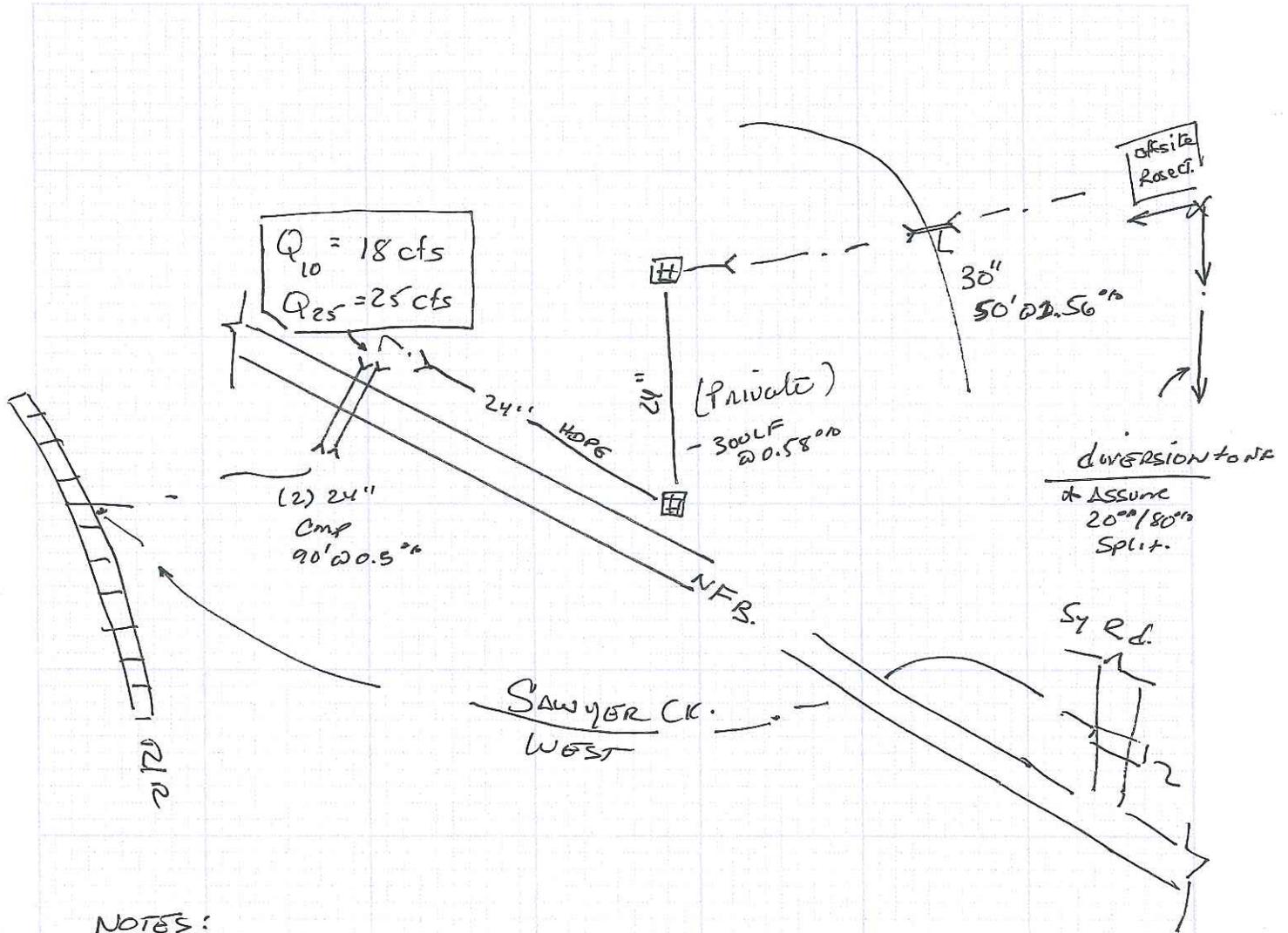


Attachment 4

Sawyer Creek West



Client _____ Job Number 631140 Sheet _____ of _____
 Project Wheatfield Drainage Sheets by _____ Date _____
 Subject Sawyer Cr. West Tributary Rev. Checked by _____ Date _____



NOTES:

- 1) 20/80 split assumed @ Rose Ct. Rear yard.
- 2) Twin 24" Capacity (25 year event) / NO OVER TOPPING @ NF under 100 yr.
- 3) 30" @ OLD FALLS Blvd. has adequate CAP to carry to 25 yr. storm.
- 4) * 24" private storm has limited capacity (5-10 yr.)
 - A Restriction



Client _____ Job Number _____ Sheet _____ of _____
Project _____ Sheets by _____ Date _____
Subject Sawyer Creek west. Checked by _____ Date _____

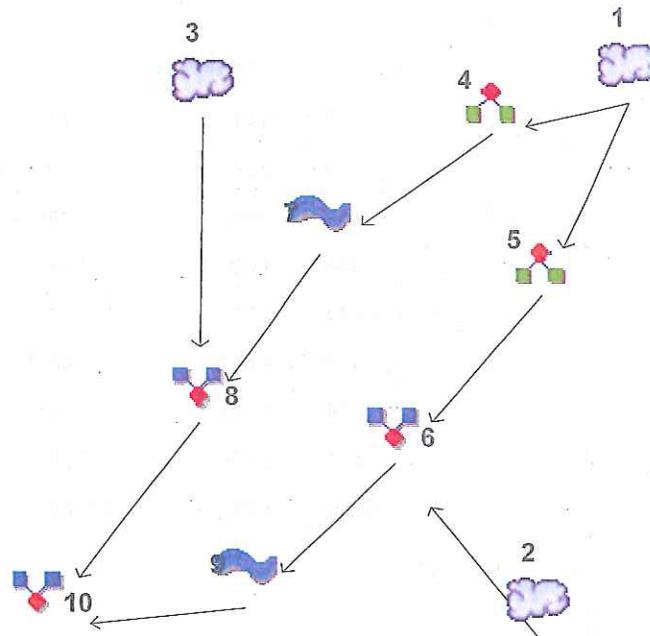
SWA - 1 (TRIB) DIVERSION	ROSE CR.	10	25	100
SWA - 1 (TRIB)	NIAGARA FALLS BLD.	3 9 18	4 14 25	6 25 42
SWA	WALMORE	52	76	130 ds

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Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3



Legend

<u>Hvd. Origin</u>	<u>Description</u>
1	SCS Runoff SWA-1 trib (SW-A1)
2	SCS Runoff SWA (SW-A3)
3	SCS Runoff SWA-1 (SW-A2)
4	Diversion1 SWA-1 (Rose Court)
5	Diversion2 SWA (Niagara Fall Blvd.)
6	Combine SWA (SY Rd)
7	Reach SWA-1
8	Combine <no description>
9	Reach SWA
10	Combine SWA (Walmore)

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

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	----	-----	-----	-----	-----	-----	11.96	17.75	-----	30.68	SWA-1 trib (SW-A1)
2	SCS Runoff	-----	-----	-----	-----	-----	-----	33.09	49.62	-----	86.98	SWA (SW-A3)
3	SCS Runoff	-----	-----	-----	-----	-----	-----	15.39	22.04	-----	36.39	SWA-1 (SW-A2)
4	Diversion1	1	-----	-----	-----	-----	-----	2.391	3.550	-----	6.135	SWA-1 (Rose Court)
5	Diversion2	1	-----	-----	-----	-----	-----	9.564	14.20	-----	24.54	SWA (Niagara Fall Blvd.)
6	Combine	2, 5	-----	-----	-----	-----	-----	42.48	63.00	-----	108.78	SWA (SY Rd)
7	Reach	4	-----	-----	-----	-----	-----	3.118	4.487	-----	7.462	SWA-1
8	Combine	3, 7	-----	-----	-----	-----	-----	17.58	25.23	-----	41.81	<no description>
9	Reach	6	-----	-----	-----	-----	-----	42.11	62.50	-----	108.02	SWA
10	Combine	8, 9	-----	-----	-----	-----	-----	52.00	76.29	-----	129.99	SWA (Walmore)

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

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	11.96	2	1050	428,239	----	----	----	SWA-1 trib (SW-A1)	
2	SCS Runoff	33.09	2	1280	1,725,328	----	----	----	SWA (SW-A3)	
3	SCS Runoff	15.39	2	942	409,958	----	----	----	SWA-1 (SW-A2)	
4	Diversion1	2.391	2	1050	85,648	1	----	----	SWA-1 (Rose Court)	
5	Diversion2	9.564	2	1050	342,592	1	----	----	SWA (Niagara Fall Blvd.)	
6	Combine	42.48	2	1210	2,147,890	2, 5	----	----	SWA (SY Rd)	
7	Reach	3.118	2	1092	105,603	4	----	----	SWA-1	
8	Combine	17.58	2	972	515,561	3, 7	----	----	<no description>	
9	Reach	42.11	2	1246	2,147,874	6	----	----	SWA	
10	Combine	52.00	2	1204	2,663,436	8, 9	----	----	SWA (Walmore)	
Sawyer Creek West.gpw					Return Period: 10 Year			Thursday, 01 / 28 / 2016		

Hydrograph Report

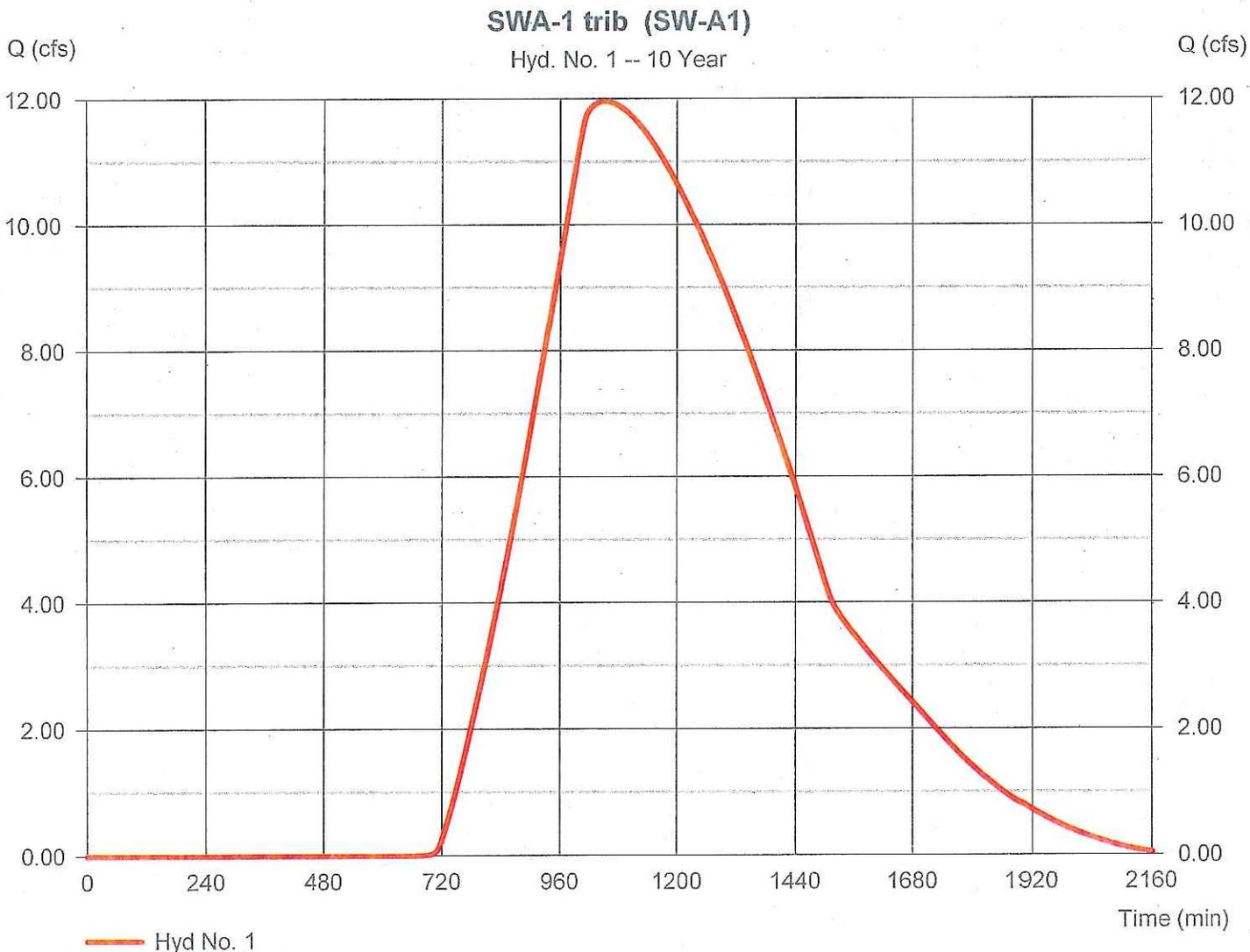
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 1

SWA-1 trib (SW-A1)

Hydrograph type	= SCS Runoff	Peak discharge	= 11.96 cfs
Storm frequency	= 10 yrs	Time to peak	= 1050 min
Time interval	= 2 min	Hyd. volume	= 428,239 cuft
Drainage area	= 117.000 ac	Curve number	= 76
Basin Slope	= 0.1 %	Hydraulic length	= 4200 ft
Tc method	= LAG	Time of conc. (Tc)	= 506.34 min
Total precip.	= 2.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

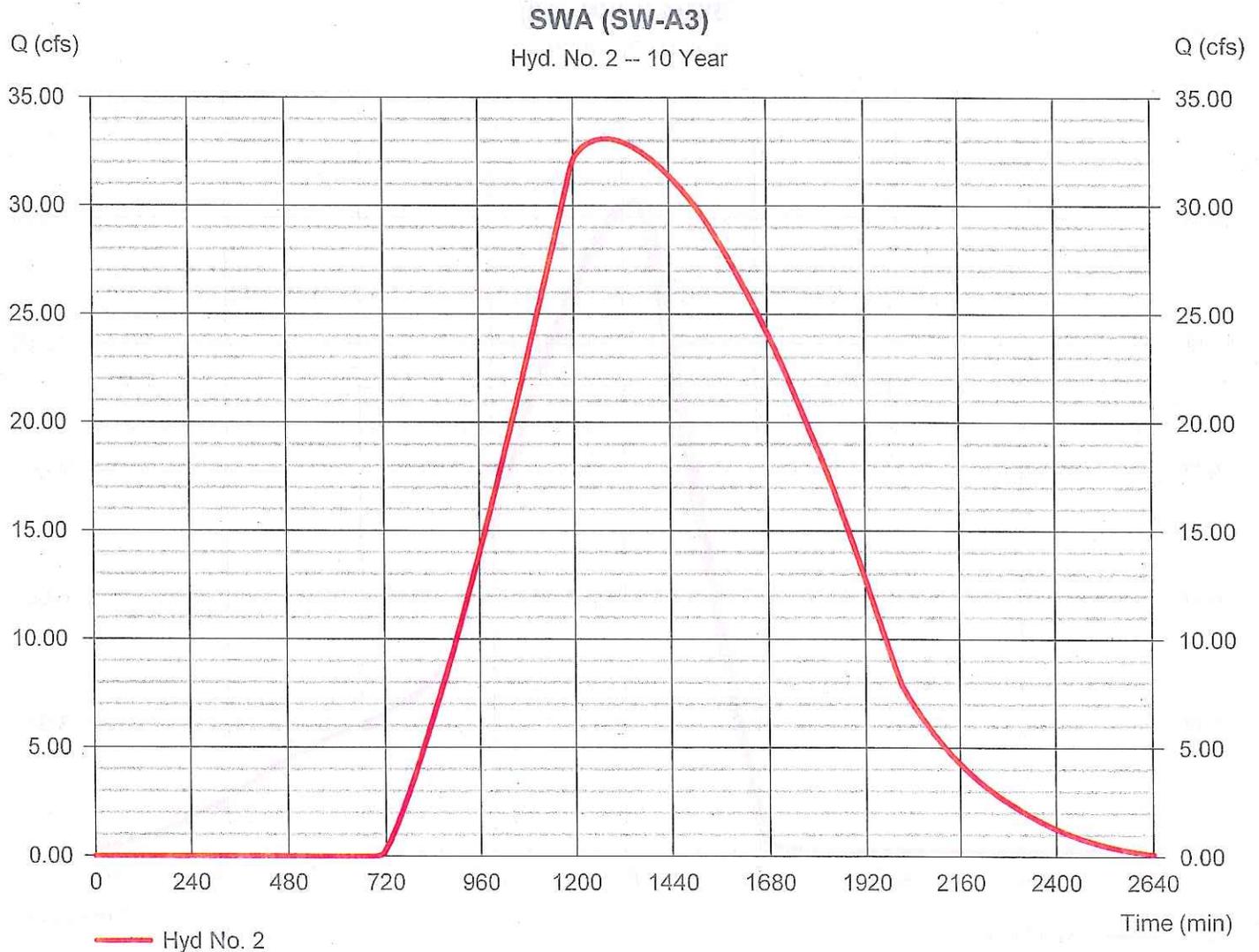
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 2

SWA (SW-A3)

Hydrograph type	= SCS Runoff	Peak discharge	= 33.09 cfs
Storm frequency	= 10 yrs	Time to peak	= 1280 min
Time interval	= 2 min	Hyd. volume	= 1,725,328 cuft
Drainage area	= 527.000 ac	Curve number	= 74
Basin Slope	= 0.1 %	Hydraulic length	= 7200 ft
Tc method	= LAG	Time of conc. (Tc)	= 825.38 min
Total precip.	= 2.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

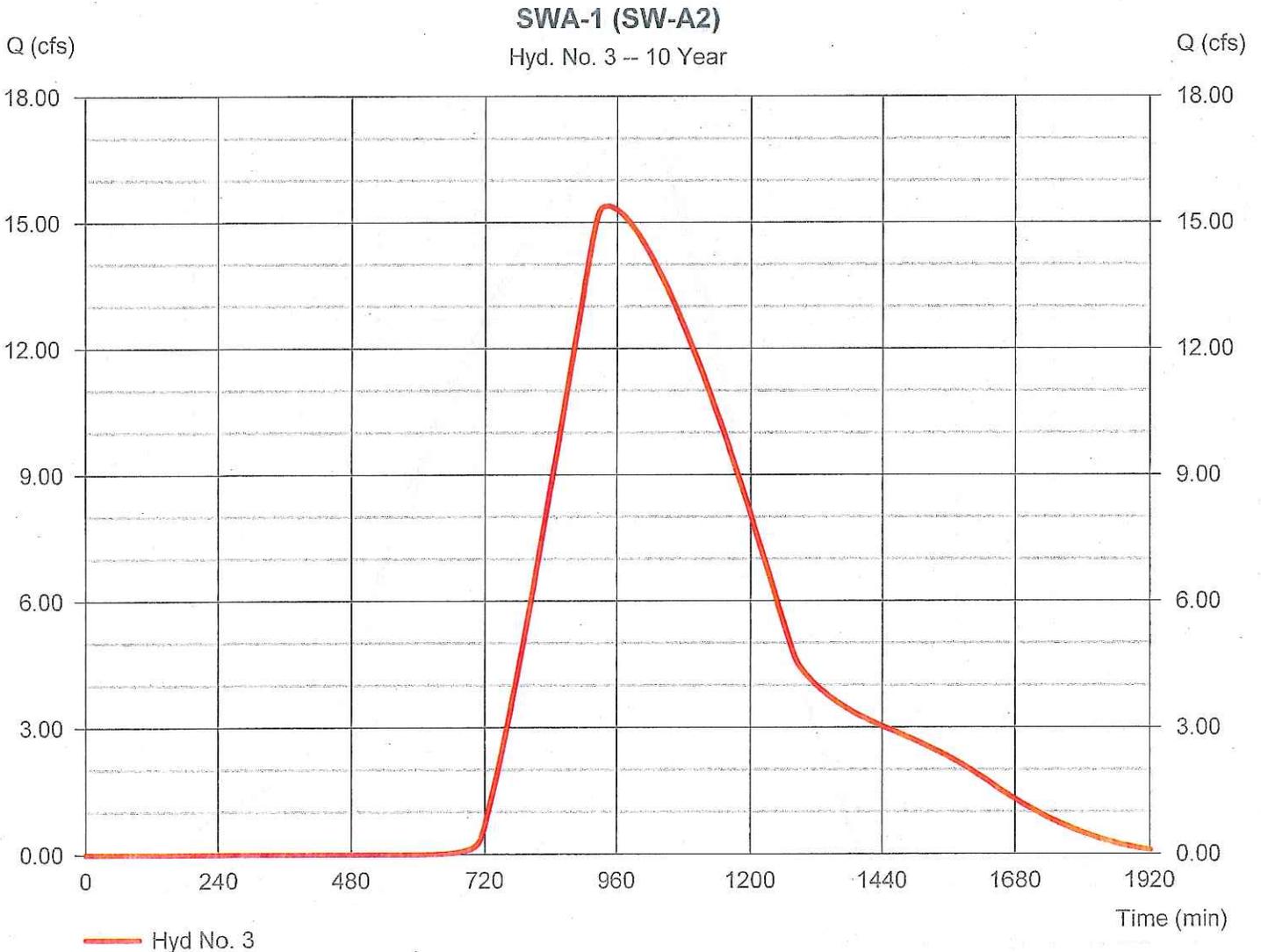
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 3

SWA-1 (SW-A2)

Hydrograph type	= SCS Runoff	Peak discharge	= 15.39 cfs
Storm frequency	= 10 yrs	Time to peak	= 942 min
Time interval	= 2 min	Hyd. volume	= 409,958 cuft
Drainage area	= 91.000 ac	Curve number	= 80
Basin Slope	= 0.1 %	Hydraulic length	= 3200 ft
Tc method	= LAG	Time of conc. (Tc)	= 361.07 min
Total precip.	= 2.99 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

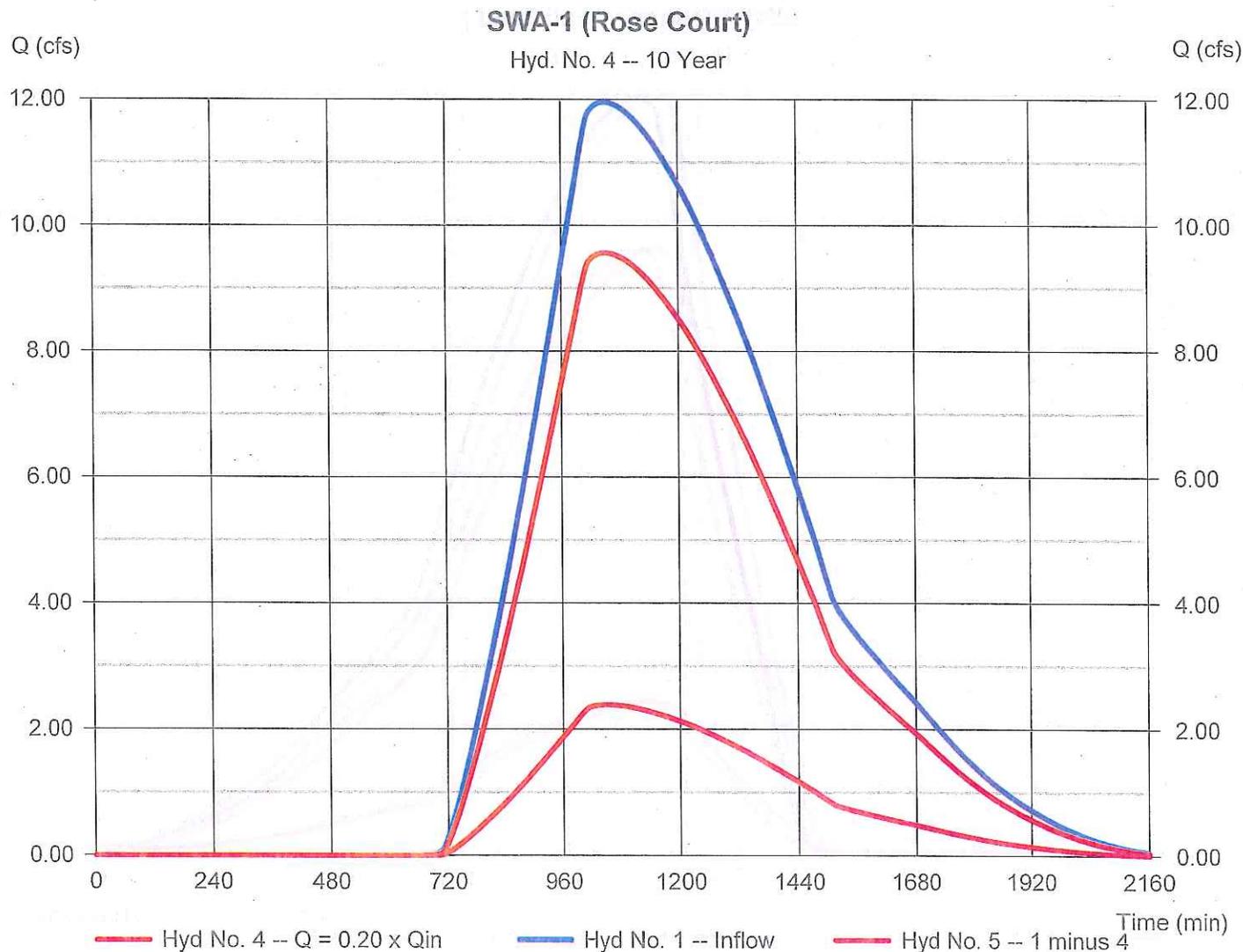


Hydrograph Report

Hyd. No. 4

SWA-1 (Rose Court)

Hydrograph type	= Diversion1	Peak discharge	= 2.391 cfs
Storm frequency	= 10 yrs	Time to peak	= 1050 min
Time interval	= 2 min	Hyd. volume	= 85,648 cuft
Inflow hydrograph	= 1 - SWA-1 trib (SW-A1)	2nd diverted hyd.	= 5
Diversion method	= Flow Ratio	Flow ratio	= 0.20



Hydrograph Report

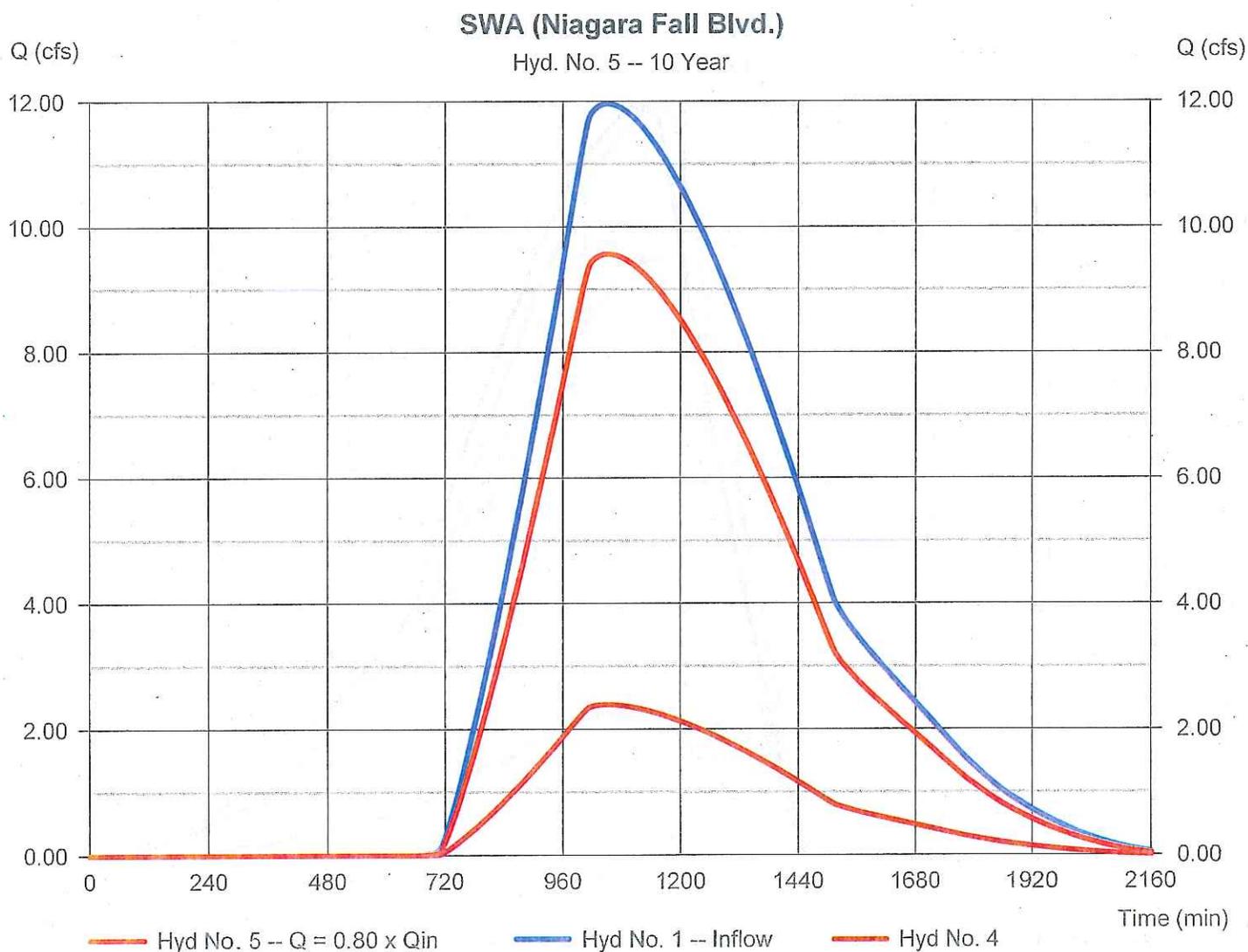
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 5

SWA (Niagara Fall Blvd.)

Hydrograph type	= Diversion2	Peak discharge	= 9.564 cfs
Storm frequency	= 10 yrs	Time to peak	= 1050 min
Time interval	= 2 min	Hyd. volume	= 342,592 cuft
Inflow hydrograph	= 1 - SWA-1 trib (SW-A1)	2nd diverted hyd.	= 4
Diversion method	= Flow Ratio	Flow ratio	= 0.20



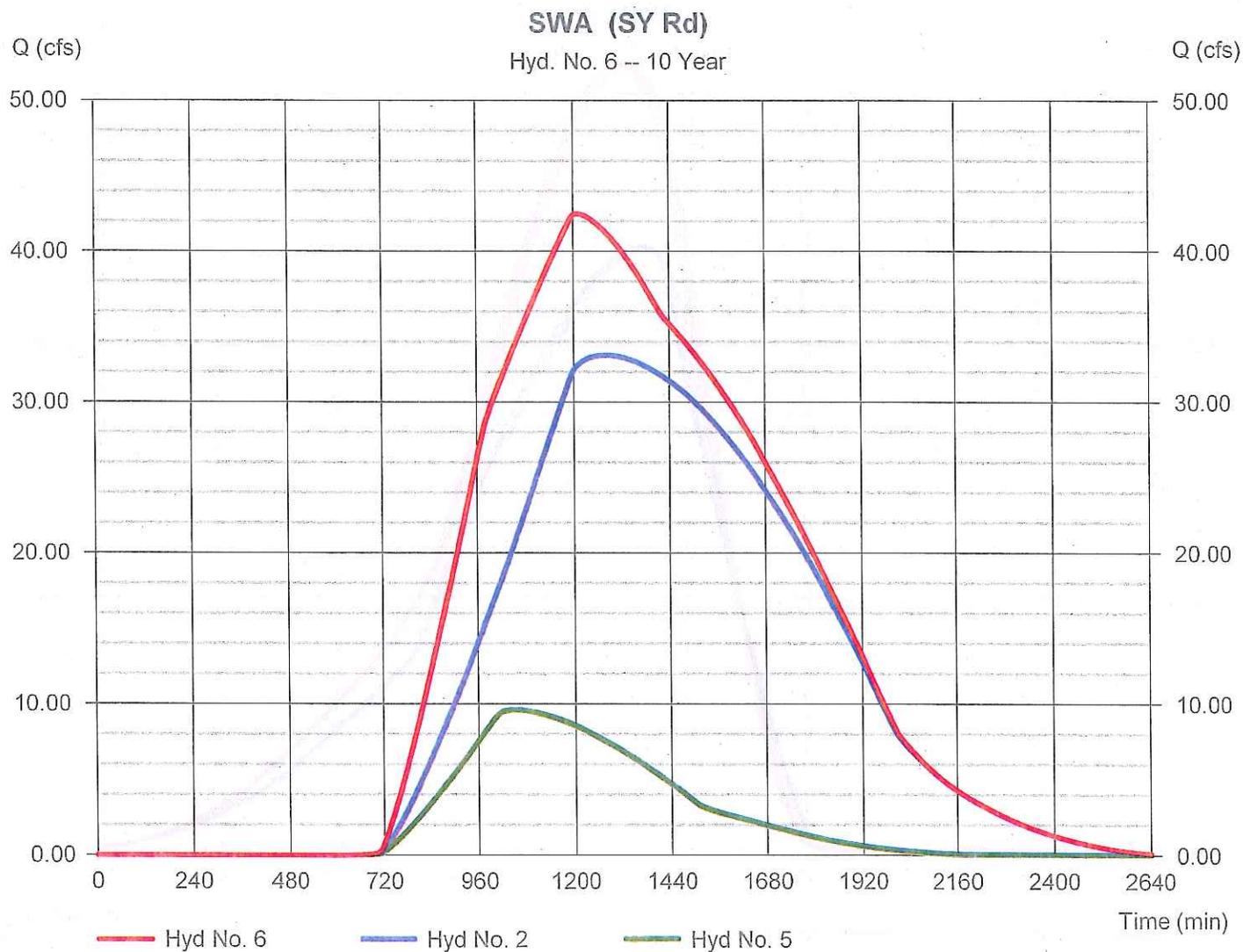
Hydrograph Report

Hyd. No. 6

SWA (SY Rd)

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 2 min
Inflow hyds. = 2, 5

Peak discharge = 42.48 cfs
Time to peak = 1210 min
Hyd. volume = 2,147,890 cuft
Contrib. drain. area = 527.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

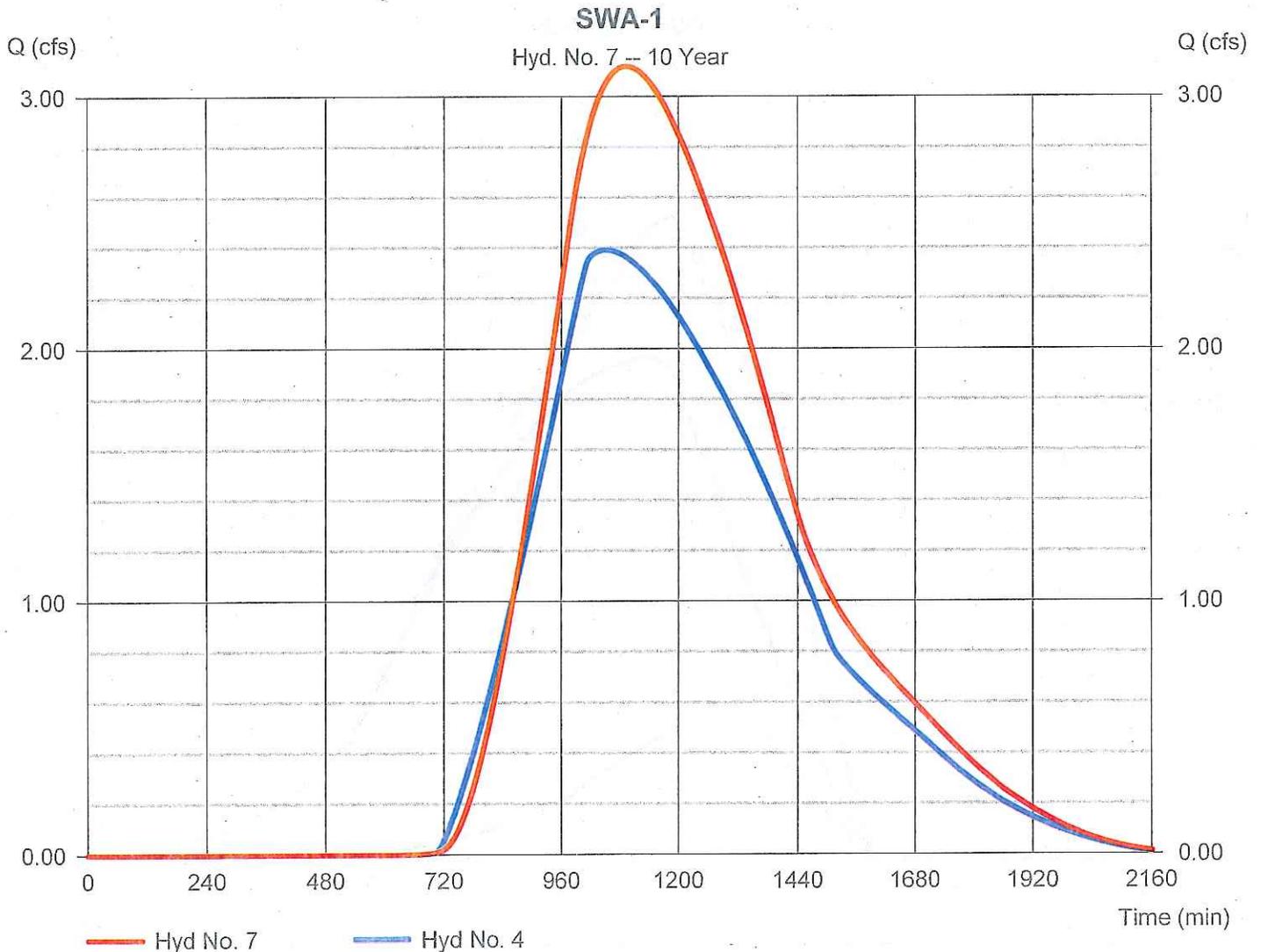
Thursday, 01 / 28 / 2016

Hyd. No. 7

SWA-1

Hydrograph type	= Reach	Peak discharge	= 3.118 cfs
Storm frequency	= 10 yrs	Time to peak	= 1092 min
Time interval	= 2 min	Hyd. volume	= 105,603 cuft
Inflow hyd. No.	= 4 - SWA-1 (Rose Court)	Section type	= Trapezoidal
Reach length	= 3000.0 ft	Channel slope	= 0.1 %
Manning's n	= 0.035	Bottom width	= 10.0 ft
Side slope	= 1.0:1	Max. depth	= 3.0 ft
Rating curve x	= 0.205	Rating curve m	= 1.518
Ave. velocity	= 0.00 ft/s	Routing coeff.	= 0.0317

Modified Att-Kin routing method used.

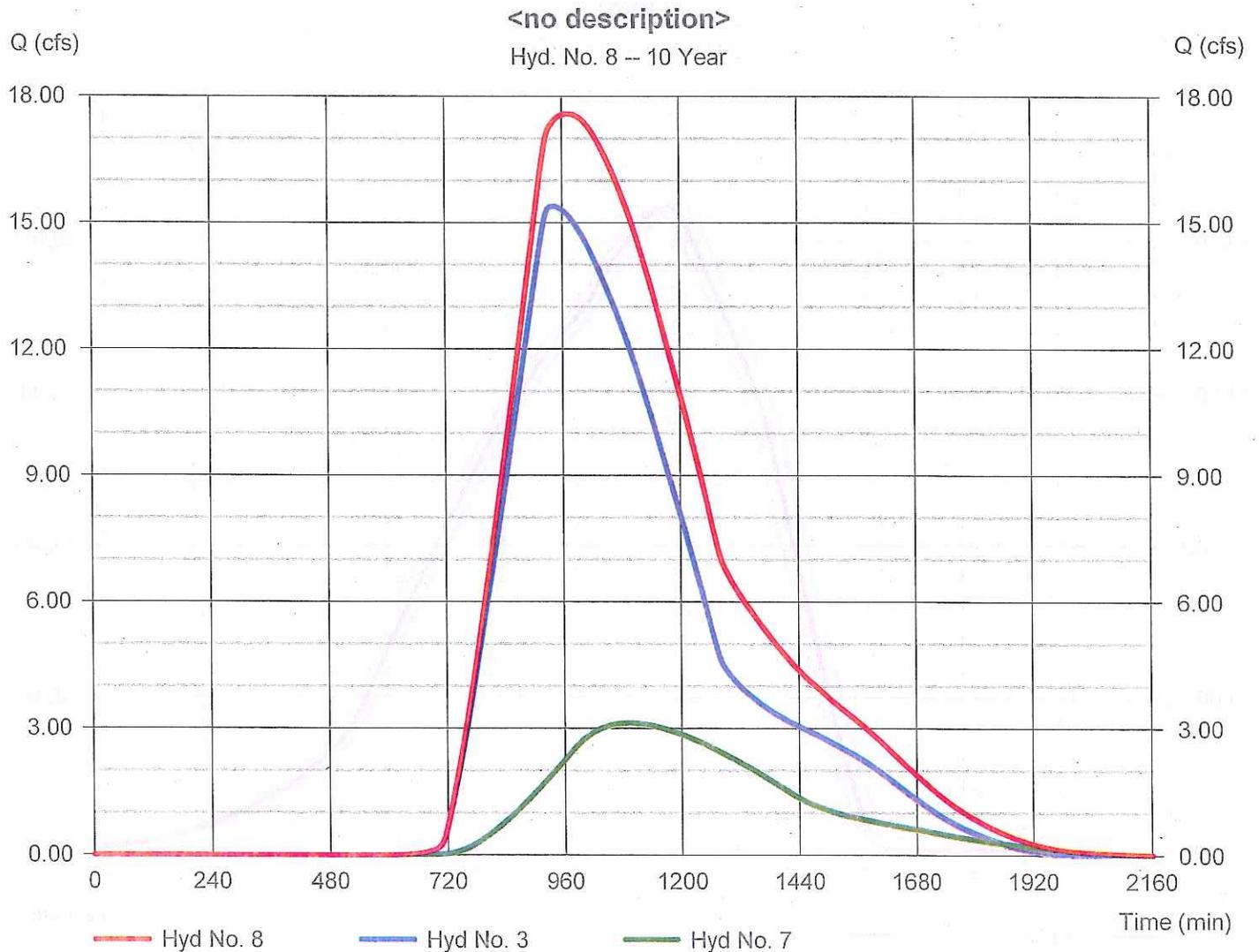


Hydrograph Report

Hyd. No. 8

<no description>

Hydrograph type	= Combine	Peak discharge	= 17.58 cfs
Storm frequency	= 10 yrs	Time to peak	= 972 min
Time interval	= 2 min	Hyd. volume	= 515,561 cuft
Inflow hyds.	= 3, 7	Contrib. drain. area	= 91.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

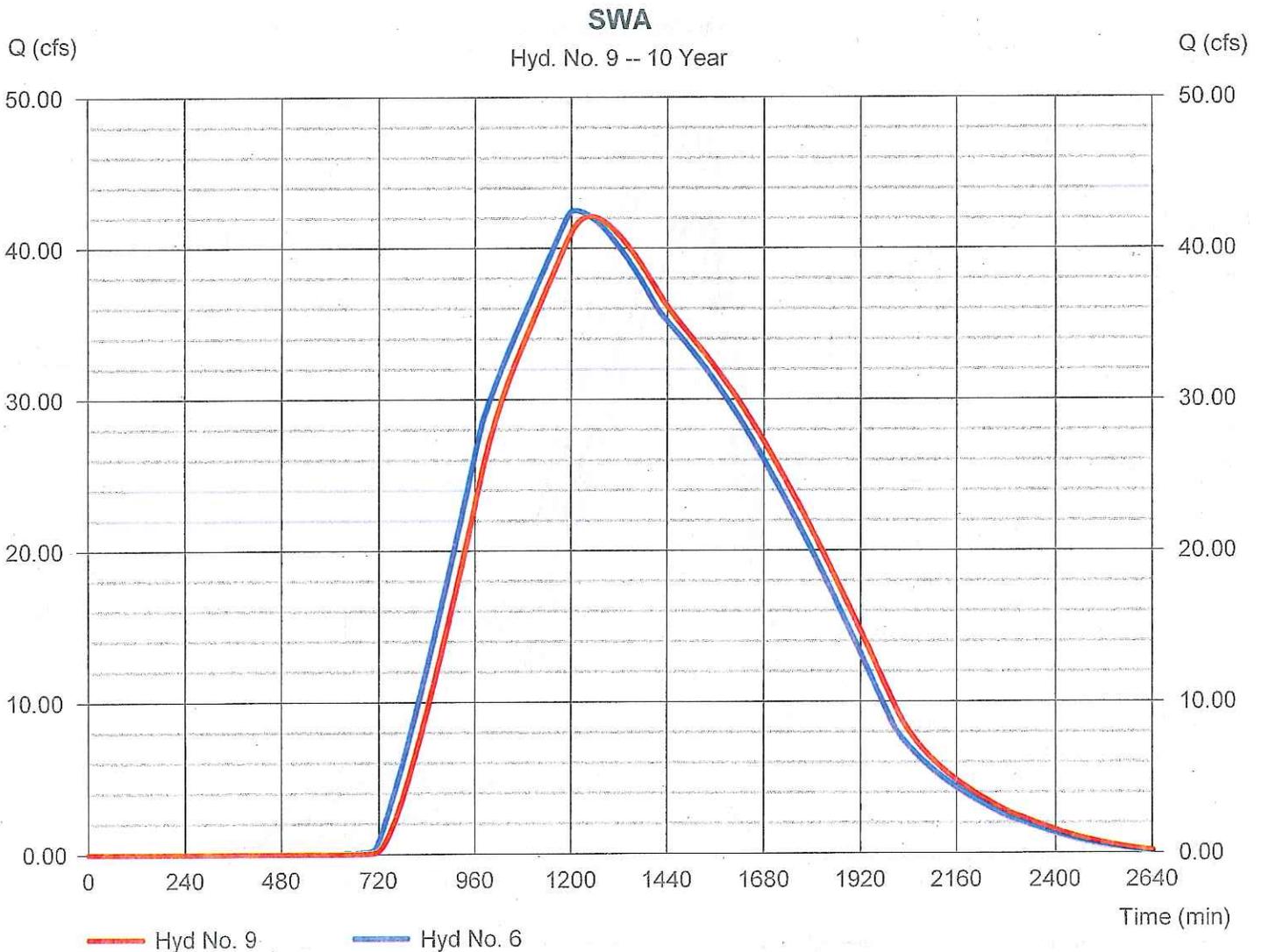
Thursday, 01 / 28 / 2016

Hyd. No. 9

SWA

Hydrograph type	= Reach	Peak discharge	= 42.11 cfs
Storm frequency	= 10 yrs	Time to peak	= 1246 min
Time interval	= 2 min	Hyd. volume	= 2,147,874 cuft
Inflow hyd. No.	= 6 - SWA (SY Rd)	Section type	= Trapezoidal
Reach length	= 2500.0 ft	Channel slope	= 0.1 %
Manning's n	= 0.035	Bottom width	= 25.0 ft
Side slope	= 1.0:1	Max. depth	= 5.0 ft
Rating curve x	= 0.122	Rating curve m	= 1.576
Ave. velocity	= 0.00 ft/s	Routing coeff.	= 0.0754

Modified Att-Kin routing method used.



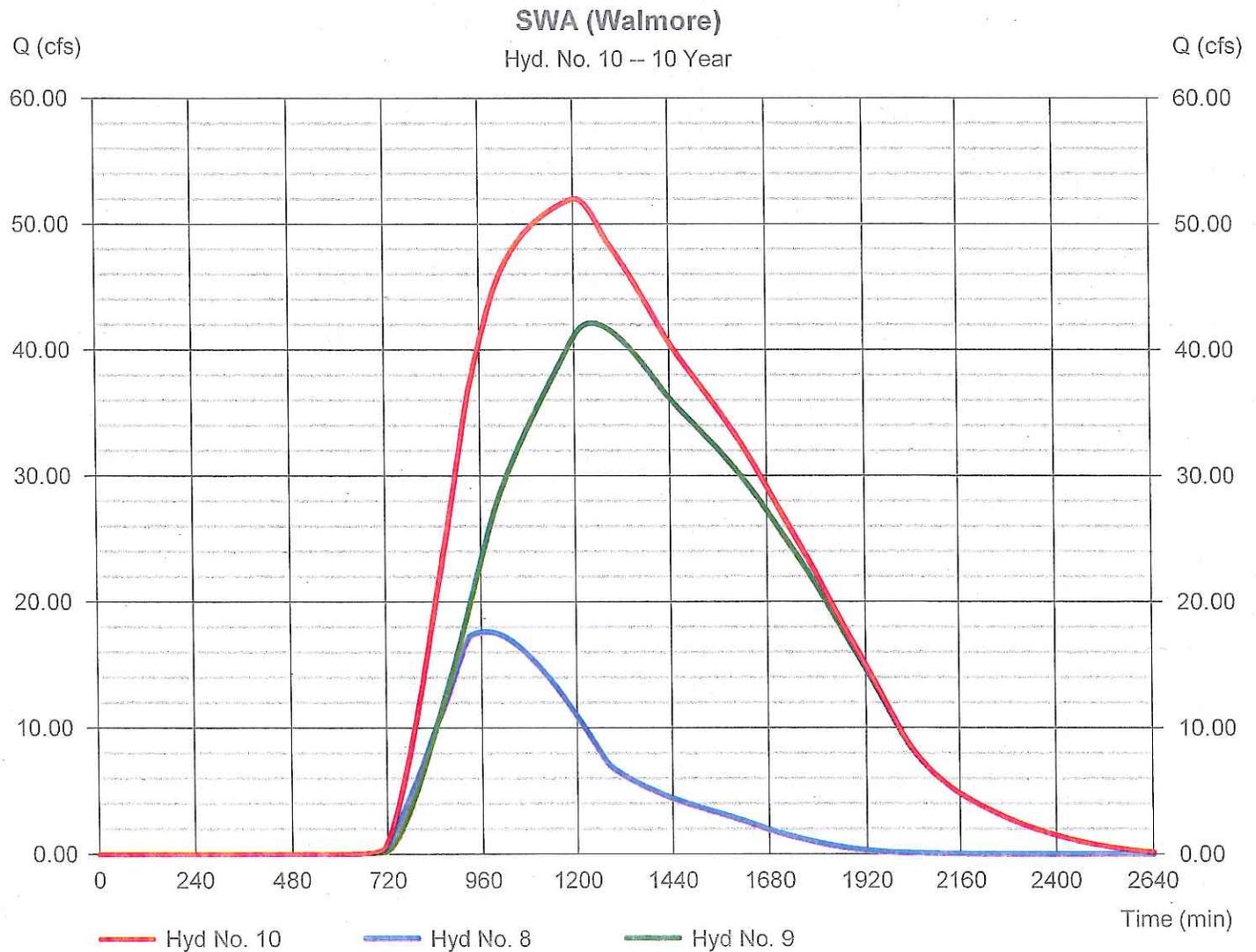
Hydrograph Report

Hyd. No. 10

SWA (Walmore)

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 2 min
Inflow hyds. = 8, 9

Peak discharge = 52.00 cfs
Time to peak = 1204 min
Hyd. volume = 2,663,436 cuft
Contrib. drain. area = 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

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	17.75	2	1040	620,236	----	----	----	SWA-1 trib (SW-A1)
2	SCS Runoff	49.62	2	1262	2,545,118	----	----	----	SWA (SW-A3)
3	SCS Runoff	22.04	2	938	574,144	----	----	----	SWA-1 (SW-A2)
4	Diversion1	3.550	2	1040	124,047	1	----	----	SWA-1 (Rose Court)
5	Diversion2	14.20	2	1040	496,189	1	----	----	SWA (Niagara Fall Blvd.)
6	Combine	63.00	2	1204	3,136,913	2, 5	----	----	SWA (SY Rd)
7	Reach	4.487	2	1076	147,916	4	----	----	SWA-1
8	Combine	25.23	2	962	722,061	3, 7	----	----	<no description>
9	Reach	62.50	2	1236	3,136,899	6	----	----	SWA
10	Combine	76.29	2	1202	3,858,959	8, 9	----	----	SWA (Walmore)
Sawyer Creek West.gpw					Return Period: 25 Year			Thursday, 01 / 28 / 2016	

Hydrograph Report

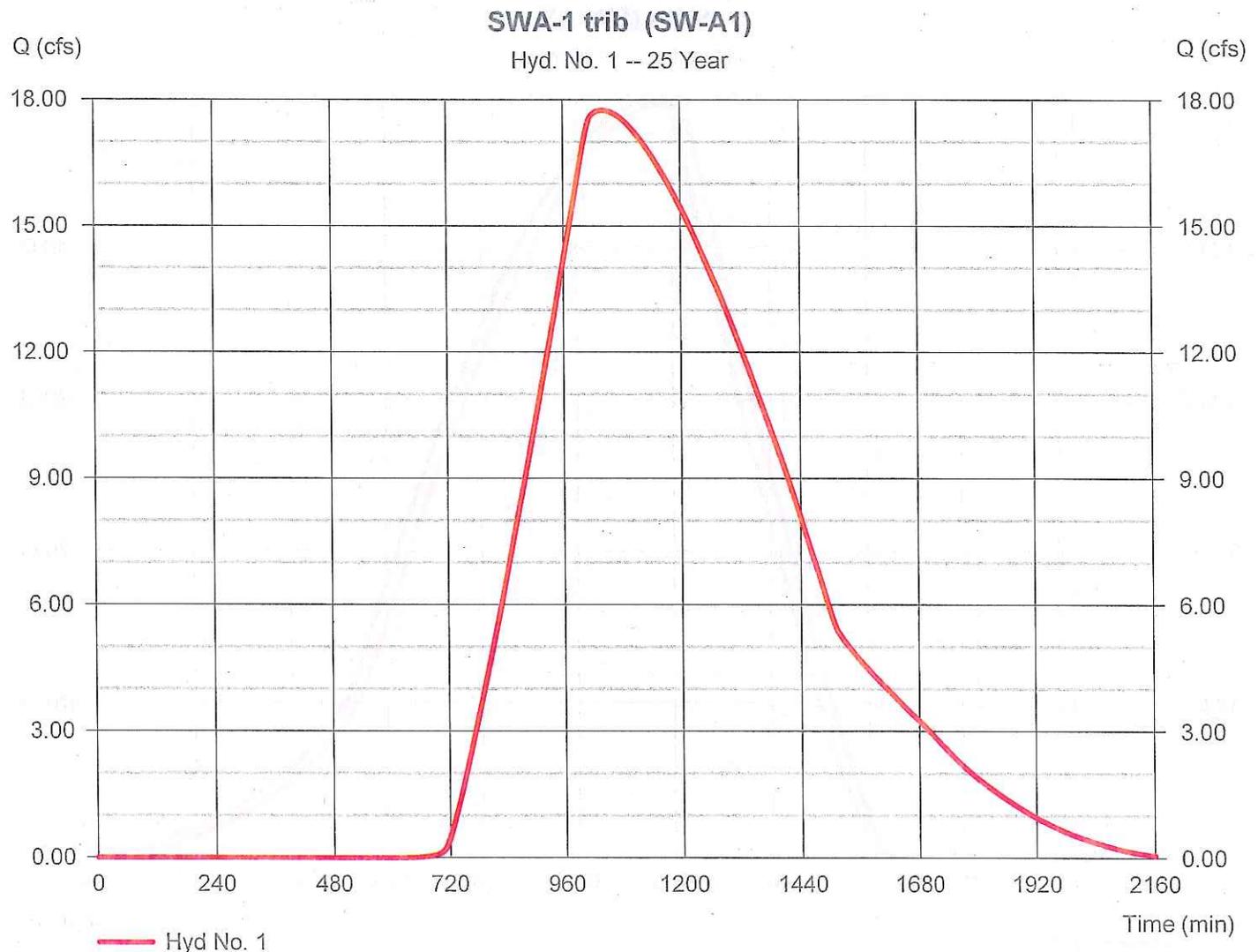
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 1

SWA-1 trib (SW-A1)

Hydrograph type	= SCS Runoff	Peak discharge	= 17.75 cfs
Storm frequency	= 25 yrs	Time to peak	= 1040 min
Time interval	= 2 min	Hyd. volume	= 620,236 cuft
Drainage area	= 117.000 ac	Curve number	= 76
Basin Slope	= 0.1 %	Hydraulic length	= 4200 ft
Tc method	= LAG	Time of conc. (Tc)	= 506.34 min
Total precip.	= 3.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

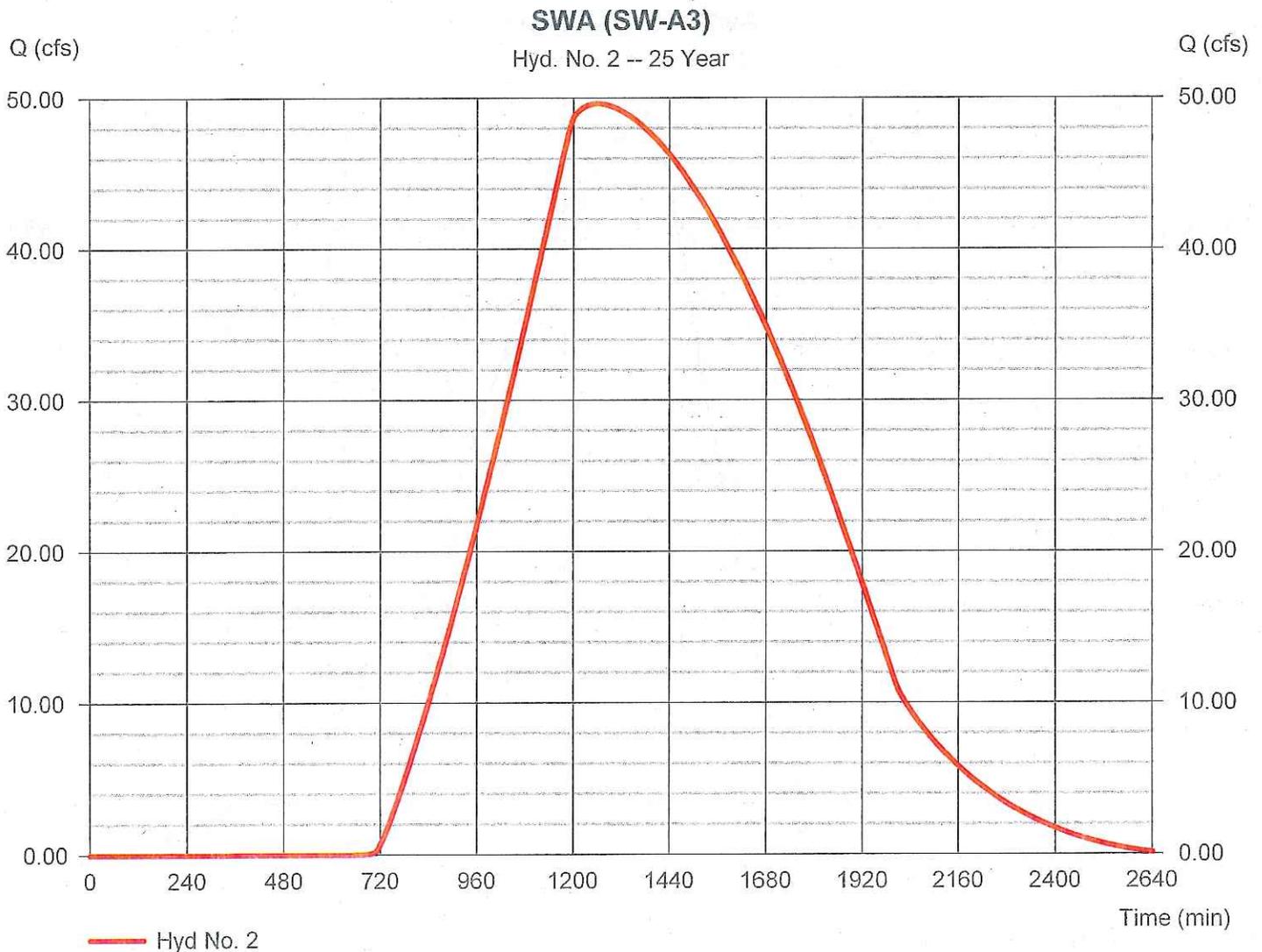
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 2

SWA (SW-A3)

Hydrograph type	= SCS Runoff	Peak discharge	= 49.62 cfs
Storm frequency	= 25 yrs	Time to peak	= 1262 min
Time interval	= 2 min	Hyd. volume	= 2,545,118 cuft
Drainage area	= 527.000 ac	Curve number	= 74
Basin Slope	= 0.1 %	Hydraulic length	= 7200 ft
Tc method	= LAG	Time of conc. (Tc)	= 825.38 min
Total precip.	= 3.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

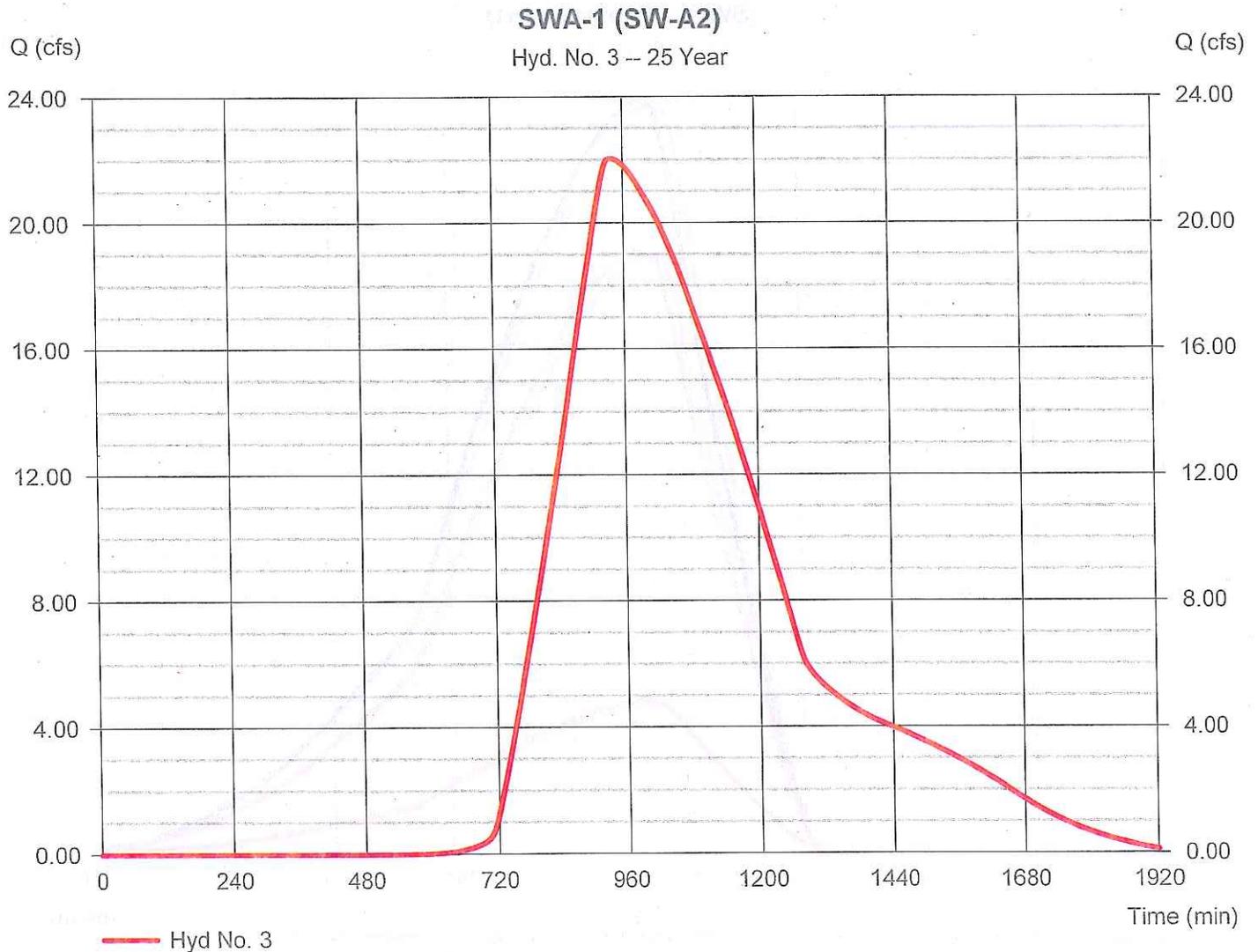
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 3

SWA-1 (SW-A2)

Hydrograph type	= SCS Runoff	Peak discharge	= 22.04 cfs
Storm frequency	= 25 yrs	Time to peak	= 938 min
Time interval	= 2 min	Hyd. volume	= 574,144 cuft
Drainage area	= 91.000 ac	Curve number	= 80
Basin Slope	= 0.1 %	Hydraulic length	= 3200 ft
Tc method	= LAG	Time of conc. (Tc)	= 361.07 min
Total precip.	= 3.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

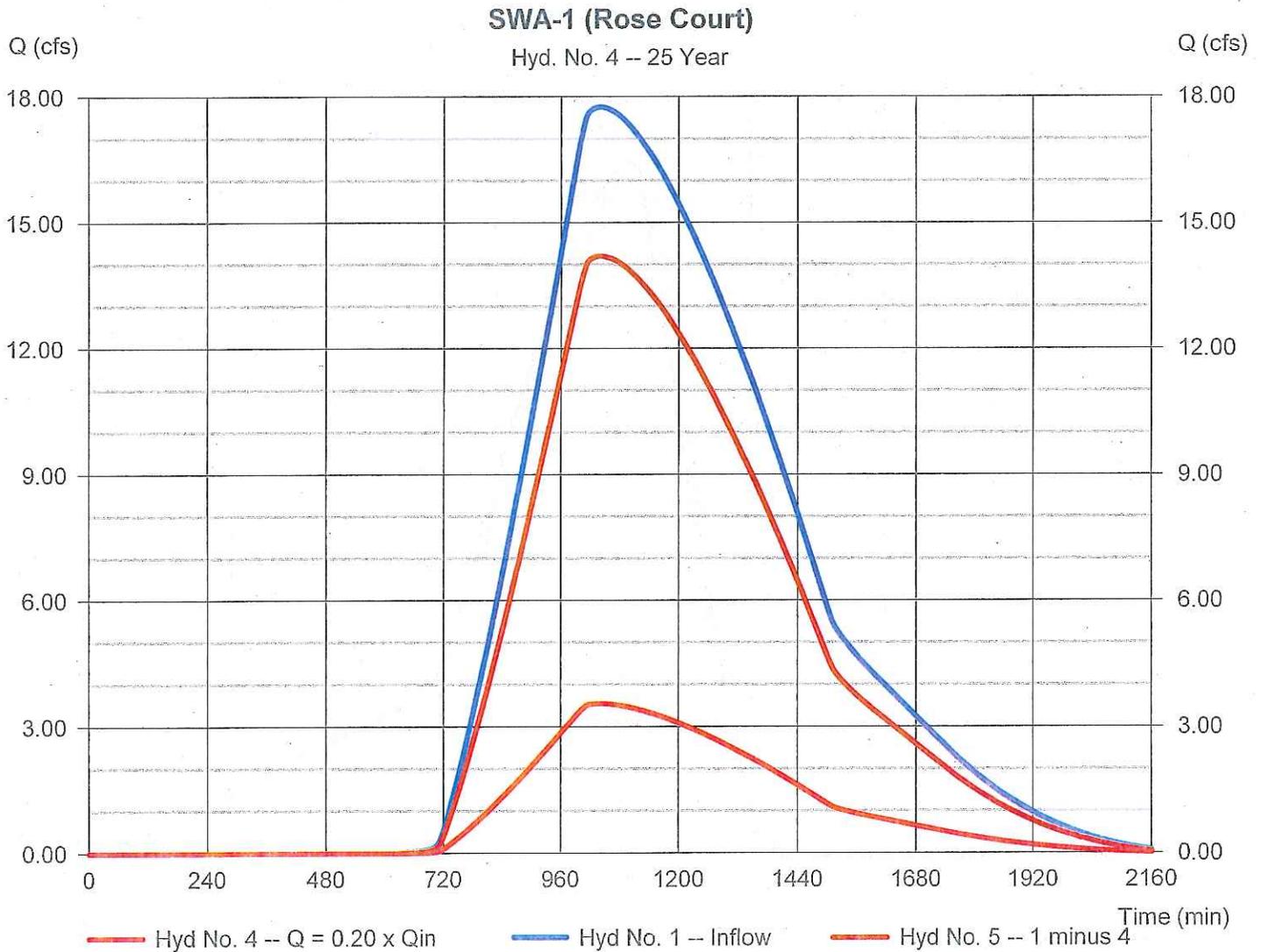
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 4

SWA-1 (Rose Court)

Hydrograph type	= Diversion1	Peak discharge	= 3.550 cfs
Storm frequency	= 25 yrs	Time to peak	= 1040 min
Time interval	= 2 min	Hyd. volume	= 124,047 cuft
Inflow hydrograph	= 1 - SWA-1 trib (SW-A1)	2nd diverted hyd.	= 5
Diversion method	= Flow Ratio	Flow ratio	= 0.20

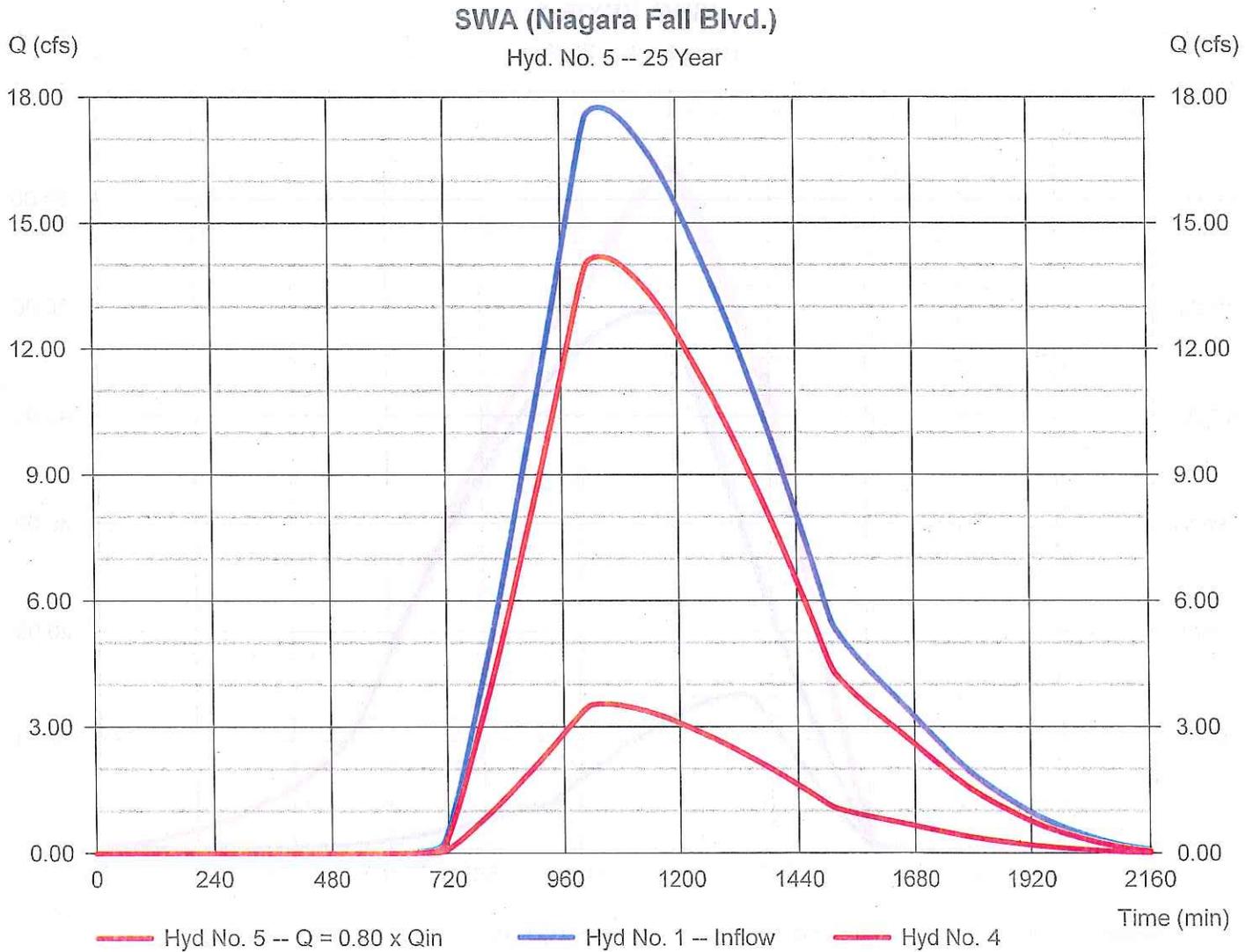


Hydrograph Report

Hyd. No. 5

SWA (Niagara Fall Blvd.)

Hydrograph type	= Diversion2	Peak discharge	= 14.20 cfs
Storm frequency	= 25 yrs	Time to peak	= 1040 min
Time interval	= 2 min	Hyd. volume	= 496,189 cuft
Inflow hydrograph	= 1 - SWA-1 trib (SW-A1)	2nd diverted hyd.	= 4
Diversion method	= Flow Ratio	Flow ratio	= 0.20



Hydrograph Report

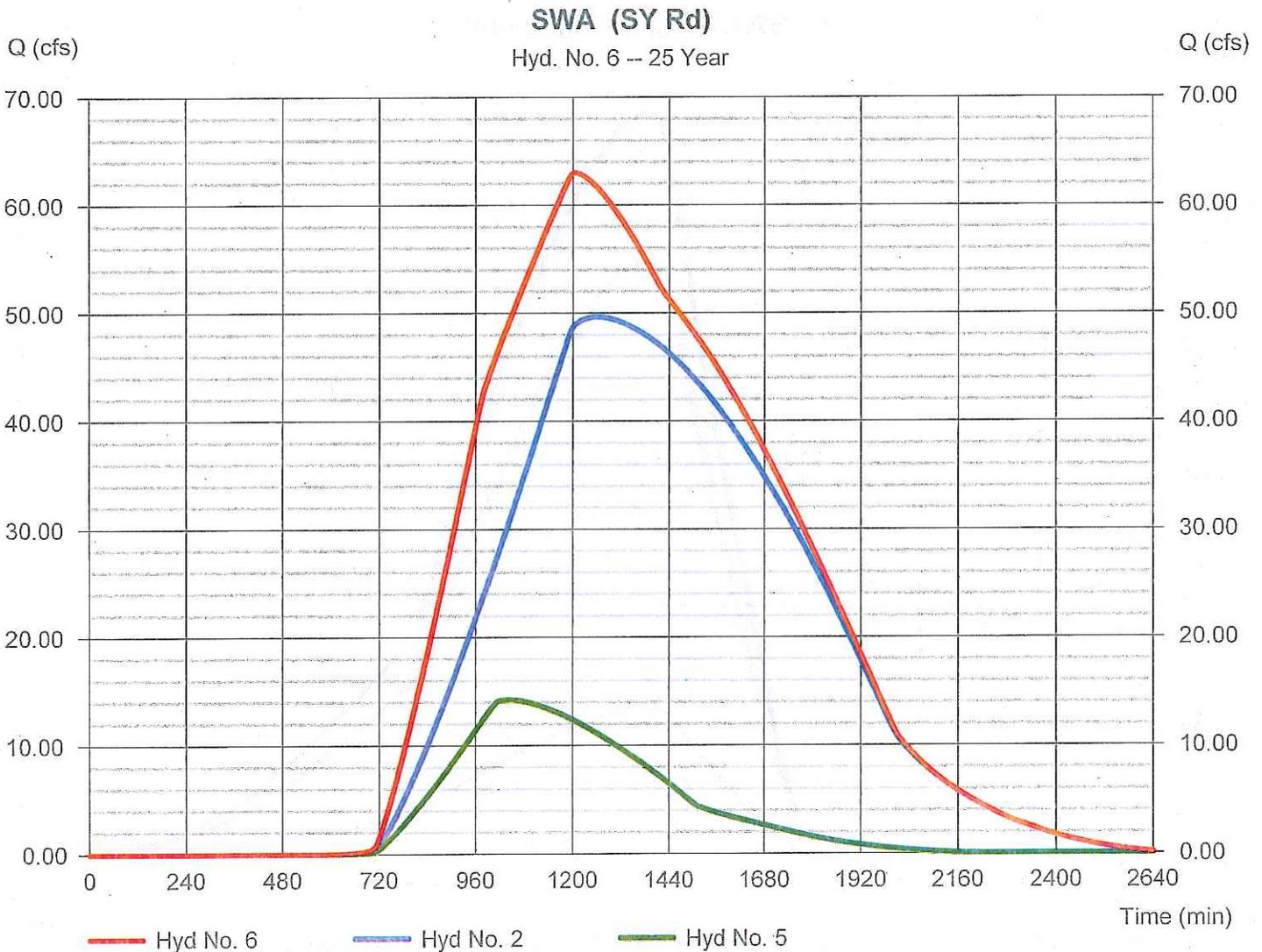
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 6

SWA (SY Rd)

Hydrograph type	= Combine	Peak discharge	= 63.00 cfs
Storm frequency	= 25 yrs	Time to peak	= 1204 min
Time interval	= 2 min	Hyd. volume	= 3,136,913 cuft
Inflow hyds.	= 2, 5	Contrib. drain. area	= 527.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

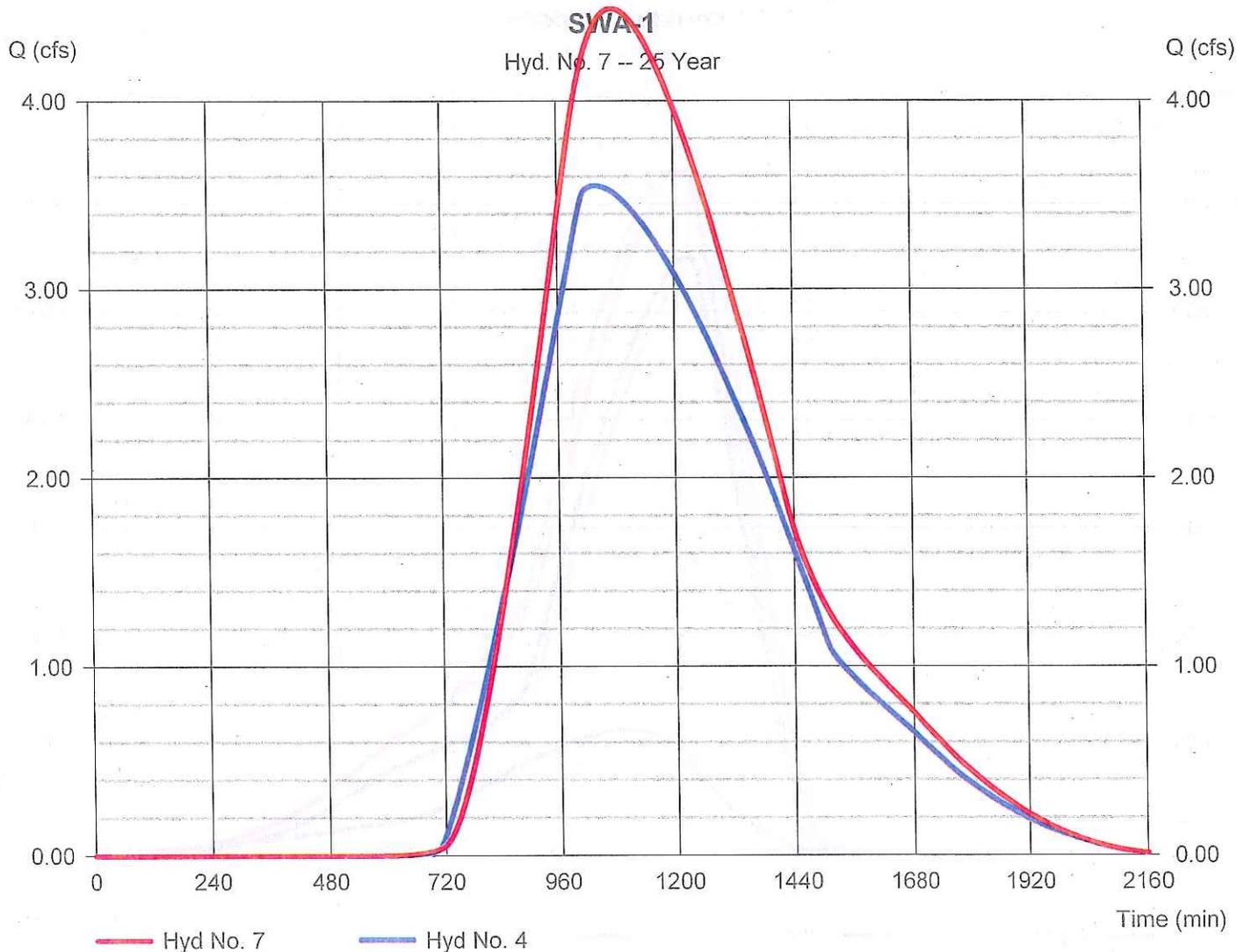
Thursday, 01 / 28 / 2016

Hyd. No. 7

SWA-1

Hydrograph type	= Reach	Peak discharge	= 4.487 cfs
Storm frequency	= 25 yrs	Time to peak	= 1076 min
Time interval	= 2 min	Hyd. volume	= 147,916 cuft
Inflow hyd. No.	= 4 - SWA-1 (Rose Court)	Section type	= Trapezoidal
Reach length	= 3000.0 ft	Channel slope	= 0.1 %
Manning's n	= 0.035	Bottom width	= 10.0 ft
Side slope	= 1.0:1	Max. depth	= 3.0 ft
Rating curve x	= 0.205	Rating curve m	= 1.518
Ave. velocity	= 0.00 ft/s	Routing coeff.	= 0.0358

Modified Att-Kin routing method used.



Hydrograph Report

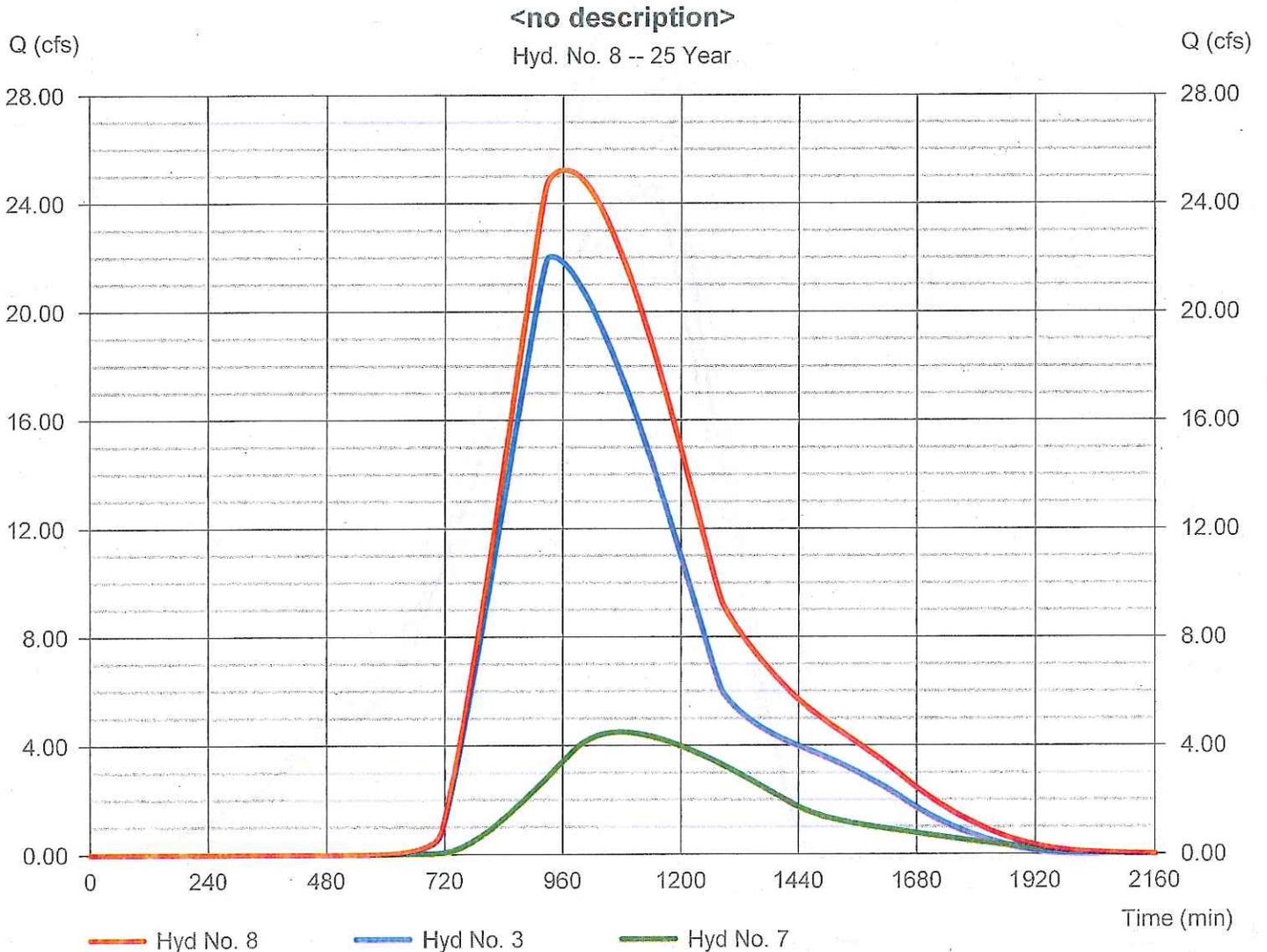
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 8

<no description>

Hydrograph type	= Combine	Peak discharge	= 25.23 cfs
Storm frequency	= 25 yrs	Time to peak	= 962 min
Time interval	= 2 min	Hyd. volume	= 722,061 cuft
Inflow hyds.	= 3, 7	Contrib. drain. area	= 91.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

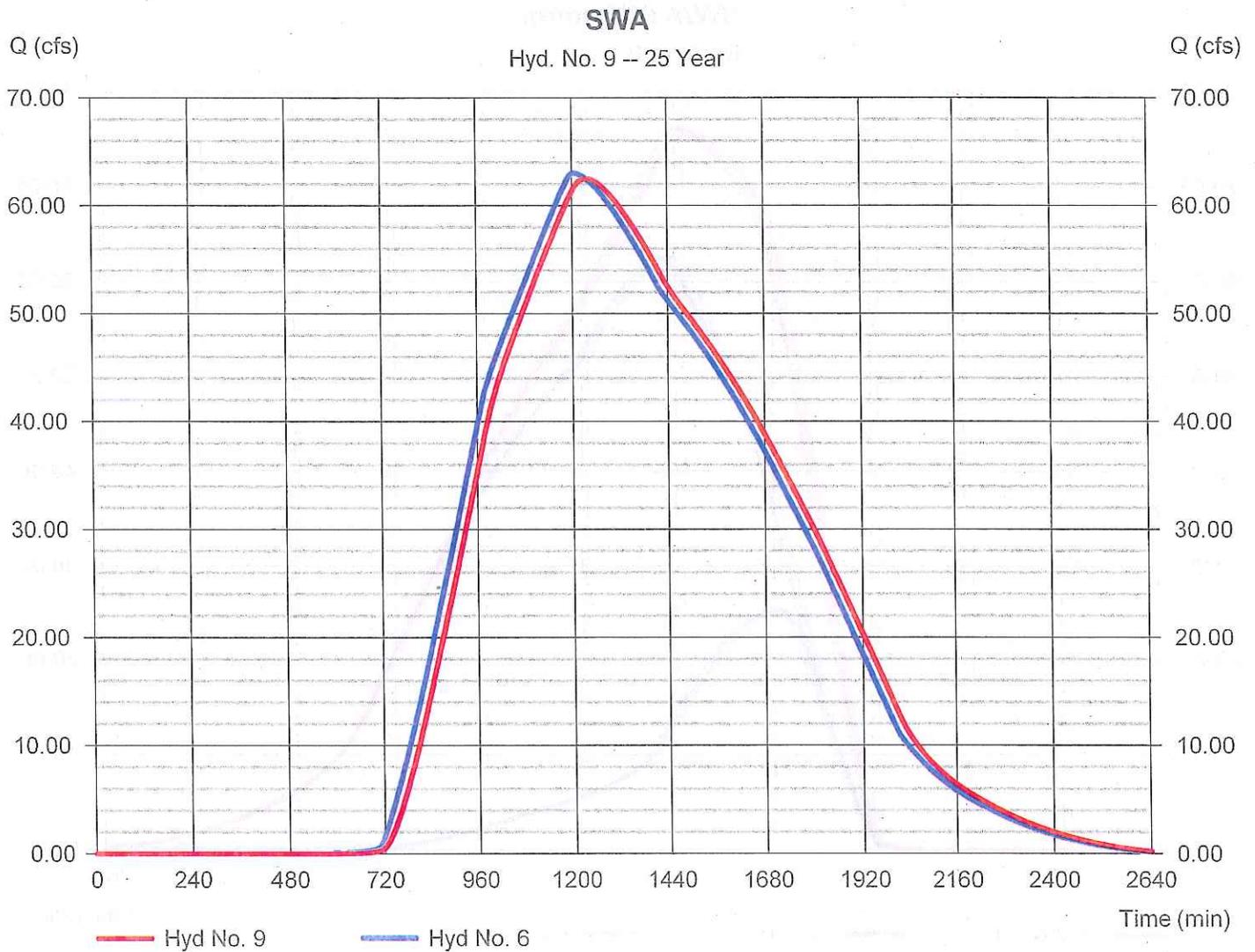
Thursday, 01 / 28 / 2016

Hyd. No. 9

SWA

Hydrograph type	= Reach	Peak discharge	= 62.50 cfs
Storm frequency	= 25 yrs	Time to peak	= 1236 min
Time interval	= 2 min	Hyd. volume	= 3,136,899 cuft
Inflow hyd. No.	= 6 - SWA (SY Rd)	Section type	= Trapezoidal
Reach length	= 2500.0 ft	Channel slope	= 0.1 %
Manning's n	= 0.035	Bottom width	= 25.0 ft
Side slope	= 1.0:1	Max. depth	= 5.0 ft
Rating curve x	= 0.122	Rating curve m	= 1.576
Ave. velocity	= 0.00 ft/s	Routing coeff.	= 0.0865

Modified Att-Kin routing method used.



Hydrograph Report

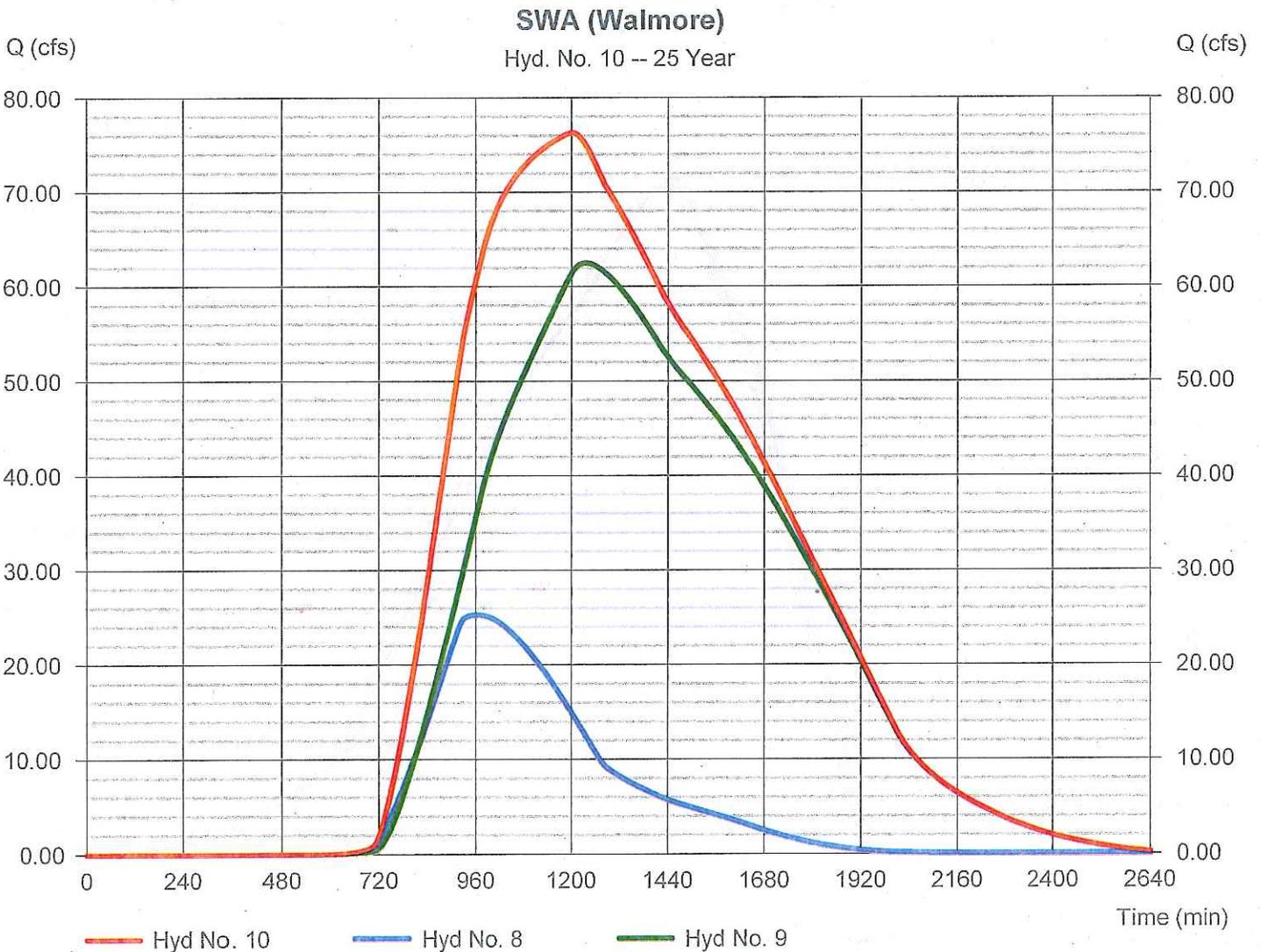
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 10

SWA (Walmore)

Hydrograph type	= Combine	Peak discharge	= 76.29 cfs
Storm frequency	= 25 yrs	Time to peak	= 1202 min
Time interval	= 2 min	Hyd. volume	= 3,858,959 cuft
Inflow hyds.	= 8, 9	Contrib. drain. area	= 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

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	30.68	2	1030	1,041,968	----	----	----	SWA-1 trib (SW-A1)
2	SCS Runoff	86.98	2	1240	4,370,731	----	----	----	SWA (SW-A3)
3	SCS Runoff	36.39	2	932	925,757	----	----	----	SWA-1 (SW-A2)
4	Diversion1	6.135	2	1030	208,394	1	----	----	SWA-1 (Rose Court)
5	Diversion2	24.54	2	1030	833,574	1	----	----	SWA (Niagara Fall Blvd.)
6	Combine	108.78	2	1202	5,324,945	2, 5	----	----	SWA (SY Rd)
7	Reach	7.462	2	1058	238,527	4	----	----	SWA-1
8	Combine	41.81	2	952	1,164,284	3, 7	----	----	<no description>
9	Reach	108.02	2	1226	5,324,934	6	----	----	SWA
10	Combine	129.99	2	1198	6,489,221	8, 9	----	----	SWA (Walmore)
Sawyer Creek West.gpw					Return Period: 100 Year			Thursday, 01 / 28 / 2016	

Hydrograph Report

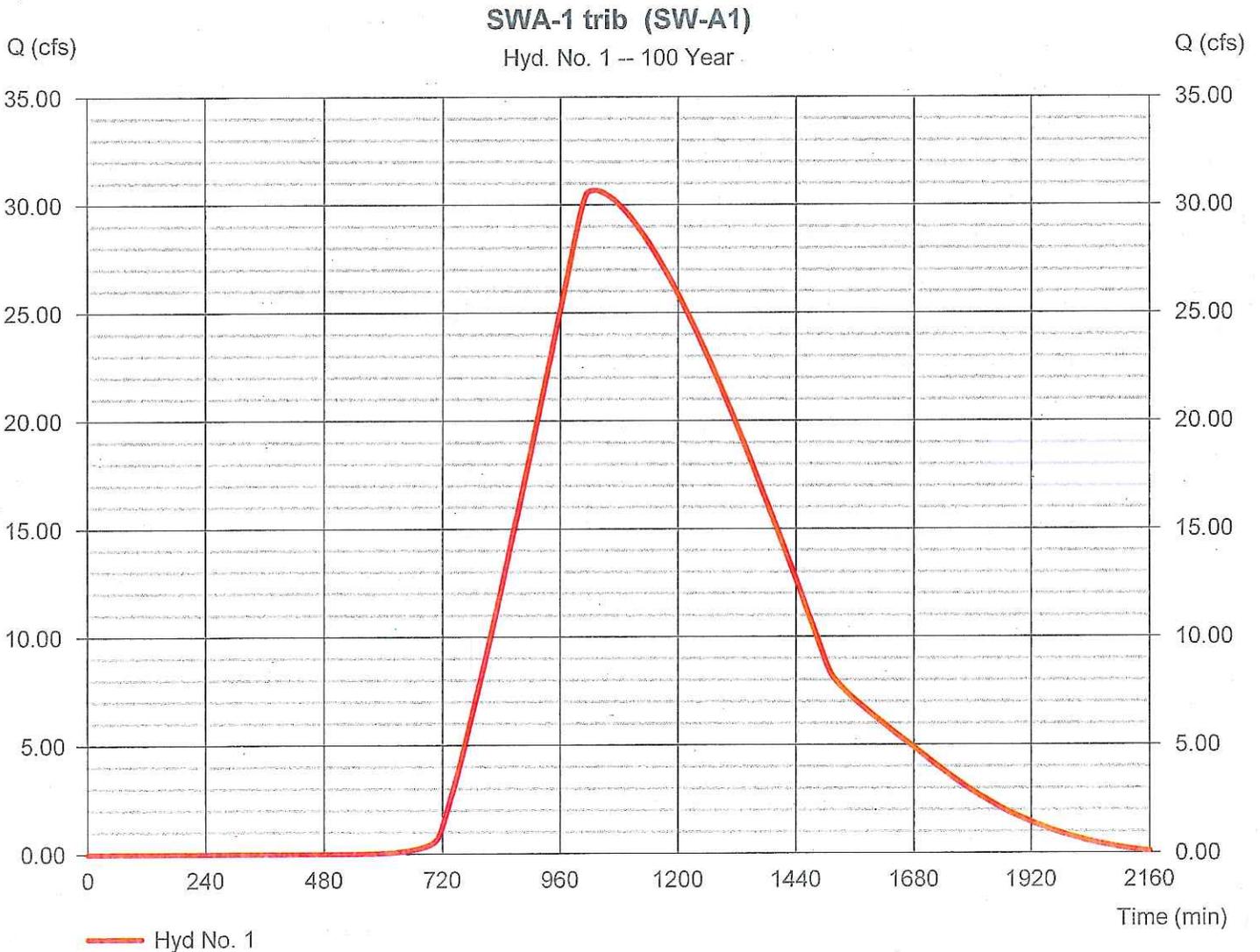
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 1

SWA-1 trib (SW-A1)

Hydrograph type	= SCS Runoff	Peak discharge	= 30.68 cfs
Storm frequency	= 100 yrs	Time to peak	= 1030 min
Time interval	= 2 min	Hyd. volume	= 1,041,968 cuft
Drainage area	= 117.000 ac	Curve number	= 76
Basin Slope	= 0.1 %	Hydraulic length	= 4200 ft
Tc method	= LAG	Time of conc. (Tc)	= 506.34 min
Total precip.	= 4.90 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

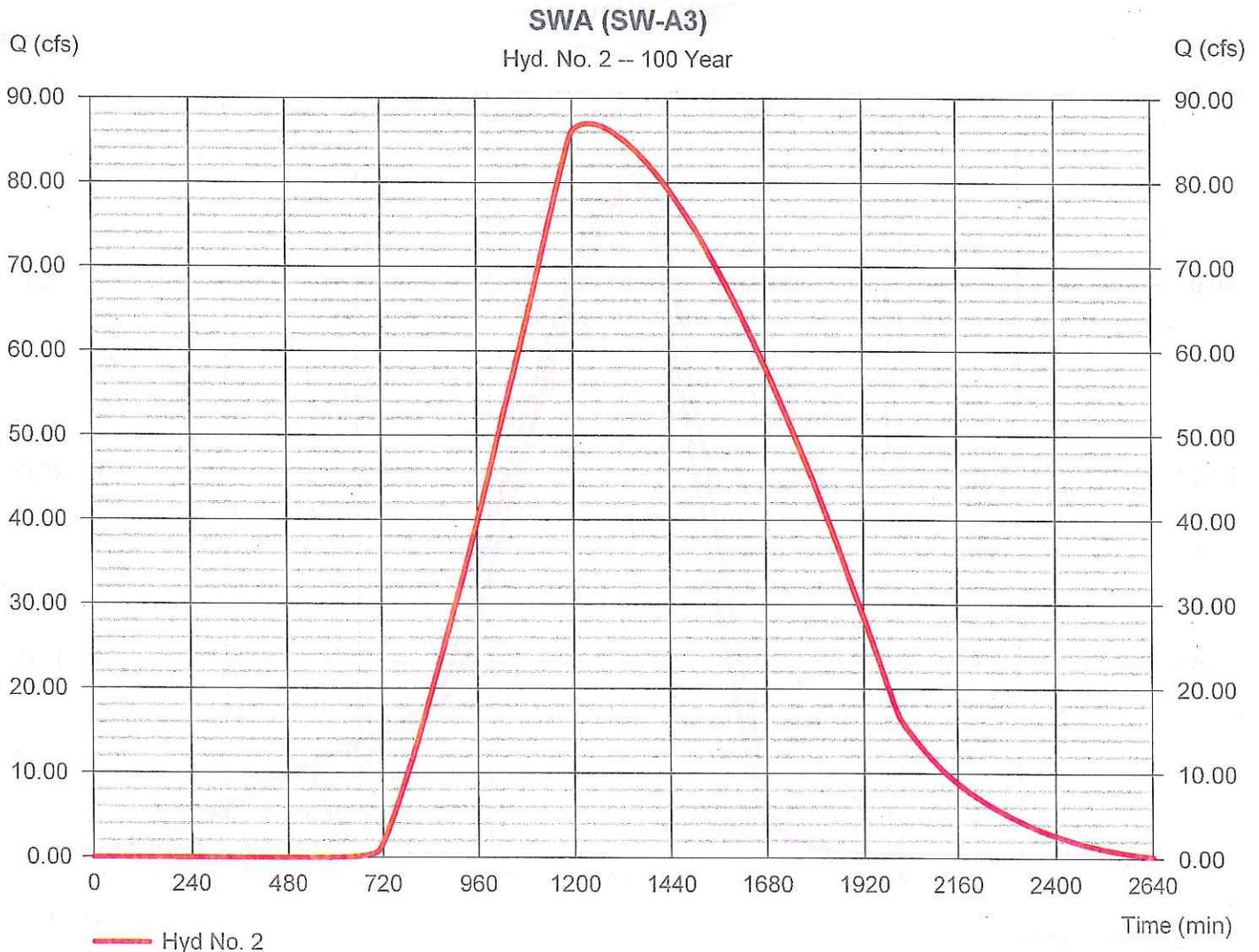


Hydrograph Report

Hyd. No. 2

SWA (SW-A3)

Hydrograph type	= SCS Runoff	Peak discharge	= 86.98 cfs
Storm frequency	= 100 yrs	Time to peak	= 1240 min
Time interval	= 2 min	Hyd. volume	= 4,370,731 cuft
Drainage area	= 527.000 ac	Curve number	= 74
Basin Slope	= 0.1 %	Hydraulic length	= 7200 ft
Tc method	= LAG	Time of conc. (Tc)	= 825.38 min
Total precip.	= 4.90 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

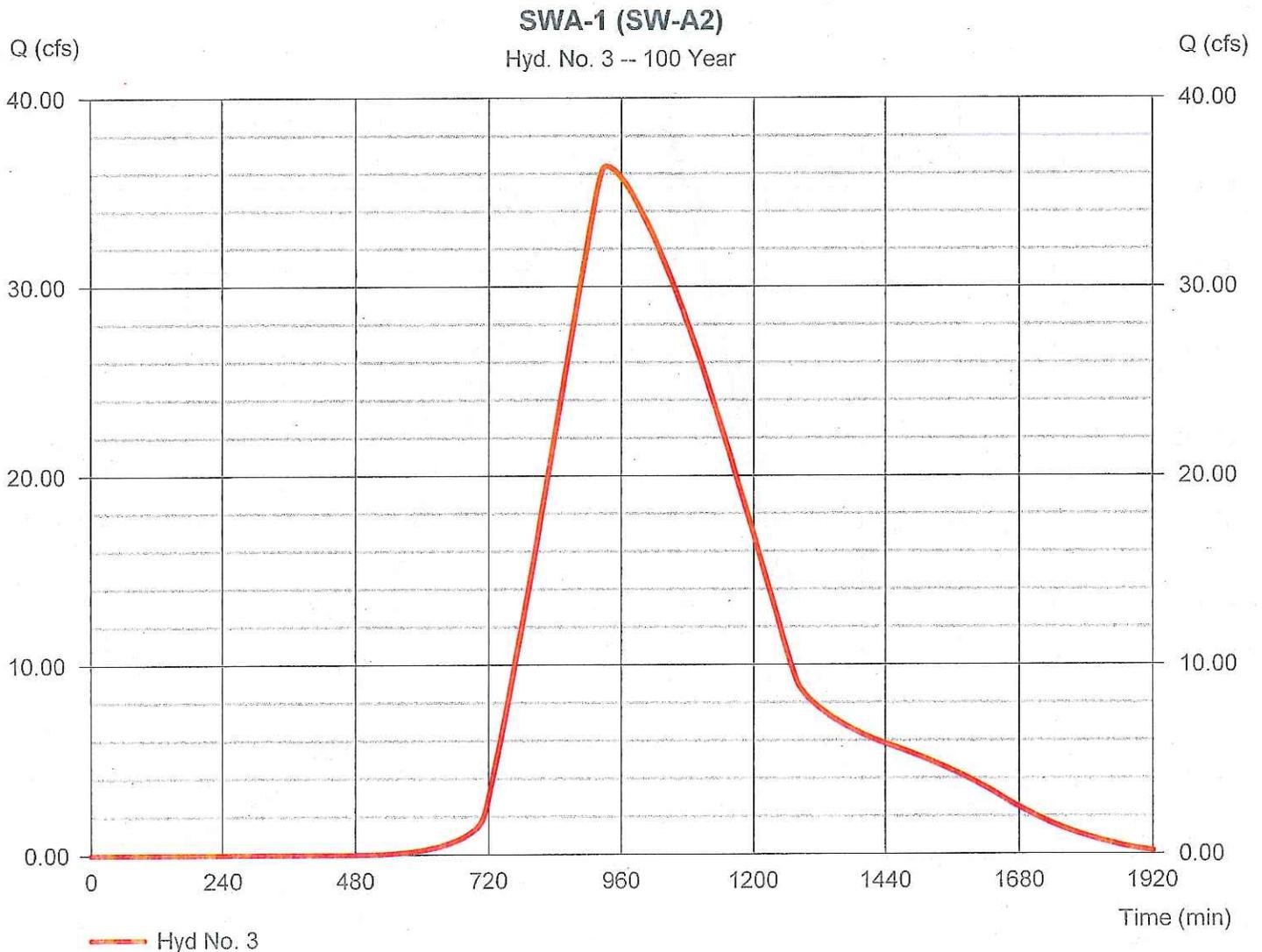
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 3

SWA-1 (SW-A2)

Hydrograph type	= SCS Runoff	Peak discharge	= 36.39 cfs
Storm frequency	= 100 yrs	Time to peak	= 932 min
Time interval	= 2 min	Hyd. volume	= 925,757 cuft
Drainage area	= 91.000 ac	Curve number	= 80
Basin Slope	= 0.1 %	Hydraulic length	= 3200 ft
Tc method	= LAG	Time of conc. (Tc)	= 361.07 min
Total precip.	= 4.90 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

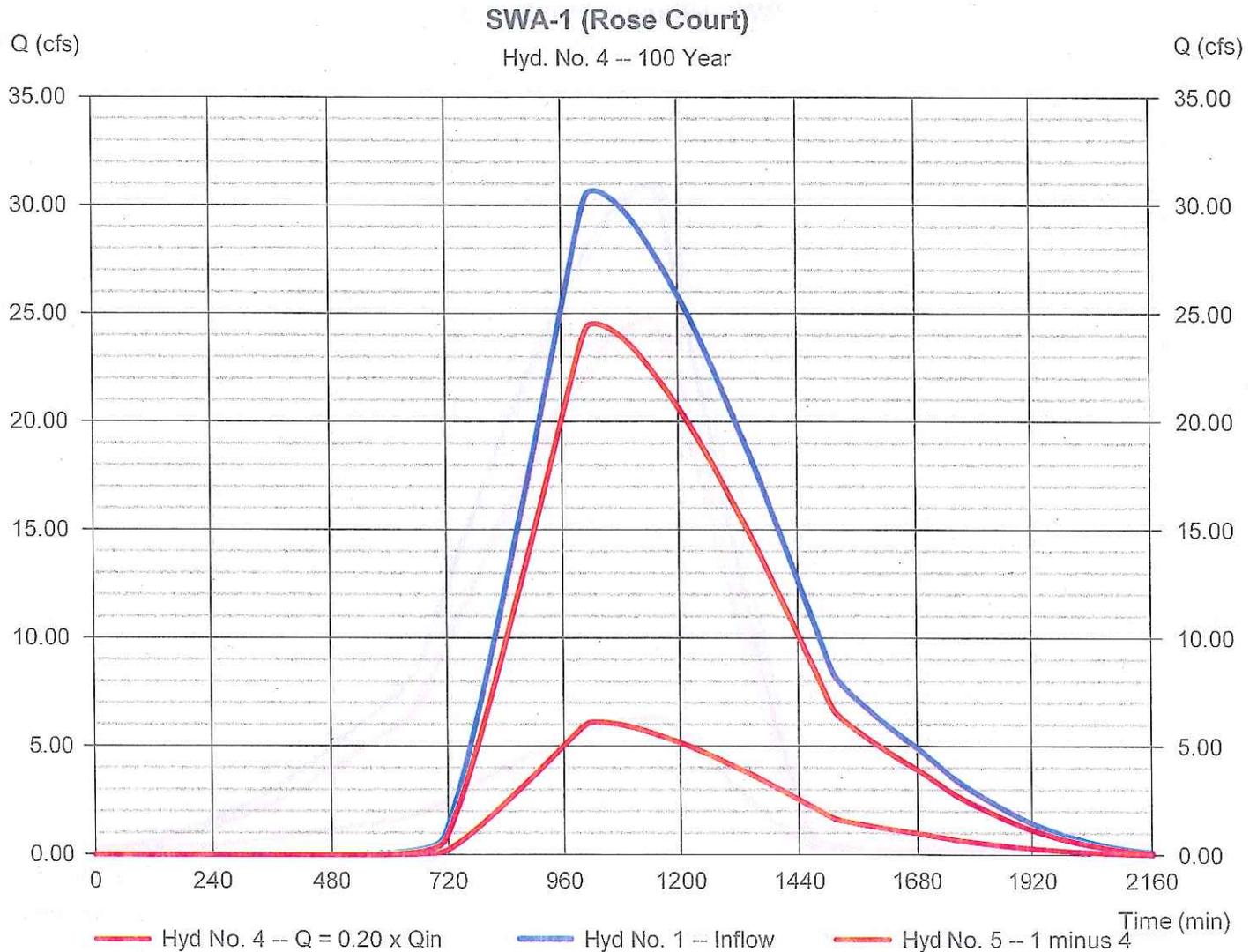
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 4

SWA-1 (Rose Court)

Hydrograph type	= Diversion1	Peak discharge	= 6.135 cfs
Storm frequency	= 100 yrs	Time to peak	= 1030 min
Time interval	= 2 min.	Hyd. volume	= 208,394 cuft
Inflow hydrograph	= 1 - SWA-1 trib (SW-A1)	2nd diverted hyd.	= 5
Diversion method	= Flow Ratio	Flow ratio	= 0.20



Hydrograph Report

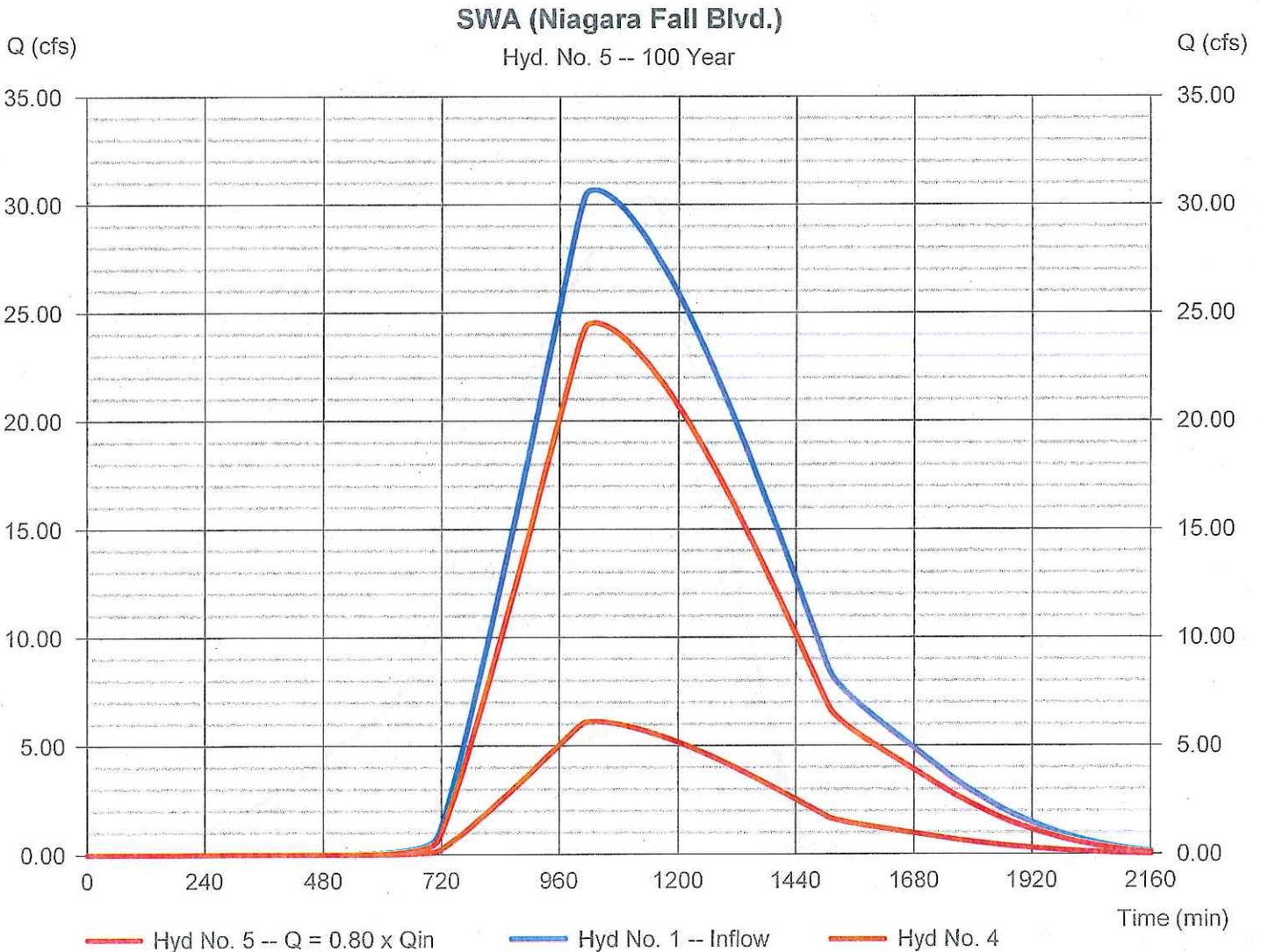
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 5

SWA (Niagara Fall Blvd.)

Hydrograph type	= Diversion2	Peak discharge	= 24.54 cfs
Storm frequency	= 100 yrs	Time to peak	= 1030 min
Time interval	= 2 min	Hyd. volume	= 833,574 cuft
Inflow hydrograph	= 1 - SWA-1 trib (SW-A1)	2nd diverted hyd.	= 4
Diversion method	= Flow Ratio	Flow ratio	= 0.20



Hydrograph Report

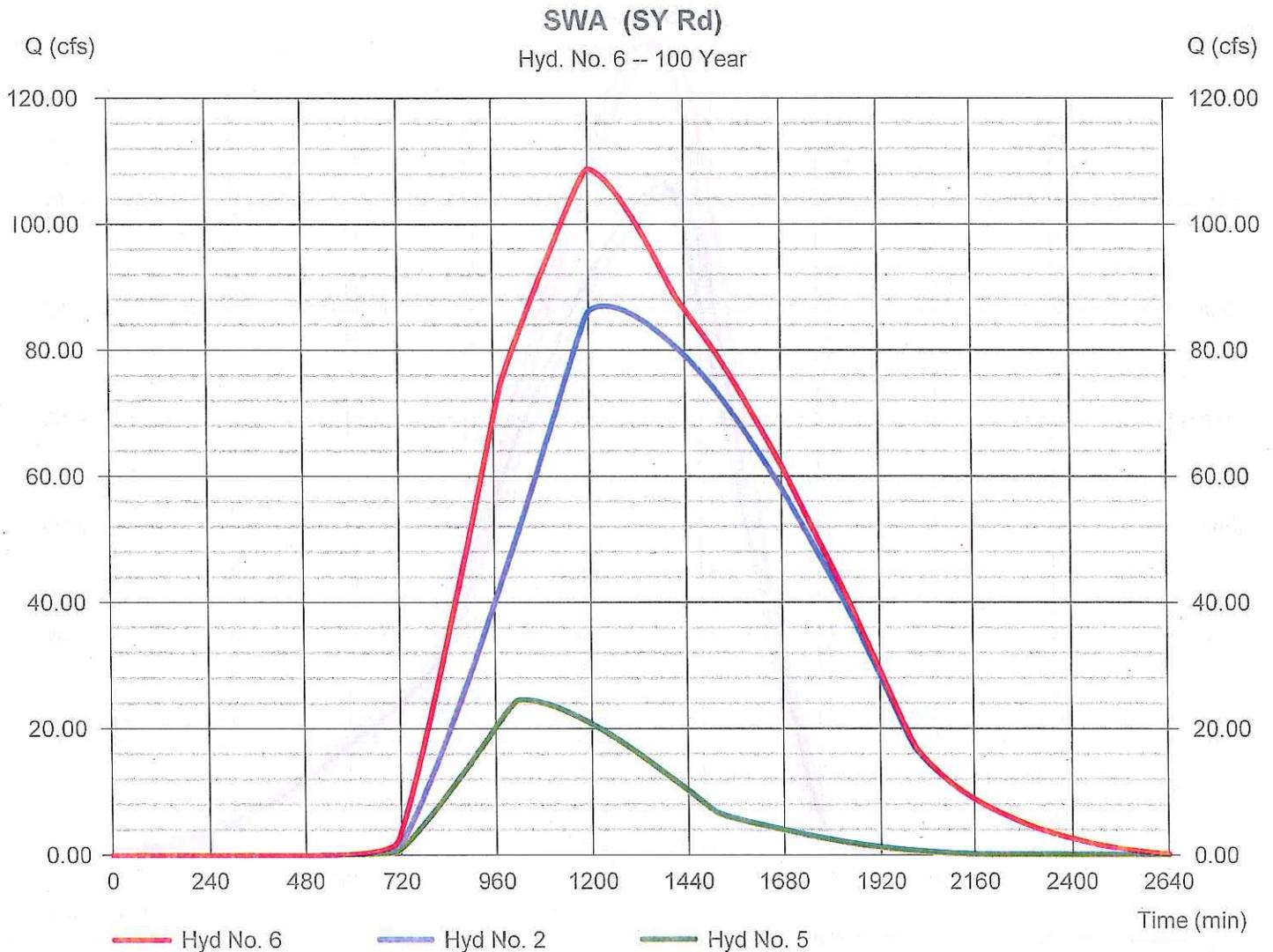
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Thursday, 01 / 28 / 2016

Hyd. No. 6

SWA (SY Rd)

Hydrograph type	= Combine	Peak discharge	= 108.78 cfs
Storm frequency	= 100 yrs	Time to peak	= 1202 min
Time interval	= 2 min	Hyd. volume	= 5,324,945 cuft
Inflow hyds.	= 2, 5	Contrib. drain. area	= 527.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

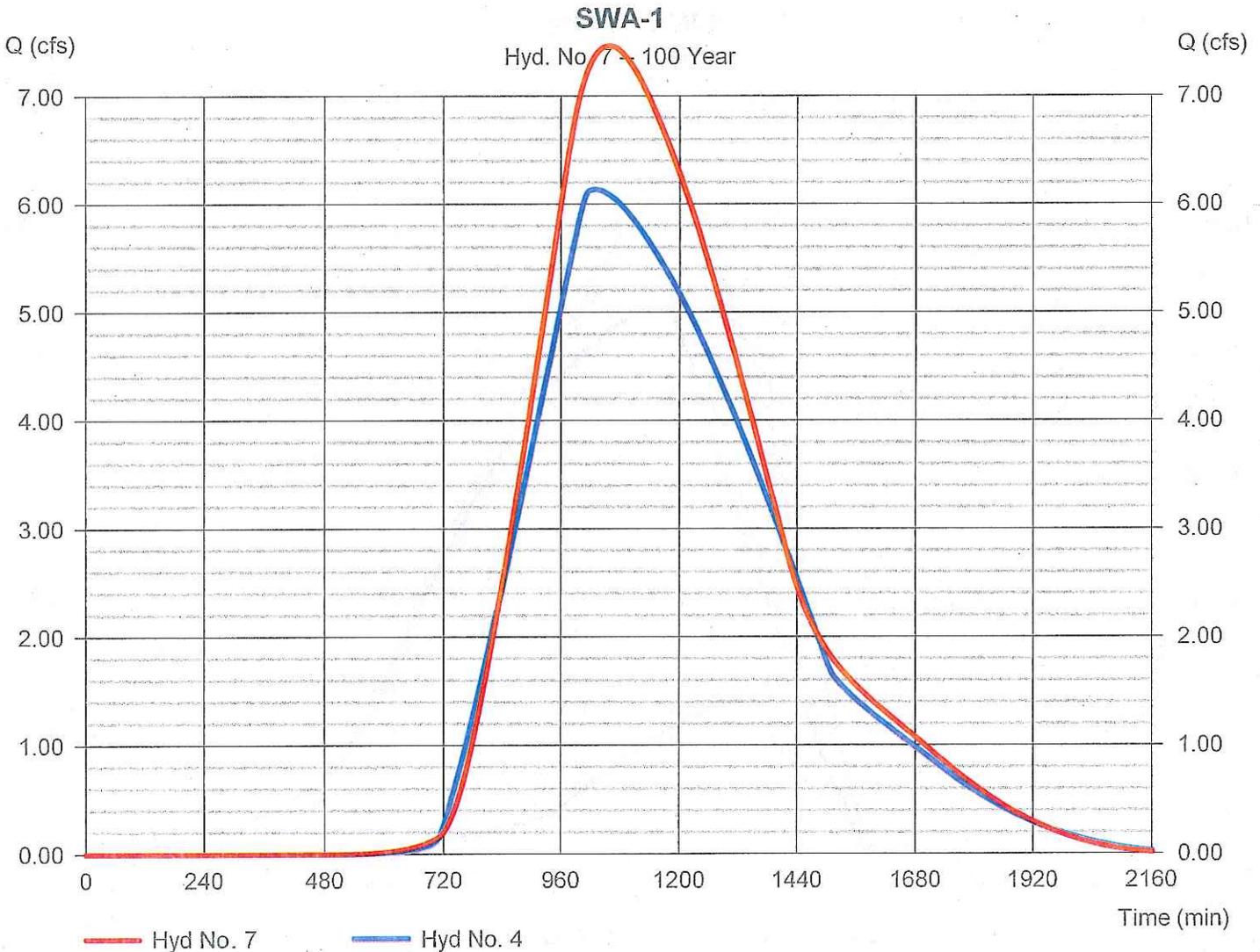
Thursday, 01 / 28 / 2016

Hyd. No. 7

SWA-1

Hydrograph type	= Reach	Peak discharge	= 7.462 cfs
Storm frequency	= 100 yrs	Time to peak	= 1058 min
Time interval	= 2 min	Hyd. volume	= 238,527 cuft
Inflow hyd. No.	= 4 - SWA-1 (Rose Court)	Section type	= Trapezoidal
Reach length	= 3000.0 ft	Channel slope	= 0.1 %
Manning's n	= 0.035	Bottom width	= 10.0 ft
Side slope	= 1.0:1	Max. depth	= 3.0 ft
Rating curve x	= 0.205	Rating curve m	= 1.518
Ave. velocity	= 0.00 ft/s	Routing coeff.	= 0.0423

Modified Att-Kin routing method used.

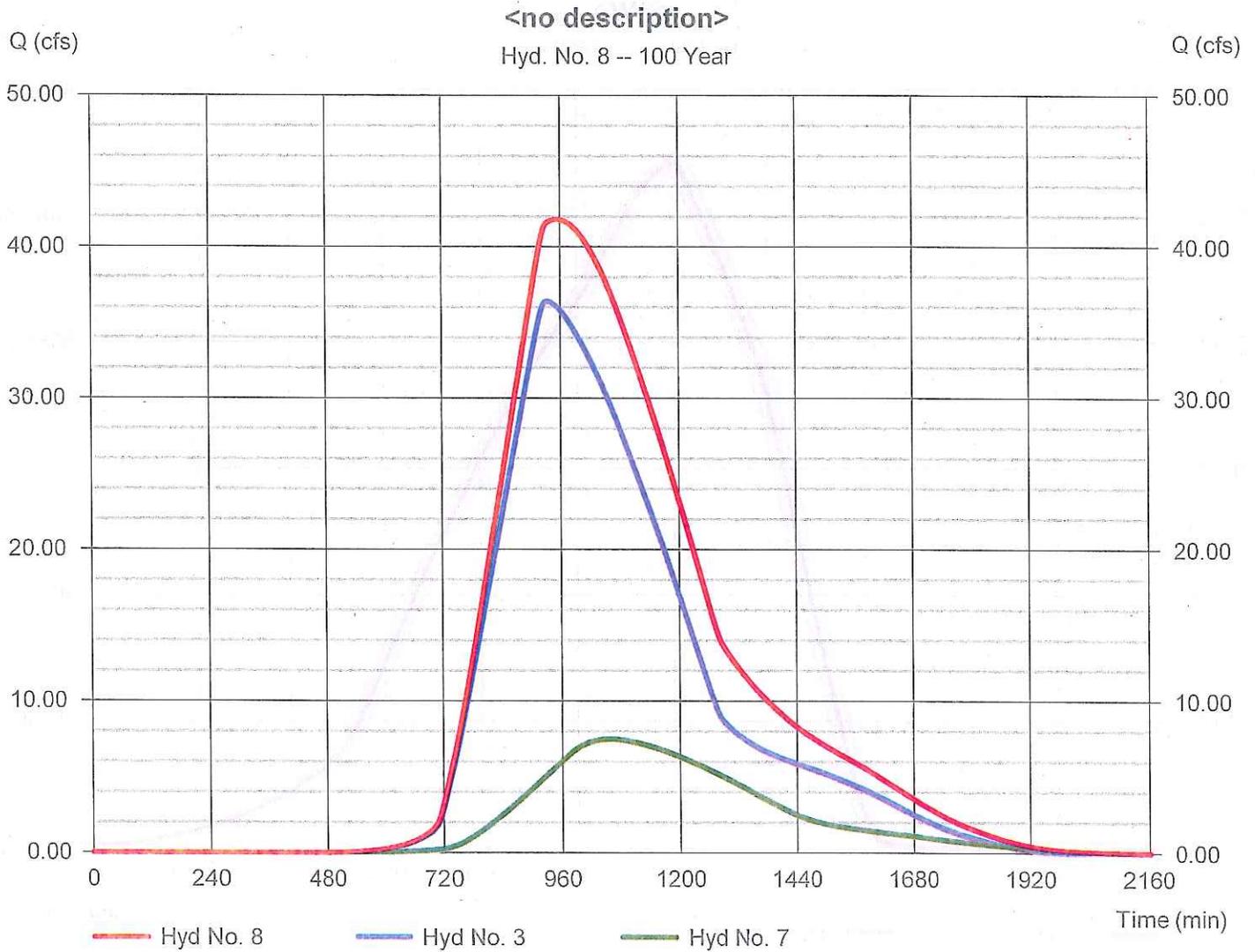


Hydrograph Report

Hyd. No. 8

<no description>

Hydrograph type	= Combine	Peak discharge	= 41.81 cfs
Storm frequency	= 100 yrs	Time to peak	= 952 min
Time interval	= 2 min	Hyd. volume	= 1,164,284 cuft
Inflow hyds.	= 3, 7	Contrib. drain. area	= 91.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

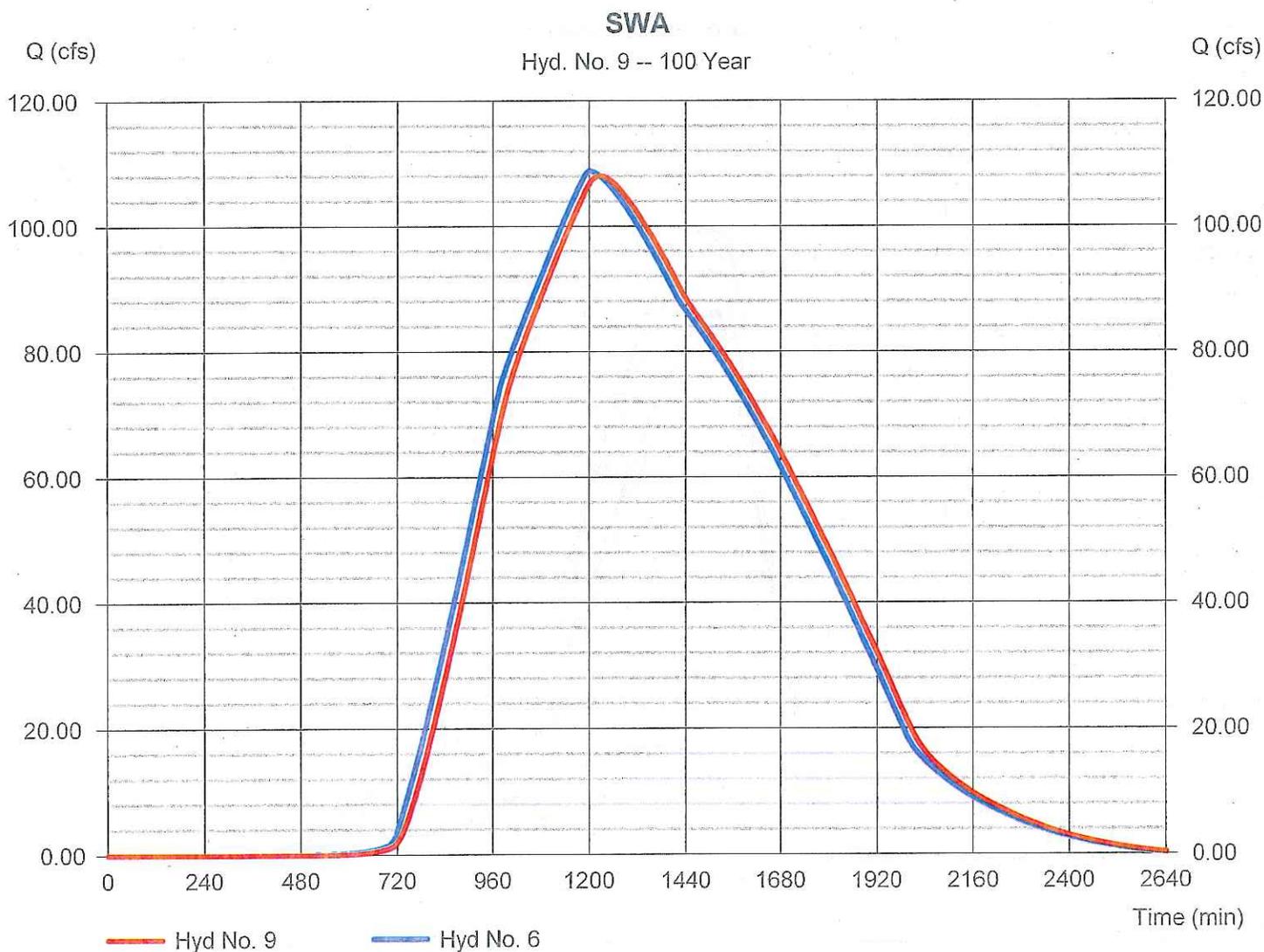
Thursday, 01 / 28 / 2016

Hyd. No. 9

SWA

Hydrograph type	= Reach	Peak discharge	= 108.02 cfs
Storm frequency	= 100 yrs	Time to peak	= 1226 min
Time interval	= 2 min	Hyd. volume	= 5,324,934 cuft
Inflow hyd. No.	= 6 - SWA (SY Rd)	Section type	= Trapezoidal
Reach length	= 2500.0 ft	Channel slope	= 0.1 %
Manning's n	= 0.035	Bottom width	= 25.0 ft
Side slope	= 1.0:1	Max. depth	= 5.0 ft
Rating curve x	= 0.122	Rating curve m	= 1.576
Ave. velocity	= 0.00 ft/s	Routing coeff.	= 0.1047

Modified Att-Kin routing method used.



Hydrograph Report

Hyd. No. 10

SWA (Walmore)

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 2 min
Inflow hyds. = 8, 9

Peak discharge = 129.99 cfs
Time to peak = 1198 min
Hyd. volume = 6,489,221 cuft
Contrib. drain. area = 0.000 ac

