PCSM PLAN NARRATIVE & CALCULATIONS
Eagle & Radnor Roads Subdivision
Radnor Township, Delaware County
Plan Prepared For: CG Wayne, LLC

Date: September 9, 2020

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EXECUTIVE SUMMARY
GRADING PERMIT
NARRATIVE

The Applicant, CG Wayne, LLC, proposes to a subdivide the parent tract into 20 single family homes. The parent tract consists for 2 parcels. The larger parcel is located on the southeast corner of Eagle Road and Radnor Road (36-02-0097810) and the smaller parcel immediately east along Eagle Road (36-02-0097820). An unnamed tributary to Gulph Creek runs between the 2 parcels. The project point of analysis, POI-A, is creek just north of the Walnut Lane culvert. To evaluate stormwater control performance, the contribution from the project stormwater management area (SWMA, same as the limit of disturbance) to POI-A for the existing conditions is determined. The SWMA is divided into 7 outfall locations to determine the post-development conditions. Each Outfall is assumed to have a Tt of zero from the outfall location to POI-A to provide a conservative estimate of the peak flows. See the Outfall Location Map in this report for the general locations. The drainage area map on Sheet X of the plan set provides a large-scale view of the outfall locations and site conditions.

A summary of the calculation results are provided on the tables in this report. The Compliance Summary Table provides the requirements and performance totals for the SWMA. The Peak Flows and Runoff Volumes Table presents results for the pre-development condition and each post-development outfall. The Basin Volumes and Dewater Times Table presents the sata for the each infiltration basin.

Peak flows and runoff volumes are calculated by the SCS soil cover complex method (TR-55) using the Hydraflow program. Output from the modeling is included with this report including peak outflow and hydrograph summaries for all hydrographs and storm events. To conserve paper, detailed hydrographs are provided for the 2 year storm event only. This documents the input data for all storm events. The only difference between storm events is the rain fall amount which is provided in the Hydraflow Rainfall Report

Each lot which passed infiltration tests was fitted with an infiltration bed. Each bed is design based on the proposed impervious and other coverage captured by the system of swale, inlets and infiltration beds regardless of lot in the drainage area. The remain areas (uncontrolled) and an additional 1,500 SF of future impervious area per lot is included in the bypass calculations. The property is in the Gulph Creek Watershed and release rates are per Table 408.2. Retention Volume requirement is based on Chapter 245-22.A(2)(a) for project with proposed impervious greater than 1,500 SF. The Water Quality Volume requirement is based on Chapter 245-23.D(1). The lots that failed infiltration testing are partially captured by a downstream basins and the balance of the area is included in the bypass calculations.

The limit of disturbance and stormwater regulatory area is 11,631 SF. During construction erosion and sediment control is accomplished through phased disturbance, sedimentation basin, immediate stabilization, and silt barriers.

PLAN PREPARED FOR:

CG WAYNE, LLC
EAGLE & RADNOR ROADS
WAYNE, PA

RADNOR TOWNSHIP DELAWARE COUNTY

NUM.	DATE	REVISION

PLAN PREPARED BY:

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OUTFALL MAP

DATE:AUG 31, 2020

SHEET 1 of 1

SCALE: 1"= 200'

COMPLIANCE SUMMARY

EVENT: **RADNOR STORMWATER MANAGEMENT** DATE: **9/9/2020**
PROJECT: **RADNOR & EASGEL RDS SUBDIVSION** BY: **LPS**
LOCATION: **SW CORNER, RADNOR & EAGEL ROADS** REVISED:

Hydrograph Description	Peak Outflow (cfs)							COMMENTS
	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
	PROJECT AREA ANALYSIS							
WATERSHED	GULPH CR	OTHER	2YR POST<=1YR PRE 5<=2;10<=5;25<=10;50<=25;100<=100					
PRE-DEV - REGULATED AREA	10.63	15.83	24.73	34.74	45.48	56.76	71.41	PreDev Hyd#9
REDUCTION REQUIRED		-5.20	-8.90	-10.01	-10.74	-11.28	0.00	Table408.2
PRE DEV W/ COMPENSATORY	-	16.11	25.35	35.75	46.92	58.66	73.91	PreDev Hyd#11
ALLOWABLE DISCHARGE*	-	10.91	16.45	25.74	36.18	47.38	73.91	Row 10 + Row 11
BASIN DISCHARGE & BYPASS	-	3.75	6.35	9.28	16.61	28.81	44.38	PEAK FLOW TBL
PASS/ FAIL	-	PASS	PASS	PASS	PASS	PASS	PASS	

*ALLOWABLE DISCHARGE=PRE-DEV+COMPENSATORY RUNOFF LESS REDUCTION REQUIRED

CHAPTER 245-22.A(2)(a): RETENTION VOLUME, ReV (=>1,500 SF)				
2 YEAR POST-DEVELOPMENT		58,591	C.F.	SEE PEAK FLOW
2 YEAR PRE-DEVELOPMENT		46,928	C.F.	AND VOLUME
DIFFERENCE		11,663	C.F.	TABLE
BASIN INFILTRATION VOL		39,337	C.F.	
		PASS		

CHAP 245-22.A(2)(b): RETENTION VOLUME, ReV (>500&<1,500 SF)		
PARAMETER	*VALUE*	*UNIT*
P	1	IN
IMPERVIOUS	>1500 SF	SF
ReV	N/A	CF
BASIN	39,337	CF
	N/A	

PROVIDED INFILTRATION VOLUME	
See Basin Volume Table for individual basin volumes	39337

CHAP 245-22.A(1)(c): DEWATER TIME
See basin dewater Table for individual basin dewater times

CHAP 245-23.D(1): WATER QUALITY VOLUME, WQv		
PARAMETER	*VALUE*	*UNIT*
P	1	IN
A	9.91	AC
I	100	%
ReV	34,175	CF
BASIN	39,337	CF
	PASS	

PEAK FLOWS & RUNOFF VOLUMES PER OUTFALL

EVENT: **RADNOR STORMWATER MANAGEMENT** DATE: **9/9/2020**
PROJECT: **RADNOR & EASGEL RDS SUBDIVSION** BY: **LPS**
LOCATION: **SW CORNER, RADNOR & EAGEL ROADS** REVISED:

Hydrograph Description	Peak Outflow (cfs)							
	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	2-YR VOL
PRE-DEV - REGULATED AREA	11.14	15.09	22.57	29.63	40.48	50.13	60.98	58591
OUTFALL A-1	-	0.01	0.05	0.20	0.74	1.04	1.37	1483
OUTFALL A-2	-	0.00	0.00	0.00	0.32	1.00	1.67	2510
OUTFALL A-3	-	0.00	0.03	0.25	1.49	4.99	9.50	12679
OUTFALL A-4	-	0.00	0.00	0.05	0.30	0.91	1.41	2033
OUTFALL A-5	-	0.00	0.00	0.02	0.53	2.83	6.29	8843
OUTFALL A-6	-	0.00	0.00	0.00	0.16	0.73	1.55	2449
OUTFALL A-7	-	0.10	0.13	0.21	0.75	1.60	3.08	3988
BYPASS	-	3.63	6.14	8.55	12.32	15.70	19.52	12943
POI-A TOTAL*	-	3.75	6.35	9.28	16.61	28.81	44.38	46928

*ASSUME WORST CASE SCENARIO OF IDENTICAL Tt FROM OUTFALL to POI.

BASIN VOLUMES & DEWATER TIMES PER BED

EVENT: **RADNOR STORMWATER MANAGEMENT** DATE: **9/9/2020**
PROJECT: **RADNOR & EASGEL RDS SUBDIVSION** BY: **LPS**
LOCATION: **SW CORNER, RADNOR & EAGEL ROADS** REVISED:

	LOWER ELEVATION		UPPER ELEVATION		INFIL VOL PROVIDED	BASIN FOOTPRINT	INFIL RATE	DEWATER TIME	MAX ALLOWED	
LOT #	ELEV	CF	ELEV	CF	CF	SF	IN/HR	HR	HR	
1	353.40	2394	354.20	3277	2780	2013	1.6	10	96	Pass
2	355.00	1144	355.40	1433	1325	1233	2.64	5	96	Pass
3	360.80	2293	361.20	2630	2462	1627	1.68	11	96	Pass
4	NO BED						0			
5	NO BED						0			
6	379.80	757	380.20	862	810	574	1.92	9	96	Pass
7	381.80	1429	382.20	1638	1534	1038	1.44	12	96	Pass
8	379.40	2552	379.80	3045	2983	2142	1.92	9	96	Pass
9	372.80	1992	373.20	2285	2139	1428	2.48	7	96	Pass
10	371.80	2274	372.20	2609	2232	1623	0.72	23	96	Pass
11	361.40	2237	361.80	2669	2345	1885	0.39	38	96	Pass
12	382.40	2552	382.80	3045	2675	2142	0.56	27	96	Pass
13	384.40	2237	384.80	2669	2345	1885	0.32	47	96	Pass
14	388.00	3256			3256	3370	0.48	24	96	Pass
15	NO BED						0			
16	403.40	3182	403.80	3797	3336	2657	2.64	6	96	Pass
17	406.40	3867	406.80	3421	3477	2399	0.72	24	96	Pass
18	402.80	1992	403.20	2285	2139	1428	1.44	12	96	Pass
19	393.90	2237	394.30	2669	2345	1885	1.92	8	96	Pass
20	361.40	1103	361.80	1316	1156	972	0.39	37	96	Pass

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	------	4.352	5.577	-------	7.204	8.828	10.45	12.07	14.09	PRE-NORTH-80% OF IMP
2	SCS Runoff	------	1.089	1.395	-------	1.802	2.208	2.614	3.019	3.525	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	------	0.697	2.355	-------	5.560	9.399	13.65	18.21	24.33	PRE-NORTH-LAWN
4	Combine	1, 2, 3	5.864	8.867	-------	14.02	19.84	26.10	32.68	41.24	PRE-NORTH-TOTAL
5	SCS Runoff	------	3.583	4.592	-------	5.932	7.268	8.603	9.936	11.60	PRE-SOUTH-80% OF IMP
6	SCS Runoff	------	0.897	1.150	-------	1.485	1.820	2.154	2.488	2.905	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	------	0.466	1.573	-------	3.713	6.277	9.117	12.16	16.25	PRE-SOUTH-LAWN
8	Combine	5, 6, 7	4.763	6.986	-------	10.71	14.90	19.38	24.08	30.17	PRE-SOUTH-TOTAL
9	Combine	4, 8	10.63	15.83	-------	24.73	34.74	45.48	56.76	71.41	PRE-POIA-TOTAL
10	SCS Runoff	------	0.084	0.281	-------	0.649	1.081	1.557	2.066	2.741	COMP-GRASS
11	Combine	9, 10	10.71	16.11	-------	25.35	35.75	46.92	58.66	73.91	POI A PREDEV+COMP

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	------	0.186	0.225	-------	0.283	0.333	0.403	0.461	0.525	20A-POST-IMP
2	SCS Runoff	------	0.007	0.017	-------	0.038	0.057	0.088	0.116	0.148	20A-POST-LAWN
3	SCS Runoff	------	0.274	0.331	-------	0.417	0.489	0.592	0.678	0.772	20B-POST-IMP
4	SCS Runoff	------	0.018	0.044	-------	0.094	0.143	0.220	0.290	0.369	20B-POST-LAWN
5	Combine	1, 2, 3, 4	0.470	0.593	-------	0.799	0.980	1.251	1.487	1.750	20-POST-BED INFLOW
6	Reservoir	5	0.008	0.009	-------	0.047	0.197	0.738	1.040	1.367	20-POST-BED DISCHARGE

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	------	0.091	0.110	-------	0.139	0.163	0.197	0.226	0.257	19A-POST-CAPT-IMP
2	SCS Runoff	------	0.092	0.224	-------	0.483	0.733	1.128	1.485	1.891	19A-POST-CAPT-LAWN
3	SCS Runoff	------	0.490	0.592	-------	0.745	0.874	1.058	1.212	1.379	19B-POST-CAPT-IMP
4	SCS Runoff	------	0.029	0.071	-------	0.152	0.231	0.355	0.468	0.596	19B-POST-CAPT-LAWN
5	Combine	1, 2, 3, 4	0.640	0.924	-------	1.435	1.911	2.643	3.295	4.029	19-BASIN-INFLOW
6	Reservoir	5	0.000	0.000	-------	0.000	0.000	0.317	1.006	1.667	19-BED DISCHARGE

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	------	0.186	0.225	-------	0.283	0.333	0.403	0.461	0.525	16A-POST-IMP
2	SCS Runoff	------	0.208	0.508	-------	1.095	1.662	2.558	3.368	4.290	16A-POST-LAWN
3	SCS Runoff	------	0.150	0.181	-------	0.228	0.267	0.324	0.371	0.422	16B-POST-IMP
4	SCS Runoff	------	0.029	0.072	-------	0.155	0.235	0.361	0.476	0.606	16B-POST-LAWN
5	Combine	1, 2, 3, 4	0.488	0.888	-------	1.653	2.386	3.539	4.579	5.762	16-POST-BED INFLOW
6	Reservoir	5	0.000	0.000	-------	0.000	0.000	0.145	0.825	1.669	16-POST-BED DISCHARGE
7	SCS Runoff	------	0.179	0.216	-------	0.272	0.320	0.387	0.443	0.504	14A-POST-IMP
8	SCS Runoff	------	0.061	0.149	-------	0.320	0.487	0.749	0.986	1.256	14A-POST-LAWN
9	SCS Runoff	------	0.267	0.322	-------	0.406	0.476	0.576	0.660	0.751	14B-POST-IMP
10	SCS Runoff	------	0.064	0.156	-------	0.336	0.509	0.784	1.032	1.315	14B-POST-LAWN
11	SCS Runoff	------	0.311	0.375	-------	0.472	0.554	0.671	0.769	0.875	15A-POST-IMP
12	SCS Runoff	------	0.092	0.225	-------	0.485	0.737	1.133	1.493	1.901	15A-POST-LAWN
13	Combine	7, 8, 9, 10, 11, 12	0.875	1.329	-------	2.162	2.944	4.158	5.244	6.470	14&15-POST-BED INFLOW
14	Reservoir	13	0.000	0.000	-------	0.031	0.179	0.805	1.392	1.991	14-POST-BED DISCHARGE
15	SCS Runoff	------	0.212	0.256	-------	0.322	0.378	0.458	0.525	0.597	17A-POST-IMP
16	SCS Runoff	------	0.098	0.240	-------	0.517	0.784	1.207	1.589	2.024	17A-LAWN
17	SCS Runoff	------	0.069	0.084	-------	0.106	0.124	0.150	0.172	0.196	17B-POST-IMP
18	SCS Runoff	------	0.053	0.129	-------	0.278	0.422	0.649	0.855	1.088	17B-POST-LAWN
19	SCS Runoff	------	0.146	0.177	-------	0.222	0.261	0.316	0.362	0.412	17C-POST-IMP
20	SCS Runoff	------	0.018	0.044	-------	0.094	0.143	0.220	0.290	0.369	17C-POST-LAWN
21	Combine	15, 16, 17, 18, 19, 20	0.527	0.849	-------	1.449	2.018	2.905	3.702	4.604	17-POST-BED INFLOW
22	Reservoir	21	0.000	0.000	-------	0.000	0.000	0.152	0.570	1.461	17-POST-BED DISCHARGE
23	SCS Runoff	------	0.044	0.107	-------	0.230	0.349	0.537	0.708	0.901	18A-POST-LAWN
24	SCS Runoff	------	0.420	0.508	-------	0.639	0.750	0.908	1.040	1.183	18B-POST-IMP
25	SCS Runoff	------	0.033	0.081	-------	0.175	0.265	0.408	0.537	0.685	18B-POST-LAWN
26	Combine	23, 24, 25	0.456	0.647	-------	0.987	1.303	1.788	2.218	2.703	18-POST-BED INFLOW
27	Reservoir	26	0.000	0.000	-------	0.000	0.000	0.048	0.346	1.092	18-POST-BED DISCHARGE
28	SCS Runoff	------	0.420	0.508	-------	0.639	0.750	0.908	1.040	1.183	13A-POST-IMP
29	SCS Runoff	------	0.052	0.127	-------	0.273	0.414	0.637	0.839	1.069	13A-POST-LAWN
30	SCS Runoff	------	0.018	0.022	-------	0.028	0.033	0.039	0.045	0.051	13B-POST-IMP
31	SCS Runoff	------	0.076	0.186	-------	0.401	0.609	0.937	1.233	1.571	13B-POST-LAWN
32	Combine	28, 29, 30, 31	0.509	0.775	-------	1.264	1.725	2.438	3.076	3.798	13-POST-BED INFLOW
33	Reservoir	32	0.000	0.000	-------	0.008	0.074	0.412	1.097	1.770	13-POST-BED DISCHARGE
34	SCS Runoff	------	0.197	0.238	-------	0.300	0.352	0.426	0.488	0.556	12A-POST-IMP

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	
35	SCS Runoff	------	0.056	0.136	-------	0.293	0.445	0.684	0.901	1.147	12A-POST-LAWN
36	SCS Runoff	------	0.376	0.455	-------	0.573	0.672	0.813	0.932	1.060	12B-POST-IMP
37	SCS Runoff	------	0.008	0.020	-------	0.044	0.067	0.103	0.135	0.172	12B-POST-LAWN
38	SCS Runoff	------	0.070	0.169	-------	0.349	0.522	0.795	1.040	1.319	12C-POST-LAWN
39	Combine	34, 35, 36, 37, 38	0.662	0.965	-------	1.496	1.988	2.744	3.415	4.170	12-POST-BED INFLOW
40	Reservoir	39	0.000	0.000	-------	0.000	0.044	0.308	0.958	1.622	12-POST-BED DISCHARGE
41	Combine	6, 14, 22, 27, 33, 40	0.000	0.000	-------	0.031	0.251	1.492	4.999	9.497	A3 CONTROLED DISCHARGE

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	------	0.270	0.329	-------	-------	0.482	0.583	0.668	0.758	11A-POST-IMP
2	SCS Runoff	------	0.084	0.218	-------	-------	0.707	1.091	1.441	1.832	11A-POST-LAWN
3	SCS Runoff	------	0.112	0.136	-------	-------	0.199	0.241	0.276	0.313	11B-POST-IMP
4	SCS Runoff	------	0.035	0.092	-------	-------	0.298	0.460	0.608	0.773	11B-POST-LAWN
5	Combine	1, 2, 3, 4	0.446	0.711	-------	-------	1.609	2.296	2.917	3.605	11-POST-BED INFLOW
6	Reservoir	5	0.000	0.000	-------	-------	0.042	0.266	0.894	1.320	11-POST-BED DISCHARGE

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	------	0.150	0.181	-------	0.228	0.267	0.324	0.371	0.422	6A-POST-IMP
2	SCS Runoff	------	0.009	0.022	-------	0.047	0.071	0.109	0.143	0.182	6A-POST-LAWN
3	SCS Runoff	------	0.150	0.181	-------	0.228	0.267	0.324	0.371	0.422	6B-POST-IMP
4	SCS Runoff	------	0.008	0.019	-------	0.041	0.063	0.097	0.128	0.163	6B-POST-LAWN
5	Combine	1, 2, 3, 4	0.306	0.387	-------	0.521	0.641	0.818	0.974	1.147	6-POST-BED INFLOW
6	Reservoir	5	0.000	0.000	-------	0.000	0.001	0.219	0.622	0.965	6-POST-BED DISCHARGE
7	SCS Runoff	------	0.164	0.199	-------	0.250	0.293	0.355	0.407	0.463	7A-POST-IMP
8	SCS Runoff	------	0.055	0.134	-------	0.288	0.437	0.672	0.885	1.128	7A-POST-LAWN
9	SCS Runoff	------	0.102	0.124	-------	0.156	0.183	0.221	0.253	0.288	7B-POST-IMP
10	SCS Runoff	------	0.021	0.052	-------	0.113	0.172	0.264	0.348	0.443	7B-POST-LAWN
11	Combine	7, 8, 9, 10	0.308	0.468	-------	0.761	1.036	1.463	1.845	2.276	7-POST-BED INFLOW
12	Reservoir	11	0.000	0.000	-------	0.000	0.000	0.118	0.633	1.350	7-POST-BED DISCHARGE
13	SCS Runoff	------	0.278	0.336	-------	0.422	0.496	0.600	0.687	0.782	8A-POST-IMP
14	SCS Runoff	------	0.069	0.169	-------	0.364	0.553	0.852	1.121	1.428	8A-POST-LAWN
15	SCS Runoff	------	0.387	0.468	-------	0.589	0.691	0.837	0.959	1.091	8B-POST-IMP
16	SCS Runoff	------	0.056	0.136	-------	0.294	0.447	0.687	0.905	1.152	8B-POST-LAWN
17	Combine	13, 14, 15, 16	0.723	1.031	-------	1.579	2.088	2.871	3.566	4.348	8-POST-BED INFLOW
18	Reservoir	17	0.000	0.000	-------	0.000	0.000	0.146	0.715	1.523	8-POST-DISCHARGE
19	SCS Runoff	------	0.030	0.073	-------	0.157	0.239	0.367	0.483	0.616	9A-POST-LAWN
20	SCS Runoff	------	0.347	0.419	-------	0.528	0.619	0.750	0.859	0.978	9B-POST-IMP
21	SCS Runoff	------	0.076	0.186	-------	0.401	0.609	0.937	1.233	1.571	9B-POST-LAWN
22	Combine	19, 20, 21	0.406	0.624	-------	1.024	1.401	1.987	2.510	3.103	9-POST-BED INFLOW
23	Reservoir	22	0.000	0.000	-------	0.000	0.000	0.036	0.476	1.335	9-POST-BED DISCHARGE
24	SCS Runoff	------	0.311	0.375	-------	0.472	0.554	0.671	0.769	0.875	10A-POST-IMP
25	SCS Runoff	------	0.014	0.034	-------	0.073	0.111	0.170	0.224	0.286	10A-POST-LAWN
26	SCS Runoff	------	0.201	0.243	-------	0.306	0.359	0.434	0.497	0.566	10B-POST-IMP
27	SCS Runoff	------	0.070	0.171	-------	0.368	0.559	0.860	1.133	1.443	10B-POST-LAWN
28	Combine	24, 25, 26, 27	0.548	0.767	-------	1.154	1.511	2.059	2.544	3.090	10-POST-BED INFLOW
29	Reservoir	28	0.000	0.000	-------	0.000	0.016	0.223	0.829	1.509	10-POST-BED DISCHARGE
30	Combine	6, 12, 18, 23, 29	0.000	0.000	-------	0.000	0.016	0.530	2.832	6.290	A5 CONTROLLED DISCHARGE

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	------	0.526	0.636	-------	0.800	0.939	1.137	1.302	1.482	1A-IMP
2	SCS Runoff	------	0.113	0.277	-------	0.597	0.906	1.395	1.837	2.339	1A-LAWN
3	SCS Runoff	------	0.020	0.050	-------	0.107	0.162	0.250	0.329	0.419	1B-LAWN
4	Combine	1, 2, 3	0.597	0.889	-------	1.420	1.918	2.688	3.375	4.151	1-POST-BED INFLOW
5	Reservoir	4	0.000	0.000	-------	0.000	0.000	0.158	0.730	1.555	1-POST-BED DISCHARGE

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	------	0.197	0.238	-------	0.300	0.352	0.426	0.488	0.556	2A-POST-IMP
2	SCS Runoff	------	0.062	0.151	-------	0.326	0.494	0.761	1.001	1.276	2A-POST-LAWN
3	SCS Runoff	------	0.263	0.318	-------	0.400	0.469	0.568	0.651	0.741	2B-POST-IMP
4	SCS Runoff	------	0.013	0.031	-------	0.068	0.103	0.159	0.209	0.266	2B-POST-LAWN
5	Combine	1, 2, 3, 4	0.492	0.689	-------	1.035	1.355	1.845	2.279	2.767	2-POST-BED INFLOW
6	Reservoir	5	0.049	0.056	-------	0.069	0.141	0.681	1.189	1.647	2-POST-BED DISCHARGE
7	SCS Runoff	------	0.121	0.146	-------	0.183	0.215	0.260	0.298	0.340	3B-POST-IMP
8	SCS Runoff	------	0.020	0.048	-------	0.103	0.156	0.241	0.317	0.404	3B-POST-LAWN
9	SCS Runoff	------	0.417	0.503	-------	0.634	0.743	0.900	1.031	1.173	4B-POST-IMP
10	SCS Runoff	------	0.068	0.166	-------	0.357	0.542	0.834	1.098	1.399	4B-POST-LAWN
11	Combine	7, 8, 9, 10	0.575	0.804	-------	1.209	1.582	2.155	2.662	3.232	3-POST-BED INFLOW
12	Reservoir	11	0.041	0.048	-------	0.058	0.068	0.152	0.572	1.428	3-POST-BED DISCHARGE
13	Combine	6, 12	0.090	0.104	-------	0.127	0.207	0.754	1.602	3.075	A7 CONTROLLED DISCHARGE

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	------	1.900	2.296	-------	2.892	3.393	4.108	4.708	5.358	POST-BYPASS-IMP
2	SCS Runoff	------	0.629	1.556	-------	3.495	5.397	8.415	11.16	14.37	POST-BYPASS-GRASS
3	Combine	1, 2	2.336	3.634	-------	6.142	8.553	12.32	15.70	19.54	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	4.352	2	722	13,570	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	1.089	2	722	3,395	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	0.697	2	730	4,894	------	------	------	PRE-NORTH-LAWN
4	Combine	5.864	2	722	21,859	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	3.583	2	722	11,174	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	0.897	2	722	2,798	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	0.466	2	730	3,269	------	------	------	PRE-SOUTH-LAWN
8	Combine	4.763	2	722	17,240	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	Combine	10.63	2	722	39,099	4, 8	------	------	PRE-POIA-TOTAL
10	SCS Runoff	0.084	2	724	455	------	------	------	COMP-GRASS
11	Combine	10.71	2	722	39,554	9, 10	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	5.577	2	722	17,608	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	1.395	2	722	4,405	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	2.355	2	728	10,479	------	------	------	PRE-NORTH-LAWN
4	Combine	8.867	2	724	32,491	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	4.592	2	722	14,498	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	1.150	2	722	3,630	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	1.573	2	728	6,998	------	------	------	PRE-SOUTH-LAWN
8	Combine	6.986	2	722	25,126	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	Combine	15.83	2	724	57,617	4, 8	------	------	PRE-POIA-TOTAL
10	SCS Runoff	0.281	2	722	974	------	------	------	COMP-GRASS
11	Combine	16.11	2	724	58,591	9, 10	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	7.204	2	722	22,999	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	1.802	2	722	5,753	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	5.560	2	726	20,100	------	------	------	PRE-NORTH-LAWN
4	Combine	14.02	2	724	48,852	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	5.932	2	722	18,937	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	1.485	2	722	4,741	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	3.713	2	726	13,424	------	------	------	PRE-SOUTH-LAWN
8	Combine	10.71	2	724	37,102	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	Combine	24.73	2	724	85,954	4, 8	------	------	PRE-POIA-TOTAL
10	SCS Runoff	0.649	2	722	1,868	------	------	------	COMP-GRASS
11	Combine	25.35	2	724	87,822	9, 10	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	8.828	2	722	28,395	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	2.208	2	722	7,103	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	9.399	2	726	31,579	------	------	------	PRE-NORTH-LAWN
4	Combine	19.84	2	724	67,077	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	7.268	2	722	23,380	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	1.820	2	722	5,854	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	6.277	2	726	21,090	------	------	------	PRE-SOUTH-LAWN
8	Combine	14.90	2	724	50,324	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	Combine	34.74	2	724	117,401	4, 8	------	------	PRE-POIA-TOTAL
10	SCS Runoff	1.081	2	722	2,935	------	------	------	COMP-GRASS
11	Combine	35.75	2	724	120,336	9, 10	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	10.45	2	722	33,795	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	2.614	2	722	8,454	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	13.65	2	726	44,444	------	------	------	PRE-NORTH-LAWN
4	Combine	26.10	2	724	86,693	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	8.603	2	722	27,826	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	2.154	2	722	6,967	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	9.117	2	726	29,682	------	------	------	PRE-SOUTH-LAWN
8	Combine	19.38	2	724	64,475	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	Combine	45.48	2	724	151,168	4, 8	------	------	PRE-POIA-TOTAL
10	SCS Runoff	1.557	2	722	4,131	------	------	------	COMP-GRASS
11	Combine	46.92	2	724	155,298	9, 10	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	12.07	2	722	39,196	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	3.019	2	722	9,805	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	18.21	2	726	58,373	------	------	------	PRE-NORTH-LAWN
4	Combine	32.68	2	724	107,374	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	9.936	2	722	32,273	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	2.488	2	722	8,081	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	12.16	2	726	38,984	------	------	------	PRE-SOUTH-LAWN
8	Combine	24.08	2	724	79,338	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	Combine	56.76	2	724	186,711	4, 8	------	------	PRE-POIA-TOTAL
10	SCS Runoff	2.066	2	722	5,425	------	------	------	COMP-GRASS
11	Combine	58.66	2	724	192,136	9, 10	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	14.09	2	722	45,948	------	------	------	PRE-NORTH-80% OF IMP
2	SCS Runoff	3.525	2	722	11,494	------	------	------	PRE-NORTH-20% IMP AS MEADOW
3	SCS Runoff	24.33	2	724	76,933	------	------	------	PRE-NORTH-LAWN
4	Combine	41.24	2	724	134,376	1, 2, 3	------	------	PRE-NORTH-TOTAL
5	SCS Runoff	11.60	2	722	37,833	------	------	------	PRE-SOUTH-80% OF IMP
6	SCS Runoff	2.905	2	722	9,473	------	------	------	PRE-SOUTH-20% IMP AS MEADOW
7	SCS Runoff	16.25	2	724	51,380	------	------	------	PRE-SOUTH-LAWN
8	Combine	30.17	2	724	98,685	5, 6, 7	------	------	PRE-SOUTH-TOTAL
9	Combine	71.41	2	724	233,061	4, 8	------	------	PRE-POIA-TOTAL
10	SCS Runoff	2.741	2	720	7,150	------	------	------	COMP-GRASS
11	Combine	73.91	2	724	240,211	9, 10	------	------	POI A PREDEV+COMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.186	2	716	432	------	------	------	20A-POST-IMP
2	SCS Runoff	0.007	2	722	29	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.274	2	716	635	------	------	------	20B-POST-IMP
4	SCS Runoff	0.018	2	722	72	------	------	------	20B-POST-LAWN
5	Combine	0.470	2	716	1,169	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.008	2	1064	1,159	5	360.88	816	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.225	2	716	527	------	------	------	20A-POST-IMP
2	SCS Runoff	0.017	2	720	51	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.331	2	716	775	------	------	------	20B-POST-IMP
4	SCS Runoff	0.044	2	720	129	------	------	------	20B-POST-LAWN
5	Combine	0.593	2	716	1,483	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.009	2	1112	1,474	5	361.33	1,063	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.283	2	716	671	------	------	------	20A-POST-IMP
2	SCS Runoff	0.038	2	720	94	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.417	2	716	986	------	------	------	20B-POST-IMP
4	SCS Runoff	0.094	2	720	235	------	------	------	20B-POST-LAWN
5	Combine	0.799	2	716	1,986	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.047	2	772	1,977	5	361.60	1,211	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.333	2	716	792	------	------	------	20A-POST-IMP
2	SCS Runoff	0.057	2	720	136	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.489	2	716	1,165	------	------	------	20B-POST-IMP
4	SCS Runoff	0.143	2	720	340	------	------	------	20B-POST-LAWN
5	Combine	0.980	2	716	2,433	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.197	2	728	2,424	5	361.74	1,283	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.403	2	716	965	------	------	------	20A-POST-IMP
2	SCS Runoff	0.088	2	720	204	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.592	2	716	1,420	------	------	------	20B-POST-IMP
4	SCS Runoff	0.220	2	720	510	------	------	------	20B-POST-LAWN
5	Combine	1.251	2	716	3,099	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	0.738	2	722	3,090	5	362.02	1,425	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.461	2	716	1,111	------	------	------	20A-POST-IMP
2	SCS Runoff	0.116	2	720	266	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.678	2	716	1,634	------	------	------	20B-POST-IMP
4	SCS Runoff	0.290	2	720	666	------	------	------	20B-POST-LAWN
5	Combine	1.487	2	718	3,677	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	1.040	2	722	3,668	5	362.24	1,525	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.525	2	716	1,269	------	------	------	20A-POST-IMP
2	SCS Runoff	0.148	2	720	338	------	------	------	20A-POST-LAWN
3	SCS Runoff	0.772	2	716	1,866	------	------	------	20B-POST-IMP
4	SCS Runoff	0.369	2	720	845	------	------	------	20B-POST-LAWN
5	Combine	1.750	2	718	4,318	1, 2, 3, 4	------	------	20-POST-BED INFLOW
6	Reservoir	1.367	2	720	4,309	5	362.48	1,622	20-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.091	2	716	212	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	0.092	2	722	370	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	0.490	2	716	1,135	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.029	2	722	116	------	------	------	19B-POST-CAPT-LAWN
5	Combine	0.640	2	718	1,833	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.000	2	636	0	5	392.50	709	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.110	2	716	258	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	0.224	2	720	659	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	0.592	2	716	1,385	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.071	2	720	208	------	------	------	19B-POST-CAPT-LAWN
5	Combine	0.924	2	718	2,510	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.000	2	1504	0	5	392.83	1,039	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.139	2	716	329	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	0.483	2	720	1,204	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	0.745	2	716	1,762	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.152	2	720	379	------	------	------	19B-POST-CAPT-LAWN
5	Combine	1.435	2	718	3,675	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.000	2	n/a	0	5	393.39	1,666	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.163	2	716	388	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	0.733	2	720	1,743	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	0.874	2	716	2,081	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.231	2	720	549	------	------	------	19B-POST-CAPT-LAWN
5	Combine	1.911	2	718	4,762	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.000	2	500	0	5	393.95	2,286	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.197	2	716	473	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	1.128	2	720	2,611	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	1.058	2	716	2,536	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.355	2	720	823	------	------	------	19B-POST-CAPT-LAWN
5	Combine	2.643	2	718	6,443	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	0.317	2	732	971	5	394.32	2,687	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.226	2	716	545	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	1.485	2	720	3,409	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	1.212	2	716	2,919	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.468	2	720	1,074	------	------	------	19B-POST-CAPT-LAWN
5	Combine	3.295	2	718	7,946	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	1.006	2	726	2,053	5	394.69	3,053	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.257	2	716	622	------	------	------	19A-POST-CAPT-IMP
2	SCS Runoff	1.891	2	720	4,329	------	------	------	19A-POST-CAPT-LAWN
3	SCS Runoff	1.379	2	716	3,334	------	------	------	19B-POST-CAPT-IMP
4	SCS Runoff	0.596	2	720	1,364	------	------	------	19B-POST-CAPT-LAWN
5	Combine	4.029	2	718	9,648	1, 2, 3, 4	------	------	19-BASIN-INFLOW
6	Reservoir	1.667	2	724	3,336	5	395.32	3,485	19-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.186	2	716	432	------	------	------	16A-POST-IMP
2	SCS Runoff	0.208	2	722	838	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.150	2	716	347	------	------	------	16B-POST-IMP
4	SCS Runoff	0.029	2	722	118	------	------	------	16B-POST-LAWN
5	Combine	0.488	2	718	1,736	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.000	2	1054	0	5	401.56	451	16-POST-BED DISCHARGE
7	SCS Runoff	0.179	2	716	415	------	------	------	14A-POST-IMP
8	SCS Runoff	0.061	2	722	245	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.267	2	716	618	------	------	------	14B-POST-IMP
10	SCS Runoff	0.064	2	722	257	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.311	2	716	720	------	------	------	15A-POST-IMP
12	SCS Runoff	0.092	2	722	372	------	------	------	15A-POST-LAWN
13	Combine	0.875	2	718	2,628	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	0.000	2	514	0	13	387.13	1,517	14-POST-BED DISCHARGE
15	SCS Runoff	0.212	2	716	491	------	------	------	17A-POST-IMP
16	SCS Runoff	0.098	2	722	396	------	------	------	17A-LAWN
17	SCS Runoff	0.069	2	716	161	------	------	------	17B-POST-IMP
18	SCS Runoff	0.053	2	722	213	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.146	2	716	339	------	------	------	17C-POST-IMP
20	SCS Runoff	0.018	2	722	72	------	------	------	17C-POST-LAWN
21	Combine	0.527	2	718	1,672	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.000	2	454	0	21	404.92	799	17-POST-BED DISCHARGE
23	SCS Runoff	0.044	2	722	176	------	------	------	18A-POST-LAWN
24	SCS Runoff	0.420	2	716	974	------	------	------	18B-POST-IMP
25	SCS Runoff	0.033	2	722	134	------	------	------	18B-POST-LAWN
26	Combine	0.456	2	718	1,284	23, 24, 25	------	------	18-POST-BED INFLOW
27	Reservoir	0.000	2	744	0	26	401.03	548	18-POST-BED DISCHARGE
28	SCS Runoff	0.420	2	716	974	------	------	------	13A-POST-IMP
29	SCS Runoff	0.052	2	722	209	------	------	------	13A-POST-LAWN
30	SCS Runoff	0.018	2	716	42	------	------	------	13B-POST-IMP
31	SCS Runoff	0.076	2	722	307	------	------	------	13B-POST-LAWN
32	Combine	0.509	2	718	1,533	28, 29, 30, 31	------	------	13-POST-BED INFLOW
33	Reservoir	0.000	2	3640	0	32	383.32	1,029	13-POST-BED DISCHARGE
34	SCS Runoff	0.197	2	716	458	------	------	------	12A-POST-IMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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
35	SCS Runoff	0.056	2	722	224	------	------	------	12A-POST-LAWN
36	SCS Runoff	0.376	2	716	873	------	------	------	12B-POST-IMP
37	SCS Runoff	0.008	2	722	34	------	------	------	12B-POST-LAWN
38	SCS Runoff	0.070	2	720	226	------	------	------	12C-POST-LAWN
39	Combine	0.662	2	718	1,814	34, 35, 36, 37, 38	------	------	12-POST-BED INFLOW
40	Reservoir	0.000	2	304	0	39	381.20	1,030	12-POST-BED DISCHARGE
41	Combine	0.000	2	744	0	6, 14, 22, 27, 33, 40	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.225	2	716	527	------	------	------	16A-POST-IMP
2	SCS Runoff	0.508	2	720	1,495	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.181	2	716	424	------	------	------	16B-POST-IMP
4	SCS Runoff	0.072	2	720	211	------	------	------	16B-POST-LAWN
5	Combine	0.888	2	718	2,657	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.000	2	1224	0	5	401.88	833	16-POST-BED DISCHARGE
7	SCS Runoff	0.216	2	716	506	------	------	------	14A-POST-IMP
8	SCS Runoff	0.149	2	720	438	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.322	2	716	755	------	------	------	14B-POST-IMP
10	SCS Runoff	0.156	2	720	458	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.375	2	716	879	------	------	------	15A-POST-IMP
12	SCS Runoff	0.225	2	720	662	------	------	------	15A-POST-LAWN
13	Combine	1.329	2	718	3,698	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	0.000	2	3234	0	13	387.53	2,298	14-POST-BED DISCHARGE
15	SCS Runoff	0.256	2	716	599	------	------	------	17A-POST-IMP
16	SCS Runoff	0.240	2	720	705	------	------	------	17A-LAWN
17	SCS Runoff	0.084	2	716	196	------	------	------	17B-POST-IMP
18	SCS Runoff	0.129	2	720	379	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.177	2	716	413	------	------	------	17C-POST-IMP
20	SCS Runoff	0.044	2	720	129	------	------	------	17C-POST-LAWN
21	Combine	0.849	2	718	2,423	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.000	2	406	0	21	405.29	1,278	17-POST-BED DISCHARGE
23	SCS Runoff	0.107	2	720	314	------	------	------	18A-POST-LAWN
24	SCS Runoff	0.508	2	716	1,189	------	------	------	18B-POST-IMP
25	SCS Runoff	0.081	2	720	239	------	------	------	18B-POST-LAWN
26	Combine	0.647	2	718	1,741	23, 24, 25	------	------	18-POST-BED INFLOW
27	Reservoir	0.000	2	692	0	26	401.34	789	18-POST-BED DISCHARGE
28	SCS Runoff	0.508	2	716	1,189	------	------	------	13A-POST-IMP
29	SCS Runoff	0.127	2	720	372	------	------	------	13A-POST-LAWN
30	SCS Runoff	0.022	2	716	52	------	------	------	13B-POST-IMP
31	SCS Runoff	0.186	2	720	547	------	------	------	13B-POST-LAWN
32	Combine	0.775	2	718	2,160	28, 29, 30, 31	------	------	13-POST-BED INFLOW
33	Reservoir	0.000	2	4446	0	32	383.79	1,547	13-POST-BED DISCHARGE
34	SCS Runoff	0.238	2	716	558	------	------	------	12A-POST-IMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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
35	SCS Runoff	0.136	2	720	400	------	------	------	12A-POST-LAWN
36	SCS Runoff	0.455	2	716	1,065	------	------	------	12B-POST-IMP
37	SCS Runoff	0.020	2	720	60	------	------	------	12B-POST-LAWN
38	SCS Runoff	0.169	2	718	402	------	------	------	12C-POST-LAWN
39	Combine	0.965	2	718	2,485	34, 35, 36, 37, 38	------	------	12-POST-BED INFLOW
40	Reservoir	0.000	2	228	0	39	381.58	1,496	12-POST-BED DISCHARGE
41	Combine	0.000	2	1224	0	6, 14, 22, 27, 33, 40	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.283	2	716	671	------	------	------	16A-POST-IMP
2	SCS Runoff	1.095	2	720	2,731	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.228	2	716	539	------	------	------	16B-POST-IMP
4	SCS Runoff	0.155	2	720	386	------	------	------	16B-POST-LAWN
5	Combine	1.653	2	718	4,327	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.000	2	n/a	0	5	402.44	1,649	16-POST-BED DISCHARGE
7	SCS Runoff	0.272	2	716	644	------	------	------	14A-POST-IMP
8	SCS Runoff	0.320	2	720	800	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.406	2	716	960	------	------	------	14B-POST-IMP
10	SCS Runoff	0.336	2	720	837	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.472	2	716	1,118	------	------	------	15A-POST-IMP
12	SCS Runoff	0.485	2	720	1,210	------	------	------	15A-POST-LAWN
13	Combine	2.162	2	718	5,570	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	0.031	2	932	458	13	388.09	3,444	14-POST-BED DISCHARGE
15	SCS Runoff	0.322	2	716	763	------	------	------	17A-POST-IMP
16	SCS Runoff	0.517	2	720	1,289	------	------	------	17A-LAWN
17	SCS Runoff	0.106	2	716	250	------	------	------	17B-POST-IMP
18	SCS Runoff	0.278	2	720	693	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.222	2	716	526	------	------	------	17C-POST-IMP
20	SCS Runoff	0.094	2	720	235	------	------	------	17C-POST-LAWN
21	Combine	1.449	2	718	3,756	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.000	2	334	0	21	405.94	2,199	17-POST-BED DISCHARGE
23	SCS Runoff	0.230	2	720	574	------	------	------	18A-POST-LAWN
24	SCS Runoff	0.639	2	716	1,513	------	------	------	18B-POST-IMP
25	SCS Runoff	0.175	2	720	436	------	------	------	18B-POST-LAWN
26	Combine	0.987	2	718	2,522	23, 24, 25	------	------	18-POST-BED INFLOW
27	Reservoir	0.000	2	1472	0	26	401.89	1,238	18-POST-BED DISCHARGE
28	SCS Runoff	0.639	2	716	1,513	------	------	------	13A-POST-IMP
29	SCS Runoff	0.273	2	720	680	------	------	------	13A-POST-LAWN
30	SCS Runoff	0.028	2	716	66	------	------	------	13B-POST-IMP
31	SCS Runoff	0.401	2	720	1,000	------	------	------	13B-POST-LAWN
32	Combine	1.264	2	718	3,259	28, 29, 30, 31	------	------	13-POST-BED INFLOW
33	Reservoir	0.008	2	1158	123	32	384.54	2,390	13-POST-BED DISCHARGE
34	SCS Runoff	0.300	2	716	710	------	------	------	12A-POST-IMP

Hydrograph Summary Report

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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
35	SCS Runoff	0.293	2	720	731	------	------	------	12A-POST-LAWN
36	SCS Runoff	0.573	2	716	1,355	------	------	------	12B-POST-IMP
37	SCS Runoff	0.044	2	720	110	------	------	------	12B-POST-LAWN
38	SCS Runoff	0.349	2	718	735	------	------	------	12C-POST-LAWN
39	Combine	1.496	2	718	3,640	34, 35, 36, 37, 38	------	------	12-POST-BED INFLOW
40	Reservoir	0.000	2	880	0	39	382.24	2,350	12-POST-BED DISCHARGE
41	Combine	0.031	2	932	580	6, 14, 22, 27, 33, 40	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.333	2	716	792	------	------	------	16A-POST-IMP
2	SCS Runoff	1.662	2	720	3,954	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.267	2	716	637	------	------	------	16B-POST-IMP
4	SCS Runoff	0.235	2	720	558	------	------	------	16B-POST-LAWN
5	Combine	2.386	2	718	5,941	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.000	2	678	0	5	402.98	2,512	16-POST-BED DISCHARGE
7	SCS Runoff	0.320	2	716	761	------	------	------	14A-POST-IMP
8	SCS Runoff	0.487	2	720	1,158	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.476	2	716	1,134	------	------	------	14B-POST-IMP
10	SCS Runoff	0.509	2	720	1,212	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.554	2	716	1,320	------	------	------	15A-POST-IMP
12	SCS Runoff	0.737	2	720	1,752	------	------	------	15A-POST-LAWN
13	Combine	2.944	2	718	7,337	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	0.179	2	772	2,064	13	388.23	3,734	14-POST-BED DISCHARGE
15	SCS Runoff	0.378	2	716	901	------	------	------	17A-POST-IMP
16	SCS Runoff	0.784	2	720	1,866	------	------	------	17A-LAWN
17	SCS Runoff	0.124	2	716	295	------	------	------	17B-POST-IMP
18	SCS Runoff	0.422	2	720	1,003	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.261	2	716	621	------	------	------	17C-POST-IMP
20	SCS Runoff	0.143	2	720	340	------	------	------	17C-POST-LAWN
21	Combine	2.018	2	718	5,027	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.000	2	432	0	21	406.58	3,113	17-POST-BED DISCHARGE
23	SCS Runoff	0.349	2	720	831	------	------	------	18A-POST-LAWN
24	SCS Runoff	0.750	2	716	1,786	------	------	------	18B-POST-IMP
25	SCS Runoff	0.265	2	720	631	------	------	------	18B-POST-LAWN
26	Combine	1.303	2	718	3,248	23, 24, 25	------	------	18-POST-BED INFLOW
27	Reservoir	0.000	2	n/a	0	26	402.41	1,676	18-POST-BED DISCHARGE
28	SCS Runoff	0.750	2	716	1,786	------	------	------	13A-POST-IMP
29	SCS Runoff	0.414	2	720	985	------	------	------	13A-POST-LAWN
30	SCS Runoff	0.033	2	716	78	------	------	------	13B-POST-IMP
31	SCS Runoff	0.609	2	720	1,448	------	------	------	13B-POST-LAWN
32	Combine	1.725	2	718	4,297	28, 29, 30, 31	------	------	13-POST-BED INFLOW
33	Reservoir	0.074	2	808	1,101	32	384.65	2,503	13-POST-BED DISCHARGE
34	SCS Runoff	0.352	2	716	839	------	------	------	12A-POST-IMP

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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
35	SCS Runoff	0.445	2	720	1,058	------	------	------	12A-POST-LAWN
36	SCS Runoff	0.672	2	716	1,600	------	------	------	12B-POST-IMP
37	SCS Runoff	0.067	2	720	159	------	------	------	12B-POST-LAWN
38	SCS Runoff	0.522	2	718	1,064	------	------	------	12C-POST-LAWN
39	Combine	1.988	2	718	4,719	34, 35, 36, 37, 38	------	------	12-POST-BED INFLOW
40	Reservoir	0.044	2	838	507	39	382.61	2,811	12-POST-BED DISCHARGE
41	Combine	0.251	2	806	3,672	6, 14, 22, 27, 33, 40	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.403	2	716	965	------	------	------	16A-POST-IMP
2	SCS Runoff	2.558	2	720	5,922	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.324	2	716	776	------	------	------	16B-POST-IMP
4	SCS Runoff	0.361	2	720	836	------	------	------	16B-POST-LAWN
5	Combine	3.539	2	718	8,499	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.145	2	756	518	5	403.71	3,654	16-POST-BED DISCHARGE
7	SCS Runoff	0.387	2	716	927	------	------	------	14A-POST-IMP
8	SCS Runoff	0.749	2	720	1,734	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.576	2	716	1,382	------	------	------	14B-POST-IMP
10	SCS Runoff	0.784	2	720	1,815	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.671	2	716	1,609	------	------	------	15A-POST-IMP
12	SCS Runoff	1.133	2	720	2,624	------	------	------	15A-POST-LAWN
13	Combine	4.158	2	718	10,091	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	0.805	2	730	4,688	13	388.56	4,403	14-POST-BED DISCHARGE
15	SCS Runoff	0.458	2	716	1,098	------	------	------	17A-POST-IMP
16	SCS Runoff	1.207	2	720	2,794	------	------	------	17A-LAWN
17	SCS Runoff	0.150	2	716	360	------	------	------	17B-POST-IMP
18	SCS Runoff	0.649	2	720	1,502	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.316	2	716	757	------	------	------	17C-POST-IMP
20	SCS Runoff	0.220	2	720	510	------	------	------	17C-POST-LAWN
21	Combine	2.905	2	718	7,021	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.152	2	776	1,338	21	406.96	3,627	17-POST-BED DISCHARGE
23	SCS Runoff	0.537	2	720	1,244	------	------	------	18A-POST-LAWN
24	SCS Runoff	0.908	2	716	2,177	------	------	------	18B-POST-IMP
25	SCS Runoff	0.408	2	720	945	------	------	------	18B-POST-LAWN
26	Combine	1.788	2	718	4,366	23, 24, 25	------	------	18-POST-BED INFLOW
27	Reservoir	0.048	2	780	214	26	403.12	2,224	18-POST-BED DISCHARGE
28	SCS Runoff	0.908	2	716	2,177	------	------	------	13A-POST-IMP
29	SCS Runoff	0.637	2	720	1,475	------	------	------	13A-POST-LAWN
30	SCS Runoff	0.039	2	716	95	------	------	------	13B-POST-IMP
31	SCS Runoff	0.937	2	720	2,169	------	------	------	13B-POST-LAWN
32	Combine	2.438	2	718	5,915	28, 29, 30, 31	------	------	13-POST-BED INFLOW
33	Reservoir	0.412	2	732	2,675	32	384.87	2,737	13-POST-BED DISCHARGE
34	SCS Runoff	0.426	2	716	1,022	------	------	------	12A-POST-IMP

Hydrograph Summary Report

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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
35	SCS Runoff	0.684	2	720	1,584	------	------	------	12A-POST-LAWN
36	SCS Runoff	0.813	2	716	1,950	------	------	------	12B-POST-IMP
37	SCS Runoff	0.103	2	720	238	------	------	------	12B-POST-LAWN
38	SCS Runoff	0.795	2	718	1,593	------	------	------	12C-POST-LAWN
39	Combine	2.744	2	718	6,387	34, 35, 36, 37, 38	------	------	12-POST-BED INFLOW
40	Reservoir	0.308	2	740	2,024	39	382.81	3,060	12-POST-BED DISCHARGE
41	Combine	1.492	2	732	11,456	6, 14, 22, 27, 33, 40	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.461	2	716	1,111	------	------	------	16A-POST-IMP
2	SCS Runoff	3.368	2	720	7,731	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.371	2	716	893	------	------	------	16B-POST-IMP
4	SCS Runoff	0.476	2	720	1,092	------	------	------	16B-POST-LAWN
5	Combine	4.579	2	718	10,827	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	0.825	2	730	2,046	5	404.07	4,180	16-POST-BED DISCHARGE
7	SCS Runoff	0.443	2	716	1,067	------	------	------	14A-POST-IMP
8	SCS Runoff	0.986	2	720	2,263	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.660	2	716	1,590	------	------	------	14B-POST-IMP
10	SCS Runoff	1.032	2	720	2,370	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.769	2	716	1,852	------	------	------	15A-POST-IMP
12	SCS Runoff	1.493	2	720	3,426	------	------	------	15A-POST-LAWN
13	Combine	5.244	2	718	12,569	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	1.392	2	728	7,075	13	389.02	5,262	14-POST-BED DISCHARGE
15	SCS Runoff	0.525	2	716	1,263	------	------	------	17A-POST-IMP
16	SCS Runoff	1.589	2	720	3,648	------	------	------	17A-LAWN
17	SCS Runoff	0.172	2	716	414	------	------	------	17B-POST-IMP
18	SCS Runoff	0.855	2	720	1,962	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.362	2	716	871	------	------	------	17C-POST-IMP
20	SCS Runoff	0.290	2	720	666	------	------	------	17C-POST-LAWN
21	Combine	3.702	2	718	8,824	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	0.570	2	732	2,976	21	407.20	3,922	17-POST-BED DISCHARGE
23	SCS Runoff	0.708	2	720	1,624	------	------	------	18A-POST-LAWN
24	SCS Runoff	1.040	2	716	2,505	------	------	------	18B-POST-IMP
25	SCS Runoff	0.537	2	720	1,234	------	------	------	18B-POST-LAWN
26	Combine	2.218	2	718	5,363	23, 24, 25	------	------	18-POST-BED INFLOW
27	Reservoir	0.346	2	730	938	26	403.33	2,366	18-POST-BED DISCHARGE
28	SCS Runoff	1.040	2	716	2,505	------	------	------	13A-POST-IMP
29	SCS Runoff	0.839	2	720	1,926	------	------	------	13A-POST-LAWN
30	SCS Runoff	0.045	2	716	109	------	------	------	13B-POST-IMP
31	SCS Runoff	1.233	2	720	2,832	------	------	------	13B-POST-LAWN
32	Combine	3.076	2	718	7,372	28, 29, 30, 31	------	------	13-POST-BED INFLOW
33	Reservoir	1.097	2	726	4,104	32	385.26	3,109	13-POST-BED DISCHARGE
34	SCS Runoff	0.488	2	716	1,176	------	------	------	12A-POST-IMP

Hydrograph Summary Report

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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
35	SCS Runoff	0.901	2	720	2,068	------	------	------	12A-POST-LAWN
36	SCS Runoff	0.932	2	716	2,244	------	------	------	12B-POST-IMP
37	SCS Runoff	0.135	2	720	311	------	------	------	12B-POST-LAWN
38	SCS Runoff	1.040	2	718	2,080	------	------	------	12C-POST-LAWN
39	Combine	3.415	2	718	7,879	34, 35, 36, 37, 38	------	------	12-POST-BED INFLOW
40	Reservoir	0.958	2	726	3,447	39	383.16	3,443	12-POST-BED DISCHARGE
41	Combine	4.999	2	730	20,587	6, 14, 22, 27, 33, 40	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.525	2	716	1,269	------	------	------	16A-POST-IMP
2	SCS Runoff	4.290	2	720	9,818	------	------	------	16A-POST-LAWN
3	SCS Runoff	0.422	2	716	1,020	------	------	------	16B-POST-IMP
4	SCS Runoff	0.606	2	720	1,387	------	------	------	16B-POST-LAWN
5	Combine	5.762	2	718	13,494	1, 2, 3, 4	------	------	16-POST-BED INFLOW
6	Reservoir	1.669	2	728	3,906	5	404.82	4,959	16-POST-BED DISCHARGE
7	SCS Runoff	0.504	2	716	1,219	------	------	------	14A-POST-IMP
8	SCS Runoff	1.256	2	720	2,875	------	------	------	14A-POST-LAWN
9	SCS Runoff	0.751	2	716	1,816	------	------	------	14B-POST-IMP
10	SCS Runoff	1.315	2	720	3,010	------	------	------	14B-POST-LAWN
11	SCS Runoff	0.875	2	716	2,115	------	------	------	15A-POST-IMP
12	SCS Runoff	1.901	2	720	4,351	------	------	------	15A-POST-LAWN
13	Combine	6.470	2	718	15,385	7, 8, 9, 10, 11, 12	------	------	14&15-POST-BED INFLOW
14	Reservoir	1.991	2	728	9,799	13	389.74	6,288	14-POST-BED DISCHARGE
15	SCS Runoff	0.597	2	716	1,443	------	------	------	17A-POST-IMP
16	SCS Runoff	2.024	2	720	4,633	------	------	------	17A-LAWN
17	SCS Runoff	0.196	2	716	473	------	------	------	17B-POST-IMP
18	SCS Runoff	1.088	2	720	2,491	------	------	------	17B-POST-LAWN
19	SCS Runoff	0.412	2	716	995	------	------	------	17C-POST-IMP
20	SCS Runoff	0.369	2	720	845	------	------	------	17C-POST-LAWN
21	Combine	4.604	2	718	10,881	15, 16, 17, 18, 19, 20	------	------	17-POST-BED INFLOW
22	Reservoir	1.461	2	728	4,918	21	407.84	4,479	17-POST-BED DISCHARGE
23	SCS Runoff	0.901	2	720	2,063	------	------	------	18A-POST-LAWN
24	SCS Runoff	1.183	2	716	2,861	------	------	------	18B-POST-IMP
25	SCS Runoff	0.685	2	720	1,567	------	------	------	18B-POST-LAWN
26	Combine	2.703	2	718	6,491	23, 24, 25	------	------	18-POST-BED INFLOW
27	Reservoir	1.092	2	726	1,810	26	403.76	2,583	18-POST-BED DISCHARGE
28	SCS Runoff	1.183	2	716	2,861	------	------	------	13A-POST-IMP
29	SCS Runoff	1.069	2	720	2,446	------	------	------	13A-POST-LAWN
30	SCS Runoff	0.051	2	716	124	------	------	------	13B-POST-IMP
31	SCS Runoff	1.571	2	720	3,596	------	------	------	13B-POST-LAWN
32	Combine	3.798	2	718	9,028	28, 29, 30, 31	------	------	13-POST-BED INFLOW
33	Reservoir	1.770	2	726	5,730	32	385.94	3,543	13-POST-BED DISCHARGE
34	SCS Runoff	0.556	2	716	1,343	------	------	------	12A-POST-IMP

Hydrograph Summary Report

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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
35	SCS Runoff	1.147	2	720	2,627	------	------	------	12A-POST-LAWN
36	SCS Runoff	1.060	2	716	2,562	------	------	------	12B-POST-IMP
37	SCS Runoff	0.172	2	720	395	------	------	------	12B-POST-LAWN
38	SCS Runoff	1.319	2	718	2,642	------	------	------	12C-POST-LAWN
39	Combine	4.170	2	718	9,569	34, 35, 36, 37, 38	------	------	12-POST-BED INFLOW
40	Reservoir	1.622	2	724	5,070	39	383.77	3,948	12-POST-BED DISCHARGE
41	Combine	9.497	2	726	31,233	6, 14, 22, 27, 33, 40	------	------	A3 CONTROLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.270	2	716	625	------	------	------	11A-POST-IMP
2	SCS Runoff	0.084	2	722	351	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.112	2	716	258	------	------	------	11B-POST-IMP
4	SCS Runoff	0.035	2	722	148	------	------	------	11B-POST-LAWN
5	Combine	0.446	2	718	1,383	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	0.000	2	578	0	5	360.15	849	11-POST-BED DISCHARGE

Hydrograph Summary Report

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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	0.329	2	716	770	------	------	------	11A-POST-IMP
2	SCS Runoff	0.218	2	720	647	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.136	2	716	318	------	------	------	11B-POST-IMP
4	SCS Runoff	0.092	2	720	273	------	------	------	11B-POST-LAWN
5	Combine	0.711	2	718	2,009	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	0.000	2	526	0	5	360.60	1,333	11-POST-BED DISCHARGE

Hydrograph Summary Report

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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	0.482	2	716	1,147	------	------	------	11A-POST-IMP
2	SCS Runoff	0.707	2	720	1,687	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.199	2	716	474	------	------	------	11B-POST-IMP
4	SCS Runoff	0.298	2	720	712	------	------	------	11B-POST-LAWN
5	Combine	1.609	2	718	4,019	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	0.042	2	864	682	5	361.61	2,462	11-POST-BED DISCHARGE

Hydrograph Summary Report

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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	0.583	2	716	1,397	------	------	------	11A-POST-IMP
2	SCS Runoff	1.091	2	720	2,529	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.241	2	716	577	------	------	------	11B-POST-IMP
4	SCS Runoff	0.460	2	720	1,067	------	------	------	11B-POST-LAWN
5	Combine	2.296	2	718	5,569	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	0.266	2	744	2,171	5	361.79	2,657	11-POST-BED DISCHARGE

Hydrograph Summary Report

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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	0.668	2	716	1,608	------	------	------	11A-POST-IMP
2	SCS Runoff	1.441	2	720	3,311	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.276	2	716	665	------	------	------	11B-POST-IMP
4	SCS Runoff	0.608	2	720	1,397	------	------	------	11B-POST-LAWN
5	Combine	2.917	2	718	6,981	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	0.894	2	728	3,548	5	362.11	2,976	11-POST-BED DISCHARGE

Hydrograph Summary Report

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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	0.758	2	716	1,833	------	------	------	11A-POST-IMP
2	SCS Runoff	1.832	2	720	4,194	------	------	------	11A-POST-LAWN
3	SCS Runoff	0.313	2	716	758	------	------	------	11B-POST-IMP
4	SCS Runoff	0.773	2	720	1,769	------	------	------	11B-POST-LAWN
5	Combine	3.605	2	718	8,554	1, 2, 3, 4	------	------	11-POST-BED INFLOW
6	Reservoir	1.320	2	726	5,086	5	362.79	3,473	11-POST-BED DISCHARGE

Hydrograph Summary Report

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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	0.150	2	716	347	------	------	------	6A-POST-IMP
2	SCS Runoff	0.009	2	722	36	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.150	2	716	347	------	------	------	6B-POST-IMP
4	SCS Runoff	0.008	2	722	32	------	------	------	6B-POST-LAWN
5	Combine	0.306	2	716	762	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.000	2	1044	0	5	378.52	351	6-POST-BED DISCHARGE
7	SCS Runoff	0.164	2	716	381	------	------	------	7A-POST-IMP
8	SCS Runoff	0.055	2	722	220	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.102	2	716	237	------	------	------	7B-POST-IMP
10	SCS Runoff	0.021	2	722	87	------	------	------	7B-POST-LAWN
11	Combine	0.308	2	718	926	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.000	2	504	0	11	380.00	376	7-POST-BED DISCHARGE
13	SCS Runoff	0.278	2	716	644	------	------	------	8A-POST-IMP
14	SCS Runoff	0.069	2	722	279	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.387	2	716	898	------	------	------	8B-POST-IMP
16	SCS Runoff	0.056	2	722	225	------	------	------	8B-POST-LAWN
17	Combine	0.723	2	718	2,046	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.000	2	n/a	0	17	377.99	798	8-POST-DISCHARGE
19	SCS Runoff	0.030	2	722	120	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.347	2	716	805	------	------	------	9B-POST-IMP
21	SCS Runoff	0.076	2	722	307	------	------	------	9B-POST-LAWN
22	Combine	0.406	2	718	1,232	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.000	2	608	0	22	370.84	406	9-POST-BED DISCHARGE
24	SCS Runoff	0.311	2	716	720	------	------	------	10A-POST-IMP
25	SCS Runoff	0.014	2	722	56	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.201	2	716	466	------	------	------	10B-POST-IMP
27	SCS Runoff	0.070	2	722	282	------	------	------	10B-POST-LAWN
28	Combine	0.548	2	718	1,524	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.000	2	330	0	28	370.26	826	10-POST-BED DISCHARGE
30	Combine	0.000	2	510	0	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.181	2	716	424	------	------	------	6A-POST-IMP
2	SCS Runoff	0.022	2	720	64	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.181	2	716	424	------	------	------	6B-POST-IMP
4	SCS Runoff	0.019	2	720	57	------	------	------	6B-POST-LAWN
5	Combine	0.387	2	716	968	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.000	2	412	0	5	378.86	460	6-POST-BED DISCHARGE
7	SCS Runoff	0.199	2	716	465	------	------	------	7A-POST-IMP
8	SCS Runoff	0.134	2	720	393	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.124	2	716	289	------	------	------	7B-POST-IMP
10	SCS Runoff	0.052	2	720	154	------	------	------	7B-POST-LAWN
11	Combine	0.468	2	718	1,302	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.000	2	418	0	11	380.36	576	7-POST-BED DISCHARGE
13	SCS Runoff	0.336	2	716	786	------	------	------	8A-POST-IMP
14	SCS Runoff	0.169	2	720	498	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.468	2	716	1,096	------	------	------	8B-POST-IMP
16	SCS Runoff	0.136	2	720	402	------	------	------	8B-POST-LAWN
17	Combine	1.031	2	718	2,780	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.000	2	1390	0	17	378.30	1,154	8-POST-DISCHARGE
19	SCS Runoff	0.073	2	720	215	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.419	2	716	982	------	------	------	9B-POST-IMP
21	SCS Runoff	0.186	2	720	547	------	------	------	9B-POST-LAWN
22	Combine	0.624	2	718	1,744	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.000	2	558	0	22	371.14	632	9-POST-BED DISCHARGE
24	SCS Runoff	0.375	2	716	879	------	------	------	10A-POST-IMP
25	SCS Runoff	0.034	2	720	100	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.243	2	716	568	------	------	------	10B-POST-IMP
27	SCS Runoff	0.171	2	720	503	------	------	------	10B-POST-LAWN
28	Combine	0.767	2	718	2,049	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.000	2	226	0	28	370.64	1,170	10-POST-BED DISCHARGE
30	Combine	0.000	2	1390	0	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.228	2	716	539	------	------	------	6A-POST-IMP
2	SCS Runoff	0.047	2	720	116	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.228	2	716	539	------	------	------	6B-POST-IMP
4	SCS Runoff	0.041	2	720	103	------	------	------	6B-POST-LAWN
5	Combine	0.521	2	716	1,298	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.000	2	334	0	5	379.44	642	6-POST-BED DISCHARGE
7	SCS Runoff	0.250	2	716	592	------	------	------	7A-POST-IMP
8	SCS Runoff	0.288	2	720	718	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.156	2	716	368	------	------	------	7B-POST-IMP
10	SCS Runoff	0.113	2	720	282	------	------	------	7B-POST-LAWN
11	Combine	0.761	2	718	1,960	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.000	2	326	0	11	381.01	959	7-POST-BED DISCHARGE
13	SCS Runoff	0.422	2	716	1,000	------	------	------	8A-POST-IMP
14	SCS Runoff	0.364	2	720	909	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.589	2	716	1,394	------	------	------	8B-POST-IMP
16	SCS Runoff	0.294	2	720	734	------	------	------	8B-POST-LAWN
17	Combine	1.579	2	718	4,037	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.000	2	n/a	0	17	378.84	1,826	8-POST-DISCHARGE
19	SCS Runoff	0.157	2	720	392	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.528	2	716	1,249	------	------	------	9B-POST-IMP
21	SCS Runoff	0.401	2	720	1,000	------	------	------	9B-POST-LAWN
22	Combine	1.024	2	718	2,642	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.000	2	506	0	22	371.70	1,082	9-POST-BED DISCHARGE
24	SCS Runoff	0.472	2	716	1,118	------	------	------	10A-POST-IMP
25	SCS Runoff	0.073	2	720	182	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.306	2	716	723	------	------	------	10B-POST-IMP
27	SCS Runoff	0.368	2	720	919	------	------	------	10B-POST-LAWN
28	Combine	1.154	2	718	2,942	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.000	2	836	0	28	371.28	1,788	10-POST-BED DISCHARGE
30	Combine	0.000	2	836	0	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.267	2	716	637	------	------	------	6A-POST-IMP
2	SCS Runoff	0.071	2	720	168	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.267	2	716	637	------	------	------	6B-POST-IMP
4	SCS Runoff	0.063	2	720	150	------	------	------	6B-POST-LAWN
5	Combine	0.641	2	716	1,591	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.001	2	792	1	5	380.00	808	6-POST-BED DISCHARGE
7	SCS Runoff	0.293	2	716	699	------	------	------	7A-POST-IMP
8	SCS Runoff	0.437	2	720	1,040	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.183	2	716	435	------	------	------	7B-POST-IMP
10	SCS Runoff	0.172	2	720	409	------	------	------	7B-POST-LAWN
11	Combine	1.036	2	718	2,582	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.000	2	268	0	11	381.64	1,338	7-POST-BED DISCHARGE
13	SCS Runoff	0.496	2	716	1,180	------	------	------	8A-POST-IMP
14	SCS Runoff	0.553	2	720	1,317	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.691	2	716	1,646	------	------	------	8B-POST-IMP
16	SCS Runoff	0.447	2	720	1,062	------	------	------	8B-POST-LAWN
17	Combine	2.088	2	718	5,205	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.000	2	1712	0	17	379.35	2,490	8-POST-DISCHARGE
19	SCS Runoff	0.239	2	720	567	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.619	2	716	1,475	------	------	------	9B-POST-IMP
21	SCS Runoff	0.609	2	720	1,448	------	------	------	9B-POST-LAWN
22	Combine	1.401	2	718	3,491	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.000	2	452	0	22	372.25	1,541	9-POST-BED DISCHARGE
24	SCS Runoff	0.554	2	716	1,320	------	------	------	10A-POST-IMP
25	SCS Runoff	0.111	2	720	263	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.359	2	716	854	------	------	------	10B-POST-IMP
27	SCS Runoff	0.559	2	720	1,330	------	------	------	10B-POST-LAWN
28	Combine	1.511	2	718	3,768	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.016	2	888	136	28	371.81	2,286	10-POST-BED DISCHARGE
30	Combine	0.016	2	888	136	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.324	2	716	776	------	------	------	6A-POST-IMP
2	SCS Runoff	0.109	2	720	252	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.324	2	716	776	------	------	------	6B-POST-IMP
4	SCS Runoff	0.097	2	720	224	------	------	------	6B-POST-LAWN
5	Combine	0.818	2	716	2,028	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.219	2	726	275	5	380.26	876	6-POST-BED DISCHARGE
7	SCS Runoff	0.355	2	716	852	------	------	------	7A-POST-IMP
8	SCS Runoff	0.672	2	720	1,557	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.221	2	716	530	------	------	------	7B-POST-IMP
10	SCS Runoff	0.264	2	720	612	------	------	------	7B-POST-LAWN
11	Combine	1.463	2	718	3,551	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.118	2	748	443	11	382.19	1,631	7-POST-BED DISCHARGE
13	SCS Runoff	0.600	2	716	1,439	------	------	------	8A-POST-IMP
14	SCS Runoff	0.852	2	720	1,972	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.837	2	716	2,006	------	------	------	8B-POST-IMP
16	SCS Runoff	0.687	2	720	1,591	------	------	------	8B-POST-LAWN
17	Combine	2.871	2	718	7,007	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.146	2	752	525	17	379.96	3,223	8-POST-DISCHARGE
19	SCS Runoff	0.367	2	720	850	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.750	2	716	1,798	------	------	------	9B-POST-IMP
21	SCS Runoff	0.937	2	720	2,169	------	------	------	9B-POST-LAWN
22	Combine	1.987	2	718	4,817	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.036	2	772	107	22	373.10	2,212	9-POST-BED DISCHARGE
24	SCS Runoff	0.671	2	716	1,609	------	------	------	10A-POST-IMP
25	SCS Runoff	0.170	2	720	394	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.434	2	716	1,041	------	------	------	10B-POST-IMP
27	SCS Runoff	0.860	2	720	1,992	------	------	------	10B-POST-LAWN
28	Combine	2.059	2	718	5,036	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.223	2	742	1,200	28	372.01	2,452	10-POST-BED DISCHARGE
30	Combine	0.530	2	746	2,550	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.371	2	716	893	------	------	------	6A-POST-IMP
2	SCS Runoff	0.143	2	720	328	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.371	2	716	893	------	------	------	6B-POST-IMP
4	SCS Runoff	0.128	2	720	293	------	------	------	6B-POST-LAWN
5	Combine	0.974	2	718	2,408	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.622	2	722	537	5	380.47	924	6-POST-BED DISCHARGE
7	SCS Runoff	0.407	2	716	980	------	------	------	7A-POST-IMP
8	SCS Runoff	0.885	2	720	2,033	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.253	2	716	610	------	------	------	7B-POST-IMP
10	SCS Runoff	0.348	2	720	799	------	------	------	7B-POST-LAWN
11	Combine	1.845	2	718	4,422	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	0.633	2	726	1,116	11	382.48	1,759	7-POST-BED DISCHARGE
13	SCS Runoff	0.687	2	716	1,656	------	------	------	8A-POST-IMP
14	SCS Runoff	1.121	2	720	2,574	------	------	------	8A-POST-LAWN
15	SCS Runoff	0.959	2	716	2,309	------	------	------	8B-POST-IMP
16	SCS Runoff	0.905	2	720	2,077	------	------	------	8B-POST-LAWN
17	Combine	3.566	2	718	8,616	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	0.715	2	728	1,633	17	380.27	3,556	8-POST-DISCHARGE
19	SCS Runoff	0.483	2	720	1,110	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.859	2	716	2,069	------	------	------	9B-POST-IMP
21	SCS Runoff	1.233	2	720	2,832	------	------	------	9B-POST-LAWN
22	Combine	2.510	2	718	6,011	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	0.476	2	730	871	22	373.40	2,407	9-POST-BED DISCHARGE
24	SCS Runoff	0.769	2	716	1,852	------	------	------	10A-POST-IMP
25	SCS Runoff	0.224	2	720	515	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.497	2	716	1,198	------	------	------	10B-POST-IMP
27	SCS Runoff	1.133	2	720	2,601	------	------	------	10B-POST-LAWN
28	Combine	2.544	2	718	6,165	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	0.829	2	726	2,212	28	372.33	2,698	10-POST-BED DISCHARGE
30	Combine	2.832	2	728	6,369	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

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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	0.422	2	716	1,020	------	------	------	6A-POST-IMP
2	SCS Runoff	0.182	2	720	417	------	------	------	6A-POST-LAWN
3	SCS Runoff	0.422	2	716	1,020	------	------	------	6B-POST-IMP
4	SCS Runoff	0.163	2	720	372	------	------	------	6B-POST-LAWN
5	Combine	1.147	2	718	2,829	1, 2, 3, 4	------	------	6-POST-BED INFLOW
6	Reservoir	0.965	2	720	842	5	380.66	961	6-POST-BED DISCHARGE
7	SCS Runoff	0.463	2	716	1,120	------	------	------	7A-POST-IMP
8	SCS Runoff	1.128	2	720	2,581	------	------	------	7A-POST-LAWN
9	SCS Runoff	0.288	2	716	697	------	------	------	7B-POST-IMP
10	SCS Runoff	0.443	2	720	1,015	------	------	------	7B-POST-LAWN
11	Combine	2.276	2	718	5,412	7, 8, 9, 10	------	------	7-POST-BED INFLOW
12	Reservoir	1.350	2	724	1,925	11	382.98	1,905	7-POST-BED DISCHARGE
13	SCS Runoff	0.782	2	716	1,891	------	------	------	8A-POST-IMP
14	SCS Runoff	1.428	2	720	3,269	------	------	------	8A-POST-LAWN
15	SCS Runoff	1.091	2	716	2,637	------	------	------	8B-POST-IMP
16	SCS Runoff	1.152	2	720	2,638	------	------	------	8B-POST-LAWN
17	Combine	4.348	2	718	10,435	13, 14, 15, 16	------	------	8-POST-BED INFLOW
18	Reservoir	1.523	2	726	2,957	17	380.90	4,022	8-POST-DISCHARGE
19	SCS Runoff	0.616	2	720	1,409	------	------	------	9A-POST-LAWN
20	SCS Runoff	0.978	2	716	2,363	------	------	------	9B-POST-IMP
21	SCS Runoff	1.571	2	720	3,596	------	------	------	9B-POST-LAWN
22	Combine	3.103	2	718	7,369	19, 20, 21	------	------	9-POST-BED INFLOW
23	Reservoir	1.335	2	726	1,806	22	373.96	2,652	9-POST-BED DISCHARGE
24	SCS Runoff	0.875	2	716	2,115	------	------	------	10A-POST-IMP
25	SCS Runoff	0.286	2	720	654	------	------	------	10A-POST-LAWN
26	SCS Runoff	0.566	2	716	1,368	------	------	------	10B-POST-IMP
27	SCS Runoff	1.443	2	720	3,303	------	------	------	10B-POST-LAWN
28	Combine	3.090	2	718	7,440	24, 25, 26, 27	------	------	10-POST-BED INFLOW
29	Reservoir	1.509	2	724	3,410	28	372.89	2,998	10-POST-BED DISCHARGE
30	Combine	6.290	2	724	10,940	6, 12, 18, 23, 29	------	------	A5 CONTROLLED DISCHARGE

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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	0.526	2	716	1,220	------	------	------	1A-IMP
2	SCS Runoff	0.113	2	722	457	------	------	------	1A-LAWN
3	SCS Runoff	0.020	2	722	82	------	------	------	1B-LAWN
4	Combine	0.597	2	718	1,759	1, 2, 3	------	------	1-POST-BED INFLOW
5	Reservoir	0.000	2	522	0	4	351.94	692	1-POST-BED DISCHARGE

Hydrograph Summary Report

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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	0.636	2	716	1,488	------	------	------	1A-IMP
2	SCS Runoff	0.277	2	720	815	------	------	------	1A-LAWN
3	SCS Runoff	0.050	2	720	146	------	------	------	1B-LAWN
4	Combine	0.889	2	718	2,449	1, 2, 3	------	------	1-POST-BED INFLOW
5	Reservoir	0.000	2	450	0	4	352.27	1,042	1-POST-BED DISCHARGE

Hydrograph Summary Report

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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	0.800	2	716	1,894	------	------	------	1A-IMP
2	SCS Runoff	0.597	2	720	1,489	------	------	------	1A-LAWN
3	SCS Runoff	0.107	2	720	267	------	------	------	1B-LAWN
4	Combine	1.420	2	718	3,650	1, 2, 3	------	------	1-POST-BED INFLOW
5	Reservoir	0.000	2	350	0	4	352.84	1,716	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.939	2	716	2,236	------	------	------	1A-IMP
2	SCS Runoff	0.906	2	720	2,156	------	------	------	1A-LAWN
3	SCS Runoff	0.162	2	720	386	------	------	------	1B-LAWN
4	Combine	1.918	2	718	4,779	1, 2, 3	------	------	1-POST-BED INFLOW
5	Reservoir	0.000	2	298	0	4	353.39	2,386	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	1.137	2	716	2,726	------	------	------	1A-IMP
2	SCS Runoff	1.395	2	720	3,229	------	------	------	1A-LAWN
3	SCS Runoff	0.250	2	720	578	------	------	------	1B-LAWN
4	Combine	2.688	2	718	6,533	1, 2, 3	------	------	1-POST-BED INFLOW
5	Reservoir	0.158	2	752	661	4	353.97	3,033	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	1.302	2	716	3,137	------	------	------	1A-IMP
2	SCS Runoff	1.837	2	720	4,216	------	------	------	1A-LAWN
3	SCS Runoff	0.329	2	720	754	------	------	------	1B-LAWN
4	Combine	3.375	2	718	8,108	1, 2, 3	------	------	1-POST-BED INFLOW
5	Reservoir	0.730	2	728	1,822	4	354.28	3,343	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	1.482	2	716	3,583	------	------	------	1A-IMP
2	SCS Runoff	2.339	2	720	5,355	------	------	------	1A-LAWN
3	SCS Runoff	0.419	2	720	958	------	------	------	1B-LAWN
4	Combine	4.151	2	718	9,895	1, 2, 3	------	------	1-POST-BED INFLOW
5	Reservoir	1.555	2	726	3,210	4	354.94	3,791	1-POST-BED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.197	2	716	458	------	------	------	2A-POST-IMP
2	SCS Runoff	0.062	2	722	249	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.263	2	716	610	------	------	------	2B-POST-IMP
4	SCS Runoff	0.013	2	722	52	------	------	------	2B-POST-LAWN
5	Combine	0.492	2	718	1,369	1, 2, 3, 4	------	------	2-POST-BED INFLOW
6	Reservoir	0.049	2	750	1,367	5	354.09	506	2-POST-BED DISCHARGE
7	SCS Runoff	0.121	2	716	280	------	------	------	3B-POST-IMP
8	SCS Runoff	0.020	2	722	79	------	------	------	3B-POST-LAWN
9	SCS Runoff	0.417	2	716	966	------	------	------	4B-POST-IMP
10	SCS Runoff	0.068	2	722	273	------	------	------	4B-POST-LAWN
11	Combine	0.575	2	718	1,598	7, 8, 9, 10	------	------	3-POST-BED INFLOW
12	Reservoir	0.041	2	772	1,596	11	359.07	666	3-POST-BED DISCHARGE
13	Combine	0.090	2	756	2,963	6, 12	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.238	2	716	558	------	------	------	2A-POST-IMP
2	SCS Runoff	0.151	2	720	445	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.318	2	716	744	------	------	------	2B-POST-IMP
4	SCS Runoff	0.031	2	720	93	------	------	------	2B-POST-LAWN
5	Combine	0.689	2	718	1,840	1, 2, 3, 4	------	------	2-POST-BED INFLOW
6	Reservoir	0.056	2	760	1,838	5	354.40	719	2-POST-BED DISCHARGE
7	SCS Runoff	0.146	2	716	341	------	------	------	3B-POST-IMP
8	SCS Runoff	0.048	2	720	141	------	------	------	3B-POST-LAWN
9	SCS Runoff	0.503	2	716	1,178	------	------	------	4B-POST-IMP
10	SCS Runoff	0.166	2	720	487	------	------	------	4B-POST-LAWN
11	Combine	0.804	2	718	2,148	7, 8, 9, 10	------	------	3-POST-BED INFLOW
12	Reservoir	0.048	2	790	2,146	11	359.38	946	3-POST-BED DISCHARGE
13	Combine	0.104	2	772	3,984	6, 12	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.300	2	716	710	------	------	------	2A-POST-IMP
2	SCS Runoff	0.326	2	720	812	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.400	2	716	947	------	------	------	2B-POST-IMP
4	SCS Runoff	0.068	2	720	169	------	------	------	2B-POST-LAWN
5	Combine	1.035	2	718	2,639	1, 2, 3, 4	------	------	2-POST-BED INFLOW
6	Reservoir	0.069	2	776	2,637	5	354.96	1,118	2-POST-BED DISCHARGE
7	SCS Runoff	0.183	2	716	434	------	------	------	3B-POST-IMP
8	SCS Runoff	0.103	2	720	257	------	------	------	3B-POST-LAWN
9	SCS Runoff	0.634	2	716	1,499	------	------	------	4B-POST-IMP
10	SCS Runoff	0.357	2	720	890	------	------	------	4B-POST-LAWN
11	Combine	1.209	2	718	3,081	7, 8, 9, 10	------	------	3-POST-BED INFLOW
12	Reservoir	0.058	2	812	3,079	11	359.93	1,464	3-POST-BED DISCHARGE
13	Combine	0.127	2	788	5,716	6, 12	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.352	2	716	839	------	------	------	2A-POST-IMP
2	SCS Runoff	0.494	2	720	1,176	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.469	2	716	1,118	------	------	------	2B-POST-IMP
4	SCS Runoff	0.103	2	720	245	------	------	------	2B-POST-LAWN
5	Combine	1.355	2	718	3,378	1, 2, 3, 4	------	------	2-POST-BED INFLOW
6	Reservoir	0.141	2	748	3,376	5	355.38	1,421	2-POST-BED DISCHARGE
7	SCS Runoff	0.215	2	716	512	------	------	------	3B-POST-IMP
8	SCS Runoff	0.156	2	720	372	------	------	------	3B-POST-LAWN
9	SCS Runoff	0.743	2	716	1,770	------	------	------	4B-POST-IMP
10	SCS Runoff	0.542	2	720	1,289	------	------	------	4B-POST-LAWN
11	Combine	1.582	2	718	3,944	7, 8, 9, 10	------	------	3-POST-BED INFLOW
12	Reservoir	0.068	2	822	3,942	11	360.45	1,969	3-POST-BED DISCHARGE
13	Combine	0.207	2	748	7,319	6, 12	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.426	2	716	1,022	------	------	------	2A-POST-IMP
2	SCS Runoff	0.761	2	720	1,761	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.568	2	716	1,363	------	------	------	2B-POST-IMP
4	SCS Runoff	0.159	2	720	367	------	------	------	2B-POST-LAWN
5	Combine	1.845	2	718	4,513	1, 2, 3, 4	------	------	2-POST-BED INFLOW
6	Reservoir	0.681	2	726	4,512	5	355.71	1,648	2-POST-BED DISCHARGE
7	SCS Runoff	0.260	2	716	625	------	------	------	3B-POST-IMP
8	SCS Runoff	0.241	2	720	557	------	------	------	3B-POST-LAWN
9	SCS Runoff	0.900	2	716	2,158	------	------	------	4B-POST-IMP
10	SCS Runoff	0.834	2	720	1,931	------	------	------	4B-POST-LAWN
11	Combine	2.155	2	718	5,271	7, 8, 9, 10	------	------	3-POST-BED INFLOW
12	Reservoir	0.152	2	766	5,269	11	361.14	2,580	3-POST-BED DISCHARGE
13	Combine	0.754	2	726	9,780	6, 12	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.488	2	716	1,176	------	------	------	2A-POST-IMP
2	SCS Runoff	1.001	2	720	2,299	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.651	2	716	1,568	------	------	------	2B-POST-IMP
4	SCS Runoff	0.209	2	720	479	------	------	------	2B-POST-LAWN
5	Combine	2.279	2	718	5,523	1, 2, 3, 4	------	------	2-POST-BED INFLOW
6	Reservoir	1.189	2	724	5,522	5	356.03	1,854	2-POST-BED DISCHARGE
7	SCS Runoff	0.298	2	716	719	------	------	------	3B-POST-IMP
8	SCS Runoff	0.317	2	720	728	------	------	------	3B-POST-LAWN
9	SCS Runoff	1.031	2	716	2,483	------	------	------	4B-POST-IMP
10	SCS Runoff	1.098	2	720	2,521	------	------	------	4B-POST-LAWN
11	Combine	2.662	2	718	6,451	7, 8, 9, 10	------	------	3-POST-BED INFLOW
12	Reservoir	0.572	2	730	6,449	11	361.41	2,773	3-POST-BED DISCHARGE
13	Combine	1.602	2	726	11,971	6, 12	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	0.556	2	716	1,343	------	------	------	2A-POST-IMP
2	SCS Runoff	1.276	2	720	2,920	------	------	------	2A-POST-LAWN
3	SCS Runoff	0.741	2	716	1,791	------	------	------	2B-POST-IMP
4	SCS Runoff	0.266	2	720	609	------	------	------	2B-POST-LAWN
5	Combine	2.767	2	718	6,663	1, 2, 3, 4	------	------	2-POST-BED INFLOW
6	Reservoir	1.647	2	724	6,662	5	356.43	2,078	2-POST-BED DISCHARGE
7	SCS Runoff	0.340	2	716	821	------	------	------	3B-POST-IMP
8	SCS Runoff	0.404	2	720	924	------	------	------	3B-POST-LAWN
9	SCS Runoff	1.173	2	716	2,836	------	------	------	4B-POST-IMP
10	SCS Runoff	1.399	2	720	3,201	------	------	------	4B-POST-LAWN
11	Combine	3.232	2	718	7,783	7, 8, 9, 10	------	------	3-POST-BED INFLOW
12	Reservoir	1.428	2	724	7,781	11	361.95	3,046	3-POST-BED DISCHARGE
13	Combine	3.075	2	724	14,443	6, 12	------	------	A7 CONTROLLED DISCHARGE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	1.900	2	720	5,508	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	0.629	2	726	3,490	------	------	------	POST-BYPASS-GRASS
3	Combine	2.336	2	722	8,998	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	2.296	2	720	6,719	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	1.556	2	724	6,223	------	------	------	POST-BYPASS-GRASS
3	Combine	3.634	2	722	12,943	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	2.892	2	720	8,551	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	3.495	2	724	11,369	------	------	------	POST-BYPASS-GRASS
3	Combine	6.142	2	722	19,920	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	3.393	2	720	10,096	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	5.397	2	724	16,461	------	------	------	POST-BYPASS-GRASS
3	Combine	8.553	2	722	26,557	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	4.108	2	720	12,305	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	8.415	2	724	24,652	------	------	------	POST-BYPASS-GRASS
3	Combine	12.32	2	722	36,957	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	4.708	2	720	14,162	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	11.16	2	722	32,186	------	------	------	POST-BYPASS-GRASS
3	Combine	15.70	2	722	46,348	1, 2	------	------	POST=BYPASS-TOTAL

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

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	5.358	2	720	16,174	------	------	------	POST-BYPASS-IMP
2	SCS Runoff	14.37	2	722	40,875	------	------	------	POST-BYPASS-GRASS
3	Combine	19.54	2	722	57,049	1, 2	------	------	POST=BYPASS-TOTAL

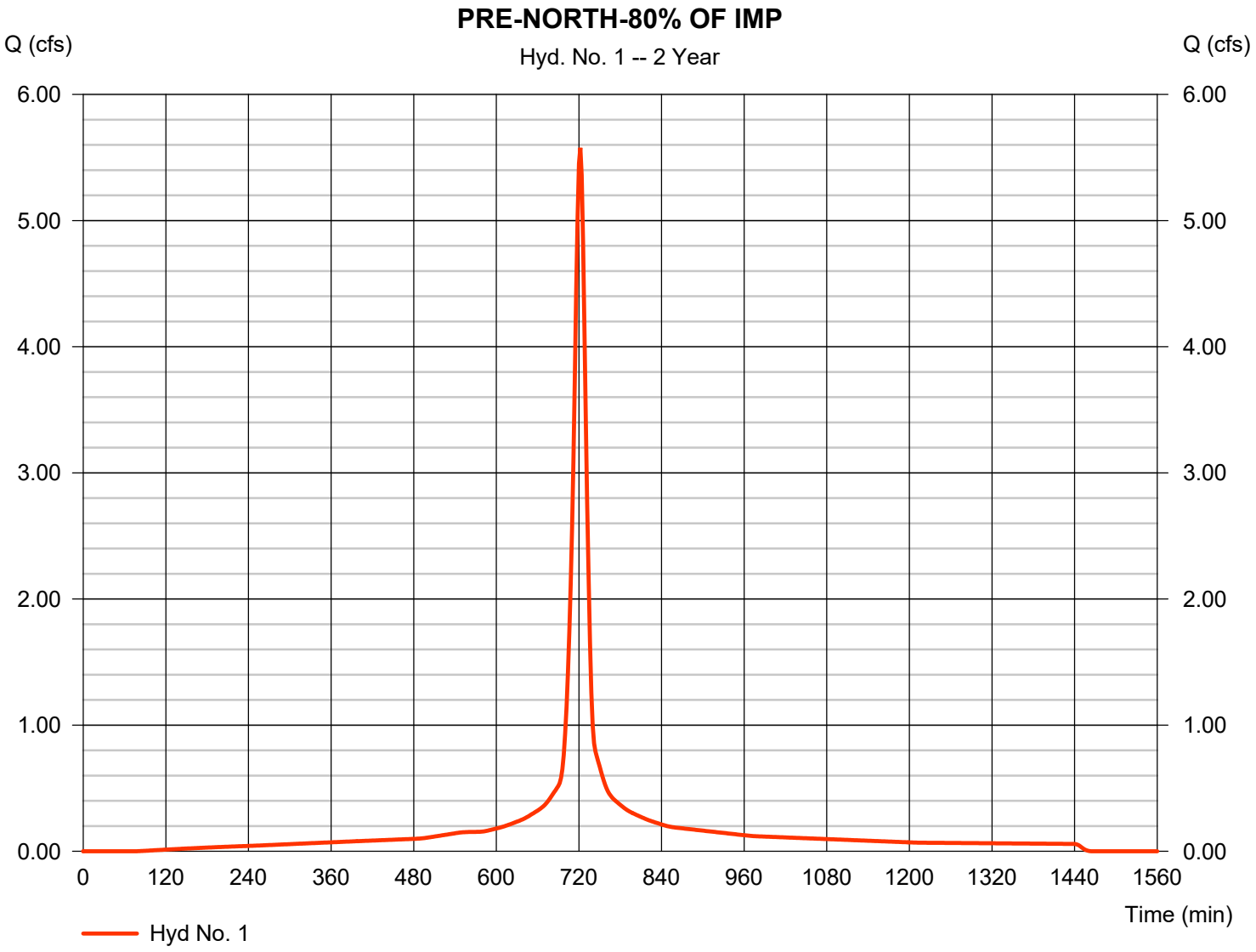
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 1

PRE-NORTH-80% OF IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 5.577 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 17,608 cuft
Drainage area	= 1.591 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



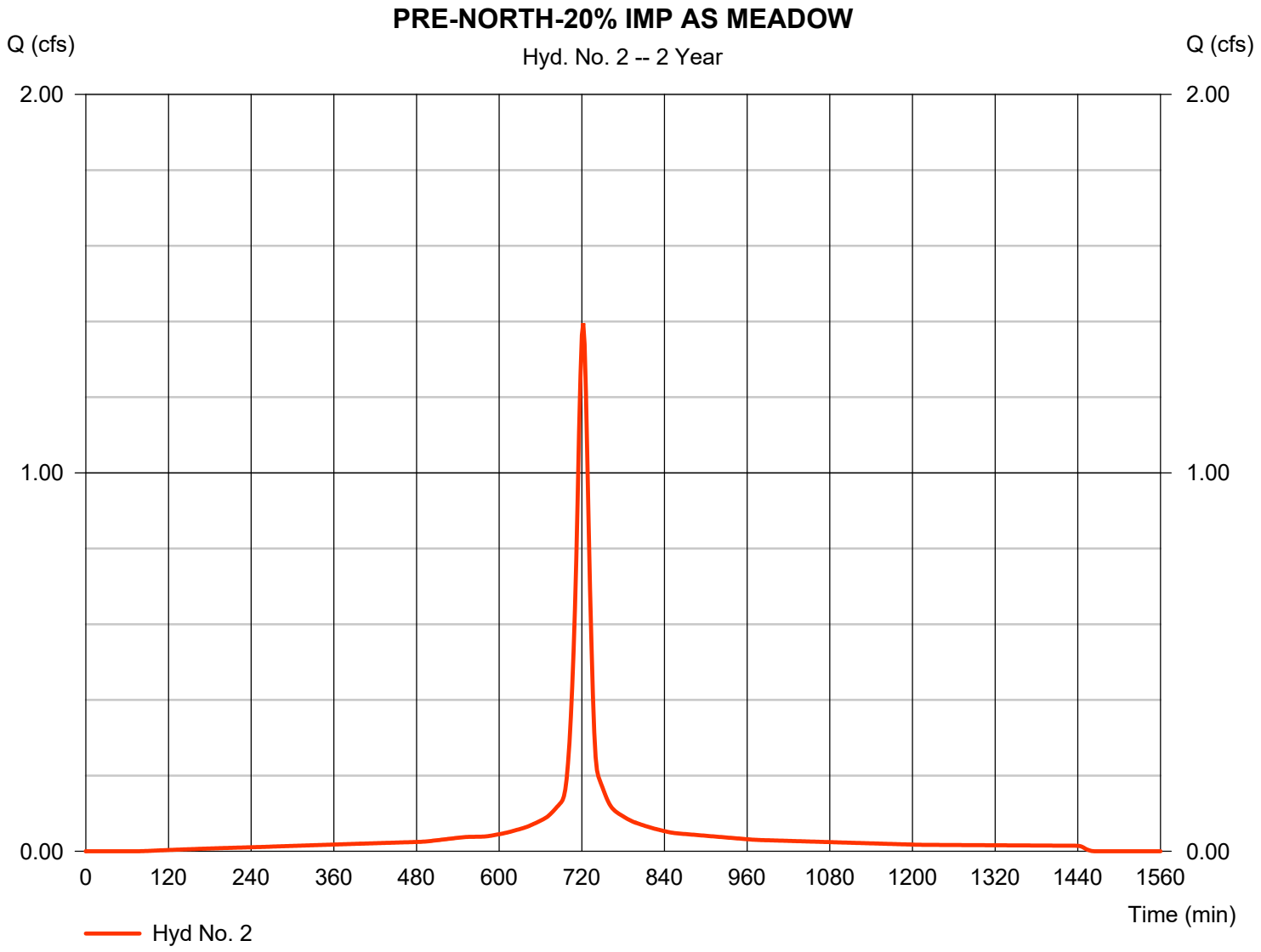
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 2

PRE-NORTH-20% IMP AS MEADOW

Hydrograph type	= SCS Runoff	Peak discharge	= 1.395 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 4,405 cuft
Drainage area	= 0.398 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



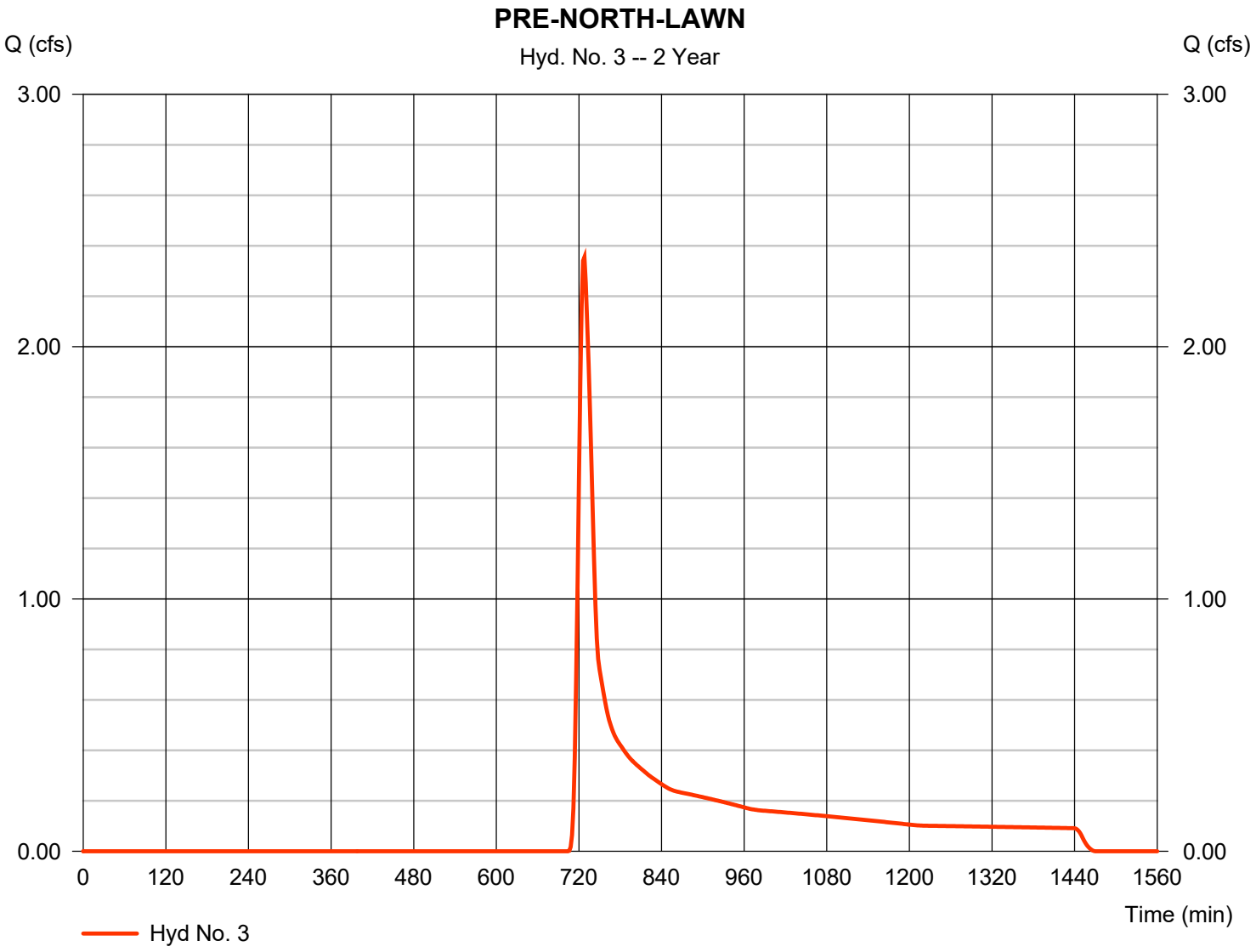
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 3

PRE-NORTH-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 2.355 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 10,479 cuft
Drainage area	= 5.648 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



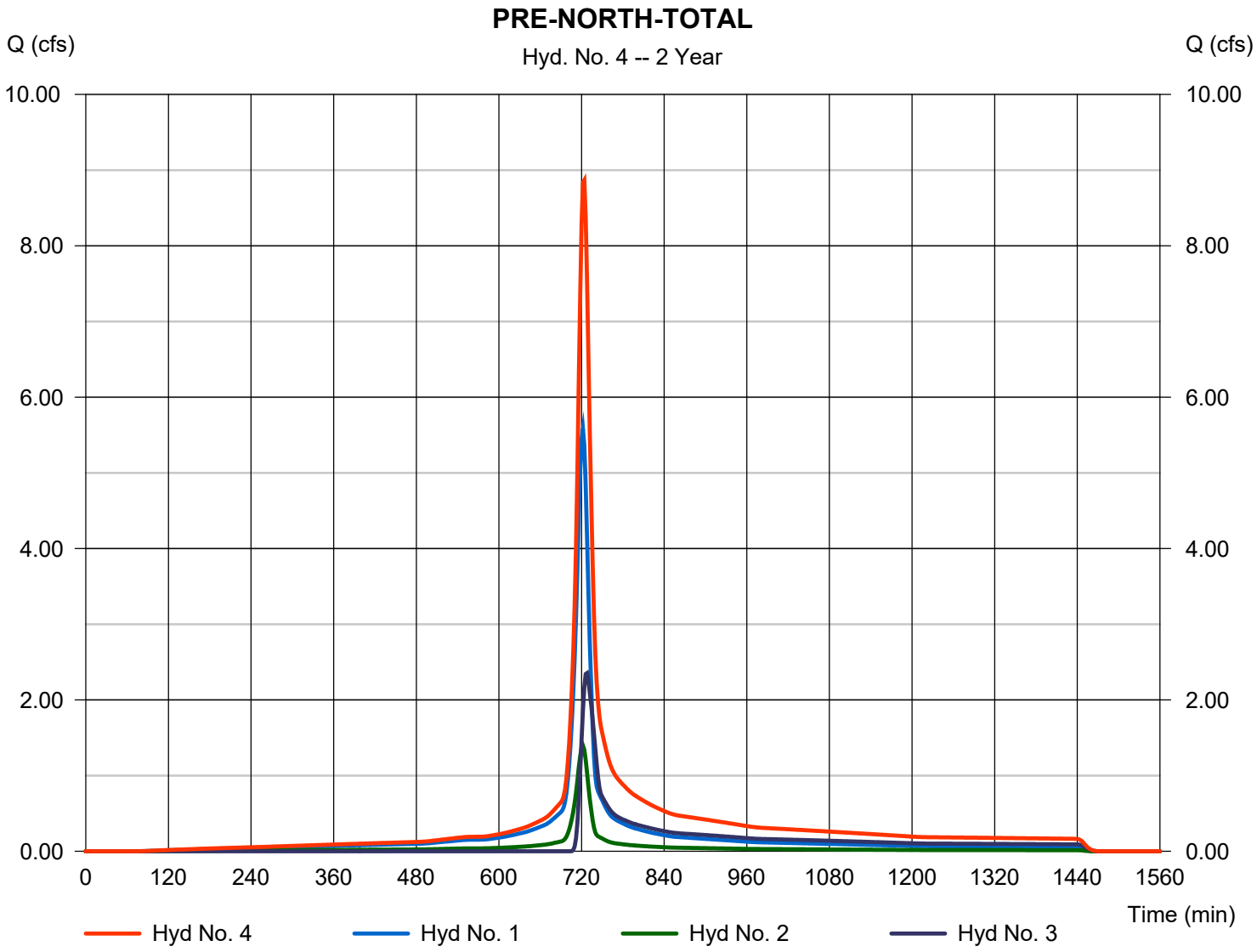
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 4

PRE-NORTH-TOTAL

Hydrograph type	= Combine	Peak discharge	= 8.867 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 32,491 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 7.637 ac



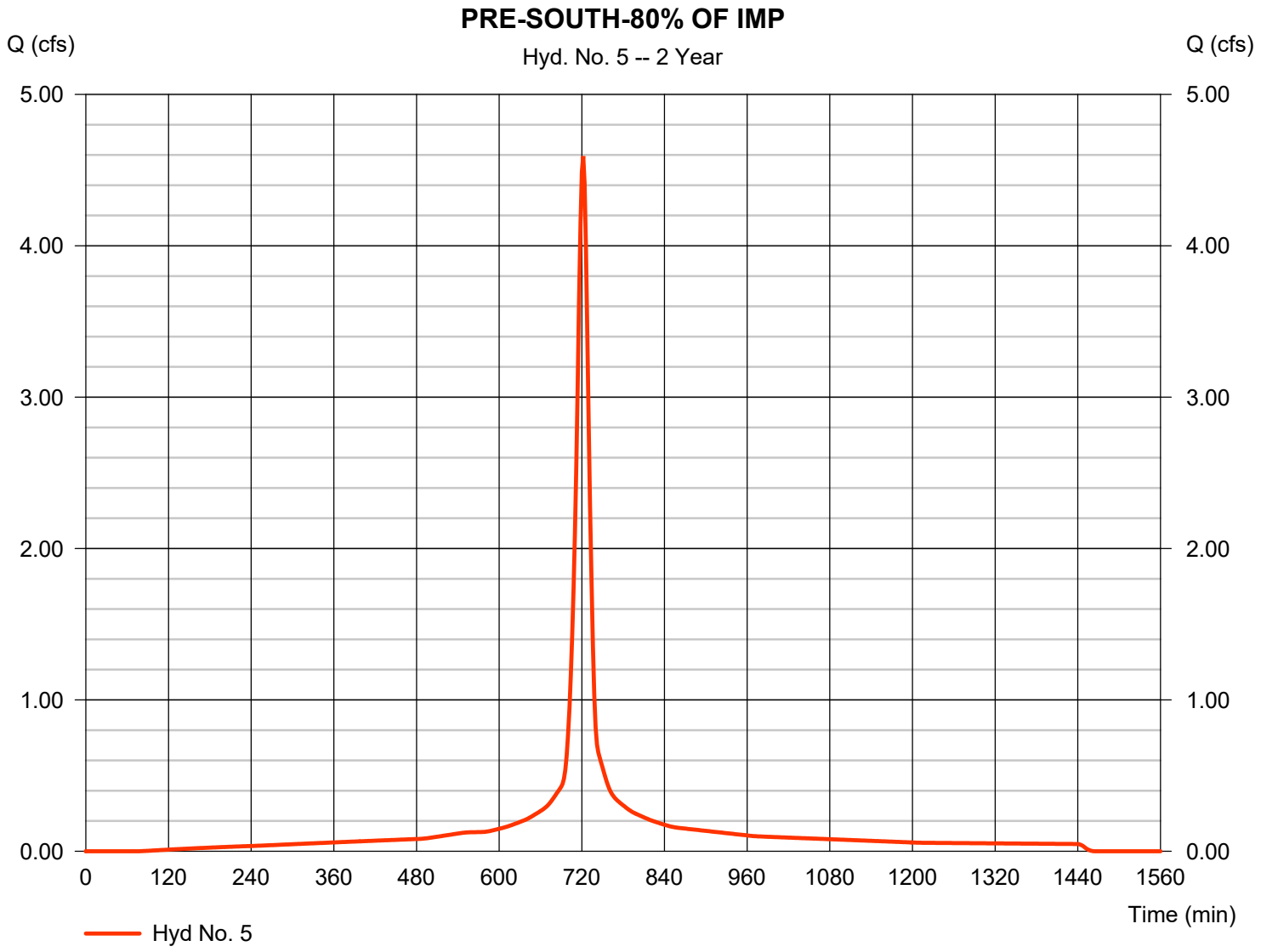
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 5

PRE-SOUTH-80% OF IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 4.592 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 14,498 cuft
Drainage area	= 1.310 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



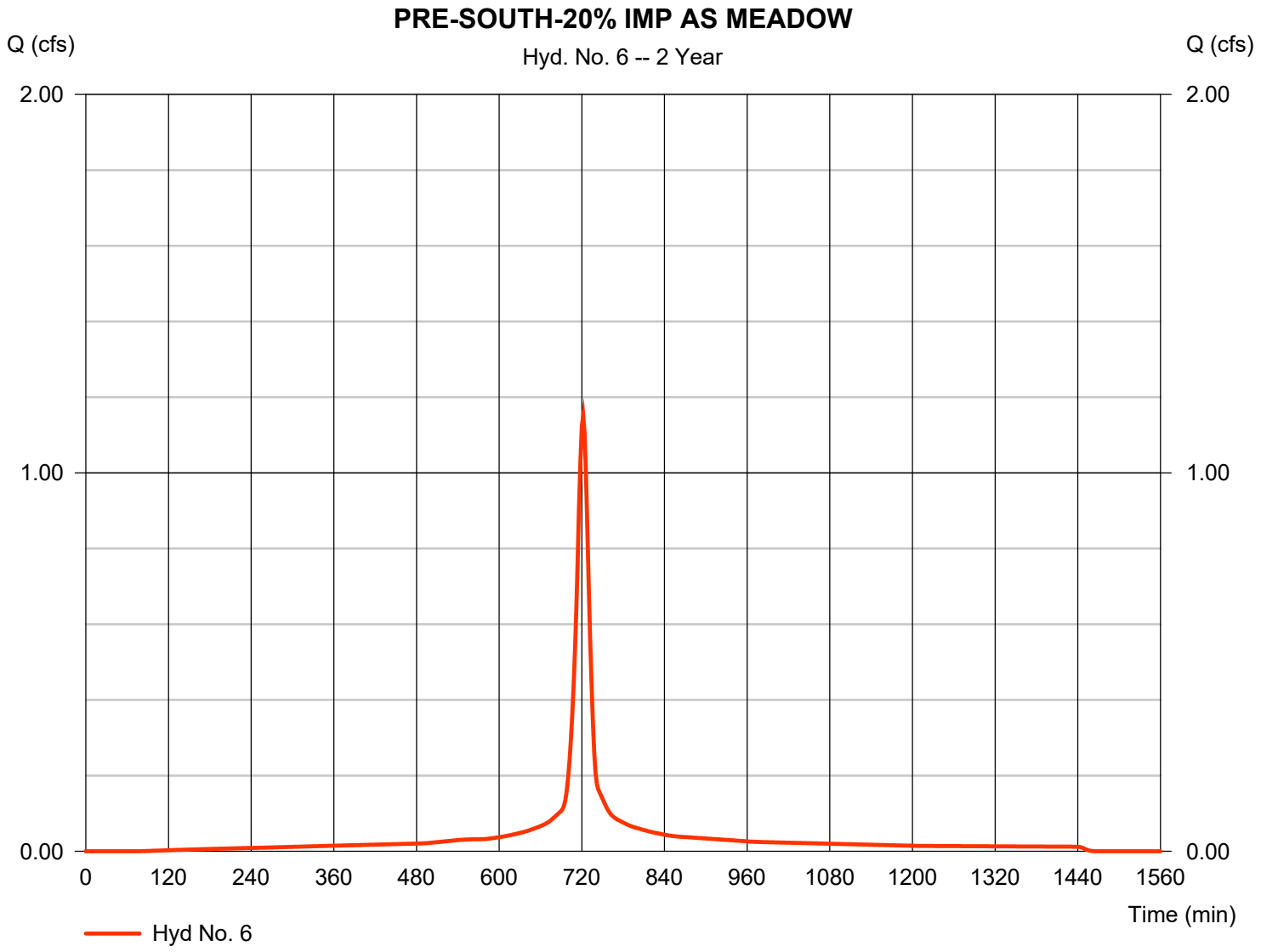
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 6

PRE-SOUTH-20% IMP AS MEADOW

Hydrograph type	= SCS Runoff	Peak discharge	= 1.150 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 3,630 cuft
Drainage area	= 0.328 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



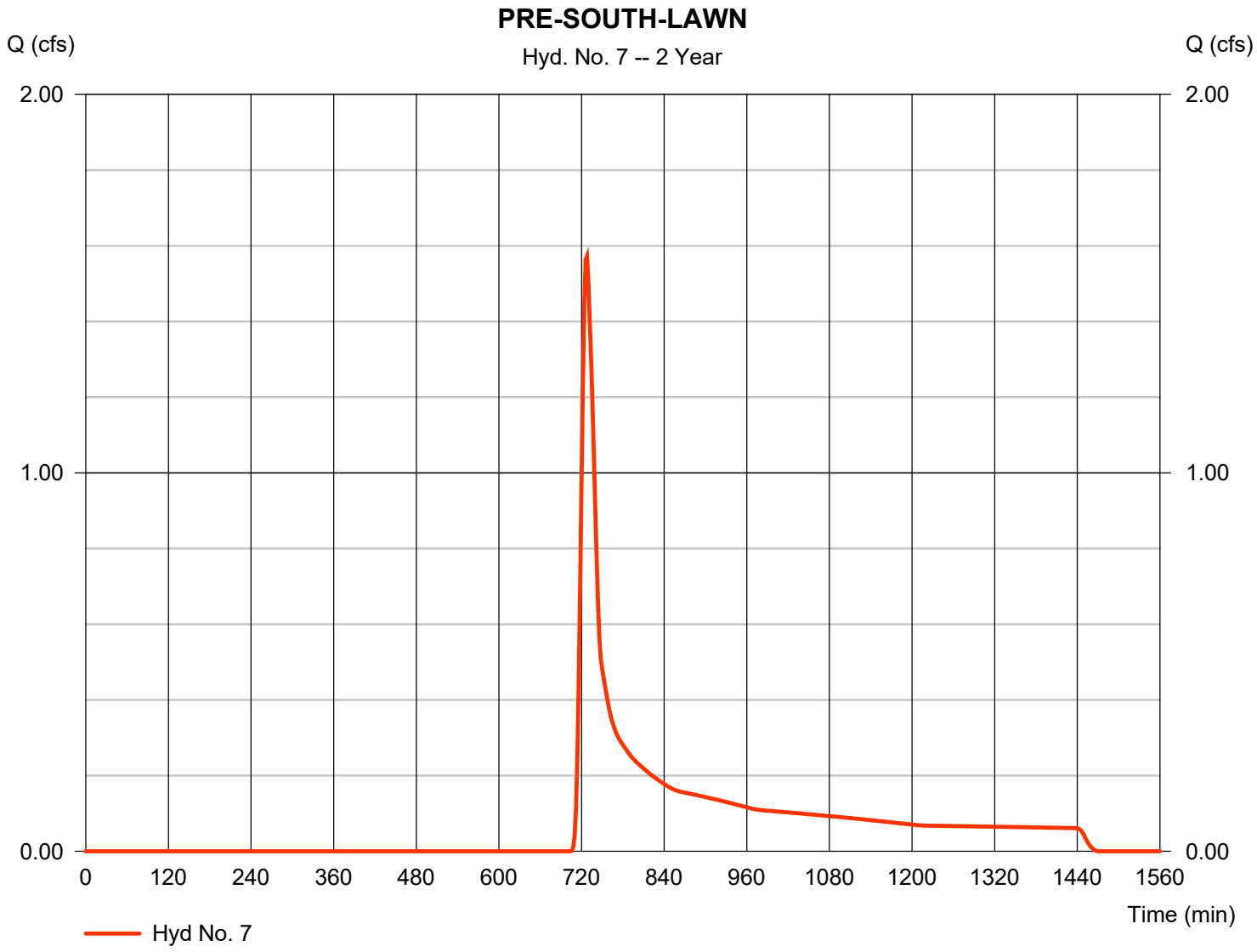
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 7

PRE-SOUTH-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 1.573 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 6,998 cuft
Drainage area	= 3.772 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 20.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



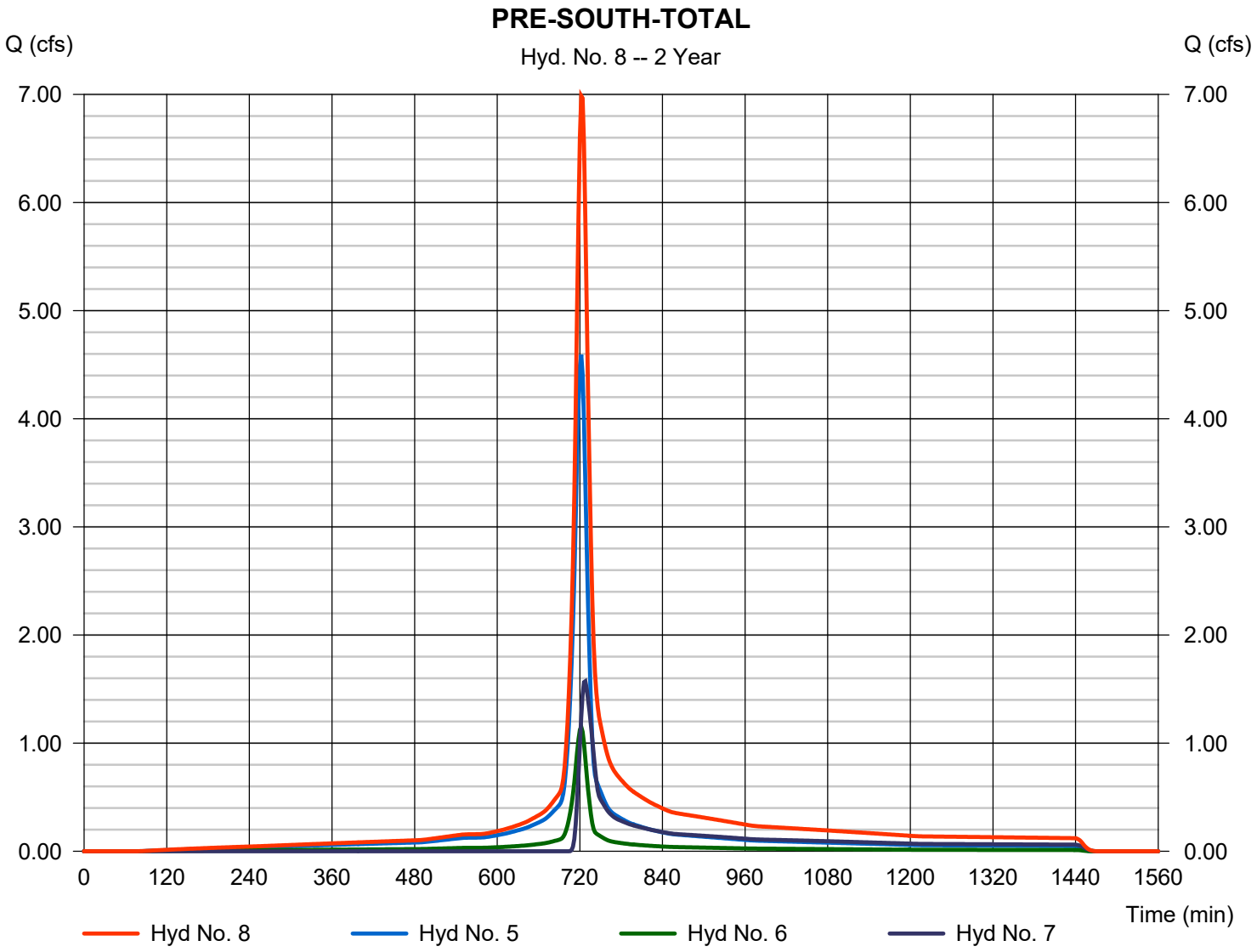
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 8

PRE-SOUTH-TOTAL

Hydrograph type	= Combine	Peak discharge	= 6.986 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 25,126 cuft
Inflow hyds.	= 5, 6, 7	Contrib. drain. area	= 5.410 ac



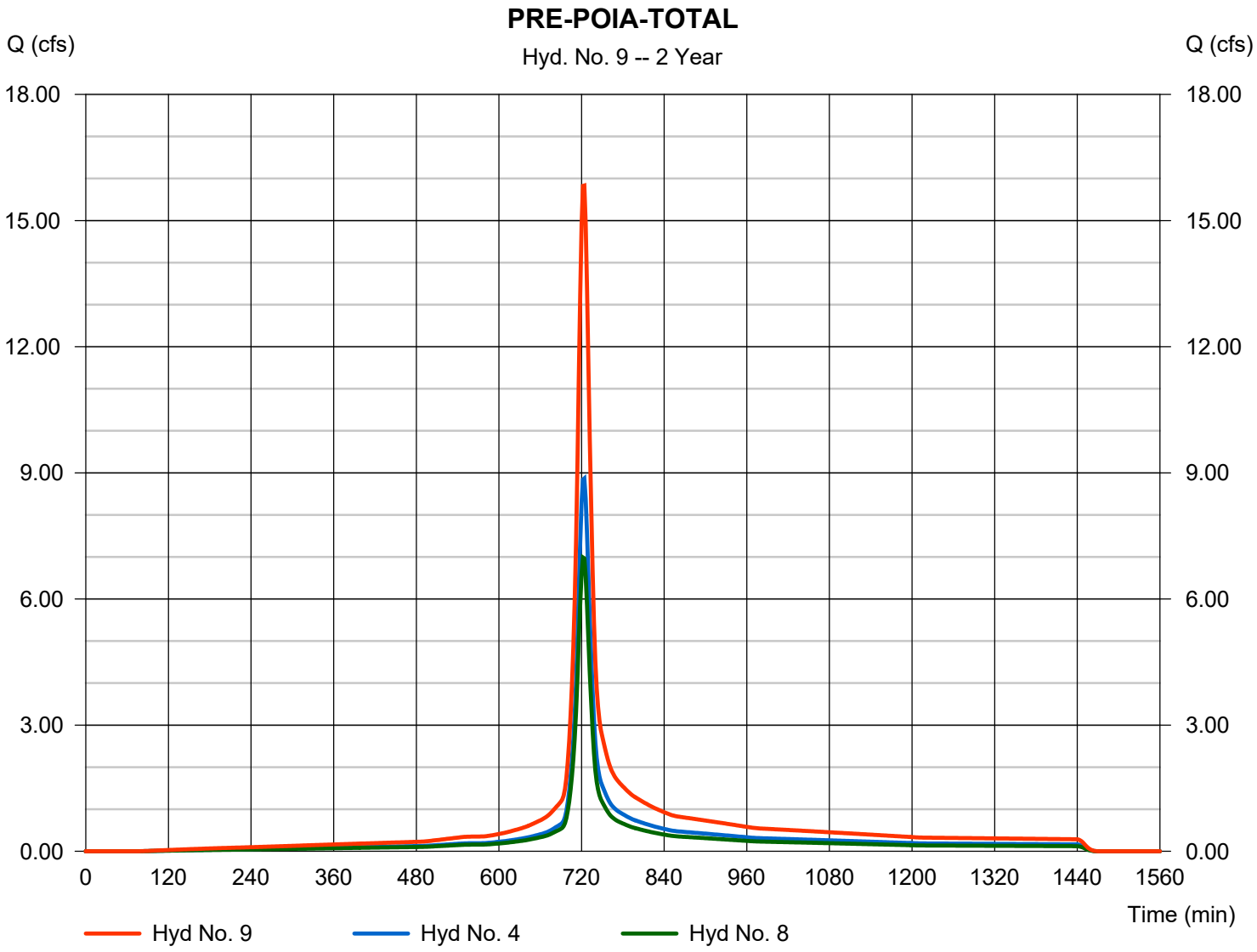
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 9

PRE-POIA-TOTAL

Hydrograph type	= Combine	Peak discharge	= 15.83 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 57,617 cuft
Inflow hyds.	= 4, 8	Contrib. drain. area	= 0.000 ac



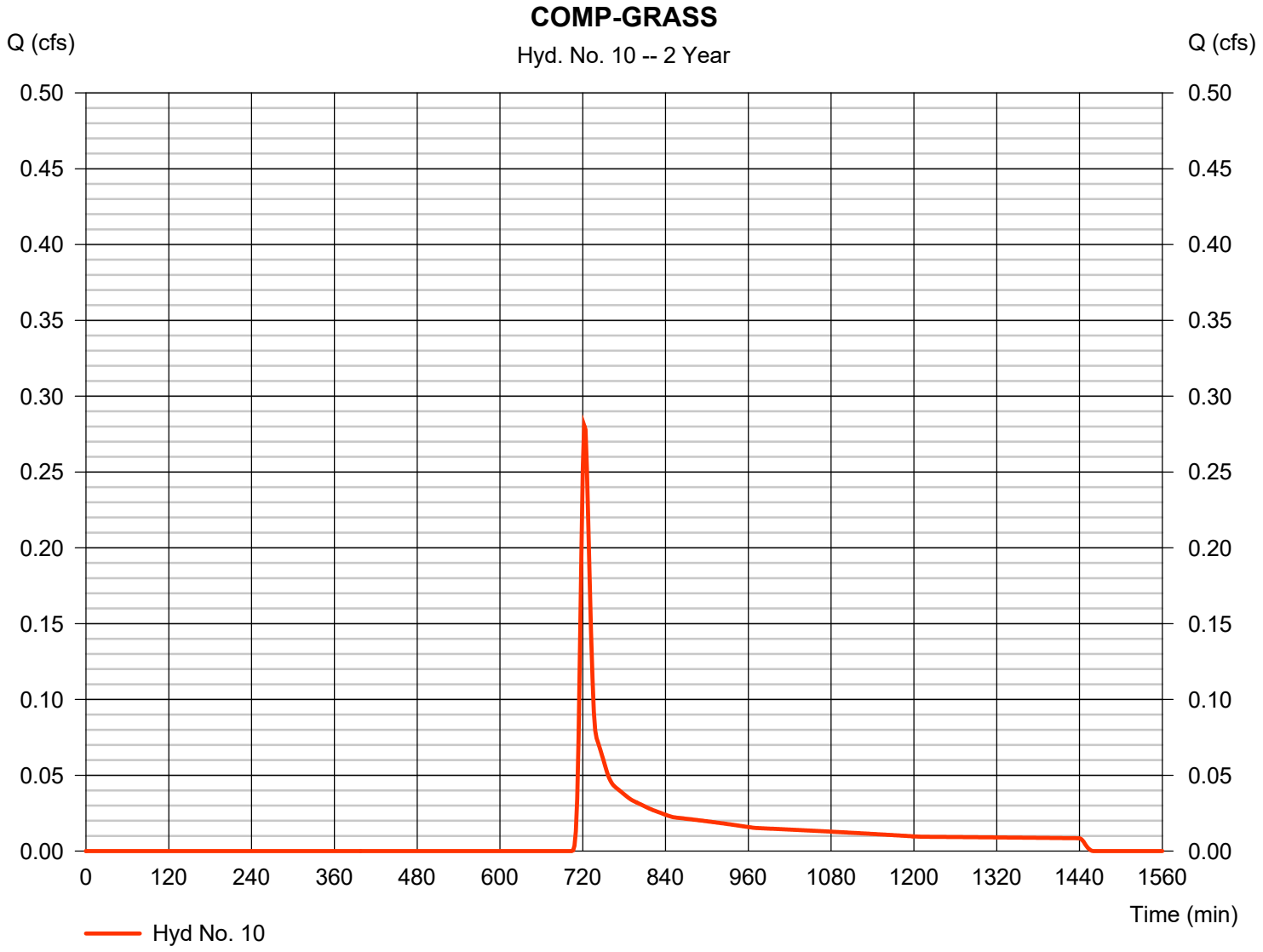
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 10

COMP-GRASS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.281 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 974 cuft
Drainage area	= 0.509 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



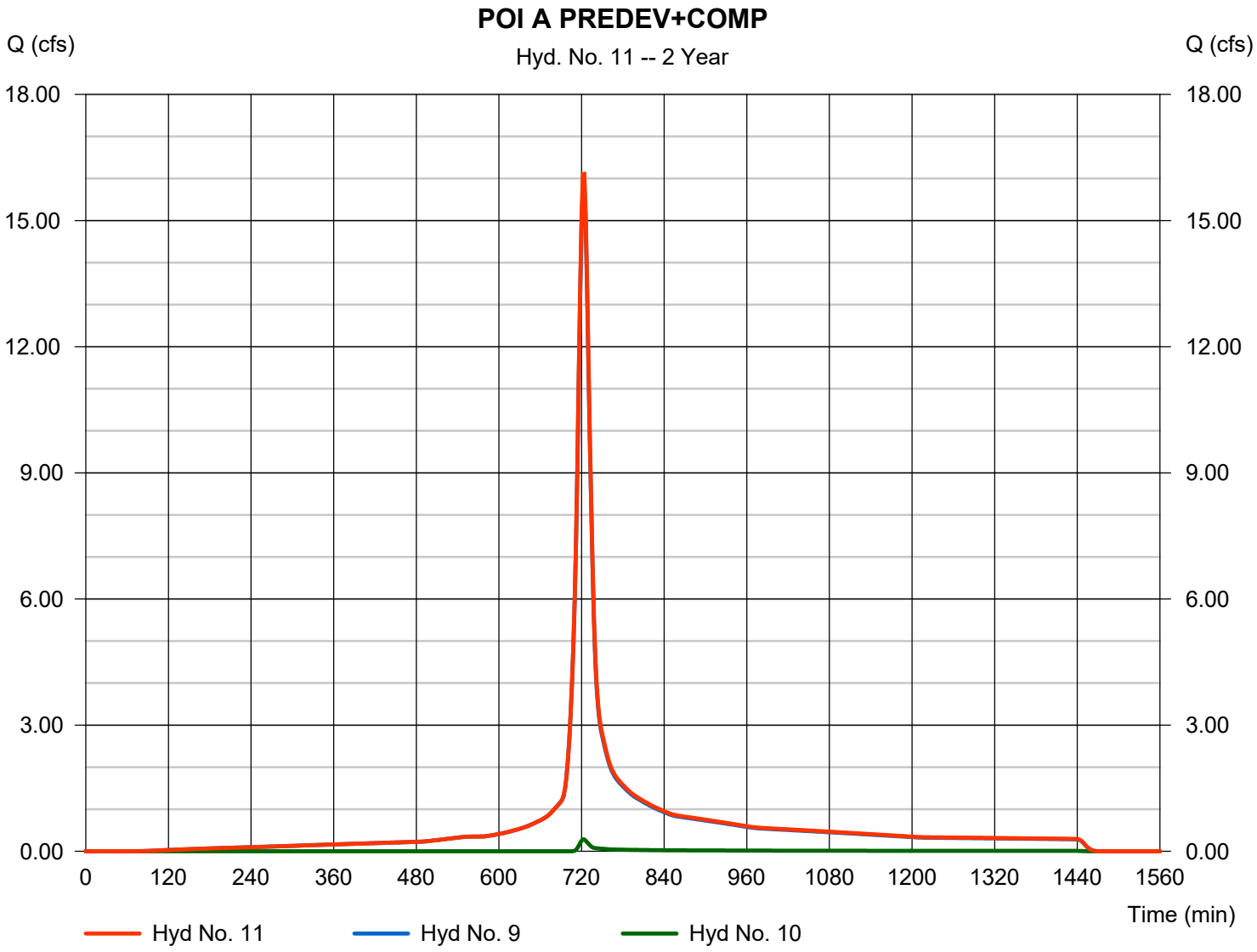
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 11

POI A PREDEV+COMP

Hydrograph type	= Combine	Peak discharge	= 16.11 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 58,591 cuft
Inflow hyds.	= 9, 10	Contrib. drain. area	= 0.509 ac



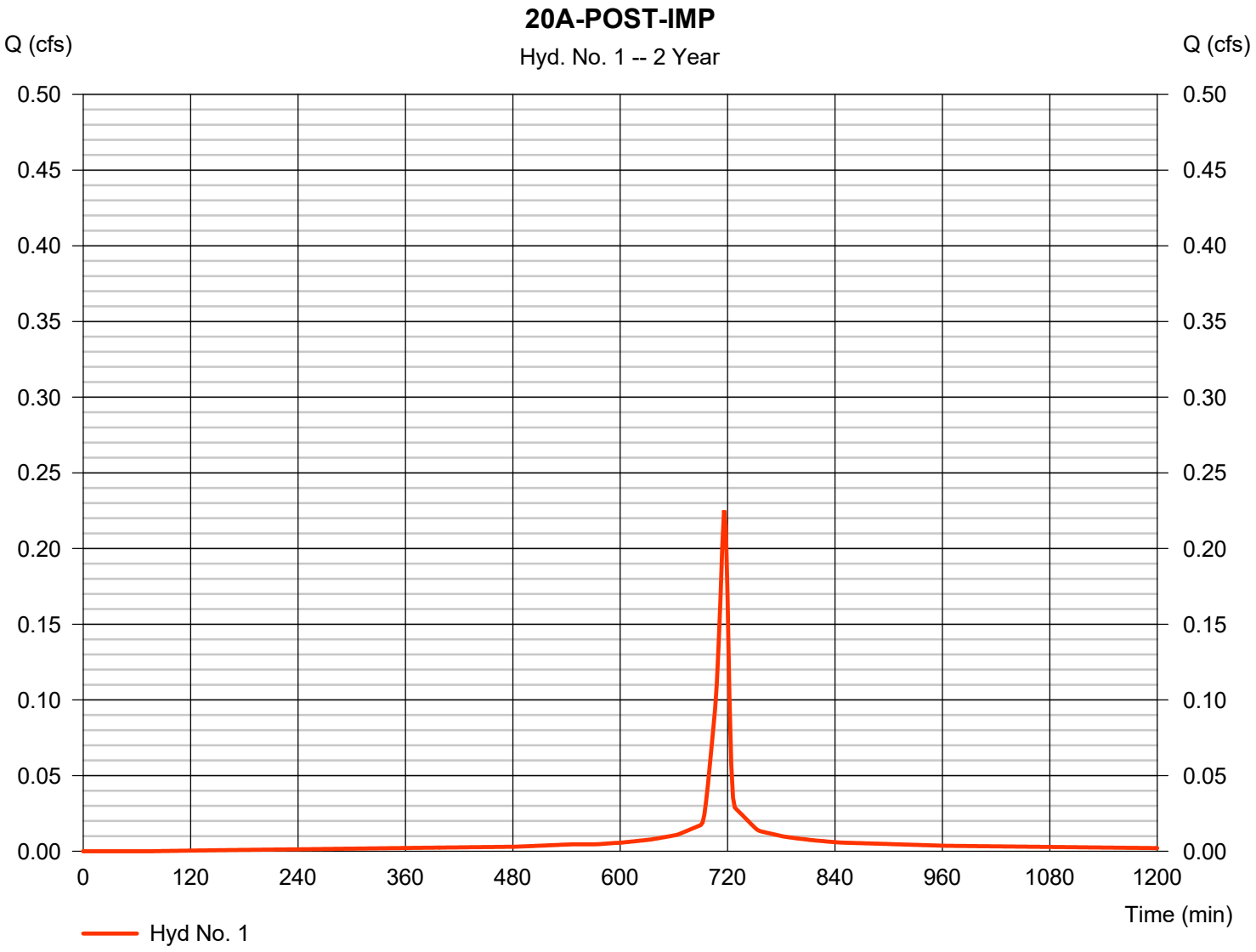
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 1

20A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.225 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 527 cuft
Drainage area	= 0.051 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



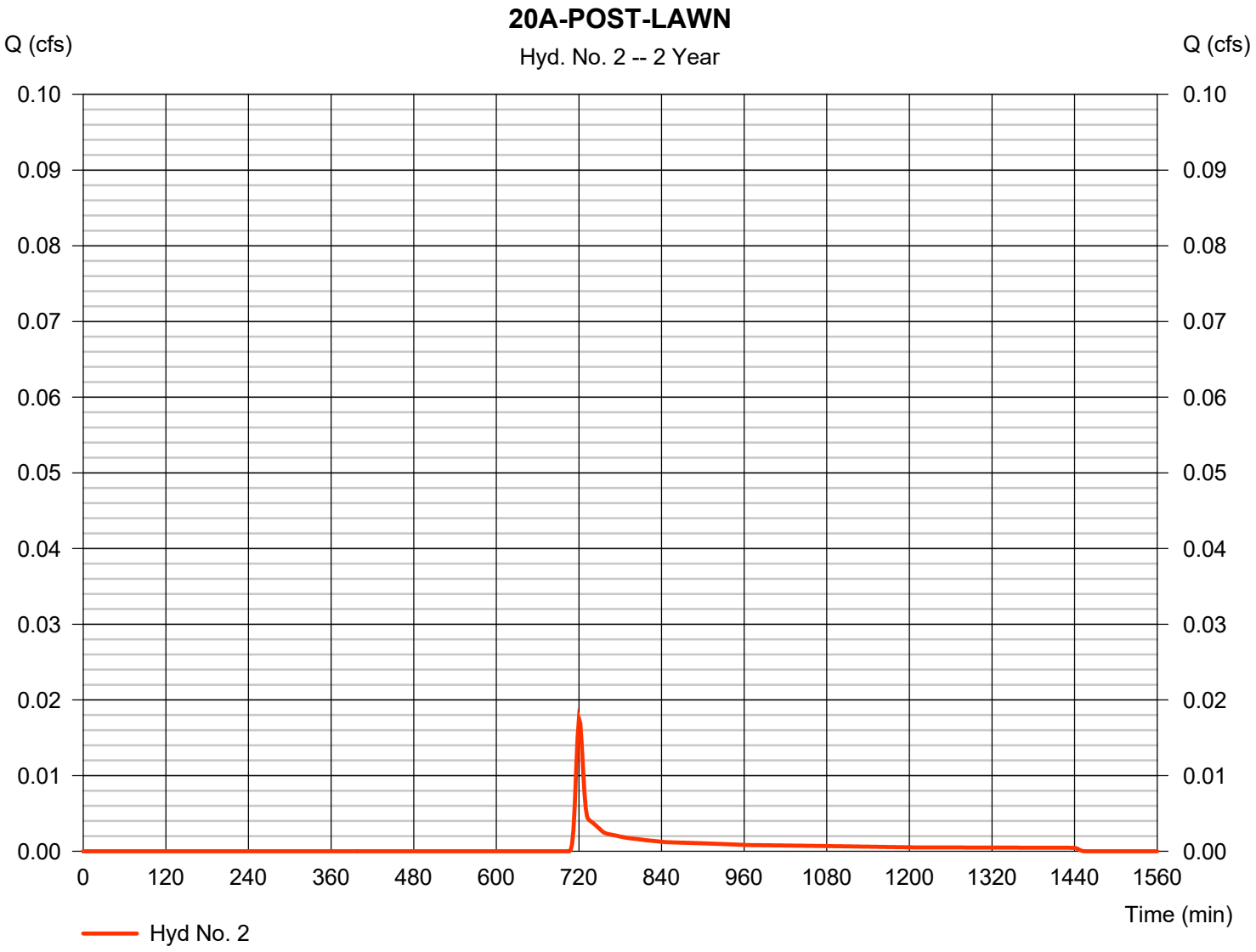
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 2

20A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.017 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 51 cuft
Drainage area	= 0.030 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



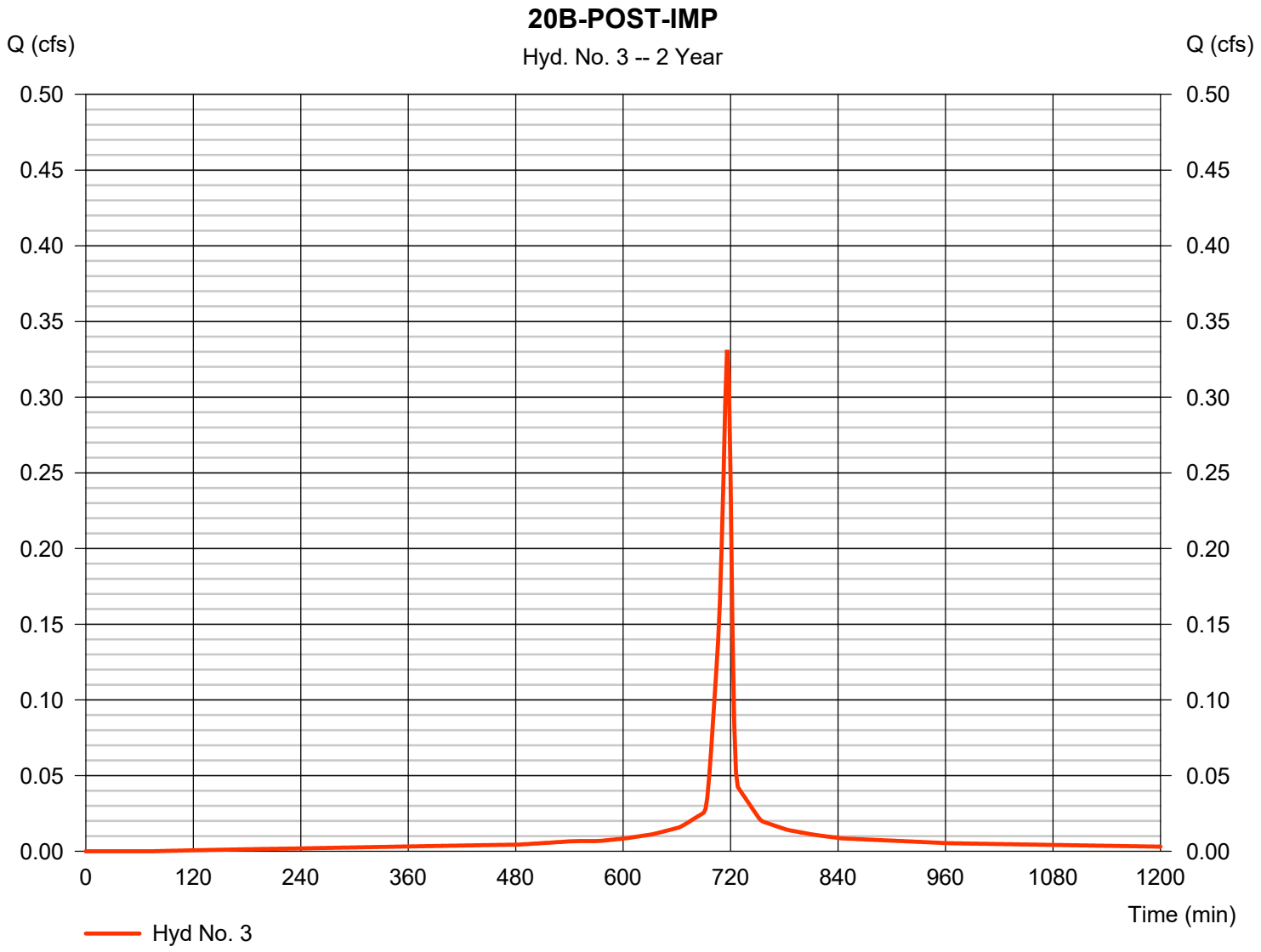
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 3

20B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.331 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 775 cuft
Drainage area	= 0.075 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



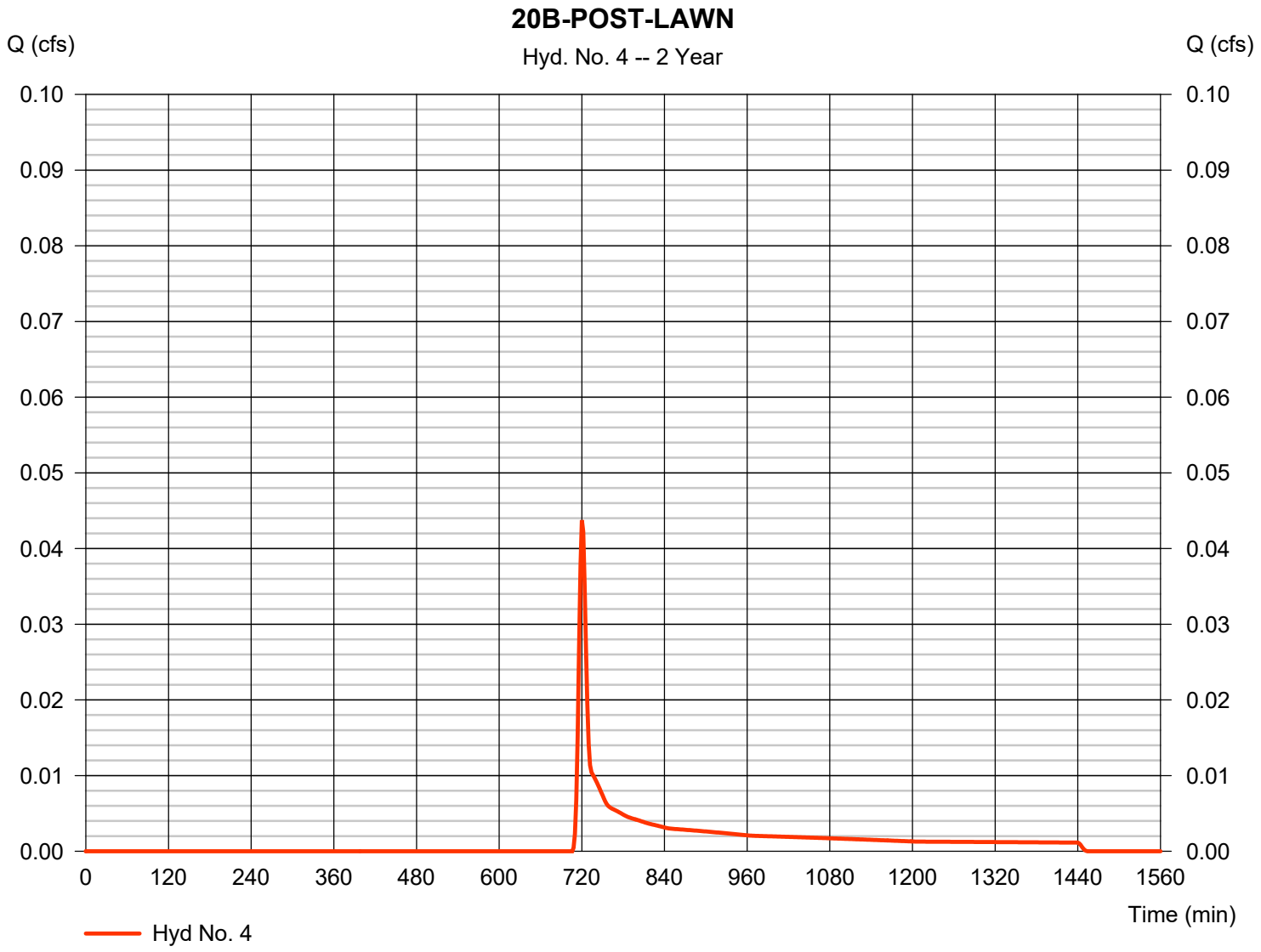
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 4

20B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.044 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 129 cuft
Drainage area	= 0.075 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



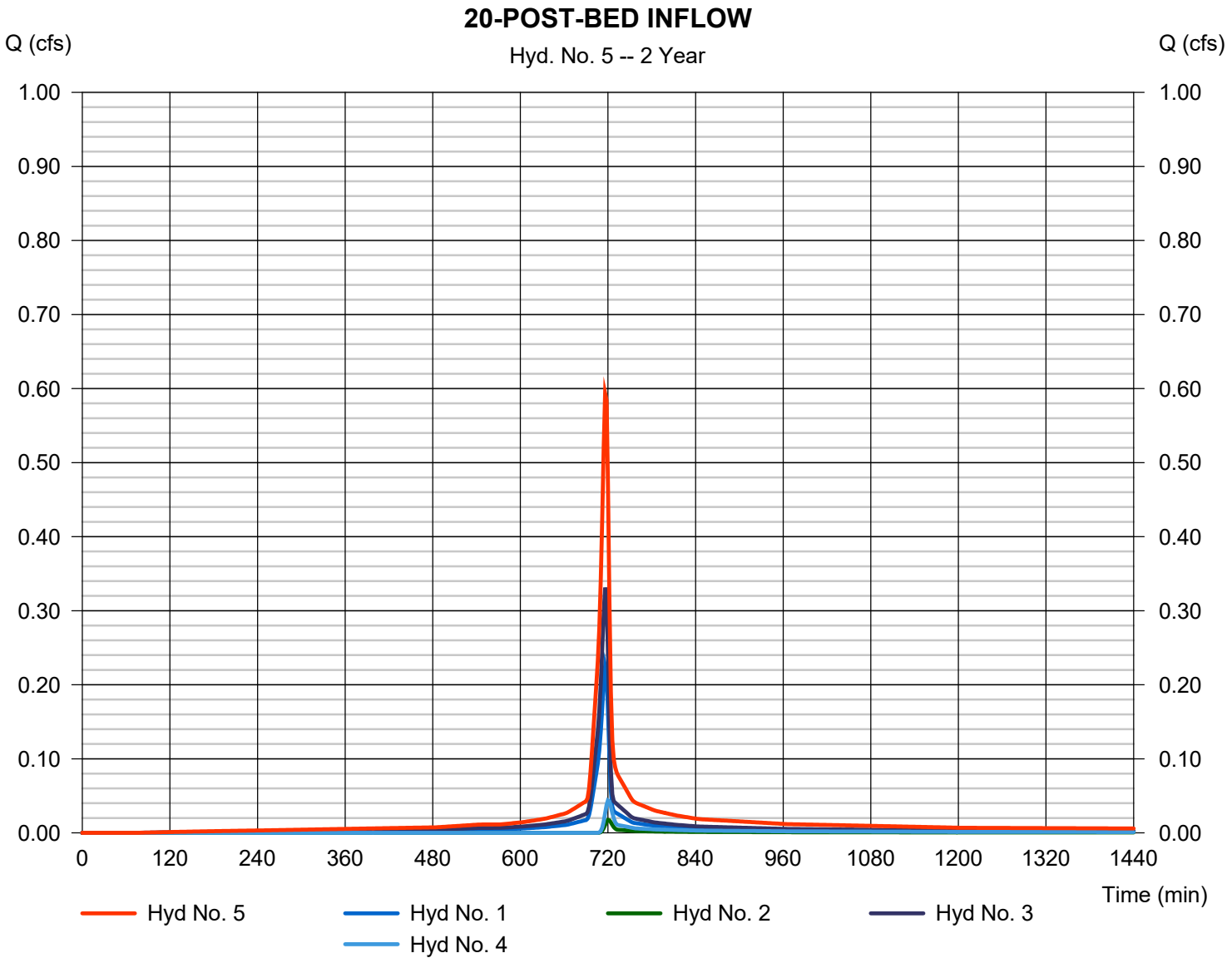
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 5

20-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.593 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,483 cuft
Inflow hyds.	= 1, 2, 3, 4	Contrib. drain. area	= 0.231 ac



Hydrograph Report

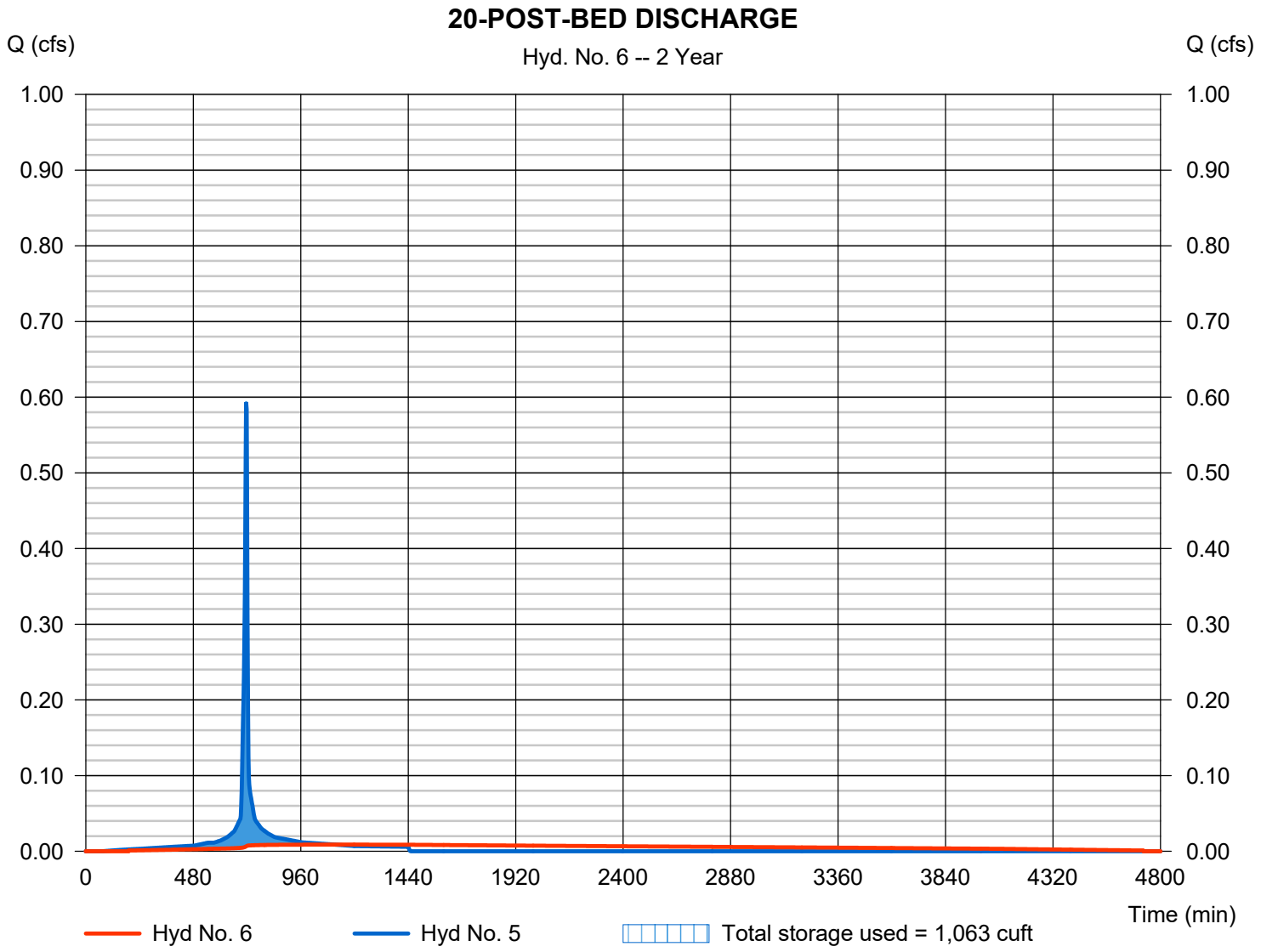
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 6

20-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.009 cfs
Storm frequency	=	2 yrs	Time to peak	=	1112 min
Time interval	=	2 min	Hyd. volume	=	1,474 cuft
Inflow hyd. No.	=	5 - 20-POST-BED INFLOW	Max. Elevation	=	361.33 ft
Reservoir name	=	LOT 20 INFILTRATION BED	Max. Storage	=	1,063 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 1 - LOT 20 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 359.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	359.00	n/a	0	0
0.40	359.40	n/a	92	92
0.80	359.80	n/a	159	251
1.20	360.20	n/a	194	444
1.60	360.60	n/a	213	657
2.00	361.00	n/a	223	880
2.40	361.40	n/a	223	1,103
2.80	361.80	n/a	213	1,316
3.20	362.20	n/a	193	1,509
3.60	362.60	n/a	159	1,668
4.00	363.00	n/a	91	1,760

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 361.50	0.00	0.00	0.00
Length (ft)	= 10.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

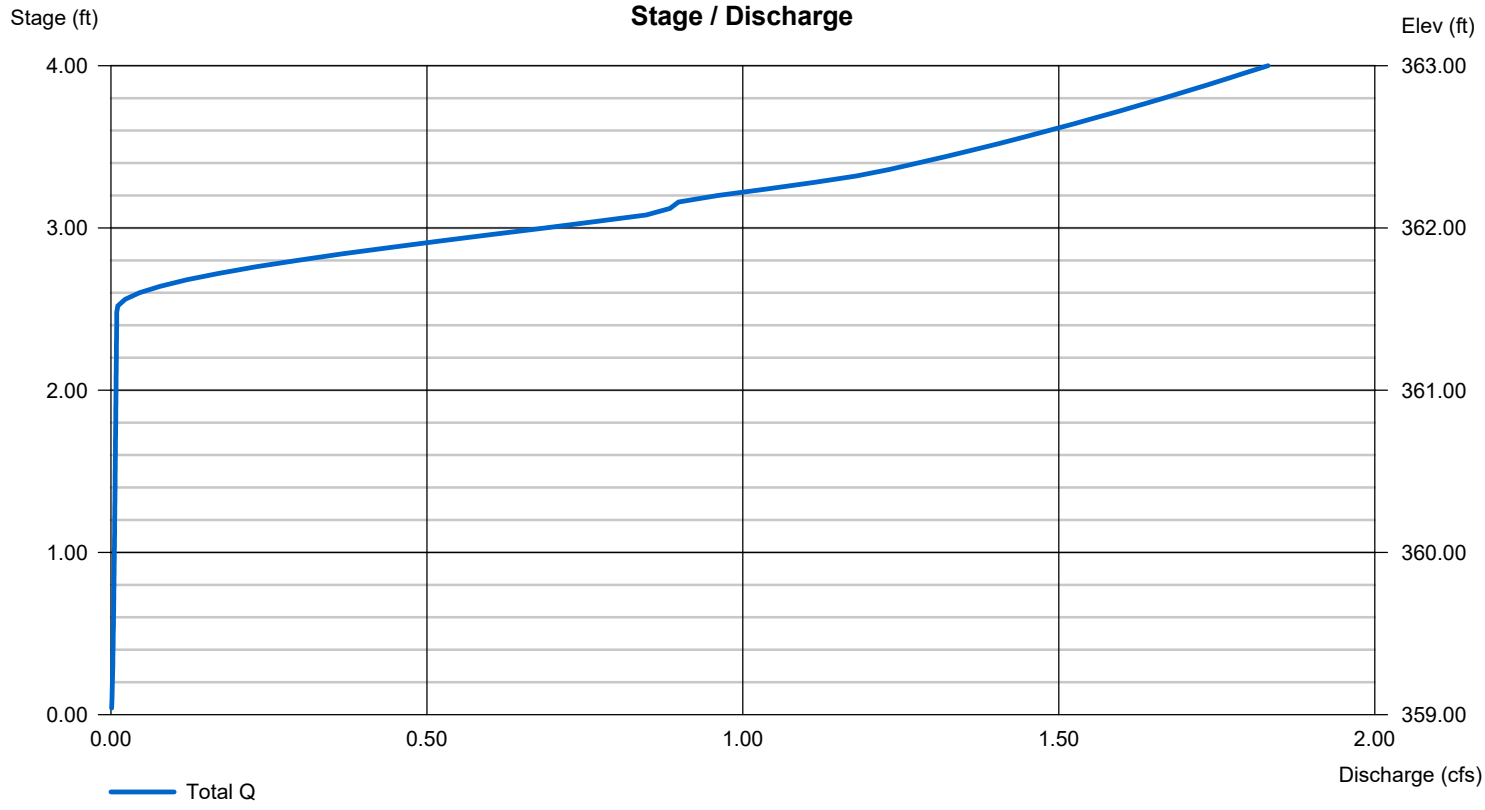
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.390 (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).



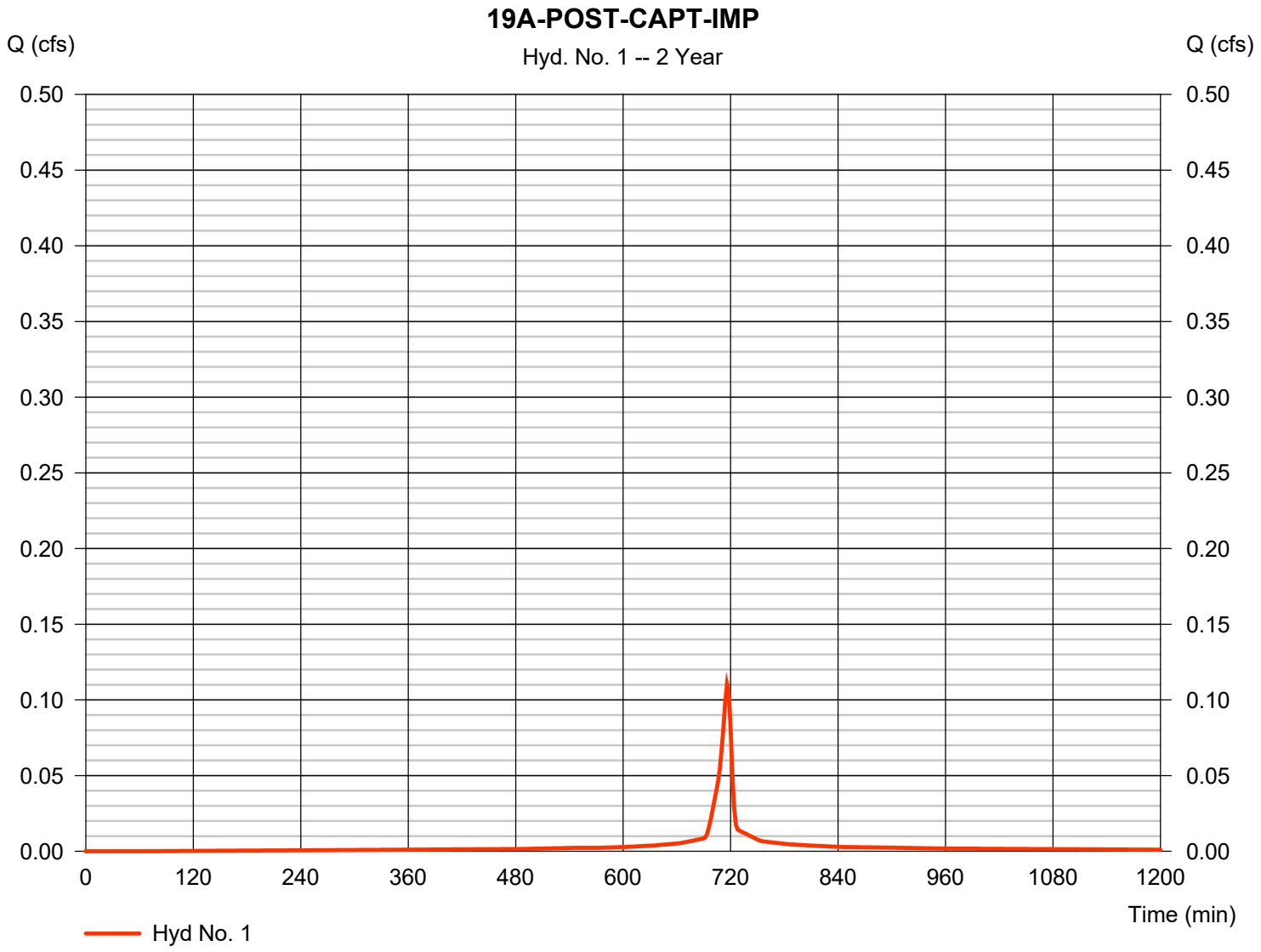
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 1

19A-POST-CAPT-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.110 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 258 cuft
Drainage area	= 0.025 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



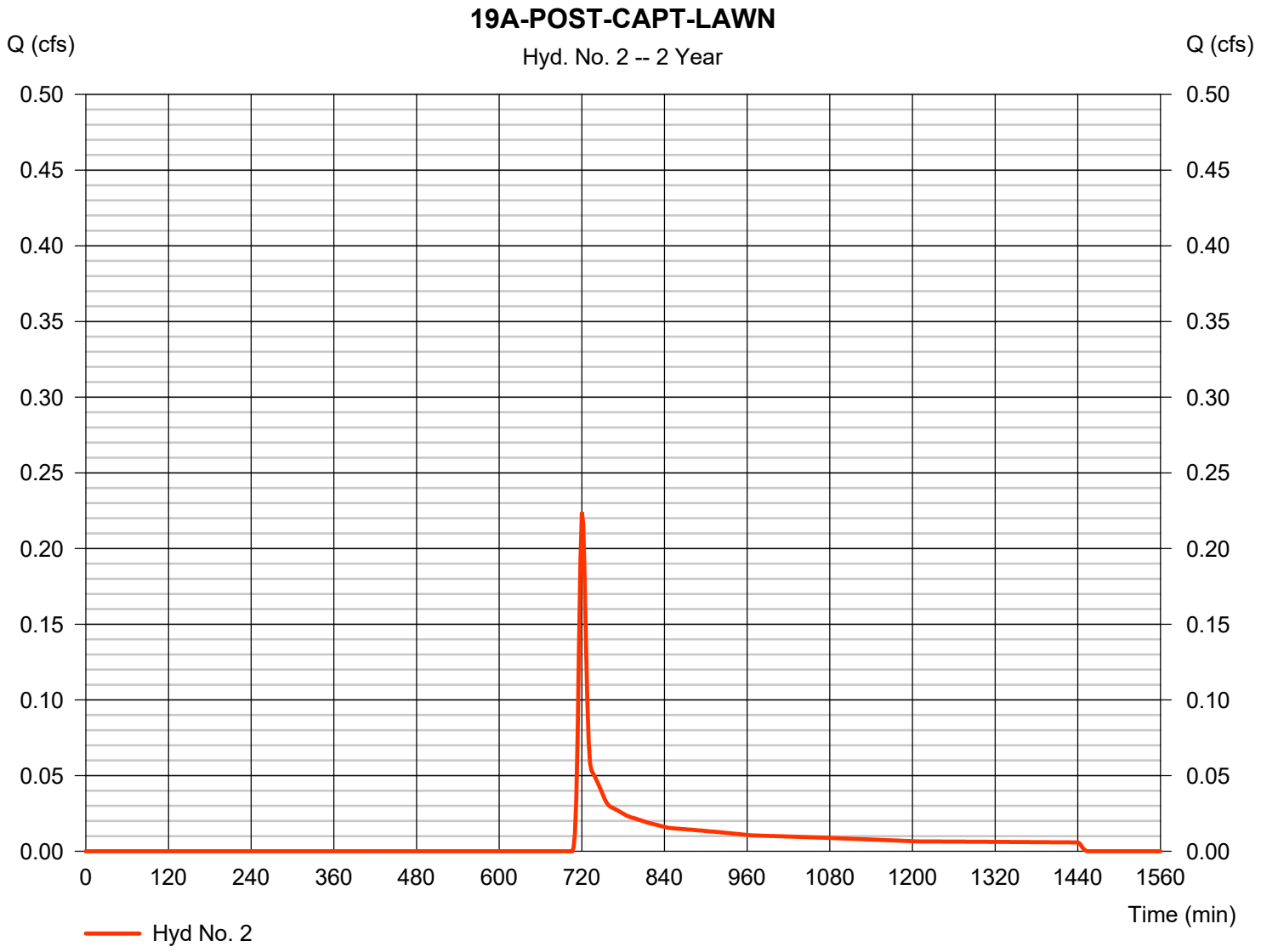
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 2

19A-POST-CAPT-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.224 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 659 cuft
Drainage area	= 0.384 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



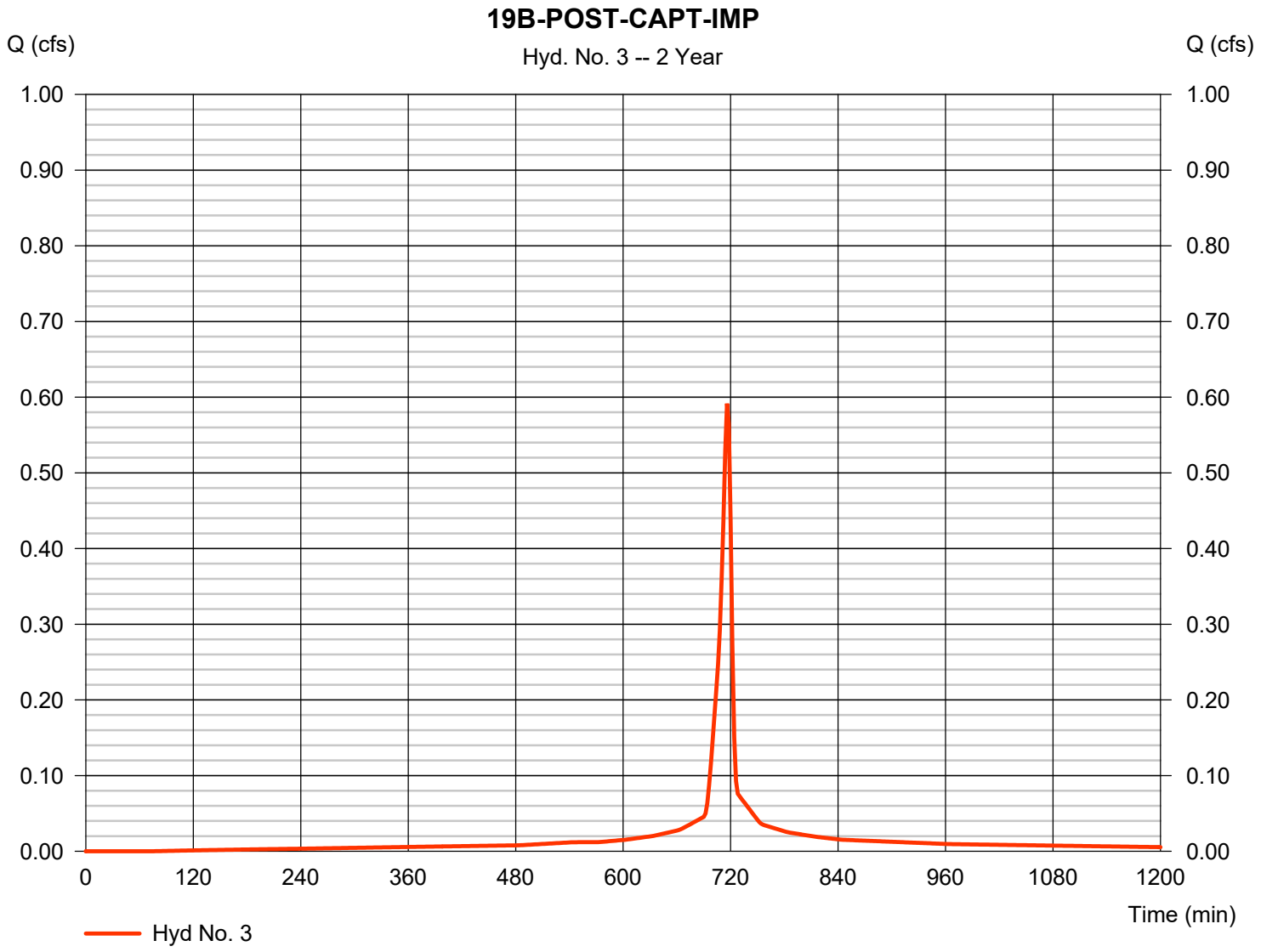
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 3

19B-POST-CAPT-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.592 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,385 cuft
Drainage area	= 0.134 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



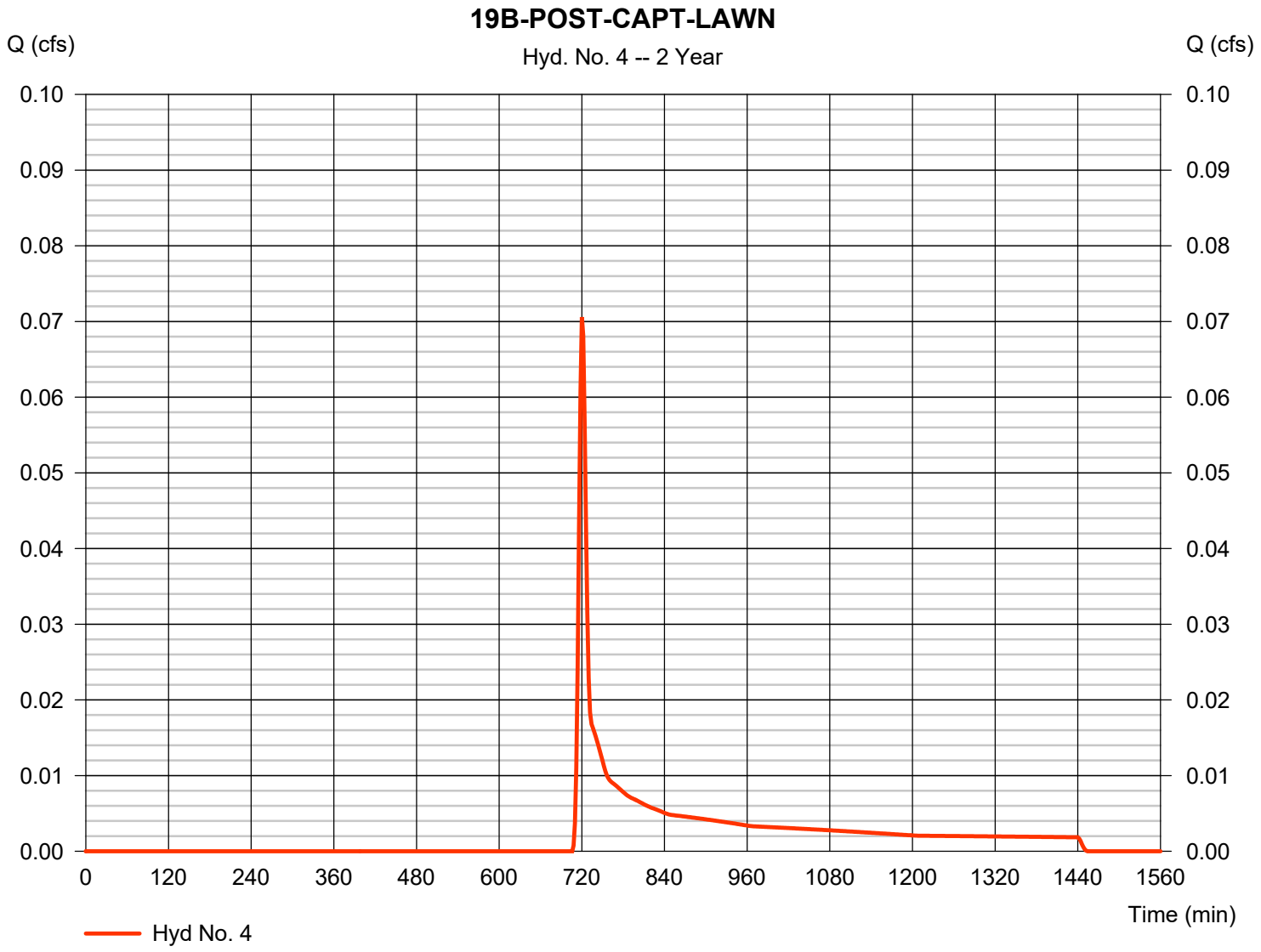
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 4

19B-POST-CAPT-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.071 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 208 cuft
Drainage area	= 0.121 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



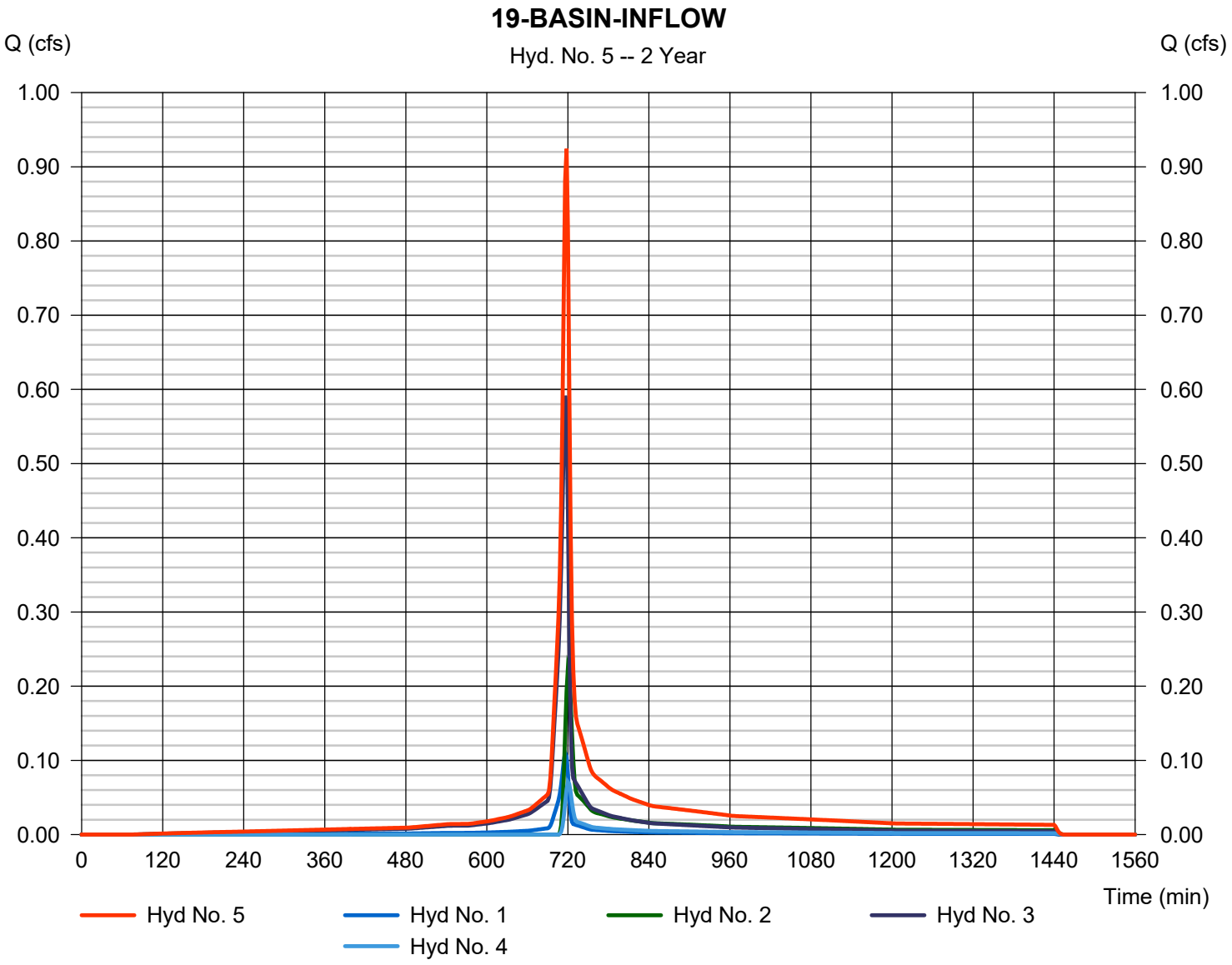
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 5

19-BASIN-INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.924 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,510 cuft
Inflow hyds.	= 1, 2, 3, 4	Contrib. drain. area	= 0.664 ac



Hydrograph Report

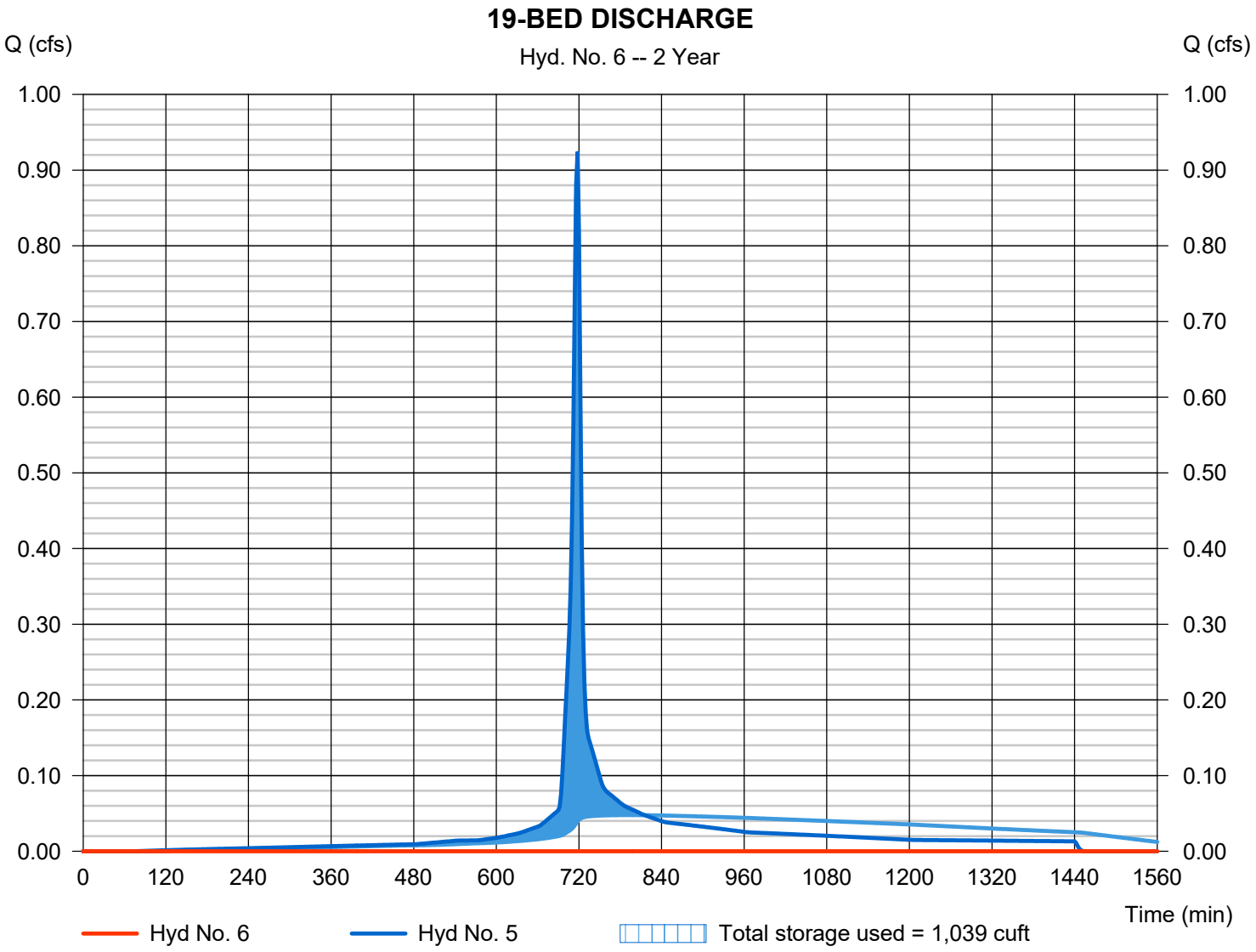
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 6

19-BED DISCHARGE

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 1504 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 5 - 19-BASIN-INFLOW	Max. Elevation	= 392.83 ft
Reservoir name	= LOT 19 INFIL BED	Max. Storage	= 1,039 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 1 - LOT 19 INFIL BED

Pond Data

UG Chambers -Invert elev. = 391.50 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	391.50	n/a	0	0
0.40	391.90	n/a	186	186
0.80	392.30	n/a	323	509
1.20	392.70	n/a	393	901
1.60	393.10	n/a	432	1,333
2.00	393.50	n/a	452	1,785
2.40	393.90	n/a	452	2,237
2.80	394.30	n/a	432	2,669
3.20	394.70	n/a	392	3,061
3.60	395.10	n/a	323	3,384
4.00	395.50	n/a	186	3,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 394.00	0.00	0.00	0.00
Length (ft)	= 297.00	0.00	0.00	0.00
Slope (%)	= 11.30	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

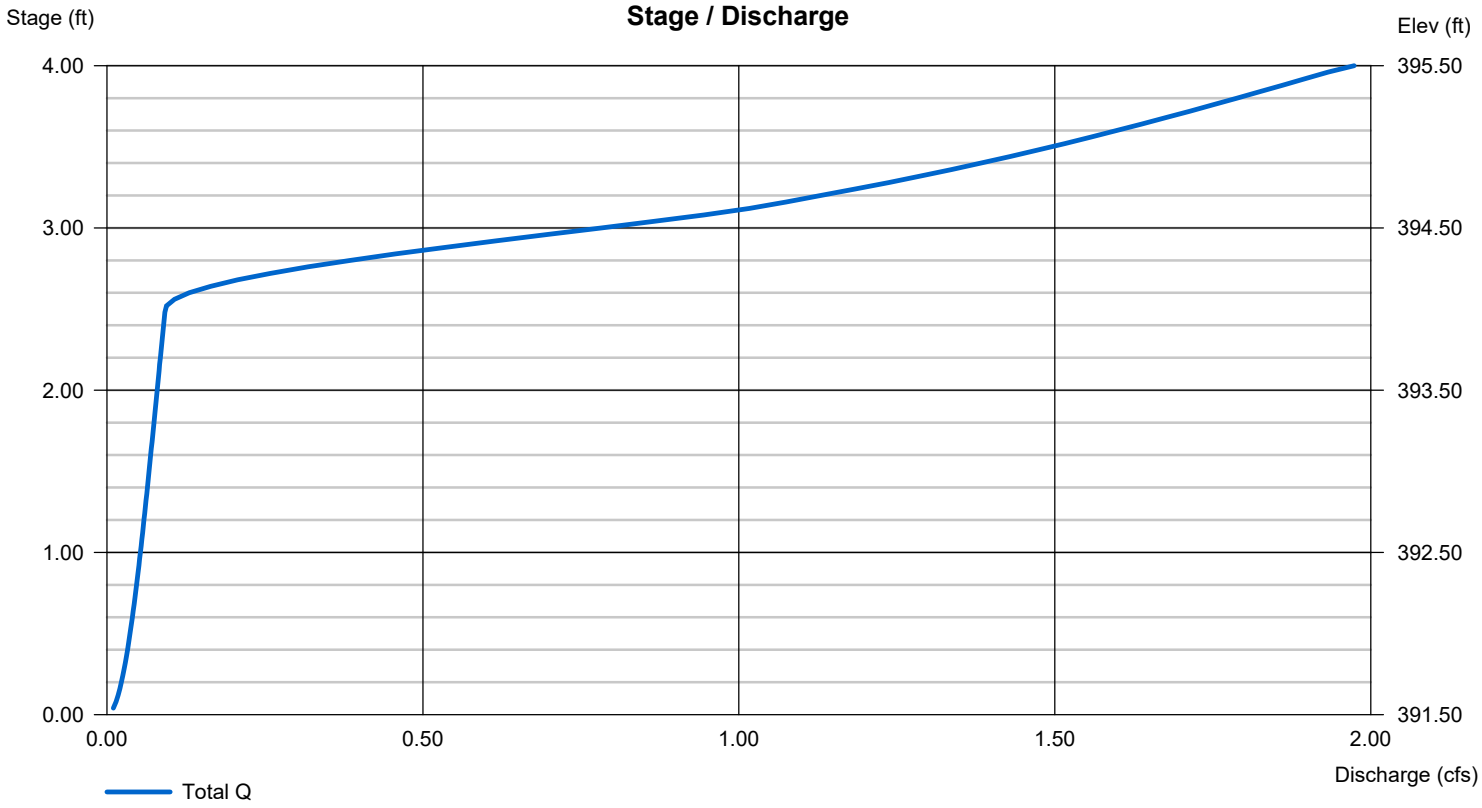
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.920 (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).



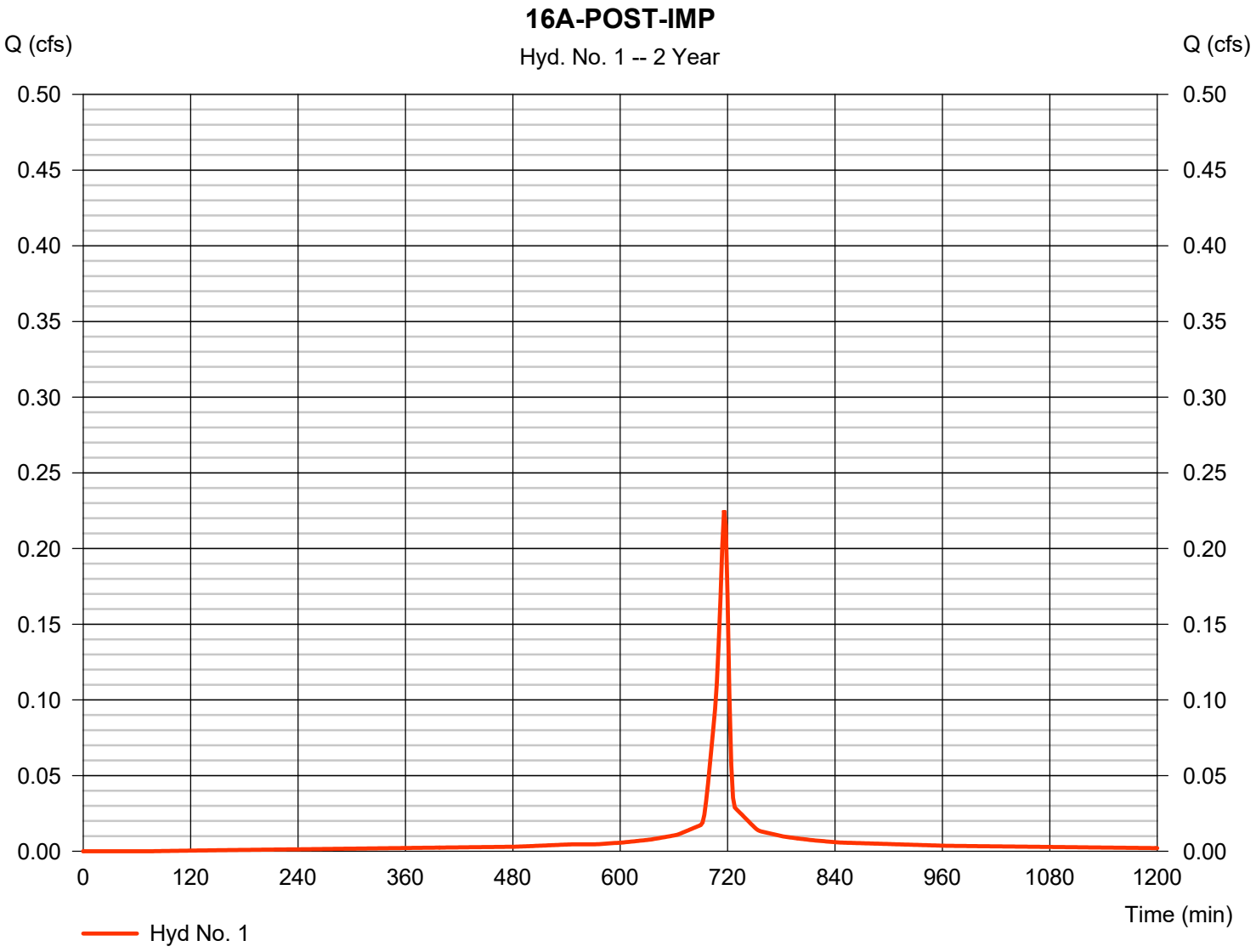
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 1

16A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.225 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 527 cuft
Drainage area	= 0.051 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



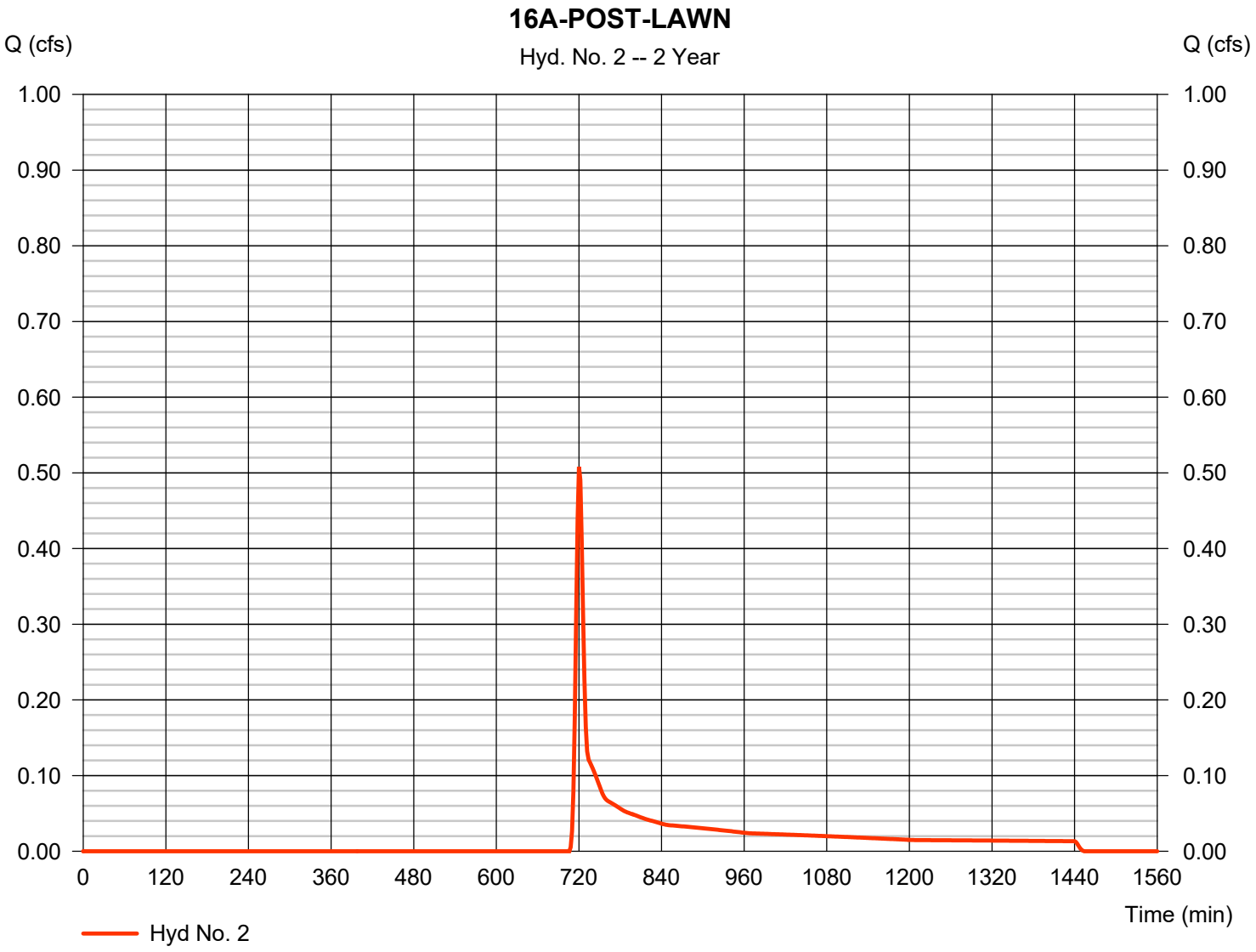
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 2

16A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.508 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 1,495 cuft
Drainage area	= 0.871 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



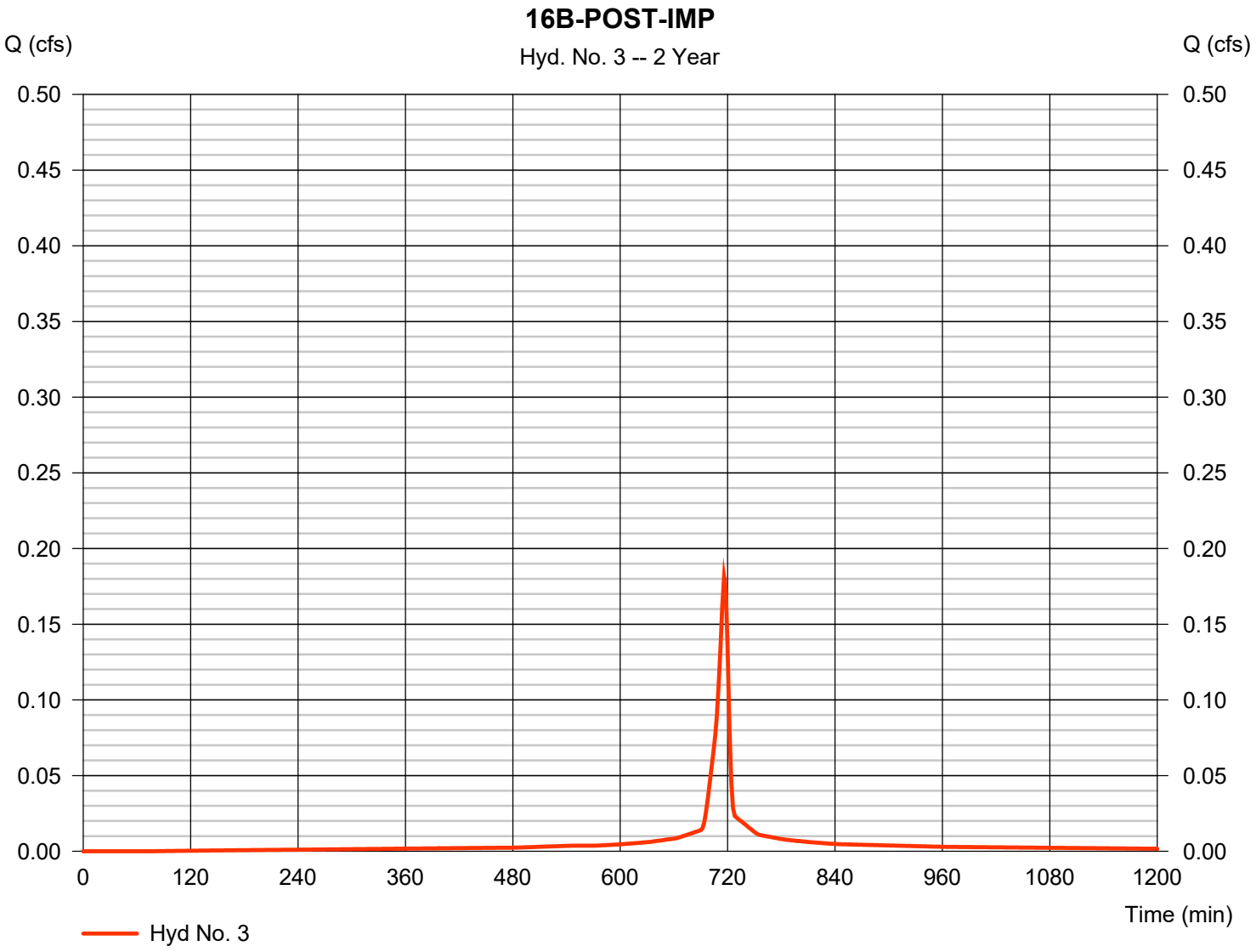
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 3

16B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.181 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 424 cuft
Drainage area	= 0.041 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



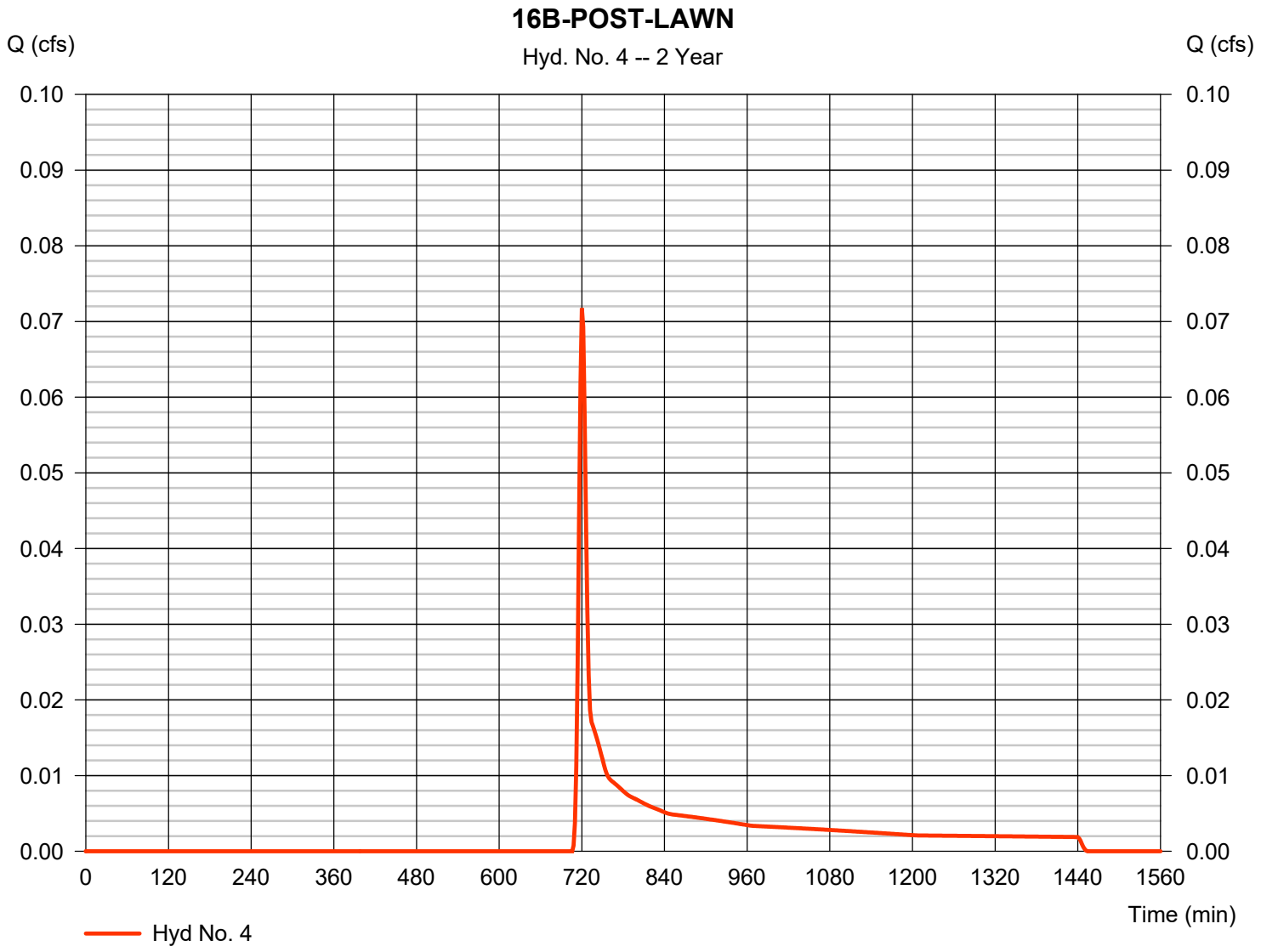
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 4

16B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.072 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 211 cuft
Drainage area	= 0.123 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



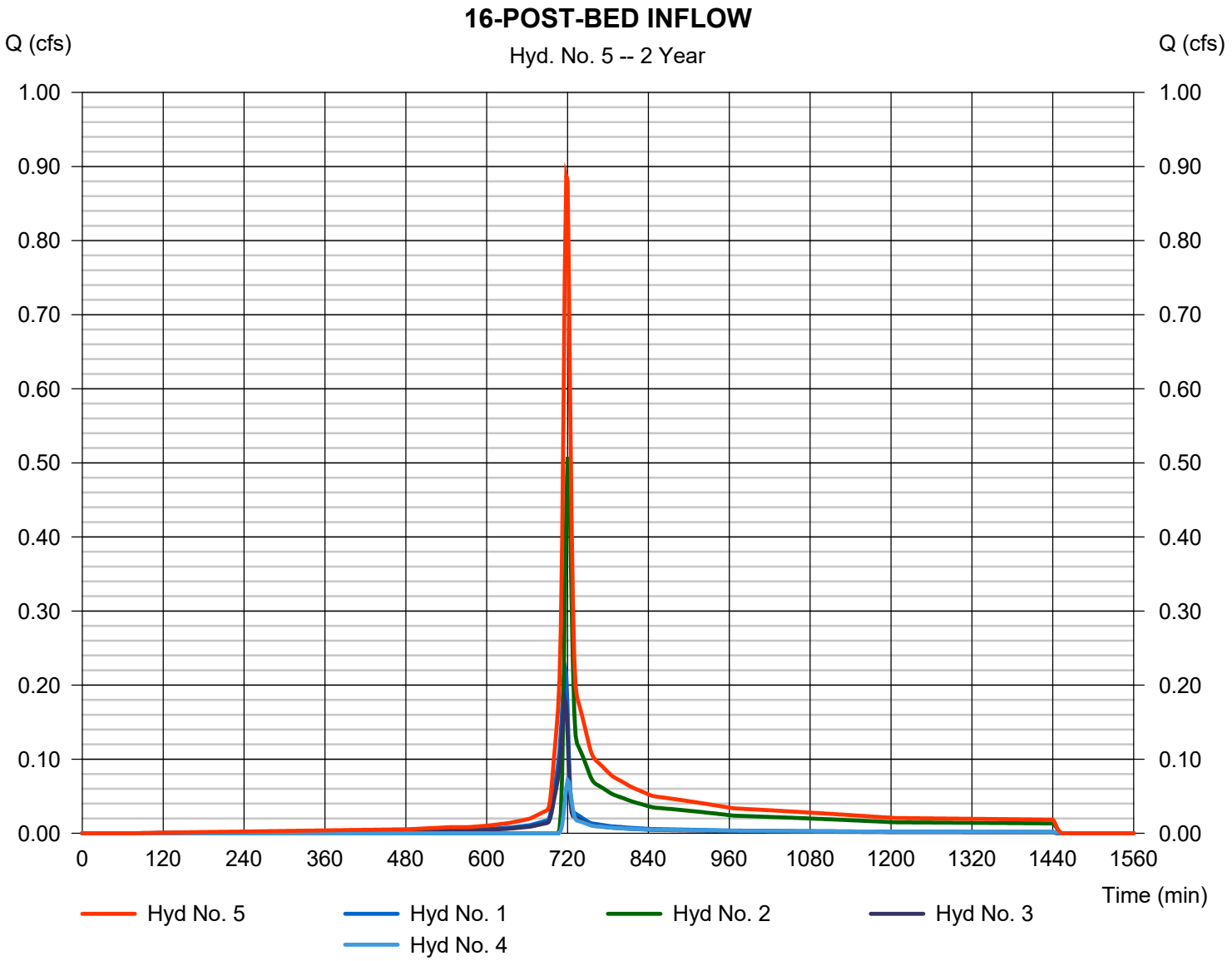
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 5

16-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.888 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,657 cuft
Inflow hyds.	= 1, 2, 3, 4	Contrib. drain. area	= 1.086 ac



Hydrograph Report

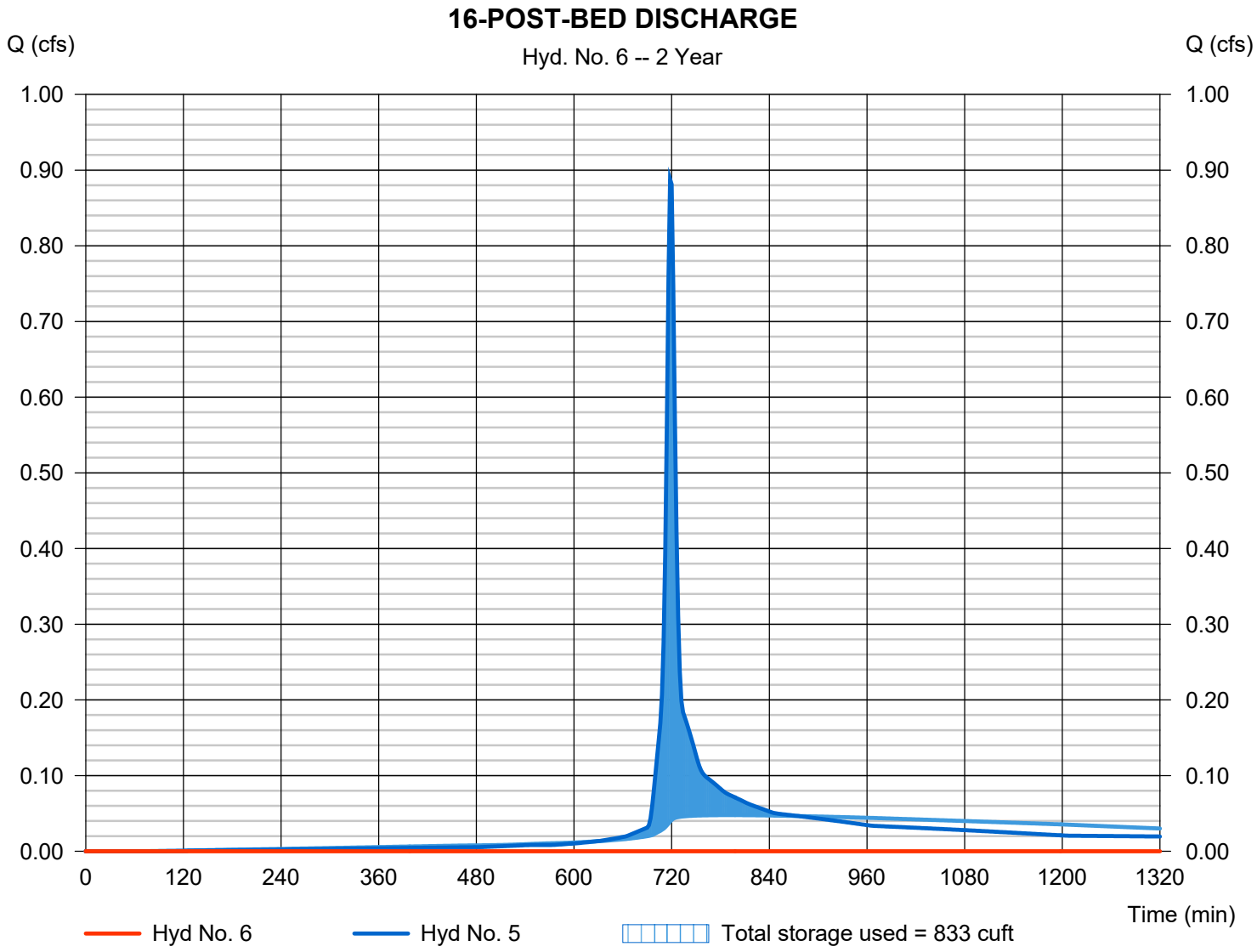
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 6

16-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	1224 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	5 - 16-POST-BED INFLOW	Max. Elevation	=	401.88 ft
Reservoir name	=	LOT 16 INFILTRATION BED	Max. Storage	=	833 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 1 - LOT 16 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 401.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 90.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	401.00	n/a	0	0
0.40	401.40	n/a	264	264
0.80	401.80	n/a	459	723
1.20	402.20	n/a	558	1,282
1.60	402.60	n/a	615	1,897
2.00	403.00	n/a	643	2,539
2.40	403.40	n/a	643	3,182
2.80	403.80	n/a	615	3,797
3.20	404.20	n/a	558	4,355
3.60	404.60	n/a	459	4,814
4.00	405.00	n/a	264	5,078

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 403.50	0.00	0.00	0.00
Length (ft)	= 89.00	0.00	0.00	0.00
Slope (%)	= 2.25	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

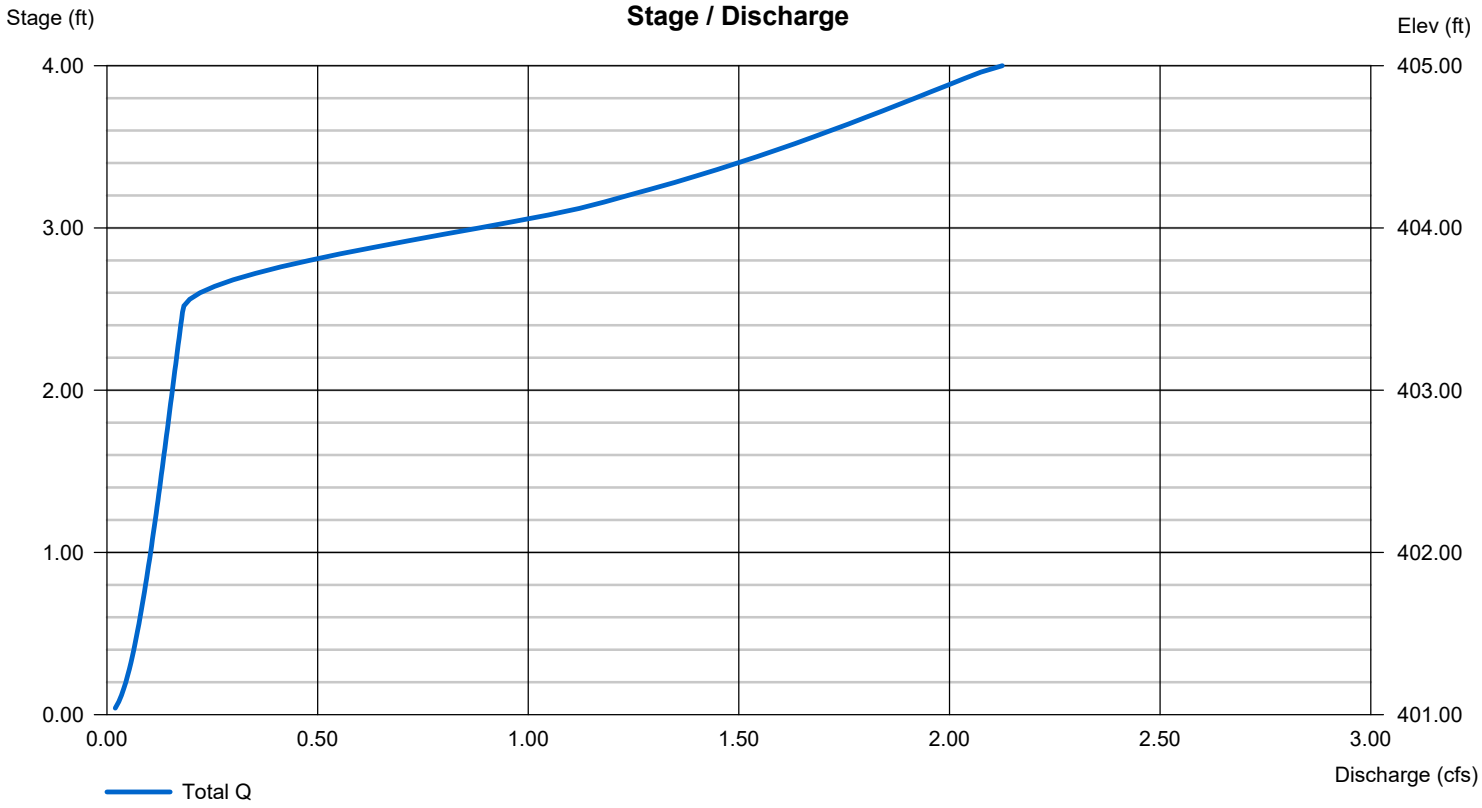
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.640 (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).



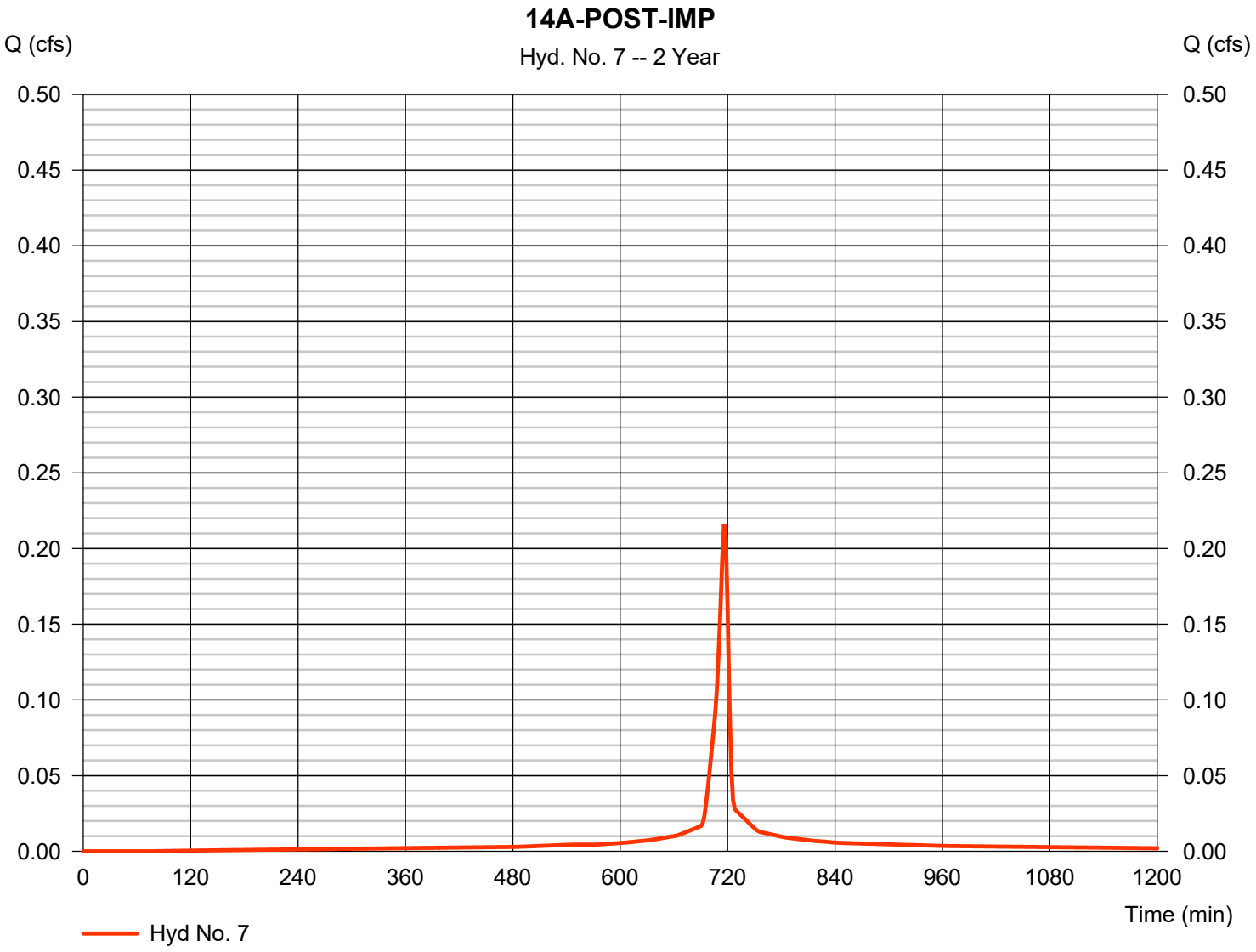
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 7

14A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.216 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 506 cuft
Drainage area	= 0.049 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



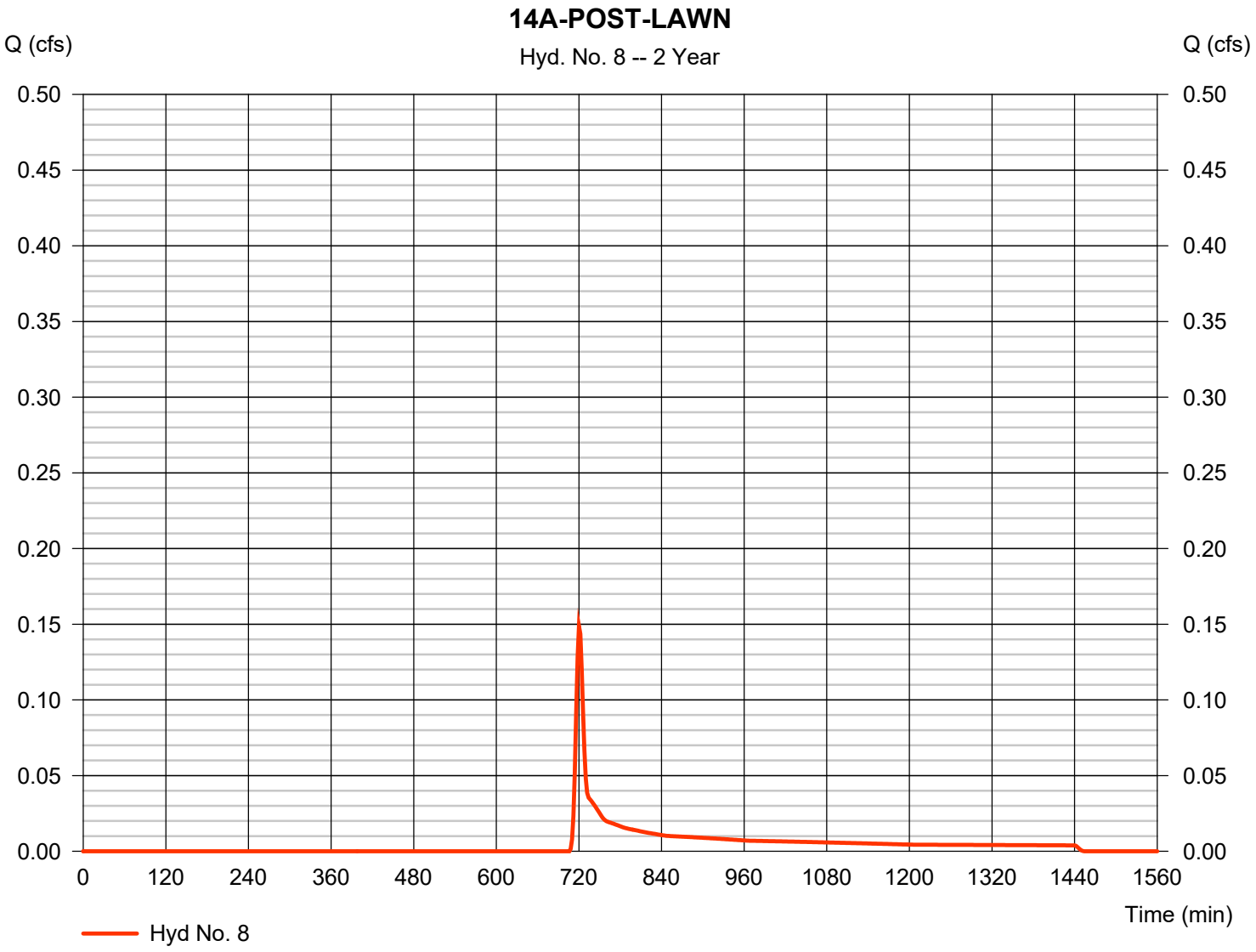
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 8

14A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.149 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 438 cuft
Drainage area	= 0.255 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



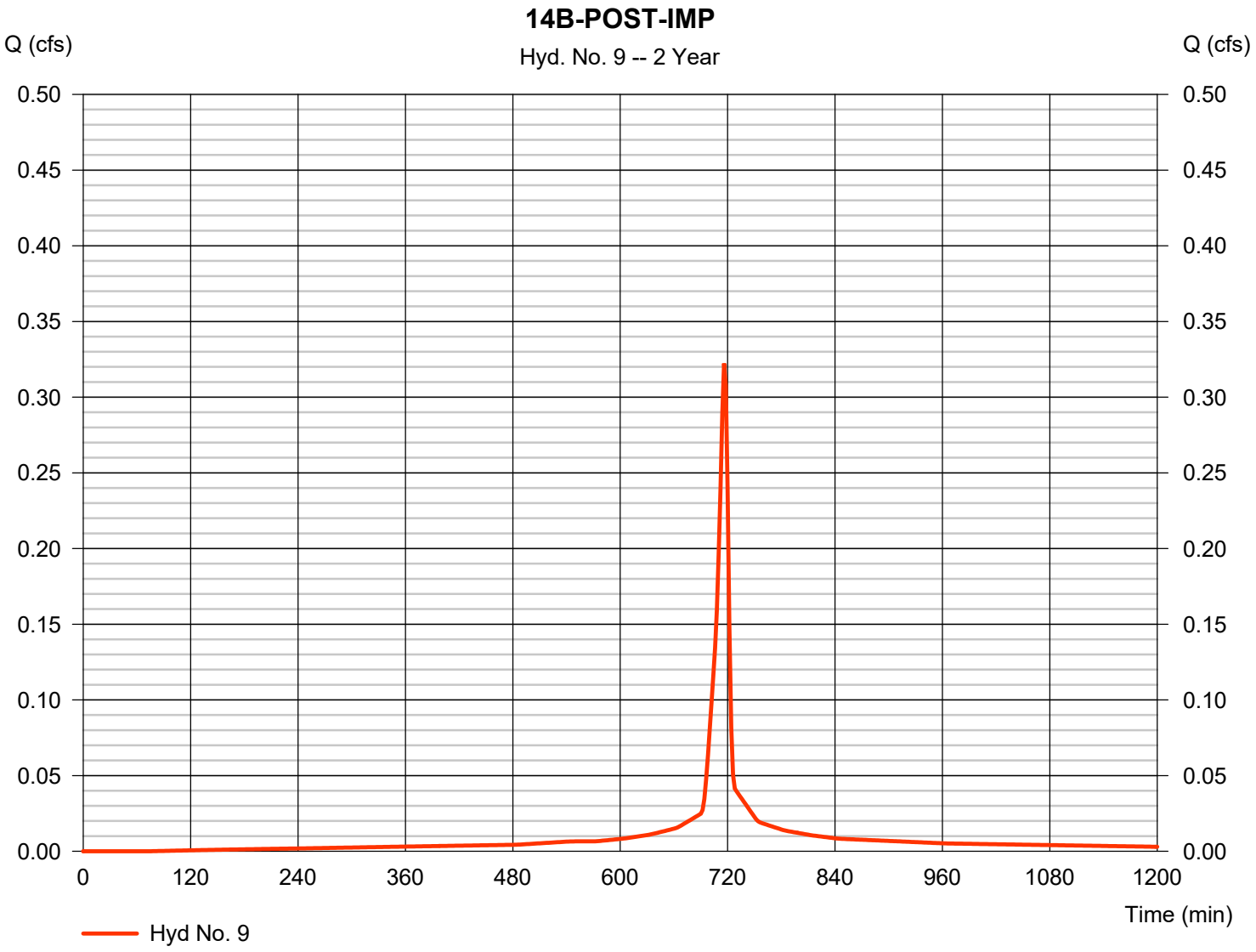
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 9

14B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.322 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 755 cuft
Drainage area	= 0.073 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



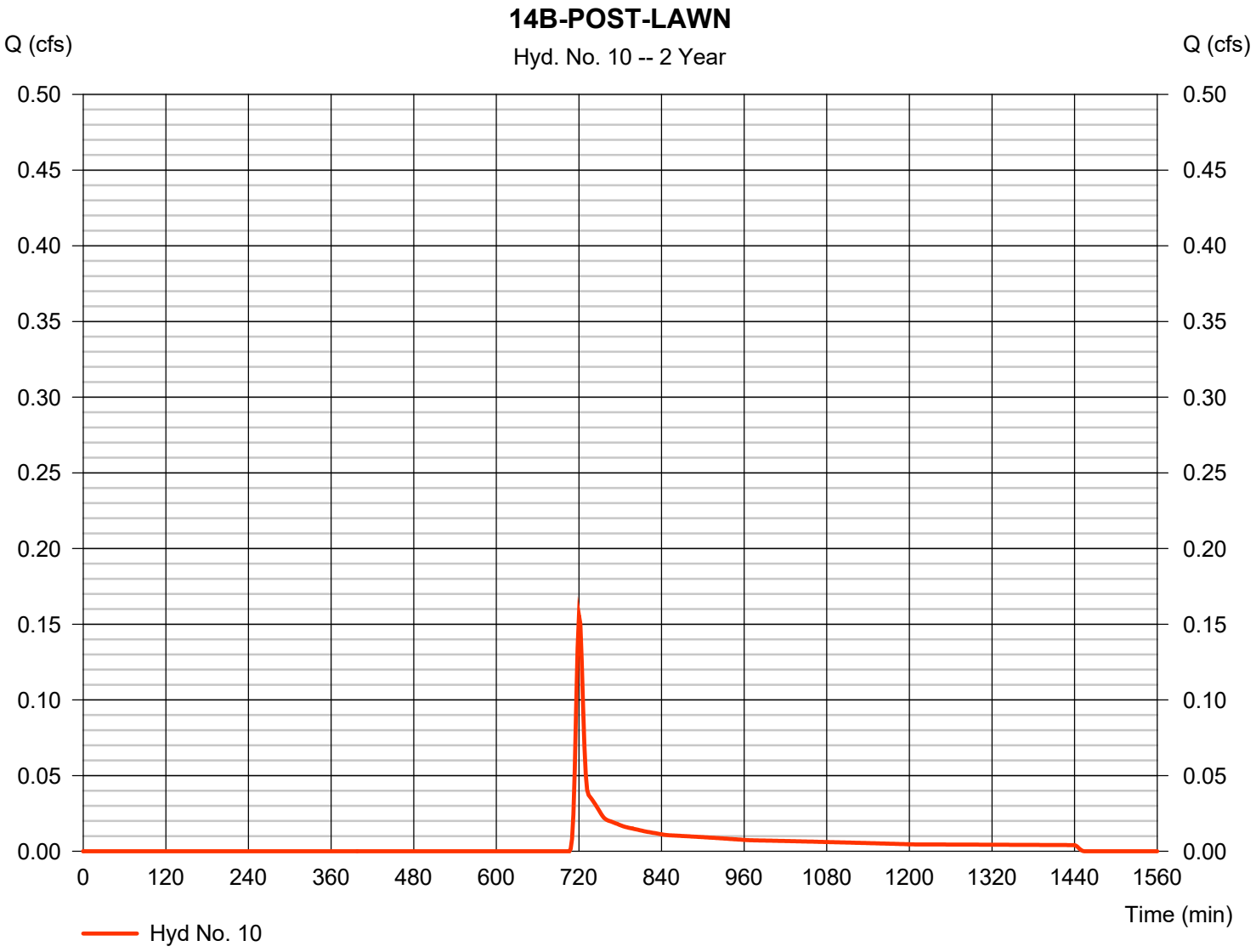
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 10

14B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.156 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 458 cuft
Drainage area	= 0.267 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



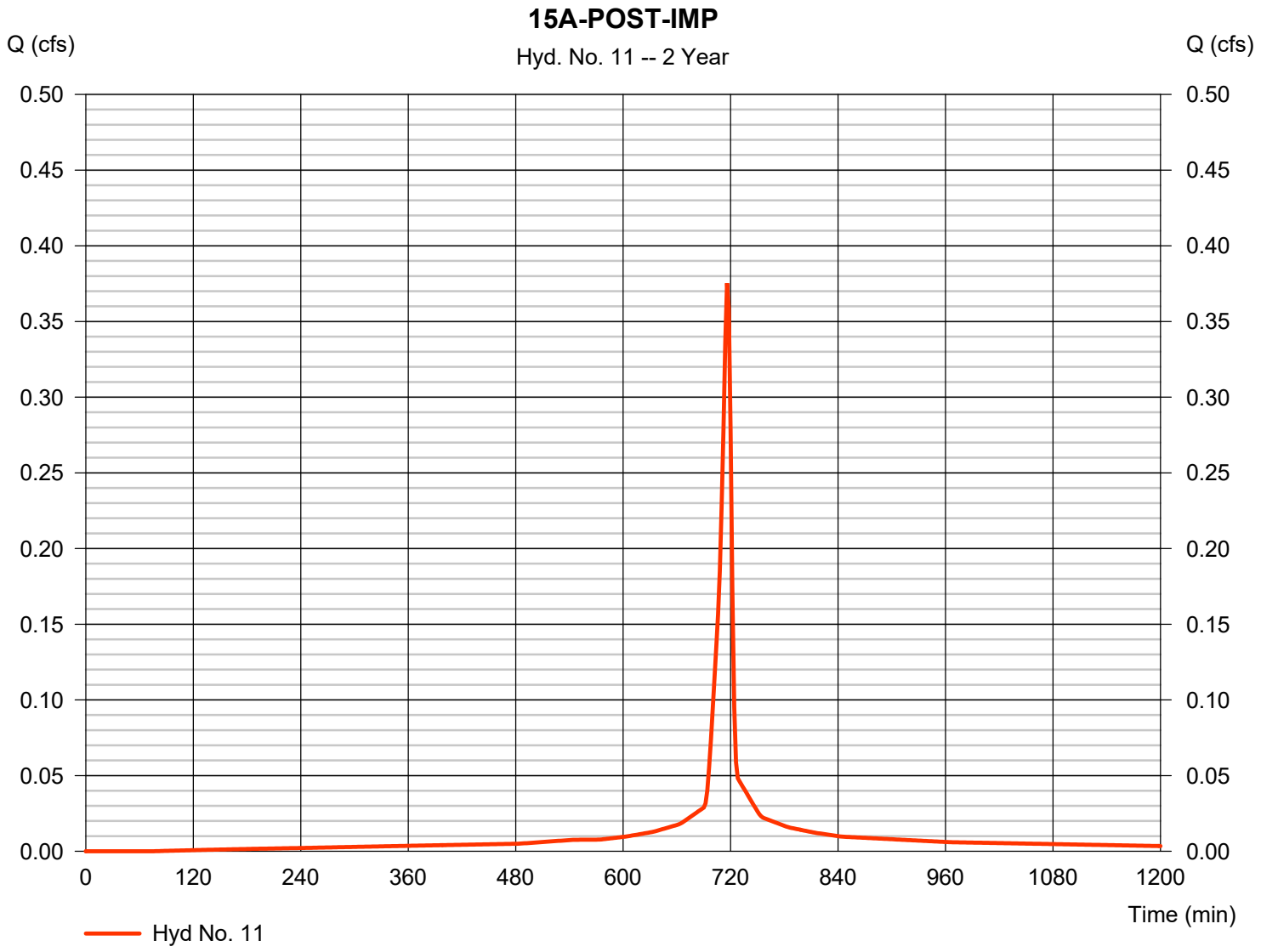
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 11

15A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.375 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 879 cuft
Drainage area	= 0.085 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



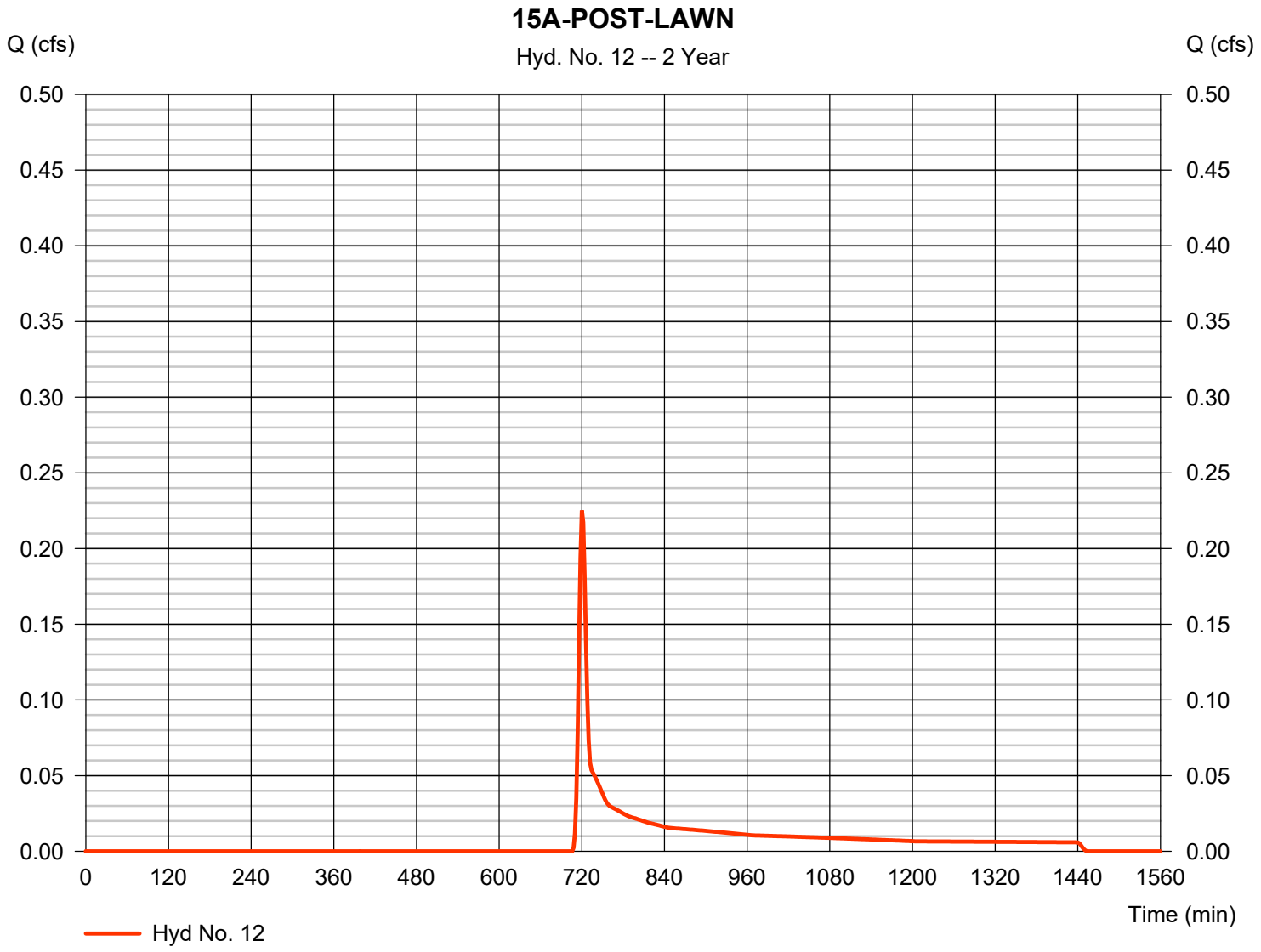
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 12

15A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.225 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 662 cuft
Drainage area	= 0.386 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



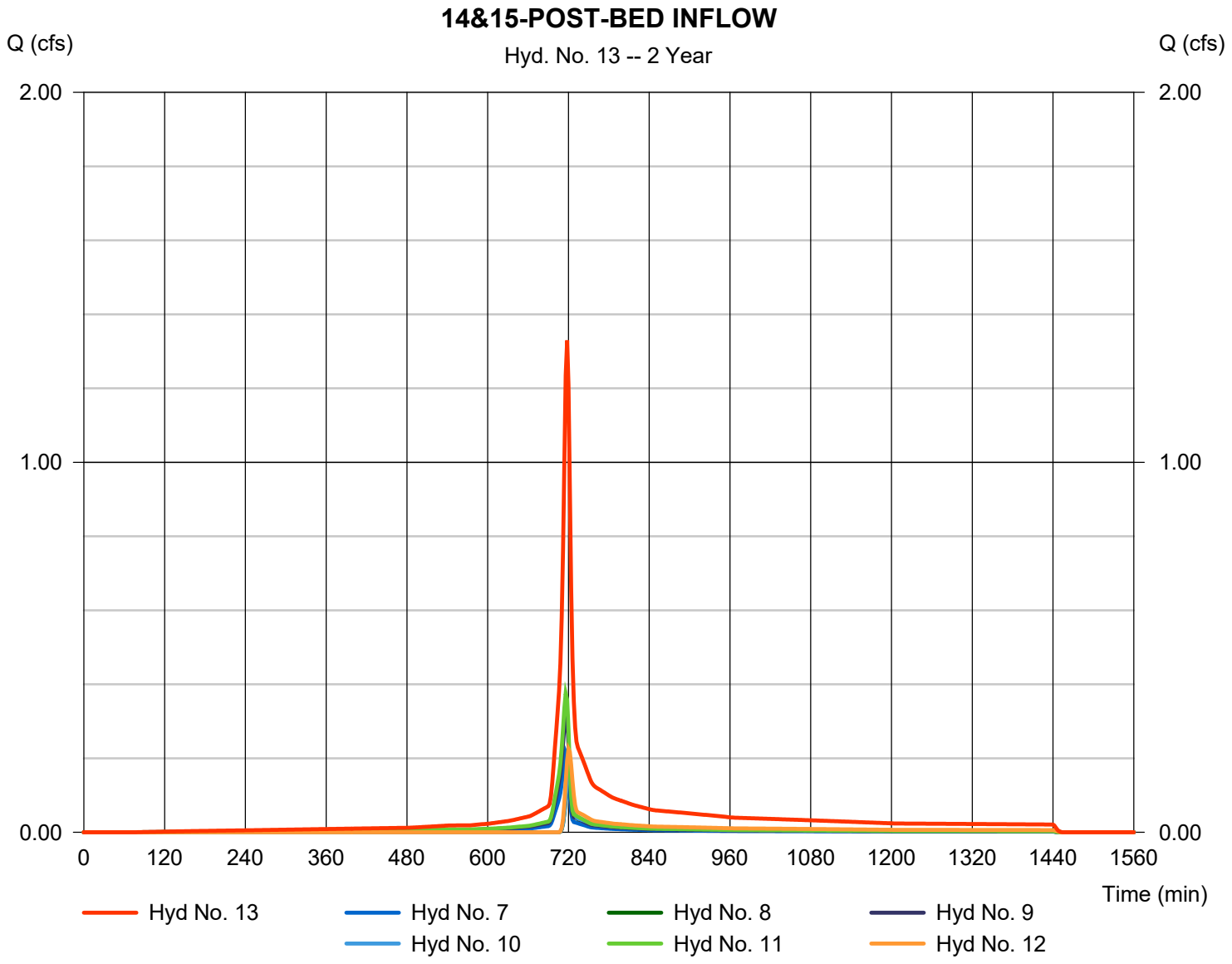
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 13

14&15-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 1.329 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 3,698 cuft
Inflow hyds.	= 7, 8, 9, 10, 11, 12	Contrib. drain. area	= 1.115 ac



Hydrograph Report

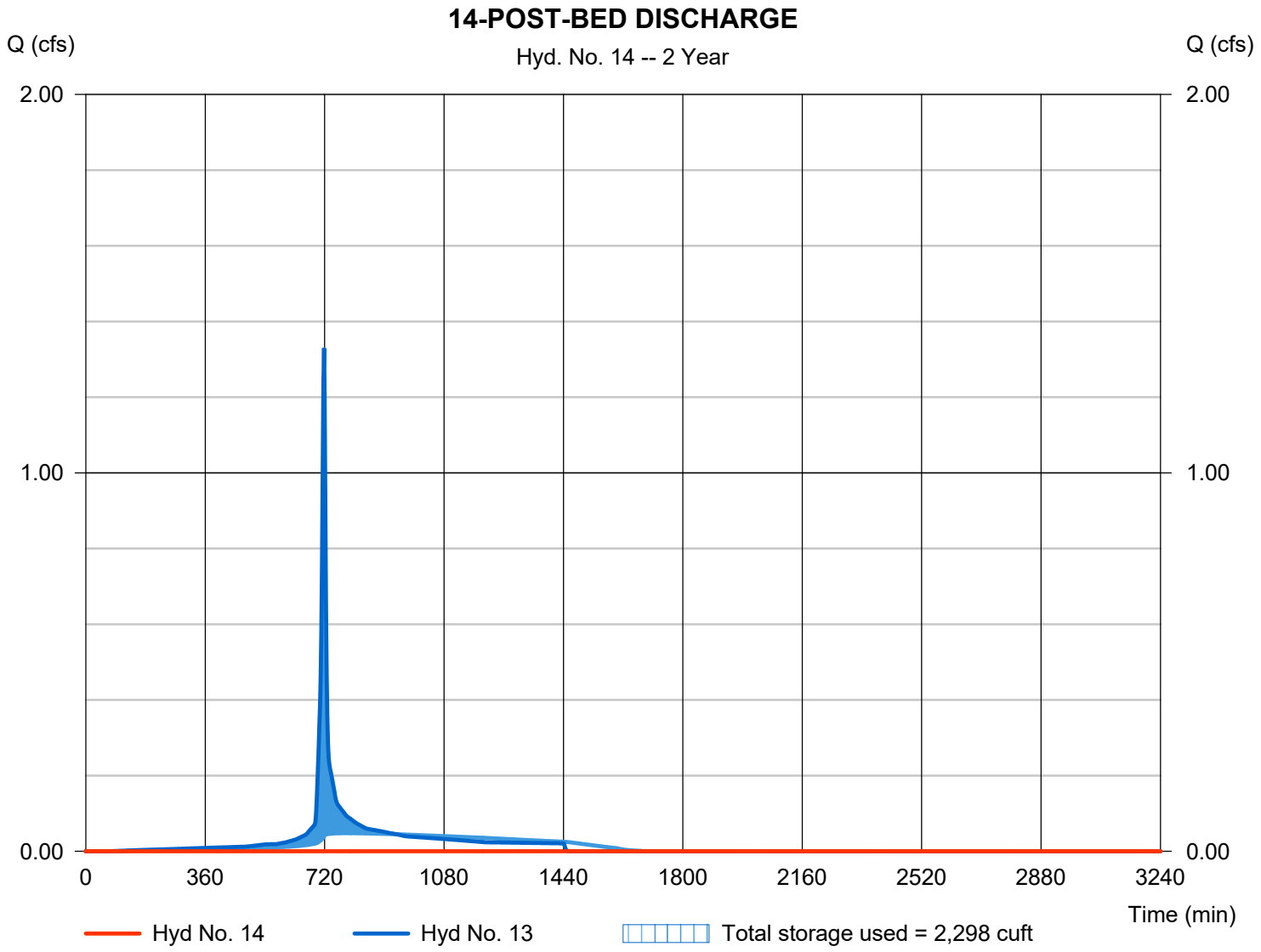
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 14

14-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	3234 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	13 - 14&15-POST-BED INFLOW	Max. Elevation	=	387.53 ft
Reservoir name	=	LOT 14 INFILTRATION BED	Max. Storage	=	2,298 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 2 - LOT 14 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 386.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 75.00 ft, No. Barrels = 6, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	386.00	n/a	0	0
0.40	386.40	n/a	339	339
0.80	386.80	n/a	589	928
1.20	387.20	n/a	716	1,643
1.60	387.60	n/a	789	2,432
2.00	388.00	n/a	824	3,256
2.40	388.40	n/a	824	4,080
2.80	388.80	n/a	788	4,868
3.20	389.20	n/a	716	5,584
3.60	389.60	n/a	588	6,172
4.00	390.00	n/a	338	6,511

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 388.00	0.00	0.00	0.00
Length (ft)	= 18.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

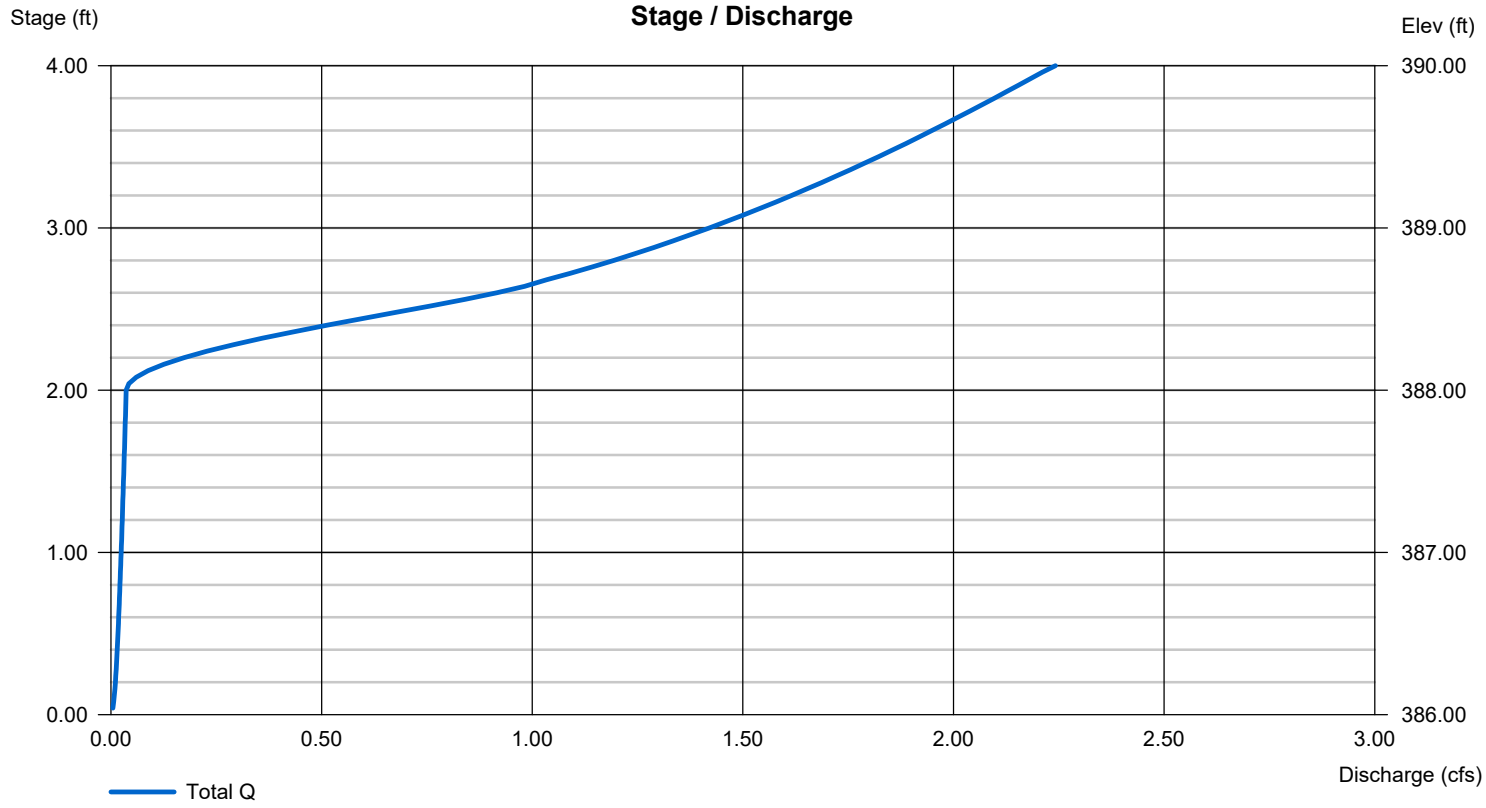
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.480 (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).



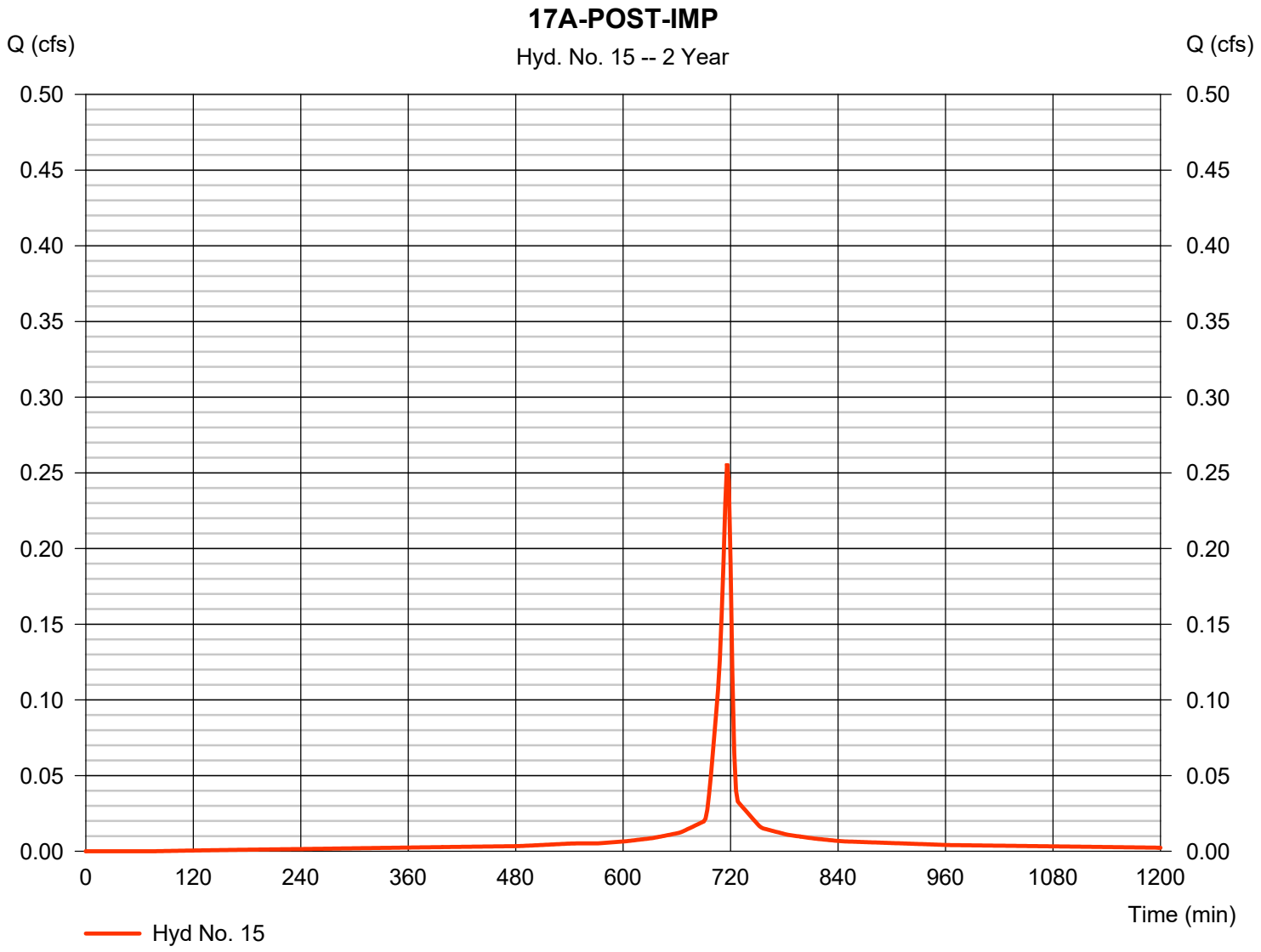
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 15

17A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.256 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 599 cuft
Drainage area	= 0.058 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



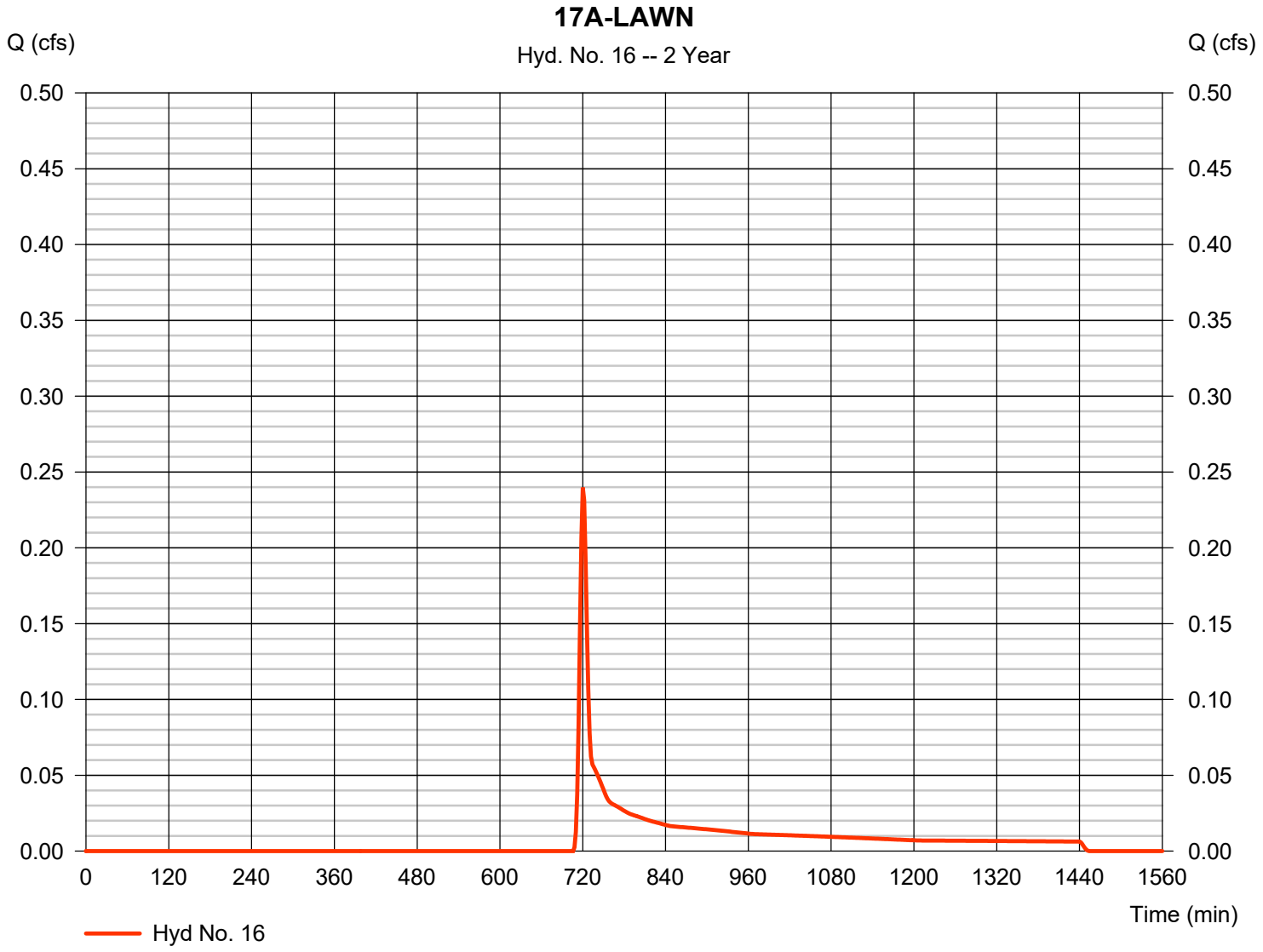
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 16

17A-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.240 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 705 cuft
Drainage area	= 0.411 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



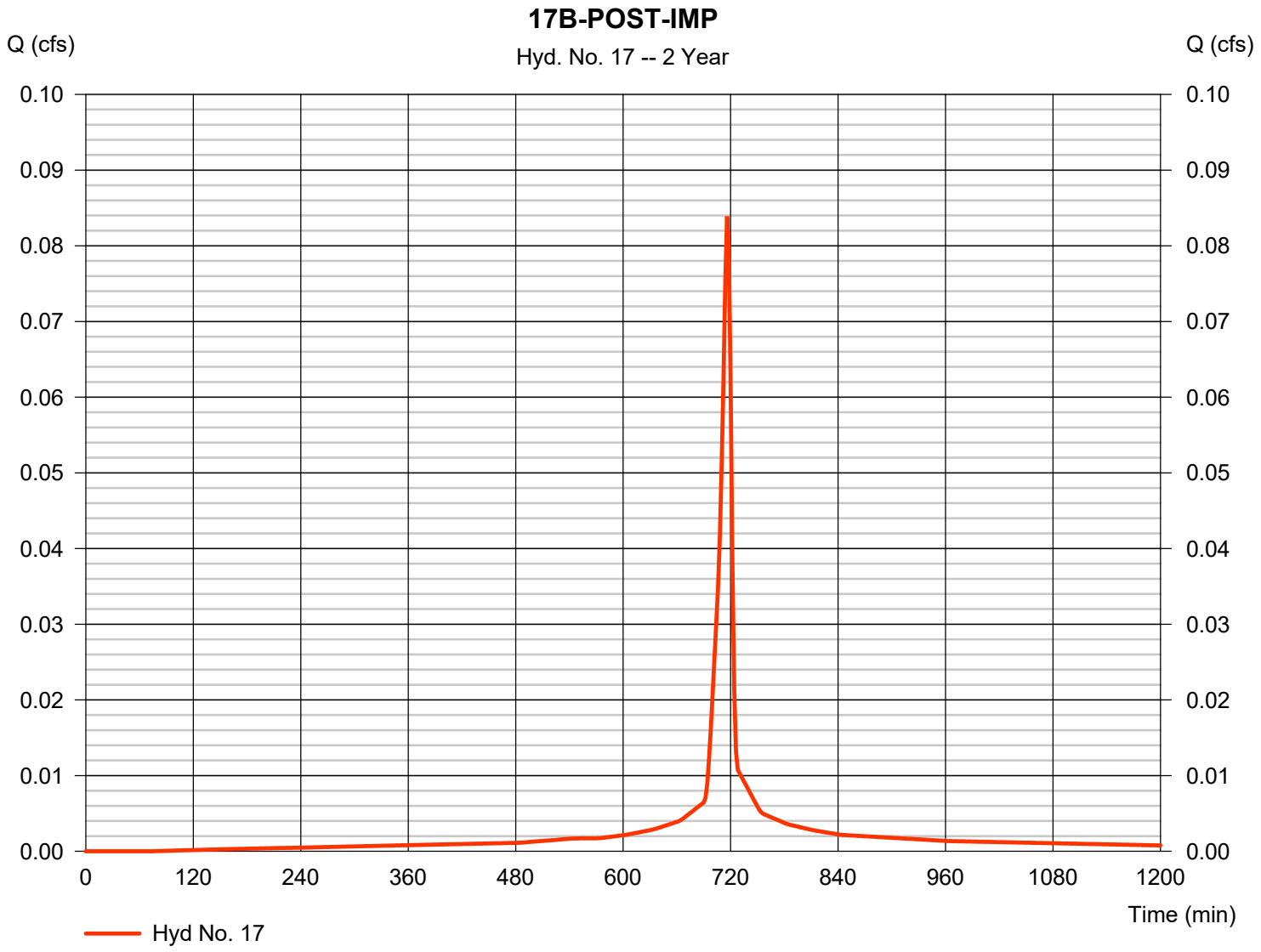
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 17

17B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.084 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 196 cuft
Drainage area	= 0.019 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



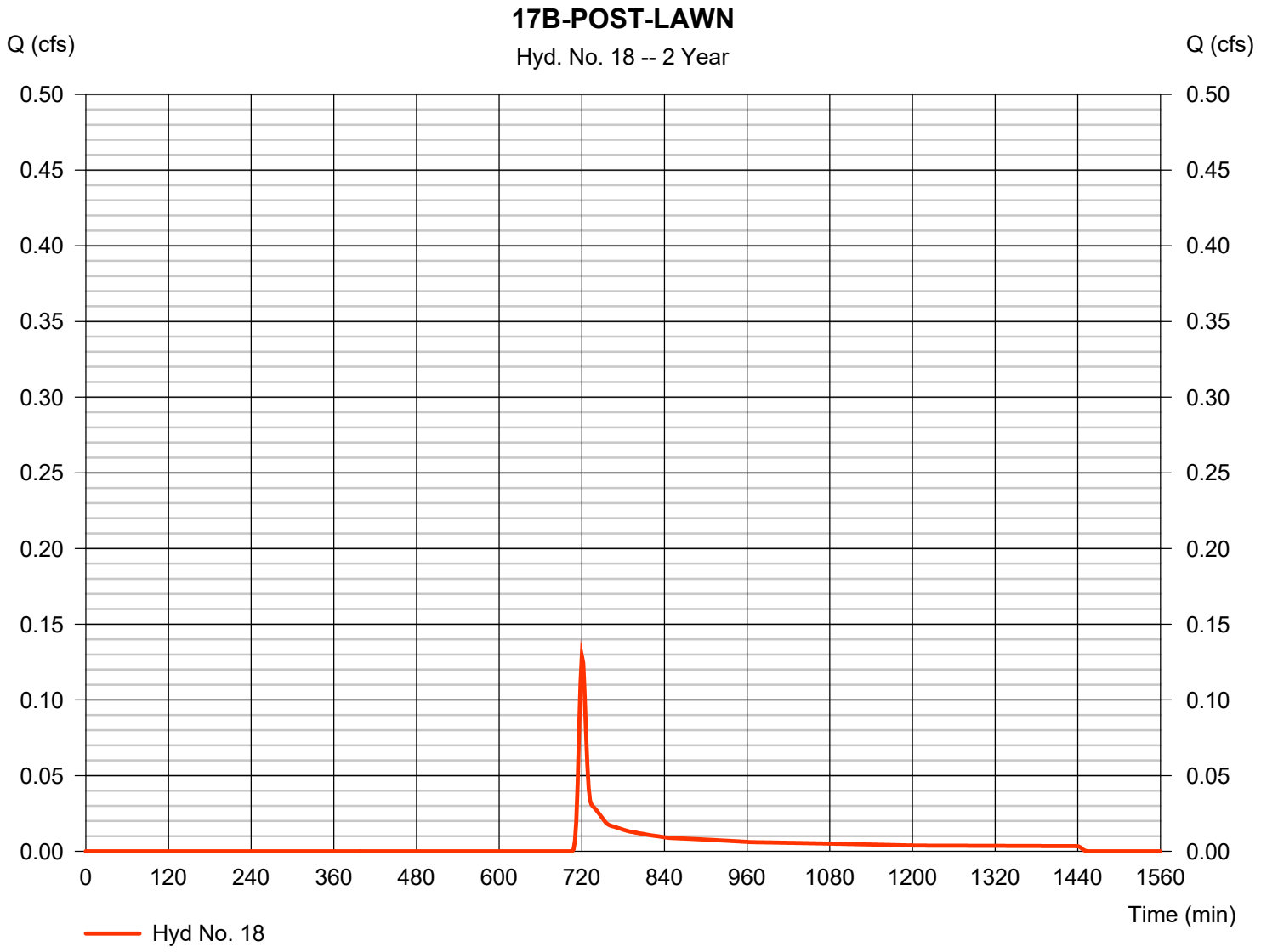
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 18

17B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.129 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 379 cuft
Drainage area	= 0.221 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



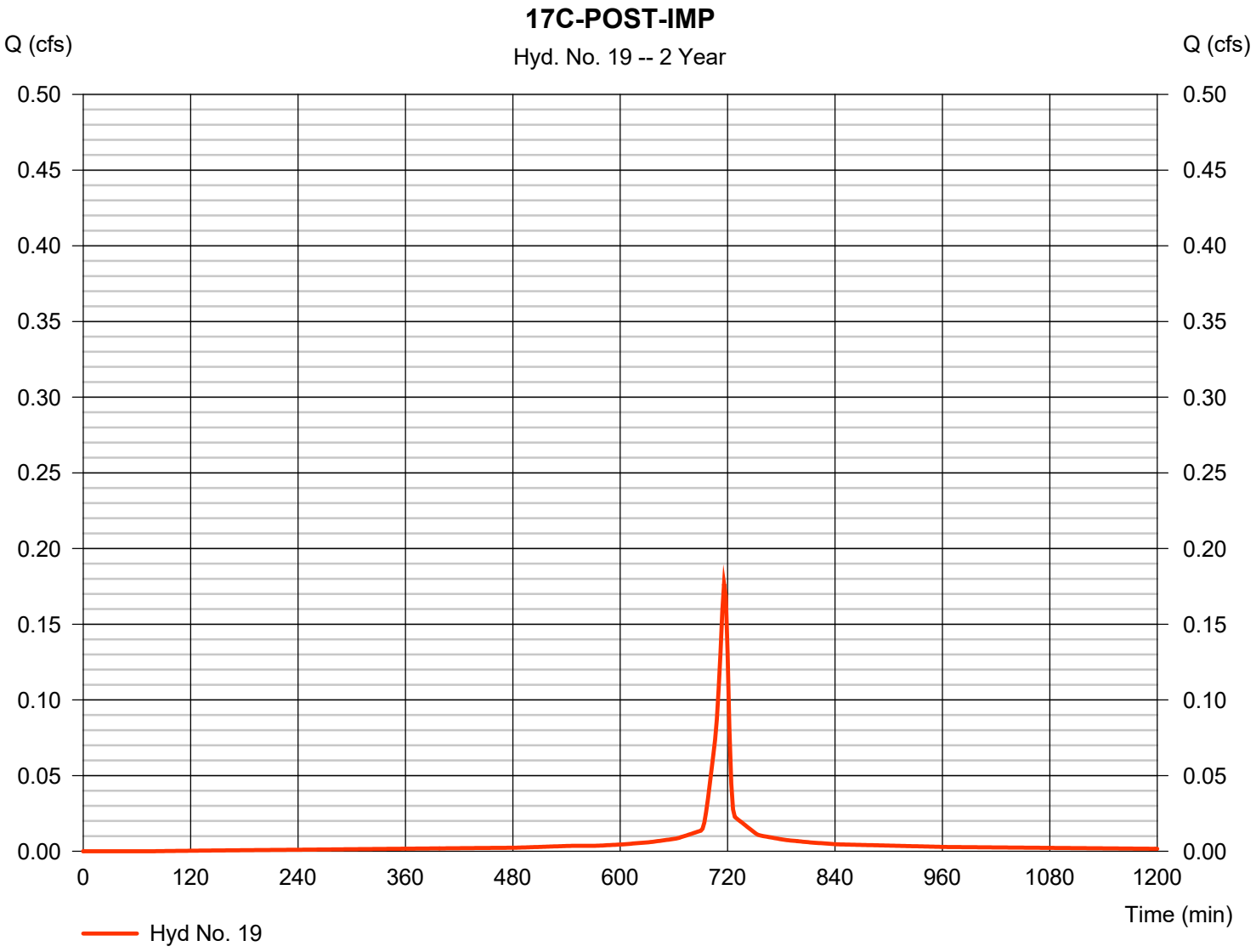
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 19

17C-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.177 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 413 cuft
Drainage area	= 0.040 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



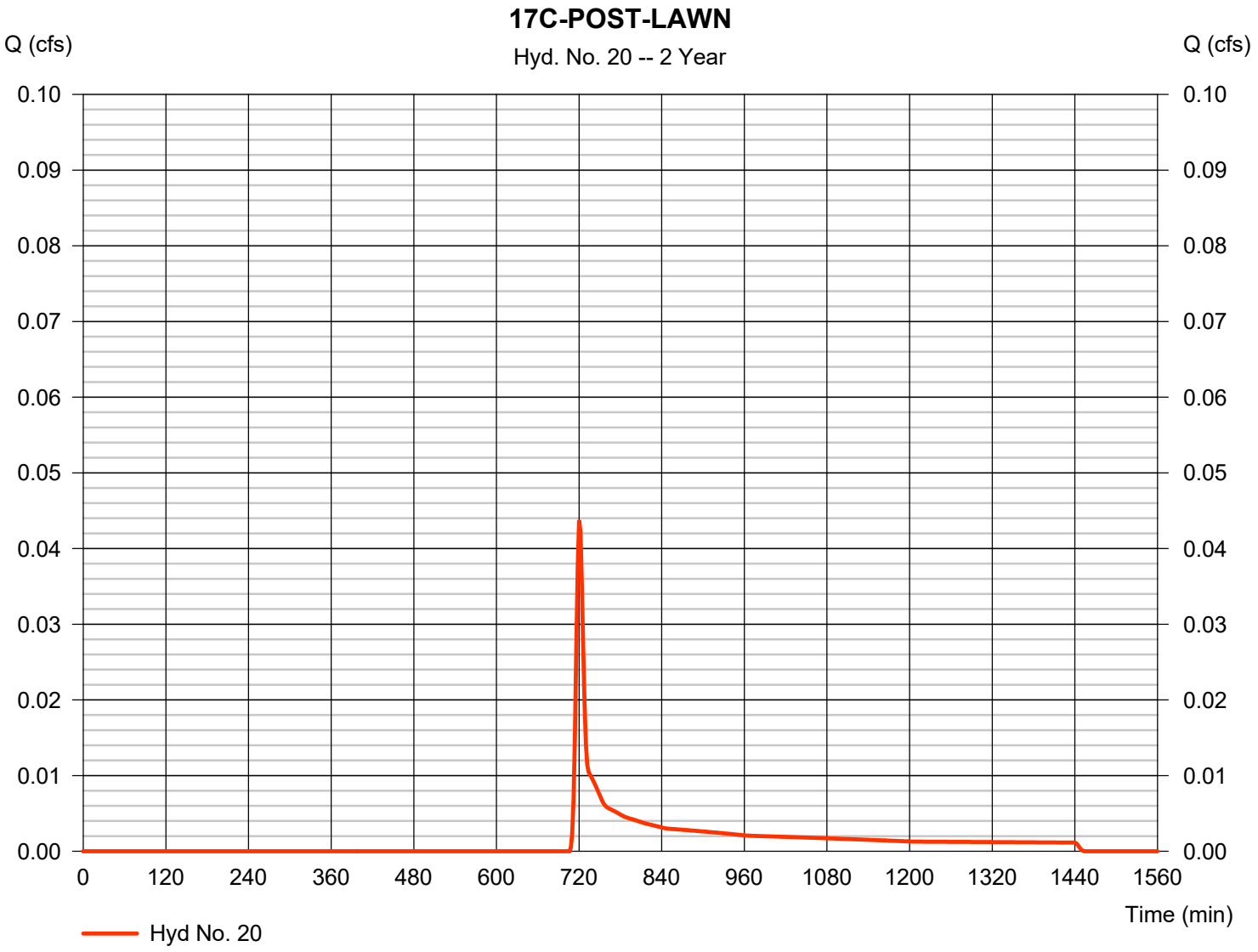
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 20

17C-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.044 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 129 cuft
Drainage area	= 0.075 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



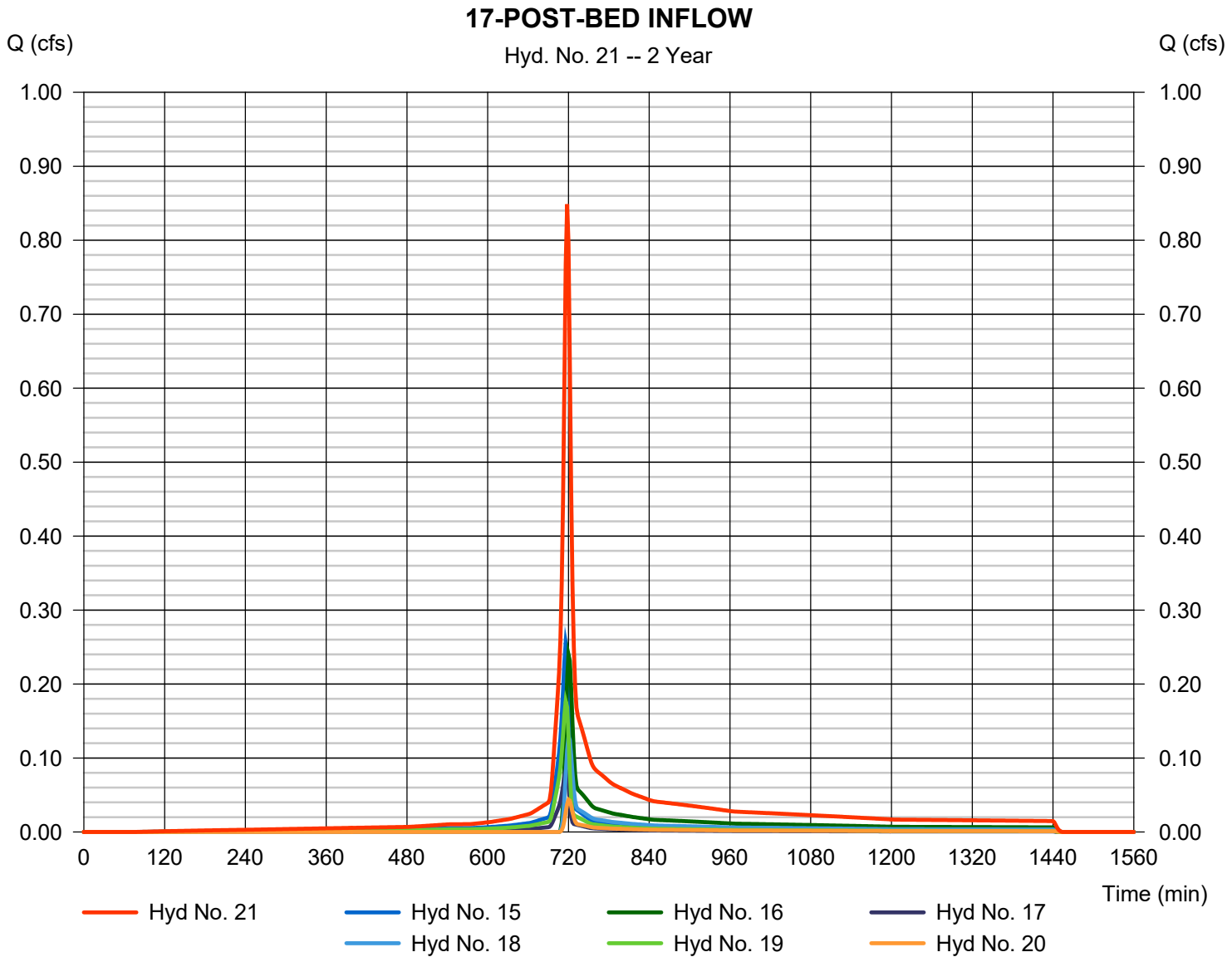
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 21

17-POST-BED INFLOW

Hydrograph type	=	Combine	Peak discharge	=	0.849 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,423 cuft
Inflow hyds.	=	15, 16, 17, 18, 19, 20	Contrib. drain. area	=	0.824 ac



Hydrograph Report

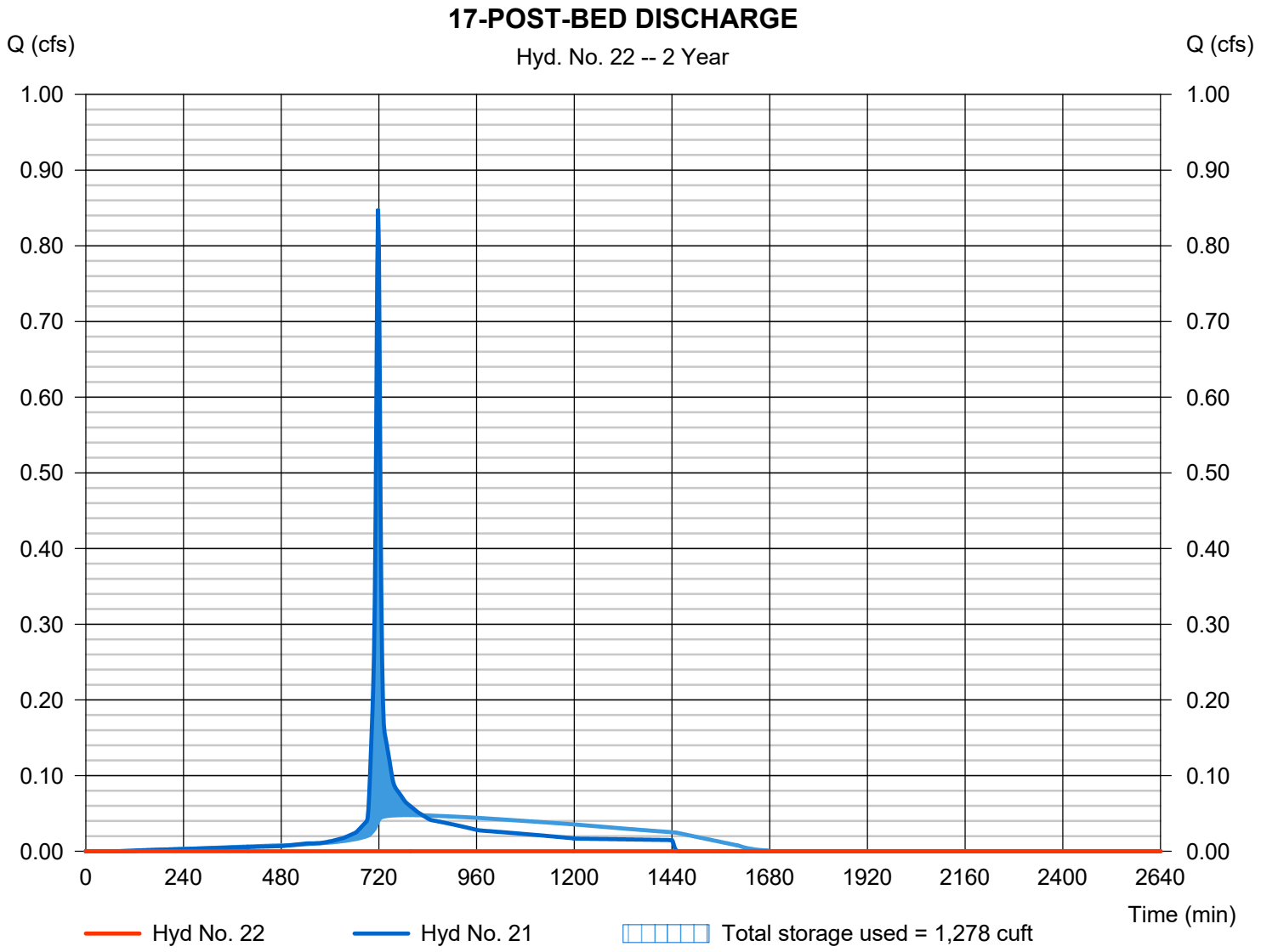
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 22

17-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	406 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	21 - 17-POST-BED INFLOW	Max. Elevation	=	405.29 ft
Reservoir name	=	LOT 17 INFILTRATION BED	Max. Storage	=	1,278 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 3 - LOT 17 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 404.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 80.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	404.00	n/a	0	0
0.40	404.40	n/a	238	238
0.80	404.80	n/a	414	652
1.20	405.20	n/a	503	1,155
1.60	405.60	n/a	554	1,709
2.00	406.00	n/a	579	2,288
2.40	406.40	n/a	579	2,867
2.80	406.80	n/a	554	3,421
3.20	407.20	n/a	503	3,924
3.60	407.60	n/a	413	4,337
4.00	408.00	n/a	238	4,575

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 406.75	0.00	0.00	0.00
Length (ft)	= 89.00	0.00	0.00	0.00
Slope (%)	= 2.25	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

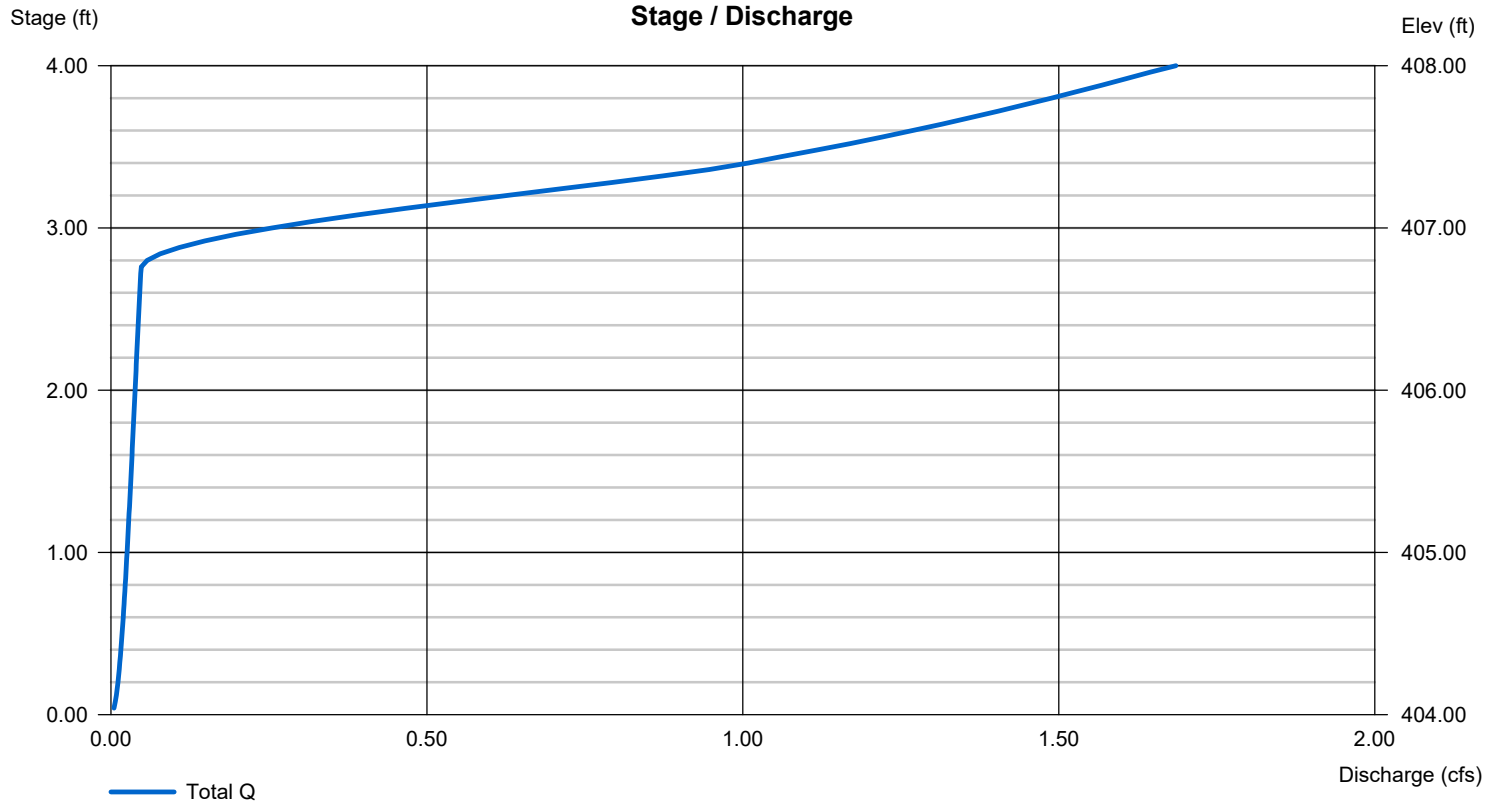
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.720 (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).



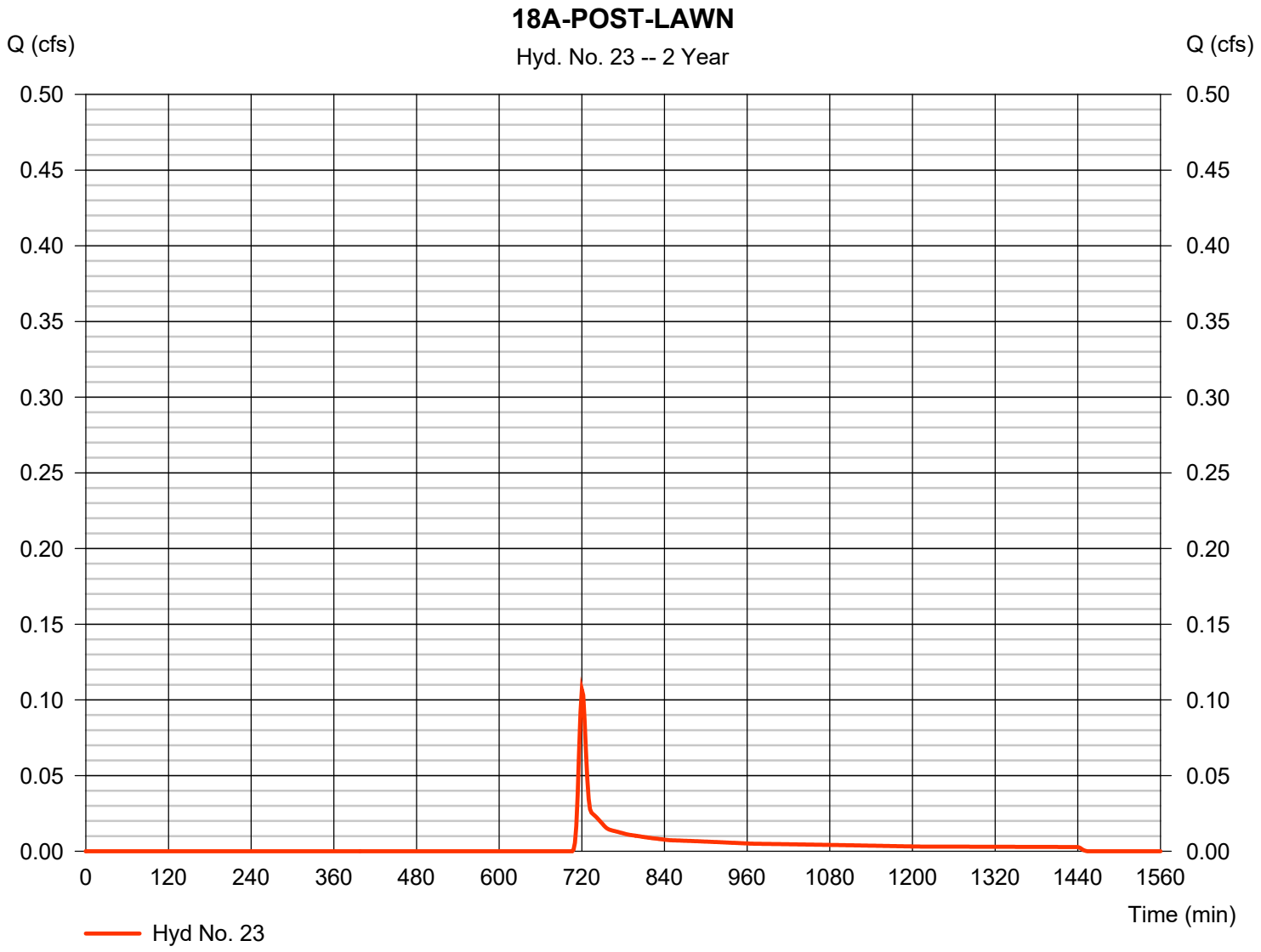
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 23

18A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.107 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 314 cuft
Drainage area	= 0.183 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



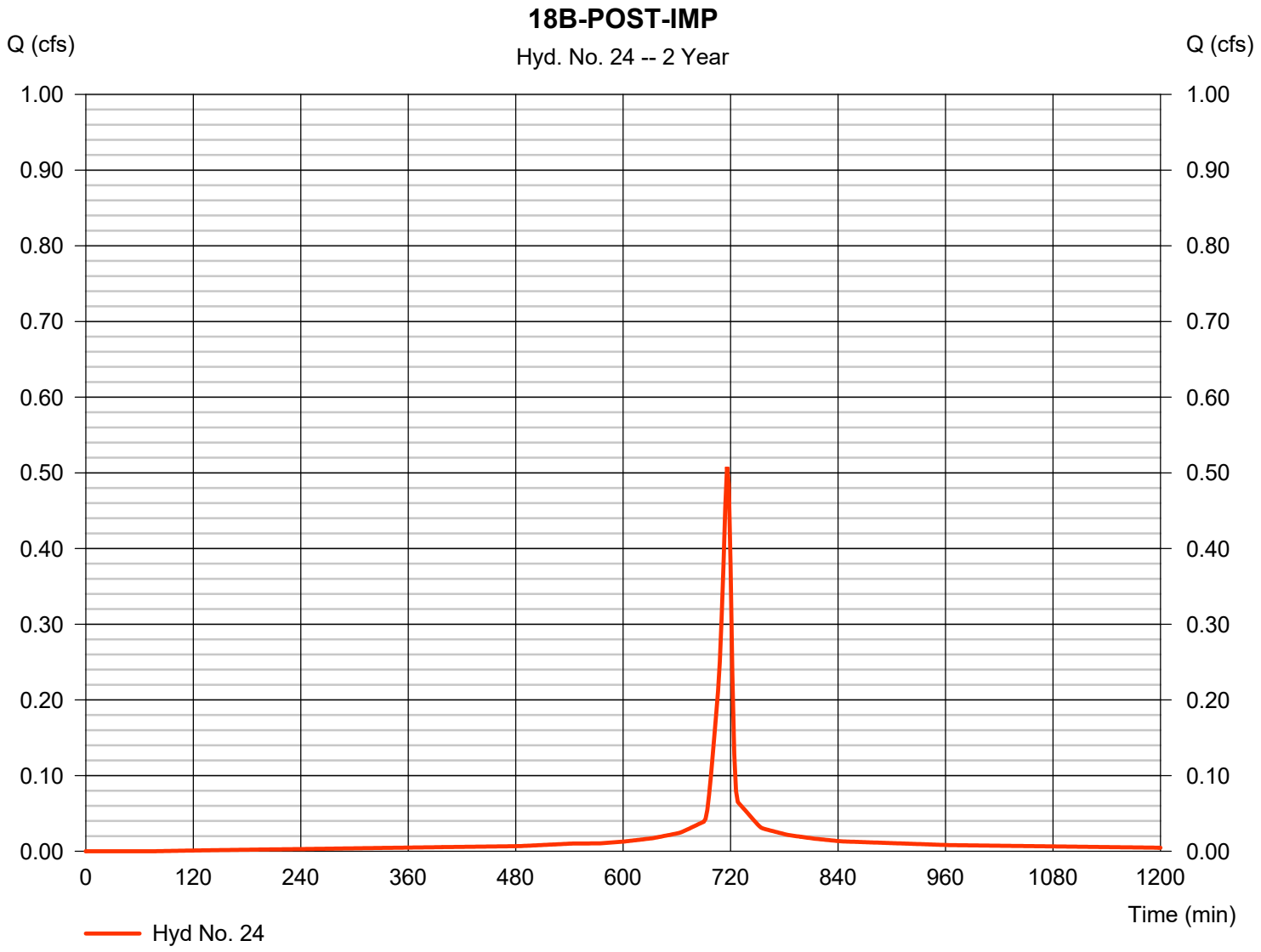
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 24

18B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.508 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,189 cuft
Drainage area	= 0.115 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



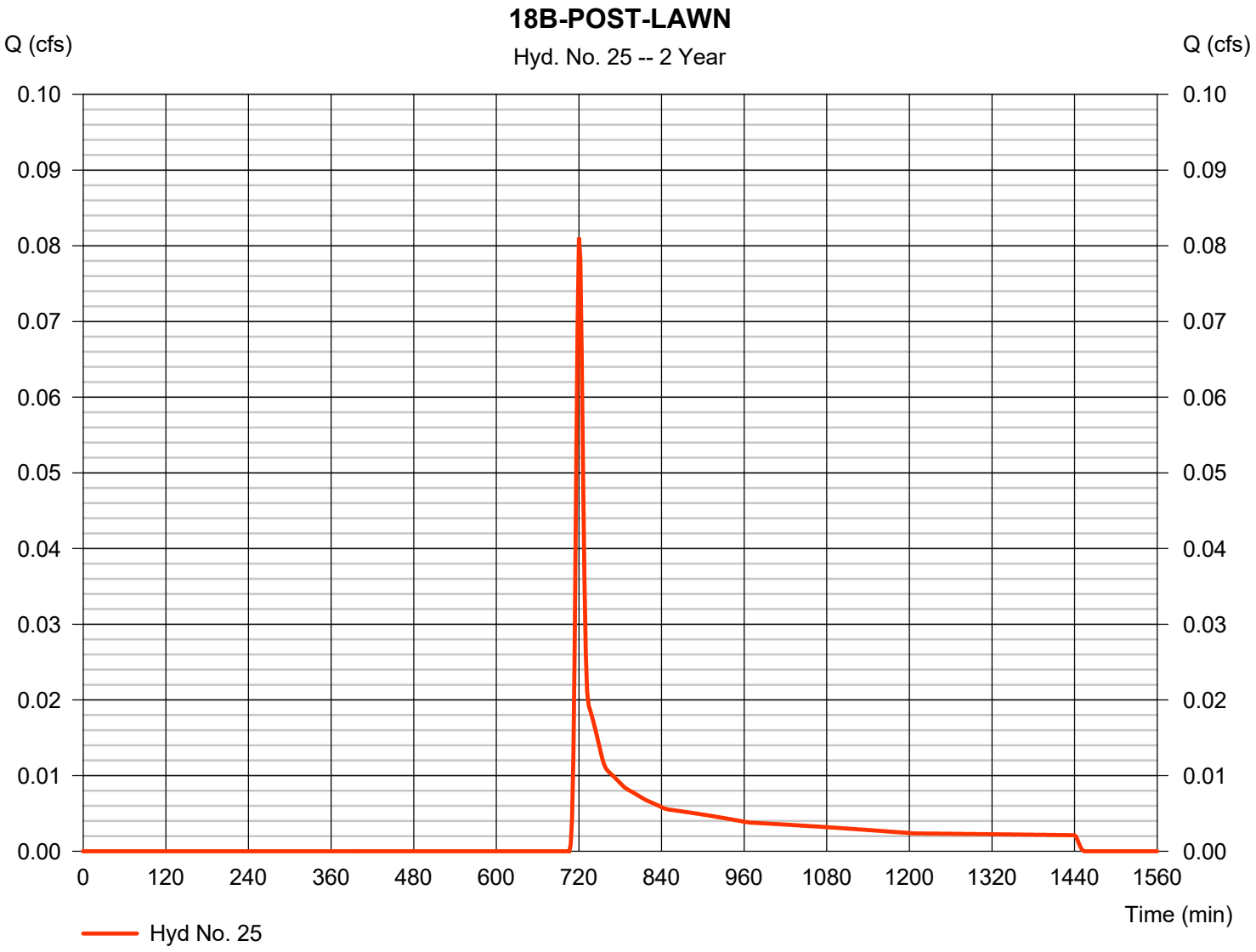
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 25

18B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.081 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 239 cuft
Drainage area	= 0.139 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



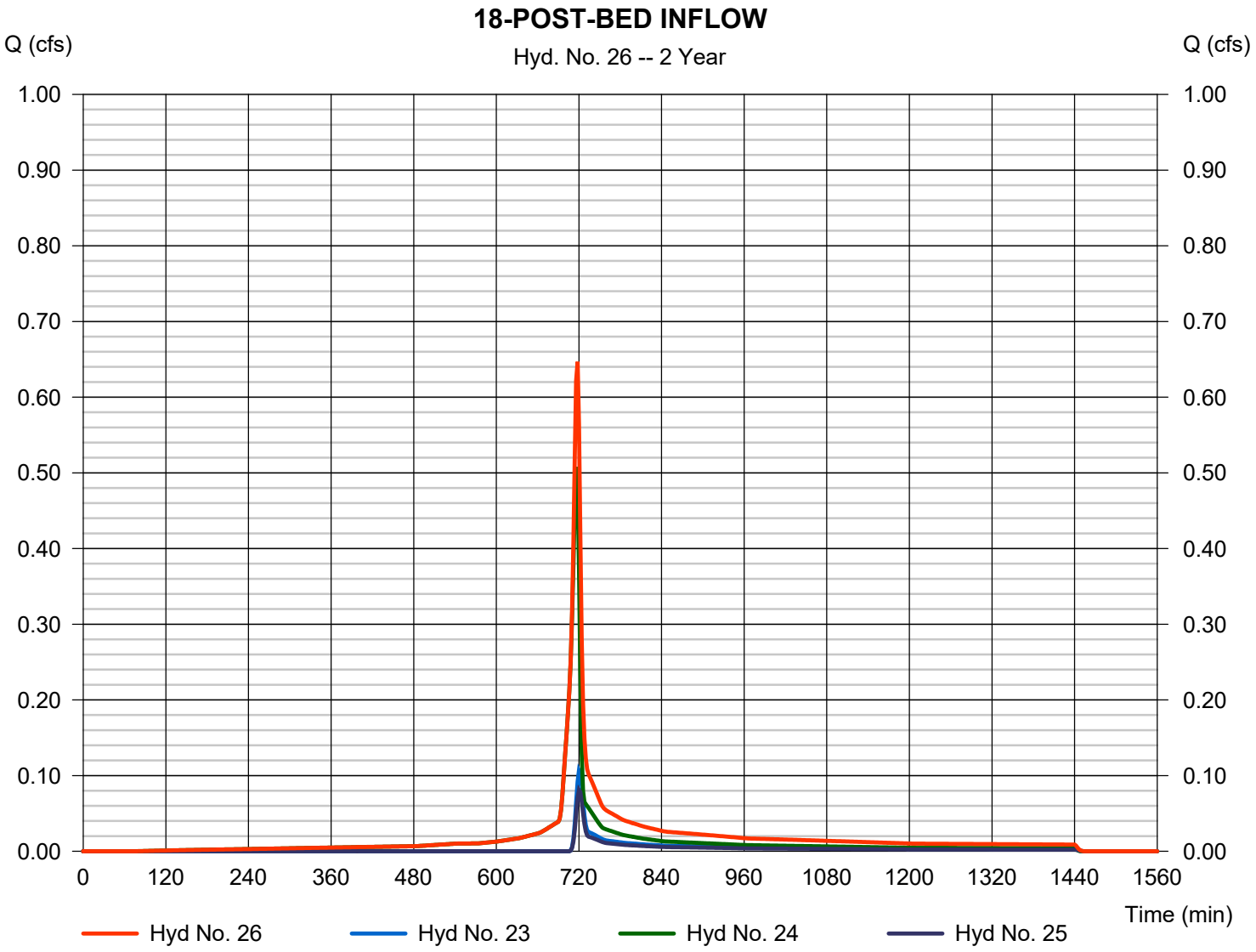
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 26

18-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.647 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,741 cuft
Inflow hyds.	= 23, 24, 25	Contrib. drain. area	= 0.437 ac



Hydrograph Report

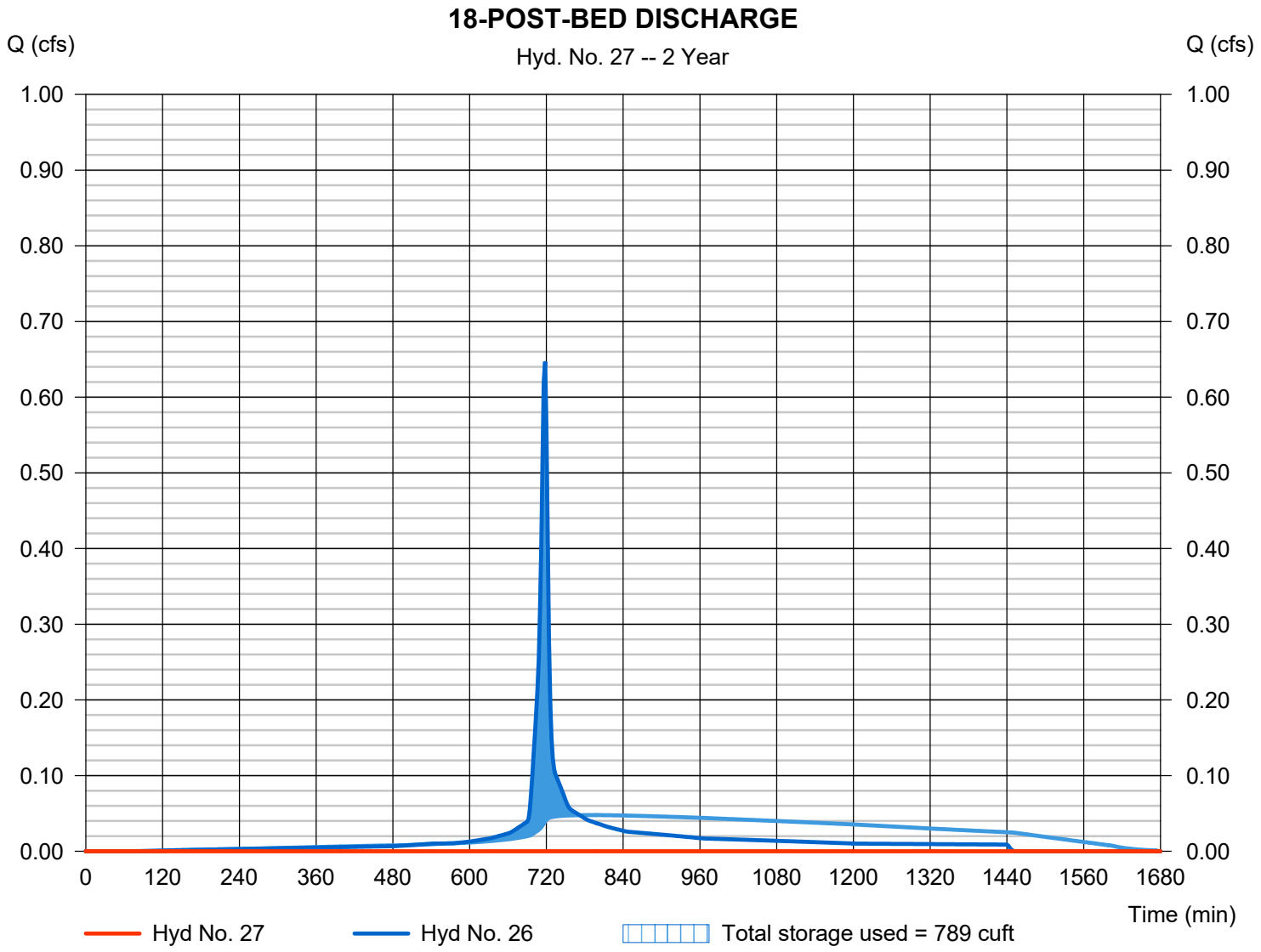
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 27

18-POST-BED DISCHARGE

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 692 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 26 - 18-POST-BED INFLOW	Max. Elevation	= 401.34 ft
Reservoir name	= LOT 18 INFILTRATION BED	Max. Storage	= 789 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 4 - LOT 18 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 400.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	400.00	n/a	0	0
0.40	400.40	n/a	139	139
0.80	400.80	n/a	241	380
1.20	401.20	n/a	293	673
1.60	401.60	n/a	323	995
2.00	402.00	n/a	337	1,333
2.40	402.40	n/a	337	1,670
2.80	402.80	n/a	323	1,992
3.20	403.20	n/a	293	2,285
3.60	403.60	n/a	241	2,526
4.00	404.00	n/a	138	2,665

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 403.00	0.00	0.00	0.00
Length (ft)	= 11.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

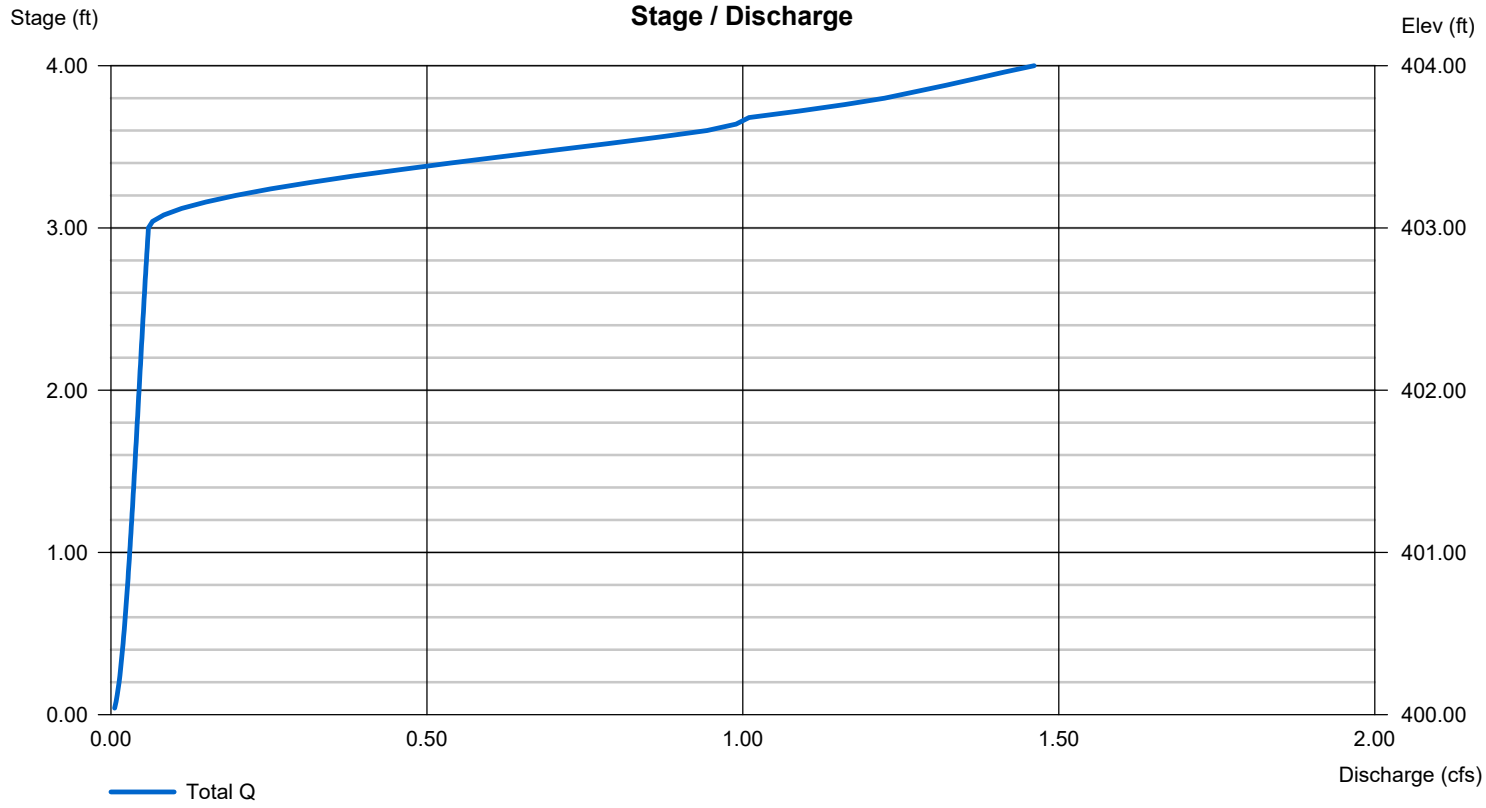
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.440 (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).



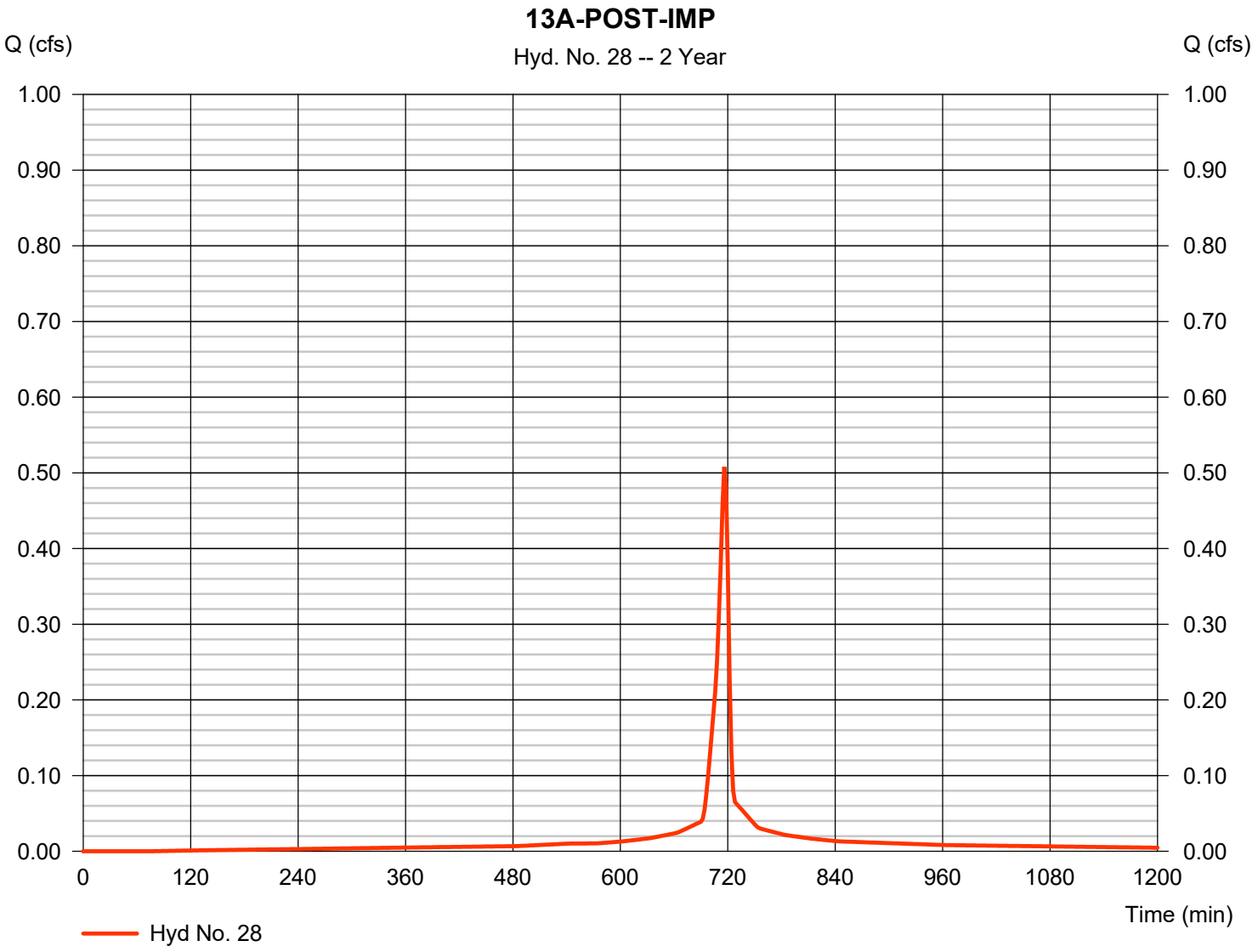
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 28

13A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.508 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,189 cuft
Drainage area	= 0.115 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



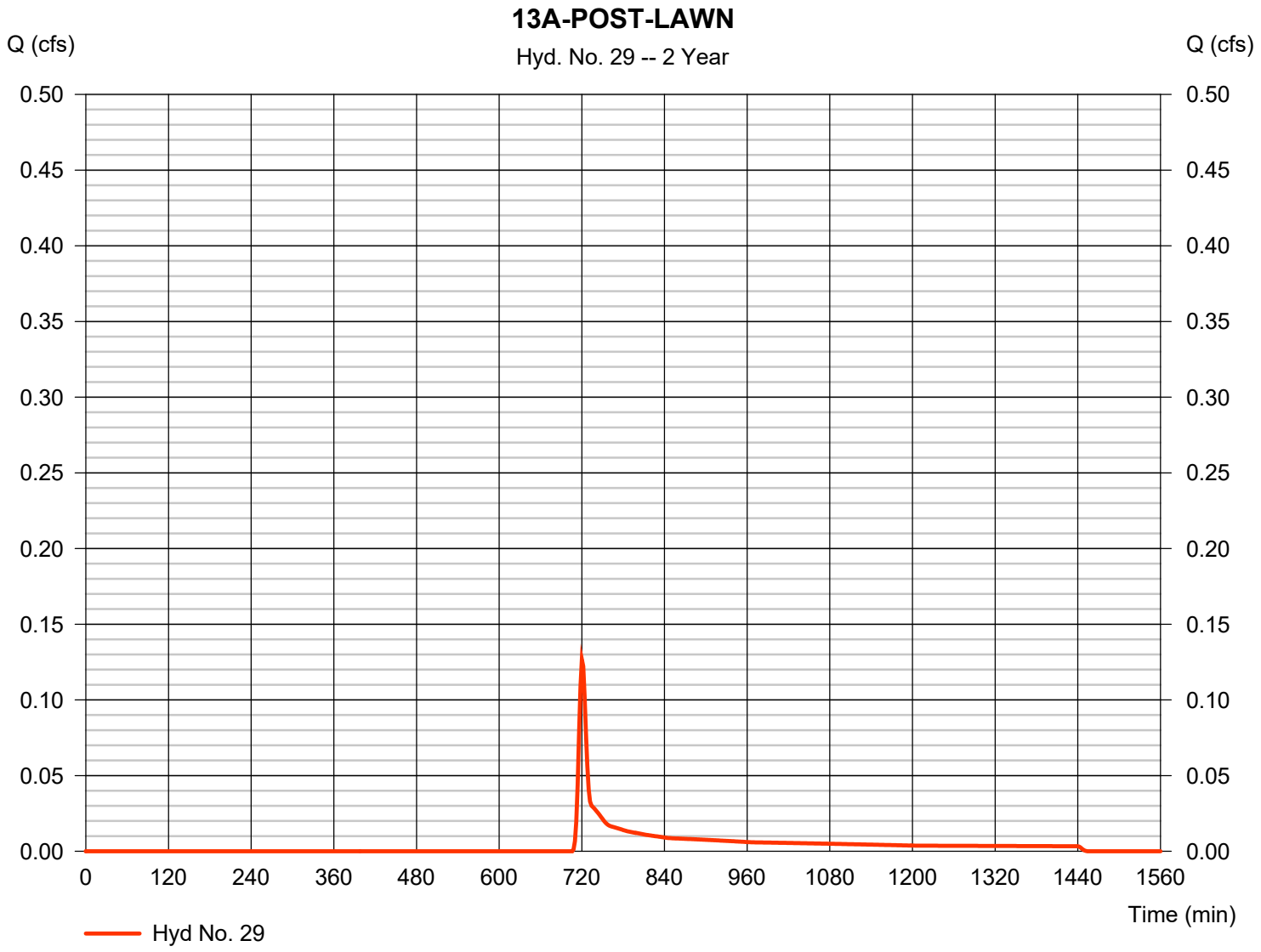
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 29

13A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.127 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 372 cuft
Drainage area	= 0.217 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



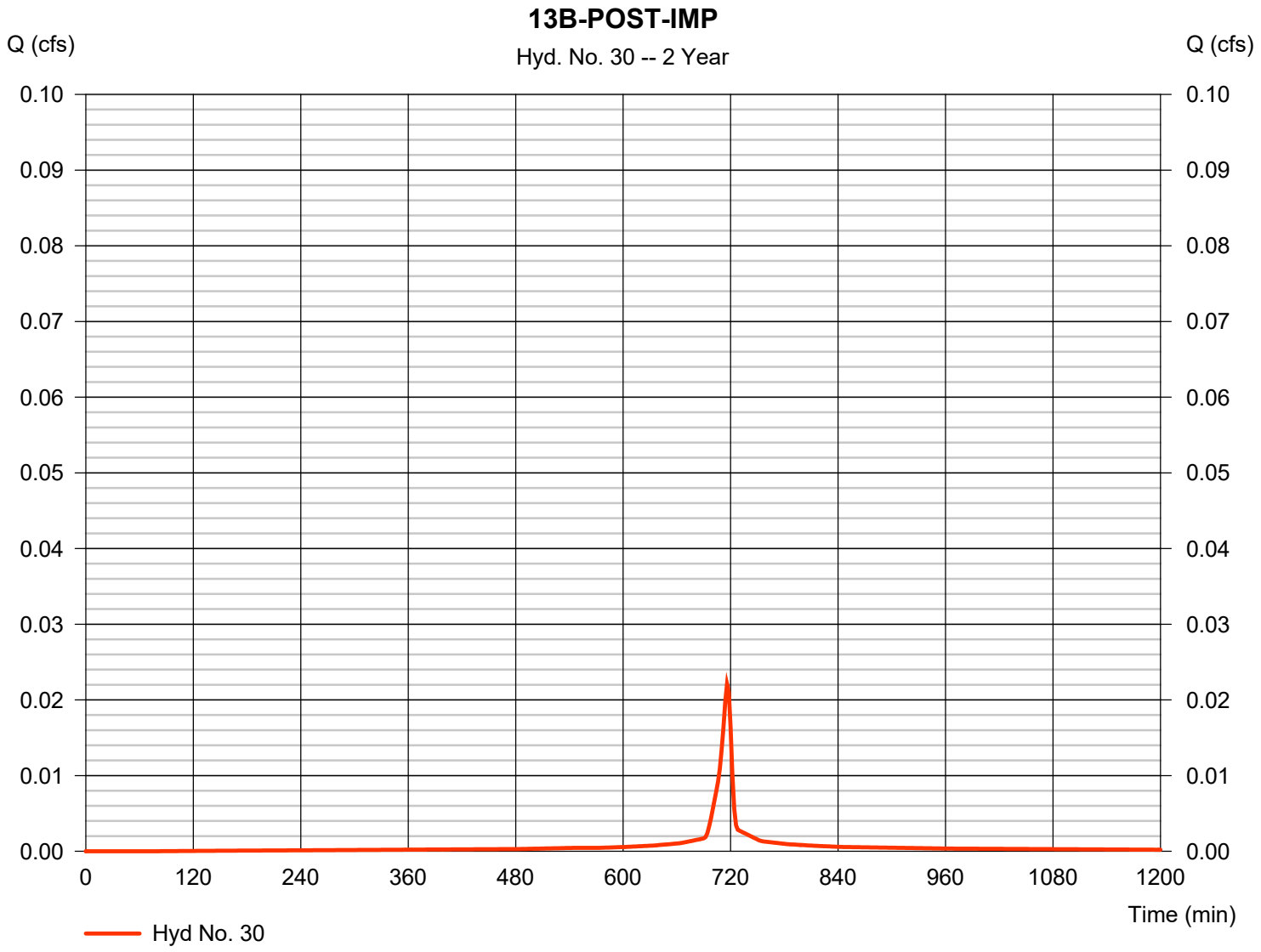
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 30

13B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.022 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 52 cuft
Drainage area	= 0.005 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



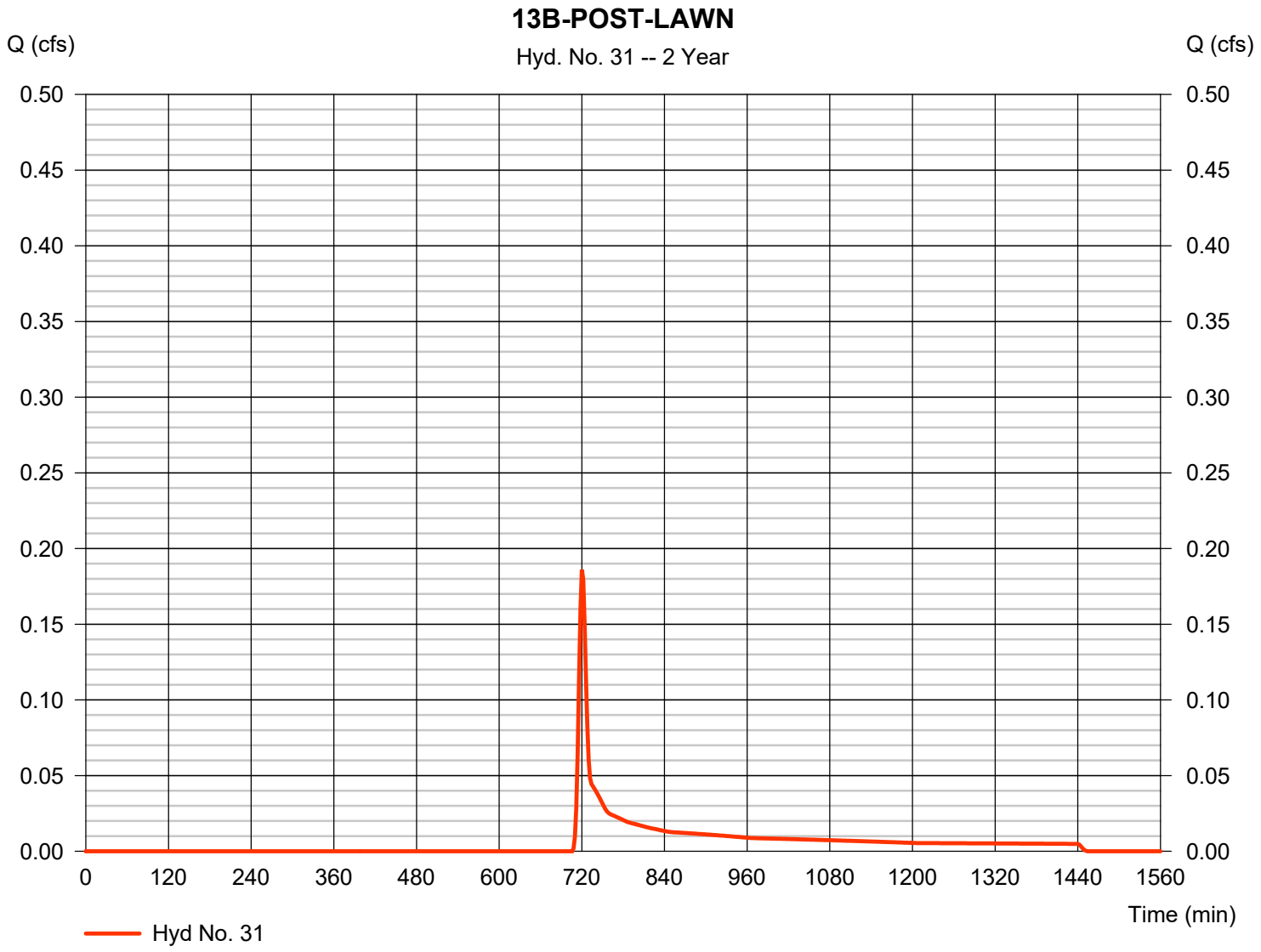
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 31

13B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.186 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 547 cuft
Drainage area	= 0.319 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



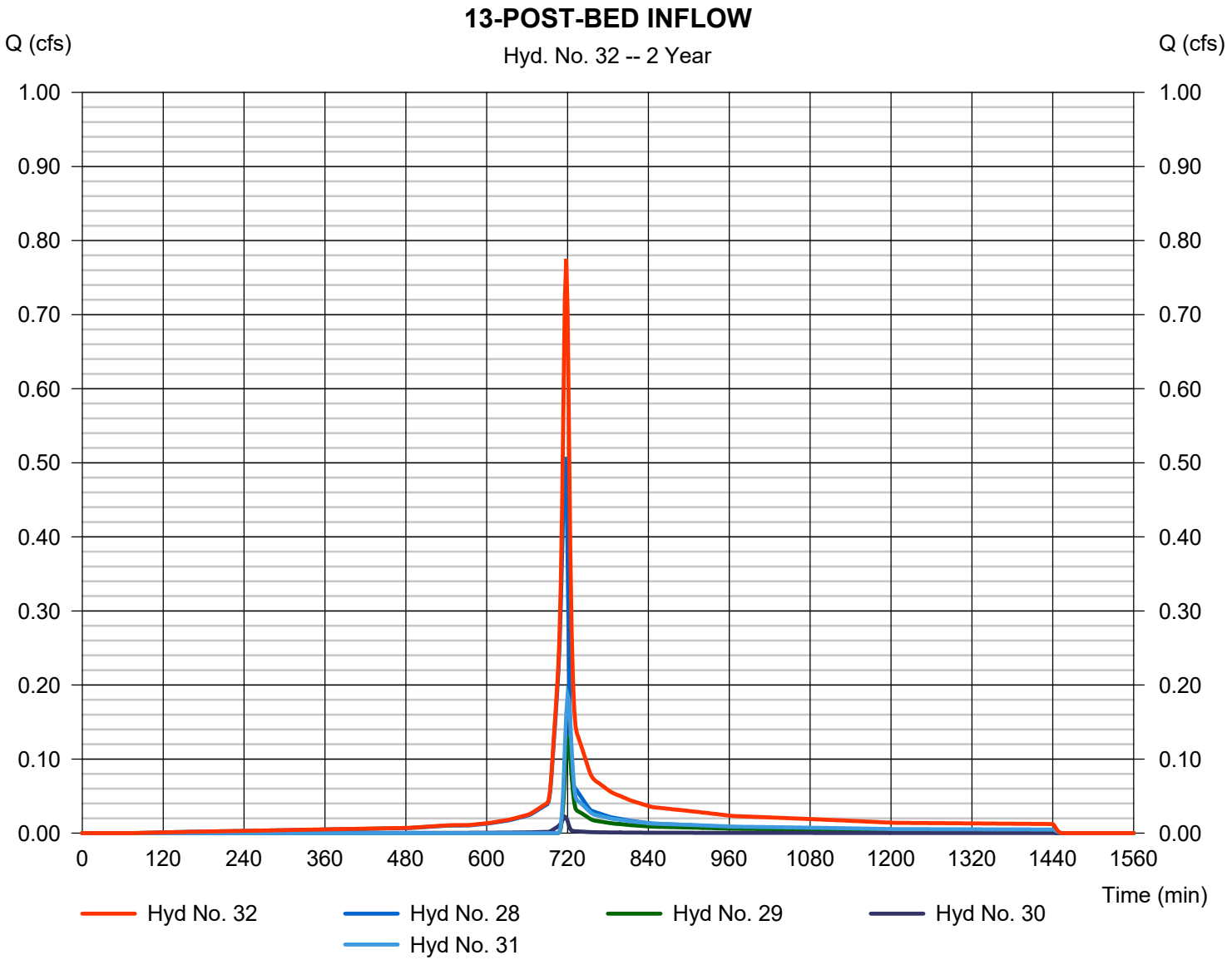
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 32

13-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.775 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,160 cuft
Inflow hyds.	= 28, 29, 30, 31	Contrib. drain. area	= 0.656 ac



Hydrograph Report

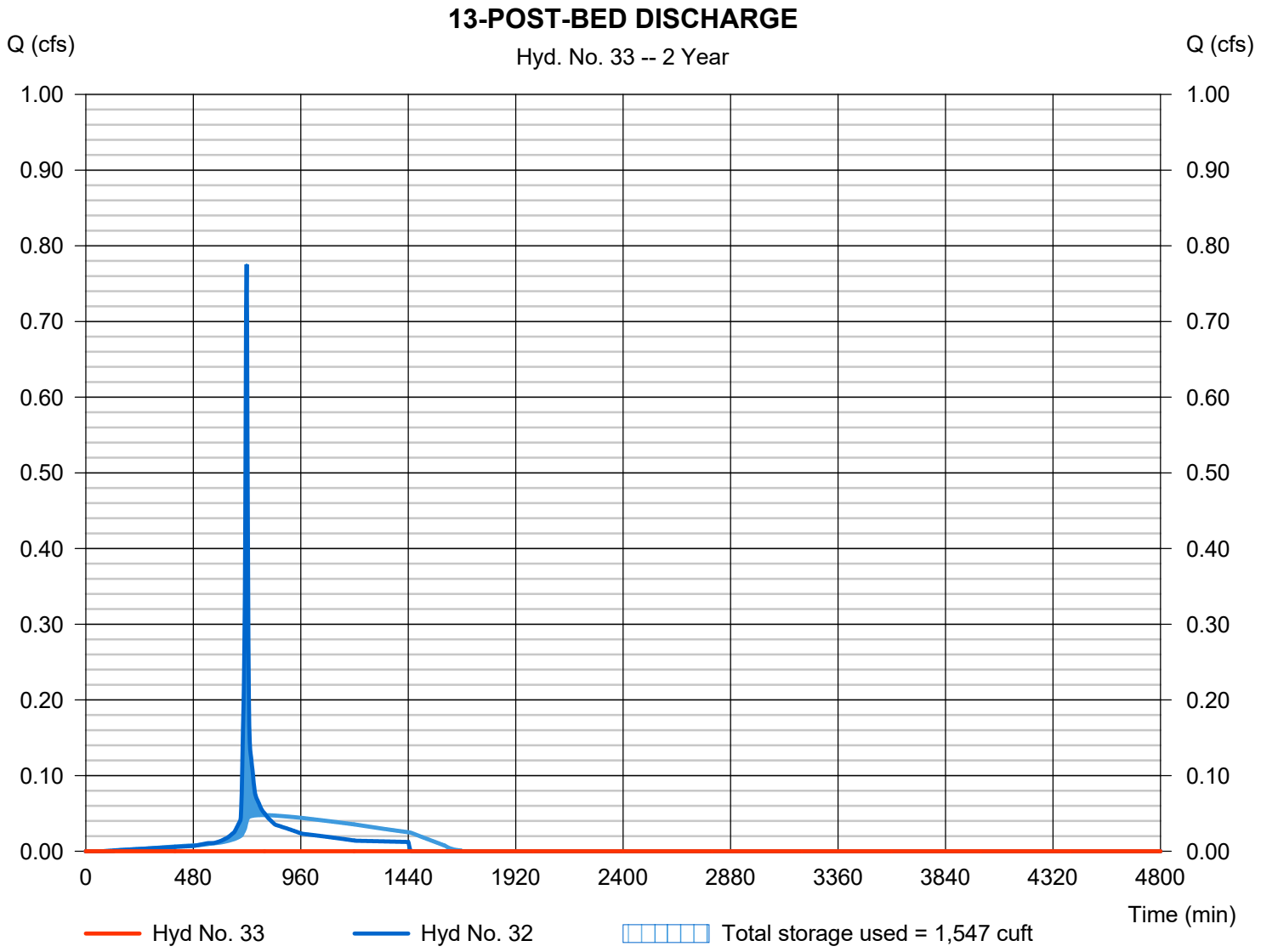
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 33

13-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	4446 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	32 - 13-POST-BED INFLOW	Max. Elevation	=	383.79 ft
Reservoir name	=	LOT 13 INFILTRATION BED	Max. Storage	=	1,547 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 5 - LOT 13 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 382.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	382.00	n/a	0	0
0.40	382.40	n/a	186	186
0.80	382.80	n/a	323	509
1.20	383.20	n/a	393	901
1.60	383.60	n/a	432	1,333
2.00	384.00	n/a	452	1,785
2.40	384.40	n/a	452	2,237
2.80	384.80	n/a	432	2,669
3.20	385.20	n/a	392	3,061
3.60	385.60	n/a	323	3,384
4.00	386.00	n/a	186	3,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 384.50	0.00	0.00	0.00
Length (ft)	= 47.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

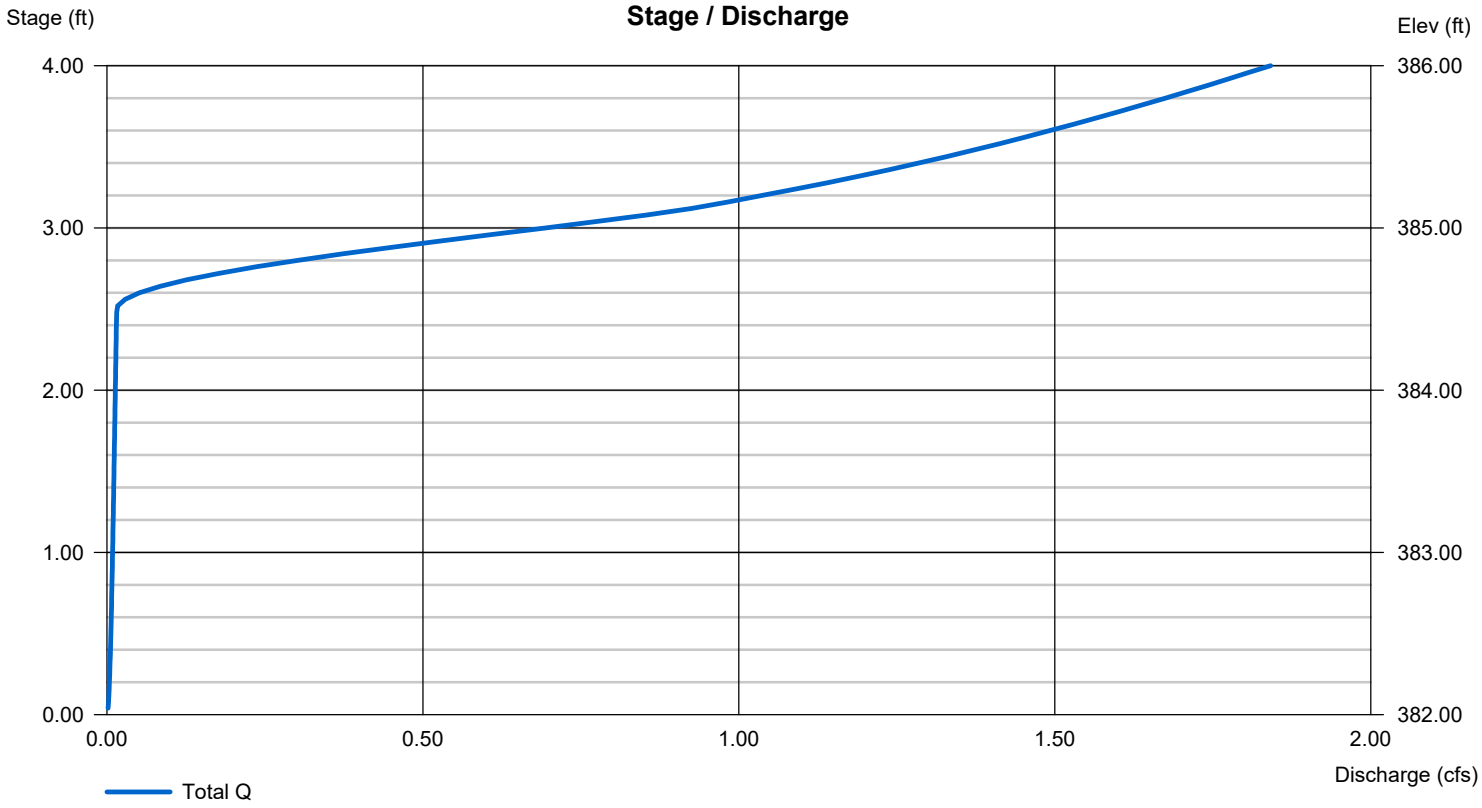
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.320 (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).



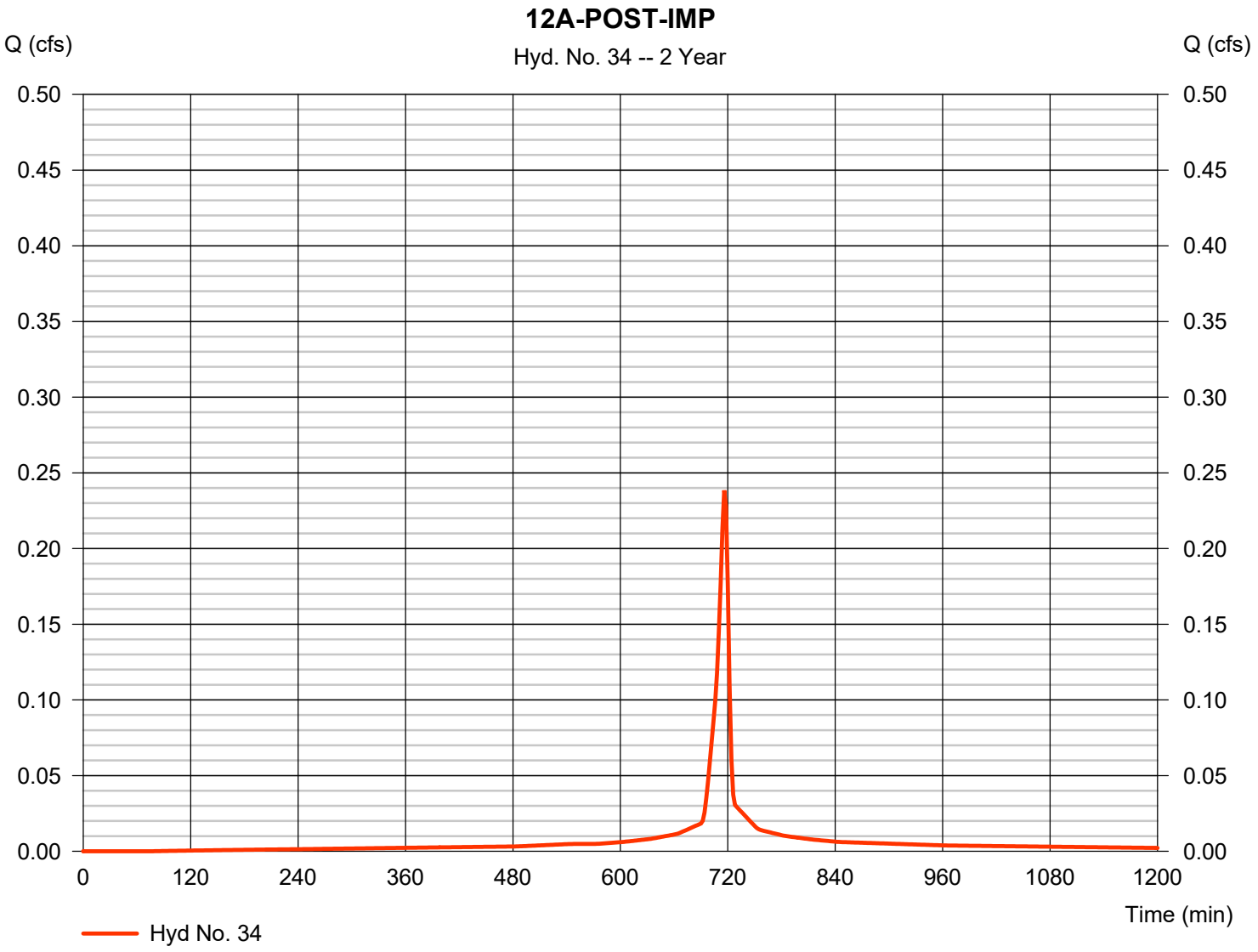
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 34

12A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.238 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 558 cuft
Drainage area	= 0.054 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



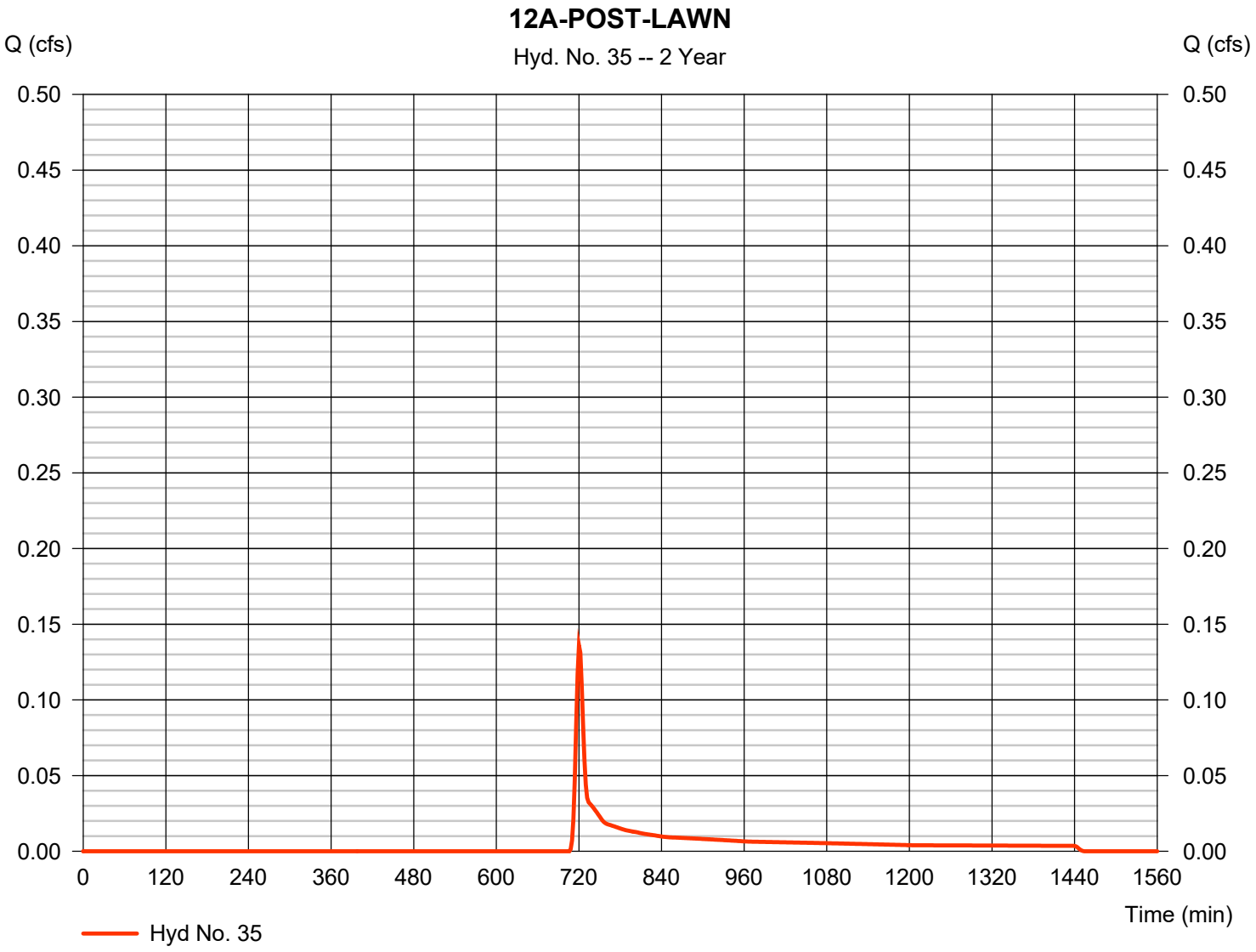
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 35

12A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.136 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 400 cuft
Drainage area	= 0.233 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



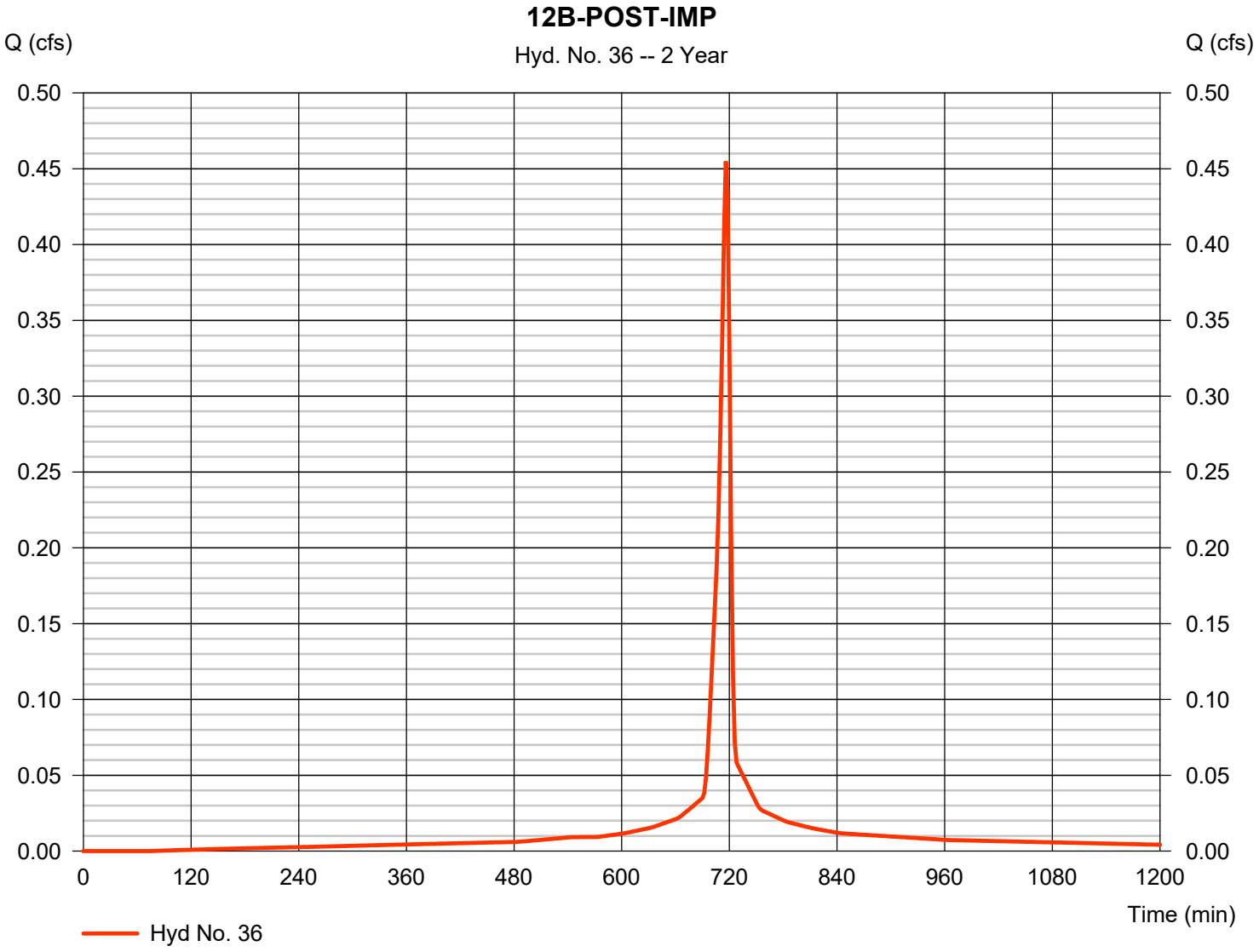
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 36

12B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.455 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,065 cuft
Drainage area	= 0.103 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



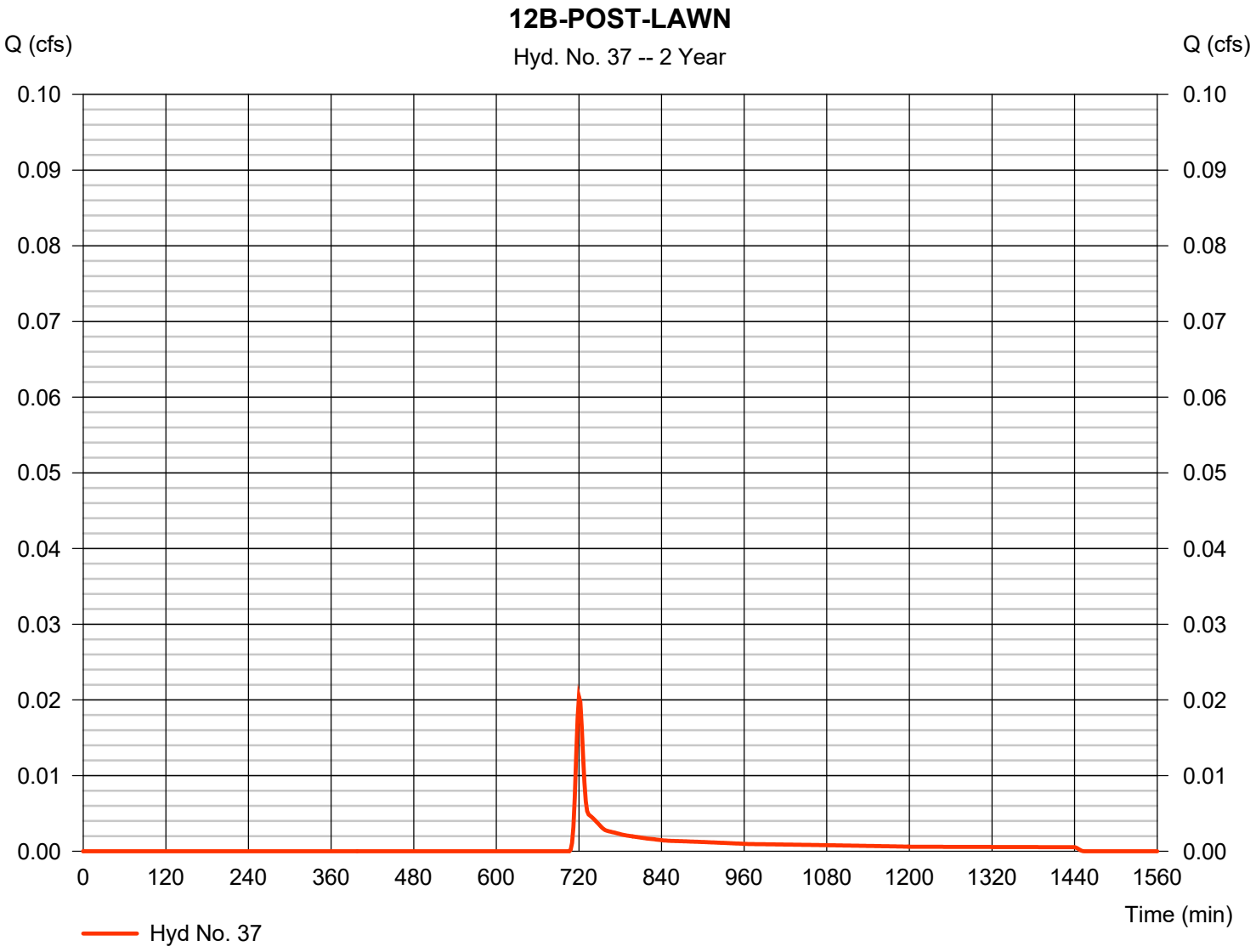
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 37

12B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.020 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 60 cuft
Drainage area	= 0.035 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



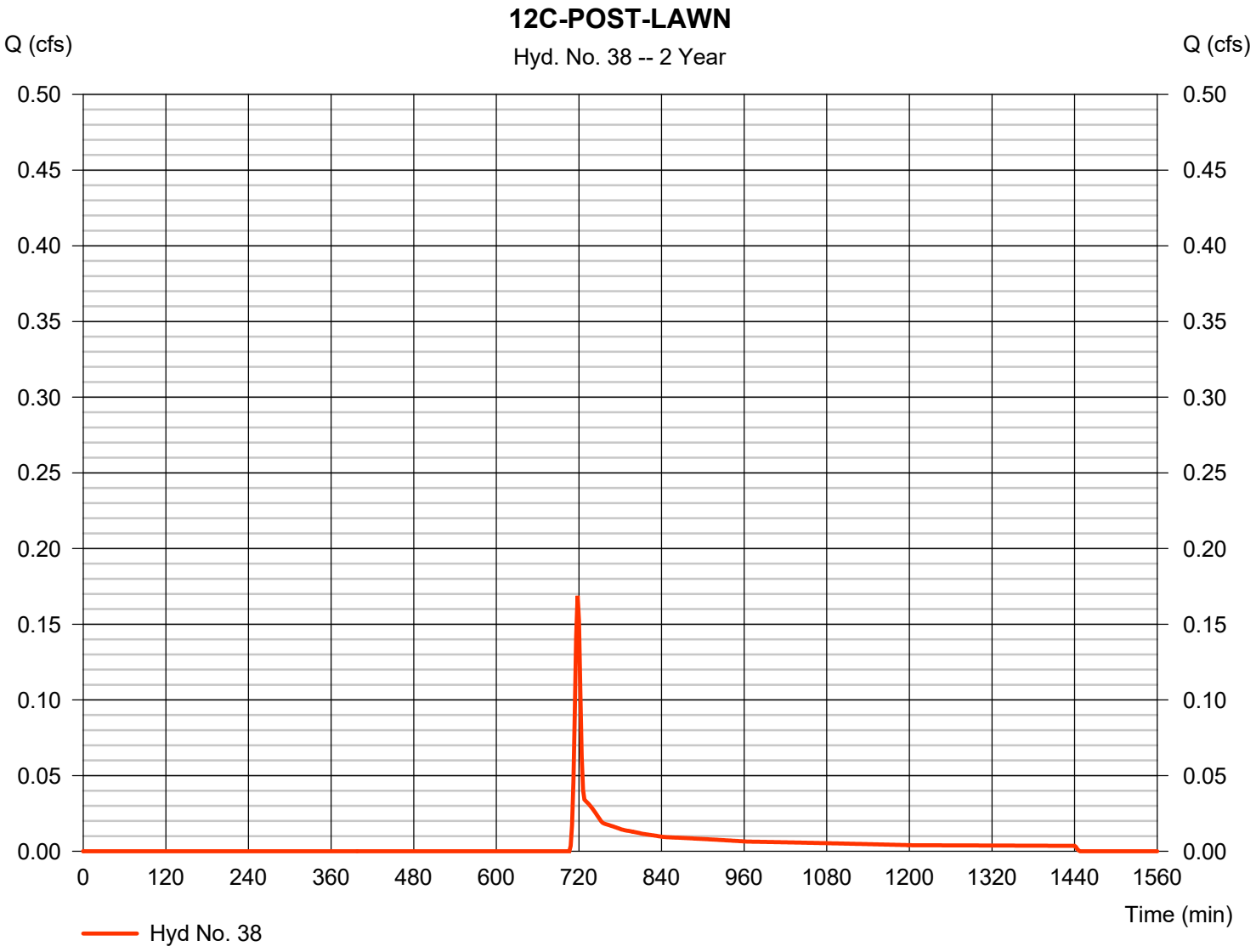
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 38

12C-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.169 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 402 cuft
Drainage area	= 0.250 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



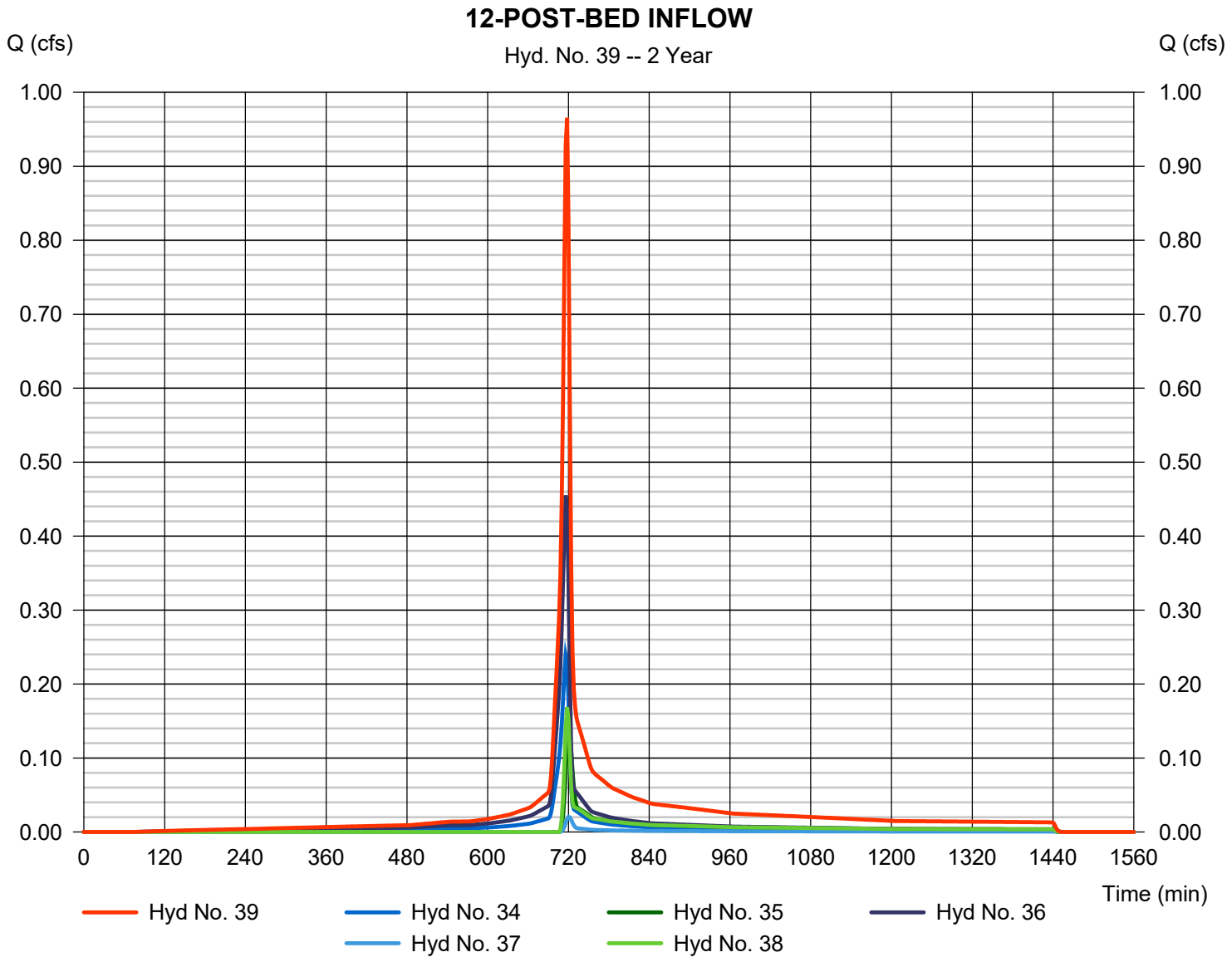
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 39

12-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.965 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,485 cuft
Inflow hyds.	= 34, 35, 36, 37, 38	Contrib. drain. area	= 0.675 ac



Hydrograph Report

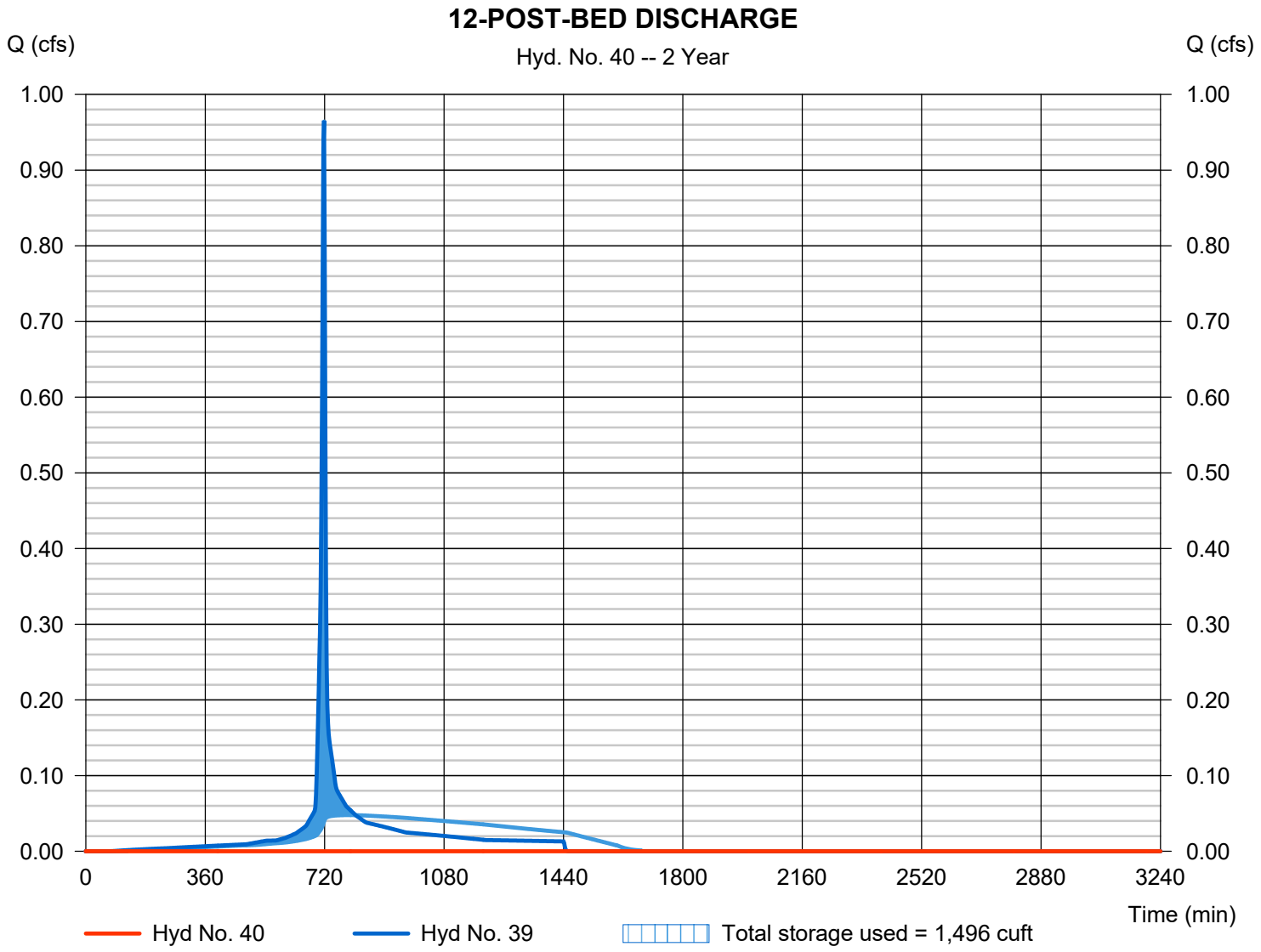
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 40

12-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	228 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	39 - 12-POST-BED INFLOW	Max. Elevation	=	381.58 ft
Reservoir name	=	LOT 12 INFILTRATION BED	Max. Storage	=	1,496 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 6 - LOT 12 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 380.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 70.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	380.00	n/a	0	0
0.40	380.40	n/a	212	212
0.80	380.80	n/a	368	580
1.20	381.20	n/a	448	1,028
1.60	381.60	n/a	493	1,521
2.00	382.00	n/a	515	2,037
2.40	382.40	n/a	515	2,552
2.80	382.80	n/a	493	3,045
3.20	383.20	n/a	448	3,493
3.60	383.60	n/a	368	3,861
4.00	384.00	n/a	212	4,072

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 382.50	0.00	0.00	0.00
Length (ft)	= 47.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

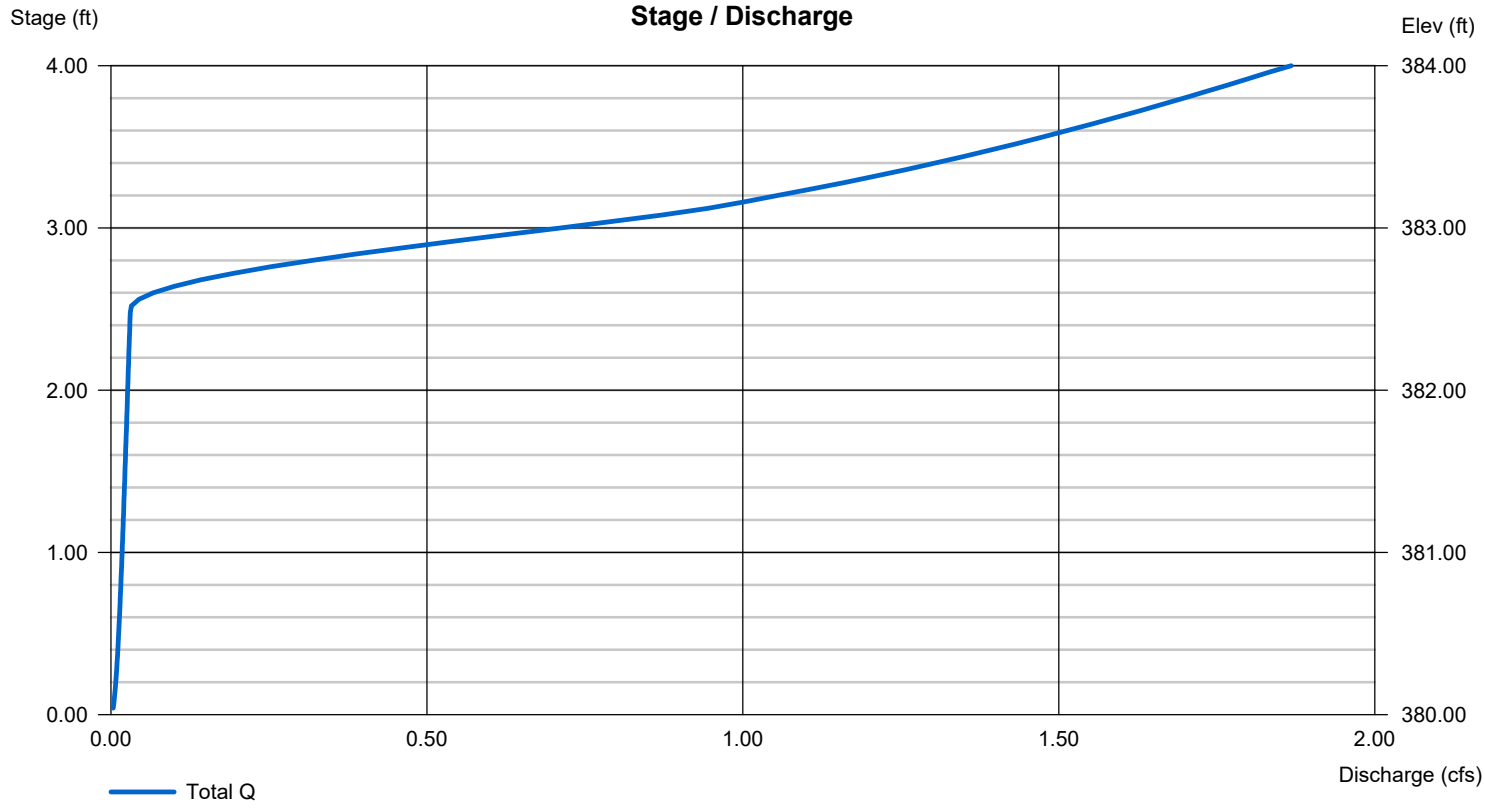
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.560 (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).



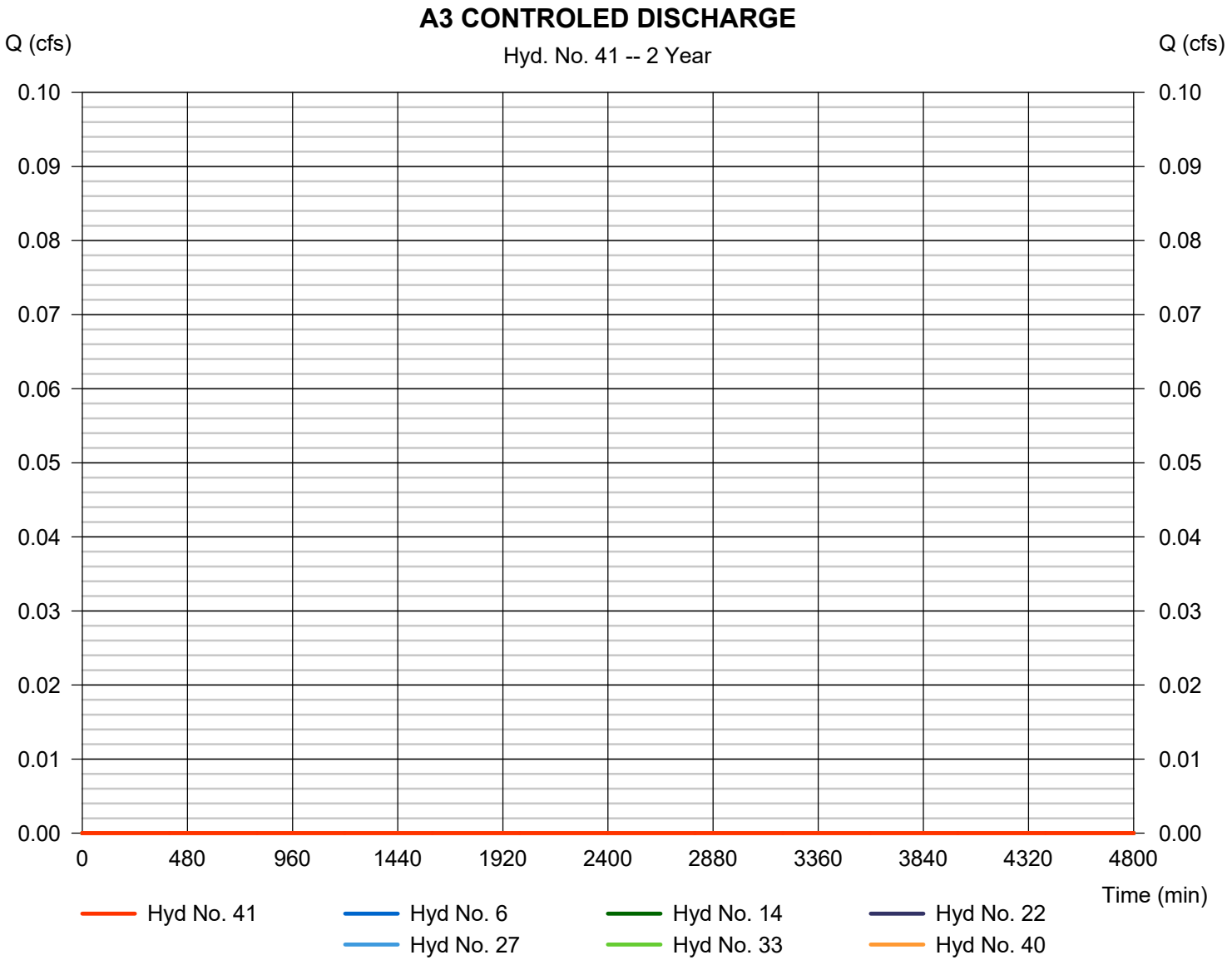
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 41

A3 CONTROLED DISCHARGE

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 1224 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 6, 14, 22, 27, 33, 40	Contrib. drain. area	= 0.000 ac



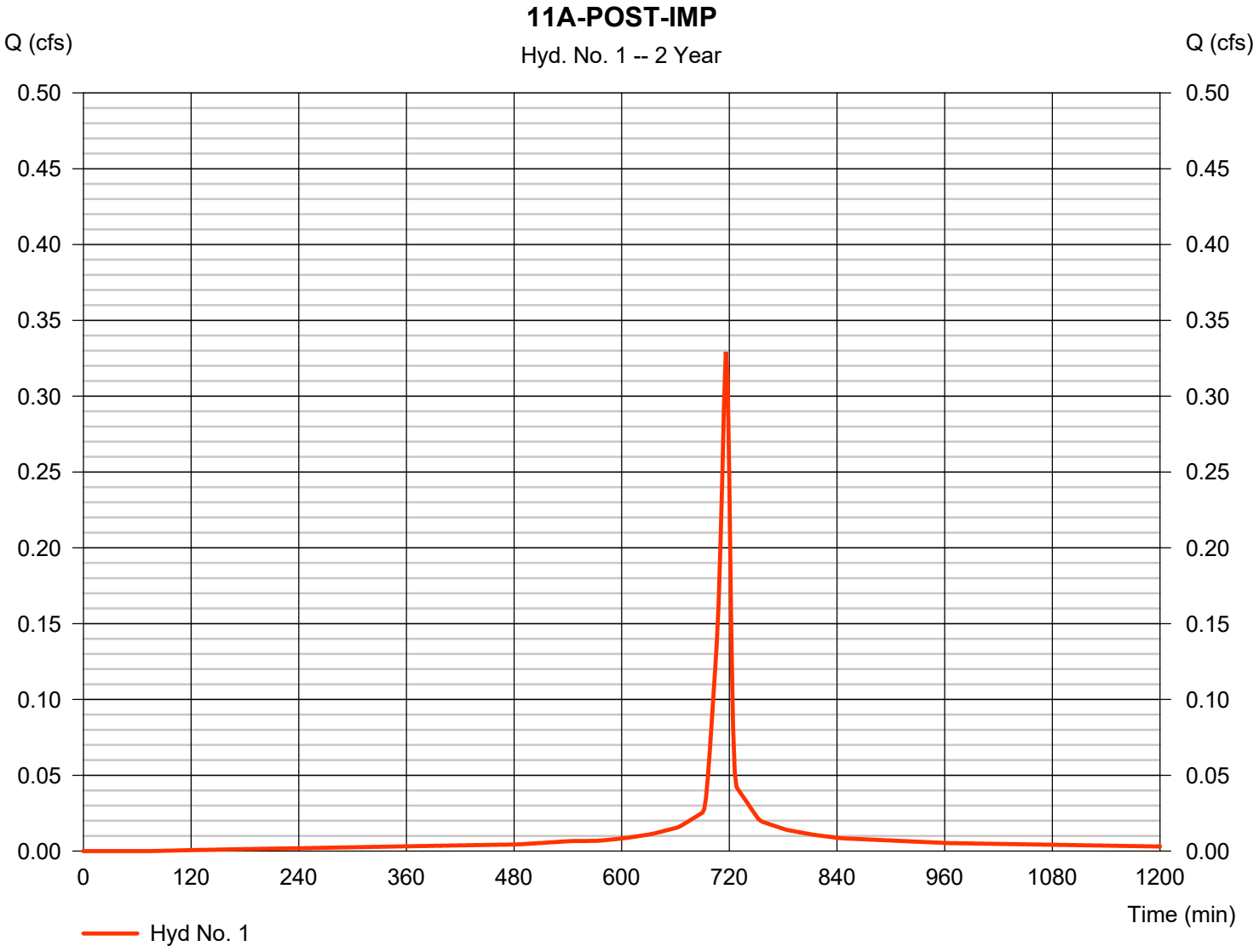
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 1

11A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.329 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 770 cuft
Drainage area	= 0.075 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



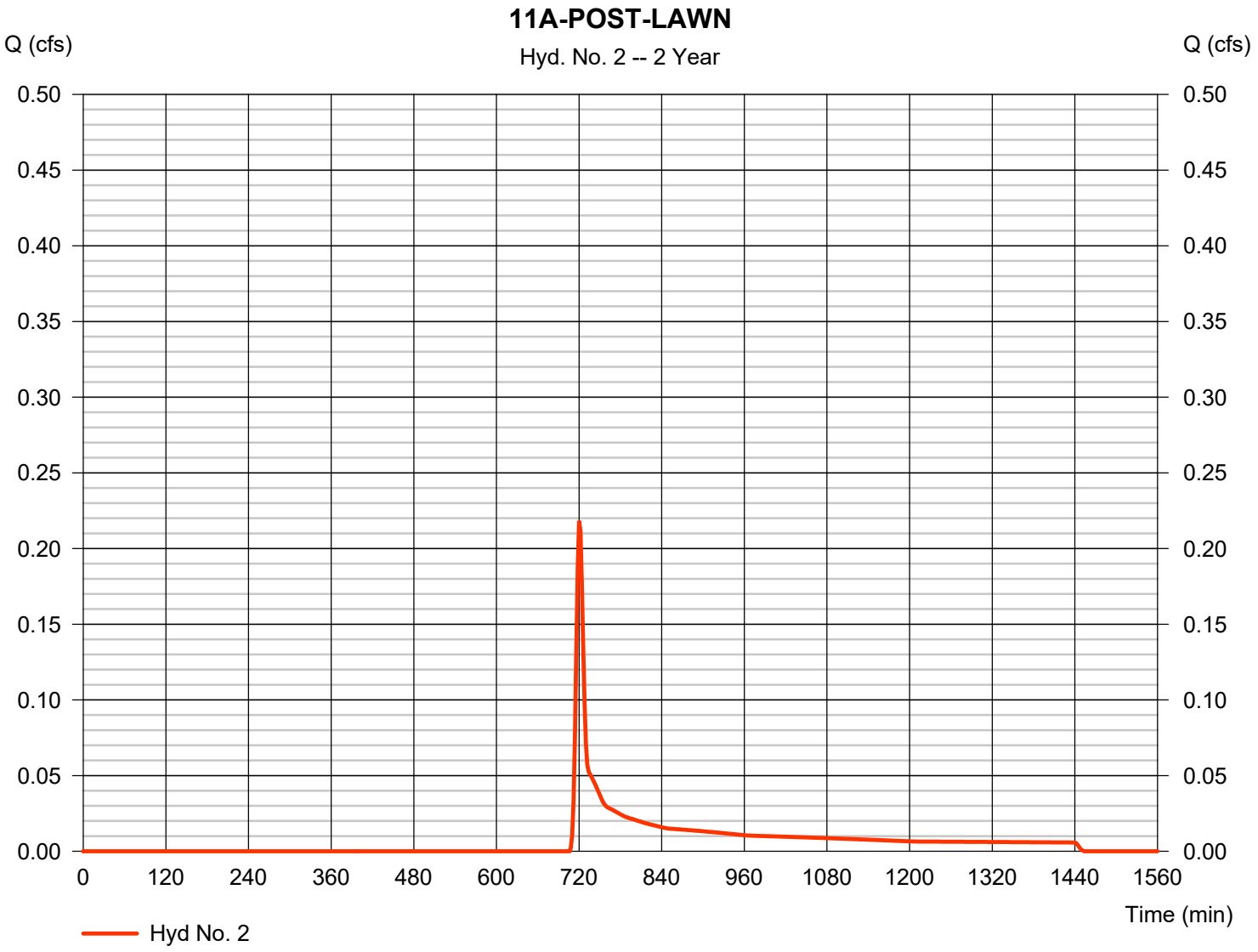
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 2

11A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.218 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 647 cuft
Drainage area	= 0.384 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



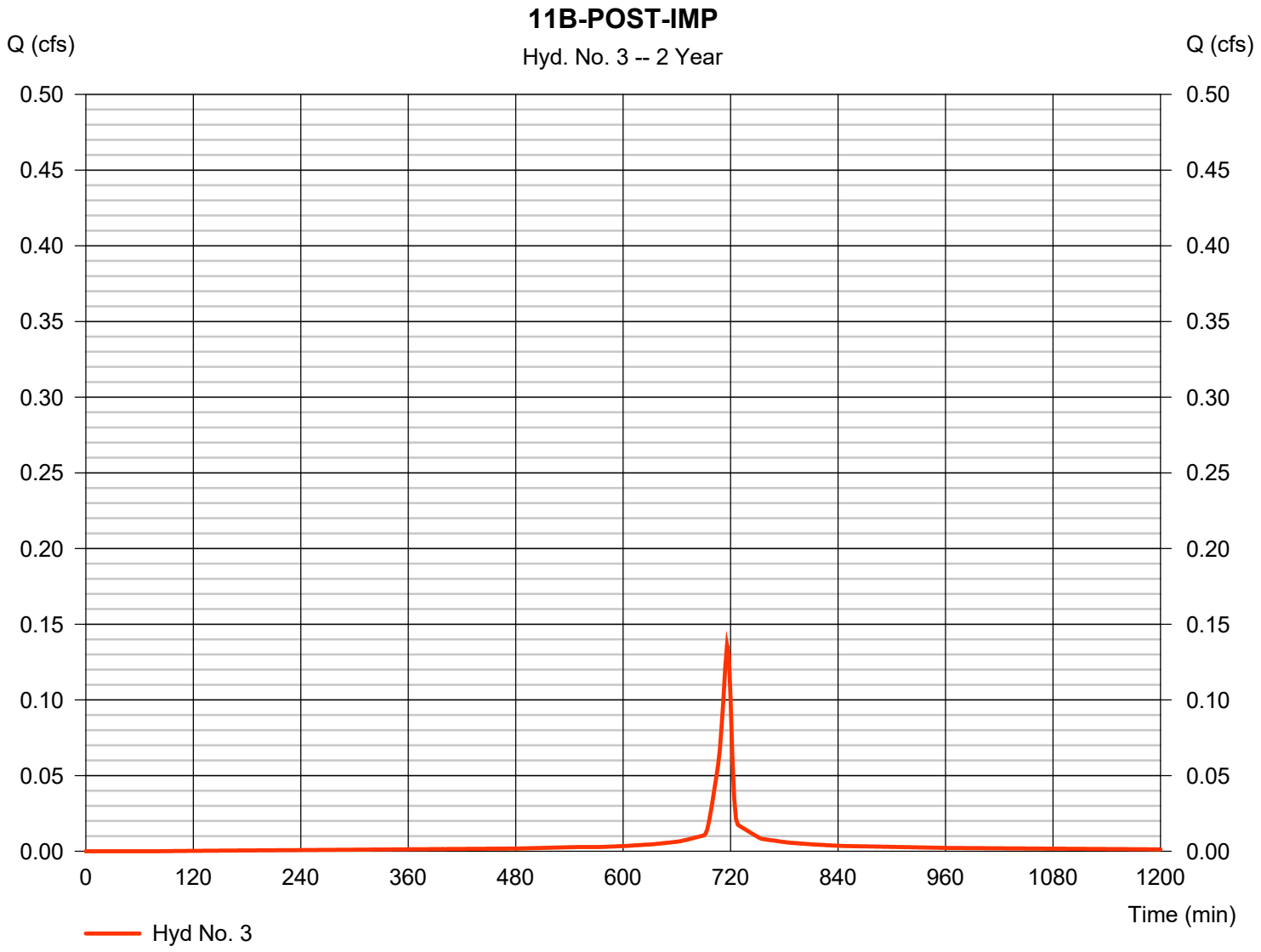
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 3

11B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.136 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 318 cuft
Drainage area	= 0.031 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



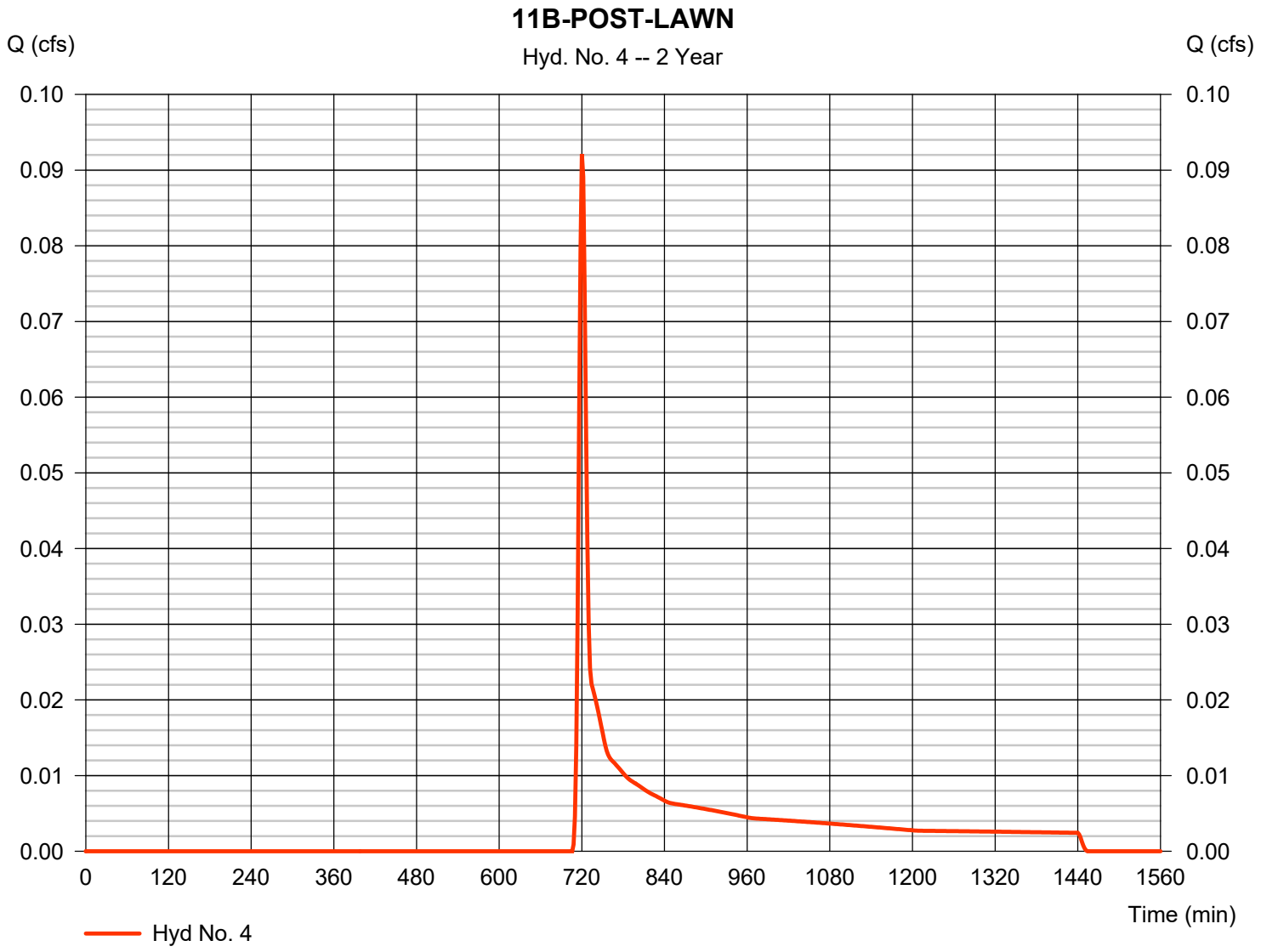
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 4

11B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.092 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 273 cuft
Drainage area	= 0.162 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



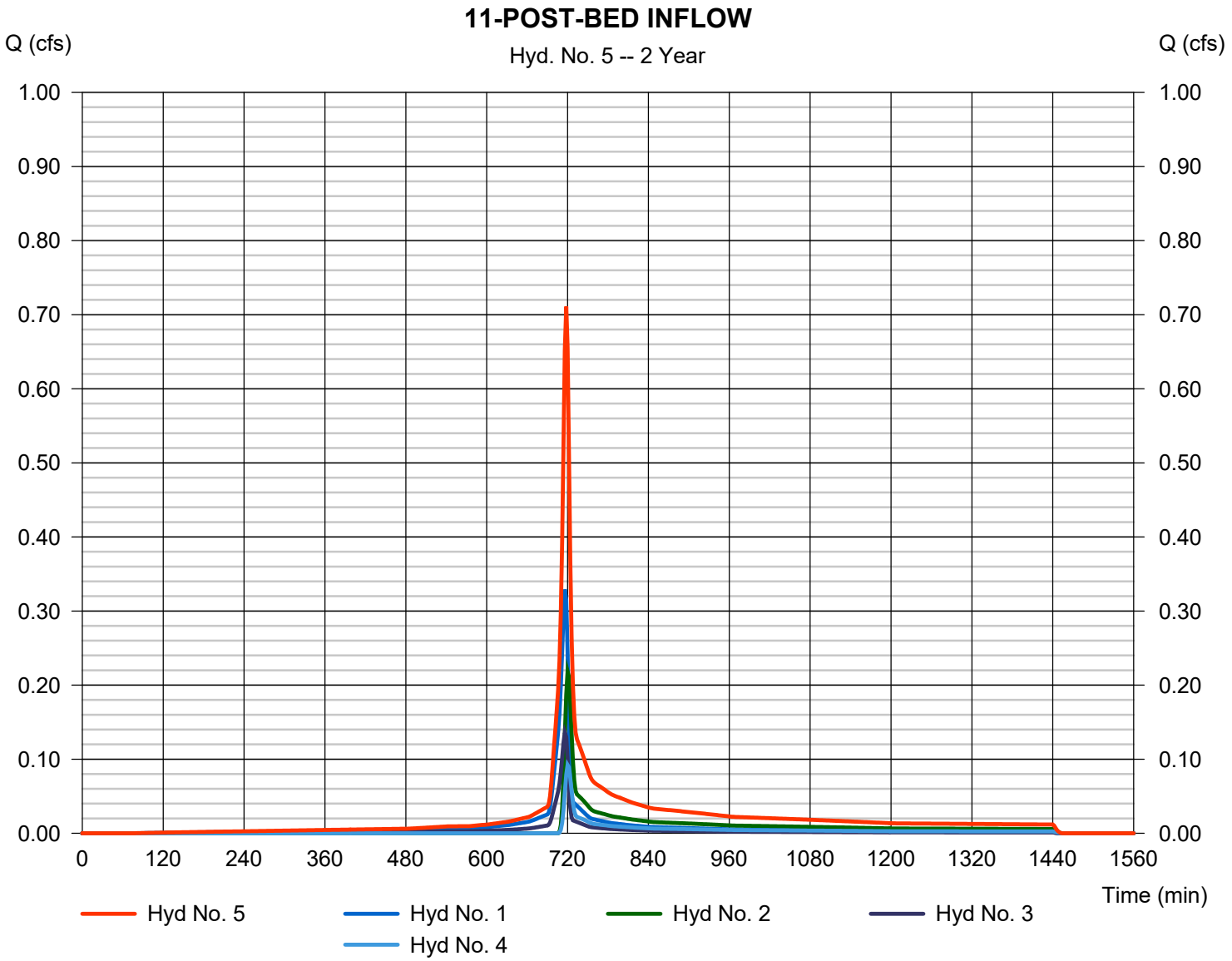
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 5

11-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.711 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,009 cuft
Inflow hyds.	= 1, 2, 3, 4	Contrib. drain. area	= 0.652 ac



Hydrograph Report

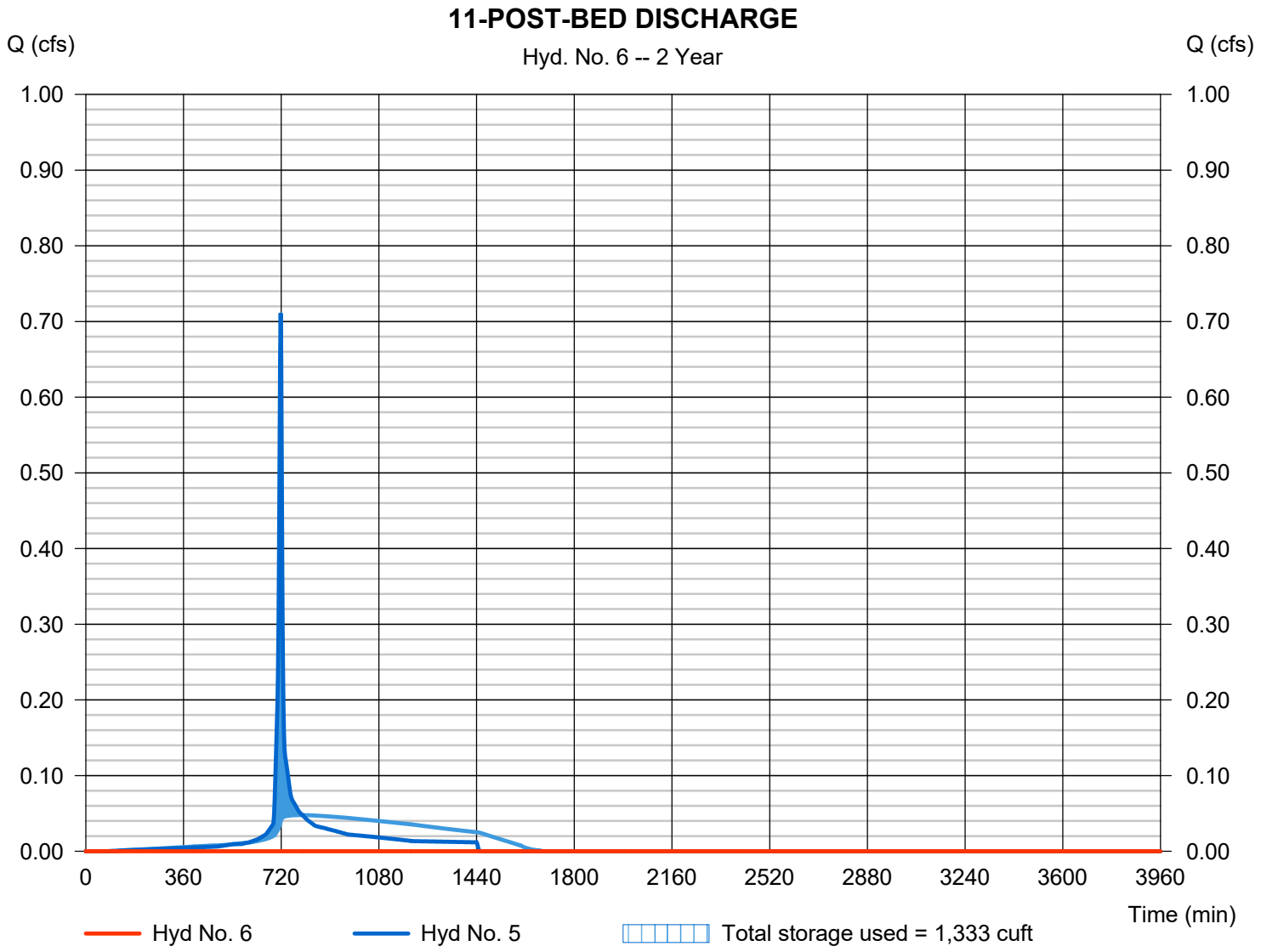
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 6

11-POST-BED DISCHARGE

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 526 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 5 - 11-POST-BED INFLOW	Max. Elevation	= 360.60 ft
Reservoir name	= LOT 11 INFIL BED	Max. Storage	= 1,333 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 1 - LOT 11 INFIL BED

Pond Data

UG Chambers -Invert elev. = 359.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	359.00	n/a	0	0
0.40	359.40	n/a	186	186
0.80	359.80	n/a	323	509
1.20	360.20	n/a	393	901
1.60	360.60	n/a	432	1,333
2.00	361.00	n/a	452	1,785
2.40	361.40	n/a	452	2,237
2.80	361.80	n/a	432	2,669
3.20	362.20	n/a	392	3,061
3.60	362.60	n/a	323	3,384
4.00	363.00	n/a	186	3,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 361.50	0.00	0.00	0.00
Length (ft)	= 68.00	0.00	0.00	0.00
Slope (%)	= 0.75	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

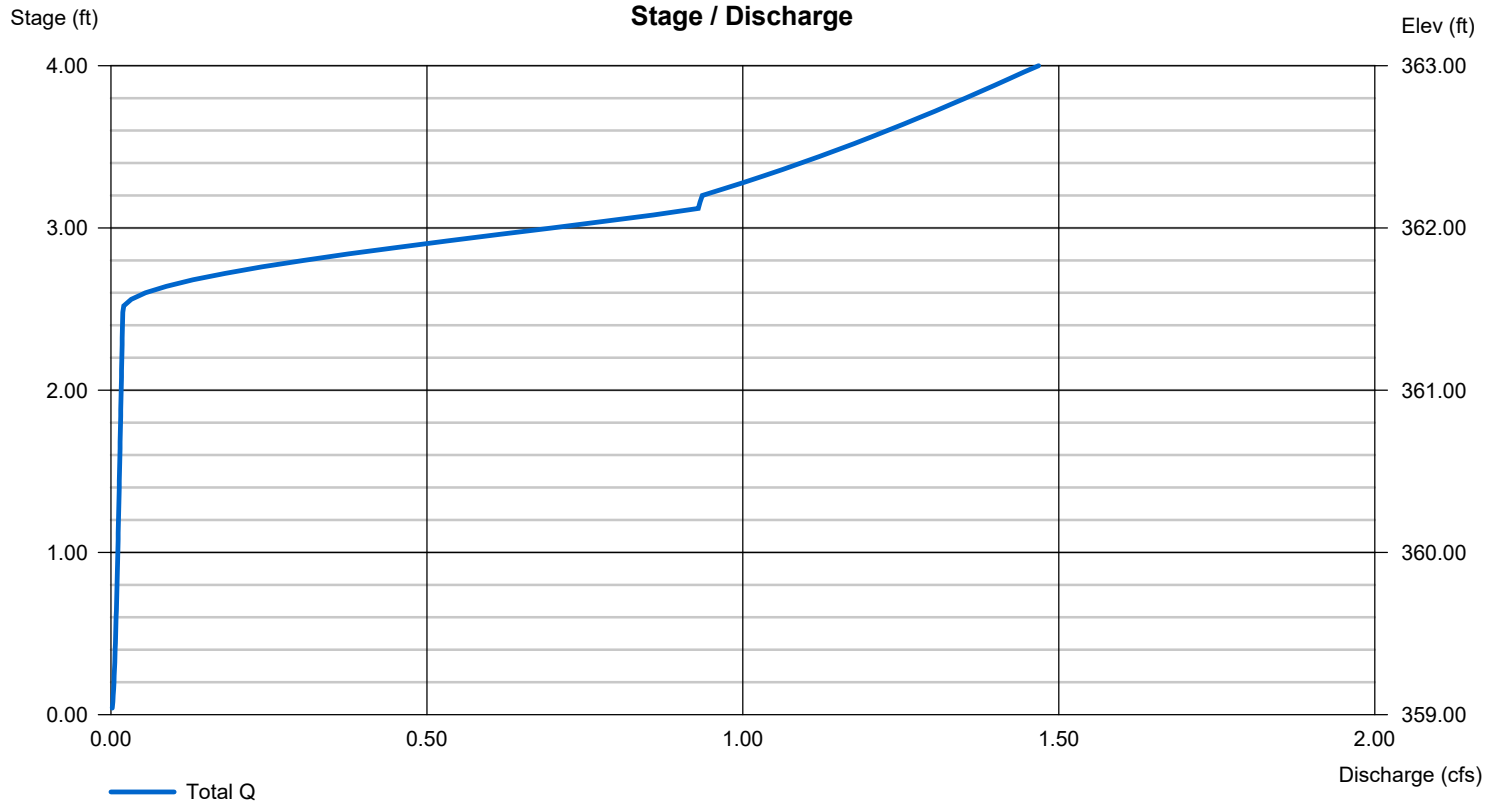
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.390 (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).



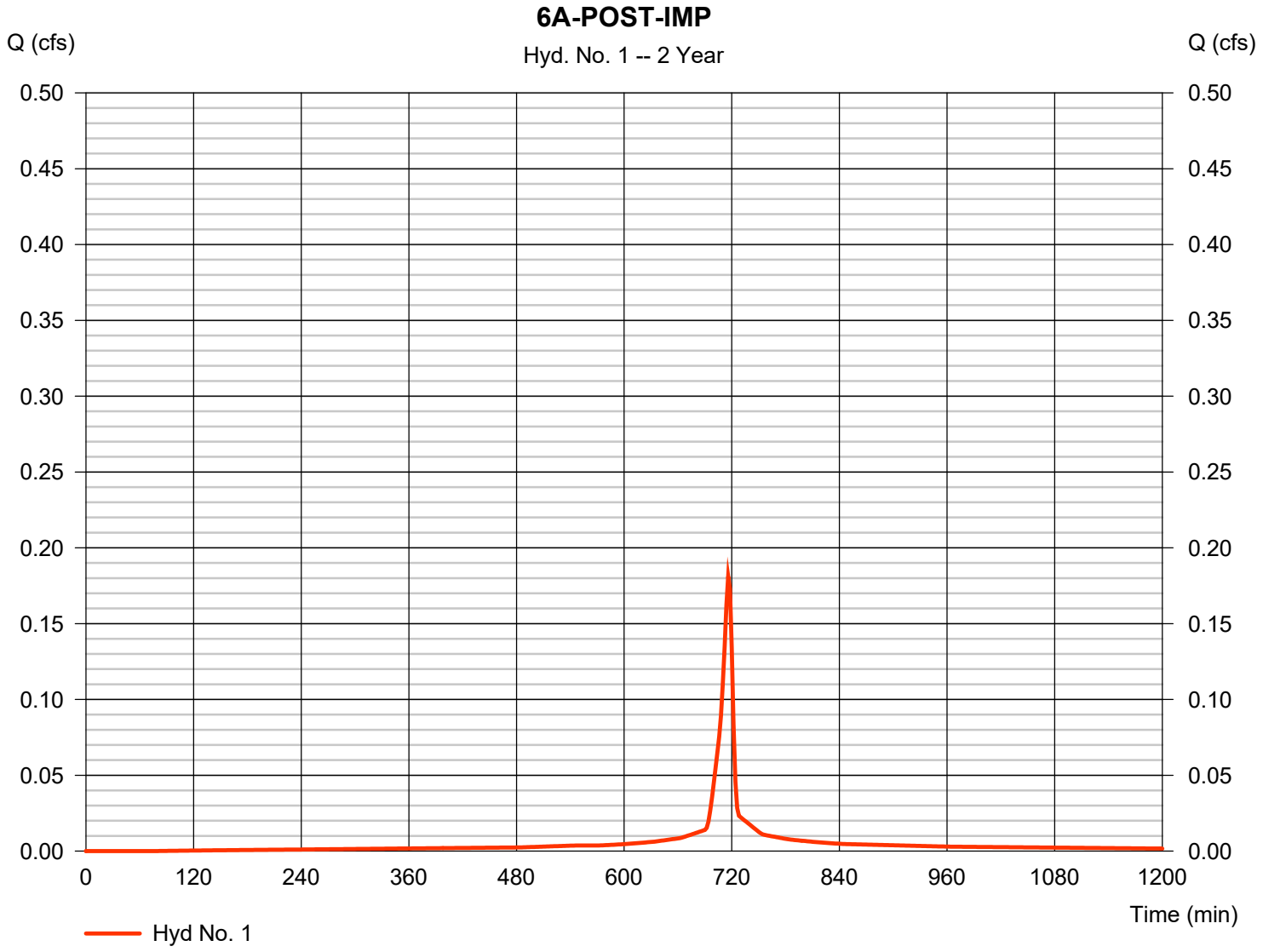
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 1

6A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.181 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 424 cuft
Drainage area	= 0.041 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



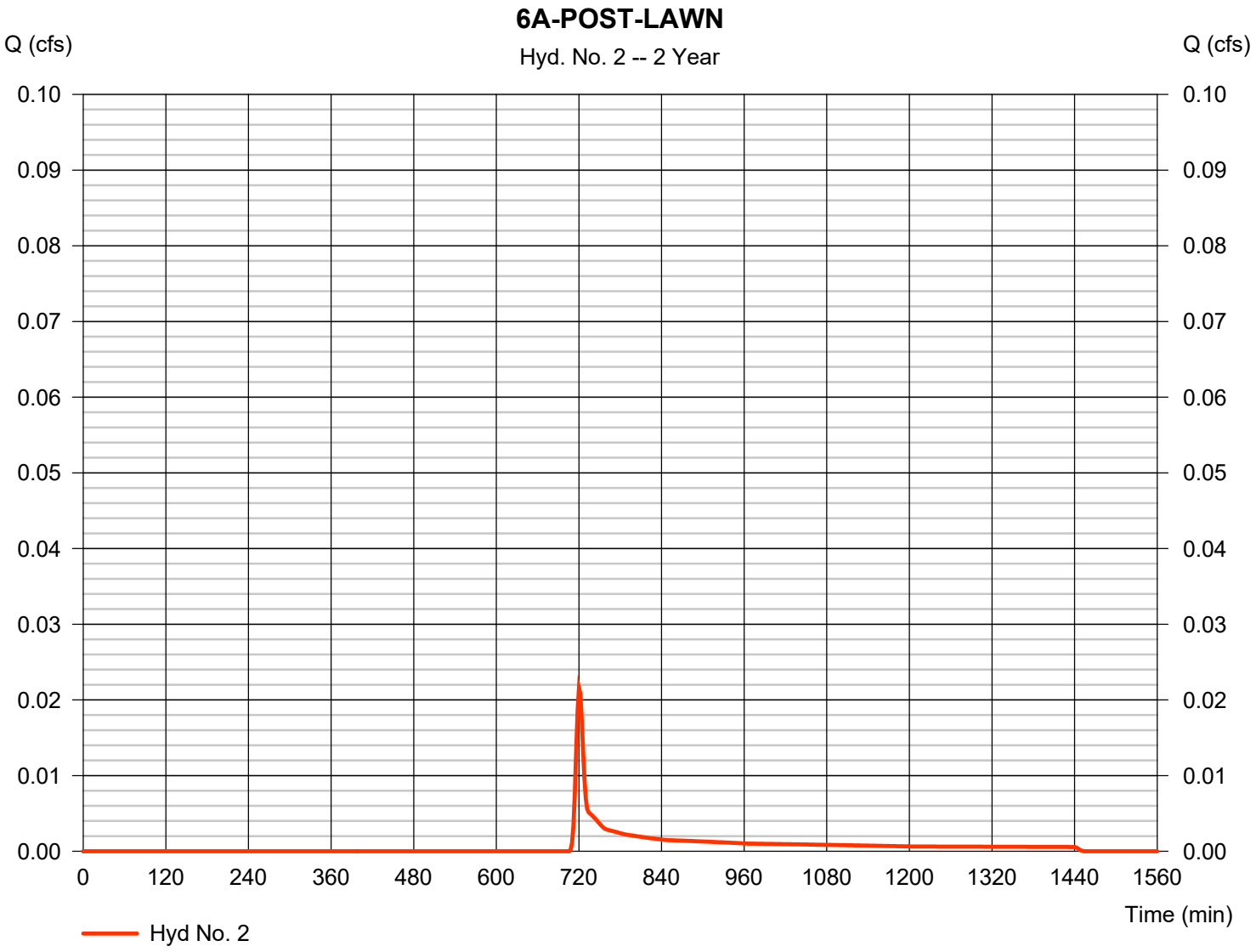
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 2

6A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.022 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 64 cuft
Drainage area	= 0.037 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



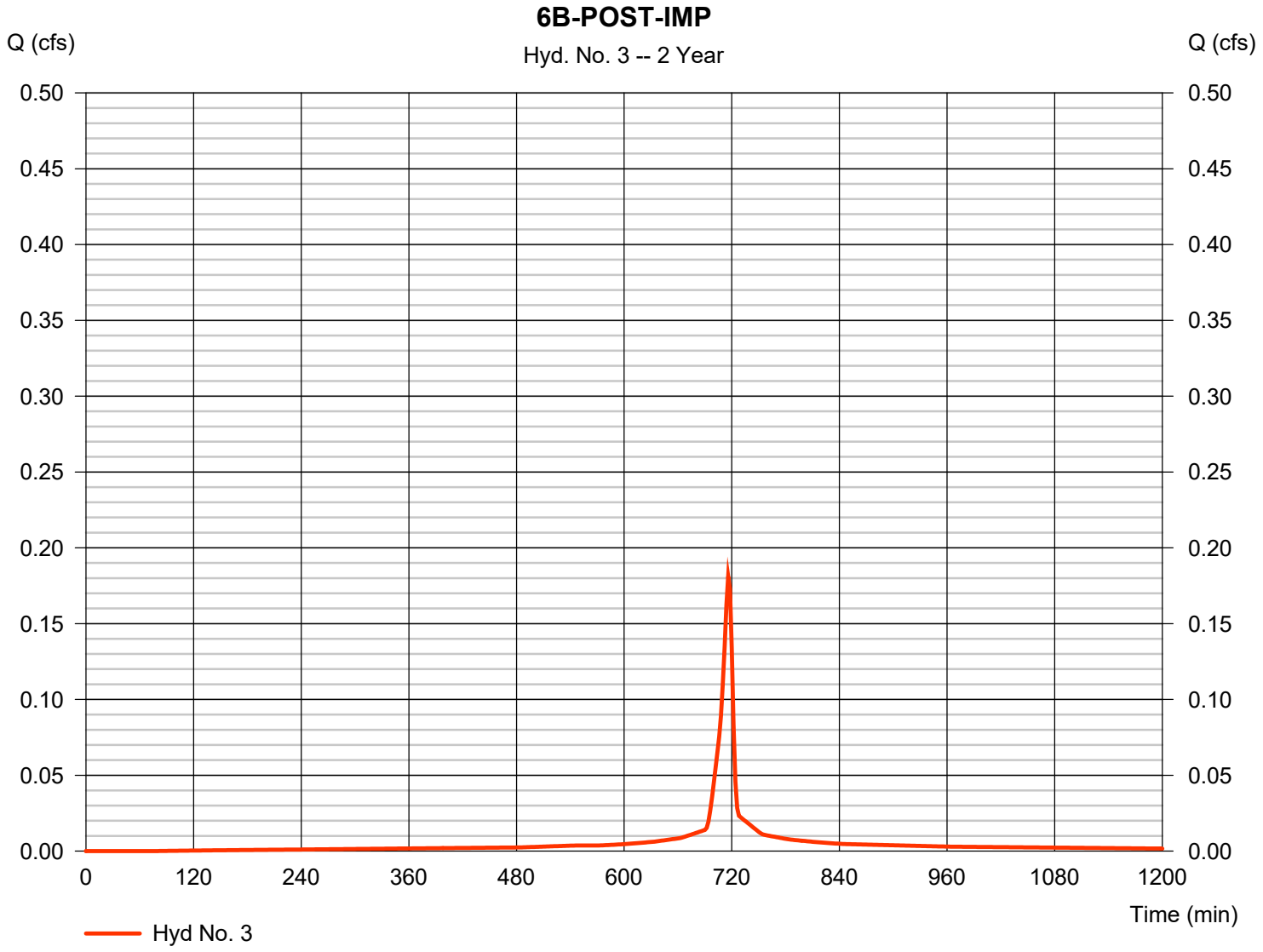
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 3

6B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.181 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 424 cuft
Drainage area	= 0.041 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



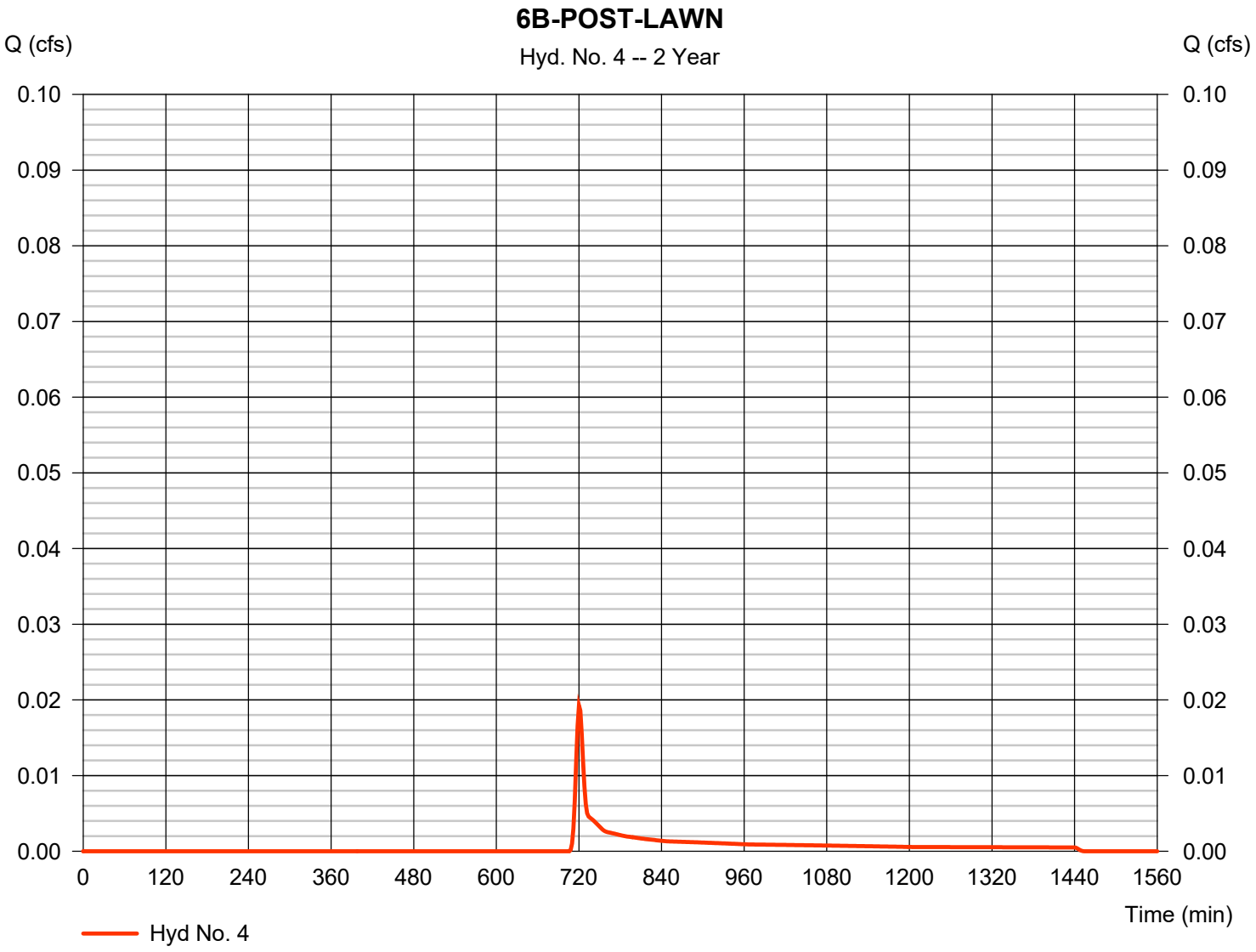
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 4

6B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.019 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 57 cuft
Drainage area	= 0.033 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



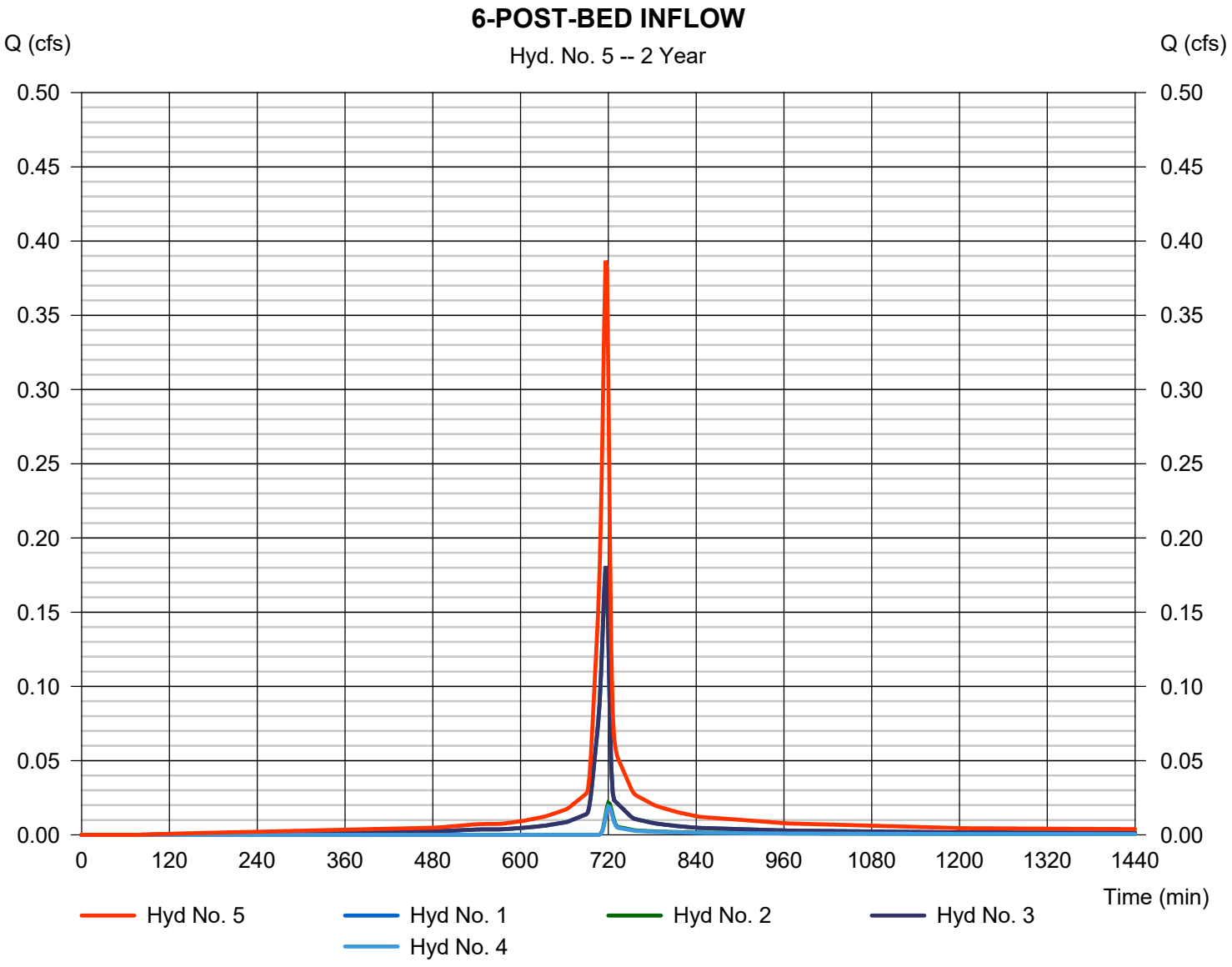
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 5

6-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.387 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 968 cuft
Inflow hyds.	= 1, 2, 3, 4	Contrib. drain. area	= 0.152 ac



Hydrograph Report

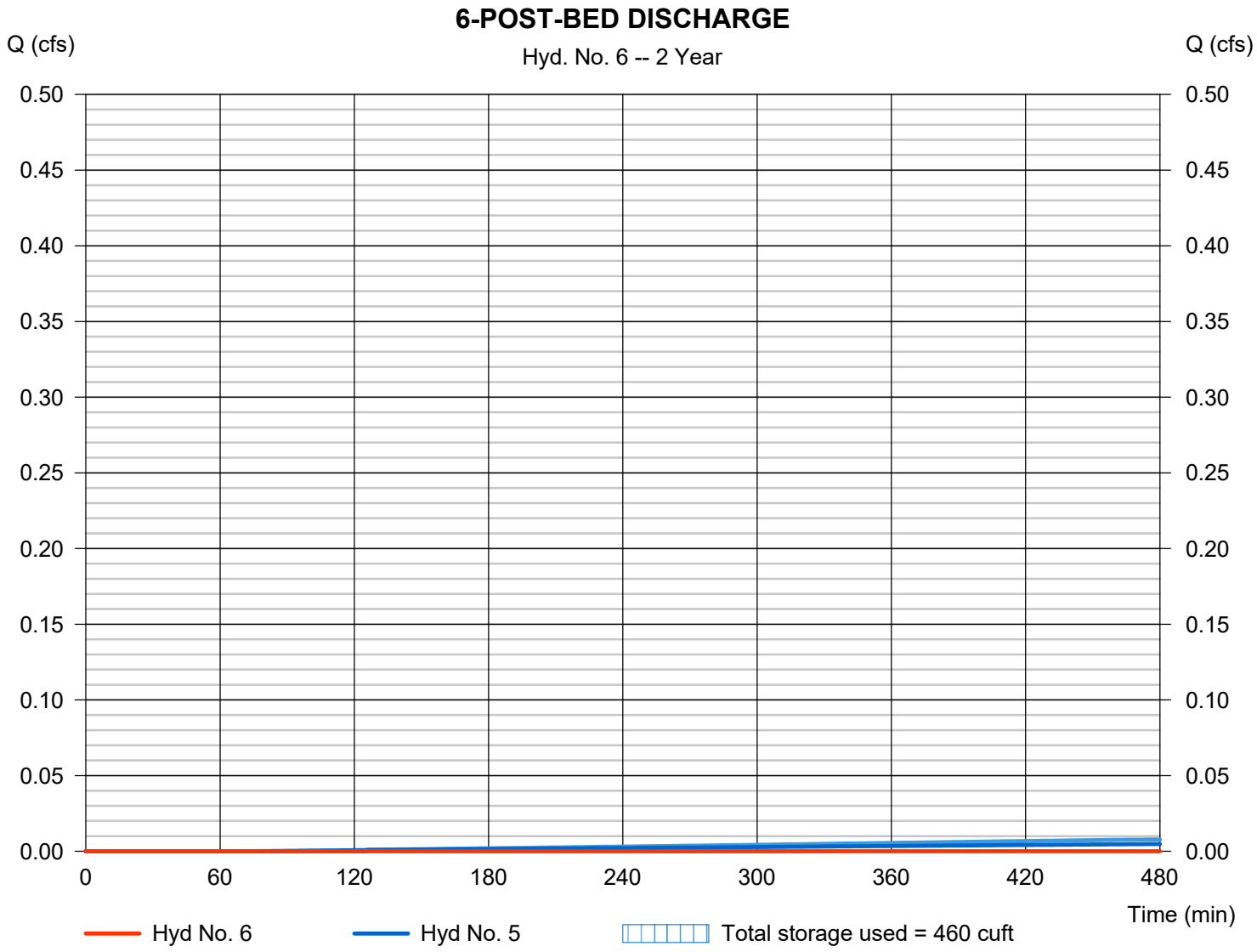
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 6

6-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	412 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	5 - 6-POST-BED INFLOW	Max. Elevation	=	378.86 ft
Reservoir name	=	LOT 6 INFILTRATION BED	Max. Storage	=	460 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 1 - LOT 6 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 377.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 30.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	377.00	n/a	0	0
0.40	377.40	n/a	52	52
0.80	377.80	n/a	91	143
1.20	378.20	n/a	111	254
1.60	378.60	n/a	122	376
2.00	379.00	n/a	127	503
2.40	379.40	n/a	127	630
2.80	379.80	n/a	122	752
3.20	380.20	n/a	111	862
3.60	380.60	n/a	91	953
4.00	381.00	n/a	52	1,005

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 380.00	0.00	0.00	0.00
Length (ft)	= 51.60	0.00	0.00	0.00
Slope (%)	= 15.50	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

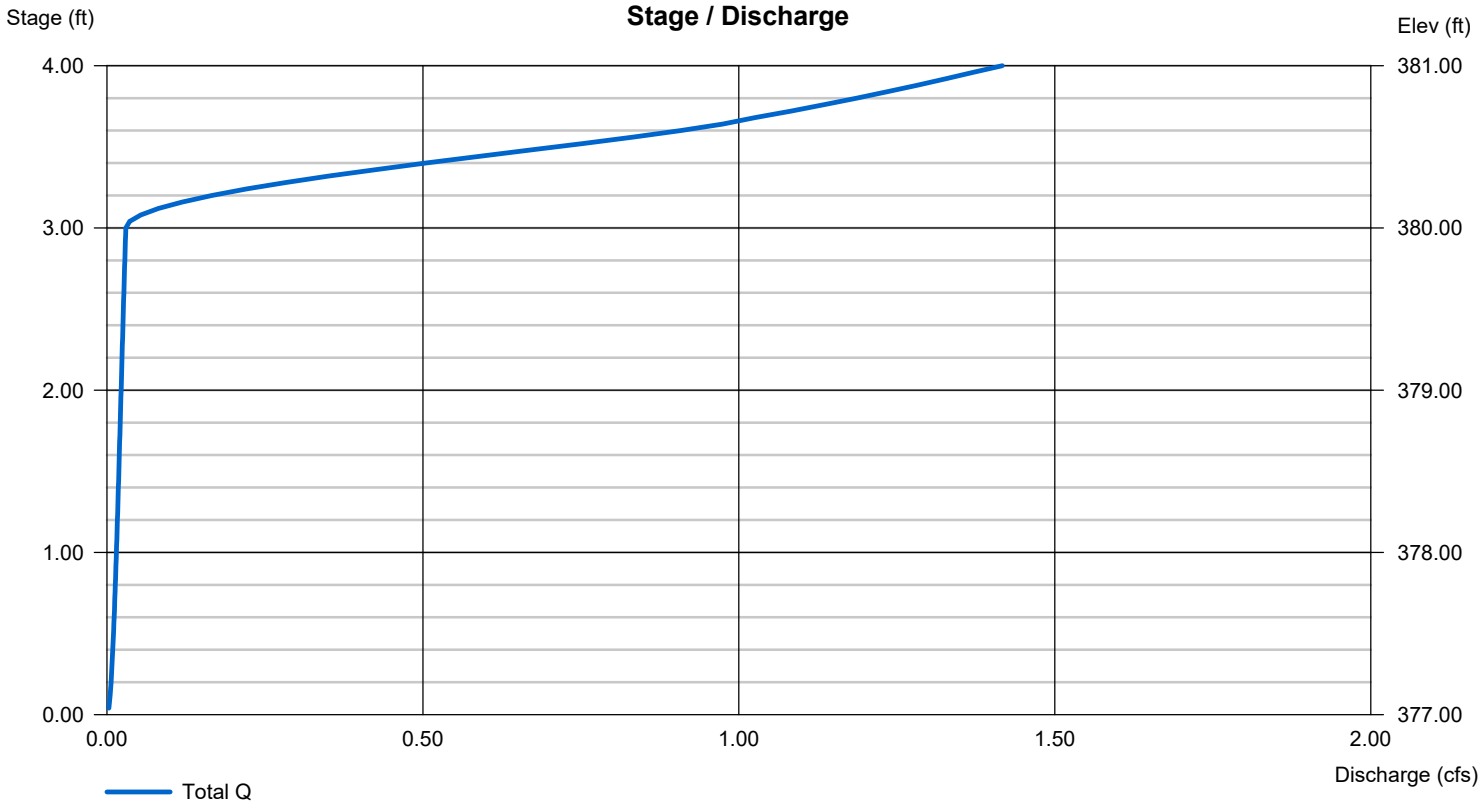
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.920 (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).



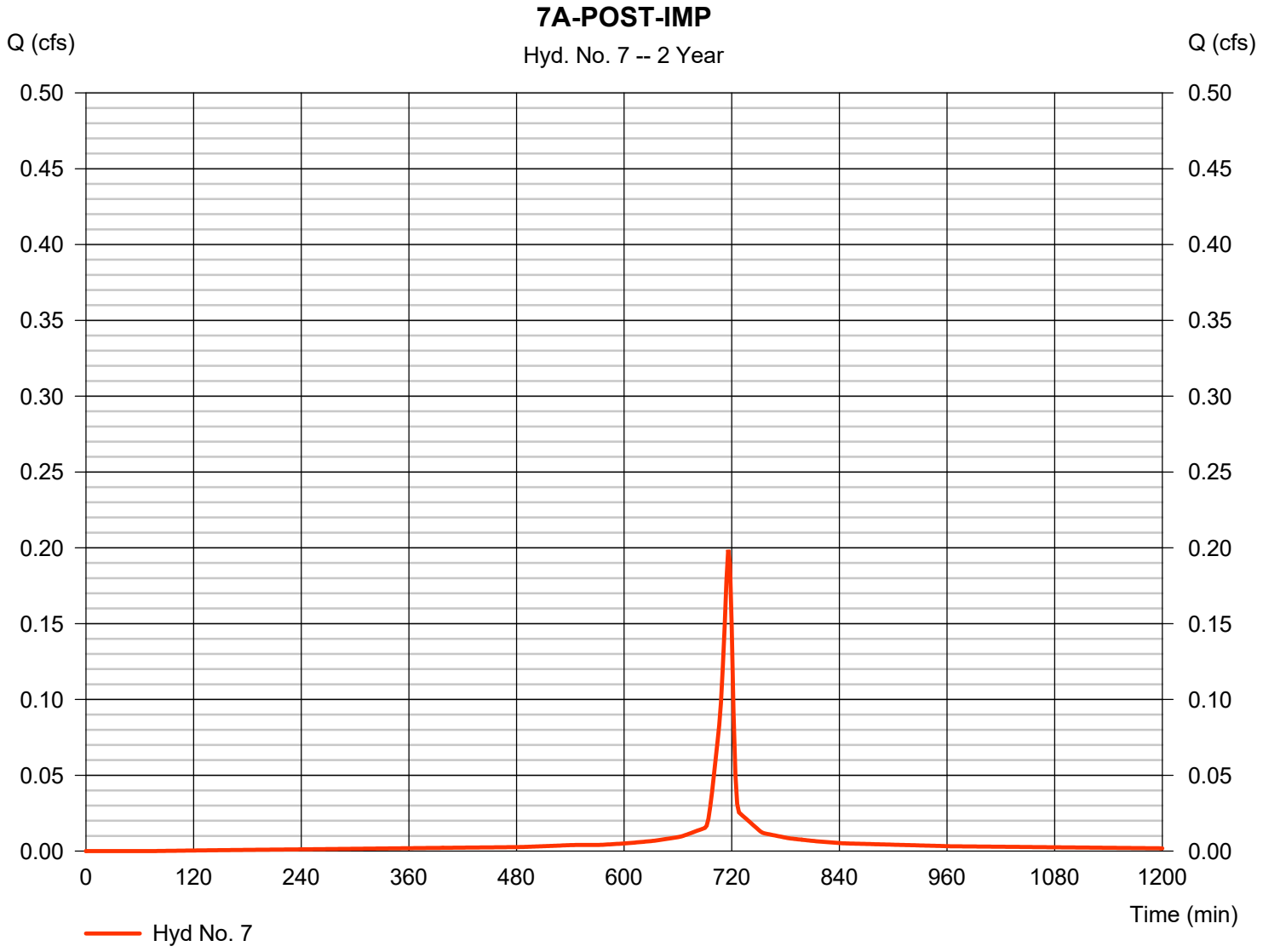
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 7

7A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.199 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 465 cuft
Drainage area	= 0.045 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



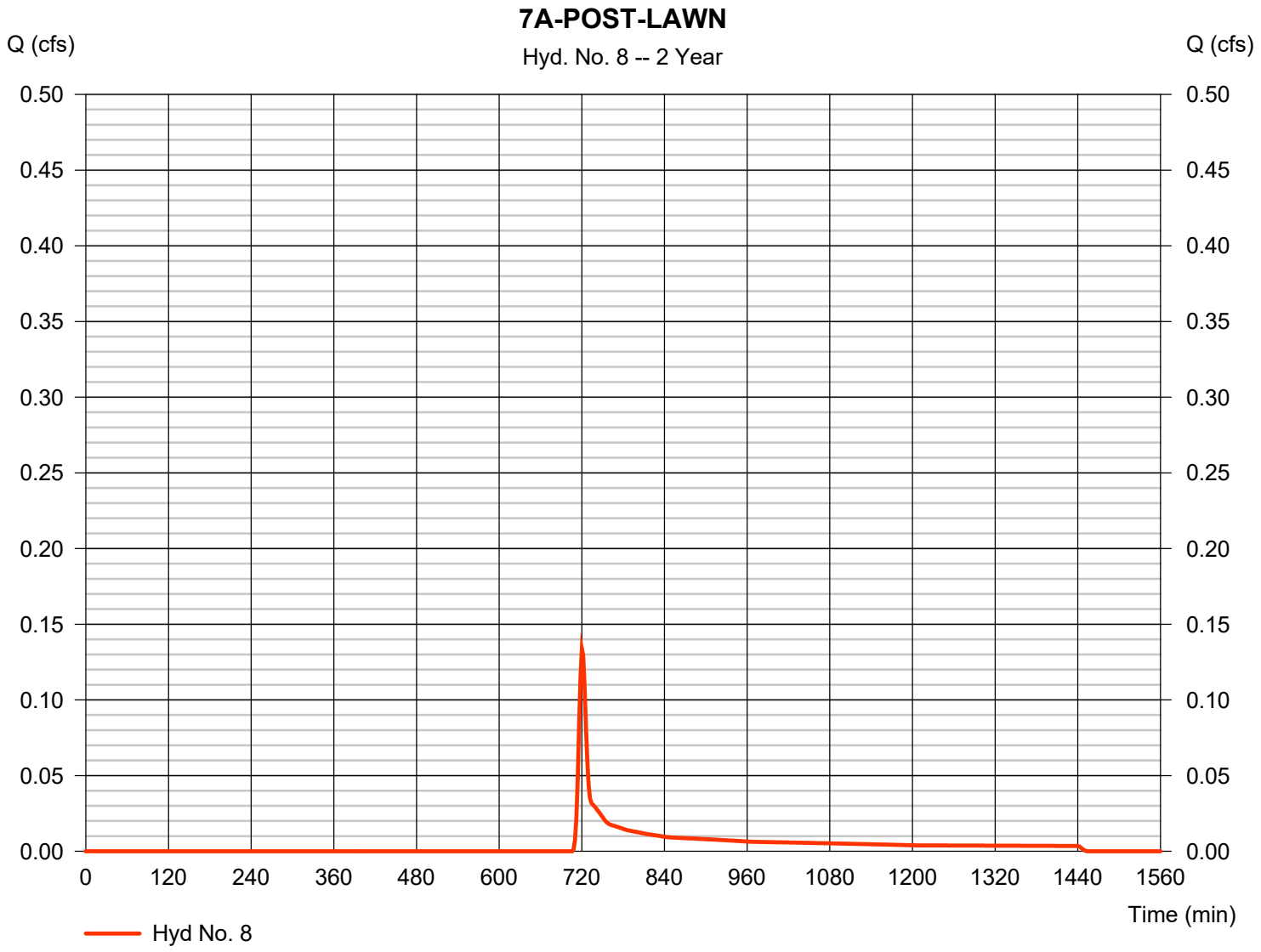
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 8

7A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.134 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 393 cuft
Drainage area	= 0.229 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



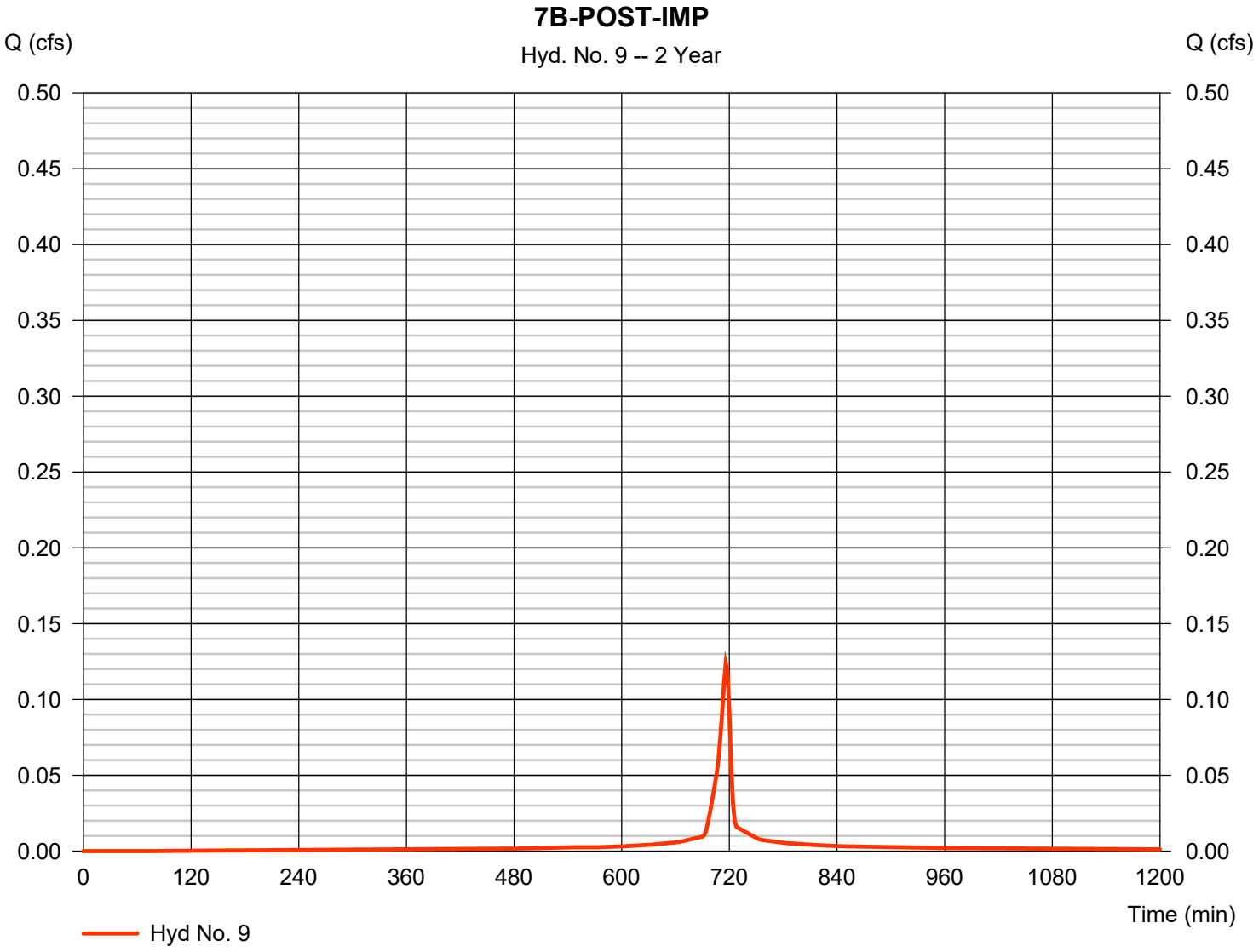
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 9

7B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.124 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 289 cuft
Drainage area	= 0.028 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



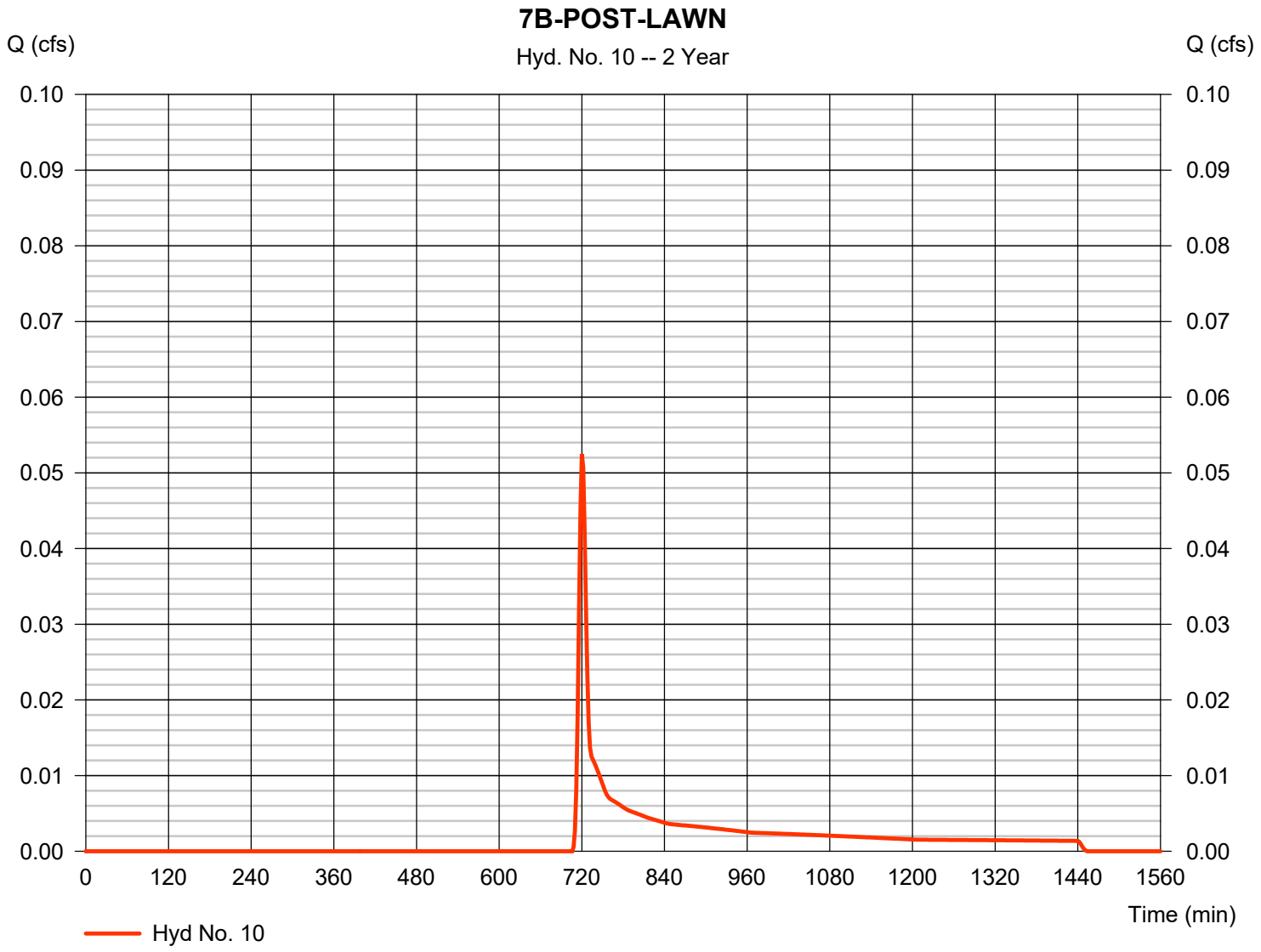
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 10

7B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.052 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 154 cuft
Drainage area	= 0.090 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



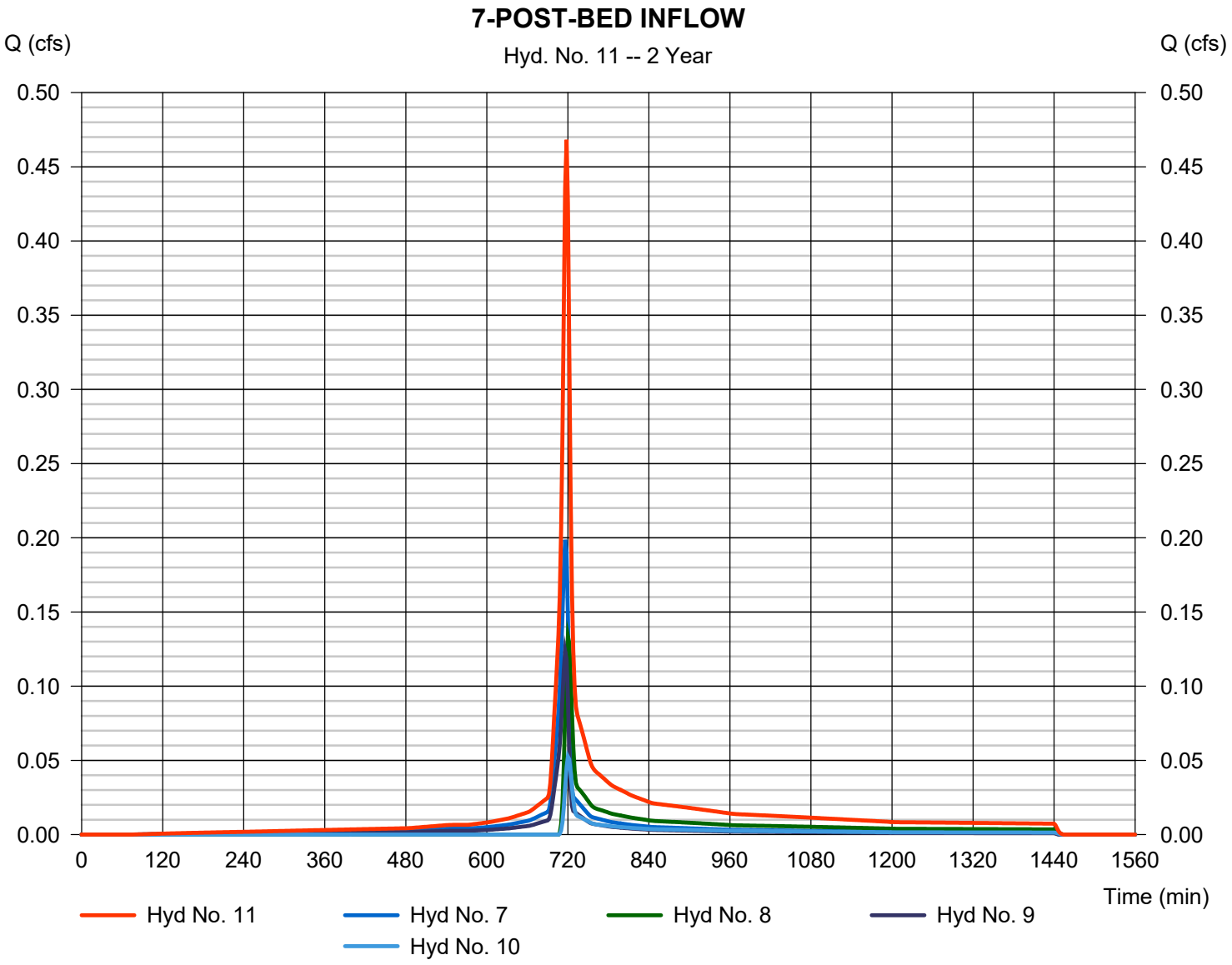
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 11

7-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.468 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,302 cuft
Inflow hyds.	= 7, 8, 9, 10	Contrib. drain. area	= 0.392 ac



Hydrograph Report

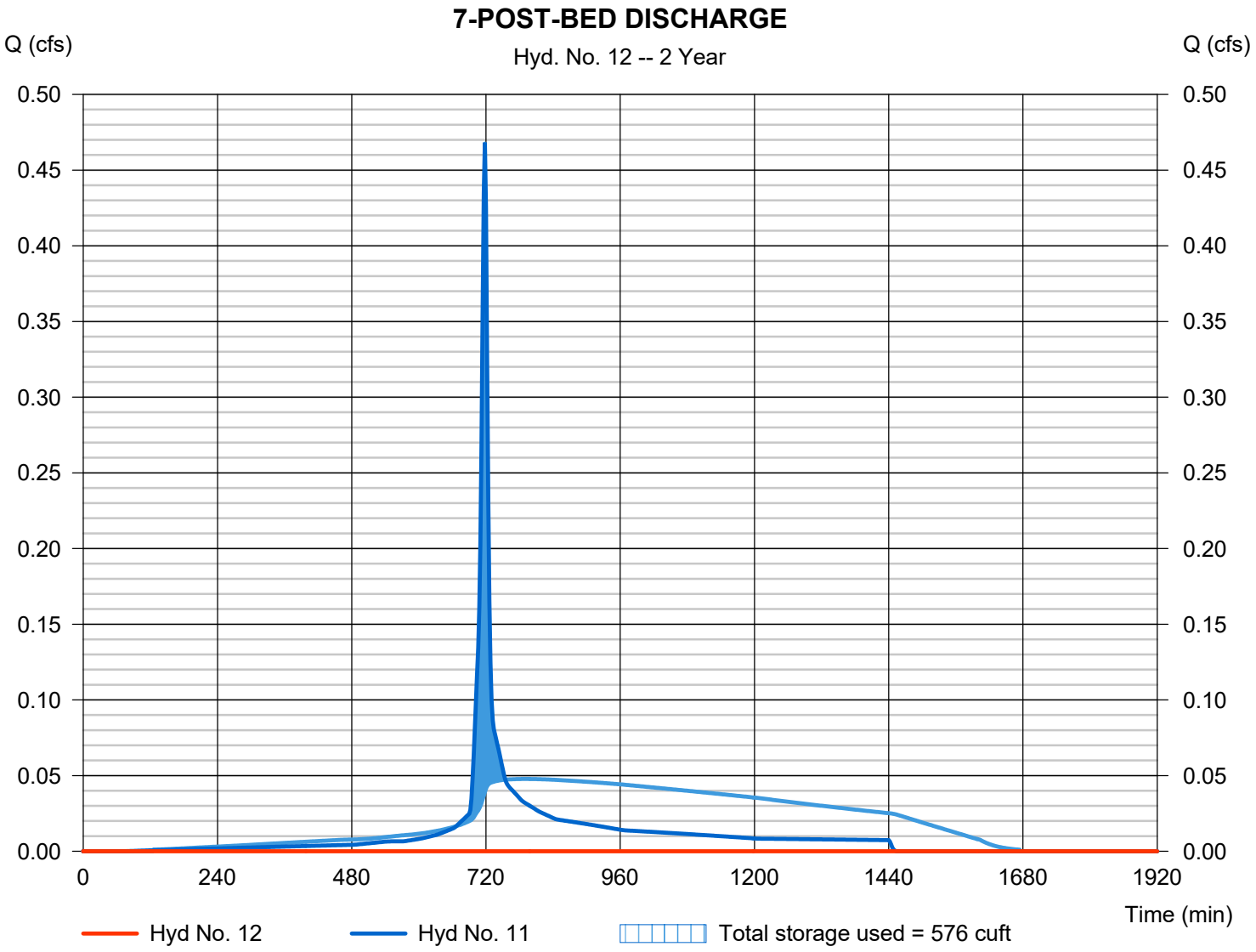
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 12

7-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	418 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	11 - 7-POST-BED INFLOW	Max. Elevation	=	380.36 ft
Reservoir name	=	LOT 7 INFILTRATION BED	Max. Storage	=	576 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 2 - LOT 7 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 379.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 40.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	379.00	n/a	0	0
0.40	379.40	n/a	99	99
0.80	379.80	n/a	173	272
1.20	380.20	n/a	210	482
1.60	380.60	n/a	231	714
2.00	381.00	n/a	242	955
2.40	381.40	n/a	242	1,197
2.80	381.80	n/a	231	1,429
3.20	382.20	n/a	210	1,638
3.60	382.60	n/a	173	1,811
4.00	383.00	n/a	99	1,910

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 382.00	0.00	0.00	0.00
Length (ft)	= 51.60	0.00	0.00	0.00
Slope (%)	= 15.50	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

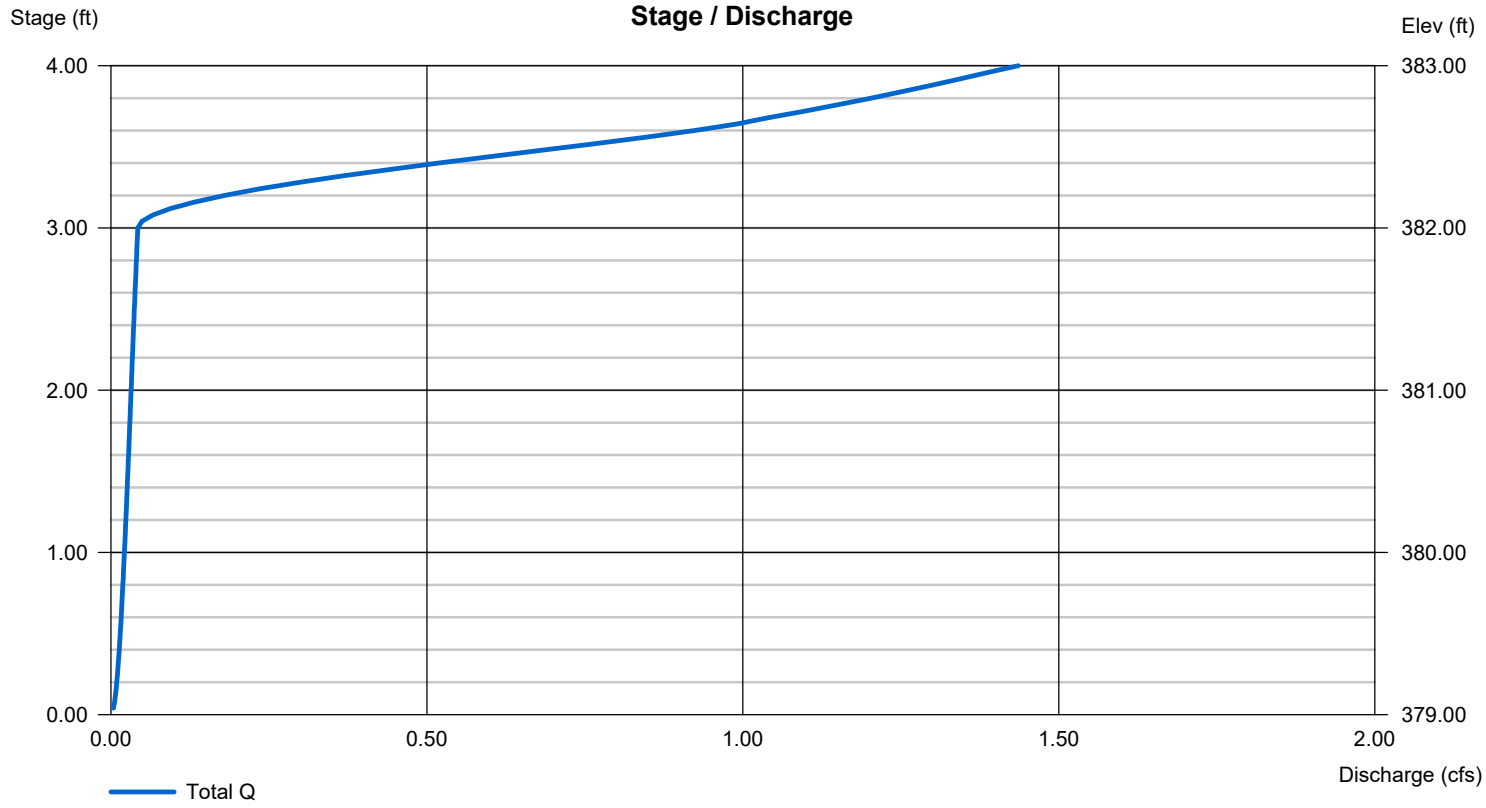
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.440 (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).



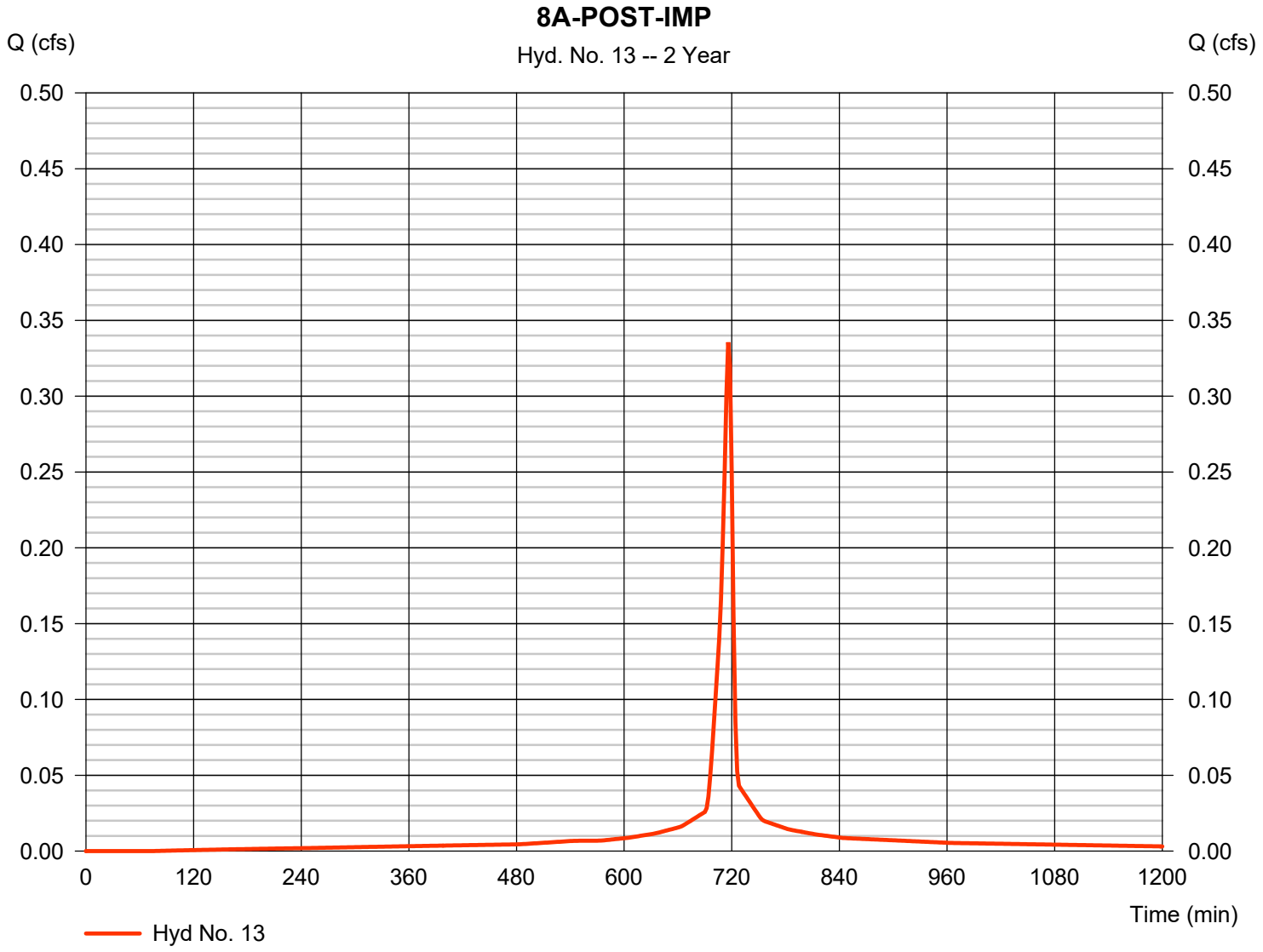
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 13

8A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.336 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 786 cuft
Drainage area	= 0.076 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



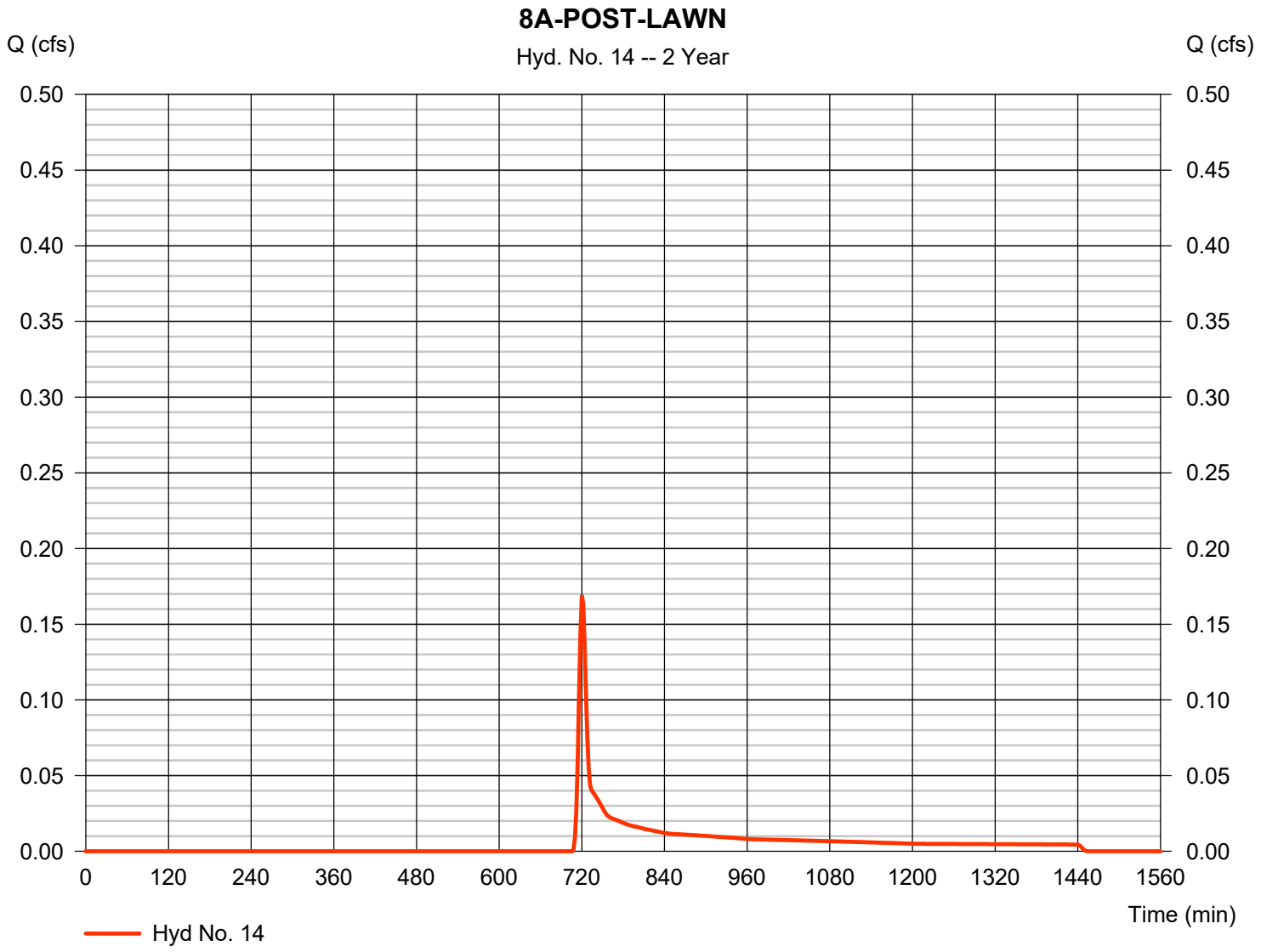
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 14

8A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.169 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 498 cuft
Drainage area	= 0.290 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



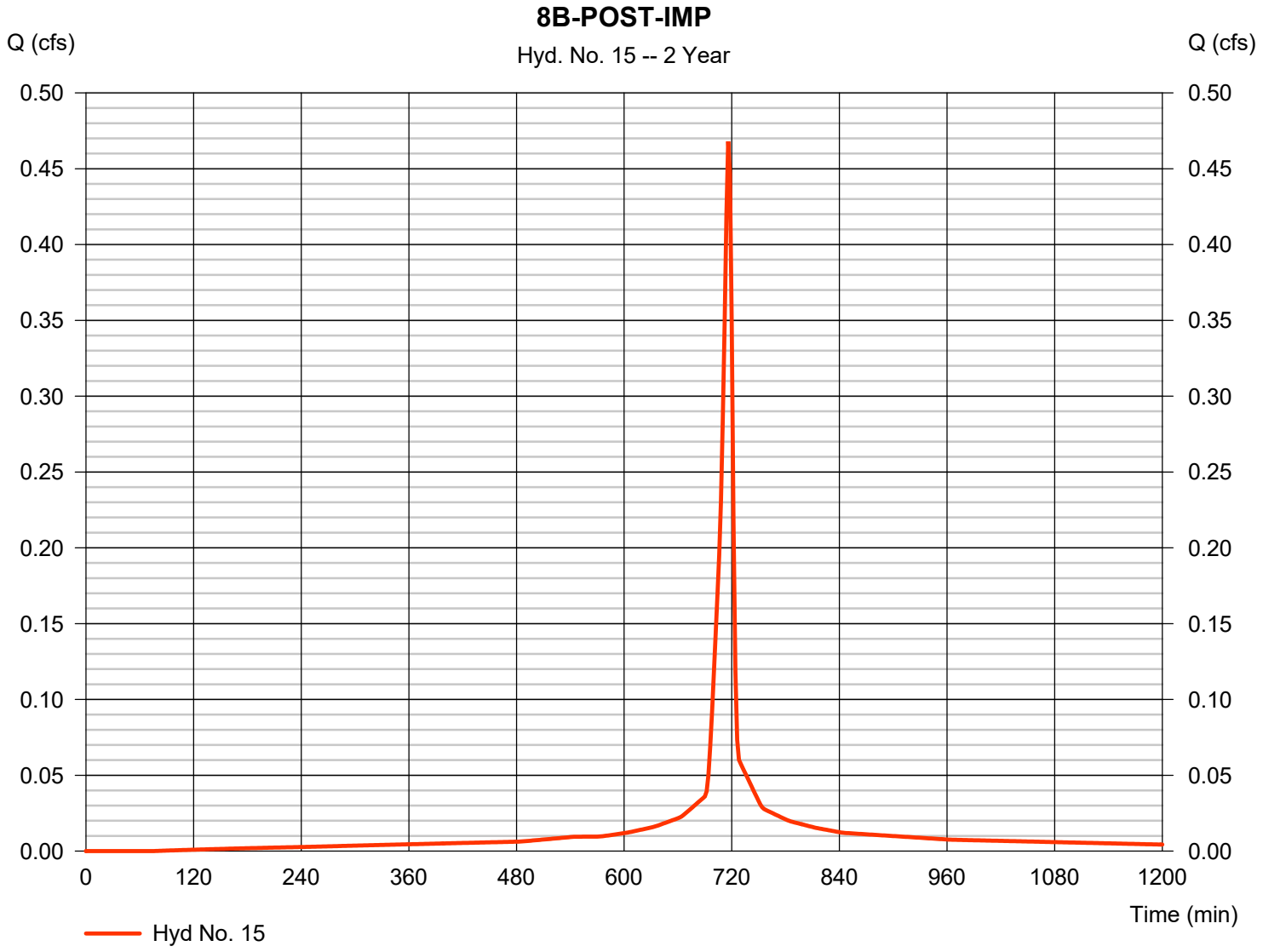
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 15

8B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.468 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,096 cuft
Drainage area	= 0.106 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



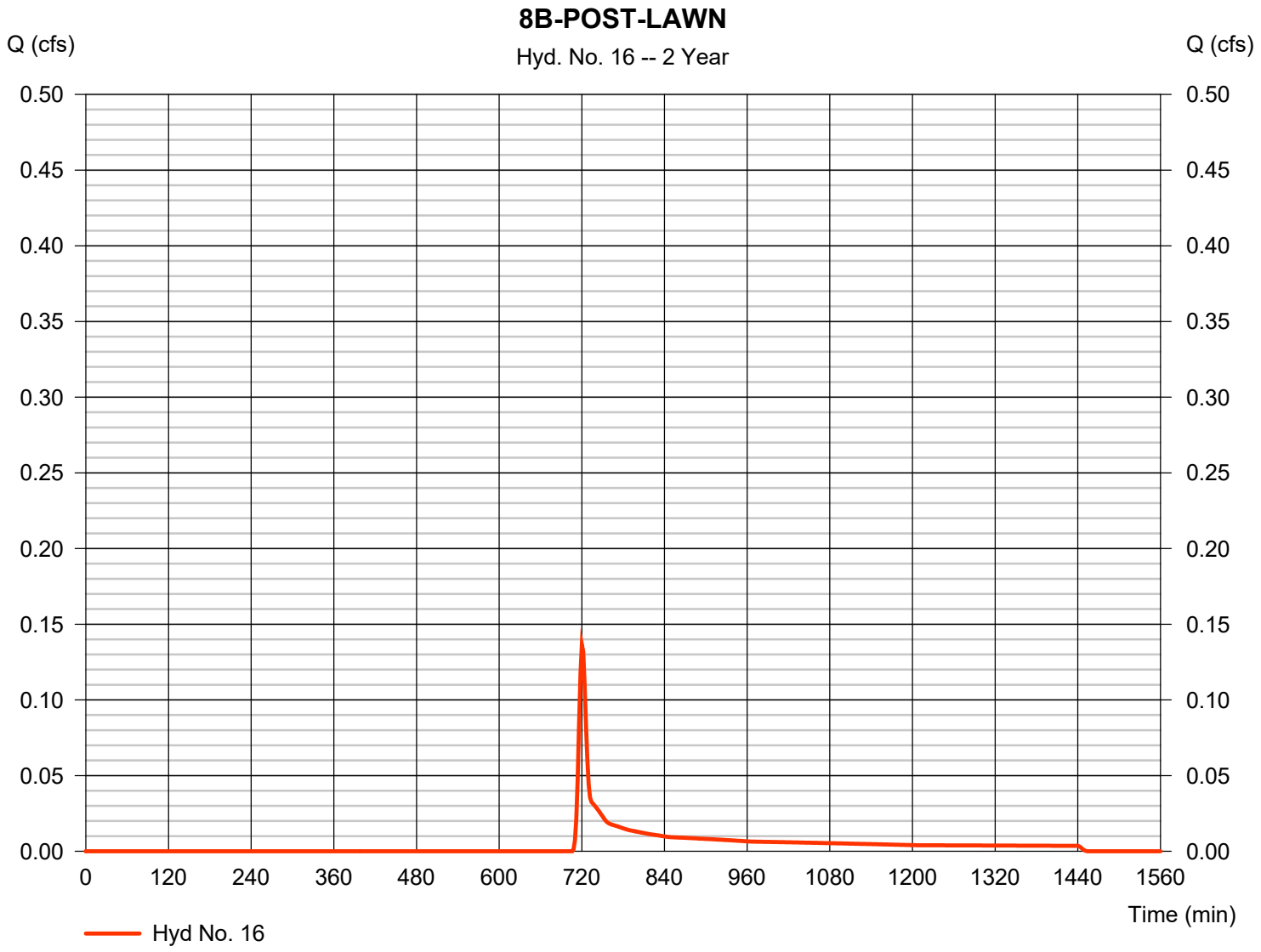
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 16

8B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.136 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 402 cuft
Drainage area	= 0.234 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



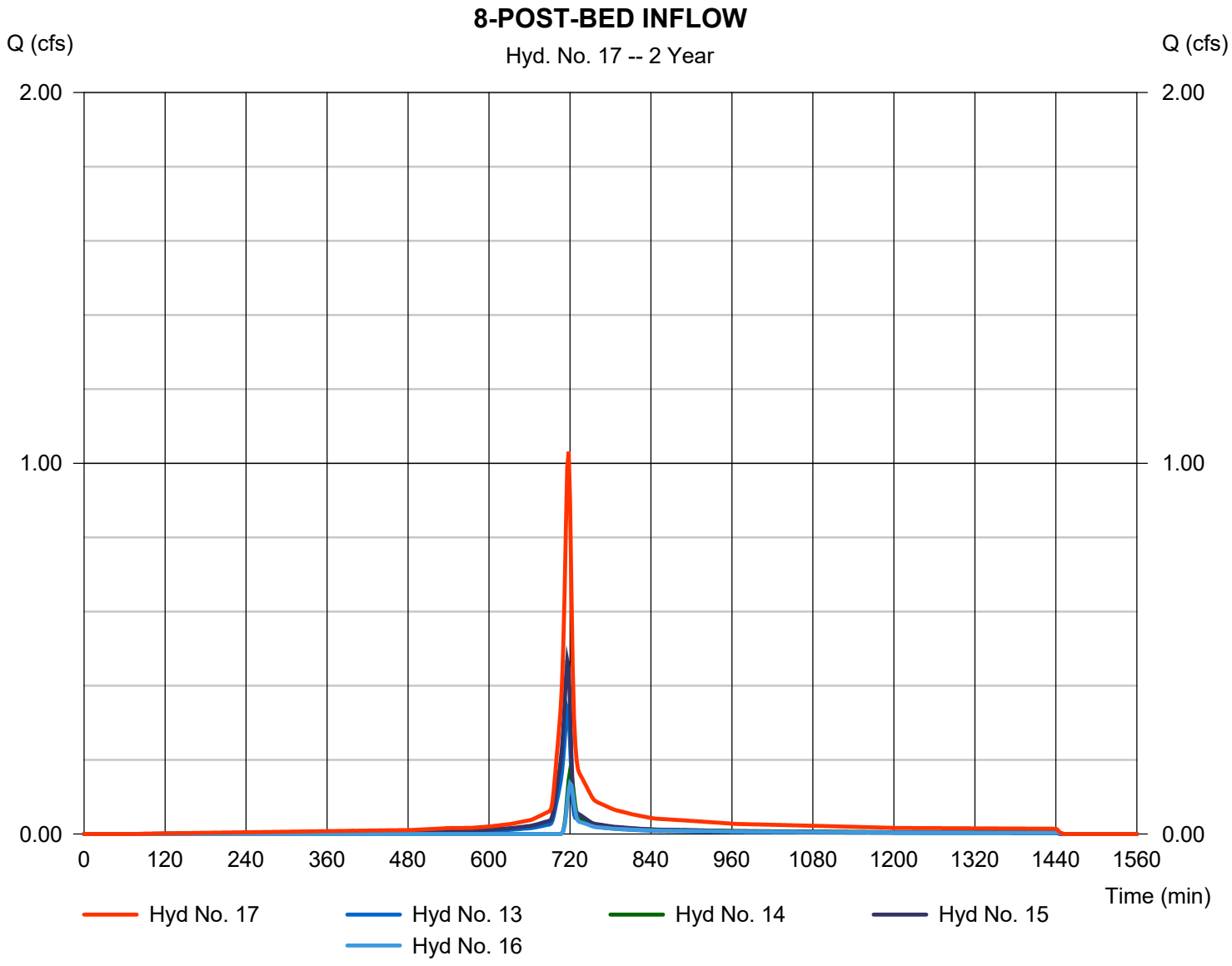
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 17

8-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 1.031 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,780 cuft
Inflow hyds.	= 13, 14, 15, 16	Contrib. drain. area	= 0.706 ac



Hydrograph Report

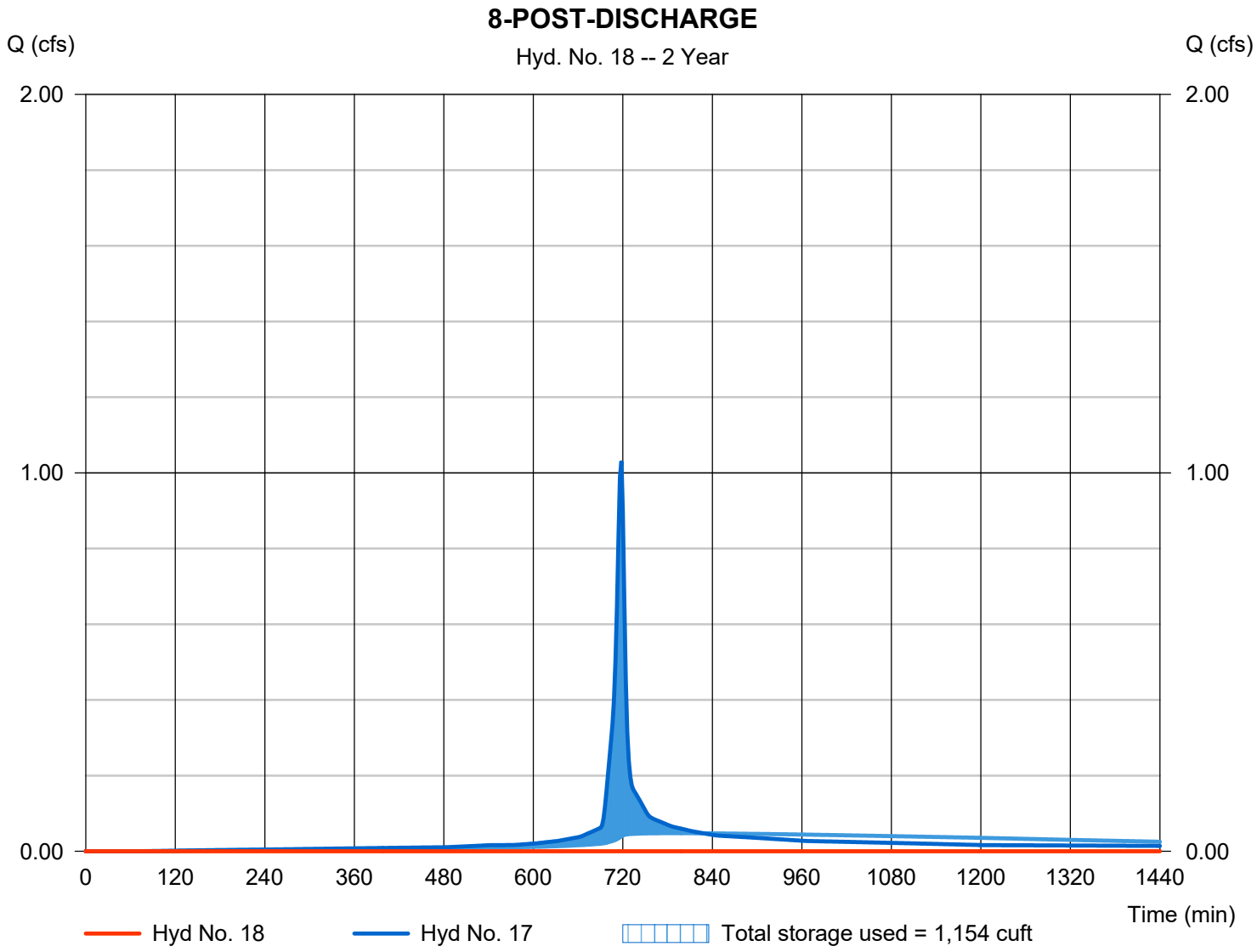
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 18

8-POST-DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	1390 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	17 - 8-POST-BED INFLOW	Max. Elevation	=	378.30 ft
Reservoir name	=	LOT 8 INFILTRATION BED	Max. Storage	=	1,154 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 3 - LOT 8 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 377.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 70.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	377.00	n/a	0	0
0.40	377.40	n/a	212	212
0.80	377.80	n/a	368	580
1.20	378.20	n/a	448	1,028
1.60	378.60	n/a	493	1,521
2.00	379.00	n/a	515	2,037
2.40	379.40	n/a	515	2,552
2.80	379.80	n/a	493	3,045
3.20	380.20	n/a	448	3,493
3.60	380.60	n/a	368	3,861
4.00	381.00	n/a	212	4,072

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 379.75	0.00	0.00	0.00
Length (ft)	= 51.60	0.00	0.00	0.00
Slope (%)	= 15.50	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

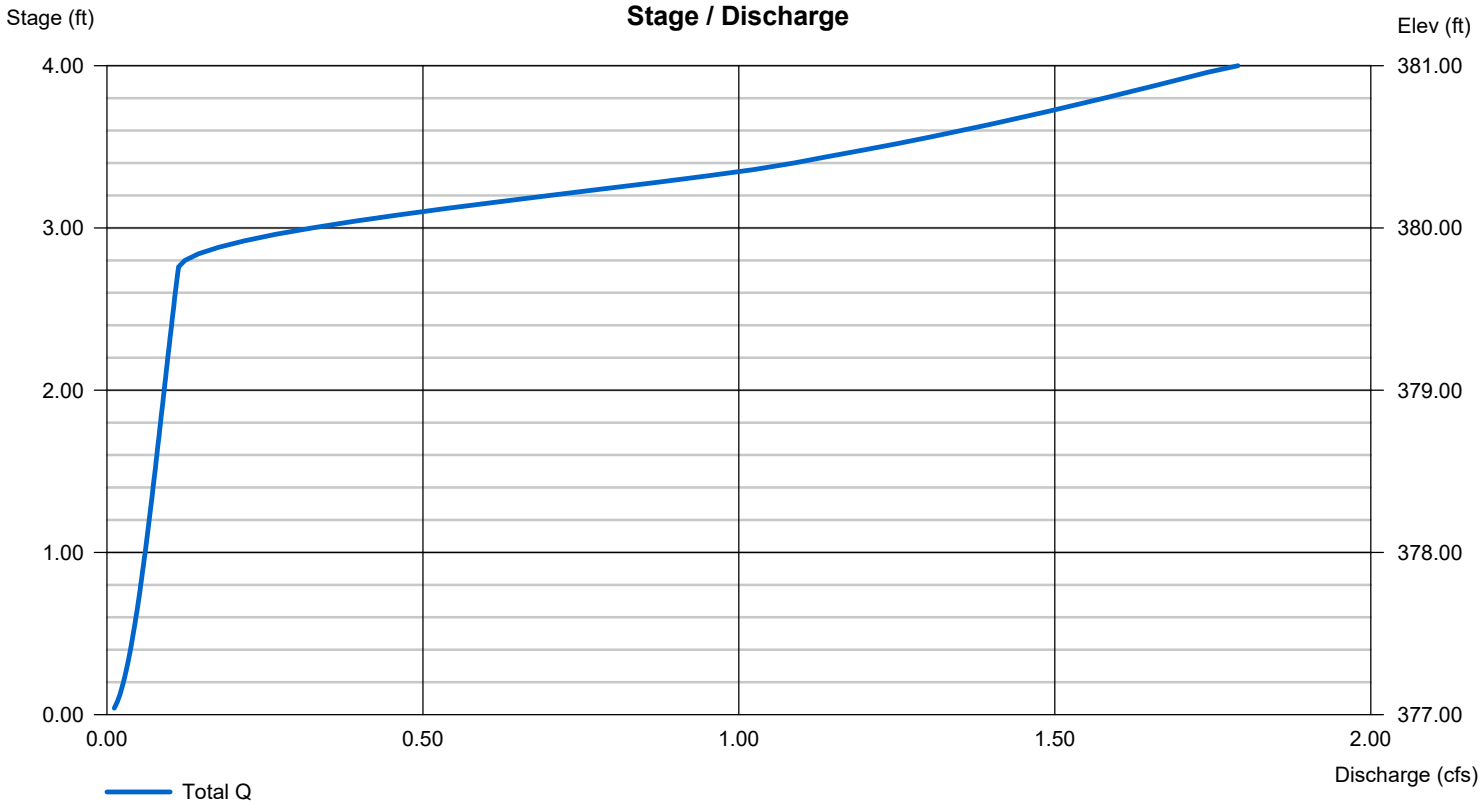
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.920 (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).



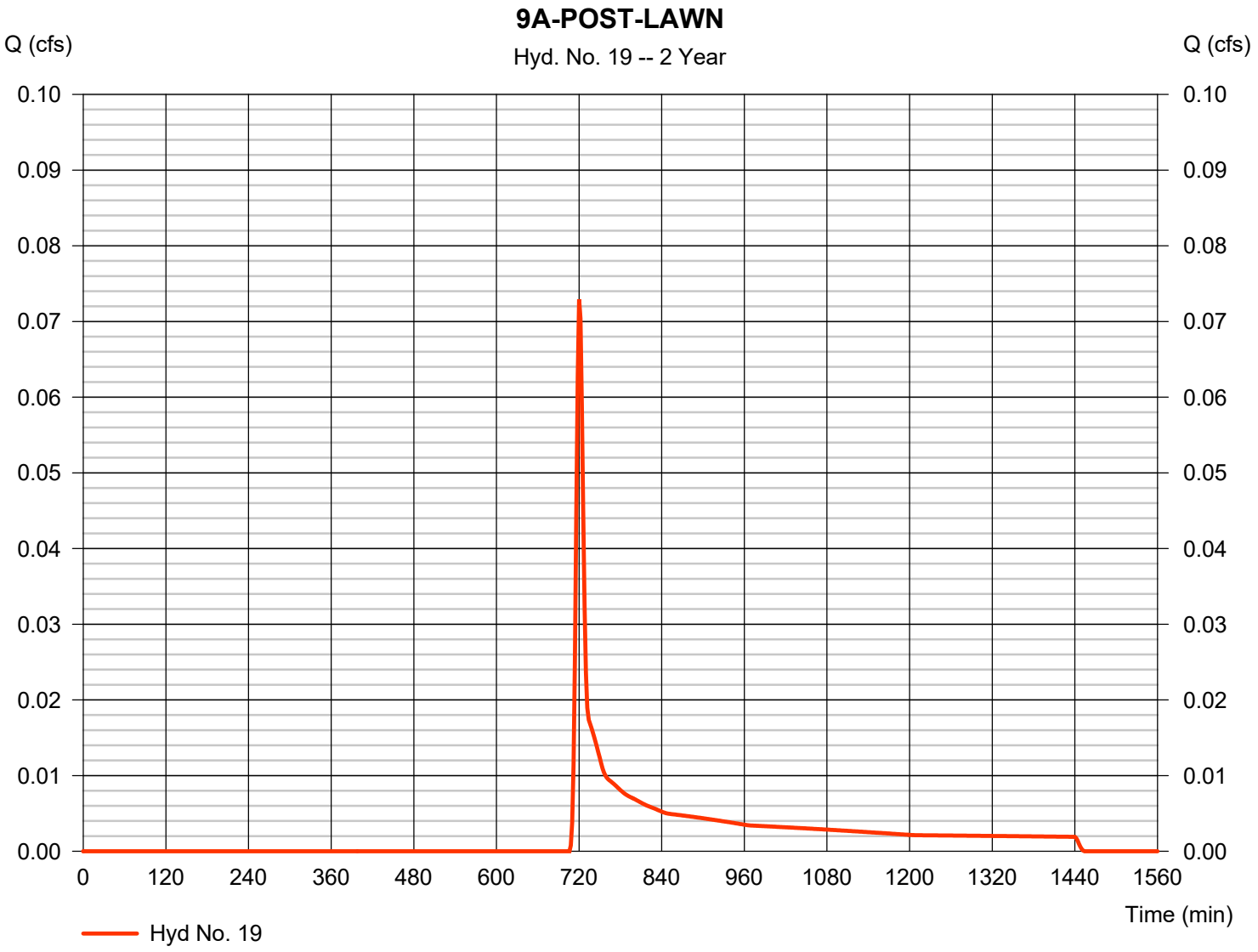
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 19

9A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.073 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 215 cuft
Drainage area	= 0.125 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



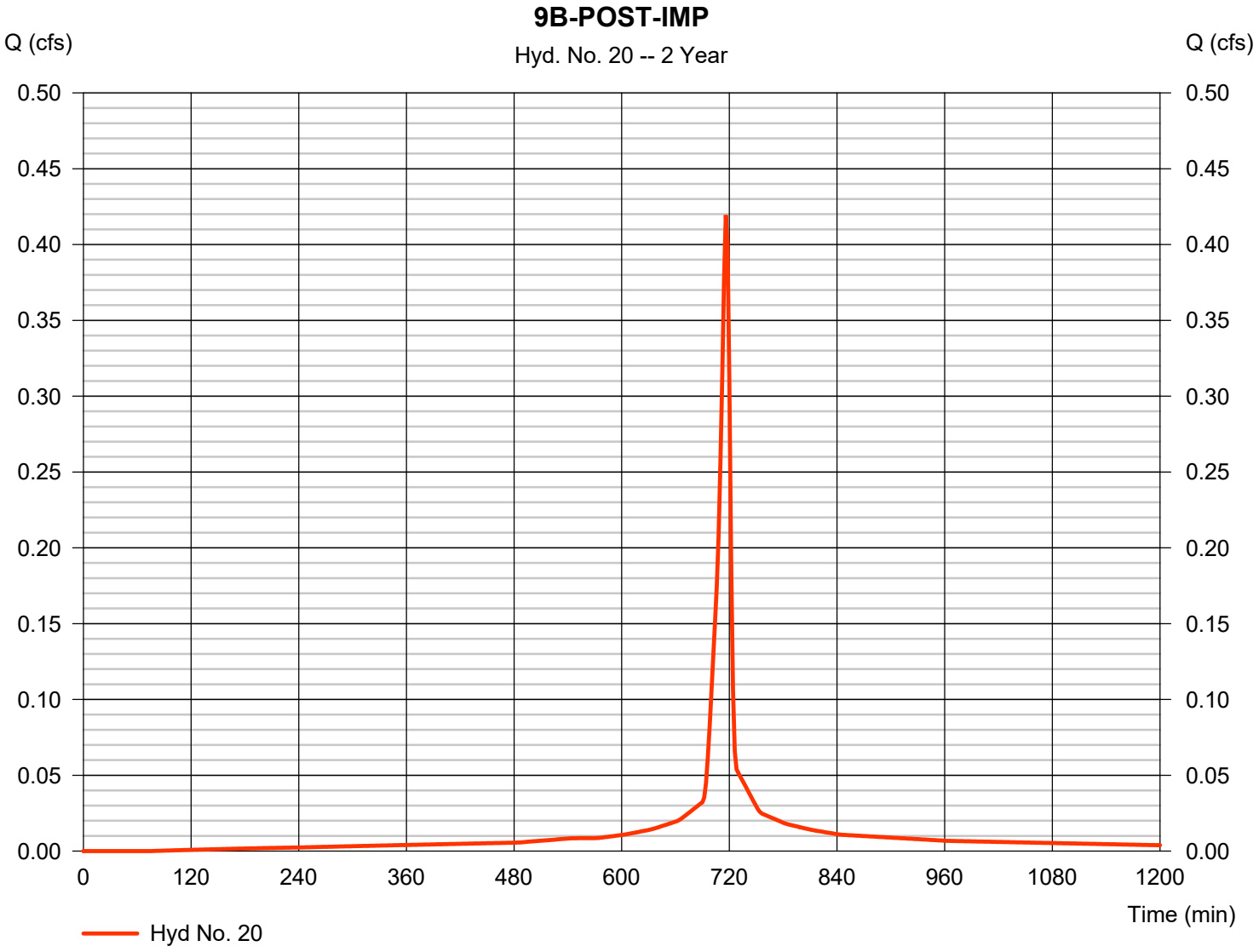
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 20

9B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.419 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 982 cuft
Drainage area	= 0.095 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



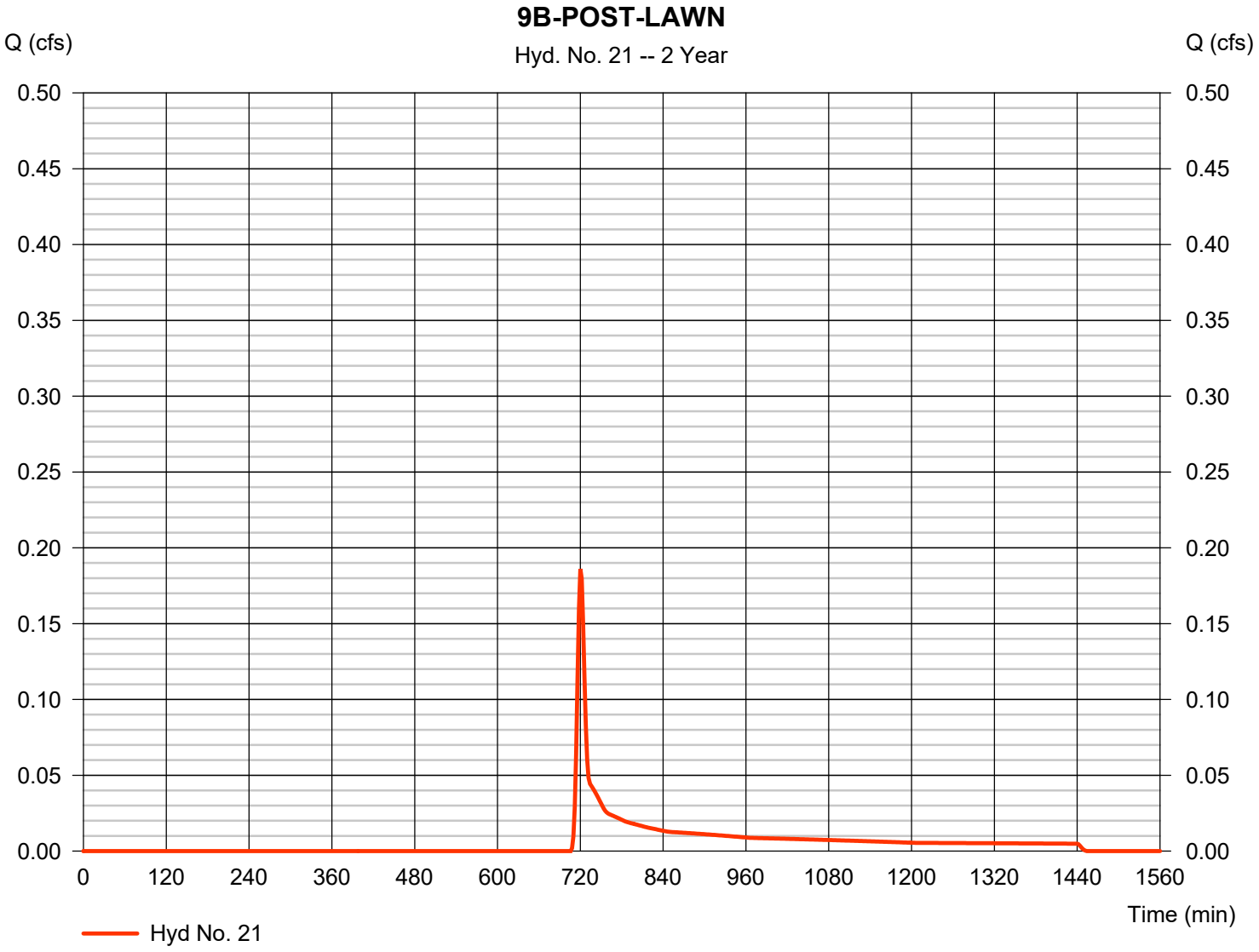
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 21

9B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.186 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 547 cuft
Drainage area	= 0.319 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



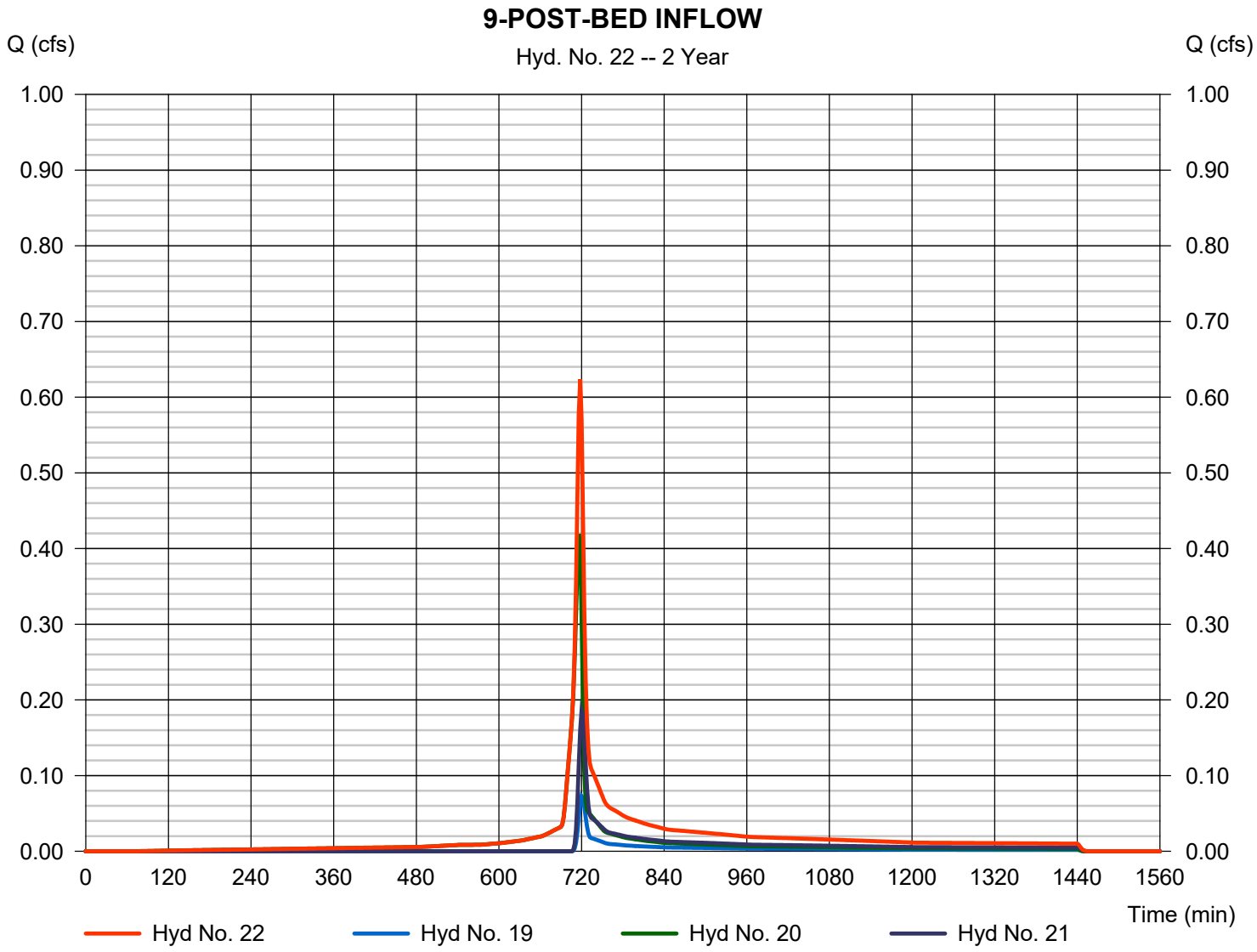
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 22

9-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.624 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,744 cuft
Inflow hyds.	= 19, 20, 21	Contrib. drain. area	= 0.539 ac



Hydrograph Report

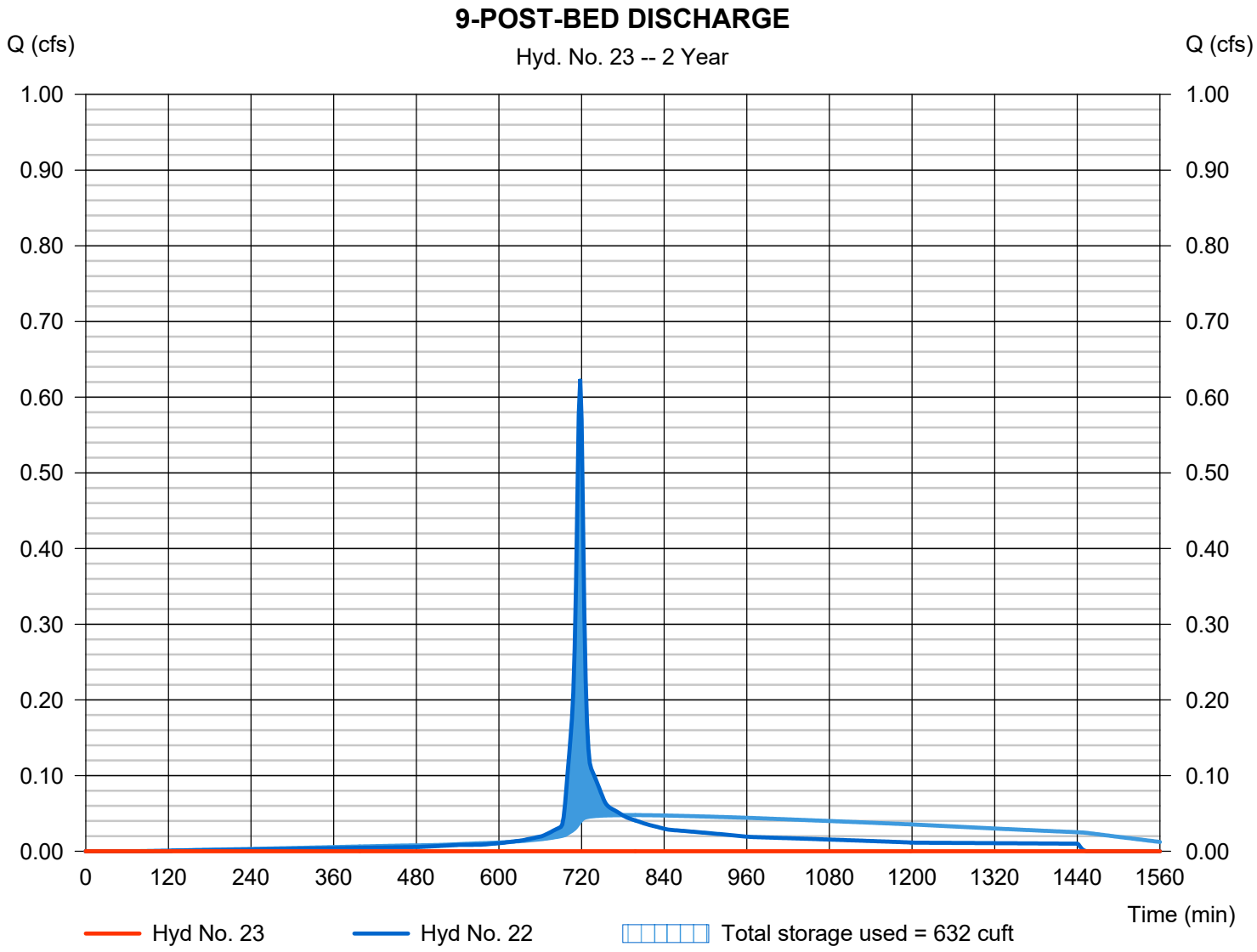
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 23

9-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	558 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	22 - 9-POST-BED INFLOW	Max. Elevation	=	371.14 ft
Reservoir name	=	LOT 9 INFILTRATION BED	Max. Storage	=	632 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 4 - LOT 9 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 370.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 60.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	370.00	n/a	0	0
0.40	370.40	n/a	139	139
0.80	370.80	n/a	241	380
1.20	371.20	n/a	293	673
1.60	371.60	n/a	323	995
2.00	372.00	n/a	337	1,333
2.40	372.40	n/a	337	1,670
2.80	372.80	n/a	323	1,992
3.20	373.20	n/a	293	2,285
3.60	373.60	n/a	241	2,526
4.00	374.00	n/a	138	2,665

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 373.00	0.00	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

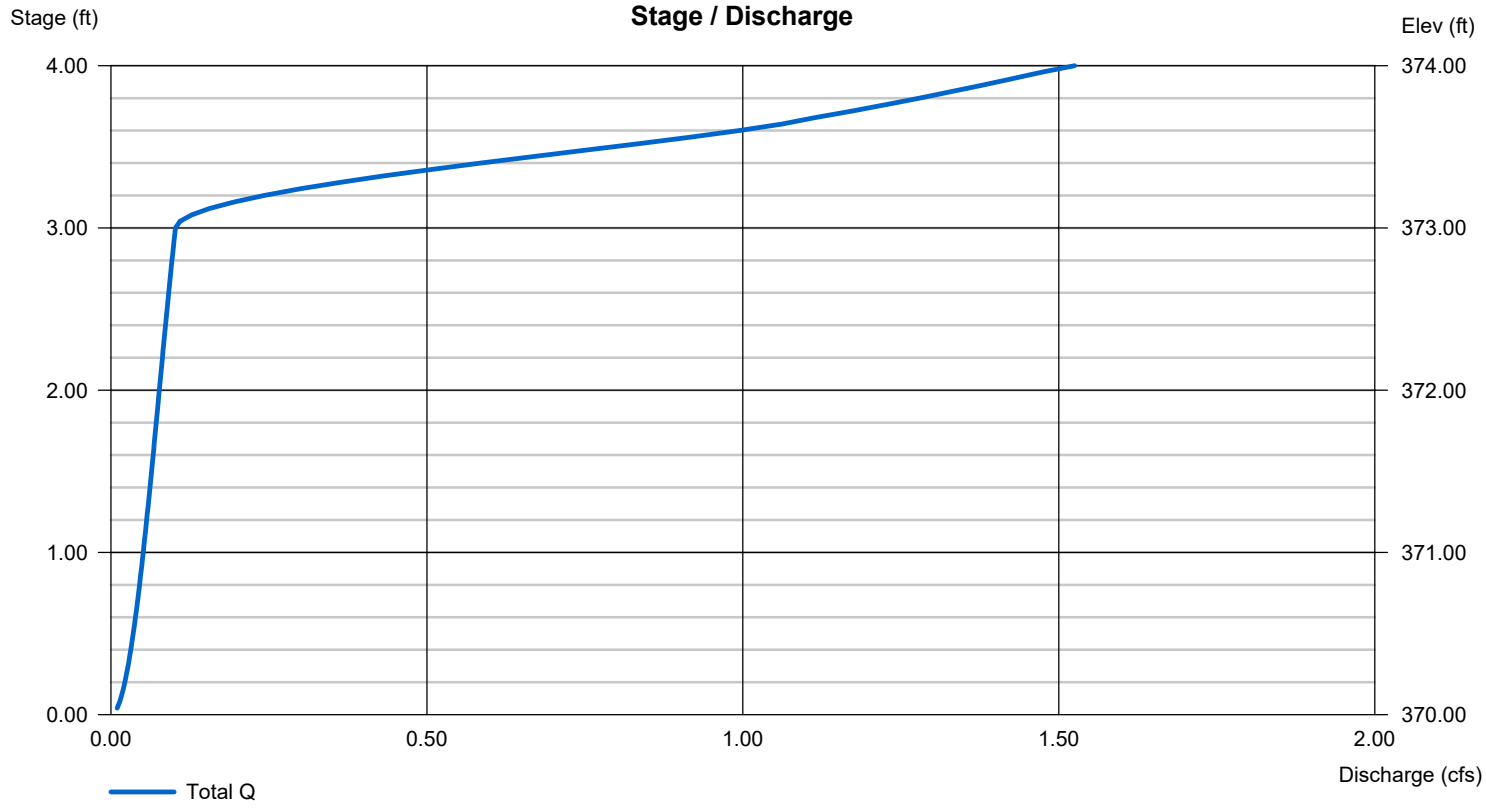
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.480 (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).



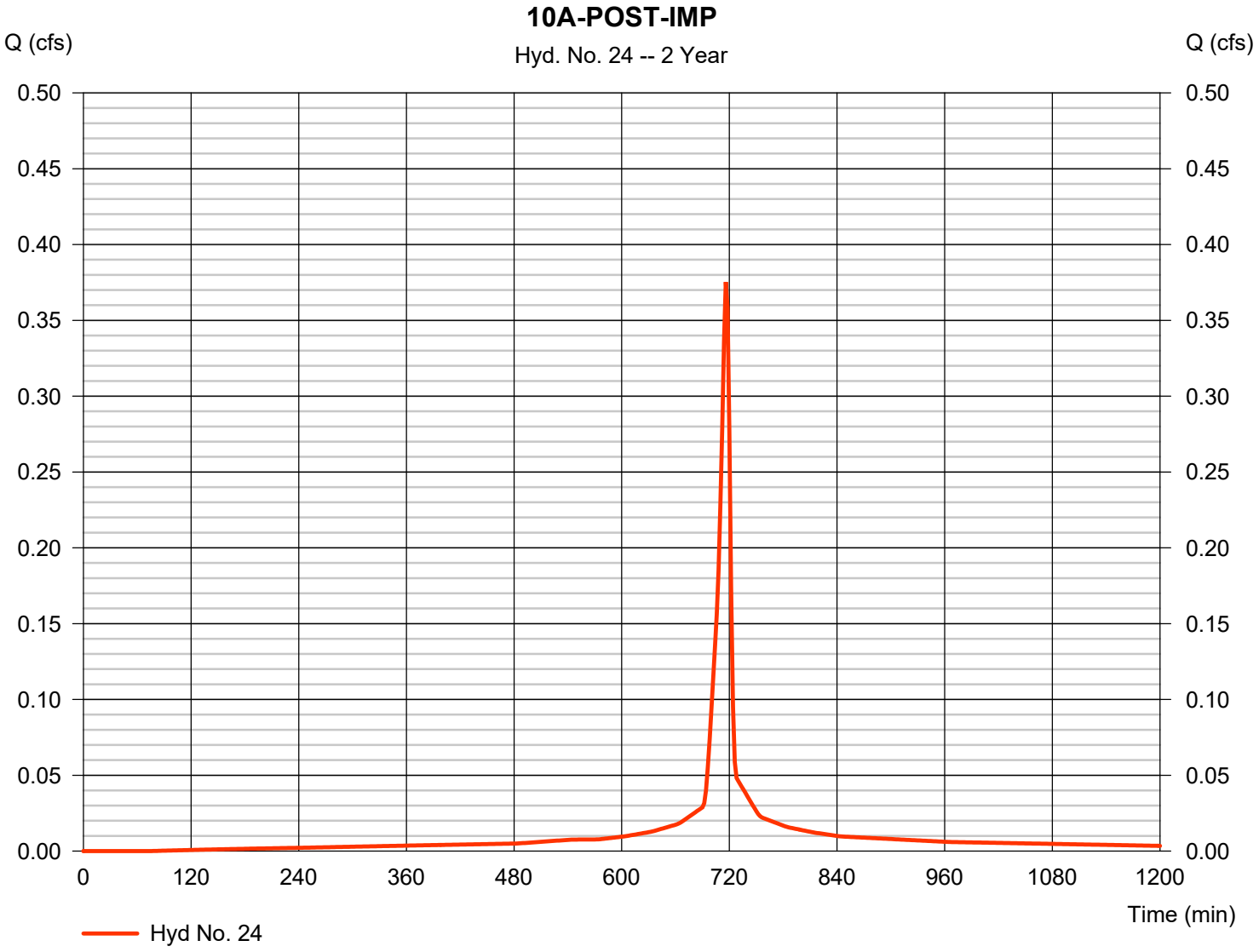
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 24

10A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.375 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 879 cuft
Drainage area	= 0.085 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



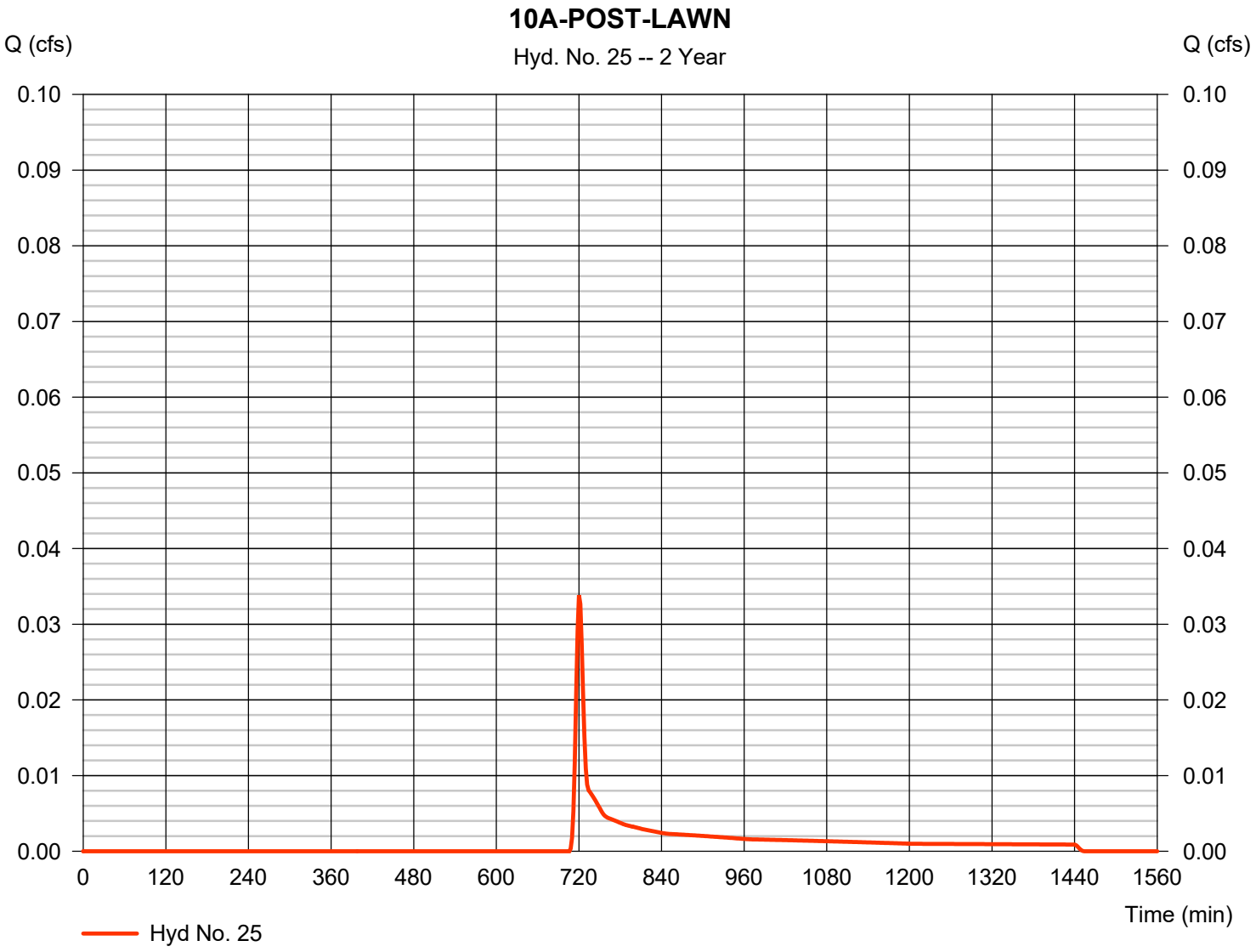
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 25

10A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.034 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 100 cuft
Drainage area	= 0.058 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



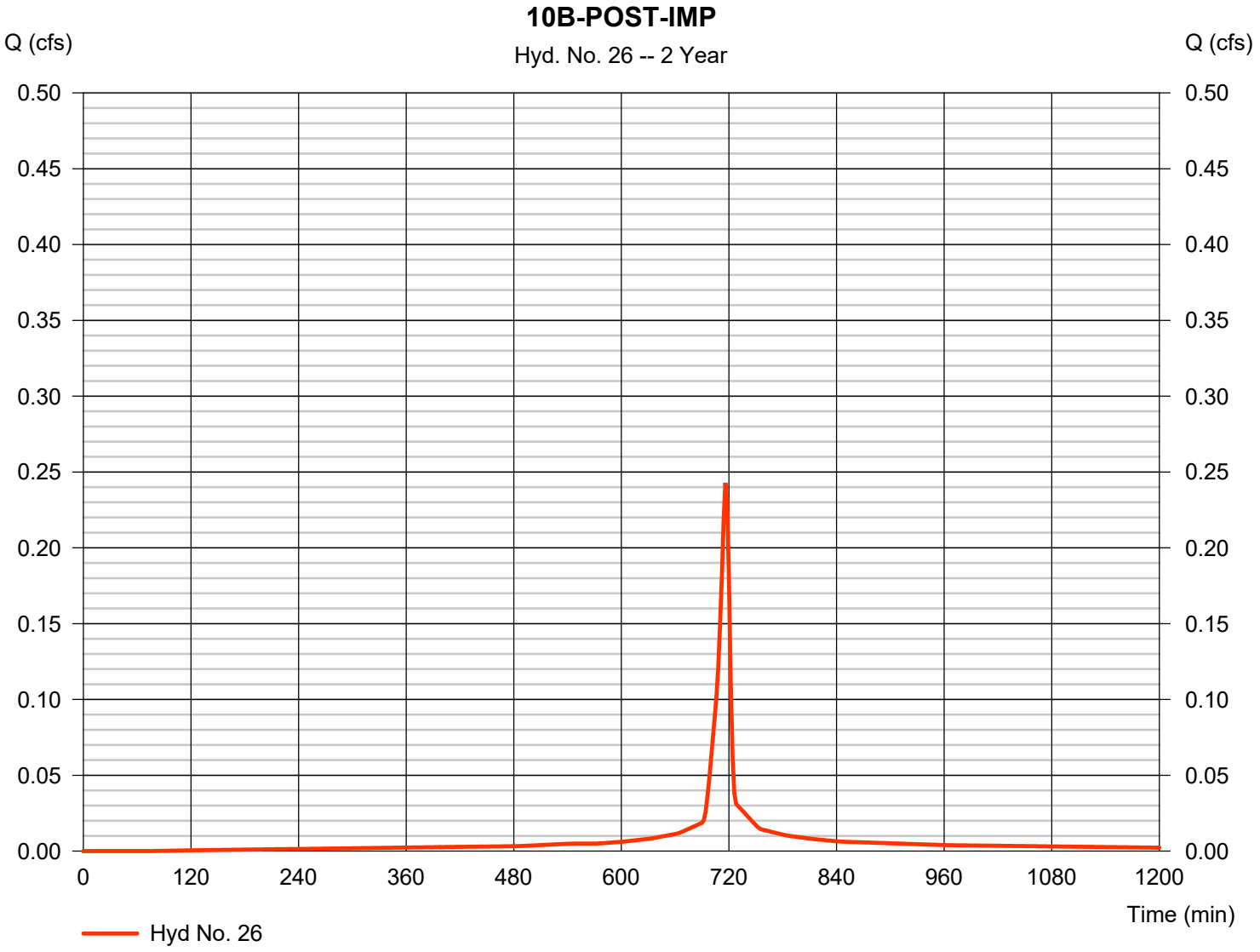
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 26

10B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.243 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 568 cuft
Drainage area	= 0.055 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



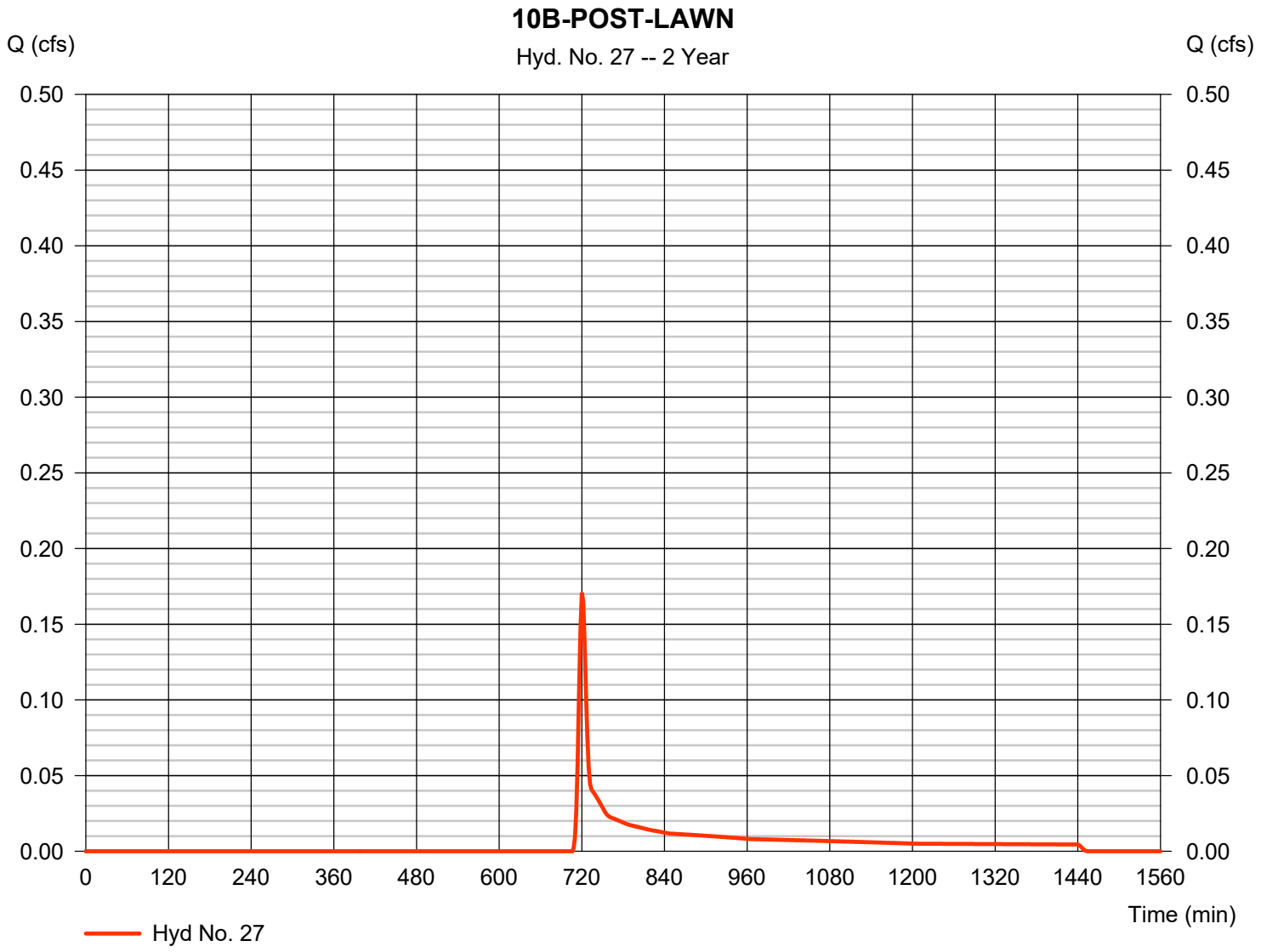
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 27

10B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.171 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 503 cuft
Drainage area	= 0.293 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



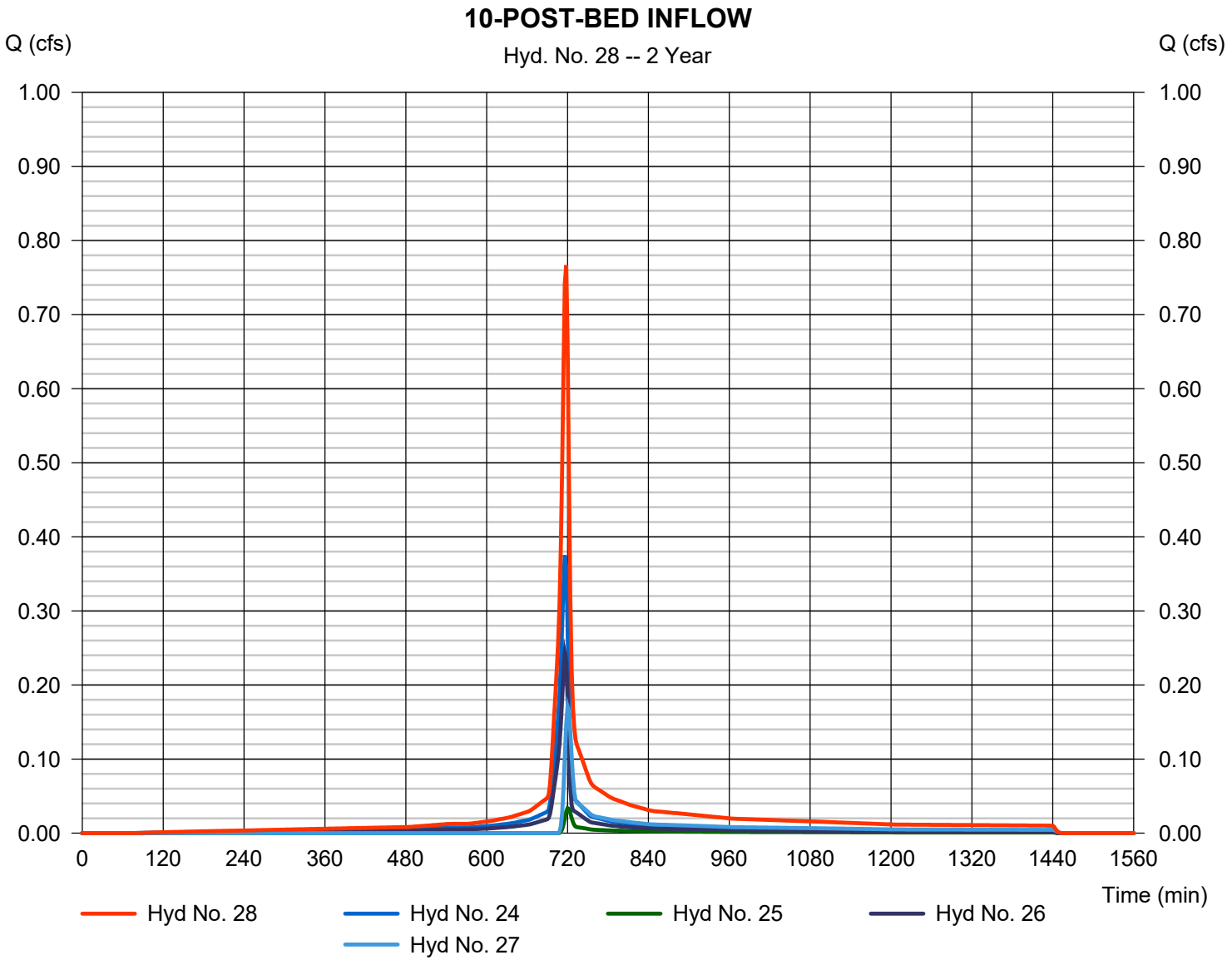
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 28

10-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.767 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,049 cuft
Inflow hyds.	= 24, 25, 26, 27	Contrib. drain. area	= 0.491 ac



Hydrograph Report

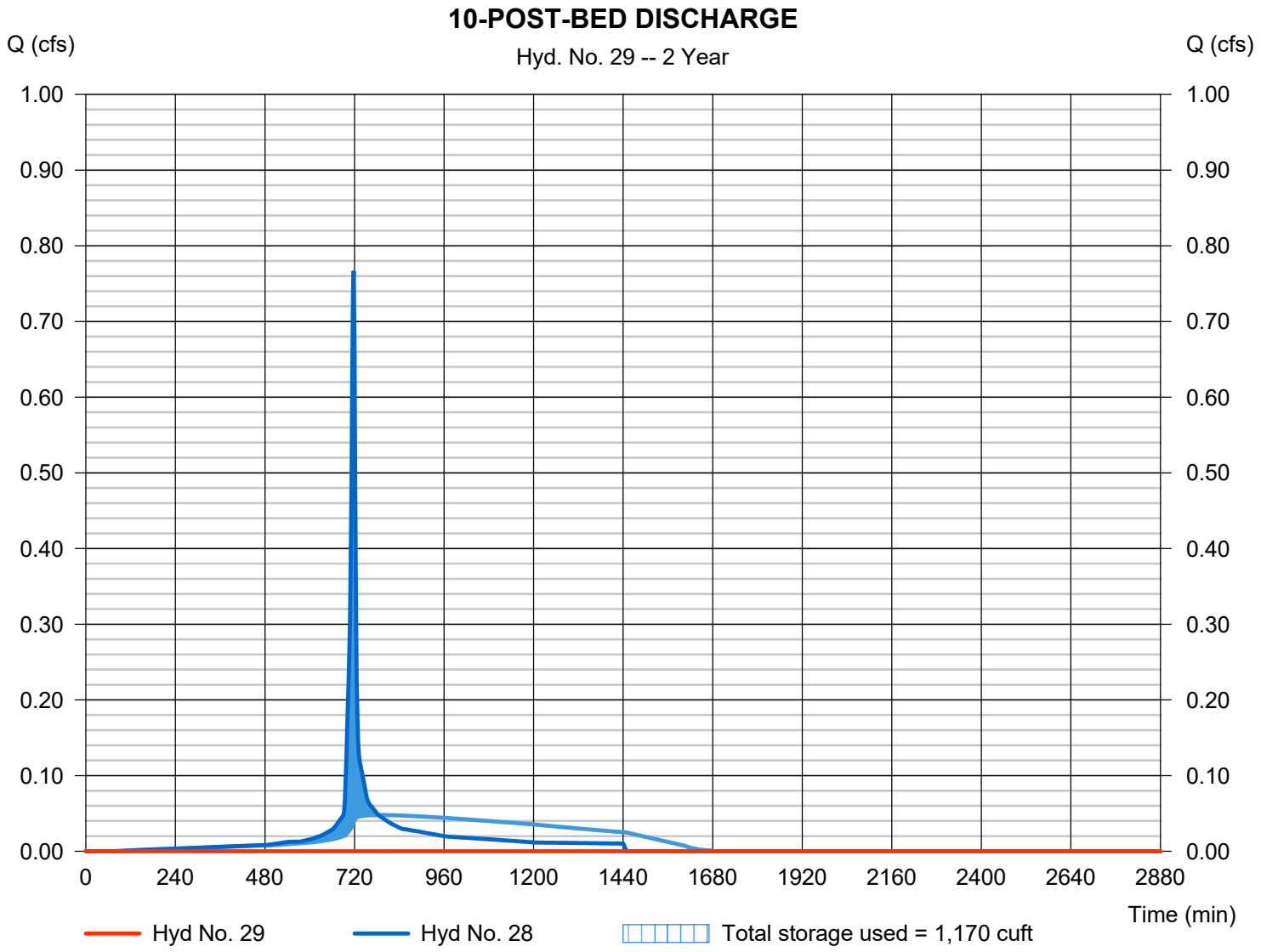
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 29

10-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	226 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	28 - 10-POST-BED INFLOW	Max. Elevation	=	370.64 ft
Reservoir name	=	LOT 10 INFILTRATION BED	Max. Storage	=	1,170 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 5 - LOT 10 INFILTRATION BED

Pond Data

UG Chambers -Invert elev. = 369.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 70.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	369.00	n/a	0	0
0.40	369.40	n/a	158	158
0.80	369.80	n/a	275	433
1.20	370.20	n/a	334	768
1.60	370.60	n/a	368	1,136
2.00	371.00	n/a	385	1,521
2.40	371.40	n/a	385	1,906
2.80	371.80	n/a	368	2,274
3.20	372.20	n/a	334	2,609
3.60	372.60	n/a	275	2,884
4.00	373.00	n/a	158	3,042

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 371.75	0.00	0.00	0.00
Length (ft)	= 10.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

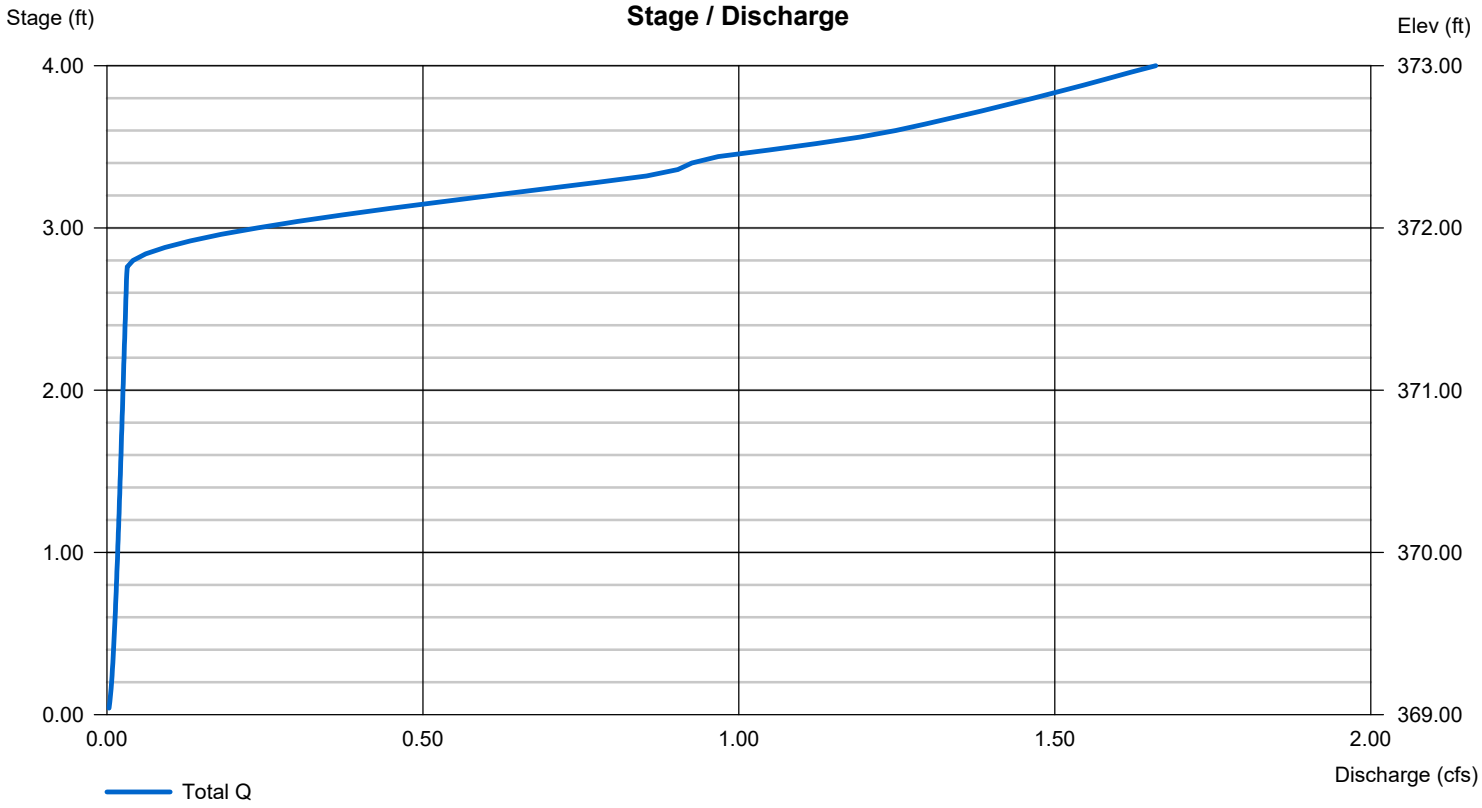
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.720 (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).



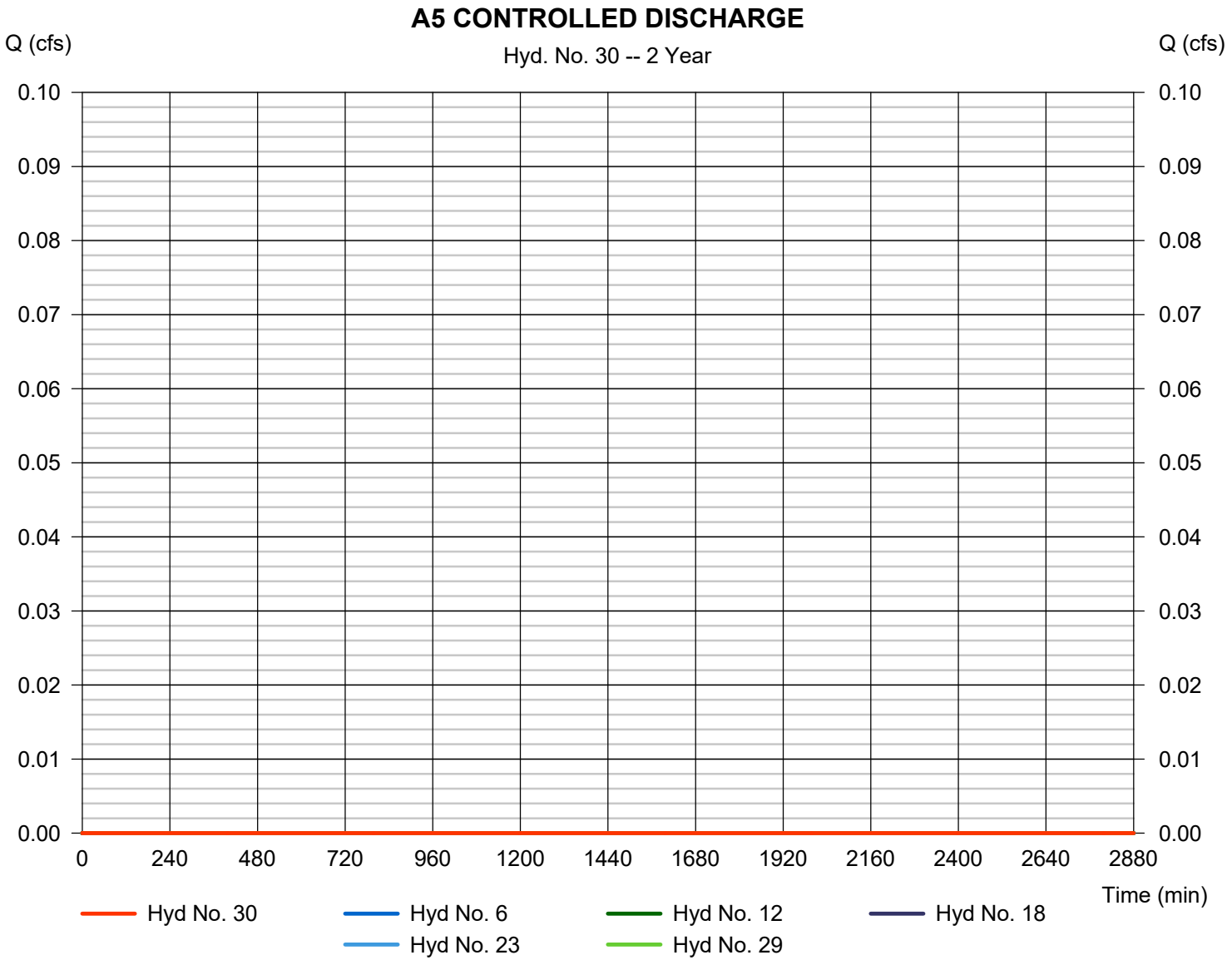
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 30

A5 CONTROLLED DISCHARGE

Hydrograph type	= Combine	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 1390 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyds.	= 6, 12, 18, 23, 29	Contrib. drain. area	= 0.000 ac



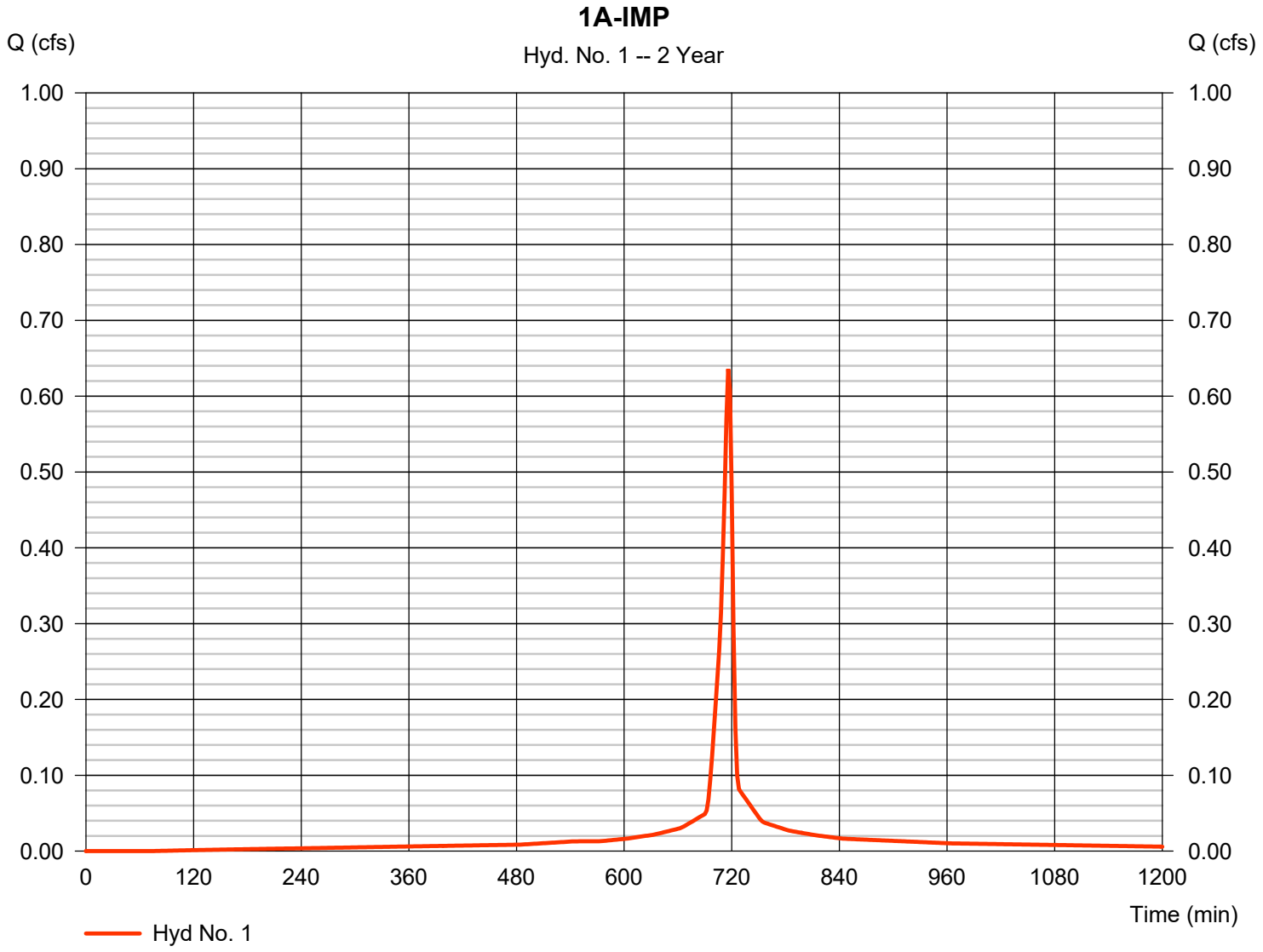
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 1

1A-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.636 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,488 cuft
Drainage area	= 0.144 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



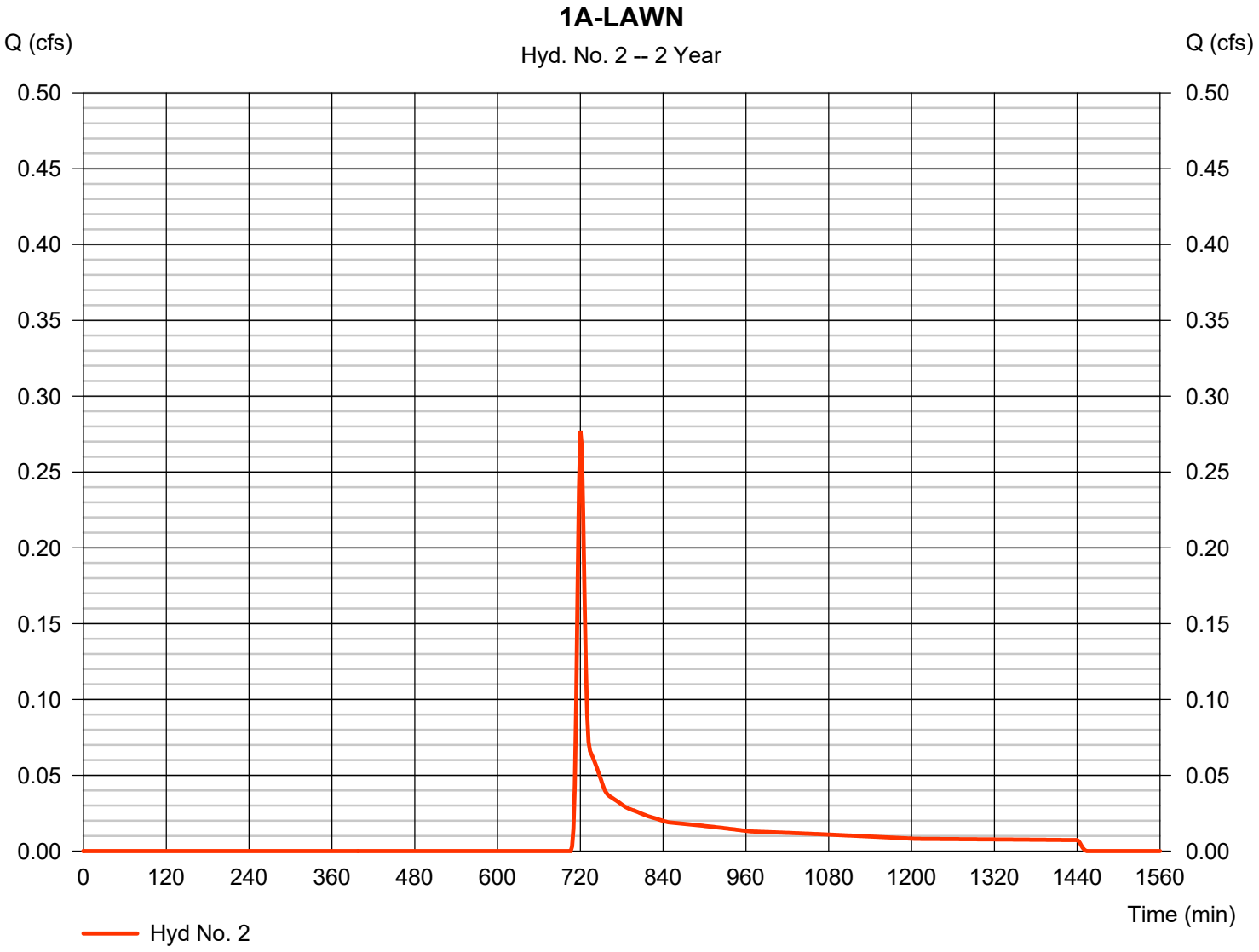
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 2

1A-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.277 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 815 cuft
Drainage area	= 0.475 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



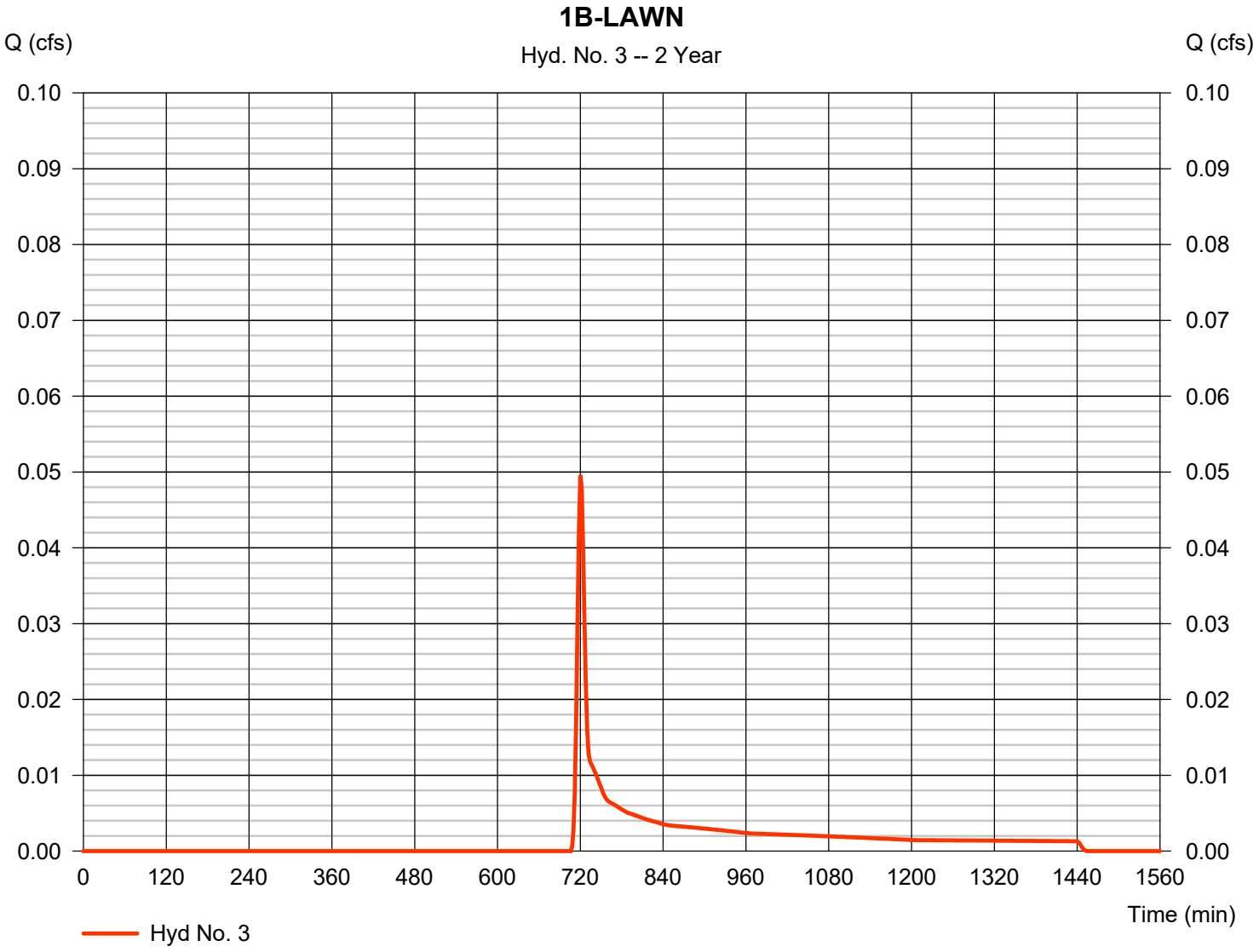
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 3

1B-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.050 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 146 cuft
Drainage area	= 0.085 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



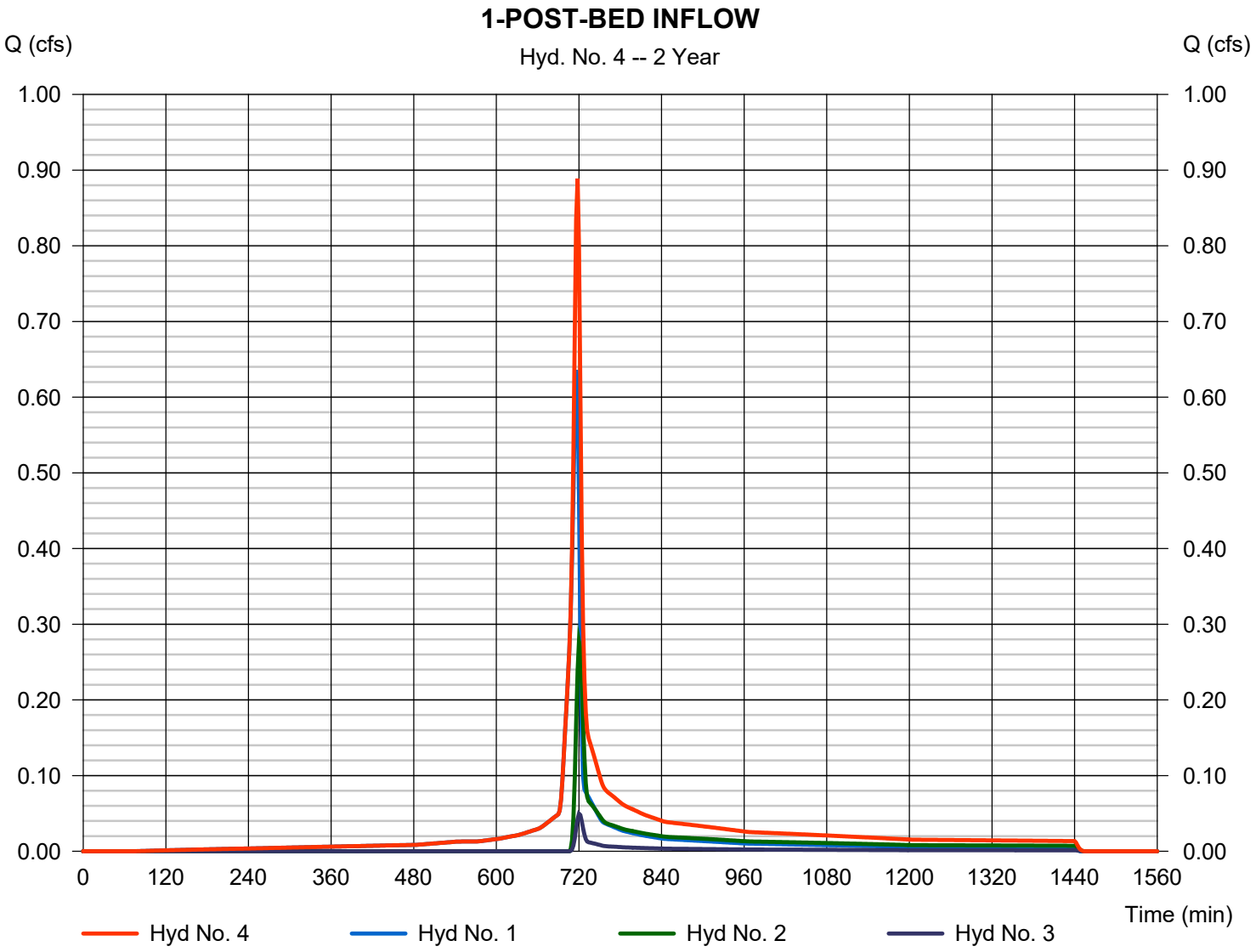
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 4

1-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.889 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,449 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.704 ac



Hydrograph Report

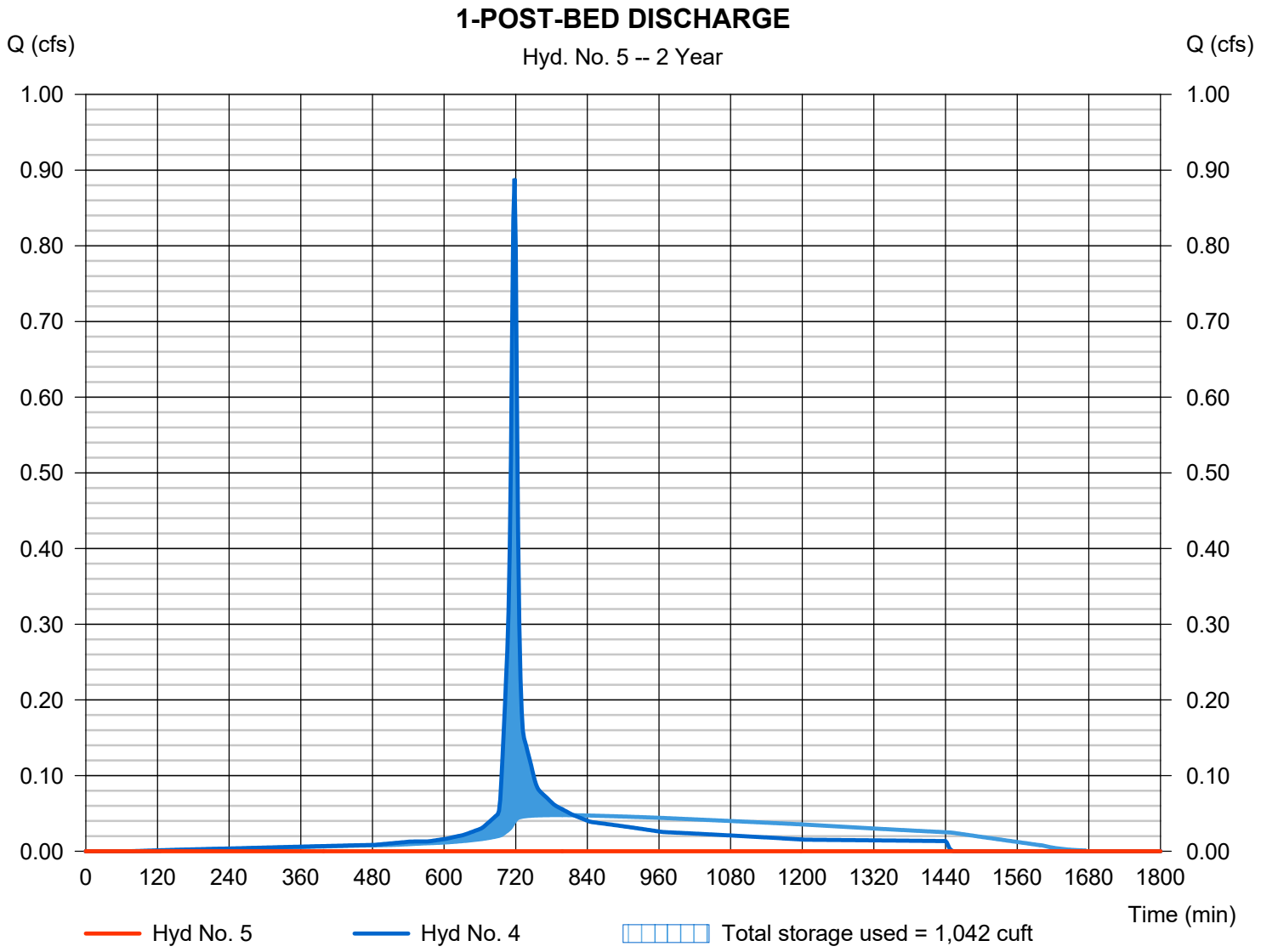
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 5

1-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	450 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	4 - 1-POST-BED INFLOW	Max. Elevation	=	352.27 ft
Reservoir name	=	LOT 1 INFILTRATION BASIN	Max. Storage	=	1,042 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 1 - LOT 1 INFILTRATION BASIN

Pond Data

UG Chambers -Invert elev. = 351.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 65.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	351.00	n/a	0	0
0.40	351.40	n/a	199	199
0.80	351.80	n/a	345	544
1.20	352.20	n/a	420	965
1.60	352.60	n/a	463	1,427
2.00	353.00	n/a	484	1,911
2.40	353.40	n/a	484	2,394
2.80	353.80	n/a	463	2,857
3.20	354.20	n/a	420	3,277
3.60	354.60	n/a	345	3,622
4.00	355.00	n/a	199	3,821

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 353.75	0.00	0.00	0.00
Length (ft)	= 10.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

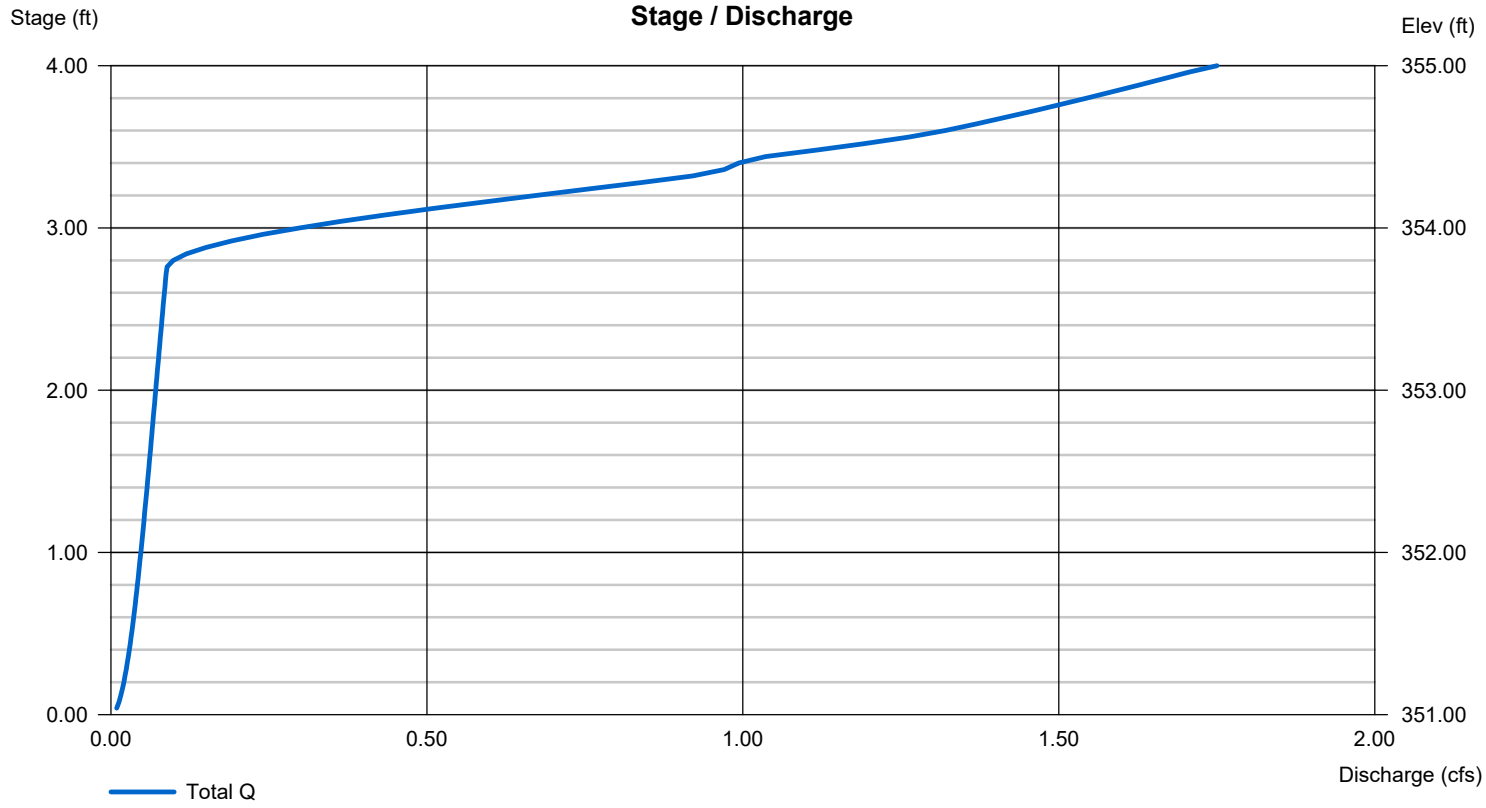
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.600 (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).



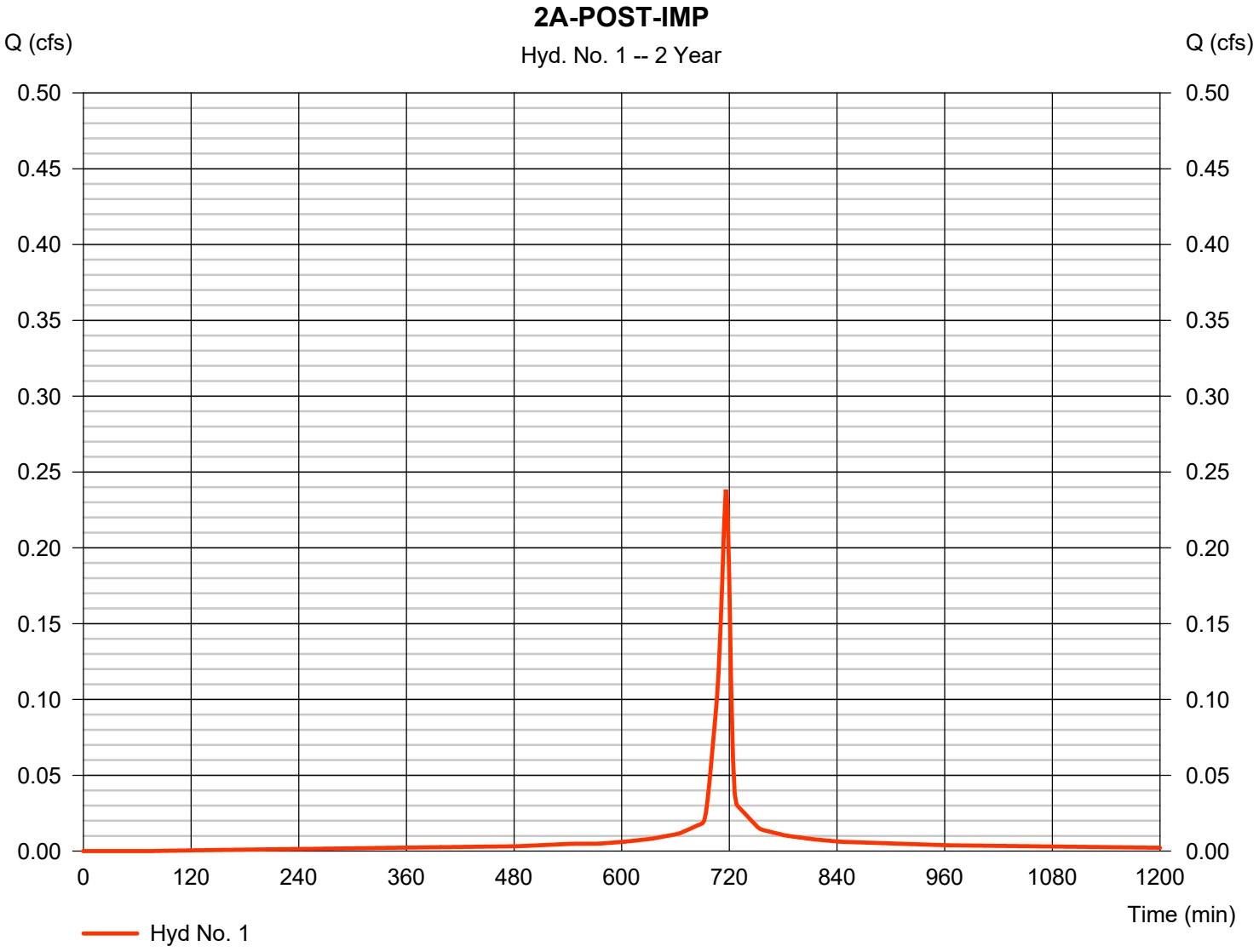
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 1

2A-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.238 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 558 cuft
Drainage area	= 0.054 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



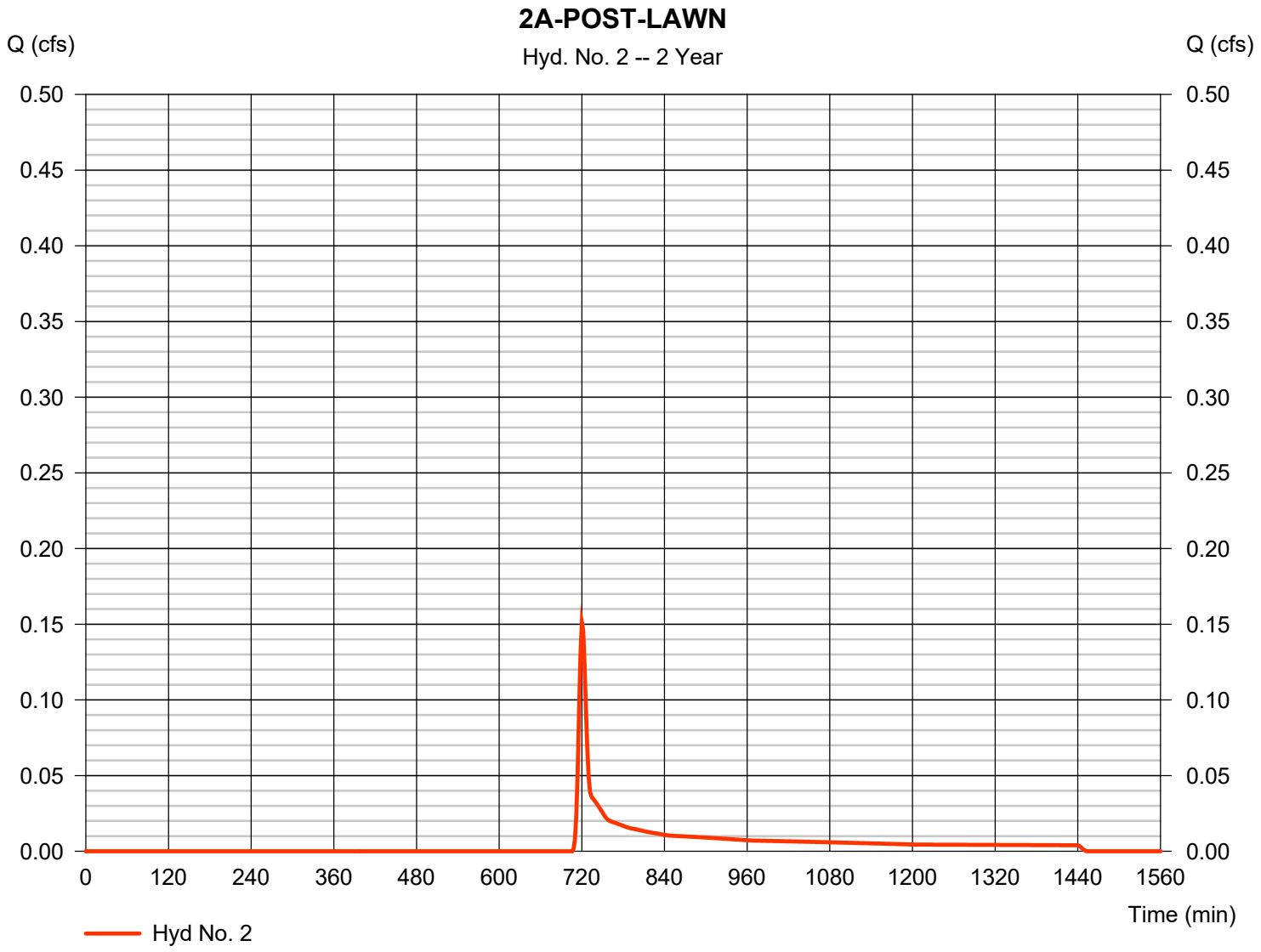
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 2

2A-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.151 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 445 cuft
Drainage area	= 0.259 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



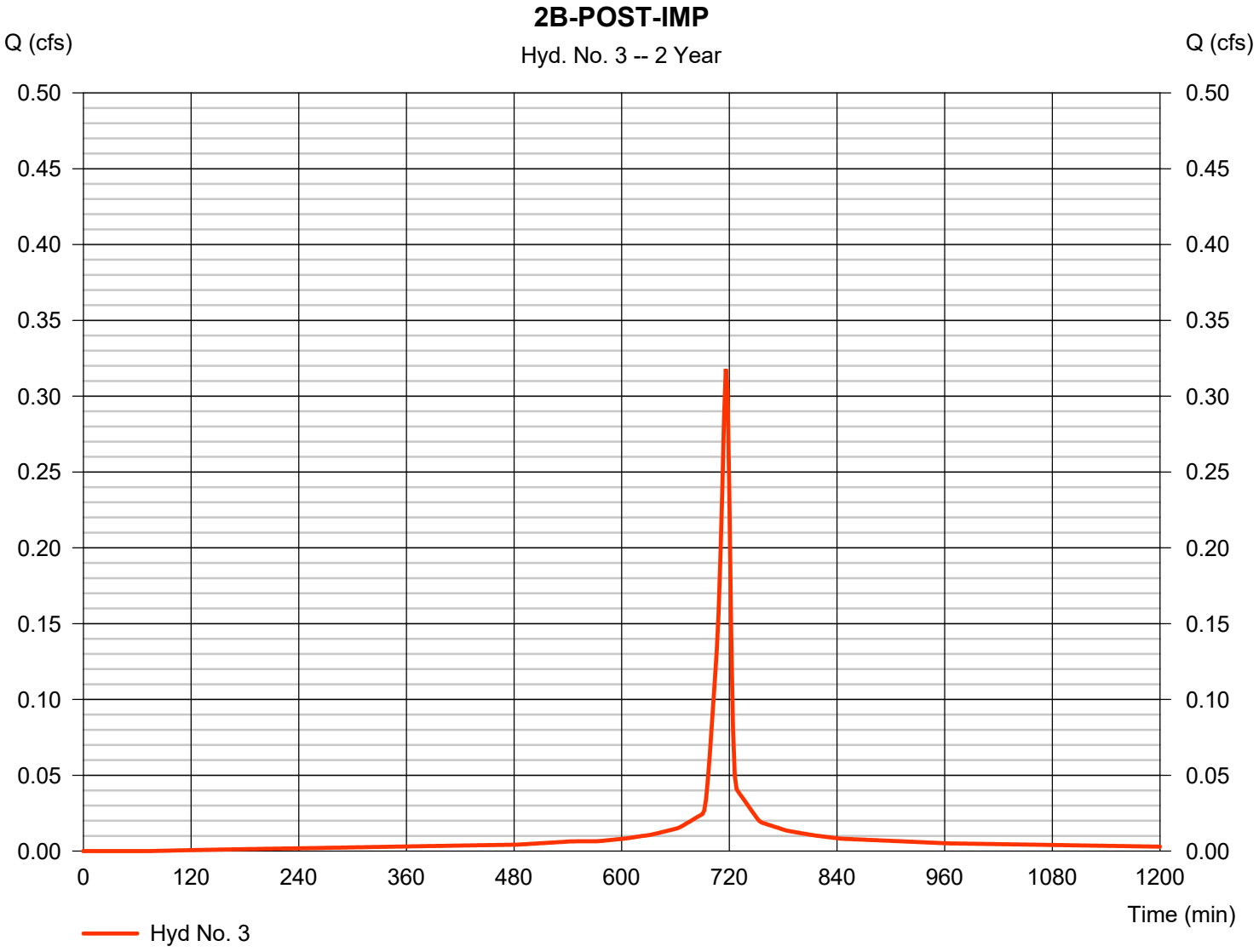
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 3

2B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.318 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 744 cuft
Drainage area	= 0.072 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



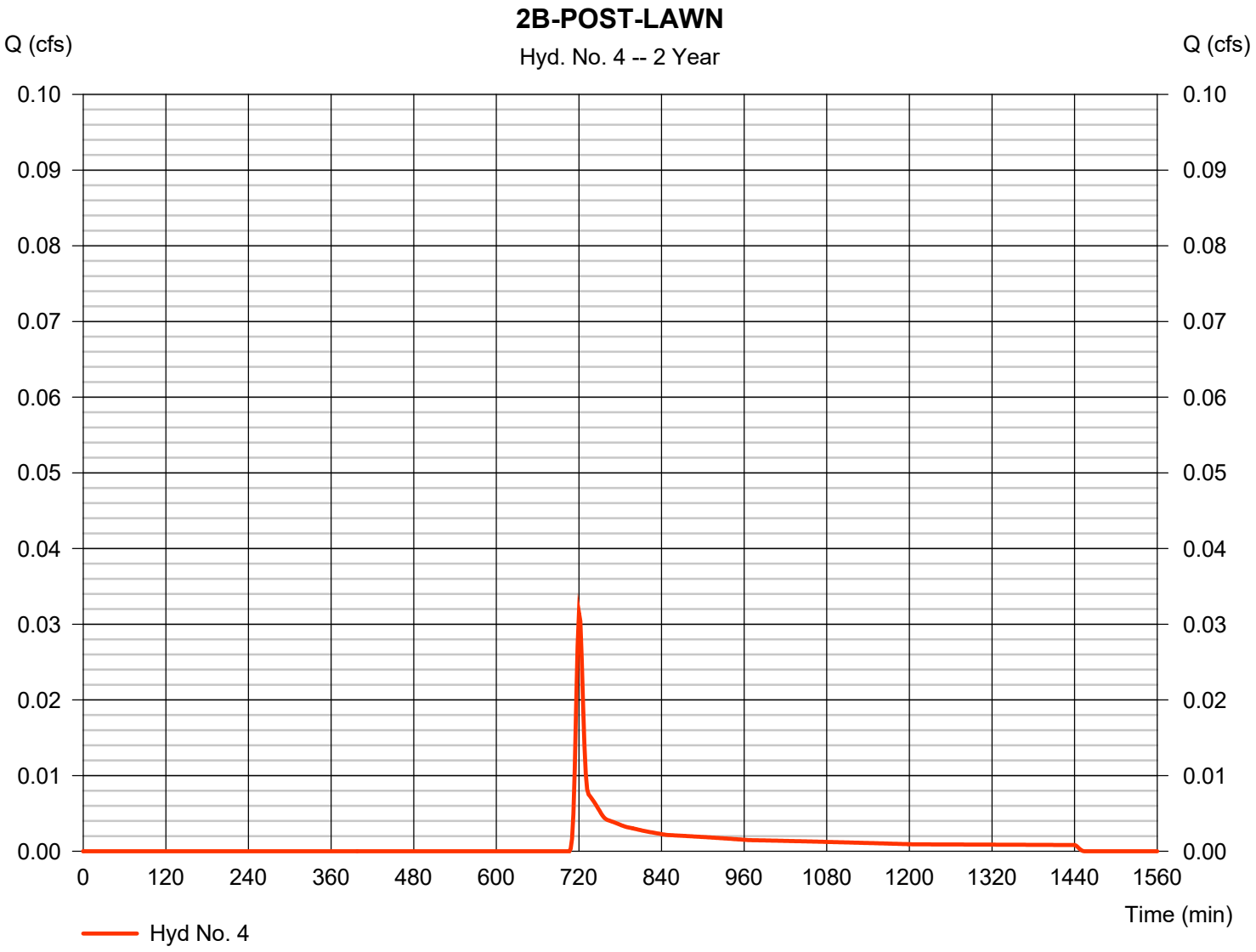
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 4

2B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.031 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 93 cuft
Drainage area	= 0.054 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



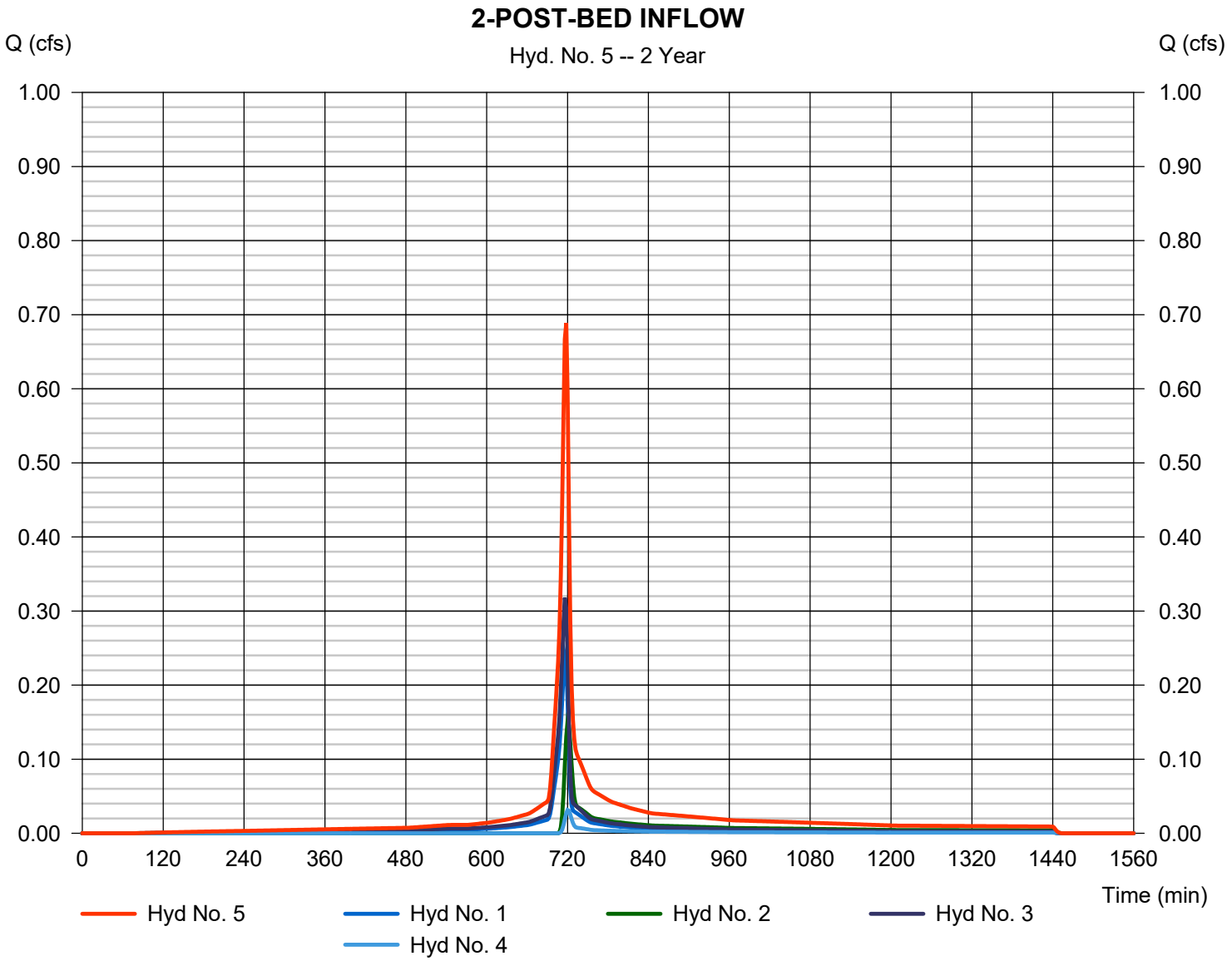
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 5

2-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.689 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,840 cuft
Inflow hyds.	= 1, 2, 3, 4	Contrib. drain. area	= 0.439 ac



Hydrograph Report

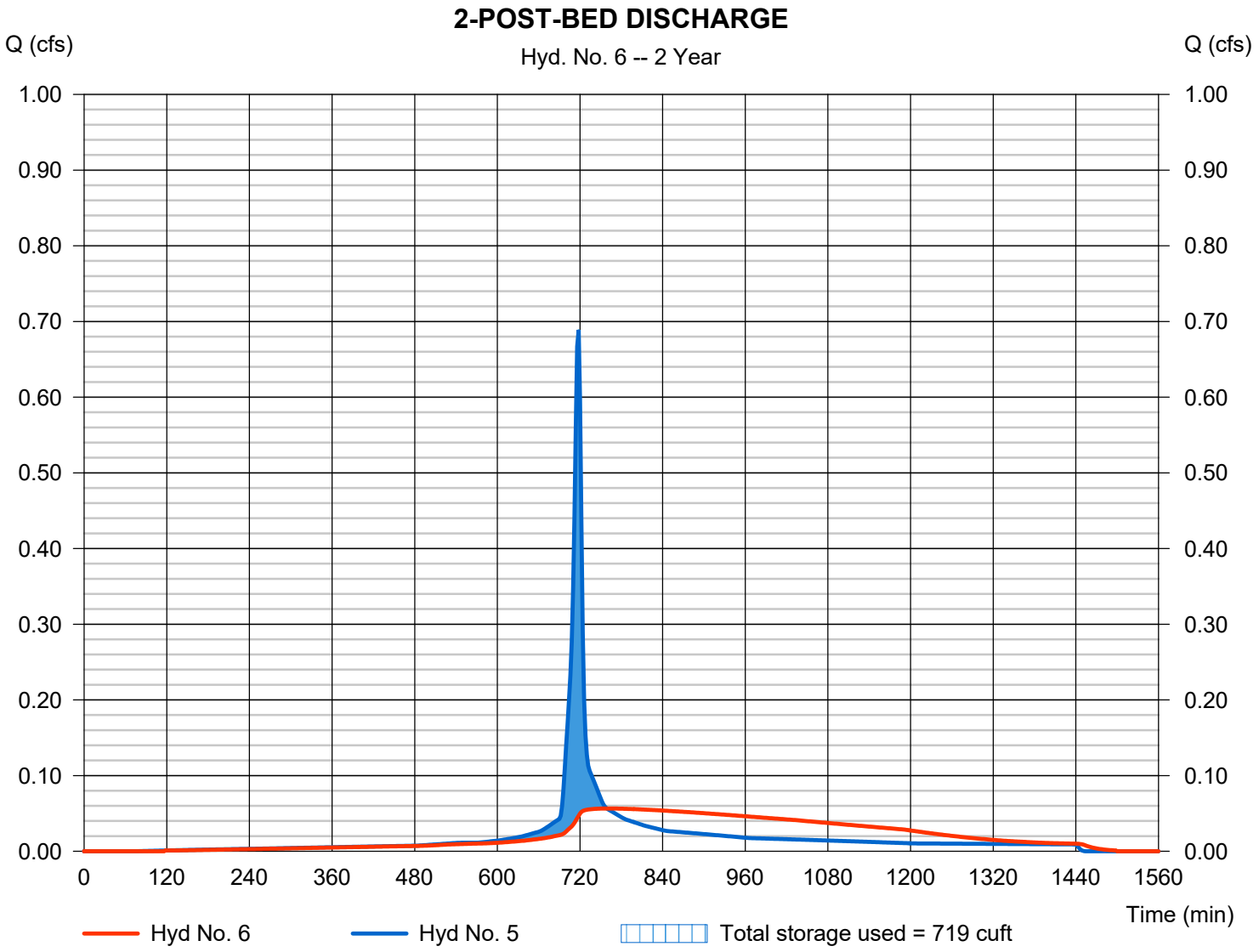
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 6

2-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.056 cfs
Storm frequency	=	2 yrs	Time to peak	=	760 min
Time interval	=	2 min	Hyd. volume	=	1,838 cuft
Inflow hyd. No.	=	5 - 2-POST-BED INFLOW	Max. Elevation	=	354.40 ft
Reservoir name	=	LOT 2 INFILTRATION POND	Max. Storage	=	719 cuft

Storage Indication method used. Outflow includes exfiltration.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 1 - LOT 2 INFILTRATION POND

Pond Data

UG Chambers -Invert elev. = 353.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 50.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	353.00	n/a	0	0
0.40	353.40	n/a	119	119
0.80	353.80	n/a	207	326
1.20	354.20	n/a	252	577
1.60	354.60	n/a	277	855
2.00	355.00	n/a	289	1,144
2.40	355.40	n/a	289	1,433
2.80	355.80	n/a	277	1,710
3.20	356.20	n/a	251	1,962
3.60	356.60	n/a	207	2,169
4.00	357.00	n/a	119	2,287

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 355.25	0.00	0.00	0.00
Length (ft)	= 10.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

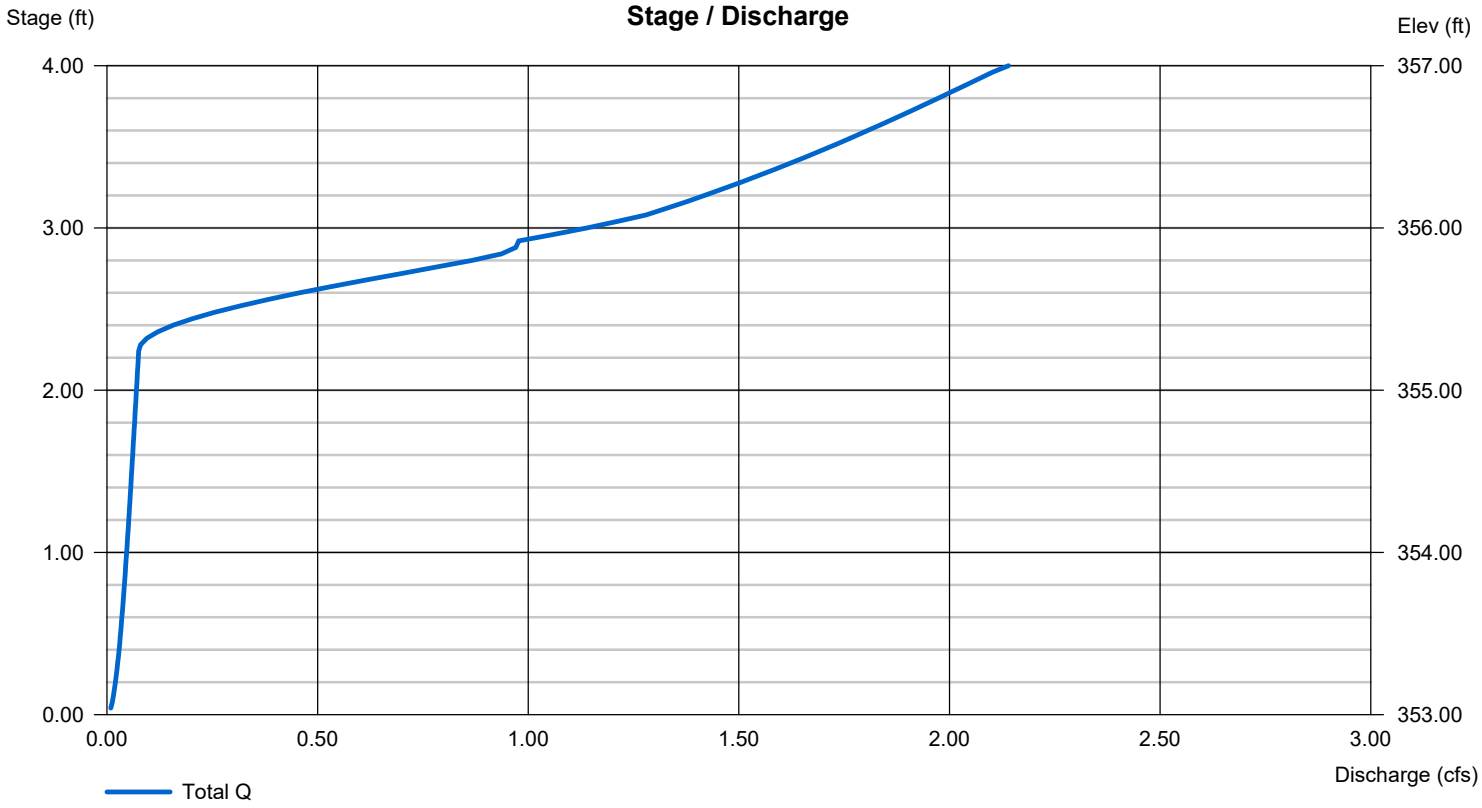
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.640 (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).



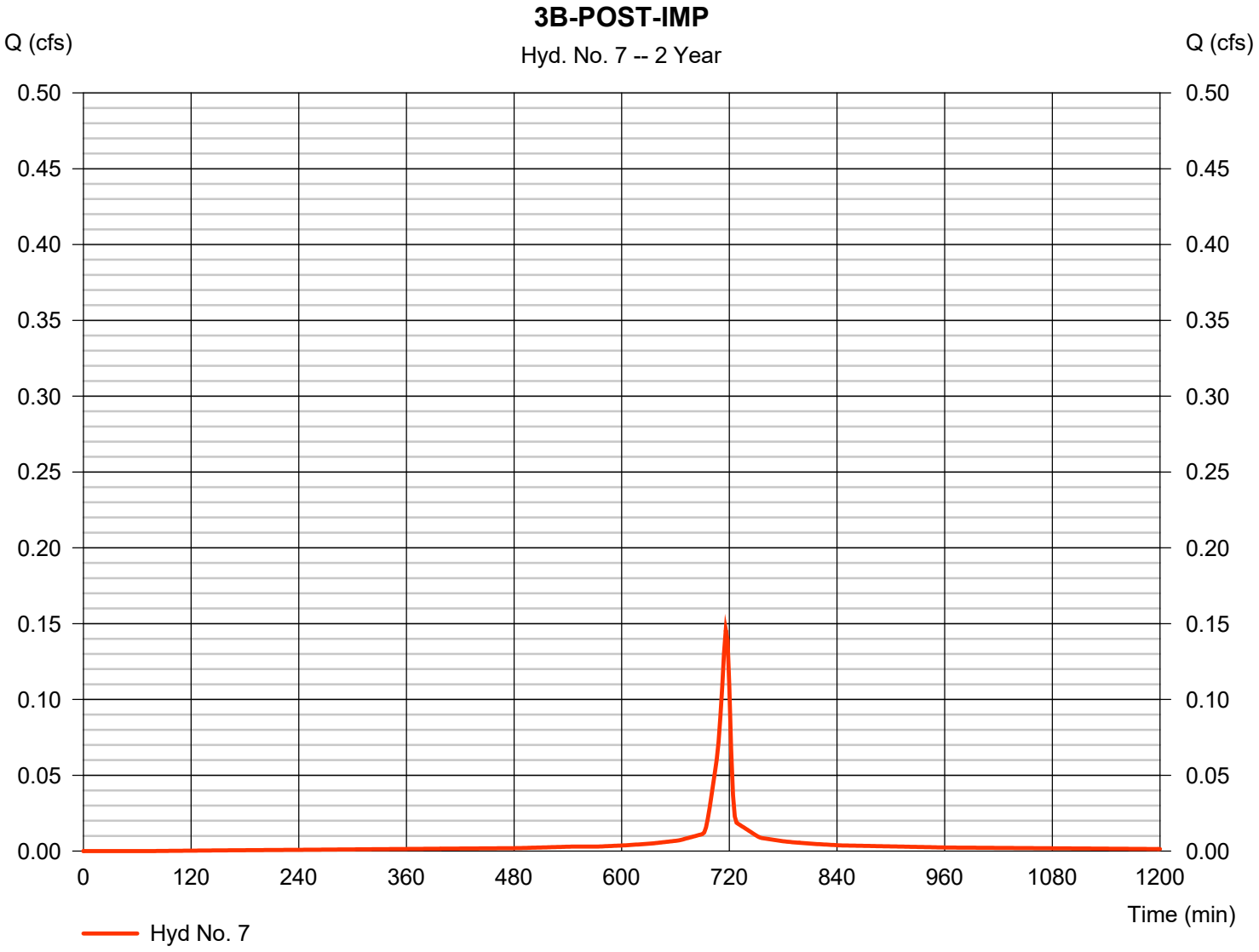
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 7

3B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.146 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 341 cuft
Drainage area	= 0.033 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



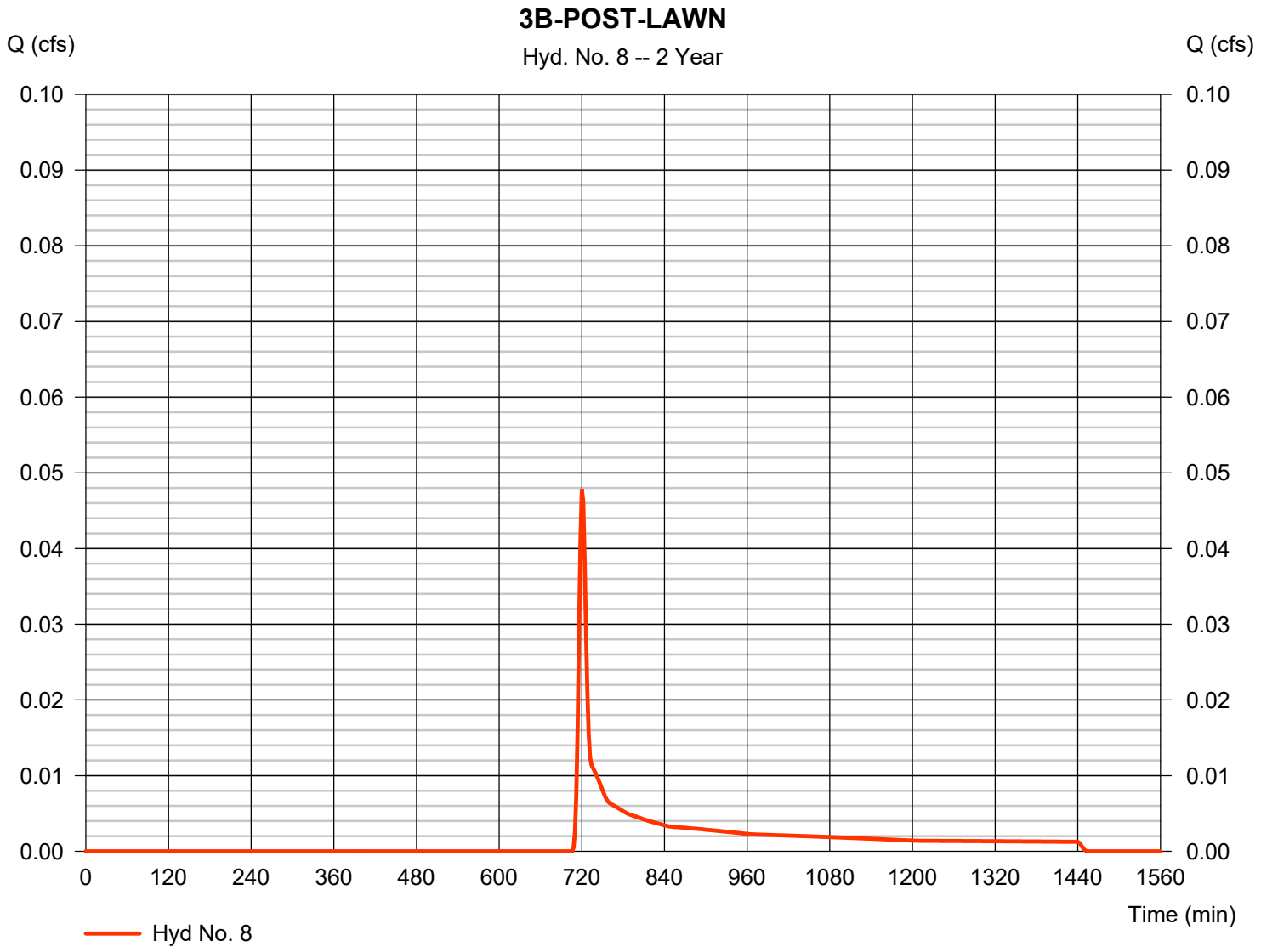
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 8

3B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.048 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 141 cuft
Drainage area	= 0.082 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



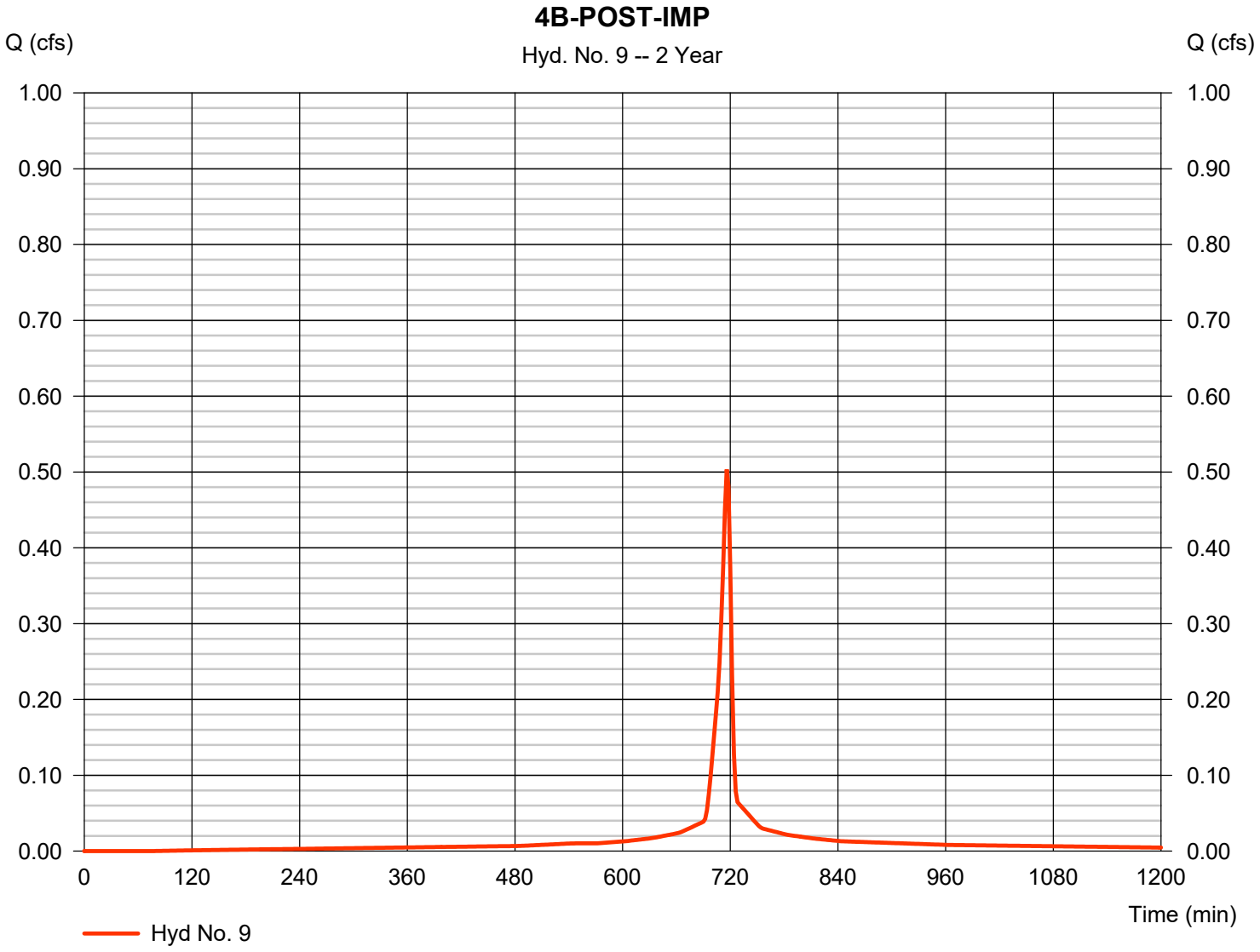
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 9

4B-POST-IMP

Hydrograph type	= SCS Runoff	Peak discharge	= 0.503 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,178 cuft
Drainage area	= 0.114 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



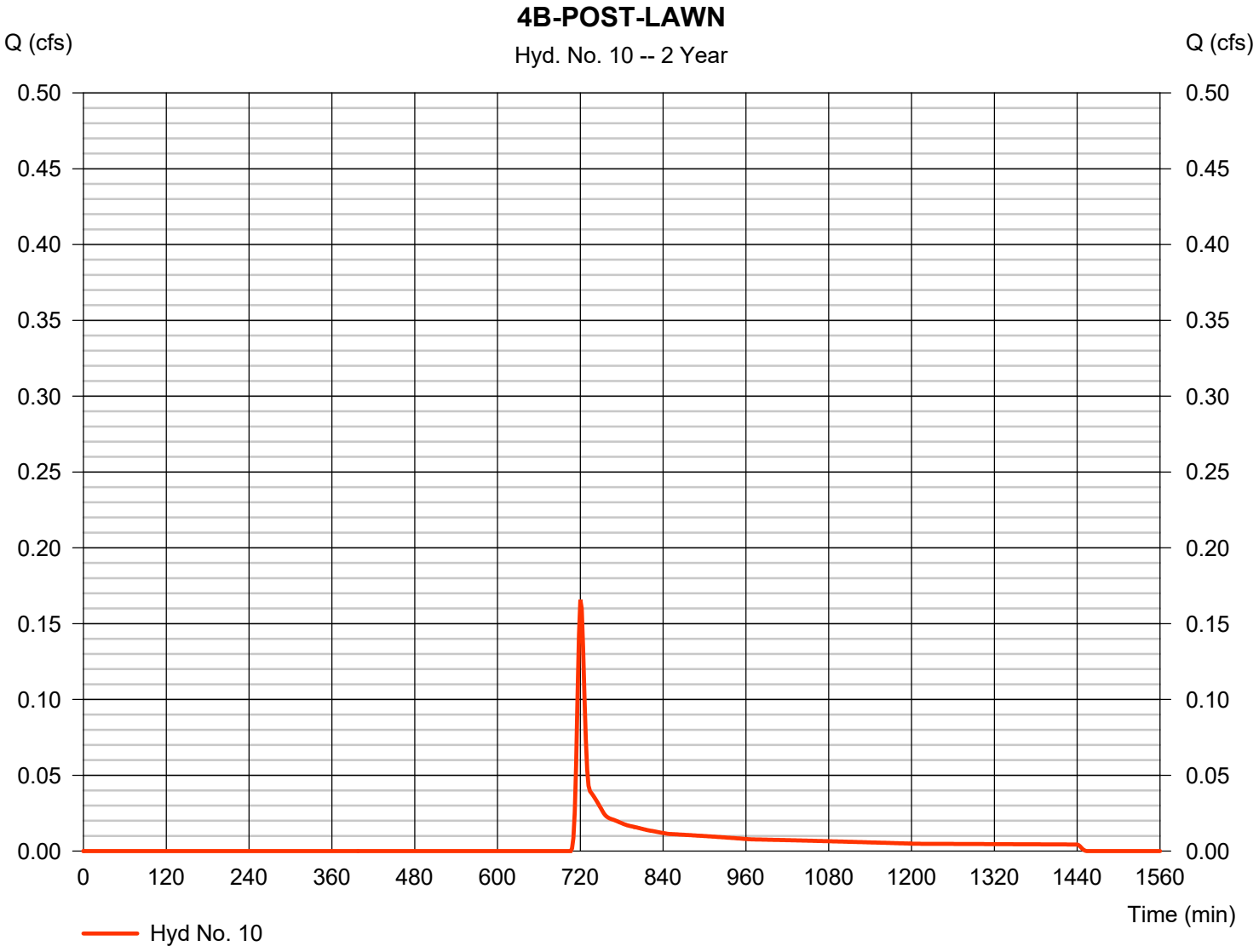
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 10

4B-POST-LAWN

Hydrograph type	= SCS Runoff	Peak discharge	= 0.166 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 487 cuft
Drainage area	= 0.284 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



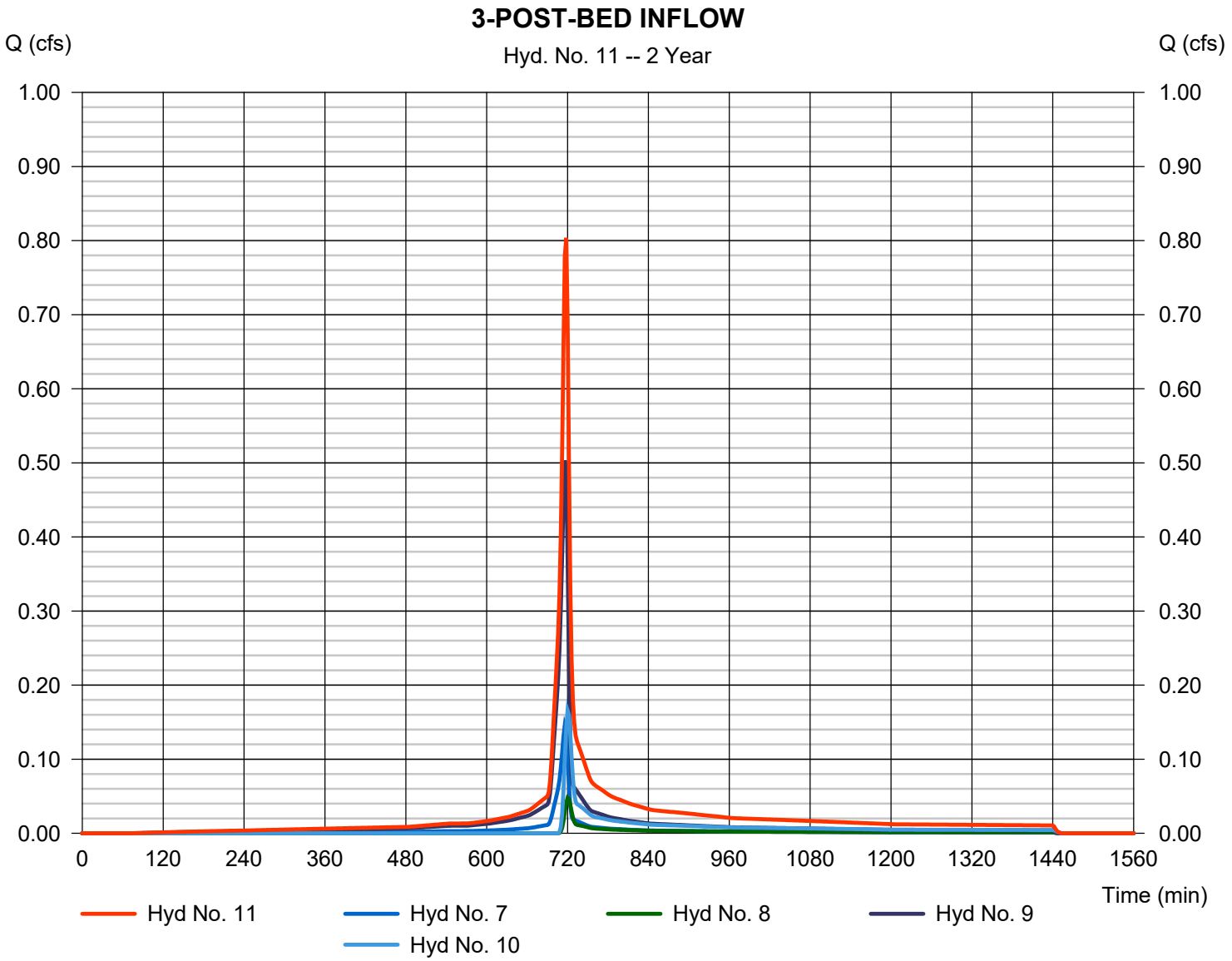
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 11

3-POST-BED INFLOW

Hydrograph type	= Combine	Peak discharge	= 0.804 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,148 cuft
Inflow hyds.	= 7, 8, 9, 10	Contrib. drain. area	= 0.513 ac



Hydrograph Report

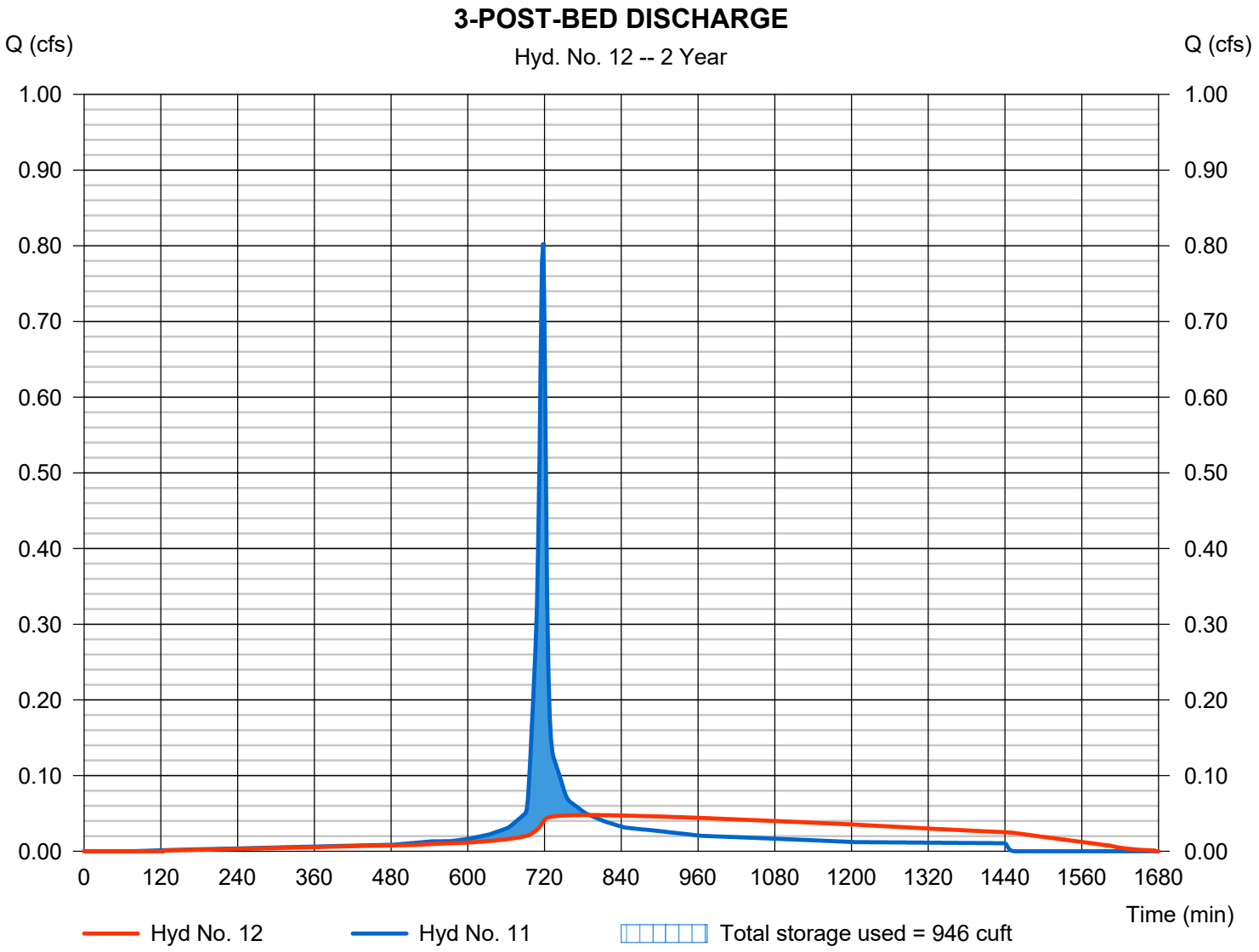
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 12

3-POST-BED DISCHARGE

Hydrograph type	=	Reservoir	Peak discharge	=	0.048 cfs
Storm frequency	=	2 yrs	Time to peak	=	790 min
Time interval	=	2 min	Hyd. volume	=	2,146 cuft
Inflow hyd. No.	=	11 - 3-POST-BED INFLOW	Max. Elevation	=	359.38 ft
Reservoir name	=	LOT 3 INFILTRATION POND	Max. Storage	=	946 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Pond No. 2 - LOT 3 INFILTRATION POND

Pond Data

UG Chambers -Invert elev. = 358.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 50.00 ft, No. Barrels = 4, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	358.00	n/a	0	0
0.40	358.40	n/a	160	160
0.80	358.80	n/a	277	437
1.20	359.20	n/a	337	774
1.60	359.60	n/a	371	1,146
2.00	360.00	n/a	388	1,534
2.40	360.40	n/a	388	1,922
2.80	360.80	n/a	371	2,293
3.20	361.20	n/a	337	2,630
3.60	361.60	n/a	277	2,907
4.00	362.00	n/a	159	3,067

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 361.00	0.00	0.00	0.00
Length (ft)	= 10.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

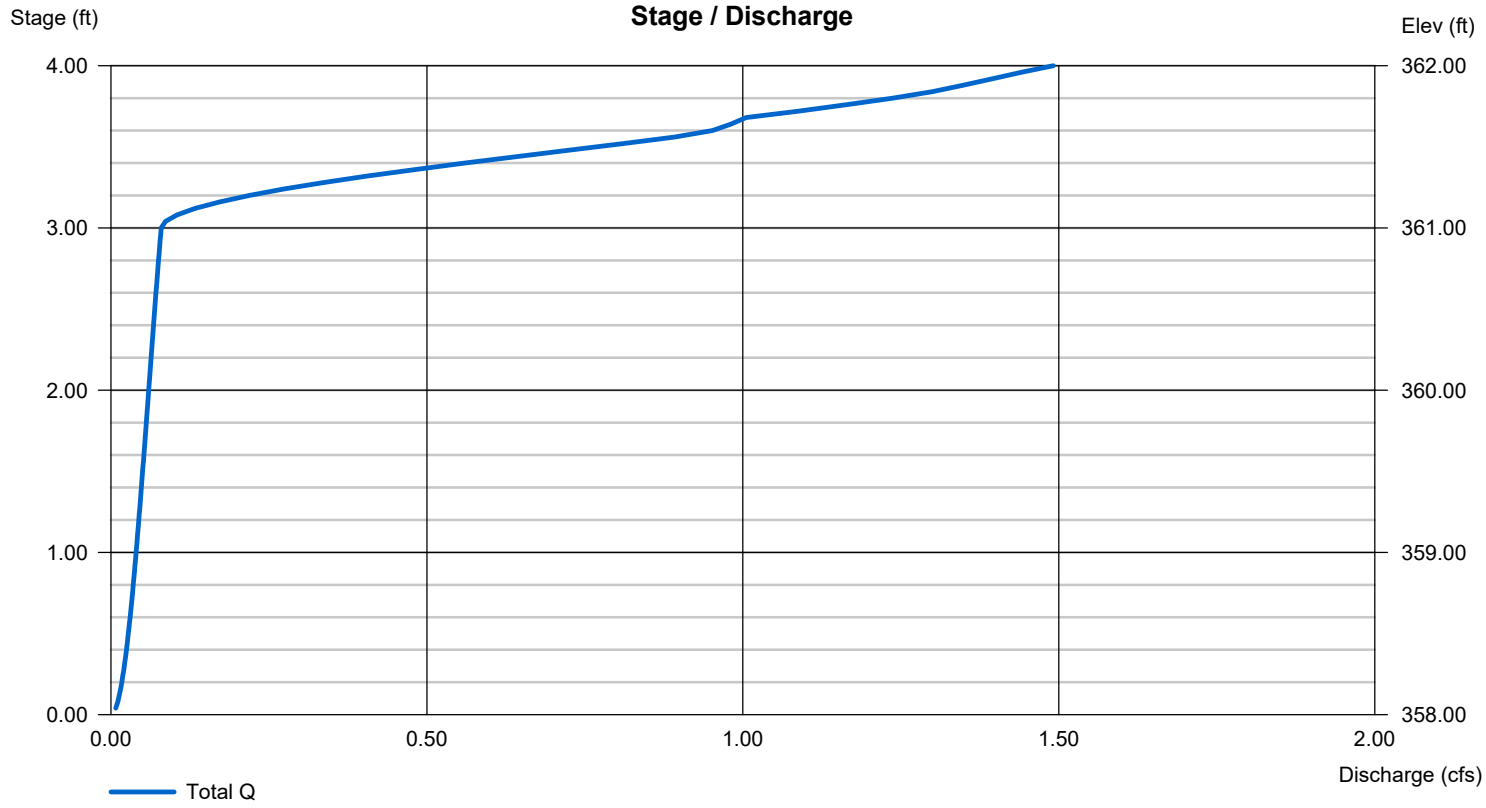
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.680 (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).



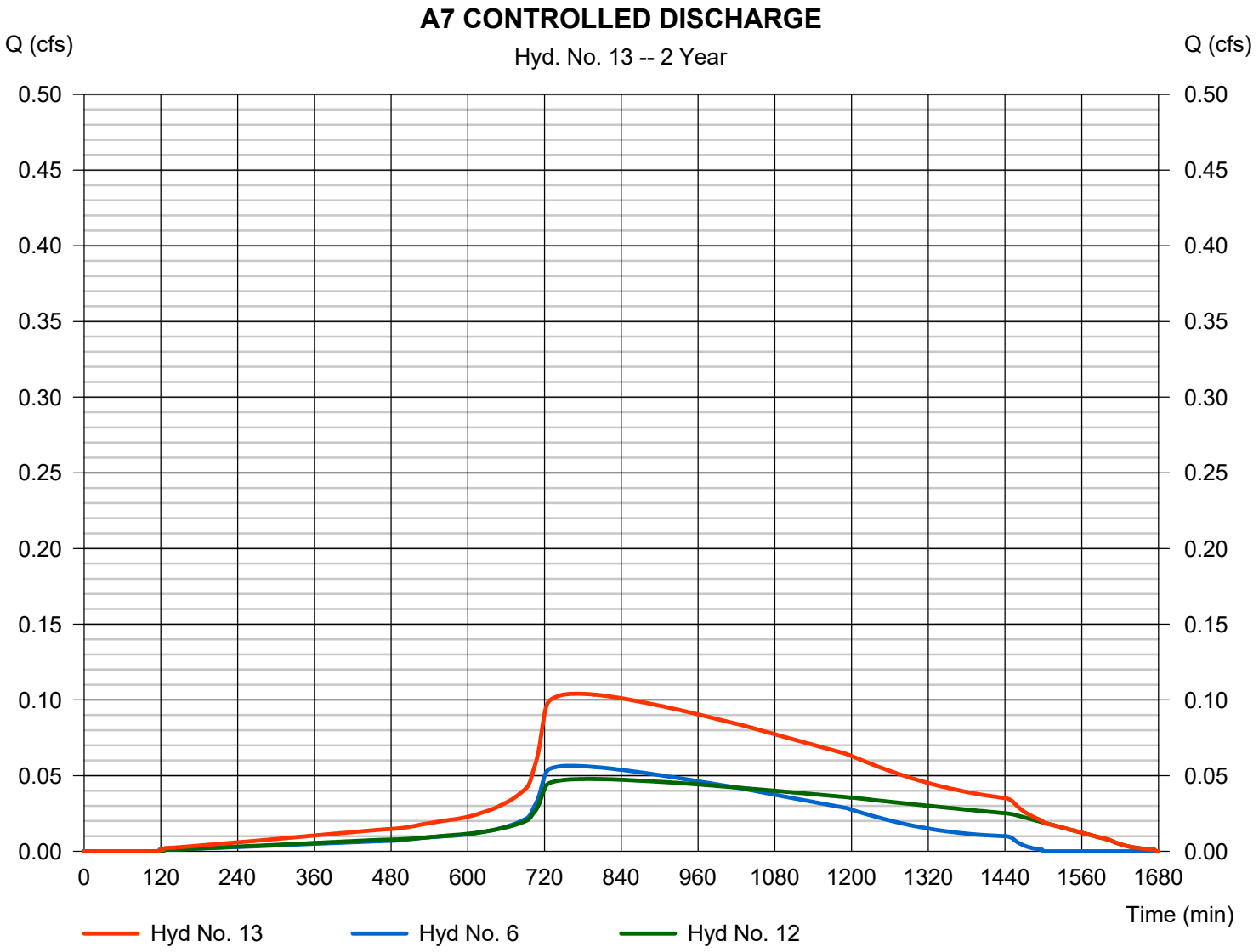
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Hyd. No. 13

A7 CONTROLLED DISCHARGE

Hydrograph type	= Combine	Peak discharge	= 0.104 cfs
Storm frequency	= 2 yrs	Time to peak	= 772 min
Time interval	= 2 min	Hyd. volume	= 3,984 cuft
Inflow hyds.	= 6, 12	Contrib. drain. area	= 0.000 ac



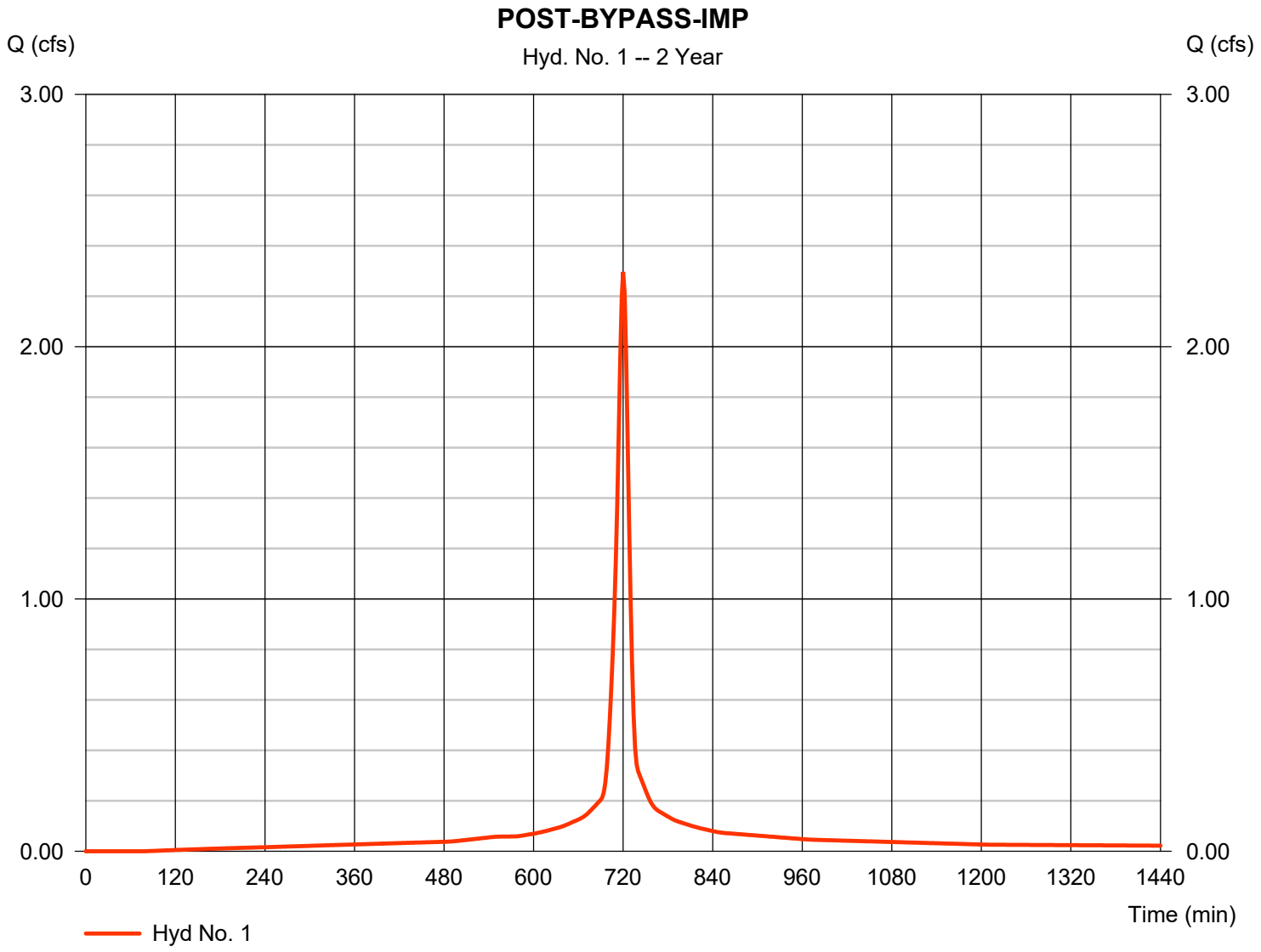
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Wednesday, 09 / 9 / 2020

Hyd. No. 1

POST-BYPASS-IMP

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.296 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	6,719 cuft
Drainage area	=	0.591 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	3.27 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



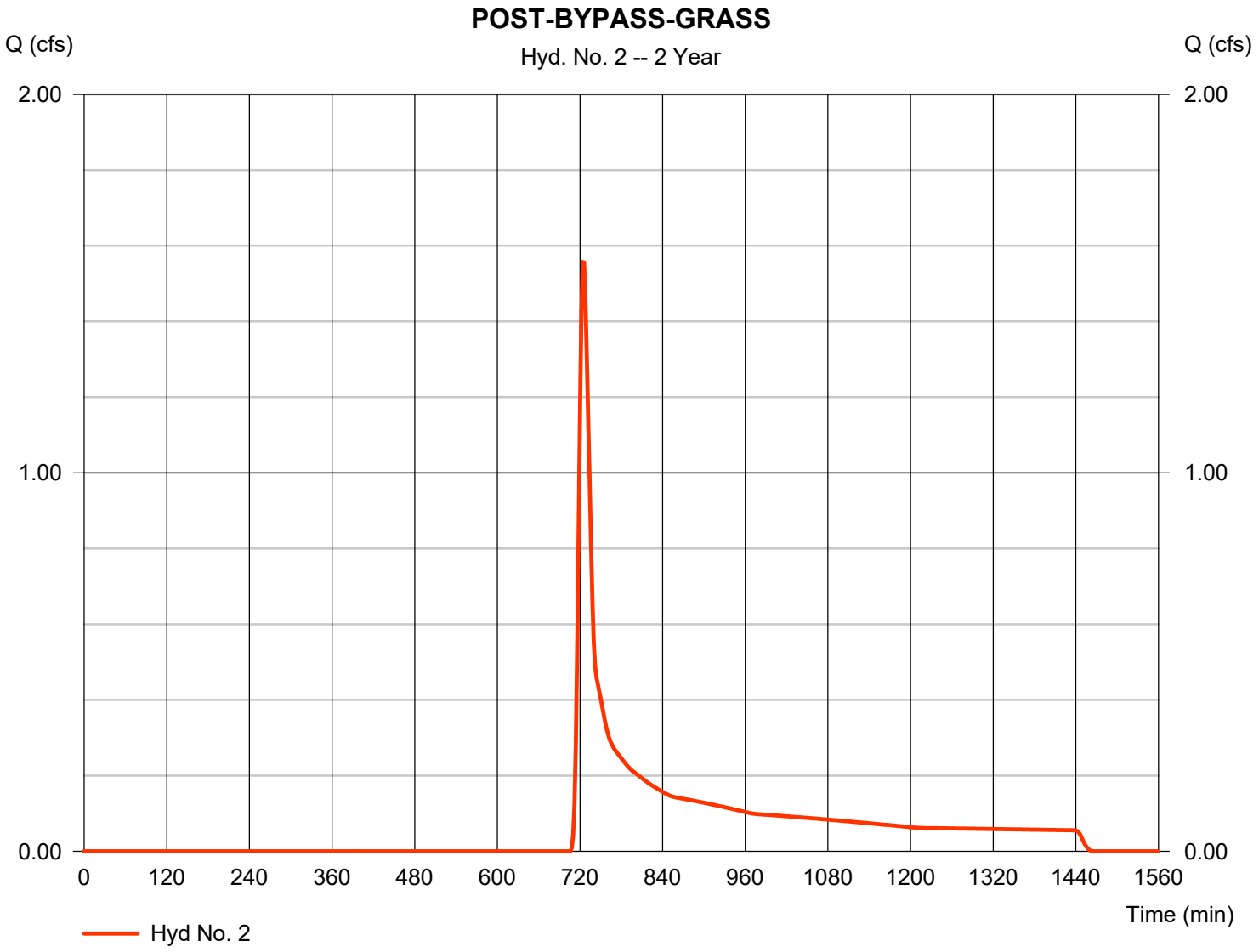
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Wednesday, 09 / 9 / 2020

Hyd. No. 2

POST-BYPASS-GRASS

Hydrograph type	= SCS Runoff	Peak discharge	= 1.556 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 6,223 cuft
Drainage area	= 3.719 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 3.27 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



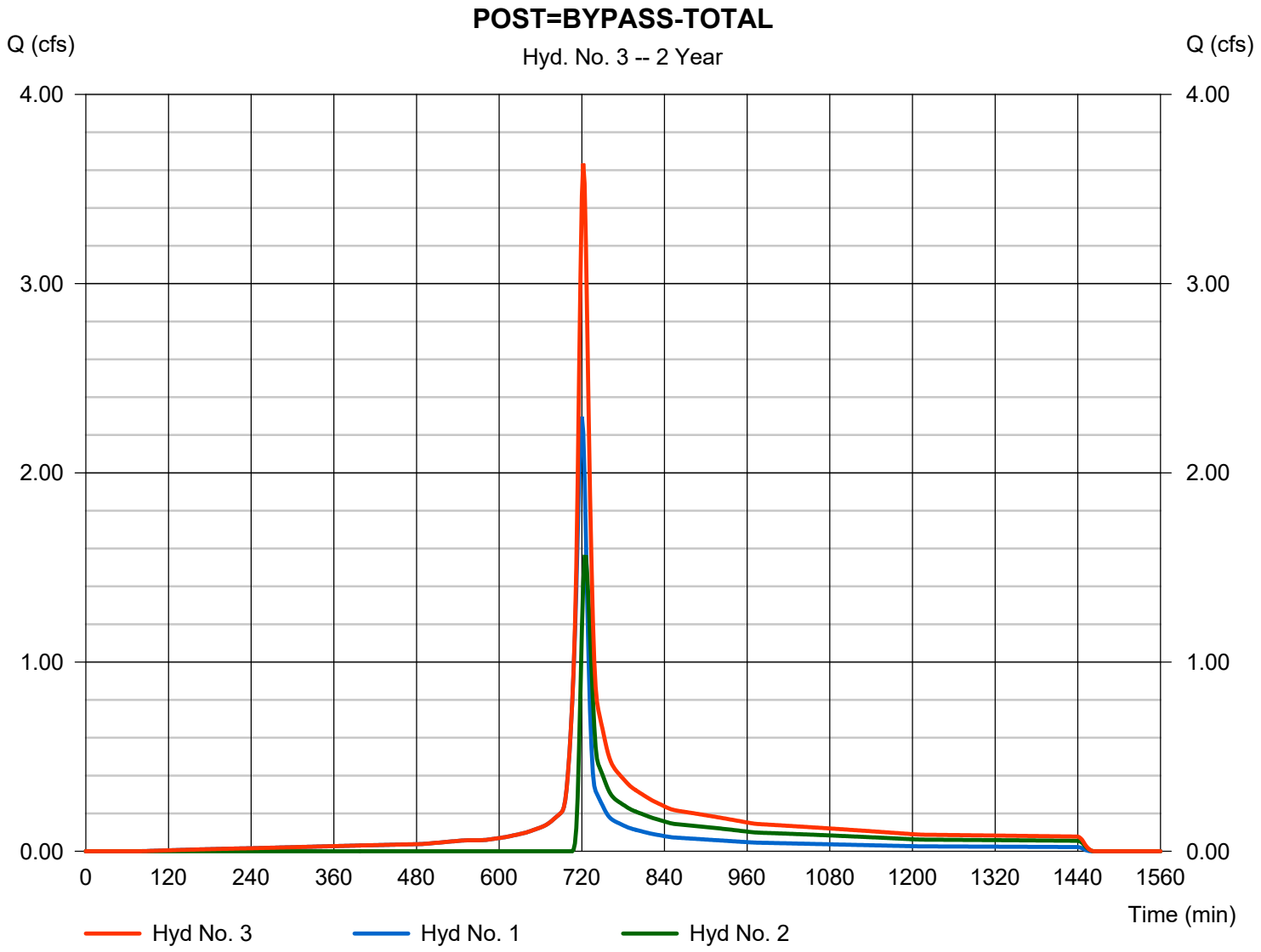
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Wednesday, 09 / 9 / 2020

Hyd. No. 3

POST=BYPASS-TOTAL

Hydrograph type	= Combine	Peak discharge	= 3.634 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 12,943 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 4.310 ac



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020 Tuesday, 09 / 8 / 2020

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	35.6114	9.4000	0.8202	--------
2	33.3274	8.5000	0.7586	--------
3	0.0000	0.0000	0.0000	--------
5	34.6417	7.8000	0.7293	--------
10	42.2492	9.0000	0.7389	--------
25	56.1383	11.1000	0.7651	--------
50	84.7712	15.2000	0.8066	--------
100	84.0871	15.4000	0.7726	--------

File name: Region5.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	4.00	3.13	2.59	2.22	1.96	1.75	1.59	1.45	1.34	1.25	1.17	1.10
2	4.63	3.64	3.04	2.63	2.32	2.09	1.91	1.75	1.63	1.52	1.43	1.35
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	5.40	4.24	3.54	3.07	2.72	2.45	2.24	2.06	1.92	1.80	1.69	1.60
10	6.01	4.80	4.04	3.51	3.12	2.82	2.58	2.38	2.22	2.08	1.96	1.85
25	6.70	5.45	4.63	4.05	3.61	3.27	3.00	2.77	2.58	2.41	2.27	2.15
50	7.51	6.28	5.43	4.80	4.31	3.92	3.60	3.34	3.11	2.92	2.75	2.60
100	8.18	6.91	6.01	5.34	4.83	4.41	4.07	3.78	3.54	3.33	3.14	2.98

Tc = time in minutes. Values may exceed 60.

e name: C:\Users\Patrick Spellman\Desktop\1 LOCAL FILES\Concordia\Calcs&Data\Hydraflow Files\RadnorNOAA.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	2.72	3.27	0.00	4.10	4.80	5.80	6.64	7.55
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOAA Atlas 14, Volume 2, Version 3
Location name: Wayne, Pennsylvania, USA*
Latitude: 40.0522°, Longitude: -75.3835°
Elevation: 424.7 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.348** (0.320-0.379)	**0.414** (0.381-0.451)	**0.485** (0.445-0.528)	**0.535** (0.490-0.582)	**0.594** (0.541-0.646)	**0.634** (0.574-0.689)	**0.673** (0.607-0.733)	**0.706** (0.634-0.772)	**0.744** (0.662-0.816)	**0.773** (0.682-0.851)
10-min	**0.556** (0.512-0.605)	**0.662** (0.610-0.721)	**0.777** (0.713-0.845)	**0.856** (0.784-0.931)	**0.946** (0.862-1.03)	**1.01** (0.914-1.10)	**1.07** (0.965-1.17)	**1.12** (1.00-1.22)	**1.18** (1.05-1.29)	**1.22** (1.07-1.34)
15-min	**0.694** (0.639-0.756)	**0.833** (0.766-0.906)	**0.983** (0.901-1.07)	**1.08** (0.992-1.18)	**1.20** (1.09-1.31)	**1.28** (1.16-1.39)	**1.35** (1.22-1.47)	**1.41** (1.27-1.54)	**1.48** (1.32-1.63)	**1.53** (1.35-1.68)
30-min	**0.952** (0.877-1.04)	**1.15** (1.06-1.25)	**1.40** (1.28-1.52)	**1.57** (1.44-1.71)	**1.78** (1.62-1.93)	**1.93** (1.74-2.09)	**2.07** (1.87-2.26)	**2.20** (1.97-2.40)	**2.36** (2.10-2.59)	**2.47** (2.18-2.72)
60-min	**1.19** (1.09-1.29)	**1.44** (1.33-1.57)	**1.79** (1.64-1.95)	**2.04** (1.87-2.22)	**2.37** (2.16-2.57)	**2.61** (2.36-2.84)	**2.85** (2.57-3.11)	**3.09** (2.77-3.37)	**3.38** (3.01-3.71)	**3.61** (3.19-3.98)
2-hr	**1.42** (1.30-1.56)	**1.73** (1.58-1.89)	**2.15** (1.97-2.36)	**2.48** (2.26-2.71)	**2.91** (2.63-3.17)	**3.24** (2.91-3.54)	**3.58** (3.19-3.91)	**3.91** (3.47-4.29)	**4.36** (3.82-4.80)	**4.71** (4.08-5.20)
3-hr	**1.55** (1.42-1.71)	**1.88** (1.72-2.07)	**2.35** (2.15-2.58)	**2.71** (2.47-2.97)	**3.19** (2.88-3.49)	**3.57** (3.20-3.90)	**3.95** (3.52-4.32)	**4.33** (3.83-4.75)	**4.85** (4.23-5.34)	**5.24** (4.53-5.80)
6-hr	**1.94** (1.77-2.13)	**2.34** (2.14-2.57)	**2.91** (2.66-3.20)	**3.37** (3.07-3.70)	**4.02** (3.62-4.40)	**4.54** (4.06-4.97)	**5.08** (4.51-5.57)	**5.65** (4.96-6.20)	**6.45** (5.56-7.11)	**7.09** (6.02-7.85)
12-hr	**2.35** (2.15-2.61)	**2.84** (2.59-3.15)	**3.56** (3.24-3.93)	**4.15** (3.77-4.59)	**5.01** (4.50-5.52)	**5.74** (5.10-6.31)	**6.52** (5.72-7.19)	**7.37** (6.38-8.13)	**8.59** (7.28-9.52)	**9.61** (8.00-10.7)
24-hr	**2.72** (2.49-2.97)	**3.27** (3.00-3.58)	**4.10** (3.76-4.48)	**4.80** (4.38-5.24)	**5.80** (5.27-6.32)	**6.64** (6.01-7.23)	**7.55** (6.80-8.21)	**8.53** (7.63-9.27)	**9.96** (8.81-10.8)	**11.2** (9.76-12.1)
2-day	**3.13** (2.86-3.43)	**3.78** (3.46-4.14)	**4.75** (4.34-5.20)	**5.54** (5.05-6.06)	**6.66** (6.05-7.27)	**7.59** (6.87-8.27)	**8.58** (7.71-9.35)	**9.63** (8.61-10.5)	**11.1** (9.87-12.1)	**12.4** (10.9-13.5)
3-day	**3.30** (3.03-3.62)	**3.98** (3.65-4.36)	**4.99** (4.57-5.46)	**5.81** (5.31-6.35)	**6.97** (6.34-7.61)	**7.93** (7.19-8.65)	**8.95** (8.07-9.76)	**10.0** (9.00-11.0)	**11.6** (10.3-12.7)	**12.9** (11.3-14.0)
4-day	**3.47** (3.19-3.81)	**4.18** (3.84-4.59)	**5.23** (4.80-5.73)	**6.08** (5.57-6.65)	**7.29** (6.64-7.96)	**8.28** (7.52-9.03)	**9.33** (8.43-10.2)	**10.4** (9.39-11.4)	**12.0** (10.7-13.2)	**13.3** (11.8-14.6)
7-day	**4.06** (3.76-4.42)	**4.87** (4.50-5.30)	**6.02** (5.56-6.56)	**6.96** (6.42-7.58)	**8.31** (7.63-9.04)	**9.43** (8.61-10.2)	**10.6** (9.65-11.5)	**11.9** (10.7-12.9)	**13.7** (12.2-14.9)	**15.1** (13.4-16.5)
10-day	**4.62** (4.29-4.99)	**5.52** (5.13-5.96)	**6.73** (6.24-7.27)	**7.70** (7.13-8.32)	**9.06** (8.36-9.77)	**10.2** (9.34-11.0)	**11.3** (10.3-12.2)	**12.5** (11.4-13.5)	**14.1** (12.8-15.3)	**15.5** (13.9-16.7)
20-day	**6.24** (5.84-6.69)	**7.41** (6.94-7.93)	**8.84** (8.27-9.47)	**9.96** (9.31-10.7)	**11.5** (10.7-12.3)	**12.7** (11.8-13.5)	**13.9** (12.8-14.8)	**15.1** (13.9-16.1)	**16.7** (15.3-17.9)	**17.9** (16.4-19.3)
30-day	**7.78** (7.34-8.23)	**9.16** (8.65-9.70)	**10.7** (10.1-11.3)	**11.9** (11.2-12.6)	**13.4** (12.6-14.2)	**14.6** (13.7-15.4)	**15.7** (14.7-16.7)	**16.9** (15.8-17.9)	**18.4** (17.1-19.5)	**19.5** (18.0-20.7)
45-day	**9.87** (9.37-10.4)	**11.6** (11.0-12.2)	**13.3** (12.6-14.1)	**14.7** (13.9-15.4)	**16.3** (15.4-17.2)	**17.5** (16.6-18.5)	**18.7** (17.6-19.7)	**19.8** (18.6-20.9)	**21.2** (19.9-22.4)	**22.1** (20.8-23.4)
60-day	**11.8** (11.3-12.4)	**13.9** (13.2-14.6)	**15.8** (15.0-16.6)	**17.3** (16.4-18.2)	**19.1** (18.1-20.1)	**20.4** (19.4-21.5)	**21.7** (20.5-22.8)	**22.8** (21.6-24.0)	**24.2** (22.9-25.5)	**25.2** (23.8-26.6)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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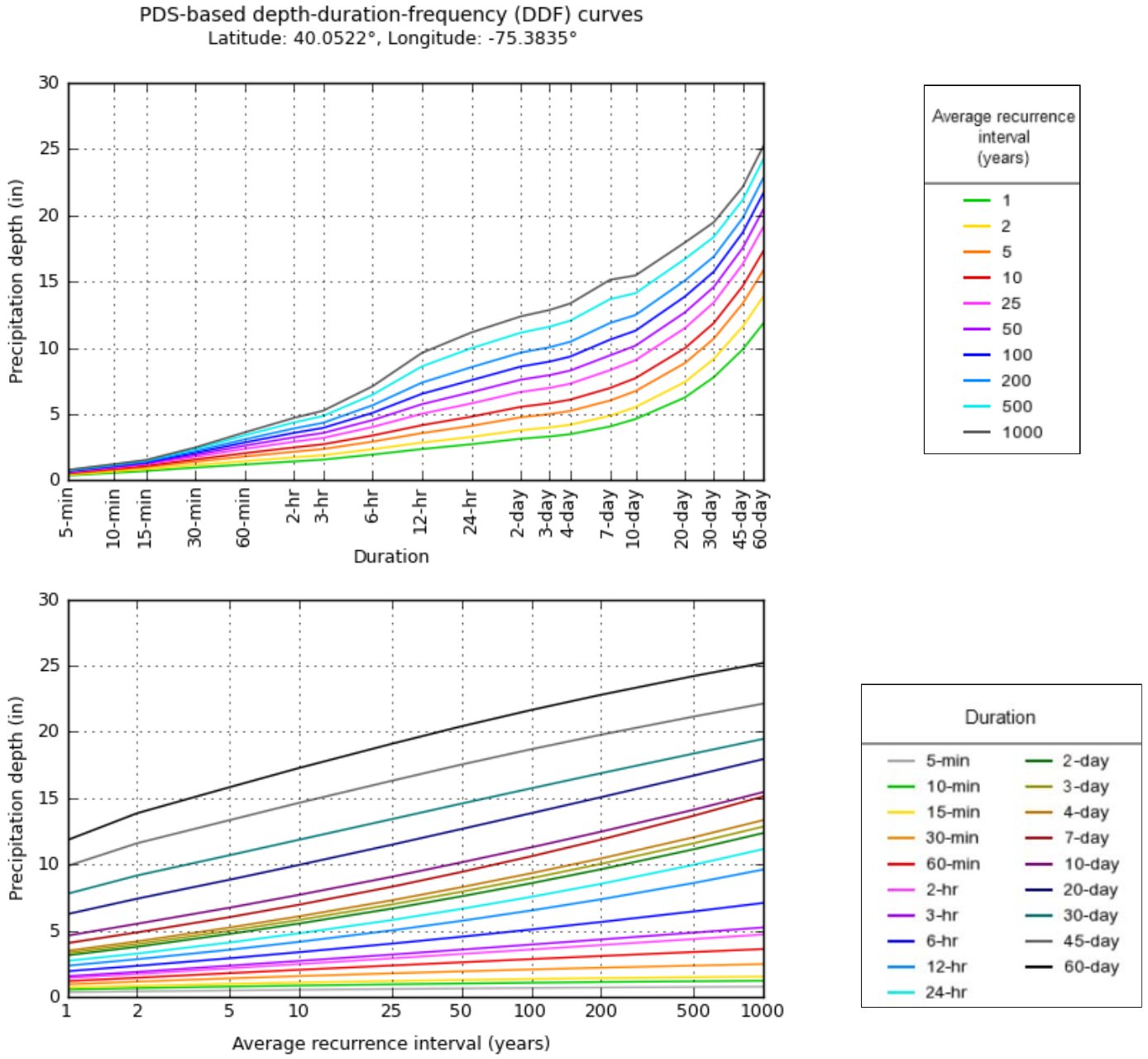
PF graphical



NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Tue Sep 8 17:06:59 2020

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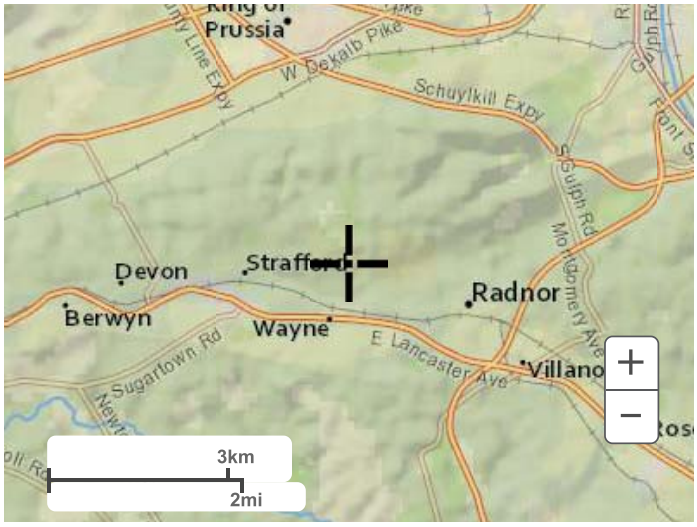
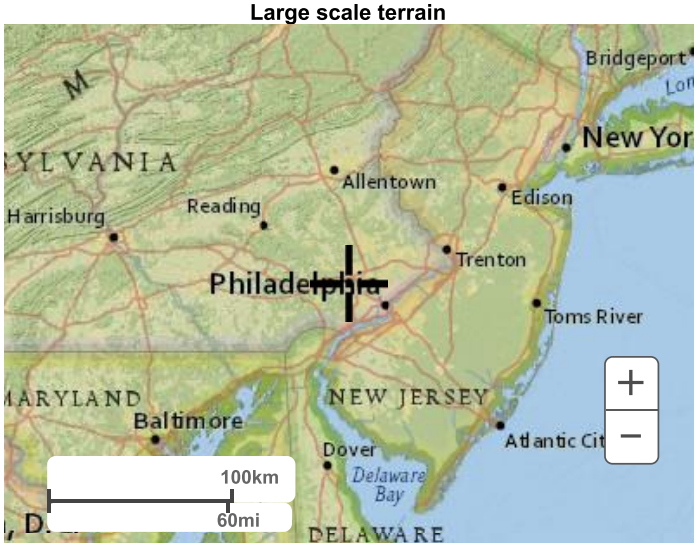
Maps & aerials

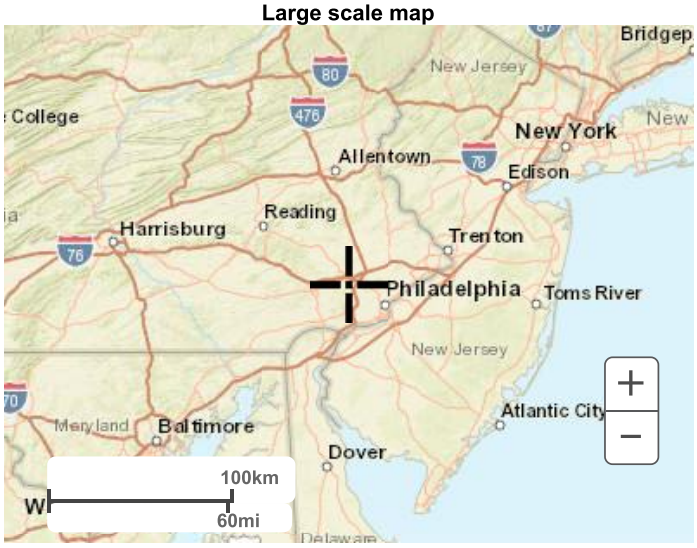
Small scale terrain



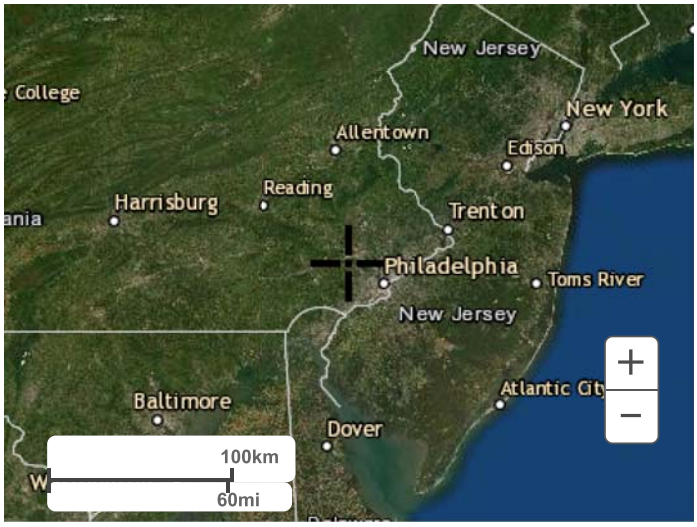
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

GeoStructures
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GEOTECHNICAL ENGINEERING CONSULTANTS

Project No. G20-158
May 22, 2020

Mr. Devin Tuohey
The Concordia Group
161 Leverington Avenue, Suite 101
Philadelphia, PA 19127

Re: Infiltration Testing Report
Radnor Street & Eagle Roads Development – Proposed Stormwater Management Facilities
Radnor Street & Eagle Roads, Radnor, PA

Dear Mr. Tuohey:

GeoStructures, Inc. is pleased to submit the enclosed infiltration testing report for the referenced project. The work was conducted in accordance with Proposal No. P20-108 dated March 13, 2020. Our objectives were to explore the subsurface conditions and measure the infiltration rates at the locations marked in the attached plan. This report presents site information and proposed construction, and our characterization of the subsurface soils, results of the field testing, and geotechnical conclusions and recommendations.

SITE INFORMATION & PROPOSED CONSTRUCTION

The subject site is situated at the intersection of Eagle and Radnor Street Roads in Radnor Township PA (Figures 1 & 2). Several houses are nested along the roads with a large paved parking lot in the middle of the project area. The majority of the site is grass covered with shrubs and common tree covered areas around the houses. Based on the Pennsylvania geologic information, the site is underlain by the *Octoraro Formation (Xo)*, which is a phyllite that contains some schist, hornblende gneiss, and granitized members. The southern edge of the site is underlain by the Glenarm Wissahickon" formation (Xgw), that is lithologically similar to oligoclase-mica schist of the Wissahickon Formation but also includes lenticular amphibolite bodies having ocean-floor basalt chemistry. Site geology map is presented in Figure 3.

We understand that the project development involves construction of several stormwater management facilities (SMPs) across the site to accommodate the site development. Several potential areas were investigated at the locations shown in Drawing 1. The test locations and topographic elevations are provided by Site Engineering Concepts.

FIELD EXPLORATION AND SOIL PROFILE CHARACTERIZATIONS

The soil profiles were characterized using 23 test borings distributed over the area as indicated in Drawing 1. The drilling was conducted on May 4 through May 6, 2020 as documented in the attached logs. The subsurface strata were described according to material type, condition, and relative moisture and then checked for hydraulically restrictive layers, limiting zones, and seasonal high water table (SHWT) or zones of saturation. Colors were described using the standard Munsell soil color chart. All of the test borings were dry upon completion. Mottling that are indicative of the seasonal high water table (SHWT) were observed locally in the test borings. Based on refusal depths in the borings, bedrock was encountered within about 12 ft below existing grades locally.

INFILTRATION TESTING

Infiltration testing was carried out at 23 locations using the cased borehole method in accordance with Appendix E of the PADEP BMP Manual. The tests were performed at offset locations near the profile test borings. The tested strata, test elevations, limiting zones, and hydraulically restrictive layers are summarized in Table 1, along with the factored infiltration rates. A safety factor of 2.0 is applied to the adjusted field rates and the resulting factored rates presented in Table 1 can be used for design.

GEOTECHNICAL COMMENTARY AND RECOMMENDATIONS

- Perched water was encountered at SWB-4 and SWB-5. Water also seeped into the test holes prior to the testing and testing were terminated. As such, due to limiting zones in the form of perched water, infiltration is *not* feasible at the planned test depths at these locations.
- Mottles were encountered at test location SWB-7. Also, perched water was encountered at SWB-11B. However, the depths of mottling and perched water are more than 2 ft below the testing levels and infiltration is still feasible at these locations.
- Limiting zone in the form of auger refusal depth on weathered rock was encountered at a depth of 12.0 ft at SWB-17 — However, the test was conducted 2 ft above the refusal depth and infiltration is still feasible here.
- The infiltration test results show variable rates for the various SMP areas. After applying a *recommended* safety factor of 2, the permeability rates as presented in Table 1 fall within the preferred infiltration rates by the PADEP that is between 0.1 in./hr. and 10 in./hr. As such, the soils at the *tested levels* in these areas are favorable for infiltration as described in Table 1. The only exceptions are SWB-1A and SWB-15, where the rates are below 0.1 in./hr. and considered *slow* because of a clay layer at SWB-15 and silt/clay sublayers in the sand at SWB-1A. As such, infiltration is *not* feasible at these two locations.
- GeoStructures should be present during stormwater facility construction to verify the presence of the target strata and to confirm the minimum 2-ft buffer between the bottom of the stormwater beds and any limiting zones.

Please feel free to contact us if you have any questions or require additional information.

Sincerely,

Daniel Eshete

Daniel W. Eshete, P.G.
Project Manager

Attachments

Table 1. Summary of Stormwater Infiltration Testing Results

Radnor Street & Eagle Roads Development

Test Location	Description of Tested Stratum	Exist. Grade [1] El. (ft)	Test El. (ft)	Test Depth [1] (ft)	SHWT El. (ft)	Limiting Zone	Field Rate (in/hr)	Adjusted Infiltr. Rate [2] (in/hr)	FS	Factored Rate[3] (in/hr)	Remarks
1A	Medium dense, light yellowish brown (2.5Y, 6/3), silty sand with gravel (SM), moist (RESIDUAL).	357.50	350.00	7.50	None	No water or rock to 12' (El. 345.5)	0.24	0.16	2.00	0.08	Slow rate and infiltration is *not* feasible.
1B	Loose, dark brown (7.5YR, 3/4), silty sand with gravel (SM), moist to very moist (RESIDUAL).	365.50	358.00	7.50	None	No water or rock to 12' (El. 353.5)	4.80	3.20		1.60	Favorable rate in sandy soils and infiltration is feasible.
2	Medium dense, light olive brown (2.5Y 5/6), silty sand with gravel (SM), moist to damp (RESIDUAL).	359.80	352.30	7.50	None	No water or rock to 12' (El. 347.8)	7.92	5.28		2.64	
3	Medium dense, light olive brown (2.5YR, 5/6), silty sand (SM), moist to damp (RESIDUAL).	365.50	357.50	8.00	None	No water or rock to 12' (El. 353.5)	5.04	3.36		1.68	
4	Stiff to very stiff, yellowish brown (10YR, 5/8) sandy silt (ML), moist (RESIDUAL).	369.00	362.00	7.00	Mottles @9.5'	Perched water @6.5' (El. 362.5')	-	-		-	Perched water seeped into the test hole prior the testing and test was terminated.
5	Medium dense, olive yellow (2.5Y, 6/8), silty fine sand (SM), damp (RESIDUAL).	373.00	365.50	7.50	None	Perched water @4.6' (El. 368.4')	-	-		-	Perched water seeped into the test hole prior the testing and test was terminated.
6	Medium dense, light olive brown (2.5YR 5/4), silty sand with gravel (SM), damp (RESIDUAL).	380.00	368.00	12.00	None	No water or rock to 16' (El. 364.0)	7.92	5.28	2.00	2.64	The mottles at SWB-17 is well below the testing level. Favorable rate in sandy soils and feasible.
7	Med. dense to dense, light olive brown (2.5 YR, 5/4), silty fine sand (SM), occasional rock fragments, damp to moist (RESIDUAL).	383.30	376.30	7.00	Mottles @11.3'	No water or rock to 12' (El. 371.3)	4.32	2.88		1.44	

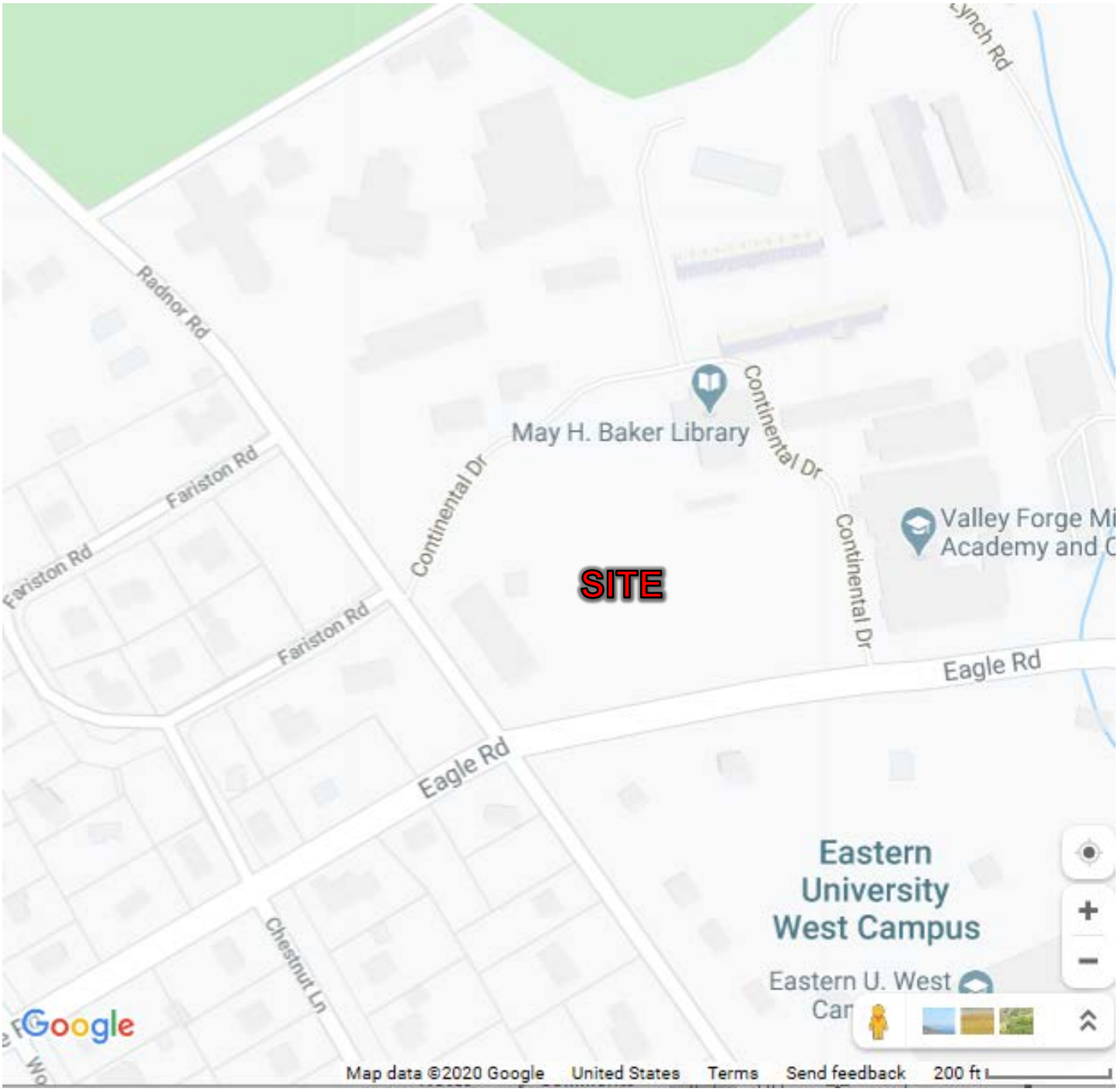
8	Medium dense to dense, light olive brown (2.5YR, 5/4), silty fine sand (SM), damp (RESIDUAL).	381.30	375.30	6.00	None	No water or rock to 12' (El. 369.3)	5.76	3.84		1.92	Favorable rate in sandy soils and infiltration is feasible.
9	Medium dense, light olive brown (2.5YR, 5/4), silty fine sand (SM), damp (RESIDUAL).	376.50	367.50	9.00	None	No water or rock to 14' (El. 352.5)	7.44	4.96		2.48	
10	Loose to medium dense, yellowish brown (10YR, 5/6), silty fine sand (SM), moist (RESIDUAL).	374.50	368.00	6.50	None	No water or rock to 12' (El. 362.5)	2.16	1.44	2.00	0.72	Relatively *marginal* rates but rates are still above 0.1 in./hr. after applying a fsafety factor of 2. Infiltration is still considered feasible.
11A	Medium dense, light yellowish brown (10YR, 6/4), silty sand (SM), moist (RESIDUAL).	370.00	364.00	6.00	None	No water or rock to 10' (El. 360.0)	0.72	0.48		0.24	
11B	Soft, dark yellowish brown (10YR, 5/8), sandy lean clay (CL), very moist, micaceous (RESIDUAL).	365.00	361.00	4.00	None	Perched water @6.4' (El. 358.6')	1.92	0.77		0.39	Perched water is more than 2 ft below the testing level. The marginal rate is above 0.1 in./hr. and infiltration is still feasible.
12	Loose, dark yellowish brown (10 YR 4/6), silty sand (SM), damp (RESIDUAL).	383.50	379.50	4.00	None	No water or rock to 10' (El. 373.5)	1.68	1.12		0.56	Relatively marginal rates but rates are still above 0.1 in./hr. after applying a fsafety factor of 2. Infiltration is still considered feasible.
13	Loose, light olive brown (2.5Y, 5/4) silty fine sand (SM), damp to moist (RESIDUAL).	385.50	381.50	4.00	None	No water or rock to 10' (El. 364.0)	0.96	0.64		0.32	
14	Loose, brownish yellow (10YR 6/8), silty fine sand (SM), damp (RESIDUAL).	392.00	387.00	5.00	None	No water or rock to 10' (El. 382.0)	1.44	0.96		0.48	
15	Medium to stiff, brownish yellow (10YR, 6/8), silty lean clay with sand (CL), moist.	394.50	387.75	6.75	None	No water or rock to 12' (El. 382.5)	0.24	0.16	2.00	0.08	Slow rate and infiltration is *not* feasible.
16	Medium dense, dark yellowish brown (10YR, 4/6), silty sand (SM), trace friable rock fragments, moist to damp (RESIDUAL).	407.50	400.50	7.00	None	No water or rock to 12' (El. 395.5)	7.92	5.28		2.64	Favorable rate in sandy soils and infiltration is feasible.

17	Medium dense, yellowish red (5YR, 5/8), silty sand with rock fragments (SM), micaceous, moist to damp (RESIDUAL).	427.50	417.50	10.00	None	Auger Refusal @ 12' (El.415.5)	15.60	7.88	2.00	3.94	Favorable rate in sandy soils and infiltration is feasible.
18	Loose, yellowish brown (10YR, 5/8), silty sand (SM), micaceous, damp (RESIDUAL).	407.00	400.70	6.30	None	No water or rock to 12' (El. 395.0)	2.16	1.44		0.72	
19	Medium dense, strong brown (7.5YR 5/8), silty sand with rock fragments (SM), micaceous, damp.	406.50	396.00	10.50	None	No water or rock to 16' (El. 300.5)	4.32	2.88		1.44	
20	Medium dense, reddish yellow (7.5YR 6/8), silty sand (SM), micaceous, trace to little rocks fragments, moist to damp.	394.00	387.50	6.50	None	No water or rock to 12' (El. 382.0)	5.76	3.84		1.92	
21	Loose to medium dense, reddish yellow (7.5YR, 6/8), silty sand (SM), micaceous, trace rock fragments, moist to damp.	377.50	370.00	7.50	None	No water or rock to 12' (El. 365.5)	13.20	8.80		4.40	

[1] Existing grade elevations and testing depths are provided by Site Engineering Concepts.

[2] Reduction factors were applied to adjust the field measured infiltration rates for the *cased borehole* method per PADEP BMP Manual Appendix E.

[3] Also, for design purposes a recommended safety factor of 2 was applied on to the adjusted infiltration rates.



Source:

"Bing Maps in Google Earth." *Bing Maps in Google Earth*. N.p., n.d. Web. 5/21/2020. < http://ge-map-overlays.appspot.com/bing-maps/road >.

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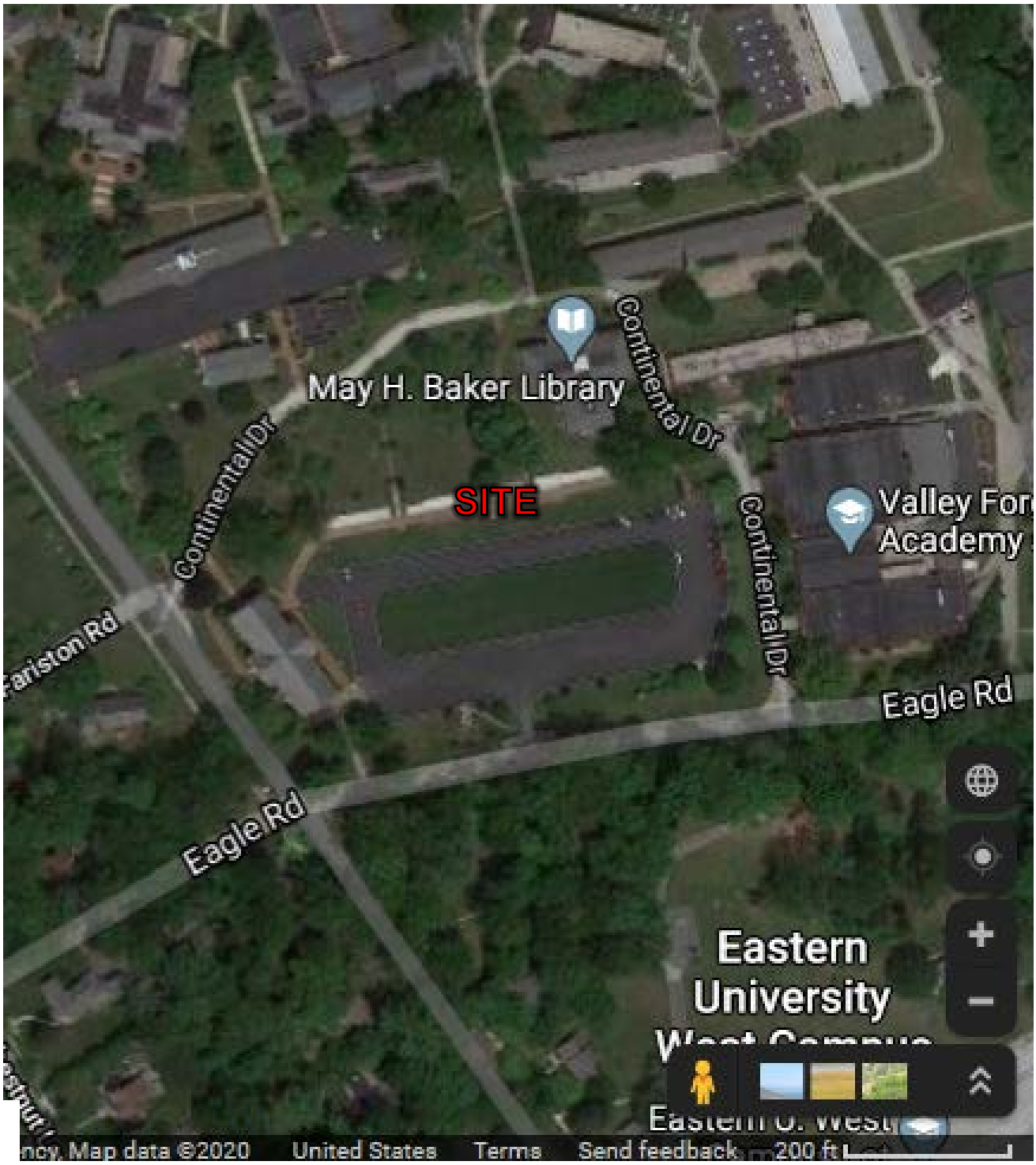
FIGURE 1. SITE LOCATION MAP

RADNOR STREET & EAGLE ROADS DEVELOPMENT
RADNOR STREET & EAGLE ROADS, RADNOR PA



Source:

"*Bing Maps in Google Earth*. N.p., n.d. Web. 5/21/2020. < http://ge-map-overlays.appspot.com/bing-maps/road >.

GeoStructures

FIGURE 2. SITE AERIAL MAP

RADNOR STREET & EAGLE ROADS DEVELOPMENT
RADNOR STREET & EAGLE ROADS, RADNOR PA

Xo: Octoraro Formation (Probably lower Paleozoic):
Includes albite-chlorite schist, phyllite, some hornblende gneiss, and granitized members.

Xgw: "Glenarm Wissahickon" formation (Probably lower Paleozoic):
Lithologically similar to oligoclase-mica schist of the Wissahickon Formation (PZw), but also includes lenticular amphibolite bodies having ocean-floor basalt chemistry.

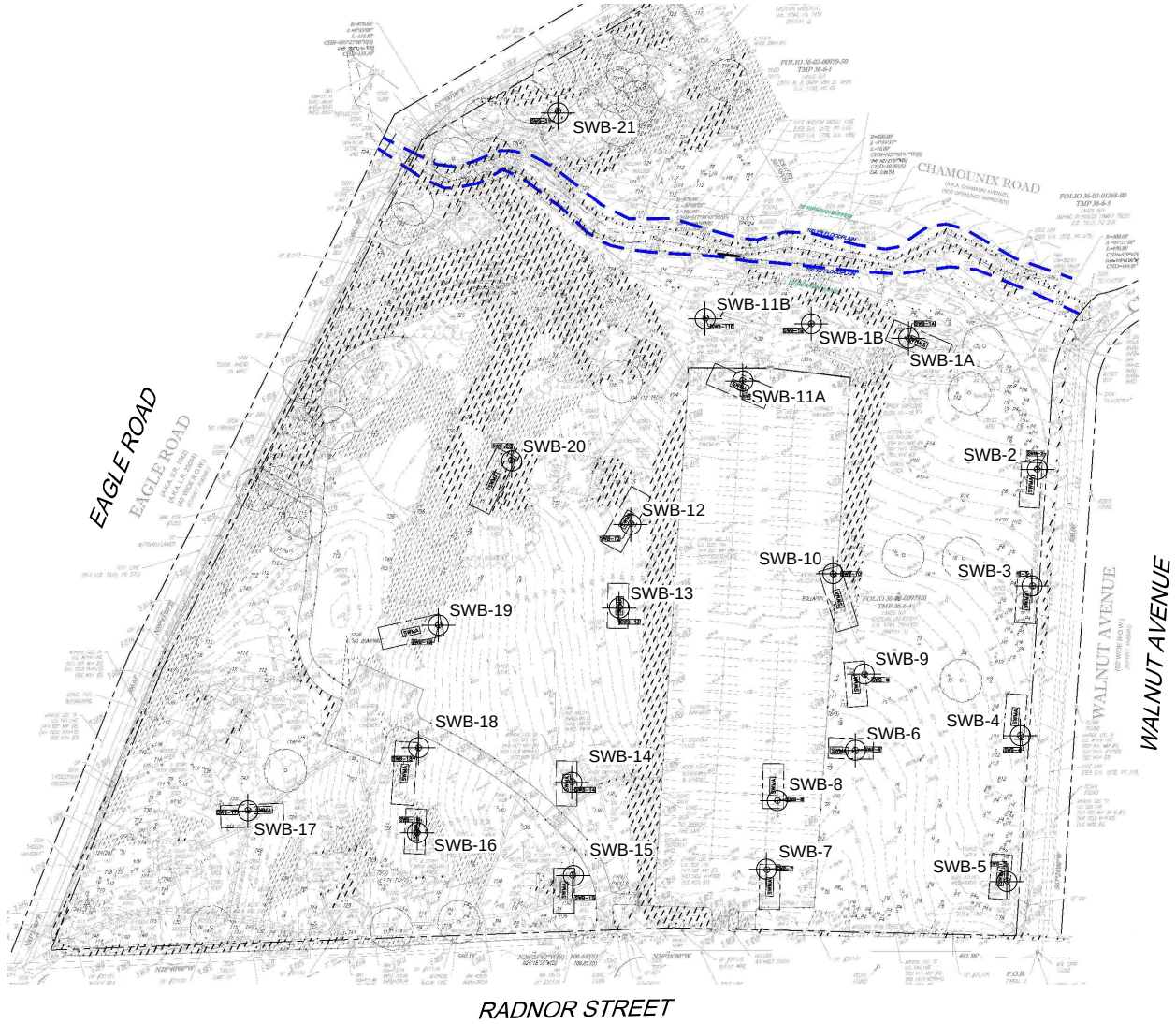
Sources:

1. Google Maps in Google Earth.
2. Bedrock Geologic Map of Pennsylvania by Socolow, A.A. & Berg, T.M., 1978.

GeoStructures

FIGURE 3. SITE GEOLOGIC MAP

RADNOR STREET & EAGLE ROADS DEVELOPMENT
RADNOR STREET & EAGLE ROADS, RADNOR PA



LEGEND

INFILTRATION TEST

200' 100' 0 200'

SCALE: 1" = 200'

NOTE: THIS DRAWING IS BASED ON A SITE PLAN PREPARED BY SITE ENGINEERING CONCEPTS, DATED 1/15/20.

GeoStructures

GEOTECHNICAL INVESTIGATION PLAN

RADNOR STREET & EAGLE ROADS DEVELOPMENT
RADNOR STREET & EAGLE ROADS, RADNOR, PA

SCALE: 1" = 200'	DRAWN BY: YY	PROJECT NO: G20-158
DATE: 5/19/2020	CHECKED BY: DWE	DRAWING NO: 1

PLOTTED: 5/19/2020 10:29:09 PM | BY: YIZHEN YAN | PLOTSTYLE:GSI_HALF.CTB | PLOTTER:DWG TO PDF.PC3
FILE PATH: DRAWING1.DWG

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-1A**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	357.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.50
Test Bottom Elevation (ft)	350.0

Soil Conditions at Test Level:
Medium dense, light yellowish brown (2.5Y, 6/3), silty sand with gravel (SM), moist (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	1.32	in
Water Drop During Final Presoak	0.12	in

Test:

Test Start Time	12:10 PM	
Time interval selected:	30	minutes
Water level at start of test	8.54	ft

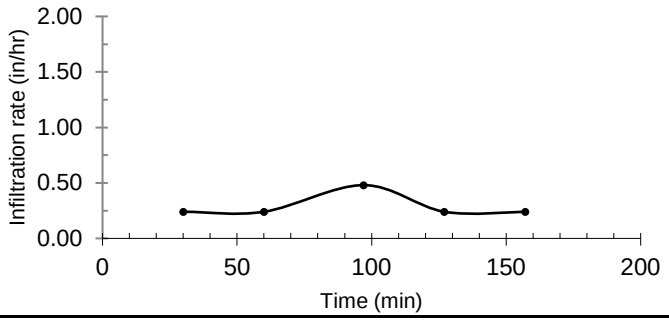
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	12:40 PM	8.55	0.01	12:41 PM	8.55	0.24
2	1:11 PM	8.51	0.01	1:11 PM	8.51	0.24
3	1:41 PM	8.53	0.02	1:41 PM	8.53	0.48
4	2:11 PM	8.54	0.01	2:11 PM	8.53	0.24
5	2:41 PM	8.54	0.01			0.24

Total Length of Test (hr) 2:31

Field Rate During Final Reading (in./hr) **0.24**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-1A for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/13/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-1B**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	365.5	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Loose, dark brown (7.5YR, 3/4), silty sand with gravel (SM), moist to very moist (RESIDUAL).
Depth of Hole (ft)	7.50	
Test Bottom Elevation (ft)	358.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	2.64	in
Water Drop During Final Presoak	1.80	in

Test:

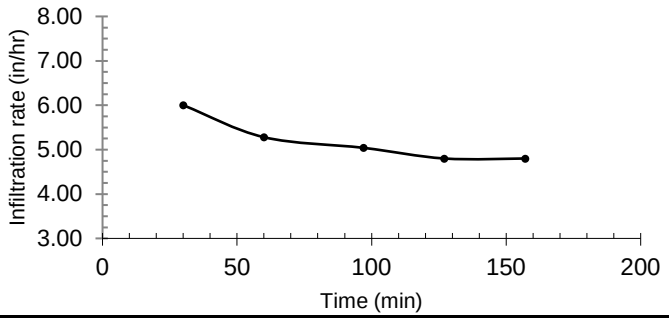
Test Start Time	11:13 AM	
Time interval selected:	30	minutes
Water level at start of test	9.01	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:43 AM	9.26	0.25	11:45 AM	9.09	6.00
2	12:15 PM	9.31	0.22	12:16 PM	9.09	5.28
3	12:46 PM	9.30	0.21	12:47 PM	9.15	5.04
4	1:17 PM	9.35	0.20	1:19 PM	9.10	4.80
5	1:49 PM	9.30	0.20			4.80

Total Length of Test (hr)	2:36
Field Rate During Final Reading (in./hr)	**4.80**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-1B for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-2**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	359.8
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.50
Test Bottom Elevation (ft)	352.3

Soil Conditions at Test Level:
Medium dense, light olive brown (2.5YR, 5/6), silty sand with gravel (SM), moist to damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	3.12	in
Water Drop During Final Presoak	0.84	in

Test:

Test Start Time	4:17 PM	
Time interval selected:	30	minutes
Water level at start of test	9.16	ft

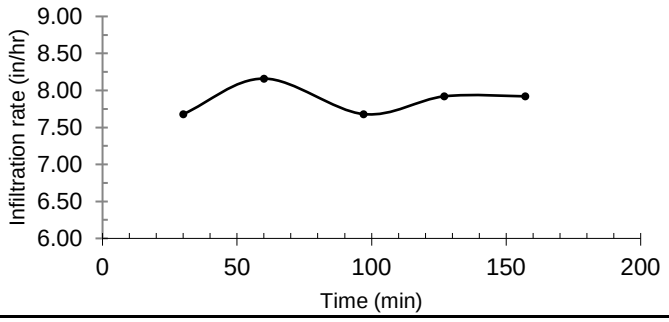
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	4:49 PM	9.48	0.32	5:50 PM	9.12	7.68
2	5:20 PM	9.46	0.34	6:22 PM	9.16	8.16
3	5:52 PM	9.48	0.32	6:57 PM	9.17	7.68
4	6:27 PM	9.50	0.33	7:29 PM	9.17	7.92
5	6:59 PM	9.50	0.33			7.92

Total Length of Test (hr) 2:42

Field Rate During Final Reading (in./hr) **7.92**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-2 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-3**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	365.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	8.00
Test Bottom Elevation (ft)	357.5

Soil Conditions at Test Level:
Medium dense, light olive brown (2.5YR, 5/6), silty sand (SM), moist to damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	2.88	in
Water Drop During Final Presoak	1.32	in

Test:

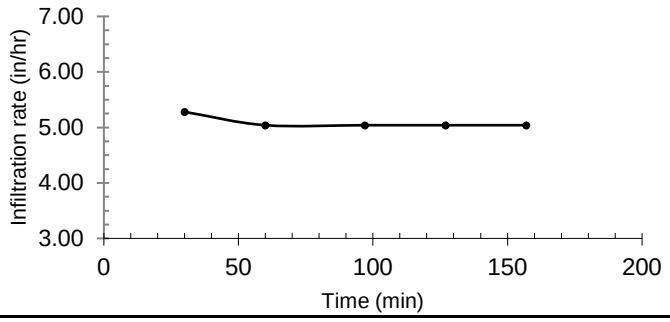
Test Start Time	4:09 PM	
Time interval selected:	30	minutes
Water level at start of test	9.00	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	4:40 PM	9.22	0.22	5:41 PM	8.94	5.28
2	5:11 PM	9.15	0.21	6:12 PM	8.99	5.04
3	5:42 PM	9.20	0.21	6:44 PM	8.97	5.04
4	6:14 PM	9.18	0.21	7:16 PM	8.97	5.04
5	6:45 PM	9.18	0.21			5.04

Total Length of Test (hr)	2:05
Field Rate During Final Reading (in./hr)	**5.04**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-3 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-4**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	369.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Stiff to very stiff, yellowish brown (10YR, 5/8) sandy silt (ML), moist (RESIDUAL).
Depth of Hole (ft)	7.00	
Test Bottom Elevation (ft)	362.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.00	in
Water Drop During Final Presoak	0.00	in

Test:

Test Start Time	4:28 PM	
Time interval selected:	30	minutes
Water level at start of test		ft

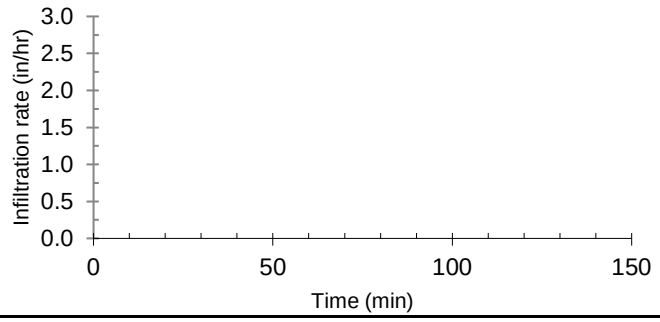
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
Note: Perched water seeped into the test hole prior the testing and terminated.						

Total Length of Test (hr)

Field Rate During Final Reading (in./hr) **0.00**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-3 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-5**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	373.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Medium dense, olive yellow (2.5Y, 6/8), silty fine sand (SM), damp (RESIDUAL).
Depth of Hole (ft)	7.50	
Test Bottom Elevation (ft)	365.5	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:		**Test:**	
Water Drop During Initial Presoak	0.00 in	**Test Start Time**	
Water Drop During Final Presoak	0.00 in	**Time interval selected:**	minutes
		Water level at start of test	ft

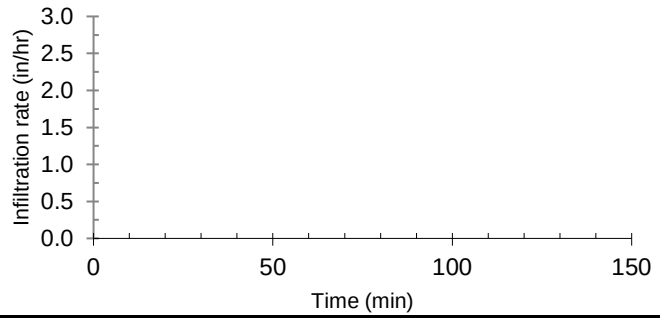
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
Note: Perched water seeped into the test hole prior the testing and terminated.						

Total Length of Test (hr)

Field Rate During Final Reading (in./hr) **0.00**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-3 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-6**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	380.0
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	12.00
Test Bottom Elevation (ft)	368.0

Soil Conditions at Test Level:
Medium dense, light olive brown (2.5YR 5/4), silty sand with gravel (SM), damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	1.80	in
Water Drop During Final Presoak	2.40	in

Test:

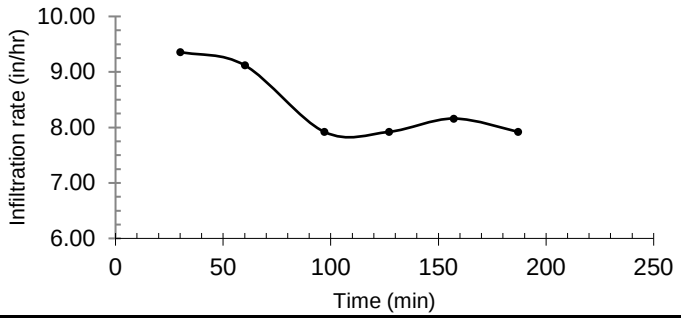
Test Start Time	9:26 AM	
Time interval selected:	30	minutes
Water level at start of test	10.55	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:01 AM	10.94	0.39	11:02 AM	10.53	9.36
2	11:32 AM	10.91	0.38	11:34 AM	10.55	9.12
3	12:04 PM	10.88	0.33	12:05 PM	10.52	7.92
4	12:35 PM	10.85	0.33	12:36 PM	10.50	7.92
5	1:06 PM	10.84	0.34	1:07 PM	10.53	8.16
6	1:37 PM	10.86	0.33			7.92

Total Length of Test (hr)	4:11
Field Rate During Final Reading (in./hr)	**7.92**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-6 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-7**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	383.3
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.00
Test Bottom Elevation (ft)	376.3

Soil Conditions at Test Level:
Medium dense to dense, light olive brown (2.5 YR, 5/4), silty fine sand (SM), includes occasional rock fragments, damp to moist (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	3.00	in
Water Drop During Final Presoak	1.20	in

Test:

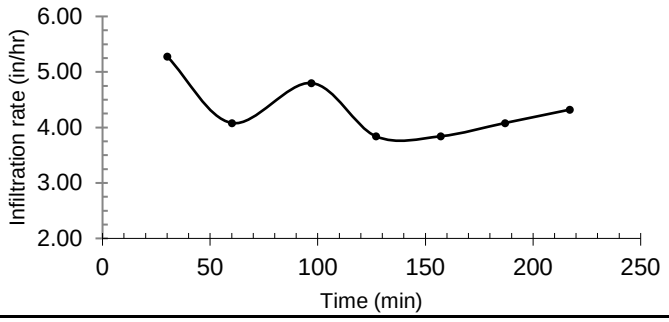
Test Start Time	9:06 AM	
Time interval selected:	30	minutes
Water level at start of test	8.85	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	10:39 AM	9.07	0.22	10:41 AM	8.93	5.28
2	11:11 AM	9.10	0.17	11:14 AM	8.85	4.08
3	11:44 AM	9.05	0.20	11:45 AM	8.86	4.80
4	12:15 PM	9.02	0.16	12:16 PM	8.82	3.84
5	12:46 PM	8.98	0.16	12:49 PM	8.83	3.84
6	1:19 PM	9.00	0.17	1:20 PM	8.82	4.08
7	1:50 PM	9.00	0.18			4.32

Total Length of Test (hr)	4:44
Field Rate During Final Reading (in./hr)	**4.32**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-7 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-8**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	381.3
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	6.00
Test Bottom Elevation (ft)	375.3

Soil Conditions at Test Level:
Medium dense to dense, light olive brown (2.5YR, 5/4), silty fine sand (SM), damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	4.80	in
Water Drop During Final Presoak	1.80	in

Test:

Test Start Time	8:48 AM	
Time interval selected:	30	minutes
Water level at start of test	6.00	ft

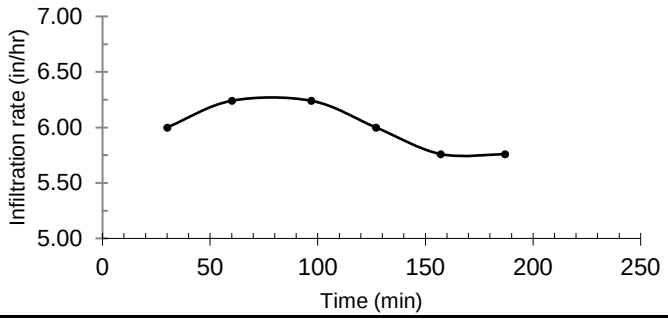
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	10:19 AM	6.25	0.25	10:23 AM	6.00	6.00
2	10:53 AM	6.26	0.26	10:54 AM	5.99	6.24
3	11:24 AM	6.25	0.26	11:25 AM	5.95	6.24
4	11:55 AM	6.20	0.25	11:56 AM	5.98	6.00
5	12:26 PM	6.22	0.24	12:27 PM	5.98	5.76
6	12:57 PM	6.22	0.24			5.76

Total Length of Test (hr) 4:09

Field Rate During Final Reading (in./hr) **5.76**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-8 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-9**
Date	5/7/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	376.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	9.00
Test Bottom Elevation (ft)	367.5

Soil Conditions at Test Level:
Medium dense, light olive brown (2.5YR, 5/4), silty fine sand (SM), damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	4.20	in
Water Drop During Final Presoak	2.04	in

Test:

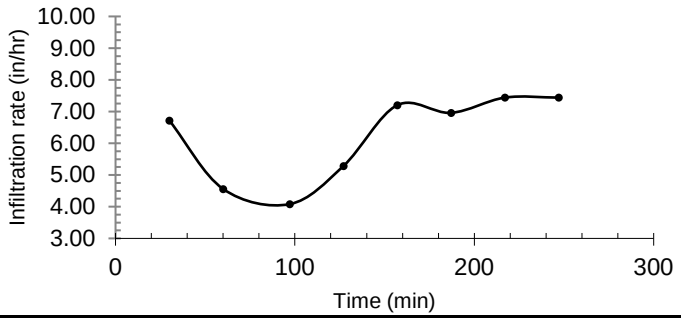
Test Start Time	9:30 AM	
Time interval selected:	30	minutes
Water level at start of test	8.70	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:07 AM	8.98	0.28	11:09 AM	8.38	6.72
2	11:39 AM	8.57	0.19	11:40 AM	8.40	4.56
3	12:10 PM	8.57	0.17	12:11 PM	8.41	4.08
4	12:41 PM	8.63	0.22	12:42 PM	8.35	5.28
5	1:12 PM	8.65	0.30	1:13 PM	8.34	7.20
6	1:43 PM	8.63	0.29	1:46 PM	8.29	6.96
7	2:16 PM	8.60	0.31	2:17 PM	8.29	7.44
8	2:47 PM	8.60	0.31			7.44

Total Length of Test (hr)	5:17
Field Rate During Final Reading (in./hr)	**7.44**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-9 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-10**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	374.5	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Loose to medium dense, yellowish brown (10YR, 5/6), silty fine sand (SM), moist (RESIDUAL).
Depth of Hole (ft)	6.50	
Test Bottom Elevation (ft)	368.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	1.56	in
Water Drop During Final Presoak	3.00	in

Test:

Test Start Time	10:11 AM	
Time interval selected:	30	minutes
Water level at start of test	5.85	ft

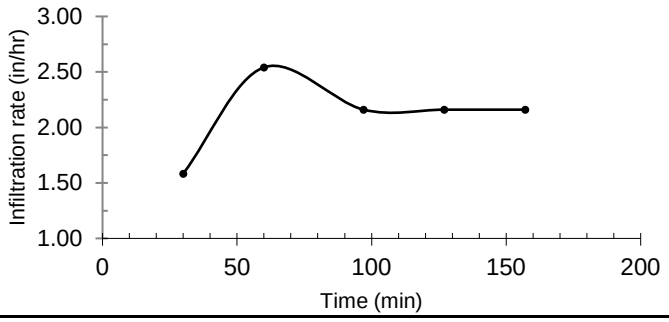
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:01 AM	5.96	0.11	11:02 AM	5.42	1.58
2	11:36 AM	5.54	0.12	11:36 AM	5.59	2.54
3	12:06 PM	5.68	0.09	12:07 PM	5.21	2.16
4	12:37 PM	5.30	0.09	12:37 PM	5.21	2.16
5	1:07 PM	5.30	0.09			2.16

Total Length of Test (hr) 2:56

Field Rate During Final Reading (in./hr) **2.16**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-10 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-11A**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	370.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Medium dense, light yellowish brown (10YR, 6/4), silty sand (SM), moist (RESIDUAL).
Depth of Hole (ft)	6.00	
Test Bottom Elevation (ft)	364.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.24	in
Water Drop During Final Presoak	0.12	in

Test:

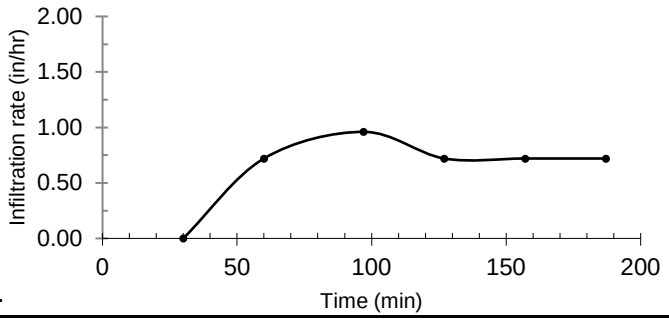
Test Start Time	11:38 AM	
Time interval selected:	30	minutes
Water level at start of test	8.79	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	12:08 PM	8.79	0.00	12:09 PM	8.26	0.00
2	12:39 PM	8.29	0.03	12:40 PM	8.18	0.72
3	1:10 PM	8.22	0.04	1:10 PM	8.22	0.96
4	1:40 PM	8.25	0.03	1:41 PM	8.30	0.72
5	2:11 PM	8.33	0.03	2:12 PM	8.30	0.72
6	2:32 PM	8.33	0.03			0.72

Total Length of Test (hr)	2:54
Field Rate During Final Reading (in./hr)	**0.72**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.
* Fine-grained soil from 0.3' to 6.0' and test depth was taken deeper into a sandier soil per Site Engineering Concepts.



Notes

1. Refer to test boring SWB-11A for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-11B**
Date	5/6/2020
Sheet No.	1 of 1
Weather	50s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	365.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Soft, dark yellowish brown (10YR, 5/8), sandy lean clay (CL), very moist, micaceous (RESIDUAL).
Depth of Hole (ft)	4.00	
Test Bottom Elevation (ft)	361.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.48	in
Water Drop During Final Presoak	0.00	in

Test:

Test Start Time	10:32 AM	
Time interval selected:	30	minutes
Water level at start of test	5.17	ft

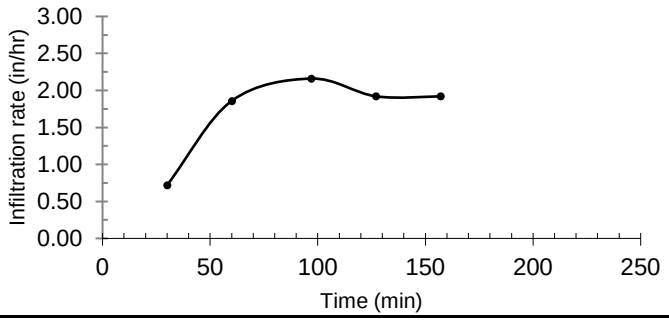
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:02 AM	5.20	0.03	11:15 AM	4.79	0.72
2	11:46 AM	4.87	0.08	11:47 AM	4.71	1.86
3	12:17 PM	4.80	0.09	12:17 PM	4.80	2.16
4	12:47 PM	4.88	0.08	12:47 PM	4.75	1.92
5	1:17 PM	4.83	0.08	1:17 PM	4.75	1.92
6	1:47 PM	4.83	0.08			

Total Length of Test (hr) 3:15

Field Rate During Final Reading (in./hr) **1.92**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.
* Perched water was found at the end of drilling at 6.4 ft so test level was raised to 4 ft per Site Engineering Concepts



Notes

1. Refer to test boring SWB-11A for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/6/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-12**
Date	5/12/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	383.5	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Loose, dark yellowish brown (10 YR 4/6), silty sand (SM), damp (RESIDUAL).
Depth of Hole (ft)	4.00	
Test Bottom Elevation (ft)	379.5	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	1.08	in
Water Drop During Final Presoak	0.72	in

Test:

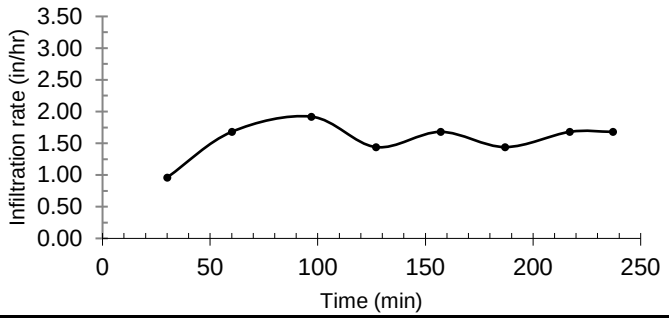
Test Start Time	10:01 AM	
Time interval selected:	30	minutes
Water level at start of test	3.66	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:33 AM	3.70	0.04	11:34 AM	3.63	0.96
2	12:04 PM	3.70	0.07	12:05 PM	3.61	1.68
3	12:35 PM	3.69	0.08	12:36 PM	3.60	1.92
4	1:06 PM	3.66	0.06	1:07 PM	3.57	1.44
5	1:37 PM	3.64	0.07	1:38 PM	3.55	1.68
6	2:08 PM	3.61	0.06	2:08 PM	3.61	1.44
7	2:38 PM	3.68	0.07	2:38 PM	3.61	1.68
8	3:08 PM	3.68	0.07			1.68

Total Length of Test (hr)	5:07
Field Rate During Final Reading (in./hr)	**1.68**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-12 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-13**
Date	5/12/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	385.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	4.00
Test Bottom Elevation (ft)	381.5

Soil Conditions at Test Level:
Loose, light olive brown (2.5Y, 5/4) silty fine sand (SM), damp to moist (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.60	in
Water Drop During Final Presoak	0.72	in

Test:

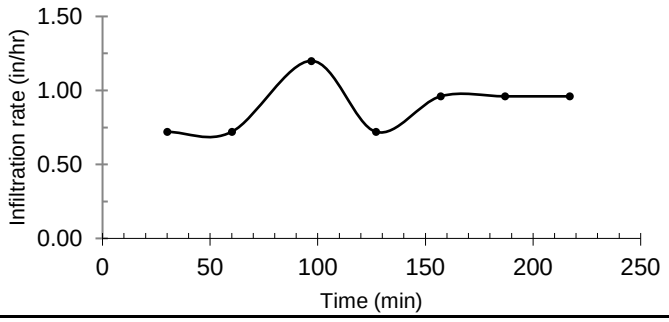
Test Start Time	10:05 AM	
Time interval selected:	30	minutes
Water level at start of test	3.86	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:36 AM	3.89	0.03	11:37 AM	3.86	0.72
2	12:07 PM	3.89	0.03	12:08 PM	3.80	0.72
3	12:38 PM	3.85	0.05	12:39 PM	3.76	1.20
4	1:09 PM	3.79	0.03	1:09 PM	3.79	0.72
5	1:39 PM	3.83	0.04	1:40 PM	3.78	0.96
6	2:10 PM	3.82	0.04	2:11 PM	3.73	0.96
7	2:41 PM	3.77	0.04			0.96

Total Length of Test (hr)	4:36
Field Rate During Final Reading (in./hr)	**0.96**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-13 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-14**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	392.0	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Loose, brownish yellow (10YR 6/8), silty fine sand (SM), damp (RESIDUAL).
Depth of Hole (ft)	5.00	
Test Bottom Elevation (ft)	387.0	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.84	in
Water Drop During Final Presoak	0.96	in

Test:

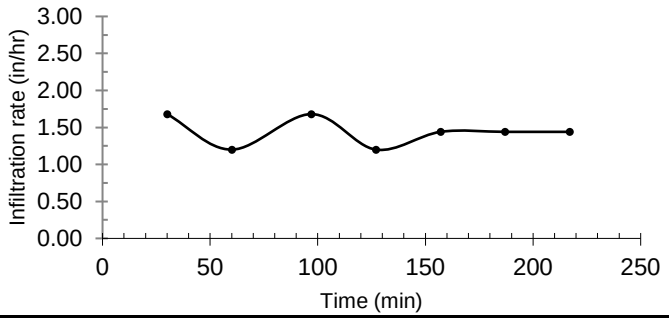
Test Start Time	11:09 AM	
Time interval selected:	30	minutes
Water level at start of test	4.49	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:39 AM	4.56	0.07	11:40 AM	4.45	1.68
2	12:10 PM	4.50	0.05	12:12 PM	4.41	1.20
3	12:42 PM	4.48	0.07	12:43 PM	4.41	1.68
4	1:13 PM	4.46	0.05	1:14 PM	4.37	1.20
5	1:44 PM	4.43	0.06	1:45 PM	4.35	1.44
6	2:15 PM	4.41	0.06	2:16 PM	4.31	1.44
7	2:46 PM	4.37	0.06			1.44

Total Length of Test (hr)	3:37
Field Rate During Final Reading (in./hr)	**1.44**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-14 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-15**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	394.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	6.75
Test Bottom Elevation (ft)	387.8

Soil Conditions at Test Level:
Medium to stiff, brownish yellow (10YR, 6/8), silty lean clay with sand (CL), moist.

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	0.12	in
Water Drop During Final Presoak	0.12	in

Test:

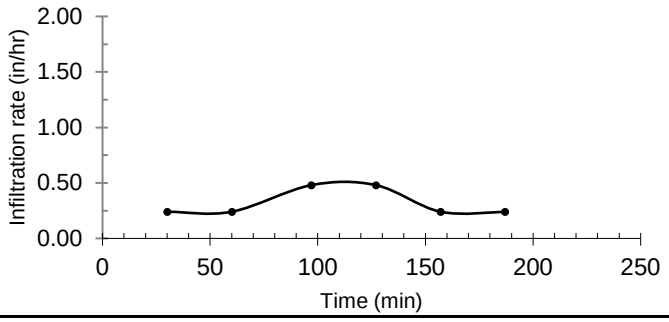
Test Start Time	10:05 AM	
Time interval selected:	30	minutes
Water level at start of test	9.08	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:35 AM	9.09	0.01	11:37 AM	9.09	0.24
2	12:07 PM	9.10	0.01	12:07 PM	9.10	0.24
3	12:37 PM	9.12	0.02	12:37 PM	9.12	0.48
4	1:07 PM	9.14	0.02	1:07 PM	9.14	0.48
5	1:37 PM	9.15	0.01	1:39 PM	9.15	0.24
6	2:09 PM	9.16	0.01			0.24

Total Length of Test (hr)	4:04
Field Rate During Final Reading (in./hr)	**0.24**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-15 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-16**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	407.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.00
Test Bottom Elevation (ft)	400.5

Soil Conditions at Test Level:
Medium dense, dark yellowish brown (10YR, 4/6), silty sand (SM), trace friable rock fragments, moist to damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	4.68	in
Water Drop During Final Presoak	2.88	in

Test:

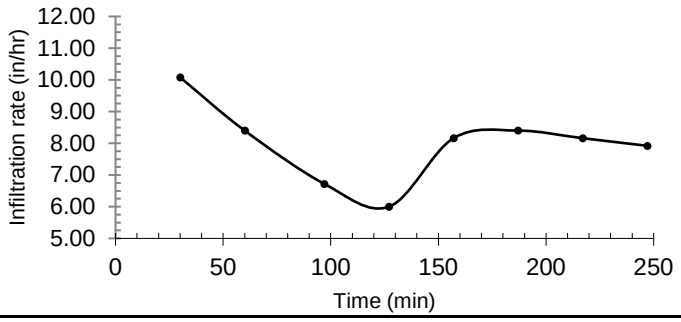
Test Start Time	9:53 AM	
Time interval selected:	30	minutes
Water level at start of test	9.15	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:24 AM	9.57	0.42	11:25 AM	9.06	10.08
2	11:55 AM	9.41	0.35	11:56 AM	8.89	8.40
3	12:26 PM	9.17	0.28	12:26 PM	8.98	6.72
4	12:56 PM	9.23	0.25	1:00 PM	8.98	6.00
5	1:30 PM	9.32	0.34	1:31 PM	9.04	8.16
6	2:01 PM	9.39	0.35	2:02 PM	9.05	8.40
7	2:32 PM	9.39	0.34	2:33 PM	9.05	8.16
8	3:03 PM	9.38	0.33			7.92

Total Length of Test (hr)	5:10
Field Rate During Final Reading (in./hr)	**7.92**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-16 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-17**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	427.5	**Soil Conditions at Test Level:**
Bottom of Stormwater Basin El. (ft)	-	Medium dense, yellowish red (5YR, 5/8), silty sand with friable rocks fragments (SM), micaceous, moist to damp (RESIDUAL).
Depth of Hole (ft)	10.00	
Test Bottom Elevation (ft)	417.5	**Test Method:** Percolation test in cased boreholes per PADEP.

Presoak:			**Test:**		
Water Drop During Initial Presoak	7.20	in	**Test Start Time**	9:42 AM	
Water Drop During Final Presoak	3.48	in	**Time interval selected:**	30	minutes
			Water level at start of test	9.28	ft

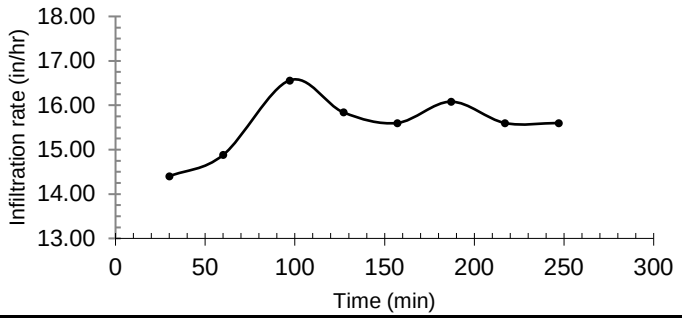
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:14 AM	9.88	0.60	11:15 AM	9.23	14.40
2	11:45 AM	9.85	0.62	11:46 AM	9.19	14.88
3	12:16 PM	9.88	0.69	12:18 PM	9.22	16.56
4	12:48 PM	9.88	0.66	12:49 PM	9.32	15.84
5	1:19 PM	9.97	0.65	1:20 PM	9.20	15.60
6	1:50 PM	9.87	0.67	1:51 PM	9.21	16.08
7	2:21 PM	9.86	0.65	2:22 PM	9.20	15.60
8	2:52 PM	9.85	0.65			15.60

Total Length of Test (hr) 5:10

Field Rate During Final Reading (in./hr) **15.60**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.
* Limiting zone at 12 ft (auger refusal on rock).



Notes

1. Refer to test boring SWB-17 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-18**
Date	5/8/2020
Sheet No.	1 of 1
Weather	40s°F, P.Rainy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	407.0
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	6.50
Test Bottom Elevation (ft)	400.5

Soil Conditions at Test Level:
Loose, yellowish brown (10YR, 5/8), silty sand (SM), micaceous, damp (RESIDUAL).

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	2.40	in
Water Drop During Final Presoak	1.80	in

Test:

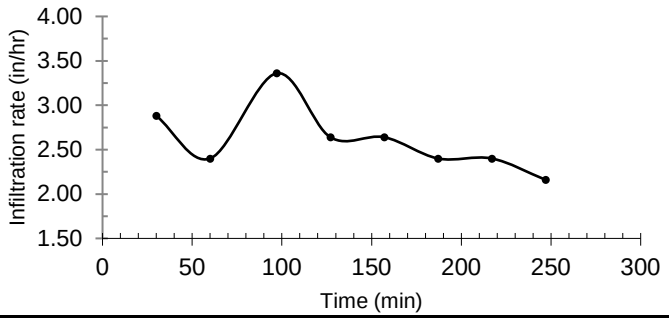
Test Start Time	9:58 AM	
Time interval selected:	30	minutes
Water level at start of test	9.21	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:30 AM	9.33	0.12	11:31 AM	9.15	2.88
2	12:01 PM	9.25	0.10	12:02 PM	9.00	2.40
3	12:32 PM	9.14	0.14	12:33 PM	9.04	3.36
4	1:03 PM	9.15	0.11	1:04 PM	9.06	2.64
5	1:34 PM	9.17	0.11	1:35 PM	9.08	2.64
6	2:05 PM	9.18	0.10	2:08 PM	9.10	2.40
7	2:38 PM	9.20	0.10	2:39 PM	9.10	2.40
8	3:09 PM	9.19	0.09			2.16

Total Length of Test (hr)	5:11
Field Rate During Final Reading (in./hr)	**2.16**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-18 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-19**
Date	5/12/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	406.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	10.50
Test Bottom Elevation (ft)	396.0

Soil Conditions at Test Level:
Medium dense, strong brown (7.5YR 5/8), silty sand with rock fragments (SM), micaceous, damp.

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	2.76	in
Water Drop During Final Presoak	2.76	in

Test:

Test Start Time	9:47 AM	
Time interval selected:	30	minutes
Water level at start of test	10.03	ft

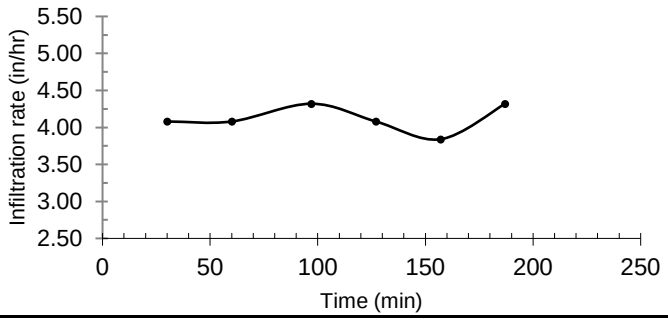
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:17 AM	10.20	0.17	11:18 AM	10.03	4.08
2	11:48 AM	10.20	0.17	11:49 AM	10.01	4.08
3	12:19 PM	10.19	0.18	12:20 PM	10.03	4.32
4	12:50 PM	10.20	0.17	12:51 PM	10.03	4.08
5	1:21 PM	10.19	0.16	1:22 PM	10.02	3.84
6	1:52 PM	10.20	0.18			4.32

Total Length of Test (hr) 4:05

Field Rate During Final Reading (in./hr) **4.32**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-19 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-20**
Date	5/12/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development			**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:**	Radnor	**Co.**	Delaware

Existing Grade El. (ft)	394.0
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	6.50
Test Bottom Elevation (ft)	387.5

Soil Conditions at Test Level:
Medium dense, reddish yellow (7.5YR 6/8), silty sand (SM), micaceous, trace to little rocks fragments, moist to damp.

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	4.56	in
Water Drop During Final Presoak	3.48	in

Test:

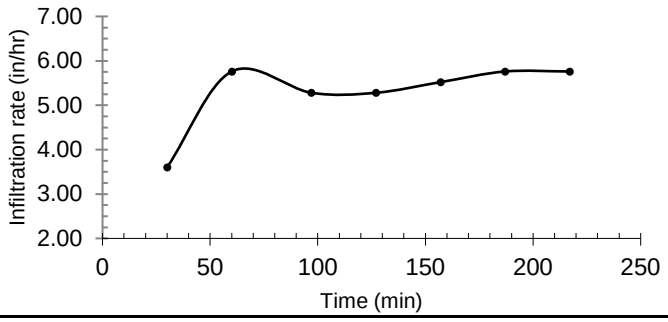
Test Start Time	9:56 AM	
Time interval selected:	30	minutes
Water level at start of test	8.39	ft

Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	11:29 AM	8.54	0.15	11:30 AM	8.38	3.60
2	12:00 PM	8.62	0.24	12:01 PM	8.37	5.76
3	12:31 PM	8.59	0.22	12:32 PM	8.38	5.28
4	1:02 PM	8.60	0.22	1:03 PM	8.40	5.28
5	1:33 PM	8.63	0.23	1:34 PM	8.39	5.52
6	2:04 PM	8.63	0.24	2:05 PM	8.40	5.76
7	2:35 PM	8.64	0.24			5.76

Total Length of Test (hr)	4:39
Field Rate During Final Reading (in./hr)	**5.76**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-20 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

Infiltration Test Report

Infiltration Hole No.	**SWB-21**
Date	5/9/2020
Sheet No.	1 of 1
Weather	40s°F, P.Cloudy

Project Name	Radnor & Eagle Roads Development	**Project No.**	G20-158
Project Location	Radnor & Eagle Roads	**Borough:** Radnor	**Co.** Delaware

Existing Grade El. (ft)	377.5
Bottom of Stormwater Basin El. (ft)	-
Depth of Hole (ft)	7.50
Test Bottom Elevation (ft)	370.0

Soil Conditions at Test Level:
Loose to medium dense, reddish yellow (7.5YR, 6/8), silty sand (SM), micaceous, trace to little rocks fragments, moist to damp.

Test Method: Percolation test in cased boreholes per PADEP.

Presoak:

Water Drop During Initial Presoak	12.00	in
Water Drop During Final Presoak	15.80	in

Test:

Test Start Time	2:35 PM	
Time interval selected:	10	minutes
Water level at start of test	9.19	ft

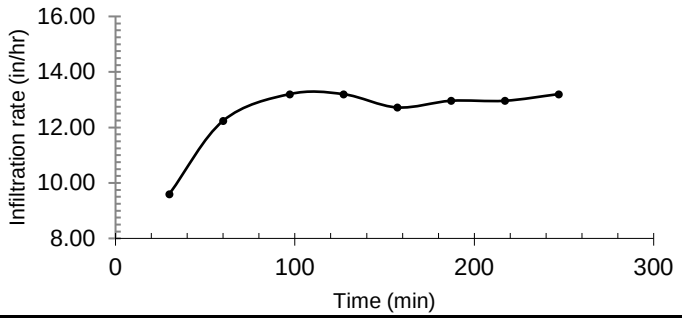
Rdg. No.	Time	Water Level (ft)	Drop (ft)	Refill Time	Refill Water Level (ft)	Field Measured Infiltration Rate (in./hr.)
1	3:47 PM	9.59	0.40	3:48 AM	9.00	9.60
2	3:58 PM	9.51	0.51	3:59 AM	8.94	12.24
3	4:09 PM	9.49	0.55	4:10 AM	8.91	13.20
4	4:20 PM	9.46	0.55	4:20 AM	8.88	13.20
5	4:30 PM	9.41	0.53	4:30 AM	8.91	12.72
6	4:40 PM	9.45	0.54	4:41 AM	8.90	12.96
7	4:51 PM	9.44	0.54	4:53 AM	8.95	12.96
8	5:03 PM	9.50	0.55			13.20

Total Length of Test (hr) 2:28

Field Rate During Final Reading (in./hr) **13.20**

Remarks

* Surface elevations are estimated from the infiltration testing plan by Site Engineering Concepts dated 1/15/20.



Notes

1. Refer to test boring SWB-21 for detailed soil profile description.
2. Test levels are as provided by Site Engineering Concepts.

Distribution

Field Engineer	**Nick Calvanese, PE**	Date	5/13/2020
Project Manager	**Daniel W. Eshete, PG**	Date	5/20/2020

GeoStructures

TEST BORING LOG

Test Boring: SWB-1A
Sheet: 1 of 1
Elevation (ft): 357.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
355	2		S-1	0.0-2.0	WOH-1-1-2	2	1.0/50					F	Soft to stiff, dark yellowish brown (10YR 5/6), sandy lean clay (CL), moist (FILL).		
			S-2	2.0-4.0	4-4-5-5	11	1.0/50					F			
	4		S-3	4.0-6.0	4-4-3-4	9	0.5/25					F		5.0	
350	6		S-4	6.0-8.0	5-5-5-5	13	2.0/100						Medium dense, light yellowish brown (2.5YR 6/3), silty sand (SM), micaceous, moist, trace rock fragments (RESIDUAL).		
	8		S-5	8.0-10.0	4-5-6-6	14	1.8/90								
	10		S-6	10.0-12.0	8-8-10-9	23	2.0/100								
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-1B
Sheet: 1 of 1
Elevation (ft): 365.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
365													6" Topsoil.	0.5	
	2		S-1	0.0-2.0	WOH-2-3-3	6	2.0/100						Soft to medium, dark yellowish brown (10YR 4/6), sandy lean clay (CL), micaceous, moist to very moist (FILL).		
			S-2	2.0-4.0	1-2-1-2	3	1.0/50								
	4		S-3	4.0-6.0	1-2-2-1	5	NR								
360	6		S-4	6.0-8.0	WOH-1-2-2	3	1.6/80						Very loose to loose, dark brown (7.5 YR 3/4), silty sand with gravel, micaceous, rock fragments, moist to very moist (RESIDUAL).	6.0	
	8		S-5	8.0-10.0	2-1-2-1	3	2.0/100								
	10		S-6	10.0-12.0	1-3-4-2	9	1.5/75								
355	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-2
Sheet: 1 of 1
Elevation (ft): 360.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													9" Topsoil.	0.8	
	2		S-1	0.0-2.0	WOH-WOH-1-1	1	1.4/70						Very soft to medium, strong brown (7.5YR 5/6), lean clay with sand (CL), moist (RESIDUAL).		
	4		S-2	2.0-4.0	2-2-2-4	5								4.0	
355	6		S-3	4.0-6.0	4-5-7-7	15							Medium dense, light olive brown (2.5Y 5/6), silty sand with gravel (SM), moist to damp (RESIDUAL).		
	8		S-4	6.0-8.0	5-8-12-5	26									
			S-5	8.0-10.0	7-7-7-8	18	NR							9.0	
350	10												Same as above except dark greenish gray (GLEY1 4/10Y).		
			S-6	10.0-12.0	5-6-6-7	15									
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55

GeoStructures

TEST BORING LOG

Test Boring: SWB-3
Sheet: 1 of 1
Elevation (ft): 365.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
365	0												8" Topsoil.	0.7	
	2		S-1	0.0-2.0	WOH-1-1-1	2							Very loose to loose, strong brown (7.5YR 5/6), silty sand (SM), moist to very moist.		
			S-2	2.0-4.0	3-2-2-3	5	1.6/80							4.0	
	4		S-3	4.0-6.0	5-5-7-8	15							Medium dense, light olive brown (2.5Y 5/6), silty sand (SM), moist to damp (RESIDUAL).		
360	6		S-4	6.0-8.0	5-6-8-11	18									
	8		S-5	8.0-10.0	7-8-9-13	22								10.0	
355	10		S-6	10.0-12.0	20-25-18-18	57							Same as above except very dense with some rock fragments (WEATHERED ROCK).		
	12													12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-4
Sheet: 1 of 1
Elevation (ft): 369.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth ▽ : 6.75' After drilling (05/07/20) | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
			S-1	0.0-2.0	WOH-1-1-2	2							Very soft to very stiff, yellowish brown (10YR 5/8), sandy silt (ML), moist (RESIDUAL).		
	2		S-2	2.0-4.0	3-3-3-3	7	2.0/100								S-2 trace rocks fragments.
365	4		S-3	4.0-6.0	1-4-5-9	11	2.0/100								
	6		S-4	6.0-8.0	8-9-9-9	23	0.5/25								▽ Gravel stuck in tip of S-4.
	8		S-5	8.0-10.0	3-3-3-4	7	2.0/100							9.0	
360	10		S-6	10.0-12.0	5-7-8-7	19	2.0/100						Medium dense, olive light brown (2.5Y 5/4), silty fine sand(SM), damp to moist (RESIDUAL).		Orangish brown, redox staining at 9.5'.
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-5
Sheet: 1 of 1
Elevation (ft): 373.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth ▽ : 4.6' After drilling (05/07/20) | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													Very soft, sandy lean clay with gravel (CL), moist to very moist.	1.0	
	2		S-1	0.0-2.0	1-1-1-1	2	NR						Soft to medium, olive yellow (2.5Y 6/6), sandy silt (ML), moist (RESIDUAL).		
370			S-2	2.0-4.0	1-1-2-1	3	2.0/100								▽
	4		S-3	4.0-6.0	2-2-2-3	5	NR								
	6		S-4	6.0-8.0	4-4-6-6	13	NR							7.0	
365	8		S-5	8.0-10.0	4-4-5-5	11	NR						Medium dense, olive yellow (2.5Y 6/8), silty fine sand (SM), damp (RESIDUAL).		
	10		S-6	10.0-12.0	6-7-7-7	18	NR								
	12													12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-6
Sheet: 1 of 1
Elevation (ft): 380.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
			S-1	0.0-2.0	WOH-1-1-2	2	1.9/95						Very soft to very stiff, strong brown (7.5YR 5/6), sandy lean clay (CL), damp.		
	2		S-2	2.0-4.0	5-6-7-7	17	2.0/100							3.8	
	4		S-3	4.0-6.0	6-6-7-8	17	1.9/95						Medium dense, light olive brown (2.5YR 5/4), silty sand with crushed gravel (SM), damp (RESIDUAL).		
375	6		S-4	6.0-8.0	7-7-6-6	17	1.9/95								
	8		S-5	8.0-10.0	6-7-7-7	18	2.0/100								
370	10		S-6	10.0-12.0	9-6-8-10	18	2.0/100								
	12		S-7	12.0-14.0	8-8-10-9	23	2.0/100								
	14														
365			S-8	14.0-16.0	6-8-9-13	22	2.0/100								
	16												Bottom of borehole at 16.0'.	16.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-7
Sheet: 1 of 1
Elevation (ft): 383.30

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/09/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													0.4" Asphalt pavement and subbase.	0.4	
	2		S-1	0.0-2.0	10-4-4-7	10	NR						Medium dense to dense, light olive brown (2.5YR 5/4), silty fine sand (SM), includes occasional rocks fragments, damp to moist (RESIDUAL).		
380	4		S-2	2.0-4.0	12-10-10-10	26	1.5/75								
	6		S-3	4.0-6.0	8-9-9-12	23	1.8/90								
	8		S-4	6.0-8.0	7-10-10-10	26	1.5/75								Bottom 8" of S-4 has some orange brown/gray redox staining.
375	10		S-5	8.0-10.0	6-8-9-15	22	2.0/100								
	12		S-6	10.0-12.0	12-12-15-15	35	2.0/100								
													Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-8
Sheet: 1 of 1
Elevation (ft): 373.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Asphalt and subbase.	0.3	
			S-1	0.0-2.0	13-5-3-3	10	0.8/40						Stiff, yellowish brown (10YR 5/6), sandy lean clay (CL), damp to moist (RESIDUAL).		
	2														
370			S-2	2.0-4.0	6-6-4-6	13	2.0/100								
	4													4.0	
			S-3	4.0-6.0	9-9-10-11	25	1.9/95						Medioum dense to dense, light olive brown (2.5YR 5/4), silty fine sand (SM), damp (RESIDUAL).		
	6														
			S-4	6.0-8.0	12-13-14-13	35	1.3/65								
365	8														
			S-5	8.0-10.0	10-10-10-10	26	1.7/85								
	10													10.0	
													Bottom of borehole at 10.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-9
Sheet: 1 of 1
Elevation (ft): 376.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
375	2		S-1	0.0-2.0	1-1-2-2	3	1.0/50						Soft, strong brown (7.5YR 4/6), lean clay with sand (CL), moist (RESIDUAL).		
			S-2	2.0-4.0	4-5-7-8	15	1.5/75							3.0	
	4		S-3	4.0-6.0	5-5-5-5	13	1.6/80						Medium dense, light olive brown (2.5YR 5/4), silty fine sand (SM), damp (RESIDUAL).		
370	6		S-4	6.0-8.0	6-6-5-6	14	1.0/50								
	8		S-5	8.0-10.0	6-7-7-7	18	1.8/90								
	10		S-6	10.0-12.0	3-5-7-7	15	1.8/90								
365	12		S-7	12.0-14.0	7-7-10-10	22	1.5/75								
	14												Bottom of borehole at 14.0'.	14.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures, Inc. 1000 West 9th Avenue King of Prussia PA 19406 Ph: 610-265-1818 Fx: 610-265-1833 www.geostructures.net

GeoStructures

TEST BORING LOG

Test Boring: SWB-10
Sheet: 1 of 1
Elevation (ft): 374.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/04/20 - 05/04/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/04/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Topsoil.	0.3	
	2		S-1	0.0-2.0	11-3-3-3	7	0.8/40						Medium to stiff, dark yellowish brown (10YR 3/6), sandy silt (ML), moist (FILL).		
			S-2	2.0-4.0	5-3-5-5	10	1.7/85							3.0	
	4												Same as above except residual.	4.0	
370			S-3	4.0-6.0	4-3-2-4	6	1.3/65						Loose to medium dense, yellowish brown (10YR 5/6), silty fine sand (SM), micaceous, moist (RESIDUAL).		
	6		S-4	6.0-8.0	4-12-7-7	25	1.4/70								
	8		S-5	8.0-10.0	3-3-4-5	9	2.0/100								
365	10		S-6	10.0-12.0	5-5-5-5	13	2.0/100								
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-11A
Sheet: 1 of 1
Elevation (ft): 370.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Asphalt.	0.3	
	2		S-1	0.0-2.0	13-2-2-2	5	NR						Loose, very dark grayish brown (2.5Y 3/2), sandy lean clay (CL), very moist to moist (FILL).		
			S-2	2.0-4.0	2-2-2-2	5	1.0/50								
	4														
365			S-3	4.0-6.0	3-3-3-3	7	NR								S-3: Rock in tip.
	6													6.0	
			S-4	6.0-8.0	3-4-5-5	11	1.8/90						Medium dense, light yellowish brown (10YR 6/4), silty sand (SM), micaceous, trace rocks fragments, moist (RESIDUAL).		
	8														
			S-5	8.0-10.0	8-9-9-8	23	1.2/60								
360	10													10.0	
													Bottom of borehole at 10.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:54:

GeoStructures

TEST BORING LOG

Test Boring: SWB-11B
Sheet: 1 of 1
Elevation (ft): 365.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Topsoil.	0.3	
	2		S-1	0.0-2.0	WOH-2-WOH-1	2	1.1/55						Very loose, light olive brown (2.5YR 5/4), silty fine sand with rocks fragments (SM), micaceous (FILL).	2.0	
	4		S-2	2.0-4.0	WOH-1-1-2	2	1.3/65						Soft, dark yellowish brown (10YR 5/8), sandy lean clay (CL), micaceous.		
360	6		S-3	4.0-6.0	1-1-2-2	3	NR							6.0	S-3: Rock stuck in tip.
	8		S-4	6.0-8.0	2-2-4-4	7	1.8/90						Same as above except residual with traces of rock fragments, moist to very moist.		
			S-5	8.0-10.0	1-2-3-4	6	1.9/95								
355	10		S-6	10.0-12.0	6-7-5-5	15	1.8/90								
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55

GeoStructures

TEST BORING LOG

Test Boring: SWB-12
Sheet: 1 of 1
Elevation (ft): 383.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
			S-1	0.0-2.0	1-1-1-2	2	1.5/75						Soft, yellowish brown (10YR 5/8), sandy silt (ML), have little angular gravel (RESIDUAL).	2.0	
	2		S-2	2.0-4.0	2-2-3-2	6	1.8/90						Loose, light olive brown (2.5YR 5/4), silty fine sand (SM), damp (RESIDUAL).	3.5	
380	4		S-3	4.0-6.0	3-6-6-4	15	1.0/50						Loose to medium dense, dark yellowish brown (10YR 4/6), silty sand (SM), damp (RESIDUAL).		
	6		S-4	6.0-8.0	4-4-3-4	9	1.5/75								
	8														
375			S-5	8.0-10.0	5-4-4-3	10	1.8/90								
	10												Bottom of borehole at 10.0'.	10.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-13
Sheet: 1 of 1
Elevation (ft): 385.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
385													8" Topsoil.	0.7	
	2		S-1	0.0-2.0	1-1-2-2	3	1.6/80						Soft to medium, strong brown (7.5YR 5/8), sandy silt (ML) with gravel, moist to damp (RESIDUAL).		
			S-2	2.0-4.0	3-3-4-4	9	1.5/75							3.5	
	4		S-3	4.0-6.0	3-3-3-4	7	1.8/90						Loose to medium dense, light olive brown (2.5Y 5/4), silty fine sand (SM), damp to moist (RESIDUAL).		
380	6		S-4	6.0-8.0	5-5-5-6	13	2.0/100								
	8		S-5	8.0-10.0	5-5-5-5	13	1.0/50								
	10												Bottom of borehole at 10.0'.	10.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-14
Sheet: 1 of 1
Elevation (ft): 392.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
			S-1	0.0-2.0	1-1-2-2	3	1.5/75						Soft to stiff, reddish brown (5YR 5/4), sandy silt (ML), moist to damp (RESIDUAL).		
390	2														
			S-2	2.0-4.0	3-4-4-4	10	1.5/75								
	4													4.5	
			S-3	4.0-6.0	4-5-5-7	13	2.0/100						Medium dense, brownish yellow (10YR 6/8), silty fine sand (SM), damp (RESIDUAL).		
	6														
385			S-4	6.0-8.0	5-4-5-5	11	1.8/90								
	8														
			S-5	8.0-10.0	5-5-4-6	11	1.4/70								
	10													10.0	
													Bottom of borehole at 10.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-15
Sheet: 1 of 1
Elevation (ft): 394.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Topsoil.	0.3	
	2		S-1	0.0-2.0	1-1-1-2	2	1.5/75						Soft, strong brown (7.5YR 5/8), sandy silt (ML), moist (FILL).		
			S-2	2.0-4.0	2-2-1-2	3	1.6/80								
	4													4.0	
390			S-3	4.0-6.0	2-2-2-3	5	1.0/50				2.0		Medium to stiff, brownish yellow (10YR 6/8), lean clay with sand (CL), moist.		
	6		S-4	6.0-8.0	4-4-5-5	11	2.0/100				2.25				
	8		S-5	8.0-10.0	4-4-5-5	11	1.5/75				2.0				
385	10		S-6	10.0-12.0	5-5-4-4	11	1.0/50				2.5				
	12												Bottom of borehole at 12.0'.	12.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-16
Sheet: 1 of 1
Elevation (ft): 407.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
405	2		S-1	0.0-2.0	1-2-2-1	5	1.5/75						Loose to very loose, yellowish red (5YR 5/8), silty sand with angular gravel (SM), micaceous, moist to damp (RESIDUAL).		
	4		S-2	2.0-4.0	3-2-1-2	3	1.2/60							4.0	
	6		S-3	4.0-6.0	4-5-5-4	13	1.4/70						Medium dense, dark yellowish brown (10YR 4/6), silty sand (SM), trace friable rocks fragments, moist to damp (RESIDUAL).		
400	8		S-4	6.0-8.0	4-5-4-6	11	1.8/90								
	10		S-5	8.0-10.0	3-5-6-5	14	2.0/100								
	12		S-6	10.0-12.0	5-6-6-6	15	1.8/90							12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-17
Sheet: 1 of 1
Elevation (ft): 427.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													2" Topsoil.	0.2	
425	2		S-1	0.0-2.0	1-2-2-5	5	1.6/80						Loose to dense, yellowish red (5YR 5/8), silty sand with friable rocks fragments (SM), micaceous, moist to damp (RESIDUAL).		
	4		S-2	2.0-4.0	1-5-5-1	13	1.2/60								
	6		S-3	4.0-6.0	8-8-5-5	17	1.2/60								
420	8		S-4	6.0-8.0	4-5-5-6	13	1.5/75								
	10		S-5	8.0-10.0	10-15-20-38	46	1.8/90								
	12		S-6	10.0-12.0	5-7-9-18	21	1.3/65							12.0	Limiting zone at 12', test adjusted to 10'.
415			S-7	12.0-14.0	30-40-39-32	105							Same as above except very dense with some rock fragments (WEATHERED ROCK).		
	14		S-8	14.0-14.4	50/5"									14.4	
													Bottom of borehole at 14.4'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-18
Sheet: 1 of 1
Elevation (ft): 407.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
405	2		S-1	0.0-2.0	1-1-3-2	5	2.0/100						Medium, brownish yellow (10YR 6/6), sandy lean clay (CL), moist to damp (RESIDUAL).		
			S-2	2.0-4.0	2-2-4-4	7	1.0/50								
	4		S-3	4.0-6.0	2-3-4-4	9	0.5/25								
	6													6.0	
400			S-4	6.0-8.0	3-4-5-5	11	1.9/95						Medium dense to loose, yellowish brown (10YR 5/8), silty sand (SM), micaceous, damp (RESIDUAL).		
	8		S-5	8.0-10.0	4-3-4-3	9	1.2/60								
	10		S-6	10.0-12.0	5-6-6-7	15	1.5/75								
395	12													12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

Project Name: Radnor & Eagles Road development | Project Number: G20-158 | Path: g:\field\gint program & project data\projects\g2020\g20-158 radnor & eagles rd development.gpj | Date and Time: 05/20/20 20:55.

GeoStructures

TEST BORING LOG

Test Boring: SWB-19
Sheet: 1 of 1
Elevation (ft): 406.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													4" Topsoil.	0.3	
405	2		S-1	0.0-2.0	1-1-1-2	2	1.2/60						Very loose to medium dense, strong brown (7.5YR 5/8), silty sand with rock fragments (SM), micaceous, damp.		
			S-2	2.0-4.0	2-2-2-3	5	1.8/90								
	4		S-3	4.0-6.0	4-5-8-8	17	1.8/90								
400	6		S-4	6.0-8.0	5-6-7-6	17	1.5/75								
	8		S-5	8.0-10.0	7-7-6-6	17	1.8/90								
	10		S-6	10.0-12.0	9-9-6-10	19									
395	12		S-7	12.0-14.0	8-11-12-12	30							Same as above except dense with some rock fragments (COMPLETELY WEATHERED ROCK).	12.0	
	14		S-8	14.0-16.0	11-13-13-12	34									
	16												Bottom of borehole at 16.0'.	16.0	

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-20
Sheet: 1 of 1
Elevation (ft): 394.00

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/05/20 - 05/05/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/05/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
													6" Topsoil.	0.5	
			S-1	0.0-2.0	2-4-4-3	10	1.8/90						Loose, strong brown (7.5YR 5/8), silty sand with rock fragments, moist (FILL).	2.0	
	2		S-2	2.0-4.0	4-4-3-2	9	1.5/75						Loose to medium dense, reddish yellow (7.5YR 6/8), silty sand (SM), micaceous, trace to little rocks fragments, moist to damp.		
390	4		S-3	4.0-6.0	4-4-4-4	10	1.5/75								
	6		S-4	6.0-8.0	5-5-8-8	17	1.6/80								
	8														
385			S-5	8.0-10.0	6-8-8-9	21	1.8/90								
	10		S-6	10.0-12.0	7-10-7-11	22	1.8/90								
	12													12.0	
													Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.

GeoStructures

TEST BORING LOG

Test Boring: SWB-21
Sheet: 1 of 1
Elevation (ft): 377.50

Project Name: Radnor & Eagles Road development | Project No: G20-158 | Date: 05/06/20 - 05/06/20

Location: Radnor & Eagle Roads | Twp.: Radnor | County: Delaware | State: PA

Driller/Company:Lou/GeoStructures | Rig Type: Geoprobe 7822DT, Automatic Safety Hammer.

Drilling Methods:2-1/4" I.D. Hollow Stem Auger. | Logged By: NRC

Water Depth ▽ : Dry End of drilling (05/06/20) | Water Depth : | Checked By: DWE

Elevation (ft)	Depth (ft)	Sample Type	Sample No.	Sample Interval (ft)	SPT Blows or RQD (ft/%)	SPT N_{60}	Recovery (ft/%)	W_C (%)	LL/PL (%)	USCS/AASHTO	Strength (tsf)	Symbol	Material Description	Strata Div.(ft)	Remarks
			S-1	0.0-2.0	1-WOH-1-WOH	1	0.9/45						Very soft, dark yellowish brown (10YR 4/4), sandy silt with angular gravel (ML), very moist (FILL).		
375	2		S-2	2.0-4.0	3-3-5-7	10	1.5/75							3.0	
	4		S-3	4.0-6.0	8-8-10-11	23	2.0/100						Medium dense to dense, brownish yellow (10YR 6/6), silty sand with angular gravel (SM), micaceous, damp (RESIDUAL).		
370	6		S-4	6.0-8.0	12-13-20-18	43	2.0/100								
	8		S-5	8.0-10.0	12-12-12-12	31	2.0/100							10.0	
	10		S-6	10.0-12.0	25-30-30-40	79	1.5/75						Very dense, light olive brown (2.5YR 5/4), silty sand and rock fragments (SM/GM), micaceous, dry (COMPLETELY WEATHERED ROCK).	12.0	
	12												Bottom of borehole at 12.0'.		

SAMPLE LEGEND

- SPT Sample
- Rock Core
- Bulk Sample
- Shelby Tube

GENERAL NOTES

Surface elevations are as provided by Site Engineering Concepts on an infiltration testing plan dated 1/15/20.