.9	1
21.2	2	25.0	0
21.3	2	25.1	0
21.4	2	25.2	0
21.5	2	25.3	0
21.6	2	25.4	0
21.7	2	25.5	0
21.8	2	25.6	0
21.9	2	25.7	0
22.0	2	25.8	0
22.1	2	25.9	0
22.2	2		
22.3	2		

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 10:55:11

Watershed file: --> PR803BNR.MOP

Hydrograph file: --> 803BNRHU.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
portion which drains to the detention basin

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used
proposed site	27.85	85.0	0.10	0.00	7.70	5.92	I.05 .10

* Travel time from subarea outfall to composite watershed outfall point.

I -- Subarea where user specified interpolation between Ia/p tables.

Total area = 27.85 acres or 0.04352 sq.mi

Peak discharge = 260 cfs

>>>> Computer Modifications of Input Parameters <<<<

Subarea Description	Input Values		Rounded Values		Ia/p Interpolated	Ia/p Messages
	Tc (hr)	* Tt (hr)	Tc (hr)	* Tt (hr)	(Yes/No)	
proposed site	0.10	0.00	**	**	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.

** Tc & Tt are available in the hydrograph tables.

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 10:55:11
Watershed file: --> PR803BNR.MOP
Hydrograph file: --> 803BNRHU.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
portion which drains to the detention basin

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
----- proposed site -----	260	12.1
----- Composite Watershed	260	12.1

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 10:55:11
Watershed file: --> PR803BNR.MOP
Hydrograph file: --> 803BNRHU.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
portion which drains to the detention basin

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
proposed site	6	9	14	86	167	260	162	56	38
Total (cfs)	6	9	14	86	167	260	162	56	38

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
proposed site	32	27	22	20	17	15	13	12	11
Total (cfs)	32	27	22	20	17	15	13	12	11

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
proposed site	10	9	8	7	7	6	5	5	5
Total (cfs)	10	9	8	7	7	6	5	5	5

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
proposed site	5	4	3	3	0
Total (cfs)	5	4	3	3	0

TR-55 TABULAR HYDROGRAPH METHOD

Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 10:55:11

Watershed file: --> PR803BNR.MOP

Hydrograph file: --> 803BNRHU.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
portion which drains to the detention basin

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	6	14.8	8
11.1	7	14.9	7
11.2	8	15.0	7
11.3	9	15.1	7
11.4	11	15.2	7
11.5	12	15.3	7
11.6	14	15.4	7
11.7	38	15.5	7
11.8	62	15.6	7
11.9	86	15.7	7
12.0	167	15.8	6
12.1	260	15.9	6
12.2	162	16.0	6
12.3	56	16.1	6
12.4	38	16.2	6
12.5	32	16.3	5
12.6	27	16.4	5
12.7	22	16.5	5
12.8	20	16.6	5
12.9	18	16.7	5
13.0	17	16.8	5
13.1	16	16.9	5
13.2	15	17.0	5
13.3	14	17.1	5
13.4	13	17.2	5
13.5	12	17.3	5
13.6	12	17.4	5
13.7	12	17.5	5
13.8	11	17.6	5
13.9	10	17.7	5
14.0	10	17.8	5
14.1	10	17.9	5
14.2	9	18.0	5
14.3	9	18.1	5
14.4	9	18.2	5
14.5	8	18.3	5
14.6	8	18.4	5
14.7	8	18.5	4

TR-55 TABULAR HYDROGRAPH METHOD
 Type II. Distribution
 (24 hr. Duration Storm)

Executed: 06-26-2003 10:55:11

Watershed file: --> PR803BNR.MOP

Hydrograph file: --> 803BNRHU.HYD

Saint Luke's Lee's Summit Hospital
 proposed conditions
 portion which drains to the detention basin

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	4	22.4	3
18.7	4	22.5	3
18.8	4	22.6	3
18.9	4	22.7	2
19.0	4	22.8	2
19.1	4	22.9	2
19.2	4	23.0	2
19.3	4	23.1	2
19.4	4	23.2	2
19.5	4	23.3	2
19.6	3	23.4	2
19.7	3	23.5	2
19.8	3	23.6	2
19.9	3	23.7	2
20.0	3	23.8	2
20.1	3	23.9	2
20.2	3	24.0	2
20.3	3	24.1	1
20.4	3	24.2	1
20.5	3	24.3	1
20.6	3	24.4	1
20.7	3	24.5	1
20.8	3	24.6	1
20.9	3	24.7	1
21.0	3	24.8	1
21.1	3	24.9	1
21.2	3	25.0	1
21.3	3	25.1	1
21.4	3	25.2	1
21.5	3	25.3	1
21.6	3	25.4	0
21.7	3	25.5	0
21.8	3	25.6	0
21.9	3	25.7	0
22.0	3	25.8	0
22.1	3	25.9	0
22.2	3		
22.3	3		

Quick TR-55 Ver.5.46 S/N:
Executed: 10:40:32 06-26-2003

Saint Luke's Lee's Summit Hospital
proposed conditions
flow which bypasses the detention basin

RUNOFF CURVE NUMBER SUMMARY

.....

Subarea Description	Area (acres)	CN (weighted)
bypass	15.22	84

Quick TR-55 Ver.5.46 S/N:
Executed: 10:40:32 06-26-2003

Saint Luke's Lee's Summit Hospital
proposed conditions
flow which bypasses the detention basin

RUNOFF CURVE NUMBER DATA

.....

Composite Area: bypass

SURFACE DESCRIPTION	AREA (acres)	CN
Type B soil, grass area	3.74	61
Type D soil, grass area	3.74	80
building, drives, parking lots	7.74	98
COMPOSITE AREA --->	15.22	84.5 (84)

TR-55 TABULAR HYDROGRAPH METHOD
 Type II. Distribution
 (24 hr. Duration Storm)

Executed: 06-26-2003 13:37:02
 Watershed file: --> PR803OFR.MOP
 Hydrograph file: --> 25OFR803.HYD

Saint Luke's Lee's Summit Hospital
 proposed conditions
 area bypassing the detention basin
 includes offsite area

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used
bypass	15.22	84.0	0.10	0.00	6.20	4.38	1.06 .10

* Travel time from subarea outfall to composite watershed outfall point.
 I -- Subarea where user specified interpolation between Ia/p tables.

Total area = 15.22 acres or 0.02378 sq.mi
 Peak discharge = 105 cfs

>>>> Computer Modifications of Input Parameters <<<<

Subarea Description	Input Values		Rounded Values		Ia/p	Ia/p Messages
	Tc (hr)	* Tt (hr)	Tc (hr)	* Tt (hr)	Interpolated (Yes/No)	
bypass	0.13	0.00	0.10	0.00	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 13:37:02

Watershed file: --> PR8030FR.MOP

Hydrograph file: --> 250FR803.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
area bypassing the detention basin
includes offsite area

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
bypass	105	12.1
Composite Watershed	105	12.1

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 13:37:02
Watershed file: --> PR803OFR.MOP
Hydrograph file: --> 25OFR803.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
area bypassing the detention basin
includes offsite area

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
bypass	2	4	6	35	67	105	65	23	15
Total (cfs)	2	4	6	35	67	105	65	23	15

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
bypass	13	11	9	8	7	6	5	5	4
Total (cfs)	13	11	9	8	7	6	5	5	4

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
bypass	4	4	3	3	3	2	2	2	2
Total (cfs)	4	4	3	3	3	2	2	2	2

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
bypass	2	2	1	1	0
Total (cfs)	2	2	1	1	0

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)Executed: 06-26-2003 13:37:02
Watershed file: --> PR803OFR.MOP
Hydrograph file: --> 25OFR803.HYDSaint Luke's Lee's Summit Hospital
proposed conditions
area bypassing the detention basin
includes offsite area

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	2	14.8	3
11.1	3	14.9	3
11.2	3	15.0	3
11.3	4	15.1	3
11.4	5	15.2	3
11.5	5	15.3	3
11.6	6	15.4	3
11.7	16	15.5	3
11.8	25	15.6	3
11.9	35	15.7	3
12.0	67	15.8	2
12.1	105	15.9	2
12.2	65	16.0	2
12.3	23	16.1	2
12.4	15	16.2	2
12.5	13	16.3	2
12.6	11	16.4	2
12.7	9	16.5	2
12.8	8	16.6	2
12.9	8	16.7	2
13.0	7	16.8	2
13.1	6	16.9	2
13.2	6	17.0	2
13.3	6	17.1	2
13.4	5	17.2	2
13.5	5	17.3	2
13.6	5	17.4	2
13.7	4	17.5	2
13.8	4	17.6	2
13.9	4	17.7	2
14.0	4	17.8	2
14.1	4	17.9	2
14.2	4	18.0	2
14.3	4	18.1	2
14.4	4	18.2	2
14.5	3	18.3	2
14.6	3	18.4	2
14.7	3	18.5	2

TR-55 TABULAR HYDROGRAPH METHOD

Type II. Distribution

(24 hr. Duration Storm)

Executed: 06-26-2003 13:37:02

Watershed file: --> PR803OFR.MOP

Hydrograph file: --> 25OFR803.HYD

Saint Luke's Lee's Summit Hospital

proposed conditions

area bypassing the detention basin

includes offsite area

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	2	22.4	1
18.7	2	22.5	1
18.8	2	22.6	1
18.9	2	22.7	1
19.0	2	22.8	1
19.1	2	22.9	1
19.2	2	23.0	1
19.3	2	23.1	1
19.4	2	23.2	1
19.5	2	23.3	1
19.6	1	23.4	1
19.7	1	23.5	1
19.8	1	23.6	1
19.9	1	23.7	1
20.0	1	23.8	1
20.1	1	23.9	1
20.2	1	24.0	0
20.3	1	24.1	0
20.4	1	24.2	0
20.5	1	24.3	0
20.6	1	24.4	0
20.7	1	24.5	0
20.8	1	24.6	0
20.9	1	24.7	0
21.0	1	24.8	0
21.1	1	24.9	0
21.2	1	25.0	0
21.3	1	25.1	0
21.4	1	25.2	0
21.5	1	25.3	0
21.6	1	25.4	0
21.7	1	25.5	0
21.8	1	25.6	0
21.9	1	25.7	0
22.0	1	25.8	0
22.1	1	25.9	0
22.2	1		
22.3	1		

TR-55 TABULAR HYDROGRAPH METHOD
 Type II. Distribution
 (24 hr. Duration Storm)

Executed: 06-26-2003 13:37:02
 Watershed file: --> PR803OFR.MOP
 Hydrograph file: --> HUOFR803.HYD

Saint Luke's Lee's Summit Hospital
 proposed conditions
 area bypassing the detention basin
 includes offsite area

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used
bypass	15.22	84.0	0.10	0.00	7.70	5.81	I.05 .10

* Travel time from subarea outfall to composite watershed outfall point.
 I -- Subarea where user specified interpolation between Ia/p tables.

Total area = 15.22 acres or 0.02378 sq.mi
 Peak discharge = 140 cfs

>>>> Computer Modifications of Input Parameters <<<<

Subarea Description	Input Values		Rounded Values		Ia/p Interpolated	Ia/p Messages
	Tc (hr)	* Tt (hr)	Tc (hr)	* Tt (hr)	(Yes/No)	
bypass	0.13	0.00	0.10	0.00	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 13:37:02
Watershed file: --> PR803OFR.MOP
Hydrograph file: --> HUOFR803.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
area bypassing the detention basin
includes offsite area

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
bypass	140	12.1
Composite Watershed	140	12.1

TR-55 TABULAR HYDROGRAPH METHOD
Type II. Distribution
(24 hr. Duration Storm)

Executed: 06-26-2003 13:37:02

Watershed file: --> PR803OFR.MOP

Hydrograph file: --> HUOFR803.HYD

Saint Luke's Lee's Summit Hospital
proposed conditions
area bypassing the detention basin
includes offsite area

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
bypass	3	5	7	46	89	140	87	30	20
Total (cfs)	3	5	7	46	89	140	87	30	20

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
bypass	17	14	12	11	9	8	7	6	6
Total (cfs)	17	14	12	11	9	8	7	6	6

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
bypass	5	5	4	4	4	3	3	3	3
Total (cfs)	5	5	4	4	4	3	3	3	3

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
bypass	2	2	2	2	0
Total (cfs)	2	2	2	2	0

TR-55 TABULAR HYDROGRAPH METHOD
 Type II. Distribution
 (24 hr. Duration Storm)

Executed: 06-26-2003 13:37:02

Watershed file: --> PR803OFR.MOP

Hydrograph file: --> HUOFR803.HYD

Saint Luke's Lee's Summit Hospital
 proposed conditions
 area bypassing the detention basin
 includes offsite area

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	3	14.8	4
11.1	4	14.9	4
11.2	4	15.0	4
11.3	5	15.1	4
11.4	6	15.2	4
11.5	6	15.3	4
11.6	7	15.4	4
11.7	20	15.5	4
11.8	33	15.6	4
11.9	46	15.7	4
12.0	89	15.8	3
12.1	140	15.9	3
12.2	87	16.0	3
12.3	30	16.1	3
12.4	20	16.2	3
12.5	17	16.3	3
12.6	14	16.4	3
12.7	12	16.5	3
12.8	11	16.6	3
12.9	10	16.7	3
13.0	9	16.8	3
13.1	8	16.9	3
13.2	8	17.0	3
13.3	8	17.1	3
13.4	7	17.2	3
13.5	7	17.3	3
13.6	6	17.4	3
13.7	6	17.5	3
13.8	6	17.6	3
13.9	6	17.7	3
14.0	5	17.8	2
14.1	5	17.9	2
14.2	5	18.0	2
14.3	5	18.1	2
14.4	5	18.2	2
14.5	4	18.3	2
14.6	4	18.4	2
14.7	4	18.5	2

TR-55 TABULAR HYDROGRAPH METHOD
 Type II. Distribution
 (24 hr. Duration Storm)

Executed: 06-26-2003 13:37:02

Watershed file: --> PR803OFR.MOP

Hydrograph file: --> HUOFR803.HYD

Saint Luke's Lee's Summit Hospital
 proposed conditions
 area bypassing the detention basin
 includes offsite area

Time (hrs)	Flow (cfs)		Time (hrs)	Flow (cfs)
18.6	2		22.4	2
18.7	2		22.5	2
18.8	2		22.6	2
18.9	2		22.7	2
19.0	2		22.8	2
19.1	2		22.9	2
19.2	2		23.0	2
19.3	2		23.1	1
19.4	2		23.2	1
19.5	2		23.3	1
19.6	2		23.4	1
19.7	2		23.5	1
19.8	2		23.6	1
19.9	2		23.7	1
20.0	2		23.8	1
20.1	2		23.9	1
20.2	2		24.0	1
20.3	2		24.1	1
20.4	2		24.2	1
20.5	2		24.3	1
20.6	2		24.4	1
20.7	2		24.5	1
20.8	2		24.6	1
20.9	2		24.7	1
21.0	2		24.8	1
21.1	2		24.9	1
21.2	2		25.0	0
21.3	2		25.1	0
21.4	2		25.2	0
21.5	2		25.3	0
21.6	2		25.4	0
21.7	2		25.5	0
21.8	2		25.6	0
21.9	2		25.7	0
22.0	2		25.8	0
22.1	2		25.9	0
22.2	2			
22.3	2			


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*****
*
*   Saint Luke's Lee's Summit Hospital
*   proposed detention basin outfall pipe
*   36 inch
*
*
*****

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Inflow Hydrograph: c:\pond55\803BNR25.HYD
 Rating Table file: c:\pond55\803OUTFL.PND

----INITIAL CONDITIONS----

Elevation = 960.00 ft
 Outflow = 0.00 cfs
 Storage = 0.00 ac-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)	2S/t (cfs)	2S/t + 0 (cfs)
960.00	0.0	0.000	0.0	0.0
961.00	12.0	0.006	1.4	13.4
962.00	23.8	0.023	5.5	29.4
963.00	41.3	0.059	14.4	55.6
964.00	53.3	0.125	30.3	83.6
965.00	63.0	0.244	59.0	122.0
966.00	71.5	0.419	101.3	172.8
967.00	79.0	0.667	161.4	240.4
968.00	85.9	1.023	247.6	333.5
969.00	92.3	1.471	356.0	448.3
970.00	98.2	1.993	482.4	580.6
970.50	137.7	2.286	553.2	690.9
971.00	223.9	2.579	624.0	847.9
972.00	448.0	3.214	777.8	1225.8

Time increment (t) = 0.100 hrs.

Pond File: c:\pond55\803OUTFL.PND
Inflow Hydrograph: c:\pond55\803BNR25.HYD
Outflow Hydrograph: c:\pond55\803OUTFL.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - 0 (cfs)	2S/t + 0 (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
11.000	5.00	-----	0.0	0.0	0.00	960.00
11.100	6.00	11.0	-8.7	11.0	9.87	960.82
11.200	6.00	12.0	-2.6	3.3	2.93	960.24
11.300	7.00	13.0	-8.3	10.4	9.33	960.78
11.400	8.00	15.0	-5.4	6.7	6.05	960.50
11.500	9.00	17.0	-9.2	11.6	10.45	960.87
11.600	10.00	19.0	-7.7	9.8	8.75	960.73
11.700	28.00	38.0	-18.6	30.3	24.42	962.03
11.800	47.00	75.0	-26.8	56.4	41.61	963.03
11.900	65.00	112.0	-22.2	85.2	53.70	964.04
12.000	126.00	191.0	27.2	168.8	70.81	965.92
12.100	197.00	323.0	176.5	350.2	86.83	968.14
12.200	123.00	320.0	307.6	496.5	94.45	969.36
12.300	42.00	165.0	285.9	472.6	93.38	969.18
12.400	29.00	71.0	182.4	356.9	87.20	968.20
12.500	24.00	53.0	78.5	235.4	78.47	966.93
12.600	20.00	44.0	-3.7	122.5	63.12	965.01
12.700	17.00	37.0	-19.6	33.3	26.42	962.15
12.800	15.00	32.0	-9.9	12.4	11.15	960.93
12.900	14.00	29.0	-13.4	19.1	16.26	961.36
13.000	13.00	27.0	-10.7	13.6	12.18	961.02
13.100	12.00	25.0	-11.0	14.3	12.65	961.06
13.200	11.00	23.0	-9.5	12.0	10.72	960.89
13.300	10.00	21.0	-9.1	11.5	10.32	960.86
13.400	10.00	20.0	-8.6	10.9	9.74	960.81
13.500	10.00	20.0	-9.0	11.4	10.20	960.85
13.600	9.00	19.0	-7.9	10.0	8.94	960.75
13.700	8.00	17.0	-7.2	9.1	8.15	960.68
13.800	8.00	16.0	-7.0	8.8	7.88	960.66
13.900	8.00	16.0	-7.2	9.0	8.09	960.67
14.000	7.00	15.0	-6.2	7.8	7.03	960.59
14.100	7.00	14.0	-6.2	7.8	6.98	960.58
14.200	7.00	14.0	-6.2	7.8	7.02	960.58
14.300	7.00	14.0	-6.2	7.8	6.99	960.58
14.400	7.00	14.0	-6.2	7.8	7.01	960.58
14.500	6.00	13.0	-5.4	6.8	6.09	960.51
14.600	6.00	12.0	-5.2	6.6	5.93	960.49
14.700	6.00	12.0	-5.4	6.8	6.06	960.50
14.800	6.00	12.0	-5.3	6.6	5.95	960.50
14.900	6.00	12.0	-5.3	6.7	6.04	960.50
15.000	6.00	12.0	-5.3	6.7	5.97	960.50
15.100	6.00	12.0	-5.3	6.7	6.02	960.50
15.200	6.00	12.0	-5.3	6.7	5.98	960.50
15.300	5.00	11.0	-4.5	5.7	5.12	960.43
15.400	5.00	10.0	-4.3	5.5	4.91	960.41

Pond File: c:\pond55\803OUTFL.PND
Inflow Hydrograph: c:\pond55\803BNR25.HYD
Outflow Hydrograph: c:\pond55\803OUTFL.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - 0 (cfs)	2S/t + 0 (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
15.500	5.00	10.0	-4.5	5.7	5.07	960.42
15.600	5.00	10.0	-4.4	5.5	4.94	960.41
15.700	5.00	10.0	-4.5	5.6	5.05	960.42
15.800	4.00	9.0	-3.6	4.5	4.07	960.34
15.900	4.00	8.0	-3.5	4.4	3.95	960.33
16.000	4.00	8.0	-3.6	4.5	4.04	960.34
16.100	4.00	8.0	-3.5	4.4	3.97	960.33
16.200	4.00	8.0	-3.6	4.5	4.03	960.34
16.300	4.00	8.0	-3.5	4.4	3.98	960.33
16.400	4.00	8.0	-3.6	4.5	4.02	960.33
16.500	4.00	8.0	-3.5	4.4	3.99	960.33
16.600	4.00	8.0	-3.5	4.5	4.01	960.33
16.700	4.00	8.0	-3.5	4.5	3.99	960.33
16.800	4.00	8.0	-3.5	4.5	4.01	960.33
16.900	4.00	8.0	-3.5	4.5	3.99	960.33
17.000	4.00	8.0	-3.5	4.5	4.00	960.33
17.100	4.00	8.0	-3.5	4.5	4.00	960.33
17.200	4.00	8.0	-3.5	4.5	4.00	960.33
17.300	4.00	8.0	-3.5	4.5	4.00	960.33
17.400	4.00	8.0	-3.5	4.5	4.00	960.33
17.500	4.00	8.0	-3.5	4.5	4.00	960.33
17.600	4.00	8.0	-3.5	4.5	4.00	960.33
17.700	4.00	8.0	-3.5	4.5	4.00	960.33
17.800	4.00	8.0	-3.5	4.5	4.00	960.33
17.900	4.00	8.0	-3.5	4.5	4.00	960.33
18.000	4.00	8.0	-3.5	4.5	4.00	960.33
18.100	4.00	8.0	-3.5	4.5	4.00	960.33
18.200	4.00	8.0	-3.5	4.5	4.00	960.33
18.300	4.00	8.0	-3.5	4.5	4.00	960.33
18.400	4.00	8.0	-3.5	4.5	4.00	960.33
18.500	4.00	8.0	-3.5	4.5	4.00	960.33
18.600	3.00	7.0	-2.7	3.5	3.10	960.26
18.700	3.00	6.0	-2.6	3.3	2.92	960.24
18.800	3.00	6.0	-2.7	3.4	3.07	960.26
18.900	3.00	6.0	-2.6	3.3	2.95	960.25
19.000	3.00	6.0	-2.7	3.4	3.04	960.25
19.100	3.00	6.0	-2.6	3.3	2.97	960.25
19.200	3.00	6.0	-2.7	3.4	3.03	960.25
19.300	3.00	6.0	-2.6	3.3	2.98	960.25
19.400	3.00	6.0	-2.7	3.4	3.02	960.25
19.500	3.00	6.0	-2.6	3.3	2.99	960.25
19.600	3.00	6.0	-2.7	3.4	3.01	960.25
19.700	3.00	6.0	-2.6	3.3	2.99	960.25
19.800	3.00	6.0	-2.7	3.4	3.01	960.25
19.900	3.00	6.0	-2.7	3.3	2.99	960.25
20.000	3.00	6.0	-2.7	3.3	3.00	960.25

Pond File: c:\pond55\803OUTFL.PND
Inflow Hydrograph: c:\pond55\803BNR25.HYD
Outflow Hydrograph: c:\pond55\803OUTFL.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - 0 (cfs)	2S/t + 0 (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
20.100	3.00	6.0	-2.7	3.3	3.00	960.25
20.200	3.00	6.0	-2.7	3.3	3.00	960.25
20.300	3.00	6.0	-2.7	3.3	3.00	960.25
20.400	3.00	6.0	-2.7	3.3	3.00	960.25
20.500	3.00	6.0	-2.7	3.3	3.00	960.25
20.600	3.00	6.0	-2.7	3.3	3.00	960.25
20.700	3.00	6.0	-2.7	3.3	3.00	960.25
20.800	3.00	6.0	-2.7	3.3	3.00	960.25
20.900	3.00	6.0	-2.7	3.3	3.00	960.25
21.000	2.00	5.0	-1.9	2.3	2.10	960.18
21.100	2.00	4.0	-1.7	2.1	1.92	960.16
21.200	2.00	4.0	-1.8	2.3	2.07	960.17
21.300	2.00	4.0	-1.7	2.2	1.95	960.16
21.400	2.00	4.0	-1.8	2.3	2.04	960.17
21.500	2.00	4.0	-1.7	2.2	1.97	960.16
21.600	2.00	4.0	-1.8	2.3	2.03	960.17
21.700	2.00	4.0	-1.8	2.2	1.98	960.16
21.800	2.00	4.0	-1.8	2.2	2.02	960.17
21.900	2.00	4.0	-1.8	2.2	1.99	960.17
22.000	2.00	4.0	-1.8	2.2	2.01	960.17
22.100	2.00	4.0	-1.8	2.2	1.99	960.17
22.200	2.00	4.0	-1.8	2.2	2.01	960.17
22.300	2.00	4.0	-1.8	2.2	1.99	960.17
22.400	2.00	4.0	-1.8	2.2	2.00	960.17
22.500	2.00	4.0	-1.8	2.2	2.00	960.17
22.600	2.00	4.0	-1.8	2.2	2.00	960.17
22.700	2.00	4.0	-1.8	2.2	2.00	960.17
22.800	2.00	4.0	-1.8	2.2	2.00	960.17
22.900	2.00	4.0	-1.8	2.2	2.00	960.17
23.000	2.00	4.0	-1.8	2.2	2.00	960.17
23.100	1.00	3.0	-1.0	1.2	1.10	960.09
23.200	1.00	2.0	-0.8	1.0	0.92	960.08
23.300	1.00	2.0	-0.9	1.2	1.06	960.09
23.400	1.00	2.0	-0.8	1.1	0.95	960.08
23.500	1.00	2.0	-0.9	1.2	1.04	960.09
23.600	1.00	2.0	-0.9	1.1	0.97	960.08
23.700	1.00	2.0	-0.9	1.1	1.03	960.09
23.800	1.00	2.0	-0.9	1.1	0.98	960.08
23.900	1.00	2.0	-0.9	1.1	1.02	960.08
24.000	1.00	2.0	-0.9	1.1	0.99	960.08
24.100	1.00	2.0	-0.9	1.1	1.01	960.08
24.200	1.00	2.0	-0.9	1.1	0.99	960.08
24.300	1.00	2.0	-0.9	1.1	1.01	960.08
24.400	1.00	2.0	-0.9	1.1	0.99	960.08
24.500	1.00	2.0	-0.9	1.1	1.00	960.08
24.600	1.00	2.0	-0.9	1.1	1.00	960.08

Pond File: c:\pond55\803OUTFL.PND
 Inflow Hydrograph: c:\pond55\803BNR25.HYD
 Outflow Hydrograph: c:\pond55\803OUTFL.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
24.700	1.00	2.0	-0.9	1.1	1.00	960.08
24.800	1.00	2.0	-0.9	1.1	1.00	960.08
24.900	1.00	2.0	-0.9	1.1	1.00	960.08
25.000	0.00	1.0	-0.1	0.1	0.10	960.01
25.100	0.00	0.0	-0.1	-0.1	0.00	960.00
25.200	0.00	0.0	-0.1	-0.1	0.00	960.00
25.300	0.00	0.0	-0.1	-0.1	0.00	960.00
25.400	0.00	0.0	-0.1	-0.1	0.00	960.00
25.500	0.00	0.0	-0.1	-0.1	0.00	960.00
25.600	0.00	0.0	-0.1	-0.1	0.00	960.00
25.700	0.00	0.0	-0.1	-0.1	0.00	960.00
25.800	0.00	0.0	-0.1	-0.1	0.00	960.00
25.900	0.00	0.0	-0.1	-0.1	0.00	960.00

***** SUMMARY OF ROUTING COMPUTATIONS *****

Pond File: c:\pond55\803OUTFL.PND
Inflow Hydrograph: c:\pond55\803BNR25.HYD
Outflow Hydrograph: c:\pond55\803OUTFL.HYD

Starting Pond W.S. Elevation = 960.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow	=	197.00 cfs
Peak Outflow	=	94.45 cfs
Peak Elevation	=	969.36 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0.00 ac-ft
Peak Storage From Storm	=	1.66 ac-ft

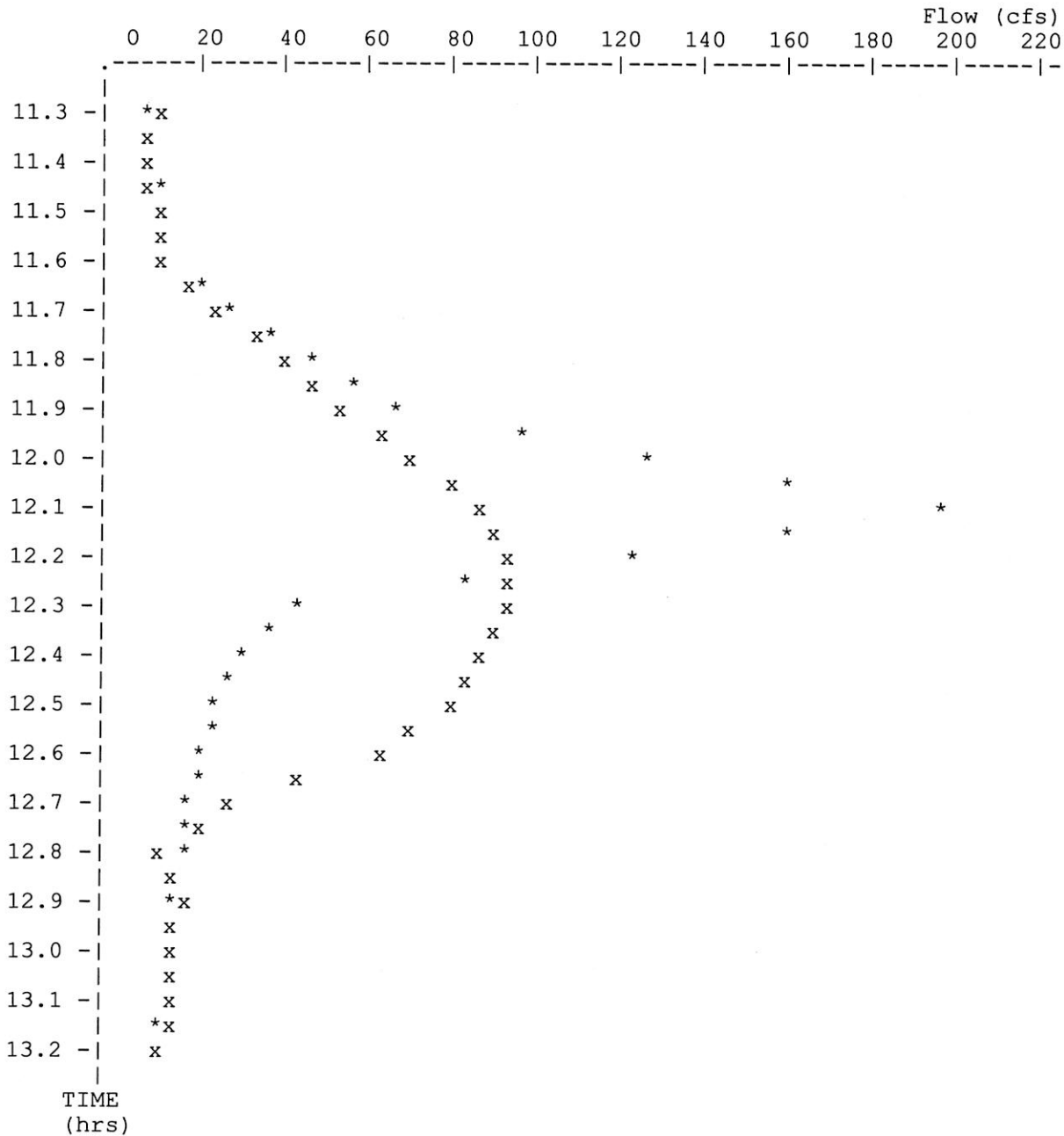
Total Storage in Pond	=	1.66 ac-ft

Warning: Inflow hydrograph truncated on left side.

Pond File: c:\pond55\803OUTFL.PND
 Inflow Hydrograph: c:\pond55\803BNR25.HYD
 Outflow Hydrograph: c:\pond55\803OUTFL.HYD

EXECUTED: 06-26-2003
 13:26:05

Peak Inflow = 197.00 cfs
 Peak Outflow = 94.45 cfs
 Peak Elevation = 969.36 ft



* File: c:\pond55\803BNR25.HYD Qmax = 197.0 cfs
 x File: c:\pond55\803OUTFL.HYD Qmax = 94.4 cfs


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*****
*
*   Saint Luke's Lee's Summit Hospital
*   proposed detention basin outfall pipe
*   36 inch
*
*
*****

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Inflow Hydrograph: c:\pond55\803BNRHU.HYD
Rating Table file: c:\pond55\803OUTFL.PND

----INITIAL CONDITIONS----

Elevation = 960.00 ft
Outflow = 0.00 cfs
Storage = 0.00 ac-ft

GIVEN POND DATA			INTERMEDIATE ROUTING COMPUTATIONS	
ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (ac-ft)	2S/t (cfs)	2S/t + 0 (cfs)
960.00	0.0	0.000	0.0	0.0
961.00	12.0	0.006	1.4	13.4
962.00	23.8	0.023	5.5	29.4
963.00	41.3	0.059	14.4	55.6
964.00	53.3	0.125	30.3	83.6
965.00	63.0	0.244	59.0	122.0
966.00	71.5	0.419	101.3	172.8
967.00	79.0	0.667	161.4	240.4
968.00	85.9	1.023	247.6	333.5
969.00	92.3	1.471	356.0	448.3
970.00	98.2	1.993	482.4	580.6
970.50	137.7	2.286	553.2	690.9
971.00	223.9	2.579	624.0	847.9
972.00	448.0	3.214	777.8	1225.8

Time increment (t) = 0.100 hrs.

Pond File: c:\pond55\803OUTFL.PND
Inflow Hydrograph: c:\pond55\803BNRHU.HYD
Outflow Hydrograph: c:\pond55\803OUTFL.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - 0 (cfs)	2S/t + 0 (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
11.000	6.00	-----	0.0	0.0	0.00	960.00
11.100	7.00	13.0	-10.3	13.0	11.66	960.97
11.200	8.00	15.0	-3.7	4.7	4.20	960.35
11.300	9.00	17.0	-10.5	13.3	11.91	960.99
11.400	11.00	20.0	-7.5	9.5	8.48	960.71
11.500	12.00	23.0	-11.6	15.5	13.56	961.13
11.600	14.00	26.0	-11.1	14.4	12.73	961.06
11.700	38.00	52.0	-22.1	40.9	31.49	962.44
11.800	62.00	100.0	-23.8	77.9	50.86	963.80
11.900	86.00	148.0	-2.6	124.2	63.40	965.04
12.000	167.00	253.0	90.9	250.4	79.76	967.11
12.100	260.00	427.0	327.1	517.9	95.41	969.53
12.200	162.00	422.0	409.8	749.1	169.61	970.69
12.300	56.00	218.0	397.6	627.8	115.12	970.21
12.400	38.00	94.0	303.1	491.6	94.23	969.33
12.500	32.00	70.0	196.9	373.1	88.11	968.34
12.600	27.00	59.0	95.6	255.9	80.17	967.17
12.700	22.00	49.0	11.0	144.6	66.79	965.44
12.800	20.00	42.0	-26.1	53.0	39.53	962.90
12.900	18.00	38.0	-9.5	11.9	10.71	960.89
13.000	17.00	35.0	-16.4	25.5	20.98	961.76
13.100	16.00	33.0	-12.1	16.6	14.35	961.20
13.200	15.00	31.0	-13.2	18.9	16.05	961.34
13.300	14.00	29.0	-11.8	15.8	13.76	961.15
13.400	13.00	27.0	-11.5	15.2	13.38	961.12
13.500	12.00	25.0	-10.7	13.5	12.08	961.01
13.600	12.00	24.0	-10.6	13.3	11.95	961.00
13.700	12.00	24.0	-10.6	13.4	12.03	961.00
13.800	11.00	23.0	-9.8	12.4	11.09	960.92
13.900	10.00	21.0	-8.9	11.2	10.04	960.84
14.000	10.00	20.0	-8.8	11.1	9.97	960.83
14.100	10.00	20.0	-8.9	11.2	10.02	960.84
14.200	9.00	19.0	-8.0	10.1	9.09	960.76
14.300	9.00	18.0	-7.9	10.0	8.93	960.74
14.400	9.00	18.0	-8.0	10.1	9.05	960.75
14.500	8.00	17.0	-7.1	9.0	8.06	960.67
14.600	8.00	16.0	-7.0	8.9	7.95	960.66
14.700	8.00	16.0	-7.1	9.0	8.04	960.67
14.800	8.00	16.0	-7.1	8.9	7.97	960.66
14.900	7.00	15.0	-6.3	7.9	7.13	960.59
15.000	7.00	14.0	-6.1	7.7	6.90	960.57
15.100	7.00	14.0	-6.3	7.9	7.08	960.59
15.200	7.00	14.0	-6.1	7.7	6.94	960.58
15.300	7.00	14.0	-6.2	7.9	7.05	960.59
15.400	7.00	14.0	-6.2	7.8	6.96	960.58

Pond File: c:\pond55\803OUTFL.PND
Inflow Hydrograph: c:\pond55\803BNRHU.HYD
Outflow Hydrograph: c:\pond55\803OUTFL.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - 0 (cfs)	2S/t + 0 (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
15.500	7.00	14.0	-6.2	7.8	7.03	960.59
15.600	7.00	14.0	-6.2	7.8	6.97	960.58
15.700	7.00	14.0	-6.2	7.8	7.02	960.59
15.800	6.00	13.0	-5.4	6.8	6.09	960.51
15.900	6.00	12.0	-5.2	6.6	5.93	960.49
16.000	6.00	12.0	-5.4	6.8	6.05	960.50
16.100	6.00	12.0	-5.3	6.6	5.96	960.50
16.200	6.00	12.0	-5.3	6.7	6.03	960.50
16.300	5.00	11.0	-4.5	5.7	5.08	960.42
16.400	5.00	10.0	-4.4	5.5	4.94	960.41
16.500	5.00	10.0	-4.5	5.6	5.05	960.42
16.600	5.00	10.0	-4.4	5.5	4.96	960.41
16.700	5.00	10.0	-4.5	5.6	5.03	960.42
16.800	5.00	10.0	-4.4	5.5	4.98	960.41
16.900	5.00	10.0	-4.4	5.6	5.02	960.42
17.000	5.00	10.0	-4.4	5.6	4.98	960.42
17.100	5.00	10.0	-4.4	5.6	5.01	960.42
17.200	5.00	10.0	-4.4	5.6	4.99	960.42
17.300	5.00	10.0	-4.4	5.6	5.01	960.42
17.400	5.00	10.0	-4.4	5.6	4.99	960.42
17.500	5.00	10.0	-4.4	5.6	5.00	960.42
17.600	5.00	10.0	-4.4	5.6	5.00	960.42
17.700	5.00	10.0	-4.4	5.6	5.00	960.42
17.800	5.00	10.0	-4.4	5.6	5.00	960.42
17.900	5.00	10.0	-4.4	5.6	5.00	960.42
18.000	5.00	10.0	-4.4	5.6	5.00	960.42
18.100	5.00	10.0	-4.4	5.6	5.00	960.42
18.200	5.00	10.0	-4.4	5.6	5.00	960.42
18.300	5.00	10.0	-4.4	5.6	5.00	960.42
18.400	5.00	10.0	-4.4	5.6	5.00	960.42
18.500	4.00	9.0	-3.6	4.6	4.10	960.34
18.600	4.00	8.0	-3.5	4.4	3.92	960.33
18.700	4.00	8.0	-3.6	4.5	4.07	960.34
18.800	4.00	8.0	-3.5	4.4	3.95	960.33
18.900	4.00	8.0	-3.6	4.5	4.04	960.34
19.000	4.00	8.0	-3.5	4.4	3.97	960.33
19.100	4.00	8.0	-3.6	4.5	4.03	960.34
19.200	4.00	8.0	-3.5	4.4	3.98	960.33
19.300	4.00	8.0	-3.6	4.5	4.02	960.33
19.400	4.00	8.0	-3.5	4.4	3.99	960.33
19.500	4.00	8.0	-3.5	4.5	4.01	960.33
19.600	3.00	7.0	-2.7	3.5	3.09	960.26
19.700	3.00	6.0	-2.6	3.3	2.92	960.24
19.800	3.00	6.0	-2.7	3.4	3.06	960.25
19.900	3.00	6.0	-2.6	3.3	2.95	960.25
20.000	3.00	6.0	-2.7	3.4	3.04	960.25

Pond File: c:\pond55\803OUTFL.PND
Inflow Hydrograph: c:\pond55\803BNRHU.HYD
Outflow Hydrograph: c:\pond55\803OUTFL.HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - 0 (cfs)	2S/t + 0 (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
20.100	3.00	6.0	-2.6	3.3	2.97	960.25
20.200	3.00	6.0	-2.7	3.4	3.02	960.25
20.300	3.00	6.0	-2.6	3.3	2.98	960.25
20.400	3.00	6.0	-2.7	3.4	3.01	960.25
20.500	3.00	6.0	-2.6	3.3	2.99	960.25
20.600	3.00	6.0	-2.7	3.4	3.01	960.25
20.700	3.00	6.0	-2.6	3.3	2.99	960.25
20.800	3.00	6.0	-2.7	3.4	3.01	960.25
20.900	3.00	6.0	-2.7	3.3	3.00	960.25
21.000	3.00	6.0	-2.7	3.3	3.00	960.25
21.100	3.00	6.0	-2.7	3.3	3.00	960.25
21.200	3.00	6.0	-2.7	3.3	3.00	960.25
21.300	3.00	6.0	-2.7	3.3	3.00	960.25
21.400	3.00	6.0	-2.7	3.3	3.00	960.25
21.500	3.00	6.0	-2.7	3.3	3.00	960.25
21.600	3.00	6.0	-2.7	3.3	3.00	960.25
21.700	3.00	6.0	-2.7	3.3	3.00	960.25
21.800	3.00	6.0	-2.7	3.3	3.00	960.25
21.900	3.00	6.0	-2.7	3.3	3.00	960.25
22.000	3.00	6.0	-2.7	3.3	3.00	960.25
22.100	3.00	6.0	-2.7	3.3	3.00	960.25
22.200	3.00	6.0	-2.7	3.3	3.00	960.25
22.300	3.00	6.0	-2.7	3.3	3.00	960.25
22.400	3.00	6.0	-2.7	3.3	3.00	960.25
22.500	3.00	6.0	-2.7	3.3	3.00	960.25
22.600	3.00	6.0	-2.7	3.3	3.00	960.25
22.700	2.00	5.0	-1.9	2.3	2.10	960.18
22.800	2.00	4.0	-1.7	2.1	1.92	960.16
22.900	2.00	4.0	-1.8	2.3	2.06	960.17
23.000	2.00	4.0	-1.7	2.2	1.95	960.16
23.100	2.00	4.0	-1.8	2.3	2.04	960.17
23.200	2.00	4.0	-1.7	2.2	1.97	960.16
23.300	2.00	4.0	-1.8	2.3	2.03	960.17
23.400	2.00	4.0	-1.8	2.2	1.98	960.16
23.500	2.00	4.0	-1.8	2.2	2.02	960.17
23.600	2.00	4.0	-1.8	2.2	1.99	960.17
23.700	2.00	4.0	-1.8	2.2	2.01	960.17
23.800	2.00	4.0	-1.8	2.2	1.99	960.17
23.900	2.00	4.0	-1.8	2.2	2.01	960.17
24.000	2.00	4.0	-1.8	2.2	1.99	960.17
24.100	1.00	3.0	-1.0	1.2	1.11	960.09
24.200	1.00	2.0	-0.8	1.0	0.91	960.08
24.300	1.00	2.0	-0.9	1.2	1.07	960.09
24.400	1.00	2.0	-0.8	1.1	0.95	960.08
24.500	1.00	2.0	-0.9	1.2	1.04	960.09
24.600	1.00	2.0	-0.9	1.1	0.97	960.08

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INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
24.700	1.00	2.0	-0.9	1.1	1.03	960.09
24.800	1.00	2.0	-0.9	1.1	0.98	960.08
24.900	1.00	2.0	-0.9	1.1	1.02	960.08
25.000	1.00	2.0	-0.9	1.1	0.99	960.08
25.100	1.00	2.0	-0.9	1.1	1.01	960.08
25.200	1.00	2.0	-0.9	1.1	0.99	960.08
25.300	1.00	2.0	-0.9	1.1	1.01	960.08
25.400	0.00	1.0	-0.1	0.1	0.10	960.01
25.500	0.00	0.0	-0.1	-0.1	0.00	960.00
25.600	0.00	0.0	-0.1	-0.1	0.00	960.00
25.700	0.00	0.0	-0.1	-0.1	0.00	960.00
25.800	0.00	0.0	-0.1	-0.1	0.00	960.00
25.900	0.00	0.0	-0.1	-0.1	0.00	960.00

***** SUMMARY OF ROUTING COMPUTATIONS *****

Pond File: c:\pond55\803OUTFL.PND
Inflow Hydrograph: c:\pond55\803BNRHU.HYD
Outflow Hydrograph: c:\pond55\803OUTFL.HYD

Starting Pond W.S. Elevation = 960.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow	=	260.00 cfs
Peak Outflow	=	169.61 cfs
Peak Elevation	=	970.69 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0.00 ac-ft
Peak Storage From Storm	=	2.39 ac-ft

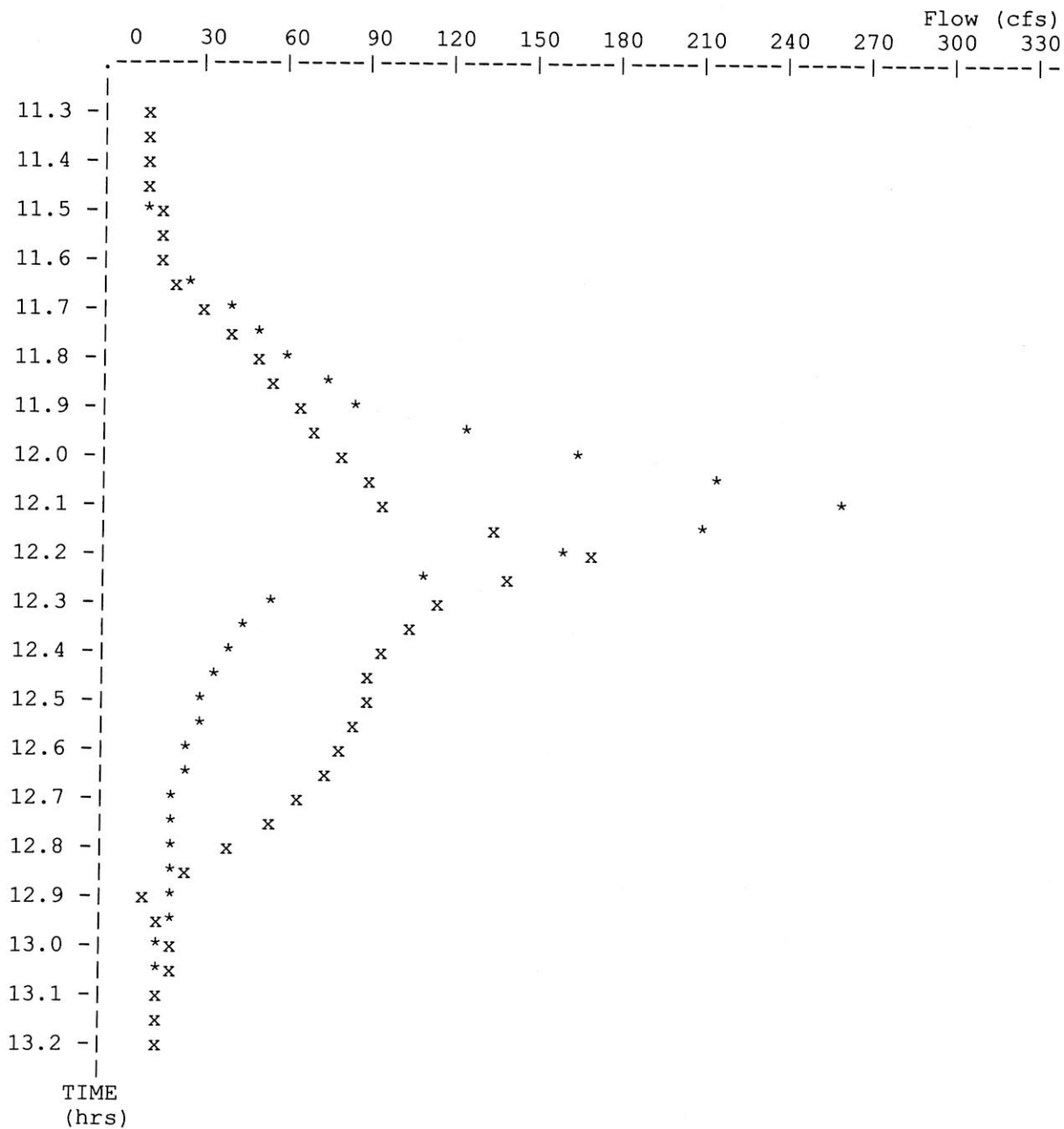
Total Storage in Pond	=	2.39 ac-ft

Warning: Inflow hydrograph truncated on left side.

Pond File: c:\pond55\803OUTFL.PND
 Inflow Hydrograph: c:\pond55\803BNRHU.HYD
 Outflow Hydrograph: c:\pond55\803OUTFL.HYD

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Peak Inflow = 260.00 cfs
 Peak Outflow = 169.61 cfs
 Peak Elevation = 970.69 ft



* File: c:\pond55\803BNRHU.HYD Qmax = 260.0 cfs
 x File: c:\pond55\803OUTFL.HYD Qmax = 169.6 cfs

