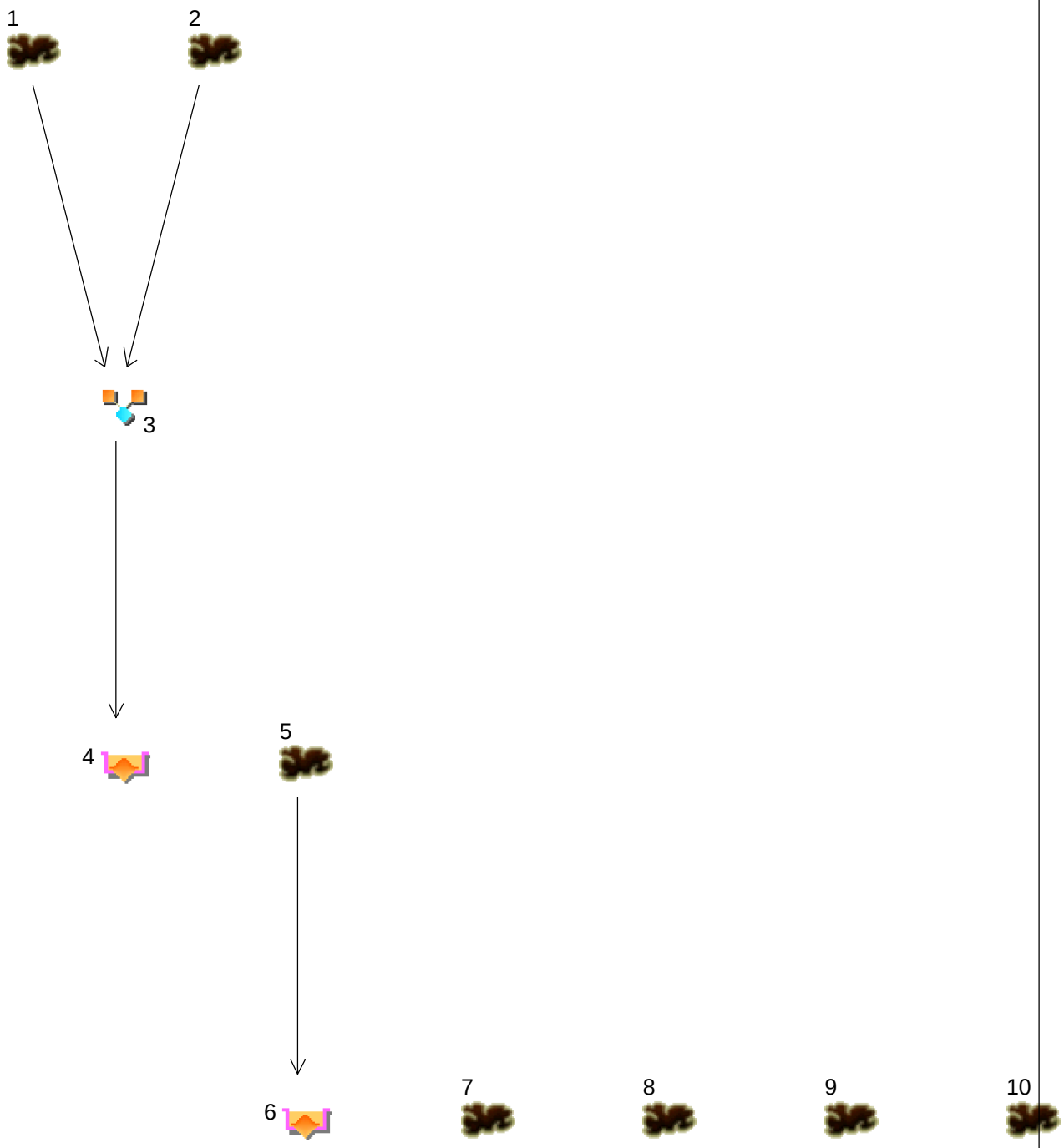
Watershed Model Schematic

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



Hydrograph Summary Report

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

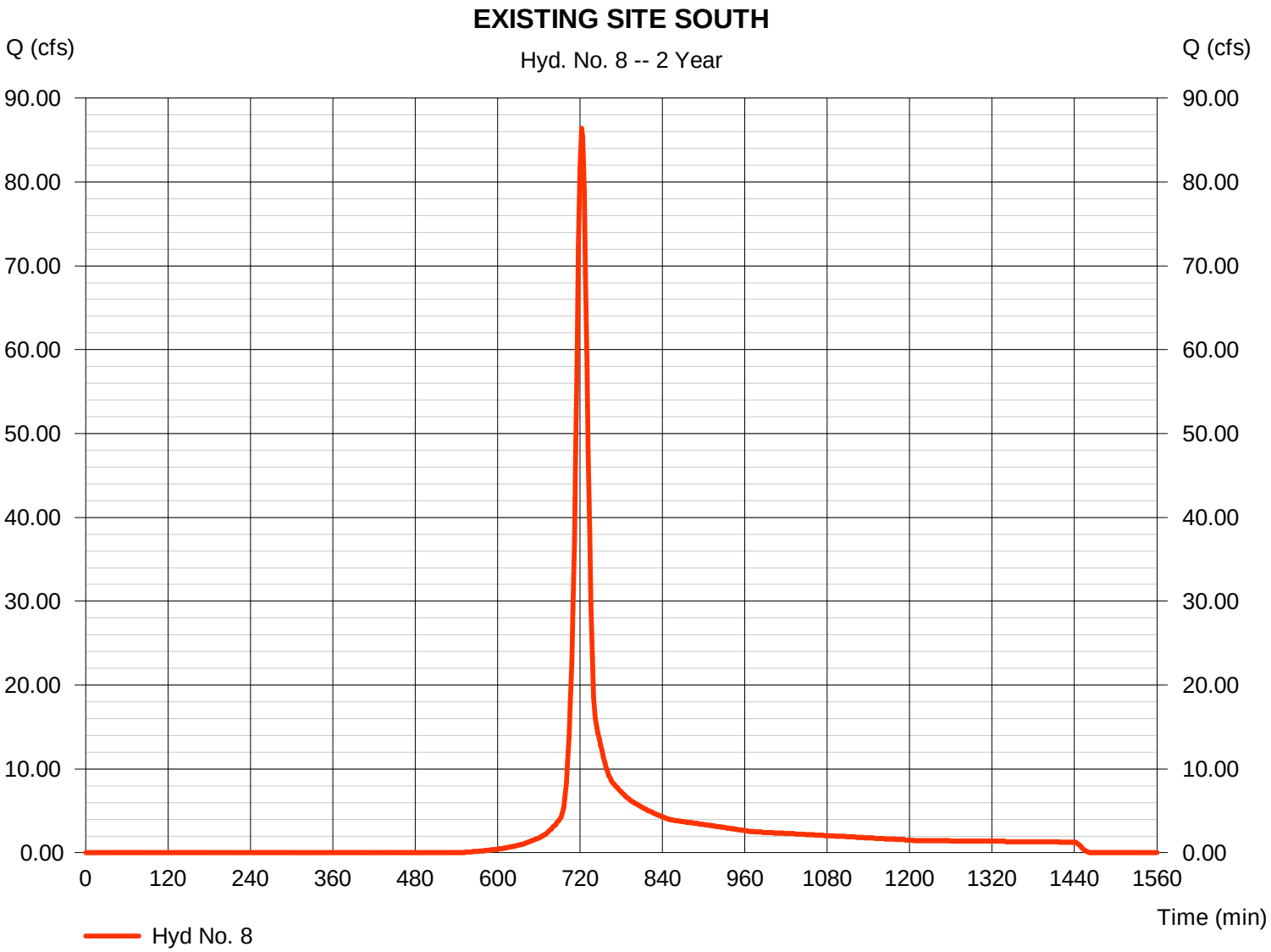
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	22.96	2	744	142,374	------	------	------	West Offsite
2	SCS Runoff	26.81	2	722	75,350	------	------	------	Onsite Developed
3	Combine	37.26	2	724	217,723	1, 2	------	------	<no description>
4	Reservoir	12.14	2	782	217,685	3	1384.38	85,641	<no description>
5	SCS Runoff	57.65	2	722	162,002	------	------	------	South Developed
6	Reservoir	23.25	2	734	161,997	5	1381.50	54,271	<no description>
7	SCS Runoff	28.96	2	724	85,237	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	86.40	2	722	243,243	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	10.56	2	724	33,264	------	------	------	Offsite North Central
10	SCS Runoff	50.82	2	736	233,138	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 8

EXISTING SITE SOUTH

Hydrograph type	=	SCS Runoff	Peak discharge	=	86.40 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	243,243 cuft
Drainage area	=	42.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	3.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

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

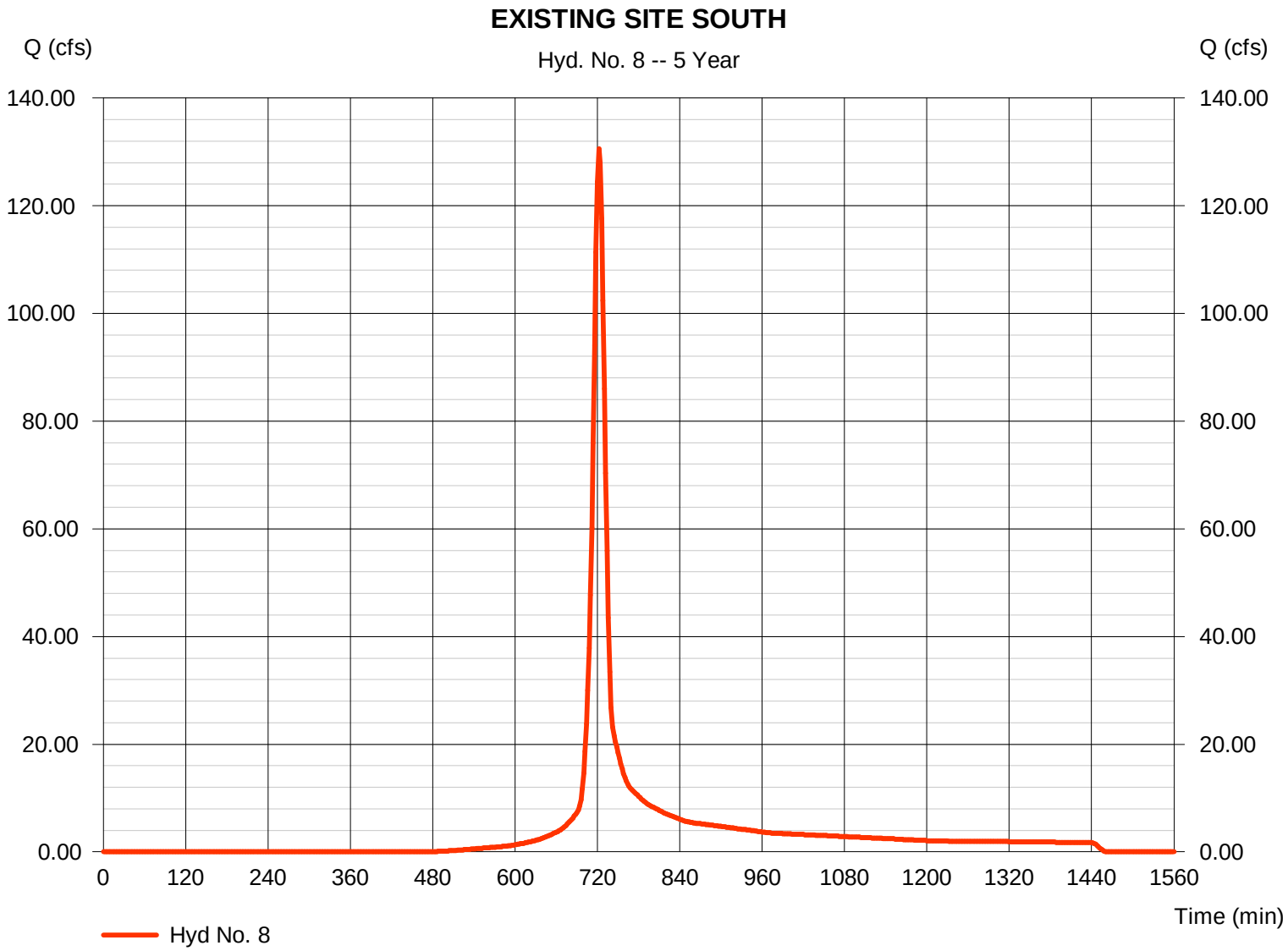
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	53.02	2	744	306,070	------	------	------	West Offsite
2	SCS Runoff	50.43	2	722	141,823	------	------	------	Onsite Developed
3	Combine	77.83	2	724	447,894	1, 2	------	------	<no description>
4	Reservoir	36.92	2	770	447,855	3	1385.10	156,865	<no description>
5	SCS Runoff	108.43	2	722	304,920	------	------	------	South Developed
6	Reservoir	54.17	2	732	304,915	5	1381.87	95,357	<no description>
7	SCS Runoff	64.91	2	722	183,240	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	130.53	2	722	365,904	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	16.00	2	724	50,038	------	------	------	Offsite North Central
10	SCS Runoff	77.24	2	734	350,704	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 8

EXISTING SITE SOUTH

Hydrograph type	=	SCS Runoff	Peak discharge	=	130.53 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	365,904 cuft
Drainage area	=	42.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	4.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

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

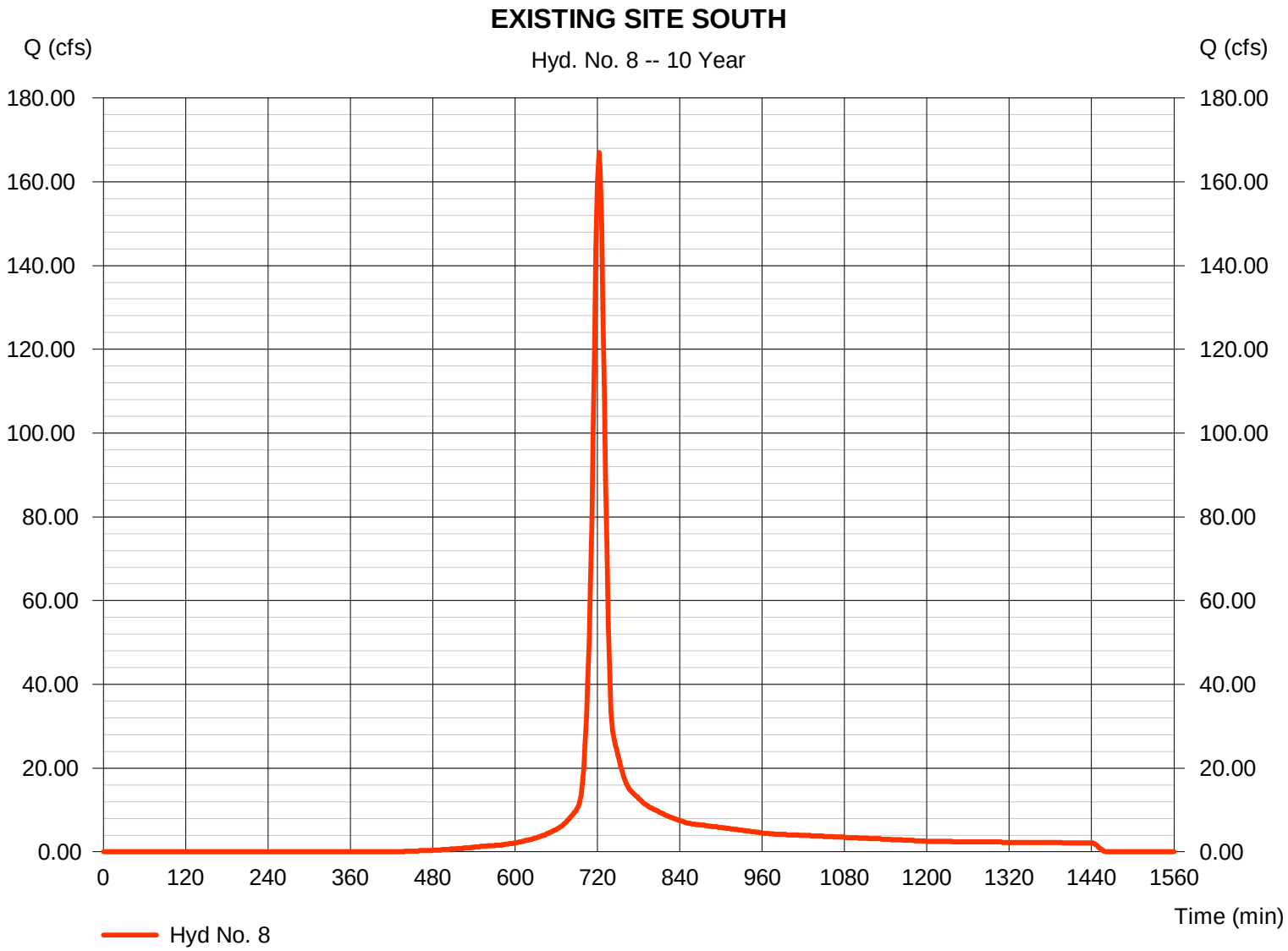
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	81.90	2	744	465,548	------	------	------	West Offsite
2	SCS Runoff	71.48	2	722	202,935	------	------	------	Onsite Developed
3	Combine	115.77	2	724	668,483	1, 2	------	------	<no description>
4	Reservoir	62.65	2	766	668,443	3	1385.67	217,375	<no description>
5	SCS Runoff	153.69	2	722	436,311	------	------	------	South Developed
6	Reservoir	83.64	2	732	436,306	5	1382.17	128,619	<no description>
7	SCS Runoff	99.42	2	722	278,716	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	167.00	2	722	469,159	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	20.51	2	724	64,159	------	------	------	Offsite North Central
10	SCS Runoff	99.28	2	734	449,669	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 8

EXISTING SITE SOUTH

Hydrograph type	=	SCS Runoff	Peak discharge	=	167.00 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	469,159 cuft
Drainage area	=	42.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	5.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

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

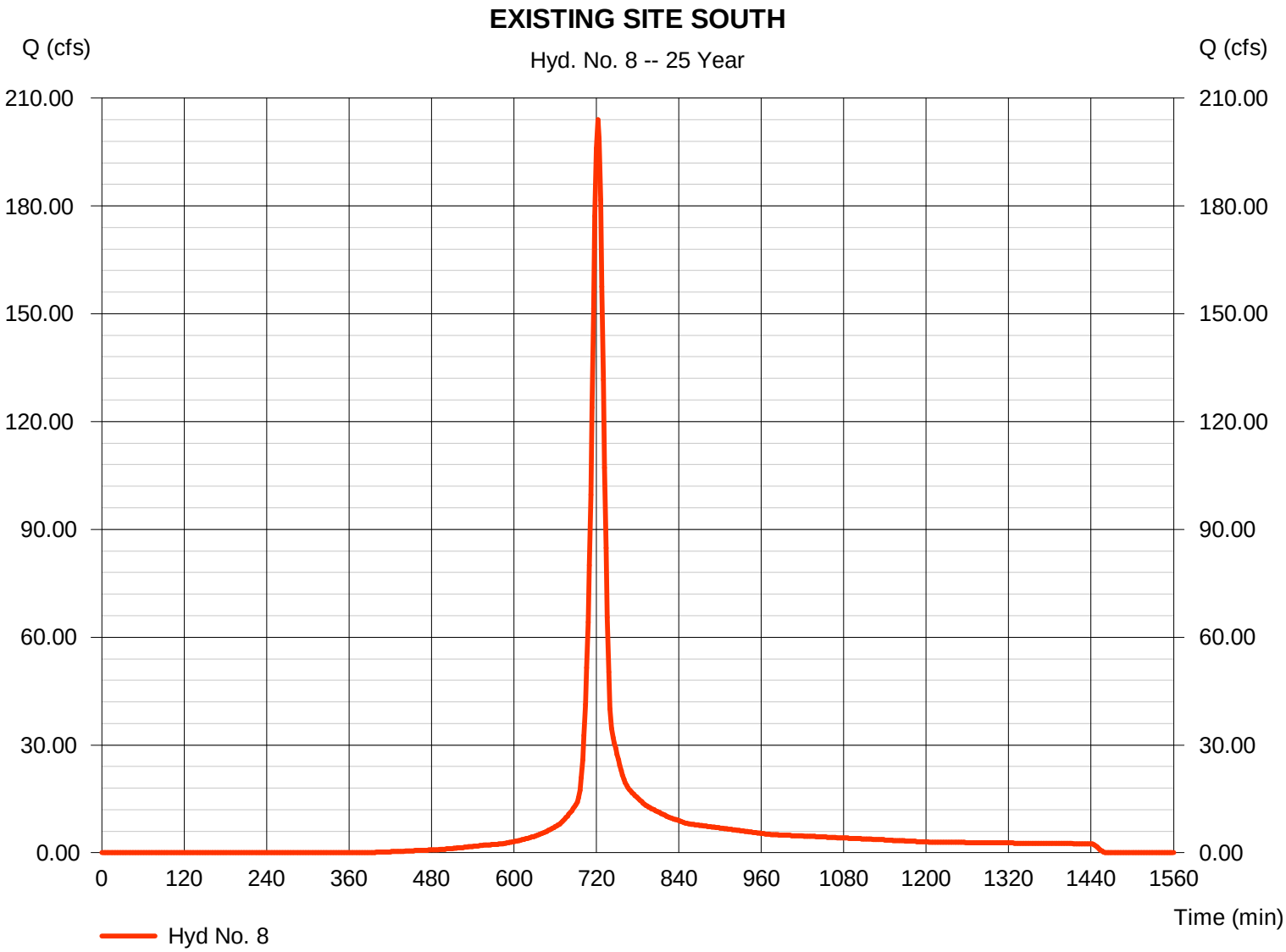
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	130.62	2	742	739,574	------	------	------	West Offsite
2	SCS Runoff	105.37	2	722	304,195	------	------	------	Onsite Developed
3	Combine	178.92	2	724	1,043,769	1, 2	------	------	<no description>
4	Reservoir	103.87	2	762	1,043,731	3	1386.51	314,313	<no description>
5	SCS Runoff	226.54	2	722	654,019	------	------	------	South Developed
6	Reservoir	133.32	2	730	654,014	5	1382.59	178,206	<no description>
7	SCS Runoff	157.25	2	722	442,771	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	204.01	2	722	575,508	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	25.08	2	724	78,702	------	------	------	Offsite North Central
10	SCS Runoff	121.72	2	734	551,601	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 8

EXISTING SITE SOUTH

Hydrograph type	=	SCS Runoff	Peak discharge	=	204.01 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	575,508 cuft
Drainage area	=	42.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	6.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

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

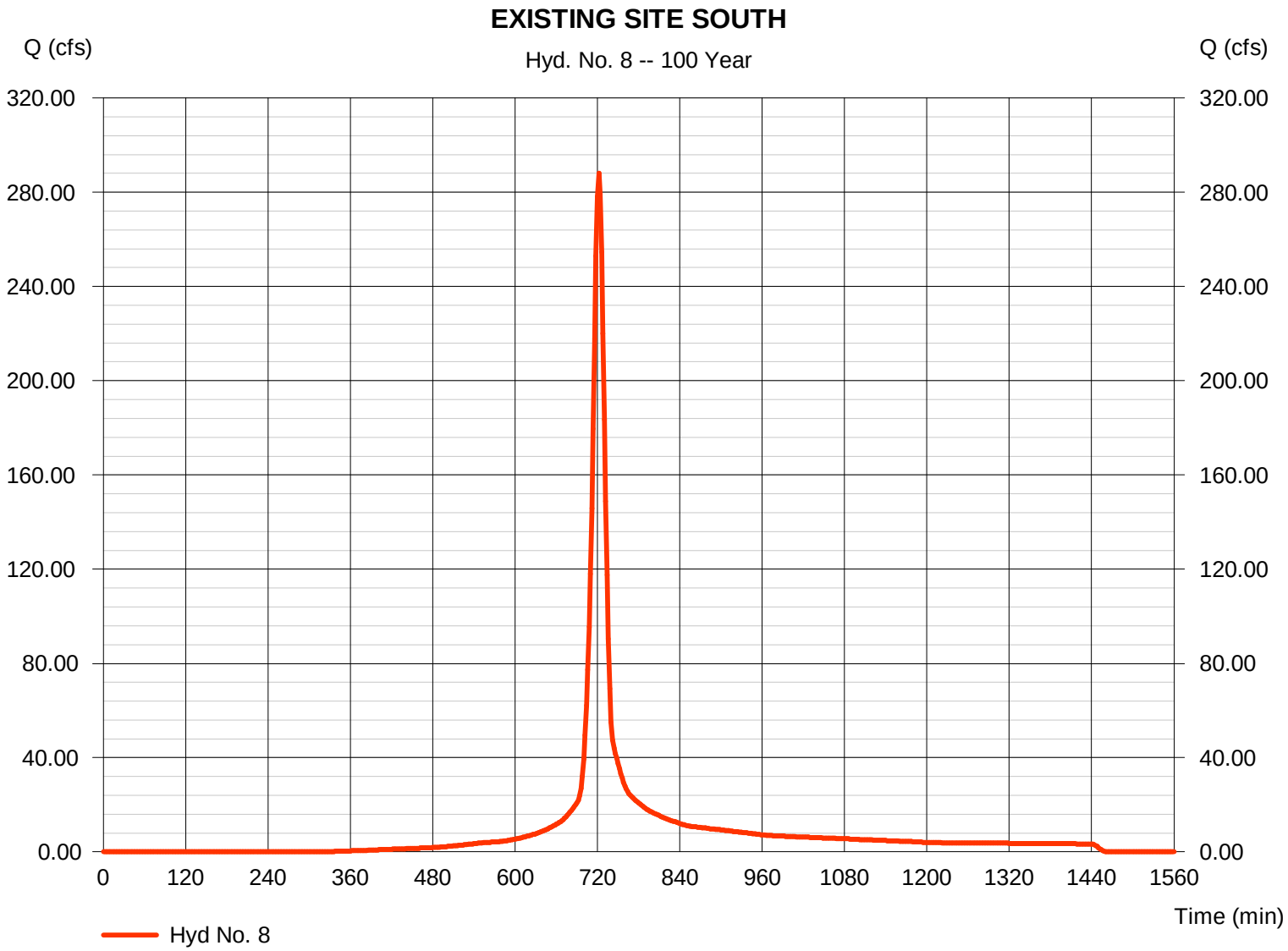
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	202.93	2	742	1,154,173	------	------	------	West Offsite
2	SCS Runoff	153.70	2	722	453,098	------	------	------	Onsite Developed
3	Combine	271.39	2	724	1,607,270	1, 2	------	------	<no description>
4	Reservoir	147.65	2	766	1,607,230	3	1387.79	479,174	<no description>
5	SCS Runoff	330.46	2	722	974,160	------	------	------	South Developed
6	Reservoir	208.45	2	730	974,154	5	1383.14	243,575	<no description>
7	SCS Runoff	242.04	2	722	690,984	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	288.10	2	722	822,220	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	35.49	2	724	112,441	------	------	------	Offsite North Central
10	SCS Runoff	172.87	2	734	788,065	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 8

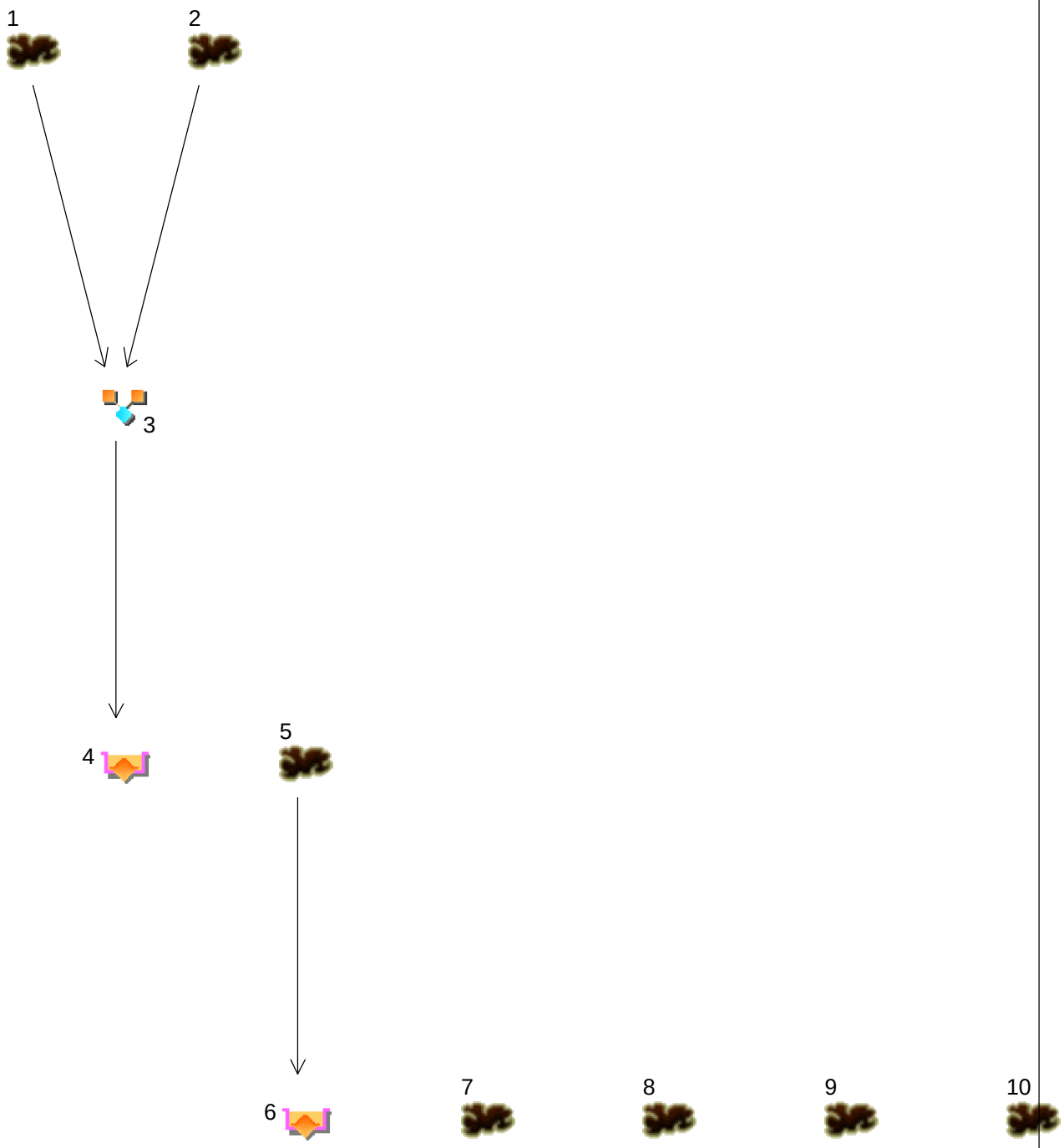
EXISTING SITE SOUTH

Hydrograph type	=	SCS Runoff	Peak discharge	=	288.10 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	822,220 cuft
Drainage area	=	42.000 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	7.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Watershed Model Schematic

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



Hydrograph Summary Report

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

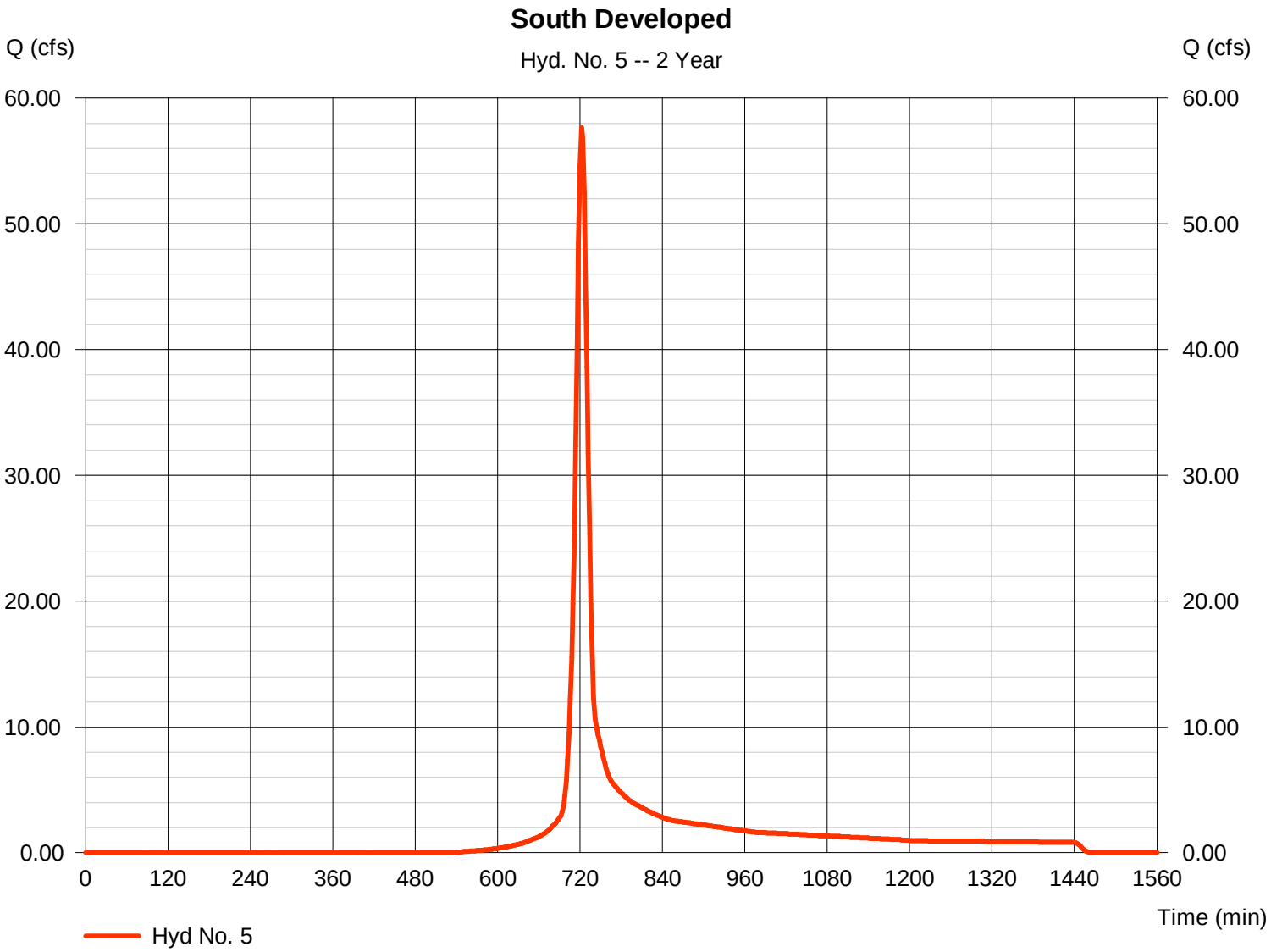
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	22.96	2	744	142,374	------	------	------	West Offsite
2	SCS Runoff	26.81	2	722	75,350	------	------	------	Onsite Developed
3	Combine	37.26	2	724	217,723	1, 2	------	------	<no description>
4	Reservoir	12.14	2	782	217,685	3	1384.38	85,641	<no description>
5	SCS Runoff	57.65	2	722	162,002	------	------	------	South Developed
6	Reservoir	23.25	2	734	161,997	5	1381.50	54,271	<no description>
7	SCS Runoff	28.96	2	724	85,237	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	86.40	2	722	243,243	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	10.56	2	724	33,264	------	------	------	Offsite North Central
10	SCS Runoff	50.82	2	736	233,138	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 5

South Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	57.65 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	162,002 cuft
Drainage area	=	43.000 ac	Curve number	=	87
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	3.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



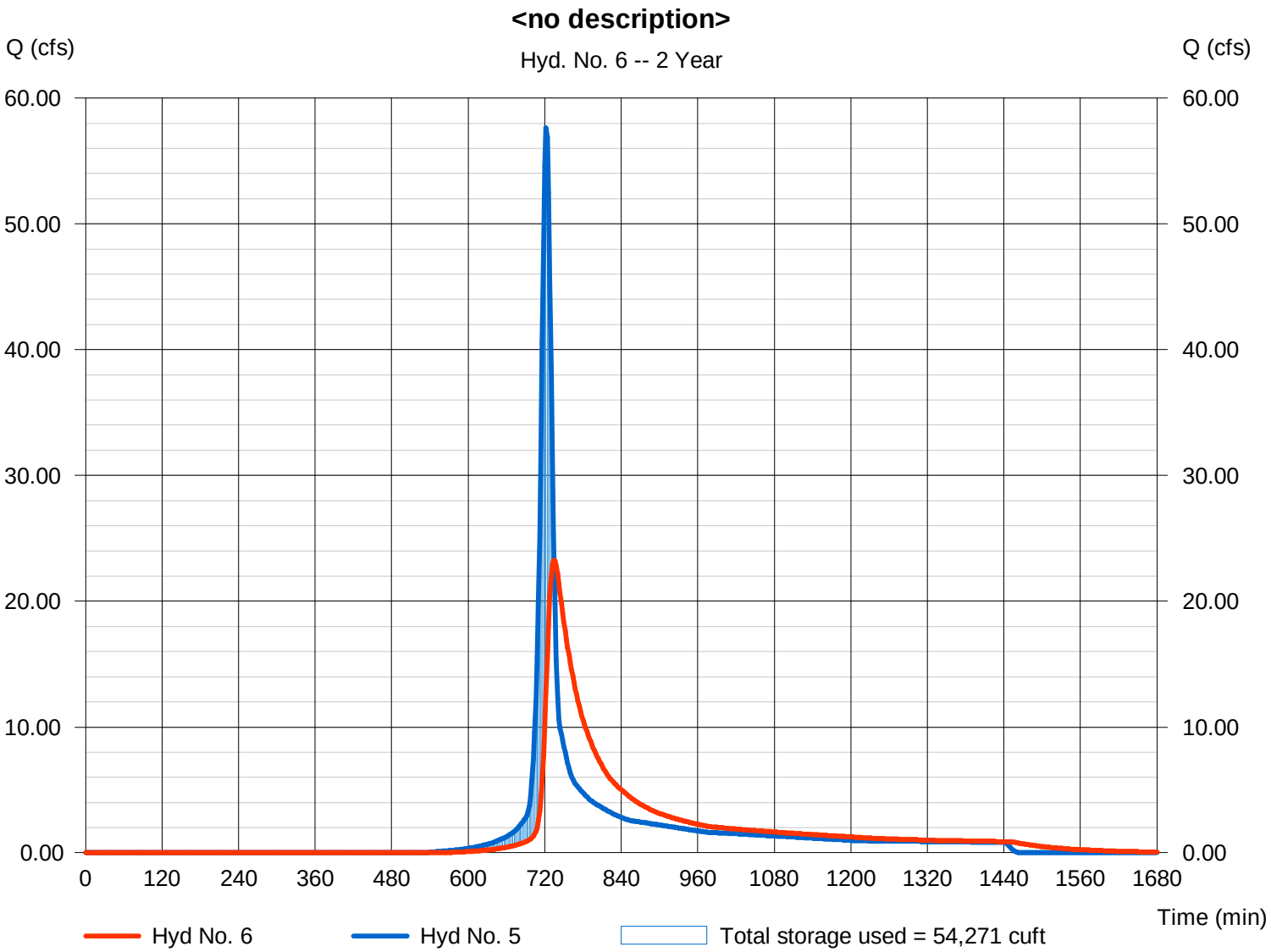
Hydrograph Report

Hyd. No. 6

<no description>

Hydrograph type	=	Reservoir	Peak discharge	=	23.25 cfs
Storm frequency	=	2 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	161,997 cuft
Inflow hyd. No.	=	5 - South Developed	Max. Elevation	=	1381.50 ft
Reservoir name	=	SOUTH POND	Max. Storage	=	54,271 cuft

Storage Indication method used.



Pond Report

Pond No. 2 - SOUTH POND

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 1381.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1381.00	106,000	0	0
1.00	1382.00	113,100	109,520	109,520
2.00	1383.00	120,500	116,769	226,289
3.00	1384.00	127,500	123,971	350,260

Culvert / Orifice Structures

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

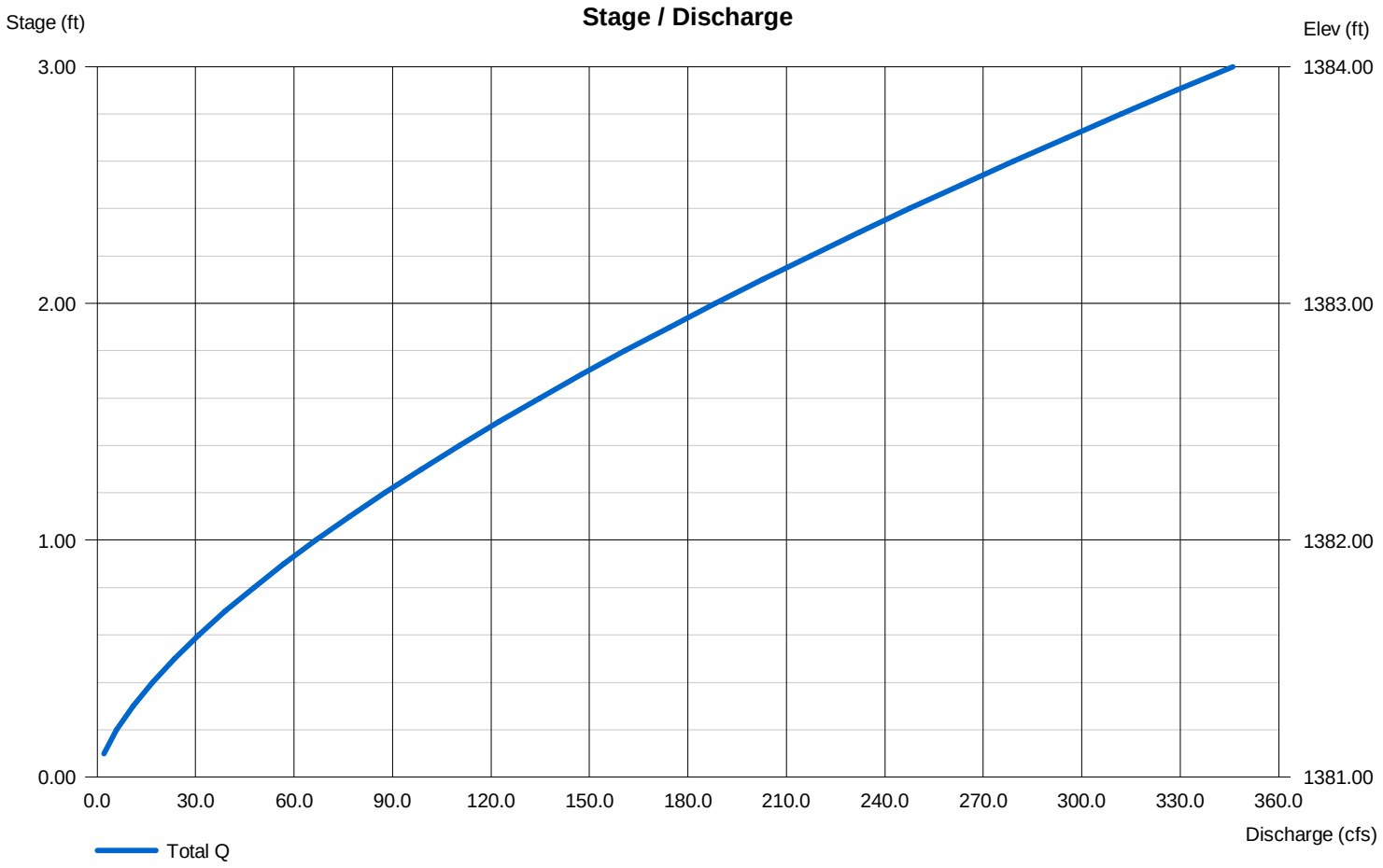
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 20.00	0.00	0.00	0.00
Crest El. (ft)	= 1381.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Ciplti	---	---	---
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

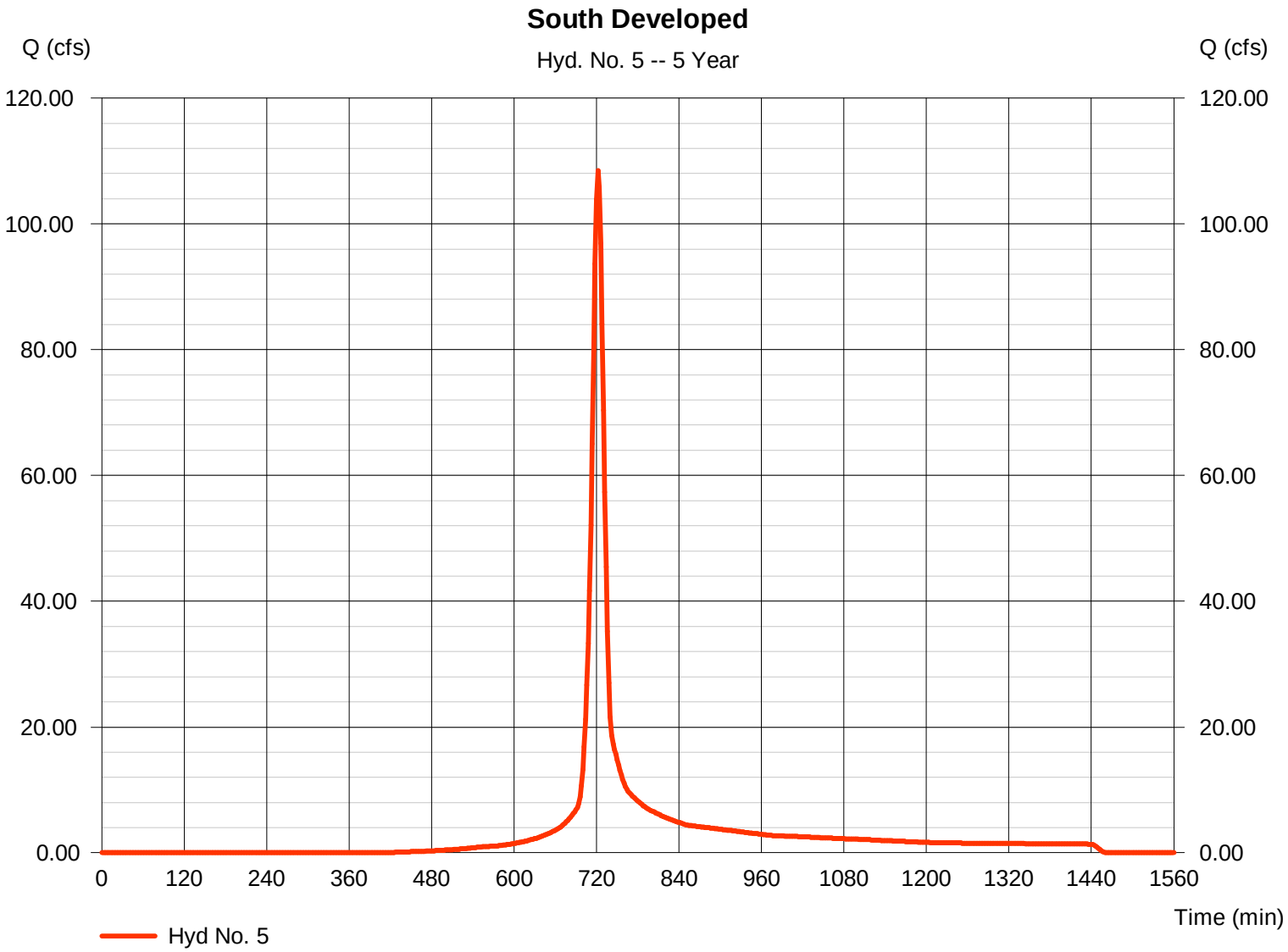
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	53.02	2	744	306,070	------	------	------	West Offsite
2	SCS Runoff	50.43	2	722	141,823	------	------	------	Onsite Developed
3	Combine	77.83	2	724	447,894	1, 2	------	------	<no description>
4	Reservoir	36.92	2	770	447,855	3	1385.10	156,865	<no description>
5	SCS Runoff	108.43	2	722	304,920	------	------	------	South Developed
6	Reservoir	54.17	2	732	304,915	5	1381.87	95,357	<no description>
7	SCS Runoff	64.91	2	722	183,240	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	130.53	2	722	365,904	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	16.00	2	724	50,038	------	------	------	Offsite North Central
10	SCS Runoff	77.24	2	734	350,704	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 5

South Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	108.43 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	304,920 cuft
Drainage area	=	43.000 ac	Curve number	=	87
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	4.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



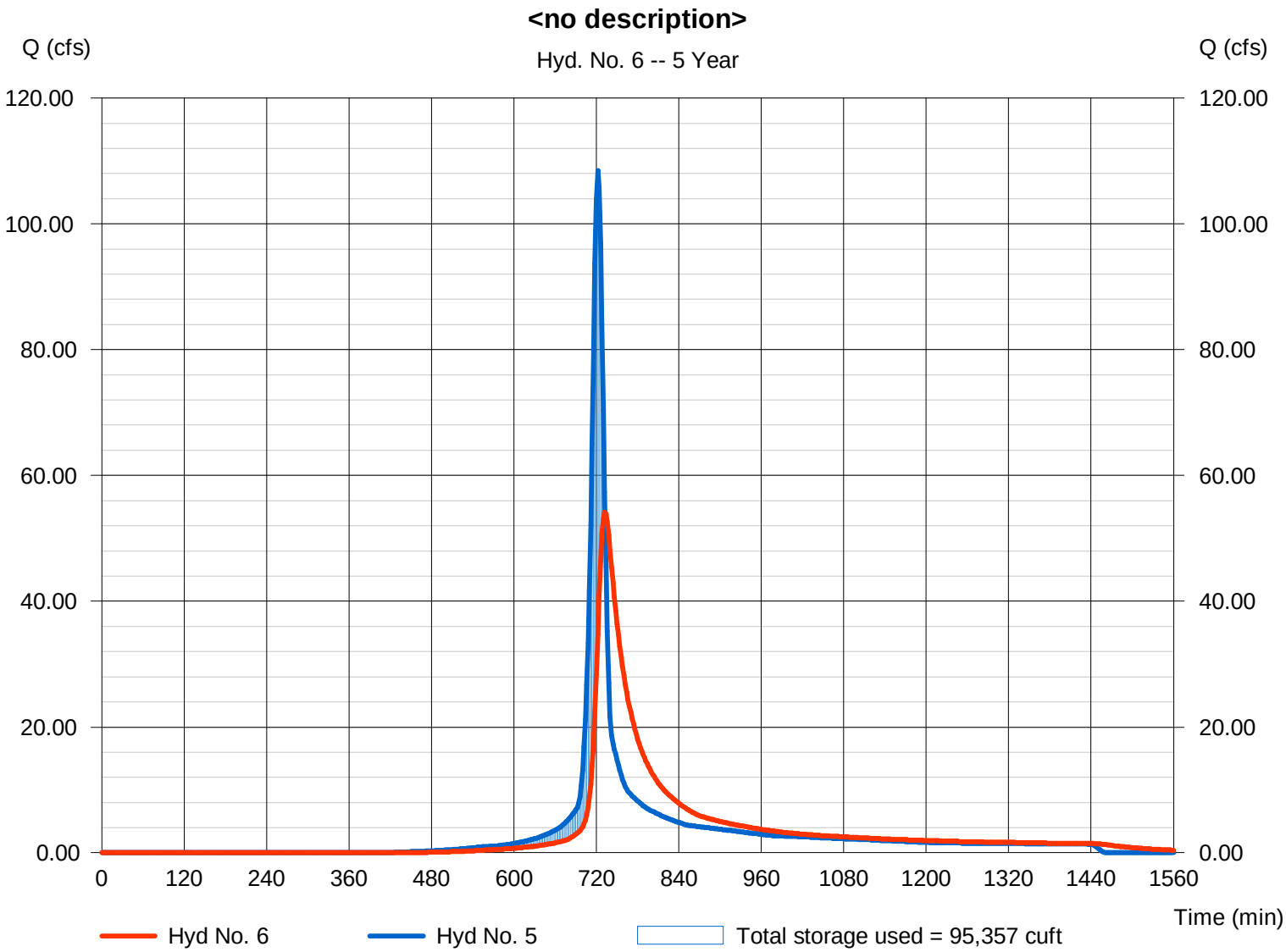
Hydrograph Report

Hyd. No. 6

<no description>

Hydrograph type	=	Reservoir	Peak discharge	=	54.17 cfs
Storm frequency	=	5 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	304,915 cuft
Inflow hyd. No.	=	5 - South Developed	Max. Elevation	=	1381.87 ft
Reservoir name	=	SOUTH POND	Max. Storage	=	95,357 cuft

Storage Indication method used.



Hydrograph Summary Report

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

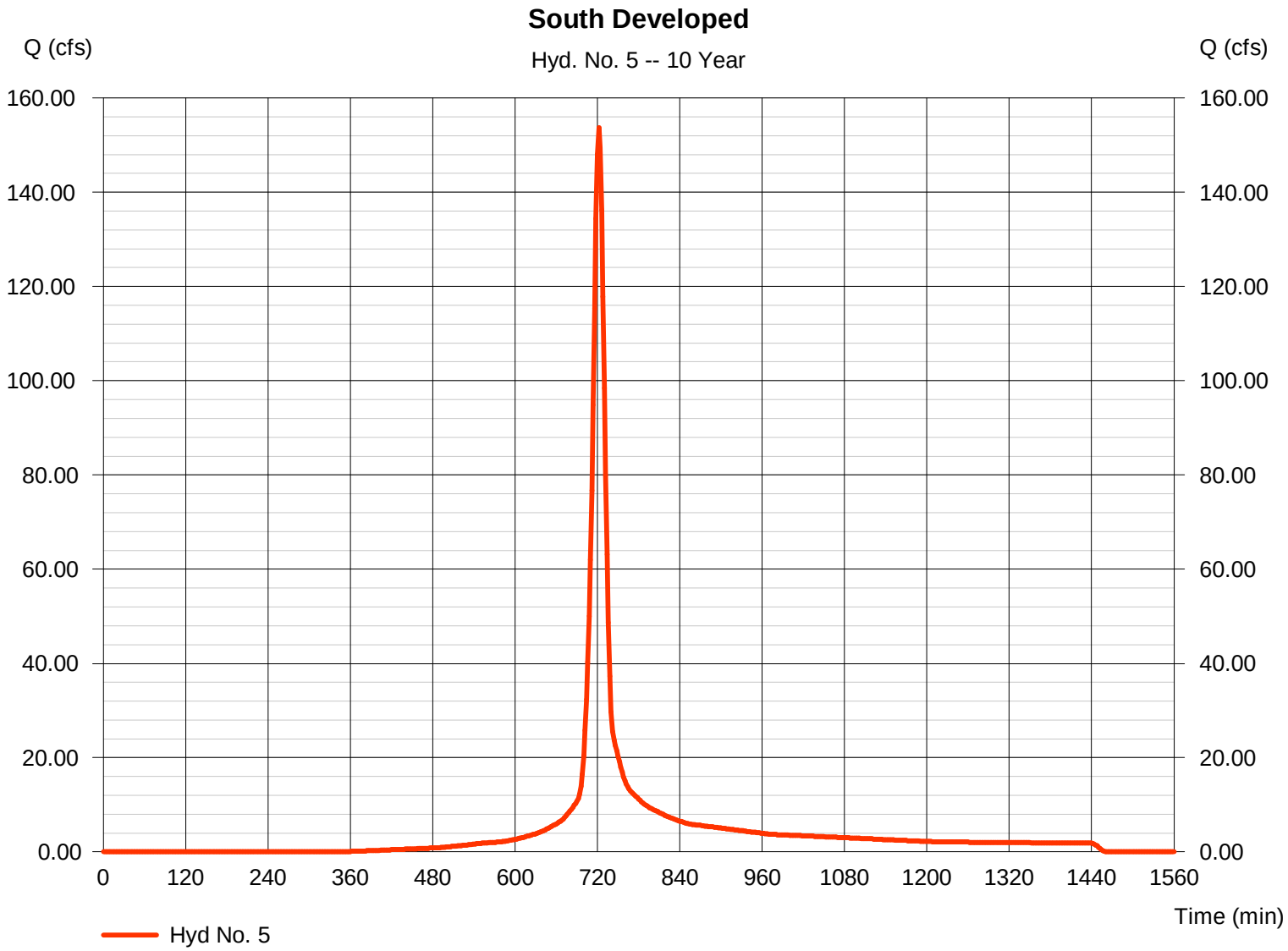
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	81.90	2	744	465,548	------	------	------	West Offsite
2	SCS Runoff	71.48	2	722	202,935	------	------	------	Onsite Developed
3	Combine	115.77	2	724	668,483	1, 2	------	------	<no description>
4	Reservoir	62.65	2	766	668,443	3	1385.67	217,375	<no description>
5	SCS Runoff	153.69	2	722	436,311	------	------	------	South Developed
6	Reservoir	83.64	2	732	436,306	5	1382.17	128,619	<no description>
7	SCS Runoff	99.42	2	722	278,716	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	167.00	2	722	469,159	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	20.51	2	724	64,159	------	------	------	Offsite North Central
10	SCS Runoff	99.28	2	734	449,669	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 5

South Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	153.69 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	436,311 cuft
Drainage area	=	43.000 ac	Curve number	=	87
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	5.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



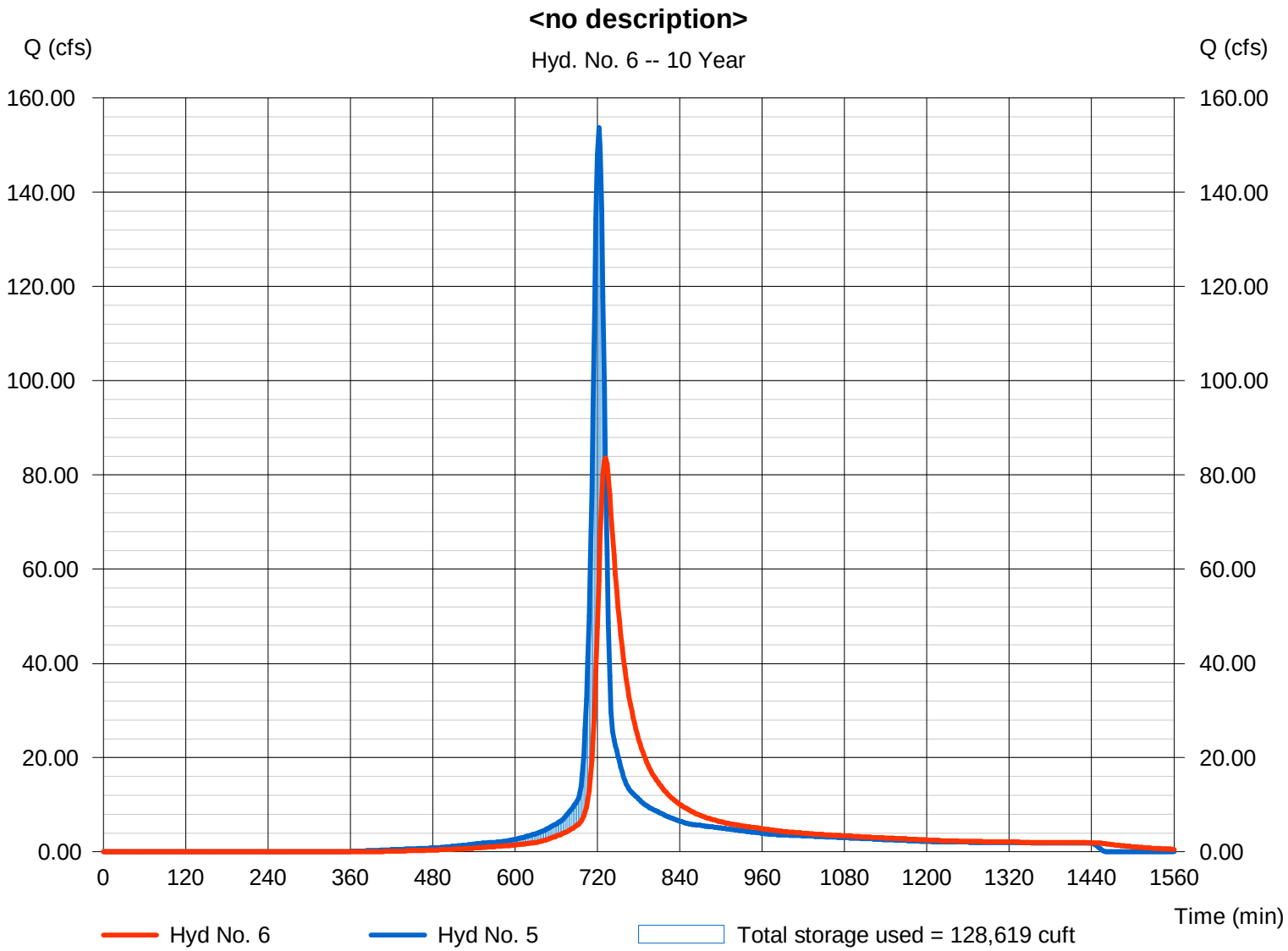
Hydrograph Report

Hyd. No. 6

<no description>

Hydrograph type	=	Reservoir	Peak discharge	=	83.64 cfs
Storm frequency	=	10 yrs	Time to peak	=	732 min
Time interval	=	2 min	Hyd. volume	=	436,306 cuft
Inflow hyd. No.	=	5 - South Developed	Max. Elevation	=	1382.17 ft
Reservoir name	=	SOUTH POND	Max. Storage	=	128,619 cuft

Storage Indication method used.



Hydrograph Summary Report

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

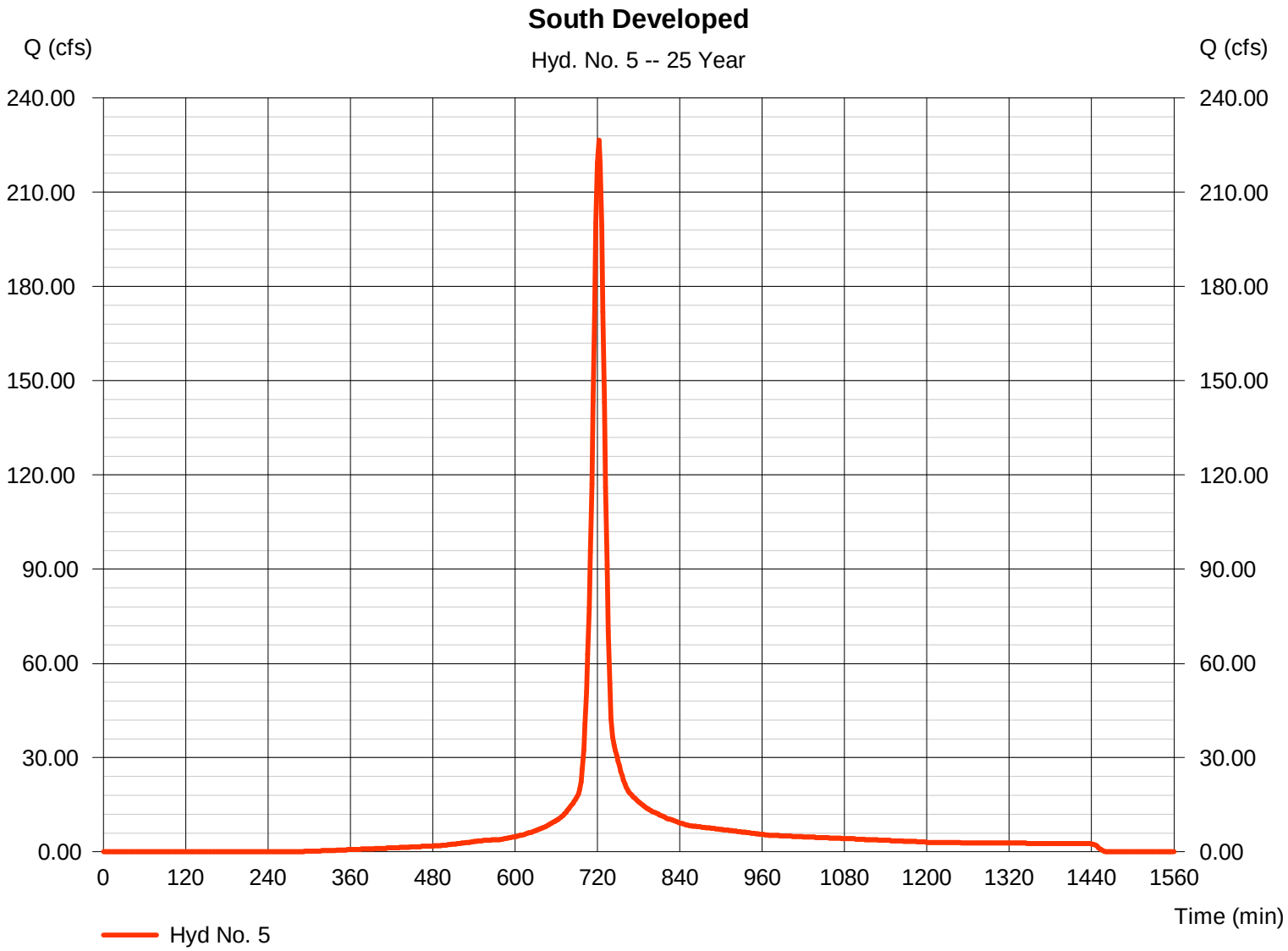
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	130.62	2	742	739,574	------	------	------	West Offsite
2	SCS Runoff	105.37	2	722	304,195	------	------	------	Onsite Developed
3	Combine	178.92	2	724	1,043,769	1, 2	------	------	<no description>
4	Reservoir	103.87	2	762	1,043,731	3	1386.51	314,313	<no description>
5	SCS Runoff	226.54	2	722	654,019	------	------	------	South Developed
6	Reservoir	133.32	2	730	654,014	5	1382.59	178,206	<no description>
7	SCS Runoff	157.25	2	722	442,771	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	204.01	2	722	575,508	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	25.08	2	724	78,702	------	------	------	Offsite North Central
10	SCS Runoff	121.72	2	734	551,601	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 5

South Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	226.54 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	654,019 cuft
Drainage area	=	43.000 ac	Curve number	=	87
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	6.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



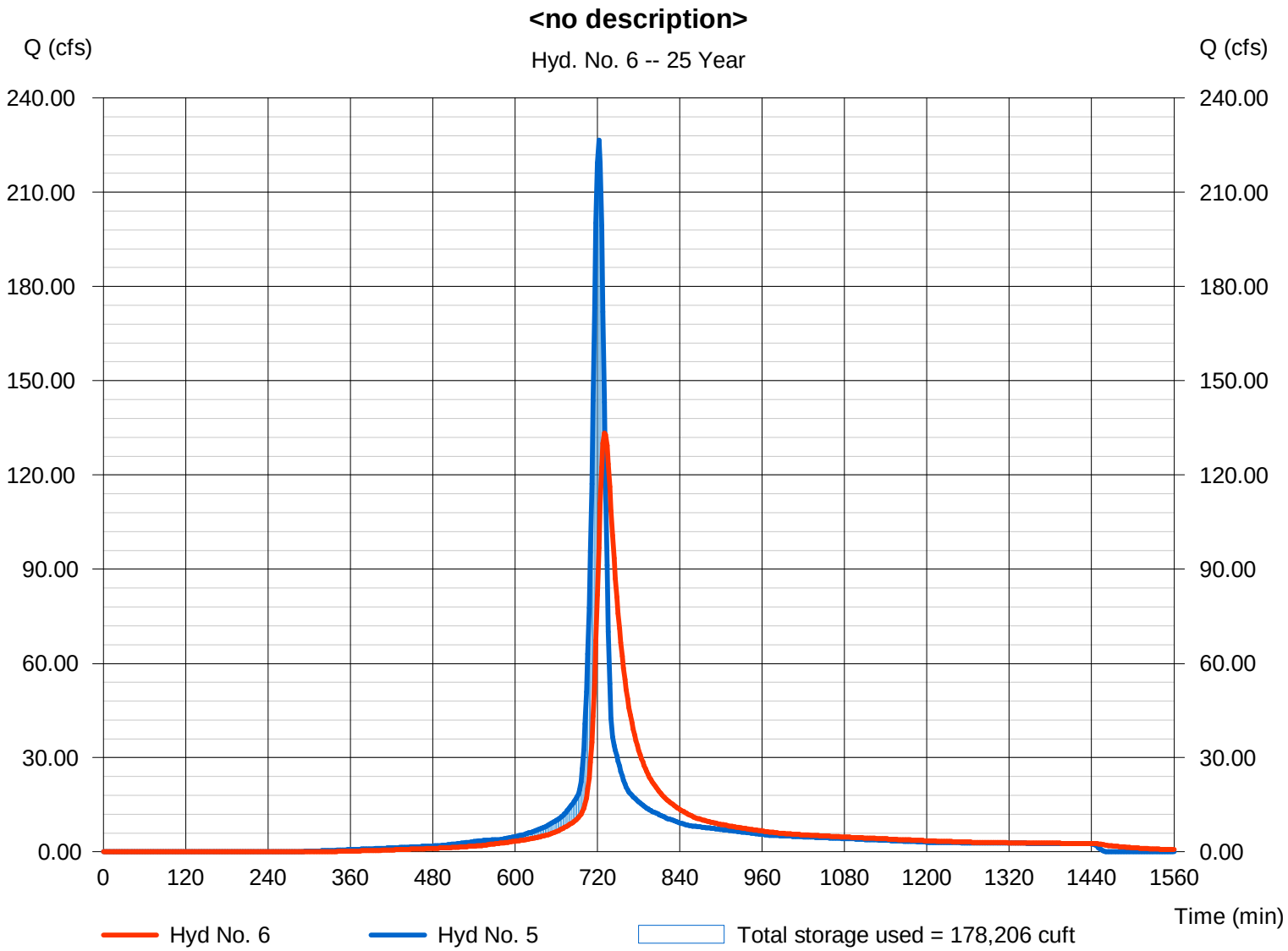
Hydrograph Report

Hyd. No. 6

<no description>

Hydrograph type	=	Reservoir	Peak discharge	=	133.32 cfs
Storm frequency	=	25 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	654,014 cuft
Inflow hyd. No.	=	5 - South Developed	Max. Elevation	=	1382.59 ft
Reservoir name	=	SOUTH POND	Max. Storage	=	178,206 cuft

Storage Indication method used.



Hydrograph Summary Report

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

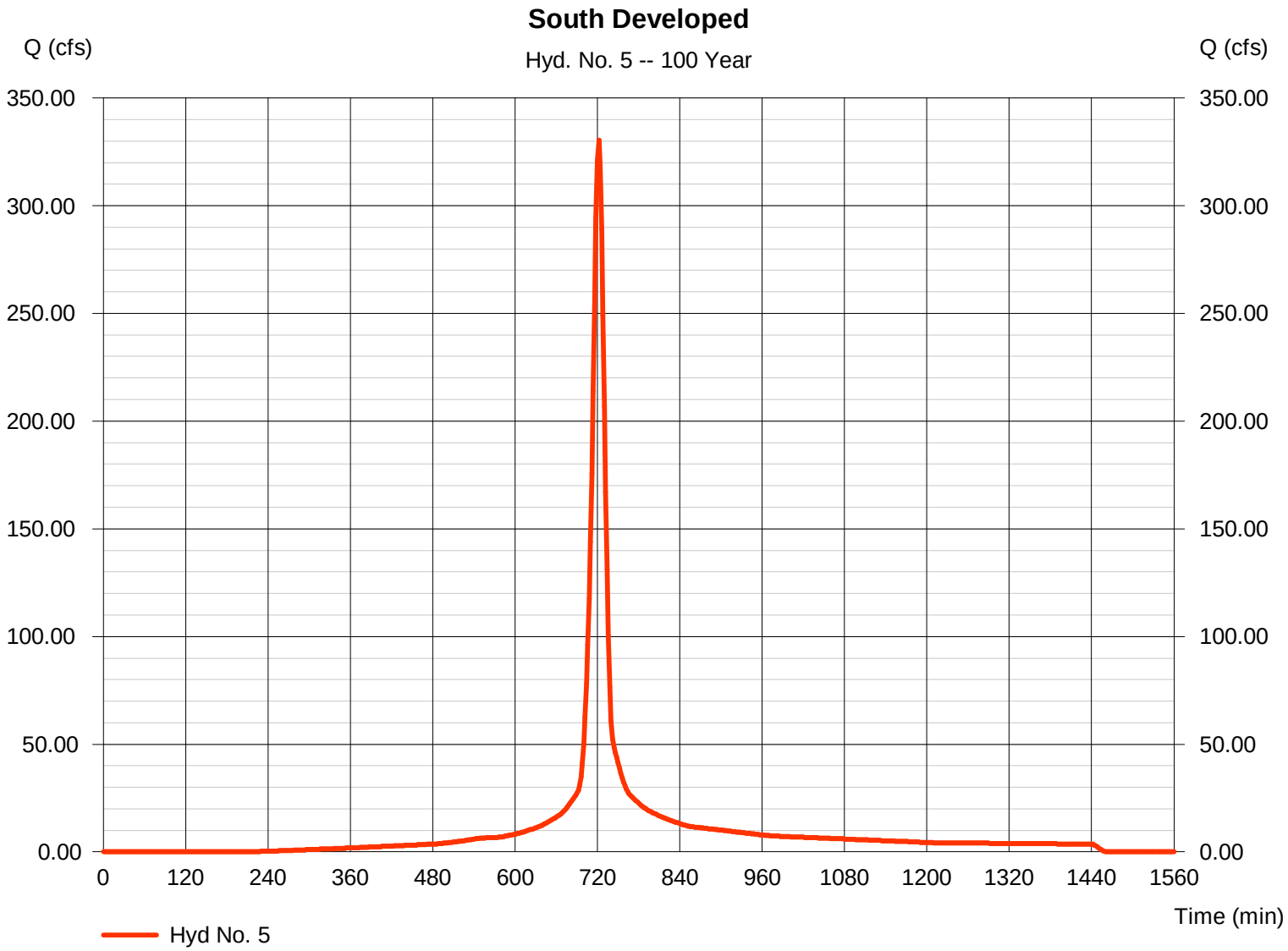
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	202.93	2	742	1,154,173	------	------	------	West Offsite
2	SCS Runoff	153.70	2	722	453,098	------	------	------	Onsite Developed
3	Combine	271.39	2	724	1,607,270	1, 2	------	------	<no description>
4	Reservoir	147.65	2	766	1,607,230	3	1387.79	479,174	<no description>
5	SCS Runoff	330.46	2	722	974,160	------	------	------	South Developed
6	Reservoir	208.45	2	730	974,154	5	1383.14	243,575	<no description>
7	SCS Runoff	242.04	2	722	690,984	------	------	------	EXISTING SITE NORTH
8	SCS Runoff	288.10	2	722	822,220	------	------	------	EXISTING SITE SOUTH
9	SCS Runoff	35.49	2	724	112,441	------	------	------	Offsite North Central
10	SCS Runoff	172.87	2	734	788,065	------	------	------	Offsite North East

Hydrograph Report

Hyd. No. 5

South Developed

Hydrograph type	=	SCS Runoff	Peak discharge	=	330.46 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	974,160 cuft
Drainage area	=	43.000 ac	Curve number	=	87
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	15.00 min
Total precip.	=	7.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hyd. No. 6

<no description>

Hydrograph type	=	Reservoir	Peak discharge	=	208.45 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	974,154 cuft
Inflow hyd. No.	=	5 - South Developed	Max. Elevation	=	1383.14 ft
Reservoir name	=	SOUTH POND	Max. Storage	=	243,575 cuft

Storage Indication method used.