STORMWATER MANAGEMENT CALCULATIONS

Vertex Rail and Site Improvements
Phase 1 – NCSPA Permit

Wilmington, North Carolina

August 2015

W. K. Dickson & Co., Inc.
909 Market Street
Wilmington, North Carolina 28401
(910) 762-4200

Firm License No. F-0374

INFILTRATION BASIN #1 CALCULATIONS

Basin is Interim Design until future build-out of site

Total Area =	120,860	SF----\		
Pervious Area =	100,179	SF >	% IMP =	17.11%
Impervious Area =	20,681	SF----/		

Determine the storage volume required to hold the first 3.75 inch of runoff.

Schueler's Method:

X = 0.05 + 0.009 (% IMP)

= 0.204

Volume Calculations to meet the 2.5 times 1.5" NCDENR Requirment to waive the Offline Bypass and Vegetated Filter Strip.

Volume = (3.75"/12) x Total Area x X

= 7,705 CF

Volume Calculations to calculate the ac-in during the first 1.5" of rainfall

Volume = (1.5"/12) x Total Area x X

= 3,082 CF

Volume = (ft^2-ft)*(12"/ft)*(ac/43560 ft^2)=ac-in

= 0.85 ac-in

Determine the storage volume provided.

Contour Elevation (FMSL)	Area (SF)	Volume (CF)	
38.00	2750	0	
39.00	4123	3437	<<<<<< 1.5" Runoff Storage @ 38.90
40.00	5550	8273	<<<<<< 3.75" Runoff Storage @ 39.88

Engineering
Land Planning
Surveying

wgb 9/2/2015

909 Market Street
Wilmington, NC 28401
(910) 762-4200

Determine time required for stored runoff to fully infiltrate.

Darcy's Law: $Q = kA_{bottom}(h/L)$

where: k = (from soils report)= 30.0 in/hr
A = bottom area of infiltration basin = 2,750 sf
L = bottom elev. - SHWT elev. = 3.00
h = water surface elev. (varies)
SHWT = 35.00

Contour Elevation (FMSL)	Area (SF)	Incremental Storage (CF)	Infiltration Rate, Q (CFS)	Release Time (HRS)
40.00	5550	4837	2.86	0.469
39.00	4123	3437	2.23	0.428
38.00	2750			

Total Drawdown Time = 0.90 Hours

Determine time required for stored runoff to fully infiltrate at half the soils infiltration rate.

Darcy's Law: $Q = kA_{bottom}(h/L)$

where: k = (from soils report)= 15.0 in/hr
A = bottom area of infiltration basin = 2,750 sf
L = bottom elev. - SHWT elev. = 3.00
h = water surface elev. (varies)
SHWT = 35.00

Contour Elevation (FMSL)	Area (SF)	Incremental Storage (CF)	Infiltration Rate, Q (CFS)	Release Time (HRS)
40.00	5550	4837	1.43	0.938
39.00	4123	3437	1.11	0.857
38.00	2750			

Total Drawdown Time = 1.79 Hours

Hydrograph Report

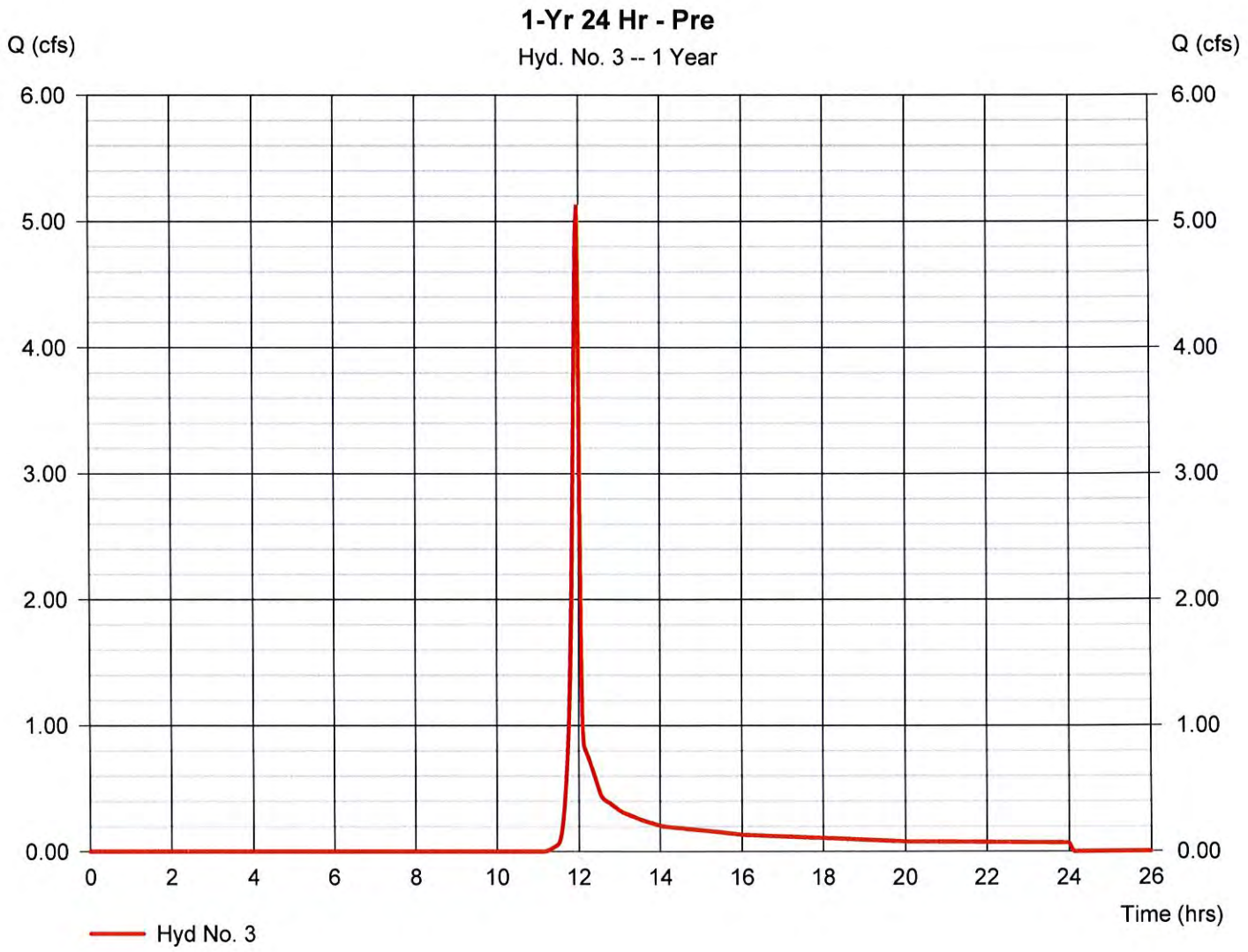
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 3

1-Yr 24 Hr - Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 5.132 cfs
Storm frequency	= 1 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 10,358 cuft
Drainage area	= 2.770 ac	Curve number	= 68*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = + (2.770 x 68)] / 2.770



Hydrograph Report

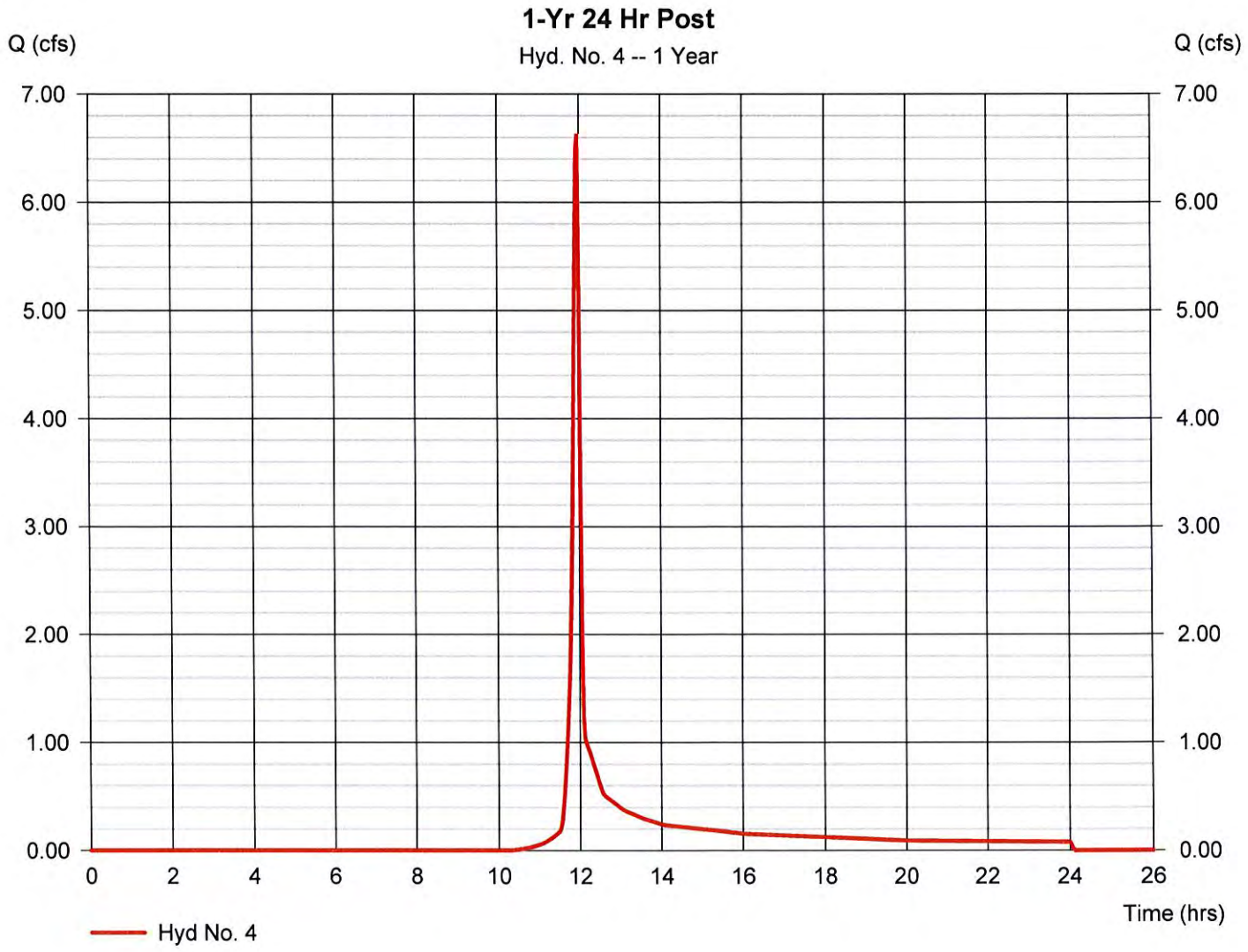
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 4

1-Yr 24 Hr Post

Hydrograph type	= SCS Runoff	Peak discharge	= 6.631 cfs
Storm frequency	= 1 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 13,260 cuft
Drainage area	= 2.770 ac	Curve number	= 73*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.300 x 68) + (0.470 x 98)] / 2.770



Hydrograph Report

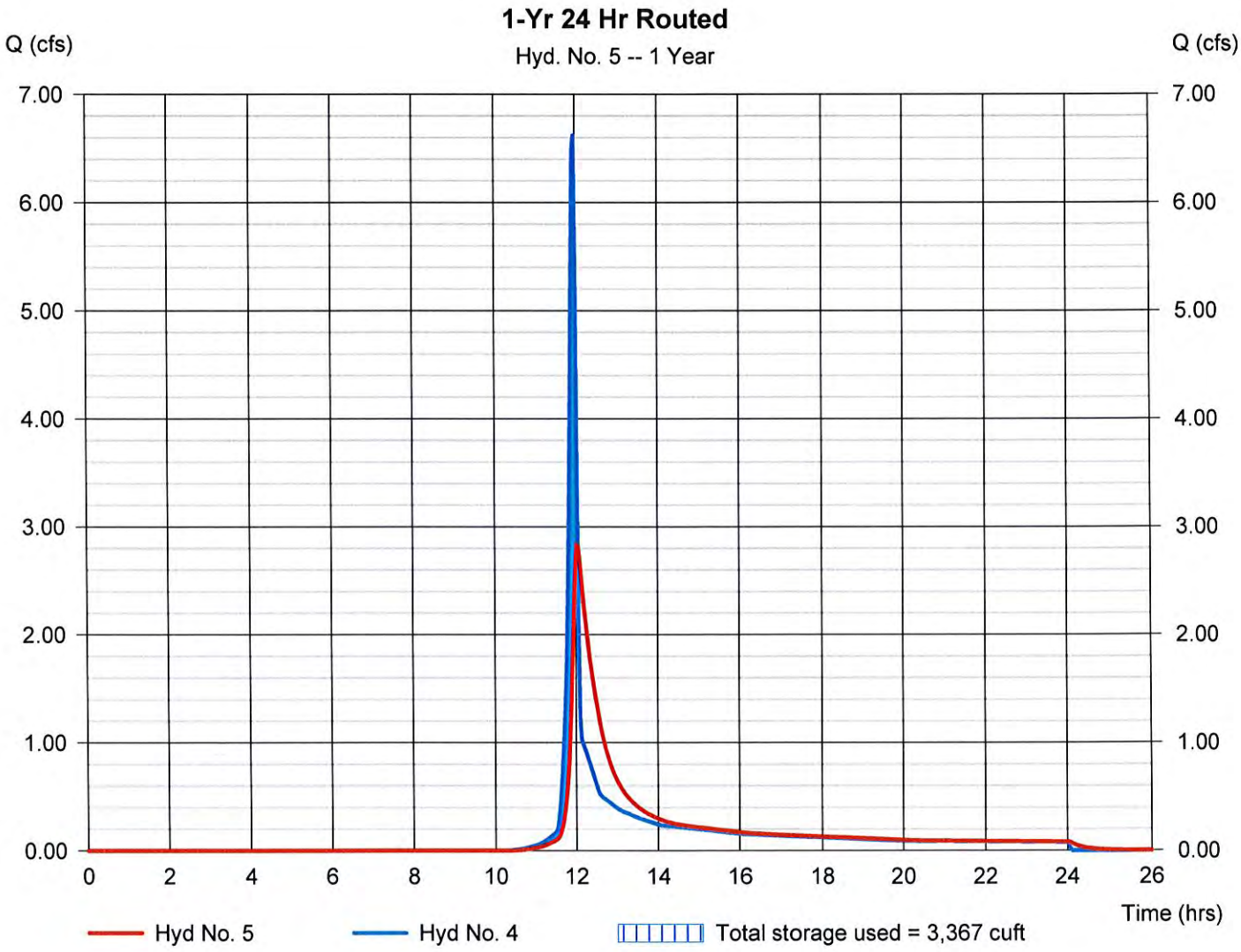
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 5

1-Yr 24 Hr Routed

Hydrograph type	= Reservoir	Peak discharge	= 2.824 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 13,259 cuft
Inflow hyd. No.	= 4 - 1-Yr 24 Hr Post	Max. Elevation	= 39.00 ft
Reservoir name	= Infiltration Basin #1 - 30 in/hr	Max. Storage	= 3,367 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Tuesday, 09 / 8 / 2015

Hyd. No. 5

1-Yr 24 Hr Routed

Hydrograph type	= Reservoir	Peak discharge	= 2.824 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 13,259 cuft
Inflow hyd. No.	= 4 - 1-Yr 24 Hr Post	Reservoir name	= Infiltration Basi
Max. Elevation	= 39.00 ft	Max. Storage	= 3,367 cuft

Storage Indication method used. Outflow includes exfiltration.

Hydrograph Discharge Table

(Printed values >= 1.00% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
11.03	0.055	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
11.07	0.060	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.031	0.031
11.10	0.066	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.034	0.034
11.13	0.072	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.038	0.038
11.17	0.079	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.041	0.041
11.20	0.087	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.045	0.045
11.23	0.094	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.050	0.050
11.27	0.103	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.054	0.054
11.30	0.111	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.059	0.059
11.33	0.120	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.065	0.065
11.37	0.130	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.071	0.071
11.40	0.140	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.077	0.077
11.43	0.151	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
11.47	0.162	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.090	0.090
11.50	0.174	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.098	0.098
11.53	0.199	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.106	0.106
11.57	0.266	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.118	0.118
11.60	0.389	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.138	0.138
11.63	0.559	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.171	0.171
11.67	0.771	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.218	0.218

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
11.70	1.023	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.283	0.283
11.73	1.321	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.368	0.368
11.77	1.678	38.17	-----	-----	-----	-----	-----	-----	-----	-----	0.477	0.477
11.80	2.189	38.22	-----	-----	-----	-----	-----	-----	-----	-----	0.616	0.616
11.83	2.968	38.28	-----	-----	-----	-----	-----	-----	-----	-----	0.804	0.804
11.87	4.023	38.37	-----	-----	-----	-----	-----	-----	-----	-----	1.062	1.062
11.90	5.335	38.49	-----	-----	-----	-----	-----	-----	-----	-----	1.409	1.409
11.93	6.490	38.64	-----	-----	-----	-----	-----	-----	-----	-----	1.841	1.841
11.97	6.631 <<	38.80	-----	-----	-----	-----	-----	-----	-----	-----	2.293	2.293
12.00	5.417	38.93	-----	-----	-----	-----	-----	-----	-----	-----	2.651	2.651
12.03	3.508	38.99 <<	-----	-----	-----	-----	-----	-----	-----	-----	2.824	2.824
<<												
12.07	1.975	38.98	-----	-----	-----	-----	-----	-----	-----	-----	2.816	2.816
12.10	1.244	38.94	-----	-----	-----	-----	-----	-----	-----	-----	2.701	2.701
12.13	1.031	38.89	-----	-----	-----	-----	-----	-----	-----	-----	2.551	2.551
12.17	0.993	38.84	-----	-----	-----	-----	-----	-----	-----	-----	2.403	2.403
12.20	0.956	38.79	-----	-----	-----	-----	-----	-----	-----	-----	2.266	2.266
12.23	0.919	38.75	-----	-----	-----	-----	-----	-----	-----	-----	2.139	2.139
12.27	0.880	38.71	-----	-----	-----	-----	-----	-----	-----	-----	2.020	2.020
12.30	0.841	38.67	-----	-----	-----	-----	-----	-----	-----	-----	1.909	1.909
12.33	0.801	38.63	-----	-----	-----	-----	-----	-----	-----	-----	1.805	1.805
12.37	0.761	38.60	-----	-----	-----	-----	-----	-----	-----	-----	1.707	1.707
12.40	0.720	38.56	-----	-----	-----	-----	-----	-----	-----	-----	1.614	1.614
12.43	0.678	38.53	-----	-----	-----	-----	-----	-----	-----	-----	1.526	1.526
12.47	0.636	38.50	-----	-----	-----	-----	-----	-----	-----	-----	1.443	1.443
12.50	0.593	38.48	-----	-----	-----	-----	-----	-----	-----	-----	1.364	1.364
12.53	0.554	38.45	-----	-----	-----	-----	-----	-----	-----	-----	1.288	1.288
12.57	0.525	38.42	-----	-----	-----	-----	-----	-----	-----	-----	1.216	1.216

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
12.60	0.506	38.40	-----	-----	-----	-----	-----	-----	-----	-----	1.149	1.149
12.63	0.495	38.38	-----	-----	-----	-----	-----	-----	-----	-----	1.087	1.087
12.67	0.486	38.36	-----	-----	-----	-----	-----	-----	-----	-----	1.030	1.030
12.70	0.477	38.34	-----	-----	-----	-----	-----	-----	-----	-----	0.977	0.977
12.73	0.467	38.32	-----	-----	-----	-----	-----	-----	-----	-----	0.929	0.929
12.77	0.458	38.31	-----	-----	-----	-----	-----	-----	-----	-----	0.884	0.884
12.80	0.449	38.29	-----	-----	-----	-----	-----	-----	-----	-----	0.843	0.843
12.83	0.439	38.28	-----	-----	-----	-----	-----	-----	-----	-----	0.805	0.805
12.87	0.430	38.27	-----	-----	-----	-----	-----	-----	-----	-----	0.769	0.769
12.90	0.420	38.26	-----	-----	-----	-----	-----	-----	-----	-----	0.736	0.736
12.93	0.410	38.25	-----	-----	-----	-----	-----	-----	-----	-----	0.705	0.705
12.97	0.401	38.24	-----	-----	-----	-----	-----	-----	-----	-----	0.677	0.677
13.00	0.391	38.23	-----	-----	-----	-----	-----	-----	-----	-----	0.650	0.650
13.03	0.381	38.22	-----	-----	-----	-----	-----	-----	-----	-----	0.624	0.624
13.07	0.373	38.21	-----	-----	-----	-----	-----	-----	-----	-----	0.601	0.601
13.10	0.367	38.20	-----	-----	-----	-----	-----	-----	-----	-----	0.579	0.579
13.13	0.362	38.19	-----	-----	-----	-----	-----	-----	-----	-----	0.558	0.558
13.17	0.356	38.19	-----	-----	-----	-----	-----	-----	-----	-----	0.539	0.539
13.20	0.351	38.18	-----	-----	-----	-----	-----	-----	-----	-----	0.521	0.521
13.23	0.346	38.18	-----	-----	-----	-----	-----	-----	-----	-----	0.505	0.505
13.27	0.341	38.17	-----	-----	-----	-----	-----	-----	-----	-----	0.489	0.489
13.30	0.335	38.17	-----	-----	-----	-----	-----	-----	-----	-----	0.475	0.475
13.33	0.330	38.16	-----	-----	-----	-----	-----	-----	-----	-----	0.461	0.461
13.37	0.325	38.16	-----	-----	-----	-----	-----	-----	-----	-----	0.448	0.448
13.40	0.320	38.15	-----	-----	-----	-----	-----	-----	-----	-----	0.436	0.436
13.43	0.314	38.15	-----	-----	-----	-----	-----	-----	-----	-----	0.425	0.425
13.47	0.309	38.14	-----	-----	-----	-----	-----	-----	-----	-----	0.414	0.414
13.50	0.303	38.14	-----	-----	-----	-----	-----	-----	-----	-----	0.404	0.404

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
13.53	0.298	38.14	-----	-----	-----	-----	-----	-----	-----	-----	0.394	0.394
13.57	0.293	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.384	0.384
13.60	0.289	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.375	0.375
13.63	0.285	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.367	0.367
13.67	0.281	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.359	0.359
13.70	0.277	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.351	0.351
13.73	0.273	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.344	0.344
13.77	0.270	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.337	0.337
13.80	0.266	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.330	0.330
13.83	0.262	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.324	0.324
13.87	0.258	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.318	0.318
13.90	0.254	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.312	0.312
13.93	0.250	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.306	0.306
13.97	0.246	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.301	0.301
14.00	0.242	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.295	0.295
14.03	0.238	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.290	0.290
14.07	0.235	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.285	0.285
14.10	0.233	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.280	0.280
14.13	0.232	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.275	0.275
14.17	0.231	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.271	0.271
14.20	0.229	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.267	0.267
14.23	0.228	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.264	0.264
14.27	0.227	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.260	0.260
14.30	0.225	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.257	0.257
14.33	0.224	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.254	0.254
14.37	0.223	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.251	0.251
14.40	0.221	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.248	0.248
14.43	0.220	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.245	0.245

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
14.47	0.219	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.243	0.243
14.50	0.218	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.241	0.241
14.53	0.216	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.238	0.238
14.57	0.215	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.236	0.236
14.60	0.214	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.234	0.234
14.63	0.212	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.232	0.232
14.67	0.211	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.230	0.230
14.70	0.210	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.228	0.228
14.73	0.208	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.226	0.226
14.77	0.207	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.225	0.225
14.80	0.205	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.223	0.223
14.83	0.204	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.221	0.221
14.87	0.203	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.219	0.219
14.90	0.201	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.218	0.218
14.93	0.200	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.216	0.216
14.97	0.199	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.214	0.214
15.00	0.197	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.213	0.213
15.03	0.196	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.211	0.211
15.07	0.195	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.210	0.210
15.10	0.193	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.208	0.208
15.13	0.192	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.207	0.207
15.17	0.190	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.205	0.205
15.20	0.189	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.204	0.204
15.23	0.188	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.202	0.202
15.27	0.186	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.201	0.201
15.30	0.185	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.199	0.199
15.33	0.183	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.198	0.198
15.37	0.182	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.196	0.196

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
15.40	0.181	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.195	0.195
15.43	0.179	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.193	0.193
15.47	0.178	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.192	0.192
15.50	0.176	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.191	0.191
15.53	0.175	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.189	0.189
15.57	0.173	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.188	0.188
15.60	0.172	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.186	0.186
15.63	0.171	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.185	0.185
15.67	0.169	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.183	0.183
15.70	0.168	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.182	0.182
15.73	0.166	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.181	0.181
15.77	0.165	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.179	0.179
15.80	0.163	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.178	0.178
15.83	0.162	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.176	0.176
15.87	0.160	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.175	0.175
15.90	0.159	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.173	0.173
15.93	0.158	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.172	0.172
15.97	0.156	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.170	0.170
16.00	0.155	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.169	0.169
16.03	0.153	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.168	0.168
16.07	0.152	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.166	0.166
16.10	0.151	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.165	0.165
16.13	0.151	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.163	0.163
16.17	0.150	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.162	0.162
16.20	0.150	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.161	0.161
16.23	0.149	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.160	0.160
16.27	0.149	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.159	0.159
16.30	0.148	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.158	0.158

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
16.33	0.148	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.157	0.157
16.37	0.147	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.156	0.156
16.40	0.147	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.155	0.155
16.43	0.147	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.154	0.154
16.47	0.146	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.154	0.154
16.50	0.146	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.153	0.153
16.53	0.145	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.152	0.152
16.57	0.145	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.151	0.151
16.60	0.144	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.151	0.151
16.63	0.144	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.150	0.150
16.67	0.143	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.149	0.149
16.70	0.143	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.149	0.149
16.73	0.142	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.148	0.148
16.77	0.142	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.148	0.148
16.80	0.141	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.147	0.147
16.83	0.141	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.146	0.146
16.87	0.140	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.146	0.146
16.90	0.140	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.145	0.145
16.93	0.139	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.145	0.145
16.97	0.139	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.144	0.144
17.00	0.138	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.144	0.144
17.03	0.138	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.143	0.143
17.07	0.137	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.142	0.142
17.10	0.137	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.142	0.142
17.13	0.136	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.141	0.141
17.17	0.136	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.141	0.141
17.20	0.135	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.140	0.140
17.23	0.135	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.140	0.140

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
17.27	0.134	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.139	0.139
17.30	0.134	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.139	0.139
17.33	0.133	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.138	0.138
17.37	0.133	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.138	0.138
17.40	0.132	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.137	0.137
17.43	0.132	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.137	0.137
17.47	0.131	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.136	0.136
17.50	0.131	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.136	0.136
17.53	0.130	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.135	0.135
17.57	0.129	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.135	0.135
17.60	0.129	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.134	0.134
17.63	0.128	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.134	0.134
17.67	0.128	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.133	0.133
17.70	0.127	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.133	0.133
17.73	0.127	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.132	0.132
17.77	0.126	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.132	0.132
17.80	0.126	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.131	0.131
17.83	0.125	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.130	0.131
17.87	0.125	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.130	0.130
17.90	0.124	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.129	0.129
17.93	0.124	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.129	0.129
17.97	0.123	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.128	0.128
18.00	0.123	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.128	0.128
18.03	0.122	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.127	0.127
18.07	0.122	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.127	0.127
18.10	0.121	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.126	0.126
18.13	0.121	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.126	0.126
18.17	0.120	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.125	0.125

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
18.20	0.120	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.125	0.125
18.23	0.119	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.124	0.124
18.27	0.119	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.124	0.124
18.30	0.118	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.123	0.123
18.33	0.118	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.123	0.123
18.37	0.117	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.122	0.122
18.40	0.116	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.122	0.122
18.43	0.116	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.121	0.121
18.47	0.115	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.121	0.121
18.50	0.115	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.120	0.120
18.53	0.114	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.120	0.120
18.57	0.114	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.119	0.119
18.60	0.113	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.119	0.119
18.63	0.113	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.118	0.118
18.67	0.112	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.117	0.117
18.70	0.112	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.117	0.117
18.73	0.111	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.116	0.116
18.77	0.111	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.116	0.116
18.80	0.110	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.115	0.115
18.83	0.110	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.115	0.115
18.87	0.109	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.114	0.114
18.90	0.108	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.114	0.114
18.93	0.108	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.113	0.113
18.97	0.107	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.113	0.113
19.00	0.107	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.112	0.112
19.03	0.106	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.112	0.112
19.07	0.106	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.111	0.111
19.10	0.105	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.111	0.111

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
19.13	0.105	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.110	0.110
19.17	0.104	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109
19.20	0.104	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109
19.23	0.103	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.108	0.108
19.27	0.103	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.108	0.108
19.30	0.102	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.107	0.107
19.33	0.101	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.107	0.107
19.37	0.101	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.106	0.106
19.40	0.100	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.106	0.106
19.43	0.100	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.105	0.105
19.47	0.099	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.105	0.105
19.50	0.099	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.104	0.104
19.53	0.098	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.104	0.104
19.57	0.098	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.103	0.103
19.60	0.097	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.102	0.102
19.63	0.097	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.102	0.102
19.67	0.096	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.101	0.101
19.70	0.095	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.101	0.101
19.73	0.095	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.100	0.100
19.77	0.094	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.100	0.100
19.80	0.094	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.099	0.099
19.83	0.093	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.099	0.099
19.87	0.093	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.098	0.098
19.90	0.092	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.098	0.098
19.93	0.092	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.097	0.097
19.97	0.091	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.096	0.096
20.00	0.091	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.096	0.096
20.03	0.090	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.095	0.095

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
20.07	0.090	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.095	0.095
20.10	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.094	0.094
20.13	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.094	0.094
20.17	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.093	0.093
20.20	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.093	0.093
20.23	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.093	0.093
20.27	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.092	0.092
20.30	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.092	0.092
20.33	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.092	0.092
20.37	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.091	0.091
20.40	0.089	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.091	0.091
20.43	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.091	0.091
20.47	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.091	0.091
20.50	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.090	0.090
20.53	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.090	0.090
20.57	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.090	0.090
20.60	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.090	0.090
20.63	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.090	0.090
20.67	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.089	0.089
20.70	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.089	0.089
20.73	0.088	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.089	0.089
20.77	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.089	0.089
20.80	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.089	0.089
20.83	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.089	0.089
20.87	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.089	0.089
20.90	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
20.93	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
20.97	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
21.00	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
21.03	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
21.07	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
21.10	0.087	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
21.13	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
21.17	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
21.20	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
21.23	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
21.27	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
21.30	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
21.33	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
21.37	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
21.40	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
21.43	0.086	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
21.47	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.50	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.53	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.57	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.60	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.63	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.67	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.70	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.73	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.77	0.085	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
21.80	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
21.83	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
21.87	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
21.90	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
21.93	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
21.97	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
22.00	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
22.03	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
22.07	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
22.10	0.084	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
22.13	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.17	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.20	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.23	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.27	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.30	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.33	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.37	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.40	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.43	0.083	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
22.47	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.50	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.53	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.57	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.60	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.63	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.67	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.70	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.73	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.77	0.082	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
22.80	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
22.83	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
22.87	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
22.90	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
22.93	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
22.97	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
23.00	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
23.03	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
23.07	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
23.10	0.081	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
23.13	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.17	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.20	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.23	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.27	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.30	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.33	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.37	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.40	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.43	0.080	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.081	0.081
23.47	0.079	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
23.50	0.079	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
23.53	0.079	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
23.57	0.079	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
23.60	0.079	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
23.63	0.079	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
23.67	0.079	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
23.70	0.079	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
23.73	0.079	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
23.77	0.078	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
23.80	0.078	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.079	0.079
23.83	0.078	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.079	0.079
23.87	0.078	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.079	0.079
23.90	0.078	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.079	0.079
23.93	0.078	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.079	0.079
23.97	0.078	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.079	0.079
24.00	0.078	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.079	0.079
24.03	0.062	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.078	0.078
24.07	0.031	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.075	0.075
24.10	0.010	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.070	0.070
24.13	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.064	0.064
24.17	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.057	0.057
24.20	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.052	0.052
24.23	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.047	0.047
24.27	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.042	0.042
24.30	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.038	0.038
24.33	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.035	0.035
24.37	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.031	0.031
24.40	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028

...End

Hydrograph Report

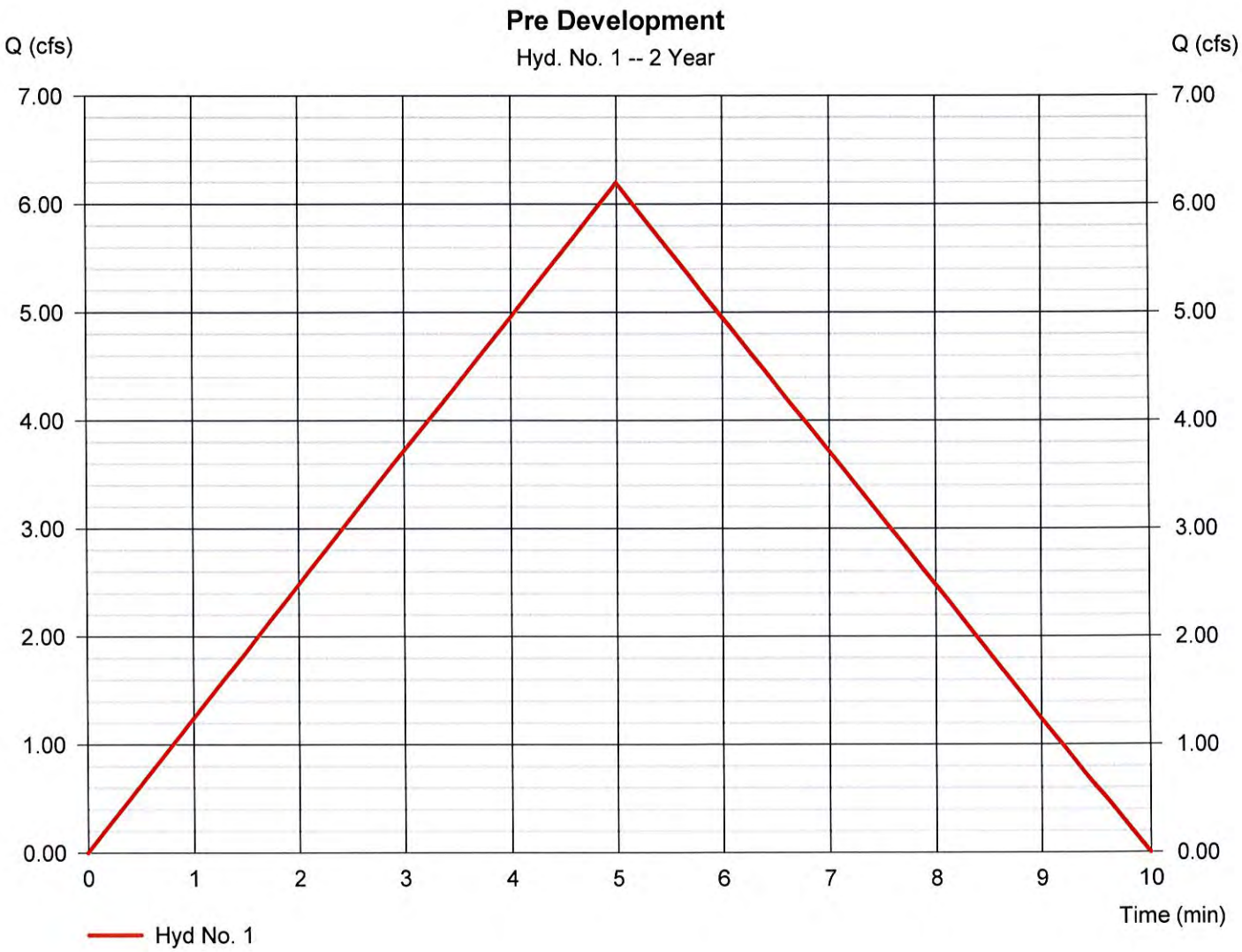
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 1

Pre Development

Hydrograph type	= Rational	Peak discharge	= 6.194 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 1,858 cuft
Drainage area	= 2.770 ac	Runoff coeff.	= 0.3*
Intensity	= 7.453 in/hr	Tc by User	= 5.00 min
IDF Curve	= City of Wilmington (NOAA).IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.770 x 0.30)] / 2.770



Hydrograph Report

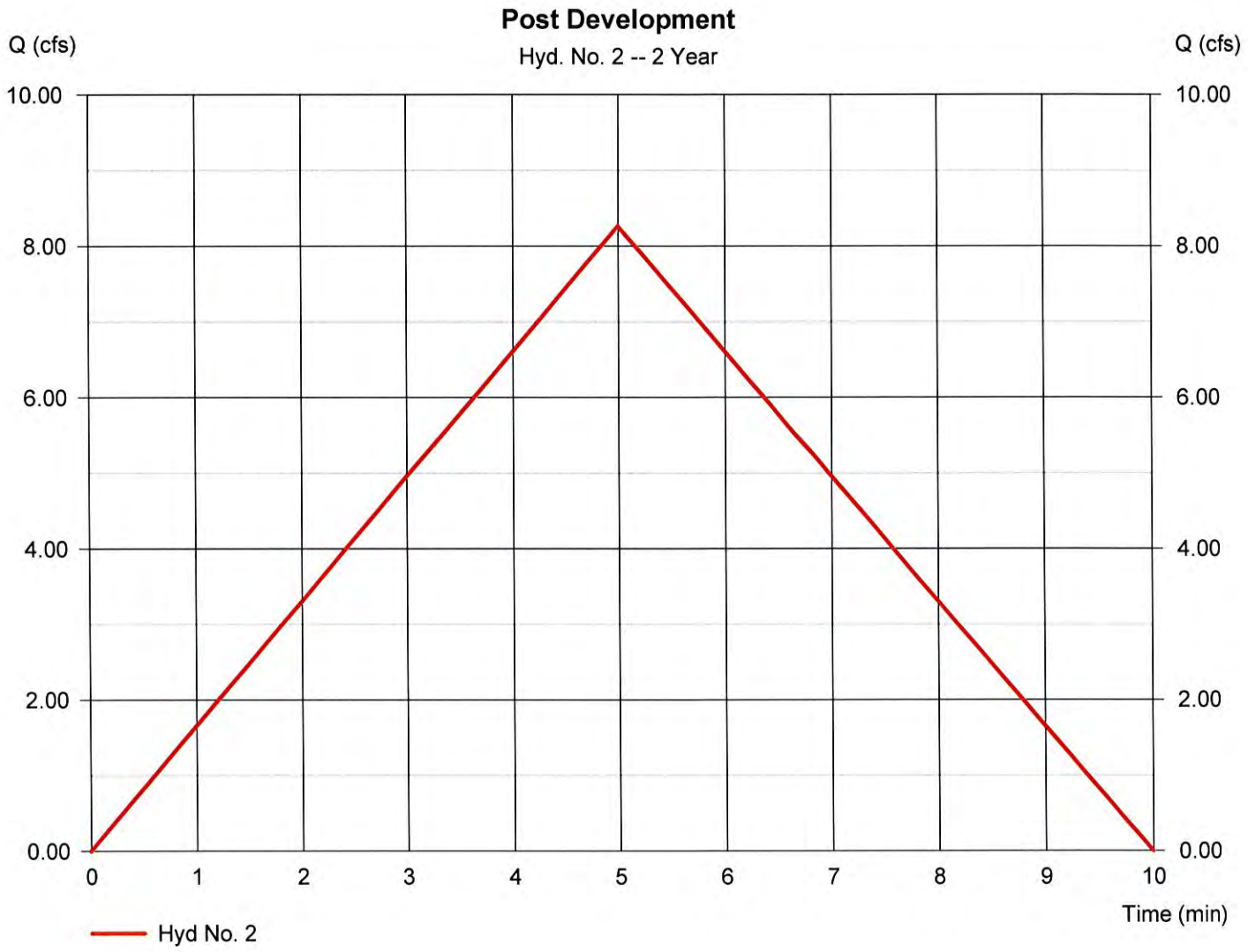
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 8.258 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 2,477 cuft
Drainage area	= 2.770 ac	Runoff coeff.	= 0.4*
Intensity	= 7.453 in/hr	Tc by User	= 5.00 min
IDF Curve	= City of Wilmington (NOAA).IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.300 x 0.30) + (0.470 x 0.90)] / 2.770



Hydrograph Report

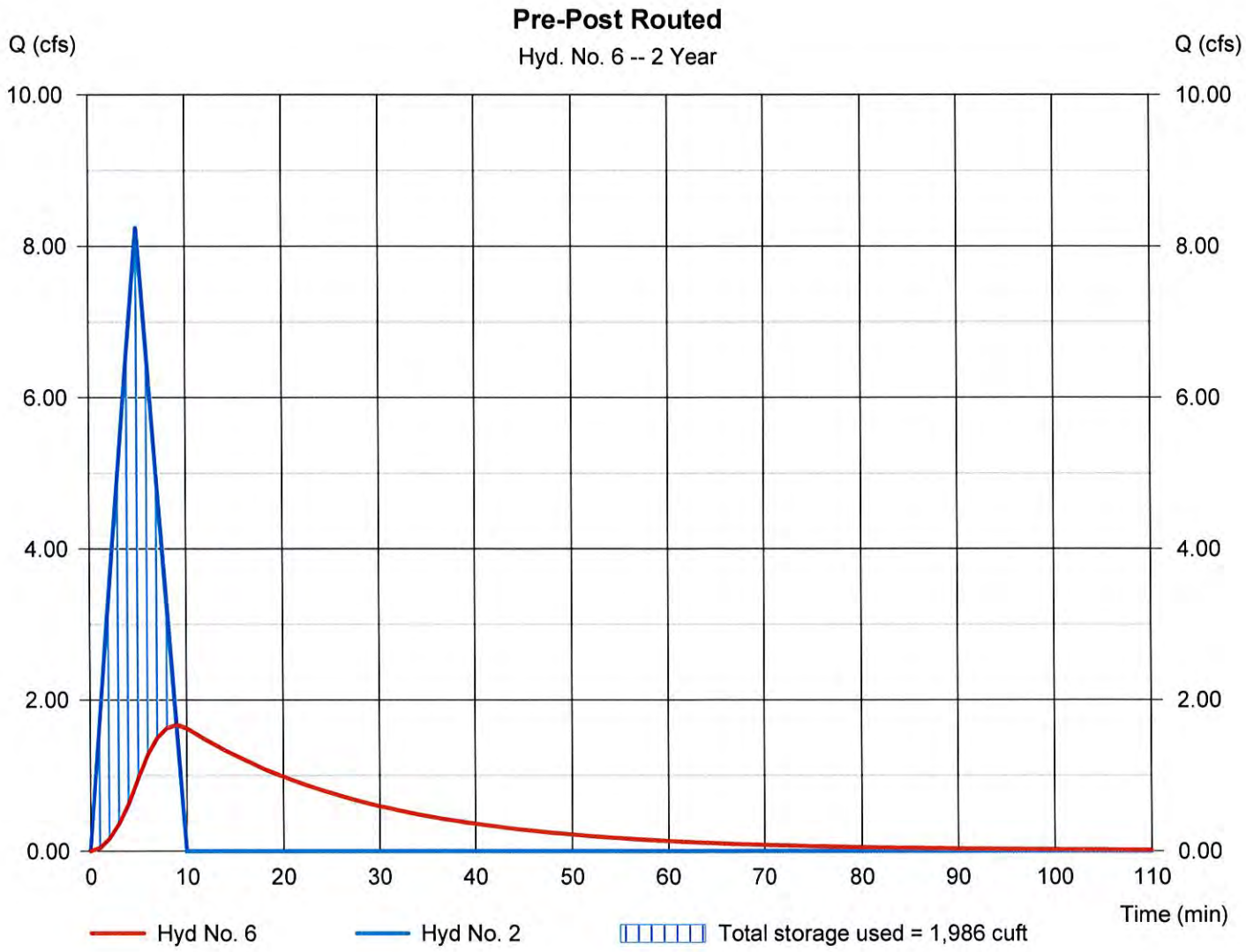
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 6

Pre-Post Routed

Hydrograph type	= Reservoir	Peak discharge	= 1.666 cfs
Storm frequency	= 2 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 2,476 cuft
Inflow hyd. No.	= 2 - Pre Development	Max. Elevation	= 38.58 ft
Reservoir name	= Infiltration Basin #1 - 30 in/hr	Max. Storage	= 1,986 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Tuesday, 09 / 8 / 2015

Hyd. No. 6

Pre-Post Routed

Hydrograph type	= Reservoir	Peak discharge	= 1.666 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.15 hrs
Time interval	= 1 min	Hyd. volume	= 2,476 cuft
Inflow hyd. No.	= 2 - Post Development	Reservoir name	= Infiltration Basi
Max. Elevation	= 38.58 ft	Max. Storage	= 1,986 cuft

Storage Indication method used. Outflow includes exfiltration.

Hydrograph Discharge Table

(Printed values >= 1.00% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.02	1.652	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.041	0.041
0.03	3.303	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.160	0.160
0.05	4.955	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.355	0.355
0.07	6.607	38.22	-----	-----	-----	-----	-----	-----	-----	-----	0.621	0.621
0.08	8.258 <<	38.33	-----	-----	-----	-----	-----	-----	-----	-----	0.956	0.956
0.10	6.607	38.44	-----	-----	-----	-----	-----	-----	-----	-----	1.274	1.274
0.12	4.955	38.52	-----	-----	-----	-----	-----	-----	-----	-----	1.495	1.495
0.13	3.303	38.57	-----	-----	-----	-----	-----	-----	-----	-----	1.624	1.624
0.15	1.652	38.58 <<	-----	-----	-----	-----	-----	-----	-----	-----	1.666	1.666
0.17	0.000	38.57	-----	-----	-----	-----	-----	-----	-----	-----	1.625	1.625
0.18	0.000	38.54	-----	-----	-----	-----	-----	-----	-----	-----	1.545	1.545
0.20	0.000	38.51	-----	-----	-----	-----	-----	-----	-----	-----	1.469	1.469
0.22	0.000	38.49	-----	-----	-----	-----	-----	-----	-----	-----	1.397	1.397
0.23	0.000	38.46	-----	-----	-----	-----	-----	-----	-----	-----	1.329	1.329
0.25	0.000	38.44	-----	-----	-----	-----	-----	-----	-----	-----	1.263	1.263
0.27	0.000	38.42	-----	-----	-----	-----	-----	-----	-----	-----	1.201	1.201
0.28	0.000	38.40	-----	-----	-----	-----	-----	-----	-----	-----	1.142	1.142
0.30	0.000	38.38	-----	-----	-----	-----	-----	-----	-----	-----	1.086	1.086
0.32	0.000	38.36	-----	-----	-----	-----	-----	-----	-----	-----	1.033	1.033
0.33	0.000	38.34	-----	-----	-----	-----	-----	-----	-----	-----	0.982	0.982

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.35	0.000	38.33	-----	-----	-----	-----	-----	-----	-----	-----	0.934	0.934
0.37	0.000	38.31	-----	-----	-----	-----	-----	-----	-----	-----	0.888	0.888
0.38	0.000	38.29	-----	-----	-----	-----	-----	-----	-----	-----	0.845	0.845
0.40	0.000	38.28	-----	-----	-----	-----	-----	-----	-----	-----	0.803	0.803
0.42	0.000	38.27	-----	-----	-----	-----	-----	-----	-----	-----	0.764	0.764
0.43	0.000	38.25	-----	-----	-----	-----	-----	-----	-----	-----	0.726	0.726
0.45	0.000	38.24	-----	-----	-----	-----	-----	-----	-----	-----	0.691	0.691
0.47	0.000	38.23	-----	-----	-----	-----	-----	-----	-----	-----	0.657	0.657
0.48	0.000	38.22	-----	-----	-----	-----	-----	-----	-----	-----	0.624	0.624
0.50	0.000	38.21	-----	-----	-----	-----	-----	-----	-----	-----	0.594	0.594
0.52	0.000	38.20	-----	-----	-----	-----	-----	-----	-----	-----	0.565	0.565
0.53	0.000	38.19	-----	-----	-----	-----	-----	-----	-----	-----	0.537	0.537
0.55	0.000	38.18	-----	-----	-----	-----	-----	-----	-----	-----	0.511	0.511
0.57	0.000	38.17	-----	-----	-----	-----	-----	-----	-----	-----	0.485	0.485
0.58	0.000	38.16	-----	-----	-----	-----	-----	-----	-----	-----	0.462	0.462
0.60	0.000	38.15	-----	-----	-----	-----	-----	-----	-----	-----	0.439	0.439
0.62	0.000	38.15	-----	-----	-----	-----	-----	-----	-----	-----	0.417	0.417
0.63	0.000	38.14	-----	-----	-----	-----	-----	-----	-----	-----	0.397	0.397
0.65	0.000	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.377	0.377
0.67	0.000	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.359	0.359
0.68	0.000	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.341	0.341
0.70	0.000	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.325	0.325
0.72	0.000	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.309	0.309
0.73	0.000	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.293	0.293
0.75	0.000	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.279	0.279
0.77	0.000	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.265	0.265
0.78	0.000	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.252	0.252
0.80	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.240	0.240

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.82	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.228	0.228
0.83	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.217	0.217
0.85	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.206	0.206
0.87	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.196	0.196
0.88	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.187	0.187
0.90	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.177	0.177
0.92	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.169	0.169
0.93	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.160	0.160
0.95	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.152	0.152
0.97	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.145	0.145
0.98	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.138	0.138
1.00	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.131	0.131
1.02	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.125	0.125
1.03	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.119	0.119
1.05	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.113	0.113
1.07	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.107	0.107
1.08	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.102	0.102
1.10	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.097	0.097
1.12	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.092	0.092
1.13	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
1.15	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
1.17	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.079	0.079
1.18	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.075	0.075
1.20	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.072	0.072
1.22	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.068	0.068
1.23	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.065	0.065
1.25	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.062	0.062
1.27	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.059	0.059

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
1.28	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.056	0.056
1.30	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.053	0.053
1.32	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.050	0.050
1.33	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.048	0.048
1.35	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.046	0.046
1.37	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.043	0.043
1.38	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.041	0.041
1.40	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.039	0.039
1.42	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.037	0.037
1.43	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.035	0.035
1.45	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.034	0.034
1.47	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.032	0.032
1.48	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.030	0.030
1.50	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.029	0.029
1.52	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
1.53	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026
1.55	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
1.57	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
1.58	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
1.60	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
1.62	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
1.63	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
1.65	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
1.67	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.018

...End

Hydrograph Report

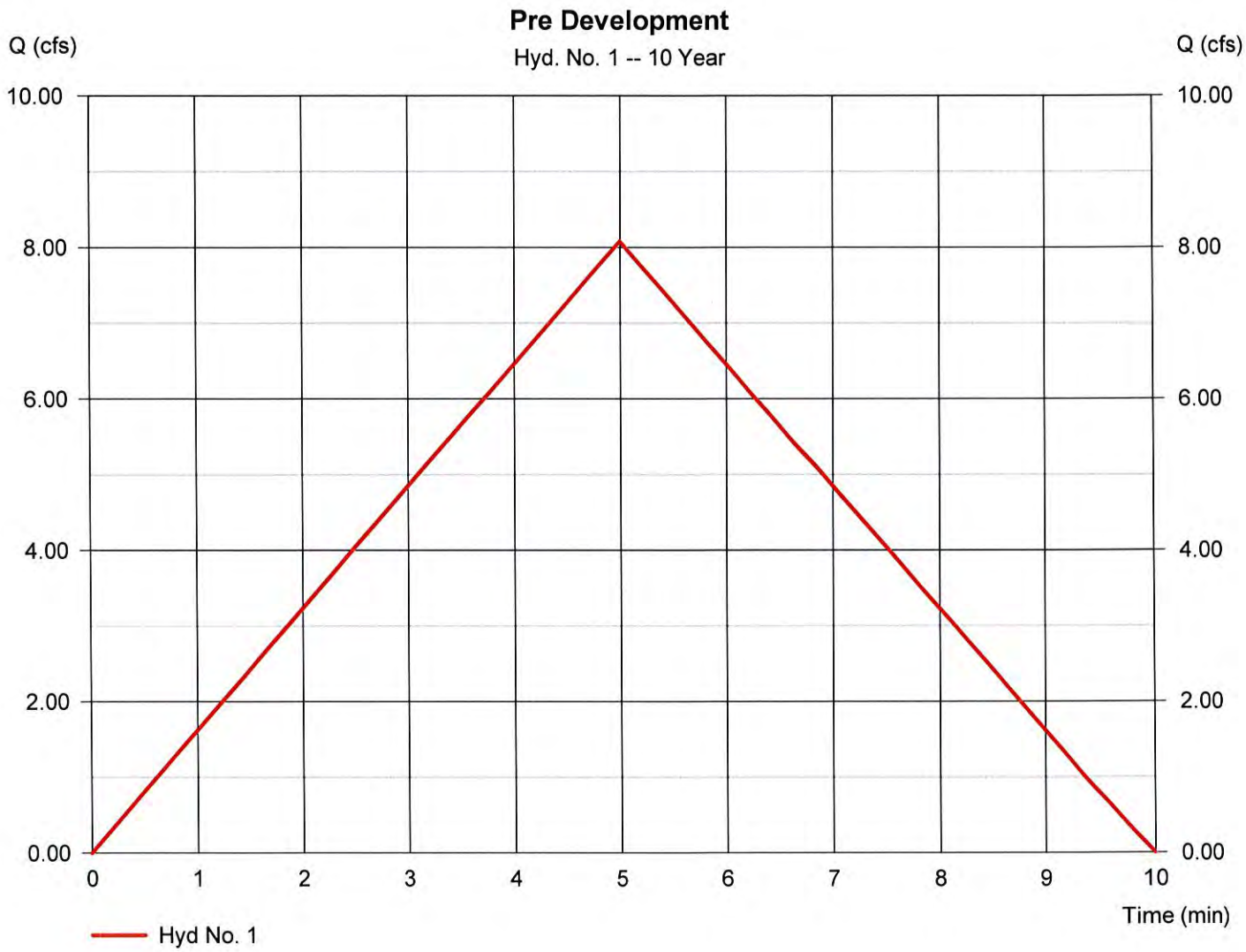
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 1

Pre Development

Hydrograph type	= Rational	Peak discharge	= 8.075 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 2,422 cuft
Drainage area	= 2.770 ac	Runoff coeff.	= 0.3*
Intensity	= 9.717 in/hr	Tc by User	= 5.00 min
IDF Curve	= City of Wilmington (NOAA).IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.770 x 0.30)] / 2.770



Hydrograph Report

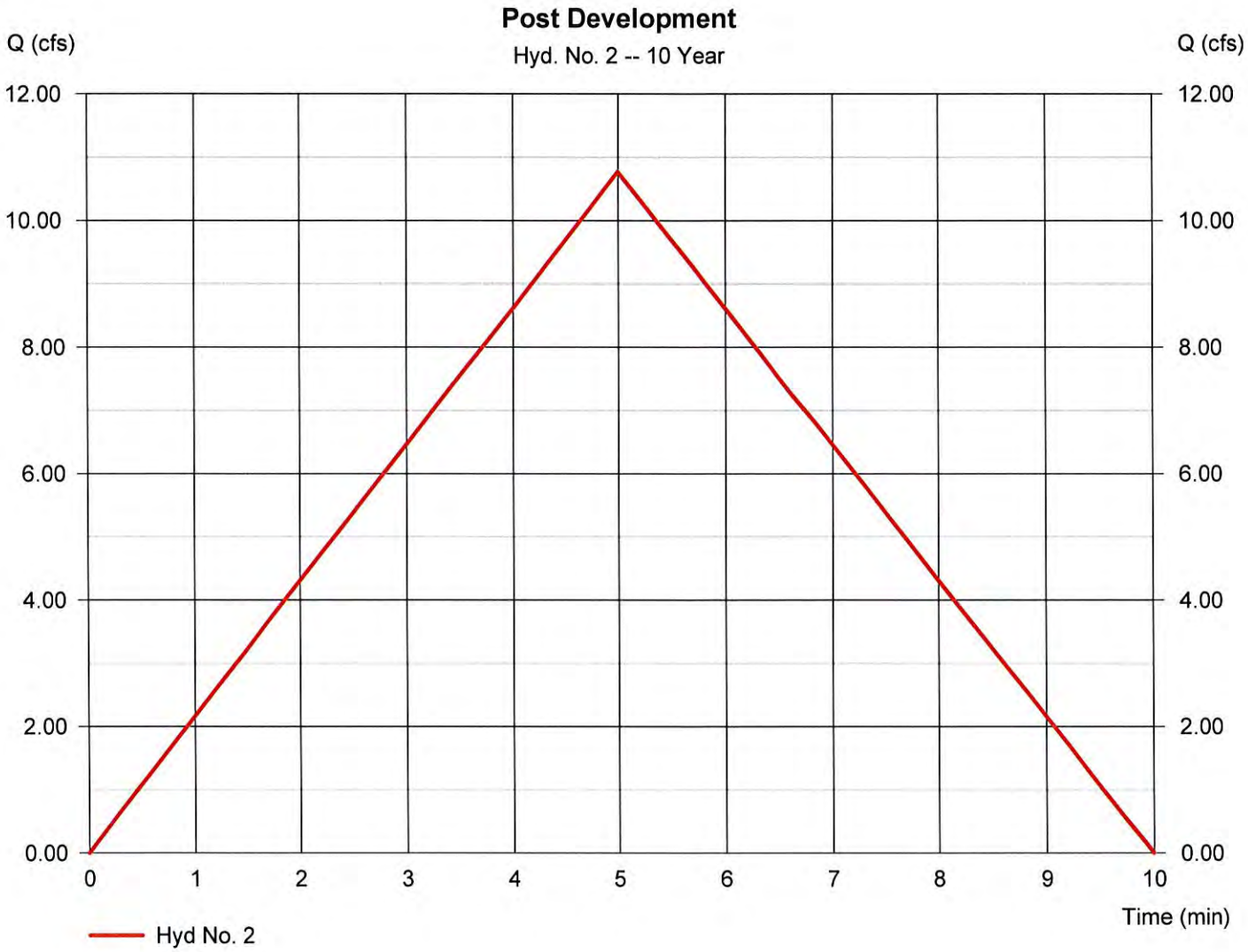
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 10.77 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 3,230 cuft
Drainage area	= 2.770 ac	Runoff coeff.	= 0.4*
Intensity	= 9.717 in/hr	Tc by User	= 5.00 min
IDF Curve	= City of Wilmington (NOAA).IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.300 x 0.30) + (0.470 x 0.90)] / 2.770



Hydrograph Report

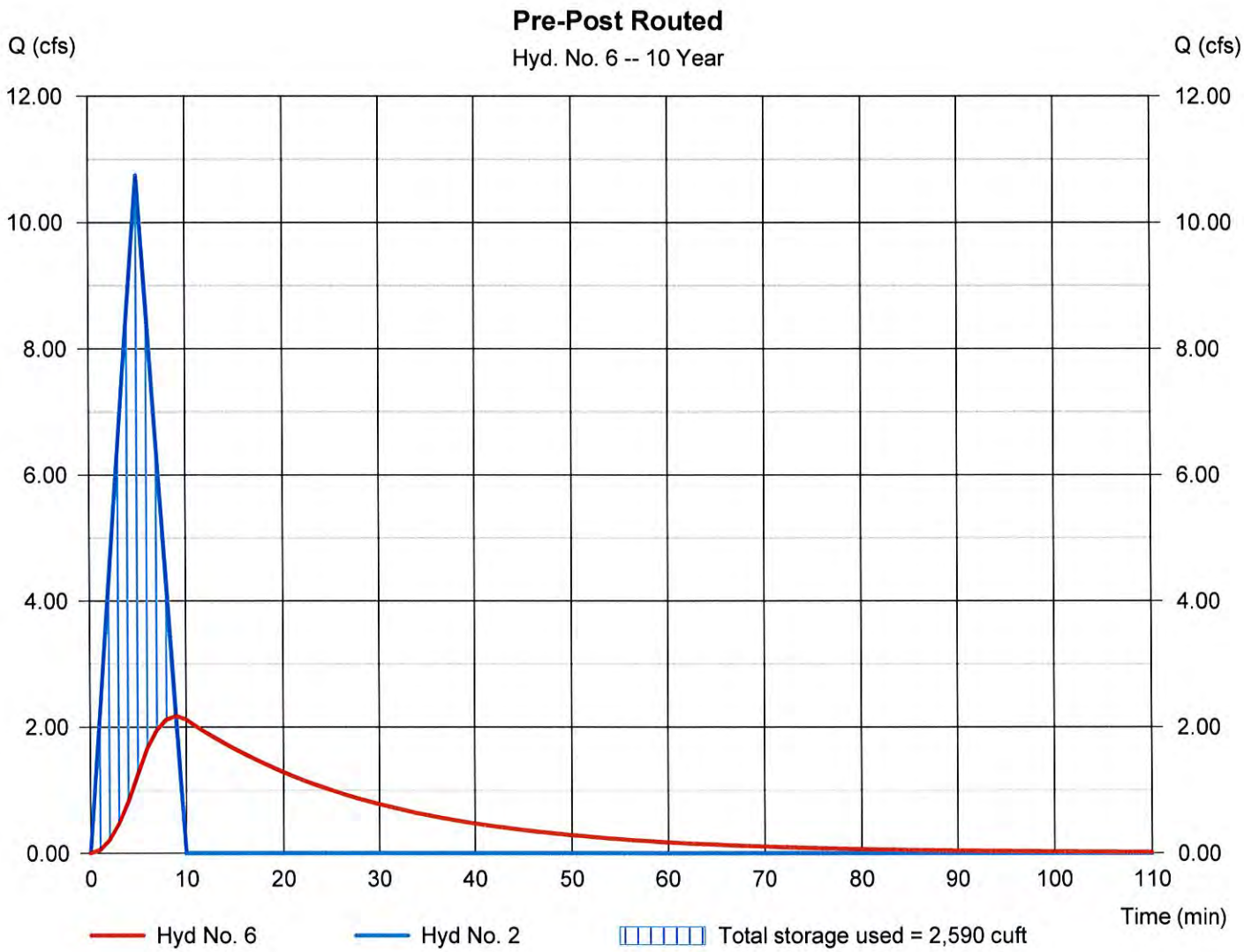
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 6

Pre-Post Routed

Hydrograph type	= Reservoir	Peak discharge	= 2.172 cfs
Storm frequency	= 10 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 3,229 cuft
Inflow hyd. No.	= 2 - Pre Development	Max. Elevation	= 38.76 ft
Reservoir name	= Infiltration Basin #1 - 30 in/hr	Max. Storage	= 2,590 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Tuesday, 09 / 8 / 2015

Hyd. No. 6

Pre-Post Routed

Hydrograph type	= Reservoir	Peak discharge	= 2.172 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.15 hrs
Time interval	= 1 min	Hyd. volume	= 3,229 cuft
Inflow hyd. No.	= 2 - Post Development	Reservoir name	= Infiltration Basi
Max. Elevation	= 38.76 ft	Max. Storage	= 2,590 cuft

Storage Indication method used. Outflow includes exfiltration.

Hydrograph Discharge Table

(Printed values >= 1.00% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.02	2.153	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.053	0.053
0.03	4.307	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.209	0.209
0.05	6.460	38.16	-----	-----	-----	-----	-----	-----	-----	-----	0.463	0.463
0.07	8.613	38.28	-----	-----	-----	-----	-----	-----	-----	-----	0.810	0.810
0.08	10.77 <<	38.44	-----	-----	-----	-----	-----	-----	-----	-----	1.246	1.246
0.10	8.613	38.58	-----	-----	-----	-----	-----	-----	-----	-----	1.661	1.661
0.12	6.460	38.68	-----	-----	-----	-----	-----	-----	-----	-----	1.949	1.949
0.13	4.307	38.74	-----	-----	-----	-----	-----	-----	-----	-----	2.118	2.118
0.15	2.153	38.76 <<	-----	-----	-----	-----	-----	-----	-----	-----	2.172	2.172
0.17	0.000	38.74	-----	-----	-----	-----	-----	-----	-----	-----	2.119	2.119
0.18	0.000	38.70	-----	-----	-----	-----	-----	-----	-----	-----	2.015	2.015
0.20	0.000	38.67	-----	-----	-----	-----	-----	-----	-----	-----	1.916	1.916
0.22	0.000	38.64	-----	-----	-----	-----	-----	-----	-----	-----	1.822	1.822
0.23	0.000	38.60	-----	-----	-----	-----	-----	-----	-----	-----	1.732	1.732
0.25	0.000	38.58	-----	-----	-----	-----	-----	-----	-----	-----	1.647	1.647
0.27	0.000	38.55	-----	-----	-----	-----	-----	-----	-----	-----	1.566	1.566
0.28	0.000	38.52	-----	-----	-----	-----	-----	-----	-----	-----	1.489	1.489
0.30	0.000	38.49	-----	-----	-----	-----	-----	-----	-----	-----	1.416	1.416
0.32	0.000	38.47	-----	-----	-----	-----	-----	-----	-----	-----	1.347	1.347
0.33	0.000	38.45	-----	-----	-----	-----	-----	-----	-----	-----	1.281	1.281

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.35	0.000	38.43	-----	-----	-----	-----	-----	-----	-----	-----	1.218	1.218
0.37	0.000	38.40	-----	-----	-----	-----	-----	-----	-----	-----	1.158	1.158
0.38	0.000	38.38	-----	-----	-----	-----	-----	-----	-----	-----	1.101	1.101
0.40	0.000	38.37	-----	-----	-----	-----	-----	-----	-----	-----	1.047	1.047
0.42	0.000	38.35	-----	-----	-----	-----	-----	-----	-----	-----	0.996	0.996
0.43	0.000	38.33	-----	-----	-----	-----	-----	-----	-----	-----	0.947	0.947
0.45	0.000	38.31	-----	-----	-----	-----	-----	-----	-----	-----	0.900	0.900
0.47	0.000	38.30	-----	-----	-----	-----	-----	-----	-----	-----	0.856	0.856
0.48	0.000	38.28	-----	-----	-----	-----	-----	-----	-----	-----	0.814	0.814
0.50	0.000	38.27	-----	-----	-----	-----	-----	-----	-----	-----	0.774	0.774
0.52	0.000	38.26	-----	-----	-----	-----	-----	-----	-----	-----	0.736	0.736
0.53	0.000	38.24	-----	-----	-----	-----	-----	-----	-----	-----	0.700	0.700
0.55	0.000	38.23	-----	-----	-----	-----	-----	-----	-----	-----	0.666	0.666
0.57	0.000	38.22	-----	-----	-----	-----	-----	-----	-----	-----	0.633	0.633
0.58	0.000	38.21	-----	-----	-----	-----	-----	-----	-----	-----	0.602	0.602
0.60	0.000	38.20	-----	-----	-----	-----	-----	-----	-----	-----	0.572	0.572
0.62	0.000	38.19	-----	-----	-----	-----	-----	-----	-----	-----	0.544	0.544
0.63	0.000	38.18	-----	-----	-----	-----	-----	-----	-----	-----	0.517	0.517
0.65	0.000	38.17	-----	-----	-----	-----	-----	-----	-----	-----	0.492	0.492
0.67	0.000	38.16	-----	-----	-----	-----	-----	-----	-----	-----	0.468	0.468
0.68	0.000	38.16	-----	-----	-----	-----	-----	-----	-----	-----	0.445	0.445
0.70	0.000	38.15	-----	-----	-----	-----	-----	-----	-----	-----	0.423	0.423
0.72	0.000	38.14	-----	-----	-----	-----	-----	-----	-----	-----	0.402	0.402
0.73	0.000	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.383	0.383
0.75	0.000	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.364	0.364
0.77	0.000	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.346	0.346
0.78	0.000	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.329	0.329
0.80	0.000	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.313	0.313

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.82	0.000	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.297	0.297
0.83	0.000	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.283	0.283
0.85	0.000	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.269	0.269
0.87	0.000	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.256	0.256
0.88	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.243	0.243
0.90	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.231	0.231
0.92	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.220	0.220
0.93	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.209	0.209
0.95	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.199	0.199
0.97	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.189	0.189
0.98	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.180	0.180
1.00	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.171	0.171
1.02	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.163	0.163
1.03	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.155	0.155
1.05	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.147	0.147
1.07	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.140	0.140
1.08	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.133	0.133
1.10	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.126	0.126
1.12	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.120	0.120
1.13	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.114	0.114
1.15	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109
1.17	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.103	0.103
1.18	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.098	0.098
1.20	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.093	0.093
1.22	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.089	0.089
1.23	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
1.25	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.080	0.080
1.27	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.076	0.076

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
1.28	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.073	0.073
1.30	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.069	0.069
1.32	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.066	0.066
1.33	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.062	0.062
1.35	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.059	0.059
1.37	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.056	0.056
1.38	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.054	0.054
1.40	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.051	0.051
1.42	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.049	0.049
1.43	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.046	0.046
1.45	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.044	0.044
1.47	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.042	0.042
1.48	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.040	0.040
1.50	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.038	0.038
1.52	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.036	0.036
1.53	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.034	0.034
1.55	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.032	0.032
1.57	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.031	0.031
1.58	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.029	0.029
1.60	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
1.62	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
1.63	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
1.65	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
1.67	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023

...End

Hydrograph Report

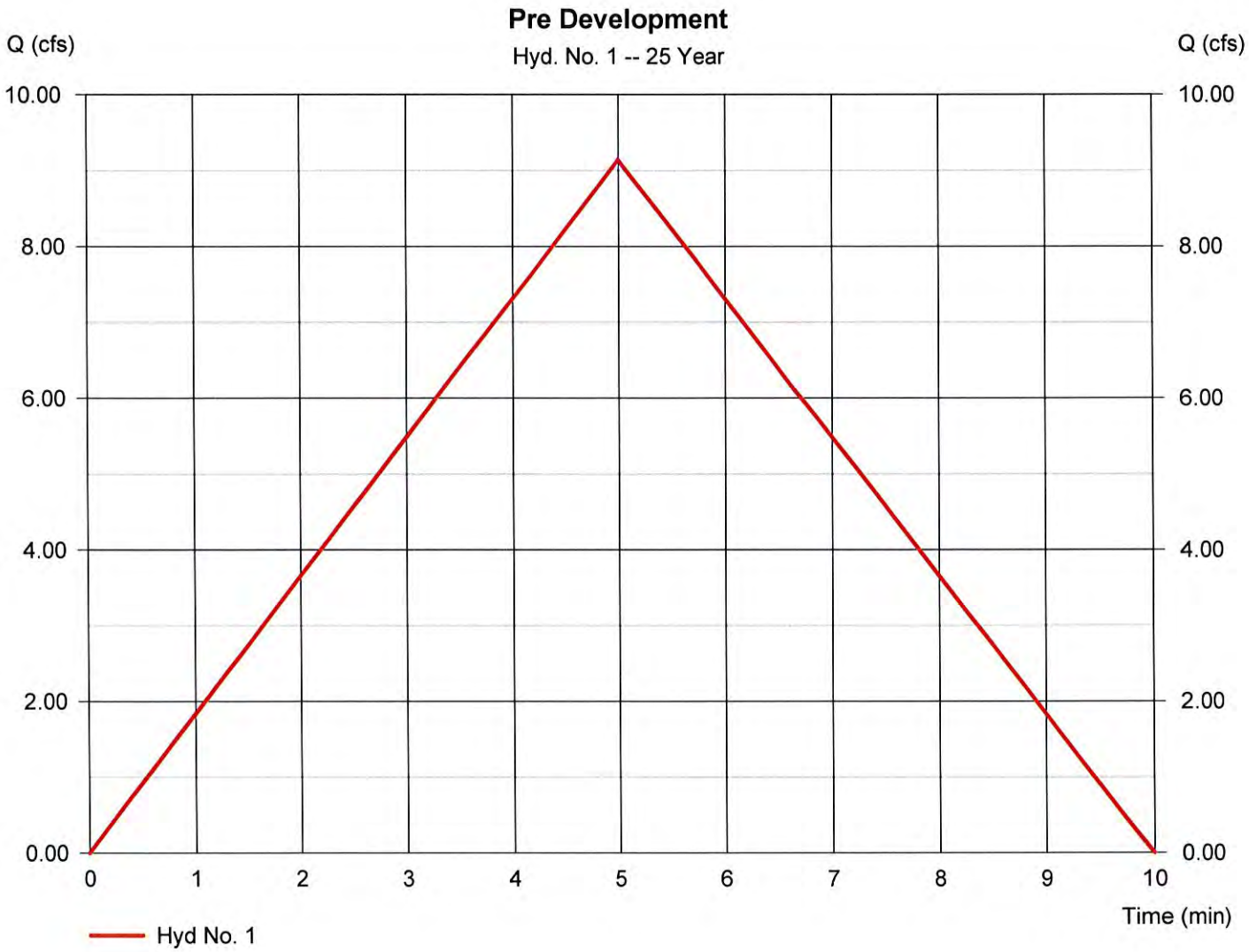
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 1

Pre Development

Hydrograph type	= Rational	Peak discharge	= 9.137 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 2,741 cuft
Drainage area	= 2.770 ac	Runoff coeff.	= 0.3*
Intensity	= 10.996 in/hr	Tc by User	= 5.00 min
IDF Curve	= City of Wilmington (NOAA).IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.770 x 0.30)] / 2.770



Hydrograph Report

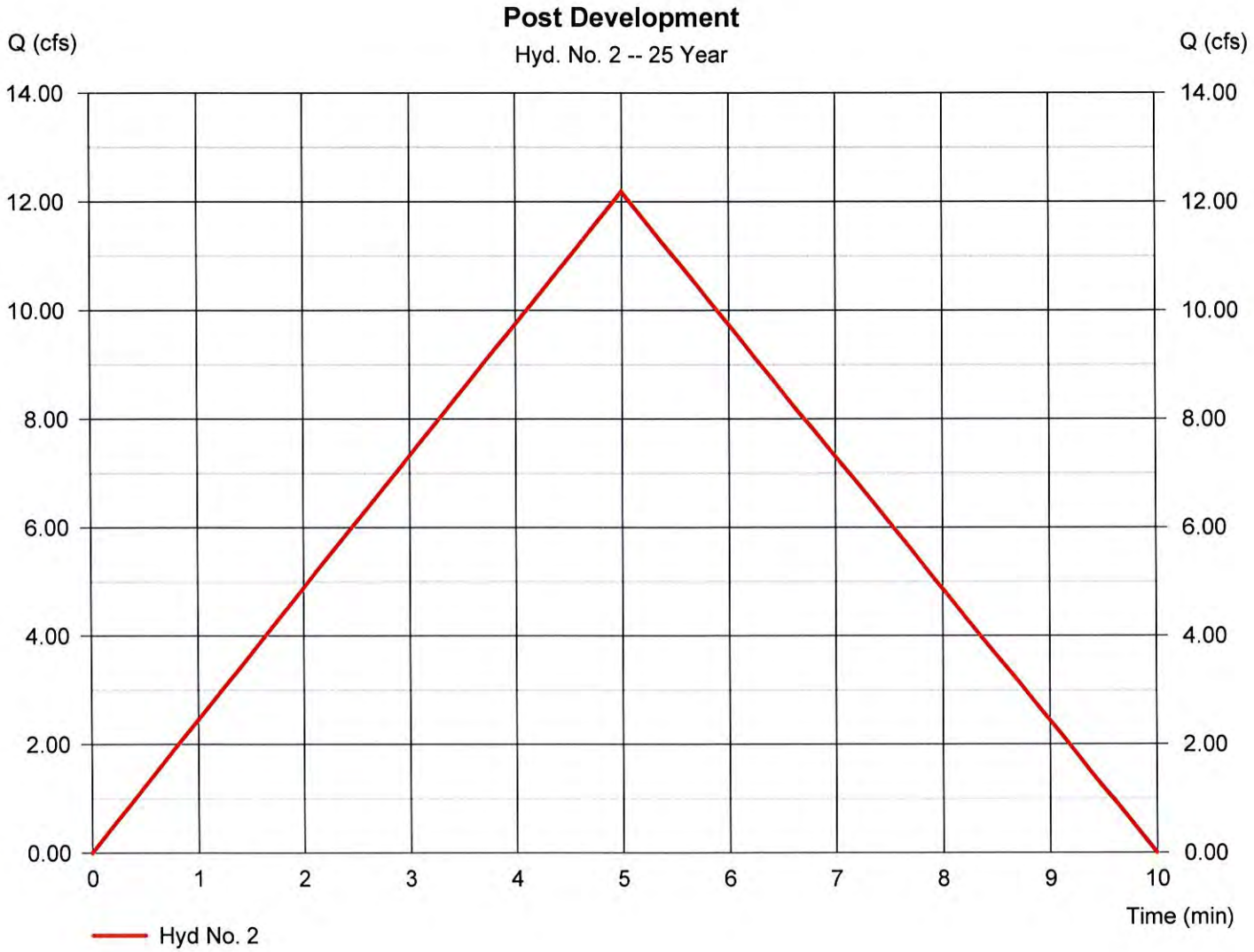
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 12.18 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 3,655 cuft
Drainage area	= 2.770 ac	Runoff coeff.	= 0.4*
Intensity	= 10.996 in/hr	Tc by User	= 5.00 min
IDF Curve	= City of Wilmington (NOAA).IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.300 x 0.30) + (0.470 x 0.90)] / 2.770



Hydrograph Report

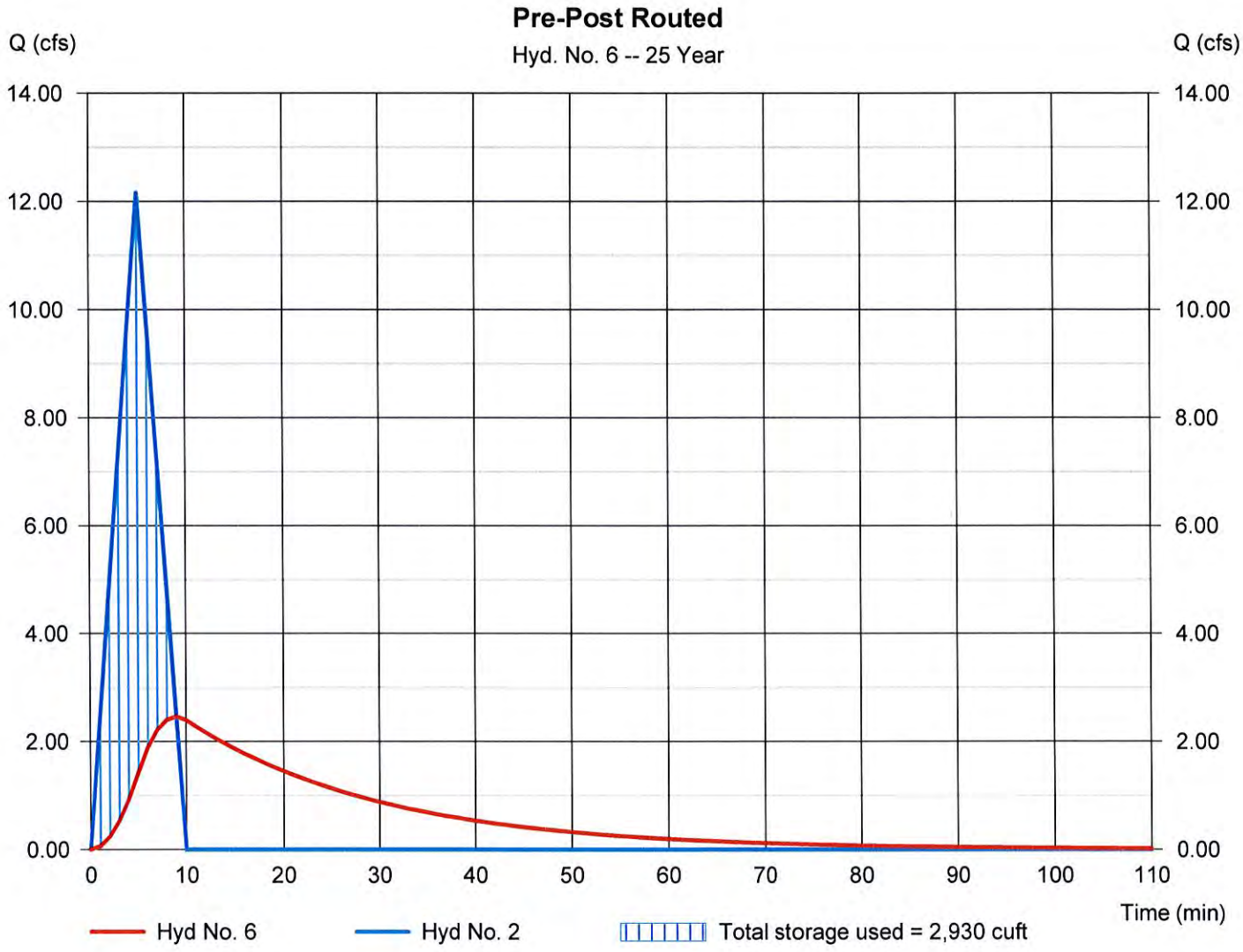
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 6

Pre-Post Routed

Hydrograph type	= Reservoir	Peak discharge	= 2.458 cfs
Storm frequency	= 25 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 3,654 cuft
Inflow hyd. No.	= 2 - Pre Development	Max. Elevation	= 38.86 ft
Reservoir name	= Infiltration Basin #1 - 30 in/hr	Max. Storage	= 2,930 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Tuesday, 09 / 8 / 2015

Hyd. No. 6

Pre-Post Routed

Hydrograph type	= Reservoir	Peak discharge	= 2.458 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.15 hrs
Time interval	= 1 min	Hyd. volume	= 3,654 cuft
Inflow hyd. No.	= 2 - Post Development	Reservoir name	= Infiltration Basi
Max. Elevation	= 38.86 ft	Max. Storage	= 2,930 cuft

Storage Indication method used. Outflow includes exfiltration.

Hydrograph Discharge Table

(Printed values >= 1.00% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.02	2.437	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.060	0.060
0.03	4.873	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.236	0.236
0.05	7.310	38.18	-----	-----	-----	-----	-----	-----	-----	-----	0.524	0.524
0.07	9.747	38.32	-----	-----	-----	-----	-----	-----	-----	-----	0.917	0.917
0.08	12.18 <<	38.49	-----	-----	-----	-----	-----	-----	-----	-----	1.410	1.410
0.10	9.747	38.66	-----	-----	-----	-----	-----	-----	-----	-----	1.879	1.879
0.12	7.310	38.77	-----	-----	-----	-----	-----	-----	-----	-----	2.206	2.206
0.13	4.873	38.84	-----	-----	-----	-----	-----	-----	-----	-----	2.396	2.396
0.15	2.437	38.86 <<	-----	-----	-----	-----	-----	-----	-----	-----	2.458	2.458
0.17	0.000	38.84	-----	-----	-----	-----	-----	-----	-----	-----	2.397	2.397
0.18	0.000	38.80	-----	-----	-----	-----	-----	-----	-----	-----	2.280	2.280
0.20	0.000	38.76	-----	-----	-----	-----	-----	-----	-----	-----	2.168	2.168
0.22	0.000	38.72	-----	-----	-----	-----	-----	-----	-----	-----	2.061	2.061
0.23	0.000	38.68	-----	-----	-----	-----	-----	-----	-----	-----	1.960	1.960
0.25	0.000	38.65	-----	-----	-----	-----	-----	-----	-----	-----	1.864	1.864
0.27	0.000	38.62	-----	-----	-----	-----	-----	-----	-----	-----	1.772	1.772
0.28	0.000	38.59	-----	-----	-----	-----	-----	-----	-----	-----	1.685	1.685
0.30	0.000	38.56	-----	-----	-----	-----	-----	-----	-----	-----	1.603	1.603
0.32	0.000	38.53	-----	-----	-----	-----	-----	-----	-----	-----	1.524	1.524
0.33	0.000	38.51	-----	-----	-----	-----	-----	-----	-----	-----	1.449	1.449

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.35	0.000	38.48	-----	-----	-----	-----	-----	-----	-----	-----	1.378	1.378
0.37	0.000	38.46	-----	-----	-----	-----	-----	-----	-----	-----	1.310	1.310
0.38	0.000	38.44	-----	-----	-----	-----	-----	-----	-----	-----	1.246	1.246
0.40	0.000	38.41	-----	-----	-----	-----	-----	-----	-----	-----	1.185	1.185
0.42	0.000	38.39	-----	-----	-----	-----	-----	-----	-----	-----	1.127	1.127
0.43	0.000	38.37	-----	-----	-----	-----	-----	-----	-----	-----	1.071	1.071
0.45	0.000	38.36	-----	-----	-----	-----	-----	-----	-----	-----	1.019	1.019
0.47	0.000	38.34	-----	-----	-----	-----	-----	-----	-----	-----	0.969	0.969
0.48	0.000	38.32	-----	-----	-----	-----	-----	-----	-----	-----	0.921	0.921
0.50	0.000	38.31	-----	-----	-----	-----	-----	-----	-----	-----	0.876	0.876
0.52	0.000	38.29	-----	-----	-----	-----	-----	-----	-----	-----	0.833	0.833
0.53	0.000	38.28	-----	-----	-----	-----	-----	-----	-----	-----	0.792	0.792
0.55	0.000	38.26	-----	-----	-----	-----	-----	-----	-----	-----	0.753	0.753
0.57	0.000	38.25	-----	-----	-----	-----	-----	-----	-----	-----	0.716	0.716
0.58	0.000	38.24	-----	-----	-----	-----	-----	-----	-----	-----	0.681	0.681
0.60	0.000	38.23	-----	-----	-----	-----	-----	-----	-----	-----	0.648	0.648
0.62	0.000	38.22	-----	-----	-----	-----	-----	-----	-----	-----	0.616	0.616
0.63	0.000	38.20	-----	-----	-----	-----	-----	-----	-----	-----	0.586	0.586
0.65	0.000	38.19	-----	-----	-----	-----	-----	-----	-----	-----	0.557	0.557
0.67	0.000	38.18	-----	-----	-----	-----	-----	-----	-----	-----	0.529	0.529
0.68	0.000	38.18	-----	-----	-----	-----	-----	-----	-----	-----	0.503	0.503
0.70	0.000	38.17	-----	-----	-----	-----	-----	-----	-----	-----	0.479	0.479
0.72	0.000	38.16	-----	-----	-----	-----	-----	-----	-----	-----	0.455	0.455
0.73	0.000	38.15	-----	-----	-----	-----	-----	-----	-----	-----	0.433	0.433
0.75	0.000	38.14	-----	-----	-----	-----	-----	-----	-----	-----	0.412	0.412
0.77	0.000	38.14	-----	-----	-----	-----	-----	-----	-----	-----	0.391	0.391
0.78	0.000	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.372	0.372
0.80	0.000	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.354	0.354

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.82	0.000	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.337	0.337
0.83	0.000	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.320	0.320
0.85	0.000	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.304	0.304
0.87	0.000	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.289	0.289
0.88	0.000	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.275	0.275
0.90	0.000	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.262	0.262
0.92	0.000	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.249	0.249
0.93	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.237	0.237
0.95	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.225	0.225
0.97	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.214	0.214
0.98	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.203	0.203
1.00	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.193	0.193
1.02	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.184	0.184
1.03	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.175	0.175
1.05	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.166	0.166
1.07	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.158	0.158
1.08	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.150	0.150
1.10	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.143	0.143
1.12	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.136	0.136
1.13	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.129	0.129
1.15	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.123	0.123
1.17	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.117	0.117
1.18	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.111	0.111
1.20	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.106	0.106
1.22	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.101	0.101
1.23	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.096	0.096
1.25	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.091	0.091
1.27	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
1.28	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
1.30	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.078	0.078
1.32	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.074	0.074
1.33	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.071	0.071
1.35	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.067	0.067
1.37	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.064	0.064
1.38	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.061	0.061
1.40	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.058	0.058
1.42	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.055	0.055
1.43	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.052	0.052
1.45	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.050	0.050
1.47	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.047	0.047
1.48	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.045	0.045
1.50	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.043	0.043
1.52	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.041	0.041
1.53	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.039	0.039
1.55	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.037	0.037
1.57	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.035	0.035
1.58	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.033	0.033
1.60	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.032	0.032
1.62	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.030	0.030
1.63	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.029	0.029
1.65	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
1.67	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026

...End

Hydrograph Report

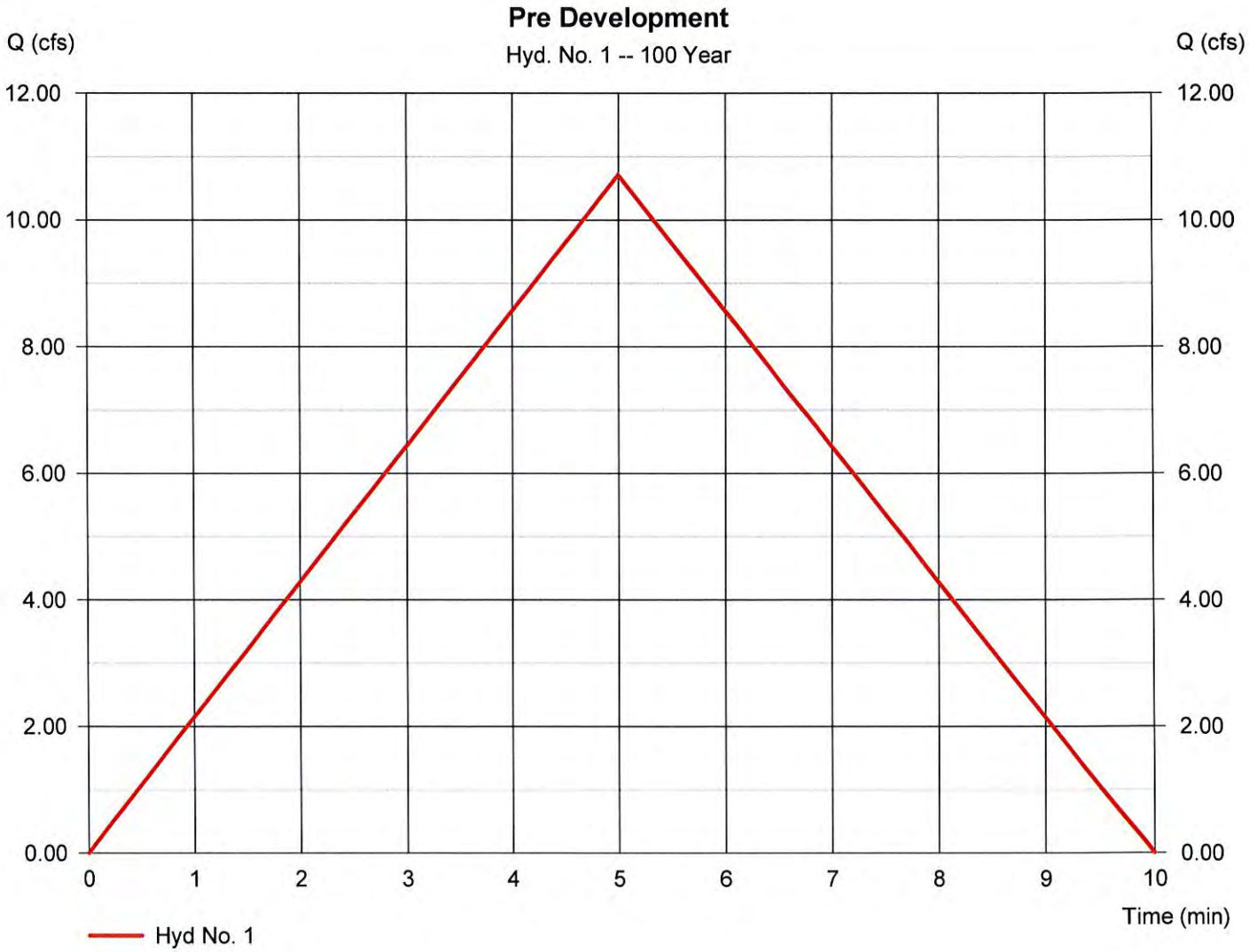
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 1

Pre Development

Hydrograph type	= Rational	Peak discharge	= 10.71 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 3,212 cuft
Drainage area	= 2.770 ac	Runoff coeff.	= 0.3*
Intensity	= 12.886 in/hr	Tc by User	= 5.00 min
IDF Curve	= City of Wilmington (NOAA).IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.770 x 0.30)] / 2.770



Hydrograph Report

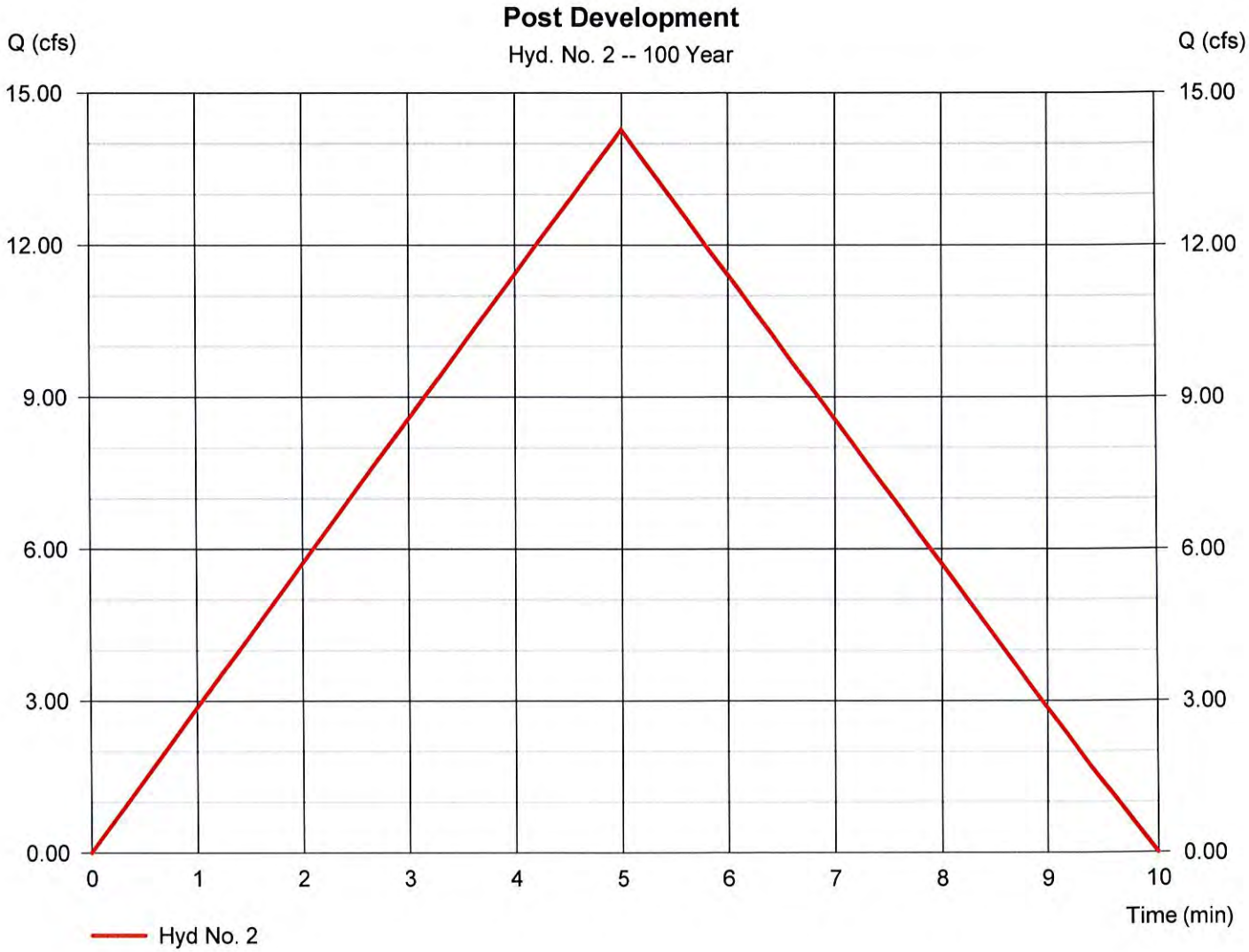
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 14.28 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 4,283 cuft
Drainage area	= 2.770 ac	Runoff coeff.	= 0.4*
Intensity	= 12.886 in/hr	Tc by User	= 5.00 min
IDF Curve	= City of Wilmington (NOAA).IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.300 x 0.30) + (0.470 x 0.90)] / 2.770



Hydrograph Report

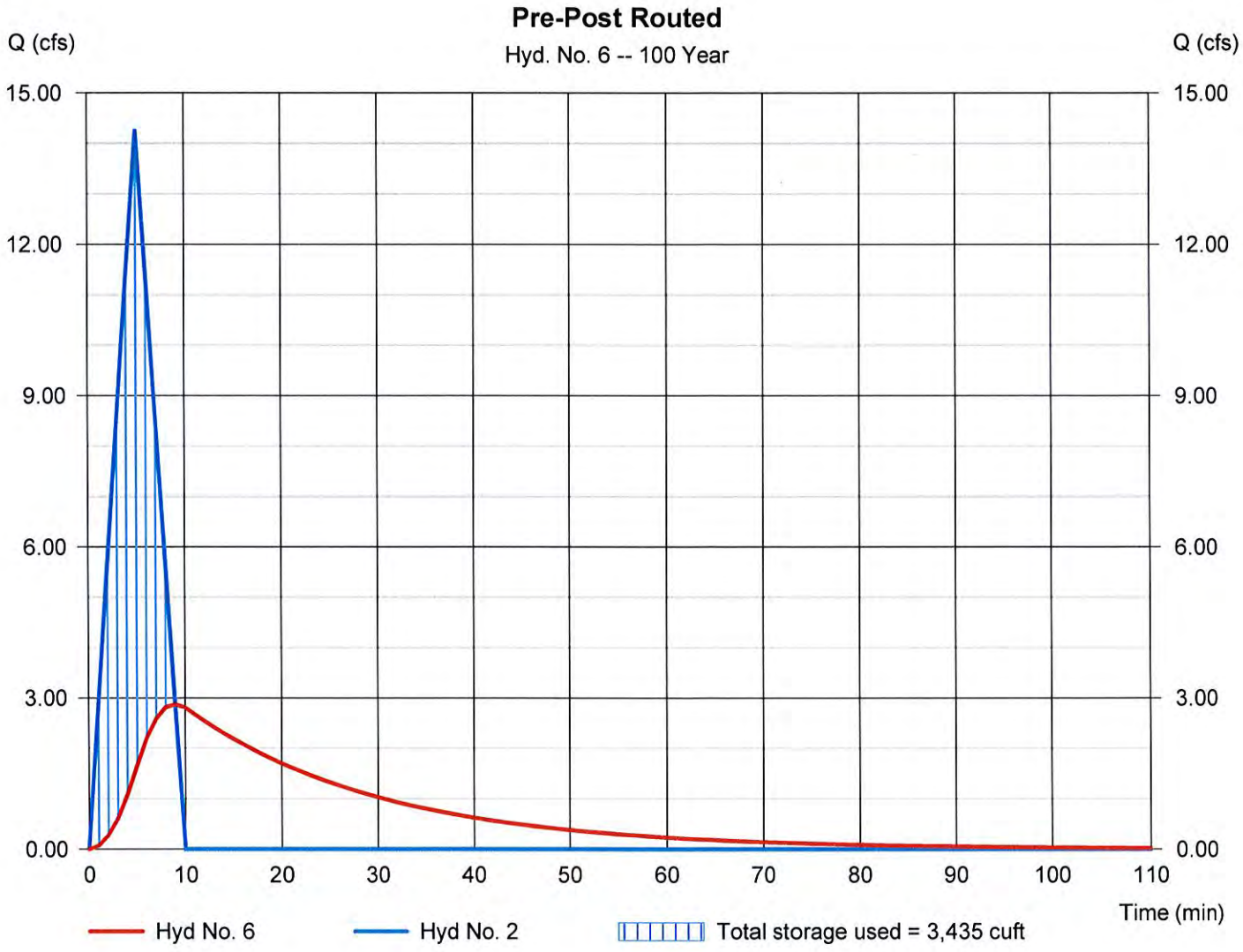
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Wednesday, 09 / 2 / 2015

Hyd. No. 6

Pre-Post Routed

Hydrograph type	= Reservoir	Peak discharge	= 2.868 cfs
Storm frequency	= 100 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 4,282 cuft
Inflow hyd. No.	= 2 - Pre Development	Max. Elevation	= 39.00 ft
Reservoir name	= Infiltration Basin #1 - 30 in/hr	Max. Storage	= 3,435 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Tuesday, 09 / 8 / 2015

Hyd. No. 6

Pre-Post Routed

Hydrograph type	= Reservoir	Peak discharge	= 2.868 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.15 hrs
Time interval	= 1 min	Hyd. volume	= 4,282 cuft
Inflow hyd. No.	= 2 - Post Development	Reservoir name	= Infiltration Basi
Max. Elevation	= 39.00 ft	Max. Storage	= 3,435 cuft

Storage Indication method used. Outflow includes exfiltration.

Hydrograph Discharge Table

(Printed values >= 1.00% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.02	2.856	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.070	0.070
0.03	5.711	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.277	0.277
0.05	8.567	38.21	-----	-----	-----	-----	-----	-----	-----	-----	0.614	0.614
0.07	11.42	38.38	-----	-----	-----	-----	-----	-----	-----	-----	1.074	1.074
0.08	14.28 <<	38.58	-----	-----	-----	-----	-----	-----	-----	-----	1.653	1.653
0.10	11.42	38.77	-----	-----	-----	-----	-----	-----	-----	-----	2.202	2.202
0.12	8.567	38.90	-----	-----	-----	-----	-----	-----	-----	-----	2.585	2.585
0.13	5.711	38.98	-----	-----	-----	-----	-----	-----	-----	-----	2.808	2.808
0.15	2.856	39.00 <<	-----	-----	-----	-----	-----	-----	-----	-----	2.868	2.868
<<												
0.17	0.000	38.98	-----	-----	-----	-----	-----	-----	-----	-----	2.810	2.810
0.18	0.000	38.93	-----	-----	-----	-----	-----	-----	-----	-----	2.672	2.672
0.20	0.000	38.89	-----	-----	-----	-----	-----	-----	-----	-----	2.541	2.541
0.22	0.000	38.84	-----	-----	-----	-----	-----	-----	-----	-----	2.416	2.416
0.23	0.000	38.80	-----	-----	-----	-----	-----	-----	-----	-----	2.298	2.298
0.25	0.000	38.76	-----	-----	-----	-----	-----	-----	-----	-----	2.185	2.185
0.27	0.000	38.73	-----	-----	-----	-----	-----	-----	-----	-----	2.078	2.078
0.28	0.000	38.69	-----	-----	-----	-----	-----	-----	-----	-----	1.976	1.976
0.30	0.000	38.66	-----	-----	-----	-----	-----	-----	-----	-----	1.879	1.879
0.32	0.000	38.62	-----	-----	-----	-----	-----	-----	-----	-----	1.786	1.786
0.33	0.000	38.59	-----	-----	-----	-----	-----	-----	-----	-----	1.699	1.699

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.35	0.000	38.56	-----	-----	-----	-----	-----	-----	-----	-----	1.615	1.615
0.37	0.000	38.54	-----	-----	-----	-----	-----	-----	-----	-----	1.536	1.536
0.38	0.000	38.51	-----	-----	-----	-----	-----	-----	-----	-----	1.460	1.461
0.40	0.000	38.49	-----	-----	-----	-----	-----	-----	-----	-----	1.389	1.389
0.42	0.000	38.46	-----	-----	-----	-----	-----	-----	-----	-----	1.321	1.321
0.43	0.000	38.44	-----	-----	-----	-----	-----	-----	-----	-----	1.256	1.256
0.45	0.000	38.42	-----	-----	-----	-----	-----	-----	-----	-----	1.194	1.194
0.47	0.000	38.40	-----	-----	-----	-----	-----	-----	-----	-----	1.135	1.135
0.48	0.000	38.38	-----	-----	-----	-----	-----	-----	-----	-----	1.080	1.080
0.50	0.000	38.36	-----	-----	-----	-----	-----	-----	-----	-----	1.027	1.027
0.52	0.000	38.34	-----	-----	-----	-----	-----	-----	-----	-----	0.976	0.976
0.53	0.000	38.32	-----	-----	-----	-----	-----	-----	-----	-----	0.928	0.928
0.55	0.000	38.31	-----	-----	-----	-----	-----	-----	-----	-----	0.883	0.883
0.57	0.000	38.29	-----	-----	-----	-----	-----	-----	-----	-----	0.839	0.839
0.58	0.000	38.28	-----	-----	-----	-----	-----	-----	-----	-----	0.798	0.798
0.60	0.000	38.27	-----	-----	-----	-----	-----	-----	-----	-----	0.759	0.759
0.62	0.000	38.25	-----	-----	-----	-----	-----	-----	-----	-----	0.722	0.722
0.63	0.000	38.24	-----	-----	-----	-----	-----	-----	-----	-----	0.686	0.686
0.65	0.000	38.23	-----	-----	-----	-----	-----	-----	-----	-----	0.653	0.653
0.67	0.000	38.22	-----	-----	-----	-----	-----	-----	-----	-----	0.621	0.621
0.68	0.000	38.21	-----	-----	-----	-----	-----	-----	-----	-----	0.590	0.590
0.70	0.000	38.20	-----	-----	-----	-----	-----	-----	-----	-----	0.561	0.561
0.72	0.000	38.19	-----	-----	-----	-----	-----	-----	-----	-----	0.534	0.534
0.73	0.000	38.18	-----	-----	-----	-----	-----	-----	-----	-----	0.507	0.507
0.75	0.000	38.17	-----	-----	-----	-----	-----	-----	-----	-----	0.482	0.482
0.77	0.000	38.16	-----	-----	-----	-----	-----	-----	-----	-----	0.459	0.459
0.78	0.000	38.15	-----	-----	-----	-----	-----	-----	-----	-----	0.436	0.436
0.80	0.000	38.14	-----	-----	-----	-----	-----	-----	-----	-----	0.415	0.415

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
0.82	0.000	38.14	-----	-----	-----	-----	-----	-----	-----	-----	0.394	0.394
0.83	0.000	38.13	-----	-----	-----	-----	-----	-----	-----	-----	0.375	0.375
0.85	0.000	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.357	0.357
0.87	0.000	38.12	-----	-----	-----	-----	-----	-----	-----	-----	0.339	0.339
0.88	0.000	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.323	0.323
0.90	0.000	38.11	-----	-----	-----	-----	-----	-----	-----	-----	0.307	0.307
0.92	0.000	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.292	0.292
0.93	0.000	38.10	-----	-----	-----	-----	-----	-----	-----	-----	0.277	0.277
0.95	0.000	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.264	0.264
0.97	0.000	38.09	-----	-----	-----	-----	-----	-----	-----	-----	0.251	0.251
0.98	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.238	0.238
1.00	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.227	0.227
1.02	0.000	38.08	-----	-----	-----	-----	-----	-----	-----	-----	0.216	0.216
1.03	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.205	0.205
1.05	0.000	38.07	-----	-----	-----	-----	-----	-----	-----	-----	0.195	0.195
1.07	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.185	0.185
1.08	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.176	0.176
1.10	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.168	0.168
1.12	0.000	38.06	-----	-----	-----	-----	-----	-----	-----	-----	0.159	0.159
1.13	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.152	0.152
1.15	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.144	0.144
1.17	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.137	0.137
1.18	0.000	38.05	-----	-----	-----	-----	-----	-----	-----	-----	0.130	0.130
1.20	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.124	0.124
1.22	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.118	0.118
1.23	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.112	0.112
1.25	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.107	0.107
1.27	0.000	38.04	-----	-----	-----	-----	-----	-----	-----	-----	0.101	0.101

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
1.28	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.096	0.096
1.30	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.092	0.092
1.32	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
1.33	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
1.35	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.079	0.079
1.37	0.000	38.03	-----	-----	-----	-----	-----	-----	-----	-----	0.075	0.075
1.38	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.071	0.071
1.40	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.068	0.068
1.42	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.064	0.064
1.43	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.061	0.061
1.45	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.058	0.058
1.47	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.055	0.055
1.48	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.053	0.053
1.50	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.050	0.050
1.52	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.048	0.048
1.53	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.045	0.045
1.55	0.000	38.02	-----	-----	-----	-----	-----	-----	-----	-----	0.043	0.043
1.57	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.041	0.041
1.58	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.039	0.039
1.60	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.037	0.037
1.62	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.035	0.035
1.63	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.033	0.033
1.65	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.032	0.032
1.67	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.030	0.030
1.68	0.000	38.01	-----	-----	-----	-----	-----	-----	-----	-----	0.029	0.029

...End

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Tuesday, 09 / 8 / 2015

Pond No. 1 - Infiltration Basin #1 - 30 in/hr

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 38.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	38.00	2,750	0	0
1.00	39.00	4,123	3,413	3,413
2.00	40.00	5,550	4,818	8,231

Culvert / Orifice Structures

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

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 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) = 30.000 (by Contour)

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).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	38.00	---	---	---	---	---	---	---	---	0.000	---	0.000
0.10	341	38.10	---	---	---	---	---	---	---	---	0.286	---	0.286
0.20	683	38.20	---	---	---	---	---	---	---	---	0.573	---	0.573
0.30	1,024	38.30	---	---	---	---	---	---	---	---	0.859	---	0.859
0.40	1,365	38.40	---	---	---	---	---	---	---	---	1.145	---	1.145
0.50	1,707	38.50	---	---	---	---	---	---	---	---	1.432	---	1.432
0.60	2,048	38.60	---	---	---	---	---	---	---	---	1.718	---	1.718
0.70	2,389	38.70	---	---	---	---	---	---	---	---	2.004	---	2.004
0.80	2,730	38.80	---	---	---	---	---	---	---	---	2.291	---	2.291
0.90	3,072	38.90	---	---	---	---	---	---	---	---	2.577	---	2.577
1.00	3,413	39.00	---	---	---	---	---	---	---	---	2.863	---	2.863
1.10	3,895	39.10	---	---	---	---	---	---	---	---	2.962	---	2.962
1.20	4,377	39.20	---	---	---	---	---	---	---	---	3.061	---	3.061
1.30	4,859	39.30	---	---	---	---	---	---	---	---	3.160	---	3.160
1.40	5,340	39.40	---	---	---	---	---	---	---	---	3.260	---	3.260
1.50	5,822	39.50	---	---	---	---	---	---	---	---	3.359	---	3.359
1.60	6,304	39.60	---	---	---	---	---	---	---	---	3.458	---	3.458
1.70	6,786	39.70	---	---	---	---	---	---	---	---	3.557	---	3.557
1.80	7,268	39.80	---	---	---	---	---	---	---	---	3.656	---	3.656
1.90	7,750	39.90	---	---	---	---	---	---	---	---	3.755	---	3.755
2.00	8,231	40.00	---	---	---	---	---	---	---	---	3.854	---	3.854

Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4 Tuesday, 09 / 8 / 2015

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	78.9365	12.5000	0.8839	--------
2	89.4239	12.5000	0.8681	--------
3	0.0000	0.0000	0.0000	--------
5	94.7755	12.6000	0.8313	--------
10	96.4823	12.4000	0.8036	--------
25	85.5761	11.0000	0.7401	--------
50	81.0399	10.4000	0.7020	--------
100	73.4377	9.2000	0.6559	--------

File name: City of Wilmington (NOAA).IDF

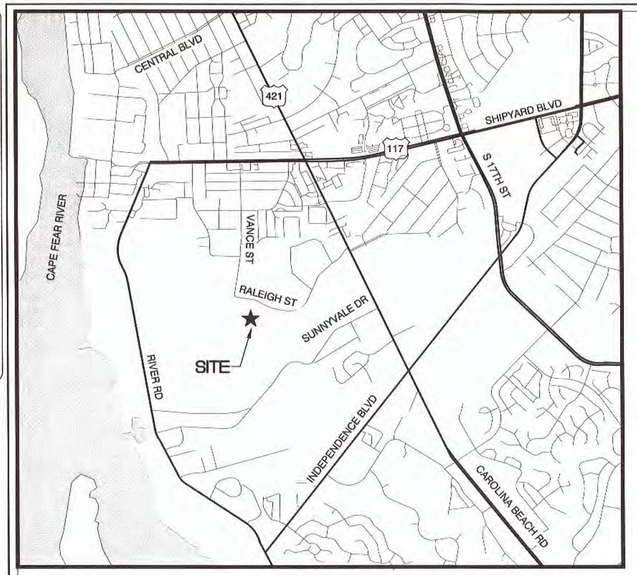
Intensity = B / (Tc + D)^E

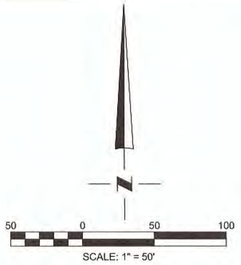
Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	6.29	5.04	4.22	3.64	3.21	2.87	2.60	2.38	2.20	2.04	1.91	1.79
2	7.45	5.99	5.03	4.35	3.85	3.45	3.13	2.87	2.65	2.47	2.31	2.17
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	8.74	7.10	6.01	5.23	4.65	4.19	3.82	3.52	3.26	3.04	2.85	2.69
10	9.72	7.93	6.75	5.90	5.25	4.75	4.34	4.01	3.72	3.48	3.27	3.09
25	11.00	8.99	7.68	6.74	6.03	5.48	5.03	4.66	4.35	4.08	3.85	3.65
50	11.89	9.76	8.37	7.37	6.63	6.04	5.56	5.17	4.84	4.55	4.31	4.09
100	12.89	10.57	9.08	8.03	7.24	6.62	6.12	5.70	5.35	5.05	4.79	4.56

Tc = time in minutes. Values may exceed 60.

/ices Fleet Complex\DOCUMENTS\G_Design Calculations\SW Ponds\Permit Submittal\ILM-AIRPORT-2008-08-19.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	3.83	4.65	0.00	6.02	7.22	9.08	10.73	12.61
SCS 6-Hr	2.79	3.38	0.00	4.34	5.18	6.45	7.57	8.84
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	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00



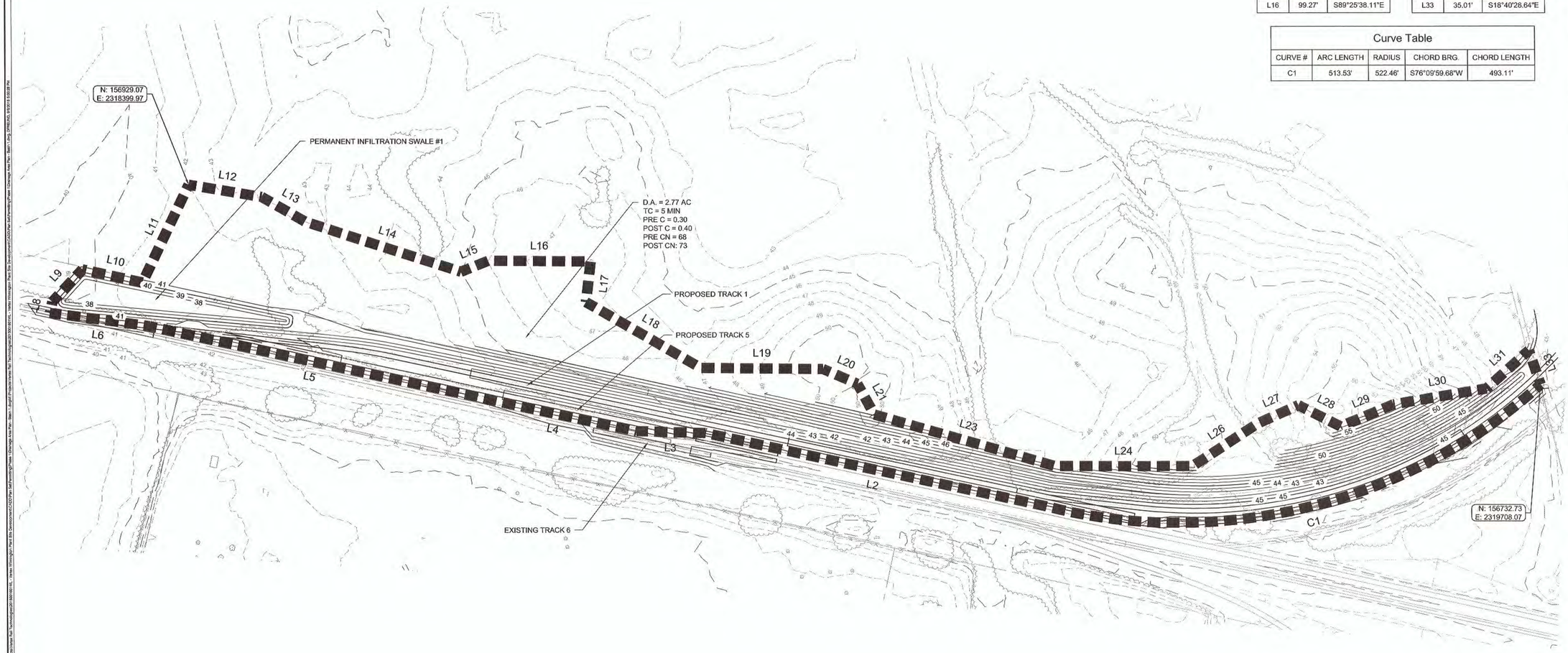


INFILTRATION BASIN #1 DRAINAGE AREA LINE AND CURVE TABLE

LINE TABLE		
LINE #	LENGTH	DIRECTION
L2	337.59'	N77°42'31.13"W
L3	66.58'	N88°09'37.89"W
L4	158.93'	N77°39'59.01"W
L5	323.48'	N77°43'53.36"W
L6	97.66'	N82°21'45.38"W
L8	11.19'	N12°17'28.87"E
L9	43.00'	N42°50'05.05"E
L10	59.75'	S77°45'02.46"E
L11	105.03'	N25°30'43.87"E
L12	71.70'	S80°26'53.87"E
L13	48.73'	S60°11'38.42"E
L14	158.24'	S72°04'38.67"E
L15	28.61'	N67°56'30.19"E
L16	99.27'	S89°25'38.11"E

LINE TABLE		
LINE #	LENGTH	DIRECTION
L17	39.79'	S06°47'59.26"W
L18	128.12'	S59°46'21.39"E
L19	118.27'	S89°26'24.80"E
L20	36.46'	S66°27'36.09"E
L21	33.97'	S28°34'41.12"E
L23	181.24'	S73°54'29.19"E
L24	133.38'	S89°48'07.42"E
L26	75.45'	N56°55'11.04"E
L27	43.37'	N65°55'25.29"E
L28	45.54'	S63°09'27.63"E
L29	55.68'	N67°24'34.22"E
L30	91.47'	N80°20'11.10"E
L31	55.36'	N47°56'15.86"E
L33	35.01'	S18°40'28.64"E

Curve Table				
CURVE #	ARC LENGTH	RADIUS	CHORD BRG.	CHORD LENGTH
C1	513.53'	522.46'	S76°09'59.68"W	493.11'



PRELIMINARY - DO NOT USE FOR CONSTRUCTION

WK DICKSON
community infrastructure consultants
909 MARKET STREET
WILMINGTON, NC 28401
(t)(910) 762-4201
(f)(910) 762-4200
WWW.WKDICKSON.COM
NC LICENSE NO.F-0374

NORTH CAROLINA PROFESSIONAL SEAL 10357 ENGINEER DANIEL E. DAWSON
PROFESSIONAL SEAL

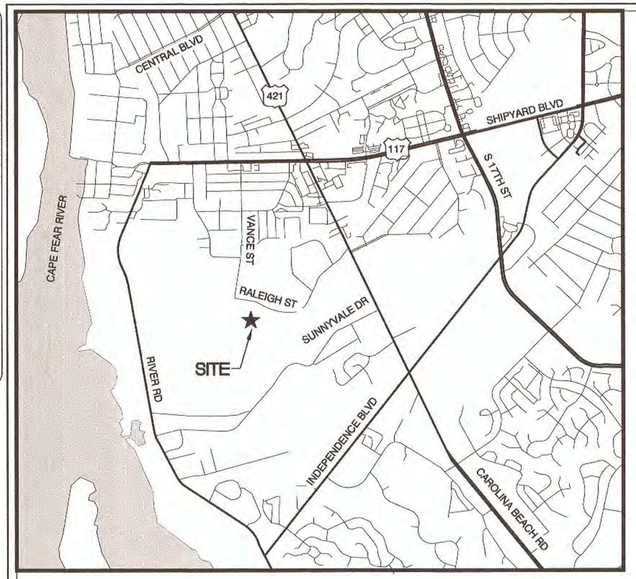
REVISION RECORD

NO.	DATE	DESCRIPTION	BY

PROJECT NAME: RAIL AND SITE IMPROVEMENTS FOR VERTEX RAILCAR CORPORATION 202 RALEIGH STREET WILMINGTON, NORTH CAROLINA 28412

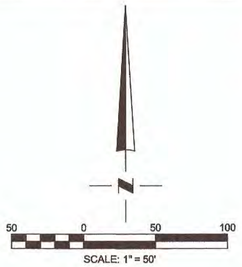
DRAWING TITLE: STORM WATER DRAINAGE AREA PLAN - INFILTRATION BASIN #1

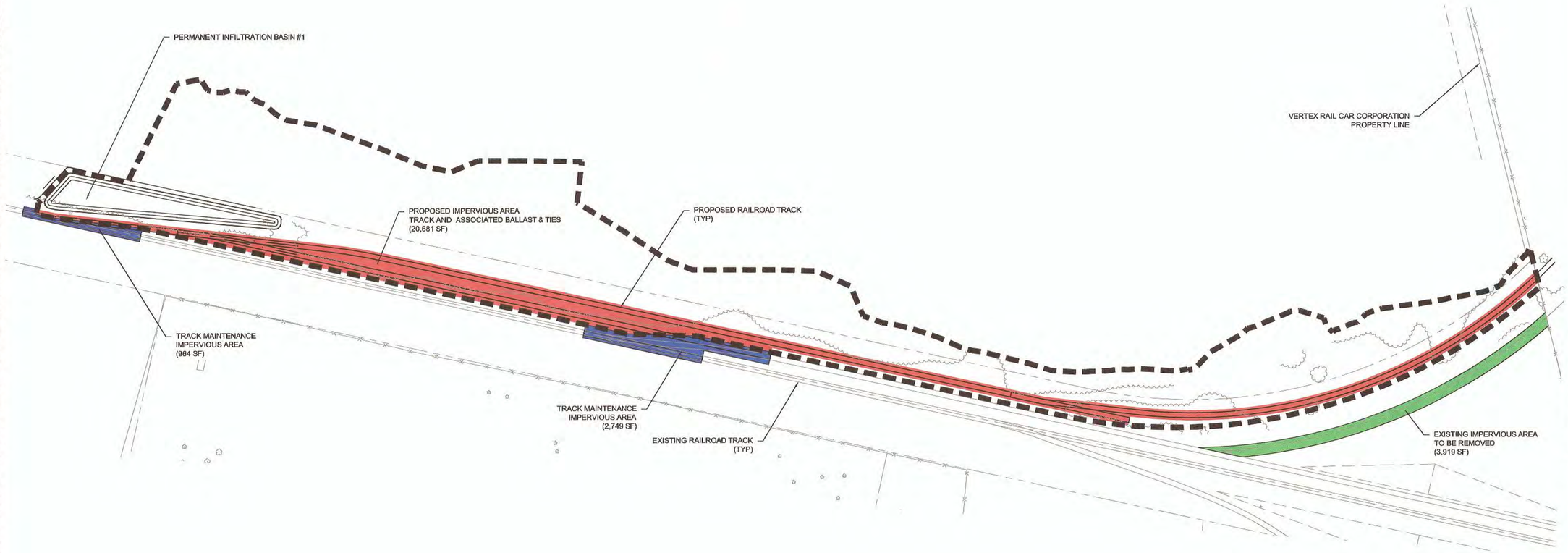
PROJ. MGR.:	DLF
DESIGN BY:	DED
DRAWN BY:	TJC
PROJ. DATE:	AUGUST 2015
DRAWING NUMBER:	1
WKD PROJ. NO.:	20150016.00.WL



IMPERVIOUS AREA - NCSPA PROPERTY		
PROPOSED IMPERVIOUS AREA TRACK AND ASSOCIATED BALLAST & TIES (TOTAL IMPERVIOUS AREA TO BASIN #1)		20,681 SF
EXISTING IMPERVIOUS AREA (TRACK AND ASSOCIATED BALLAST & TIES TO BE REMOVED)		3,717 SF
TRACK MAINTENANCE IMPERVIOUS AREA *		3,919 SF

* TRACK MAINTENANCE IMPERVIOUS AREAS ARE THOSE WHERE EXISTING TRACK IS BEING REPLACED AS A MAINTENANCE OPERATION. THESE AREAS ARE NOT CONSIDERED TO BE PROPOSED IMPERVIOUS SURFACE AREA.





PRELIMINARY - DO NOT USE FOR CONSTRUCTION

WK DICKSON
community infrastructure consultants
909 MARKET STREET
WILMINGTON, NC 28401
(t)(910) 762-4201
(f)(910) 762-4200
WWW.WKDICKSON.COM
NC LICENSE NO.F-0374

NORTH CAROLINA PROFESSIONAL SEAL 10357 ENGINEER DANIEL E. DAWSON 9/8/15

PROFESSIONAL SEAL

REVISION RECORD

NO.	DATE	DESCRIPTION	BY

PROJECT NAME: RAIL AND SITE IMPROVEMENTS FOR VERTEX RAILCAR CORPORATION 202 RALEIGH STREET WILMINGTON, NORTH CAROLINA 28412

DRAWING TITLE: IMPERVIOUS AREA PLAN - BASIN 1

PROJ. MGR.:	DLF
DESIGN BY:	DED
DRAWN BY:	TJC
PROJ. DATE:	AUGUST 2015

DRAWING NUMBER: 1

WKD PROJ. NO.: 20150016.00.WL