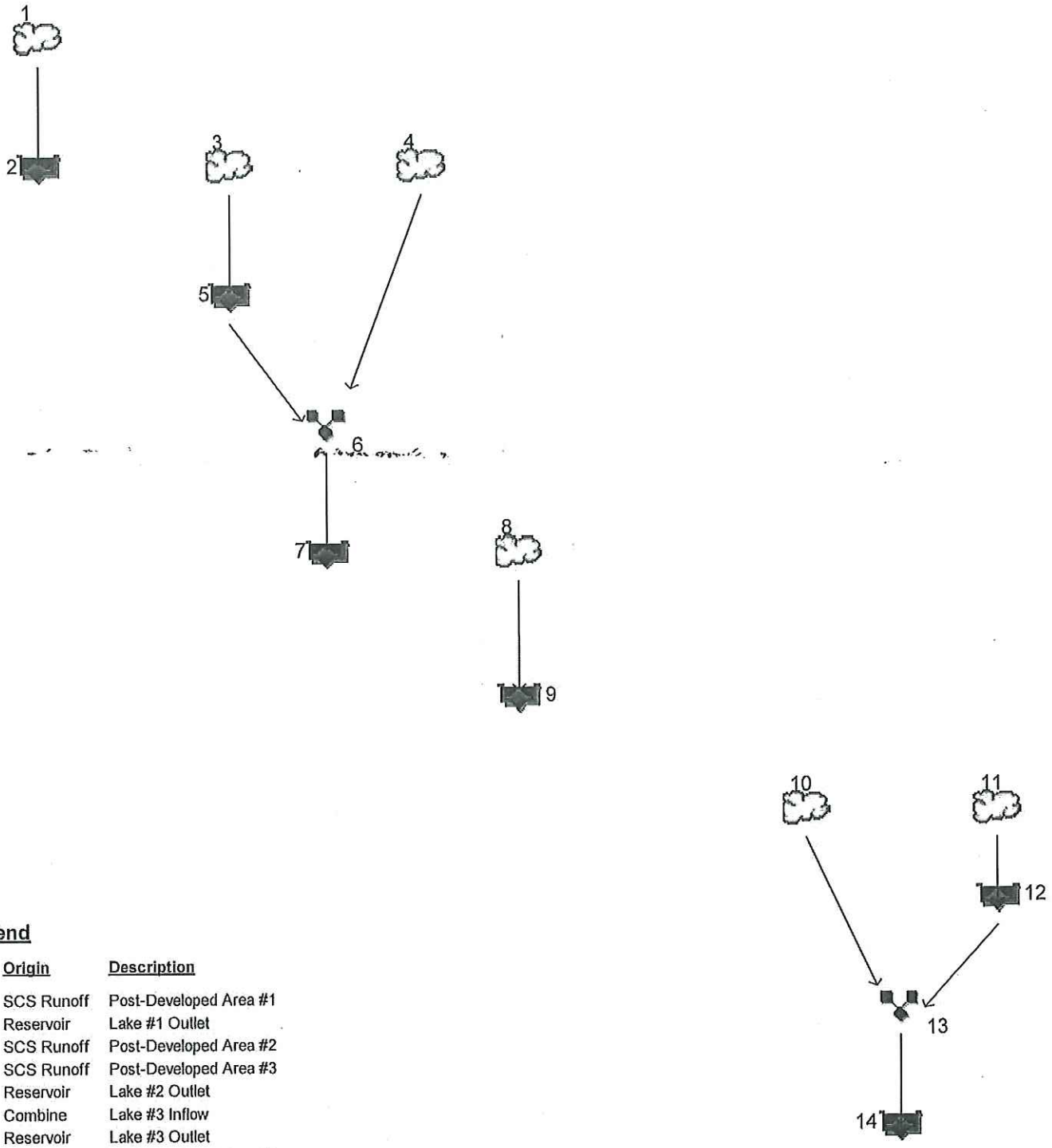
Watershed Model Schematic

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

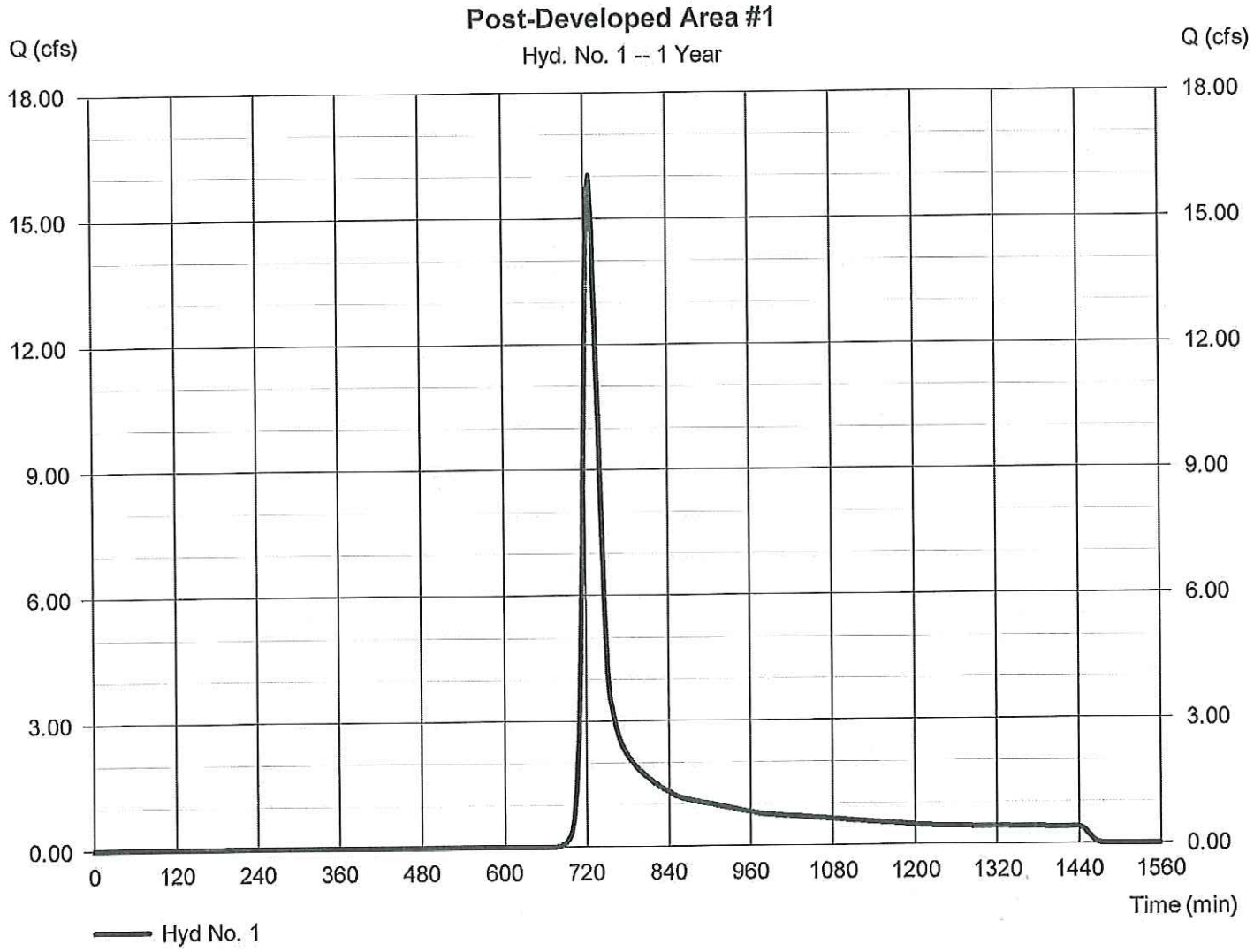
Hydrograph Report

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

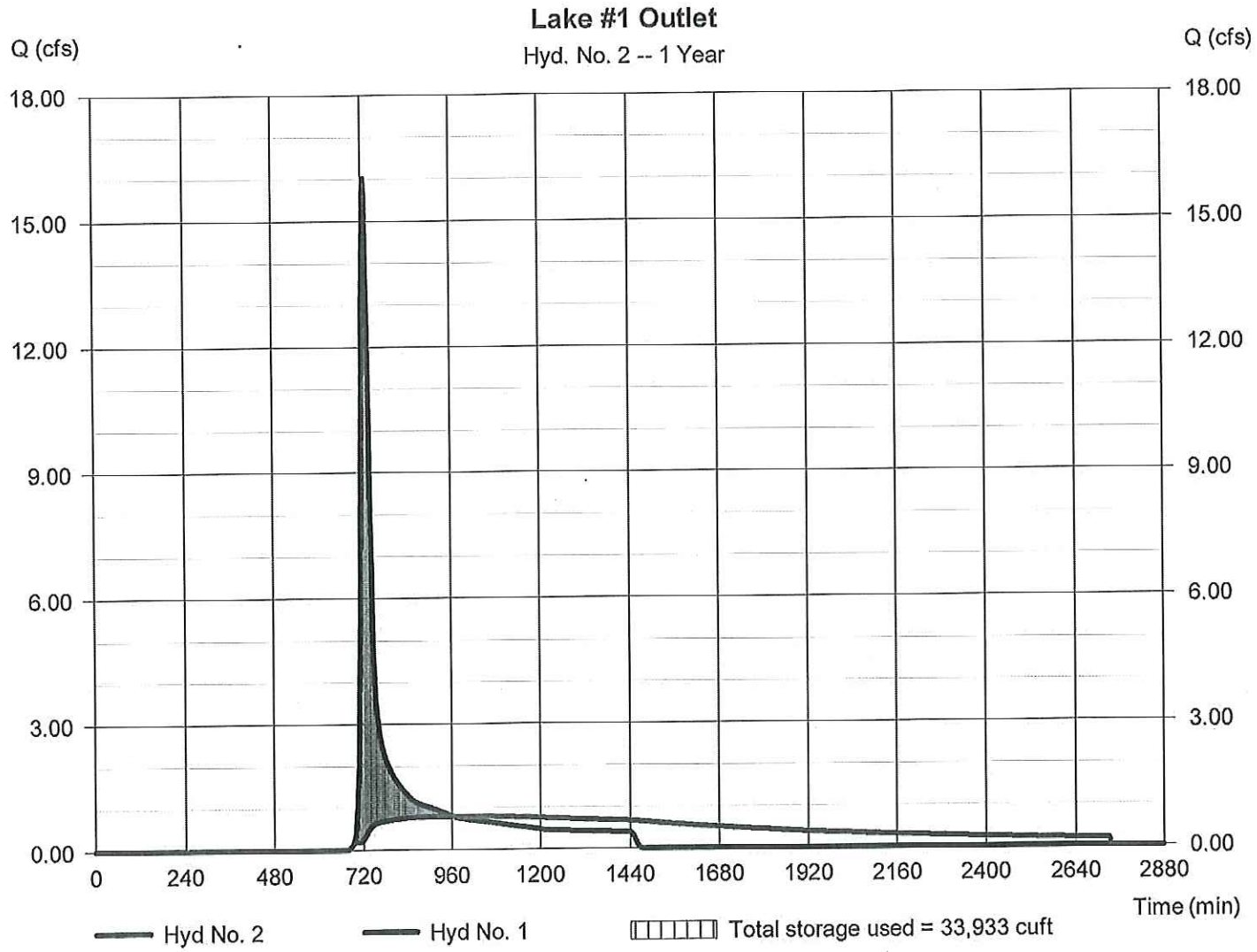
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

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.



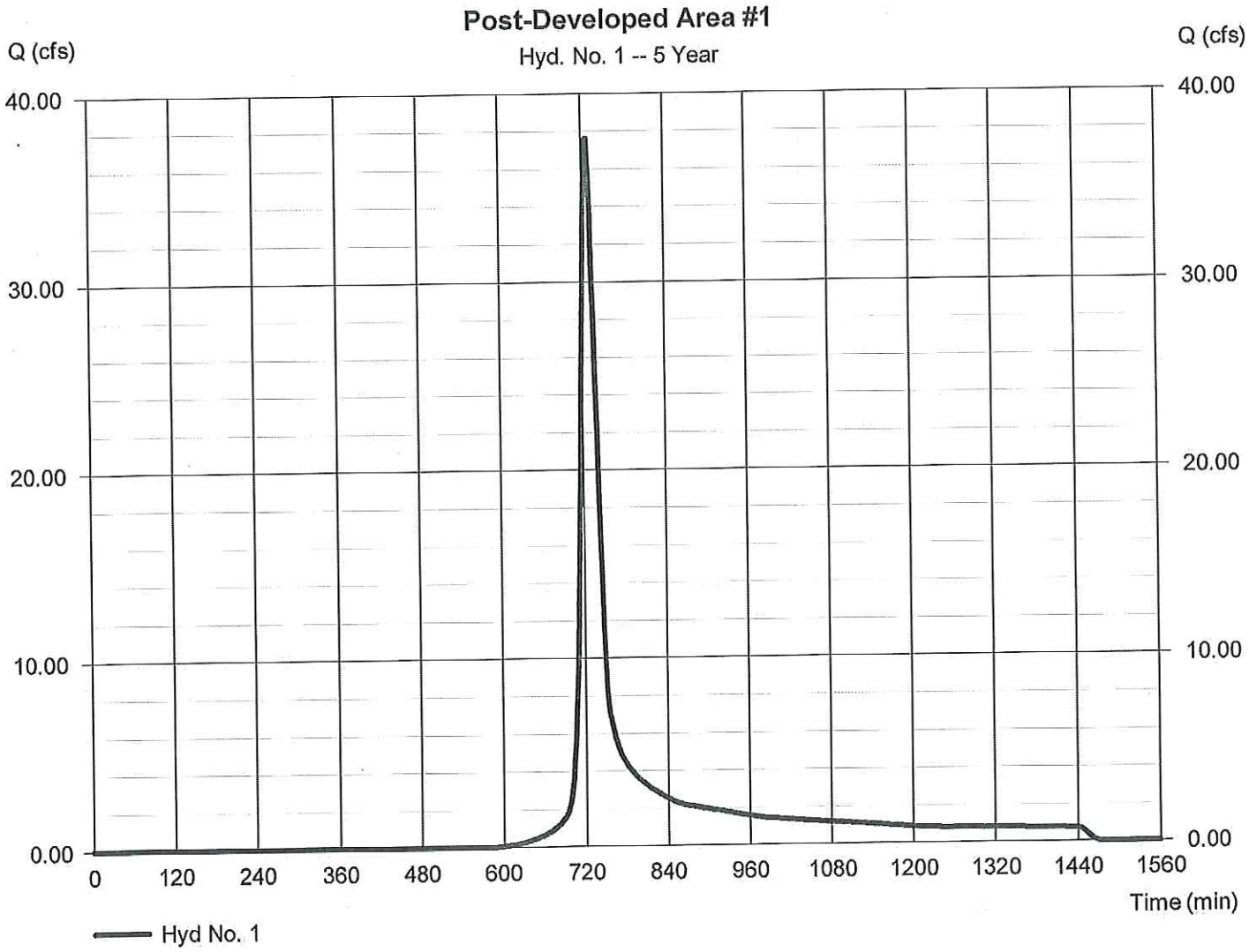
Hydrograph Report

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

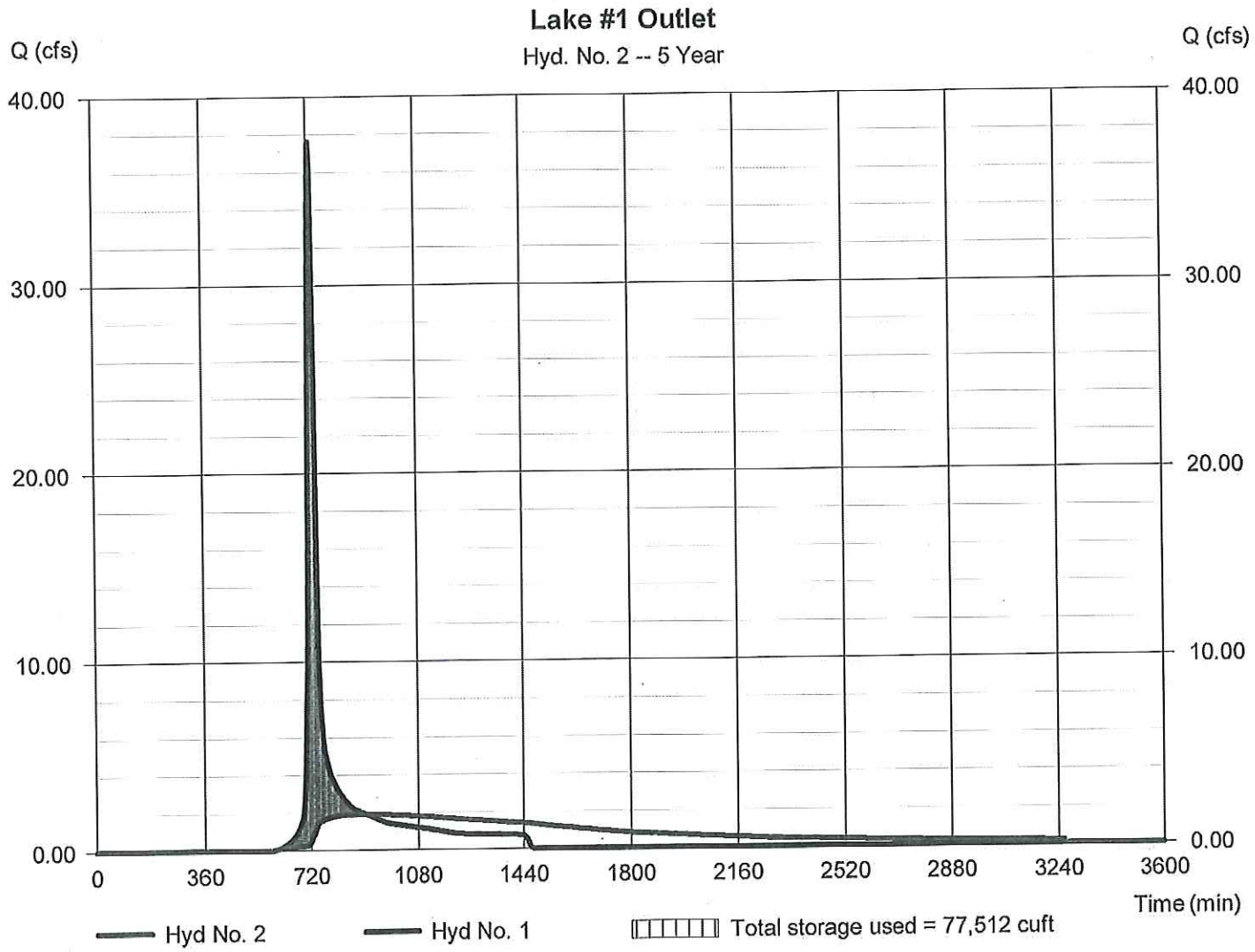
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

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.



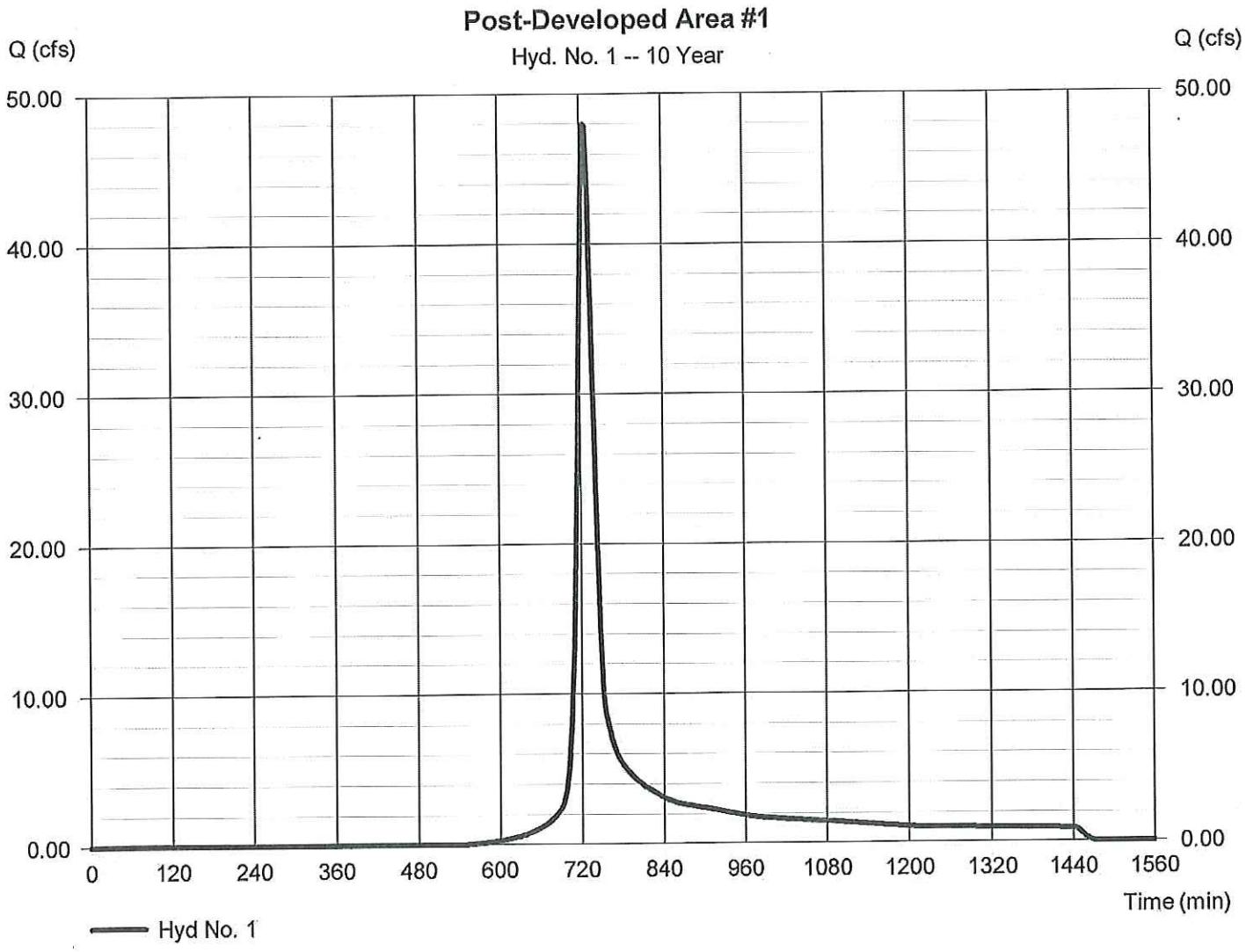
Hydrograph Report

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

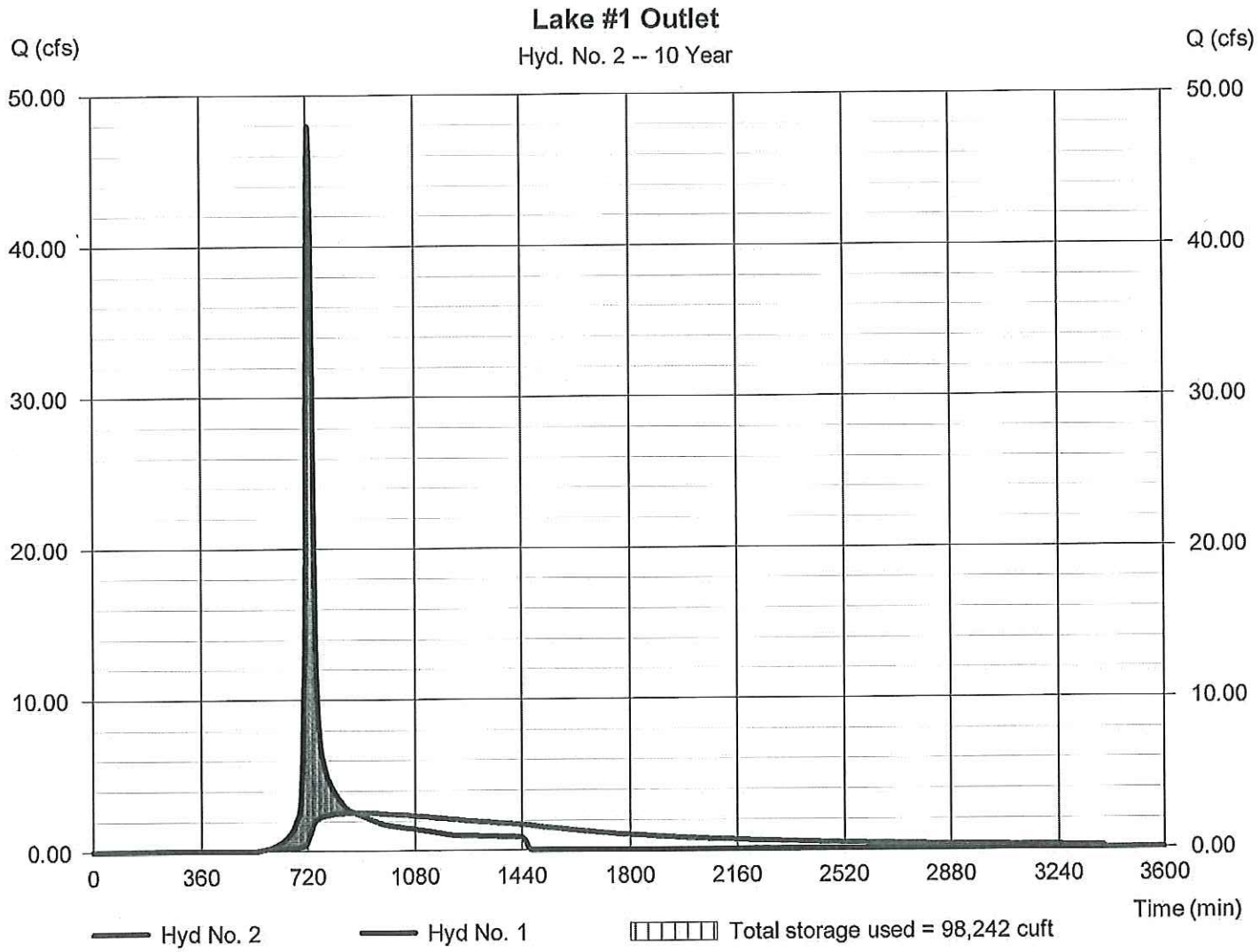
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

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.



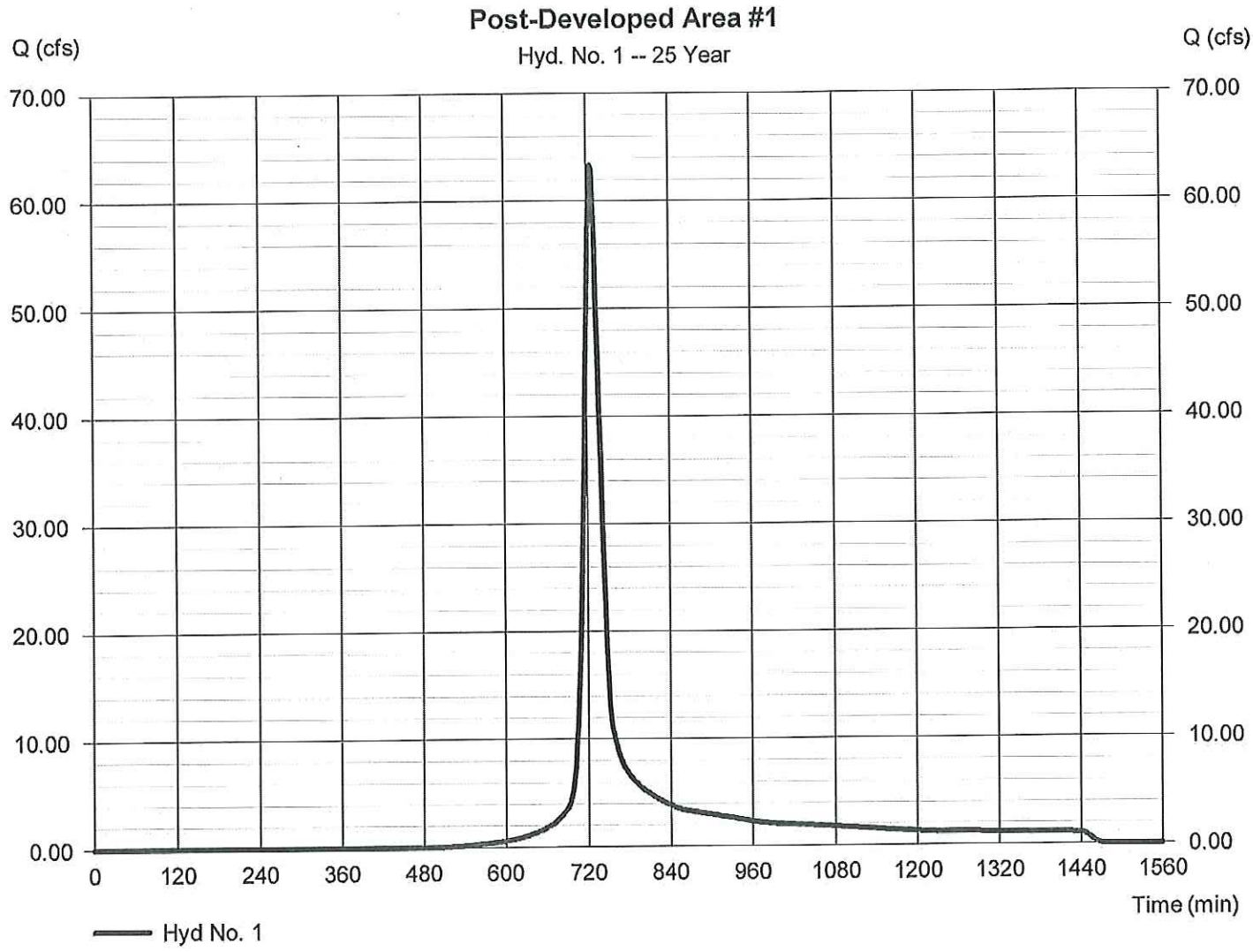
Hydrograph Report

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

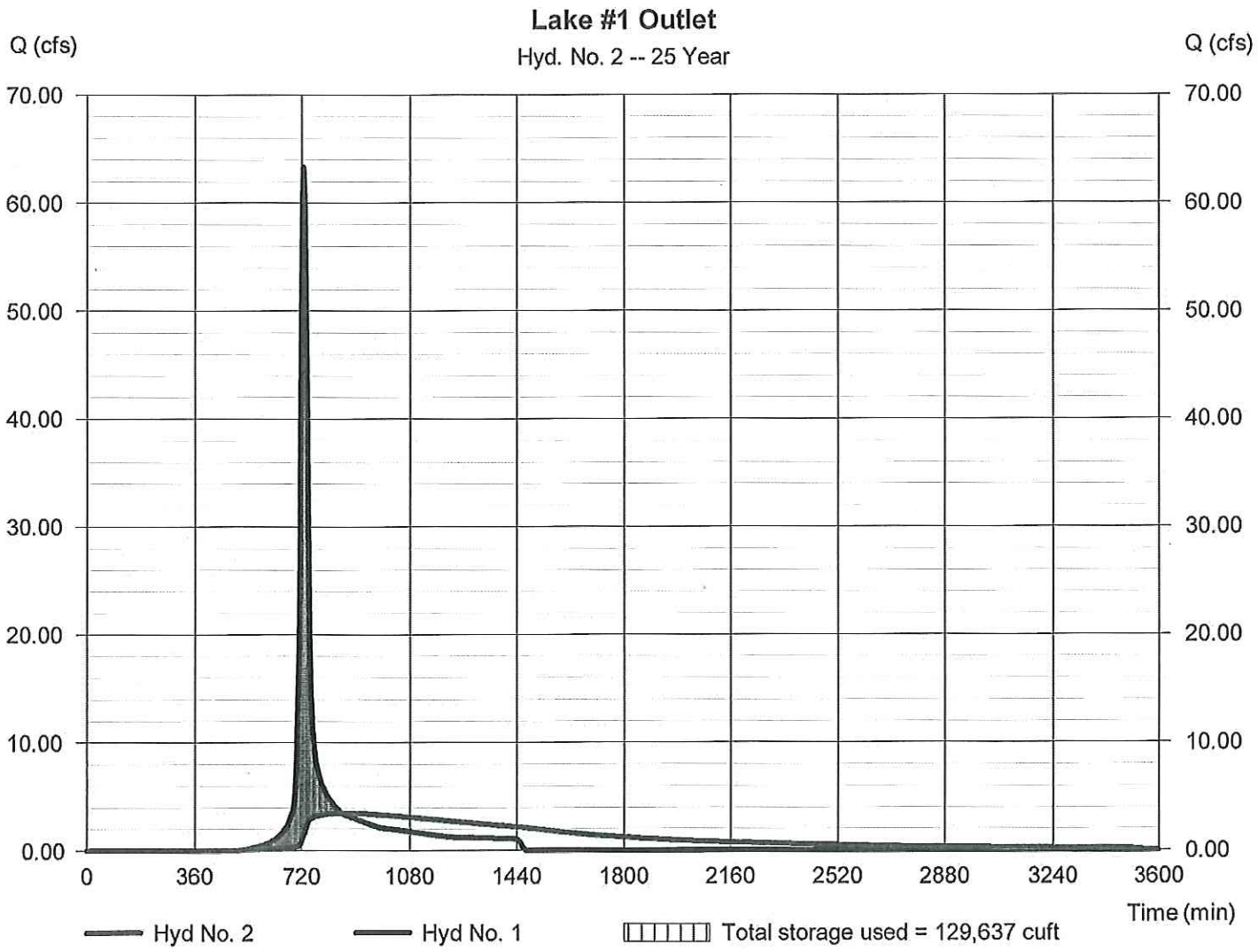
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

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.



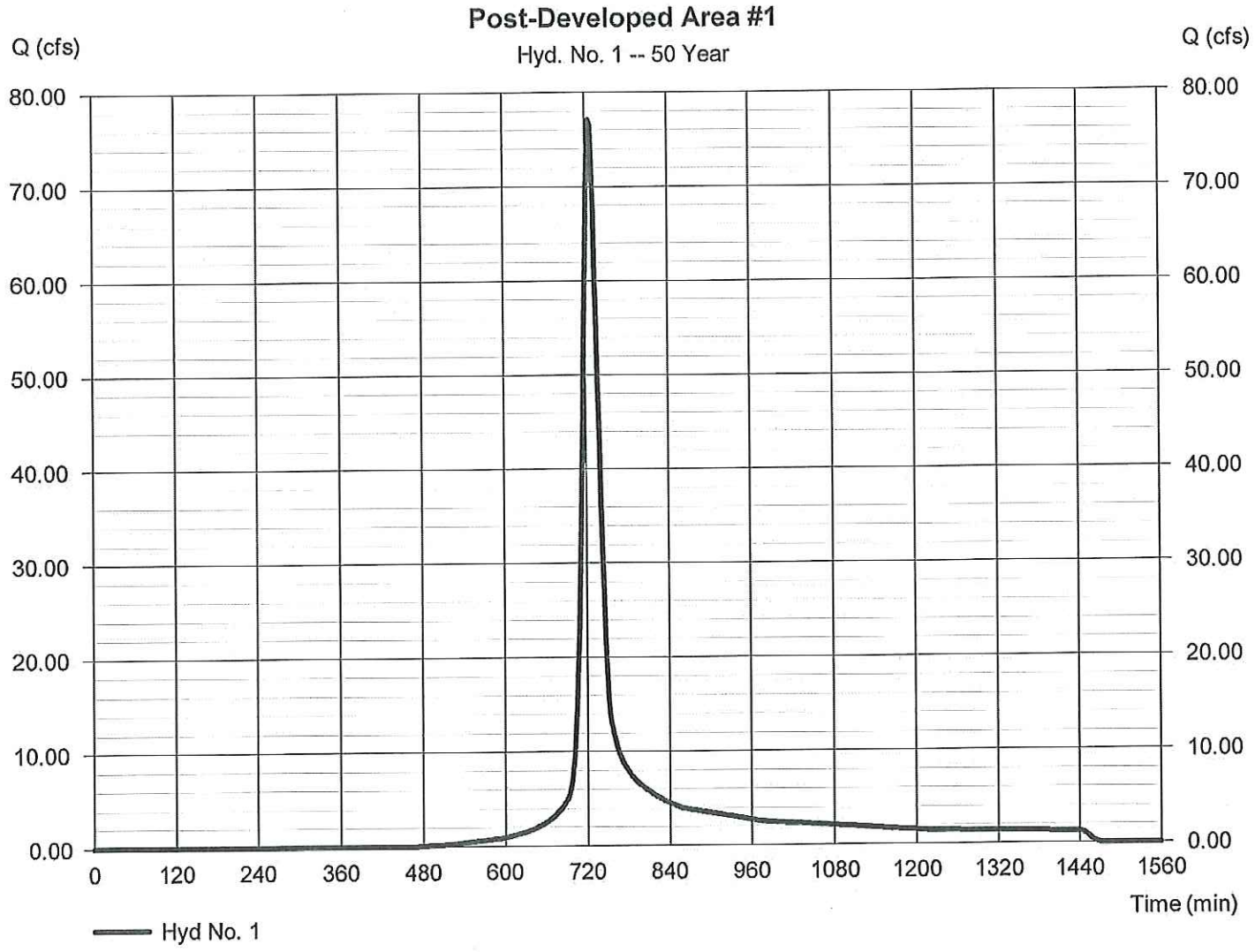
Hydrograph Report

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

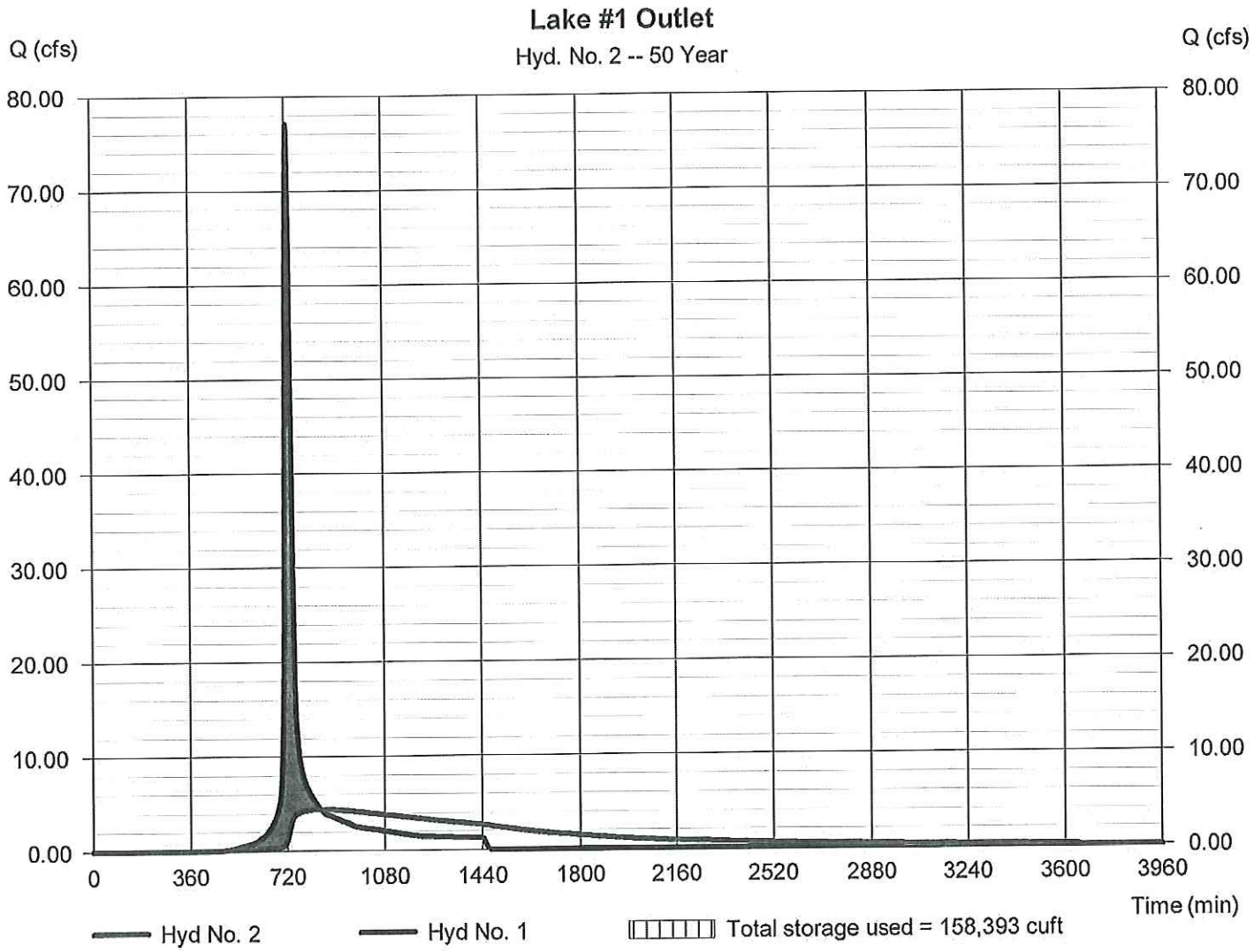
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

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.



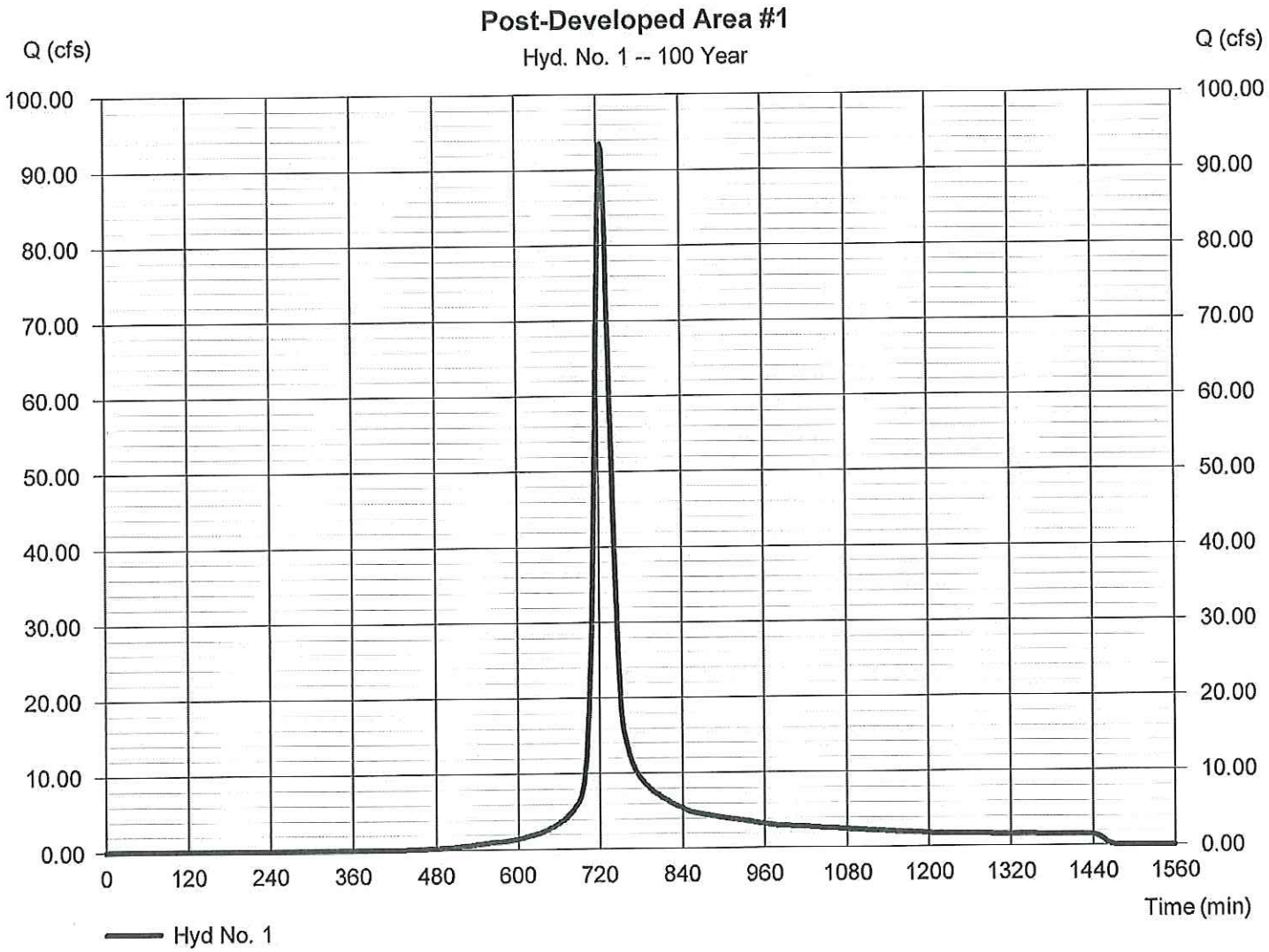
Hydrograph Report

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

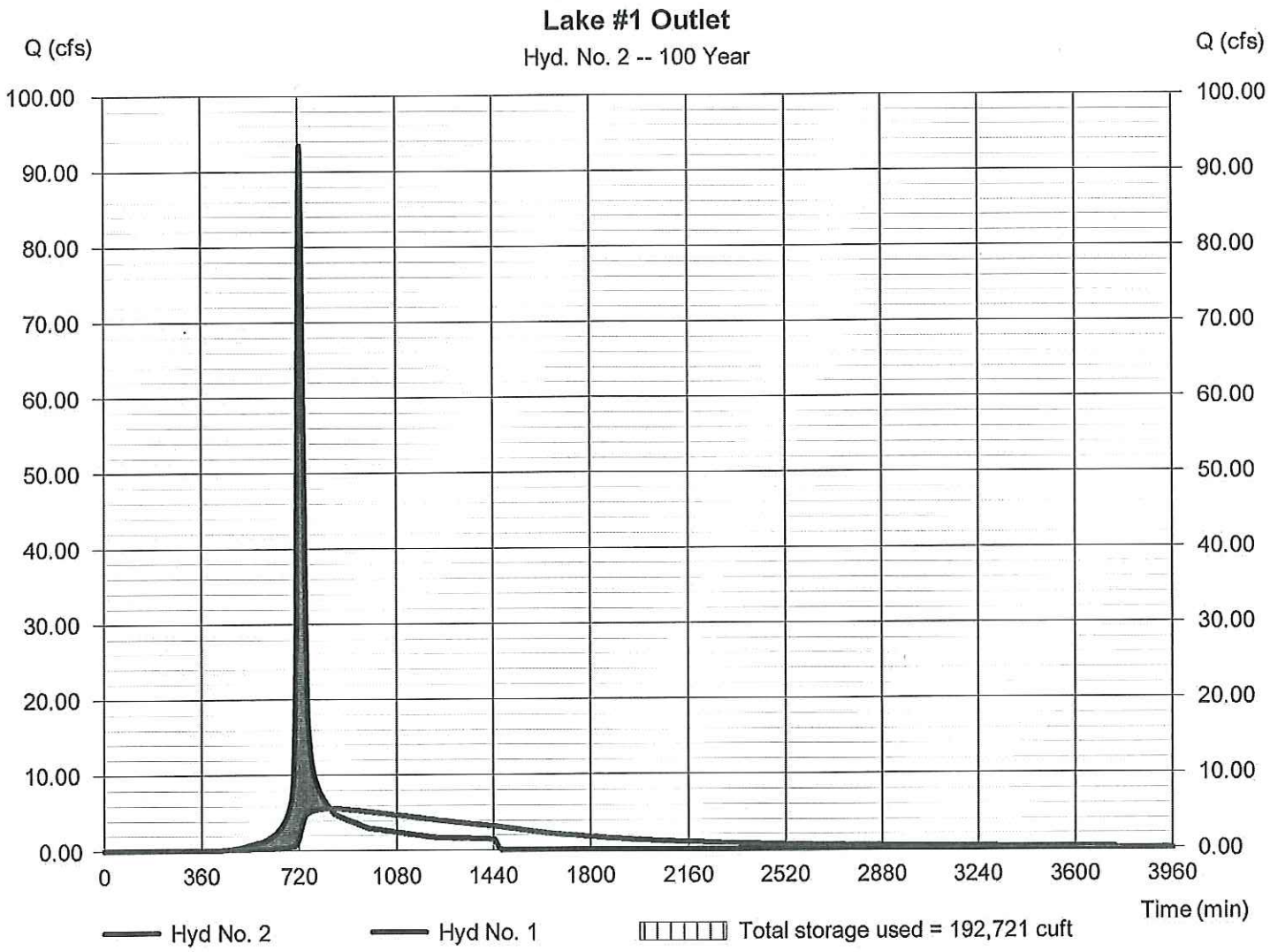
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 2

Lake #1 Outlet

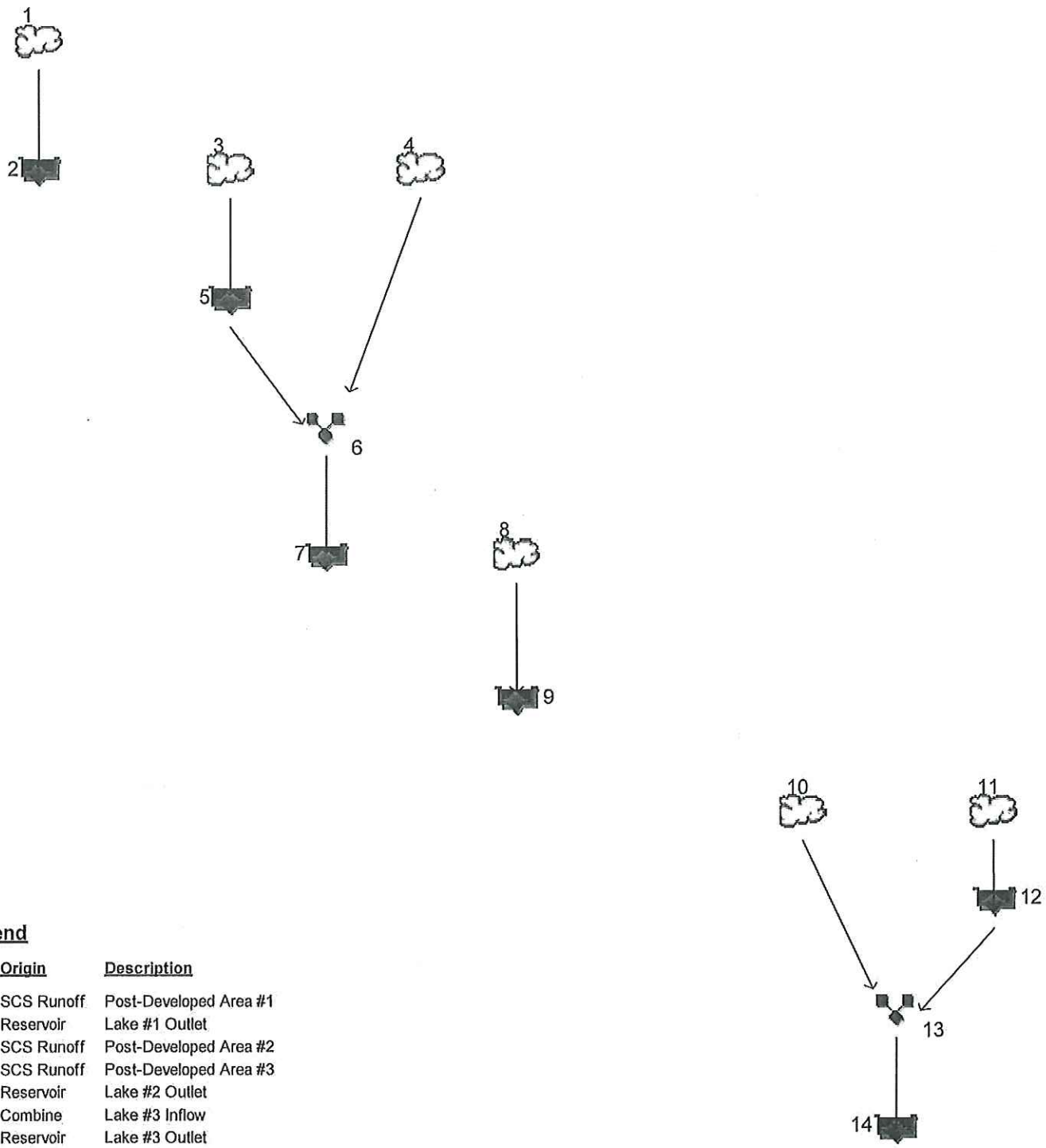
Hydrograph type	= Reservoir	Peak discharge	= 5.578 cfs
Storm frequency	= 100 yrs	Time to peak	= 836 min
Time interval	= 2 min	Hyd. volume	= 322,702 cuft
Inflow hyd. No.	= 1 - Post-Developed Area #1	Max. Elevation	= 886.97 ft
Reservoir name	= Lake #1	Max. Storage	= 192,721 cuft

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

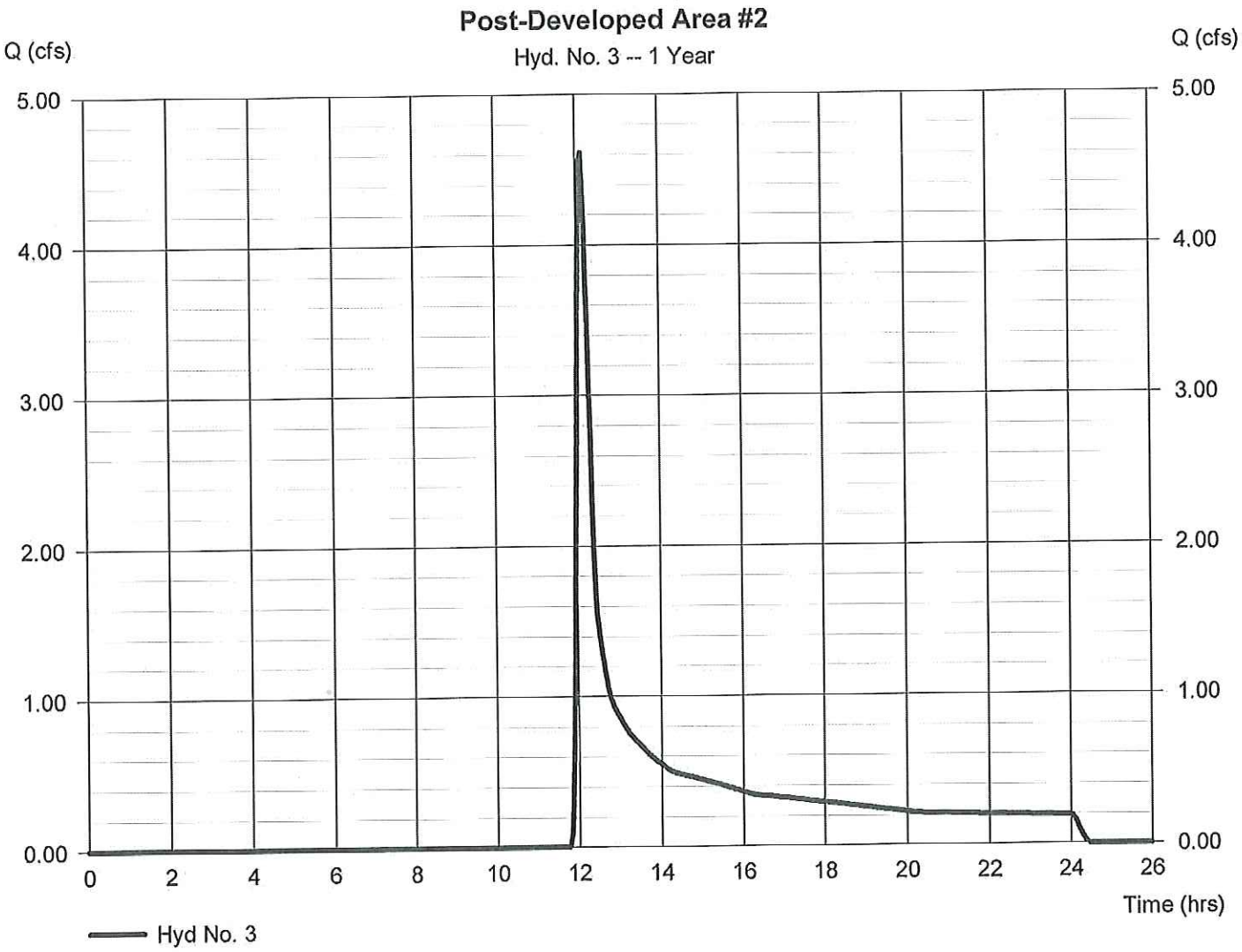
Hydrograph Report

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



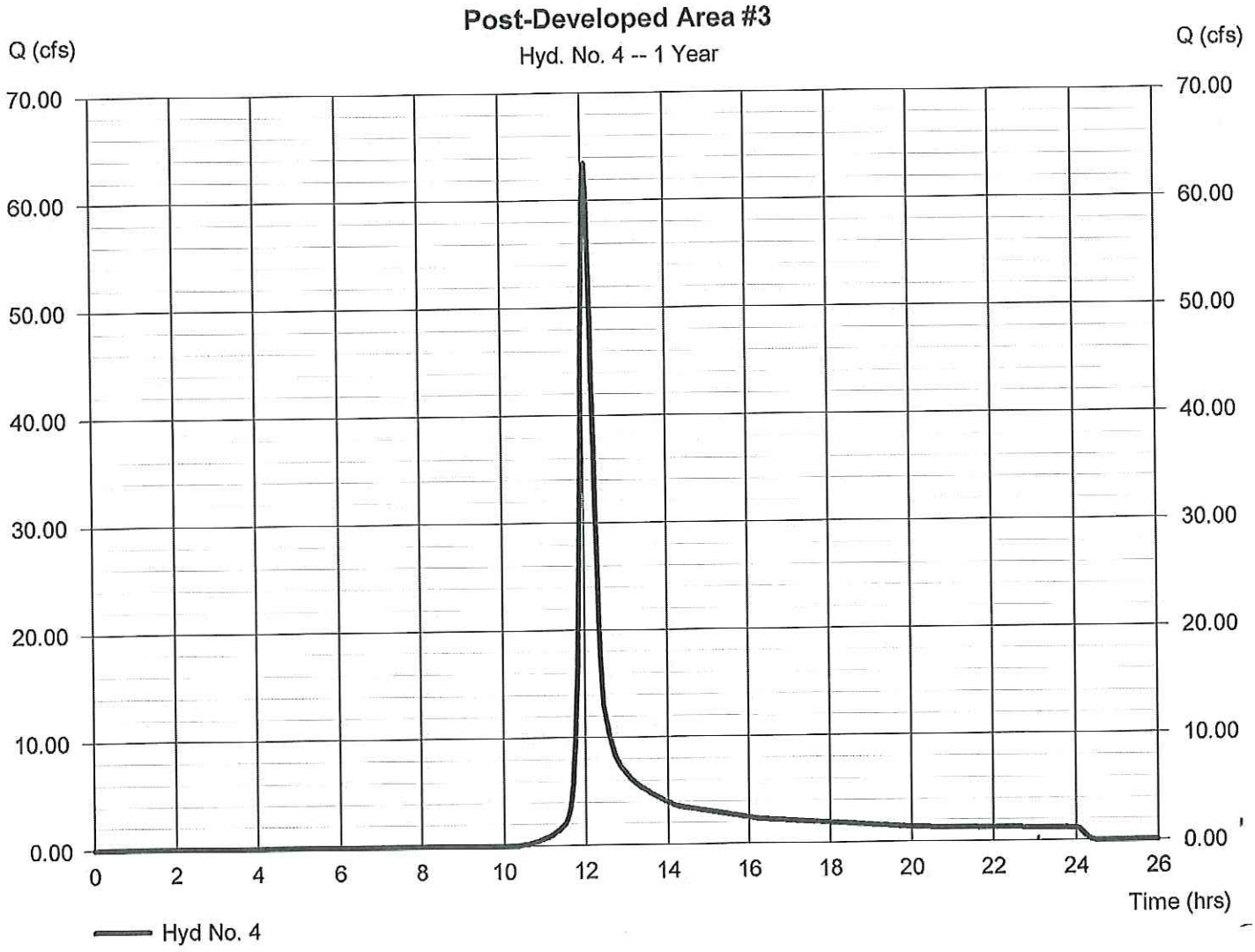
Hydrograph Report

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

Hyd. No. 4

Post-Developed Area #3

Hydrograph type	= SCS Runoff	Peak discharge	= 63.44 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 204,171 cuft
Drainage area	= 63.500 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 2.33 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

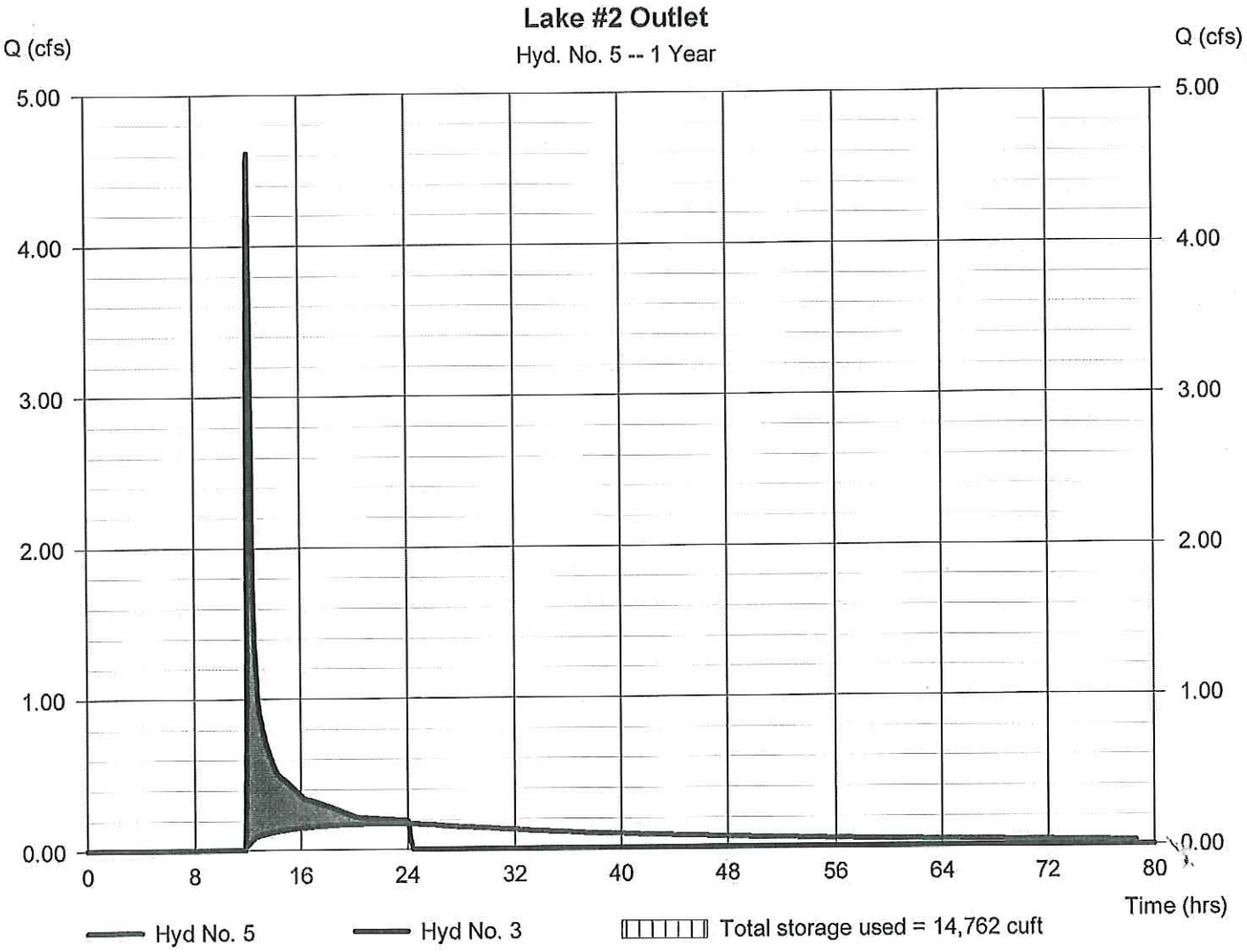
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 5

Lake #2 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 0.172 cfs
Storm frequency	= 1 yrs	Time to peak	= 24.10 hrs
Time interval	= 2 min	Hyd. volume	= 21,332 cuft
Inflow hyd. No.	= 3 - Post-Developed Area #2	Max. Elevation	= 888.01 ft
Reservoir name	= Lake #2	Max. Storage	= 14,762 cuft

Storage Indication method used.



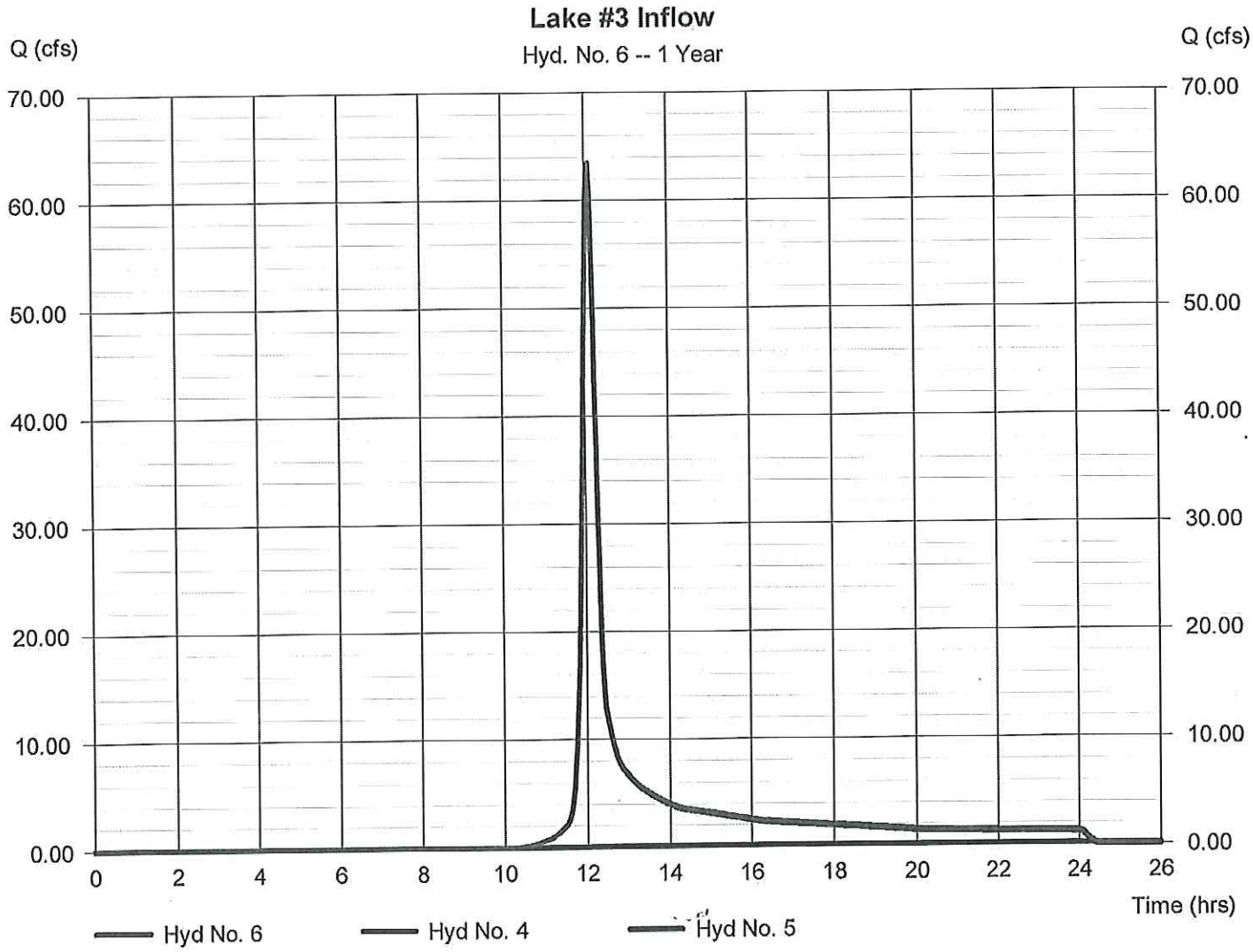
Hydrograph Report

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

Hyd. No. 6

Lake #3 Inflow

Hydrograph type	= Combine	Peak discharge	= 63.48 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 225,503 cuft
Inflow hyds.	= 4, 5	Contrib. drain. area	= 63.500 ac



Hydrograph Report

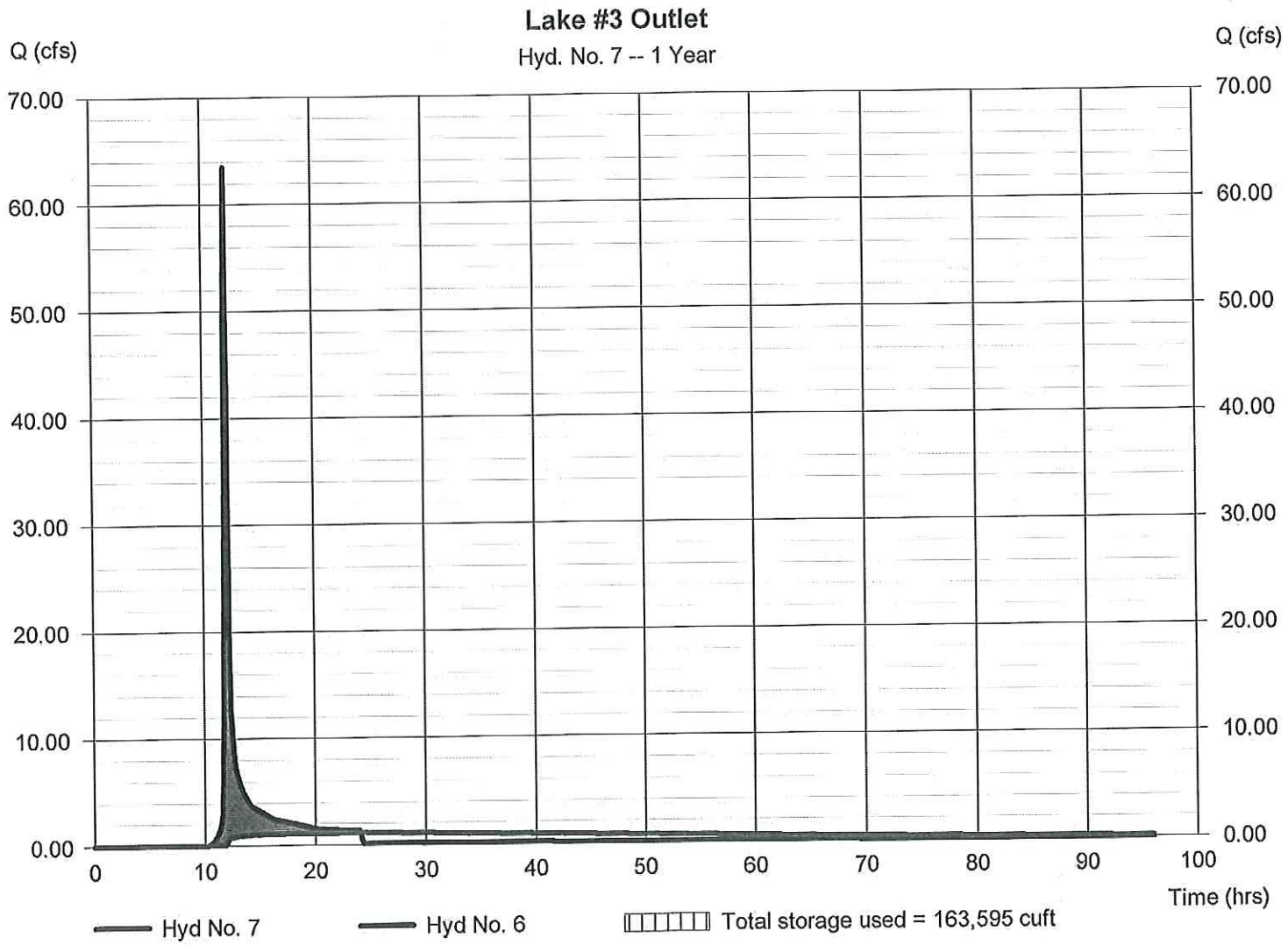
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 7

Lake #3 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 1.153 cfs
Storm frequency	= 1 yrs	Time to peak	= 24.13 hrs
Time interval	= 2 min	Hyd. volume	= 196,675 cuft
Inflow hyd. No.	= 6 - Lake #3 Inflow	Max. Elevation	= 882.78 ft
Reservoir name	= Lake #3	Max. Storage	= 163,595 cuft

Storage Indication method used.



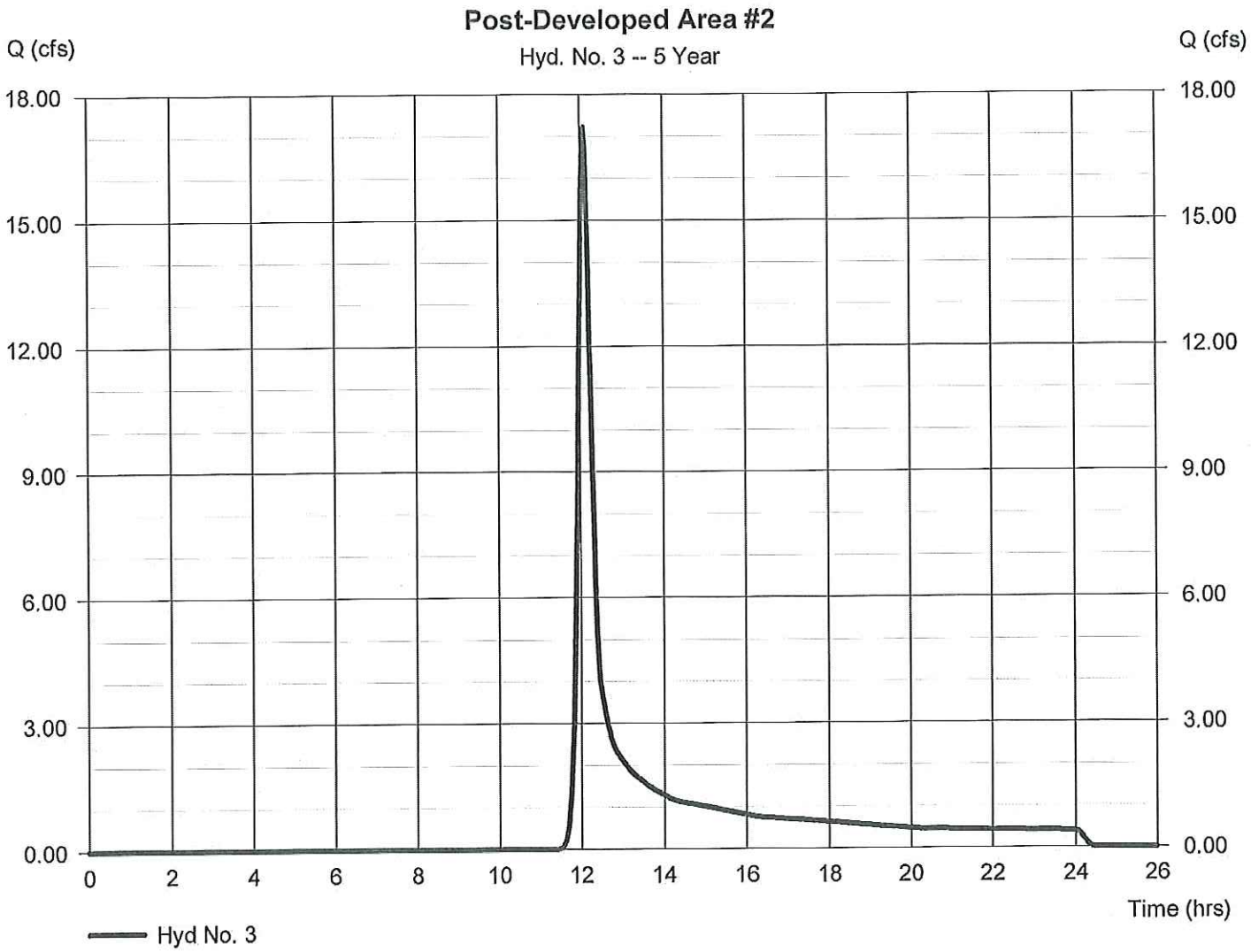
Hydrograph Report

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	= 17.22 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 59,211 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.	= 3.49 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

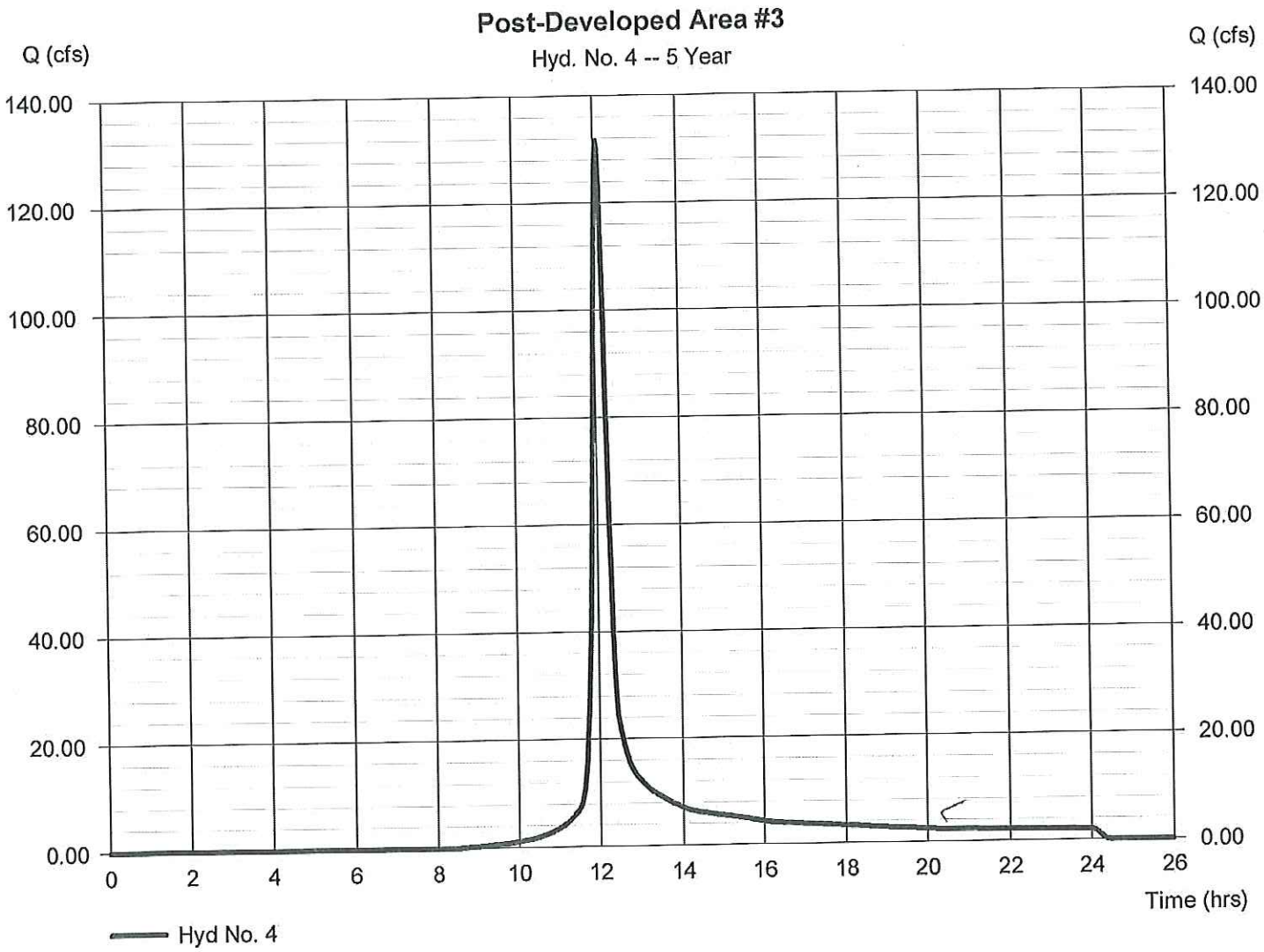
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, May 15, 2012

Hyd. No. 4

Post-Developed Area #3

Hydrograph type	= SCS Runoff	Peak discharge	= 131.67 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 412,457 cuft
Drainage area	= 63.500 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 3.49 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

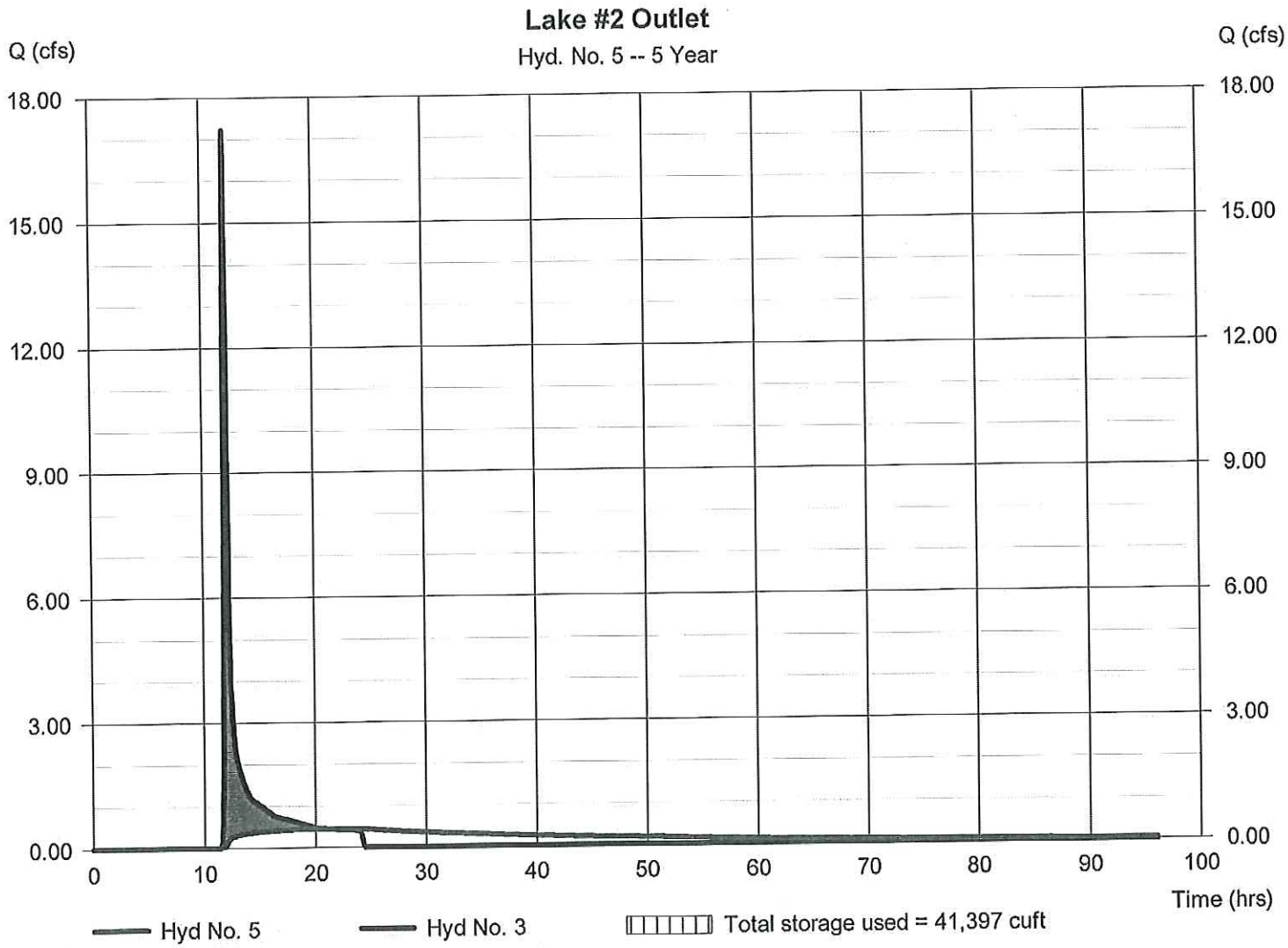
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 5

Lake #2 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 0.448 cfs
Storm frequency	= 5 yrs	Time to peak	= 21.07 hrs
Time interval	= 2 min	Hyd. volume	= 58,169 cuft
Inflow hyd. No.	= 3 - Post-Developed Area #2	Max. Elevation	= 888.29 ft
Reservoir name	= Lake #2	Max. Storage	= 41,397 cuft

Storage Indication method used.



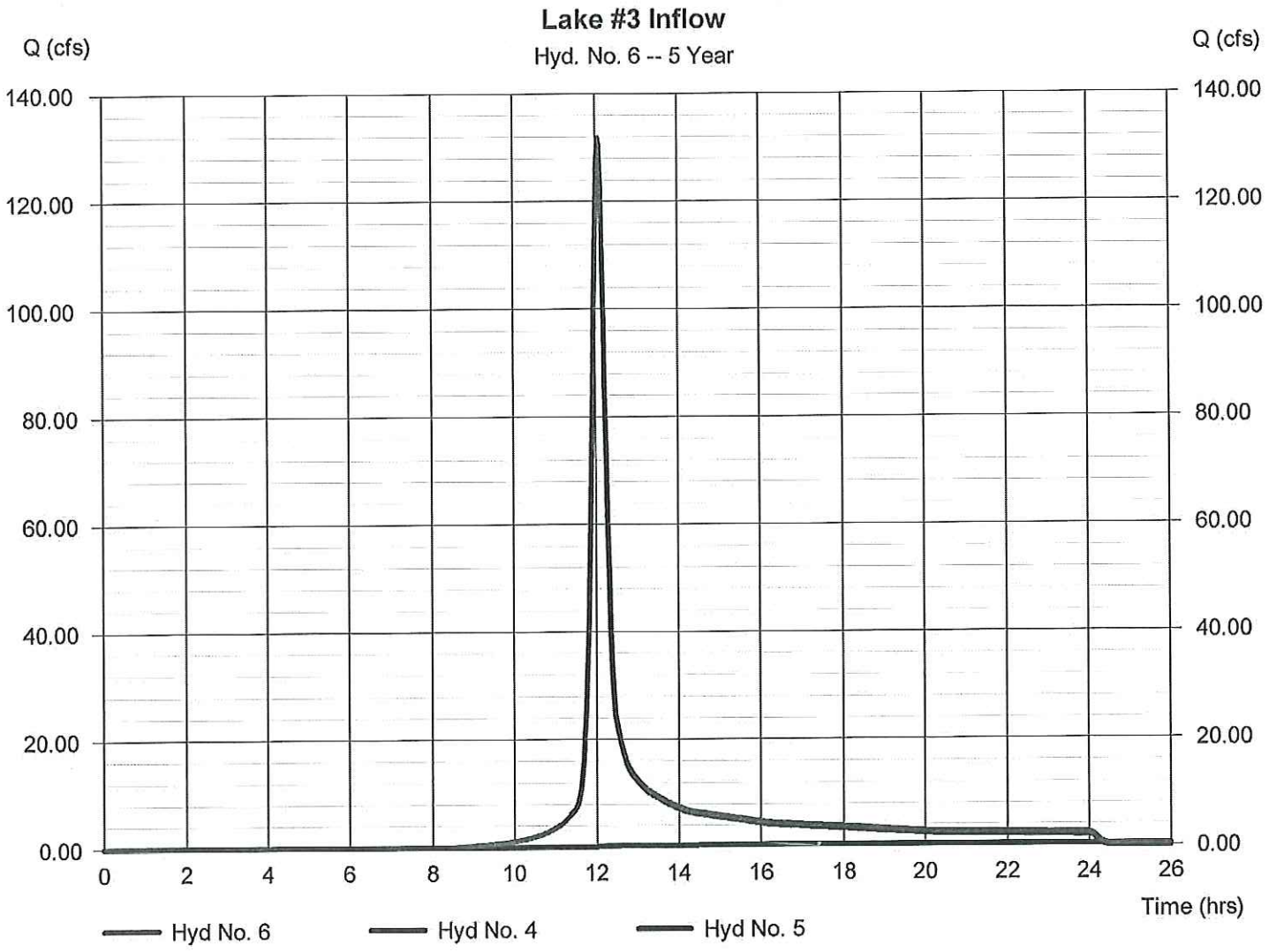
Hydrograph Report

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

Hyd. No. 6

Lake #3 Inflow

Hydrograph type	= Combine	Peak discharge	= 131.78 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 470,627 cuft
Inflow hyds.	= 4, 5	Contrib. drain. area	= 63.500 ac



Hydrograph Report

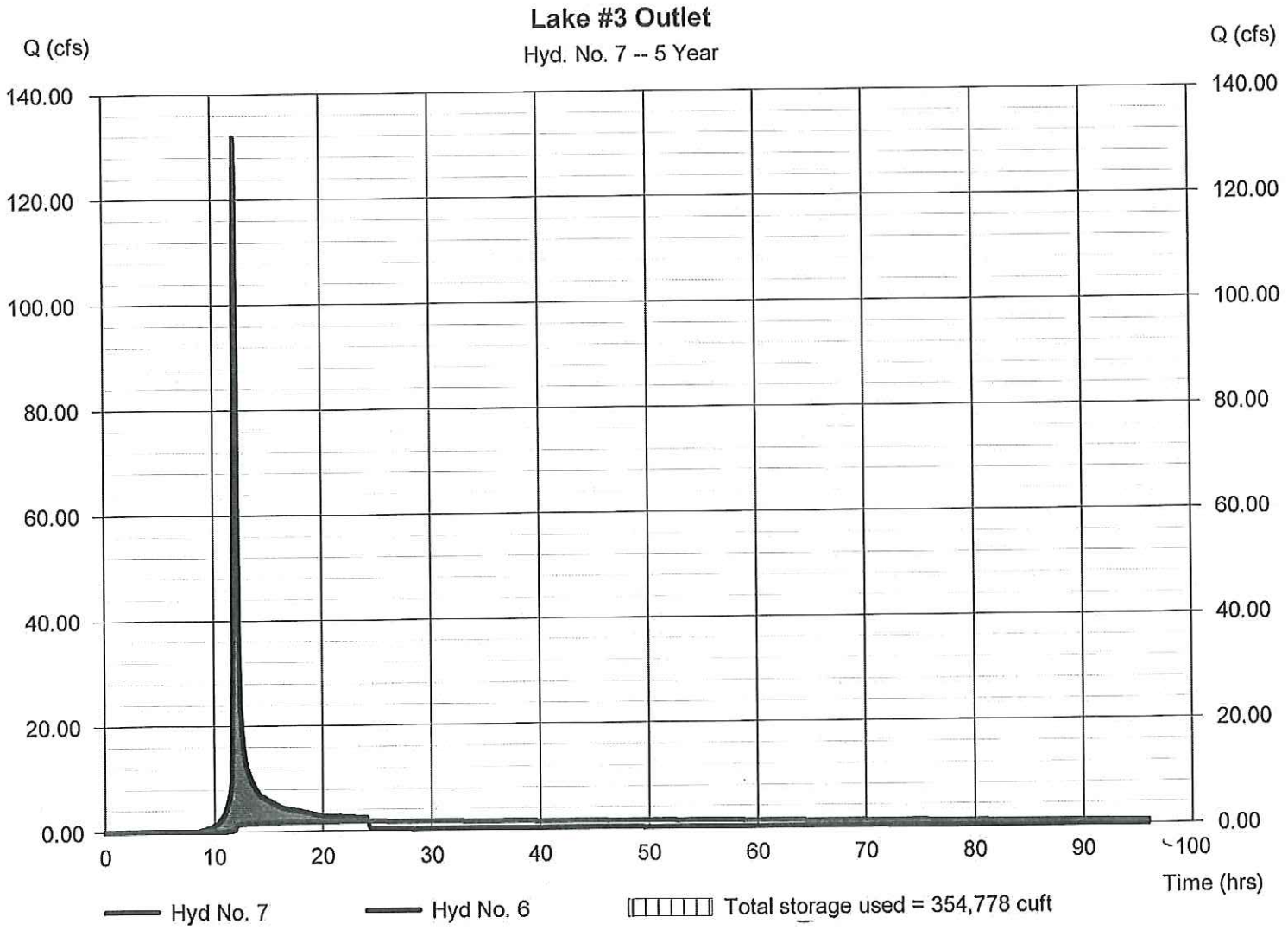
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 7

Lake #3 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 1.808 cfs
Storm frequency	= 5 yrs	Time to peak	= 24.17 hrs
Time interval	= 2 min	Hyd. volume	= 395,887 cuft
Inflow hyd. No.	= 6 - Lake #3 Inflow	Max. Elevation	= 883.93 ft
Reservoir name	= Lake #3	Max. Storage	= 354,778 cuft

Storage Indication method used.



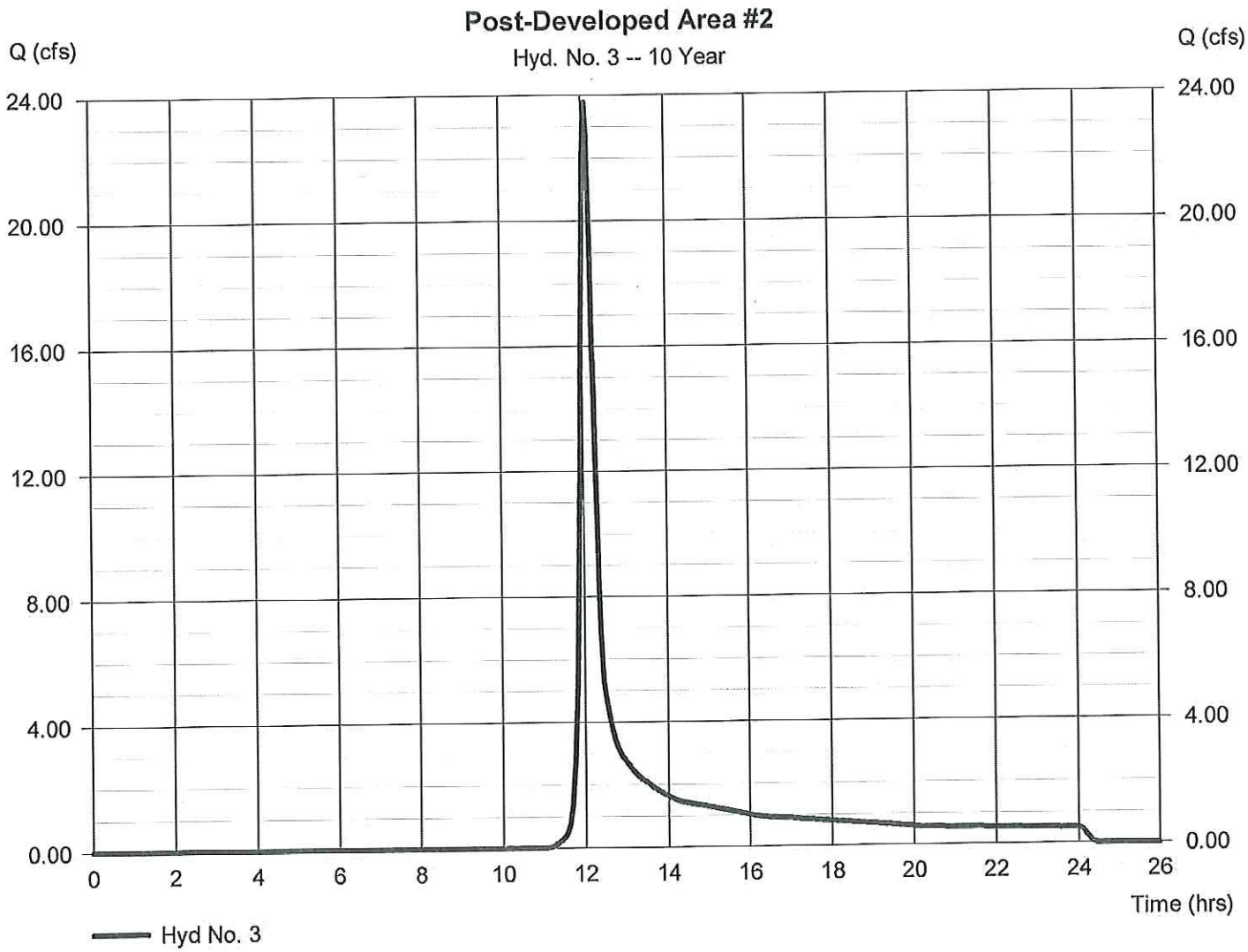
Hydrograph Report

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	= 23.78 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 78,925 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.	= 3.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



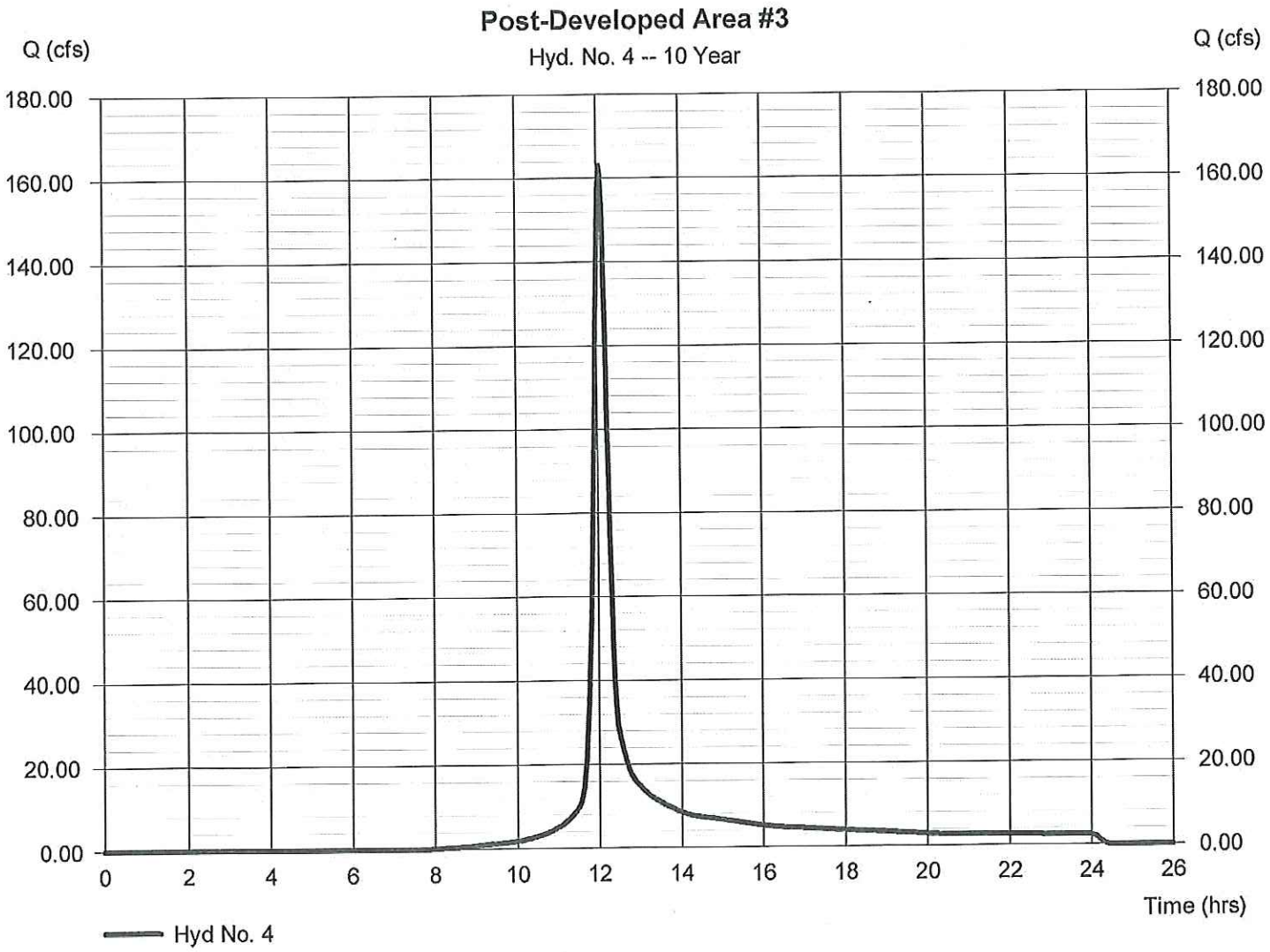
Hydrograph Report

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

Hyd. No. 4

Post-Developed Area #3

Hydrograph type	= SCS Runoff	Peak discharge	= 163.00 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 509,625 cuft
Drainage area	= 63.500 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 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

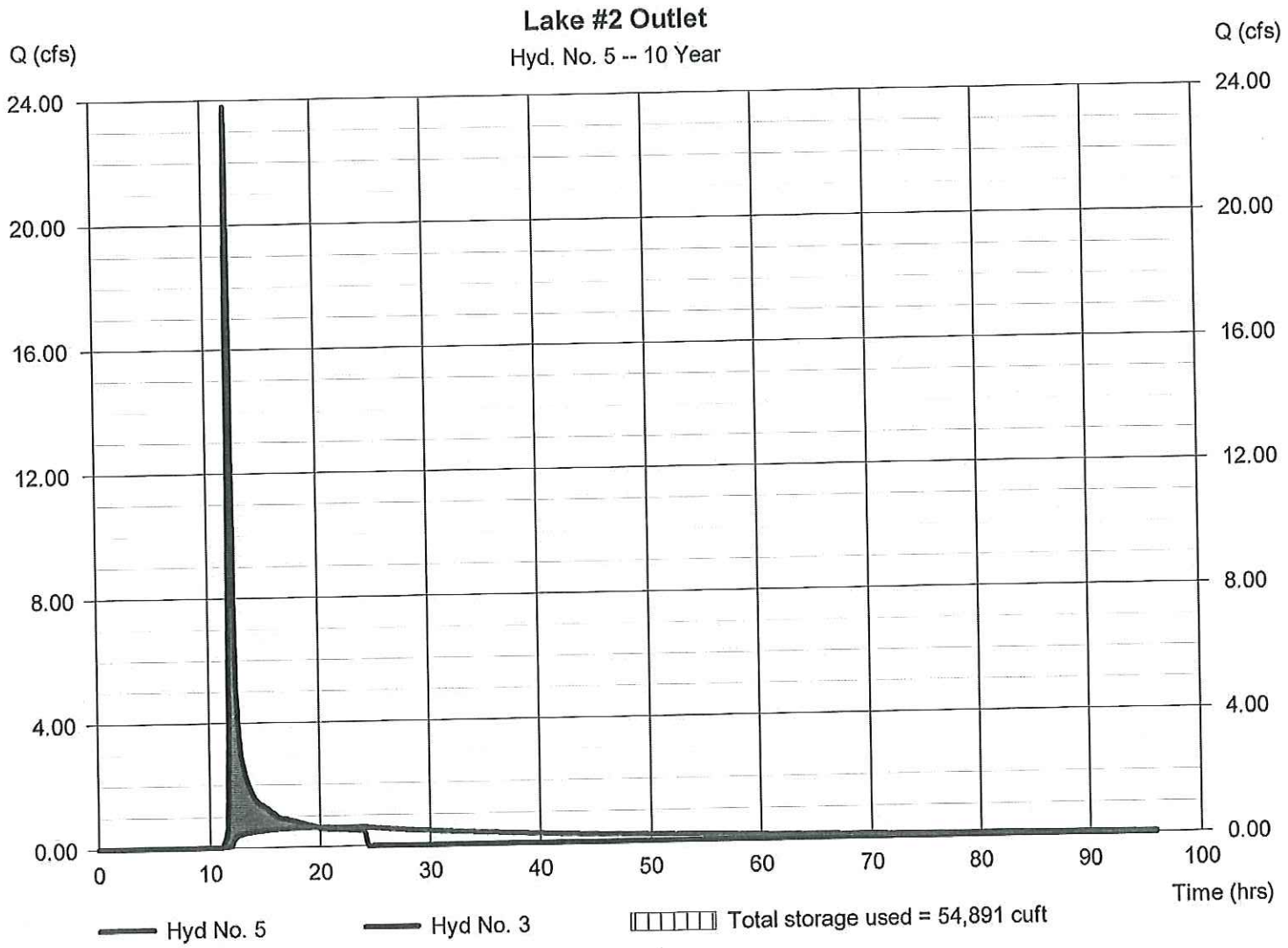
Tuesday, May 15, 2012

Hyd. No. 5

Lake #2 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 0.619 cfs
Storm frequency	= 10 yrs	Time to peak	= 19.80 hrs
Time interval	= 2 min	Hyd. volume	= 76,883 cuft
Inflow hyd. No.	= 3 - Post-Developed Area #2	Max. Elevation	= 888.43 ft
Reservoir name	= Lake #2	Max. Storage	= 54,891 cuft

Storage Indication method used.



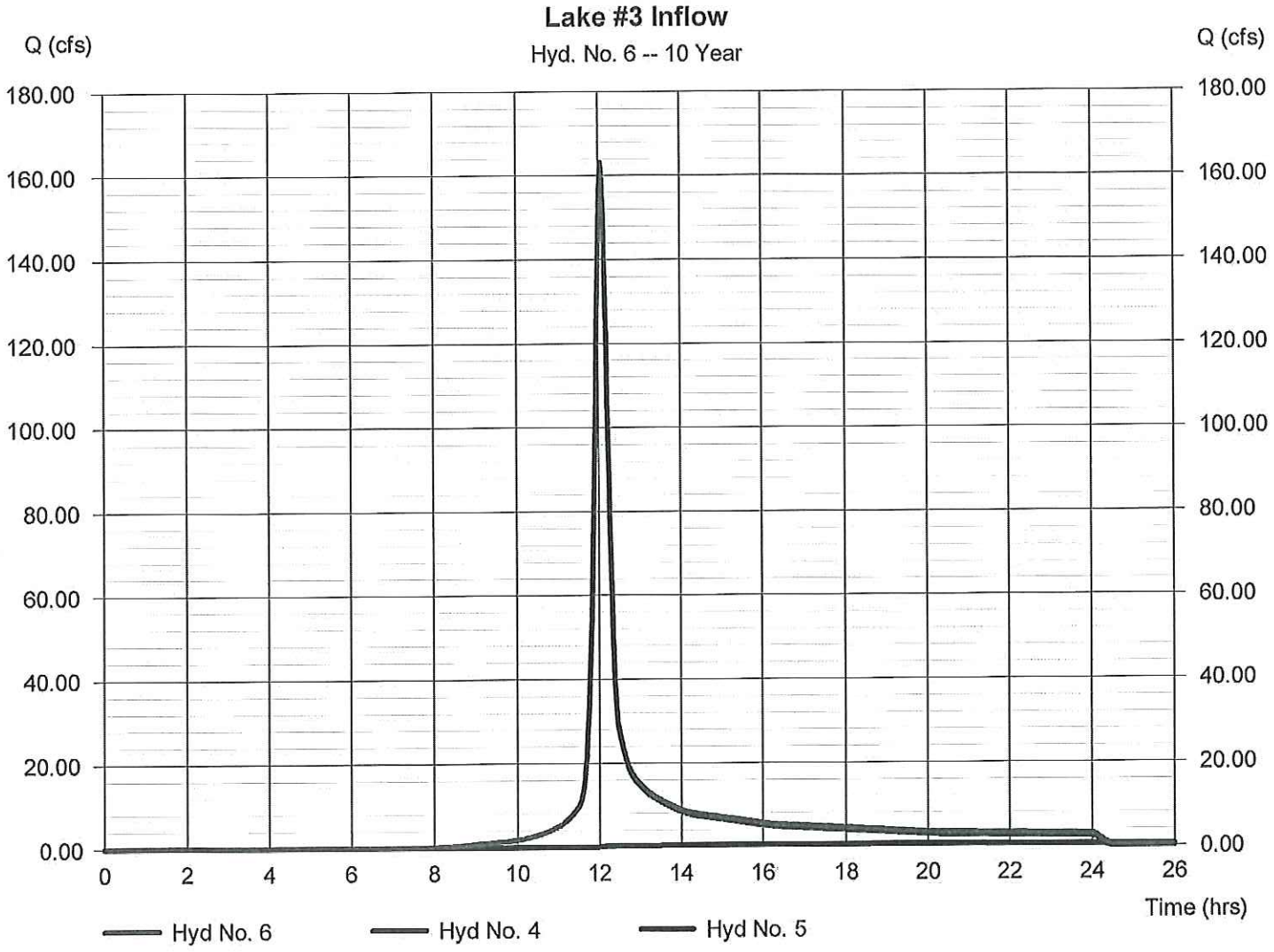
Hydrograph Report

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

Hyd. No. 6

Lake #3 Inflow

Hydrograph type	= Combine	Peak discharge	= 163.17 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 586,509 cuft
Inflow hyds.	= 4, 5	Contrib. drain. area	= 63.500 ac



Hydrograph Report

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

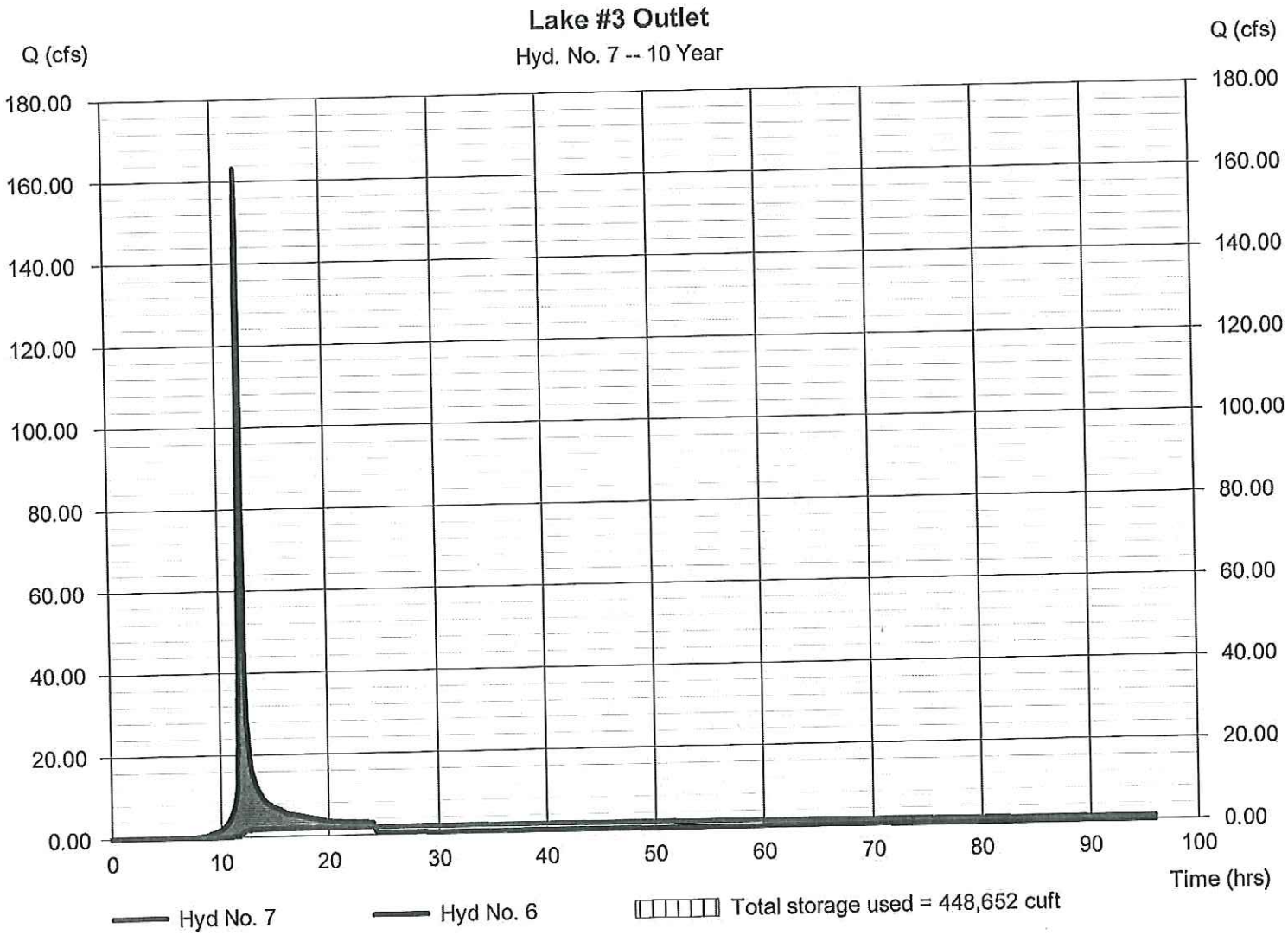
Tuesday, May 15, 2012

Hyd. No. 7

Lake #3 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 2.041 cfs
Storm frequency	= 10 yrs	Time to peak	= 24.20 hrs
Time interval	= 2 min	Hyd. volume	= 473,606 cuft
Inflow hyd. No.	= 6 - Lake #3 Inflow	Max. Elevation	= 884.46 ft
Reservoir name	= Lake #3	Max. Storage	= 448,652 cuft

Storage Indication method used.



Hydrograph Report

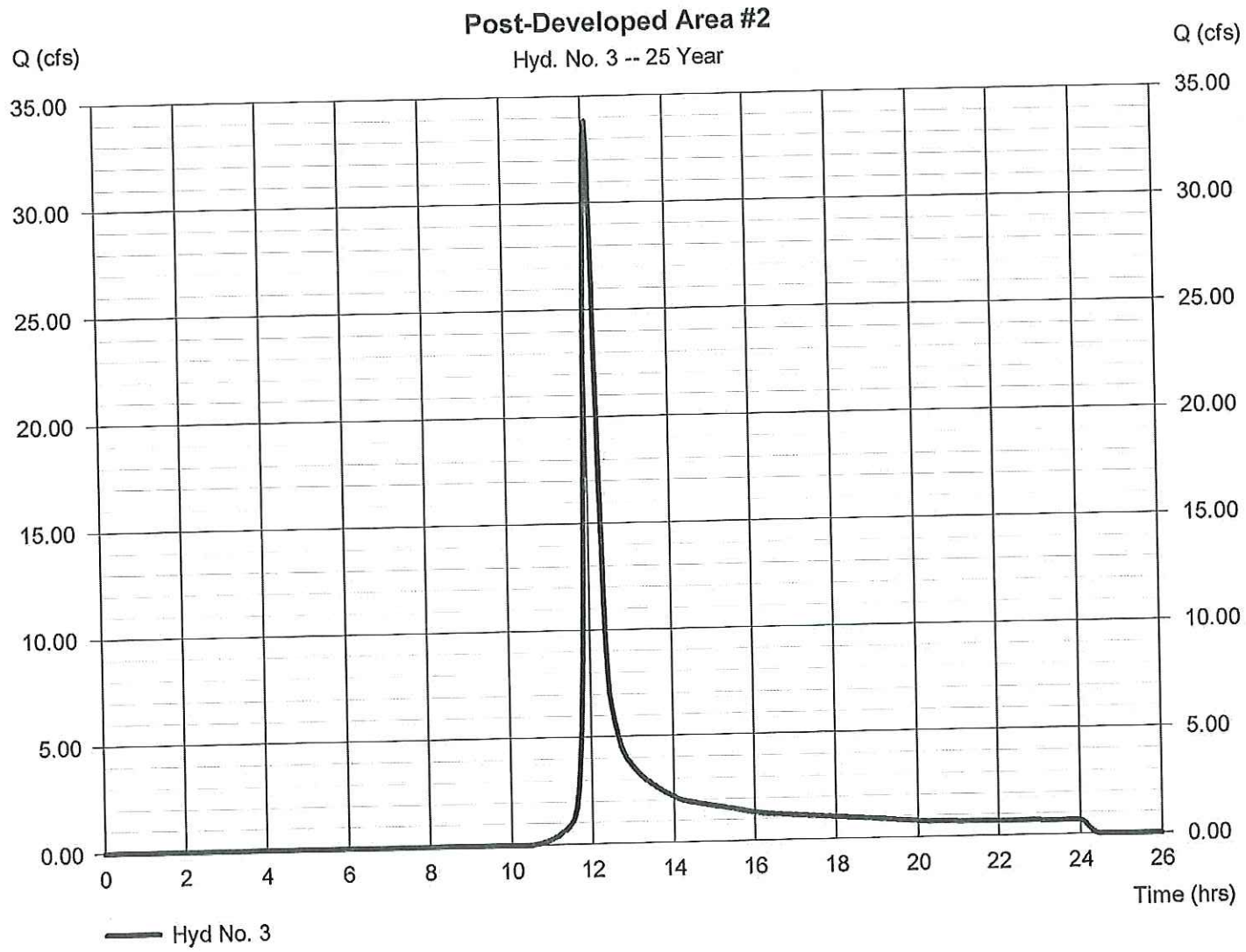
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, May 15, 2012

Hyd. No. 3

Post-Developed Area #2

Hydrograph type	= SCS Runoff	Peak discharge	= 33.83 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 109,433 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.	= 4.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



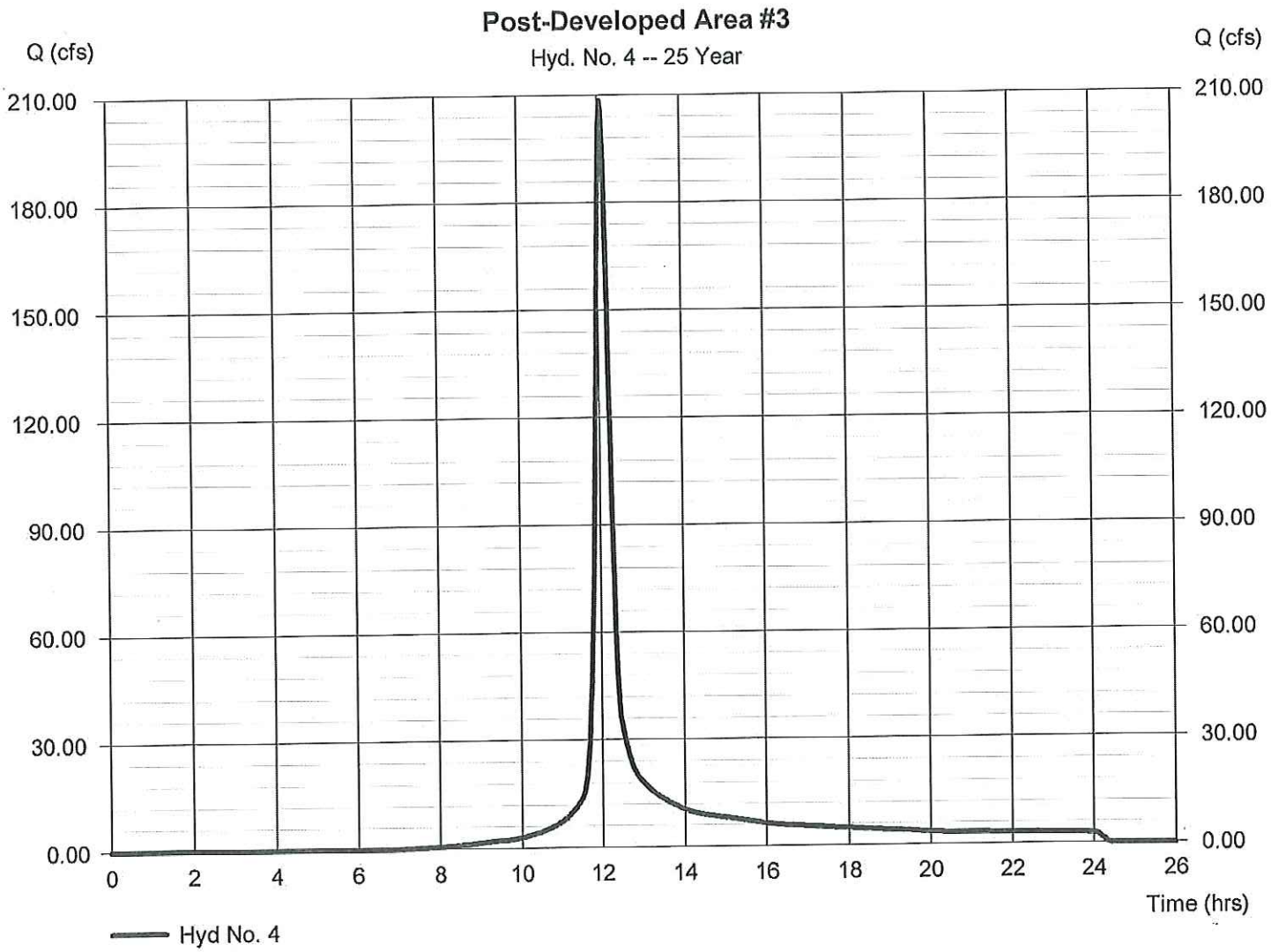
Hydrograph Report

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

Hyd. No. 4

Post-Developed Area #3

Hydrograph type	= SCS Runoff	Peak discharge	= 208.47 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 652,434 cuft
Drainage area	= 63.500 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 4.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

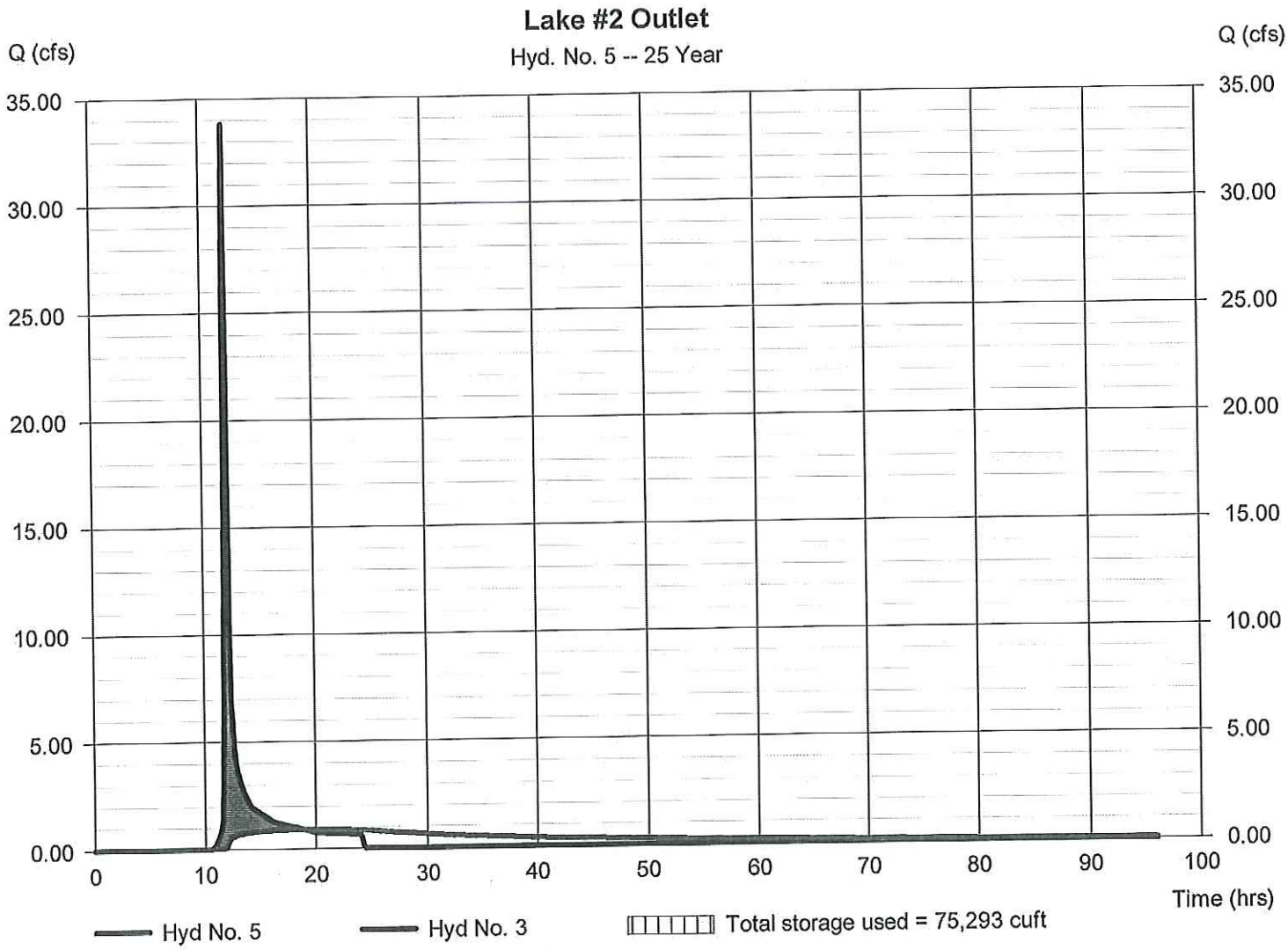
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 5

Lake #2 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 0.908 cfs
Storm frequency	= 25 yrs	Time to peak	= 19.00 hrs
Time interval	= 2 min	Hyd. volume	= 106,120 cuft
Inflow hyd. No.	= 3 - Post-Developed Area #2	Max. Elevation	= 888.64 ft
Reservoir name	= Lake #2	Max. Storage	= 75,293 cuft

Storage Indication method used.



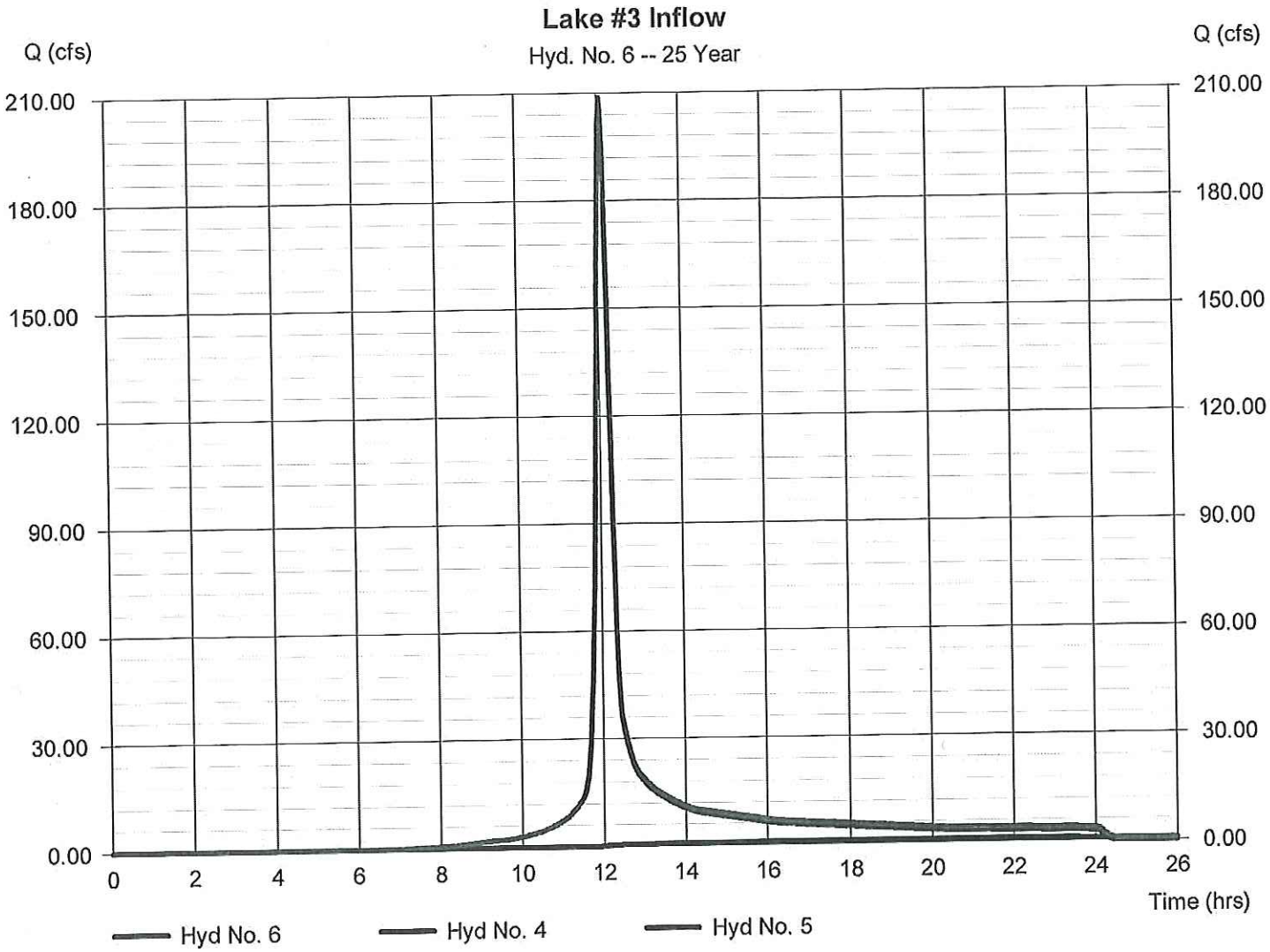
Hydrograph Report

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

Hyd. No. 6

Lake #3 Inflow

Hydrograph type	= Combine	Peak discharge	= 208.71 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 758,555 cuft
Inflow hyds.	= 4, 5	Contrib. drain. area	= 63.500 ac



Hydrograph Report

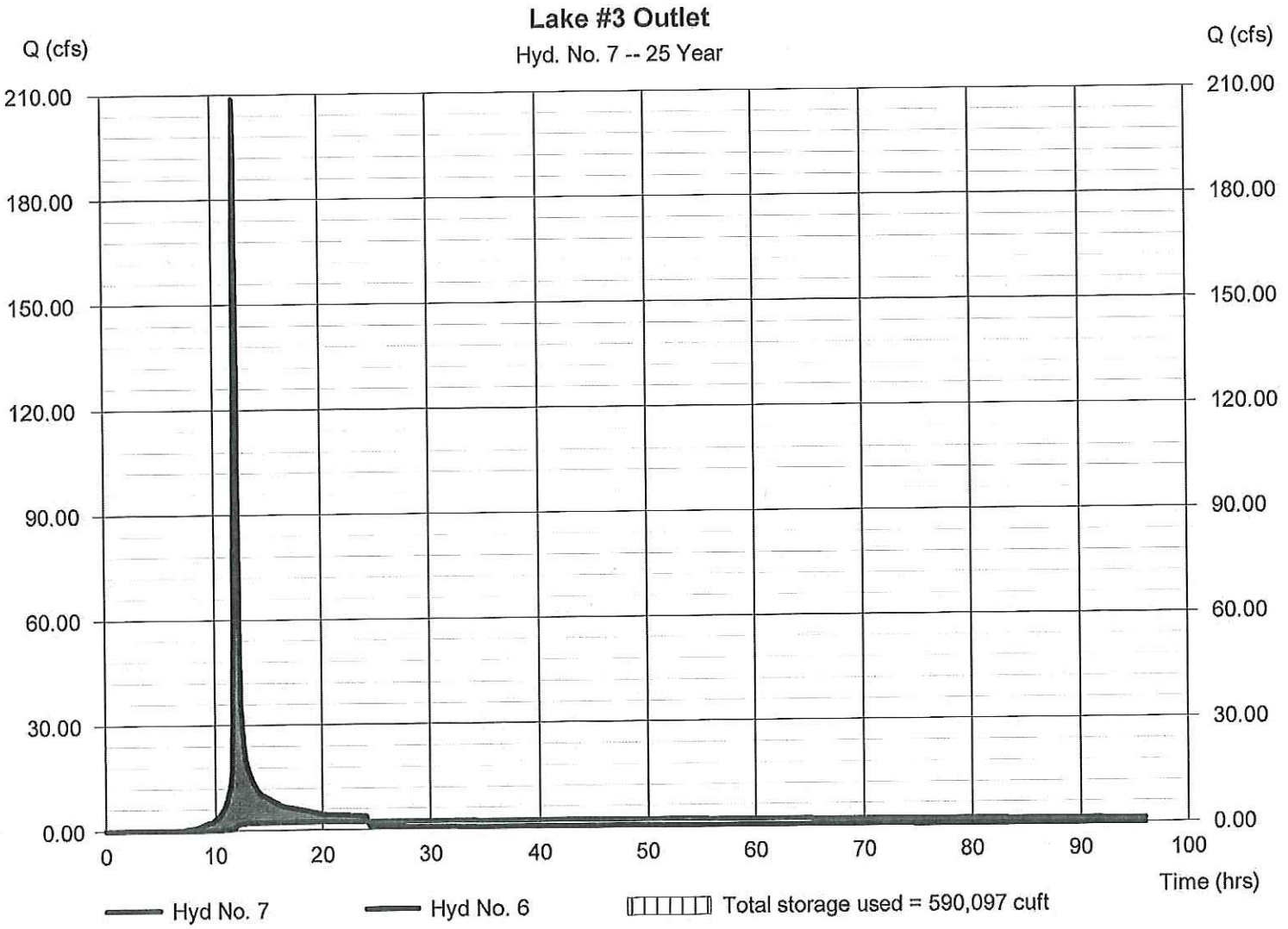
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 7

Lake #3 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 2.339 cfs
Storm frequency	= 25 yrs	Time to peak	= 24.23 hrs
Time interval	= 2 min	Hyd. volume	= 573,366 cuft
Inflow hyd. No.	= 6 - Lake #3 Inflow	Max. Elevation	= 885.23 ft
Reservoir name	= Lake #3	Max. Storage	= 590,097 cuft

Storage Indication method used.



Hydrograph Report

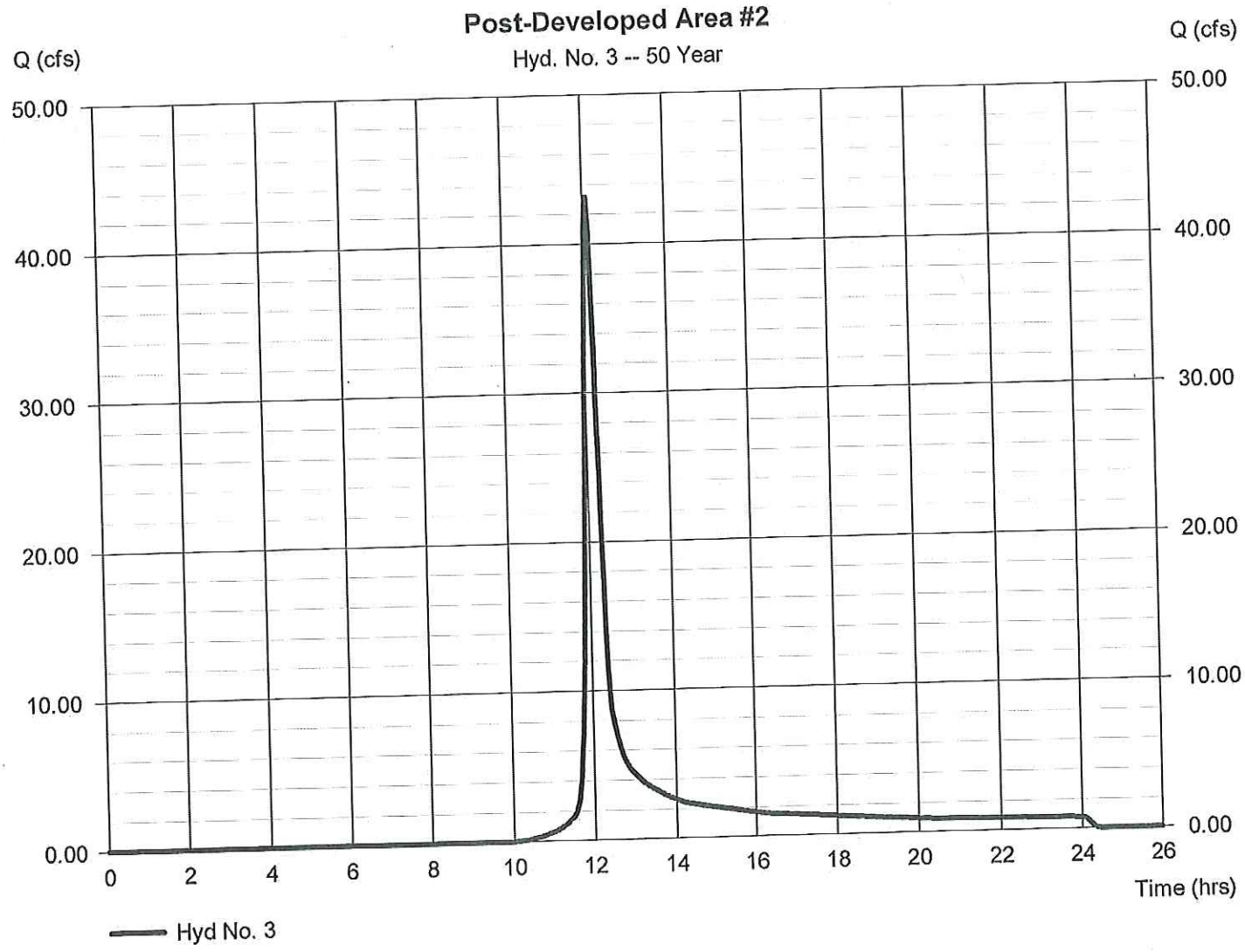
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, May 15, 2012

Hyd. No. 3

Post-Developed Area #2

Hydrograph type	= SCS Runoff	Peak discharge	= 43.17 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 137,993 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.	= 5.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



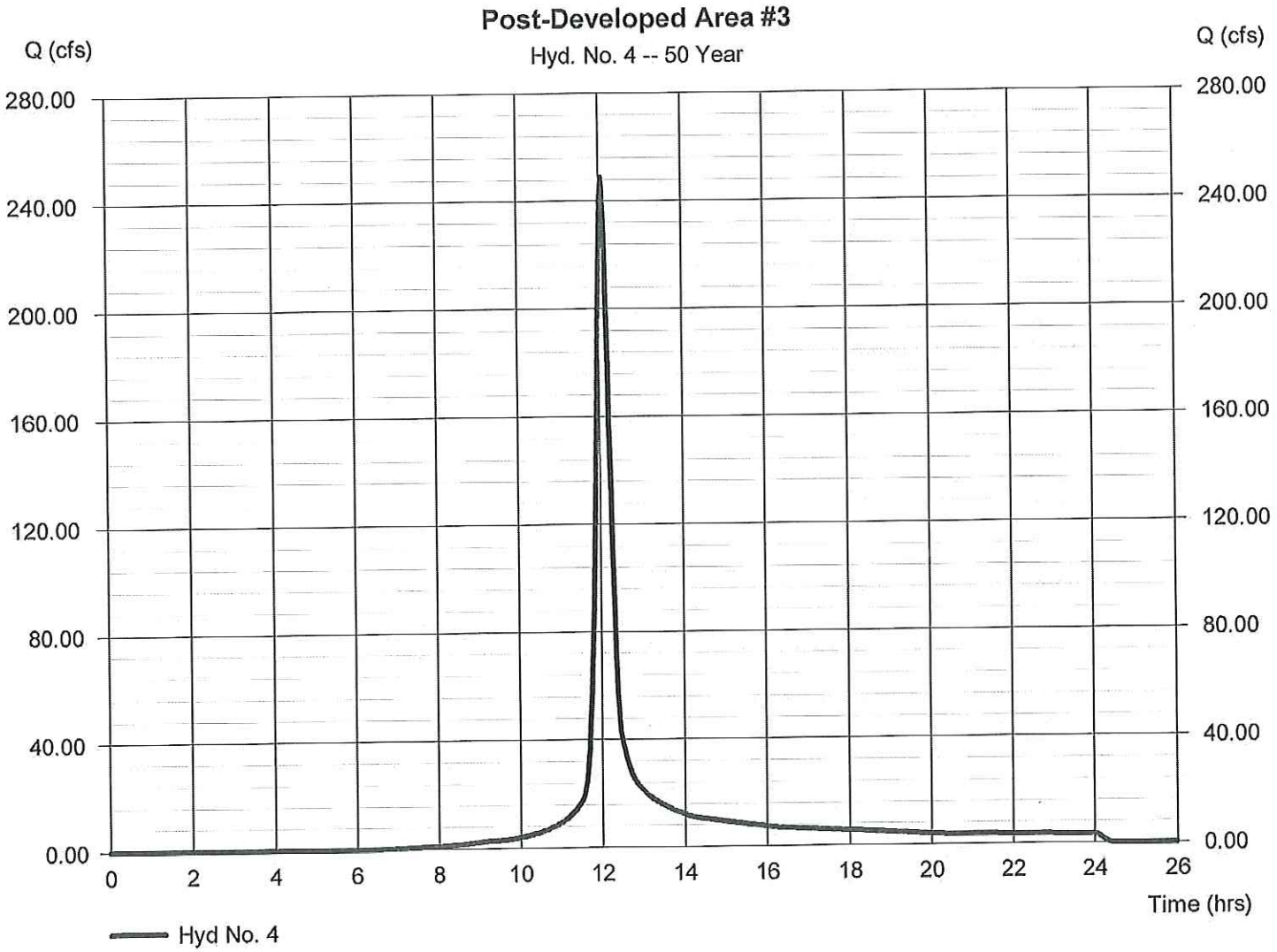
Hydrograph Report

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

Hyd. No. 4

Post-Developed Area #3

Hydrograph type	= SCS Runoff	Peak discharge	= 248.74 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 780,575 cuft
Drainage area	= 63.500 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 5.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

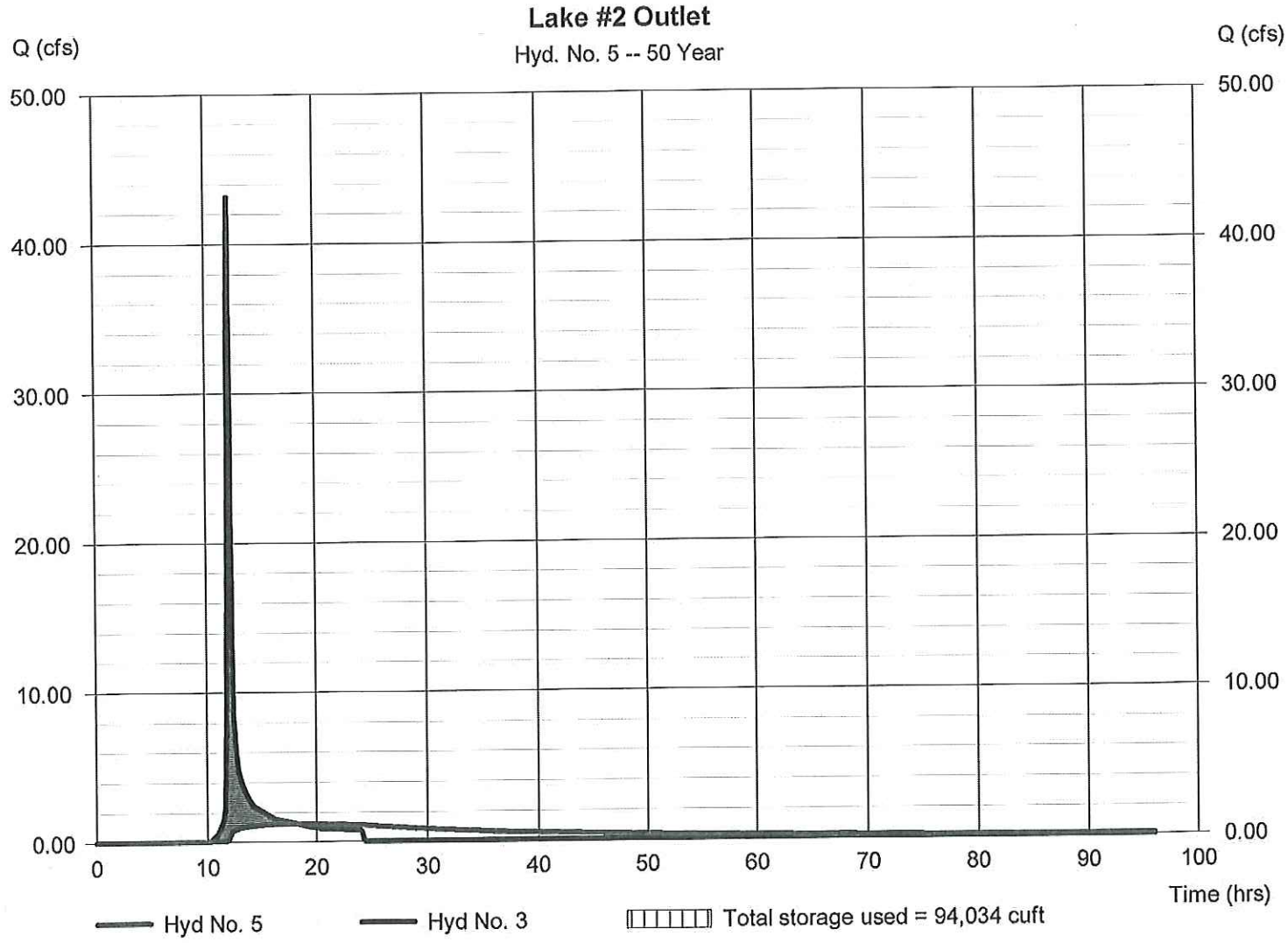
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 5

Lake #2 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 1.206 cfs
Storm frequency	= 50 yrs	Time to peak	= 18.27 hrs
Time interval	= 2 min	Hyd. volume	= 133,701 cuft
Inflow hyd. No.	= 3 - Post-Developed Area #2	Max. Elevation	= 888.84 ft
Reservoir name	= Lake #2	Max. Storage	= 94,034 cuft

Storage Indication method used.



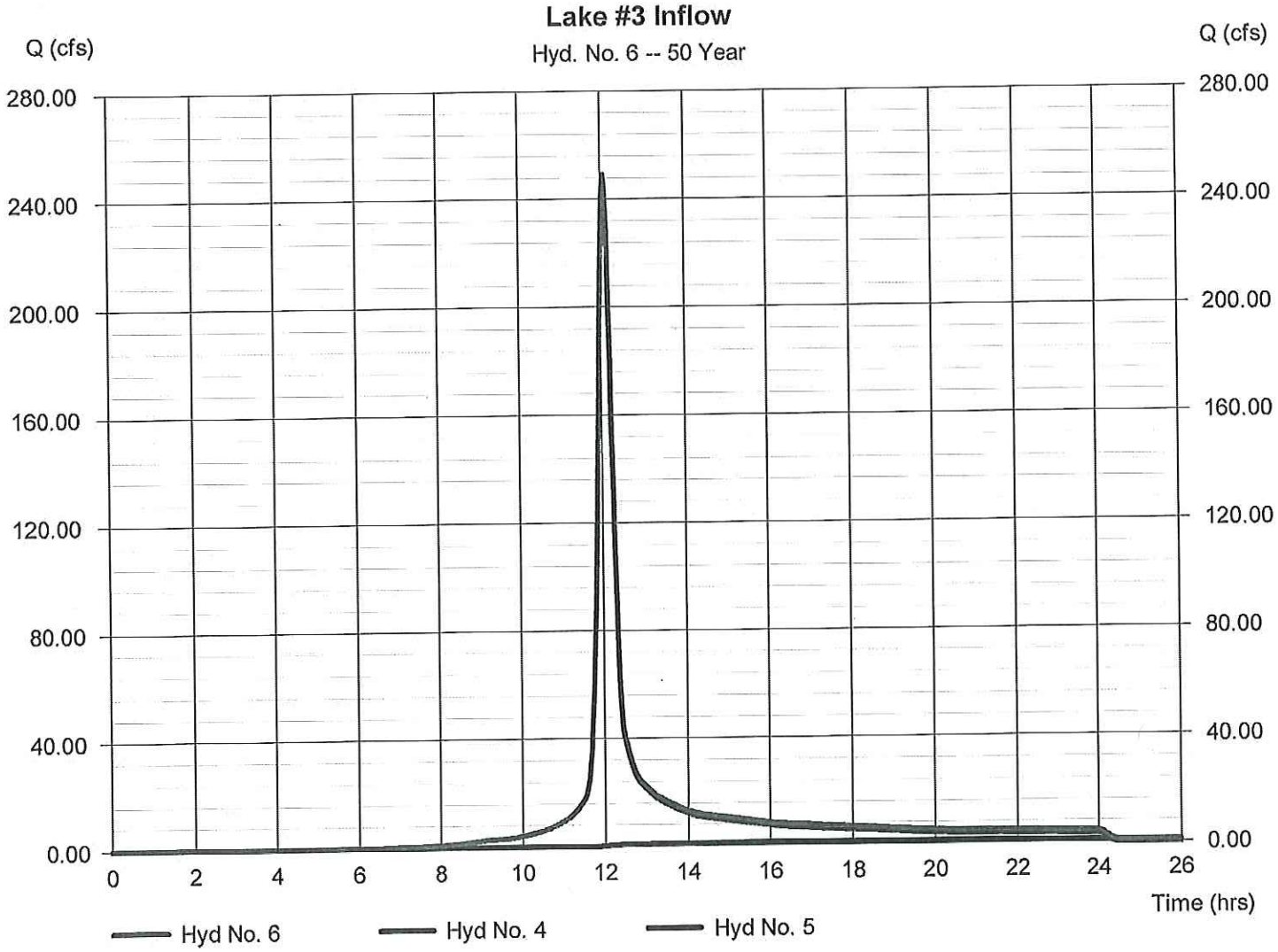
Hydrograph Report

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

Hyd. No. 6

Lake #3 Inflow

Hydrograph type	= Combine	Peak discharge	= 249.07 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 914,276 cuft
Inflow hyds.	= 4, 5	Contrib. drain. area	= 63.500 ac



Hydrograph Report

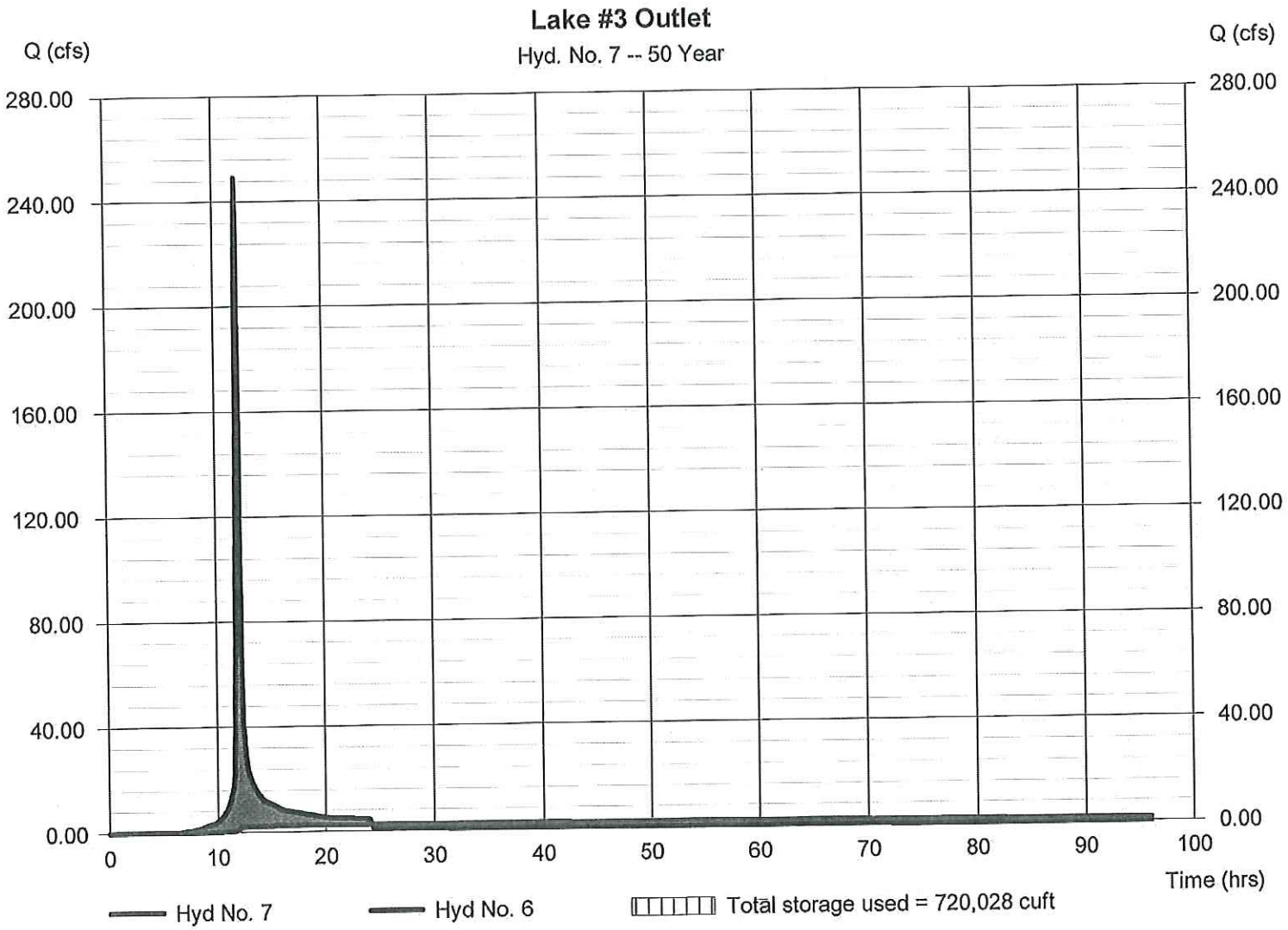
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 7

Lake #3 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 2.568 cfs
Storm frequency	= 50 yrs	Time to peak	= 24.23 hrs
Time interval	= 2 min	Hyd. volume	= 651,649 cuft
Inflow hyd. No.	= 6 - Lake #3 Inflow	Max. Elevation	= 885.89 ft
Reservoir name	= Lake #3	Max. Storage	= 720,028 cuft

Storage Indication method used.



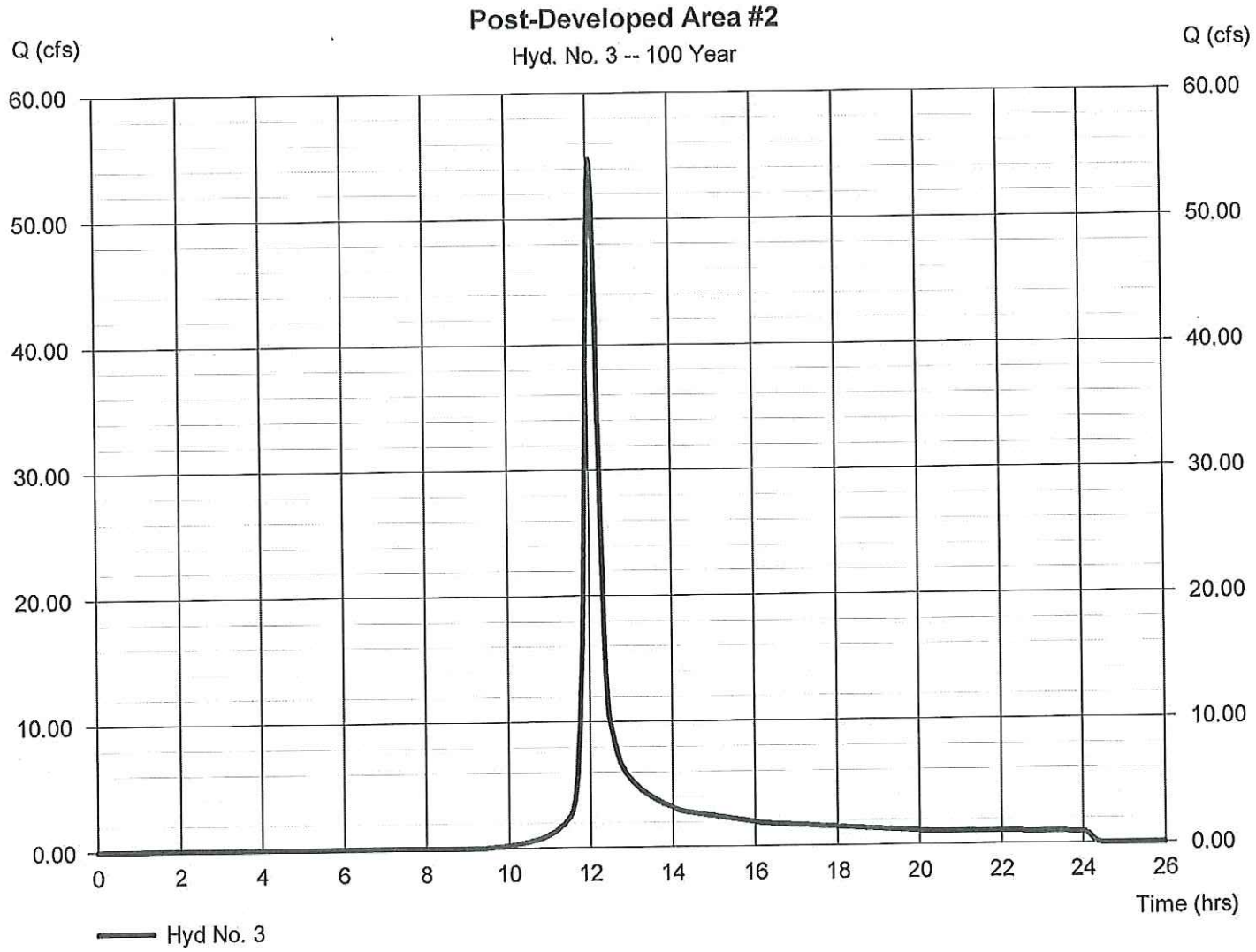
Hydrograph Report

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	= 54.70 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 172,933 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.	= 6.04 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

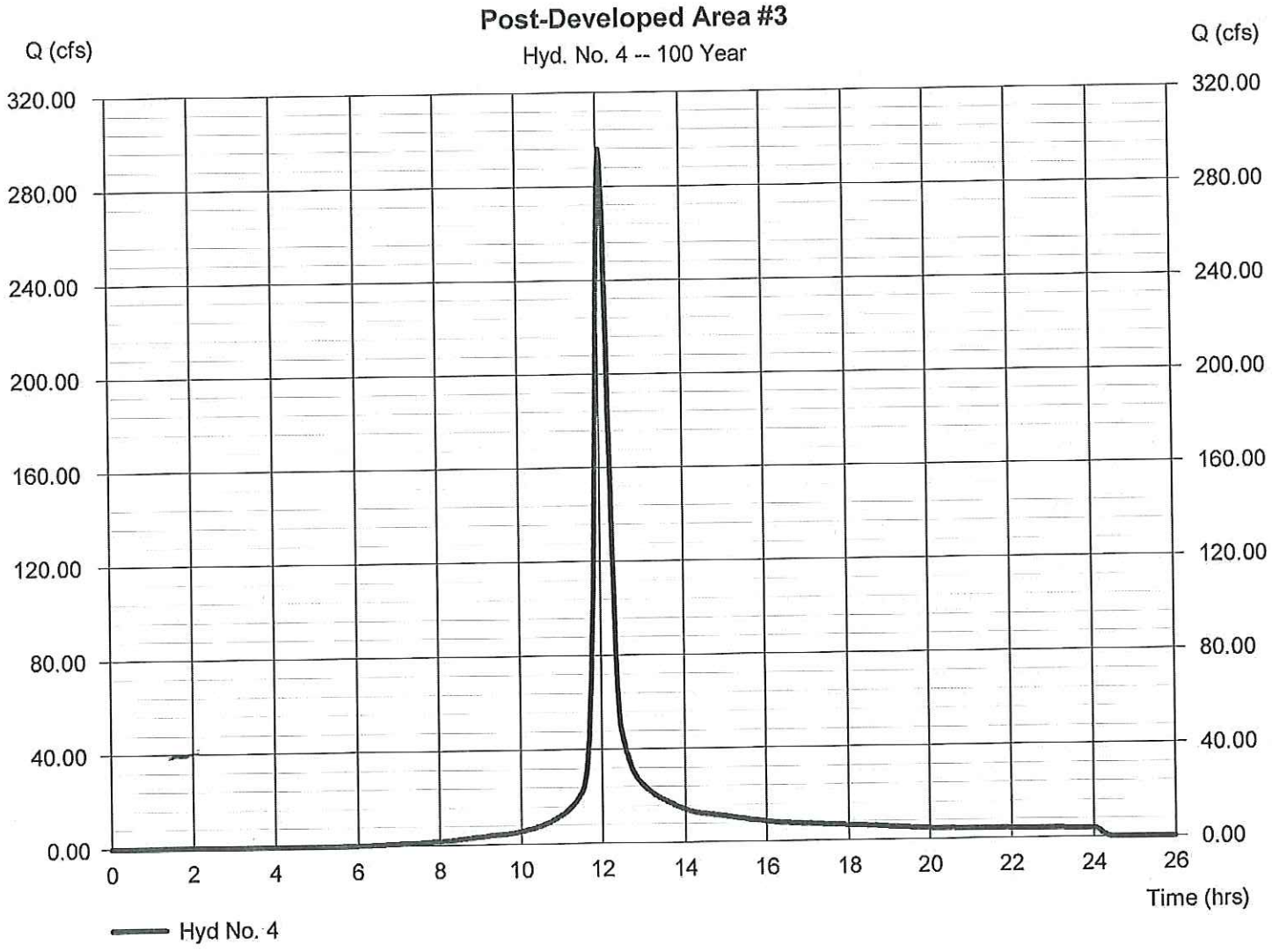
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, May 15, 2012

Hyd. No. 4

Post-Developed Area #3

Hydrograph type	= SCS Runoff	Peak discharge	= 295.85 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 932,341 cuft
Drainage area	= 63.500 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 6.04 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

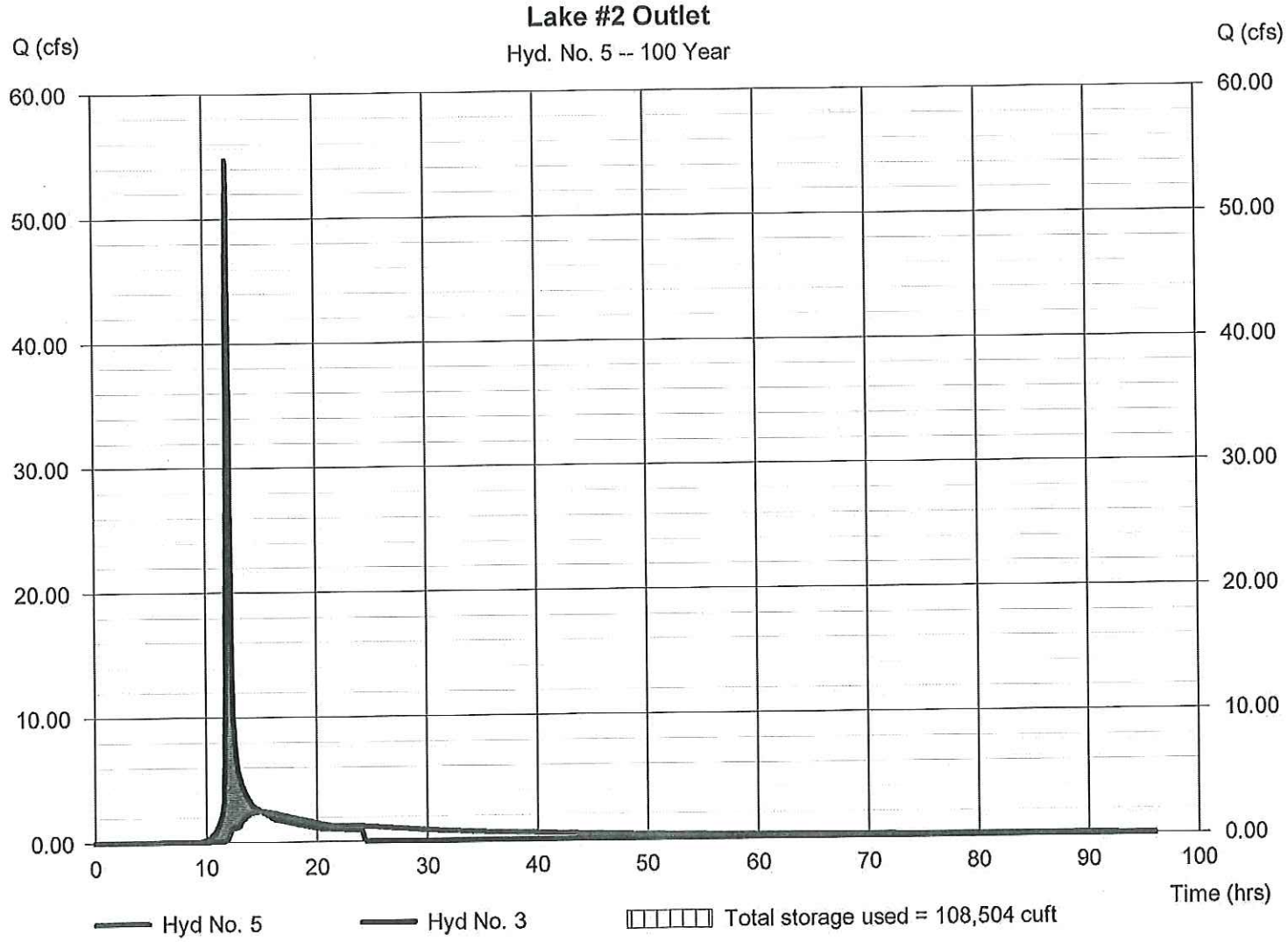
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 5

Lake #2 Outlet

Hydrograph type	= Reservoir	Peak discharge	= 2.464 cfs
Storm frequency	= 100 yrs	Time to peak	= 15.00 hrs
Time interval	= 2 min	Hyd. volume	= 168,183 cuft
Inflow hyd. No.	= 3 - Post-Developed Area #2	Max. Elevation	= 888.99 ft
Reservoir name	= Lake #2	Max. Storage	= 108,504 cuft

Storage Indication method used.



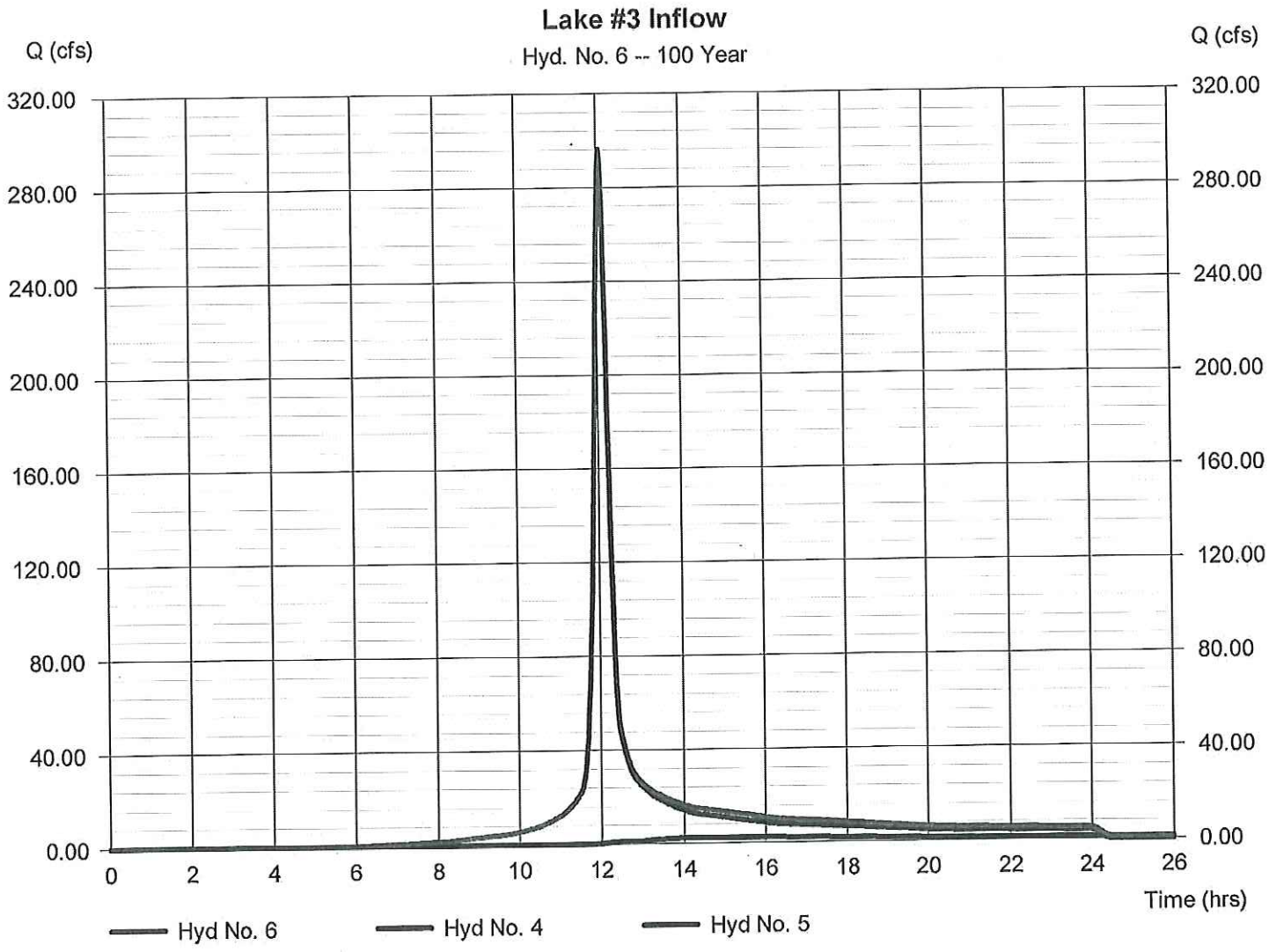
Hydrograph Report

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

Hyd. No. 6

Lake #3 Inflow

Hydrograph type	= Combine	Peak discharge	= 296.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 1,100,524 cuft
Inflow hyds.	= 4, 5	Contrib. drain. area	= 63.500 ac



Hydrograph Report

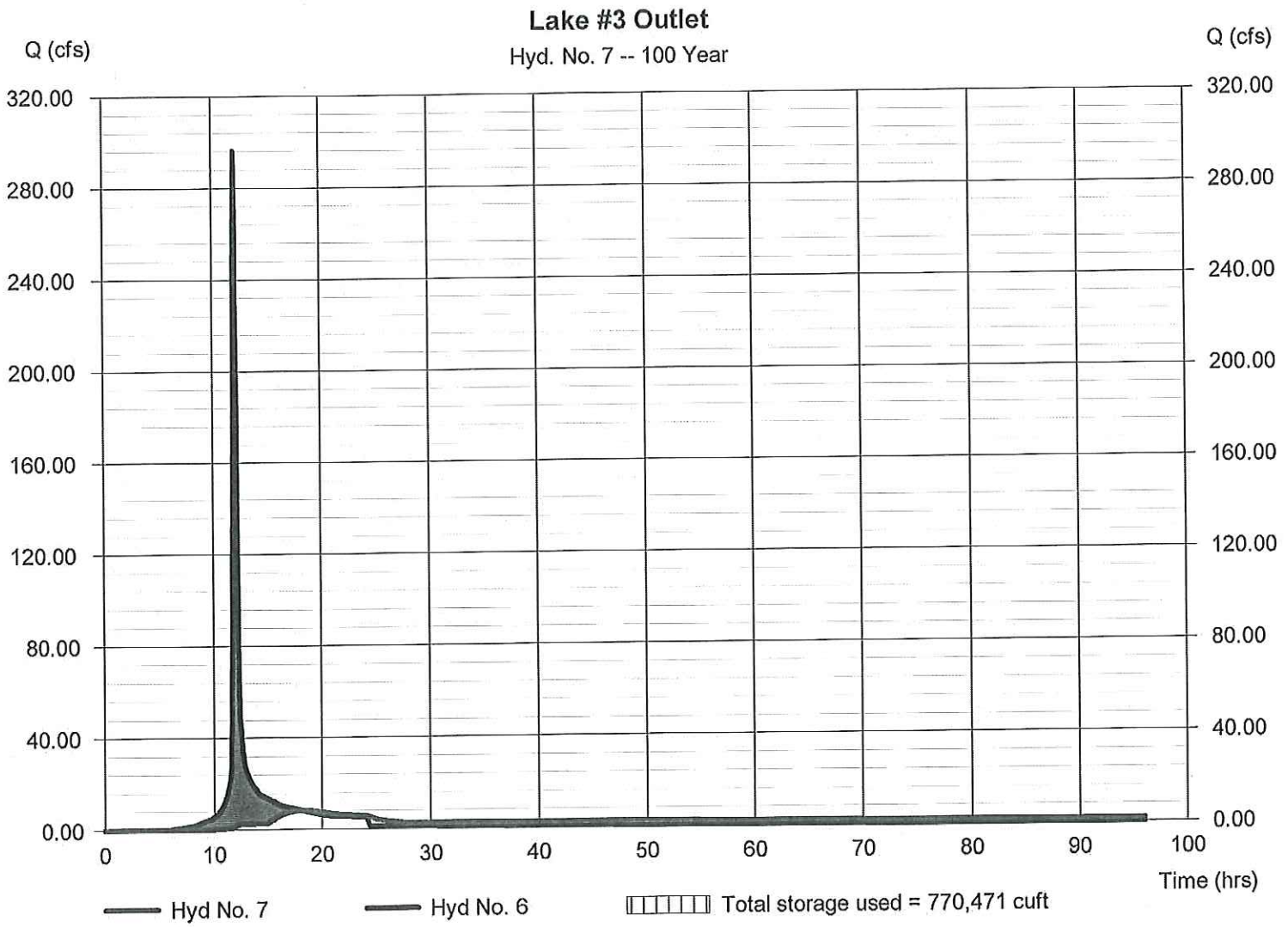
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Tuesday, May 15, 2012

Hyd. No. 7

Lake #3 Outlet

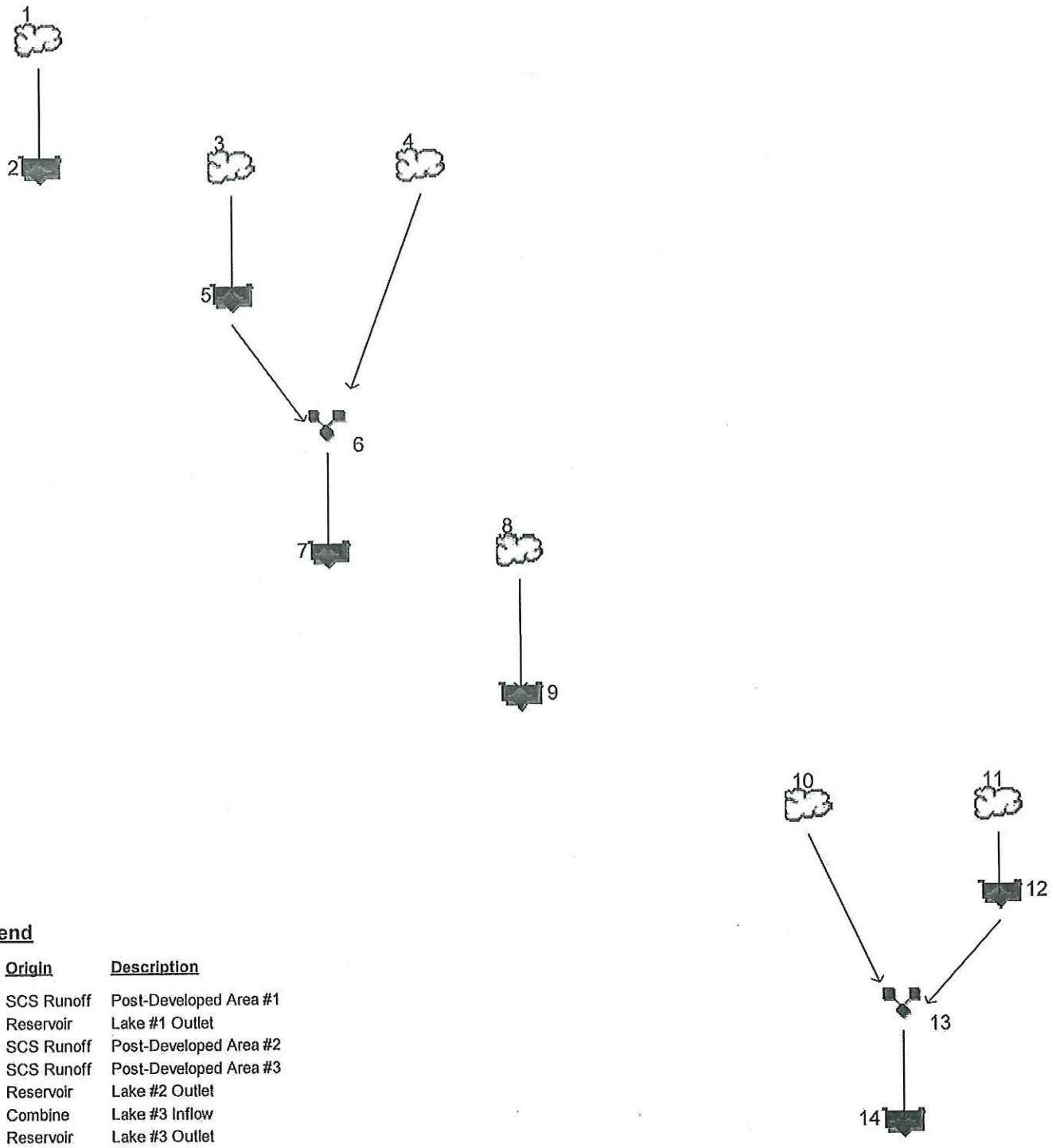
Hydrograph type	= Reservoir	Peak discharge	= 8.211 cfs
Storm frequency	= 100 yrs	Time to peak	= 18.23 hrs
Time interval	= 2 min	Hyd. volume	= 822,128 cuft
Inflow hyd. No.	= 6 - Lake #3 Inflow	Max. Elevation	= 886.14 ft
Reservoir name	= Lake #3	Max. Storage	= 770,471 cuft

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

Hydrograph Report

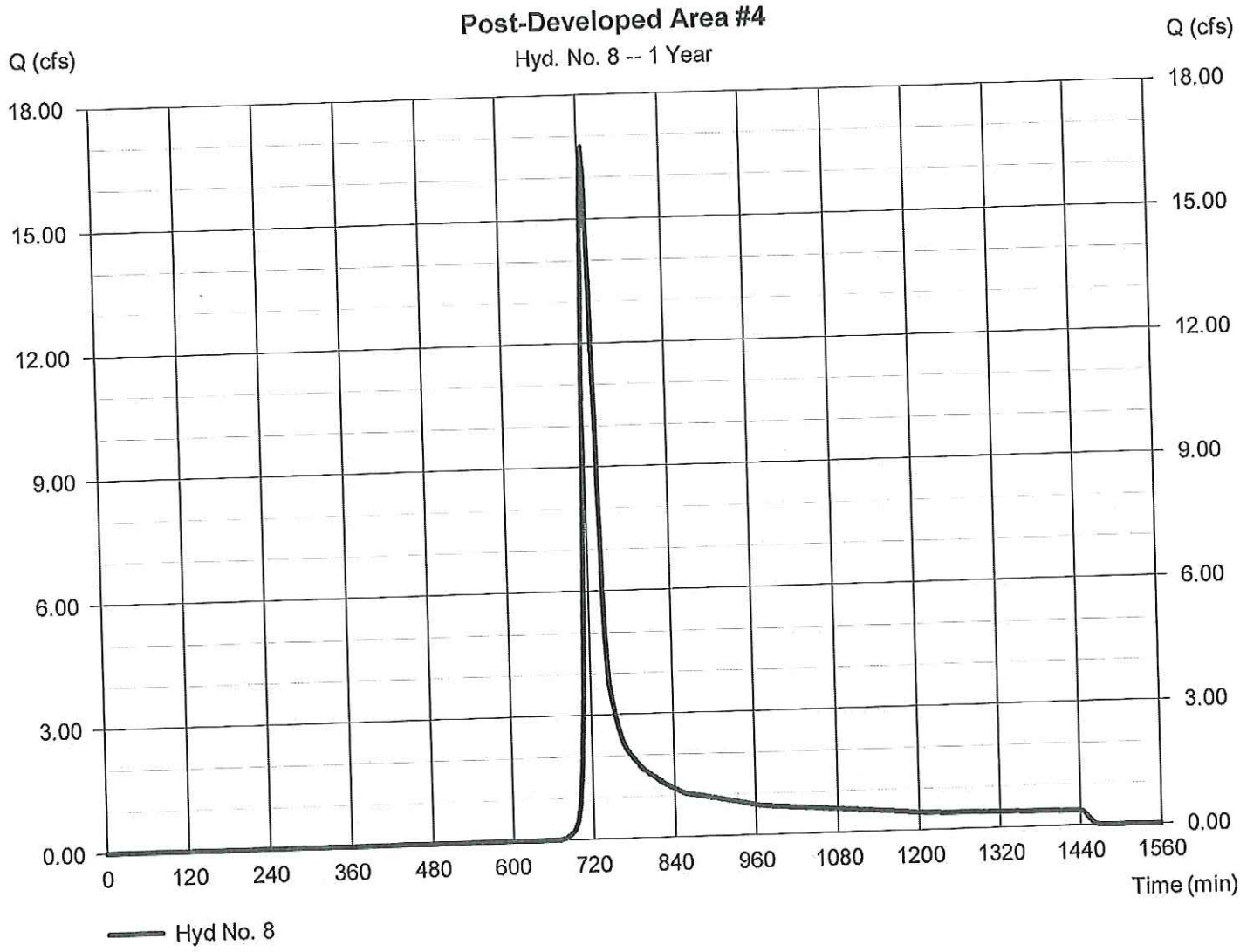
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Monday, Apr 16, 2012

Hyd. No. 8

Post-Developed Area #4

Hydrograph type	= SCS Runoff	Peak discharge	= 16.74 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 56,008 cuft
Drainage area	= 22.250 ac	Curve number	= 78.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.70 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

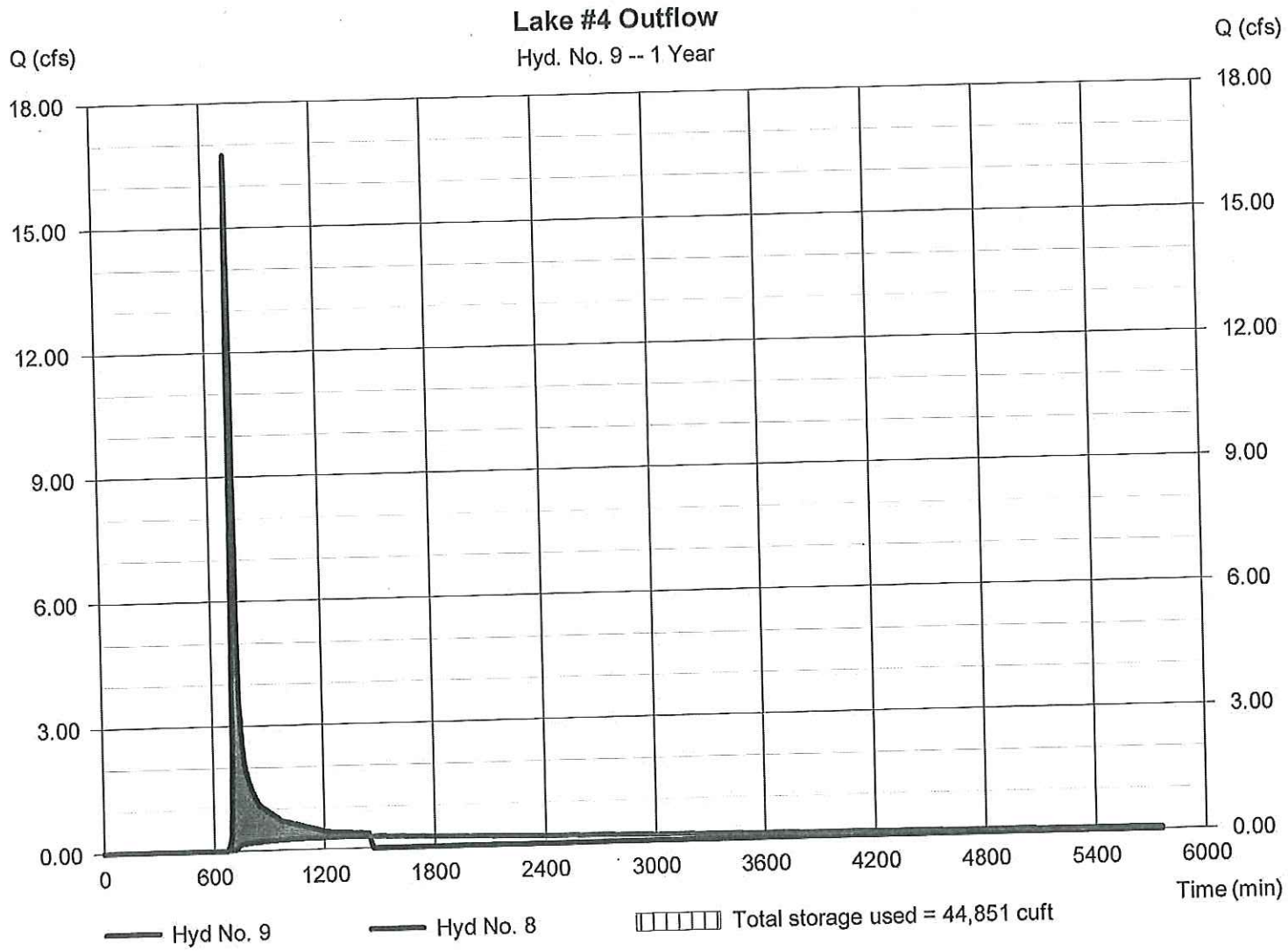
Monday, Apr 16, 2012

Hyd. No. 9

Lake #4 Outflow

Hydrograph type	= Reservoir	Peak discharge	= 0.293 cfs
Storm frequency	= 1 yrs	Time to peak	= 1448 min
Time interval	= 2 min	Hyd. volume	= 46,780 cuft
Inflow hyd. No.	= 8 - Post-Developed Area #4	Max. Elevation	= 890.03 ft
Reservoir name	= Lake #4	Max. Storage	= 44,851 cuft

Storage Indication method used.



Hydrograph Report

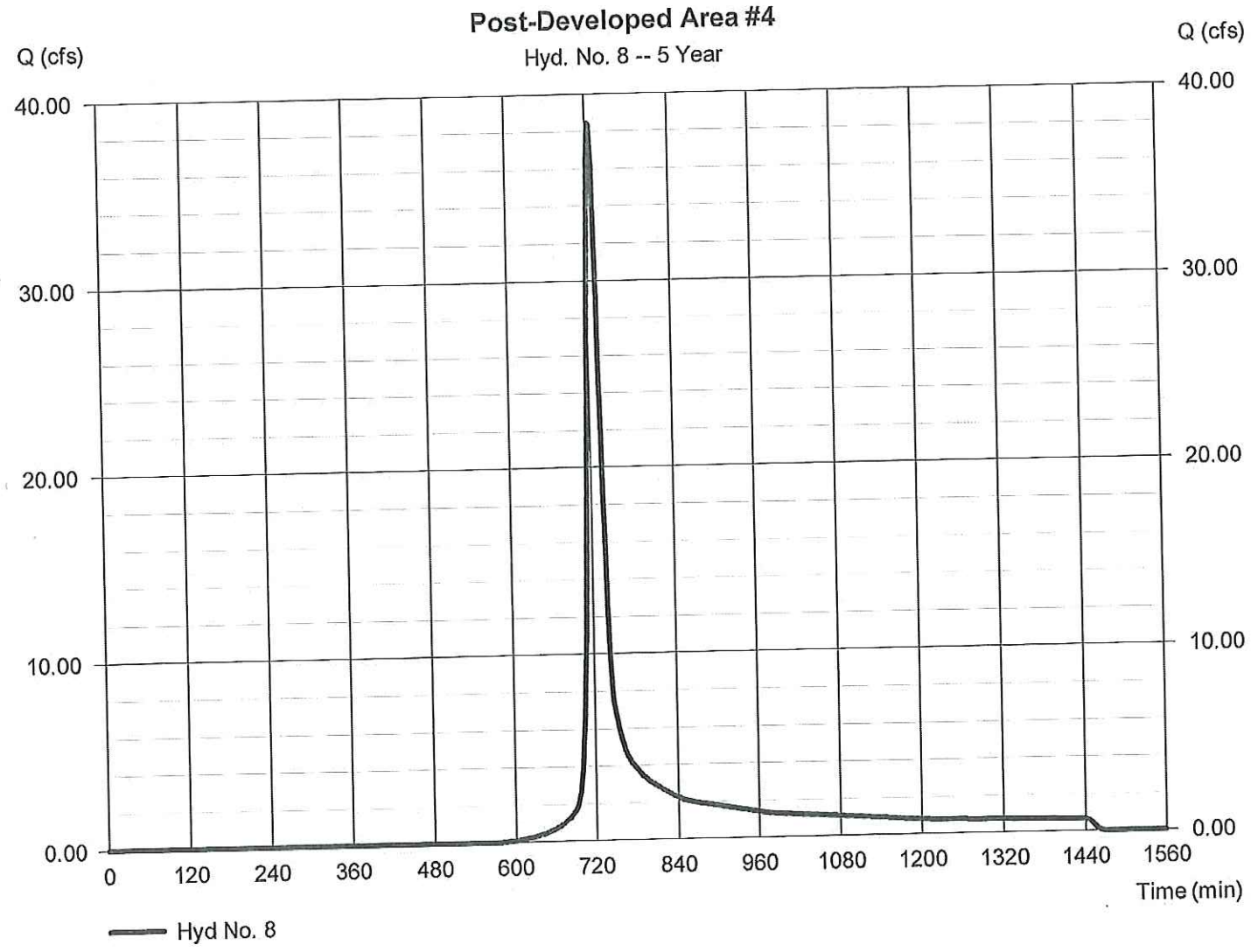
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Monday, Apr 16, 2012

Hyd. No. 8

Post-Developed Area #4

Hydrograph type	= SCS Runoff	Peak discharge	= 38.45 cfs
Storm frequency	= 5 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 121,969 cuft
Drainage area	= 22.250 ac	Curve number	= 78.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.70 min
Total precip.	= 3.49 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

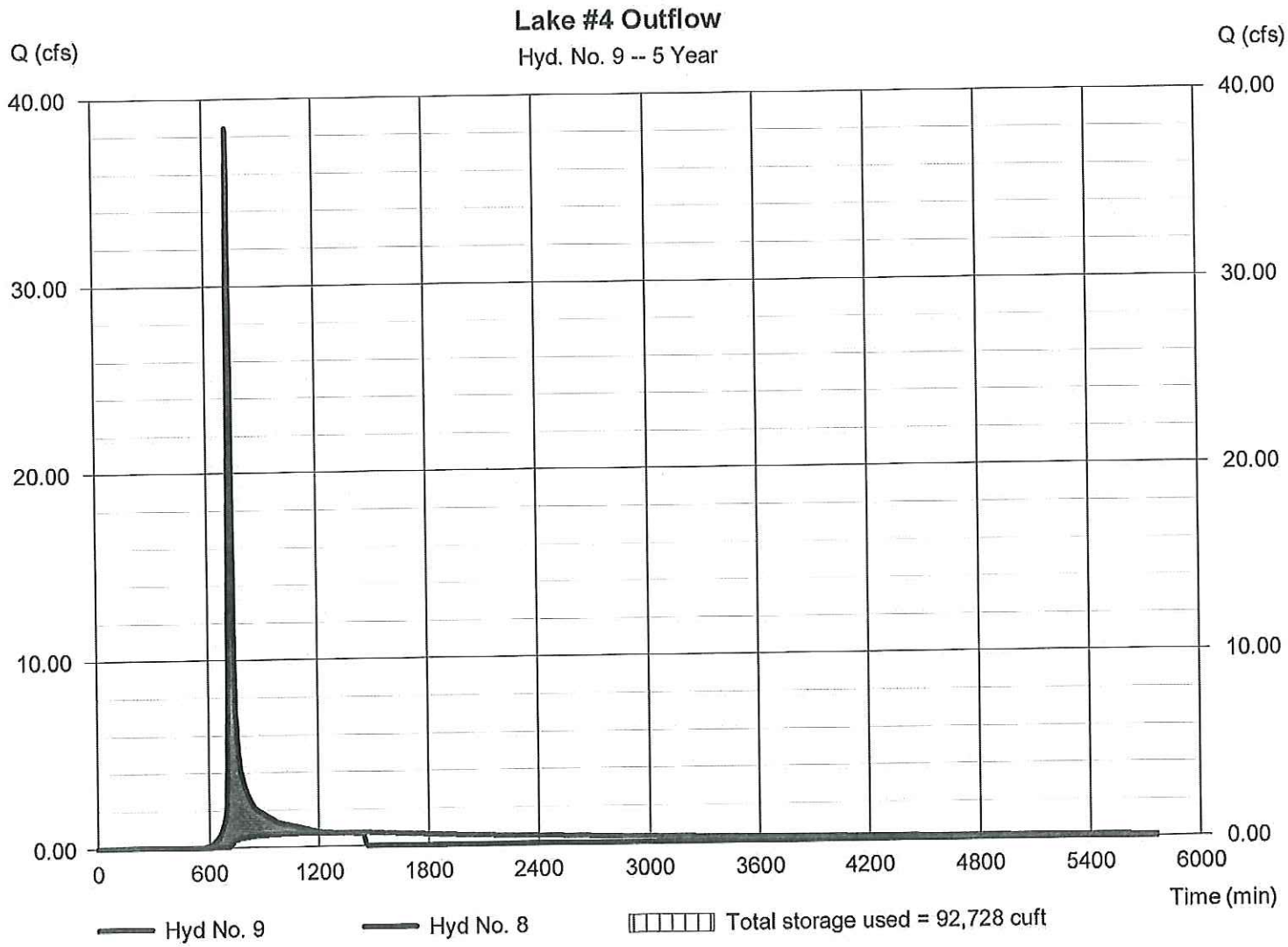
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 9

Lake #4 Outflow

Hydrograph type	= Reservoir	Peak discharge	= 0.729 cfs
Storm frequency	= 5 yrs	Time to peak	= 1294 min
Time interval	= 2 min	Hyd. volume	= 104,661 cuft
Inflow hyd. No.	= 8 - Post-Developed Area #4	Max. Elevation	= 890.48 ft
Reservoir name	= Lake #4	Max. Storage	= 92,728 cuft

Storage Indication method used.



Hydrograph Report

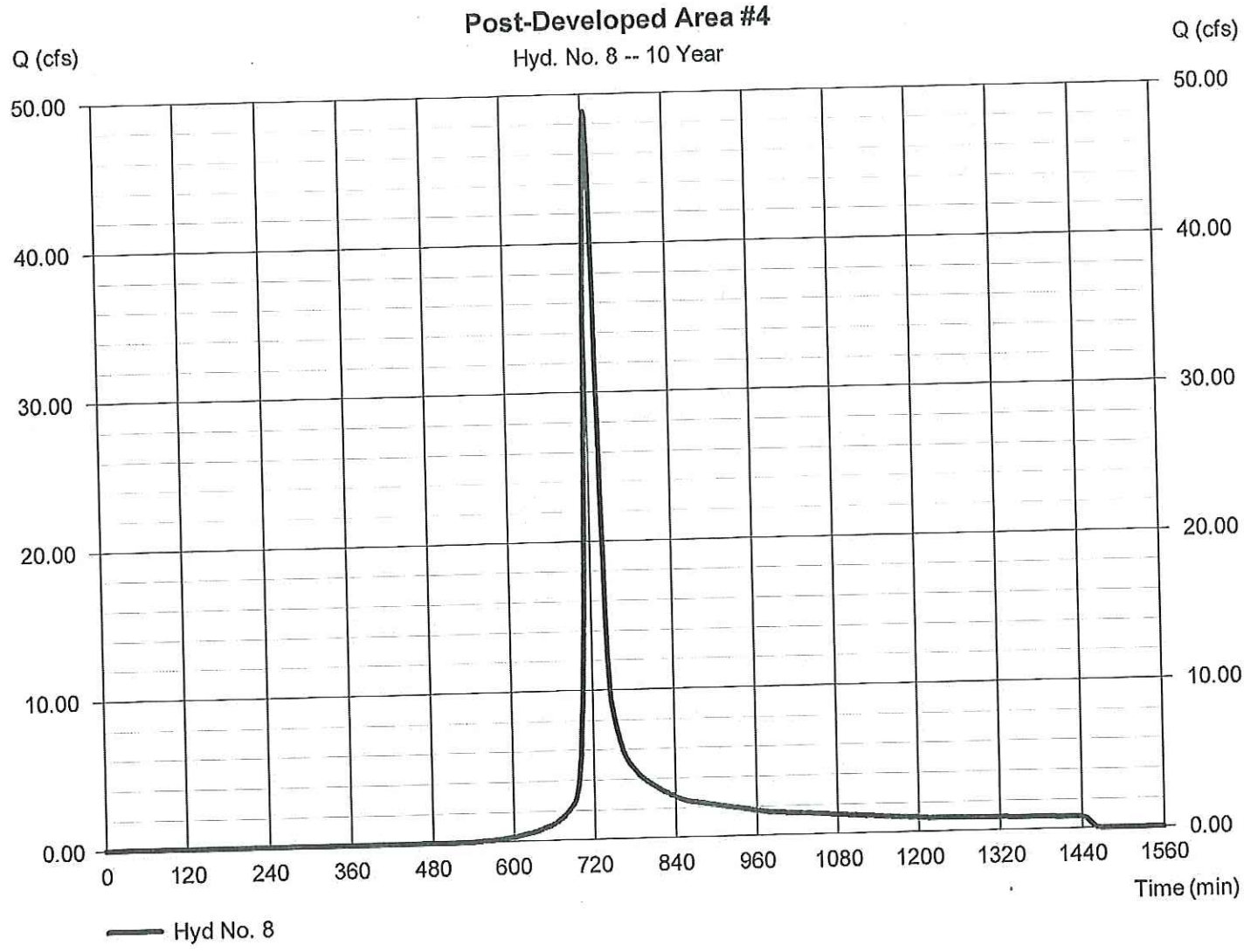
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Monday, Apr 16, 2012

Hyd. No. 8

Post-Developed Area #4

Hydrograph type	= SCS Runoff	Peak discharge	= 48.83 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 153,597 cuft
Drainage area	= 22.250 ac	Curve number	= 78.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.70 min
Total precip.	= 3.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

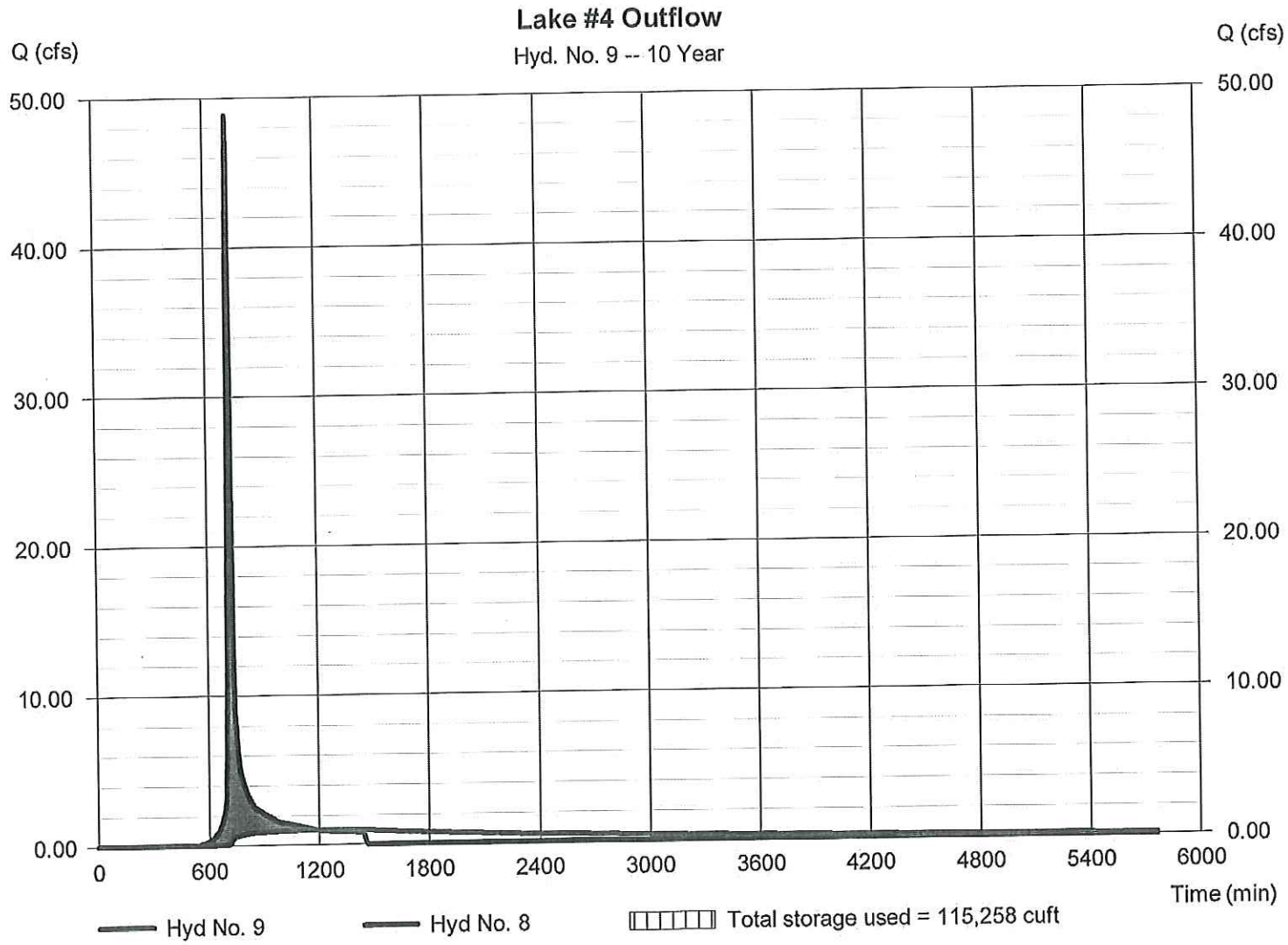
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 9

Lake #4 Outflow

Hydrograph type	= Reservoir	Peak discharge	= 0.975 cfs
Storm frequency	= 10 yrs	Time to peak	= 1194 min
Time interval	= 2 min	Hyd. volume	= 133,478 cuft
Inflow hyd. No.	= 8 - Post-Developed Area #4	Max. Elevation	= 890.69 ft
Reservoir name	= Lake #4	Max. Storage	= 115,258 cuft

Storage Indication method used.



Hydrograph Report

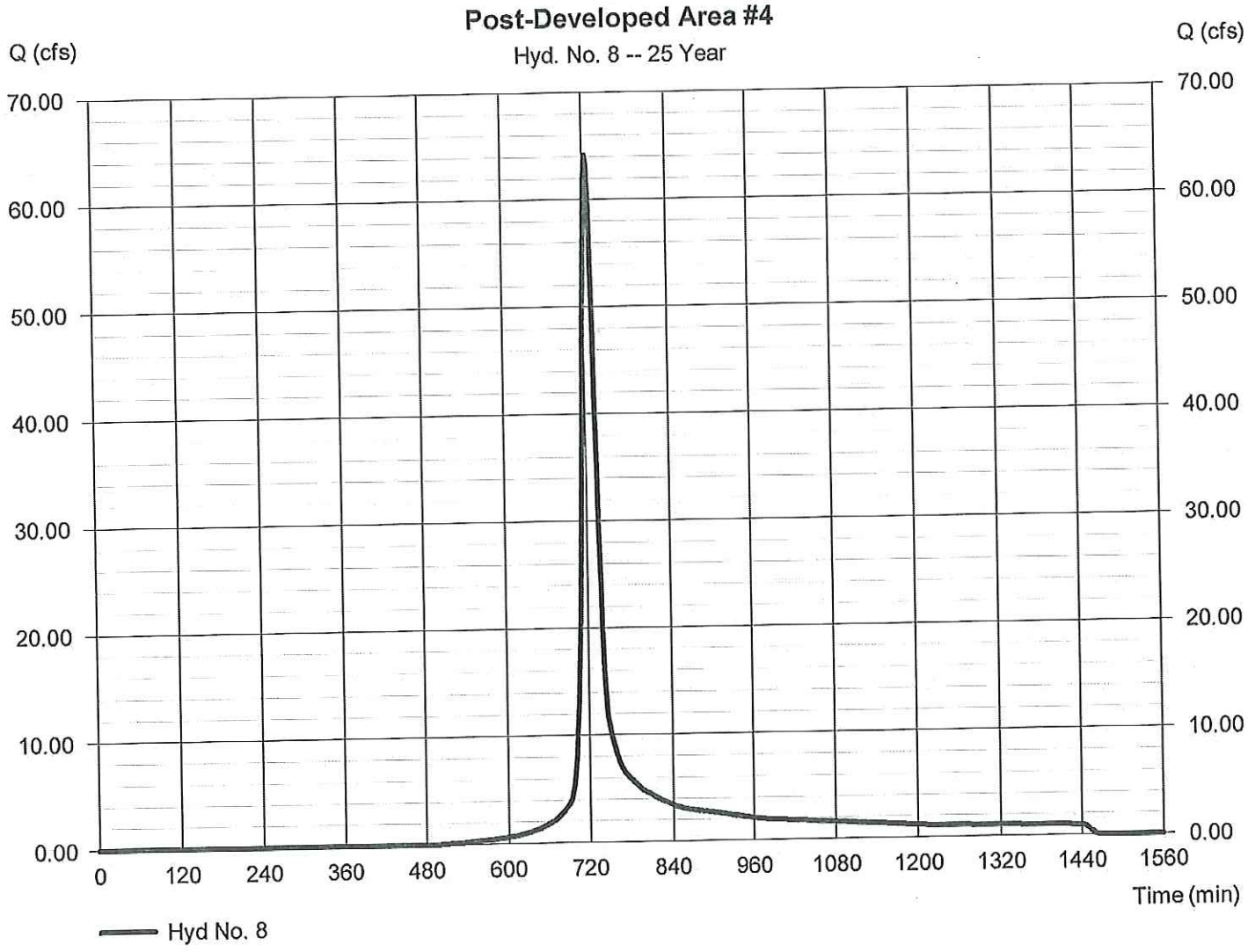
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Monday, Apr 16, 2012

Hyd. No. 8

Post-Developed Area #4

Hydrograph type	= SCS Runoff	Peak discharge	= 64.13 cfs
Storm frequency	= 25 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 200,684 cuft
Drainage area	= 22.250 ac	Curve number	= 78.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.70 min
Total precip.	= 4.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

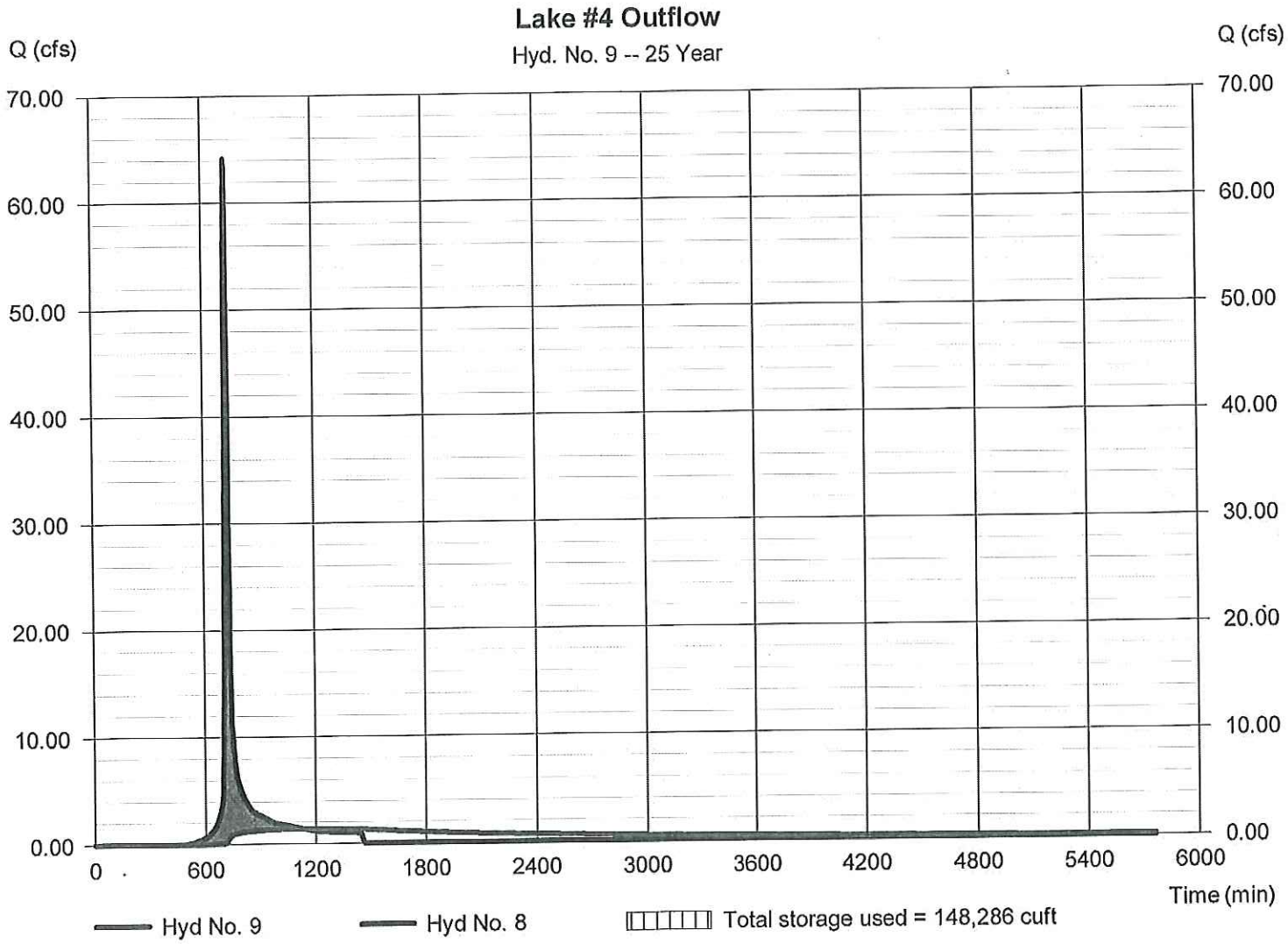
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 9

Lake #4 Outflow

Hydrograph type	= Reservoir	Peak discharge	= 1.378 cfs
Storm frequency	= 25 yrs	Time to peak	= 1146 min
Time interval	= 2 min	Hyd. volume	= 177,117 cuft
Inflow hyd. No.	= 8 - Post-Developed Area #4	Max. Elevation	= 891.00 ft
Reservoir name	= Lake #4	Max. Storage	= 148,286 cuft

Storage Indication method used.



Hydrograph Report

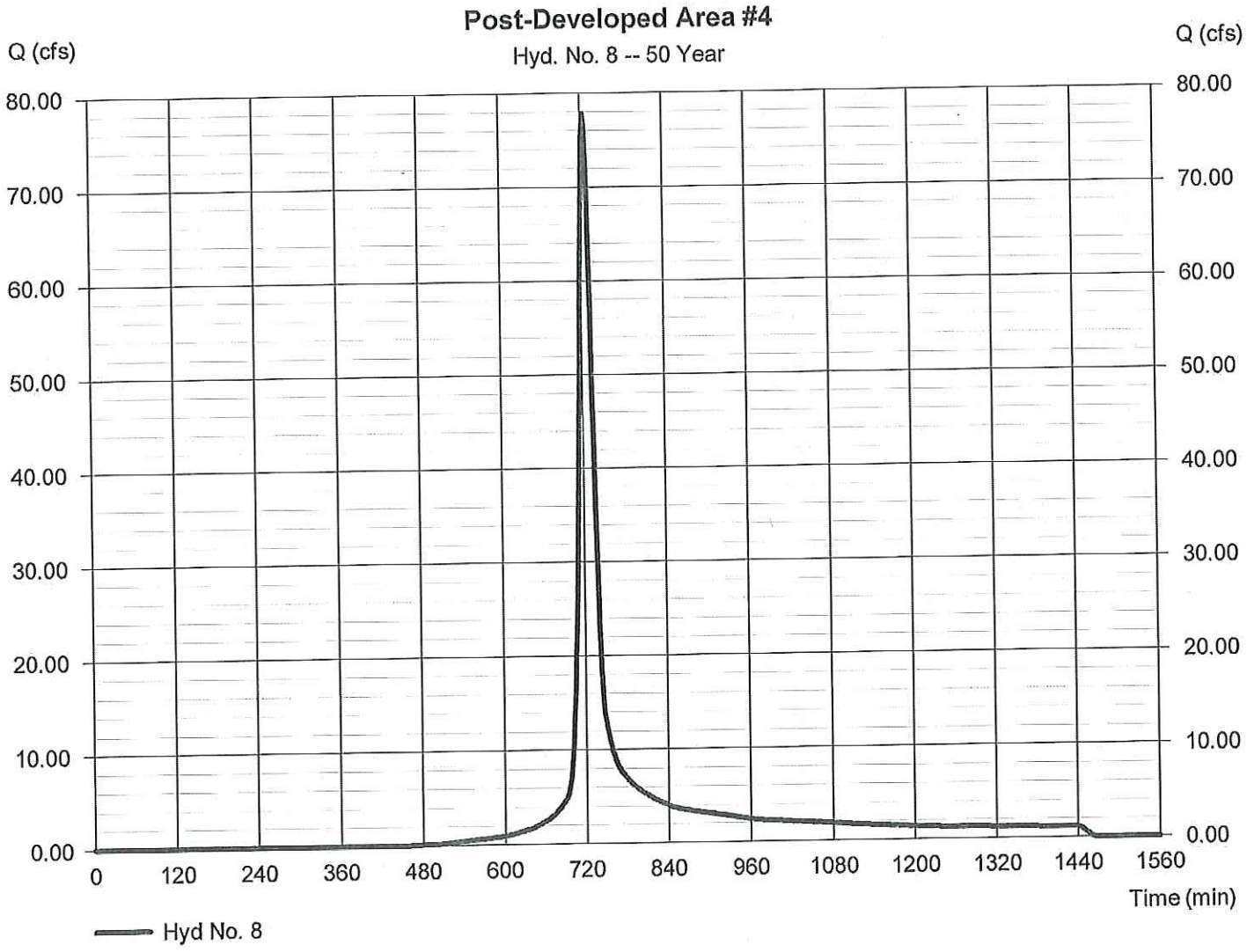
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Monday, Apr 16, 2012

Hyd. No. 8

Post-Developed Area #4

Hydrograph type	= SCS Runoff	Peak discharge	= 77.85 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 243,382 cuft
Drainage area	= 22.250 ac	Curve number	= 78.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.70 min
Total precip.	= 5.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

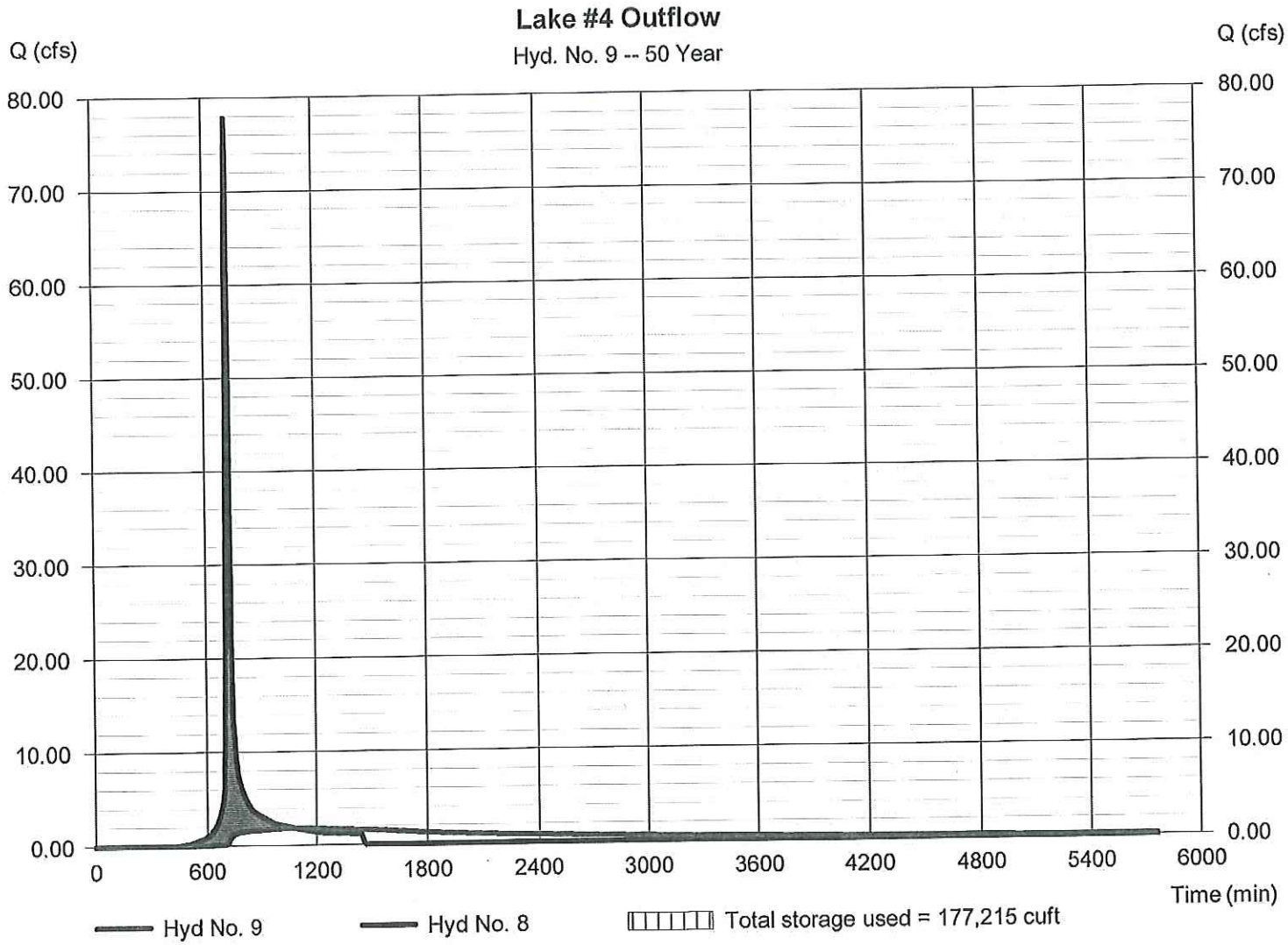
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 — Monday, Apr 16, 2012

Hyd. No. 9

Lake #4 Outflow

Hydrograph type	= Reservoir	Peak discharge	= 1.852 cfs
Storm frequency	= 50 yrs	Time to peak	= 1086 min
Time interval	= 2 min	Hyd. volume	= 217,301 cuft
Inflow hyd. No.	= 8 - Post-Developed Area #4	Max. Elevation	= 891.26 ft
Reservoir name	= Lake #4	Max. Storage	= 177,215 cuft

Storage Indication method used.



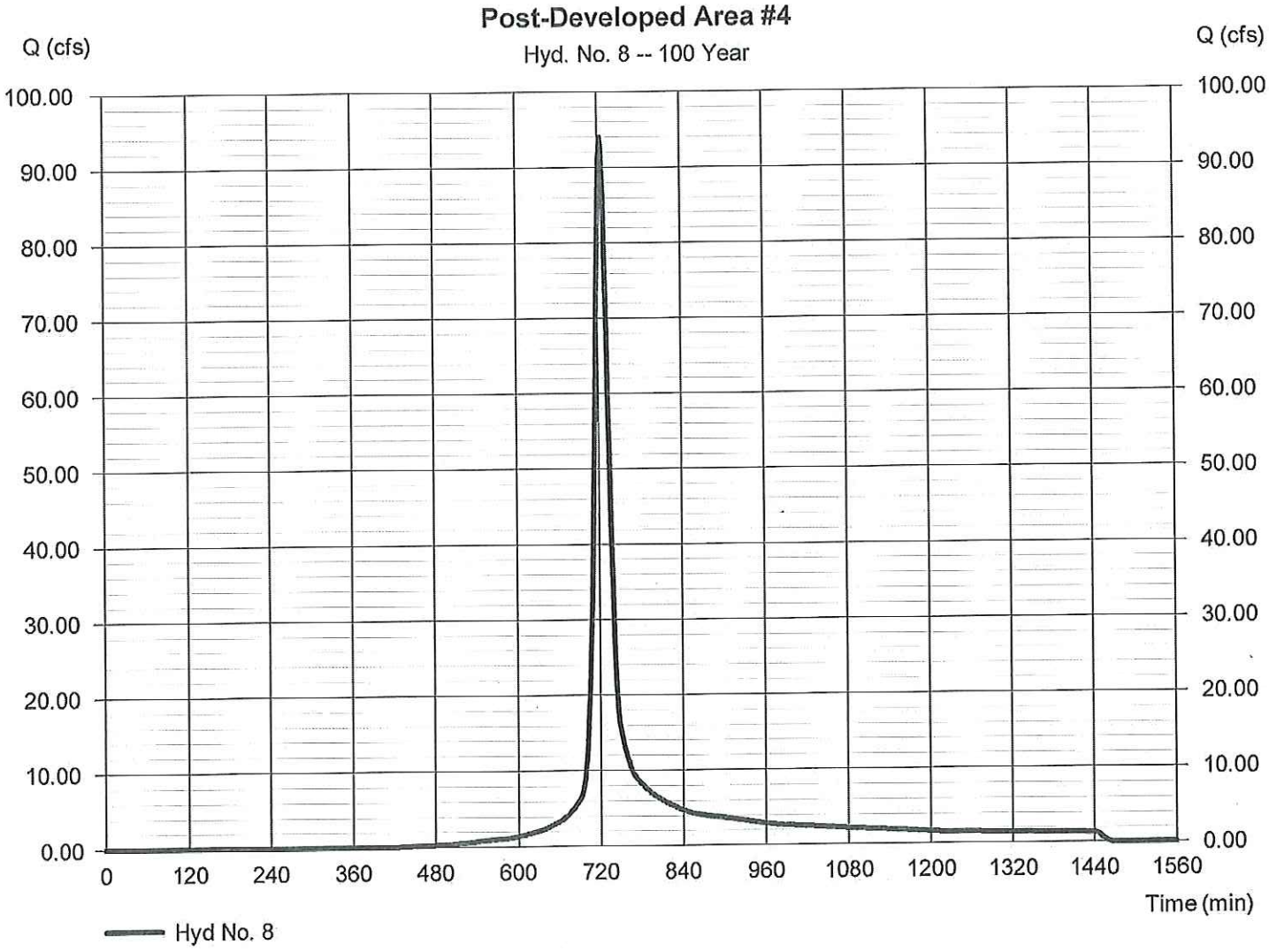
Hydrograph Report

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

Hyd. No. 8

Post-Developed Area #4

Hydrograph type	= SCS Runoff	Peak discharge	= 94.05 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 294,358 cuft
Drainage area	= 22.250 ac	Curve number	= 78.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.70 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. 9

Lake #4 Outflow

Hydrograph type	= Reservoir	Peak discharge	= 3.606 cfs
Storm frequency	= 100 yrs	Time to peak	= 904 min
Time interval	= 2 min	Hyd. volume	= 267,424 cuft
Inflow hyd. No.	= 8 - Post-Developed Area #4	Max. Elevation	= 891.45 ft
Reservoir name	= Lake #4	Max. Storage	= 199,116 cuft

Storage Indication method used.