STORMWATER MANAGEMENT AND WATER QUALITY ANALYSIS

For

PVP Exit 8, LLC

Proposed Warehouse Development

200 Milford Road
Block 22.02, Lots 2.02, 8.01 & 11.01
Township of East Windsor
Mercer County, NJ

Prepared by:

1904 Main Street
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APPENDIX

A. SITE DESCRIPTION

The project site consists of Block 22.02, Lots 2.02, 8.01 and 11.01 in the Township of East Windsor, Mercer County, New Jersey. The subject site is located at 200 Milford Road and is comprised of approximately 123.603 acres. The subject parcel currently consists of farmland, open space and wooded areas.

The project proposes to develop the existing site with a 721,548 SF warehouse and associated site improvements, including drive aisles, parking areas, sidewalks, landscaping, lighting, loading docks and other site amenities. The overall limit of disturbance is approximately 1,538,251.87 SF (35.31 Ac.) and the development proposes a net increase in impervious coverage of approximately 1,384,863 SF (31.79 Ac.).

The existing conditions of the tract have been verified by the ALTA/NSPS Land Title Survey, prepared by Dynamic Survey, LLC, dated 9/30/2020, last revised 01/15/2021 and the Boundary and Topographic Survey, prepared by Dynamic Survey, LLC, dated 09/30/2020, last revised 07/19/2021.

B. DESIGN OVERVIEW

This report has been prepared to define and analyze the stormwater drainage conditions that would occur as a result of the development of Block 22.02, Lots 2.02, 8.01 and 11.01 in the Township of East Windsor, Mercer County, New Jersey.

The scope of the study includes the proposed 721,548 SF warehouse and its associated drive aisles, parking areas, landscaping, loading docks and other related site improvements as shown on the accompanying engineering drawings.

Based upon the fact that the proposed improvements will result in more than one (1) acre of land disturbance and an increase in impervious coverage by more than ¼ acre, this project is classified as a "major development"; and therefore, has been designed to meet the stormwater runoff quantity and stormwater runoff quality standards set forth by the Township of East Windsor Land Development Ordinance and NJAC 7:8.

Based upon the soil conditions encountered onsite, it was determined that areas of the site that were not previously classified as HSG D soils should be reclassified as HSG D soils as verified by the NJDEP under Permit #1101-04-0007.1 FWW. The areas of reclassification as well as a table summarizing the test pit data and reason for reclassification are included in the appendix of this report. In accordance with the NJGRS Program and NJ Geological Survey's Geological Survey Report GSR-32: A Method for Evaluating Ground Water Recharge Areas in New Jersey, areas with HSG D soils shall not produce any groundwater recharge. Therefore, the development is exempt from meeting the groundwater recharge regulations set forth by the Township of East Windsor Land Development Ordinance and NJAC 7:8.

A hydrological evaluation is provided for the NJDEP Water Quality, 2, 10 and 100 year storm events utilizing the Urban Hydrology for Small Watersheds TR55 Method.

The Township of East Windsor and NJDEP flow reduction requirements are as follows:

2-year:	50% reduction
10-year:	25% reduction
100-year:	20% reduction

It is the intention of the design of this facility to comply with the Stormwater Management Best Management Practices.

C. EXISTING DRAINAGE CONDITIONS

The tract has been evaluated with the following drainage sub-watershed areas as depicted on the Existing Conditions Drainage Area Map:

Existing Study Area A: This portion of the tract comprises the majority of the limit of disturbance. It includes both farmland and wooded areas. Stormwater runoff from these areas is tributary to the Rocky Brook (POA 'A') along the southwestern property line via overland flow.

Existing Study Area B: This portion of the tract consists mostly of wooded areas as well as portions of farmland. Stormwater runoff from these areas is tributary to the existing wetlands swale on the northern portion of the site via overland flow. This wetland area is ultimately tributary to the Rocky Brook (POA 'A') along the southwestern property line.

Existing Study Area C: This portion of the tract consists of farmland and wooded areas. Stormwater runoff from these areas is tributary to a state open water that runs along the eastern portion of the property via overland flow. This study area is ultimately tributary to the Rocky Brook (POA 'A') along the southwestern property line.

Based on the Mercer County soil survey information, the soil types native to the site include:

MERCER COUNTY SOIL SURVEY INFORMATION		
SOIL TYPE (SYMBOL)	**SOIL TYPE (NAME)**	**HYDROLOGIC SOIL GROUP**
EvgB	Evesboro loamy sand, 0-5% slopes	A
FamA	Fallsington sandy loams, 0-2% slopes, northern coastal plain	C/D
GASB	Galloway variant soils, 0-5% slopes	A
GKAWOB	Glassboro and Woodstown sandy loams, 0-5% slopes	A/D
HcuAt	Hatboro-Codorus complex, 0-3% slopes, frequently flooded	B/D
OthA	Othello silt loams, 0-2% slopes, northern coastal plain	C/D
WomfB	Woodstown-Fallsington sand loams, 0-5% slopes	B

As noted previously, soils within the limit of disturbance were reclassified to HSG D.

D. PROPOSED DRAINAGE CONDITIONS

The tract has been evaluated with the following drainage sub-watershed areas as depicted on the Proposed Conditions Drainage Area Map:

Proposed Study Area Basin A: This portion of the tract consists of impervious surfaces, including approximately half of the building roof, and open space areas associated with the northeastern portion of the proposed development. Stormwater runoff from these areas is tributary to the proposed aboveground detention basin via overland flow and the proposed pipe network. Runoff is discharged via an outlet control structure to an MTD and then the wetlands swale in the northern portion of the site, which is ultimately tributary to the Rocky Brook (POA 'A').

Proposed Study Area Basin B: This portion of the tract consists of impervious surfaces, including the eastern portion of the building roof, and open space areas associated with the eastern portion of the proposed development. Stormwater runoff from these areas is tributary to the proposed underground detention basin via overland flow and the proposed pipe network. Runoff is discharged via an outlet control structure to an MTD and then to a headwall in the southern portion of the site which is ultimately tributary to the Rocky Brook (POA 'A').

Proposed Study Area Basin C: This portion of the tract consists of impervious areas, including approximately half of the building roof, and open space areas associated with the southwestern portion of the proposed development. Stormwater runoff from these areas is tributary to the proposed underground detention basin via overland flow and the proposed pipe network. The proposed basin is divided into two portions, one to collect the runoff from the inlets and one to collect the runoff from the roof. Runoff from the inlet collection portion

of the basin is discharged via an outlet control structure to an MTD. Runoff from the roof collection portion of the basin is discharged via an outlet control structure and then combined with the post-MTD runoff from the inlet collection basin. The combination of runoff is discharged to the wetlands swale in the northern portion of the site (similar to Basin A) which is ultimately tributary to the Rocky Brook (POA 'A').

Proposed Study Area Basin D: This portion of the tract consists of impervious and open space areas associated with the easternmost improvements along the driveway entrance to the site. Stormwater runoff from these areas is tributary via the proposed pipe network to the underground detention basin. Runoff is discharged via an outlet control structure to an MTD and then to the state open water swale in the eastern portion of the site which is ultimately tributary to the Rocky Brook (POA 'A').

Study Area Undetained: This portion of the tract consists of various open space areas. Stormwater runoff from these areas are tributary via overland to the existing wetlands and Rocky Brook (POA 'A').

E. DESIGN METHODOLOGY

The intention of the design of the proposed stormwater management facilities for this project is to provide measures as required to address applicable aspects of the Township of East Windsor Land Development Ordinance and NJAC 7:8. In order to prepare the stormwater calculations for the subject project, extensive initial investigation of the property and topography were performed. On-site review of the tract was performed by Dynamic Engineering Consultants, PC to verify existing site conditions and land cover characteristics. Dynamic Survey, LLC was contracted to prepare the ALTA/NSPS Land Title Survey and the Boundary and Topographic Survey for the existing site.

Based on our review of the existing site conditions and topography, the Drainage Area Maps for the existing and proposed site conditions as defined within this report were established. A Grading Plan was developed for the proposed site improvements with consideration to the existing drainage patterns. The Plan was designed to ensure runoff from the proposed development could be directed to stormwater management facilities in order to address the applicable sections of the Township of East Windsor Land Development Ordinance and NJAC 7:8.

Furthermore, Dynamic Earth performed test pits within the site to establish the subsurface soil conditions. Provided separately, please reference the Report of Geotechnical and Stormwater Basin Area Investigation, prepared by Dynamic Earth, dated 10/1/2020, and Report of Supplemental Stormwater Basin Area Investigation, prepared by Dynamic Earth, dated 1/21/2021, for the test pit locations and logs.

Under proposed conditions, stormwater runoff associated with the majority of the proposed development is tributary to the proposed underground detention basins via the on-site stormwater conveyance system. The

proposed detention basins have been designed to detain and release stormwater runoff at a controlled rate via the proposed outlet control structures in order to meet the stormwater runoff quantity standards set forth by the Township of East Windsor Land Development Ordinance and NJAC 7:8. Stormwater runoff discharged from the proposed basins is ultimately tributary to the Rocky Brook, located along the southwestern property boundary, which is considered to be Point of Analysis 'A'.

The TSS removal rate requirement set forth by the Township of East Windsor Land Use Ordinance and NJAC 7:8 for the subject site is 80%. The design for the subject development meets the obligation for TSS removal by utilizing manufactured treatment devices for each of the detention basins. The proposed manufactured treatment devices will meet the required 80% TSS removal, thereby satisfying the water quality aspect of the Township of East Windsor Land Use Ordinance and NJAC 7:8. A copy of the NJDEP Certification Letter and sizing requirements for the proposed manufactured treatment devices will be provided under separate cover.

As previously noted, based upon the soil conditions encountered onsite, it was determined that areas of the site that were not previously classified as HSG D soils should be reclassified as HSG D soils. The areas of reclassification as well as a table summarizing the test pit data and reason for reclassification are included in the appendix of this report. In accordance with the NJGRS Program and NJ Geological Survey's Geological Survey Report GSR-32: A Method for Evaluating Ground Water Recharge Areas in New Jersey, areas with HSG D soils shall not produce any groundwater recharge. Therefore, the development is exempt from meeting the groundwater recharge regulations set forth by the Township of East Windsor Land Development Ordinance and NJAC 7:8.

The overall stormwater management report for the subject tract has been evaluated by Dynamic Engineering Consultants to ensure that the overall development satisfies the stormwater criteria set forth by the Township of East Windsor Land Development Ordinance and NJAC 7:8.

F. UNDERGROUND DETENTION BASIN DESIGN

In order to meet the stormwater runoff quantity and quality requirements set forth by the Township of East Windsor Land Development Ordinance and NJAC 7:8 for the developed site, the site design incorporates six (6) underground detention basins. Proposed Basin A will be a StormTrap SingleTrap 6 FT deep by 101 FT wide by 245 FT in length with an outlet control structure to detain and release runoff at a controlled rate. Proposed Basin B1 will be a StormTrap SingleTrap 4 FT deep by 42 FT wide by 430 FT in length with an outlet control structure to detain and release runoff at a controlled rate. Proposed Basin B2 will be a StormTrap SingleTrap 4 FT deep by 17 FT wide by 430 FT in length for roof runoff. Proposed Basin C1 will be a StormTrap SingleTrap 4 FT deep by 17 FT wide by 1,242 FT in length with an outlet control structure to detain and release runoff at a controlled rate. Proposed Basin C2 will be a StormTrap SingleTrap 4 FT deep by

17 FT wide by 1,242 FT in length for roof runoff. Proposed Basin D consists of four (4) 40 LF, four (4) 100 LF and eight (140) LF 24" pipes with an outlet control structure to detain and release runoff at a controlled rate. The proposed underground detention basins have been designed within the seasonal high-water table; therefore, the structures are watertight and non-buoyant. In accordance with the New Jersey Stormwater Best Management Practices Manual, the following design considerations have been satisfied:

- Basin bottom must be as level as possible.
- Construction of basin must be done to avoid compaction of sub-grade soils.
- Basin must be designed to safely convey overflow volume.

G. RUNOFF RATE REDUCTION PERFORMACE

Pre-Development and Post-Development Peak Runoff Results Summary – Overall Site

Runoff for Overall Site				
Design Storm	Ex. Disturbed Peak Flow (cfs)	Reduction (%)	Total Allowable Peak Flow (cfs)	Total Proposed Peak Flow (cfs)
2	46.72	50	23.36	19.50
10	86.89	25	65.17	57.55
100	167.44	20	133.95	97.54

H. WATER QUALITY

As noted previously in this report, the TSS removal rate requirement set forth by the Township of East Windsor Land Use Ordinance and NJAC 7:8 is 80%. The stormwater management design for the project satisfies this requirement utilizing four (4) MTD units downstream of the underground detention basins (Basins A, B, C and D). Therefore, the stormwater management facilities provide a TSS removal rate of 80% for the subject project, satisfying the water quality aspect of the Township of East Windsor Land Use Ordinance and NJAC 7:8.

I. GROUNDWATER RECHARGE

As previously noted, based upon the soil conditions encountered onsite, it was determined that areas of the site that were not previously classified as HSG D soils should be reclassified as HSG D soils. The areas of reclassification as well as a table summarizing the test pit data and reason for reclassification are included in the appendix of this report. The Report of Preliminary Geotechnical and Stormwater Basin Area Investigation, dated 10/1/2020, and Report of Supplemental Stormwater Basin Area Investigation, dated 1/21/2021, are

also provided under separate cover. In accordance with the NJGRS Program and NJ Geological Survey's Geological Survey Report GSR-32: A Method for Evaluating Ground Water Recharge Areas in New Jersey, areas with HSG D soils shall not produce any groundwater recharge. Therefore, the development is exempt from meeting the groundwater recharge regulations set forth by the Township of East Windsor Land Development Ordinance and NJAC 7:8.

J. NON-STRUCTURAL STORMWATER MANAGEMENT STRATEGIES

The site design has been prepared to implement non-structural stormwater management strategies in accordance with NJAC 7:8-5.3 to the maximum extent practicable. The following is a detailed narrative on how this application addresses each of the nine (9) nonstructural strategies established in NJAC 7:8-5.3. The strategies implemented at this site location include the following:

Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss: The subject parcel currently consists of farmland and wooded areas. No areas susceptible to erosion and sediment loss are known to exist on site. Stormwater runoff currently traverses the site via sheet flow and shallow concentrated flow to three (3) points of analysis. In proposed conditions, the limit of disturbance was minimized and wooded and environmentally sensitive areas were maintained to the maximum extent practicable. The development is designed with six (6) underground detention basins, which collect stormwater runoff from the proposed improvements. The proposed stormwater management systems reduce the peak rates of stormwater runoff in the post development condition for the 2, 10, and 100 year design storm, thereby reducing the potential for erosion and sediment loss.

Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces: Stormwater runoff from the building roof is directly routed to the underground detention basins where the stormwater runoff is being detained.

Maximize the protection of natural drainage features and vegetation: The proposed development was designed with consideration to the existing drainage patterns. The stormwater management system serves to reduce peak rates of runoff in post-development conditions. In addition, the proposed development has been designed to preserve the existing wooded and environmentally sensitive areas on-site to the maximum extent practicable. The lot consists of 123.603 acres, of which 36.49 acres are being disturbed and 87.11 acres are being preserved (±70.4% preservation). Furthermore, the proposed development provides a variety of trees and shrubs, thereby enhancing the aesthetic and water quality benefits of the site.

Minimize the decrease in the pre-development "time of concentration": The proposed development is designed to minimize the decrease in the pre-development "time of concentration". The proposed

development is designed with a multiple basin system that collects stormwater runoff from the majority of the subject parcel and detains and releases runoff at a controlled rate to satisfy the water quantity regulations set forth by NJAC 7:8.

Minimize land disturbance including clearing and grading: It is important to note that only 36.49 acres of the 123.603 acres of the lot is being developed. This effectively preserves ±70.4% of the property, a majority of which is wooded and environmentally sensitive areas. Land outside of the proposed limit of disturbance and limit of clearing will be protected during construction by tree protection and silt fences. Additionally, the site proposes stormwater facilities to mitigate the impacts caused by the clearing of wooded areas.

Minimize soil compaction: The proposed development proposes to minimize soil compaction to the maximum extent practicable by utilizing lightweight construction equipment for landscaped areas of the site.

Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawn fertilizers and pesticides: The proposed landscaping design has been prepared to provide an aesthetic improvement to the interior and perimeter of the site through use of approved native species and other low maintenance vegetation.

Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas: The site has been designed to preserve the existing vegetation and wooded areas to the maximum extent practicable. These existing wooded areas provide vegetated open-channel conveyance systems.

Provide other source control to prevent or minimize the use or exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into the stormwater: A trash rack will be provided at the outlet control structures to help prevent accumulation of trash and debris from entering the downstream drainage system. Regularly scheduled maintenance of the basin system as described in the Operations and Maintenance Manual will remove any trash and debris that may have entered the stormwater management facilities.

K. CONCLUSION

The proposed overall development has been designed with provisions for the safe and efficient control of stormwater runoff in a manner that will not adversely impact the existing drainage patterns, adjacent roadways, or adjacent parcels. Furthermore, the stormwater management design shall reduce peak flow rates to each point of analysis and meets the minimum peak flow reductions of 50%, 75%, and 80% for the 2, 10, and 100-year storm events, respectively, as dictated by the Township of East Windsor Land Development Ordinance and NJAC 7:8. With this stated, it is evident that the proposed development will not have a

negative impact on the existing drainage pattern, water quality, or groundwater recharge on site or within the vicinity of the subject parcel.

APPENDIX

USGS MAP

DYNAMIC
ENGINEERING EARTH SURVEY TRAFFIC

Dynamic Engineering Consultants, PC
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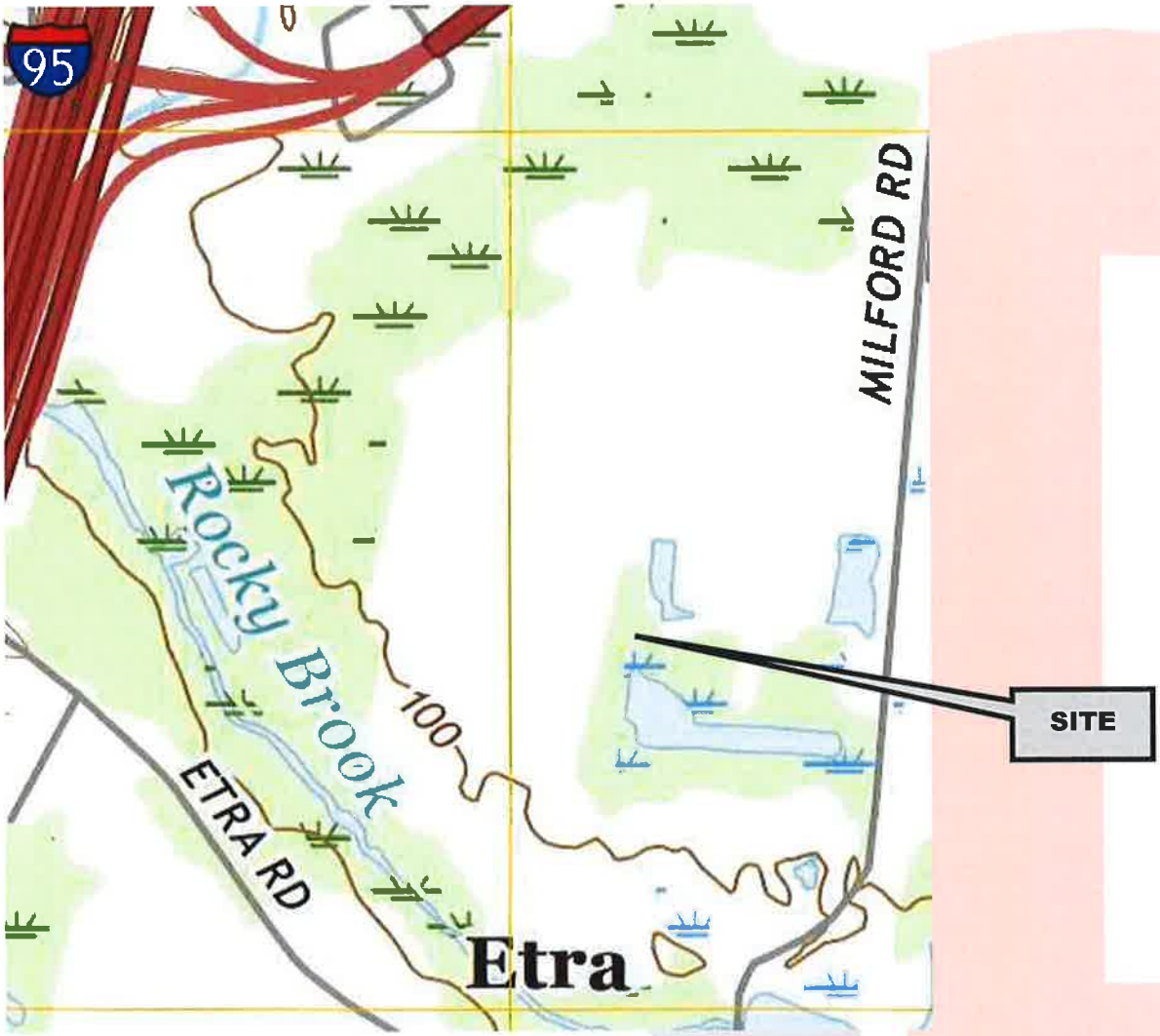

RUNOFF CURVE NUMBER (CN) CALCULATIONS – EXISTING

EXISTING DRAINAGE AREA CURVE NUMBER(CN) CALCULATIONS

Project:	Proposed Warehouse Development	Computed By:	KW
Job #:	0091-99-013	Checked By:	
Location:	East Windsor, NJ	Date:	11/30/2022

Drainage Area	HSG D - Small Grain Area (acre)	HSG D - Small Grain Area (sf)	Curve Number (CN) Used	HSG D - Wooded Area (acre)	HSG D - Wooded Area (sf)	Curve Number (CN) Used	Avg. Perv. Curve Number	Total Pervious Area (acres)	Total Area (acres)	TC (Min.)
Study Area A	18.55	807,950	87	7.95	346,295	77	84	26.50	26.50	23
Study Area B	0.00	-	87	6.28	273,764	77	77	6.28	6.28	37
Study Area C	3.56	154,985	87	0.22	9,570	77	86	3.78	3.78	19
Total	**22.1**	**962,935.00**		**14.5**	**629,629.00**			**36.6**	**36.6**	

Per County Soil Survey -	EvgB	HSG	A	Soil	Evesboro loamy sand, 0-5% slopes
Per County Soil Survey -	FamA	HSG	D	Soil	Fallsington sandy loam, 0-2% slopes, northern coastal plan
Per County Soil Survey -	GASB	HSG	A	Soil	Galloway variant soils, 0-5% slopes
Per County Soil Survey -	GKAWOB	HSG	D	Soil	Glassboro & Woodstown sandy loam, 0-5% slopes
Per County Soil Survey -	HcuAt	HSG	D	Soil	Hatboro-Codorus complex, 0-3 percent slopes, frequently flooded
Per County Soil Survey -	OthA	HSG	D	Soil	Othello silt loams, 0-2 percent slopes, northern coastal plan
Per County Soil Survey -	WomfB	HSG	B	Soil	Woodstown-Fallsington sandy loams, 0-5% slopes

Description	Runoff Curve Number (CN) (HSG D)
Small Grain (SR) (good)	87
Woods (good)	77

RUNOFF CURVE NUMBER (CN) CALCULATIONS – PROPOSED

DYNAMIC ENGINEERING

PROPOSED DRAINAGE AREA SUMMARY AND AVERAGE CURVE NUMBER(CN) CALCULATIONS

Project:	Proposed Warehouse Development	Computed By:	KW
Job #:	0091-99-013	Checked By:	AM
Location:	East Windsor, NJ	Date:	11/23/2022

Drainage Area	Impervious Area (acre)	Impervious Area (sf)	Curve Number (CN) Used	HSG D - Open Space Area (acre)	HSG D - Open Space Area (sf)	Curve Number (CN) Used	Avg. Perv. Curve Number	Total Pervious Area (acres)	Total Area (acres)	TC (Min.)
Proposed Basin 'A1'	3.59	156,209	98	0.41	17,960	89	89	0.41	4.00	10
Proposed Basin 'A' (Roof)	7.58	330,360	98	0.00	-	89	N/A	0.00	7.58	10
Proposed Basin 'B1'	5.32	231,853	98	0.58	25,089	89	89	0.58	5.90	10
Proposed Basin 'B2' (Roof)	1.12	48,852	98	0.00	-	89	N/A	0.00	1.12	10
Proposed Basin 'C1'	5.06	220,363	98	0.57	25,019	89	89	0.57	5.63	10
Proposed Basin 'C2' (Roof)	7.53	327,797	98	0.00	-	89	N/A	0.00	7.53	10
Proposed Basin 'D'	0.41	17,726	98	0.00		89	N/A	0.00	0.41	10
Proposed Undetained	0.00	-	98	4.39	191,375	89	89	4.39	4.39	10
Total	**30.6**	**1,333,160.00**		**6.0**	**259,443.00**			**6.0**	**36.6**	

Per County Soil Survey -	EvgB	HSG	A	Soil	Evesboro loamy sand, 0-5% slopes
Per County Soil Survey -	FamA	HSG	D	Soil	Fallsington sandy loam, 0-2% slopes, northern coastal plan
Per County Soil Survey -	GASB	HSG	A	Soil	Galloway variant soils, 0-5% slopes
Per County Soil Survey -	GKAWOB	HSG	D	Soil	Glassboro & Woodstown sandy loam, 0-5% slopes
Per County Soil Survey -	HcuAt	HSG	D	Soil	Hatboro-Codorus complex, 0-3 percent slopes, frequently flooded
Per County Soil Survey -	OthA	HSG	D	Soil	Othello silt loams, 0-2 percent slopes, northern coastal plan
Per County Soil Survey -	WomfB	HSG	B	Soil	Woodstown-Fallsington sandy loams, 0-5% slopes

Description	Runoff Curve Number (CN) (HSG D)
Impervious Surface	98
Open Space (lawn) (poor)	89

EXISTING TIME OF CONCENTRATION (TC) CALCULATIONS

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1904 Main Street, Lake Como, NJ 07719
(732) 974-0198

Date: 12/18/2020
Project: Proposed Warehouse
Project No: 0091-99-013

Calculated By: AM
Checked By:

Worksheet 3: Time of Concentration (T_c) Calculations

Land Condition: Existing
Drainage Area: Study Area A

• Sheet Flow:

		AB				
1.	Surface Description	Cultivated Soil				
2.	Manning's Roughness Coefficient, n	0.17				
3.	Flow Length, L { total $L \le 100$ ft }	100.0 ft				
4.	Two-Year 24-hour Rainfall, p_2 for ... Mercer County	3.31 in	3.31 in	3.31 in		
5.	Land Slope, s (ft/ft)	0.011 ft/ft				
6.	Travel Time, $T_t = \frac{0.007\,(n\,L)^{0.8}}{p_2^{0.5}\,s^{0.4}}$	0.225 hr	+ 0.000 hr	+ 0.000 hr	=	0.225 hr

• Shallow Concentrated Flow:

		BC	CD			
7.	Surface Description	Unpaved	Unpaved			
8.	Flow Length, L	821.0 ft	250.0 ft			
9.	Watercourse Slope, s	0.017 ft/ft	0.009 ft/ft			
10.	Average velocity, V { see Figure 3.1)	2.10 ft/s	1.53 ft/s			
11.	Travel Time, $T_t = \frac{L}{3600\,V}$	0.108 hr	+ 0.045 hr	+ 0.000 hr	=	0.154 hr

• Channel Flow:

12.	Pipe Diameter, D					
13.	Cross-Sectional Flow Area, A					
14.	Wetted Perimeter, p_w					
15.	Hydraulic Radius, $r = A / p_w$					
16.	Channel Slope, s					
17.	Pipe Material					
18.	Manning's Roughness Coefficient, n					
19.	Velocity, $V = \frac{1.49\,r^{2/3}\,s^{1/2}}{n}$					
20.	Flow Length, L					
21.	Travel Time, $T_t = \frac{L}{3600\,V}$	0.000 hr	+ 0.000 hr	+ 0.000 hr	=	0.000 hr
22.	Watershed or subarea Time of Concentration, T_c { add T_t in steps 6, 11 and 21 }					0.379 hr
						22.8 min

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Checked By:

Worksheet 3: Time of Concentration (T_c) Calculations

Land Condition: Existing
Drainage Area: Study Area B

- ***Sheet Flow:***

		AB				
1.	Surface Description	Woods, Light Underbrush				
2.	Manning's Roughness Coefficient, n	0.4				
3.	Flow Length, L { total $L \le 100$ ft }	100.0 ft				
4.	Two-Year 24-hour Rainfall, p_2 for . . . Mercer County	3.31 in	3.31 in	3.31 in		
5.	Land Slope, s (ft/ft)	0.007 ft/ft				
6.	Travel Time, $T_t = \frac{0.007\,(n\,L)^{0.8}}{p_2^{0.5}\,s^{0.4}}$	0.536 hr	+ 0.000 hr	+ 0.000 hr	=	0.536 hr

- ***Shallow Concentrated Flow:***

		BC				
7.	Surface Description	Unpaved				
8.	Flow Length, L	553.0 ft				
9.	Watercourse Slope, s	0.014 ft/ft				
10.	Average velocity, V { see Figure 3.1)	1.91 ft/s				
11.	Travel Time, $T_t = \frac{L}{3600\,V}$	0.080 hr	+ 0.000 hr	+ 0.000 hr	=	0.080 hr

- ***Channel Flow:***

12.	Pipe Diameter, D					
13.	Cross-Sectional Flow Area, A					
14.	Wetted Perimeter, p_w					
15.	Hydraulic Radius, $r = A / p_w$					
16.	Channel Slope, s					
17.	Pipe Material					
18.	Manning's Roughness Coefficient, n					
19.	Velocity, $V = \frac{1.49\,r^{2/3}\,s^{1/2}}{n}$					
20.	Flow Length, L					
21.	Travel Time, $T_t = \frac{L}{3600\,V}$	0.000 hr	+ 0.000 hr	+ 0.000 hr	=	0.000 hr
22.	Watershed or subarea Time of Concentration, T_c { add T_t in steps 6, 11 and 21 }					0.616 hr
						37.0 min

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Calculated By: AM
Checked By:

Worksheet 3: Time of Concentration (T_c) Calculations

Land Condition: Existing
Drainage Area: Study Area C

- ***Sheet Flow:***

		AB				
1.	Surface Description	Cultivated Soil				
2.	Manning's Roughness Coefficient, n	0.17				
3.	Flow Length, L { total $L \le 100$ ft }	100.0 ft				
4.	Two-Year 24-hour Rainfall, p_2 for . . . Mercer County	3.31 in	3.31 in	3.31 in		
5.	Land Slope, s (ft/ft)	0.025 ft/ft				
6.	Travel Time, $T_t = \frac{0.007\,(n\,L)^{0.8}}{p_2^{0.5}\,s^{0.4}}$	0.162 hr	+ 0.000 hr	+ 0.000 hr	=	0.162 hr

- ***Shallow Concentrated Flow:***

		BC	CD			
7.	Surface Description	Unpaved	Unpaved			
8.	Flow Length, L	555.0 ft	379.0 ft			
9.	Watercourse Slope, s	0.008 ft/ft	0.018 ft/ft			
10.	Average velocity, V { see Figure 3.1)	1.44 ft/s	2.16 ft/s			
11.	Travel Time, $T_t = \frac{L}{3600\,V}$	0.107 hr	+ 0.049 hr	+ 0.000 hr	=	0.155 hr

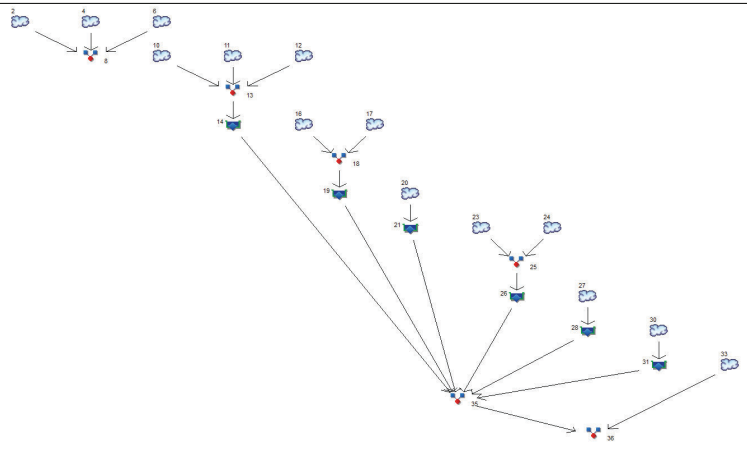
- ***Channel Flow:***

12.	Pipe Diameter, D					
13.	Cross-Sectional Flow Area, A					
14.	Wetted Perimeter, p_w					
15.	Hydraulic Radius, $r = A / p_w$					
16.	Channel Slope, s					
17.	Pipe Material					
18.	Manning's Roughness Coefficient, n					
19.	Velocity, $V = \frac{1.49\,r^{2/3}\,s^{1/2}}{n}$					
20.	Flow Length, L					
21.	Travel Time, $T_t = \frac{L}{3600\,V}$	0.000 hr	+ 0.000 hr	+ 0.000 hr	=	0.000 hr
22.	Watershed or subarea Time of Concentration, T_c { add T_t in steps 6, 11 and 21 }					0.318 hr
						19.1 min

HYDROGRAPH SUMMARY REPORTS – EXISTING AND PROPOSED CONDITIONS 2, 10 & 100 YR.

Watershed Model Schematic

Hydraflow Hydrographs by Intelisolve v9.1



Legend

Hyd.	Origin	Description
2	SCS Runoff	Existing Study Area A
4	SCS Runoff	Existing Study Area B
6	SCS Runoff	Existing Study Area C
8	Combine	Existing Total (POA 'A')
10	SCS Runoff	Proposed Basin A (Imp)
11	SCS Runoff	Proposed Basin A (Perv)
12	SCS Runoff	Proposed Basin A (Roof)
13	Combine	Proposed Basin A
14	Reservoir	Post Route Basin A
16	SCS Runoff	Proposed Basin B1 (Imp)
17	SCS Runoff	Proposed Basin B1 (Perv)
18	Combine	Proposed Basin B1 Total
19	Reservoir	Post Route Basin B1
20	SCS Runoff	Proposed Basin B2 (Roof)
21	Reservoir	Post Route Basin B2
23	SCS Runoff	Proposed Basin C1 (Imp)
24	SCS Runoff	Proposed Basin C1 (Perv)
25	Combine	Proposed Basin C1 Total
26	Reservoir	Post Route Basin C1
27	SCS Runoff	Proposed Basin C2 (Roof)
28	Reservoir	Post Route Basin C2
30	SCS Runoff	Proposed Basin D (Imp)
31	Reservoir	Post Route Basin D
33	SCS Runoff	Proposed Undetained
35	Combine	Proposed Detained
36	Combine	Proposed POA 1 Total

Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.1

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	
2	SCS Runoff	-------	-------	37.44	-------	-------	68.89	-------	-------	131.46	Existing Study Area A
4	SCS Runoff	-------	-------	4.741	-------	-------	9.918	-------	-------	21.01	Existing Study Area B
6	SCS Runoff	-------	-------	5.816	-------	-------	10.35	-------	-------	19.26	Existing Study Area C
8	Combine	2, 4, 6,	-------	46.72	-------	-------	86.89	-------	-------	167.44	Existing Total (POA 'A')
10	SCS Runoff	-------	-------	9.167	-------	-------	13.97	-------	-------	23.31	Proposed Basin A (Imp)
11	SCS Runoff	-------	-------	0.829	-------	-------	1.404	-------	-------	2.515	Proposed Basin A (Perv)
12	SCS Runoff	-------	-------	19.36	-------	-------	29.50	-------	-------	49.23	Proposed Basin A (Roof)
13	Combine	10, 11, 12	-------	29.35	-------	-------	44.87	-------	-------	75.05	Proposed Basin A
14	Reservoir	13	-------	4.646	-------	-------	13.72	-------	-------	18.95	Post Route Basin A
16	SCS Runoff	-------	-------	13.58	-------	-------	20.70	-------	-------	34.55	Proposed Basin B1 (Imp)
17	SCS Runoff	-------	-------	1.173	-------	-------	1.987	-------	-------	3.557	Proposed Basin B1 (Perv)
18	Combine	16, 17	-------	14.76	-------	-------	22.69	-------	-------	38.11	Proposed Basin B1 Total
19	Reservoir	18	-------	2.906	-------	-------	10.09	-------	-------	17.28	Post Route Basin B1
20	SCS Runoff	-------	-------	2.860	-------	-------	4.358	-------	-------	7.273	Proposed Basin B2 (Roof)
21	Reservoir	20	-------	0.330	-------	-------	0.431	-------	-------	2.219	Post Route Basin B2
23	SCS Runoff	-------	-------	12.92	-------	-------	19.69	-------	-------	32.86	Proposed Basin C1 (Imp)
24	SCS Runoff	-------	-------	1.153	-------	-------	1.952	-------	-------	3.496	Proposed Basin C1 (Perv)
25	Combine	23, 24	-------	14.07	-------	-------	21.64	-------	-------	36.36	Proposed Basin C1 Total
26	Reservoir	25	-------	5.718	-------	-------	9.860	-------	-------	16.55	Post Route Basin C1
27	SCS Runoff	-------	-------	19.23	-------	-------	29.30	-------	-------	48.90	Proposed Basin C2 (Roof)
28	Reservoir	27	-------	3.980	-------	-------	14.02	-------	-------	23.83	Post Route Basin C2
30	SCS Runoff	-------	-------	1.047	-------	-------	1.596	-------	-------	2.663	Proposed Basin D (Imp)
31	Reservoir	30	-------	0.782	-------	-------	1.177	-------	-------	1.979	Post Route Basin D
33	SCS Runoff	-------	-------	8.880	-------	-------	15.04	-------	-------	26.93	Proposed Undetained
35	Combine	14, 19, 21, 26, 28, 31,	-------	17.22	-------	-------	49.05	-------	-------	80.29	Proposed Detained
36	Combine	33, 35	-------	19.26	-------	-------	56.61	-------	-------	95.20	Proposed POA 1 Total

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

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
2	SCS Runoff	37.44	5	735	170,732	----	------	------	Existing Study Area A
4	SCS Runoff	4.741	5	750	28,694	----	------	------	Existing Study Area B
6	SCS Runoff	5.816	5	735	26,497	----	------	------	Existing Study Area C
8	Combine	46.72	5	735	225,923	2, 4, 6,	------	------	Existing Total (POA 'A')
10	SCS Runoff	9.167	5	730	37,593	----	------	------	Proposed Basin A (Imp)
11	SCS Runoff	0.829	5	730	3,045	----	------	------	Proposed Basin A (Perv)
12	SCS Runoff	19.36	5	730	79,375	----	------	------	Proposed Basin A (Roof)
13	Combine	29.35	5	730	120,014	10, 11, 12	------	------	Proposed Basin A
14	Reservoir	4.646	5	765	119,806	13	98.71	72,862	Post Route Basin A
16	SCS Runoff	13.58	5	730	55,709	----	------	------	Proposed Basin B1 (Imp)
17	SCS Runoff	1.173	5	730	4,307	----	------	------	Proposed Basin B1 (Perv)
18	Combine	14.76	5	730	60,017	16, 17	------	------	Proposed Basin B1 Total
19	Reservoir	2.906	5	760	59,840	18	99.78	32,093	Post Route Basin B1
20	SCS Runoff	2.860	5	730	11,728	----	------	------	Proposed Basin B2 (Roof)
21	Reservoir	0.330	5	785	11,649	20	98.85	6,414	Post Route Basin B2
23	SCS Runoff	12.92	5	730	52,987	----	------	------	Proposed Basin C1 (Imp)
24	SCS Runoff	1.153	5	730	4,233	----	------	------	Proposed Basin C1 (Perv)
25	Combine	14.07	5	730	57,220	23, 24	------	------	Proposed Basin C1 Total
26	Reservoir	5.718	5	745	57,001	25	97.22	25,543	Post Route Basin C1
27	SCS Runoff	19.23	5	730	78,852	----	------	------	Proposed Basin C2 (Roof)
28	Reservoir	3.980	5	760	78,633	27	98.16	45,178	Post Route Basin C2
30	SCS Runoff	1.047	5	730	4,293	----	------	------	Proposed Basin D (Imp)
31	Reservoir	0.782	5	735	4,271	30	96.51	601	Post Route Basin D
33	SCS Runoff	8.880	5	730	32,602	----	------	------	Proposed Undetained
35	Combine	17.22	5	760	331,199	14, 19, 21, 26, 28, 31,		------	Proposed Detained
36	Combine	19.26	5	755	360,459	33, 35	------	------	Proposed POA 1 Total

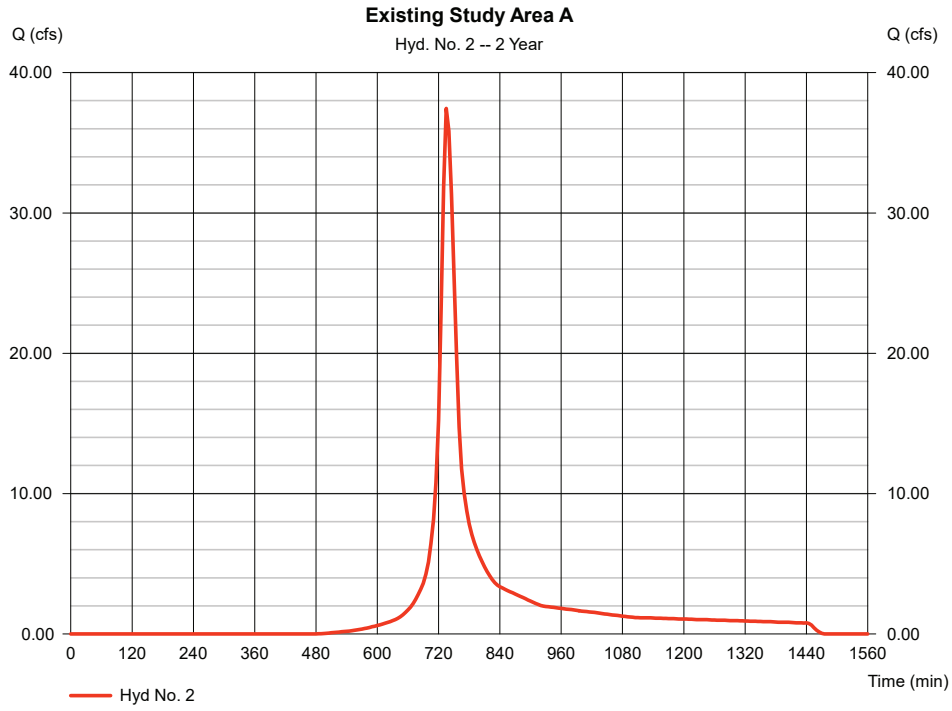
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 2

Existing Study Area A

Hydrograph type	= SCS Runoff	Peak discharge	= 37.44 cfs
Storm frequency	= 2 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 170,732 cuft
Drainage area	= 26.500 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 23.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

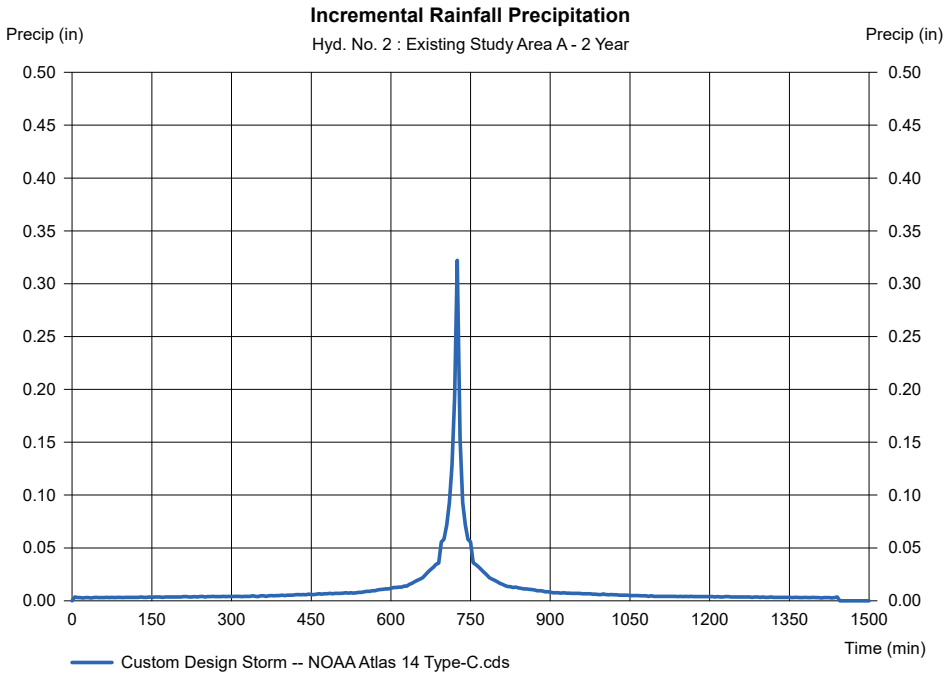


Precipitation Report

Hyd. No. 2

Existing Study Area A

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

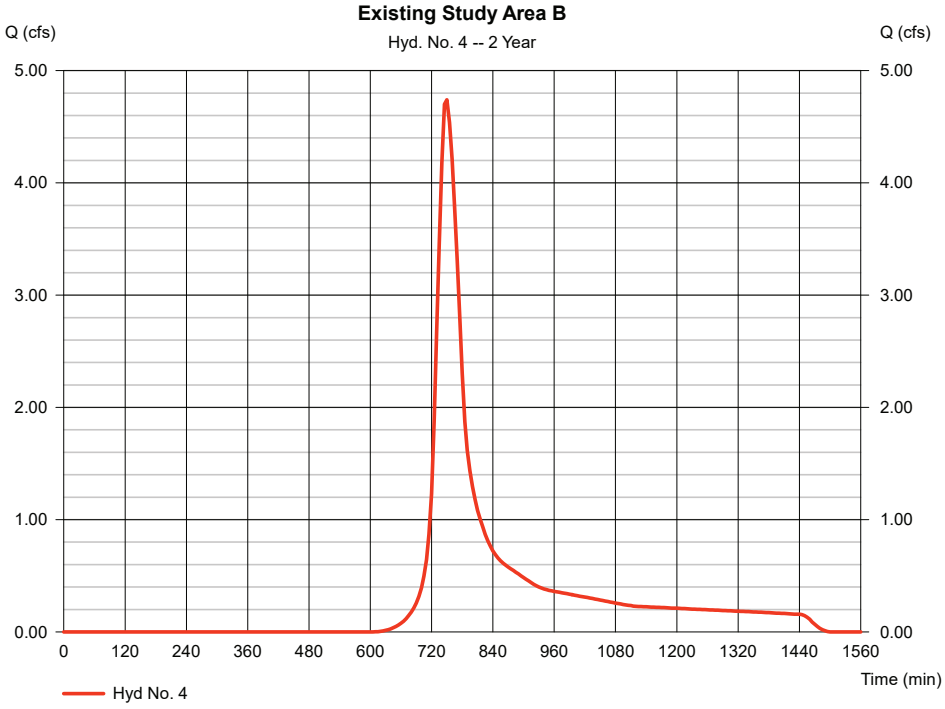


Hydrograph Report

Hyd. No. 4

Existing Study Area B

Hydrograph type	= SCS Runoff	Peak discharge	= 4.741 cfs
Storm frequency	= 2 yrs	Time to peak	= 750 min
Time interval	= 5 min	Hyd. volume	= 28,694 cuft
Drainage area	= 6.280 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 37.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

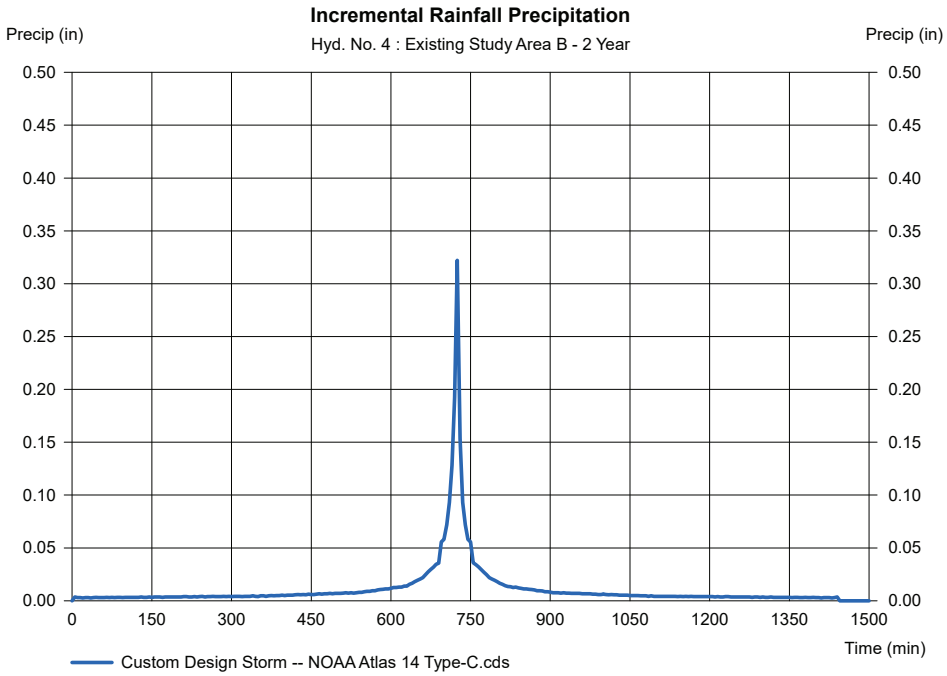


Precipitation Report

Hyd. No. 4

Existing Study Area B

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

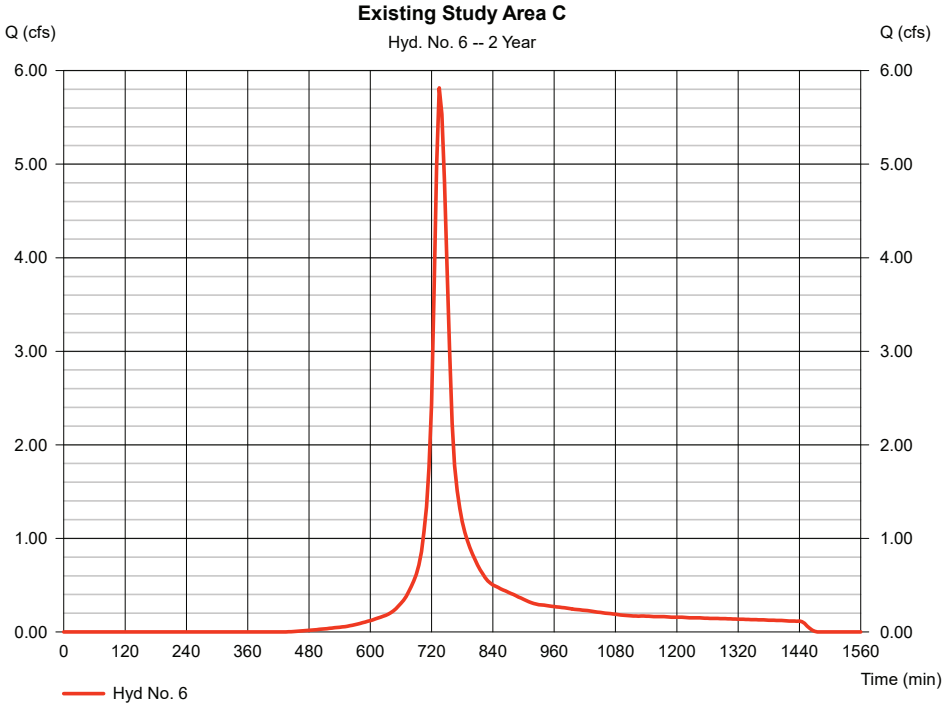


Hydrograph Report

Hyd. No. 6

Existing Study Area C

Hydrograph type	= SCS Runoff	Peak discharge	= 5.816 cfs
Storm frequency	= 2 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 26,497 cuft
Drainage area	= 3.780 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 19.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

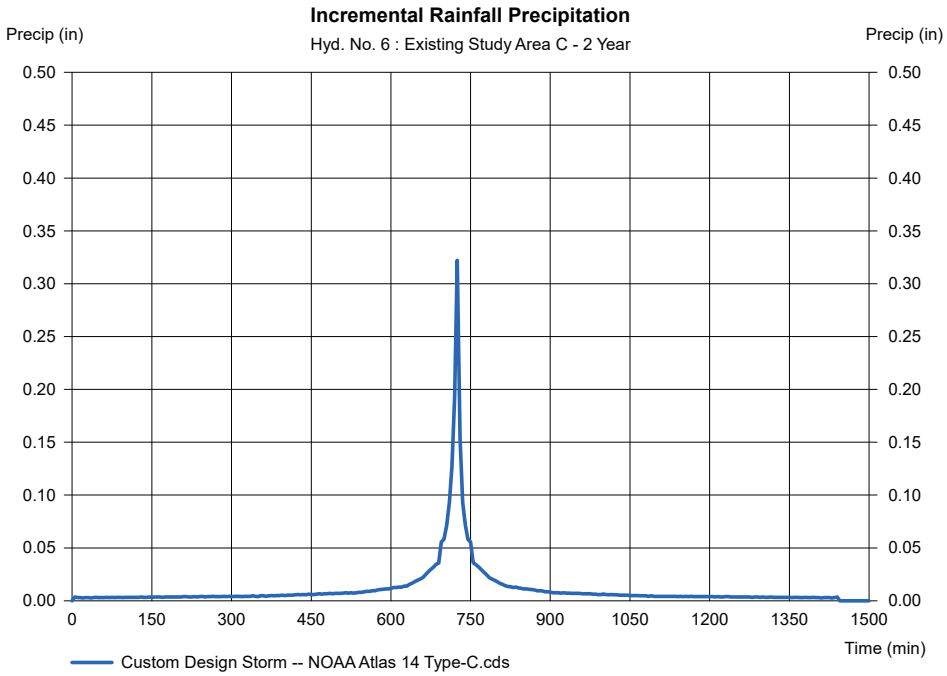


Precipitation Report

Hyd. No. 6

Existing Study Area C

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

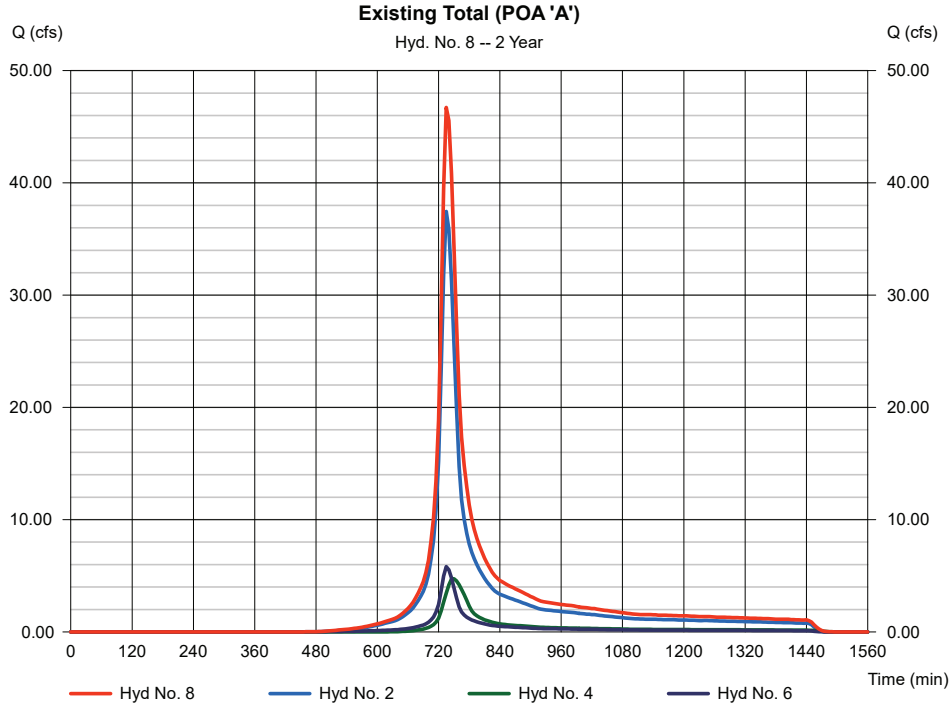


Hydrograph Report

Hyd. No. 8

Existing Total (POA 'A')

Hydrograph type	= Combine	Peak discharge	= 46.72 cfs
Storm frequency	= 2 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 225,923 cuft
Inflow hyds.	= 2, 4, 6	Contrib. drain. area	= 36.560 ac

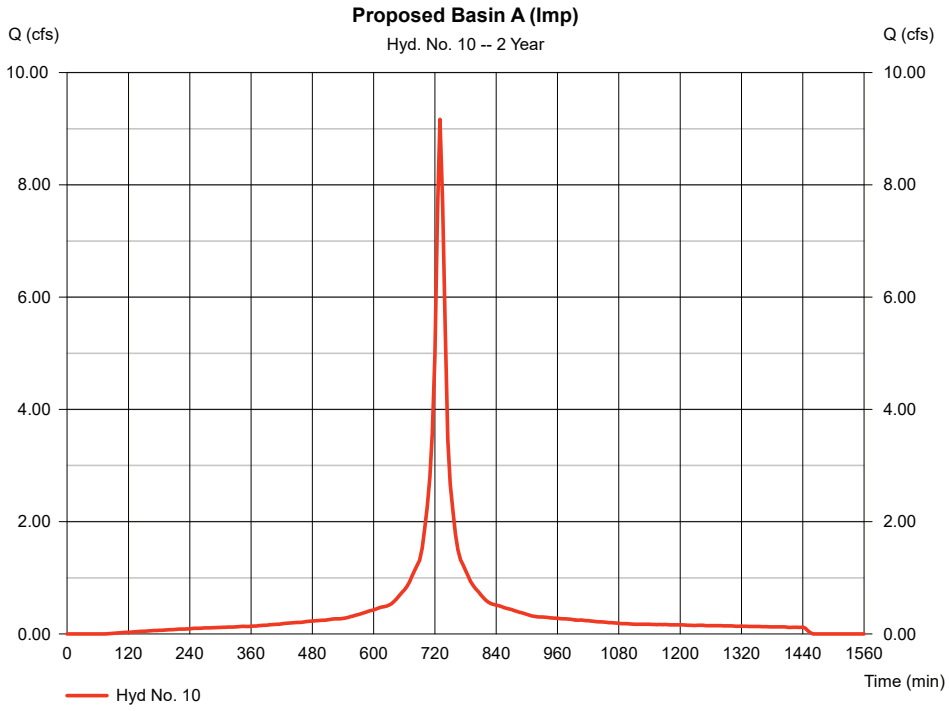


Hydrograph Report

Hyd. No. 10

Proposed Basin A (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 9.167 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 37,593 cuft
Drainage area	= 3.590 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

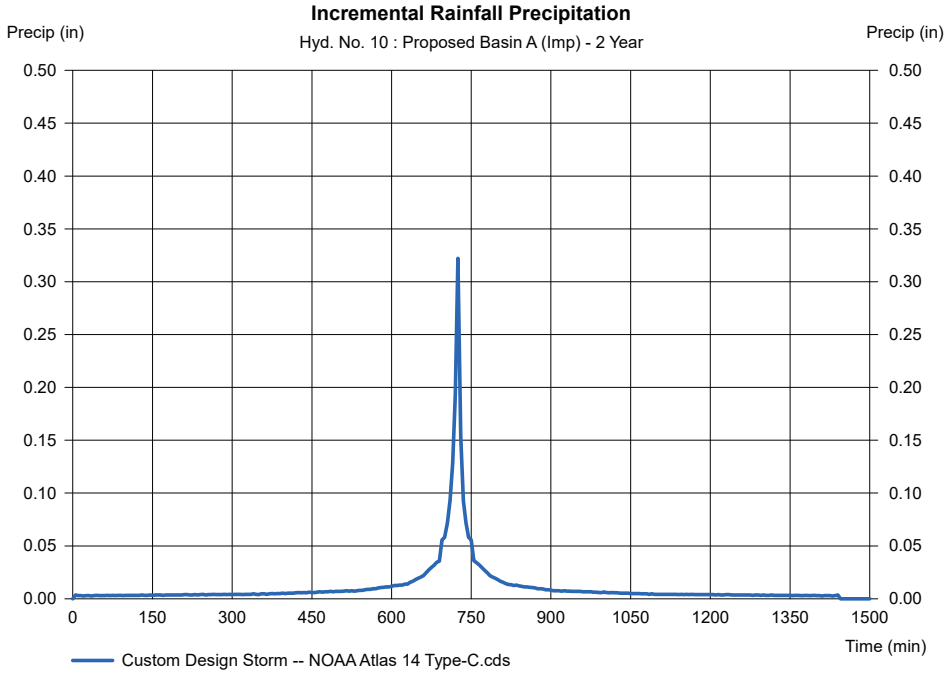


Precipitation Report

Hyd. No. 10

Proposed Basin A (Imp)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

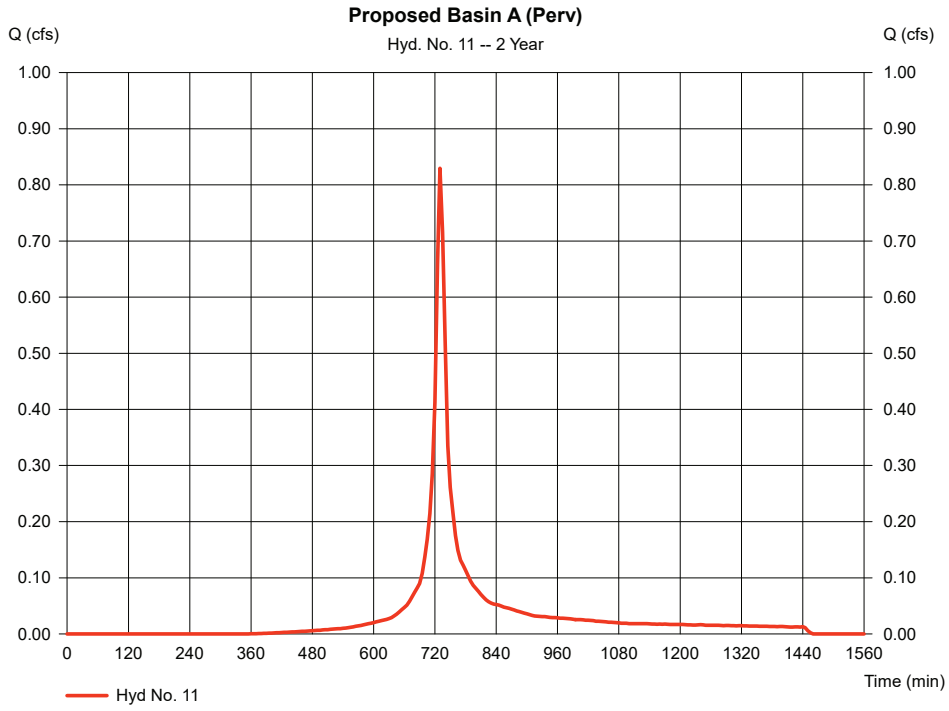


Hydrograph Report

Hyd. No. 11

Proposed Basin A (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.829 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 3,045 cuft
Drainage area	= 0.410 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

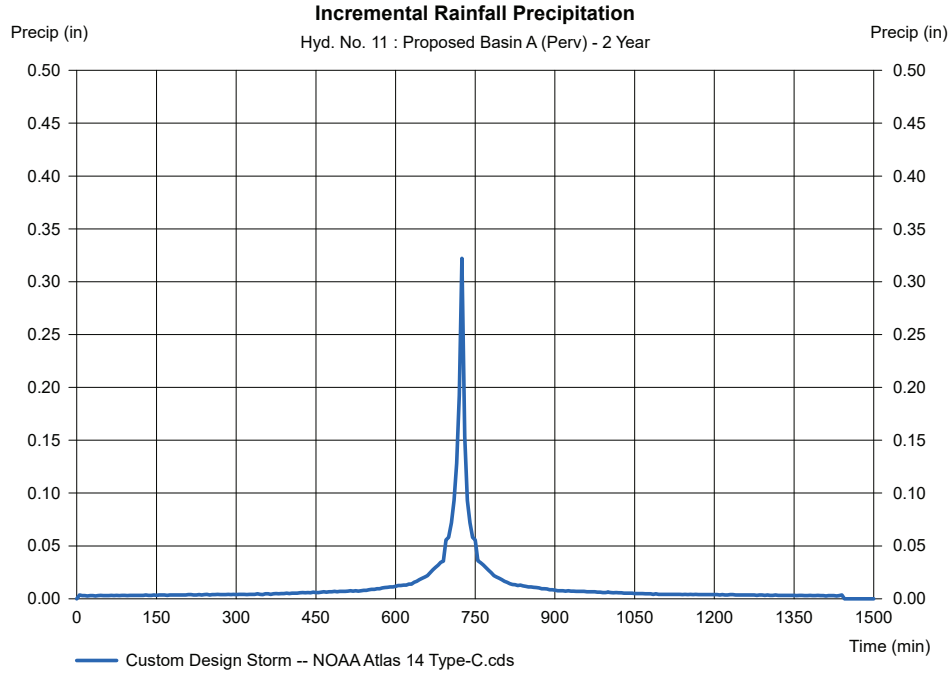


Precipitation Report

Hyd. No. 11

Proposed Basin A (Perv)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

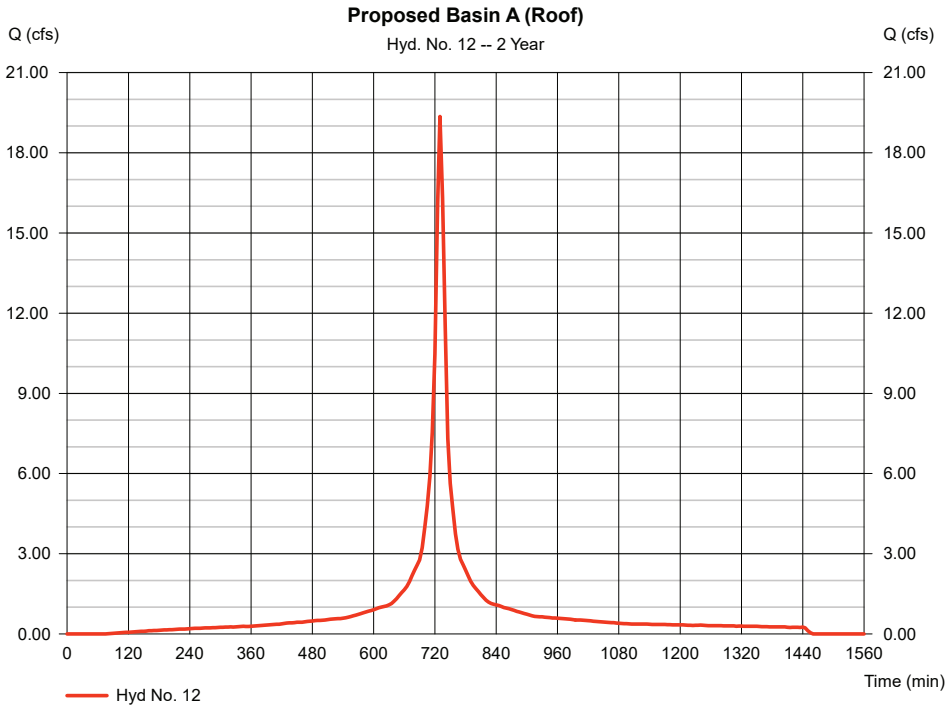


Hydrograph Report

Hyd. No. 12

Proposed Basin A (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 19.36 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 79,375 cuft
Drainage area	= 7.580 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

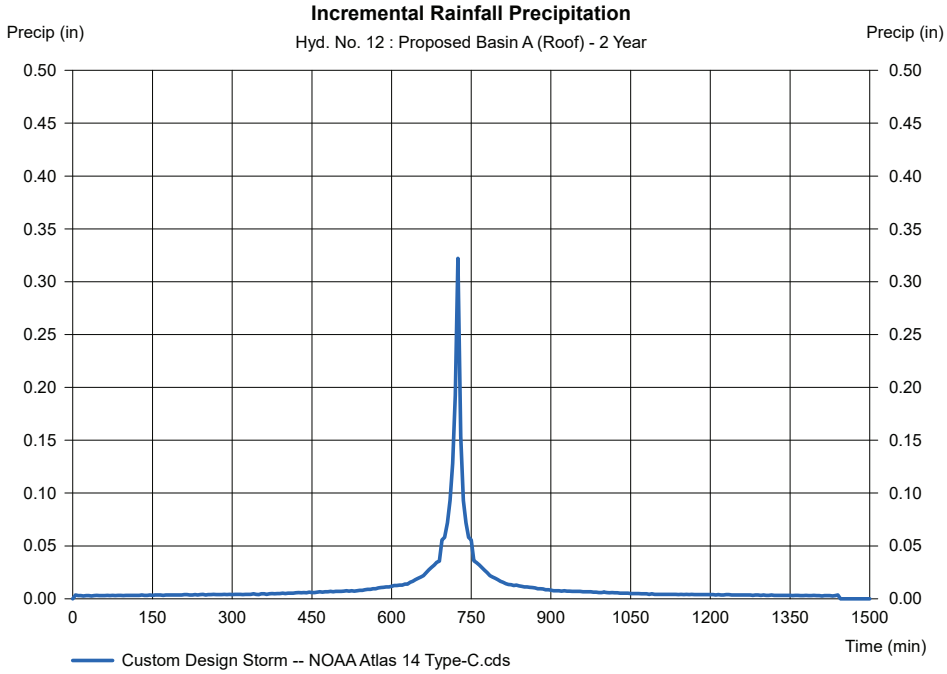


Precipitation Report

Hyd. No. 12

Proposed Basin A (Roof)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

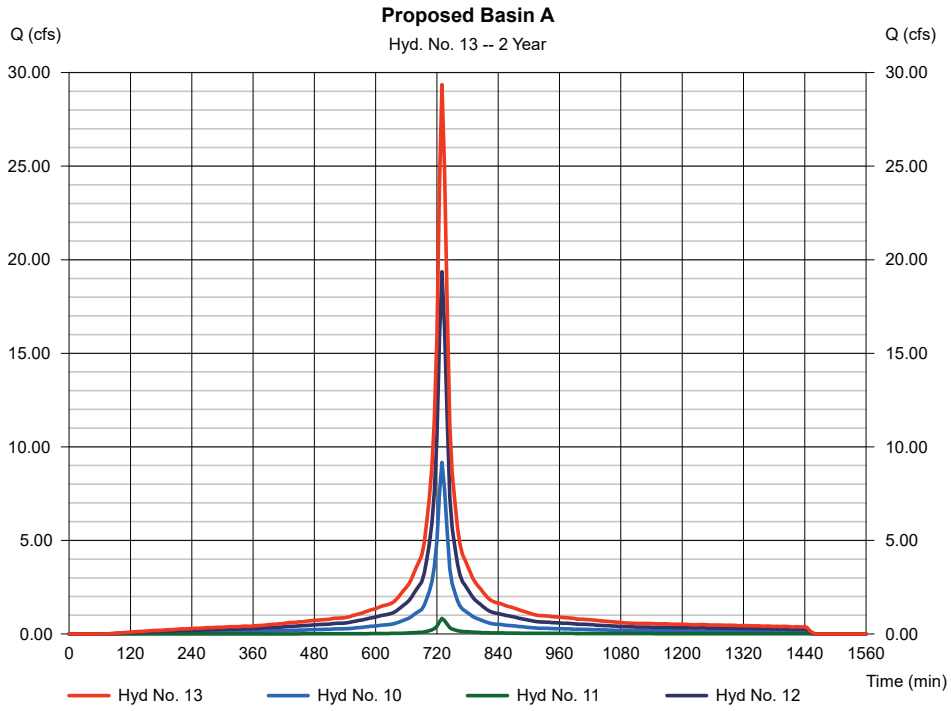


Hydrograph Report

Hyd. No. 13

Proposed Basin A

Hydrograph type	= Combine	Peak discharge	= 29.35 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 120,014 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 11.580 ac



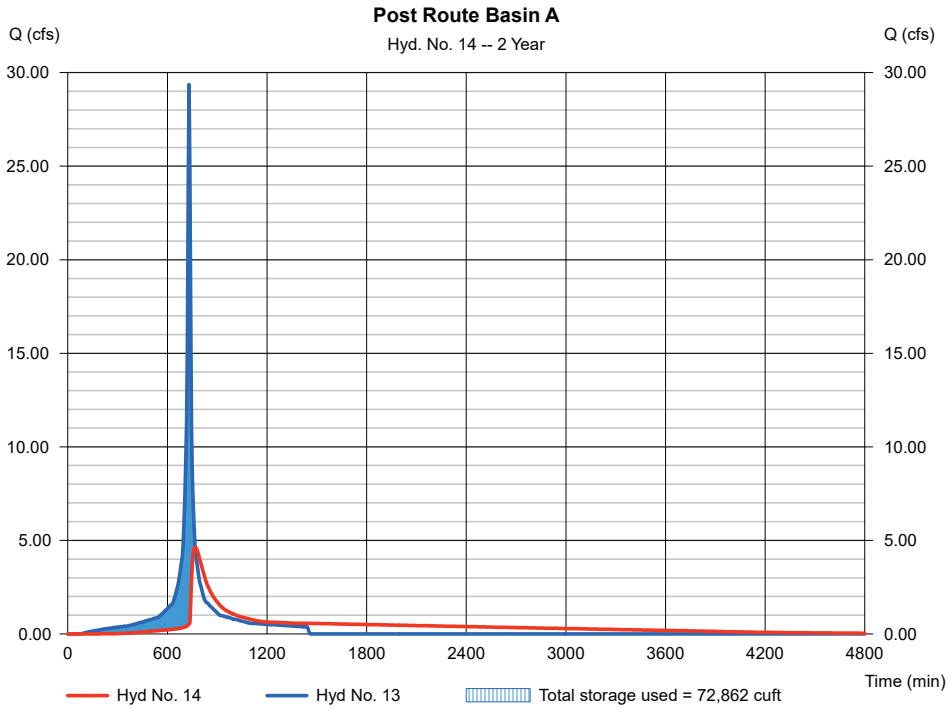
Hydrograph Report

Hyd. No. 14

Post Route Basin A

Hydrograph type	= Reservoir	Peak discharge	= 4.646 cfs
Storm frequency	= 2 yrs	Time to peak	= 765 min
Time interval	= 5 min	Hyd. volume	= 119,806 cuft
Inflow hyd. No.	= 13 - Proposed Basin A	Max. Elevation	= 98.71 ft
Reservoir name	= UG Basin A	Max. Storage	= 72,862 cuft

Storage Indication method used.



Pond Report

Pond No. 3 - UG Basin A

Pond Data

UG Chambers - Invert elev. = 96.00 ft, Rise x Span = 6.00 x 8.42 ft, Barrel Len = 245.28 ft, No. Barrels = 13, Slope = 0.00%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	96.00	n/a	0	0
0.60	96.60	n/a	16,112	16,112
1.20	97.20	n/a	16,112	32,224
1.80	97.80	n/a	16,112	48,337
2.40	98.40	n/a	16,112	64,449
3.00	99.00	n/a	16,112	80,561
3.60	99.60	n/a	16,112	96,673
4.20	100.20	n/a	16,112	112,786
4.80	100.80	n/a	16,112	128,898
5.40	101.40	n/a	16,112	145,010
6.00	102.00	n/a	16,112	161,122

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	4.00	0.00	0.00
Span (in)	= 18.00	4.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 96.00	96.00	98.00	0.00
Length (ft)	= 35.00	0.50	0.50	0.00
Slope (%)	= 0.35	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	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 98.25	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	96.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.06	1,611	96.06	0.01 oc	0.01 ic	---	---	0.00	---	---	---	---	---	0.01
0.12	3,222	96.12	0.03 oc	0.03 ic	---	---	0.00	---	---	---	---	---	0.03
0.18	4,834	96.18	0.07 oc	0.06 ic	---	---	0.00	---	---	---	---	---	0.06
0.24	6,445	96.24	0.11 oc	0.10 ic	---	---	0.00	---	---	---	---	---	0.10
0.30	8,056	96.30	0.14 oc	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.36	9,667	96.36	0.18 oc	0.17 ic	---	---	0.00	---	---	---	---	---	0.17
0.42	11,279	96.42	0.20 oc	0.20 ic	---	---	0.00	---	---	---	---	---	0.20
0.48	12,890	96.48	0.23 oc	0.22 ic	---	---	0.00	---	---	---	---	---	0.22
0.54	14,501	96.54	0.24 oc	0.24 ic	---	---	0.00	---	---	---	---	---	0.24
0.60	16,112	96.60	0.26 oc	0.26 ic	---	---	0.00	---	---	---	---	---	0.26
0.66	17,723	96.66	0.28 oc	0.27 ic	---	---	0.00	---	---	---	---	---	0.27
0.72	19,335	96.72	0.30 oc	0.29 ic	---	---	0.00	---	---	---	---	---	0.29
0.78	20,946	96.78	0.31 oc	0.30 ic	---	---	0.00	---	---	---	---	---	0.30
0.84	22,557	96.84	0.33 oc	0.32 ic	---	---	0.00	---	---	---	---	---	0.32
0.90	24,168	96.90	0.33 oc	0.33 ic	---	---	0.00	---	---	---	---	---	0.33
0.96	25,780	96.96	0.35 oc	0.35 ic	---	---	0.00	---	---	---	---	---	0.35
1.02	27,391	97.02	0.37 oc	0.36 ic	---	---	0.00	---	---	---	---	---	0.36
1.08	29,002	97.08	0.37 oc	0.37 ic	---	---	0.00	---	---	---	---	---	0.37
1.14	30,613	97.14	0.40 oc	0.39 ic	---	---	0.00	---	---	---	---	---	0.39
1.20	32,224	97.20	0.42 oc	0.40 ic	---	---	0.00	---	---	---	---	---	0.40
1.26	33,836	97.26	0.42 oc	0.41 ic	---	---	0.00	---	---	---	---	---	0.41
1.32	35,447	97.32	0.44 oc	0.42 ic	---	---	0.00	---	---	---	---	---	0.42
1.38	37,058	97.38	0.44 oc	0.43 ic	---	---	0.00	---	---	---	---	---	0.43
1.44	38,669	97.44	0.46 oc	0.44 ic	---	---	0.00	---	---	---	---	---	0.44
1.50	40,281	97.50	0.46 oc	0.46 ic	---	---	0.00	---	---	---	---	---	0.46
1.56	41,892	97.56	0.49 oc	0.47 ic	---	---	0.00	---	---	---	---	---	0.47
1.62	43,503	97.62	0.49 oc	0.48 ic	---	---	0.00	---	---	---	---	---	0.48
1.68	45,114	97.68	0.49 oc	0.49 ic	---	---	0.00	---	---	---	---	---	0.49
1.74	46,725	97.74	0.51 oc	0.50 ic	---	---	0.00	---	---	---	---	---	0.50
1.80	48,337	97.80	0.51 oc	0.51 ic	---	---	0.00	---	---	---	---	---	0.51
1.86	49,948	97.86	0.54 oc	0.52 ic	---	---	0.00	---	---	---	---	---	0.52
1.92	51,559	97.92	0.54 oc	0.53 ic	---	---	0.00	---	---	---	---	---	0.53

Continues on next page...

UG Basin A

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
1.98	53,170	97.98	0.54 oc	0.54 ic	---	---	0.00	---	---	---	---	---	0.54
2.04	54,782	98.04	0.56 oc	0.54 ic	---	---	0.00	---	---	---	---	---	0.54
2.10	56,393	98.10	0.56 oc	0.55 ic	---	---	0.00	---	---	---	---	---	0.55
2.16	58,004	98.16	0.56 oc	0.56 ic	---	---	0.00	---	---	---	---	---	0.56
2.22	59,615	98.22	0.59 oc	0.57 ic	---	---	0.00	---	---	---	---	---	0.57
2.28	61,226	98.28	0.67 oc	0.58 ic	---	---	0.07	---	---	---	---	---	0.65
2.34	62,838	98.34	0.95 oc	0.57 ic	---	---	0.36	---	---	---	---	---	0.93
2.40	64,449	98.40	1.37 oc	0.56 ic	---	---	0.77	---	---	---	---	---	1.33
2.46	66,060	98.46	1.85 oc	0.54 ic	---	---	1.28	---	---	---	---	---	1.83
2.52	67,671	98.52	2.42 oc	0.52 ic	---	---	1.87	---	---	---	---	---	2.39
2.58	69,283	98.58	3.02 oc	0.50 ic	---	---	2.53	---	---	---	---	---	3.02
2.64	70,894	98.64	3.69 oc	0.44 ic	---	---	3.24	---	---	---	---	---	3.69
2.70	72,505	98.70	4.46 oc	0.44 ic	---	---	4.02	---	---	---	---	---	4.46
2.76	74,116	98.76	5.29 oc	0.44 ic	---	---	4.85	---	---	---	---	---	5.29
2.82	75,728	98.82	6.16 oc	0.43 ic	---	---	5.73	---	---	---	---	---	6.16
2.88	77,339	98.88	7.07 oc	0.41 ic	---	---	6.66	---	---	---	---	---	7.07
2.94	78,950	98.94	8.03 oc	0.39 ic	---	---	7.63	---	---	---	---	---	8.03
3.00	80,561	99.00	9.02 oc	0.37 ic	---	---	8.65	---	---	---	---	---	9.02
3.06	82,172	99.06	9.78 oc	0.34 ic	---	---	9.43 s	---	---	---	---	---	9.78
3.12	83,784	99.12	10.38 oc	0.33 ic	---	---	10.05 s	---	---	---	---	---	10.38
3.18	85,395	99.18	10.90 oc	0.31 ic	---	---	10.59 s	---	---	---	---	---	10.90
3.24	87,006	99.24	11.37 oc	0.29 ic	---	---	11.07 s	---	---	---	---	---	11.37
3.30	88,617	99.30	11.79 oc	0.28 ic	---	---	11.51 s	---	---	---	---	---	11.79
3.36	90,229	99.36	12.18 oc	0.27 ic	---	---	11.91 s	---	---	---	---	---	12.18
3.42	91,840	99.42	12.54 oc	0.26 ic	---	---	12.28 s	---	---	---	---	---	12.54
3.48	93,451	99.48	12.88 oc	0.25 ic	---	---	12.63 s	---	---	---	---	---	12.88
3.54	95,062	99.54	13.19 oc	0.24 ic	---	---	12.95 s	---	---	---	---	---	13.19
3.60	96,673	99.60	13.49 oc	0.23 ic	---	---	13.26 s	---	---	---	---	---	13.49
3.66	98,285	99.66	13.77 oc	0.22 ic	---	---	13.55 s	---	---	---	---	---	13.77
3.72	99,896	99.72	14.03 ic	0.21 ic	---	---	13.82 s	---	---	---	---	---	14.03
3.78	101,507	99.78	14.23 ic	0.20 ic	---	---	14.03 s	---	---	---	---	---	14.23
3.84	103,118	99.84	14.43 ic	0.19 ic	---	---	14.23 s	---	---	---	---	---	14.43
3.90	104,730	99.90	14.62 ic	0.19 ic	---	---	14.43 s	---	---	---	---	---	14.61
3.96	106,341	99.96	14.80 ic	0.18 ic	---	---	14.61 s	---	---	---	---	---	14.80
4.02	107,952	100.02	14.97 ic	0.17 ic	---	---	14.80 s	---	---	---	---	---	14.97
4.08	109,563	100.08	15.15 ic	0.17 ic	---	---	14.98 s	---	---	---	---	---	15.15
4.14	111,174	100.14	15.31 ic	0.16 ic	---	---	15.15 s	---	---	---	---	---	15.31
4.20	112,786	100.20	15.48 ic	0.16 ic	---	---	15.32 s	---	---	---	---	---	15.47
4.26	114,397	100.26	15.64 ic	0.15 ic	---	---	15.48 s	---	---	---	---	---	15.63
4.32	116,008	100.32	15.79 ic	0.15 ic	---	---	15.64 s	---	---	---	---	---	15.79
4.38	117,619	100.38	15.94 ic	0.14 ic	---	---	15.80 s	---	---	---	---	---	15.94
4.44	119,231	100.44	16.09 ic	0.14 ic	---	---	15.95 s	---	---	---	---	---	16.09
4.50	120,842	100.50	16.24 ic	0.14 ic	---	---	16.10 s	---	---	---	---	---	16.24
4.56	122,453	100.56	16.39 ic	0.13 ic	---	---	16.25 s	---	---	---	---	---	16.38
4.62	124,064	100.62	16.53 ic	0.13 ic	---	---	16.40 s	---	---	---	---	---	16.53
4.68	125,675	100.68	16.67 ic	0.13 ic	---	---	16.54 s	---	---	---	---	---	16.67
4.74	127,287	100.74	16.81 ic	0.12 ic	---	---	16.69 s	---	---	---	---	---	16.81
4.80	128,898	100.80	16.95 ic	0.12 ic	---	---	16.82 s	---	---	---	---	---	16.94
4.86	130,509	100.86	17.08 ic	0.12 ic	---	---	16.96 s	---	---	---	---	---	17.08
4.92	132,120	100.92	17.22 ic	0.11 ic	---	---	17.10 s	---	---	---	---	---	17.21
4.98	133,732	100.98	17.35 ic	0.11 ic	---	---	17.24 s	---	---	---	---	---	17.35
5.04	135,343	101.04	17.48 ic	0.11 ic	---	---	17.36 s	---	---	---	---	---	17.47
5.10	136,954	101.10	17.61 ic	0.11 ic	---	---	17.50 s	---	---	---	---	---	17.61
5.16	138,565	101.16	17.74 ic	0.11 ic	---	---	17.63 s	---	---	---	---	---	17.73
5.22	140,176	101.22	17.87 ic	0.10 ic	---	---	17.75 s	---	---	---	---	---	17.86
5.28	141,788	101.28	17.99 ic	0.10 ic	---	---	17.89 s	---	---	---	---	---	17.99
5.34	143,399	101.34	18.12 ic	0.10 ic	---	---	18.02 s	---	---	---	---	---	18.12
5.40	145,010	101.40	18.24 ic	0.10 ic	---	---	18.13 s	---	---	---	---	---	18.23
5.46	146,621	101.46	18.36 ic	0.10 ic	---	---	18.26 s	---	---	---	---	---	18.36
5.52	148,233	101.52	18.48 ic	0.09 ic	---	---	18.38 s	---	---	---	---	---	18.47
5.58	149,844	101.58	18.60 ic	0.09 ic	---	---	18.51 s	---	---	---	---	---	18.60
5.64	151,455	101.64	18.72 ic	0.09 ic	---	---	18.62 s	---	---	---	---	---	18.71
5.70	153,066	101.70	18.84 ic	0.09 ic	---	---	18.74 s	---	---	---	---	---	18.83
5.76	154,677	101.76	18.96 ic	0.09 ic	---	---	18.87 s	---	---	---	---	---	18.96
5.82	156,289	101.82	19.08 ic	0.09 ic	---	---	18.98 s	---	---	---	---	---	19.06
5.88	157,900	101.88	19.19 ic	0.08 ic	---	---	19.10 s	---	---	---	---	---	19.18
5.94	159,511	101.94	19.31 ic	0.08 ic	---	---	19.21 s	---	---	---	---	---	19.30
6.00	161,122	102.00	19.42 ic	0.08 ic	---	---	19.34 s	---	---	---	---	---	19.42

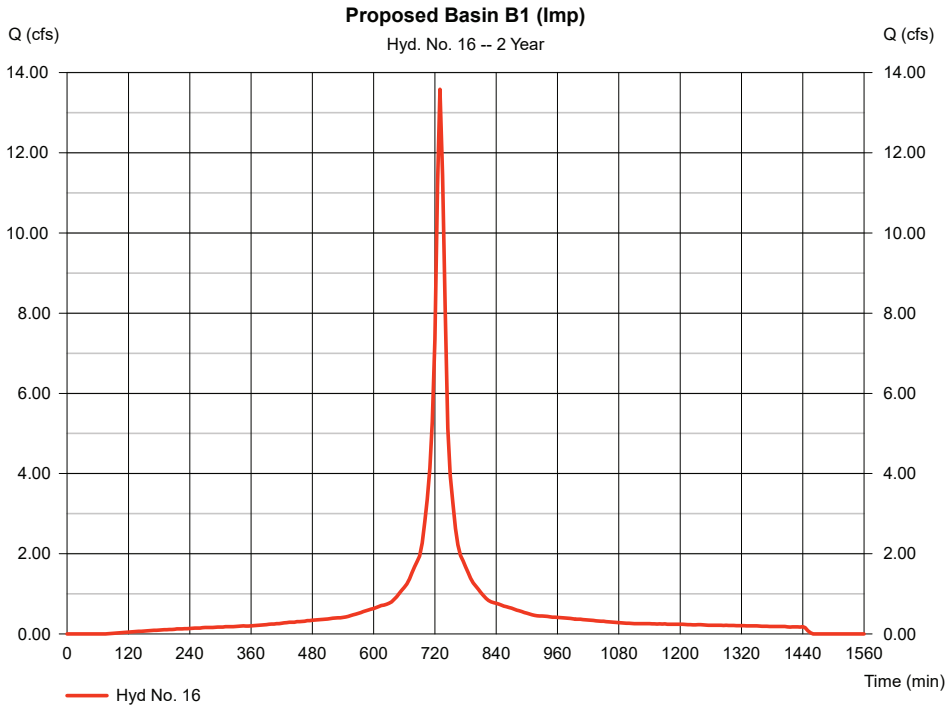
...End

Hydrograph Report

Hyd. No. 16

Proposed Basin B1 (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 13.58 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 55,709 cuft
Drainage area	= 5.320 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

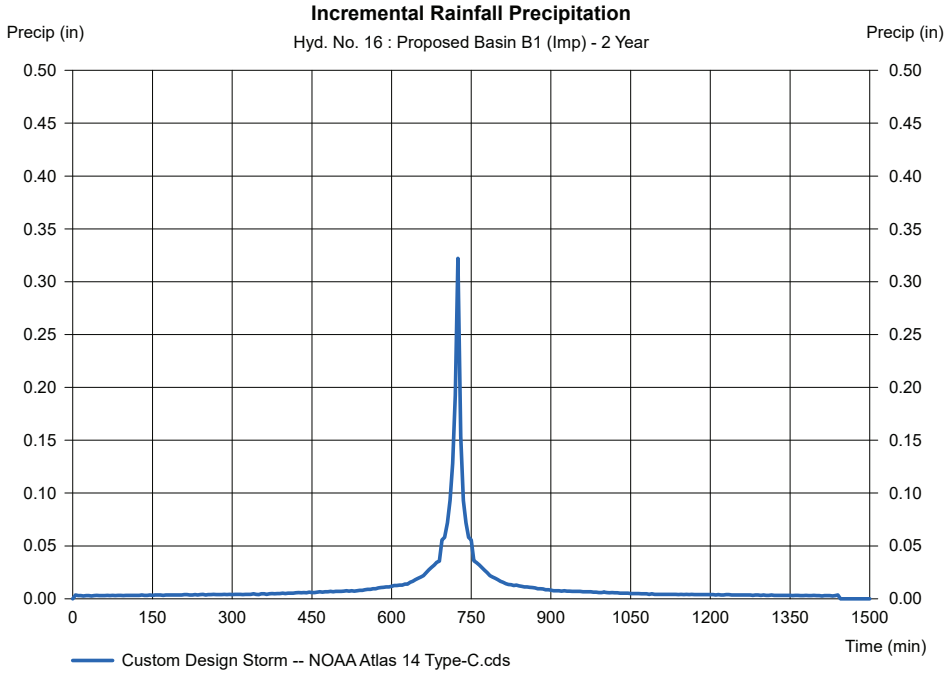


Precipitation Report

Hyd. No. 16

Proposed Basin B1 (Imp)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

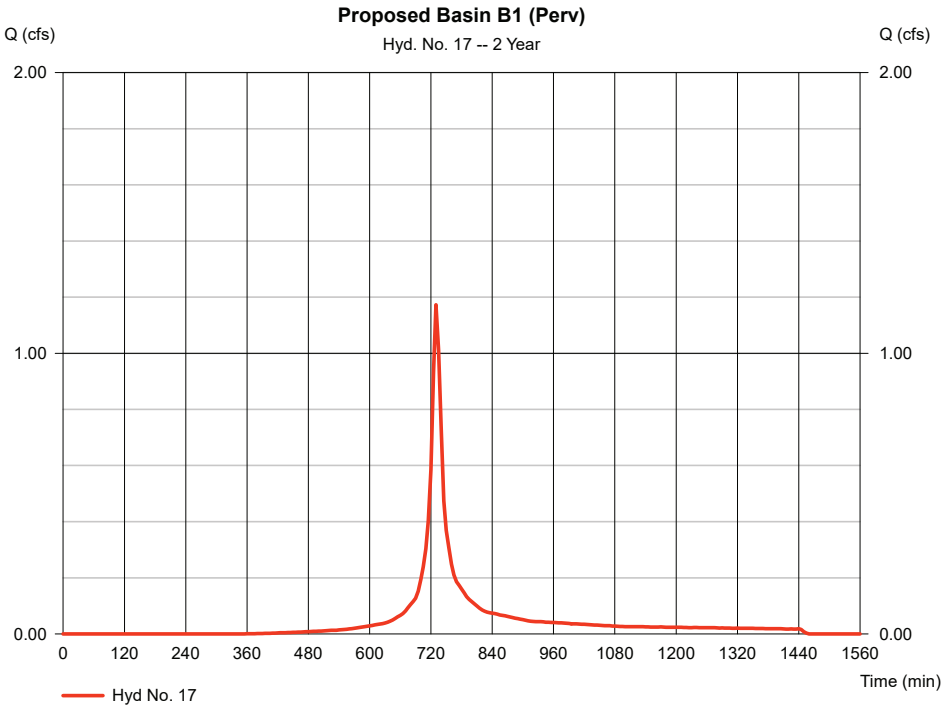


Hydrograph Report

Hyd. No. 17

Proposed Basin B1 (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.173 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 4,307 cuft
Drainage area	= 0.580 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

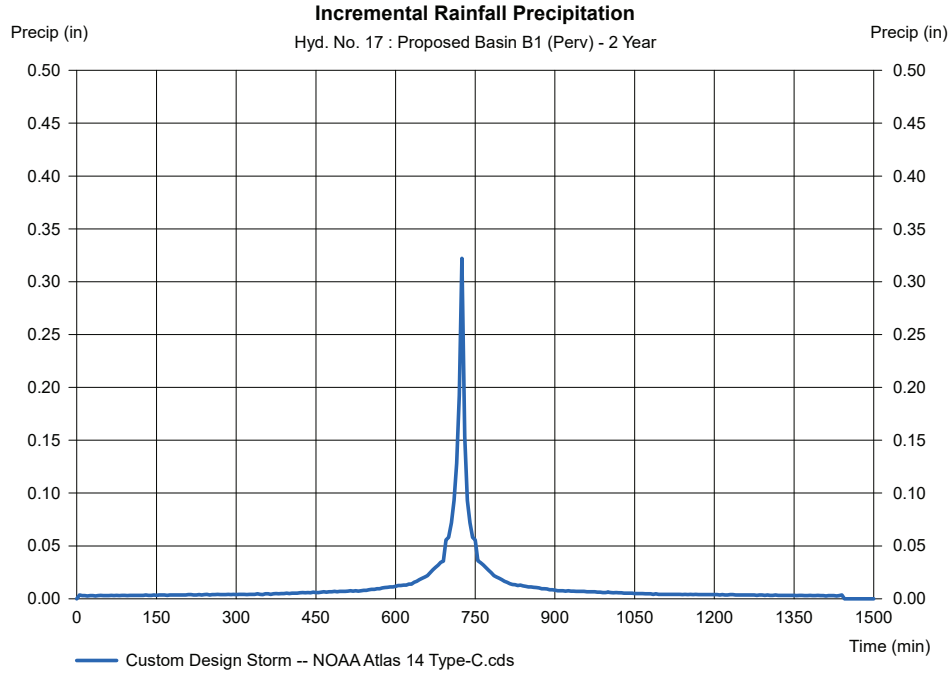


Precipitation Report

Hyd. No. 17

Proposed Basin B1 (Perv)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

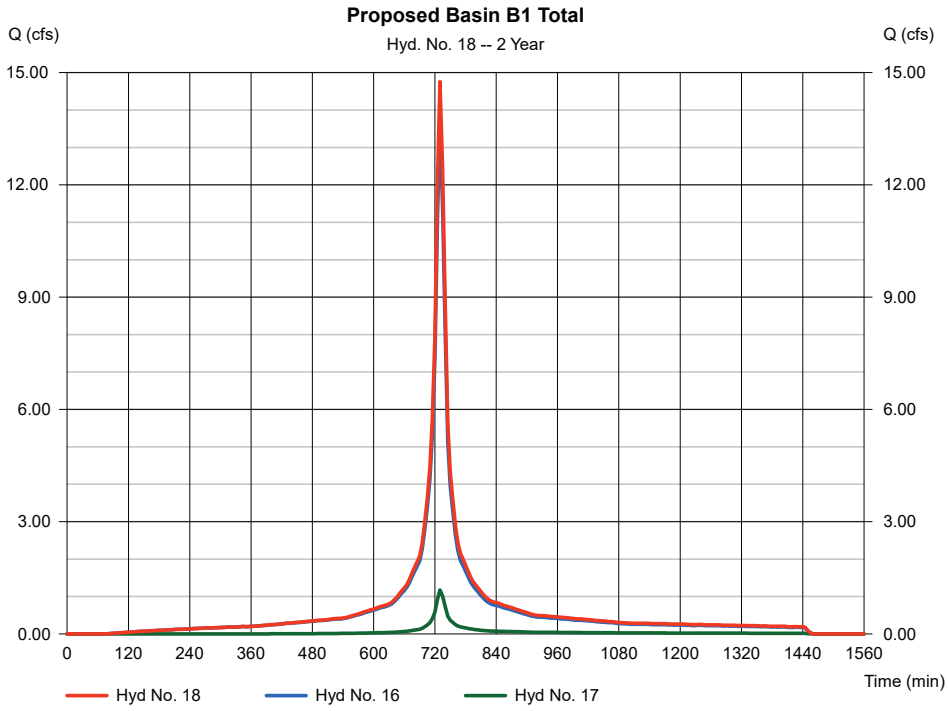


Hydrograph Report

Hyd. No. 18

Proposed Basin B1 Total

Hydrograph type	= Combine	Peak discharge	= 14.76 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 60,017 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 5.900 ac



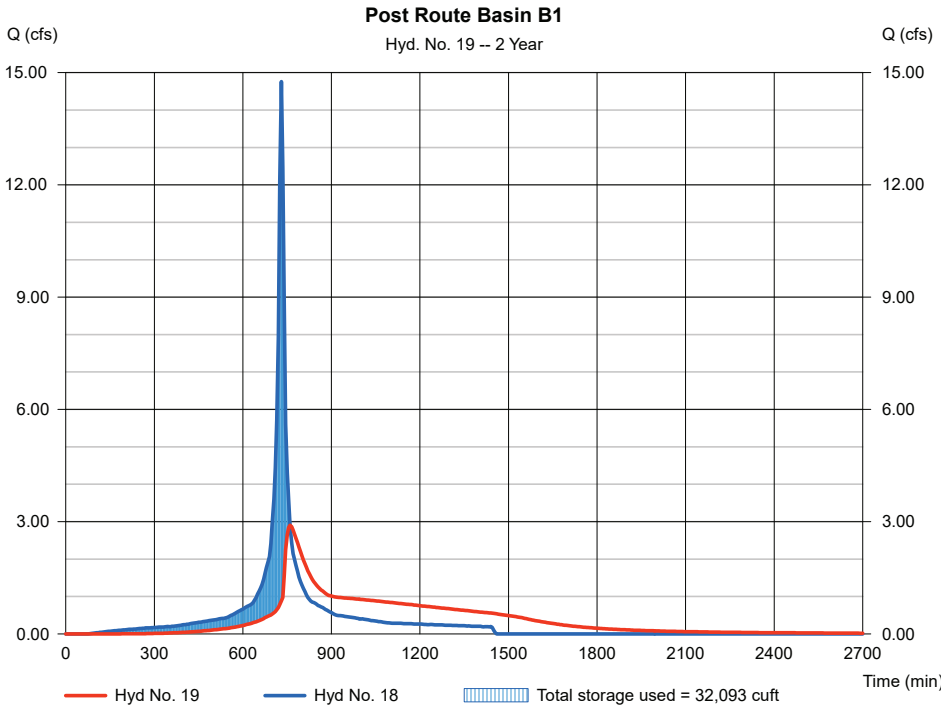
Hydrograph Report

Hyd. No. 19

Post Route Basin B1

Hydrograph type	= Reservoir	Peak discharge	= 2.906 cfs
Storm frequency	= 2 yrs	Time to peak	= 760 min
Time interval	= 5 min	Hyd. volume	= 59,840 cuft
Inflow hyd. No.	= 18 - Proposed Basin B1 Total	Max. Elevation	= 99.78 ft
Reservoir name	= UG Basin B (1)	Max. Storage	= 32,093 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - UG Basin B (1)

Pond Data

UG Chambers - Invert elev. = 98.00 ft, Rise x Span = 4.00 x 8.42 ft, Barrel Len = 429.24 ft, No. Barrels = 5, Slope = 0.00%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	98.00	n/a	0	0
0.40	98.40	n/a	7,230	7,230
0.80	98.80	n/a	7,230	14,460
1.20	99.20	n/a	7,230	21,690
1.60	99.60	n/a	7,230	28,919
2.00	100.00	n/a	7,230	36,149
2.40	100.40	n/a	7,230	43,379
2.80	100.80	n/a	7,230	50,609
3.20	101.20	n/a	7,230	57,839
3.60	101.60	n/a	7,230	65,069
4.00	102.00	n/a	7,230	72,298

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	6.00	0.00	0.00
Span (in)	= 24.00	6.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 98.00	98.00	0.00	0.00
Length (ft)	= 200.00	0.50	0.00	0.00
Slope (%)	= 0.35	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	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 99.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	98.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.04	723	98.04	0.01 oc	0.00 ic	---	---	0.00	---	---	---	---	---	0.00
0.08	1,446	98.08	0.02 oc	0.02 ic	---	---	0.00	---	---	---	---	---	0.02
0.12	2,169	98.12	0.04 ic	0.04 ic	---	---	0.00	---	---	---	---	---	0.04
0.16	2,892	98.16	0.06 ic	0.06 ic	---	---	0.00	---	---	---	---	---	0.06
0.20	3,615	98.20	0.11 ic	0.10 ic	---	---	0.00	---	---	---	---	---	0.10
0.24	4,338	98.24	0.15 ic	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.28	5,061	98.28	0.18 ic	0.18 ic	---	---	0.00	---	---	---	---	---	0.18
0.32	5,784	98.32	0.24 ic	0.23 ic	---	---	0.00	---	---	---	---	---	0.23
0.36	6,507	98.36	0.29 ic	0.29 ic	---	---	0.00	---	---	---	---	---	0.29
0.40	7,230	98.40	0.35 ic	0.33 ic	---	---	0.00	---	---	---	---	---	0.33
0.44	7,953	98.44	0.39 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
0.48	8,676	98.48	0.44 ic	0.44 ic	---	---	0.00	---	---	---	---	---	0.44
0.52	9,399	98.52	0.48 ic	0.47 ic	---	---	0.00	---	---	---	---	---	0.47
0.56	10,122	98.56	0.52 ic	0.50 ic	---	---	0.00	---	---	---	---	---	0.50
0.60	10,845	98.60	0.52 ic	0.52 ic	---	---	0.00	---	---	---	---	---	0.52
0.64	11,568	98.64	0.56 ic	0.56 ic	---	---	0.00	---	---	---	---	---	0.56
0.68	12,291	98.68	0.60 ic	0.58 ic	---	---	0.00	---	---	---	---	---	0.58
0.72	13,014	98.72	0.60 ic	0.60 ic	---	---	0.00	---	---	---	---	---	0.60
0.76	13,737	98.76	0.64 ic	0.63 ic	---	---	0.00	---	---	---	---	---	0.63
0.80	14,460	98.80	0.65 ic	0.65 ic	---	---	0.00	---	---	---	---	---	0.65
0.84	15,183	98.84	0.69 ic	0.68 ic	---	---	0.00	---	---	---	---	---	0.68
0.88	15,906	98.88	0.70 ic	0.70 ic	---	---	0.00	---	---	---	---	---	0.70
0.92	16,629	98.92	0.73 ic	0.72 ic	---	---	0.00	---	---	---	---	---	0.72
0.96	17,352	98.96	0.74 ic	0.74 ic	---	---	0.00	---	---	---	---	---	0.74
1.00	18,075	99.00	0.78 ic	0.76 ic	---	---	0.00	---	---	---	---	---	0.76
1.04	18,798	99.04	0.78 ic	0.78 ic	---	---	0.00	---	---	---	---	---	0.78
1.08	19,521	99.08	0.84 ic	0.80 ic	---	---	0.00	---	---	---	---	---	0.80
1.12	20,244	99.12	0.84 ic	0.82 ic	---	---	0.00	---	---	---	---	---	0.82
1.16	20,967	99.16	0.84 ic	0.84 ic	---	---	0.00	---	---	---	---	---	0.84
1.20	21,690	99.20	0.89 ic	0.86 ic	---	---	0.00	---	---	---	---	---	0.86
1.24	22,413	99.24	0.89 ic	0.88 ic	---	---	0.00	---	---	---	---	---	0.88
1.28	23,136	99.28	0.90 ic	0.90 ic	---	---	0.00	---	---	---	---	---	0.90

Continues on next page...

UG Basin B (1)

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
1.32	23,858	99.32	0.95 ic	0.91 ic	---	---	0.00	---	---	---	---	---	0.91
1.36	24,581	99.36	0.95 ic	0.93 ic	---	---	0.00	---	---	---	---	---	0.93
1.40	25,304	99.40	0.95 ic	0.95 ic	---	---	0.00	---	---	---	---	---	0.95
1.44	26,027	99.44	1.01 ic	0.96 ic	---	---	0.00	---	---	---	---	---	0.96
1.48	26,750	99.48	1.01 ic	0.98 ic	---	---	0.00	---	---	---	---	---	0.98
1.52	27,473	99.52	1.07 ic	0.99 ic	---	---	0.04	---	---	---	---	---	1.03
1.56	28,196	99.56	1.20 ic	1.00 ic	---	---	0.20	---	---	---	---	---	1.20
1.60	28,919	99.60	1.42 ic	1.00 ic	---	---	0.42	---	---	---	---	---	1.42
1.64	29,642	99.64	1.73 ic	1.00 ic	---	---	0.70	---	---	---	---	---	1.69
1.68	30,365	99.68	2.01 ic	0.99 ic	---	---	1.02	---	---	---	---	---	2.01
1.72	31,088	99.72	2.38 ic	0.99 ic	---	---	1.37	---	---	---	---	---	2.36
1.76	31,811	99.76	2.81 ic	0.98 ic	---	---	1.77	---	---	---	---	---	2.74
1.80	32,534	99.80	3.16 ic	0.97 ic	---	---	2.19	---	---	---	---	---	3.16
1.84	33,257	99.84	3.64 ic	0.97 ic	---	---	2.64	---	---	---	---	---	3.61
1.88	33,980	99.88	4.17 ic	0.96 ic	---	---	3.12	---	---	---	---	---	4.08
1.92	34,703	99.92	4.58 ic	0.95 ic	---	---	3.63	---	---	---	---	---	4.58
1.96	35,426	99.96	5.16 ic	0.94 ic	---	---	4.16	---	---	---	---	---	5.10
2.00	36,149	100.00	5.68 oc	0.93 ic	---	---	4.71	---	---	---	---	---	5.64
2.04	36,872	100.04	6.32 oc	0.91 ic	---	---	5.29	---	---	---	---	---	6.20
2.08	37,595	100.08	6.82 oc	0.90 ic	---	---	5.88	---	---	---	---	---	6.78
2.12	38,318	100.12	7.43 oc	0.88 ic	---	---	6.50	---	---	---	---	---	7.39
2.16	39,041	100.16	8.01 oc	0.86 ic	---	---	7.14	---	---	---	---	---	8.01
2.20	39,764	100.20	8.66 oc	0.84 ic	---	---	7.80	---	---	---	---	---	8.64
2.24	40,487	100.24	9.33 oc	0.81 ic	---	---	8.47 s	---	---	---	---	---	9.28
2.28	41,210	100.28	9.82 oc	0.78 ic	---	---	9.03 s	---	---	---	---	---	9.82
2.32	41,933	100.32	10.28 oc	0.76 ic	---	---	9.51 s	---	---	---	---	---	10.27
2.36	42,656	100.36	10.66 oc	0.73 ic	---	---	9.90 s	---	---	---	---	---	10.63
2.40	43,379	100.40	10.91 oc	0.70 ic	---	---	10.21 s	---	---	---	---	---	10.91
2.44	44,102	100.44	10.88 oc	0.64 ic	---	---	10.23 s	---	---	---	---	---	10.88
2.48	44,825	100.48	11.02 oc	0.61 ic	---	---	10.41 s	---	---	---	---	---	11.02
2.52	45,548	100.52	11.40 oc	0.60 ic	---	---	10.80 s	---	---	---	---	---	11.40
2.56	46,271	100.56	11.77 oc	0.60 ic	---	---	11.17 s	---	---	---	---	---	11.76
2.60	46,994	100.60	12.12 oc	0.59 ic	---	---	11.53 s	---	---	---	---	---	12.12
2.64	47,717	100.64	12.46 oc	0.58 ic	---	---	11.88 s	---	---	---	---	---	12.46
2.68	48,440	100.68	12.79 oc	0.57 ic	---	---	12.22 s	---	---	---	---	---	12.79
2.72	49,163	100.72	13.11 oc	0.56 ic	---	---	12.55 s	---	---	---	---	---	13.11
2.76	49,886	100.76	13.42 oc	0.55 ic	---	---	12.87 s	---	---	---	---	---	13.42
2.80	50,609	100.80	13.72 oc	0.54 ic	---	---	13.18 s	---	---	---	---	---	13.72
2.84	51,332	100.84	14.02 oc	0.53 ic	---	---	13.49 s	---	---	---	---	---	14.02
2.88	52,055	100.88	14.30 oc	0.52 ic	---	---	13.78 s	---	---	---	---	---	14.30
2.92	52,778	100.92	14.58 oc	0.51 ic	---	---	14.06 s	---	---	---	---	---	14.58
2.96	53,501	100.96	14.85 oc	0.50 ic	---	---	14.34 s	---	---	---	---	---	14.85
3.00	54,224	101.00	15.11 oc	0.50 ic	---	---	14.61 s	---	---	---	---	---	15.11
3.04	54,947	101.04	15.37 oc	0.49 ic	---	---	14.88 s	---	---	---	---	---	15.37
3.08	55,670	101.08	15.62 oc	0.48 ic	---	---	15.14 s	---	---	---	---	---	15.62
3.12	56,393	101.12	15.86 oc	0.47 ic	---	---	15.39 s	---	---	---	---	---	15.86
3.16	57,116	101.16	16.10 oc	0.47 ic	---	---	15.64 s	---	---	---	---	---	16.10
3.20	57,839	101.20	16.34 oc	0.46 ic	---	---	15.88 s	---	---	---	---	---	16.34
3.24	58,562	101.24	16.57 oc	0.45 ic	---	---	16.11 s	---	---	---	---	---	16.57
3.28	59,285	101.28	16.79 oc	0.44 ic	---	---	16.35 s	---	---	---	---	---	16.79
3.32	60,008	101.32	17.01 oc	0.44 ic	---	---	16.57 s	---	---	---	---	---	17.01
3.36	60,731	101.36	17.23 oc	0.43 ic	---	---	16.80 s	---	---	---	---	---	17.23
3.40	61,454	101.40	17.44 oc	0.42 ic	---	---	17.02 s	---	---	---	---	---	17.44
3.44	62,177	101.44	17.65 oc	0.42 ic	---	---	17.23 s	---	---	---	---	---	17.65
3.48	62,900	101.48	17.86 oc	0.41 ic	---	---	17.44 s	---	---	---	---	---	17.85
3.52	63,623	101.52	18.06 oc	0.41 ic	---	---	17.65 s	---	---	---	---	---	18.06
3.56	64,346	101.56	18.26 oc	0.40 ic	---	---	17.85 s	---	---	---	---	---	18.26
3.60	65,069	101.60	18.45 oc	0.40 ic	---	---	18.06 s	---	---	---	---	---	18.45
3.64	65,792	101.64	18.65 oc	0.39 ic	---	---	18.25 s	---	---	---	---	---	18.65
3.68	66,515	101.68	18.84 oc	0.38 ic	---	---	18.45 s	---	---	---	---	---	18.84
3.72	67,238	101.72	19.03 oc	0.38 ic	---	---	18.64 s	---	---	---	---	---	19.02
3.76	67,961	101.76	19.21 oc	0.37 ic	---	---	18.84 s	---	---	---	---	---	19.21
3.80	68,684	101.80	19.39 oc	0.37 ic	---	---	19.02 s	---	---	---	---	---	19.39
3.84	69,407	101.84	19.57 oc	0.37 ic	---	---	19.21 s	---	---	---	---	---	19.57
3.88	70,130	101.88	19.75 oc	0.36 ic	---	---	19.39 s	---	---	---	---	---	19.75
3.92	70,853	101.92	19.93 oc	0.36 ic	---	---	19.57 s	---	---	---	---	---	19.93
3.96	71,575	101.96	20.10 oc	0.35 ic	---	---	19.75 s	---	---	---	---	---	20.10
4.00	72,298	102.00	20.27 oc	0.35 ic	---	---	19.92 s	---	---	---	---	---	20.27

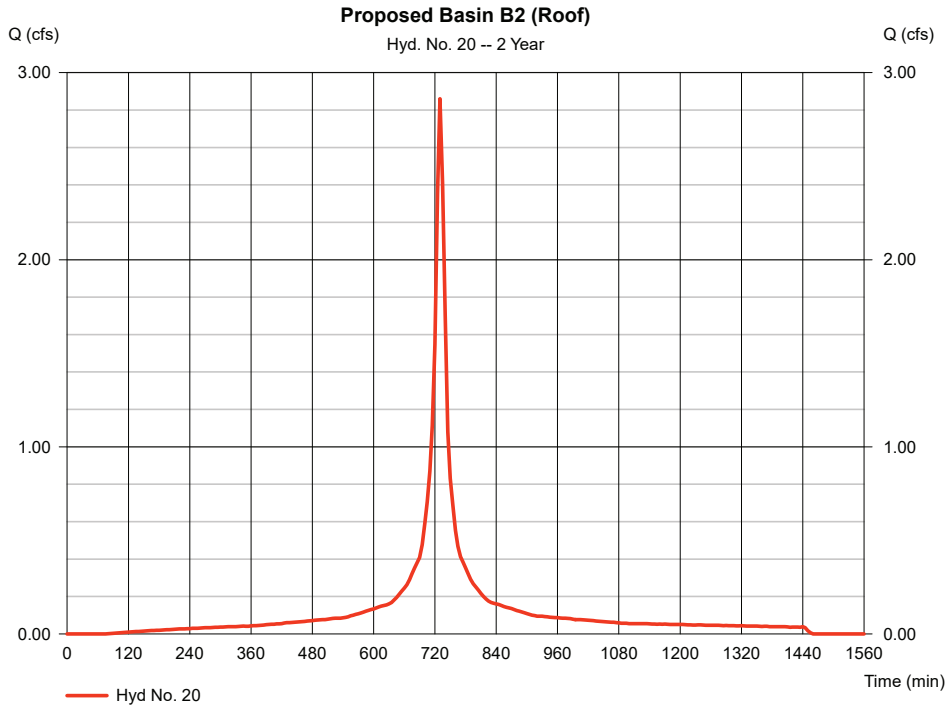
...End

Hydrograph Report

Hyd. No. 20

Proposed Basin B2 (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.860 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 11,728 cuft
Drainage area	= 1.120 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

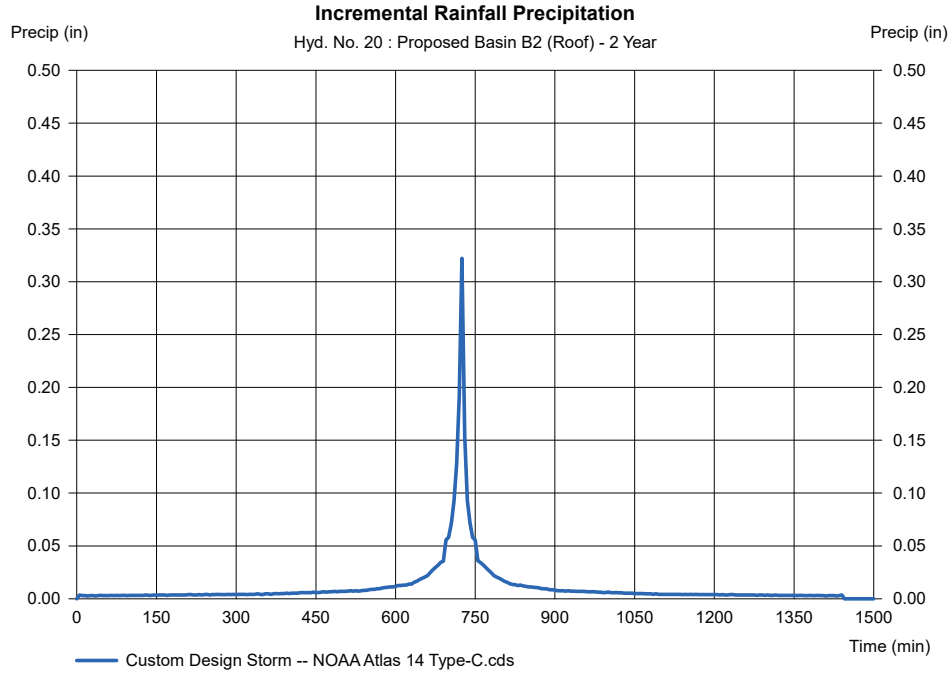


Precipitation Report

Hyd. No. 20

Proposed Basin B2 (Roof)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		



Hydrograph Report

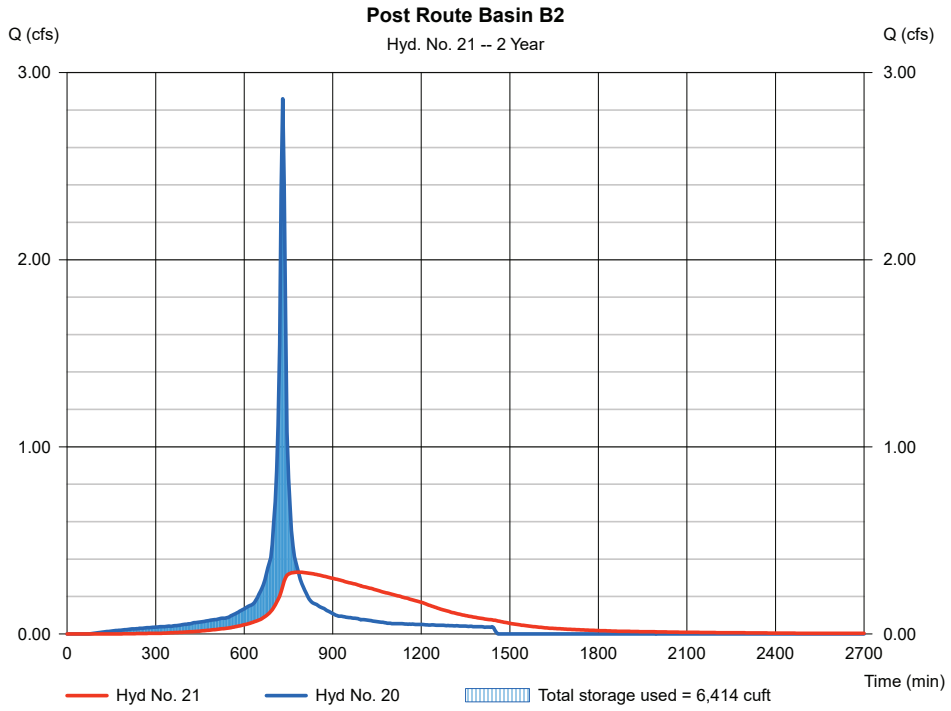
Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 21

Post Route Basin B2

Hydrograph type	= Reservoir	Peak discharge	= 0.330 cfs
Storm frequency	= 2 yrs	Time to peak	= 785 min
Time interval	= 5 min	Hyd. volume	= 11,649 cuft
Inflow hyd. No.	= 20 - Proposed Basin B2 (Roof)	Max. Elevation	= 98.85 ft
Reservoir name	= UG Basin B (2)	Max. Storage	= 6,414 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Pond No. 4 - UG Basin B (2)

Pond Data

UG Chambers - Invert elev. = 98.00 ft, Rise x Span = 4.00 x 8.42 ft, Barrel Len = 429.24 ft, No. Barrels = 2, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	98.00	n/a	0	0
0.40	98.40	n/a	3,034	3,034
0.80	98.80	n/a	3,034	6,067
1.20	99.20	n/a	3,034	9,101
1.60	99.60	n/a	3,034	12,135
2.00	100.00	n/a	3,034	15,169
2.40	100.40	n/a	3,034	18,202
2.80	100.80	n/a	3,034	21,236
3.20	101.20	n/a	3,034	24,270
3.60	101.60	n/a	3,034	27,304
4.00	102.00	n/a	3,034	30,337

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	4.00	0.00	0.00
Span (in)	= 24.00	4.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 98.00	98.00	0.00	0.00
Length (ft)	= 120.00	0.50	0.50	0.00
Slope (%)	= 5.00	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	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 2.00	0.00	0.00	0.00
Crest El. (ft)	= 99.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	98.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.04	303	98.04	0.00 ic	0.00 ic	---	---	0.00	---	---	---	---	---	0.00
0.08	607	98.08	0.01 ic	0.01 ic	---	---	0.00	---	---	---	---	---	0.01
0.12	910	98.12	0.03 ic	0.03 ic	---	---	0.00	---	---	---	---	---	0.03
0.16	1,213	98.16	0.06 ic	0.05 ic	---	---	0.00	---	---	---	---	---	0.05
0.20	1,517	98.20	0.08 ic	0.08 ic	---	---	0.00	---	---	---	---	---	0.08
0.24	1,820	98.24	0.11 ic	0.11 ic	---	---	0.00	---	---	---	---	---	0.11
0.28	2,124	98.28	0.15 ic	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.32	2,427	98.32	0.17 ic	0.17 ic	---	---	0.00	---	---	---	---	---	0.17
0.36	2,730	98.36	0.18 ic	0.18 ic	---	---	0.00	---	---	---	---	---	0.18
0.40	3,034	98.40	0.20 ic	0.20 ic	---	---	0.00	---	---	---	---	---	0.20
0.44	3,337	98.44	0.22 ic	0.21 ic	---	---	0.00	---	---	---	---	---	0.21
0.48	3,640	98.48	0.23 ic	0.23 ic	---	---	0.00	---	---	---	---	---	0.23
0.52	3,944	98.52	0.24 ic	0.24 ic	---	---	0.00	---	---	---	---	---	0.24
0.56	4,247	98.56	0.27 ic	0.25 ic	---	---	0.00	---	---	---	---	---	0.25
0.60	4,551	98.60	0.27 ic	0.27 ic	---	---	0.00	---	---	---	---	---	0.27
0.64	4,854	98.64	0.29 ic	0.28 ic	---	---	0.00	---	---	---	---	---	0.28
0.68	5,157	98.68	0.29 ic	0.29 ic	---	---	0.00	---	---	---	---	---	0.29
0.72	5,461	98.72	0.30 ic	0.30 ic	---	---	0.00	---	---	---	---	---	0.30
0.76	5,764	98.76	0.32 ic	0.31 ic	---	---	0.00	---	---	---	---	---	0.31
0.80	6,067	98.80	0.32 ic	0.32 ic	---	---	0.00	---	---	---	---	---	0.32
0.84	6,371	98.84	0.35 ic	0.33 ic	---	---	0.00	---	---	---	---	---	0.33
0.88	6,674	98.88	0.35 ic	0.34 ic	---	---	0.00	---	---	---	---	---	0.34
0.92	6,978	98.92	0.35 ic	0.35 ic	---	---	0.00	---	---	---	---	---	0.35
0.96	7,281	98.96	0.38 ic	0.36 ic	---	---	0.00	---	---	---	---	---	0.36
1.00	7,584	99.00	0.38 ic	0.37 ic	---	---	0.00	---	---	---	---	---	0.37
1.04	7,888	99.04	0.38 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
1.08	8,191	99.08	0.38 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
1.12	8,494	99.12	0.41 ic	0.39 ic	---	---	0.00	---	---	---	---	---	0.39
1.16	8,798	99.16	0.41 ic	0.40 ic	---	---	0.00	---	---	---	---	---	0.40
1.20	9,101	99.20	0.41 ic	0.41 ic	---	---	0.00	---	---	---	---	---	0.41
1.24	9,405	99.24	0.42 ic	0.42 ic	---	---	0.00	---	---	---	---	---	0.42
1.28	9,708	99.28	0.44 ic	0.42 ic	---	---	0.00	---	---	---	---	---	0.42

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UG Basin B (2)

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
1.32	10,011	99.32	0.44 ic	0.43 ic	---	---	0.00	---	---	---	---	---	0.43
1.36	10,315	99.36	0.44 ic	0.44 ic	---	---	0.00	---	---	---	---	---	0.44
1.40	10,618	99.40	0.45 ic	0.45 ic	---	---	0.00	---	---	---	---	---	0.45
1.44	10,921	99.44	0.48 ic	0.45 ic	---	---	0.00	---	---	---	---	---	0.45
1.48	11,225	99.48	0.48 ic	0.46 ic	---	---	0.00	---	---	---	---	---	0.46
1.52	11,528	99.52	0.49 ic	0.47 ic	---	---	0.02	---	---	---	---	---	0.49
1.56	11,832	99.56	0.60 ic	0.47 ic	---	---	0.10	---	---	---	---	---	0.57
1.60	12,135	99.60	0.69 ic	0.47 ic	---	---	0.21	---	---	---	---	---	0.68
1.64	12,438	99.64	0.84 ic	0.47 ic	---	---	0.35	---	---	---	---	---	0.82
1.68	12,742	99.68	1.00 ic	0.48 ic	---	---	0.51	---	---	---	---	---	0.98
1.72	13,045	99.72	1.20 ic	0.48 ic	---	---	0.69	---	---	---	---	---	1.16
1.76	13,348	99.76	1.41 ic	0.48 ic	---	---	0.88	---	---	---	---	---	1.36
1.80	13,652	99.80	1.57 ic	0.48 ic	---	---	1.09	---	---	---	---	---	1.57
1.84	13,955	99.84	1.81 ic	0.48 ic	---	---	1.32	---	---	---	---	---	1.80
1.88	14,259	99.88	2.08 ic	0.48 ic	---	---	1.56	---	---	---	---	---	2.04
1.92	14,562	99.92	2.29 ic	0.48 ic	---	---	1.81	---	---	---	---	---	2.29
1.96	14,865	99.96	2.59 ic	0.48 ic	---	---	2.08	---	---	---	---	---	2.56
2.00	15,169	100.00	2.83 ic	0.48 ic	---	---	2.35	---	---	---	---	---	2.83
2.04	15,472	100.04	3.15 ic	0.48 ic	---	---	2.64	---	---	---	---	---	3.12
2.08	15,775	100.08	3.42 ic	0.48 ic	---	---	2.94	---	---	---	---	---	3.42
2.12	16,079	100.12	3.77 ic	0.48 ic	---	---	3.25	---	---	---	---	---	3.73
2.16	16,382	100.16	4.05 ic	0.48 ic	---	---	3.57	---	---	---	---	---	4.05
2.20	16,686	100.20	4.44 ic	0.48 ic	---	---	3.90	---	---	---	---	---	4.38
2.24	16,989	100.24	4.72 ic	0.48 ic	---	---	4.24	---	---	---	---	---	4.72
2.28	17,292	100.28	5.16 ic	0.48 ic	---	---	4.59	---	---	---	---	---	5.07
2.32	17,596	100.32	5.46 ic	0.48 ic	---	---	4.95	---	---	---	---	---	5.43
2.36	17,899	100.36	5.79 ic	0.48 ic	---	---	5.31	---	---	---	---	---	5.79
2.40	18,202	100.40	6.22 ic	0.48 ic	---	---	5.69	---	---	---	---	---	6.17
2.44	18,506	100.44	6.55 ic	0.48 ic	---	---	6.07	---	---	---	---	---	6.55
2.48	18,809	100.48	7.00 ic	0.48 ic	---	---	6.46	---	---	---	---	---	6.94
2.52	19,113	100.52	7.34 ic	0.48 ic	---	---	6.86	---	---	---	---	---	7.34
2.56	19,416	100.56	7.80 ic	0.48 ic	---	---	7.27	---	---	---	---	---	7.75
2.60	19,719	100.60	8.17 ic	0.48 ic	---	---	7.68	---	---	---	---	---	8.17
2.64	20,023	100.64	8.60 ic	0.48 ic	---	---	8.11	---	---	---	---	---	8.59
2.68	20,326	100.68	9.07 ic	0.48 ic	---	---	8.54	---	---	---	---	---	9.02
2.72	20,629	100.72	9.54 ic	0.48 ic	---	---	8.97	---	---	---	---	---	9.46
2.76	20,933	100.76	10.00 ic	0.48 ic	---	---	9.42	---	---	---	---	---	9.90
2.80	21,236	100.80	10.44 ic	0.48 ic	---	---	9.87	---	---	---	---	---	10.35
2.84	21,540	100.84	10.88 ic	0.48 ic	---	---	10.32 s	---	---	---	---	---	10.80
2.88	21,843	100.88	11.29 ic	0.48 ic	---	---	10.76 s	---	---	---	---	---	11.24
2.92	22,146	100.92	11.69 ic	0.48 ic	---	---	11.19 s	---	---	---	---	---	11.67
2.96	22,450	100.96	12.09 ic	0.48 ic	---	---	11.61 s	---	---	---	---	---	12.09
3.00	22,753	101.00	12.55 ic	0.48 ic	---	---	12.03 s	---	---	---	---	---	12.51
3.04	23,056	101.04	12.99 ic	0.48 ic	---	---	12.44 s	---	---	---	---	---	12.92
3.08	23,360	101.08	13.38 ic	0.48 ic	---	---	12.86 s	---	---	---	---	---	13.34
3.12	23,663	101.12	13.75 ic	0.48 ic	---	---	13.27 s	---	---	---	---	---	13.75
3.16	23,966	101.16	14.18 ic	0.48 ic	---	---	13.67 s	---	---	---	---	---	14.15
3.20	24,270	101.20	14.55 ic	0.48 ic	---	---	14.07 s	---	---	---	---	---	14.54
3.24	24,573	101.24	14.92 ic	0.48 ic	---	---	14.45 s	---	---	---	---	---	14.92
3.28	24,877	101.28	15.28 ic	0.47 ic	---	---	14.80 s	---	---	---	---	---	15.27
3.32	25,180	101.32	15.65 ic	0.47 ic	---	---	15.18 s	---	---	---	---	---	15.65
3.36	25,483	101.36	16.02 ic	0.47 ic	---	---	15.55 s	---	---	---	---	---	16.02
3.40	25,787	101.40	16.39 ic	0.47 ic	---	---	15.92 s	---	---	---	---	---	16.39
3.44	26,090	101.44	16.75 ic	0.46 ic	---	---	16.28 s	---	---	---	---	---	16.75
3.48	26,393	101.48	17.10 ic	0.46 ic	---	---	16.64 s	---	---	---	---	---	17.10
3.52	26,697	101.52	17.45 ic	0.46 ic	---	---	16.99 s	---	---	---	---	---	17.45
3.56	27,000	101.56	17.80 ic	0.46 ic	---	---	17.34 s	---	---	---	---	---	17.80
3.60	27,304	101.60	18.14 ic	0.45 ic	---	---	17.68 s	---	---	---	---	---	18.14
3.64	27,607	101.64	18.47 ic	0.45 ic	---	---	18.02 s	---	---	---	---	---	18.47
3.68	27,910	101.68	18.80 ic	0.45 ic	---	---	18.35 s	---	---	---	---	---	18.80
3.72	28,214	101.72	19.13 ic	0.44 ic	---	---	18.68 s	---	---	---	---	---	19.13
3.76	28,517	101.76	19.45 ic	0.44 ic	---	---	19.00 s	---	---	---	---	---	19.45
3.80	28,820	101.80	19.76 ic	0.44 ic	---	---	19.32 s	---	---	---	---	---	19.76
3.84	29,124	101.84	20.07 ic	0.44 ic	---	---	19.64 s	---	---	---	---	---	20.07
3.88	29,427	101.88	20.38 ic	0.43 ic	---	---	19.95 s	---	---	---	---	---	20.38
3.92	29,731	101.92	20.68 ic	0.43 ic	---	---	20.25 s	---	---	---	---	---	20.68
3.96	30,034	101.96	20.98 ic	0.43 ic	---	---	20.55 s	---	---	---	---	---	20.98
4.00	30,337	102.00	21.27 ic	0.42 ic	---	---	20.85 s	---	---	---	---	---	21.27

...End

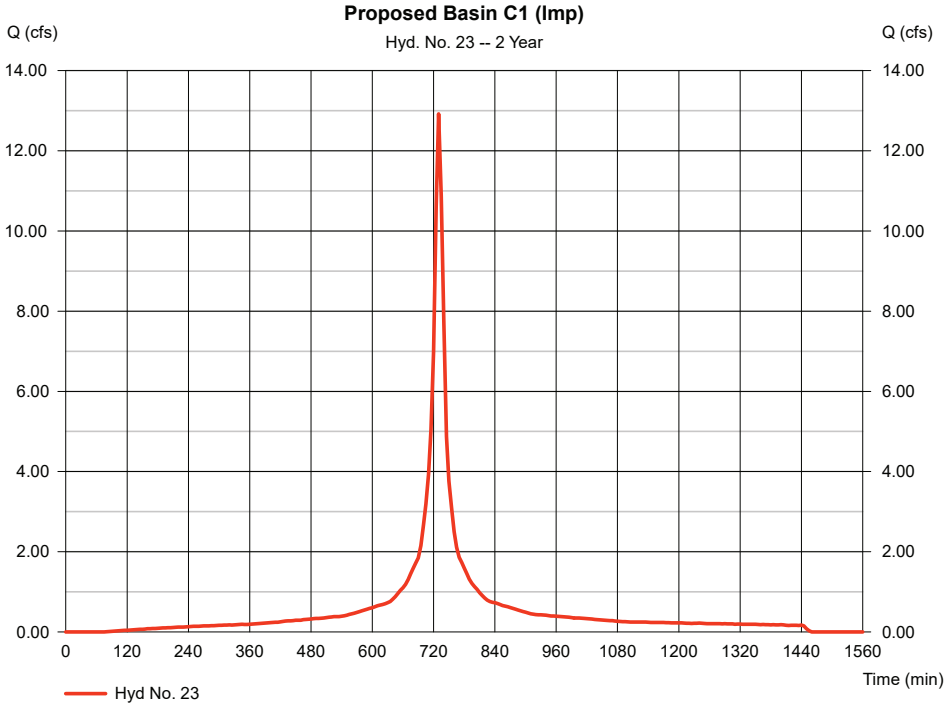
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 23

Proposed Basin C1 (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 12.92 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 52,987 cuft
Drainage area	= 5.060 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

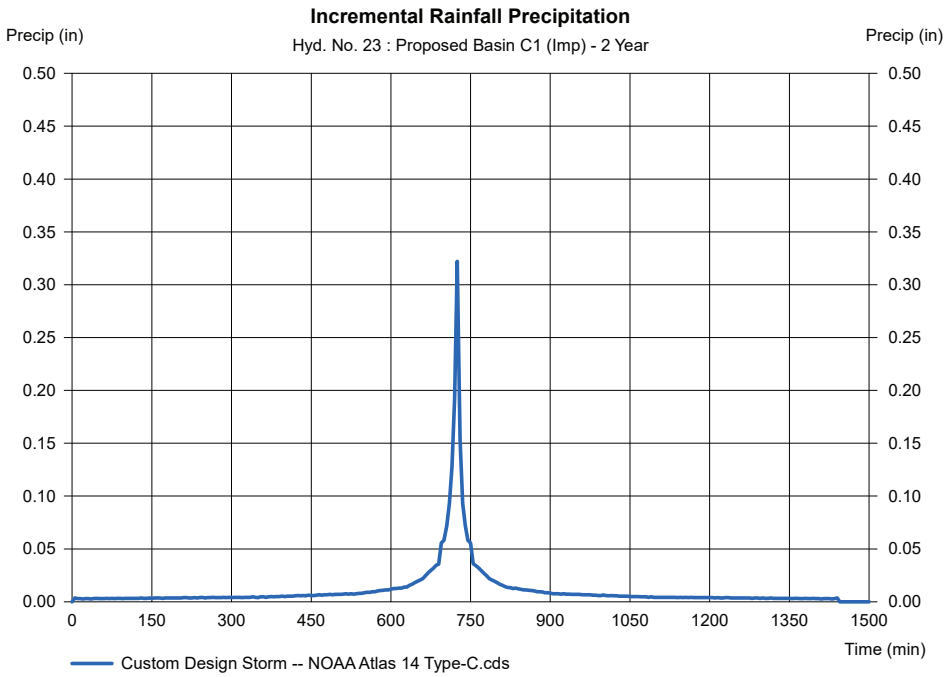


Precipitation Report

Hyd. No. 23

Proposed Basin C1 (Imp)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

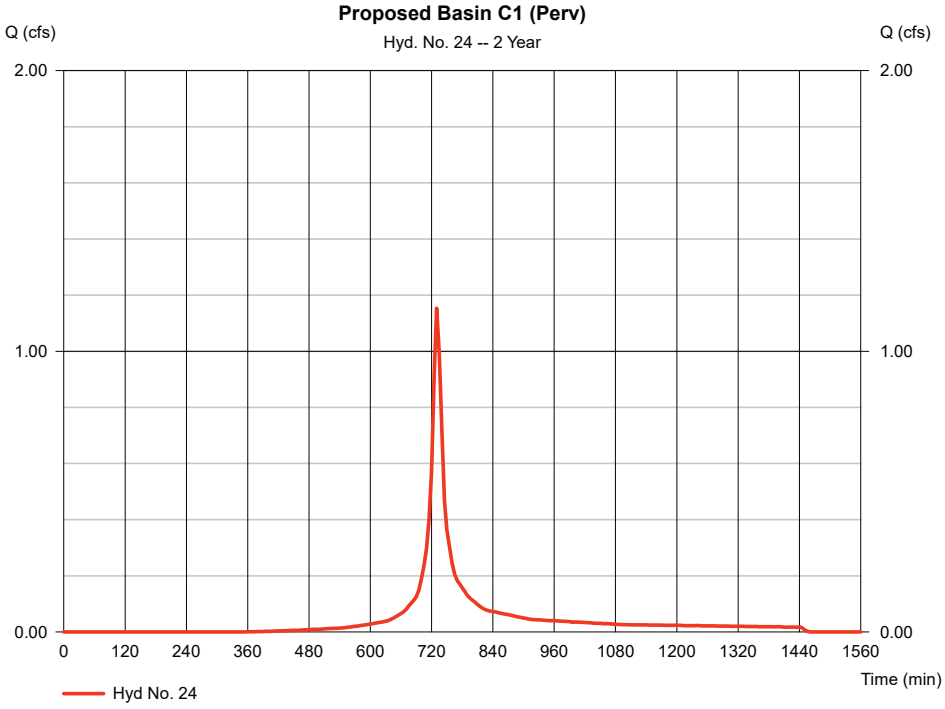


Hydrograph Report

Hyd. No. 24

Proposed Basin C1 (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.153 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 4,233 cuft
Drainage area	= 0.570 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

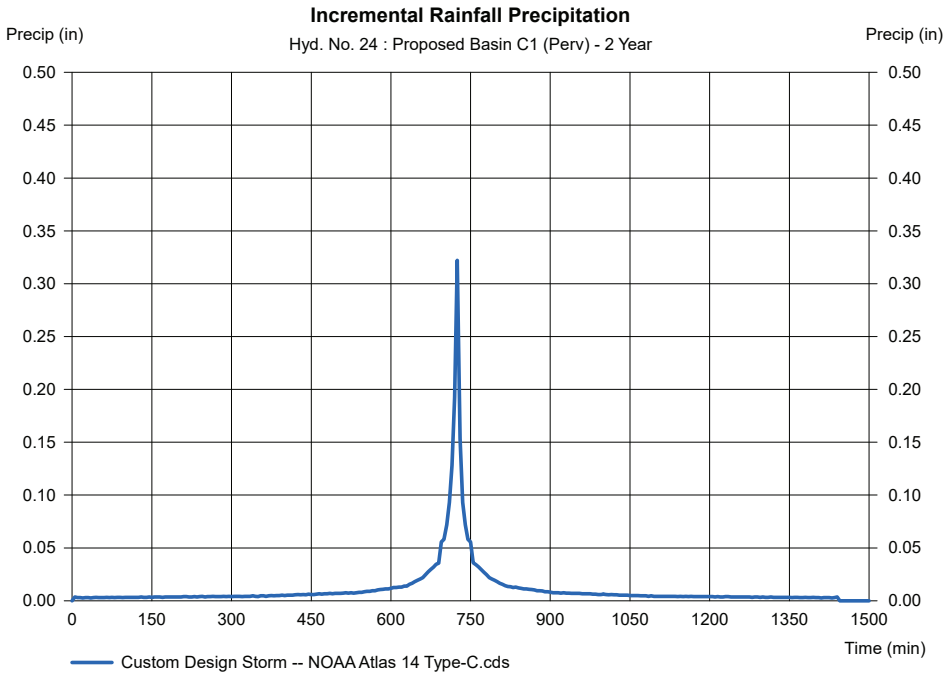


Precipitation Report

Hyd. No. 24

Proposed Basin C1 (Perv)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

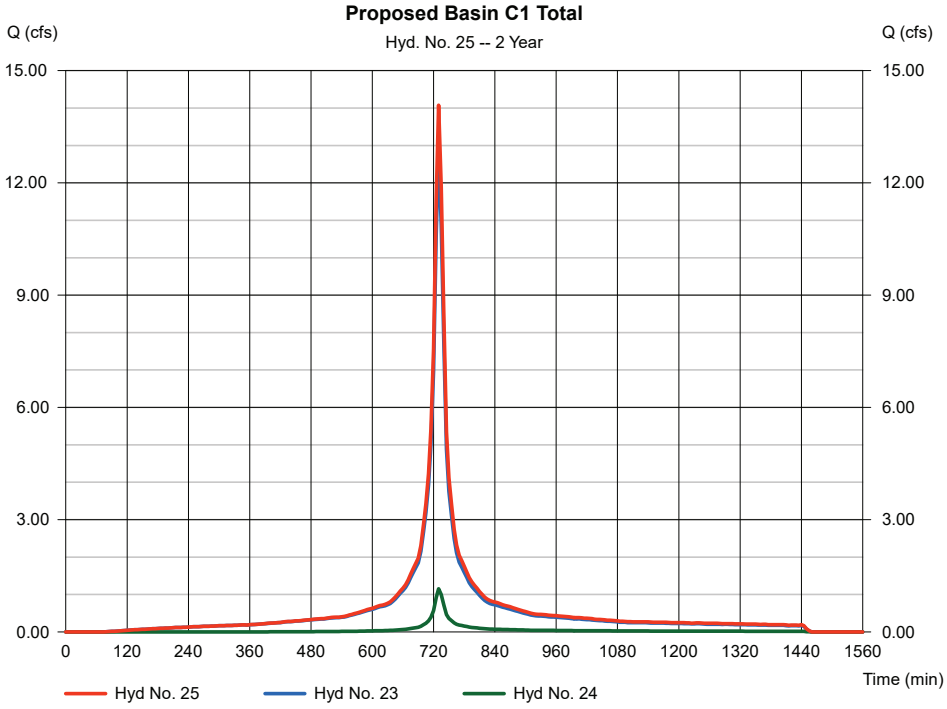


Hydrograph Report

Hyd. No. 25

Proposed Basin C1 Total

Hydrograph type	= Combine	Peak discharge	= 14.07 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 57,220 cuft
Inflow hyds.	= 23, 24	Contrib. drain. area	= 5.630 ac



Hydrograph Report

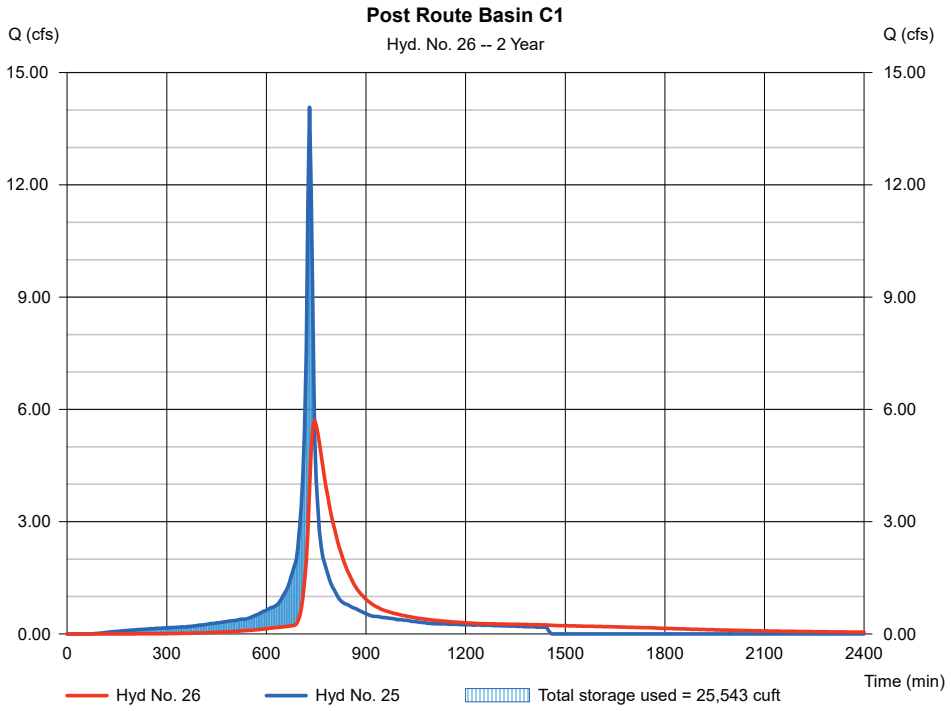
Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 26

Post Route Basin C1

Hydrograph type	= Reservoir	Peak discharge	= 5.718 cfs
Storm frequency	= 2 yrs	Time to peak	= 745 min
Time interval	= 5 min	Hyd. volume	= 57,001 cuft
Inflow hyd. No.	= 25 - Proposed Basin C1 Total	Max. Elevation	= 97.22 ft
Reservoir name	= UG Basin C (1)	Max. Storage	= 25,543 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Pond No. 2 - UG Basin C (1)

Pond Data

UG Chambers - Invert elev. = 96.00 ft, Rise x Span = 4.00 x 8.42 ft, Barrel Len = 1241.73 ft, No. Barrels = 2, Slope = 0.00%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	96.00	n/a	0	0
0.40	96.40	n/a	8,366	8,366
0.80	96.80	n/a	8,366	16,732
1.20	97.20	n/a	8,366	25,098
1.60	97.60	n/a	8,366	33,464
2.00	98.00	n/a	8,366	41,830
2.40	98.40	n/a	8,366	50,196
2.80	98.80	n/a	8,366	58,562
3.20	99.20	n/a	8,366	66,928
3.60	99.60	n/a	8,366	75,294
4.00	100.00	n/a	8,366	83,660

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	4.00	0.00	0.00
Span (in)	= 24.00	4.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 96.00	96.00	0.00	0.00
Length (ft)	= 180.00	0.50	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	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 96.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	96.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.04	837	96.04	0.00 ic	0.00 ic	---	---	0.00	---	---	---	---	---	0.00
0.08	1,673	96.08	0.01 ic	0.01 ic	---	---	0.00	---	---	---	---	---	0.01
0.12	2,510	96.12	0.03 ic	0.03 ic	---	---	0.00	---	---	---	---	---	0.03
0.16	3,346	96.16	0.06 ic	0.05 ic	---	---	0.00	---	---	---	---	---	0.05
0.20	4,183	96.20	0.08 ic	0.08 ic	---	---	0.00	---	---	---	---	---	0.08
0.24	5,020	96.24	0.11 ic	0.11 ic	---	---	0.00	---	---	---	---	---	0.11
0.28	5,856	96.28	0.15 ic	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.32	6,693	96.32	0.17 ic	0.17 ic	---	---	0.00	---	---	---	---	---	0.17
0.36	7,529	96.36	0.18 ic	0.18 ic	---	---	0.00	---	---	---	---	---	0.18
0.40	8,366	96.40	0.20 ic	0.20 ic	---	---	0.00	---	---	---	---	---	0.20
0.44	9,203	96.44	0.22 ic	0.21 ic	---	---	0.00	---	---	---	---	---	0.21
0.48	10,039	96.48	0.23 ic	0.23 ic	---	---	0.00	---	---	---	---	---	0.23
0.52	10,876	96.52	0.27 ic	0.23 ic	---	---	0.04	---	---	---	---	---	0.27
0.56	11,712	96.56	0.44 ic	0.23 ic	---	---	0.20	---	---	---	---	---	0.43
0.60	12,549	96.60	0.64 ic	0.22 ic	---	---	0.42	---	---	---	---	---	0.64
0.64	13,386	96.64	0.95 ic	0.21 ic	---	---	0.70	---	---	---	---	---	0.91
0.68	14,222	96.68	1.26 ic	0.20 ic	---	---	1.02	---	---	---	---	---	1.22
0.72	15,059	96.72	1.57 ic	0.19 ic	---	---	1.37 s	---	---	---	---	---	1.57
0.76	15,895	96.76	1.90 ic	0.19 ic	---	---	1.69 s	---	---	---	---	---	1.88
0.80	16,732	96.80	2.19 ic	0.19 ic	---	---	2.00 s	---	---	---	---	---	2.18
0.84	17,569	96.84	2.49 ic	0.18 ic	---	---	2.31 s	---	---	---	---	---	2.49
0.88	18,405	96.88	2.81 ic	0.18 ic	---	---	2.63 s	---	---	---	---	---	2.81
0.92	19,242	96.92	3.15 ic	0.18 ic	---	---	2.94 s	---	---	---	---	---	3.12
0.96	20,078	96.96	3.42 ic	0.18 ic	---	---	3.24 s	---	---	---	---	---	3.42
1.00	20,915	97.00	3.78 ic	0.18 ic	---	---	3.60 s	---	---	---	---	---	3.78
1.04	21,752	97.04	4.17 ic	0.18 ic	---	---	3.91 s	---	---	---	---	---	4.09
1.08	22,588	97.08	4.46 ic	0.18 ic	---	---	4.28 s	---	---	---	---	---	4.46
1.12	23,425	97.12	4.87 ic	0.18 ic	---	---	4.60 s	---	---	---	---	---	4.78
1.16	24,261	97.16	5.17 ic	0.18 ic	---	---	4.99 s	---	---	---	---	---	5.17
1.20	25,098	97.20	5.50 ic	0.18 ic	---	---	5.31 s	---	---	---	---	---	5.49
1.24	25,934	97.24	5.91 ic	0.18 ic	---	---	5.73 s	---	---	---	---	---	5.91
1.28	26,771	97.28	6.25 ic	0.18 ic	---	---	6.07 s	---	---	---	---	---	6.25

Continues on next page...

UG Basin C (1)

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
1.32	27,608	97.32	6.69 ic	0.19 ic	---	---	6.48 s	---	---	---	---	---	6.67
1.36	28,444	97.36	7.03 ic	0.19 ic	---	---	6.84 s	---	---	---	---	---	7.03
1.40	29,281	97.40	7.48 ic	0.19 ic	---	---	7.24 s	---	---	---	---	---	7.43
1.44	30,117	97.44	7.82 ic	0.19 ic	---	---	7.64 s	---	---	---	---	---	7.82
1.48	30,954	97.48	8.28 ic	0.19 ic	---	---	8.04 s	---	---	---	---	---	8.22
1.52	31,791	97.52	8.63 ic	0.19 ic	---	---	8.44 s	---	---	---	---	---	8.62
1.56	32,627	97.56	9.07 ic	0.19 ic	---	---	8.87 s	---	---	---	---	---	9.07
1.60	33,464	97.60	9.42 ic	0.19 ic	---	---	9.23 s	---	---	---	---	---	9.42
1.64	34,300	97.64	9.86 ic	0.19 ic	---	---	9.67 s	---	---	---	---	---	9.86
1.68	35,137	97.68	10.30 ic	0.19 ic	---	---	10.10 s	---	---	---	---	---	10.30
1.72	35,974	97.72	10.73 ic	0.19 ic	---	---	10.49 s	---	---	---	---	---	10.68
1.76	36,810	97.76	11.16 ic	0.19 ic	---	---	10.88 s	---	---	---	---	---	11.07
1.80	37,647	97.80	11.56 ic	0.19 ic	---	---	11.30 s	---	---	---	---	---	11.49
1.84	38,483	97.84	11.95 ic	0.19 ic	---	---	11.74 s	---	---	---	---	---	11.94
1.88	39,320	97.88	12.33 ic	0.19 ic	---	---	12.14 s	---	---	---	---	---	12.33
1.92	40,157	97.92	12.70 ic	0.19 ic	---	---	12.51 s	---	---	---	---	---	12.70
1.96	40,993	97.96	13.12 ic	0.19 ic	---	---	12.92 s	---	---	---	---	---	13.11
2.00	41,830	98.00	13.50 ic	0.19 ic	---	---	13.30 s	---	---	---	---	---	13.50
2.04	42,666	98.04	13.90 ic	0.19 ic	---	---	13.70 s	---	---	---	---	---	13.89
2.08	43,503	98.08	14.25 ic	0.19 ic	---	---	14.05 s	---	---	---	---	---	14.25
2.12	44,340	98.12	14.58 ic	0.19 ic	---	---	14.39 s	---	---	---	---	---	14.58
2.16	45,176	98.16	14.88 ic	0.19 ic	---	---	14.68 s	---	---	---	---	---	14.87
2.20	46,013	98.20	15.13 ic	0.19 ic	---	---	14.94 s	---	---	---	---	---	15.13
2.24	46,849	98.24	15.45 ic	0.19 ic	---	---	15.26 s	---	---	---	---	---	15.45
2.28	47,686	98.28	15.76 ic	0.18 ic	---	---	15.58 s	---	---	---	---	---	15.76
2.32	48,523	98.32	16.07 ic	0.18 ic	---	---	15.88 s	---	---	---	---	---	16.07
2.36	49,359	98.36	16.37 ic	0.18 ic	---	---	16.19 s	---	---	---	---	---	16.37
2.40	50,196	98.40	16.67 ic	0.18 ic	---	---	16.49 s	---	---	---	---	---	16.67
2.44	51,032	98.44	16.96 ic	0.18 ic	---	---	16.78 s	---	---	---	---	---	16.96
2.48	51,869	98.48	17.25 ic	0.18 ic	---	---	17.07 s	---	---	---	---	---	17.25
2.52	52,706	98.52	17.53 ic	0.18 ic	---	---	17.35 s	---	---	---	---	---	17.53
2.56	53,542	98.56	17.81 ic	0.18 ic	---	---	17.63 s	---	---	---	---	---	17.80
2.60	54,379	98.60	18.08 ic	0.17 ic	---	---	17.90 s	---	---	---	---	---	18.08
2.64	55,215	98.64	18.35 ic	0.17 ic	---	---	18.17 s	---	---	---	---	---	18.34
2.68	56,052	98.68	18.61 ic	0.17 ic	---	---	18.44 s	---	---	---	---	---	18.61
2.72	56,889	98.72	18.87 ic	0.17 ic	---	---	18.70 s	---	---	---	---	---	18.87
2.76	57,725	98.76	19.13 ic	0.17 ic	---	---	18.96 s	---	---	---	---	---	19.13
2.80	58,562	98.80	19.38 ic	0.17 ic	---	---	19.22 s	---	---	---	---	---	19.38
2.84	59,398	98.84	19.63 ic	0.17 ic	---	---	19.46 s	---	---	---	---	---	19.63
2.88	60,235	98.88	19.88 ic	0.16 ic	---	---	19.72 s	---	---	---	---	---	19.88
2.92	61,072	98.92	20.12 ic	0.16 ic	---	---	19.96 s	---	---	---	---	---	20.12
2.96	61,908	98.96	20.36 ic	0.16 ic	---	---	20.20 s	---	---	---	---	---	20.36
3.00	62,745	99.00	20.60 ic	0.16 ic	---	---	20.44 s	---	---	---	---	---	20.60
3.04	63,581	99.04	20.83 ic	0.16 ic	---	---	20.67 s	---	---	---	---	---	20.83
3.08	64,418	99.08	21.07 ic	0.16 ic	---	---	20.90 s	---	---	---	---	---	21.06
3.12	65,255	99.12	21.29 ic	0.16 ic	---	---	21.14 s	---	---	---	---	---	21.29
3.16	66,091	99.16	21.52 ic	0.15 ic	---	---	21.36 s	---	---	---	---	---	21.51
3.20	66,928	99.20	21.74 ic	0.15 ic	---	---	21.58 s	---	---	---	---	---	21.74
3.24	67,764	99.24	21.96 ic	0.15 ic	---	---	21.81 s	---	---	---	---	---	21.96
3.28	68,601	99.28	22.18 ic	0.15 ic	---	---	22.03 s	---	---	---	---	---	22.18
3.32	69,438	99.32	22.40 ic	0.15 ic	---	---	22.25 s	---	---	---	---	---	22.40
3.36	70,274	99.36	22.61 ic	0.15 ic	---	---	22.46 s	---	---	---	---	---	22.61
3.40	71,111	99.40	22.82 ic	0.15 ic	---	---	22.67 s	---	---	---	---	---	22.82
3.44	71,947	99.44	23.03 ic	0.15 ic	---	---	22.88 s	---	---	---	---	---	23.03
3.48	72,784	99.48	23.24 ic	0.14 ic	---	---	23.09 s	---	---	---	---	---	23.24
3.52	73,620	99.52	23.45 ic	0.14 ic	---	---	23.30 s	---	---	---	---	---	23.44
3.56	74,457	99.56	23.65 ic	0.14 ic	---	---	23.50 s	---	---	---	---	---	23.65
3.60	75,294	99.60	23.85 ic	0.14 ic	---	---	23.70 s	---	---	---	---	---	23.85
3.64	76,130	99.64	24.05 ic	0.14 ic	---	---	23.90 s	---	---	---	---	---	24.04
3.68	76,967	99.68	24.25 ic	0.14 ic	---	---	24.10 s	---	---	---	---	---	24.24
3.72	77,803	99.72	24.44 ic	0.14 ic	---	---	24.30 s	---	---	---	---	---	24.44
3.76	78,640	99.76	24.64 ic	0.14 ic	---	---	24.49 s	---	---	---	---	---	24.63
3.80	79,477	99.80	24.83 ic	0.14 ic	---	---	24.69 s	---	---	---	---	---	24.82
3.84	80,313	99.84	25.02 ic	0.14 ic	---	---	24.88 s	---	---	---	---	---	25.02
3.88	81,150	99.88	25.21 ic	0.13 ic	---	---	25.07 s	---	---	---	---	---	25.20
3.92	81,986	99.92	25.40 ic	0.13 ic	---	---	25.26 s	---	---	---	---	---	25.39
3.96	82,823	99.96	25.58 ic	0.13 ic	---	---	25.44 s	---	---	---	---	---	25.57
4.00	83,660	100.00	25.77 ic	0.13 ic	---	---	25.63 s	---	---	---	---	---	25.76

...End

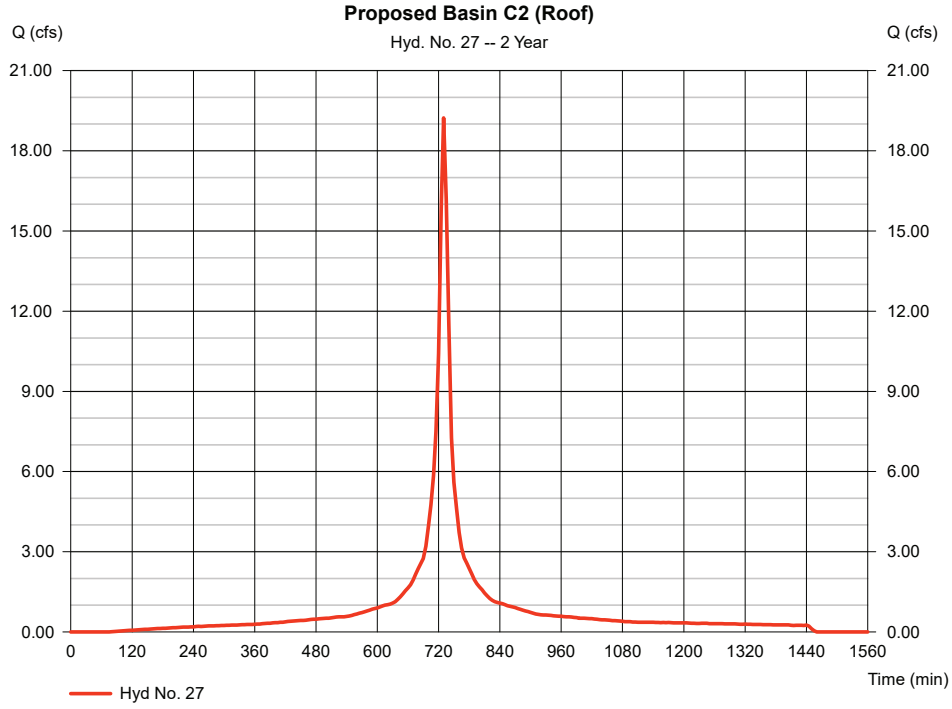
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 27

Proposed Basin C2 (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 19.23 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 78,852 cuft
Drainage area	= 7.530 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

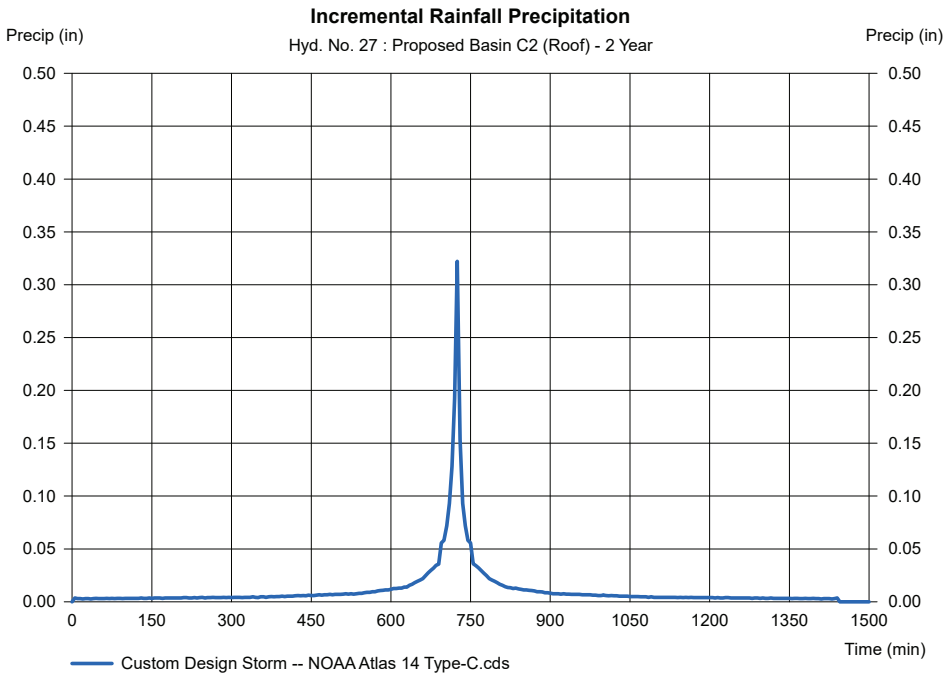


Precipitation Report

Hyd. No. 27

Proposed Basin C2 (Roof)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		



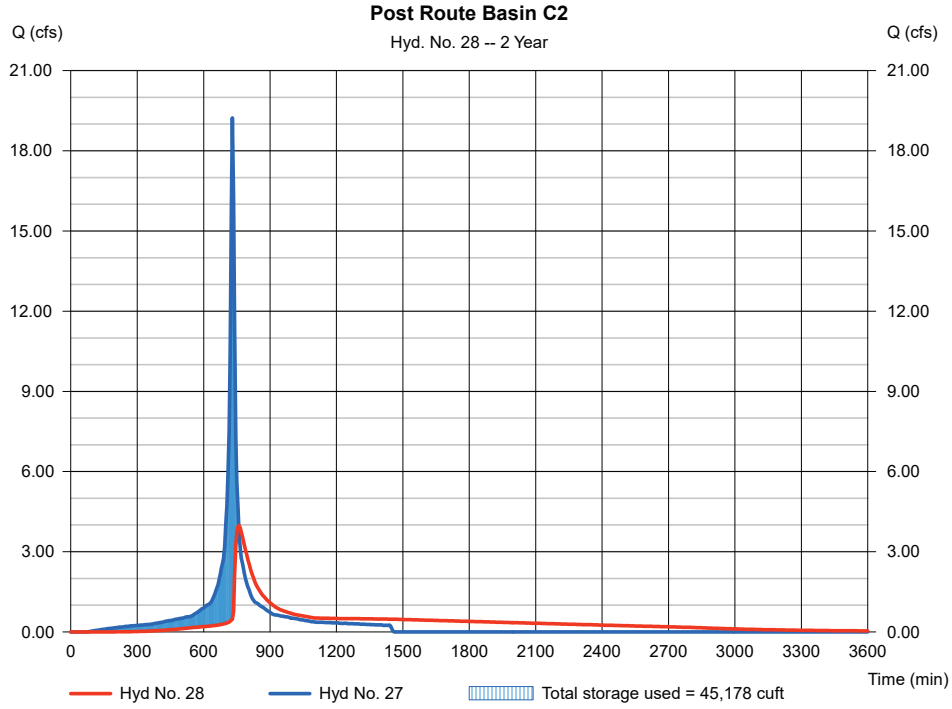
Hydrograph Report

Hyd. No. 28

Post Route Basin C2

Hydrograph type	= Reservoir	Peak discharge	= 3.980 cfs
Storm frequency	= 2 yrs	Time to peak	= 760 min
Time interval	= 5 min	Hyd. volume	= 78,633 cuft
Inflow hyd. No.	= 27 - Proposed Basin C2 (Roof)	Max. Elevation	= 98.16 ft
Reservoir name	= UG Basin C (2)	Max. Storage	= 45,178 cuft

Storage Indication method used.



Pond Report

Pond No. 5 - UG Basin C (2)

Pond Data

UG Chambers - Invert elev. = 96.00 ft, Rise x Span = 4.00 x 8.42 ft, Barrel Len = 1241.73 ft, No. Barrels = 2, Slope = 0.00%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	96.00	n/a	0	0
0.40	96.40	n/a	8,366	8,366
0.80	96.80	n/a	8,366	16,732
1.20	97.20	n/a	8,366	25,098
1.60	97.60	n/a	8,366	33,464
2.00	98.00	n/a	8,366	41,830
2.40	98.40	n/a	8,366	50,196
2.80	98.80	n/a	8,366	58,562
3.20	99.20	n/a	8,366	66,928
3.60	99.60	n/a	8,366	75,294
4.00	100.00	n/a	8,366	83,660

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	4.00	0.00	0.00
Span (in)	= 24.00	4.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 96.00	96.00	0.00	0.00
Length (ft)	= 180.00	0.50	0.50	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	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 97.75	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	96.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.04	837	96.04	0.00 ic	0.00 ic	---	---	0.00	---	---	---	---	---	0.00
0.08	1,673	96.08	0.01 ic	0.01 ic	---	---	0.00	---	---	---	---	---	0.01
0.12	2,510	96.12	0.03 ic	0.03 ic	---	---	0.00	---	---	---	---	---	0.03
0.16	3,346	96.16	0.06 ic	0.05 ic	---	---	0.00	---	---	---	---	---	0.05
0.20	4,183	96.20	0.08 ic	0.08 ic	---	---	0.00	---	---	---	---	---	0.08
0.24	5,020	96.24	0.11 ic	0.11 ic	---	---	0.00	---	---	---	---	---	0.11
0.28	5,856	96.28	0.15 ic	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.32	6,693	96.32	0.17 ic	0.17 ic	---	---	0.00	---	---	---	---	---	0.17
0.36	7,529	96.36	0.18 ic	0.18 ic	---	---	0.00	---	---	---	---	---	0.18
0.40	8,366	96.40	0.20 ic	0.20 ic	---	---	0.00	---	---	---	---	---	0.20
0.44	9,203	96.44	0.22 ic	0.21 ic	---	---	0.00	---	---	---	---	---	0.21
0.48	10,039	96.48	0.23 ic	0.23 ic	---	---	0.00	---	---	---	---	---	0.23
0.52	10,876	96.52	0.24 ic	0.24 ic	---	---	0.00	---	---	---	---	---	0.24
0.56	11,712	96.56	0.27 ic	0.25 ic	---	---	0.00	---	---	---	---	---	0.25
0.60	12,549	96.60	0.27 ic	0.27 ic	---	---	0.00	---	---	---	---	---	0.27
0.64	13,386	96.64	0.29 ic	0.28 ic	---	---	0.00	---	---	---	---	---	0.28
0.68	14,222	96.68	0.29 ic	0.29 ic	---	---	0.00	---	---	---	---	---	0.29
0.72	15,059	96.72	0.30 ic	0.30 ic	---	---	0.00	---	---	---	---	---	0.30
0.76	15,895	96.76	0.32 ic	0.31 ic	---	---	0.00	---	---	---	---	---	0.31
0.80	16,732	96.80	0.32 ic	0.32 ic	---	---	0.00	---	---	---	---	---	0.32
0.84	17,569	96.84	0.35 ic	0.33 ic	---	---	0.00	---	---	---	---	---	0.33
0.88	18,405	96.88	0.35 ic	0.34 ic	---	---	0.00	---	---	---	---	---	0.34
0.92	19,242	96.92	0.35 ic	0.35 ic	---	---	0.00	---	---	---	---	---	0.35
0.96	20,078	96.96	0.38 ic	0.36 ic	---	---	0.00	---	---	---	---	---	0.36
1.00	20,915	97.00	0.38 ic	0.37 ic	---	---	0.00	---	---	---	---	---	0.37
1.04	21,752	97.04	0.38 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
1.08	22,588	97.08	0.38 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
1.12	23,425	97.12	0.41 ic	0.39 ic	---	---	0.00	---	---	---	---	---	0.39
1.16	24,261	97.16	0.41 ic	0.40 ic	---	---	0.00	---	---	---	---	---	0.40
1.20	25,098	97.20	0.41 ic	0.41 ic	---	---	0.00	---	---	---	---	---	0.41
1.24	25,934	97.24	0.42 ic	0.42 ic	---	---	0.00	---	---	---	---	---	0.42
1.28	26,771	97.28	0.44 ic	0.42 ic	---	---	0.00	---	---	---	---	---	0.42

Continues on next page...

UG Basin C (2)

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
1.32	27,608	97.32	0.44 ic	0.43 ic	---	---	0.00	---	---	---	---	---	0.43
1.36	28,444	97.36	0.44 ic	0.44 ic	---	---	0.00	---	---	---	---	---	0.44
1.40	29,281	97.40	0.45 ic	0.45 ic	---	---	0.00	---	---	---	---	---	0.45
1.44	30,117	97.44	0.48 ic	0.45 ic	---	---	0.00	---	---	---	---	---	0.45
1.48	30,954	97.48	0.48 ic	0.46 ic	---	---	0.00	---	---	---	---	---	0.46
1.52	31,791	97.52	0.48 ic	0.47 ic	---	---	0.00	---	---	---	---	---	0.47
1.56	32,627	97.56	0.48 ic	0.48 ic	---	---	0.00	---	---	---	---	---	0.48
1.60	33,464	97.60	0.48 ic	0.48 ic	---	---	0.00	---	---	---	---	---	0.48
1.64	34,300	97.64	0.52 ic	0.49 ic	---	---	0.00	---	---	---	---	---	0.49
1.68	35,137	97.68	0.52 ic	0.50 ic	---	---	0.00	---	---	---	---	---	0.50
1.72	35,974	97.72	0.52 ic	0.50 ic	---	---	0.00	---	---	---	---	---	0.50
1.76	36,810	97.76	0.52 ic	0.51 ic	---	---	0.01	---	---	---	---	---	0.52
1.80	37,647	97.80	0.69 ic	0.51 ic	---	---	0.15	---	---	---	---	---	0.66
1.84	38,483	97.84	0.89 ic	0.51 ic	---	---	0.36	---	---	---	---	---	0.87
1.88	39,320	97.88	1.13 ic	0.51 ic	---	---	0.62	---	---	---	---	---	1.13
1.92	40,157	97.92	1.48 ic	0.50 ic	---	---	0.93	---	---	---	---	---	1.44
1.96	40,993	97.96	1.81 ic	0.50 ic	---	---	1.28	---	---	---	---	---	1.78
2.00	41,830	98.00	2.18 ic	0.50 ic	---	---	1.67	---	---	---	---	---	2.16
2.04	42,666	98.04	2.59 ic	0.49 ic	---	---	2.08	---	---	---	---	---	2.57
2.08	43,503	98.08	3.03 ic	0.49 ic	---	---	2.53	---	---	---	---	---	3.01
2.12	44,340	98.12	3.52 ic	0.49 ic	---	---	3.00	---	---	---	---	---	3.48
2.16	45,176	98.16	4.03 ic	0.48 ic	---	---	3.50	---	---	---	---	---	3.98
2.20	46,013	98.20	4.58 ic	0.48 ic	---	---	4.02	---	---	---	---	---	4.50
2.24	46,849	98.24	5.04 ic	0.47 ic	---	---	4.57	---	---	---	---	---	5.04
2.28	47,686	98.28	5.61 ic	0.47 ic	---	---	5.14	---	---	---	---	---	5.61
2.32	48,523	98.32	6.22 ic	0.47 ic	---	---	5.73	---	---	---	---	---	6.20
2.36	49,359	98.36	6.85 ic	0.46 ic	---	---	6.35	---	---	---	---	---	6.81
2.40	50,196	98.40	7.48 ic	0.46 ic	---	---	6.98	---	---	---	---	---	7.44
2.44	51,032	98.44	8.12 ic	0.46 ic	---	---	7.63	---	---	---	---	---	8.09
2.48	51,869	98.48	8.76 ic	0.45 ic	---	---	8.31	---	---	---	---	---	8.76
2.52	52,706	98.52	9.54 ic	0.45 ic	---	---	9.00	---	---	---	---	---	9.45
2.56	53,542	98.56	10.15 ic	0.44 ic	---	---	9.71	---	---	---	---	---	10.15
2.60	54,379	98.60	10.88 ic	0.44 ic	---	---	10.44	---	---	---	---	---	10.87
2.64	55,215	98.64	11.69 ic	0.43 ic	---	---	11.18	---	---	---	---	---	11.61
2.68	56,052	98.68	12.44 ic	0.42 ic	---	---	11.95	---	---	---	---	---	12.37
2.72	56,889	98.72	13.19 ic	0.41 ic	---	---	12.73 s	---	---	---	---	---	13.14
2.76	57,725	98.76	13.83 ic	0.41 ic	---	---	13.42 s	---	---	---	---	---	13.83
2.80	58,562	98.80	14.44 ic	0.40 ic	---	---	14.04 s	---	---	---	---	---	14.44
2.84	59,398	98.84	14.99 ic	0.39 ic	---	---	14.60 s	---	---	---	---	---	14.99
2.88	60,235	98.88	15.50 ic	0.38 ic	---	---	15.12 s	---	---	---	---	---	15.50
2.92	61,072	98.92	16.01 ic	0.38 ic	---	---	15.63 s	---	---	---	---	---	16.01
2.96	61,908	98.96	16.49 ic	0.37 ic	---	---	16.12 s	---	---	---	---	---	16.49
3.00	62,745	99.00	16.96 ic	0.36 ic	---	---	16.59 s	---	---	---	---	---	16.96
3.04	63,581	99.04	17.40 ic	0.36 ic	---	---	17.04 s	---	---	---	---	---	17.40
3.08	64,418	99.08	17.83 ic	0.35 ic	---	---	17.48 s	---	---	---	---	---	17.83
3.12	65,255	99.12	18.24 ic	0.34 ic	---	---	17.90 s	---	---	---	---	---	18.24
3.16	66,091	99.16	18.63 ic	0.34 ic	---	---	18.30 s	---	---	---	---	---	18.63
3.20	66,928	99.20	19.02 ic	0.33 ic	---	---	18.68 s	---	---	---	---	---	19.02
3.24	67,764	99.24	19.38 ic	0.32 ic	---	---	19.06 s	---	---	---	---	---	19.38
3.28	68,601	99.28	19.74 ic	0.32 ic	---	---	19.42 s	---	---	---	---	---	19.74
3.32	69,438	99.32	20.09 ic	0.31 ic	---	---	19.77 s	---	---	---	---	---	20.09
3.36	70,274	99.36	20.42 ic	0.31 ic	---	---	20.11 s	---	---	---	---	---	20.42
3.40	71,111	99.40	20.75 ic	0.30 ic	---	---	20.44 s	---	---	---	---	---	20.74
3.44	71,947	99.44	21.06 ic	0.30 ic	---	---	20.76 s	---	---	---	---	---	21.06
3.48	72,784	99.48	21.37 ic	0.29 ic	---	---	21.07 s	---	---	---	---	---	21.37
3.52	73,620	99.52	21.66 ic	0.29 ic	---	---	21.38 s	---	---	---	---	---	21.66
3.56	74,457	99.56	21.95 ic	0.28 ic	---	---	21.67 s	---	---	---	---	---	21.95
3.60	75,294	99.60	22.24 ic	0.28 ic	---	---	21.96 s	---	---	---	---	---	22.24
3.64	76,130	99.64	22.51 ic	0.27 ic	---	---	22.24 s	---	---	---	---	---	22.51
3.68	76,967	99.68	22.78 ic	0.27 ic	---	---	22.51 s	---	---	---	---	---	22.78
3.72	77,803	99.72	23.05 ic	0.27 ic	---	---	22.78 s	---	---	---	---	---	23.05
3.76	78,640	99.76	23.31 ic	0.26 ic	---	---	23.04 s	---	---	---	---	---	23.30
3.80	79,477	99.80	23.56 ic	0.26 ic	---	---	23.30 s	---	---	---	---	---	23.56
3.84	80,313	99.84	23.81 ic	0.25 ic	---	---	23.55 s	---	---	---	---	---	23.81
3.88	81,150	99.88	24.05 ic	0.25 ic	---	---	23.80 s	---	---	---	---	---	24.05
3.92	81,986	99.92	24.29 ic	0.25 ic	---	---	24.04 s	---	---	---	---	---	24.29
3.96	82,823	99.96	24.52 ic	0.24 ic	---	---	24.28 s	---	---	---	---	---	24.52
4.00	83,660	100.00	24.75 ic	0.24 ic	---	---	24.51 s	---	---	---	---	---	24.75

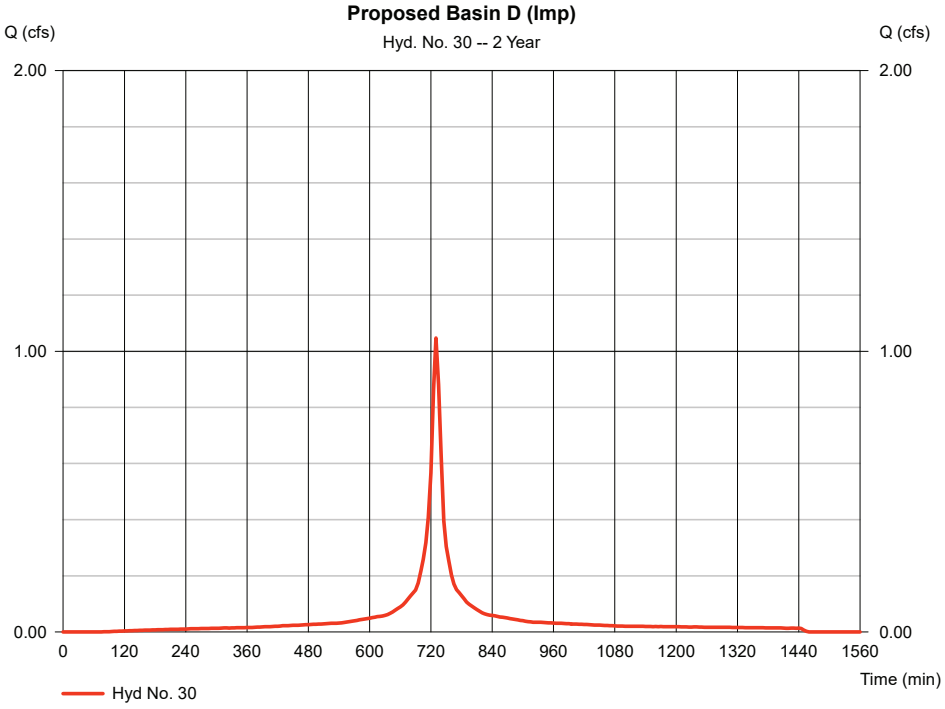
...End

Hydrograph Report

Hyd. No. 30

Proposed Basin D (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.047 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 4,293 cuft
Drainage area	= 0.410 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

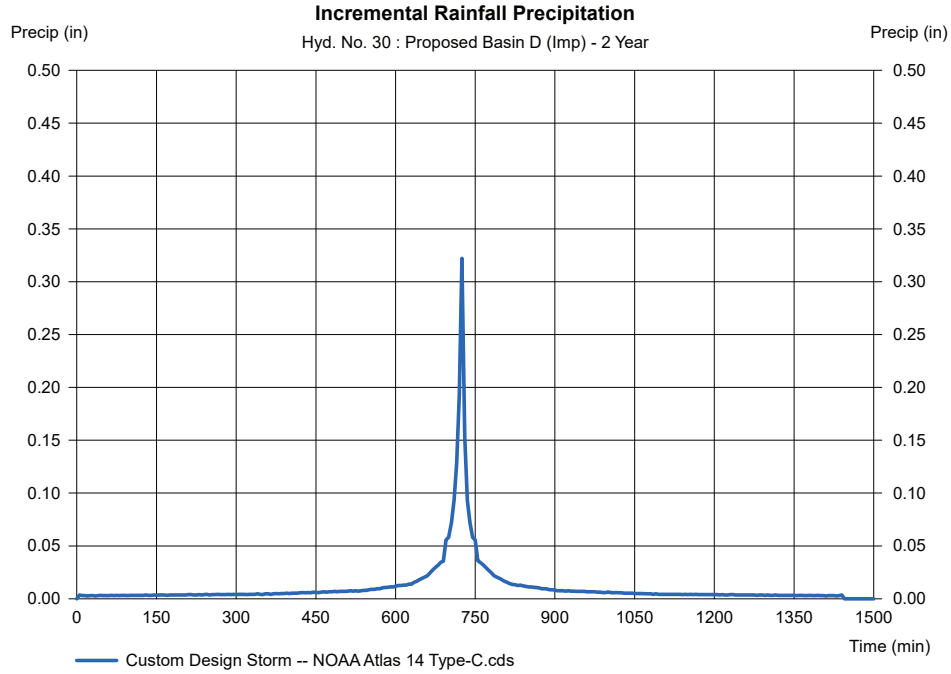


Precipitation Report

Hyd. No. 30

Proposed Basin D (Imp)

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		



Hydrograph Report

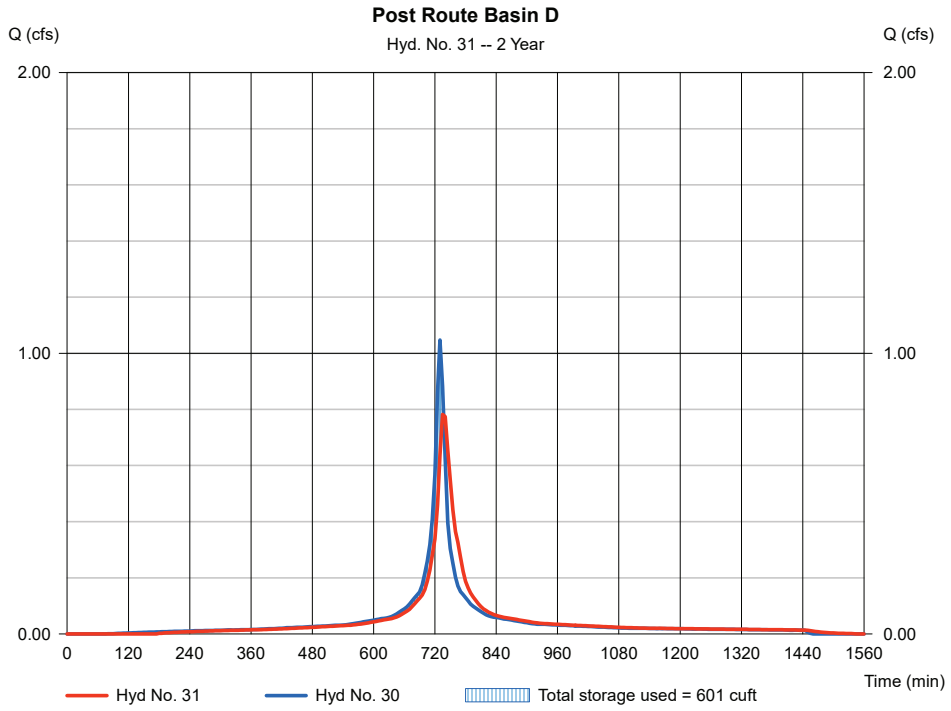
Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 31

Post Route Basin D

Hydrograph type	= Reservoir	Peak discharge	= 0.782 cfs
Storm frequency	= 2 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 4,271 cuft
Inflow hyd. No.	= 30 - Proposed Basin D (Imp)	Max. Elevation	= 96.51 ft
Reservoir name	= UG Basin D	Max. Storage	= 601 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Pond No. 6 - UG Basin D

Pond Data

UG Chambers - Invert elev. = 96.10 ft, Rise x Span = 2.00 x 2.00 ft, Barrel Len = 105.00 ft, No. Barrels = 12, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	96.10	n/a	0	0
0.20	96.30	n/a	217	217
0.40	96.50	n/a	378	595
0.60	96.70	n/a	460	1,055
0.80	96.90	n/a	506	1,561
1.00	97.10	n/a	529	2,090
1.20	97.30	n/a	529	2,619
1.40	97.50	n/a	506	3,125
1.60	97.70	n/a	459	3,584
1.80	97.90	n/a	378	3,962
2.00	98.10	n/a	217	4,179

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	4.00	6.00	0.00
Span (in)	= 24.00	4.00	6.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 96.10	96.10	96.50	0.00
Length (ft)	= 30.00	0.50	0.50	0.00
Slope (%)	= 0.35	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	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 96.60	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	96.10	0.00	0.00	0.00	---	0.00	---	---	---	---	---	0.00
0.02	22	96.12	0.00 oc	0.00 ic	0.00	---	0.00	---	---	---	---	---	0.00
0.04	43	96.14	0.01 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.01
0.06	65	96.16	0.02 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.02
0.08	87	96.18	0.04 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.04
0.10	109	96.20	0.06 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.06
0.12	130	96.22	0.09 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.09
0.14	152	96.24	0.12 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.12
0.16	174	96.26	0.15 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.15
0.18	196	96.28	0.18 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.18
0.20	217	96.30	0.22 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.22
0.22	255	96.32	0.28 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.28
0.24	293	96.34	0.33 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.33
0.26	331	96.36	0.35 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.35
0.28	369	96.38	0.41 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.41
0.30	406	96.40	0.46 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.46
0.32	444	96.42	0.53 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.53
0.34	482	96.44	0.59 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.59
0.36	520	96.46	0.63 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.63
0.38	558	96.48	0.70 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.70
0.40	595	96.50	0.78 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.78
0.42	641	96.52	0.82 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.82
0.44	687	96.54	0.90 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.90
0.46	733	96.56	0.94 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.94
0.48	779	96.58	1.03 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.03
0.50	825	96.60	1.08 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.08
0.52	871	96.62	1.18 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.18
0.54	917	96.64	1.22 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.22
0.56	963	96.66	1.27 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.27
0.58	1,009	96.68	1.38 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.38
0.60	1,055	96.70	1.43 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.43
0.62	1,106	96.72	1.54 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.54
0.64	1,156	96.74	1.59 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.59

Continues on next page...

UG Basin D

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
0.66	1,207	96.76	1.65 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.65
0.68	1,257	96.78	1.76 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.76
0.70	1,308	96.80	1.82 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.82
0.72	1,359	96.82	1.87 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.87
0.74	1,409	96.84	1.99 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.99
0.76	1,460	96.86	2.05 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.05
0.78	1,511	96.88	2.11 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.11
0.80	1,561	96.90	2.23 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.23
0.82	1,614	96.92	2.29 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.29
0.84	1,667	96.94	2.36 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.36
0.86	1,720	96.96	2.48 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.48
0.88	1,773	96.98	2.54 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.54
0.90	1,826	97.00	2.61 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.61
0.92	1,878	97.02	2.67 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.67
0.94	1,931	97.04	2.80 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.80
0.96	1,984	97.06	2.86 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.86
0.98	2,037	97.08	2.92 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.92
1.00	2,090	97.10	2.99 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.99
1.02	2,143	97.12	3.11 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.11
1.04	2,196	97.14	3.18 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.18
1.06	2,249	97.16	3.24 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.24
1.08	2,302	97.18	3.37 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.37
1.10	2,354	97.20	3.43 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.43
1.12	2,407	97.22	3.49 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.49
1.14	2,460	97.24	3.56 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.56
1.16	2,513	97.26	3.68 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.68
1.18	2,566	97.28	3.74 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.74
1.20	2,619	97.30	3.80 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.80
1.22	2,669	97.32	3.92 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.92
1.24	2,720	97.34	3.98 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.98
1.26	2,771	97.36	4.04 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.04
1.28	2,821	97.38	4.16 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.16
1.30	2,872	97.40	4.22 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.22
1.32	2,923	97.42	4.27 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.27
1.34	2,973	97.44	4.39 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.39
1.36	3,024	97.46	4.44 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.44
1.38	3,074	97.48	4.50 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.50
1.40	3,125	97.50	4.60 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.60
1.42	3,171	97.52	4.65 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.65
1.44	3,217	97.54	4.75 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.75
1.46	3,263	97.56	4.80 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.80
1.48	3,309	97.58	4.85 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.85
1.50	3,355	97.60	4.95 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.95
1.52	3,401	97.62	4.99 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.99
1.54	3,447	97.64	5.08 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.08
1.56	3,492	97.66	5.12 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.12
1.58	3,538	97.68	5.21 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.21
1.60	3,584	97.70	5.25 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.25
1.62	3,622	97.72	5.32 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.32
1.64	3,660	97.74	5.39 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.39
1.66	3,698	97.76	5.43 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.43
1.68	3,735	97.78	5.50 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.50
1.70	3,773	97.80	5.56 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.56
1.72	3,811	97.82	5.61 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.61
1.74	3,849	97.84	5.67 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.67
1.76	3,886	97.86	5.69 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.69
1.78	3,924	97.88	5.74 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.74
1.80	3,962	97.90	5.80 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.80
1.82	3,984	97.92	5.84 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.84
1.84	4,005	97.94	5.87 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.87
1.86	4,027	97.96	5.90 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.90
1.88	4,049	97.98	5.94 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.94
1.90	4,071	98.00	5.97 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.97
1.92	4,092	98.02	5.99 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.99
1.94	4,114	98.04	6.00 oc	0.00	0.00	---	0.00	---	---	---	---	---	6.00
1.96	4,136	98.06	6.01 oc	0.00	0.00	---	0.00	---	---	---	---	---	6.01
1.98	4,157	98.08	6.01 oc	0.00	0.00	---	0.00	---	---	---	---	---	6.01
2.00	4,179	98.10	5.97 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.97

...End

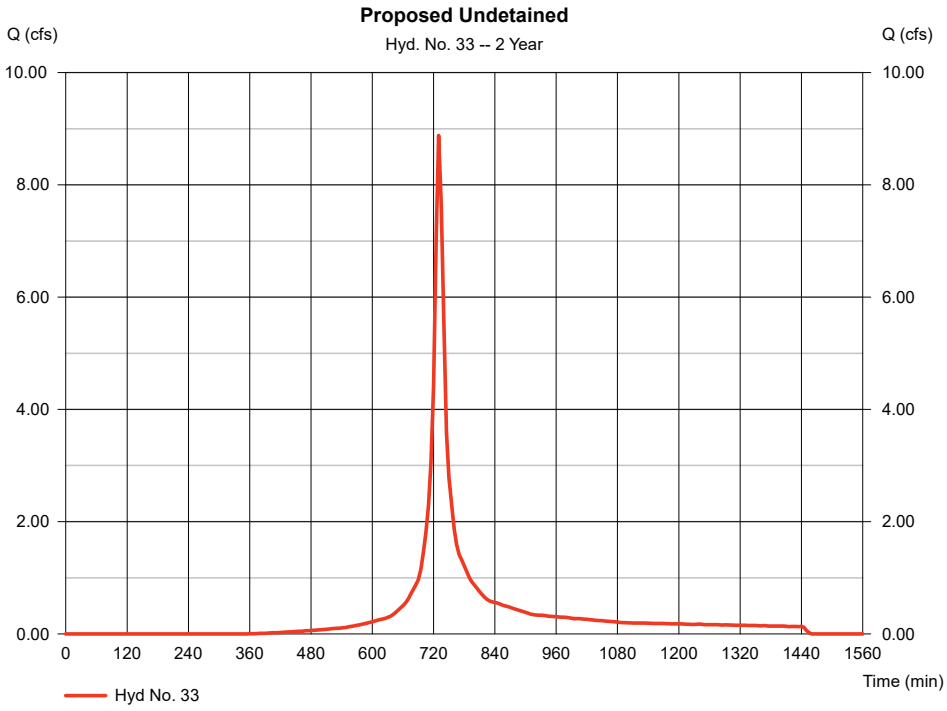
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 33

Proposed Undetained

Hydrograph type	= SCS Runoff	Peak discharge	= 8.880 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 32,602 cuft
Drainage area	= 4.390 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.31 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

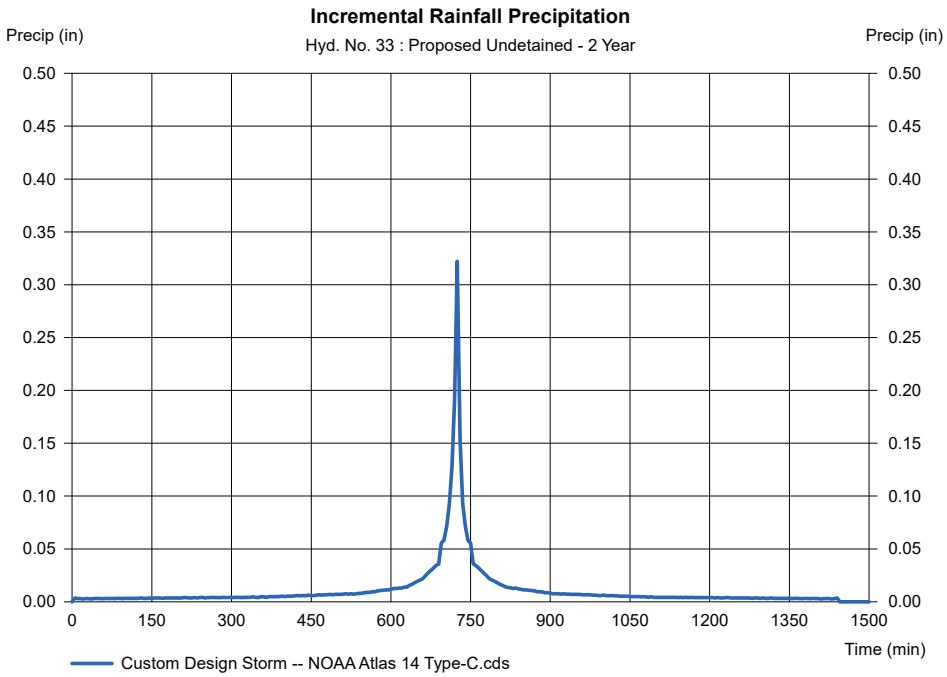


Precipitation Report

Hyd. No. 33

Proposed Undetained

Storm Frequency	= 2 yrs	Time interval	= 5 min
Total precip.	= 3.3100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

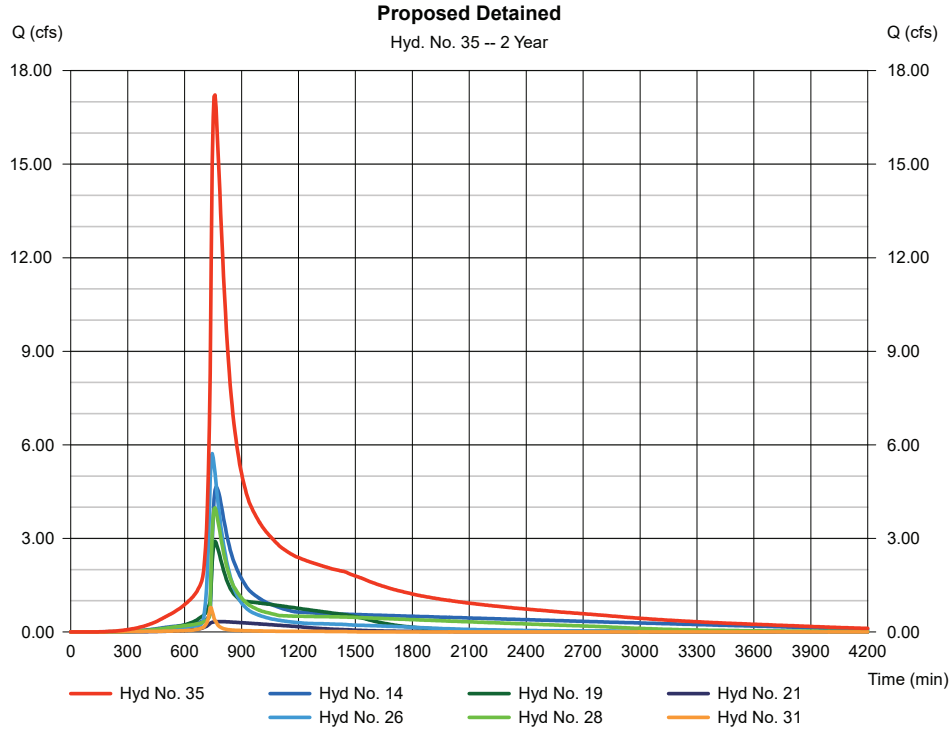


Hydrograph Report

Hyd. No. 35

Proposed Detained

Hydrograph type	= Combine	Peak discharge	= 17.22 cfs
Storm frequency	= 2 yrs	Time to peak	= 760 min
Time interval	= 5 min	Hyd. volume	= 331,199 cuft
Inflow hyds.	= 14, 19, 21, 26, 28, 31	Contrib. drain. area	= 0.000 ac



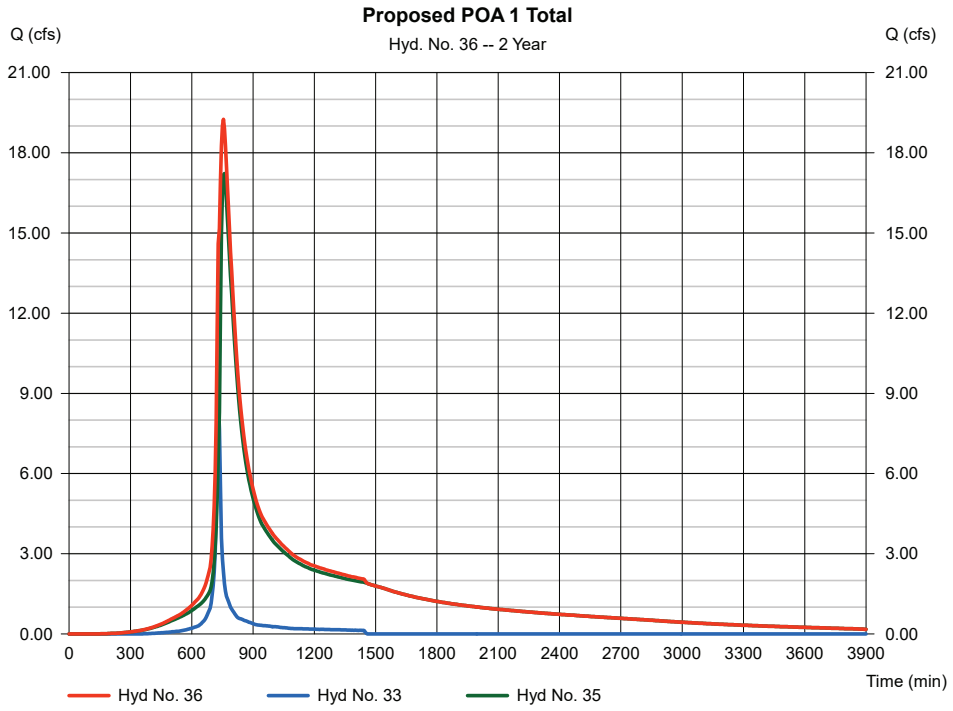
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 36

Proposed POA 1 Total

Hydrograph type	= Combine	Peak discharge	= 19.26 cfs
Storm frequency	= 2 yrs	Time to peak	= 755 min
Time interval	= 5 min	Hyd. volume	= 360,459 cuft
Inflow hyds.	= 33, 35	Contrib. drain. area	= 4.390 ac



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

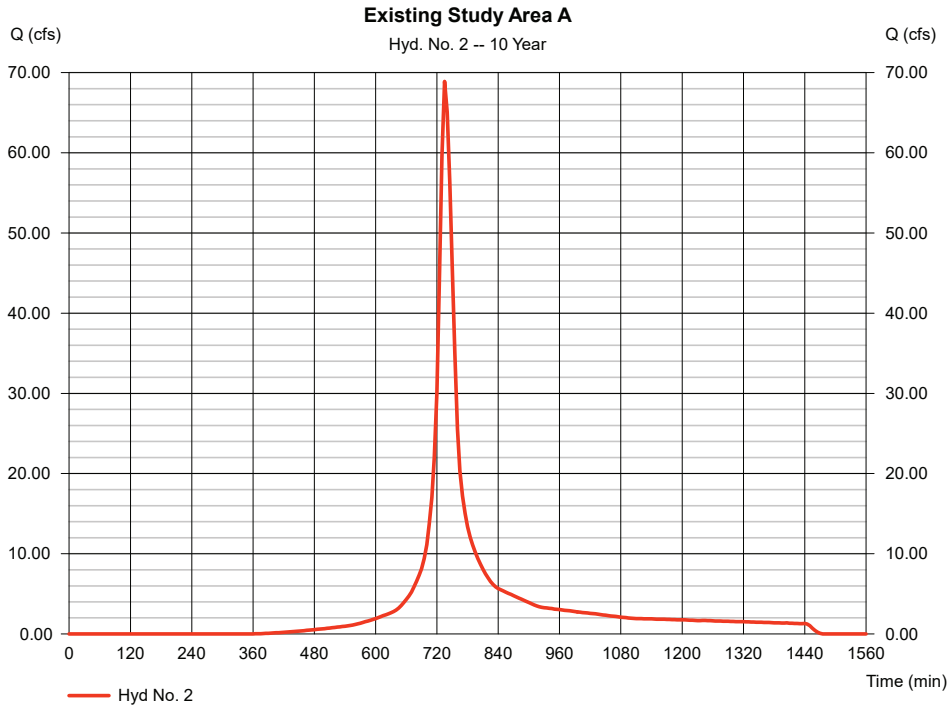
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
2	SCS Runoff	68.89	5	735	315,478	----	------	------	Existing Study Area A
4	SCS Runoff	9.918	5	745	58,486	----	------	------	Existing Study Area B
6	SCS Runoff	10.35	5	735	47,700	----	------	------	Existing Study Area C
8	Combine	86.89	5	735	421,664	2, 4, 6,	------	------	Existing Total (POA 'A')
10	SCS Runoff	13.97	5	730	58,315	----	------	------	Proposed Basin A (Imp)
11	SCS Runoff	1.404	5	730	5,276	----	------	------	Proposed Basin A (Perv)
12	SCS Runoff	29.50	5	730	123,127	----	------	------	Proposed Basin A (Roof)
13	Combine	44.87	5	730	186,718	10, 11, 12	------	------	Proposed Basin A
14	Reservoir	13.72	5	750	186,510	13	99.65	98,010	Post Route Basin A
16	SCS Runoff	20.70	5	730	86,416	----	------	------	Proposed Basin B1 (Imp)
17	SCS Runoff	1.987	5	730	7,464	----	------	------	Proposed Basin B1 (Perv)
18	Combine	22.69	5	730	93,880	16, 17	------	------	Proposed Basin B1 Total
19	Reservoir	10.09	5	745	93,703	18	100.32	41,643	Post Route Basin B1
20	SCS Runoff	4.358	5	730	18,193	----	------	------	Proposed Basin B2 (Roof)
21	Reservoir	0.431	5	790	18,114	20	99.32	9,972	Post Route Basin B2
23	SCS Runoff	19.69	5	730	82,193	----	------	------	Proposed Basin C1 (Imp)
24	SCS Runoff	1.952	5	730	7,335	----	------	------	Proposed Basin C1 (Perv)
25	Combine	21.64	5	730	89,528	23, 24	------	------	Proposed Basin C1 Total
26	Reservoir	9.860	5	745	89,309	25	97.65	34,297	Post Route Basin C1
27	SCS Runoff	29.30	5	730	122,315	----	------	------	Proposed Basin C2 (Roof)
28	Reservoir	14.02	5	745	122,096	27	98.79	57,992	Post Route Basin C2
30	SCS Runoff	1.596	5	730	6,660	----	------	------	Proposed Basin D (Imp)
31	Reservoir	1.177	5	735	6,637	30	96.63	873	Post Route Basin D
33	SCS Runoff	15.04	5	730	56,495	----	------	------	Proposed Undetained
35	Combine	49.05	5	745	516,369	14, 19, 21, 26, ~~28, 31~~,	------	------	Proposed Detained
36	Combine	56.61	5	740	567,072	33, 35	------	------	Proposed POA 1 Total

Hydrograph Report

Hyd. No. 2

Existing Study Area A

Hydrograph type	= SCS Runoff	Peak discharge	= 68.89 cfs
Storm frequency	= 10 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 315,478 cuft
Drainage area	= 26.500 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 23.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

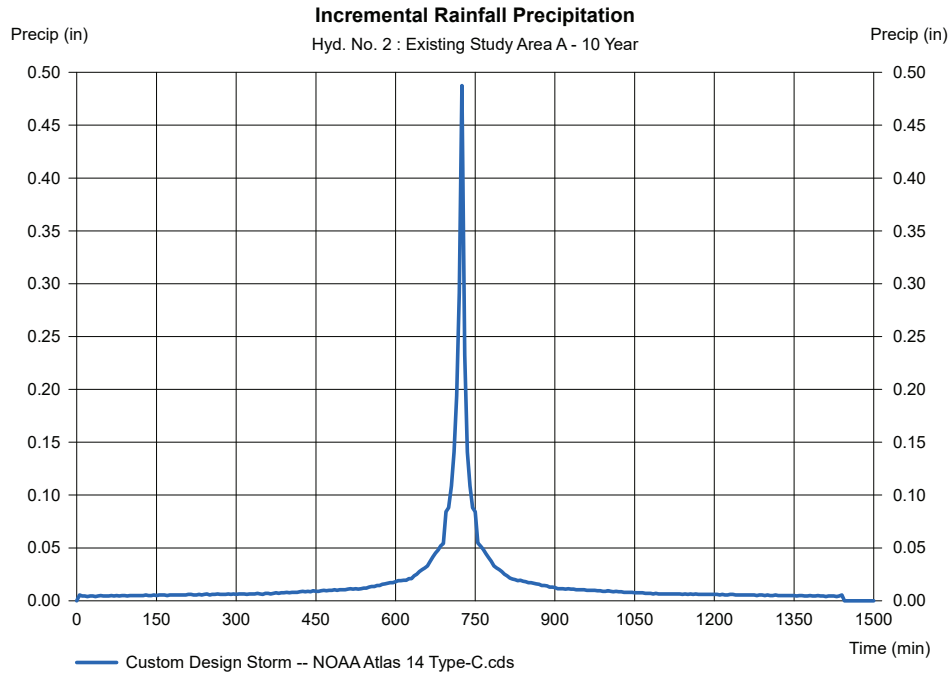


Precipitation Report

Hyd. No. 2

Existing Study Area A

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

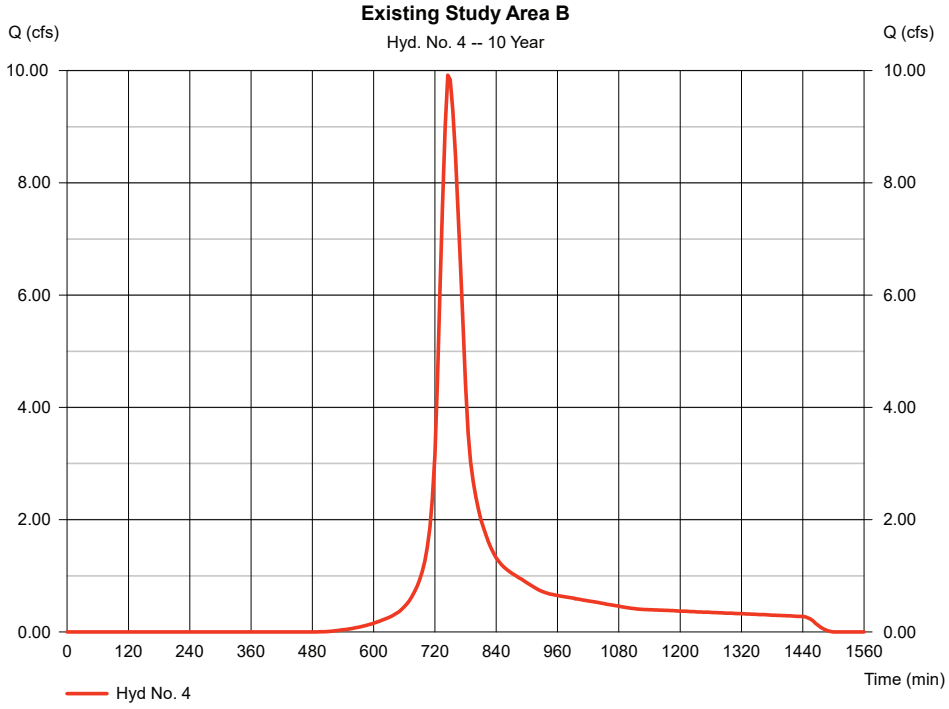


Hydrograph Report

Hyd. No. 4

Existing Study Area B

Hydrograph type	= SCS Runoff	Peak discharge	= 9.918 cfs
Storm frequency	= 10 yrs	Time to peak	= 745 min
Time interval	= 5 min	Hyd. volume	= 58,486 cuft
Drainage area	= 6.280 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 37.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

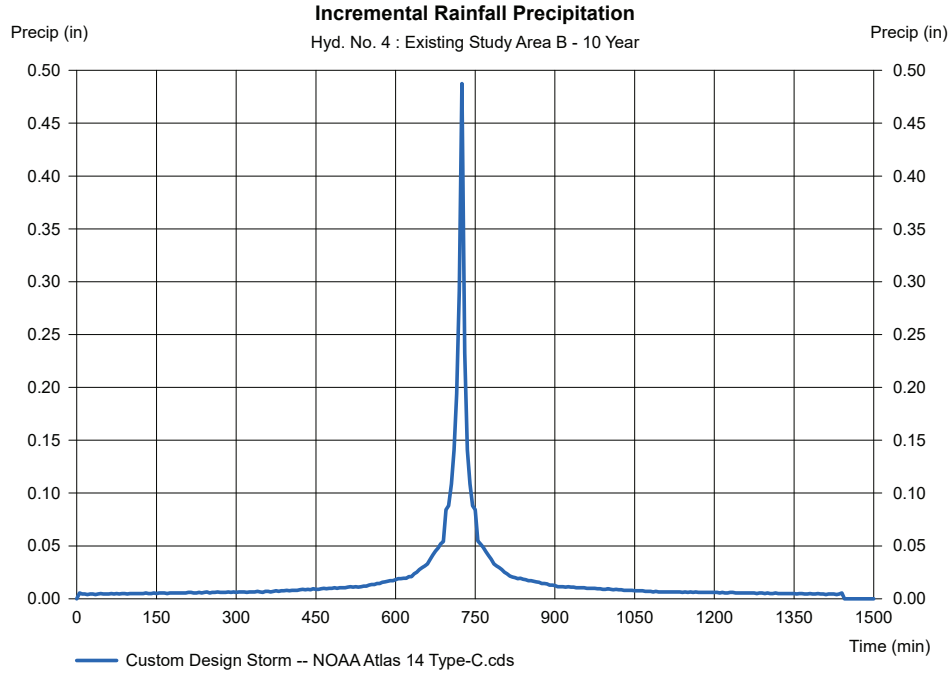


Precipitation Report

Hyd. No. 4

Existing Study Area B

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

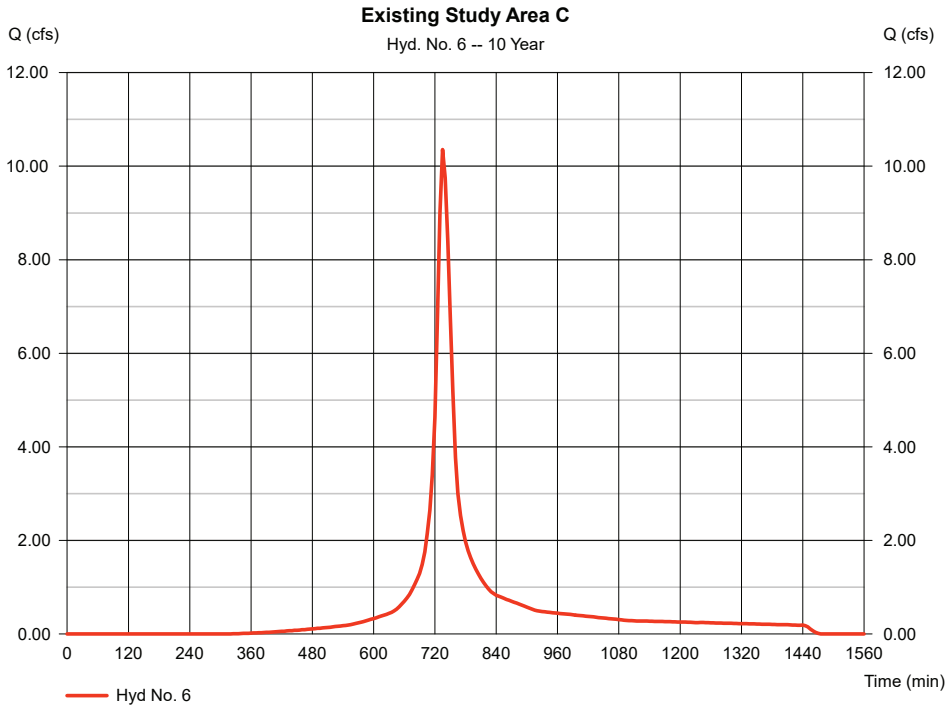


Hydrograph Report

Hyd. No. 6

Existing Study Area C

Hydrograph type	= SCS Runoff	Peak discharge	= 10.35 cfs
Storm frequency	= 10 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 47,700 cuft
Drainage area	= 3.780 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 19.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

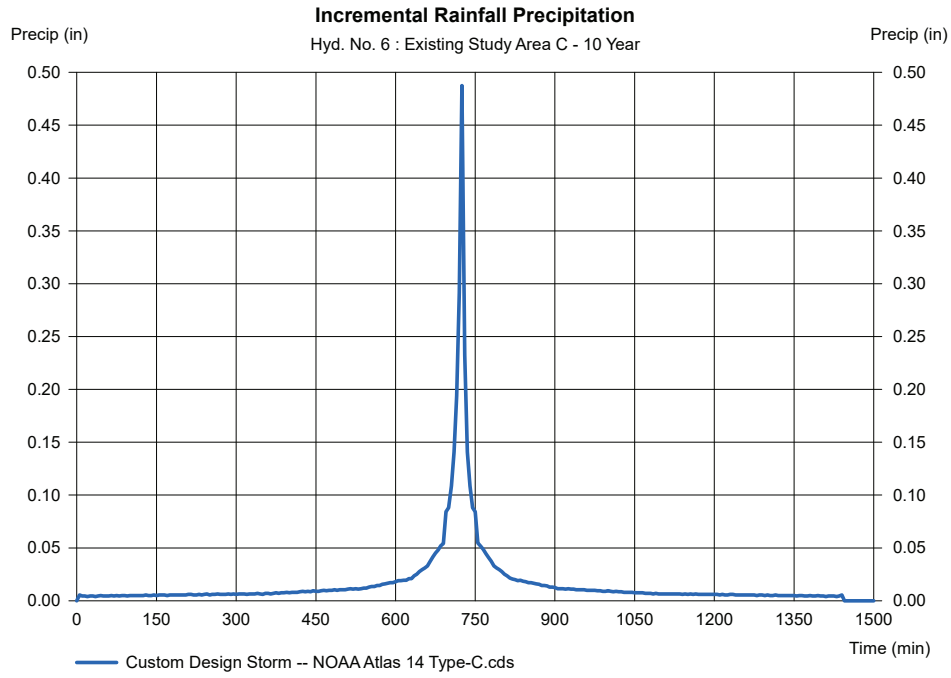


Precipitation Report

Hyd. No. 6

Existing Study Area C

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

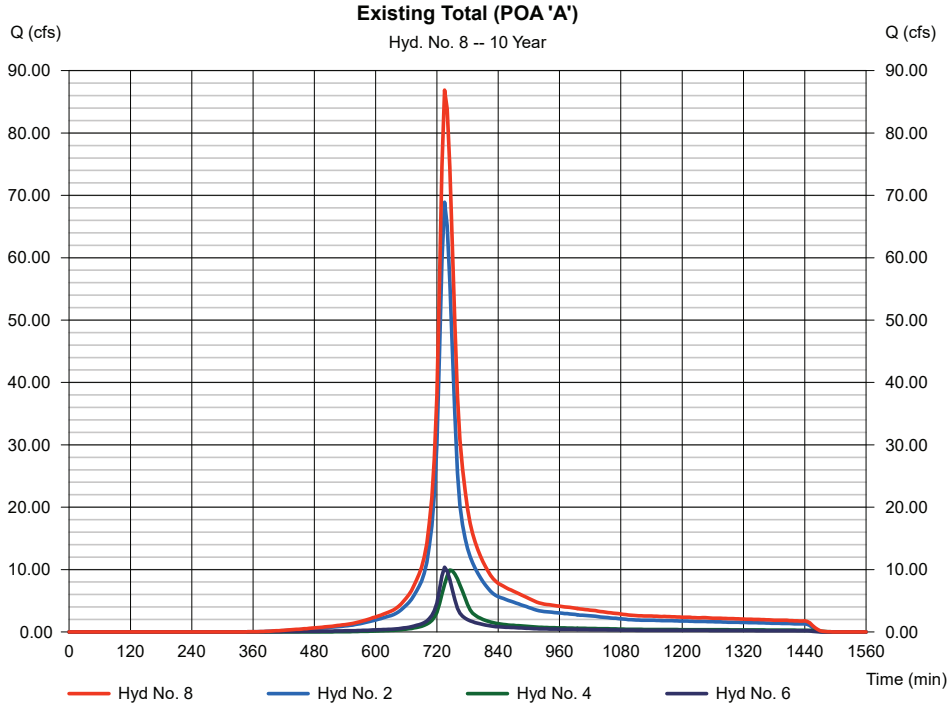


Hydrograph Report

Hyd. No. 8

Existing Total (POA 'A')

Hydrograph type	= Combine	Peak discharge	= 86.89 cfs
Storm frequency	= 10 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 421,664 cuft
Inflow hyds.	= 2, 4, 6	Contrib. drain. area	= 36.560 ac

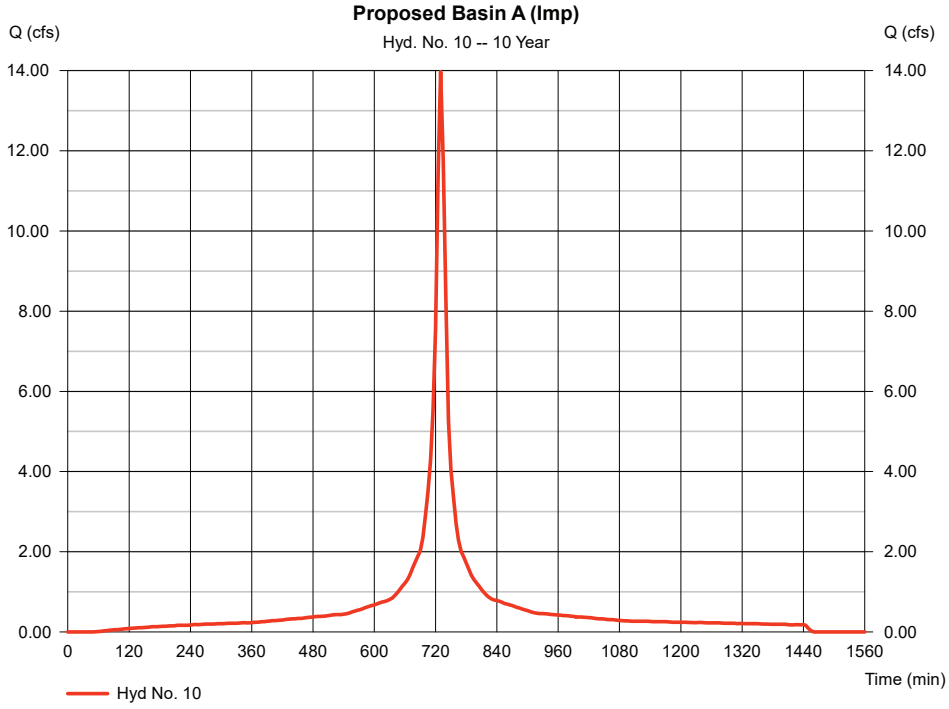


Hydrograph Report

Hyd. No. 10

Proposed Basin A (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 13.97 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 58,315 cuft
Drainage area	= 3.590 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

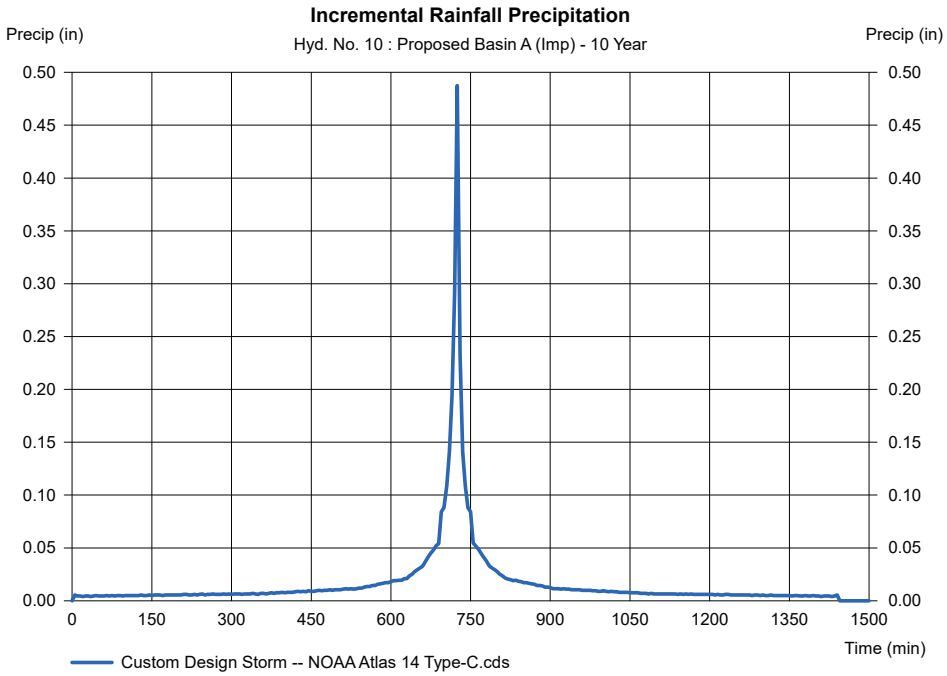


Precipitation Report

Hyd. No. 10

Proposed Basin A (Imp)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

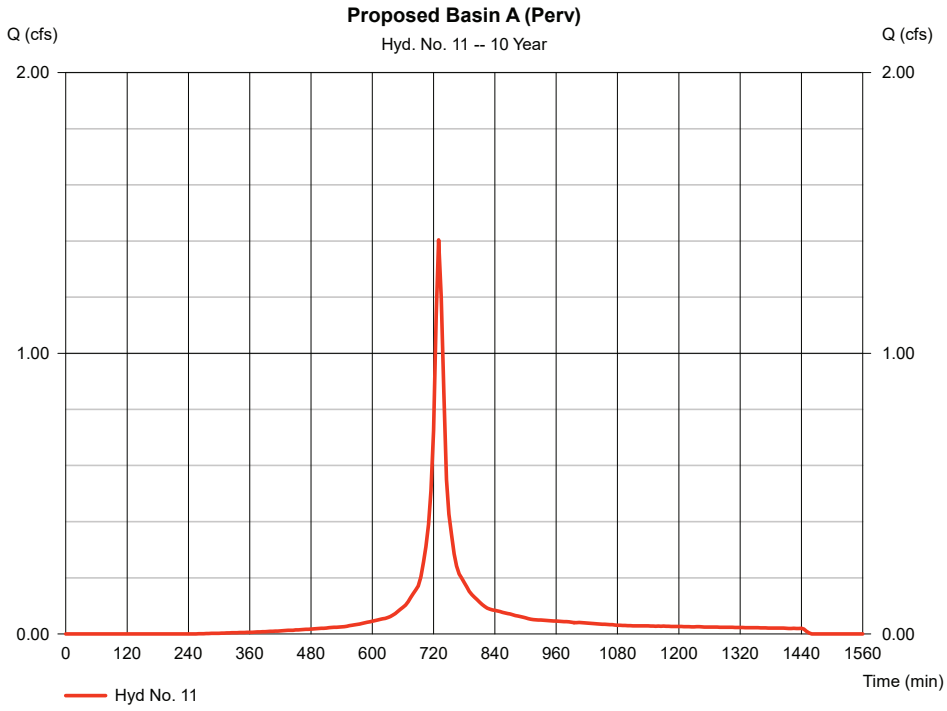


Hydrograph Report

Hyd. No. 11

Proposed Basin A (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.404 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 5,276 cuft
Drainage area	= 0.410 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

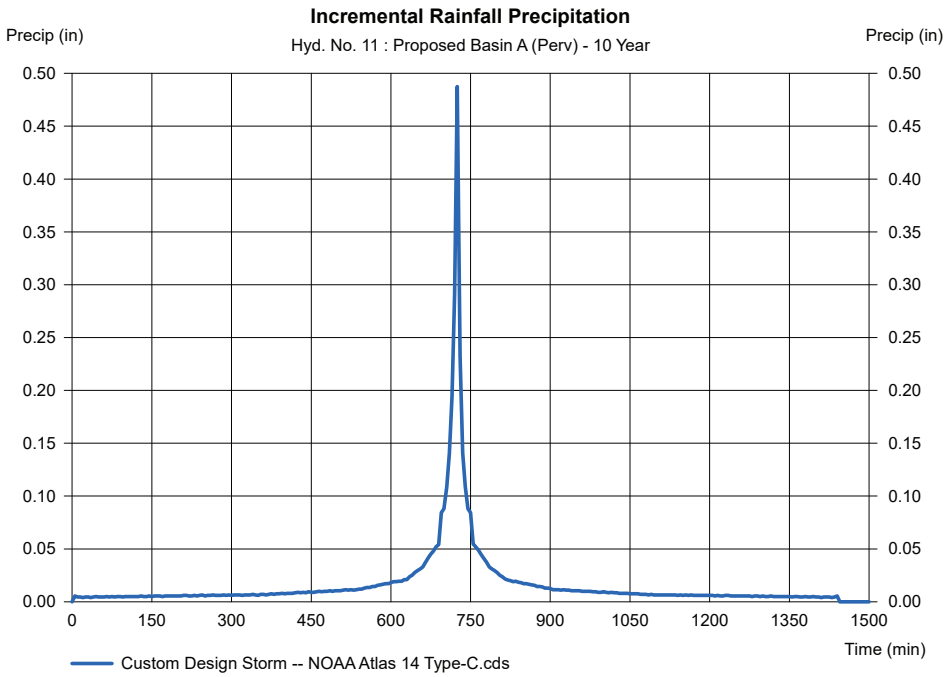


Precipitation Report

Hyd. No. 11

Proposed Basin A (Perv)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

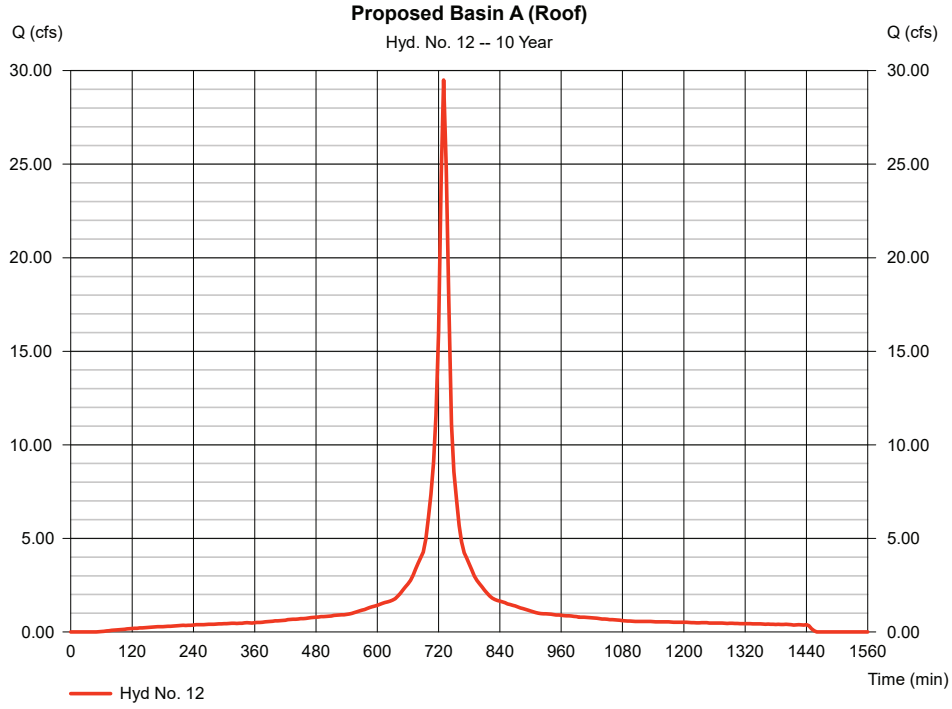


Hydrograph Report

Hyd. No. 12

Proposed Basin A (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 29.50 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 123,127 cuft
Drainage area	= 7.580 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

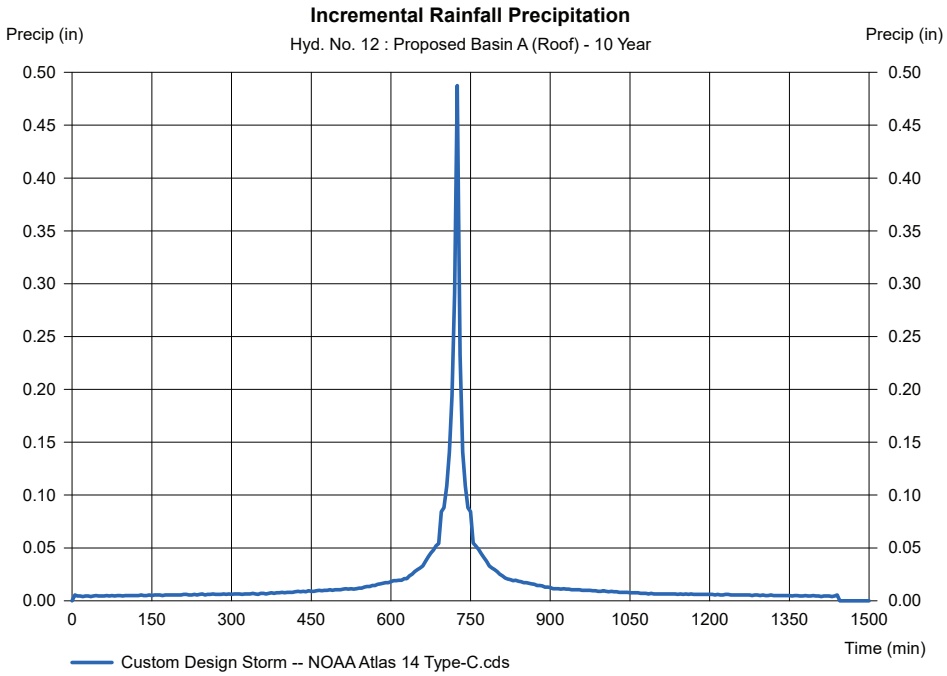


Precipitation Report

Hyd. No. 12

Proposed Basin A (Roof)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

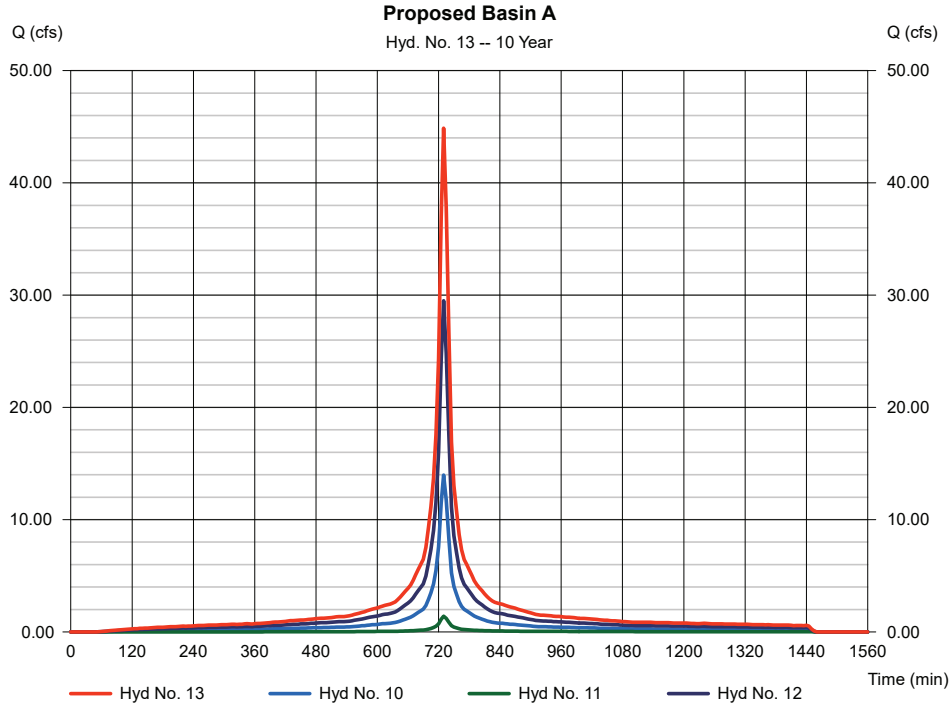


Hydrograph Report

Hyd. No. 13

Proposed Basin A

Hydrograph type	= Combine	Peak discharge	= 44.87 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 186,718 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 11.580 ac



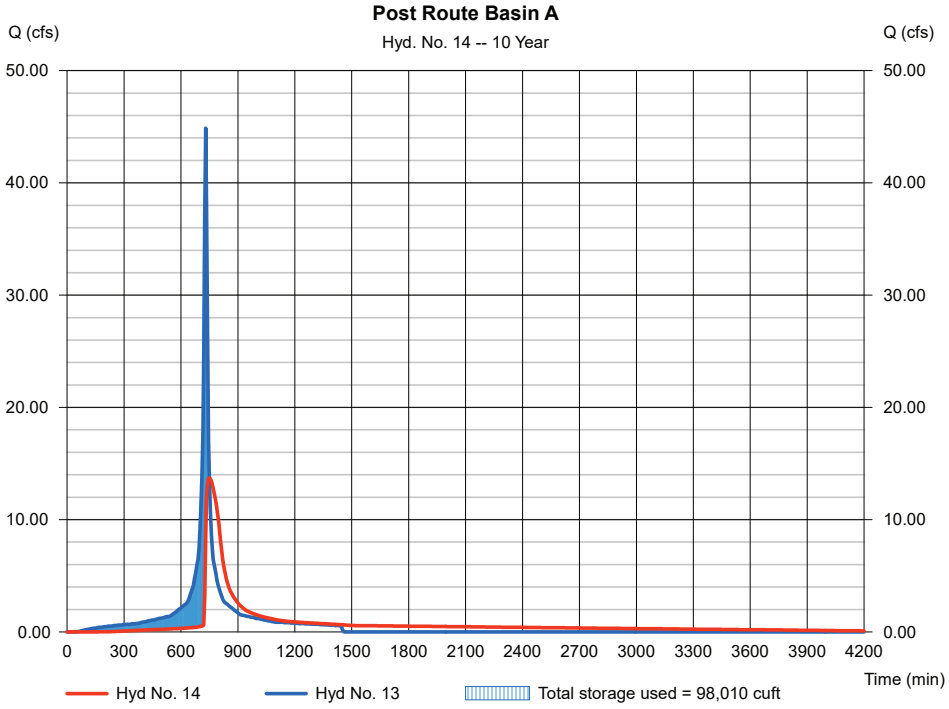
Hydrograph Report

Hyd. No. 14

Post Route Basin A

Hydrograph type	=	Reservoir	Peak discharge	=	13.72 cfs
Storm frequency	=	10 yrs	Time to peak	=	750 min
Time interval	=	5 min	Hyd. volume	=	186,510 cuft
Inflow hyd. No.	=	13 - Proposed Basin A	Max. Elevation	=	99.65 ft
Reservoir name	=	UG Basin A	Max. Storage	=	98,010 cuft

Storage Indication method used.

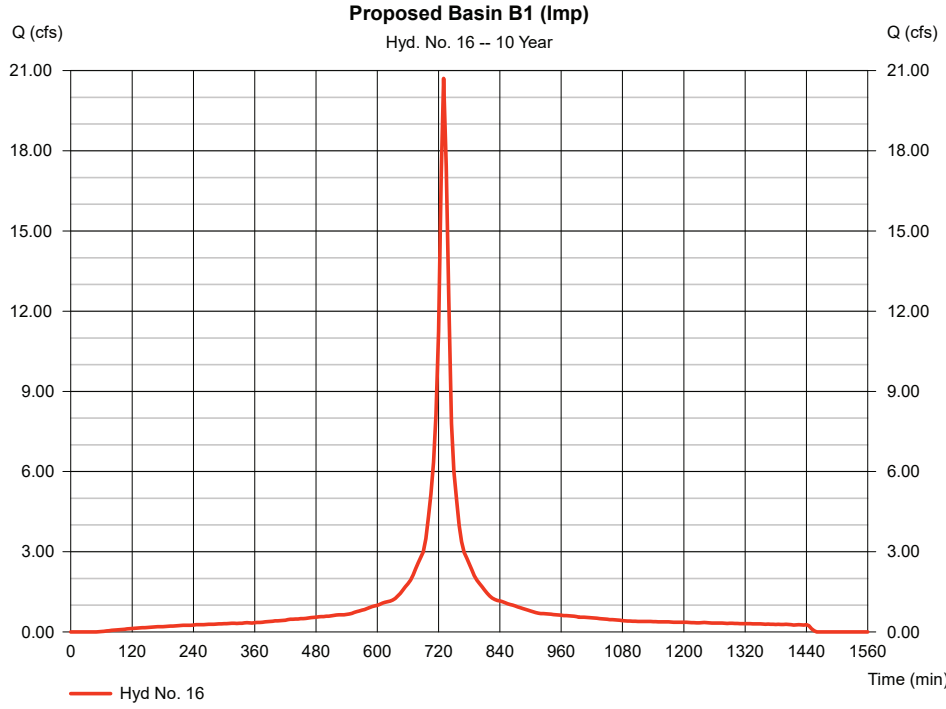


Hydrograph Report

Hyd. No. 16

Proposed Basin B1 (Imp)

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.70 cfs
Storm frequency	=	10 yrs	Time to peak	=	730 min
Time interval	=	5 min	Hyd. volume	=	86,416 cuft
Drainage area	=	5.320 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	10.00 min
Total precip.	=	5.01 in	Distribution	=	Custom
Storm duration	=	NOAA Atlas 14 Type-C.cds	Shape factor	=	484

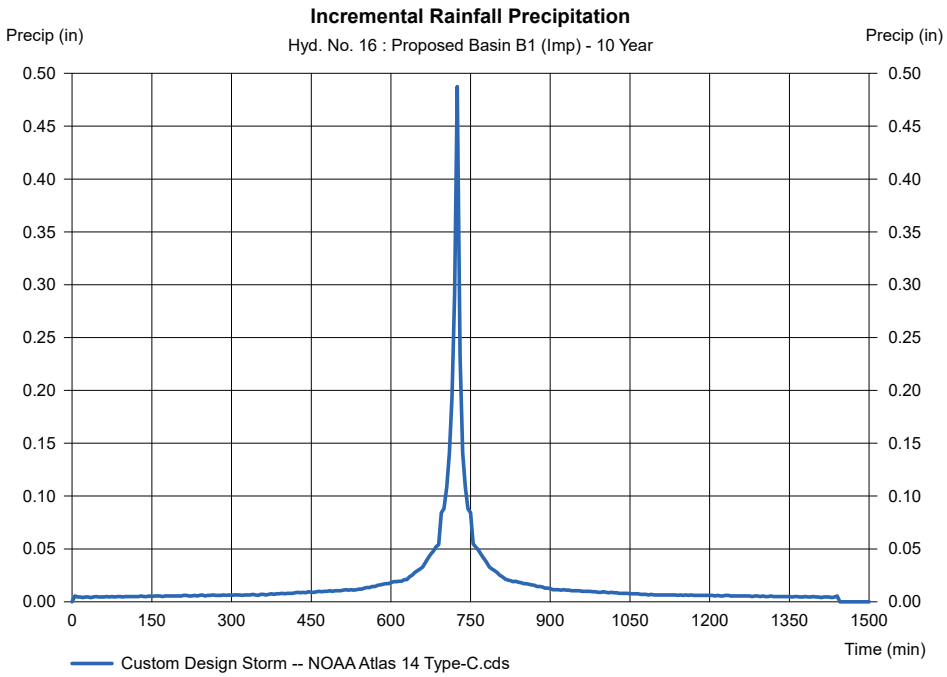


Precipitation Report

Hyd. No. 16

Proposed Basin B1 (Imp)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

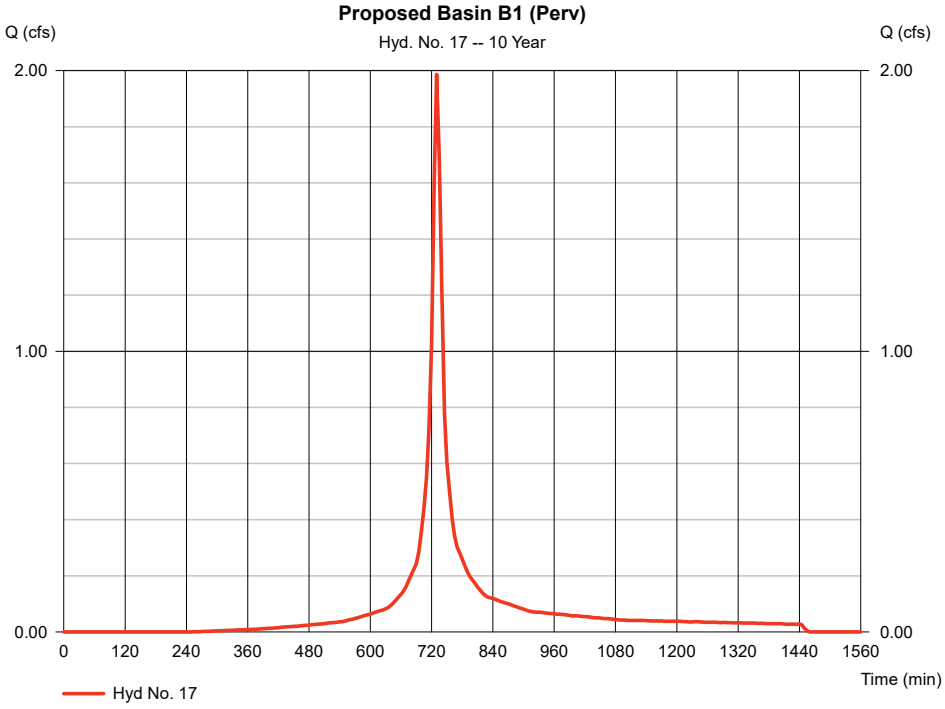


Hydrograph Report

Hyd. No. 17

Proposed Basin B1 (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.987 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 7,464 cuft
Drainage area	= 0.580 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

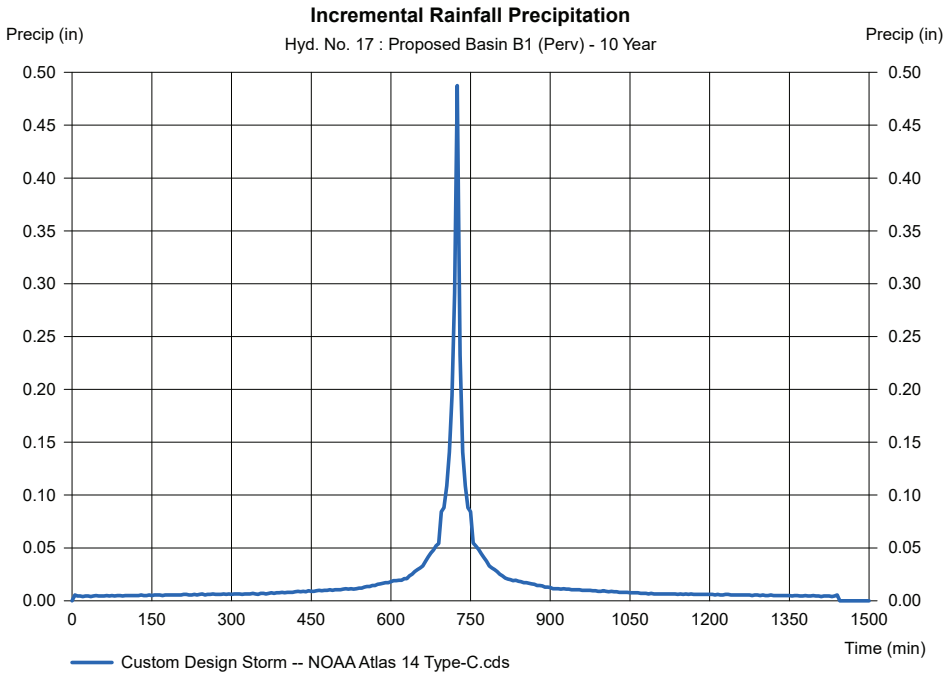


Precipitation Report

Hyd. No. 17

Proposed Basin B1 (Perv)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

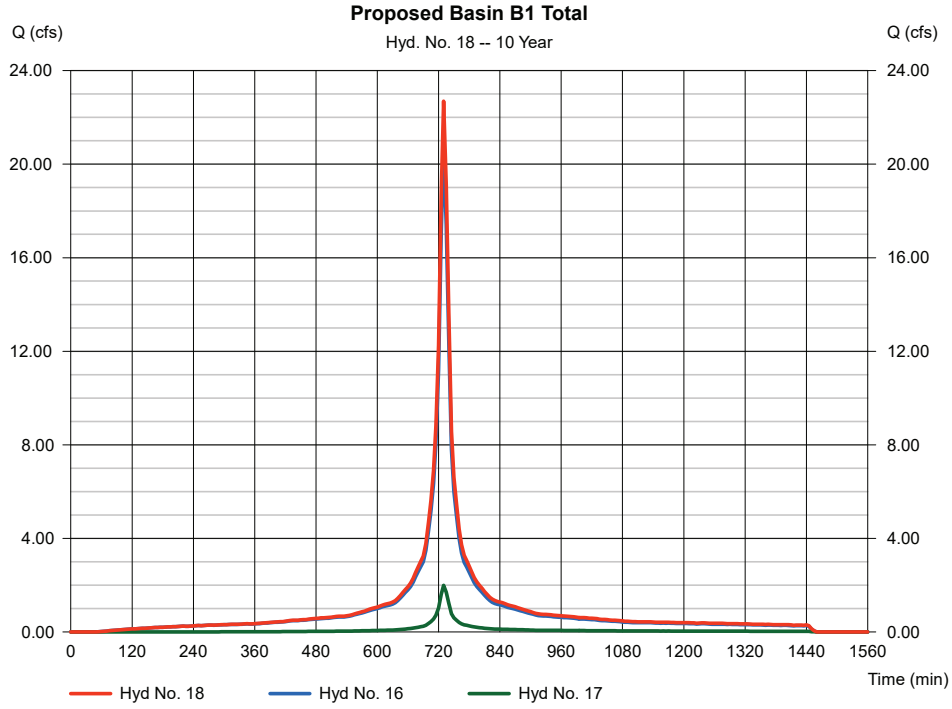


Hydrograph Report

Hyd. No. 18

Proposed Basin B1 Total

Hydrograph type	= Combine	Peak discharge	= 22.69 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 93,880 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 5.900 ac



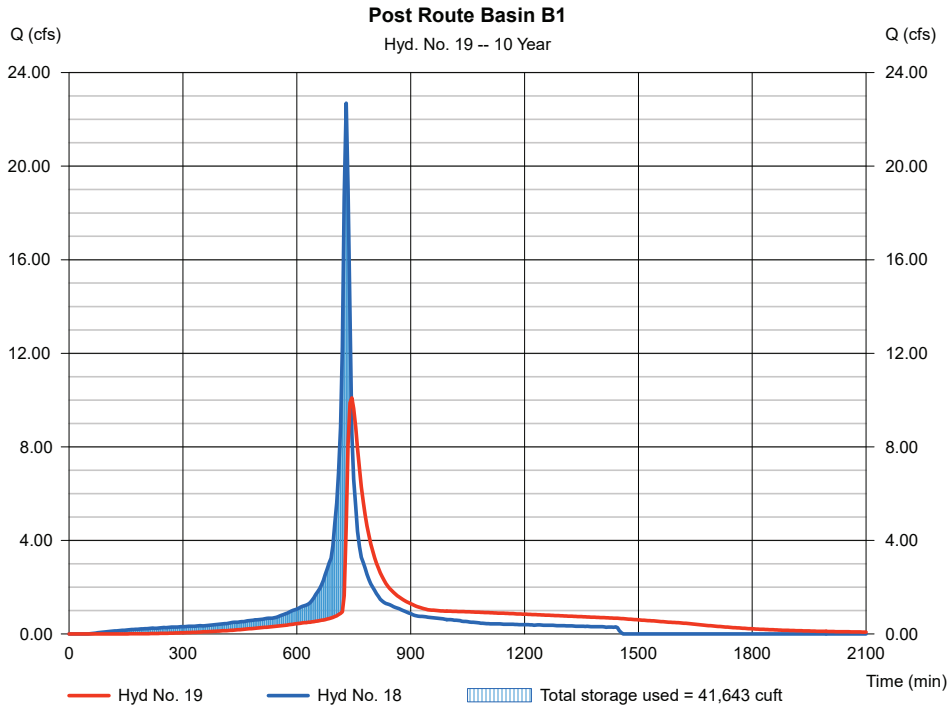
Hydrograph Report

Hyd. No. 19

Post Route Basin B1

Hydrograph type	=	Reservoir	Peak discharge	=	10.09 cfs
Storm frequency	=	10 yrs	Time to peak	=	745 min
Time interval	=	5 min	Hyd. volume	=	93,703 cuft
Inflow hyd. No.	=	18 - Proposed Basin B1 Total	Max. Elevation	=	100.32 ft
Reservoir name	=	UG Basin B (1)	Max. Storage	=	41,643 cuft

Storage Indication method used.

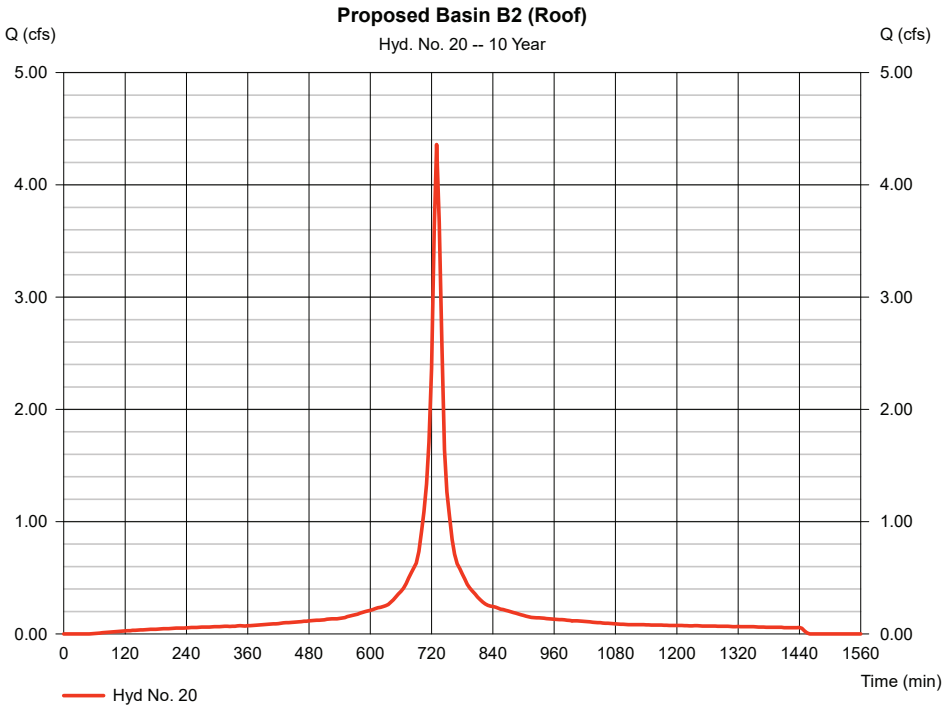


Hydrograph Report

Hyd. No. 20

Proposed Basin B2 (Roof)

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.358 cfs
Storm frequency	=	10 yrs	Time to peak	=	730 min
Time interval	=	5 min	Hyd. volume	=	18,193 cuft
Drainage area	=	1.120 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	10.00 min
Total precip.	=	5.01 in	Distribution	=	Custom
Storm duration	=	NOAA Atlas 14 Type-C.cds	Shape factor	=	484

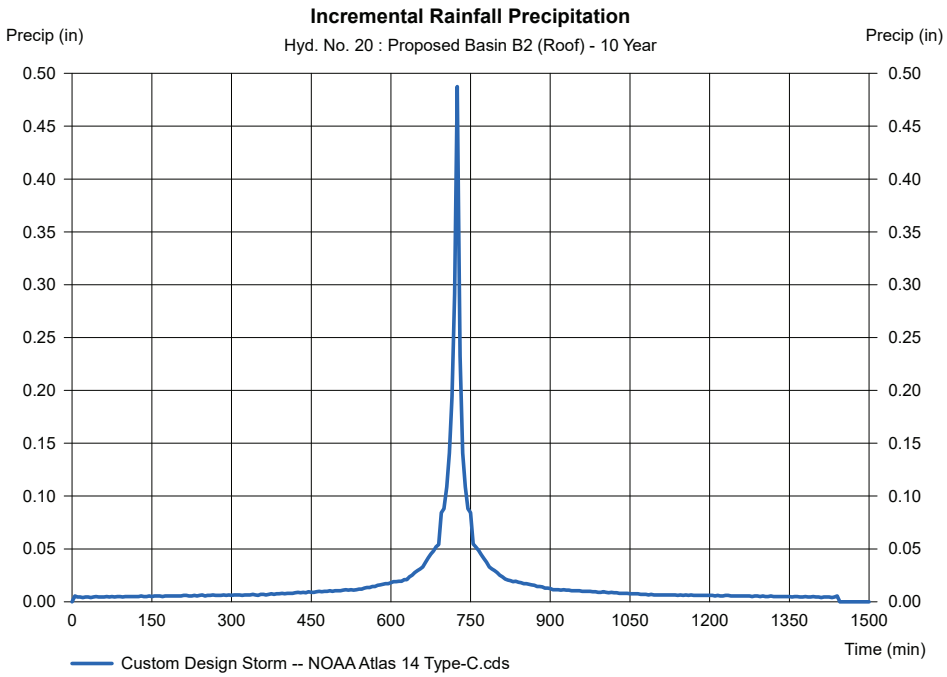


Precipitation Report

Hyd. No. 20

Proposed Basin B2 (Roof)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		



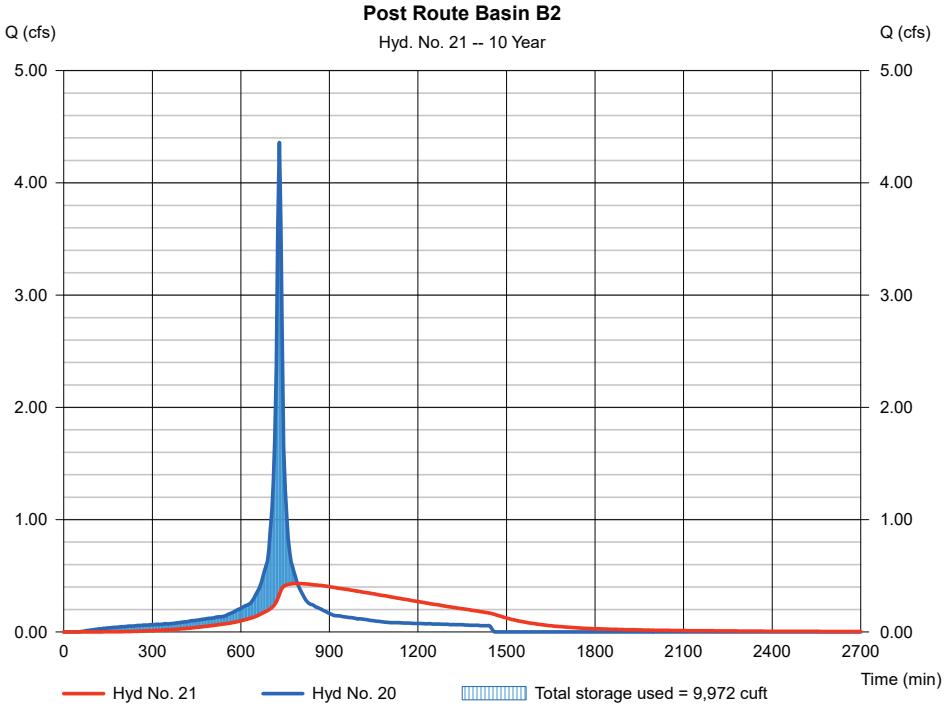
Hydrograph Report

Hyd. No. 21

Post Route Basin B2

Hydrograph type	= Reservoir	Peak discharge	= 0.431 cfs
Storm frequency	= 10 yrs	Time to peak	= 790 min
Time interval	= 5 min	Hyd. volume	= 18,114 cuft
Inflow hyd. No.	= 20 - Proposed Basin B2 (Roof)	Max. Elevation	= 99.32 ft
Reservoir name	= UG Basin B (2)	Max. Storage	= 9,972 cuft

Storage Indication method used.

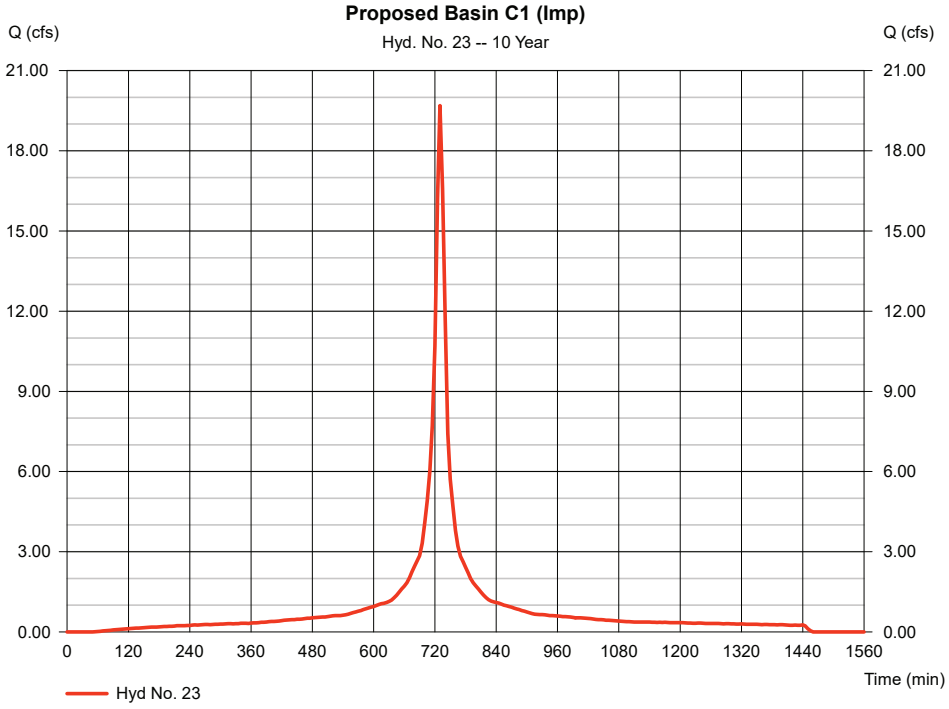


Hydrograph Report

Hyd. No. 23

Proposed Basin C1 (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 19.69 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 82,193 cuft
Drainage area	= 5.060 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

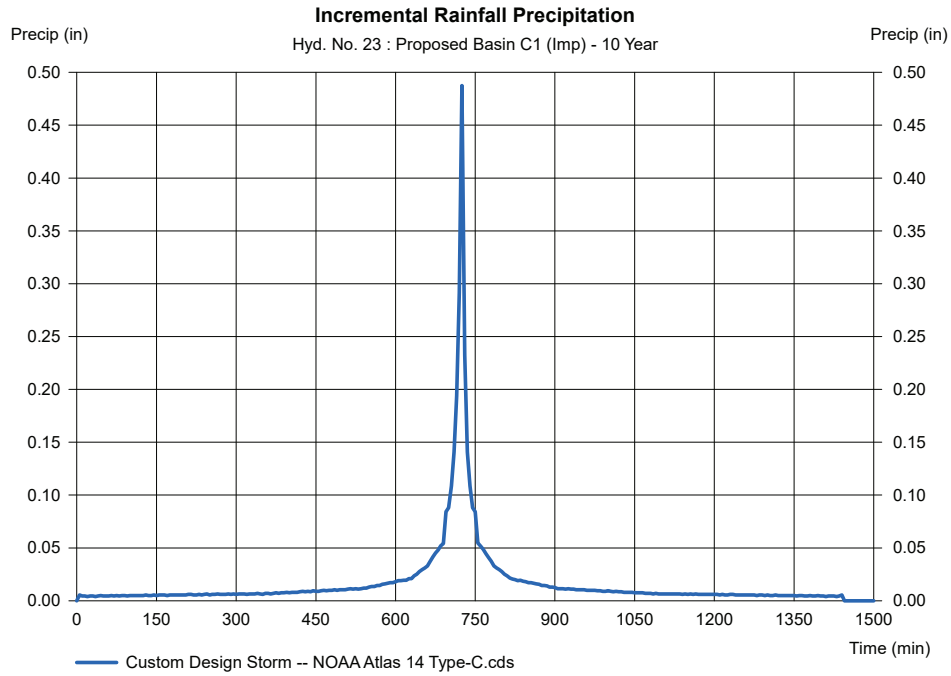


Precipitation Report

Hyd. No. 23

Proposed Basin C1 (Imp)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

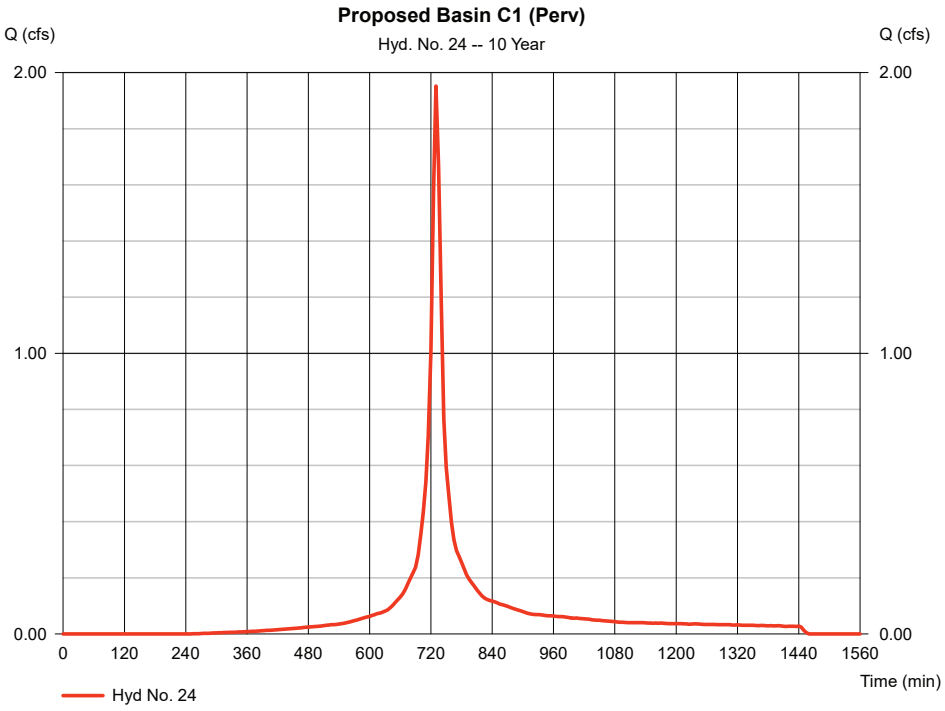


Hydrograph Report

Hyd. No. 24

Proposed Basin C1 (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.952 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 7,335 cuft
Drainage area	= 0.570 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

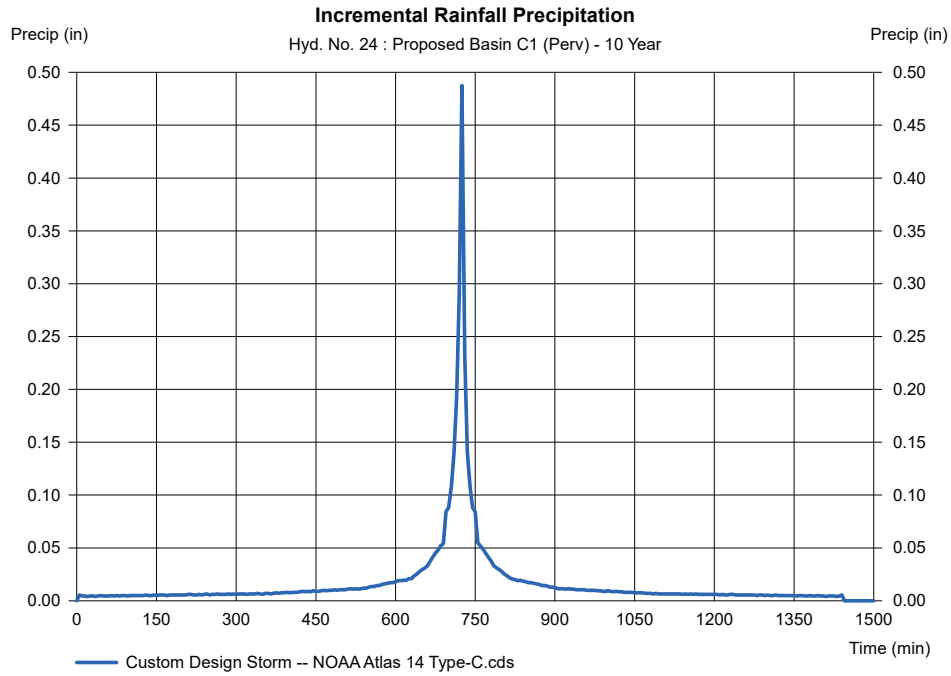


Precipitation Report

Hyd. No. 24

Proposed Basin C1 (Perv)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

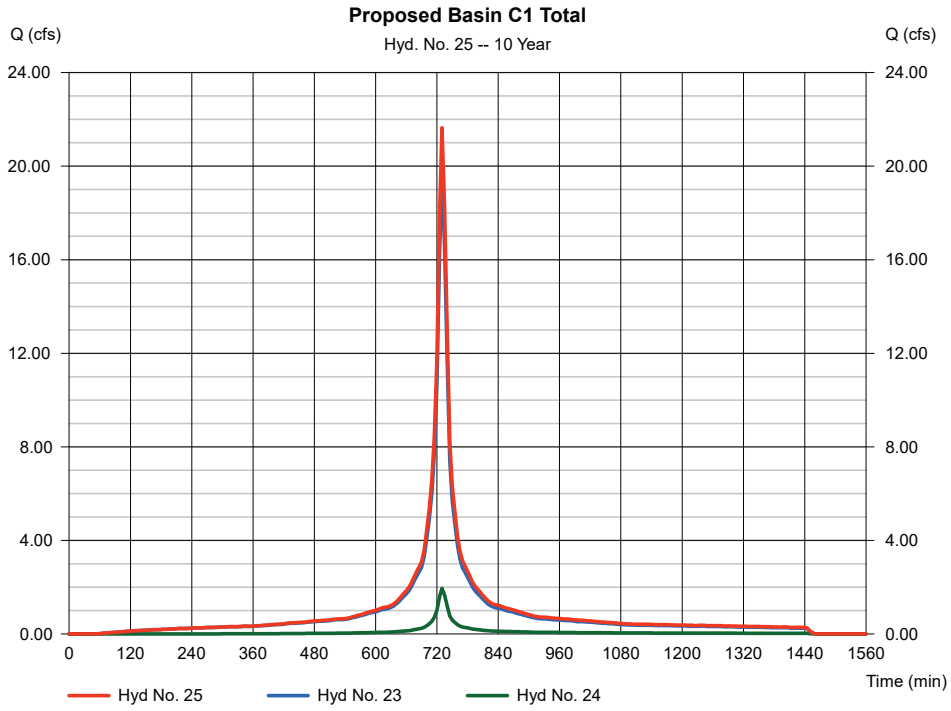


Hydrograph Report

Hyd. No. 25

Proposed Basin C1 Total

Hydrograph type	= Combine	Peak discharge	= 21.64 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 89,528 cuft
Inflow hyds.	= 23, 24	Contrib. drain. area	= 5.630 ac



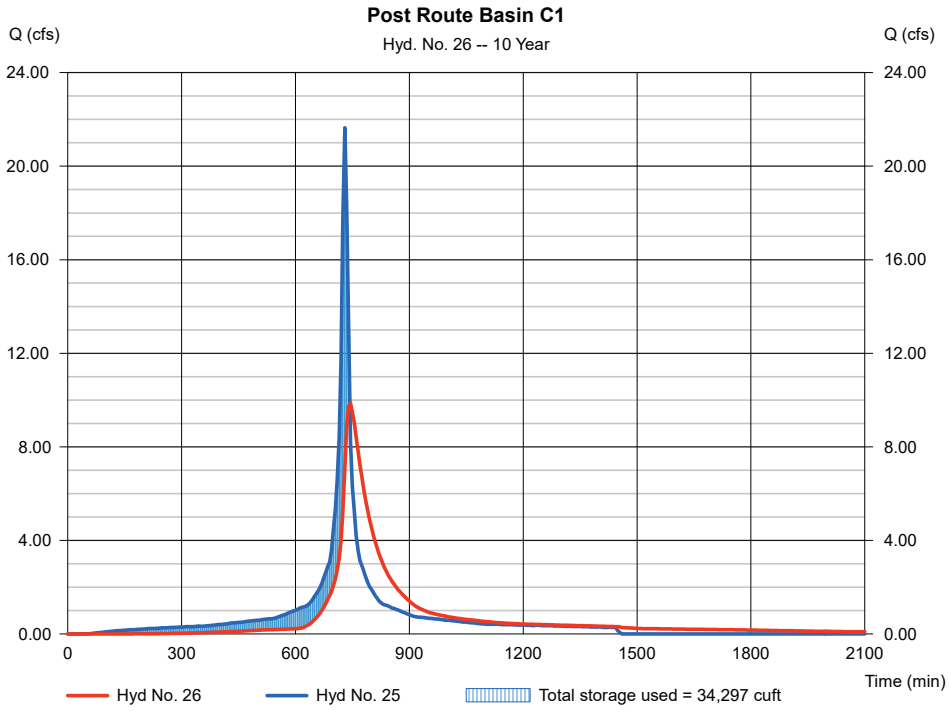
Hydrograph Report

Hyd. No. 26

Post Route Basin C1

Hydrograph type	= Reservoir	Peak discharge	= 9.860 cfs
Storm frequency	= 10 yrs	Time to peak	= 745 min
Time interval	= 5 min	Hyd. volume	= 89,309 cuft
Inflow hyd. No.	= 25 - Proposed Basin C1 Total	Max. Elevation	= 97.65 ft
Reservoir name	= UG Basin C (1)	Max. Storage	= 34,297 cuft

Storage Indication method used.

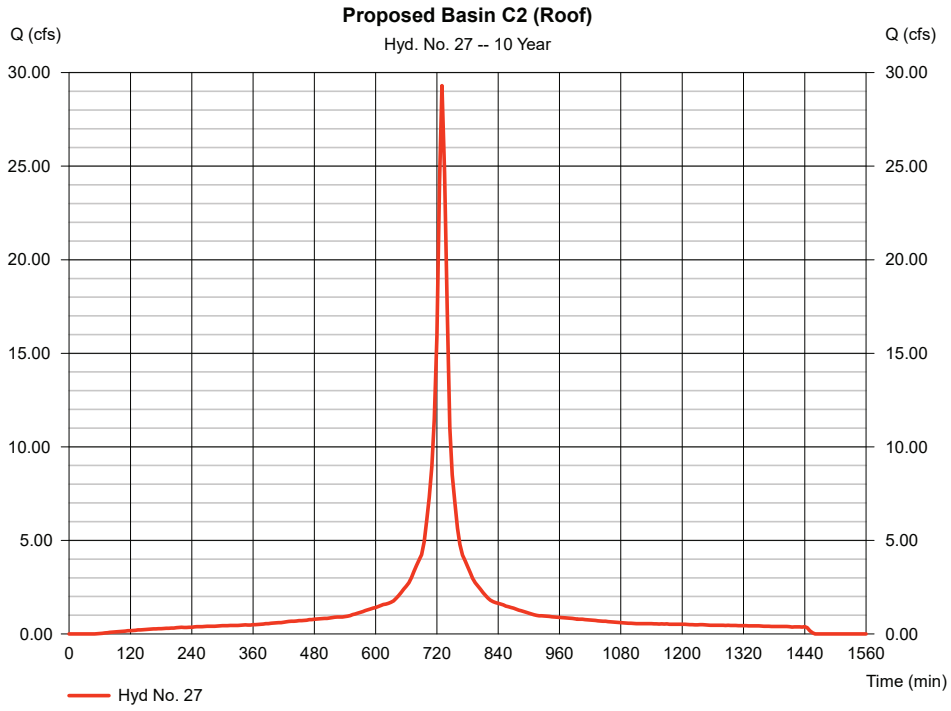


Hydrograph Report

Hyd. No. 27

Proposed Basin C2 (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 29.30 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 122,315 cuft
Drainage area	= 7.530 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

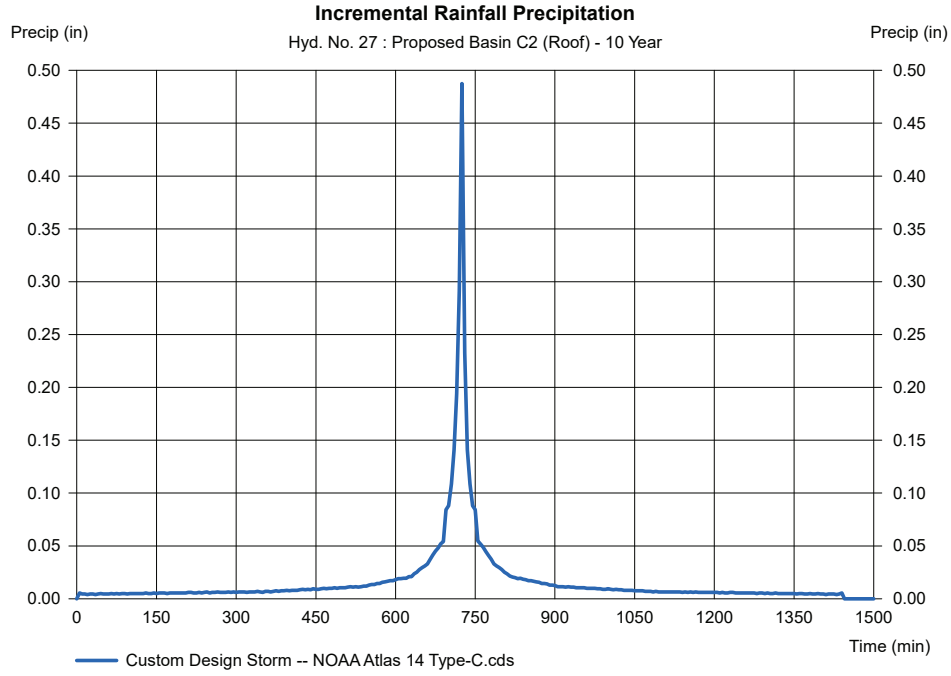


Precipitation Report

Hyd. No. 27

Proposed Basin C2 (Roof)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		



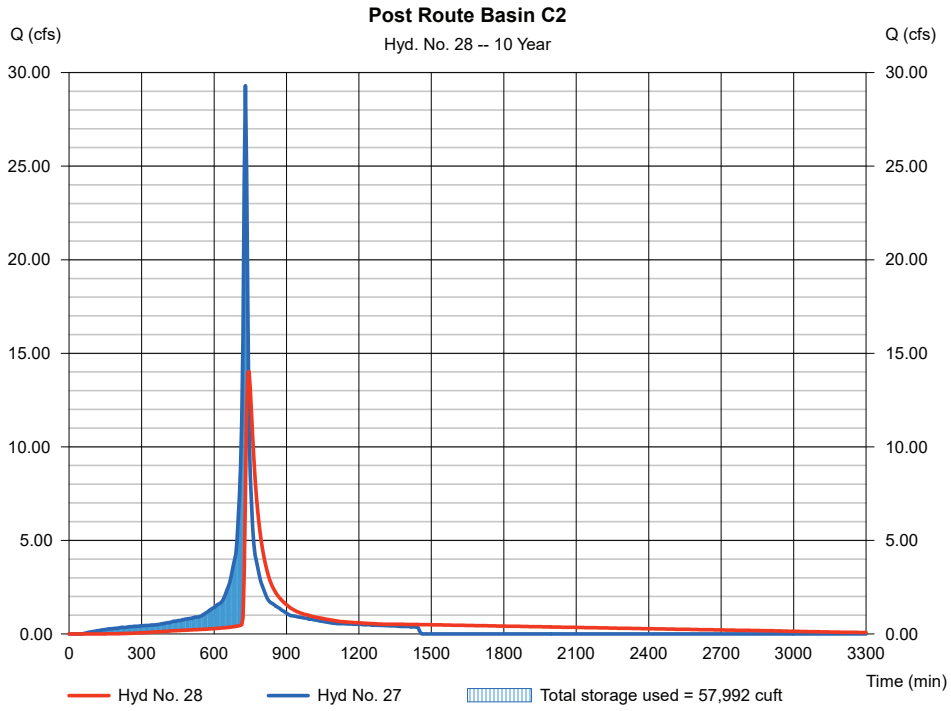
Hydrograph Report

Hyd. No. 28

Post Route Basin C2

Hydrograph type	=	Reservoir	Peak discharge	=	14.02 cfs
Storm frequency	=	10 yrs	Time to peak	=	745 min
Time interval	=	5 min	Hyd. volume	=	122,096 cuft
Inflow hyd. No.	=	27 - Proposed Basin C2 (Roof)	Max. Elevation	=	98.79 ft
Reservoir name	=	UG Basin C (2)	Max. Storage	=	57,992 cuft

Storage Indication method used.

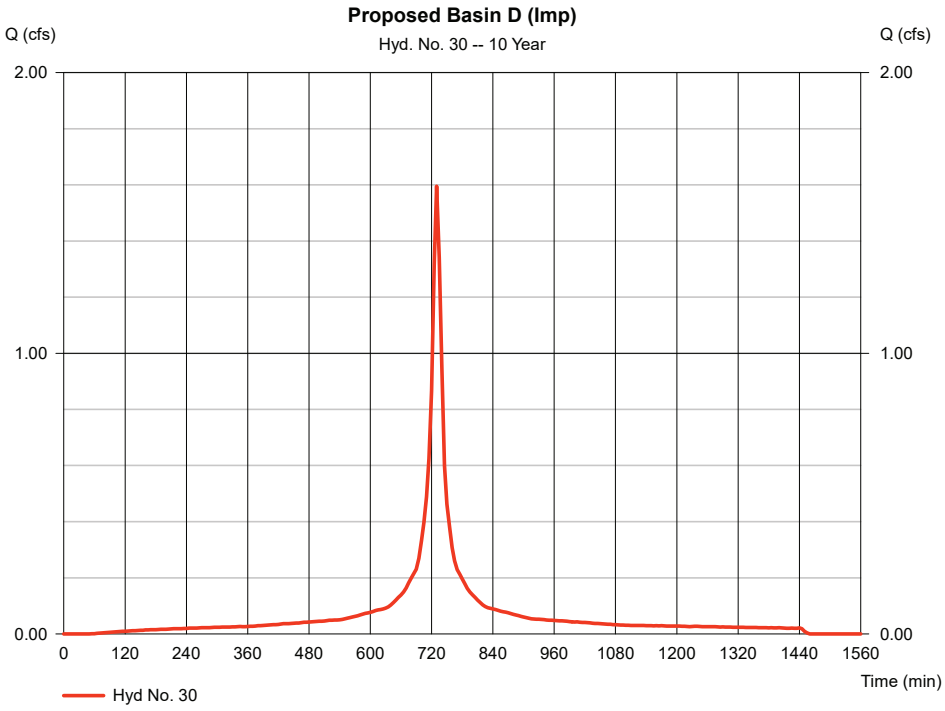


Hydrograph Report

Hyd. No. 30

Proposed Basin D (Imp)

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.596 cfs
Storm frequency	=	10 yrs	Time to peak	=	730 min
Time interval	=	5 min	Hyd. volume	=	6,660 cuft
Drainage area	=	0.410 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	10.00 min
Total precip.	=	5.01 in	Distribution	=	Custom
Storm duration	=	NOAA Atlas 14 Type-C.cds	Shape factor	=	484

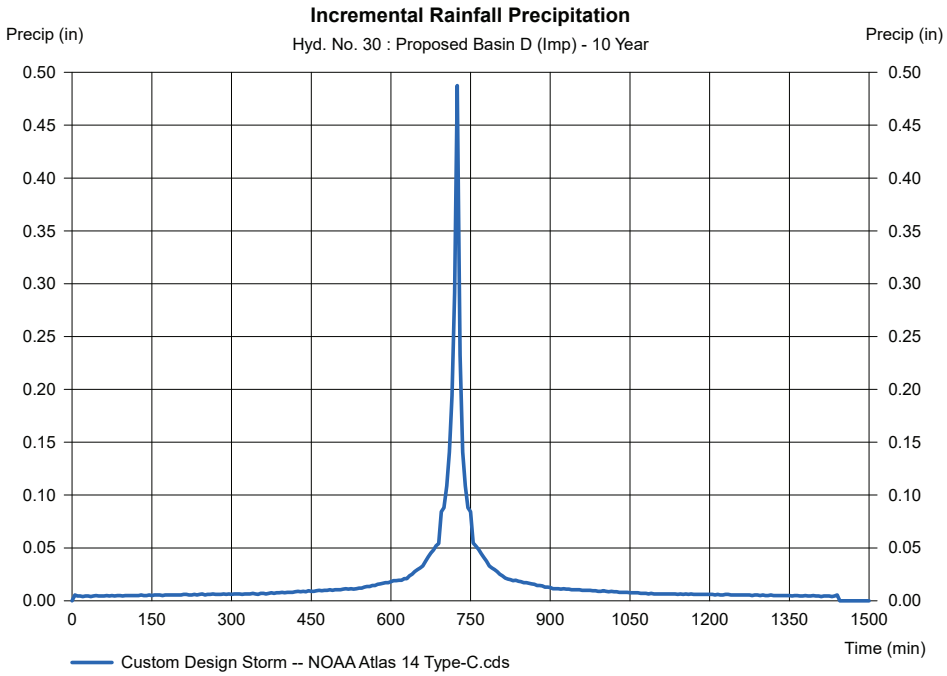


Precipitation Report

Hyd. No. 30

Proposed Basin D (Imp)

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		



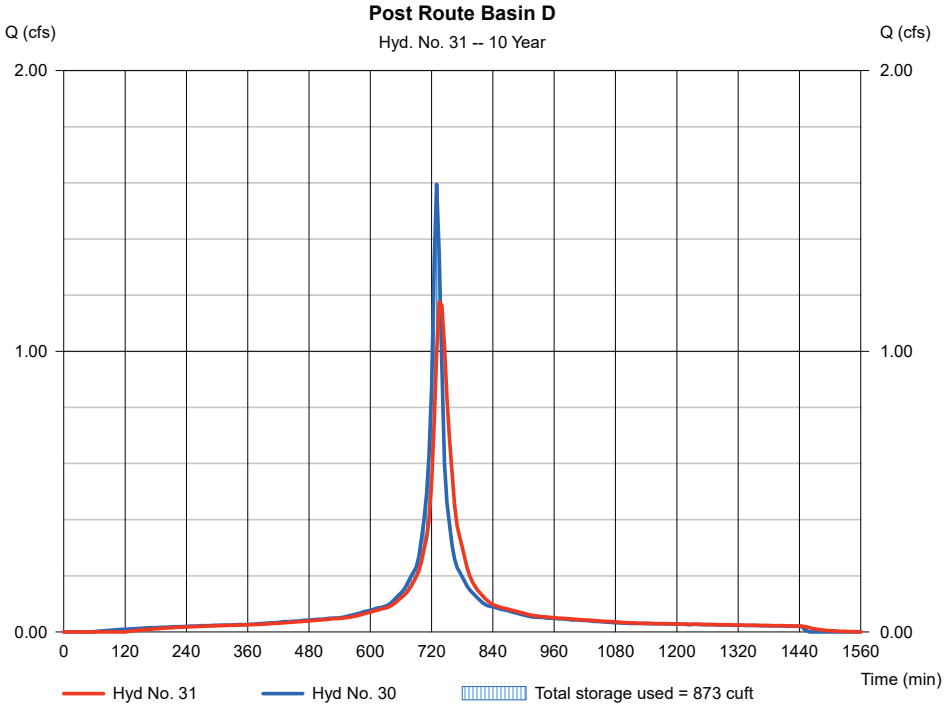
Hydrograph Report

Hyd. No. 31

Post Route Basin D

Hydrograph type	= Reservoir	Peak discharge	= 1.177 cfs
Storm frequency	= 10 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 6,637 cuft
Inflow hyd. No.	= 30 - Proposed Basin D (Imp)	Max. Elevation	= 96.63 ft
Reservoir name	= UG Basin D	Max. Storage	= 873 cuft

Storage Indication method used.

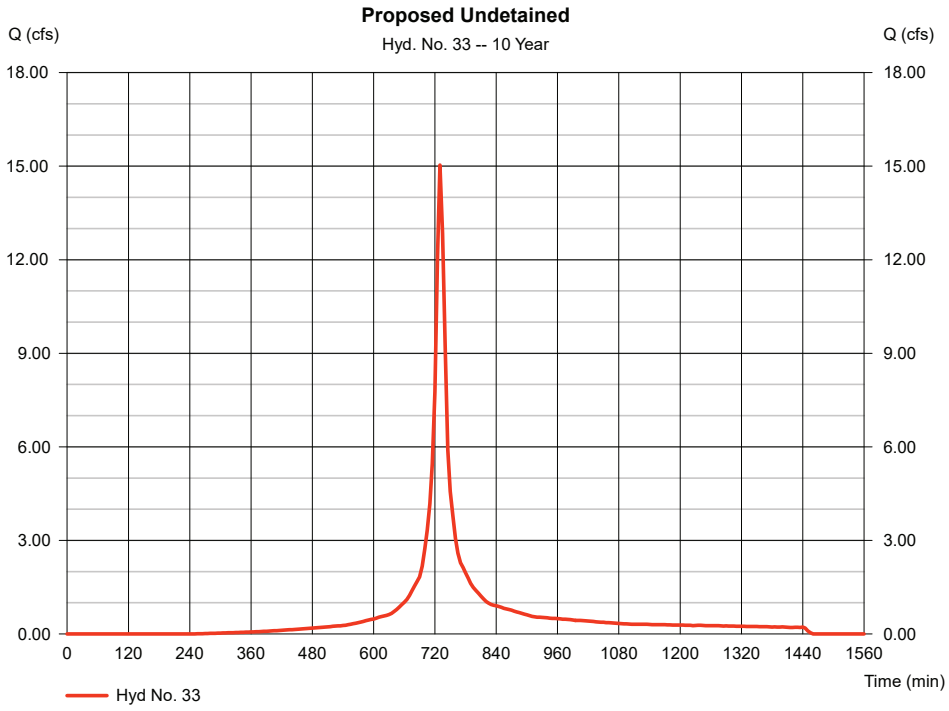


Hydrograph Report

Hyd. No. 33

Proposed Undetained

Hydrograph type	= SCS Runoff	Peak discharge	= 15.04 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 56,495 cuft
Drainage area	= 4.390 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.01 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

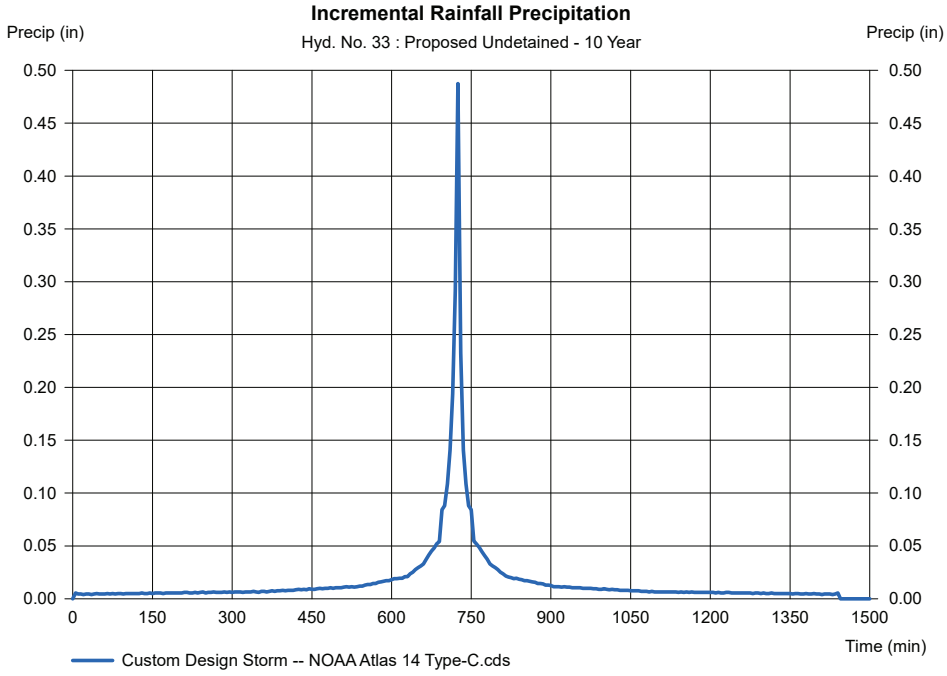


Precipitation Report

Hyd. No. 33

Proposed Undetained

Storm Frequency	= 10 yrs	Time interval	= 5 min
Total precip.	= 5.0100 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

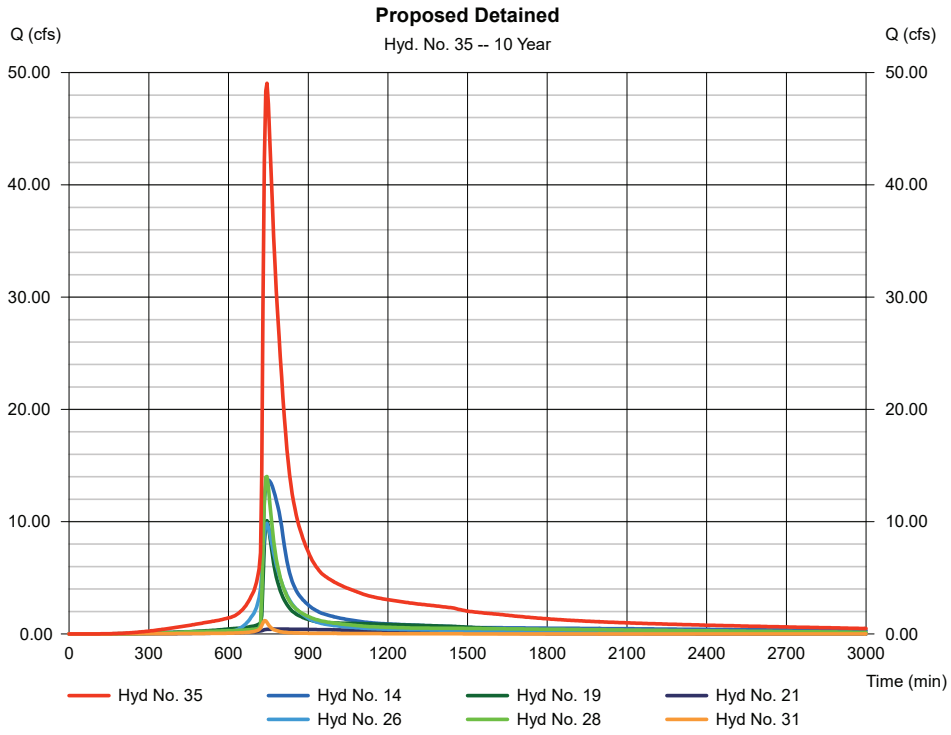


Hydrograph Report

Hyd. No. 35

Proposed Detained

Hydrograph type	= Combine	Peak discharge	= 49.05 cfs
Storm frequency	= 10 yrs	Time to peak	= 745 min
Time interval	= 5 min	Hyd. volume	= 516,369 cuft
Inflow hyds.	= 14, 19, 21, 26, 28, 31	Contrib. drain. area	= 0.000 ac

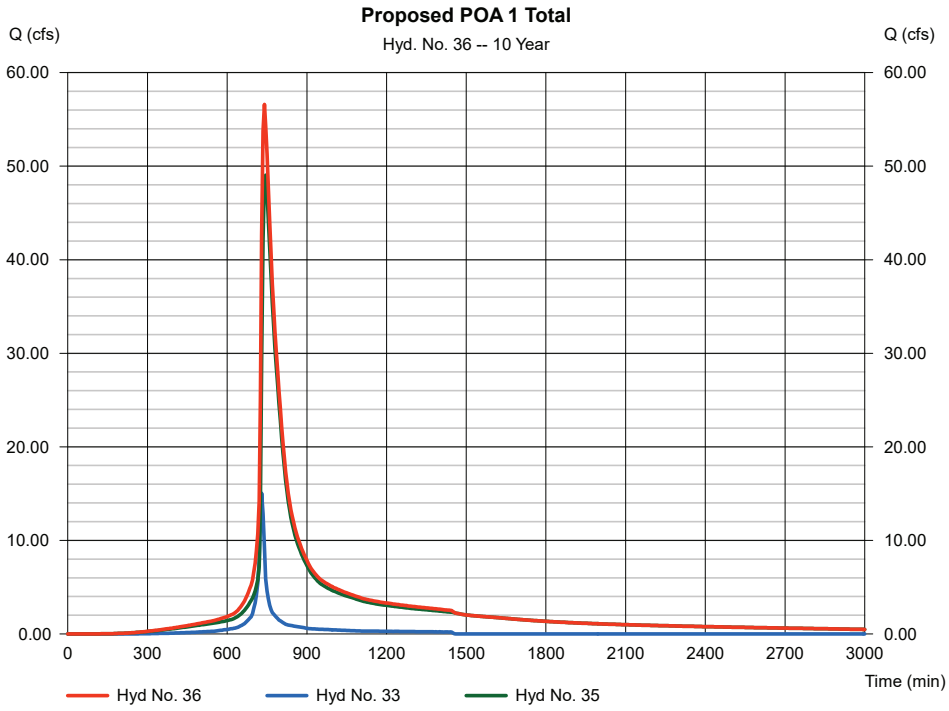


Hydrograph Report

Hyd. No. 36

Proposed POA 1 Total

Hydrograph type	= Combine	Peak discharge	= 56.61 cfs
Storm frequency	= 10 yrs	Time to peak	= 740 min
Time interval	= 5 min	Hyd. volume	= 567,072 cuft
Inflow hyds.	= 33, 35	Contrib. drain. area	= 4.390 ac



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

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
2	SCS Runoff	131.46	5	735	616,848	----	------	------	Existing Study Area A
4	SCS Runoff	21.01	5	745	123,977	----	------	------	Existing Study Area B
6	SCS Runoff	19.26	5	735	91,270	----	------	------	Existing Study Area C
8	Combine	167.44	5	735	832,095	2, 4, 6,	------	------	Existing Total (POA 'A')
10	SCS Runoff	23.31	5	730	98,837	----	------	------	Proposed Basin A (Imp)
11	SCS Runoff	2.515	5	730	9,782	----	------	------	Proposed Basin A (Perv)
12	SCS Runoff	49.23	5	730	208,686	----	------	------	Proposed Basin A (Roof)
13	Combine	75.05	5	730	317,305	10, 11, 12	------	------	Proposed Basin A
14	Reservoir	18.95	5	755	317,097	13	101.76	154,522	Post Route Basin A
16	SCS Runoff	34.55	5	730	146,466	----	------	------	Proposed Basin B1 (Imp)
17	SCS Runoff	3.557	5	730	13,838	----	------	------	Proposed Basin B1 (Perv)
18	Combine	38.11	5	730	160,304	16, 17	------	------	Proposed Basin B1 Total
19	Reservoir	17.28	5	745	160,127	18	101.40	60,923	Post Route Basin B1
20	SCS Runoff	7.273	5	730	30,835	----	------	------	Proposed Basin B2 (Roof)
21	Reservoir	2.219	5	750	30,755	20	99.91	14,475	Post Route Basin B2
23	SCS Runoff	32.86	5	730	139,308	----	------	------	Proposed Basin C1 (Imp)
24	SCS Runoff	3.496	5	730	13,599	----	------	------	Proposed Basin C1 (Perv)
25	Combine	36.36	5	730	152,907	23, 24	------	------	Proposed Basin C1 Total
26	Reservoir	16.55	5	745	152,689	25	98.40	49,862	Post Route Basin C1
27	SCS Runoff	48.90	5	730	207,310	----	------	------	Proposed Basin C2 (Roof)
28	Reservoir	23.83	5	740	207,091	27	99.88	80,381	Post Route Basin C2
30	SCS Runoff	2.663	5	730	11,288	----	------	------	Proposed Basin D (Imp)
31	Reservoir	1.979	5	735	11,265	30	96.85	1,404	Post Route Basin D
33	SCS Runoff	26.93	5	730	104,739	----	------	------	Proposed Undetained
35	Combine	80.29	5	745	879,024	14, 19, 21, 26, 28, 31,		------	Proposed Detained
36	Combine	95.20	5	735	973,026	33, 35	------	------	Proposed POA 1 Total

2021-12-13 2,10,25,100 yr.gpw | Return Period: 100 Year | Friday, Dec 2, 2022

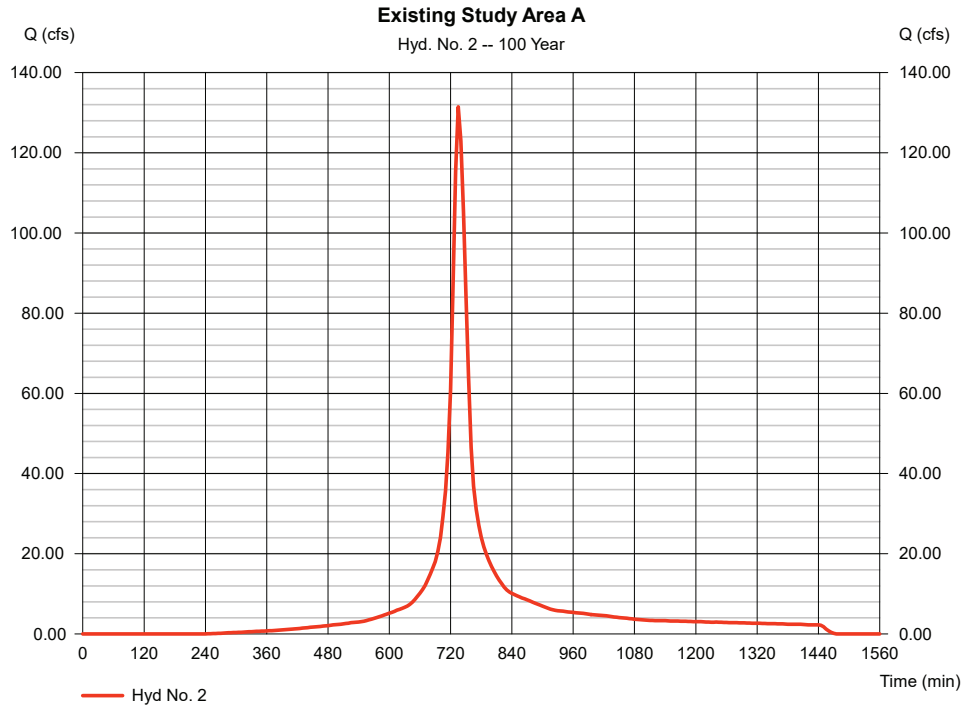
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.1 | Friday, Dec 2, 2022

Hyd. No. 2

Existing Study Area A

Hydrograph type	= SCS Runoff	Peak discharge	= 131.46 cfs
Storm frequency	= 100 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 616,848 cuft
Drainage area	= 26.500 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 23.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

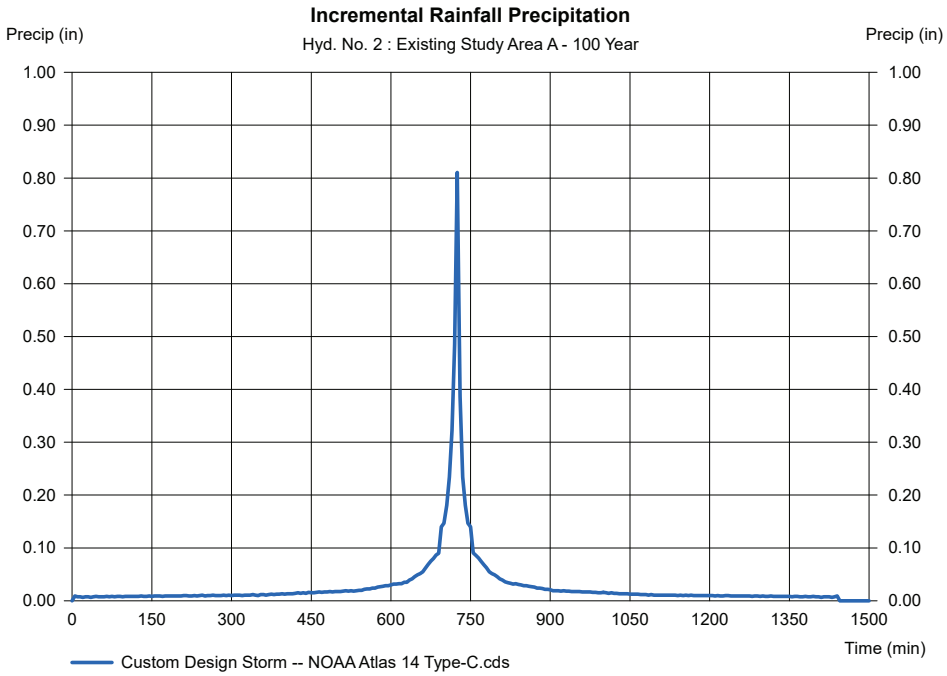


Precipitation Report

Hyd. No. 2

Existing Study Area A

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

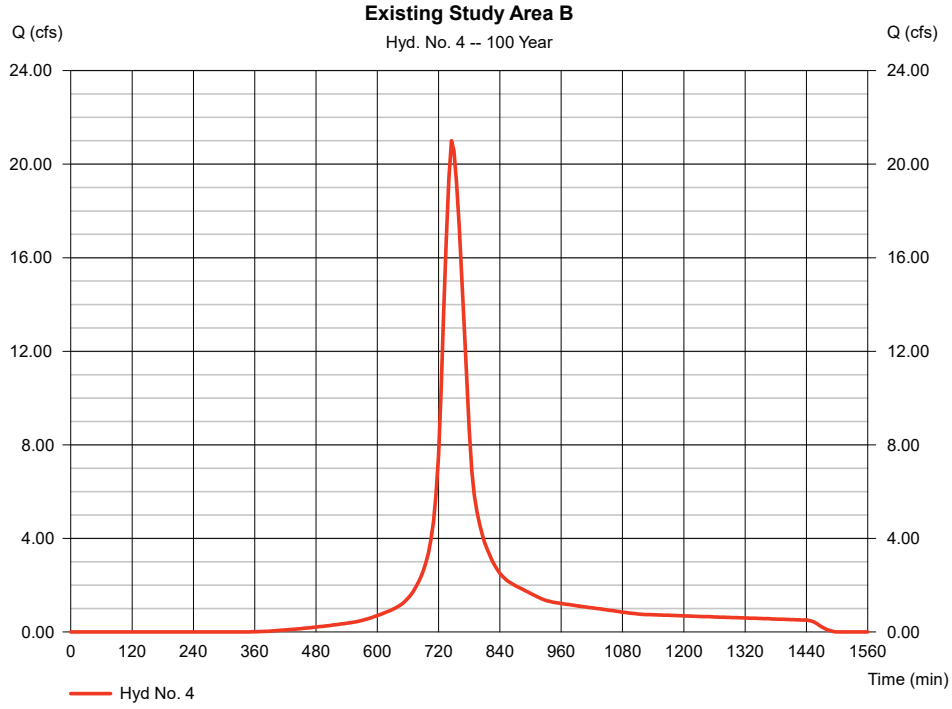


Hydrograph Report

Hyd. No. 4

Existing Study Area B

Hydrograph type	= SCS Runoff	Peak discharge	= 21.01 cfs
Storm frequency	= 100 yrs	Time to peak	= 745 min
Time interval	= 5 min	Hyd. volume	= 123,977 cuft
Drainage area	= 6.280 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 37.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

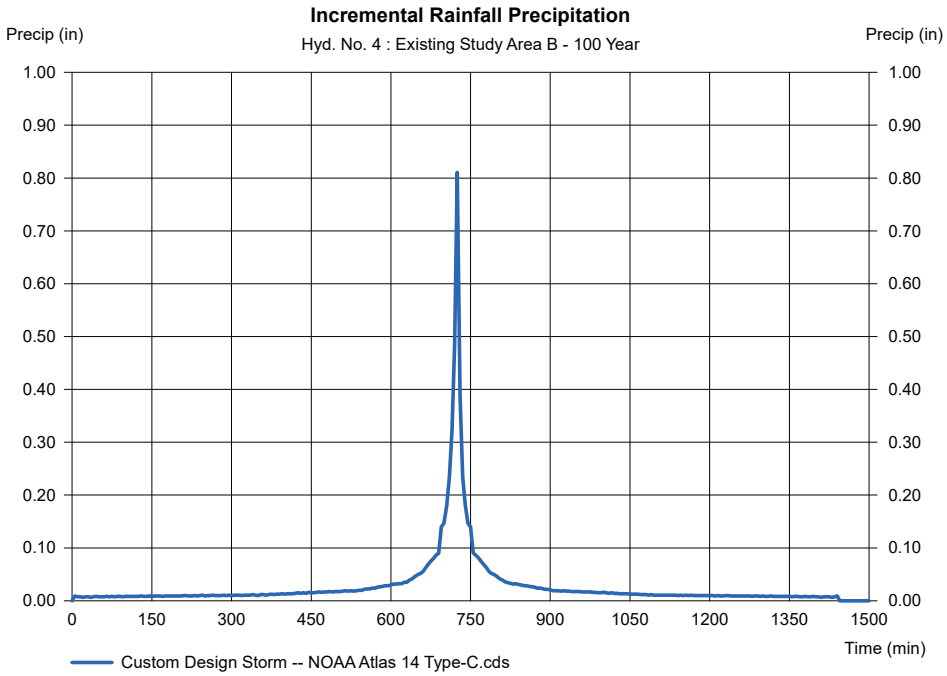


Precipitation Report

Hyd. No. 4

Existing Study Area B

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

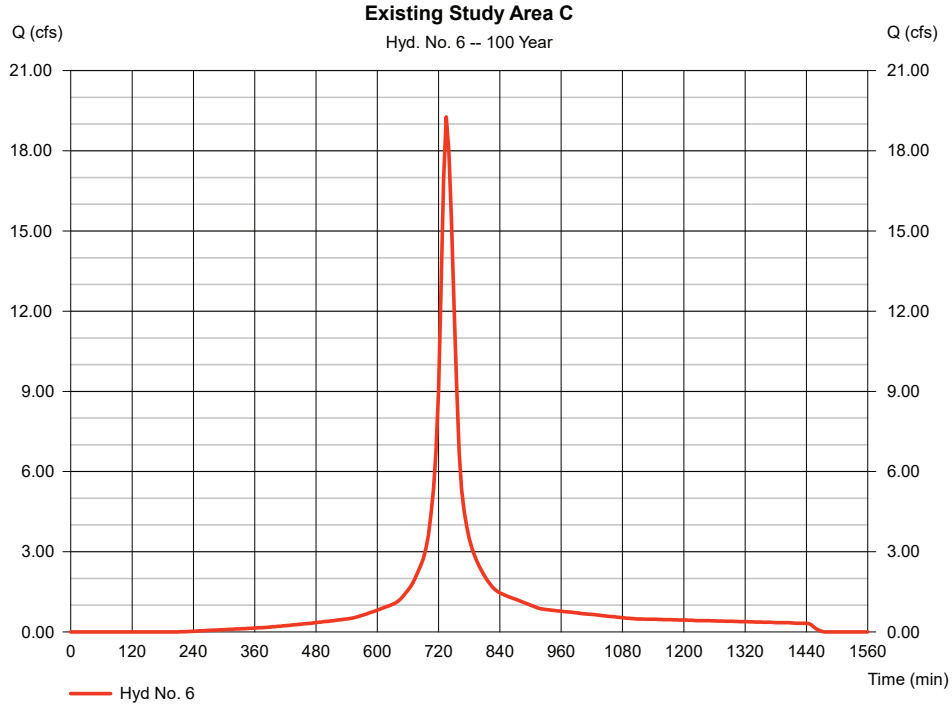


Hydrograph Report

Hyd. No. 6

Existing Study Area C

Hydrograph type	= SCS Runoff	Peak discharge	= 19.26 cfs
Storm frequency	= 100 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 91,270 cuft
Drainage area	= 3.780 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 19.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

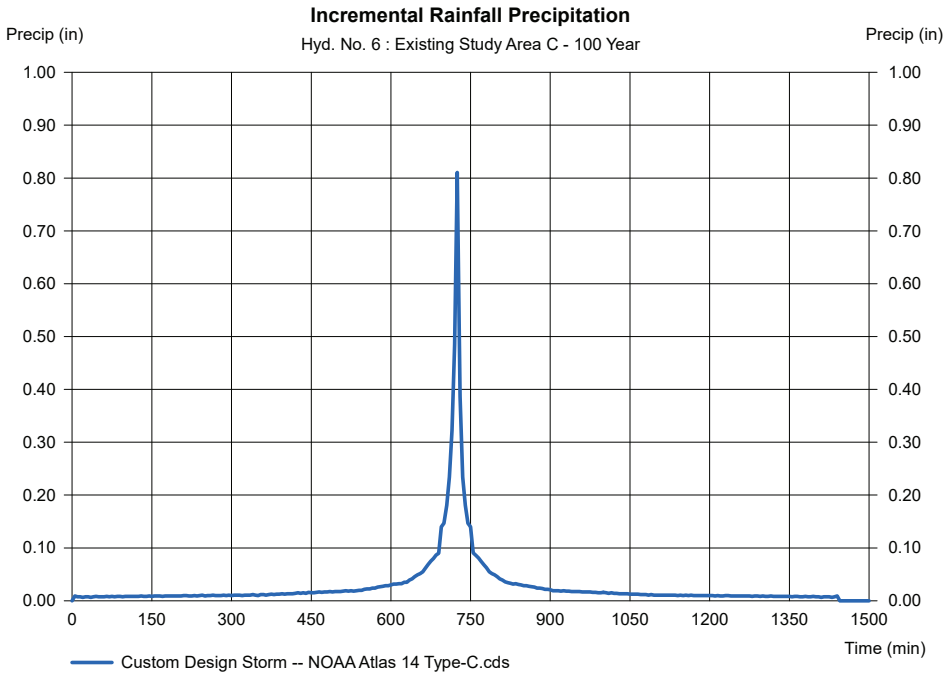


Precipitation Report

Hyd. No. 6

Existing Study Area C

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

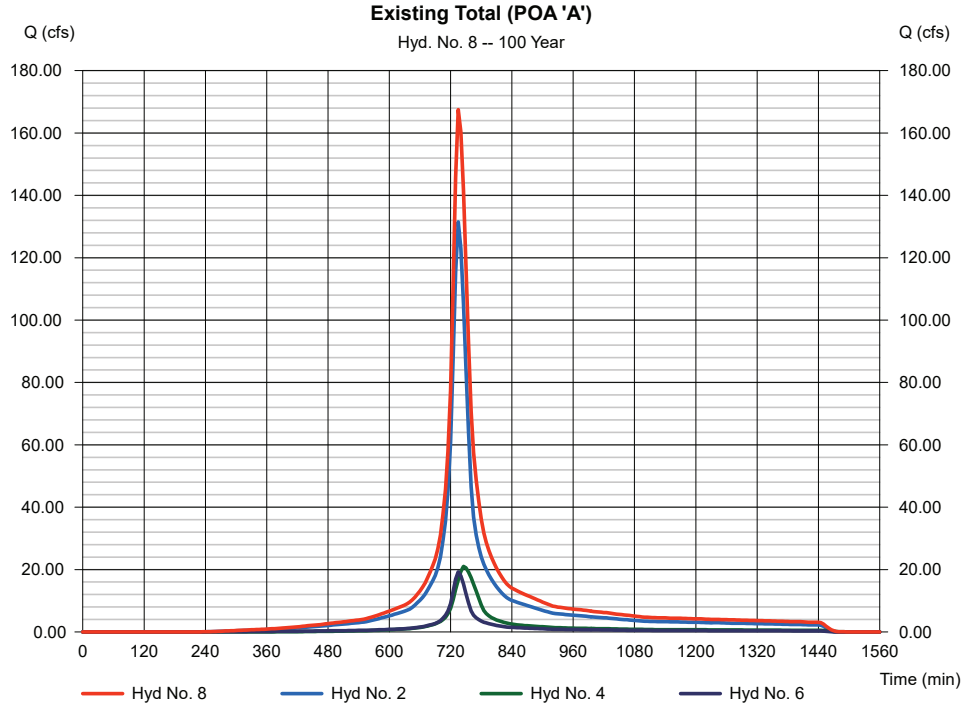


Hydrograph Report

Hyd. No. 8

Existing Total (POA 'A')

Hydrograph type	= Combine	Peak discharge	= 167.44 cfs
Storm frequency	= 100 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 832,095 cuft
Inflow hyds.	= 2, 4, 6	Contrib. drain. area	= 36.560 ac

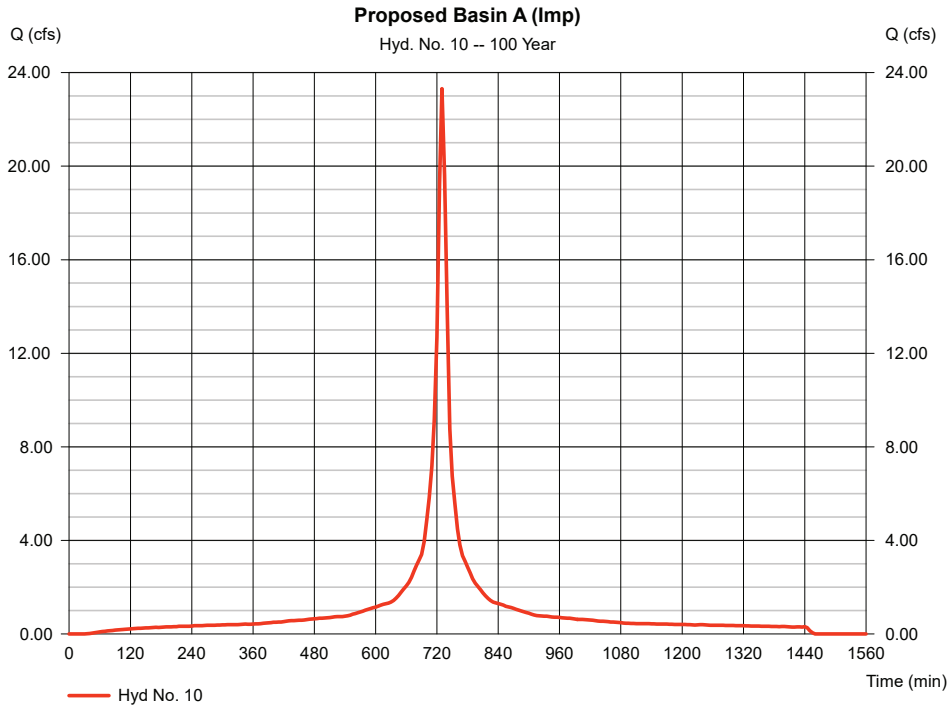


Hydrograph Report

Hyd. No. 10

Proposed Basin A (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 23.31 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 98,837 cuft
Drainage area	= 3.590 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

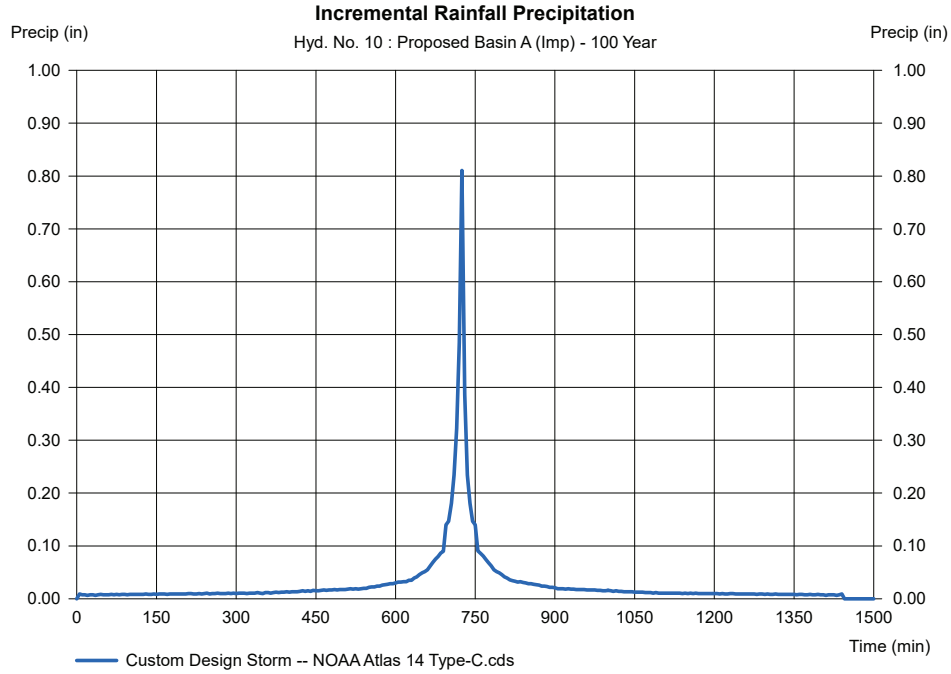


Precipitation Report

Hyd. No. 10

Proposed Basin A (Imp)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

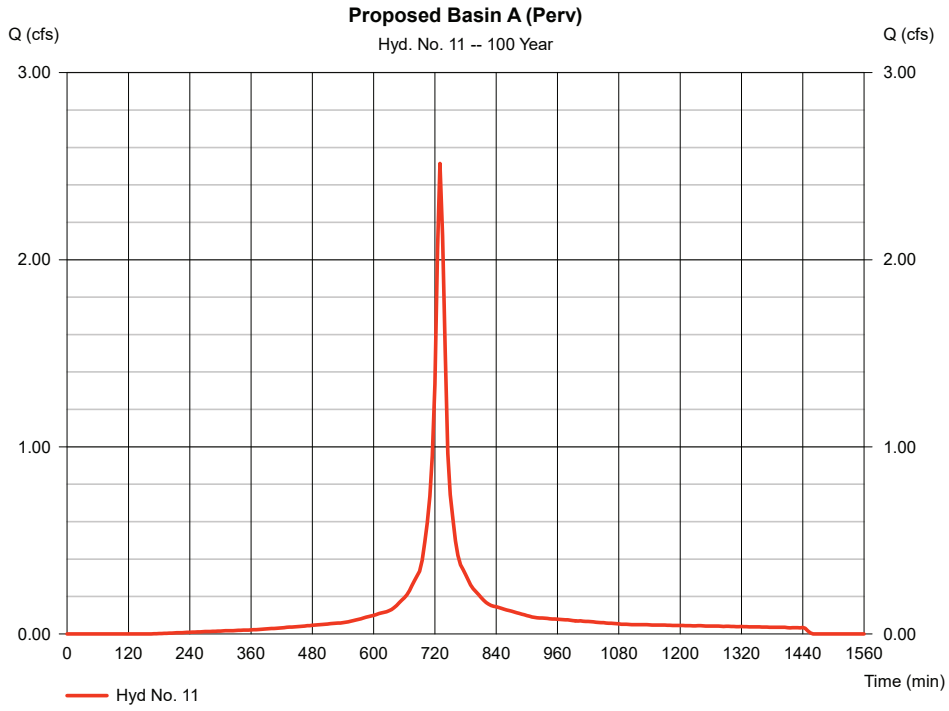


Hydrograph Report

Hyd. No. 11

Proposed Basin A (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.515 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 9,782 cuft
Drainage area	= 0.410 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

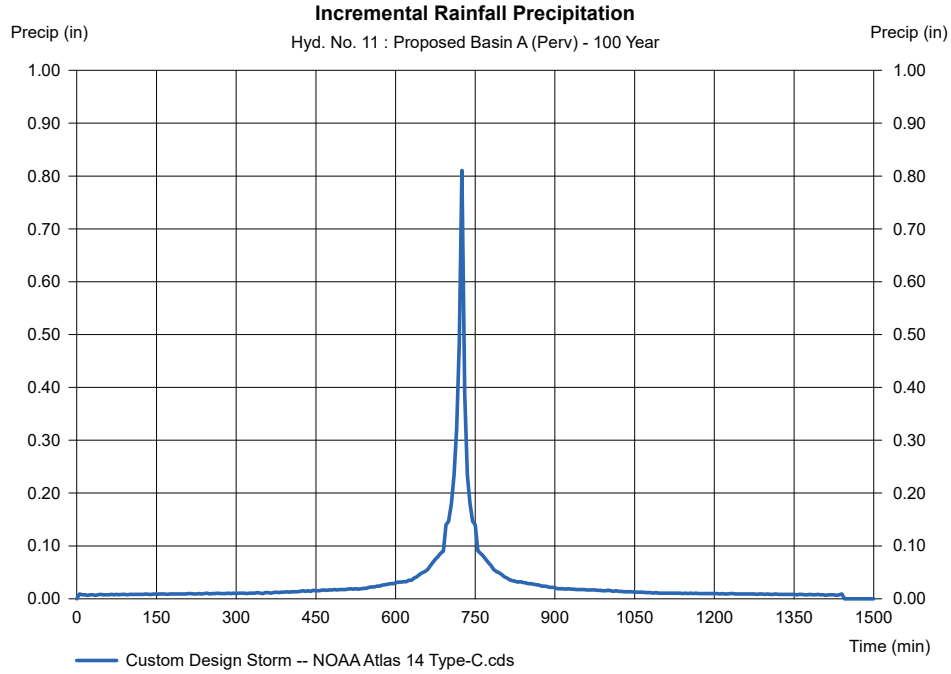


Precipitation Report

Hyd. No. 11

Proposed Basin A (Perv)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

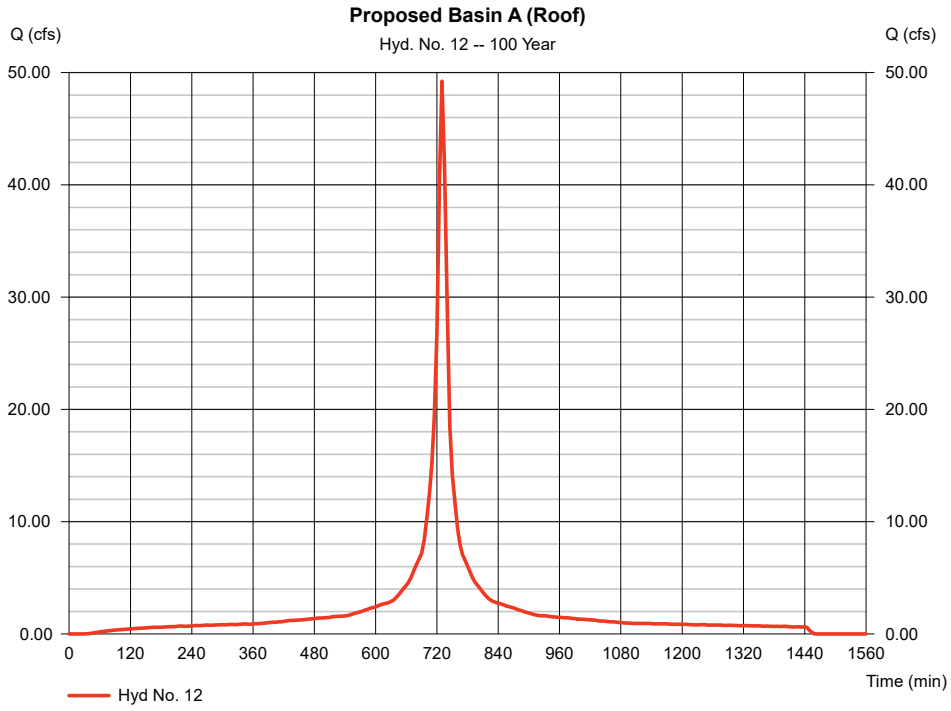


Hydrograph Report

Hyd. No. 12

Proposed Basin A (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 49.23 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 208,686 cuft
Drainage area	= 7.580 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

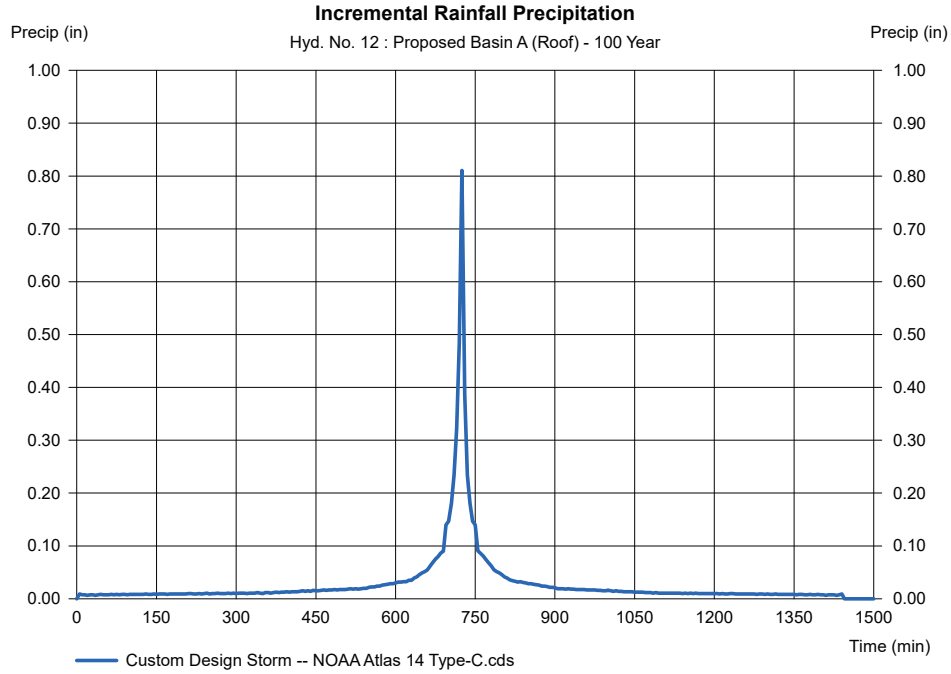


Precipitation Report

Hyd. No. 12

Proposed Basin A (Roof)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

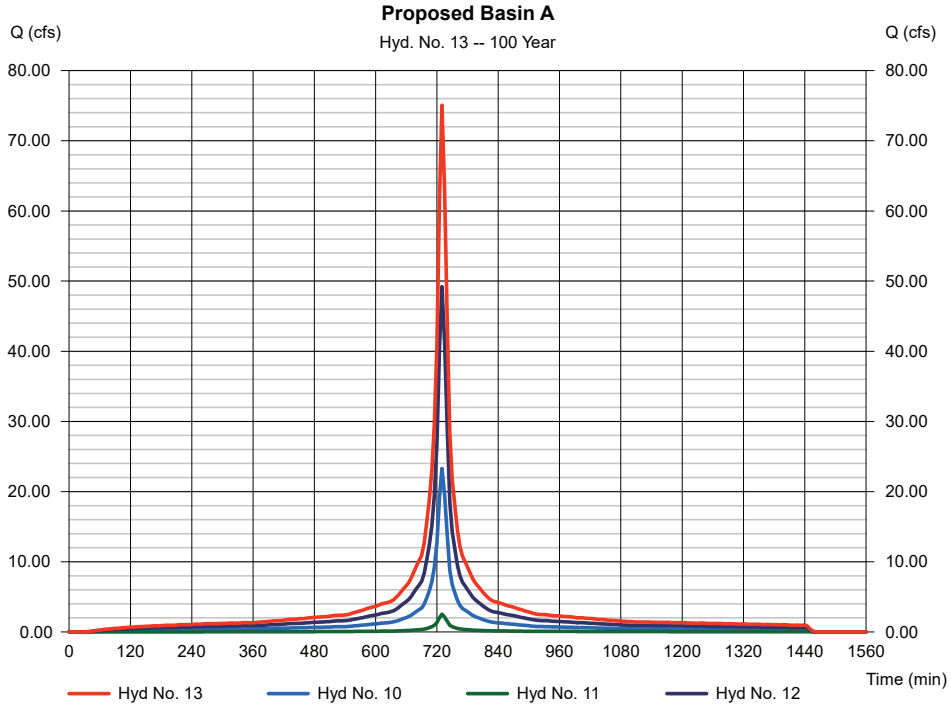


Hydrograph Report

Hyd. No. 13

Proposed Basin A

Hydrograph type	= Combine	Peak discharge	= 75.05 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 317,305 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 11.580 ac



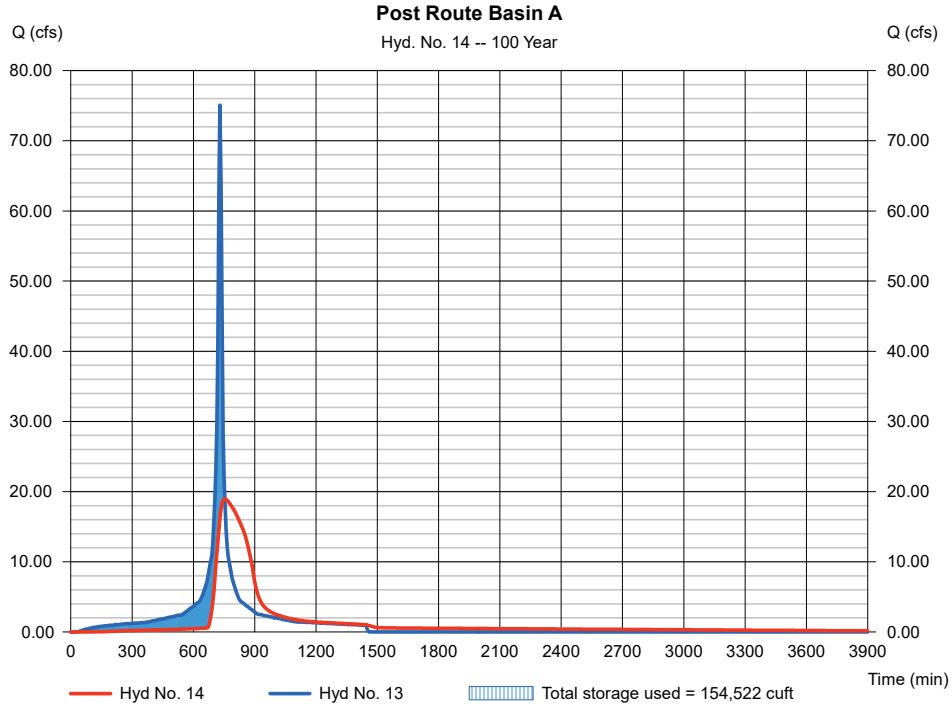
Hydrograph Report

Hyd. No. 14

Post Route Basin A

Hydrograph type	= Reservoir	Peak discharge	= 18.95 cfs
Storm frequency	= 100 yrs	Time to peak	= 755 min
Time interval	= 5 min	Hyd. volume	= 317,097 cuft
Inflow hyd. No.	= 13 - Proposed Basin A	Max. Elevation	= 101.76 ft
Reservoir name	= UG Basin A	Max. Storage	= 154,522 cuft

Storage Indication method used.

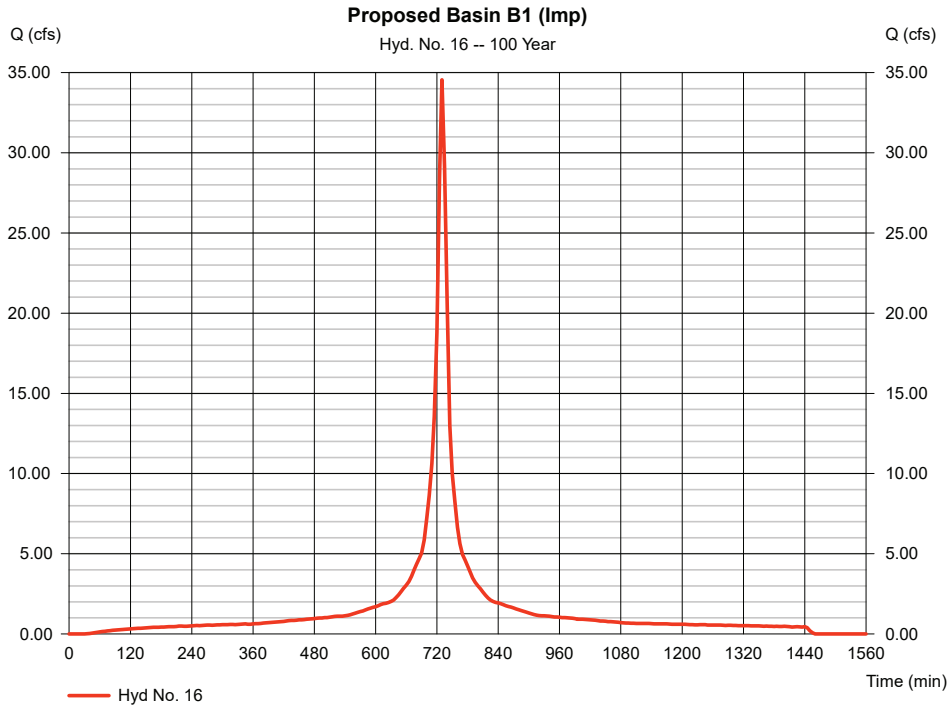


Hydrograph Report

Hyd. No. 16

Proposed Basin B1 (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 34.55 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 146,466 cuft
Drainage area	= 5.320 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

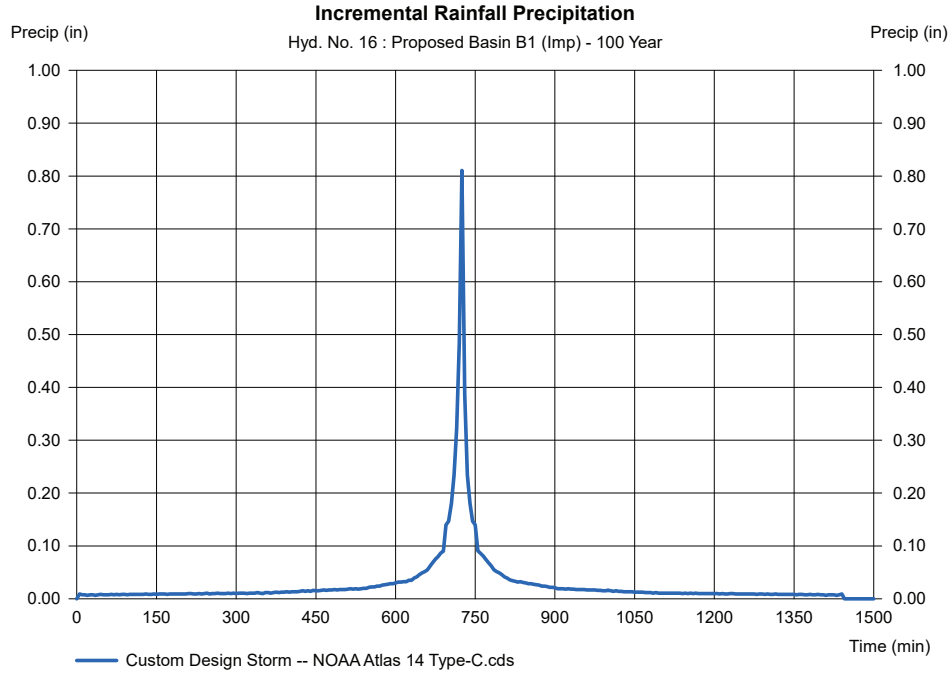


Precipitation Report

Hyd. No. 16

Proposed Basin B1 (Imp)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

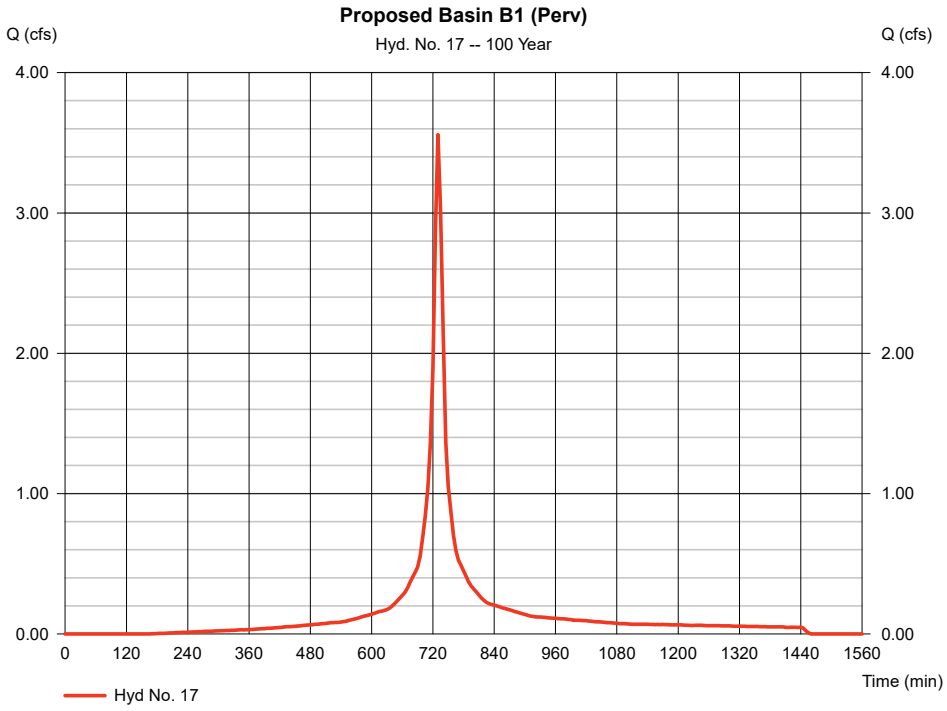


Hydrograph Report

Hyd. No. 17

Proposed Basin B1 (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 3.557 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 13,838 cuft
Drainage area	= 0.580 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

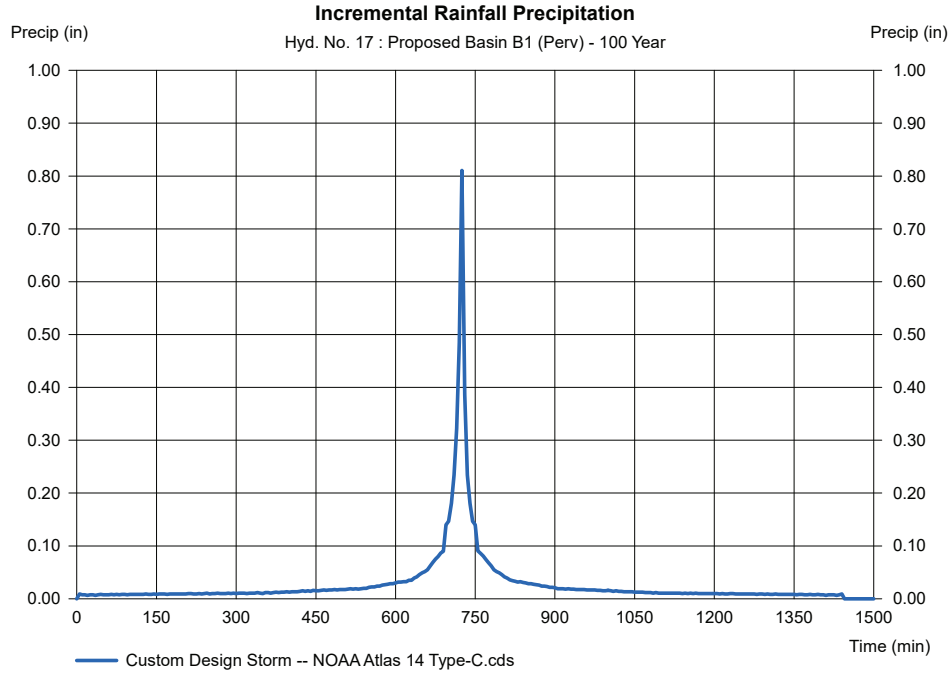


Precipitation Report

Hyd. No. 17

Proposed Basin B1 (Perv)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

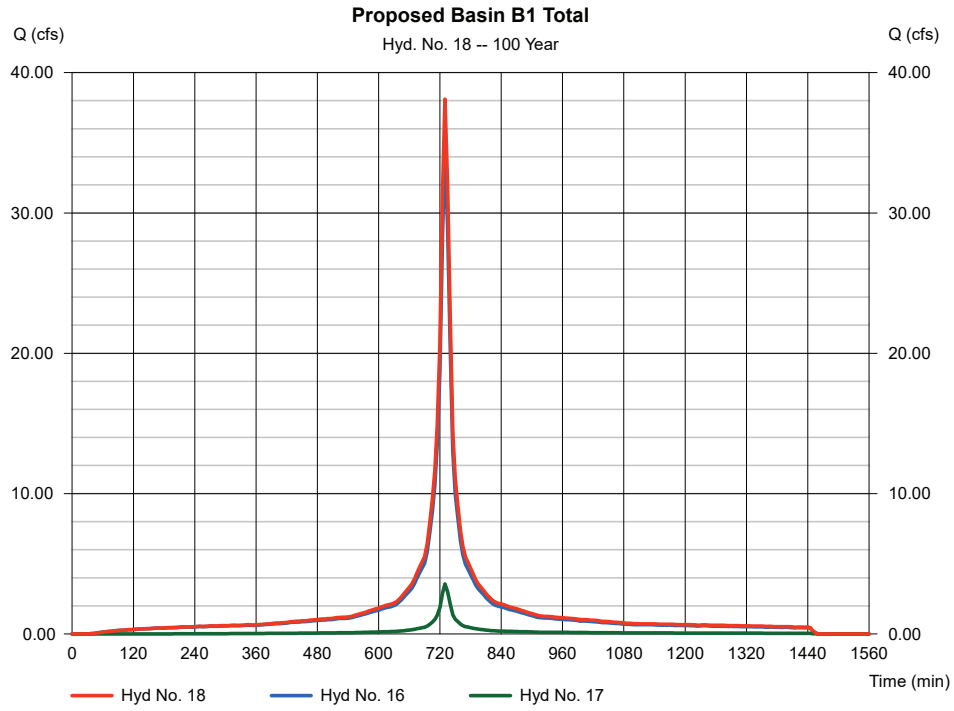


Hydrograph Report

Hyd. No. 18

Proposed Basin B1 Total

Hydrograph type	= Combine	Peak discharge	= 38.11 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 160,304 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 5.900 ac



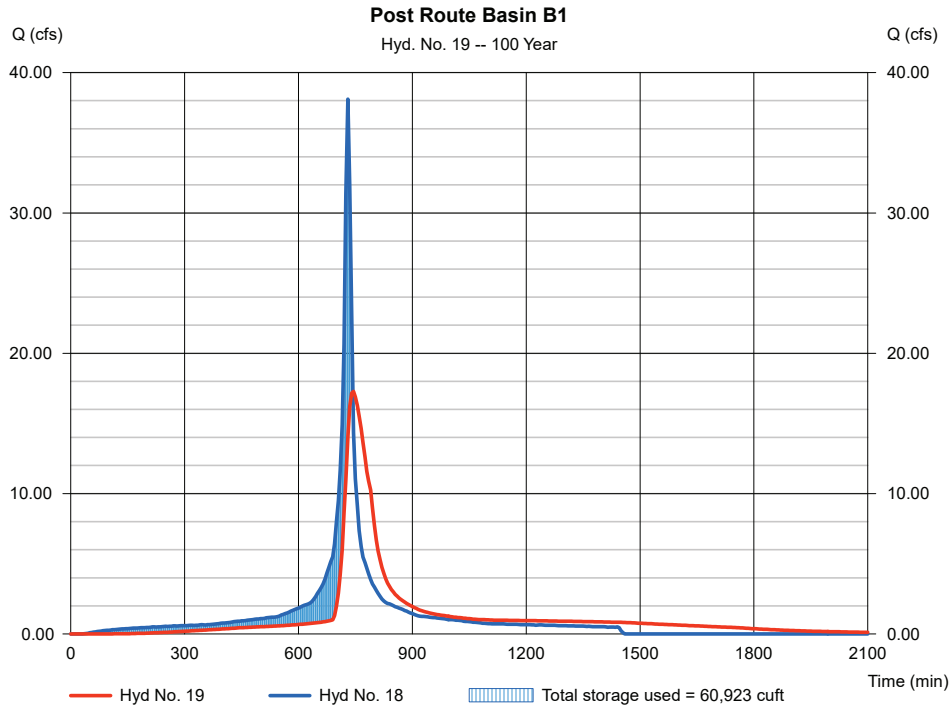
Hydrograph Report

Hyd. No. 19

Post Route Basin B1

Hydrograph type	= Reservoir	Peak discharge	= 17.28 cfs
Storm frequency	= 100 yrs	Time to peak	= 745 min
Time interval	= 5 min	Hyd. volume	= 160,127 cuft
Inflow hyd. No.	= 18 - Proposed Basin B1 Total	Max. Elevation	= 101.40 ft
Reservoir name	= UG Basin B (1)	Max. Storage	= 60,923 cuft

Storage Indication method used.

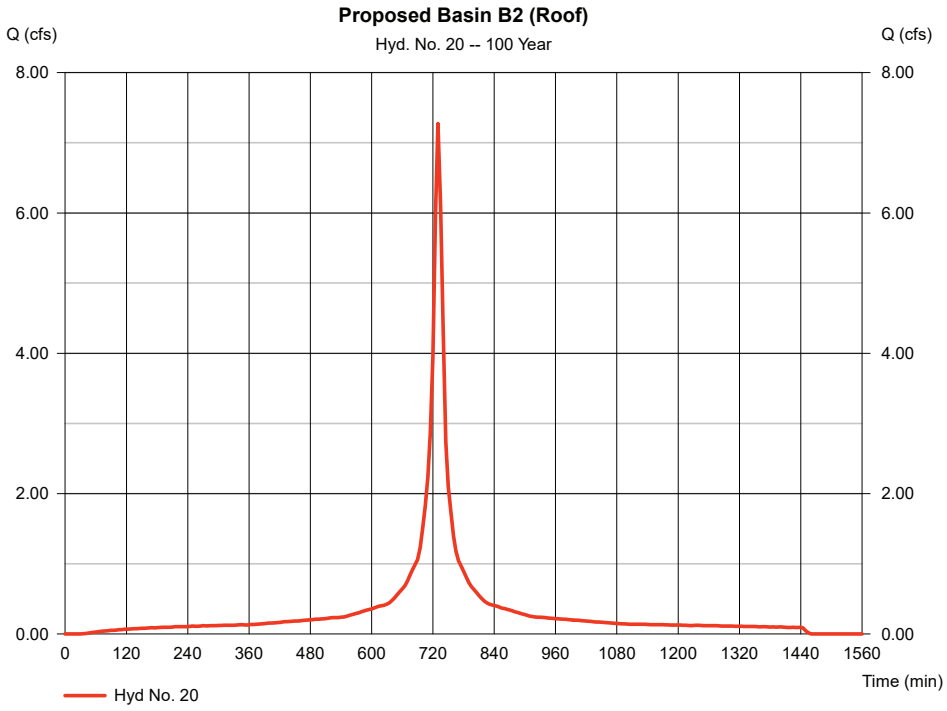


Hydrograph Report

Hyd. No. 20

Proposed Basin B2 (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 7.273 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 30,835 cuft
Drainage area	= 1.120 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

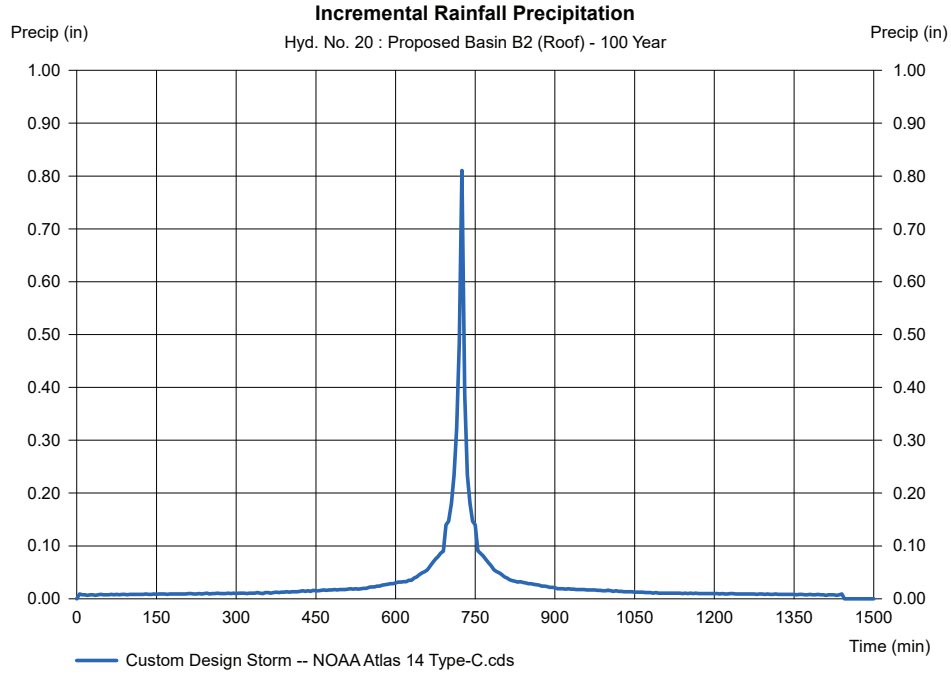


Precipitation Report

Hyd. No. 20

Proposed Basin B2 (Roof)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		



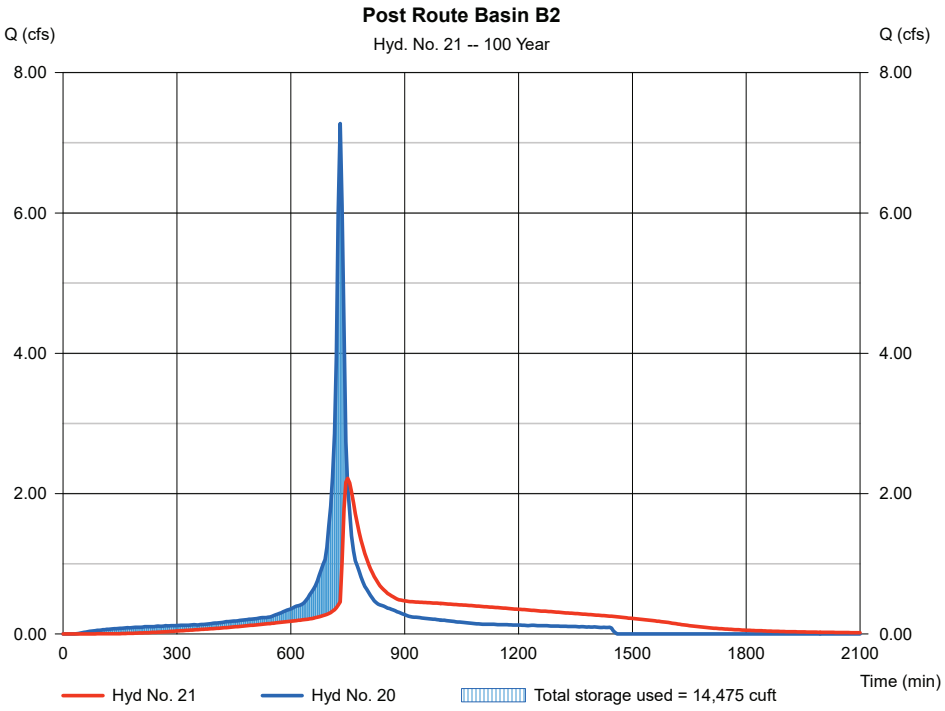
Hydrograph Report

Hyd. No. 21

Post Route Basin B2

Hydrograph type	=	Reservoir	Peak discharge	=	2.219 cfs
Storm frequency	=	100 yrs	Time to peak	=	750 min
Time interval	=	5 min	Hyd. volume	=	30,755 cuft
Inflow hyd. No.	=	20 - Proposed Basin B2 (Roof)	Max. Elevation	=	99.91 ft
Reservoir name	=	UG Basin B (2)	Max. Storage	=	14,475 cuft

Storage Indication method used.

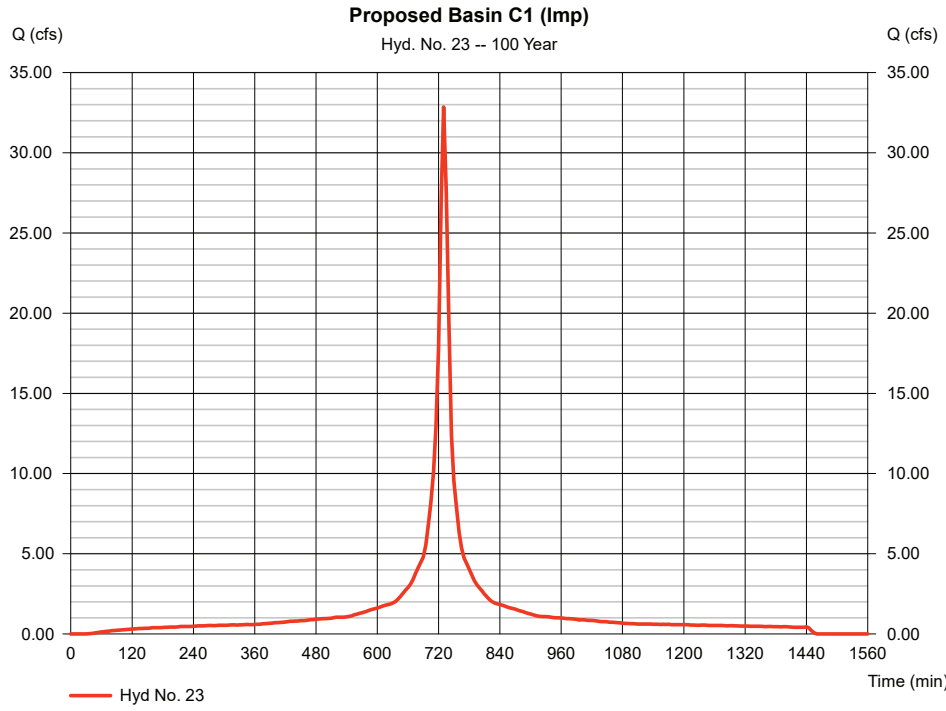


Hydrograph Report

Hyd. No. 23

Proposed Basin C1 (Imp)

Hydrograph type	=	SCS Runoff	Peak discharge	=	32.86 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	5 min	Hyd. volume	=	139,308 cuft
Drainage area	=	5.060 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	10.00 min
Total precip.	=	8.33 in	Distribution	=	Custom
Storm duration	=	NOAA Atlas 14 Type-C.cds	Shape factor	=	484

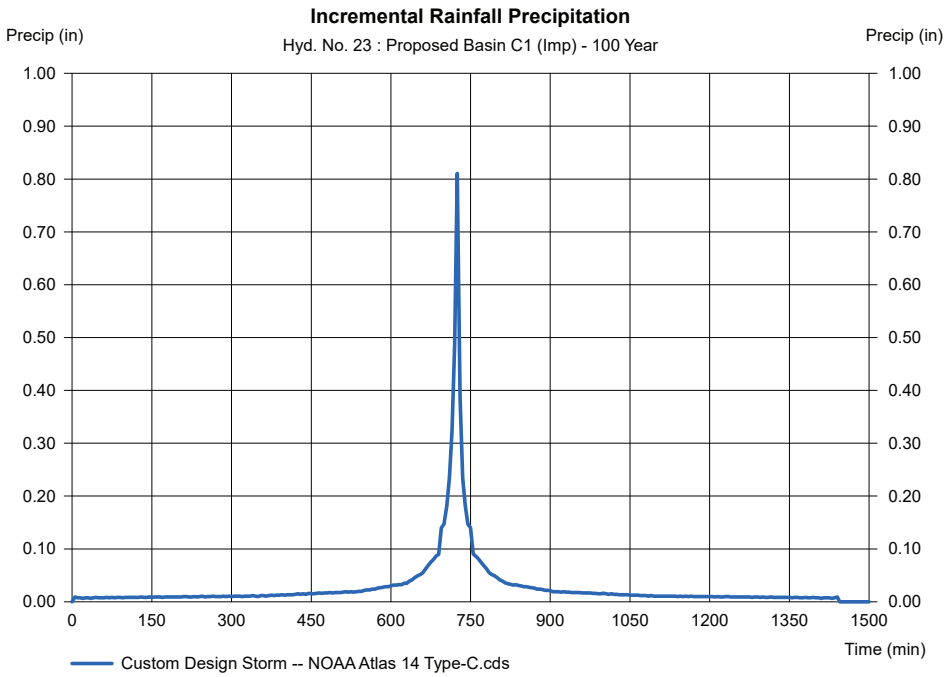


Precipitation Report

Hyd. No. 23

Proposed Basin C1 (Imp)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

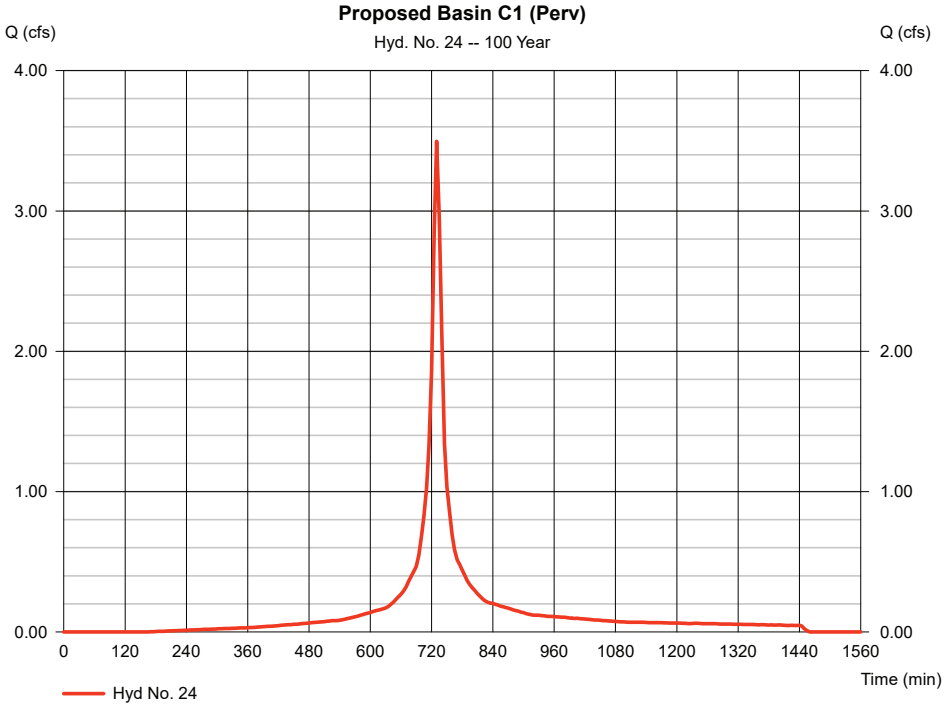


Hydrograph Report

Hyd. No. 24

Proposed Basin C1 (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 3.496 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 13,599 cuft
Drainage area	= 0.570 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

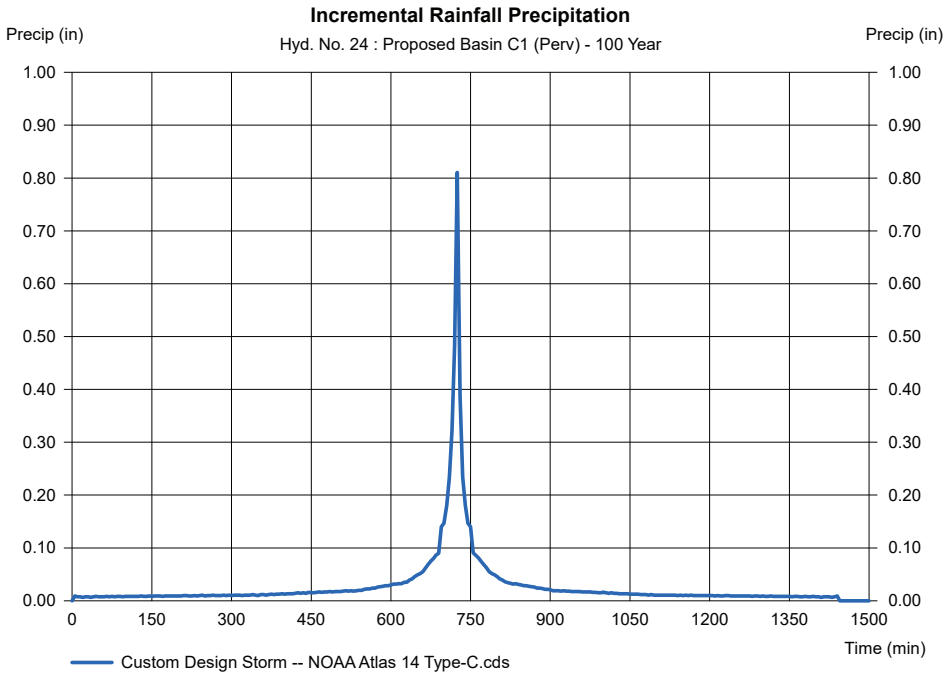


Precipitation Report

Hyd. No. 24

Proposed Basin C1 (Perv)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

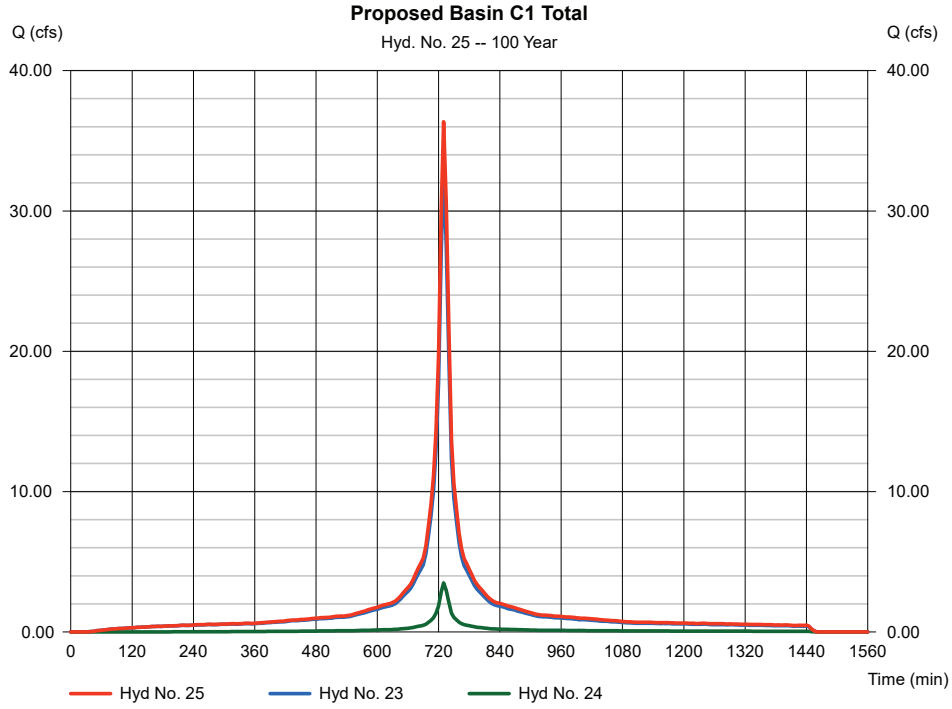


Hydrograph Report

Hyd. No. 25

Proposed Basin C1 Total

Hydrograph type	= Combine	Peak discharge	= 36.36 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 152,907 cuft
Inflow hyds.	= 23, 24	Contrib. drain. area	= 5.630 ac



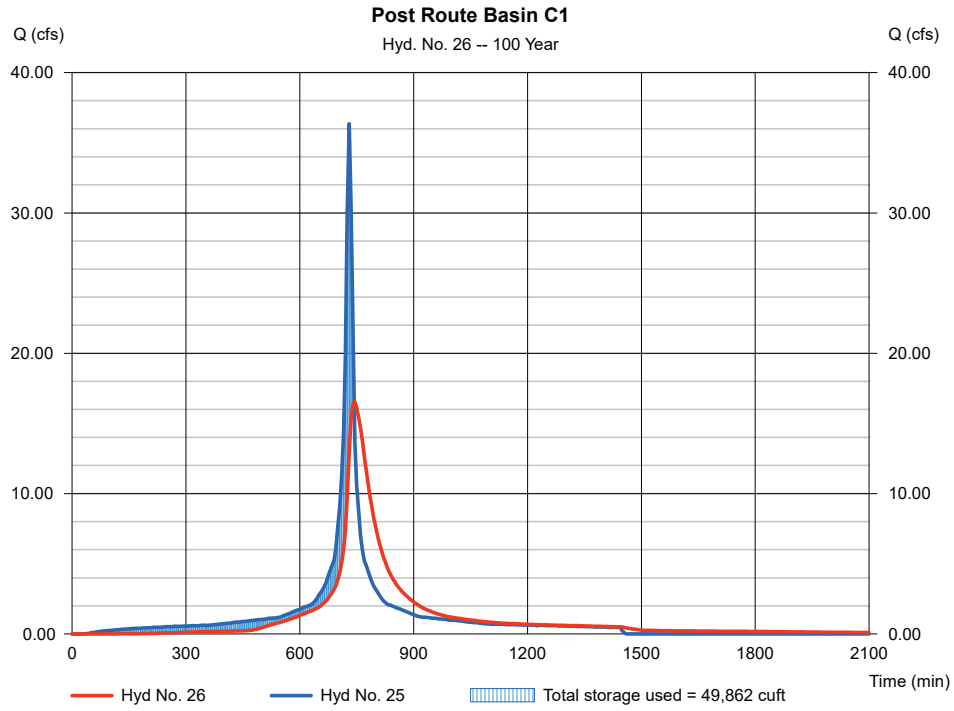
Hydrograph Report

Hyd. No. 26

Post Route Basin C1

Hydrograph type	=	Reservoir	Peak discharge	=	16.55 cfs
Storm frequency	=	100 yrs	Time to peak	=	745 min
Time interval	=	5 min	Hyd. volume	=	152,689 cuft
Inflow hyd. No.	=	25 - Proposed Basin C1 Total	Max. Elevation	=	98.40 ft
Reservoir name	=	UG Basin C (1)	Max. Storage	=	49,862 cuft

Storage Indication method used.

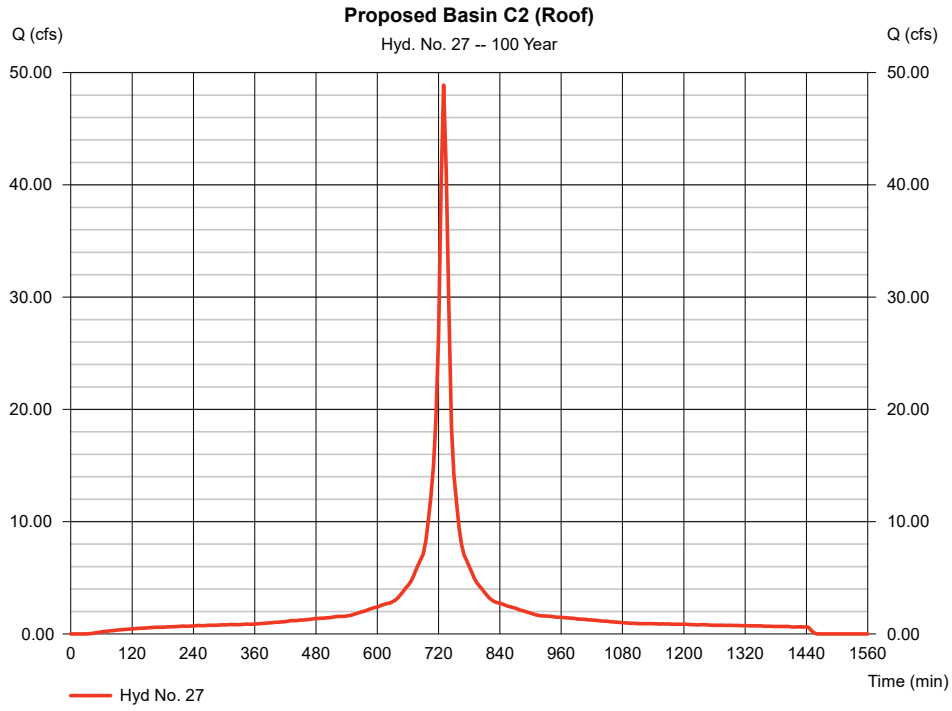


Hydrograph Report

Hyd. No. 27

Proposed Basin C2 (Roof)

Hydrograph type	=	SCS Runoff	Peak discharge	=	48.90 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	5 min	Hyd. volume	=	207,310 cuft
Drainage area	=	7.530 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	10.00 min
Total precip.	=	8.33 in	Distribution	=	Custom
Storm duration	=	NOAA Atlas 14 Type-C.cds	Shape factor	=	484



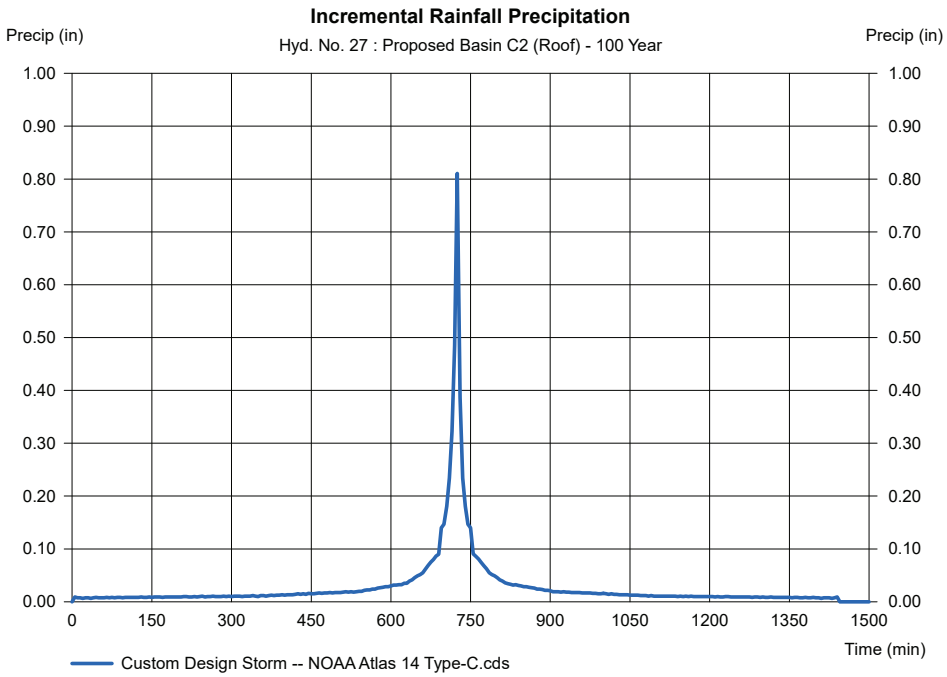
Precipitation Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 27

Proposed Basin C2 (Roof)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		



Hydrograph Report

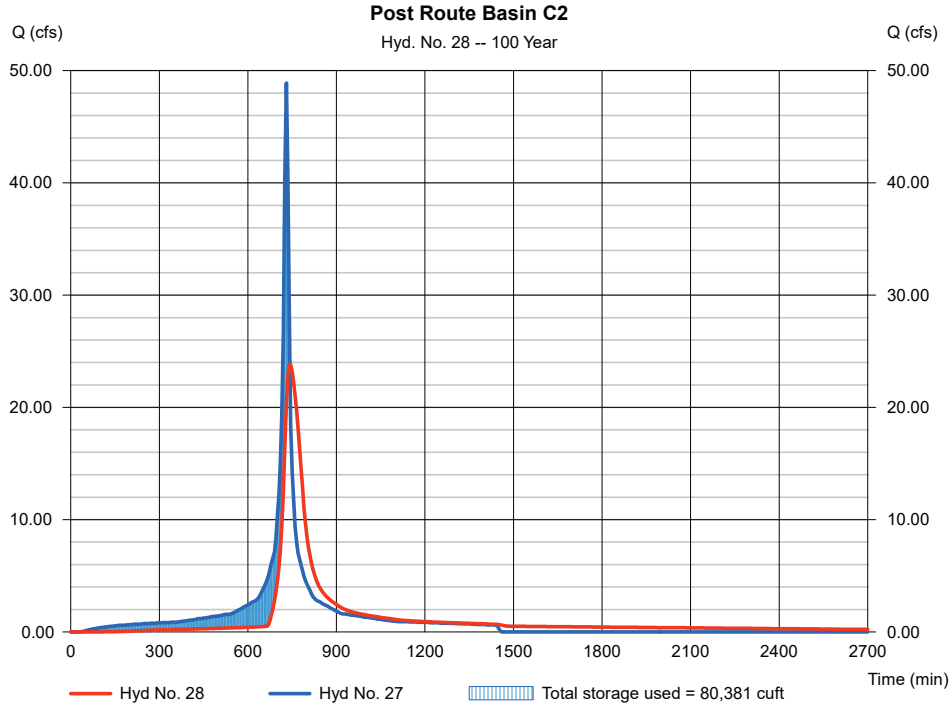
Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 28

Post Route Basin C2

Hydrograph type	= Reservoir	Peak discharge	= 23.83 cfs
Storm frequency	= 100 yrs	Time to peak	= 740 min
Time interval	= 5 min	Hyd. volume	= 207,091 cuft
Inflow hyd. No.	= 27 - Proposed Basin C2 (Roof)	Max. Elevation	= 99.88 ft
Reservoir name	= UG Basin C (2)	Max. Storage	= 80,381 cuft

Storage Indication method used.

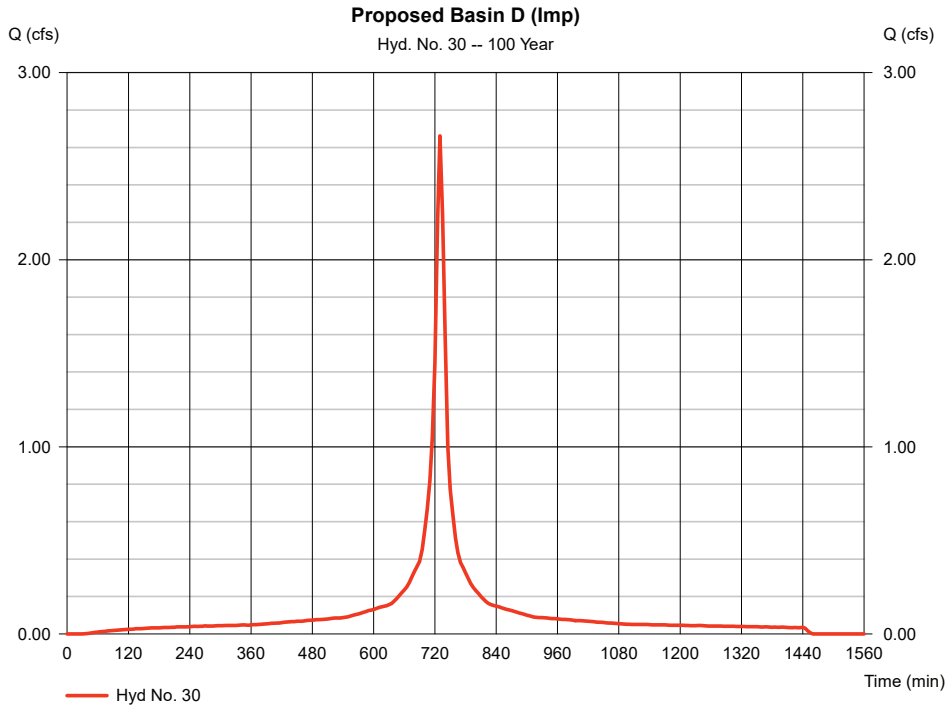


Hydrograph Report

Hyd. No. 30

Proposed Basin D (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.663 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 5 min	Hyd. volume	= 11,288 cuft
Drainage area	= 0.410 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.33 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds	Shape factor	= 484

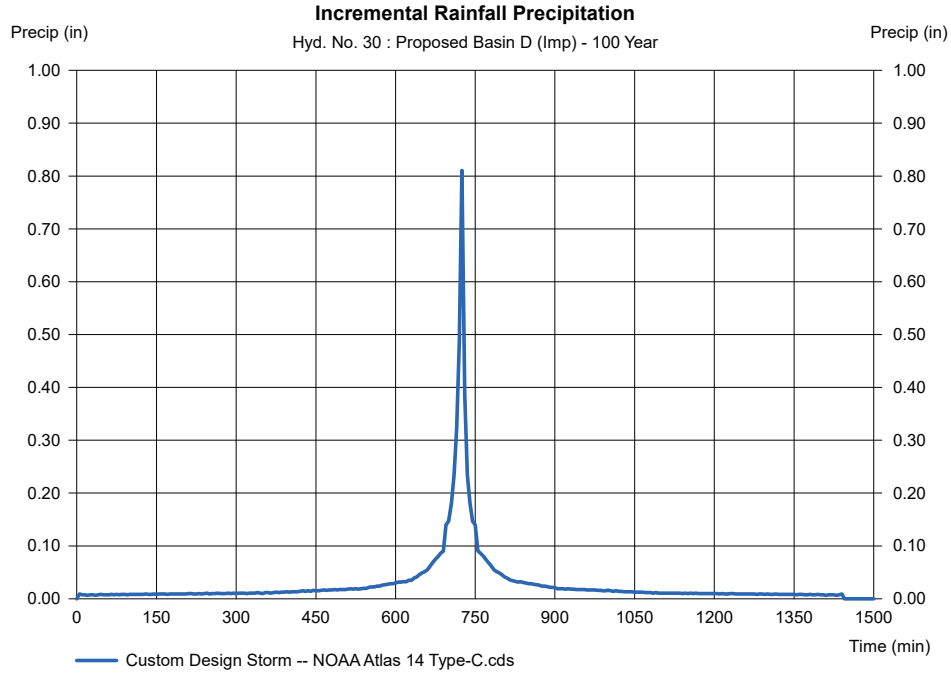


Precipitation Report

Hyd. No. 30

Proposed Basin D (Imp)

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		



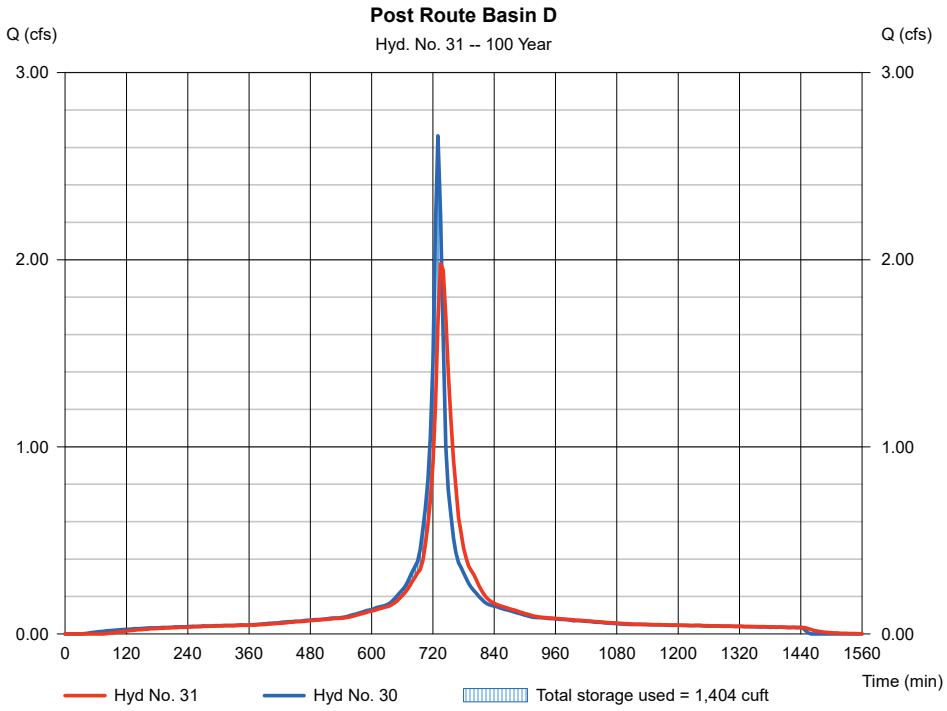
Hydrograph Report

Hyd. No. 31

Post Route Basin D

Hydrograph type	=	Reservoir	Peak discharge	=	1.979 cfs
Storm frequency	=	100 yrs	Time to peak	=	735 min
Time interval	=	5 min	Hyd. volume	=	11,265 cuft
Inflow hyd. No.	=	30 - Proposed Basin D (Imp)	Max. Elevation	=	96.85 ft
Reservoir name	=	UG Basin D	Max. Storage	=	1,404 cuft

Storage Indication method used.

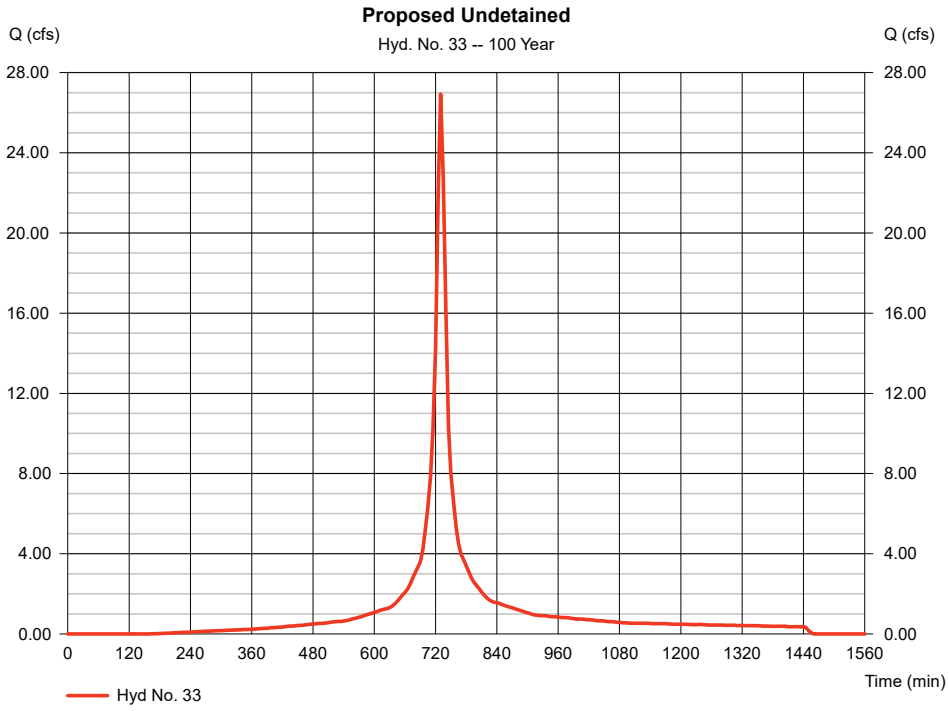


Hydrograph Report

Hyd. No. 33

Proposed Undetained

Hydrograph type	=	SCS Runoff	Peak discharge	=	26.93 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	5 min	Hyd. volume	=	104,739 cuft
Drainage area	=	4.390 ac	Curve number	=	89
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	10.00 min
Total precip.	=	8.33 in	Distribution	=	Custom
Storm duration	=	NOAA Atlas 14 Type-C.cds	Shape factor	=	484

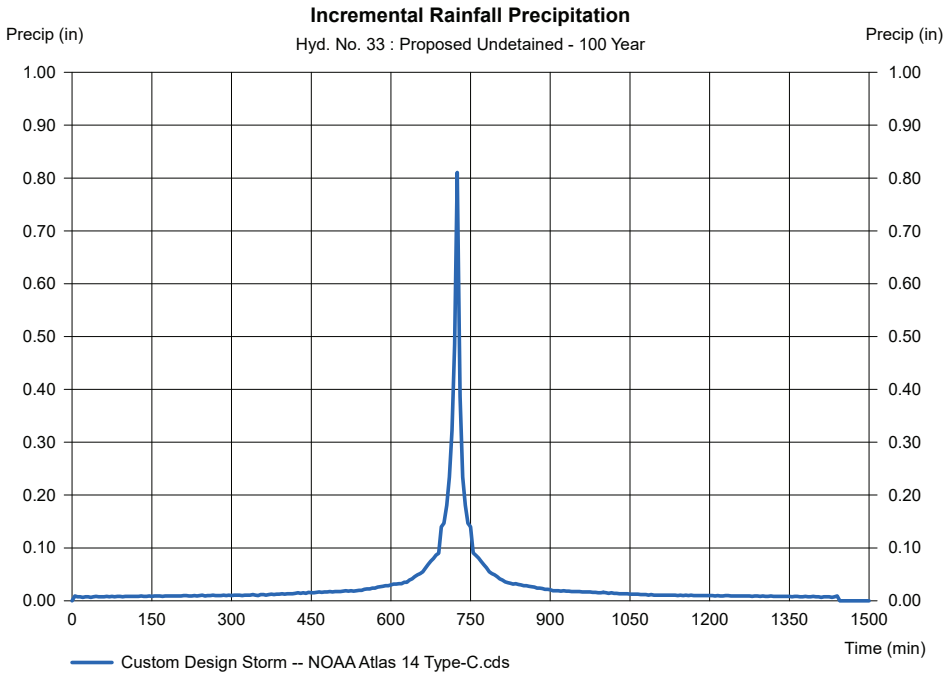


Precipitation Report

Hyd. No. 33

Proposed Undetained

Storm Frequency	= 100 yrs	Time interval	= 5 min
Total precip.	= 8.3300 in	Distribution	= Custom
Storm duration	= NOAA Atlas 14 Type-C.cds		

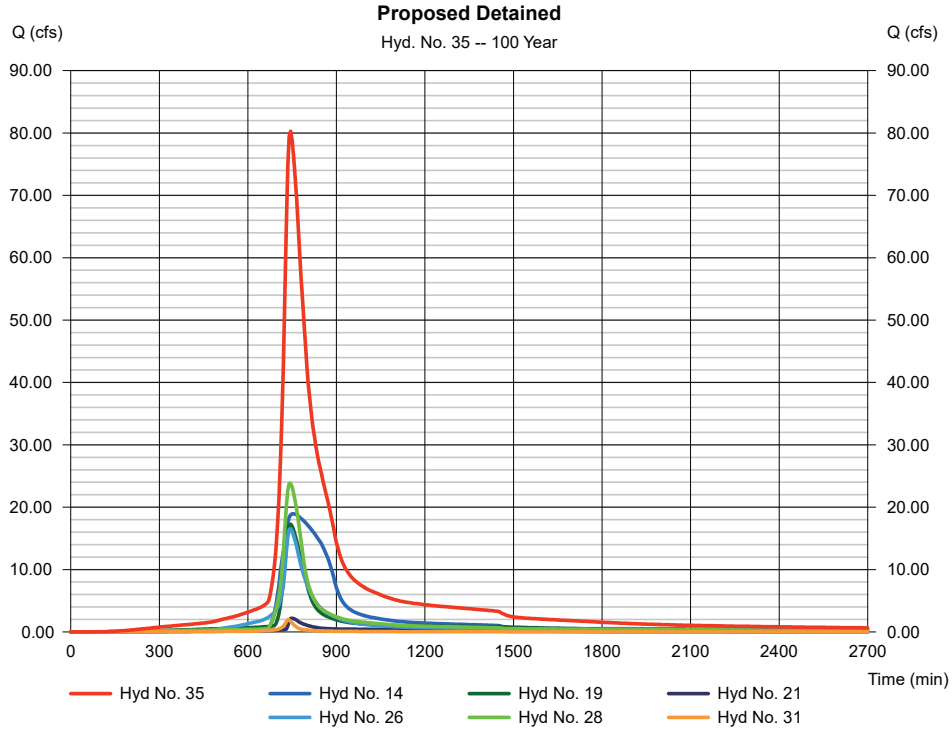


Hydrograph Report

Hyd. No. 35

Proposed Detained

Hydrograph type	= Combine	Peak discharge	= 80.29 cfs
Storm frequency	= 100 yrs	Time to peak	= 745 min
Time interval	= 5 min	Hyd. volume	= 879,024 cuft
Inflow hyds.	= 14, 19, 21, 26, 28, 31	Contrib. drain. area	= 0.000 ac

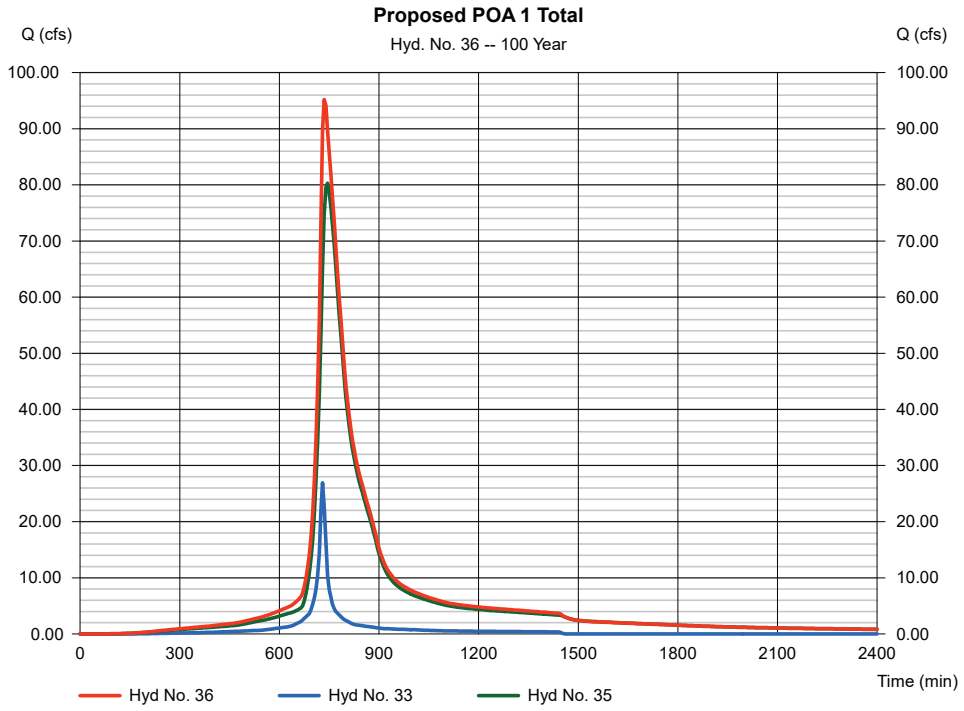


Hydrograph Report

Hyd. No. 36

Proposed POA 1 Total

Hydrograph type	= Combine	Peak discharge	= 95.20 cfs
Storm frequency	= 100 yrs	Time to peak	= 735 min
Time interval	= 5 min	Hyd. volume	= 973,026 cuft
Inflow hyds.	= 33, 35	Contrib. drain. area	= 4.390 ac



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	69.8703	13.1000	0.8658	--------
3	0.0000	0.0000	0.0000	--------
5	79.2597	14.6000	0.8369	--------
10	88.2351	15.5000	0.8279	--------
25	102.6072	16.5000	0.8217	--------
50	114.8193	17.2000	0.8199	--------
100	127.1596	17.8000	0.8186	--------

File name: SampleFHA.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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.69	4.61	3.89	3.38	2.99	2.69	2.44	2.24	2.07	1.93	1.81	1.70
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	6.57	5.43	4.65	4.08	3.65	3.30	3.02	2.79	2.59	2.42	2.27	2.15
10	7.24	6.04	5.21	4.59	4.12	3.74	3.43	3.17	2.95	2.77	2.60	2.46
25	8.25	6.95	6.03	5.34	4.80	4.38	4.02	3.73	3.48	3.26	3.07	2.91
50	9.04	7.65	6.66	5.92	5.34	4.87	4.49	4.16	3.88	3.65	3.44	3.25
100	9.83	8.36	7.30	6.50	5.87	5.36	4.94	4.59	4.29	4.03	3.80	3.60

Tc = time in minutes. Values may exceed 60.

Precip. file name: Mercer County.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	0.00	3.31	0.00	0.00	5.01	6.19	0.00	8.33
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	1.25	3.31	0.00	0.00	5.01	6.19	0.00	8.33

Hydraflow Table of Contents

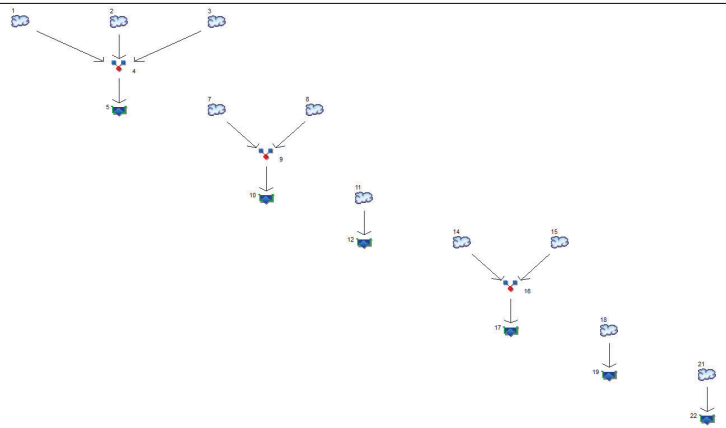
Hydraflow Hydrographs by Intelisolve v9.1 Friday, Dec 2, 2022

Contents continued...

HYDROGRAPH SUMMARY REPORTS – WATER QUALITY STORM

Watershed Model Schematic

Hydraflow Hydrographs by Intelisolve v9.1



Legend

Hyd.	Origin	Description
1	SCS Runoff	Proposed Basin A (Imp)
2	SCS Runoff	Proposed Basin A (Perv)
3	SCS Runoff	Proposed Basin A (Roof)
4	Combine	Proposed Basin A
5	Reservoir	Post Route Basin A
7	SCS Runoff	Proposed Basin B1 (Imp)
8	SCS Runoff	Proposed Basin B1 (Perv)
9	Combine	Proposed Basin B1 Total
10	Reservoir	Post Route Basin B1
11	SCS Runoff	Proposed Basin B2 (Roof)
12	Reservoir	Post Route Basin B2
14	SCS Runoff	Proposed Basin C1 (Imp)
15	SCS Runoff	Proposed Basin C1 (Perv)
16	Combine	Proposed Basin C1 Total
17	Reservoir	Post Route Basin C1
18	SCS Runoff	Proposed Basin C2 (Roof)
19	Reservoir	Post Route Basin C2
21	SCS Runoff	Proposed Basin D (Imp)
22	Reservoir	Post Route Basin D

Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.1

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	SCS Runoff	-------	16.80	-------	-------	-------	-------	-------	-------	-------	Proposed Basin A (Imp)
2	SCS Runoff	-------	0.405	-------	-------	-------	-------	-------	-------	-------	Proposed Basin A (Perv)
3	SCS Runoff	-------	16.80	-------	-------	-------	-------	-------	-------	-------	Proposed Basin A (Roof)
4	Combine	1, 2, 3	24.55	-------	-------	-------	-------	-------	-------	-------	Proposed Basin A
5	Reservoir	4	0.436	-------	-------	-------	-------	-------	-------	-------	Post Route Basin A
7	SCS Runoff	-------	11.79	-------	-------	-------	-------	-------	-------	-------	Proposed Basin B1 (Imp)
8	SCS Runoff	-------	0.573	-------	-------	-------	-------	-------	-------	-------	Proposed Basin B1 (Perv)
9	Combine	7, 8	12.30	-------	-------	-------	-------	-------	-------	-------	Proposed Basin B1 Total
10	Reservoir	9	0.732	-------	-------	-------	-------	-------	-------	-------	Post Route Basin B1
11	SCS Runoff	-------	2.483	-------	-------	-------	-------	-------	-------	-------	Proposed Basin B2 (Roof)
12	Reservoir	11	0.211	-------	-------	-------	-------	-------	-------	-------	Post Route Basin B2
14	SCS Runoff	-------	11.22	-------	-------	-------	-------	-------	-------	-------	Proposed Basin C1 (Imp)
15	SCS Runoff	-------	0.563	-------	-------	-------	-------	-------	-------	-------	Proposed Basin C1 (Perv)
16	Combine	14, 15	12.42	-------	-------	-------	-------	-------	-------	-------	Proposed Basin C1 Total
17	Reservoir	16	1.730	-------	-------	-------	-------	-------	-------	-------	Post Route Basin C1
18	SCS Runoff	-------	16.69	-------	-------	-------	-------	-------	-------	-------	Proposed Basin C2 (Roof)
19	Reservoir	18	0.408	-------	-------	-------	-------	-------	-------	-------	Post Route Basin C2
21	SCS Runoff	-------	0.909	-------	-------	-------	-------	-------	-------	-------	Proposed Basin D (Imp)
22	Reservoir	21	0.607	-------	-------	-------	-------	-------	-------	-------	Post Route Basin D

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

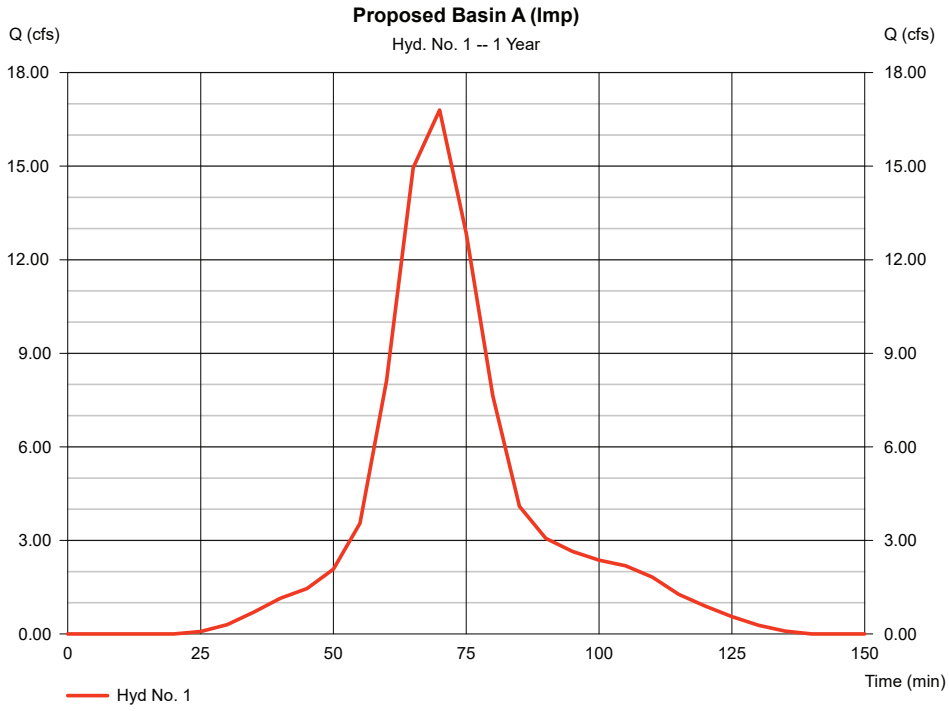
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	16.80	5	70	26,677	----	------	------	Proposed Basin A (Imp)
2	SCS Runoff	0.405	5	70	627	----	------	------	Proposed Basin A (Perv)
3	SCS Runoff	16.80	5	70	26,677	----	------	------	Proposed Basin A (Roof)
4	Combine	24.55	5	70	38,975	1, 2, 3	------	------	Proposed Basin A
5	Reservoir	0.436	5	130	38,767	4	97.39	37,285	Post Route Basin A
7	SCS Runoff	11.79	5	70	18,723	----	------	------	Proposed Basin B1 (Imp)
8	SCS Runoff	0.573	5	70	886	----	------	------	Proposed Basin B1 (Perv)
9	Combine	12.30	5	70	19,503	7, 8	------	------	Proposed Basin B1 Total
10	Reservoir	0.732	5	120	19,326	9	98.94	17,022	Post Route Basin B1
11	SCS Runoff	2.483	5	70	3,942	----	------	------	Proposed Basin B2 (Roof)
12	Reservoir	0.211	5	115	3,862	11	98.43	3,275	Post Route Basin B2
14	SCS Runoff	11.22	5	70	17,808	----	------	------	Proposed Basin C1 (Imp)
15	SCS Runoff	0.563	5	70	871	----	------	------	Proposed Basin C1 (Perv)
16	Combine	12.42	5	70	19,719	14, 15	------	------	Proposed Basin C1 Total
17	Reservoir	1.730	5	100	19,501	16	96.74	15,504	Post Route Basin C1
18	SCS Runoff	16.69	5	70	26,501	----	------	------	Proposed Basin C2 (Roof)
19	Reservoir	0.408	5	130	26,282	18	97.19	24,945	Post Route Basin C2
21	SCS Runoff	0.909	5	70	1,443	----	------	------	Proposed Basin D (Imp)
22	Reservoir	0.607	5	75	1,421	21	96.46	498	Post Route Basin D

Hydrograph Report

Hyd. No. 1

Proposed Basin A (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 16.80 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 26,677 cuft
Drainage area	= 7.580 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds	Shape factor	= 484

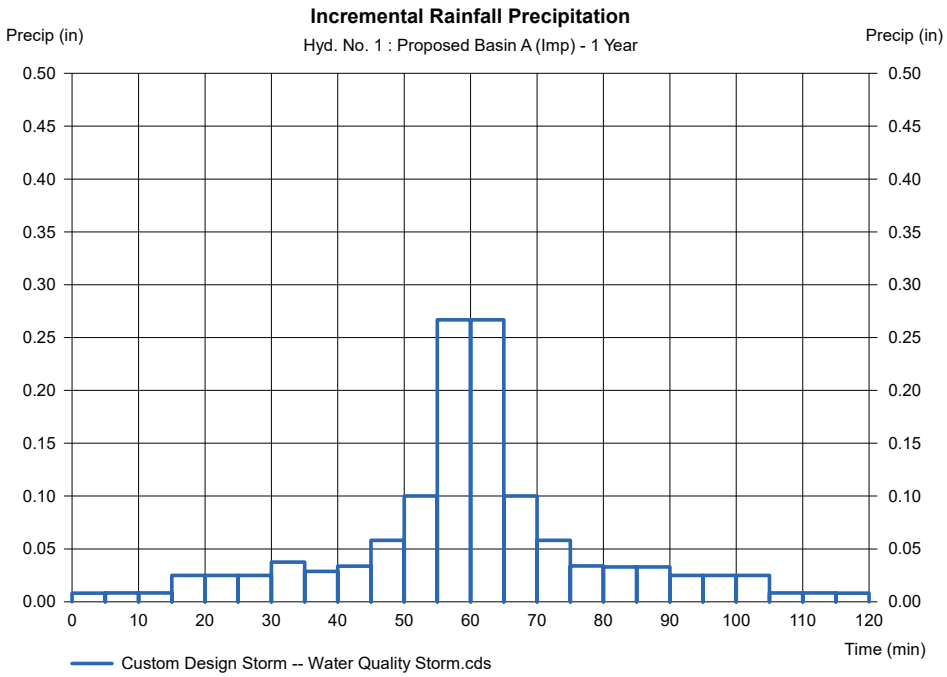


Precipitation Report

Hyd. No. 1

Proposed Basin A (Imp)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		

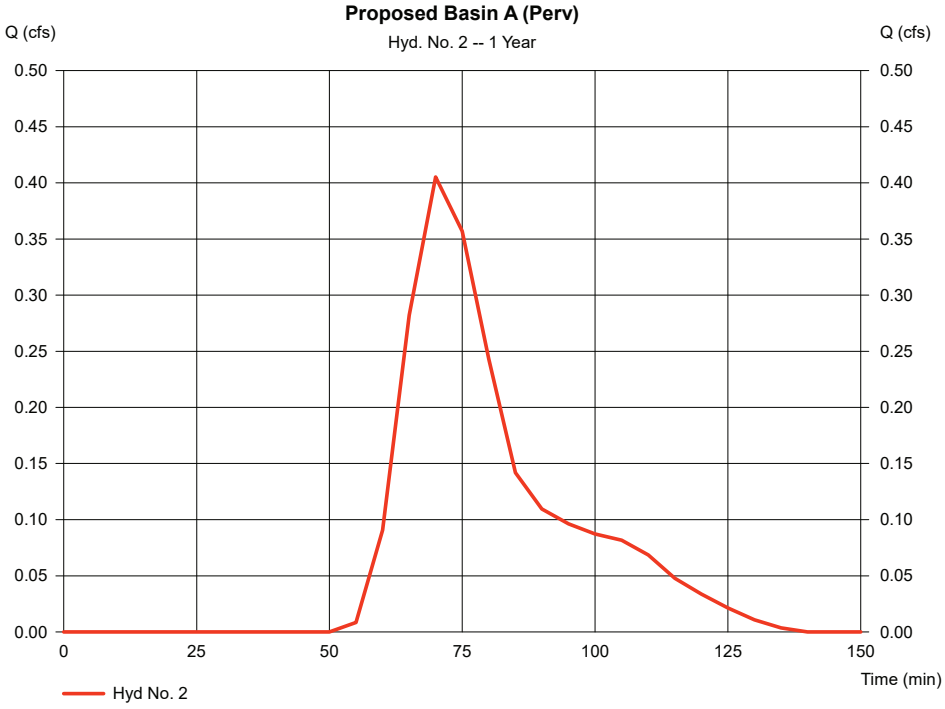


Hydrograph Report

Hyd. No. 2

Proposed Basin A (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.405 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 627 cuft
Drainage area	= 0.410 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds	Shape factor	= 484

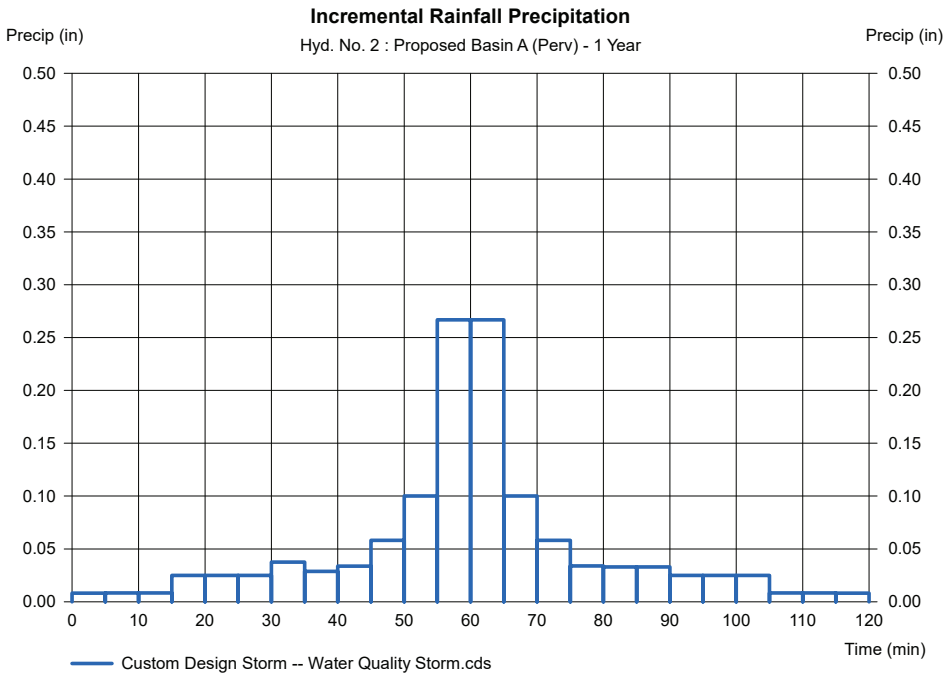


Precipitation Report

Hyd. No. 2

Proposed Basin A (Perv)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		

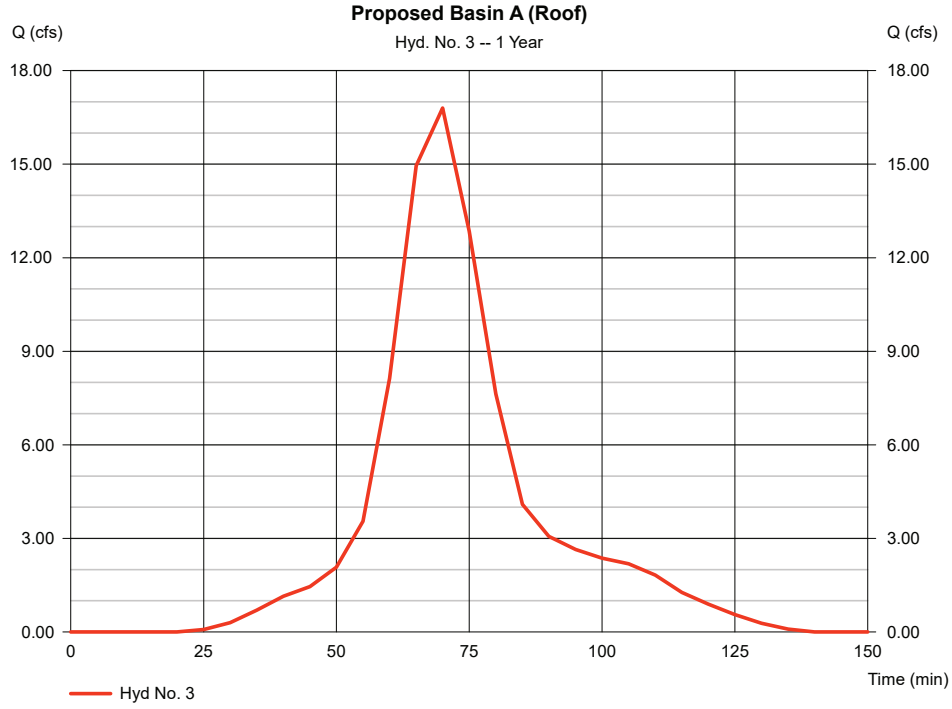


Hydrograph Report

Hyd. No. 3

Proposed Basin A (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 16.80 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 26,677 cuft
Drainage area	= 7.580 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds	Shape factor	= 484

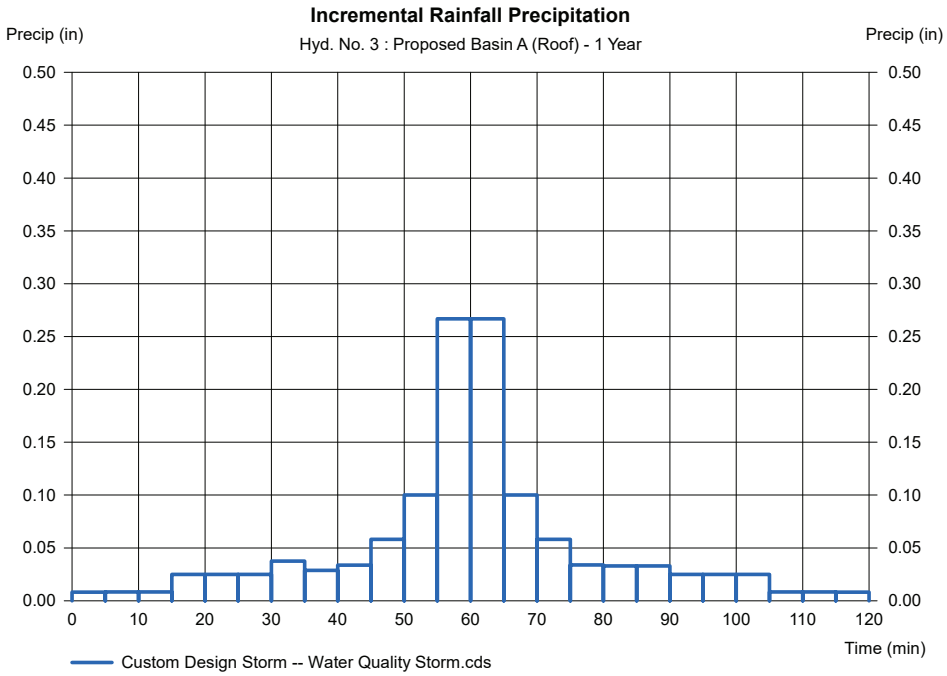


Precipitation Report

Hyd. No. 3

Proposed Basin A (Roof)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		

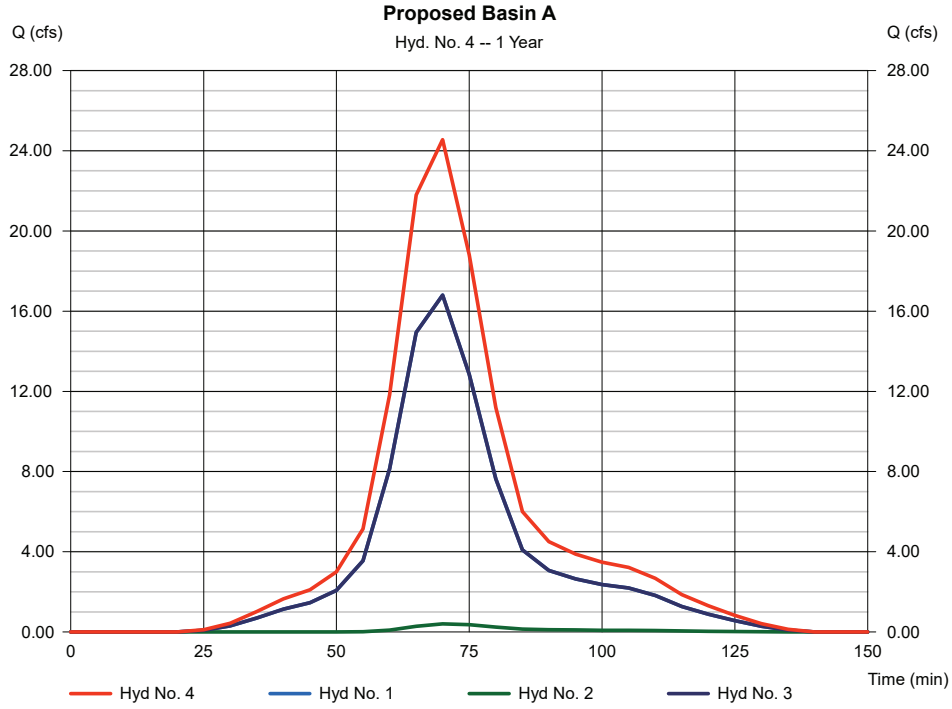


Hydrograph Report

Hyd. No. 4

Proposed Basin A

Hydrograph type	= Combine	Peak discharge	= 24.55 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 38,975 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 15.570 ac



Hydrograph Report

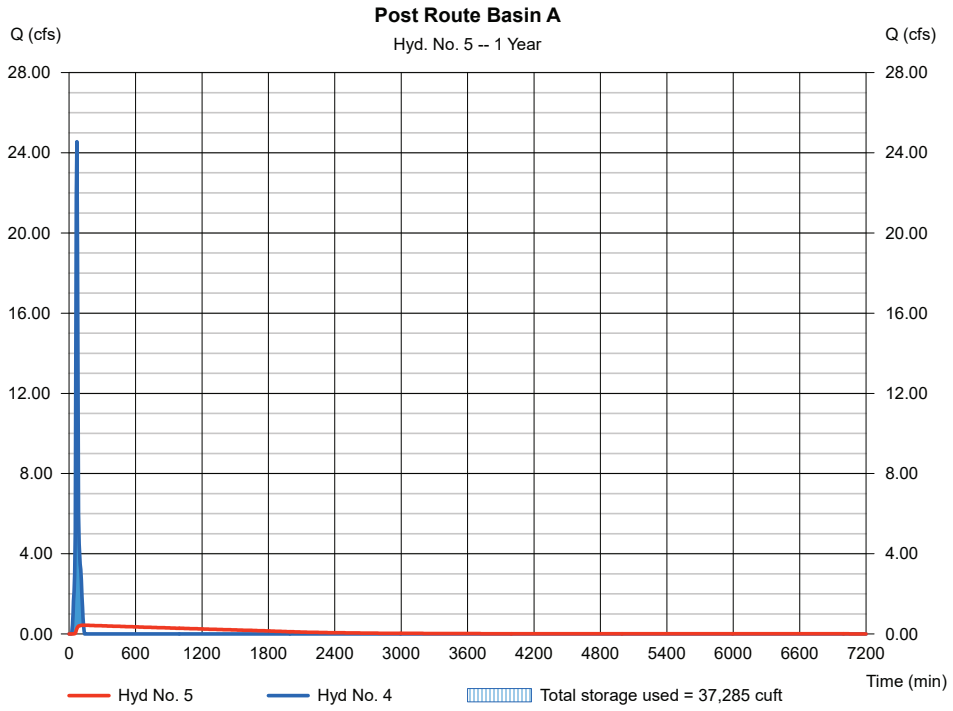
Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 5

Post Route Basin A

Hydrograph type	= Reservoir	Peak discharge	= 0.436 cfs
Storm frequency	= 1 yrs	Time to peak	= 130 min
Time interval	= 5 min	Hyd. volume	= 38,767 cuft
Inflow hyd. No.	= 4 - Proposed Basin A	Max. Elevation	= 97.39 ft
Reservoir name	= UG Basin A	Max. Storage	= 37,285 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Pond No. 3 - UG Basin A

Pond Data

UG Chambers - Invert elev. = 96.00 ft, Rise x Span = 6.00 x 8.42 ft, Barrel Len = 245.28 ft, No. Barrels = 13, Slope = 0.00%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	96.00	n/a	0	0
0.60	96.60	n/a	16,112	16,112
1.20	97.20	n/a	16,112	32,224
1.80	97.80	n/a	16,112	48,337
2.40	98.40	n/a	16,112	64,449
3.00	99.00	n/a	16,112	80,561
3.60	99.60	n/a	16,112	96,673
4.20	100.20	n/a	16,112	112,786
4.80	100.80	n/a	16,112	128,898
5.40	101.40	n/a	16,112	145,010
6.00	102.00	n/a	16,112	161,122

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	4.00	0.00	0.00
Span (in)	= 18.00	4.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 96.00	96.00	98.00	0.00
Length (ft)	= 35.00	0.50	0.50	0.00
Slope (%)	= 0.35	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	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 98.25	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	96.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.06	1,611	96.06	0.01 oc	0.01 ic	---	---	0.00	---	---	---	---	---	0.01
0.12	3,222	96.12	0.03 oc	0.03 ic	---	---	0.00	---	---	---	---	---	0.03
0.18	4,834	96.18	0.07 oc	0.06 ic	---	---	0.00	---	---	---	---	---	0.06
0.24	6,445	96.24	0.11 oc	0.10 ic	---	---	0.00	---	---	---	---	---	0.10
0.30	8,056	96.30	0.14 oc	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.36	9,667	96.36	0.18 oc	0.17 ic	---	---	0.00	---	---	---	---	---	0.17
0.42	11,279	96.42	0.20 oc	0.20 ic	---	---	0.00	---	---	---	---	---	0.20
0.48	12,890	96.48	0.23 oc	0.22 ic	---	---	0.00	---	---	---	---	---	0.22
0.54	14,501	96.54	0.24 oc	0.24 ic	---	---	0.00	---	---	---	---	---	0.24
0.60	16,112	96.60	0.26 oc	0.26 ic	---	---	0.00	---	---	---	---	---	0.26
0.66	17,723	96.66	0.28 oc	0.27 ic	---	---	0.00	---	---	---	---	---	0.27
0.72	19,335	96.72	0.30 oc	0.29 ic	---	---	0.00	---	---	---	---	---	0.29
0.78	20,946	96.78	0.31 oc	0.30 ic	---	---	0.00	---	---	---	---	---	0.30
0.84	22,557	96.84	0.33 oc	0.32 ic	---	---	0.00	---	---	---	---	---	0.32
0.90	24,168	96.90	0.33 oc	0.33 ic	---	---	0.00	---	---	---	---	---	0.33
0.96	25,780	96.96	0.35 oc	0.35 ic	---	---	0.00	---	---	---	---	---	0.35
1.02	27,391	97.02	0.37 oc	0.36 ic	---	---	0.00	---	---	---	---	---	0.36
1.08	29,002	97.08	0.37 oc	0.37 ic	---	---	0.00	---	---	---	---	---	0.37
1.14	30,613	97.14	0.40 oc	0.39 ic	---	---	0.00	---	---	---	---	---	0.39
1.20	32,224	97.20	0.42 oc	0.40 ic	---	---	0.00	---	---	---	---	---	0.40
1.26	33,836	97.26	0.42 oc	0.41 ic	---	---	0.00	---	---	---	---	---	0.41
1.32	35,447	97.32	0.44 oc	0.42 ic	---	---	0.00	---	---	---	---	---	0.42
1.38	37,058	97.38	0.44 oc	0.43 ic	---	---	0.00	---	---	---	---	---	0.43
1.44	38,669	97.44	0.46 oc	0.44 ic	---	---	0.00	---	---	---	---	---	0.44
1.50	40,281	97.50	0.46 oc	0.46 ic	---	---	0.00	---	---	---	---	---	0.46
1.56	41,892	97.56	0.49 oc	0.47 ic	---	---	0.00	---	---	---	---	---	0.47
1.62	43,503	97.62	0.49 oc	0.48 ic	---	---	0.00	---	---	---	---	---	0.48
1.68	45,114	97.68	0.49 oc	0.49 ic	---	---	0.00	---	---	---	---	---	0.49
1.74	46,725	97.74	0.51 oc	0.50 ic	---	---	0.00	---	---	---	---	---	0.50
1.80	48,337	97.80	0.51 oc	0.51 ic	---	---	0.00	---	---	---	---	---	0.51
1.86	49,948	97.86	0.54 oc	0.52 ic	---	---	0.00	---	---	---	---	---	0.52
1.92	51,559	97.92	0.54 oc	0.53 ic	---	---	0.00	---	---	---	---	---	0.53

Continues on next page...

UG Basin A

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
1.98	53,170	97.98	0.54 oc	0.54 ic	---	---	0.00	---	---	---	---	---	0.54
2.04	54,782	98.04	0.56 oc	0.54 ic	---	---	0.00	---	---	---	---	---	0.54
2.10	56,393	98.10	0.56 oc	0.55 ic	---	---	0.00	---	---	---	---	---	0.55
2.16	58,004	98.16	0.56 oc	0.56 ic	---	---	0.00	---	---	---	---	---	0.56
2.22	59,615	98.22	0.59 oc	0.57 ic	---	---	0.00	---	---	---	---	---	0.57
2.28	61,226	98.28	0.67 oc	0.58 ic	---	---	0.07	---	---	---	---	---	0.65
2.34	62,838	98.34	0.95 oc	0.57 ic	---	---	0.36	---	---	---	---	---	0.93
2.40	64,449	98.40	1.37 oc	0.56 ic	---	---	0.77	---	---	---	---	---	1.33
2.46	66,060	98.46	1.85 oc	0.54 ic	---	---	1.28	---	---	---	---	---	1.83
2.52	67,671	98.52	2.42 oc	0.52 ic	---	---	1.87	---	---	---	---	---	2.39
2.58	69,283	98.58	3.02 oc	0.50 ic	---	---	2.53	---	---	---	---	---	3.02
2.64	70,894	98.64	3.69 oc	0.44 ic	---	---	3.24	---	---	---	---	---	3.69
2.70	72,505	98.70	4.46 oc	0.44 ic	---	---	4.02	---	---	---	---	---	4.46
2.76	74,116	98.76	5.29 oc	0.44 ic	---	---	4.85	---	---	---	---	---	5.29
2.82	75,728	98.82	6.16 oc	0.43 ic	---	---	5.73	---	---	---	---	---	6.16
2.88	77,339	98.88	7.07 oc	0.41 ic	---	---	6.66	---	---	---	---	---	7.07
2.94	78,950	98.94	8.03 oc	0.39 ic	---	---	7.63	---	---	---	---	---	8.03
3.00	80,561	99.00	9.02 oc	0.37 ic	---	---	8.65	---	---	---	---	---	9.02
3.06	82,172	99.06	9.78 oc	0.34 ic	---	---	9.43 s	---	---	---	---	---	9.78
3.12	83,784	99.12	10.38 oc	0.33 ic	---	---	10.05 s	---	---	---	---	---	10.38
3.18	85,395	99.18	10.90 oc	0.31 ic	---	---	10.59 s	---	---	---	---	---	10.90
3.24	87,006	99.24	11.37 oc	0.29 ic	---	---	11.07 s	---	---	---	---	---	11.37
3.30	88,617	99.30	11.79 oc	0.28 ic	---	---	11.51 s	---	---	---	---	---	11.79
3.36	90,229	99.36	12.18 oc	0.27 ic	---	---	11.91 s	---	---	---	---	---	12.18
3.42	91,840	99.42	12.54 oc	0.26 ic	---	---	12.28 s	---	---	---	---	---	12.54
3.48	93,451	99.48	12.88 oc	0.25 ic	---	---	12.63 s	---	---	---	---	---	12.88
3.54	95,062	99.54	13.19 oc	0.24 ic	---	---	12.95 s	---	---	---	---	---	13.19
3.60	96,673	99.60	13.49 oc	0.23 ic	---	---	13.26 s	---	---	---	---	---	13.49
3.66	98,285	99.66	13.77 oc	0.22 ic	---	---	13.55 s	---	---	---	---	---	13.77
3.72	99,896	99.72	14.03 ic	0.21 ic	---	---	13.82 s	---	---	---	---	---	14.03
3.78	101,507	99.78	14.23 ic	0.20 ic	---	---	14.03 s	---	---	---	---	---	14.23
3.84	103,118	99.84	14.43 ic	0.19 ic	---	---	14.23 s	---	---	---	---	---	14.43
3.90	104,730	99.90	14.62 ic	0.19 ic	---	---	14.43 s	---	---	---	---	---	14.61
3.96	106,341	99.96	14.80 ic	0.18 ic	---	---	14.61 s	---	---	---	---	---	14.80
4.02	107,952	100.02	14.97 ic	0.17 ic	---	---	14.80 s	---	---	---	---	---	14.97
4.08	109,563	100.08	15.15 ic	0.17 ic	---	---	14.98 s	---	---	---	---	---	15.15
4.14	111,174	100.14	15.31 ic	0.16 ic	---	---	15.15 s	---	---	---	---	---	15.31
4.20	112,786	100.20	15.48 ic	0.16 ic	---	---	15.32 s	---	---	---	---	---	15.47
4.26	114,397	100.26	15.64 ic	0.15 ic	---	---	15.48 s	---	---	---	---	---	15.63
4.32	116,008	100.32	15.79 ic	0.15 ic	---	---	15.64 s	---	---	---	---	---	15.79
4.38	117,619	100.38	15.94 ic	0.14 ic	---	---	15.80 s	---	---	---	---	---	15.94
4.44	119,231	100.44	16.09 ic	0.14 ic	---	---	15.95 s	---	---	---	---	---	16.09
4.50	120,842	100.50	16.24 ic	0.14 ic	---	---	16.10 s	---	---	---	---	---	16.24
4.56	122,453	100.56	16.39 ic	0.13 ic	---	---	16.25 s	---	---	---	---	---	16.38
4.62	124,064	100.62	16.53 ic	0.13 ic	---	---	16.40 s	---	---	---	---	---	16.53
4.68	125,675	100.68	16.67 ic	0.13 ic	---	---	16.54 s	---	---	---	---	---	16.67
4.74	127,287	100.74	16.81 ic	0.12 ic	---	---	16.69 s	---	---	---	---	---	16.81
4.80	128,898	100.80	16.95 ic	0.12 ic	---	---	16.82 s	---	---	---	---	---	16.94
4.86	130,509	100.86	17.08 ic	0.12 ic	---	---	16.96 s	---	---	---	---	---	17.08
4.92	132,120	100.92	17.22 ic	0.11 ic	---	---	17.10 s	---	---	---	---	---	17.21
4.98	133,732	100.98	17.35 ic	0.11 ic	---	---	17.24 s	---	---	---	---	---	17.35
5.04	135,343	101.04	17.48 ic	0.11 ic	---	---	17.36 s	---	---	---	---	---	17.47
5.10	136,954	101.10	17.61 ic	0.11 ic	---	---	17.50 s	---	---	---	---	---	17.61
5.16	138,565	101.16	17.74 ic	0.11 ic	---	---	17.63 s	---	---	---	---	---	17.73
5.22	140,176	101.22	17.87 ic	0.10 ic	---	---	17.75 s	---	---	---	---	---	17.86
5.28	141,788	101.28	17.99 ic	0.10 ic	---	---	17.89 s	---	---	---	---	---	17.99
5.34	143,399	101.34	18.12 ic	0.10 ic	---	---	18.02 s	---	---	---	---	---	18.12
5.40	145,010	101.40	18.24 ic	0.10 ic	---	---	18.13 s	---	---	---	---	---	18.23
5.46	146,621	101.46	18.36 ic	0.10 ic	---	---	18.26 s	---	---	---	---	---	18.36
5.52	148,233	101.52	18.48 ic	0.09 ic	---	---	18.38 s	---	---	---	---	---	18.47
5.58	149,844	101.58	18.60 ic	0.09 ic	---	---	18.51 s	---	---	---	---	---	18.60
5.64	151,455	101.64	18.72 ic	0.09 ic	---	---	18.62 s	---	---	---	---	---	18.71
5.70	153,066	101.70	18.84 ic	0.09 ic	---	---	18.74 s	---	---	---	---	---	18.83
5.76	154,677	101.76	18.96 ic	0.09 ic	---	---	18.87 s	---	---	---	---	---	18.96
5.82	156,289	101.82	19.08 ic	0.09 ic	---	---	18.98 s	---	---	---	---	---	19.06
5.88	157,900	101.88	19.19 ic	0.08 ic	---	---	19.10 s	---	---	---	---	---	19.18
5.94	159,511	101.94	19.31 ic	0.08 ic	---	---	19.21 s	---	---	---	---	---	19.30
6.00	161,122	102.00	19.42 ic	0.08 ic	---	---	19.34 s	---	---	---	---	---	19.42

...End

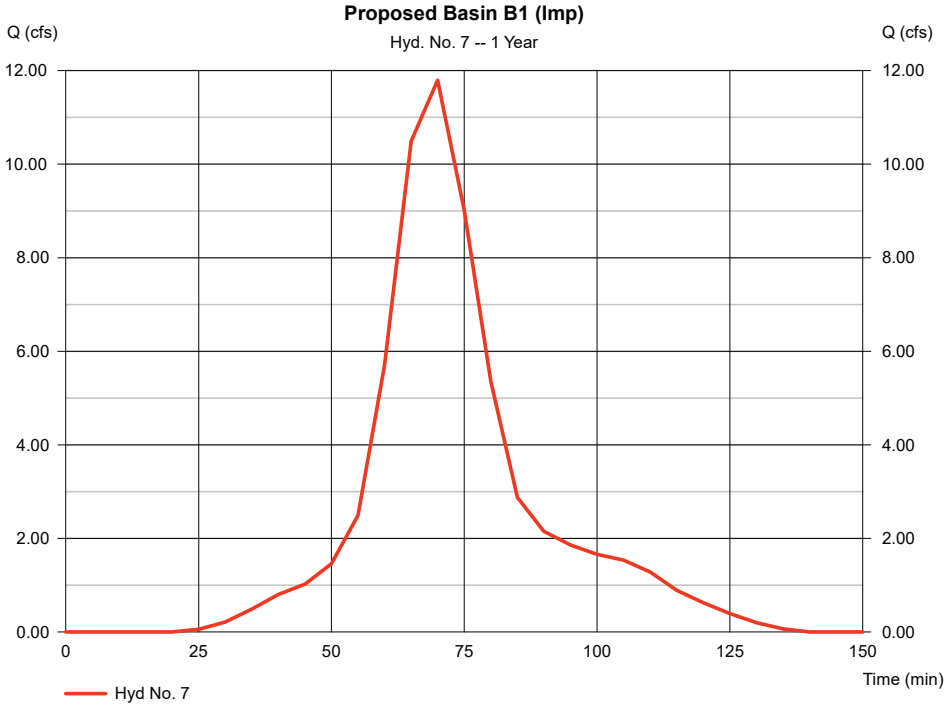
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 7

Proposed Basin B1 (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 11.79 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 18,723 cuft
Drainage area	= 5.320 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds	Shape factor	= 484

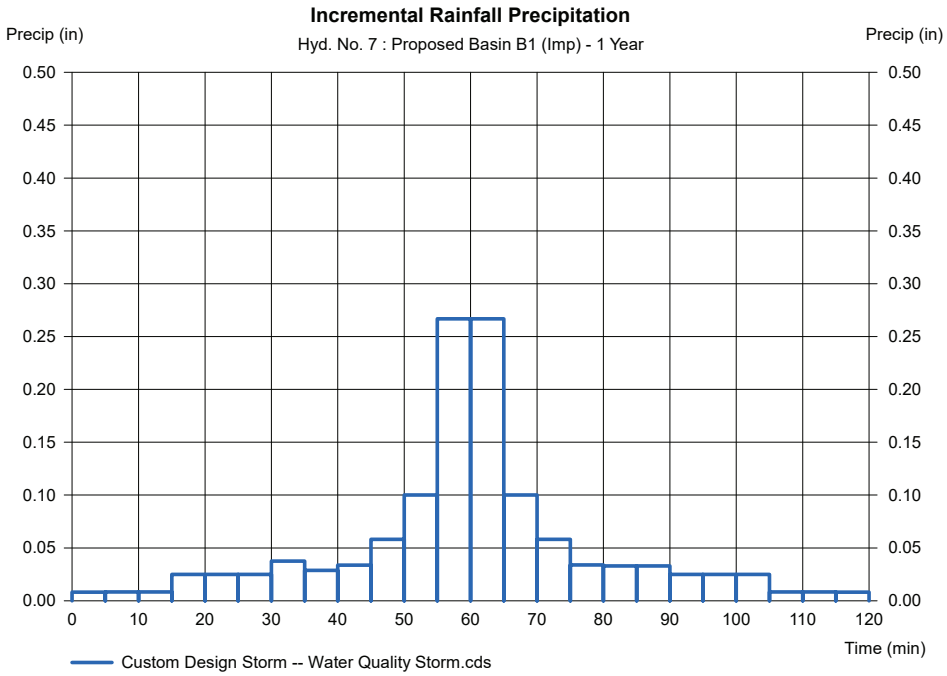


Precipitation Report

Hyd. No. 7

Proposed Basin B1 (Imp)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		

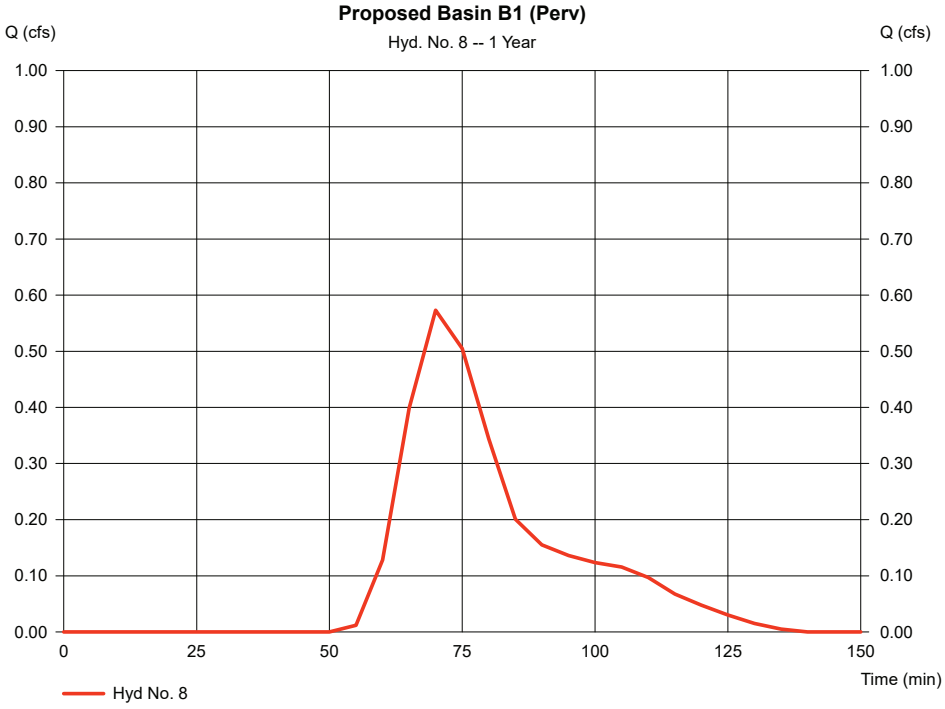


Hydrograph Report

Hyd. No. 8

Proposed Basin B1 (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.573 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 886 cuft
Drainage area	= 0.580 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds	Shape factor	= 484

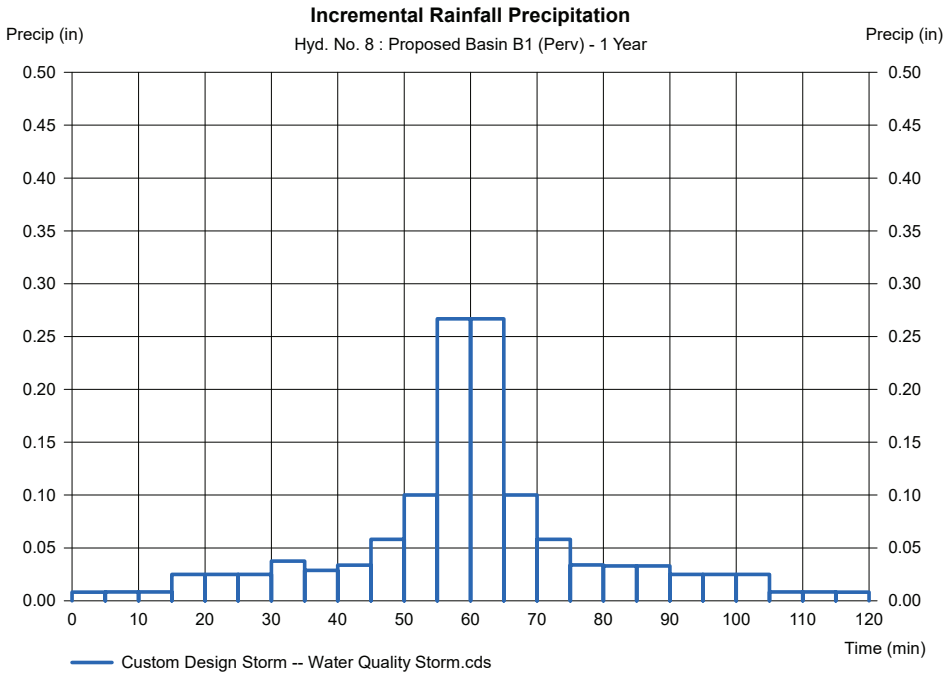


Precipitation Report

Hyd. No. 8

Proposed Basin B1 (Perv)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		

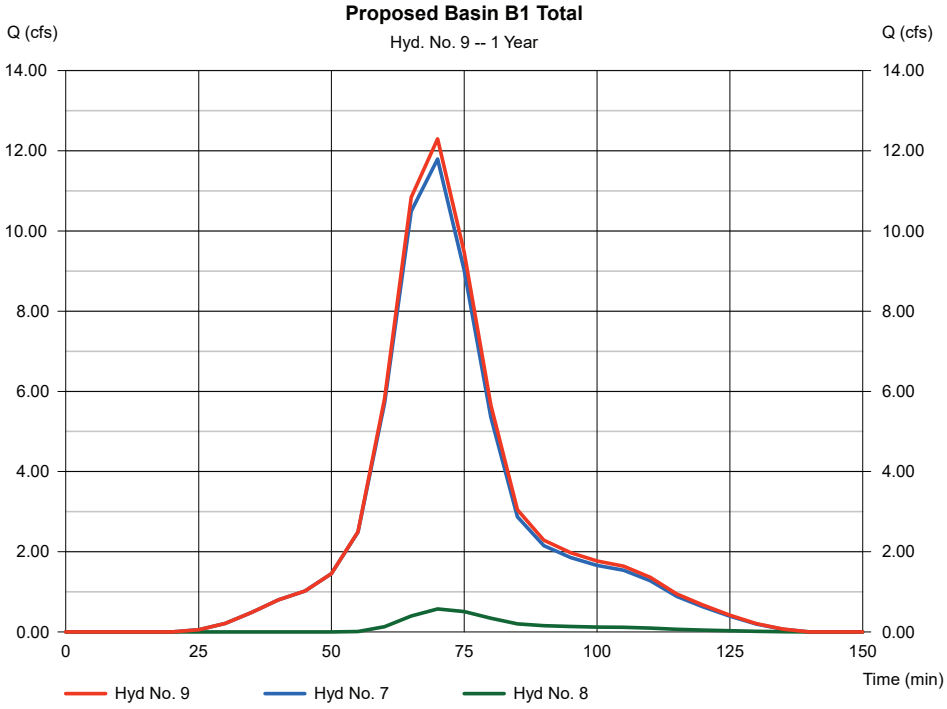


Hydrograph Report

Hyd. No. 9

Proposed Basin B1 Total

Hydrograph type	= Combine	Peak discharge	= 12.30 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 19,503 cuft
Inflow hyds.	= 7, 8	Contrib. drain. area	= 5.900 ac



Hydrograph Report

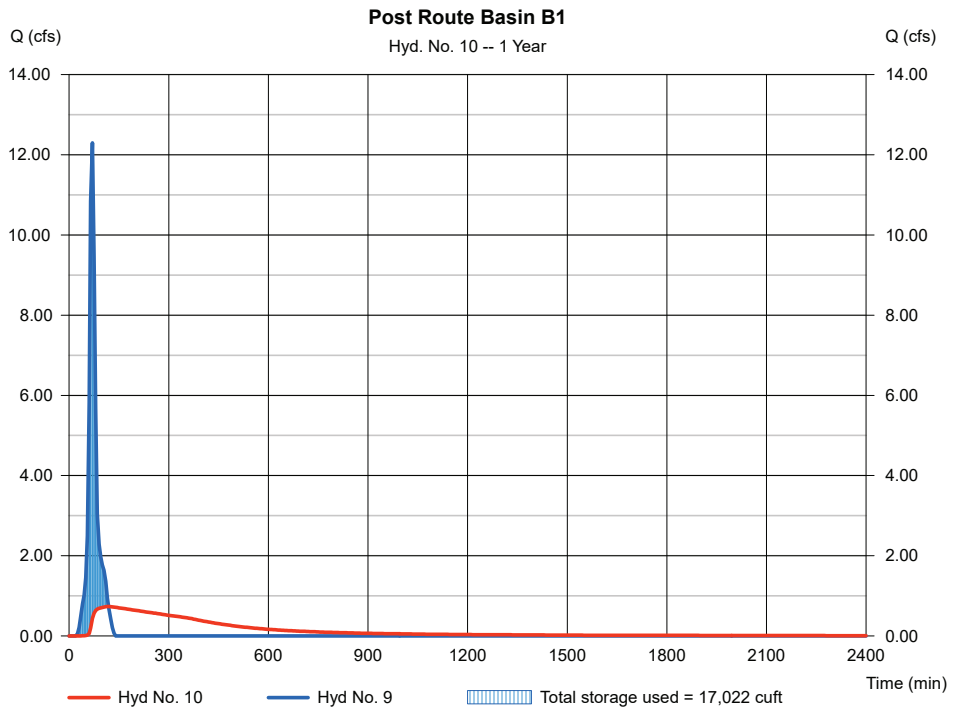
Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 10

Post Route Basin B1

Hydrograph type	= Reservoir	Peak discharge	= 0.732 cfs
Storm frequency	= 1 yrs	Time to peak	= 120 min
Time interval	= 5 min	Hyd. volume	= 19,326 cuft
Inflow hyd. No.	= 9 - Proposed Basin B1 Total	Max. Elevation	= 98.94 ft
Reservoir name	= UG Basin B (1)	Max. Storage	= 17,022 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Pond No. 1 - UG Basin B (1)

Pond Data

UG Chambers - Invert elev. = 98.00 ft, Rise x Span = 4.00 x 8.42 ft, Barrel Len = 429.24 ft, No. Barrels = 5, Slope = 0.00%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	98.00	n/a	0	0
0.40	98.40	n/a	7,230	7,230
0.80	98.80	n/a	7,230	14,460
1.20	99.20	n/a	7,230	21,690
1.60	99.60	n/a	7,230	28,919
2.00	100.00	n/a	7,230	36,149
2.40	100.40	n/a	7,230	43,379
2.80	100.80	n/a	7,230	50,609
3.20	101.20	n/a	7,230	57,839
3.60	101.60	n/a	7,230	65,069
4.00	102.00	n/a	7,230	72,298

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	6.00	0.00	0.00
Span (in)	= 24.00	6.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 98.00	98.00	0.00	0.00
Length (ft)	= 200.00	0.50	0.00	0.00
Slope (%)	= 0.35	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	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 99.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	98.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.04	723	98.04	0.01 oc	0.00 ic	---	---	0.00	---	---	---	---	---	0.00
0.08	1,446	98.08	0.02 oc	0.02 ic	---	---	0.00	---	---	---	---	---	0.02
0.12	2,169	98.12	0.04 ic	0.04 ic	---	---	0.00	---	---	---	---	---	0.04
0.16	2,892	98.16	0.06 ic	0.06 ic	---	---	0.00	---	---	---	---	---	0.06
0.20	3,615	98.20	0.11 ic	0.10 ic	---	---	0.00	---	---	---	---	---	0.10
0.24	4,338	98.24	0.15 ic	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.28	5,061	98.28	0.18 ic	0.18 ic	---	---	0.00	---	---	---	---	---	0.18
0.32	5,784	98.32	0.24 ic	0.23 ic	---	---	0.00	---	---	---	---	---	0.23
0.36	6,507	98.36	0.29 ic	0.29 ic	---	---	0.00	---	---	---	---	---	0.29
0.40	7,230	98.40	0.35 ic	0.33 ic	---	---	0.00	---	---	---	---	---	0.33
0.44	7,953	98.44	0.39 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
0.48	8,676	98.48	0.44 ic	0.44 ic	---	---	0.00	---	---	---	---	---	0.44
0.52	9,399	98.52	0.48 ic	0.47 ic	---	---	0.00	---	---	---	---	---	0.47
0.56	10,122	98.56	0.52 ic	0.50 ic	---	---	0.00	---	---	---	---	---	0.50
0.60	10,845	98.60	0.52 ic	0.52 ic	---	---	0.00	---	---	---	---	---	0.52
0.64	11,568	98.64	0.56 ic	0.56 ic	---	---	0.00	---	---	---	---	---	0.56
0.68	12,291	98.68	0.60 ic	0.58 ic	---	---	0.00	---	---	---	---	---	0.58
0.72	13,014	98.72	0.60 ic	0.60 ic	---	---	0.00	---	---	---	---	---	0.60
0.76	13,737	98.76	0.64 ic	0.63 ic	---	---	0.00	---	---	---	---	---	0.63
0.80	14,460	98.80	0.65 ic	0.65 ic	---	---	0.00	---	---	---	---	---	0.65
0.84	15,183	98.84	0.69 ic	0.68 ic	---	---	0.00	---	---	---	---	---	0.68
0.88	15,906	98.88	0.70 ic	0.70 ic	---	---	0.00	---	---	---	---	---	0.70
0.92	16,629	98.92	0.73 ic	0.72 ic	---	---	0.00	---	---	---	---	---	0.72
0.96	17,352	98.96	0.74 ic	0.74 ic	---	---	0.00	---	---	---	---	---	0.74
1.00	18,075	99.00	0.78 ic	0.76 ic	---	---	0.00	---	---	---	---	---	0.76
1.04	18,798	99.04	0.78 ic	0.78 ic	---	---	0.00	---	---	---	---	---	0.78
1.08	19,521	99.08	0.84 ic	0.80 ic	---	---	0.00	---	---	---	---	---	0.80
1.12	20,244	99.12	0.84 ic	0.82 ic	---	---	0.00	---	---	---	---	---	0.82
1.16	20,967	99.16	0.84 ic	0.84 ic	---	---	0.00	---	---	---	---	---	0.84
1.20	21,690	99.20	0.89 ic	0.86 ic	---	---	0.00	---	---	---	---	---	0.86
1.24	22,413	99.24	0.89 ic	0.88 ic	---	---	0.00	---	---	---	---	---	0.88
1.28	23,136	99.28	0.90 ic	0.90 ic	---	---	0.00	---	---	---	---	---	0.90

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UG Basin B (1)

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
1.32	23,858	99.32	0.95 ic	0.91 ic	---	---	0.00	---	---	---	---	---	0.91
1.36	24,581	99.36	0.95 ic	0.93 ic	---	---	0.00	---	---	---	---	---	0.93
1.40	25,304	99.40	0.95 ic	0.95 ic	---	---	0.00	---	---	---	---	---	0.95
1.44	26,027	99.44	1.01 ic	0.96 ic	---	---	0.00	---	---	---	---	---	0.96
1.48	26,750	99.48	1.01 ic	0.98 ic	---	---	0.00	---	---	---	---	---	0.98
1.52	27,473	99.52	1.07 ic	0.99 ic	---	---	0.04	---	---	---	---	---	1.03
1.56	28,196	99.56	1.20 ic	1.00 ic	---	---	0.20	---	---	---	---	---	1.20
1.60	28,919	99.60	1.42 ic	1.00 ic	---	---	0.42	---	---	---	---	---	1.42
1.64	29,642	99.64	1.73 ic	1.00 ic	---	---	0.70	---	---	---	---	---	1.69
1.68	30,365	99.68	2.01 ic	0.99 ic	---	---	1.02	---	---	---	---	---	2.01
1.72	31,088	99.72	2.38 ic	0.99 ic	---	---	1.37	---	---	---	---	---	2.36
1.76	31,811	99.76	2.81 ic	0.98 ic	---	---	1.77	---	---	---	---	---	2.74
1.80	32,534	99.80	3.16 ic	0.97 ic	---	---	2.19	---	---	---	---	---	3.16
1.84	33,257	99.84	3.64 ic	0.97 ic	---	---	2.64	---	---	---	---	---	3.61
1.88	33,980	99.88	4.17 ic	0.96 ic	---	---	3.12	---	---	---	---	---	4.08
1.92	34,703	99.92	4.58 ic	0.95 ic	---	---	3.63	---	---	---	---	---	4.58
1.96	35,426	99.96	5.16 ic	0.94 ic	---	---	4.16	---	---	---	---	---	5.10
2.00	36,149	100.00	5.68 oc	0.93 ic	---	---	4.71	---	---	---	---	---	5.64
2.04	36,872	100.04	6.32 oc	0.91 ic	---	---	5.29	---	---	---	---	---	6.20
2.08	37,595	100.08	6.82 oc	0.90 ic	---	---	5.88	---	---	---	---	---	6.78
2.12	38,318	100.12	7.43 oc	0.88 ic	---	---	6.50	---	---	---	---	---	7.39
2.16	39,041	100.16	8.01 oc	0.86 ic	---	---	7.14	---	---	---	---	---	8.01
2.20	39,764	100.20	8.66 oc	0.84 ic	---	---	7.80	---	---	---	---	---	8.64
2.24	40,487	100.24	9.33 oc	0.81 ic	---	---	8.47 s	---	---	---	---	---	9.28
2.28	41,210	100.28	9.82 oc	0.78 ic	---	---	9.03 s	---	---	---	---	---	9.82
2.32	41,933	100.32	10.28 oc	0.76 ic	---	---	9.51 s	---	---	---	---	---	10.27
2.36	42,656	100.36	10.66 oc	0.73 ic	---	---	9.90 s	---	---	---	---	---	10.63
2.40	43,379	100.40	10.91 oc	0.70 ic	---	---	10.21 s	---	---	---	---	---	10.91
2.44	44,102	100.44	10.88 oc	0.64 ic	---	---	10.23 s	---	---	---	---	---	10.88
2.48	44,825	100.48	11.02 oc	0.61 ic	---	---	10.41 s	---	---	---	---	---	11.02
2.52	45,548	100.52	11.40 oc	0.60 ic	---	---	10.80 s	---	---	---	---	---	11.40
2.56	46,271	100.56	11.77 oc	0.60 ic	---	---	11.17 s	---	---	---	---	---	11.76
2.60	46,994	100.60	12.12 oc	0.59 ic	---	---	11.53 s	---	---	---	---	---	12.12
2.64	47,717	100.64	12.46 oc	0.58 ic	---	---	11.88 s	---	---	---	---	---	12.46
2.68	48,440	100.68	12.79 oc	0.57 ic	---	---	12.22 s	---	---	---	---	---	12.79
2.72	49,163	100.72	13.11 oc	0.56 ic	---	---	12.55 s	---	---	---	---	---	13.11
2.76	49,886	100.76	13.42 oc	0.55 ic	---	---	12.87 s	---	---	---	---	---	13.42
2.80	50,609	100.80	13.72 oc	0.54 ic	---	---	13.18 s	---	---	---	---	---	13.72
2.84	51,332	100.84	14.02 oc	0.53 ic	---	---	13.49 s	---	---	---	---	---	14.02
2.88	52,055	100.88	14.30 oc	0.52 ic	---	---	13.78 s	---	---	---	---	---	14.30
2.92	52,778	100.92	14.58 oc	0.51 ic	---	---	14.06 s	---	---	---	---	---	14.58
2.96	53,501	100.96	14.85 oc	0.50 ic	---	---	14.34 s	---	---	---	---	---	14.85
3.00	54,224	101.00	15.11 oc	0.50 ic	---	---	14.61 s	---	---	---	---	---	15.11
3.04	54,947	101.04	15.37 oc	0.49 ic	---	---	14.88 s	---	---	---	---	---	15.37
3.08	55,670	101.08	15.62 oc	0.48 ic	---	---	15.14 s	---	---	---	---	---	15.62
3.12	56,393	101.12	15.86 oc	0.47 ic	---	---	15.39 s	---	---	---	---	---	15.86
3.16	57,116	101.16	16.10 oc	0.47 ic	---	---	15.64 s	---	---	---	---	---	16.10
3.20	57,839	101.20	16.34 oc	0.46 ic	---	---	15.88 s	---	---	---	---	---	16.34
3.24	58,562	101.24	16.57 oc	0.45 ic	---	---	16.11 s	---	---	---	---	---	16.57
3.28	59,285	101.28	16.79 oc	0.44 ic	---	---	16.35 s	---	---	---	---	---	16.79
3.32	60,008	101.32	17.01 oc	0.44 ic	---	---	16.57 s	---	---	---	---	---	17.01
3.36	60,731	101.36	17.23 oc	0.43 ic	---	---	16.80 s	---	---	---	---	---	17.23
3.40	61,454	101.40	17.44 oc	0.42 ic	---	---	17.02 s	---	---	---	---	---	17.44
3.44	62,177	101.44	17.65 oc	0.42 ic	---	---	17.23 s	---	---	---	---	---	17.65
3.48	62,900	101.48	17.86 oc	0.41 ic	---	---	17.44 s	---	---	---	---	---	17.85
3.52	63,623	101.52	18.06 oc	0.41 ic	---	---	17.65 s	---	---	---	---	---	18.06
3.56	64,346	101.56	18.26 oc	0.40 ic	---	---	17.85 s	---	---	---	---	---	18.26
3.60	65,069	101.60	18.45 oc	0.40 ic	---	---	18.06 s	---	---	---	---	---	18.45
3.64	65,792	101.64	18.65 oc	0.39 ic	---	---	18.25 s	---	---	---	---	---	18.65
3.68	66,515	101.68	18.84 oc	0.38 ic	---	---	18.45 s	---	---	---	---	---	18.84
3.72	67,238	101.72	19.03 oc	0.38 ic	---	---	18.64 s	---	---	---	---	---	19.02
3.76	67,961	101.76	19.21 oc	0.37 ic	---	---	18.84 s	---	---	---	---	---	19.21
3.80	68,684	101.80	19.39 oc	0.37 ic	---	---	19.02 s	---	---	---	---	---	19.39
3.84	69,407	101.84	19.57 oc	0.37 ic	---	---	19.21 s	---	---	---	---	---	19.57
3.88	70,130	101.88	19.75 oc	0.36 ic	---	---	19.39 s	---	---	---	---	---	19.75
3.92	70,853	101.92	19.93 oc	0.36 ic	---	---	19.57 s	---	---	---	---	---	19.93
3.96	71,575	101.96	20.10 oc	0.35 ic	---	---	19.75 s	---	---	---	---	---	20.10
4.00	72,298	102.00	20.27 oc	0.35 ic	---	---	19.92 s	---	---	---	---	---	20.27

...End

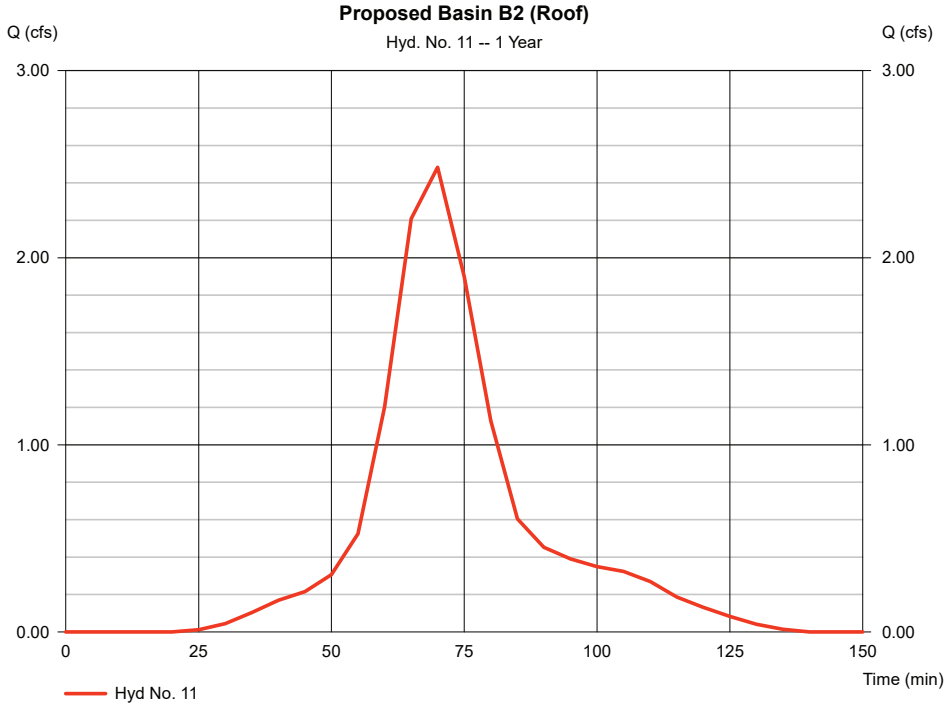
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 11

Proposed Basin B2 (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.483 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 3,942 cuft
Drainage area	= 1.120 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds	Shape factor	= 484

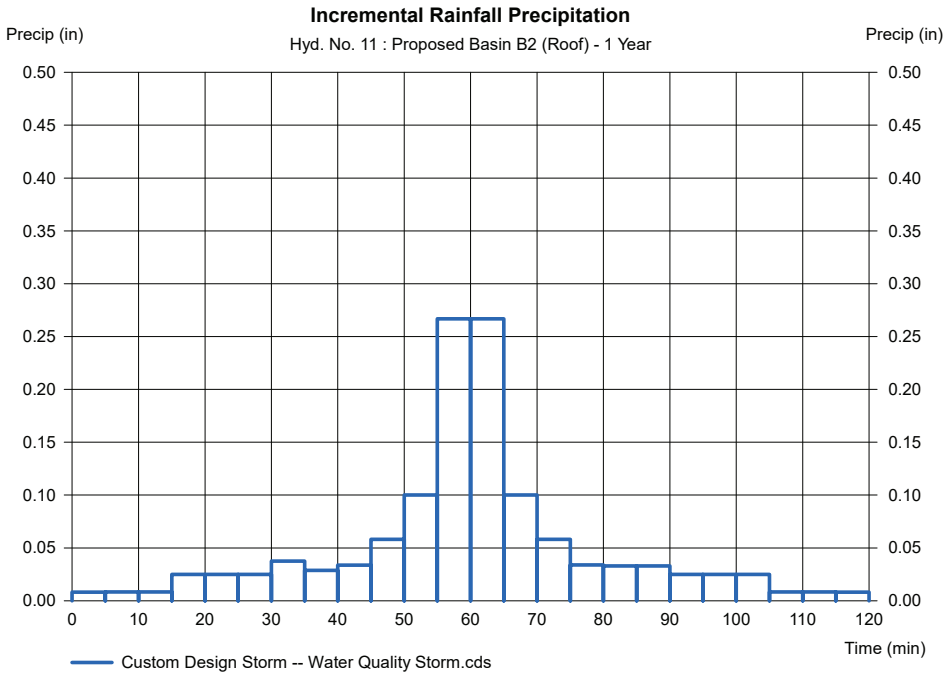


Precipitation Report

Hyd. No. 11

Proposed Basin B2 (Roof)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		



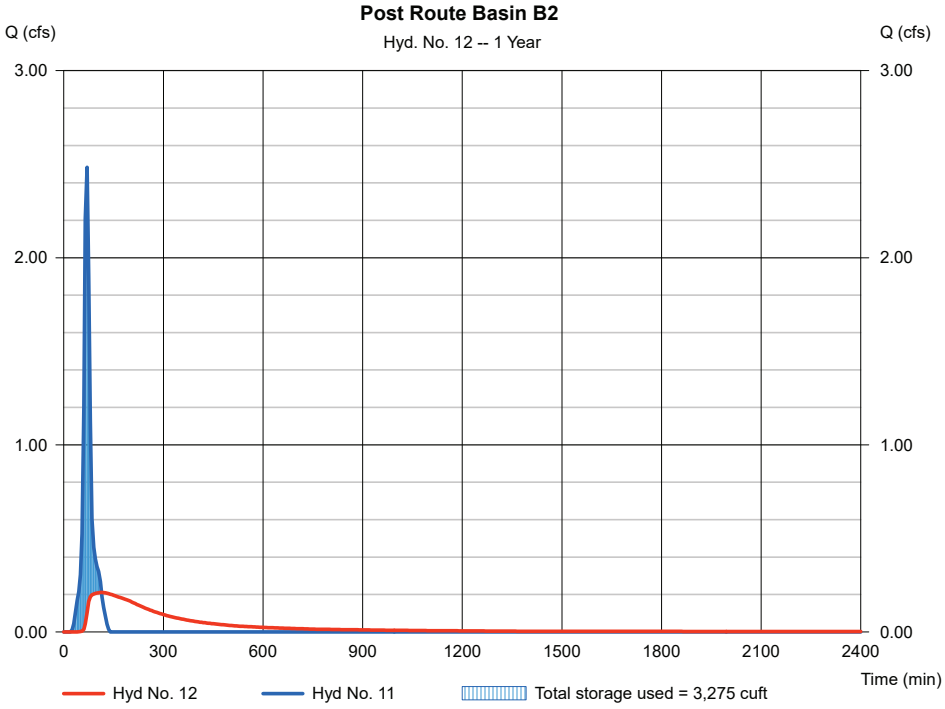
Hydrograph Report

Hyd. No. 12

Post Route Basin B2

Hydrograph type	= Reservoir	Peak discharge	= 0.211 cfs
Storm frequency	= 1 yrs	Time to peak	= 115 min
Time interval	= 5 min	Hyd. volume	= 3,862 cuft
Inflow hyd. No.	= 11 - Proposed Basin B2 (Roof)	Max. Elevation	= 98.43 ft
Reservoir name	= UG Basin B (2)	Max. Storage	= 3,275 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Pond No. 4 - UG Basin B (2)

Pond Data

UG Chambers - Invert elev. = 98.00 ft, Rise x Span = 4.00 x 8.42 ft, Barrel Len = 429.24 ft, No. Barrels = 2, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	98.00	n/a	0	0
0.40	98.40	n/a	3,034	3,034
0.80	98.80	n/a	3,034	6,067
1.20	99.20	n/a	3,034	9,101
1.60	99.60	n/a	3,034	12,135
2.00	100.00	n/a	3,034	15,169
2.40	100.40	n/a	3,034	18,202
2.80	100.80	n/a	3,034	21,236
3.20	101.20	n/a	3,034	24,270
3.60	101.60	n/a	3,034	27,304
4.00	102.00	n/a	3,034	30,337

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	4.00	0.00	0.00
Span (in)	= 24.00	4.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 98.00	98.00	0.00	0.00
Length (ft)	= 120.00	0.50	0.50	0.00
Slope (%)	= 5.00	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	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 2.00	0.00	0.00	0.00
Crest El. (ft)	= 99.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr)	= 0.000 (by Wet area)
TW Elev. (ft)	= 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	98.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.04	303	98.04	0.00 ic	0.00 ic	---	---	0.00	---	---	---	---	---	0.00
0.08	607	98.08	0.01 ic	0.01 ic	---	---	0.00	---	---	---	---	---	0.01
0.12	910	98.12	0.03 ic	0.03 ic	---	---	0.00	---	---	---	---	---	0.03
0.16	1,213	98.16	0.06 ic	0.05 ic	---	---	0.00	---	---	---	---	---	0.05
0.20	1,517	98.20	0.08 ic	0.08 ic	---	---	0.00	---	---	---	---	---	0.08
0.24	1,820	98.24	0.11 ic	0.11 ic	---	---	0.00	---	---	---	---	---	0.11
0.28	2,124	98.28	0.15 ic	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.32	2,427	98.32	0.17 ic	0.17 ic	---	---	0.00	---	---	---	---	---	0.17
0.36	2,730	98.36	0.18 ic	0.18 ic	---	---	0.00	---	---	---	---	---	0.18
0.40	3,034	98.40	0.20 ic	0.20 ic	---	---	0.00	---	---	---	---	---	0.20
0.44	3,337	98.44	0.22 ic	0.21 ic	---	---	0.00	---	---	---	---	---	0.21
0.48	3,640	98.48	0.23 ic	0.23 ic	---	---	0.00	---	---	---	---	---	0.23
0.52	3,944	98.52	0.24 ic	0.24 ic	---	---	0.00	---	---	---	---	---	0.24
0.56	4,247	98.56	0.27 ic	0.25 ic	---	---	0.00	---	---	---	---	---	0.25
0.60	4,551	98.60	0.27 ic	0.27 ic	---	---	0.00	---	---	---	---	---	0.27
0.64	4,854	98.64	0.29 ic	0.28 ic	---	---	0.00	---	---	---	---	---	0.28
0.68	5,157	98.68	0.29 ic	0.29 ic	---	---	0.00	---	---	---	---	---	0.29
0.72	5,461	98.72	0.30 ic	0.30 ic	---	---	0.00	---	---	---	---	---	0.30
0.76	5,764	98.76	0.32 ic	0.31 ic	---	---	0.00	---	---	---	---	---	0.31
0.80	6,067	98.80	0.32 ic	0.32 ic	---	---	0.00	---	---	---	---	---	0.32
0.84	6,371	98.84	0.35 ic	0.33 ic	---	---	0.00	---	---	---	---	---	0.33
0.88	6,674	98.88	0.35 ic	0.34 ic	---	---	0.00	---	---	---	---	---	0.34
0.92	6,978	98.92	0.35 ic	0.35 ic	---	---	0.00	---	---	---	---	---	0.35
0.96	7,281	98.96	0.38 ic	0.36 ic	---	---	0.00	---	---	---	---	---	0.36
1.00	7,584	99.00	0.38 ic	0.37 ic	---	---	0.00	---	---	---	---	---	0.37
1.04	7,888	99.04	0.38 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
1.08	8,191	99.08	0.38 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
1.12	8,494	99.12	0.41 ic	0.39 ic	---	---	0.00	---	---	---	---	---	0.39
1.16	8,798	99.16	0.41 ic	0.40 ic	---	---	0.00	---	---	---	---	---	0.40
1.20	9,101	99.20	0.41 ic	0.41 ic	---	---	0.00	---	---	---	---	---	0.41
1.24	9,405	99.24	0.42 ic	0.42 ic	---	---	0.00	---	---	---	---	---	0.42
1.28	9,708	99.28	0.44 ic	0.42 ic	---	---	0.00	---	---	---	---	---	0.42

Continues on next page...

UG Basin B (2)

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
1.32	10,011	99.32	0.44 ic	0.43 ic	---	---	0.00	---	---	---	---	---	0.43
1.36	10,315	99.36	0.44 ic	0.44 ic	---	---	0.00	---	---	---	---	---	0.44
1.40	10,618	99.40	0.45 ic	0.45 ic	---	---	0.00	---	---	---	---	---	0.45
1.44	10,921	99.44	0.48 ic	0.45 ic	---	---	0.00	---	---	---	---	---	0.45
1.48	11,225	99.48	0.48 ic	0.46 ic	---	---	0.00	---	---	---	---	---	0.46
1.52	11,528	99.52	0.49 ic	0.47 ic	---	---	0.02	---	---	---	---	---	0.49
1.56	11,832	99.56	0.60 ic	0.47 ic	---	---	0.10	---	---	---	---	---	0.57
1.60	12,135	99.60	0.69 ic	0.47 ic	---	---	0.21	---	---	---	---	---	0.68
1.64	12,438	99.64	0.84 ic	0.47 ic	---	---	0.35	---	---	---	---	---	0.82
1.68	12,742	99.68	1.00 ic	0.48 ic	---	---	0.51	---	---	---	---	---	0.98
1.72	13,045	99.72	1.20 ic	0.48 ic	---	---	0.69	---	---	---	---	---	1.16
1.76	13,348	99.76	1.41 ic	0.48 ic	---	---	0.88	---	---	---	---	---	1.36
1.80	13,652	99.80	1.57 ic	0.48 ic	---	---	1.09	---	---	---	---	---	1.57
1.84	13,955	99.84	1.81 ic	0.48 ic	---	---	1.32	---	---	---	---	---	1.80
1.88	14,259	99.88	2.08 ic	0.48 ic	---	---	1.56	---	---	---	---	---	2.04
1.92	14,562	99.92	2.29 ic	0.48 ic	---	---	1.81	---	---	---	---	---	2.29
1.96	14,865	99.96	2.59 ic	0.48 ic	---	---	2.08	---	---	---	---	---	2.56
2.00	15,169	100.00	2.83 ic	0.48 ic	---	---	2.35	---	---	---	---	---	2.83
2.04	15,472	100.04	3.15 ic	0.48 ic	---	---	2.64	---	---	---	---	---	3.12
2.08	15,775	100.08	3.42 ic	0.48 ic	---	---	2.94	---	---	---	---	---	3.42
2.12	16,079	100.12	3.77 ic	0.48 ic	---	---	3.25	---	---	---	---	---	3.73
2.16	16,382	100.16	4.05 ic	0.48 ic	---	---	3.57	---	---	---	---	---	4.05
2.20	16,686	100.20	4.44 ic	0.48 ic	---	---	3.90	---	---	---	---	---	4.38
2.24	16,989	100.24	4.72 ic	0.48 ic	---	---	4.24	---	---	---	---	---	4.72
2.28	17,292	100.28	5.16 ic	0.48 ic	---	---	4.59	---	---	---	---	---	5.07
2.32	17,596	100.32	5.46 ic	0.48 ic	---	---	4.95	---	---	---	---	---	5.43
2.36	17,899	100.36	5.79 ic	0.48 ic	---	---	5.31	---	---	---	---	---	5.79
2.40	18,202	100.40	6.22 ic	0.48 ic	---	---	5.69	---	---	---	---	---	6.17
2.44	18,506	100.44	6.55 ic	0.48 ic	---	---	6.07	---	---	---	---	---	6.55
2.48	18,809	100.48	7.00 ic	0.48 ic	---	---	6.46	---	---	---	---	---	6.94
2.52	19,113	100.52	7.34 ic	0.48 ic	---	---	6.86	---	---	---	---	---	7.34
2.56	19,416	100.56	7.80 ic	0.48 ic	---	---	7.27	---	---	---	---	---	7.75
2.60	19,719	100.60	8.17 ic	0.48 ic	---	---	7.68	---	---	---	---	---	8.17
2.64	20,023	100.64	8.60 ic	0.48 ic	---	---	8.11	---	---	---	---	---	8.59
2.68	20,326	100.68	9.07 ic	0.48 ic	---	---	8.54	---	---	---	---	---	9.02
2.72	20,629	100.72	9.54 ic	0.48 ic	---	---	8.97	---	---	---	---	---	9.46
2.76	20,933	100.76	10.00 ic	0.48 ic	---	---	9.42	---	---	---	---	---	9.90
2.80	21,236	100.80	10.44 ic	0.48 ic	---	---	9.87	---	---	---	---	---	10.35
2.84	21,540	100.84	10.88 ic	0.48 ic	---	---	10.32 s	---	---	---	---	---	10.80
2.88	21,843	100.88	11.29 ic	0.48 ic	---	---	10.76 s	---	---	---	---	---	11.24
2.92	22,146	100.92	11.69 ic	0.48 ic	---	---	11.19 s	---	---	---	---	---	11.67
2.96	22,450	100.96	12.09 ic	0.48 ic	---	---	11.61 s	---	---	---	---	---	12.09
3.00	22,753	101.00	12.55 ic	0.48 ic	---	---	12.03 s	---	---	---	---	---	12.51
3.04	23,056	101.04	12.99 ic	0.48 ic	---	---	12.44 s	---	---	---	---	---	12.92
3.08	23,360	101.08	13.38 ic	0.48 ic	---	---	12.86 s	---	---	---	---	---	13.34
3.12	23,663	101.12	13.75 ic	0.48 ic	---	---	13.27 s	---	---	---	---	---	13.75
3.16	23,966	101.16	14.18 ic	0.48 ic	---	---	13.67 s	---	---	---	---	---	14.15
3.20	24,270	101.20	14.55 ic	0.48 ic	---	---	14.07 s	---	---	---	---	---	14.54
3.24	24,573	101.24	14.92 ic	0.48 ic	---	---	14.45 s	---	---	---	---	---	14.92
3.28	24,877	101.28	15.28 ic	0.47 ic	---	---	14.80 s	---	---	---	---	---	15.27
3.32	25,180	101.32	15.65 ic	0.47 ic	---	---	15.18 s	---	---	---	---	---	15.65
3.36	25,483	101.36	16.02 ic	0.47 ic	---	---	15.55 s	---	---	---	---	---	16.02
3.40	25,787	101.40	16.39 ic	0.47 ic	---	---	15.92 s	---	---	---	---	---	16.39
3.44	26,090	101.44	16.75 ic	0.46 ic	---	---	16.28 s	---	---	---	---	---	16.75
3.48	26,393	101.48	17.10 ic	0.46 ic	---	---	16.64 s	---	---	---	---	---	17.10
3.52	26,697	101.52	17.45 ic	0.46 ic	---	---	16.99 s	---	---	---	---	---	17.45
3.56	27,000	101.56	17.80 ic	0.46 ic	---	---	17.34 s	---	---	---	---	---	17.80
3.60	27,304	101.60	18.14 ic	0.45 ic	---	---	17.68 s	---	---	---	---	---	18.14
3.64	27,607	101.64	18.47 ic	0.45 ic	---	---	18.02 s	---	---	---	---	---	18.47
3.68	27,910	101.68	18.80 ic	0.45 ic	---	---	18.35 s	---	---	---	---	---	18.80
3.72	28,214	101.72	19.13 ic	0.44 ic	---	---	18.68 s	---	---	---	---	---	19.13
3.76	28,517	101.76	19.45 ic	0.44 ic	---	---	19.00 s	---	---	---	---	---	19.45
3.80	28,820	101.80	19.76 ic	0.44 ic	---	---	19.32 s	---	---	---	---	---	19.76
3.84	29,124	101.84	20.07 ic	0.44 ic	---	---	19.64 s	---	---	---	---	---	20.07
3.88	29,427	101.88	20.38 ic	0.43 ic	---	---	19.95 s	---	---	---	---	---	20.38
3.92	29,731	101.92	20.68 ic	0.43 ic	---	---	20.25 s	---	---	---	---	---	20.68
3.96	30,034	101.96	20.98 ic	0.43 ic	---	---	20.55 s	---	---	---	---	---	20.98
4.00	30,337	102.00	21.27 ic	0.42 ic	---	---	20.85 s	---	---	---	---	---	21.27

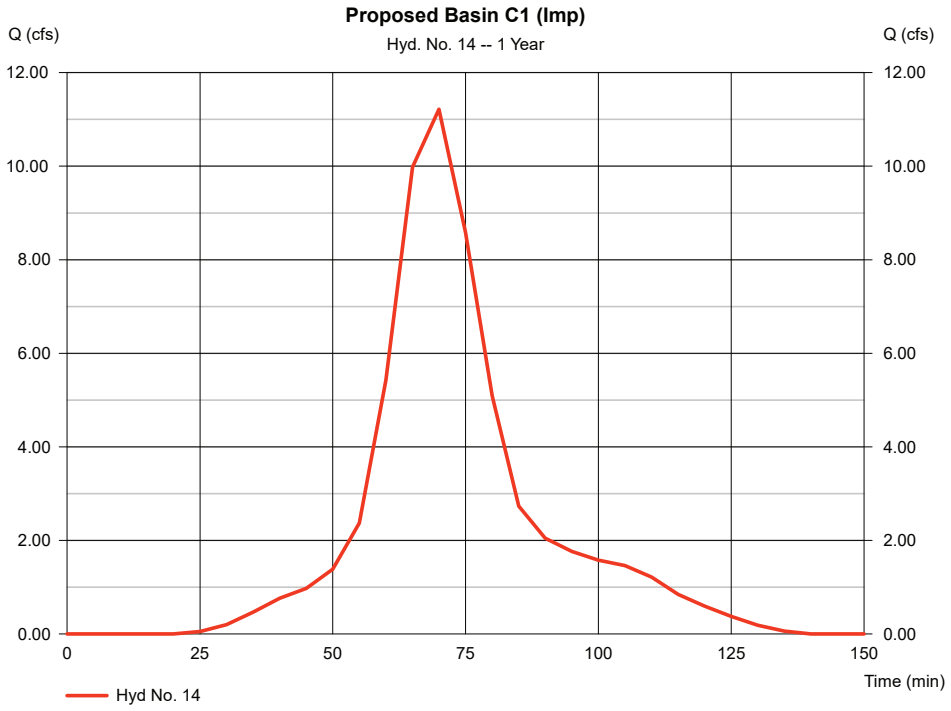
...End

Hydrograph Report

Hyd. No. 14

Proposed Basin C1 (Imp)

Hydrograph type	= SCS Runoff	Peak discharge	= 11.22 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 17,808 cuft
Drainage area	= 5.060 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds	Shape factor	= 484

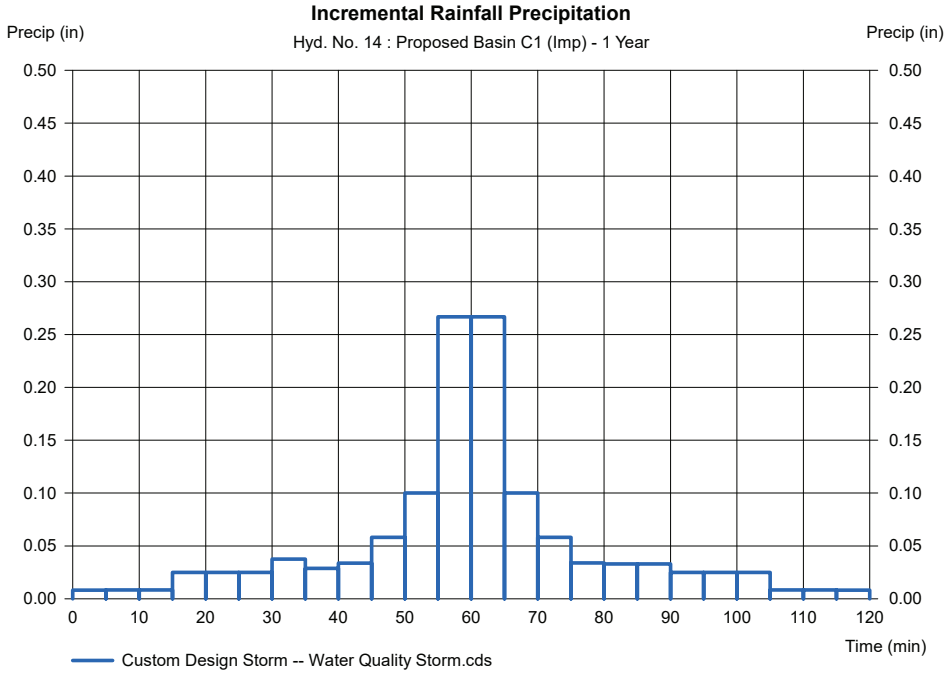


Precipitation Report

Hyd. No. 14

Proposed Basin C1 (Imp)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		

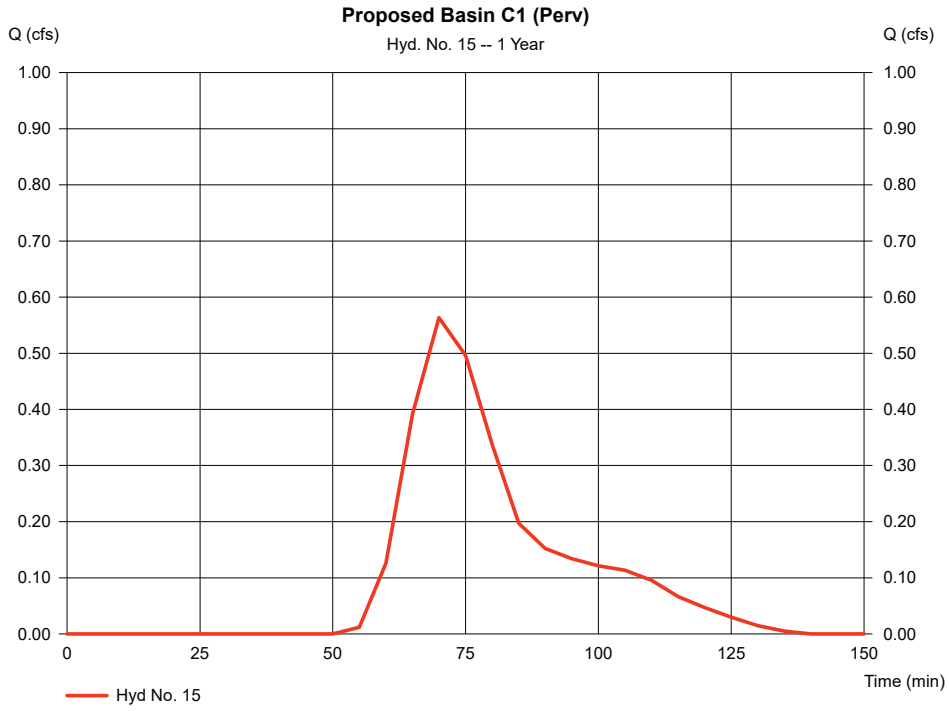


Hydrograph Report

Hyd. No. 15

Proposed Basin C1 (Perv)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.563 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 871 cuft
Drainage area	= 0.570 ac	Curve number	= 89
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds	Shape factor	= 484

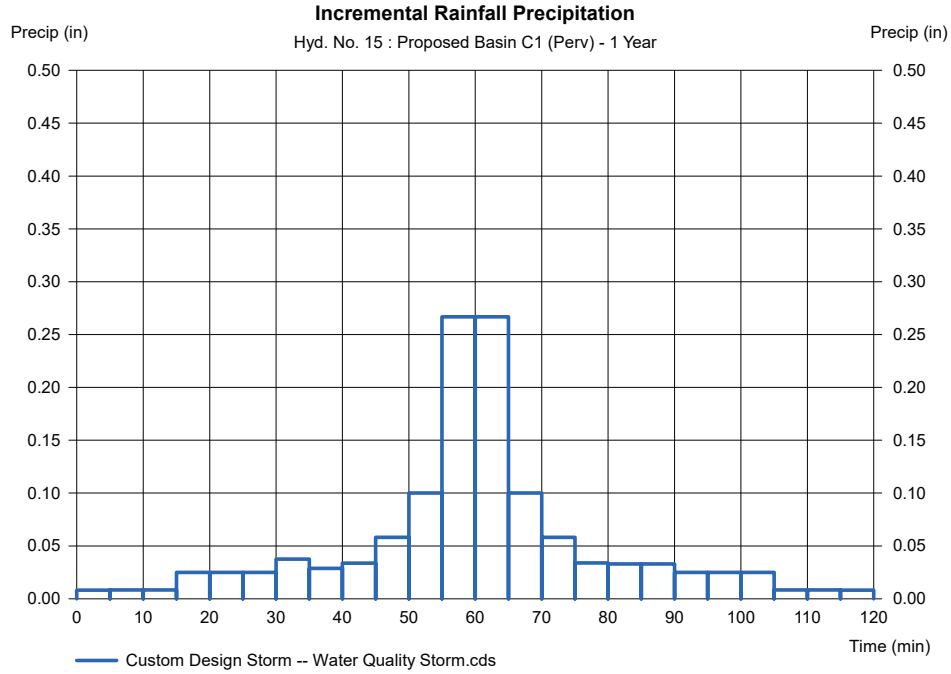


Precipitation Report

Hyd. No. 15

Proposed Basin C1 (Perv)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		

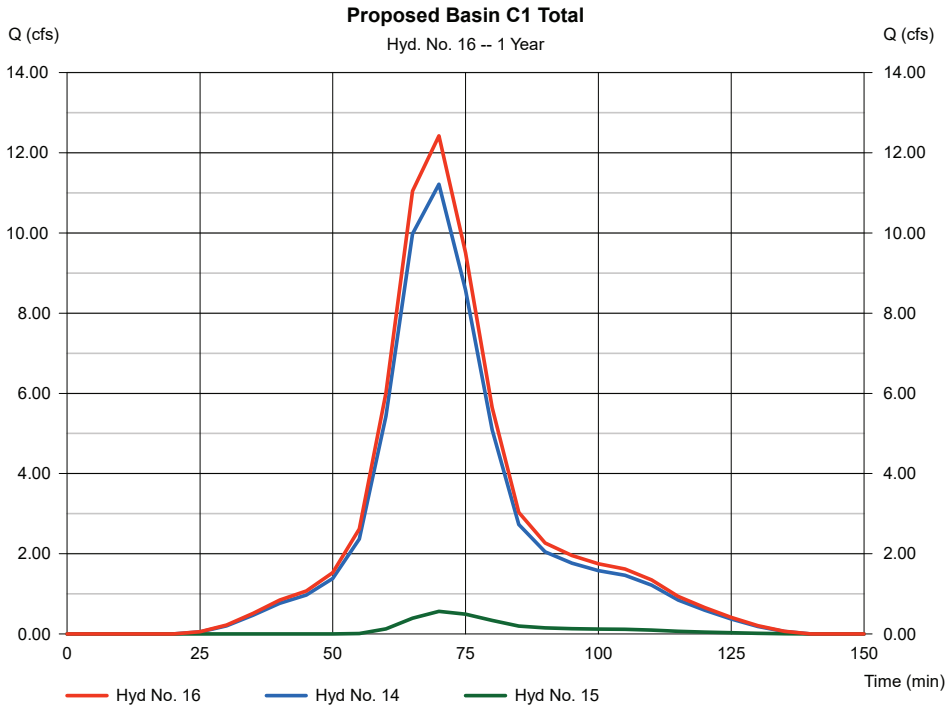


Hydrograph Report

Hyd. No. 16

Proposed Basin C1 Total

Hydrograph type	= Combine	Peak discharge	= 12.42 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 19,719 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 5.630 ac



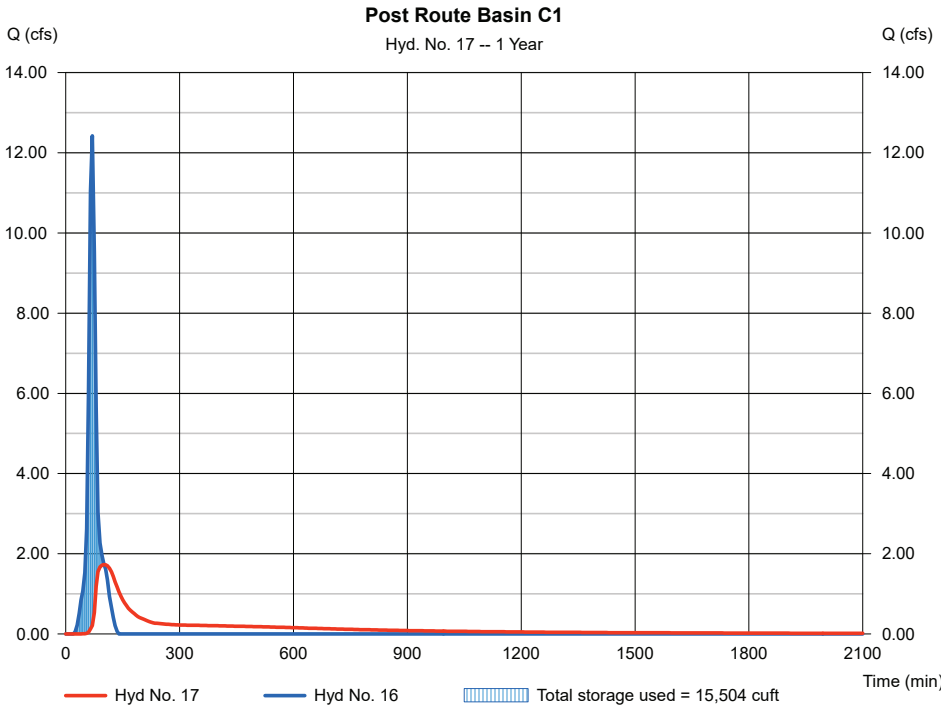
Hydrograph Report

Hyd. No. 17

Post Route Basin C1

Hydrograph type	= Reservoir	Peak discharge	= 1.730 cfs
Storm frequency	= 1 yrs	Time to peak	= 100 min
Time interval	= 5 min	Hyd. volume	= 19,501 cuft
Inflow hyd. No.	= 16 - Proposed Basin C1 Total	Max. Elevation	= 96.74 ft
Reservoir name	= UG Basin C (1)	Max. Storage	= 15,504 cuft

Storage Indication method used.



Pond Report

Pond No. 2 - UG Basin C (1)

Pond Data

UG Chambers - Invert elev. = 96.00 ft, Rise x Span = 4.00 x 8.42 ft, Barrel Len = 1241.73 ft, No. Barrels = 2, Slope = 0.00%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	96.00	n/a	0	0
0.40	96.40	n/a	8,366	8,366
0.80	96.80	n/a	8,366	16,732
1.20	97.20	n/a	8,366	25,098
1.60	97.60	n/a	8,366	33,464
2.00	98.00	n/a	8,366	41,830
2.40	98.40	n/a	8,366	50,196
2.80	98.80	n/a	8,366	58,562
3.20	99.20	n/a	8,366	66,928
3.60	99.60	n/a	8,366	75,294
4.00	100.00	n/a	8,366	83,660

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	4.00	0.00	0.00
Span (in)	= 24.00	4.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 96.00	96.00	0.00	0.00
Length (ft)	= 180.00	0.50	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	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 96.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	96.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.04	837	96.04	0.00 ic	0.00 ic	---	---	0.00	---	---	---	---	---	0.00
0.08	1,673	96.08	0.01 ic	0.01 ic	---	---	0.00	---	---	---	---	---	0.01
0.12	2,510	96.12	0.03 ic	0.03 ic	---	---	0.00	---	---	---	---	---	0.03
0.16	3,346	96.16	0.06 ic	0.05 ic	---	---	0.00	---	---	---	---	---	0.05
0.20	4,183	96.20	0.08 ic	0.08 ic	---	---	0.00	---	---	---	---	---	0.08
0.24	5,020	96.24	0.11 ic	0.11 ic	---	---	0.00	---	---	---	---	---	0.11
0.28	5,856	96.28	0.15 ic	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.32	6,693	96.32	0.17 ic	0.17 ic	---	---	0.00	---	---	---	---	---	0.17
0.36	7,529	96.36	0.18 ic	0.18 ic	---	---	0.00	---	---	---	---	---	0.18
0.40	8,366	96.40	0.20 ic	0.20 ic	---	---	0.00	---	---	---	---	---	0.20
0.44	9,203	96.44	0.22 ic	0.21 ic	---	---	0.00	---	---	---	---	---	0.21
0.48	10,039	96.48	0.23 ic	0.23 ic	---	---	0.00	---	---	---	---	---	0.23
0.52	10,876	96.52	0.27 ic	0.23 ic	---	---	0.04	---	---	---	---	---	0.27
0.56	11,712	96.56	0.44 ic	0.23 ic	---	---	0.20	---	---	---	---	---	0.43
0.60	12,549	96.60	0.64 ic	0.22 ic	---	---	0.42	---	---	---	---	---	0.64
0.64	13,386	96.64	0.95 ic	0.21 ic	---	---	0.70	---	---	---	---	---	0.91
0.68	14,222	96.68	1.26 ic	0.20 ic	---	---	1.02	---	---	---	---	---	1.22
0.72	15,059	96.72	1.57 ic	0.19 ic	---	---	1.37 s	---	---	---	---	---	1.57
0.76	15,895	96.76	1.90 ic	0.19 ic	---	---	1.69 s	---	---	---	---	---	1.88
0.80	16,732	96.80	2.19 ic	0.19 ic	---	---	2.00 s	---	---	---	---	---	2.18
0.84	17,569	96.84	2.49 ic	0.18 ic	---	---	2.31 s	---	---	---	---	---	2.49
0.88	18,405	96.88	2.81 ic	0.18 ic	---	---	2.63 s	---	---	---	---	---	2.81
0.92	19,242	96.92	3.15 ic	0.18 ic	---	---	2.94 s	---	---	---	---	---	3.12
0.96	20,078	96.96	3.42 ic	0.18 ic	---	---	3.24 s	---	---	---	---	---	3.42
1.00	20,915	97.00	3.78 ic	0.18 ic	---	---	3.60 s	---	---	---	---	---	3.78
1.04	21,752	97.04	4.17 ic	0.18 ic	---	---	3.91 s	---	---	---	---	---	4.09
1.08	22,588	97.08	4.46 ic	0.18 ic	---	---	4.28 s	---	---	---	---	---	4.46
1.12	23,425	97.12	4.87 ic	0.18 ic	---	---	4.60 s	---	---	---	---	---	4.78
1.16	24,261	97.16	5.17 ic	0.18 ic	---	---	4.99 s	---	---	---	---	---	5.17
1.20	25,098	97.20	5.50 ic	0.18 ic	---	---	5.31 s	---	---	---	---	---	5.49
1.24	25,934	97.24	5.91 ic	0.18 ic	---	---	5.73 s	---	---	---	---	---	5.91
1.28	26,771	97.28	6.25 ic	0.18 ic	---	---	6.07 s	---	---	---	---	---	6.25

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UG Basin C (1)

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
1.32	27,608	97.32	6.69 ic	0.19 ic	---	---	6.48 s	---	---	---	---	---	6.67
1.36	28,444	97.36	7.03 ic	0.19 ic	---	---	6.84 s	---	---	---	---	---	7.03
1.40	29,281	97.40	7.48 ic	0.19 ic	---	---	7.24 s	---	---	---	---	---	7.43
1.44	30,117	97.44	7.82 ic	0.19 ic	---	---	7.64 s	---	---	---	---	---	7.82
1.48	30,954	97.48	8.28 ic	0.19 ic	---	---	8.04 s	---	---	---	---	---	8.22
1.52	31,791	97.52	8.63 ic	0.19 ic	---	---	8.44 s	---	---	---	---	---	8.62
1.56	32,627	97.56	9.07 ic	0.19 ic	---	---	8.87 s	---	---	---	---	---	9.07
1.60	33,464	97.60	9.42 ic	0.19 ic	---	---	9.23 s	---	---	---	---	---	9.42
1.64	34,300	97.64	9.86 ic	0.19 ic	---	---	9.67 s	---	---	---	---	---	9.86
1.68	35,137	97.68	10.30 ic	0.19 ic	---	---	10.10 s	---	---	---	---	---	10.30
1.72	35,974	97.72	10.73 ic	0.19 ic	---	---	10.49 s	---	---	---	---	---	10.68
1.76	36,810	97.76	11.16 ic	0.19 ic	---	---	10.88 s	---	---	---	---	---	11.07
1.80	37,647	97.80	11.56 ic	0.19 ic	---	---	11.30 s	---	---	---	---	---	11.49
1.84	38,483	97.84	11.95 ic	0.19 ic	---	---	11.74 s	---	---	---	---	---	11.94
1.88	39,320	97.88	12.33 ic	0.19 ic	---	---	12.14 s	---	---	---	---	---	12.33
1.92	40,157	97.92	12.70 ic	0.19 ic	---	---	12.51 s	---	---	---	---	---	12.70
1.96	40,993	97.96	13.12 ic	0.19 ic	---	---	12.92 s	---	---	---	---	---	13.11
2.00	41,830	98.00	13.50 ic	0.19 ic	---	---	13.30 s	---	---	---	---	---	13.50
2.04	42,666	98.04	13.90 ic	0.19 ic	---	---	13.70 s	---	---	---	---	---	13.89
2.08	43,503	98.08	14.25 ic	0.19 ic	---	---	14.05 s	---	---	---	---	---	14.25
2.12	44,340	98.12	14.58 ic	0.19 ic	---	---	14.39 s	---	---	---	---	---	14.58
2.16	45,176	98.16	14.88 ic	0.19 ic	---	---	14.68 s	---	---	---	---	---	14.87
2.20	46,013	98.20	15.13 ic	0.19 ic	---	---	14.94 s	---	---	---	---	---	15.13
2.24	46,849	98.24	15.45 ic	0.19 ic	---	---	15.26 s	---	---	---	---	---	15.45
2.28	47,686	98.28	15.76 ic	0.18 ic	---	---	15.58 s	---	---	---	---	---	15.76
2.32	48,523	98.32	16.07 ic	0.18 ic	---	---	15.88 s	---	---	---	---	---	16.07
2.36	49,359	98.36	16.37 ic	0.18 ic	---	---	16.19 s	---	---	---	---	---	16.37
2.40	50,196	98.40	16.67 ic	0.18 ic	---	---	16.49 s	---	---	---	---	---	16.67
2.44	51,032	98.44	16.96 ic	0.18 ic	---	---	16.78 s	---	---	---	---	---	16.96
2.48	51,869	98.48	17.25 ic	0.18 ic	---	---	17.07 s	---	---	---	---	---	17.25
2.52	52,706	98.52	17.53 ic	0.18 ic	---	---	17.35 s	---	---	---	---	---	17.53
2.56	53,542	98.56	17.81 ic	0.18 ic	---	---	17.63 s	---	---	---	---	---	17.80
2.60	54,379	98.60	18.08 ic	0.17 ic	---	---	17.90 s	---	---	---	---	---	18.08
2.64	55,215	98.64	18.35 ic	0.17 ic	---	---	18.17 s	---	---	---	---	---	18.34
2.68	56,052	98.68	18.61 ic	0.17 ic	---	---	18.44 s	---	---	---	---	---	18.61
2.72	56,889	98.72	18.87 ic	0.17 ic	---	---	18.70 s	---	---	---	---	---	18.87
2.76	57,725	98.76	19.13 ic	0.17 ic	---	---	18.96 s	---	---	---	---	---	19.13
2.80	58,562	98.80	19.38 ic	0.17 ic	---	---	19.22 s	---	---	---	---	---	19.38
2.84	59,398	98.84	19.63 ic	0.17 ic	---	---	19.46 s	---	---	---	---	---	19.63
2.88	60,235	98.88	19.88 ic	0.16 ic	---	---	19.72 s	---	---	---	---	---	19.88
2.92	61,072	98.92	20.12 ic	0.16 ic	---	---	19.96 s	---	---	---	---	---	20.12
2.96	61,908	98.96	20.36 ic	0.16 ic	---	---	20.20 s	---	---	---	---	---	20.36
3.00	62,745	99.00	20.60 ic	0.16 ic	---	---	20.44 s	---	---	---	---	---	20.60
3.04	63,581	99.04	20.83 ic	0.16 ic	---	---	20.67 s	---	---	---	---	---	20.83
3.08	64,418	99.08	21.07 ic	0.16 ic	---	---	20.90 s	---	---	---	---	---	21.06
3.12	65,255	99.12	21.29 ic	0.16 ic	---	---	21.14 s	---	---	---	---	---	21.29
3.16	66,091	99.16	21.52 ic	0.15 ic	---	---	21.36 s	---	---	---	---	---	21.51
3.20	66,928	99.20	21.74 ic	0.15 ic	---	---	21.58 s	---	---	---	---	---	21.74
3.24	67,764	99.24	21.96 ic	0.15 ic	---	---	21.81 s	---	---	---	---	---	21.96
3.28	68,601	99.28	22.18 ic	0.15 ic	---	---	22.03 s	---	---	---	---	---	22.18
3.32	69,438	99.32	22.40 ic	0.15 ic	---	---	22.25 s	---	---	---	---	---	22.40
3.36	70,274	99.36	22.61 ic	0.15 ic	---	---	22.46 s	---	---	---	---	---	22.61
3.40	71,111	99.40	22.82 ic	0.15 ic	---	---	22.67 s	---	---	---	---	---	22.82
3.44	71,947	99.44	23.03 ic	0.15 ic	---	---	22.88 s	---	---	---	---	---	23.03
3.48	72,784	99.48	23.24 ic	0.14 ic	---	---	23.09 s	---	---	---	---	---	23.24
3.52	73,620	99.52	23.45 ic	0.14 ic	---	---	23.30 s	---	---	---	---	---	23.44
3.56	74,457	99.56	23.65 ic	0.14 ic	---	---	23.50 s	---	---	---	---	---	23.65
3.60	75,294	99.60	23.85 ic	0.14 ic	---	---	23.70 s	---	---	---	---	---	23.85
3.64	76,130	99.64	24.05 ic	0.14 ic	---	---	23.90 s	---	---	---	---	---	24.04
3.68	76,967	99.68	24.25 ic	0.14 ic	---	---	24.10 s	---	---	---	---	---	24.24
3.72	77,803	99.72	24.44 ic	0.14 ic	---	---	24.30 s	---	---	---	---	---	24.44
3.76	78,640	99.76	24.64 ic	0.14 ic	---	---	24.49 s	---	---	---	---	---	24.63
3.80	79,477	99.80	24.83 ic	0.14 ic	---	---	24.69 s	---	---	---	---	---	24.82
3.84	80,313	99.84	25.02 ic	0.14 ic	---	---	24.88 s	---	---	---	---	---	25.02
3.88	81,150	99.88	25.21 ic	0.13 ic	---	---	25.07 s	---	---	---	---	---	25.20
3.92	81,986	99.92	25.40 ic	0.13 ic	---	---	25.26 s	---	---	---	---	---	25.39
3.96	82,823	99.96	25.58 ic	0.13 ic	---	---	25.44 s	---	---	---	---	---	25.57
4.00	83,660	100.00	25.77 ic	0.13 ic	---	---	25.63 s	---	---	---	---	---	25.76

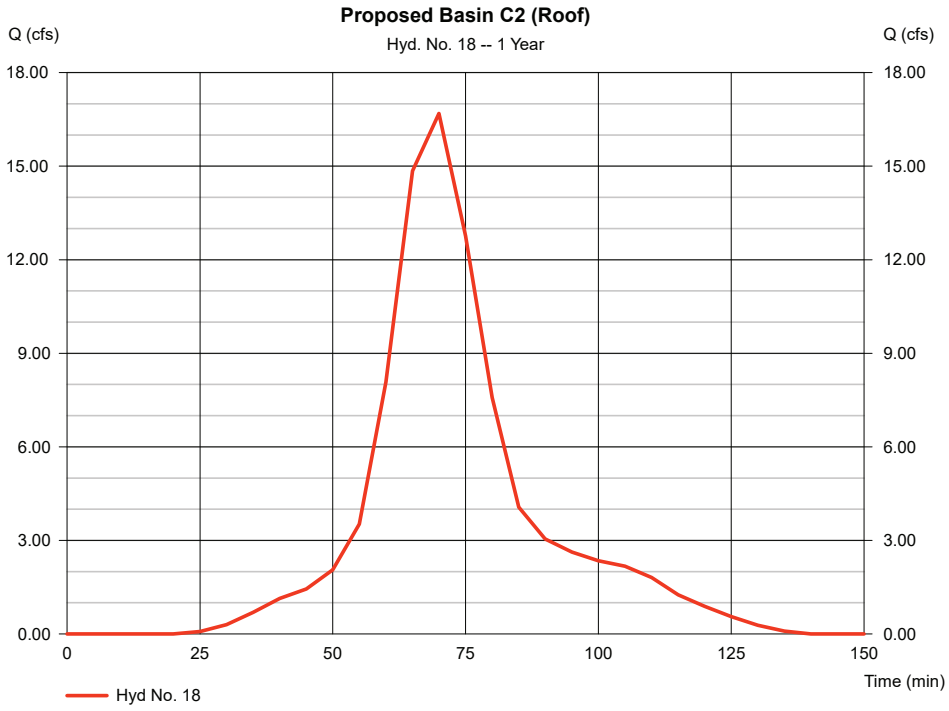
...End

Hydrograph Report

Hyd. No. 18

Proposed Basin C2 (Roof)

Hydrograph type	= SCS Runoff	Peak discharge	= 16.69 cfs
Storm frequency	= 1 yrs	Time to peak	= 70 min
Time interval	= 5 min	Hyd. volume	= 26,501 cuft
Drainage area	= 7.530 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds	Shape factor	= 484

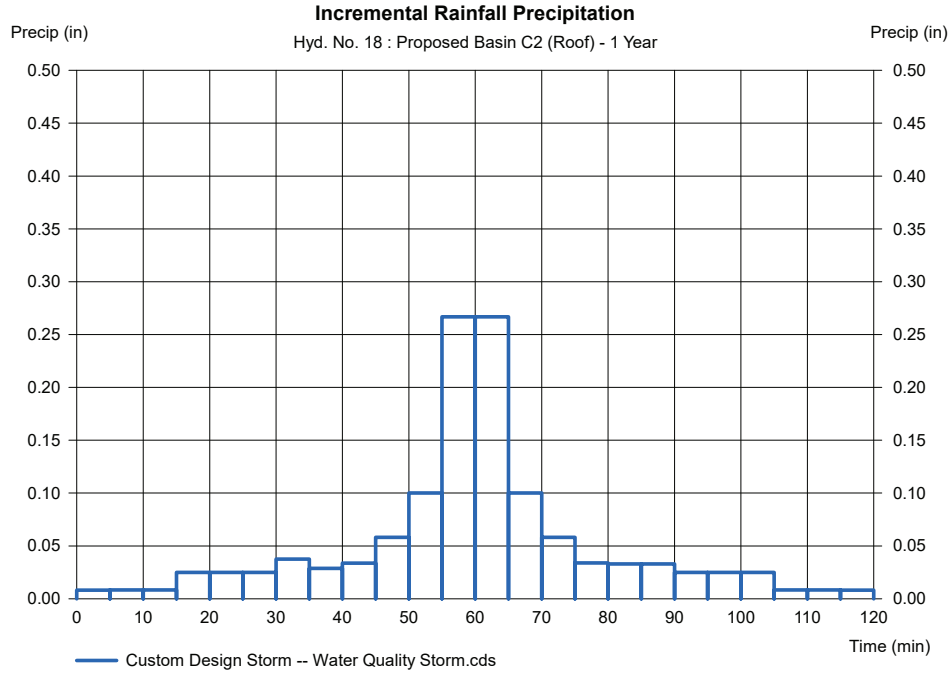


Precipitation Report

Hyd. No. 18

Proposed Basin C2 (Roof)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		



Hydrograph Report

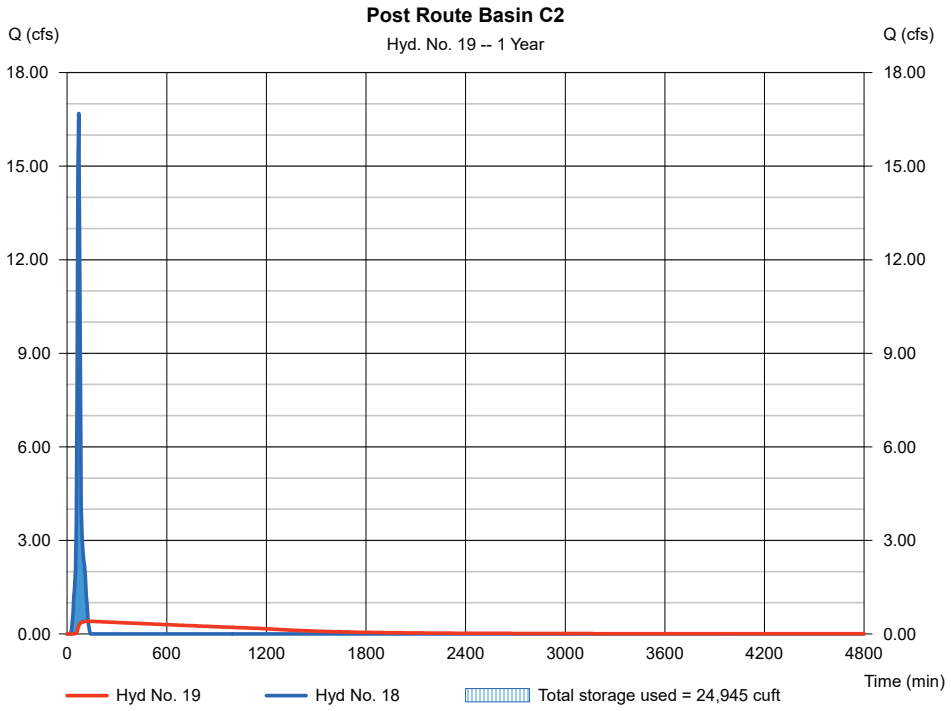
Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 19

Post Route Basin C2

Hydrograph type	= Reservoir	Peak discharge	= 0.408 cfs
Storm frequency	= 1 yrs	Time to peak	= 130 min
Time interval	= 5 min	Hyd. volume	= 26,282 cuft
Inflow hyd. No.	= 18 - Proposed Basin C2 (Roof)	Max. Elevation	= 97.19 ft
Reservoir name	= UG Basin C (2)	Max. Storage	= 24,945 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Pond No. 5 - UG Basin C (2)

Pond Data

UG Chambers - Invert elev. = 96.00 ft, Rise x Span = 4.00 x 8.42 ft, Barrel Len = 1241.73 ft, No. Barrels = 2, Slope = 0.00%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	96.00	n/a	0	0
0.40	96.40	n/a	8,366	8,366
0.80	96.80	n/a	8,366	16,732
1.20	97.20	n/a	8,366	25,098
1.60	97.60	n/a	8,366	33,464
2.00	98.00	n/a	8,366	41,830
2.40	98.40	n/a	8,366	50,196
2.80	98.80	n/a	8,366	58,562
3.20	99.20	n/a	8,366	66,928
3.60	99.60	n/a	8,366	75,294
4.00	100.00	n/a	8,366	83,660

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	4.00	0.00	0.00
Span (in)	= 24.00	4.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 96.00	96.00	0.00	0.00
Length (ft)	= 180.00	0.50	0.50	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	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 97.75	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	96.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.00
0.04	837	96.04	0.00 ic	0.00 ic	---	---	0.00	---	---	---	---	---	0.00
0.08	1,673	96.08	0.01 ic	0.01 ic	---	---	0.00	---	---	---	---	---	0.01
0.12	2,510	96.12	0.03 ic	0.03 ic	---	---	0.00	---	---	---	---	---	0.03
0.16	3,346	96.16	0.06 ic	0.05 ic	---	---	0.00	---	---	---	---	---	0.05
0.20	4,183	96.20	0.08 ic	0.08 ic	---	---	0.00	---	---	---	---	---	0.08
0.24	5,020	96.24	0.11 ic	0.11 ic	---	---	0.00	---	---	---	---	---	0.11
0.28	5,856	96.28	0.15 ic	0.14 ic	---	---	0.00	---	---	---	---	---	0.14
0.32	6,693	96.32	0.17 ic	0.17 ic	---	---	0.00	---	---	---	---	---	0.17
0.36	7,529	96.36	0.18 ic	0.18 ic	---	---	0.00	---	---	---	---	---	0.18
0.40	8,366	96.40	0.20 ic	0.20 ic	---	---	0.00	---	---	---	---	---	0.20
0.44	9,203	96.44	0.22 ic	0.21 ic	---	---	0.00	---	---	---	---	---	0.21
0.48	10,039	96.48	0.23 ic	0.23 ic	---	---	0.00	---	---	---	---	---	0.23
0.52	10,876	96.52	0.24 ic	0.24 ic	---	---	0.00	---	---	---	---	---	0.24
0.56	11,712	96.56	0.27 ic	0.25 ic	---	---	0.00	---	---	---	---	---	0.25
0.60	12,549	96.60	0.27 ic	0.27 ic	---	---	0.00	---	---	---	---	---	0.27
0.64	13,386	96.64	0.29 ic	0.28 ic	---	---	0.00	---	---	---	---	---	0.28
0.68	14,222	96.68	0.29 ic	0.29 ic	---	---	0.00	---	---	---	---	---	0.29
0.72	15,059	96.72	0.30 ic	0.30 ic	---	---	0.00	---	---	---	---	---	0.30
0.76	15,895	96.76	0.32 ic	0.31 ic	---	---	0.00	---	---	---	---	---	0.31
0.80	16,732	96.80	0.32 ic	0.32 ic	---	---	0.00	---	---	---	---	---	0.32
0.84	17,569	96.84	0.35 ic	0.33 ic	---	---	0.00	---	---	---	---	---	0.33
0.88	18,405	96.88	0.35 ic	0.34 ic	---	---	0.00	---	---	---	---	---	0.34
0.92	19,242	96.92	0.35 ic	0.35 ic	---	---	0.00	---	---	---	---	---	0.35
0.96	20,078	96.96	0.38 ic	0.36 ic	---	---	0.00	---	---	---	---	---	0.36
1.00	20,915	97.00	0.38 ic	0.37 ic	---	---	0.00	---	---	---	---	---	0.37
1.04	21,752	97.04	0.38 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
1.08	22,588	97.08	0.38 ic	0.38 ic	---	---	0.00	---	---	---	---	---	0.38
1.12	23,425	97.12	0.41 ic	0.39 ic	---	---	0.00	---	---	---	---	---	0.39
1.16	24,261	97.16	0.41 ic	0.40 ic	---	---	0.00	---	---	---	---	---	0.40
1.20	25,098	97.20	0.41 ic	0.41 ic	---	---	0.00	---	---	---	---	---	0.41
1.24	25,934	97.24	0.42 ic	0.42 ic	---	---	0.00	---	---	---	---	---	0.42
1.28	26,771	97.28	0.44 ic	0.42 ic	---	---	0.00	---	---	---	---	---	0.42

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UG Basin C (2)

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
1.32	27,608	97.32	0.44 ic	0.43 ic	---	---	0.00	---	---	---	---	---	0.43
1.36	28,444	97.36	0.44 ic	0.44 ic	---	---	0.00	---	---	---	---	---	0.44
1.40	29,281	97.40	0.45 ic	0.45 ic	---	---	0.00	---	---	---	---	---	0.45
1.44	30,117	97.44	0.48 ic	0.45 ic	---	---	0.00	---	---	---	---	---	0.45
1.48	30,954	97.48	0.48 ic	0.46 ic	---	---	0.00	---	---	---	---	---	0.46
1.52	31,791	97.52	0.48 ic	0.47 ic	---	---	0.00	---	---	---	---	---	0.47
1.56	32,627	97.56	0.48 ic	0.48 ic	---	---	0.00	---	---	---	---	---	0.48
1.60	33,464	97.60	0.48 ic	0.48 ic	---	---	0.00	---	---	---	---	---	0.48
1.64	34,300	97.64	0.52 ic	0.49 ic	---	---	0.00	---	---	---	---	---	0.49
1.68	35,137	97.68	0.52 ic	0.50 ic	---	---	0.00	---	---	---	---	---	0.50
1.72	35,974	97.72	0.52 ic	0.50 ic	---	---	0.00	---	---	---	---	---	0.50
1.76	36,810	97.76	0.52 ic	0.51 ic	---	---	0.01	---	---	---	---	---	0.52
1.80	37,647	97.80	0.69 ic	0.51 ic	---	---	0.15	---	---	---	---	---	0.66
1.84	38,483	97.84	0.89 ic	0.51 ic	---	---	0.36	---	---	---	---	---	0.87
1.88	39,320	97.88	1.13 ic	0.51 ic	---	---	0.62	---	---	---	---	---	1.13
1.92	40,157	97.92	1.48 ic	0.50 ic	---	---	0.93	---	---	---	---	---	1.44
1.96	40,993	97.96	1.81 ic	0.50 ic	---	---	1.28	---	---	---	---	---	1.78
2.00	41,830	98.00	2.18 ic	0.50 ic	---	---	1.67	---	---	---	---	---	2.16
2.04	42,666	98.04	2.59 ic	0.49 ic	---	---	2.08	---	---	---	---	---	2.57
2.08	43,503	98.08	3.03 ic	0.49 ic	---	---	2.53	---	---	---	---	---	3.01
2.12	44,340	98.12	3.52 ic	0.49 ic	---	---	3.00	---	---	---	---	---	3.48
2.16	45,176	98.16	4.03 ic	0.48 ic	---	---	3.50	---	---	---	---	---	3.98
2.20	46,013	98.20	4.58 ic	0.48 ic	---	---	4.02	---	---	---	---	---	4.50
2.24	46,849	98.24	5.04 ic	0.47 ic	---	---	4.57	---	---	---	---	---	5.04
2.28	47,686	98.28	5.61 ic	0.47 ic	---	---	5.14	---	---	---	---	---	5.61
2.32	48,523	98.32	6.22 ic	0.47 ic	---	---	5.73	---	---	---	---	---	6.20
2.36	49,359	98.36	6.85 ic	0.46 ic	---	---	6.35	---	---	---	---	---	6.81
2.40	50,196	98.40	7.48 ic	0.46 ic	---	---	6.98	---	---	---	---	---	7.44
2.44	51,032	98.44	8.12 ic	0.46 ic	---	---	7.63	---	---	---	---	---	8.09
2.48	51,869	98.48	8.76 ic	0.45 ic	---	---	8.31	---	---	---	---	---	8.76
2.52	52,706	98.52	9.54 ic	0.45 ic	---	---	9.00	---	---	---	---	---	9.45
2.56	53,542	98.56	10.15 ic	0.44 ic	---	---	9.71	---	---	---	---	---	10.15
2.60	54,379	98.60	10.88 ic	0.44 ic	---	---	10.44	---	---	---	---	---	10.87
2.64	55,215	98.64	11.69 ic	0.43 ic	---	---	11.18	---	---	---	---	---	11.61
2.68	56,052	98.68	12.44 ic	0.42 ic	---	---	11.95	---	---	---	---	---	12.37
2.72	56,889	98.72	13.19 ic	0.41 ic	---	---	12.73 s	---	---	---	---	---	13.14
2.76	57,725	98.76	13.83 ic	0.41 ic	---	---	13.42 s	---	---	---	---	---	13.83
2.80	58,562	98.80	14.44 ic	0.40 ic	---	---	14.04 s	---	---	---	---	---	14.44
2.84	59,398	98.84	14.99 ic	0.39 ic	---	---	14.60 s	---	---	---	---	---	14.99
2.88	60,235	98.88	15.50 ic	0.38 ic	---	---	15.12 s	---	---	---	---	---	15.50
2.92	61,072	98.92	16.01 ic	0.38 ic	---	---	15.63 s	---	---	---	---	---	16.01
2.96	61,908	98.96	16.49 ic	0.37 ic	---	---	16.12 s	---	---	---	---	---	16.49
3.00	62,745	99.00	16.96 ic	0.36 ic	---	---	16.59 s	---	---	---	---	---	16.96
3.04	63,581	99.04	17.40 ic	0.36 ic	---	---	17.04 s	---	---	---	---	---	17.40
3.08	64,418	99.08	17.83 ic	0.35 ic	---	---	17.48 s	---	---	---	---	---	17.83
3.12	65,255	99.12	18.24 ic	0.34 ic	---	---	17.90 s	---	---	---	---	---	18.24
3.16	66,091	99.16	18.63 ic	0.34 ic	---	---	18.30 s	---	---	---	---	---	18.63
3.20	66,928	99.20	19.02 ic	0.33 ic	---	---	18.68 s	---	---	---	---	---	19.02
3.24	67,764	99.24	19.38 ic	0.32 ic	---	---	19.06 s	---	---	---	---	---	19.38
3.28	68,601	99.28	19.74 ic	0.32 ic	---	---	19.42 s	---	---	---	---	---	19.74
3.32	69,438	99.32	20.09 ic	0.31 ic	---	---	19.77 s	---	---	---	---	---	20.09
3.36	70,274	99.36	20.42 ic	0.31 ic	---	---	20.11 s	---	---	---	---	---	20.42
3.40	71,111	99.40	20.75 ic	0.30 ic	---	---	20.44 s	---	---	---	---	---	20.74
3.44	71,947	99.44	21.06 ic	0.30 ic	---	---	20.76 s	---	---	---	---	---	21.06
3.48	72,784	99.48	21.37 ic	0.29 ic	---	---	21.07 s	---	---	---	---	---	21.37
3.52	73,620	99.52	21.66 ic	0.29 ic	---	---	21.38 s	---	---	---	---	---	21.66
3.56	74,457	99.56	21.95 ic	0.28 ic	---	---	21.67 s	---	---	---	---	---	21.95
3.60	75,294	99.60	22.24 ic	0.28 ic	---	---	21.96 s	---	---	---	---	---	22.24
3.64	76,130	99.64	22.51 ic	0.27 ic	---	---	22.24 s	---	---	---	---	---	22.51
3.68	76,967	99.68	22.78 ic	0.27 ic	---	---	22.51 s	---	---	---	---	---	22.78
3.72	77,803	99.72	23.05 ic	0.27 ic	---	---	22.78 s	---	---	---	---	---	23.05
3.76	78,640	99.76	23.31 ic	0.26 ic	---	---	23.04 s	---	---	---	---	---	23.30
3.80	79,477	99.80	23.56 ic	0.26 ic	---	---	23.30 s	---	---	---	---	---	23.56
3.84	80,313	99.84	23.81 ic	0.25 ic	---	---	23.55 s	---	---	---	---	---	23.81
3.88	81,150	99.88	24.05 ic	0.25 ic	---	---	23.80 s	---	---	---	---	---	24.05
3.92	81,986	99.92	24.29 ic	0.25 ic	---	---	24.04 s	---	---	---	---	---	24.29
3.96	82,823	99.96	24.52 ic	0.24 ic	---	---	24.28 s	---	---	---	---	---	24.52
4.00	83,660	100.00	24.75 ic	0.24 ic	---	---	24.51 s	---	---	---	---	---	24.75

...End

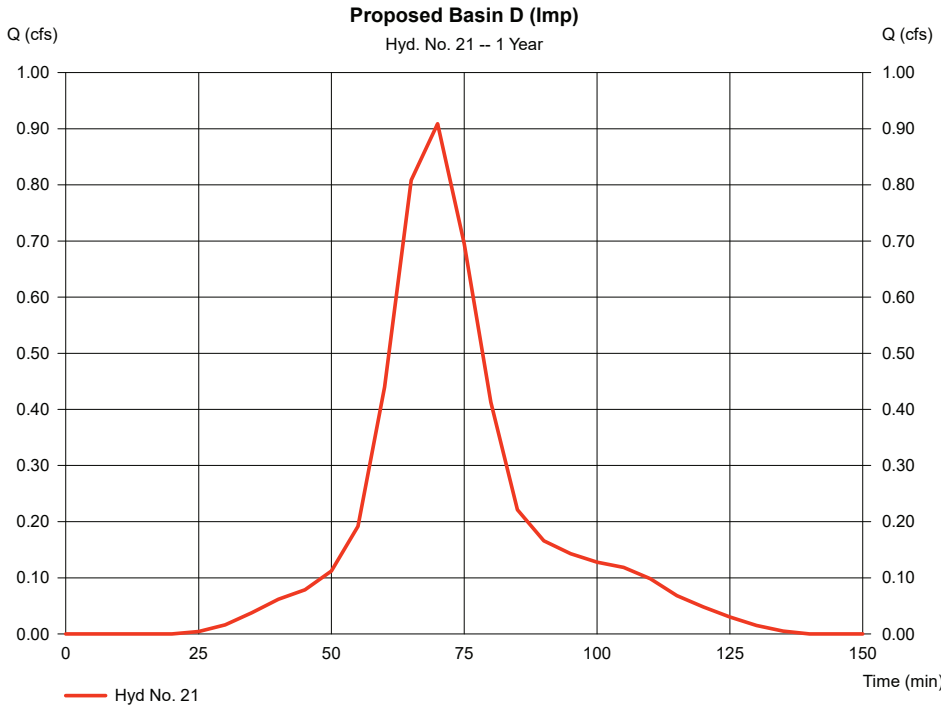
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Hyd. No. 21

Proposed Basin D (Imp)

Hydrograph type	= SCS Runoff		Peak discharge	= 0.909 cfs
Storm frequency	= 1 yrs		Time to peak	= 70 min
Time interval	= 5 min		Hyd. volume	= 1,443 cuft
Drainage area	= 0.410 ac		Curve number	= 98
Basin Slope	= 0.0 %		Hydraulic length	= 0 ft
Tc method	= USER		Time of conc. (Tc)	= 10.00 min
Total precip.	= 1.25 in		Distribution	= Custom
Storm duration	= Water Quality Storm.cds		Shape factor	= 484

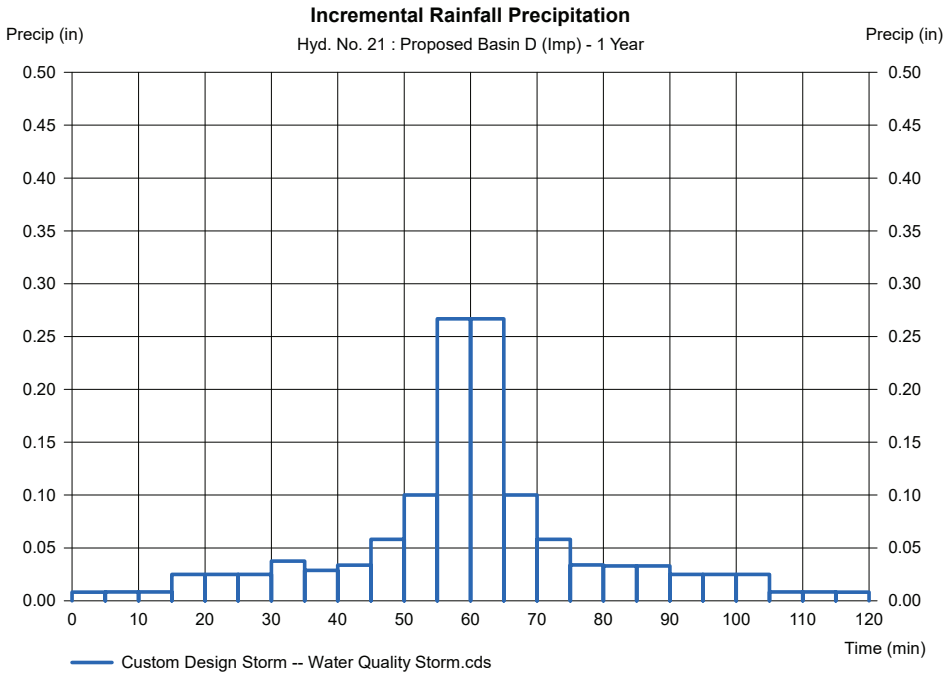


Precipitation Report

Hyd. No. 21

Proposed Basin D (Imp)

Storm Frequency	= 1 yrs	Time interval	= 5 min
Total precip.	= 1.2500 in	Distribution	= Custom
Storm duration	= Water Quality Storm.cds		



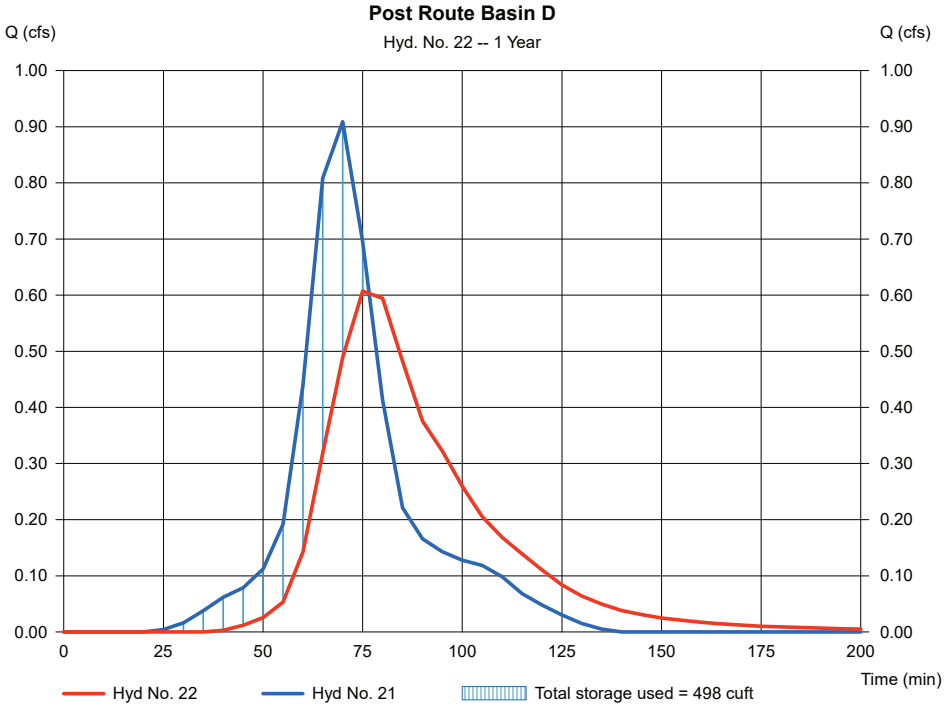
Hydrograph Report

Hyd. No. 22

Post Route Basin D

Hydrograph type	= Reservoir	Peak discharge	= 0.607 cfs
Storm frequency	= 1 yrs	Time to peak	= 75 min
Time interval	= 5 min	Hyd. volume	= 1,421 cuft
Inflow hyd. No.	= 21 - Proposed Basin D (Imp)	Max. Elevation	= 96.46 ft
Reservoir name	= UG Basin D	Max. Storage	= 498 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs by Intelisolve v9.1 — Friday, Dec 2, 2022

Pond No. 6 - UG Basin D

Pond Data

UG Chambers - Invert elev. = 96.10 ft, Rise x Span = 2.00 x 2.00 ft, Barrel Len = 105.00 ft, No. Barrels = 12, Slope = 0.00%, Headers = Yes

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	96.10	n/a	0	0
0.20	96.30	n/a	217	217
0.40	96.50	n/a	378	595
0.60	96.70	n/a	460	1,055
0.80	96.90	n/a	506	1,561
1.00	97.10	n/a	529	2,090
1.20	97.30	n/a	529	2,619
1.40	97.50	n/a	506	3,125
1.60	97.70	n/a	459	3,584
1.80	97.90	n/a	378	3,962
2.00	98.10	n/a	217	4,179

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	4.00	6.00	0.00
Span (in)	= 24.00	4.00	6.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 96.10	96.10	96.50	0.00
Length (ft)	= 30.00	0.50	0.50	0.00
Slope (%)	= 0.35	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	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 96.60	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

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	96.10	0.00	0.00	0.00	---	0.00	---	---	---	---	---	0.00
0.02	22	96.12	0.00 oc	0.00 ic	0.00	---	0.00	---	---	---	---	---	0.00
0.04	43	96.14	0.01 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.01
0.06	65	96.16	0.02 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.02
0.08	87	96.18	0.04 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.04
0.10	109	96.20	0.06 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.06
0.12	130	96.22	0.09 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.09
0.14	152	96.24	0.12 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.12
0.16	174	96.26	0.15 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.15
0.18	196	96.28	0.18 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.18
0.20	217	96.30	0.22 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.22
0.22	255	96.32	0.28 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.28
0.24	293	96.34	0.33 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.33
0.26	331	96.36	0.35 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.35
0.28	369	96.38	0.41 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.41
0.30	406	96.40	0.46 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.46
0.32	444	96.42	0.53 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.53
0.34	482	96.44	0.59 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.59
0.36	520	96.46	0.63 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.63
0.38	558	96.48	0.70 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.70
0.40	595	96.50	0.78 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.78
0.42	641	96.52	0.82 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.82
0.44	687	96.54	0.90 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.90
0.46	733	96.56	0.94 oc	0.00	0.00	---	0.00	---	---	---	---	---	0.94
0.48	779	96.58	1.03 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.03
0.50	825	96.60	1.08 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.08
0.52	871	96.62	1.18 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.18
0.54	917	96.64	1.22 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.22
0.56	963	96.66	1.27 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.27
0.58	1,009	96.68	1.38 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.38
0.60	1,055	96.70	1.43 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.43
0.62	1,106	96.72	1.54 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.54
0.64	1,156	96.74	1.59 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.59

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UG Basin D

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
0.66	1,207	96.76	1.65 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.65
0.68	1,257	96.78	1.76 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.76
0.70	1,308	96.80	1.82 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.82
0.72	1,359	96.82	1.87 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.87
0.74	1,409	96.84	1.99 oc	0.00	0.00	---	0.00	---	---	---	---	---	1.99
0.76	1,460	96.86	2.05 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.05
0.78	1,511	96.88	2.11 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.11
0.80	1,561	96.90	2.23 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.23
0.82	1,614	96.92	2.29 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.29
0.84	1,667	96.94	2.36 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.36
0.86	1,720	96.96	2.48 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.48
0.88	1,773	96.98	2.54 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.54
0.90	1,826	97.00	2.61 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.61
0.92	1,878	97.02	2.67 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.67
0.94	1,931	97.04	2.80 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.80
0.96	1,984	97.06	2.86 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.86
0.98	2,037	97.08	2.92 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.92
1.00	2,090	97.10	2.99 oc	0.00	0.00	---	0.00	---	---	---	---	---	2.99
1.02	2,143	97.12	3.11 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.11
1.04	2,196	97.14	3.18 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.18
1.06	2,249	97.16	3.24 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.24
1.08	2,302	97.18	3.37 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.37
1.10	2,354	97.20	3.43 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.43
1.12	2,407	97.22	3.49 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.49
1.14	2,460	97.24	3.56 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.56
1.16	2,513	97.26	3.68 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.68
1.18	2,566	97.28	3.74 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.74
1.20	2,619	97.30	3.80 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.80
1.22	2,669	97.32	3.92 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.92
1.24	2,720	97.34	3.98 oc	0.00	0.00	---	0.00	---	---	---	---	---	3.98
1.26	2,771	97.36	4.04 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.04
1.28	2,821	97.38	4.16 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.16
1.30	2,872	97.40	4.22 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.22
1.32	2,923	97.42	4.27 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.27
1.34	2,973	97.44	4.39 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.39
1.36	3,024	97.46	4.44 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.44
1.38	3,074	97.48	4.50 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.50
1.40	3,125	97.50	4.60 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.60
1.42	3,171	97.52	4.65 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.65
1.44	3,217	97.54	4.75 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.75
1.46	3,263	97.56	4.80 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.80
1.48	3,309	97.58	4.85 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.85
1.50	3,355	97.60	4.95 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.95
1.52	3,401	97.62	4.99 oc	0.00	0.00	---	0.00	---	---	---	---	---	4.99
1.54	3,447	97.64	5.08 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.08
1.56	3,492	97.66	5.12 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.12
1.58	3,538	97.68	5.21 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.21
1.60	3,584	97.70	5.25 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.25
1.62	3,622	97.72	5.32 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.32
1.64	3,660	97.74	5.39 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.39
1.66	3,698	97.76	5.43 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.43
1.68	3,735	97.78	5.50 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.50
1.70	3,773	97.80	5.56 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.56
1.72	3,811	97.82	5.61 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.61
1.74	3,849	97.84	5.67 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.67
1.76	3,886	97.86	5.69 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.69
1.78	3,924	97.88	5.74 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.74
1.80	3,962	97.90	5.80 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.80
1.82	3,984	97.92	5.84 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.84
1.84	4,005	97.94	5.87 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.87
1.86	4,027	97.96	5.90 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.90
1.88	4,049	97.98	5.94 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.94
1.90	4,071	98.00	5.97 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.97
1.92	4,092	98.02	5.99 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.99
1.94	4,114	98.04	6.00 oc	0.00	0.00	---	0.00	---	---	---	---	---	6.00
1.96	4,136	98.06	6.01 oc	0.00	0.00	---	0.00	---	---	---	---	---	6.01
1.98	4,157	98.08	6.01 oc	0.00	0.00	---	0.00	---	---	---	---	---	6.01
2.00	4,179	98.10	5.97 oc	0.00	0.00	---	0.00	---	---	---	---	---	5.97

...End

Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	69.8703	13.1000	0.8658	--------
3	0.0000	0.0000	0.0000	--------
5	79.2597	14.6000	0.8369	--------
10	88.2351	15.5000	0.8279	--------
25	102.6072	16.5000	0.8217	--------
50	114.8193	17.2000	0.8199	--------
100	127.1596	17.8000	0.8186	--------

File name: SampleFHA.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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.69	4.61	3.89	3.38	2.99	2.69	2.44	2.24	2.07	1.93	1.81	1.70
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	6.57	5.43	4.65	4.08	3.65	3.30	3.02	2.79	2.59	2.42	2.27	2.15
10	7.24	6.04	5.21	4.59	4.12	3.74	3.43	3.17	2.95	2.77	2.60	2.46
25	8.25	6.95	6.03	5.34	4.80	4.38	4.02	3.73	3.48	3.26	3.07	2.91
50	9.04	7.65	6.66	5.92	5.34	4.87	4.49	4.16	3.88	3.65	3.44	3.25
100	9.83	8.36	7.30	6.50	5.87	5.36	4.94	4.59	4.29	4.03	3.80	3.60

Tc = time in minutes. Values may exceed 60.

Precip. file name: Mercer County.pcp

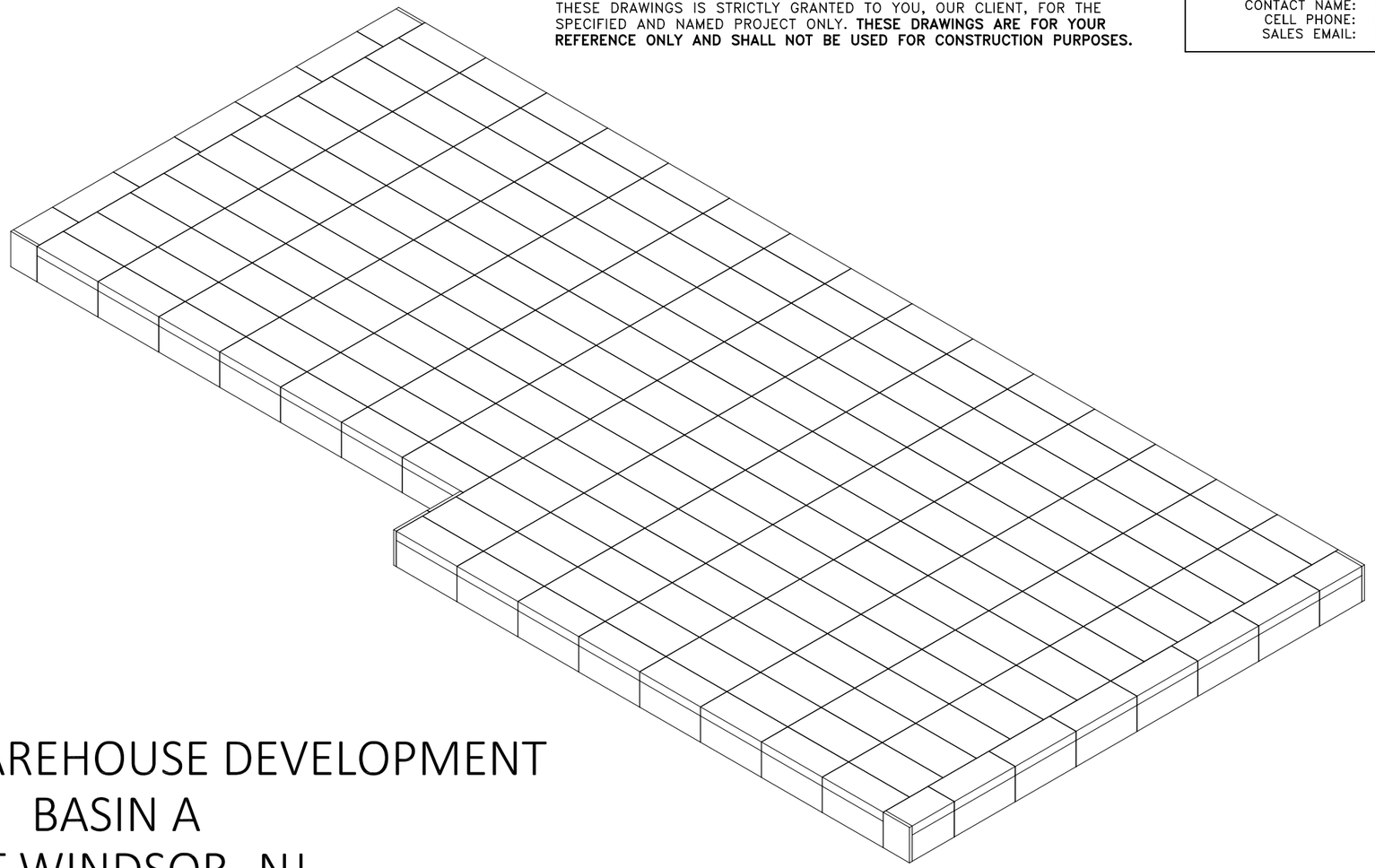
Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	3.31	0.00	0.00	5.01	6.19	0.00	8.33
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	1.25	3.31	0.00	0.00	5.01	6.19	0.00	8.33

Hydraflow Table of Contents

UNDERGROUND DETENTION BASIN ‘A’ DETAIL

StormTrap®

MODULAR CONCRETE
STORMWATER MANAGEMENT



PROPOSED WAREHOUSE DEVELOPMENT
BASIN A
EAST WINDSOR , NJ

SHEET INDEX

STORMTRAP CONTACT INFORMATION

STORMTRAP SUPPLIER: STORMTRAP
CONTACT NAME: SHANE MURPHY
CELL PHONE: 973-557-6280
SALES EMAIL: SMURPHY@STORMTRAP.COM

StormTrap®
PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]
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ENGINEER INFORMATION:

DYNAMIC ENGINEERING CONSULTANTS
1904 MAIN ST
LAKE COMO, NJ
732-974-0198

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SCALE:

NTS

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

0.0

STRUCTURAL DESIGN LOADING CRITERIA

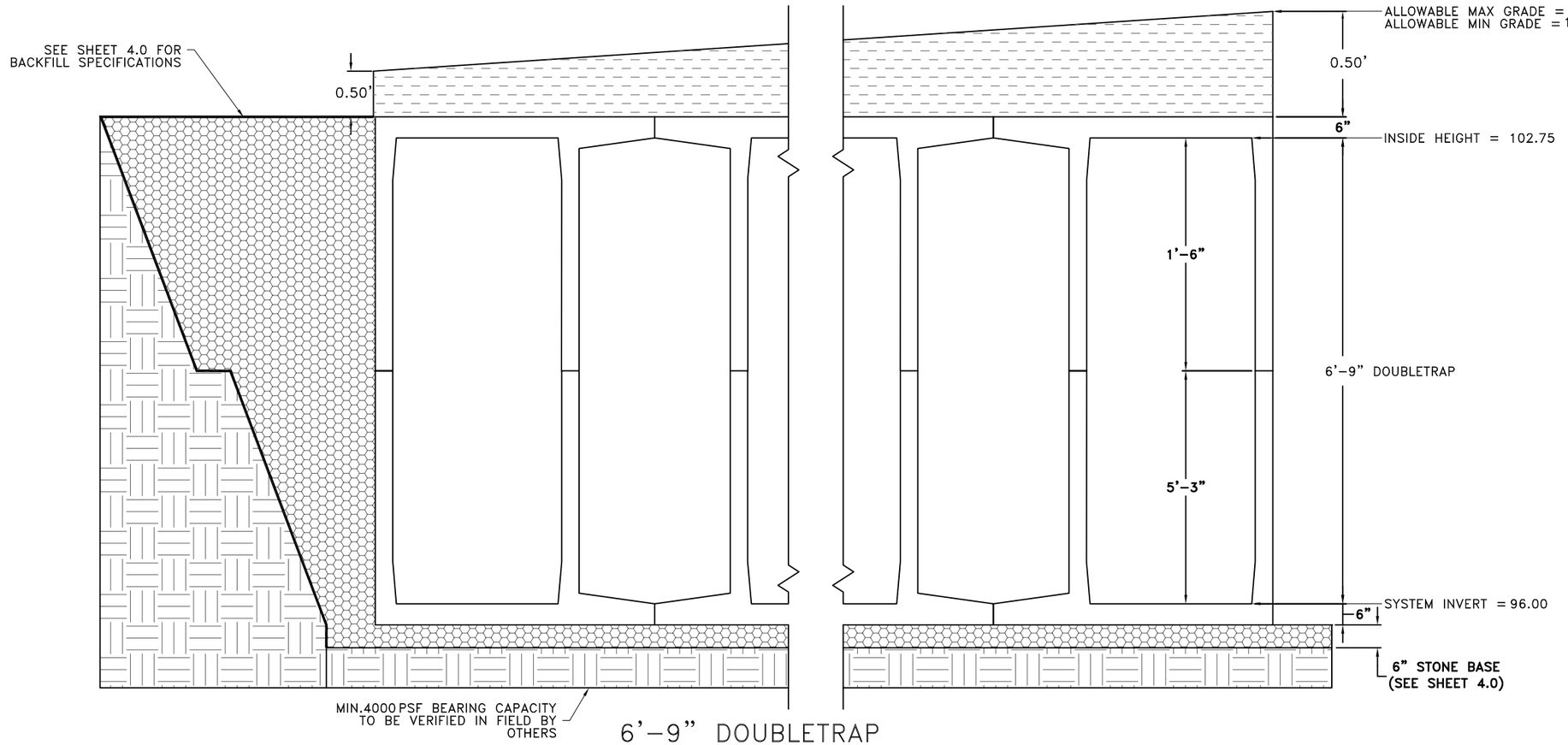
LIVE LOADING:	**AASHTO HS–20 HIGHWAY LOADING**
GROUND WATER TABLE:	BELOW INVERT OF SYSTEM
SOIL BEARING PRESSURE:	4000 PSF
SOIL DENSITY:	120 PCF
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE:	35 PSF / FT.
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE:	80 PSF/FT. (IF WATER TABLE PRESENT)
APPLICABLE CODES:	ASTM C857 ACI–318
BACKFILL TYPE:	SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

WATER STORAGE PROV:	161,321.35 CUBIC FEET
UNIT HEADROOM:	6'–9" DOUBLETRAP

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 0.50' MAX. 0.50' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW INVERT OF SYSTEM IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. **SYSTEM DESIGN MAY ALLOW FOR INCIDENTAL LEAKAGE AND WILL NOT BE SUBJECT TO LEAKAGE TESTING.**



6'–9" DOUBLETRAP

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SHEET TITLE:

DOUBLETRAP DESIGN CRITERIA

SHEET NUMBER:

1.0

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	TOP WEIGHT	BASE WEIGHT
166	I	6'–9" DOUBLETRAP	12877	15444
0	II	6'–9" DOUBLETRAP	–	–
41	III	6'–9" DOUBLETRAP	10746	15627
0	IV	6'–9" DOUBLETRAP	–	–
0	VII	6'–9" DOUBLETRAP	–	–
4	SPIII/SPIV	6'–9" DOUBLETRAP	VARIES	VARIES
2	T2 PANEL	8" THICK PANEL	6532	
4	T4 PANEL	8" THICK PANEL	5135	
0	T7 PANEL	8" THICK PANEL	–	
39	JOINT WRAP	150' PER ROLL		
72	JOINT TAPE	14.5' PER ROLL		
TOTAL PIECES = 422				
TOTAL PANELS = 6				
HEAVIEST PICK WEIGHT = 15,627				

LOADING DISCLAIMER:

STORMTRAP IS NOT DESIGNED TO ACCEPT ANY ADDITIONAL LOADINGS FROM NEARBY STRUCTURES NEXT TO OR OVER THE TOP OF STORMTRAP. IF ADDITIONAL LOADING CONSIDERATIONS ARE REQUIRED FOR STRUCTURAL DESIGN OF STORMTRAP, PLEASE CONTACT STORMTRAP IMMEDIATELY.

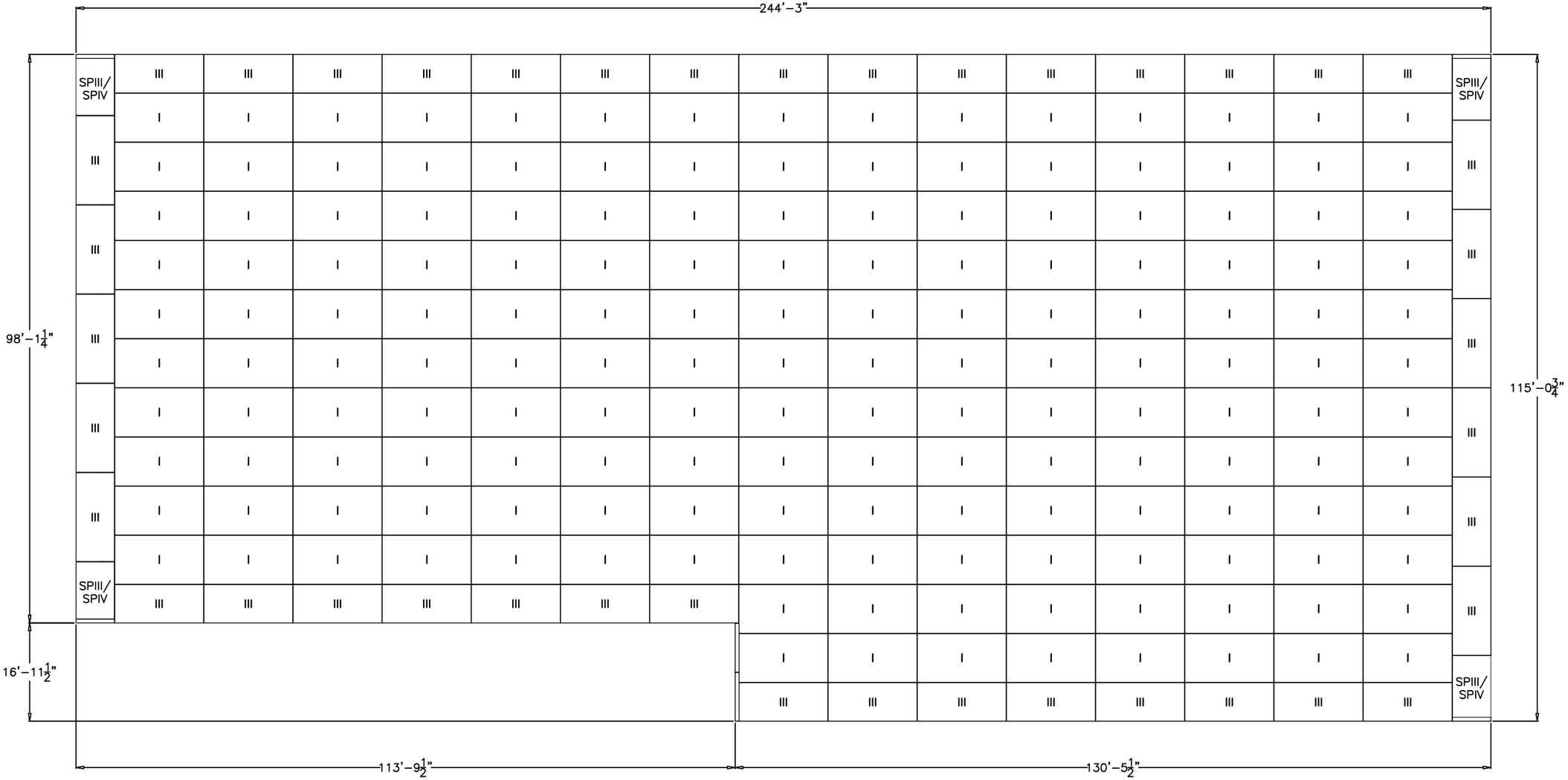
TREE LOADING DISCLAIMER:

THE STORMTRAP SYSTEM HAS NOT BEEN DESIGNED TO SUPPORT THE ADDITIONAL WEIGHT OF ANY TREES. FURTHERMORE, THE ROOTS OF THE TREES MUST BE CONTAINED TO PREVENT FUTURE DAMAGE TO THE STORMTRAP SYSTEM. STORMTRAP ACCEPTS NO LIABILITY FOR DAMAGES CAUSED BY TREES OR OTHER VEGETATION PLACE AROUND OR ON TOP OF THE SYSTEM.

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 103.75
ALLOWABLE MIN GRADE =103.75
INSIDE HEIGHT ELEVATION =102.75
SYSTEM INVERT = 96.00

NOTES:

1. DIMENSIONING OF STORMTRAP SYSTEM SHOWN BELOW ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP – INDICATES A MODULE WITH MODIFICATIONS.
5. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
6. CONTRACTORS RESPONSIBILITY TO ENSURE CONSISTENCY/ACCURACY TO FINAL ENGINEER OF RECORD PLAN SET.



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DOUBLETRAP SYSTEM LAYOUT

SHEET NUMBER:

2.0

STORMTRAP INSTALLATION SPECIFICATIONS

1. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891, STANDARD FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES, THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:

2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.

3. STORMTRAP MODULES CAN BE PLACED ON A LEVEL, 6" FOUNDATION OF ¾" AGGREGATE EXTENDING 2'-0" PAST THE OUTSIDE OF THE SYSTEM (SEE DETAIL 1) AND SHALL BE PLACED ON PROPERLY COMPACTED SOILS (SEE SHEET 1.0 FOR SOIL BEARING CAPACITY REQUIREMENTS), AND IN ACCORDANCE WITH ASTM C891 STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST UTILITY STRUCTURES.

4. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED ¾" (SEE DETAIL 2). IF THE SPACE EXCEEDS ¾", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

5. STORMTRAP MODULES ARE NOT WATERTIGHT. IF A WATERTIGHT SOLUTION IS REQUIRED, CONTACT STORMTRAP FOR RECOMMENDATIONS. THE WATERTIGHT APPLICATION IS TO BE PROVIDED AND IMPLEMENTED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SELECTED WATERTIGHT SOLUTION PERFORMS AS SPECIFIED BY THE MANUFACTURER.

6. THE PERIMETER HORIZONTAL JOINT BETWEEN THE TOP AND BASE LEG CONNECTION OF THE STORMTRAP MODULES SHALL BE SEALED WITH PREFORMED MASTIC JOINT TAPE ACCORDING TO ASTM C891, 8.8 AND 8.12. (SEE DETAIL 3). THE MASTIC JOINT TAPE DOES NOT PROVIDE A WATERTIGHT SEAL.

7. ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH 8" WIDE PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN, BONDED TO A WOVEN , HIGHLY PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY STORMTRAP (SEE DETAILS 2, 4, & 5). THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

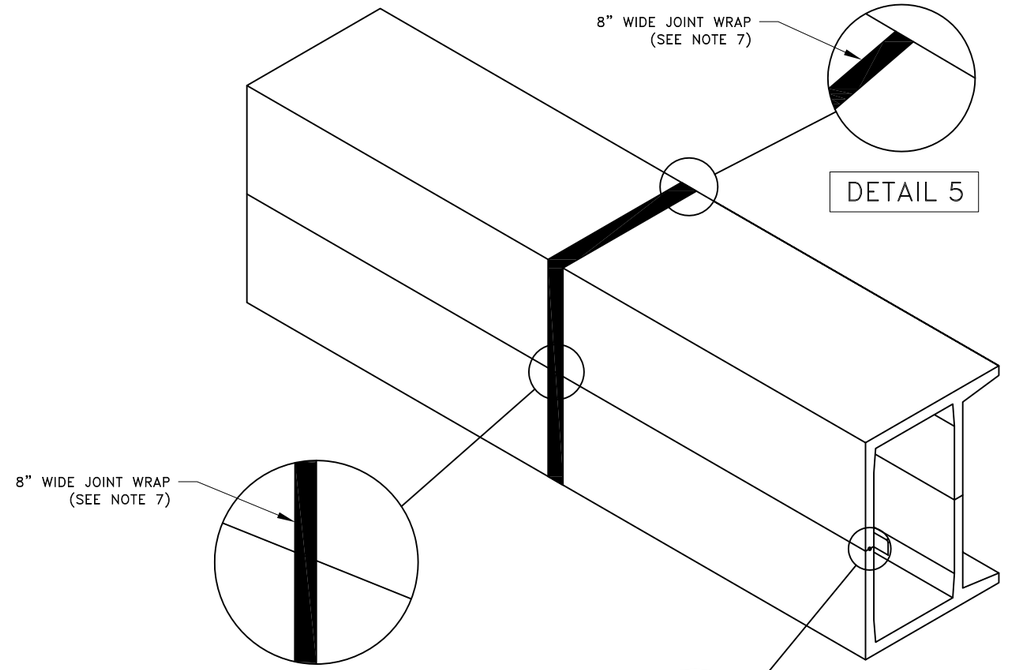
   7.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE JOINT WRAP IS TO BE APPLIED.

   7.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.

8. IF THE CONTRACTOR NEEDS TO CANCEL ANY SHIPMENTS, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE. IF CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.

9. IF THE STORMTRAP MODULE(S) IS DAMAGED IN ANY WAY PRIOR, DURING, OR AFTER INSTALL, STORMTRAP MUST BE CONTACTED IMMEDIATELY TO ASSESS THE DAMAGE AND TO DETERMINE WHETHER OR NOT THE MODULE(S) WILL NEED TO BE REPLACED. IF ANY MODULE ARRIVES AT THE JOBSITE DAMAGED DO NOT UNLOAD IT; CONTACT STORMTRAP IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.

10. STORMTRAP MODULES CANNOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM STORMTRAP.



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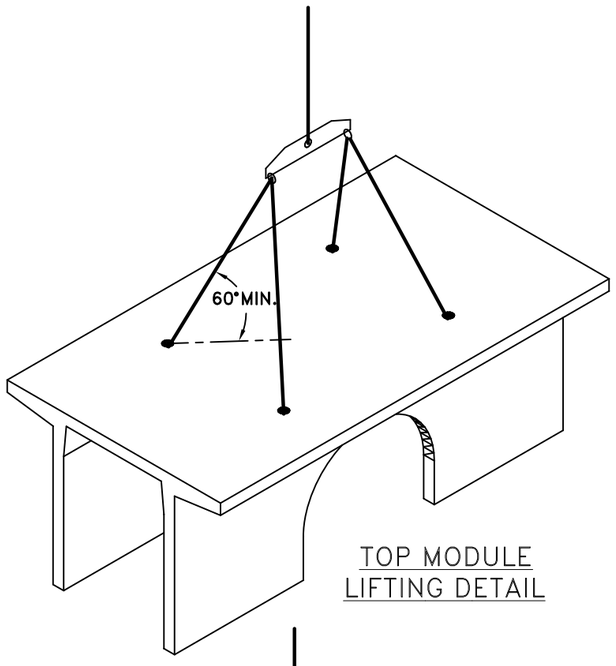
SHEET NUMBER:

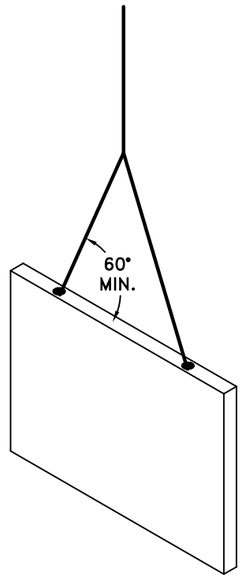
3.0

STORMTRAP MODULE LIFTING INSTALLATION NOTES

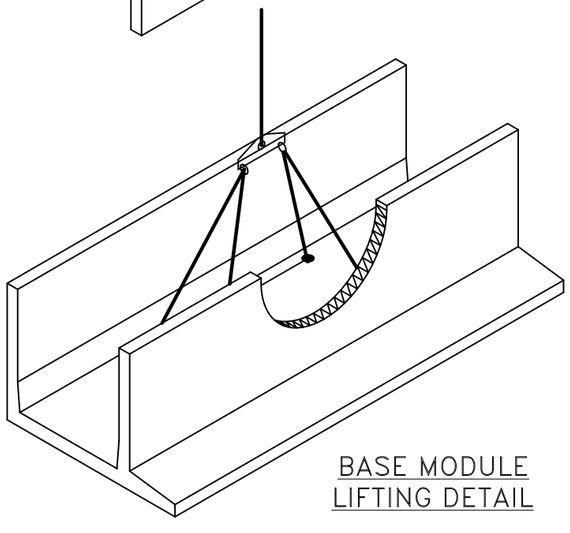
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL (4) CHAINS/CABLES ARE SECURED PROPERLY TO THE LIFTING ANCHORS AND IN EQUAL TENSION WHEN LIFTING THE STORMTRAP MODULE (SEE RECOMMENDATIONS 2 & 3).
2. MINIMUM 7'-0" CHAIN/CABLE LENGTH TO BE USED TO LIFT STORMTRAP MODULES (SUPPLIED BY CONTRACTOR).
3. CONTRACTOR TO ENSURE MINIMUM LIFTING ANGLE IS 60° FROM TOP SURFACE OF STORMTRAP MODULE. SEE DETAIL.
4. IT IS UNDERSTOOD AND AGREED THAT AT ALL TIMES DURING WHICH HOISTING AND RIGGING EQUIPMENT IS BEING SUPPLIED TO THE PURCHASER, OPERATOR OF SUCH EQUIPMENT SHALL BE IN CHARGE OF HIS ENTIRE EQUIPMENT AND SHALL AT ALL TIMES BE THE JUDGE OF THE SAFETY AND PROPERTY OF ANY SUGGESTION TO HIM FROM THE SELLER, ITS AGENTS OR EMPLOYEES. PURCHASER AGREES TO SAVE, INDEMNIFY AND HOLD HARMLESS SELLER FROM ALL LOSS, CLAIMS, DEMANDS OR CAUSES OF ACTION, WHICH MAY ARISE FROM THE EXISTENCE OR OPERATION OF SAID EQUIPMENT.



TOP MODULE
LIFTING DETAIL



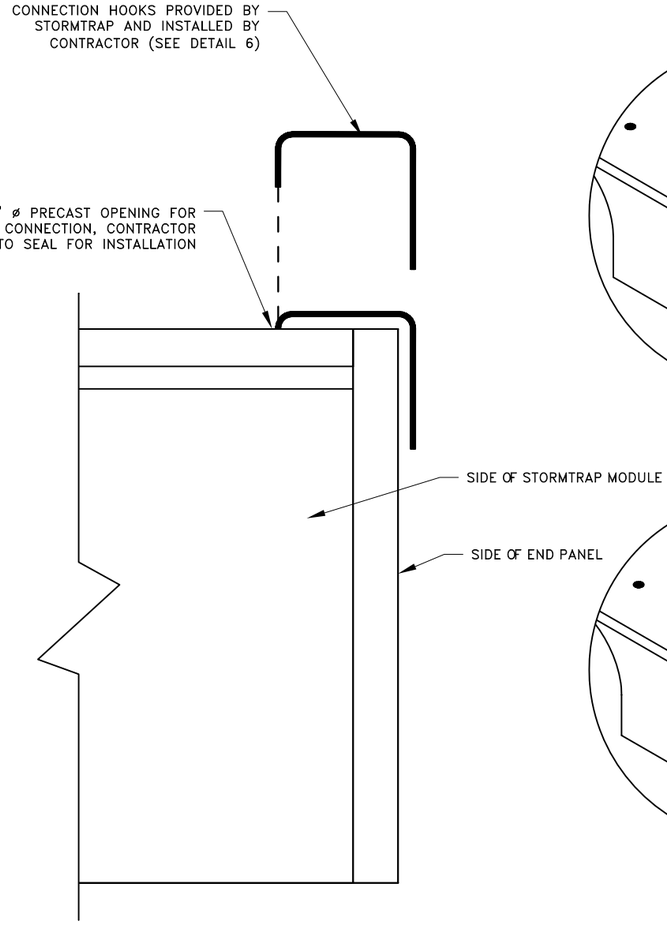
END PANEL
LIFTING DETAIL



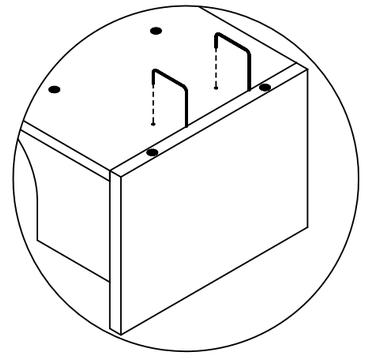
BASE MODULE
LIFTING DETAIL

END PANEL ERECTION/INSTALLATION NOTES

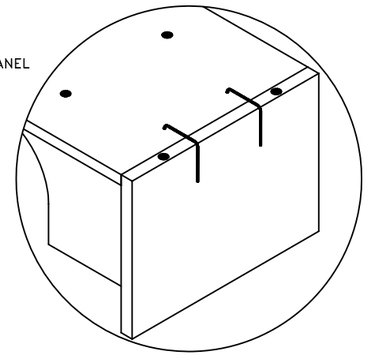
1. END PANELS WILL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF ROWS.
2. PANELS SHALL BE INSTALLED IN A TILT UP FASHION DIRECTLY ADJACENT TO OPEN END OF MODULE (REFER TO SHEET 2.0 FOR END PANEL LOCATIONS).
3. CONNECTION HOOKS WILL BE SUPPLIED WITH END PANELS TO SECURELY CONNECT PANEL TO ADJACENT STORMTRAP MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONNECTION HOOK IS ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE SHEET 3.0).



PANEL CONNECTION
ELEVATION VIEW



STEP 1



STEP 2

DETAIL 6

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SHEET NUMBER:

3.1

ZONE CHART		
ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 1	FOUNDATION AGGREGATE	#5 (¾") STONE AGGREGATE (SEE NOTE 4 FOR DESCRIPTION)
ZONE 2	BACKFILL	UNIFIED SOILS CLASSIFICATION (GW, GP, SW, SP) OR SEE BELOW FOR APPROVED BACKFILL OPTIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

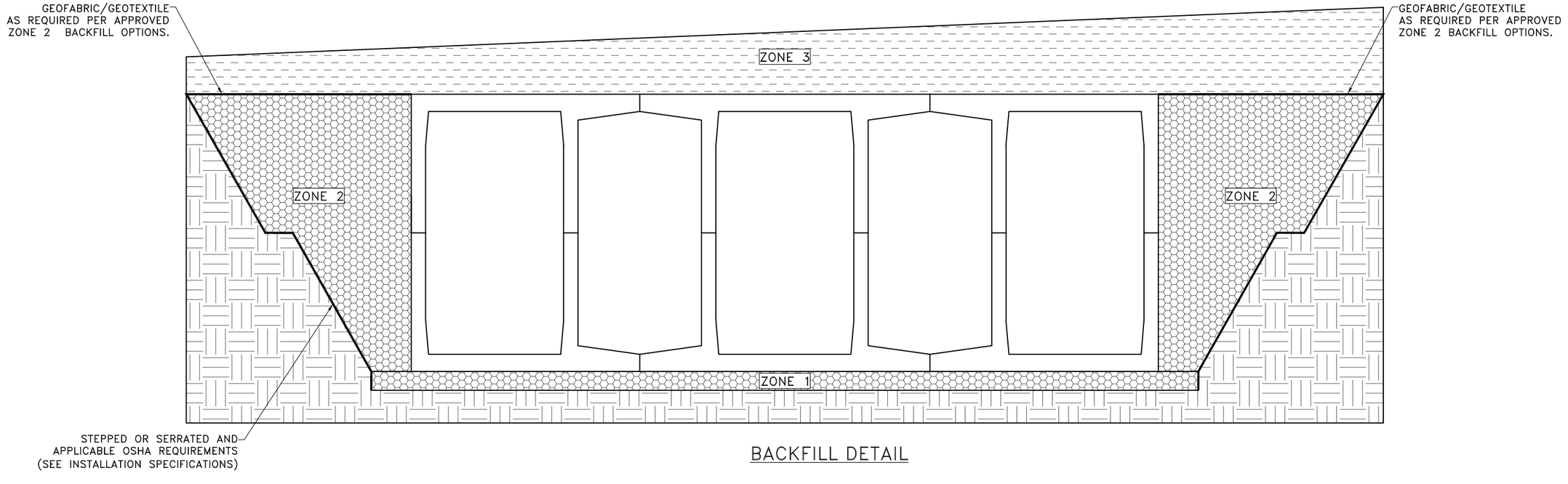
FILL DEPTH	TRACK WIDTH	MAX VEHICLE WEIGHT (KIPS)	MAX GROUND PRESSURE
12"	12"	51.8	1690 psf
	18"	56.1	1219 psf
	24"	68.1	1111 psf
	30"	76.7	1000 psf
	36"	85.0	924 psf

NOTE:
TRACK LENGTH NOT TO EXCEED 15'-4".
ONLY TWO TRACKS PER VEHICLE.

APPROVED ZONE 2 BACKFILL OPTIONS	
OPTION	REMARKS
¾" STONE AGGREGATE	THE STONE AGGREGATE SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR MATERIAL. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL (ASTM SIZE #57) AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
SAND	IMPORTED PURE SAND IS PERMITTED TO BE USED AS BACKFILL IF IT IS CLEAN AND FREE DRAINING. THE SAND USED FOR BACKFILLING SHALL HAVE LESS THAN 40% PASSING #40 SIEVE AND LESS THAN 5% PASSING #200 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE SAND BACKFILL.
CRUSHED CONCRETE AGGREGATE	CLEAN, FREE DRAINING CRUSHED CONCRETE AGGREGATE MATERIAL CAN BE USED AS BACKFILL FOR STORMTRAP'S MODULES. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL.
ROAD PACK	STONE AGGREGATE 100% PASSING THE 1-1/2" SIEVE WITH LESS THAN 12% PASSING THE #200 SIEVE (ASTM SIZE #467). GEOFABRIC AS PER GEOTECHNICAL ENGINEER RECOMMENDATION.

STORMTRAP ZONE INSTALLATION SPECIFICATIONS/PROCEDURES

1. THE FILL PLACED AROUND THE STORMTRAP MODULES MUST DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGING ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MUST BE FREE-DRAINING MATERIAL. SEE ZONE 2 BACKFILL CHART ON THIS PAGE FOR APPROVED BACKFILL OPTIONS. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED (PROVIDED BY OTHERS).
2. DURING PLACEMENT OF MATERIAL OVERTOP THE SYSTEM, AT NO TIME SHALL MACHINERY BE USED OVERTOP THAT EXCEEDS THE DESIGN LIMITATIONS OF THE SYSTEM. WHEN PLACEMENT OF MATERIAL OVERTOP, MATERIAL SHALL BE PLACED SUCH THAT THE DIRECTION OF PLACEMENT IS PARALLEL WITH THE OVERALL LONGITUDINAL DIRECTION OF THE SYSTEM WHENEVER POSSIBLE.
3. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED AT A MINIMUM OF 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN HS-20 LOADING CRITERIA TRAVEL OVERTOP THE SYSTEM WITHOUT THE MINIMUM DESIGN COVERAGE. IF TRAVEL IS NECESSARY OVERTOP THE SYSTEM PRIOR TO ACHIEVING THE MINIMUM DESIGN COVER, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OF THE SYSTEM. IN SOME CASES, IN ORDER TO ACHIEVE REQUIRED COMPACTION, HAND COMPACTION MAY BE NECESSARY IN ORDER NOT TO EXCEED THE ALLOTTED DESIGN LOADING. SEE CHART FOR TRACKED VEHICLE WIDTH AND ALLOWABLE MAXIMUM PRESSURE PER TRACK.
4. STONE AGGREGATE FOUNDATION IN ZONE 1 IS RECOMMENDED FOR LEVELING PURPOSES ONLY (OPTIONAL).



BACKFILL DETAIL

StormTrap
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1287 WINDHAM PARKWAY
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732-974-0198

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NTS

SHEET TITLE:

DOUBLETRAP BACKFILL SPECIFICATIONS

SHEET NUMBER:

4.0

RECOMMENDED ACCESS OPENING SPECIFICATION

1. A TYPICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 2'–0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 3'–0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 1'–0" OF CLEARANCE FROM THE END OF THE STORMTRAP MODULE UNLESS NOTED OTHERWISE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG UNLESS OTHERWISE SPECIFIED.
2. PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3–PFC OR APPROVED EQUAL (SEE STEP DETAIL) ARE PROVIDED INSIDE ANY MODULE WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A DISTANCE OF 1'–0" FROM THE INSIDE EDGE OF THE STORMTRAP MODULES. ALL ENSUING STEPS SHALL BE PLACED AT A DISTANCE BETWEEN 10" MIN AND 14" MAX BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE MODULE.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER TO MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST TWO ACCESS OPENINGS PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (PROVIDED BY OTHERS)

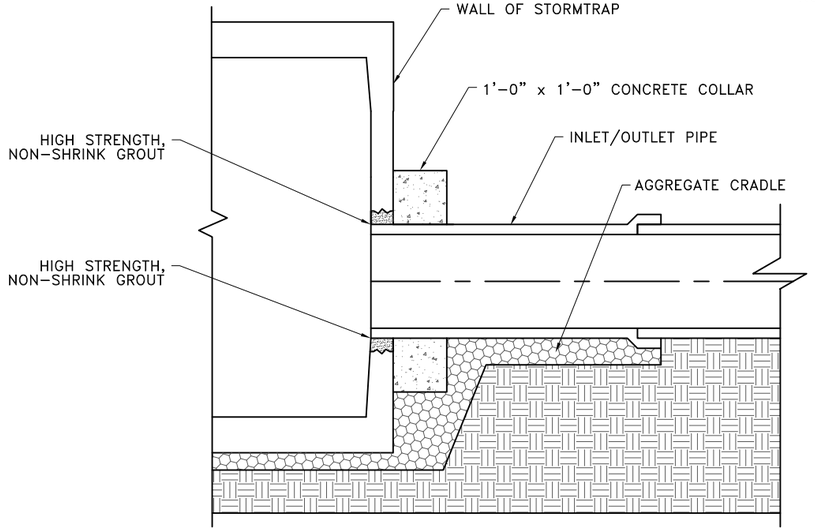
RECOMMENDED PIPE OPENING SPECIFICATION

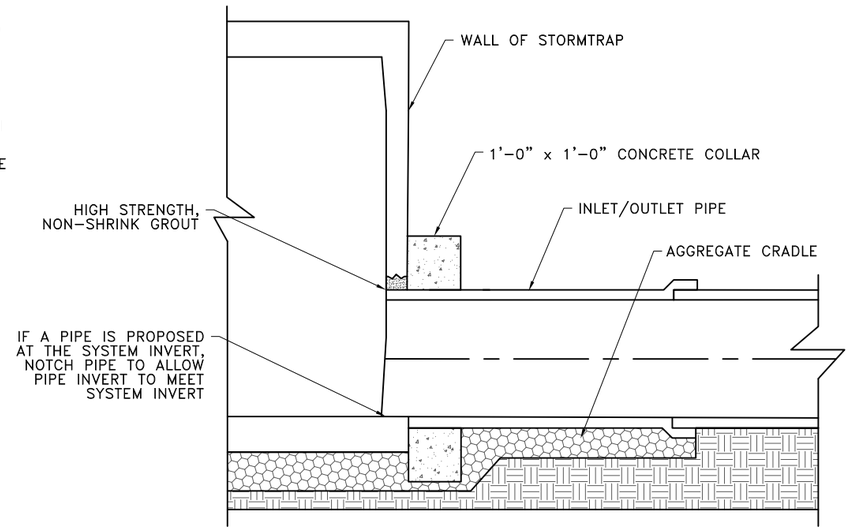
1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'–0".
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY THE MODULE HEIGHT. PREFERRED OPENING SIZE ⌀ 36" OR LESS. ANY OPENING NEEDED THAT DOES NOT FIT THIS CRITERIA SHALL BE BROUGHT TO THE ATTENTION OF STORMTRAP FOR REVIEW.
3. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'–0" CONCRETE COLLAR, AND AN AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON–SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
4. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON–SHRINK GROUT.

RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

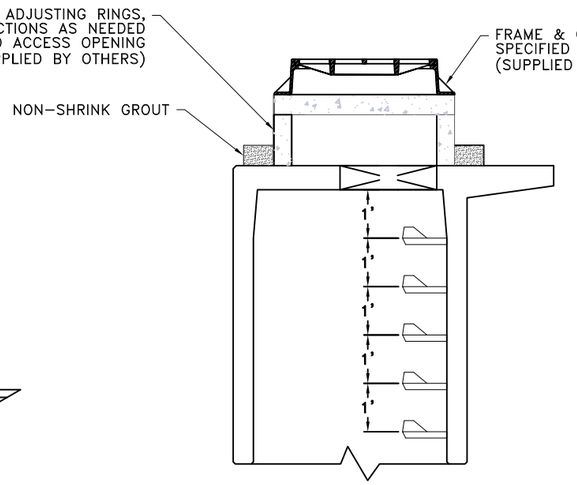
1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

NOTE: ALL ANCILLARY PRODUCTS/SPECIFICATIONS RECOMMENDED AND SHOWN ON THIS SHEET ARE RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE PER THE INSTALLING CONTRACTOR AND/OR PER LOCAL MUNICIPAL CODE/REQUIREMENTS.

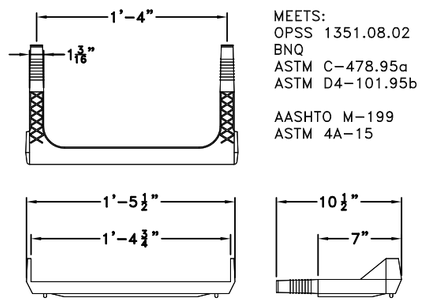




PIPE CONNECTION DETAIL



RISER / STAIR DETAIL



MEETS:
OPSS 1351.08.02
BNQ
ASTM C–478.95a
ASTM D4–101.95b

AASHTO M–199
ASTM 4A–15

STEP DETAIL

*** NOTICE *** 03–25–2022

DUE TO CURRENT INCONSISTENCIES IN THE 16" STEP SUPPLY, STORMTRAP MAY SUBSTITUTE THE 16" STEP WITH THE CLOSEST ALTERNATIVE LENGTH STEP UNTIL THE SUPPLY CHAIN ISSUE IS RESOLVED.

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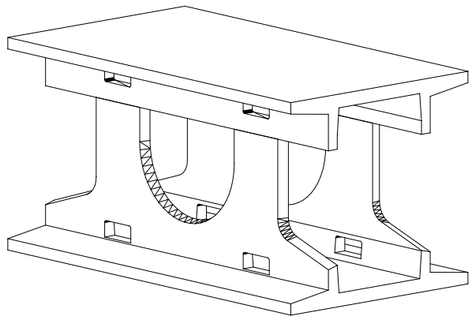
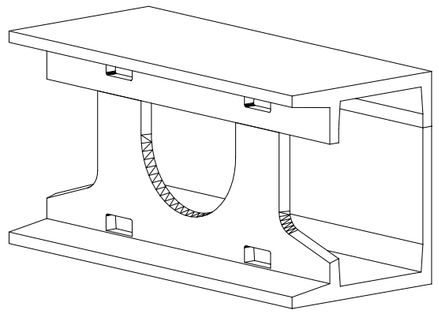
RECOMMENDED PIPE / ACCESS OPENING SPECIFICATIONS

SHEET NUMBER:

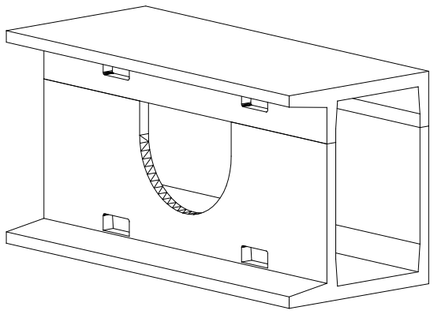
5.0



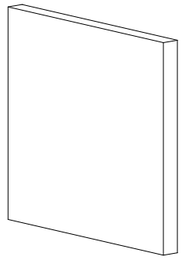
TYPE I



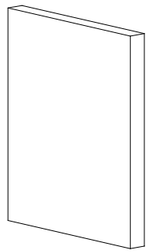
TYPE III



TYPE III/IV



TYPE II
END PANEL



TYPE IV
END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. SP – INDICATES A MODULE WITH MODIFICATIONS.
3. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
4. POCKET WINDOW OPENINGS ARE OPTIONAL.

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NTS

SHEET TITLE:

DOUBLETRAP
MODULE TYPES

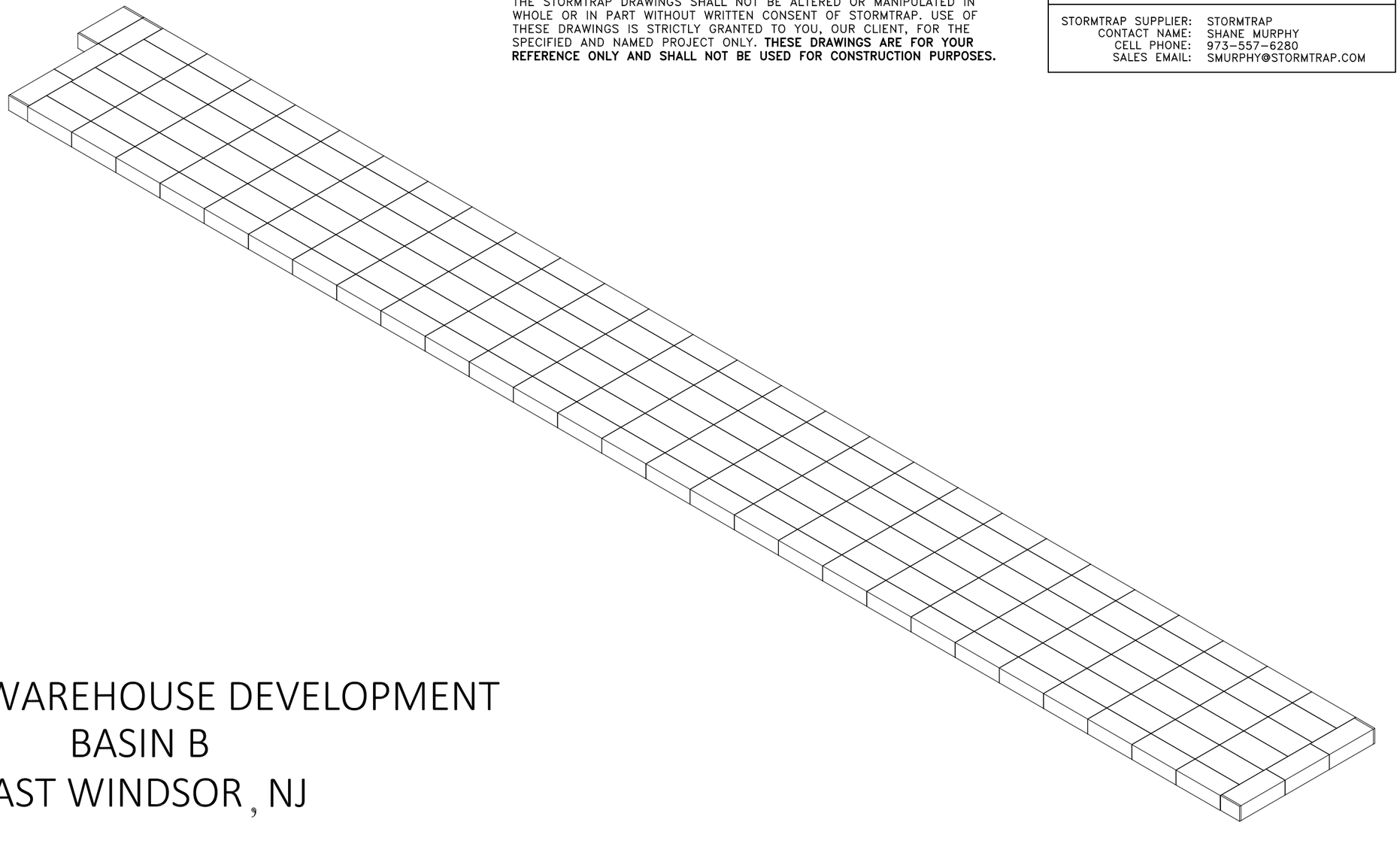
SHEET NUMBER:

6.0

UNDERGROUND DETENTION BASIN ‘B1’ DETAIL

StormTrap®

MODULAR CONCRETE
STORMWATER MANAGEMENT



PROPOSED WAREHOUSE DEVELOPMENT
BASIN B
EAST WINDSOR , NJ

SHEET INDEX

STORMTRAP CONTACT INFORMATION

STORMTRAP SUPPLIER: STORMTRAP
CONTACT NAME: SHANE MURPHY
CELL PHONE: 973-557-6280
SALES EMAIL: SMURPHY@STORMTRAP.COM

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NTS

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

0.0

STRUCTURAL DESIGN LOADING CRITERIA

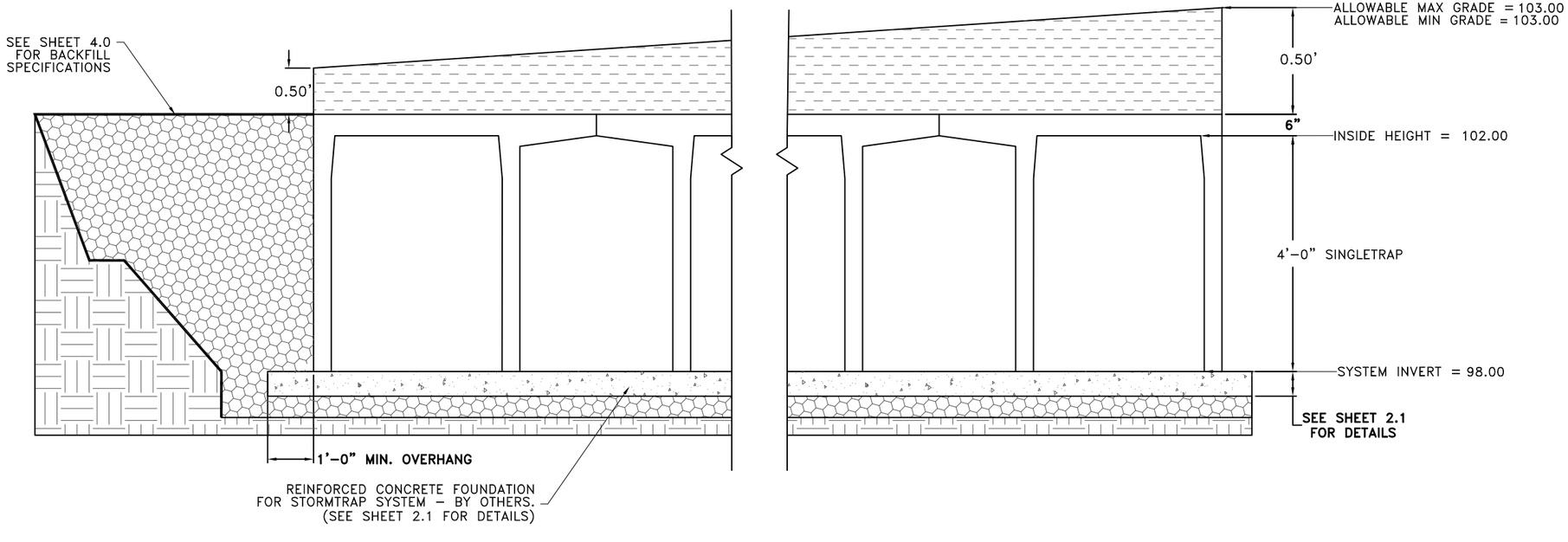
LIVE LOADING:	**AASHTO HS-20 HIGHWAY LOADING**
GROUND WATER TABLE:	BELOW INVERT OF SYSTEM
SOIL BEARING PRESSURE:	4000 PSF
SOIL DENSITY:	120 PCF
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE:	35 PSF / FT.
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE:	80 PSF/FT. (IF WATER TABLE PRESENT)
APPLICABLE CODES:	ASTM C857 ACI-318
BACKFILL TYPE:	SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

WATER STORAGE PROV:	72,343.55 CUBIC FEET
UNIT HEADROOM:	4'-0" SINGLETRAP

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 0.50' MAX. 0.50' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW INVERT OF SYSTEM IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN MAY ALLOW FOR INCIDENTAL LEAKAGE AND WILL NOT BE SUBJECT TO LEAKAGE TESTING.



4'-0" SINGLETRAP

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SHEET TITLE:

SINGLETRAP
DESIGN
CRITERIA

SHEET NUMBER:

1.0

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	WEIGHT
0	I	4'–0" SINGLETRAP	–
108	II	4'–0" SINGLETRAP	16802
0	III	4'–0" SINGLETRAP	–
61	IV	4'–0" SINGLETRAP	15104
0	VII	4'–0" SINGLETRAP	–
0	SPIV	4'–0" SINGLETRAP	VARIES
0	T2 PANEL	6" THICK PANEL	–
6	T4 PANEL	6" THICK PANEL	2236
0	T7 PANEL	6" THICK PANEL	–
32	JOINTWRAP	150' PER ROLL	
80	JOINTTAPE	14.5' PER ROLL	
TOTAL PIECES = 169			
TOTAL PANELS = 6			
HEAVIEST PICK WEIGHT = 16,802			

LOADING DISCLAIMER:

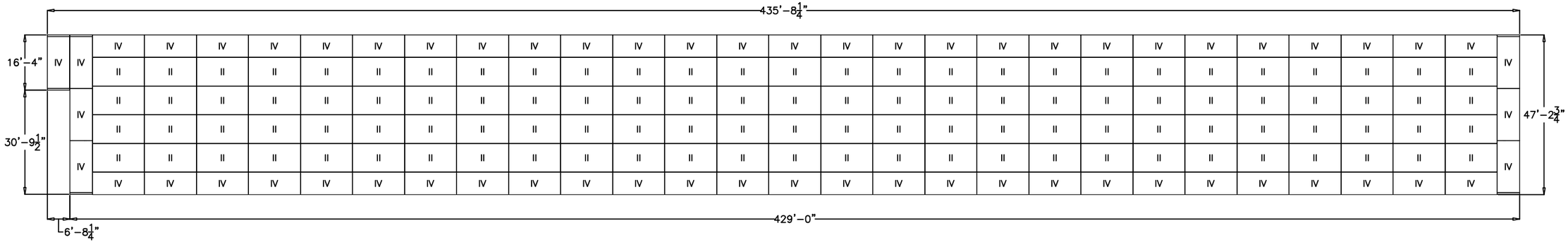
STORMTRAP IS NOT DESIGNED TO ACCEPT ANY ADDITIONAL LOADINGS FROM NEARBY STRUCTURES NEXT TO OR OVER THE TOP OF STORMTRAP. IF ADDITIONAL LOADING CONSIDERATIONS ARE REQUIRED FOR STRUCTURAL DESIGN OF STORMTRAP, PLEASE CONTACT STORMTRAP IMMEDIATELY.

TREE LOADING DISCLAIMER:

THE STORMTRAP SYSTEM HAS NOT BEEN DESIGNED TO SUPPORT THE ADDITIONAL WEIGHT OF ANY TREES. FURTHERMORE, THE ROOTS OF THE TREES MUST BE CONTAINED TO PREVENT FUTURE DAMAGE TO THE STORMTRAP SYSTEM. STORMTRAP ACCEPTS NO LIABILITY FOR DAMAGES CAUSED BY TREES OR OTHER VEGETATION PLACE AROUND OR ON TOP OF THE SYSTEM.

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 103.00
ALLOWABLE MIN GRADE = 103.00
INSIDE HEIGHT ELEVATION = 102.00
SYSTEM INVERT = 98.00

NOTES:
1. DIMENSIONING OF STORMTRAP SYSTEM SHOWN BELOW ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP – INDICATES A MODULE WITH MODIFICATIONS.
5. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
6. CONTRACTORS RESPONSIBILITY TO ENSURE CONSISTENCY/ACCURACY TO FINAL ENGINEER OF RECORD PLAN SET.



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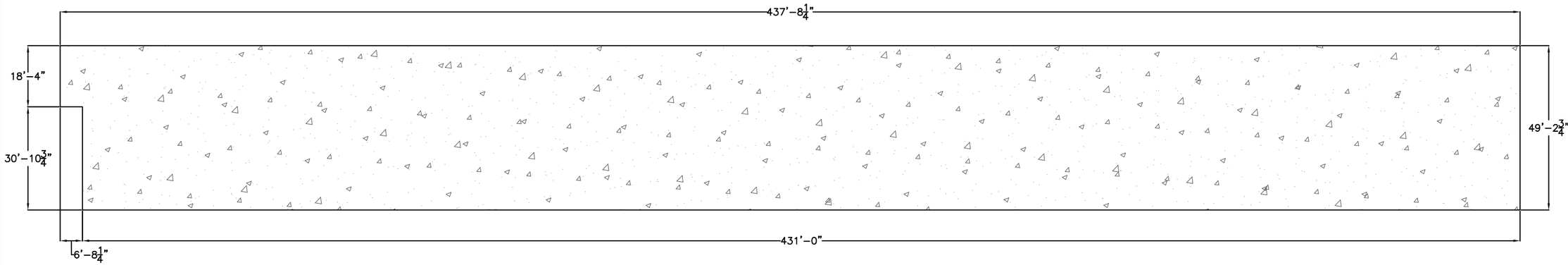
SINGLETRAP SYSTEM LAYOUT

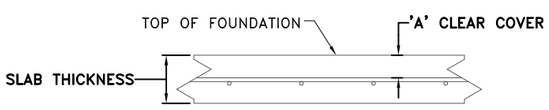
SHEET NUMBER:

2.0



CONCRETE FOUNDATION NOTES:

1. CONCRETE FOUNDATION TO BE SUPPLIED AND INSTALLED BY OTHERS.
2. CONCRETE STRENGTH @ 28 DAYS, 5%–8% ENTRAINED AIR, 4" MAX SLUMP.
3. NET ALLOWABLE SOIL PRESSURE AS INDICATED ON SHEET 1.0.
4. SOIL CONDITIONS TO BE VERIFIED ON SITE BY OTHERS.
5. REBAR: ASTM A615 GRADE 60, BLACK BAR.
6. DIMENSION OF FOUNDATION MUST HAVE 1'–0" OVERHANG BEYOND EXTERNAL FACE OF MODULE.
7. DIMENSION OF STORMTRAP SYSTEM ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
8. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
9. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.



STORMTRAP FOUNDATION DETAIL

HS–20 & HS–25 LOADING – (ACI 318, ST2)				
MAXIMUM SYSTEM COVER	SLAB THICKNESS	CONCRETE STRENGTH	REINFORCEMENT (BOTH DIRECTIONS)	'A' CLEAR COVER
1'–0"	8"	4000 PSI	#4 @ 18" O.C.	3.5"
1'–1" – 2'–0"	8"	4000 PSI	#4 @ 16" O.C.	3.5"
2'–1" – 3'–0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
3'–1" – 4'–0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
4'–1" – 5'–0"	8"	4000 PSI	#5 @ 18" O.C.	3.375"
5'–1" – 6'–0"	8"	4000 PSI	#5 @ 16" O.C.	3.375"
6'–1" – 7'–0"	8"	4000 PSI	#5 @ 12" O.C.	3.375"
7'–1" – 8'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
8'–1" – 9'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
9'–1" – 10'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"

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ROMEOVILLE, IL 60446
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ENGINEER INFORMATION:

DYNAMIC ENGINEERING CONSULTANTS
1904 MAIN ST
LAKE COMO, NJ
732–974–0198

PROJECT INFORMATION:

PROPOSED WAREHOUSE DEVELOPMENT
BASIN B

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SCALE:

NTS

SHEET TITLE:

SINGLETRAP FOUNDATION LAYOUT

SHEET NUMBER:

2.1

STORMTRAP INSTALLATION SPECIFICATIONS

1. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891, STANDARD FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES, THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:

2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.

3. STORMTRAP MODULES SHALL BE PLACED ON A LEVEL CONCRETE FOUNDATION (SEE SHEET 2.1) WITH A 1'-0" OVERHANG ON ALL SIDES THAT SHALL BE POURED IN PLACE BY INSTALLING CONTRACTOR. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS TO ENSURE THAT THE SOIL BEARING PRESSURE MEETS OR EXCEEDS THE STRUCTURAL DESIGN LOADING CRITERIA AS SPECIFIED ON SHEET 1.0.

4. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED ¾" (SEE DETAIL 2). IF THE SPACE EXCEEDS ¾", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

5. THE PERIMETER HORIZONTAL JOINT BETWEEN THE STORMTRAP MODULES AND THE CONCRETE FOUNDATION SHALL BE SEALED TO THE FOUNDATION WITH PRE-FORMED MASTIC JOINT SEALER ACCORDING TO ASTM C891, 8.8 AND 8.12 (SEE DETAIL 1). THE MASTIC JOINT TAPE DOES NOT PROVIDE A WATERTIGHT SEAL.

6. ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH 8" WIDE PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN, BONDED TO A WOVEN , HIGHLY PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY STORMTRAP (SEE DETAILS 2, 3, & 4). THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

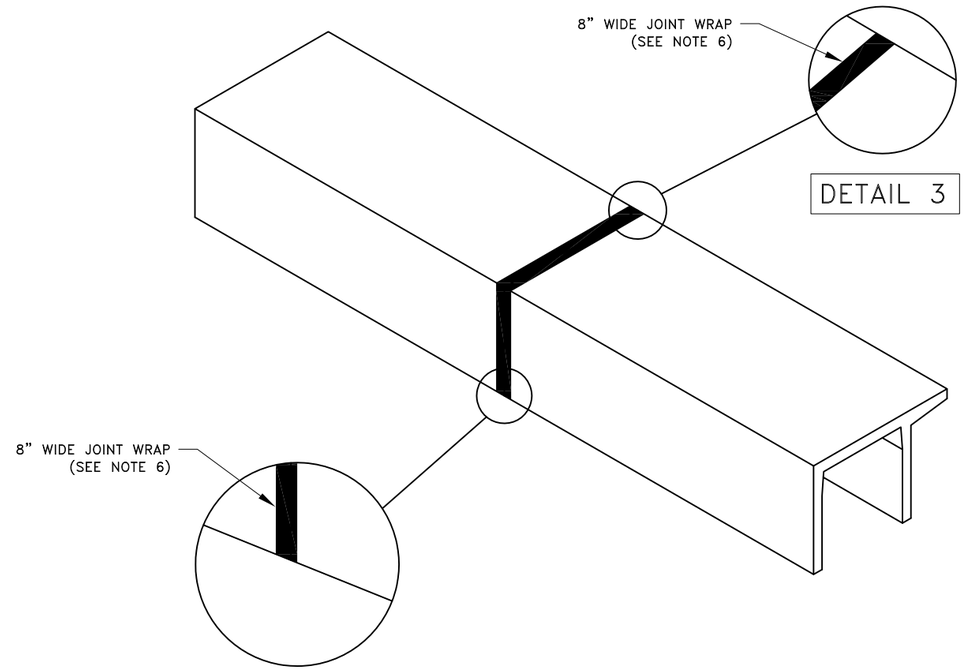
   6.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE JOINT WRAP IS TO BE APPLIED.

   6.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.

7. IF THE CONTRACTOR NEEDS TO CANCEL ANY SHIPMENTS, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE. IF CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.

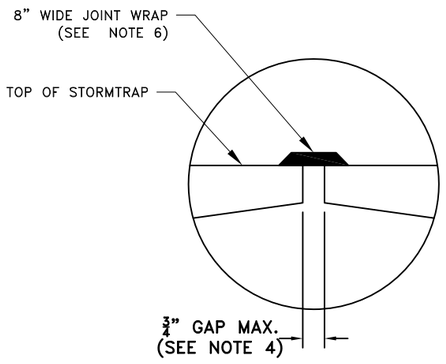
8. IF THE STORMTRAP MODULE(S) IS DAMAGED IN ANY WAY PRIOR, DURING, OR AFTER INSTALL, STORMTRAP MUST BE CONTACTED IMMEDIATELY TO ASSESS THE DAMAGE AND DETERMINE WHETHER OR NOT THE MODULE(S) WILL NEED TO BE REPLACED. IF ANY MODULE ARRIVES AT THE JOBSITE DAMAGED DO NOT UNLOAD IT; CONTACT STORMTRAP IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.

9. STORMTRAP MODULES CANNOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM STORMTRAP.

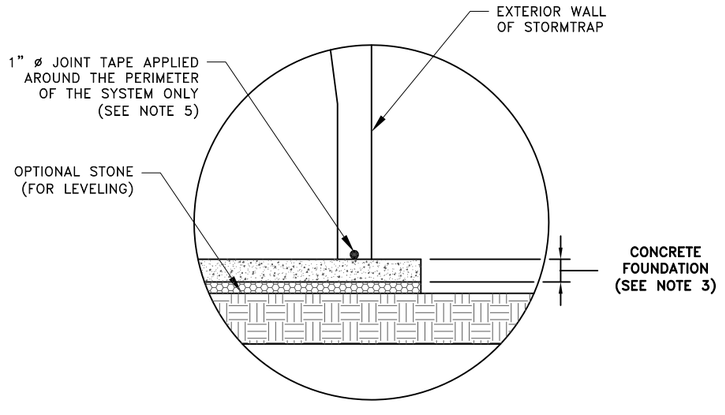


DETAIL 3

DETAIL 4



DETAIL 2



DETAIL 1

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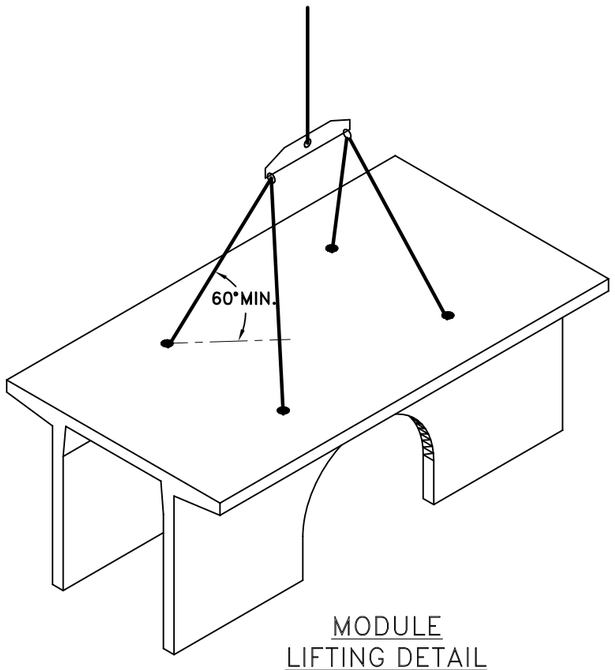
SINGLETRAP
INSTALLATION
SPECIFICATIONS

SHEET NUMBER:

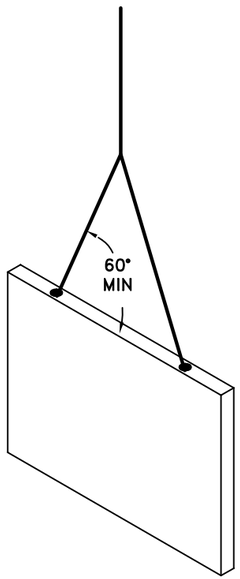
3.0

STORMTRAP MODULE LIFTING INSTALLATION NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL (4) CHAINS/CABLES ARE SECURED PROPERLY TO THE LIFTING ANCHORS AND IN EQUAL TENSION WHEN LIFTING THE STORMTRAP MODULE (SEE RECOMMENDATIONS 2 & 3).
2. MINIMUM 7'–0" CHAIN/CABLE LENGTH TO BE USED TO LIFT STORMTRAP MODULES (SUPPLIED BY CONTRACTOR).
3. CONTRACTOR TO ENSURE MINIMUM LIFTING ANGLE IS 60° FROM TOP SURFACE OF STORMTRAP MODULE. SEE DETAIL.
4. IT IS UNDERSTOOD AND AGREED THAT AT ALL TIMES DURING WHICH HOISTING AND RIGGING EQUIPMENT IS BEING SUPPLIED TO THE PURCHASER, OPERATOR OF SUCH EQUIPMENT SHALL BE IN CHARGE OF HIS ENTIRE EQUIPMENT AND SHALL AT ALL TIMES BE THE JUDGE OF THE SAFETY AND PROPERTY OF ANY SUGGESTION TO HIM FROM THE SELLER, ITS AGENTS OR EMPLOYEES. PURCHASER AGREES TO SAVE, INDEMNIFY AND HOLD HARMLESS SELLER FROM ALL LOSS, CLAIMS, DEMANDS OR CAUSES OF ACTION, WHICH MAY ARISE FROM THE EXISTENCE OR OPERATION OF SAID EQUIPMENT.



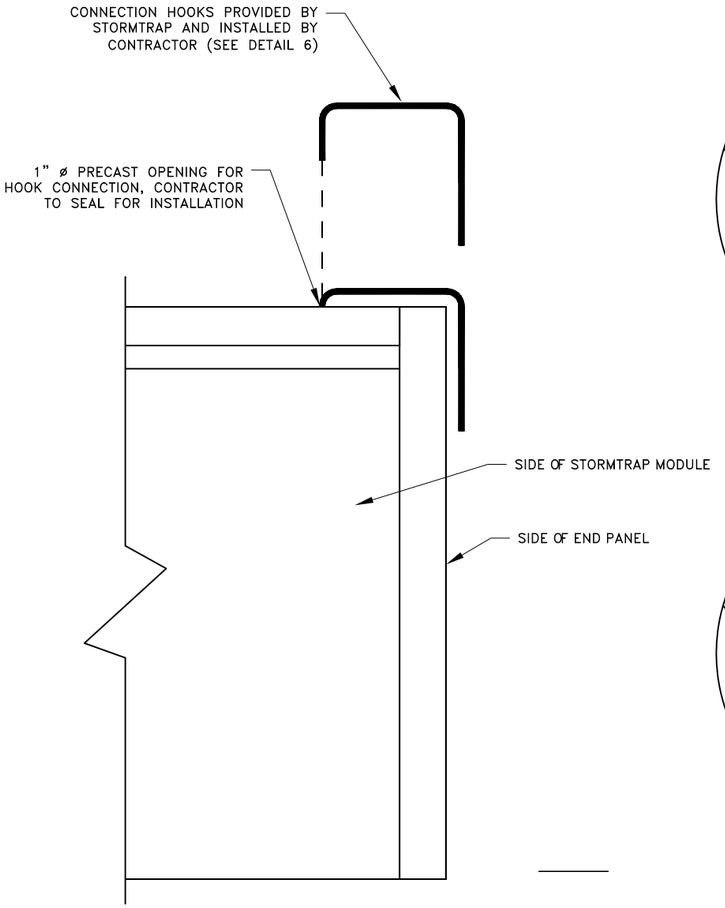
MODULE
LIFTING DETAIL



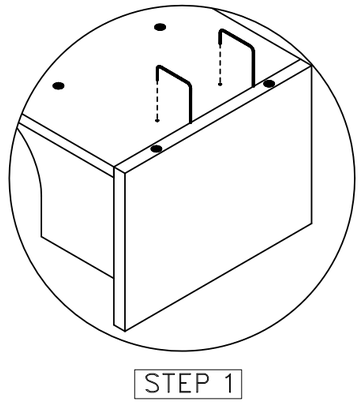
END PANEL
LIFTING DETAIL

END PANEL ERECTION/INSTALLATION NOTES

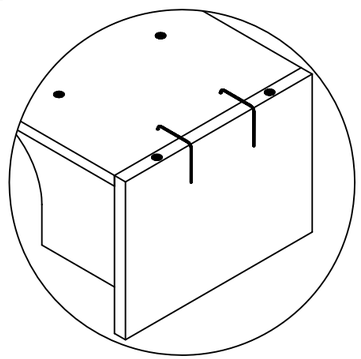
1. END PANELS WILL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF ROWS.
2. PANELS SHALL BE INSTALLED IN A TILT UP FASHION DIRECTLY ADJACENT TO OPEN END OF MODULE (REFER TO SHEET 2.0 FOR END PANEL LOCATIONS).
3. CONNECTION HOOKS WILL BE SUPPLIED WITH END PANELS TO SECURELY CONNECT PANEL TO ADJACENT STORMTRAP MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONNECTION HOOK IS ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE SHEET 3.0).



PANEL CONNECTION
ELEVATION VIEW



STEP 1



STEP 2

DETAIL 6

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3.1

ZONE CHART

ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 1	FOUNDATION AGGREGATE	#5 (¾") STONE AGGREGATE (SEE NOTE 4 FOR DESCRIPTION)
ZONE 2	BACKFILL	UNIFIED SOILS CLASSIFICATION (GW, GP, SW, SP) OR SEE BELOW FOR APPROVED BACKFILL OPTIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

APPROVED ZONE 2 BACKFILL OPTIONS

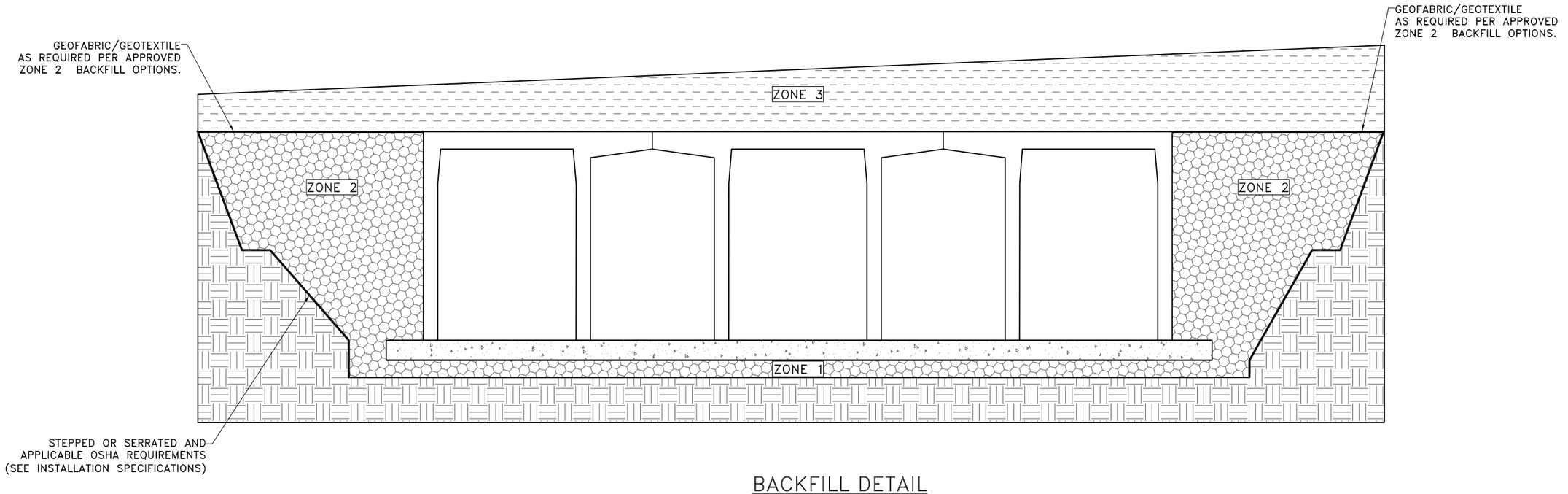
OPTION	REMARKS
¾" STONE AGGREGATE	THE STONE AGGREGATE SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR MATERIAL. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL (ASTM SIZE #57) AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
SAND	IMPORTED PURE SAND IS PERMITTED TO BE USED AS BACKFILL IF IT IS CLEAN AND FREE DRAINING. THE SAND USED FOR BACKFILLING SHALL HAVE LESS THAN 40% PASSING #40 SIEVE AND LESS THAN 5% PASSING #200 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE SAND BACKFILL.
CRUSHED CONCRETE AGGREGATE	CLEAN, FREE DRAINING CRUSHED CONCRETE AGGREGATE MATERIAL CAN BE USED AS BACKFILL FOR STORMTRAP'S MODULES. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL.
ROAD PACK	STONE AGGREGATE 100% PASSING THE 1-1/2" SIEVE WITH LESS THAN 12% PASSING THE #200 SIEVE (ASTM SIZE #467). GEOFABRIC AS PER GEOTECHNICAL ENGINEER RECOMMENDATION.

FILL DEPTH	TRACK WIDTH	MAX VEHICLE WEIGHT (KIPS)	MAX GROUND PRESSURE
12"	12"	51.8	1690 psf
	18"	56.1	1219 psf
	24"	68.1	1111 psf
	30"	76.7	1000 psf
	36"	85.0	924 psf

NOTE:
TRACK LENGTH NOT TO EXCEED 15'-4".
ONLY TWO TRACKS PER VEHICLE.

STORMTRAP ZONE INSTALLATION SPECIFICATIONS/PROCEDURES

1. THE FILL PLACED AROUND THE STORMTRAP MODULES MUST DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGING ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MUST BE FREE-DRAINING MATERIAL. SEE ZONE 2 BACKFILL CHART ON THIS PAGE FOR APPROVED BACKFILL OPTIONS. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED (PROVIDED BY OTHERS).
2. DURING PLACEMENT OF MATERIAL OVERTOP THE SYSTEM, AT NO TIME SHALL MACHINERY BE USED OVERTOP THAT EXCEEDS THE DESIGN LIMITATIONS OF THE SYSTEM. WHEN PLACEMENT OF MATERIAL OVERTOP, MATERIAL SHALL BE PLACED SUCH THAT THE DIRECTION OF PLACEMENT IS PARALLEL WITH THE OVERALL LONGITUDINAL DIRECTION OF THE SYSTEM WHENEVER POSSIBLE.
3. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED AT A MINIMUM OF 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN HS-20 LOADING CRITERIA TRAVEL OVERTOP THE SYSTEM WITHOUT THE MINIMUM DESIGN COVERAGE. IF TRAVEL IS NECESSARY OVERTOP THE SYSTEM PRIOR TO ACHIEVING THE MINIMUM DESIGN COVER, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OF THE SYSTEM. IN SOME CASES, IN ORDER TO ACHIEVE REQUIRED COMPACTION, HAND COMPACTION MAY BE NECESSARY IN ORDER NOT TO EXCEED THE ALLOTTED DESIGN LOADING. SEE CHART FOR TRACKED VEHICLE WIDTH AND ALLOWABLE MAXIMUM PRESSURE PER TRACK.
4. STONE AGGREGATE FOUNDATION IN ZONE 1 IS RECOMMENDED FOR LEVELING PURPOSES ONLY (OPTIONAL).



BACKFILL DETAIL

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SINGLETRAP BACKFILL SPECIFICATIONS

SHEET NUMBER:

4.0

RECOMMENDED ACCESS OPENING SPECIFICATION

1. A TYPICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 2'–0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 3'–0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 1'–0" OF CLEARANCE FROM THE END OF THE STORMTRAP MODULE UNLESS NOTED OTHERWISE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG UNLESS OTHERWISE SPECIFIED.
2. PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3–PFC OR APPROVED EQUAL (SEE STEP DETAIL) ARE PROVIDED INSIDE ANY MODULE WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A DISTANCE OF 1'–0" FROM THE INSIDE EDGE OF THE STORMTRAP MODULES. ALL ENSUING STEPS SHALL BE PLACED AT A DISTANCE BETWEEN 10" MIN AND 14" MAX BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE MODULE.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER TO MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST TWO ACCESS OPENINGS PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (PROVIDED BY OTHERS)

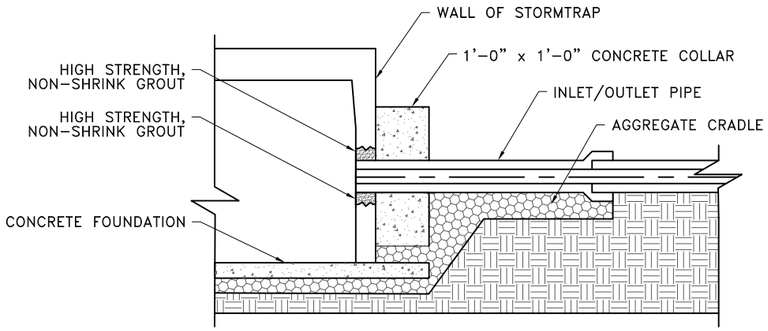
RECOMMENDED PIPE OPENING SPECIFICATION

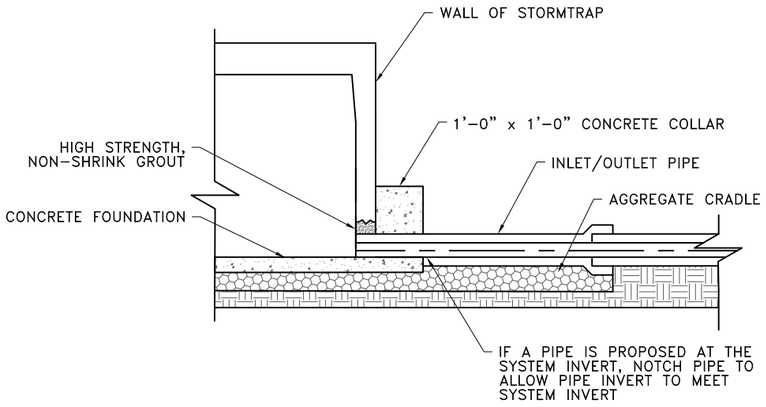
1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'–0".
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY THE MODULE HEIGHT. PREFERRED OPENING SIZE ø 36" OR LESS. ANY OPENING NEEDED THAT DOES NOT FIT THIS CRITERIA SHALL BE BROUGHT TO THE ATTENTION OF STORMTRAP FOR REVIEW.
3. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'–0" CONCRETE COLLAR, AND AN AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON–SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
4. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON–SHRINK GROUT.

RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

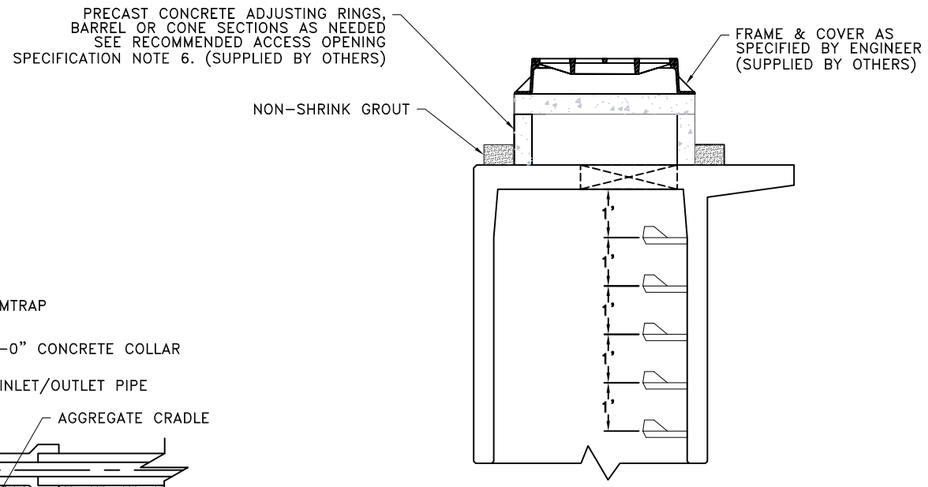
1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

NOTE: ALL ANCILLARY PRODUCTS/SPECIFICATIONS RECOMMENDED AND SHOWN ON THIS SHEET ARE RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE PER THE INSTALLING CONTRACTOR AND/OR PER LOCAL MUNICIPAL CODE/REQUIREMENTS.

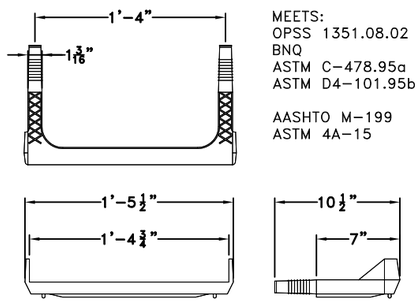




PIPE CONNECTION DETAIL



RISER/STAIR DETAIL



MEETS:
OPSS 1351.08.02
BNQ
ASTM C–478.95a
ASTM D4–101.95b

AASHTO M–199
ASTM 4A–15

STEP DETAIL

*** NOTICE *** 03–25–2022

DUE TO CURRENT INCONSISTENCIES IN THE 16" STEP SUPPLY, STORMTRAP MAY SUBSTITUTE THE 16" STEP WITH THE CLOSEST ALTERNATIVE LENGTH STEP UNTIL THE SUPPLY CHAIN ISSUE IS RESOLVED.

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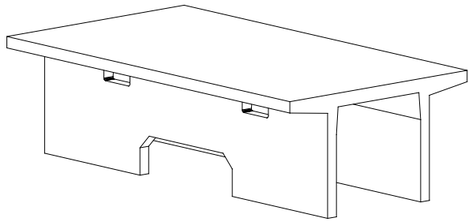
RECOMMENDED PIPE / ACCESS OPENING SPECIFICATIONS

SHEET NUMBER:

5.0



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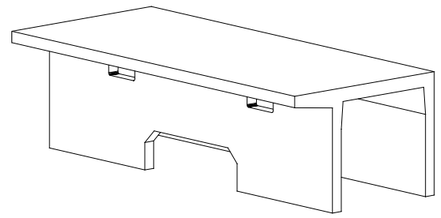

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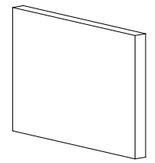

TYPE IV
END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. SP – INDICATES A MODULE WITH MODIFICATIONS.
3. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
4. POCKET WINDOW OPENINGS ARE OPTIONAL.

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MODULE TYPES

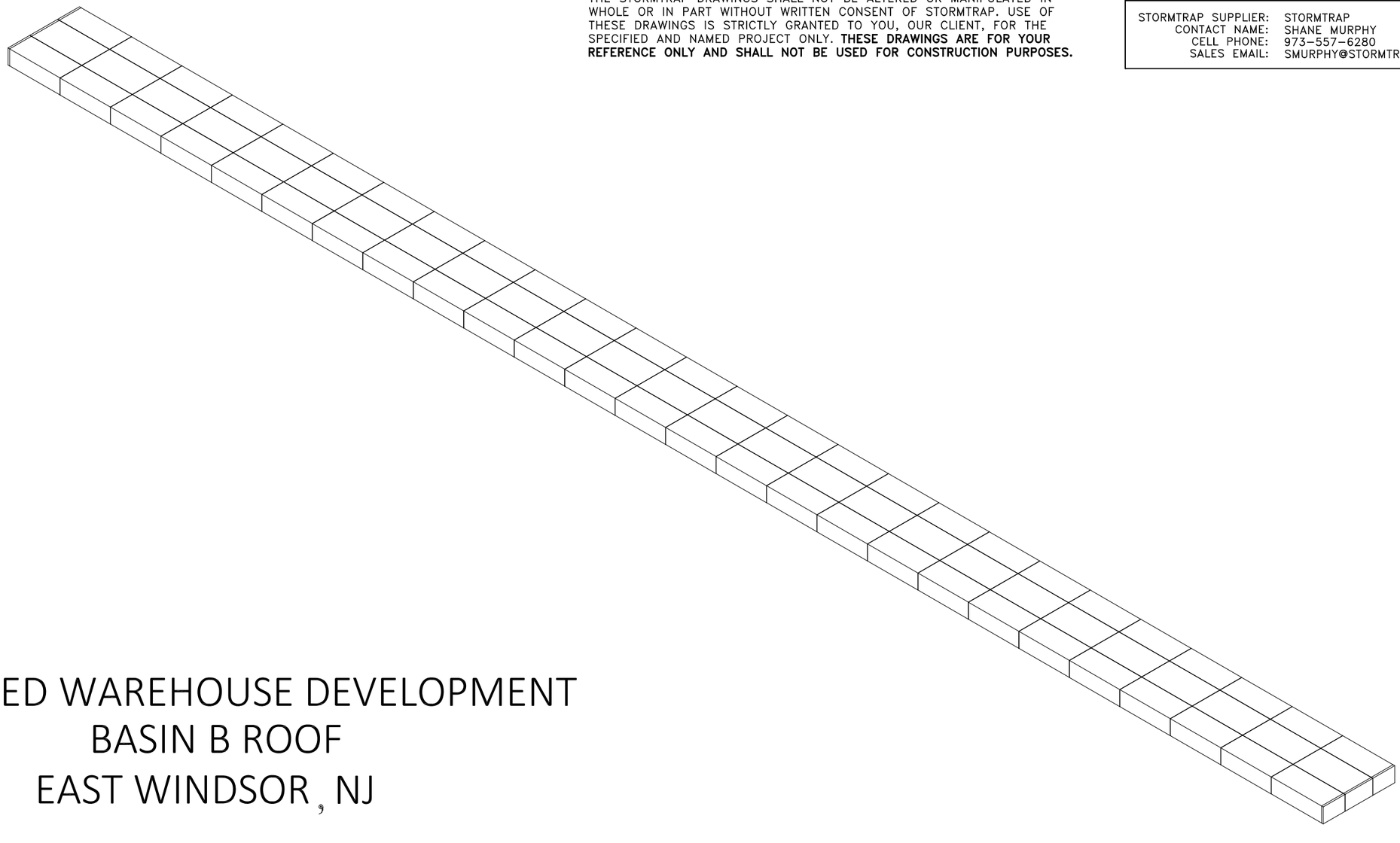
SHEET NUMBER:

6.0

UNDERGROUND DETENTION BASIN ‘B2’ (ROOF) DETAIL

StormTrap®

MODULAR CONCRETE
STORMWATER MANAGEMENT



PROPOSED WAREHOUSE DEVELOPMENT
BASIN B ROOF
EAST WINDSOR , NJ

SHEET INDEX

STORMTRAP CONTACT INFORMATION

STORMTRAP SUPPLIER: STORMTRAP
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SALES EMAIL: SMURPHY@STORMTRAP.COM

StormTrap®
PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]
1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
P:815-941-4549 / F:331-318-5347

ENGINEER INFORMATION:

DYNAMIC ENGINEERING CONSULTANTS
1904 MAIN ST
LAKE COMO, NJ
732-974-0198

PROJECT INFORMATION:

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SCALE:

NTS

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

0.0

STRUCTURAL DESIGN LOADING CRITERIA

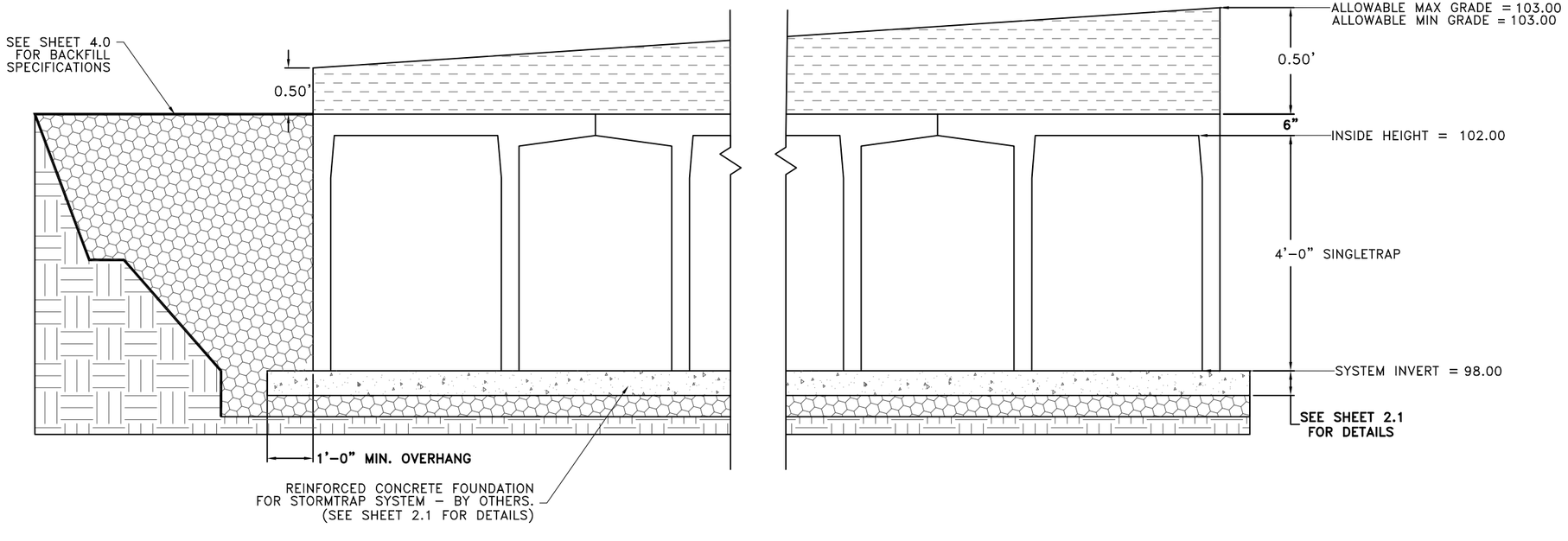
LIVE LOADING:	**AASHTO HS-20 HIGHWAY LOADING**
GROUND WATER TABLE:	BELOW INVERT OF SYSTEM
SOIL BEARING PRESSURE:	4000 PSF
SOIL DENSITY:	120 PCF
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE:	35 PSF / FT.
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE:	80 PSF/FT. (IF WATER TABLE PRESENT)
APPLICABLE CODES:	ASTM C857 ACI-318
BACKFILL TYPE:	SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

WATER STORAGE PROV:	30,711.97 CUBIC FEET
UNIT HEADROOM:	4'-0" SINGLETRAP

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 0.50' MAX. 0.50' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW INVERT OF SYSTEM IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN MAY ALLOW FOR INCIDENTAL LEAKAGE AND WILL NOT BE SUBJECT TO LEAKAGE TESTING.



4'-0" SINGLETRAP

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SINGLETRAP DESIGN CRITERIA

SHEET NUMBER:

1.0

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	WEIGHT
0	I	4'–0" SINGLETRAP	–
26	II	4'–0" SINGLETRAP	16802
0	III	4'–0" SINGLETRAP	–
52	IV	4'–0" SINGLETRAP	15104
0	VII	4'–0" SINGLETRAP	–
0	SPIV	4'–0" SINGLETRAP	VARIES
2	T2 PANEL	6" THICK PANEL	2843
4	T4 PANEL	6" THICK PANEL	2236
0	T7 PANEL	6" THICK PANEL	–
16	JOINTWRAP	150' PER ROLL	
64	JOINTTAPE	14.5' PER ROLL	
TOTAL PIECES = 78			
TOTAL PANELS = 6			
HEAVIEST PICK WEIGHT = 16,802			

LOADING DISCLAIMER:

STORMTRAP IS NOT DESIGNED TO ACCEPT ANY ADDITIONAL LOADINGS FROM NEARBY STRUCTURES NEXT TO OR OVER THE TOP OF STORMTRAP. IF ADDITIONAL LOADING CONSIDERATIONS ARE REQUIRED FOR STRUCTURAL DESIGN OF STORMTRAP, PLEASE CONTACT STORMTRAP IMMEDIATELY.

TREE LOADING DISCLAIMER:

THE STORMTRAP SYSTEM HAS NOT BEEN DESIGNED TO SUPPORT THE ADDITIONAL WEIGHT OF ANY TREES. FURTHERMORE, THE ROOTS OF THE TREES MUST BE CONTAINED TO PREVENT FUTURE DAMAGE TO THE STORMTRAP SYSTEM. STORMTRAP ACCEPTS NO LIABILITY FOR DAMAGES CAUSED BY TREES OR OTHER VEGETATION PLACE AROUND OR ON TOP OF THE SYSTEM.

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 103.00
ALLOWABLE MIN GRADE = 103.00
INSIDE HEIGHT ELEVATION = 102.00
SYSTEM INVERT = 98.00

NOTES:
1. DIMENSIONING OF STORMTRAP SYSTEM SHOWN BELOW ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP – INDICATES A MODULE WITH MODIFICATIONS.
5. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
6. CONTRACTORS RESPONSIBILITY TO ENSURE CONSISTENCY/ACCURACY TO FINAL ENGINEER OF RECORD PLAN SET.

401'–2 3/4"

21'–9 1/2"

IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV
II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II
IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV

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SINGLETRAP SYSTEM LAYOUT

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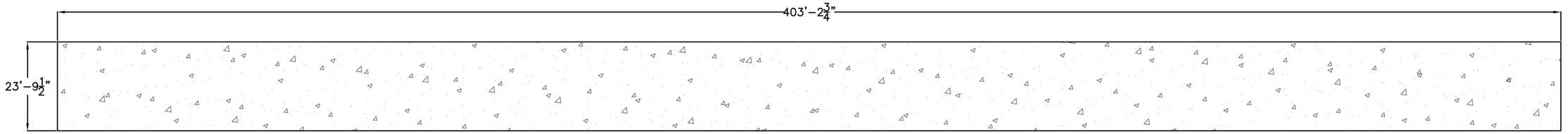
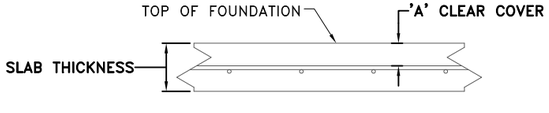
2.0



CONCRETE FOUNDATION NOTES:

1. CONCRETE FOUNDATION TO BE SUPPLIED AND INSTALLED BY OTHERS.
2. CONCRETE STRENGTH @ 28 DAYS, 5%–8% ENTRAINED AIR, 4" MAX SLUMP.
3. NET ALLOWABLE SOIL PRESSURE AS INDICATED ON SHEET 1.0.
4. SOIL CONDITIONS TO BE VERIFIED ON SITE BY OTHERS.
5. REBAR: ASTM A615 GRADE 60, BLACK BAR.
6. DIMENSION OF FOUNDATION MUST HAVE 1'–0" OVERHANG BEYOND EXTERNAL FACE OF MODULE.
7. DIMENSION OF STORMTRAP SYSTEM ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
8. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
9. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.



STORMTRAP FOUNDATION DETAIL

HS–20 & HS–25 LOADING – (ACI 318, ST2)				
MAXIMUM SYSTEM COVER	SLAB THICKNESS	CONCRETE STRENGTH	REINFORCEMENT (BOTH DIRECTIONS)	'A' CLEAR COVER
1'–0"	8"	4000 PSI	#4 @ 18" O.C.	3.5"
1'–1" – 2'–0"	8"	4000 PSI	#4 @ 16" O.C.	3.5"
2'–1" – 3'–0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
3'–1" – 4'–0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
4'–1" – 5'–0"	8"	4000 PSI	#5 @ 18" O.C.	3.375"
5'–1" – 6'–0"	8"	4000 PSI	#5 @ 16" O.C.	3.375"
6'–1" – 7'–0"	8"	4000 PSI	#5 @ 12" O.C.	3.375"
7'–1" – 8'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
8'–1" – 9'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
9'–1" – 10'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"

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STORMTRAP INSTALLATION SPECIFICATIONS

1. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891, STANDARD FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES, THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:

2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.

3. STORMTRAP MODULES SHALL BE PLACED ON A LEVEL CONCRETE FOUNDATION (SEE SHEET 2.1) WITH A 1'-0" OVERHANG ON ALL SIDES THAT SHALL BE POURED IN PLACE BY INSTALLING CONTRACTOR. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS TO ENSURE THAT THE SOIL BEARING PRESSURE MEETS OR EXCEEDS THE STRUCTURAL DESIGN LOADING CRITERIA AS SPECIFIED ON SHEET 1.0.

4. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED ¾" (SEE DETAIL 2). IF THE SPACE EXCEEDS ¾", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

5. THE PERIMETER HORIZONTAL JOINT BETWEEN THE STORMTRAP MODULES AND THE CONCRETE FOUNDATION SHALL BE SEALED TO THE FOUNDATION WITH PRE-FORMED MASTIC JOINT SEALER ACCORDING TO ASTM C891, 8.8 AND 8.12 (SEE DETAIL 1). THE MASTIC JOINT TAPE DOES NOT PROVIDE A WATERTIGHT SEAL.

6. ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH 8" WIDE PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN, BONDED TO A WOVEN , HIGHLY PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY STORMTRAP (SEE DETAILS 2, 3, & 4). THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

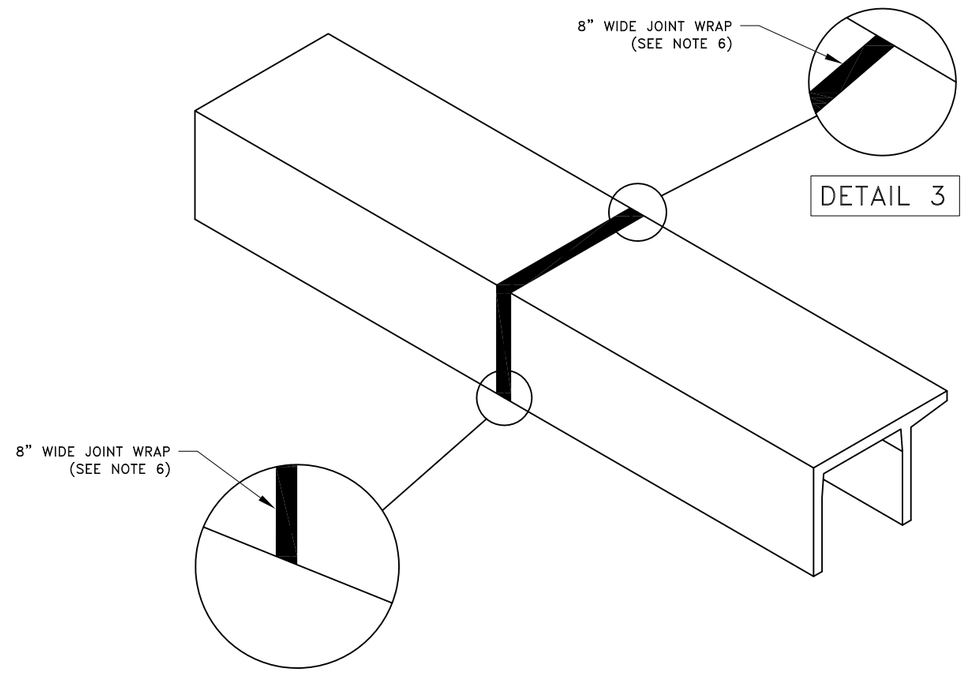
   6.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE JOINT WRAP IS TO BE APPLIED.

   6.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.

7. IF THE CONTRACTOR NEEDS TO CANCEL ANY SHIPMENTS, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE. IF CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.

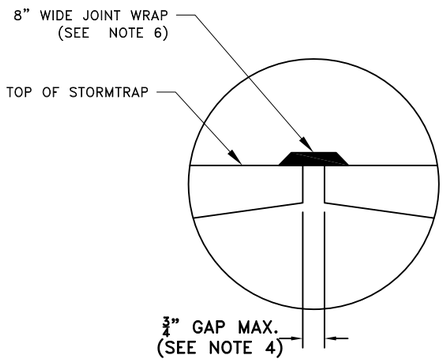
8. IF THE STORMTRAP MODULE(S) IS DAMAGED IN ANY WAY PRIOR, DURING, OR AFTER INSTALL, STORMTRAP MUST BE CONTACTED IMMEDIATELY TO ASSESS THE DAMAGE AND DETERMINE WHETHER OR NOT THE MODULE(S) WILL NEED TO BE REPLACED. IF ANY MODULE ARRIVES AT THE JOBSITE DAMAGED DO NOT UNLOAD IT; CONTACT STORMTRAP IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.

9. STORMTRAP MODULES CANNOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM STORMTRAP.

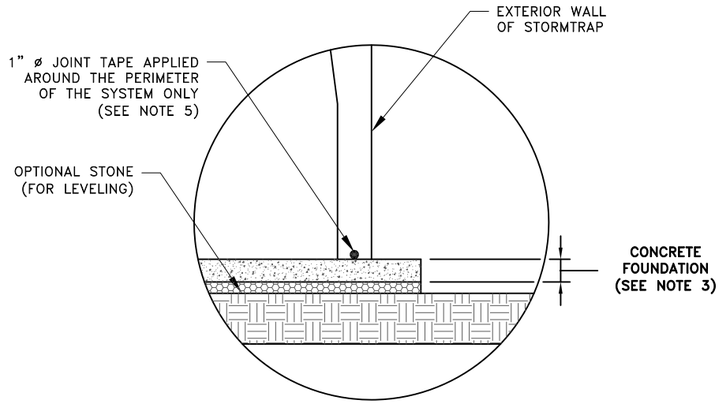


DETAIL 3

DETAIL 4



DETAIL 2



DETAIL 1

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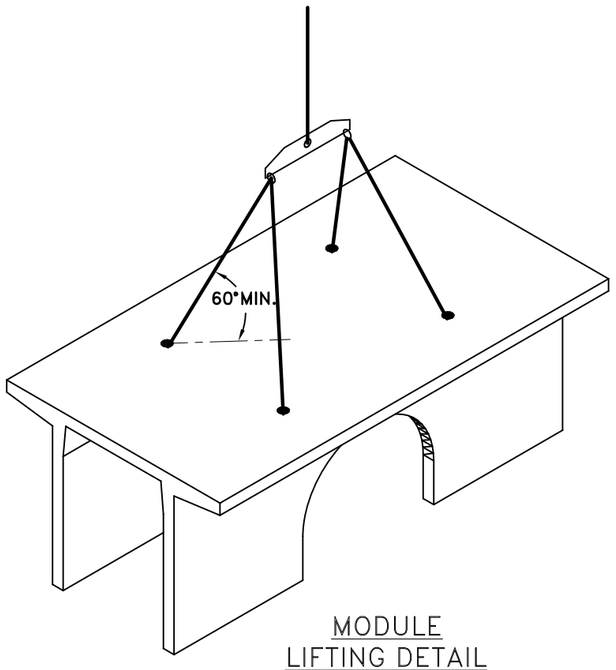
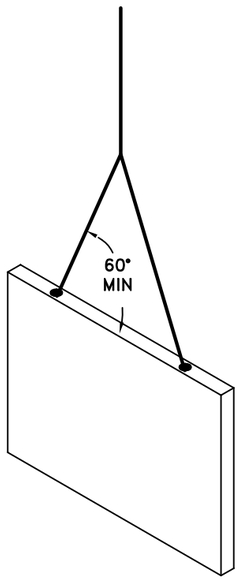
3.0

STORMTRAP MODULE LIFTING INSTALLATION NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL (4) CHAINS/CABLES ARE SECURED PROPERLY TO THE LIFTING ANCHORS AND IN EQUAL TENSION WHEN LIFTING THE STORMTRAP MODULE (SEE RECOMMENDATIONS 2 & 3).
2. MINIMUM 7'–0" CHAIN/CABLE LENGTH TO BE USED TO LIFT STORMTRAP MODULES (SUPPLIED BY CONTRACTOR).
3. CONTRACTOR TO ENSURE MINIMUM LIFTING ANGLE IS 60° FROM TOP SURFACE OF STORMTRAP MODULE. SEE DETAIL.
4. IT IS UNDERSTOOD AND AGREED THAT AT ALL TIMES DURING WHICH HOISTING AND RIGGING EQUIPMENT IS BEING SUPPLIED TO THE PURCHASER, OPERATOR OF SUCH EQUIPMENT SHALL BE IN CHARGE OF HIS ENTIRE EQUIPMENT AND SHALL AT ALL TIMES BE THE JUDGE OF THE SAFETY AND PROPERTY OF ANY SUGGESTION TO HIM FROM THE SELLER, ITS AGENTS OR EMPLOYEES. PURCHASER AGREES TO SAVE, INDEMNIFY AND HOLD HARMLESS SELLER FROM ALL LOSS, CLAIMS, DEMANDS OR CAUSES OF ACTION, WHICH MAY ARISE FROM THE EXISTENCE OR OPERATION OF SAID EQUIPMENT.



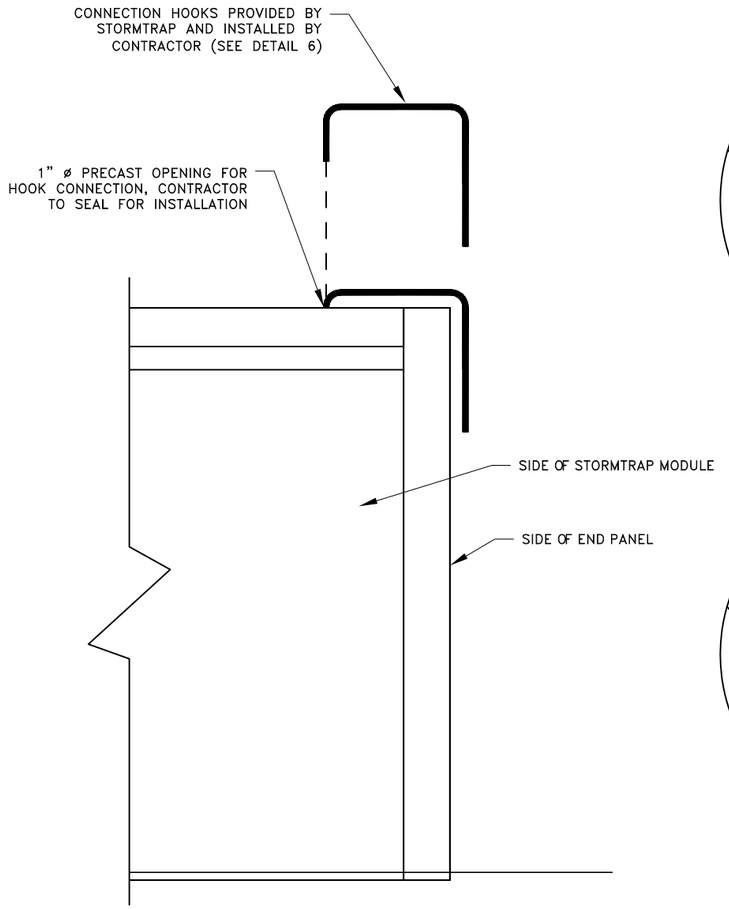
MODULE
LIFTING DETAIL



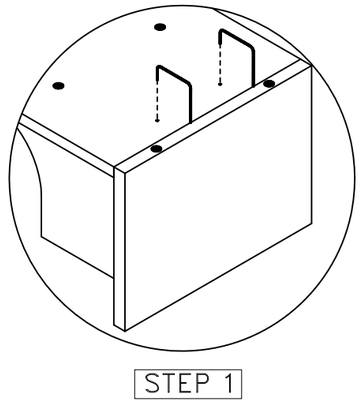
END PANEL
LIFTING DETAIL

END PANEL ERECTION/INSTALLATION NOTES

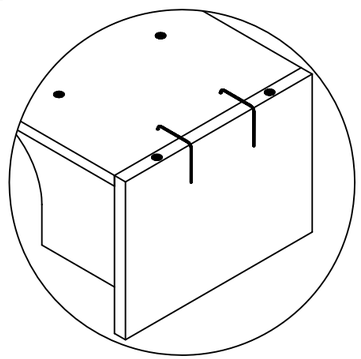
1. END PANELS WILL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF ROWS.
2. PANELS SHALL BE INSTALLED IN A TILT UP FASHION DIRECTLY ADJACENT TO OPEN END OF MODULE (REFER TO SHEET 2.0 FOR END PANEL LOCATIONS).
3. CONNECTION HOOKS WILL BE SUPPLIED WITH END PANELS TO SECURELY CONNECT PANEL TO ADJACENT STORMTRAP MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONNECTION HOOK IS ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE SHEET 3.0).



PANEL CONNECTION
ELEVATION VIEW



STEP 1



STEP 2

DETAIL 6

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ZONE CHART

ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 1	FOUNDATION AGGREGATE	#5 (¾") STONE AGGREGATE (SEE NOTE 4 FOR DESCRIPTION)
ZONE 2	BACKFILL	UNIFIED SOILS CLASSIFICATION (GW, GP, SW, SP) OR SEE BELOW FOR APPROVED BACKFILL OPTIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

APPROVED ZONE 2 BACKFILL OPTIONS

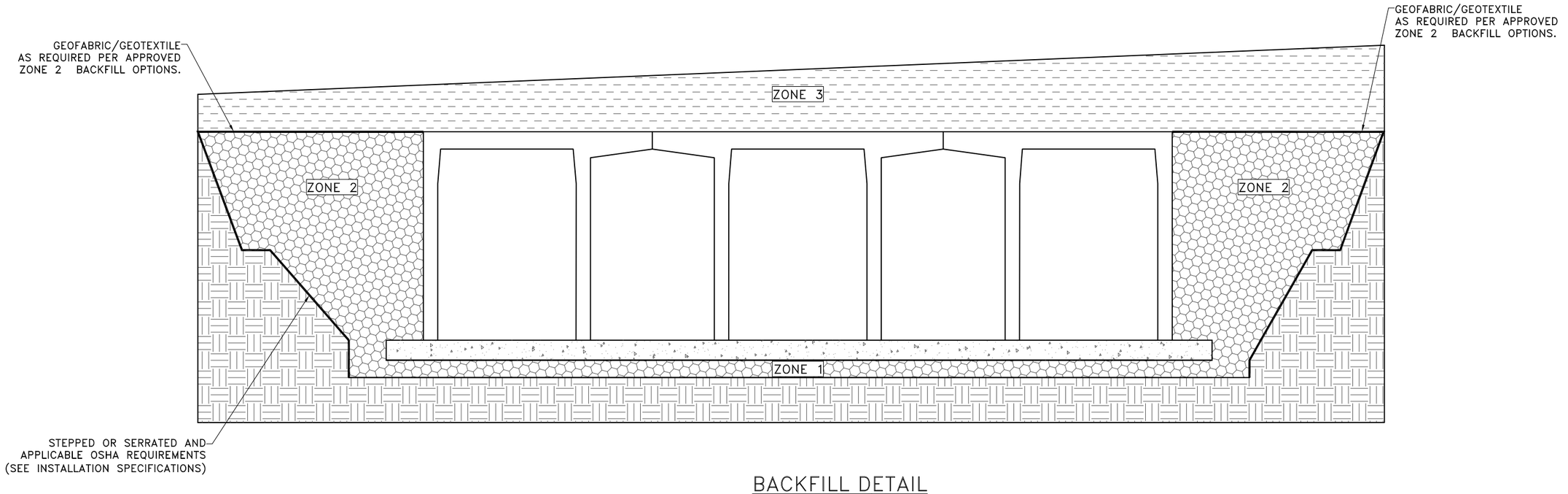
OPTION	REMARKS
¾" STONE AGGREGATE	THE STONE AGGREGATE SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR MATERIAL. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL (ASTM SIZE #57) AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
SAND	IMPORTED PURE SAND IS PERMITTED TO BE USED AS BACKFILL IF IT IS CLEAN AND FREE DRAINING. THE SAND USED FOR BACKFILLING SHALL HAVE LESS THAN 40% PASSING #40 SIEVE AND LESS THAN 5% PASSING #200 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE SAND BACKFILL.
CRUSHED CONCRETE AGGREGATE	CLEAN, FREE DRAINING CRUSHED CONCRETE AGGREGATE MATERIAL CAN BE USED AS BACKFILL FOR STORMTRAP'S MODULES. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL.
ROAD PACK	STONE AGGREGATE 100% PASSING THE 1-1/2" SIEVE WITH LESS THAN 12% PASSING THE #200 SIEVE (ASTM SIZE #467). GEOFABRIC AS PER GEOTECHNICAL ENGINEER RECOMMENDATION.

FILL DEPTH	TRACK WIDTH	MAX VEHICLE WEIGHT (KIPS)	MAX GROUND PRESSURE
12"	12"	51.8	1690 psf
	18"	56.1	1219 psf
	24"	68.1	1111 psf
	30"	76.7	1000 psf
	36"	85.0	924 psf

NOTE:
TRACK LENGTH NOT TO EXCEED 15'-4".
ONLY TWO TRACKS PER VEHICLE.

STORMTRAP ZONE INSTALLATION SPECIFICATIONS/PROCEDURES

1. THE FILL PLACED AROUND THE STORMTRAP MODULES MUST DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGING ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MUST BE FREE-DRAINING MATERIAL. SEE ZONE 2 BACKFILL CHART ON THIS PAGE FOR APPROVED BACKFILL OPTIONS. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED (PROVIDED BY OTHERS).
2. DURING PLACEMENT OF MATERIAL OVERTOP THE SYSTEM, AT NO TIME SHALL MACHINERY BE USED OVERTOP THAT EXCEEDS THE DESIGN LIMITATIONS OF THE SYSTEM. WHEN PLACEMENT OF MATERIAL OVERTOP, MATERIAL SHALL BE PLACED SUCH THAT THE DIRECTION OF PLACEMENT IS PARALLEL WITH THE OVERALL LONGITUDINAL DIRECTION OF THE SYSTEM WHENEVER POSSIBLE.
3. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED AT A MINIMUM OF 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN HS-20 LOADING CRITERIA TRAVEL OVERTOP THE SYSTEM WITHOUT THE MINIMUM DESIGN COVERAGE. IF TRAVEL IS NECESSARY OVERTOP THE SYSTEM PRIOR TO ACHIEVING THE MINIMUM DESIGN COVER, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OF THE SYSTEM. IN SOME CASES, IN ORDER TO ACHIEVE REQUIRED COMPACTION, HAND COMPACTION MAY BE NECESSARY IN ORDER NOT TO EXCEED THE ALLOTTED DESIGN LOADING. SEE CHART FOR TRACKED VEHICLE WIDTH AND ALLOWABLE MAXIMUM PRESSURE PER TRACK.
4. STONE AGGREGATE FOUNDATION IN ZONE 1 IS RECOMMENDED FOR LEVELING PURPOSES ONLY (OPTIONAL).



BACKFILL DETAIL

StormTrap
PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]
1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
P:815-941-4549 / F:331-318-5347

ENGINEER INFORMATION:

DYNAMIC ENGINEERING CONSULTANTS
1904 MAIN ST
LAKE COMO, NJ
732-974-0198

PROJECT INFORMATION:

PROPOSED WAREHOUSE DEVELOPMENT
BASIN B ROOF

EAST WINDSOR, NJ

CURRENT ISSUE DATE:

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1	04/25/22	PRELIMINARY	LR

SCALE:

NTS

SHEET TITLE:

SINGLETRAP BACKFILL SPECIFICATIONS

SHEET NUMBER:

4.0

RECOMMENDED ACCESS OPENING SPECIFICATION

1. A TYPICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 2'–0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 3'–0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 1'–0" OF CLEARANCE FROM THE END OF THE STORMTRAP MODULE UNLESS NOTED OTHERWISE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG UNLESS OTHERWISE SPECIFIED.
2. PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3–PFC OR APPROVED EQUAL (SEE STEP DETAIL) ARE PROVIDED INSIDE ANY MODULE WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A DISTANCE OF 1'–0" FROM THE INSIDE EDGE OF THE STORMTRAP MODULES. ALL ENSUING STEPS SHALL BE PLACED AT A DISTANCE BETWEEN 10" MIN AND 14" MAX BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE MODULE.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER TO MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST TWO ACCESS OPENINGS PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (PROVIDED BY OTHERS)

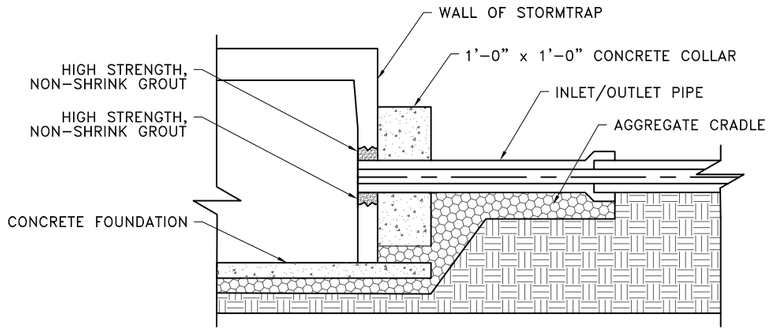
RECOMMENDED PIPE OPENING SPECIFICATION

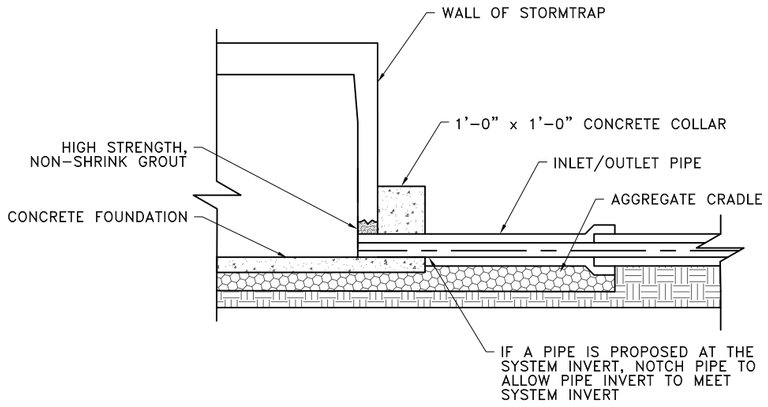
1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'–0".
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY THE MODULE HEIGHT. PREFERRED OPENING SIZE ø 36" OR LESS. ANY OPENING NEEDED THAT DOES NOT FIT THIS CRITERIA SHALL BE BROUGHT TO THE ATTENTION OF STORMTRAP FOR REVIEW.
3. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'–0" CONCRETE COLLAR, AND AN AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON–SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
4. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON–SHRINK GROUT.

RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

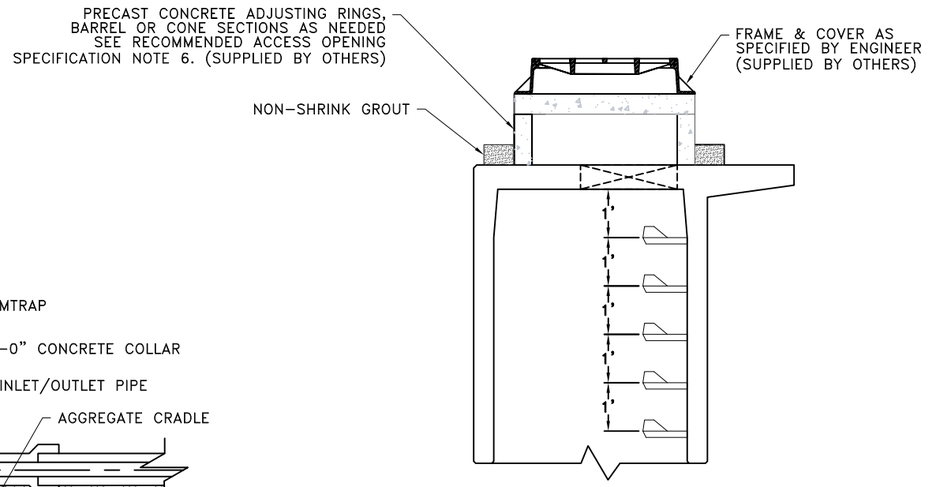
1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

NOTE: ALL ANCILLARY PRODUCTS/SPECIFICATIONS RECOMMENDED AND SHOWN ON THIS SHEET ARE RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE PER THE INSTALLING CONTRACTOR AND/OR PER LOCAL MUNICIPAL CODE/REQUIREMENTS.

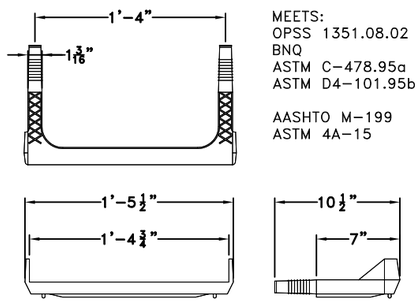




PIPE CONNECTION DETAIL



RISER/STAIR DETAIL



MEETS:
OPSS 1351.08.02
BNQ
ASTM C–478.95a
ASTM D4–101.95b

AASHTO M–199
ASTM 4A–15

STEP DETAIL

*** NOTICE *** 03–25–2022

DUE TO CURRENT INCONSISTENCIES IN THE 16" STEP SUPPLY, STORMTRAP MAY SUBSTITUTE THE 16" STEP WITH THE CLOSEST ALTERNATIVE LENGTH STEP UNTIL THE SUPPLY CHAIN ISSUE IS RESOLVED.

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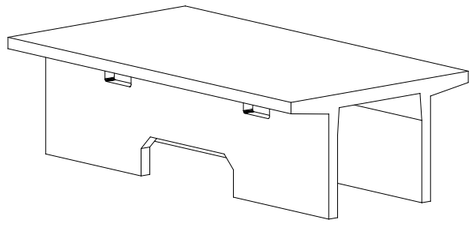
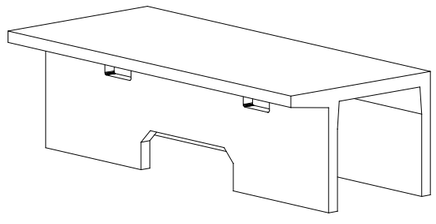
RECOMMENDED PIPE / ACCESS OPENING SPECIFICATIONS

SHEET NUMBER:

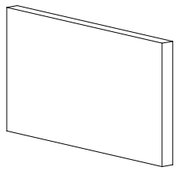
5.0



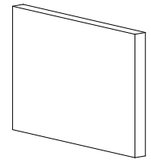
TYPE II



TYPE IV



TYPE II
END PANEL



TYPE IV
END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. SP – INDICATES A MODULE WITH MODIFICATIONS.
3. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
4. POCKET WINDOW OPENINGS ARE OPTIONAL.

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SCALE:

NTS

SHEET TITLE:

SINGLETRAP
MODULE TYPES

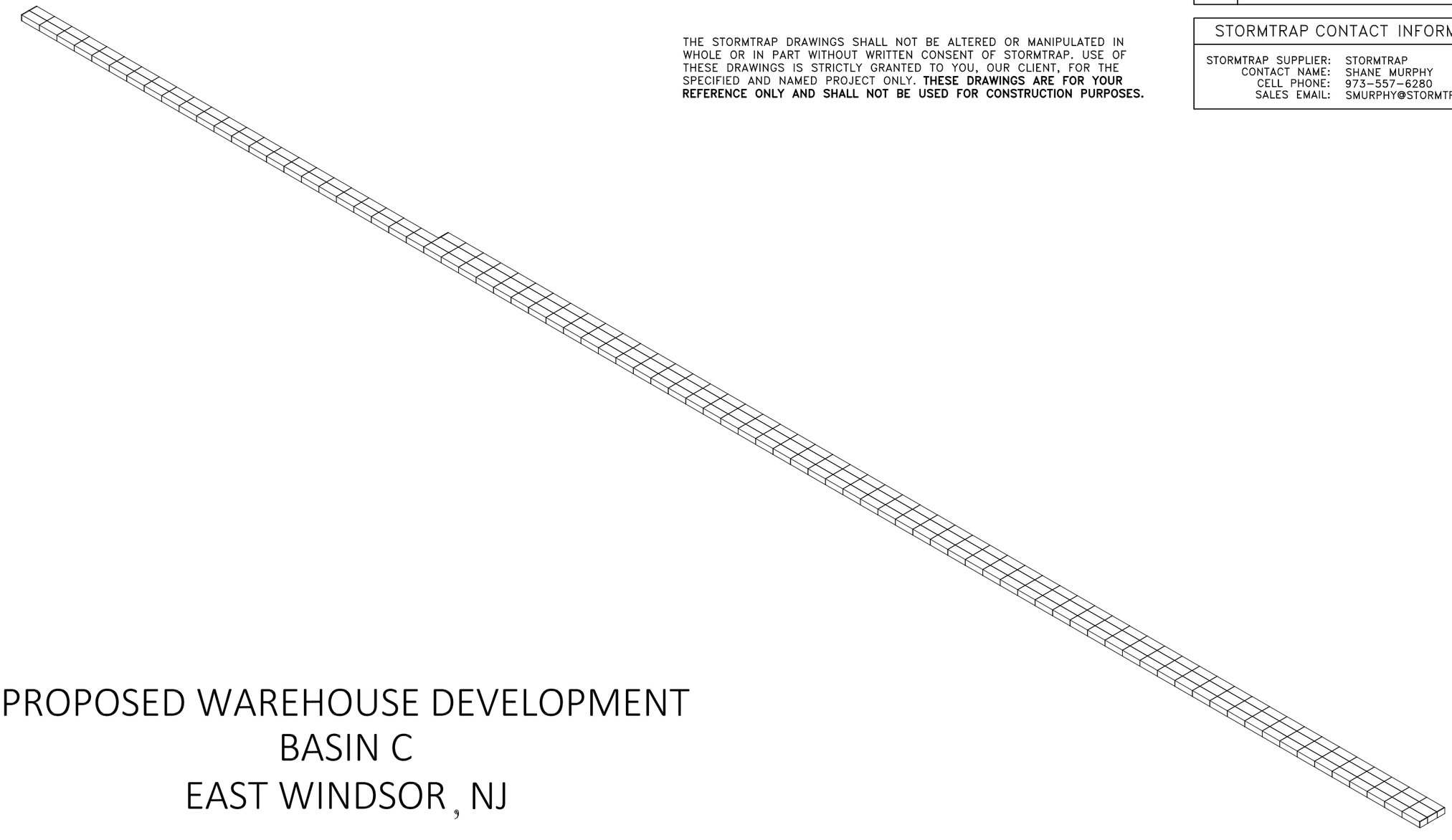
SHEET NUMBER:

6.0

UNDERGROUND DETENTION BASIN ‘C1’ DETAIL

StormTrap®

MODULAR CONCRETE
STORMWATER MANAGEMENT



PROPOSED WAREHOUSE DEVELOPMENT
BASIN C
EAST WINDSOR , NJ

SHEET INDEX

STORMTRAP CONTACT INFORMATION

STORMTRAP SUPPLIER: STORMTRAP
CONTACT NAME: SHANE MURPHY
CELL PHONE: 973–557–6280
SALES EMAIL: SMURPHY@STORMTRAP.COM

StormTrap®
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NTS

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

0.0

STRUCTURAL DESIGN LOADING CRITERIA

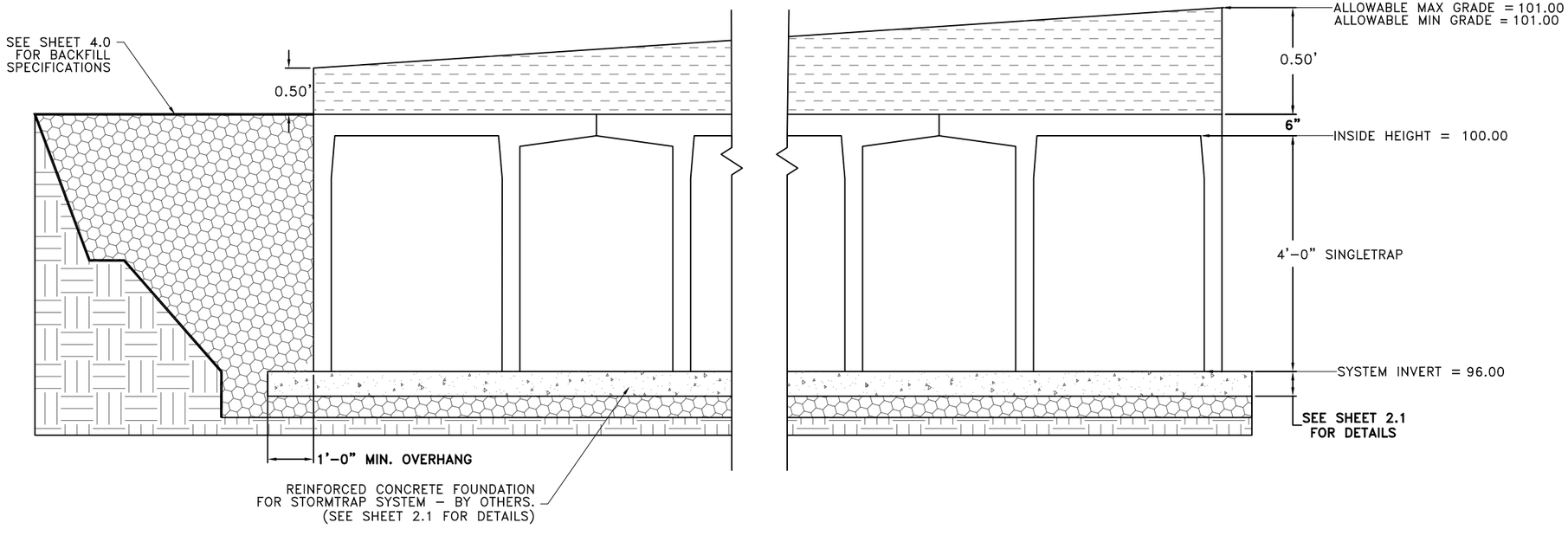
LIVE LOADING:	**AASHTO HS-20 HIGHWAY LOADING**
GROUND WATER TABLE:	BELOW INVERT OF SYSTEM
SOIL BEARING PRESSURE:	3000 PSF
SOIL DENSITY:	120 PCF
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE:	35 PSF / FT.
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE:	80 PSF/FT. (IF WATER TABLE PRESENT)
APPLICABLE CODES:	ASTM C857 ACI-318
BACKFILL TYPE:	SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

WATER STORAGE PROV:	83,720.70 CUBIC FEET
UNIT HEADROOM:	4'-0" SINGLETRAP

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 0.50' MAX. 0.50' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW INVERT OF SYSTEM IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN MAY ALLOW FOR INCIDENTAL LEAKAGE AND WILL NOT BE SUBJECT TO LEAKAGE TESTING.



4'-0" SINGLETRAP

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ENGINEER INFORMATION:

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1904 MAIN ST
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732-974-0198

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NTS

SHEET TITLE:

SINGLETRAP DESIGN CRITERIA

SHEET NUMBER:

1.0

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	WEIGHT
0	I	4'–0" SINGLETRAP	–
57	II	4'–0" SINGLETRAP	16802
0	III	4'–0" SINGLETRAP	–
160	IV	4'–0" SINGLETRAP	15104
0	VII	4'–0" SINGLETRAP	–
0	SPIV	4'–0" SINGLETRAP	VARIES
2	T2 PANEL	6" THICK PANEL	2843
4	T4 PANEL	6" THICK PANEL	2236
0	T7 PANEL	6" THICK PANEL	–
42	JOINTWRAP	150' PER ROLL	
192	JOINTTAPE	14.5' PER ROLL	
TOTAL PIECES = 217			
TOTAL PANELS = 6			
HEAVIEST PICK WEIGHT = 16,802			

LOADING DISCLAIMER:

STORMTRAP IS NOT DESIGNED TO ACCEPT ANY ADDITIONAL LOADINGS FROM NEARBY STRUCTURES NEXT TO OR OVER THE TOP OF STORMTRAP. IF ADDITIONAL LOADING CONSIDERATIONS ARE REQUIRED FOR STRUCTURAL DESIGN OF STORMTRAP, PLEASE CONTACT STORMTRAP IMMEDIATELY.

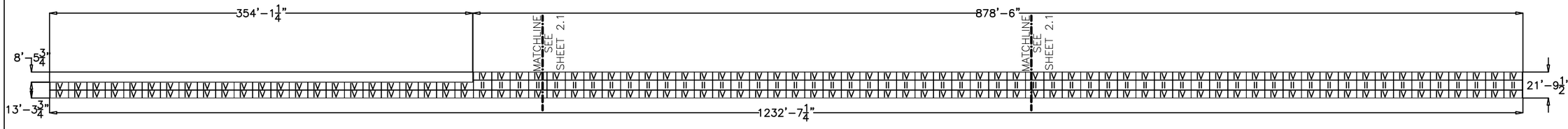
TREE LOADING DISCLAIMER:

THE STORMTRAP SYSTEM HAS NOT BEEN DESIGNED TO SUPPORT THE ADDITIONAL WEIGHT OF ANY TREES. FURTHERMORE, THE ROOTS OF THE TREES MUST BE CONTAINED TO PREVENT FUTURE DAMAGE TO THE STORMTRAP SYSTEM. STORMTRAP ACCEPTS NO LIABILITY FOR DAMAGES CAUSED BY TREES OR OTHER VEGETATION PLACE AROUND OR ON TOP OF THE SYSTEM.

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 101.00
ALLOWABLE MIN GRADE = 101.00
INSIDE HEIGHT ELEVATION = 100.00
SYSTEM INVERT = 96.00

NOTES:

1. DIMENSIONING OF STORMTRAP SYSTEM SHOWN BELOW ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP – INDICATES A MODULE WITH MODIFICATIONS.
5. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
6. CONTRACTORS RESPONSIBILITY TO ENSURE CONSISTENCY/ACCURACY TO FINAL ENGINEER OF RECORD PLAN SET.



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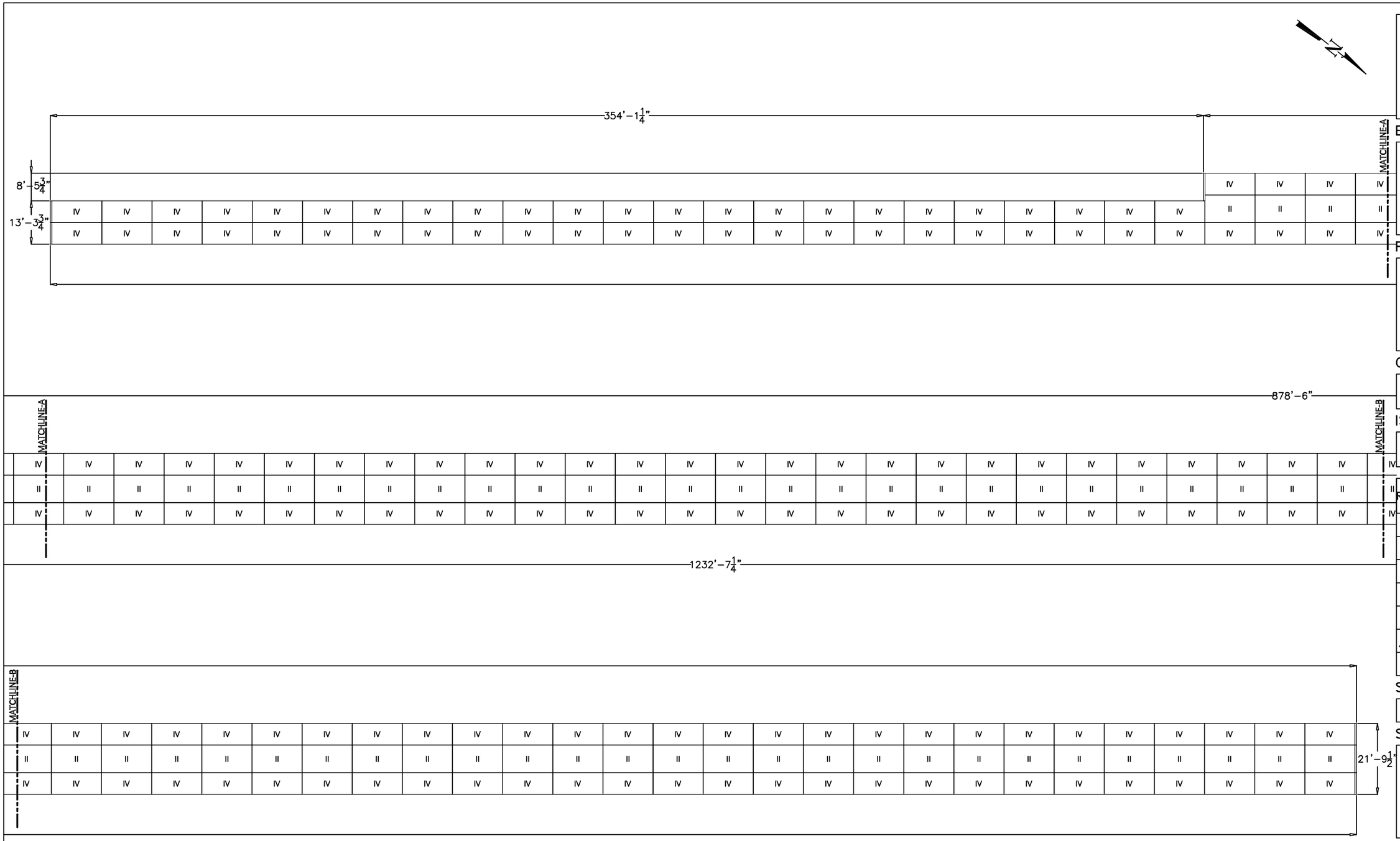
NTS

SHEET TITLE:

OVERALL SINGLETRAP SYSTEM LAYOUT

SHEET NUMBER:

2.0



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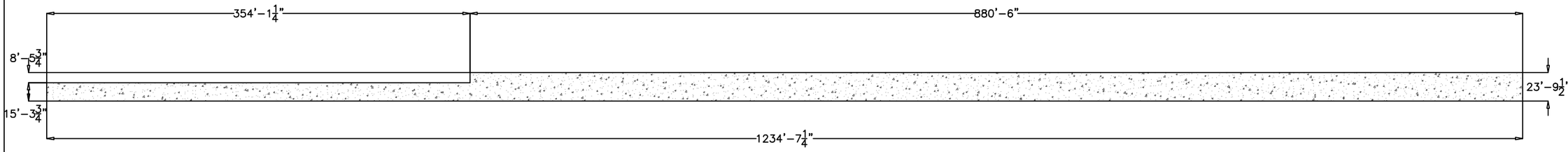
NTS

SHEET TITLE:

SINGLETRAP SYSTEM ENLARGED LAYOUTS

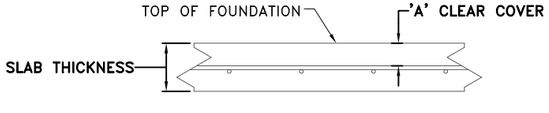
SHEET NUMBER:

2.1



CONCRETE FOUNDATION NOTES:

1. CONCRETE FOUNDATION TO BE SUPPLIED AND INSTALLED BY OTHERS.
2. CONCRETE STRENGTH @ 28 DAYS, 5%-8% ENTRAINED AIR, 4" MAX SLUMP.
3. NET ALLOWABLE SOIL PRESSURE AS INDICATED ON SHEET 1.0.
4. SOIL CONDITIONS TO BE VERIFIED ON SITE BY OTHERS.
5. REBAR: ASTM A615 GRADE 60, BLACK BAR.
6. DIMENSION OF FOUNDATION MUST HAVE 1'-0" OVERHANG BEYOND EXTERNAL FACE OF MODULE.
7. DIMENSION OF STORMTRAP SYSTEM ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
8. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
9. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.



STORMTRAP FOUNDATION DETAIL

HS-20 & HS-25 LOADING - (ACI 318, ST2)				
MAXIMUM SYSTEM COVER	SLAB THICKNESS	CONCRETE STRENGTH	REINFORCEMENT (BOTH DIRECTIONS)	'A' CLEAR COVER
1'-0"	8"	4000 PSI	#4 @ 18" O.C.	3.5"
1'-1" - 2'-0"	8"	4000 PSI	#4 @ 16" O.C.	3.5"
2'-1" - 3'-0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
3'-1" - 4'-0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
4'-1" - 5'-0"	8"	4000 PSI	#5 @ 18" O.C.	3.375"
5'-1" - 6'-0"	8"	4000 PSI	#5 @ 16" O.C.	3.375"
6'-1" - 7'-0"	8"	4000 PSI	#5 @ 12" O.C.	3.375"
7'-1" - 8'-0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
8'-1" - 9'-0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
9'-1" - 10'-0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"

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SHEET TITLE:

SINGLETRAP FOUNDATION LAYOUT

SHEET NUMBER:

2.2

STORMTRAP INSTALLATION SPECIFICATIONS

1. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891, STANDARD FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES, THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:

2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.

3. STORMTRAP MODULES SHALL BE PLACED ON A LEVEL CONCRETE FOUNDATION (SEE SHEET 2.1) WITH A 1'-0" OVERHANG ON ALL SIDES THAT SHALL BE POURED IN PLACE BY INSTALLING CONTRACTOR. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS TO ENSURE THAT THE SOIL BEARING PRESSURE MEETS OR EXCEEDS THE STRUCTURAL DESIGN LOADING CRITERIA AS SPECIFIED ON SHEET 1.0.

4. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED ¾" (SEE DETAIL 2). IF THE SPACE EXCEEDS ¾", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

5. THE PERIMETER HORIZONTAL JOINT BETWEEN THE STORMTRAP MODULES AND THE CONCRETE FOUNDATION SHALL BE SEALED TO THE FOUNDATION WITH PRE-FORMED MASTIC JOINT SEALER ACCORDING TO ASTM C891, 8.8 AND 8.12 (SEE DETAIL 1). THE MASTIC JOINT TAPE DOES NOT PROVIDE A WATERTIGHT SEAL.

6. ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH 8" WIDE PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN, BONDED TO A WOVEN , HIGHLY PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY STORMTRAP (SEE DETAILS 2, 3, & 4). THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

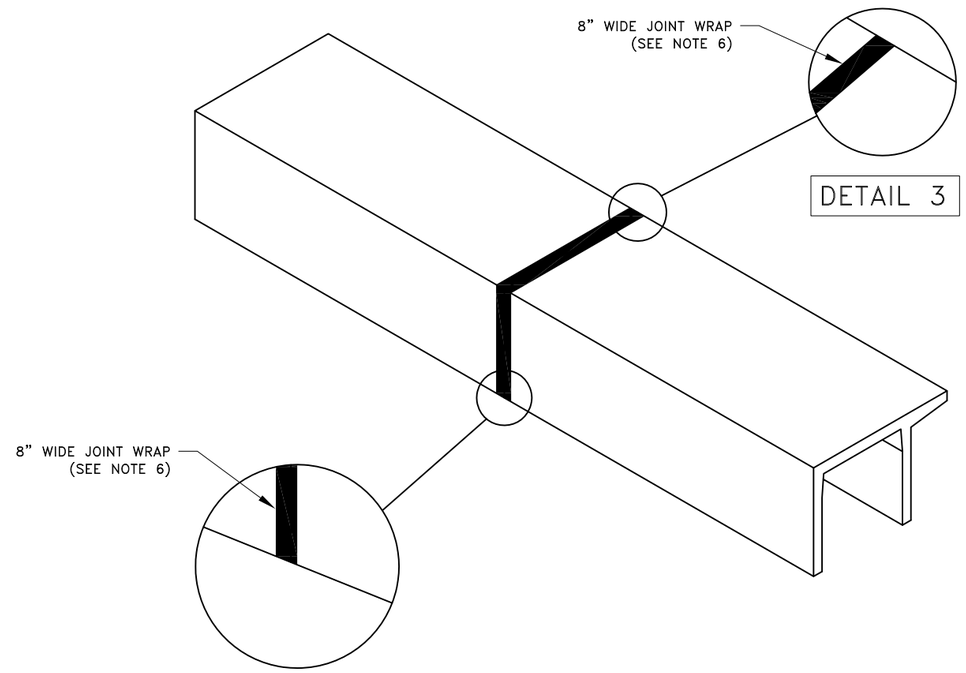
   6.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE JOINT WRAP IS TO BE APPLIED.

   6.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.

7. IF THE CONTRACTOR NEEDS TO CANCEL ANY SHIPMENTS, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE. IF CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.

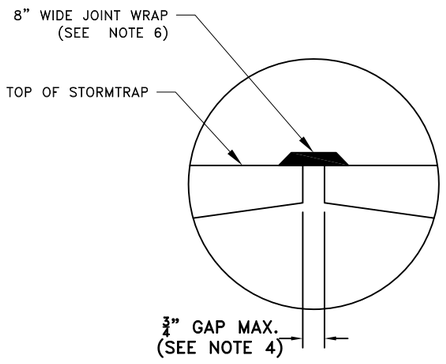
8. IF THE STORMTRAP MODULE(S) IS DAMAGED IN ANY WAY PRIOR, DURING, OR AFTER INSTALL, STORMTRAP MUST BE CONTACTED IMMEDIATELY TO ASSESS THE DAMAGE AND DETERMINE WHETHER OR NOT THE MODULE(S) WILL NEED TO BE REPLACED. IF ANY MODULE ARRIVES AT THE JOBSITE DAMAGED DO NOT UNLOAD IT; CONTACT STORMTRAP IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.

9. STORMTRAP MODULES CANNOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM STORMTRAP.

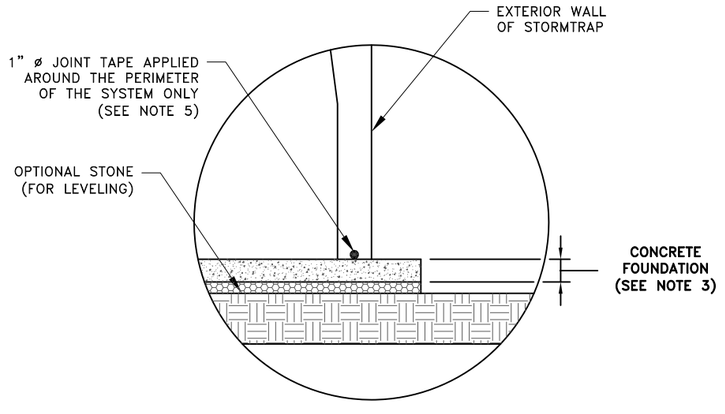


DETAIL 3

DETAIL 4



DETAIL 2



DETAIL 1

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CONSULTANTS
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732-974-0198

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DEVELOPMENT
BASIN C

EAST WINDSOR, NJ

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SCALE:

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SHEET TITLE:

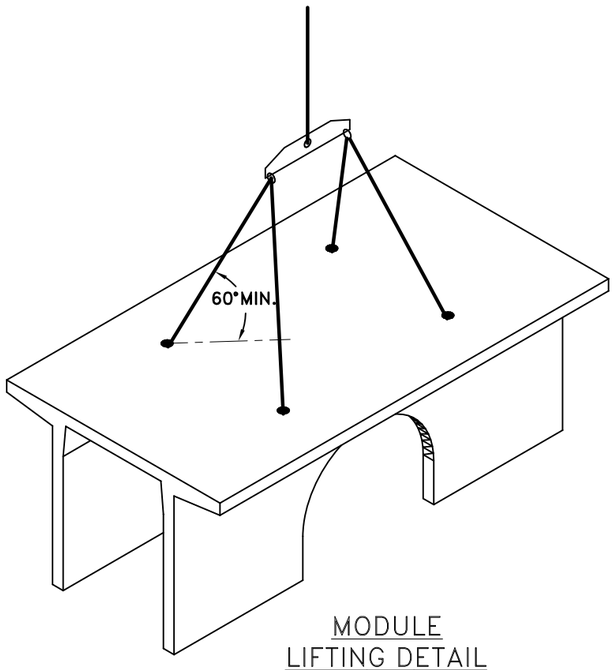
SINGLETRAP
INSTALLATION
SPECIFICATIONS

SHEET NUMBER:

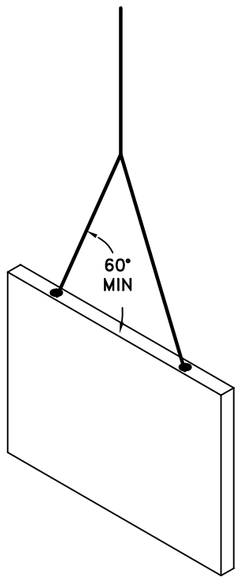
3.0

STORMTRAP MODULE LIFTING INSTALLATION NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL (4) CHAINS/CABLES ARE SECURED PROPERLY TO THE LIFTING ANCHORS AND IN EQUAL TENSION WHEN LIFTING THE STORMTRAP MODULE (SEE RECOMMENDATIONS 2 & 3).
2. MINIMUM 7'–0" CHAIN/CABLE LENGTH TO BE USED TO LIFT STORMTRAP MODULES (SUPPLIED BY CONTRACTOR).
3. CONTRACTOR TO ENSURE MINIMUM LIFTING ANGLE IS 60° FROM TOP SURFACE OF STORMTRAP MODULE. SEE DETAIL.
4. IT IS UNDERSTOOD AND AGREED THAT AT ALL TIMES DURING WHICH HOISTING AND RIGGING EQUIPMENT IS BEING SUPPLIED TO THE PURCHASER, OPERATOR OF SUCH EQUIPMENT SHALL BE IN CHARGE OF HIS ENTIRE EQUIPMENT AND SHALL AT ALL TIMES BE THE JUDGE OF THE SAFETY AND PROPERTY OF ANY SUGGESTION TO HIM FROM THE SELLER, ITS AGENTS OR EMPLOYEES. PURCHASER AGREES TO SAVE, INDEMNIFY AND HOLD HARMLESS SELLER FROM ALL LOSS, CLAIMS, DEMANDS OR CAUSES OF ACTION, WHICH MAY ARISE FROM THE EXISTENCE OR OPERATION OF SAID EQUIPMENT.



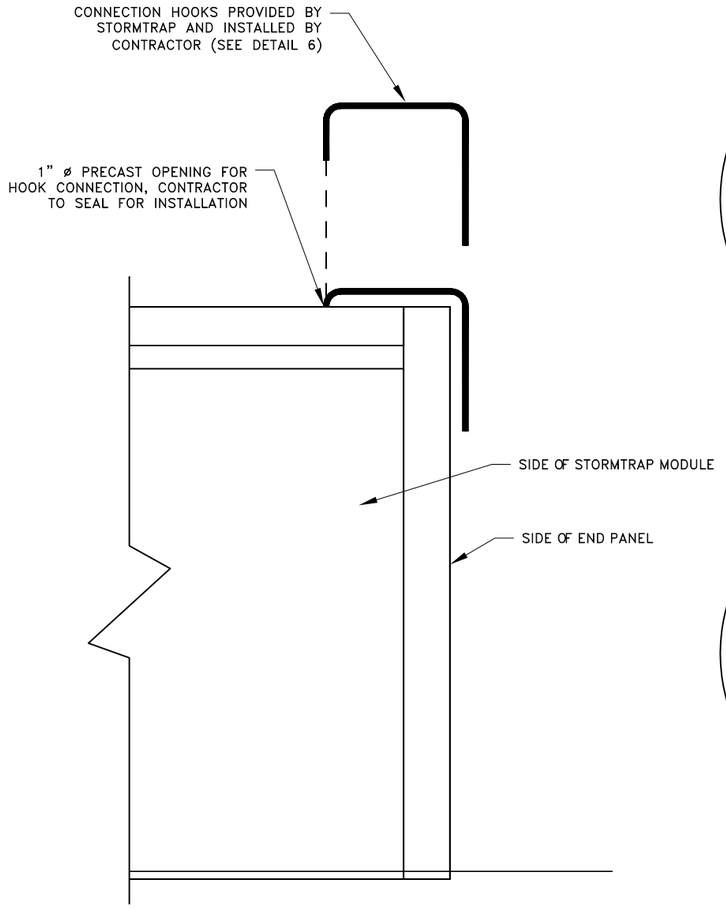
MODULE
LIFTING DETAIL



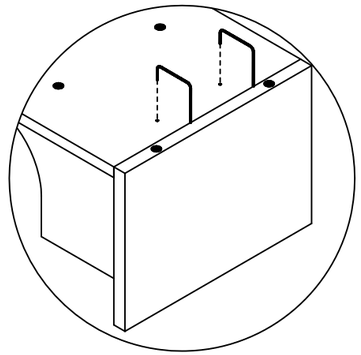
END PANEL
LIFTING DETAIL

END PANEL ERECTION/INSTALLATION NOTES

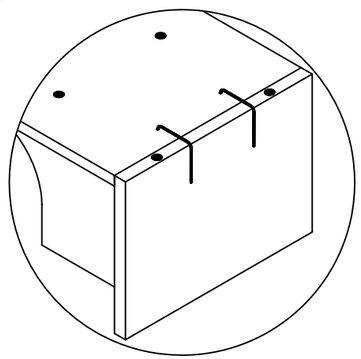
1. END PANELS WILL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF ROWS.
2. PANELS SHALL BE INSTALLED IN A TILT UP FASHION DIRECTLY ADJACENT TO OPEN END OF MODULE (REFER TO SHEET 2.0 FOR END PANEL LOCATIONS).
3. CONNECTION HOOKS WILL BE SUPPLIED WITH END PANELS TO SECURELY CONNECT PANEL TO ADJACENT STORMTRAP MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONNECTION HOOK IS ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE SHEET 3.0).



PANEL CONNECTION
ELEVATION VIEW



STEP 1



STEP 2

DETAIL 6

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3.1

ZONE CHART

ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 1	FOUNDATION AGGREGATE	#5 (¾") STONE AGGREGATE (SEE NOTE 4 FOR DESCRIPTION)
ZONE 2	BACKFILL	UNIFIED SOILS CLASSIFICATION (GW, GP, SW, SP) OR SEE BELOW FOR APPROVED BACKFILL OPTIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

APPROVED ZONE 2 BACKFILL OPTIONS

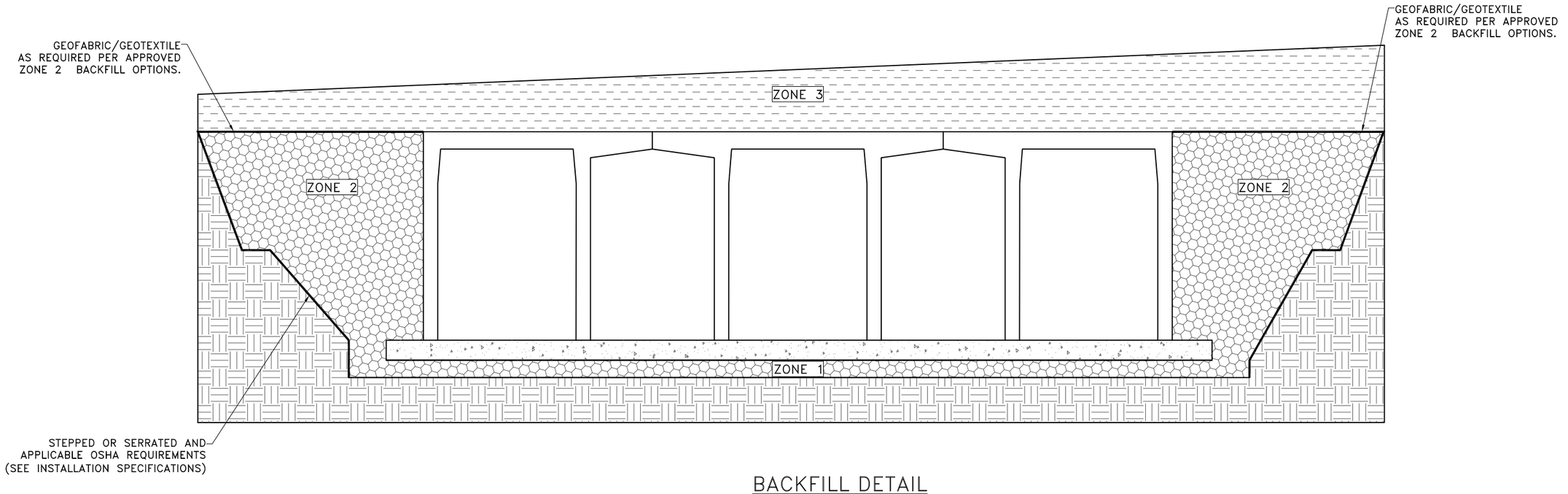
OPTION	REMARKS
¾" STONE AGGREGATE	THE STONE AGGREGATE SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR MATERIAL. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL (ASTM SIZE #57) AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
SAND	IMPORTED PURE SAND IS PERMITTED TO BE USED AS BACKFILL IF IT IS CLEAN AND FREE DRAINING. THE SAND USED FOR BACKFILLING SHALL HAVE LESS THAN 40% PASSING #40 SIEVE AND LESS THAN 5% PASSING #200 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE SAND BACKFILL.
CRUSHED CONCRETE AGGREGATE	CLEAN, FREE DRAINING CRUSHED CONCRETE AGGREGATE MATERIAL CAN BE USED AS BACKFILL FOR STORMTRAP'S MODULES. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL.
ROAD PACK	STONE AGGREGATE 100% PASSING THE 1-1/2" SIEVE WITH LESS THAN 12% PASSING THE #200 SIEVE (ASTM SIZE #467). GEOFABRIC AS PER GEOTECHNICAL ENGINEER RECOMMENDATION.

FILL DEPTH	TRACK WIDTH	MAX VEHICLE WEIGHT (KIPS)	MAX GROUND PRESSURE
12"	12"	51.8	1690 psf
	18"	56.1	1219 psf
	24"	68.1	1111 psf
	30"	76.7	1000 psf
	36"	85.0	924 psf

NOTE:
TRACK LENGTH NOT TO EXCEED 15'-4".
ONLY TWO TRACKS PER VEHICLE.

STORMTRAP ZONE INSTALLATION SPECIFICATIONS/PROCEDURES

1. THE FILL PLACED AROUND THE STORMTRAP MODULES MUST DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGING ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MUST BE FREE-DRAINING MATERIAL. SEE ZONE 2 BACKFILL CHART ON THIS PAGE FOR APPROVED BACKFILL OPTIONS. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED (PROVIDED BY OTHERS).
2. DURING PLACEMENT OF MATERIAL OVERTOP THE SYSTEM, AT NO TIME SHALL MACHINERY BE USED OVERTOP THAT EXCEEDS THE DESIGN LIMITATIONS OF THE SYSTEM. WHEN PLACEMENT OF MATERIAL OVERTOP, MATERIAL SHALL BE PLACED SUCH THAT THE DIRECTION OF PLACEMENT IS PARALLEL WITH THE OVERALL LONGITUDINAL DIRECTION OF THE SYSTEM WHENEVER POSSIBLE.
3. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED AT A MINIMUM OF 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN HS-20 LOADING CRITERIA TRAVEL OVERTOP THE SYSTEM WITHOUT THE MINIMUM DESIGN COVERAGE. IF TRAVEL IS NECESSARY OVERTOP THE SYSTEM PRIOR TO ACHIEVING THE MINIMUM DESIGN COVER, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OF THE SYSTEM. IN SOME CASES, IN ORDER TO ACHIEVE REQUIRED COMPACTION, HAND COMPACTION MAY BE NECESSARY IN ORDER NOT TO EXCEED THE ALLOTTED DESIGN LOADING. SEE CHART FOR TRACKED VEHICLE WIDTH AND ALLOWABLE MAXIMUM PRESSURE PER TRACK.
4. STONE AGGREGATE FOUNDATION IN ZONE 1 IS RECOMMENDED FOR LEVELING PURPOSES ONLY (OPTIONAL).



BACKFILL DETAIL

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SINGLETRAP BACKFILL SPECIFICATIONS

SHEET NUMBER:

4.0

RECOMMENDED ACCESS OPENING SPECIFICATION

1. A TYPICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 2'–0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 3'–0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 1'–0" OF CLEARANCE FROM THE END OF THE STORMTRAP MODULE UNLESS NOTED OTHERWISE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG UNLESS OTHERWISE SPECIFIED.
2. PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3–PFC OR APPROVED EQUAL (SEE STEP DETAIL) ARE PROVIDED INSIDE ANY MODULE WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A DISTANCE OF 1'–0" FROM THE INSIDE EDGE OF THE STORMTRAP MODULES. ALL ENSUING STEPS SHALL BE PLACED AT A DISTANCE BETWEEN 10" MIN AND 14" MAX BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE MODULE.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER TO MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST TWO ACCESS OPENINGS PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (PROVIDED BY OTHERS)

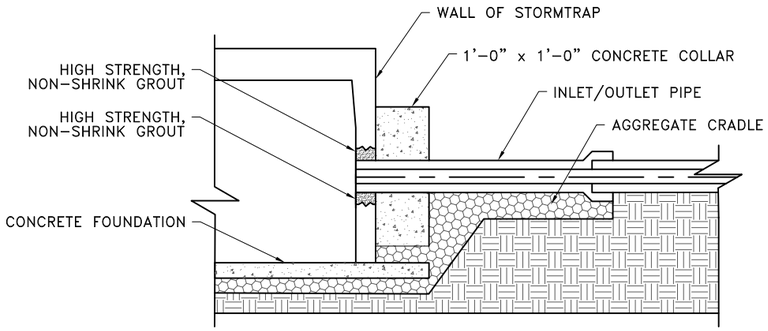
RECOMMENDED PIPE OPENING SPECIFICATION

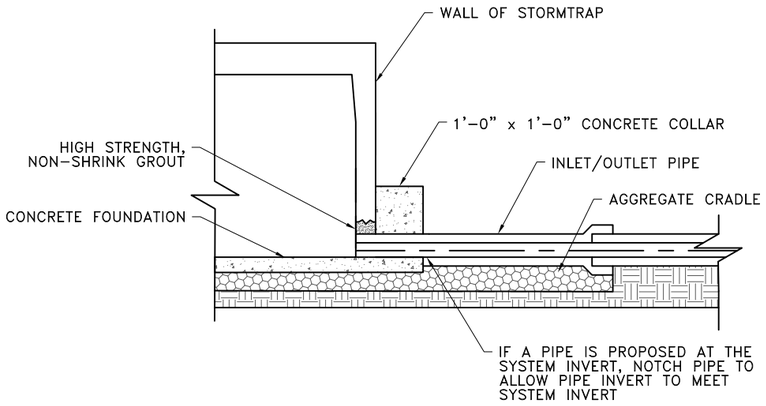
1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'–0".
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY THE MODULE HEIGHT. PREFERRED OPENING SIZE ø 36" OR LESS. ANY OPENING NEEDED THAT DOES NOT FIT THIS CRITERIA SHALL BE BROUGHT TO THE ATTENTION OF STORMTRAP FOR REVIEW.
3. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'–0" CONCRETE COLLAR, AND AN AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON–SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
4. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON–SHRINK GROUT.

RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

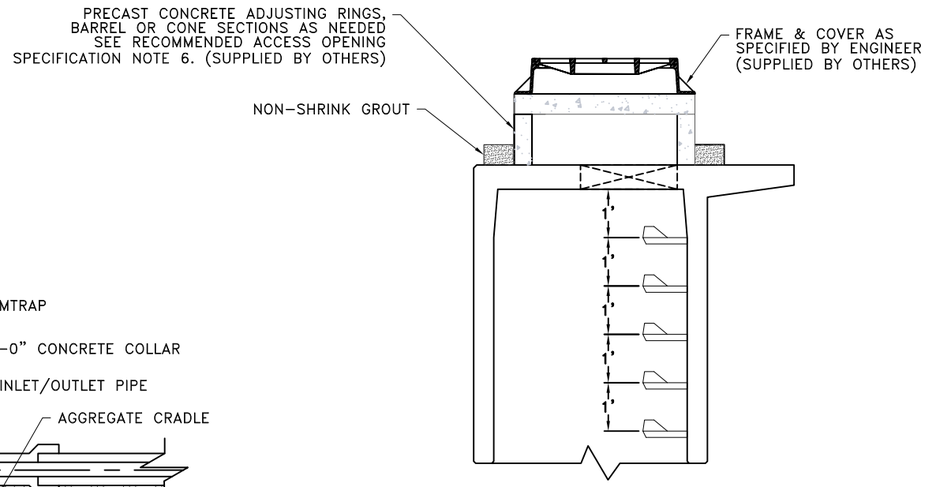
1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

NOTE: ALL ANCILLARY PRODUCTS/SPECIFICATIONS RECOMMENDED AND SHOWN ON THIS SHEET ARE RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE PER THE INSTALLING CONTRACTOR AND/OR PER LOCAL MUNICIPAL CODE/REQUIREMENTS.

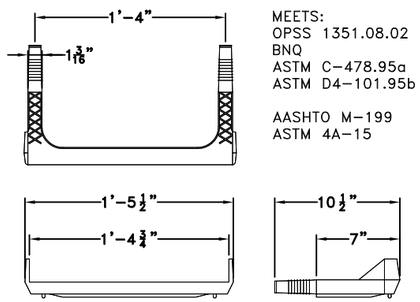




PIPE CONNECTION DETAIL



RISER/STAIR DETAIL



MEETS:
OPSS 1351.08.02
BNQ
ASTM C–478.95a
ASTM D4–101.95b

AASHTO M–199
ASTM 4A–15

STEP DETAIL

*** NOTICE *** 03–25–2022

DUE TO CURRENT INCONSISTENCIES IN THE 16" STEP SUPPLY, STORMTRAP MAY SUBSTITUTE THE 16" STEP WITH THE CLOSEST ALTERNATIVE LENGTH STEP UNTIL THE SUPPLY CHAIN ISSUE IS RESOLVED.

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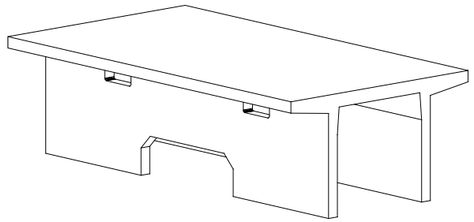
RECOMMENDED PIPE / ACCESS OPENING SPECIFICATIONS

SHEET NUMBER:

5.0



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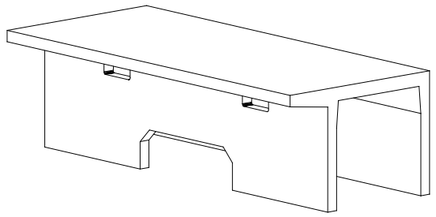

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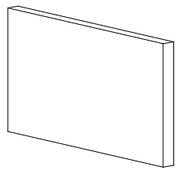
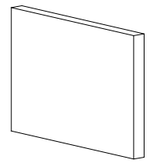


TYPE II
END PANEL



TYPE IV
END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. SP – INDICATES A MODULE WITH MODIFICATIONS.
3. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
4. POCKET WINDOW OPENINGS ARE OPTIONAL.

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SHEET TITLE:

SINGLETRAP
MODULE TYPES

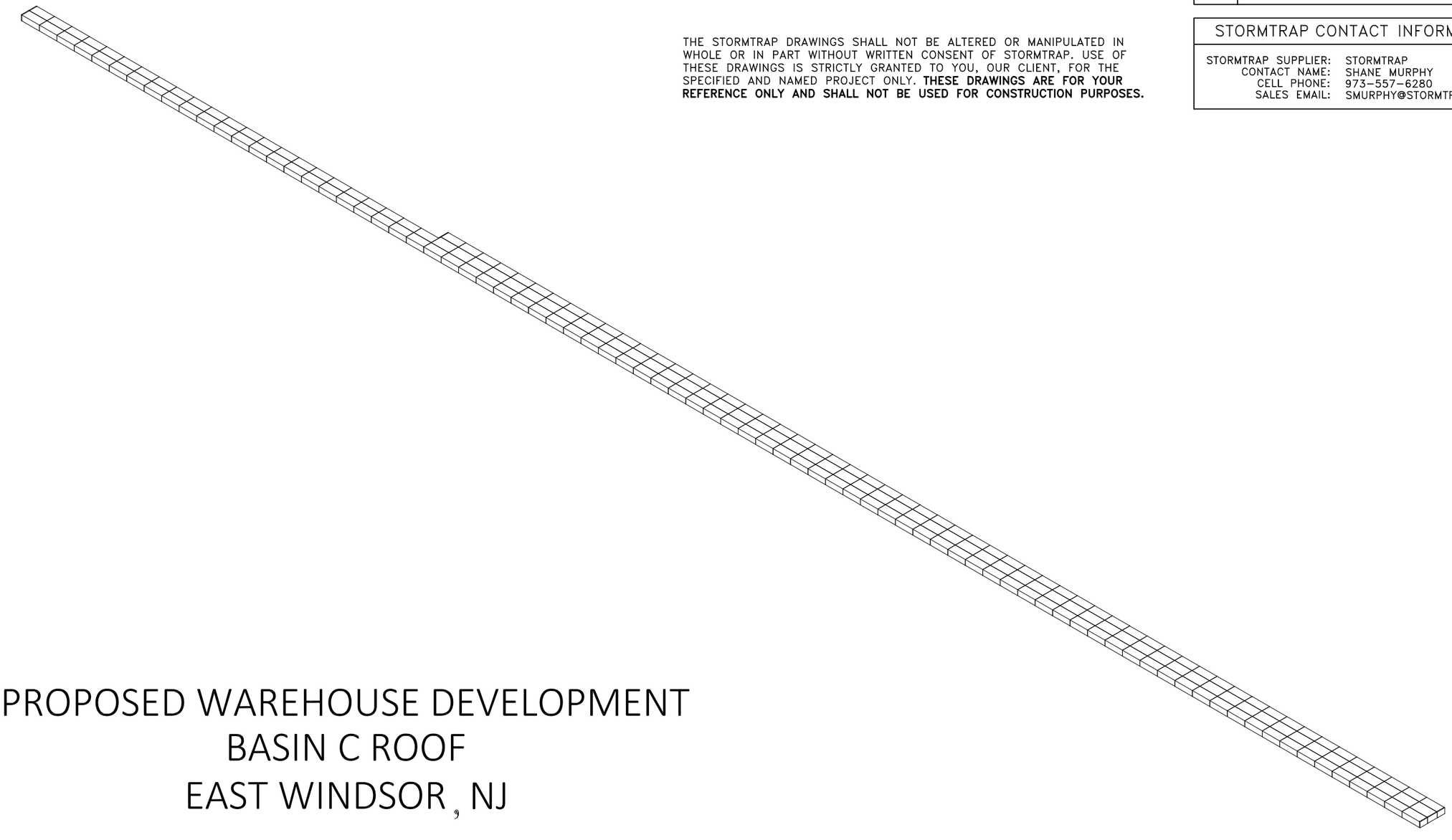
SHEET NUMBER:

6.0

UNDERGROUND DETENTION BASIN ‘C2’ (ROOF) DETAIL

StormTrap®

MODULAR CONCRETE
STORMWATER MANAGEMENT



PROPOSED WAREHOUSE DEVELOPMENT
BASIN C ROOF
EAST WINDSOR , NJ

SHEET INDEX

STORMTRAP CONTACT INFORMATION

STORMTRAP SUPPLIER: STORMTRAP
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StormTrap®
PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]
1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
P:815–941–4549 / F:331–318–5347

ENGINEER INFORMATION:

DYNAMIC ENGINEERING CONSULTANTS
1904 MAIN ST
LAKE COMO, NJ
732–974–0198

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SCALE:

NTS

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

0.0

STRUCTURAL DESIGN LOADING CRITERIA

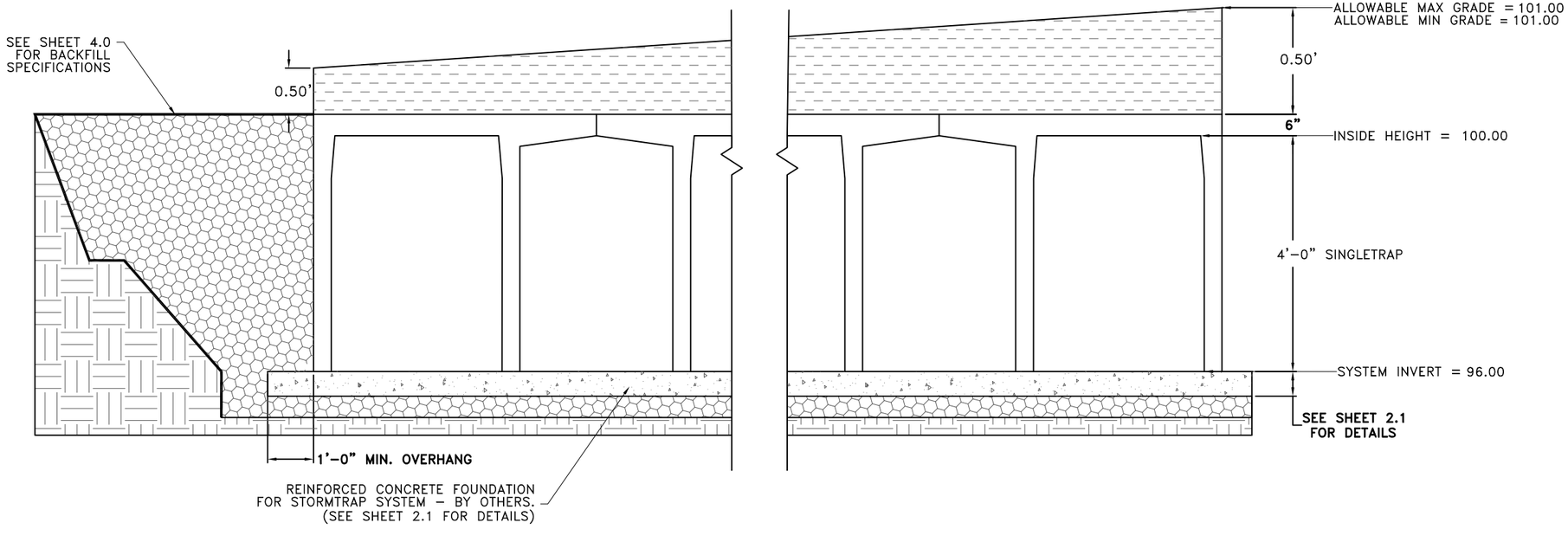
LIVE LOADING:	**AASHTO HS-20 HIGHWAY LOADING**
GROUND WATER TABLE:	BELOW INVERT OF SYSTEM
SOIL BEARING PRESSURE:	3000 PSF
SOIL DENSITY:	120 PCF
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE:	35 PSF / FT.
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE:	80 PSF/FT. (IF WATER TABLE PRESENT)
APPLICABLE CODES:	ASTM C857 ACI-318
BACKFILL TYPE:	SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

WATER STORAGE PROV:	83,720.70 CUBIC FEET
UNIT HEADROOM:	4'-0" SINGLETRAP

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 0.50' MAX. 0.50' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW INVERT OF SYSTEM IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. SYSTEM DESIGN MAY ALLOW FOR INCIDENTAL LEAKAGE AND WILL NOT BE SUBJECT TO LEAKAGE TESTING.



4'-0" SINGLETRAP

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SINGLETRAP DESIGN CRITERIA

SHEET NUMBER:

1.0

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	WEIGHT
0	I	4'–0" SINGLETRAP	–
57	II	4'–0" SINGLETRAP	16802
0	III	4'–0" SINGLETRAP	–
160	IV	4'–0" SINGLETRAP	15104
0	VII	4'–0" SINGLETRAP	–
0	SPIV	4'–0" SINGLETRAP	VARIES
2	T2 PANEL	6" THICK PANEL	2843
4	T4 PANEL	6" THICK PANEL	2236
0	T7 PANEL	6" THICK PANEL	–
42	JOINTWRAP	150' PER ROLL	
192	JOINTTAPE	14.5' PER ROLL	
TOTAL PIECES = 217			
TOTAL PANELS = 6			
HEAVIEST PICK WEIGHT = 16,802			

LOADING DISCLAIMER:

STORMTRAP IS NOT DESIGNED TO ACCEPT ANY ADDITIONAL LOADINGS FROM NEARBY STRUCTURES NEXT TO OR OVER THE TOP OF STORMTRAP. IF ADDITIONAL LOADING CONSIDERATIONS ARE REQUIRED FOR STRUCTURAL DESIGN OF STORMTRAP, PLEASE CONTACT STORMTRAP IMMEDIATELY.

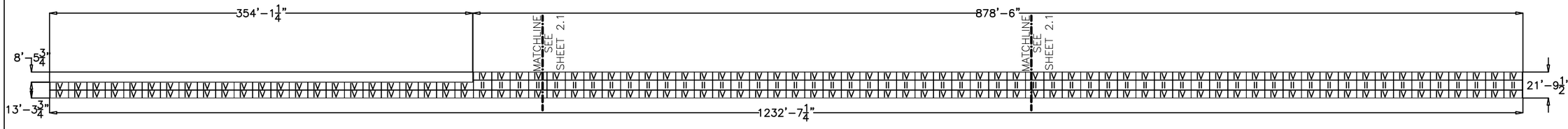
TREE LOADING DISCLAIMER:

THE STORMTRAP SYSTEM HAS NOT BEEN DESIGNED TO SUPPORT THE ADDITIONAL WEIGHT OF ANY TREES. FURTHERMORE, THE ROOTS OF THE TREES MUST BE CONTAINED TO PREVENT FUTURE DAMAGE TO THE STORMTRAP SYSTEM. STORMTRAP ACCEPTS NO LIABILITY FOR DAMAGES CAUSED BY TREES OR OTHER VEGETATION PLACE AROUND OR ON TOP OF THE SYSTEM.

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 101.00
ALLOWABLE MIN GRADE = 101.00
INSIDE HEIGHT ELEVATION = 100.00
SYSTEM INVERT = 96.00

NOTES:

1. DIMENSIONING OF STORMTRAP SYSTEM SHOWN BELOW ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP – INDICATES A MODULE WITH MODIFICATIONS.
5. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
6. CONTRACTORS RESPONSIBILITY TO ENSURE CONSISTENCY/ACCURACY TO FINAL ENGINEER OF RECORD PLAN SET.



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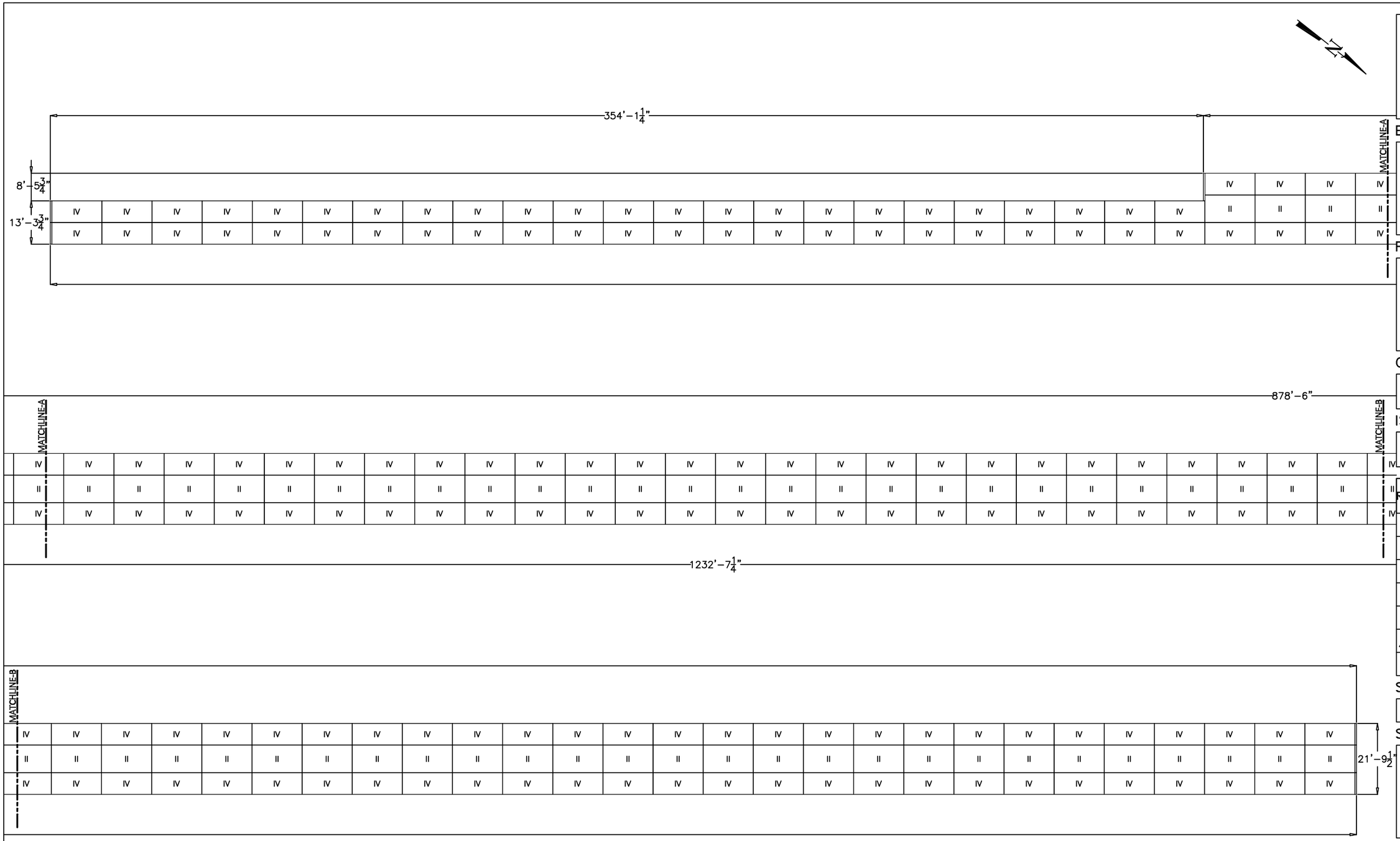
OVERALL SINGLETRAP SYSTEM LAYOUT

SHEET NUMBER:

2.0



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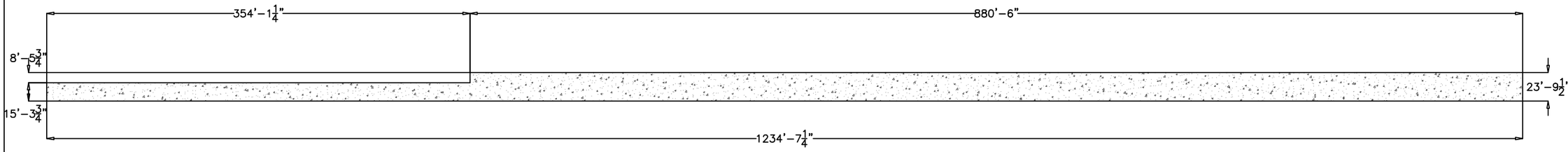
SINGLETRAP SYSTEM ENLARGED LAYOUTS

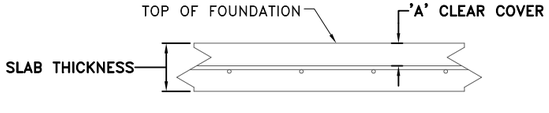
SHEET NUMBER:

2.1



CONCRETE FOUNDATION NOTES:

1. CONCRETE FOUNDATION TO BE SUPPLIED AND INSTALLED BY OTHERS.
2. CONCRETE STRENGTH @ 28 DAYS, 5%–8% ENTRAINED AIR, 4" MAX SLUMP.
3. NET ALLOWABLE SOIL PRESSURE AS INDICATED ON SHEET 1.0.
4. SOIL CONDITIONS TO BE VERIFIED ON SITE BY OTHERS.
5. REBAR: ASTM A615 GRADE 60, BLACK BAR.
6. DIMENSION OF FOUNDATION MUST HAVE 1'–0" OVERHANG BEYOND EXTERNAL FACE OF MODULE.
7. DIMENSION OF STORMTRAP SYSTEM ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
8. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
9. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.



STORMTRAP FOUNDATION DETAIL

HS–20 & HS–25 LOADING – (ACI 318, ST2)				
MAXIMUM SYSTEM COVER	SLAB THICKNESS	CONCRETE STRENGTH	REINFORCEMENT (BOTH DIRECTIONS)	'A' CLEAR COVER
1'–0"	8"	4000 PSI	#4 @ 18" O.C.	3.5"
1'–1" – 2'–0"	8"	4000 PSI	#4 @ 16" O.C.	3.5"
2'–1" – 3'–0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
3'–1" – 4'–0"	8"	4000 PSI	#4 @ 12" O.C.	3.5"
4'–1" – 5'–0"	8"	4000 PSI	#5 @ 18" O.C.	3.375"
5'–1" – 6'–0"	8"	4000 PSI	#5 @ 16" O.C.	3.375"
6'–1" – 7'–0"	8"	4000 PSI	#5 @ 12" O.C.	3.375"
7'–1" – 8'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
8'–1" – 9'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"
9'–1" – 10'–0"	9"	4000 PSI	#5 @ 12" O.C.	3.875"

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SINGLETRAP FOUNDATION LAYOUT

SHEET NUMBER:

2.2

STORMTRAP INSTALLATION SPECIFICATIONS

1. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891, STANDARD FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES, THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:

2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.

3. STORMTRAP MODULES SHALL BE PLACED ON A LEVEL CONCRETE FOUNDATION (SEE SHEET 2.1) WITH A 1'-0" OVERHANG ON ALL SIDES THAT SHALL BE POURED IN PLACE BY INSTALLING CONTRACTOR. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS TO ENSURE THAT THE SOIL BEARING PRESSURE MEETS OR EXCEEDS THE STRUCTURAL DESIGN LOADING CRITERIA AS SPECIFIED ON SHEET 1.0.

4. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED ¾" (SEE DETAIL 2). IF THE SPACE EXCEEDS ¾", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

5. THE PERIMETER HORIZONTAL JOINT BETWEEN THE STORMTRAP MODULES AND THE CONCRETE FOUNDATION SHALL BE SEALED TO THE FOUNDATION WITH PRE-FORMED MASTIC JOINT SEALER ACCORDING TO ASTM C891, 8.8 AND 8.12 (SEE DETAIL 1). THE MASTIC JOINT TAPE DOES NOT PROVIDE A WATERTIGHT SEAL.

6. ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH 8" WIDE PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN, BONDED TO A WOVEN , HIGHLY PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY STORMTRAP (SEE DETAILS 2, 3, & 4). THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

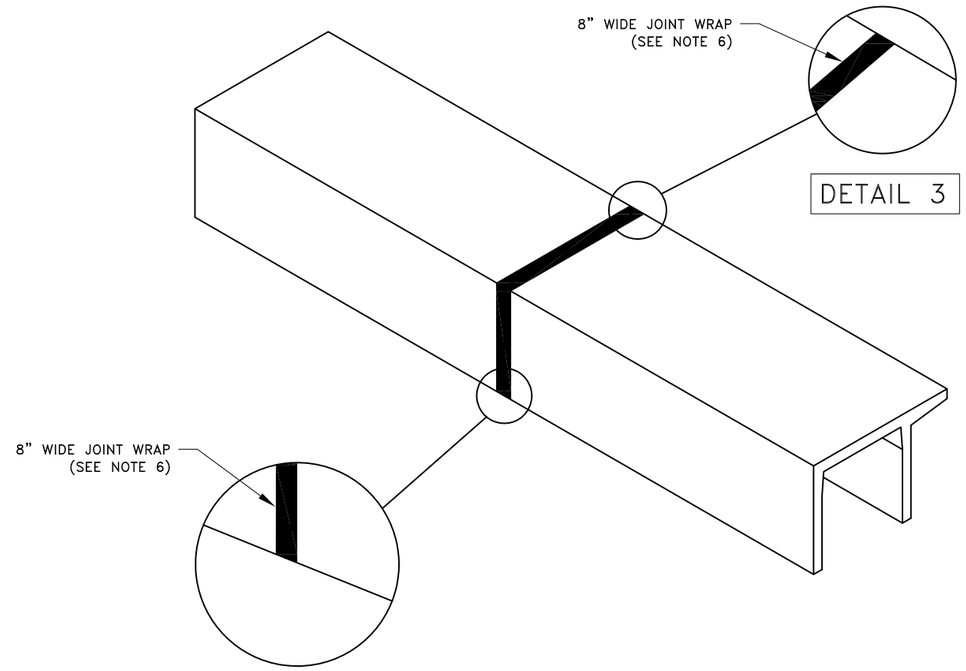
   6.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE JOINT WRAP IS TO BE APPLIED.

   6.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.

7. IF THE CONTRACTOR NEEDS TO CANCEL ANY SHIPMENTS, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE. IF CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.

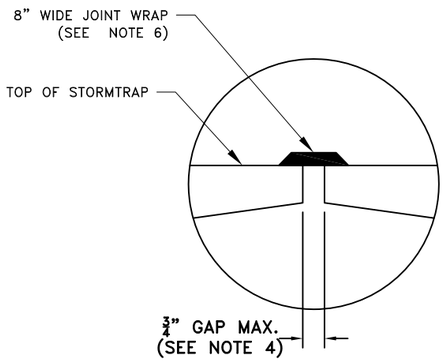
8. IF THE STORMTRAP MODULE(S) IS DAMAGED IN ANY WAY PRIOR, DURING, OR AFTER INSTALL, STORMTRAP MUST BE CONTACTED IMMEDIATELY TO ASSESS THE DAMAGE AND DETERMINE WHETHER OR NOT THE MODULE(S) WILL NEED TO BE REPLACED. IF ANY MODULE ARRIVES AT THE JOBSITE DAMAGED DO NOT UNLOAD IT; CONTACT STORMTRAP IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.

9. STORMTRAP MODULES CANNOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM STORMTRAP.

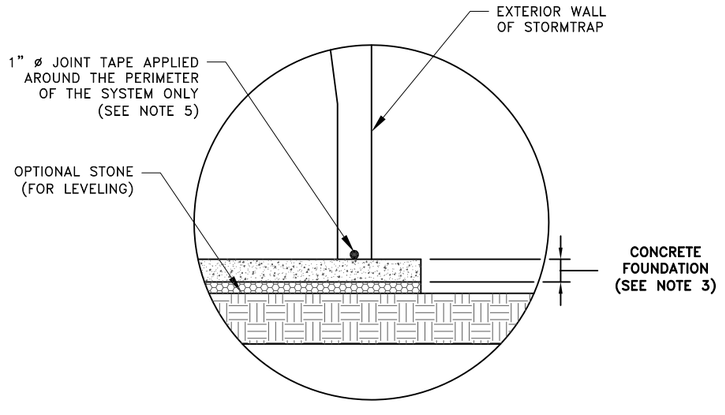


DETAIL 3

DETAIL 4



DETAIL 2



DETAIL 1

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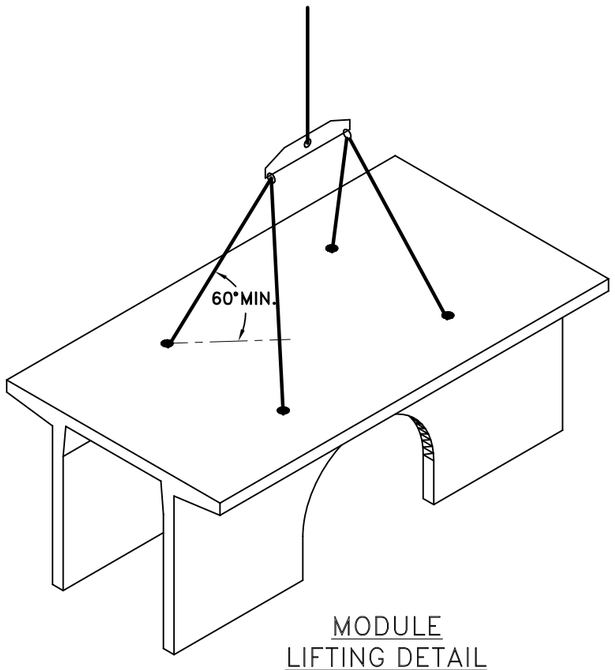
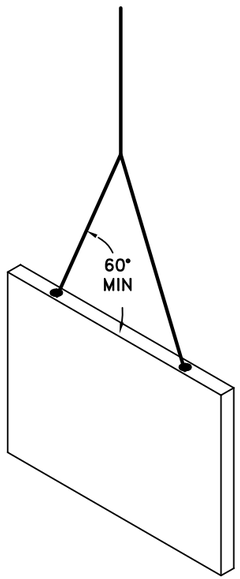
STORMTRAP MODULE LIFTING INSTALLATION NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL (4) CHAINS/CABLES ARE SECURED PROPERLY TO THE LIFTING ANCHORS AND IN EQUAL TENSION WHEN LIFTING THE STORMTRAP MODULE (SEE RECOMMENDATIONS 2 & 3).
2. MINIMUM 7'–0" CHAIN/CABLE LENGTH TO BE USED TO LIFT STORMTRAP MODULES (SUPPLIED BY CONTRACTOR).
3. CONTRACTOR TO ENSURE MINIMUM LIFTING ANGLE IS 60° FROM TOP SURFACE OF STORMTRAP MODULE. SEE DETAIL.
4. IT IS UNDERSTOOD AND AGREED THAT AT ALL TIMES DURING WHICH HOISTING AND RIGGING EQUIPMENT IS BEING SUPPLIED TO THE PURCHASER, OPERATOR OF SUCH EQUIPMENT SHALL BE IN CHARGE OF HIS ENTIRE EQUIPMENT AND SHALL AT ALL TIMES BE THE JUDGE OF THE SAFETY AND PROPERTY OF ANY SUGGESTION TO HIM FROM THE SELLER, ITS AGENTS OR EMPLOYEES. PURCHASER AGREES TO SAVE, INDEMNIFY AND HOLD HARMLESS SELLER FROM ALL LOSS, CLAIMS, DEMANDS OR CAUSES OF ACTION, WHICH MAY ARISE FROM THE EXISTENCE OR OPERATION OF SAID EQUIPMENT.



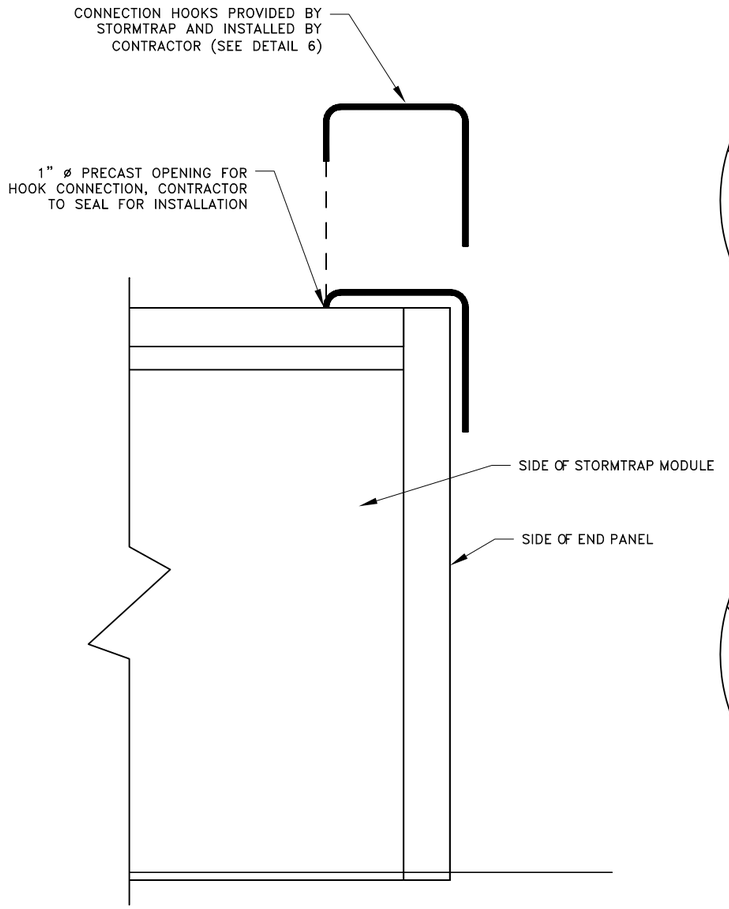
MODULE
LIFTING DETAIL



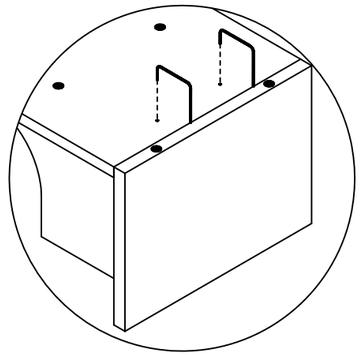
END PANEL
LIFTING DETAIL

END PANEL ERECTION/INSTALLATION NOTES

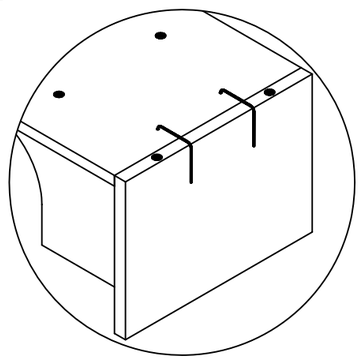
1. END PANELS WILL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF ROWS.
2. PANELS SHALL BE INSTALLED IN A TILT UP FASHION DIRECTLY ADJACENT TO OPEN END OF MODULE (REFER TO SHEET 2.0 FOR END PANEL LOCATIONS).
3. CONNECTION HOOKS WILL BE SUPPLIED WITH END PANELS TO SECURELY CONNECT PANEL TO ADJACENT STORMTRAP MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONNECTION HOOK IS ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE SHEET 3.0).



PANEL CONNECTION
ELEVATION VIEW



STEP 1



STEP 2

DETAIL 6

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ZONE CHART

ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 1	FOUNDATION AGGREGATE	#5 (¾") STONE AGGREGATE (SEE NOTE 4 FOR DESCRIPTION)
ZONE 2	BACKFILL	UNIFIED SOILS CLASSIFICATION (GW, GP, SW, SP) OR SEE BELOW FOR APPROVED BACKFILL OPTIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

APPROVED ZONE 2 BACKFILL OPTIONS

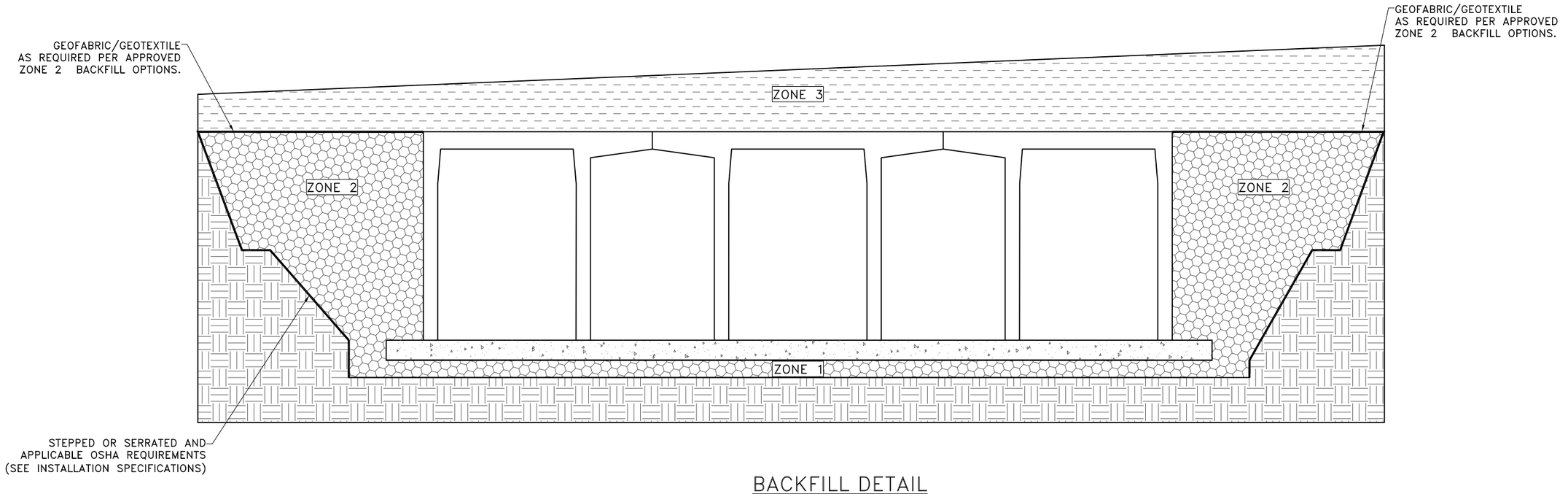
OPTION	REMARKS
¾" STONE AGGREGATE	THE STONE AGGREGATE SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR MATERIAL. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL (ASTM SIZE #57) AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
SAND	IMPORTED PURE SAND IS PERMITTED TO BE USED AS BACKFILL IF IT IS CLEAN AND FREE DRAINING. THE SAND USED FOR BACKFILLING SHALL HAVE LESS THAN 40% PASSING #40 SIEVE AND LESS THAN 5% PASSING #200 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE SAND BACKFILL.
CRUSHED CONCRETE AGGREGATE	CLEAN, FREE DRAINING CRUSHED CONCRETE AGGREGATE MATERIAL CAN BE USED AS BACKFILL FOR STORMTRAP'S MODULES. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL.
ROAD PACK	STONE AGGREGATE 100% PASSING THE 1-1/2" SIEVE WITH LESS THAN 12% PASSING THE #200 SIEVE (ASTM SIZE #467). GEOFABRIC AS PER GEOTECHNICAL ENGINEER RECOMMENDATION.

FILL DEPTH	TRACK WIDTH	MAX VEHICLE WEIGHT (KIPS)	MAX GROUND PRESSURE
12"	12"	51.8	1690 psf
	18"	56.1	1219 psf
	24"	68.1	1111 psf
	30"	76.7	1000 psf
	36"	85.0	924 psf

NOTE:
TRACK LENGTH NOT TO EXCEED 15'-4".
ONLY TWO TRACKS PER VEHICLE.

STORMTRAP ZONE INSTALLATION SPECIFICATIONS/PROCEDURES

1. THE FILL PLACED AROUND THE STORMTRAP MODULES MUST DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGING ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MUST BE FREE-DRAINING MATERIAL. SEE ZONE 2 BACKFILL CHART ON THIS PAGE FOR APPROVED BACKFILL OPTIONS. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED (PROVIDED BY OTHERS).
2. DURING PLACEMENT OF MATERIAL OVERTOP THE SYSTEM, AT NO TIME SHALL MACHINERY BE USED OVERTOP THAT EXCEEDS THE DESIGN LIMITATIONS OF THE SYSTEM. WHEN PLACEMENT OF MATERIAL OVERTOP, MATERIAL SHALL BE PLACED SUCH THAT THE DIRECTION OF PLACEMENT IS PARALLEL WITH THE OVERALL LONGITUDINAL DIRECTION OF THE SYSTEM WHENEVER POSSIBLE.
3. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED AT A MINIMUM OF 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN HS-20 LOADING CRITERIA TRAVEL OVERTOP THE SYSTEM WITHOUT THE MINIMUM DESIGN COVERAGE. IF TRAVEL IS NECESSARY OVERTOP THE SYSTEM PRIOR TO ACHIEVING THE MINIMUM DESIGN COVER, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OF THE SYSTEM. IN SOME CASES, IN ORDER TO ACHIEVE REQUIRED COMPACTION, HAND COMPACTION MAY BE NECESSARY IN ORDER NOT TO EXCEED THE ALLOTTED DESIGN LOADING. SEE CHART FOR TRACKED VEHICLE WIDTH AND ALLOWABLE MAXIMUM PRESSURE PER TRACK.
4. STONE AGGREGATE FOUNDATION IN ZONE 1 IS RECOMMENDED FOR LEVELING PURPOSES ONLY (OPTIONAL).



BACKFILL DETAIL

StormTrap
PATENTS LISTED AT: [HTTP://STORMTRAP.COM/PATENT]
1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
P:815-941-4549 / F:331-318-5347

ENGINEER INFORMATION:

DYNAMIC ENGINEERING CONSULTANTS
1904 MAIN ST
LAKE COMO, NJ
732-974-0198

PROJECT INFORMATION:

PROPOSED WAREHOUSE DEVELOPMENT
BASIN C ROOF

EAST WINDSOR, NJ

CURRENT ISSUE DATE:

12/2/2022

ISSUED FOR:

PRELIMINARY

REV.	DATE:	ISSUED FOR:	DWN BY:
2	12/2/2022	PRELIMINARY	BG
1	04/26/22	PRELIMINARY	LR

SCALE:

NTS

SHEET TITLE:

SINGLETRAP BACKFILL SPECIFICATIONS

SHEET NUMBER:

4.0

RECOMMENDED ACCESS OPENING SPECIFICATION

1. A TYPICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 2'–0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 3'–0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 1'–0" OF CLEARANCE FROM THE END OF THE STORMTRAP MODULE UNLESS NOTED OTHERWISE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG UNLESS OTHERWISE SPECIFIED.
2. PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3–PFC OR APPROVED EQUAL (SEE STEP DETAIL) ARE PROVIDED INSIDE ANY MODULE WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A DISTANCE OF 1'–0" FROM THE INSIDE EDGE OF THE STORMTRAP MODULES. ALL ENSUING STEPS SHALL BE PLACED AT A DISTANCE BETWEEN 10" MIN AND 14" MAX BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE MODULE.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER TO MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST TWO ACCESS OPENINGS PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (PROVIDED BY OTHERS)

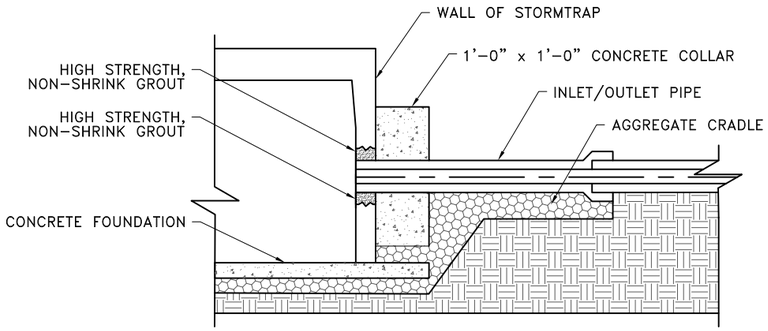
RECOMMENDED PIPE OPENING SPECIFICATION

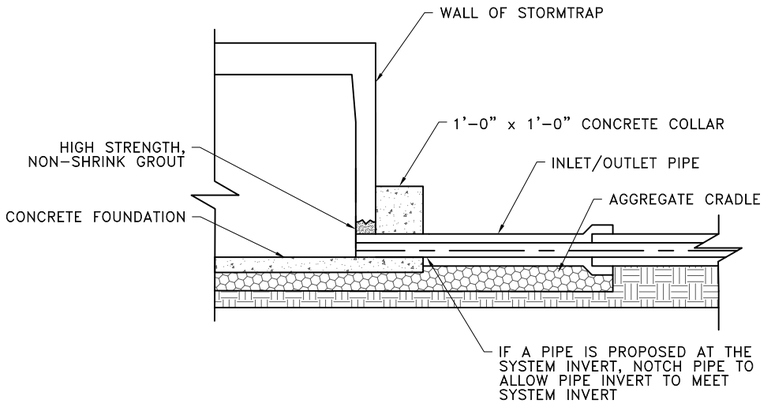
1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'–0".
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY THE MODULE HEIGHT. PREFERRED OPENING SIZE ø 36" OR LESS. ANY OPENING NEEDED THAT DOES NOT FIT THIS CRITERIA SHALL BE BROUGHT TO THE ATTENTION OF STORMTRAP FOR REVIEW.
3. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'–0" CONCRETE COLLAR, AND AN AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON–SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
4. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON–SHRINK GROUT.

RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

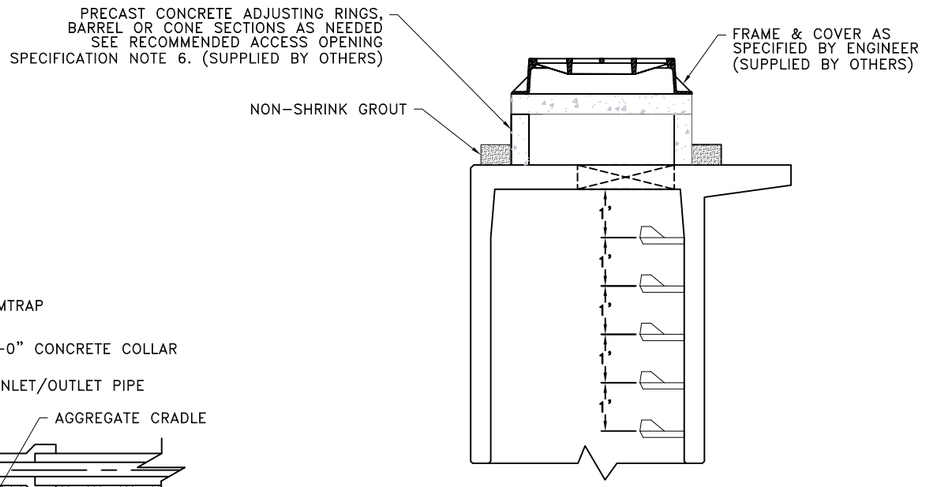
1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

NOTE: ALL ANCILLARY PRODUCTS/SPECIFICATIONS RECOMMENDED AND SHOWN ON THIS SHEET ARE RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE PER THE INSTALLING CONTRACTOR AND/OR PER LOCAL MUNICIPAL CODE/REQUIREMENTS.

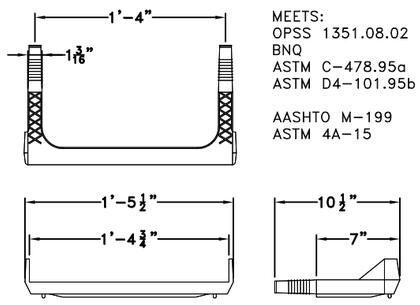




PIPE CONNECTION DETAIL



RISER/STAIR DETAIL



MEETS:
OPSS 1351.08.02
BNQ
ASTM C–478.95a
ASTM D4–101.95b

AASHTO M–199
ASTM 4A–15

STEP DETAIL

*** NOTICE *** 03–25–2022

DUE TO CURRENT INCONSISTENCIES IN THE 16" STEP SUPPLY, STORMTRAP MAY SUBSTITUTE THE 16" STEP WITH THE CLOSEST ALTERNATIVE LENGTH STEP UNTIL THE SUPPLY CHAIN ISSUE IS RESOLVED.

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ENGINEER INFORMATION:

DYNAMIC ENGINEERING CONSULTANTS
1904 MAIN ST
LAKE COMO, NJ
732–974–0198

PROJECT INFORMATION:

PROPOSED WAREHOUSE DEVELOPMENT
BASIN C ROOF

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SCALE:

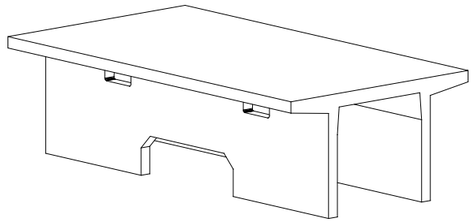
NTS

SHEET TITLE:

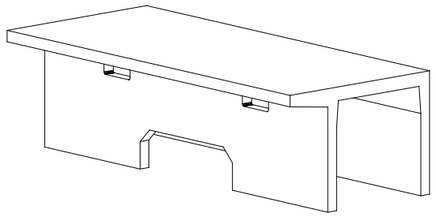
RECOMMENDED PIPE / ACCESS OPENING SPECIFICATIONS

SHEET NUMBER:

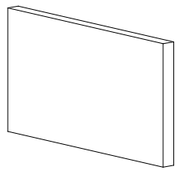
5.0



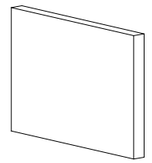
TYPE II



TYPE IV



TYPE II
END PANEL



TYPE IV
END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. SP – INDICATES A MODULE WITH MODIFICATIONS.
3. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
4. POCKET WINDOW OPENINGS ARE OPTIONAL.

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SCALE:

NTS

SHEET TITLE:

SINGLETRAP
MODULE TYPES

SHEET NUMBER:

6.0

UNDERGROUND DETENTION BASIN ‘D’ DETAIL

24" RCP SCHEMATIC UNDERGROUND BASIN 'D' DETAIL

NOT TO SCALE

DYNAMIC ENGINEERING
1904 Main Street - Lake Como, NJ 07719
T: 732.974.0198 - F: 732.974.3521
www.dynamicsc.com

Plotted: 01/28/21 - 8:43 AM, By: areyes, - Product Ver: 23.1s (LMS Tech)
File: P:\DECPC PROJECTS\0091 Paul Profeta\99-013 East Windsor\Dwg\Site Plans\D009199013SD0.dwg, ---> UG BASIN D

SCOUR HOLE SIZING

DYNAMIC ENGINEERING

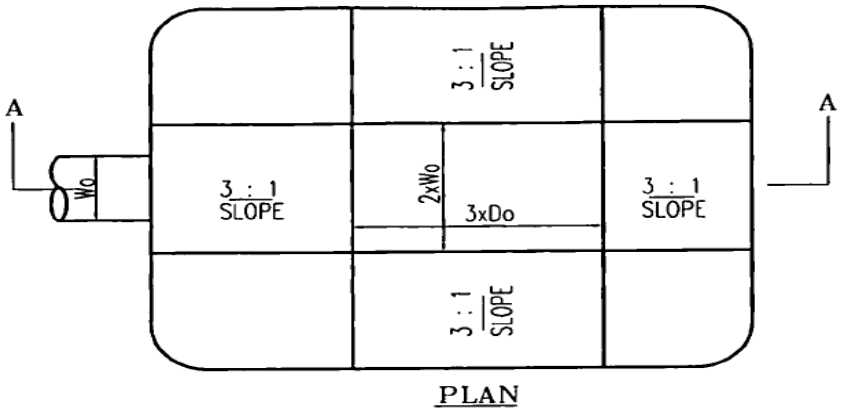
SCOUR HOLE DESIGN

Project:	Proposed Warehouse
Job #:	0091-99-013
Location:	East Windsor, NJ
Design Storm:	100-year
Computed By:	KW
Checked By:	CC
Date:	4/22/2022

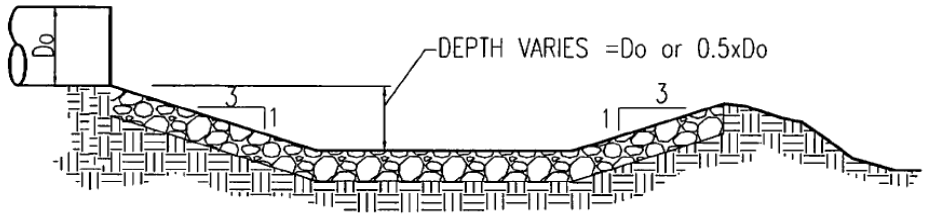
Discharge not in Basin, Therefore Tailwater is less than 0.5 x Do

Discharge Point	Basin A
Q (100-yr storm cfs)	**18.95**
Inside Height of Outlet Culvert, Do (in)	**30**
Inside Height of Outlet Culvert, Do (ft)	2.5
Tailwater (ft), Tw	0.50
Length of Apron, L (ft)	**7.50**
Width of Culvert, Wo(in)	**30**
Width of Culvert, Wo(ft)	**2.5**
Width of Apron, W(ft)	**5.00**
Where Y = 1/2 Do, Y(ft)	**1.250**
Median Stone Diameter, D50 (ft)	**0.37**
Where Y = Do, Y(ft)	**2.500**
Median Stone Diameter, D50 (ft)	**0.24**

Note: Use D50 of 6 inches minimum



PLAN



SECTION A–A

Equations used:
L=3*Do
W=2*Wo
Tw=0.2*Do (If Tw cannot be computed)
Where Y=1/2 Do
D50=(0.0125/Tw)*(q^1.33)
Where Y=Do
D50=(0.0082/Tw)*(q^1.33)

Notes:
1. The use of scour holes shall comply with county or local ordinances which would restrict the use of such devices due to the possible problems with mosquito breeding.
2. No bends or curves at the intersection of the conduit and apron or scour hole will be permitted.
3. There shall be no over fall from the end of the apron to the receiving material.
4. The thickness of the riprap lining, filter, and quality shall meet the requirements in the Riprap Standard Section of the Standards for Soil Erosion Control in New Jersey.

DYNAMIC ENGINEERING

SCOUR HOLE DESIGN

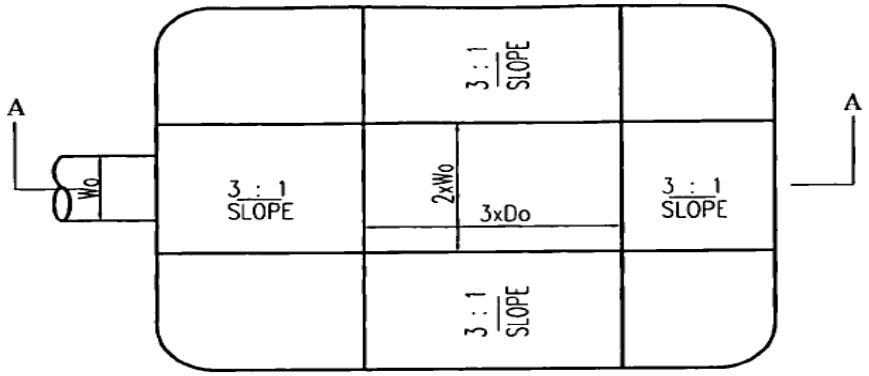
Project:	Proposed Warehouse
Job #:	0091-99-013
Location:	East Windsor, NJ
Design Storm:	100-year
Computed By:	KW
Checked By:	CC
Date:	4/22/2022

Discharge not in Basin, Therefore Tailwater is less than 0.5 x Do

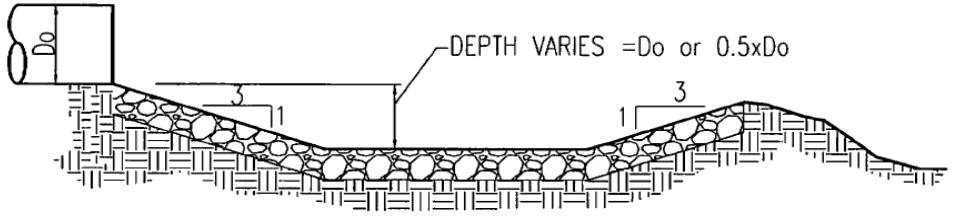
Discharge Point	Basin B1 and B2
Q (100-yr storm cfs)	**19.499**
Inside Height of Outlet Culvert, Do (in)	**24**
Inside Height of Outlet Culvert, Do (ft)	2.0
Tailwater (ft), Tw	0.40
Length of Apron, L (ft)	**6.00**
Width of Culvert, Wo(in)	**24**
Width of Culvert, Wo(ft)	**2.0**
Width of Apron, W(ft)	**4.00**
Where Y = 1/2 Do, Y(ft)	**1.000**
Median Stone Diameter, D50 (ft)	**0.65**
Where Y = Do, Y(ft)	**2.000**
Median Stone Diameter, D50 (ft)	**0.42**

Note: Use D50 of 6 inches minimum

Equations used:
L=3*Do
W=2*Wo
Tw=0.2*Do (If Tw cannot be computed)
Where Y=1/2 Do
D50=(0.0125/Tw)*(q^1.33)
Where Y=Do
D50=(0.0082/Tw)*(q^1.33)



PLAN



SECTION A–A

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1. The use of scour holes shall comply with county or local ordinances which would restrict the use of such devices due to the possible problems with mosquito breeding.
2. No bends or curves at the intersection of the conduit and apron or scour hole will be permitted.
3. There shall be no over fall from the end of the apron to the receiving material.
4. The thickness of the riprap lining, filter, and quality shall meet the requirements in the Riprap Standard Section of the Standards for Soil Erosion Control in New Jersey.

DYNAMIC ENGINEERING

SCOUR HOLE DESIGN

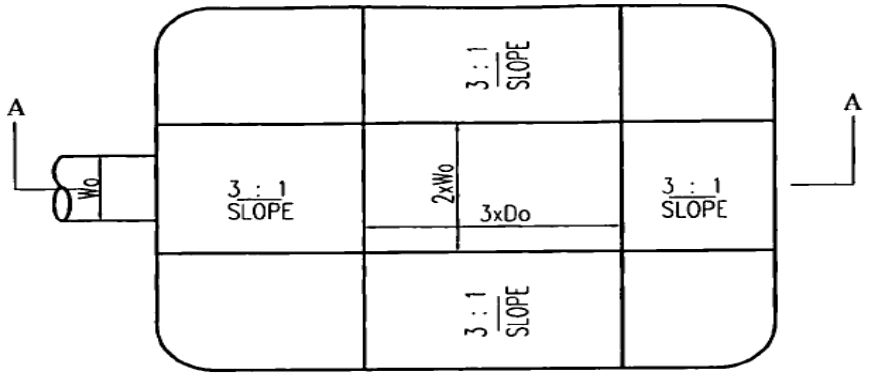
Project:	Proposed Warehouse
Job #:	0091-99-013
Location:	East Windsor, NJ
Design Storm:	100-year
Computed By:	KW
Checked By:	CC
Date:	4/22/2022

Discharge not in Basin, Therefore Tailwater is less than 0.5 x Do

Discharge Point	Basin C1 and C2
Q (100-yr storm cfs)	**40.38**
Inside Height of Outlet Culvert, Do (in)	**30**
Inside Height of Outlet Culvert, Do (ft)	2.5
Tailwater (ft), Tw	0.50
Length of Apron, L (ft)	**7.50**
Width of Culvert, Wo(in)	**30**
Width of Culvert, Wo(ft)	**2.5**
Width of Apron, W(ft)	**5.00**
Where Y = 1/2 Do, Y(ft)	**1.250**
Median Stone Diameter, D50 (ft)	**1.01**
Where Y = Do, Y(ft)	**2.500**
Median Stone Diameter, D50 (ft)	**0.66**

Note: Use D50 of 6 inches minimum

Equations used:
L=3*Do
W=2*Wo
Tw=0.2*Do (If Tw cannot be computed)
Where Y=1/2 Do
D50=(0.0125/Tw)*(q^1.33)
Where Y=Do
D50=(0.0082/Tw)*(q^1.33)



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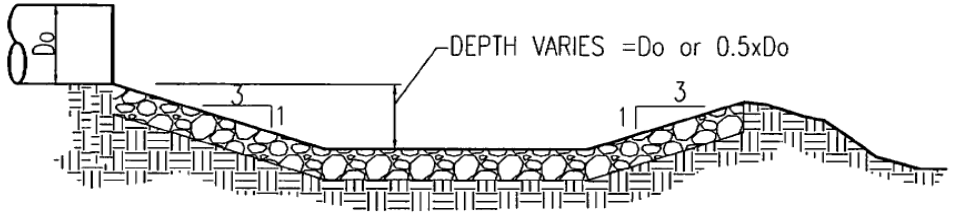

SECTION A–A

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2. No bends or curves at the intersection of the conduit and apron or scour hole will be permitted.
3. There shall be no over fall from the end of the apron to the receiving material.
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DYNAMIC ENGINEERING

SCOUR HOLE DESIGN

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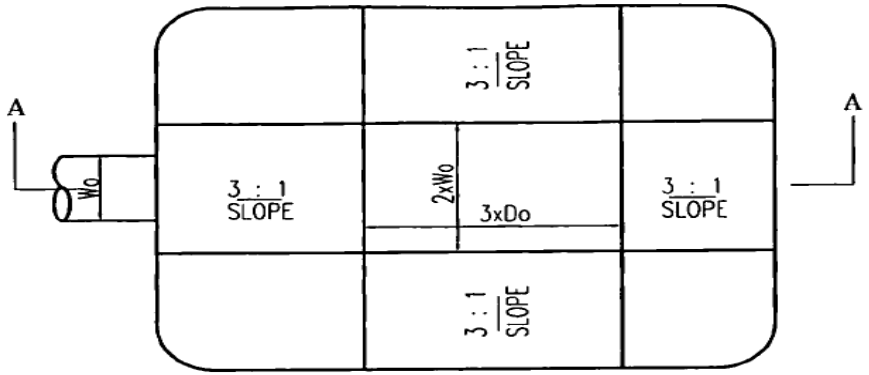
Location:	East Windsor, NJ
Design Storm:	100-year
Computed By:	KW
Checked By:	CC
Date:	4/22/2022

Discharge not in Basin, Therefore Tailwater is less than 0.5 x Do

Discharge Point	Basin D
Q (100-yr storm cfs)	**1.979**
Inside Height of Outlet Culvert, Do (in)	**18**
Inside Height of Outlet Culvert, Do (ft)	1.5
Tailwater (ft), Tw	0.30
Length of Apron, L (ft)	**4.50**
Width of Culvert, Wo(in)	**18**
Width of Culvert, Wo(ft)	**1.5**
Width of Apron, W(ft)	**3.00**
Where Y = 1/2 Do, Y(ft)	**0.750**
Median Stone Diameter, D50 (ft)	**0.06**
Where Y = Do, Y(ft)	**1.500**
Median Stone Diameter, D50 (ft)	**0.04**

Note: Use D50 of 6 inches minimum

Equations used:
L=3*Do
W=2*Wo
Tw=0.2*Do (If Tw cannot be computed)
Where Y=1/2 Do
D50=(0.0125/Tw)*(q^1.33)
Where Y=Do
D50=(0.0082/Tw)*(q^1.33)



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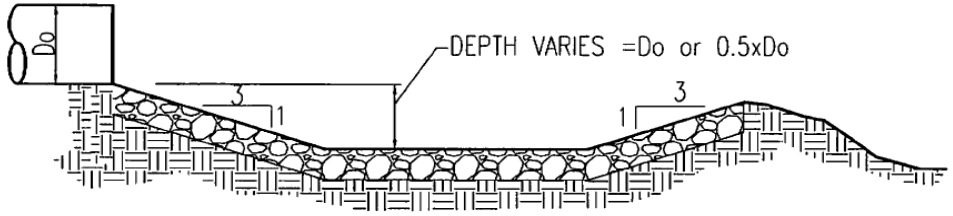

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SOIL RECLASSIFICATION

Test Pit	Surface Elevation	Bottom of Test Pit Elevation	Seasonal High Groundwater / Mottling		Permeability Sample				HSG Classification	Reason for Reclassification
			Depth (feet)	Elevation	Depth (feet)	Elevation	Rate (in/hour)			
							Replicate A	Replicate B		
SPP-1	98.5	86.5	2.3	96.2	1.7	96.8	1.0	1.5	D	Anomoly - Soil profile consistent with adjacent test pits
SPP-2	98	87.8	1.5	96.5	--	--	--		D	Depth to SHWT less than 24"
SPP-3	106	94	1.8	104.2	--	--			D	No Change
SPP-4	102	90	4.3	97.7	2.5	99.5	4.4	6.1	D	No Change
SPP-5	105	93	3	102	2.1	102.9	2.4	3.4	B	No Change
SPP-6	99	88.8	1.8	97.2	--	--			D	Depth to SHWT less than 24"
SPP-7	95	84	0.8	94.2	--	--			D	No Change
SPP-100	97	89	1	96	--	--			D	Depth to SHWT less than 24"
SPP-101	98.2	88.2	1.3	96.9	--	--			D	Depth to SHWT less than 24"
SPP-102	98.8	89.5	1.3	97.5	--	--			D	Depth to SHWT less than 24"
SPP-103	96.4	86.7	1.5	94.9	--	--			D	Depth to SHWT less than 24"
SPP-104	98.5	89.5	1.2	97.3	4	94.5			D	Depth to SHWT less than 24"
SPP-105	96.5	85.8	1.3	95.2	4	92.5			D	No Change
SPP-106	96.3	87	1	95.3	--	--			D	Depth to SHWT less than 24"
SPP-107	100.4	92.4	1.2	99.2	4	96.4			D	No Change
SPP-108	98.3	87.5	1	97.3	--	--			D	Depth to SHWT less than 24"
SPP-109	97.2	87.2	1	96.2	3.8	93.4			D	Depth to SHWT less than 24"
SPP-110	99.3	89.3	1.2	98.1	--	--			D	Depth to SHWT less than 24"
SPP-111	96.6	86.8	1.8	94.8	3	93.6			D	Depth to SHWT less than 24"
SPP-112	98.5	90.5	1.7	96.8	--	--			D	Depth to SHWT less than 24"
SPP-113	101.2	93	1	100.2	4.7	96.5			D	Depth to SHWT less than 24"
SPP-114	97.3	87.3	1	96.3	3	94.3			D	Depth to SHWT less than 24"
SPP-115	99.6	89.6	0.8	98.8	6	93.6			D	Depth to SHWT less than 24"
SPP-116	99.9	89.9	0.8	99.1	--	--			D	No Change
SPP-117	96.1	86.1	2.3	93.8	1.5	94.6	0.7	0.8	D	Anomoly - Soil profile consistent with adjacent test pits
SPP-118	97.3	85.3	1	96.3	5.5	91.8			D	Depth to SHWT less than 24"
SPP-119	95	88	0.3	94.7	4.7	90.3			D	Depth to SHWT less than 24"
SPP-120	98.5	86.5	1	97.5	--	--			D	Depth to SHWT less than 24"
SPP-121	97.3	87.3	1.4	95.9	5	92.3			D	Depth to SHWT less than 24"
SPP-122	98.2	88.2	1	97.2	4	94.2			D	Depth to SHWT less than 24"
SPP-123	98.1	88.1	0	98.1	3.3	94.8			D	Depth to SHWT less than 24"
SPP-124	98.1	86.1	0.8	97.3	--	--			D	Depth to SHWT less than 24"
SPP-125	98.6	87.4	1.2	97.4	4.2	94.4			D	Depth to SHWT less than 24"
SPP-126	96.2	85.2	1	95.2	3	93.2			D	Depth to SHWT less than 24"
SPP-127	97.6	85.6	1	96.6	4	93.6			D	Depth to SHWT less than 24"
SPP-128	95.7	89.7	0.8	94.9	--	--			D	Depth to SHWT less than 24"
SPP-129	95.4	88.4	1.2	94.2	--	--			D	Depth to SHWT less than 24"
SPP-130	96.8	84.8	0.7	96.1	--	--			D	Depth to SHWT less than 24"
SPP-131	95	84	1.3	93.7	6	89			D	Depth to SHWT less than 24"
SPP-132	95.3	85.3	1	94.3	--	--			D	Depth to SHWT less than 24"
SPP-133	96.3	84.3	2	94.3	1.3	95	3	2.2	D	Depth to SHWT less than 24"
SPP-134	100.1	88.1	1	99.1	--	--	--		D	Depth to SHWT less than 24"
SPP-135	102.6	94.8	2	100.6	1.3	101.3	3.9	3.5	D	Depth to SHWT less than 24"
SPP-136	100.6	93.3	1	99.6	--	--			D	Depth to SHWT less than 24"
SPP-137	99.4	87.4	1.3	98.1	--	--			D	Depth to SHWT less than 24"
SPP-138	101.9	89.9	1.4	100.5	--	--			D	Depth to SHWT less than 24"
SPP-139	100	90.3	1.4	98.6	--	--			D	Depth to SHWT less than 24"
SPP-140	101.2	91.2	0.8	100.4	--	--			D	No Change
SPP-141	101.8	89.8	1.2	100.6	7.2	94.6			D	No Change
SPP-142	101.5	89.5	0.8	100.7	--	--			D	No Change
SPP-143	101.5	89.5	1	100.5	8	93.5			D	No Change
SPP-144	100.3	88.3	0.8	99.5	--	--			D	Depth to SHWT less than 24"
SPP-145	100.9	88.9	1	99.9	5	95.9			D	Depth to SHWT less than 24"
SPP-146	94.7	84.7	1.5	93.2	--	--			D	Depth to SHWT less than 24"
SPP-147	95.6	88.4	0.8	94.8	--	--			D	Depth to SHWT less than 24"
SPP-148	96.5	88.5	1.7	94.8	1.3	95.2			D	Depth to SHWT less than 24"
SPP-149	97.3	89.3	1	96.3	--	--			D	Depth to SHWT less than 24"

Test Pit	Surface Elevation	Bottom of Test Pit Elevation	Seasonal High Groundwater / Mottling		Permeability Sample				HSG Classification	Reason for Reclassification
			Depth (feet)	Elevation	Depth (feet)	Elevation	Rate (in/hour)			
							Replicate A	Replicate B		
SPP-1	98.5	86.5	2.3	96.2	1.7	96.8	1.0	1.5	D	Anomaly - Soil profile consistent with adjacent test pits
SPP-2	98	87.8	1.5	96.5	--	--	--		D	Depth to SHWT less than 24"
SPP-3	106	94	1.8	104.2	--	--			D	No Change
SPP-4	102	90	4.3	97.7	2.5	99.5	4.4	6.1	D	No Change
SPP-5	105	93	3	102	2.1	102.9	2.4	3.4	B	No Change
SPP-6	99	88.8	1.8	97.2	--	--			D	Depth to SHWT less than 24"
SPP-7	95	84	0.8	94.2	--	--			D	No Change
SPP-100	97	89	1	96	--	--			D	Depth to SHWT less than 24"
SPP-101	98.2	88.2	1.3	96.9	--	--			D	Depth to SHWT less than 24"
SPP-102	98.8	89.5	1.3	97.5	--	--			D	Depth to SHWT less than 24"
SPP-103	96.4	86.7	1.5	94.9	--	--			D	Depth to SHWT less than 24"
SPP-104	98.5	89.5	1.2	97.3	4	94.5			D	Depth to SHWT less than 24"
SPP-105	96.5	85.8	1.3	95.2	4	92.5			D	No Change
SPP-106	96.3	87	1	95.3	--	--			D	Depth to SHWT less than 24"
SPP-107	100.4	92.4	1.2	99.2	4	96.4			D	No Change
SPP-108	98.3	87.5	1	97.3	--	--			D	Depth to SHWT less than 24"
SPP-109	97.2	87.2	1	96.2	3.8	93.4			D	Depth to SHWT less than 24"
SPP-110	99.3	89.3	1.2	98.1	--	--			D	Depth to SHWT less than 24"
SPP-111	96.6	86.8	1.8	94.8	3	93.6			D	Depth to SHWT less than 24"
SPP-112	98.5	90.5	1.7	96.8	--	--			D	Depth to SHWT less than 24"
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SPP-141	101.8	89.8	1.2	100.6	7.2	94.6			D	No Change
SPP-142	101.5	89.5	0.8	100.7	--	--			D	No Change
SPP-143	101.5	89.5	1	100.5	8	93.5			D	No Change
SPP-144	100.3	88.3	0.8	99.5	--	--			D	Depth to SHWT less than 24"
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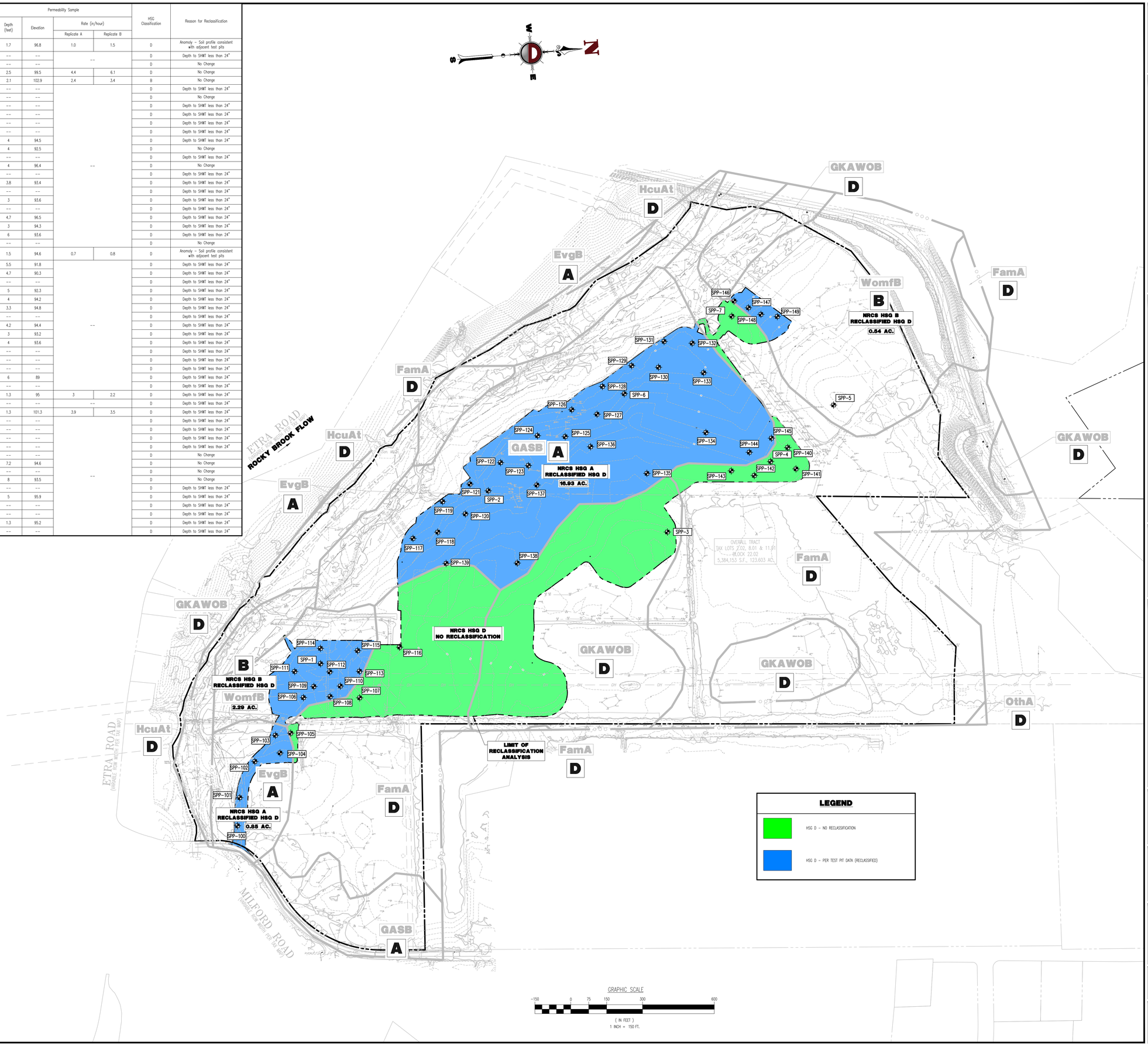
SPP-149	97.3	89.3	1	96.3	--	--			D	Depth to SHWT less than 24"



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REV.	DATE	COMMENTS	BY

THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

DRAWN BY: ALPH | DESIGNED BY: JH | CHKED BY: RPF | CHKED BY: -

PROJECT: **PVP EXIT 8, LLC**
PROPOSED WAREHOUSE DEVELOPMENT
BLOCK 22.02, LOTS 2.02, 8.01, 11.01
TOWNSHIP OF EAST WINDSOR, MERCER COUNTY, NEW JERSEY

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ROBERT P. FREUD
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 41938

JEFFREY HABERMAN
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 53560

TITLE:
SOIL RECLASSIFICATION EXHIBIT

SCALE: (V) 1"=150' | DATE: 01/22/2021
PROJECT No: 0091-99-013
SHEET No: 1 OF 1 | Rev. #: 0

Plotted: 01/28/21 - 3:21 PM By: mayes
File: P:\2021PC PROJECTS\0091 Paul Prohelo\99-013 East Windsor\Dwg\AutoCAD Plans\Soils Reclassification Exhibit\0009199013SREC.dwg, ---> SOIL RECLASSIFICATION EXHIBIT

LOW IMPACT DEVELOPMENT CHECKLIST

New Jersey Stormwater Best Management Practices Manual

February 2004

APPENDIX A

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

According to the NJDEP Stormwater Management Rules at N.J.A.C. 7:8, the groundwater recharge, stormwater quality, and stormwater quantity standards established by the Rules for major land development projects must be met by incorporating nine specific nonstructural stormwater management strategies into the project's design to the maximum extent practicable.

To accomplish this, the Rules require an applicant seeking land development approval from a regulatory board or agency to identify those nonstructural strategies that have been incorporated into the project's design. In addition, if an applicant contends that it is not feasible to incorporate any of the specific strategies into the project's design, particularly for engineering, environmental, or safety reasons, the Rules further require that the applicant provide a basis for that contention.

This checklist has been prepared to assist applicants, site designers, and regulatory boards and agencies in ensuring that the nonstructural stormwater management requirements of the Rules are met. It provides an applicant with a means to identify both the nonstructural strategies incorporated into the development's design and the specific low impact development BMPs (LID-BMPs) that have been used to do so. It can also help an applicant explain the engineering, environmental, and/or safety reasons that a specific nonstructural strategy could not be incorporated into the development's design.

The checklist can also assist municipalities and other land development review agencies in the development of specific requirements for both nonstructural strategies and LID-BMPs in zoning and/or land use ordinances and regulations. As such, where requirements consistent with the Rules have been adopted, they may supersede this checklist.

Finally, the checklist can be used during a pre-design meeting between an applicant and pertinent review personnel to discuss local nonstructural strategies and LID-BMPs requirements in order to optimize the development's nonstructural stormwater management design.

Since this checklist is intended to promote the use of nonstructural stormwater management strategies and provide guidance in their incorporation in land development projects, municipalities are permitted to revise it as necessary to meet the goals and objectives of their specific stormwater management program and plan within the limits of N.J.A.C. 7:8.

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

Municipality: Township of East Windsor

County: Mercer County Date: January 2021

Review board or agency: Planning Board

Proposed land development name: Proposed Warehouse Development

Lot(s): 2.02, 8.01 & 11.01 Block(s): 22.02

Project or application number: TBD

Applicant's name: PVP Exit 8, LLC

Applicant's address: 105 Eisenhower Parkway

Roseland, NJ 07068

Telephone: 973-325-1300 Fax: 973-325-0376

Email address: paulp@pvpassoc.com

Designer's name: Dynamic Engineering Consultants, PC - Robert P. Freud, PE

Designer's address: 1904 Main Street

Lake Como, NJ 07719

Telephone: 732-974-0198 Fax: 732-974-3521

Email address: rfreud@dynamicec.com

Part 1: Description of Nonstructural Approach to Site Design

In narrative form, provide an overall description of the nonstructural stormwater management approach and strategies incorporated into the proposed site's design. Attach additional pages as necessary. Details of each nonstructural strategy are provided in Part 3 below.

Please see Section XI: Non-Structural Stormwater Management Strategies

in the accompanying report.

Part 2: Review of Local Stormwater Management Regulations

Title and date of stormwater management regulations used in development design:

Stormwater Management Regulations NJAC 7:8

Do regulations include nonstructural requirements? Yes: ✓ No: _____

If yes, briefly describe: Please refer to Section XI: Non-Structural Stormwater Management Strategies of the Stormwater Management and Water Quality Analysis, dated April 2022

List LID-BMPs prohibited by local regulations: N/A

Pre-design meeting held? Yes: _____ Date: _____ No: ✓

Meeting held with: _____

Pre-design site walk held? Yes: _____ Date: _____ No: ✓

Site walk held with: _____

Other agencies with stormwater review jurisdiction:

Name: Mercer County Planning Board

Required approval: Site Plan Approval

Name: Mercer County Soil Conservation District

Required approval: Soil Erosion & Sediment Control Certification

Name: NJDEP

Required approval: Flood Hazard Verification, Flood Hazard Area Individual Permit, Freshwater Wetlands General Permits 6, 10A & 11, Freshwater Wetlands Transition Area Averaging

Name: DRCC

Required Approval: Site Plan Approval

Part 3: Nonstructural Strategies and LID-BMPs in Design

3.1 Vegetation and Landscaping

Effective management of both existing and proposed site vegetation can reduce a development's adverse impacts on groundwater recharges and runoff quality and quantity. This section of the checklist helps identify the vegetation and landscaping strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to help maintain existing recharge rates and/or minimize or prevent increases in runoff quantity and pollutant loading.

A. Has an inventory of existing site vegetation been performed? Yes: ✓ No: _____

If yes, was this inventory a factor in the site's layout and design? Yes: ✓ No: _____

B. Does the site design utilize any of the following nonstructural LID-BMPs?

Preservation of natural areas? Yes: ✓ No: _____ If yes, specify % of site: 71.7%

Native ground cover? Yes: ✓ No: _____ If yes, specify % of site: 71.7%

Vegetated buffers? Yes: ✓ No: _____ If yes, specify % of site: 71.7%

C. Do the land development regulations require these nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: ✓ If yes, specify % of site: _____

Native ground cover? Yes: _____ No: ✓ If yes, specify % of site: _____

Vegetated buffers? Yes: _____ No: ✓ If yes, specify % of site: _____

D. If vegetated filter strips or buffers are utilized, specify their functions: N/A

Reduce runoff volume increases through lower runoff coefficient: Yes: _____ No: _____

Reduce runoff pollutant loads through runoff treatment: Yes: _____ No: _____

Maintain groundwater recharge by preserving natural areas: Yes: _____ No: _____

3.2 Minimize Land Disturbance

Minimizing land disturbance is a nonstructural LID-BMP that can be applied during both the development's construction and post-construction phases. This section of the checklist helps identify those land disturbance strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to minimize land disturbance and the resultant change in the site's hydrologic character.

A. Have inventories of existing site soils and slopes been performed? Yes: ✓ No: _____

If yes, were these inventories factors in the site's layout and design? Yes: ✓ No: _____

B. Does the development's design utilize any of the following nonstructural LID-BMPs?

Restrict permanent site disturbance by land owners? Yes: _____ No: ✓

If yes, how: _____

Restrict temporary site disturbance during construction? Yes: ✓ No: _____

If yes, how: Silt fence and tree protection will be utilized to limit the construction activities to within the limits of disturbance area.

Consider soils and slopes in selecting disturbance limits? Yes: ✓ No: _____

If yes, how: The site development is designed to maintain the existing drainage patterns.

C. Specify percentage of site to be cleared: 28.6% Regraded: 28.6%

D. Specify percentage of cleared areas done so for buildings: 13.4%

For driveways and parking: 12.3 % For roadways: N/A

E. What design criteria and/or site changes would be required to reduce the percentages in C and D above?

Reduce the size of the proposed parking area, however, a significant number of stalls are required per the municipal ordinance.

F. Specify site's hydrologic soil group (HSG) percentages:

HSG A: 0% HSG B: 0% HSG C: 0% HSG D: 100%

G. Specify percentage of each HSG that will be permanently disturbed:

HSG A: N/A HSG B: N/A HSG C: N/A HSG D: 28.6%

H. Locating site disturbance within areas with less permeable soils (HSG C and D) and minimizing disturbance within areas with greater permeable soils (HSG A and B) can help maintain groundwater recharge rates and reduce runoff volume increases. In light of the HSG percentages in F and G above, what other practical measures if any can be taken to achieve this?

The entirety of the site contains HSG D soils. Therefore this section is not applicable.

I. Does the site include Karst topography? Yes: _____ No: ✔

If yes, discuss measures taken to limit Karst impacts:

3.3 Impervious Area Management

New impervious surfaces at a development site can have the greatest adverse effect on groundwater recharge and stormwater quality and quantity. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into a proposed development's design to comprehensively manage the extent and impacts of new impervious surfaces.

A. Specify impervious cover at site: Existing: N/A (0%) Proposed: 1,384,863 SF (25.7%)

B. Specify maximum site impervious coverage allowed by regulations: 75%

C. Compare proposed street cartway widths with those required by regulations:

Type of Street	Proposed Cartway Width (feet)	Required Cartway Width (feet)
Residential access – low intensity	N/A	N/A
Residential access – medium intensity	N/A	N/A
Residential access – high intensity with parking	N/A	N/A
Residential access – high intensity without parking	N/A	N/A
Neighborhood	N/A	N/A
Minor collector – low intensity without parking	N/A	N/A
Minor collector – with one parking lane	N/A	N/A
Minor collector – with two parking lanes	N/A	N/A
Minor collector – without parking	N/A	N/A
Major collector	N/A	N/A

D. Compare proposed parking space dimensions with those required by regulations:

Proposed: 9' x 18' & 10' x 20' Regulations: 9' x 18' (162 SF)

E. Compare proposed number of parking spaces with those required by regulations:

Proposed: 773 Regulations: 820

F. Specify percentage of total site impervious cover created by buildings: 13.4%

By driveways and parking: 12.3 % By roadways: N/A

G. What design criteria and/or site changes would be required to reduce the percentages in F above?

Reduce the size of the proposed parking area, however, a significant number of stalls are required per the municipal ordinance.

H. Specify percentage of total impervious area that will be unconnected:

Total site: 0% Buildings: 0% Driveways and parking: 0% Roads: 0%

I. Specify percentage of total impervious area that will be porous:

Total site: 0% Buildings: 0% Driveways and parking: 0% Roads: 0%

J. Specify percentage of total building roof area that will be vegetated: 0%

K. Specify percentage of total parking area located beneath buildings: 0%

L. Specify percentage of total parking located within multi-level parking deck: 0%

3.4 Time of Concentration Modifications

Decreasing a site's time of concentration (Tc) can lead directly to increased site runoff rates which, in turn, can create new and/or aggravate existing erosion and flooding problems downstream. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to effectively minimize such Tc decreases.

When reviewing Tc modification strategies, it is important to remember that a drainage area's Tc should reflect the general conditions throughout the area. As a result, Tc modifications must generally be applied throughout a drainage area, not just along a specific Tc route.

A. Specify percentage of site's total stormwater conveyance system length that will be:

Storm sewer: +/- 5% Vegetated swale: 0% Natural channel: 0%

Stormwater management facility: +/- 95% Other: N/A

Note: the total length of the stormwater conveyance system should be measured from the site's downstream property line to the downstream limit of sheet flow at the system's headwaters.

B. What design criteria and/or site changes would be required to reduce the storm sewer percentages and increase the vegetated swale and natural channel percentages in A above?

The site would need to be elevated greatly from existing conditions.

This would also result in a high quantity of fill.

C. In conveyance system subareas that have overland or sheet flow over impervious surfaces or turf grass, what practical and effective site changes can be made to:

Decrease overland flow slope: Site grading has been designed to decrease overland flow slope to the maximum extent feasible while minimizing the amount of disturbance.

Increase overland flow roughness: N/A

3.5 Preventative Source Controls

The most effective way to address water quality concerns is by pollution prevention. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to reduce the exposure of pollutants to prevent their release into the stormwater runoff.

A. Trash Receptacles

Specify the number of trash receptacles provided: TBD

Specify the spacing between the trash receptacles: TBD

Compare trash receptacles proposed with those required by regulations:

Proposed: TBD Regulations: TBD

B. Pet Waste Stations

Specify the number of pet waste stations provided: Zero (0)

Specify the spacing between the pet waste stations: N/A

Compare pet waste stations proposed with those required by regulations:

Proposed: Zero (0) Regulations: N/A

C. Inlets, Trash Racks, and Other Devices that Prevent Discharge of Large Trash and Debris

Specify percentage of total inlets that comply with the NJPDES storm drain inlet criteria: 100%

D. Maintenance

Specify the frequency of the following maintenance activities:

Street sweeping: Proposed: At owner's discretion Regulations: Not specified

Litter collection: Proposed: At owner's discretion Regulations: Not specified

Identify other stormwater management measures on the site that prevent discharge of large trash and debris:

The basins have been designed with trash racks on the outlet control structures to prevent discharge of large trash and debris.

E. Prevention and Containment of Spills

Identify locations where pollutants are located on the site, and the features that prevent these pollutants from being exposed to stormwater runoff:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Part 4: Compliance with Nonstructural Requirements of NJDEP Stormwater Management Rules

1. Based upon the checklist responses above, indicate which nonstructural strategies have been incorporated into the proposed development's design in accordance with N.J.A.C. 7:8-5.3(b):

No.	Nonstructural Strategy	Yes	No
1.	Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.	✓	
2.	Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.	✓	
3.	Maximize the protection of natural drainage features and vegetation.	✓	
4.	Minimize the decrease in the pre-construction time of concentration.	✓	
5.	Minimize land disturbance including clearing and grading.	✓	
6.	Minimize soil compaction.	✓	
7.	Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.	✓	
8.	Provide vegetated open-channel conveyance systems discharge into and through stable vegetated areas.	✓	
9.	Provide preventative source controls.	✓	

2. For those strategies that have not been incorporated into the proposed development's design, provide engineering, environmental, and/or safety reasons. Attached additional pages as necessary.

N/A

STORMWATER COLLECTION SYSTEM CALCULATIONS (PIPE SIZING)

DYNAMIC ENGINEERING

Stormwater Collection System Calculations

Project: Proposed Warehouse Develoment
Job #: 0091-99-013
Location: East Windsor
Design Storm: 25 YR
*Basin outfalls have been designed for the 100 YR storm

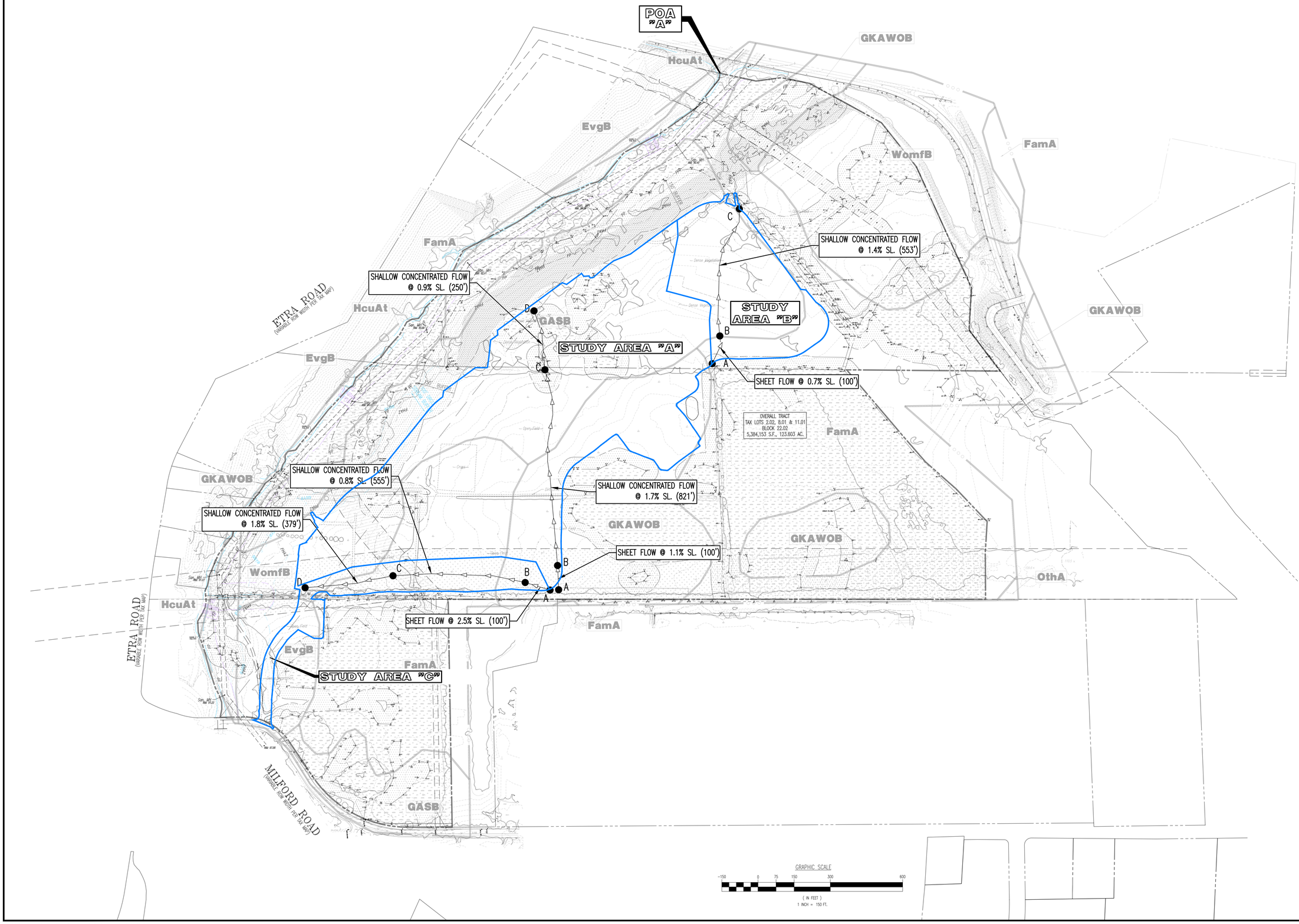
Computed By: KW
Checked By: CC
Date: 4/18/2022

NOTES:
1) Design method used is Rational Method, unless otherwise noted.
2) Refer to Weighted Runoff Coefficient table for calculation of incremental areas and C values

PIPE SECTION		SUBCATCHMENT AREA	INCREMENTAL		CUMULATIVE	TIME OF CONCENTRATION			I	PEAK RUNOFF		PIPING INPUT			PIPING DATA		
FROM	TO	Area (Acres)	"C"	A x C Ac	A x C (acres)	Tc to Inlet (min)	Tc in Pipe (min.)	Final Tc (min)	(In/Hr)	Q to Inlet (CFS)	Q cum. for Pipe (CFS)	Dia. (In)	Length (Ft)	Man. "n"	Slope (ft/ft)	Pipe Capacity (cfs)	Pipe Velocity (fps)
Inlet A1	Inlet A2	0.28	0.75	0.21	0.21	10.00	0.75	10.00	6.80	1.43	1.43	15	168.0	0.013	0.0050	4.57	3.73
Inlet A2	Inlet A3	0.16	0.88	0.14	0.35	10.00	1.02	10.75	6.68	0.94	2.34	15	228.0	0.013	0.0050	4.57	3.73
Inlet A7a	Inlet A7b	0.09	0.86	0.08	0.08	10.00	0.27	10.00	6.80	0.54	0.54	15	61.0	0.013	0.0050	4.57	3.73
Inlet A7b	Inlet A7c	0.20	0.90	0.18	0.26	10.00	0.38	10.27	6.80	1.22	1.77	15	86.0	0.013	0.0050	4.57	3.73
Inlet A7c	Inlet A8	0.33	0.94	0.31	0.57	10.00	0.26	10.65	6.68	2.07	3.81	15	58.0	0.013	0.0050	4.57	3.73
Inlet A9	Inlet A8	0.27	0.86	0.23	0.23	10.00	0.40	10.00	6.80	1.56	1.56	15	89.0	0.013	0.0050	4.57	3.73
Inlet A8	Inlet A3	0.41	0.94	0.39	1.19	10.00	0.42	10.91	6.68	2.61	7.95	24	127.0	0.013	0.0050	15.99	5.09
Inlet A3	Inlet A4	0.23	0.78	0.18	1.72	10.00	0.67	11.77	6.44	1.16	11.08	24	205.0	0.013	0.0050	15.99	5.09
Inlet A4	Inlet A5	0.14	0.93	0.13	1.85	10.00	0.19	12.44	6.32	0.82	11.69	24	57.0	0.013	0.0050	15.99	5.09
Inlet A5	Inlet A6	0.15	0.86	0.13	1.98	10.00	0.26	12.63	6.20	0.81	12.28	24	79.0	0.013	0.0050	15.99	5.09
Inlet A6	Basin A	0.17	0.74	0.13	2.11	10.00	0.57	12.89	6.20	0.81	13.08	24	174.0	0.013	0.0050	15.99	5.09
Inlet A10	Inlet A11	0.39	0.93	0.36	0.36	10.00	0.34	10.00	6.80	2.45	2.45	15	77.0	0.013	0.0050	4.57	3.73
Inlet A13	Inlet A12	0.43	0.83	0.36	0.36	10.00	0.21	10.00	6.80	2.45	2.45	15	47.0	0.013	0.0050	4.57	3.73
Inlet A12	Inlet A11	0.13	0.90	0.12	0.48	10.00	0.21	10.21	6.80	0.82	3.26	15	48.0	0.013	0.0050	4.57	3.73
Inlet A15	Inlet A14	0.27	0.83	0.22	0.22	10.00	0.28	10.00	6.80	1.50	1.50	15	62.0	0.013	0.0050	4.57	3.73
Inlet A14	Inlet A11	0.11	0.89	0.10	0.32	10.00	0.39	10.28	6.80	0.68	2.18	15	87.0	0.013	0.0050	4.57	3.73
Inlet A11	Basin A	0.29	0.93	0.27	1.43	10.00	0.01	10.67	6.68	1.80	9.55	24	4.0	0.013	0.0050	15.99	5.09
OCS A1	MH 89										18.97	30	17.0	0.013	0.0040	25.94	5.29
MH 89	MH 90										18.97	30	217.0	0.013	0.0035	24.26	4.94
MH 90	WQD 2										18.64	30	217.0	0.013	0.0035	24.26	4.94
WQD 2	HWA										17.97	30	73.0	0.013	0.0174	54.10	11.03
Inlet B1	Inlet B2	0.31	0.87	0.27	0.27	10.00	0.27	10.00	6.80	1.84	1.84	15	60.0	0.013	0.0050	4.57	3.73
Inlet B2	Inlet B3	0.10	0.93	0.09	0.36	10.00	0.34	10.27	6.80	0.61	2.45	15	77.0	0.013	0.0050	4.57	3.73
Inlet B4	Inlet B3	0.28	0.90	0.25	0.25	10.00	0.63	10.00	6.80	1.70	1.70	15	141.0	0.013	0.0050	4.57	3.73
Inlet B3	Basin B1	0.15	0.87	0.13	0.74	10.00	0.23	10.63	6.68	0.87	4.94	18	58.0	0.013	0.0050	7.43	4.21
Inlet B5	Inlet B6	0.22	0.93	0.20	0.20	10.00	0.41	10.00	6.80	1.36	1.36	15	91.0	0.013	0.0050	4.57	3.73
Inlet B6	Inlet B7	0.20	0.84	0.17	0.37	10.00	0.39	10.41	6.80	1.16	2.52	15	87.0	0.013	0.0050	4.57	3.73
Inlet B8	Inlet B7	0.19	0.86	0.16	0.16	10.00	0.16	10.00	6.80	1.09	1.09	15	35.0	0.013	0.0050	4.57	3.73
Inlet B7	Inlet B9	0.14	0.88	0.12	0.65	10.00	0.62	10.80	6.68	0.80	4.34	15	139.0	0.013	0.0050	4.57	3.73
Inlet B9	Basin B1	0.44	0.94	0.41	1.06	10.00	0.10	11.42	6.56	2.69	6.95	18	26.0	0.013	0.0050	7.43	4.21
Inlet B10	Basin B1	0.67	0.93	0.62	0.62	10.00	0.02	10.00	6.80	4.22	4.22	15	8.0	0.013	0.0182	8.71	7.10
Inlet B11	Inlet B13	0.17	0.73	0.12	0.12	10.00	0.75	10.00	6.80	0.82	0.82	15	136.0	0.013	0.0033	3.71	3.02
Inlet B12	Inlet B13	0.29	0.82	0.24	0.24	10.00	0.58	10.00	6.80	1.63	1.63	15	105.0	0.013	0.0033	3.71	3.02
Inlet B13	Inlet B14	0.30	0.80	0.24	0.60	10.00	0.53	10.75	6.68	1.60	4.01	18	109.0	0.013	0.0033	6.03	3.41
Inlet B14	Inlet B16	0.25	0.81	0.20	0.80	10.00	0.50	11.28	6.56	1.31	5.25	18	102.0	0.013	0.0033	6.03	3.41
Inlet B15	Inlet B16	0.26	0.84	0.22	0.22	10.00	0.27	10.00	6.80	1.50	1.50	15	49.0	0.013	0.0033	3.71	3.02
Inlet B16	Inlet B17	0.23	0.84	0.19	1.21	10.00	0.59	11.78	6.44	1.22	7.79	24	147.0	0.013	0.0033	12.99	4.14
Inlet B17	Inlet B18	0.55	0.88	0.48	1.69	10.00	0.92	12.37	6.32	3.03	10.68	24	229.0	0.013	0.0033	12.99	4.14
Inlet B18	Inlet B19	0.54	0.88	0.48	2.17	10.00	0.13	13.29	6.08	2.92	13.19	30	36.0	0.013	0.0033	23.56	4.80
Inlet B19	Basin B1	0.31	0.88	0.27	2.44	10.00	0.50	13.42	6.08	1.64	14.84	30	144.0	0.013	0.0033	23.56	4.80
OCS B1	WQD 1										17.34	24	24.0	0.013	0.0500	50.57	16.11
WQD 1	MH 91										17.34	24	24.0	0.013	0.0500	50.57	16.11
MH 91	MH 87										17.34	24	46.0	0.013	0.0500	50.57	16.11
OCS B2	MH 87										2.24	24	74.0	0.013	0.0500	50.57	16.11
MH 87	HW 1										19.58	24	54.0	0.013	0.0080	20.23	6.44
Inlet C1	Basin C1	0.54	0.63	0.34	0.34	10.00	0.69	10.00	6.80	2.31	2.31	15	154.0	0.013	0.0050	4.57	3.73
Inlet C2	Basin C1	0.72	0.85	0.61	0.61	10.00	0.11	10.00	6.80	4.15	4.15	15	25.0	0.013	0.0050	4.57	3.73
Inlet C3	Basin C1	0.62	0.95	0.59	0.59	10.00	0.10	10.00	6.80	4.01	4.01	15	23.0	0.013	0.0050	4.57	3.73
Inlet C4	Basin C1	0.68	0.95	0.65	0.65	10.00	0.06	10.00	6.80	4.42	4.42	15	14.0	0.013	0.0050	4.57	3.73
Inlet C5	Basin C1	0.68	0.95	0.65	0.65	10.00	0.06	10.00	6.80	4.42	4.42	15	14.0	0.013	0.0050	4.57	3.73
Inlet C6	Basin C1	0.54	0.95	0.51	0.51	10.00	0.07	10.00	6.80	3.47	3.47	15	16.0	0.013	0.0050	4.57	3.73
Inlet C7	Basin C1	0.48	0.95	0.46	0.46	10.00	0.07	10.00	6.80	3.13	3.13	15	16.0	0.013	0.0050	4.57	3.73
Inlet C8	Basin C1	0.48	0.95	0.46	0.46	10.00	0.07	10.00	6.80	3.13	3.13	15	16.0	0.013	0.0050	4.57	3.73
Inlet C9	Basin C1	0.48	0.91	0.44	0.44	10.00	0.06	10.00	6.80	2.99	2.99	15	13.0	0.013	0.0050	4.57	3.73
Inlet C10	Basin C1	0.41	0.77	0.32	0.32	10.00	0.62	10.00	6.80	2.18	2.18	15	138.0	0.013	0.0050	4.57	3.73
OCS C1	WQD 3										16.59	30	55.0	0.013	0.0052	29.57	6.03
WQD 3	MH C1A										16.59	30	67.0	0.013	0.0050	29.00	5.91
OCS C2	MH C2A										23.87	30	116.0	0.013	0.0051	29.29	5.97
MH C2A	MH C1A										23.87	30	20.0	0.013	0.0050	29.00	5.91
MH C1A	HWC										40.46	30	50.0	0.013	0.0200	58.00	11.82
Inlet D1	MTD M3	0.29	0.95	0.28	0.28	10.00	0.30	10.00	6.80	1.90	1.90	15	110.0	0.013	0.0131	7.39	6.02
MTD M3	Basin D	0.00	0.95	0.00	0.28	10.00	0.04	10.30	6.80	0.00	1.90	18	16.0	0.013	0.0131	12.02	6.81

PIPE SECTION		SUBCATCHMENT AREA	INCREMENTAL		CUMULATIVE	TIME OF CONCENTRATION			I	PEAK RUNOFF		PIPING INPUT			PIPING DATA		
FROM	TO	Area (Acres)	"C"	A x C Ac	A x C (acres)	Tc to Inlet (min)	Tc in Pipe (min.)	Final Tc (min)	(In/Hr)	Q to Inlet (CFS)	Q cum. for Pipe (CFS)	Dia. (In)	Length (Ft)	Man. "n"	Slope (ft/ft)	Pipe Capacity (cfs)	Pipe Velocity (fps)
OCS D1A	HW 2										2.04	18	7.0	0.013	0.0296	18.07	10.23

DRAINAGE AREA & INLET AREA MAPS



REV.	DATE	COMMENTS	DRAWN BY
2	12/14/22	PER TOWNSHIP SUBMISSION	ALPH
1	04/22/22	REV. PER ARCHAEOLOGICAL TESTING & CLIENT COMMENTS	ALPH
-	-	-	RP

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DRAWN BY: ALPH | CHKD BY: JH | CHKD BY: RPF | CHKD BY: -

PROJECT: **PVP EXIT 8, LLC**
PROPOSED WAREHOUSE DEVELOPMENT
BLOCK 22.02, LOTS 2.02, 8.01, 11.01
& BLOCK 23.02, LOT 1.01
TOWNSHIP OF EAST WINDSOR, MERCER COUNTY, NEW JERSEY

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NEW JERSEY LICENSE No. 41938

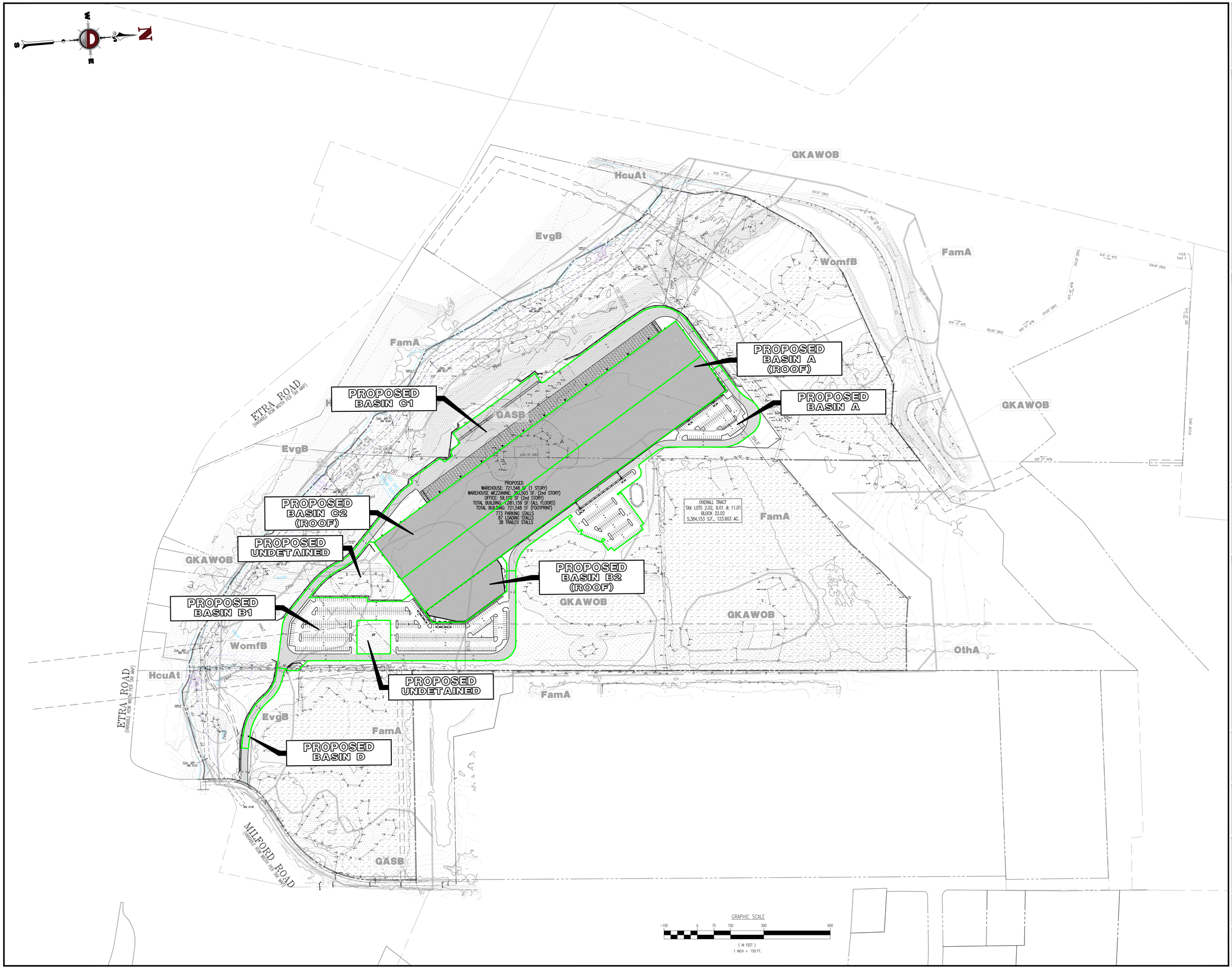
JEFFREY HABERMAN
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 53560

TITLE:
EXISTING DRAINAGE AREA MAP

SCALE: (H) 1"=150' (V) | DATE: 1/22/2021
PROJECT No: 0091-99-013

SHEET No: 1 OF 3 | Rev. #: 2

Plotted: 12/15/22 - 10:44 AM By: rstyes
File: P:\DEC\PC PROJECTS\0091 Paul Profeta\99-013 East Windsor\Dwg\DA Maps\0009199013ESDA02.dwg, ----> EXISTING DRAINAGE AREA MAP



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REV.	DATE	COMMENTS		
2	12/14/22	REV. PER TOWNSHIP SUBMISSION	ALPH	RP
1	04/22/22	REV. PER ARCHAEOLOGICAL TESTING & ALBNT COMMENTS	ALPH	

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DRAWN BY: ALPH | DESIGNED BY: JH | CHKED BY: RPF | CHKED BY: –

PROJECT: **PVP EXIT 8, LLC**
PROPOSED WAREHOUSE DEVELOPMENT
BLOCK 22.02, LOTS 2.02, 8.01, 11.01
COUNTY OF MERCER
TOWNSHIP OF EAST WINDSOR, MERCER COUNTY, NEW JERSEY

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JEFFREY HABERMAN
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 53560

TITLE:
PROPOSED DRAINAGE AREA MAP

SCALE: (H) 1"=150' (V) | DATE: 1/22/2021
PROJECT No: 0091-99-013

SHEET No: 2 OF 3 | Rev. #: 2

Plotted: 12/15/22 – 10:44 AM By: greene
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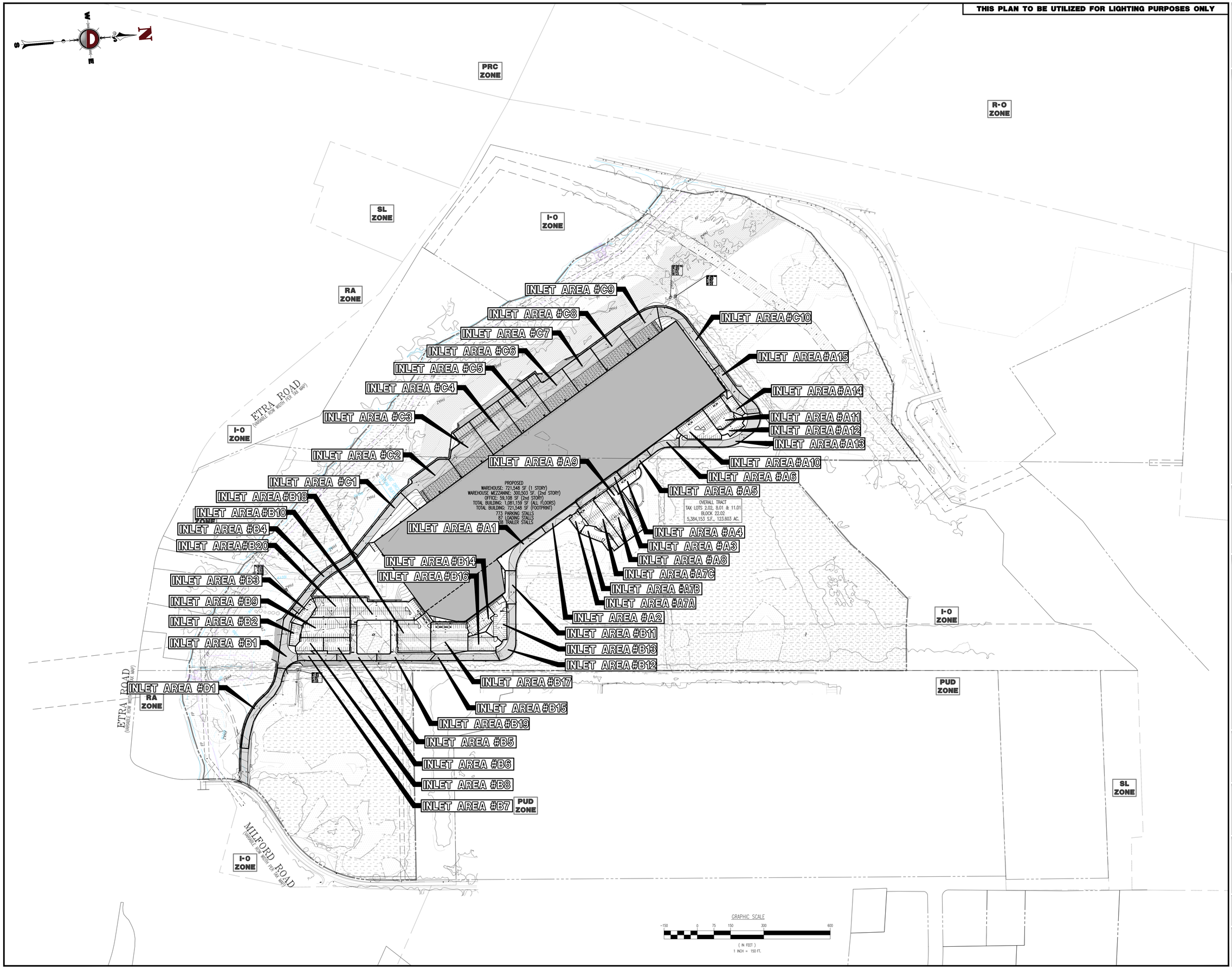

GRAPHIC SCALE

-150 0 75 150 300 600

(IN FEET)

1 INCH = 150 FT.

Plotted: 12/15/22 - 10:44 AM By: crewes
File: P:\SECPC PROJECTS\0091 Paul Profeta\99-013 East Windsor\Dwg\DA Maps\0009199013DAM2.dwg, ---> INLET AREA MAP

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REV.	DATE	COMMENTS	DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY
2	12/14/22	REV. PER TOWNSHIP SUBMISSION	ALPH	JH	RPF	-
1	04/22/22	REV. PER ARCHAEOLOGICAL TESTING & ALERT COMMENTS	ALPH	JH	RPF	-

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PROJECT: **PVP EXIT 8, LLC**
PROPOSED WAREHOUSE DEVELOPMENT
BLOCK 22.02, LOTS 2.02, 8.01, 11.01
TAX MAP SHEET 16
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JEFFREY HABERMAN
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 53560

TITLE:
INLET AREA MAP

SCALE: (H) 1"=150' | DATE: 1/22/2021
PROJECT No: 0091-99-013

SHEET No: 3 OF 3 | Rev. #: 2