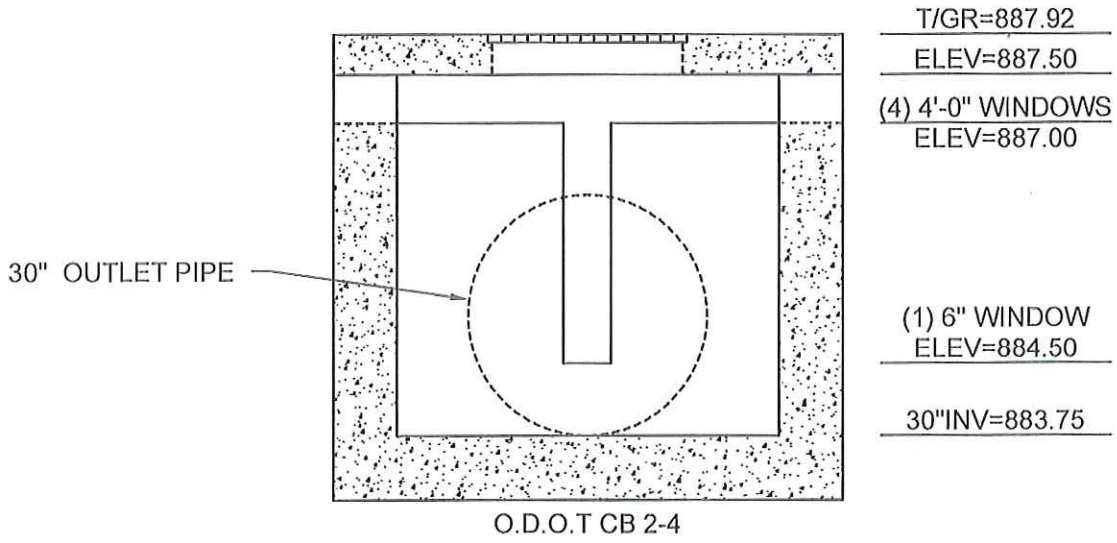
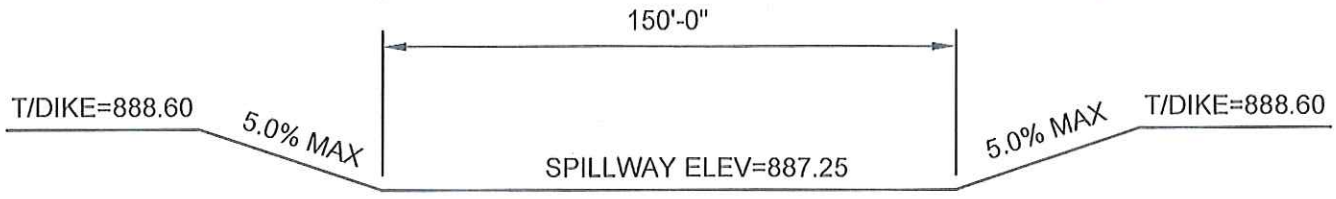


LAKE #1 OUTLET STRUCTURE SIDE VIEW DETAIL

N.T.S.



LAKE #1 EMERGENCY SPILLWAY DETAIL

N.T.S.

Drawing:	07M056-006 CD
Scale	07M056.006
Drawn by:	GJK
Checked By:	
Issue Date:	04-04-12

VOICE OF AMERICA PARK ATHLETIC COMPLEX

SECTION 12, TOWN 3, RANGE 2,
WEST CHESTER TOWNSHIP,
BUTLER COUNTY, OHIO

FUTURE LAKE #1 OUTLET DETAILS

bayer becker
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Pond No. 1 - Lake #1

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 884.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	884.50	00	0	0
0.24	884.74	01	0	0
0.25	884.75	81,066	271	271
0.50	885.00	82,336	20,423	20,694
1.50	886.00	87,471	84,882	105,577
2.50	887.00	92,703	90,065	195,642

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 30.00	0.00	0.00	0.00
Span (in)	= 30.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 883.75	0.00	0.00	0.00
Length (ft)	= 47.00	0.00	0.00	0.00
Slope (%)	= 0.30	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)	= 0.50	15.50	0.00	0.00
Crest El. (ft)	= 884.50	887.00	0.00	0.00
Weir Coeff.	= 3.00	3.00	3.33	3.33
Weir Type	= Rect	Rect	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	884.50	0.00	---	---	---	0.00	0.00	---	---	---	---	0.000
0.02	0	884.52	2.53 oc	---	---	---	0.01	0.00	---	---	---	---	0.006
0.05	0	884.55	2.53 oc	---	---	---	0.02	0.00	---	---	---	---	0.016
0.07	0	884.57	2.53 oc	---	---	---	0.03	0.00	---	---	---	---	0.029
0.10	0	884.60	2.53 oc	---	---	---	0.04	0.00	---	---	---	---	0.045
0.12	0	884.62	2.53 oc	---	---	---	0.06	0.00	---	---	---	---	0.062
0.14	0	884.64	2.53 oc	---	---	---	0.08	0.00	---	---	---	---	0.082
0.17	0	884.67	2.53 oc	---	---	---	0.10	0.00	---	---	---	---	0.103
0.19	0	884.69	2.53 oc	---	---	---	0.13	0.00	---	---	---	---	0.126
0.22	0	884.72	2.53 oc	---	---	---	0.15	0.00	---	---	---	---	0.150
0.24	0	884.74	2.53 oc	---	---	---	0.18	0.00	---	---	---	---	0.176
0.24	27	884.74	2.53 oc	---	---	---	0.18	0.00	---	---	---	---	0.177
0.24	54	884.74	2.53 oc	---	---	---	0.18	0.00	---	---	---	---	0.178
0.24	82	884.74	2.53 oc	---	---	---	0.18	0.00	---	---	---	---	0.180
0.24	109	884.74	2.53 oc	---	---	---	0.18	0.00	---	---	---	---	0.181
0.24	136	884.74	2.53 oc	---	---	---	0.18	0.00	---	---	---	---	0.182
0.25	163	884.75	2.53 oc	---	---	---	0.18	0.00	---	---	---	---	0.183
0.25	190	884.75	2.53 oc	---	---	---	0.18	0.00	---	---	---	---	0.184
0.25	217	884.75	2.53 oc	---	---	---	0.19	0.00	---	---	---	---	0.185
0.25	244	884.75	2.53 oc	---	---	---	0.19	0.00	---	---	---	---	0.186
0.25	271	884.75	2.53 oc	---	---	---	0.19	0.00	---	---	---	---	0.188
0.28	2,314	884.78	2.53 oc	---	---	---	0.22	0.00	---	---	---	---	0.216
0.30	4,356	884.80	2.53 oc	---	---	---	0.25	0.00	---	---	---	---	0.246
0.32	6,398	884.83	2.53 oc	---	---	---	0.28	0.00	---	---	---	---	0.278
0.35	8,441	884.85	2.53 oc	---	---	---	0.31	0.00	---	---	---	---	0.311
0.38	10,483	884.88	2.53 oc	---	---	---	0.34	0.00	---	---	---	---	0.345
0.40	12,525	884.90	2.53 oc	---	---	---	0.38	0.00	---	---	---	---	0.380
0.43	14,568	884.93	2.53 oc	---	---	---	0.42	0.00	---	---	---	---	0.416
0.45	16,610	884.95	2.53 oc	---	---	---	0.45	0.00	---	---	---	---	0.453
0.48	18,652	884.98	2.53 oc	---	---	---	0.49	0.00	---	---	---	---	0.491
0.50	20,694	885.00	2.53 oc	---	---	---	0.53	0.00	---	---	---	---	0.530
0.60	29,183	885.10	2.53 oc	---	---	---	0.70	0.00	---	---	---	---	0.697
0.70	37,671	885.20	2.53 oc	---	---	---	0.88	0.00	---	---	---	---	0.879
0.80	46,159	885.30	2.53 oc	---	---	---	1.07	0.00	---	---	---	---	1.073
0.90	54,647	885.40	2.53 oc	---	---	---	1.28	0.00	---	---	---	---	1.281
1.00	63,136	885.50	2.53 oc	---	---	---	1.50	0.00	---	---	---	---	1.500
1.10	71,624	885.60	2.53 oc	---	---	---	1.73	0.00	---	---	---	---	1.730

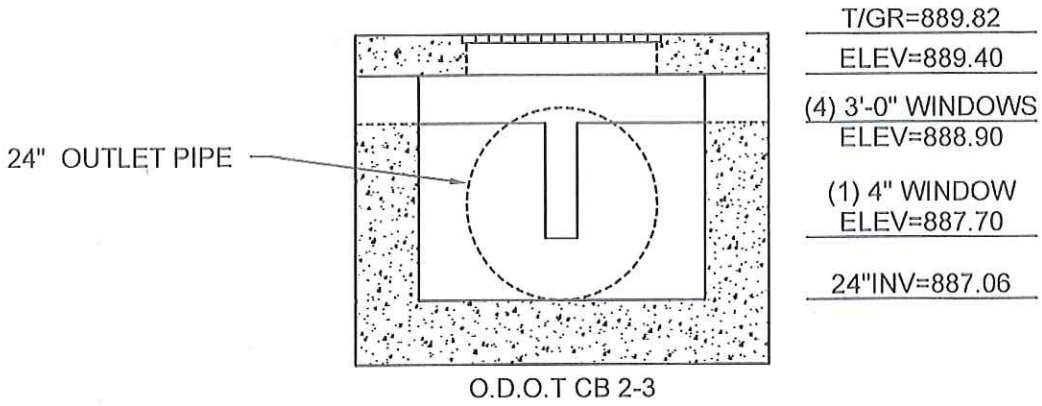
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Lake #1

Stage / Storage / Discharge Table

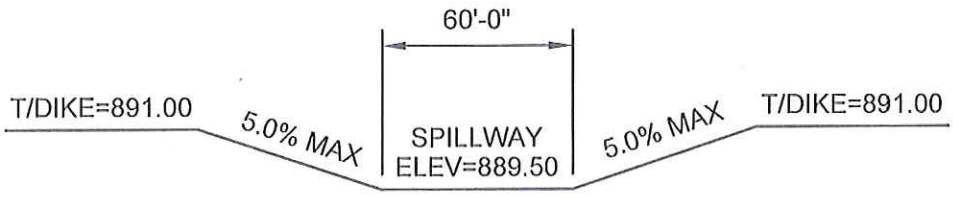
Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
1.20	80,112	885.70	2.53 oc	---	---	---	1.97	0.00	---	---	---	---	1.971
1.30	88,600	885.80	2.53 oc	---	---	---	2.22	0.00	---	---	---	---	2.223
1.40	97,088	885.90	2.53 oc	---	---	---	2.48	0.00	---	---	---	---	2.484
1.50	105,577	886.00	2.82 oc	---	---	---	2.75 s	0.00	---	---	---	---	2.751
1.60	114,583	886.10	3.12 oc	---	---	---	3.02 s	0.00	---	---	---	---	3.019
1.70	123,590	886.20	3.32 oc	---	---	---	3.30 s	0.00	---	---	---	---	3.297
1.80	132,596	886.30	3.64 oc	---	---	---	3.57 s	0.00	---	---	---	---	3.574
1.90	141,603	886.40	3.86 oc	---	---	---	3.86 s	0.00	---	---	---	---	3.860
2.00	150,609	886.50	4.19 oc	---	---	---	4.15 s	0.00	---	---	---	---	4.153
2.10	159,616	886.60	4.53 oc	---	---	---	4.45 s	0.00	---	---	---	---	4.446
2.20	168,622	886.70	4.75 oc	---	---	---	4.75 s	0.00	---	---	---	---	4.753
2.30	177,629	886.80	5.09 oc	---	---	---	5.06 s	0.00	---	---	---	---	5.058
2.40	186,635	886.90	5.44 oc	---	---	---	5.37 s	0.00	---	---	---	---	5.366
2.50	195,642	887.00	5.78 oc	---	---	---	5.68 s	0.00	---	---	---	---	5.680

...End



LAKE #2 OUTLET STRUCTURE SIDE VIEW DETAIL

N.T.S.



LAKE #2 EMERGENCY SPILLWAY DETAIL

N.T.S.

Drawing:	07M056-006 CD
Scale	07M056.006
Drawn by:	GJK
Checked By:	
Issue Date:	04-04-12

VOICE OF AMERICA PARK ATHLETIC COMPLEX

SECTION 12, TOWN 3, RANGE 2,
WEST CHESTER TOWNSHIP,
BUTLER COUNTY, OHIO

LAKE #2 OUTLET DETAILS

bayer becker
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Pond No. 2 - Lake #2

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 887.70 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	887.70	00	0	0
0.09	887.79	01	0	0
0.10	887.80	55,863	187	187
0.30	888.00	80,959	13,604	13,791
1.30	889.00	110,891	95,524	109,315
2.30	890.00	133,307	121,915	231,230

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)	= 887.06	0.00	0.00	0.00
Length (ft)	= 178.00	0.00	0.00	0.00
Slope (%)	= 0.30	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)	= 0.33	11.67	0.00	0.00
Crest El. (ft)	= 887.70	888.90	0.00	0.00
Weir Coeff.	= 3.00	3.00	3.33	3.33
Weir Type	= Rect	Rect	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	887.70	0.00	---	---	---	0.00	0.00	---	---	---	---	0.000
0.01	0	887.71	2.34 oc	---	---	---	0.00	0.00	---	---	---	---	0.001
0.02	0	887.72	2.34 oc	---	---	---	0.00	0.00	---	---	---	---	0.002
0.03	0	887.73	2.34 oc	---	---	---	0.00	0.00	---	---	---	---	0.004
0.04	0	887.74	2.34 oc	---	---	---	0.01	0.00	---	---	---	---	0.007
0.04	0	887.74	2.34 oc	---	---	---	0.01	0.00	---	---	---	---	0.009
0.05	0	887.75	2.34 oc	---	---	---	0.01	0.00	---	---	---	---	0.012
0.06	0	887.76	2.34 oc	---	---	---	0.02	0.00	---	---	---	---	0.016
0.07	0	887.77	2.34 oc	---	---	---	0.02	0.00	---	---	---	---	0.019
0.08	0	887.78	2.34 oc	---	---	---	0.02	0.00	---	---	---	---	0.023
0.09	0	887.79	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.027
0.09	19	887.79	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.027
0.09	37	887.79	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.028
0.09	56	887.79	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.028
0.09	75	887.79	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.028
0.09	94	887.79	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.029
0.10	112	887.80	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.029
0.10	131	887.80	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.030
0.10	150	887.80	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.030
0.10	168	887.80	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.031
0.10	187	887.80	2.34 oc	---	---	---	0.03	0.00	---	---	---	---	0.031
0.12	1,548	887.82	2.34 oc	---	---	---	0.04	0.00	---	---	---	---	0.041
0.14	2,908	887.84	2.34 oc	---	---	---	0.05	0.00	---	---	---	---	0.052
0.16	4,268	887.86	2.34 oc	---	---	---	0.06	0.00	---	---	---	---	0.063
0.18	5,629	887.88	2.34 oc	---	---	---	0.08	0.00	---	---	---	---	0.076
0.20	6,989	887.90	2.34 oc	---	---	---	0.09	0.00	---	---	---	---	0.089
0.22	8,350	887.92	2.34 oc	---	---	---	0.10	0.00	---	---	---	---	0.102
0.24	9,710	887.94	2.34 oc	---	---	---	0.12	0.00	---	---	---	---	0.116
0.26	11,071	887.96	2.34 oc	---	---	---	0.13	0.00	---	---	---	---	0.131
0.28	12,431	887.98	2.34 oc	---	---	---	0.15	0.00	---	---	---	---	0.147
0.30	13,791	888.00	2.34 oc	---	---	---	0.16	0.00	---	---	---	---	0.163
0.40	23,344	888.10	2.34 oc	---	---	---	0.25	0.00	---	---	---	---	0.250
0.50	32,896	888.20	2.34 oc	---	---	---	0.35	0.00	---	---	---	---	0.350
0.60	42,449	888.30	2.34 oc	---	---	---	0.46	0.00	---	---	---	---	0.460
0.70	52,001	888.40	2.34 oc	---	---	---	0.58	0.00	---	---	---	---	0.580
0.80	61,553	888.50	2.34 oc	---	---	---	0.71	0.00	---	---	---	---	0.708
0.90	71,106	888.60	2.34 oc	---	---	---	0.85	0.00	---	---	---	---	0.845

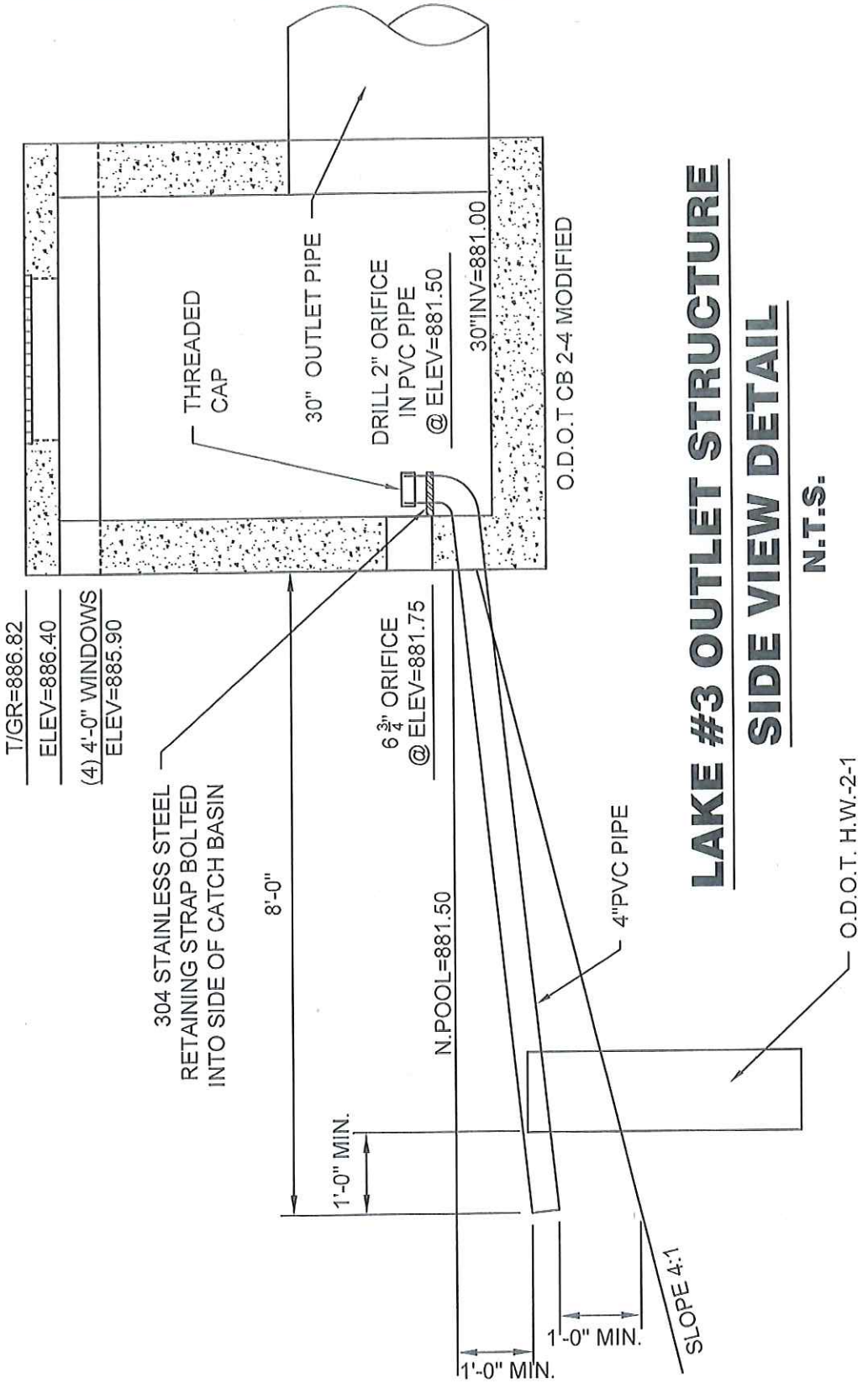
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Lake #2

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
1.00	80,658	888.70	2.34 oc	---	---	---	0.99	0.00	---	---	---	---	0.990
1.10	90,211	888.80	2.34 oc	---	---	---	1.14	0.00	---	---	---	---	1.142
1.20	99,763	888.90	2.34 oc	---	---	---	1.30	0.00	---	---	---	---	1.301
1.30	109,315	889.00	2.63 oc	---	---	---	1.46 s	1.11	---	---	---	---	2.571
1.40	121,507	889.10	4.79 oc	---	---	---	1.56 s	3.13	---	---	---	---	4.690
1.50	133,698	889.20	7.33 oc	---	---	---	1.57 s	5.75	---	---	---	---	7.320
1.60	145,890	889.30	9.91 oc	---	---	---	1.26 s	8.65 s	---	---	---	---	9.910
1.70	158,081	889.40	10.79 oc	---	---	---	1.11 s	9.68 s	---	---	---	---	10.79
1.80	170,273	889.50	11.91 oc	---	---	---	1.06 s	10.85 s	---	---	---	---	11.91
1.90	182,464	889.60	12.83 oc	---	---	---	1.03 s	11.81 s	---	---	---	---	12.83
2.00	194,656	889.70	13.64 oc	---	---	---	1.00 s	12.63 s	---	---	---	---	13.63
2.10	206,847	889.80	14.36 oc	---	---	---	0.98 s	13.38 s	---	---	---	---	14.35
2.20	219,039	889.90	15.02 oc	---	---	---	0.96 s	14.05 s	---	---	---	---	15.01
2.30	231,230	890.00	15.63 oc	---	---	---	0.95 s	14.68 s	---	---	---	---	15.63

...End



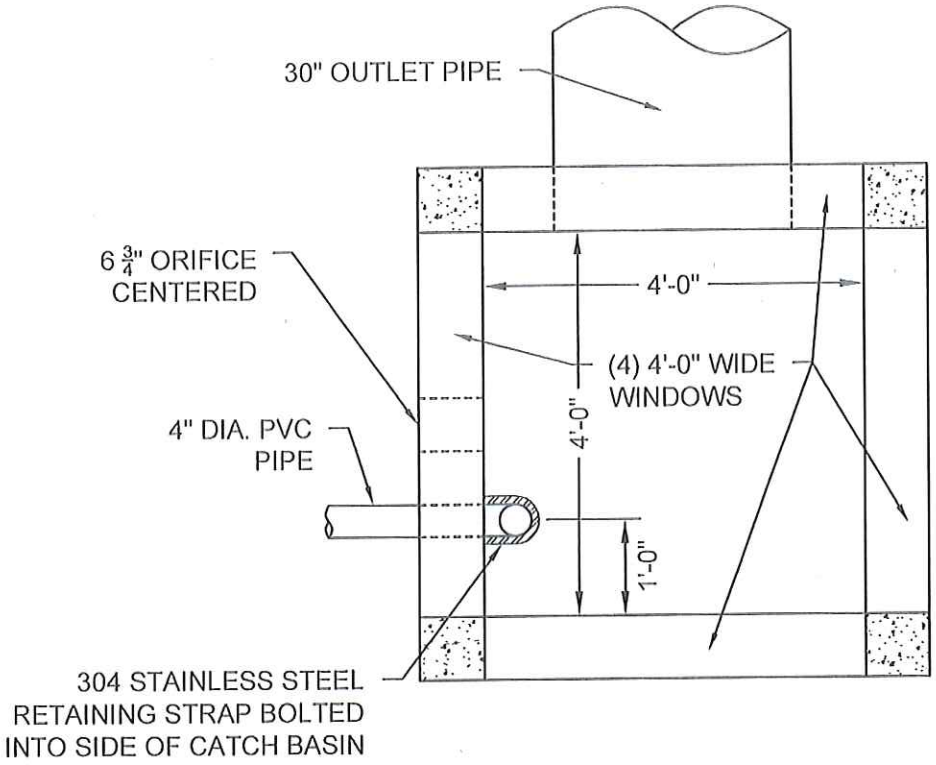
Drawing:	07M056-006 CD
Scale	07M056.006
Drawn by:	GJK
Checked By:	
Issue Date:	05-14-12

VOICE OF AMERICA PARK ATHLETIC COMPLEX

SECTION 12, TOWN 3, RANGE 2,
WEST CHESTER TOWNSHIP,
BUTLER COUNTY, OHIO

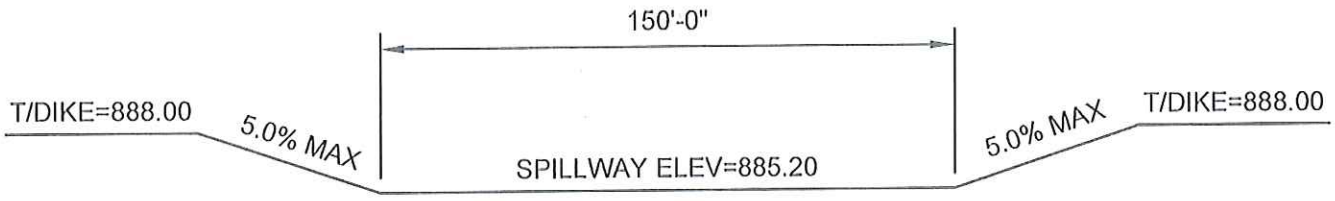
LAKE #3 OUTLET DETAILS (1 of 2)

bayer becker
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600



LAKE #3 OUTLET STRUCTURE TOP VIEW DETAIL

N.T.S.



LAKE #3 EMERGENCY SPILLWAY DETAIL

N.T.S.

Drawing:	07M056-006 CD
Scale	07M056.006
Drawn by:	GJK
Checked By:	
Issue Date:	05-14-12

VOICE OF AMERICA PARK ATHLETIC COMPLEX

SECTION 12, TOWN 3, RANGE 2, WEST CHESTER TOWNSHIP, BUTLER COUNTY, OHIO

LAKE #3 OUTLET DETAILS (2 of 2)

bayer becker

6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Pond No. 3 - Lake #3

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 881.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	881.50	00	0	0
0.24	881.74	01	0	0
0.25	881.75	150,658	504	504
0.50	882.00	154,399	38,127	38,631
1.50	883.00	164,258	159,287	197,919
2.50	884.00	174,071	169,124	367,042
3.50	885.00	183,937	178,963	546,006
4.50	886.00	207,023	195,347	741,353
4.80	886.30	210,198	62,576	803,929

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 30.00	2.00	6.75	0.00
Span (in)	= 30.00	2.00	6.75	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 881.00	881.50	881.75	0.00
Length (ft)	= 190.00	0.00	0.00	0.00
Slope (%)	= 0.30	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	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 16.00	0.00	0.00	0.00
Crest El. (ft)	= 885.90	0.00	0.00	0.00
Weir Coeff.	= 3.00	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	881.50	0.00	0.00	0.00	---	0.00	---	---	---	---	---	0.000
0.02	0	881.52	1.76 ic	0.00 ic	0.00	---	0.00	---	---	---	---	---	0.001
0.05	0	881.55	1.76 ic	0.00 ic	0.00	---	0.00	---	---	---	---	---	0.004
0.07	0	881.57	1.76 ic	0.01 ic	0.00	---	0.00	---	---	---	---	---	0.008
0.10	0	881.60	1.76 ic	0.01 ic	0.00	---	0.00	---	---	---	---	---	0.014
0.12	0	881.62	1.76 ic	0.02 ic	0.00	---	0.00	---	---	---	---	---	0.020
0.14	0	881.64	1.76 ic	0.03 ic	0.00	---	0.00	---	---	---	---	---	0.026
0.17	0	881.67	1.76 ic	0.03 ic	0.00	---	0.00	---	---	---	---	---	0.031
0.19	0	881.69	1.76 ic	0.03 ic	0.00	---	0.00	---	---	---	---	---	0.035
0.22	0	881.72	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.038
0.24	0	881.74	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.042
0.24	50	881.74	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.042
0.24	101	881.74	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.042
0.24	151	881.74	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.042
0.24	202	881.74	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.042
0.24	252	881.74	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.042
0.25	302	881.75	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.042
0.25	353	881.75	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.042
0.25	403	881.75	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.043
0.25	454	881.75	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.043
0.25	504	881.75	1.76 ic	0.04 ic	0.00	---	0.00	---	---	---	---	---	0.043
0.28	4,317	881.78	1.76 ic	0.05 ic	0.00 ic	---	0.00	---	---	---	---	---	0.048
0.30	8,129	881.80	1.76 ic	0.05 ic	0.01 ic	---	0.00	---	---	---	---	---	0.057
0.32	11,942	881.83	1.76 ic	0.05 ic	0.02 ic	---	0.00	---	---	---	---	---	0.070
0.35	15,755	881.85	1.76 ic	0.05 ic	0.03 ic	---	0.00	---	---	---	---	---	0.087
0.38	19,568	881.88	1.76 ic	0.06 ic	0.05 ic	---	0.00	---	---	---	---	---	0.107
0.40	23,380	881.90	1.76 ic	0.06 ic	0.07 ic	---	0.00	---	---	---	---	---	0.132
0.43	27,193	881.93	1.76 ic	0.06 ic	0.10 ic	---	0.00	---	---	---	---	---	0.157
0.45	31,006	881.95	1.76 ic	0.06 ic	0.12 ic	---	0.00	---	---	---	---	---	0.187
0.48	34,819	881.98	1.76 ic	0.07 ic	0.15 ic	---	0.00	---	---	---	---	---	0.219
0.50	38,631	882.00	1.76 ic	0.07 ic	0.18 ic	---	0.00	---	---	---	---	---	0.250
0.60	54,560	882.10	1.76 ic	0.08 ic	0.33 ic	---	0.00	---	---	---	---	---	0.404
0.70	70,489	882.20	1.76 ic	0.08 ic	0.49 ic	---	0.00	---	---	---	---	---	0.569
0.80	86,418	882.30	1.76 ic	0.09 ic	0.62 ic	---	0.00	---	---	---	---	---	0.713

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Lake #3

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.90	102,346	882.40	1.76 ic	0.09 ic	0.73 ic	---	0.00	---	---	---	---	---	0.821
1.00	118,275	882.50	1.76 ic	0.10 ic	0.82 ic	---	0.00	---	---	---	---	---	0.920
1.10	134,204	882.60	1.76 ic	0.11 ic	0.90 ic	---	0.00	---	---	---	---	---	1.008
1.20	150,132	882.70	1.76 ic	0.11 ic	0.98 ic	---	0.00	---	---	---	---	---	1.089
1.30	166,061	882.80	1.76 ic	0.12 ic	1.05 ic	---	0.00	---	---	---	---	---	1.165
1.40	181,990	882.90	1.76 ic	0.12 ic	1.11 ic	---	0.00	---	---	---	---	---	1.235
1.50	197,919	883.00	1.76 ic	0.13 ic	1.18 ic	---	0.00	---	---	---	---	---	1.303
1.60	214,831	883.10	1.76 ic	0.13 ic	1.24 ic	---	0.00	---	---	---	---	---	1.366
1.70	231,743	883.20	1.76 ic	0.13 ic	1.29 ic	---	0.00	---	---	---	---	---	1.427
1.80	248,656	883.30	1.76 ic	0.14 ic	1.35 ic	---	0.00	---	---	---	---	---	1.485
1.90	265,568	883.40	1.76 ic	0.14 ic	1.40 ic	---	0.00	---	---	---	---	---	1.541
2.00	282,480	883.50	1.76 ic	0.15 ic	1.45 ic	---	0.00	---	---	---	---	---	1.595
2.10	299,393	883.60	1.76 ic	0.15 ic	1.50 ic	---	0.00	---	---	---	---	---	1.648
2.20	316,305	883.70	1.76 ic	0.15 ic	1.55 ic	---	0.00	---	---	---	---	---	1.698
2.30	333,218	883.80	1.76 ic	0.16 ic	1.59 ic	---	0.00	---	---	---	---	---	1.747
2.40	350,130	883.90	1.86 ic	0.16 ic	1.64 ic	---	0.00	---	---	---	---	---	1.795
2.50	367,042	884.00	1.86 ic	0.16 ic	1.68 ic	---	0.00	---	---	---	---	---	1.842
2.60	384,939	884.10	1.89 ic	0.17 ic	1.72 ic	---	0.00	---	---	---	---	---	1.887
2.70	402,835	884.20	1.97 ic	0.17 ic	1.76 ic	---	0.00	---	---	---	---	---	1.932
2.80	420,731	884.30	1.98 ic	0.17 ic	1.80 ic	---	0.00	---	---	---	---	---	1.975
2.90	438,628	884.40	2.09 ic	0.18 ic	1.84 ic	---	0.00	---	---	---	---	---	2.018
3.00	456,524	884.50	2.09 ic	0.18 ic	1.88 ic	---	0.00	---	---	---	---	---	2.059
3.10	474,420	884.60	2.10 ic	0.18 ic	1.92 ic	---	0.00	---	---	---	---	---	2.100
3.20	492,317	884.70	2.21 ic	0.19 ic	1.95 ic	---	0.00	---	---	---	---	---	2.140
3.30	510,213	884.80	2.21 ic	0.19 ic	1.99 ic	---	0.00	---	---	---	---	---	2.179
3.40	528,110	884.90	2.22 ic	0.19 ic	2.03 ic	---	0.00	---	---	---	---	---	2.218
3.50	546,006	885.00	2.33 ic	0.19 ic	2.06 ic	---	0.00	---	---	---	---	---	2.256
3.60	565,541	885.10	2.33 ic	0.20 ic	2.10 ic	---	0.00	---	---	---	---	---	2.293
3.70	585,075	885.20	2.33 ic	0.20 ic	2.13 ic	---	0.00	---	---	---	---	---	2.329
3.80	604,610	885.30	2.37 ic	0.20 ic	2.16 ic	---	0.00	---	---	---	---	---	2.365
3.90	624,145	885.40	2.46 ic	0.20 ic	2.20 ic	---	0.00	---	---	---	---	---	2.401
4.00	643,679	885.50	2.46 ic	0.21 ic	2.23 ic	---	0.00	---	---	---	---	---	2.436
4.10	663,214	885.60	2.47 ic	0.21 ic	2.26 ic	---	0.00	---	---	---	---	---	2.470
4.20	682,749	885.70	2.59 ic	0.21 ic	2.29 ic	---	0.00	---	---	---	---	---	2.504
4.30	702,283	885.80	2.59 ic	0.21 ic	2.32 ic	---	0.00	---	---	---	---	---	2.537
4.40	721,818	885.90	2.59 ic	0.22 ic	2.35 ic	---	0.00	---	---	---	---	---	2.571
4.50	741,353	886.00	4.24 oc	0.22 ic	2.38 ic	---	1.52	---	---	---	---	---	4.116
4.53	747,610	886.03	4.91 oc	0.21 ic	2.39 ic	---	2.25	---	---	---	---	---	4.856
4.56	753,868	886.06	5.79 oc	0.21 ic	2.40 ic	---	3.07	---	---	---	---	---	5.688
4.59	760,125	886.09	6.72 oc	0.21 ic	2.40 ic	---	3.98	---	---	---	---	---	6.585
4.62	766,383	886.12	7.68 oc	0.21 ic	2.38 ic	---	4.96	---	---	---	---	---	7.542
4.65	772,641	886.15	8.65 oc	0.21 ic	2.36 ic	---	6.00	---	---	---	---	---	8.566
4.68	778,898	886.18	9.82 oc	0.20 ic	2.33 ic	---	7.12	---	---	---	---	---	9.652
4.71	785,156	886.21	10.95 oc	0.20 ic	2.30 ic	---	8.29	---	---	---	---	---	10.80
4.74	791,414	886.24	12.04 oc	0.20 ic	2.28 ic	---	9.52	---	---	---	---	---	12.00
4.77	797,671	886.27	13.37 oc	0.20 ic	2.24 ic	---	10.82	---	---	---	---	---	13.25
4.80	803,929	886.30	14.65 oc	0.19 ic	2.20 ic	---	12.14	---	---	---	---	---	14.53

...End

LAKE #4 OUTLET STRUCTURE DETAIL

N.T.S.

LAKE #4 EMERGENCY SPILLWAY DETAIL

N.T.S.

Drawing:	07M056-006 CD
Scale	07M056.006
Drawn by:	GJK
Checked By:	
Issue Date:	04-04-12

VOICE OF AMERICA PARK ATHLETIC COMPLEX

SECTION 12, TOWN 3, RANGE 2,
WEST CHESTER TOWNSHIP,
BUTLER COUNTY, OHIO

LAKE #4 OUTLET DETAILS

bayer becker
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Pond No. 4 - Lake #4

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 889.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	889.50	00	0	0
0.09	889.59	01	0	0
0.10	889.60	101,215	337	337
0.50	890.00	103,743	40,989	41,326
1.50	891.00	110,129	106,909	148,235
2.50	892.00	116,611	113,343	261,578
3.50	893.00	123,187	119,872	381,450
4.00	893.50	126,512	62,417	443,867

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	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)	= 0.25	5.75	0.00	0.00
Crest El. (ft)	= 889.50	891.25	0.00	0.00
Weir Coeff.	= 3.00	3.00	3.33	3.33
Weir Type	= Rect	Rect	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	889.50	---	---	---	---	0.00	0.00	---	---	---	---	0.000
0.01	0	889.51	---	---	---	---	0.00	0.00	---	---	---	---	0.001
0.02	0	889.52	---	---	---	---	0.00	0.00	---	---	---	---	0.002
0.03	0	889.53	---	---	---	---	0.00	0.00	---	---	---	---	0.003
0.04	0	889.54	---	---	---	---	0.01	0.00	---	---	---	---	0.005
0.05	0	889.55	---	---	---	---	0.01	0.00	---	---	---	---	0.007
0.05	0	889.55	---	---	---	---	0.01	0.00	---	---	---	---	0.009
0.06	0	889.56	---	---	---	---	0.01	0.00	---	---	---	---	0.012
0.07	0	889.57	---	---	---	---	0.01	0.00	---	---	---	---	0.015
0.08	0	889.58	---	---	---	---	0.02	0.00	---	---	---	---	0.017
0.09	0	889.59	---	---	---	---	0.02	0.00	---	---	---	---	0.020
0.09	34	889.59	---	---	---	---	0.02	0.00	---	---	---	---	0.021
0.09	67	889.59	---	---	---	---	0.02	0.00	---	---	---	---	0.021
0.09	101	889.59	---	---	---	---	0.02	0.00	---	---	---	---	0.021
0.09	135	889.59	---	---	---	---	0.02	0.00	---	---	---	---	0.022
0.10	168	889.59	---	---	---	---	0.02	0.00	---	---	---	---	0.022
0.10	202	889.60	---	---	---	---	0.02	0.00	---	---	---	---	0.022
0.10	236	889.60	---	---	---	---	0.02	0.00	---	---	---	---	0.023
0.10	269	889.60	---	---	---	---	0.02	0.00	---	---	---	---	0.023
0.10	303	889.60	---	---	---	---	0.02	0.00	---	---	---	---	0.023
0.10	337	889.60	---	---	---	---	0.02	0.00	---	---	---	---	0.024
0.14	4,436	889.64	---	---	---	---	0.04	0.00	---	---	---	---	0.039
0.18	8,535	889.68	---	---	---	---	0.06	0.00	---	---	---	---	0.057
0.22	12,633	889.72	---	---	---	---	0.08	0.00	---	---	---	---	0.077
0.26	16,732	889.76	---	---	---	---	0.10	0.00	---	---	---	---	0.099
0.30	20,831	889.80	---	---	---	---	0.12	0.00	---	---	---	---	0.123
0.34	24,930	889.84	---	---	---	---	0.15	0.00	---	---	---	---	0.149
0.38	29,029	889.88	---	---	---	---	0.18	0.00	---	---	---	---	0.176
0.42	33,128	889.92	---	---	---	---	0.20	0.00	---	---	---	---	0.204
0.46	37,227	889.96	---	---	---	---	0.23	0.00	---	---	---	---	0.234
0.50	41,326	890.00	---	---	---	---	0.27	0.00	---	---	---	---	0.265
0.60	52,017	890.10	---	---	---	---	0.35	0.00	---	---	---	---	0.349
0.70	62,708	890.20	---	---	---	---	0.44	0.00	---	---	---	---	0.439
0.80	73,398	890.30	---	---	---	---	0.54	0.00	---	---	---	---	0.537
0.90	84,089	890.40	---	---	---	---	0.64	0.00	---	---	---	---	0.640

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Lake #4

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
1.00	94,780	890.50	---	---	---	---	0.75	0.00	---	---	---	---	0.750
1.10	105,471	890.60	---	---	---	---	0.87	0.00	---	---	---	---	0.865
1.20	116,162	890.70	---	---	---	---	0.99	0.00	---	---	---	---	0.986
1.30	126,853	890.80	---	---	---	---	1.11	0.00	---	---	---	---	1.111
1.40	137,544	890.90	---	---	---	---	1.24	0.00	---	---	---	---	1.242
1.50	148,235	891.00	---	---	---	---	1.38	0.00	---	---	---	---	1.378
1.60	159,569	891.10	---	---	---	---	1.52	0.00	---	---	---	---	1.518
1.70	170,904	891.20	---	---	---	---	1.66	0.00	---	---	---	---	1.662
1.80	182,238	891.30	---	---	---	---	1.81	0.19	---	---	---	---	2.004
1.90	193,572	891.40	---	---	---	---	1.96	1.00	---	---	---	---	2.965
2.00	204,907	891.50	---	---	---	---	2.12	2.15	---	---	---	---	4.276
2.10	216,241	891.60	---	---	---	---	2.28	3.57	---	---	---	---	5.852
2.20	227,575	891.70	---	---	---	---	2.45	5.20	---	---	---	---	7.651
2.30	238,910	891.80	---	---	---	---	2.62	7.03	---	---	---	---	9.648
2.40	250,244	891.90	---	---	---	---	2.79	9.04	---	---	---	---	11.82
2.50	261,578	892.00	---	---	---	---	2.96	11.20	---	---	---	---	14.17
2.60	273,566	892.10	---	---	---	---	3.14	13.52	---	---	---	---	16.66
2.70	285,553	892.20	---	---	---	---	3.33	15.97	---	---	---	---	19.30
2.80	297,540	892.30	---	---	---	---	3.51	18.56	---	---	---	---	22.07
2.90	309,527	892.40	---	---	---	---	3.70	21.27	---	---	---	---	24.97
3.00	321,514	892.50	---	---	---	---	3.90	24.10	---	---	---	---	28.00
3.10	333,501	892.60	---	---	---	---	4.09	27.05	---	---	---	---	31.15
3.20	345,489	892.70	---	---	---	---	4.29	30.11	---	---	---	---	34.41
3.30	357,476	892.80	---	---	---	---	4.50	33.28	---	---	---	---	37.78
3.40	369,463	892.90	---	---	---	---	4.70	36.55	---	---	---	---	41.25
3.50	381,450	893.00	---	---	---	---	4.91	39.93	---	---	---	---	44.85
3.55	387,692	893.05	---	---	---	---	5.02	41.66	---	---	---	---	46.67
3.60	393,934	893.10	---	---	---	---	5.12	43.40	---	---	---	---	48.53
3.65	400,175	893.15	---	---	---	---	5.23	45.18	---	---	---	---	50.41
3.70	406,417	893.20	---	---	---	---	5.34	46.97	---	---	---	---	52.31
3.75	412,659	893.25	---	---	---	---	5.45	48.79	---	---	---	---	54.23
3.80	418,900	893.30	---	---	---	---	5.56	50.63	---	---	---	---	56.18
3.85	425,142	893.35	---	---	---	---	5.67	52.49	---	---	---	---	58.16
3.90	431,384	893.40	---	---	---	---	5.78	54.38	---	---	---	---	60.15
3.95	437,625	893.45	---	---	---	---	5.89	56.28	---	---	---	---	62.17
4.00	443,867	893.50	---	---	---	---	6.00	58.22	---	---	---	---	64.22

...End

LAKE #5 OUTLET STRUCTURE DETAIL

N.T.S.

LAKE #5 EMERGENCY SPILLWAY DETAIL

N.T.S.

Drawing:	07M056-006 CD
Scale	07M056.006
Drawn by:	GJK
Checked By:	
Issue Date:	04-04-12

VOICE OF AMERICA PARK ATHLETIC COMPLEX

SECTION 12, TOWN 3, RANGE 2,
WEST CHESTER TOWNSHIP,
BUTLER COUNTY, OHIO

LAKE #5 OUTLET DETAILS

bayer becker
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Pond No. 5 - Lake #5

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 887.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	887.50	00	0	0
0.07	887.57	01	0	0
0.08	887.58	322,667	1,078	1,078
0.50	888.00	326,812	136,370	137,449
1.50	889.00	338,236	332,474	469,923
2.50	890.00	351,020	344,574	814,497
3.50	891.00	356,916	353,929	1,168,426
4.50	892.00	367,142	361,980	1,530,406

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	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)	= 0.25	9.67	0.00	0.00
Crest El. (ft)	= 887.50	889.40	0.00	0.00
Weir Coeff.	= 3.00	3.00	3.33	3.33
Weir Type	= Rect	Rect	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	887.50	---	---	---	---	0.00	0.00	---	---	---	---	0.000
0.01	0	887.51	---	---	---	---	0.00	0.00	---	---	---	---	0.000
0.01	0	887.51	---	---	---	---	0.00	0.00	---	---	---	---	0.001
0.02	0	887.52	---	---	---	---	0.00	0.00	---	---	---	---	0.002
0.03	0	887.53	---	---	---	---	0.00	0.00	---	---	---	---	0.004
0.04	0	887.54	---	---	---	---	0.00	0.00	---	---	---	---	0.005
0.04	0	887.54	---	---	---	---	0.01	0.00	---	---	---	---	0.006
0.05	0	887.55	---	---	---	---	0.01	0.00	---	---	---	---	0.008
0.06	0	887.56	---	---	---	---	0.01	0.00	---	---	---	---	0.010
0.06	0	887.56	---	---	---	---	0.01	0.00	---	---	---	---	0.012
0.07	0	887.57	---	---	---	---	0.01	0.00	---	---	---	---	0.014
0.07	108	887.57	---	---	---	---	0.01	0.00	---	---	---	---	0.014
0.07	216	887.57	---	---	---	---	0.01	0.00	---	---	---	---	0.014
0.07	324	887.57	---	---	---	---	0.01	0.00	---	---	---	---	0.015
0.07	431	887.57	---	---	---	---	0.02	0.00	---	---	---	---	0.015
0.08	539	887.57	---	---	---	---	0.02	0.00	---	---	---	---	0.015
0.08	647	887.58	---	---	---	---	0.02	0.00	---	---	---	---	0.016
0.08	755	887.58	---	---	---	---	0.02	0.00	---	---	---	---	0.016
0.08	863	887.58	---	---	---	---	0.02	0.00	---	---	---	---	0.016
0.08	971	887.58	---	---	---	---	0.02	0.00	---	---	---	---	0.017
0.08	1,078	887.58	---	---	---	---	0.02	0.00	---	---	---	---	0.017
0.12	14,715	887.62	---	---	---	---	0.03	0.00	---	---	---	---	0.032
0.16	28,353	887.66	---	---	---	---	0.05	0.00	---	---	---	---	0.050
0.21	41,990	887.71	---	---	---	---	0.07	0.00	---	---	---	---	0.070
0.25	55,627	887.75	---	---	---	---	0.09	0.00	---	---	---	---	0.093
0.29	69,264	887.79	---	---	---	---	0.12	0.00	---	---	---	---	0.117
0.33	82,901	887.83	---	---	---	---	0.14	0.00	---	---	---	---	0.143
0.37	96,538	887.87	---	---	---	---	0.17	0.00	---	---	---	---	0.172
0.42	110,175	887.92	---	---	---	---	0.20	0.00	---	---	---	---	0.201
0.46	123,812	887.96	---	---	---	---	0.23	0.00	---	---	---	---	0.232
0.50	137,449	888.00	---	---	---	---	0.27	0.00	---	---	---	---	0.265
0.60	170,696	888.10	---	---	---	---	0.35	0.00	---	---	---	---	0.349
0.70	203,944	888.20	---	---	---	---	0.44	0.00	---	---	---	---	0.439
0.80	237,191	888.30	---	---	---	---	0.54	0.00	---	---	---	---	0.537
0.90	270,439	888.40	---	---	---	---	0.64	0.00	---	---	---	---	0.640

Continues on next page...

Lake #5

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
1.00	303,686	888.50	---	---	---	---	0.75	0.00	---	---	---	---	0.750
1.10	336,934	888.60	---	---	---	---	0.87	0.00	---	---	---	---	0.865
1.20	370,181	888.70	---	---	---	---	0.99	0.00	---	---	---	---	0.986
1.30	403,428	888.80	---	---	---	---	1.11	0.00	---	---	---	---	1.111
1.40	436,676	888.90	---	---	---	---	1.24	0.00	---	---	---	---	1.242
1.50	469,923	889.00	---	---	---	---	1.38	0.00	---	---	---	---	1.378
1.60	504,381	889.10	---	---	---	---	1.52	0.00	---	---	---	---	1.518
1.70	538,838	889.20	---	---	---	---	1.66	0.00	---	---	---	---	1.662
1.80	573,295	889.30	---	---	---	---	1.81	0.00	---	---	---	---	1.811
1.90	607,753	889.40	---	---	---	---	1.96	0.00	---	---	---	---	1.964
2.00	642,210	889.50	---	---	---	---	2.12	0.92	---	---	---	---	3.036
2.10	676,668	889.60	---	---	---	---	2.28	2.59	---	---	---	---	4.874
2.20	711,125	889.70	---	---	---	---	2.45	4.76	---	---	---	---	7.209
2.30	745,582	889.80	---	---	---	---	2.62	7.33	---	---	---	---	9.949
2.40	780,040	889.90	---	---	---	---	2.79	10.25	---	---	---	---	13.04
2.50	814,497	890.00	---	---	---	---	2.96	13.48	---	---	---	---	16.45
2.60	849,890	890.10	---	---	---	---	3.14	16.99	---	---	---	---	20.13
2.70	885,283	890.20	---	---	---	---	3.33	20.76	---	---	---	---	24.08
2.80	920,676	890.30	---	---	---	---	3.51	24.77	---	---	---	---	28.28
2.90	956,069	890.40	---	---	---	---	3.70	29.00	---	---	---	---	32.71
3.00	991,462	890.50	---	---	---	---	3.90	33.46	---	---	---	---	37.36
3.10	1,026,854	890.60	---	---	---	---	4.09	38.13	---	---	---	---	42.22
3.20	1,062,247	890.70	---	---	---	---	4.29	42.99	---	---	---	---	47.28
3.30	1,097,640	890.80	---	---	---	---	4.50	48.04	---	---	---	---	52.54
3.40	1,133,033	890.90	---	---	---	---	4.70	53.28	---	---	---	---	57.98
3.50	1,168,426	891.00	---	---	---	---	4.91	58.71	---	---	---	---	63.62
3.60	1,204,624	891.10	---	---	---	---	5.12	64.30	---	---	---	---	69.42
3.70	1,240,822	891.20	---	---	---	---	5.34	70.05	---	---	---	---	75.39
3.80	1,277,020	891.30	---	---	---	---	5.56	75.97	---	---	---	---	81.53
3.90	1,313,218	891.40	---	---	---	---	5.78	82.05	---	---	---	---	87.82
4.00	1,349,416	891.50	---	---	---	---	6.00	88.27	---	---	---	---	94.27
4.10	1,385,614	891.60	---	---	---	---	6.23	94.65	---	---	---	---	100.88
4.20	1,421,813	891.70	---	---	---	---	6.46	101.18	---	---	---	---	107.63
4.30	1,458,011	891.80	---	---	---	---	6.69	107.85	---	---	---	---	114.53
4.40	1,494,209	891.90	---	---	---	---	6.92	114.66	---	---	---	---	121.58
4.50	1,530,406	892.00	---	---	---	---	7.16	121.62	---	---	---	---	128.78

...End

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Water Quality Volume

Project:	Voice of America Park	Designed By:	GJK	Date:	4/16/12
Job No.:	07M056.006	Checked By:		Date:	
Basin ID:	WQ Basin (Lake #1)	Revised By:		Date:	

Required Water Quality Volume

$WQ_v = P\ C\ A/12$

Site Drainage Area (A) = 24.30 acres (To Basin)

Rainfall Depth (P) = 0.75 in.

Runoff Coefficient (C) = 0.2

WQ_v = 0.304 acre-ft.

Sediment Storage Allowance = -25 %

Sediment Storage Allowance = -0.08 Ac-ft

Total WQ_v = 0.228 Ac-ft

= 9,924 cu.ft.

Water Quality Release Rate

Q_{wqv} = Total WQ_v/RT

Required Retention Time (RT) = 24 hours

Provided Retention Time (PT) = 44.21 hours

Q_{wqv} = 0.115 cfs

Water Quality Outlet Orifice

Contour Areas

	Elevation ft	Area ft^2	Volume ft^3	Cum. Vol. ft^3	Elevation at V	Storage at Elev
Basin Inv. =	884.50	79,803	0.00	0.00		
Contour 1 =	885.00	88,336	42034.75	42034.75	884.62	9923.51
Contour 2 =	886.00	87,471	87903.50	129938.25		
Contour 3 =	887.00	92,703	90087.00	220025.25		

$Q = C\ L\ H^{3/2}$

C_d = 3.00

L = 6.00 In

H = 1.44 In

Q = 0.062 cfs

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Water Quality Volume

Project:	Voice of America Park	Designed By:	GJK	Date:	4/16/12
Job No.:	07M056.006	Checked By:		Date:	
Basin ID:	WQ Basin (Lake #2)	Revised By:		Date:	

Required Water Quality Volume

$WQ_v = P\ C\ A/12$

Site Drainage Area (A) = 16.70 acres (To Basin)

Rainfall Depth (P) = 0.75 in.

Runoff Coefficient (C) = 0.2

WQ_v = 0.209 acre-ft.

Sediment Storage Allowance = -25 %

Sediment Storage Allowance = -0.05 Ac-ft

Total WQ_v = 0.157 Ac-ft

= 6,820 cu.ft.

Water Quality Release Rate

$Q_{wqv} = \text{Total } WQ_v/RT$

Required Retention Time (RT) = 24 hours

Provided Retention Time (PT) = 79.88 hours

Q_{wqv} = 0.079 cfs

Water Quality Outlet Orifice

Contour Areas

	Elevation ft	Area ft^2	Volume ft^3	Cum. Vol. ft^3	Elevation at V	Storage at Elev
Basin Inv. =	887.70	54,989	0.00	0.00		
Contour 1 =	888.00	80,959	20392.20	20392.20	887.80	6819.86
Contour 2 =	889.00	110,891	95925.00	116317.20		

$Q = C\ L\ H^{3/2}$

C_d = 3.00

L = 3.00 In

H = 1.20 In

Q = 0.024 cfs

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Water Quality Volume

Project:	Voice of America Park	Designed By:	GJK	Date:	4/4/12
Job No.:	07M056.006	Checked By:		Date:	
Basin ID:	WQ Basin (Lake #3)	Revised By:	GJK	Date:	4/14/12

Required Water Quality Volume

$WQ_v = P\ C\ A/12$

Site Drainage Area (A) = 63.60 acres (To Basin)

Rainfall Depth (P) = 0.75 in.

Runoff Coefficient (C) = 0.2

WQ_v = 0.795 acre-ft.

Sediment Storage Allowance = -25 %

Sediment Storage Allowance = -0.20 Ac-ft

Total WQ_v = 0.596 Ac-ft

= 25,973 cu.ft.

Water Quality Release Rate

Q_{wqv} = Total WQ_v/RT

Required Retention Time (RT) = 24 hours

Provided Retention Time (PT) = 1371.37 hours

Q_{wqv} = 0.301 cfs

Water Quality Outlet Orifice

Contour Areas

	Elevation ft	Area ft^2	Volume ft^3	Cum. Vol. ft^3	Elevation at V	Storage at Elev
Basin Inv. =	881.50	148,454	0.00	0.00		
Contour 1 =	882.00	154,399	75713.25	75713.25	881.67	25972.65
Contour 2 =	883.00	164,258	159328.50	235041.75		
Contour 3 =	884.00	147,071	155664.50	390706.25		
Contour 4 =	885.00	183,937	165504.00	556210.25		
Contour 5 =	886.00	207,023	195480.00	751690.25		

$Q = N\ C_d\ A_o\ (2\ g\ \Delta h)^{1/2}$

C_d = 0.61

A_o = 0.02 $\pi\ D^2/4$ for circular orifices; = h * w for rectangular orifices

g = 32.20 ft/sec^2

Q = 0.005 cfs

Orifice h = 2.000 inch Orifice w = 0.00 inch (= 0 for circular orifice)

Number of orifices = N = 1

Δh_{avg} = (Elev at V - Basin Inv)/2 - 1/2 h = 0.00 ft

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Water Quality Volume

Project:	Voice of America Park	Designed By:	GJK	Date:	4/16/12
Job No.:	07M056.006	Checked By:		Date:	
Basin ID:	WQ Basin (Lake #4)	Revised By:		Date:	

Required Water Quality Volume

$WQ_v = P\ C\ A/12$

Site Drainage Area (A) = 22.00 acres (To Basin)

Rainfall Depth (P) = 0.75 in.

Runoff Coefficient (C) = 0.2

WQ_v = 0.275 acre-ft.

Sediment Storage Allowance = -25 %

Sediment Storage Allowance = -0.07 Ac-ft

Total WQ_v = 0.206 Ac-ft

= 8,984 cu.ft.

Water Quality Release Rate

Q_{wqv} = Total WQ_v/RT

Required Retention Time (RT) = 24 hours

Provided Retention Time (PT) = 138.32 hours

Q_{wqv} = 0.104 cfs

Water Quality Outlet Orifice

Contour Areas

	Elevation ft	Area ft^2	Volume ft^3	Cum. Vol. ft^3	Elevation at V	Storage at Elev
Basin Inv. =	889.50	100,586	0.00	0.00		
Contour 1 =	890.00	103,743	51082.25	51082.25	889.59	8984.25
Contour 2 =	891.00	110,129	106936.00	158018.25		
Contour 3 =	892.00	116,611	113370.00	271388.25		
Contour 4 =	893.00	123,187	119899.00	391287.25		

$Q = C\ L\ H^{3/2}$

C_d = 3.00

L = 3.00 In

H = 1.00 In

Q = 0.018 cfs

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Water Quality Volume

Project:	Voice of America Park	Designed By:	GJK	Date:	4/16/12
Job No.:	07M056.006	Checked By:		Date:	
Basin ID:	WQ Basin (Lake #5)	Revised By:		Date:	

Required Water Quality Volume

$WQ_v = P\ C\ A/12$

Site Drainage Area (A) = 67.30 acres (To Basin)

Rainfall Depth (P) = 0.75 in.

Runoff Coefficient (C) = 0.2

WQ_v = 0.841 acre-ft.

Sediment Storage Allowance = -25 %

Sediment Storage Allowance = -0.21 Ac-ft

Total WQ_v = 0.631 Ac-ft

= 27,484 cu.ft.

Water Quality Release Rate

Q_{wqv} = Total WQ_v/RT

Required Retention Time (RT) = 24 hours

Provided Retention Time (PT) = 317.35 hours

Q_{wqv} = 0.318 cfs

Water Quality Outlet Orifice

Contour Areas

	Elevation ft	Area ft^2	Volume ft^3	Cum. Vol. ft^3	Elevation at V	Storage at Elev
Basin Inv. =	887.50	321,879	0.00	0.00		
Contour 1 =	888.00	326,812	162172.75	162172.75	887.58	27483.64
Contour 2 =	889.00	338,236	332524.00	494696.75		
Contour 3 =	890.00	351,020	344628.00	839324.75		
Contour 4 =	891.00	356,916	353968.00	1193292.75		

$Q = C\ L\ H^{3/2}$

C_d = 3.00

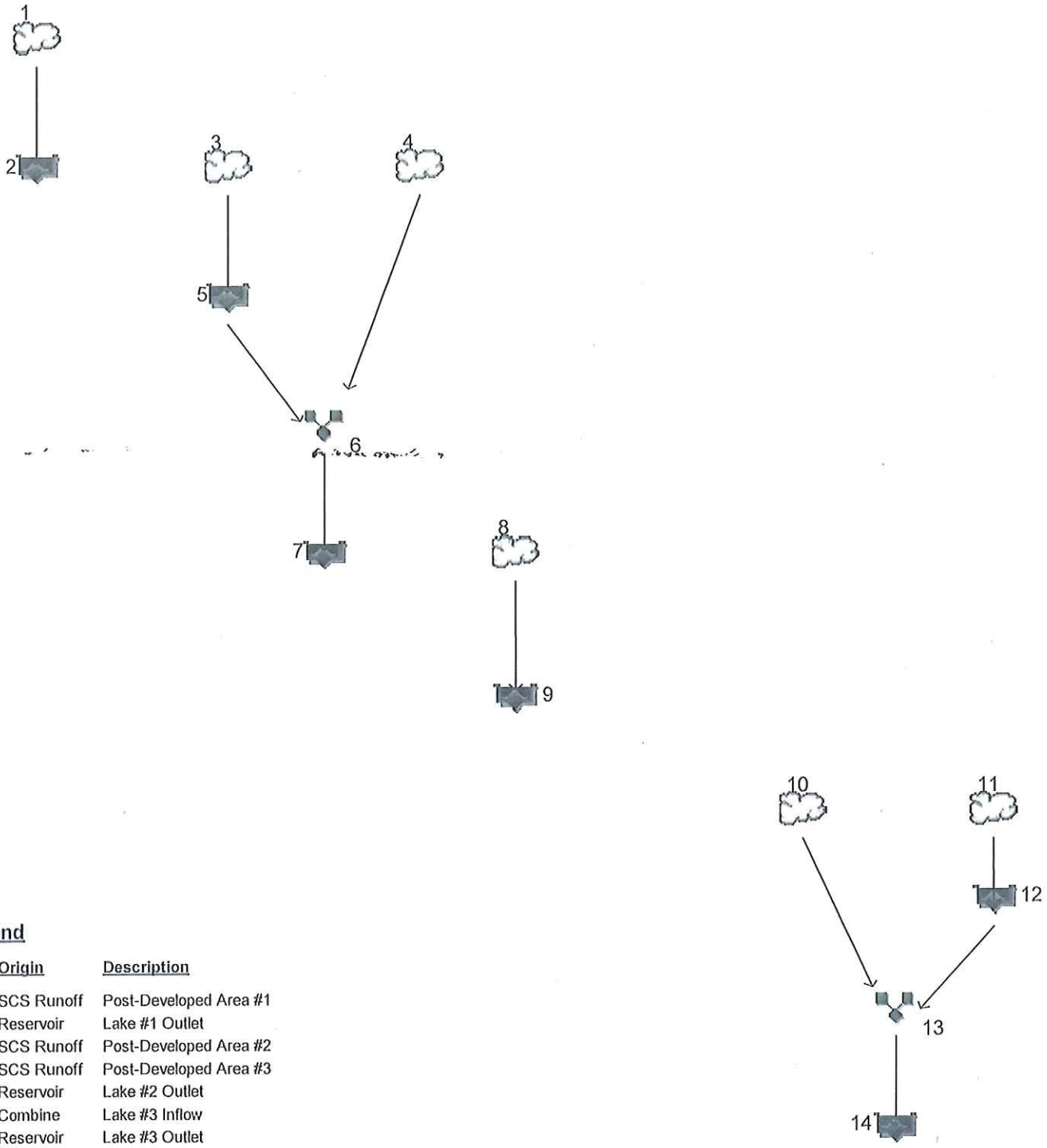
L = 4.00 In

H = 1.00 In

Q = 0.024 cfs

Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8



Legend

Hyd.	Origin	Description
1	SCS Runoff	Post-Developed Area #1
2	Reservoir	Lake #1 Outlet
3	SCS Runoff	Post-Developed Area #2
4	SCS Runoff	Post-Developed Area #3
5	Reservoir	Lake #2 Outlet
6	Combine	Lake #3 Inflow
7	Reservoir	Lake #3 Outlet
8	SCS Runoff	Post-Developed Area #4
9	Reservoir	Lake #4 Outflow
10	SCS Runoff	Post-Developed Area #5
11	SCS Runoff	Offsite Miami University VOA
12	Reservoir	Offsite MU Basin
13	Combine	Basin 5 Inflow
14	Reservoir	Basin 5 Outflow

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

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	------	16.03	25.44	-------	37.65	47.96	63.32	77.13	93.46	Post-Developed Area #1
2	Reservoir	1	0.799	1.238	-------	1.898	2.520	3.483	4.406	5.578	Lake #1 Outlet
3	SCS Runoff	------	4.614	9.775	-------	17.22	23.78	33.83	43.17	54.70	Post-Developed Area #2
4	SCS Runoff	------	63.44	93.52	-------	131.67	163.00	208.47	248.74	295.85	Post-Developed Area #3
5	Reservoir	3	0.172	0.279	-------	0.448	0.619	0.908	1.206	2.464	Lake #2 Outlet
6	Combine	4, 5	63.48	93.59	-------	131.78	163.17	208.71	249.07	296.32	Lake #3 Inflow
7	Reservoir	6	1.153	1.474	-------	1.808	2.041	2.339	2.568	8.211	Lake #3 Outlet
8	SCS Runoff	------	16.74	26.16	-------	38.45	48.83	64.13	77.85	94.05	Post-Developed Area #4
9	Reservoir	8	0.293	0.470	-------	0.729	0.975	1.378	1.852	3.606	Lake #4 Outflow
10	SCS Runoff	------	32.99	56.13	-------	86.85	113.03	152.35	188.38	231.37	Post-Developed Area #5
11	SCS Runoff	------	20.89	27.84	-------	36.16	42.76	52.13	60.27	69.69	Offsite Miami University VOA
12	Reservoir	11	4.183	4.903	-------	9.299	15.66	20.40	22.70	24.97	Offsite MU Basin
13	Combine	10, 12	37.00	60.81	-------	93.90	127.27	172.21	210.21	255.41	Basin 5 Inflow
14	Reservoir	13	0.355	0.605	-------	0.985	1.348	1.925	4.553	9.071	Basin 5 Outflow

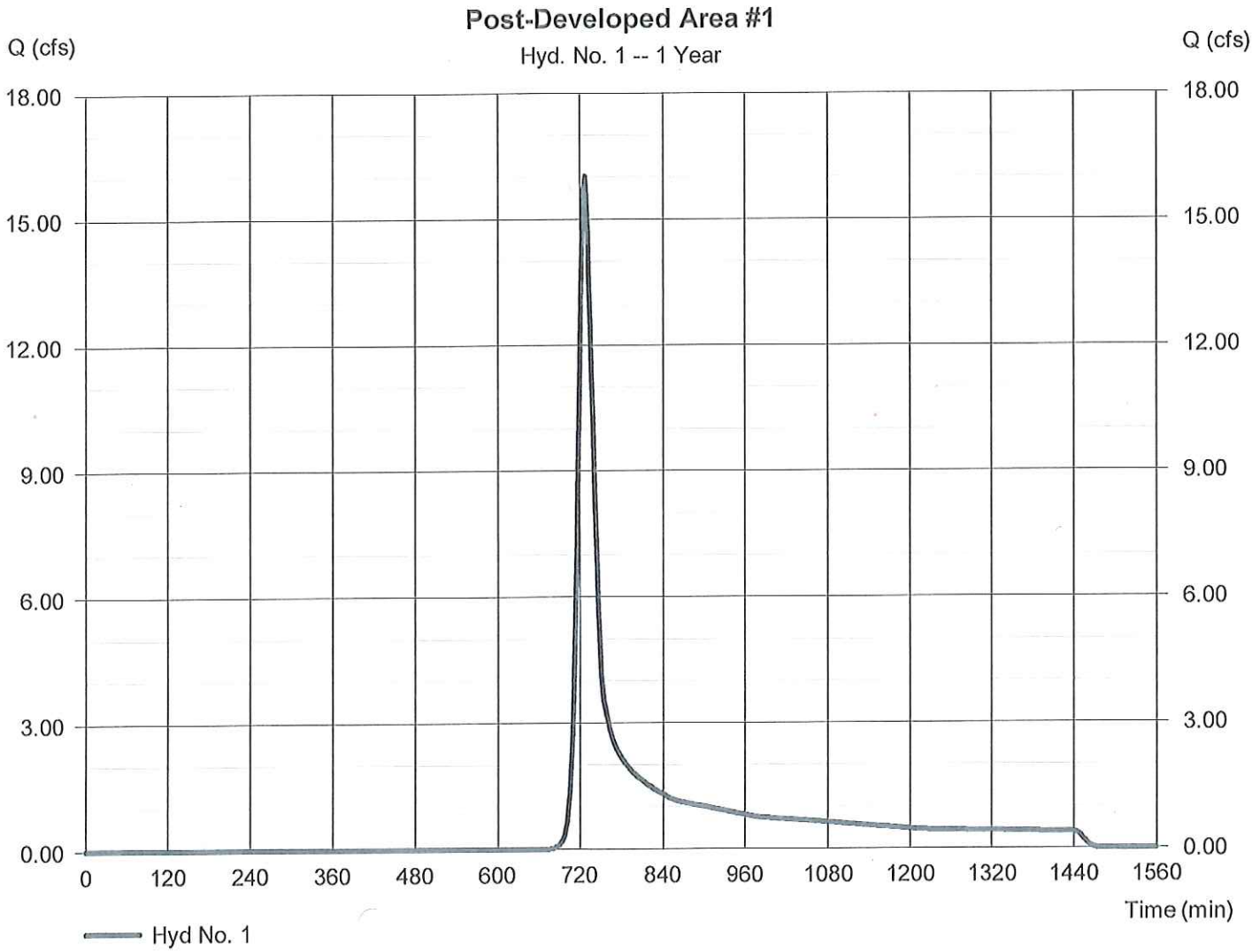
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 1

Post-Developed Area #1

Hydrograph type	= SCS Runoff	Peak discharge	= 16.03 cfs
Storm frequency	= 1 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 60,245 cuft
Drainage area	= 24.300 ac	Curve number	= 77.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.50 min
Total precip.	= 2.33 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

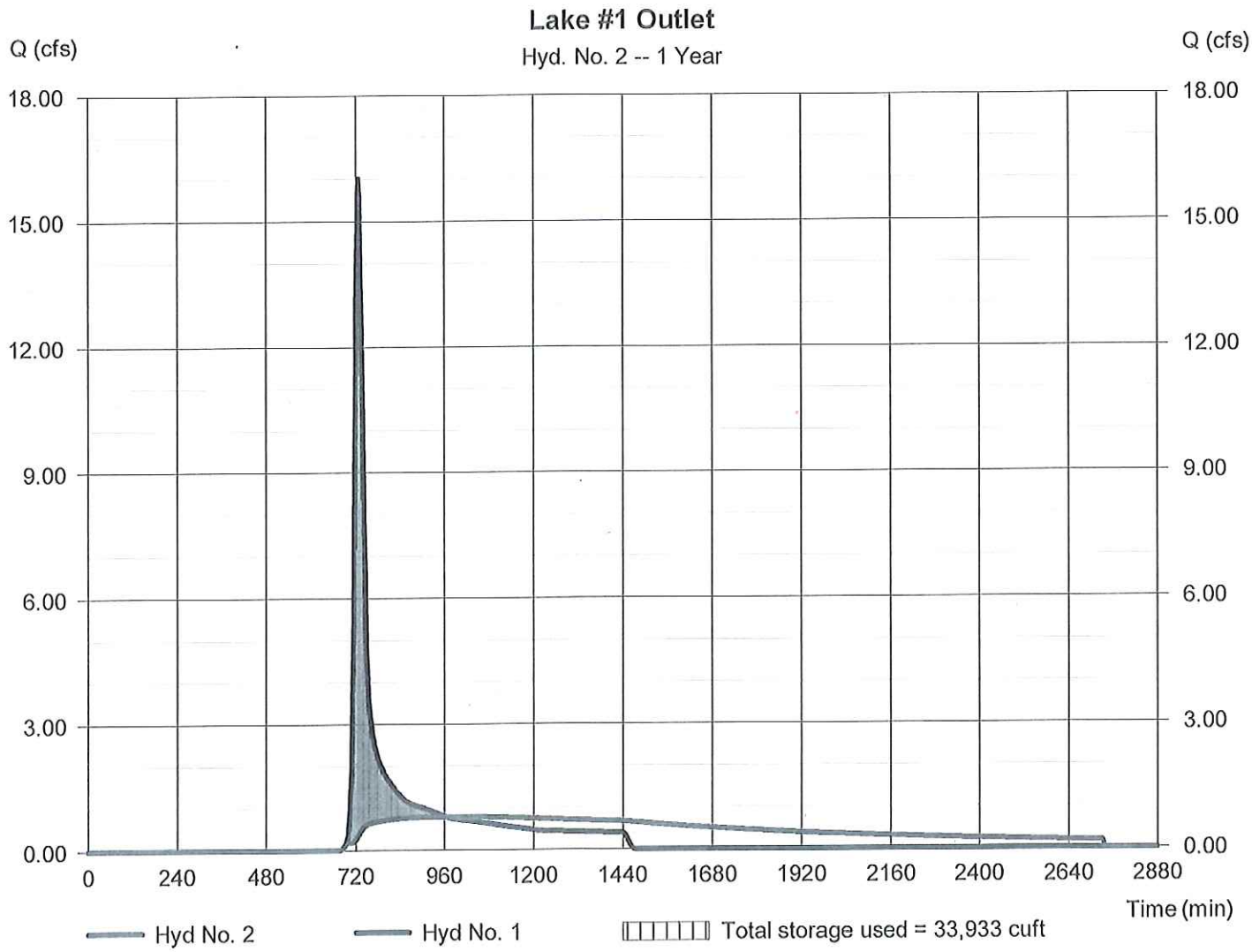
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 2

Lake #1 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 0.799 cfs
Storm frequency	= 1 yrs	Time to peak	= 964 min
Time interval	= 2 min	Hyd. volume	= 60,252 cuft
Inflow hyd. No.	= 1 - Post-Developed Area #1	Max. Elevation	= 885.16 ft
Reservoir name	= Lake #1	Max. Storage	= 33,933 cuft

Storage Indication method used.



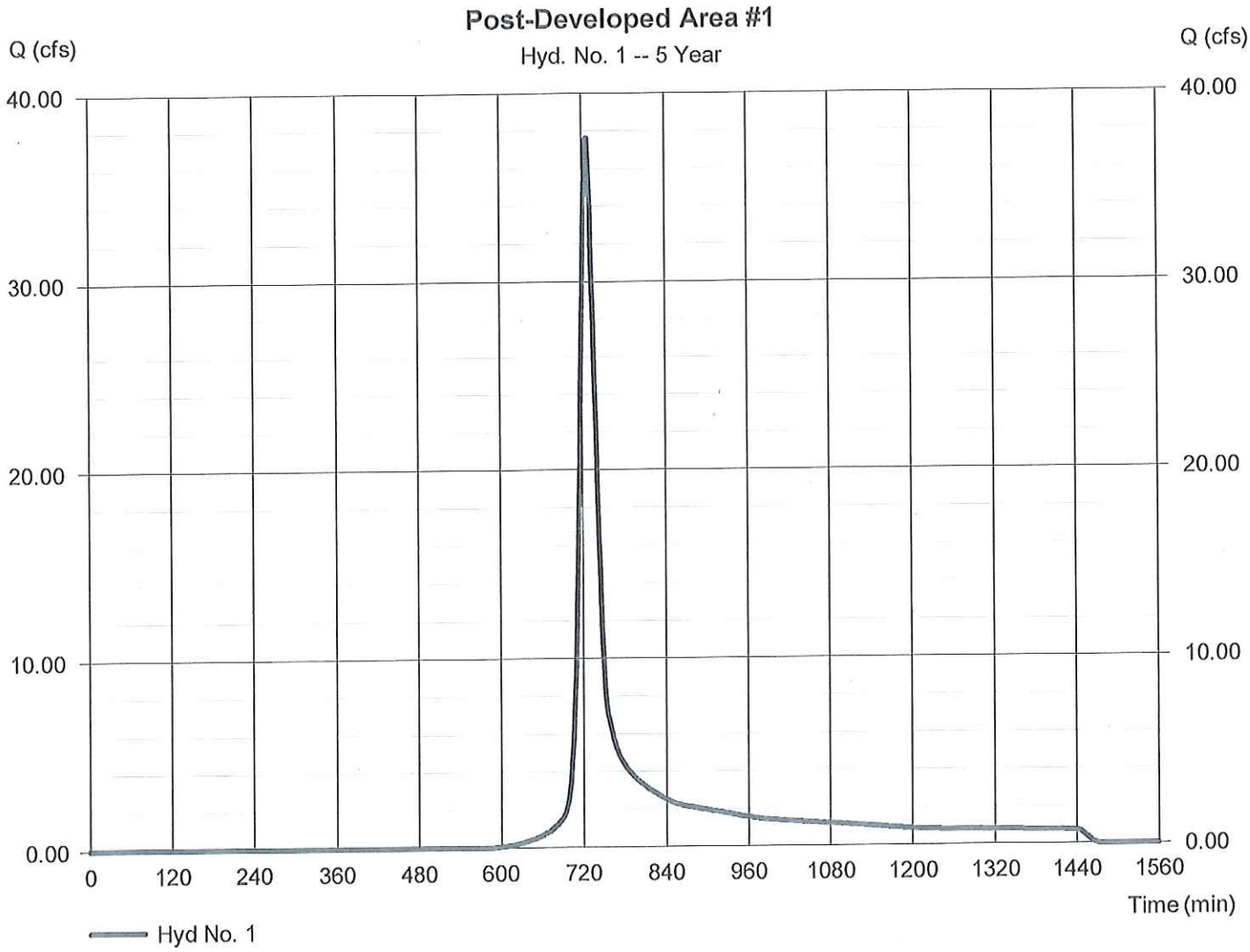
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 1

Post-Developed Area #1

Hydrograph type	= SCS Runoff	Peak discharge	= 37.65 cfs
Storm frequency	= 5 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 132,548 cuft
Drainage area	= 24.300 ac	Curve number	= 77.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.50 min
Total precip.	= 3.49 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

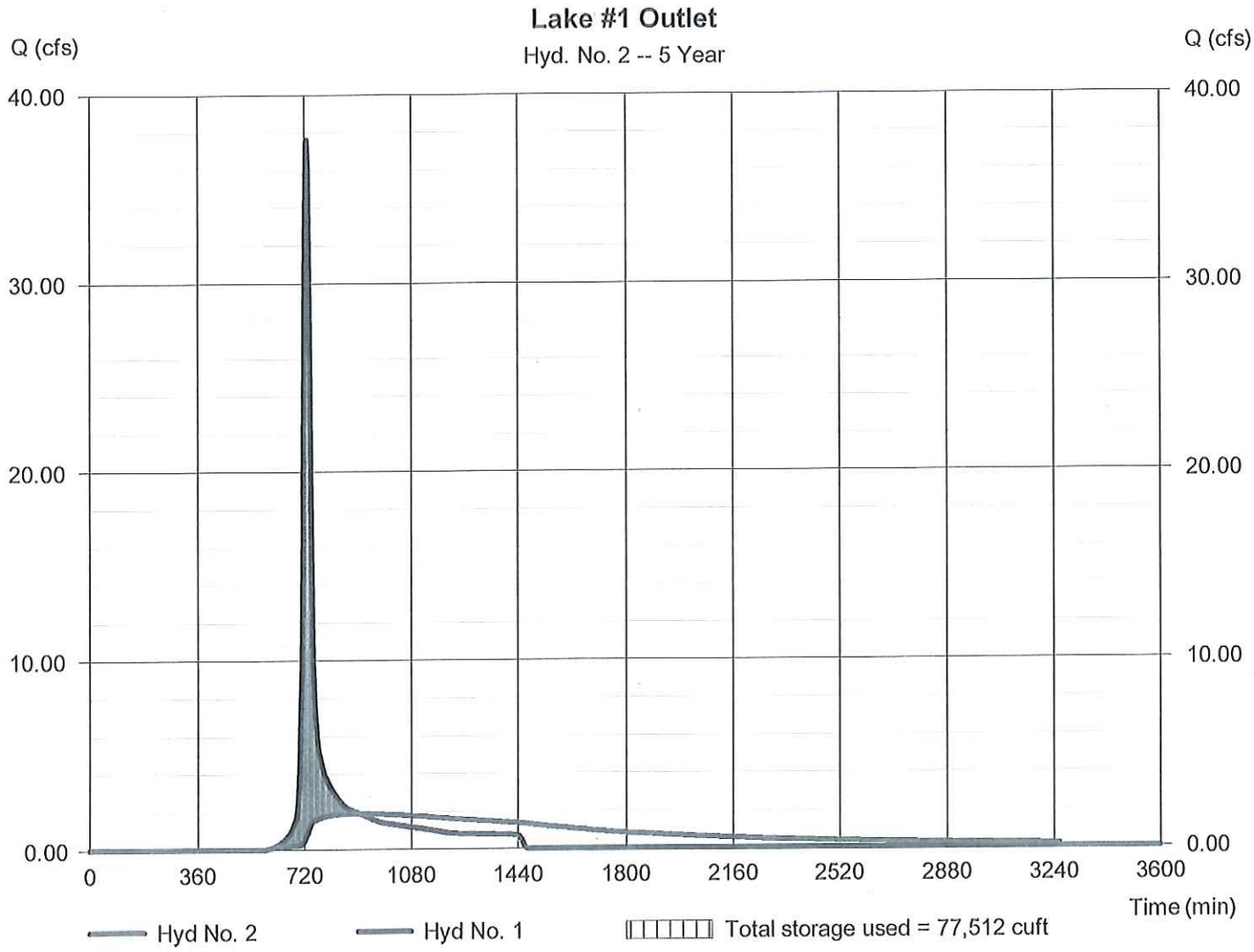
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 2

Lake #1 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 1.898 cfs
Storm frequency	= 5 yrs	Time to peak	= 908 min
Time interval	= 2 min	Hyd. volume	= 132,557 cuft
Inflow hyd. No.	= 1 - Post-Developed Area #1	Max. Elevation	= 885.67 ft
Reservoir name	= Lake #1	Max. Storage	= 77,512 cuft

Storage Indication method used.



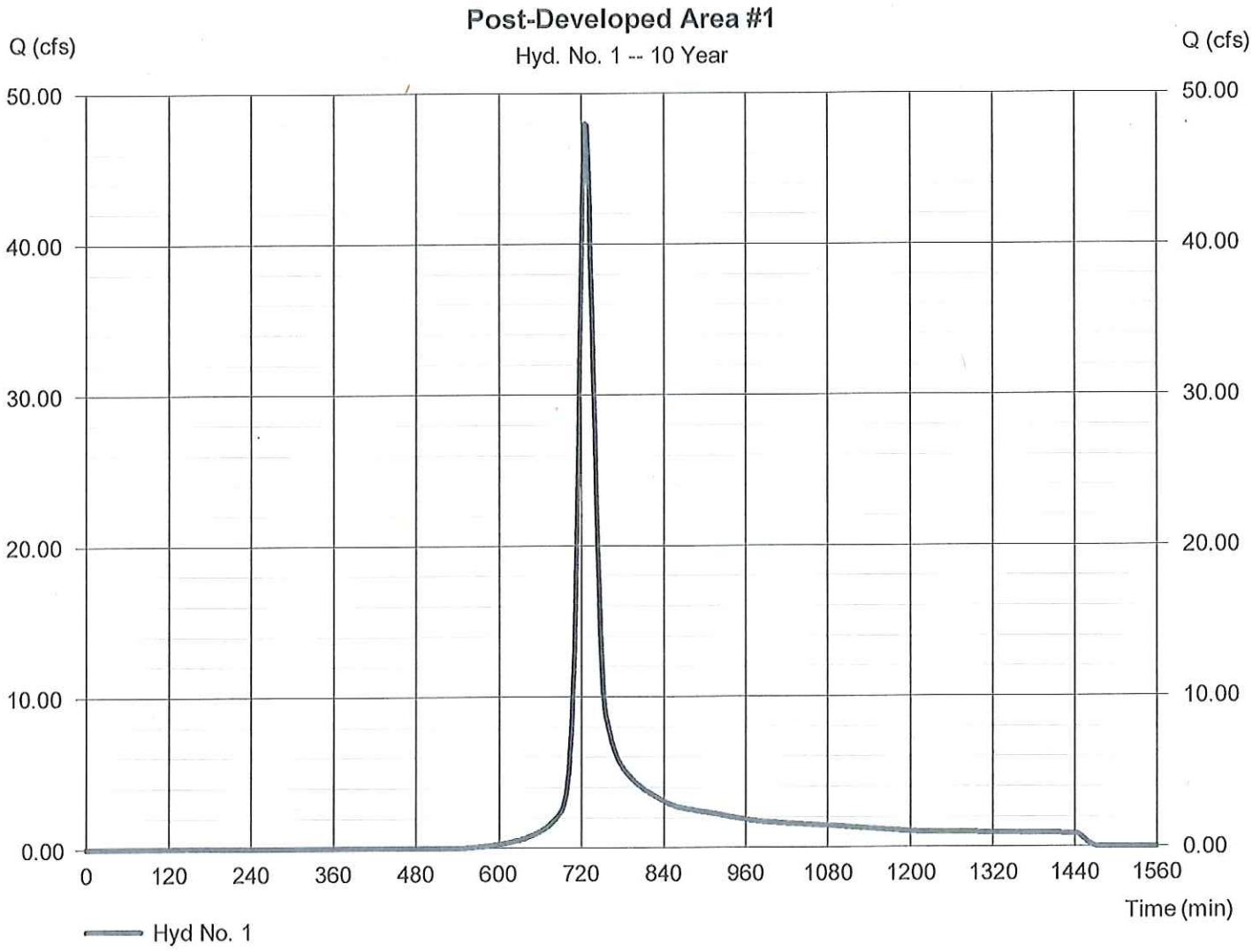
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 1

Post-Developed Area #1

Hydrograph type	= SCS Runoff	Peak discharge	= 47.96 cfs
Storm frequency	= 10 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 167,346 cuft
Drainage area	= 24.300 ac	Curve number	= 77.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.50 min
Total precip.	= 3.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

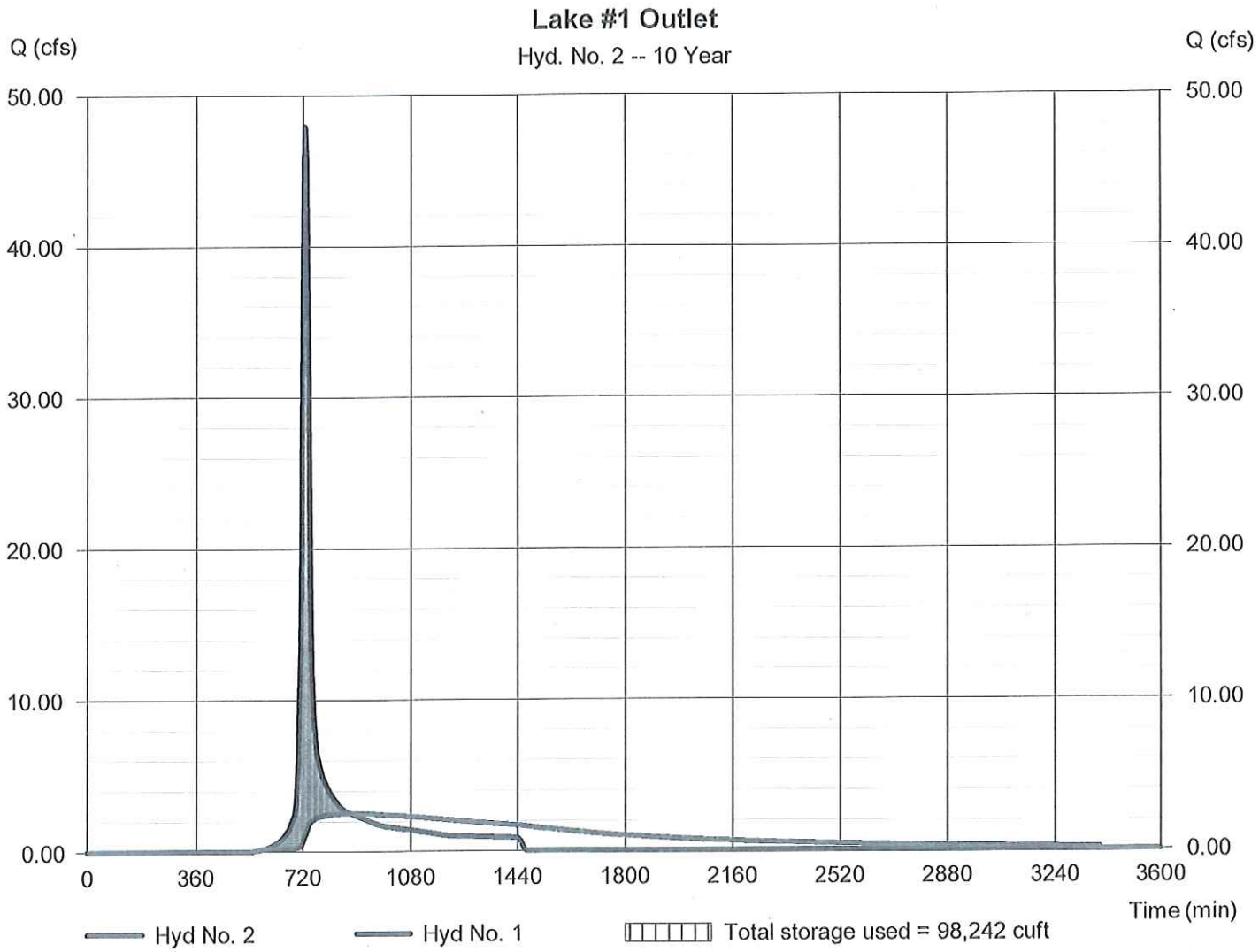
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 2

Lake #1 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 2.520 cfs
Storm frequency	= 10 yrs	Time to peak	= 880 min
Time interval	= 2 min	Hyd. volume	= 167,354 cuft
Inflow hyd. No.	= 1 - Post-Developed Area #1	Max. Elevation	= 885.91 ft
Reservoir name	= Lake #1	Max. Storage	= 98,242 cuft

Storage Indication method used.



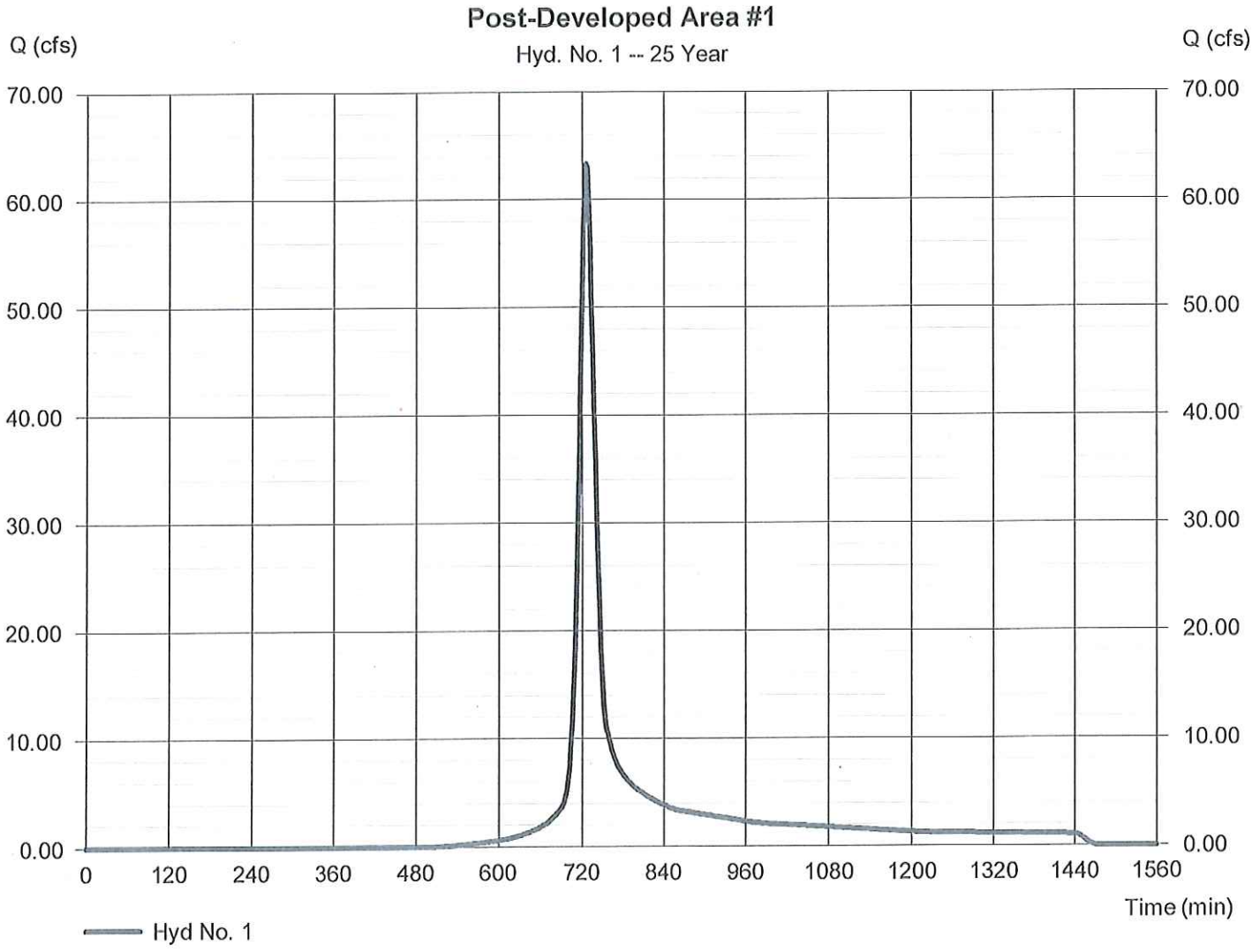
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 1

Post-Developed Area #1

Hydrograph type	= SCS Runoff	Peak discharge	= 63.32 cfs
Storm frequency	= 25 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 219,243 cuft
Drainage area	= 24.300 ac	Curve number	= 77.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.50 min
Total precip.	= 4.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

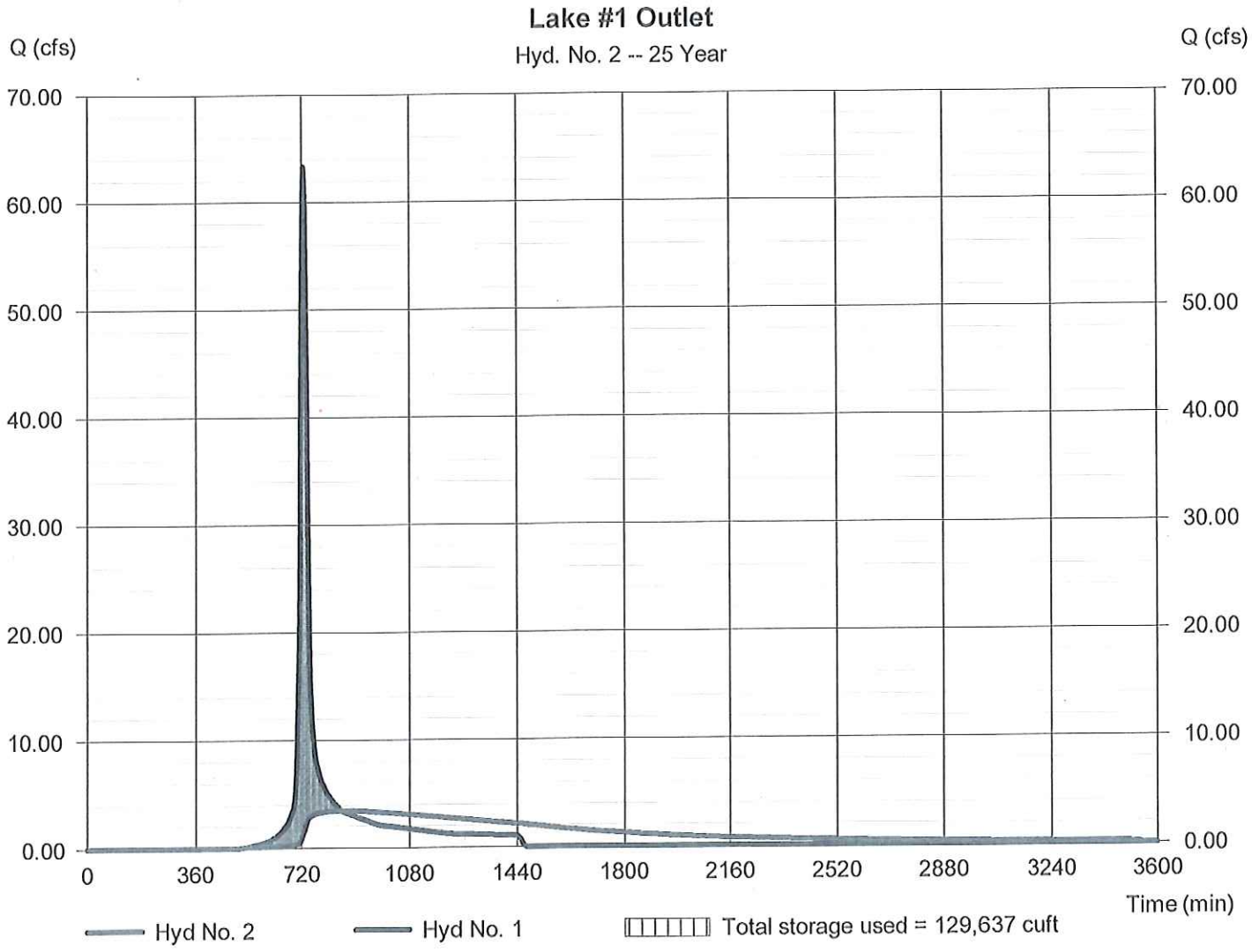
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 2

Lake #1 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 3.483 cfs
Storm frequency	= 25 yrs	Time to peak	= 856 min
Time interval	= 2 min	Hyd. volume	= 219,246 cuft
Inflow hyd. No.	= 1 - Post-Developed Area #1	Max. Elevation	= 886.27 ft
Reservoir name	= Lake #1	Max. Storage	= 129,637 cuft

Storage Indication method used.



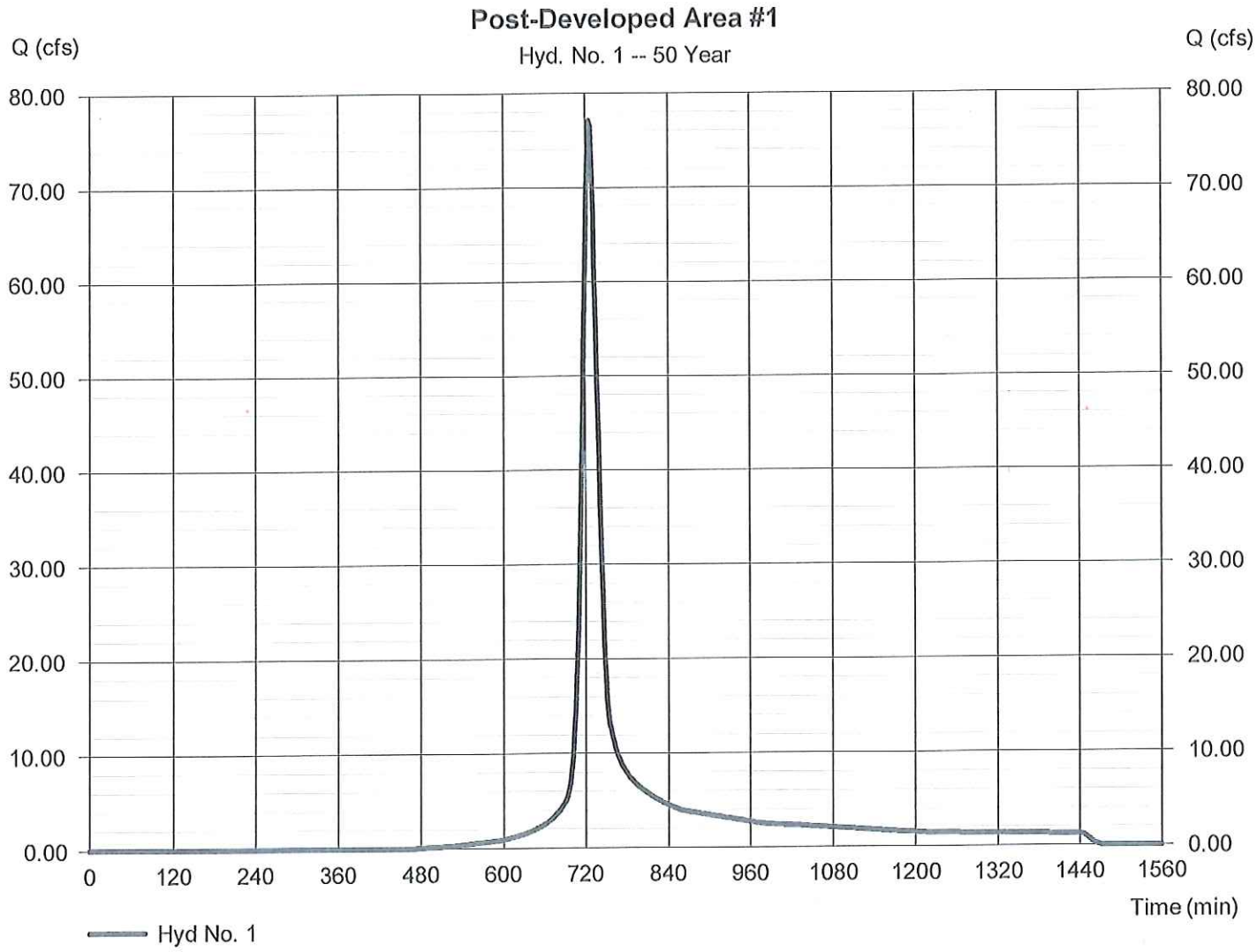
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 1

Post-Developed Area #1

Hydrograph type	= SCS Runoff	Peak discharge	= 77.13 cfs
Storm frequency	= 50 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 266,372 cuft
Drainage area	= 24.300 ac	Curve number	= 77.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.50 min
Total precip.	= 5.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

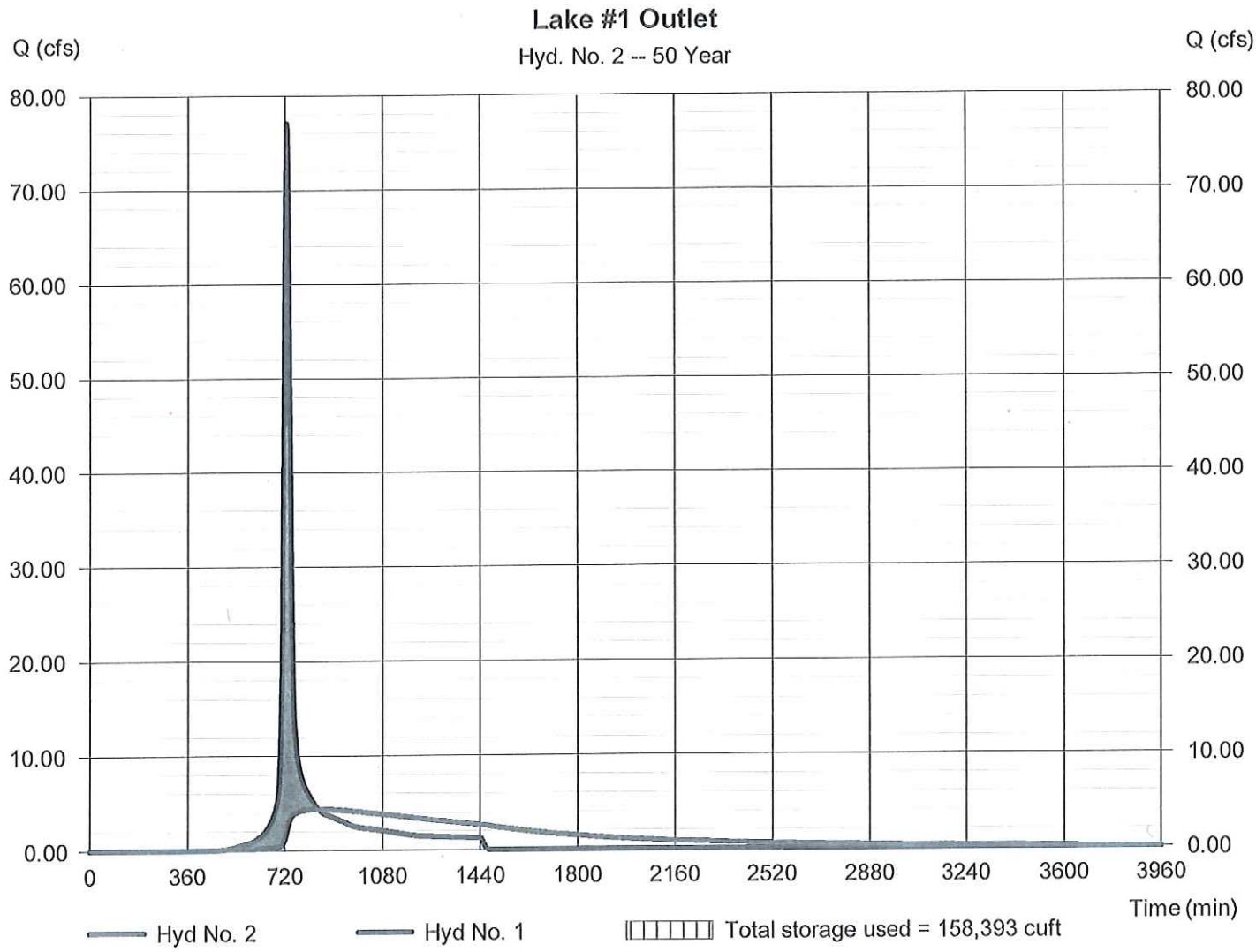
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 2

Lake #1 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 4.406 cfs
Storm frequency	= 50 yrs	Time to peak	= 844 min
Time interval	= 2 min	Hyd. volume	= 266,379 cuft
Inflow hyd. No.	= 1 - Post-Developed Area #1	Max. Elevation	= 886.59 ft
Reservoir name	= Lake #1	Max. Storage	= 158,393 cuft

Storage Indication method used.



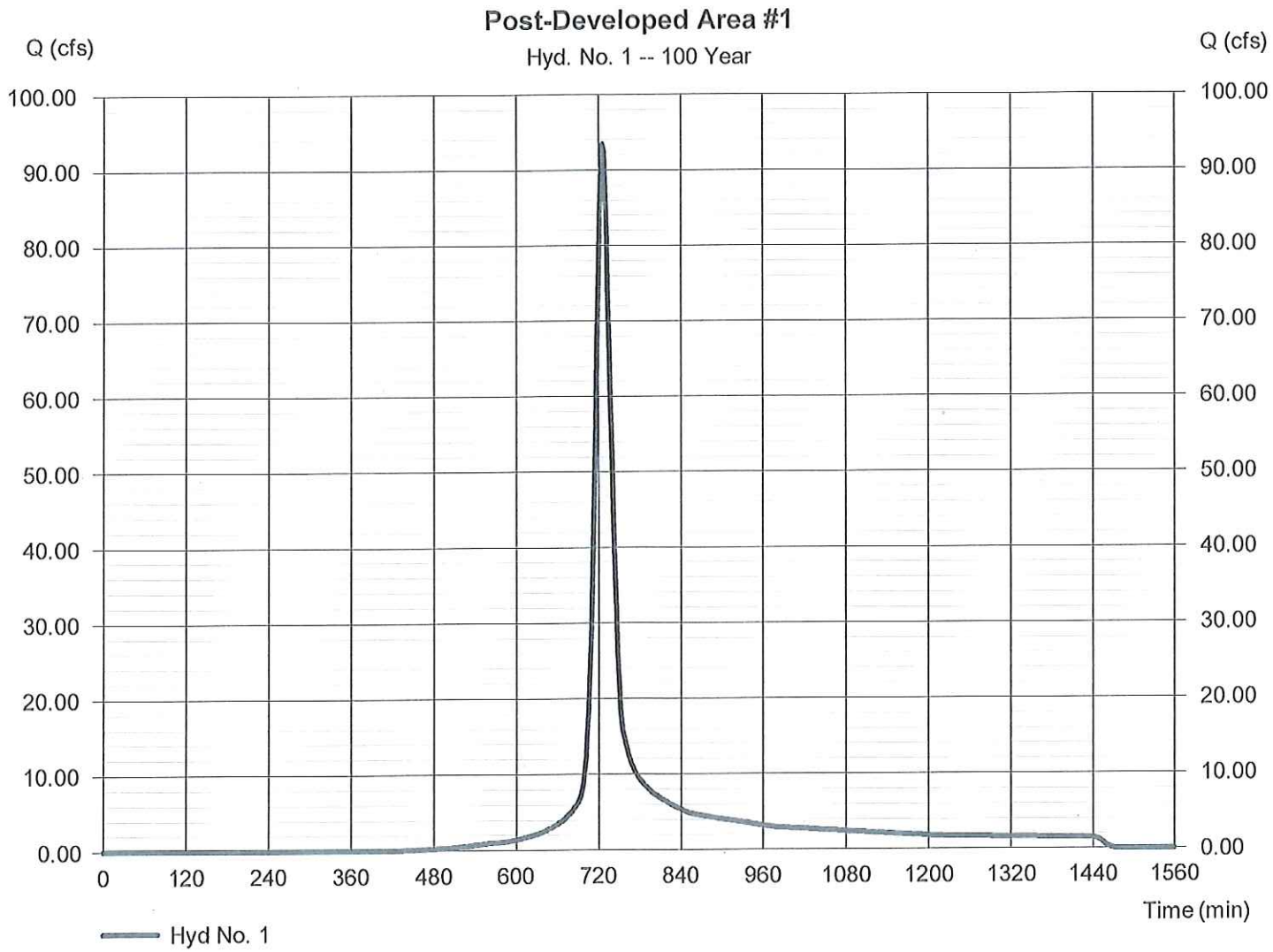
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 1

Post-Developed Area #1

Hydrograph type	= SCS Runoff	Peak discharge	= 93.46 cfs
Storm frequency	= 100 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 322,698 cuft
Drainage area	= 24.300 ac	Curve number	= 77.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.50 min
Total precip.	= 6.04 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

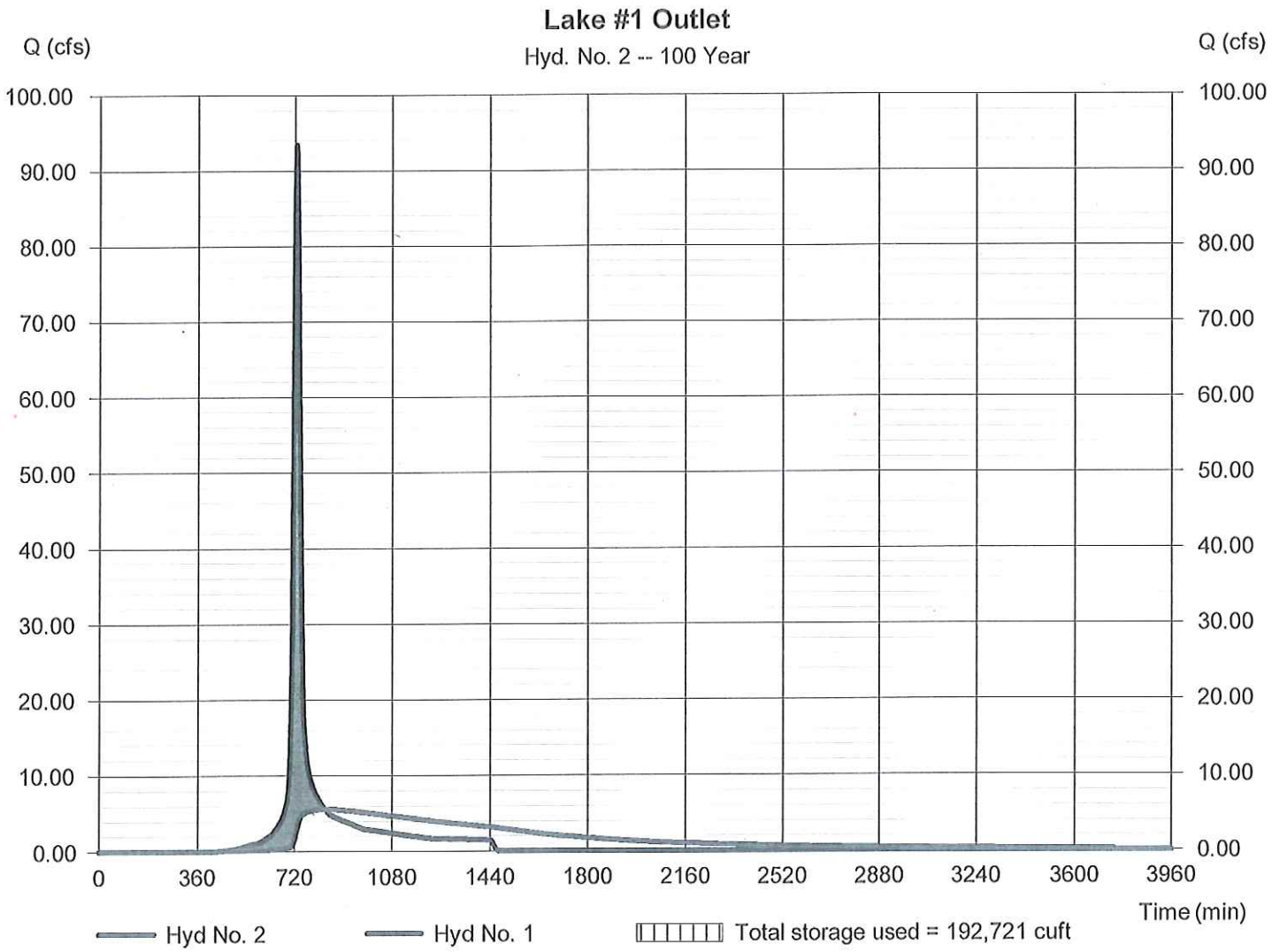
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 2

Lake #1 Outlet

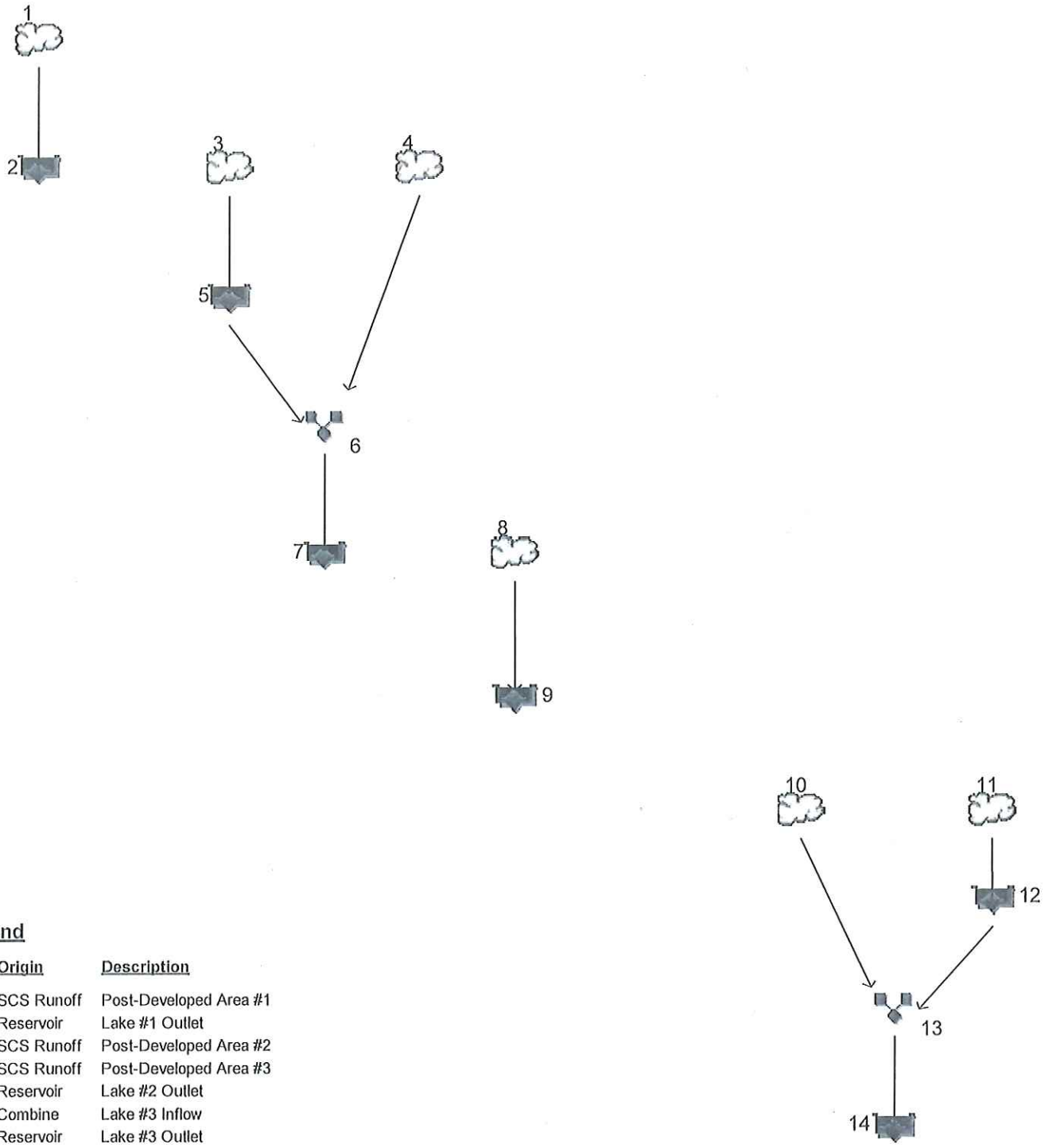
Hydrograph type	= Reservoir	Peak discharge	= 5.578 cfs
Storm frequency	= 100 yrs	Time to peak	= 836 min
Time interval	= 2 min	Hyd. volume	= 322,702 cuft
Inflow hyd. No.	= 1 - Post-Developed Area #1	Max. Elevation	= 886.97 ft
Reservoir name	= Lake #1	Max. Storage	= 192,721 cuft

Storage Indication method used.



Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8



Legend

Hyd.	Origin	Description
1	SCS Runoff	Post-Developed Area #1
2	Reservoir	Lake #1 Outlet
3	SCS Runoff	Post-Developed Area #2
4	SCS Runoff	Post-Developed Area #3
5	Reservoir	Lake #2 Outlet
6	Combine	Lake #3 Inflow
7	Reservoir	Lake #3 Outlet
8	SCS Runoff	Post-Developed Area #4
9	Reservoir	Lake #4 Outflow
10	SCS Runoff	Post-Developed Area #5
11	SCS Runoff	Offsite Miami University VOA
12	Reservoir	Offsite MU Basin
13	Combine	Basin 5 Inflow
14	Reservoir	Basin 5 Outflow

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

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	------	16.03	25.44	-------	37.65	47.96	63.32	77.13	93.46	Post-Developed Area #1
2	Reservoir	1	0.799	1.238	-------	1.898	2.520	3.483	4.406	5.578	Lake #1 Outlet
3	SCS Runoff	------	4.614	9.775	-------	17.22	23.78	33.83	43.17	54.70	Post-Developed Area #2
4	SCS Runoff	------	63.44	93.52	-------	131.67	163.00	208.47	248.74	295.85	Post-Developed Area #3
5	Reservoir	3	0.172	0.279	-------	0.448	0.619	0.908	1.206	2.464	Lake #2 Outlet
6	Combine	4, 5	63.48	93.59	-------	131.78	163.17	208.71	249.07	296.32	Lake #3 Inflow
7	Reservoir	6	1.153	1.474	-------	1.808	2.041	2.339	2.568	8.211	Lake #3 Outlet
8	SCS Runoff	------	16.74	26.16	-------	38.45	48.83	64.13	77.85	94.05	Post-Developed Area #4
9	Reservoir	8	0.293	0.470	-------	0.729	0.975	1.378	1.852	3.606	Lake #4 Outflow
10	SCS Runoff	------	32.99	56.13	-------	86.85	113.03	152.35	188.38	231.37	Post-Developed Area #5
11	SCS Runoff	------	20.89	27.84	-------	36.16	42.76	52.13	60.27	69.69	Offsite Miami University VOA
12	Reservoir	11	4.183	4.903	-------	9.299	15.66	20.40	22.70	24.97	Offsite MU Basin
13	Combine	10, 12	37.00	60.81	-------	93.90	127.27	172.21	210.21	255.41	Basin 5 Inflow
14	Reservoir	13	0.355	0.605	-------	0.985	1.348	1.925	4.553	9.071	Basin 5 Outflow

Proj. file: Post-Developed 120511.gpw

Tuesday, May 15, 2012

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 3

Post-Developed Area #2

Hydrograph type	= SCS Runoff	Peak discharge	= 4.614 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 21,332 cuft
Drainage area	= 17.600 ac	Curve number	= 68.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.00 min
Total precip.	= 2.33 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

