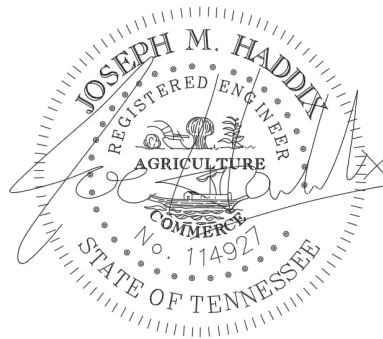


DRAINAGE REPORT

MT. PLEASANT LIBRARY

301 N COLLEGE STREET
MT. PLEASANT, TENNESSEE

FEBRUARY 26, 2025



Prepared by:



HERITAGE CIVIL

2055 N Mt. Juliet Road, Suite 202

Mt. Juliet, TN 37122

Email: JoeH@HeritageCivil.com

Contact: Joe Haddix, P.E.

PROJECT DESCRIPTION

The Mt. Pleasant Library project is approximately 5.61 acres and located at 301 N. College Street, Mt. Pleasant, TN, Map 113H Parcels 3.01. The disturbed area for this project is 2.96 acres. This project is proposing a new library and a revised softball field along with utilities and stormwater facilities as required by the State and local municipality.

EXISTING SITE CONDITIONS

The existing site currently is a softball field and a dog park. The site has slopes ranging from 5-40% and drains to Sugar Creek from Sugar Fork to Arrow Mines Road which is south-east of the eastern edge of the project area.

PROPOSED SITE CONDITIONS

The proposed site will follow the existing outflow patterns and drain to Sugar Creek from Sugar Fork to Arrow Mines Road. The overall disturbed area for the project is 2.96 acres.

The project's stormwater system has been designed to the 10-year storm event. See Storm Pipe Calculations section.

Water quality for the project area is provided by the extended retention water quality pond which has been designed to hold and slowly release the water quality volume for the impervious area of the site. See water quality calculation section.

As shown in the following summary chart, calculations, and exhibits, the overall peak flow is reduced for the 2 through 100-year storm events. See Hydraulic Calculations section.

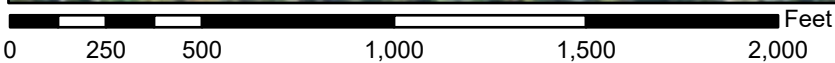
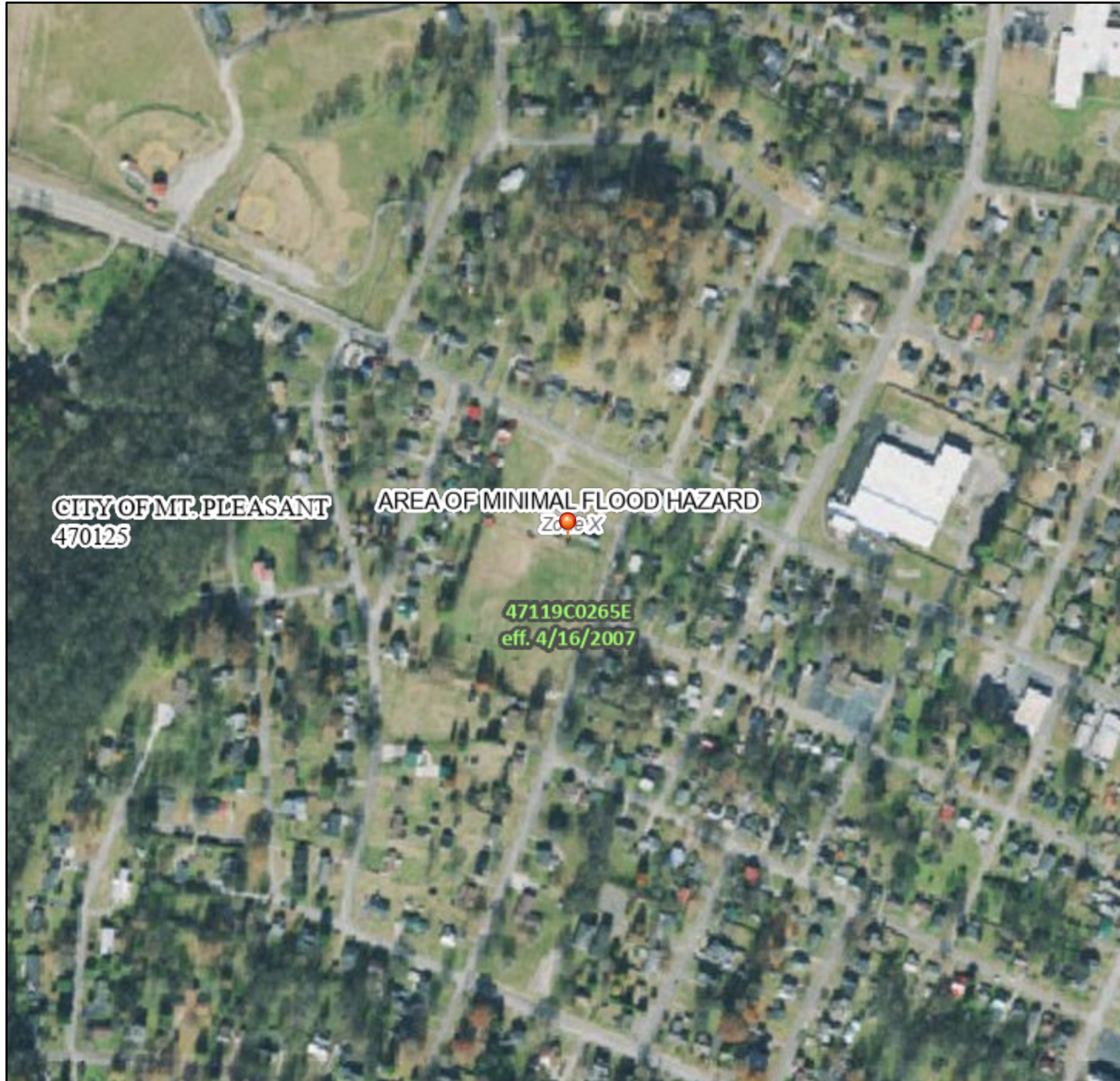
| Description | 2-year | 5-year | 10-year | 25-year | 50-year | 100-year |
|-------------------------|--------|--------|---------|---------|---------|----------|
| Pre Basin 1 | 61.75 | 85.04 | 104.16 | 130.41 | 151.71 | 173.37 |
| Post Basin 1 - Combined | 52.90 | 73.71 | 90.99 | 114.79 | 134.15 | 153.60 |

MAPS

National Flood Hazard Layer FIRMMette



87°13'9"W 35°32'41"N



1:6,000

87°12'32"W 35°32'12"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

| | | |
|-----------------------------|--|---|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE) Zone A, V, A99 |
| | | With BFE or Depth Zone AE, AO, AH, VE, AR |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X |
| | | Future Conditions 1% Annual Chance Flood Hazard Zone X |
| | | Area with Reduced Flood Risk due to Levee. See Notes. Zone X |
| | | Area with Flood Risk due to Levee Zone D |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard Zone X |
| | | Effective LOMRs |
| GENERAL STRUCTURES | | Area of Undetermined Flood Hazard Zone D |
| | | Channel, Culvert, or Storm Sewer |
| OTHER FEATURES | | Levee, Dike, or Floodwall |
| | | Cross Sections with 1% Annual Chance Water Surface Elevation |
| MAP PANELS | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| OTHER FEATURES | | Limit of Study |
| | | Jurisdiction Boundary |
| OTHER FEATURES | | Coastal Transect Baseline |
| | | Profile Baseline |
| OTHER FEATURES | | Hydrographic Feature |
| | | Digital Data Available |
| MAP PANELS | | No Digital Data Available |
| | | Unmapped |

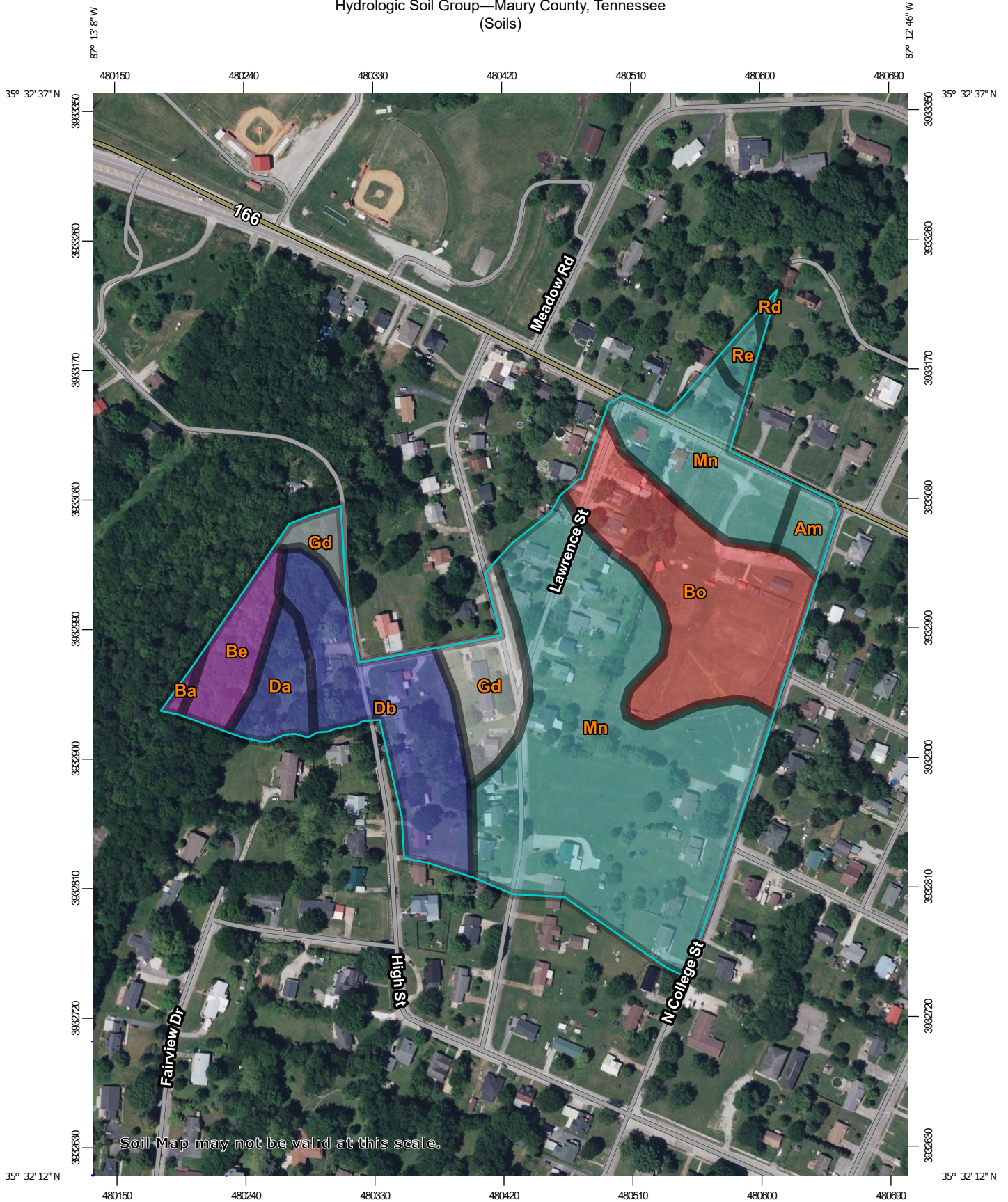
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

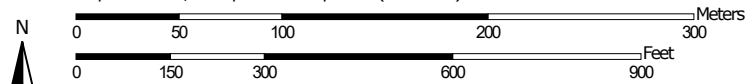
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/6/2026 at 1:10 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Hydrologic Soil Group—Maury County, Tennessee
(Soils)



Map Scale: 1:3,670 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

2/5/2026
Page 1 of 4


MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available


Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Maury County, Tennessee
 Survey Area Data: Version 20, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2021—Jun 14, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------|--------------|----------------|
| Am | Ashwood rocky silty clay, severely eroded sloping phase | C | 0.4 | 1.8% |
| Ba | Bodine gravelly silt loam, 5 to 12 percent slopes | A | 0.1 | 0.4% |
| Be | Bodine gravelly silt loam, 20 to 40 percent slopes | A | 1.0 | 4.4% |
| Bo | Burgin silty clay loam, gently sloping phosphatic phase | D | 4.1 | 18.2% |
| Da | Dellrose gravelly silt loam, 5 to 12 percent slopes, eroded | B | 0.8 | 3.7% |
| Db | Dellrose gravelly silt loam, 12 to 20 percent slopes, eroded | B | 3.1 | 13.6% |
| Gd | Gullied land, phosphatic | | 1.5 | 6.7% |
| Mn | Mimosa silty clay, 5 to 12 percent slopes, severely eroded | C | 11.4 | 50.1% |
| Rd | Rockland, Mimosa and Inman materials, sloping | C | 0.0 | 0.2% |
| Re | Rockland, Mimosa and Inman materials, steep | C | 0.2 | 1.0% |
| Totals for Area of Interest | | | 22.8 | 100.0% |

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

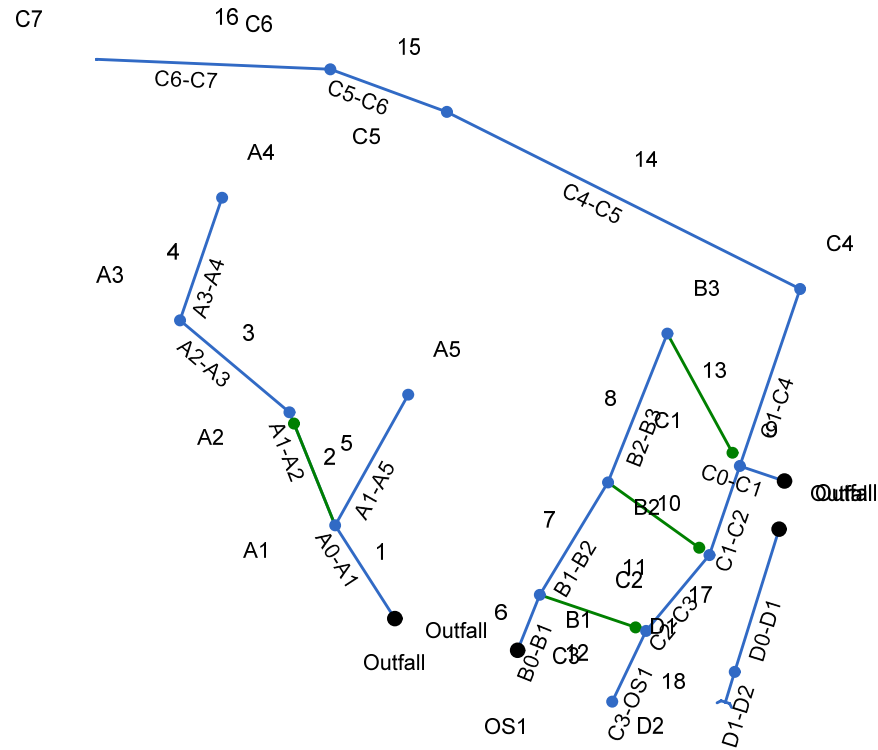
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

STORM PIPE CALCULATIONS

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Storm Sewer Summary Report

| Line No. | Line ID | Flow rate (cfs) | Line Size (in) | Line shape | Line length (ft) | Invert EL Dn (ft) | Invert EL Up (ft) | Line Slope (%) | HGL Down (ft) | HGL Up (ft) | Minor loss (ft) | HGL Junct (ft) | Dns Line No. | Junction Type |
|----------|---------|-----------------|----------------|------------|------------------|-------------------|-------------------|----------------|---------------|-------------|-----------------|----------------|--------------|---------------|
| 1 | A0-A1 | 3.51 | 15 | Cir | 48.841 | 682.71 | 682.96 | 0.512 | 683.52 | 683.78 | 0.36 | 684.13 | End | Combination |
| 2 | A1-A2 | 3.26 | 15 | Cir | 53.840 | 683.06 | 683.33 | 0.502 | 684.13 | 684.24 | 0.14 | 684.38 | 1 | Combination |
| 3 | A2-A3 | 1.87 | 15 | Cir | 62.979 | 683.43 | 683.75 | 0.508 | 684.38 | 684.43 | 0.17 | 684.59 | 2 | Combination |
| 4 | A3-A4 | 0.89 | 15 | Cir | 57.229 | 683.85 | 684.45 | 1.048 | 684.59 | 684.82 | n/a | 684.82 j | 3 | Combination |
| 5 | A1-A5 | 0.41 | 15 | Cir | 66.057 | 683.42 | 683.75 | 0.500 | 684.13 | 684.15 | 0.02 | 684.17 | 1 | Combination |
| 6 | B0-B1 | 1.64 | 15 | Cir | 26.398 | 681.76 | 681.90 | 0.530 | 682.27 | 682.41 | 0.09 | 682.50 | End | Combination |
| 7 | B1-B2 | 1.08 | 15 | Cir | 58.000 | 682.00 | 682.29 | 0.500 | 682.50 | 682.70 | 0.07 | 682.77 | 6 | Combination |
| 8 | B2-B3 | 0.82 | 15 | Cir | 70.768 | 682.39 | 682.75 | 0.509 | 682.77 | 683.11 | 0.12 | 683.23 | 7 | Combination |
| 9 | C0-C1 | 46.65 | 36 | Cir | 20.723 | 678.15 | 678.28 | 0.627 | 680.34 | 680.50 | n/a | 680.50 | End | Combination |
| 10 | C1-C2 | 6.42 | 30 | Cir | 41.555 | 678.38 | 678.59 | 0.505 | 680.50 | 679.43 | n/a | 679.43 | 9 | Combination |
| 11 | C2-C3 | 6.38 | 24 | Cir | 43.605 | 678.69 | 678.91 | 0.504 | 679.57 | 679.80 | n/a | 679.80 | 10 | Combination |
| 12 | C3-OS1 | 6.15 | 15 | Cir | 34.581 | 679.01 | 679.20 | 0.549 | 680.26* | 680.57* | 0.39 | 680.96 | 11 | DropGrate |
| 13 | C1-C4 | 39.07 | 30 | Cir | 82.567 | 679.50 | 680.40 | 1.090 | 681.38 | 682.51 | 1.81 | 682.51 | 9 | DropGrate |
| 14 | C4-C5 | 39.42 | 30 | Cir | 174.000 | 680.50 | 683.10 | 1.494 | 682.51 | 685.21 | n/a | 685.21 | 13 | DropGrate |
| 15 | C5-C6 | 38.69 | 30 | Cir | 54.561 | 683.20 | 683.90 | 1.283 | 685.21 | 686.00 | n/a | 686.00 | 14 | DropGrate |
| 16 | C6-C7 | 31.99 | 30 | Cir | 103.000 | 684.00 | 685.00 | 0.971 | 686.00 | 686.92 | n/a | 686.92 j | 15 | DropGrate |
| 17 | D0-D1 | 13.58 | 19x30 | Ell | 66.000 | 678.30 | 678.63 | 0.500 | 679.40 | 679.90 | n/a | 679.90 | End | DropGrate |
| 18 | D1-D2 | 13.41 | 18 | Cir | 14.000 | 678.73 | 680.70 | 14.072 | 679.90 | 682.06 | 0.98 | 682.06 | 17 | OpenHeadwall |

Project File: Mt. Pleasant Library - Storm Calcs.stm

Number of lines: 18

Run Date: 2/24/2026

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Tabulation

| Station | | Len (ft) | Drng Area | | Rnoff coeff (C) | Area x C | | Tc | | Rain (l) (in/hr) | Total flow (cfs) | Cap full (cfs) | Vel (ft/s) | Pipe | | Invert Elev | | HGL Elev | | Grnd / Rim Elev | | Line ID |
|---------|------------|-------------|--------------|---------------|-----------------------|----------|-------|----------------|---------------|------------------------|------------------------|----------------------|---------------|--------------|--------------|-------------|------------|------------|------------|-----------------|------------|---------|
| Line | To Line | | Incr (ac) | Total (ac) | | Incr | Total | Inlet (min) | Syst (min) | | | | | Size (in) | Slope (%) | Dn (ft) | Up (ft) | Dn (ft) | Up (ft) | Dn (ft) | Up (ft) | |
| 1 | En48 | 841 | 0.01 | 0.59 | 0.90 | 0.01 | 0.53 | 5.0 | 8.3 | 6.6 | 3.51 | 4.62 | 4.15 | 15 | 0.51 | 682.71 | 682.96 | 683.52 | 683.78 | 685.00 | 688.00 | A0-A1 |
| 2 | 1 53 | 840 | 0.23 | 0.52 | 0.90 | 0.21 | 0.47 | 5.0 | 7.0 | 7.0 | 3.26 | 4.57 | 3.16 | 15 | 0.50 | 683.06 | 683.33 | 684.13 | 684.24 | 688.00 | 687.00 | A1-A2 |
| 3 | 2 62 | 979 | 0.16 | 0.29 | 0.90 | 0.14 | 0.26 | 5.0 | 6.3 | 7.2 | 1.87 | 4.60 | 2.31 | 15 | 0.51 | 683.43 | 683.75 | 684.38 | 684.43 | 687.00 | 687.10 | A2-A3 |
| 4 | 3 57 | 229 | 0.13 | 0.13 | 0.90 | 0.12 | 0.12 | 5.0 | 5.0 | 7.6 | 0.89 | 6.61 | 2.05 | 15 | 1.05 | 683.85 | 684.45 | 684.59 | 684.82 | 687.10 | 687.70 | A3-A4 |
| 5 | 1 66 | 057 | 0.06 | 0.06 | 0.90 | 0.05 | 0.05 | 5.0 | 5.0 | 7.6 | 0.41 | 4.56 | 0.89 | 15 | 0.50 | 683.42 | 683.75 | 684.13 | 684.15 | 688.00 | 687.00 | A1-A5 |
| 6 | En26 | 398 | 0.10 | 0.27 | 0.90 | 0.09 | 0.24 | 5.0 | 7.8 | 6.7 | 1.64 | 4.70 | 3.48 | 15 | 0.53 | 681.76 | 681.90 | 682.27 | 682.41 | 685.00 | 686.00 | B0-B1 |
| 7 | 6 58 | 000 | 0.05 | 0.17 | 0.90 | 0.05 | 0.15 | 5.0 | 6.8 | 7.0 | 1.08 | 4.57 | 2.69 | 15 | 0.50 | 682.00 | 682.29 | 682.50 | 682.70 | 686.00 | 686.00 | B1-B2 |
| 8 | 7 70 | 768 | 0.12 | 0.12 | 0.90 | 0.11 | 0.11 | 5.0 | 5.0 | 7.6 | 0.82 | 4.61 | 2.70 | 15 | 0.51 | 682.39 | 682.75 | 682.77 | 683.11 | 686.00 | 686.00 | B2-B3 |
| 9 | En20 | 723 | 0.32 | 13.39 | 0.90 | 0.29 | 8.12 | 5.0 | 16.9 | 5.0 | 46.65 | 52.82 | 8.37 | 36 | 0.63 | 678.15 | 678.28 | 680.34 | 680.50 | 681.00 | 684.00 | C0-C1 |
| 10 | 9 41 | 555 | 0.01 | 0.06 | 0.90 | 0.01 | 0.05 | 5.0 | 16.4 | 5.1 | 6.42 | 29.16 | 2.95 | 30 | 0.51 | 678.38 | 678.59 | 680.50 | 679.43 | 684.00 | 682.80 | C1-C2 |
| 11 | 10 43 | 605 | 0.05 | 0.05 | 0.90 | 0.05 | 0.05 | 5.0 | 16.0 | 5.1 | 6.38 | 16.06 | 4.76 | 24 | 0.50 | 678.69 | 678.91 | 679.57 | 679.80 | 682.80 | 683.40 | C2-C3 |
| 12 | 11 34 | 581 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 15.9 | 15.9 | 0.0 | 6.15 | 4.79 | 5.01 | 15 | 0.55 | 679.01 | 679.20 | 680.26 | 680.57 | 683.40 | 685.00 | C3-OS1 |
| 13 | 9 82 | 567 | 0.01 | 13.01 | 0.90 | 0.01 | 7.78 | 5.0 | 16.6 | 5.0 | 39.07 | 42.82 | 9.37 | 30 | 1.09 | 679.50 | 680.40 | 681.38 | 682.51 | 684.00 | 685.00 | C1-C4 |
| 14 | 13 74 | 000 | 0.34 | 13.00 | 0.50 | 0.17 | 7.77 | 5.0 | 16.3 | 5.1 | 39.42 | 50.13 | 9.12 | 30 | 1.49 | 680.50 | 683.10 | 682.51 | 685.21 | 685.00 | 687.90 | C4-C5 |
| 15 | 14 54 | 561 | 2.27 | 12.66 | 0.60 | 1.36 | 7.60 | 5.0 | 16.2 | 5.1 | 38.69 | 46.45 | 8.96 | 30 | 1.28 | 683.20 | 683.90 | 685.21 | 686.00 | 687.90 | 688.50 | C5-C6 |
| 16 | 15 03 | 000 | 10.39 | 10.39 | 0.60 | 6.23 | 6.23 | 15.9 | 15.9 | 5.1 | 31.99 | 40.41 | 7.75 | 30 | 0.97 | 684.00 | 685.00 | 686.00 | 686.92 | 688.50 | 688.50 | C6-C7 |
| 17 | En66 | 000 | 0.05 | 3.58 | 0.50 | 0.03 | 1.79 | 5.0 | 5.0 | 7.6 | 13.58 | 15.50 | 5.26 | 19 | 0.50 | 678.30 | 678.63 | 679.40 | 679.90 | 680.80 | 682.00 | D0-D1 |
| 18 | 17 14 | 000 | 3.53 | 3.53 | 0.50 | 1.77 | 1.77 | 5.0 | 5.0 | 7.6 | 13.41 | 39.39 | 8.52 | 18 | 14.07 | 678.73 | 680.70 | 679.90 | 682.06 | 682.00 | 682.70 | D1-D2 |

Project File: Mt. Pleasant Library - Storm Calcs.stm

Number of lines: 18

Run Date: 2/24/2026

NOTES: Intensity = 71.80 / (Inlet time + 12.00) ^ 0.79; Return period = Yrs. 10 ; c = cir e = ellip b = box

Inlet Report

| Line No | Inlet ID | Q = CIA (cfs) | Q carry (cfs) | Q capt (cfs) | Q Byp (cfs) | Junc Type | Curb Inlet | | Grate Inlet | | | Gutter | | | | | | Inlet | | | Byp Line No | |
|---------|----------|------------------|------------------|-----------------|----------------|-----------|------------|--------|-------------|--------|--------|------------|--------|------------|------------|-------|------------|-------------|------------|-------------|-------------|-----------|
| | | | | | | | Ht (in) | L (ft) | Area (sqft) | L (ft) | W (ft) | So (ft/ft) | W (ft) | Sw (ft/ft) | Sx (ft/ft) | n | Depth (ft) | Spread (ft) | Depth (ft) | Spread (ft) | | Depr (in) |
| 1 | A1 | 0.07 | 0.00 | 0.07 | 0.00 | Comb | 4.0 | 2.50 | 0.00 | 2.50 | 1.78 | 0.020 | 2.00 | 0.020 | 0.020 | 0.013 | 0.04 | 2.15 | 0.01 | 0.43 | 0.0 | 2 |
| 2 | A2 | 1.57 | 0.00 | 1.57 | 0.00 | Comb | 4.0 | 7.50 | 5.94 | 7.50 | 1.78 | Sag | 2.00 | 0.020 | 0.020 | 0.000 | 0.15 | 7.56 | 0.15 | 7.56 | 0.0 | Off |
| 3 | A3 | 1.09 | 0.00 | 1.09 | 0.00 | Comb | 4.0 | 5.00 | 3.96 | 5.00 | 1.78 | Sag | 2.00 | 0.020 | 0.020 | 0.000 | 0.14 | 7.10 | 0.14 | 7.10 | 0.0 | Off |
| 4 | A4 | 0.89 | 0.00 | 0.89 | 0.00 | Comb | 4.0 | 5.00 | 3.96 | 5.00 | 1.78 | Sag | 2.00 | 0.020 | 0.020 | 0.000 | 0.13 | 6.32 | 0.13 | 6.32 | 0.0 | Off |
| 5 | A5 | 0.41 | 0.00 | 0.41 | 0.00 | Comb | 4.0 | 5.00 | 3.96 | 5.00 | 1.78 | Sag | 2.00 | 0.020 | 0.020 | 0.000 | 0.08 | 4.18 | 0.08 | 4.18 | 0.0 | Off |
| 6 | B1 | 0.68 | 0.00 | 0.53 | 0.16 | Comb | 4.0 | 2.50 | 0.00 | 2.50 | 1.78 | 0.050 | 2.00 | 0.020 | 0.020 | 0.013 | 0.09 | 4.28 | 0.05 | 2.46 | 0.0 | 11 |
| 7 | B2 | 0.34 | 0.00 | 0.30 | 0.04 | Comb | 4.0 | 2.50 | 0.00 | 2.50 | 1.78 | 0.050 | 2.00 | 0.020 | 0.020 | 0.013 | 0.07 | 3.30 | 0.03 | 1.52 | 0.0 | 10 |
| 8 | B3 | 0.82 | 0.00 | 0.61 | 0.21 | Comb | 4.0 | 2.50 | 0.00 | 2.50 | 1.78 | 0.050 | 2.00 | 0.020 | 0.020 | 0.013 | 0.09 | 4.58 | 0.06 | 2.75 | 0.0 | 9 |
| 9 | C1 | 2.19 | 0.22 | 2.41 | 0.00 | Comb | 4.0 | 7.50 | 5.94 | 7.50 | 1.78 | Sag | 2.00 | 0.020 | 0.020 | 0.000 | 0.19 | 9.70 | 0.19 | 9.70 | 0.0 | Off |
| 10 | C2 | 0.07 | 0.04 | 0.11 | 0.00 | Comb | 4.0 | 2.50 | 0.00 | 2.50 | 1.78 | 0.050 | 2.00 | 0.020 | 0.020 | 0.013 | 0.04 | 2.17 | 0.01 | 0.48 | 0.0 | Off |
| 11 | C3 | 0.34 | 0.16 | 0.50 | 0.00 | Comb | 4.0 | 5.00 | 3.96 | 5.00 | 2.50 | Sag | 2.50 | 0.020 | 0.020 | 0.000 | 0.09 | 4.50 | 0.09 | 4.50 | 0.0 | Off |
| 12 | OS1 | 6.15* | 0.00 | 6.15 | 0.00 | DrGr | 0.0 | 0.00 | 3.06 | 2.50 | 2.50 | Sag | 2.50 | 0.020 | 0.020 | 0.000 | 0.35 | 37.25 | 0.35 | 37.25 | 0.0 | Off |
| 13 | C4 | 0.07 | 0.00 | 0.06 | 0.01 | DrGr | 0.0 | 0.00 | 0.00 | 2.50 | 1.78 | 0.010 | 2.00 | 0.333 | 0.333 | 0.013 | 0.03 | 2.19 | 0.03 | 2.19 | 0.0 | 9 |
| 14 | C5 | 1.29 | 4.86 | 3.53 | 2.62 | DrGr | 0.0 | 0.00 | 0.00 | 2.50 | 1.78 | 0.011 | 2.00 | 0.333 | 0.333 | 0.013 | 0.39 | 4.35 | 0.39 | 4.35 | 0.0 | Off |
| 15 | C6 | 10.35 | 0.00 | 5.49 | 4.86 | DrGr | 0.0 | 0.00 | 0.00 | 2.50 | 1.78 | 0.015 | 2.00 | 0.333 | 0.333 | 0.013 | 0.47 | 4.83 | 0.47 | 4.83 | 0.0 | 14 |
| 16 | C7 | 31.99 | 0.00 | 31.99 | 0.00 | DrGr | 0.0 | 0.00 | 9.18 | 7.50 | 2.50 | Sag | 2.50 | 0.333 | 0.333 | 0.000 | 0.66 | 6.45 | 0.66 | 6.45 | 0.0 | Off |
| 17 | D1 | 0.19 | 0.00 | 0.19 | 0.00 | DrGr | 0.0 | 0.00 | 3.06 | 2.50 | 2.50 | Sag | 2.50 | 0.010 | 0.010 | 0.000 | 0.03 | 9.33 | 0.03 | 9.33 | 0.0 | Off |
| 18 | D2 | 13.41 | 0.00 | 13.41 | 0.00 | Hdwl | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | Sag | 0.00 | 0.000 | 0.000 | 0.000 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | Off |

Project File: Mt. Pleasant Library - Storm Calcs.stm

Number of lines: 18

Run Date: 2/24/2026

NOTES: Inlet N-Values = 0.016; Intensity = 71.80 / (Inlet time + 12.00) ^ 0.79; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Hydraflow IDF Report

| Return Period (Yrs) | Equation Coefficients (FHA) | | | |
|---------------------|-----------------------------|---------|--------|-------|
| | B | D | E | (N/A) |
| 1 | 0.0000 | 0.0000 | 0.0000 | ----- |
| 2 | 71.4314 | 12.7000 | 0.8735 | ----- |
| 3 | 0.0000 | 0.0000 | 0.0000 | ----- |
| 5 | 71.5595 | 12.4000 | 0.8251 | ----- |
| 10 | 71.8008 | 12.0000 | 0.7927 | ----- |
| 25 | 65.7617 | 10.8000 | 0.7335 | ----- |
| 50 | 61.1099 | 9.8000 | 0.6889 | ----- |
| 100 | 58.8522 | 9.2000 | 0.6536 | ----- |

Intensity = B / (Tc + D)^E

| Return Period (Yrs) | Intensity Values (in/hr) (Application Calculated) | | | | | | | | | | | |
|---------------------|---|------|------|------|------|------|------|------|------|------|------|------|
| | 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 | 5.81 | 4.67 | 3.93 | 3.40 | 3.00 | 2.69 | 2.44 | 2.24 | 2.07 | 1.92 | 1.80 | 1.69 |
| 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 | 6.78 | 5.50 | 4.66 | 4.06 | 3.60 | 3.25 | 2.96 | 2.73 | 2.53 | 2.36 | 2.22 | 2.09 |
| 10 | 7.60 | 6.19 | 5.27 | 4.60 | 4.10 | 3.71 | 3.39 | 3.13 | 2.91 | 2.72 | 2.56 | 2.42 |
| 25 | 8.68 | 7.10 | 6.06 | 5.32 | 4.77 | 4.33 | 3.98 | 3.69 | 3.44 | 3.23 | 3.05 | 2.89 |
| 50 | 9.55 | 7.81 | 6.69 | 5.90 | 5.30 | 4.83 | 4.45 | 4.14 | 3.87 | 3.65 | 3.45 | 3.28 |
| 100 | 10.39 | 8.53 | 7.33 | 6.49 | 5.85 | 5.35 | 4.95 | 4.61 | 4.33 | 4.09 | 3.88 | 3.69 |

Tc = time in minutes. Min Tc = 5

(Manually Input)

| Intermediate Intensity Values (In/hr) | | | | |
|---------------------------------------|----------|-----------|-----------|-----------|
| Return Period | 5-Minute | 15-Minute | 30-Minute | 60-Minute |
| 1-Yr | 0.00 | 0.00 | 2.25 | 1.40 |
| 2-Yr | 5.81 | 3.89 | 2.69 | 1.69 |
| 3-Yr | 0.00 | 0.00 | 0.00 | 0.00 |
| 5-Yr | 6.78 | 4.58 | 3.25 | 2.09 |
| 10-Yr | 7.60 | 5.12 | 3.71 | 2.42 |
| 25-Yr | 8.69 | 5.85 | 4.33 | 2.89 |
| 50-Yr | 9.55 | 6.42 | 4.83 | 3.28 |
| 100-Yr | 10.40 | 6.99 | 5.35 | 3.69 |



NOAA Atlas 14, Volume 2, Version 3
Location name: Mount Pleasant, Tennessee, USA*
Latitude: 35.5406°, Longitude: -87.2141°
Elevation: 687 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

PF tabular

| PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹ | | | | | | | | | | |
|---|-------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Duration | Average recurrence interval (years) | | | | | | | | | |
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | 4.92 (4.52-5.39) | 5.81 (5.34-6.36) | 6.78 (6.24-7.44) | 7.60 (6.96-8.30) | 8.69 (7.91-9.49) | 9.55 (8.64-10.4) | 10.4 (9.37-11.4) | 11.4 (10.1-12.4) | 12.6 (11.1-13.8) | 13.6 (11.8-14.9) |
| 10-min | 3.93 (3.62-4.30) | 4.64 (4.27-5.09) | 5.43 (4.99-5.95) | 6.07 (5.57-6.64) | 6.92 (6.30-7.57) | 7.60 (6.88-8.29) | 8.30 (7.45-9.05) | 9.01 (8.02-9.82) | 9.97 (8.75-10.9) | 10.7 (9.32-11.7) |
| 15-min | 3.27 (3.01-3.58) | 3.89 (3.58-4.26) | 4.58 (4.21-5.02) | 5.12 (4.70-5.60) | 5.85 (5.32-6.39) | 6.42 (5.80-7.00) | 6.99 (6.27-7.62) | 7.58 (6.74-8.26) | 8.37 (7.35-9.15) | 8.98 (7.80-9.83) |
| 30-min | 2.24 (2.07-2.46) | 2.69 (2.47-2.94) | 3.25 (2.99-3.57) | 3.71 (3.40-4.06) | 4.33 (3.94-4.73) | 4.83 (4.37-5.27) | 5.35 (4.80-5.84) | 5.90 (5.25-6.43) | 6.66 (5.85-7.28) | 7.27 (6.31-7.96) |
| 60-min | 1.40 (1.29-1.53) | 1.69 (1.55-1.85) | 2.09 (1.92-2.29) | 2.42 (2.22-2.64) | 2.89 (2.63-3.15) | 3.28 (2.96-3.57) | 3.69 (3.31-4.02) | 4.14 (3.68-4.51) | 4.78 (4.19-5.22) | 5.31 (4.61-5.81) |
| 2-hr | 0.807 (0.740-0.889) | 0.969 (0.886-1.07) | 1.20 (1.10-1.32) | 1.39 (1.26-1.53) | 1.66 (1.50-1.82) | 1.90 (1.70-2.08) | 2.14 (1.91-2.35) | 2.41 (2.13-2.64) | 2.80 (2.44-3.07) | 3.13 (2.69-3.44) |
| 3-hr | 0.583 (0.536-0.641) | 0.698 (0.641-0.768) | 0.861 (0.789-0.944) | 0.997 (0.910-1.09) | 1.19 (1.08-1.30) | 1.35 (1.22-1.48) | 1.53 (1.37-1.67) | 1.72 (1.52-1.88) | 1.99 (1.74-2.18) | 2.21 (1.91-2.43) |
| 6-hr | 0.364 (0.335-0.399) | 0.434 (0.399-0.476) | 0.529 (0.486-0.580) | 0.610 (0.558-0.668) | 0.726 (0.659-0.792) | 0.822 (0.742-0.897) | 0.925 (0.828-1.01) | 1.04 (0.920-1.13) | 1.19 (1.05-1.30) | 1.32 (1.15-1.45) |
| 12-hr | 0.219 (0.202-0.241) | 0.262 (0.241-0.287) | 0.319 (0.293-0.350) | 0.367 (0.336-0.402) | 0.434 (0.395-0.475) | 0.490 (0.443-0.535) | 0.549 (0.493-0.600) | 0.612 (0.546-0.669) | 0.701 (0.618-0.767) | 0.773 (0.675-0.848) |
| 24-hr | 0.136 (0.125-0.147) | 0.162 (0.150-0.176) | 0.198 (0.183-0.215) | 0.226 (0.208-0.245) | 0.264 (0.243-0.286) | 0.295 (0.271-0.319) | 0.326 (0.299-0.353) | 0.358 (0.327-0.387) | 0.402 (0.365-0.435) | 0.437 (0.394-0.472) |
| 2-day | 0.080 (0.074-0.087) | 0.096 (0.088-0.104) | 0.117 (0.108-0.127) | 0.134 (0.123-0.145) | 0.156 (0.143-0.170) | 0.175 (0.160-0.189) | 0.193 (0.176-0.209) | 0.212 (0.193-0.230) | 0.238 (0.215-0.258) | 0.258 (0.232-0.281) |
| 3-day | 0.057 (0.053-0.062) | 0.068 (0.063-0.074) | 0.083 (0.077-0.090) | 0.094 (0.087-0.102) | 0.110 (0.101-0.119) | 0.122 (0.112-0.132) | 0.134 (0.123-0.145) | 0.146 (0.134-0.158) | 0.163 (0.148-0.176) | 0.176 (0.159-0.190) |
| 4-day | 0.045 (0.042-0.049) | 0.054 (0.050-0.058) | 0.066 (0.061-0.071) | 0.075 (0.069-0.080) | 0.086 (0.080-0.093) | 0.095 (0.088-0.103) | 0.104 (0.096-0.112) | 0.113 (0.104-0.122) | 0.125 (0.115-0.135) | 0.135 (0.123-0.145) |
| 7-day | 0.030 (0.028-0.032) | 0.036 (0.034-0.039) | 0.044 (0.041-0.047) | 0.049 (0.046-0.053) | 0.057 (0.053-0.060) | 0.062 (0.058-0.066) | 0.068 (0.063-0.072) | 0.073 (0.068-0.078) | 0.081 (0.074-0.086) | 0.086 (0.079-0.092) |
| 10-day | 0.024 (0.023-0.026) | 0.029 (0.027-0.030) | 0.034 (0.032-0.036) | 0.038 (0.036-0.041) | 0.044 (0.041-0.047) | 0.048 (0.045-0.051) | 0.053 (0.049-0.056) | 0.057 (0.053-0.060) | 0.062 (0.058-0.066) | 0.066 (0.061-0.071) |
| 20-day | 0.016 (0.015-0.017) | 0.019 (0.018-0.021) | 0.023 (0.021-0.024) | 0.025 (0.024-0.027) | 0.028 (0.026-0.030) | 0.030 (0.028-0.032) | 0.032 (0.030-0.034) | 0.034 (0.032-0.036) | 0.037 (0.034-0.039) | 0.038 (0.036-0.041) |
| 30-day | 0.013 (0.013-0.014) | 0.016 (0.015-0.017) | 0.018 (0.017-0.019) | 0.020 (0.019-0.021) | 0.022 (0.021-0.023) | 0.024 (0.022-0.025) | 0.025 (0.024-0.026) | 0.026 (0.025-0.028) | 0.028 (0.026-0.029) | 0.029 (0.027-0.031) |
| 45-day | 0.011 (0.011-0.012) | 0.013 (0.012-0.014) | 0.015 (0.014-0.016) | 0.016 (0.015-0.017) | 0.018 (0.017-0.019) | 0.019 (0.018-0.020) | 0.020 (0.019-0.021) | 0.021 (0.020-0.022) | 0.022 (0.021-0.024) | 0.023 (0.022-0.024) |
| 60-day | 0.010 (0.009-0.010) | 0.012 (0.011-0.012) | 0.013 (0.013-0.014) | 0.014 (0.014-0.015) | 0.016 (0.015-0.017) | 0.017 (0.016-0.018) | 0.018 (0.017-0.019) | 0.019 (0.017-0.020) | 0.019 (0.018-0.021) | 0.020 (0.019-0.021) |

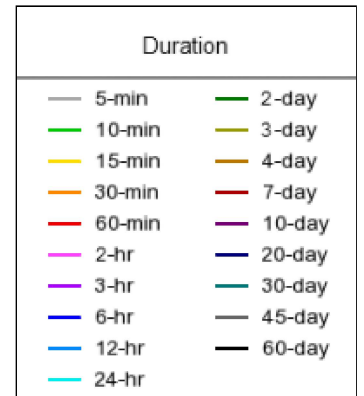
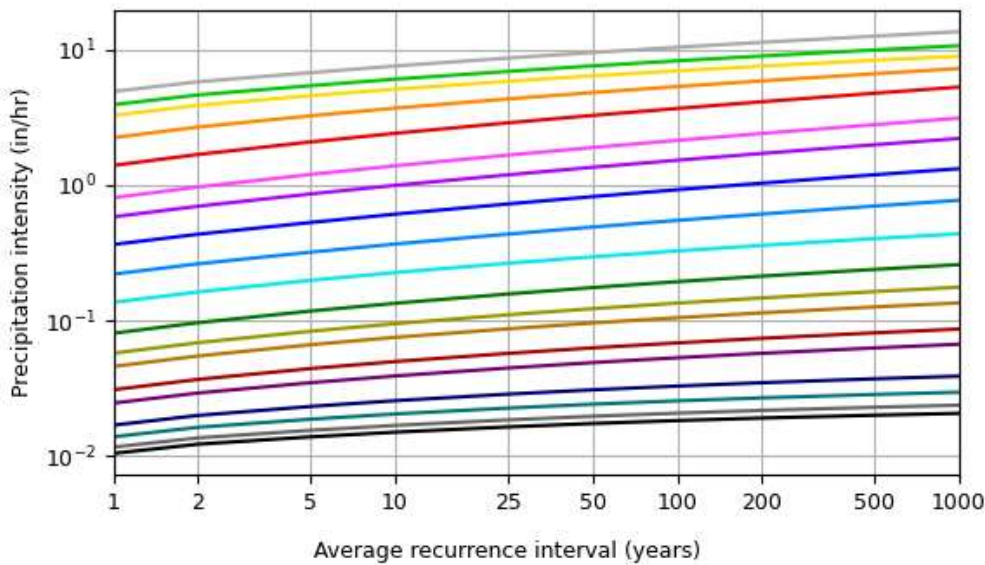
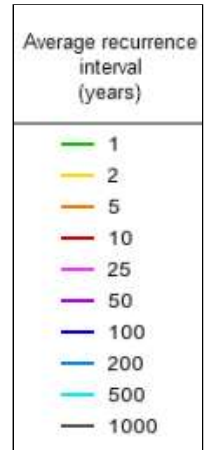
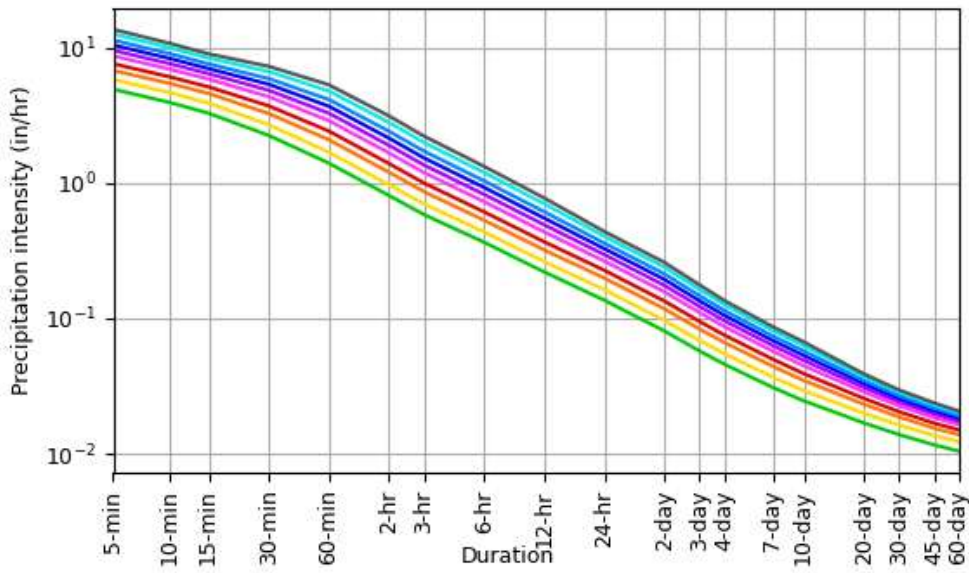
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical

PDS-based intensity-duration-frequency (IDF) curves

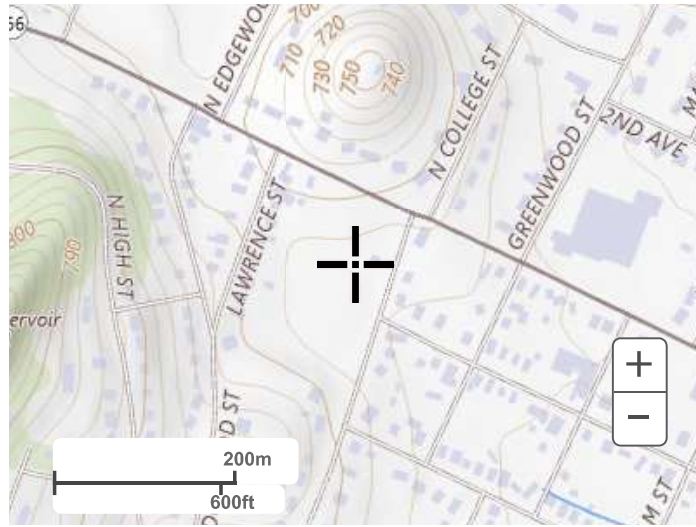
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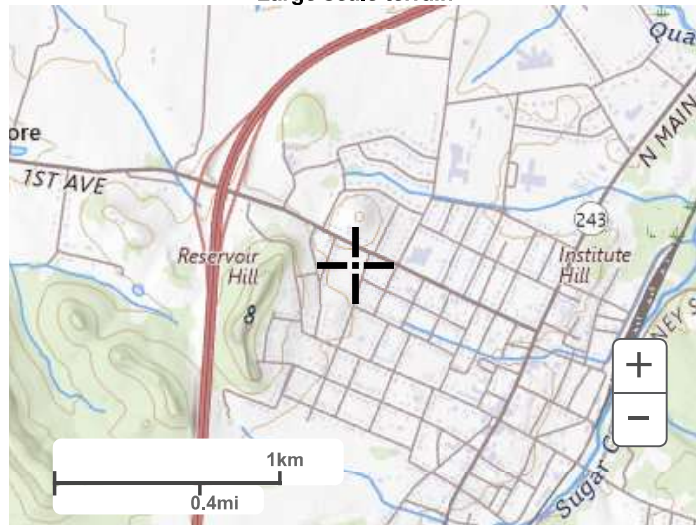
[Back to Top](#)

Maps & aeriels

Small scale terrain



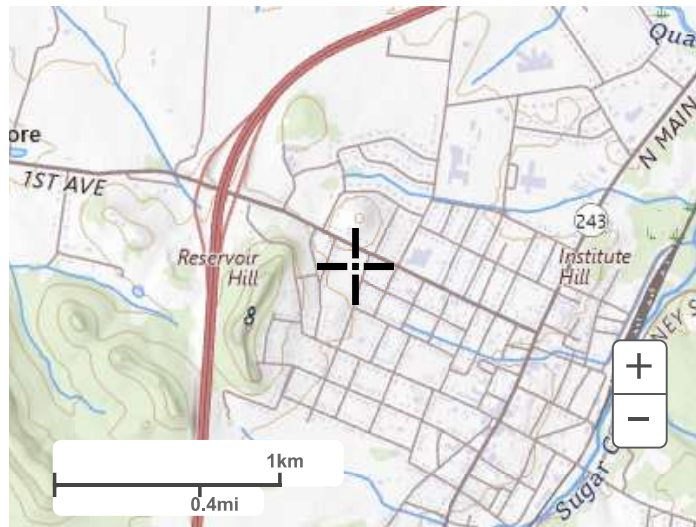
Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

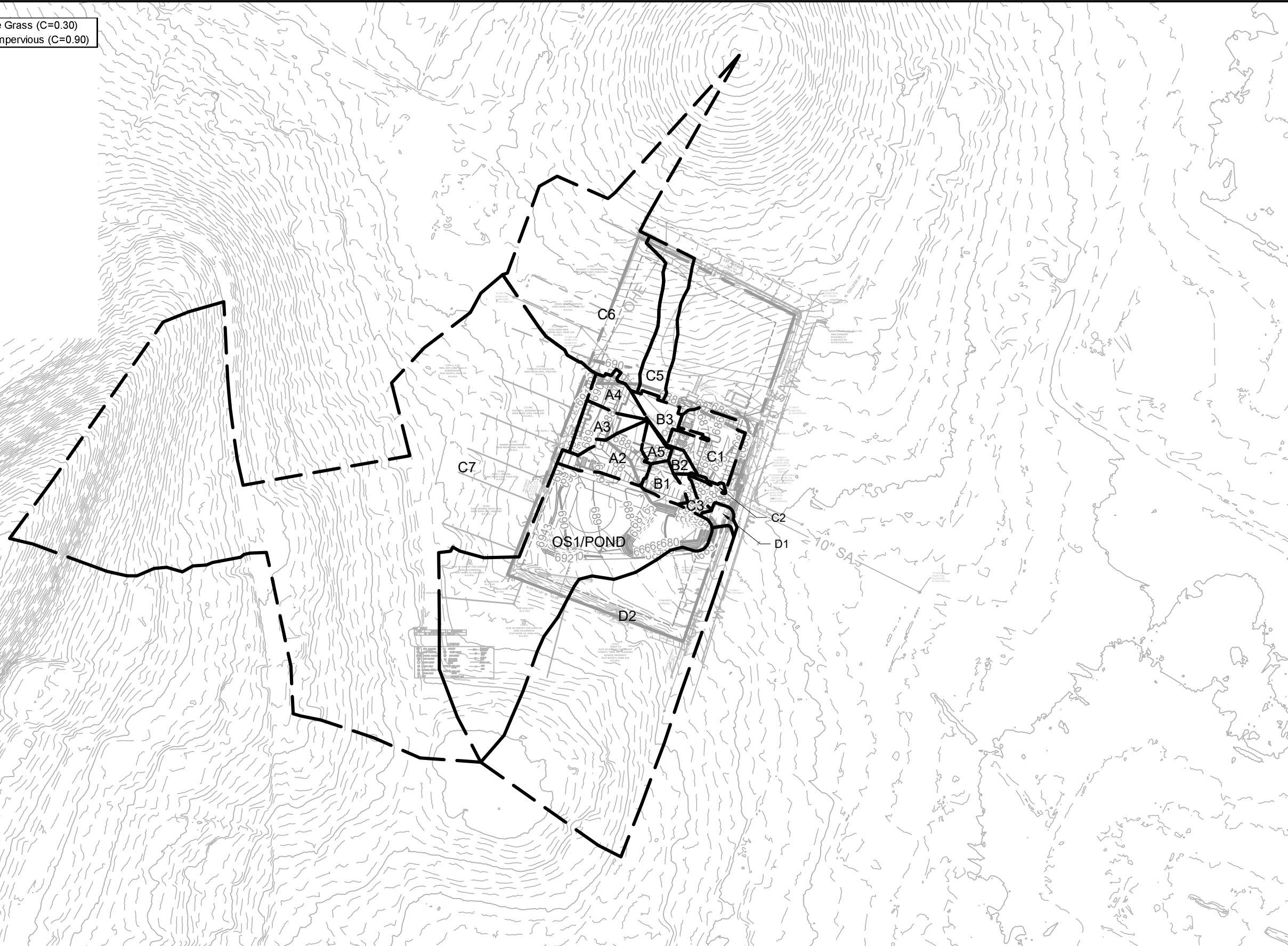
[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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INLET MAPS

Feb 24, 2026 - 8:03am Z:\Projects\2025\25-041-01\Cadd\Civil\Site Plan\Xrefs\25-041-01 DR Maps.dwg

| Inlet ID | Drainage Area (A.C.) | Impervious Area % of Drainage Area | Runoff Coefficient Linear Interpolation | Pure Grass (C=0.30) | |
|----------|---|------------------------------------|---|--------------------------|--|
| | | | | Pure Impervious (C=0.90) | |
| A1 | 0.10 | 100 | 0.9 | | |
| A2 | 0.23 | 100 | 0.9 | | |
| A3 | 0.16 | 100 | 0.9 | | |
| A4 | 0.13 | 100 | 0.9 | | |
| A5 | 0.06 | 100 | 0.9 | | |
| B1 | 0.10 | 100 | 0.9 | | |
| B2 | 0.05 | 100 | 0.9 | | |
| B3 | 0.12 | 100 | 0.9 | | |
| C1 | 0.32 | 100 | 0.9 | | |
| C2 | 0.01 | 100 | 0.9 | | |
| C3 | 0.05 | 100 | 0.9 | | |
| OS1 | 6.15 CFS (25 Yr Storm From Hydrographs) | | | | |
| C4 | 0.01 | 100 | 0.9 | | |
| C5 | 0.34 | 30 | 0.48 | | |
| C6 | 2.27 | 50 | 0.6 | | |
| C7 | 10.39 | 50 | 0.6 | | |
| D1 | 0.05 | 30 | 0.48 | | |
| D2 | 3.53 | 30 | 0.48 | | |



WATER QUALITY CALCULATIONS

WATER QUALITY CALCULATIONS

Dry Pond 1

Project: Mt. Pleasant Library
Heritage Civil Project #25-041-01

Total Drainage Area: 3.67 Acres
Impervious Drainage Area: 0.84 Acres

Water Quality Storage Volume Orifice

| <u>ELEV</u> | <u>AREA (SQ FT)</u> | <u>VOLUME (CU FT)</u> | | <u>INTERPOLATION</u> | |
|-------------|---------------------|-----------------------|--------|----------------------|--------|
| 679 | 0 | 0 | 0 | 681 | 5,800 |
| 680 | 2,700 | 1,350 | 1,350 | x | 7,623 |
| 681 | 6,200 | 4,450 | 5,800 | 682 | 12,550 |
| 682 | 7,300 | 6,750 | 12,550 | | |
| 683 | 8,400 | 7,850 | 20,400 | x= | 681.3 |
| 684 | 9,600 | 9,000 | 29,400 | | |
| 685 | 10,800 | 10,200 | 39,600 | | |
| 686 | 12,000 | 11,400 | 51,000 | | |

Water Quality Volume

Runoff 2.5" X 0.84 = 7,623 CU FT

Water Quality Elevation : 681.3 FT

7,623 CU FT IN 72 HRS = 0.03 CFS

Average Head : 1.14 FT

Area of Opening : 0.01 SF

Diameter of Opening: 0.09 FT

Diameter of Opening = 1.1 Inches

USE= 1.1 Inches

HYDRAULIC / HYDROLOGIC CALCULATIONS

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

| 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 | ----- | ----- | 61.75 | ----- | 85.04 | 104.16 | 130.41 | 151.71 | 173.37 | Pre Basin 1 |
| 3 | SCS Runoff | ----- | ----- | 51.79 | ----- | 71.33 | 87.36 | 109.38 | 127.25 | 145.42 | Post Basin 1 - Bypass |
| 4 | SCS Runoff | ----- | ----- | 14.00 | ----- | 18.47 | 22.07 | 26.95 | 30.87 | 34.83 | Post Basin 1 - To Pond |
| 5 | Reservoir | 4 | ----- | 1.619 | ----- | 2.986 | 4.315 | 6.146 | 7.619 | 9.540 | Pond Routed |
| 6 | Combine | 3, 5 | ----- | 52.90 | ----- | 73.71 | 90.99 | 114.79 | 134.15 | 153.60 | Post Basin 1 Combined |

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

| 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 | 61.75 | 2 | 720 | 160,401 | ----- | ----- | ----- | Pre Basin 1 | |
| 3 | SCS Runoff | 51.79 | 2 | 720 | 134,537 | ----- | ----- | ----- | Post Basin 1 - Bypass | |
| 4 | SCS Runoff | 14.00 | 2 | 716 | 28,516 | ----- | ----- | ----- | Post Basin 1 - To Pond | |
| 5 | Reservoir | 1.619 | 2 | 738 | 28,507 | 4 | 682.13 | 13,182 | Pond Routed | |
| 6 | Combine | 52.90 | 2 | 720 | 163,043 | 3, 5 | ----- | ----- | Post Basin 1 Combined | |
| Mt. Pleasant Library Detention Calcs.gpw | | | | | Return Period: 2 Year | | | Tuesday, 02 / 24 / 2026 | | |

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

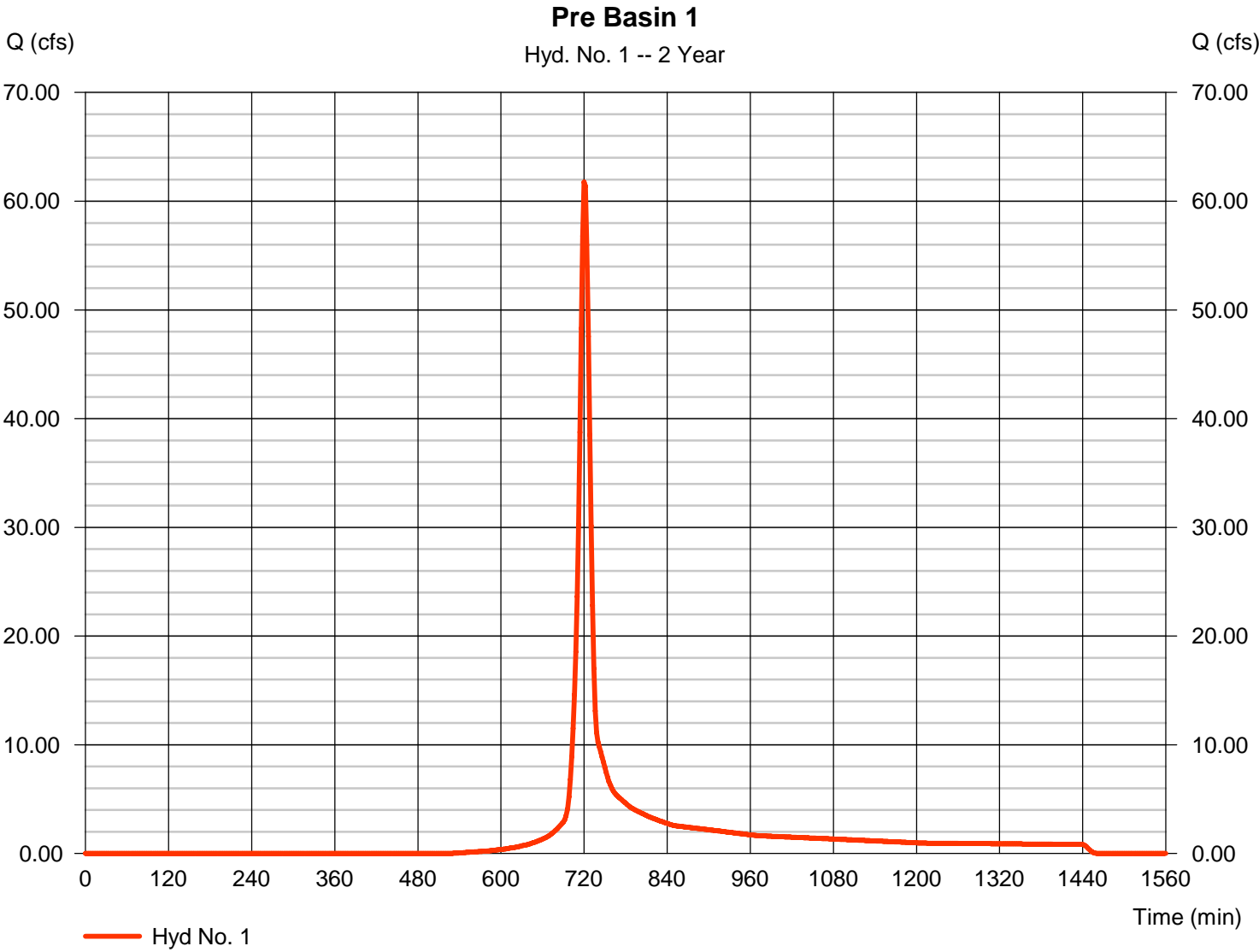
Tuesday, 02 / 24 / 2026

Hyd. No. 1

Pre Basin 1

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 61.75 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 160,401 cuft |
| Drainage area | = 22.760 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 3.90 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (11.080 x 79) + (3.760 x 84) + (3.070 x 98)] / 22.760



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No. 1

Pre Basin 1

| <u>Description</u> | <u>A</u> | <u>B</u> | <u>C</u> | <u>Totals</u> |
|------------------------------------|---------------|----------------------|----------------------|------------------|
| Sheet Flow | | | | |
| Manning's n-value | = 0.410 | 0.011 | 0.011 | |
| Flow length (ft) | = 100.0 | 0.0 | 0.0 | |
| Two-year 24-hr precip. (in) | = 3.90 | 0.00 | 0.00 | |
| Land slope (%) | = 19.33 | 0.00 | 0.00 | |
| Travel Time (min) | = 8.01 | + 0.00 | + 0.00 | = 8.01 |
| Shallow Concentrated Flow | | | | |
| Flow length (ft) | = 306.00 | 1008.00 | 50.00 | |
| Watercourse slope (%) | = 9.48 | 7.14 | 19.33 | |
| Surface description | = Unpaved | Paved | Unpaved | |
| Average velocity (ft/s) | =4.97 | 5.43 | 7.09 | |
| Travel Time (min) | = 1.03 | + 3.09 | + 0.12 | = 4.24 |
| Channel Flow | | | | |
| X sectional flow area (sqft) | = 6.00 | 0.00 | 0.00 | |
| Wetted perimeter (ft) | = 9.00 | 0.00 | 0.00 | |
| Channel slope (%) | = 3.33 | 0.00 | 0.00 | |
| Manning's n-value | = 0.015 | 0.015 | 0.015 | |
| Velocity (ft/s) | =13.81 | 0.00 | 0.00 | |
| Flow length (ft) | 450.0 | 0.0 | 0.0 | |
| Travel Time (min) | = 0.54 | + 0.00 | + 0.00 | = 0.54 |
| Total Travel Time, Tc | | | | 12.80 min |

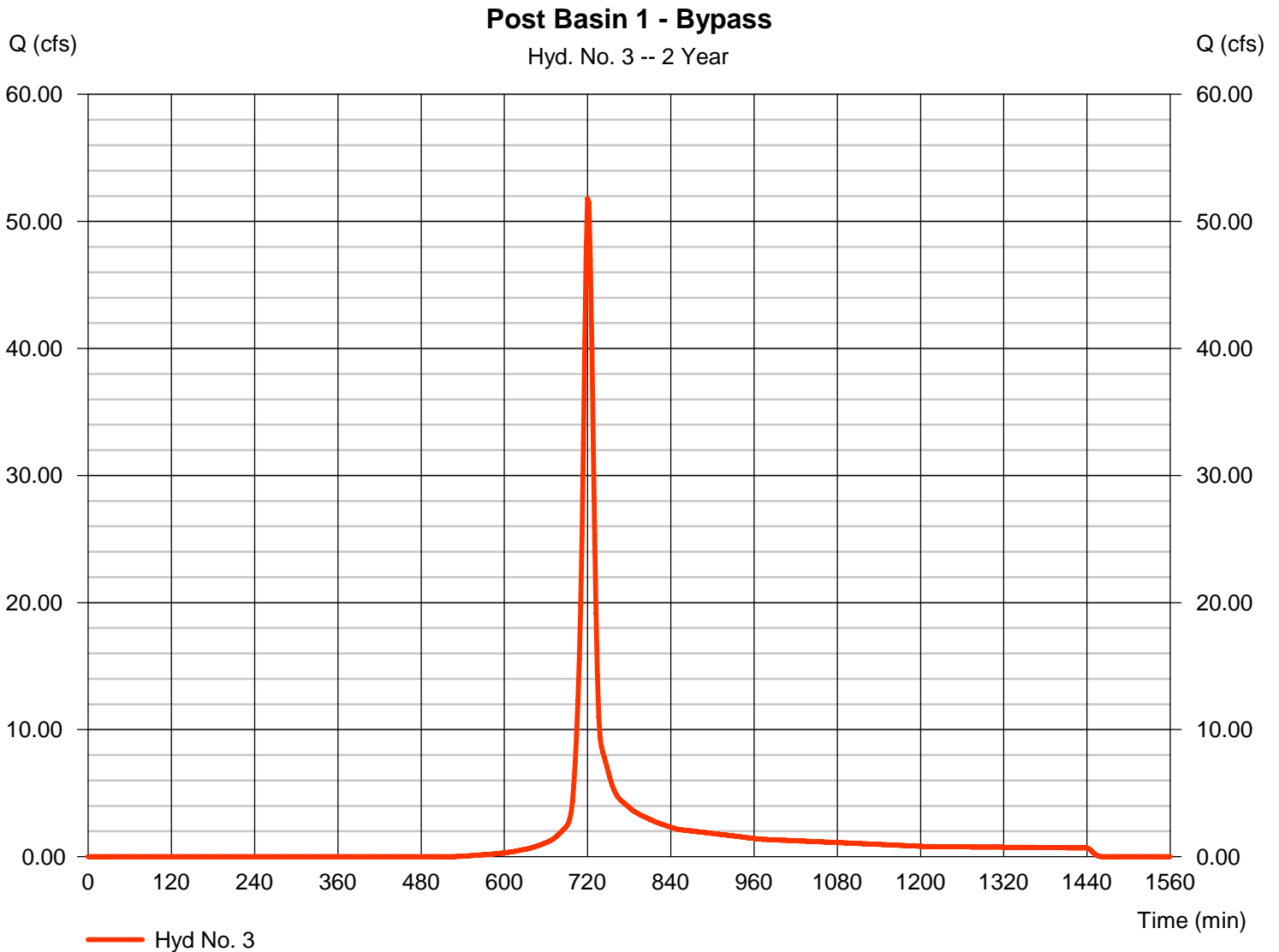
Hydrograph Report

Hyd. No. 3

Post Basin 1 - Bypass

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 51.79 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 134,537 cuft |
| Drainage area | = 19.090 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 3.90 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (8.810 x 79) + (1.940 x 84) + (3.490 x 98)] / 19.090



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No. 3

Post Basin 1 - Bypass

| <u>Description</u> | <u>A</u> | | <u>B</u> | | <u>C</u> | <u>Totals</u> |
|------------------------------------|---------------|----------|-------------|----------|-------------|------------------|
| Sheet Flow | | | | | | |
| Manning's n-value | = 0.410 | | 0.011 | | 0.011 | |
| Flow length (ft) | = 100.0 | | 0.0 | | 0.0 | |
| Two-year 24-hr precip. (in) | = 3.90 | | 0.00 | | 0.00 | |
| Land slope (%) | = 19.33 | | 0.00 | | 0.00 | |
| Travel Time (min) | = 8.01 | + | 0.00 | + | 0.00 | = 8.01 |
| Shallow Concentrated Flow | | | | | | |
| Flow length (ft) | = 306.00 | | 1008.00 | | 50.00 | |
| Watercourse slope (%) | = 9.48 | | 7.14 | | 19.33 | |
| Surface description | = Unpaved | | Paved | | Unpaved | |
| Average velocity (ft/s) | =4.97 | | 5.43 | | 7.09 | |
| Travel Time (min) | = 1.03 | + | 3.09 | + | 0.12 | = 4.24 |
| Channel Flow | | | | | | |
| X sectional flow area (sqft) | = 6.00 | | 0.00 | | 0.00 | |
| Wetted perimeter (ft) | = 9.00 | | 0.00 | | 0.00 | |
| Channel slope (%) | = 3.33 | | 0.00 | | 0.00 | |
| Manning's n-value | = 0.015 | | 0.015 | | 0.015 | |
| Velocity (ft/s) | =13.81 | | 0.00 | | 0.00 | |
| Flow length (ft) | {{0}}450.0 | | 0.0 | | 0.0 | |
| Travel Time (min) | = 0.54 | + | 0.00 | + | 0.00 | = 0.54 |
| Total Travel Time, Tc | | | | | | 12.80 min |

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

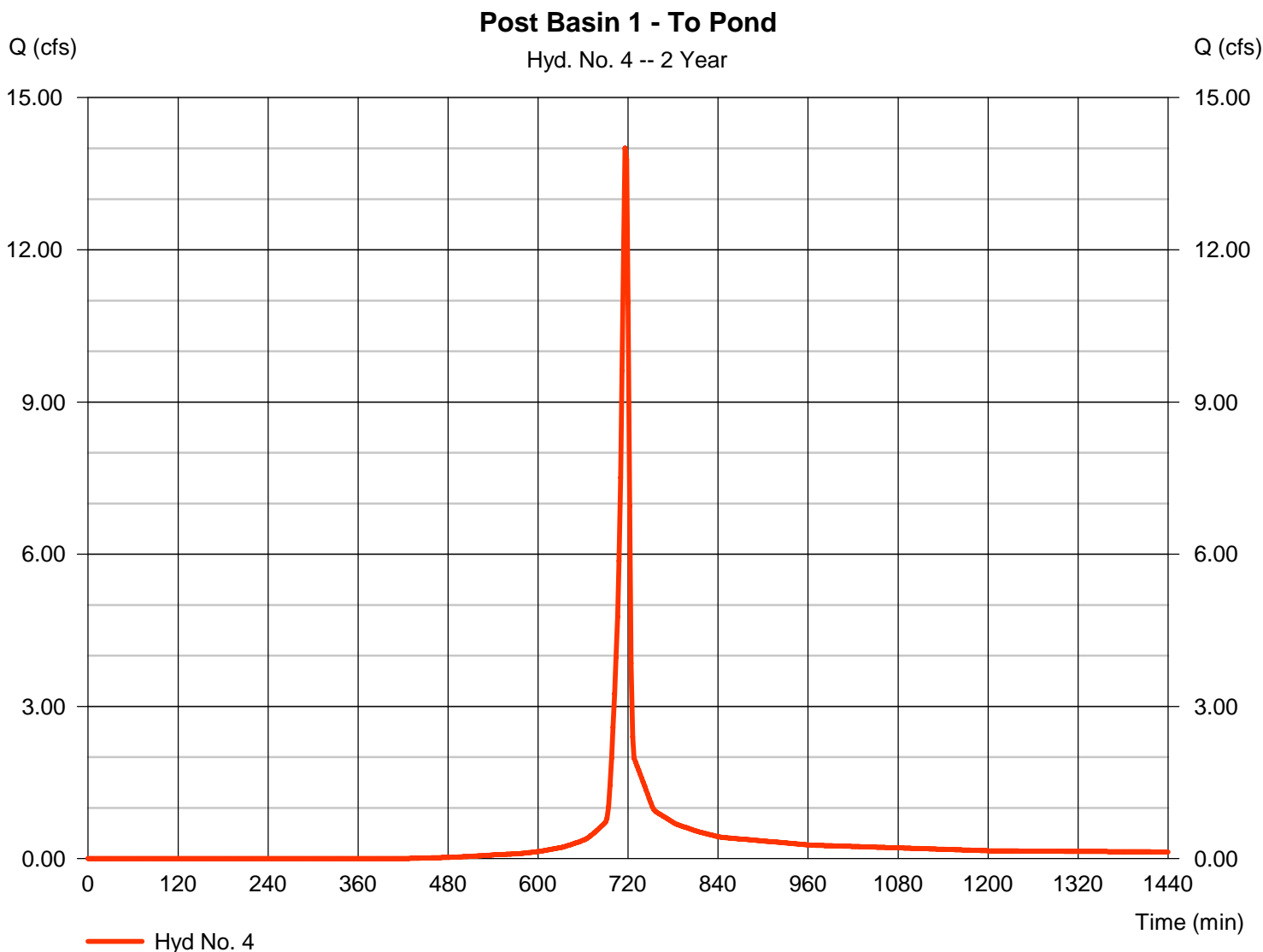
Tuesday, 02 / 24 / 2026

Hyd. No. 4

Post Basin 1 - To Pond

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 14.00 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 716 min |
| Time interval | = 2 min | Hyd. volume | = 28,516 cuft |
| Drainage area | = 3.670 ac | Curve number | = 84* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 3.90 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = + (2.130 x 79) + (0.700 x 84) + (0.840 x 98)] / 3.670



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

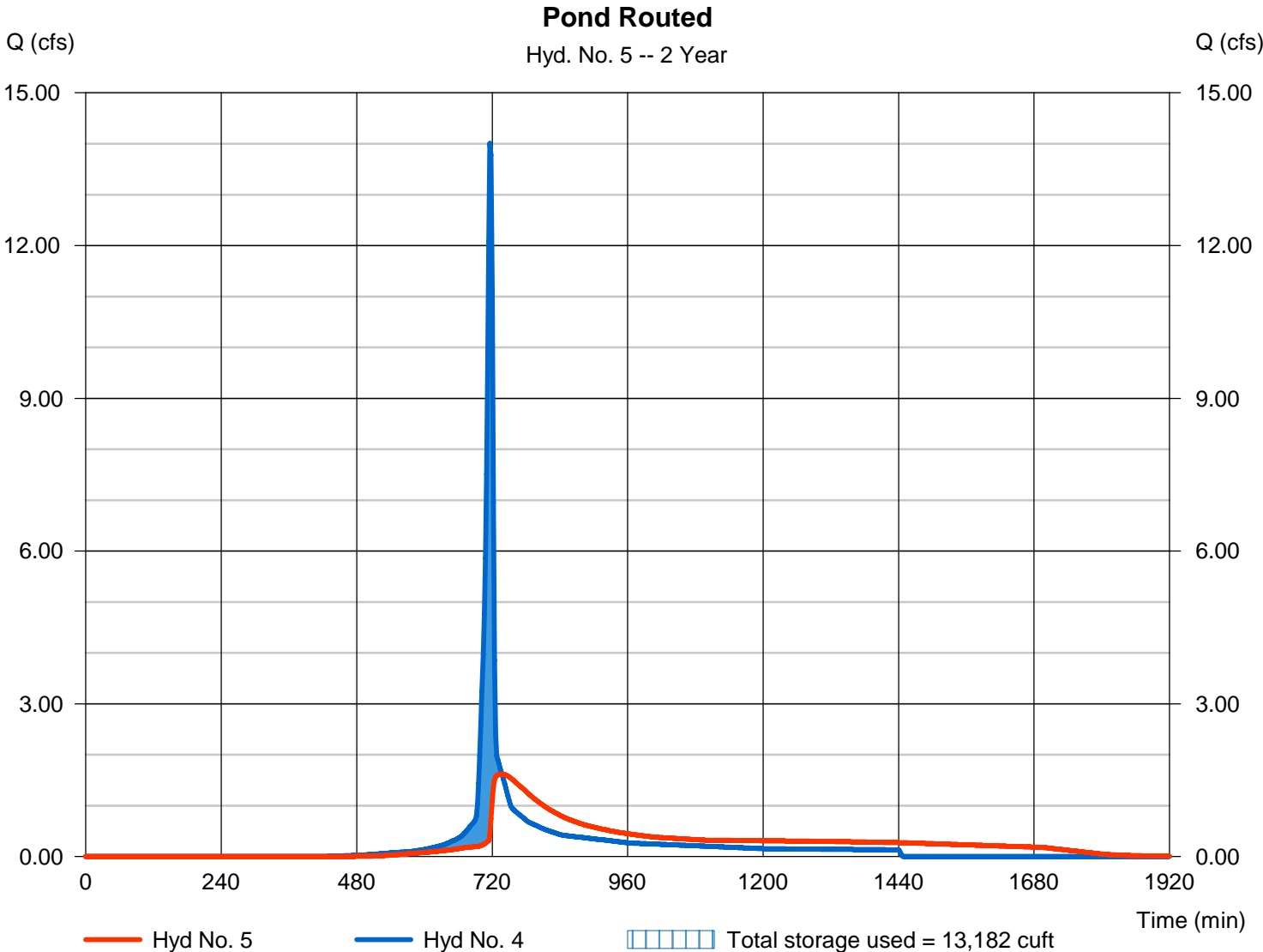
Tuesday, 02 / 24 / 2026

Hyd. No. 5

Pond Routed

| | | | |
|-----------------|------------------------------|----------------|---------------|
| Hydrograph type | = Reservoir | Peak discharge | = 1.619 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 738 min |
| Time interval | = 2 min | Hyd. volume | = 28,507 cuft |
| Inflow hyd. No. | = 4 - Post Basin 1 - To Pond | Max. Elevation | = 682.13 ft |
| Reservoir name | = Pond 1 | Max. Storage | = 13,182 cuft |

Storage Indication method used.



Pond No. 1 - Pond 1

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 679.30 ft

Stage / Storage Table

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|------------|----------------|---------------------|----------------------|----------------------|
| 0.00 | 679.30 | 00 | 0 | 0 |
| 0.70 | 680.00 | 2,700 | 945 | 945 |
| 1.70 | 681.00 | 6,200 | 4,450 | 5,395 |
| 2.70 | 682.00 | 7,300 | 6,750 | 12,145 |
| 3.70 | 683.00 | 8,400 | 7,850 | 19,995 |
| 4.70 | 684.00 | 9,600 | 9,000 | 28,995 |
| 5.70 | 685.00 | 10,800 | 10,200 | 39,195 |
| 6.70 | 686.00 | 12,000 | 11,400 | 50,595 |

Culvert / Orifice Structures

| | [A] | [B] | [C] | [PrfRsr] |
|-----------------|----------|--------|------|----------|
| Rise (in) | = 15.00 | 3.00 | 0.00 | 0.00 |
| Span (in) | = 15.00 | 3.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 1 | 0 | 0 |
| Invert El. (ft) | = 679.20 | 679.30 | 0.00 | 0.00 |
| Length (ft) | = 38.00 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 0.50 | 0.00 | 0.00 | n/a |
| N-Value | = .013 | .013 | .013 | n/a |
| Orifice Coeff. | = 0.60 | 0.60 | 0.60 | 0.60 |
| Multi-Stage | = n/a | Yes | No | No |

Weir Structures

| | [A] | [B] | [C] | [D] |
|----------------|----------------------|--------|------|--------|
| Crest Len (ft) | = 15.50 | 0.50 | 0.00 | 50.00 |
| Crest El. (ft) | = 684.30 | 681.30 | 0.00 | 685.50 |
| Weir Coeff. | = 3.33 | 3.33 | 3.33 | 2.60 |
| Weir Type | = 1 | Rect | --- | Broad |
| Multi-Stage | = Yes | Yes | No | No |
| Exfil.(in/hr) | = 0.000 (by Contour) | | | |
| TW Elev. (ft) | = 0.00 | | | |

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

Stage / Storage / Discharge Table

| Stage ft | Storage cuft | Elevation ft | Civ A cfs | Civ B cfs | Civ 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 | 679.30 | 0.00 | 0.00 | --- | --- | 0.00 | 0.00 | --- | 0.00 | --- | --- | 0.000 |
| 0.70 | 945 | 680.00 | 0.18 ic | 0.18 ic | --- | --- | 0.00 | 0.00 | --- | 0.00 | --- | --- | 0.179 |
| 1.70 | 5,395 | 681.00 | 0.29 ic | 0.29 ic | --- | --- | 0.00 | 0.00 | --- | 0.00 | --- | --- | 0.295 |
| 2.70 | 12,145 | 682.00 | 1.33 oc | 0.35 ic | --- | --- | 0.00 | 0.98 | --- | 0.00 | --- | --- | 1.326 |
| 3.70 | 19,995 | 683.00 | 4.05 oc | 0.36 ic | --- | --- | 0.00 | 3.69 | --- | 0.00 | --- | --- | 4.052 |
| 4.70 | 28,995 | 684.00 | 7.60 oc | 0.36 ic | --- | --- | 0.00 | 7.24 s | --- | 0.00 | --- | --- | 7.598 |
| 5.70 | 39,195 | 685.00 | 13.40 ic | 0.04 ic | --- | --- | 11.05 s | 2.29 s | --- | 0.00 | --- | --- | 13.39 |
| 6.70 | 50,595 | 686.00 | 14.68 ic | 0.02 ic | --- | --- | 13.25 s | 1.33 s | --- | 45.96 | --- | --- | 60.55 |

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

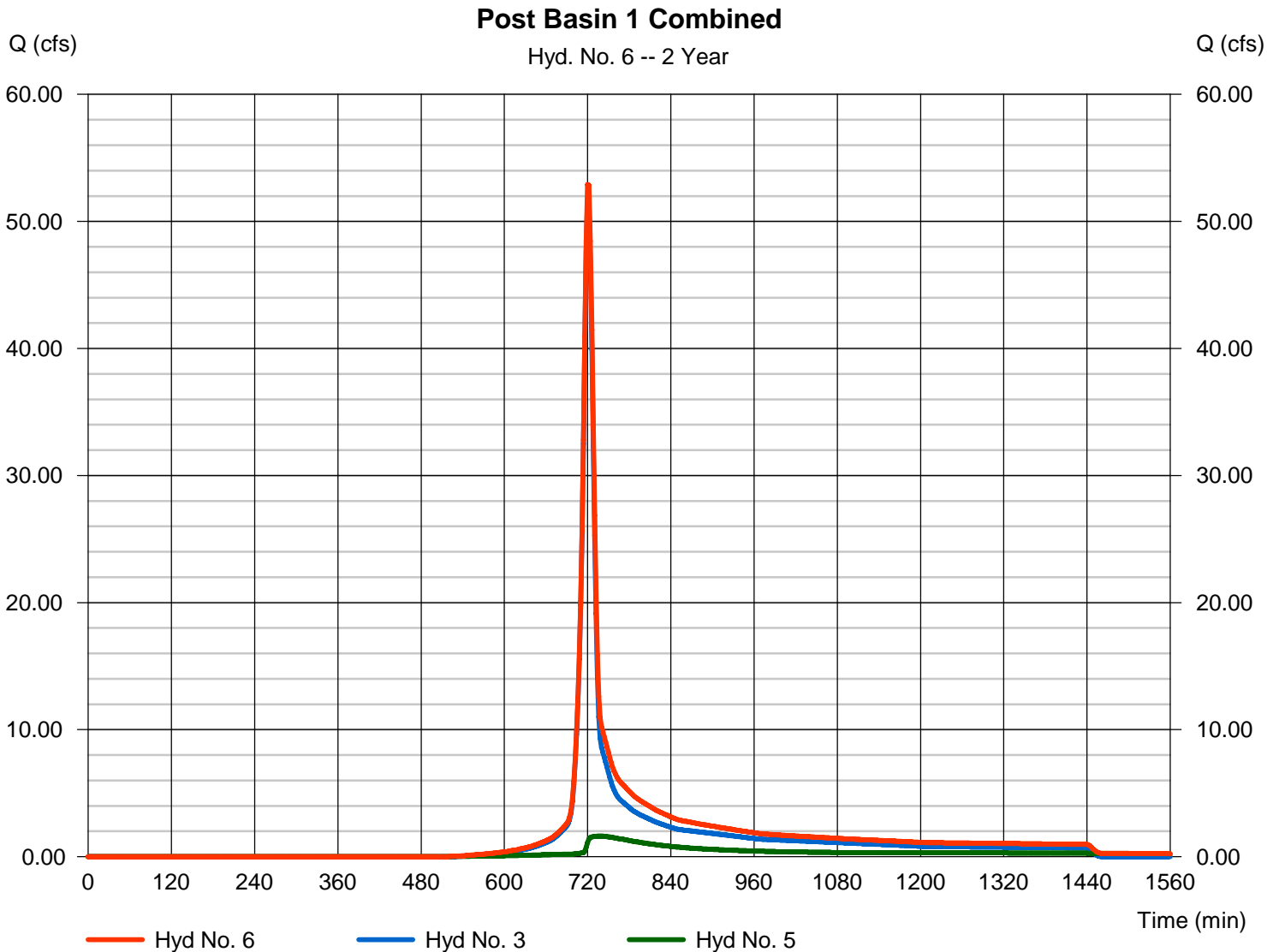
Tuesday, 02 / 24 / 2026

Hyd. No. 6

Post Basin 1 Combined

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 2 min
Inflow hyds. = 3, 5

Peak discharge = 52.90 cfs
Time to peak = 720 min
Hyd. volume = 163,043 cuft
Contrib. drain. area = 19.090 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

| 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 | 85.04 | 2 | 720 | 220,473 | ----- | ----- | ----- | Pre Basin 1 | |
| 3 | SCS Runoff | 71.33 | 2 | 720 | 184,923 | ----- | ----- | ----- | Post Basin 1 - Bypass | |
| 4 | SCS Runoff | 18.47 | 2 | 716 | 38,000 | ----- | ----- | ----- | Post Basin 1 - To Pond | |
| 5 | Reservoir | 2.986 | 2 | 726 | 37,991 | 4 | 682.66 | 17,308 | Pond Routed | |
| 6 | Combine | 73.71 | 2 | 720 | 222,913 | 3, 5 | ----- | ----- | Post Basin 1 Combined | |
| Mt. Pleasant Library Detention Calcs.gpw | | | | | Return Period: 5 Year | | | Tuesday, 02 / 24 / 2026 | | |

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

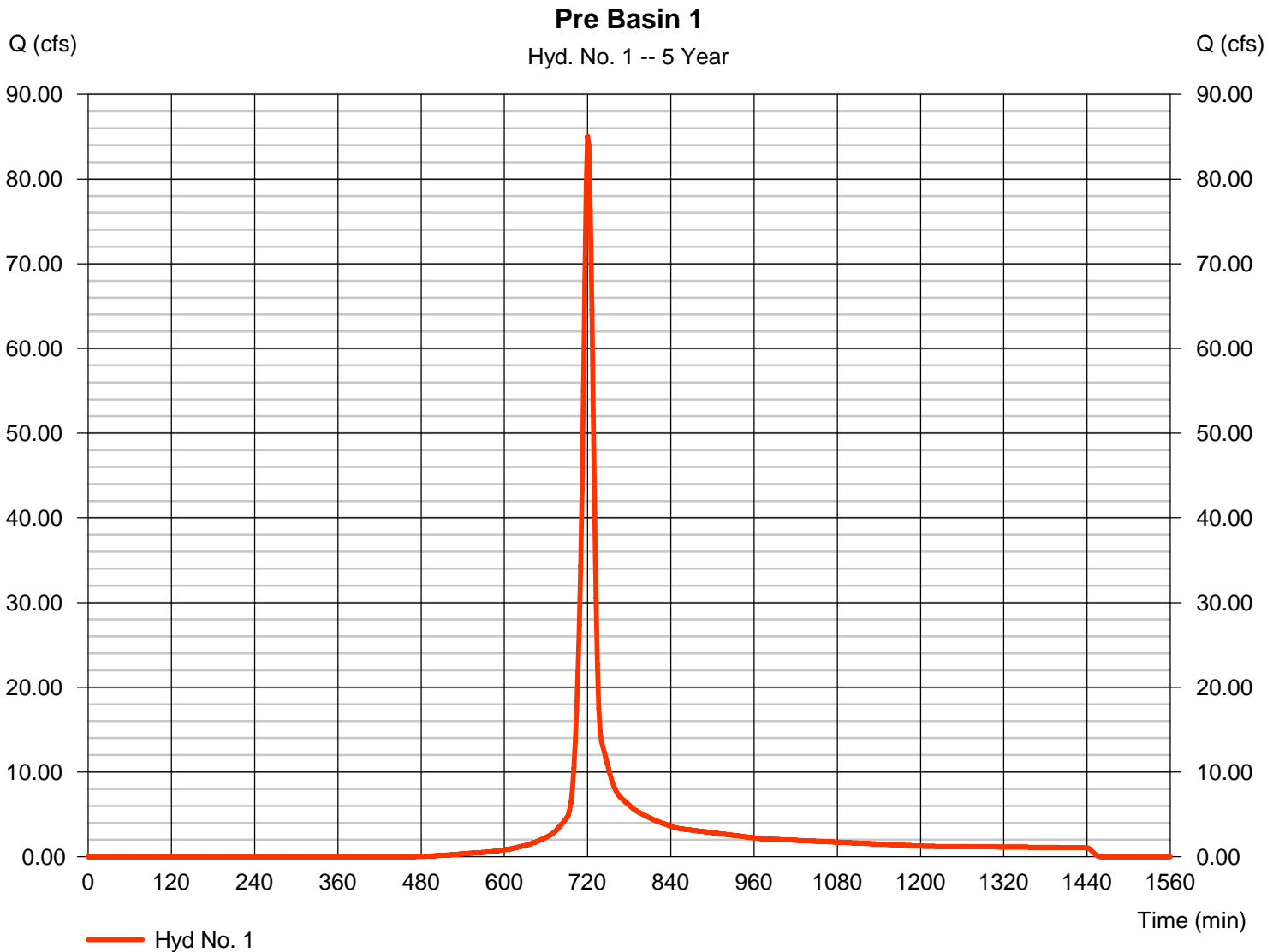
Tuesday, 02 / 24 / 2026

Hyd. No. 1

Pre Basin 1

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 85.04 cfs |
| Storm frequency | = 5 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 220,473 cuft |
| Drainage area | = 22.760 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 4.75 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (11.080 x 79) + (3.760 x 84) + (3.070 x 98)] / 22.760



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

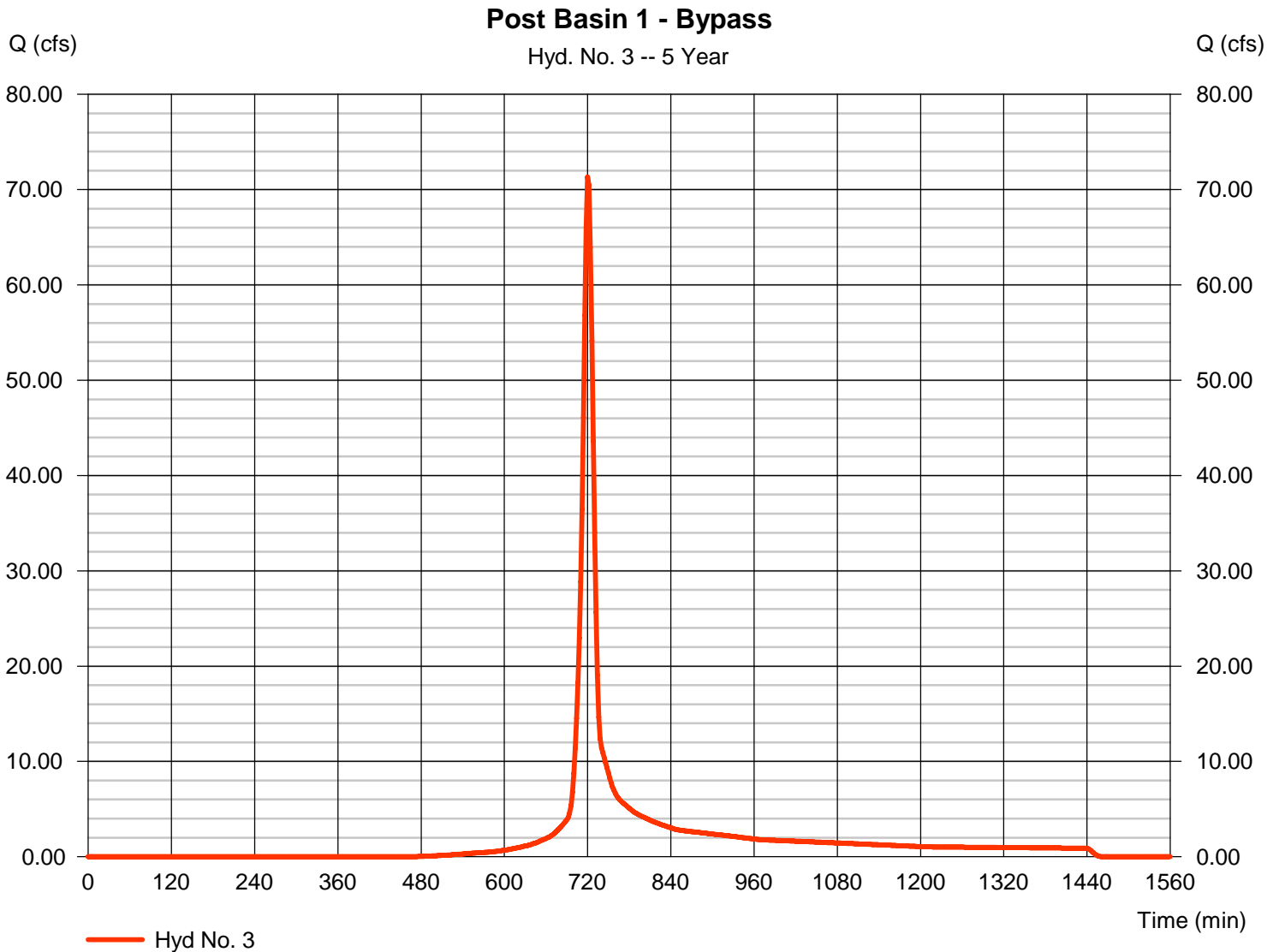
Tuesday, 02 / 24 / 2026

Hyd. No. 3

Post Basin 1 - Bypass

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 71.33 cfs |
| Storm frequency | = 5 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 184,923 cuft |
| Drainage area | = 19.090 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 4.75 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (8.810 x 79) + (1.940 x 84) + (3.490 x 98)] / 19.090



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

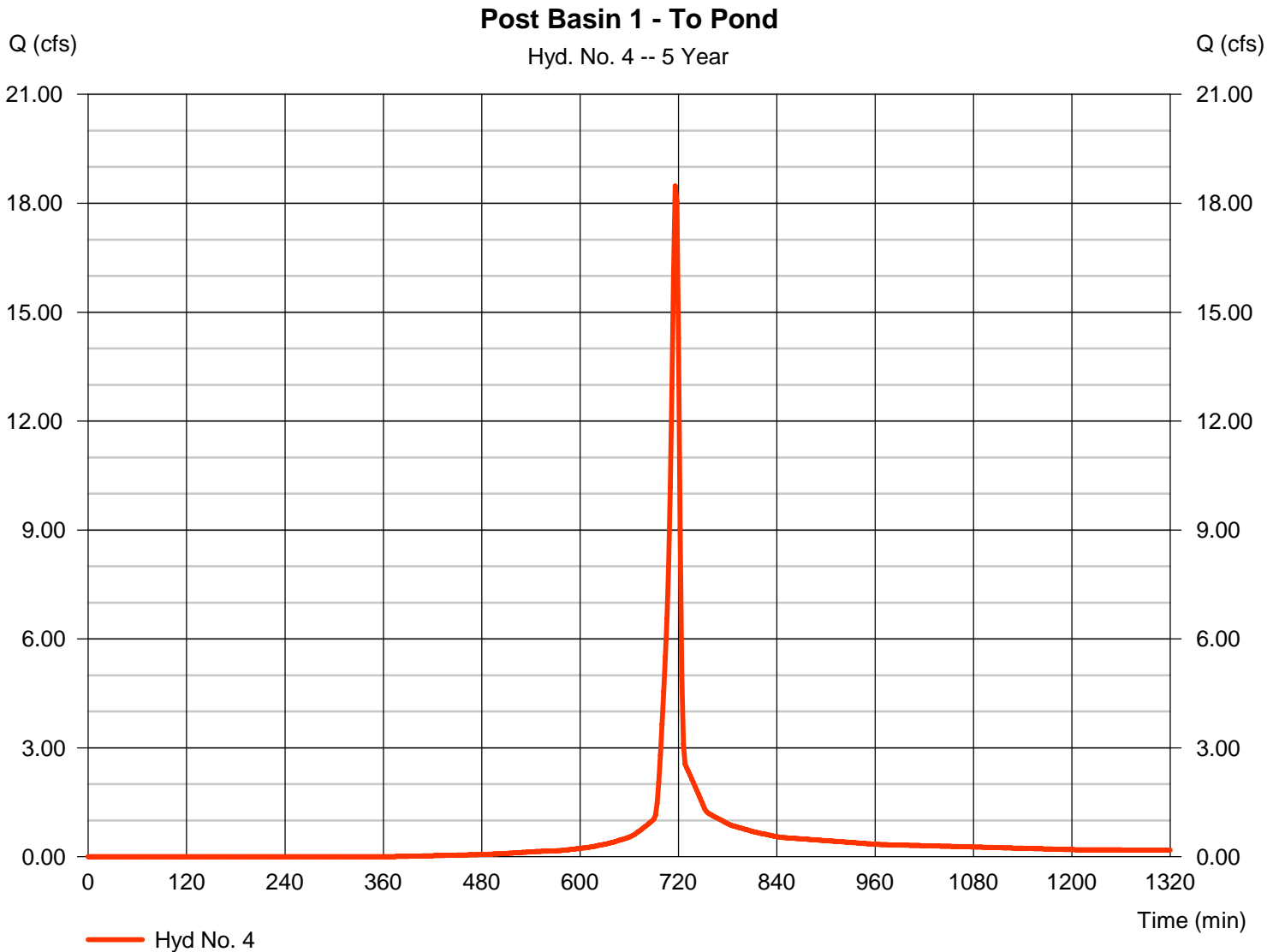
Tuesday, 02 / 24 / 2026

Hyd. No. 4

Post Basin 1 - To Pond

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 18.47 cfs |
| Storm frequency | = 5 yrs | Time to peak | = 716 min |
| Time interval | = 2 min | Hyd. volume | = 38,000 cuft |
| Drainage area | = 3.670 ac | Curve number | = 84* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 4.75 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = + (2.130 x 79) + (0.700 x 84) + (0.840 x 98)] / 3.670



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

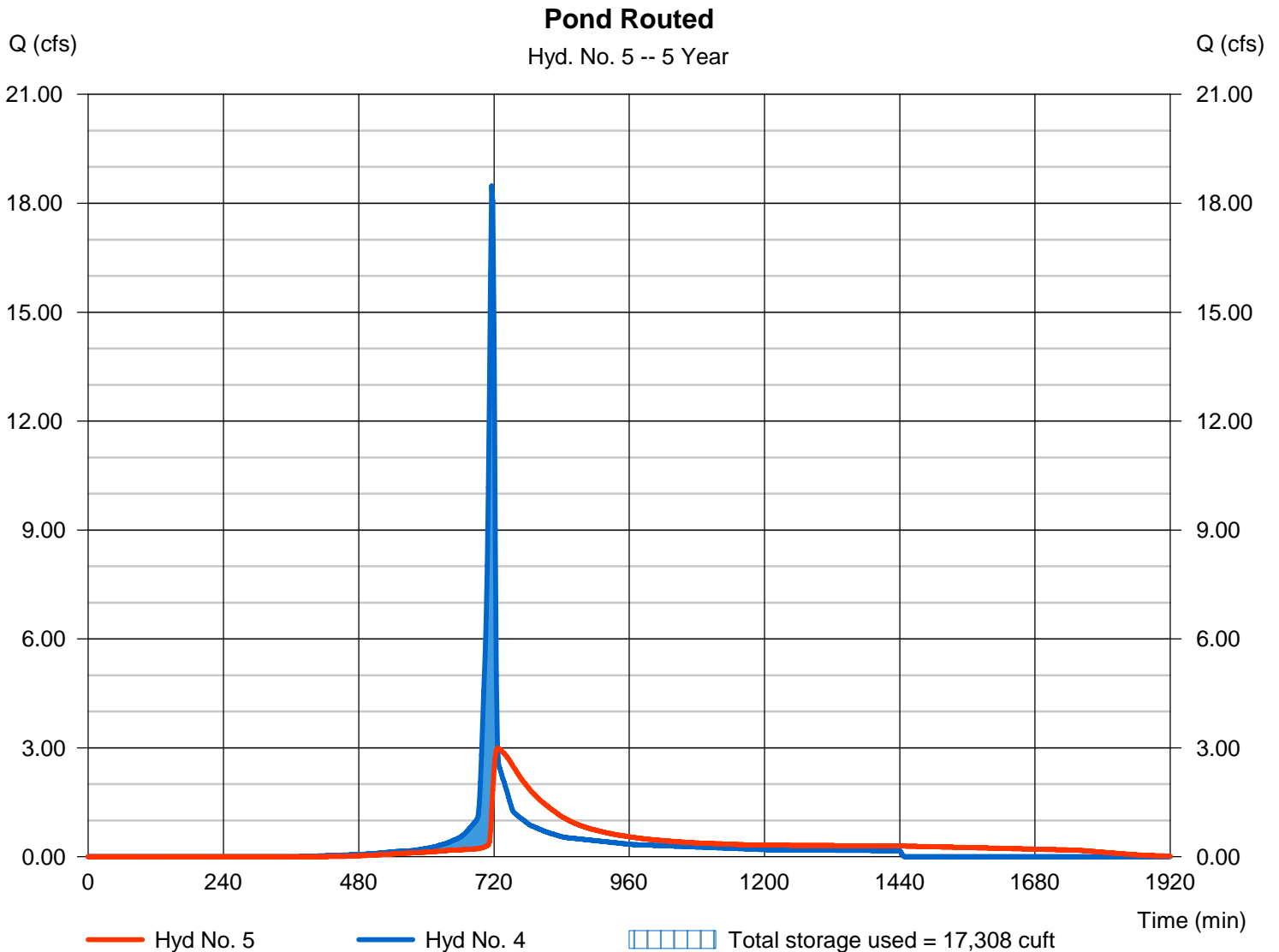
Tuesday, 02 / 24 / 2026

Hyd. No. 5

Pond Routed

| | | | |
|-----------------|------------------------------|----------------|---------------|
| Hydrograph type | = Reservoir | Peak discharge | = 2.986 cfs |
| Storm frequency | = 5 yrs | Time to peak | = 726 min |
| Time interval | = 2 min | Hyd. volume | = 37,991 cuft |
| Inflow hyd. No. | = 4 - Post Basin 1 - To Pond | Max. Elevation | = 682.66 ft |
| Reservoir name | = Pond 1 | Max. Storage | = 17,308 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

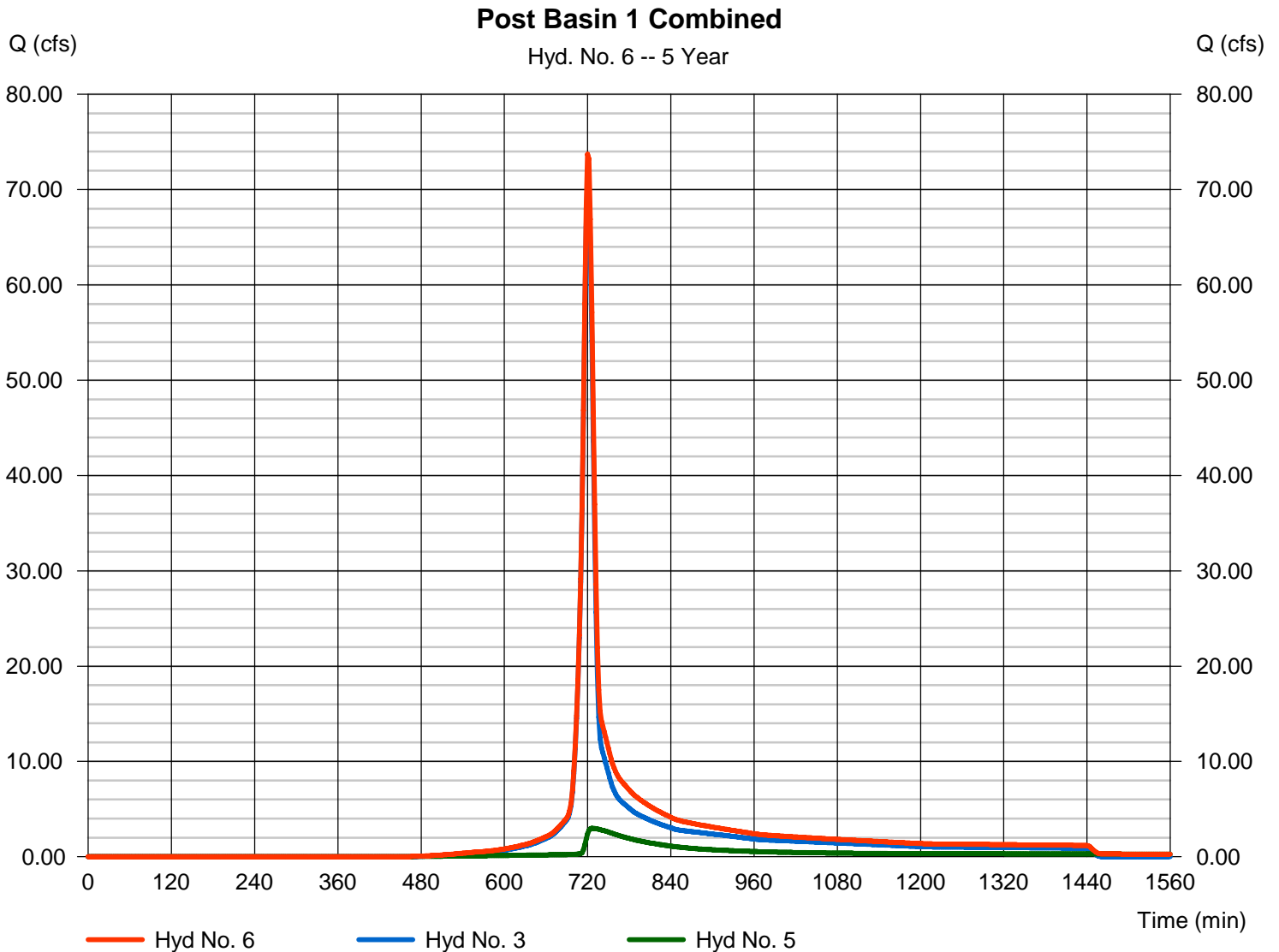
Tuesday, 02 / 24 / 2026

Hyd. No. 6

Post Basin 1 Combined

Hydrograph type = Combine
 Storm frequency = 5 yrs
 Time interval = 2 min
 Inflow hyds. = 3, 5

Peak discharge = 73.71 cfs
 Time to peak = 720 min
 Hyd. volume = 222,913 cuft
 Contrib. drain. area = 19.090 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

| 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 | 104.16 | 2 | 720 | 270,531 | ----- | ----- | ----- | Pre Basin 1 | |
| 3 | SCS Runoff | 87.36 | 2 | 720 | 226,909 | ----- | ----- | ----- | Post Basin 1 - Bypass | |
| 4 | SCS Runoff | 22.07 | 2 | 716 | 45,787 | ----- | ----- | ----- | Post Basin 1 - To Pond | |
| 5 | Reservoir | 4.315 | 2 | 726 | 45,777 | 4 | 683.08 | 20,707 | Pond Routed | |
| 6 | Combine | 90.99 | 2 | 720 | 272,686 | 3, 5 | ----- | ----- | Post Basin 1 Combined | |
| Mt. Pleasant Library Detention Calcs.gpw | | | | | Return Period: 10 Year | | | Tuesday, 02 / 24 / 2026 | | |

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

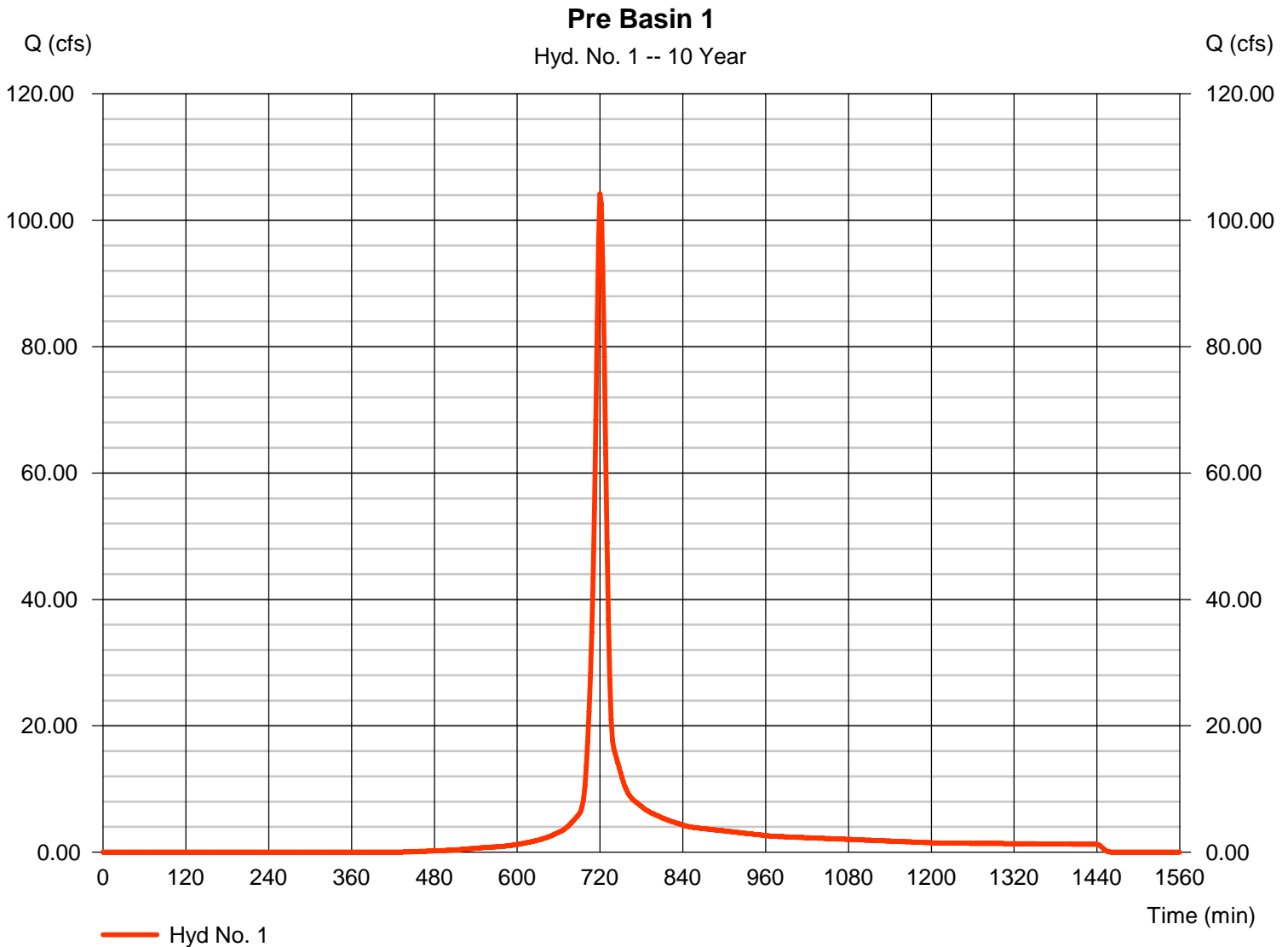
Tuesday, 02 / 24 / 2026

Hyd. No. 1

Pre Basin 1

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 104.16 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 270,531 cuft |
| Drainage area | = 22.760 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 5.43 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (11.080 x 79) + (3.760 x 84) + (3.070 x 98)] / 22.760



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

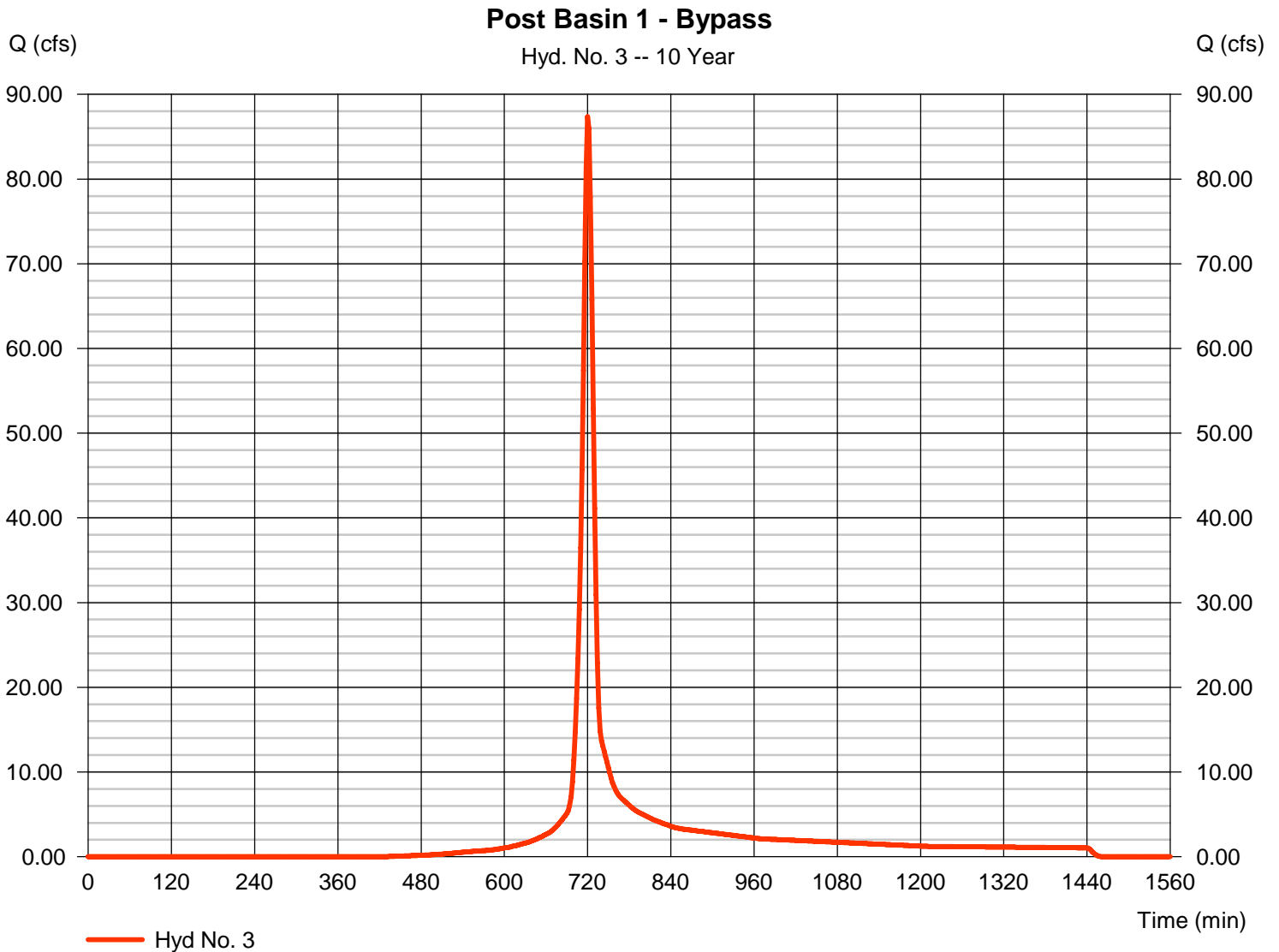
Tuesday, 02 / 24 / 2026

Hyd. No. 3

Post Basin 1 - Bypass

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 87.36 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 226,909 cuft |
| Drainage area | = 19.090 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 5.43 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (8.810 x 79) + (1.940 x 84) + (3.490 x 98)] / 19.090



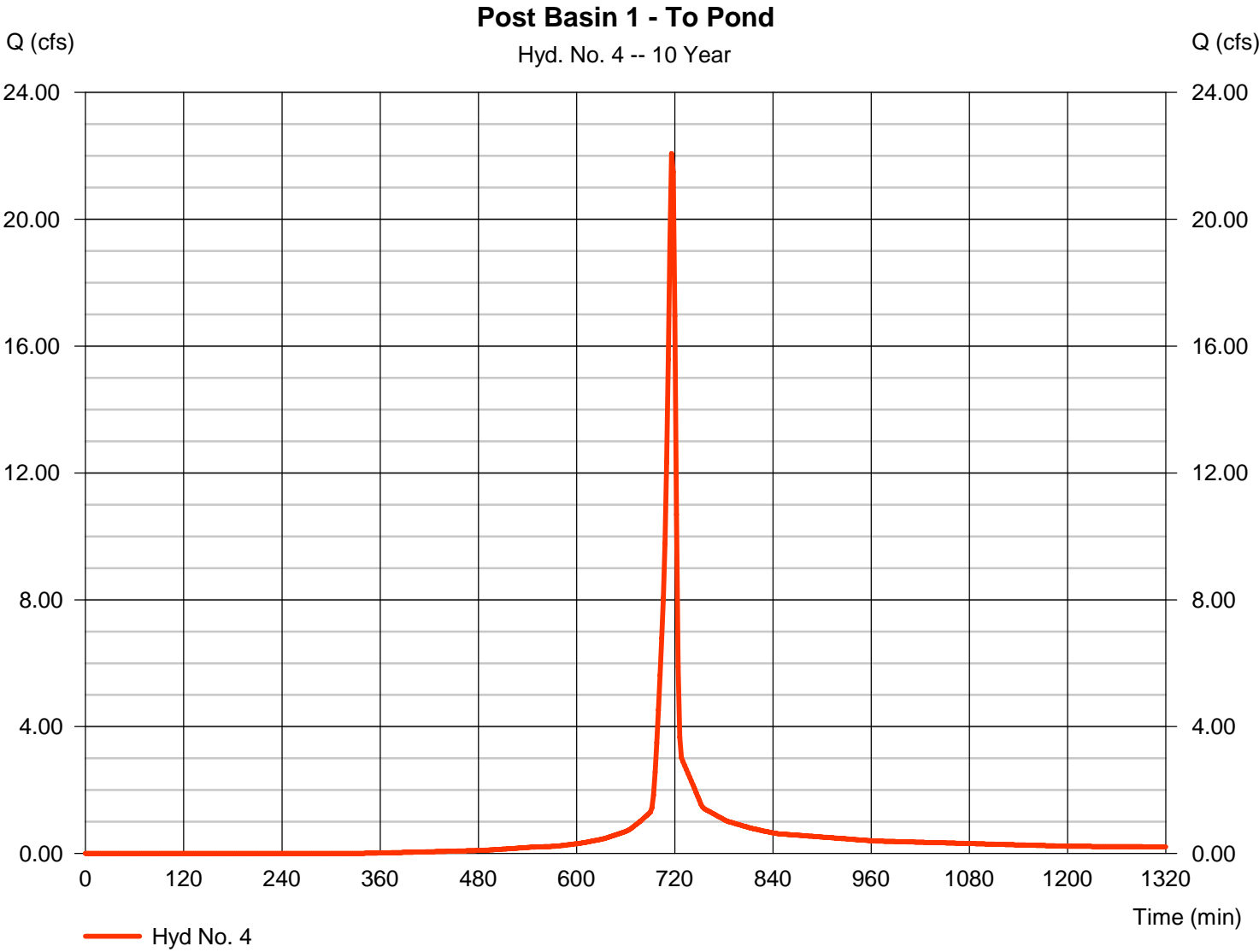
Hydrograph Report

Hyd. No. 4

Post Basin 1 - To Pond

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 22.07 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 716 min |
| Time interval | = 2 min | Hyd. volume | = 45,787 cuft |
| Drainage area | = 3.670 ac | Curve number | = 84* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 5.43 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = + (2.130 x 79) + (0.700 x 84) + (0.840 x 98) / 3.670



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

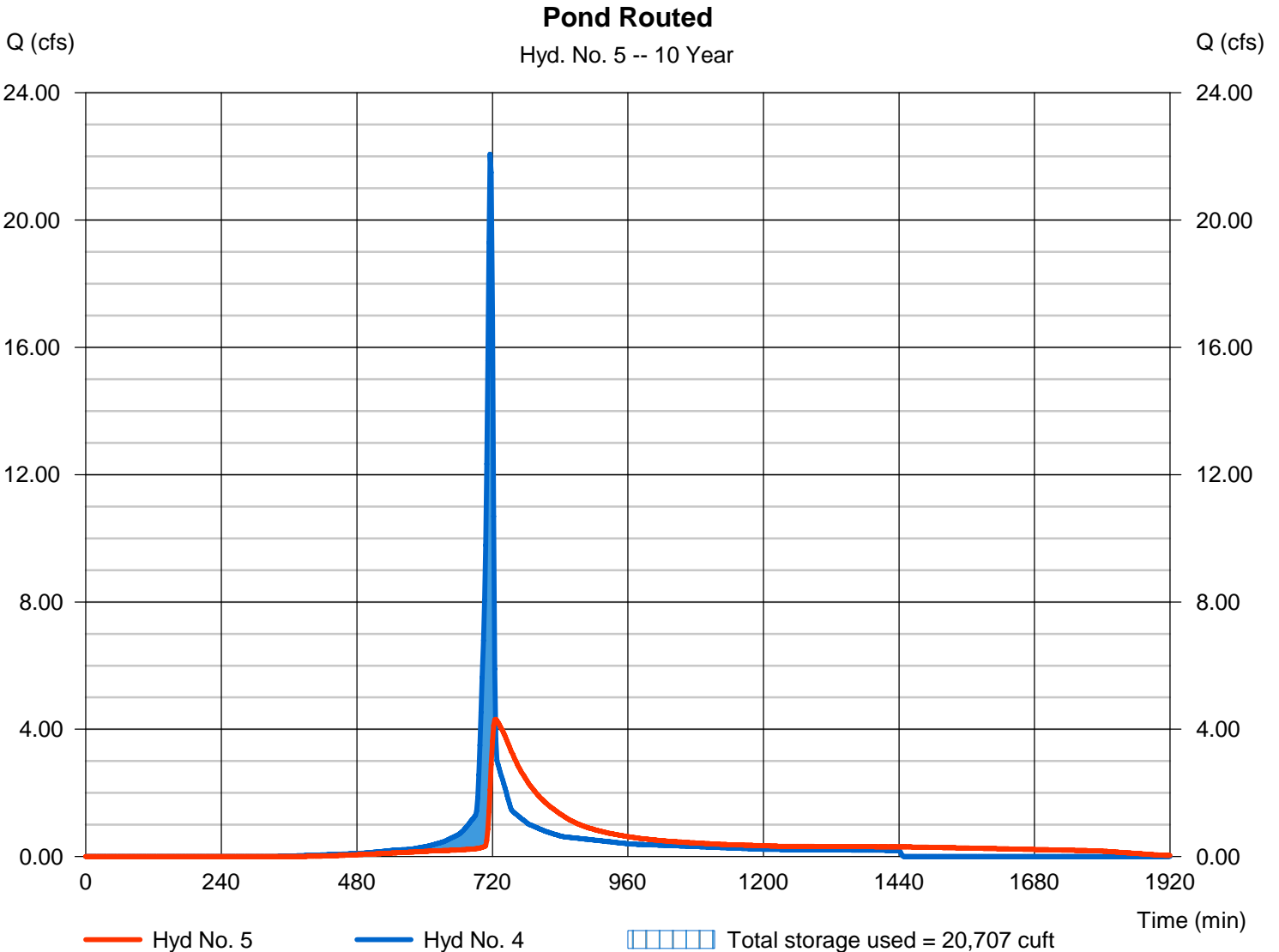
Tuesday, 02 / 24 / 2026

Hyd. No. 5

Pond Routed

| | | | |
|-----------------|------------------------------|----------------|---------------|
| Hydrograph type | = Reservoir | Peak discharge | = 4.315 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 726 min |
| Time interval | = 2 min | Hyd. volume | = 45,777 cuft |
| Inflow hyd. No. | = 4 - Post Basin 1 - To Pond | Max. Elevation | = 683.08 ft |
| Reservoir name | = Pond 1 | Max. Storage | = 20,707 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

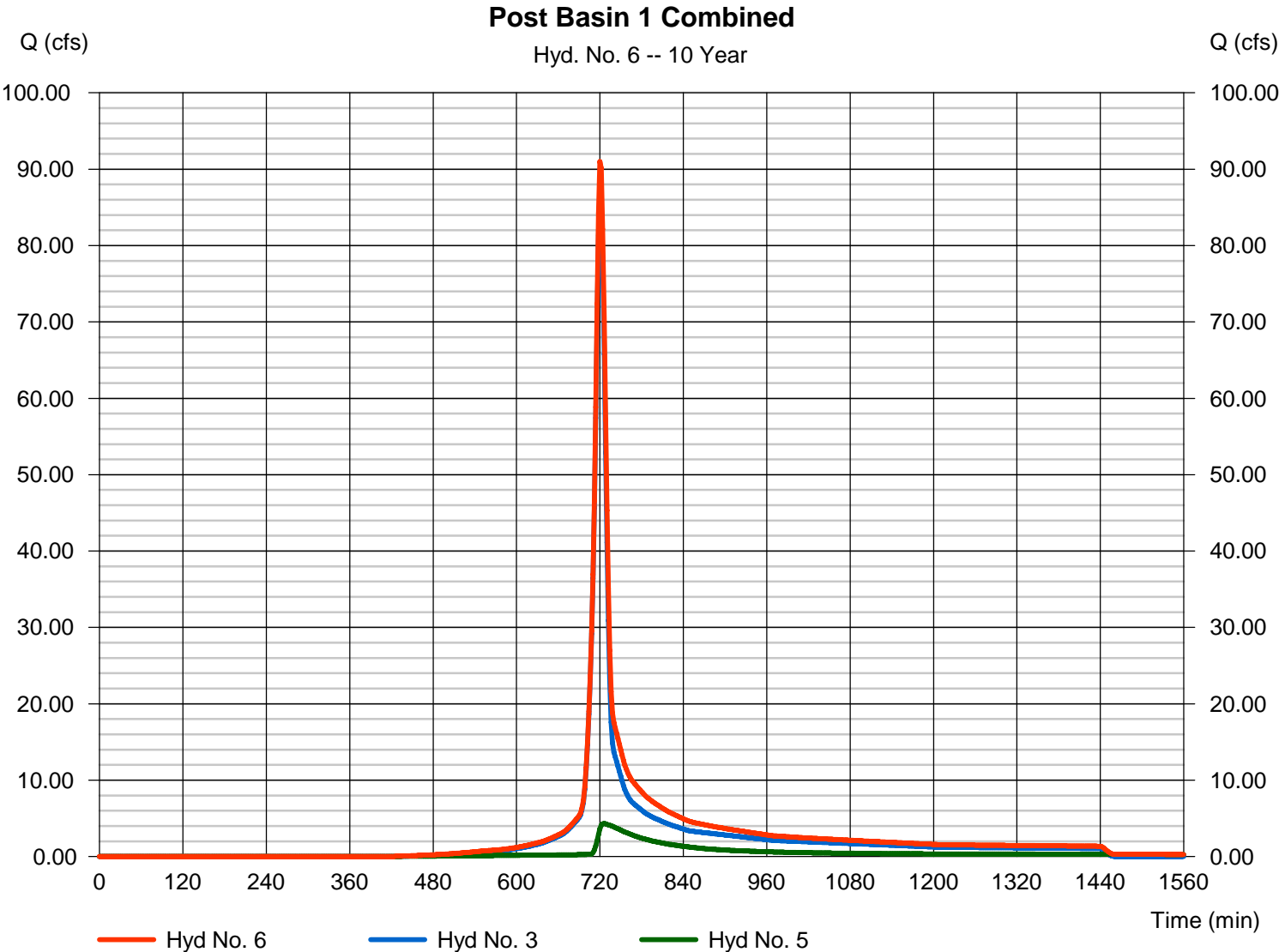
Tuesday, 02 / 24 / 2026

Hyd. No. 6

Post Basin 1 Combined

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 2 min
Inflow hyds. = 3, 5

Peak discharge = 90.99 cfs
Time to peak = 720 min
Hyd. volume = 272,686 cuft
Contrib. drain. area = 19.090 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

| 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 | 130.41 | 2 | 720 | 340,269 | ----- | ----- | ----- | Pre Basin 1 |
| 3 | SCS Runoff | 109.38 | 2 | 720 | 285,402 | ----- | ----- | ----- | Post Basin 1 - Bypass |
| 4 | SCS Runoff | 26.95 | 2 | 716 | 56,516 | ----- | ----- | ----- | Post Basin 1 - To Pond |
| 5 | Reservoir | 6.146 | 2 | 724 | 56,506 | 4 | 683.59 | 25,328 | Pond Routed |
| 6 | Combine | 114.79 | 2 | 720 | 341,908 | 3, 5 | ----- | ----- | Post Basin 1 Combined |

25 Yr Peak Flow used in Storm Calcs

| | | |
|--|------------------------|-------------------------|
| Mt. Pleasant Library Detention Calcs.gpw | Return Period: 25 Year | Tuesday, 02 / 24 / 2026 |
|--|------------------------|-------------------------|

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

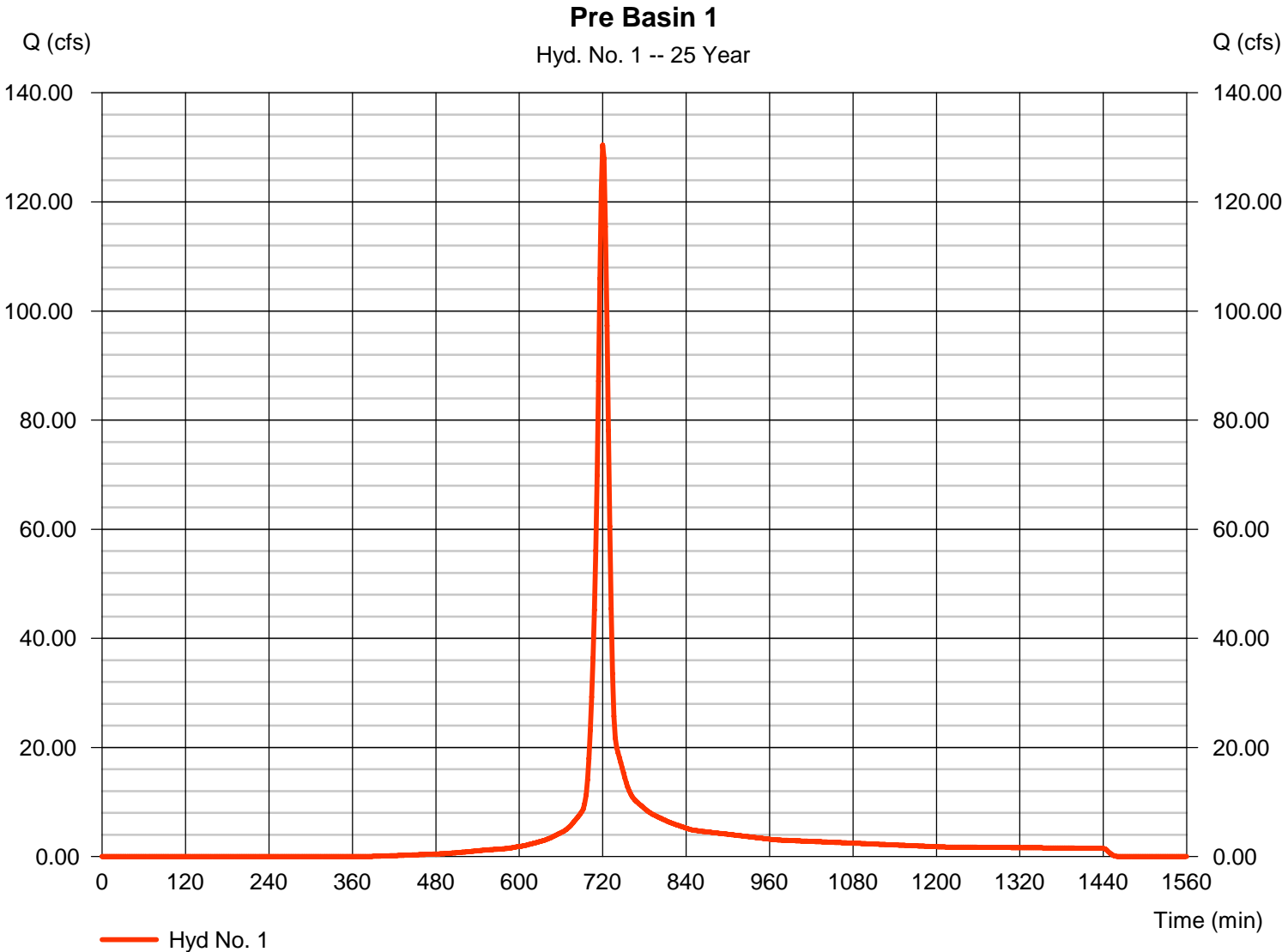
Tuesday, 02 / 24 / 2026

Hyd. No. 1

Pre Basin 1

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 130.41 cfs |
| Storm frequency | = 25 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 340,269 cuft |
| Drainage area | = 22.760 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 6.35 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (11.080 x 79) + (3.760 x 84) + (3.070 x 98)] / 22.760



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Tuesday, 02 / 24 / 2026

Hyd. No. 3

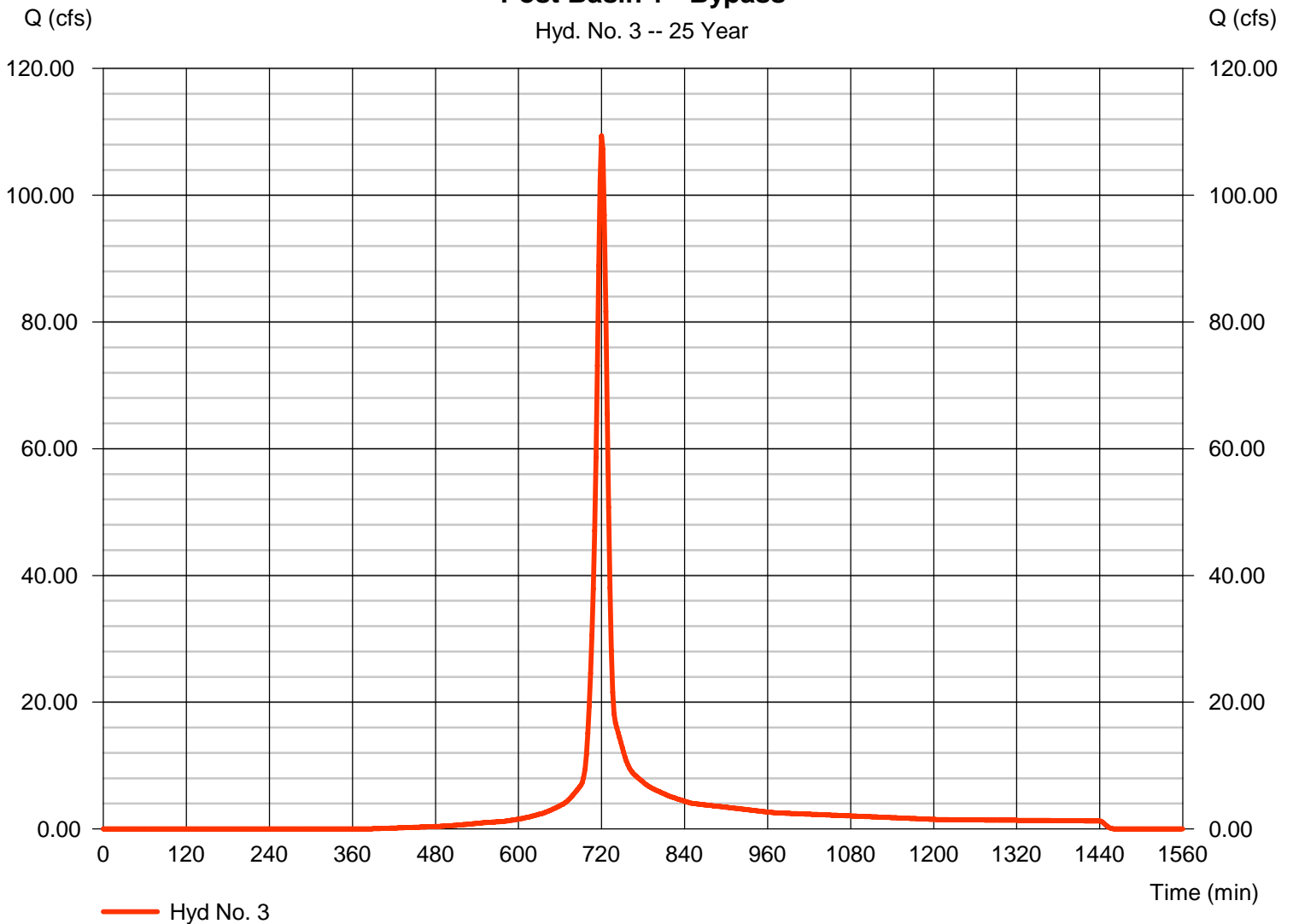
Post Basin 1 - Bypass

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 109.38 cfs |
| Storm frequency | = 25 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 285,402 cuft |
| Drainage area | = 19.090 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 6.35 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (8.810 x 79) + (1.940 x 84) + (3.490 x 98)] / 19.090

Post Basin 1 - Bypass

Hyd. No. 3 -- 25 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

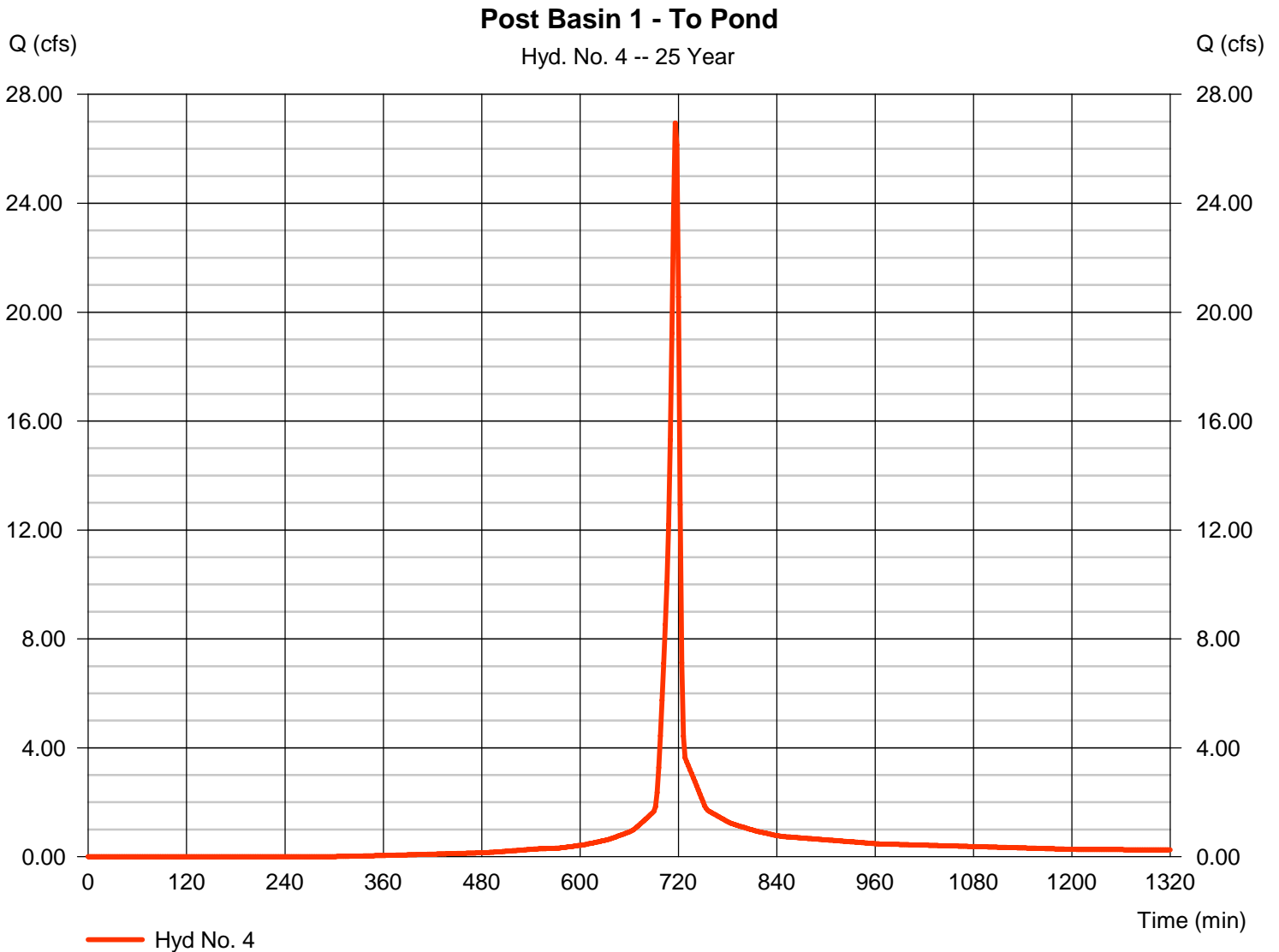
Tuesday, 02 / 24 / 2026

Hyd. No. 4

Post Basin 1 - To Pond

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 26.95 cfs |
| Storm frequency | = 25 yrs | Time to peak | = 716 min |
| Time interval | = 2 min | Hyd. volume | = 56,516 cuft |
| Drainage area | = 3.670 ac | Curve number | = 84* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 6.35 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = + (2.130 x 79) + (0.700 x 84) + (0.840 x 98)] / 3.670



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

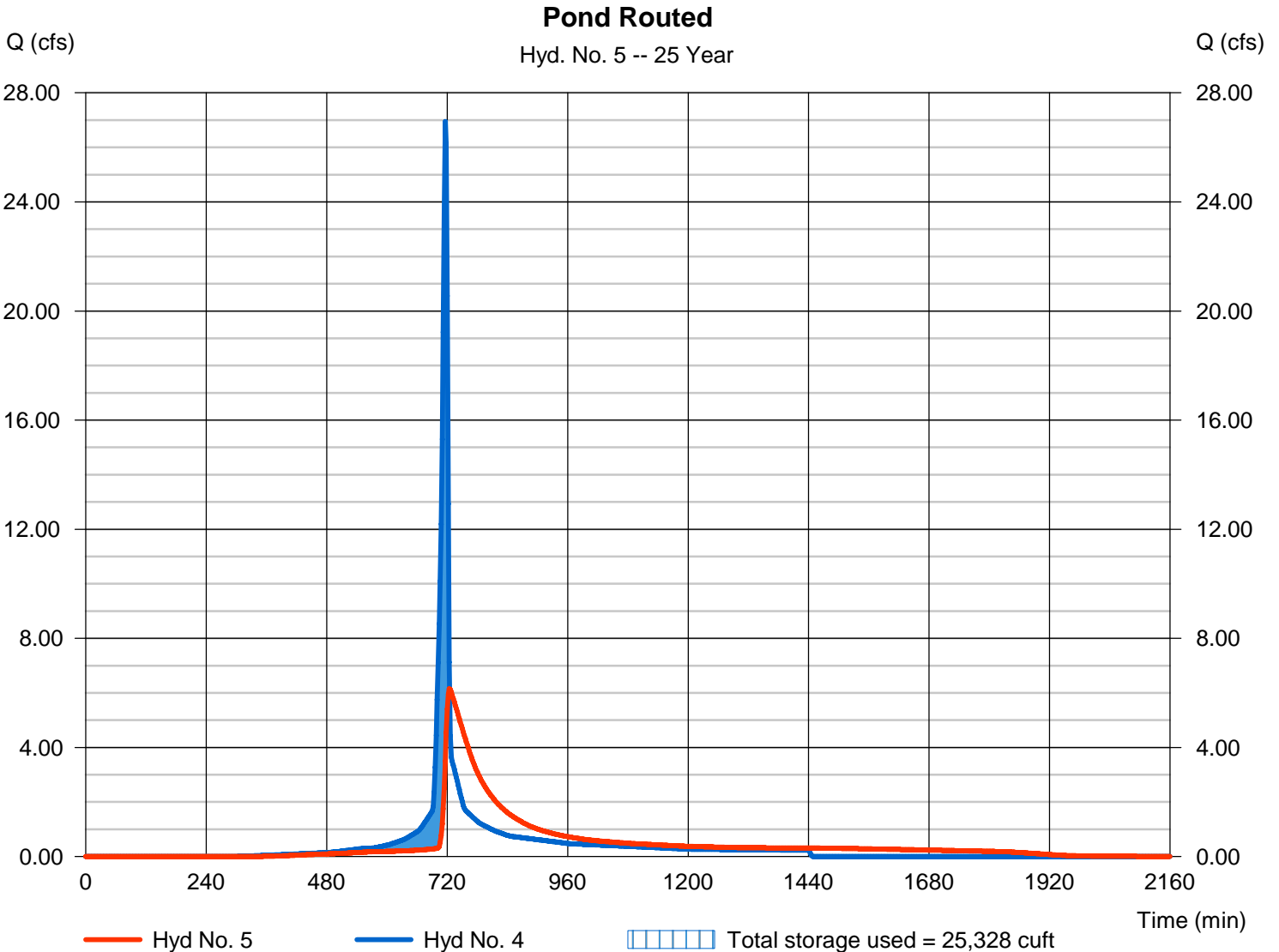
Tuesday, 02 / 24 / 2026

Hyd. No. 5

Pond Routed

| | | | |
|-----------------|------------------------------|----------------|---------------|
| Hydrograph type | = Reservoir | Peak discharge | = 6.146 cfs |
| Storm frequency | = 25 yrs | Time to peak | = 724 min |
| Time interval | = 2 min | Hyd. volume | = 56,506 cuft |
| Inflow hyd. No. | = 4 - Post Basin 1 - To Pond | Max. Elevation | = 683.59 ft |
| Reservoir name | = Pond 1 | Max. Storage | = 25,328 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Tuesday, 02 / 24 / 2026

Hyd. No. 6

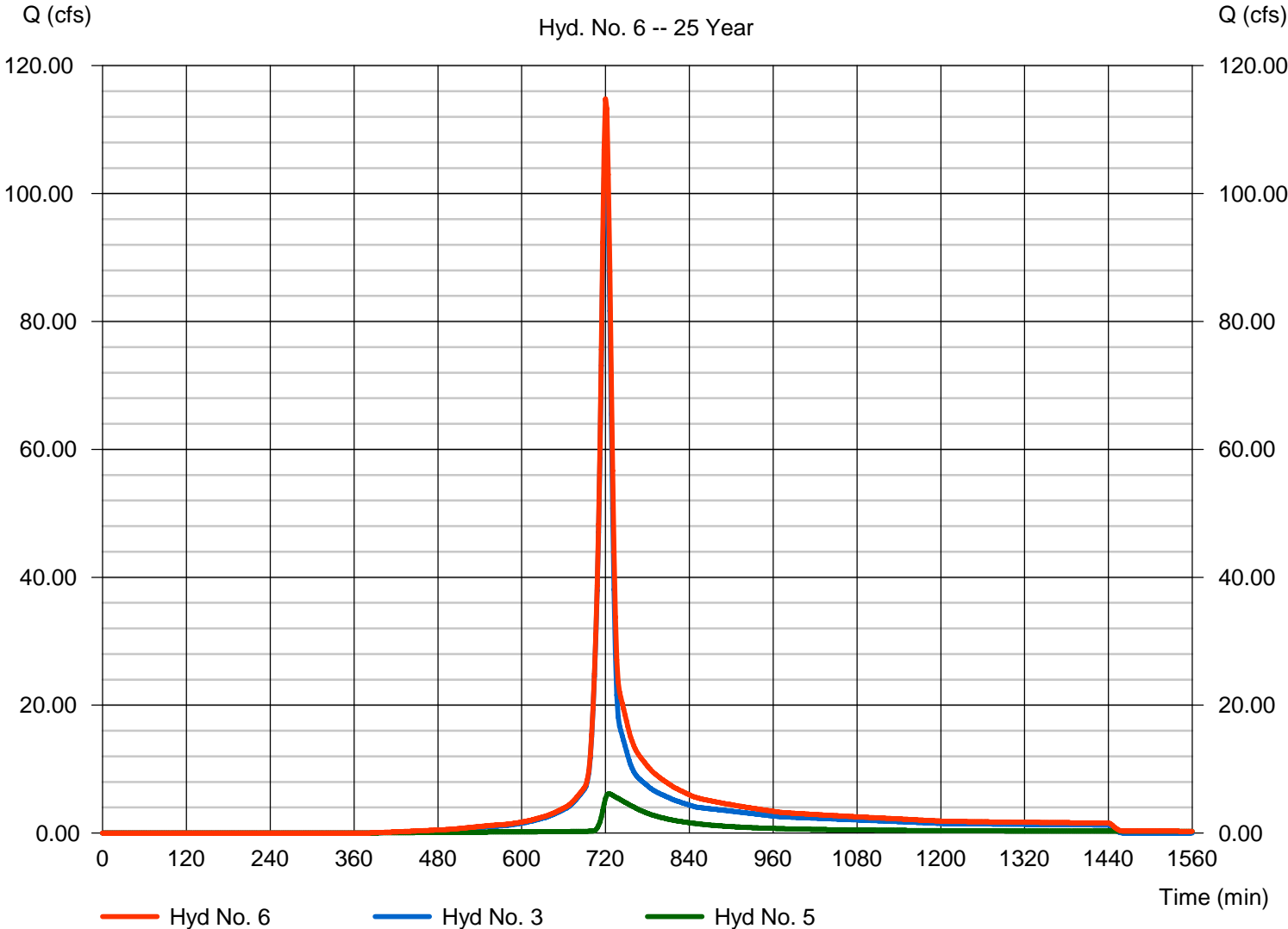
Post Basin 1 Combined

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 2 min
Inflow hyds. = 3, 5

Peak discharge = 114.79 cfs
Time to peak = 720 min
Hyd. volume = 341,908 cuft
Contrib. drain. area = 19.090 ac

Post Basin 1 Combined

Hyd. No. 6 -- 25 Year



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

| 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 | 151.71 | 2 | 720 | 397,615 | ----- | ----- | ----- | Pre Basin 1 | |
| 3 | SCS Runoff | 127.25 | 2 | 720 | 333,500 | ----- | ----- | ----- | Post Basin 1 - Bypass | |
| 4 | SCS Runoff | 30.87 | 2 | 716 | 65,264 | ----- | ----- | ----- | Post Basin 1 - To Pond | |
| 5 | Reservoir | 7.619 | 2 | 724 | 65,254 | 4 | 684.01 | 29,059 | Pond Routed | |
| 6 | Combine | 134.15 | 2 | 720 | 398,754 | 3, 5 | ----- | ----- | Post Basin 1 Combined | |
| Mt. Pleasant Library Detention Calcs.gpw | | | | | Return Period: 50 Year | | | Tuesday, 02 / 24 / 2026 | | |

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

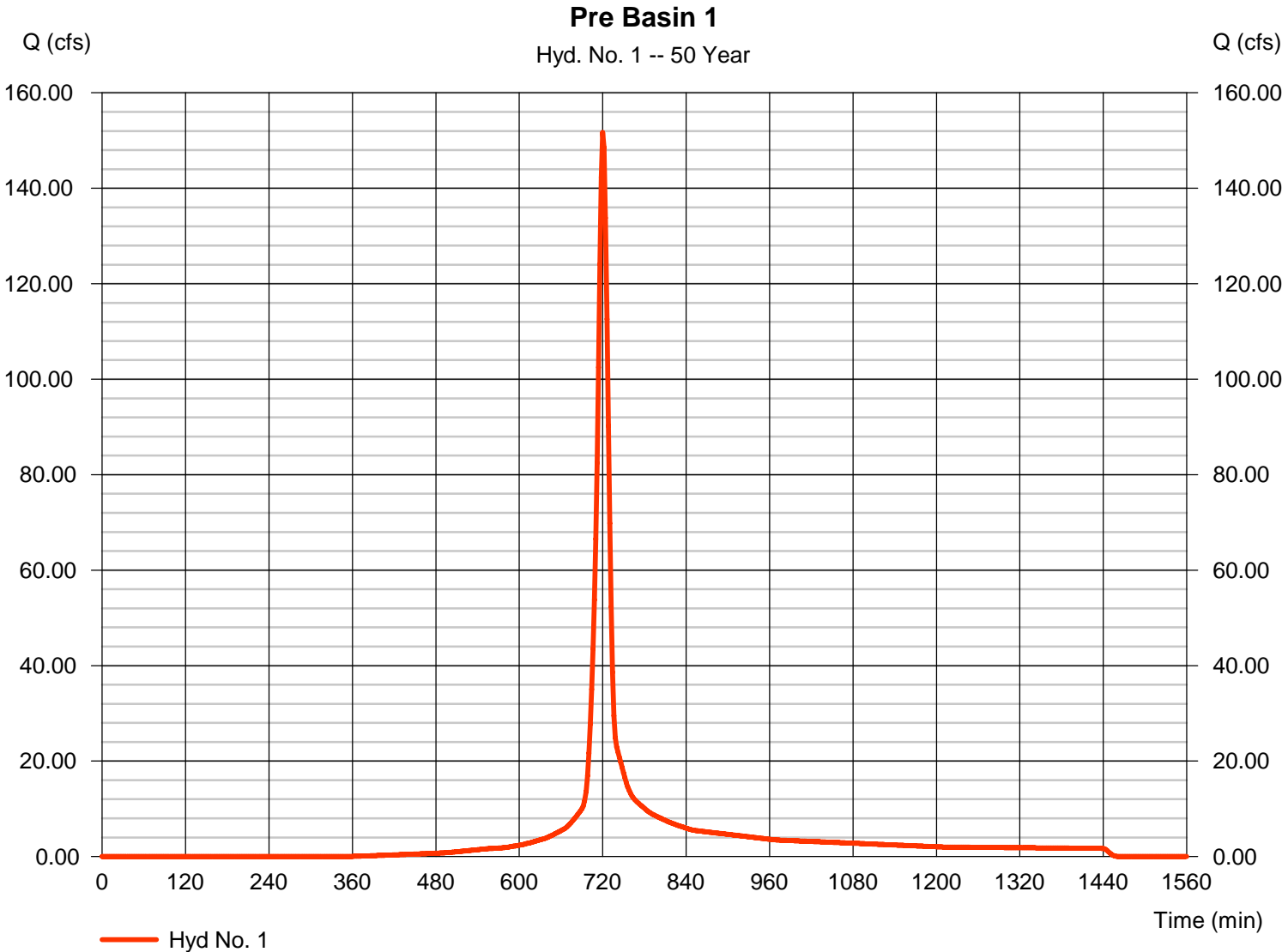
Tuesday, 02 / 24 / 2026

Hyd. No. 1

Pre Basin 1

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 151.71 cfs |
| Storm frequency | = 50 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 397,615 cuft |
| Drainage area | = 22.760 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 7.09 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (11.080 x 79) + (3.760 x 84) + (3.070 x 98)] / 22.760



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Tuesday, 02 / 24 / 2026

Hyd. No. 3

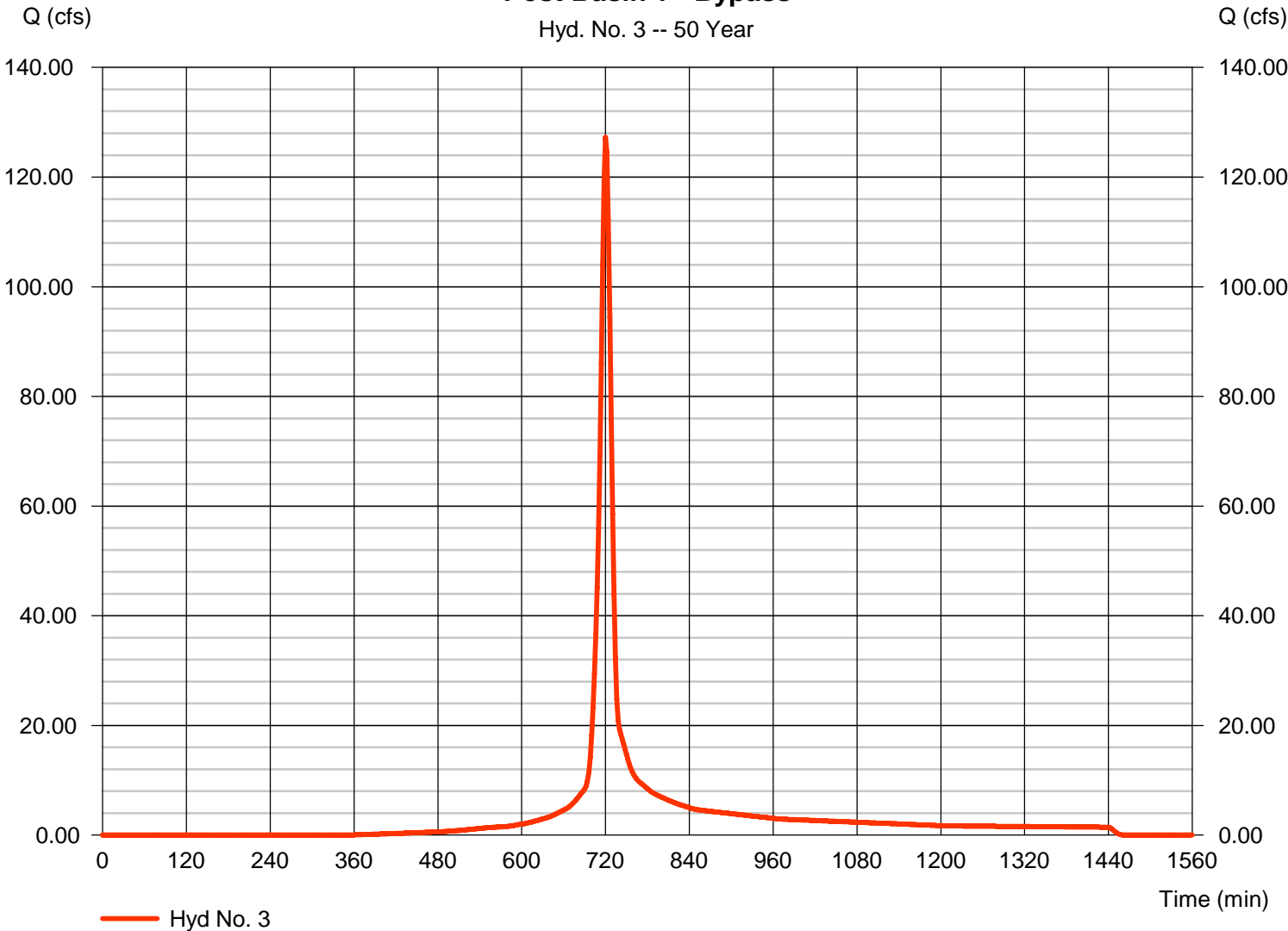
Post Basin 1 - Bypass

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 127.25 cfs |
| Storm frequency | = 50 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 333,500 cuft |
| Drainage area | = 19.090 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 7.09 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (8.810 x 79) + (1.940 x 84) + (3.490 x 98)] / 19.090

Post Basin 1 - Bypass

Hyd. No. 3 -- 50 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

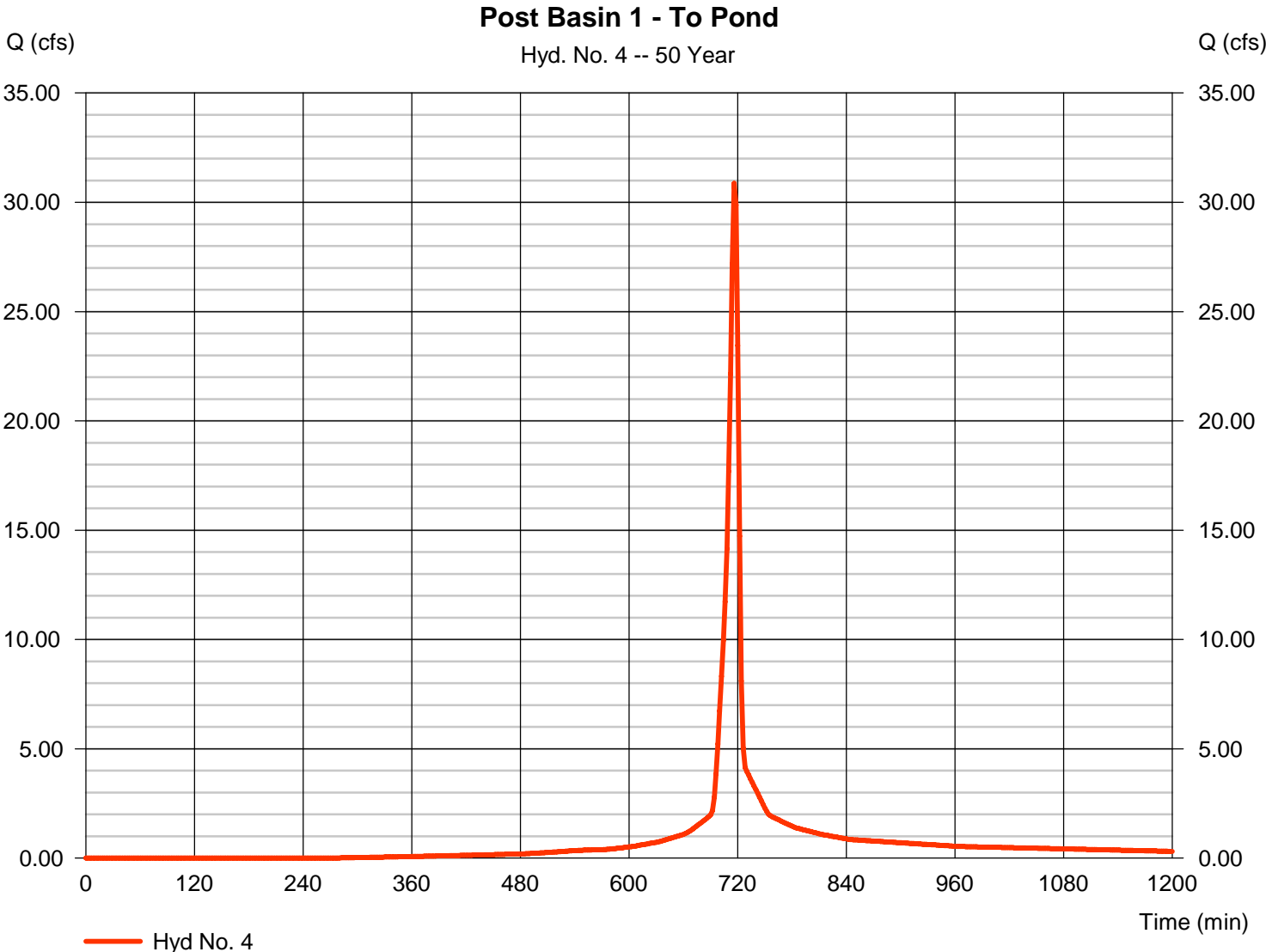
Tuesday, 02 / 24 / 2026

Hyd. No. 4

Post Basin 1 - To Pond

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 30.87 cfs |
| Storm frequency | = 50 yrs | Time to peak | = 716 min |
| Time interval | = 2 min | Hyd. volume | = 65,264 cuft |
| Drainage area | = 3.670 ac | Curve number | = 84* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 7.09 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = + (2.130 x 79) + (0.700 x 84) + (0.840 x 98)] / 3.670



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

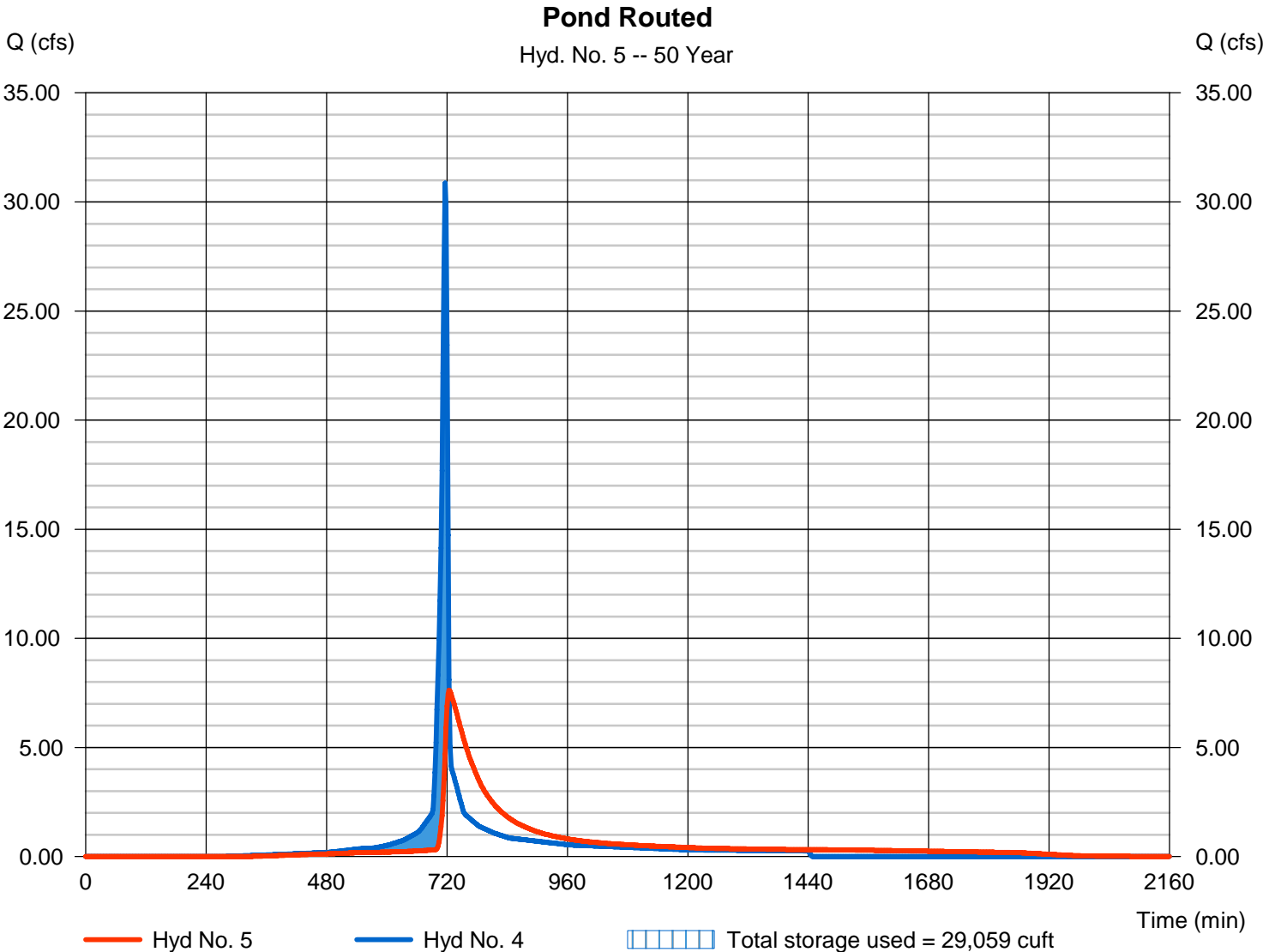
Tuesday, 02 / 24 / 2026

Hyd. No. 5

Pond Routed

| | | | |
|-----------------|------------------------------|----------------|---------------|
| Hydrograph type | = Reservoir | Peak discharge | = 7.619 cfs |
| Storm frequency | = 50 yrs | Time to peak | = 724 min |
| Time interval | = 2 min | Hyd. volume | = 65,254 cuft |
| Inflow hyd. No. | = 4 - Post Basin 1 - To Pond | Max. Elevation | = 684.01 ft |
| Reservoir name | = Pond 1 | Max. Storage | = 29,059 cuft |

Storage Indication method used.



Hydrograph Report

Hyd. No. 6

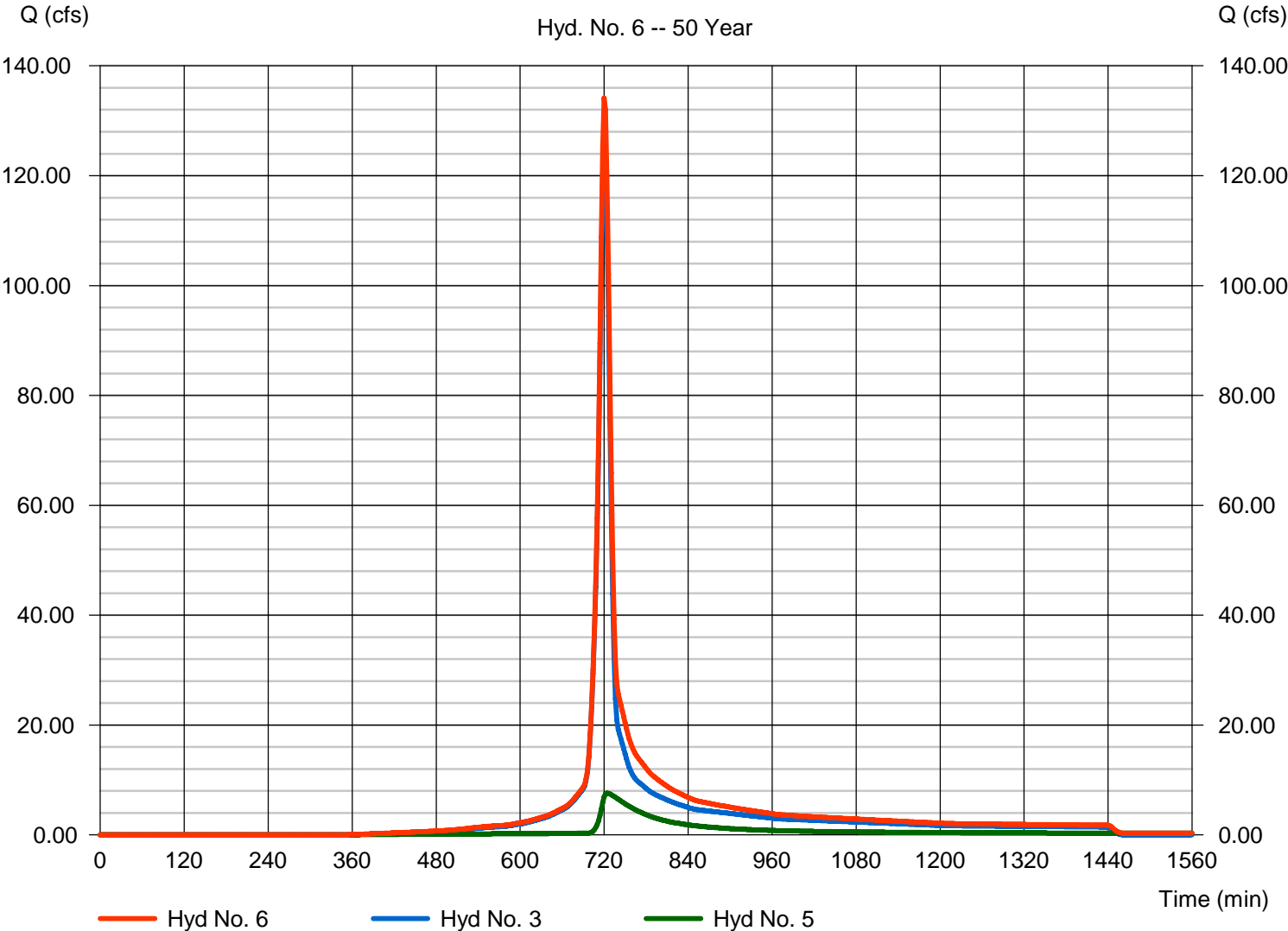
Post Basin 1 Combined

Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 2 min
Inflow hyds. = 3, 5

Peak discharge = 134.15 cfs
Time to peak = 720 min
Hyd. volume = 398,754 cuft
Contrib. drain. area = 19.090 ac

Post Basin 1 Combined

Hyd. No. 6 -- 50 Year



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

| 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 | 173.37 | 2 | 720 | 456,600 | ----- | ----- | ----- | Pre Basin 1 | |
| 3 | SCS Runoff | 145.42 | 2 | 720 | 382,974 | ----- | ----- | ----- | Post Basin 1 - Bypass | |
| 4 | SCS Runoff | 34.83 | 2 | 716 | 74,209 | ----- | ----- | ----- | Post Basin 1 - To Pond | |
| 5 | Reservoir | 9.540 | 2 | 724 | 74,200 | 4 | 684.37 | 32,799 | Pond Routed | |
| 6 | Combine | 153.60 | 2 | 720 | 457,174 | 3, 5 | ----- | ----- | Post Basin 1 Combined | |
| Mt. Pleasant Library Detention Calcs.gpw | | | | | Return Period: 100 Year | | | Tuesday, 02 / 24 / 2026 | | |

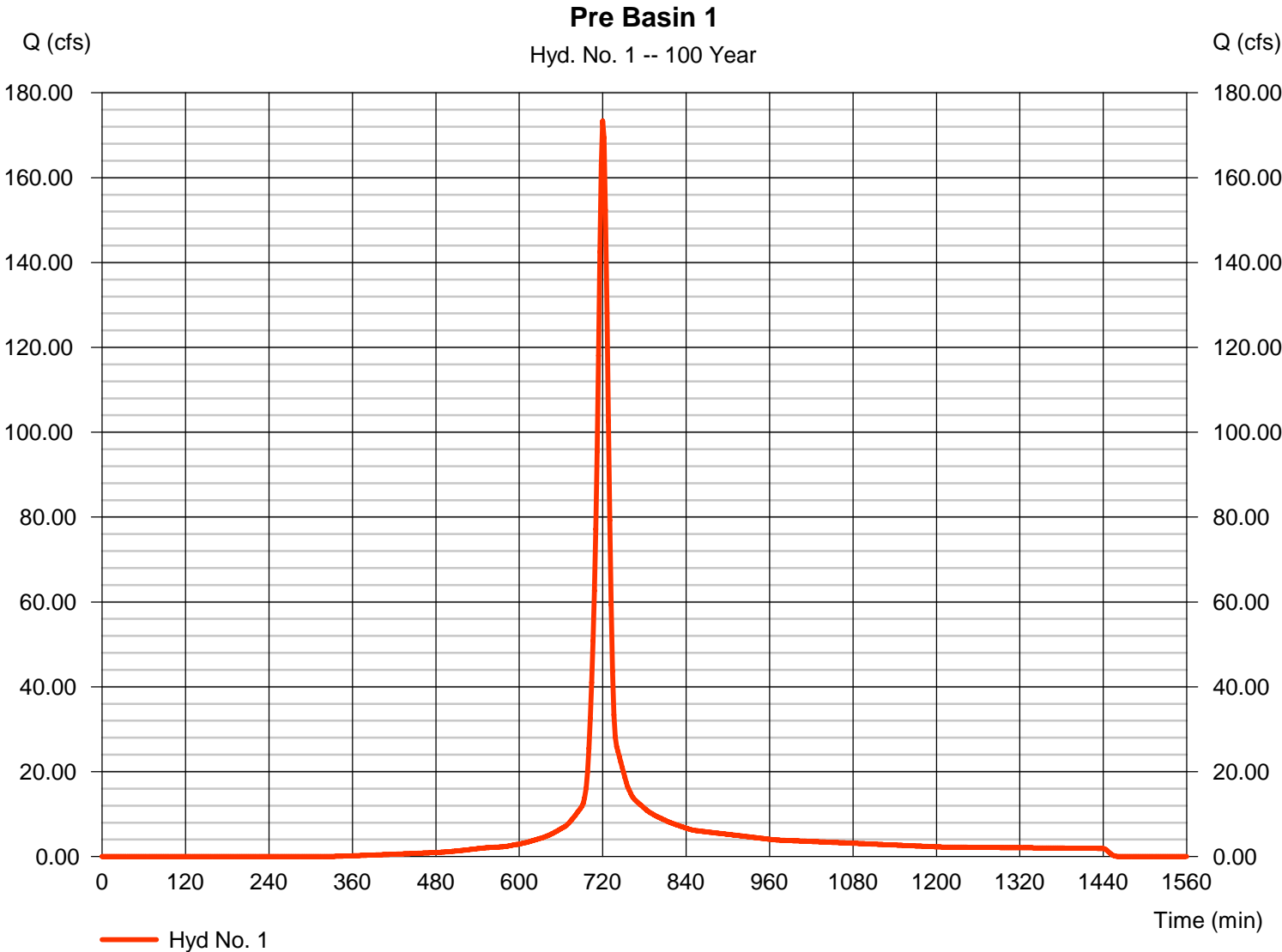
Hydrograph Report

Hyd. No. 1

Pre Basin 1

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 173.37 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 456,600 cuft |
| Drainage area | = 22.760 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 7.84 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (11.080 x 79) + (3.760 x 84) + (3.070 x 98)] / 22.760



Hydrograph Report

Hyd. No. 3

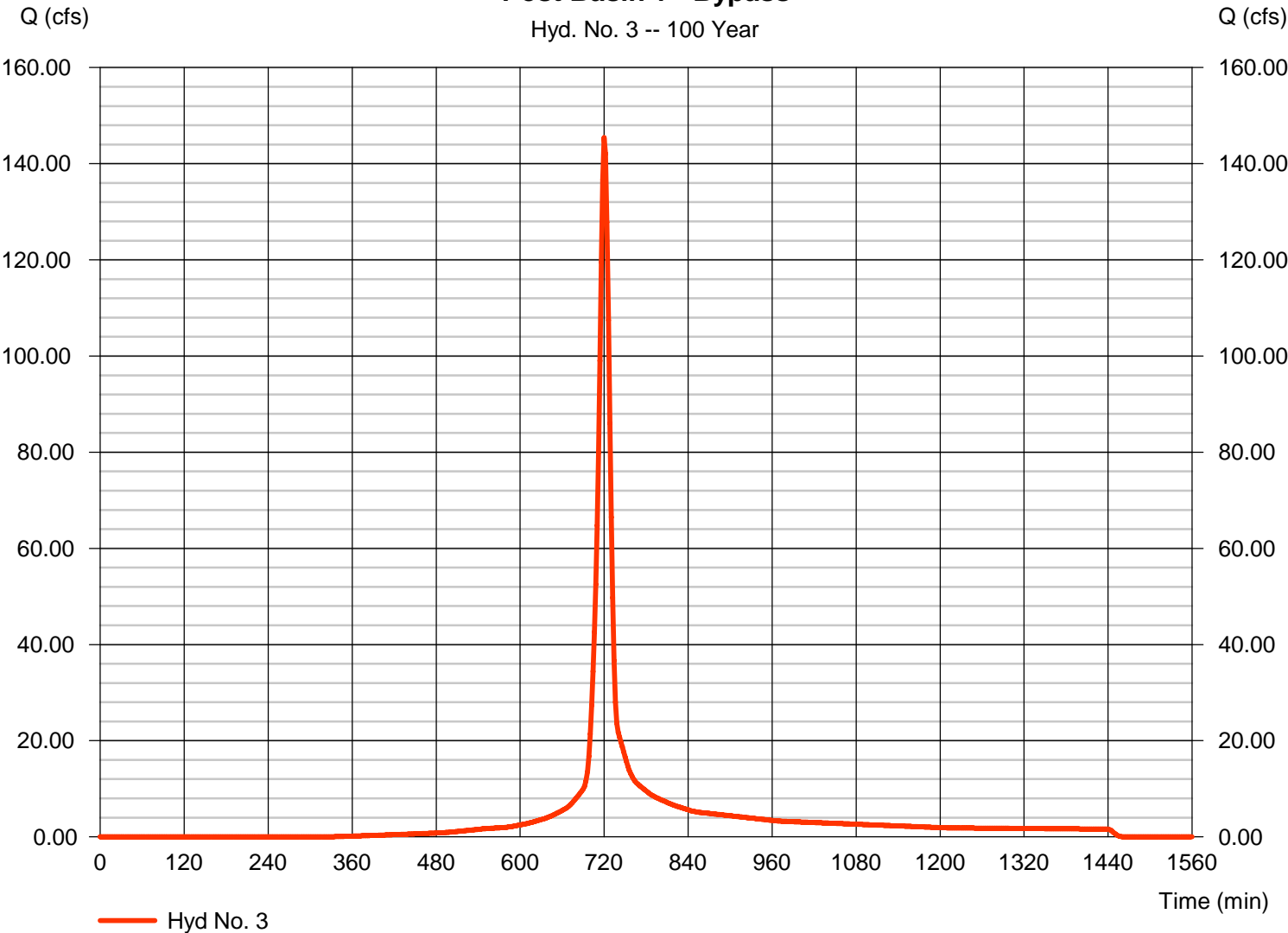
Post Basin 1 - Bypass

| | | | |
|-----------------|--------------|--------------------|----------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 145.42 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 720 min |
| Time interval | = 2 min | Hyd. volume | = 382,974 cuft |
| Drainage area | = 19.090 ac | Curve number | = 79* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = TR55 | Time of conc. (Tc) | = 12.80 min |
| Total precip. | = 7.84 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = [(1.080 x 49) + (3.770 x 69) + (8.810 x 79) + (1.940 x 84) + (3.490 x 98)] / 19.090

Post Basin 1 - Bypass

Hyd. No. 3 -- 100 Year



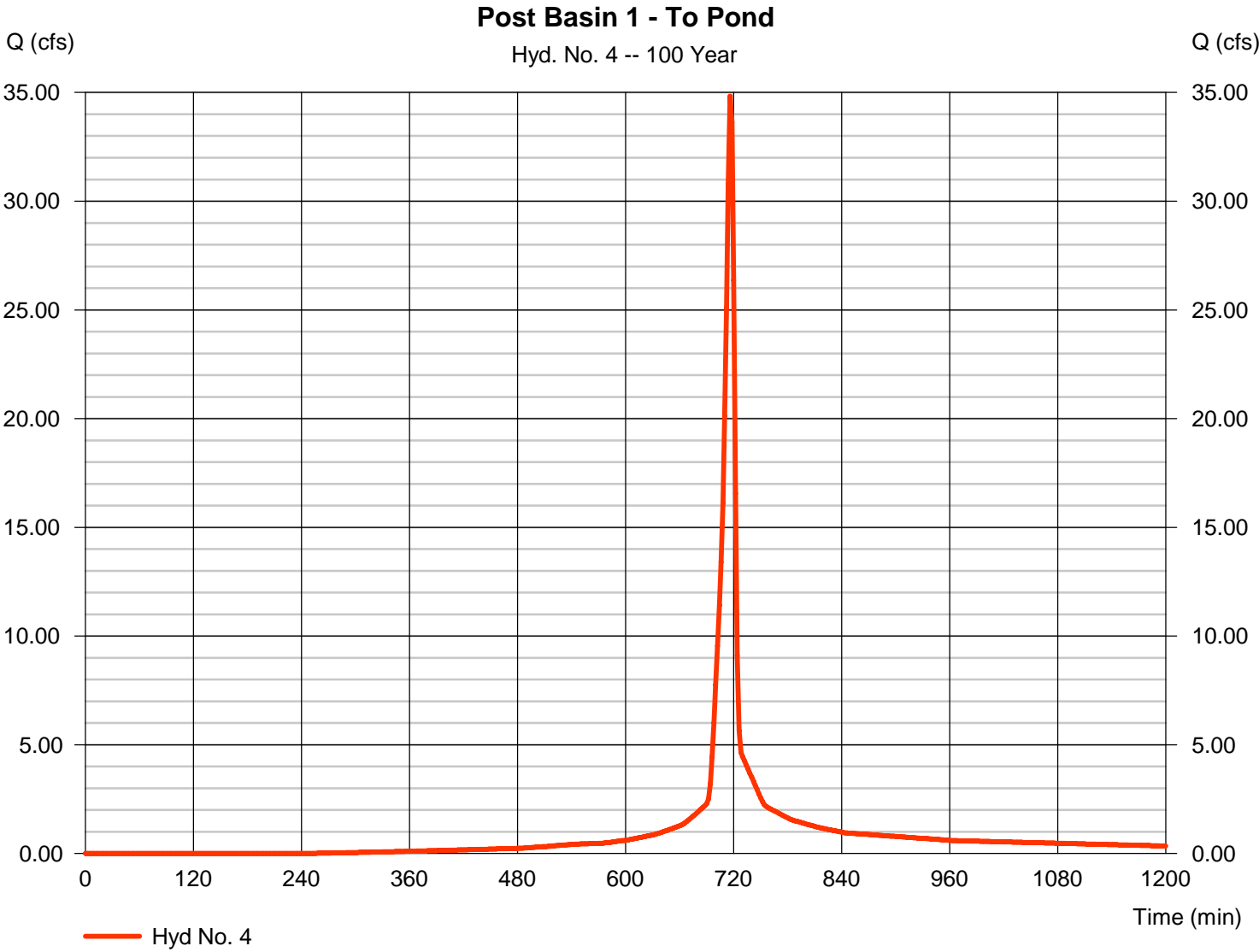
Hydrograph Report

Hyd. No. 4

Post Basin 1 - To Pond

| | | | |
|-----------------|--------------|--------------------|---------------|
| Hydrograph type | = SCS Runoff | Peak discharge | = 34.83 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 716 min |
| Time interval | = 2 min | Hyd. volume | = 74,209 cuft |
| Drainage area | = 3.670 ac | Curve number | = 84* |
| Basin Slope | = 0.0 % | Hydraulic length | = 0 ft |
| Tc method | = User | Time of conc. (Tc) | = 5.00 min |
| Total precip. | = 7.84 in | Distribution | = Type II |
| Storm duration | = 24 hrs | Shape factor | = 484 |

* Composite (Area/CN) = + (2.130 x 79) + (0.700 x 84) + (0.840 x 98)] / 3.670



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

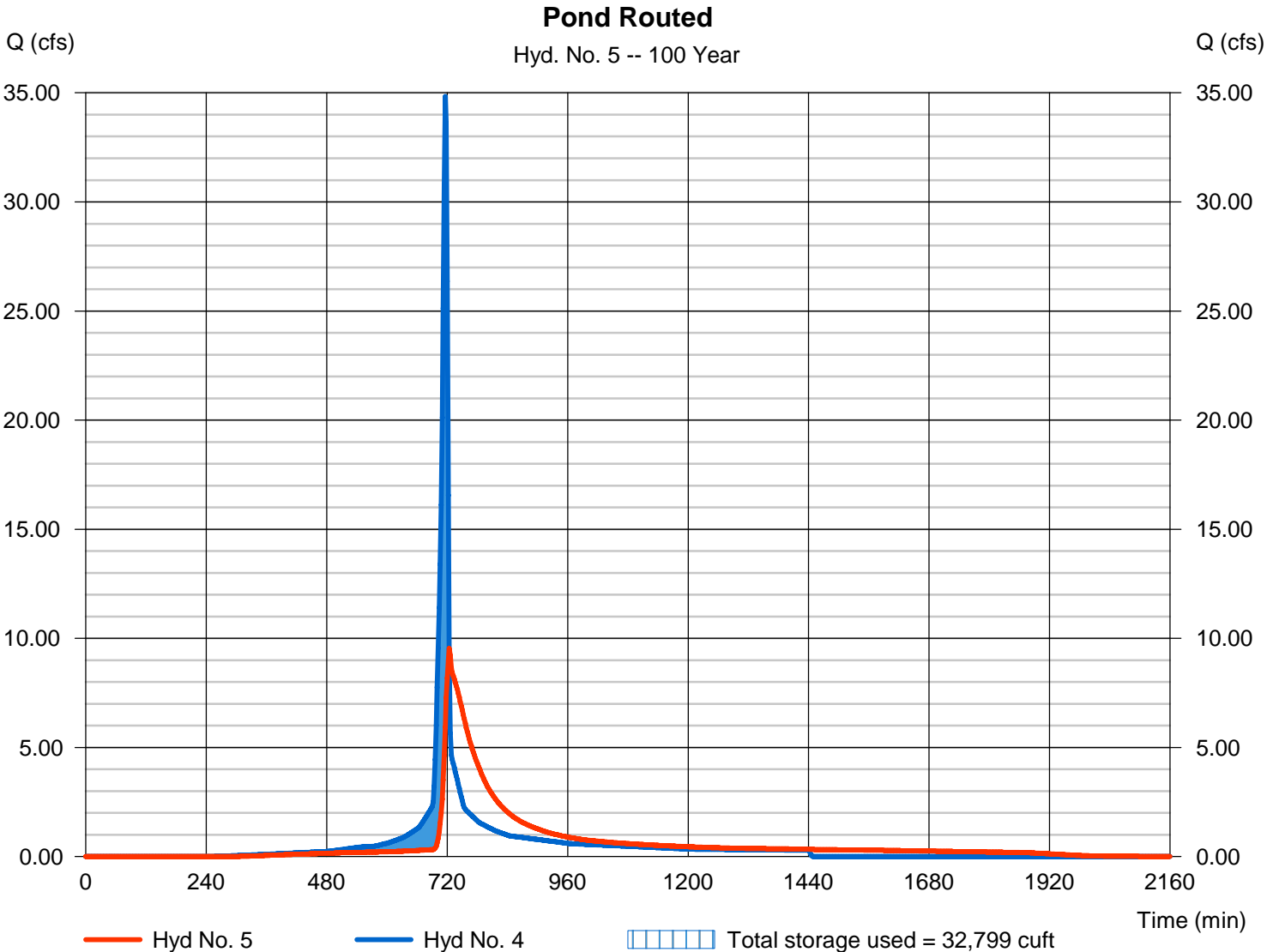
Tuesday, 02 / 24 / 2026

Hyd. No. 5

Pond Routed

| | | | |
|-----------------|------------------------------|----------------|---------------|
| Hydrograph type | = Reservoir | Peak discharge | = 9.540 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 724 min |
| Time interval | = 2 min | Hyd. volume | = 74,200 cuft |
| Inflow hyd. No. | = 4 - Post Basin 1 - To Pond | Max. Elevation | = 684.37 ft |
| Reservoir name | = Pond 1 | Max. Storage | = 32,799 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Tuesday, 02 / 24 / 2026

Hyd. No. 6

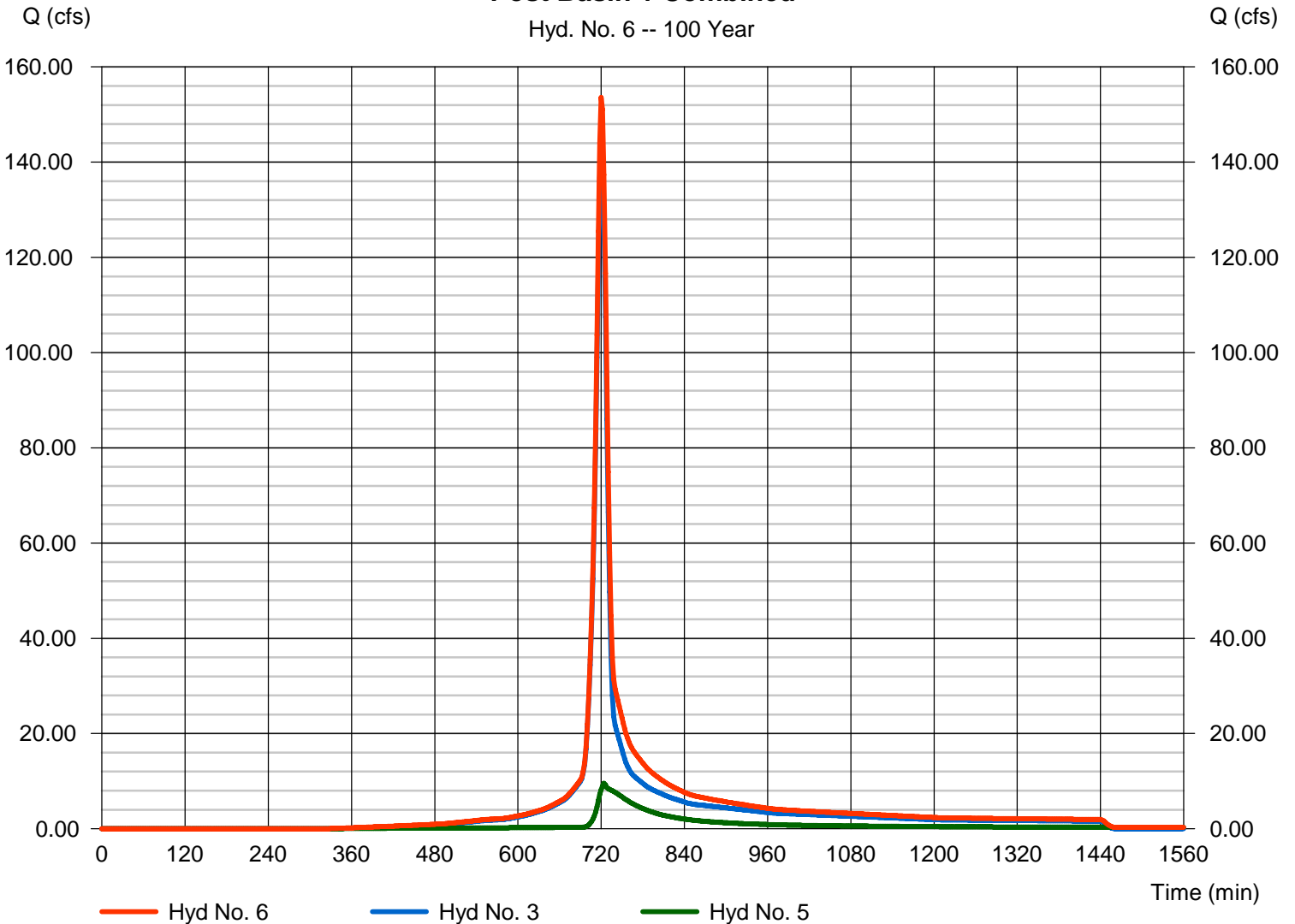
Post Basin 1 Combined

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 2 min
Inflow hyds. = 3, 5

Peak discharge = 153.60 cfs
Time to peak = 720 min
Hyd. volume = 457,174 cuft
Contrib. drain. area = 19.090 ac

Post Basin 1 Combined

Hyd. No. 6 -- 100 Year





NOAA Atlas 14, Volume 2, Version 3
Location name: Mount Pleasant, Tennessee, USA*
Latitude: 35.5406°, Longitude: -87.2141°
Elevation: 687 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

INTENSITY IN IN/HR

PF tabular

| PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹ | | | | | | | | | | |
|---|-------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Duration | Average recurrence interval (years) | | | | | | | | | |
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | 4.92 (4.52-5.39) | 5.81 (5.34-6.36) | 6.78 (6.24-7.44) | 7.60 (6.96-8.30) | 8.69 (7.91-9.49) | 9.55 (8.64-10.4) | 10.4 (9.37-11.4) | 11.4 (10.1-12.4) | 12.6 (11.1-13.8) | 13.6 (11.8-14.9) |
| 10-min | 3.93 (3.62-4.30) | 4.64 (4.27-5.09) | 5.43 (4.99-5.95) | 6.07 (5.57-6.64) | 6.92 (6.30-7.57) | 7.60 (6.88-8.29) | 8.30 (7.45-9.05) | 9.01 (8.02-9.82) | 9.97 (8.75-10.9) | 10.7 (9.32-11.7) |
| 15-min | 3.27 (3.01-3.58) | 3.89 (3.58-4.26) | 4.58 (4.21-5.02) | 5.12 (4.70-5.60) | 5.85 (5.32-6.39) | 6.42 (5.80-7.00) | 6.99 (6.27-7.62) | 7.58 (6.74-8.26) | 8.37 (7.35-9.15) | 8.98 (7.80-9.83) |
| 30-min | 2.24 (2.07-2.46) | 2.69 (2.47-2.94) | 3.25 (2.99-3.57) | 3.71 (3.40-4.06) | 4.33 (3.94-4.73) | 4.83 (4.37-5.27) | 5.35 (4.80-5.84) | 5.90 (5.25-6.43) | 6.66 (5.85-7.28) | 7.27 (6.31-7.96) |
| 60-min | 1.40 (1.29-1.53) | 1.69 (1.55-1.85) | 2.09 (1.92-2.29) | 2.42 (2.22-2.64) | 2.89 (2.63-3.15) | 3.28 (2.96-3.57) | 3.69 (3.31-4.02) | 4.14 (3.68-4.51) | 4.78 (4.19-5.22) | 5.31 (4.61-5.81) |
| 2-hr | 0.807 (0.740-0.889) | 0.969 (0.886-1.07) | 1.20 (1.10-1.32) | 1.39 (1.26-1.53) | 1.66 (1.50-1.82) | 1.90 (1.70-2.08) | 2.14 (1.91-2.35) | 2.41 (2.13-2.64) | 2.80 (2.44-3.07) | 3.13 (2.69-3.44) |
| 3-hr | 0.583 (0.536-0.641) | 0.698 (0.641-0.768) | 0.861 (0.789-0.944) | 0.997 (0.910-1.09) | 1.19 (1.08-1.30) | 1.35 (1.22-1.48) | 1.53 (1.37-1.67) | 1.72 (1.52-1.88) | 1.99 (1.74-2.18) | 2.21 (1.91-2.43) |
| 6-hr | 0.364 (0.335-0.399) | 0.434 (0.399-0.476) | 0.529 (0.486-0.580) | 0.610 (0.558-0.668) | 0.726 (0.659-0.792) | 0.822 (0.742-0.897) | 0.925 (0.828-1.01) | 1.04 (0.920-1.13) | 1.19 (1.05-1.30) | 1.32 (1.15-1.45) |
| 12-hr | 0.219 (0.202-0.241) | 0.262 (0.241-0.287) | 0.319 (0.293-0.350) | 0.367 (0.336-0.402) | 0.434 (0.395-0.475) | 0.490 (0.443-0.535) | 0.549 (0.493-0.600) | 0.612 (0.546-0.669) | 0.701 (0.618-0.767) | 0.773 (0.675-0.848) |
| 24-hr | 0.136 (0.125-0.147) | 0.162 (0.150-0.176) | 0.198 (0.183-0.215) | 0.226 (0.208-0.245) | 0.264 (0.243-0.286) | 0.295 (0.271-0.319) | 0.326 (0.299-0.353) | 0.358 (0.327-0.387) | 0.402 (0.365-0.435) | 0.437 (0.394-0.472) |
| 2-day | 0.080 (0.074-0.087) | 0.096 (0.088-0.104) | 0.117 (0.108-0.127) | 0.134 (0.123-0.145) | 0.156 (0.143-0.170) | 0.175 (0.160-0.189) | 0.193 (0.176-0.209) | 0.212 (0.193-0.230) | 0.238 (0.215-0.258) | 0.258 (0.232-0.281) |
| 3-day | 0.057 (0.053-0.062) | 0.068 (0.063-0.074) | 0.083 (0.077-0.090) | 0.094 (0.087-0.102) | 0.110 (0.101-0.119) | 0.122 (0.112-0.132) | 0.134 (0.123-0.145) | 0.146 (0.134-0.158) | 0.163 (0.148-0.176) | 0.176 (0.159-0.190) |
| 4-day | 0.045 (0.042-0.049) | 0.054 (0.050-0.058) | 0.066 (0.061-0.071) | 0.075 (0.069-0.080) | 0.086 (0.080-0.093) | 0.095 (0.088-0.103) | 0.104 (0.096-0.112) | 0.113 (0.104-0.122) | 0.125 (0.115-0.135) | 0.135 (0.123-0.145) |
| 7-day | 0.030 (0.028-0.032) | 0.036 (0.034-0.039) | 0.044 (0.041-0.047) | 0.049 (0.046-0.053) | 0.057 (0.053-0.060) | 0.062 (0.058-0.066) | 0.068 (0.063-0.072) | 0.073 (0.068-0.078) | 0.081 (0.074-0.086) | 0.086 (0.079-0.092) |
| 10-day | 0.024 (0.023-0.026) | 0.029 (0.027-0.030) | 0.034 (0.032-0.036) | 0.038 (0.036-0.041) | 0.044 (0.041-0.047) | 0.048 (0.045-0.051) | 0.053 (0.049-0.056) | 0.057 (0.053-0.060) | 0.062 (0.058-0.066) | 0.066 (0.061-0.071) |
| 20-day | 0.016 (0.015-0.017) | 0.019 (0.018-0.021) | 0.023 (0.021-0.024) | 0.025 (0.024-0.027) | 0.028 (0.026-0.030) | 0.030 (0.028-0.032) | 0.032 (0.030-0.034) | 0.034 (0.032-0.036) | 0.037 (0.034-0.039) | 0.038 (0.036-0.041) |
| 30-day | 0.013 (0.013-0.014) | 0.016 (0.015-0.017) | 0.018 (0.017-0.019) | 0.020 (0.019-0.021) | 0.022 (0.021-0.023) | 0.024 (0.022-0.025) | 0.025 (0.024-0.026) | 0.026 (0.025-0.028) | 0.028 (0.026-0.029) | 0.029 (0.027-0.031) |
| 45-day | 0.011 (0.011-0.012) | 0.013 (0.012-0.014) | 0.015 (0.014-0.016) | 0.016 (0.015-0.017) | 0.018 (0.017-0.019) | 0.019 (0.018-0.020) | 0.020 (0.019-0.021) | 0.021 (0.020-0.022) | 0.022 (0.021-0.024) | 0.023 (0.022-0.024) |
| 60-day | 0.010 (0.009-0.010) | 0.012 (0.011-0.012) | 0.013 (0.013-0.014) | 0.014 (0.014-0.015) | 0.016 (0.015-0.017) | 0.017 (0.016-0.018) | 0.018 (0.017-0.019) | 0.019 (0.017-0.020) | 0.019 (0.018-0.021) | 0.020 (0.019-0.021) |

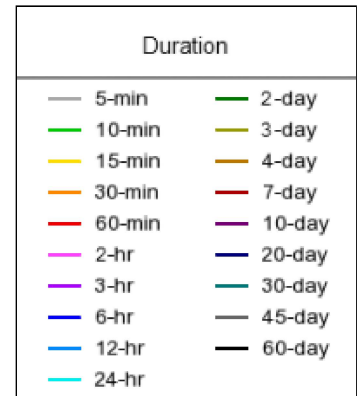
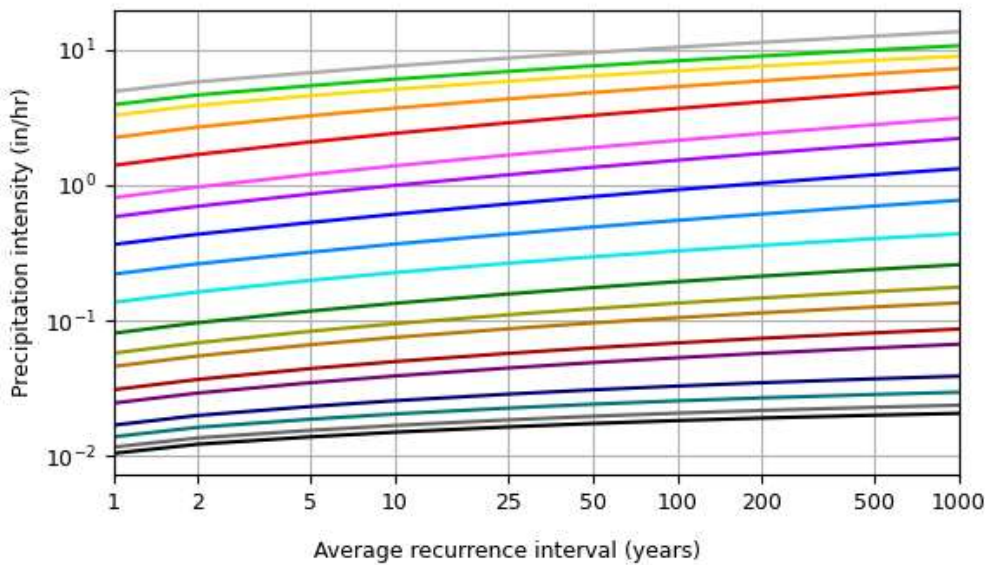
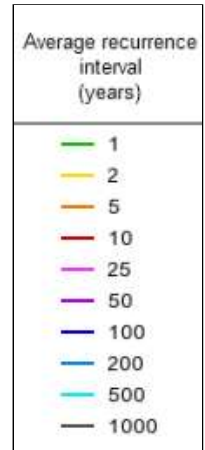
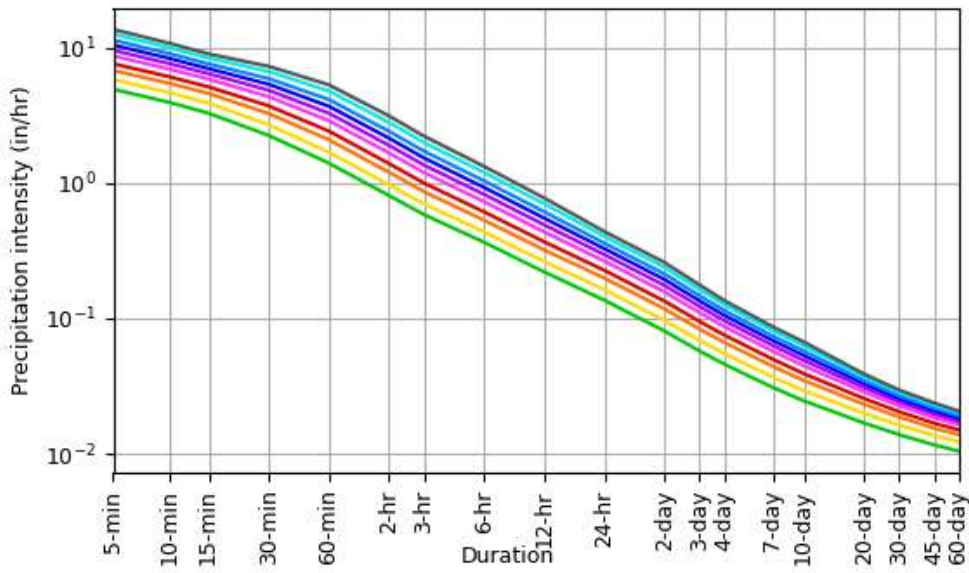
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical

PDS-based intensity-duration-frequency (IDF) curves

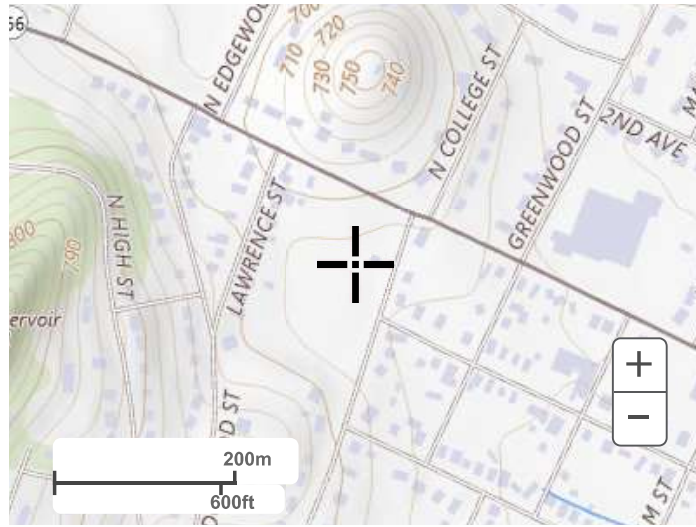
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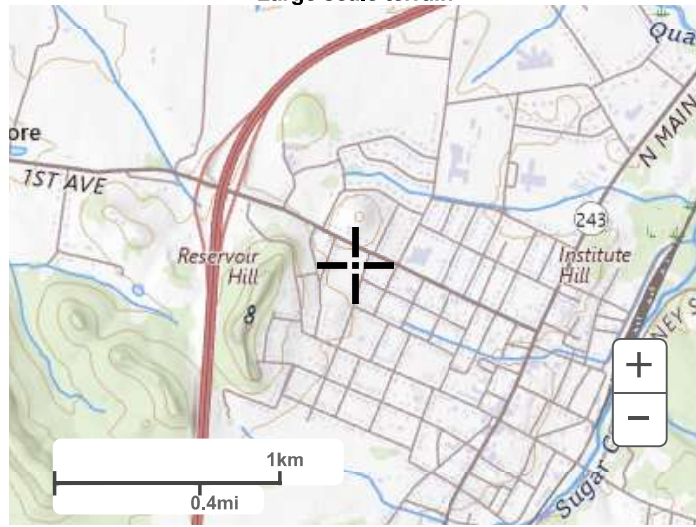
[Back to Top](#)

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Small scale terrain



Large scale terrain



Large scale map



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Silver Spring, MD 20910
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NOAA Atlas 14, Volume 2, Version 3
Location name: Mount Pleasant, Tennessee, USA*
Latitude: 35.5406°, Longitude: -87.2141°
Elevation: 687 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

DEPTH IN IN

PF tabular

| PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹ | | | | | | | | | | |
|--|-------------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|-----------------------------|
| Duration | Average recurrence interval (years) | | | | | | | | | |
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | 0.410 (0.377-0.449) | 0.484 (0.445-0.530) | 0.565 (0.520-0.620) | 0.633 (0.580-0.692) | 0.724 (0.659-0.791) | 0.796 (0.720-0.868) | 0.870 (0.781-0.949) | 0.947 (0.843-1.03) | 1.05 (0.922-1.15) | 1.14 (0.986-1.24) |
| 10-min | 0.655 (0.603-0.717) | 0.774 (0.712-0.848) | 0.905 (0.832-0.992) | 1.01 (0.928-1.11) | 1.15 (1.05-1.26) | 1.27 (1.15-1.38) | 1.38 (1.24-1.51) | 1.50 (1.34-1.64) | 1.66 (1.46-1.82) | 1.79 (1.55-1.96) |
| 15-min | 0.818 (0.753-0.896) | 0.973 (0.896-1.07) | 1.14 (1.05-1.26) | 1.28 (1.17-1.40) | 1.46 (1.33-1.60) | 1.60 (1.45-1.75) | 1.75 (1.57-1.91) | 1.89 (1.68-2.06) | 2.09 (1.84-2.29) | 2.25 (1.95-2.46) |
| 30-min | 1.12 (1.03-1.23) | 1.34 (1.24-1.47) | 1.63 (1.50-1.78) | 1.86 (1.70-2.03) | 2.17 (1.97-2.37) | 2.42 (2.18-2.64) | 2.68 (2.40-2.92) | 2.95 (2.62-3.21) | 3.33 (2.92-3.64) | 3.64 (3.16-3.98) |
| 60-min | 1.40 (1.29-1.53) | 1.69 (1.55-1.85) | 2.09 (1.92-2.29) | 2.42 (2.22-2.64) | 2.89 (2.63-3.15) | 3.28 (2.96-3.57) | 3.69 (3.31-4.02) | 4.14 (3.68-4.51) | 4.78 (4.19-5.22) | 5.31 (4.61-5.81) |
| 2-hr | 1.62 (1.48-1.78) | 1.94 (1.77-2.13) | 2.40 (2.19-2.64) | 2.78 (2.53-3.05) | 3.33 (3.01-3.65) | 3.79 (3.40-4.15) | 4.29 (3.81-4.69) | 4.82 (4.25-5.28) | 5.60 (4.87-6.14) | 6.25 (5.38-6.88) |
| 3-hr | 1.75 (1.61-1.92) | 2.10 (1.93-2.31) | 2.59 (2.37-2.84) | 2.99 (2.73-3.28) | 3.58 (3.24-3.91) | 4.07 (3.66-4.45) | 4.59 (4.10-5.02) | 5.15 (4.57-5.64) | 5.97 (5.22-6.54) | 6.65 (5.75-7.29) |
| 6-hr | 2.18 (2.01-2.39) | 2.60 (2.39-2.85) | 3.17 (2.91-3.48) | 3.66 (3.35-4.00) | 4.35 (3.95-4.75) | 4.93 (4.44-5.37) | 5.54 (4.96-6.04) | 6.20 (5.51-6.77) | 7.15 (6.27-7.81) | 7.93 (6.88-8.69) |
| 12-hr | 2.65 (2.44-2.90) | 3.16 (2.91-3.47) | 3.85 (3.53-4.22) | 4.42 (4.05-4.84) | 5.24 (4.76-5.72) | 5.91 (5.34-6.46) | 6.62 (5.94-7.23) | 7.38 (6.58-8.06) | 8.45 (7.45-9.25) | 9.32 (8.14-10.2) |
| 24-hr | 3.26 (3.02-3.54) | 3.90 (3.61-4.24) | 4.75 (4.40-5.16) | 5.43 (5.01-5.88) | 6.35 (5.85-6.88) | 7.09 (6.51-7.66) | 7.84 (7.18-8.47) | 8.62 (7.86-9.31) | 9.67 (8.76-10.4) | 10.5 (9.47-11.3) |
| 2-day | 3.87 (3.57-4.20) | 4.62 (4.27-5.03) | 5.64 (5.19-6.14) | 6.44 (5.92-7.00) | 7.53 (6.91-8.18) | 8.40 (7.69-9.12) | 9.30 (8.47-10.1) | 10.2 (9.27-11.1) | 11.5 (10.3-12.4) | 12.4 (11.2-13.5) |
| 3-day | 4.13 (3.83-4.46) | 4.94 (4.58-5.34) | 6.00 (5.55-6.49) | 6.82 (6.31-7.38) | 7.93 (7.32-8.57) | 8.80 (8.10-9.51) | 9.68 (8.88-10.4) | 10.6 (9.66-11.4) | 11.8 (10.7-12.7) | 12.7 (11.5-13.7) |
| 4-day | 4.39 (4.09-4.73) | 5.25 (4.88-5.65) | 6.36 (5.91-6.84) | 7.21 (6.70-7.76) | 8.33 (7.72-8.96) | 9.20 (8.52-9.90) | 10.1 (9.29-10.8) | 10.9 (10.1-11.8) | 12.1 (11.1-13.0) | 13.0 (11.8-14.0) |
| 7-day | 5.18 (4.84-5.52) | 6.17 (5.78-6.58) | 7.41 (6.94-7.91) | 8.36 (7.82-8.91) | 9.60 (8.97-10.2) | 10.5 (9.84-11.2) | 11.5 (10.7-12.2) | 12.4 (11.5-13.2) | 13.6 (12.6-14.5) | 14.5 (13.4-15.5) |
| 10-day | 5.88 (5.53-6.26) | 6.99 (6.57-7.44) | 8.32 (7.82-8.85) | 9.35 (8.77-9.94) | 10.7 (10.0-11.4) | 11.7 (11.0-12.4) | 12.7 (11.9-13.5) | 13.7 (12.8-14.6) | 15.1 (13.9-16.0) | 16.0 (14.8-17.0) |
| 20-day | 8.08 (7.63-8.55) | 9.55 (9.02-10.1) | 11.1 (10.5-11.8) | 12.3 (11.6-13.0) | 13.7 (12.9-14.5) | 14.8 (13.9-15.6) | 15.7 (14.8-16.6) | 16.7 (15.7-17.6) | 17.8 (16.7-18.8) | 18.6 (17.4-19.7) |
| 30-day | 9.96 (9.44-10.5) | 11.7 (11.1-12.3) | 13.4 (12.7-14.2) | 14.7 (13.9-15.5) | 16.2 (15.3-17.1) | 17.3 (16.4-18.3) | 18.4 (17.3-19.3) | 19.3 (18.2-20.4) | 20.5 (19.3-21.6) | 21.3 (20.0-22.5) |
| 45-day | 12.5 (11.9-13.2) | 14.7 (13.9-15.4) | 16.7 (15.8-17.5) | 18.1 (17.2-19.0) | 19.9 (18.9-20.9) | 21.2 (20.1-22.3) | 22.3 (21.1-23.5) | 23.4 (22.1-24.6) | 24.7 (23.3-26.0) | 25.6 (24.1-26.9) |
| 60-day | 15.0 (14.2-15.8) | 17.6 (16.6-18.5) | 19.9 (18.8-20.9) | 21.5 (20.4-22.7) | 23.6 (22.3-24.8) | 25.0 (23.6-26.3) | 26.2 (24.8-27.6) | 27.4 (25.9-28.9) | 28.8 (27.1-30.3) | 29.7 (28.0-31.3) |

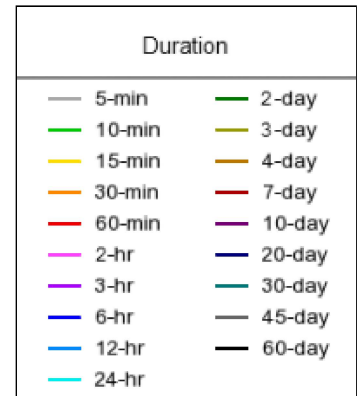
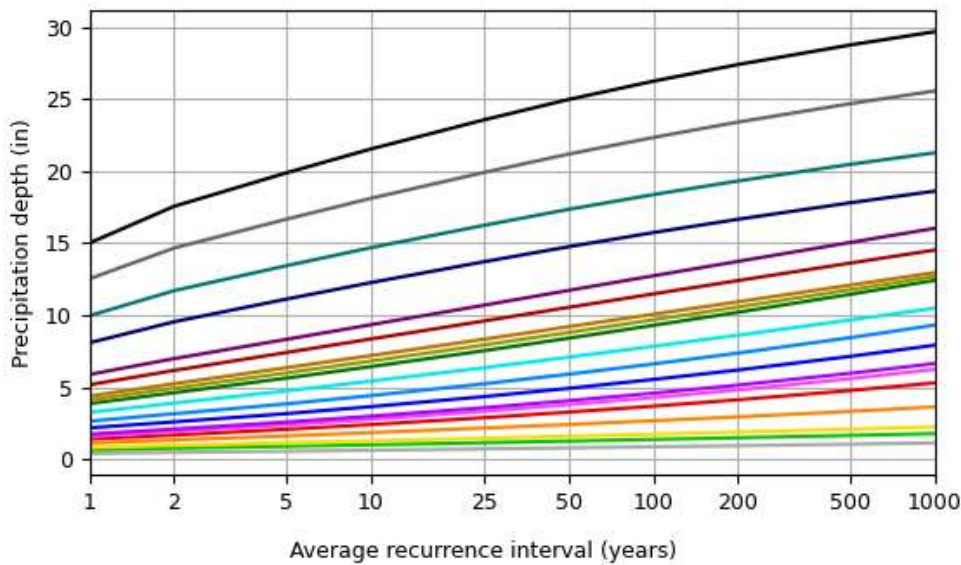
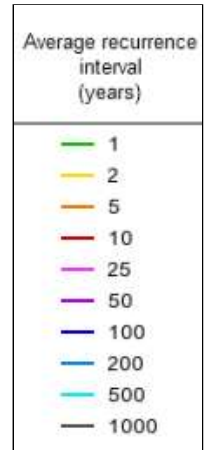
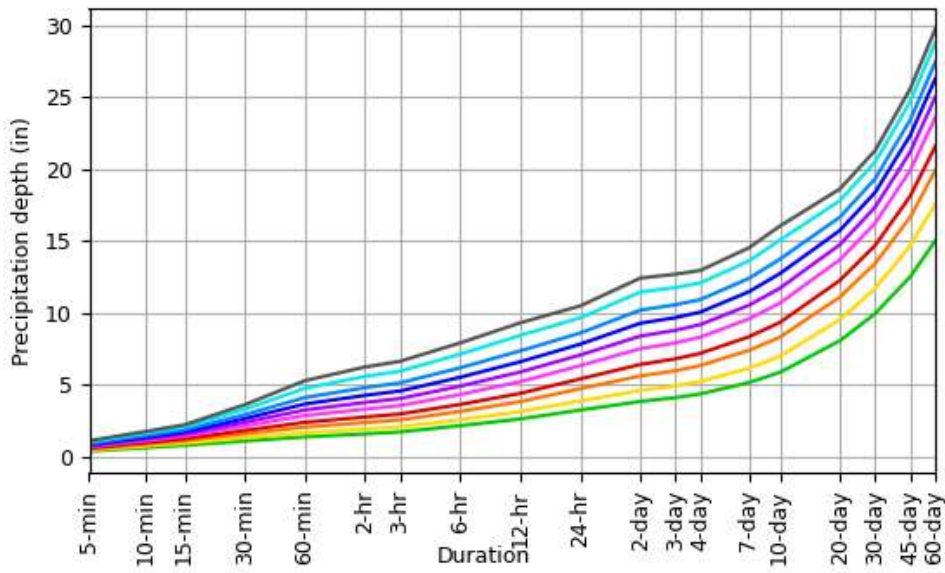
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves

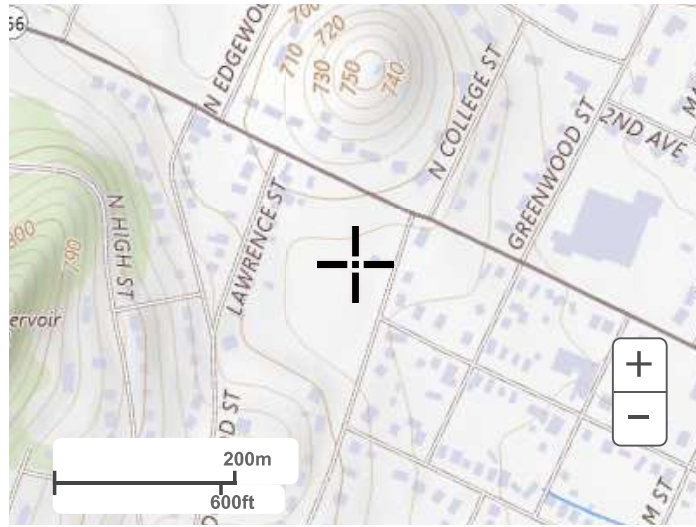
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[Back to Top](#)

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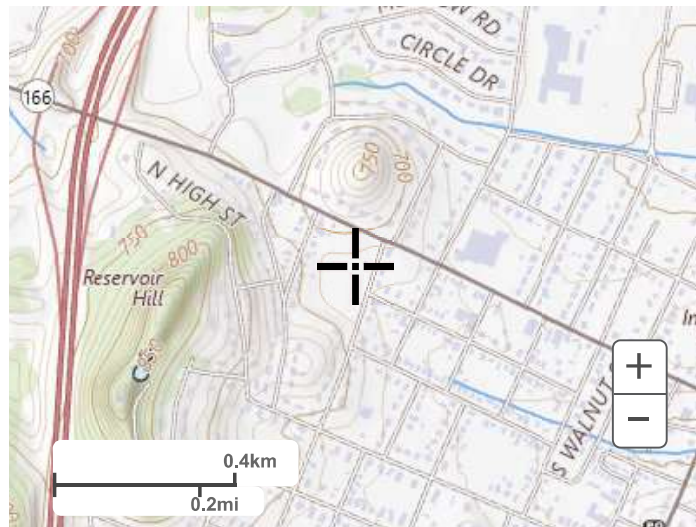
Large scale terrain



Large scale map



Large scale aerial



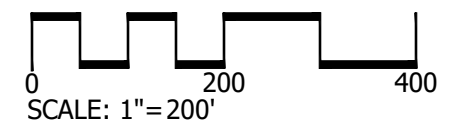
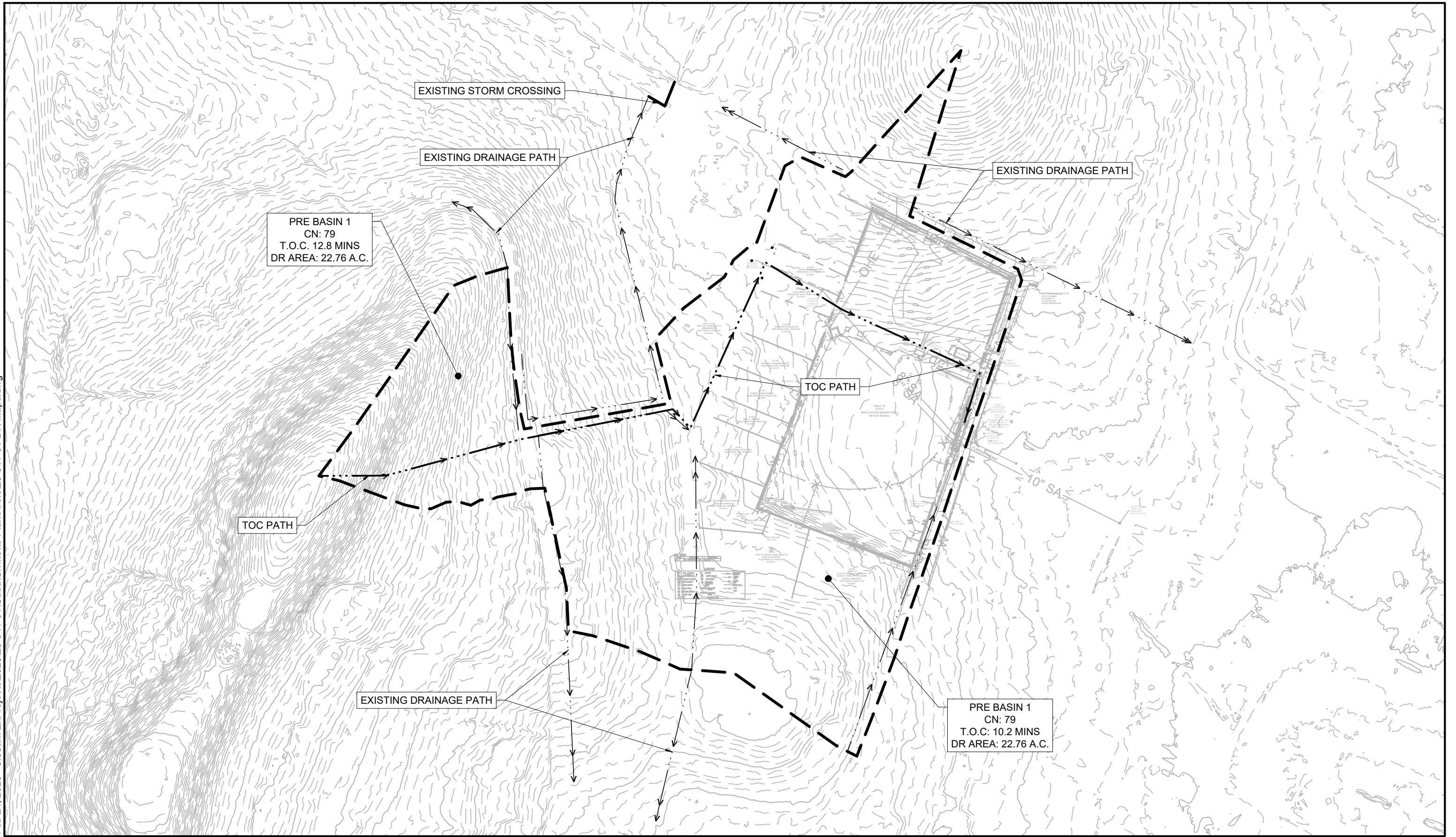
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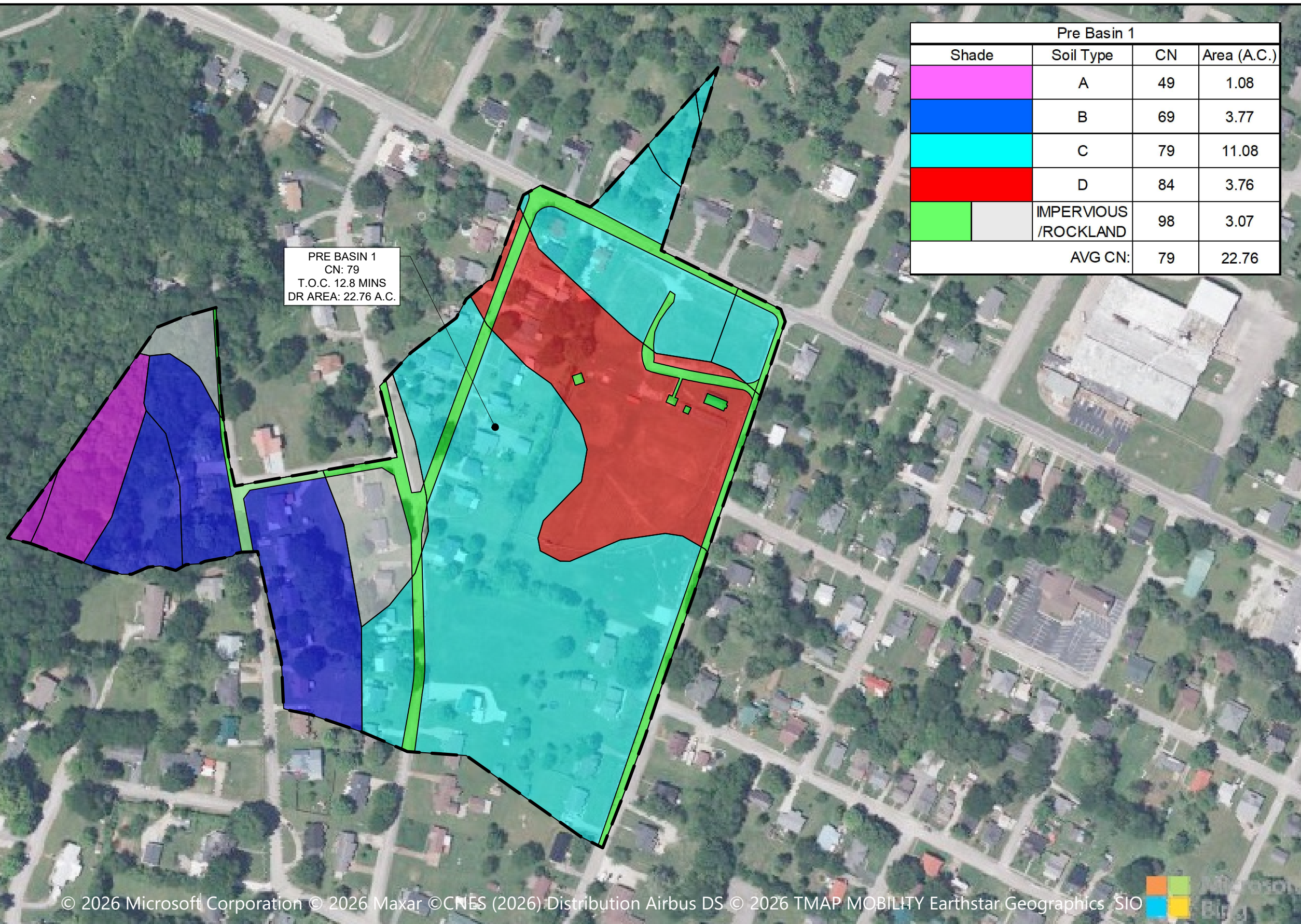
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DRAINAGE MAPS

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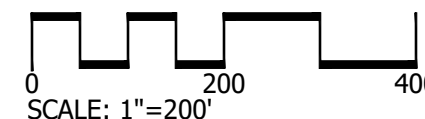


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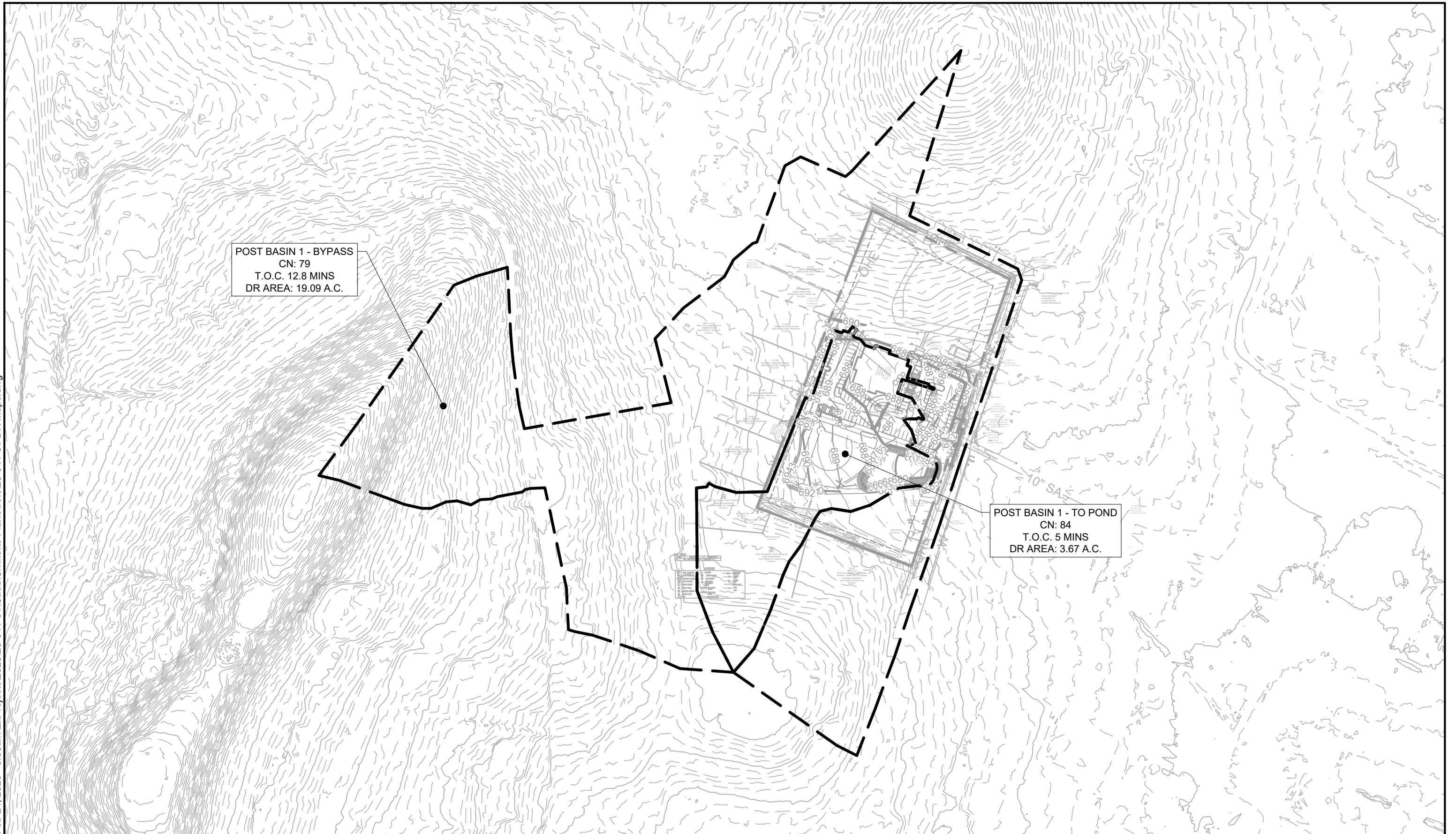


HERITAGE CIVIL

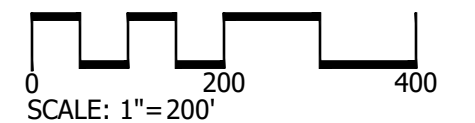
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PRE DEVELOPED SOILS
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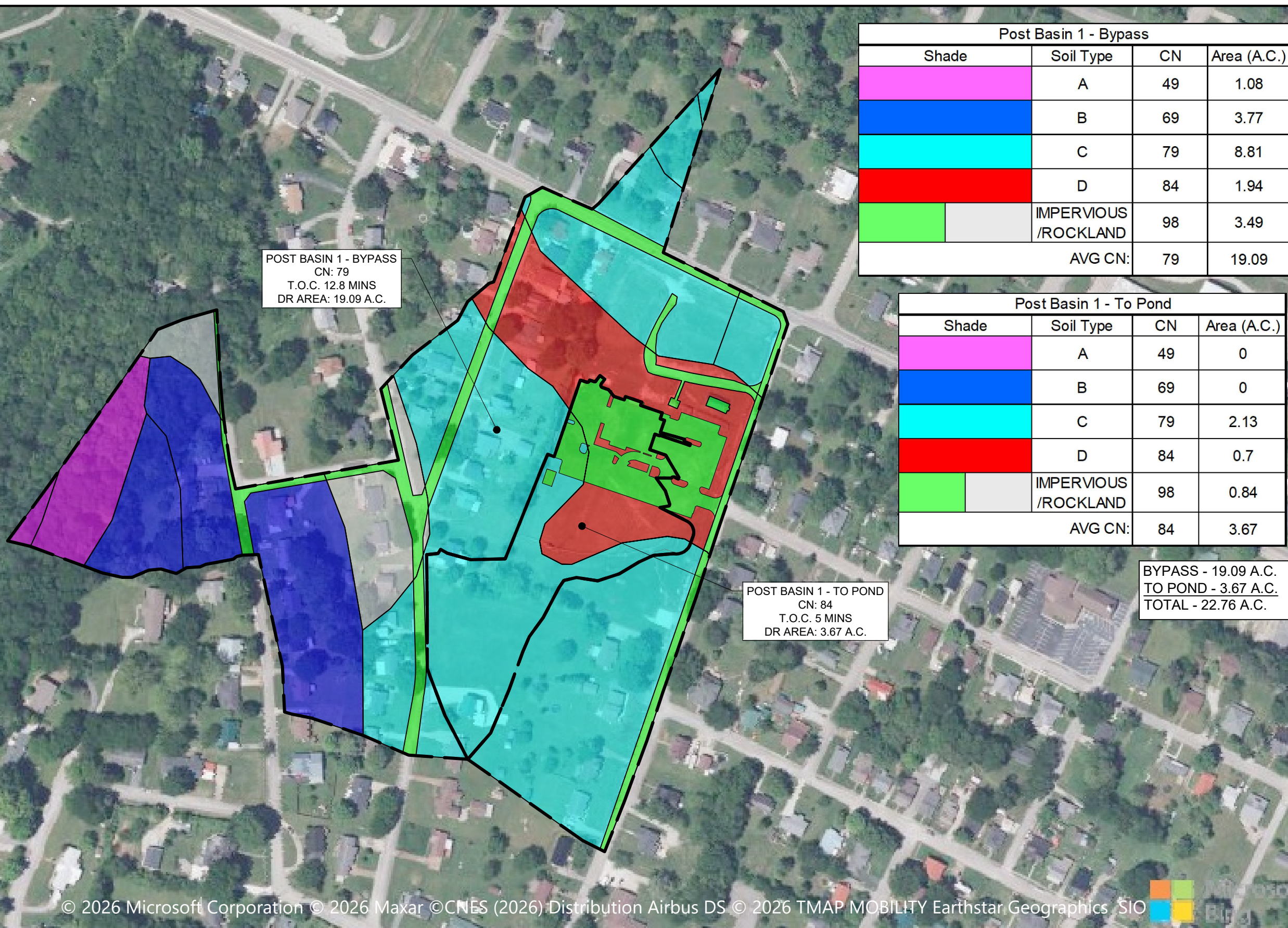
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Mt. Pleasant Library
POST BASIN
D: 02-26-2026



Feb 24, 2026 - 8:07am Z:\Projects\2025\25-041-01\Cadd\Exhibits\25-041-01 Post Developed Soils.dwg



POST BASIN 1 - BYPASS
 CN: 79
 T.O.C. 12.8 MINS
 DR AREA: 19.09 A.C.

POST BASIN 1 - TO POND
 CN: 84
 T.O.C. 5 MINS
 DR AREA: 3.67 A.C.

| Post Basin 1 - Bypass | | | |
|-----------------------|----------------------|----|-------------|
| Shade | Soil Type | CN | Area (A.C.) |
| [Pink] | A | 49 | 1.08 |
| [Blue] | B | 69 | 3.77 |
| [Cyan] | C | 79 | 8.81 |
| [Red] | D | 84 | 1.94 |
| [Green] | IMPERVIOUS /ROCKLAND | 98 | 3.49 |
| AVG CN: | | 79 | 19.09 |

| Post Basin 1 - To Pond | | | |
|------------------------|----------------------|----|-------------|
| Shade | Soil Type | CN | Area (A.C.) |
| [Pink] | A | 49 | 0 |
| [Blue] | B | 69 | 0 |
| [Cyan] | C | 79 | 2.13 |
| [Red] | D | 84 | 0.7 |
| [Green] | IMPERVIOUS /ROCKLAND | 98 | 0.84 |
| AVG CN: | | 84 | 3.67 |

BYPASS - 19.09 A.C.
 TO POND - 3.67 A.C.
 TOTAL - 22.76 A.C.

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