



ARCHITECTURE
ENGINEERING
CONSTRUCTION

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ADDENDUM NO. 1

DATE: 31 October 2025

TO: All Plan Holders

PROJECT: Winslow High School Pole Barn ES9818.01
10 Cooper Folly Road, Atco, NJ 08004

BID NO.: 2026-08

INTENT: The purpose of this Addendum is to modify certain requirements of the Contract Documents which have been issued for BIDDING.

I. PRE-BID MEETING MINUTES:

Time: 9:30 am, 20 October 2025

Place: Winslow Board of Education Administration Building – Conference Room
40 Cooper Folly Rd, Atco, NJ

Attendees:

NAME	COMPANY	EMAIL	PHONE NUMBER
Ruth A. Bussacco Project Manager	EI Associates	ruth_bussacco@eiassociates.com	Office: 973-775-7770 Cell: 201-306-2030
Michael Wozny VP Educational Projects	EI Associates	Michael_wozny@eiassociates.com	Office: 973-775-7777, ext. 187
Tyra Boyle Business Administrator / Board Secretary	Winslow Twp School District	mccoyty@winslow-schools.com	Office: 856-767-2850 ext. 7510
Sandy Pinnock General Manager	Aramark Facilities Management	pinnock-sandy@aramark.com	Office: 856-767-0995 Cell: 856-617-2638
Regina Chico	Winslow Twp. School District	chicore@winslow-schools.com	
Maureen Schanne Purchasing Agent	Winslow Twp. School District	schannema@winslow-schools.com	Office: 865-767-2850
Paul Schnettler	Dutchman Contracting, LLC	Paul.dutchmancontracting@gmail.com	Direct: 717-989-5502
Joe Porretta	Porretta Builders	Joe.Porrettabuilders@comcast.net	Office: 609-561-6391
Brendan Williams	JH Williams Enterprises, Inc.	bw@jhwilliamsinc.com	Office: 856-793-7114
Josh Levy	Levy Construction	josh@levyconstruction.com	Office: 865-5470707

Plan holders as of 31 October 2025:

<u>Company</u>	<u>Name</u>	<u>Email</u>
Levy Construction	Josh Levy	josh@levyconstruction.com
Porretta Construction	Joe Porretta	Joe.porrettabuilders@comcast.net
Dutchman Contracting	Paul Schnettler	Paul.dutchmancontractingllc.com

General Bidding Information:

1. Bid proposals are due to the Winslow Township School District, Administrative Office, 40 Cooper Folly Rd, Atco, NJ c/o Ms. Tyra Boyle, Business Administrator / Board Secretary on **Friday, November 14, 2025**. The bids must be delivered on that date by 10:30 am. The Board intends to award the contract on or about November 25, 2025.
2. Bids will be opened publicly at 10:30 am. Bids received after 10:30 am will not be accepted.
3. Bidders must be classified and prequalified by the New Jersey Department of the Treasury prior to the time and date that bids are received:

General Contractor with a DPMC Classification of C008 General Construction, or
General Contractor with a DPMC Classification of C009 General Construction/Alterations and Additions.

Specialty Trades:

Plumbing	C030
HVACR	C032
Electrical	C047

4. This project has one bid form.

Discussion Items:

5. All bidder's questions must be **in writing and emailed** to EI Associates, attention Ruth A. Bussacco, by 4pm October 28, 2025. **Email Address: ruth_bussacco@eiassociates.com.**
6. Addendum #1 will be issued by 4:00 pm on Friday, October 31, 2025.
7. All site arrangements shall be made thru the District's Head of Facilities Sandy Pinnock, cell 856-617-2638.
8. The site will be available for construction on or about December 1, 2025. All work at each school must be substantially completed by April 17, 2026. Project final completion is required by May 1, 2026.
9. All construction staff shall be cleared thru the Facilities Office prior to working on-site. Contact Ms. Pinnock for additional information.
10. All work when school is in session shall be on 'second-shift' unless otherwise cleared beforehand.
11. A walk-thru of the site for the High School Pole Barn took place after this meeting.

12. Will electronic copies of the documents be made available for the bidders? EIA will make available electronic copies of the documents to all plan holders upon request.

Additional Information:

13. Any substitutions for specified items shall be indicated on bid form attachment #14 during the bidding process. Substitutions will not be accepted after the bid.
14. The successful contractor shall provide a project schedule within seven calendar days after the award. Submittals and shop drawings are required within thirty days after the award.

General work:

15. A site walk of the High School Pole Barn area was conducted following this meeting. Anyone interested in visiting the School at a later date will be required to arrange visits through the District. No one is to visit any school without prior authorization from the District.
16. **The District intends to make the building available to contractors during the school year after hours, weekend, and/or days school is closed AND must be coordinated with district 48 hours prior. Weekend work and after-hours work must be coordinated with the District 48 hours prior.**

Site:

17. Dumpster locations, Contractor parking, Contractor toilets/usage, site access at the school will be arranged with the Head of Facilities once a contractor is selected.
18. Contractor behavior: language, attire, radio, smoking, project cleanliness – this is a school that will be occupied to some extent during the course of construction.

II. SUBMITTED QUESTIONS AND RESPONSES:

1. ***Q: There are no foundation details for this building. Not all Pole Barn manufacturers typically include foundations/slabs with their work. Will EIA be providing foundation/slab design & details ?***

A: If the Pole Barn Contractor does not include slab/foundation with their design, the winning contractor will be responsible for providing slab/foundation design signed & sealed by a licensed NJ engineer.

III. CHANGES TO SPECIFICATIONS:

No changes to specifications.

IV. CHANGES TO DRAWINGS:

No changes to drawings.

V. REPORTS:

Drainage Report attached.

Cc: All Bidders
EI Distribution

END OF ADDENDUM NO. 1

STORMWATER MANAGEMENT REPORT

Winslow Township School District

High School Pole Barn Project

Lot 1, Block 3205

10 Cooper Folly Road

Winslow Township, Camden County, New Jersey

EIA Project No.: ES 9818.00

Owner/Applicant: Winslow Township School District
40 Cooper Folly Road
Winslow, New Jersey 08004

Prepared by: EI Associates
8 Ridgedale Avenue
Cedar Knolls, NJ 07927
Phone: (973) 775-7777
Fax: (908) 775-7770

Date: August 27, 2025



Robert E. Walsh, P.E.
N.J. P.E. License No. 35809

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PROJECT DESCRIPTION:

The Winslow Township School District (WTSD) is proposing to construct a pole barn at the High School site located at 10 Cooper Folly Road in Winslow Township, Camden County, New Jersey. The proposed building will function as a storage facility for athletic field equipment associated with the sports fields located immediately adjacent to the proposed building.

The building footprint will be 100-feet by 40-feet and have an area of 4,000 square feet (0.09 acres). The access walkway near the building will be expanded from 4-feet wide to 10-feet wide. A concrete apron will be installed on all sides of the new building.

The subject property known as Lot 1 Block 3205 on the Winslow Township Tax Map is the site of the High School, Middle School and School board offices. The property is approximately 137.3 acres in area.

This project is located within the Pinelands Area. In accordance with Winslow Township Chapter 298, Stormwater Control Within the Pinelands Area, the project must meet the standards for a major development per §298-1.C.(2)(c), since there will be greater than 5,000 square feet of land grading. The project will require approval from the Pinelands Commission as well as the Camden County Soil Conservation District (CCSCD).

DRAINAGE ANALYSIS:

The existing drainage area of 0.233 acres is the area that will be subject to an increase in impervious coverage. The total increase in impervious coverage will be as follows in Table 1.0:

Table 1.0 Proposed Impervious Coverage Breakdown		
<u>Description of Coverage</u>	<u>Area (S.F.)</u>	<u>Area (Acres)</u>
Building	4,000 s.f.	0.0918
Concrete	1,880 s.f.	0.0432
Asphalt Pavement	669 s.f.	0.0153
Total =	6,549 s.f.	0.1503

This increase in impervious coverage occurs within the limits of the existing drainage area shown on Drawing No. XDM-1 located in Appendix B. The area of soil disturbance will be 0.5 acres or less.

A Subsurface Investigation Report prepared by Sor Consulting Engineers, Inc. dated July 29, 2025, is presented in Appendix C. Two (2) test pits were excavated to determine seasonal high groundwater and the design infiltration rate. Groundwater was not encountered in the excavations to a depth of 12-feet below grade or greater. The lowest infiltration rate of 0.91 in/hour was used for the design of the proposed vegetated swale with a subsurface infiltration pipe.

According to the soil survey the site consists of Aura (AugaB) sandy loam soils, which is type B hydrologic soil group. The infiltration rate encountered is ideal for the use of a groundwater recharge system for stormwater management. There is no existing stormwater drainage collection system in the immediate area of the proposed work. The proposed infiltration swale will discharge to grade during the 100-year storm event only in the lawn area northwest of the proposed pole barn.

Existing Drainage Area, XDA-1, is a 0.233-acre area that drains towards the tennis courts located to the north of the proposed pole barn. The only impervious coverage within this drainage area is the existing walkway and a small gravel area.

The proposed stormwater management facilities consist of an infiltration system swale and perforated subsurface pipe located beneath the swale. The roof leaders for the proposed pole barn will connect directly to the subsurface pipe. Sheet flow from the concrete apron around the building will flow directly into the vegetated swale located on all sides of the pole barn. Refer to Appendix B for the Proposed Drainage Area Map, Dwg. No. PDM-1.

NOAA Atlas14 was used to obtain the rainfall amounts for the 2, 10, and 100-year storm events. These storm event rainfall depths were factored in accordance with Tables 5 and 6 of Winslow Township §298-4 to calculate the current and future rainfall depths. Outlined in Table A and Table B below are comparisons of the existing and proposed stormwater runoff for the “current” and “future” rainfall conditions.

TABLE A Peak Runoff Rate Comparison – Current Rainfall Amount					
Storm Frequency	Exist. Peak Runoff (cfs)	Hydrograph Reference No.	Prop. Peak Outflow (cfs)	Hydrograph Reference No.	Ratio of proposed Peak flow to Existing
2 Year	0.112	1	0.000	3	0.000
10 Year	0.360	1	0.000	3	0.000
100 Year	0.992	1	0.187	3	0.188

TABLE B Peak Runoff Rate Comparison – Future Rainfall Amount					
Storm Frequency	Exist. Peak Runoff (cfs)	Hydrograph Reference No.	Prop. Peak Outflow (cfs)	Hydrograph Reference No.	Ratio of proposed Peak flow to Existing
2 Year	0.169	1	0.000	3	0.000
10 Year	0.502	1	0.000	3	0.000
100 Year	1.534	1	1.170	3	0.762

There is no regulated motor vehicle surface proposed for this project. The walkway surface will be used by golf carts or all-terrain vehicles to move sports equipment to and from the pole barn to the fields. Therefore, water quality treatment is not required.

The current 2-year existing runoff volume is 554 cf. The current 2-year proposed runoff volume will be 0. The future two-year existing runoff volume is 771 cf. The future two-year proposed runoff volume will be 0. Therefore, the proposed stormwater management system meets the requirements for annual groundwater

Winslow Township School District
New Pole Barn
Lot 1, Block 3205 – Winslow Township
Camden County, NJ
Stormwater Management Report
August 27, 2025

recharge in accordance with the Winslow Township Stormwater Ordinance under §298-3.O(2) which requires the total runoff volume increase associated with the 10-year storm event to be retained and infiltrated on site.

A Stormwater Operations & Maintenance (O&M) Manual will be prepared based upon acceptance of the proposed stormwater management system by all agencies having jurisdiction.

APPENDIX – A

Stormwater Calculations

- NOAA Atlas 14 Precipitation Winslow, NJ
- Precipitation Adjustment Calculation for Current and Future Rainfall Amounts
- Soil Description (AugaB) Aura sandy loam
- Runoff Curve Numbers, Tables 2-2a
- Existing & Proposed CN Calculations
- Hydrograph Summary Report (WPB_8-27-2025C.gpw) Current Precipitation
- Hydrograph Summary Report (WPB_8-27-2025F.gpw) Future Precipitation



NOAA Atlas 14, Volume 2, Version 3
Location name: Township of Winslow, New Jersey,
USA*

Latitude: 39.746°, Longitude: -74.9079°

Elevation: 176 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 & aerals](#)

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	0.351 (0.318-0.386)	0.417 (0.378-0.459)	0.490 (0.444-0.539)	0.549 (0.496-0.604)	0.618 (0.556-0.680)	0.670 (0.600-0.739)	0.721 (0.643-0.796)	0.767 (0.679-0.851)	0.823 (0.721-0.921)	0.870 (0.754-0.979)
10-min	0.560 (0.509-0.616)	0.666 (0.605-0.733)	0.785 (0.710-0.863)	0.877 (0.793-0.966)	0.985 (0.886-1.08)	1.07 (0.956-1.18)	1.14 (1.02-1.26)	1.22 (1.08-1.35)	1.30 (1.14-1.46)	1.37 (1.19-1.54)
15-min	0.700 (0.636-0.770)	0.838 (0.760-0.922)	0.993 (0.899-1.09)	1.11 (1.00-1.22)	1.25 (1.12-1.37)	1.35 (1.21-1.49)	1.45 (1.29-1.60)	1.53 (1.36-1.70)	1.64 (1.44-1.83)	1.72 (1.49-1.94)
30-min	0.960 (0.872-1.06)	1.16 (1.05-1.27)	1.41 (1.28-1.55)	1.61 (1.45-1.77)	1.85 (1.66-2.04)	2.03 (1.82-2.24)	2.22 (1.98-2.45)	2.39 (2.11-2.65)	2.61 (2.28-2.92)	2.78 (2.42-3.14)
60-min	1.20 (1.09-1.32)	1.45 (1.32-1.60)	1.81 (1.64-1.99)	2.09 (1.89-2.30)	2.46 (2.22-2.71)	2.76 (2.47-3.04)	3.05 (2.72-3.37)	3.35 (2.96-3.72)	3.74 (3.28-4.18)	4.07 (3.52-4.58)
2-hr	1.44 (1.30-1.60)	1.75 (1.57-1.95)	2.19 (1.97-2.44)	2.56 (2.29-2.84)	3.03 (2.70-3.38)	3.42 (3.03-3.81)	3.81 (3.36-4.26)	4.21 (3.68-4.73)	4.75 (4.10-5.38)	5.20 (4.43-5.92)
3-hr	1.58 (1.42-1.76)	1.91 (1.72-2.13)	2.40 (2.15-2.67)	2.81 (2.51-3.13)	3.35 (2.98-3.74)	3.80 (3.36-4.24)	4.27 (3.74-4.78)	4.75 (4.11-5.34)	5.41 (4.61-6.12)	5.96 (5.02-6.78)
6-hr	1.96 (1.76-2.20)	2.37 (2.13-2.66)	2.96 (2.65-3.32)	3.48 (3.10-3.89)	4.19 (3.71-4.69)	4.80 (4.22-5.38)	5.44 (4.74-6.12)	6.13 (5.27-6.91)	7.10 (5.99-8.07)	7.94 (6.60-9.08)
12-hr	2.37 (2.14-2.67)	2.86 (2.57-3.22)	3.60 (3.22-4.04)	4.27 (3.81-4.79)	5.23 (4.62-5.86)	6.08 (5.32-6.82)	7.00 (6.05-7.88)	8.02 (6.82-9.07)	9.51 (7.90-10.8)	10.8 (8.82-12.4)
24-hr	2.72 (2.50-2.97)	3.30 (3.04-3.61)	4.26 (3.92-4.66)	5.08 (4.65-5.55)	6.33 (5.75-6.88)	7.42 (6.69-8.03)	8.63 (7.72-9.32)	9.99 (8.86-10.8)	12.1 (10.5-13.0)	13.8 (11.9-14.9)
2-day	3.12 (2.87-3.41)	3.79 (3.49-4.15)	4.89 (4.49-5.35)	5.83 (5.34-6.36)	7.23 (6.58-7.87)	8.44 (7.63-9.17)	9.78 (8.77-10.6)	11.3 (10.0-12.2)	13.5 (11.9-14.7)	15.5 (13.4-16.8)
3-day	3.29 (3.04-3.58)	4.00 (3.69-4.35)	5.13 (4.73-5.58)	6.09 (5.60-6.62)	7.52 (6.87-8.14)	8.75 (7.95-9.46)	10.1 (9.11-10.9)	11.6 (10.4-12.5)	13.9 (12.2-15.0)	15.8 (13.8-17.1)
4-day	3.46 (3.21-3.76)	4.20 (3.89-4.55)	5.37 (4.97-5.82)	6.36 (5.86-6.87)	7.81 (7.17-8.42)	9.06 (8.27-9.75)	10.4 (9.46-11.2)	11.9 (10.7-12.8)	14.2 (12.6-15.2)	16.1 (14.1-17.3)
7-day	4.05 (3.77-4.37)	4.87 (4.54-5.26)	6.14 (5.72-6.63)	7.21 (6.69-7.77)	8.77 (8.10-9.44)	10.1 (9.28-10.9)	11.5 (10.5-12.4)	13.1 (11.9-14.1)	15.5 (13.8-16.6)	17.4 (15.4-18.8)
10-day	4.57 (4.28-4.91)	5.49 (5.14-5.90)	6.80 (6.36-7.30)	7.89 (7.36-8.46)	9.44 (8.77-10.1)	10.7 (9.92-11.5)	12.1 (11.1-13.0)	13.6 (12.4-14.5)	15.8 (14.3-16.9)	17.7 (15.9-18.9)
20-day	6.18 (5.84-6.57)	7.36 (6.95-7.82)	8.87 (8.38-9.42)	10.1 (9.51-10.7)	11.8 (11.1-12.5)	13.1 (12.3-13.9)	14.5 (13.5-15.4)	16.0 (14.8-16.9)	18.0 (16.5-19.1)	19.5 (17.9-20.8)
30-day	7.67 (7.28-8.10)	9.08 (8.60-9.59)	10.8 (10.2-11.4)	12.1 (11.4-12.8)	13.9 (13.1-14.7)	15.3 (14.4-16.2)	16.7 (15.7-17.7)	18.2 (17.0-19.2)	20.1 (18.7-21.3)	21.6 (20.0-22.9)
45-day	9.78 (9.30-10.3)	11.5 (11.0-12.1)	13.4 (12.8-14.1)	14.9 (14.2-15.7)	16.8 (15.9-17.7)	18.3 (17.3-19.2)	19.7 (18.5-20.7)	21.0 (19.8-22.1)	22.8 (21.3-24.0)	24.1 (22.5-25.4)
60-day	11.7 (11.2-12.3)	13.8 (13.1-14.5)	15.9 (15.1-16.7)	17.4 (16.6-18.3)	19.4 (18.5-20.4)	20.9 (19.8-22.0)	22.3 (21.1-23.4)	23.6 (22.3-24.8)	25.2 (23.8-26.6)	26.4 (24.8-27.9)

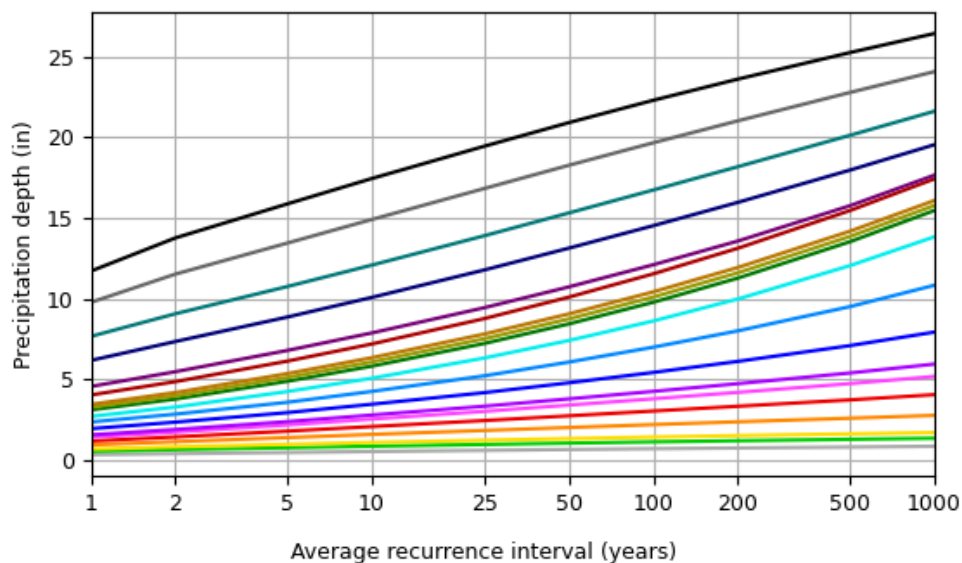
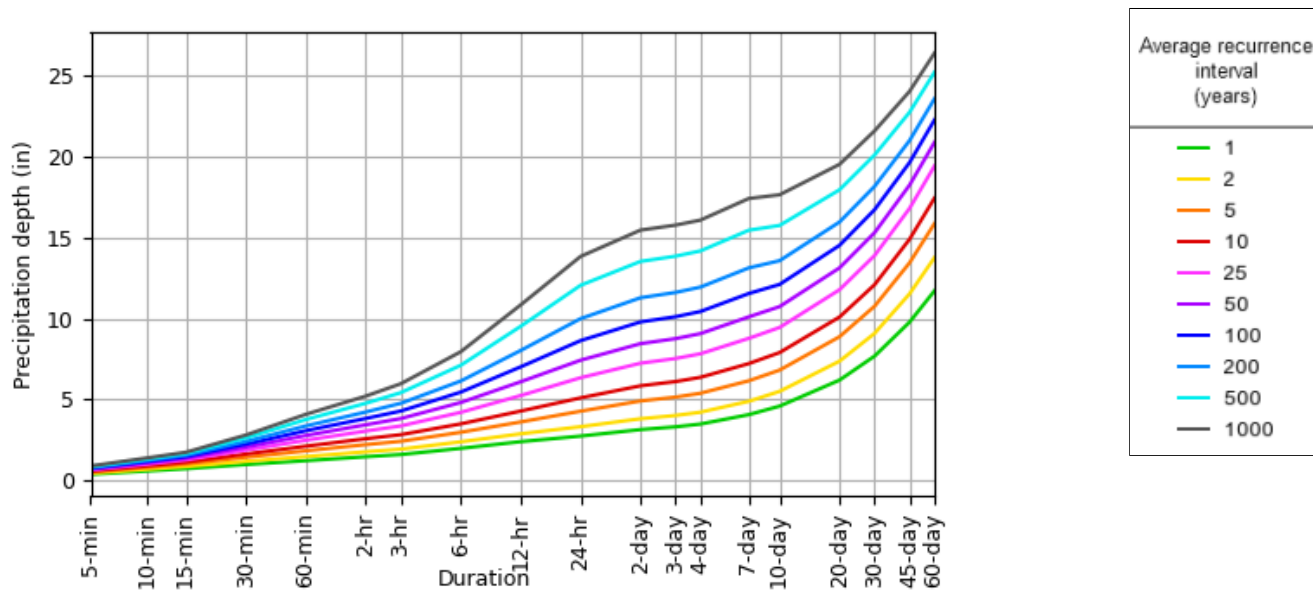
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average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

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PF graphical

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

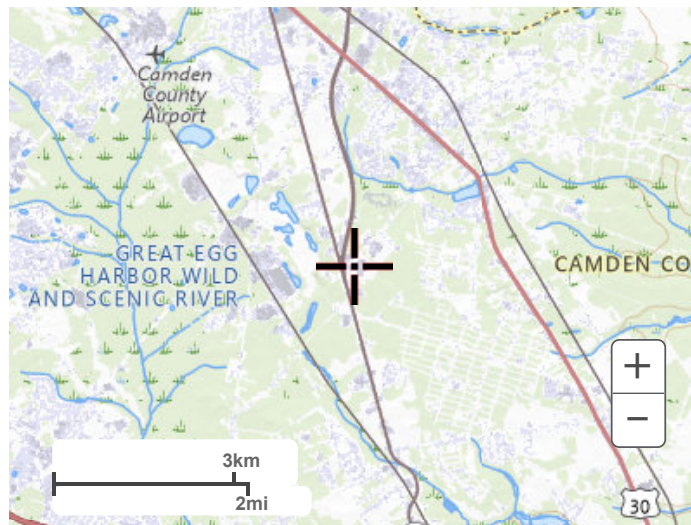
Latitude: 39.7460°, Longitude: -74.9079°



NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Wed Oct 8 15:44:14 2025

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Large scale terrain



Large scale map



Large scale aerial



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[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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Winslow Township HS Pole Barn Project

Camden County

Precipitation Adjustment Calculation for Current and Future Rainfall Amounts

8-27-2025

	<u>2-Year</u>	<u>10-Year</u>	<u>100-Year</u>
NOAA Atlas 14	3.3	5.08	8.63
Table 5 A.F.	1.03	1.04	1.05
Current PPT	3.40	5.28	9.06
Table 6 A.F.	1.18	1.22	1.39
Future PPT	3.89	6.20	12.00

Camden County, New Jersey

AugaB—Aura sandy loam, 2 to 5 percent slopes, Northern Tidewater Area

Map Unit Setting

National map unit symbol: 2x8s9

Elevation: 0 to 220 feet

Mean annual precipitation: 41 to 50 inches

Mean annual air temperature: 53 to 58 degrees F

Frost-free period: 190 to 260 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Aura and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aura

Setting

Landform: Flats, fluviomarine terraces

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Riser, rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Coarse-loamy eolian deposits over loamy gravelly fluviomarine deposits

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 10 inches: sandy loam

Bt - 10 to 23 inches: sandy loam

2Btx1 - 23 to 31 inches: gravelly sandy loam

2Btx2 - 31 to 45 inches: gravelly sandy clay loam

2C - 45 to 80 inches: gravelly loamy coarse sand

Properties and qualities

Slope: 2 to 5 percent

Depth to restrictive feature: 21 to 39 inches to fragipan

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B

Ecological site: F153DY160NJ - Well Drained Coarse-Loamy
Upland

Hydric soil rating: No

Minor Components

Downer

Percent of map unit: 5 percent

Landform: Flats, low hills, knolls

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Nose slope, rise

Down-slope shape: Convex, linear

Across-slope shape: Convex, linear

Ecological site: F153DY160NJ - Well Drained Coarse-Loamy
Upland

Hydric soil rating: No

Sassafras

Percent of map unit: 5 percent

Landform: Fluvio-marine terraces, flats

Landform position (three-dimensional): Riser, rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F149AY170MD - Well Drained Fine-Loamy Upland

Hydric soil rating: No

Woodstown

Percent of map unit: 5 percent

Landform: Flats, depressions, broad interstream divides,
fluvio-marine terraces

Landform position (two-dimensional): Shoulder, footslope

Landform position (three-dimensional): Riser, dip

Down-slope shape: Convex, concave

Across-slope shape: Linear, concave

Ecological site: F149AY130NJ - Moist Loamy Upland

Hydric soil rating: No

Data Source Information

Soil Survey Area: Camden County, New Jersey

Survey Area Data: Version 18, Sep 3, 2024

Table 2-2a Runoff curve numbers for urban areas ^{1/}

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area ^{2/}	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) ^{3/} :					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ^{4/}		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas					
(pervious areas only, no vegetation) ^{5/}		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

¹ Average runoff condition, and $I_a = 0.2S$.² The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.³ CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.⁴ Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.⁵ Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Winslow Township School District
 High School Pole Barn
 Existing CN Calculation
 8-27-2025

DRAINAGE AREA ID.	Soil Type Hydrologic Group	TOTAL AREA (ACRES)	COVERAGE AREA (AC.)	DESCRIPTION	CN VALUE	WEIGHTED CN VALUE
XDA #1		0.23				
			0.017	Impervious	98	7.2
	Aura(B)		0.216	Lawn	61	56.5
			0.000	woods	58	0.0
		Subtotal=	<u>0.233</u>			<u>64</u>

Winslow Township School District
 High School Pole Barn
 Proposed CN Calculation
 8-27-2025

DRAINAGE AREA ID.	Soil Type Hydrologic Group	TOTAL AREA (ACRES)	COVERAGE AREA (AC.)	DESCRIPTION	CN VALUE	WEIGHTED CN VALUE
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PDA #1

0.23

Aura(B)	0.160	Impervious	98	67.3
	0.073	Lawn	61	19.1
	0.000	woods	58	0.0
	Subtotal=	0.233		86
	% IMP.=	69%		

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Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	SCS Runoff	-----	-----	0.112	-----	-----	0.360	-----	-----	0.992	XDA-1
2	SCS Runoff	-----	-----	0.568	-----	-----	1.035	-----	-----	1.978	PDA-1
3	Reservoir	2	-----	0.000	-----	-----	0.000	-----	-----	0.187	PDA-1 OUTFLOW

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.112	1	733	554	----	-----	-----	XDA-1
2	SCS Runoff	0.568	1	725	1,753	----	-----	-----	PDA-1
3	Reservoir	0.000	1	704	0	2	172.89	846	PDA-1 OUTFLOW
WPB_8-27-2025C.gpw					Return Period: 2 Year			Tuesday, Oct 14, 2025	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

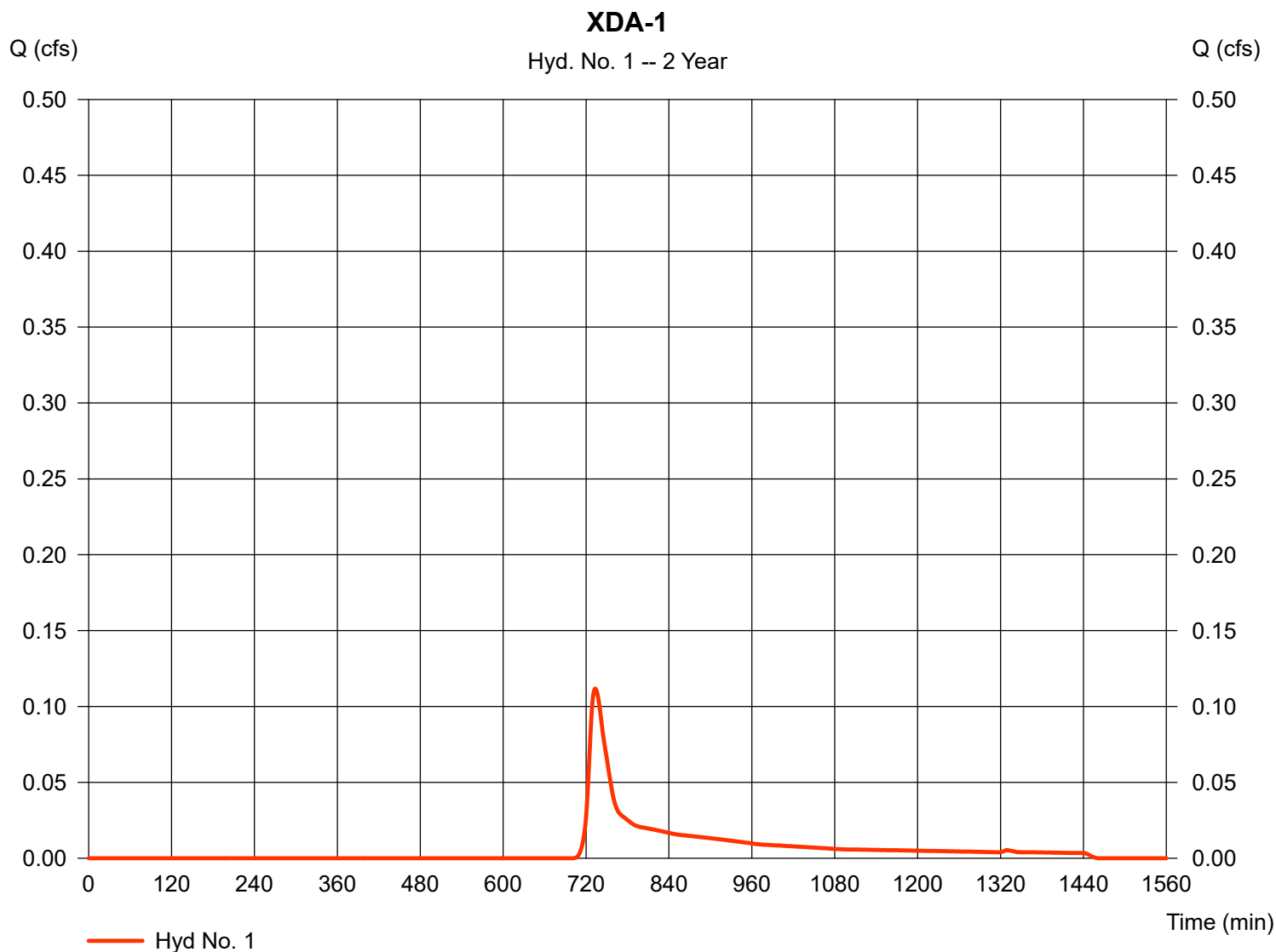
Tuesday, Oct 14, 2025

Hyd. No. 1

XDA-1

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.233 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 3.40 in
 Storm duration = 24 hrs

Peak discharge = 0.112 cfs
 Time to peak = 733 min
 Hyd. volume = 554 cuft
 Curve number = 64
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 14.20 min
 Distribution = Type III
 Shape factor = 484



TR55 Tc Worksheet

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No. 1

XDA-1

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>		
Sheet Flow						
Manning's n-value	= 0.240	0.011	0.011			
Flow length (ft)	= 100.0	0.0	0.0			
Two-year 24-hr precip. (in)	= 3.30	0.00	0.00			
Land slope (%)	= 2.00	0.00	0.00			
Travel Time (min)	= 14.05	+	0.00	+	0.00	= 14.05
Shallow Concentrated Flow						
Flow length (ft)	= 27.00	0.00	0.00			
Watercourse slope (%)	= 2.00	0.00	0.00			
Surface description	= Unpaved	Paved	Paved			
Average velocity (ft/s)	= 2.28	0.00	0.00			
Travel Time (min)	= 0.20	+	0.00	+	0.00	= 0.20
Channel Flow						
X sectional flow area (sqft)	= 0.00	0.00	0.00			
Wetted perimeter (ft)	= 0.00	0.00	0.00			
Channel slope (%)	= 0.00	0.00	0.00			
Manning's n-value	= 0.015	0.015	0.035			
Velocity (ft/s)	= 0.00	0.00	0.00			
Flow length (ft)	= 0.0	0.0	0.0			
Travel Time (min)	= 0.00	+	0.00	+	0.00	= 0.00
Total Travel Time, Tc					14.20 min	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

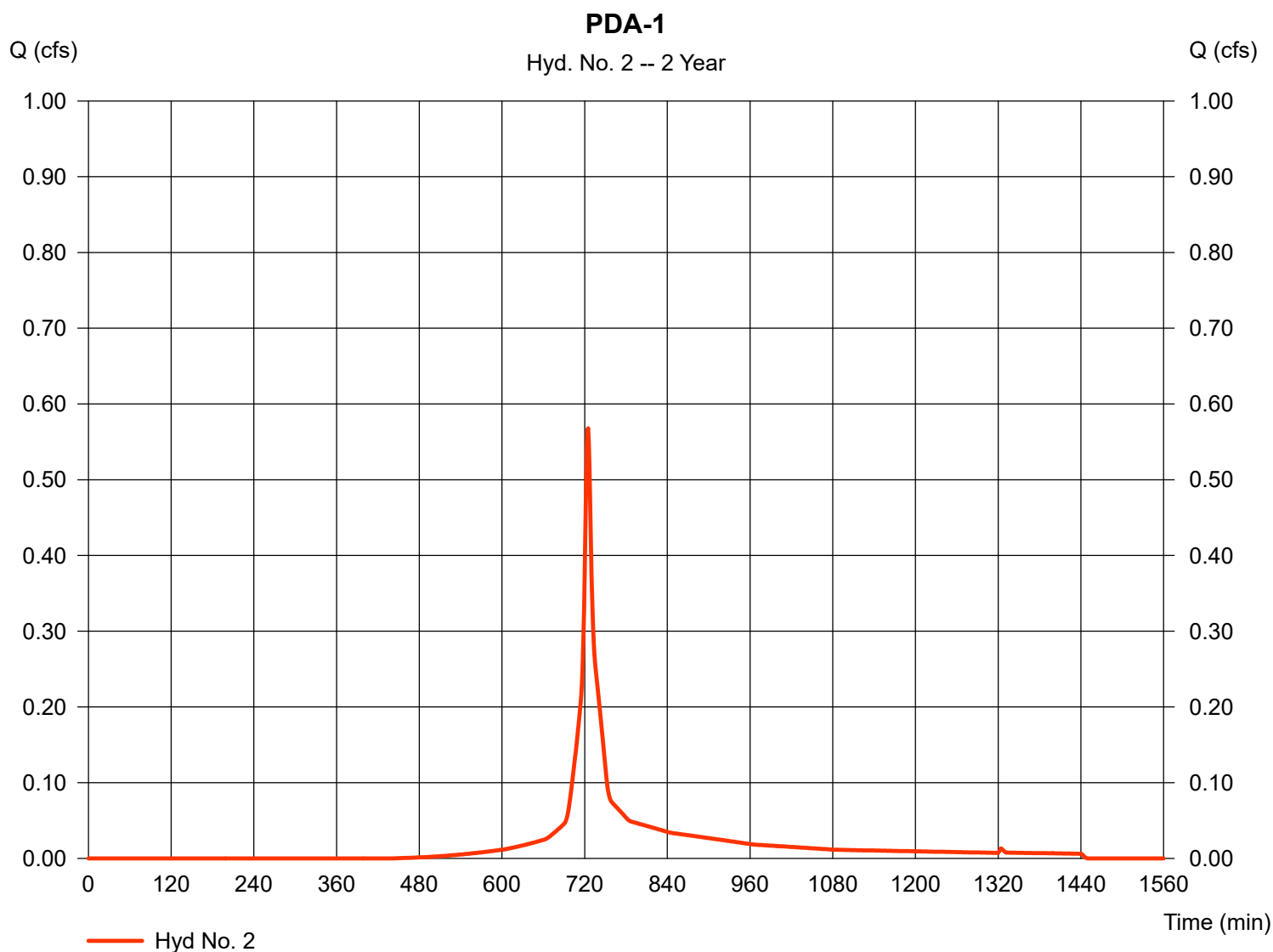
Tuesday, Oct 14, 2025

Hyd. No. 2

PDA-1

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.233 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 3.40 in
 Storm duration = 24 hrs

Peak discharge = 0.568 cfs
 Time to peak = 725 min
 Hyd. volume = 1,753 cuft
 Curve number = 86
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type III
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

Tuesday, Oct 14, 2025

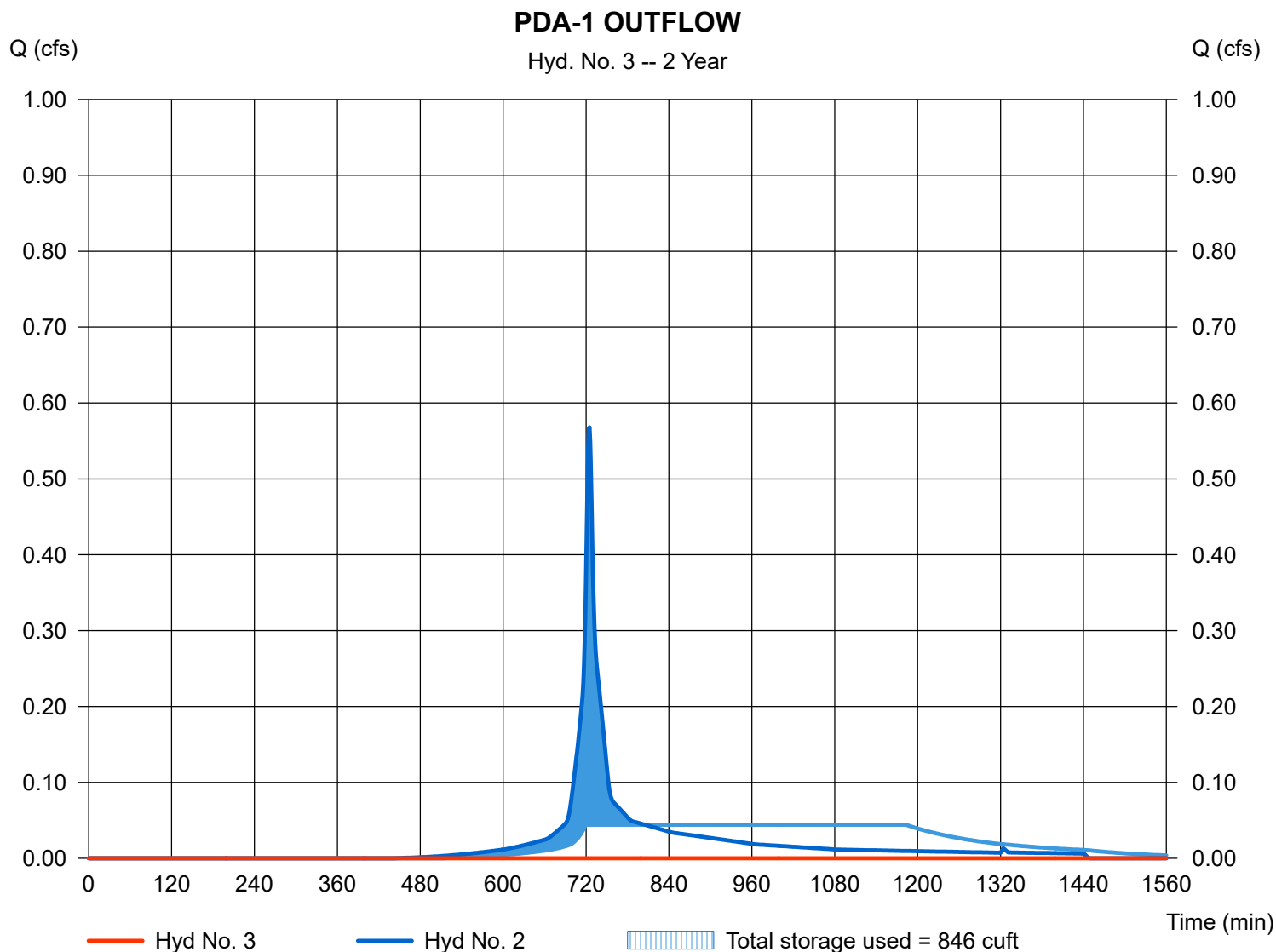
Hyd. No. 3

PDA-1 OUTFLOW

Hydrograph type = Reservoir
 Storm frequency = 2 yrs
 Time interval = 1 min
 Inflow hyd. No. = 2 - PDA-1
 Reservoir name = ADS-1

Peak discharge = 0.000 cfs
 Time to peak = 704 min
 Hyd. volume = 0 cuft
 Max. Elevation = 172.89 ft
 Max. Storage = 846 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

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Hydraflow Hydrographs by Intelisolve v9.22

Tuesday, Oct 14, 2025

Pond No. 2 - ADS-1

Pond Data

UG Chambers - Invert elev. = 172.50 ft, Rise x Span = 2.00 x 2.00 ft, Barrel Len = 350.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No

Encasement - Invert elev. = 172.00 ft, Width = 6.00 ft, Height = 3.50 ft, Voids = 40.00%

Contours - User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 175.51 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	172.00	n/a	0	0
0.35	172.35	n/a	294	294
0.70	172.70	n/a	328	622
1.05	173.05	n/a	407	1,030
1.40	173.40	n/a	435	1,464
1.75	173.75	n/a	440	1,904
2.10	174.10	n/a	426	2,330
2.45	174.45	n/a	384	2,714
2.80	174.80	n/a	298	3,012
3.15	175.15	n/a	294	3,306
3.50	175.50	n/a	294	3,600
3.51	175.51	100	1	3,601
4.00	176.00	200	74	3,674
4.25	176.25	600	100	3,774
4.50	176.50	1,000	200	3,974

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 175.00	0.00	0.00	0.00
Length (ft)	= 135.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .010	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 20.00	0.00	0.00	0.00
Crest El. (ft)	= 176.33	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.910 (by Contour)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	172.00	0.00	---	---	---	0.00	---	---	---	0.000	---	0.000
0.35	294	172.35	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
0.70	622	172.70	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
1.05	1,030	173.05	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
1.40	1,464	173.40	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
1.75	1,904	173.75	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
2.10	2,330	174.10	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
2.45	2,714	174.45	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
2.80	3,012	174.80	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
3.15	3,306	175.15	0.07 ic	---	---	---	0.00	---	---	---	0.044	---	0.110
3.50	3,600	175.50	0.47 ic	---	---	---	0.00	---	---	---	0.044	---	0.517
3.51	3,601	175.51	0.06 oc	---	---	---	0.00	---	---	---	0.044	---	0.101
4.00	3,674	176.00	0.40 oc	---	---	---	0.00	---	---	---	0.044	---	0.445
4.25	3,774	176.25	0.49 oc	---	---	---	0.00	---	---	---	0.044	---	0.535
4.50	3,974	176.50	0.57 oc	---	---	---	3.64	---	---	---	0.044	---	4.256

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.360	1	731	1,493	----	-----	-----	XDA-1
2	SCS Runoff	1.035	1	724	3,253	----	-----	-----	PDA-1
3	Reservoir	0.000	1	659	0	2	173.72	1,866	PDA-1 OUTFLOW
WPB_8-27-2025C.gpw					Return Period: 10 Year			Tuesday, Oct 14, 2025	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

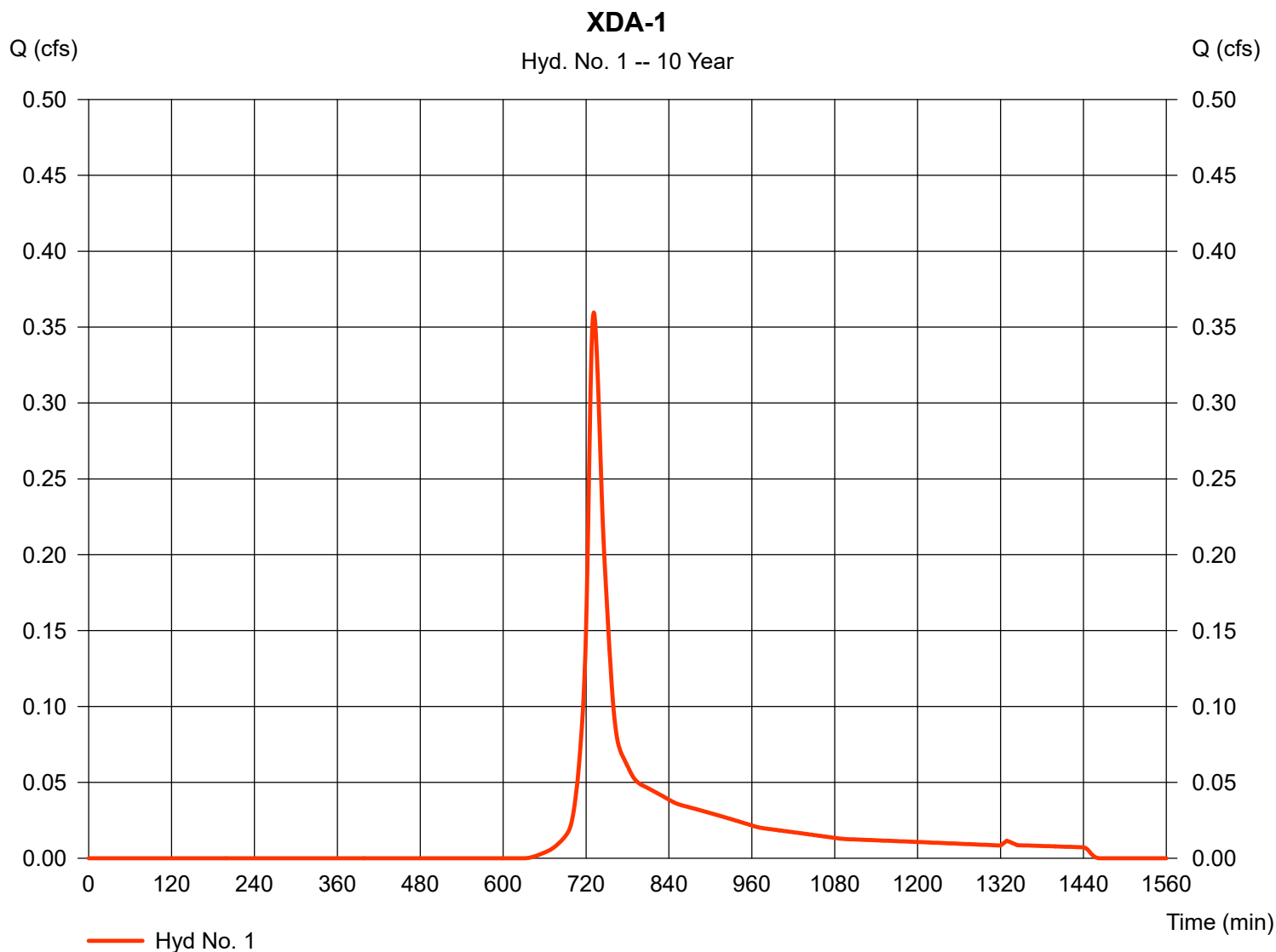
Tuesday, Oct 14, 2025

Hyd. No. 1

XDA-1

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 0.233 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 5.28 in
 Storm duration = 24 hrs

Peak discharge = 0.360 cfs
 Time to peak = 731 min
 Hyd. volume = 1,493 cuft
 Curve number = 64
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 14.20 min
 Distribution = Type III
 Shape factor = 484

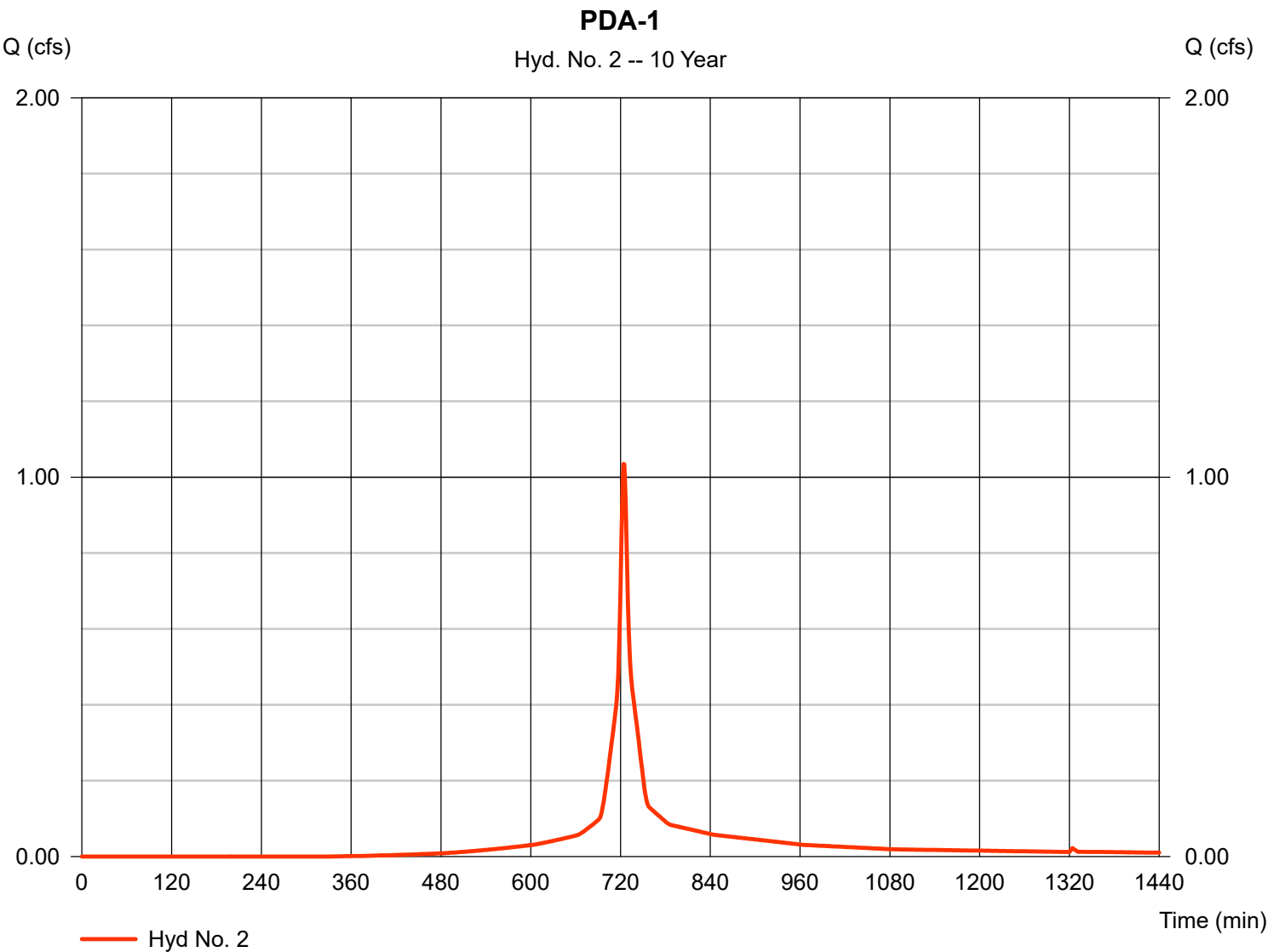


Hydrograph Report

Hyd. No. 2

PDA-1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.035 cfs
Storm frequency	=	10 yrs	Time to peak	=	724 min
Time interval	=	1 min	Hyd. volume	=	3,253 cuft
Drainage area	=	0.233 ac	Curve number	=	86
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.28 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



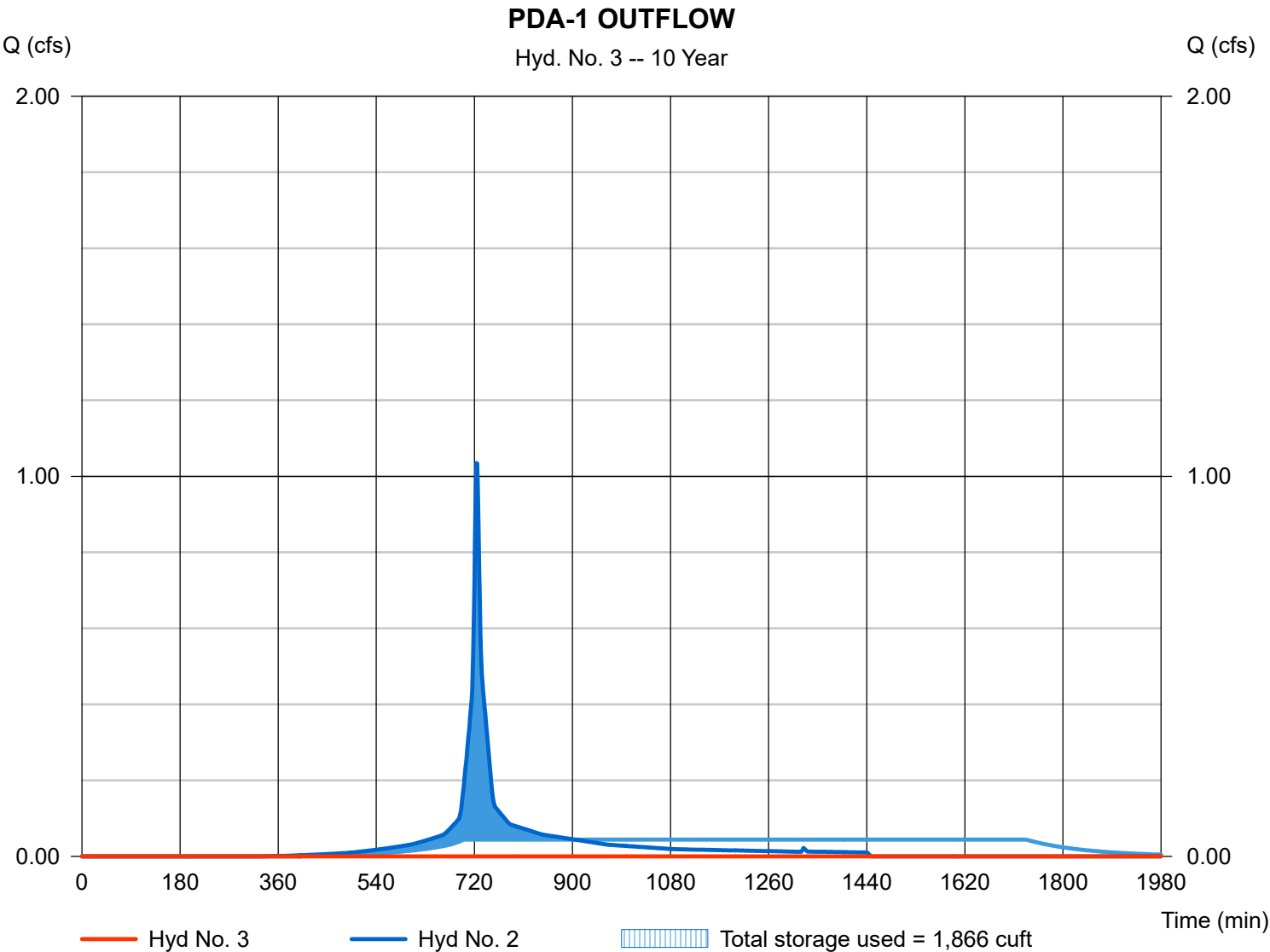
Hydrograph Report

Hyd. No. 3

PDA-1 OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= 659 min
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 2 - PDA-1	Max. Elevation	= 173.72 ft
Reservoir name	= ADS-1	Max. Storage	= 1,866 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.992	1	730	3,927	----	-----	-----	XDA-1
2	SCS Runoff	1.978	1	724	6,422	----	-----	-----	PDA-1
3	Reservoir	0.187	1	760	1,128	2	175.27	3,404	PDA-1 OUTFLOW
WPB_8-27-2025C.gpw					Return Period: 100 Year			Tuesday, Oct 14, 2025	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

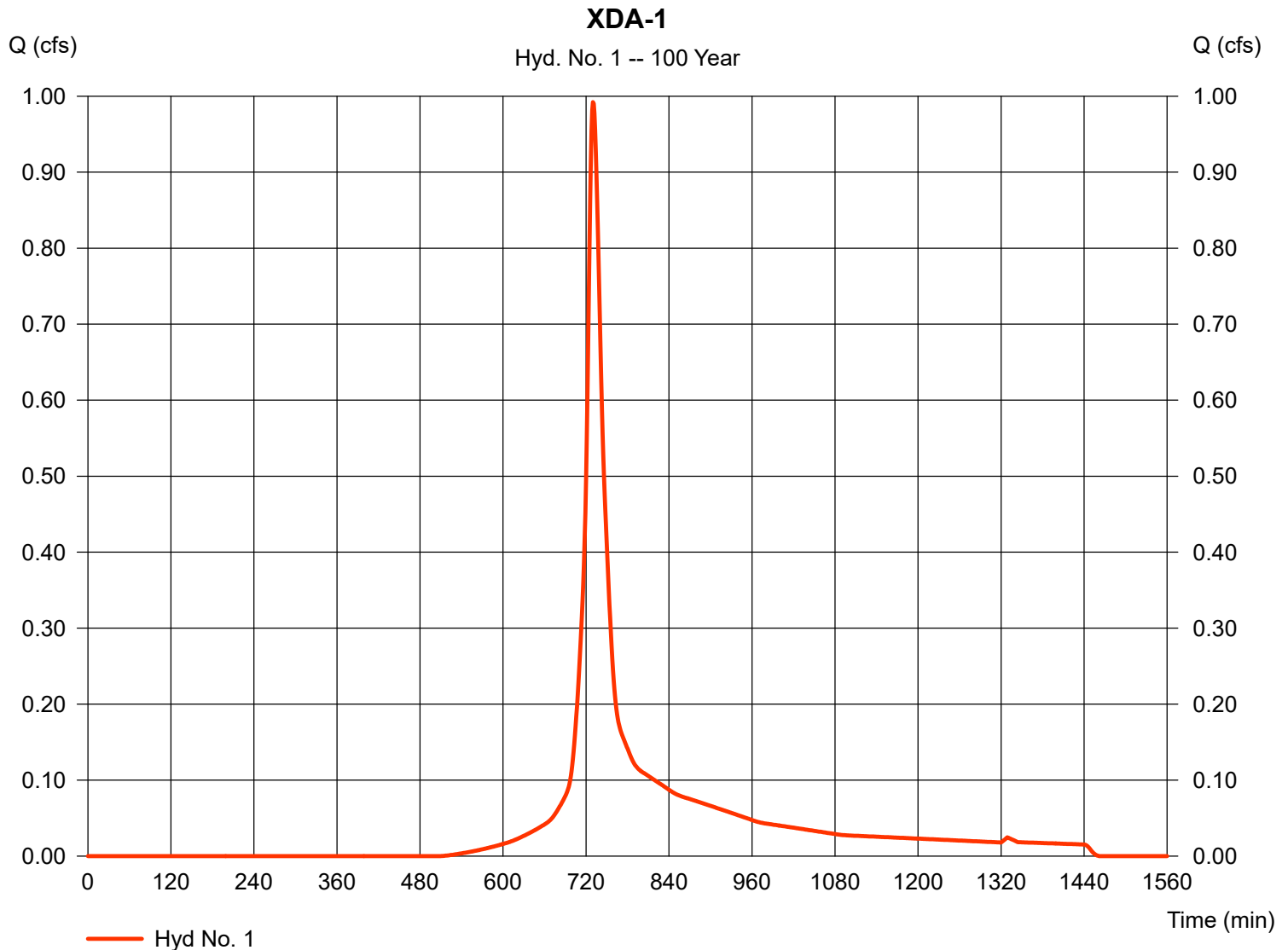
Tuesday, Oct 14, 2025

Hyd. No. 1

XDA-1

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 0.233 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 9.06 in
 Storm duration = 24 hrs

Peak discharge = 0.992 cfs
 Time to peak = 730 min
 Hyd. volume = 3,927 cuft
 Curve number = 64
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 14.20 min
 Distribution = Type III
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

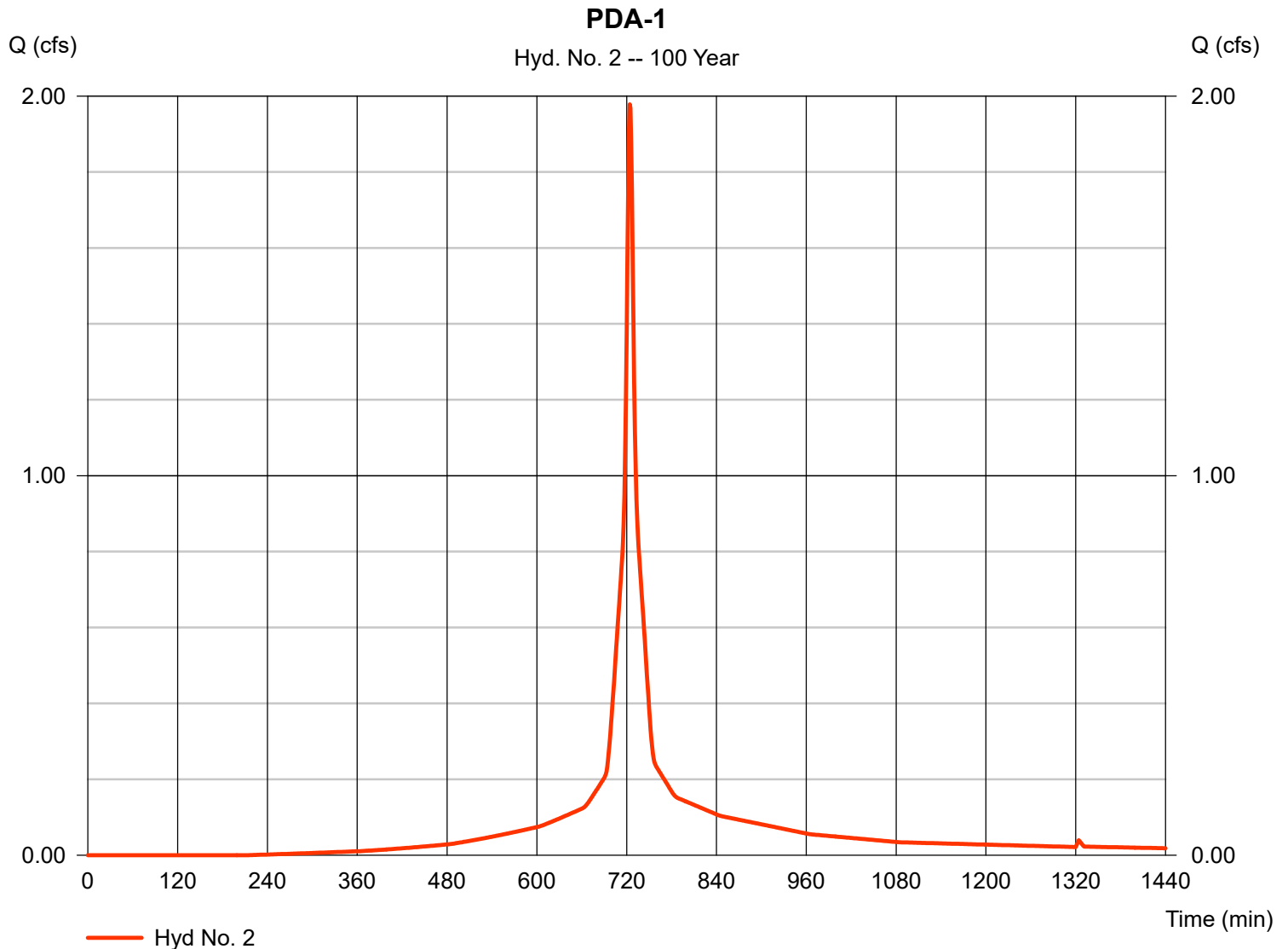
Tuesday, Oct 14, 2025

Hyd. No. 2

PDA-1

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 0.233 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 9.06 in
 Storm duration = 24 hrs

Peak discharge = 1.978 cfs
 Time to peak = 724 min
 Hyd. volume = 6,422 cuft
 Curve number = 86
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type III
 Shape factor = 484



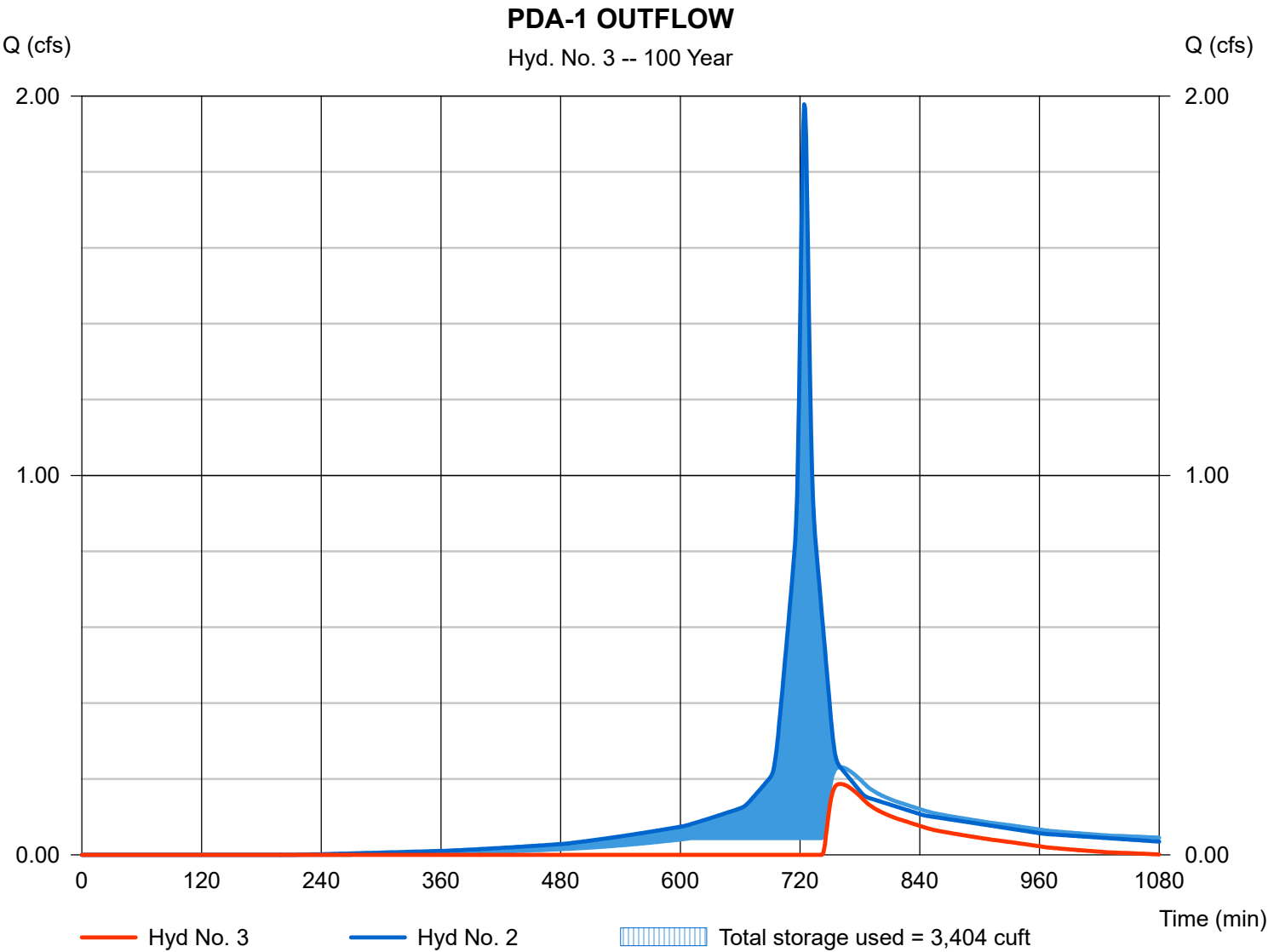
Hydrograph Report

Hyd. No. 3

PDA-1 OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 0.187 cfs
Storm frequency	= 100 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 1,128 cuft
Inflow hyd. No.	= 2 - PDA-1	Max. Elevation	= 175.27 ft
Reservoir name	= ADS-1	Max. Storage	= 3,404 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Return Period Recap 1

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 Hydrograph No. 2, SCS Runoff, PDA-1 14

 Hydrograph No. 3, Reservoir, PDA-1 OUTFLOW 15

Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	SCS Runoff	-----	-----	0.169	-----	-----	0.502	-----	-----	1.534	XDA-1
2	SCS Runoff	-----	-----	0.688	-----	-----	1.266	-----	-----	2.702	PDA-1
3	Reservoir	2	-----	0.000	-----	-----	0.000	-----	-----	1.170	PDA-1 OUTFLOW

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.169	1	732	771	----	-----	-----	XDA-1
2	SCS Runoff	0.688	1	725	2,134	----	-----	-----	PDA-1
3	Reservoir	0.000	1	1379	0	2	173.10	1,090	PDA-1 OUTFLOW
WPB_8-27-2025F.gpw					Return Period: 2 Year			Tuesday, Oct 14, 2025	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

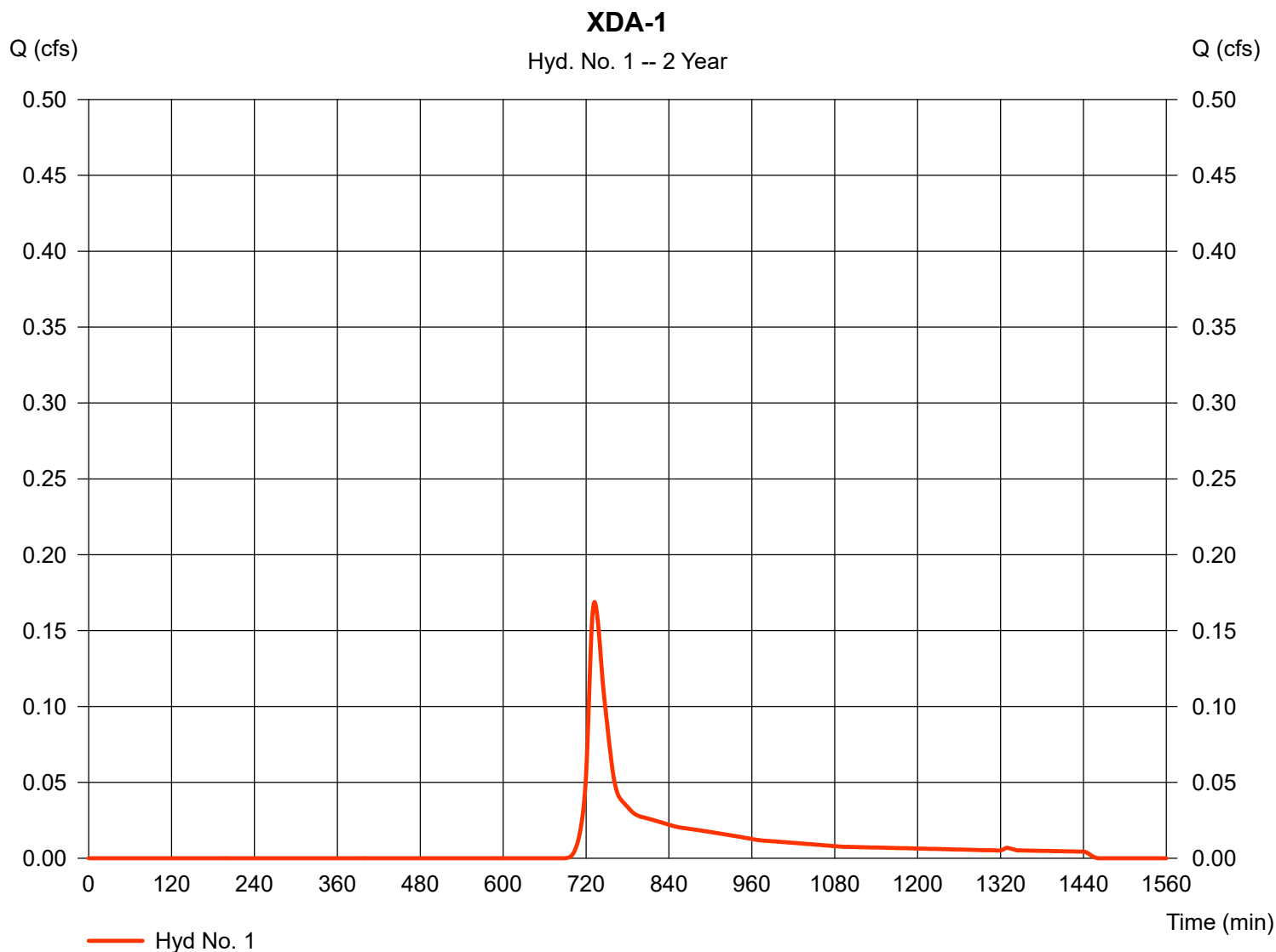
Tuesday, Oct 14, 2025

Hyd. No. 1

XDA-1

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.233 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 3.89 in
 Storm duration = 24 hrs

Peak discharge = 0.169 cfs
 Time to peak = 732 min
 Hyd. volume = 771 cuft
 Curve number = 64
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 14.20 min
 Distribution = Type III
 Shape factor = 484



TR55 Tc Worksheet

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No. 1

XDA-1

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>			
Sheet Flow							
Manning's n-value	= 0.240	0.011	0.011				
Flow length (ft)	= 100.0	0.0	0.0				
Two-year 24-hr precip. (in)	= 3.30	0.00	0.00				
Land slope (%)	= 2.00	0.00	0.00				
Travel Time (min)	= 14.05	+	0.00	+	0.00	=	14.05
Shallow Concentrated Flow							
Flow length (ft)	= 27.00	0.00	0.00				
Watercourse slope (%)	= 2.00	0.00	0.00				
Surface description	= Unpaved	Paved	Paved				
Average velocity (ft/s)	= 2.28	0.00	0.00				
Travel Time (min)	= 0.20	+	0.00	+	0.00	=	0.20
Channel Flow							
X sectional flow area (sqft)	= 0.00	0.00	0.00				
Wetted perimeter (ft)	= 0.00	0.00	0.00				
Channel slope (%)	= 0.00	0.00	0.00				
Manning's n-value	= 0.015	0.015	0.035				
Velocity (ft/s)	= 0.00	0.00	0.00				
Flow length (ft)	= 0.0	0.0	0.0				
Travel Time (min)	= 0.00	+	0.00	+	0.00	=	0.00
Total Travel Time, Tc					14.20 min		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

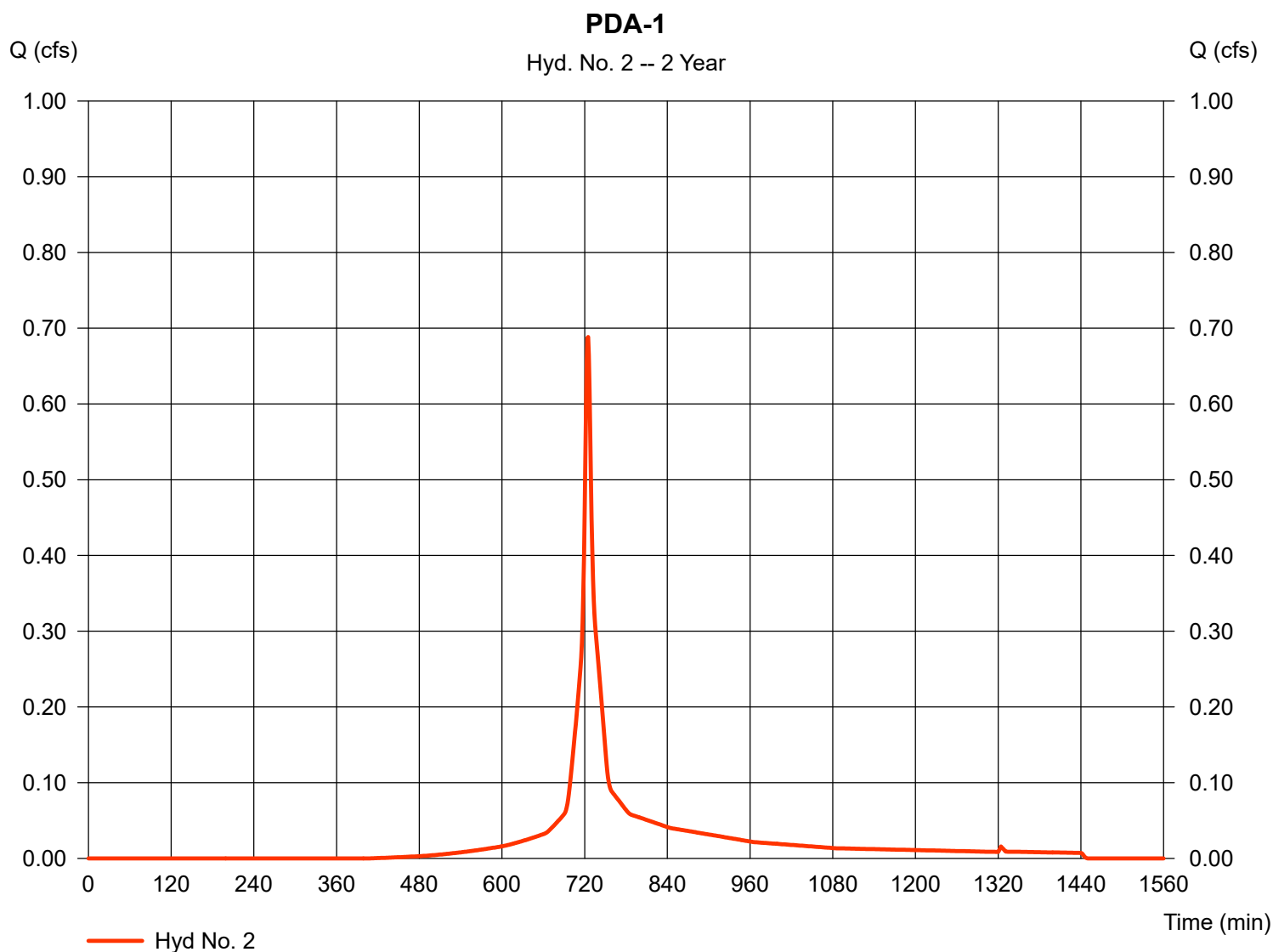
Tuesday, Oct 14, 2025

Hyd. No. 2

PDA-1

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.233 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 3.89 in
 Storm duration = 24 hrs

Peak discharge = 0.688 cfs
 Time to peak = 725 min
 Hyd. volume = 2,134 cuft
 Curve number = 86
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type III
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

Tuesday, Oct 14, 2025

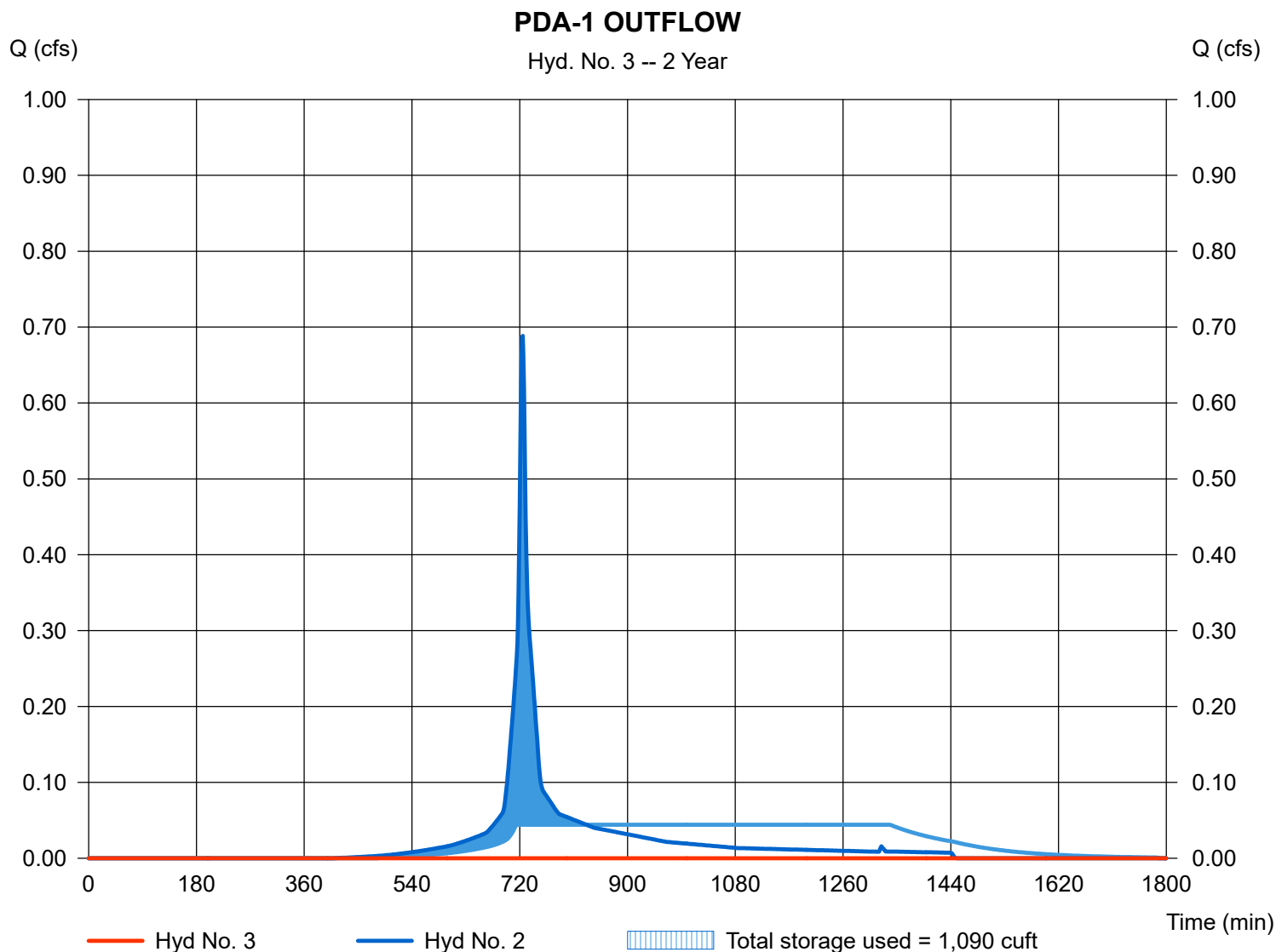
Hyd. No. 3

PDA-1 OUTFLOW

Hydrograph type = Reservoir
 Storm frequency = 2 yrs
 Time interval = 1 min
 Inflow hyd. No. = 2 - PDA-1
 Reservoir name = ADS-1

Peak discharge = 0.000 cfs
 Time to peak = 1379 min
 Hyd. volume = 0 cuft
 Max. Elevation = 173.10 ft
 Max. Storage = 1,090 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

7

Hydraflow Hydrographs by Intelisolve v9.22

Tuesday, Oct 14, 2025

Pond No. 2 - ADS-1

Pond Data

UG Chambers - Invert elev. = 172.50 ft, Rise x Span = 2.00 x 2.00 ft, Barrel Len = 350.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No

Encasement - Invert elev. = 172.00 ft, Width = 6.00 ft, Height = 3.50 ft, Voids = 40.00%

Contours - User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 175.51 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	172.00	n/a	0	0
0.35	172.35	n/a	294	294
0.70	172.70	n/a	328	622
1.05	173.05	n/a	407	1,030
1.40	173.40	n/a	435	1,464
1.75	173.75	n/a	440	1,904
2.10	174.10	n/a	426	2,330
2.45	174.45	n/a	384	2,714
2.80	174.80	n/a	298	3,012
3.15	175.15	n/a	294	3,306
3.50	175.50	n/a	294	3,600
3.51	175.51	100	1	3,601
4.00	176.00	200	74	3,674
4.25	176.25	600	100	3,774
4.50	176.50	1,000	200	3,974

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 175.00	0.00	0.00	0.00
Length (ft)	= 135.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .010	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 20.00	0.00	0.00	0.00
Crest El. (ft)	= 176.33	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.910 (by Contour)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	172.00	0.00	---	---	---	0.00	---	---	---	0.000	---	0.000
0.35	294	172.35	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
0.70	622	172.70	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
1.05	1,030	173.05	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
1.40	1,464	173.40	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
1.75	1,904	173.75	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
2.10	2,330	174.10	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
2.45	2,714	174.45	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
2.80	3,012	174.80	0.00	---	---	---	0.00	---	---	---	0.044	---	0.044
3.15	3,306	175.15	0.07 ic	---	---	---	0.00	---	---	---	0.044	---	0.110
3.50	3,600	175.50	0.47 ic	---	---	---	0.00	---	---	---	0.044	---	0.517
3.51	3,601	175.51	0.06 oc	---	---	---	0.00	---	---	---	0.044	---	0.101
4.00	3,674	176.00	0.40 oc	---	---	---	0.00	---	---	---	0.044	---	0.445
4.25	3,774	176.25	0.49 oc	---	---	---	0.00	---	---	---	0.044	---	0.535
4.50	3,974	176.50	0.57 oc	---	---	---	3.64	---	---	---	0.044	---	4.256

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.22

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.502	1	731	2,036	----	-----	-----	XDA-1
2	SCS Runoff	1.266	1	724	4,012	----	-----	-----	PDA-1
3	Reservoir	0.000	1	1988	0	2	174.19	2,428	PDA-1 OUTFLOW
WPB_8-27-2025F.gpw					Return Period: 10 Year			Tuesday, Oct 14, 2025	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.22

Tuesday, Oct 14, 2025

Hyd. No. 1

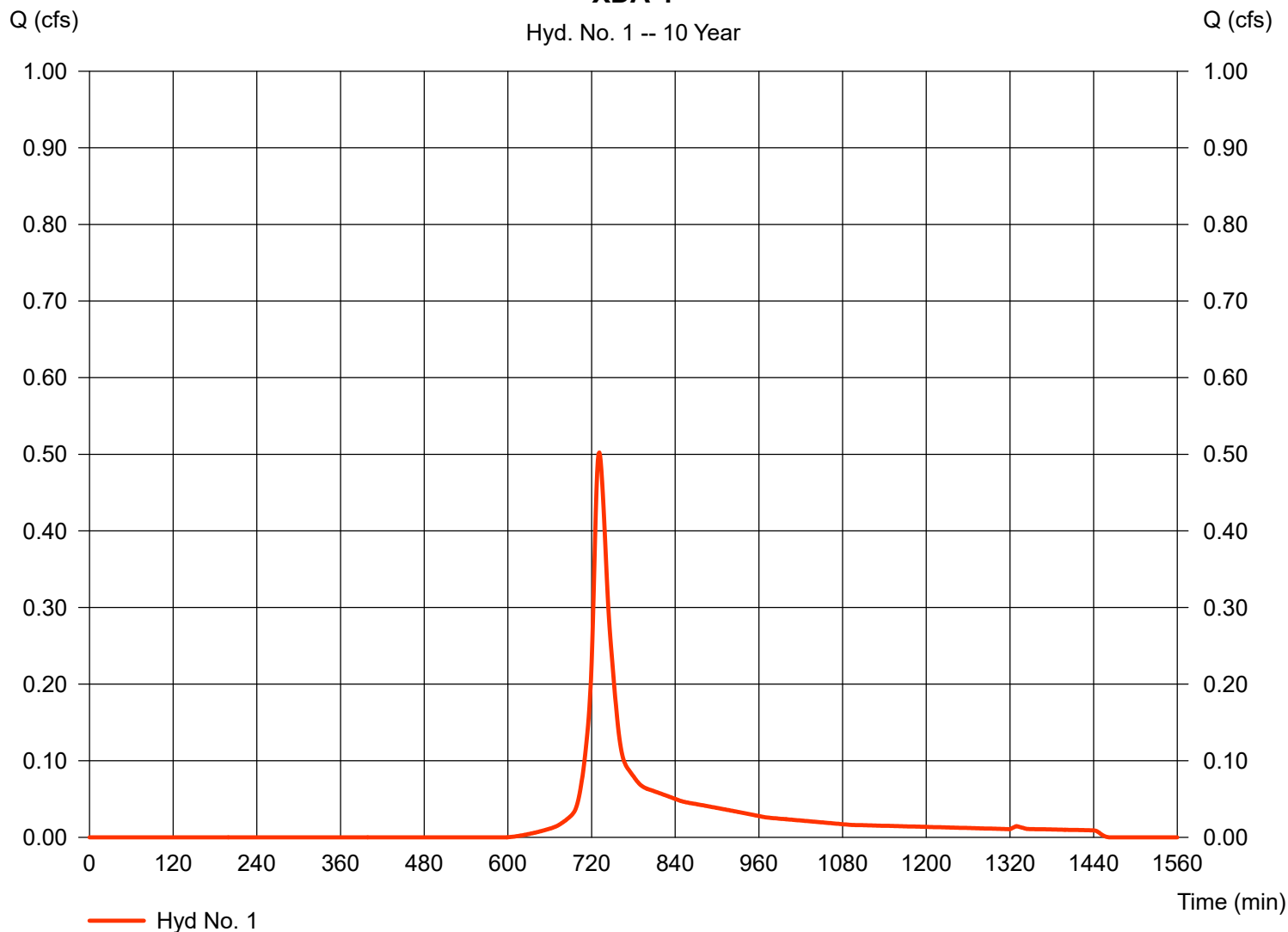
XDA-1

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 0.233 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 6.20 in
 Storm duration = 24 hrs

Peak discharge = 0.502 cfs
 Time to peak = 731 min
 Hyd. volume = 2,036 cuft
 Curve number = 64
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 14.20 min
 Distribution = Type III
 Shape factor = 484

XDA-1

Hyd. No. 1 -- 10 Year

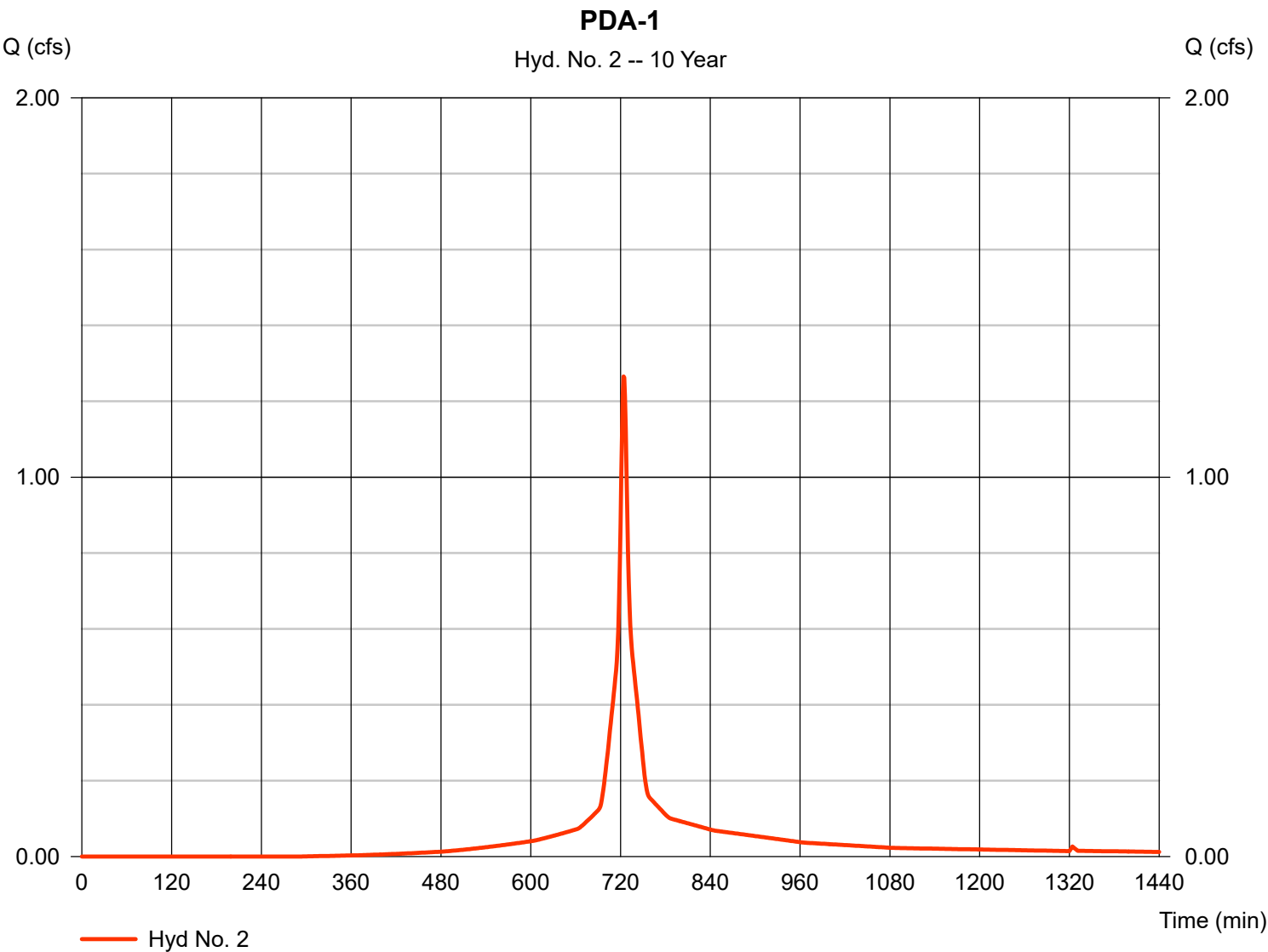


Hydrograph Report

Hyd. No. 2

PDA-1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.266 cfs
Storm frequency	=	10 yrs	Time to peak	=	724 min
Time interval	=	1 min	Hyd. volume	=	4,012 cuft
Drainage area	=	0.233 ac	Curve number	=	86
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.20 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



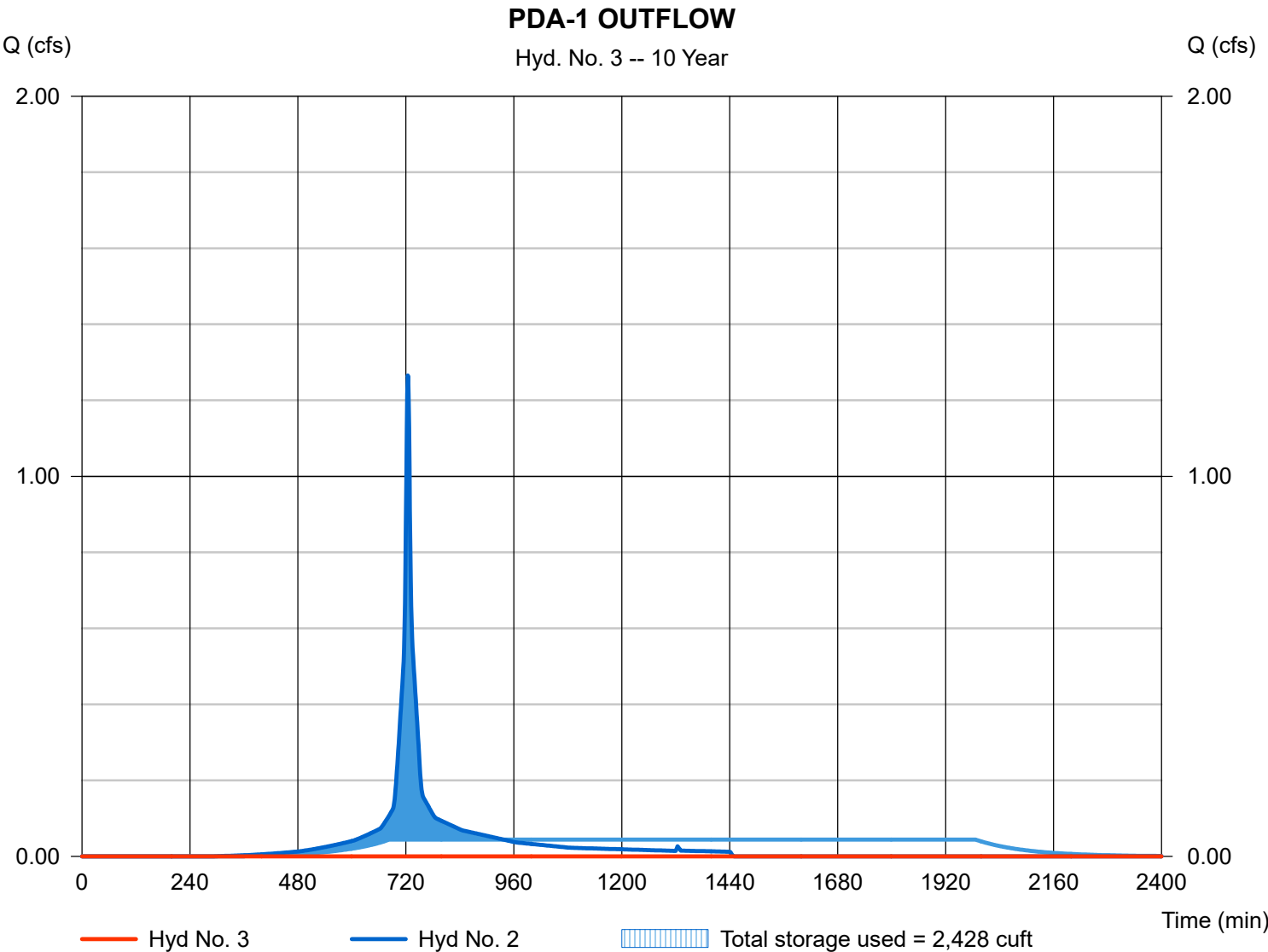
Hydrograph Report

Hyd. No. 3

PDA-1 OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= 1988 min
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 2 - PDA-1	Max. Elevation	= 174.19 ft
Reservoir name	= ADS-1	Max. Storage	= 2,428 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.22

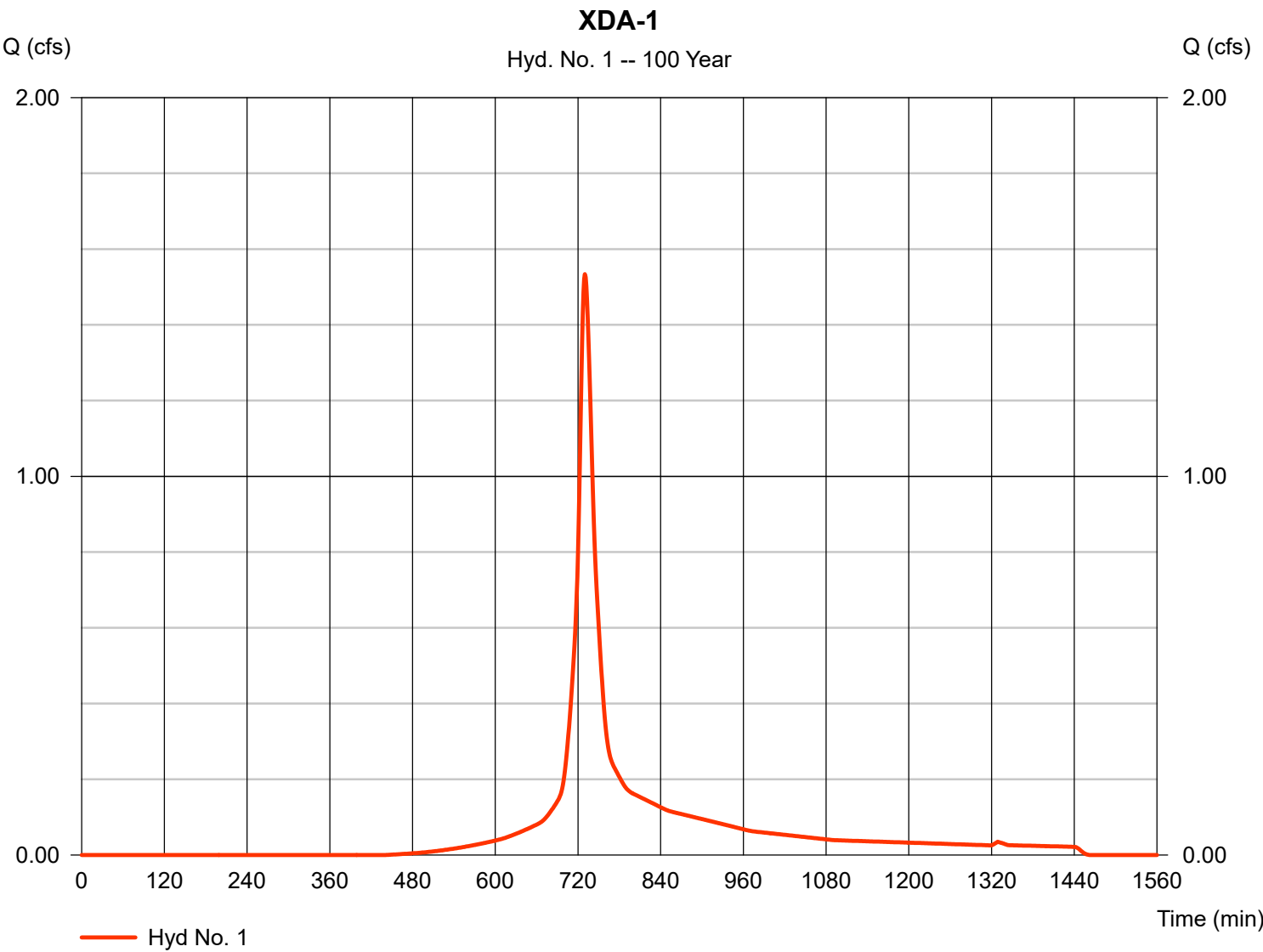
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	1.534	1	730	6,062	----	-----	-----	XDA-1
2	SCS Runoff	2.702	1	724	8,937	----	-----	-----	PDA-1
3	Reservoir	1.170	1	734	3,264	2	176.38	3,881	PDA-1 OUTFLOW
WPB_8-27-2025F.gpw					Return Period: 100 Year			Tuesday, Oct 14, 2025	

Hydrograph Report

Hyd. No. 1

XDA-1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.534 cfs
Storm frequency	=	100 yrs	Time to peak	=	730 min
Time interval	=	1 min	Hyd. volume	=	6,062 cuft
Drainage area	=	0.233 ac	Curve number	=	64
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.20 min
Total precip.	=	12.00 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

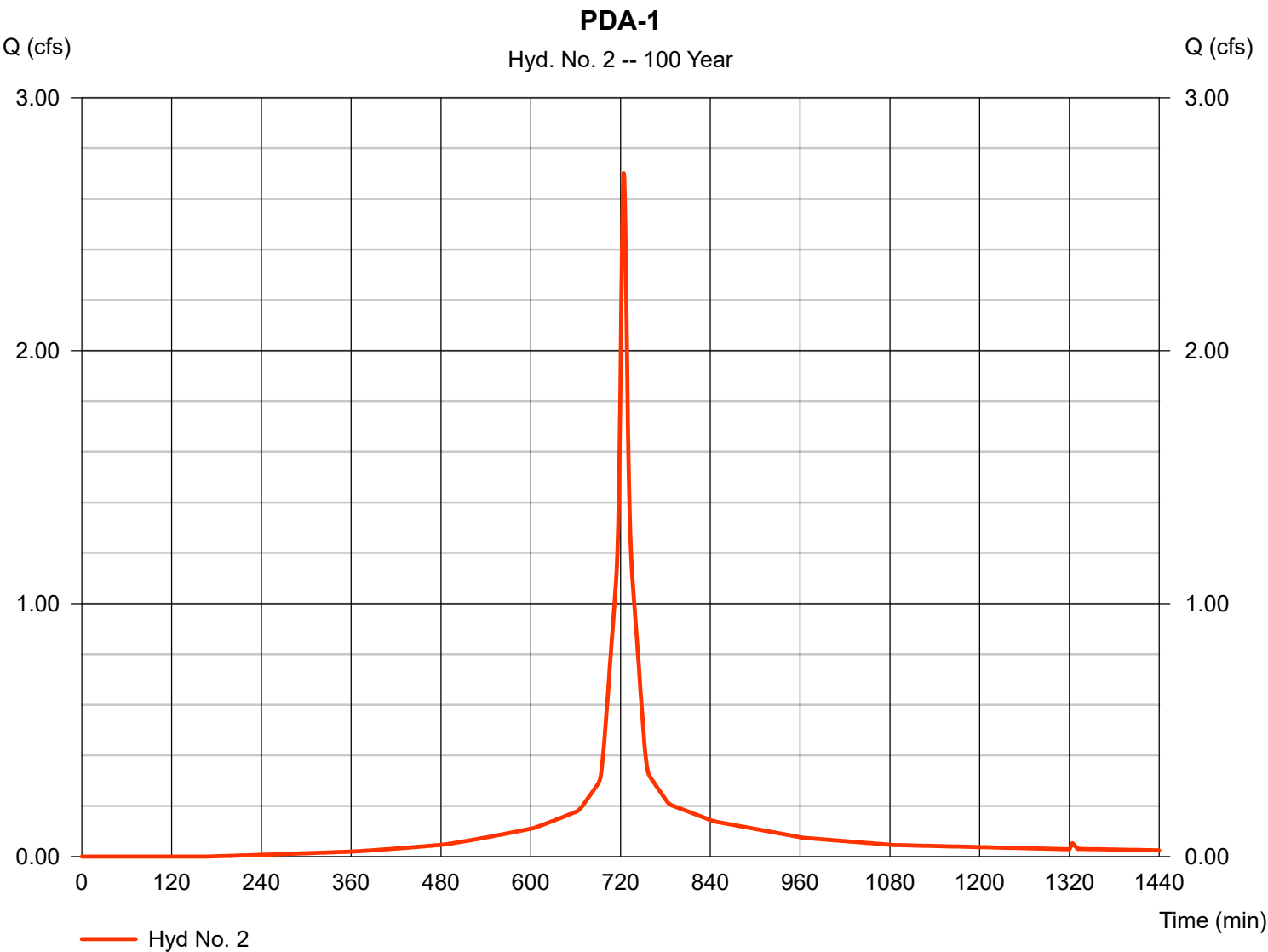
Hydraflow Hydrographs by Intelisolve v9.22

Tuesday, Oct 14, 2025

Hyd. No. 2

PDA-1

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.702 cfs
Storm frequency	=	100 yrs	Time to peak	=	724 min
Time interval	=	1 min	Hyd. volume	=	8,937 cuft
Drainage area	=	0.233 ac	Curve number	=	86
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	6.00 min
Total precip.	=	12.00 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



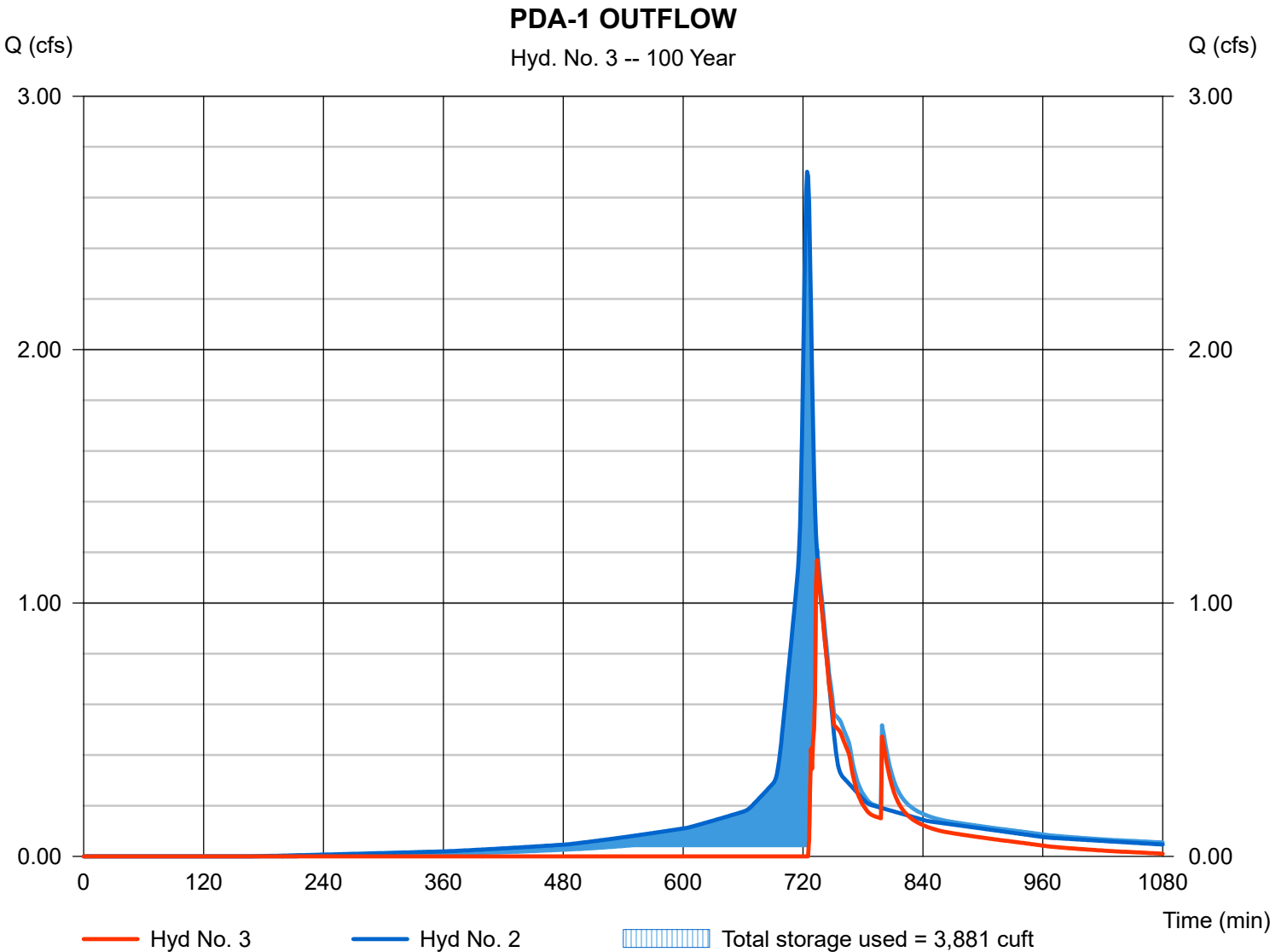
Hydrograph Report

Hyd. No. 3

PDA-1 OUTFLOW

Hydrograph type	= Reservoir	Peak discharge	= 1.170 cfs
Storm frequency	= 100 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 3,264 cuft
Inflow hyd. No.	= 2 - PDA-1	Max. Elevation	= 176.38 ft
Reservoir name	= ADS-1	Max. Storage	= 3,881 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

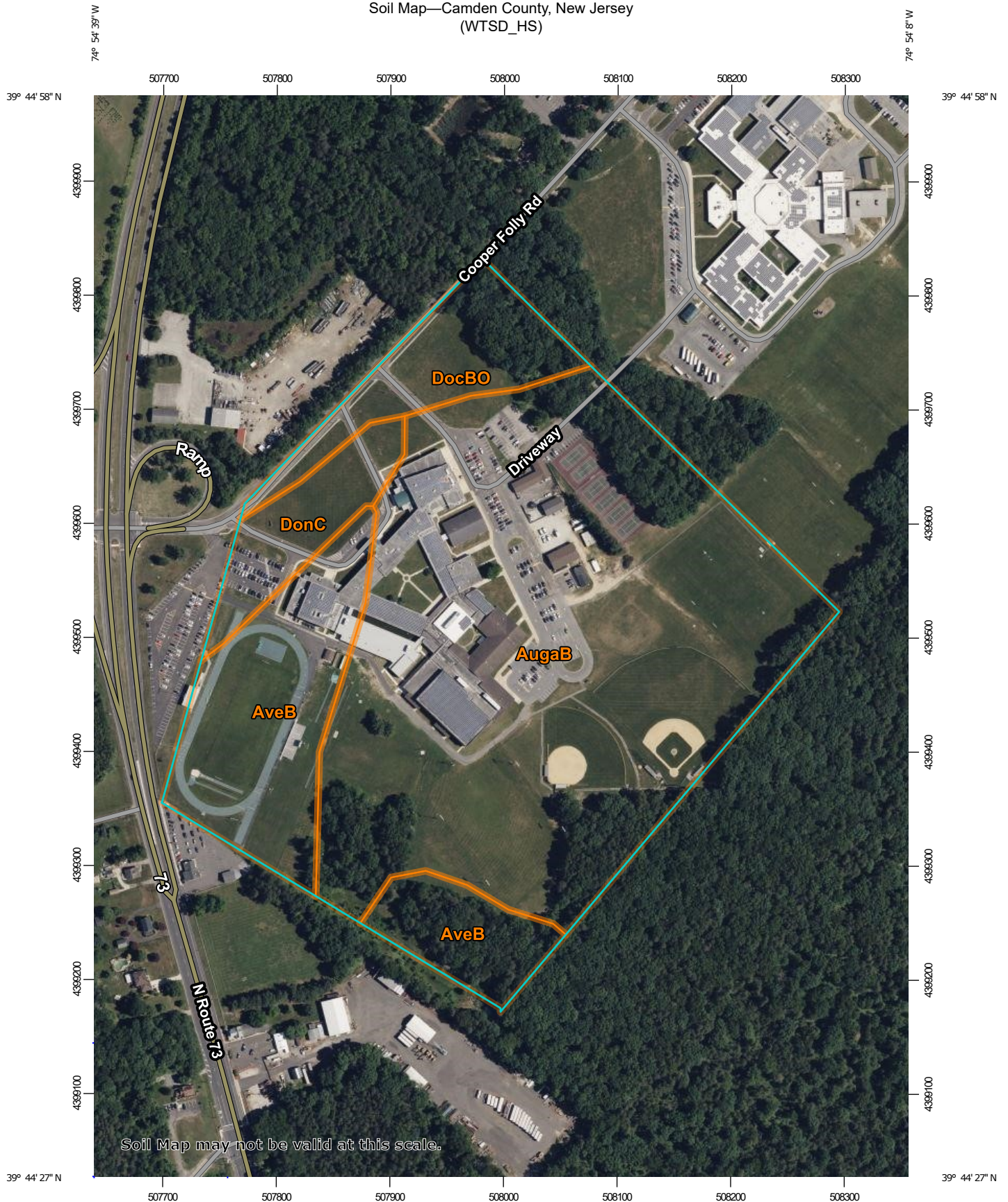


APPENDIX – B

Maps

- Soil Survey Map
- Existing Drainage Map (Dwg. No. XDM-1)
- Proposed Drainage Area Map (Dwg. No. PDM-1)

Soil Map—Camden County, New Jersey
(WTSD_HS)



Map Scale: 1:4,620 if printed on A portrait (8.5" x 11") sheet.

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

4/18/2025
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

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 1:12,000.

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: Camden County, New Jersey

Survey Area Data: Version 18, Sep 3, 2024

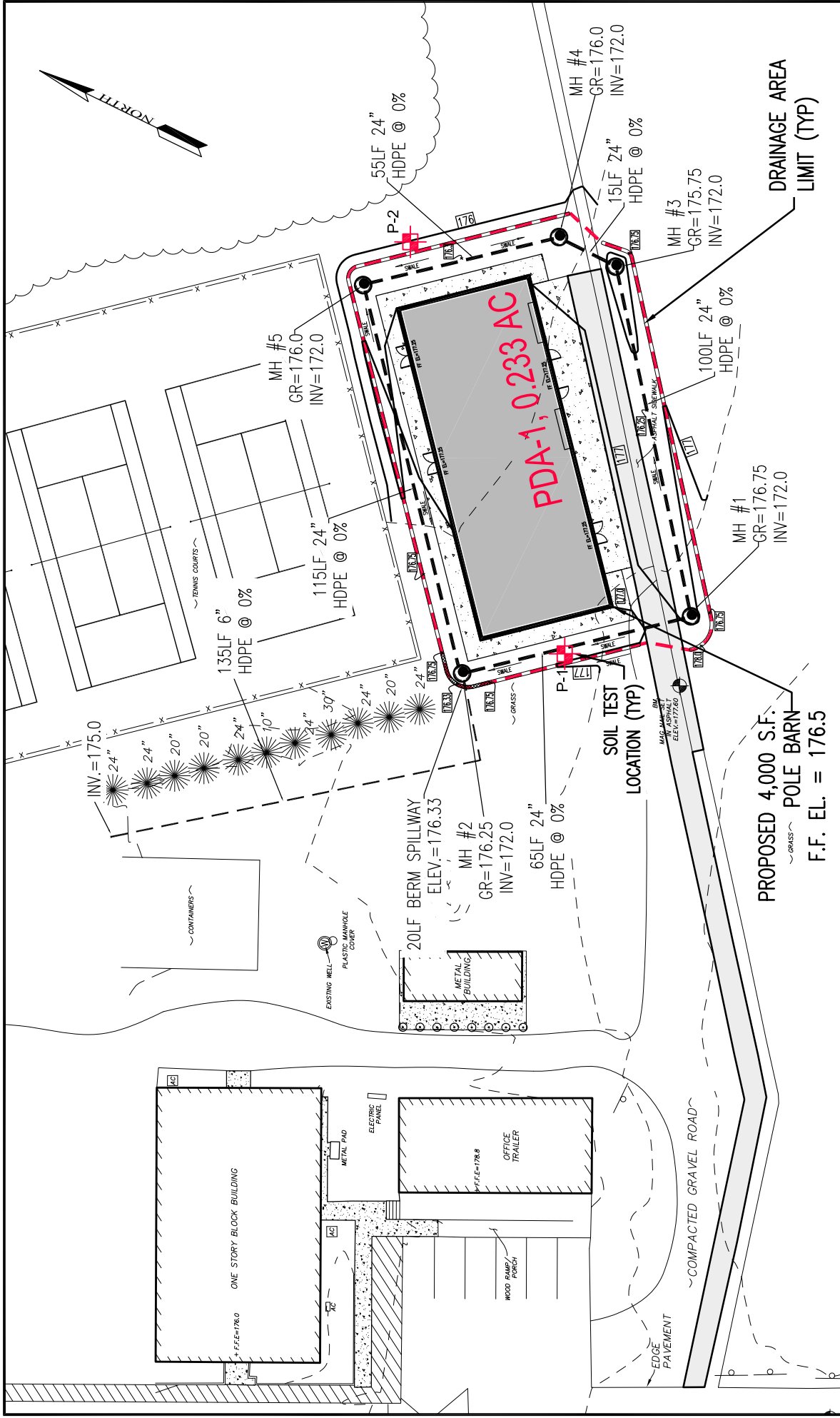
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

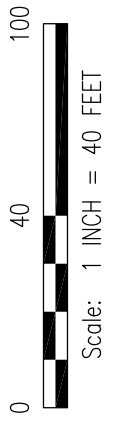
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AugaB	Aura sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	36.0	66.8%
AveB	Aura-Downer sandy loams, 0 to 5 percent slopes	10.6	19.6%
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	4.3	7.9%
DonC	Downer-Aura complex, 5 to 10 percent slopes	3.1	5.7%
Totals for Area of Interest		53.9	100.0%



DWG. NO.: PDM-1



PROPOSED DRAINAGE AREA MAP

EI

EI Associates
ARCHITECTURE
ENGINEERING
CONSTRUCTION

8 Ridgedale Avenue
Cedar Knolls, NJ 07927
(973) 775-7777

WINSLOW TOWNSHIP HIGH SCHOOL-POLE BARN PROJECT

10 COOPER FOLLY ROAD, LOT 1-BLOCK 3205, ATCO, CAMDEN COUNTY, NEW JERSEY

APPENDIX – C

Geotechnical Reports by Sor Consulting Engineers, Inc.
Dated July 29, 2025

SOR CONSULTING ENGINEERS, INC.

Geotechnical Engineering - Materials Testing - Forensic Studies

98 Sand Park Rd., Cedar Grove, NJ 07009
(973) 239-6001 Fax (973) 239-8380
www.sorlabs.com

SUBSURFACE INVESTIGATION REPORT POLE BARN PROJECT WINSLOW TOWNSHIP, NEW JERSEY

For

**EI ASSOCIATES
CEDAR KNOLLS, NEW JERSEY**

**Prepared by: Sor Consulting Engineers, Inc.
98 Sand Park Road
Cedar Grove, New Jersey 07009**

**Report No. 25-C-09
Job No. 25-C-06
July 29, 2025**

SOR CONSULTING ENGINEERS, INC.

Geotechnical Engineering - Materials Testing - Forensic Studies

98 Sand Park Rd., Cedar Grove, NJ 07009
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www.sorlabs.com

Orhun Sor, P.E.
Afilla Sencar, P.E.
Eric Knies, P.E.

July 29, 2025
Job No. 25-C-06
Report No. 25-C-09

El Associates
8 Ridgedale Avenue
Cedar Knolls, New Jersey 07927

Attention: Robert Walsh
Email: robert_walsh@eiassociates.com

Re: Subsurface Investigation Report
Pole Barn Project
Winslow Township, New Jersey

INTRODUCTION

Sor Consulting Engineers, Inc. (SCE) is pleased to present the results of a subsurface investigation performed for the pole barn to be constructed at the Winslow Township High School in Winslow Township, New Jersey. The address of the high school is 10 Cooper Folly Road, Atco, New Jersey, and the high school is located to the east of the intersection of Cooper Folly Road and Route 73. The pole barn will be constructed on the southeastern side of the existing tennis courts, with the tennis courts being the northeastern most structure associated with the high school. The pole barn will be a single-story building without a subgrade level and will have a footprint area of 2,400 ft². Unlike some pole barns, the foundations of which consist solely of poles embedded into the ground, the columns of this pole barn will bear on footings. The project will also include installing a new stormwater management system.

PURPOSE AND SCOPE OF WORK

The purpose of this study was to:

- explore the subsurface soil and groundwater conditions at the site;

SOR CONSULTING ENGINEERS, INC.

El Associates
Pole Barn Project
Winslow Township, NJ

Report No. 25-C-09
Page 2

- estimate the geotechnical engineering properties of the encountered subsurface materials including soil permeability;
- evaluate the foundation requirements for the pole barn considering the anticipated structural loads and encountered subsurface conditions;
- recommend an appropriate type of foundation for the pole barn and present geotechnical related foundation design and installation criteria, including shallow and/or deep foundation design parameters and seismic site class;
- present recommendations relative to the support of slabs to be constructed on-grade, including modulus of subgrade reaction (K_v);
- estimate the post-construction performance of the recommended floor and foundation systems;
- estimate the depth to the seasonal high-water table;
- present recommendations for stormwater infiltration system design; and
- discuss appropriate earthwork operations or considerations consistent with the proposed construction and encountered subsurface conditions. These could include the anticipation and management of groundwater, estimated depths of excavation required to remove unsuitable materials, evaluation of the suitability of the site soils for use as controlled fill and backfill, and material and placement requirements for controlled compacted fill and backfill.

To accomplish these objectives, a geotechnical investigation consisting of two test pits was performed on the site. The test pits were excavated by Clear Ground Development using a rubber-tired backhoe on July 24, 2025. One test pit each was excavated outside the eastern and western ends of the proposed pole barn location. Both test pits terminated at a depth of approximately 12 feet below grade. At the conclusion of each test pit, the test pit was backfilled and the backfill compacted using the backhoe bucket.

The explorations were performed under the direct technical observation of a geotechnical engineer from SCE. Our representative located the test pits on the site, prepared logs of the explorations as the excavation proceeded, and supervised the soil

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EI Associates
Pole Barn Project
Winslow Township, NJ

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sampling operations to obtain the necessary subsurface information. The test pit location plan is shown in Appendix I. Detailed descriptions of the encountered subsurface and foundation conditions are shown on the individual test pit logs contained in Appendix II. The soils were visually classified using the Burmister and USDA Soil Classification Systems, descriptions of which are also included in Appendix II.

All samples were brought to our office where they were examined in our soil mechanics laboratory. Laboratory testing consisting of grain-size analyses, moisture content testing, and permeability testing was performed on selected samples to assist in the evaluation of their engineering properties. The test results are presented in Appendix III.

The results of the subsurface exploration and laboratory testing programs have provided the basis for our engineering analyses and geotechnical recommendations. The following discussions of our findings and recommendations are subject to the limitations included in Appendix IV of this report.

SITE CONDITIONS

Surface Features: The area where the new pole barn will be constructed is directly to the southeast of the tennis courts. The area is a level, unpaved area. The area to the northeast of the pole barn location is wooded, and athletic fields are located to the south of the pole barn location. Several small buildings are located to the east of the pole barn location.

Subsurface Conditions: Subsurface conditions on the site in order of increasing depth consisted of the following:

1. **Surface Cover:** The topsoil at the pole barn location was approximately 6 inches thick.
2. **Bridgerton Formation.** According to the *Geology of the Williamstown Quadrangle* (Map OFM 151) published by the NJDEP, the native soil layer on the site is described as the Bridgerton Formation. OFM 151 describes the Bridgerton Formation as being a clayey sand and gravel. The soil that was encountered in the test pits consisted of coarse to fine sand containing small

amounts of gravel and up to about thirty percent silt, a description that is consistent with the Bridgerton Formation. The Bridgerton Formation dates to the late Miocene age.

Neither the groundwater table nor bedrock were encountered in either test pit.

CONCLUSIONS AND RECOMMENDATIONS

General: Based on the results of the geotechnical investigation, we believe that the pole barn may be founded on spread footings bearing on the Bridgerton Formation, that the new floor slab may be constructed as a slab-on-grade, and that the site will provide adequate stormwater drainage. Detailed discussions of these and other geotechnical issues considered relevant to the proposed construction are presented in the following sections of this report.

Site Preparation and Earthwork Considerations: Site preparation should initially consist of removing any existing utilities and topsoil from beneath and within 5 feet of the building footprint. Before placing any new fill or constructing new structures, the subgrades should be proof rolled and thoroughly compacted with a heavy vibratory roller (Dynapac Model CA-150 or equivalent). In confined or limited access areas, the proof rolling may be performed with a double drum walk-behind vibratory roller (Wacker Neuson Model RD 7 or equivalent). The compactor should be operated in static mode within 5 feet of existing structures or utilities that will remain.

Where soft spots are detected during proof rolling, the soft spots should be excavated to a minimum depth of 2 feet and replaced with structural fill. Structural fill shall be free of organic material, topsoil, construction debris, and other deleterious material; should contain no more than 12 percent by weight passing a No. 200 sieve; and should have a maximum particle size of 2 inches. Imported fill should also meet the NJDEP clean fill requirements for its intended use. The engineer should review the imported backfill. Structural fill should also be used beneath and to at least 1 foot above the top of utility lines and beneath new footings and slabs. The Bridgerton Formation soils present on site may be used elsewhere as fill, subject to the approval of the engineer.

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El Associates
Pole Barn Project
Winslow Township, NJ

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Mass fill installed within the structure and pavement areas should be spread in horizontal layers not exceeding 12 inches in loose thickness and each layer uniformly compacted to at least 95 percent of maximum dry density as determined by the ASTM D1557 test procedure. Backfill placed in confined areas, such as foundation and utility trench excavations as well as adjacent to below-grade walls, should be spread in horizontal layers not exceeding 9 inches in loose thickness and each layer compacted to 95 percent of the maximum dry density as determined by ASTM D1557 using manually operated compaction equipment.

We strongly recommend that the compaction and proof rolling operations as well as any subsequent placement of controlled fill or backfill be performed under the direct technical observation of a qualified geotechnical engineering firm.

Spread Footing Foundation Design Criteria: New footings may be designed using a maximum net bearing pressure of 4,000 pounds per square foot (psf). The maximum net bearing pressure may be increased by one-third for footings designed for wind or seismic loads. Footings should be established at least 3.5 feet below the exterior grade or at the depth required by the local building code to provide frost protection. We estimate the footings designed for a net allowable bearing pressure of 4,000 psf will undergo a maximum total settlement of approximately 1/4 inch.

We recommend that the foundation subgrade be observed by a qualified geotechnical engineer before the footings are poured to ensure that the recommended suitable bearing materials are present. Based on the cohesionless nature of the Bridgerton Formation soils, we expect that foundation settlement will occur rapidly, practically upon load application.

Floor Slab Design Criteria: The subgrade should be prepared as described in the Site Preparation section of this report. After the subgrade has been prepared, the new floor slab may be constructed as a slab-on-grade. We recommend that the slab be underlain with a 6-inch-thick layer of 3/4-inch crushed stone to provide a leveling course as well as drainage beneath the slab. The slab may be designed using a modulus of subgrade reaction of 175 pounds per cubic inch. We estimate that the post-construction

SOR CONSULTING ENGINEERS, INC.

El Associates
Pole Barn Project
Winslow Township, NJ

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Page 6

settlement of the floor slab constructed according to our recommendations will be negligible.

Seismic Design Considerations: Structures must be designed in conformance with the applicable seismic design criteria of the New Jersey Edition of the 2021 International Building Code. In accordance with the Code, the subsurface information obtained from the borings, and the known geologic conditions in this area, the site is Site Class D. Based on our analysis of the subsurface conditions, the field and laboratory test results, and the known geology of this area, the on-site soils are not susceptible to liquefaction in a seismic event.

Infiltration System Consideration: Permeability testing of tube soil samples retrieved from the test pits showed a permeability rate ranging from 0.91 inches per hour (K2 soil) to 39.5 inches per hour (K5 soil). Based on the permeability test results, the site will allow the use of a subsurface stormwater management system. We recommend that the stormwater management system be designed using the *New Jersey Stormwater Best Management Practices Manual* using the measured soil permeability rates and groundwater levels observed in the geotechnical investigation. We also recommend that the subsurface stormwater management system be fully separated from the surrounding soil by a geotextile filter fabric to provide a uniform infiltration surface and prevent the migration of fines.

RECOMMENDED SERVICES

We recommend that SCE be provided the opportunity for a general review of the final design and specifications to ensure that the foundation and earthwork recommendations are properly interpreted and implemented in the construction documents. We also recommend that controlled compacted fill and backfill operations as well as foundation and floor slab subgrades be observed by a geotechnical engineer from our firm. This is to ensure compliance with the recommendations contained herein and to address any changes in the subsurface conditions that were not disclosed by the geotechnical investigation.

SOR CONSULTING ENGINEERS, INC.

**EI Associates
Pole Barn Project
Winslow Township, NJ**

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Page 7**

SCE appreciates the opportunity to be of assistance with this project. Should there be any questions concerning the information provided herein, please do not hesitate to contact us. The following appendices are attached and complete this report:

Appendix I: Exploration Location Plan

Appendix II: Test Pit Logs TP-1 to TP-2

Burmister and USDA Soil Classification Systems

Appendix III: Laboratory Soil Test Results

Appendix IV: Limitations

Very Truly Yours,

SOR CONSULTING ENGINEERS, INC.

**Eric Knies, P.E.
Senior Engineer**

ERK/gs

APPENDIX I

TEST PIT LOCATION PLAN



LEGEND



TP-1 Number and approximate location of geotechnical test pit performed by SCE for this study.

NOTES

1. This drawing is part of Sor Consulting Engineers, Inc. Report No. 25-C-09 and should be read together with the report for complete evaluation.

TEST PIT LOCATION PLAN
EI ASSOCIATES
POLE BARN PROJECT
WINSLOW TOWNSHIP, NEW JERSEY

SOR CONSULTING ENGINEERS, INC.
Geotechnical Engineering – Materials Testing – Forensic Studies
98 Sand Park Road, Cedar Grove, New Jersey 07009

Prepared By : ERK	Approved By :	DRAWING NO.
Date : 07/25/2025	Date :	25-C-08-1
Scale : NTS	Report No. : 25-C-09	Sheet No. 1 of 1

APPENDIX II

TEST PIT LOGS TP-1 AND TP-2

BURMISTER AND USD SOIL CLASSIFICATION SYSTEMS

SOR CONSULTING ENGINEERS, INC.	TEST PIT LOG	TEST PIT NO. TP-1
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CLIENT : El Associates	GSE
PROJECT : Pole Barn Project	WATER LEVEL
LOCATION : Winslow Township, New Jersey	DATE 7/24/2025
	JOB NO. 25-C-06
	REPORT NO. 25-C-09

DEPTH FT.	DENSITY	MOISTURE	DESCRIPTION	REMARKS
1			6" topsoil	Permeability at 4' k = 3.35 in/hour (K3)
2			Brown coarse to fine SAND, trace Silt, trace medium to fine Gravel	
3				
4				
5				
6				
7			Brown coarse to fine SAND, little Silt, trace fine Gravel (loamy sand)	
8				
9				
10				
11				
12				
13			Test Pit Completed @ 12'-6"	
14				
15				
16				
17				
18				
19				
20				

EXCAVATOR : Clear Ground Development
EQUIPMENT : Sany SY80U
STL REPRESENTATIVE : Eric Knies

SOR CONSULTING ENGINEERS, INC.	TEST PIT LOG	TEST PIT NO. TP-2
---	---------------------	--------------------------

CLIENT : El Associates	GSE
PROJECT : Pole Barn Project	WATER LEVEL
LOCATION : Winslow Township, New Jersey	DATE 7/24/2025
	JOB NO. 25-C-08
	REPORT NO. 25-C-09

DEPTH FT.	DENSITY	MOISTURE	DESCRIPTION	REMARKS
1			6" topsoil	Permeability at 1' k = 39.5 in/hour (K5)
2			Brown coarse to fine SAND, trace Silt, trace medium to fine Gravel (sand)	
3				Permeability at 5' k = 0.91 in/hour (K2)
4				
5				
6				
7			Brown coarse to fine SAND, some Silt (loamy sand)	
8				
9				
10				
11				
12				
13			Test Pit Completed @ 12'-0"	
14				
15				
16				
17				
18				
19				
20				

EXCAVATOR : Clear Ground Development
EQUIPMENT : Sany SY80U
STL REPRESENTATIVE : Eric Knies

VISUAL IDENTIFICATION OF SAMPLES

The samples were identified in accordance with the American Society for Engineering Education System of Definition described by Professor Donald M. Burmister in ASTM Special Technical Publication 479, 5th Edition, 1970.

I. Definition of Soil Components and Fractions

MATERIAL	SYMBOL	FRACTION	SIEVE SIZE	DEFINITION
Boulders	Bldr	--	9" +	Material retained on 9" sieve.
Cobbles	Cbl	--	3" to 9"	Material passing the 9" sieve and retained on the 3" sieve.
Gravel	G	Coarse (c) Medium (m) Fine (f)	1" to 3" 3/8" to 1" No. 10 to 3/8"	Material passing the 3" sieve and retained on the No. 10 sieve.
Sand	S	Coarse (c) Medium (m) Fine (f)	No. 30 to No. 10 No. 60 to No. 30 No. 200 to No. 60	Material passing the No. 10 sieve and retained on the No. 200 sieve.
Silt	\$	--	Passing No. 200 (0.074 mm)	Material passing the No. 200 sieve that is non-plastic in character and exhibits little or no strength when air dried.

Organic Silt (O\$)

Material passing the No. 200 sieve which exhibits plastic properties within a certain range of moisture content, and exhibits fine granular and organic characteristics.

		PLASTICITY	PLASTICITY INDEX	CLAY-SOIL
Clayey SILT	Cy\$	Slight (sl)	1 to 5	Material passing the No. 200 sieve which can be made to exhibit plasticity and clay qualities within a certain range of moisture content, and which exhibits considerable strength when air-dried.
SILT & CLAY	\$&C	Low (l)	5 to 10	
CLAY & SILT	C&\$	Medium (m)	10 to 20	
Silty CLAY	\$yC	High (h)	20 to 40	
CLAY	C	Very High (vh)	40 plus	

II. Definition of Component Proportions

COMPONENT	WRITTEN	PROPORTIONS	SYMBOL	PERCENTAGE RANGE BY WEIGHT*
Principal	CAPITALS	--		50 or more
Minor	Lower Case	and some little trace	a.	35 to 50
			s.	20 to 35
			l.	10 to 20
			t.	1 to 10

*Minus sign (-) lower limit, plus sign (+) upper limit, no sign middle range.

III. Glossary of Modifying Abbreviations

CATEGORY	SYMBOL	TERM	SYMBOL	TERM	SYMBOL	TERM
A. Borings	U/D	Undisturbed	B	Exploratory	A	Auger
B. Samples	C D O.E.	Casing Denison Open End	L S	Lost Spoon	U W	Undisturbed Wash
C. Colors	bk bl br gr	black blue brown gray	gn or rd tn	green orange red tan	wh yw dk lt	white yellow dark light
D. Organic Soils	dec dec'g lig	decayed decaying lignite	o rts ts	organic roots topsoil	veg pt	Vegetation peat
E. Rocks	LS Gns	Limestone Gneiss	rk SS	rock Sandstone	Shst Sh	Schist Shale
F. Fill and Misc. Material	bldr(s) brk(s) cndr(s)	boulder(s) brick(s) cinder(s)	cbl (s) wd dbr	cobble (s) wood debris	gls misc rbl	glass miscellaneous rubble
G. Misc. Terms	do el, El fgmt (s) frqt lrg mtld no rec pen	ditto elevation fragment(s) frequent large mottled no recovery penetration	pp P.I. P pc(s) rec or R	pocket penetrometer Plasticity Index pushed pressed piece(s) recovered	ref sm W.L. W.H. W.R.	refusal small water level weight of hammer weight of rods
H. Stratified Soils	alt thk thn w prt seam lyr stra vvd c pkt lens occ freq	alternating thick thin with parting seam layer stratum varved Clay pocket lens occasional frequent	-) to 1/16" thickness - 1/16 to 1/2" thickness - 1/2 to 12" thickness - greater than 12" thickness - alternating seams or layers of sand, silt and clay - small, erratic deposit, usually less than 1 foot - lenticular deposit - one or less per foot of thickness - more than one per foot of thickness			

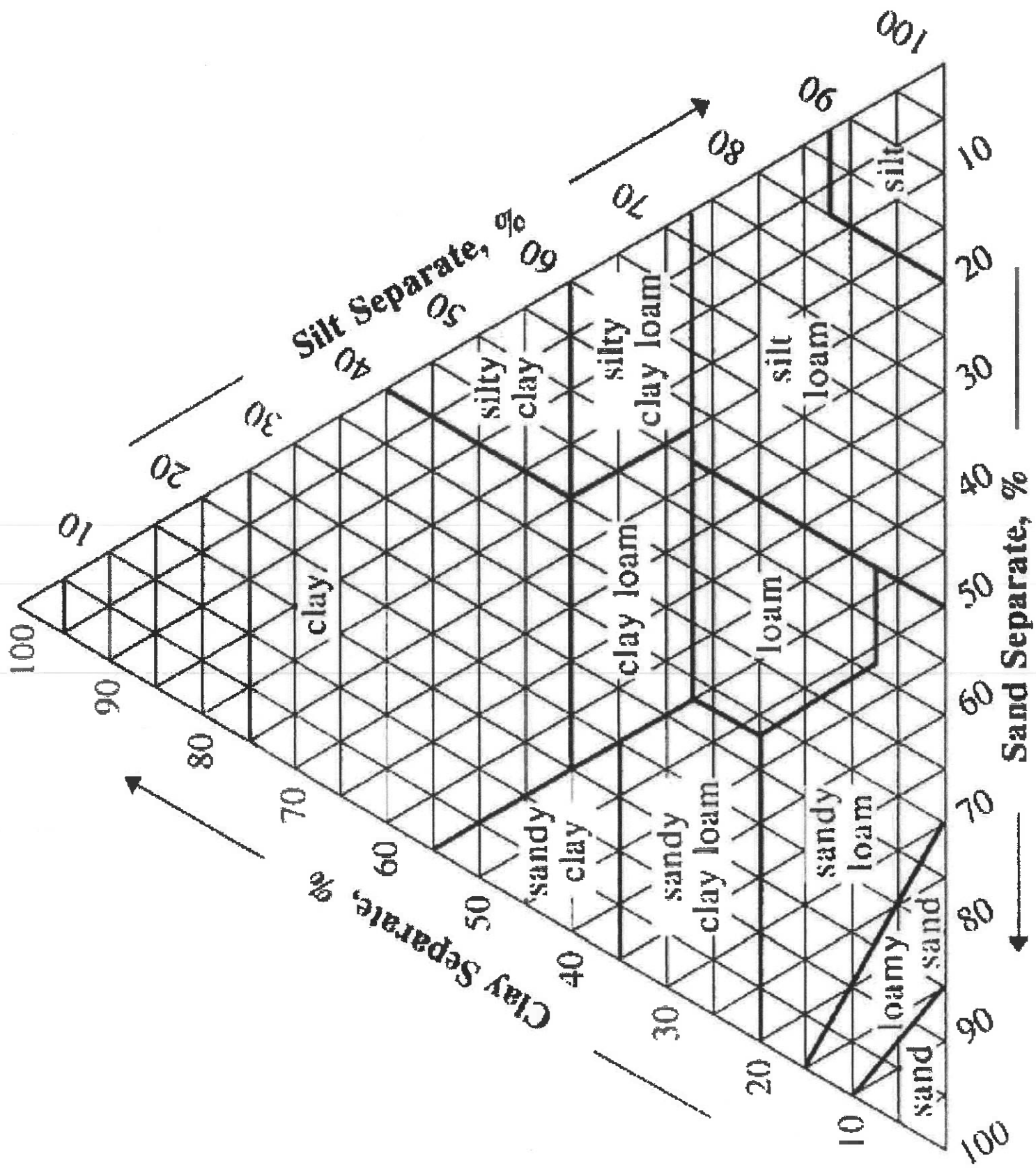
IV. Other Descriptive Criteria

- A. Relative density of coarse-grained soils and non-plastic silts.

N-VALUE	DESCRIPTIVE TERM	RELATIVE DENSITY (%)
0-4	Very Loose	0-15
4-10	Loose	15-45
10-30	Medium Dense	45-70
30-50	Dense	70-85
50+	Very Dense	85-100

- B. Consistency of fine-grained soils with some plasticity.

N-VALUE	DESCRIPTIVE TERM	UNCONFINED COMPRESSIVE STRENGTH (tsf)
0-2	Very Soft	Less than 0.25
2-4	Soft	0.25-0.50
4-8	Medium	0.50-1.00
8-16	Stiff	1.00-2.00
16-32	Very Stiff	2.00-4.00
32+	Hard	4.00+



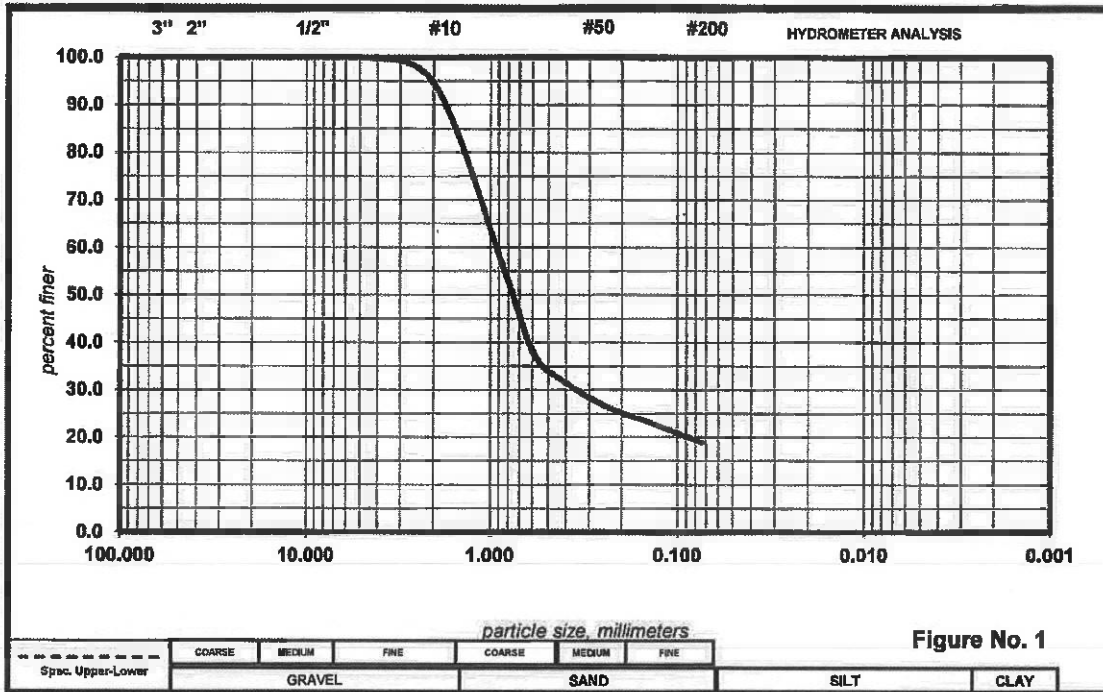
APPENDIX III

LABORATORY SOIL TEST RESULTS

SOR TESTING LABORATORIES, INC.

98 Sand Park Road - Cedar Grove, NJ 07009
Tel.: (973) 239-6001 Fax: (973) 239-8380 <http://www.sorlabs.com>

PARTICLE SIZE DISTRIBUTION TEST REPORT

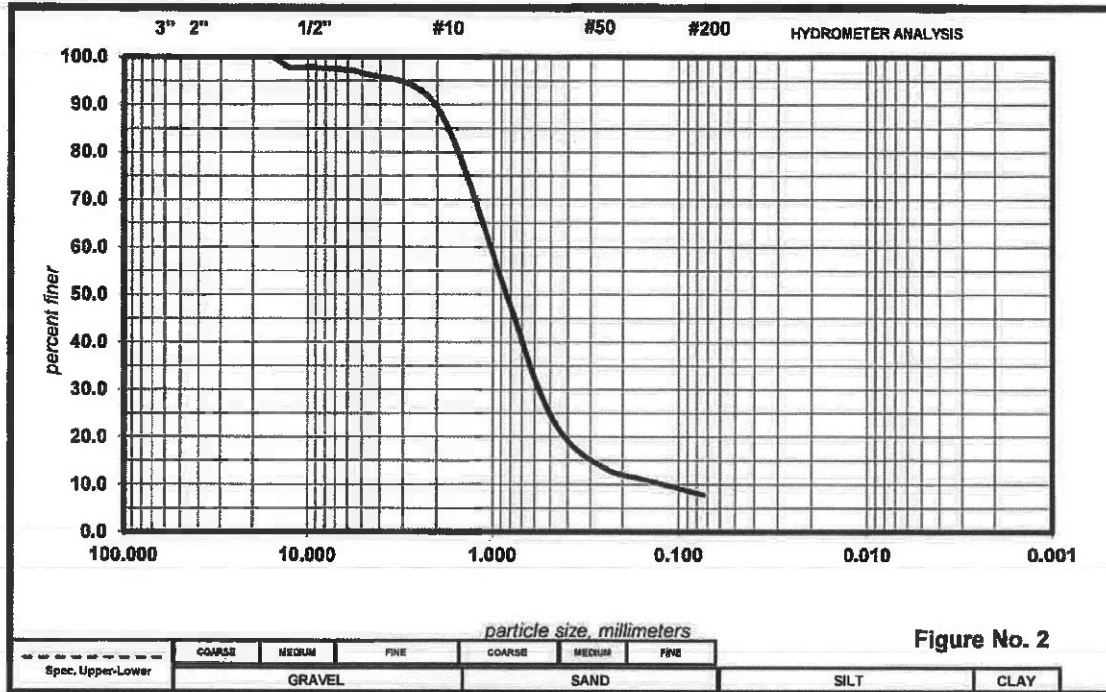


Specification*				Sample Identification		
Sieve Size	% Finer	Min.(%)	Max.(%)	Sample No.: TP-1		
3" (75 mm)				Lab No.: A25-55-01		
2 1/2" (63 mm)				Source/Location: 4'		
2" (50 mm)				Description:		
1 1/2" (38.1 mm)				Yellow of SAND, little Silt, trace fine Gravel		
1" (25 mm)				sample description in accordance with Burnmaster System		
3/4" (19 mm)				LL :	PL :	PI :
5/8" (16 mm)				As received Moisture Content: 11.8 %		
1/2" (12.5 mm)				Classification:		
3/8" (9.5 mm)				USCS: [SM]		
5/16" (8 mm)				AASHTO:		
1/4" (6.3 mm)				Remarks:		
#4 (4.75 mm)	100.0			Sample received in lab on July 25, 2025		
#6 (3.35 mm)				Permeability, k: 2.3 x 10 ⁻³ cm/s (3.35 in/hr) K3		
#8 (2.36 mm)				Client: El Associates		
#10 (2 mm)	94.7			Project: Pole Barn Project		
#14 (1.18 mm)				Location: Winslow Township, New Jersey		
#16 (1.0 mm)				Date: 28-Jul-25		
#20 (850 µm)	55.2			Job No.: 25-C-06		
#30 (600 µm)	37.4			Report No.: 25-C-09		
#40 (425 µm)						
#50 (300 µm)						
#60 (250 µm)	26.7					
#100 (150 µm)	23.5					
#200 (75 µm)	18.9					

SOR TESTING LABORATORIES, INC.

98 Sand Park Road - Cedar Grove, NJ 07009
Tel.: (973) 239-6001 Fax: (973) 239-8380 <http://www.sorlabs.com>

PARTICLE SIZE DISTRIBUTION TEST REPORT



Specification				Sample Identification		
Sieve Size	% Finer	Min.(%)	Max.(%)	Sample No.: TP-2		
3" (75 mm)				Lab No.: A25-55-02		
2 1/2" (63 mm)				Source/Location: 1'		
2" (50 mm)				Description:		
1 1/2" (38.1 mm)				Yellow cm SAND, trace Silt, trace mf Gravel		
1" (25 mm)				sample description in accordance with <i>Burmister System</i>		
3/4" (19 mm)				LL :	PL :	PI :
5/8" (16 mm)	100.0			As received Moisture Content: 7.5 %		
1/2" (12.5 mm)	97.8			Classification:		
3/8" (9.5 mm)	97.8			USCS: [SW-SM]		
5/16" (8 mm)				AASHTO:		
1/4" (6.3 mm)				Remarks:		
#4 (4.75 mm)	96.5			Sample received in lab on July 25, 2025		
#6 (3.35 mm)				Permeability, k: 2.7 x 10-2 cm/s (39.5 in/hr) K5		
#8 (2.36 mm)				Client: El Associates		
#10 (2 mm)	89.3			Project: Pole Barn Project		
#14 (1.4 mm)				Location: Winslow Township, New Jersey		
#16 (1.18 mm)				Date: 28-Jul-25		
#20 (850 µm)	49.7			Job No.: 25-C-06 Report No.: 25-C-09		
#30 (600 µm)	31.3					
#40 (425 µm)						
#50 (300 µm)						
#60 (250 µm)	13.4					
#100 (150 µm)	11.0					
#200 (75 µm)	7.8					

SOR TESTING LABORATORIES, INC.

98 Sand Park Road - Cedar Grove, NJ 07009
Tel.: (973) 239-6001 Fax: (973) 239-8380 <http://www.sorlabs.com>

PARTICLE SIZE DISTRIBUTION TEST REPORT

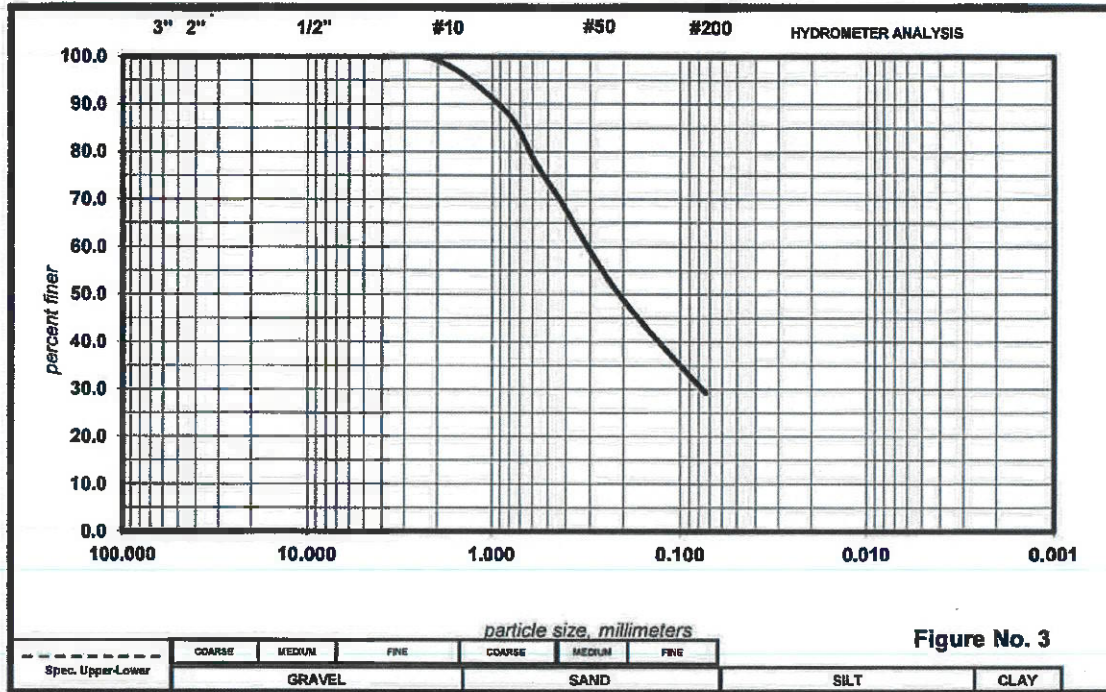


Figure No. 3

Specification*

Sieve Size	% Finer	Min.(%)	Max.(%)	Sample Identification		
3" (75 mm)				Sample No.:	TP-2	
2 1/2" (63 mm)				Lab No.:	A25-55-03	
2" (50 mm)				Source/Location:	5'	
1 1/2" (38.1 mm)				Description:	Yellow of SAND, some Silt, sample description in accordance with Burnmaster System	
1" (25 mm)						
3/4" (19 mm)						
5/8" (16 mm)						
1/2" (12.5 mm)						
3/8" (9.5 mm)				LL :	PL :	PI :
5/16" (8 mm)				As received Moisture Content: 9.1 %		
1/4" (6.3 mm)				Classification: USCS: [SM] AASHTO:		
#4 (4.75 mm)	100.0					
#6 (3.35 mm)						
#8 (2.36 mm)				Remarks: Sample received in lab on July 25, 2025		
#10 (2 mm)	99.2					
#14 (1.4 mm)						
#16 (1.18 mm)				Permeability, k: 6.3 x 10 ⁻⁴ cm/s (0.91 in/hr) K2		
#20 (850 µm)	88.5					
#30 (600 µm)	78.1					
#40 (425 µm)				Client: EI Associates Project: Pole Barn Project		
#50 (300 µm)						
#60 (250 µm)	53.9					
#100 (150 µm)	42.6			Location: Winslow Township, New Jersey Date: 28-Jul-25 Job No.: 25-C-06 Report No.: 25-C-09		
#200 (75 µm)	29.3					

APPENDIX IV

LIMITATIONS

SOR CONSULTING ENGINEERS, INC

LIMITATIONS

The conclusions and recommendations contained in this geotechnical report no. 25-C-09 are based upon the applicable standards of our profession at the time this report was prepared.

The analyses and recommendations submitted in this report are based in part upon the data obtained from two widely spaced test pits performed for this study. The stratification lines shown on the individual logs of the subsurface explorations represent the approximate boundaries between soil types. However, the transition between soil types may be gradual.

In our opinion, the number of explorations performed for this study is adequate for a general understanding of the site subsurface conditions. However, the nature and extent of variations between the explorations may not become evident until construction. If, during construction, variations become evident, it will be necessary to re-evaluate the recommendations of this report.

If any changes in the nature, design or location of the proposed pole barn are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing.

This report may be referred to or included in the project specifications for general information purposes only, but should not be solely used as the technical specifications for the work.

This geotechnical engineering report was prepared for the project by Sor Consulting Engineers, Inc. for design purposes only, and may not be sufficient to prepare an accurate bid. Contractors utilizing the information in the report should do so with the express understanding that its scope is limited to design considerations. Prospective bidders should obtain the owner's permission to perform whatever additional explorations or data gathering they deem necessary to prepare their bid accurately.

This report has been prepared in accordance with generally accepted geotechnical engineering practices for the exclusive use of E. I. Associates and/or their authorized representatives for specific application to the construction of the pole barn at the Winslow Township High School located in Winslow Township, New Jersey. No other warranty, expressed or implied, is made.