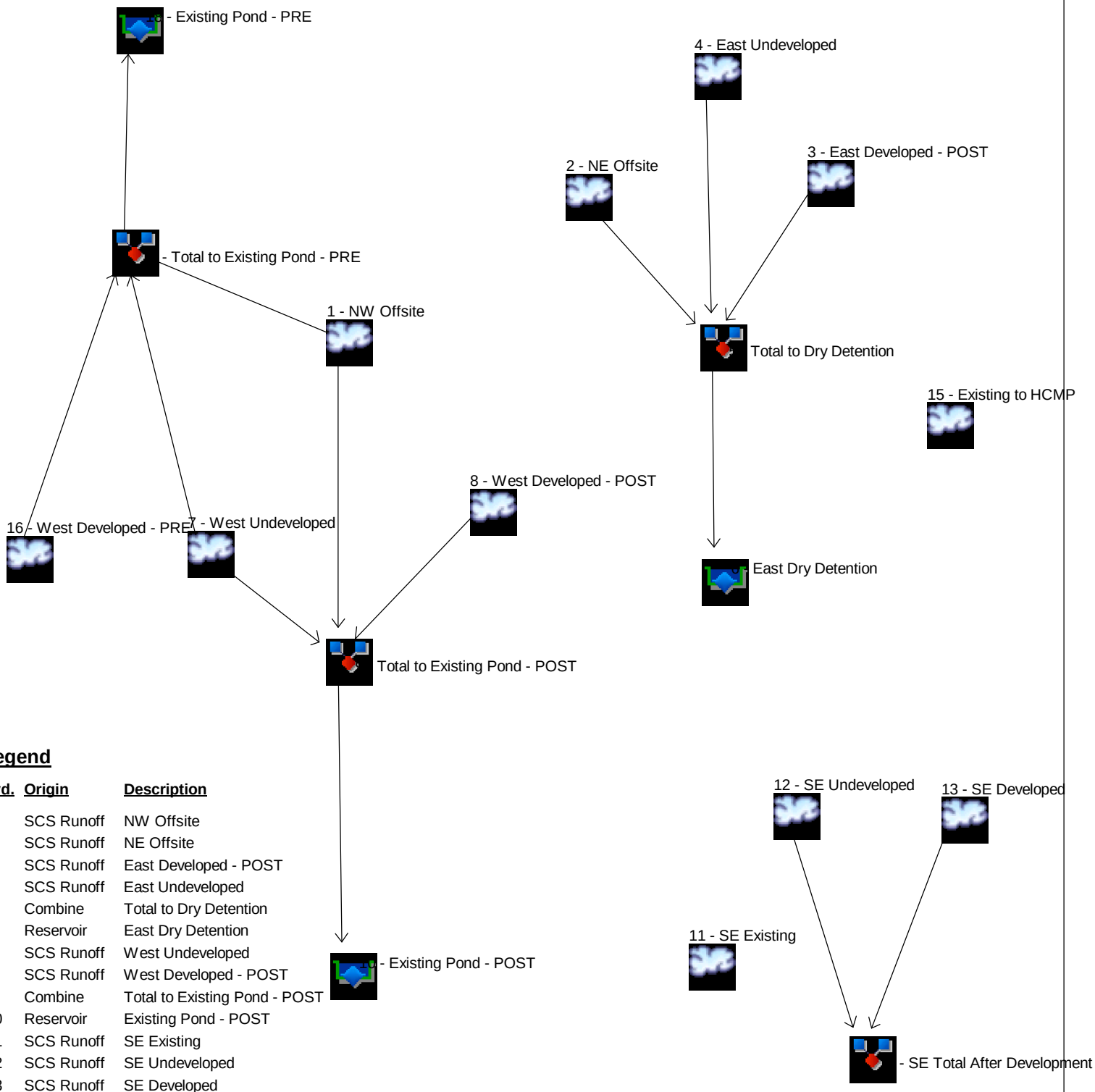
Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066



Legend

Hyd.	Origin	Description
1	SCS Runoff	NW Offsite
2	SCS Runoff	NE Offsite
3	SCS Runoff	East Developed - POST
4	SCS Runoff	East Undeveloped
5	Combine	Total to Dry Detention
6	Reservoir	East Dry Detention
7	SCS Runoff	West Undeveloped
8	SCS Runoff	West Developed - POST
9	Combine	Total to Existing Pond - POST
10	Reservoir	Existing Pond - POST
11	SCS Runoff	SE Existing
12	SCS Runoff	SE Undeveloped
13	SCS Runoff	SE Developed
14	Combine	SE Total After Development
15	SCS Runoff	Existing to HCMP
16	SCS Runoff	West Developed - PRE
17	Combine	Total to Existing Pond - PRE
18	Reservoir	Existing Pond - PRE

Hydrograph Return Period Recap

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	------	-------	8.755	-------	19.86	30.61	48.69	61.22	75.31	NW Offsite
2	SCS Runoff	------	-------	8.498	-------	19.44	29.92	47.73	60.09	73.99	NE Offsite
3	SCS Runoff	------	-------	16.34	-------	26.05	34.35	47.50	56.35	66.20	East Developed - POST
4	SCS Runoff	------	-------	6.619	-------	14.84	22.72	35.94	45.07	55.32	East Undeveloped
5	Combine	2, 3, 4	-------	28.49	-------	54.78	79.09	119.34	147.02	178.08	Total to Dry Detention
6	Reservoir	5	-------	9.338	-------	15.08	19.65	31.11	45.37	63.17	East Dry Detention
7	SCS Runoff	------	-------	20.73	-------	47.78	73.73	117.62	148.20	182.62	West Undeveloped
8	SCS Runoff	------	-------	12.25	-------	19.54	25.76	35.62	42.26	49.65	West Developed - POST
9	Combine	1, 7, 8	-------	31.44	-------	68.99	104.95	165.64	207.83	255.37	Total to Existing Pond - POST
10	Reservoir	9	-------	8.793	-------	45.38	94.95	162.68	205.50	253.08	Existing Pond - POST
11	SCS Runoff	------	-------	3.061	-------	6.862	10.51	16.62	20.85	25.59	SE Existing
12	SCS Runoff	------	-------	1.820	-------	4.080	6.249	9.884	12.40	15.21	SE Undeveloped
13	SCS Runoff	------	-------	3.063	-------	4.885	6.440	8.906	10.57	12.41	SE Developed
14	Combine	12, 13	-------	4.867	-------	8.965	12.69	18.79	22.96	27.63	SE Total After Development
15	SCS Runoff	------	-------	12.38	-------	28.64	44.27	70.65	89.02	109.75	Existing to HCMP
16	SCS Runoff	------	-------	4.964	-------	11.13	17.04	26.96	33.81	41.49	West Developed - PRE
17	Combine	1, 7, 16	-------	28.24	-------	65.34	101.18	162.09	204.44	252.16	Total to Existing Pond - PRE
18	Reservoir	17	-------	7.400	-------	37.51	89.55	158.98	202.13	249.63	Existing Pond - PRE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

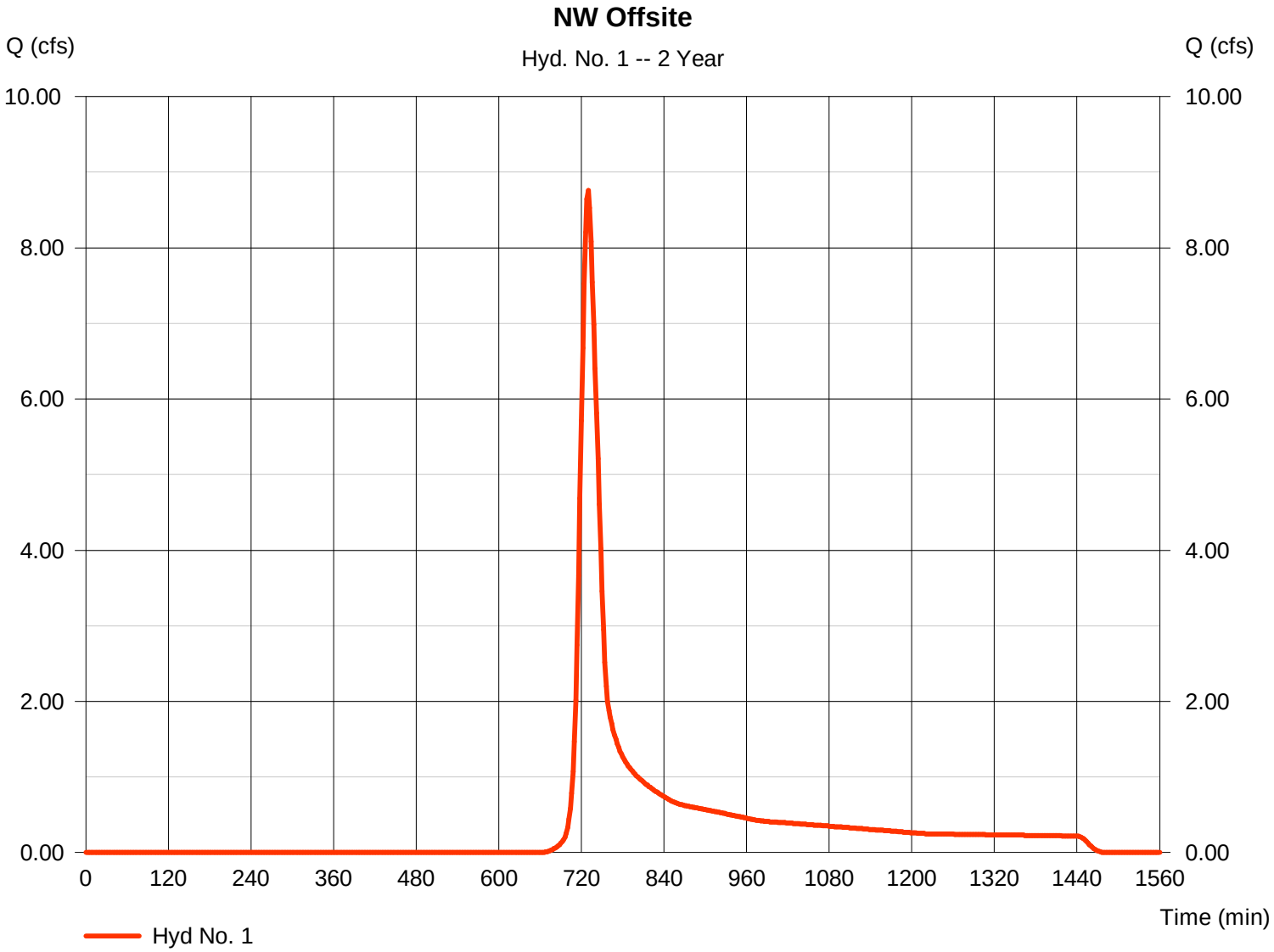
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	8.755	2	730	34,423	------	------	------	NW Offsite
2	SCS Runoff	8.498	2	734	39,705	------	------	------	NE Offsite
3	SCS Runoff	16.34	2	722	47,401	------	------	------	East Developed - POST
4	SCS Runoff	6.619	2	724	19,483	------	------	------	East Undeveloped
5	Combine	28.49	2	724	106,589	2, 3, 4	------	------	Total to Dry Detention
6	Reservoir	9.338	2	748	106,571	5	1313.69	32,938	East Dry Detention
7	SCS Runoff	20.73	2	742	121,299	------	------	------	West Undeveloped
8	SCS Runoff	12.25	2	722	35,551	------	------	------	West Developed - POST
9	Combine	31.44	2	728	191,271	1, 7, 8	------	------	Total to Existing Pond - POST
10	Reservoir	8.793	2	784	191,143	9	1310.65	79,221	Existing Pond - POST
11	SCS Runoff	3.061	2	724	9,011	------	------	------	SE Existing
12	SCS Runoff	1.820	2	724	5,358	------	------	------	SE Undeveloped
13	SCS Runoff	3.063	2	722	8,888	------	------	------	SE Developed
14	Combine	4.867	2	722	14,245	12, 13	------	------	SE Total After Development
15	SCS Runoff	12.38	2	746	81,057	------	------	------	Existing to HCMP
16	SCS Runoff	4.964	2	724	14,612	------	------	------	West Developed - PRE
17	Combine	28.24	2	736	170,333	1, 7, 16	------	------	Total to Existing Pond - PRE
18	Reservoir	7.400	2	786	170,205	17	1310.45	68,906	Existing Pond - PRE

Hydrograph Report

Hyd. No. 1

NW Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.755 cfs
Storm frequency	=	2 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	34,423 cuft
Drainage area	=	14.000 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	775 ft
Tc method	=	LAG	Time of conc. (Tc)	=	23.70 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

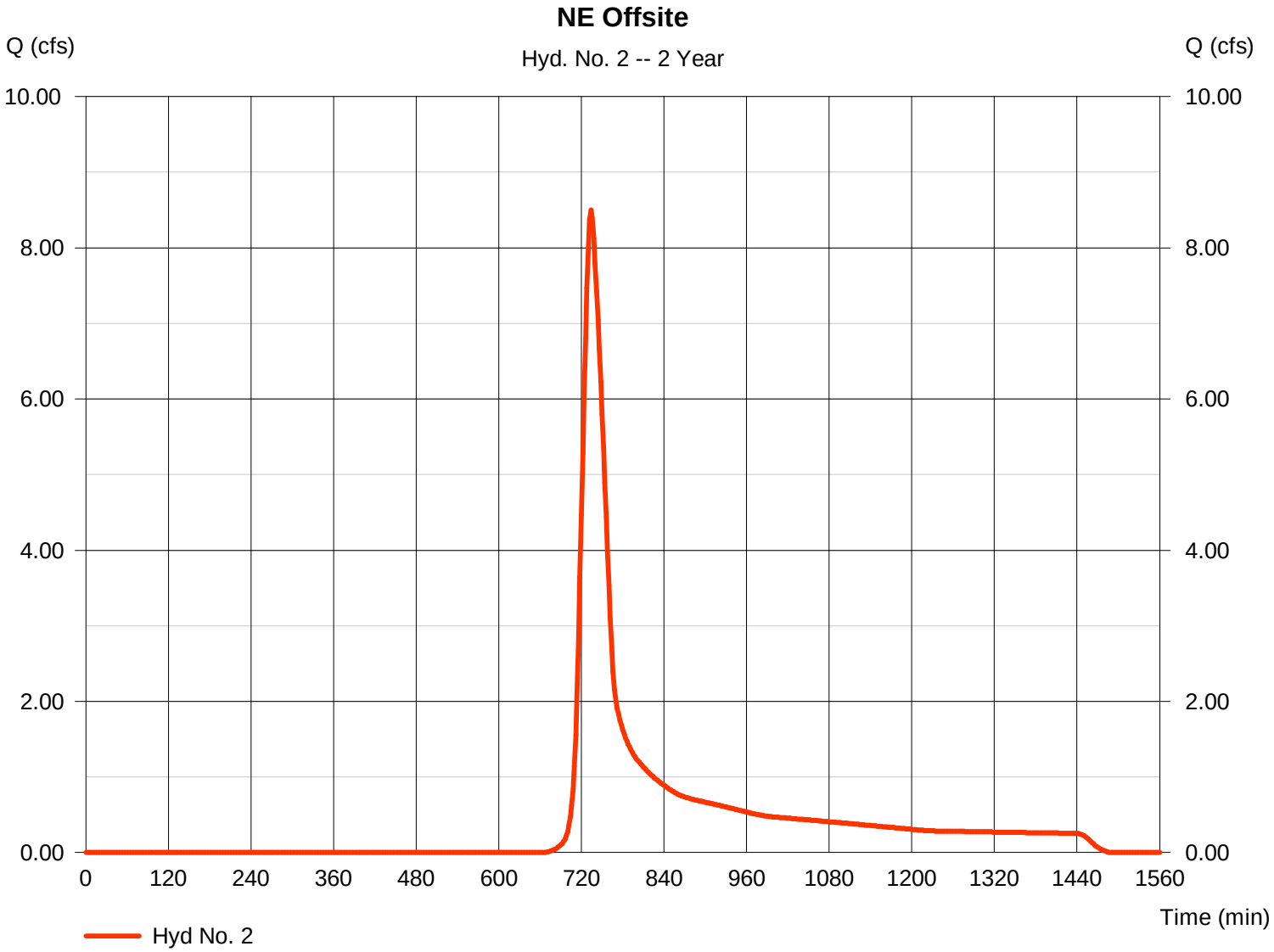


Hydrograph Report

Hyd. No. 2

NE Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.498 cfs
Storm frequency	=	2 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	39,705 cuft
Drainage area	=	15.700 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	1120 ft
Tc method	=	LAG	Time of conc. (Tc)	=	31.82 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



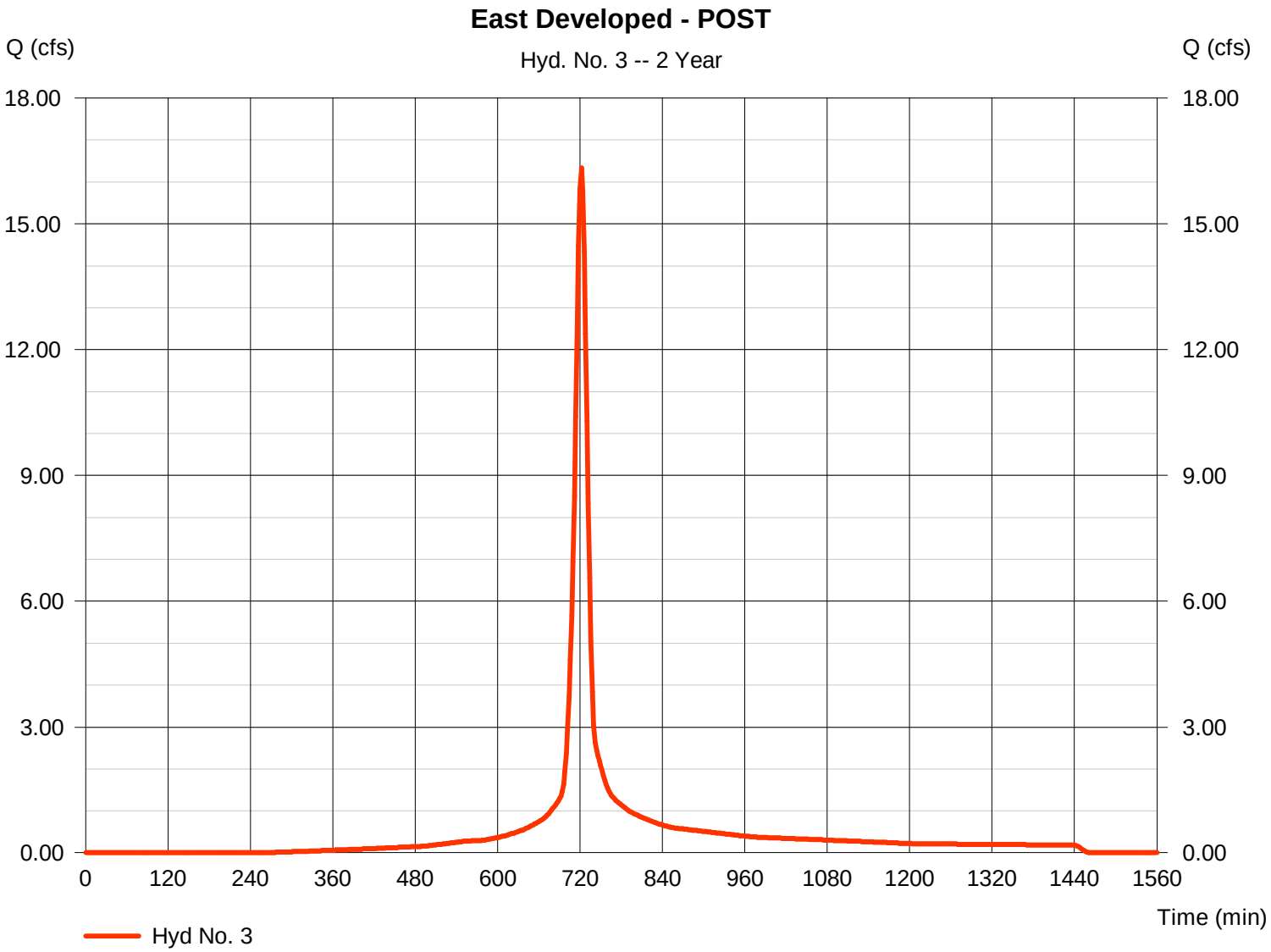
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 3

East Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	16.34 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	47,401 cuft
Drainage area	=	8.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

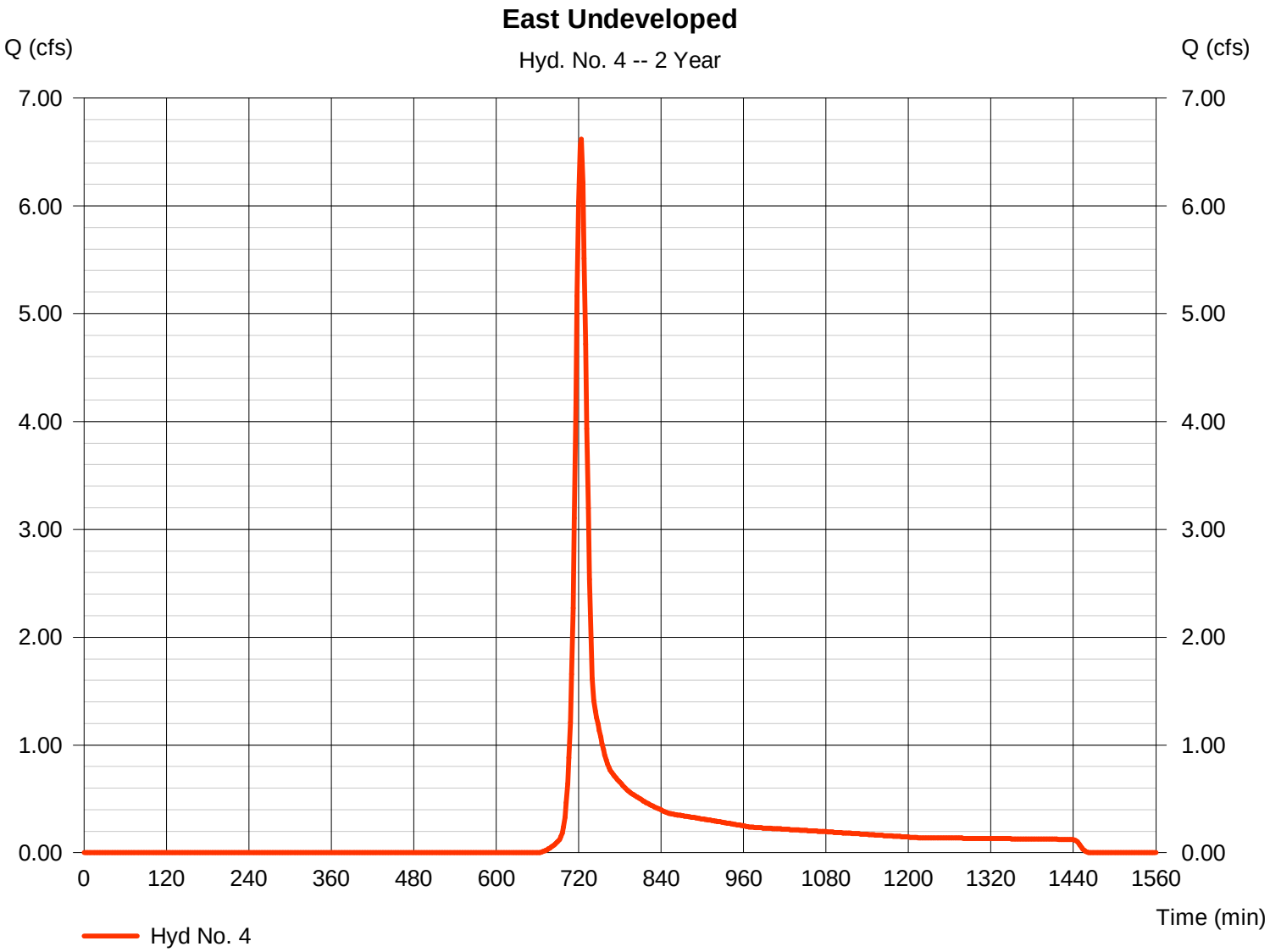


Hydrograph Report

Hyd. No. 4

East Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.619 cfs
Storm frequency	=	2 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	19,483 cuft
Drainage area	=	8.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

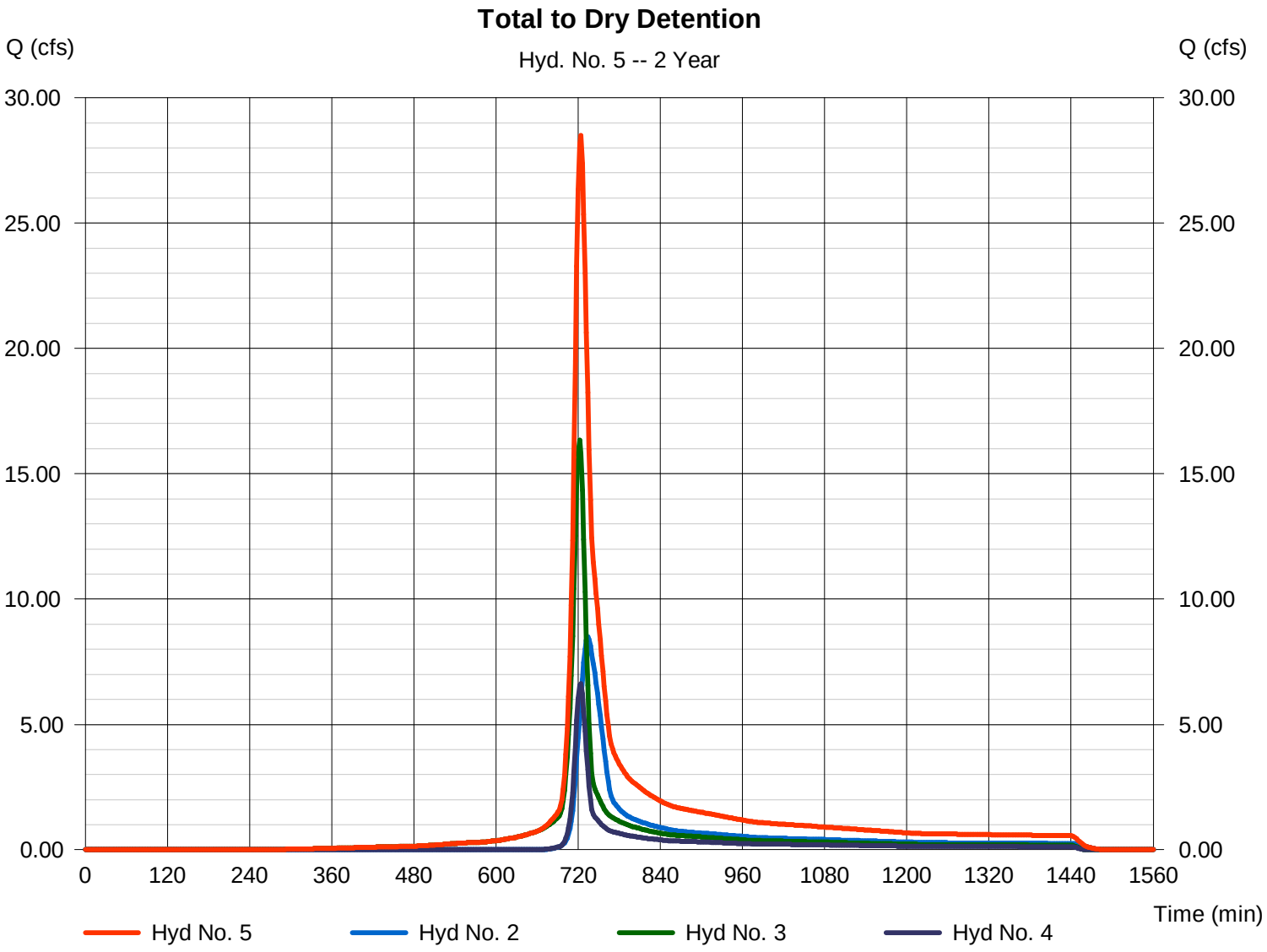


Hydrograph Report

Hyd. No. 5

Total to Dry Detention

Hydrograph type	= Combine	Peak discharge	= 28.49 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 106,589 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 31.700 ac



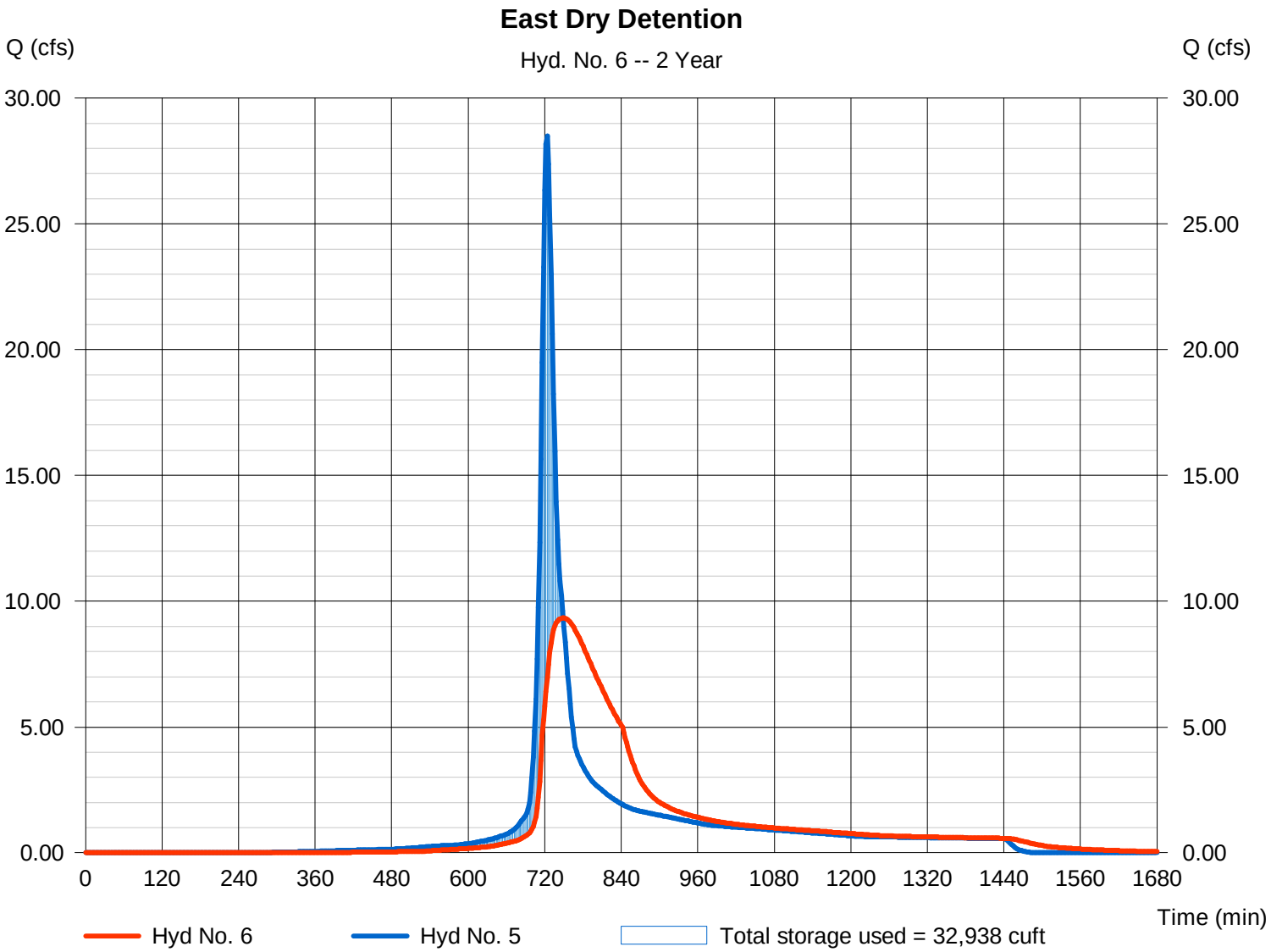
Hydrograph Report

Hyd. No. 6

East Dry Detention

Hydrograph type	=	Reservoir	Peak discharge	=	9.338 cfs
Storm frequency	=	2 yrs	Time to peak	=	748 min
Time interval	=	2 min	Hyd. volume	=	106,571 cuft
Inflow hyd. No.	=	5 - Total to Dry Detention	Max. Elevation	=	1313.69 ft
Reservoir name	=	East Dry Detention	Max. Storage	=	32,938 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - East Dry Detention

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 1312.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1312.00	5,500	0	0
1.00	1313.00	19,000	11,573	11,573
2.00	1314.00	45,000	31,077	42,650
3.00	1315.00	76,000	59,821	102,471
4.00	1316.00	84,000	79,959	182,430
5.00	1317.00	95,000	89,435	271,864

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)	= 1312.00	0.00	0.00	0.00
Length (ft)	= 75.00	0.00	0.00	0.00
Slope (%)	= 0.50	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

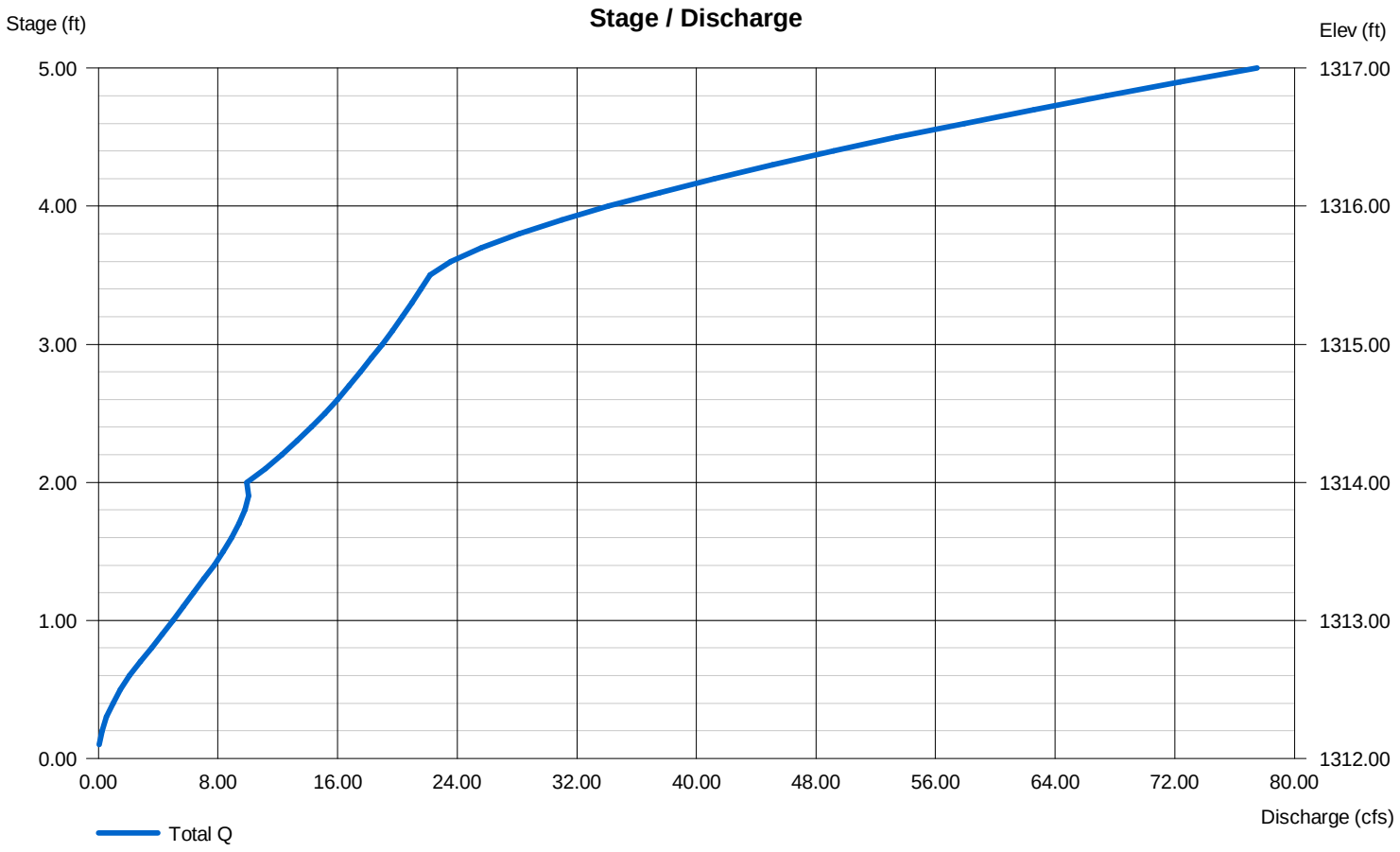
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	0.00	0.00	0.00
Crest El. (ft)	= 1315.50	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
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).

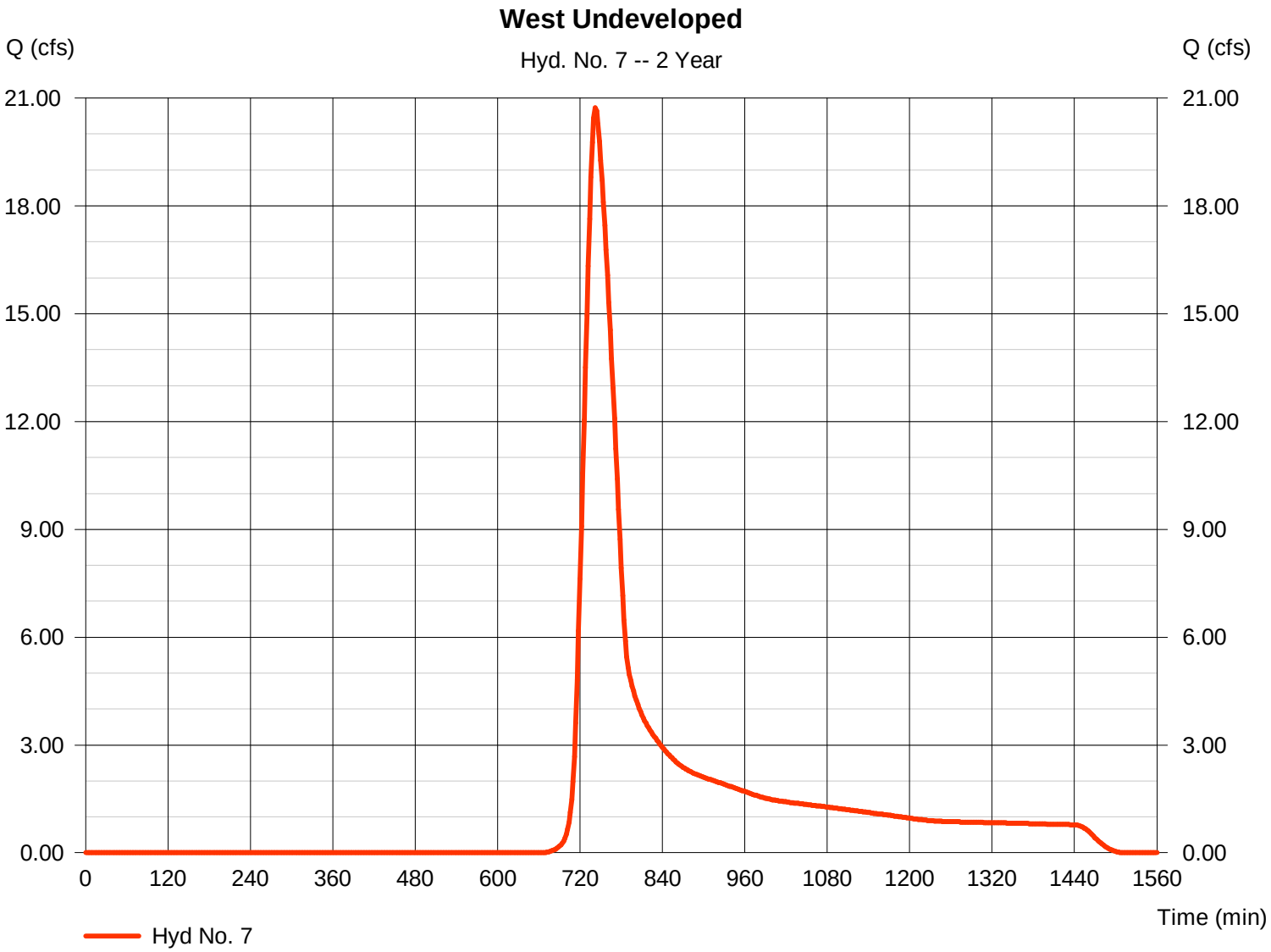


Hydrograph Report

Hyd. No. 7

West Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.73 cfs
Storm frequency	=	2 yrs	Time to peak	=	742 min
Time interval	=	2 min	Hyd. volume	=	121,299 cuft
Drainage area	=	49.000 ac	Curve number	=	80
Basin Slope	=	1.4 %	Hydraulic length	=	2000 ft
Tc method	=	LAG	Time of conc. (Tc)	=	46.85 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

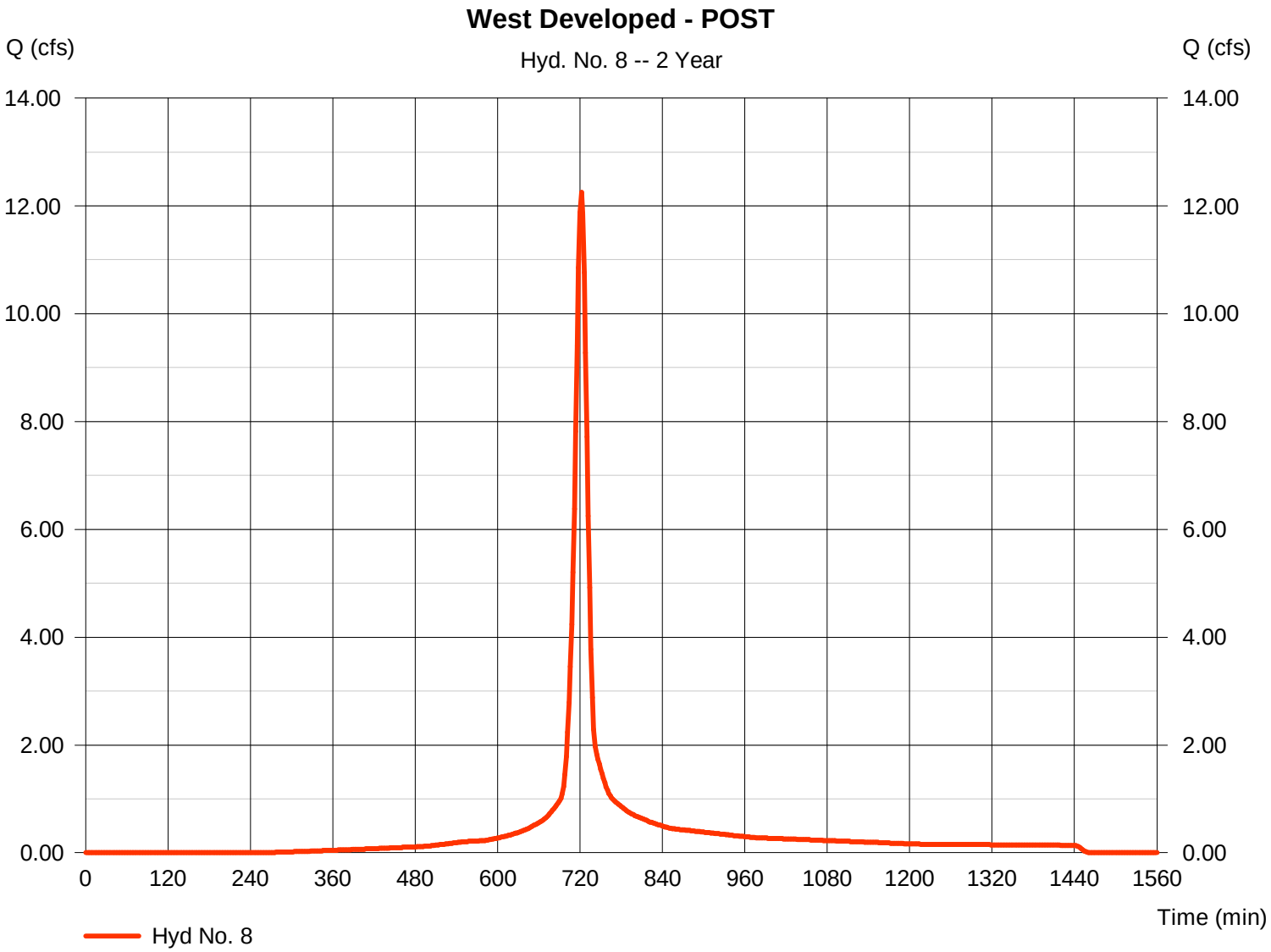


Hydrograph Report

Hyd. No. 8

West Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.25 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	35,551 cuft
Drainage area	=	6.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

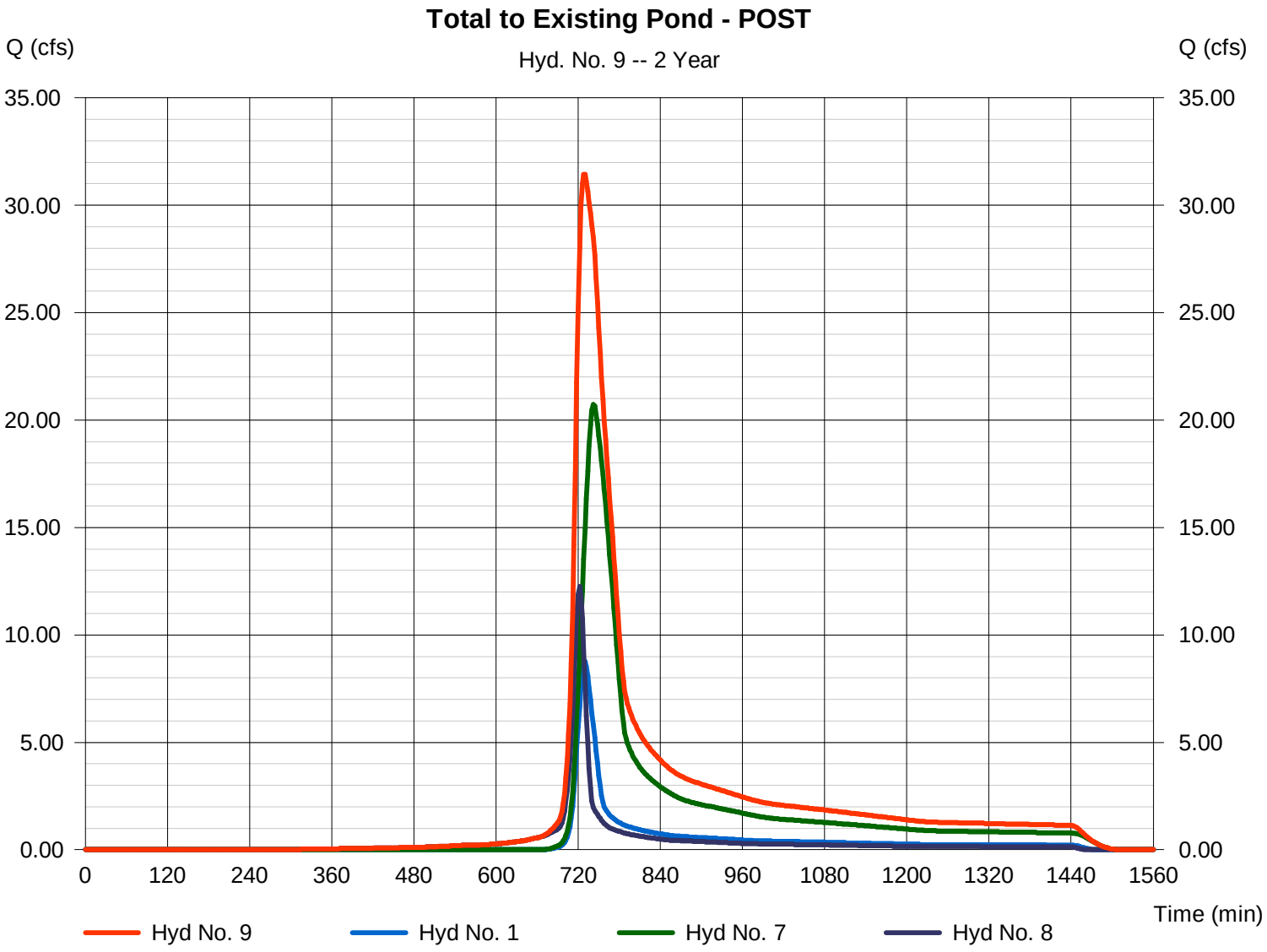


Hydrograph Report

Hyd. No. 9

Total to Existing Pond - POST

Hydrograph type	= Combine	Peak discharge	= 31.44 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 191,271 cuft
Inflow hyds.	= 1, 7, 8	Contrib. drain. area	= 69.000 ac



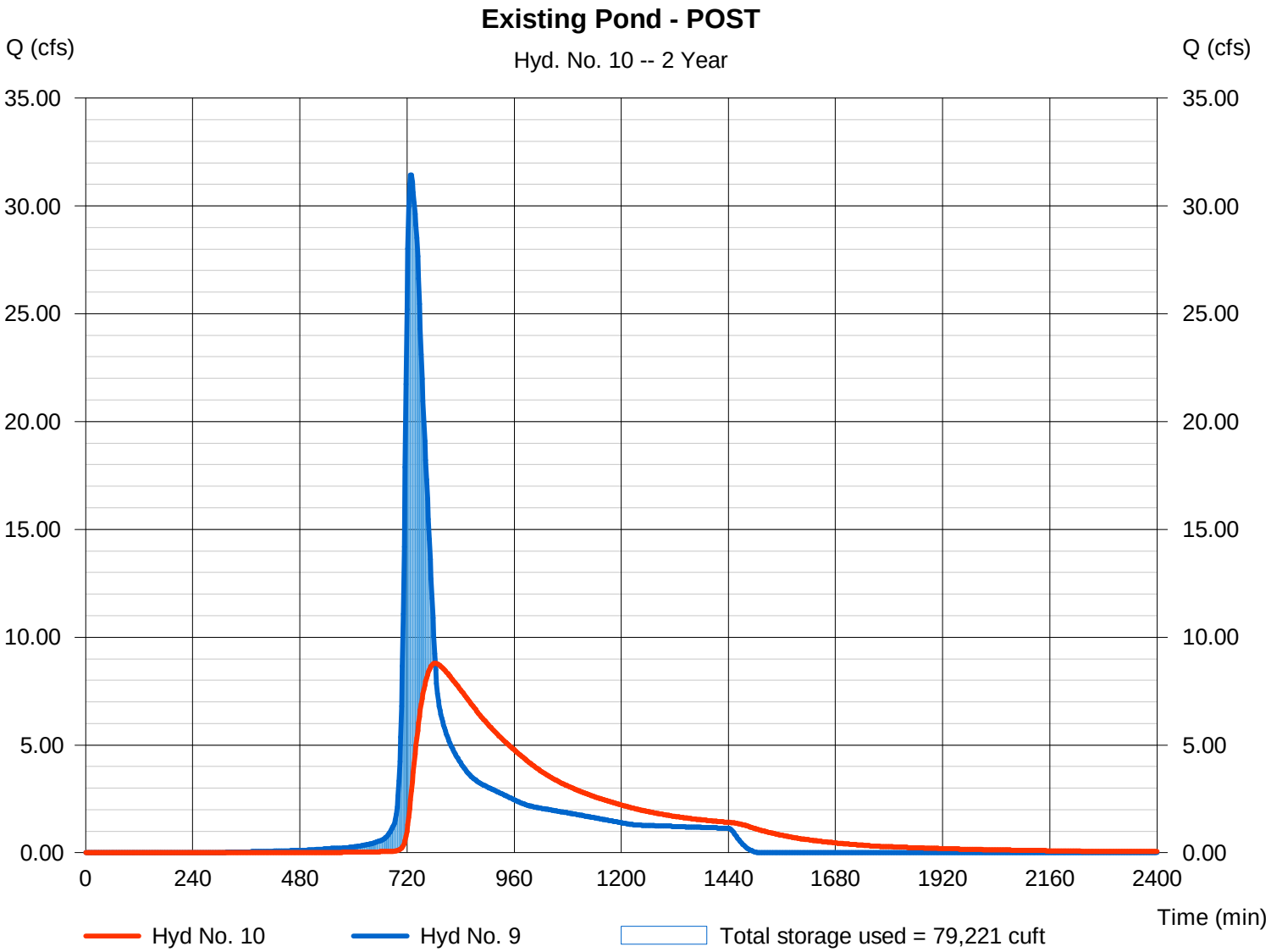
Hydrograph Report

Hyd. No. 10

Existing Pond - POST

Hydrograph type	=	Reservoir	Peak discharge	=	8.793 cfs
Storm frequency	=	2 yrs	Time to peak	=	784 min
Time interval	=	2 min	Hyd. volume	=	191,143 cuft
Inflow hyd. No.	=	9 - Total to Existing Pond - POST	Max. Elevation	=	1310.65 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	79,221 cuft

Storage Indication method used.



Pond Report

Pond No. 2 - Existing West Pond

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 1309.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1309.00	44,000	0	0
1.00	1310.00	48,400	46,178	46,178
2.00	1311.00	52,700	50,530	96,708
3.00	1312.00	60,000	56,305	153,013
4.00	1313.00	65,000	62,477	215,490

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	0.00	0.00	0.00
Span (in)	= 36.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1309.00	0.00	0.00	0.00
Length (ft)	= 25.00	0.00	0.00	0.00
Slope (%)	= 0.50	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

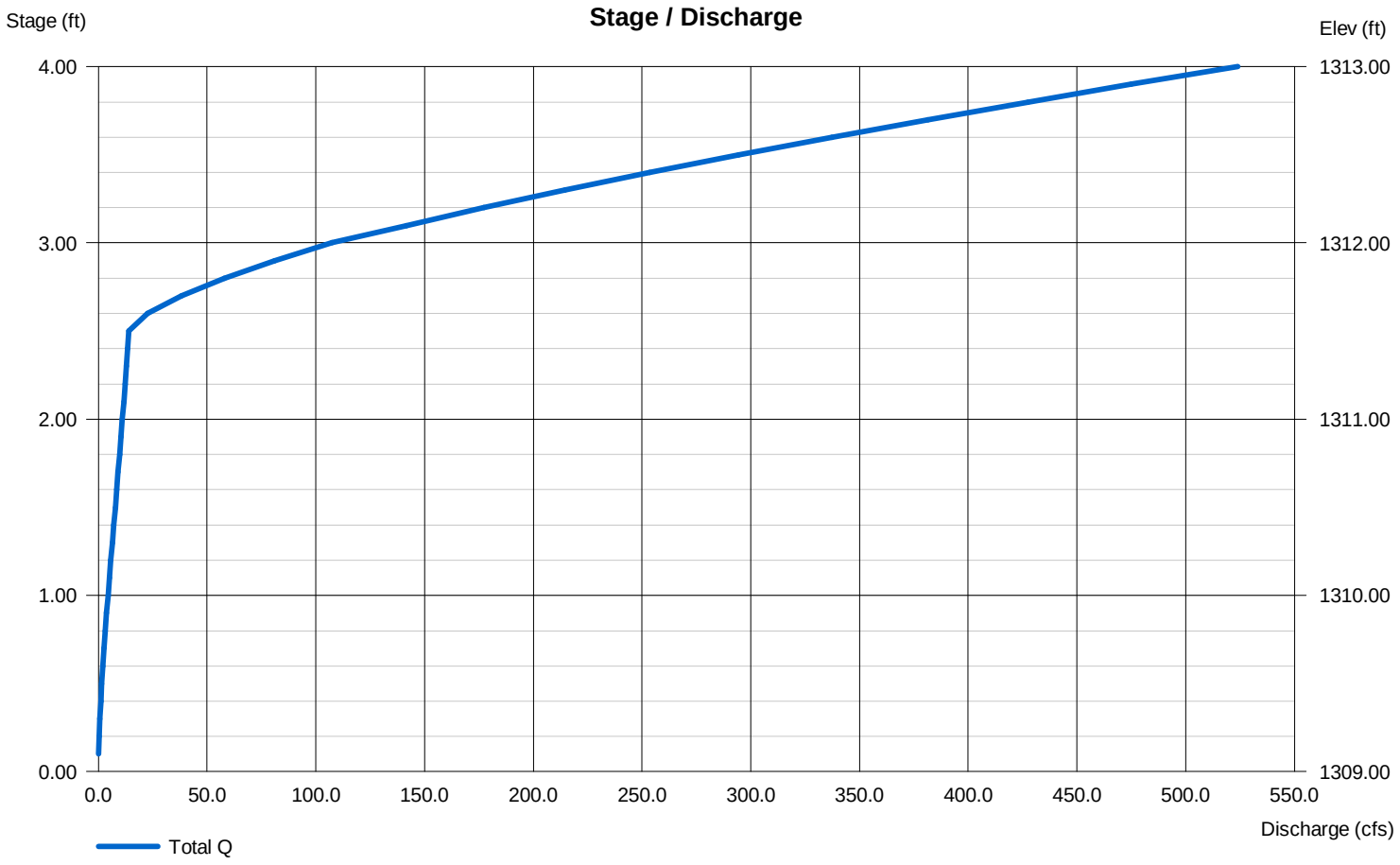
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 100.00	0.00	0.00	0.00
Crest El. (ft)	= 1311.50	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
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).

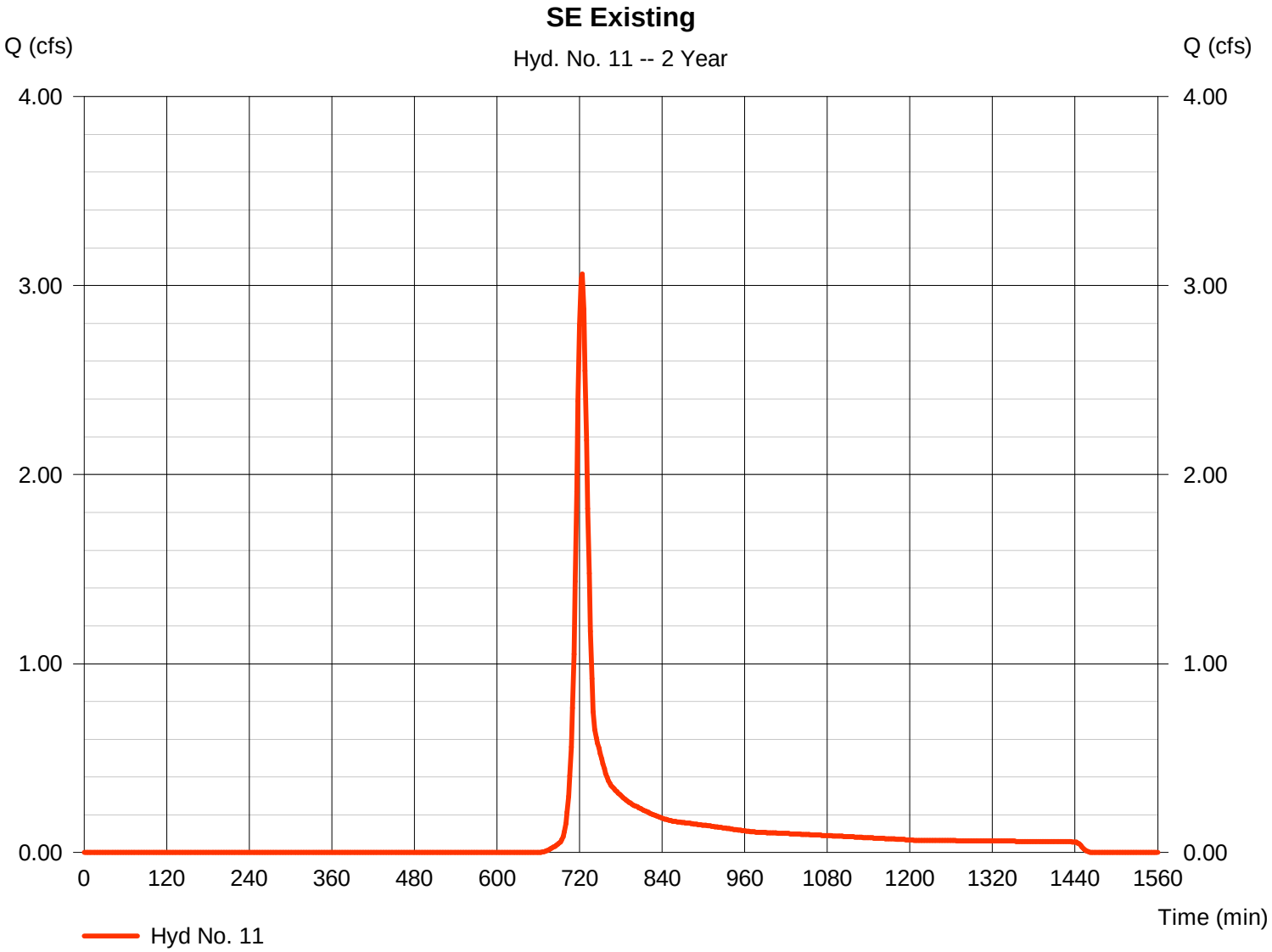


Hydrograph Report

Hyd. No. 11

SE Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.061 cfs
Storm frequency	=	2 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	9,011 cuft
Drainage area	=	3.700 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

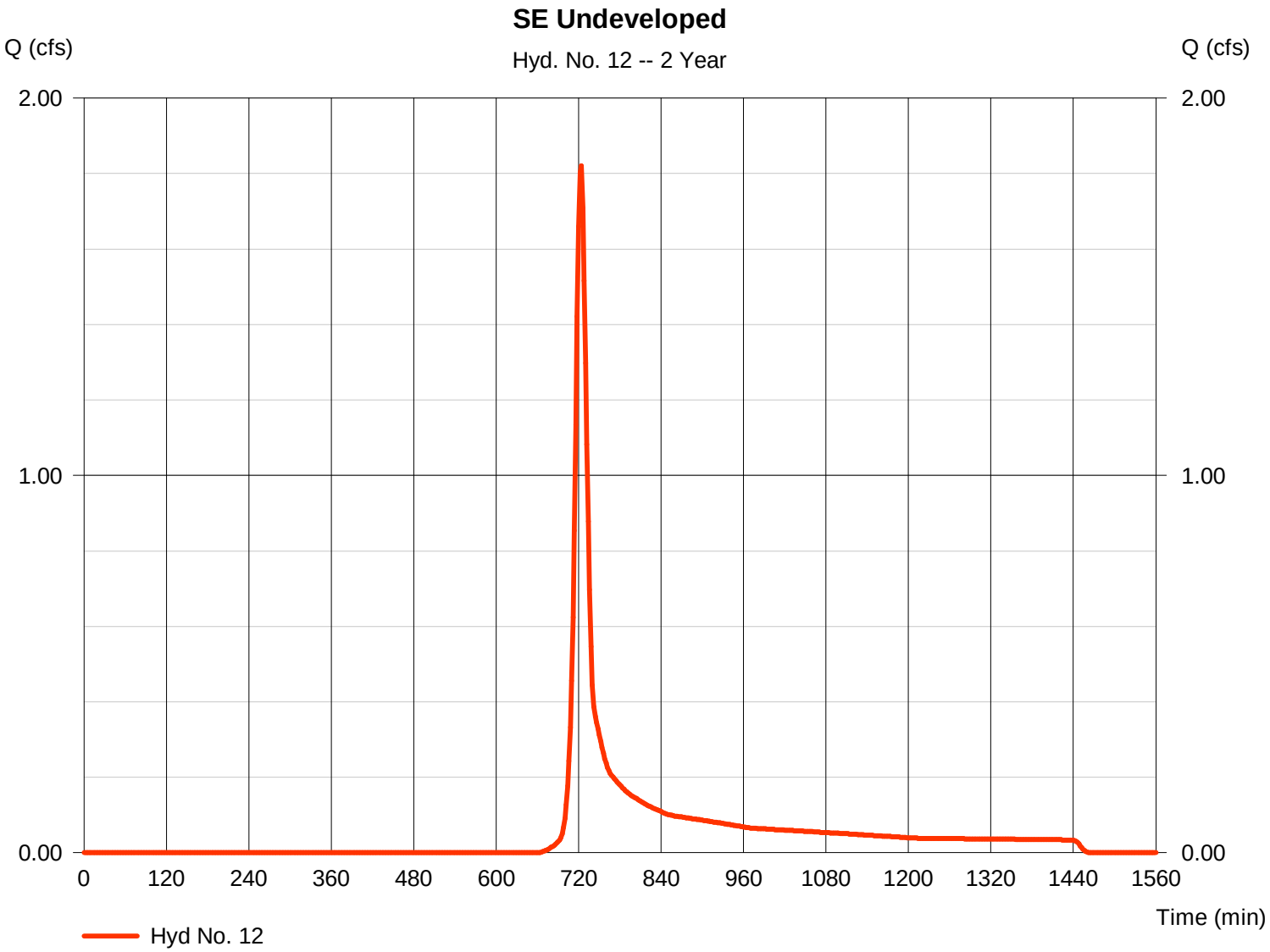


Hydrograph Report

Hyd. No. 12

SE Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.820 cfs
Storm frequency	=	2 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	5,358 cuft
Drainage area	=	2.200 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

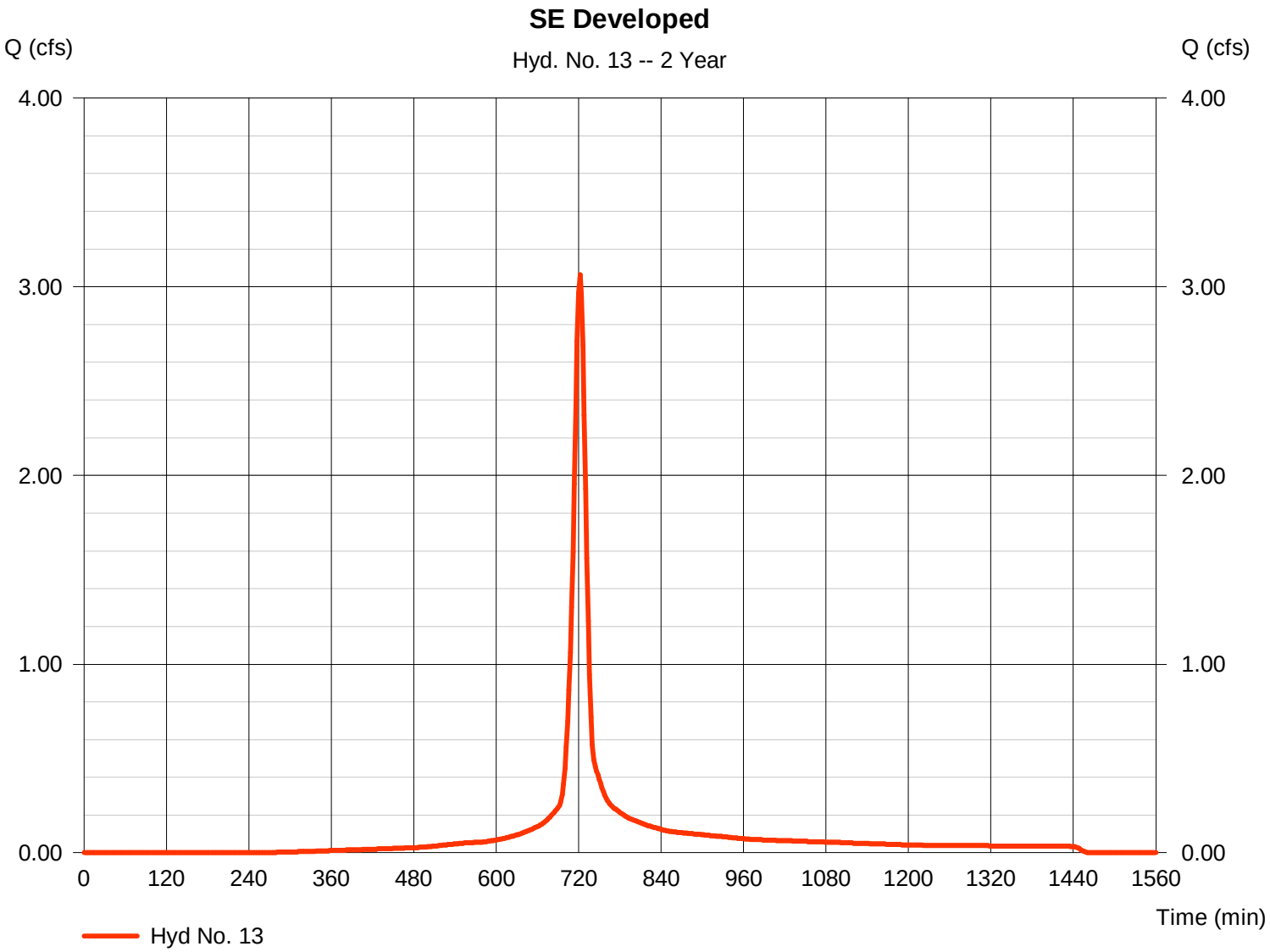


Hydrograph Report

Hyd. No. 13

SE Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.063 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	8,888 cuft
Drainage area	=	1.500 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

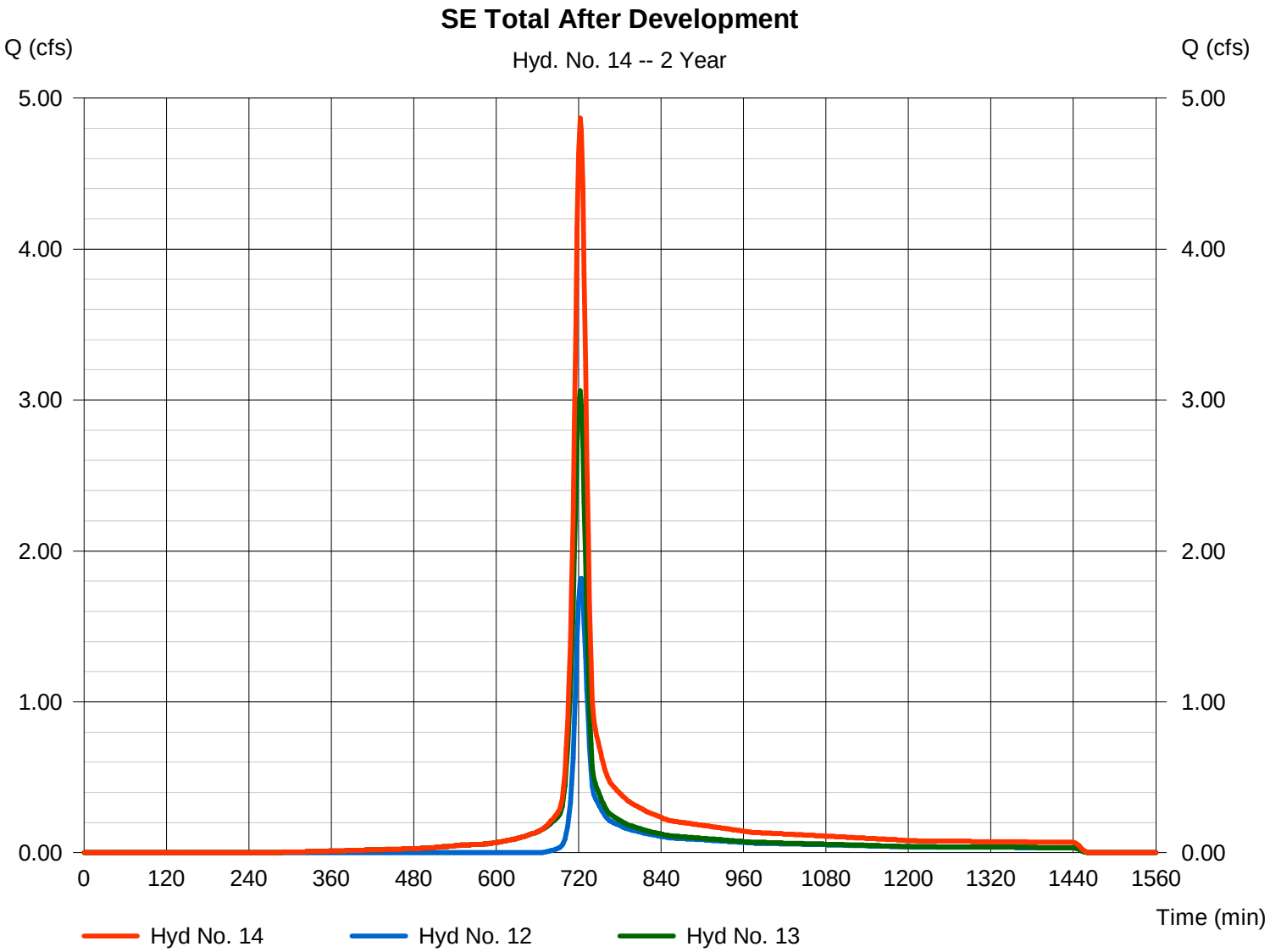


Hydrograph Report

Hyd. No. 14

SE Total After Development

Hydrograph type	= Combine	Peak discharge	= 4.867 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 14,245 cuft
Inflow hyds.	= 12, 13	Contrib. drain. area	= 3.700 ac

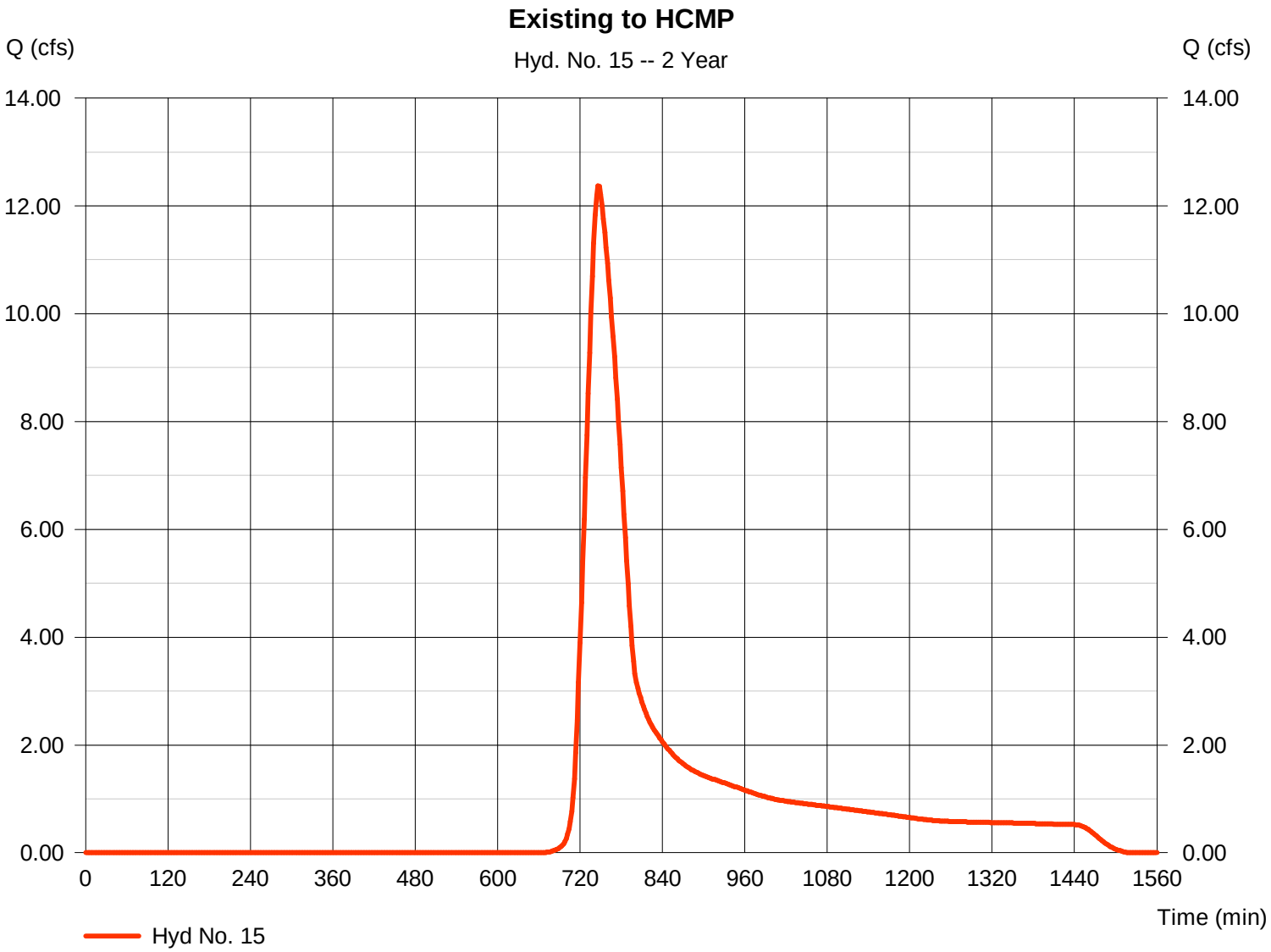


Hydrograph Report

Hyd. No. 15

Existing to HCMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.38 cfs
Storm frequency	=	2 yrs	Time to peak	=	746 min
Time interval	=	2 min	Hyd. volume	=	81,057 cuft
Drainage area	=	32.200 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	2100 ft
Tc method	=	LAG	Time of conc. (Tc)	=	52.62 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



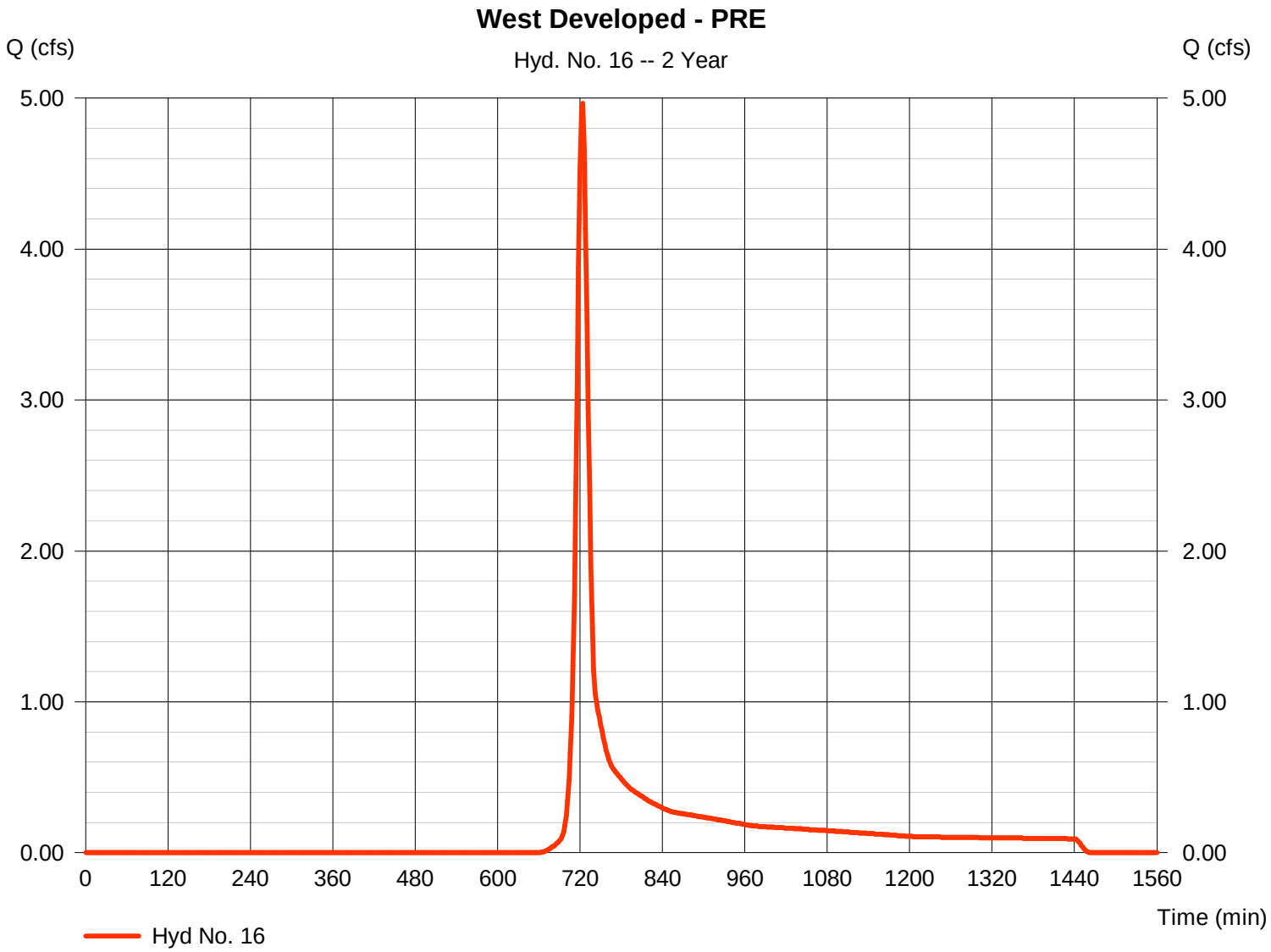
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 16

West Developed - PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.964 cfs
Storm frequency	=	2 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	14,612 cuft
Drainage area	=	6.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	2.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

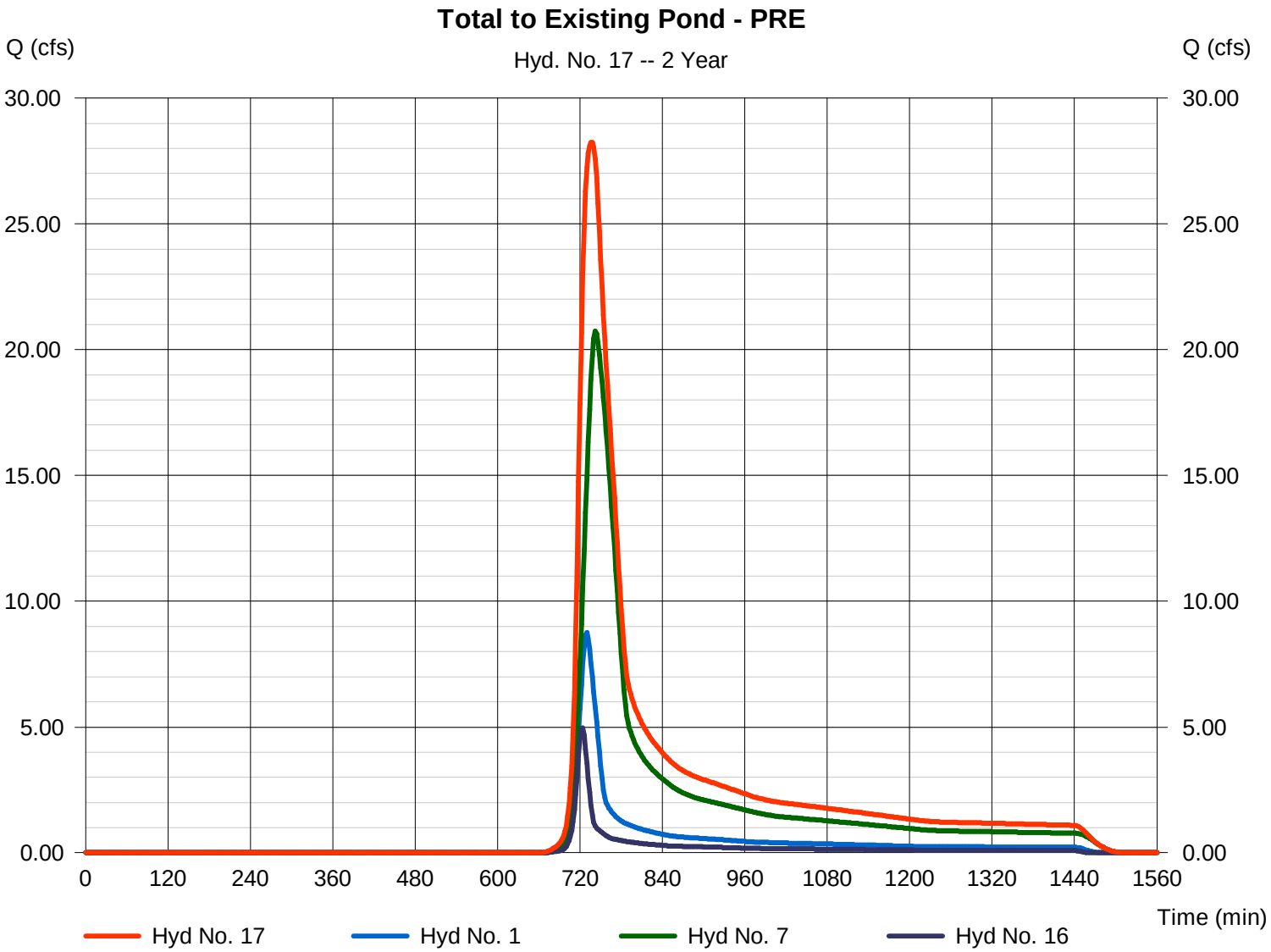


Hydrograph Report

Hyd. No. 17

Total to Existing Pond - PRE

Hydrograph type	= Combine	Peak discharge	= 28.24 cfs
Storm frequency	= 2 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 170,333 cuft
Inflow hyds.	= 1, 7, 16	Contrib. drain. area	= 69.000 ac



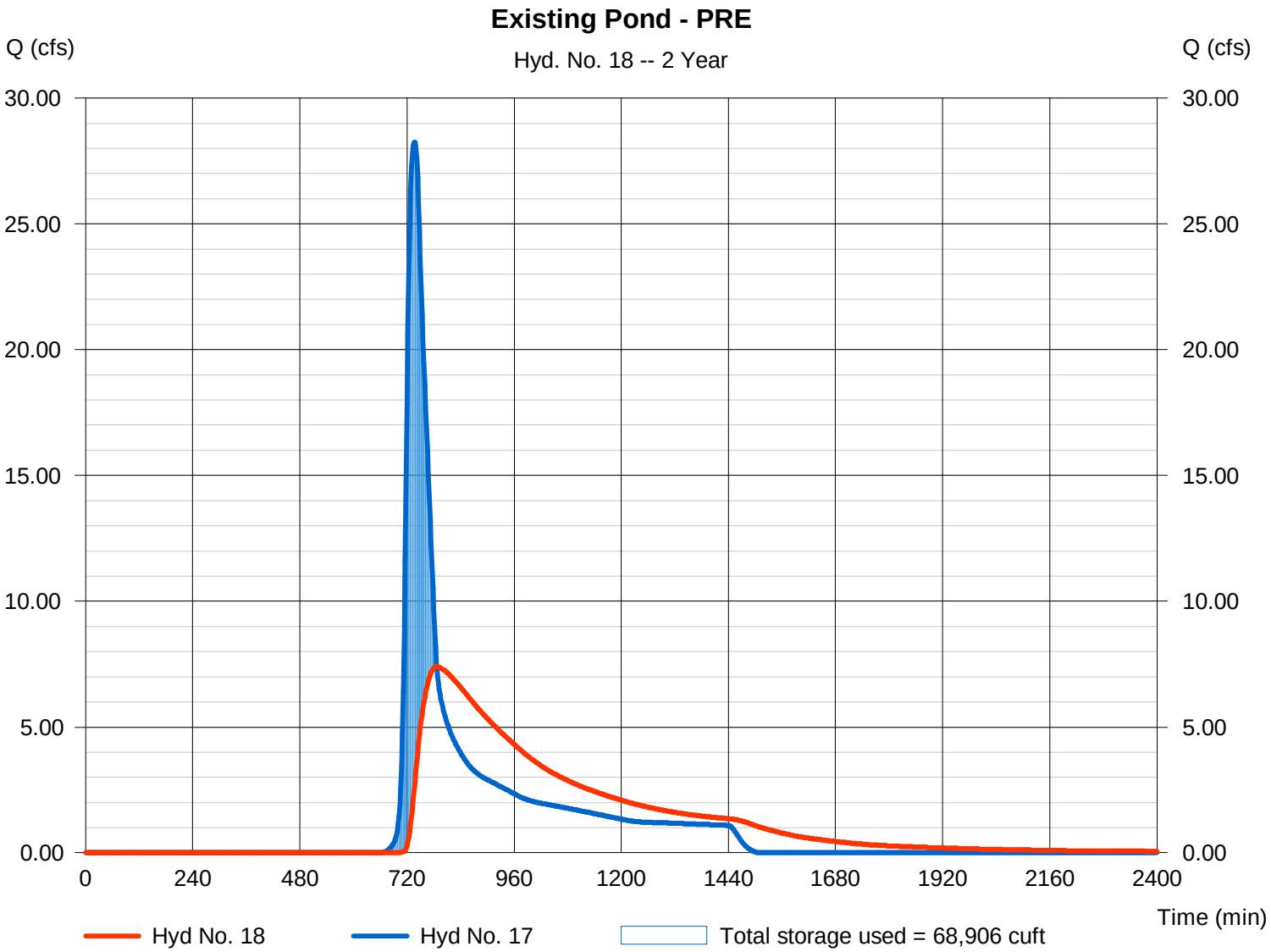
Hydrograph Report

Hyd. No. 18

Existing Pond - PRE

Hydrograph type	=	Reservoir	Peak discharge	=	7.400 cfs
Storm frequency	=	2 yrs	Time to peak	=	786 min
Time interval	=	2 min	Hyd. volume	=	170,205 cuft
Inflow hyd. No.	=	17 - Total to Existing Pond - PRE	Max. Elevation	=	1310.45 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	68,906 cuft

Storage Indication method used.



Pond No. 2 - Existing West Pond

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 1309.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1309.00	44,000	0	0
1.00	1310.00	48,400	46,178	46,178
2.00	1311.00	52,700	50,530	96,708
3.00	1312.00	60,000	56,305	153,013
4.00	1313.00	65,000	62,477	215,490

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	0.00	0.00	0.00
Span (in)	= 36.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1309.00	0.00	0.00	0.00
Length (ft)	= 25.00	0.00	0.00	0.00
Slope (%)	= 0.50	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

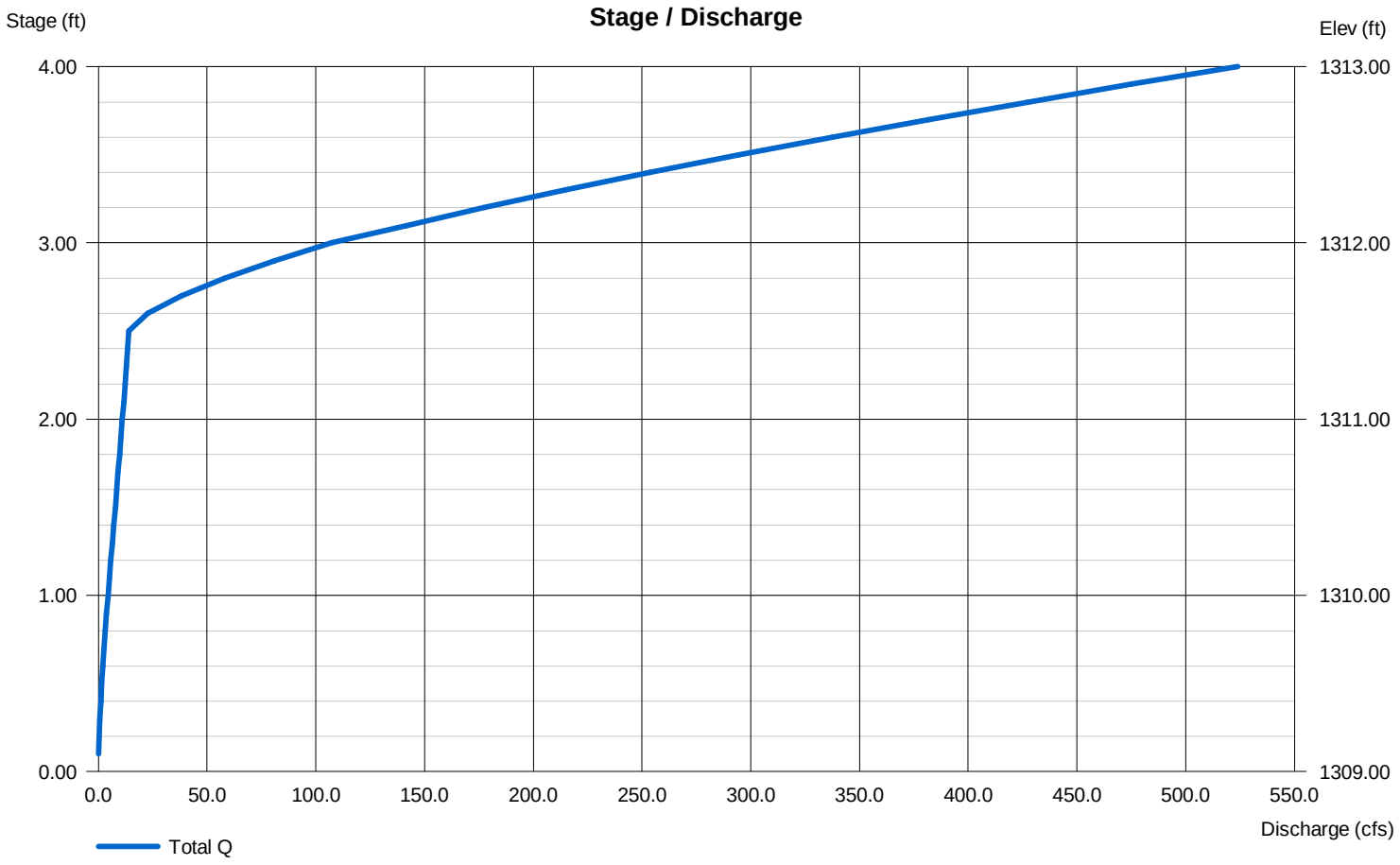
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 100.00	0.00	0.00	0.00
Crest El. (ft)	= 1311.50	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
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).



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

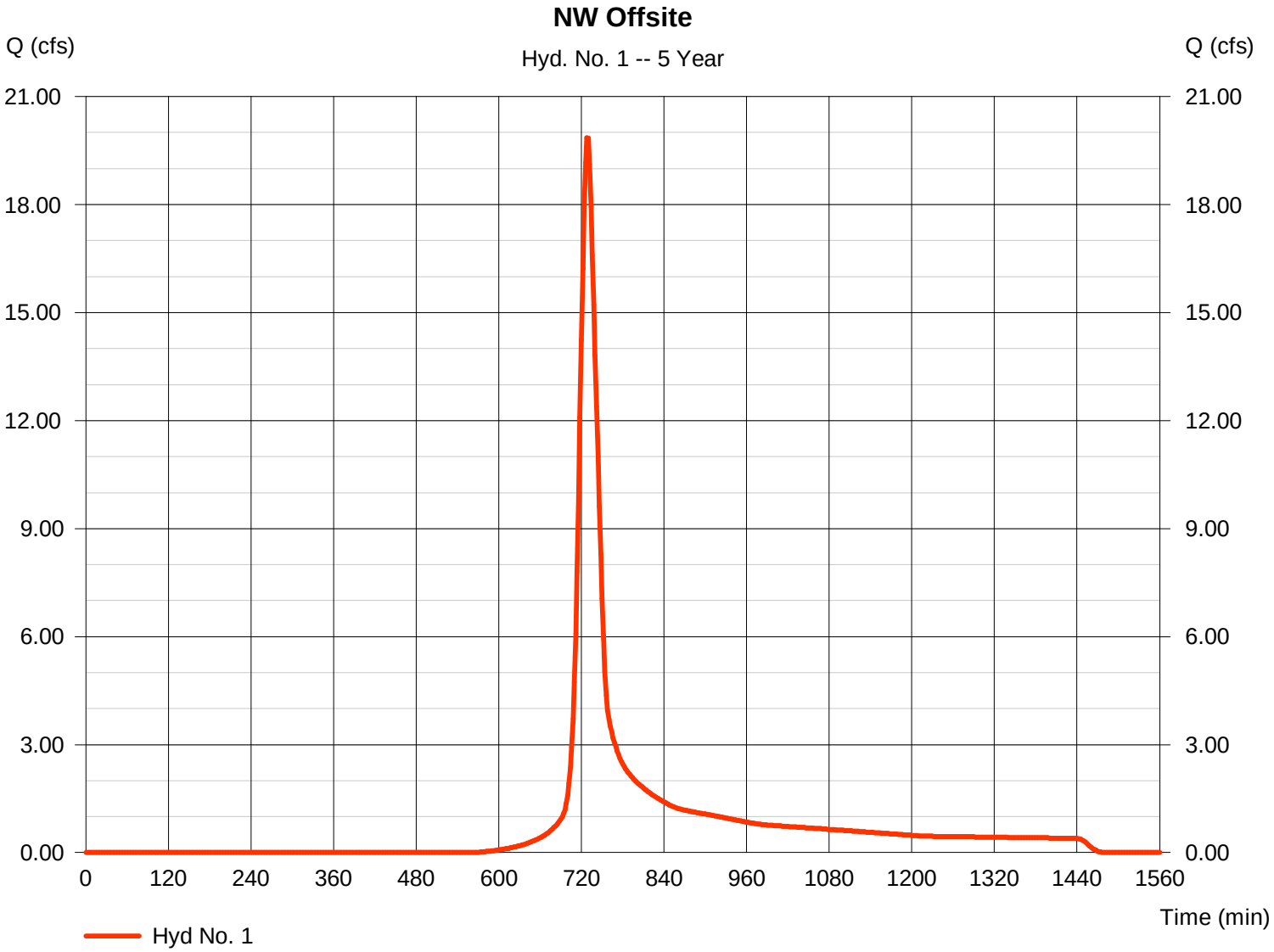
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	19.86	2	728	74,001	------	------	------	NW Offsite
2	SCS Runoff	19.44	2	734	85,357	------	------	------	NE Offsite
3	SCS Runoff	26.05	2	722	77,662	------	------	------	East Developed - POST
4	SCS Runoff	14.84	2	722	41,883	------	------	------	East Undeveloped
5	Combine	54.78	2	724	204,902	2, 3, 4	------	------	Total to Dry Detention
6	Reservoir	15.08	2	754	204,884	5	1314.49	72,114	East Dry Detention
7	SCS Runoff	47.78	2	742	260,764	------	------	------	West Undeveloped
8	SCS Runoff	19.54	2	722	58,246	------	------	------	West Developed - POST
9	Combine	68.99	2	730	393,011	1, 7, 8	------	------	Total to Existing Pond - POST
10	Reservoir	45.38	2	756	392,871	9	1311.74	138,200	Existing Pond - POST
11	SCS Runoff	6.862	2	722	19,371	------	------	------	SE Existing
12	SCS Runoff	4.080	2	722	11,518	------	------	------	SE Undeveloped
13	SCS Runoff	4.885	2	722	14,562	------	------	------	SE Developed
14	Combine	8.965	2	722	26,079	12, 13	------	------	SE Total After Development
15	SCS Runoff	28.64	2	746	174,254	------	------	------	Existing to HCMP
16	SCS Runoff	11.13	2	722	31,413	------	------	------	West Developed - PRE
17	Combine	65.34	2	734	366,177	1, 7, 16	------	------	Total to Existing Pond - PRE
18	Reservoir	37.51	2	762	366,038	17	1311.70	135,921	Existing Pond - PRE

Hydrograph Report

Hyd. No. 1

NW Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.86 cfs
Storm frequency	=	5 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	74,001 cuft
Drainage area	=	14.000 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	775 ft
Tc method	=	LAG	Time of conc. (Tc)	=	23.70 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

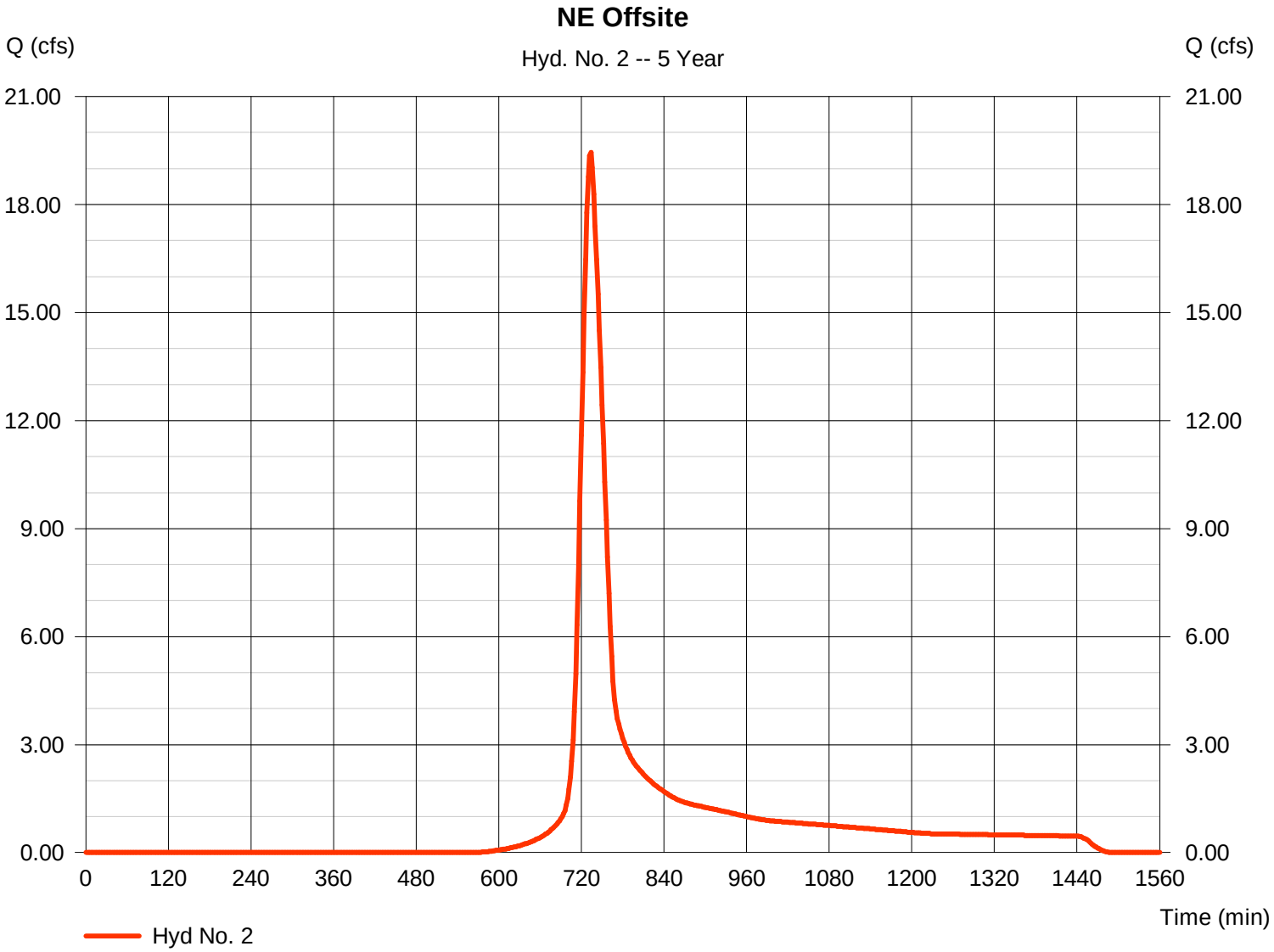


Hydrograph Report

Hyd. No. 2

NE Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.44 cfs
Storm frequency	=	5 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	85,357 cuft
Drainage area	=	15.700 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	1120 ft
Tc method	=	LAG	Time of conc. (Tc)	=	31.82 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

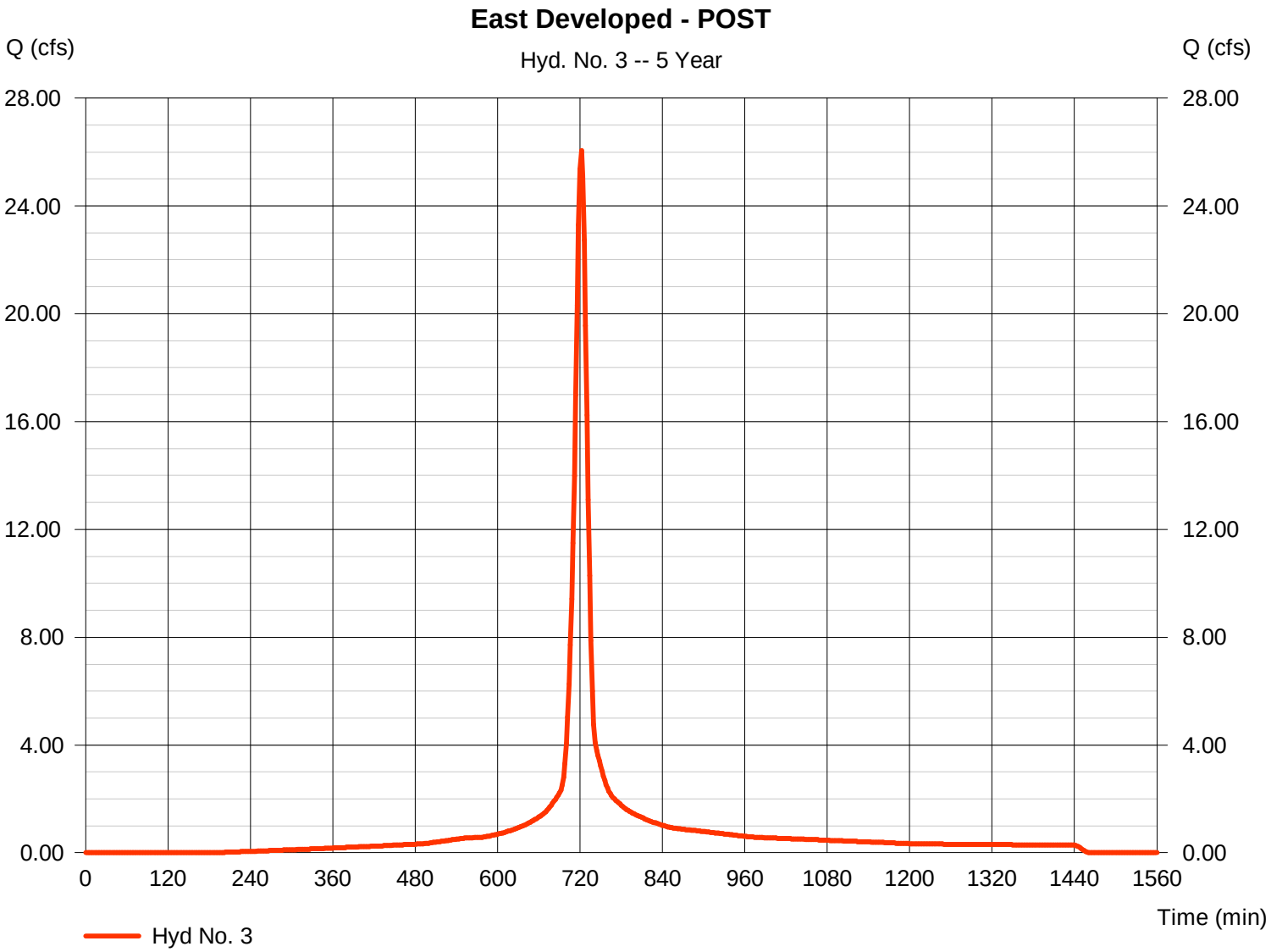


Hydrograph Report

Hyd. No. 3

East Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	26.05 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	77,662 cuft
Drainage area	=	8.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

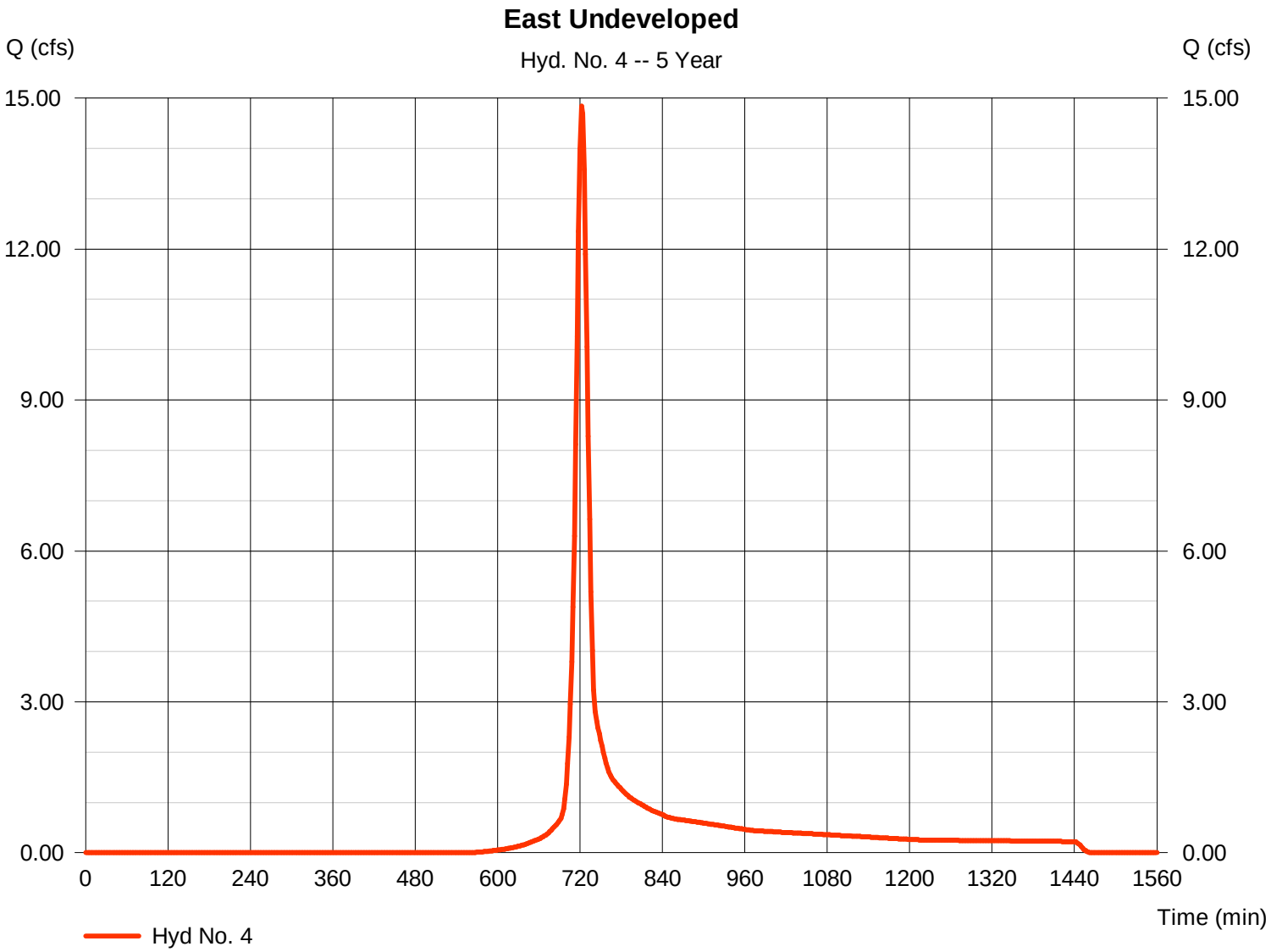


Hydrograph Report

Hyd. No. 4

East Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	14.84 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	41,883 cuft
Drainage area	=	8.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

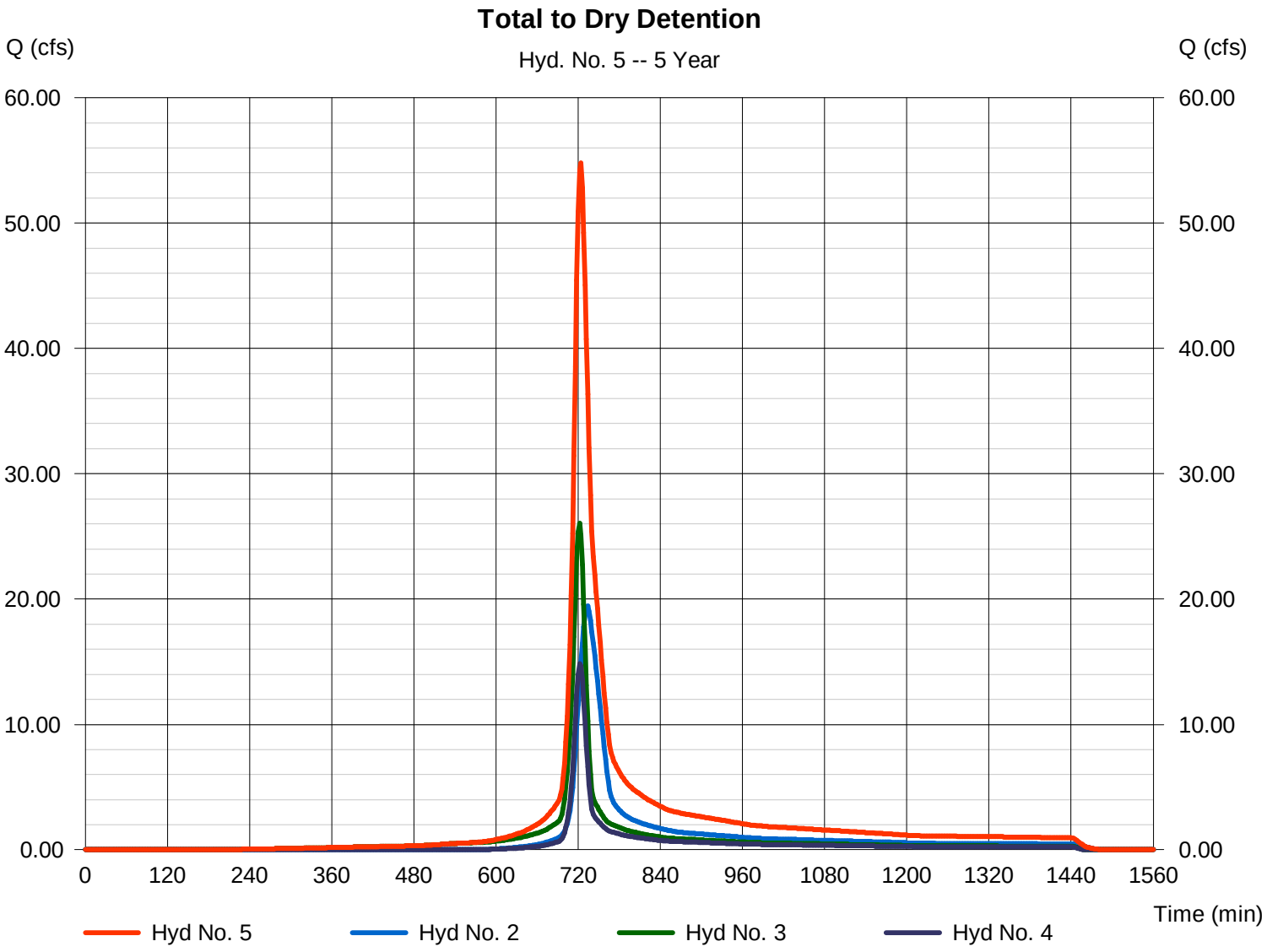


Hydrograph Report

Hyd. No. 5

Total to Dry Detention

Hydrograph type	= Combine	Peak discharge	= 54.78 cfs
Storm frequency	= 5 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 204,902 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 31.700 ac



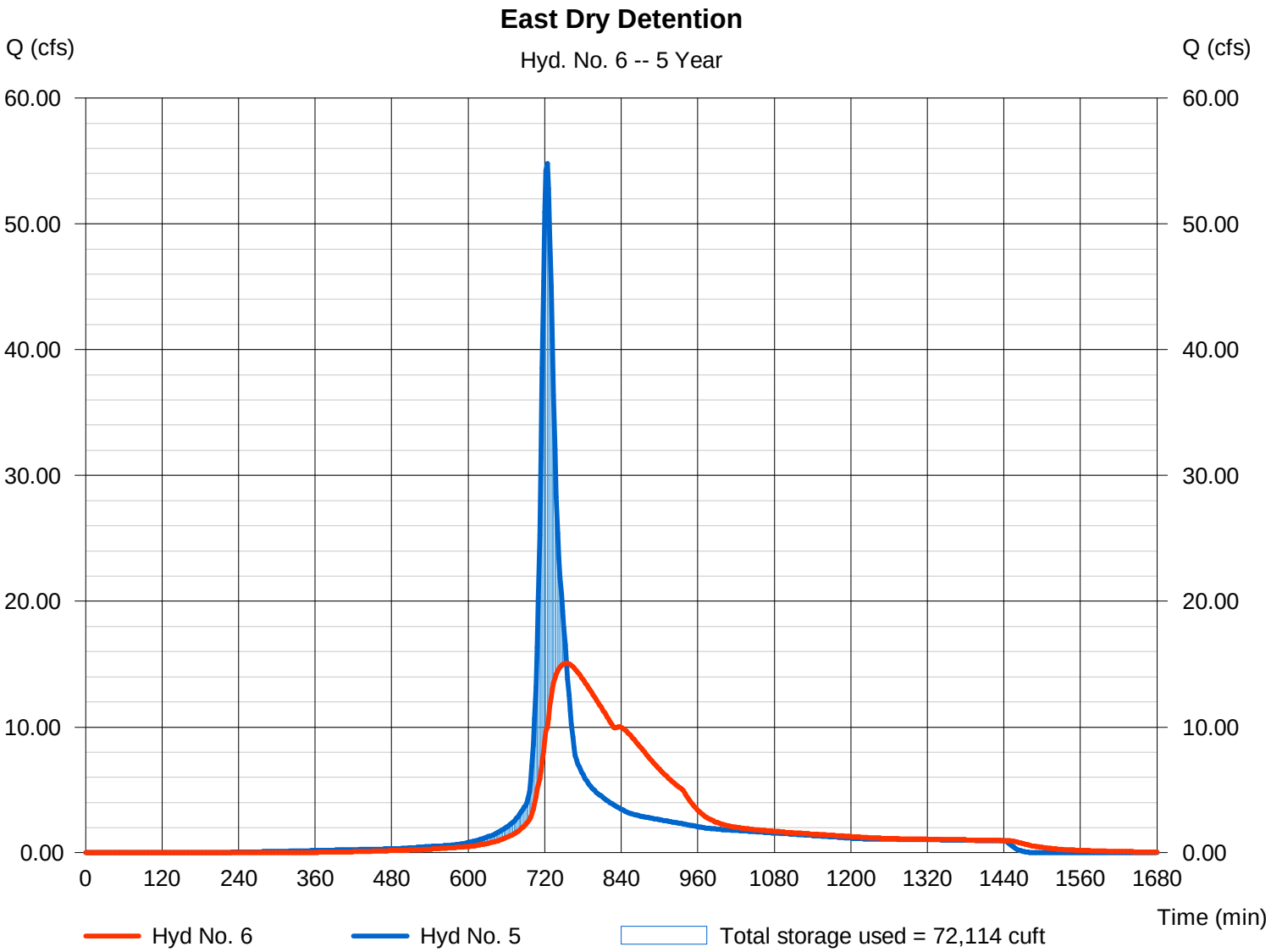
Hydrograph Report

Hyd. No. 6

East Dry Detention

Hydrograph type	=	Reservoir	Peak discharge	=	15.08 cfs
Storm frequency	=	5 yrs	Time to peak	=	754 min
Time interval	=	2 min	Hyd. volume	=	204,884 cuft
Inflow hyd. No.	=	5 - Total to Dry Detention	Max. Elevation	=	1314.49 ft
Reservoir name	=	East Dry Detention	Max. Storage	=	72,114 cuft

Storage Indication method used.

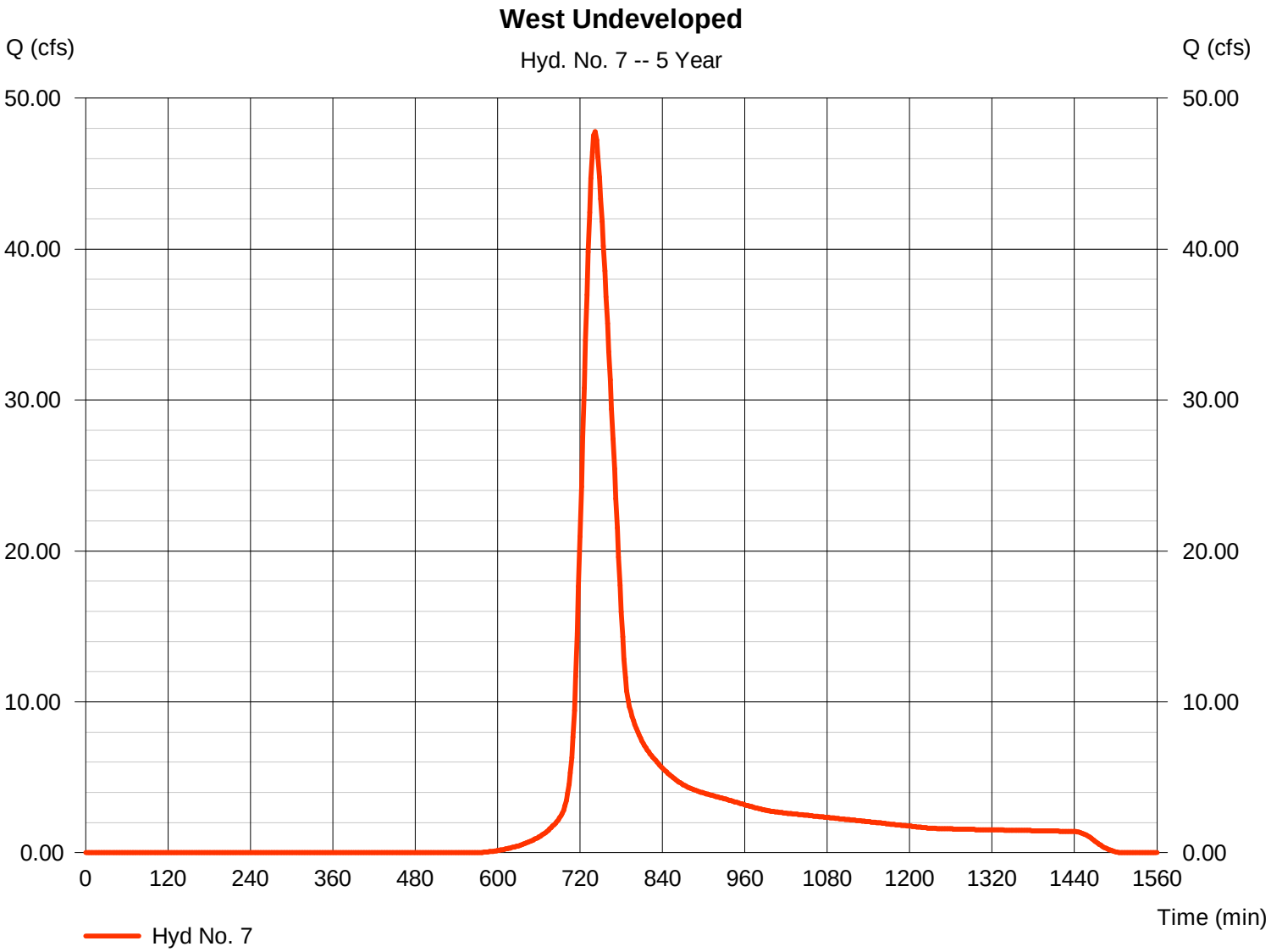


Hydrograph Report

Hyd. No. 7

West Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	47.78 cfs
Storm frequency	=	5 yrs	Time to peak	=	742 min
Time interval	=	2 min	Hyd. volume	=	260,764 cuft
Drainage area	=	49.000 ac	Curve number	=	80
Basin Slope	=	1.4 %	Hydraulic length	=	2000 ft
Tc method	=	LAG	Time of conc. (Tc)	=	46.85 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

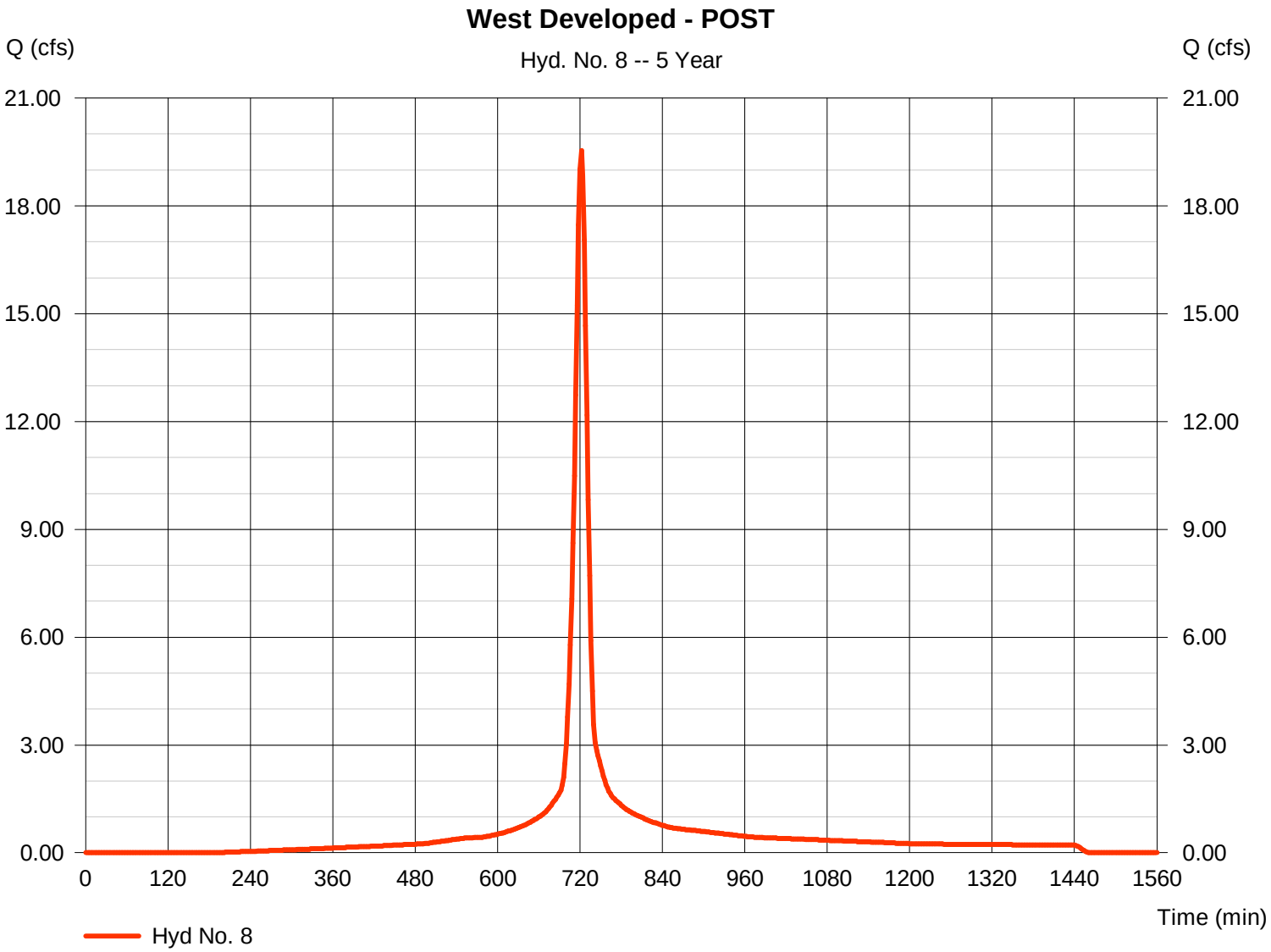


Hydrograph Report

Hyd. No. 8

West Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.54 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	58,246 cuft
Drainage area	=	6.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

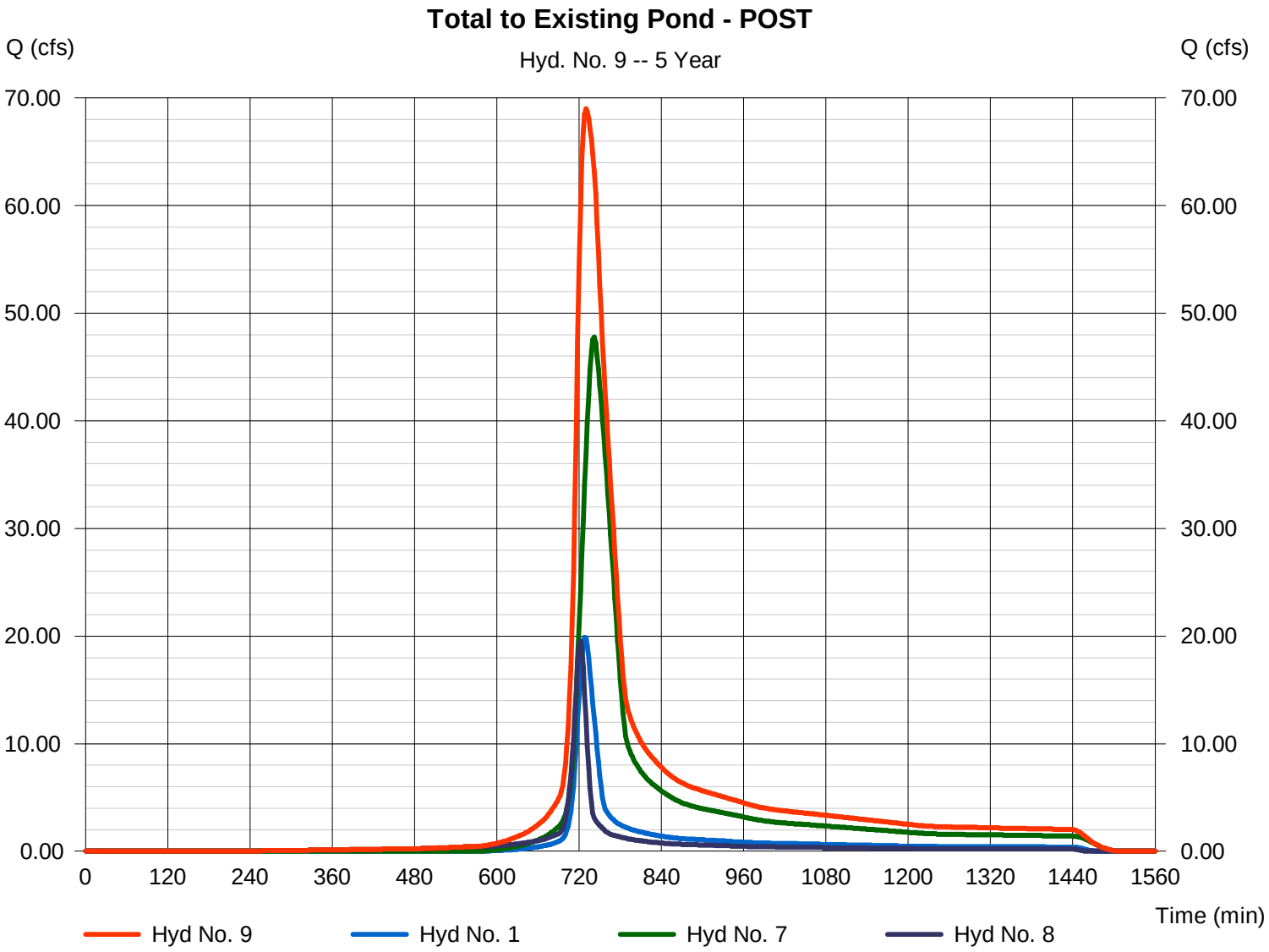


Hydrograph Report

Hyd. No. 9

Total to Existing Pond - POST

Hydrograph type	= Combine	Peak discharge	= 68.99 cfs
Storm frequency	= 5 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 393,011 cuft
Inflow hyds.	= 1, 7, 8	Contrib. drain. area	= 69.000 ac



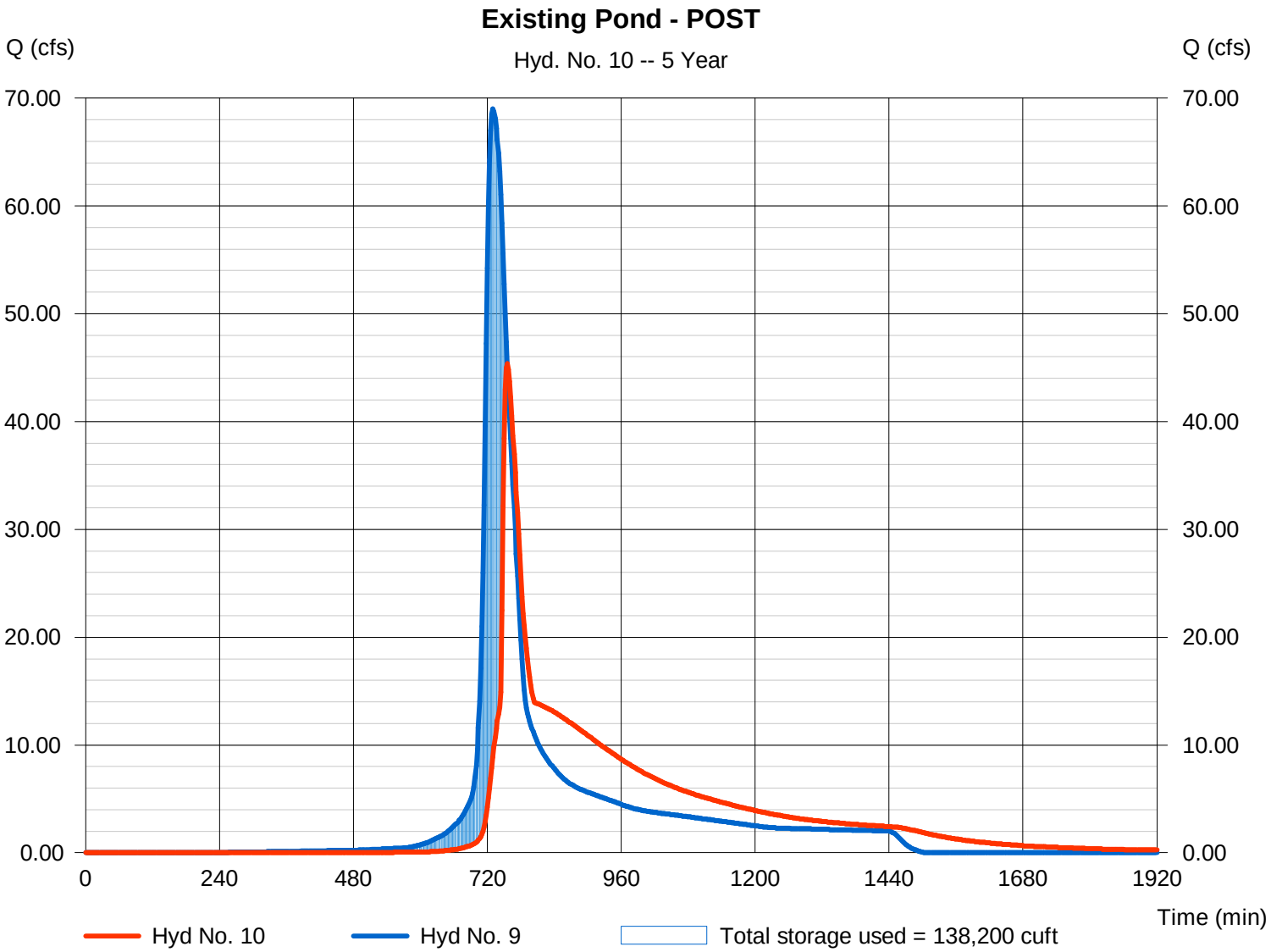
Hydrograph Report

Hyd. No. 10

Existing Pond - POST

Hydrograph type	=	Reservoir	Peak discharge	=	45.38 cfs
Storm frequency	=	5 yrs	Time to peak	=	756 min
Time interval	=	2 min	Hyd. volume	=	392,871 cuft
Inflow hyd. No.	=	9 - Total to Existing Pond - POST	Max. Elevation	=	1311.74 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	138,200 cuft

Storage Indication method used.

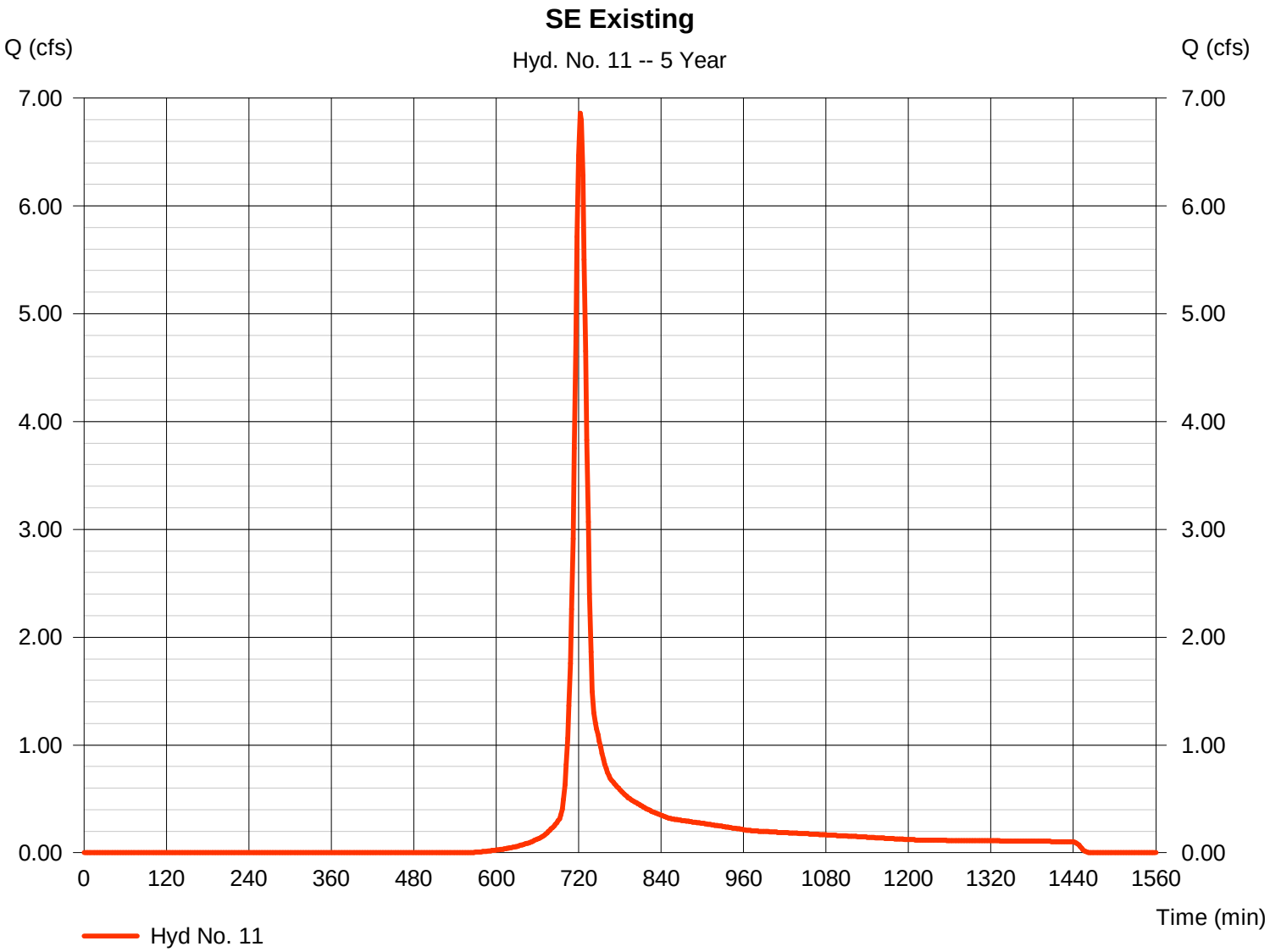


Hydrograph Report

Hyd. No. 11

SE Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.862 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	19,371 cuft
Drainage area	=	3.700 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

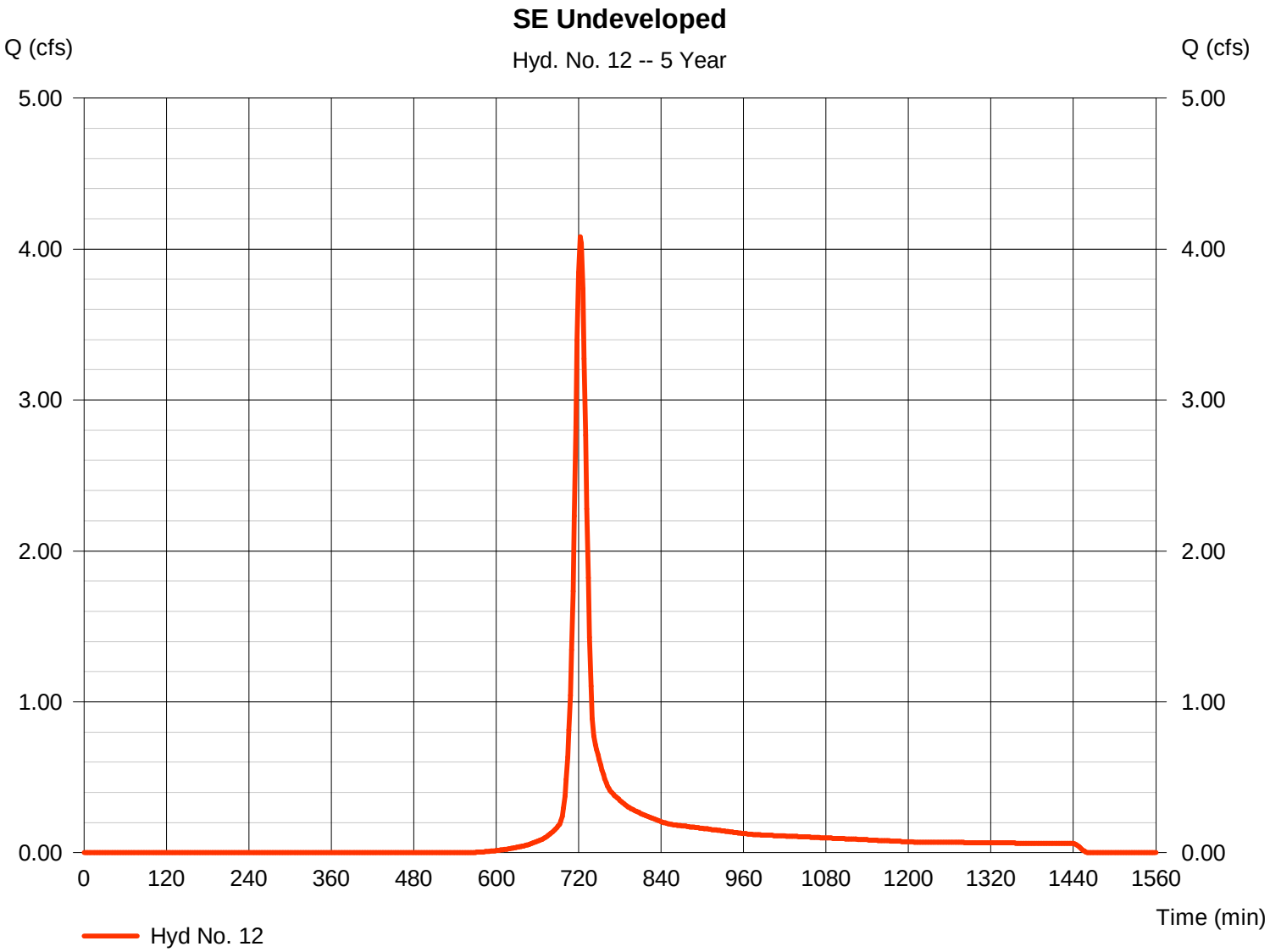


Hydrograph Report

Hyd. No. 12

SE Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.080 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	11,518 cuft
Drainage area	=	2.200 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

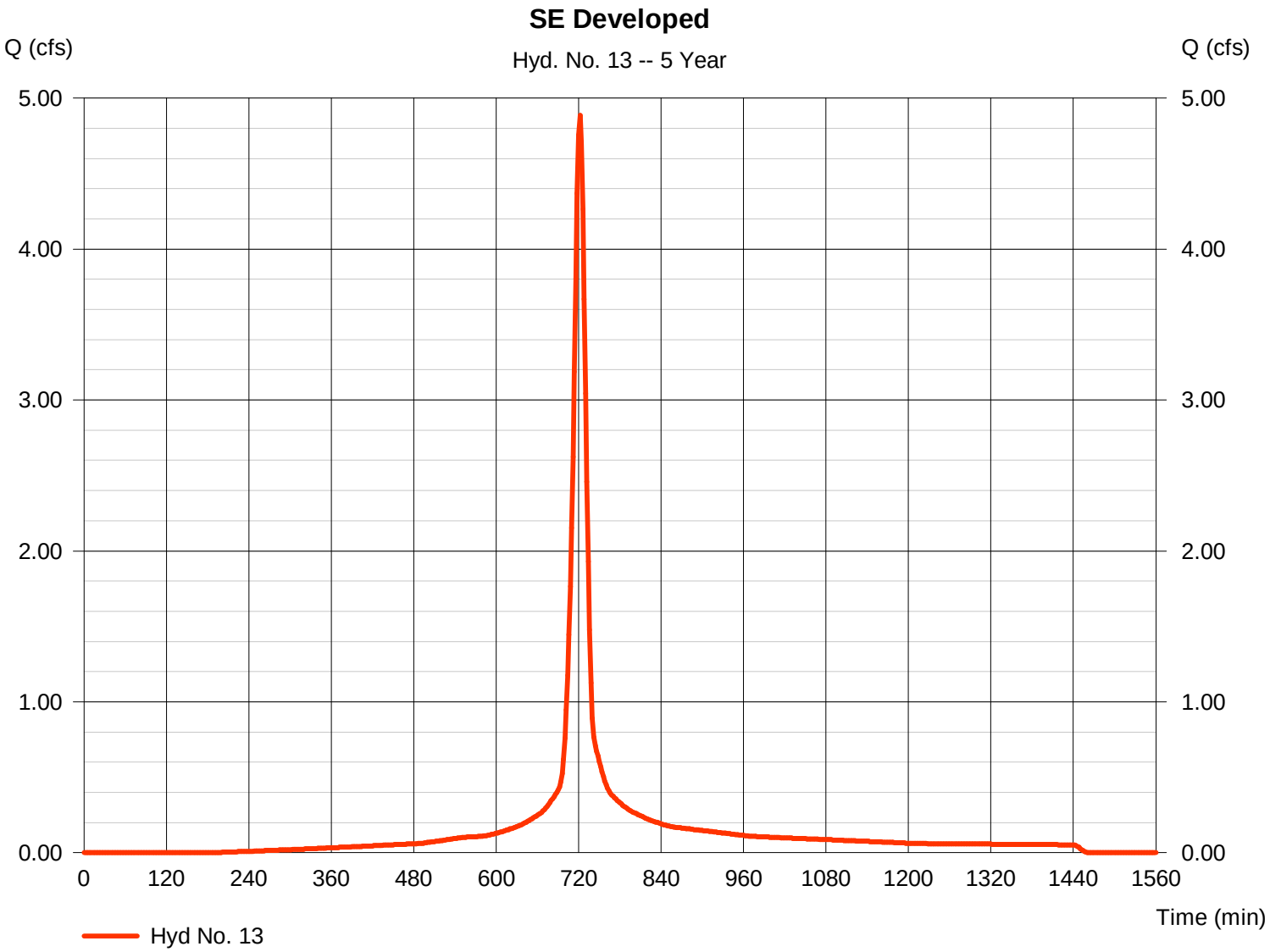


Hydrograph Report

Hyd. No. 13

SE Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.885 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	14,562 cuft
Drainage area	=	1.500 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

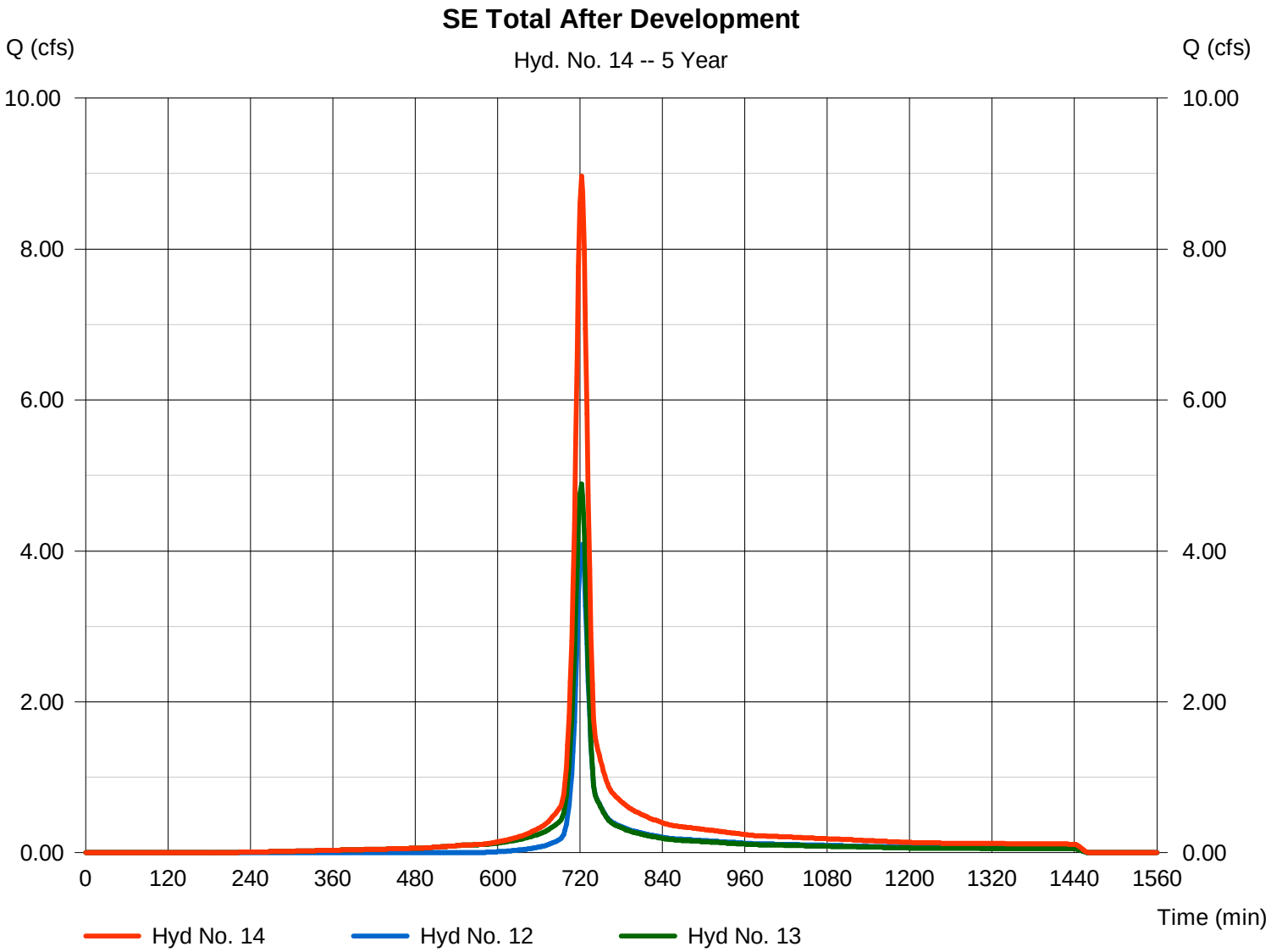


Hydrograph Report

Hyd. No. 14

SE Total After Development

Hydrograph type	= Combine	Peak discharge	= 8.965 cfs
Storm frequency	= 5 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 26,079 cuft
Inflow hyds.	= 12, 13	Contrib. drain. area	= 3.700 ac

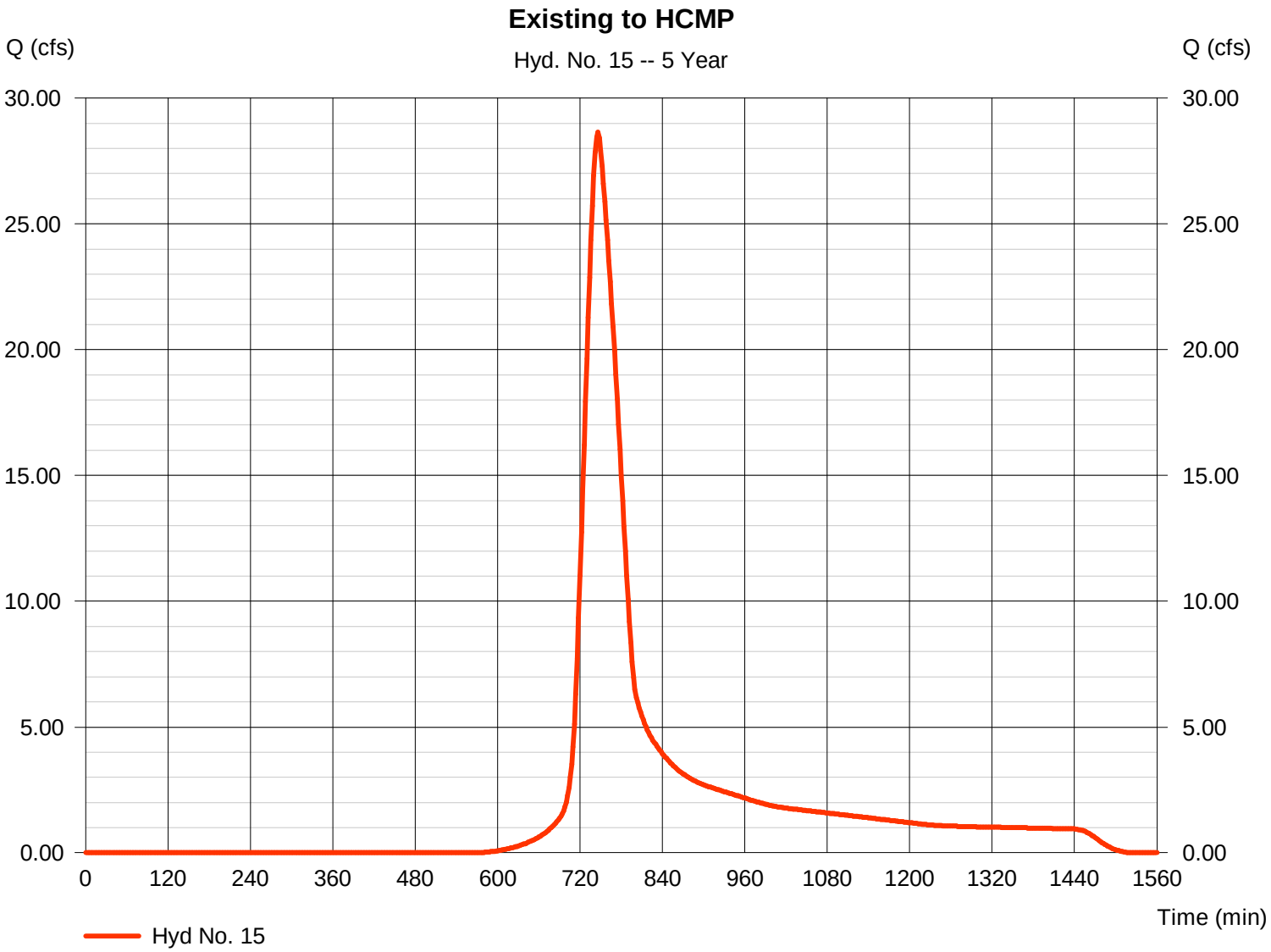


Hydrograph Report

Hyd. No. 15

Existing to HCMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	28.64 cfs
Storm frequency	=	5 yrs	Time to peak	=	746 min
Time interval	=	2 min	Hyd. volume	=	174,254 cuft
Drainage area	=	32.200 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	2100 ft
Tc method	=	LAG	Time of conc. (Tc)	=	52.62 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

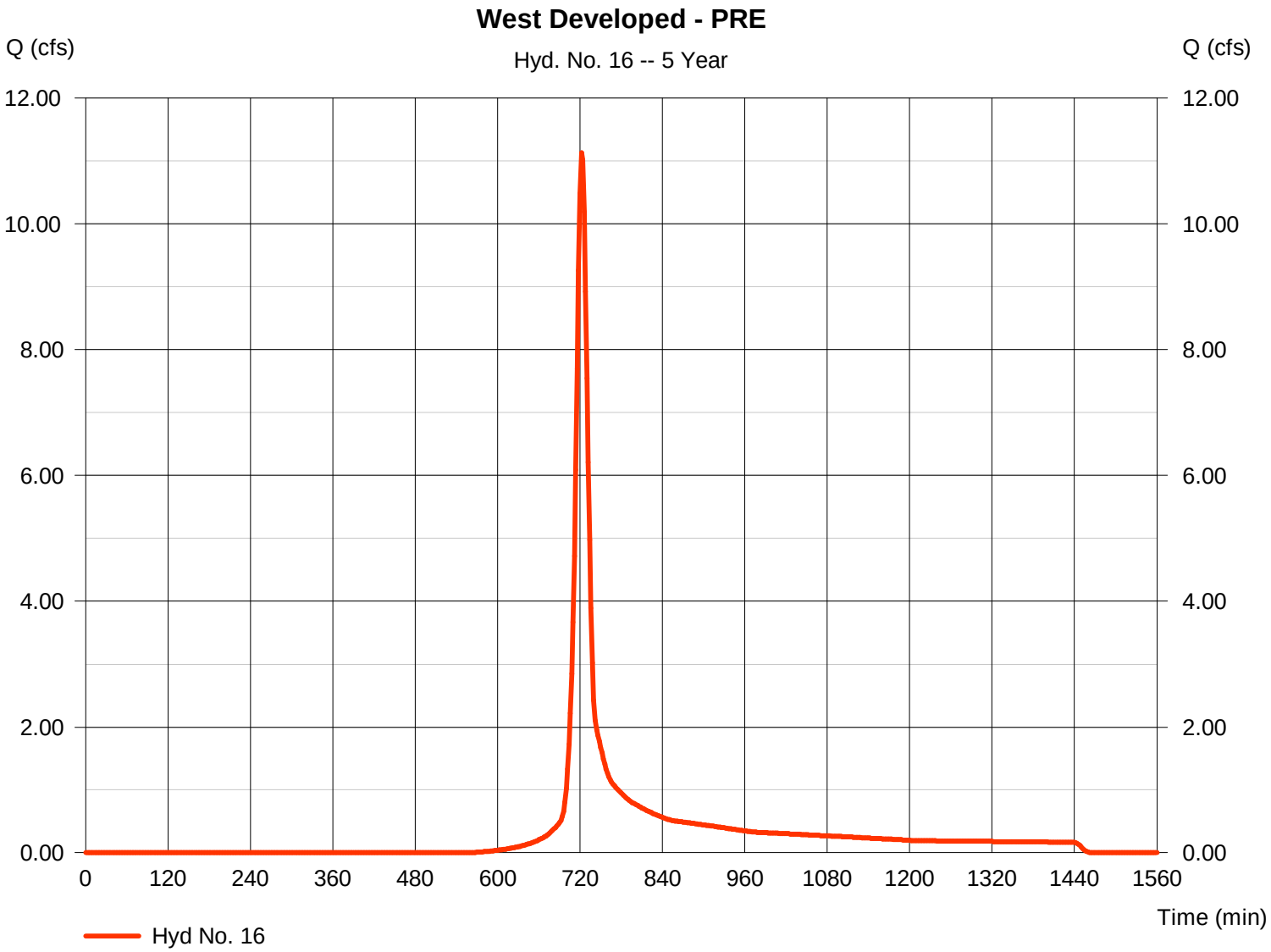


Hydrograph Report

Hyd. No. 16

West Developed - PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	11.13 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	31,413 cuft
Drainage area	=	6.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

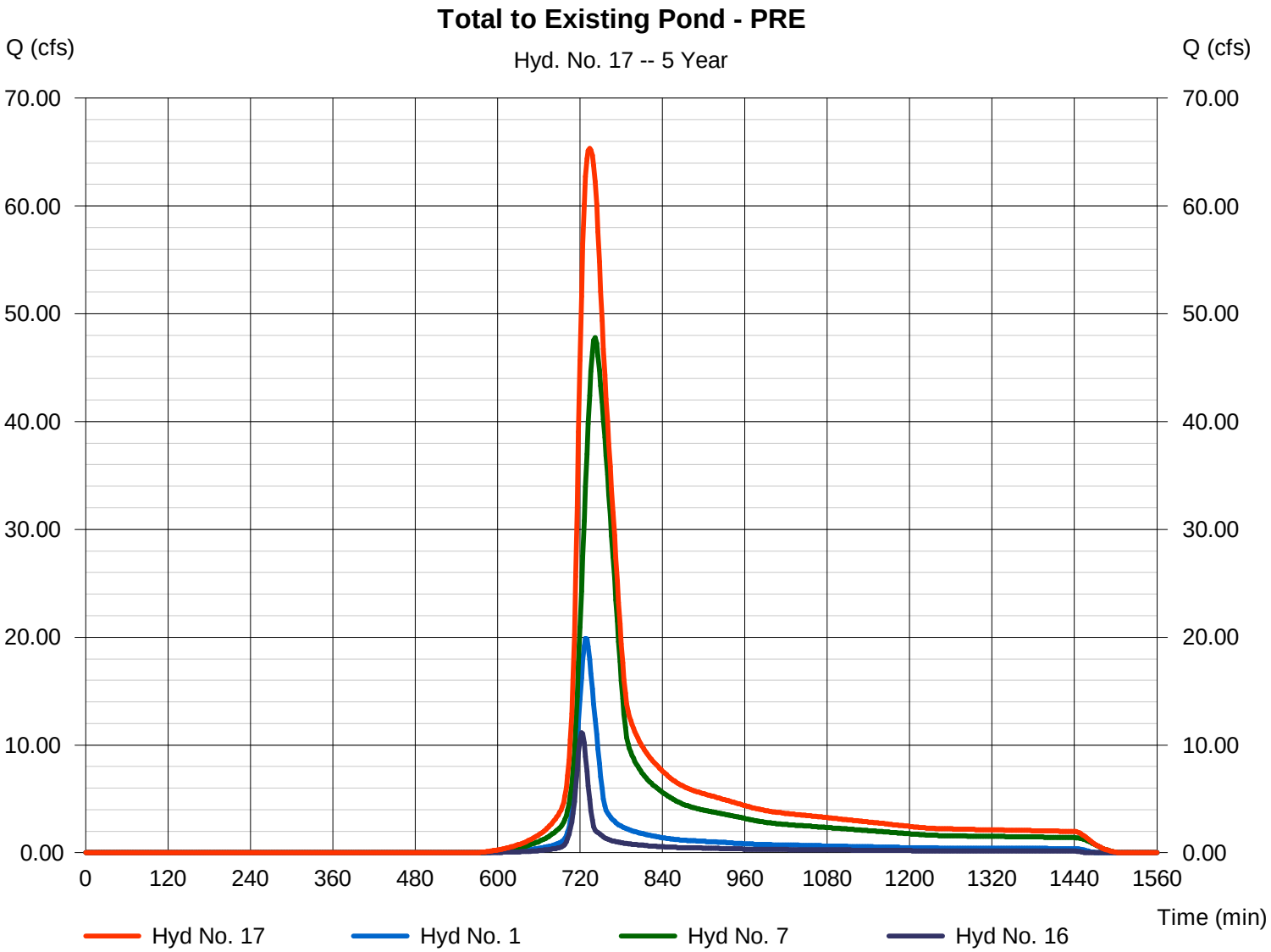


Hydrograph Report

Hyd. No. 17

Total to Existing Pond - PRE

Hydrograph type	= Combine	Peak discharge	= 65.34 cfs
Storm frequency	= 5 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 366,177 cuft
Inflow hyds.	= 1, 7, 16	Contrib. drain. area	= 69.000 ac



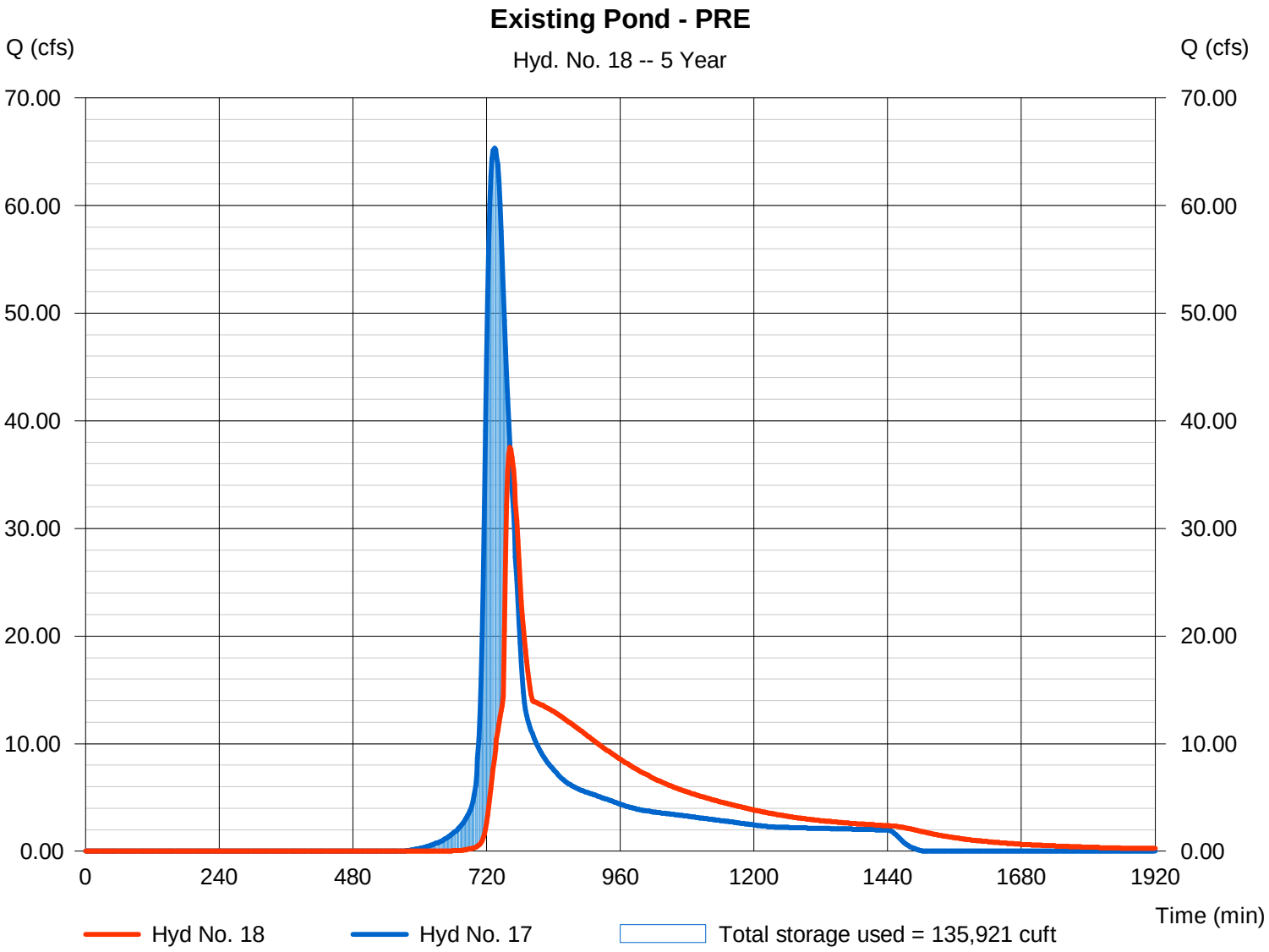
Hydrograph Report

Hyd. No. 18

Existing Pond - PRE

Hydrograph type	=	Reservoir	Peak discharge	=	37.51 cfs
Storm frequency	=	5 yrs	Time to peak	=	762 min
Time interval	=	2 min	Hyd. volume	=	366,038 cuft
Inflow hyd. No.	=	17 - Total to Existing Pond - PRE	Max. Elevation	=	1311.70 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	135,921 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

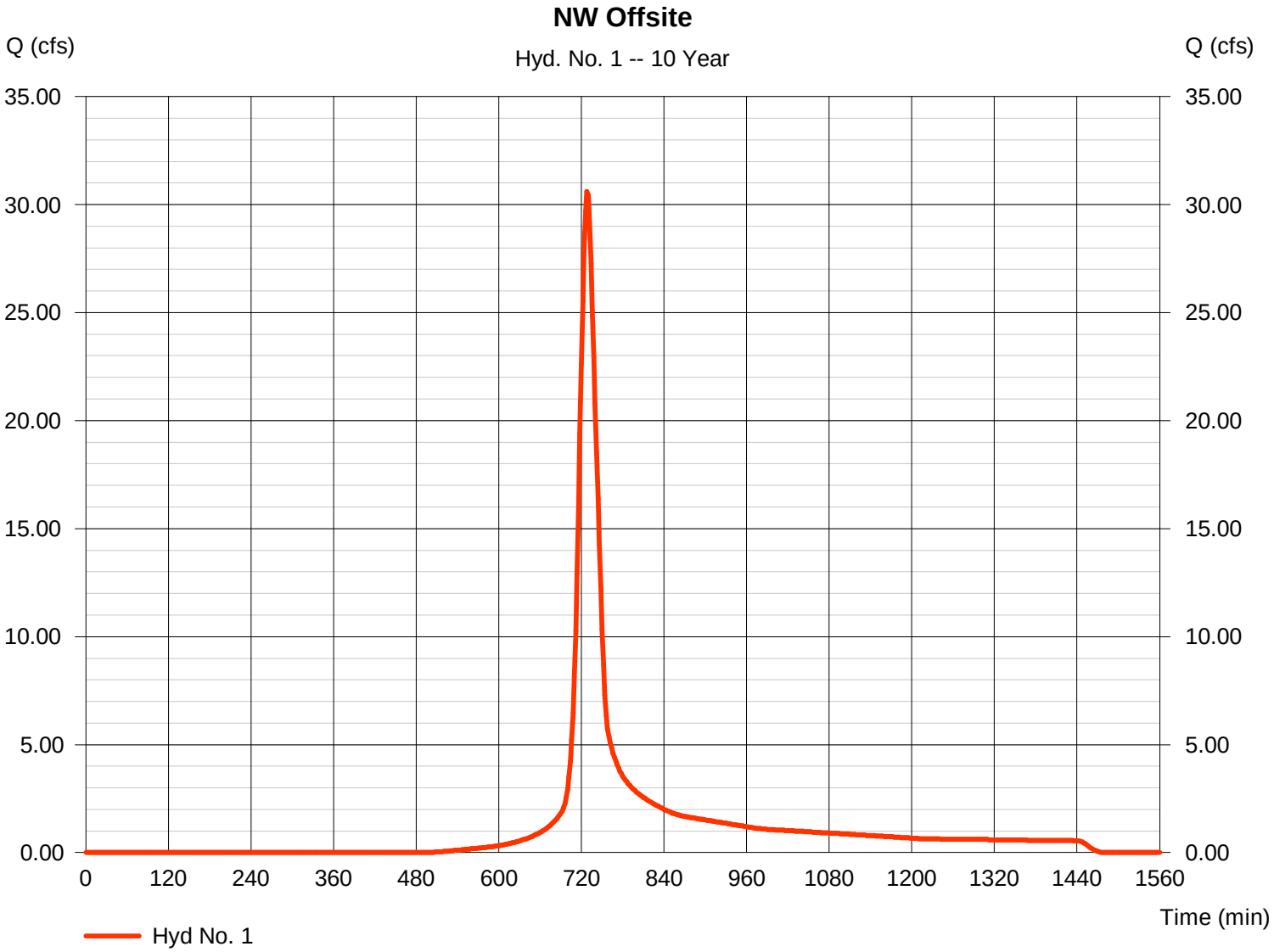
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	30.61	2	728	112,558	------	------	------	NW Offsite
2	SCS Runoff	29.92	2	732	129,833	------	------	------	NE Offsite
3	SCS Runoff	34.35	2	722	104,131	------	------	------	East Developed - POST
4	SCS Runoff	22.72	2	722	63,706	------	------	------	East Undeveloped
5	Combine	79.09	2	724	297,670	2, 3, 4	------	------	Total to Dry Detention
6	Reservoir	19.65	2	756	297,652	5	1315.10	110,359	East Dry Detention
7	SCS Runoff	73.73	2	742	396,634	------	------	------	West Undeveloped
8	SCS Runoff	25.76	2	722	78,098	------	------	------	West Developed - POST
9	Combine	104.95	2	730	587,291	1, 7, 8	------	------	Total to Existing Pond - POST
10	Reservoir	94.95	2	742	587,145	9	1311.95	150,342	Existing Pond - POST
11	SCS Runoff	10.51	2	722	29,464	------	------	------	SE Existing
12	SCS Runoff	6.249	2	722	17,519	------	------	------	SE Undeveloped
13	SCS Runoff	6.440	2	722	19,525	------	------	------	SE Developed
14	Combine	12.69	2	722	37,044	12, 13	------	------	SE Total After Development
15	SCS Runoff	44.27	2	746	265,048	------	------	------	Existing to HCMP
16	SCS Runoff	17.04	2	722	47,780	------	------	------	West Developed - PRE
17	Combine	101.18	2	734	556,973	1, 7, 16	------	------	Total to Existing Pond - PRE
18	Reservoir	89.55	2	746	556,827	17	1311.93	149,184	Existing Pond - PRE

Hydrograph Report

Hyd. No. 1

NW Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	30.61 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	112,558 cuft
Drainage area	=	14.000 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	775 ft
Tc method	=	LAG	Time of conc. (Tc)	=	23.70 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

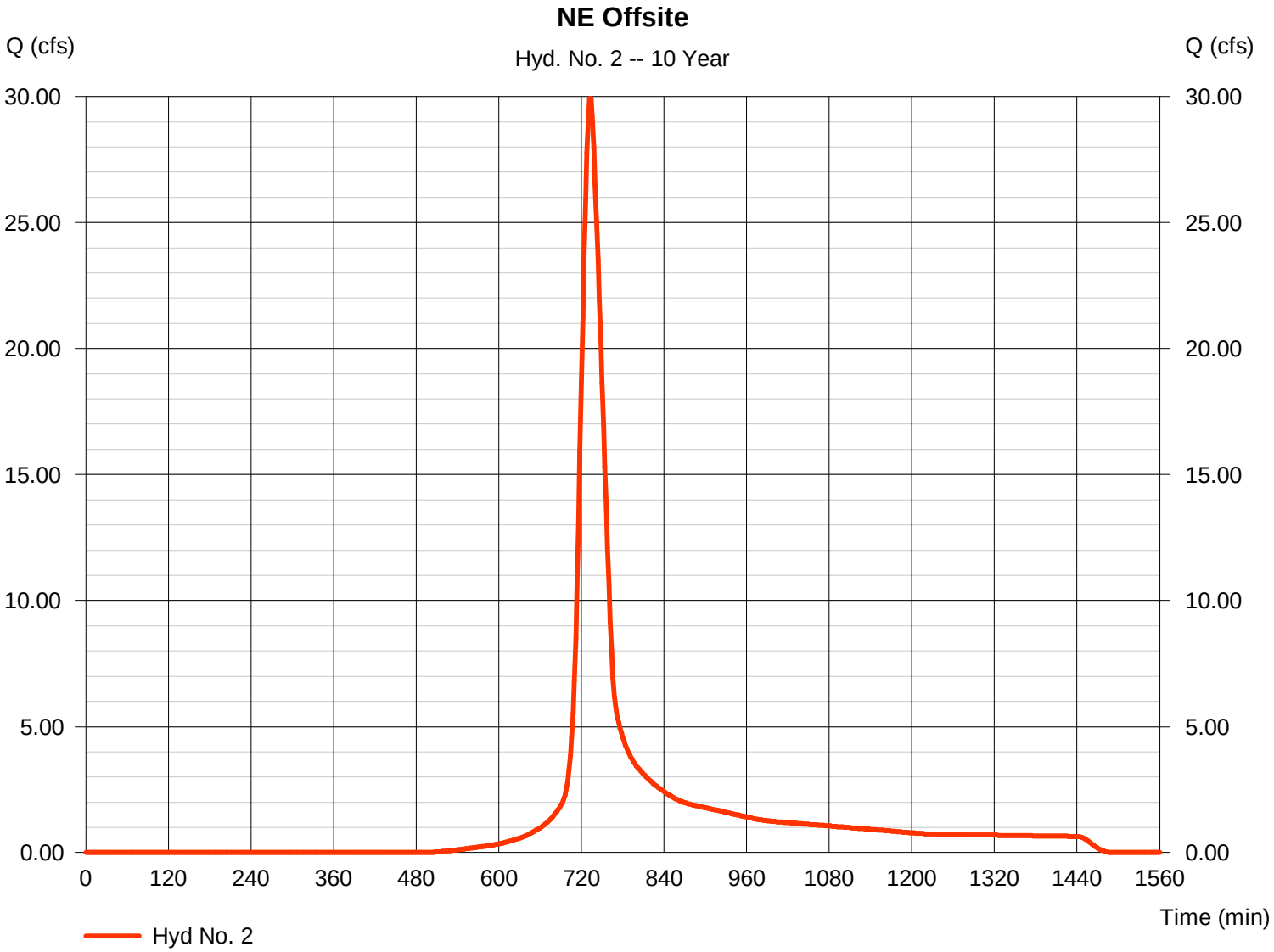


Hydrograph Report

Hyd. No. 2

NE Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	29.92 cfs
Storm frequency	=	10 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	129,833 cuft
Drainage area	=	15.700 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	1120 ft
Tc method	=	LAG	Time of conc. (Tc)	=	31.82 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

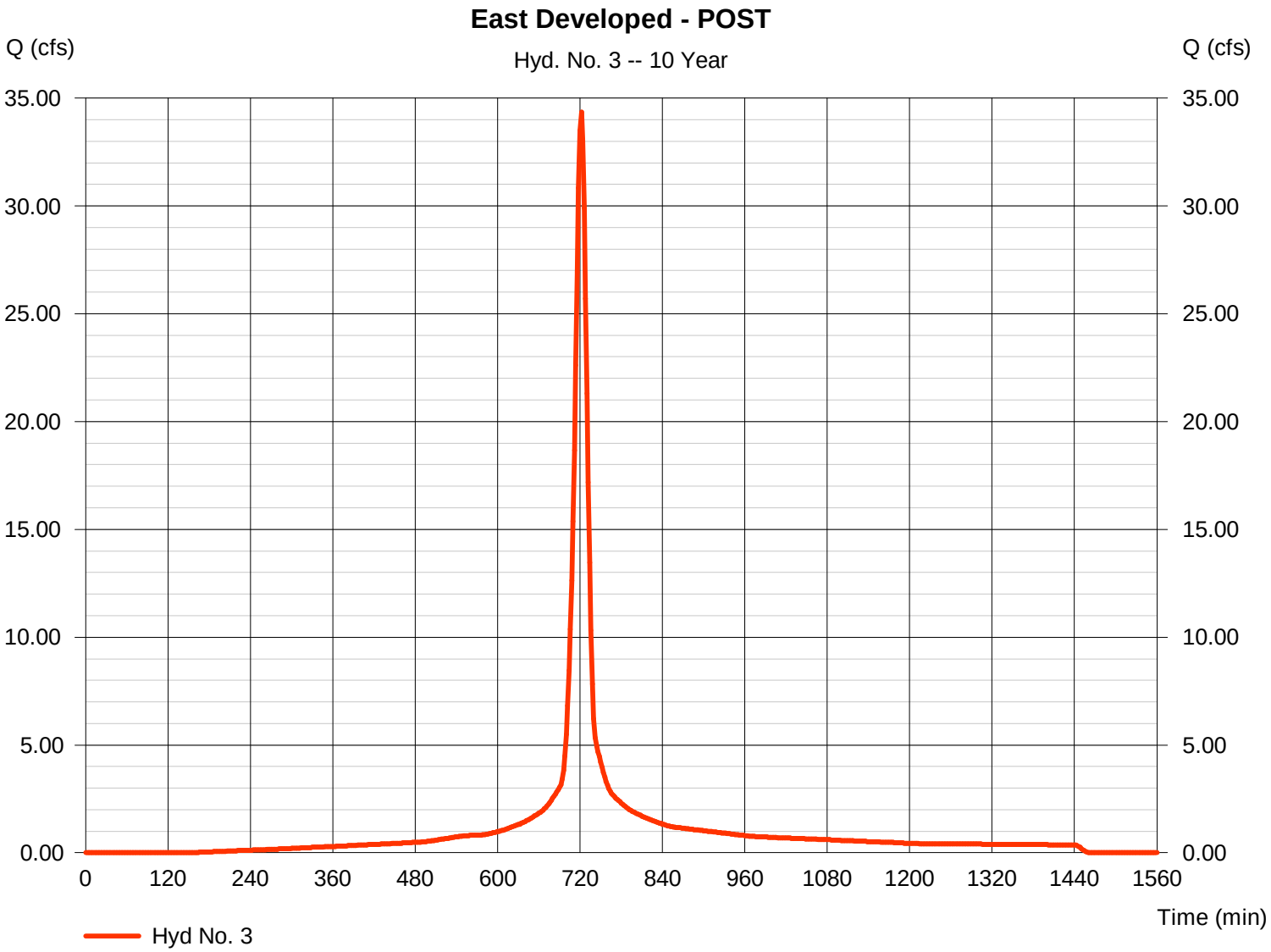


Hydrograph Report

Hyd. No. 3

East Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	34.35 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	104,131 cuft
Drainage area	=	8.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

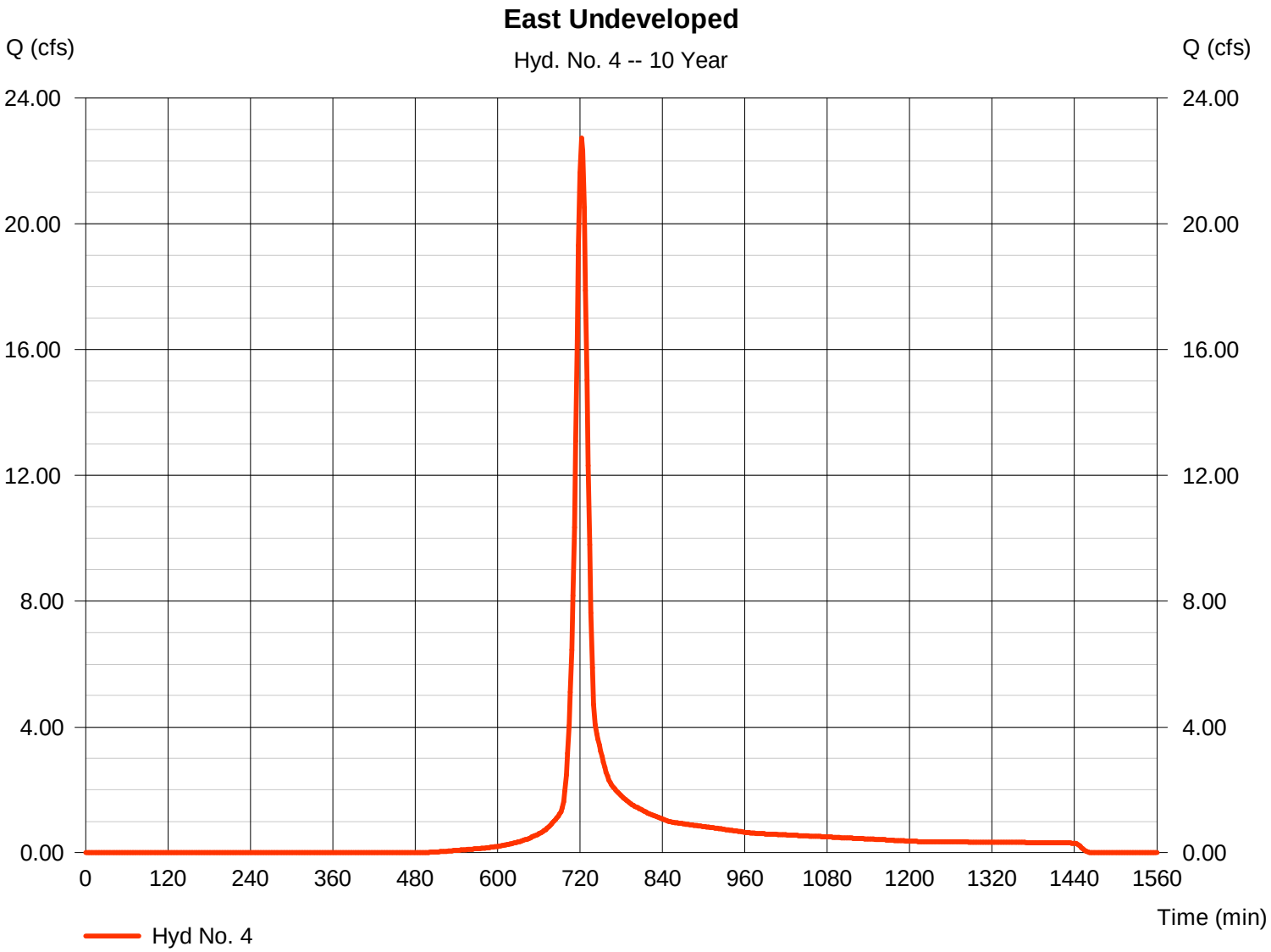


Hydrograph Report

Hyd. No. 4

East Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	22.72 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	63,706 cuft
Drainage area	=	8.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

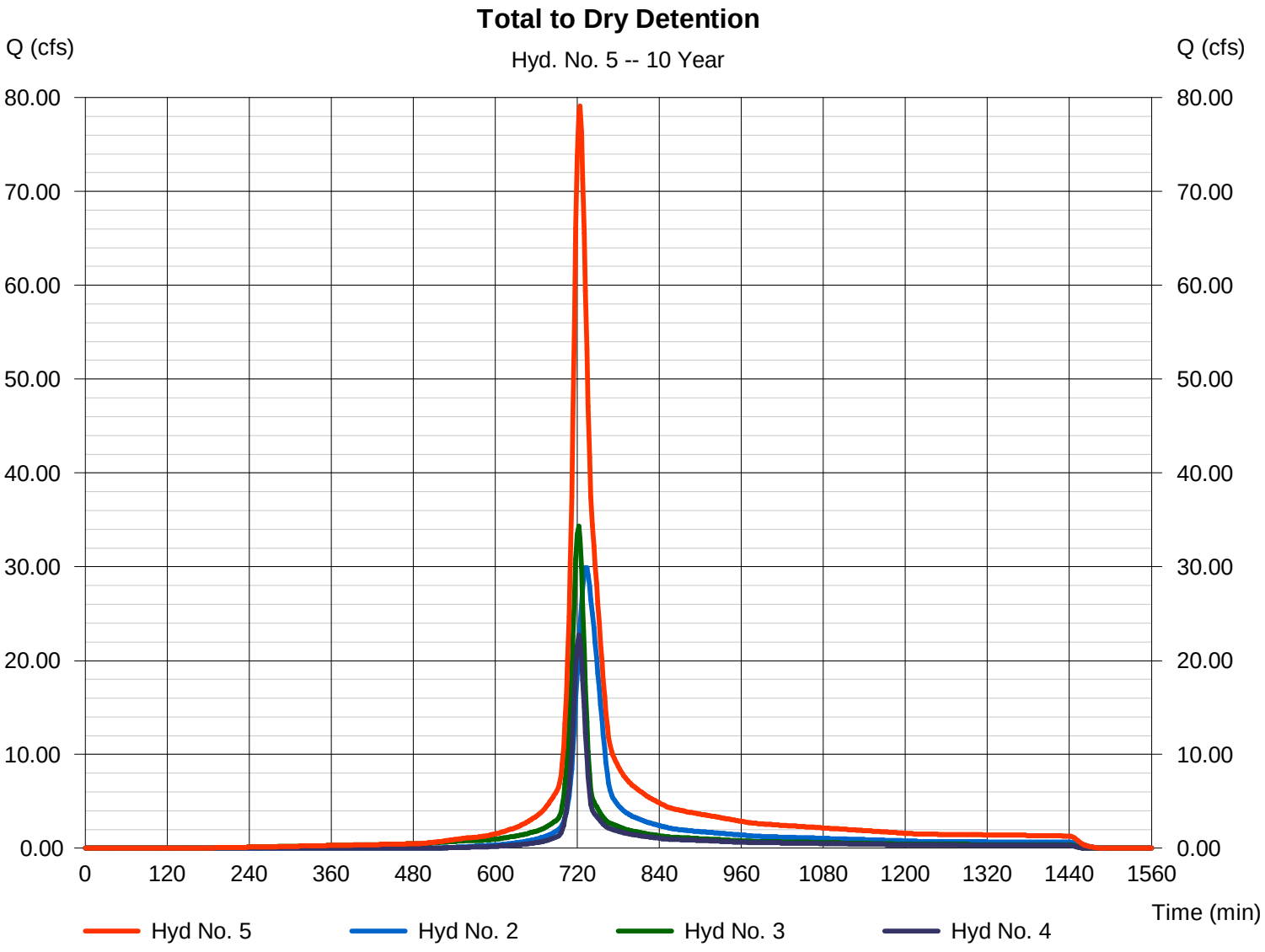


Hydrograph Report

Hyd. No. 5

Total to Dry Detention

Hydrograph type	= Combine	Peak discharge	= 79.09 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 297,670 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 31.700 ac



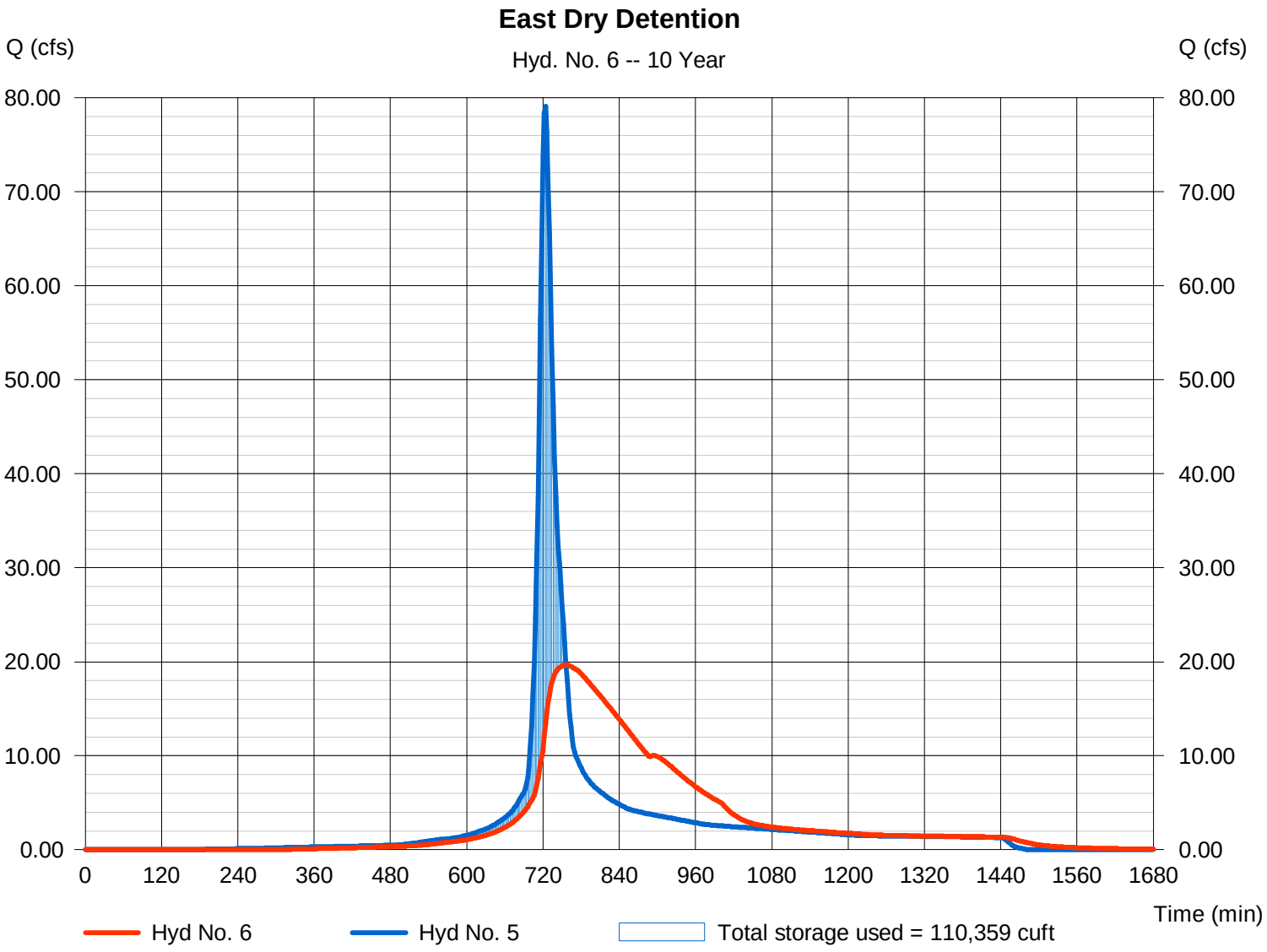
Hydrograph Report

Hyd. No. 6

East Dry Detention

Hydrograph type	=	Reservoir	Peak discharge	=	19.65 cfs
Storm frequency	=	10 yrs	Time to peak	=	756 min
Time interval	=	2 min	Hyd. volume	=	297,652 cuft
Inflow hyd. No.	=	5 - Total to Dry Detention	Max. Elevation	=	1315.10 ft
Reservoir name	=	East Dry Detention	Max. Storage	=	110,359 cuft

Storage Indication method used.

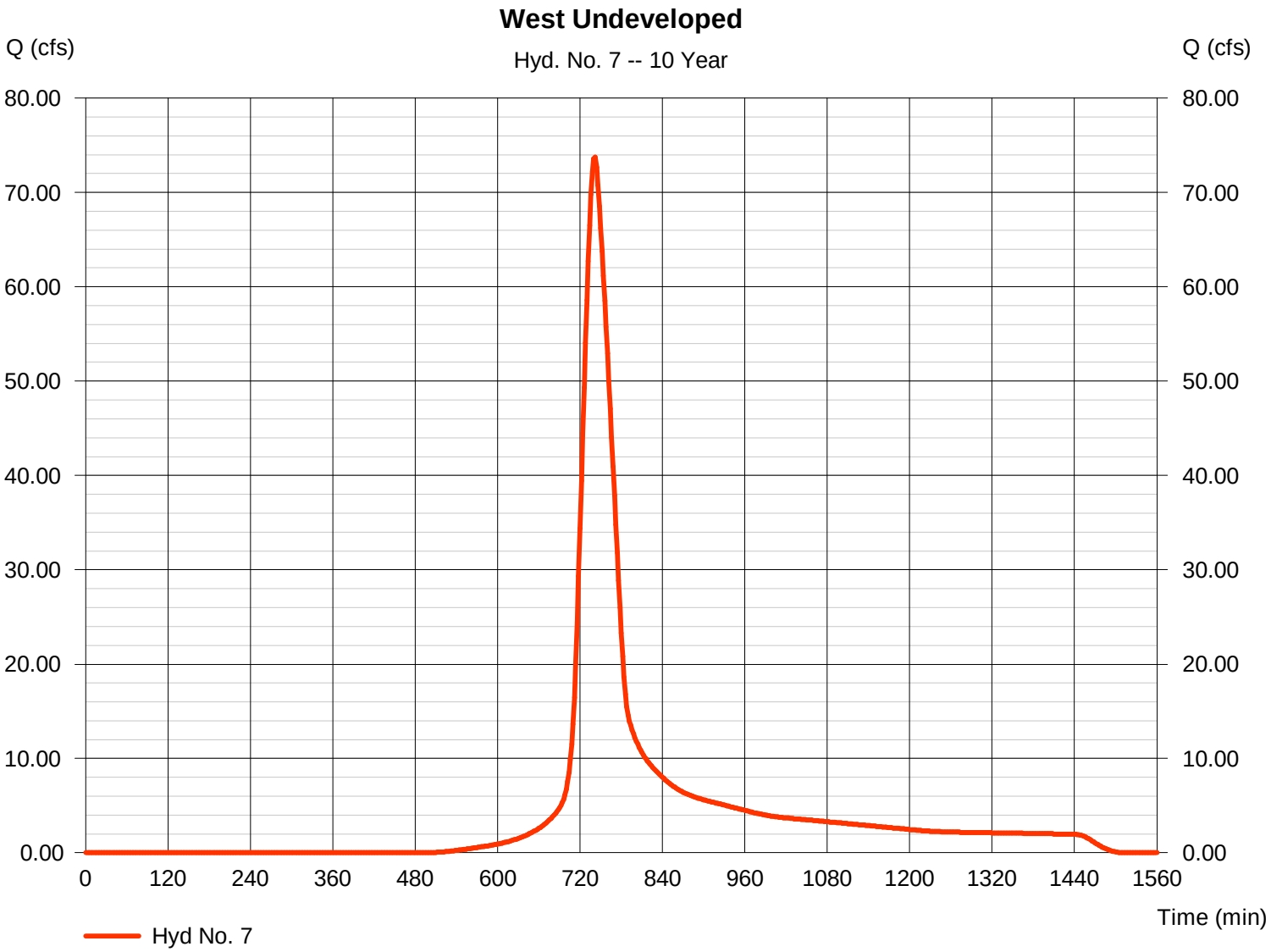


Hydrograph Report

Hyd. No. 7

West Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	73.73 cfs
Storm frequency	=	10 yrs	Time to peak	=	742 min
Time interval	=	2 min	Hyd. volume	=	396,634 cuft
Drainage area	=	49.000 ac	Curve number	=	80
Basin Slope	=	1.4 %	Hydraulic length	=	2000 ft
Tc method	=	LAG	Time of conc. (Tc)	=	46.85 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

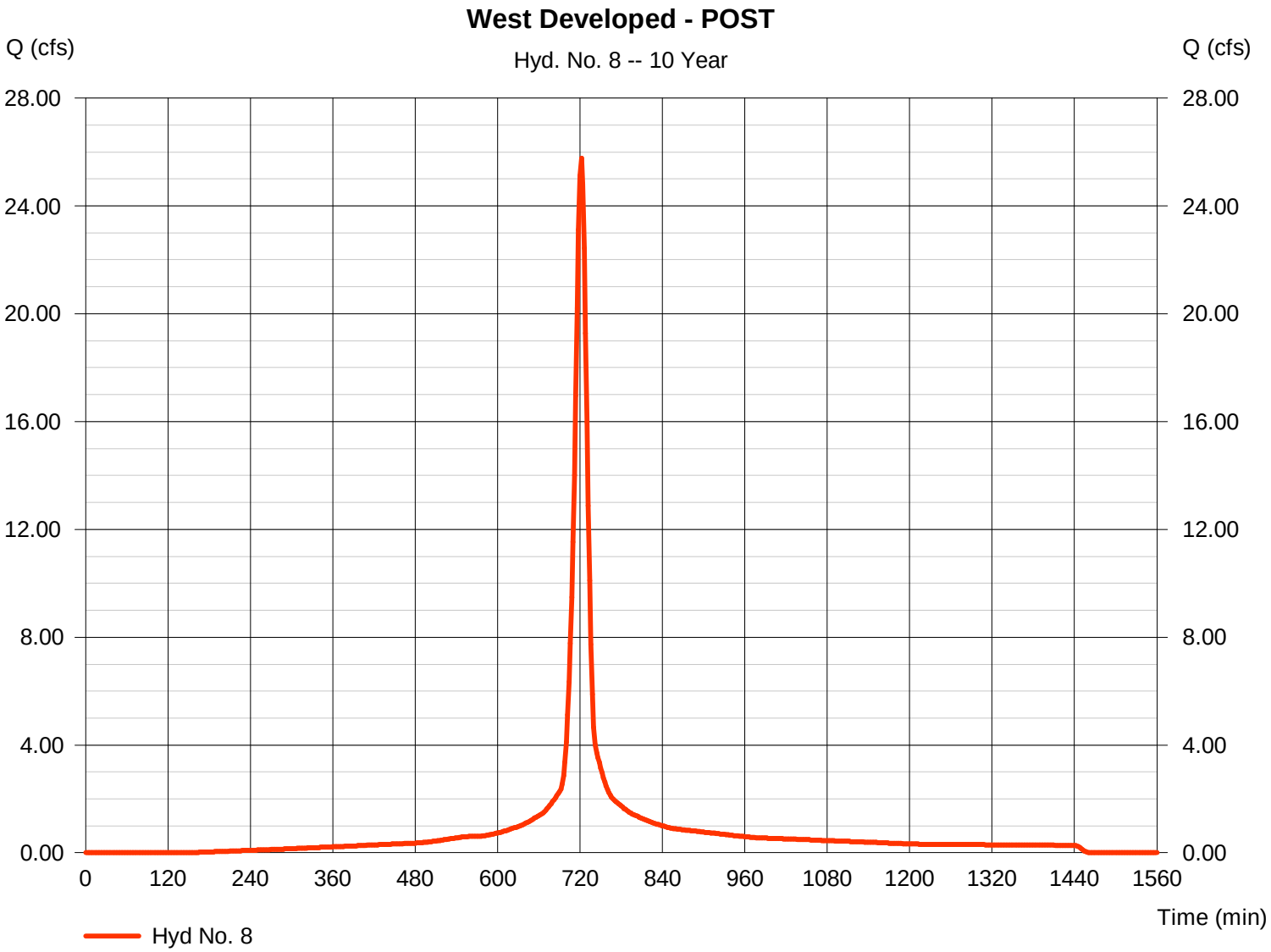


Hydrograph Report

Hyd. No. 8

West Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	25.76 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	78,098 cuft
Drainage area	=	6.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

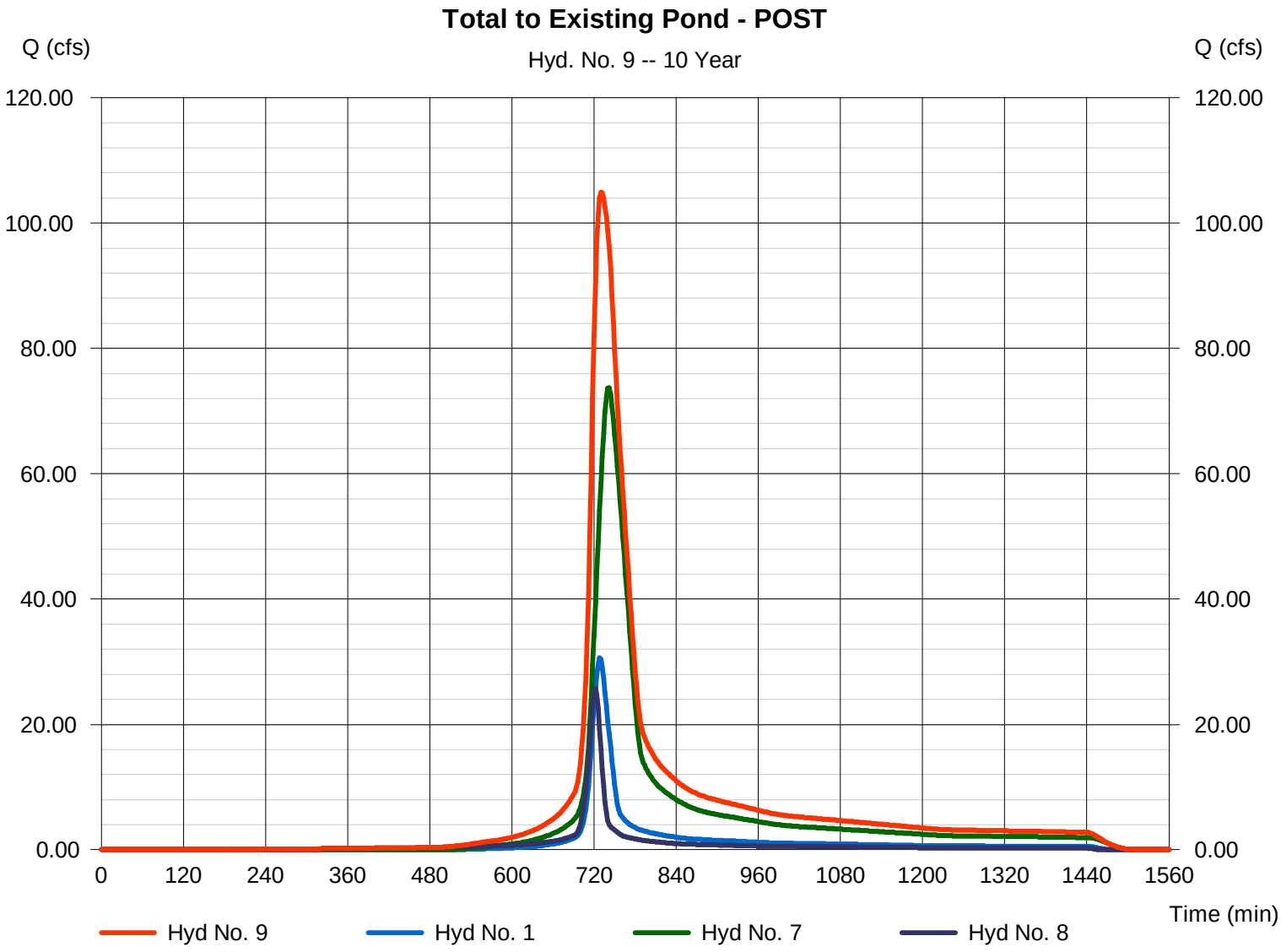


Hydrograph Report

Hyd. No. 9

Total to Existing Pond - POST

Hydrograph type	= Combine	Peak discharge	= 104.95 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 587,291 cuft
Inflow hyds.	= 1, 7, 8	Contrib. drain. area	= 69.000 ac



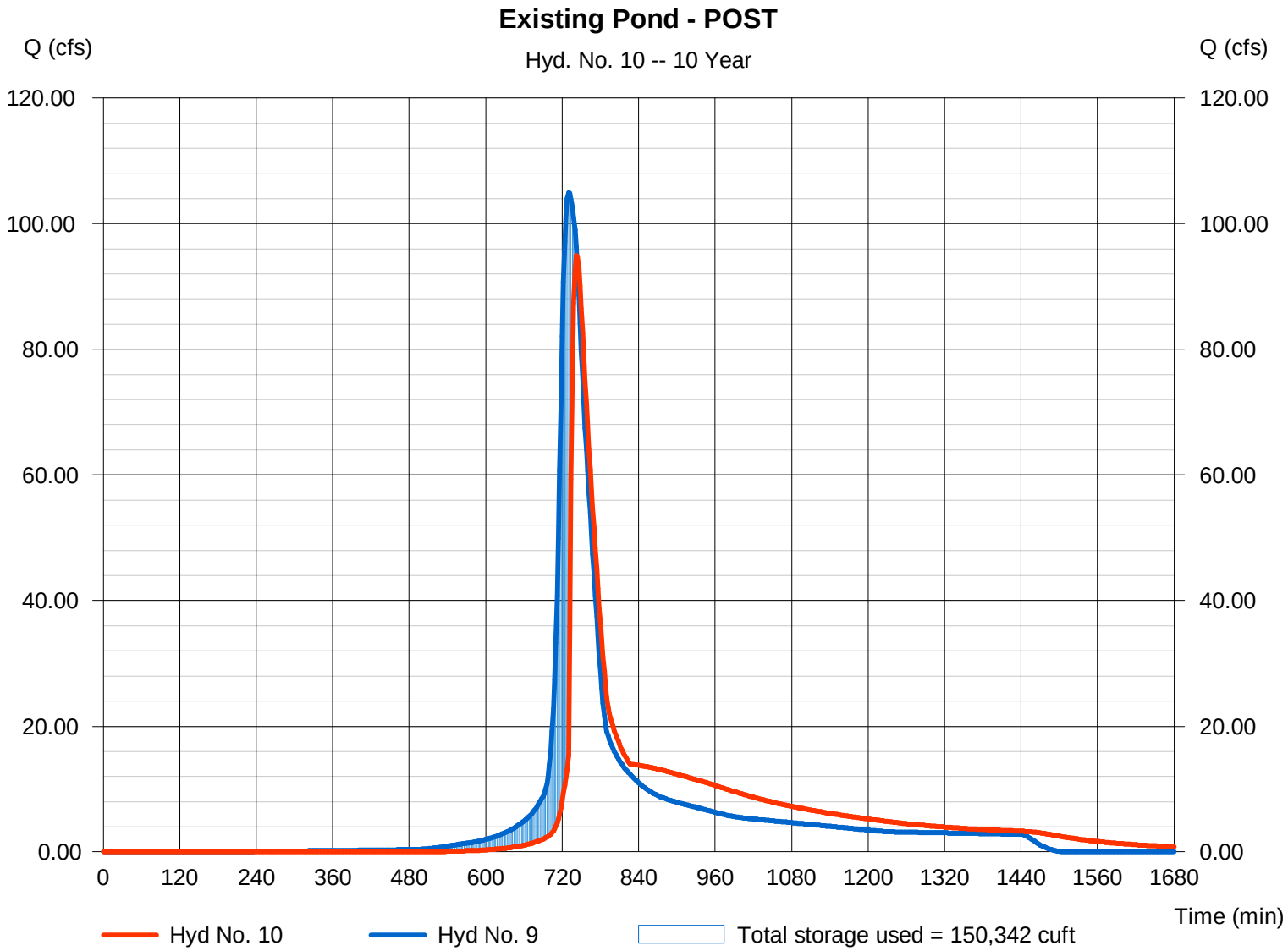
Hydrograph Report

Hyd. No. 10

Existing Pond - POST

Hydrograph type	=	Reservoir	Peak discharge	=	94.95 cfs
Storm frequency	=	10 yrs	Time to peak	=	742 min
Time interval	=	2 min	Hyd. volume	=	587,145 cuft
Inflow hyd. No.	=	9 - Total to Existing Pond - POST	Max. Elevation	=	1311.95 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	150,342 cuft

Storage Indication method used.

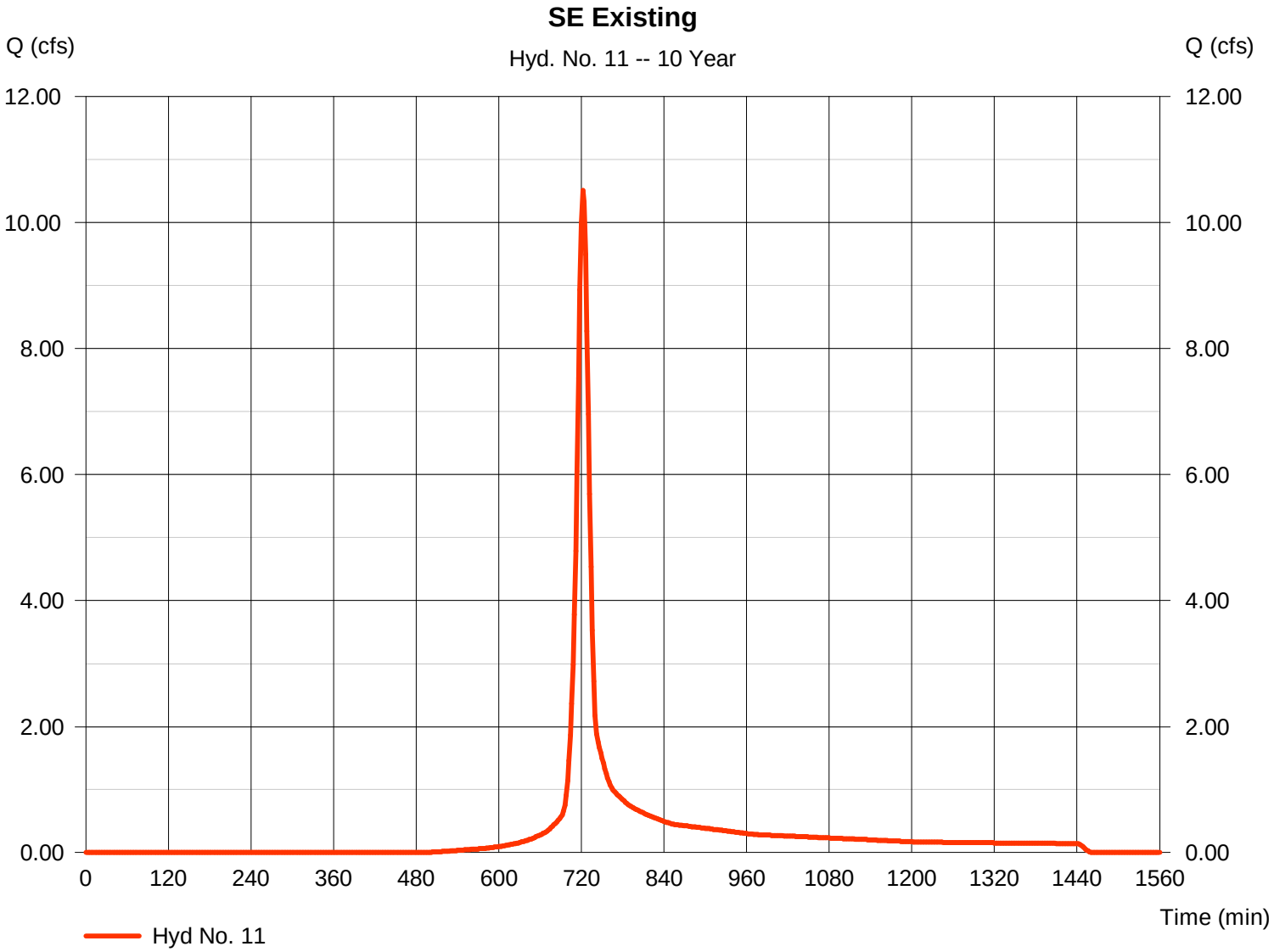


Hydrograph Report

Hyd. No. 11

SE Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.51 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	29,464 cuft
Drainage area	=	3.700 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

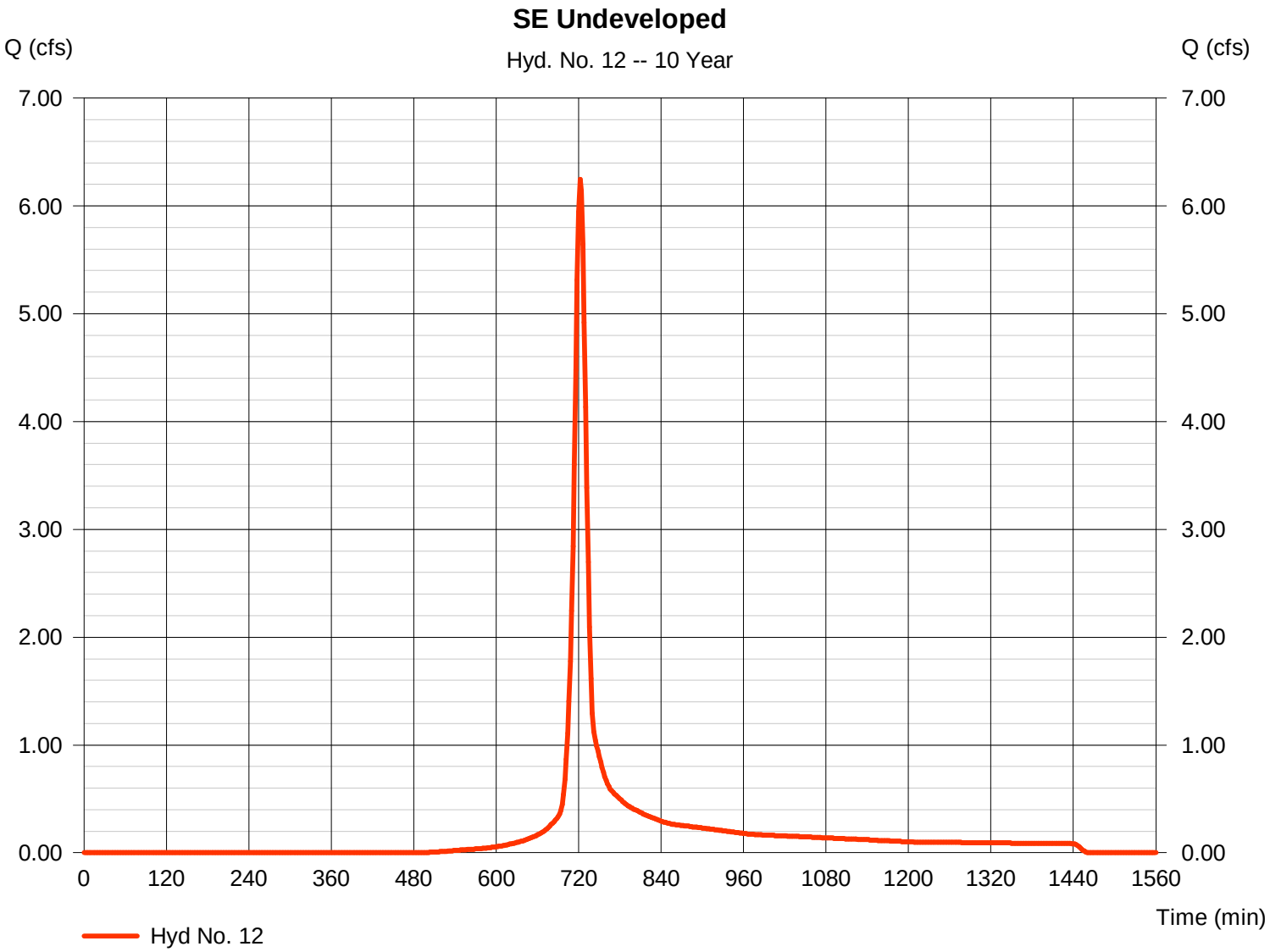


Hydrograph Report

Hyd. No. 12

SE Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.249 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	17,519 cuft
Drainage area	=	2.200 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

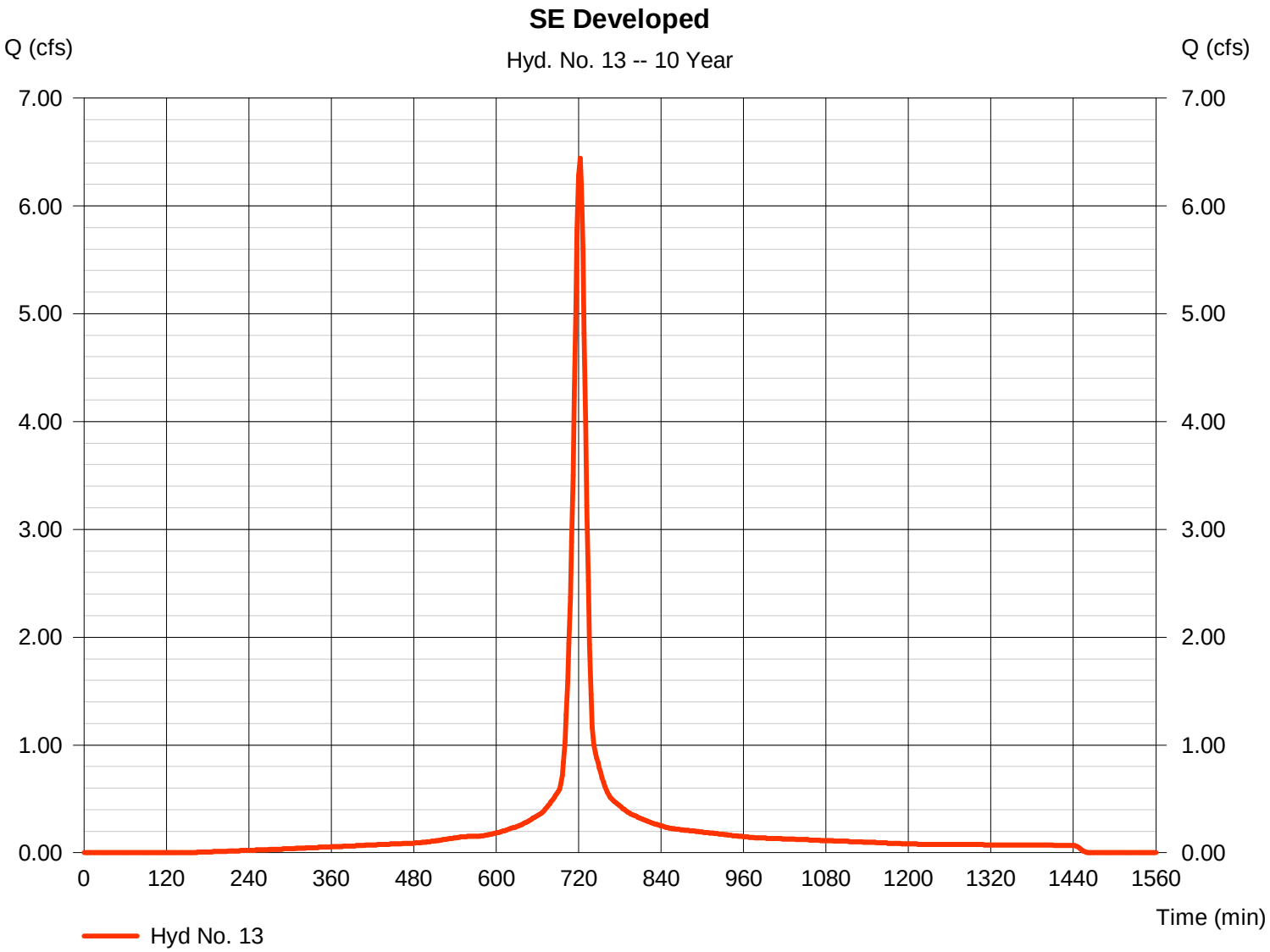


Hydrograph Report

Hyd. No. 13

SE Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.440 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	19,525 cuft
Drainage area	=	1.500 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

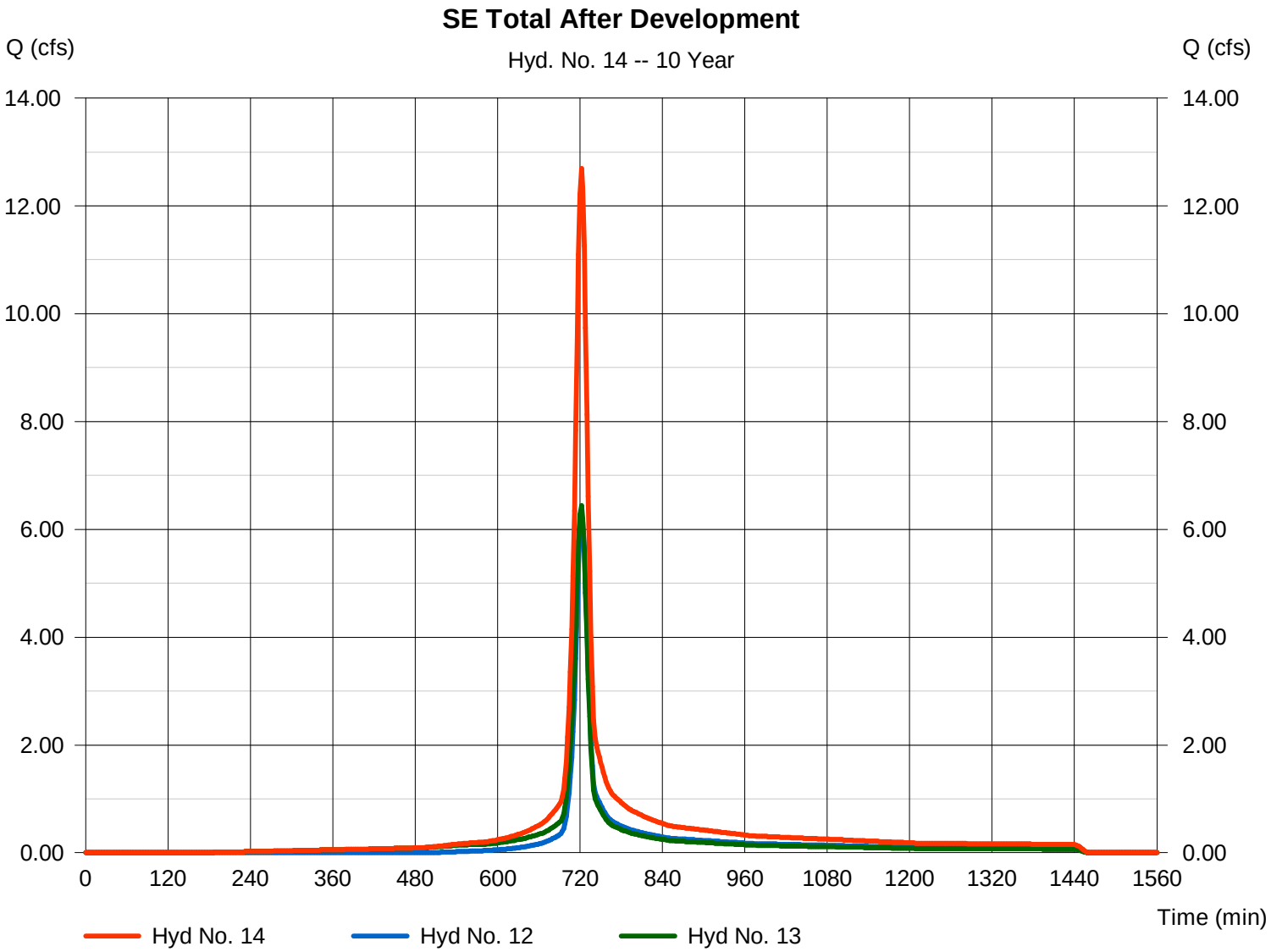


Hydrograph Report

Hyd. No. 14

SE Total After Development

Hydrograph type	= Combine	Peak discharge	= 12.69 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 37,044 cuft
Inflow hyds.	= 12, 13	Contrib. drain. area	= 3.700 ac

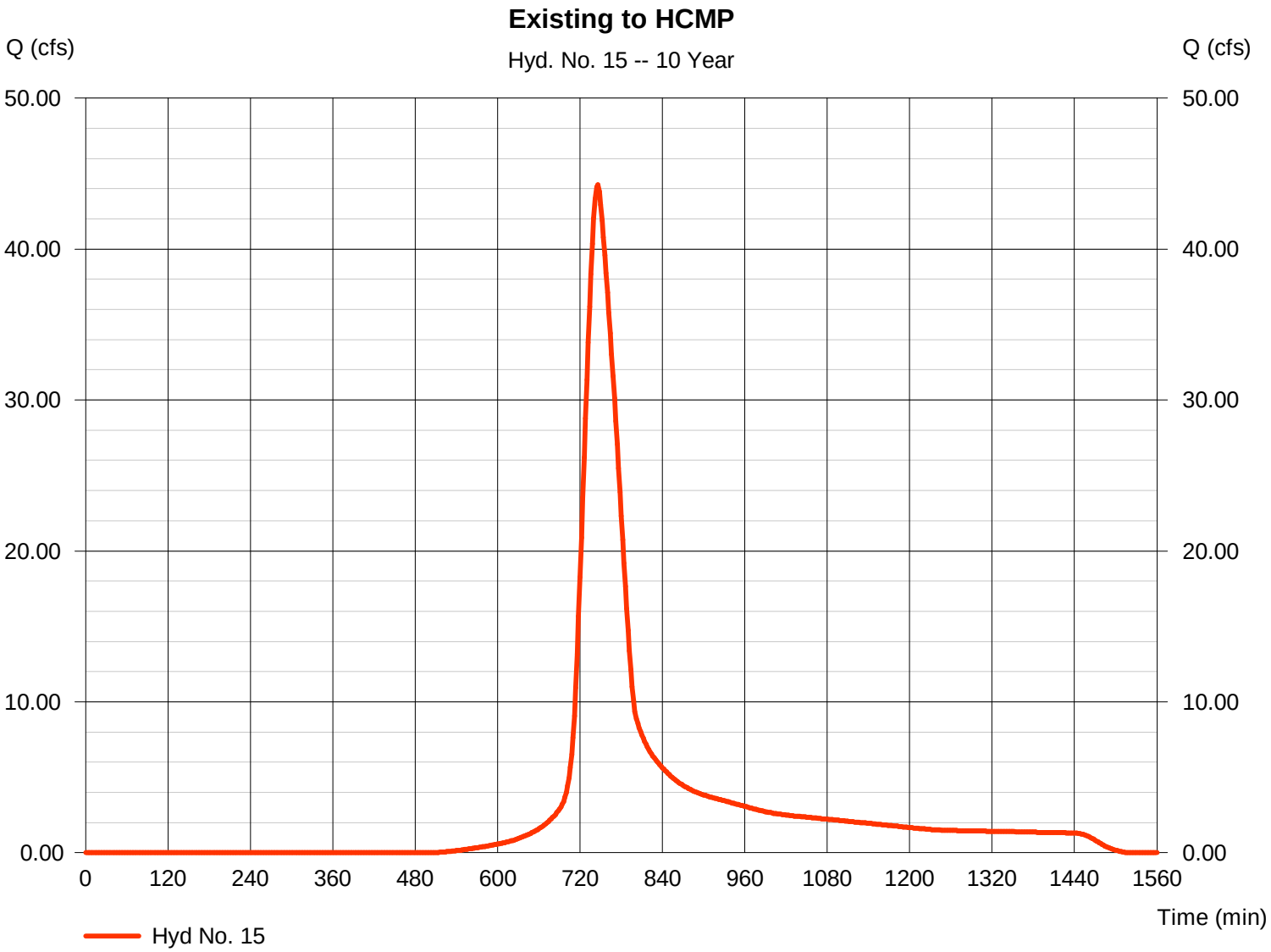


Hydrograph Report

Hyd. No. 15

Existing to HCMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	44.27 cfs
Storm frequency	=	10 yrs	Time to peak	=	746 min
Time interval	=	2 min	Hyd. volume	=	265,048 cuft
Drainage area	=	32.200 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	2100 ft
Tc method	=	LAG	Time of conc. (Tc)	=	52.62 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

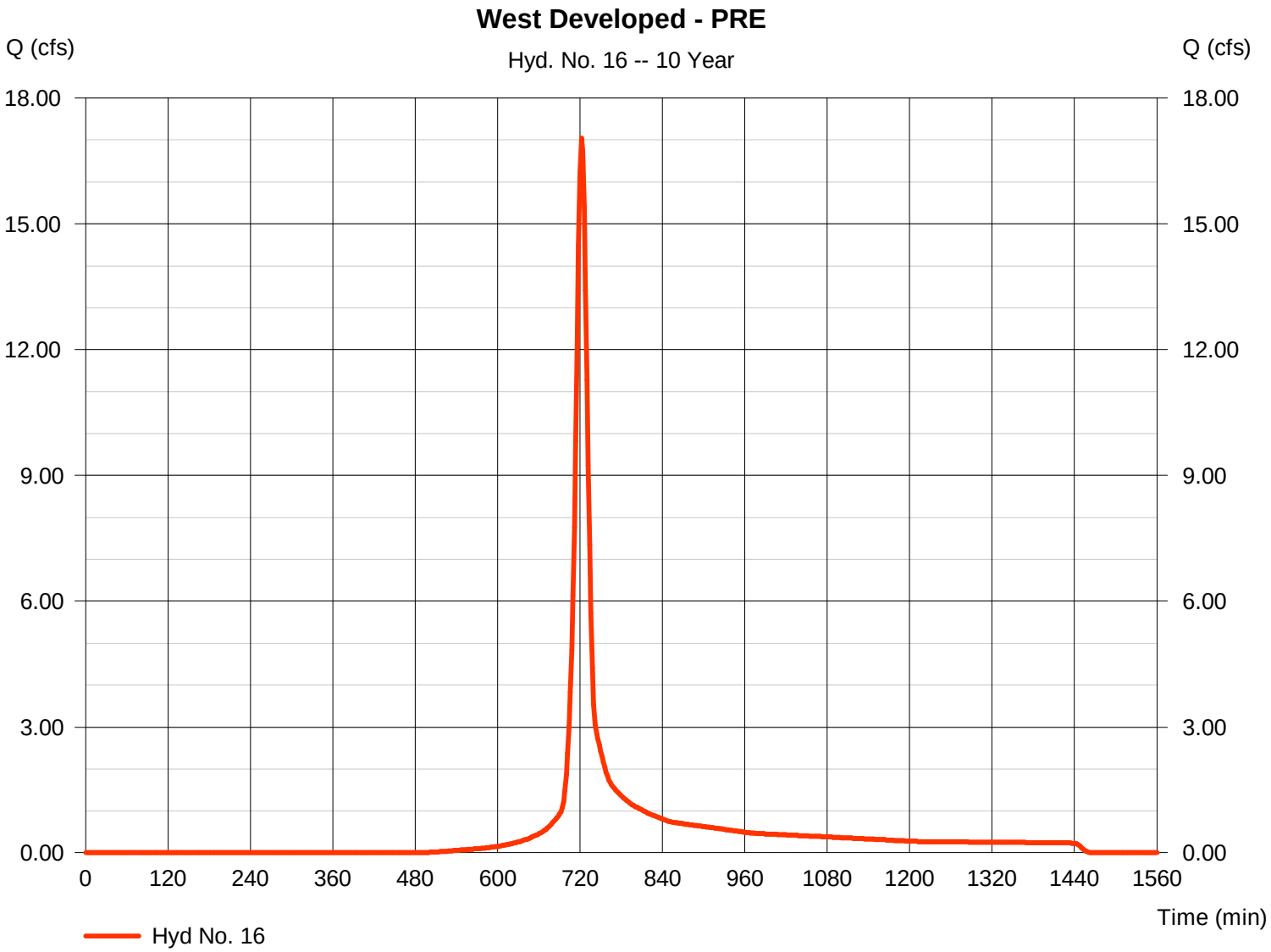


Hydrograph Report

Hyd. No. 16

West Developed - PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	17.04 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	47,780 cuft
Drainage area	=	6.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	4.25 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

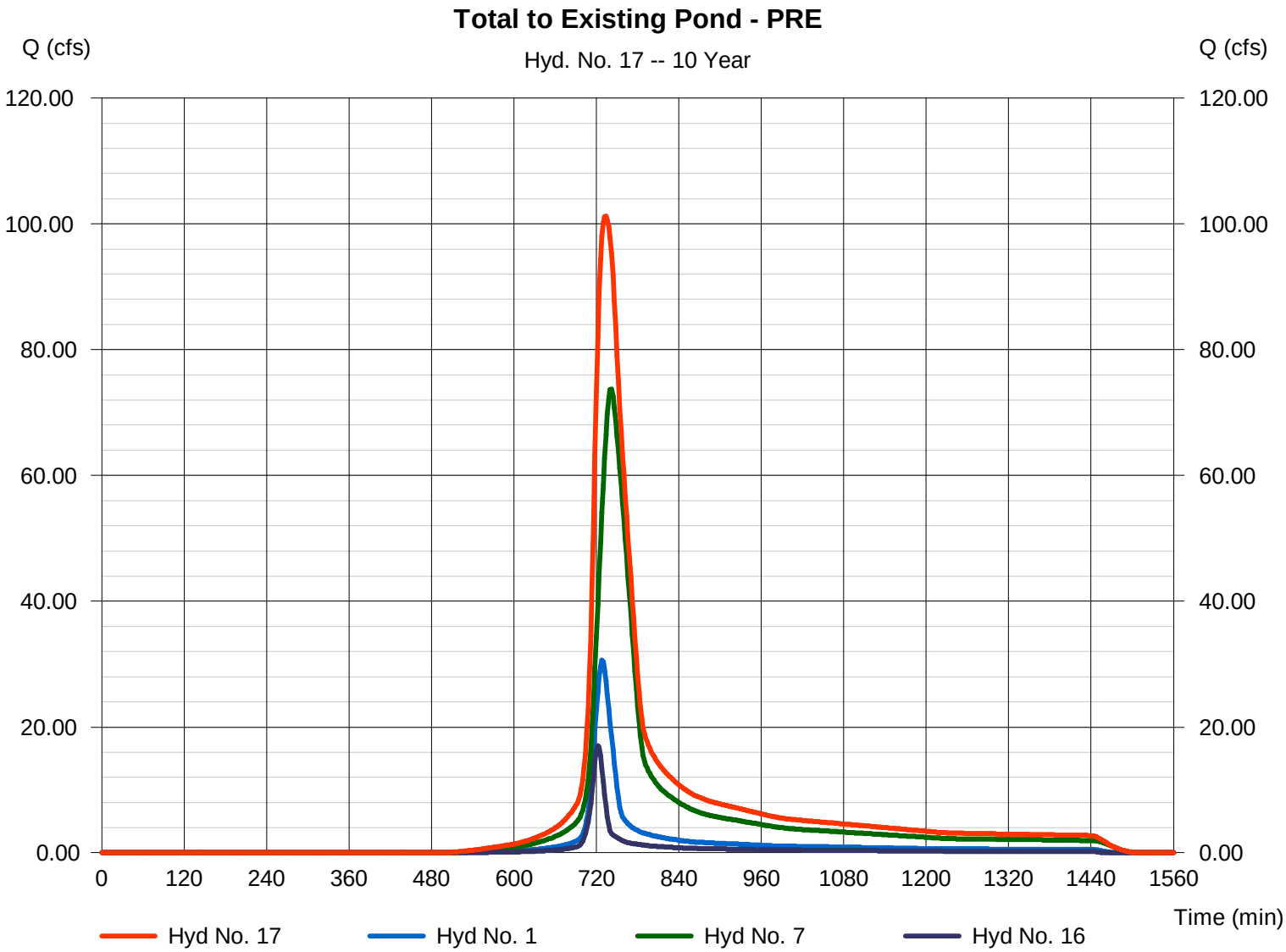


Hydrograph Report

Hyd. No. 17

Total to Existing Pond - PRE

Hydrograph type	= Combine	Peak discharge	= 101.18 cfs
Storm frequency	= 10 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 556,973 cuft
Inflow hyds.	= 1, 7, 16	Contrib. drain. area	= 69.000 ac



Hydrograph Report

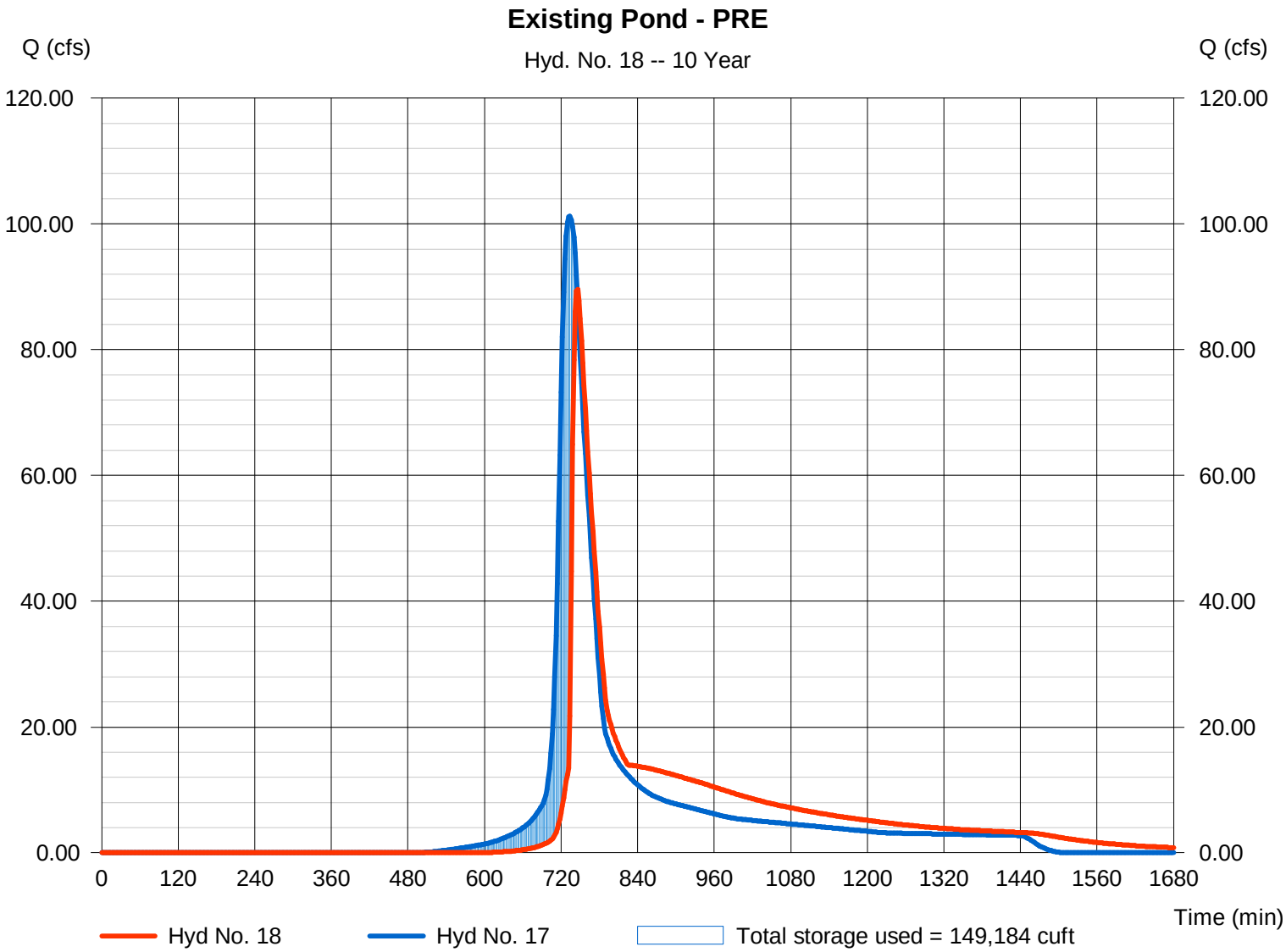
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 18

Existing Pond - PRE

Hydrograph type	=	Reservoir	Peak discharge	=	89.55 cfs
Storm frequency	=	10 yrs	Time to peak	=	746 min
Time interval	=	2 min	Hyd. volume	=	556,827 cuft
Inflow hyd. No.	=	17 - Total to Existing Pond - PRE	Max. Elevation	=	1311.93 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	149,184 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	48.69	2	728	178,812	------	------	------	NW Offsite
2	SCS Runoff	47.73	2	732	206,253	------	------	------	NE Offsite
3	SCS Runoff	47.50	2	722	146,756	------	------	------	East Developed - POST
4	SCS Runoff	35.94	2	722	101,205	------	------	------	East Undeveloped
5	Combine	119.34	2	724	454,215	2, 3, 4	------	------	Total to Dry Detention
6	Reservoir	31.11	2	756	454,196	5	1315.91	174,741	East Dry Detention
7	SCS Runoff	117.62	2	740	630,097	------	------	------	West Undeveloped
8	SCS Runoff	35.62	2	722	110,067	------	------	------	West Developed - POST
9	Combine	165.64	2	730	918,976	1, 7, 8	------	------	Total to Existing Pond - POST
10	Reservoir	162.68	2	736	918,824	9	1312.16	162,960	Existing Pond - POST
11	SCS Runoff	16.62	2	722	46,807	------	------	------	SE Existing
12	SCS Runoff	9.884	2	722	27,831	------	------	------	SE Undeveloped
13	SCS Runoff	8.906	2	722	27,517	------	------	------	SE Developed
14	Combine	18.79	2	722	55,348	12, 13	------	------	SE Total After Development
15	SCS Runoff	70.65	2	746	421,058	------	------	------	Existing to HCMP
16	SCS Runoff	26.96	2	722	75,904	------	------	------	West Developed - PRE
17	Combine	162.09	2	732	884,813	1, 7, 16	------	------	Total to Existing Pond - PRE
18	Reservoir	158.98	2	738	884,660	17	1312.15	162,311	Existing Pond - PRE

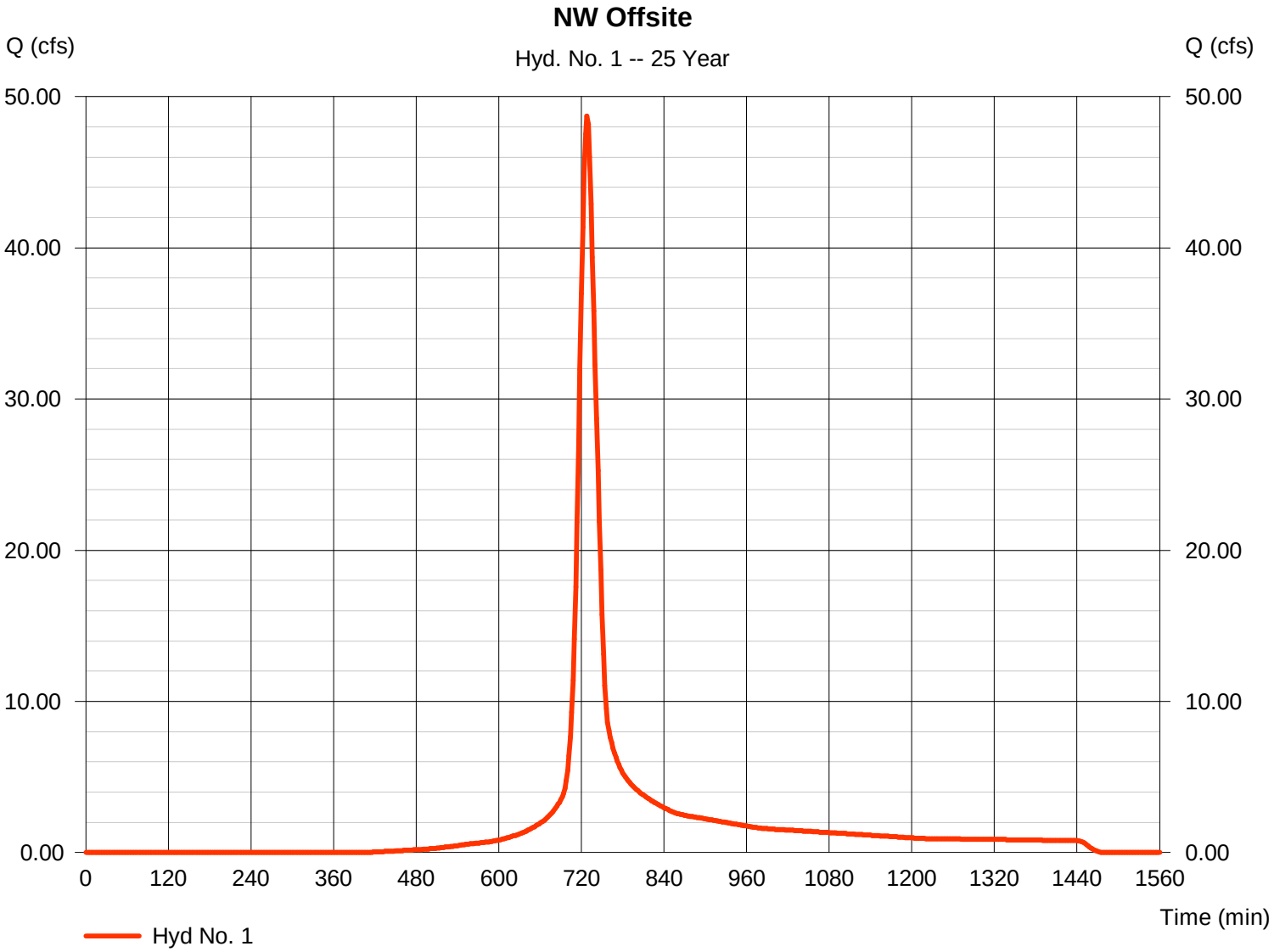
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 1

NW Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	48.69 cfs
Storm frequency	=	25 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	178,812 cuft
Drainage area	=	14.000 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	775 ft
Tc method	=	LAG	Time of conc. (Tc)	=	23.70 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

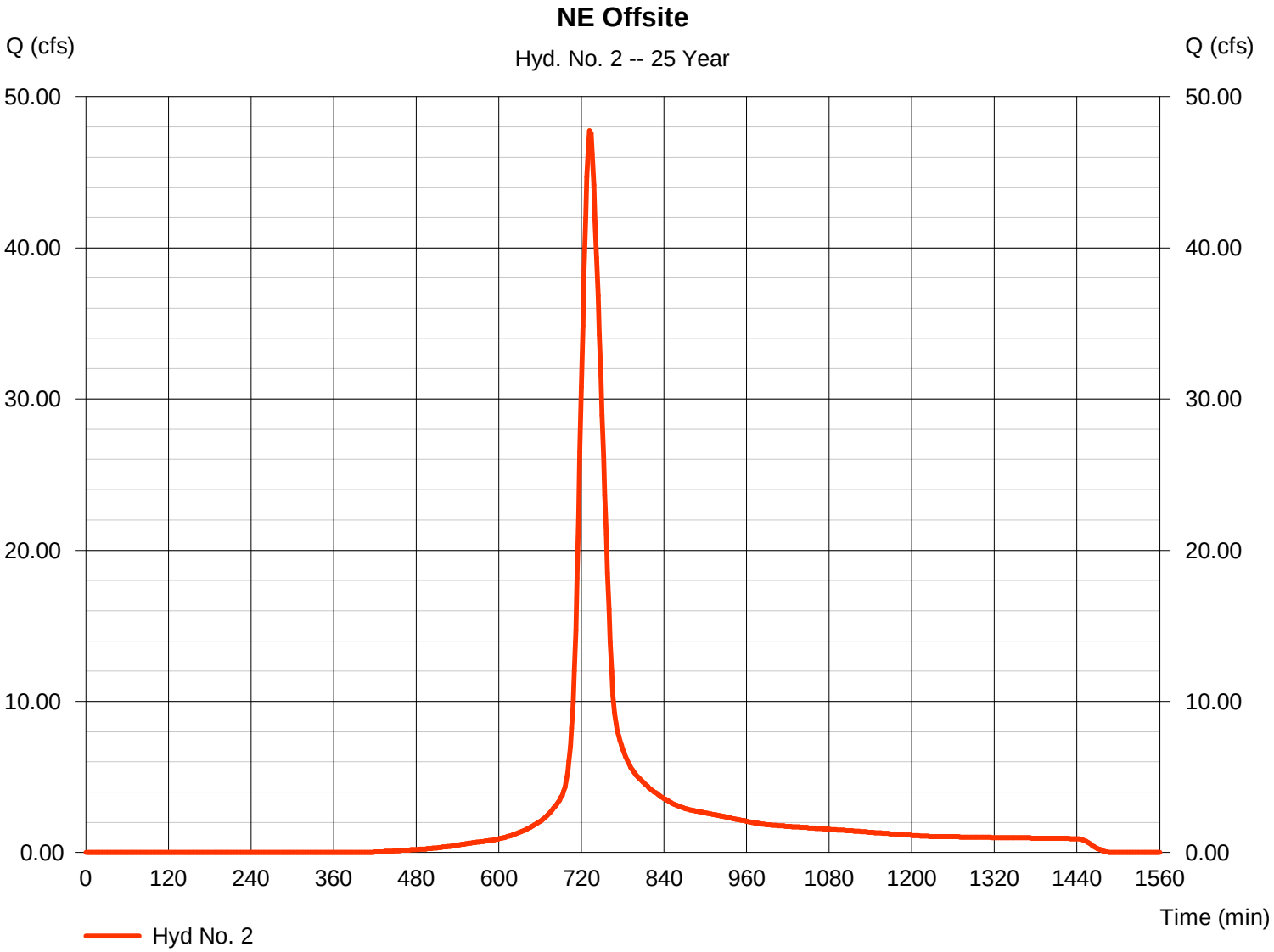


Hydrograph Report

Hyd. No. 2

NE Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	47.73 cfs
Storm frequency	=	25 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	206,253 cuft
Drainage area	=	15.700 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	1120 ft
Tc method	=	LAG	Time of conc. (Tc)	=	31.82 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

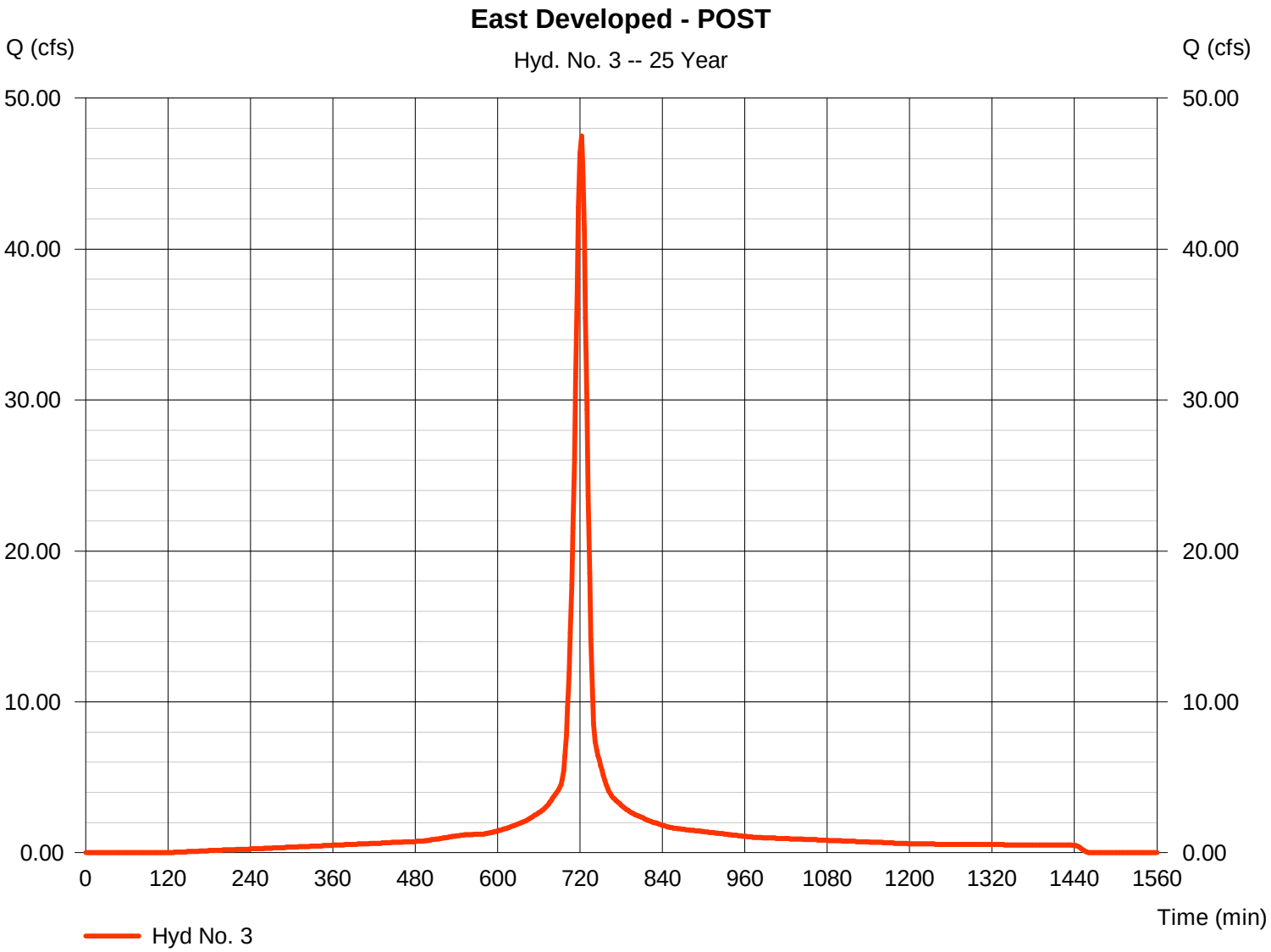


Hydrograph Report

Hyd. No. 3

East Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	47.50 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	146,756 cuft
Drainage area	=	8.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

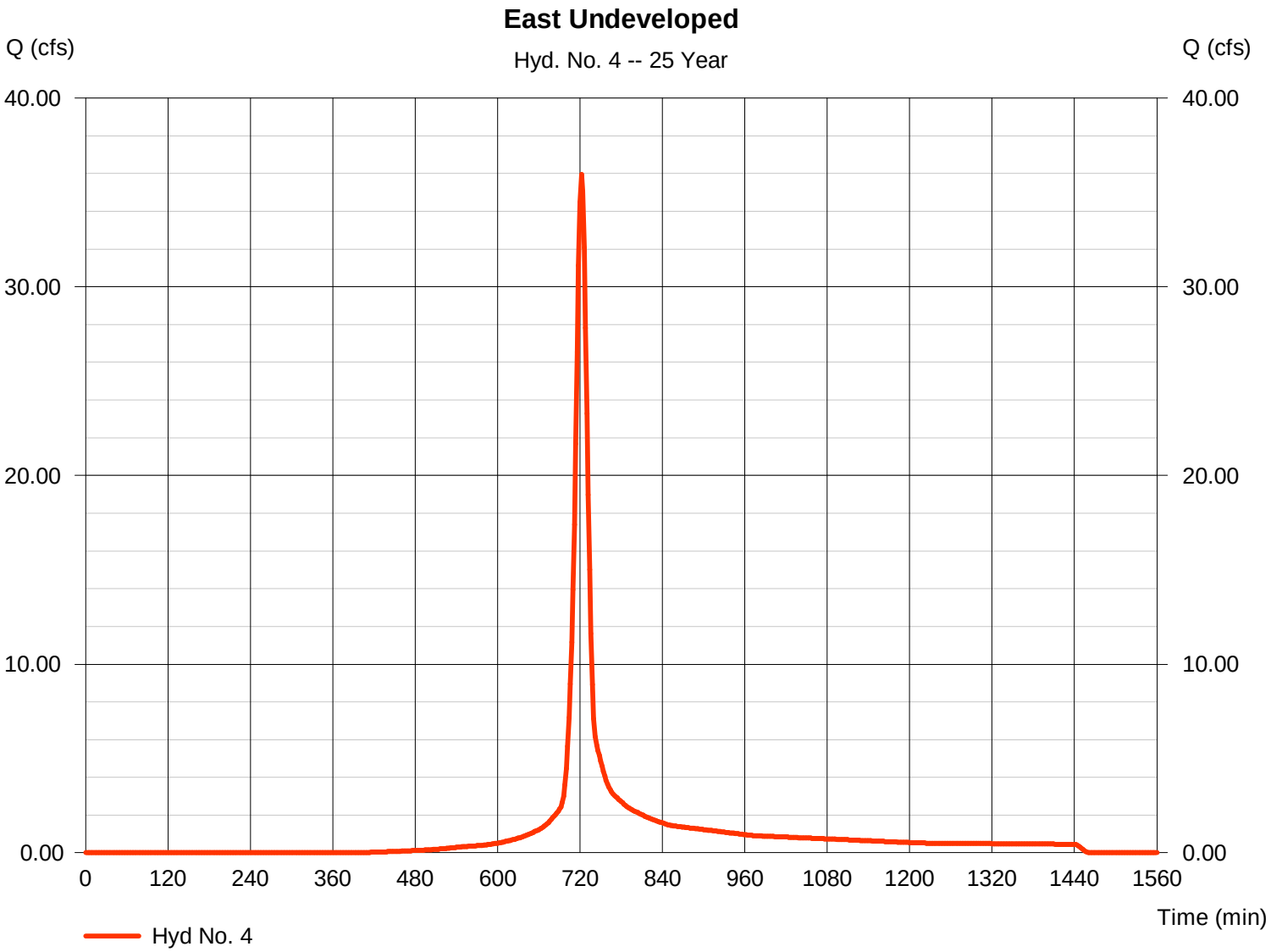


Hydrograph Report

Hyd. No. 4

East Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	35.94 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	101,205 cuft
Drainage area	=	8.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

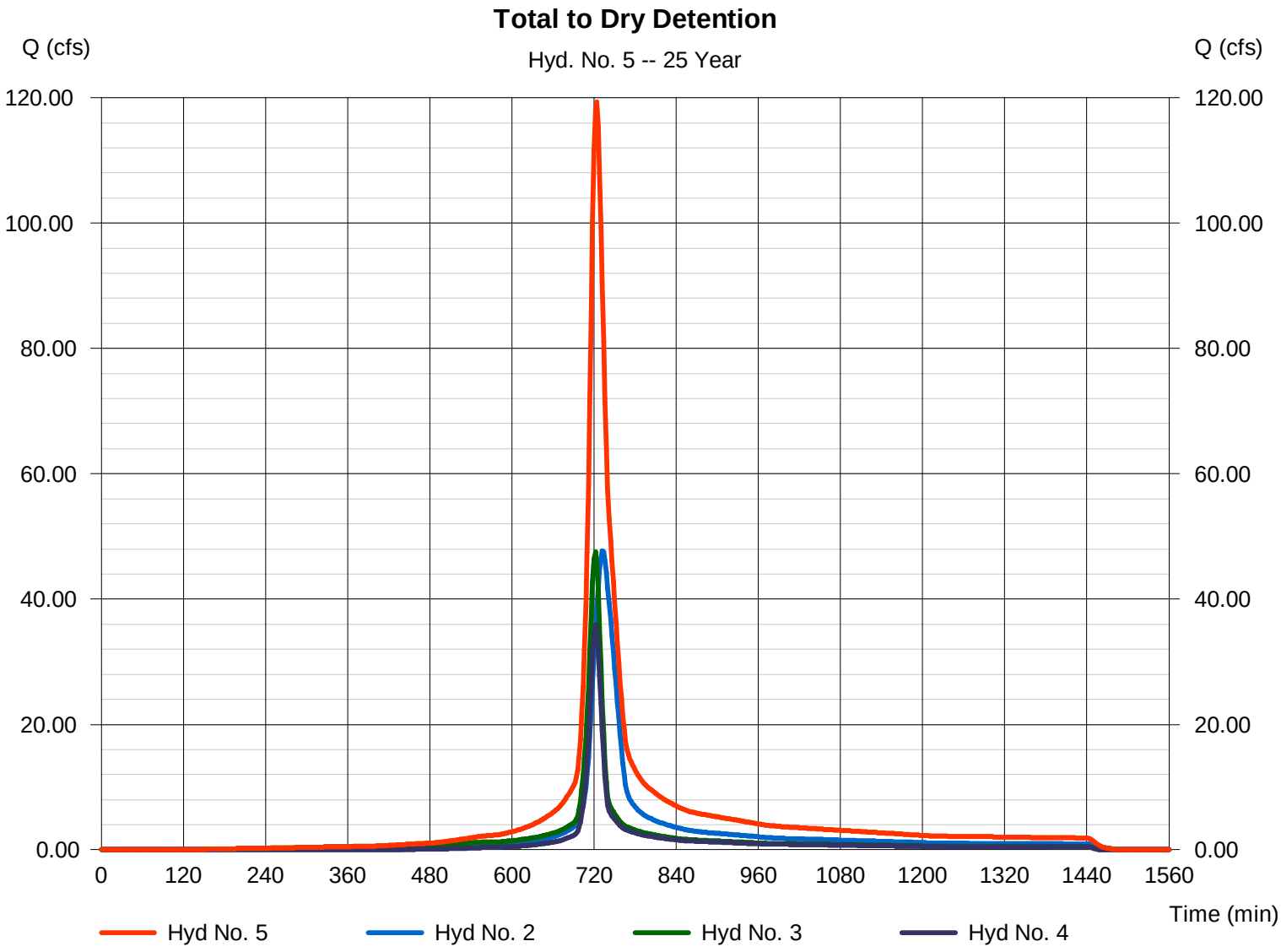


Hydrograph Report

Hyd. No. 5

Total to Dry Detention

Hydrograph type	= Combine	Peak discharge	= 119.34 cfs
Storm frequency	= 25 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 454,215 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 31.700 ac



Hydrograph Report

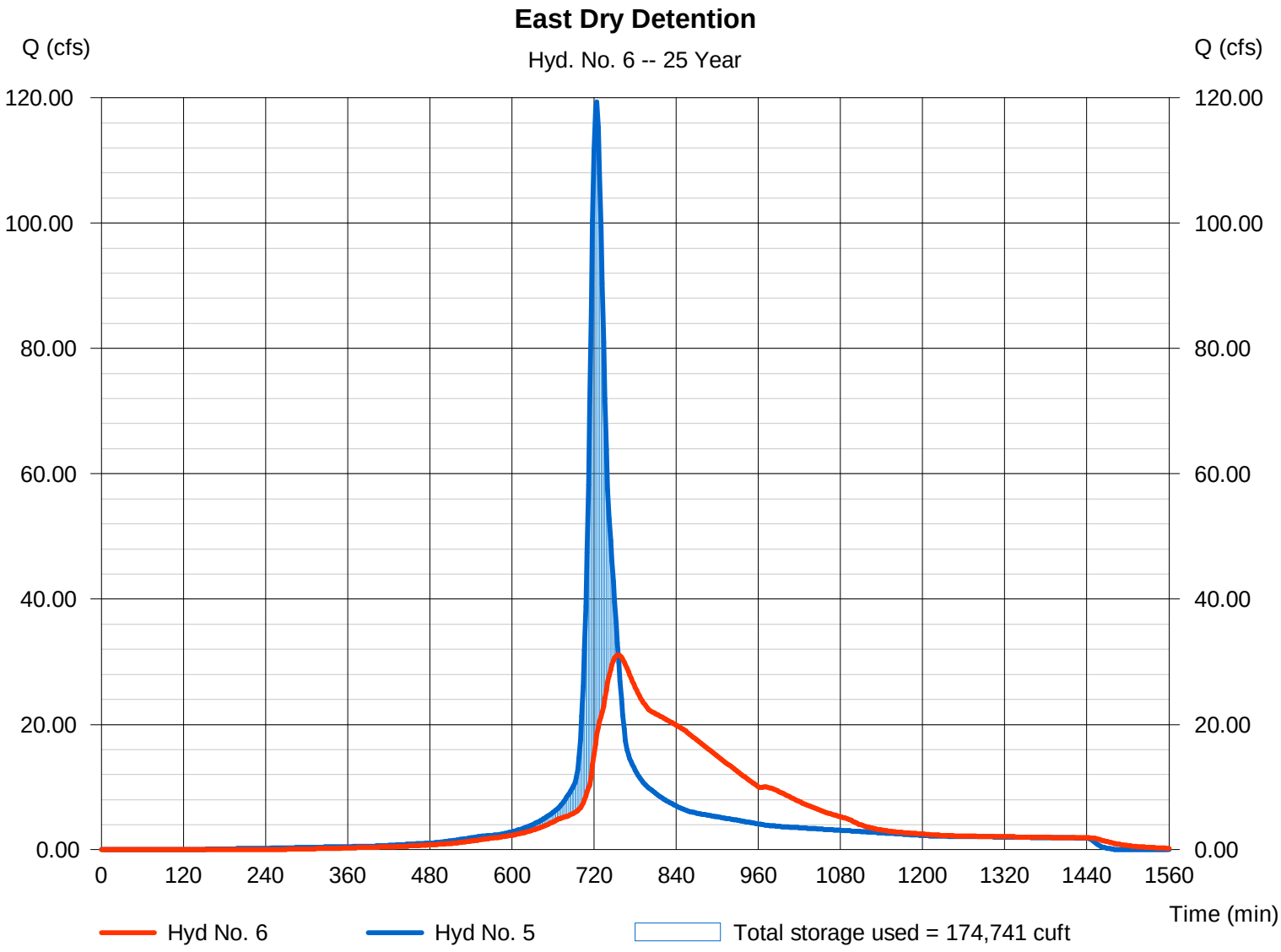
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 6

East Dry Detention

Hydrograph type	=	Reservoir	Peak discharge	=	31.11 cfs
Storm frequency	=	25 yrs	Time to peak	=	756 min
Time interval	=	2 min	Hyd. volume	=	454,196 cuft
Inflow hyd. No.	=	5 - Total to Dry Detention	Max. Elevation	=	1315.91 ft
Reservoir name	=	East Dry Detention	Max. Storage	=	174,741 cuft

Storage Indication method used.

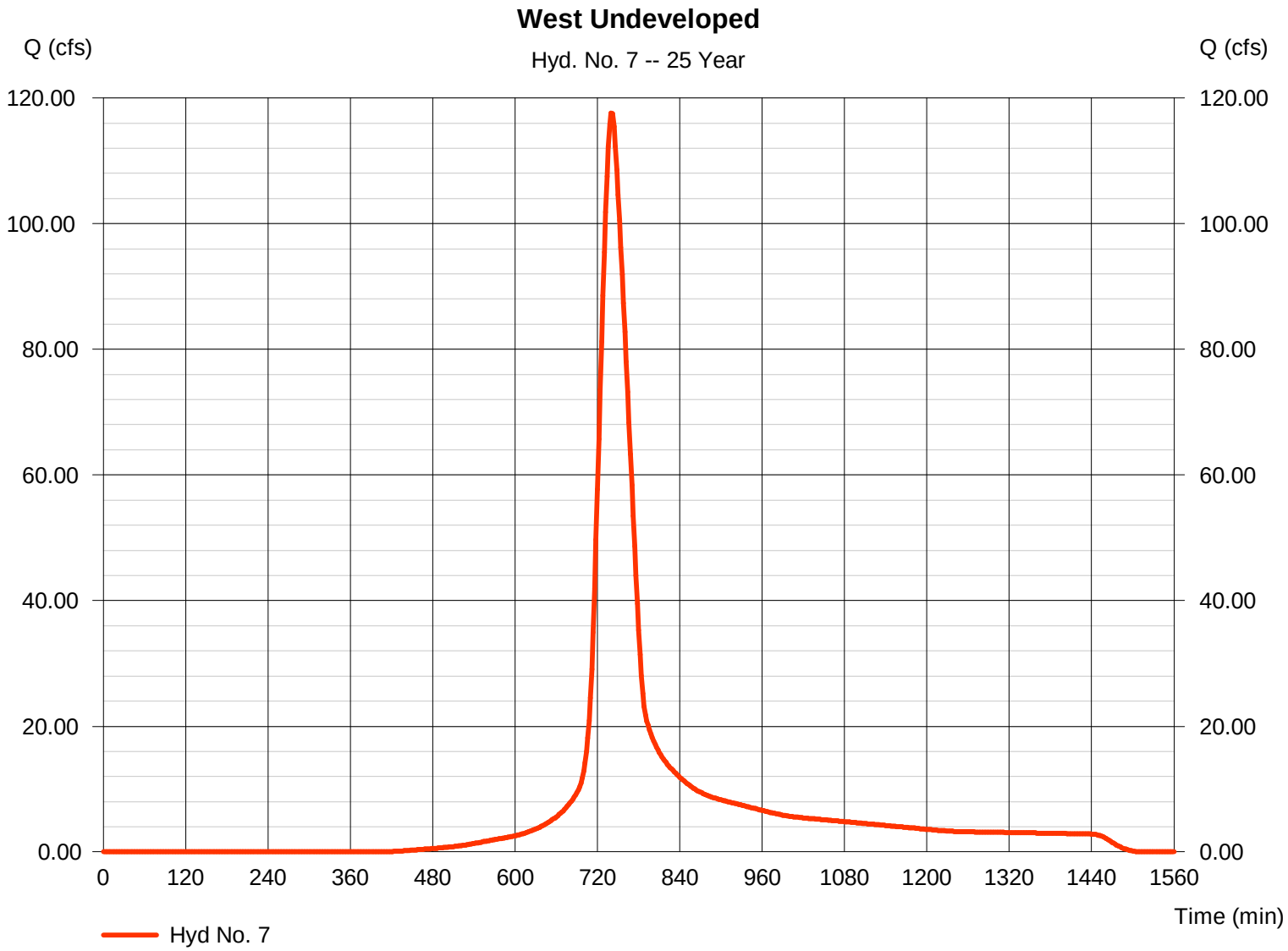


Hydrograph Report

Hyd. No. 7

West Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	117.62 cfs
Storm frequency	=	25 yrs	Time to peak	=	740 min
Time interval	=	2 min	Hyd. volume	=	630,097 cuft
Drainage area	=	49.000 ac	Curve number	=	80
Basin Slope	=	1.4 %	Hydraulic length	=	2000 ft
Tc method	=	LAG	Time of conc. (Tc)	=	46.85 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



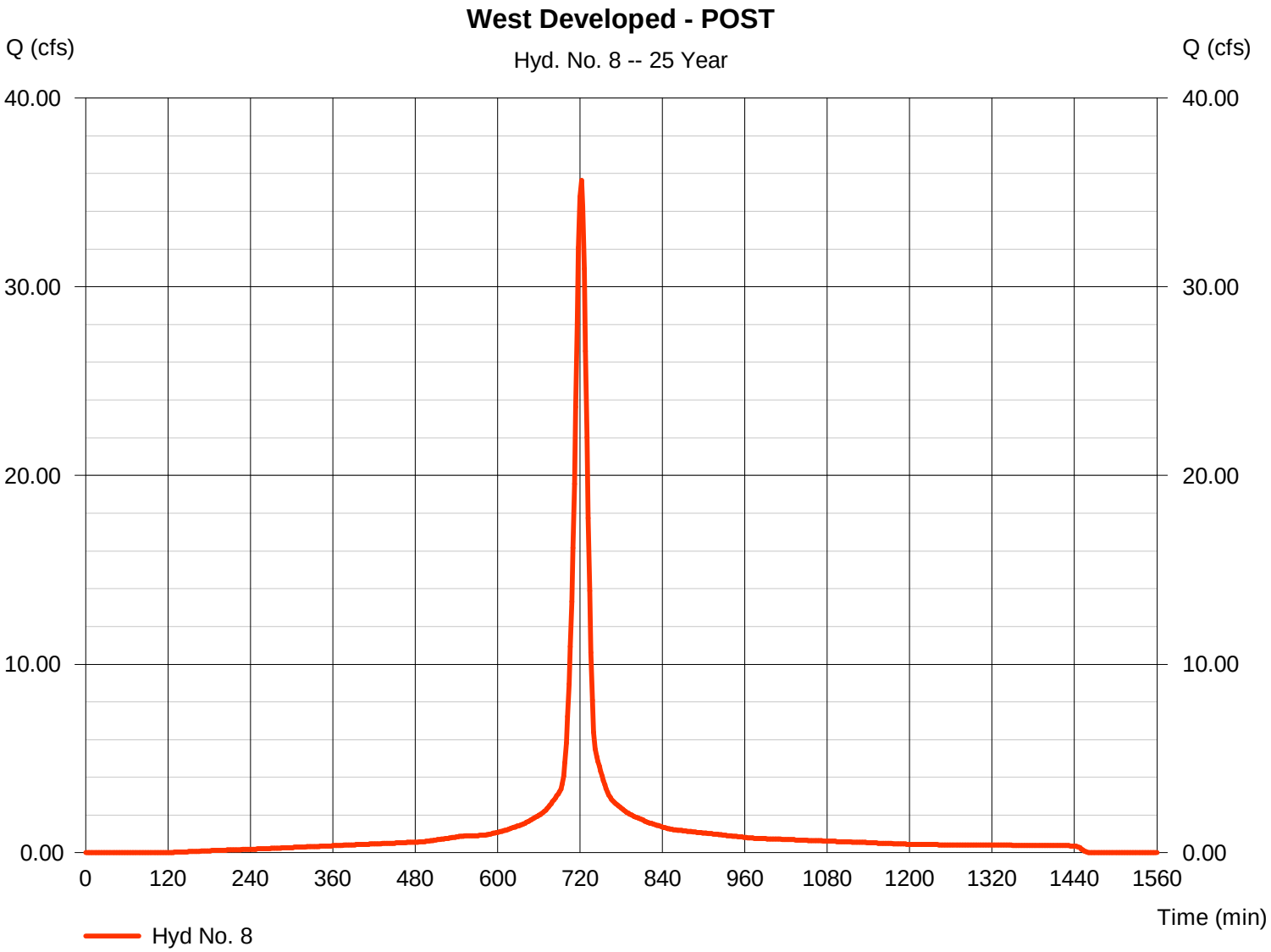
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 8

West Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	35.62 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	110,067 cuft
Drainage area	=	6.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

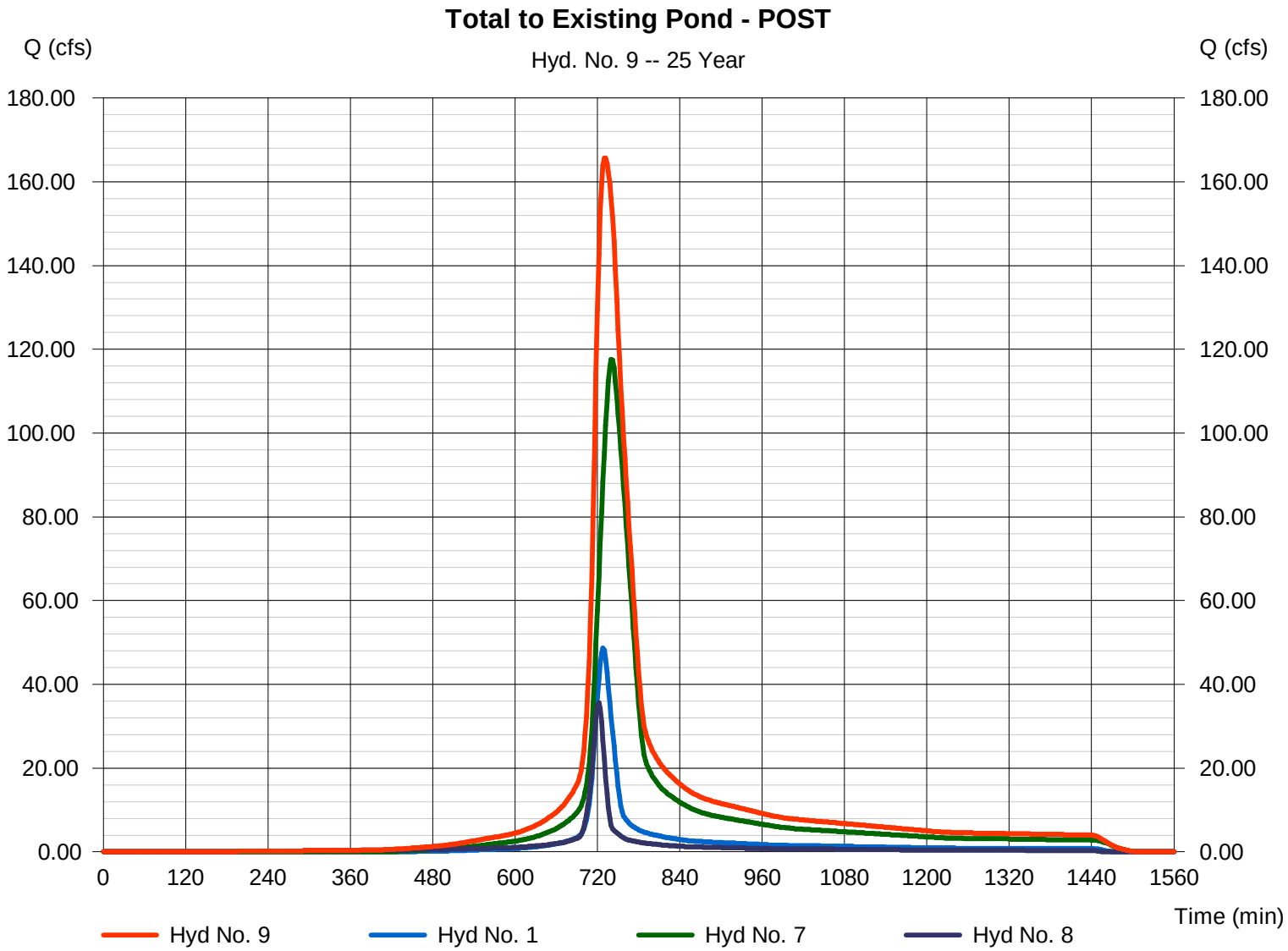


Hydrograph Report

Hyd. No. 9

Total to Existing Pond - POST

Hydrograph type	= Combine	Peak discharge	= 165.64 cfs
Storm frequency	= 25 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 918,976 cuft
Inflow hyds.	= 1, 7, 8	Contrib. drain. area	= 69.000 ac



Hydrograph Report

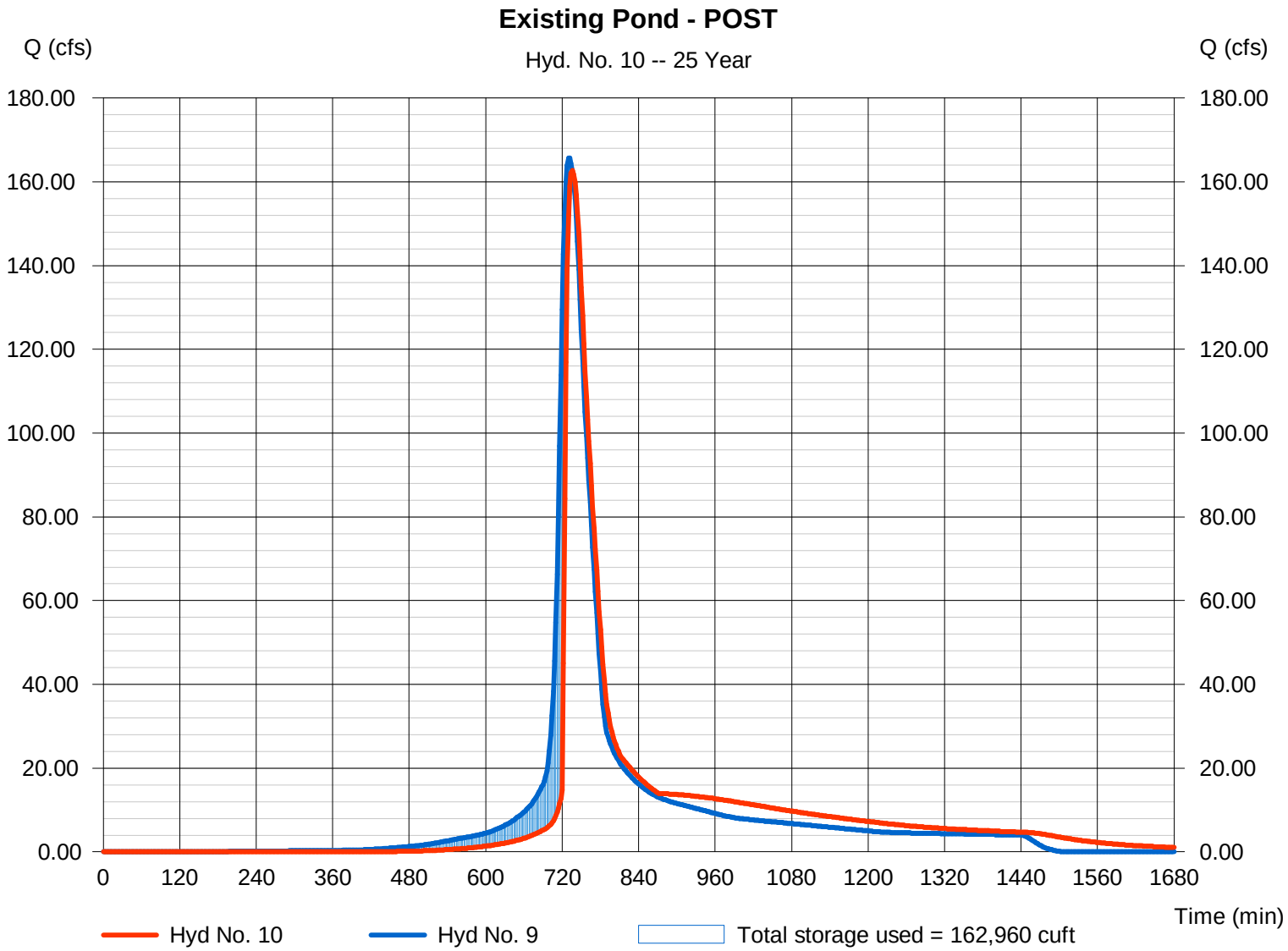
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 10

Existing Pond - POST

Hydrograph type	=	Reservoir	Peak discharge	=	162.68 cfs
Storm frequency	=	25 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	918,824 cuft
Inflow hyd. No.	=	9 - Total to Existing Pond - POST	Max. Elevation	=	1312.16 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	162,960 cuft

Storage Indication method used.

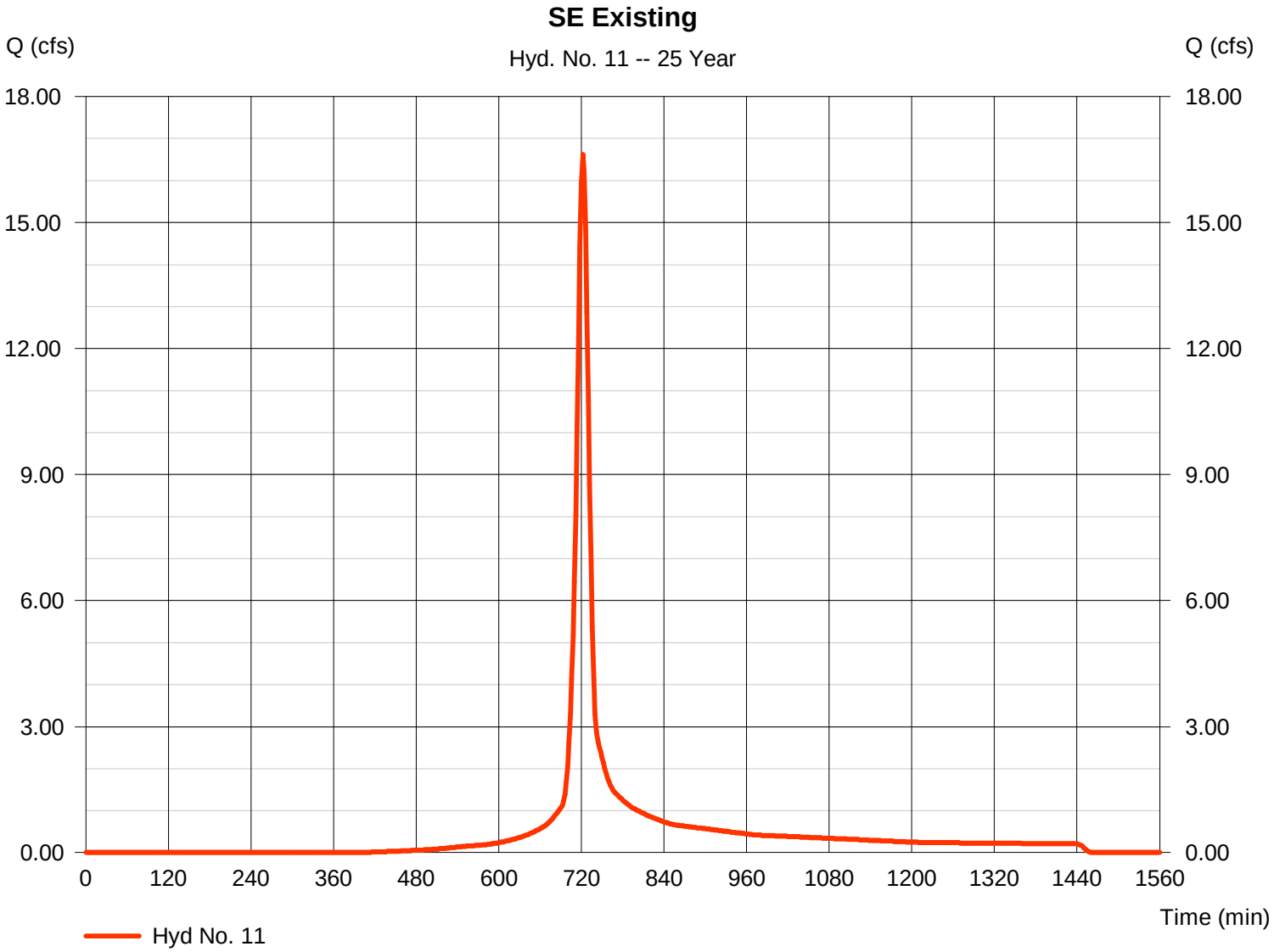


Hydrograph Report

Hyd. No. 11

SE Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	16.62 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	46,807 cuft
Drainage area	=	3.700 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

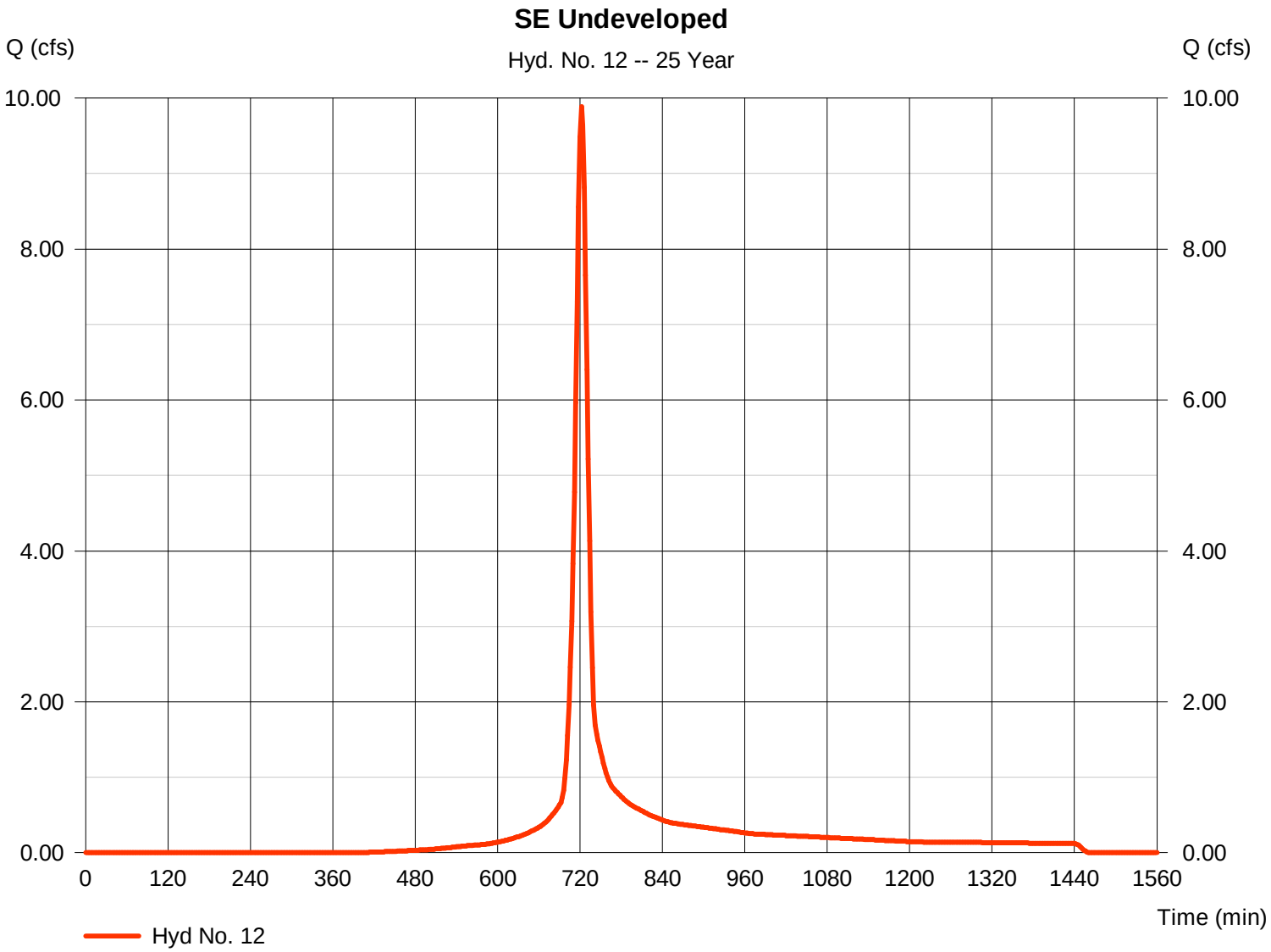


Hydrograph Report

Hyd. No. 12

SE Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	9.884 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	27,831 cuft
Drainage area	=	2.200 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

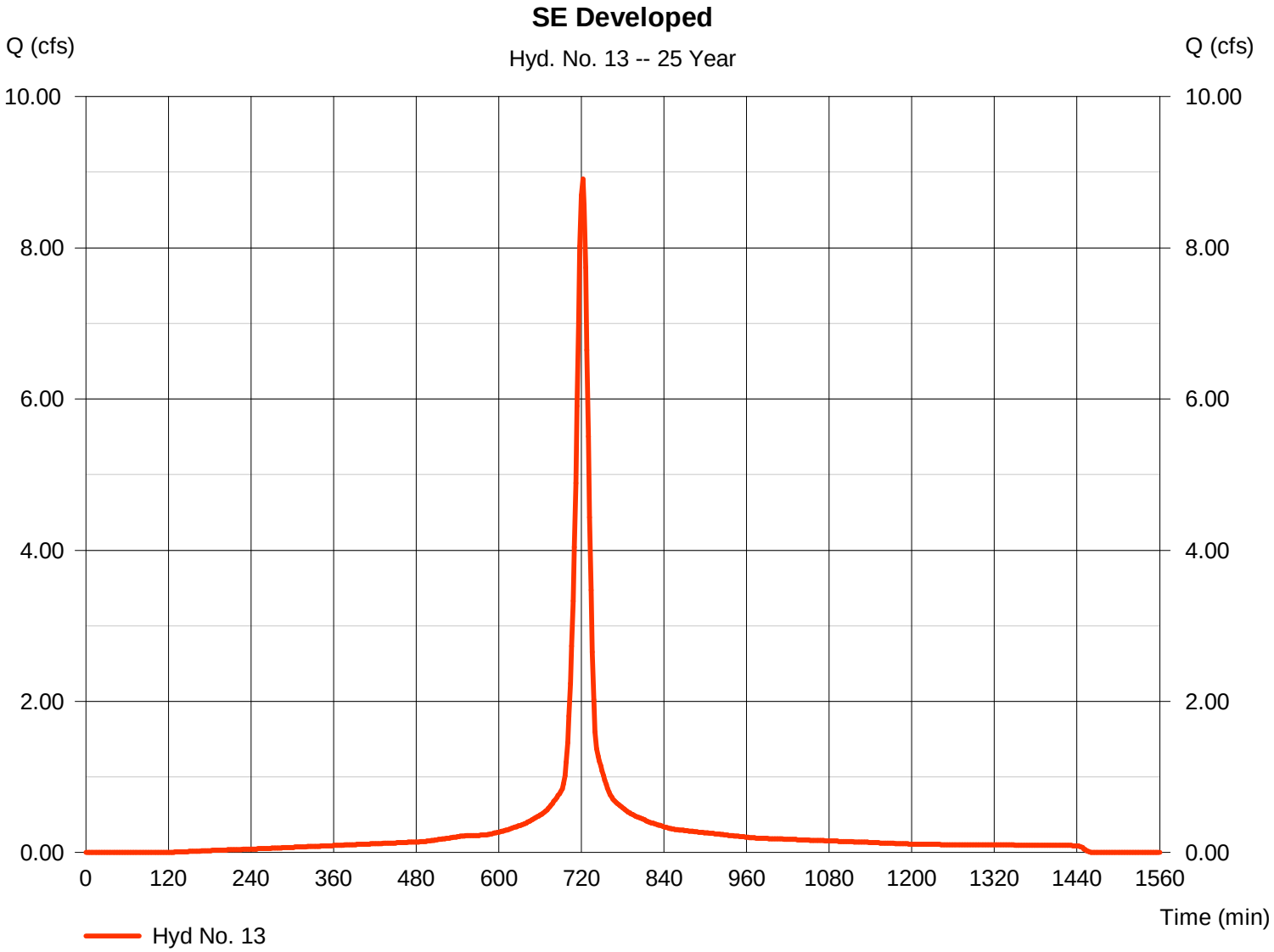


Hydrograph Report

Hyd. No. 13

SE Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.906 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	27,517 cuft
Drainage area	=	1.500 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

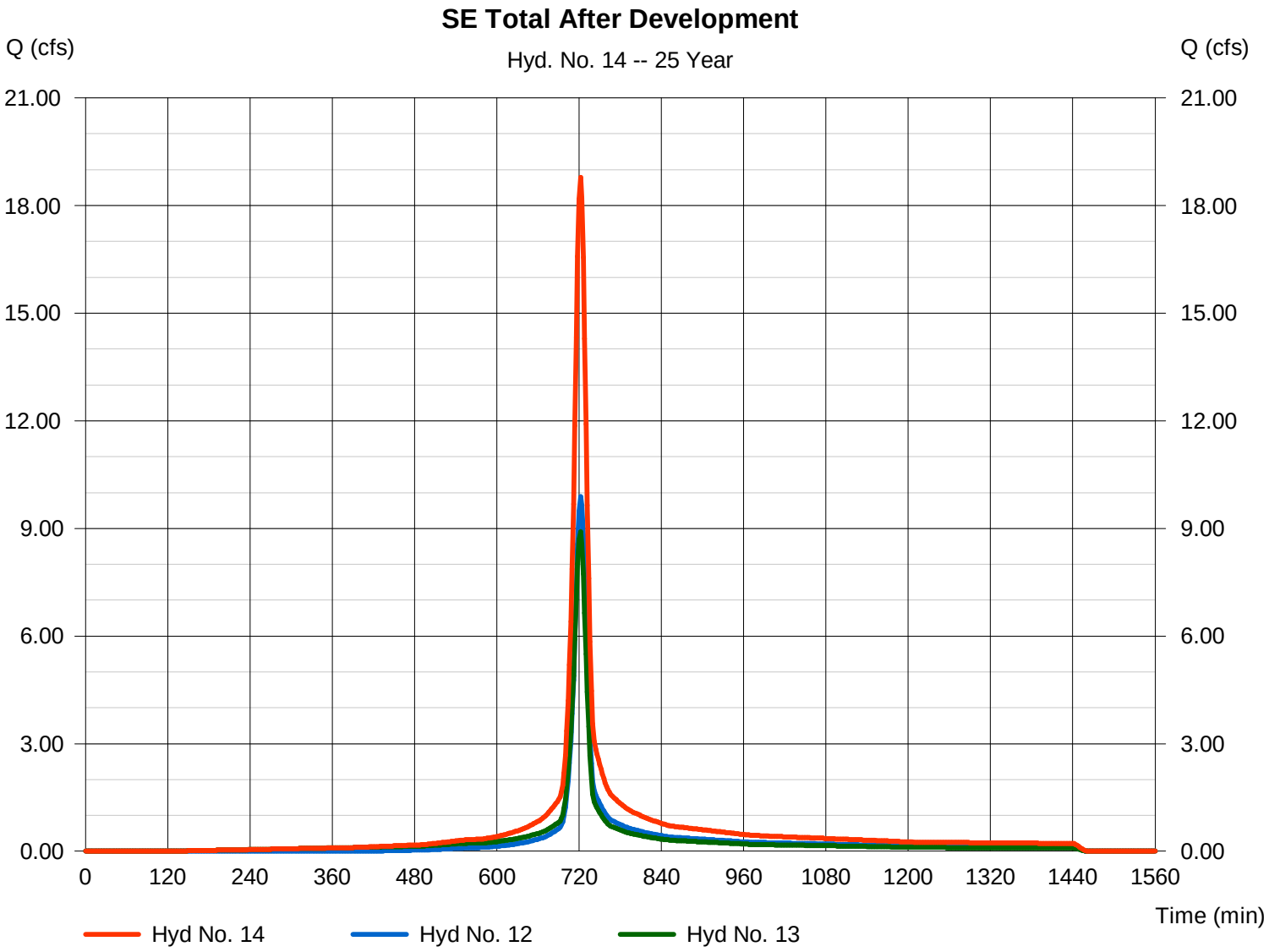


Hydrograph Report

Hyd. No. 14

SE Total After Development

Hydrograph type	= Combine	Peak discharge	= 18.79 cfs
Storm frequency	= 25 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 55,348 cuft
Inflow hyds.	= 12, 13	Contrib. drain. area	= 3.700 ac

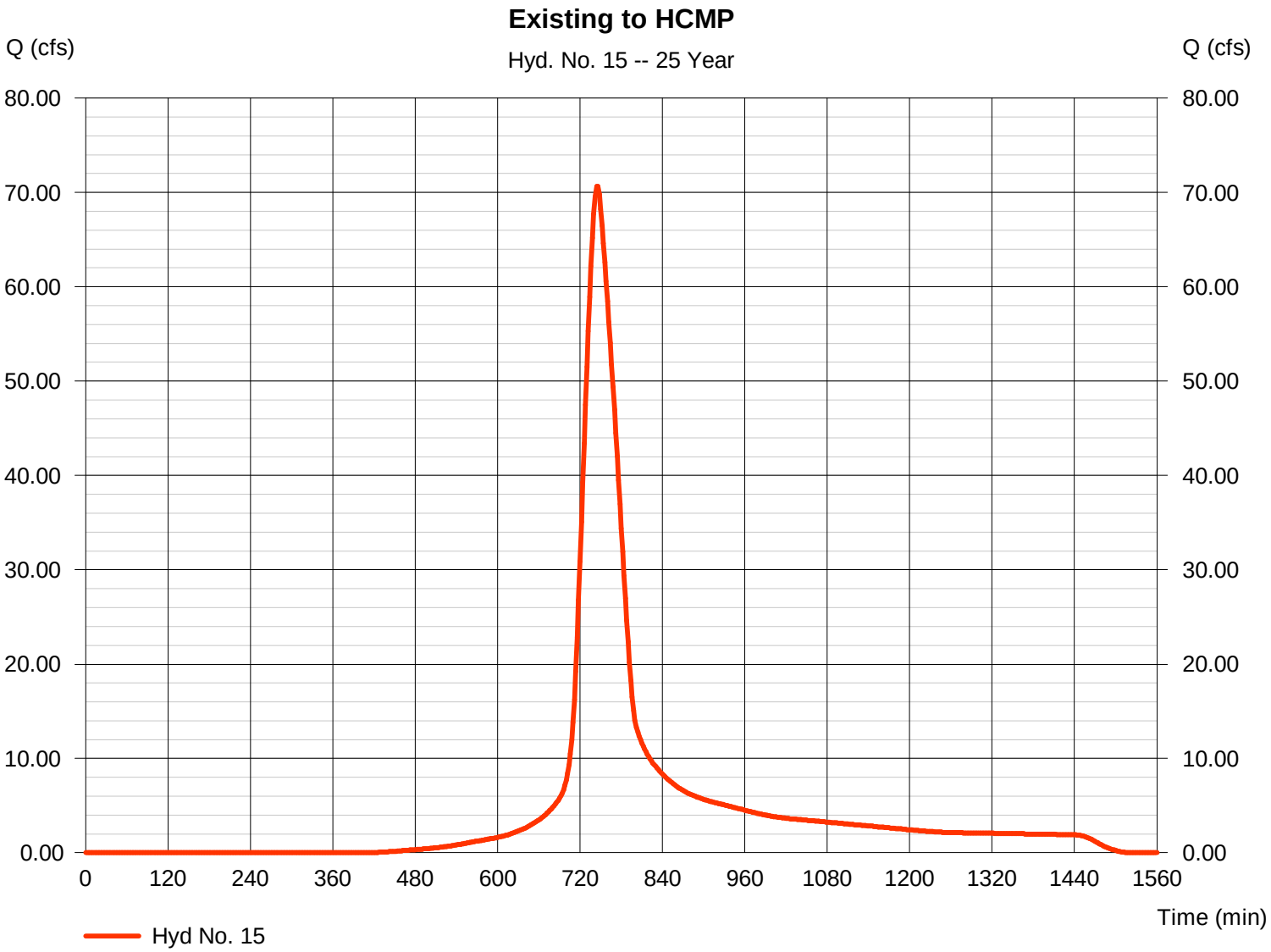


Hydrograph Report

Hyd. No. 15

Existing to HCMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	70.65 cfs
Storm frequency	=	25 yrs	Time to peak	=	746 min
Time interval	=	2 min	Hyd. volume	=	421,058 cuft
Drainage area	=	32.200 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	2100 ft
Tc method	=	LAG	Time of conc. (Tc)	=	52.62 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

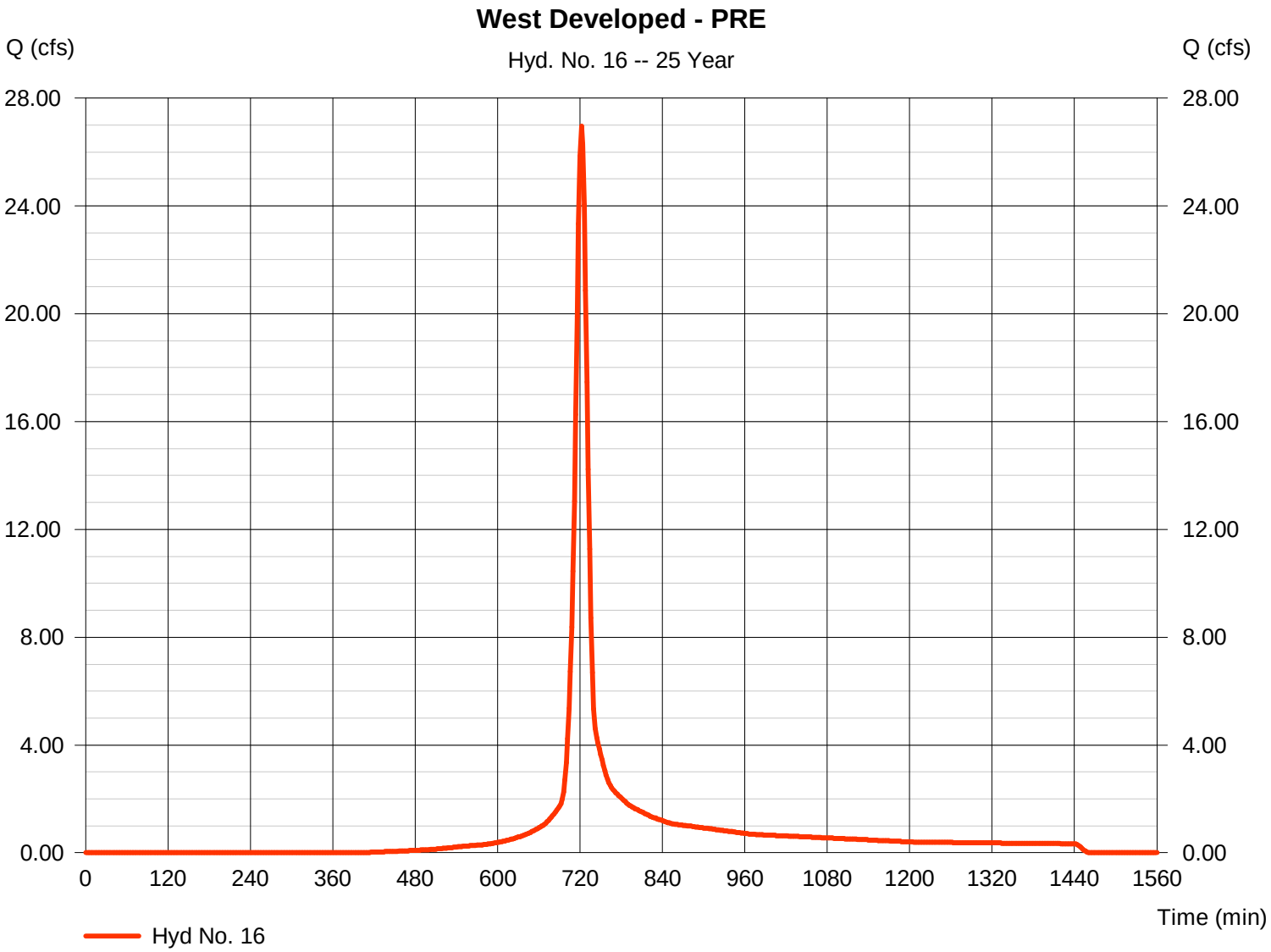


Hydrograph Report

Hyd. No. 16

West Developed - PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	26.96 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	75,904 cuft
Drainage area	=	6.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	5.77 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

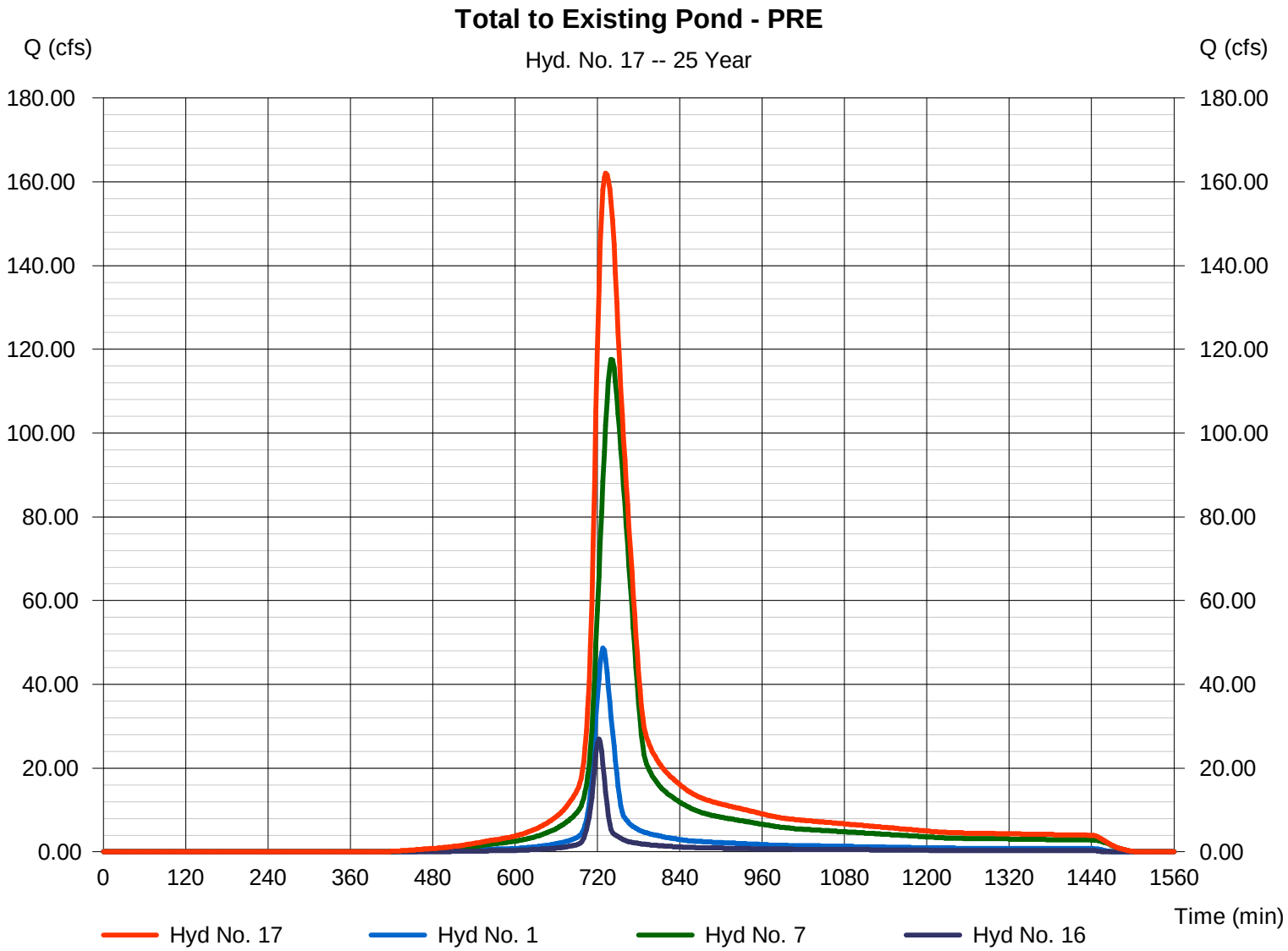


Hydrograph Report

Hyd. No. 17

Total to Existing Pond - PRE

Hydrograph type	= Combine	Peak discharge	= 162.09 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 884,813 cuft
Inflow hyds.	= 1, 7, 16	Contrib. drain. area	= 69.000 ac



Hydrograph Report

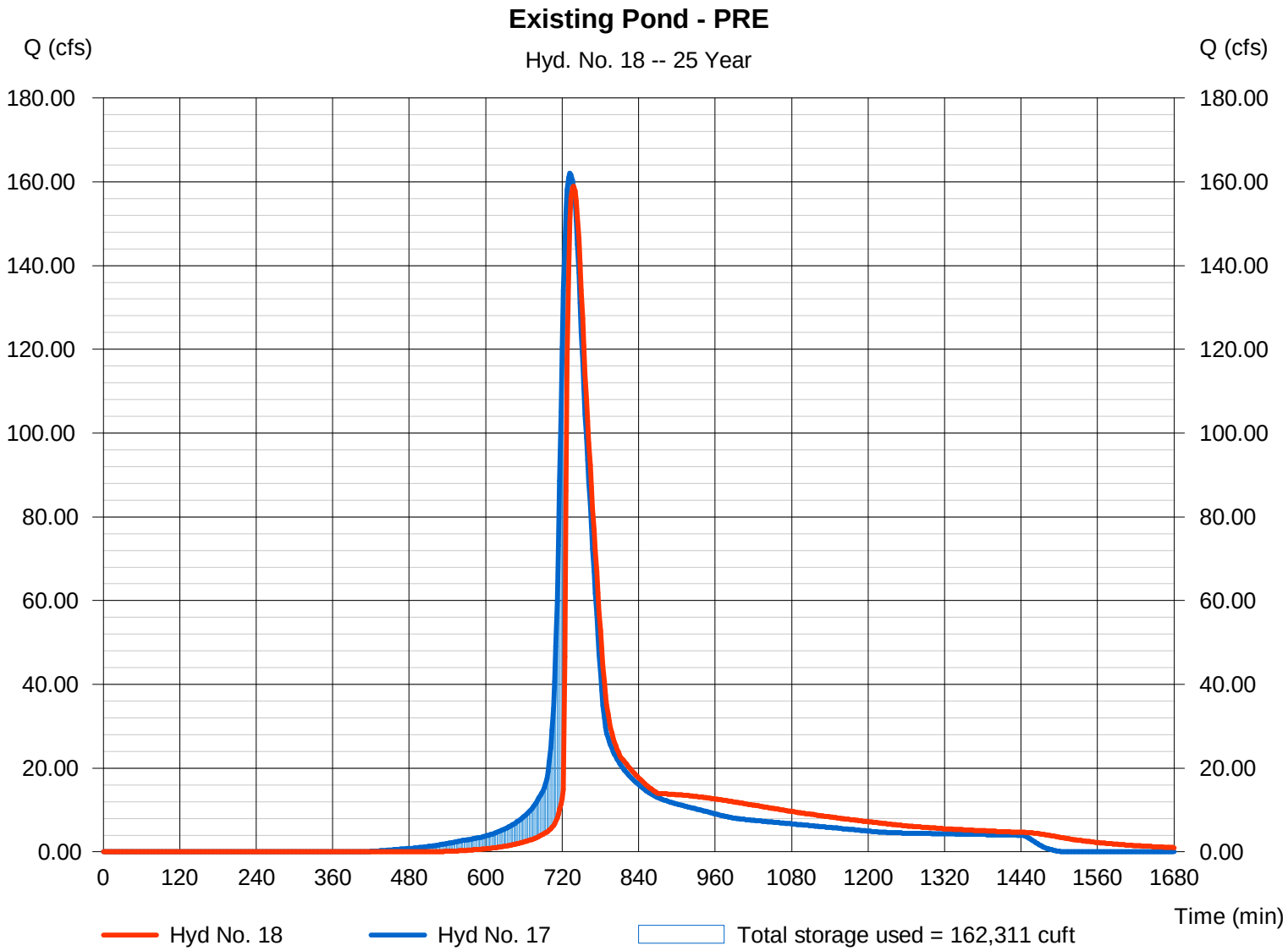
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 18

Existing Pond - PRE

Hydrograph type	=	Reservoir	Peak discharge	=	158.98 cfs
Storm frequency	=	25 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	884,660 cuft
Inflow hyd. No.	=	17 - Total to Existing Pond - PRE	Max. Elevation	=	1312.15 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	162,311 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

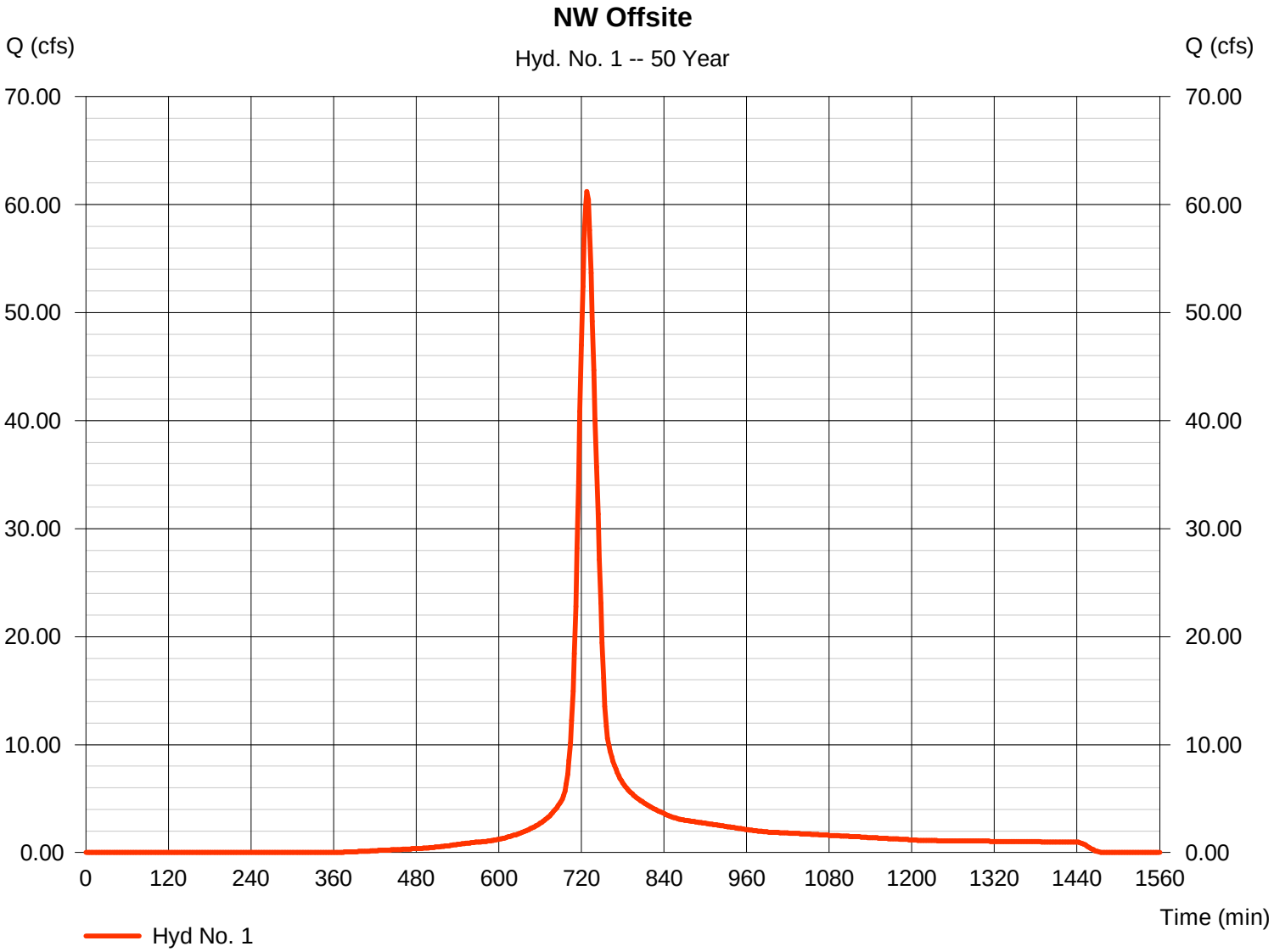
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	61.22	2	728	225,628	------	------	------	NW Offsite
2	SCS Runoff	60.09	2	732	260,255	------	------	------	NE Offsite
3	SCS Runoff	56.35	2	722	175,739	------	------	------	East Developed - POST
4	SCS Runoff	45.07	2	722	127,703	------	------	------	East Undeveloped
5	Combine	147.02	2	724	563,697	2, 3, 4	------	------	Total to Dry Detention
6	Reservoir	45.37	2	752	563,678	5	1316.31	209,898	East Dry Detention
7	SCS Runoff	148.20	2	740	795,071	------	------	------	West Undeveloped
8	SCS Runoff	42.26	2	722	131,804	------	------	------	West Developed - POST
9	Combine	207.83	2	732	1,152,504	1, 7, 8	------	------	Total to Existing Pond - POST
10	Reservoir	205.50	2	734	1,152,349	9	1312.28	170,243	Existing Pond - POST
11	SCS Runoff	20.85	2	722	59,062	------	------	------	SE Existing
12	SCS Runoff	12.40	2	722	35,118	------	------	------	SE Undeveloped
13	SCS Runoff	10.57	2	722	32,951	------	------	------	SE Developed
14	Combine	22.96	2	722	68,069	12, 13	------	------	SE Total After Development
15	SCS Runoff	89.02	2	744	531,301	------	------	------	Existing to HCMP
16	SCS Runoff	33.81	2	722	95,777	------	------	------	West Developed - PRE
17	Combine	204.44	2	732	1,116,477	1, 7, 16	------	------	Total to Existing Pond - PRE
18	Reservoir	202.13	2	736	1,116,323	17	1312.27	169,679	Existing Pond - PRE

Hydrograph Report

Hyd. No. 1

NW Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	61.22 cfs
Storm frequency	=	50 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	225,628 cuft
Drainage area	=	14.000 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	775 ft
Tc method	=	LAG	Time of conc. (Tc)	=	23.70 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

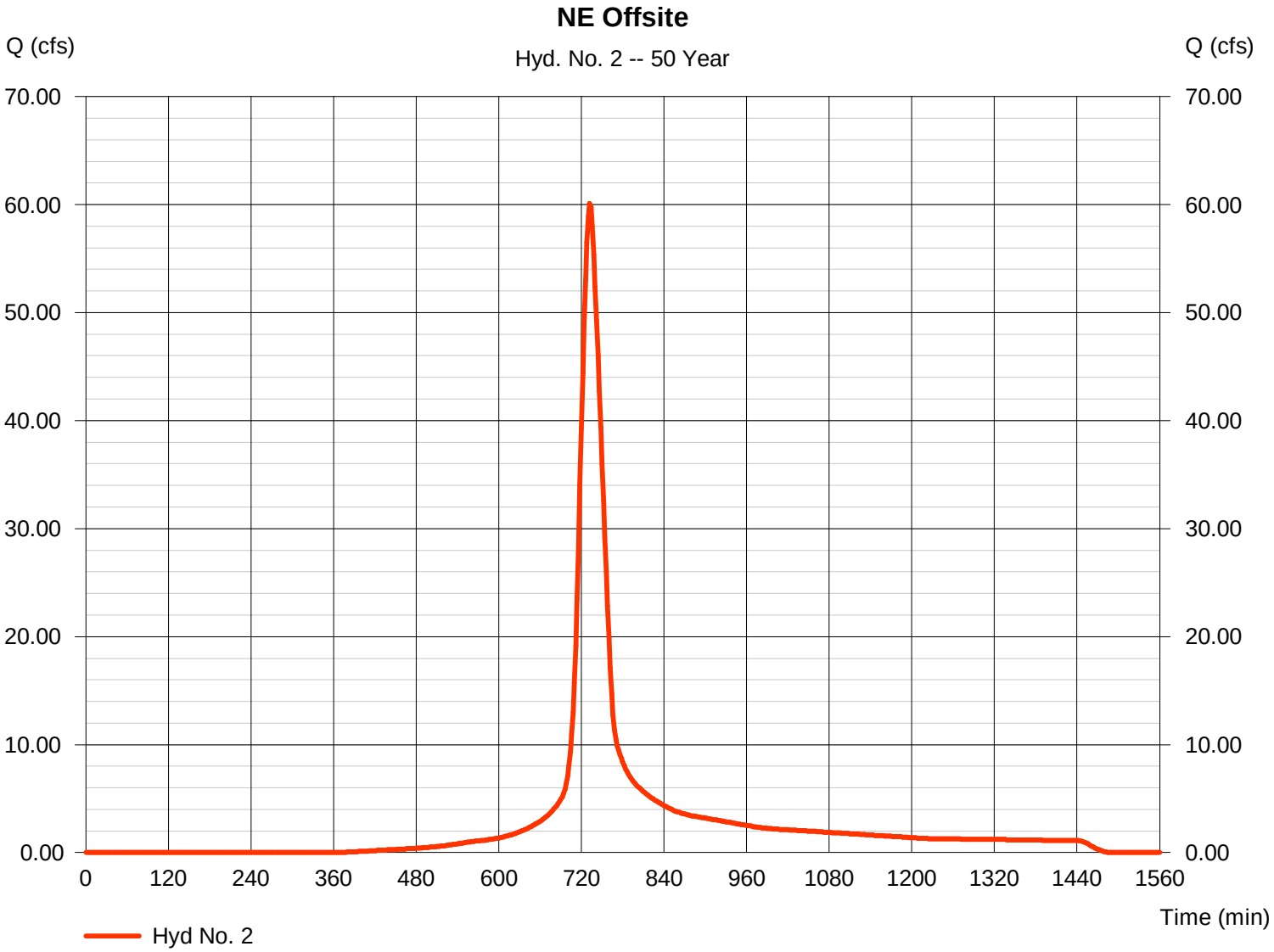


Hydrograph Report

Hyd. No. 2

NE Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	60.09 cfs
Storm frequency	=	50 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	260,255 cuft
Drainage area	=	15.700 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	1120 ft
Tc method	=	LAG	Time of conc. (Tc)	=	31.82 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

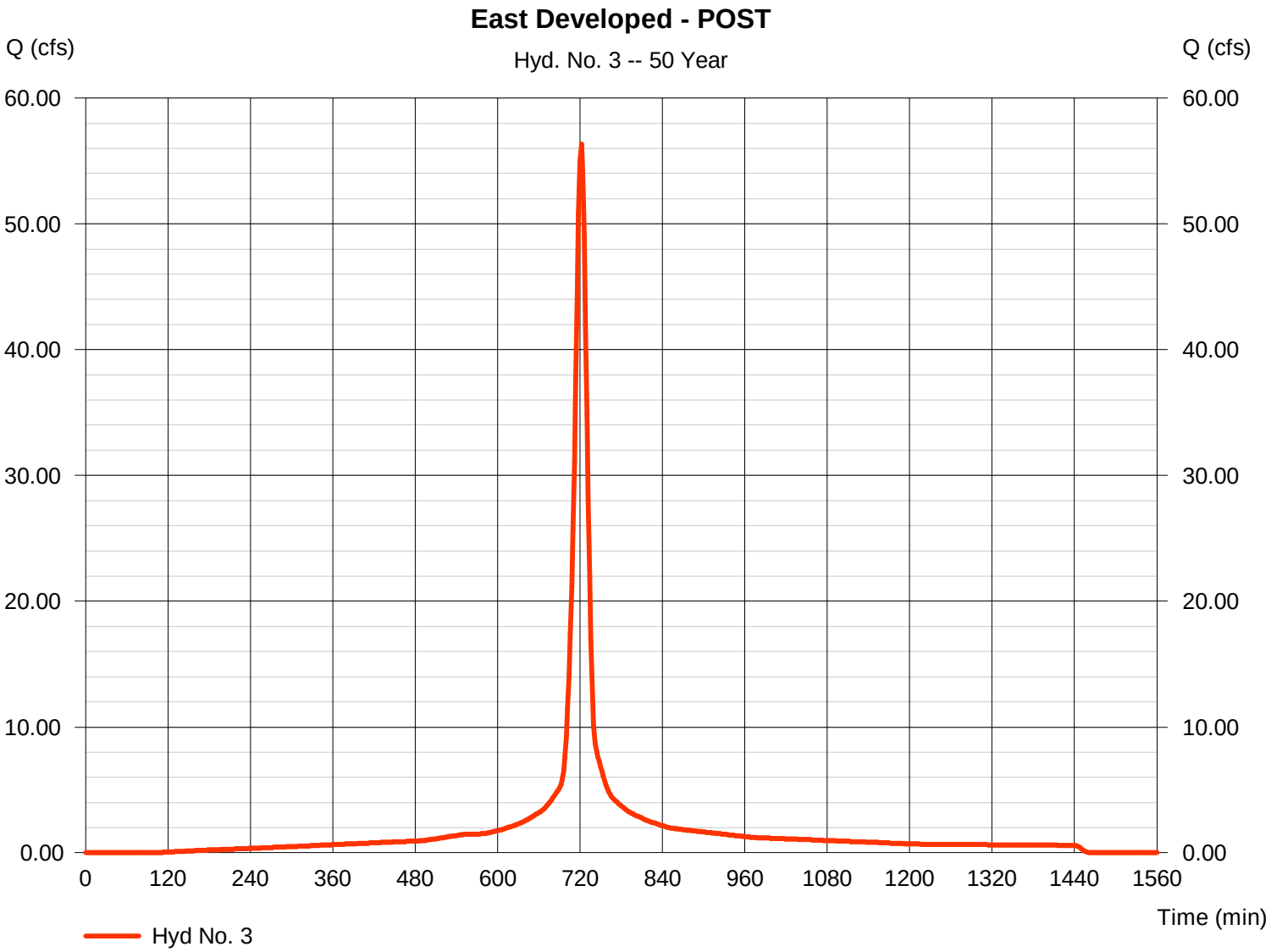


Hydrograph Report

Hyd. No. 3

East Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	56.35 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	175,739 cuft
Drainage area	=	8.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

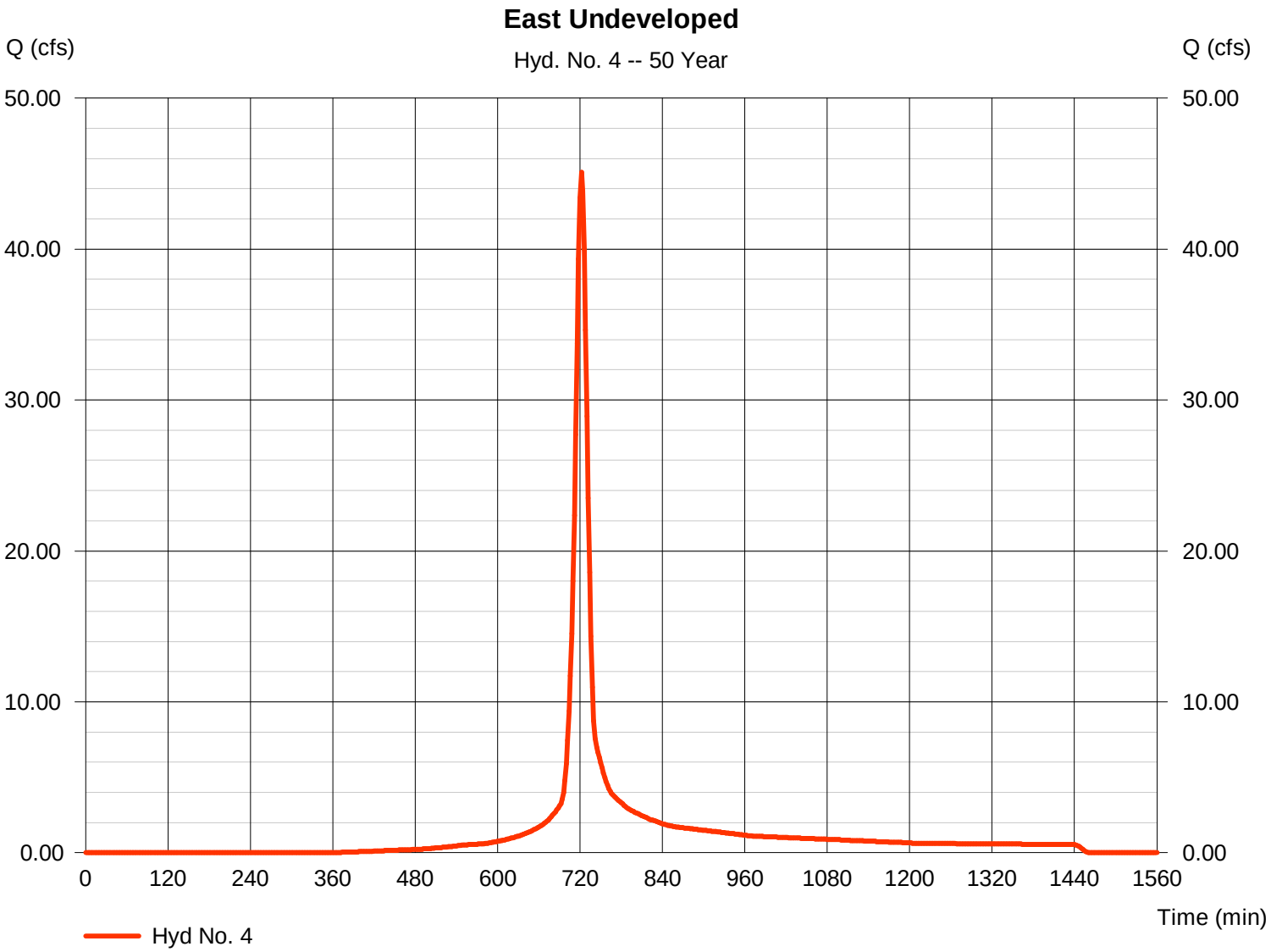


Hydrograph Report

Hyd. No. 4

East Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	45.07 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	127,703 cuft
Drainage area	=	8.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

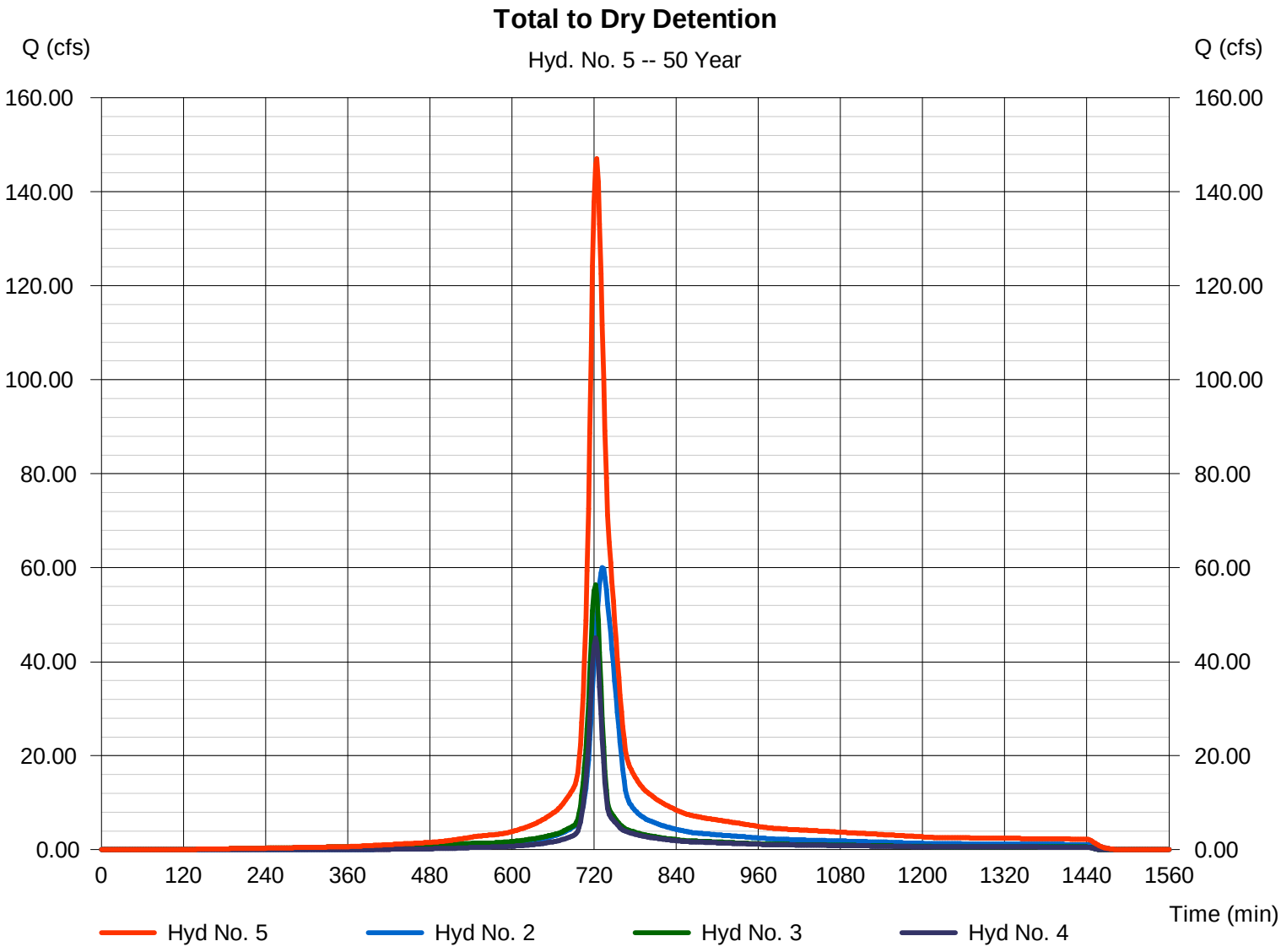


Hydrograph Report

Hyd. No. 5

Total to Dry Detention

Hydrograph type	= Combine	Peak discharge	= 147.02 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 563,697 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 31.700 ac



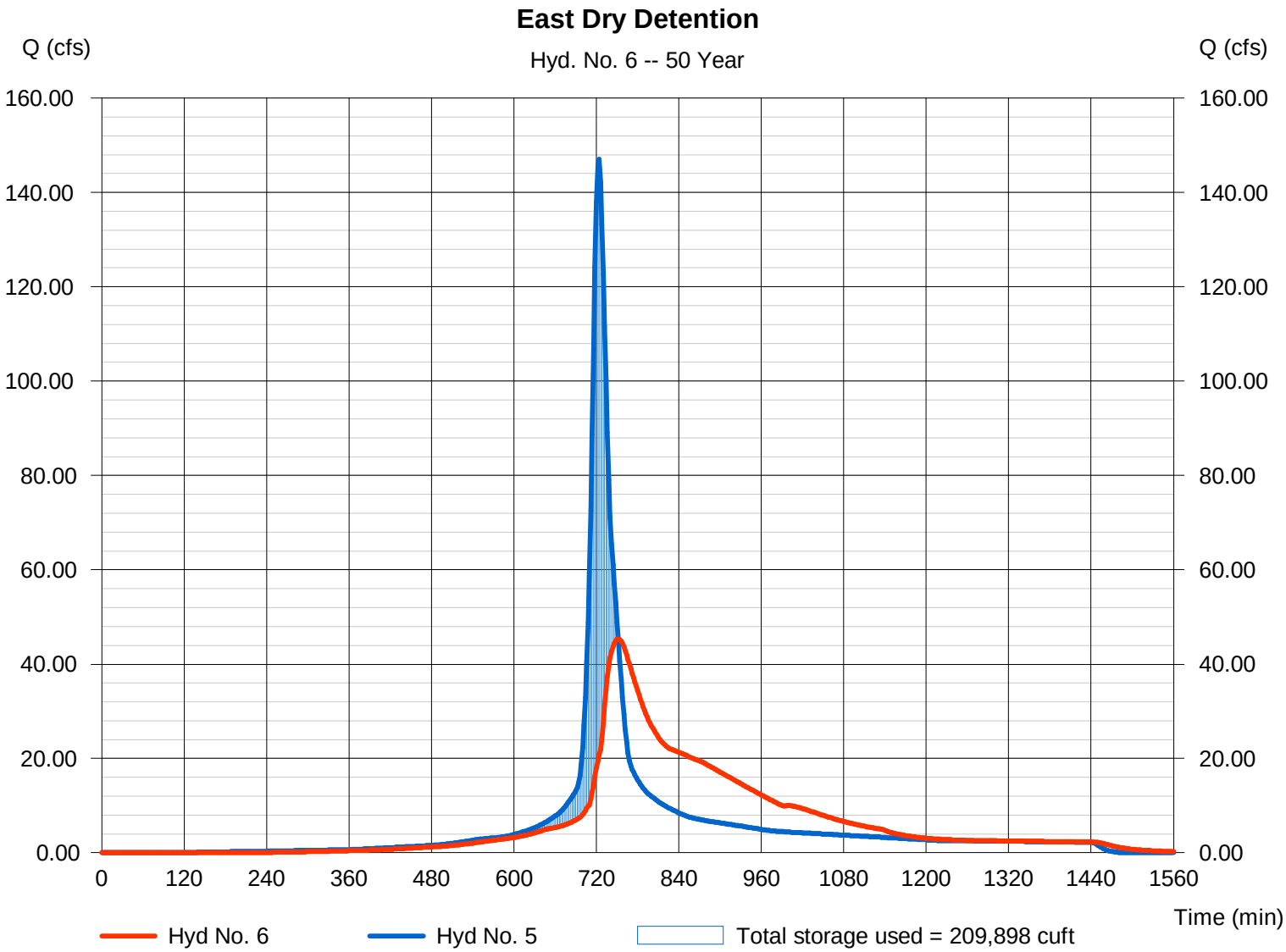
Hydrograph Report

Hyd. No. 6

East Dry Detention

Hydrograph type	=	Reservoir	Peak discharge	=	45.37 cfs
Storm frequency	=	50 yrs	Time to peak	=	752 min
Time interval	=	2 min	Hyd. volume	=	563,678 cuft
Inflow hyd. No.	=	5 - Total to Dry Detention	Max. Elevation	=	1316.31 ft
Reservoir name	=	East Dry Detention	Max. Storage	=	209,898 cuft

Storage Indication method used.



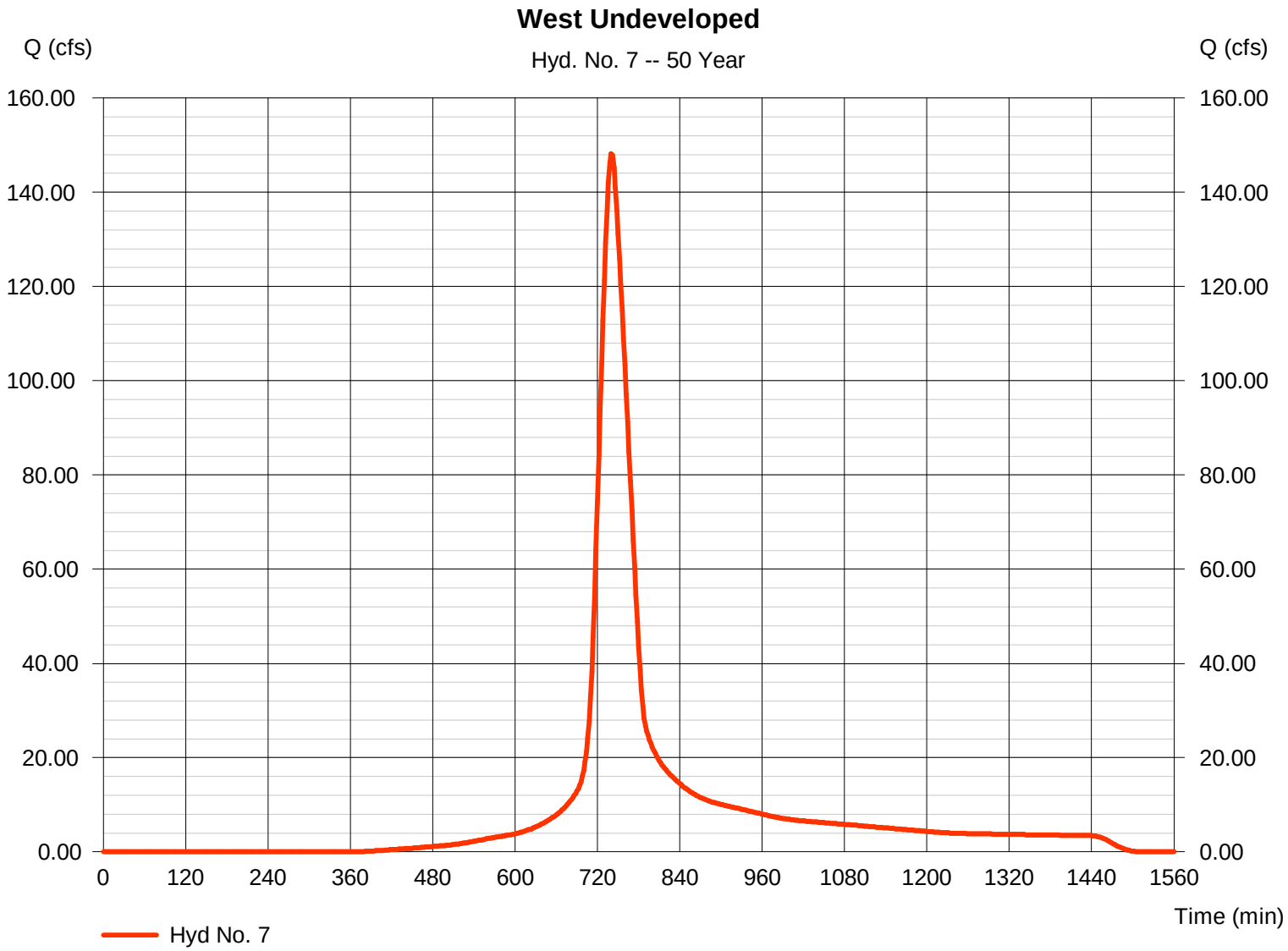
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 7

West Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	148.20 cfs
Storm frequency	=	50 yrs	Time to peak	=	740 min
Time interval	=	2 min	Hyd. volume	=	795,071 cuft
Drainage area	=	49.000 ac	Curve number	=	80
Basin Slope	=	1.4 %	Hydraulic length	=	2000 ft
Tc method	=	LAG	Time of conc. (Tc)	=	46.85 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

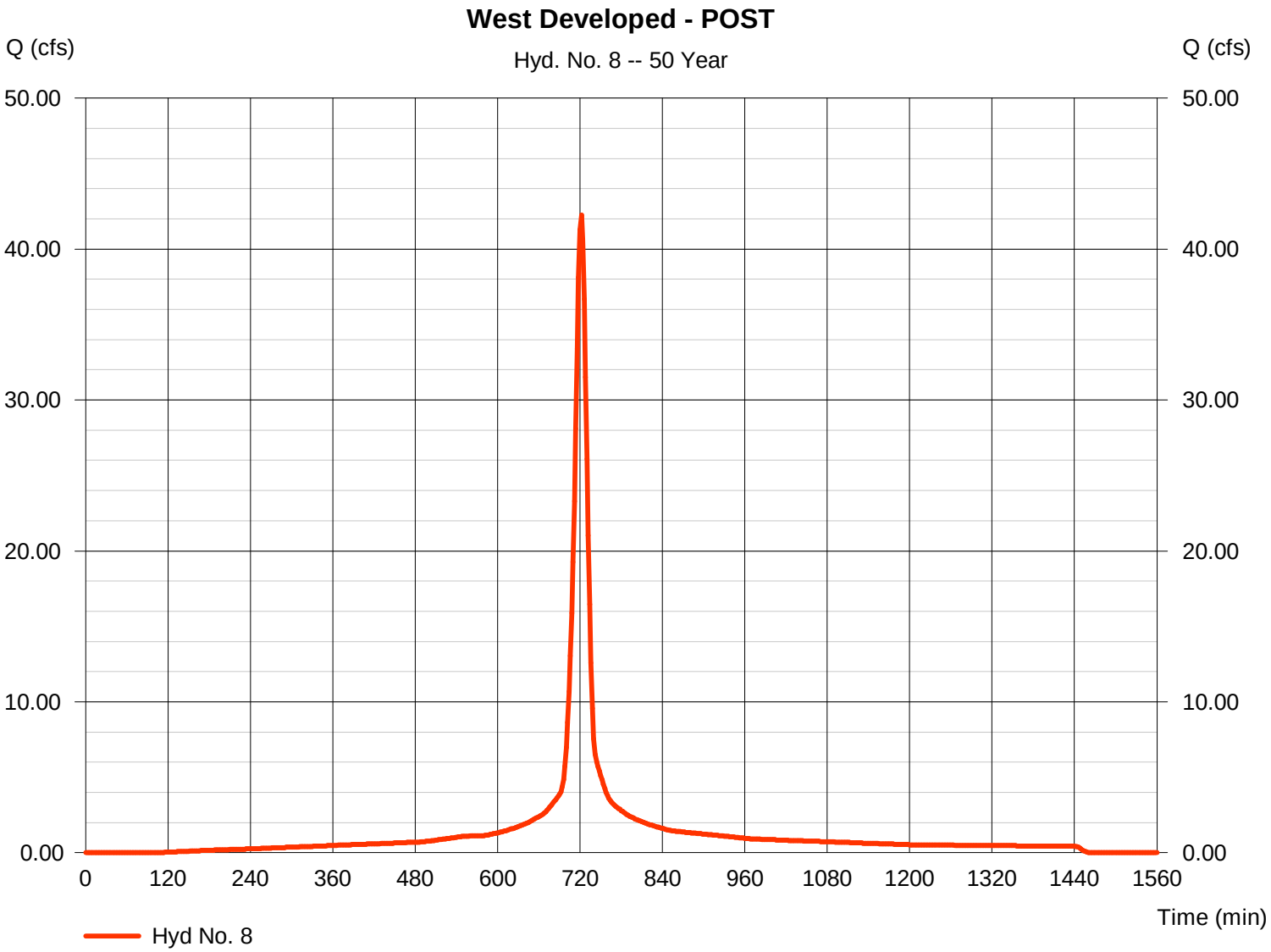


Hydrograph Report

Hyd. No. 8

West Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	42.26 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	131,804 cuft
Drainage area	=	6.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



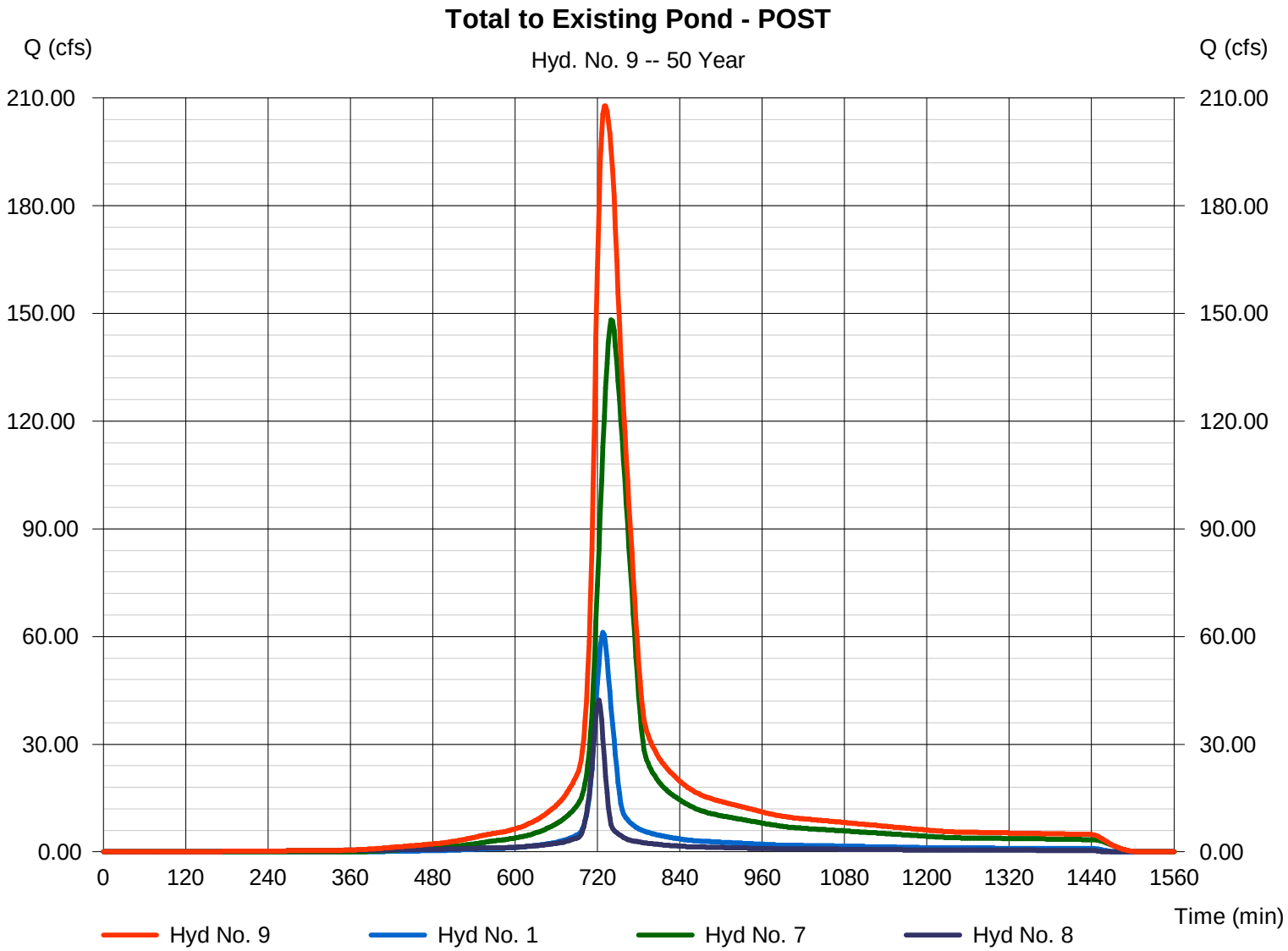
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 9

Total to Existing Pond - POST

Hydrograph type	= Combine	Peak discharge	= 207.83 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 1,152,504 cuft
Inflow hyds.	= 1, 7, 8	Contrib. drain. area	= 69.000 ac



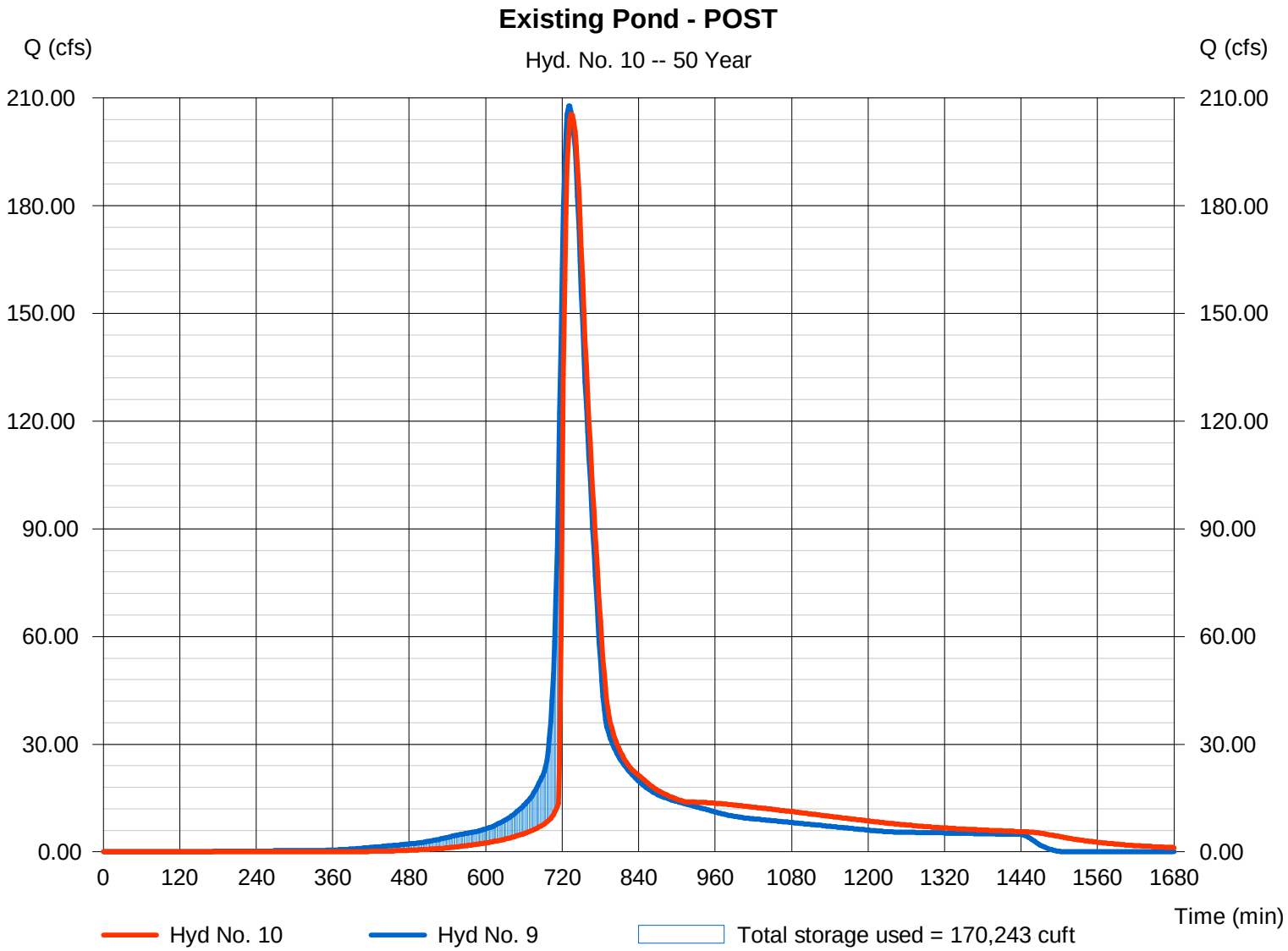
Hydrograph Report

Hyd. No. 10

Existing Pond - POST

Hydrograph type	=	Reservoir	Peak discharge	=	205.50 cfs
Storm frequency	=	50 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	1,152,349 cuft
Inflow hyd. No.	=	9 - Total to Existing Pond - POST	Max. Elevation	=	1312.28 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	170,243 cuft

Storage Indication method used.

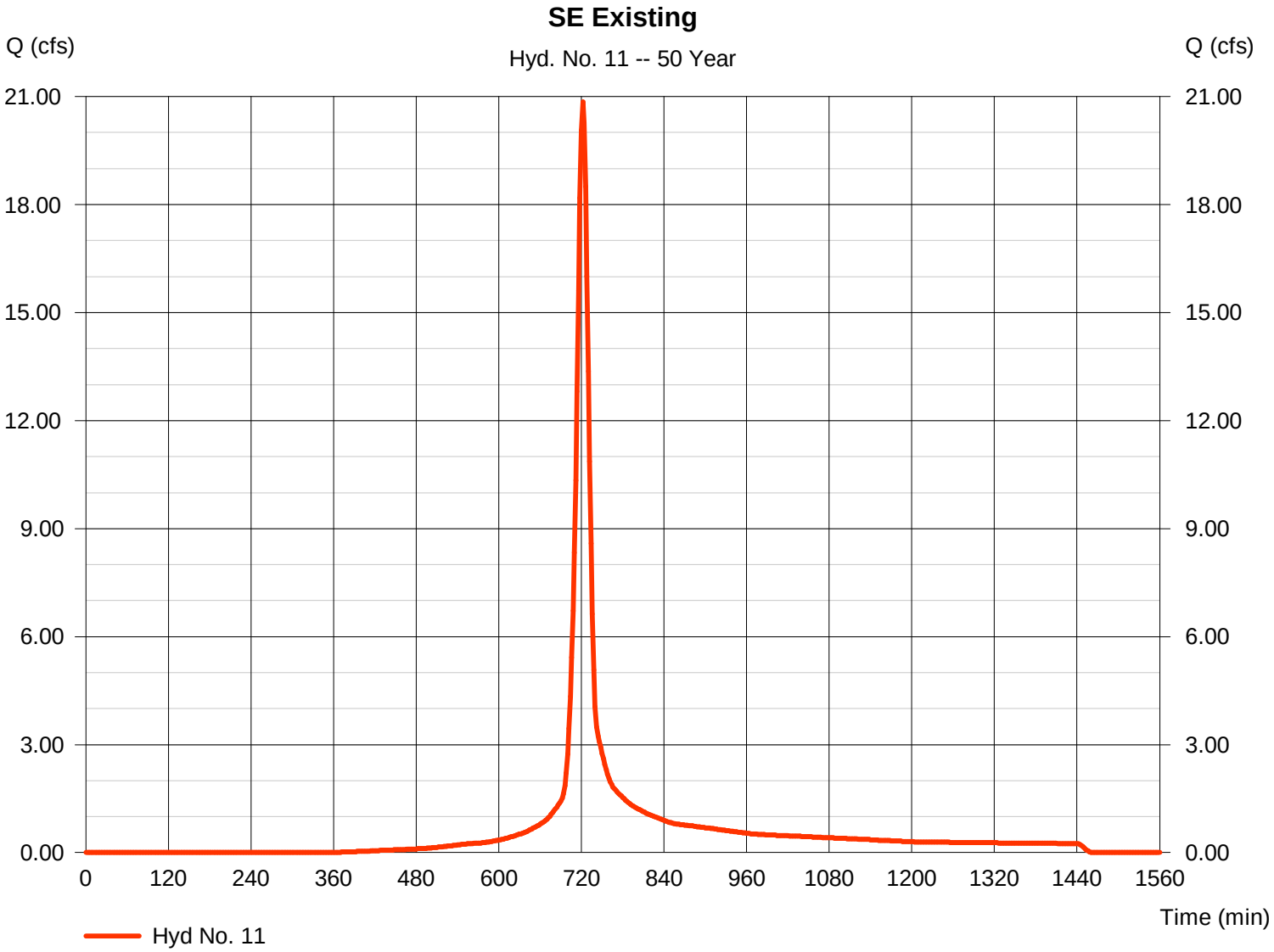


Hydrograph Report

Hyd. No. 11

SE Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.85 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	59,062 cuft
Drainage area	=	3.700 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

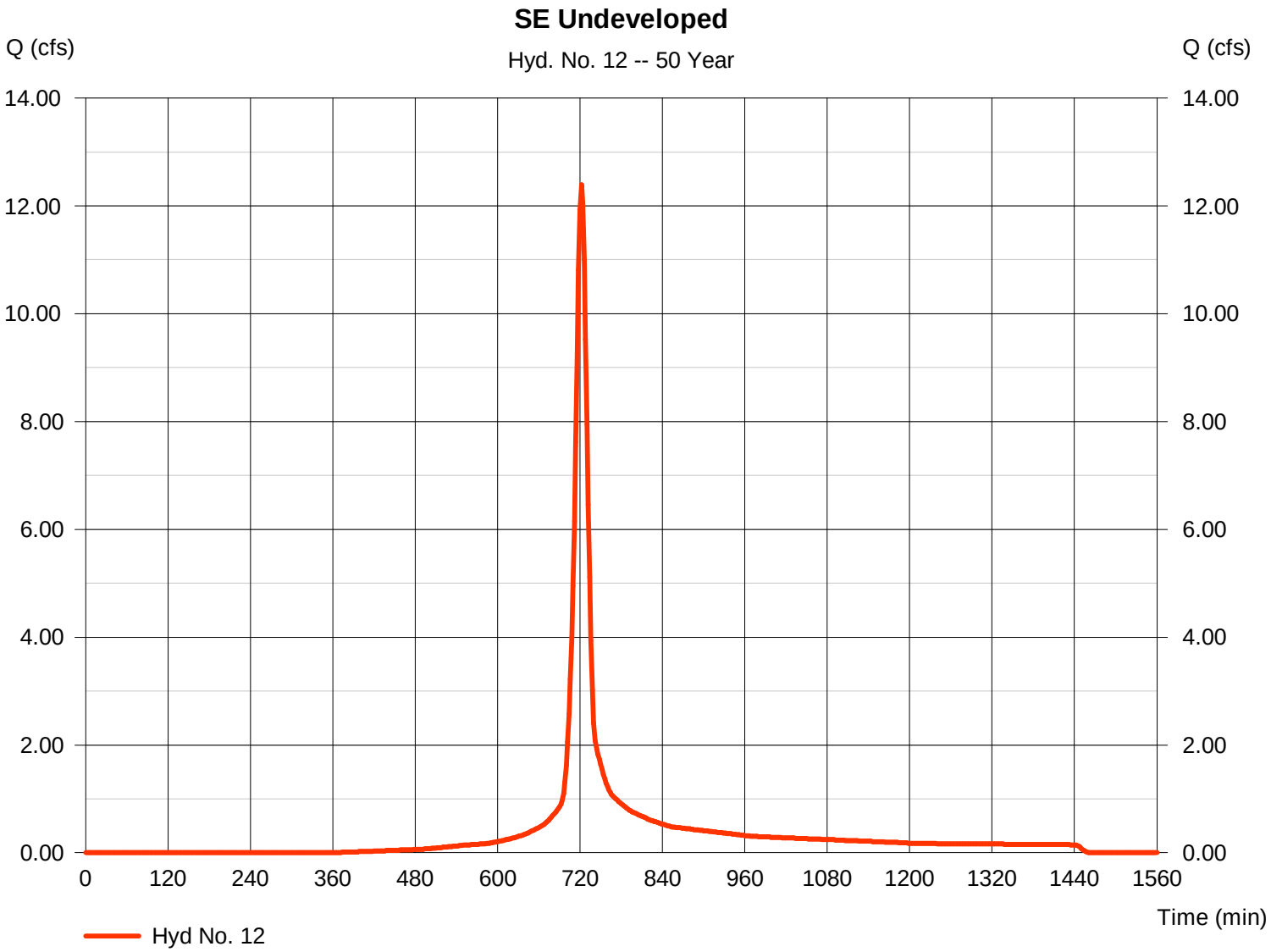


Hydrograph Report

Hyd. No. 12

SE Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.40 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	35,118 cuft
Drainage area	=	2.200 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

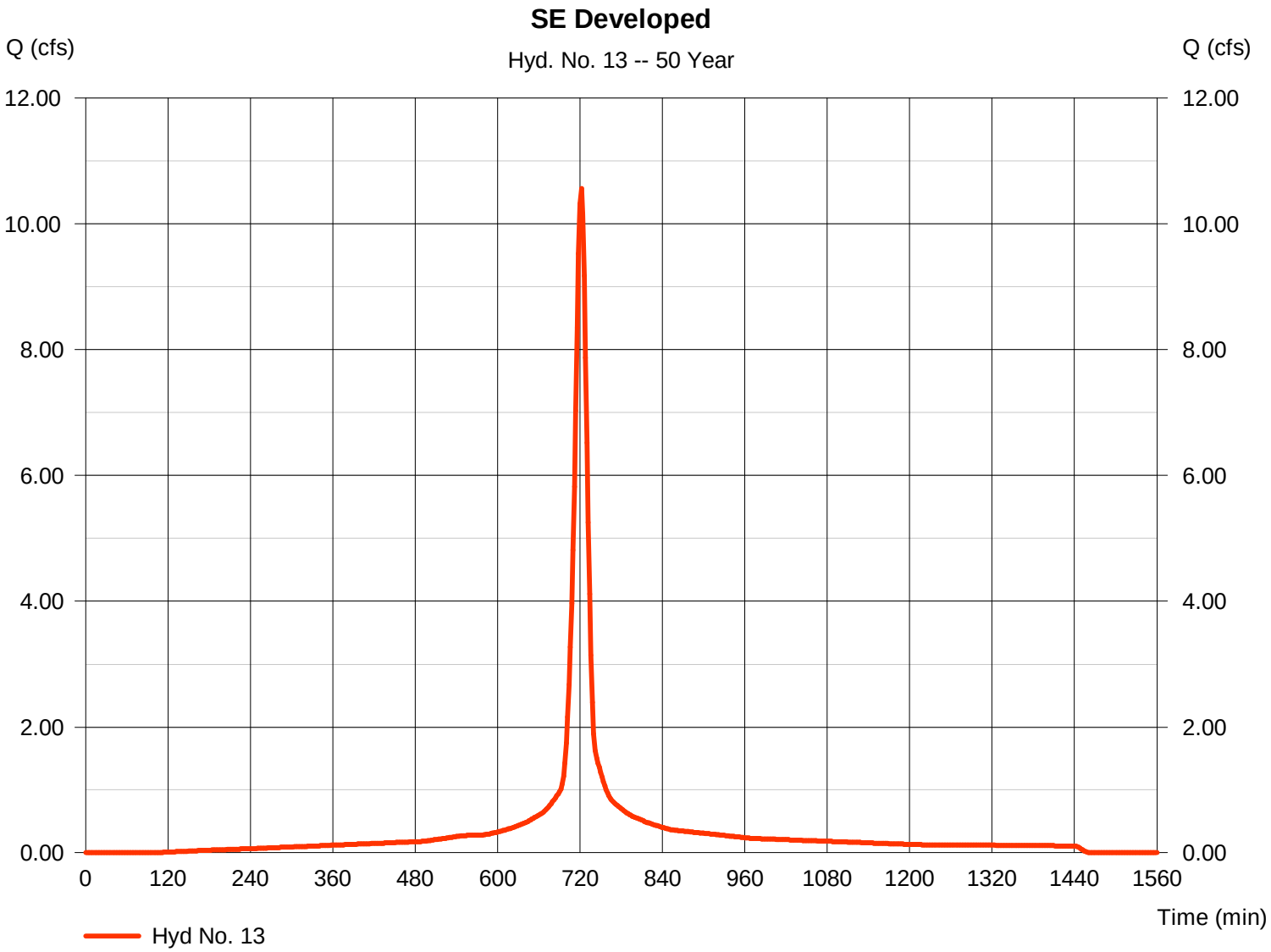


Hydrograph Report

Hyd. No. 13

SE Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.57 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	32,951 cuft
Drainage area	=	1.500 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

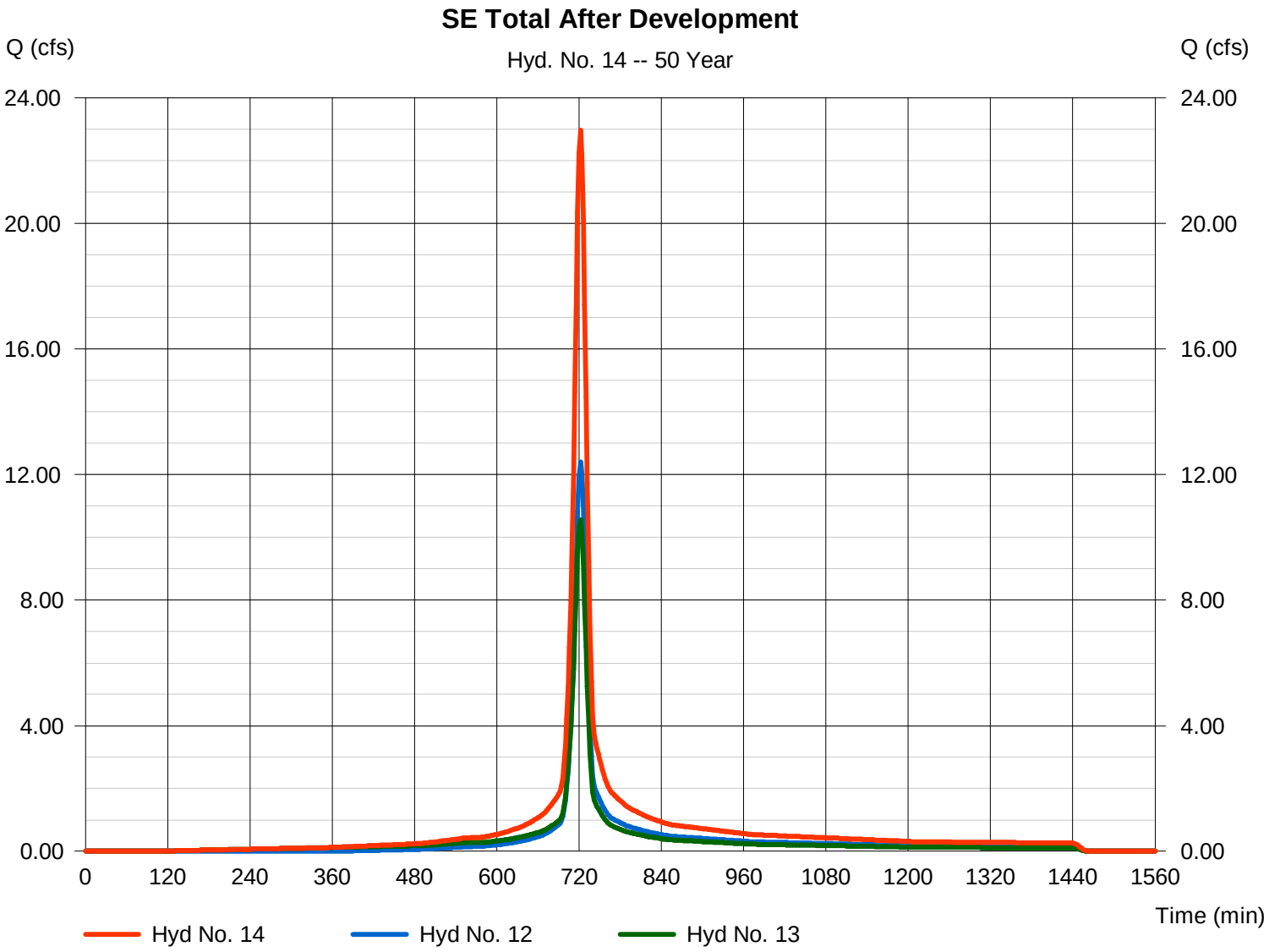


Hydrograph Report

Hyd. No. 14

SE Total After Development

Hydrograph type	= Combine	Peak discharge	= 22.96 cfs
Storm frequency	= 50 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 68,069 cuft
Inflow hyds.	= 12, 13	Contrib. drain. area	= 3.700 ac

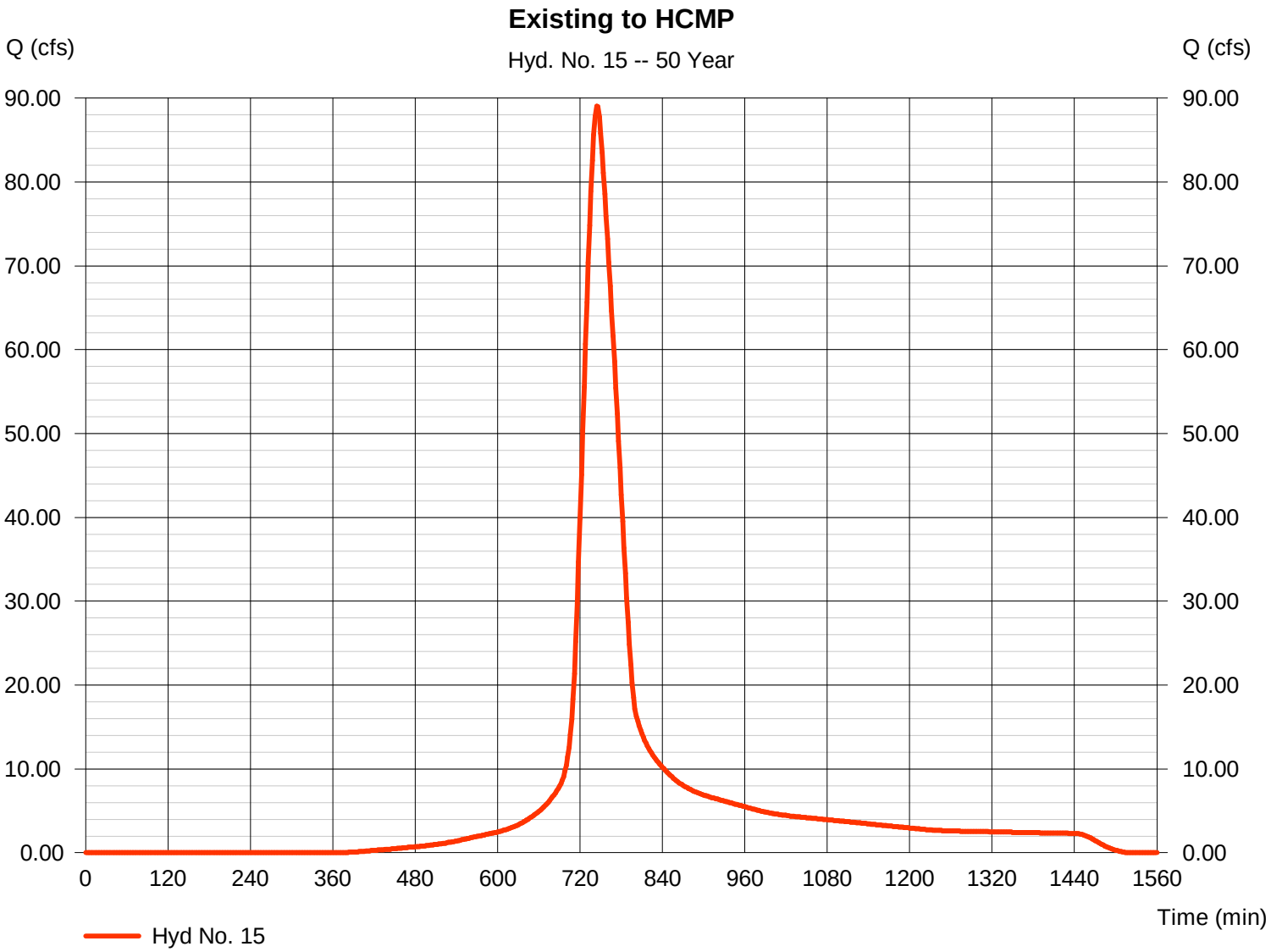


Hydrograph Report

Hyd. No. 15

Existing to HCMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	89.02 cfs
Storm frequency	=	50 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	531,301 cuft
Drainage area	=	32.200 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	2100 ft
Tc method	=	LAG	Time of conc. (Tc)	=	52.62 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



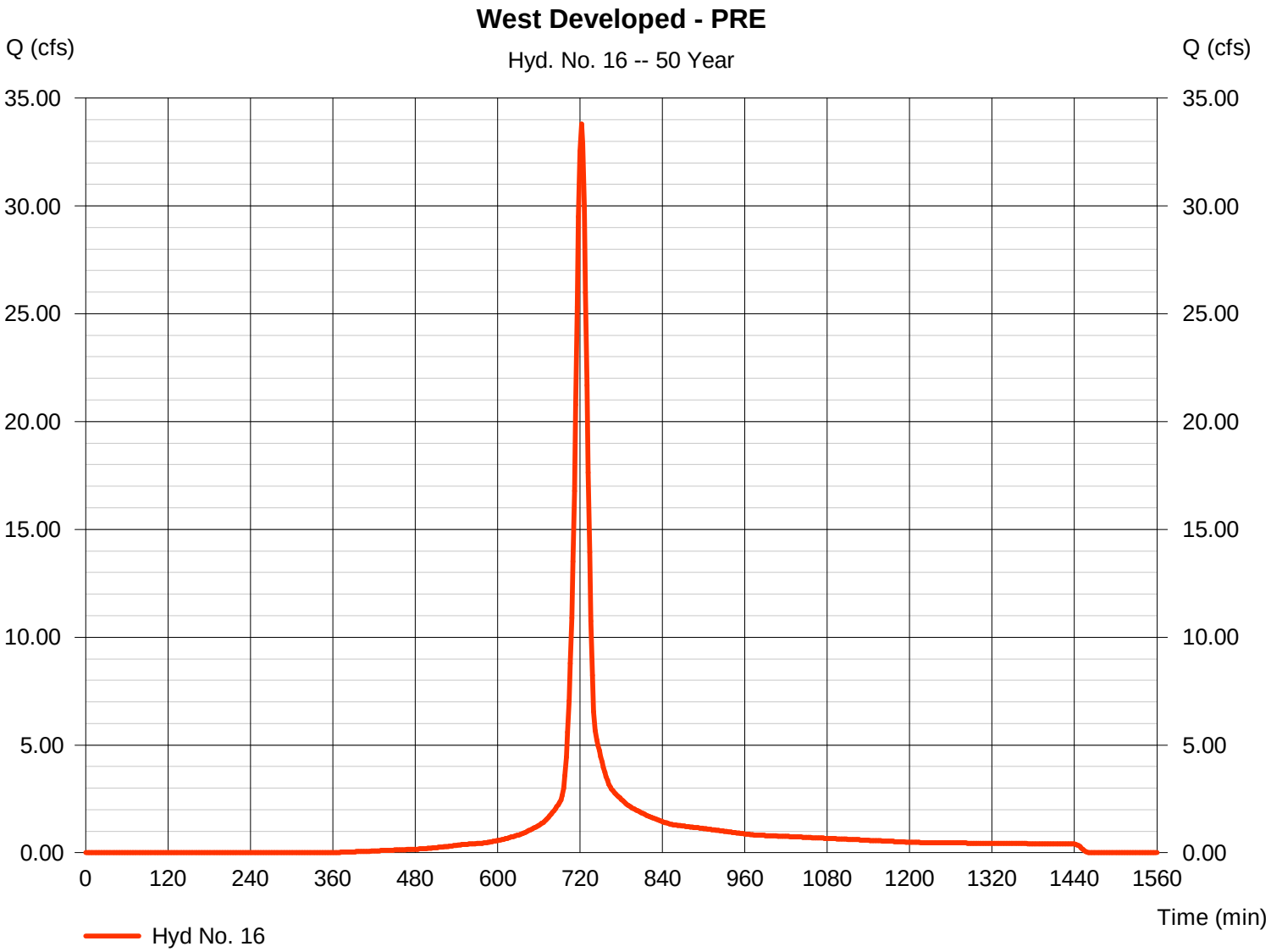
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 16

West Developed - PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	33.81 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	95,777 cuft
Drainage area	=	6.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	6.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

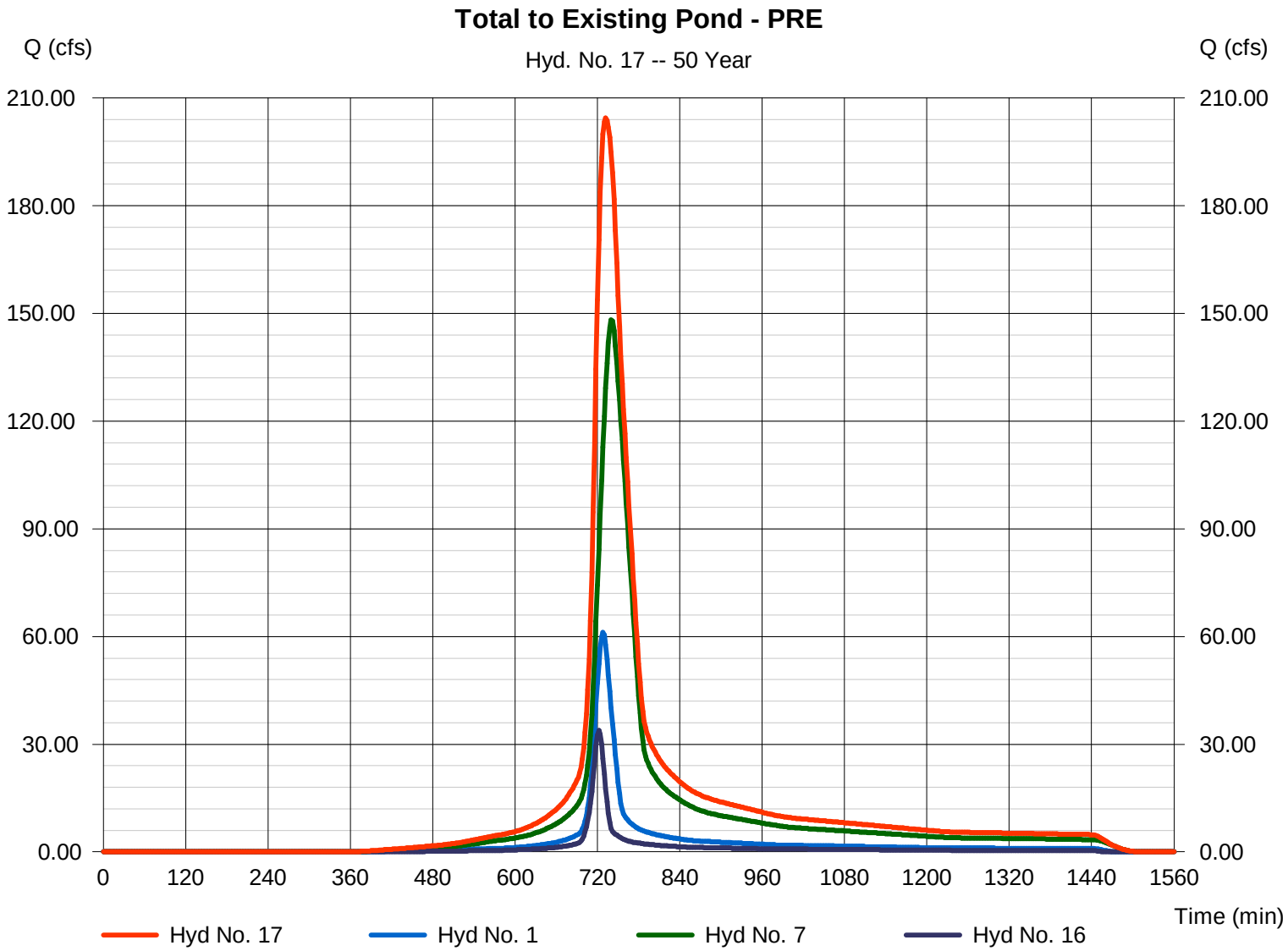


Hydrograph Report

Hyd. No. 17

Total to Existing Pond - PRE

Hydrograph type	= Combine	Peak discharge	= 204.44 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 1,116,477 cuft
Inflow hyds.	= 1, 7, 16	Contrib. drain. area	= 69.000 ac



Hydrograph Report

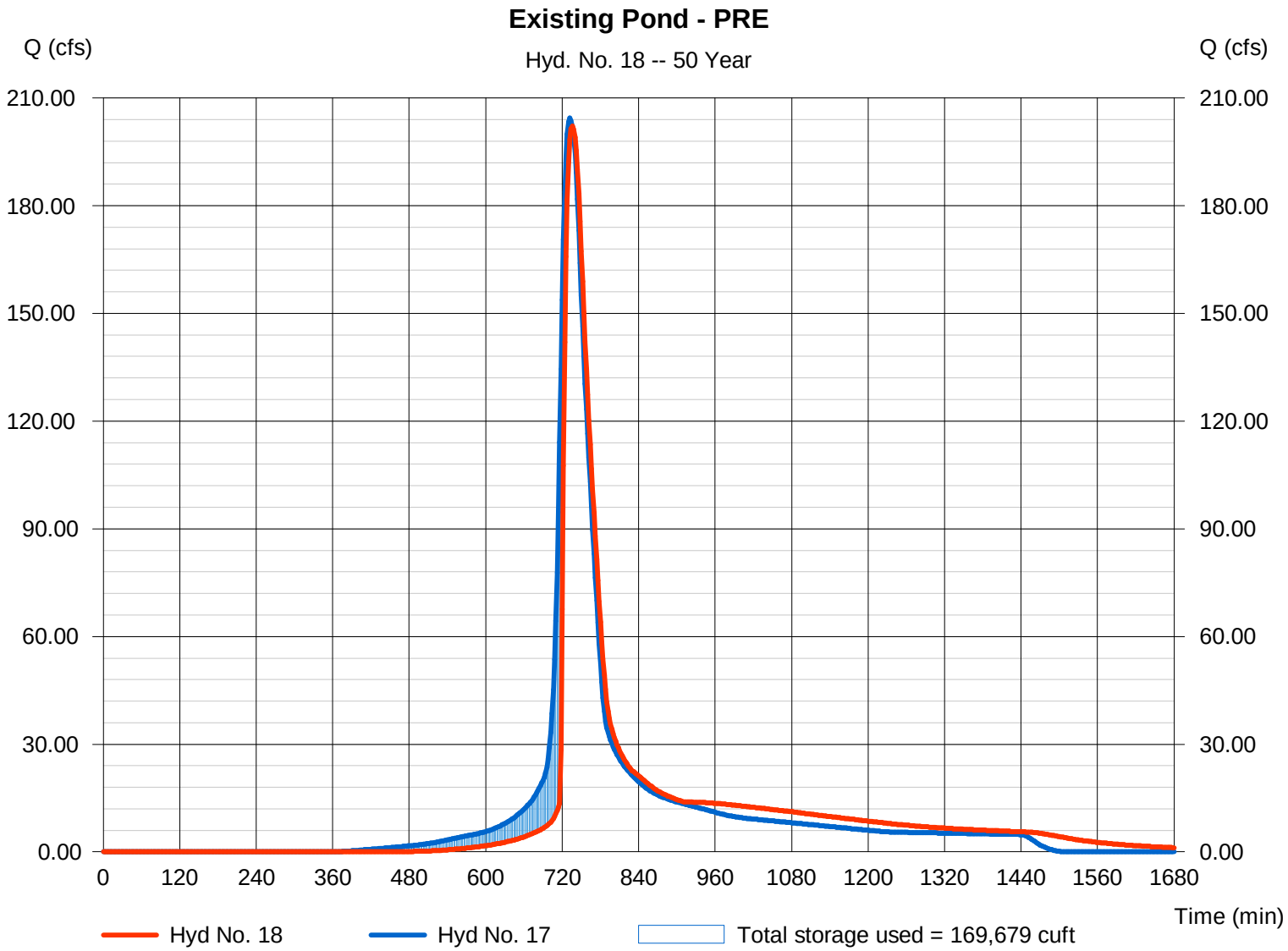
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 18

Existing Pond - PRE

Hydrograph type	=	Reservoir	Peak discharge	=	202.13 cfs
Storm frequency	=	50 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	1,116,323 cuft
Inflow hyd. No.	=	17 - Total to Existing Pond - PRE	Max. Elevation	=	1312.27 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	169,679 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	75.31	2	728	279,052	------	------	------	NW Offsite
2	SCS Runoff	73.99	2	732	321,878	------	------	------	NE Offsite
3	SCS Runoff	66.20	2	722	208,151	------	------	------	East Developed - POST
4	SCS Runoff	55.32	2	722	157,939	------	------	------	East Undeveloped
5	Combine	178.08	2	724	687,968	2, 3, 4	------	------	Total to Dry Detention
6	Reservoir	63.17	2	748	687,950	5	1316.71	246,161	East Dry Detention
7	SCS Runoff	182.62	2	740	983,325	------	------	------	West Undeveloped
8	SCS Runoff	49.65	2	722	156,113	------	------	------	West Developed - POST
9	Combine	255.37	2	732	1,418,487	1, 7, 8	------	------	Total to Existing Pond - POST
10	Reservoir	253.08	2	734	1,418,331	9	1312.40	177,910	Existing Pond - POST
11	SCS Runoff	25.59	2	722	73,047	------	------	------	SE Existing
12	SCS Runoff	15.21	2	722	43,433	------	------	------	SE Undeveloped
13	SCS Runoff	12.41	2	722	39,028	------	------	------	SE Developed
14	Combine	27.63	2	722	82,462	12, 13	------	------	SE Total After Development
15	SCS Runoff	109.75	2	744	657,100	------	------	------	Existing to HCMP
16	SCS Runoff	41.49	2	722	118,455	------	------	------	West Developed - PRE
17	Combine	252.16	2	732	1,380,831	1, 7, 16	------	------	Total to Existing Pond - PRE
18	Reservoir	249.63	2	736	1,380,675	17	1312.39	177,359	Existing Pond - PRE

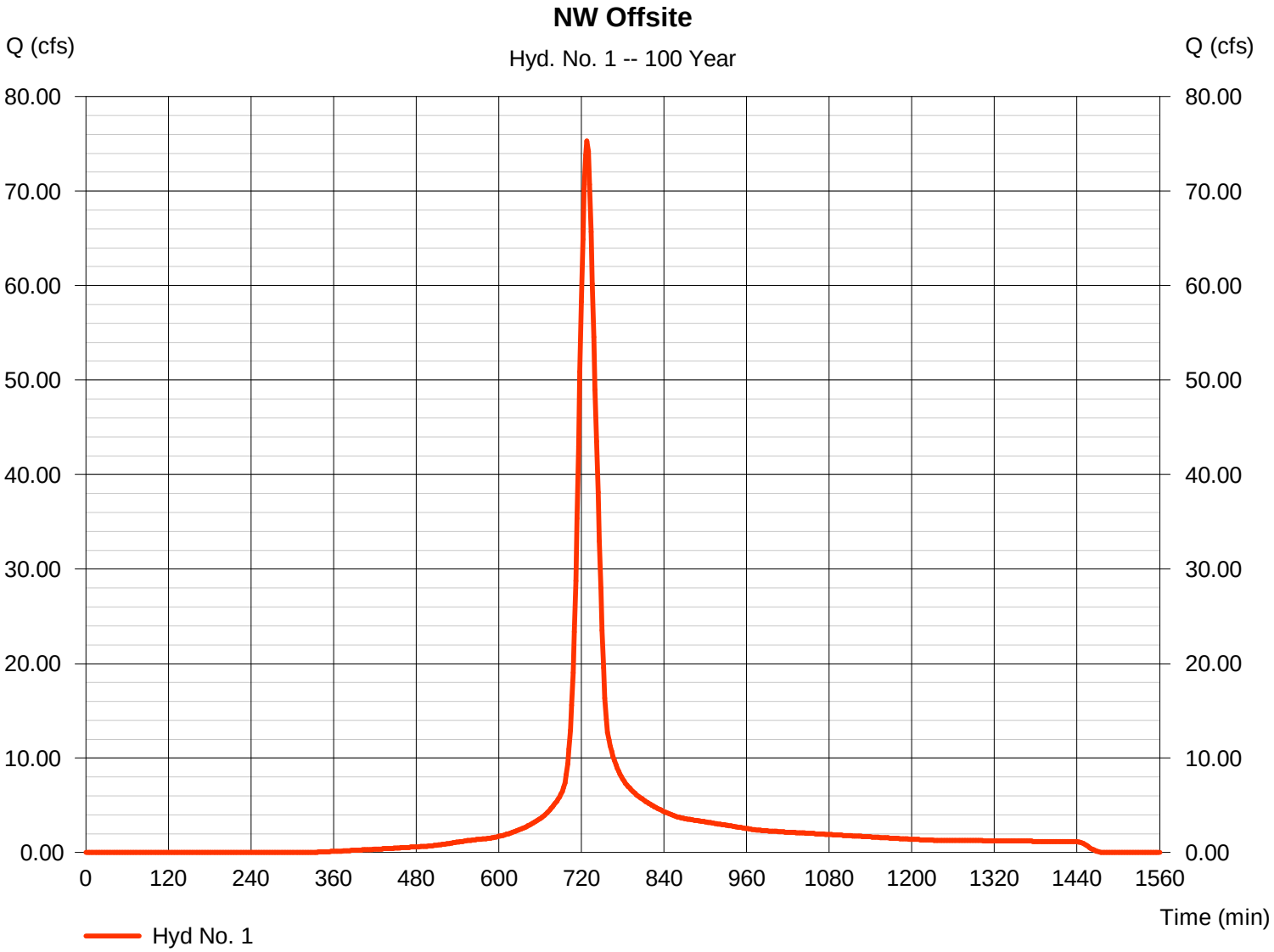
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 1

NW Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	75.31 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	279,052 cuft
Drainage area	=	14.000 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	775 ft
Tc method	=	LAG	Time of conc. (Tc)	=	23.70 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



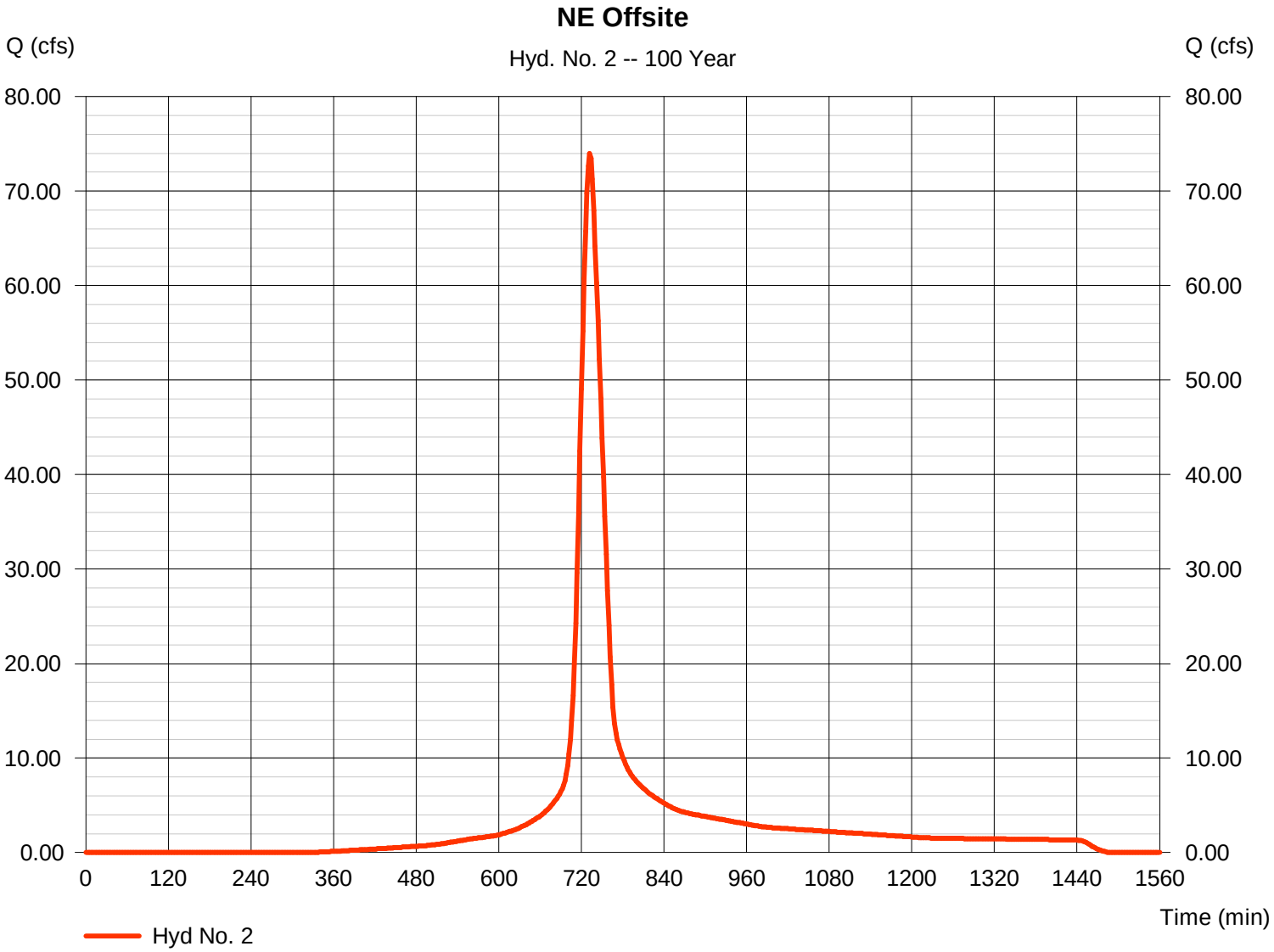
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 2

NE Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	73.99 cfs
Storm frequency	=	100 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	321,878 cuft
Drainage area	=	15.700 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	1120 ft
Tc method	=	LAG	Time of conc. (Tc)	=	31.82 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

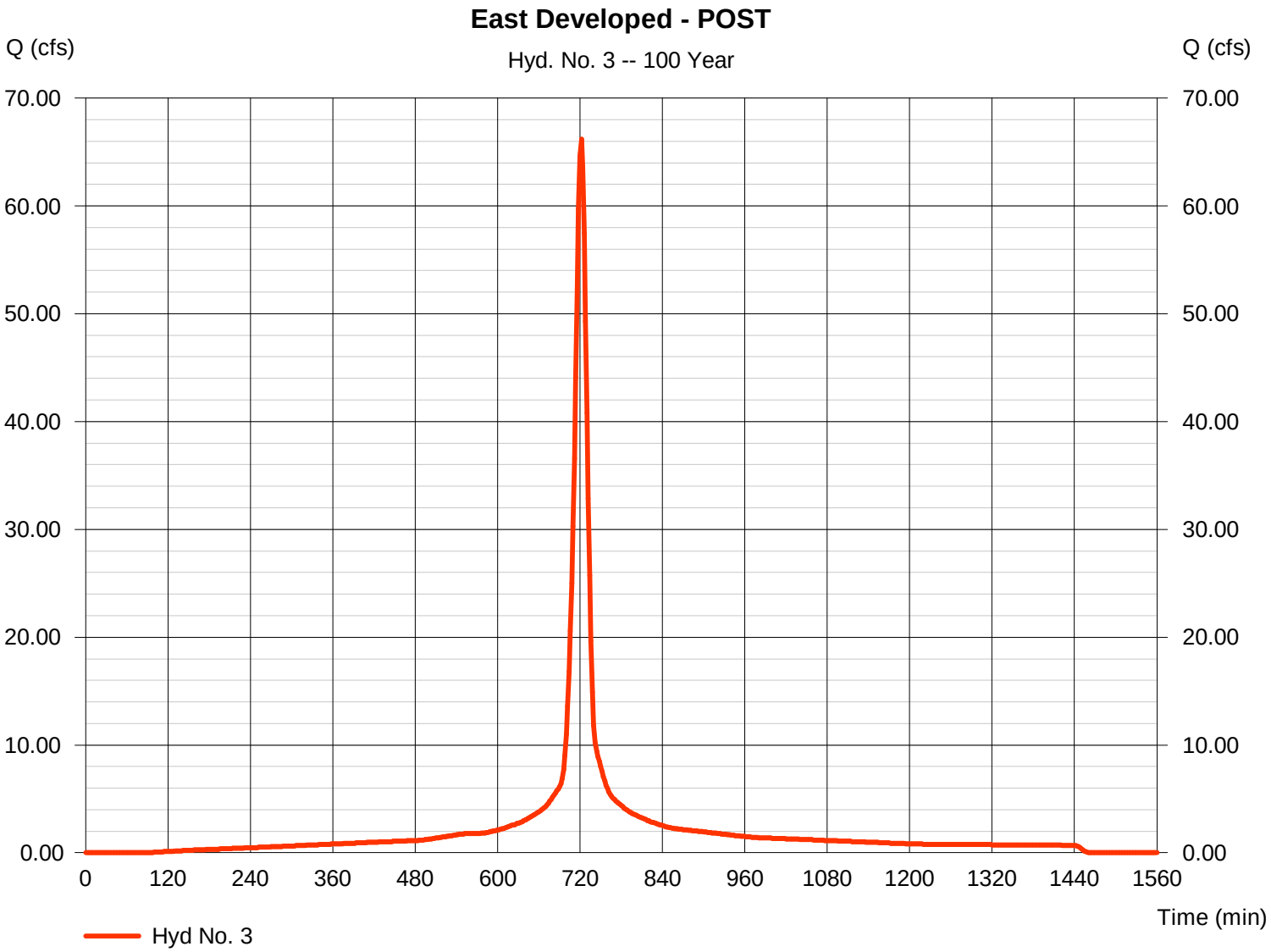


Hydrograph Report

Hyd. No. 3

East Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	66.20 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	208,151 cuft
Drainage area	=	8.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



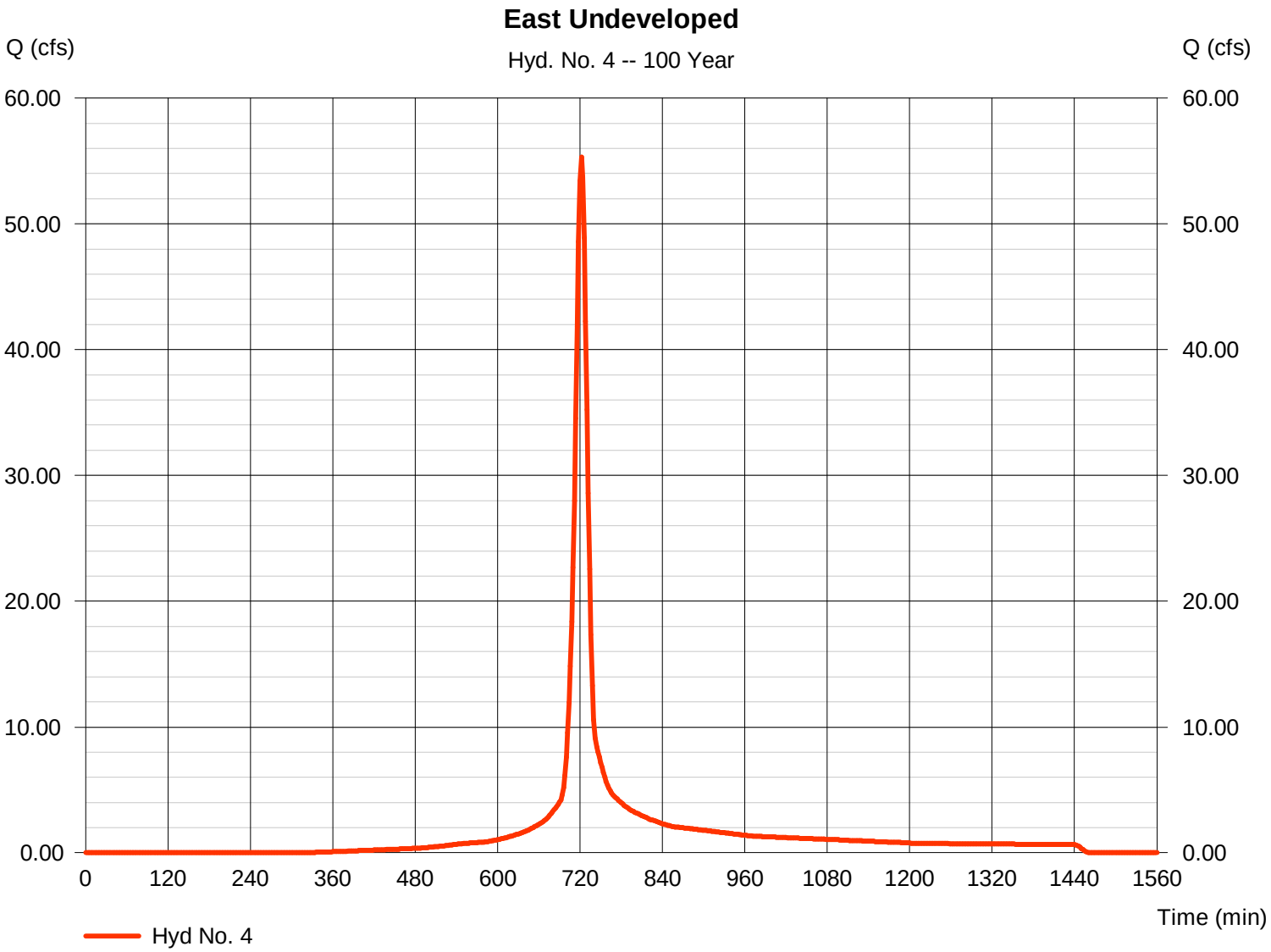
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 4

East Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	55.32 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	157,939 cuft
Drainage area	=	8.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

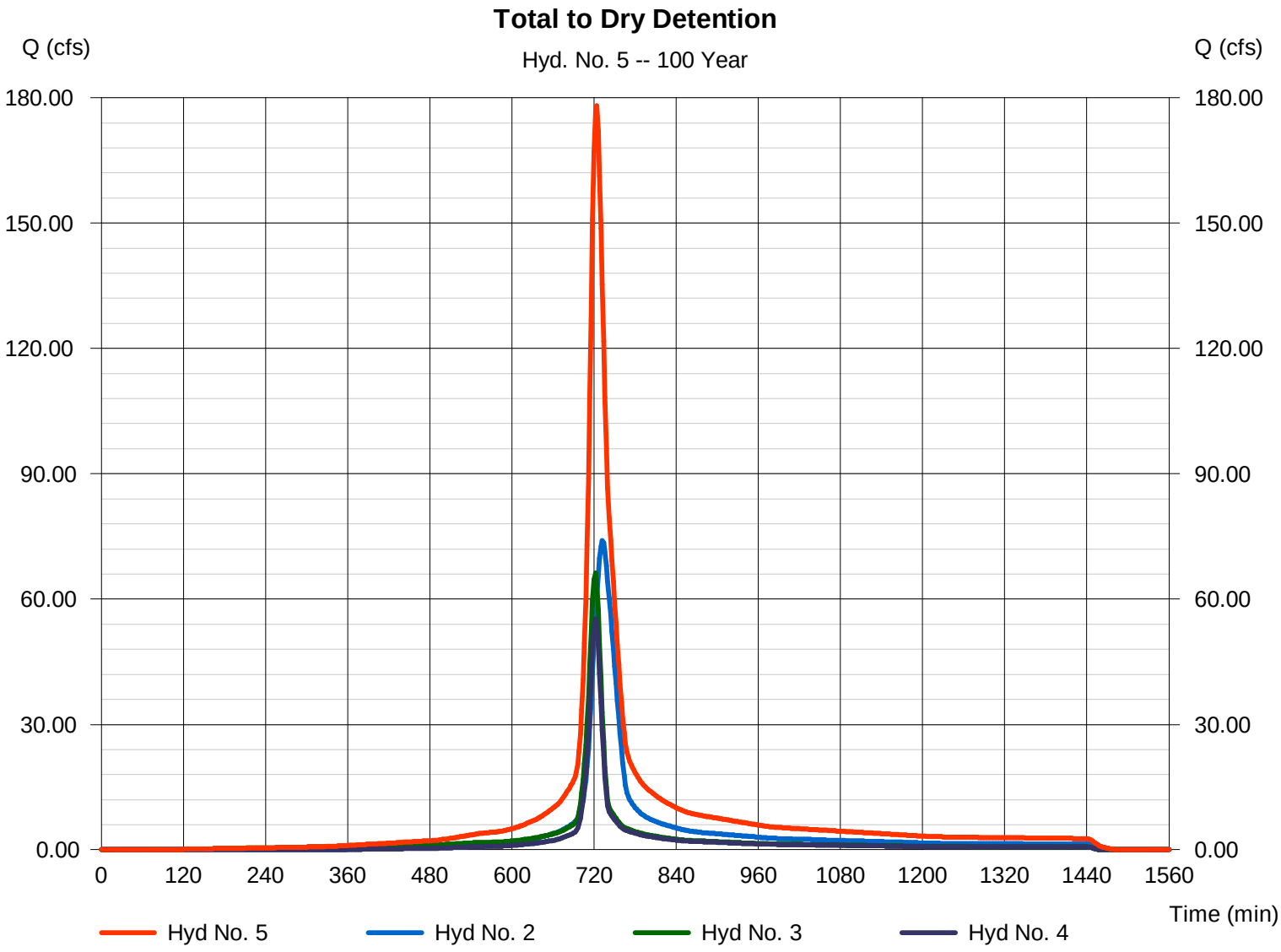


Hydrograph Report

Hyd. No. 5

Total to Dry Detention

Hydrograph type	= Combine	Peak discharge	= 178.08 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 687,968 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 31.700 ac



Hydrograph Report

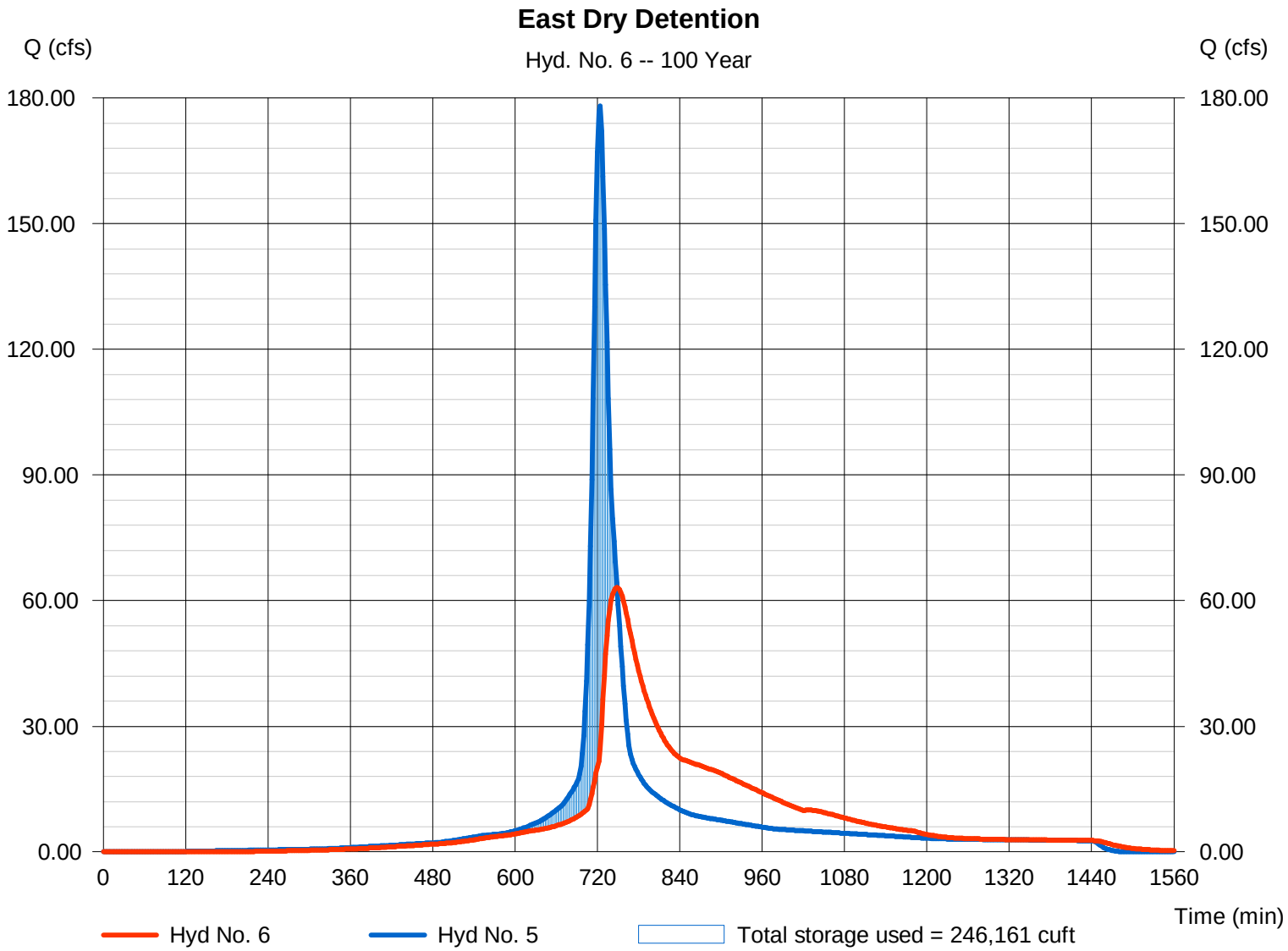
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 6

East Dry Detention

Hydrograph type	=	Reservoir	Peak discharge	=	63.17 cfs
Storm frequency	=	100 yrs	Time to peak	=	748 min
Time interval	=	2 min	Hyd. volume	=	687,950 cuft
Inflow hyd. No.	=	5 - Total to Dry Detention	Max. Elevation	=	1316.71 ft
Reservoir name	=	East Dry Detention	Max. Storage	=	246,161 cuft

Storage Indication method used.



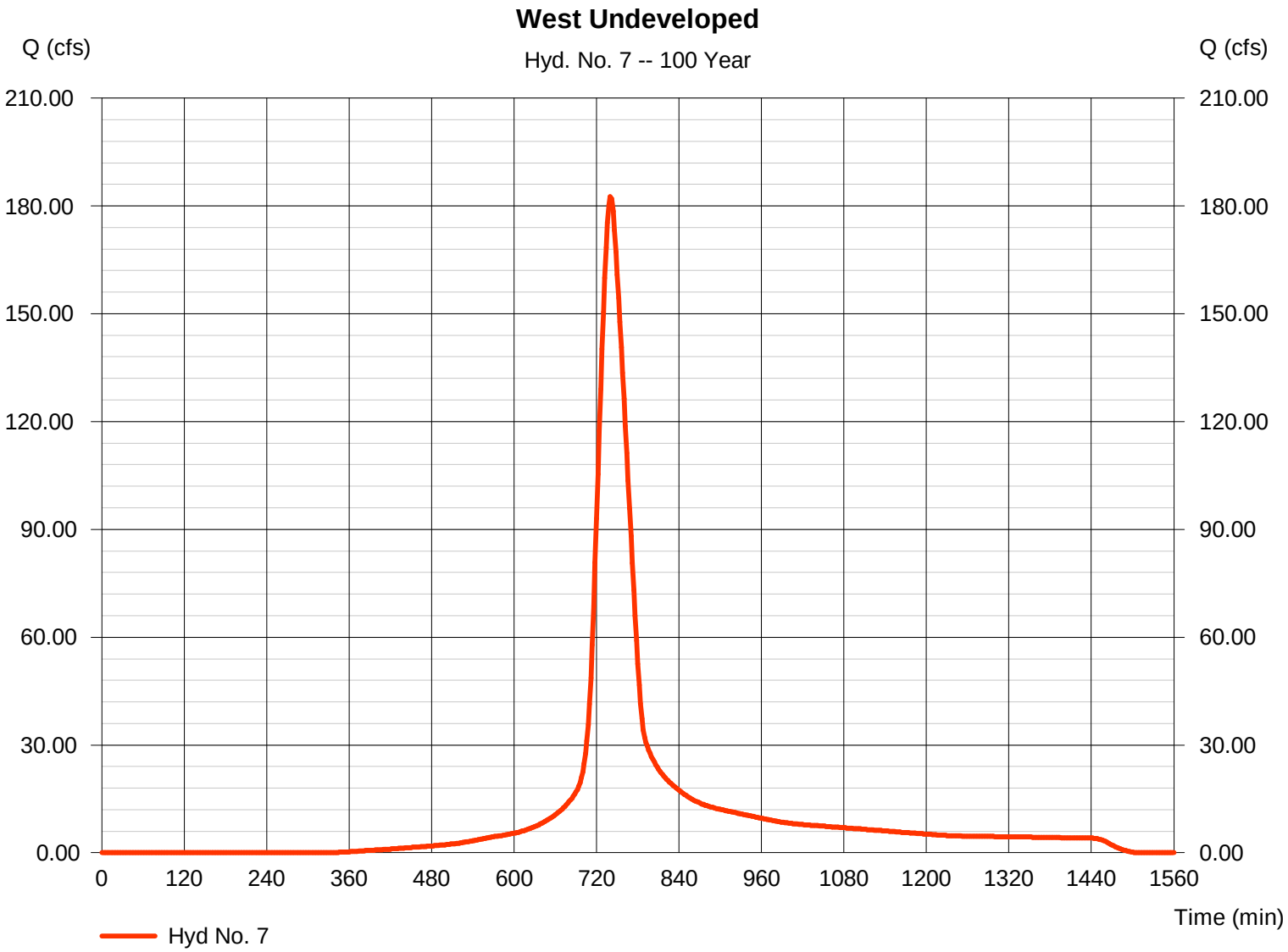
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 7

West Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	182.62 cfs
Storm frequency	=	100 yrs	Time to peak	=	740 min
Time interval	=	2 min	Hyd. volume	=	983,325 cuft
Drainage area	=	49.000 ac	Curve number	=	80
Basin Slope	=	1.4 %	Hydraulic length	=	2000 ft
Tc method	=	LAG	Time of conc. (Tc)	=	46.85 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



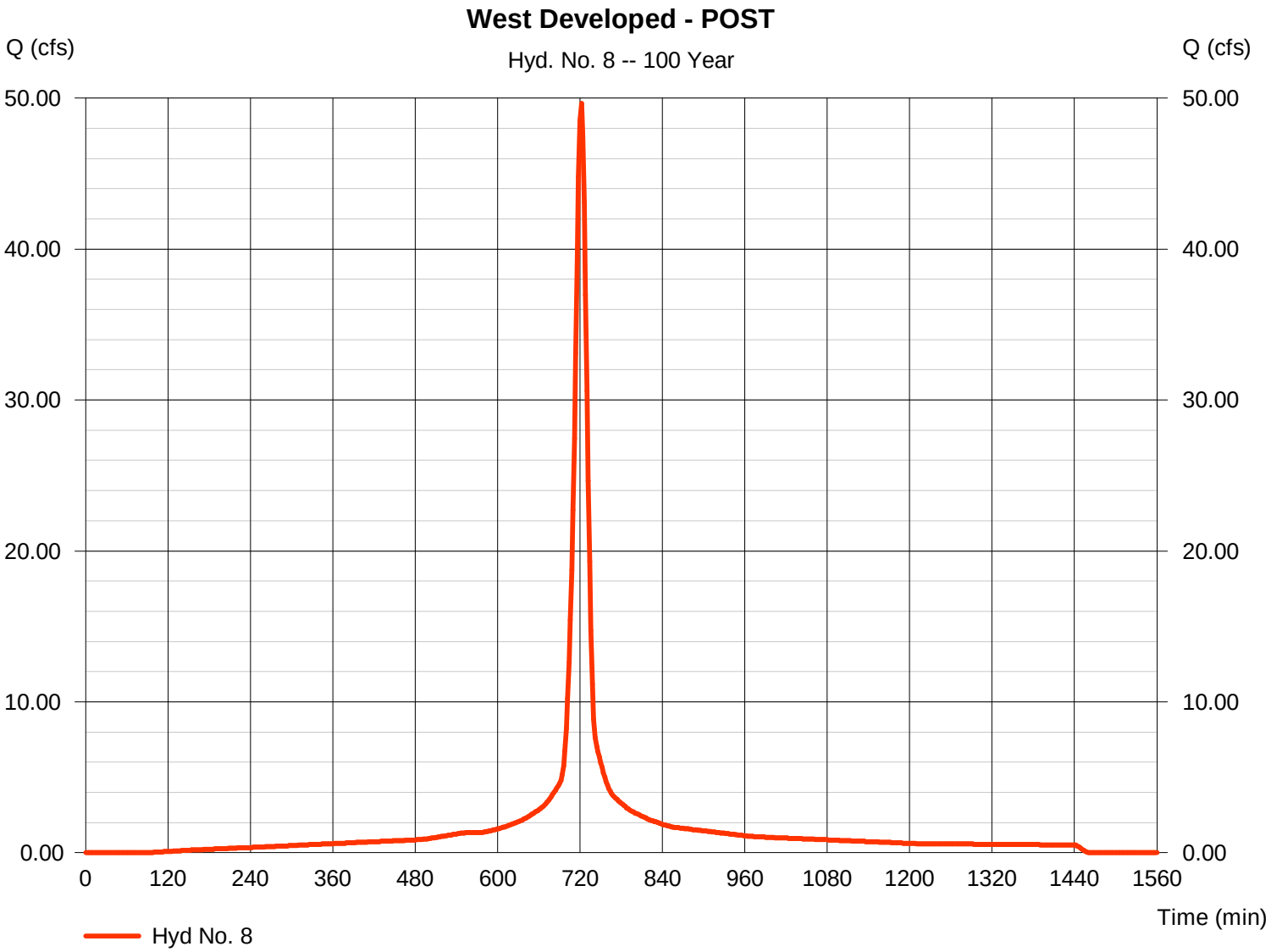
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 8

West Developed - POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	49.65 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	156,113 cuft
Drainage area	=	6.000 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

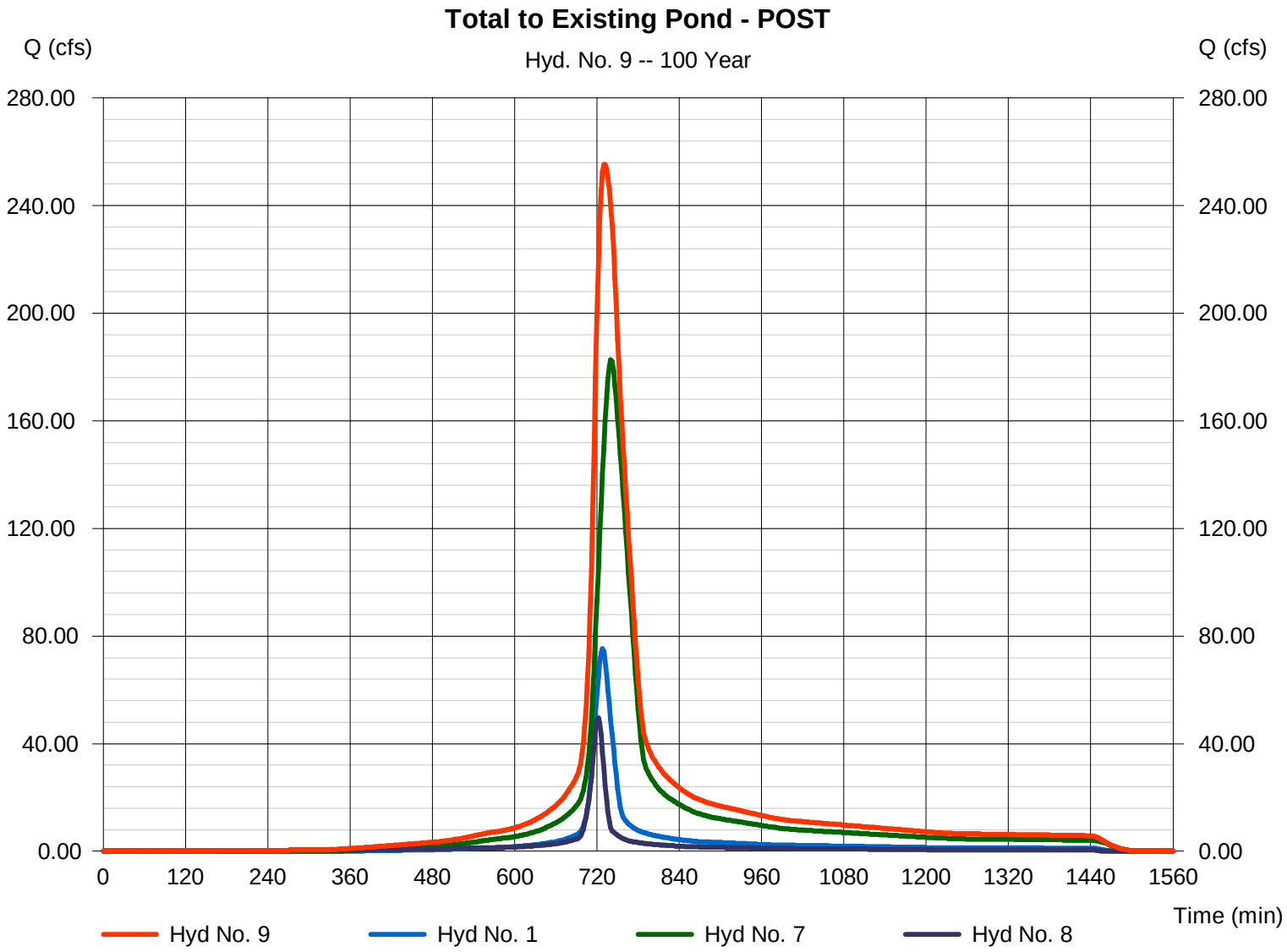


Hydrograph Report

Hyd. No. 9

Total to Existing Pond - POST

Hydrograph type	= Combine	Peak discharge	= 255.37 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 1,418,487 cuft
Inflow hyds.	= 1, 7, 8	Contrib. drain. area	= 69.000 ac



Hydrograph Report

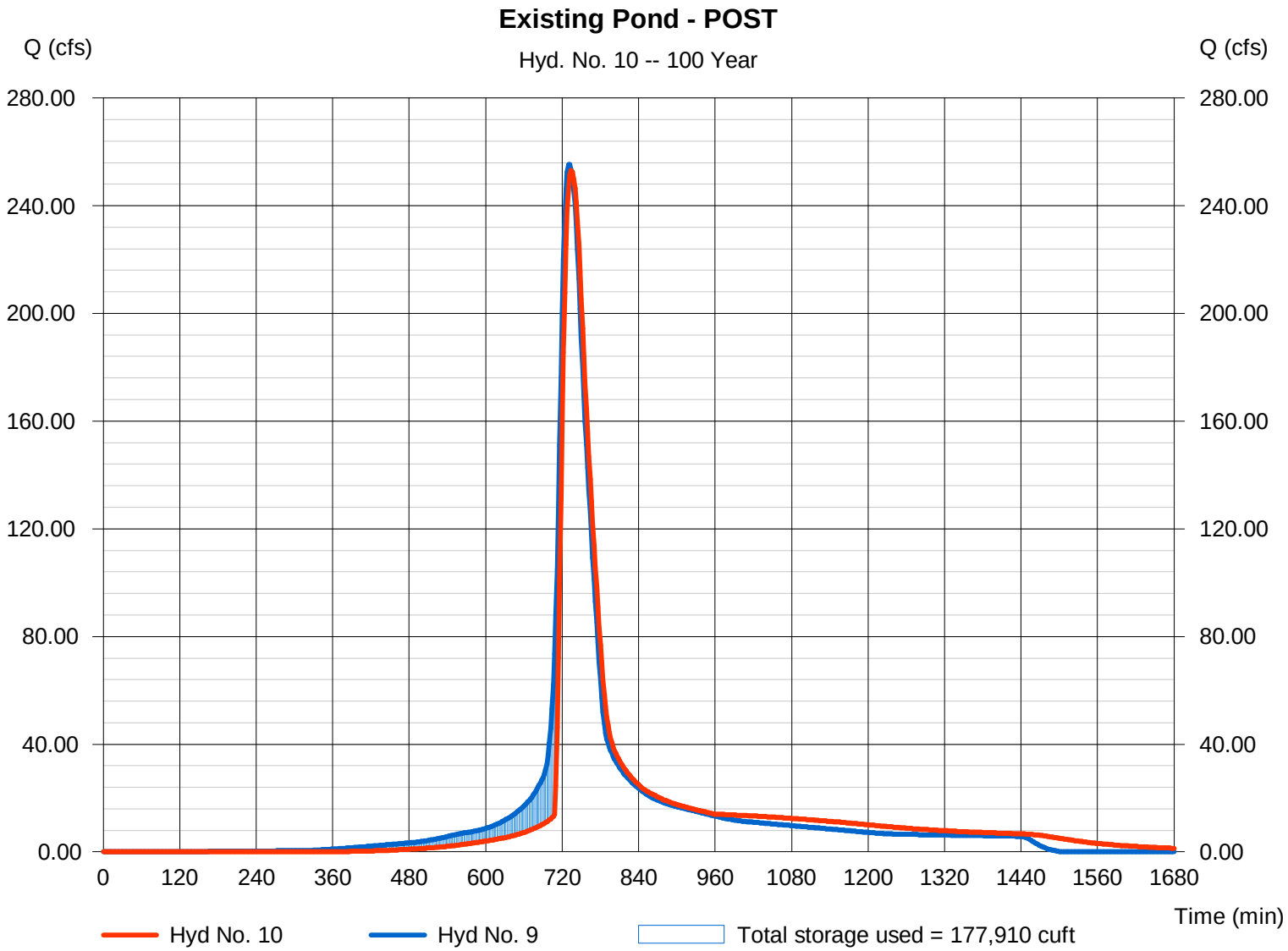
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 10

Existing Pond - POST

Hydrograph type	=	Reservoir	Peak discharge	=	253.08 cfs
Storm frequency	=	100 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	1,418,331 cuft
Inflow hyd. No.	=	9 - Total to Existing Pond - POST	Max. Elevation	=	1312.40 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	177,910 cuft

Storage Indication method used.



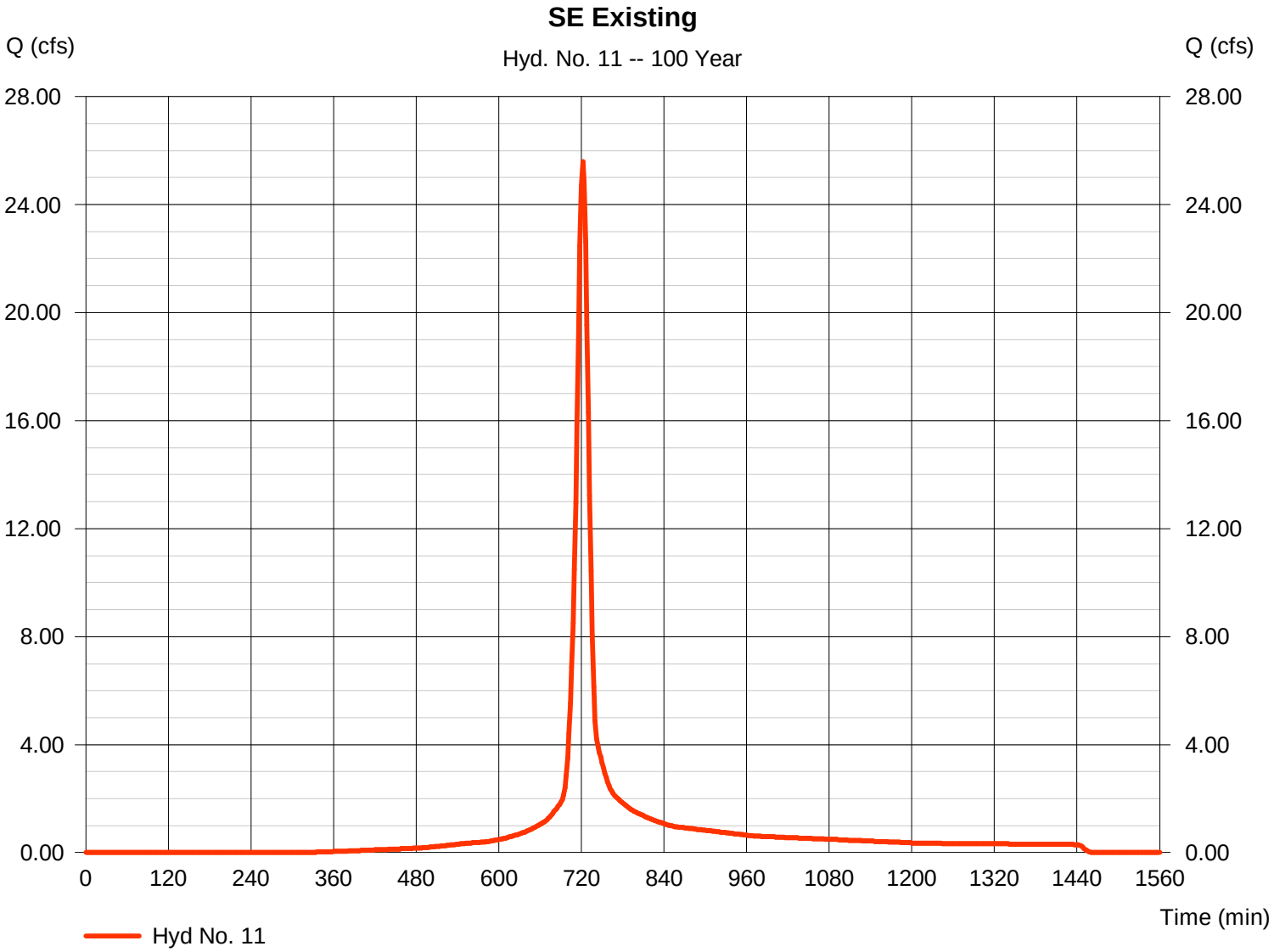
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 11

SE Existing

Hydrograph type	=	SCS Runoff	Peak discharge	=	25.59 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	73,047 cuft
Drainage area	=	3.700 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



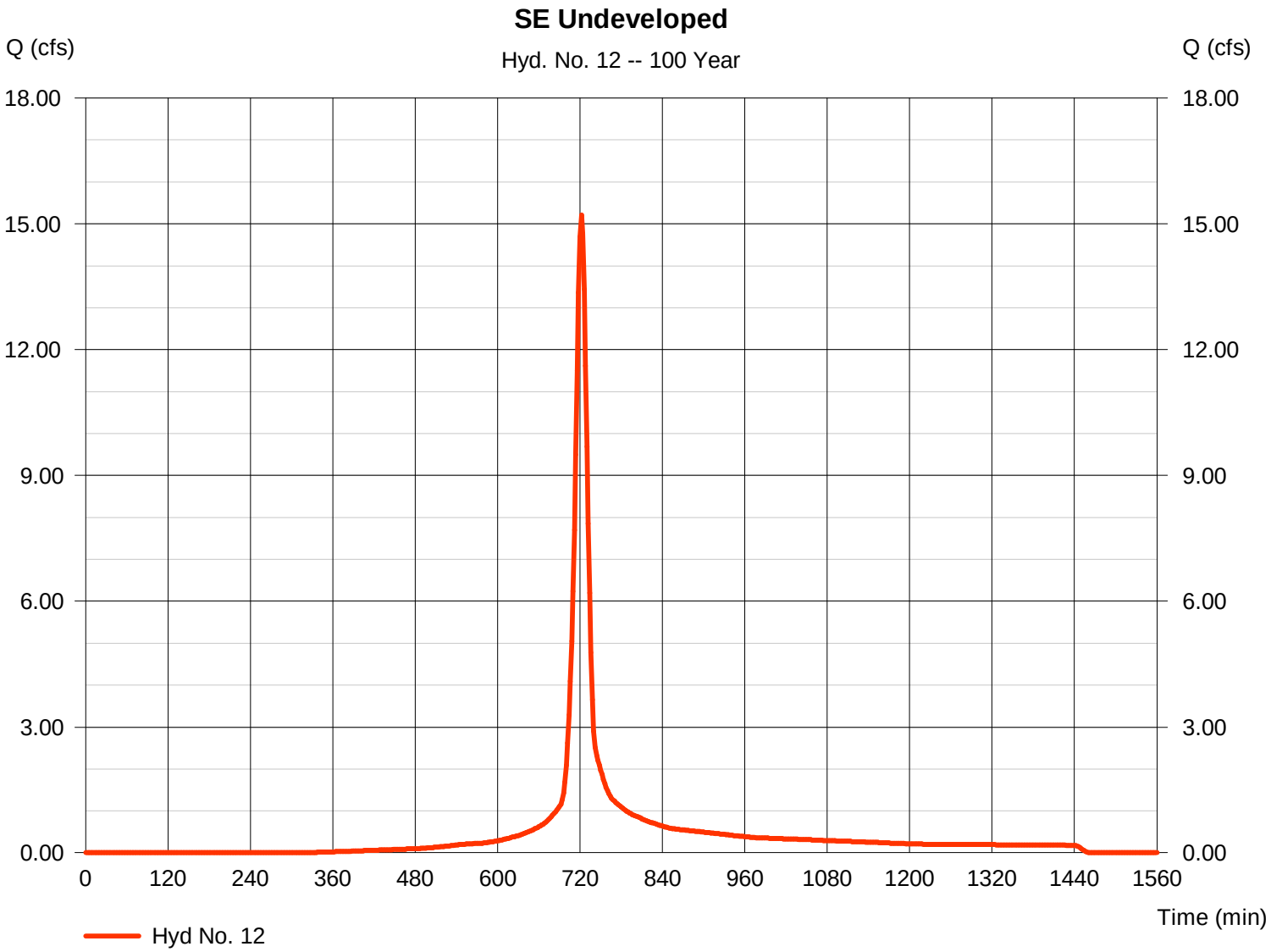
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 12

SE Undeveloped

Hydrograph type	=	SCS Runoff	Peak discharge	=	15.21 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	43,433 cuft
Drainage area	=	2.200 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

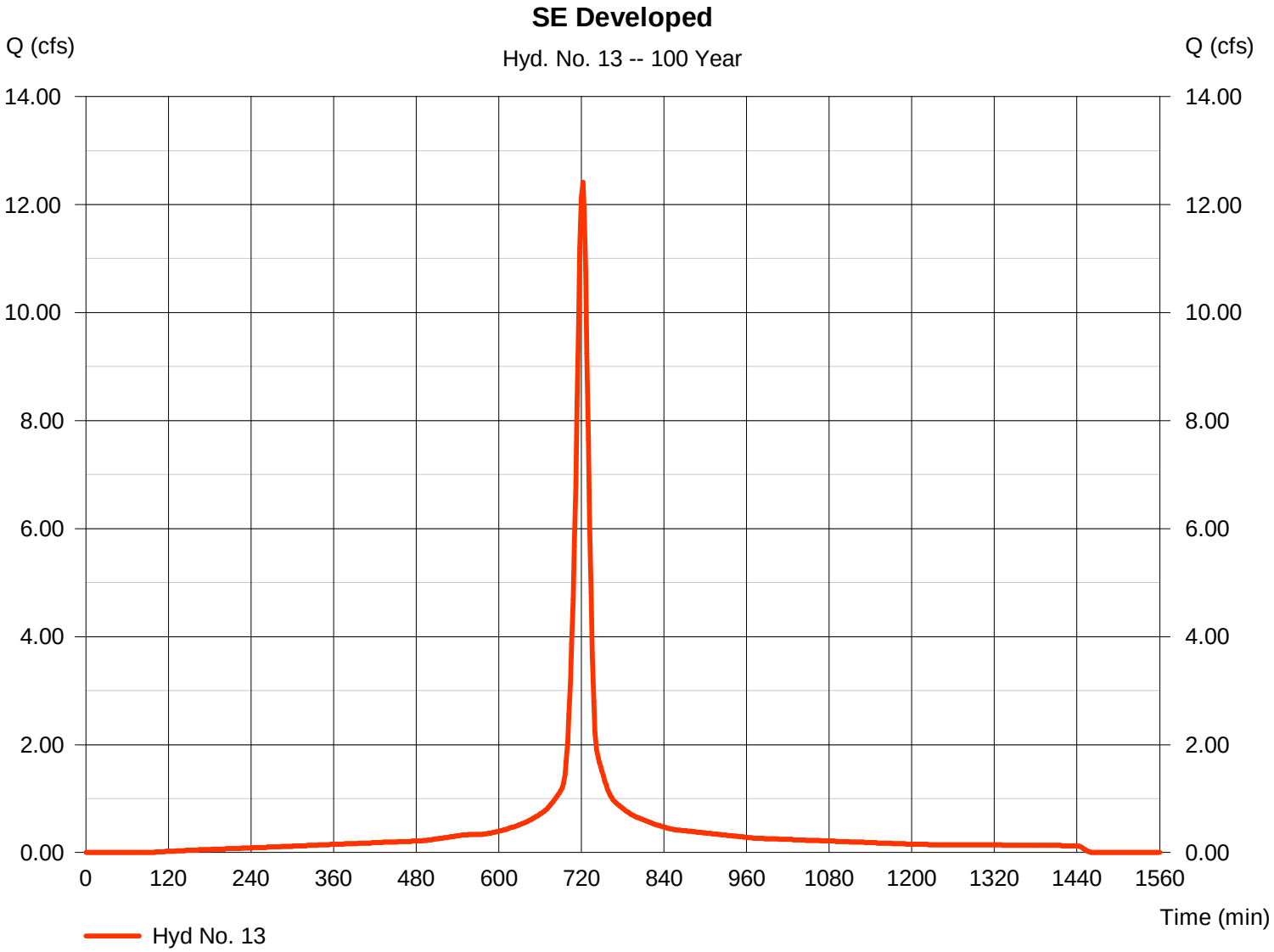


Hydrograph Report

Hyd. No. 13

SE Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.41 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	39,028 cuft
Drainage area	=	1.500 ac	Curve number	=	95
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

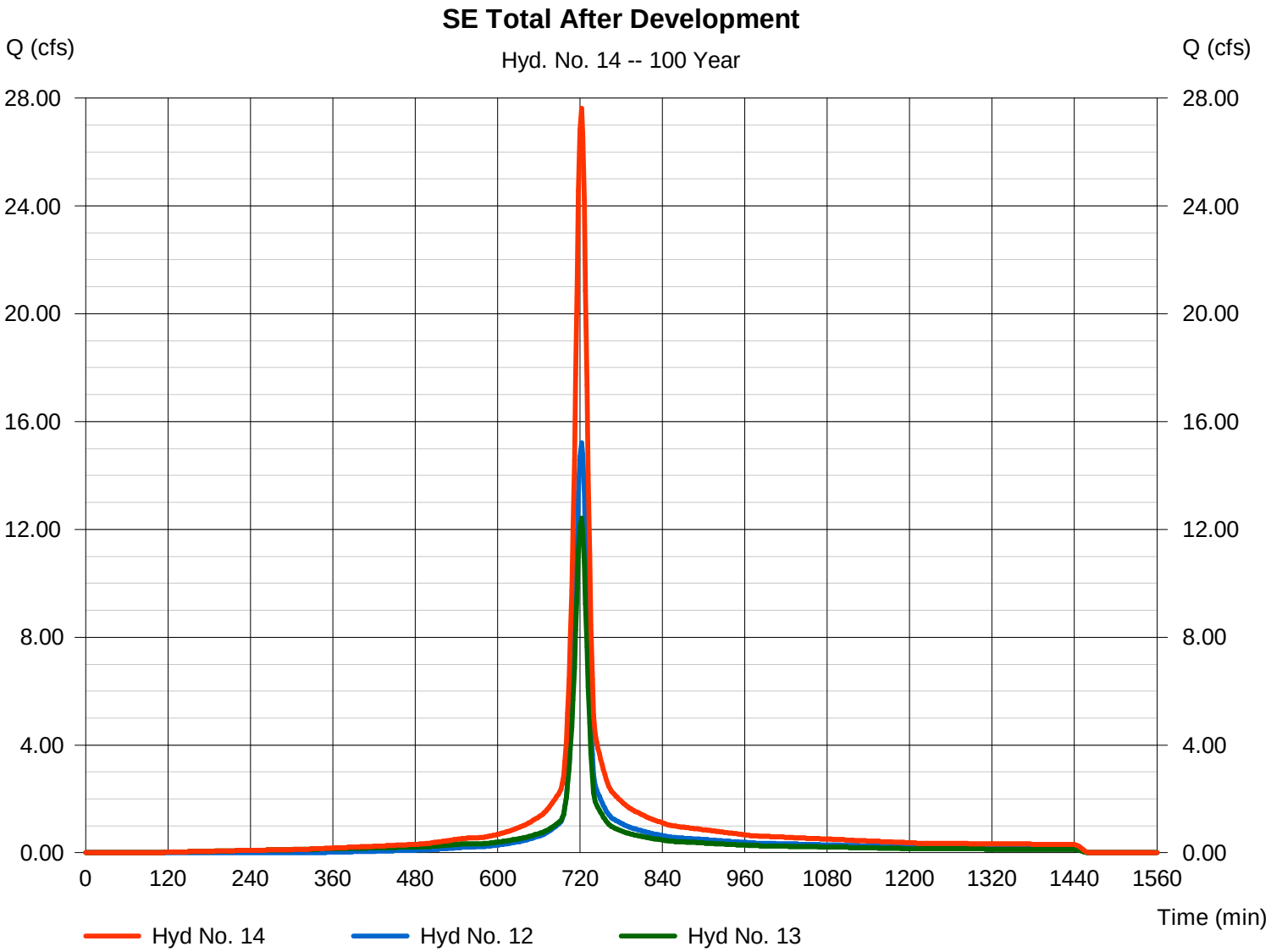


Hydrograph Report

Hyd. No. 14

SE Total After Development

Hydrograph type	= Combine	Peak discharge	= 27.63 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 82,462 cuft
Inflow hyds.	= 12, 13	Contrib. drain. area	= 3.700 ac

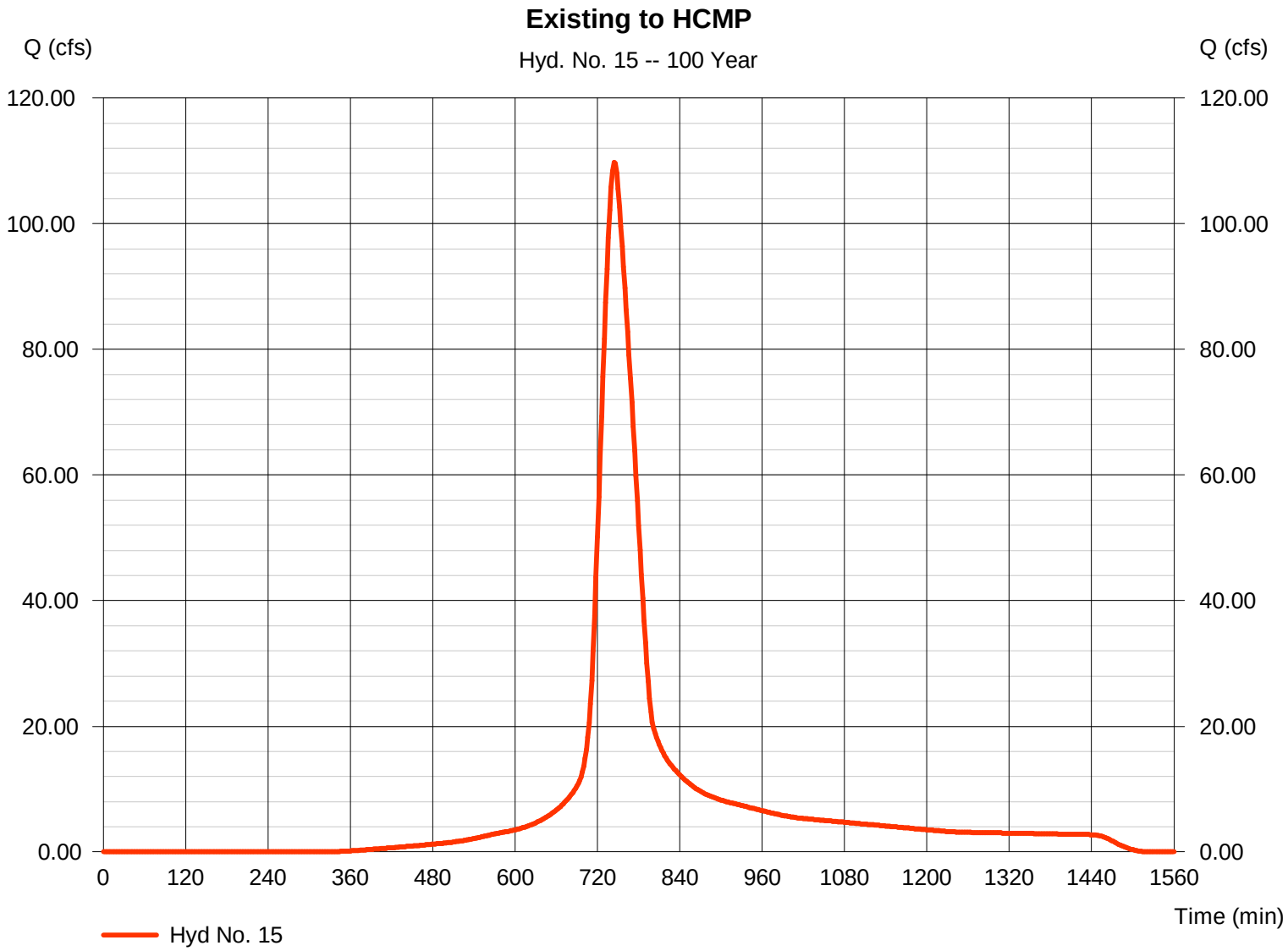


Hydrograph Report

Hyd. No. 15

Existing to HCMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	109.75 cfs
Storm frequency	=	100 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	657,100 cuft
Drainage area	=	32.200 ac	Curve number	=	80
Basin Slope	=	1.2 %	Hydraulic length	=	2100 ft
Tc method	=	LAG	Time of conc. (Tc)	=	52.62 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



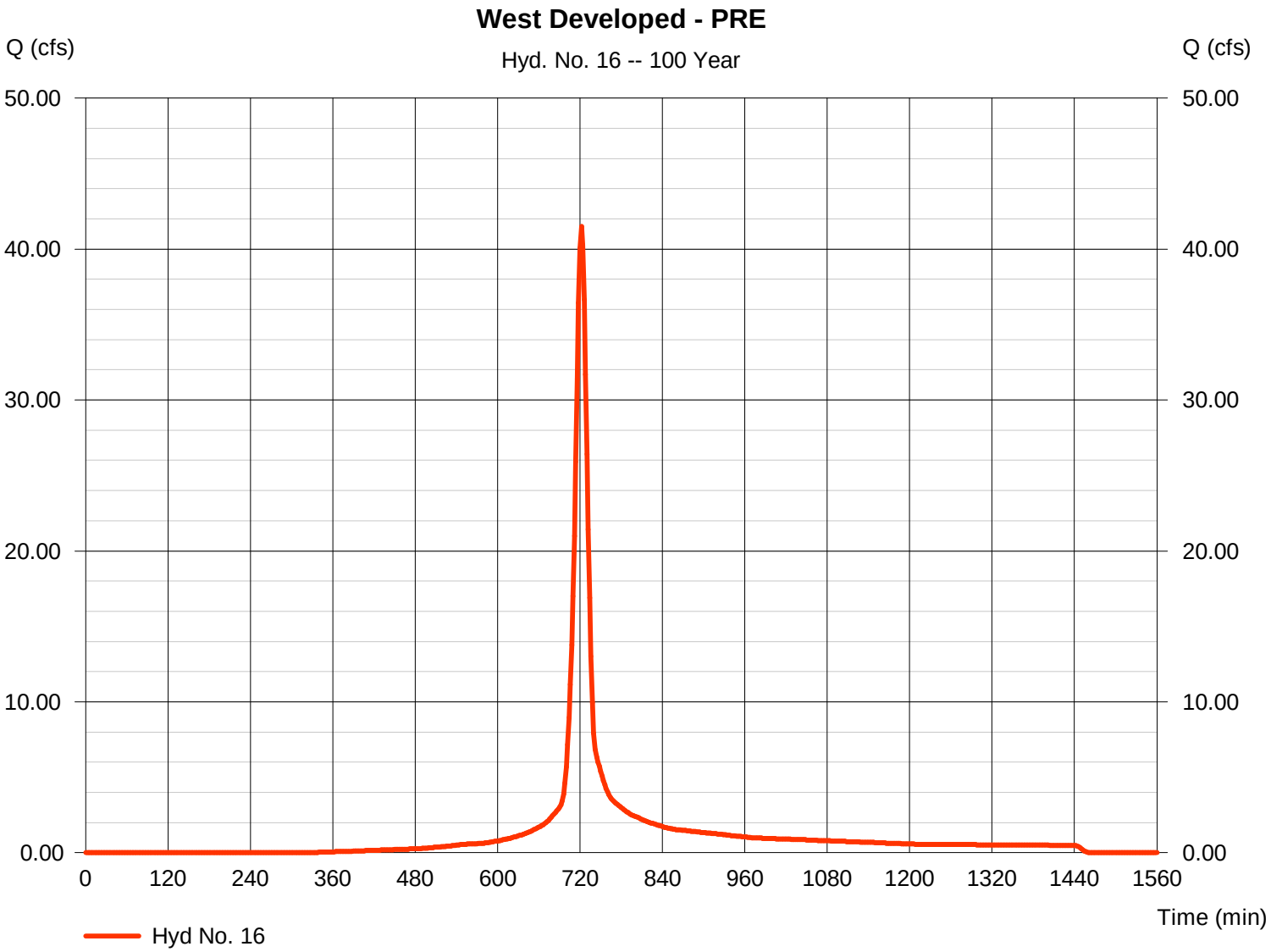
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 16

West Developed - PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	41.49 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	118,455 cuft
Drainage area	=	6.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	7.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

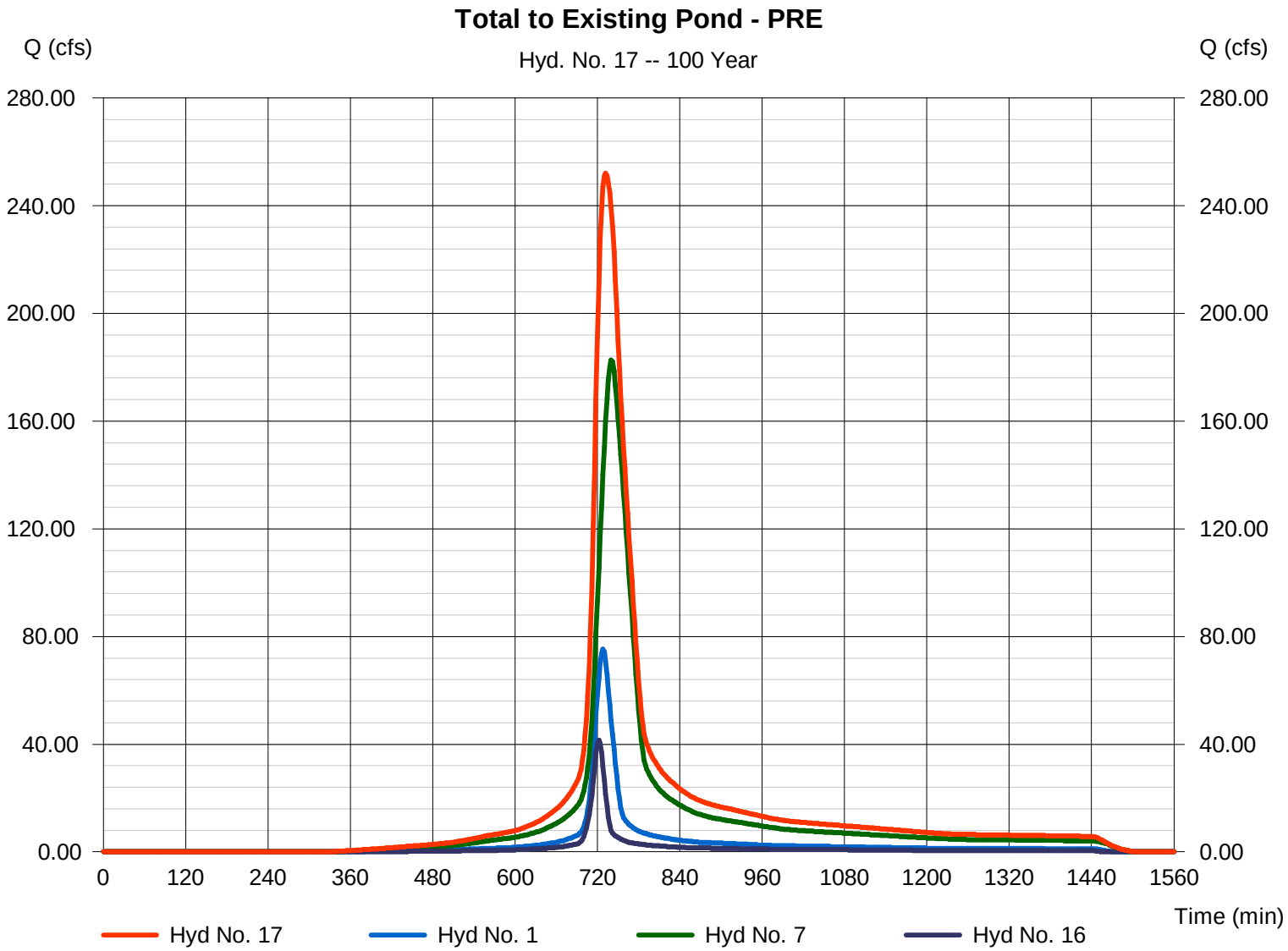


Hydrograph Report

Hyd. No. 17

Total to Existing Pond - PRE

Hydrograph type	= Combine	Peak discharge	= 252.16 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 1,380,831 cuft
Inflow hyds.	= 1, 7, 16	Contrib. drain. area	= 69.000 ac



Hydrograph Report

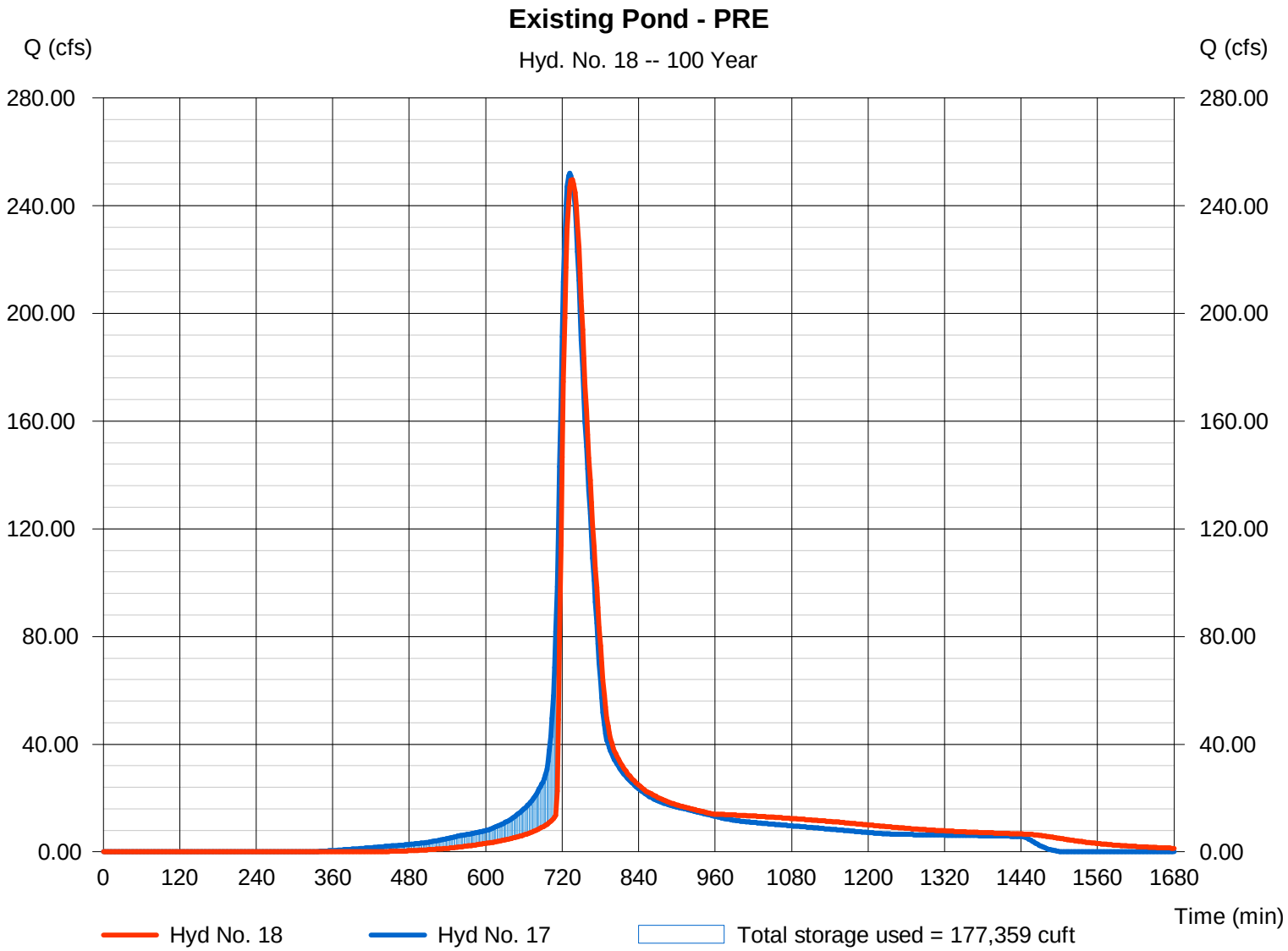
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010

Hyd. No. 18

Existing Pond - PRE

Hydrograph type	=	Reservoir	Peak discharge	=	249.63 cfs
Storm frequency	=	100 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	1,380,675 cuft
Inflow hyd. No.	=	17 - Total to Existing Pond - PRE	Max. Elevation	=	1312.39 ft
Reservoir name	=	Existing West Pond	Max. Storage	=	177,359 cuft

Storage Indication method used.



Hydraflow Rainfall Report

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

File name: wich_IDF.IDF

Intensity = B / (Tc + D)^E

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

Tc = time in minutes. Values may exceed 60.

Precip. file name: Sample.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	2.20	0.00	3.30	4.25	5.77	6.80	7.95
SCS 6-Hr	0.00	1.80	0.00	0.00	2.60	0.00	0.00	4.00
Huff-1st	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	1.75	0.00	2.80	3.90	5.25	6.00	7.10

Hydraflow Table of Contents

Site & Offsite.gpw

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Wednesday, Jul 14, 2010