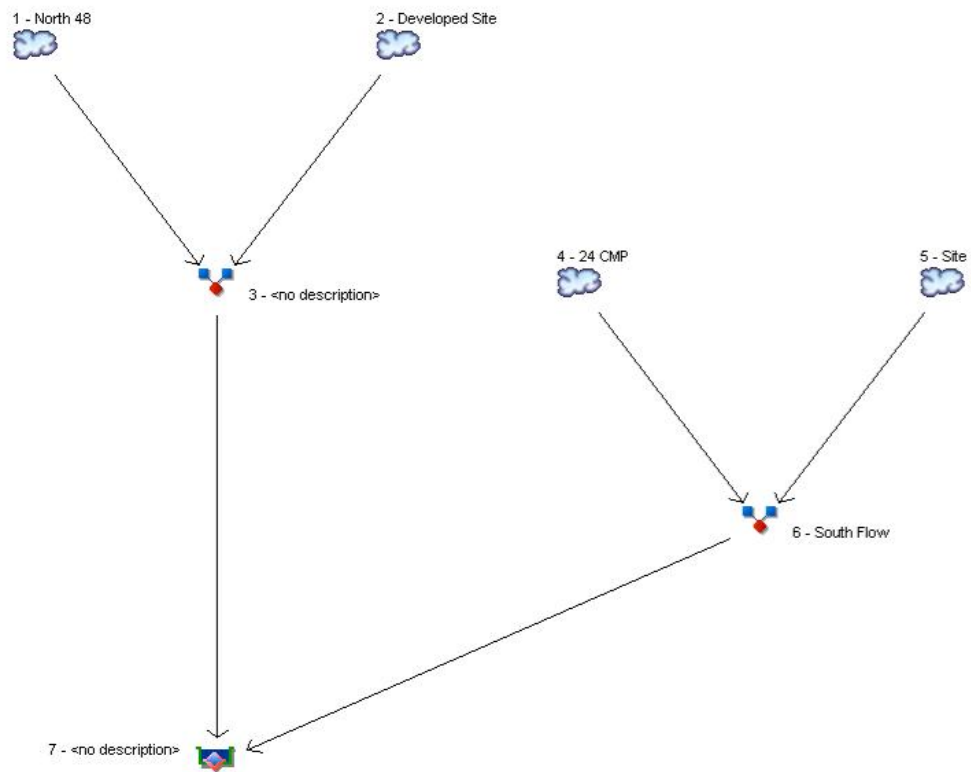


# Watershed Model Schematic

Hydraflow Hydrographs by Intelisolve v9.02



## Legend

Hyd. Origin	Description
1	SCS Runoff North 48
2	SCS Runoff Developed Site
3	Combine <no description>
4	SCS Runoff 24 CMP
5	SCS Runoff Site
6	Combine South Flow
7	Reservoir(i) <no description>

# Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.02

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	SCS Runoff	-----	-----	20.94	-----	-----	35.24	-----	-----	57.07	North 48
2	SCS Runoff	-----	-----	39.66	-----	-----	66.44	-----	-----	107.26	Developed Site
3	Combine	1, 2	-----	57.14	-----	-----	96.02	-----	-----	155.34	<no description>
4	SCS Runoff	-----	-----	9.943	-----	-----	16.57	-----	-----	26.65	24 CMP
5	SCS Runoff	-----	-----	13.28	-----	-----	22.37	-----	-----	36.28	Site
6	Combine	4, 5	-----	16.77	-----	-----	28.44	-----	-----	46.31	South Flow
7	Reservoir(i)	3, 6	-----	13.15	-----	-----	21.73	-----	-----	36.97	<no description>

# Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.02

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	20.94	2	738	108,088	----	-----	-----	North 48
2	SCS Runoff	39.66	2	728	145,919	----	-----	-----	Developed Site
3	Combine	57.14	2	730	254,007	1, 2	-----	-----	<no description>
4	SCS Runoff	9.943	2	722	28,103	----	-----	-----	24 CMP
5	SCS Runoff	13.28	2	746	81,747	----	-----	-----	Site
6	Combine	16.77	2	724	109,850	4, 5	-----	-----	South Flow
7	Reservoir(i)	13.15	2	762	62,477	3, 6	1273.58	304,794	<no description>
System.gpw					Return Period: 2 Year			Monday, Mar 5, 2007	

# Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

Monday, Mar 5, 2007

## Hyd. No. 7

<no description>

Hydrograph type = Reservoir (Interconnected)  
 Storm frequency = 2 yrs  
 Time interval = 2 min

### Upper Pond

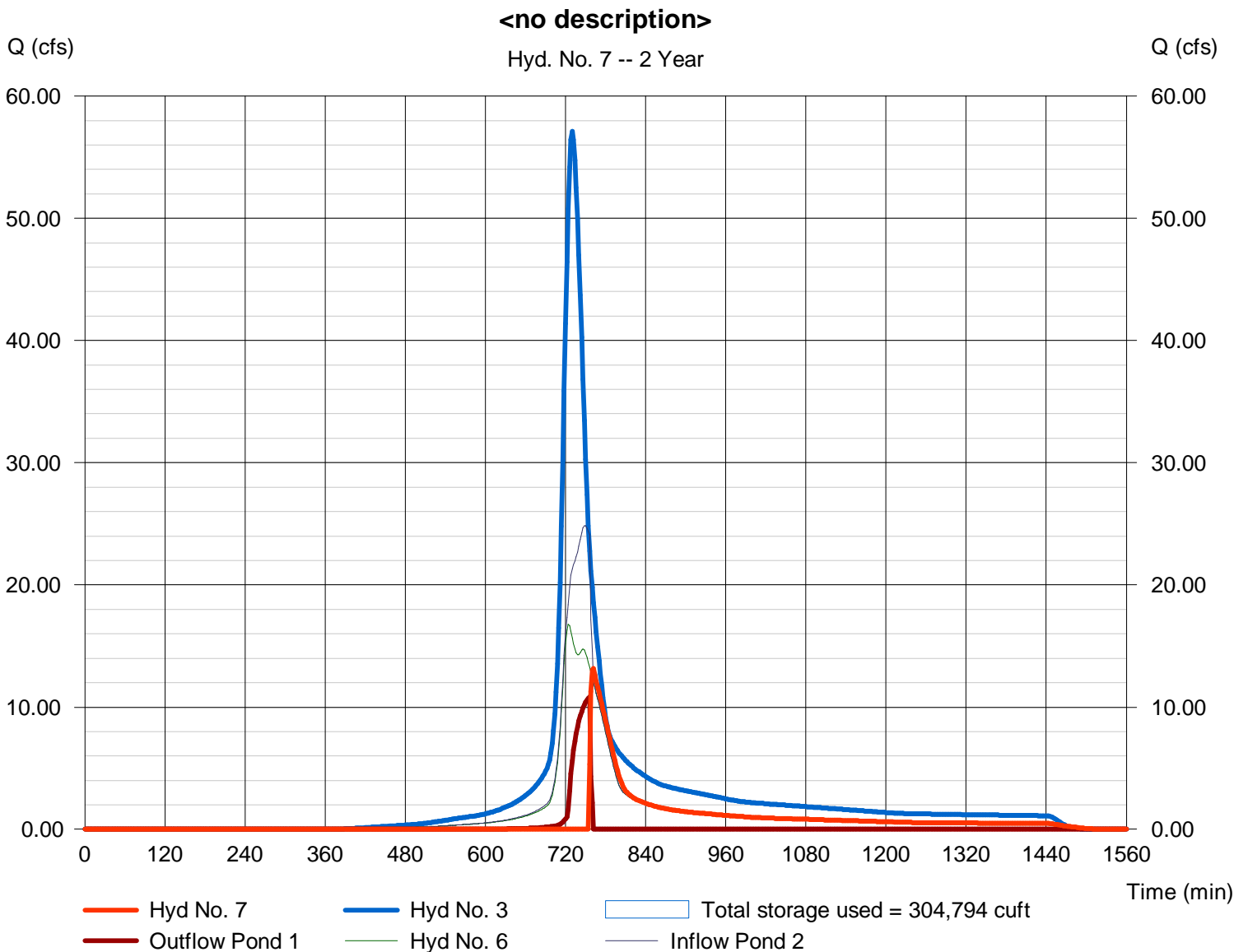
Pond name = Proposed Pond  
 Inflow hyd. = 3 - <no description>  
 Max. Elevation = 1271.59 ft  
 Max. Storage = 235,881 cuft

Peak discharge = 13.15 cfs  
 Time to peak = 762 min  
 Hyd. volume = 62,477 cuft

### Lower Pond

Pond name = Ditch  
 Other Inflow hyd. = 6 - South Flow  
 Max. Elevation = 1273.58 ft  
 Max. Storage = 68,913 cuft

Interconnected Pond Routing. Storage Indication method used.



## Pond No. 1 - Proposed Pond

### Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1267.00 ft

### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1267.00	59,000	0	0
1.00	1269.00	62,000	60,488	60,488
2.00	1270.00	66,000	63,983	124,471
3.00	1271.00	71,000	68,478	192,949
4.00	1272.00	77,000	73,972	266,921
5.00	1273.00	83,000	79,973	346,894
6.00	1274.00	88,900	85,925	432,819
7.00	1275.00	95,000	91,924	524,743
8.00	1275.00	101,000	97,975	622,718

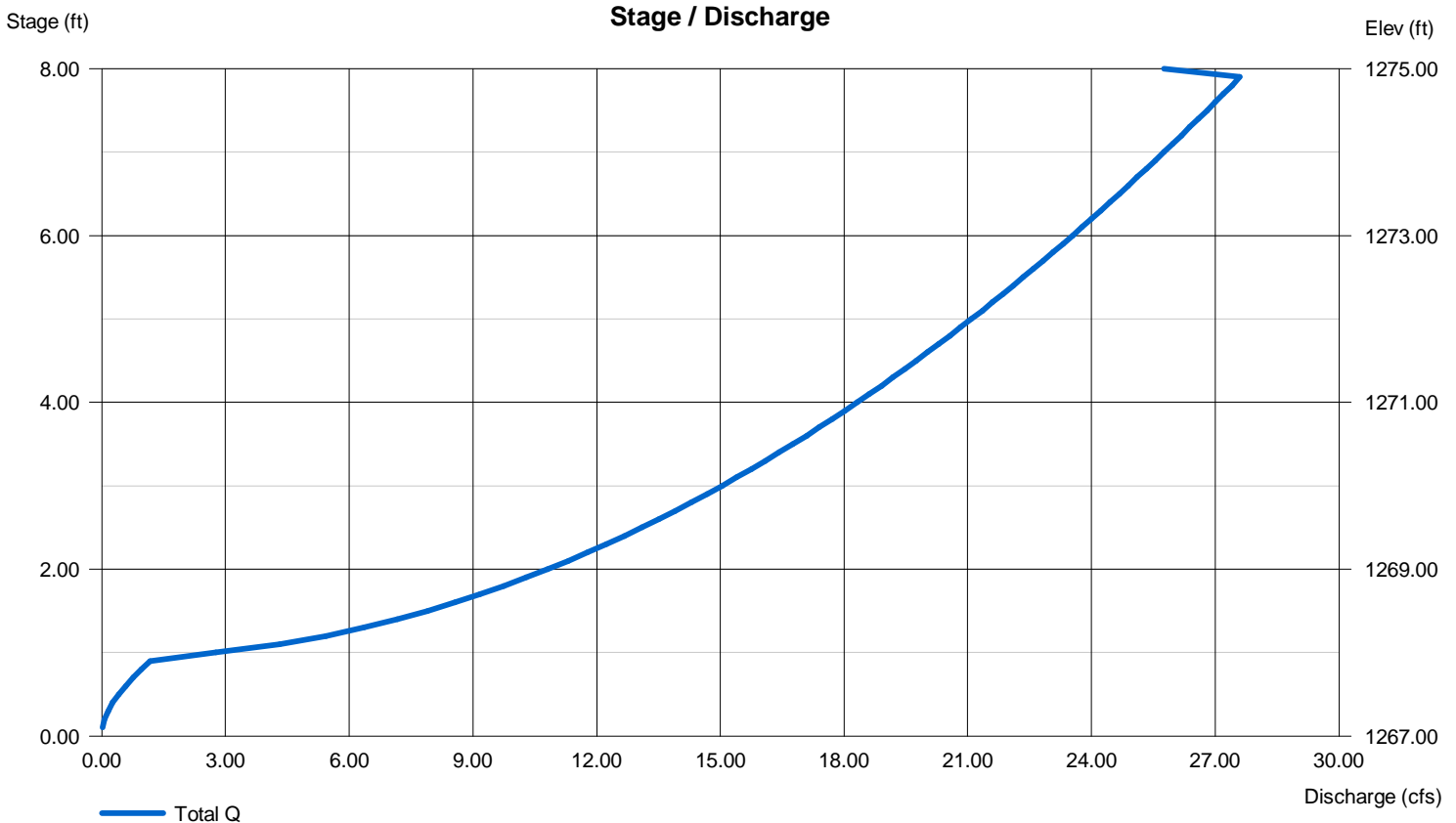
### Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	0.00	0.00	0.00
Span (in)	= 24.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1267.00	0.00	0.00	0.00
Length (ft)	= 350.00	0.00	0.00	0.00
Slope (%)	= 0.02	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

### Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 20.00	0.00	0.00	0.00
Crest El. (ft)	= 1277.00	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



## Pond No. 2 - Ditch

### Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1267.00 ft

### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1267.00	200	0	0
1.00	1269.00	1,000	549	549
2.00	1270.00	3,000	1,910	2,460
3.00	1271.00	6,315	4,555	7,015
4.00	1272.00	20,000	12,517	19,531
5.00	1273.00	32,640	26,061	45,592
6.00	1274.00	48,000	40,070	85,662
7.00	1275.00	70,000	58,649	144,311
8.00	1276.00	500,000	252,336	396,647

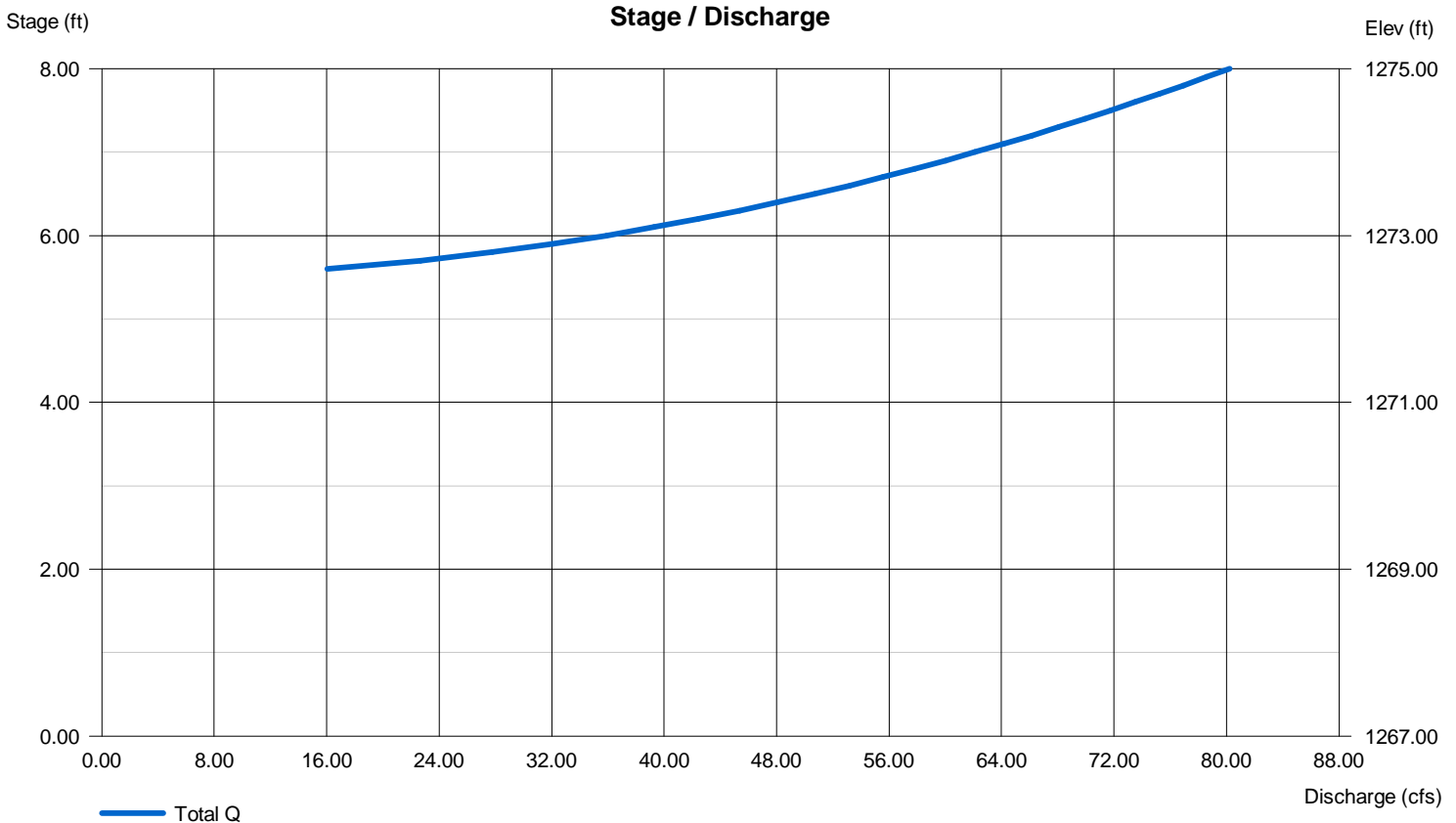
### Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 48.00	0.00	0.00	0.00
Span (in)	= 48.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1268.00	0.00	0.00	0.00
Length (ft)	= 500.00	0.00	0.00	0.00
Slope (%)	= 0.01	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
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.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 1273.50			

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



# Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.02

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	35.24	2	738	183,868	----	-----	-----	North 48
2	SCS Runoff	66.44	2	728	248,222	----	-----	-----	Developed Site
3	Combine	96.02	2	730	432,089	1, 2	-----	-----	<no description>
4	SCS Runoff	16.57	2	722	47,806	----	-----	-----	24 CMP
5	SCS Runoff	22.37	2	746	139,060	----	-----	-----	Site
6	Combine	28.44	2	724	186,865	4, 5	-----	-----	South Flow
7	Reservoir(i)	21.73	2	756	163,468	3, 6	1273.69	469,034	<no description>
System.gpw					Return Period: 10 Year			Monday, Mar 5, 2007	

# Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

Monday, Mar 5, 2007

## Hyd. No. 7

<no description>

Hydrograph type = Reservoir (Interconnected)  
 Storm frequency = 10 yrs  
 Time interval = 2 min

### Upper Pond

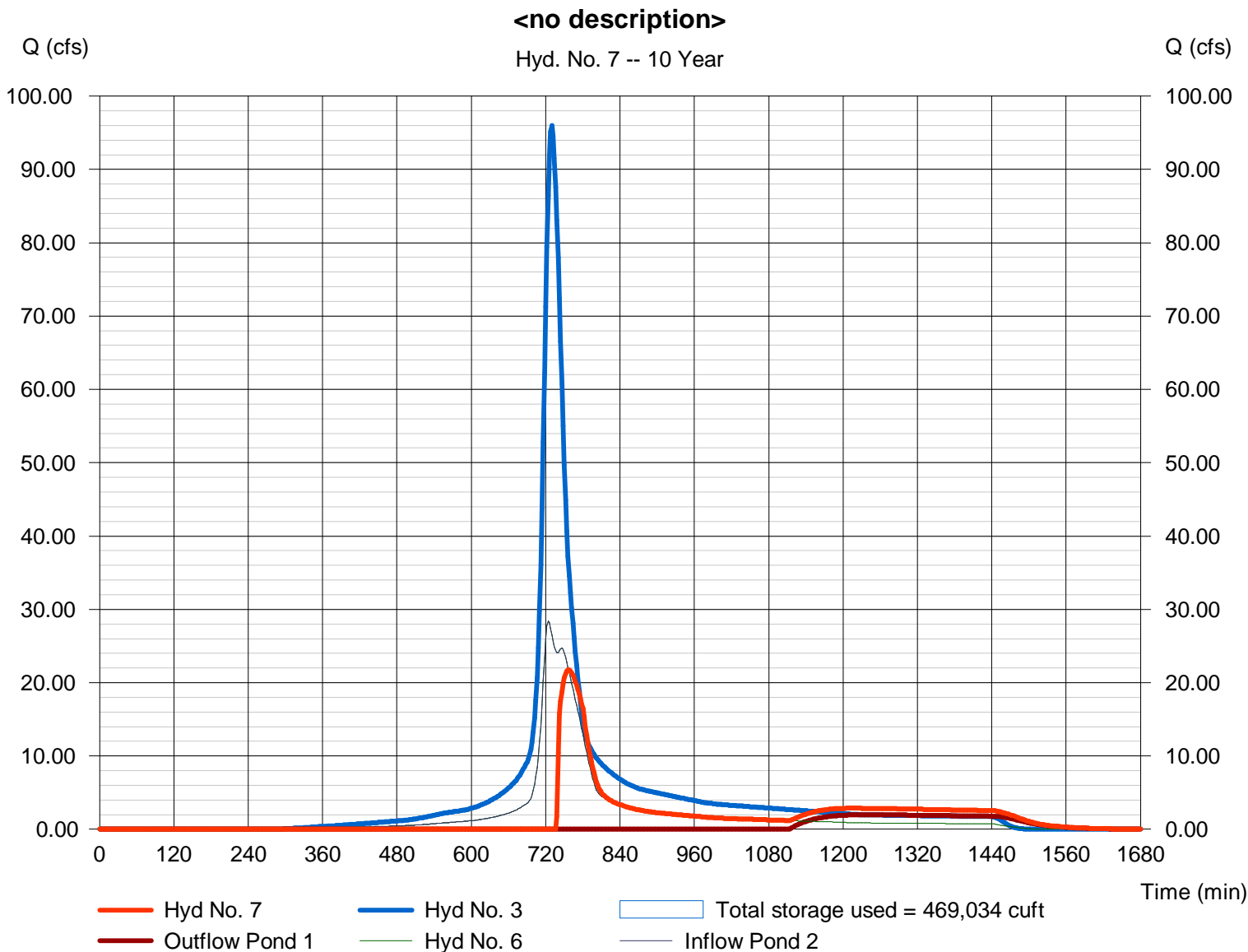
Pond name = Proposed Pond  
 Inflow hyd. = 3 - <no description>  
 Max. Elevation = 1273.57 ft  
 Max. Storage = 395,961 cuft

Peak discharge = 21.73 cfs  
 Time to peak = 756 min  
 Hyd. volume = 163,468 cuft

### Lower Pond

Pond name = Ditch  
 Other Inflow hyd. = 6 - South Flow  
 Max. Elevation = 1273.69 ft  
 Max. Storage = 73,073 cuft

Interconnected Pond Routing. Storage Indication method used.



## Pond No. 1 - Proposed Pond

### Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1267.00 ft

### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1267.00	59,000	0	0
1.00	1269.00	62,000	60,488	60,488
2.00	1270.00	66,000	63,983	124,471
3.00	1271.00	71,000	68,478	192,949
4.00	1272.00	77,000	73,972	266,921
5.00	1273.00	83,000	79,973	346,894
6.00	1274.00	88,900	85,925	432,819
7.00	1275.00	95,000	91,924	524,743
8.00	1275.00	101,000	97,975	622,718

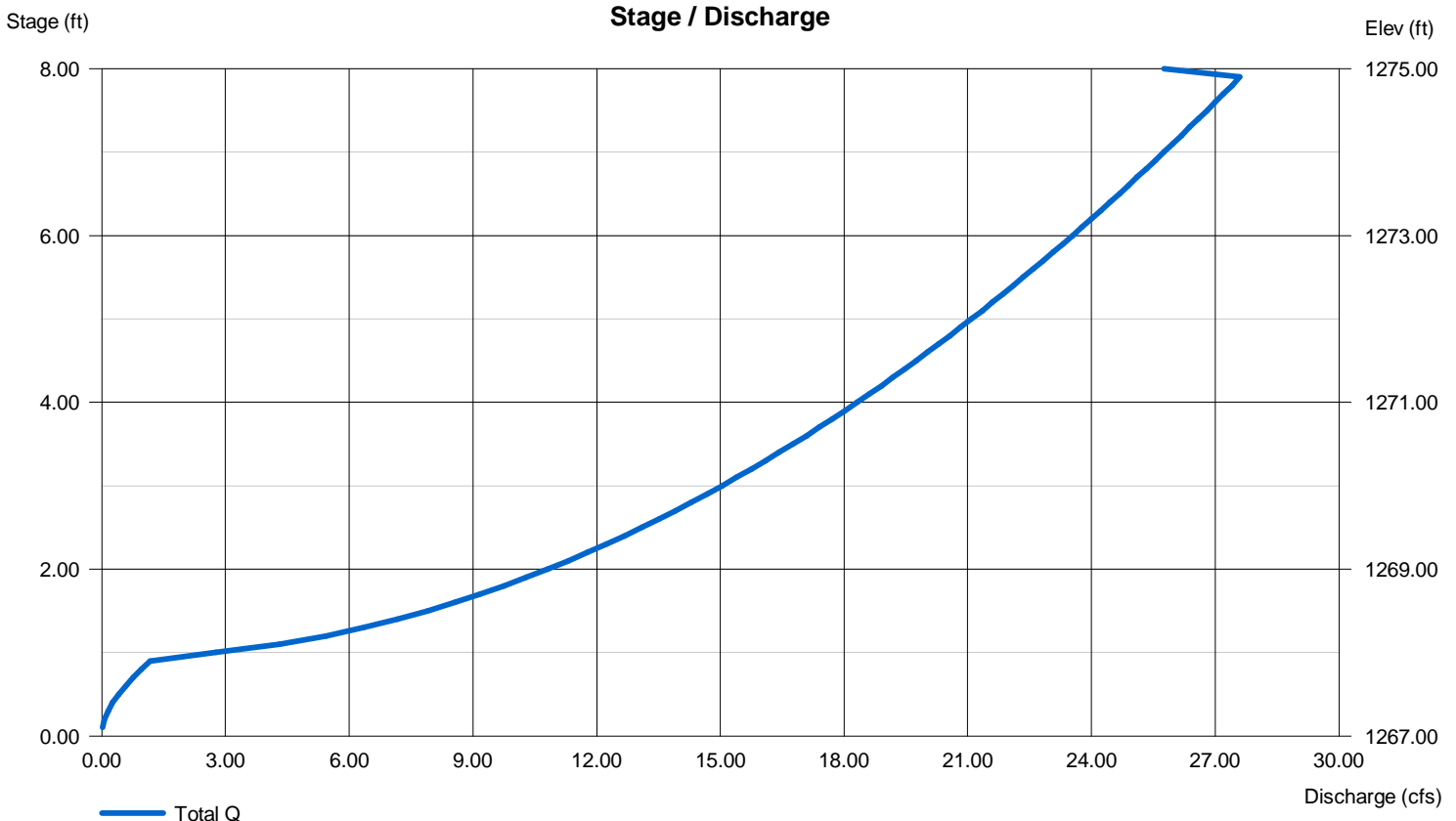
### Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	0.00	0.00	0.00
Span (in)	= 24.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1267.00	0.00	0.00	0.00
Length (ft)	= 350.00	0.00	0.00	0.00
Slope (%)	= 0.02	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

### Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 20.00	0.00	0.00	0.00
Crest El. (ft)	= 1277.00	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



## Pond No. 2 - Ditch

### Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1267.00 ft

### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1267.00	200	0	0
1.00	1269.00	1,000	549	549
2.00	1270.00	3,000	1,910	2,460
3.00	1271.00	6,315	4,555	7,015
4.00	1272.00	20,000	12,517	19,531
5.00	1273.00	32,640	26,061	45,592
6.00	1274.00	48,000	40,070	85,662
7.00	1275.00	70,000	58,649	144,311
8.00	1276.00	500,000	252,336	396,647

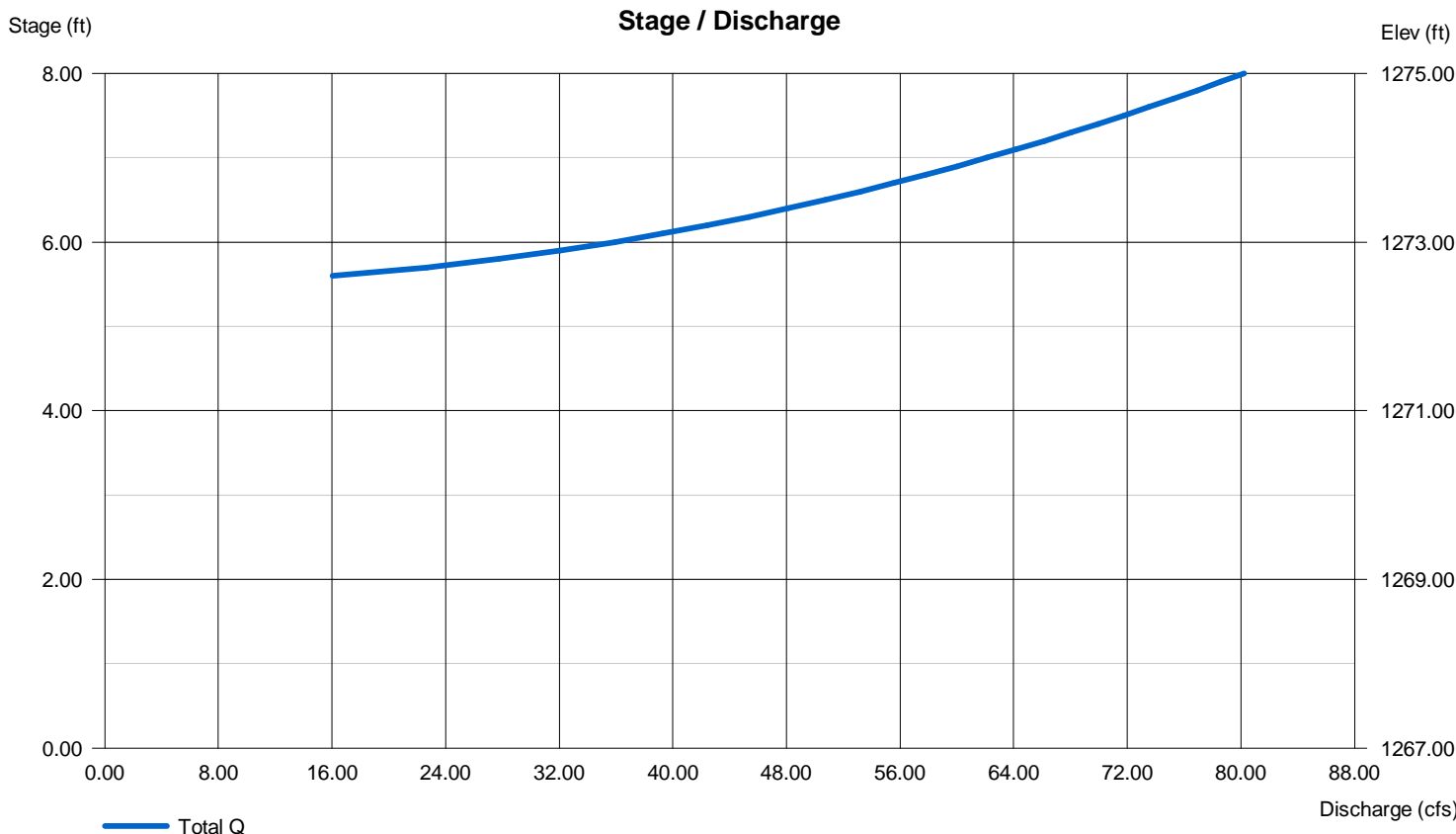
### Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 48.00	0.00	0.00	0.00
Span (in)	= 48.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1268.00	0.00	0.00	0.00
Length (ft)	= 500.00	0.00	0.00	0.00
Slope (%)	= 0.01	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
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.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000	(by Wet area)		
TW Elev. (ft)	= 1273.50			

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



# Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.02

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	57.07	2	738	303,623	----	-----	-----	North 48
2	SCS Runoff	107.26	2	728	409,891	----	-----	-----	Developed Site
3	Combine	155.34	2	730	713,514	1, 2	-----	-----	<no description>
4	SCS Runoff	26.65	2	722	78,942	----	-----	-----	24 CMP
5	SCS Runoff	36.28	2	746	229,631	----	-----	-----	Site
6	Combine	46.31	2	724	308,573	4, 5	-----	-----	South Flow
7	Reservoir(i)	36.97	2	760	566,576	3, 6	1274.75	588,964	<no description>
System.gpw					Return Period: 100 Year			Monday, Mar 5, 2007	

# Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

Monday, Mar 5, 2007

## Hyd. No. 7

<no description>

Hydrograph type = Reservoir (Interconnected)  
 Storm frequency = 100 yrs  
 Time interval = 2 min

### Upper Pond

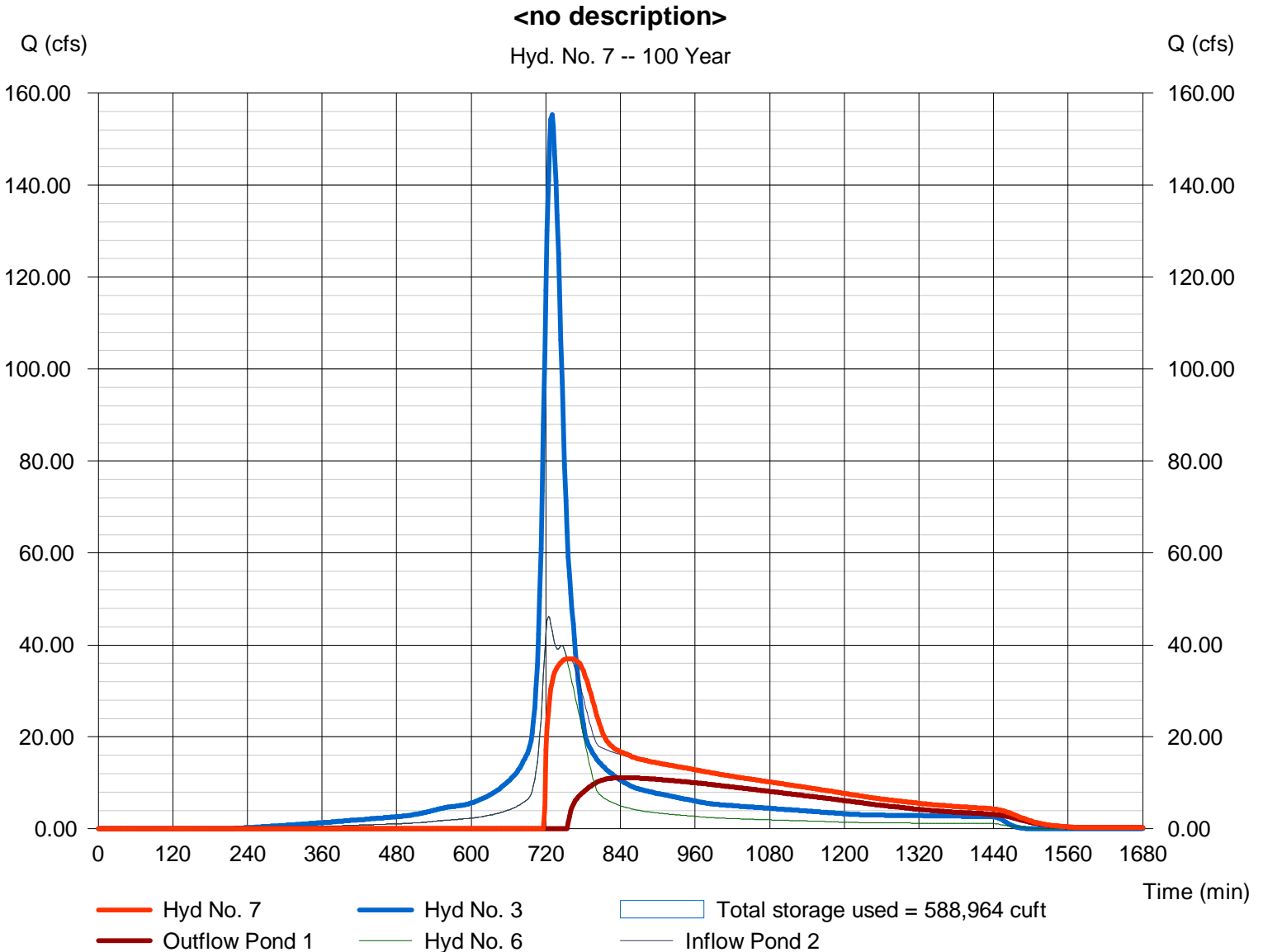
Pond name = Proposed Pond  
 Inflow hyd. = 3 - <no description>  
 Max. Elevation = 1274.75 ft  
 Max. Storage = 501,415 cuft

Peak discharge = 36.97 cfs  
 Time to peak = 760 min  
 Hyd. volume = 566,576 cuft

### Lower Pond

Pond name = Ditch  
 Other Inflow hyd. = 6 - South Flow  
 Max. Elevation = 1274.03 ft  
 Max. Storage = 87,548 cuft

Interconnected Pond Routing. Storage Indication method used.



## Pond No. 1 - Proposed Pond

### Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1267.00 ft

### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1267.00	59,000	0	0
1.00	1269.00	62,000	60,488	60,488
2.00	1270.00	66,000	63,983	124,471
3.00	1271.00	71,000	68,478	192,949
4.00	1272.00	77,000	73,972	266,921
5.00	1273.00	83,000	79,973	346,894
6.00	1274.00	88,900	85,925	432,819
7.00	1275.00	95,000	91,924	524,743
8.00	1275.00	101,000	97,975	622,718

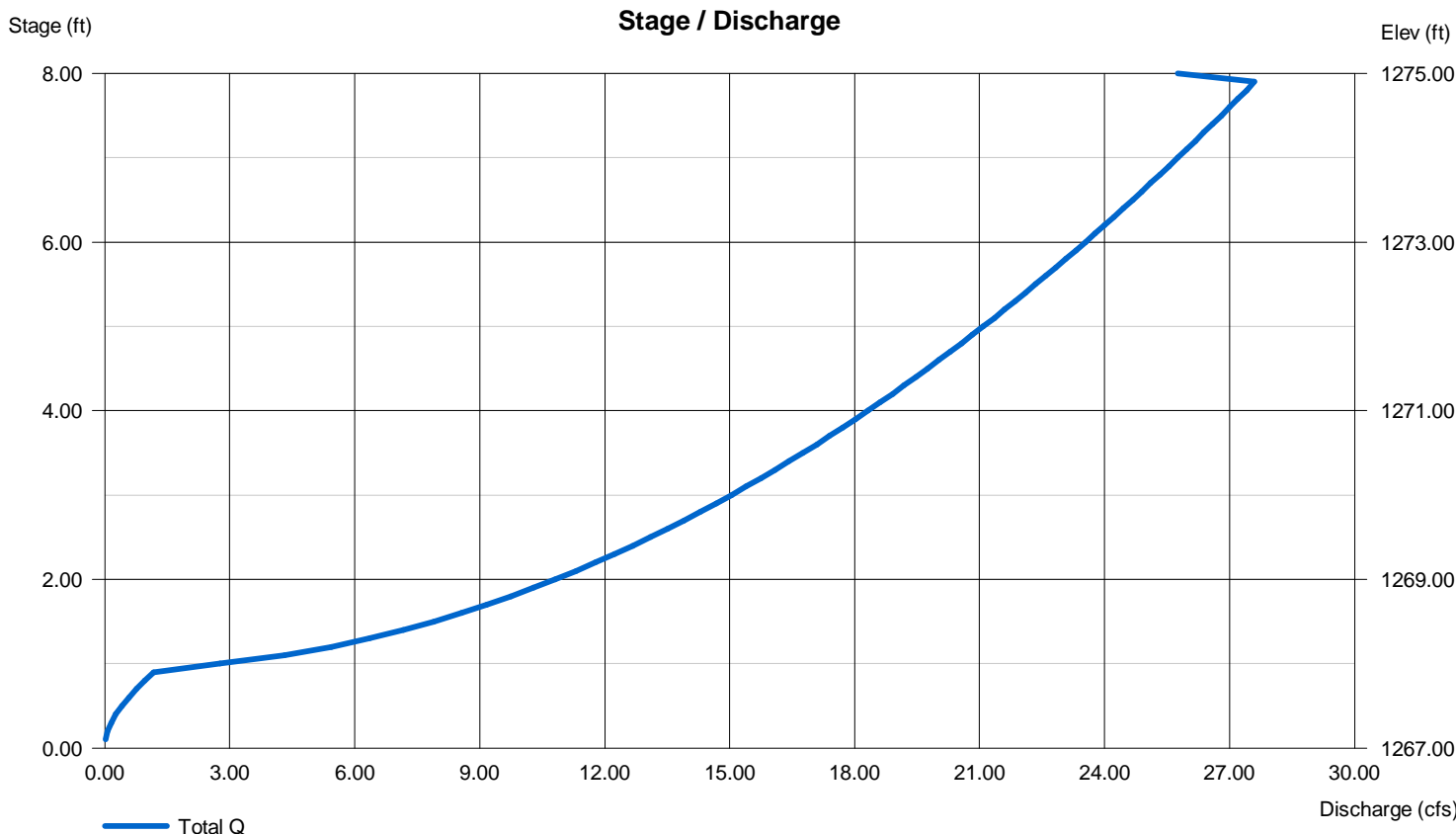
### Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	0.00	0.00	0.00
Span (in)	= 24.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1267.00	0.00	0.00	0.00
Length (ft)	= 350.00	0.00	0.00	0.00
Slope (%)	= 0.02	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

### Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 20.00	0.00	0.00	0.00
Crest El. (ft)	= 1277.00	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



## Pond No. 2 - Ditch

### Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1267.00 ft

### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1267.00	200	0	0
1.00	1269.00	1,000	549	549
2.00	1270.00	3,000	1,910	2,460
3.00	1271.00	6,315	4,555	7,015
4.00	1272.00	20,000	12,517	19,531
5.00	1273.00	32,640	26,061	45,592
6.00	1274.00	48,000	40,070	85,662
7.00	1275.00	70,000	58,649	144,311
8.00	1276.00	500,000	252,336	396,647

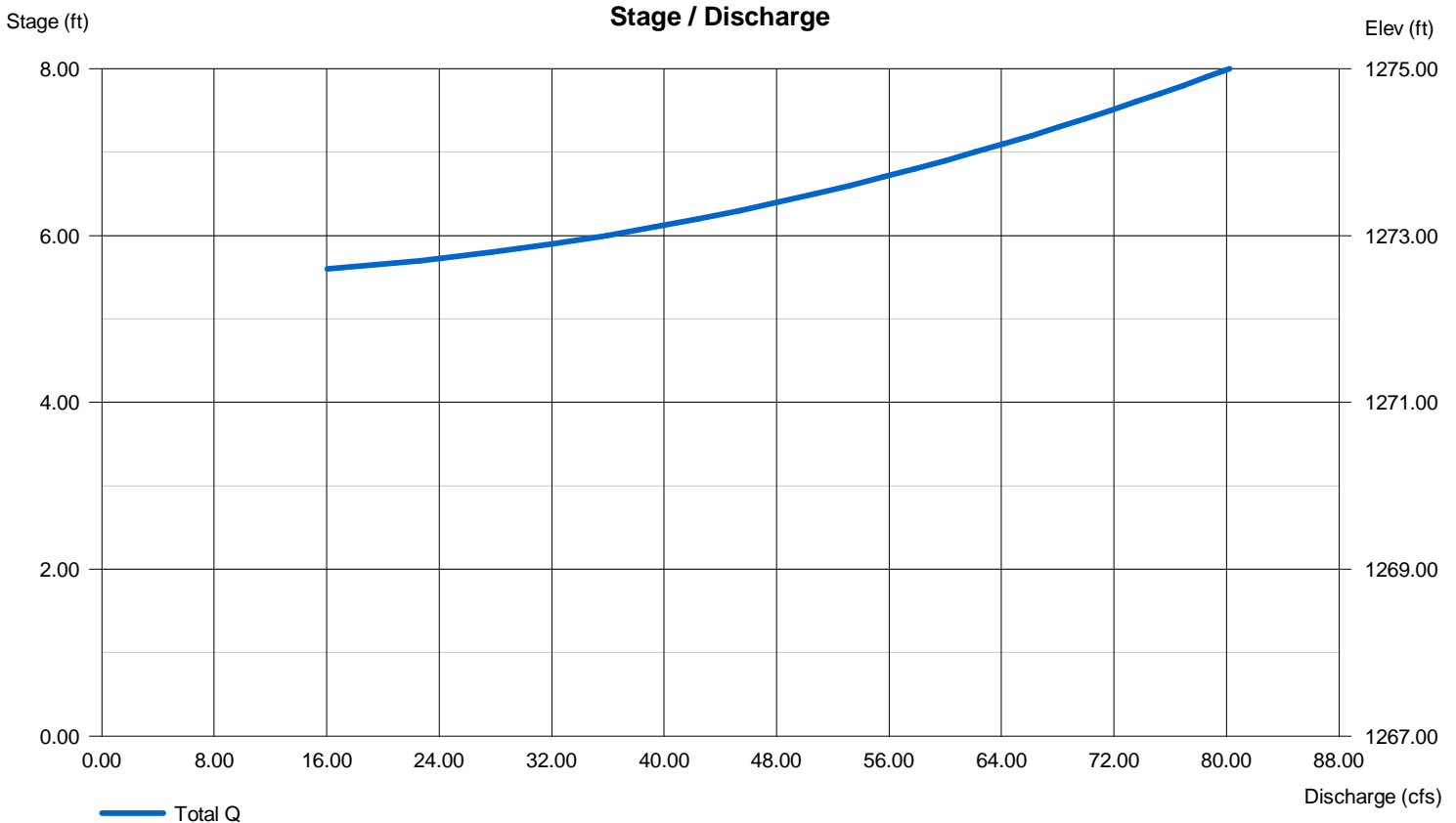
### Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 48.00	0.00	0.00	0.00
Span (in)	= 48.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1268.00	0.00	0.00	0.00
Length (ft)	= 500.00	0.00	0.00	0.00
Slope (%)	= 0.01	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
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.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000	(by Wet area)		
TW Elev. (ft)	= 1273.50			

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



# Hydraflow Rainfall Report

Hydraflow Hydrographs by Intelisolve v9.02

Monday, Mar 5, 2007

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	-----
2	69.8703	13.1000	0.8658	-----
3	0.0000	0.0000	0.0000	-----
5	79.2597	14.6000	0.8369	-----
10	88.2351	15.5000	0.8279	-----
25	102.6072	16.5000	0.8217	-----
50	114.8193	17.2000	0.8199	-----
100	127.1596	17.8000	0.8186	-----

File name: SampleFHA.idf

**Intensity = B / (Tc + D)^E**

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.69	4.61	3.89	3.38	2.99	2.69	2.44	2.24	2.07	1.93	1.81	1.70
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.57	5.43	4.65	4.08	3.65	3.30	3.02	2.79	2.59	2.42	2.27	2.15
10	7.24	6.04	5.21	4.59	4.12	3.74	3.43	3.17	2.95	2.77	2.60	2.46
25	8.25	6.95	6.03	5.34	4.80	4.38	4.02	3.73	3.48	3.26	3.07	2.91
50	9.04	7.65	6.66	5.92	5.34	4.87	4.49	4.16	3.88	3.65	3.44	3.25
100	9.83	8.36	7.30	6.50	5.87	5.36	4.94	4.59	4.29	4.03	3.80	3.60

Tc = time in minutes. Values may exceed 60.

Precip. file name: SCS\_24HR.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	3.50	0.00	4.50	5.20	6.00	7.00	7.80
SCS 6-Hr	0.00	1.80	0.00	0.00	2.60	0.00	0.00	4.00
Huff-1st	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	1.75	0.00	2.80	3.90	5.25	6.00	7.10

<b>Watershed Model Schematic .....</b>	<b>1</b>
<b>Hydrograph Return Period Recap .....</b>	<b>2</b>
<b>2 - Year</b>	
<b>Summary Report .....</b>	<b>3</b>
<b>Hydrograph Reports .....</b>	<b>4</b>
Hydrograph No. 7, Reservoir, <no description> .....	4
Pond Report - Proposed Pond .....	5
Pond Report - Ditch .....	6
<b>10 - Year</b>	
<b>Summary Report .....</b>	<b>7</b>
<b>Hydrograph Reports .....</b>	<b>8</b>
Hydrograph No. 7, Reservoir, <no description> .....	8
Pond Report - Proposed Pond .....	9
Pond Report - Ditch .....	10
<b>100 - Year</b>	
<b>Summary Report .....</b>	<b>11</b>
<b>Hydrograph Reports .....</b>	<b>12</b>
Hydrograph No. 7, Reservoir, <no description> .....	12
Pond Report - Proposed Pond .....	13
Pond Report - Ditch .....	14
<b>IDF Report .....</b>	<b>15</b>