STORM WATER DESIGN REPORT
PROPOSED COMMERCIAL BUILDING
#195 West High Street
East Hampton, Connecticut

This report summarizes the storm water impacts and the proposed mitigation strategies to deal with potential impacts for the proposed commercial development at #195 West High Street (State Route 66) in East Hampton, Connecticut. The site presently contains a single-family dwelling, a detached garage and various paved areas. All existing improvements will be demolished to allow for the re-development of the site with a 10,640 square foot commercial building with paved areas to accommodate 32 on-site parking spaces and facilitate vehicular access and circulation.

The 1.84 acre parcel known as #195 West High Street was created as part of a land subdivision back in 2012. The balance of the land is known as #201 West High Street and was developed commercially. To accommodate the proposed re-development, a minor lot line adjustment to the west property line separating #195 and #201 is proposed. After the lot line is adjusted, the subject parcel will contain 1.93 acres. To accommodate the proposed re-development at #195, approximately 1.0 acres of the parcel will be altered and is considered as the 'study area' for pre- and post-development storm water scenarios. The 1.0 acre study area is within a larger 10.7 acre watershed that was analyzed as part of the development at #201 West High Street. Reference is made to the site plans and storm water report prepared by Chatham Engineering, LLC in 2012. The attached Watershed Map depicts the 1.0 acre study area relative to the improvements on 201 West High Street and the existing storm water detention basin.

The study area on #195 drains to and is controlled by the storm water detention basin constructed as part of the original development on #201. This report includes calculations that demonstrate that storm water runoff from the 1.0 acre study area will be wholly mitigated in and of itself BEFORE draining to the aforementioned storm water detention basin. The study area was analyzed for pre- and post-development scenarios to determine peak storm flow rates for 2-, 10-, 25-, 50- and 100-year storm events.

Hydraflow Hydrographs® (HH) software was used to generate computer models of the pre- and post-development runoff scenarios. HH utilized the industry standard Rational Method for predicting peak flow rates. The Rational Method is appropriate given the relatively small drainage area and is commonly used for culvert design, pavement drainage design, storm drain design, and stormwater facility design. The HH software predicts runoff rates based upon several factors including the size of the watershed area, the type of ground cover (roof, paved, lawn, etc.), historic rainfall intensity data (for East Hampton, Middlesex County) and the time-of-concentration.

The following table summarizes the study area characteristics under pre- and post-development scenarios:

	Runoff Coefficient "C" Value	**Pre-Development**	**Post-Development**
Roof Areas	0.9	0.06 Ac	0.24 Ac
Paved Areas	0.9	0.15 Ac	0.52 Ac
Lawn/ Landscaped	0.3	0.79 Ac	0.24 Ac
	Total Area	1.0 Ac	1.0 Ac

Under pre-development conditions, the study area has a weighted runoff coefficient "C" of 0.43 and a time-of-concentration of 12 minutes based on the watershed size and slope. Under developed conditions, the weighted runoff coefficient "C" increases to 0.75 and time-of-concentration speeds up to 7 minutes for the paved area and 5-minutes for the roof area. Based on increases to the runoff coefficient "C" and times-of-concentration, not surprisingly, the peak rate of storm water runoff will increase for all storm under the developed scenario.

To mitigate this impact, two underground storm water detention systems are proposed. First, rooftop water will be collected and discharged to a deep galley system consisting of sixteen (16) 4'-wide x 8'-long x 48"-tall concrete galleries. This system, backfilled with broken stone, provides 1,376 cubic feet of storm water storage. A second underground system will accommodate runoff from the paved areas of the site and discharge to a shallower galley system consisting of eighteen (18) 4'-wide x 8'-long x 24"-tall concrete galleries. This system, also backfilled with broken stone, provides 1,239 cubic feet of storm water storage. The two underground systems will be linked together with a 8"-diameter PVC connecting pipe and discharge via a high-level overflow pipe directly to the adjacent storm sewer system on #201 West High Street.

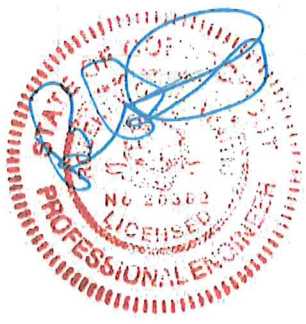
Both of the galley systems will offer infiltration of collected storm water. Based on deep test pits and soil percolation tests done in these areas, the systems will be constructed in coarse sandy loam material. Percolation rates were determined to be 8 minutes-per-inch which correlates to an infiltration rate of 7.5 inches-per-hour. To take a more conservative approach to the design, an infiltration rate of only 3 inches-per-hour was used in the drainage calculations.

The following table summarizes the overall storm water runoff from the study area for pre-, post-developed, and post-developed with mitigation conditions for the design storms:

Storm	Pre-Developed	Post-Developed (no mitigation)	Post-Developed (w/ infiltration)
2-year	1.3 cfs	2.6 cfs	0.2 cfs
10-year	2.1 cfs	4.1 cfs	1.3 cfs
25-year	2.5 cfs	4.8 cfs	1.8 cfs
50-year	2.8 cfs	5.5 cfs	2.2 cfs
100-year	3.1 cfs	6.1 cfs	2.6 cfs

As summarized above and in the calculations contained in the Appendix, with provision of the proposed infiltration systems, the post-development peak runoff flows will be effectively reduced to BELOW pre-development levels. Although no credit is taken, further peak flow attenuation will be provided by the existing detention basin on 201 West High Street.

Relative drainage calculations from the original subdivision project are attached as Appendix Sheets A1 thru A-3. Drainage calculations for the 'study area' are attached as Appendix Sheets B-1 thru B-18 and the Watershed Map is attached as Sheet WS-1.



PROPOSED STORMWATER SYSTEM
195 WEST HIGH STREET SUBDIVISION
EAST HAMPTON, CONNECTICUT

Stormwater facilities for the above referenced development have been designed in accordance with Section 06 of the Town of East Hampton Street Standards and sound engineering practices. Stormwater flows have been computed using the Rational Method for a 10 year frequency storm and intensity-duration-frequency curves for the Hartford Area. Gutter flow analysis and stormwater flows for all proposed stormwater systems were designed using Hydraflow Storm Sewers 2005 and are included within the attached document. The bio-detention facility, designed to limit post-development peak discharge to pre-development conditions, has been designed using Hydraflow Hydrographs 2002 for 2, 10, 25, 50, and 100 year frequency storms using the Rational Method as endorsed in Section 06.02.04.4. of the Street Standards.

The proposed stormwater system for the above referenced development has been designed in accordance with the 2004 Connecticut Stormwater Quality Manual and the 2002 Connecticut Guidelines for Erosion and Sedimentation Control. Compliance with the EPA and DEP guidelines for removal of 80% of the total suspended solids is exceeded (90% removal proposed) by the application of "treatment trains." The proposed stormwater system includes a "treatment train" implementing the use of two foot catch basin sumps, a sediment chamber, a scour hole to dissipate stormwater energy entering the basin, a sediment forebay formed upgradient of a stone filter berm, a bio-detention basin designed with a gravel wetland and planted with wetland type vegetation, an outlet structure designed to reduce post-development flow to less than pre-development conditions, and a scour hole to dissipate stormwater energy leaving the basin. All reasonable design precautions and BMP treatments have been considered to ensure compliance with all governing regulations. Many of the proposed best management practices are extraordinary to definitively eliminate any reasonable concerns over possible measureable environmental impacts. Peak flow rates to point 'A' have been reduced from 4.8, 7.9, 9.6, 10.7 and 12.0 CFS to 1.8, 5.9, 8.5, 9.9 and 12.1 CFS for 2, 10, 25, 50 and 100 year frequency storms respectively

The primary objectives of the proposed stormwater system is to convey stormwater from proposed developed areas to a designated discharge location while maintaining pre and post-development watershed boundaries, provide no increase in peak flow to downstream watercourses and properties, and treat stormwater for pollutants such as total suspended solids (TSS), total phosphorous, total nitrogen, copper, lead, zinc, fecal coliform, and total petroleum hydrocarbons. The sources of these pollutants include: atmospheric precipitation, roof and driveway runoff from residential and commercial structures, pet droppings, fertilizers, road sand from winter storm events, and metals and hydrocarbons from motor vehicles.

The water quality volume (WQV) has been calculated for the drainage system to ensure compliance with the 2004 Connecticut Stormwater Quality Manual. The proposed bio-detention basin has been designed to be large enough to capture and hold all runoff from a storm of 1.0 inch, equivalent to 100 percent of the WQV. Research has shown that more than 90 percent of all runoff occurs during storms of 1 inch or less.

The basis of design relating to the stormwater systems for 195 West High Street Subdivision can be found within this document. Details relating to the construction of the stormwater system can be found on Topographic Map sheet 3 of 8, and Notes and Details sheet 7 of 8.

PAGES 1-30

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195 WEST HIGH ST.

EAST HAMPTON, CT

DRAINAGE DESIGN COMPUTATIONS

PRE-DEVELOPMENT PEAK FLOWS RATES TO POINT 'A'

TOTAL AREA = 10.7 AC

AI = 3.4

T_c = 8.9 min. (SEE 'Tc' WORKSHEET)

0.1 AC @ 0.9 (IMP.)
6.2 AC @ 0.3 (GRASS)
3.8 AC @ 0.25 (WOODS)

Q_2	=	[illegible]	x	1.4 IN/HR	= 4.8 CFS
Q_{10}	=	[illegible]	x	2.3 IN/HR	= 7.9 CFS
Q_{25}	=	[illegible]	x	2.8 IN/HR	= 9.6 CFS
Q_{50}	=	[illegible]	x	3.1 IN/HR	= 10.7 CFS
Q_{100}	=	[illegible]	x	3.5 IN/HR	= 12.0 CFS

POST DEVELOPMENT PEAK FLOW RATES TO POINT 'A'

TOTAL AREA = 10.7 AC

AI = 5.[illegible]

T_c = 5.[illegible] min. (SEE 'Tc' WORKSHEET)

4.3 AC @ 0.9
3.2 AC @ 0.3
3.1 AC @ 0.25

Q_2	=	5.23	x	1.5 IN/HR	= 8.4 CFS
Q_{10}	=	[illegible]	x	2.4 IN/HR	= 13.5 CFS
Q_{25}	=	[illegible]	x	2.9 IN/HR	= 16.3 CFS
Q_{50}	=	5.23	x	3.2 IN/HR	= 18.0 CFS
Q_{100}	=	[illegible]	x	3.6 IN/HR	= 20.3 CFS

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INCREASE IN RUNOFF DUE TO DEVELOPMENT

ΔQ_2	=	8.4 CFS	−	4.8 CFS	= 3.6 CFS
ΔQ_{10}	=	13.5 CFS	−	7.9 CFS	= 5.6 CFS
ΔQ_{25}	=	16.3 CFS	−	9.6 CFS	= 6.7 CFS
ΔQ_{50}	=	18.0 CFS	−	10.7 CFS	= 7.3 CFS
ΔQ_{100}	=	20.3 CFS	−	12.0 CFS	= 8.3 CFS

POST-DEVELOPMENT RUNOFF TO DETENTION BASIN

TOTAL AREA = 7.8 AC

AT:

3.6 AC @ 0.9

3.0 AC @ 0.3

1.2 AC @ 0.2

T_c = 35 min.

SEE HYDRO GRAPH PLOTS BY INTELISOLVE

Q_2 = 7.7 CFS

Q_{10} = 11.4 CFS

Q_{25} = 13.4 CFS

Q_{50} = 15.1 CFS

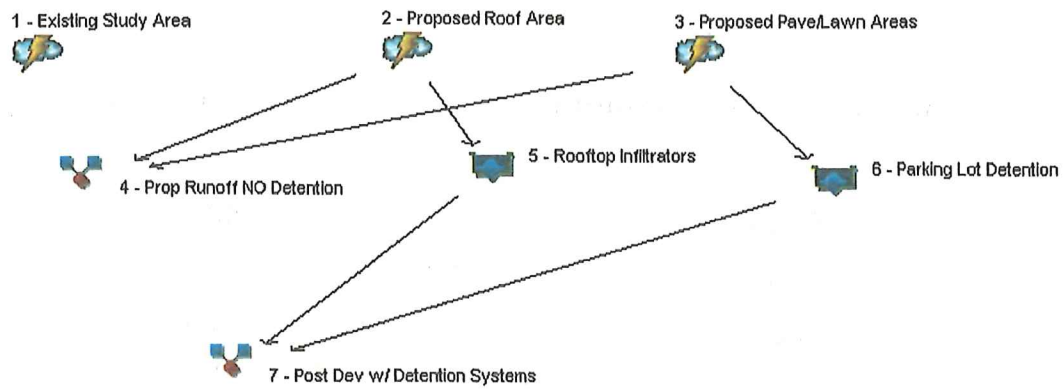
Q_{100} = 16.7 CFS

MAX ALLOWABLE DISCHARGE FROM POST-DEVELOPMENT BASIN

Q_2	=	7.7 CFS	−	3.6 CFS	= 4.1 CFS
Q_{10}	=	11.4 CFS	−	5.6 CFS	= 5.8 CFS
Q_{25}	=	13.4 CFS	−	6.7 CFS	= 6.7 CFS
Q_{50}	=	15.1 CFS	−	7.3 CFS	= 7.8 CFS
Q_{100}	=	16.7 CFS	−	8.3 CFS	= 8.4 CFS

Watershed Model Schematic

Hydraflow Hydrographs by Intelisolve v9.02



Legend

Hyd.	Origin	Description
1	Rational	Existing Study Area
2	Rational	Proposed Roof Area
3	Rational	Proposed Pave/Lawn Areas
4	Combine	Prop Runoff NO Detention
5	Reservoir	Rooftop Infiltrators
6	Reservoir	Parking Lot Detention
7	Combine	Post Dev w/ Detention Systems

Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.02

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	Rational	-------	-------	1.342	-------	-------	2.066	2.477	2.781	3.108	Existing Study Area
2	Rational	-------	-------	0.998	-------	-------	1.560	1.804	2.054	2.268	Proposed Roof Area
3	Rational	-------	-------	2.057	-------	-------	3.195	3.762	4.250	4.716	Proposed Pave/Lawn Areas
4	Combine	2, 3	-------	2.655	-------	-------	4.132	4.835	5.483	6.077	Prop Runoff NO Detention
5	Reservoir	2	-------	0.000	-------	-------	0.000	0.000	0.000	0.000	Rooftop Infiltrators
6	Reservoir	3	-------	0.264	-------	-------	1.295	1.776	2.221	2.576	Parking Lot Detention
7	Combine	5, 6	-------	0.264	-------	-------	1.295	1.776	2.221	2.576	Post Dev w/ Detention Systems

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.02

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	1.342	1	12	966	----	------	------	Existing Study Area
2	Rational	0.998	1	5	299	----	------	------	Proposed Roof Area
3	Rational	2.057	1	7	864	----	------	------	Proposed Pave/Lawn Areas
4	Combine	2.655	1	7	1,163	2, 3	------	------	Prop Runoff NO Detention
5	Reservoir	0.000	1	171	0	2	486.82	282	Rooftop Infiltrators
6	Reservoir	0.264	1	13	111	3	487.25	774	Parking Lot Detention
7	Combine	0.264	1	13	111	5, 6	------	------	Post Dev w/ Detention Systems

Hydrograph Summary Report

Hydraflow Hydrographs by Intellisolve v9.02

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	2.066	1	12	1,488	----	------	------	Existing Study Area
2	Rational	1.560	1	5	468	----	------	------	Proposed Roof Area
3	Rational	3.195	1	7	1,342	----	------	------	Proposed Pave/Lawn Areas
4	Combine	4.132	1	7	1,810	2, 3	------	------	Prop Runoff NO Detention
5	Reservoir	0.000	1	n/a	0	2	487.31	448	Rooftop Infiltrators
6	Reservoir	1.295	1	11	564	3	487.60	990	Parking Lot Detention
7	Combine	1.295	1	11	564	5, 6	------	------	Post Dev w/ Detention Systems

Hydrograph Summary Report

Hydraflow Hydrographs by Intellisolve v9.02

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	2.477	1	12	1,783	----	------	------	Existing Study Area
2	Rational	1.804	1	5	541	----	------	------	Proposed Roof Area
3	Rational	3.752	1	7	1,576	----	------	------	Proposed Pave/Lawn Areas
4	Combine	4.835	1	7	2,117	2, 3	------	------	Prop Runoff NO Detention
5	Reservoir	0.000	1	268	0	2	487.52	521	Rooftop Infiltrators
6	Reservoir	1.776	1	11	793	3	487.74	1,069	Parking Lot Detention
7	Combine	1.776	1	11	793	5, 6	------	------	Post Dev w/ Detention Systems

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.02

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	2.781	1	12	2,002	----	------	------	Existing Study Area
2	Rational	2.054	1	5	616	----	------	------	Proposed Roof Area
3	Rational	4.250	1	7	1,785	----	------	------	Proposed Pave/Lawn Areas
4	Combine	5.483	1	7	2,401	2, 3	------	------	Prop Runoff NO Detention
5	Reservoir	0.000	1	n/a	0	2	487.73	595	Rooftop Infiltrators
6	Reservoir	2.221	1	10	998	3	487.85	1,143	Parking Lot Detention
7	Combine	2.221	1	10	998	5, 6	------	------	Post Dev w/ Detention Systems

Hydrograph Summary Report

Hydraflow Hydrographs by Intellisolve v9.02

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	3.108	1	12	2,238	----	------	-------	Existing Study Area
2	Rational	2.268	1	5	680	----	------	-------	Proposed Roof Area
3	Rational	4.716	1	7	1,981	----	------	-------	Proposed Pave/Lawn Areas
4	Combine	6.077	1	7	2,661	2, 3	------	-------	Prop Runoff NO Detention
5	Reservoir	0.000	1	n/a	0	2	487.92	658	Rooftop Infiltrators
6	Reservoir	2.576	1	10	1,191	3	487.96	1,212	Parking Lot Detention
7	Combine	2.576	1	10	1,191	5, 6	------	-------	Post Dev w/ Detention Systems

Hydrograph Report

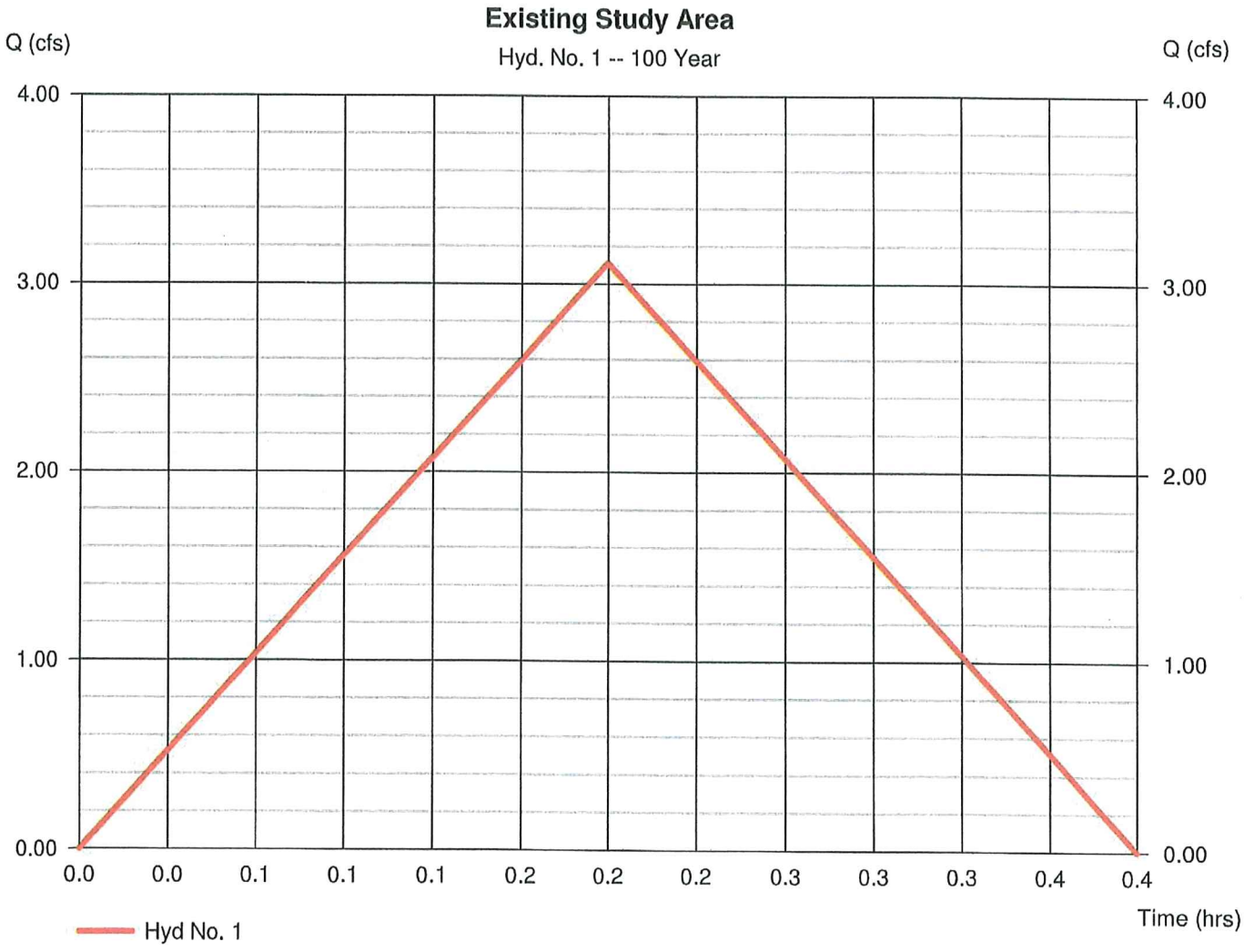
Hydraflow Hydrographs by Intelisolve v9.02 — Sunday, Feb 25, 2024

Hyd. No. 1

Existing Study Area

Hydrograph type	= Rational	Peak discharge	= 3.108 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.20 hrs
Time interval	= 1 min	Hyd. volume	= 2,238 cuft
Drainage area	= 1.000 ac	Runoff coeff.	= 0.43*
Intensity	= 7.229 in/hr	Tc by FAA	= 12.00 min
IDF Curve	= MIDDLESEX.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.060 x 0.90) + (0.150 x 0.90) + (0.790 x 0.30)] / 1.000



B-8

FAA Formula Tc Worksheet

Tc = 1.8(1.1 - C) x Flow length^0.5 / Watercourse slope^0.333

Hyd. No. 1

Existing Study Area

Description

Flow length (ft)	= 250.00
Watercourse slope (%)	= 3.60
Runoff coefficient (C)	= 0.43
Time of Conc. (min)	**= 12**

Hydrograph Report

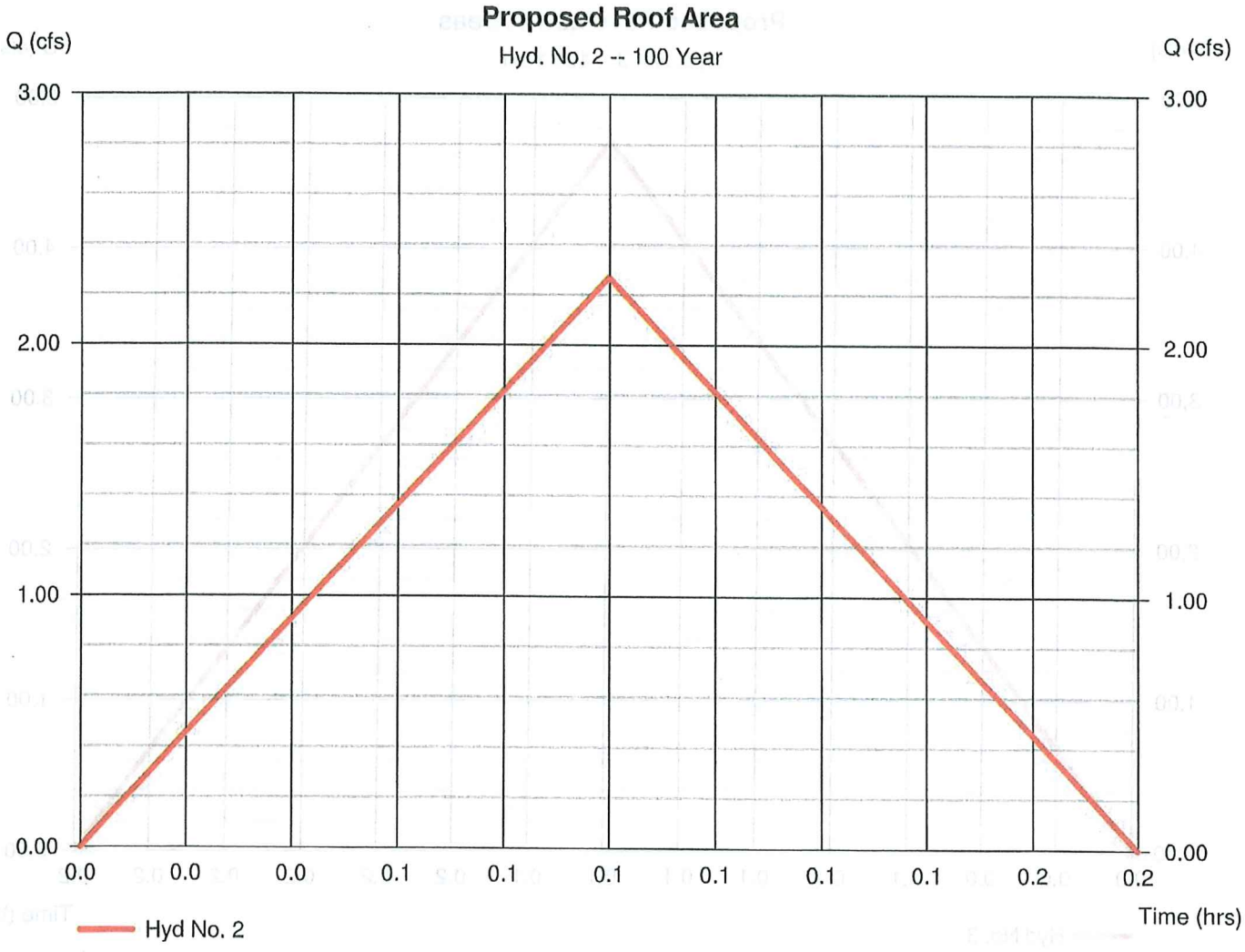
Hydraflow Hydrographs by Intelisolve v9.02 — Sunday, Feb 25, 2024

Hyd. No. 2

Proposed Roof Area

Hydrograph type	= Rational	Peak discharge	= 2.268 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.08 hrs
Time interval	= 1 min	Hyd. volume	= 680 cuft
Drainage area	= 0.240 ac	Runoff coeff.	= 0.99*
Intensity	= 9.546 in/hr	Tc by User	= 5.00 min
IDF Curve	= MIDDLESEX.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.240 x 1.00)] / 0.240



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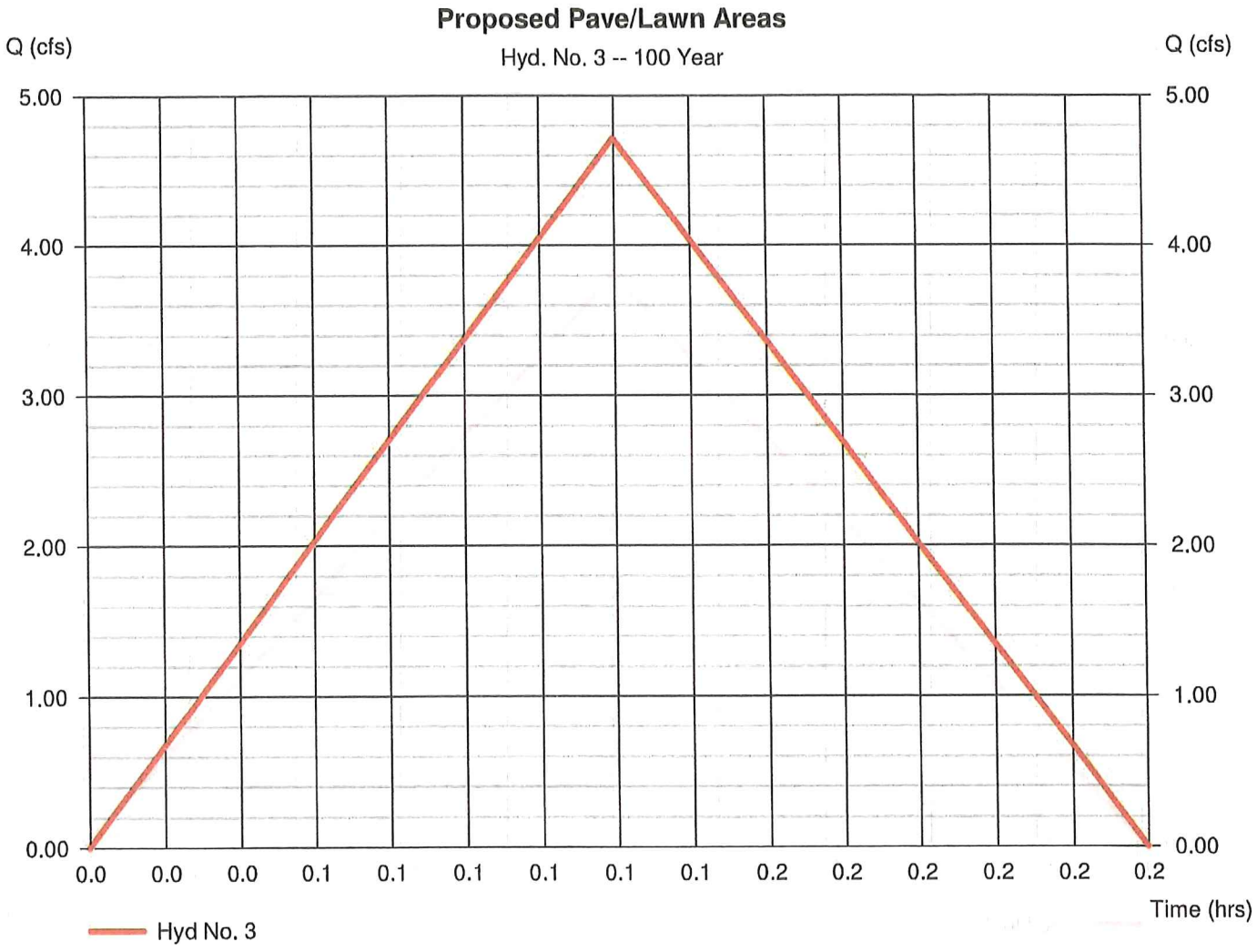
Hydrograph Report

Hyd. No. 3

Proposed Pave/Lawn Areas

Hydrograph type	= Rational	Peak discharge	= 4.716 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.12 hrs
Time interval	= 1 min	Hyd. volume	= 1,981 cuft
Drainage area	= 0.760 ac	Runoff coeff.	= 0.71*
Intensity	= 8.739 in/hr	Tc by FAA	= 7.00 min
IDF Curve	= MIDDLESEX.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.520 x 0.90) + (0.240 x 0.30)] / 0.760



FAA Formula Tc Worksheet

Tc = 1.8(1.1 - C) x Flow length^0.5 / Watercourse slope^0.333

Hyd. No. 3

Proposed Pave/Lawn Areas

Description

Flow length (ft)	= 250.00
Watercourse slope (%)	= 3.60
Runoff coefficient (C)	= 0.71
Time of Conc. (min)	**= 7**

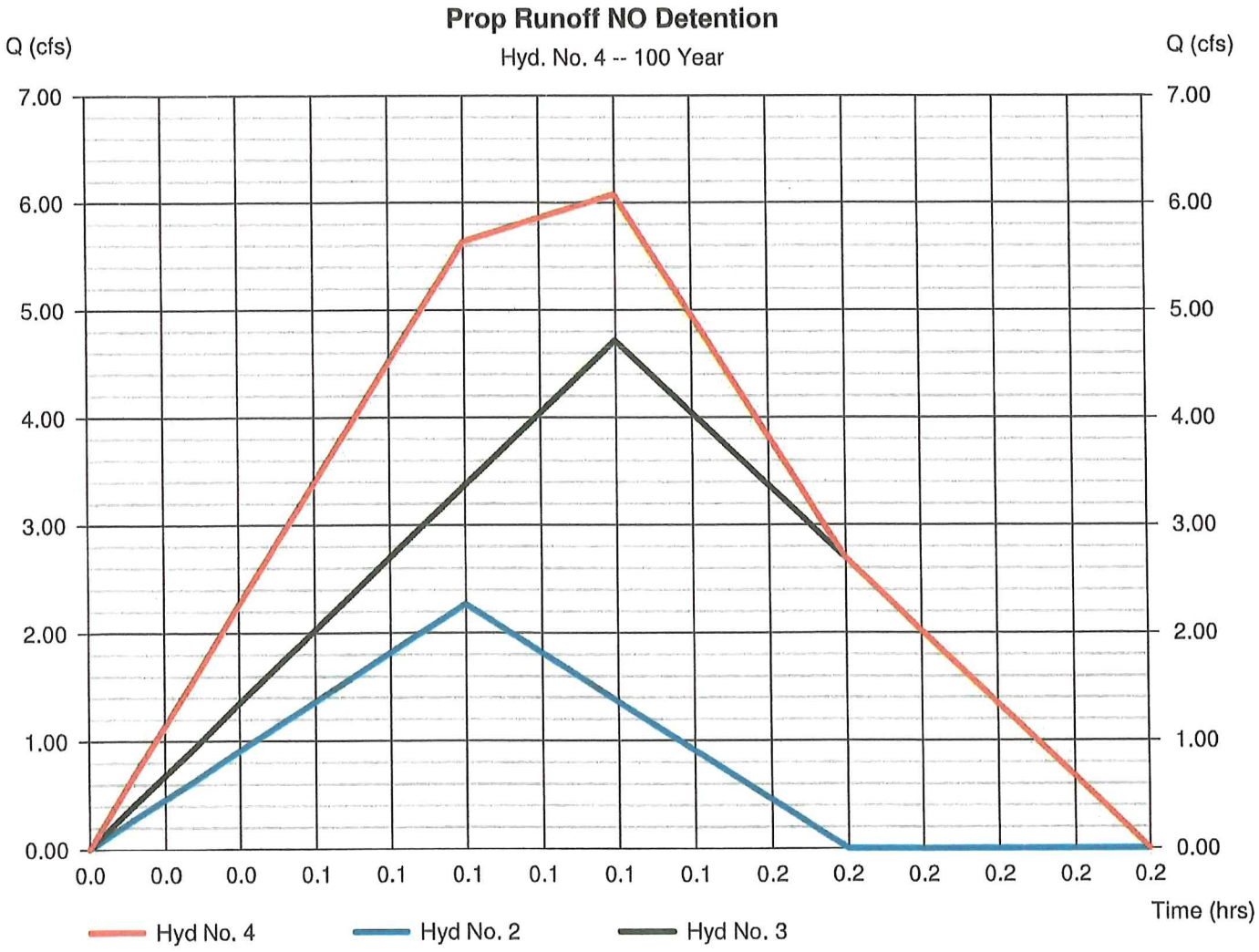
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02 — Sunday, Feb 25, 2024

Hyd. No. 4

Prop Runoff NO Detention

Hydrograph type	= Combine	Peak discharge	= 6.077 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.12 hrs
Time interval	= 1 min	Hyd. volume	= 2,661 cuft
Inflow hyds.	= 2, 3	Contrib. drain. area	= 1.000 ac



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Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

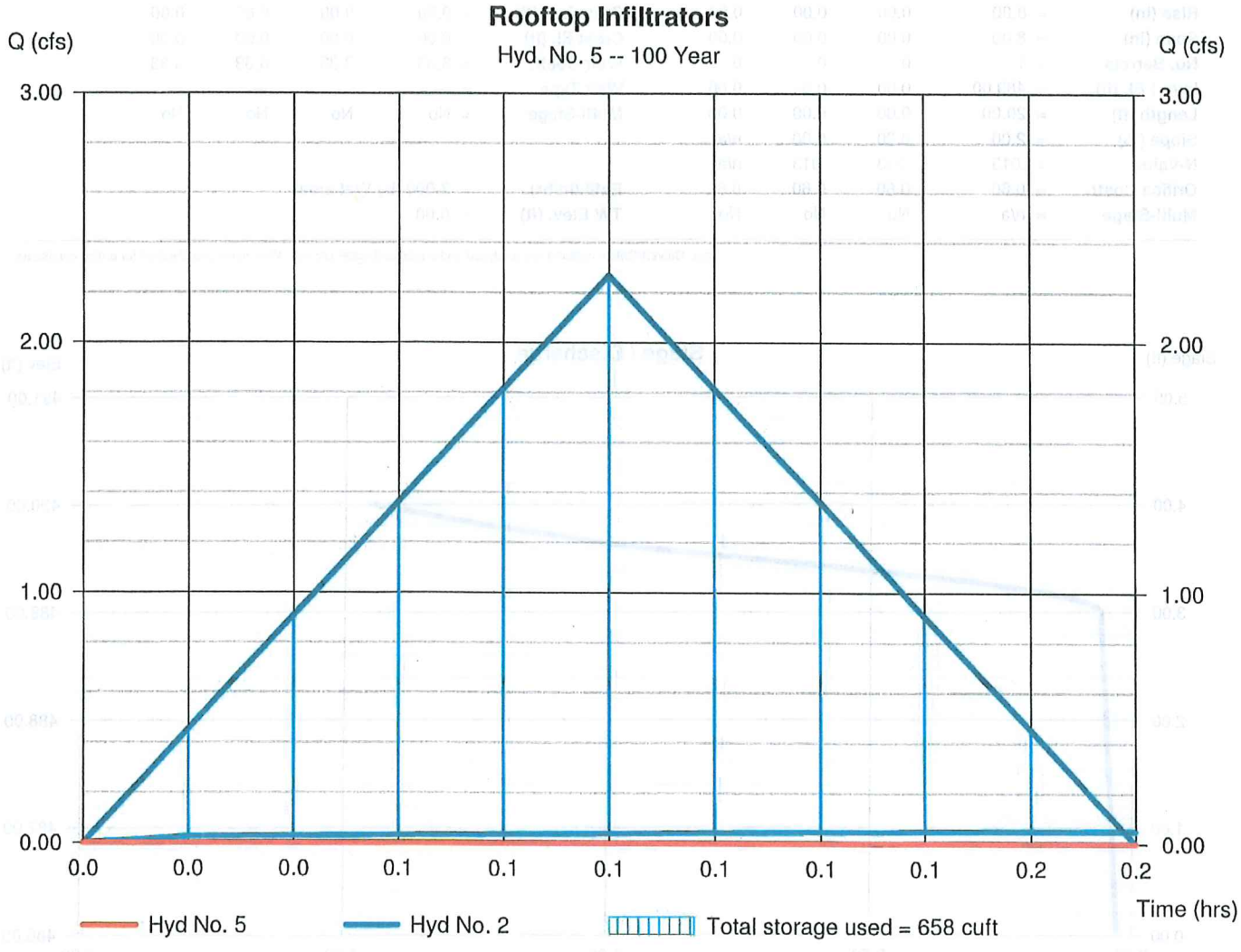
Sunday, Feb 25, 2024

Hyd. No. 5

Rooftop Infiltrators

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 2 - Proposed Roof Area	Max. Elevation	= 487.92 ft
Reservoir name	= Rooftop	Max. Storage	= 658 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



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Pond Report

Pond No. 1 - Rooftop

Pond Data

UG Chambers - Invert elev. = 486.00 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 40.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = No
Encasement - Invert elev. = 486.00 ft, Width = 5.00 ft, Height = 4.00 ft, Voids = 30.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	486.00	n/a	0	0
0.40	486.40	n/a	138	138
0.80	486.80	n/a	138	275
1.20	487.20	n/a	138	413
1.60	487.60	n/a	138	551
2.00	488.00	n/a	138	688
2.40	488.40	n/a	138	826
2.80	488.80	n/a	138	963
3.20	489.20	n/a	138	1,101
3.60	489.60	n/a	138	1,239
4.00	490.00	n/a	138	1,376

Culvert / Orifice Structures

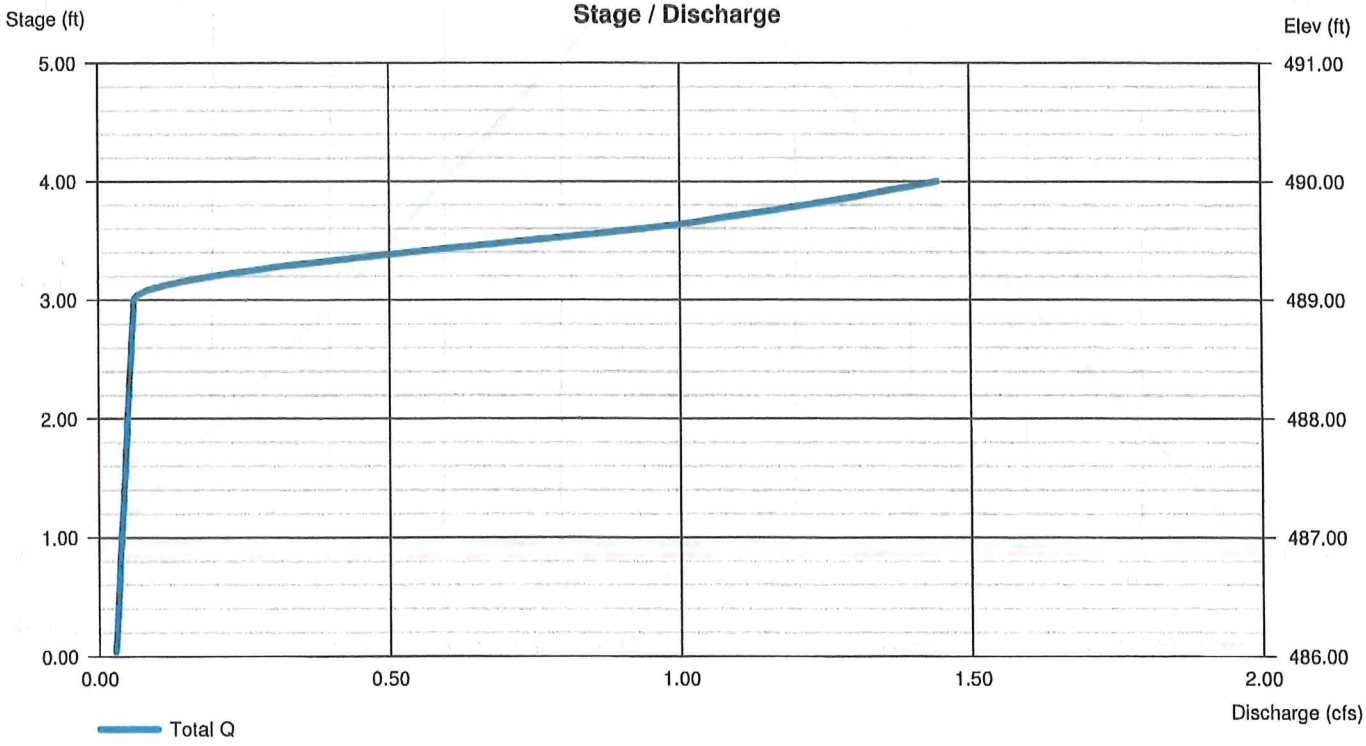
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 8.00	0.00	0.00	0.00
Span (in)	= 8.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 489.00	0.00	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

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

Exfil.(in/hr) = 3.000 (by Wet area)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



B-15

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

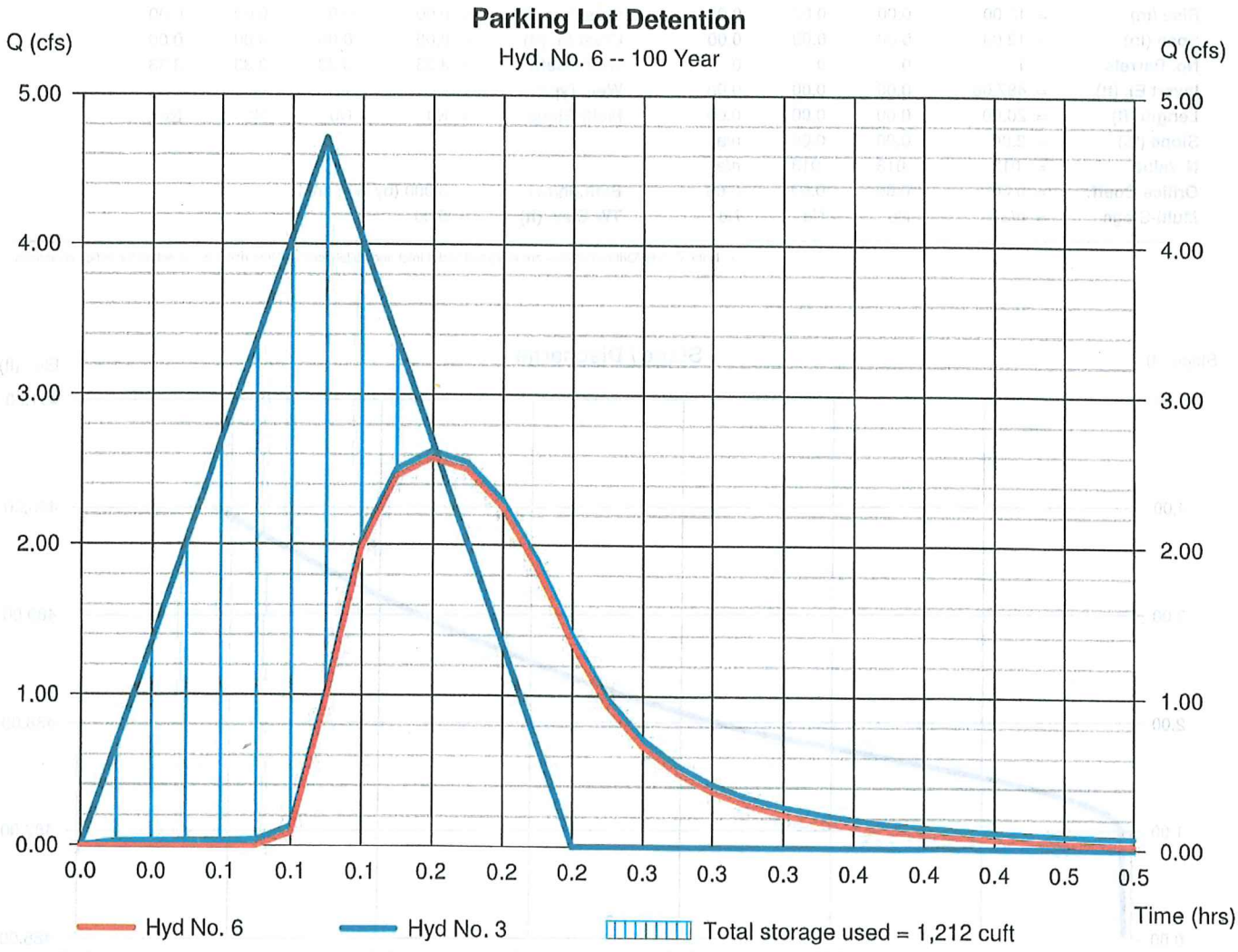
Sunday, Feb 25, 2024

Hyd. No. 6

Parking Lot Detention

Hydrograph type	= Reservoir	Peak discharge	= 2.576 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.17 hrs
Time interval	= 1 min	Hyd. volume	= 1,191 cuft
Inflow hyd. No.	= 3 - Proposed Pave/Lawn Areas	Max. Elevation	= 487.96 ft
Reservoir name	= Parking Lot	Max. Storage	= 1,212 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



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Pond Report

Hydraflow Hydrographs by Intelisolve v9.02 — Sunday, Feb 25, 2024

Pond No. 2 - Parking Lot

Pond Data

UG Chambers - Invert elev. = 486.00 ft, Rise x Span = 2.00 x 4.00 ft, Barrel Len = 48.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = No
Encasement - Invert elev. = 486.00 ft, Width = 5.00 ft, Height = 4.00 ft, Voids = 30.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	486.00	n/a	0	0
0.40	486.40	n/a	248	248
0.80	486.80	n/a	248	495
1.20	487.20	n/a	248	743
1.60	487.60	n/a	248	991
2.00	488.00	n/a	248	1,239 ← Top of 24" galley
2.40	488.40	n/a	86	1,325
2.80	488.80	n/a	86	1,411
3.20	489.20	n/a	86	1,498
3.60	489.60	n/a	86	1,584
4.00	490.00	n/a	86	1,671

Culvert / Orifice Structures

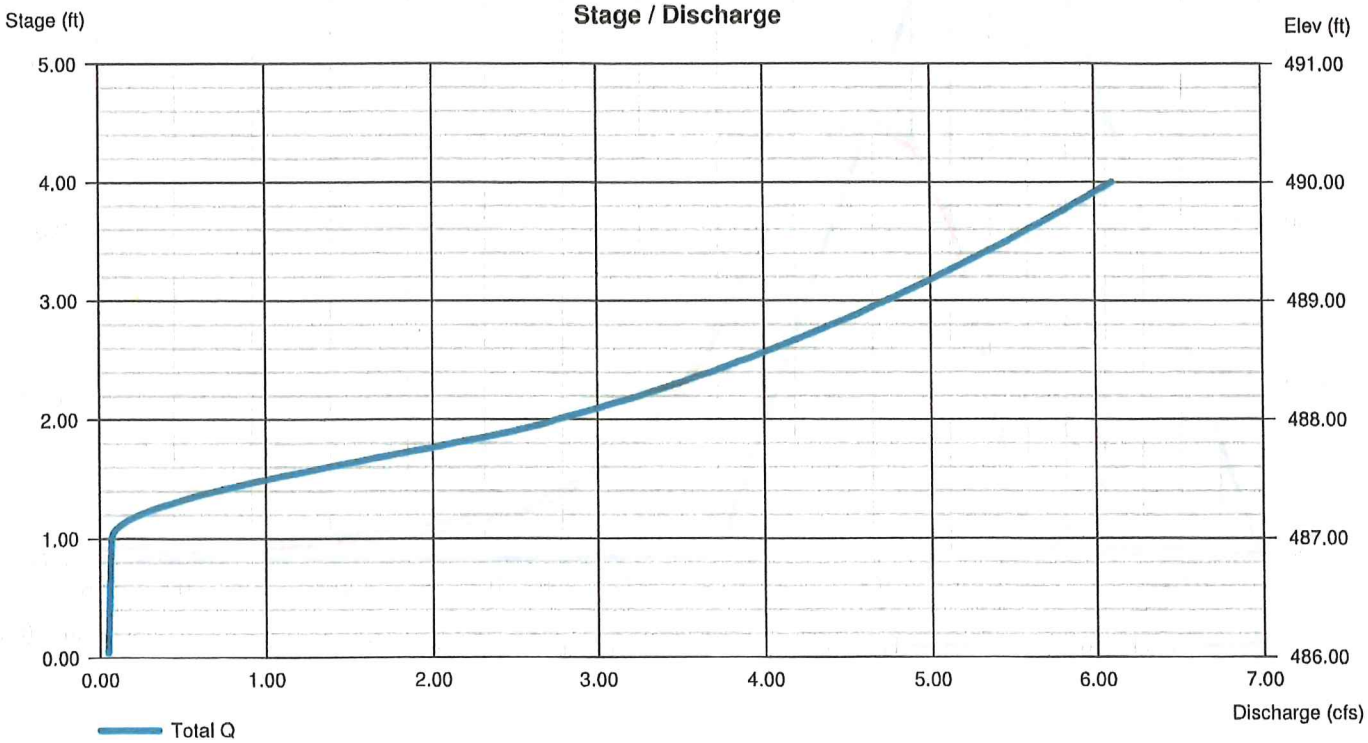
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	0.00	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 487.00	0.00	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

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

Exfil.(in/hr) = 3.000 (by Wet area)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



Hydrograph Report

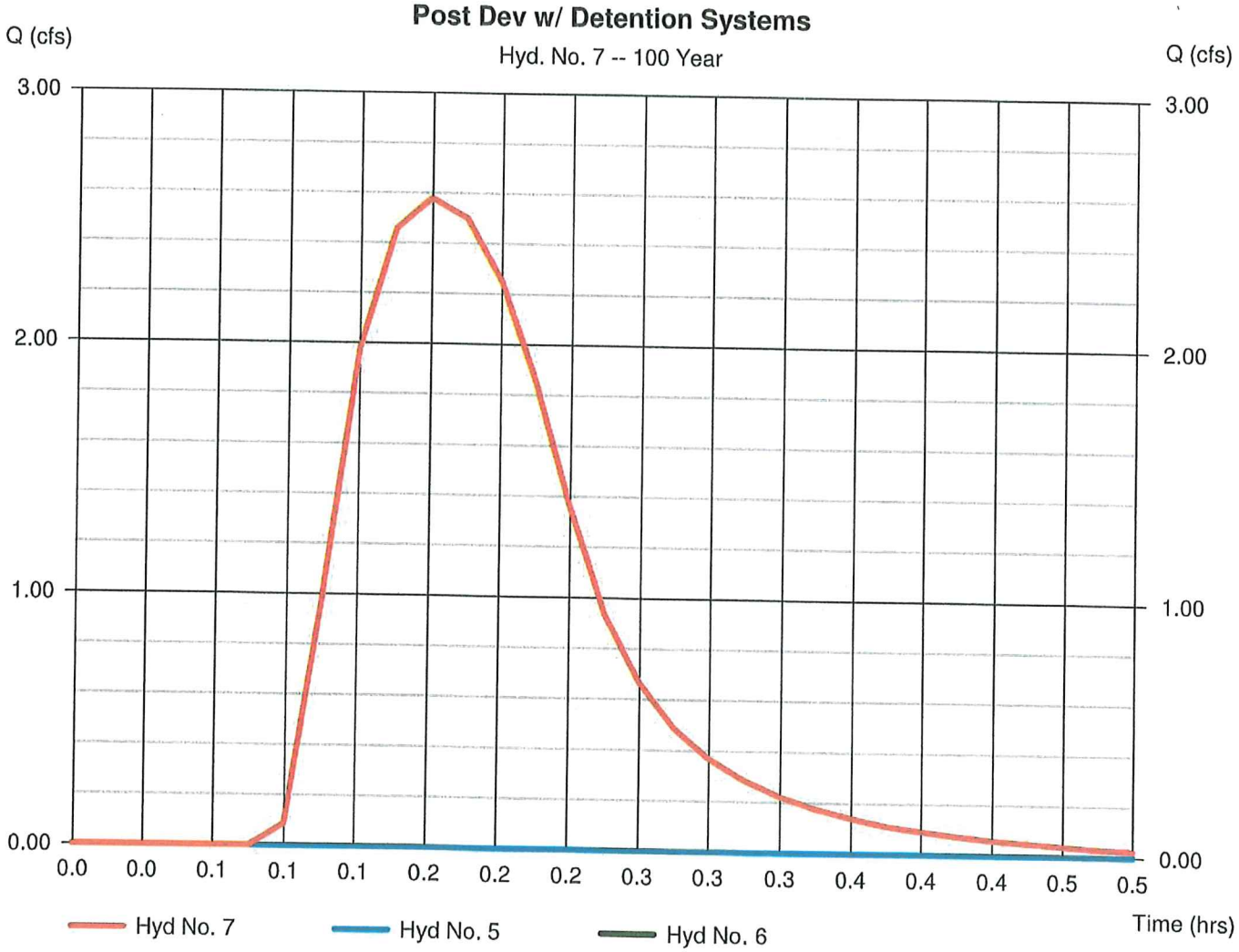
Hydraflow Hydrographs by Intelisolve v9.02

Sunday, Feb 25, 2024

Hyd. No. 7

Post Dev w/ Detention Systems

Hydrograph type	= Combine	Peak discharge	= 2.576 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.17 hrs
Time interval	= 1 min	Hyd. volume	= 1,191 cuft
Inflow hyds.	= 5, 6	Contrib. drain. area	= 0.000 ac



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