



**Planning and Zoning
Department**

616 Germantown Pike, Lafayette
Hill, PA 19444-1821

484-594-2625

www.whitemarshtwp.org

Subdivision and Land Development Cover
Page for SLD # 05-24

Project Name:

The Herbert Weintraub Foundation, LLC

Address: 740 Germantown Pike

Date: 10/15/2024

Status: Under Review

Updates:

- Arborist Report- 11.18.24
- Montgomery County Planning Commission Review- 11.21.24



This Checklist and the following items MUST be submitted to the Township, completed in their entirety, at the time of submission for the Township to accept a subdivision/land development application.

This checklist page must be filled out after printing the completed form starting on page 2 where applicable.

<u>Applicant Initials</u>	<u>Required Items of Submission</u>	<u>Township Receipt</u>
<u>JL</u>	✓ Whitmarsh Township Checklist	_____
<u>JL</u>	✓ Whitmarsh Township Application (Signature <u>MUST</u> Be Original)	_____
<u>JL</u>	✓ Whitmarsh Township Request for Modification (Signature <u>MUST</u> Be Original)	_____
<u>JL</u>	✓ Whitmarsh Time Waiver Form (Signature <u>MUST</u> Be Original)	_____
<u>JL</u>	Whitmarsh Township Escrow (Payable to Whitmarsh Township; credit card payment accepted in person)	_____
<u>JL</u>	✓ Montgomery County Planning Commission Municipal Request for Review (County will request fee directly from applicant)	_____
<u>JL</u>	✓ Shade Tree Commission Checklist for Compliance with Chapter 55 (attached)	_____
<u>n/a</u>	Transportation Impact Study [§105-21.B.(9)(c)] (if applicable)	_____
<u>JL</u>	✓ Stormwater Management Plan & Supporting Calculations (if applicable)	_____
<u>JL</u>	✓ Supplemental Documents Applicable to a Specific Application	_____
<u>JL</u>	List of Encumbrances (Book & Page Numbers) (if applicable)	_____
<u>JL</u>	✓ Three (3) Complete Sets of All Application Materials	_____
<u>JL</u>	✓ PDF or Link to Digital File of Each Component of the Application	_____

WHITEMARSH TOWNSHIP
SUBDIVISION and/or LAND DEVELOPMENT APPLICATION

The applicant, or applicant's authorized agent, for the Township to accept submission of the application, must complete each Application item and each Application Submission Checklist item.

Application Type: (check one) Minor Subdivision Minor Land Development
 Major Subdivision Major Land Development
 Land Development Waiver

Plan Type: Sketch Preliminary Final

INSERT "N/A" FOR NOT APPLICABLE WHERE APPROPRIATE

Name of Subdivision/Land Development: Proposed Single Family Home and Addition

Location of Subdivision/Land Development: 740 Germantown Pike, Lafayette Hill, PA 19444
(Primary Access Roadway Name)

Between: Thornhill Drive and Manor Road
(Roadway Name) (Roadway Name)

Number of Parcels: 2 **Block Number(s):** _____ **Unit Number(s):** _____

Parcel Number(s): APN 65-00-04510-00-6 Premise A APN 65-00-04507-00-9 Premise B

Acreage: _____ **Total Lots Proposed:** 2 **Zoning District:** AA-Residential District

Water Service Proposed: Public Private Sewer Service Proposed: Public Private

Applicant Name: The Herbert Weintraub Foundation, LLC **Contact Name:** Josh Levin

Phone #: 215-470-4337 **Fax #:** N/A **Email:** joshuajohnlevin@gmail.com

Address: 740 Germantown Pike, Lafayette Hill, PA 19444

Owner of Record Name (If Different): _____

Phone #: _____ **Fax #:** _____ **Email:** _____

Address: _____

Engineer Name: Cory Christian, P.E **Firm Name:** Bohler Engineering PA, LLC

Phone #: 215-996-9100 **Fax #:** N/A **Email:** cchristian@bohlereng.com

Address: 1600 Manor Drive, Suite 200, Chalfont, PA 18914

Fees and plans showing all public improvements are submitted with this application. Any additional plan information required by the Township Engineer will be submitted to the Director of Planning and Zoning for distribution. The undersigned applicant agrees to comply with all the provisions of Chapter 105 of the Code of the Township of Whitemarsh, as amended, and agrees to obtain all necessary permits in connection with the proposed subdivision and/or land development.

Whitemarsh Township employees, or township-authorized agents, are hereby granted permission to enter upon the land, if necessary, for site inspections.

Original preliminary and/or original final subdivision and/or land development applications submitted by 4:00pm on the last business day of the month will be reviewed by the Whitemarsh Township Planning Commission at a regular meeting two (2) months following the date of submission or other appropriate meeting date depending upon the results of Township reviews.

I hereby certify, as the undersigned applicant, that I am familiar with the provisions of: [1] Chapter 105, "Subdivision and Land Development", [2] Chapter 58, "Grading, Erosion Control, Stormwater Management and Best Management Practices", and [3] Chapter 55, "Tree Protection Standards" of the Code of the Township of Whitemarsh, as amended, and, to the best of my knowledge and belief, this application and the submitted plans conform to those provisions.

Date of Submission: 6/12/24

Signature: 
(Original Signature must be submitted)

Printed Name: Joshua Levin

I, (name) Joshua Levin (title) President of _____

(entity submitting application) The Herbert Weintraub Foundation, LLC do hereby affirm

that I am authorized by the applicant to affix my signature to this application.

Date: 6/12/24

Signature: 
(Original Signature must be submitted)

WHITEMARSH TOWNSHIP
SUBDIVISION and/or LAND DEVELOPMENT
TIME WAIVER FORM

Date: _____

Granted to: Whitemarsh Township Board of Supervisors

Name of Subdivision and/or Land Development: Proposed Single Family Home and Addition

On or about _____, I/we submitted for official filing the above-reference application.

Notwithstanding any contrary provision of the Pennsylvania Municipalities Planning Code or the Code of the Township of Whitemarsh, this letter will serve as notice to Whitemarsh Township that the requirement that action be taken on this application within ninety (90) days is hereby waived, without limitation as to time. This waiver is granted to permit us to make revisions to the application during the application review process.

Further, with the understanding that this waiver is voluntarily given and will be relied upon by Whitemarsh Township, I/we will give Whitemarsh Township written notice (by certified mail or recognized overnight carrier) should we determine that limiting the time of the review process becomes necessary. Whitemarsh Township shall then have ninety (90) days from receipt of such written notice in which to act upon the application.

This waiver is not transferable or assignable by the Applicants and shall apply to any and all revised submissions made in relation to the above-referenced application.

I/we represent that I/we have been duly authorized to execute this waiver on behalf of the Applicant.

Date: 6/12/24

Signature: _____



(Original Signature must be submitted)

Printed Name: _____

Joshua Levin

Firm Name: _____

The Herbert Weintraub Foundation, LLC

(if applicable)

Title: _____

President

(if applicable)



Applicant Name: The Herbert Weintraub Foundation, LLC c/o Joshua Levin
Development Name: The Herbert Weintraub Foundation, LLC
Location of Property: 740 Germantown Pike, Lafayette Hill, PA 19444
Date: June 12, 2024

PROJECT COVER SHEET – *Approved at June 6, 2023 Shade Tree Commission Meeting*

To verify fulfillment of Chapter 55 Ordinance requirements for:

1. Maximum Tree Removal – 55-4B
2. Tree Replacement – 55-4D(6)(a)
3. Substitutions for Replacements – 55-4F
4. Replacement Tree Species – 55-4E
5. Tree and Shrub requirements for Chapters other than Chapter 55

Complete the following tables, filling in data for each lettered item, and resolving each Compliance Test. In accordance with 55-4C(4)(e), provide this completed Cover Sheet together with the Landscape Plan.

Citations to Sections of Chapter 55 are provided for the convenience of the Applicant. Other Chapters of the Whitemarsh Township Code and other sections of Chapter 55, such as 55-2 Definitions, may be relevant. In the event of an inconsistency between this Cover Sheet and any provision of the Code, the language of the Code shall be controlling.

1) Calculation of Requirement for Maximum Tree Removal – 55-4B:

A.	Total of all existing Trees on the lot with DBH of 6” or greater, per 55-4C(3)(a).	155
B.	33% of line (A) = maximum existing Trees which may be Removed.	51.15
C.	Provide number of existing Trees proposed to be Removed by the Applicant, per 55-4C(3)(a).	51
	COMPLIANCE TEST: If Line (C) is greater than Line (B), the Applicant’s proposal is not in compliance with the requirement that no more than 33% of trees having a DBH of six inches or greater may be removed.	Complies



2) Calculation of Replacement Requirement for Removed Trees having a DBH of Six Inches or Greater 55-4D(6)(a):

D.	Total DBH of all existing Living and Healthy Trees (as determined per 55-4A) having a DBH of 6" or greater that are proposed to be Removed, per 55-4C(3)(a).	619"
E.	Total DBH of all Living and Healthy Trees (as determined per 55-4A) having a DBH of 6" or greater, removed within five years prior to the submission of application, per 55-4C(3)(b).	0"
F.	Sum of line (D) and line (E) = Total DBH that must be replaced for all Removed Living and Healthy Trees.	619"
G.	Total Caliper inches of <u>Canopy Replacement Trees</u> proposed to be planted by the Applicant (as shown on the Landscape Plan) per 55-4D(6)(a). Each Canopy Replacement Tree shall have a minimum Caliper of three inches.	93"
	COMPLIANCE TEST: If Line (G) is less than Line (F), the Applicant's proposal is not in compliance with the minimum Canopy Tree Replacement Requirement. To comply with this requirement, the Applicant may request a waiver from the Shade Tree Commission to permit limited substitutions per 55-4F. If so, proceed to Substitution calculation (3) below.	Waiver

3) Calculation of maximum Proposed Substitutions for Replacement Canopy Trees – 554F, subject to certain limitations and approval by the Shade Tree Commission.

H.	40% of line (F) (round fractions <u>down</u> to a whole number) = maximum Caliper of required Replacement Canopy Trees that may be substituted with Understory Trees and/or FIL, upon STC approval, per 55-4F.	247"
I.	Line (F) less Line (G) = Shortfall in <u>DBH</u> compliance with the minimum Canopy Tree Replacement Requirement, per 55-4D(6)(a).	526"
	COMPLIANCE TEST: If line (H) is less than line (I), the deficit of minimum Canopy Tree Replacement requirement, per 55-4D(6) cannot be fully compensated with Substitutions, per 55-4F.	Waiver



J.	Line (I) divided by 3" (round fractions <u>up</u> to a whole number) = Shortfall in the <u>number</u> of required 3" Canopy Replacement Trees.	176
K.	Provide the total number of substitution Understory Trees proposed to be planted by the Applicant, per 55-4F(1).	0
L.	Line (K) divided by two = Number of required 3"-cal. Replacement Canopy Trees being substituted with Understory Trees per 55-4F(1).	0
M.	Line (J) less Line (L) = Number of required 3"-cal. Replacement Canopy Trees proposed by the Applicant to be substituted with payment of in-lieu fees, per 55-4F(2). NOTE: Review proposed Landscape Plan to ensure that the use of Replacement Understory Tree substitutes has been maximized prior to calculating the number of substitutes via in-lieu fees, per 55-4F(4).	176
N.	Sum of Line (L) and Line (M) = Total proposed number of Replacement Canopy Trees being substituted per 55-4F.	0
O.	Line (N) multiplied by 3" = Total shortfall of DBH to be fulfilled with substitutions as proposed by this Landscape Plan.	0"
	COMPLIANCE TEST: If (O) is greater than (H), the Applicant's proposal has exceeded the 40% maximum eligible for consideration for Replacement substitutions, per 55-4F, and is not in compliance.	Complies
P.	Sum of Line (O) and (G) = Total Caliper compensation for Removed Trees as provided by this proposed Landscape Plan.	93"
	COMPLIANCE TEST: If (P) is less than (F), the Applicant's proposal is not in compliance with the Tree Replacement Requirement.	Waiver

4) Compliance with Species Requirement of Replacement Trees – 55-4E:

Q.	Total number of proposed Canopy Replacement Trees, per 55-4C(4)(c).	31
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R.	75% of line (Q) (round fractions <u>up</u> to the next whole number) = Minimum required number of Native Species Replacement Canopy Trees, per 55-4E.	24
S.	Provide the number of proposed Native Species Canopy Replacement Trees, per 55-4C(4)(c).	31
	COMPLIANCE TEST: If Line (S) is less than Line (R), the Applicant's proposal is not in compliance with the 75% Native Species requirement for Replacement Canopy Trees, per 55-4E.	Complies
T.	Provide the number of proposed Native Species Understory Trees.	0
	COMPLIANCE TEST: If Line (T) is less than line (K), he Applicant's proposal is not in compliance with the 100% Native Species requirement for Replacement Understory Trees.	Complies



5) Compliance with Landscaping Requirements of Other Code Chapters. Complete the following Tables for each applicable requirement.

REQUIRED TREES:

A	B	C	D*	E	F**
Full Code Citation: Chapter, sub-chapter, etc.	Subject matter as indicated in Code caption	Required # of Trees	Credits for Preserved Trees per 55-4D(5)	Proposed # of Trees	Column (C) less Columns (D) and (E)
SALDO 105-52.B.(2)	Buffering	0 (existing to be used)			
SALDO 105-48.B	Street Trees	0 (existing to be used)			

*NOTE: Column (D) Credits are strictly limited to calculating Chapter 105-52 Buffer yards, in accordance with 55-4D(5).

**NOTE: When the result in Column (F) is greater than zero, the Applicant's proposal is not in compliance with the applicable Code requirement.

REQUIRED SHRUBS:

A	B	C	D	E*
Full Code Citation: Chapter, sub-chapter, etc.	Subject matter as indicated in Code caption	Required # of Shrubs	Proposed # of Shrubs	Column (C) less Column (D)



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***NOTE: When the result in Column (E) is greater than zero, the Applicant's proposal is not in compliance with the applicable Code requirement.**

June 12, 2024
Via Hand Delivery by Client

Whitemarsh Township
616 Germantown Pike
Lafayette Hill, PA 19444

Attention: Charlie Guttenplan, Director of Planning & Zoning

Re: Proposed Residential Development
APN 65-00-04510-00-6 (1.37 AC)-Premise A
APN 65-00-04507-00-9)1.43 AC)-Premise B
740 Germantown Pike
Whitemarsh Township
Montgomery County, PA
PAA220215.00

Dear Mr. Guttenplan:

The following is a list of waivers requested from the Whitemarsh Township SALDO:

1. Section 105-12 requiring Preliminary & Final plans be submitted separately.
2. Section 105-21(B)(1)(n) requiring the plan to show existing features within 500' of the project site.
 - An aerial map is shown on the cover sheet in lieu of showing all existing features within 500' of the project site.
3. Section 105-23(A)(1) requiring the plan be drawn at a scale of one-inch equals 50 feet or one-inch equals 100 feet.
 - Due to the size of the project, a smaller scale is desirable for plan legibility.
4. Section 105-23(B)(1)(o)[7] requiring sidewalk to be shown on a Preliminary plan.
 - There is no sidewalk along the frontage of neighboring properties to connect to, and installation of new sidewalk would not be feasible due to existing topography.
5. Section 105-30(A) requiring street improvements, including curbs and sidewalk.
 - There is no sidewalk or curb along the frontage of neighboring properties to connect to, and installation of new sidewalk would not be feasible due to existing topography.
6. Section 105-46 requiring curb be provided in all subdivisions and land developments.
 - There is no existing curbing along the property frontage.
7. Section 105-47(A) requiring sidewalks be provided in all subdivisions and land developments.
 - There is no sidewalk along the frontage of neighboring properties to connect to, and installation of new sidewalk would not be feasible due to existing topography.
8. Section 105-52 requiring buffer yards.
 - Surrounding properties are residential uses and already heavily wooded in nature. No additional buffering should be necessary.
9. Section 105-53(D) requiring the offering of 10% of the total Site Area for Park and/or recreational use.
10. Section 105-73(A) requiring the addition of sidewalk.
 - There is no sidewalk along the frontage of neighboring properties to connect to, and installation of new sidewalk would not be feasible due to existing topography.

11. Section 105-74 requiring curb be provided in all subdivisions and land developments.
- There is no existing curbing along the property frontage.

Upon your review of the enclosed, should you have any questions or require additional information, please contact our office.

Sincerely,

BOHLER ENGINEERING PA, LLC



Cory Christian, PE

CMC/kf

cc: Josh Levin (via NewForma)

R:\2022\PAA220215.00\Admin\Correspondence\Township\PAA215.00_2024-06-12-L (Waiver Ltr.).doc

General Project Description & Stormwater Management Calculations

Project: **Proposed Single Family Home and Addition**
740 Germantown Pike
Whitemarsh Township
Montgomery County Pennsylvania, 19444

Client: **The Herbert Weintraub Foundation**
740 Germantown Pike
Lafayette Hill, PA 19444

Project Number: **PAA220215.00**

Date: **June 10, 2024**

Professional Engineer: Ron Klos
PA License #PE045479E



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General Project Description

The Herbert Weintraub Foundation proposes to develop the existing lots with a proposed single-family home and an addition to the existing home. The proposal includes the installation of stormwater management controls necessary to support the development. Pertinent data characterizing the existing and future site conditions are shown on the accompanying plans.

Two stone infiltration trenches have been proposed to meet the water quality, recharge in rate reduction requirements of Whitmarsh Township Resolution 2004-8, which adopted Ordinance #789 entitled Chapter 58, Grading, Erosion Control, Stormwater Management, Storm Drainage Systems, and Best Management Practices. The Rational Method was utilized for the purposes of peak rate calculations, and Hydraflow Hydrographs software was used to generate hydrographs.

Stormwater Management Summary of Peak Flows

PROJECT: PAA220215.00 The Herbert Weintraub Foundation
Proposed Single Family Home & Addition
Whitemarsh Township
Montgomery County, PA

DATE: 11/11/2022
 REV: 0
 BY: EAN

	1-Year	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
Pre-Development Peak Flows (cfs)							
DA-1E (Total)	2.41	2.87	3.38	3.73	4.17	4.46	4.75
DA-2E (Total)	1.64	1.95	2.30	2.54	2.84	3.03	3.23
Total Pre-Development	4.05	4.82	5.68	6.27	7.01	7.49	7.98
Allowable Post Development Peak Flow Rate¹	4.05	4.82	5.68	6.27	7.01	7.49	7.98
Post-Development Peak Flows (cfs)							
DA-1P (Total)	2.17	2.58	3.04	3.37	3.78	4.06	4.38
DA-2P (Total)	1.50	1.78	2.10	2.32	2.59	2.77	2.95
Total Post-Development²	3.67	4.36	5.14	5.69	6.37	6.83	7.33
Percent of Allowable Flow Remaining	9.38%	9.54%	9.51%	9.25%	9.13%	8.81%	8.15%

1) Township of Whitemarsh Stormwater Management Ordinance II.C.1

The on-site post development peak flows must be reduced as follows:

- 1-year storm post-development to 1-year storm pre-development
- 2-year storm post-development to 2-year storm pre-development
- 5-year storm post-development to 5-year storm pre-development
- 10-year storm post-development to 10-year storm pre-development
- 25-year storm post-development to 25-year storm pre-development
- 50-year storm post-development to 50-year storm pre-development
- 100-year storm post-development to 100-year storm pre-development

2) From HydroCAD Post-Development Link based on a time of concentration analysis.

Runoff Calculations C Worksheet

Project: The Herbert Weintraub Foundation - Whitemarsh Township

Description: _____

Drainage Area	Land Use Description	C	Area (Acres)	Total Area (Acres)	Weighted C
DA-1E	Impervious	0.95	0.25	1.71	0.34
	Meadow	0.35	0.36		
	Forest	0.20	1.10		
DA-2E	Impervious	0.95	0.12	1.04	0.38
	Meadow	0.35	0.66		
	Forest	0.20	0.26		
DA-1P Trench #1	Pervious	0.35	0.24	0.47	0.64
	Impervious	0.95	0.23		
DA-1P Trench #2	Pervious	0.35	0.10	0.16	0.58
	Impervious	0.95	0.06		
DA-1P Bypass (Managed)	Pervious	0.35	0.13	0.17	0.49
	Impervious	0.95	0.04		
DA-2P Bypass (Managed)	Pervious	0.35	0.01	0.01	0.35
	Impervious	0.95			
DA-1P (Unmanaged)	Impervious	0.95	0.24	1.00	0.44
	Meadow	0.35	0.41		
	Forest	0.20	0.35		
DA-2P (Unmanaged)	Impervious	0.95	0.11	0.94	0.38
	Meadow	0.35	0.56		
	Forest	0.20	0.27		

Custom Soil Resource Report for Montgomery County, Pennsylvania



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

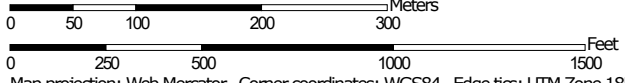
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.


Map Scale: 1:6,010 if printed on A landscape (11" x 8.5") sheet.



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

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: Montgomery County, Pennsylvania
 Survey Area Data: Version 17, Sep 6, 2022

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

Date(s) aerial images were photographed: Jul 17, 2014—Aug 14, 2014

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
CaB	Califon loam, 3 to 8 percent slopes	3.4	2.6%
Ch	Codorus silt loam	16.8	12.8%
EcB	Edgemont channery loam, 3 to 8 percent slopes	2.4	1.8%
EcC	Edgemont channery loam, 8 to 15 percent slopes	15.0	11.5%
EcD	Edgemont channery loam, 15 to 25 percent slopes	26.1	19.9%
GdC	Gladstone gravelly loam, 8 to 15 percent slopes	0.1	0.1%
MaC	Manor loam, 8 to 15 percent slopes	20.1	15.4%
UrhB	Urban land-Duffield complex, 0 to 8 percent slopes	14.3	11.0%
UrmB	Urban land-Glenelg complex, 0 to 8 percent slopes	6.2	4.7%
UrmD	Urban land-Glenelg complex, 8 to 25 percent slopes	26.4	20.2%
Totals for Area of Interest		130.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different

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management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Montgomery County, Pennsylvania

CaB—Califon loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2I3zk
Elevation: 200 to 2,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 120 to 220 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Califon and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Califon

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Head slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Colluvium derived from granite and gneiss

Typical profile

Ap - 0 to 9 inches: loam
Bt - 9 to 23 inches: clay loam
Bx - 23 to 38 inches: sandy loam
Cx - 38 to 57 inches: sandy loam
C - 57 to 60 inches: sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 30 inches to fragipan; 72 to 99 inches to lithic bedrock
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak - Hardwood - Conifer Forest
Hydric soil rating: No

Minor Components

Gladstone

Percent of map unit: 10 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Hatboro

Percent of map unit: 4 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Baile

Percent of map unit: 4 percent
Landform: Depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Ch—Codus silt loam

Map Unit Setting

National map unit symbol: 153x
Elevation: 200 to 2,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 120 to 220 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Codus and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Codorus

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread

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Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from gneiss and/or alluvium derived from mica schist

Typical profile

Ap - 0 to 12 inches: silt loam
Bw - 12 to 48 inches: silt loam
C - 48 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 72 to 99 inches to lithic bedrock
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Ecological site: F148XY027PA - Moist, Piedmont - felsic, Riparian Zone, Ecotonal Meadow-Shrub-Forest
Hydric soil rating: No

Minor Components

Hatboro

Percent of map unit: 8 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Glenville

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Head slope, side slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Baile

Percent of map unit: 3 percent
Landform: Depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear

Hydric soil rating: Yes

EcB—Edgemont channery loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2dz92
Elevation: 500 to 2,400 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 120 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Edgemont and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edgemont

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Residuum weathered from quartzite and/or residuum weathered from orthoquartzite

Typical profile

Ap - 0 to 8 inches: channery loam
Bt - 8 to 36 inches: channery fine sandy loam
C - 36 to 60 inches: channery sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 42 to 84 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak - Hardwood - Conifer Forest

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Hydric soil rating: No

Minor Components

Buchanan

Percent of map unit: 4 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Andover

Percent of map unit: 3 percent
Landform: Drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

EcC—Edgemont channery loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2dz93
Elevation: 500 to 1,800 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 46 to 59 degrees F
Frost-free period: 120 to 185 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Edgemont and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edgemont

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Residuum weathered from quartzite and/or residuum weathered from orthoquartzite

Typical profile

Ap - 0 to 8 inches: channery loam
Bt - 8 to 36 inches: channery fine sandy loam

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C - 36 to 60 inches: channery sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: 42 to 84 inches to lithic bedrock

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak -
Hardwood - Conifer Forest

Hydric soil rating: No

Minor Components

Buchanan

Percent of map unit: 4 percent

Landform: Terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Mountainbase

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Hydric soil rating: No

Andover

Percent of map unit: 3 percent

Landform: Drainageways

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Mountainbase

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Hydric soil rating: Yes

EcD—Edgemont channery loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2dz94

Elevation: 500 to 1,800 feet

Mean annual precipitation: 35 to 50 inches

Mean annual air temperature: 46 to 59 degrees F

Frost-free period: 120 to 185 days

Farmland classification: Not prime farmland

Map Unit Composition

Edgemont and similar soils: 93 percent

Minor components: 7 percent

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

Description of Edgemont

Setting

Landform: Ridges

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Upper third of mountainflank

Down-slope shape: Convex, linear

Across-slope shape: Linear, convex

Parent material: Residuum weathered from quartzite and/or residuum weathered from orthoquartzite

Typical profile

Ap - 0 to 8 inches: channery loam

Bt - 8 to 36 inches: channery fine sandy loam

C - 36 to 60 inches: channery sandy loam

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: 42 to 84 inches to lithic bedrock

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak - Hardwood - Conifer Forest

Hydric soil rating: No

Minor Components

Buchanan

Percent of map unit: 4 percent

Landform: Terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Mountainbase

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Hydric soil rating: No

Andover

Percent of map unit: 3 percent

Landform: Drainageways

Landform position (two-dimensional): Footslope, toeslope

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Landform position (three-dimensional): Mountainbase
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

GdC—Gladstone gravelly loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2v7gl
Elevation: 250 to 1,200 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 170 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Gladstone and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gladstone

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy colluvium derived from granite and gneiss and/or loamy residuum weathered from granite and gneiss

Typical profile

Ap - 0 to 10 inches: gravelly loam
Bt1 - 10 to 22 inches: gravelly sandy clay loam
Bt2 - 22 to 37 inches: gravelly loam
C - 37 to 66 inches: gravelly sandy loam
R - 66 to 76 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 65 to 67 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

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Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

*Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak -
Hardwood - Conifer Forest*

Hydric soil rating: No

Minor Components

Califon

Percent of map unit: 5 percent

Landform: Flats

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Annandale

Percent of map unit: 5 percent

Landform: Hillslopes

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

Parker

Percent of map unit: 5 percent

Landform: Hillslopes

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

MaC—Manor loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2tkpw

Elevation: 50 to 1,080 feet

Mean annual precipitation: 35 to 50 inches

Mean annual air temperature: 48 to 57 degrees F

Frost-free period: 150 to 220 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Manor and similar soils: 85 percent

Minor components: 15 percent

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

Description of Manor

Setting

Landform: Hills

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Residuum weathered from mica schist

Typical profile

A1 - 0 to 2 inches: loam

A2 - 2 to 6 inches: sandy loam

Bw1 - 6 to 13 inches: fine sandy loam

Bw2 - 13 to 22 inches: fine sandy loam

C1 - 22 to 30 inches: fine sandy loam

C2 - 30 to 44 inches: channery coarse sand

C3 - 44 to 53 inches: loamy sand

C4 - 53 to 83 inches: channery loamy sand

Cr - 83 to 108 inches: bedrock

R - 108 to 138 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent

Surface area covered with cobbles, stones or boulders: 0.0 percent

Depth to restrictive feature: 59 to 100 inches to paralithic bedrock; 100 to 128 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.07 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak - Hardwood - Conifer Forest

Hydric soil rating: No

Minor Components

Glenville

Percent of map unit: 5 percent

Landform: Drainageways, swales

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Head slope, base slope

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Mt. airy

Percent of map unit: 5 percent

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Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Blocktown

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, interfluvium, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

UrhB—Urban land-Duffield complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2dtyv
Elevation: 200 to 1,500 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 44 to 57 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 65 percent
Duffield and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Pavement, buildings and other artificially covered areas

Typical profile

H1 - 0 to 6 inches: variable

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 100 inches to lithic bedrock
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Custom Soil Resource Report

Hydric soil rating: No

Description of Duffield

Setting

Landform: Valleys
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 53 inches: silty clay loam
H3 - 53 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 48 to 120 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F147XY003PA - Mixed Limestone Upland, F148XY026PA - Moist, High Base-Saturation, Upland, Mixed Oak - Hickory - Conifer Forest
Hydric soil rating: No

Minor Components

Clarksburg

Percent of map unit: 4 percent
Landform: Valley flats
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Penlaw

Percent of map unit: 4 percent
Landform: Swales
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Thorndale

Percent of map unit: 2 percent
Landform: Depressions
Landform position (two-dimensional): Foothlope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

UrmB—Urban land-Glenelg complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2dtyz
Elevation: 200 to 2,000 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 45 to 61 degrees F
Frost-free period: 110 to 235 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 65 percent
Glenelg and similar soils: 30 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, nose slope, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Pavement, buildings and other artificially covered areas

Typical profile

C - 0 to 6 inches: variable

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 99 inches to lithic bedrock
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Glenelg

Setting

Landform: Hillslopes

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Interfluve, nose slope, side slope

Down-slope shape: Convex, linear

Across-slope shape: Linear, convex

Parent material: Residuum weathered from mica schist

Typical profile

A - 0 to 8 inches: channery silt loam

Bt - 8 to 26 inches: channery silt loam

C - 26 to 60 inches: channery loam

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: 60 to 120 inches to paralithic bedrock

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B

Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak -
Hardwood - Conifer Forest

Hydric soil rating: No

Minor Components

Glenville

Percent of map unit: 5 percent

Landform: Hillslopes

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Head slope, side slope

Down-slope shape: Concave, linear

Across-slope shape: Linear, concave

Hydric soil rating: No

UrmD—Urban land-Glenelg complex, 8 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2dtz0
Elevation: 200 to 2,000 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 45 to 61 degrees F
Frost-free period: 110 to 235 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 65 percent
Glenelg and similar soils: 30 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, nose slope, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Pavement, buildings and other artificially covered areas

Typical profile

C - 0 to 6 inches: variable

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 99 inches to lithic bedrock
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Glenelg

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Residuum weathered from mica schist

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Typical profile

A - 0 to 8 inches: channery silt loam
Bt - 8 to 26 inches: channery silt loam
C - 26 to 60 inches: channery loam

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 60 to 120 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F148XY024PA - Moist, Piedmont - felsic, Upland, Mixed Oak -
Hardwood - Conifer Forest
Hydric soil rating: No

Minor Components

Glenville

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Head slope, side slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

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United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



NOAA Atlas 14, Volume 2, Version 3
Location name: Lafayette Hill, Pennsylvania, USA*
Latitude: 40.0846°, Longitude: -75.2422°
Elevation: 264.9 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

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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	4.15 (3.82-4.54)	4.94 (4.54-5.40)	5.82 (5.32-6.34)	6.43 (5.87-7.02)	7.18 (6.52-7.82)	7.68 (6.94-8.39)	8.18 (7.37-8.95)	8.63 (7.72-9.47)	9.16 (8.11-10.1)	9.54 (8.39-10.6)
10-min	3.32 (3.04-3.62)	3.95 (3.63-4.32)	4.66 (4.26-5.08)	5.14 (4.70-5.61)	5.72 (5.19-6.23)	6.12 (5.53-6.68)	6.50 (5.85-7.11)	6.84 (6.11-7.51)	7.24 (6.41-7.98)	7.51 (6.60-8.32)
15-min	2.76 (2.54-3.02)	3.32 (3.04-3.62)	3.93 (3.59-4.28)	4.34 (3.96-4.73)	4.83 (4.39-5.27)	5.16 (4.66-5.64)	5.48 (4.93-5.99)	5.75 (5.14-6.31)	6.07 (5.38-6.70)	6.28 (5.52-6.96)
30-min	1.89 (1.74-2.07)	2.29 (2.10-2.50)	2.79 (2.55-3.04)	3.14 (2.87-3.43)	3.58 (3.25-3.90)	3.89 (3.51-4.25)	4.20 (3.78-4.59)	4.48 (4.00-4.91)	4.83 (4.28-5.33)	5.09 (4.47-5.64)
60-min	1.18 (1.08-1.29)	1.44 (1.32-1.57)	1.79 (1.64-1.95)	2.05 (1.87-2.23)	2.38 (2.16-2.60)	2.64 (2.38-2.88)	2.89 (2.60-3.16)	3.14 (2.81-3.45)	3.47 (3.07-3.82)	3.71 (3.27-4.11)
2-hr	0.708 (0.646-0.776)	0.860 (0.786-0.942)	1.08 (0.980-1.18)	1.24 (1.13-1.36)	1.46 (1.32-1.60)	1.63 (1.46-1.79)	1.81 (1.61-1.98)	1.98 (1.75-2.17)	2.22 (1.94-2.45)	2.40 (2.08-2.66)
3-hr	0.516 (0.471-0.567)	0.626 (0.571-0.688)	0.785 (0.715-0.862)	0.907 (0.824-0.996)	1.07 (0.966-1.18)	1.20 (1.08-1.32)	1.34 (1.19-1.47)	1.47 (1.30-1.62)	1.66 (1.44-1.83)	1.80 (1.55-2.00)
6-hr	0.324 (0.296-0.356)	0.392 (0.359-0.432)	0.489 (0.446-0.538)	0.568 (0.516-0.624)	0.680 (0.612-0.745)	0.770 (0.688-0.844)	0.866 (0.767-0.950)	0.967 (0.846-1.06)	1.11 (0.953-1.23)	1.22 (1.04-1.36)
12-hr	0.196 (0.180-0.216)	0.237 (0.217-0.262)	0.297 (0.272-0.328)	0.348 (0.316-0.384)	0.422 (0.380-0.464)	0.485 (0.432-0.533)	0.553 (0.486-0.609)	0.627 (0.544-0.693)	0.736 (0.624-0.818)	0.827 (0.688-0.923)
24-hr	0.114 (0.105-0.124)	0.137 (0.126-0.149)	0.172 (0.158-0.187)	0.201 (0.185-0.219)	0.244 (0.223-0.264)	0.280 (0.254-0.303)	0.318 (0.287-0.344)	0.360 (0.323-0.389)	0.421 (0.373-0.455)	0.472 (0.414-0.511)
2-day	0.066 (0.060-0.071)	0.079 (0.073-0.086)	0.100 (0.091-0.108)	0.116 (0.106-0.126)	0.140 (0.128-0.152)	0.160 (0.145-0.173)	0.181 (0.163-0.196)	0.203 (0.182-0.221)	0.235 (0.209-0.256)	0.262 (0.231-0.284)
3-day	0.046 (0.042-0.050)	0.056 (0.051-0.061)	0.070 (0.064-0.076)	0.081 (0.075-0.088)	0.098 (0.089-0.106)	0.111 (0.101-0.121)	0.125 (0.114-0.136)	0.141 (0.127-0.153)	0.162 (0.145-0.177)	0.180 (0.159-0.196)
4-day	0.036 (0.034-0.040)	0.044 (0.041-0.048)	0.055 (0.051-0.060)	0.064 (0.059-0.069)	0.076 (0.070-0.083)	0.087 (0.079-0.094)	0.098 (0.089-0.106)	0.109 (0.099-0.119)	0.126 (0.113-0.137)	0.140 (0.124-0.152)
7-day	0.024 (0.023-0.026)	0.029 (0.027-0.032)	0.036 (0.033-0.039)	0.042 (0.039-0.045)	0.050 (0.046-0.054)	0.056 (0.052-0.061)	0.064 (0.058-0.069)	0.071 (0.064-0.077)	0.082 (0.074-0.089)	0.091 (0.081-0.098)
10-day	0.019 (0.018-0.021)	0.023 (0.022-0.025)	0.028 (0.026-0.030)	0.032 (0.030-0.035)	0.038 (0.035-0.041)	0.043 (0.039-0.046)	0.047 (0.043-0.051)	0.052 (0.048-0.056)	0.059 (0.054-0.064)	0.065 (0.058-0.070)
20-day	0.013 (0.012-0.014)	0.016 (0.015-0.017)	0.019 (0.017-0.020)	0.021 (0.020-0.022)	0.024 (0.023-0.026)	0.027 (0.025-0.028)	0.029 (0.027-0.031)	0.032 (0.029-0.034)	0.035 (0.032-0.037)	0.038 (0.034-0.040)
30-day	0.011 (0.010-0.011)	0.013 (0.012-0.014)	0.015 (0.014-0.016)	0.017 (0.016-0.017)	0.019 (0.018-0.020)	0.020 (0.019-0.022)	0.022 (0.021-0.023)	0.024 (0.022-0.025)	0.026 (0.024-0.027)	0.027 (0.025-0.029)
45-day	0.009 (0.009-0.010)	0.011 (0.010-0.011)	0.012 (0.012-0.013)	0.014 (0.013-0.014)	0.015 (0.014-0.016)	0.016 (0.016-0.017)	0.017 (0.017-0.018)	0.018 (0.017-0.019)	0.020 (0.019-0.021)	0.021 (0.019-0.022)
60-day	0.008 (0.008-0.009)	0.010 (0.009-0.010)	0.011 (0.011-0.012)	0.012 (0.012-0.013)	0.013 (0.013-0.014)	0.014 (0.014-0.015)	0.015 (0.014-0.016)	0.016 (0.015-0.017)	0.017 (0.016-0.018)	0.018 (0.017-0.019)

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

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

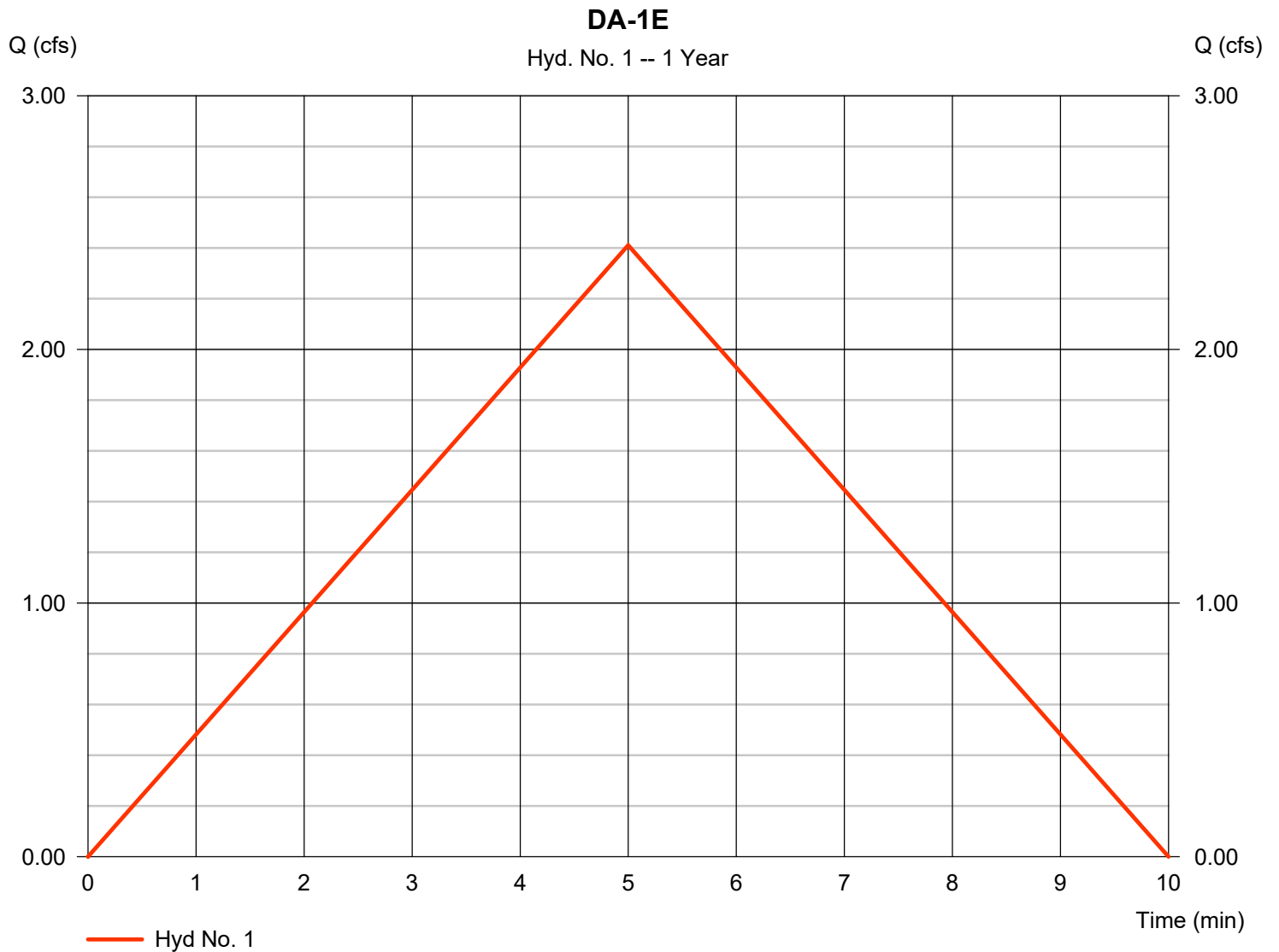
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	2.411	1	5	723	----	----	----	DA-1E
2	Rational	1.639	1	5	492	----	----	----	DA-2E
3	Combine	4.050	1	5	1,215	1, 2	----	----	Pre-Dev Total
5	Rational	1.247	1	5	374	----	----	----	DA-1P Trench #1
6	Reservoir	0.027	1	10	11	5	251.14	365	DA-1P Tr. #1 (Outflow)
7	Rational	0.385	1	5	115	----	----	----	DA-1P Trench #2
8	Reservoir	0.047	1	9	18	7	260.02	104	DA-1P Tr. #2 (Outflow)
9	Rational	0.345	1	5	104	----	----	----	DA-1P Bypass (Managed)
10	Rational	1.824	1	5	547	----	----	----	DA-1P (Unmanaged)
11	Combine	2.170	1	5	680	6, 8, 9, 10	----	----	DA-1P Total
12	Rational	0.015	1	5	4	----	----	----	DA-2P Bypass (Managed)
13	Rational	1.481	1	5	444	----	----	----	DA-2P (Unmanaged)
14	Combine	1.496	1	5	449	12, 13	----	----	DA-2P Total
15	Combine	3.666	1	5	1,128	11, 14	----	----	Post-Dev Total
Rev-0.gpw					Return Period: 10 Year			Monday, 11 / 14 / 2022	

Hydrograph Report

Hyd. No. 1

DA-1E

Hydrograph type	= Rational	Peak discharge	= 2.411 cfs
Storm frequency	= 1 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 723 cuft
Drainage area	= 1.710 ac	Runoff coeff.	= 0.34
Intensity	= 4.147 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

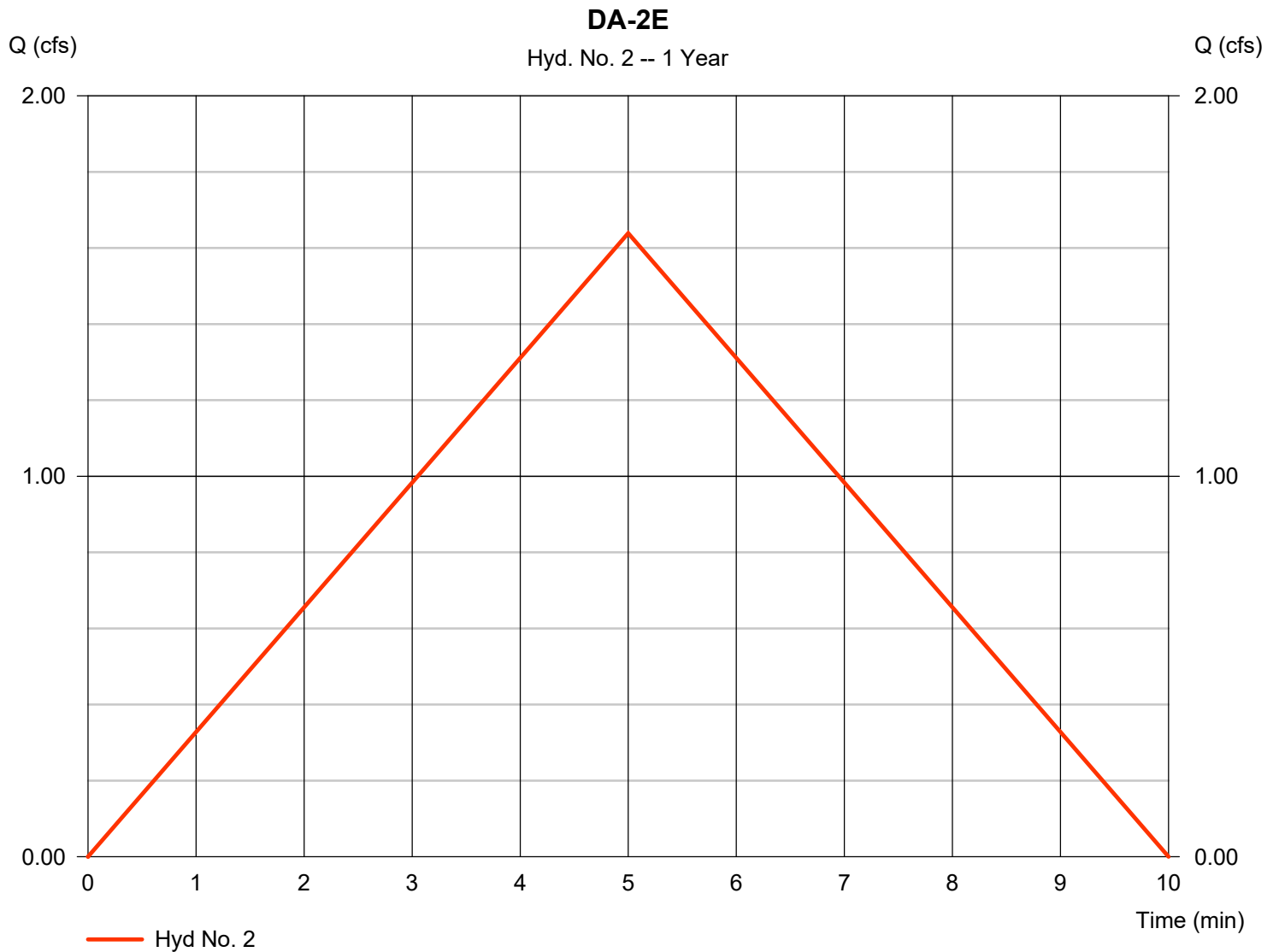


Hydrograph Report

Hyd. No. 2

DA-2E

Hydrograph type	= Rational	Peak discharge	= 1.639 cfs
Storm frequency	= 1 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 492 cuft
Drainage area	= 1.040 ac	Runoff coeff.	= 0.38
Intensity	= 4.147 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



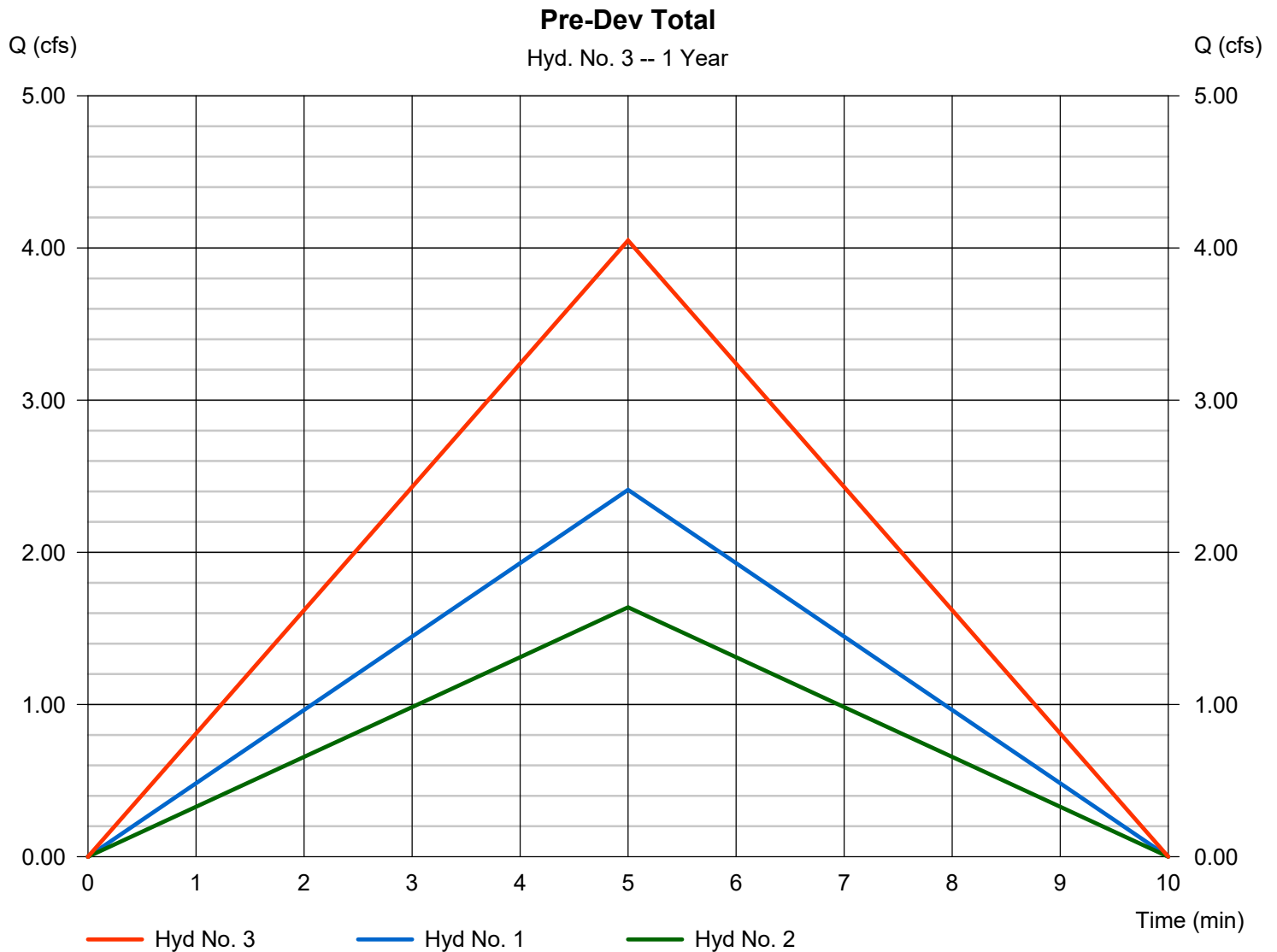
Hydrograph Report

Hyd. No. 3

Pre-Dev Total

Hydrograph type = Combine
Storm frequency = 1 yrs
Time interval = 1 min
Inflow hyds. = 1, 2

Peak discharge = 4.050 cfs
Time to peak = 5 min
Hyd. volume = 1,215 cuft
Contrib. drain. area = 2.750 ac

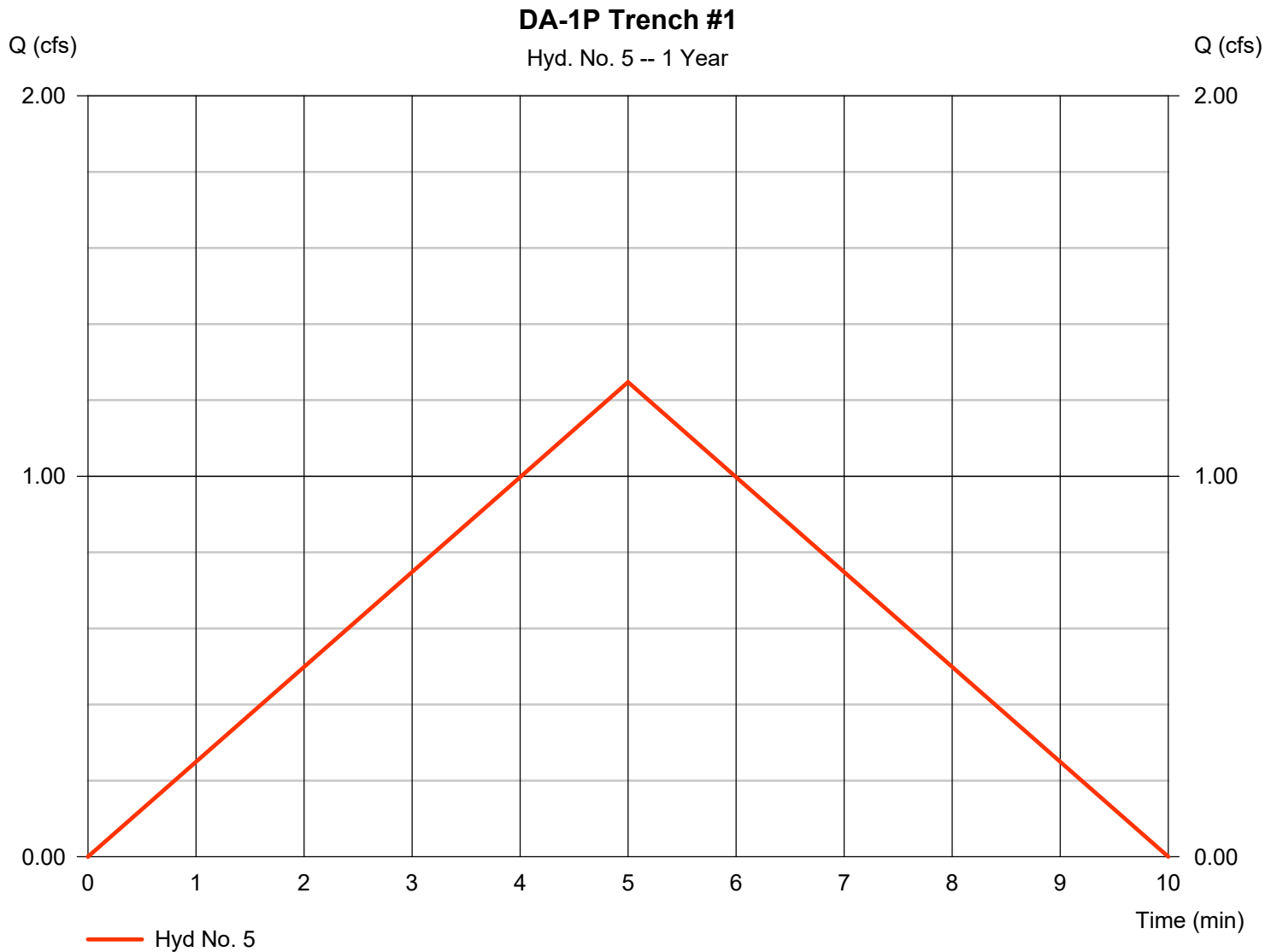


Hydrograph Report

Hyd. No. 5

DA-1P Trench #1

Hydrograph type	= Rational	Peak discharge	= 1.247 cfs
Storm frequency	= 1 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 374 cuft
Drainage area	= 0.470 ac	Runoff coeff.	= 0.64
Intensity	= 4.147 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



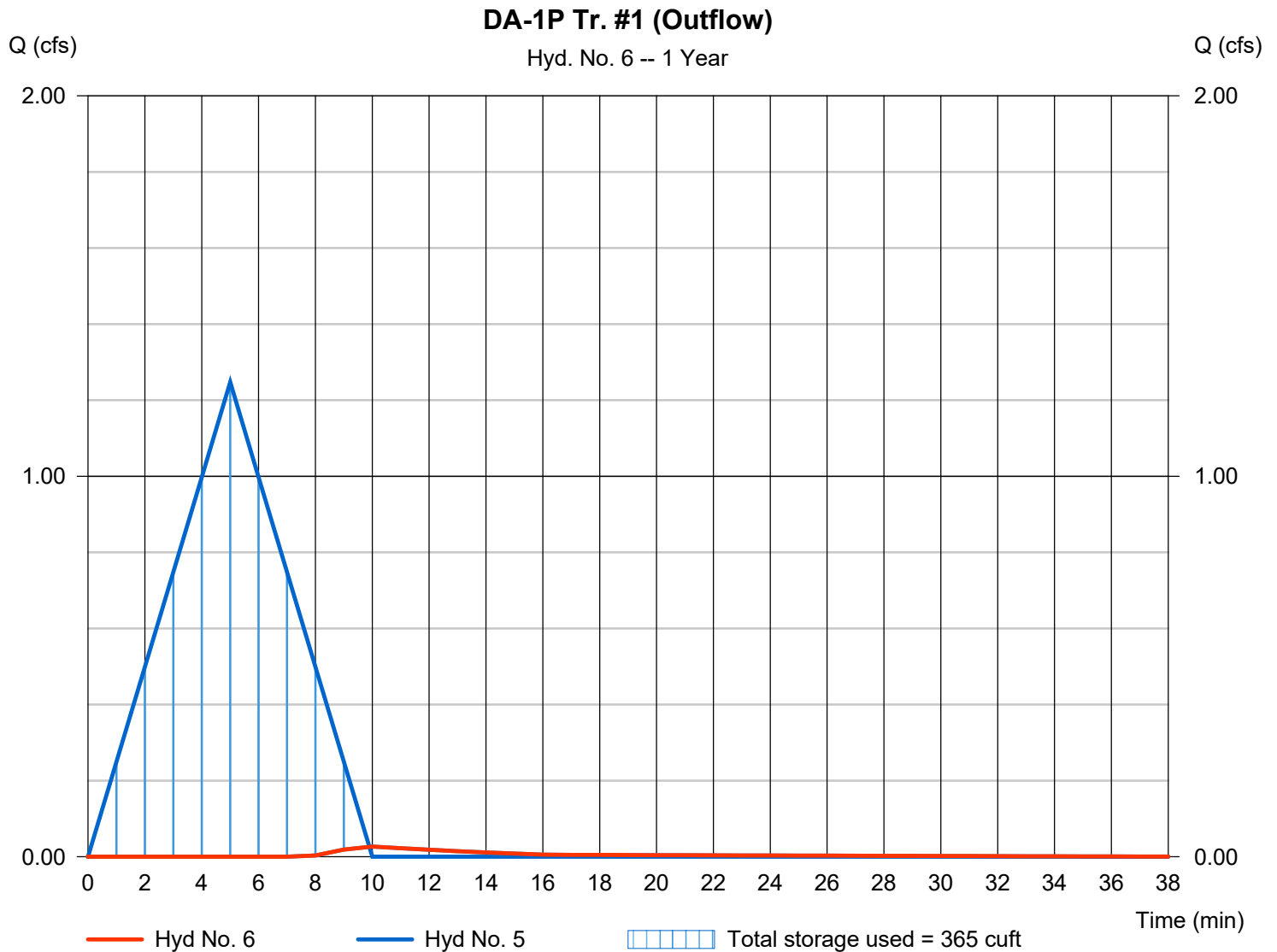
Hydrograph Report

Hyd. No. 6

DA-1P Tr. #1 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.027 cfs
Storm frequency	= 1 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 11 cuft
Inflow hyd. No.	= 5 - DA-1P Trench #1	Max. Elevation	= 251.14 ft
Reservoir name	= Trench #1	Max. Storage	= 365 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

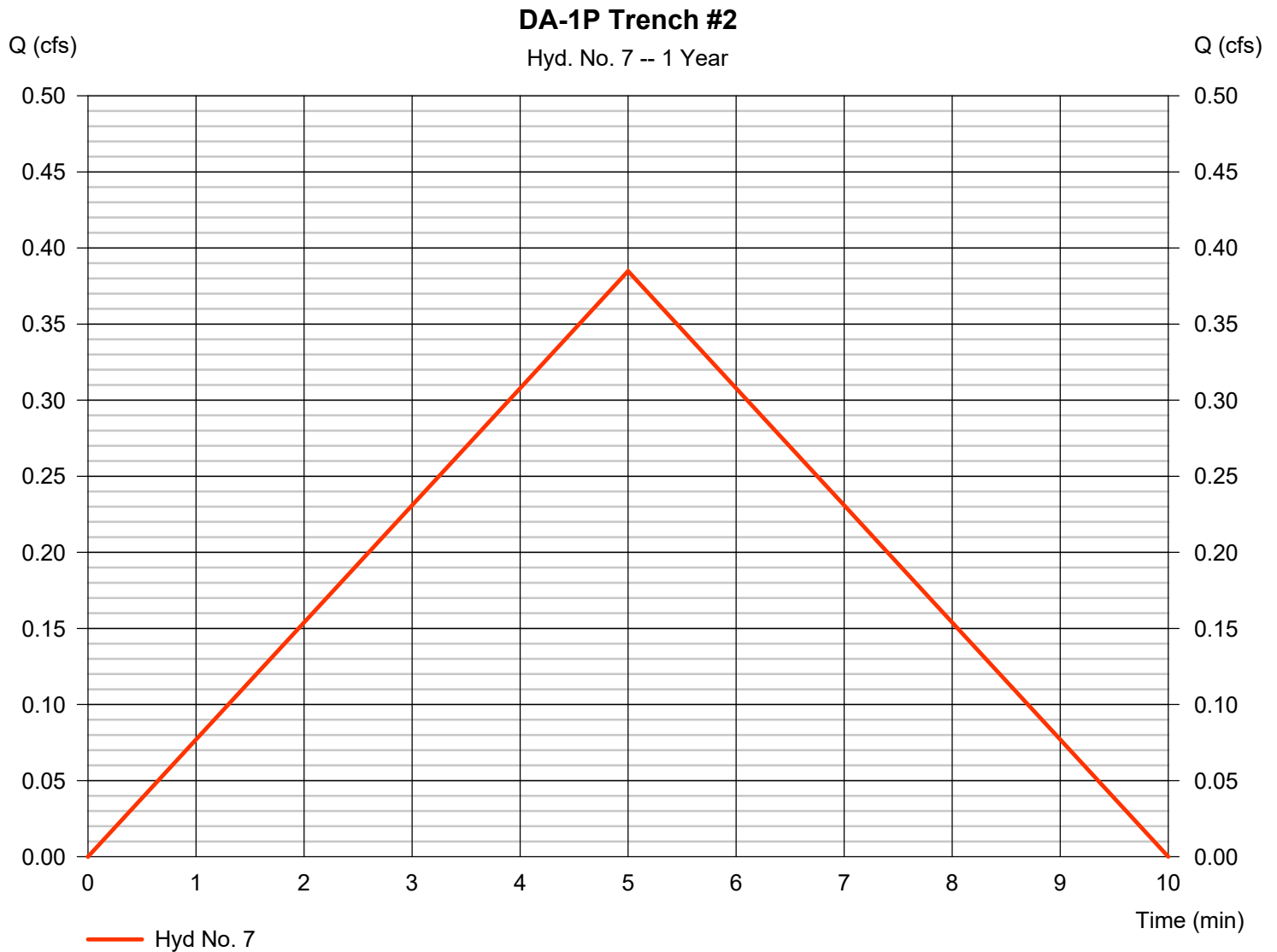


Hydrograph Report

Hyd. No. 7

DA-1P Trench #2

Hydrograph type	= Rational	Peak discharge	= 0.385 cfs
Storm frequency	= 1 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 115 cuft
Drainage area	= 0.160 ac	Runoff coeff.	= 0.58
Intensity	= 4.147 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



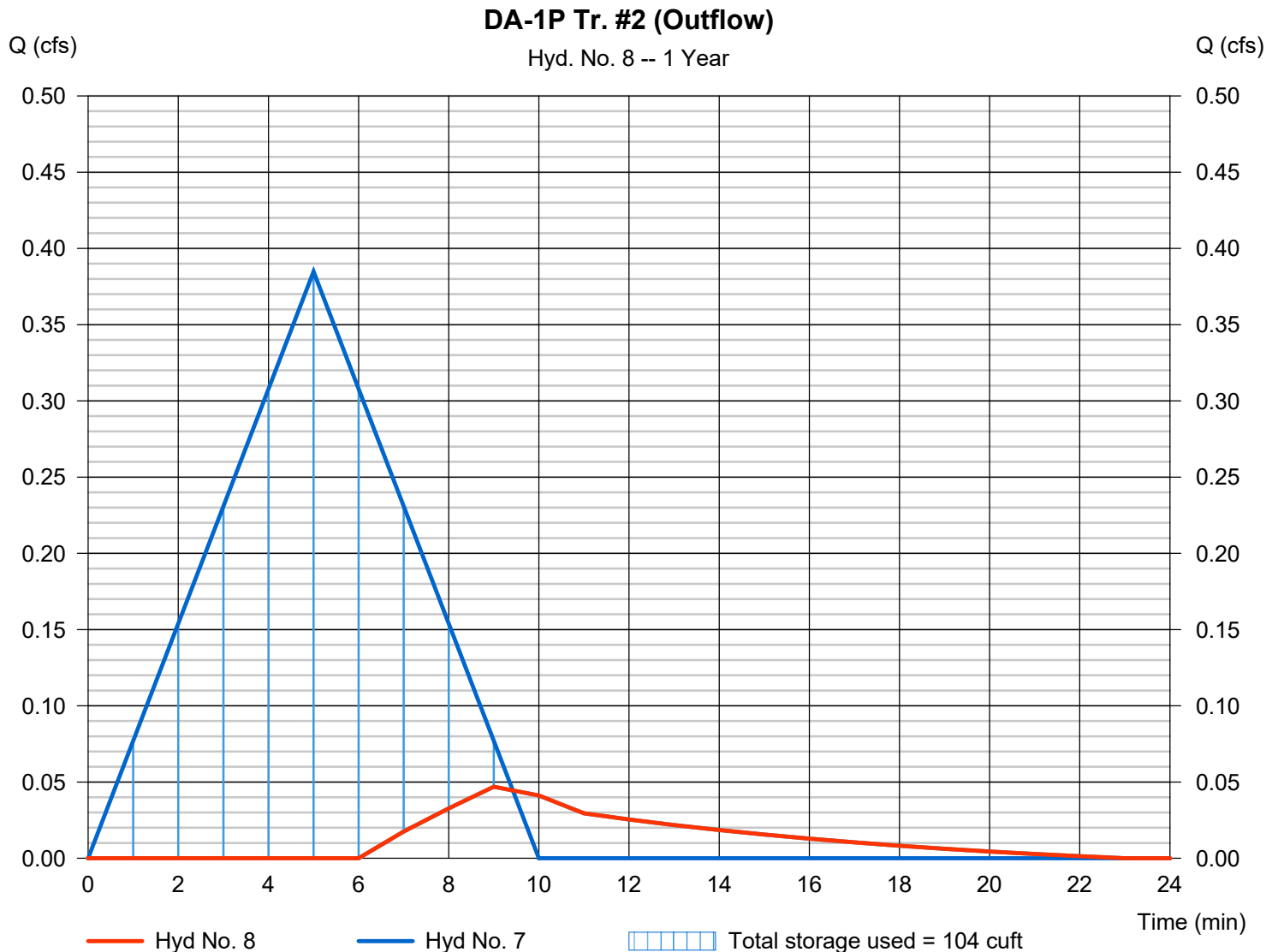
Hydrograph Report

Hyd. No. 8

DA-1P Tr. #2 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.047 cfs
Storm frequency	= 1 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 18 cuft
Inflow hyd. No.	= 7 - DA-1P Trench #2	Max. Elevation	= 260.02 ft
Reservoir name	= Trench #2	Max. Storage	= 104 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

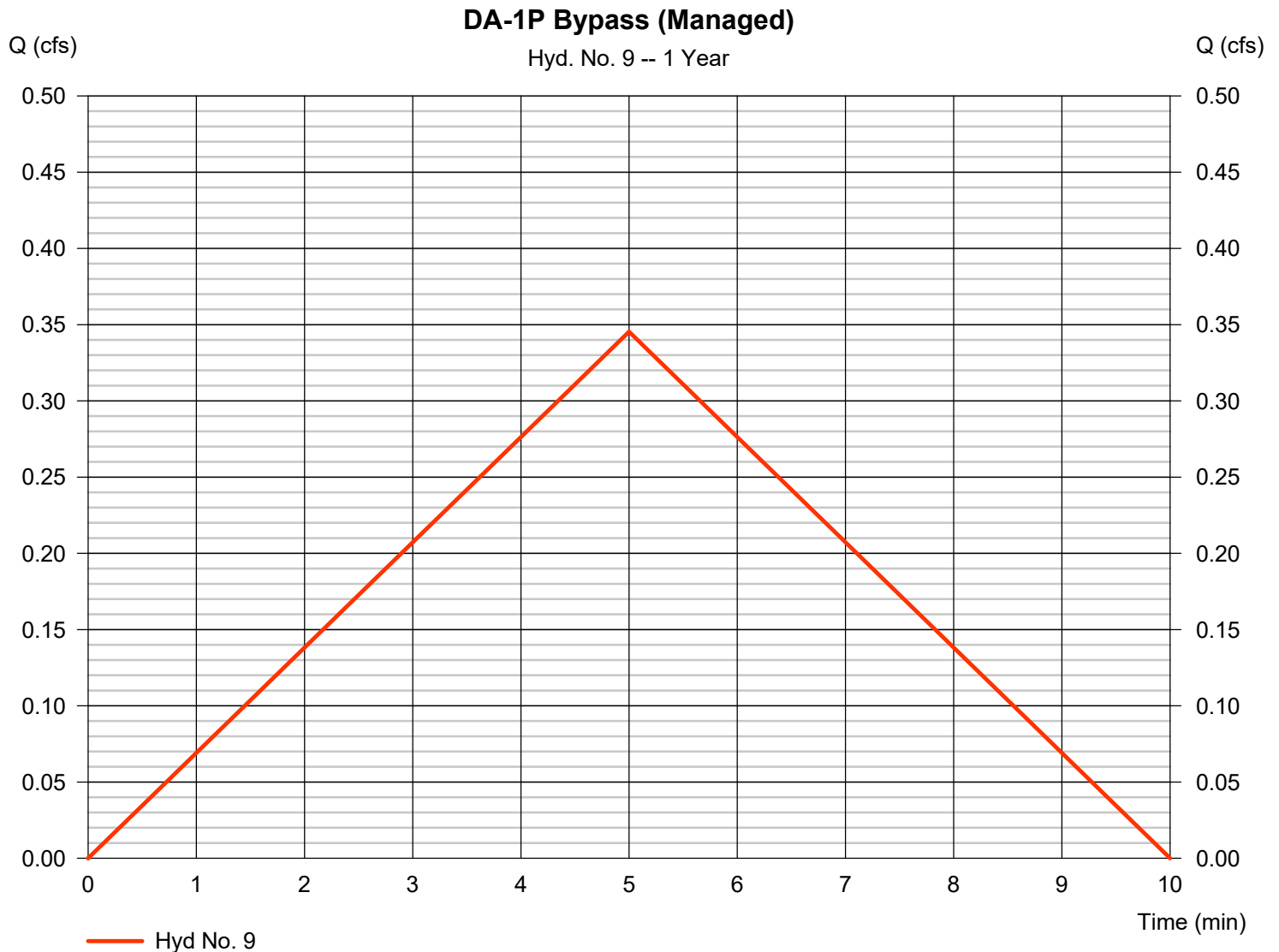


Hydrograph Report

Hyd. No. 9

DA-1P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.345 cfs
Storm frequency	= 1 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 104 cuft
Drainage area	= 0.170 ac	Runoff coeff.	= 0.49
Intensity	= 4.147 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

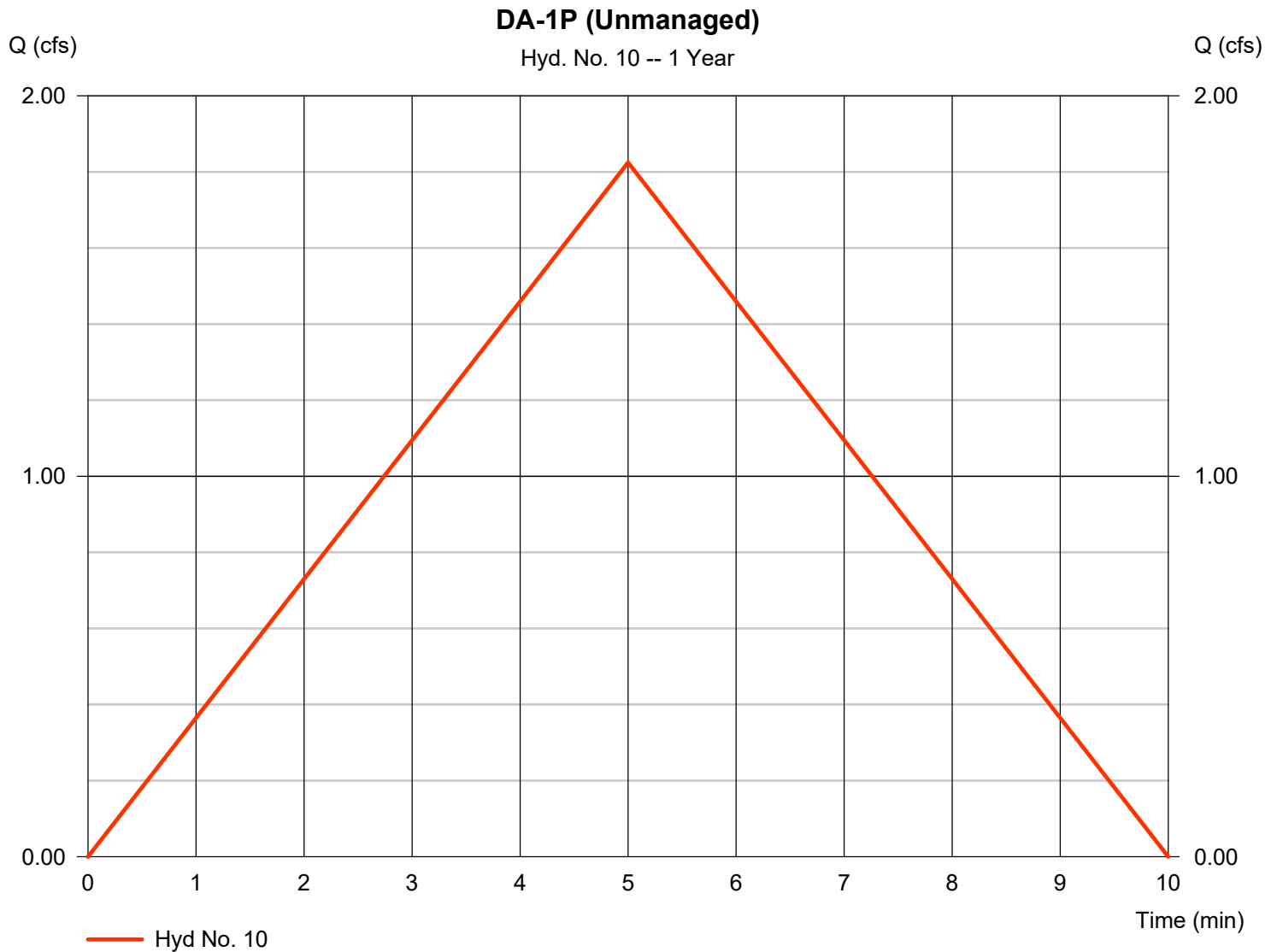


Hydrograph Report

Hyd. No. 10

DA-1P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 1.824 cfs
Storm frequency	= 1 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 547 cuft
Drainage area	= 1.000 ac	Runoff coeff.	= 0.44
Intensity	= 4.147 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



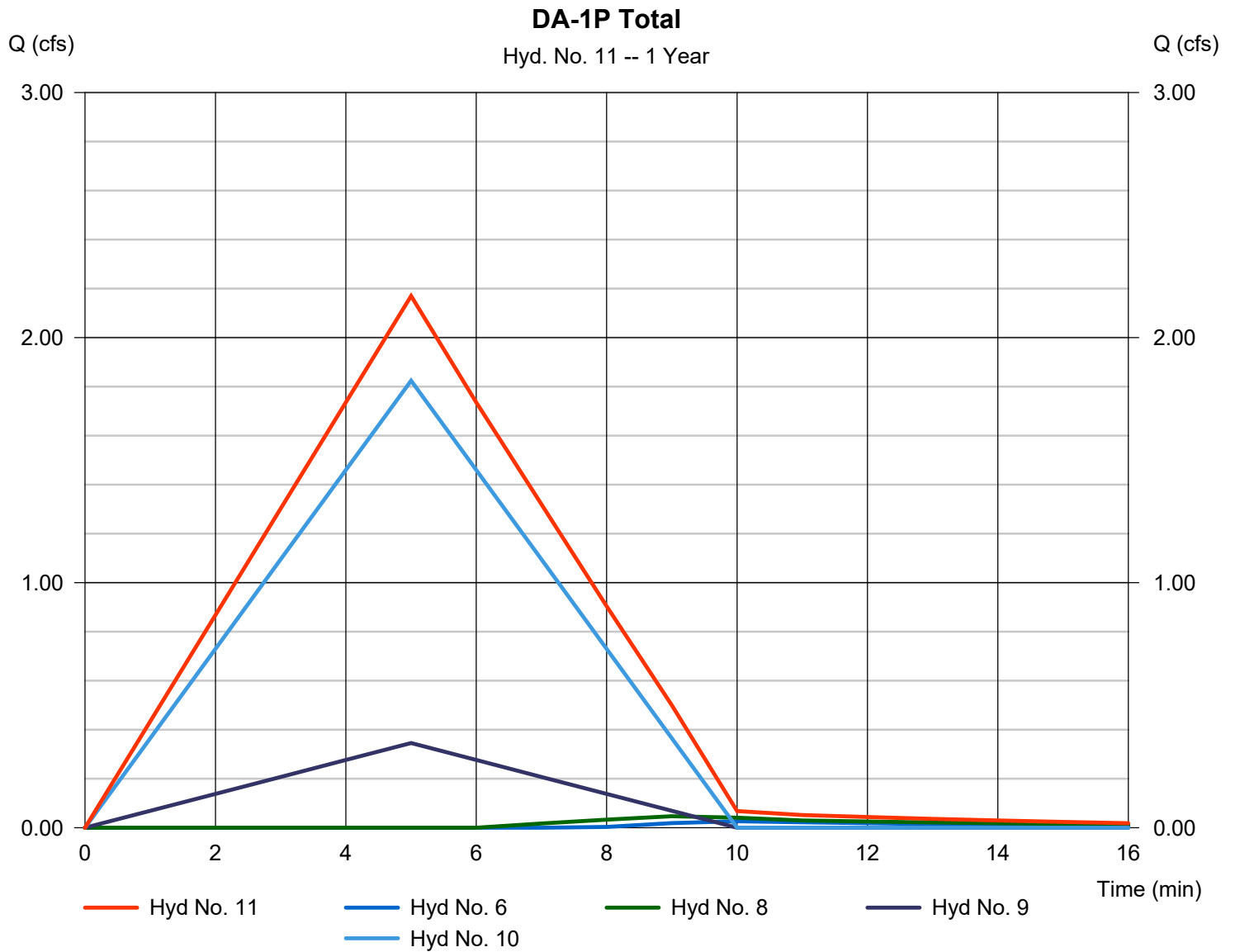
Hydrograph Report

Hyd. No. 11

DA-1P Total

Hydrograph type = Combine
Storm frequency = 1 yrs
Time interval = 1 min
Inflow hyds. = 6, 8, 9, 10

Peak discharge = 2.170 cfs
Time to peak = 5 min
Hyd. volume = 680 cuft
Contrib. drain. area = 1.170 ac

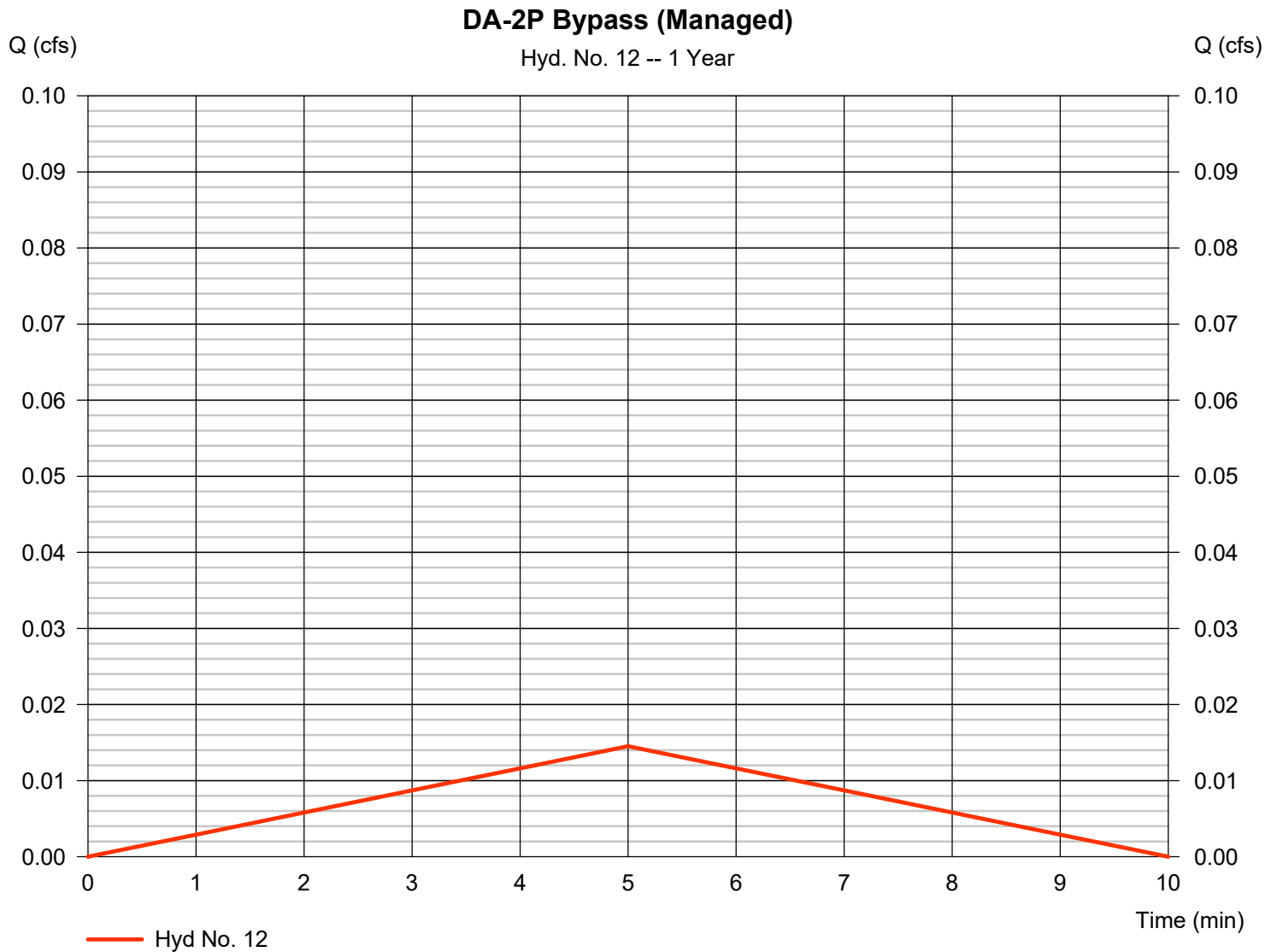


Hydrograph Report

Hyd. No. 12

DA-2P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.015 cfs
Storm frequency	= 1 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 4 cuft
Drainage area	= 0.010 ac	Runoff coeff.	= 0.35
Intensity	= 4.147 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

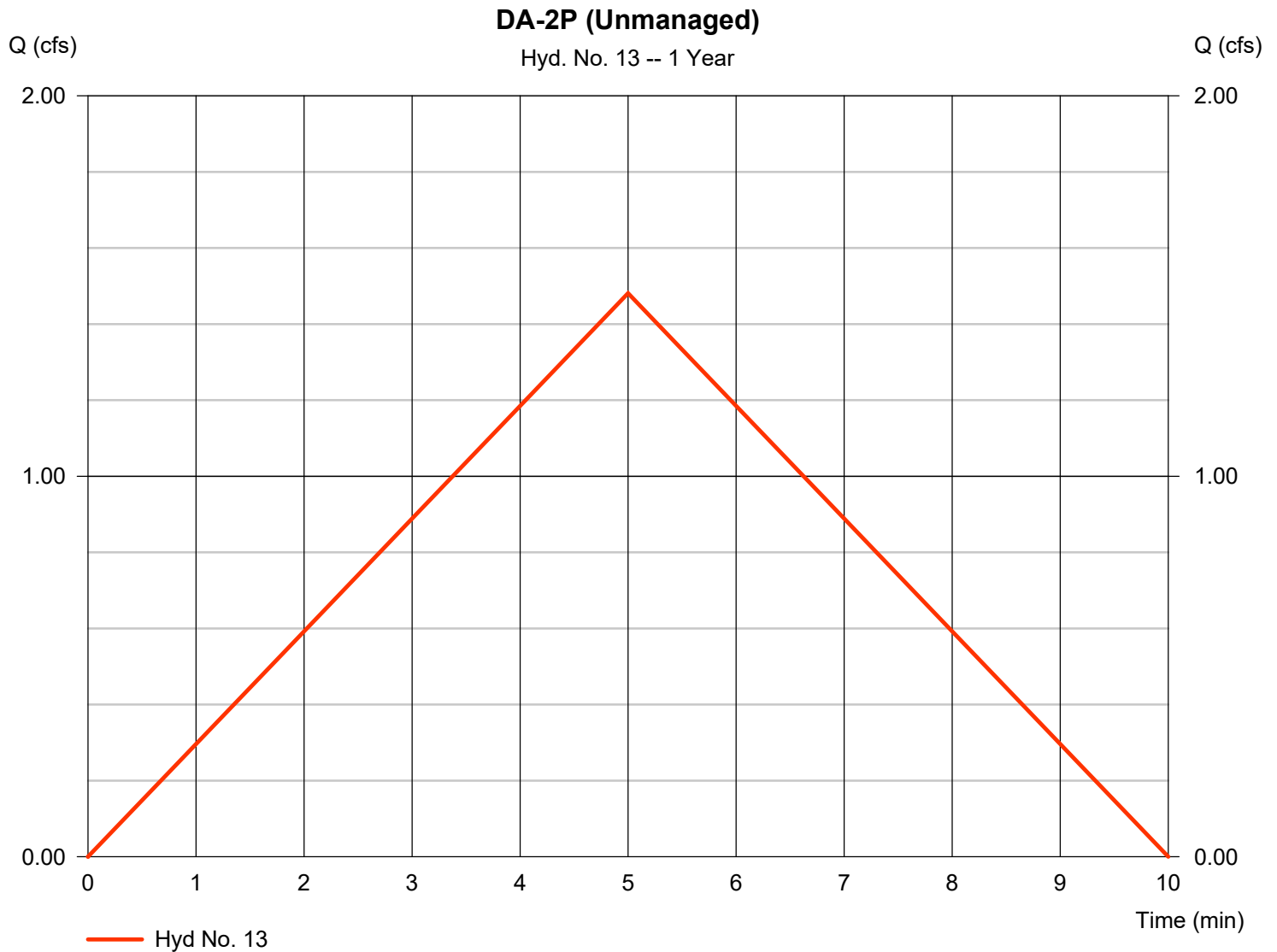


Hydrograph Report

Hyd. No. 13

DA-2P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 1.481 cfs
Storm frequency	= 1 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 444 cuft
Drainage area	= 0.940 ac	Runoff coeff.	= 0.38
Intensity	= 4.147 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



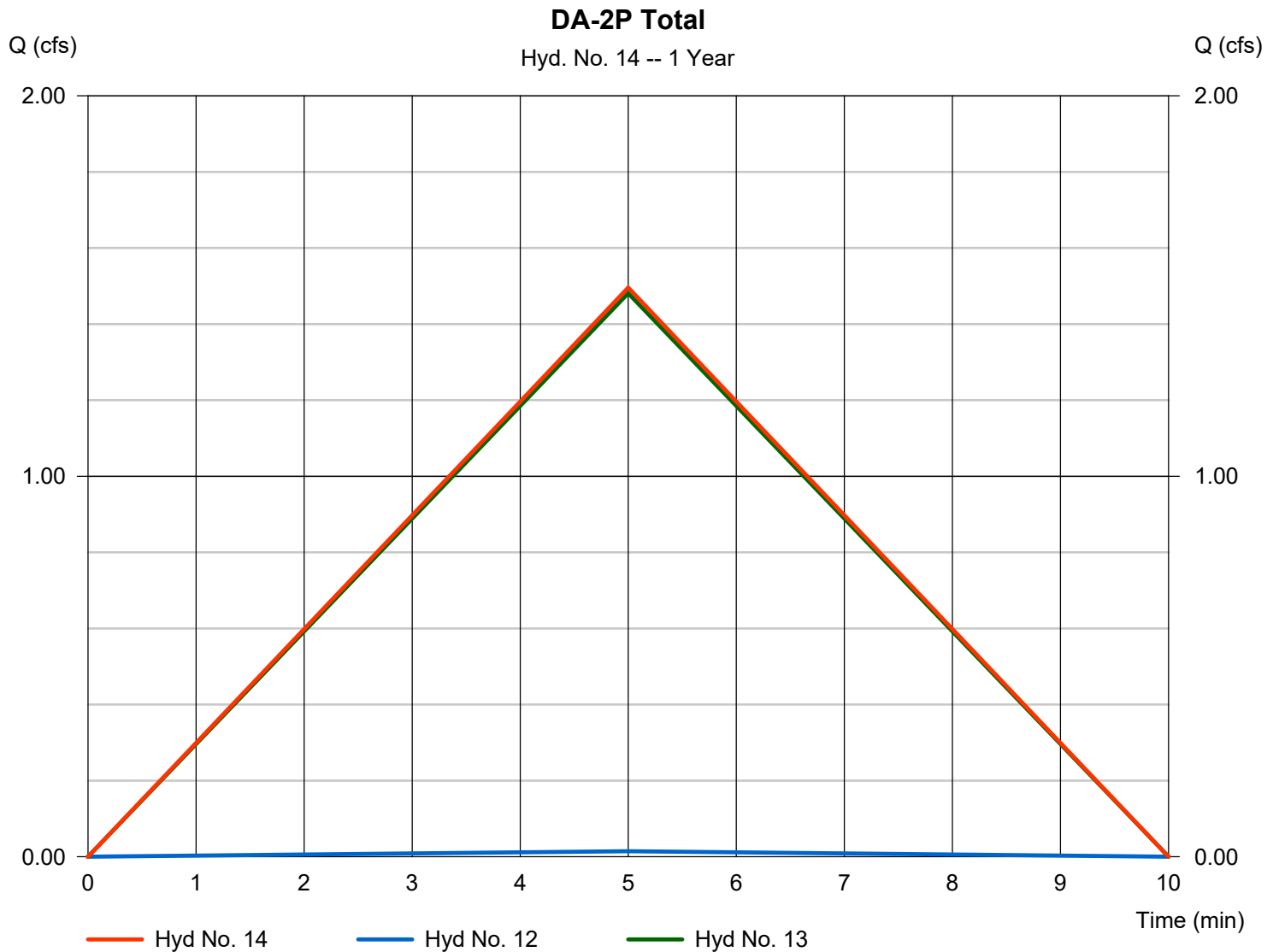
Hydrograph Report

Hyd. No. 14

DA-2P Total

Hydrograph type = Combine
Storm frequency = 1 yrs
Time interval = 1 min
Inflow hyds. = 12, 13

Peak discharge = 1.496 cfs
Time to peak = 5 min
Hyd. volume = 449 cuft
Contrib. drain. area = 0.950 ac



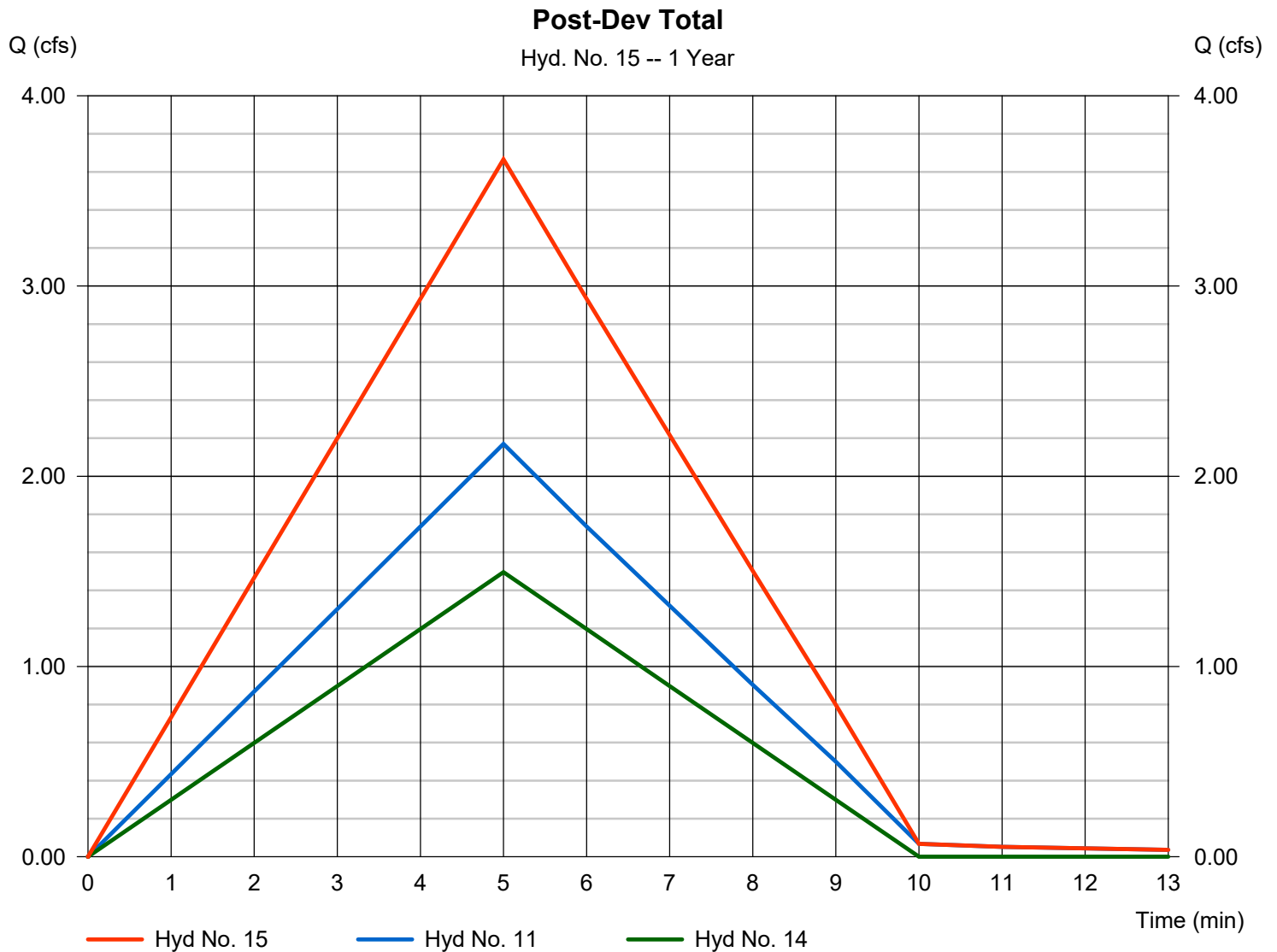
Hydrograph Report

Hyd. No. 15

Post-Dev Total

Hydrograph type = Combine
Storm frequency = 1 yrs
Time interval = 1 min
Inflow hyds. = 11, 14

Peak discharge = 3.666 cfs
Time to peak = 5 min
Hyd. volume = 1,128 cuft
Contrib. drain. area = 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	2.869	1	5	861	----	----	----	DA-1E
2	Rational	1.950	1	5	585	----	----	----	DA-2E
3	Combine	4.819	1	5	1,446	1, 2	----	----	Pre-Dev Total
5	Rational	1.484	1	5	445	----	----	----	DA-1P Trench #1
6	Reservoir	0.161	1	9	70	5	251.31	418	DA-1P Tr. #1 (Outflow)
7	Rational	0.458	1	5	137	----	----	----	DA-1P Trench #2
8	Reservoir	0.097	1	9	36	7	260.08	116	DA-1P Tr. #2 (Outflow)
9	Rational	0.411	1	5	123	----	----	----	DA-1P Bypass (Managed)
10	Rational	2.171	1	5	651	----	----	----	DA-1P (Unmanaged)
11	Combine	2.582	1	5	881	6, 8, 9, 10	----	----	DA-1P Total
12	Rational	0.017	1	5	5	----	----	----	DA-2P Bypass (Managed)
13	Rational	1.763	1	5	529	----	----	----	DA-2P (Unmanaged)
14	Combine	1.780	1	5	534	12, 13	----	----	DA-2P Total
15	Combine	4.362	1	5	1,415	11, 14	----	----	Post-Dev Total
Rev-0.gpw					Return Period: 20 Year			Monday, 11 / 14 / 2022	

Hydrograph Report

Hyd. No. 1

DA-1E

Hydrograph type	= Rational	Peak discharge	= 2.869 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 861 cuft
Drainage area	= 1.710 ac	Runoff coeff.	= 0.34
Intensity	= 4.935 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

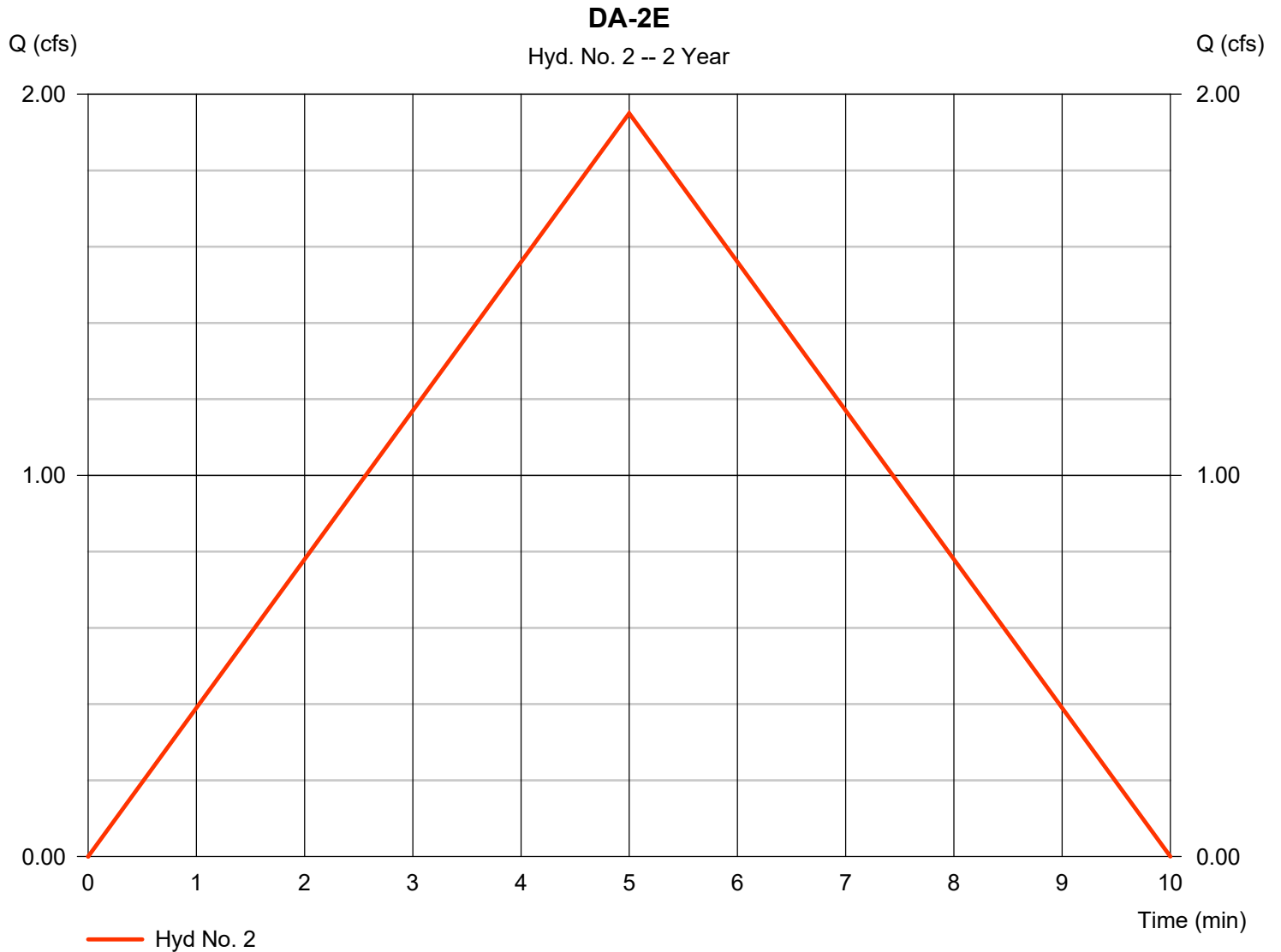


Hydrograph Report

Hyd. No. 2

DA-2E

Hydrograph type	= Rational	Peak discharge	= 1.950 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 585 cuft
Drainage area	= 1.040 ac	Runoff coeff.	= 0.38
Intensity	= 4.935 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



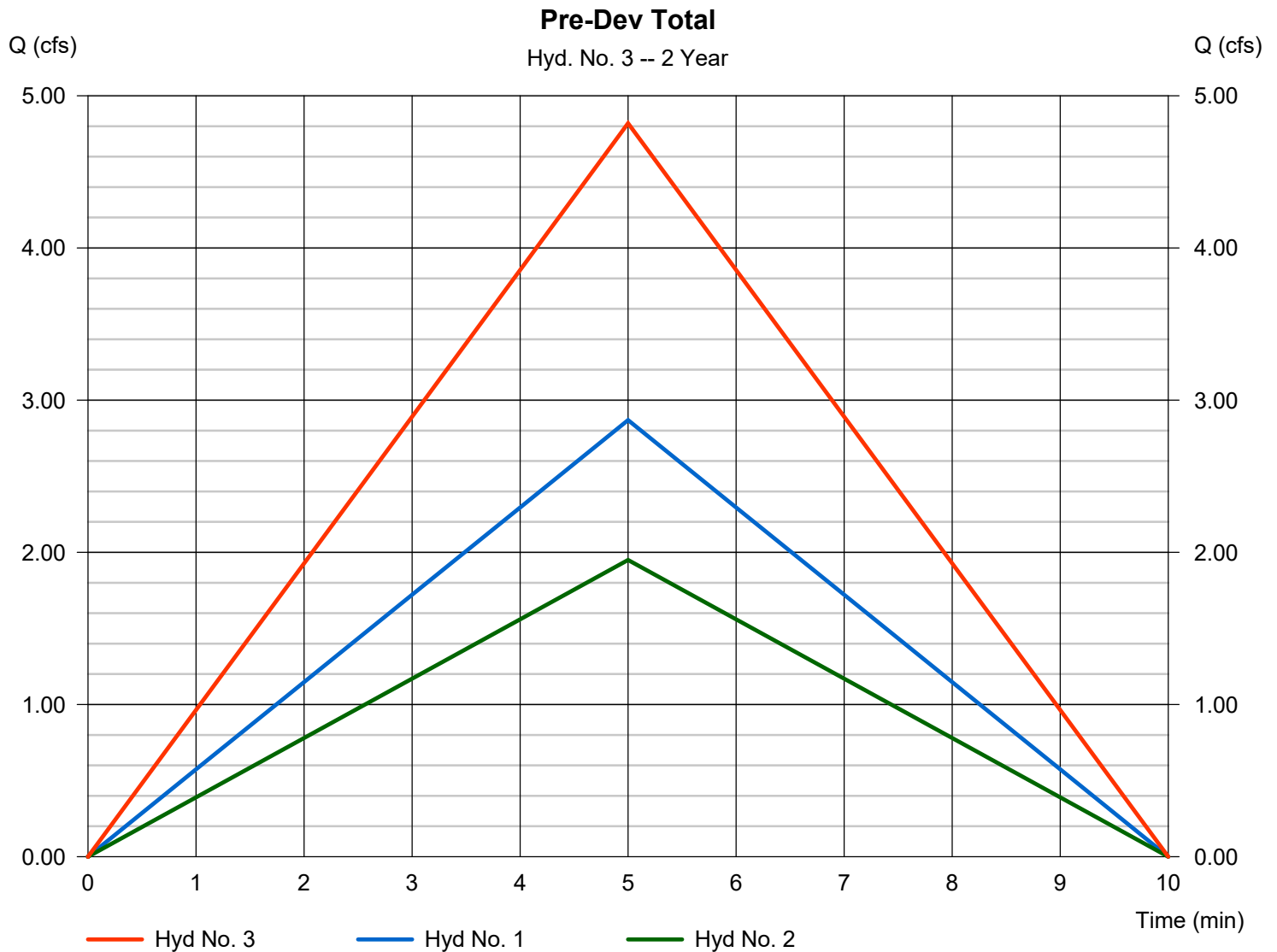
Hydrograph Report

Hyd. No. 3

Pre-Dev Total

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 1 min
Inflow hyds. = 1, 2

Peak discharge = 4.819 cfs
Time to peak = 5 min
Hyd. volume = 1,446 cuft
Contrib. drain. area = 2.750 ac



Hydrograph Report

Hyd. No. 5

DA-1P Trench #1

Hydrograph type	= Rational	Peak discharge	= 1.484 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 445 cuft
Drainage area	= 0.470 ac	Runoff coeff.	= 0.64
Intensity	= 4.935 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



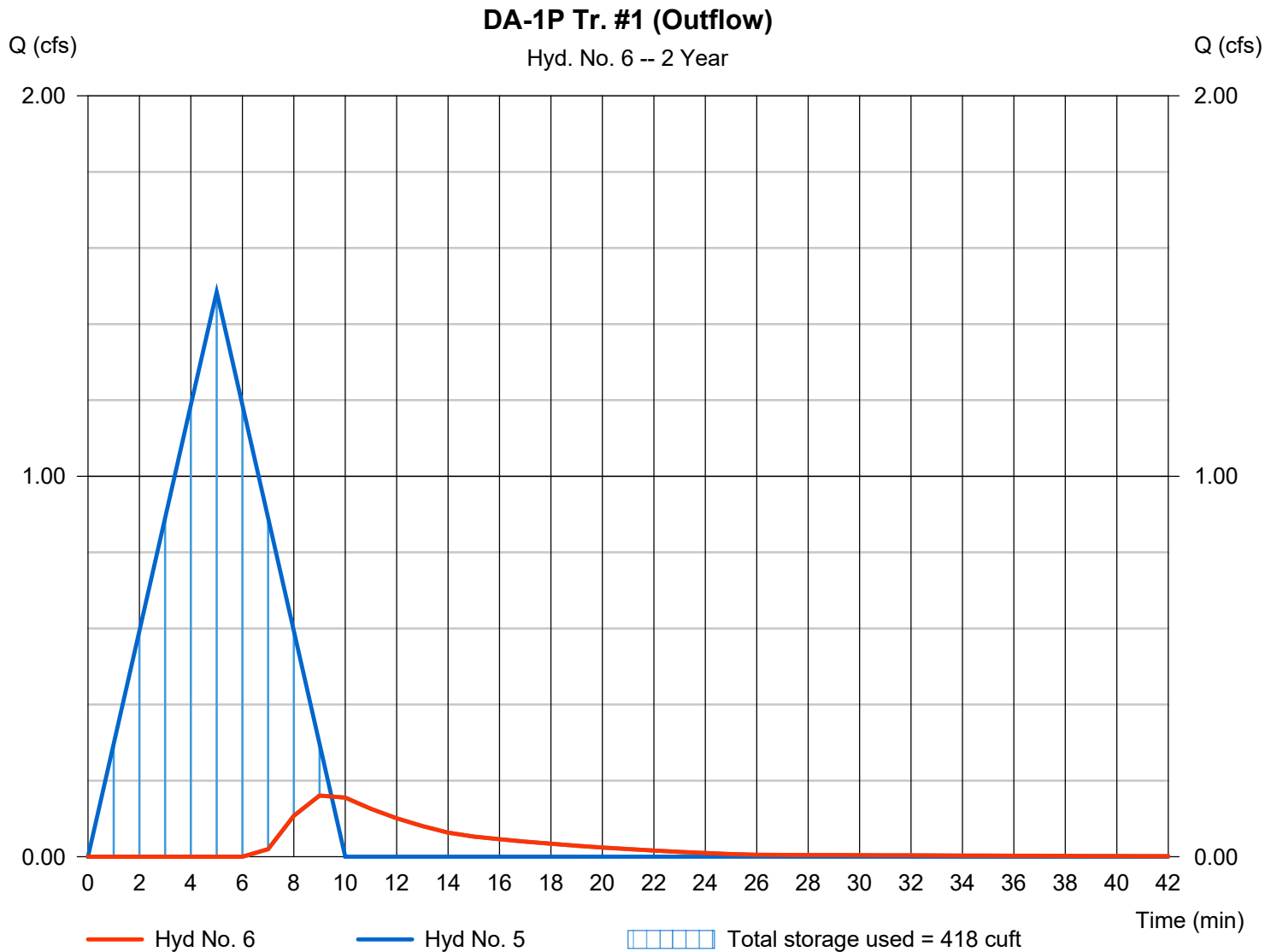
Hydrograph Report

Hyd. No. 6

DA-1P Tr. #1 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.161 cfs
Storm frequency	= 2 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 70 cuft
Inflow hyd. No.	= 5 - DA-1P Trench #1	Max. Elevation	= 251.31 ft
Reservoir name	= Trench #1	Max. Storage	= 418 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

Hyd. No. 7

DA-1P Trench #2

Hydrograph type	= Rational	Peak discharge	= 0.458 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 137 cuft
Drainage area	= 0.160 ac	Runoff coeff.	= 0.58
Intensity	= 4.935 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



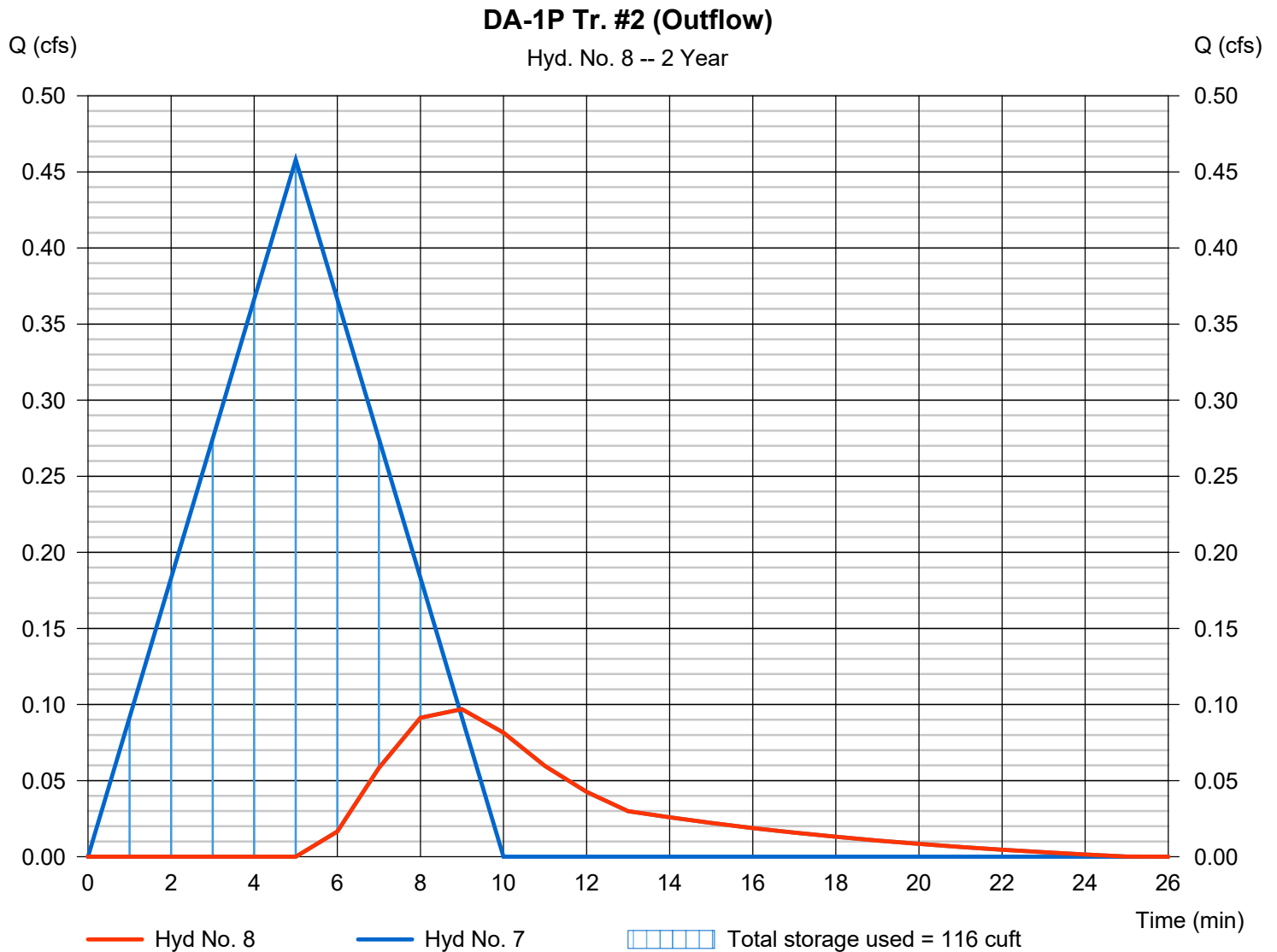
Hydrograph Report

Hyd. No. 8

DA-1P Tr. #2 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.097 cfs
Storm frequency	= 2 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 36 cuft
Inflow hyd. No.	= 7 - DA-1P Trench #2	Max. Elevation	= 260.08 ft
Reservoir name	= Trench #2	Max. Storage	= 116 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

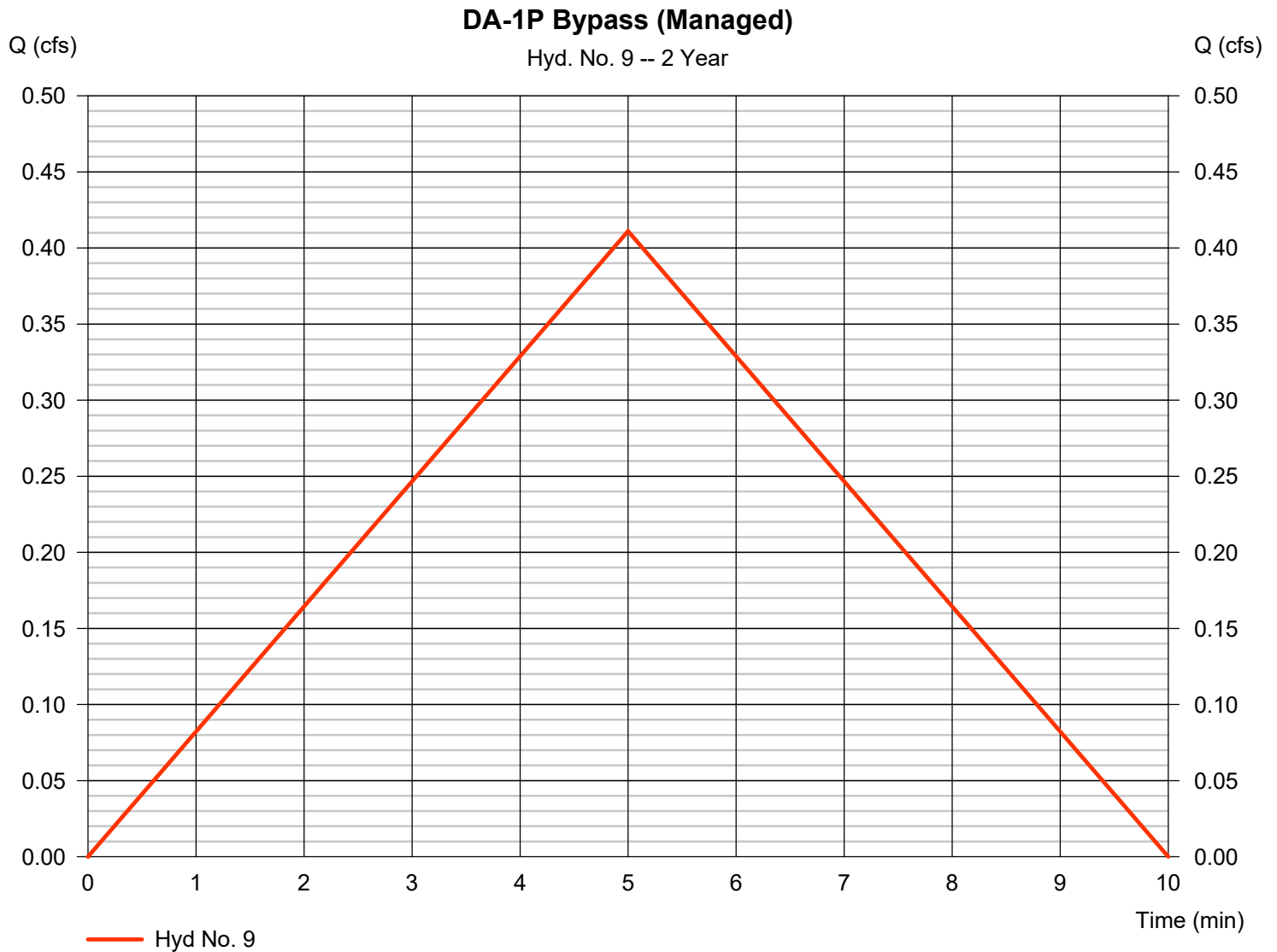


Hydrograph Report

Hyd. No. 9

DA-1P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.411 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 123 cuft
Drainage area	= 0.170 ac	Runoff coeff.	= 0.49
Intensity	= 4.935 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

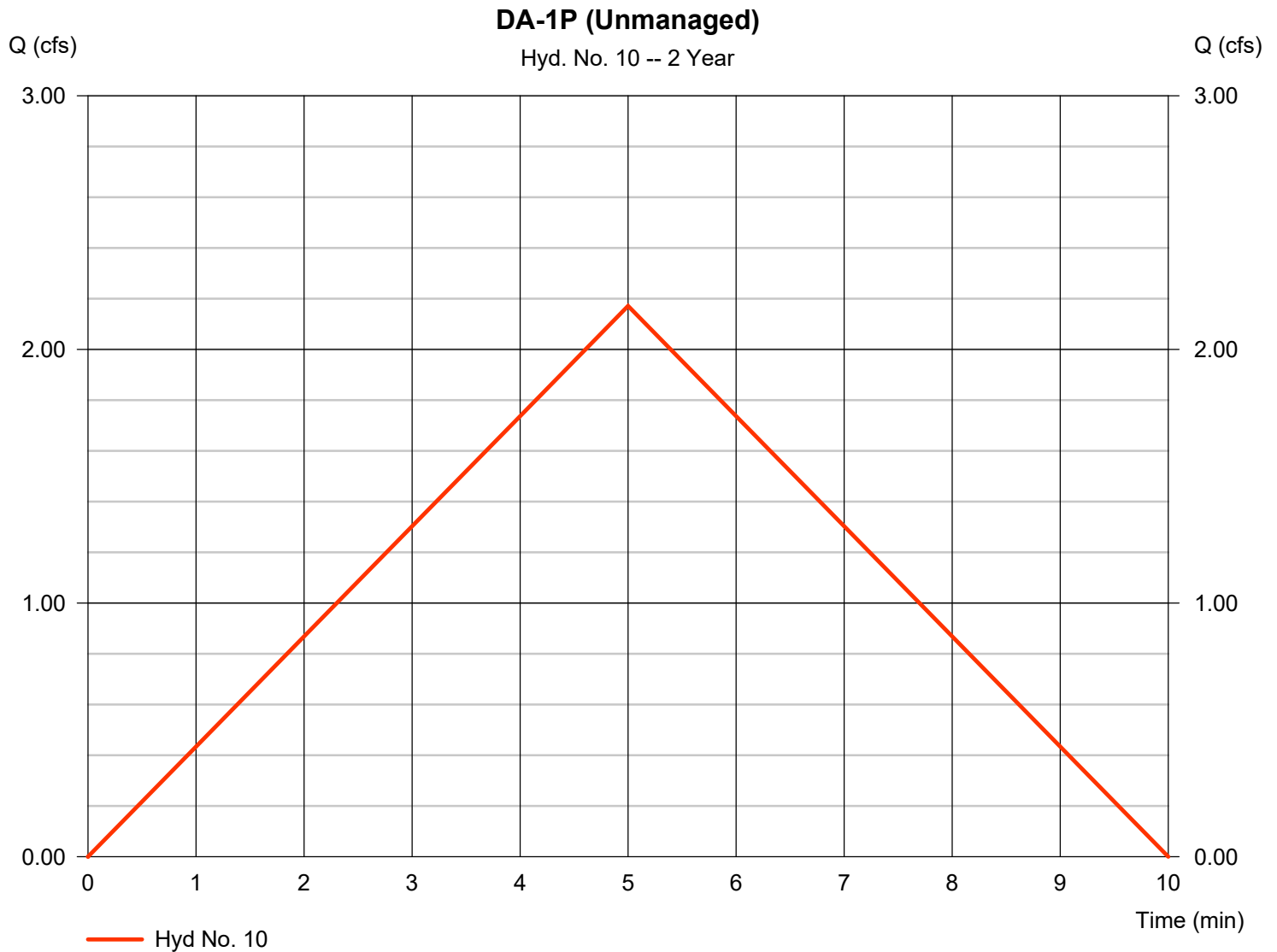


Hydrograph Report

Hyd. No. 10

DA-1P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 2.171 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 651 cuft
Drainage area	= 1.000 ac	Runoff coeff.	= 0.44
Intensity	= 4.935 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

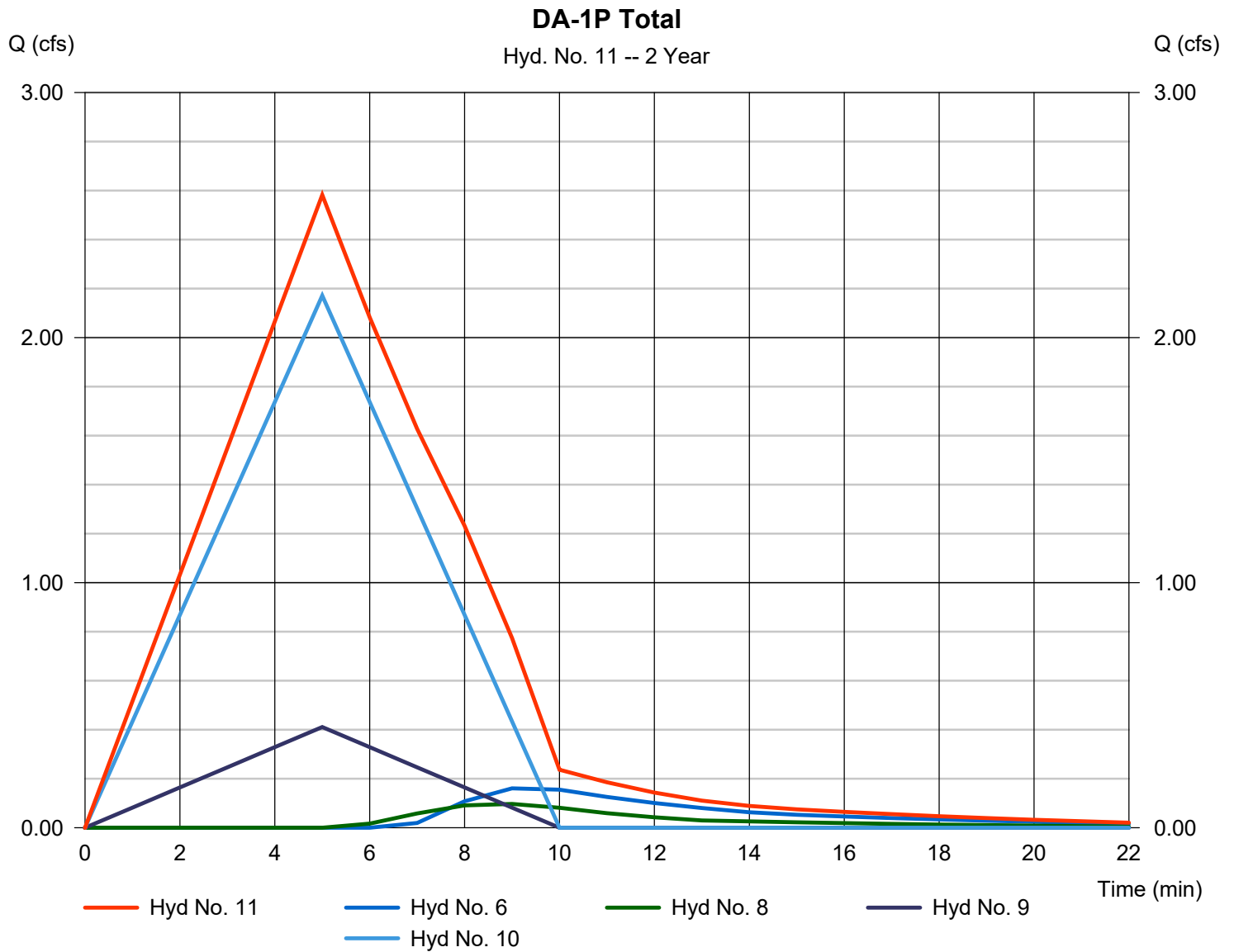


Hydrograph Report

Hyd. No. 11

DA-1P Total

Hydrograph type	= Combine	Peak discharge	= 2.582 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 881 cuft
Inflow hyds.	= 6, 8, 9, 10	Contrib. drain. area	= 1.170 ac

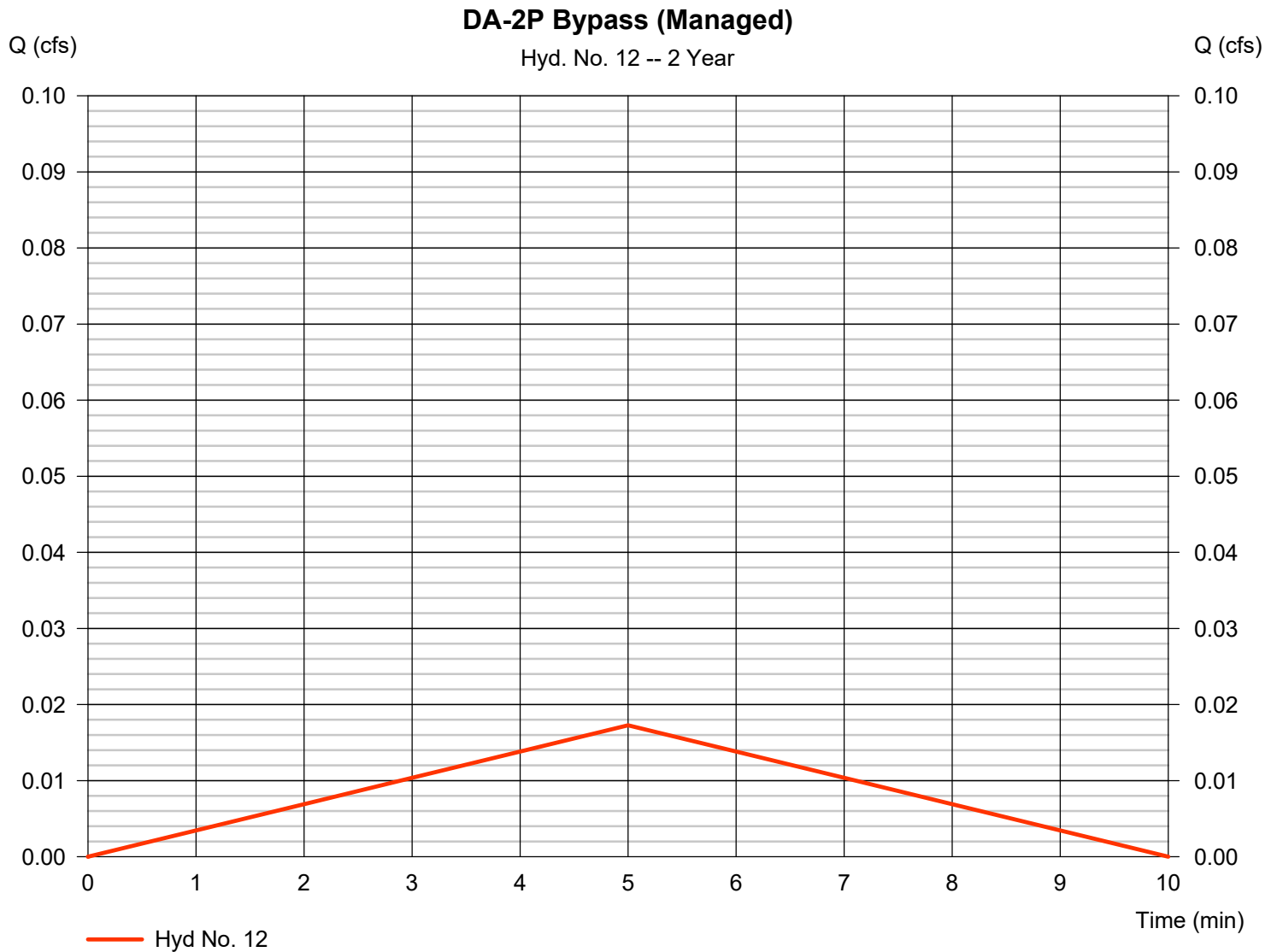


Hydrograph Report

Hyd. No. 12

DA-2P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.017 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 5 cuft
Drainage area	= 0.010 ac	Runoff coeff.	= 0.35
Intensity	= 4.935 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

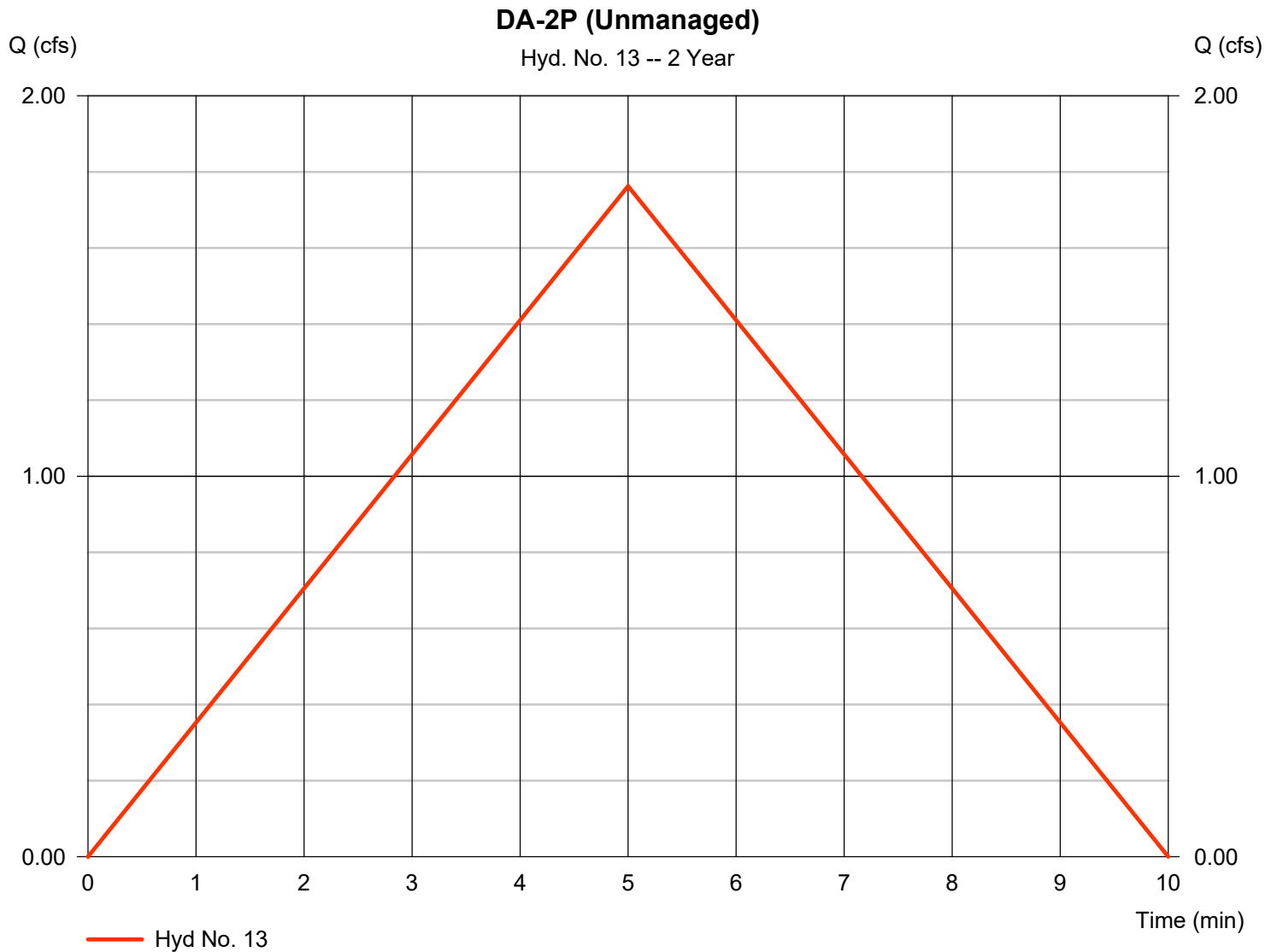


Hydrograph Report

Hyd. No. 13

DA-2P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 1.763 cfs
Storm frequency	= 2 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 529 cuft
Drainage area	= 0.940 ac	Runoff coeff.	= 0.38
Intensity	= 4.935 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



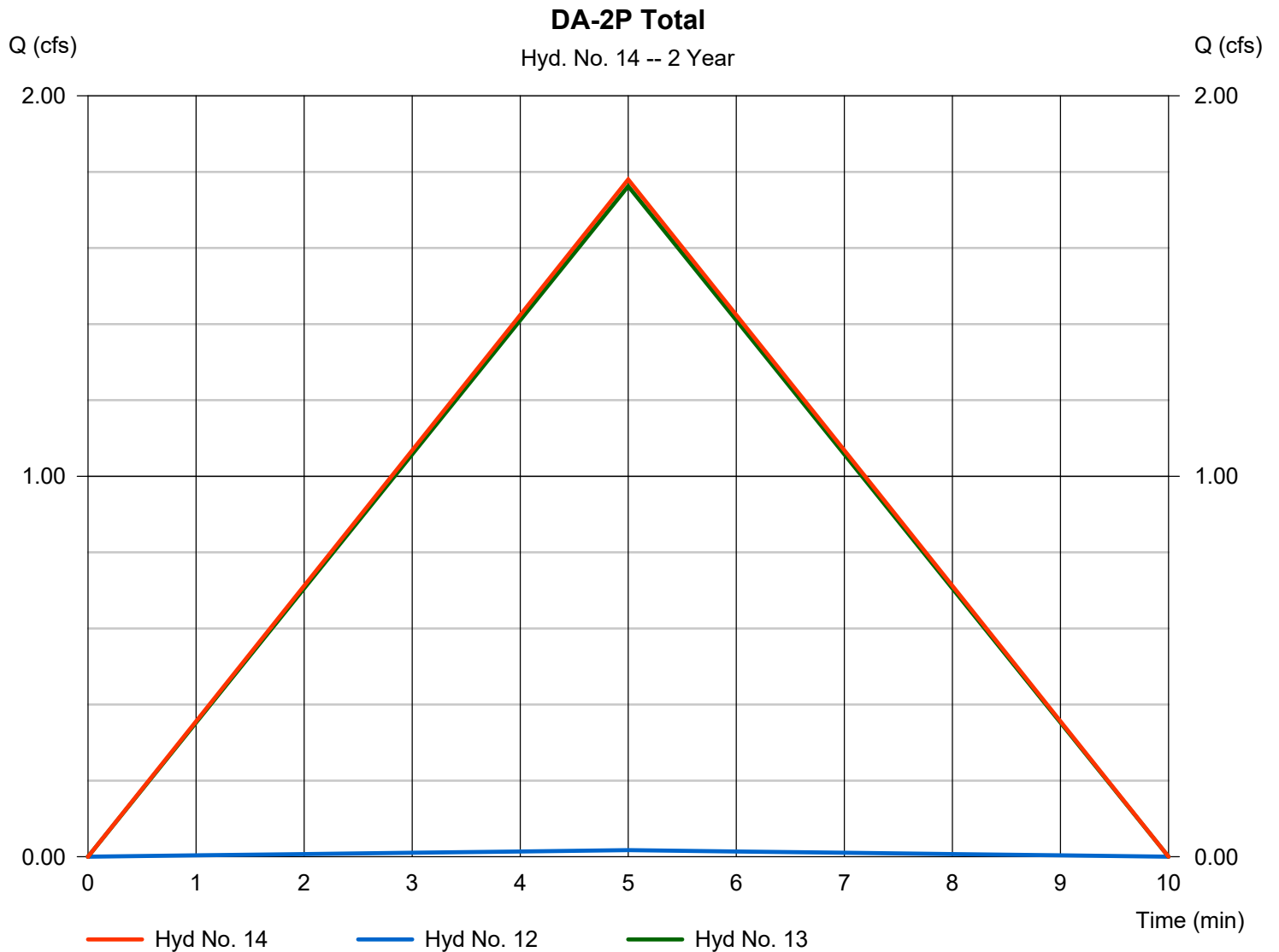
Hydrograph Report

Hyd. No. 14

DA-2P Total

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 1 min
Inflow hyds. = 12, 13

Peak discharge = 1.780 cfs
Time to peak = 5 min
Hyd. volume = 534 cuft
Contrib. drain. area = 0.950 ac



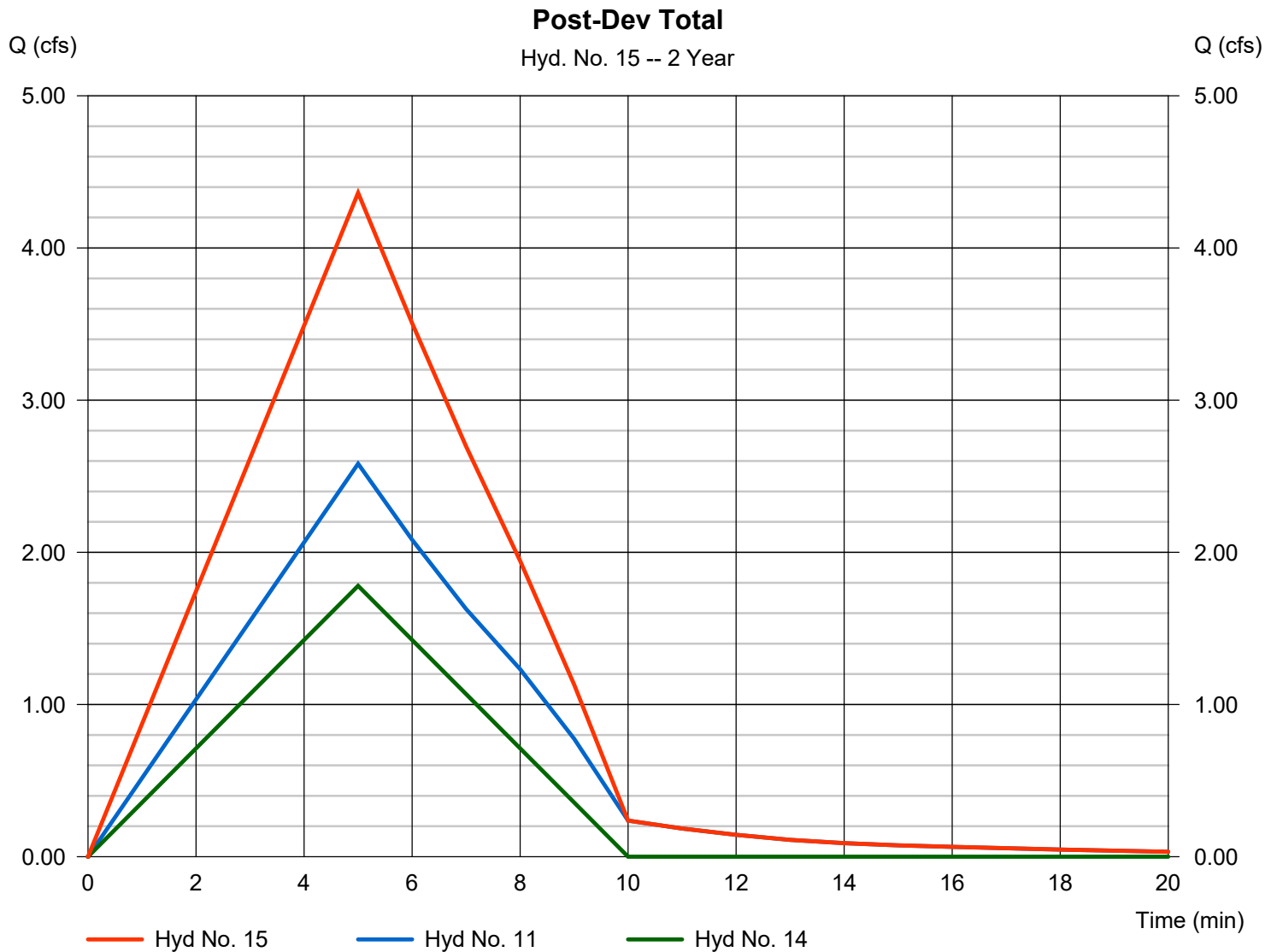
Hydrograph Report

Hyd. No. 15

Post-Dev Total

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 1 min
Inflow hyds. = 11, 14

Peak discharge = 4.362 cfs
Time to peak = 5 min
Hyd. volume = 1,415 cuft
Contrib. drain. area = 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

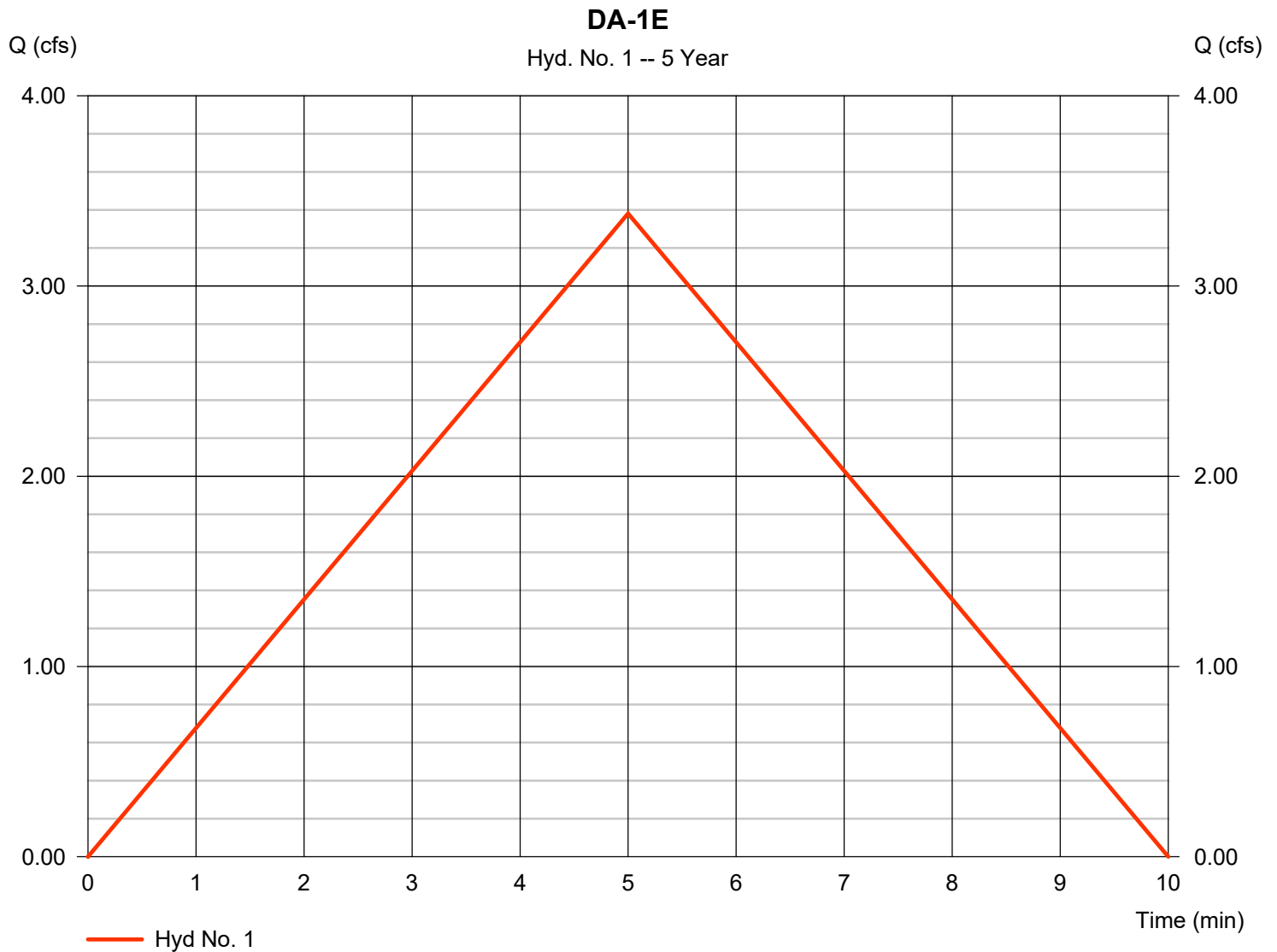
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	3.381	1	5	1,014	----	----	----	DA-1E
2	Rational	2.298	1	5	689	----	----	----	DA-2E
3	Combine	5.679	1	5	1,704	1, 2	----	----	Pre-Dev Total
5	Rational	1.749	1	5	525	----	----	----	DA-1P Trench #1
6	Reservoir	0.301	1	9	144	5	251.47	472	DA-1P Tr. #1 (Outflow)
7	Rational	0.540	1	5	162	----	----	----	DA-1P Trench #2
8	Reservoir	0.156	1	8	59	7	260.14	129	DA-1P Tr. #2 (Outflow)
9	Rational	0.484	1	5	145	----	----	----	DA-1P Bypass (Managed)
10	Rational	2.559	1	5	768	----	----	----	DA-1P (Unmanaged)
11	Combine	3.043	1	5	1,116	6, 8, 9, 10	----	----	DA-1P Total
12	Rational	0.020	1	5	6	----	----	----	DA-2P Bypass (Managed)
13	Rational	2.077	1	5	623	----	----	----	DA-2P (Unmanaged)
14	Combine	2.098	1	5	629	12, 13	----	----	DA-2P Total
15	Combine	5.141	1	5	1,745	11, 14	----	----	Post-Dev Total
Rev-0.gpw					Return Period: 50 Year			Monday, 11 / 14 / 2022	

Hydrograph Report

Hyd. No. 1

DA-1E

Hydrograph type	= Rational	Peak discharge	= 3.381 cfs
Storm frequency	= 5 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 1,014 cuft
Drainage area	= 1.710 ac	Runoff coeff.	= 0.34
Intensity	= 5.815 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

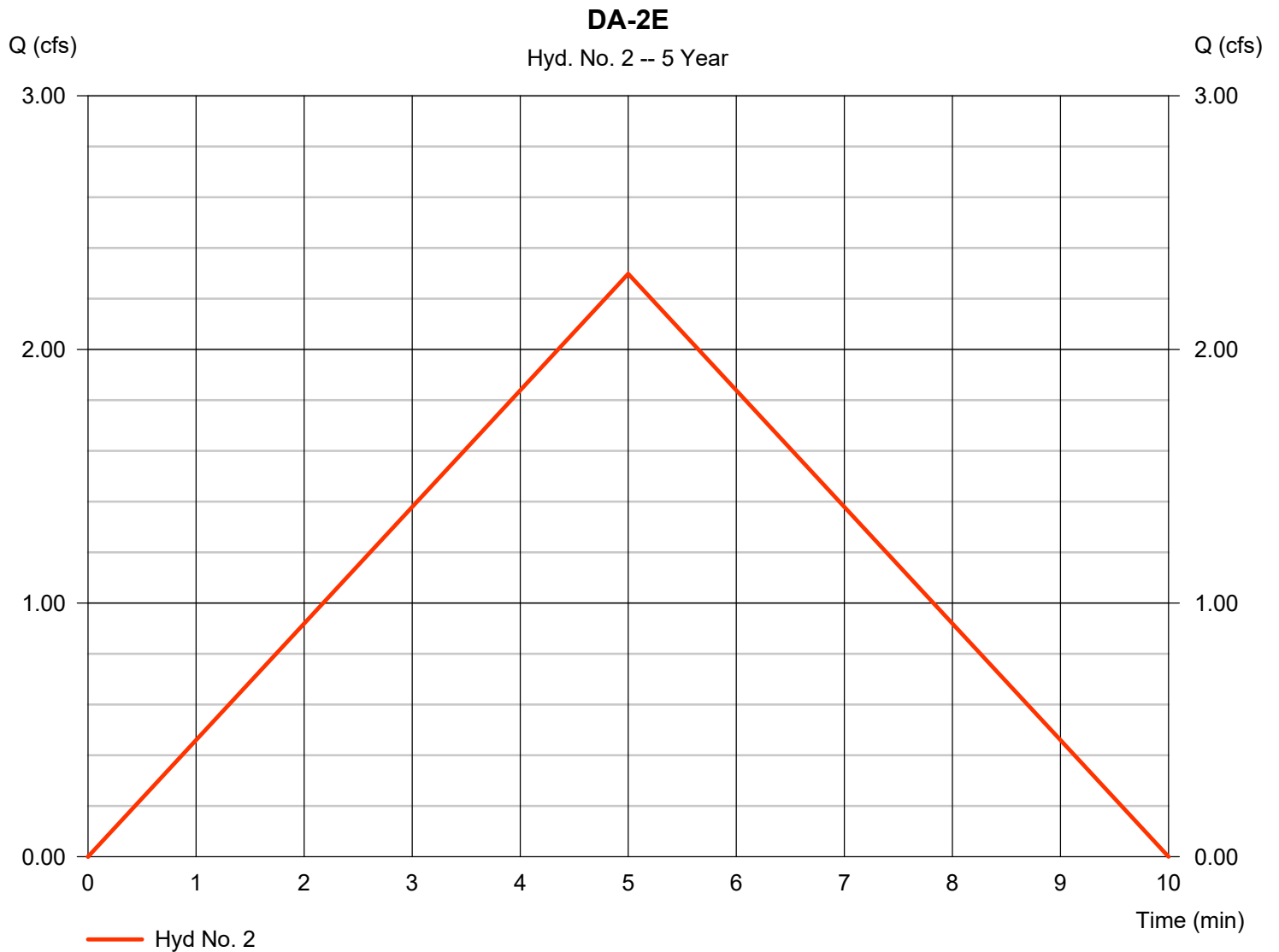


Hydrograph Report

Hyd. No. 2

DA-2E

Hydrograph type	= Rational	Peak discharge	= 2.298 cfs
Storm frequency	= 5 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 689 cuft
Drainage area	= 1.040 ac	Runoff coeff.	= 0.38
Intensity	= 5.815 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



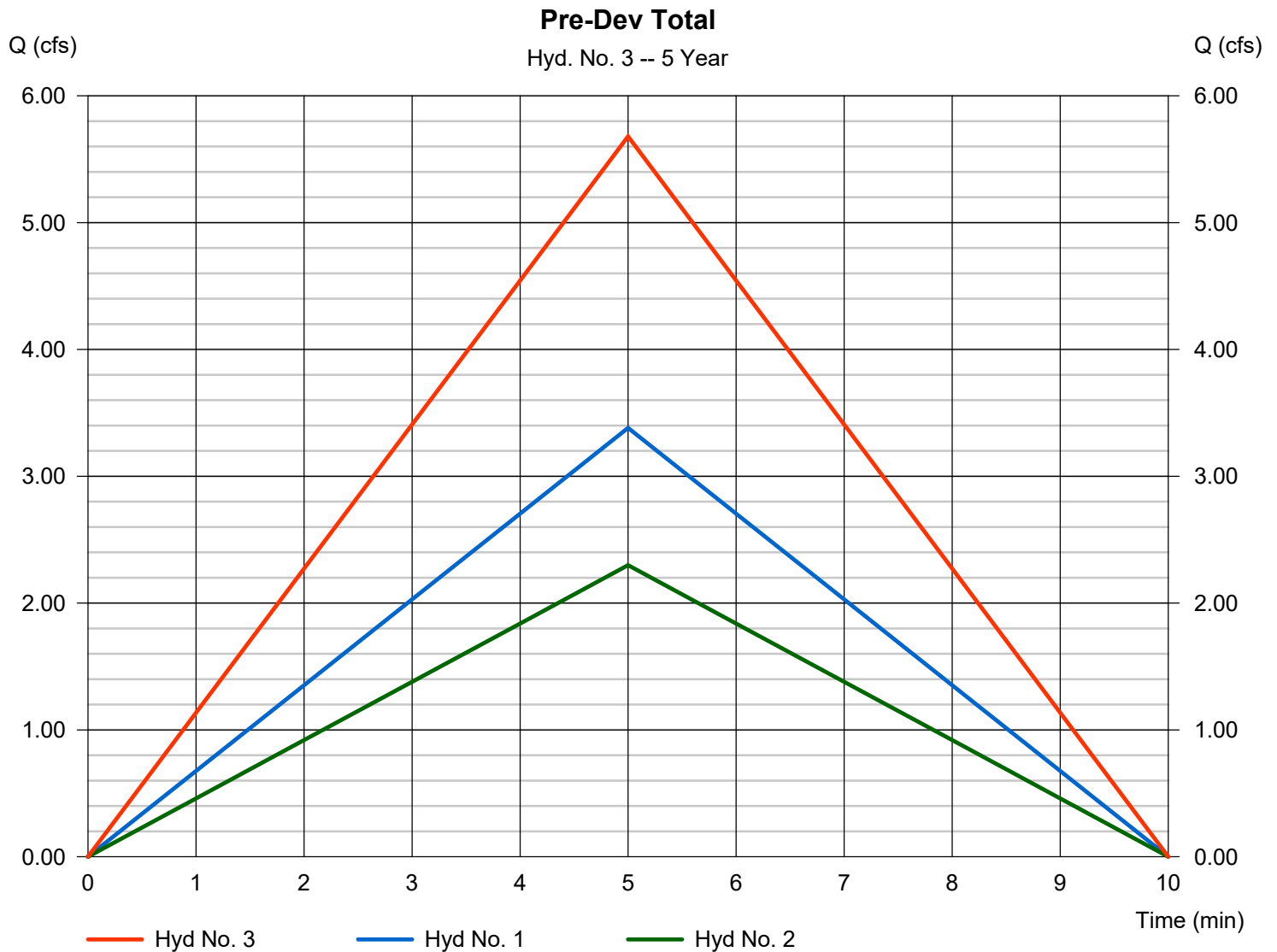
Hydrograph Report

Hyd. No. 3

Pre-Dev Total

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 1 min
Inflow hyds. = 1, 2

Peak discharge = 5.679 cfs
Time to peak = 5 min
Hyd. volume = 1,704 cuft
Contrib. drain. area = 2.750 ac



Hydrograph Report

Hyd. No. 5

DA-1P Trench #1

Hydrograph type	= Rational	Peak discharge	= 1.749 cfs
Storm frequency	= 5 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 525 cuft
Drainage area	= 0.470 ac	Runoff coeff.	= 0.64
Intensity	= 5.815 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



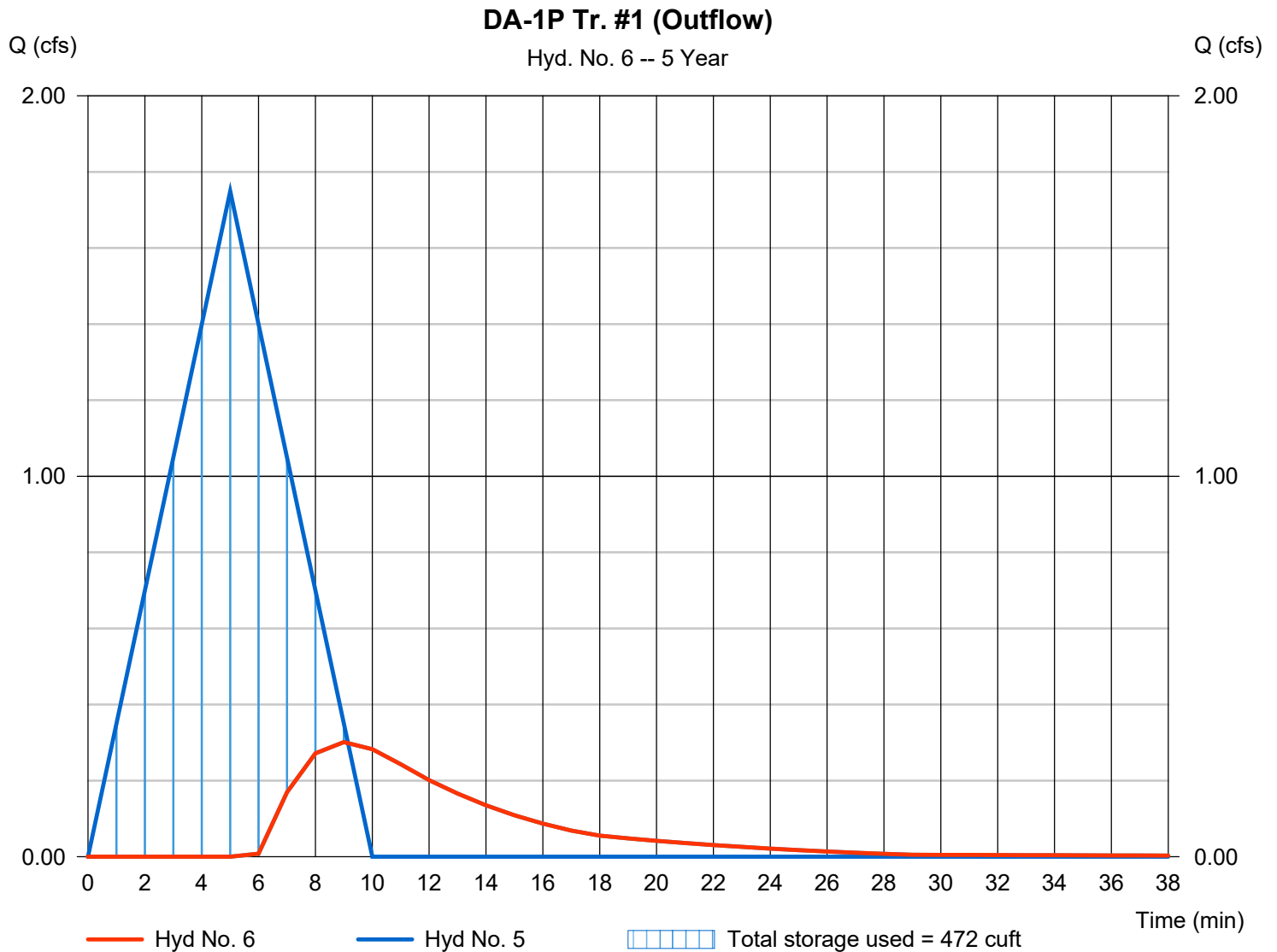
Hydrograph Report

Hyd. No. 6

DA-1P Tr. #1 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.301 cfs
Storm frequency	= 5 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 144 cuft
Inflow hyd. No.	= 5 - DA-1P Trench #1	Max. Elevation	= 251.47 ft
Reservoir name	= Trench #1	Max. Storage	= 472 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

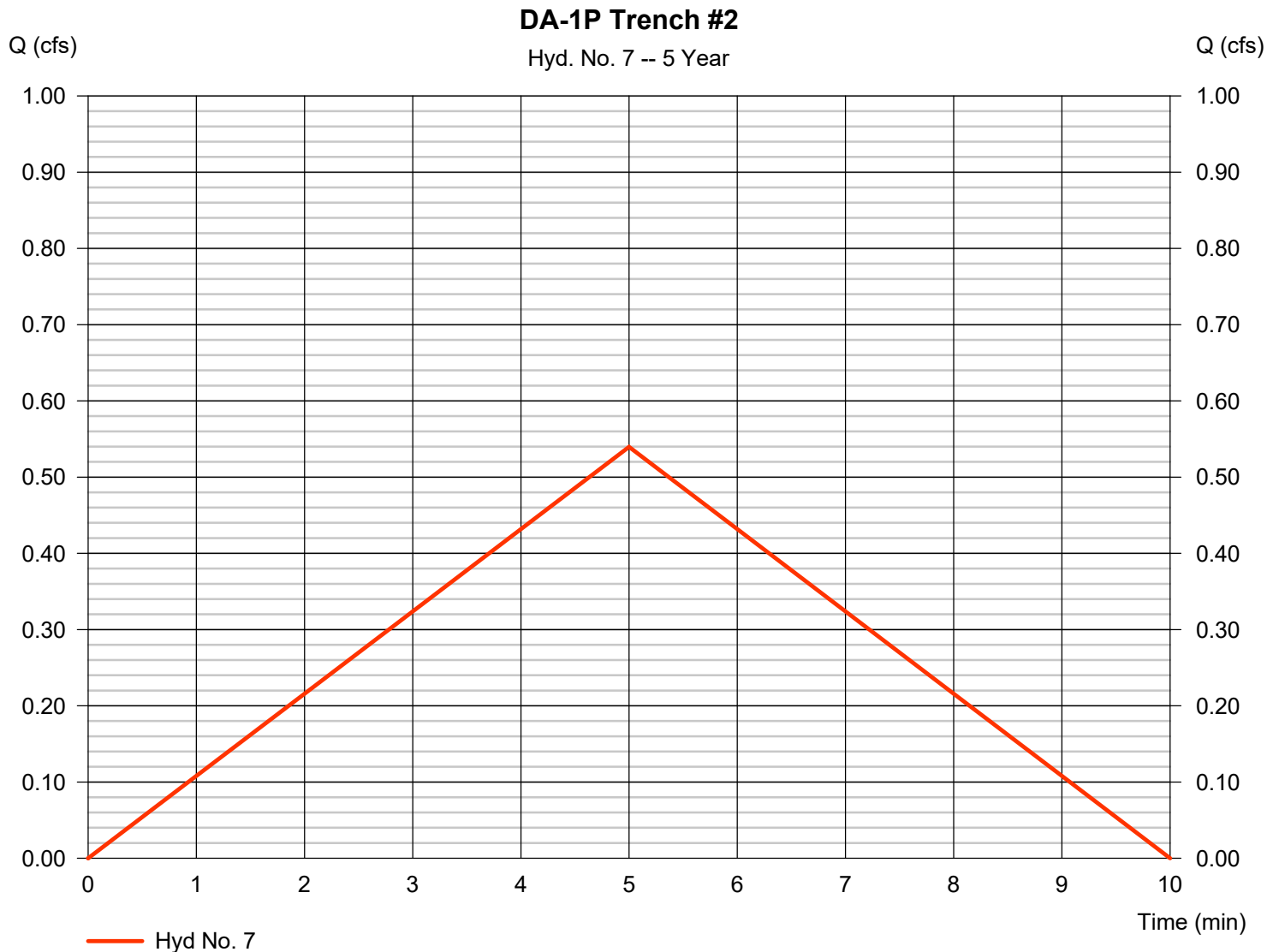


Hydrograph Report

Hyd. No. 7

DA-1P Trench #2

Hydrograph type	= Rational	Peak discharge	= 0.540 cfs
Storm frequency	= 5 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 162 cuft
Drainage area	= 0.160 ac	Runoff coeff.	= 0.58
Intensity	= 5.815 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



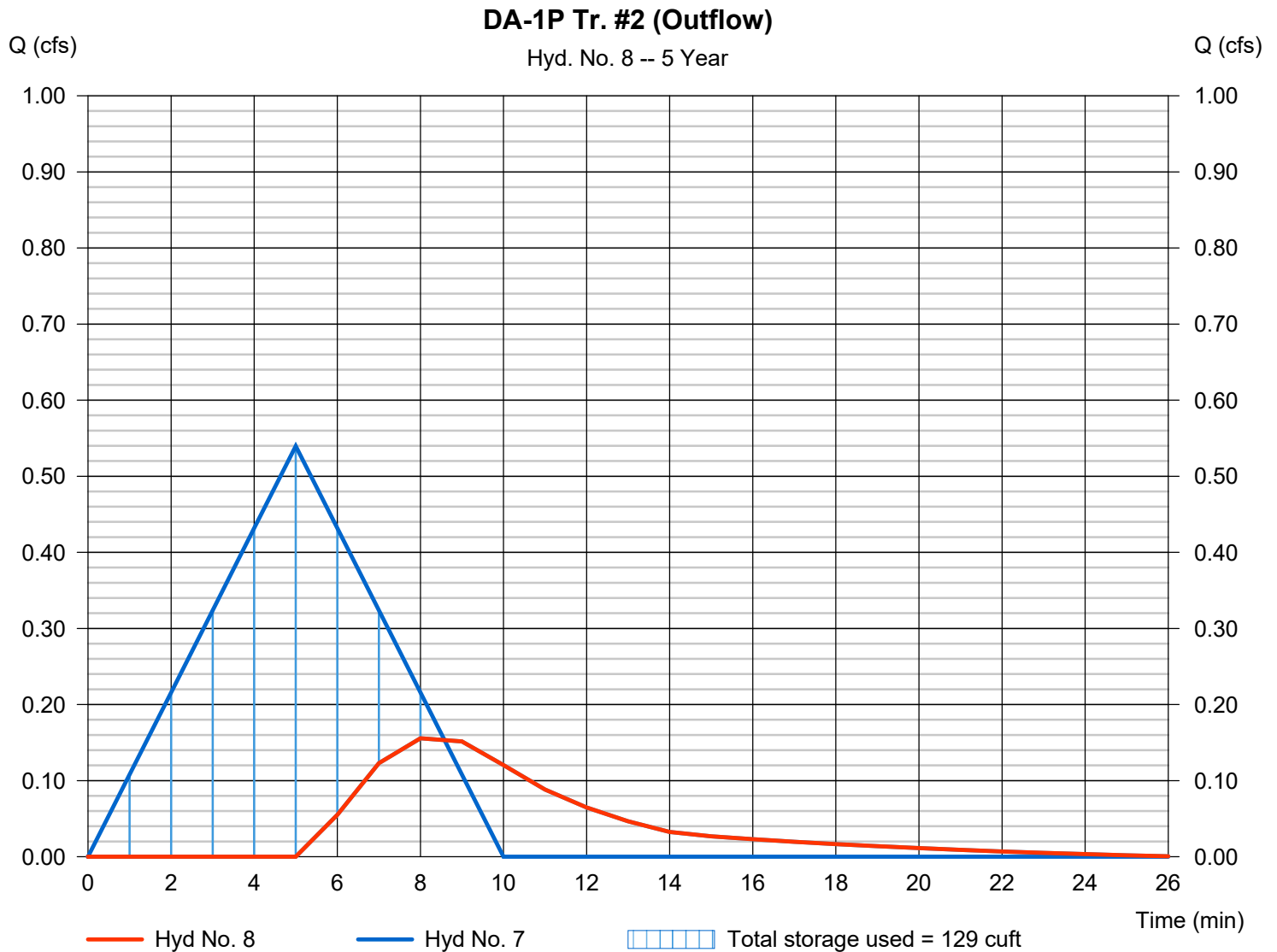
Hydrograph Report

Hyd. No. 8

DA-1P Tr. #2 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.156 cfs
Storm frequency	= 5 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 59 cuft
Inflow hyd. No.	= 7 - DA-1P Trench #2	Max. Elevation	= 260.14 ft
Reservoir name	= Trench #2	Max. Storage	= 129 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

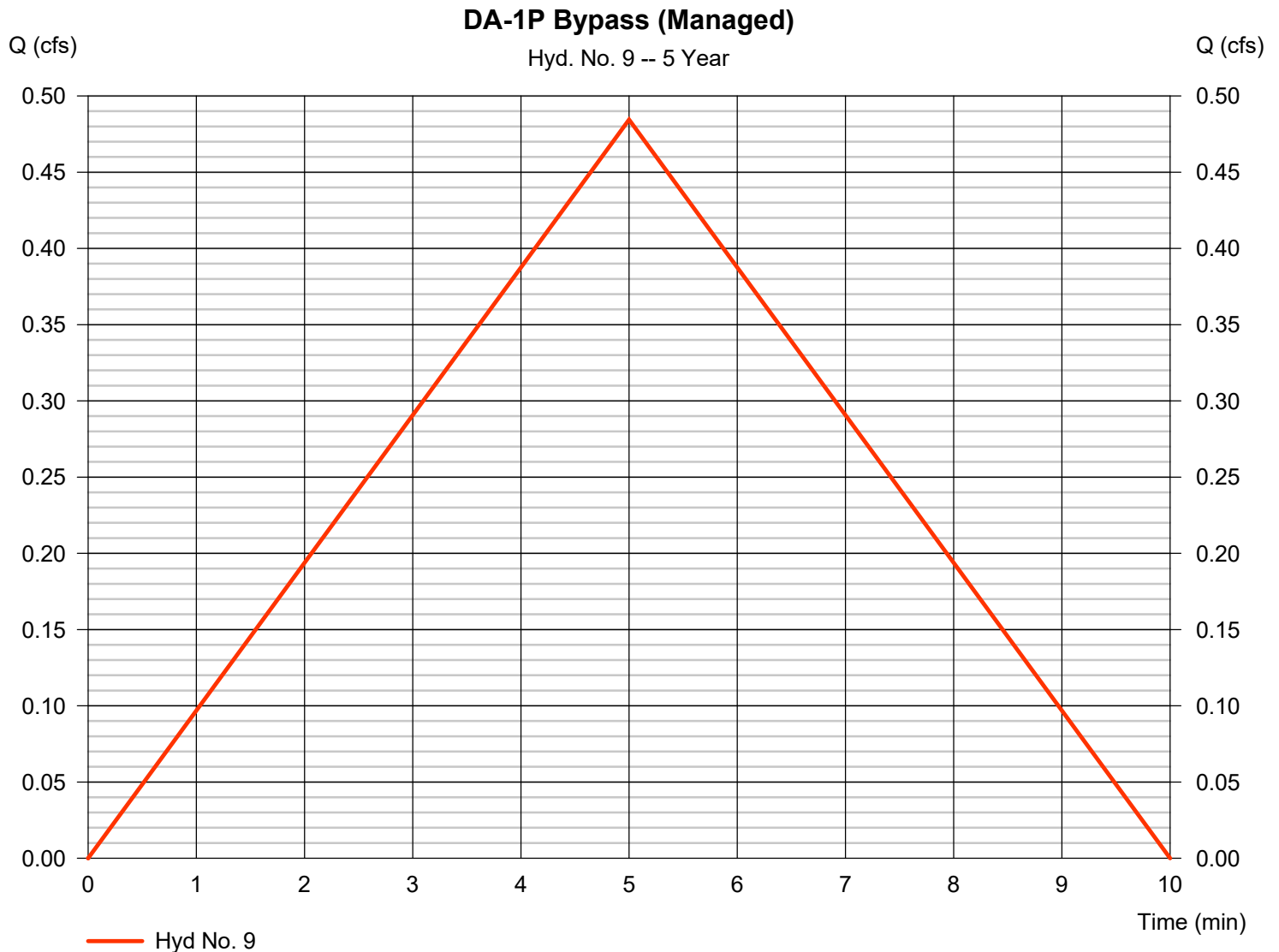


Hydrograph Report

Hyd. No. 9

DA-1P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.484 cfs
Storm frequency	= 5 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 145 cuft
Drainage area	= 0.170 ac	Runoff coeff.	= 0.49
Intensity	= 5.815 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

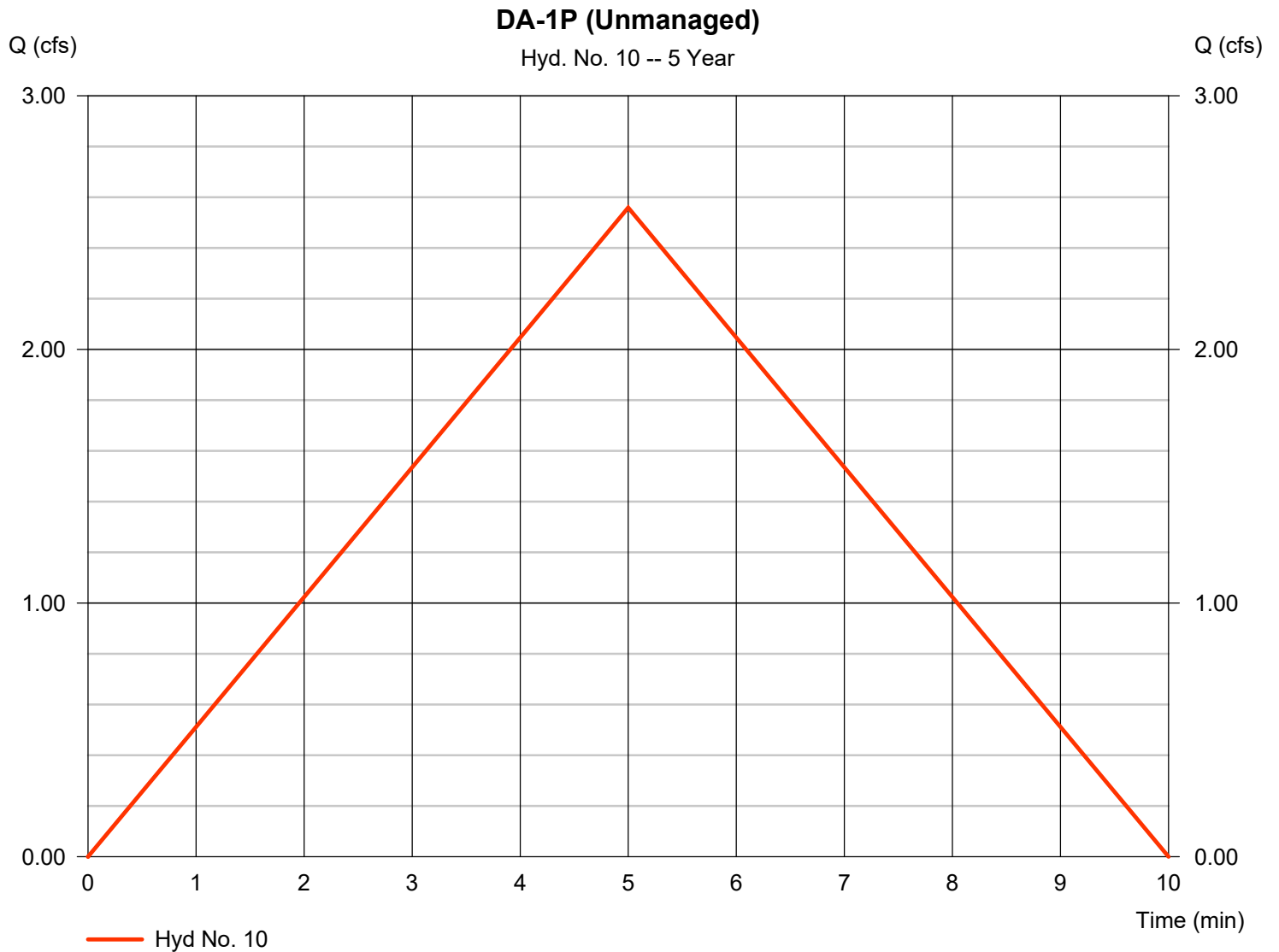


Hydrograph Report

Hyd. No. 10

DA-1P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 2.559 cfs
Storm frequency	= 5 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 768 cuft
Drainage area	= 1.000 ac	Runoff coeff.	= 0.44
Intensity	= 5.815 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



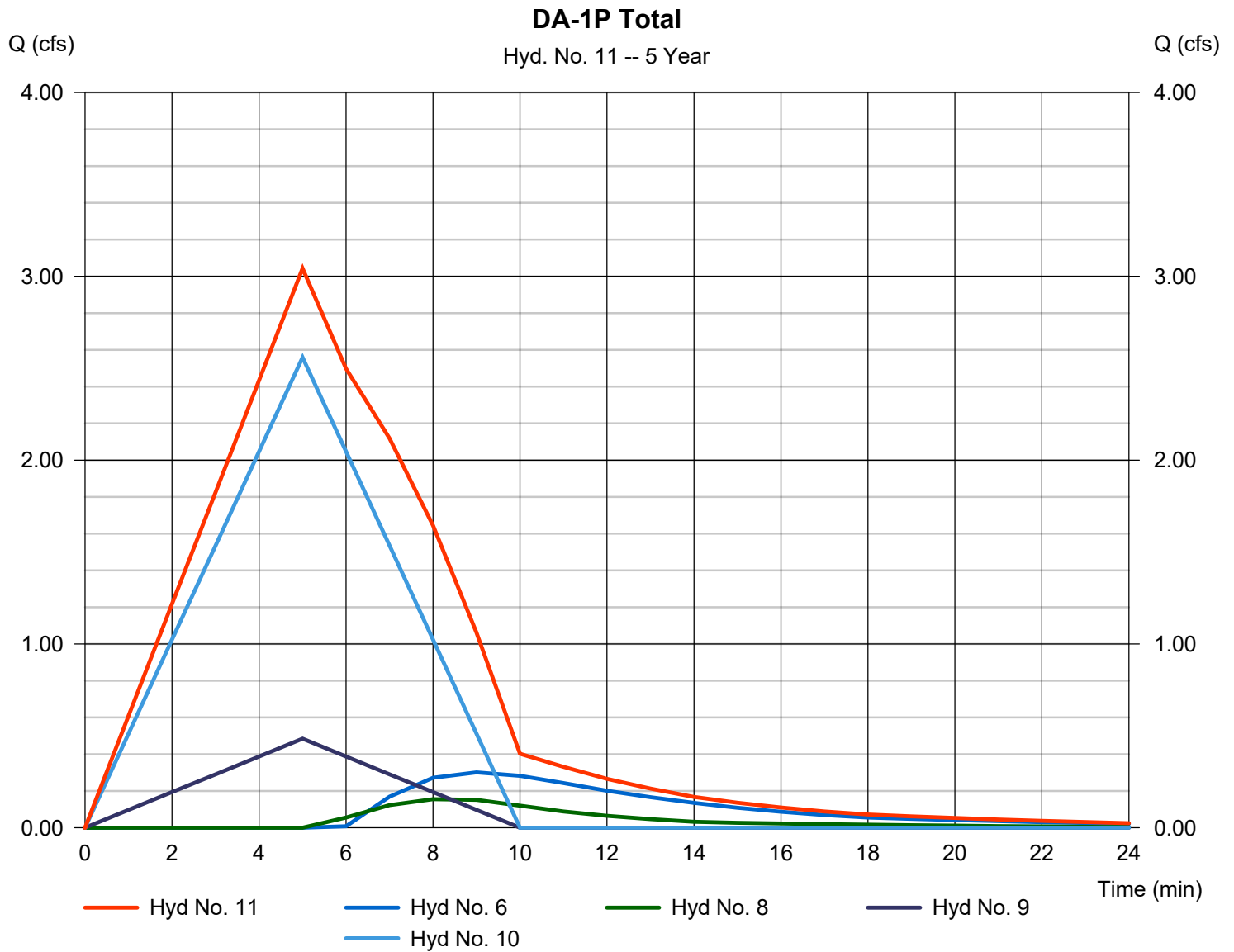
Hydrograph Report

Hyd. No. 11

DA-1P Total

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 1 min
Inflow hyds. = 6, 8, 9, 10

Peak discharge = 3.043 cfs
Time to peak = 5 min
Hyd. volume = 1,116 cuft
Contrib. drain. area = 1.170 ac

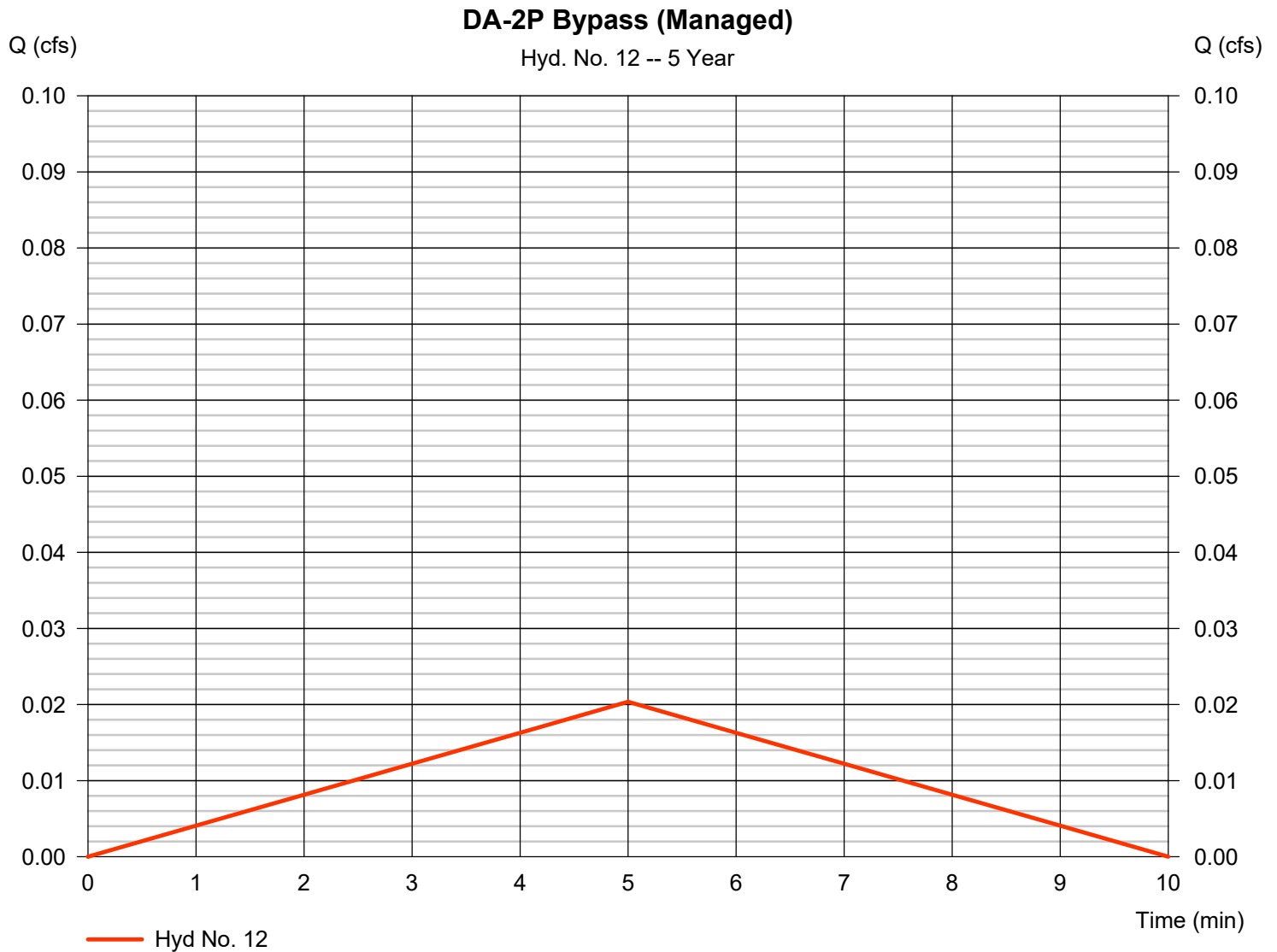


Hydrograph Report

Hyd. No. 12

DA-2P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.020 cfs
Storm frequency	= 5 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 6 cuft
Drainage area	= 0.010 ac	Runoff coeff.	= 0.35
Intensity	= 5.815 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hyd. No. 13

DA-2P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 2.077 cfs
Storm frequency	= 5 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 623 cuft
Drainage area	= 0.940 ac	Runoff coeff.	= 0.38
Intensity	= 5.815 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



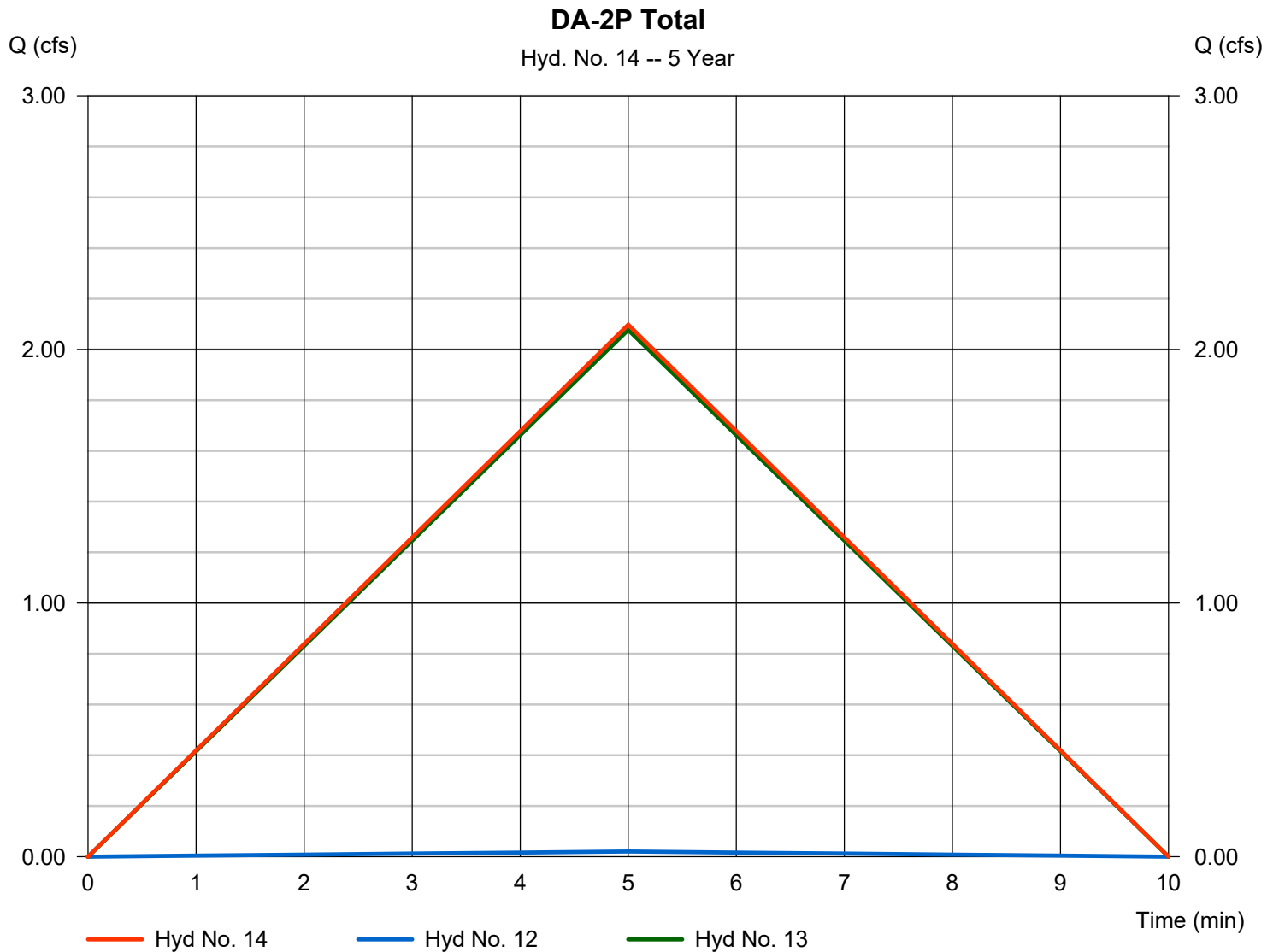
Hydrograph Report

Hyd. No. 14

DA-2P Total

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 1 min
Inflow hyds. = 12, 13

Peak discharge = 2.098 cfs
Time to peak = 5 min
Hyd. volume = 629 cuft
Contrib. drain. area = 0.950 ac



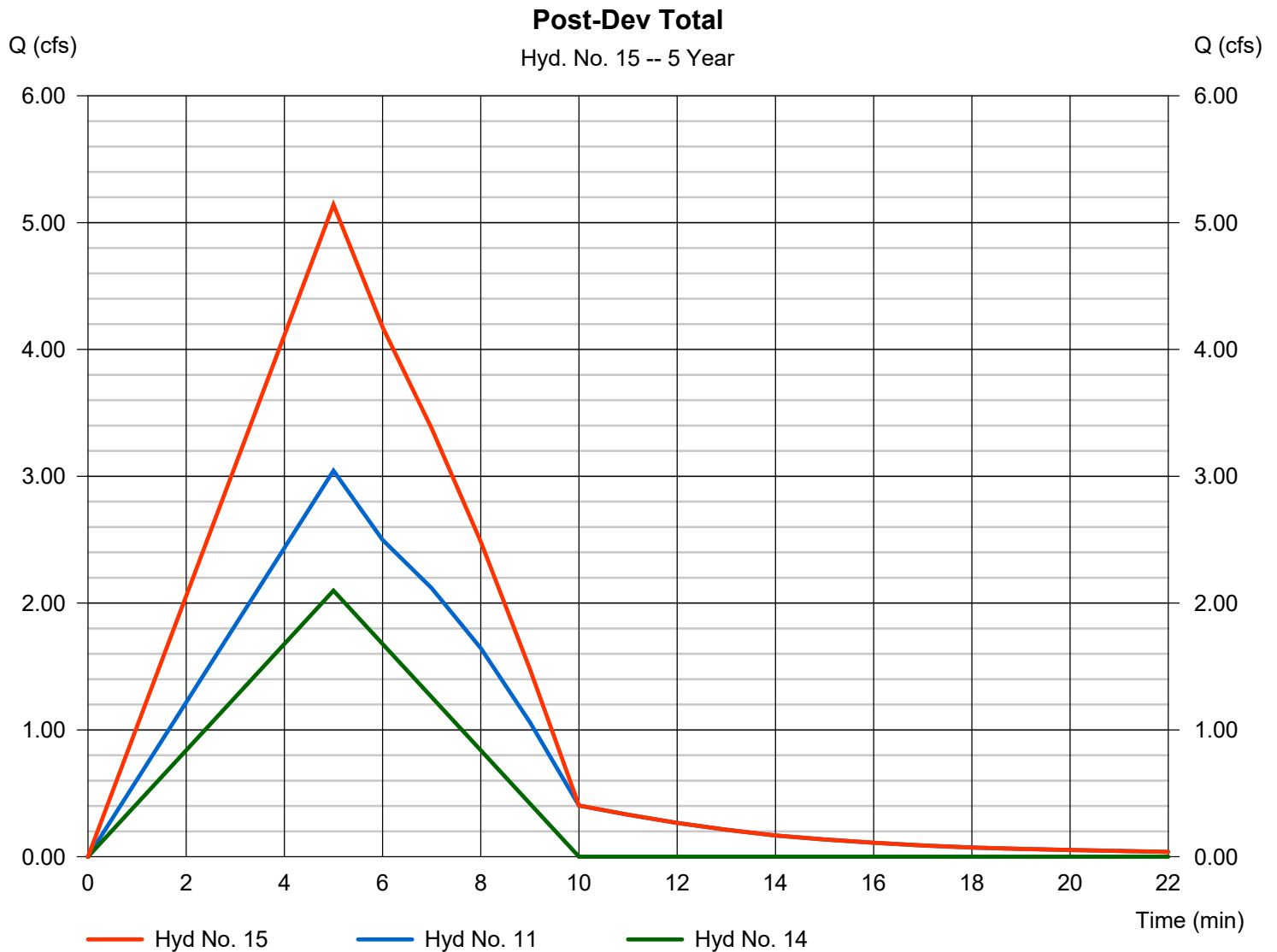
Hydrograph Report

Hyd. No. 15

Post-Dev Total

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 1 min
Inflow hyds. = 11, 14

Peak discharge = 5.141 cfs
Time to peak = 5 min
Hyd. volume = 1,745 cuft
Contrib. drain. area = 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	3.734	1	5	1,120	----	----	----	DA-1E
2	Rational	2.538	1	5	761	----	----	----	DA-2E
3	Combine	6.272	1	5	1,881	1, 2	----	----	Pre-Dev Total
5	Rational	1.932	1	5	580	----	----	----	DA-1P Trench #1
6	Reservoir	0.381	1	9	197	5	251.59	508	DA-1P Tr. #1 (Outflow)
7	Rational	0.596	1	5	179	----	----	----	DA-1P Trench #2
8	Reservoir	0.196	1	8	74	7	260.18	137	DA-1P Tr. #2 (Outflow)
9	Rational	0.535	1	5	160	----	----	----	DA-1P Bypass (Managed)
10	Rational	2.826	1	5	848	----	----	----	DA-1P (Unmanaged)
11	Combine	3.372	1	5	1,279	6, 8, 9, 10	----	----	DA-1P Total
12	Rational	0.022	1	5	7	----	----	----	DA-2P Bypass (Managed)
13	Rational	2.294	1	5	688	----	----	----	DA-2P (Unmanaged)
14	Combine	2.316	1	5	695	12, 13	----	----	DA-2P Total
15	Combine	5.688	1	5	1,974	11, 14	----	----	Post-Dev Total
Rev-0.gpw					Return Period: 10 Year			Monday, 11 / 14 / 2022	

Hydrograph Report

Hyd. No. 1

DA-1E

Hydrograph type	= Rational	Peak discharge	= 3.734 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 1,120 cuft
Drainage area	= 1.710 ac	Runoff coeff.	= 0.34
Intensity	= 6.422 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

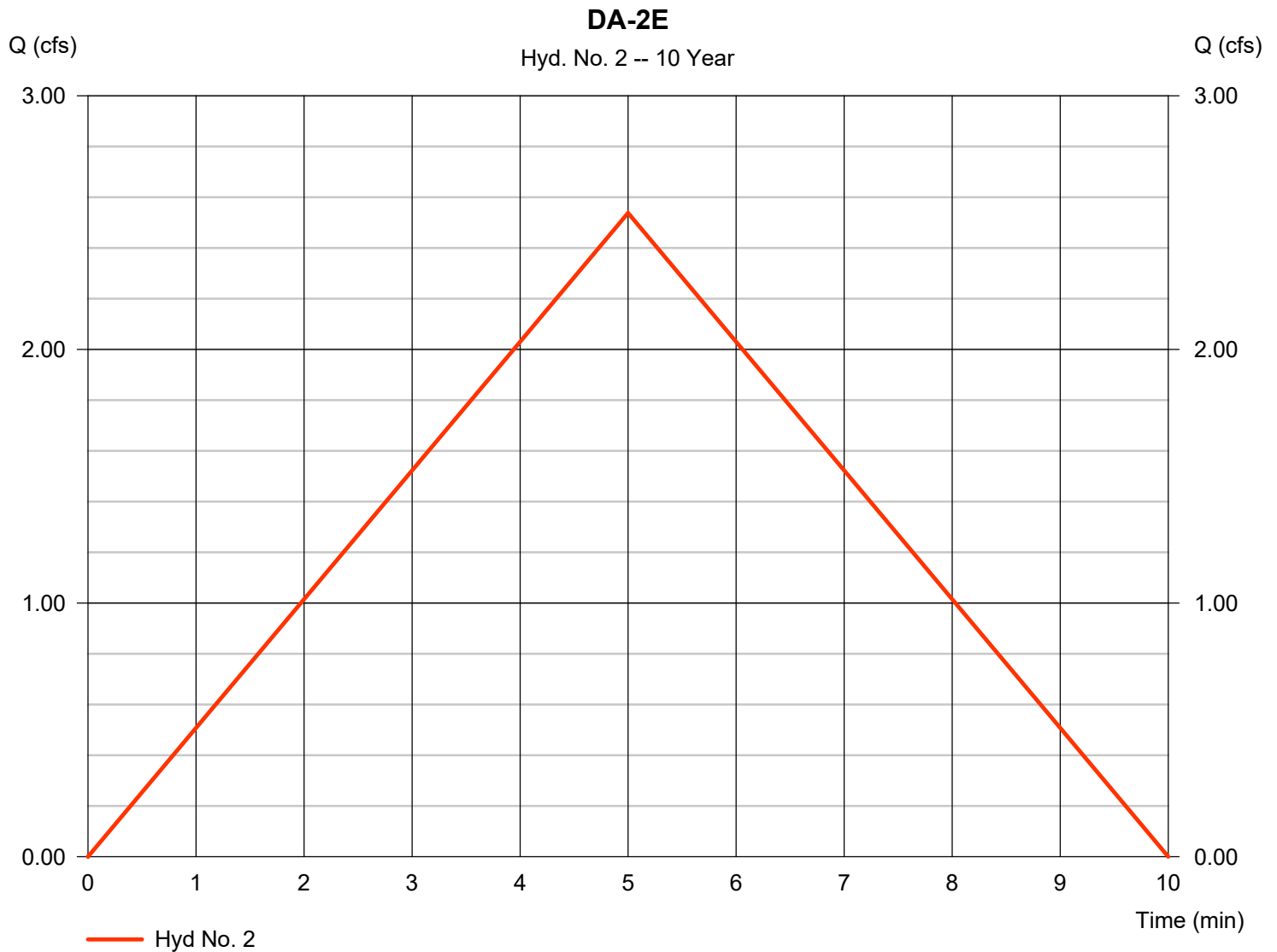


Hydrograph Report

Hyd. No. 2

DA-2E

Hydrograph type	= Rational	Peak discharge	= 2.538 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 761 cuft
Drainage area	= 1.040 ac	Runoff coeff.	= 0.38
Intensity	= 6.422 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



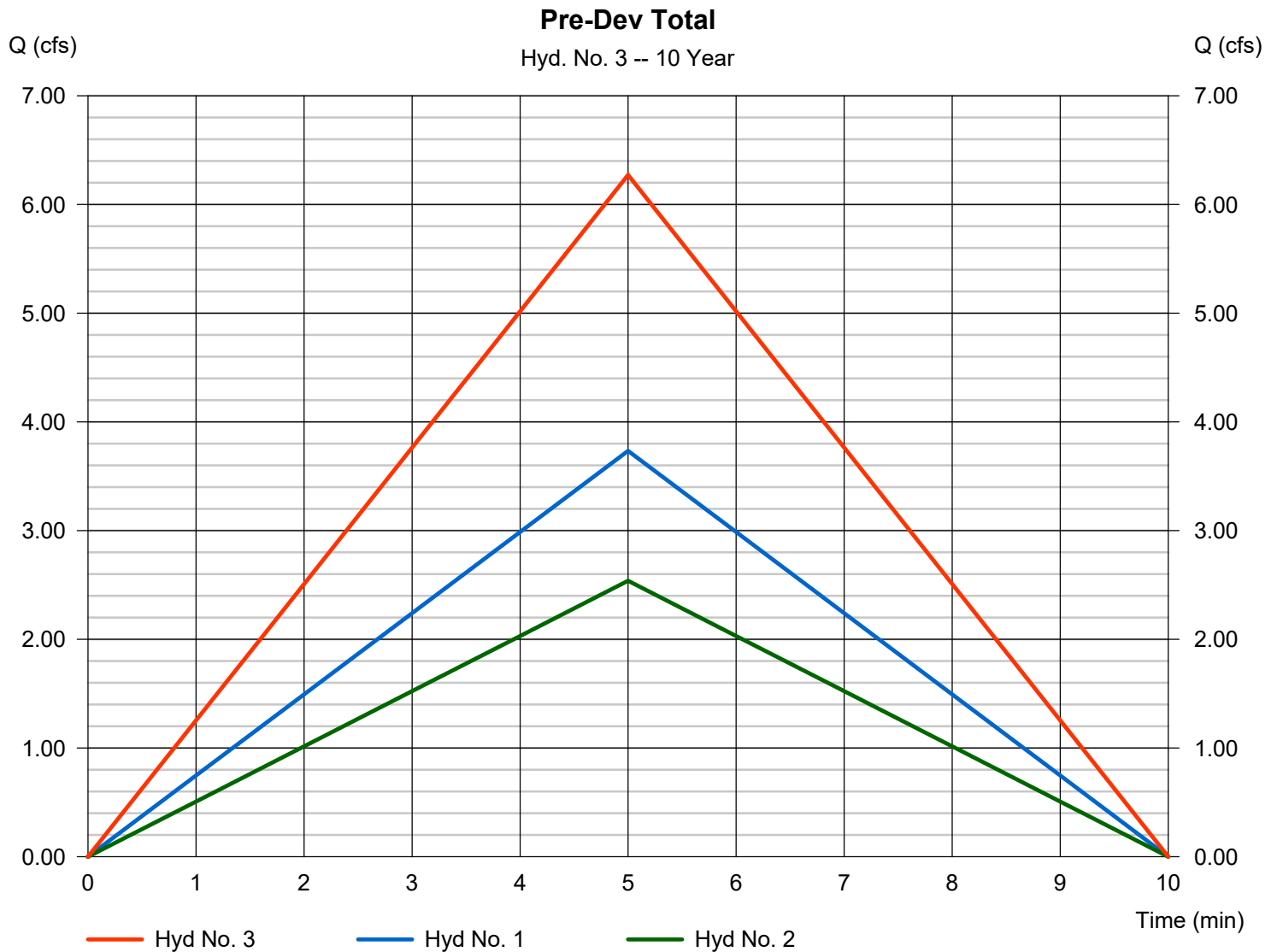
Hydrograph Report

Hyd. No. 3

Pre-Dev Total

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 1 min
Inflow hyds. = 1, 2

Peak discharge = 6.272 cfs
Time to peak = 5 min
Hyd. volume = 1,881 cuft
Contrib. drain. area = 2.750 ac



Hydrograph Report

Hyd. No. 5

DA-1P Trench #1

Hydrograph type	= Rational	Peak discharge	= 1.932 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 580 cuft
Drainage area	= 0.470 ac	Runoff coeff.	= 0.64
Intensity	= 6.422 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



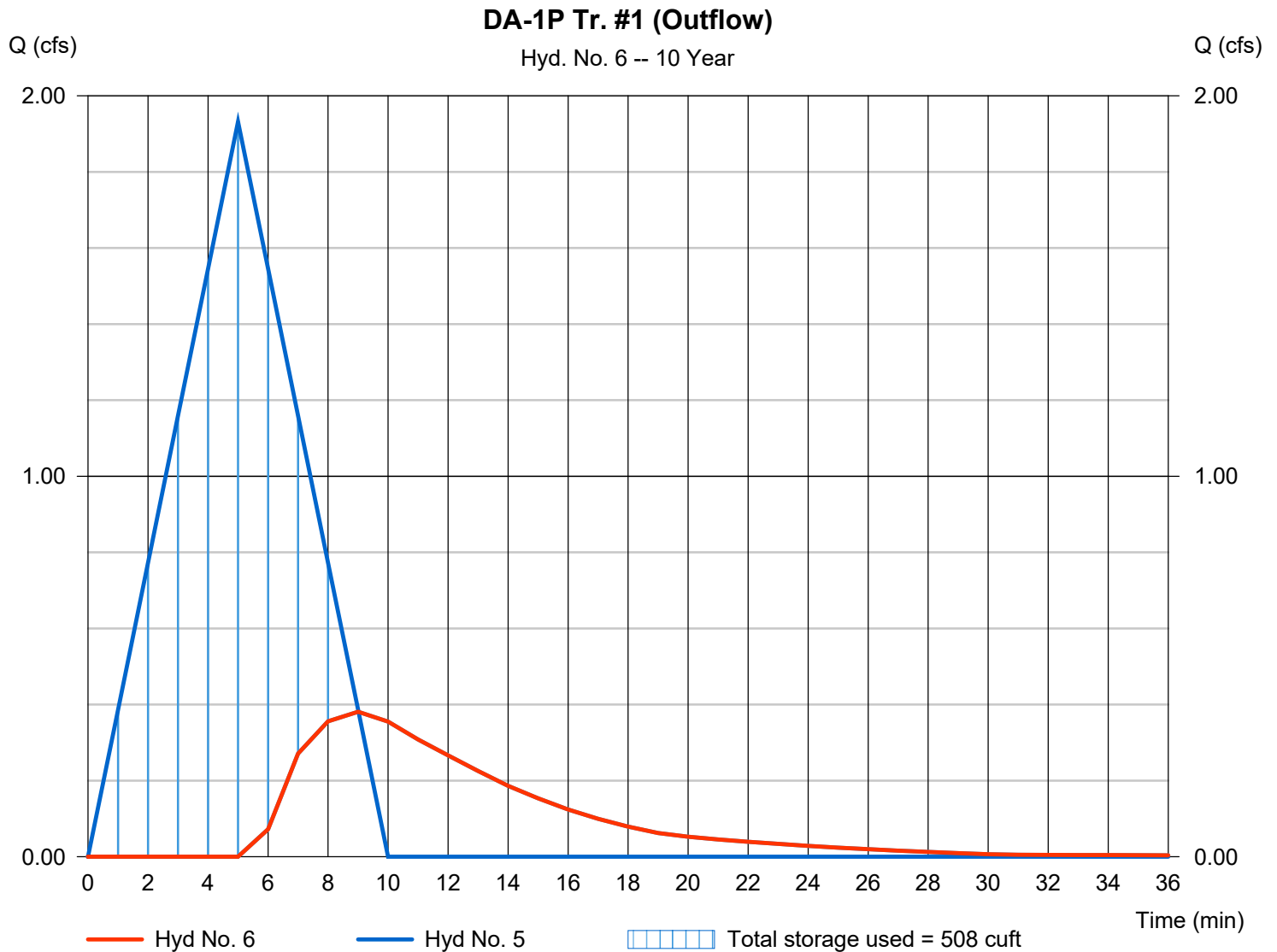
Hydrograph Report

Hyd. No. 6

DA-1P Tr. #1 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.381 cfs
Storm frequency	= 10 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 197 cuft
Inflow hyd. No.	= 5 - DA-1P Trench #1	Max. Elevation	= 251.59 ft
Reservoir name	= Trench #1	Max. Storage	= 508 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

Hyd. No. 7

DA-1P Trench #2

Hydrograph type	= Rational	Peak discharge	= 0.596 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 179 cuft
Drainage area	= 0.160 ac	Runoff coeff.	= 0.58
Intensity	= 6.422 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



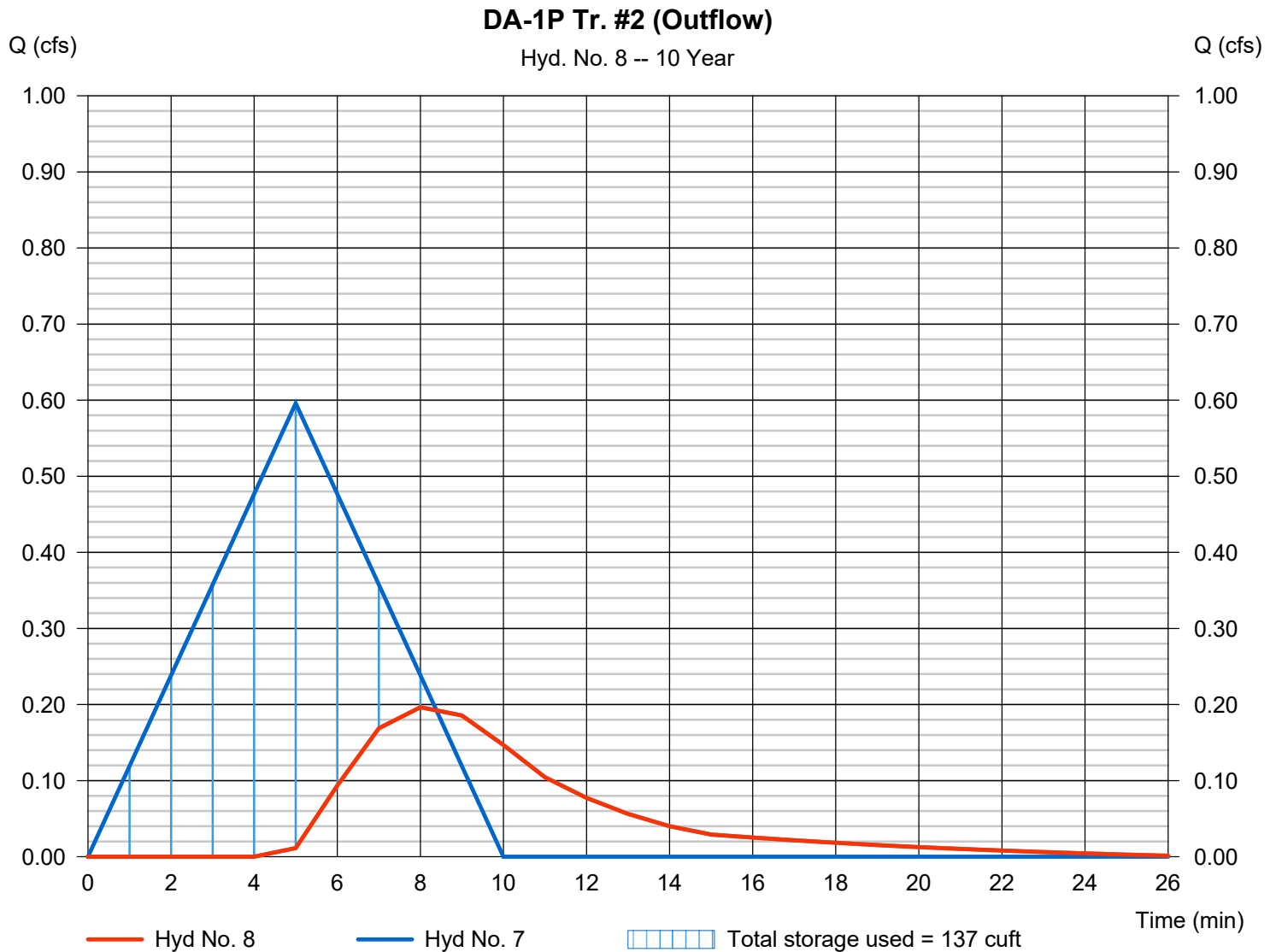
Hydrograph Report

Hyd. No. 8

DA-1P Tr. #2 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.196 cfs
Storm frequency	= 10 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 74 cuft
Inflow hyd. No.	= 7 - DA-1P Trench #2	Max. Elevation	= 260.18 ft
Reservoir name	= Trench #2	Max. Storage	= 137 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

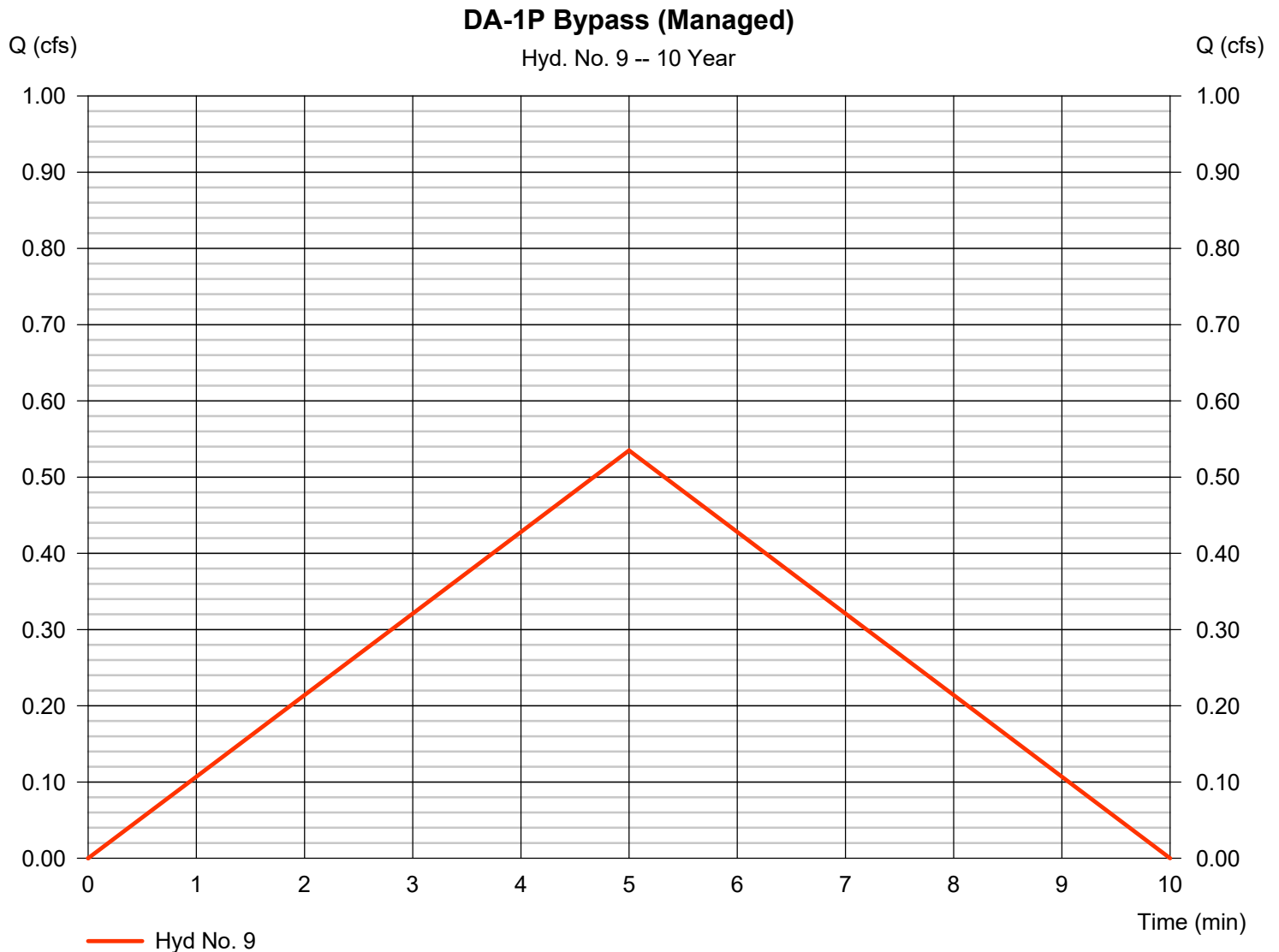


Hydrograph Report

Hyd. No. 9

DA-1P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.535 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 160 cuft
Drainage area	= 0.170 ac	Runoff coeff.	= 0.49
Intensity	= 6.422 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hyd. No. 10

DA-1P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 2.826 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 848 cuft
Drainage area	= 1.000 ac	Runoff coeff.	= 0.44
Intensity	= 6.422 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



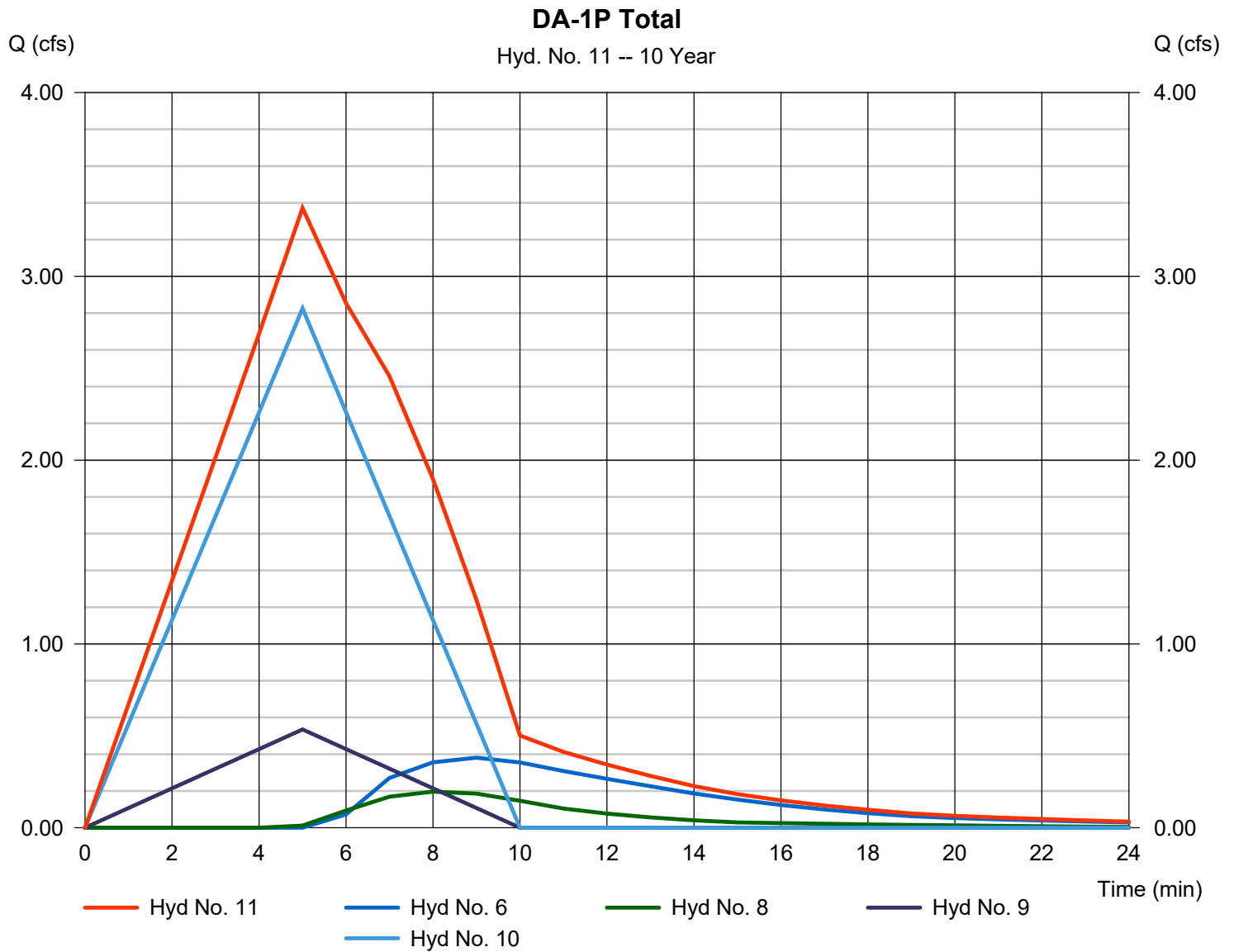
Hydrograph Report

Hyd. No. 11

DA-1P Total

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 1 min
Inflow hyds. = 6, 8, 9, 10

Peak discharge = 3.372 cfs
Time to peak = 5 min
Hyd. volume = 1,279 cuft
Contrib. drain. area = 1.170 ac

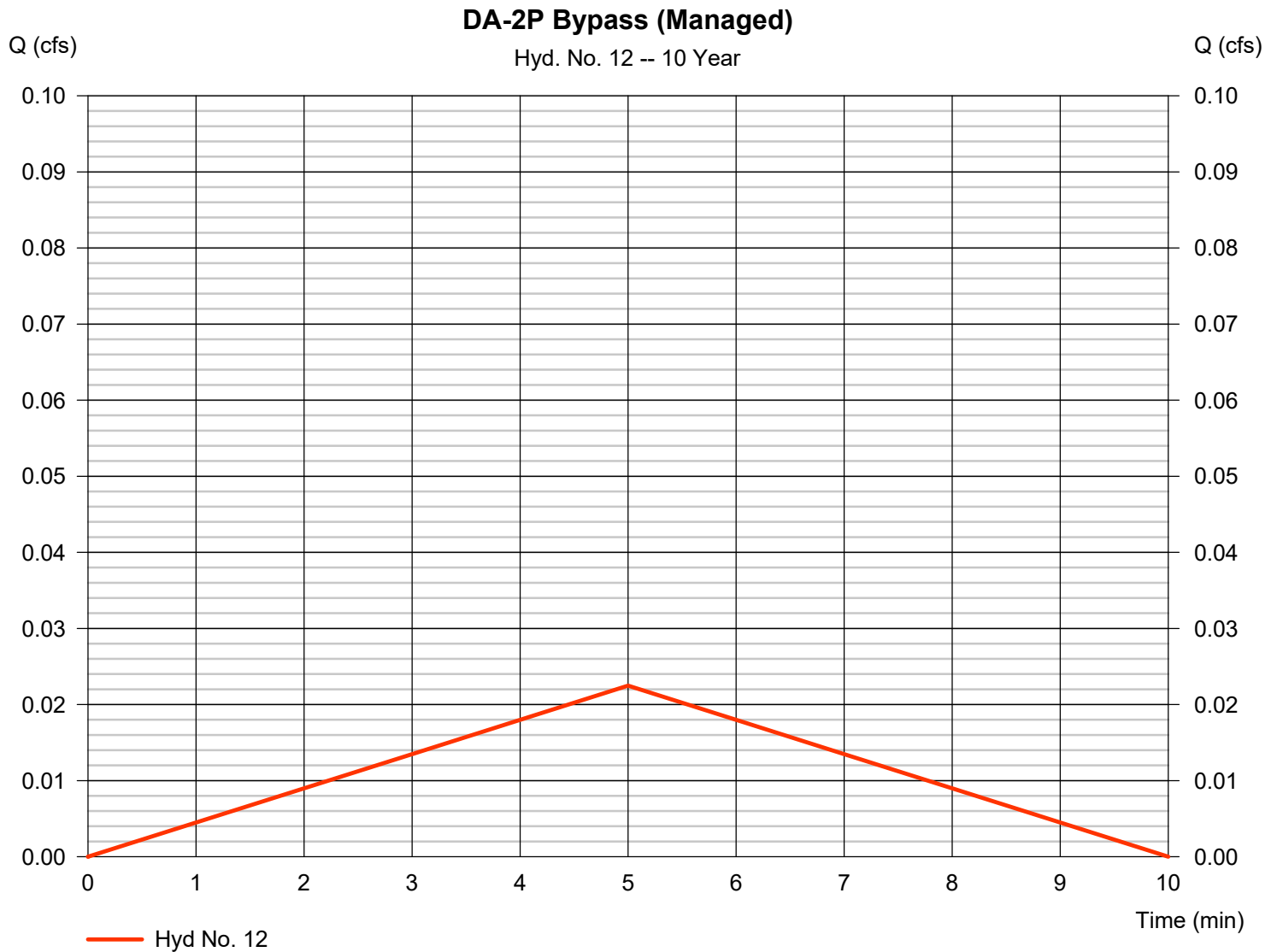


Hydrograph Report

Hyd. No. 12

DA-2P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.022 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 7 cuft
Drainage area	= 0.010 ac	Runoff coeff.	= 0.35
Intensity	= 6.422 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

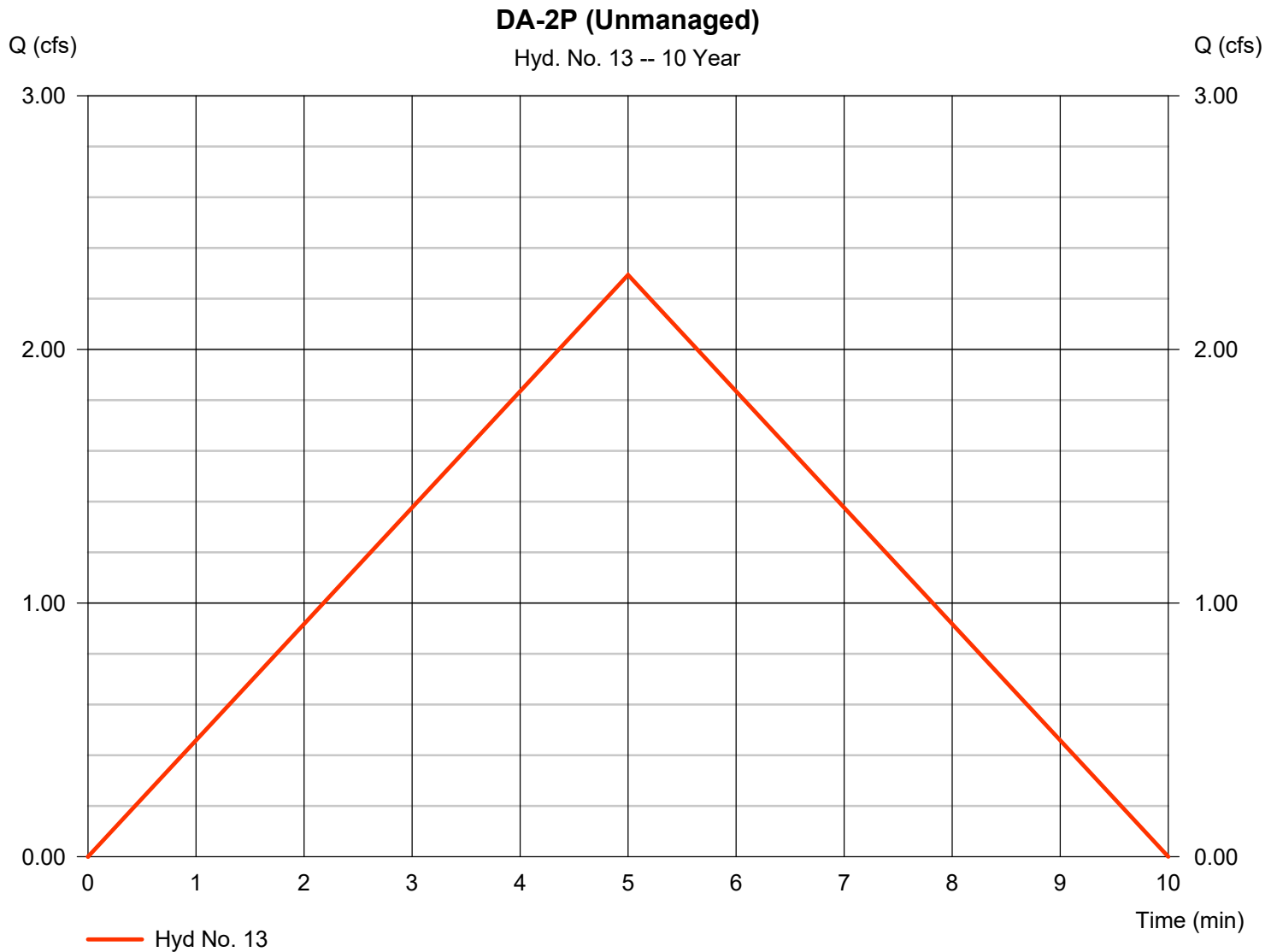


Hydrograph Report

Hyd. No. 13

DA-2P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 2.294 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 688 cuft
Drainage area	= 0.940 ac	Runoff coeff.	= 0.38
Intensity	= 6.422 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



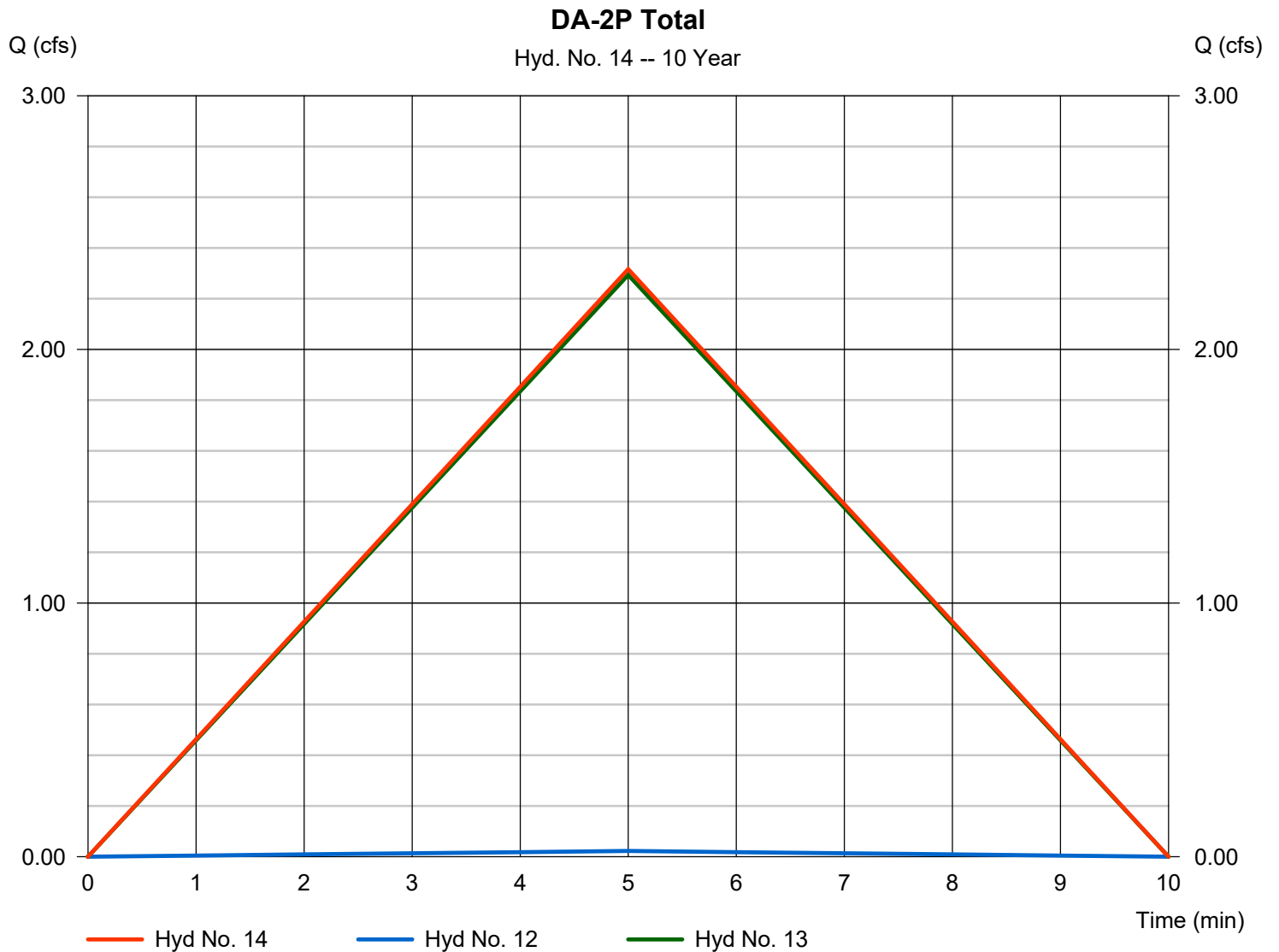
Hydrograph Report

Hyd. No. 14

DA-2P Total

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 1 min
Inflow hyds. = 12, 13

Peak discharge = 2.316 cfs
Time to peak = 5 min
Hyd. volume = 695 cuft
Contrib. drain. area = 0.950 ac



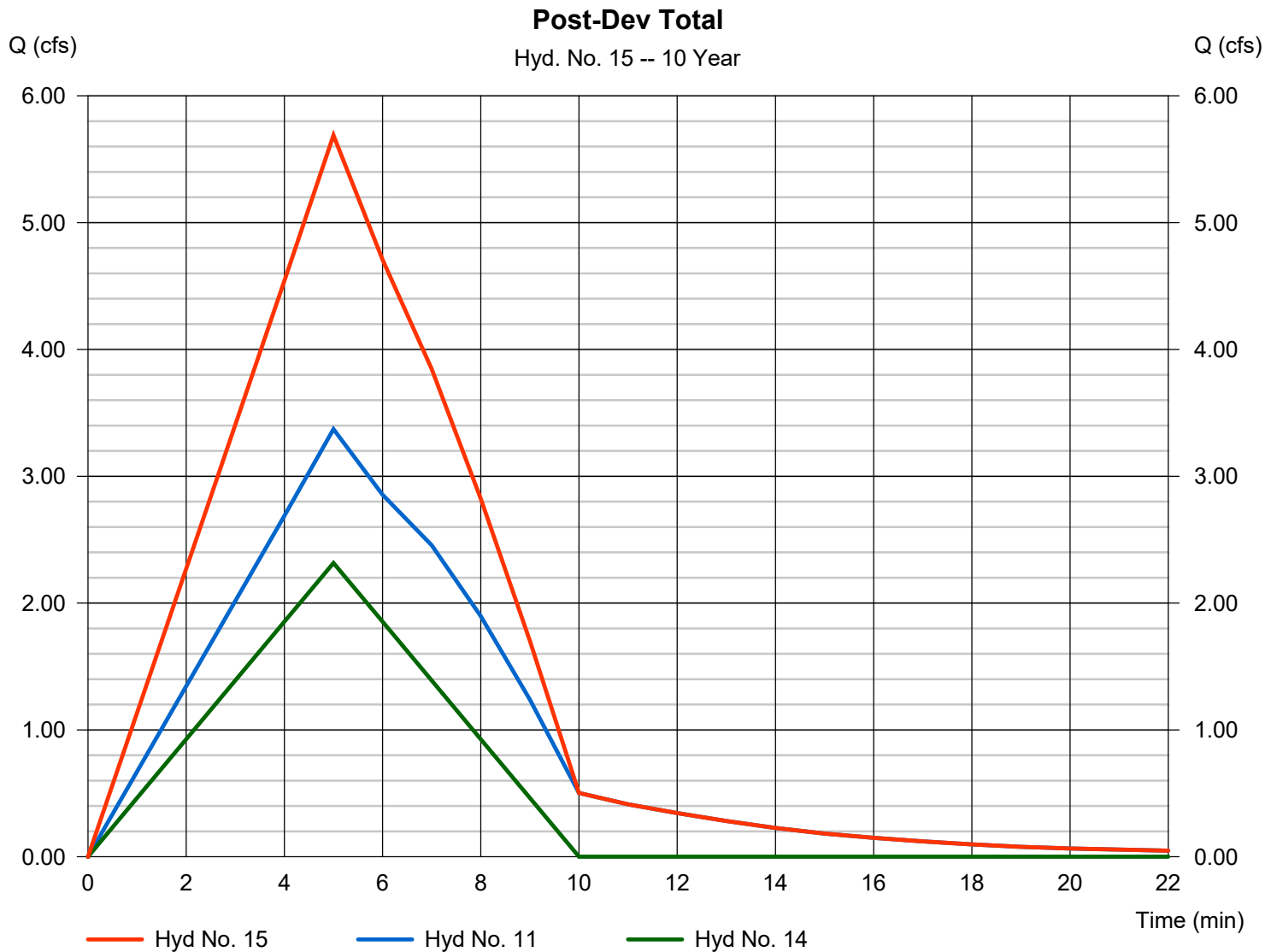
Hydrograph Report

Hyd. No. 15

Post-Dev Total

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 1 min
Inflow hyds. = 11, 14

Peak discharge = 5.688 cfs
Time to peak = 5 min
Hyd. volume = 1,974 cuft
Contrib. drain. area = 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

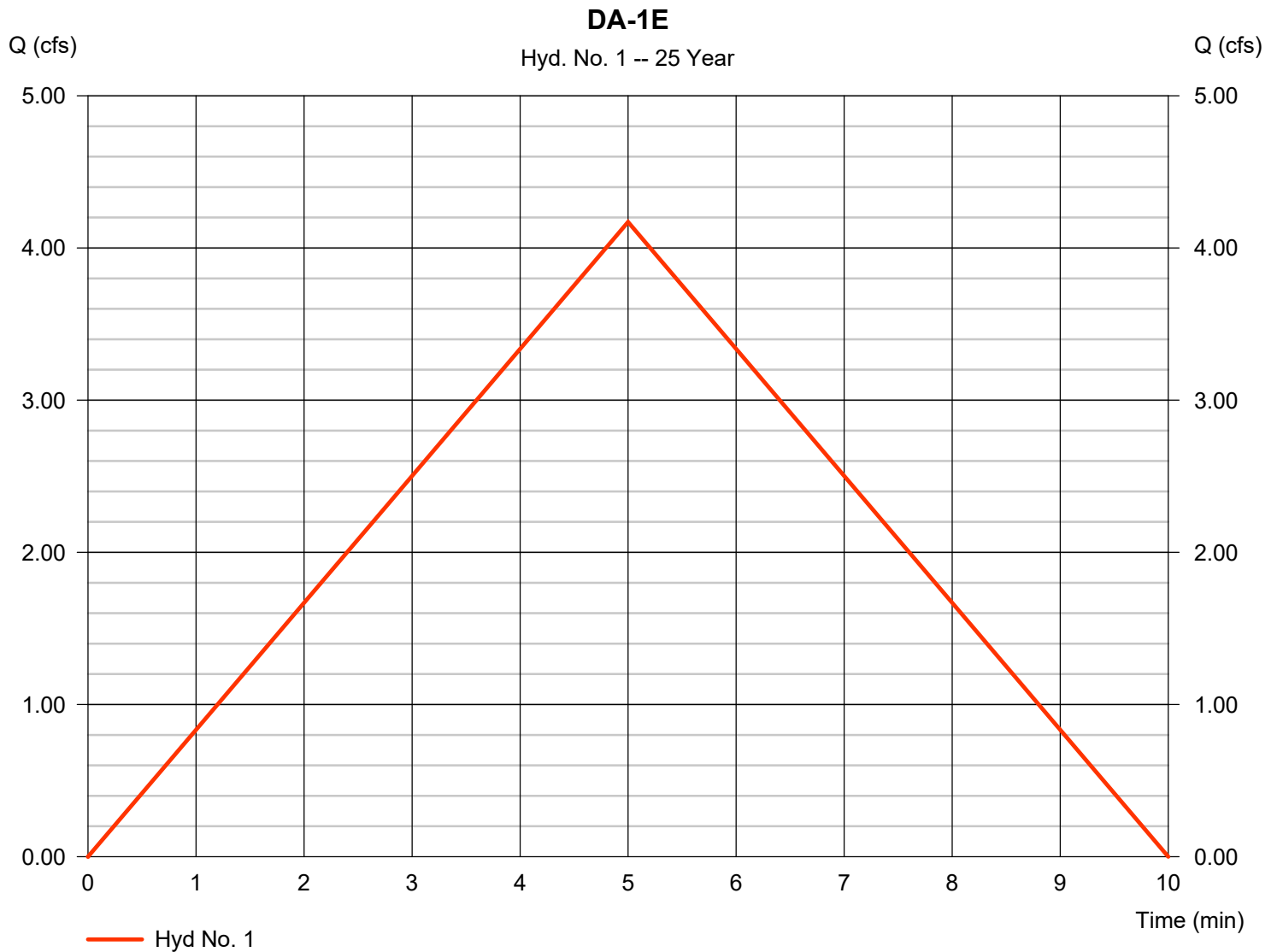
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	4.171	1	5	1,251	----	----	----	DA-1E
2	Rational	2.835	1	5	851	----	----	----	DA-2E
3	Combine	7.006	1	5	2,102	1, 2	----	----	Pre-Dev Total
5	Rational	2.158	1	5	647	----	----	----	DA-1P Trench #1
6	Reservoir	0.522	1	9	263	5	251.71	548	DA-1P Tr. #1 (Outflow)
7	Rational	0.666	1	5	200	----	----	----	DA-1P Trench #2
8	Reservoir	0.241	1	8	94	7	260.24	147	DA-1P Tr. #2 (Outflow)
9	Rational	0.598	1	5	179	----	----	----	DA-1P Bypass (Managed)
10	Rational	3.157	1	5	947	----	----	----	DA-1P (Unmanaged)
11	Combine	3.781	1	5	1,483	6, 8, 9, 10	----	----	DA-1P Total
12	Rational	0.025	1	5	8	----	----	----	DA-2P Bypass (Managed)
13	Rational	2.563	1	5	769	----	----	----	DA-2P (Unmanaged)
14	Combine	2.588	1	5	776	12, 13	----	----	DA-2P Total
15	Combine	6.368	1	5	2,259	11, 14	----	----	Post-Dev Total
Rev-0.gpw					Return Period: 25 Year			Monday, 11 / 14 / 2022	

Hydrograph Report

Hyd. No. 1

DA-1E

Hydrograph type	= Rational	Peak discharge	= 4.171 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 1,251 cuft
Drainage area	= 1.710 ac	Runoff coeff.	= 0.34
Intensity	= 7.174 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

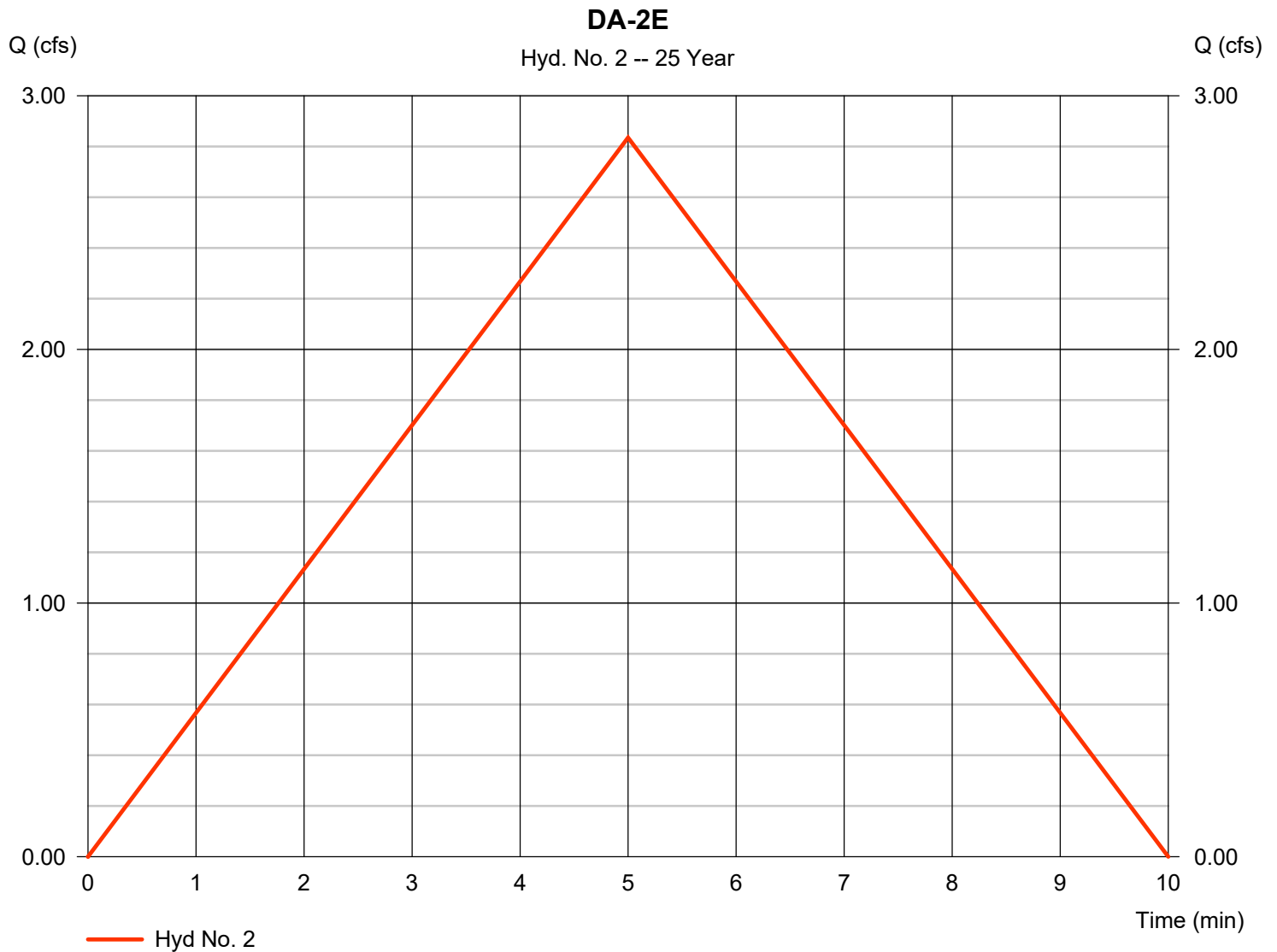


Hydrograph Report

Hyd. No. 2

DA-2E

Hydrograph type	= Rational	Peak discharge	= 2.835 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 851 cuft
Drainage area	= 1.040 ac	Runoff coeff.	= 0.38
Intensity	= 7.174 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



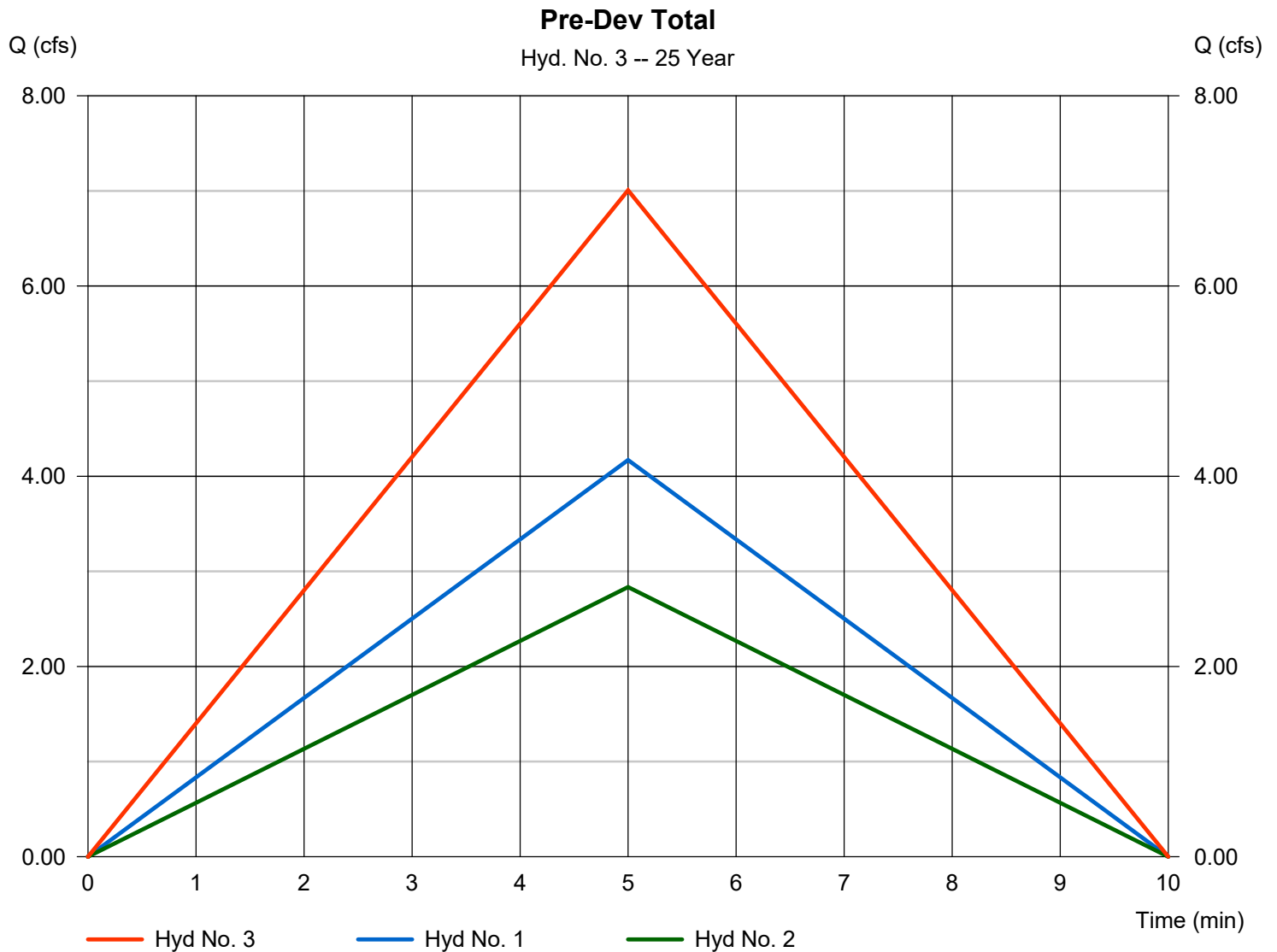
Hydrograph Report

Hyd. No. 3

Pre-Dev Total

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 1 min
Inflow hyds. = 1, 2

Peak discharge = 7.006 cfs
Time to peak = 5 min
Hyd. volume = 2,102 cuft
Contrib. drain. area = 2.750 ac



Hydrograph Report

Hyd. No. 5

DA-1P Trench #1

Hydrograph type	= Rational	Peak discharge	= 2.158 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 647 cuft
Drainage area	= 0.470 ac	Runoff coeff.	= 0.64
Intensity	= 7.174 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



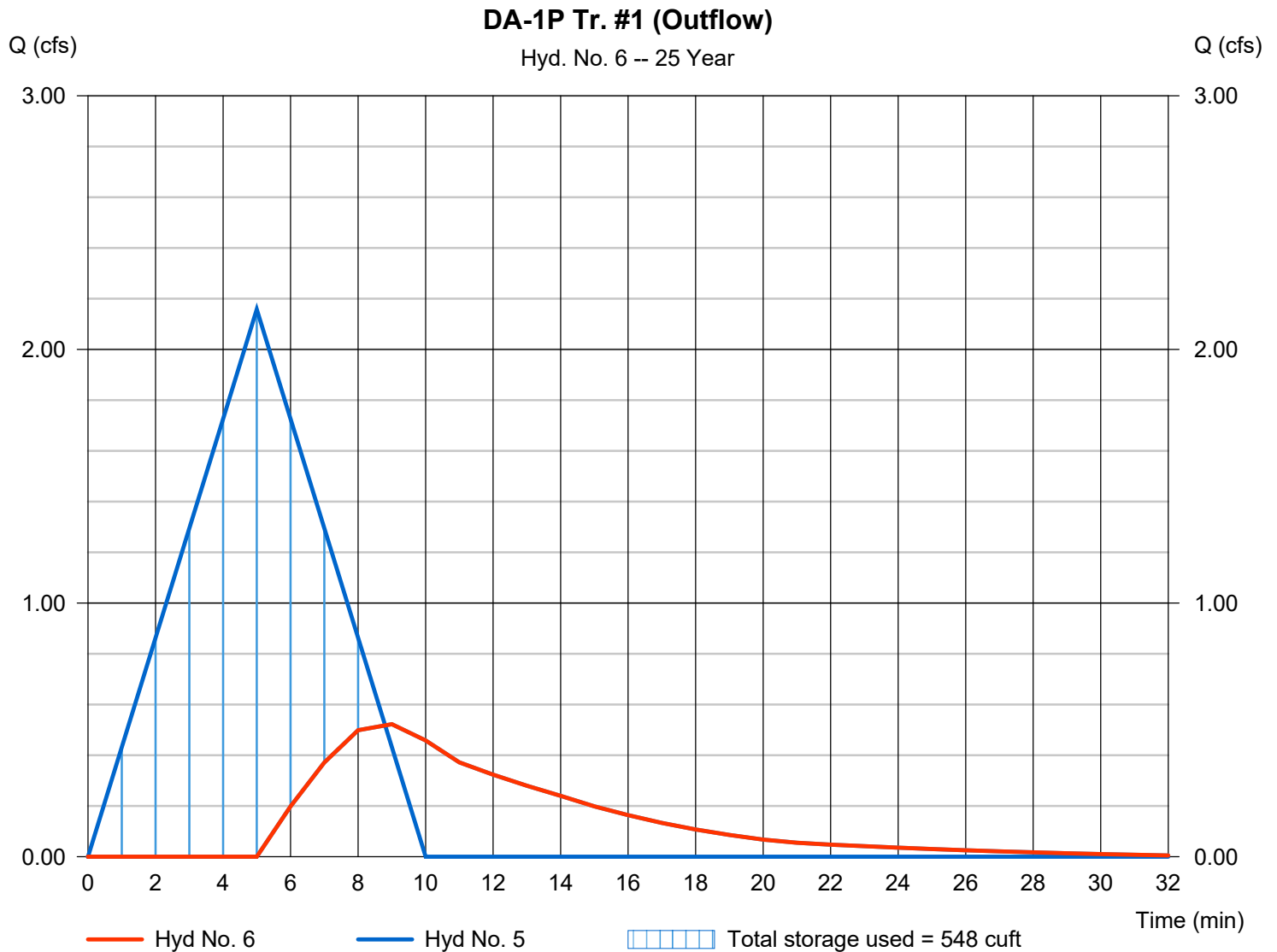
Hydrograph Report

Hyd. No. 6

DA-1P Tr. #1 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.522 cfs
Storm frequency	= 25 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 263 cuft
Inflow hyd. No.	= 5 - DA-1P Trench #1	Max. Elevation	= 251.71 ft
Reservoir name	= Trench #1	Max. Storage	= 548 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

Hyd. No. 7

DA-1P Trench #2

Hydrograph type	= Rational	Peak discharge	= 0.666 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 200 cuft
Drainage area	= 0.160 ac	Runoff coeff.	= 0.58
Intensity	= 7.174 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



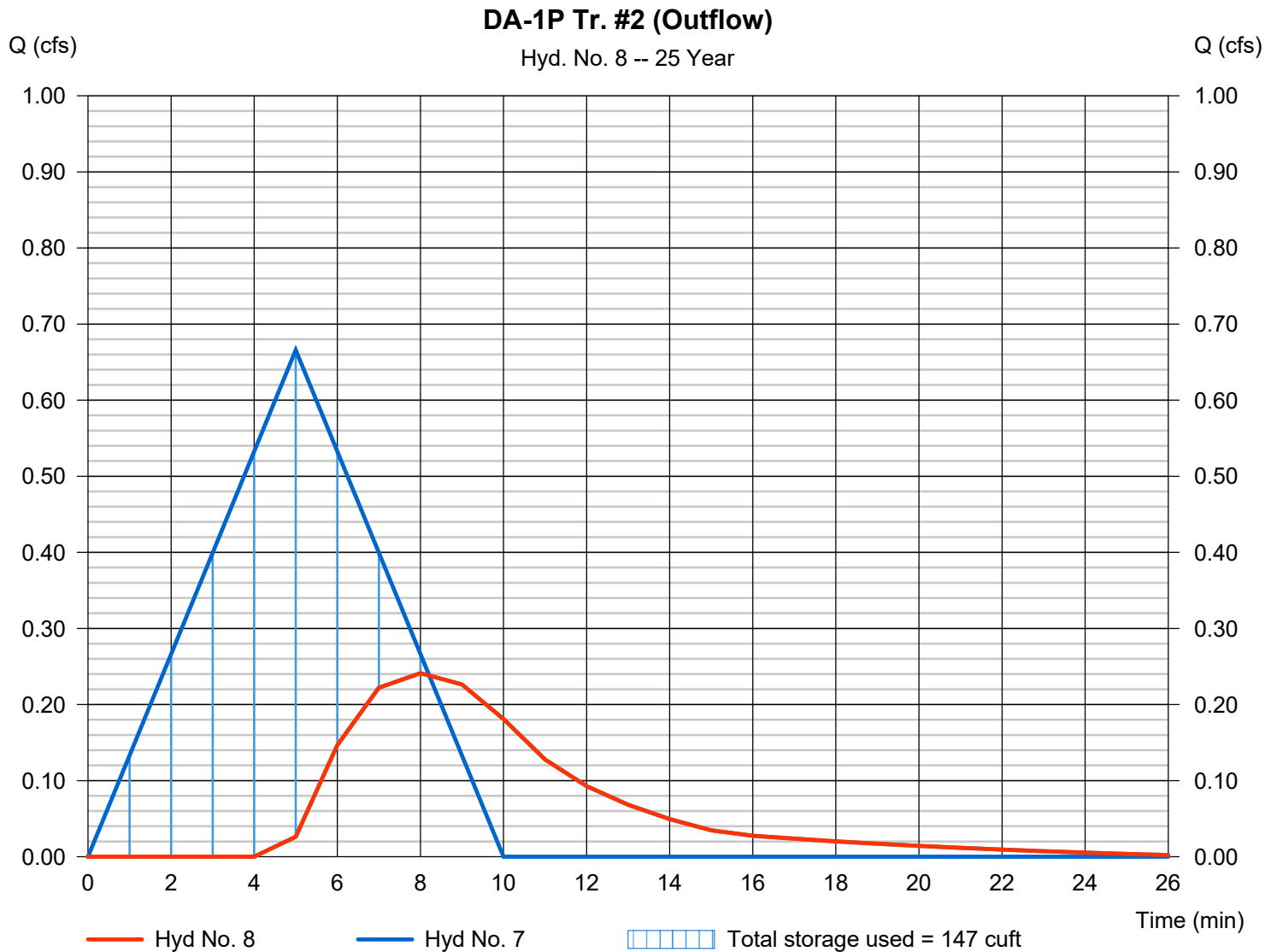
Hydrograph Report

Hyd. No. 8

DA-1P Tr. #2 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.241 cfs
Storm frequency	= 25 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 94 cuft
Inflow hyd. No.	= 7 - DA-1P Trench #2	Max. Elevation	= 260.24 ft
Reservoir name	= Trench #2	Max. Storage	= 147 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

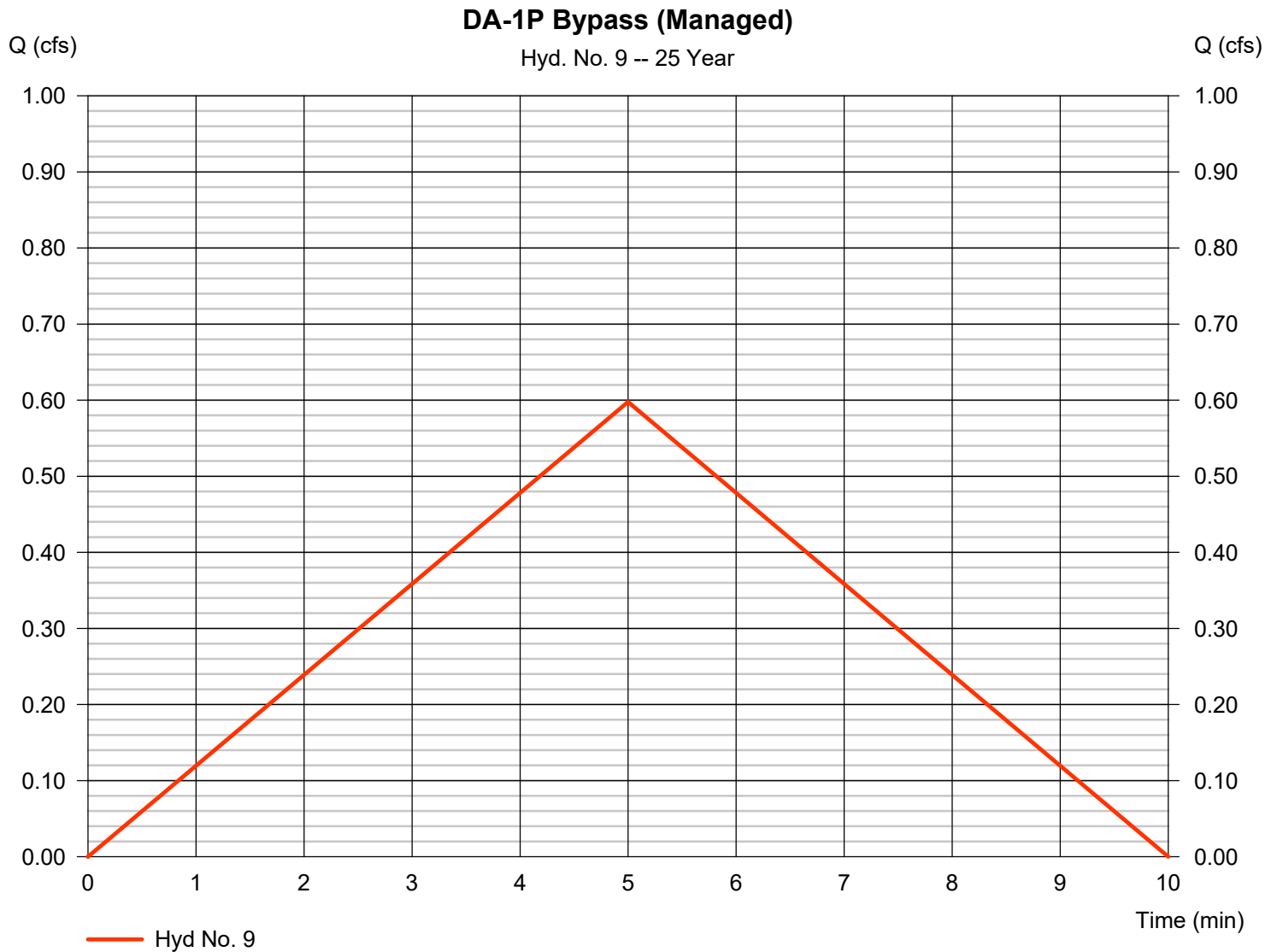


Hydrograph Report

Hyd. No. 9

DA-1P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.598 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 179 cuft
Drainage area	= 0.170 ac	Runoff coeff.	= 0.49
Intensity	= 7.174 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

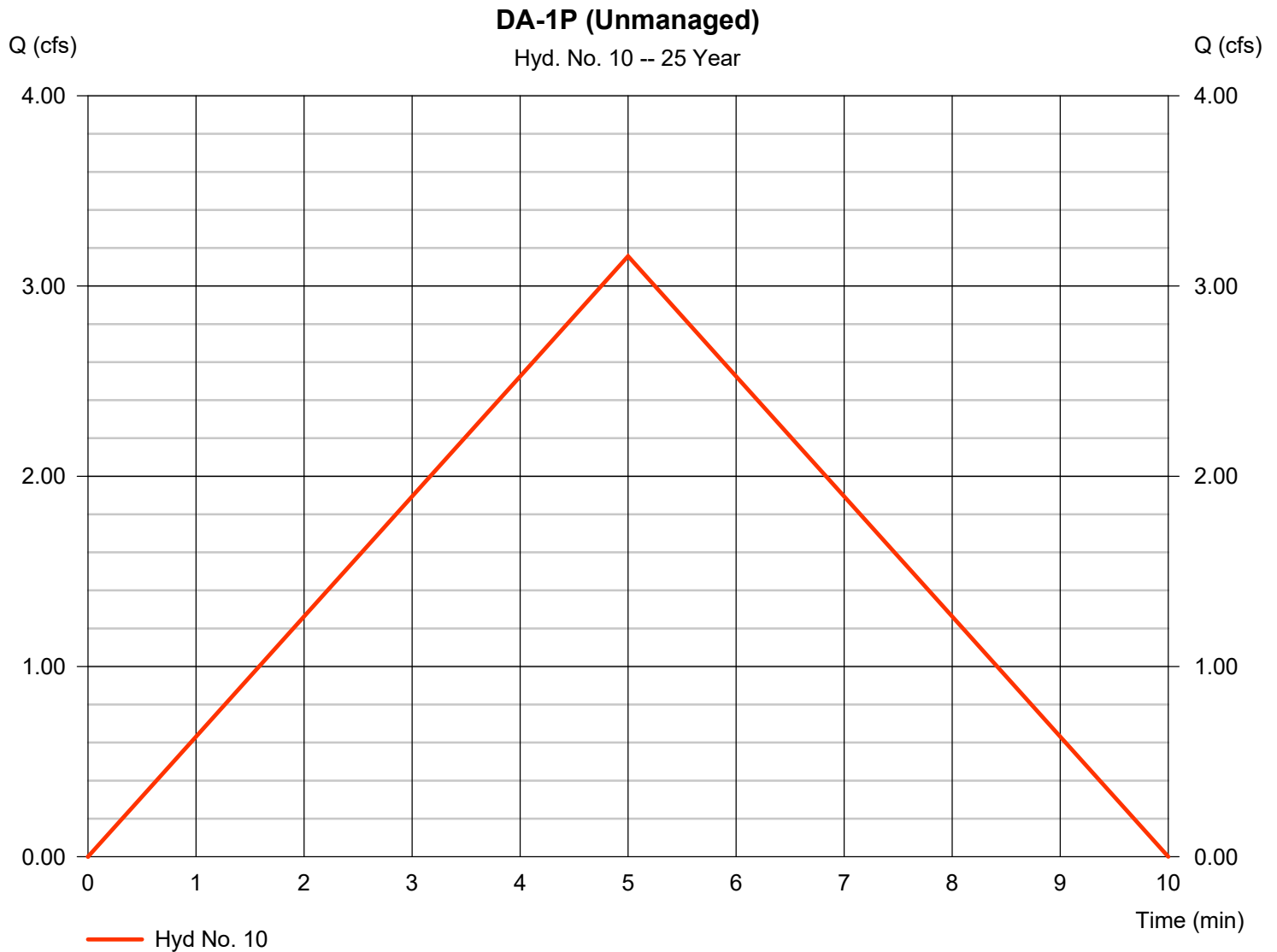


Hydrograph Report

Hyd. No. 10

DA-1P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 3.157 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 947 cuft
Drainage area	= 1.000 ac	Runoff coeff.	= 0.44
Intensity	= 7.174 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

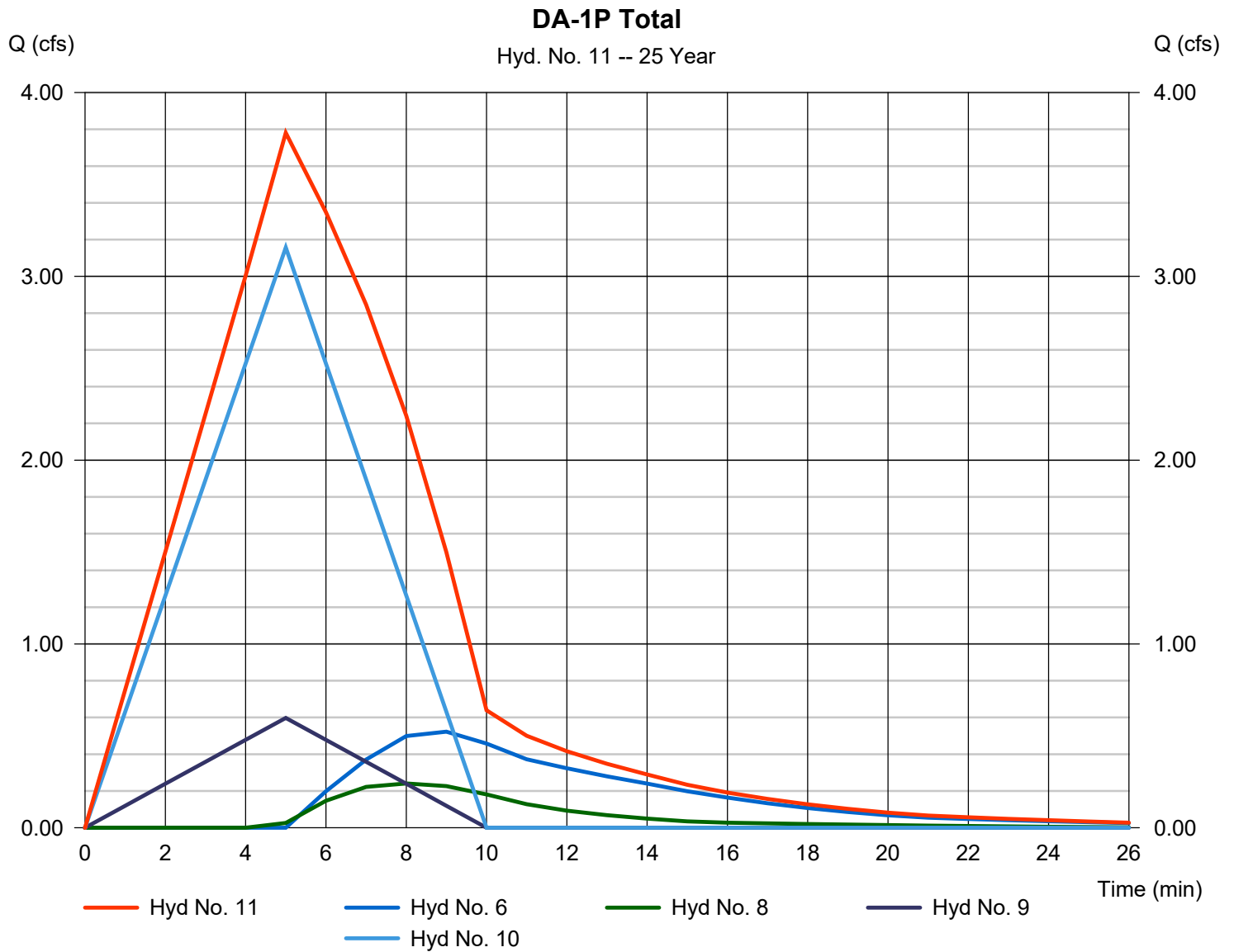


Hydrograph Report

Hyd. No. 11

DA-1P Total

Hydrograph type	= Combine	Peak discharge	= 3.781 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 1,483 cuft
Inflow hyds.	= 6, 8, 9, 10	Contrib. drain. area	= 1.170 ac

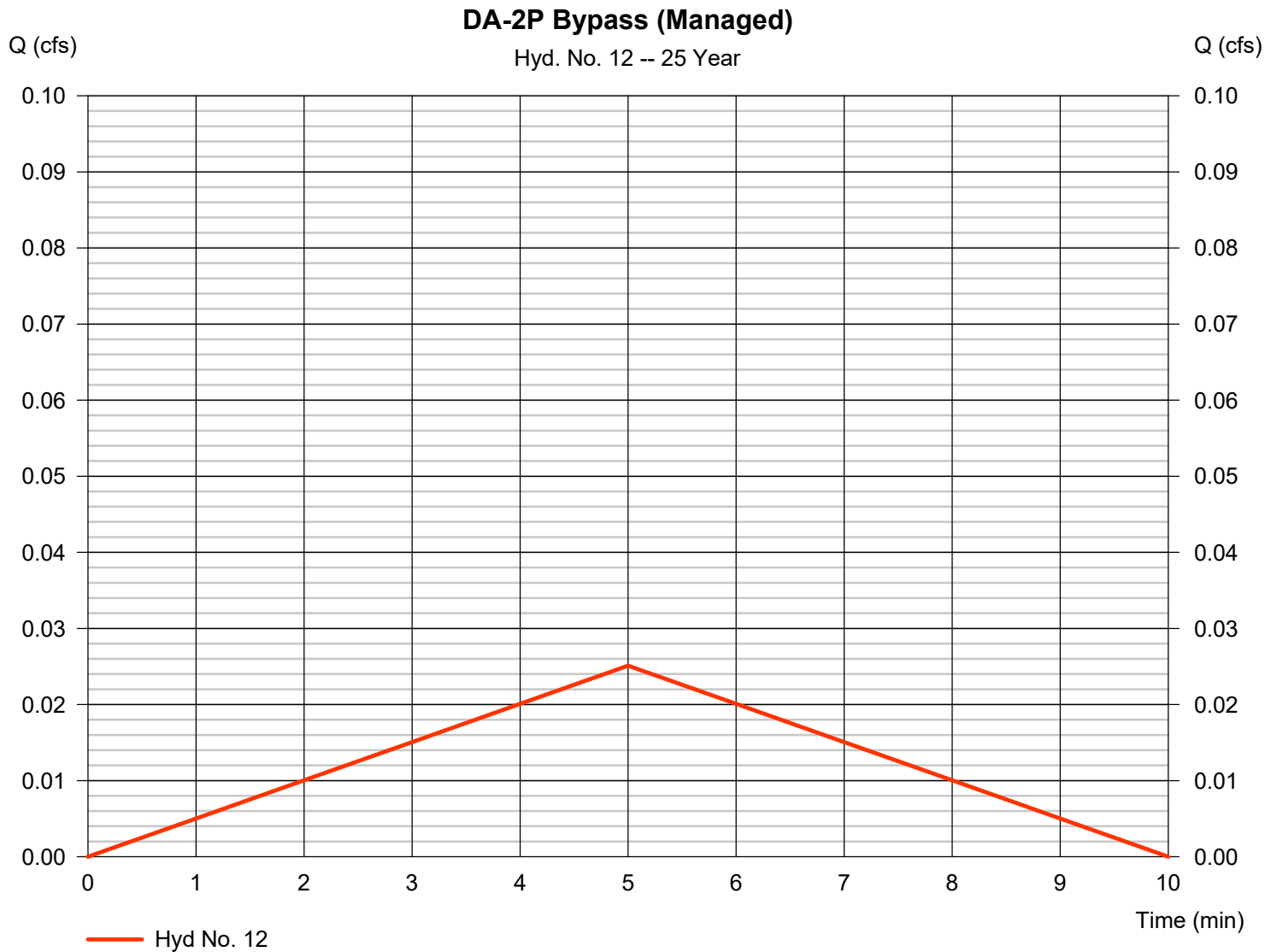


Hydrograph Report

Hyd. No. 12

DA-2P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.025 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 8 cuft
Drainage area	= 0.010 ac	Runoff coeff.	= 0.35
Intensity	= 7.174 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hyd. No. 13

DA-2P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 2.563 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 769 cuft
Drainage area	= 0.940 ac	Runoff coeff.	= 0.38
Intensity	= 7.174 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



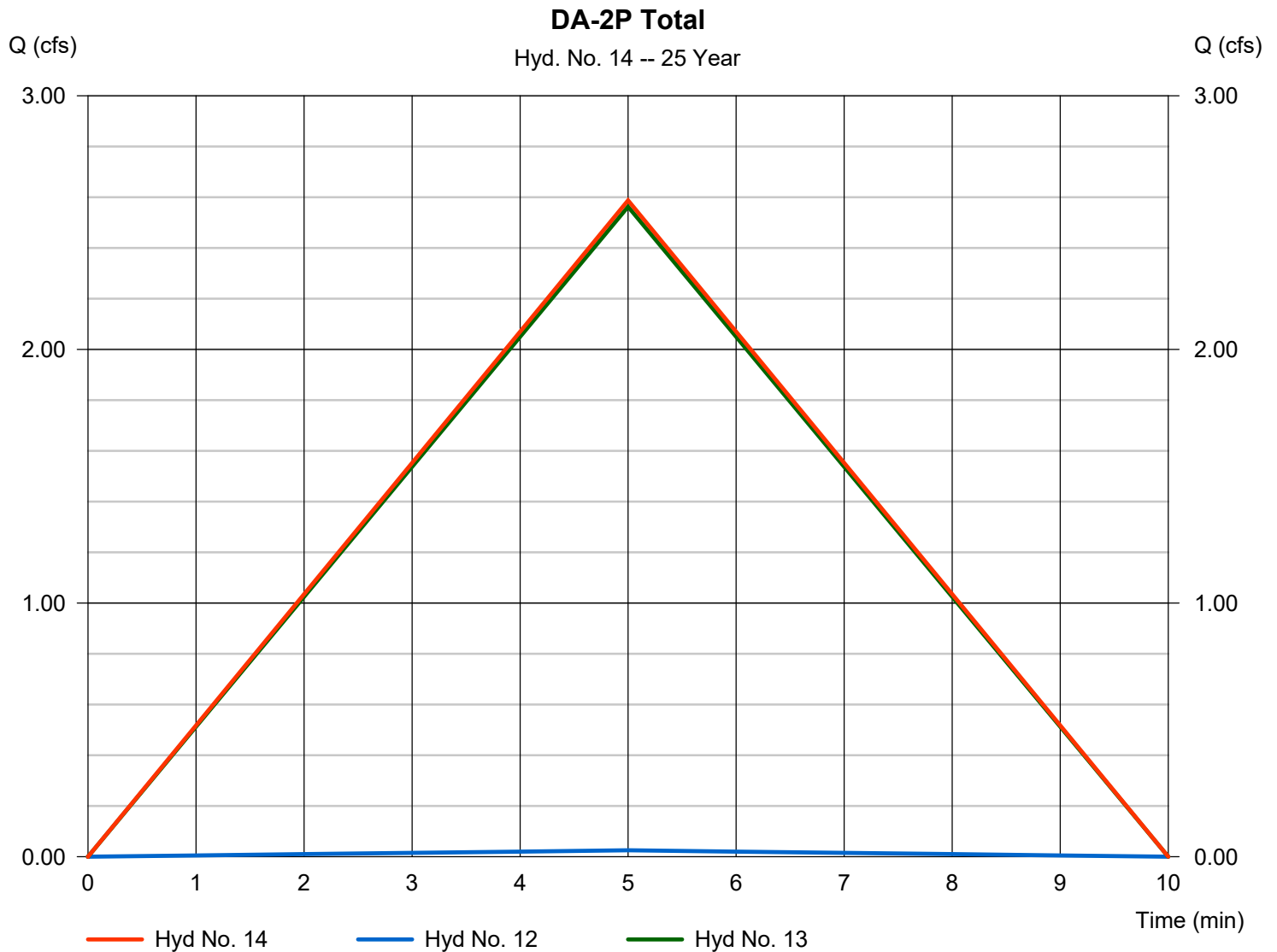
Hydrograph Report

Hyd. No. 14

DA-2P Total

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 1 min
Inflow hyds. = 12, 13

Peak discharge = 2.588 cfs
Time to peak = 5 min
Hyd. volume = 776 cuft
Contrib. drain. area = 0.950 ac



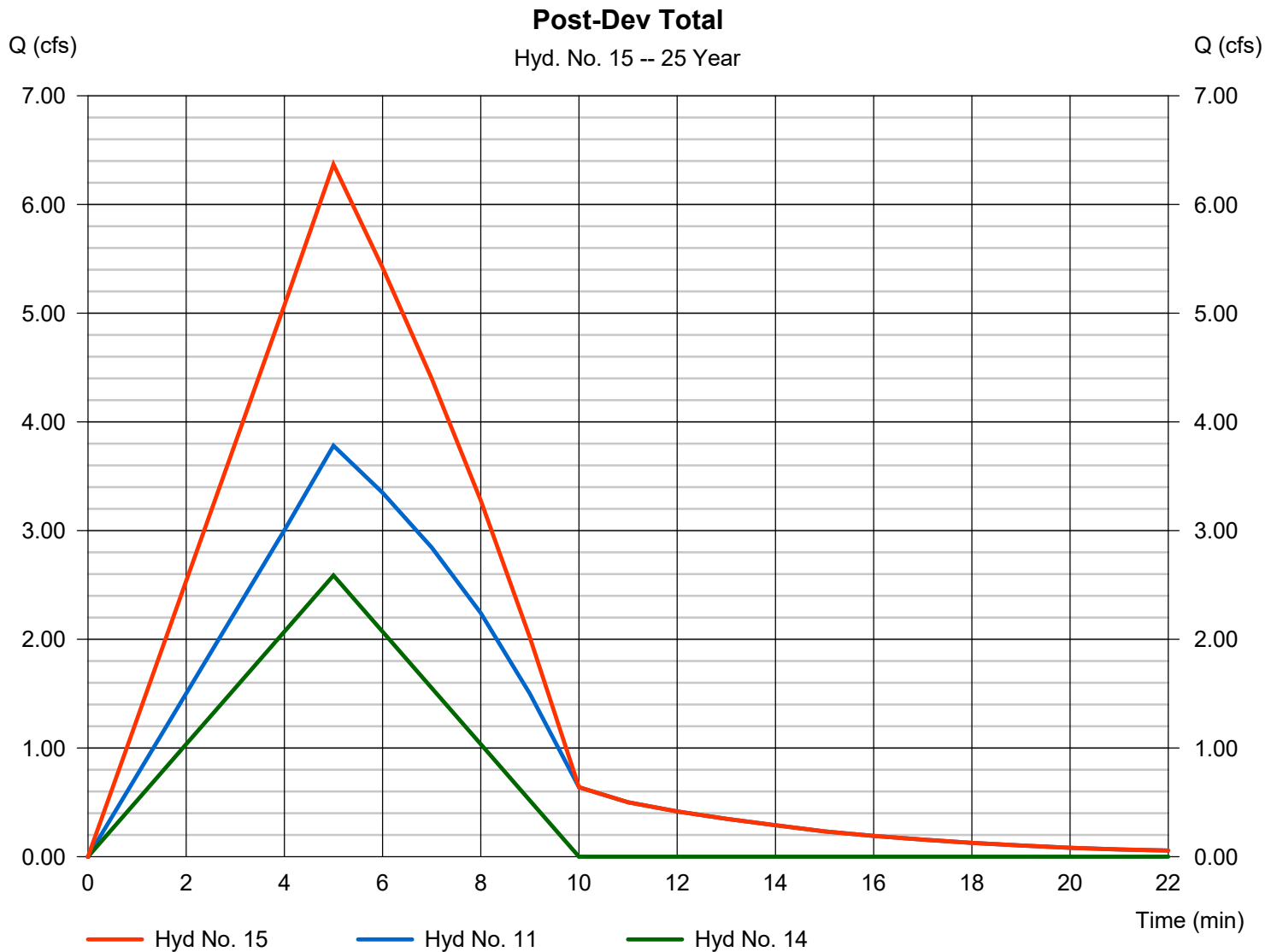
Hydrograph Report

Hyd. No. 15

Post-Dev Total

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 1 min
Inflow hyds. = 11, 14

Peak discharge = 6.368 cfs
Time to peak = 5 min
Hyd. volume = 2,259 cuft
Contrib. drain. area = 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

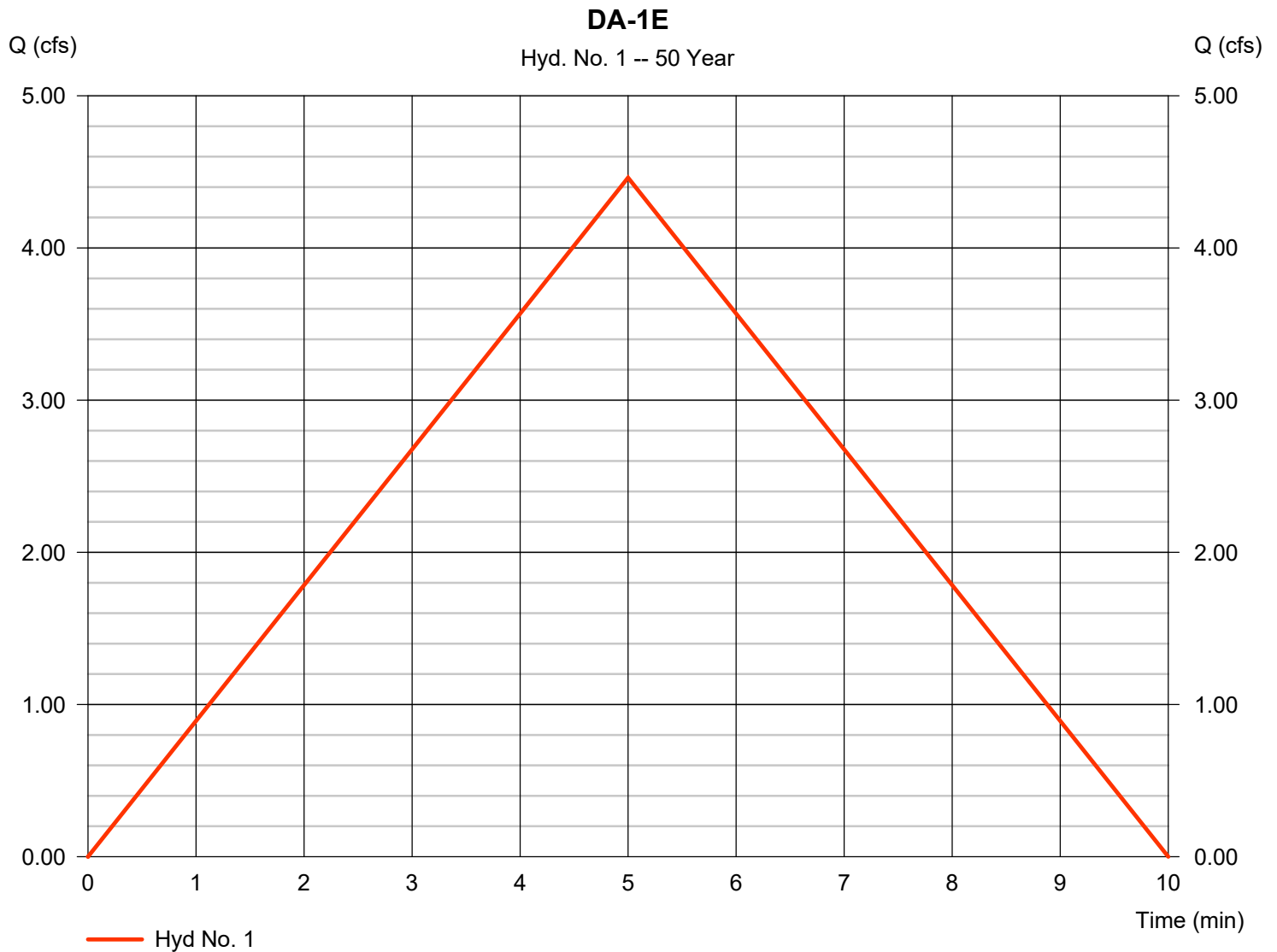
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	4.462	1	5	1,338	-----	-----	-----	DA-1E
2	Rational	3.033	1	5	910	-----	-----	-----	DA-2E
3	Combine	7.494	1	5	2,248	1, 2	-----	-----	Pre-Dev Total
5	Rational	2.308	1	5	692	-----	-----	-----	DA-1P Trench #1
6	Reservoir	0.601	1	9	307	5	251.79	573	DA-1P Tr. #1 (Outflow)
7	Rational	0.712	1	5	214	-----	-----	-----	DA-1P Trench #2
8	Reservoir	0.269	1	8	106	7	260.27	154	DA-1P Tr. #2 (Outflow)
9	Rational	0.639	1	5	192	-----	-----	-----	DA-1P Bypass (Managed)
10	Rational	3.376	1	5	1,013	-----	-----	-----	DA-1P (Unmanaged)
11	Combine	4.065	1	5	1,618	6, 8, 9, 10	-----	-----	DA-1P Total
12	Rational	0.027	1	5	8	-----	-----	-----	DA-2P Bypass (Managed)
13	Rational	2.741	1	5	822	-----	-----	-----	DA-2P (Unmanaged)
14	Combine	2.768	1	5	830	12, 13	-----	-----	DA-2P Total
15	Combine	6.832	1	5	2,449	11, 14	-----	-----	Post-Dev Total
Rev-0.gpw					Return Period: 50 Year			Monday, 11 / 14 / 2022	

Hydrograph Report

Hyd. No. 1

DA-1E

Hydrograph type	= Rational	Peak discharge	= 4.462 cfs
Storm frequency	= 50 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 1,338 cuft
Drainage area	= 1.710 ac	Runoff coeff.	= 0.34
Intensity	= 7.674 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

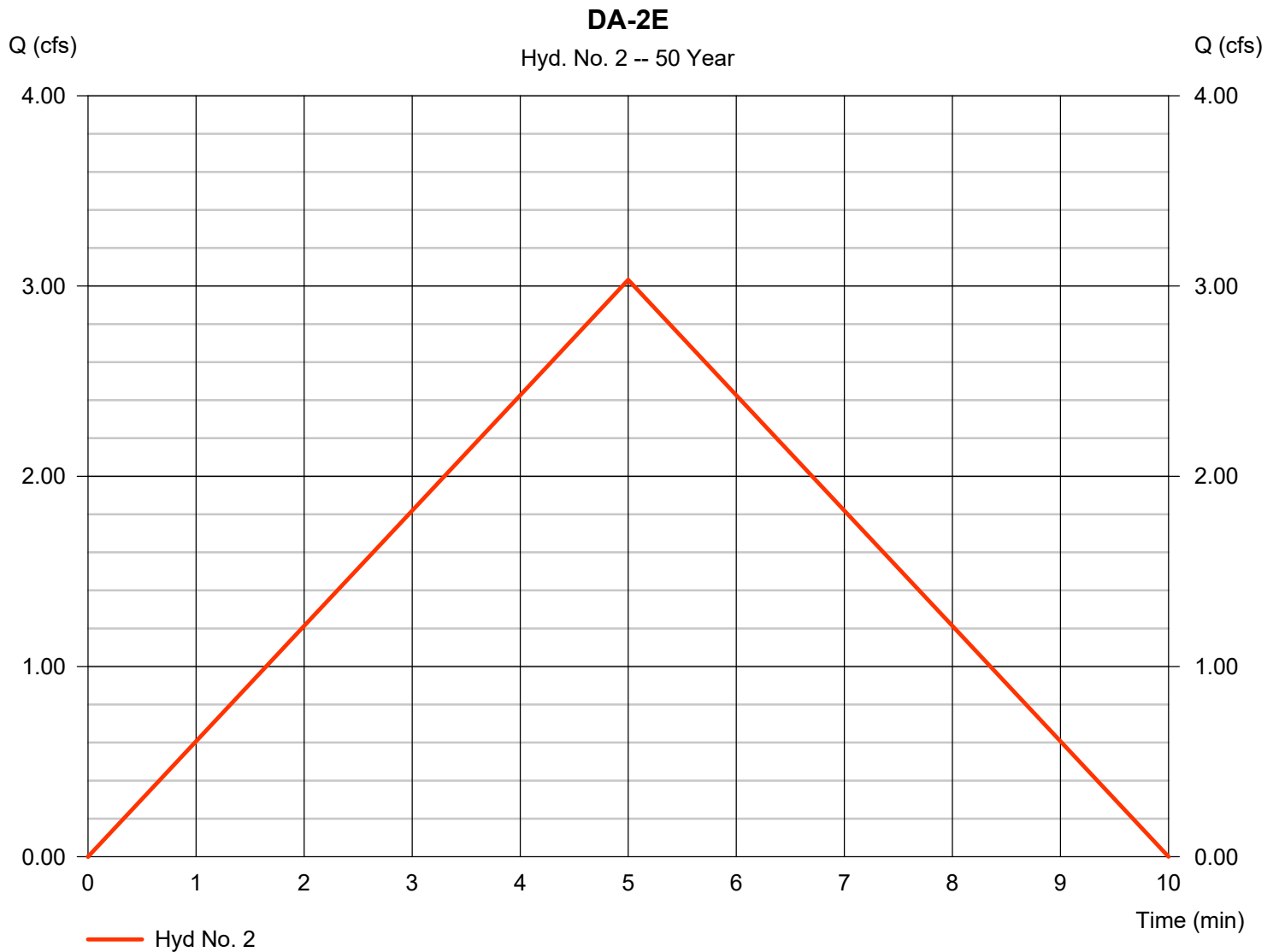


Hydrograph Report

Hyd. No. 2

DA-2E

Hydrograph type	= Rational	Peak discharge	= 3.033 cfs
Storm frequency	= 50 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 910 cuft
Drainage area	= 1.040 ac	Runoff coeff.	= 0.38
Intensity	= 7.674 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



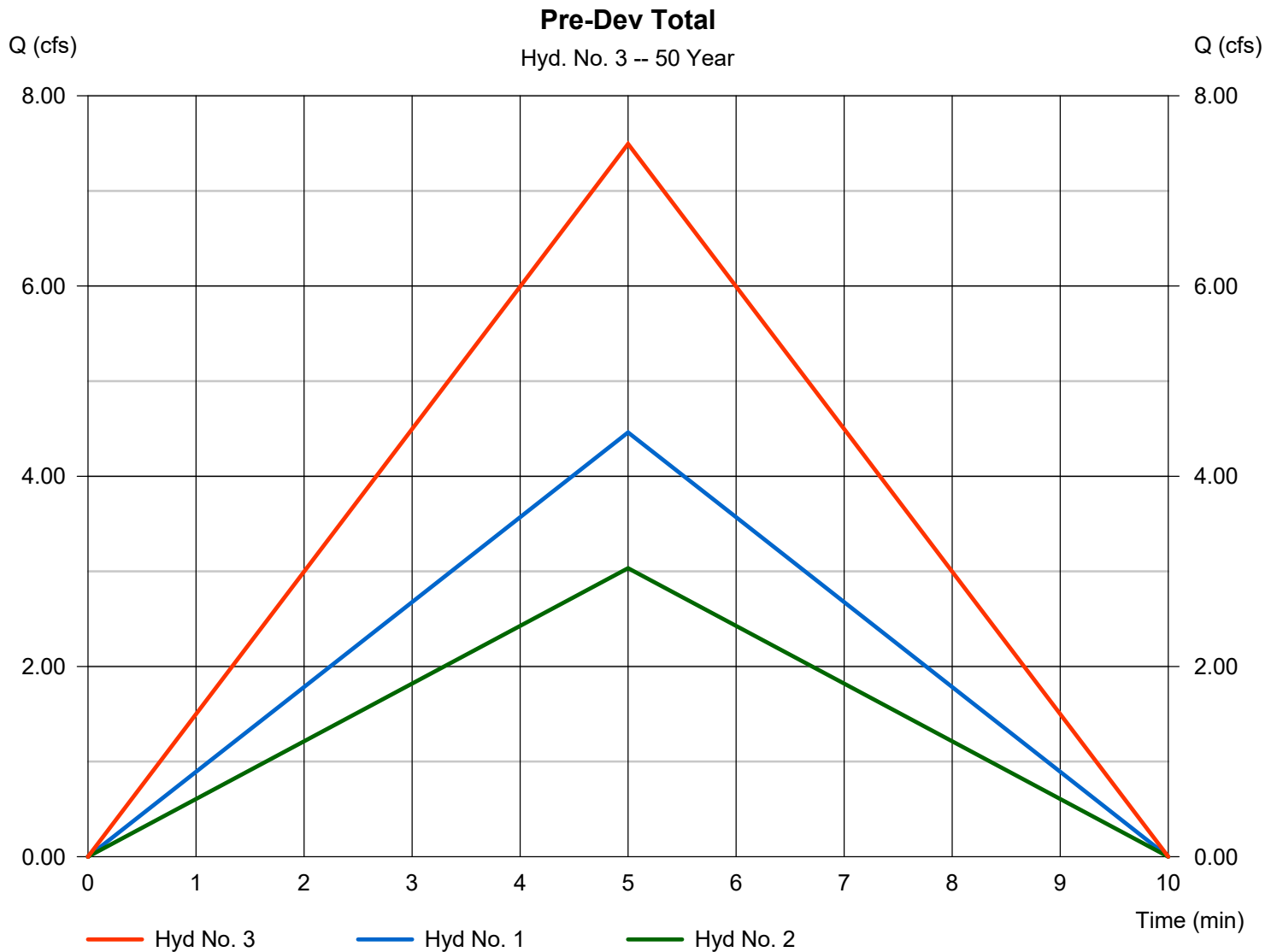
Hydrograph Report

Hyd. No. 3

Pre-Dev Total

Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 1 min
Inflow hyds. = 1, 2

Peak discharge = 7.494 cfs
Time to peak = 5 min
Hyd. volume = 2,248 cuft
Contrib. drain. area = 2.750 ac

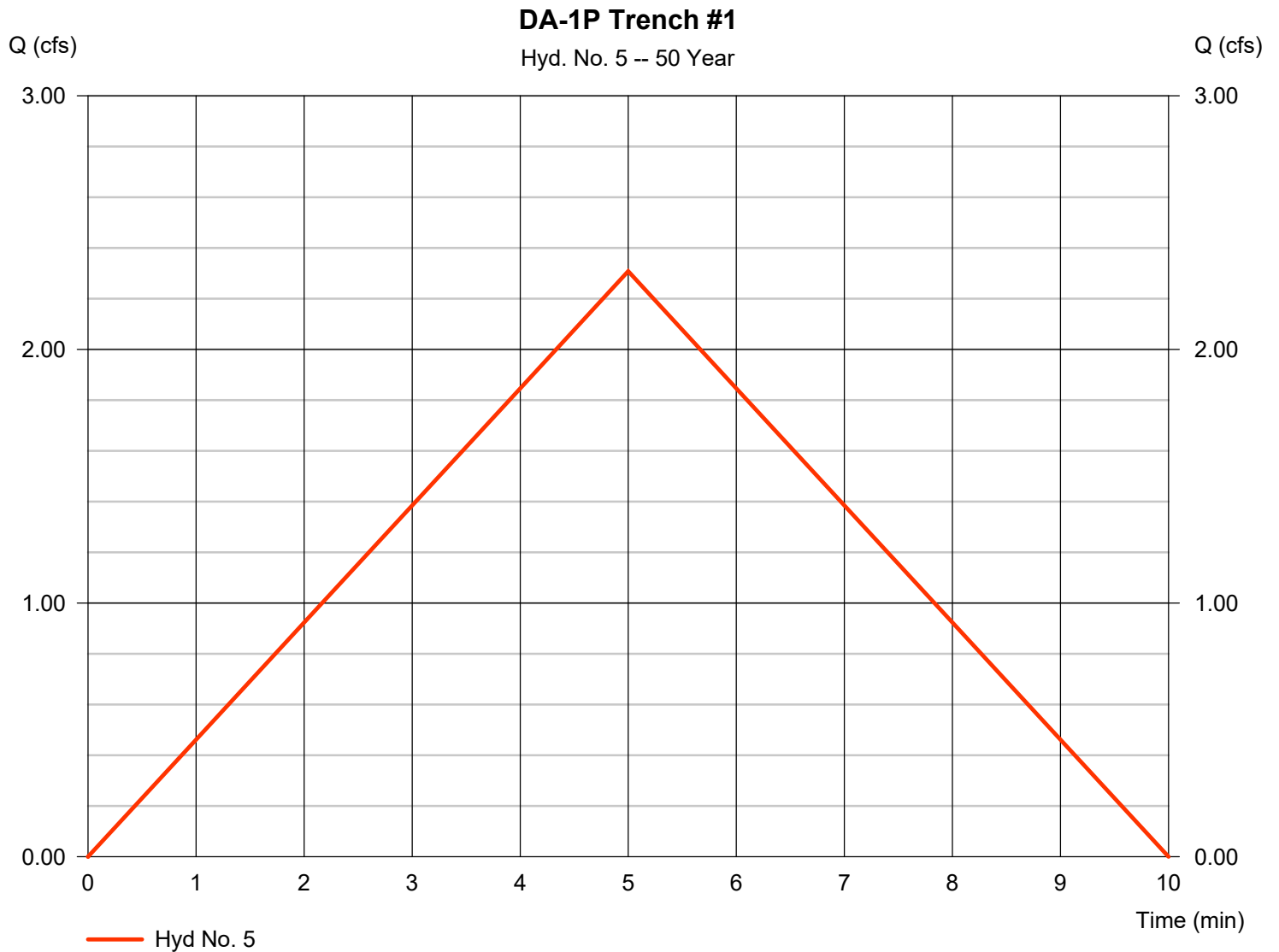


Hydrograph Report

Hyd. No. 5

DA-1P Trench #1

Hydrograph type	= Rational	Peak discharge	= 2.308 cfs
Storm frequency	= 50 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 692 cuft
Drainage area	= 0.470 ac	Runoff coeff.	= 0.64
Intensity	= 7.674 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



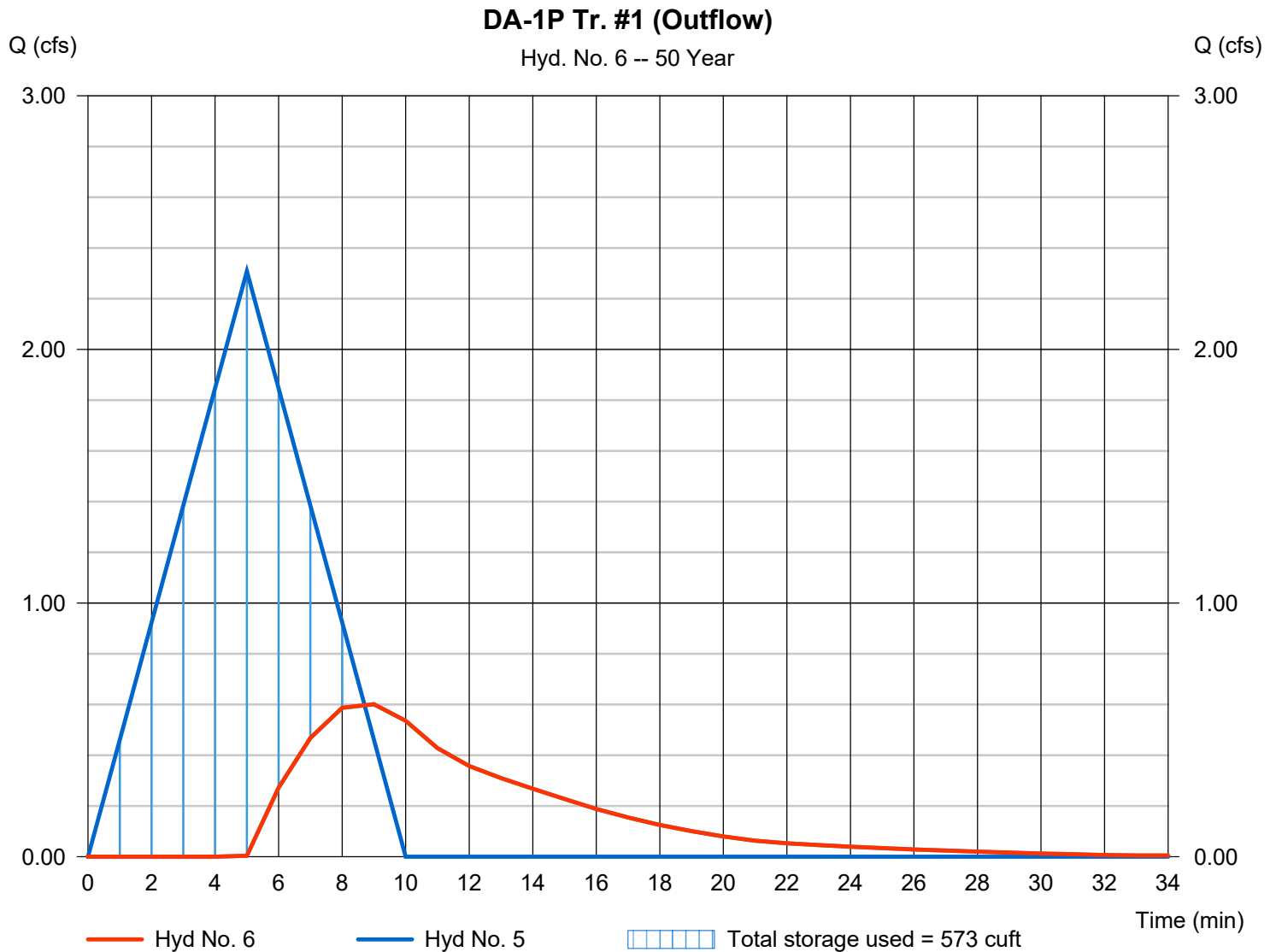
Hydrograph Report

Hyd. No. 6

DA-1P Tr. #1 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.601 cfs
Storm frequency	= 50 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 307 cuft
Inflow hyd. No.	= 5 - DA-1P Trench #1	Max. Elevation	= 251.79 ft
Reservoir name	= Trench #1	Max. Storage	= 573 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

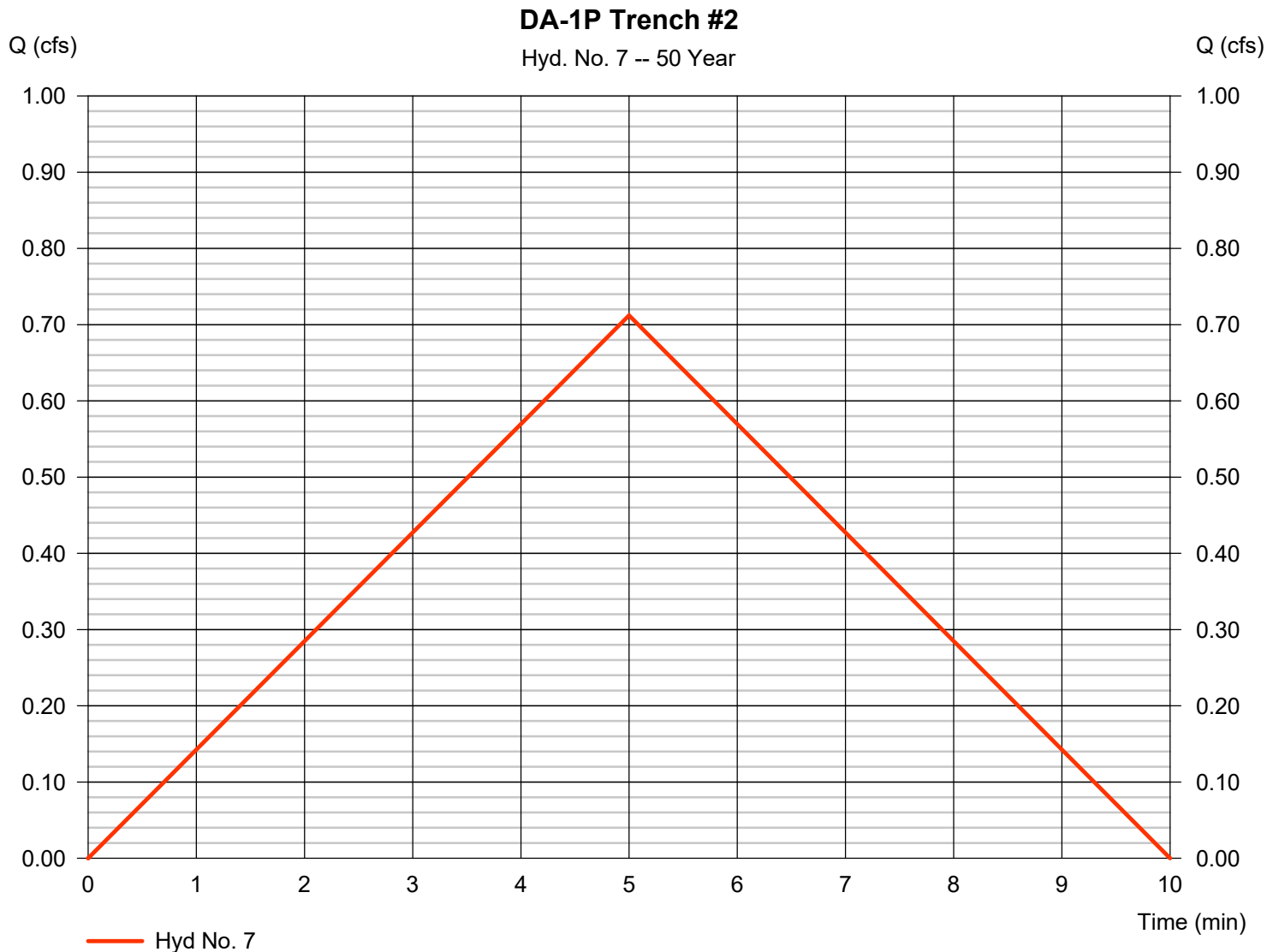


Hydrograph Report

Hyd. No. 7

DA-1P Trench #2

Hydrograph type	= Rational	Peak discharge	= 0.712 cfs
Storm frequency	= 50 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 214 cuft
Drainage area	= 0.160 ac	Runoff coeff.	= 0.58
Intensity	= 7.674 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



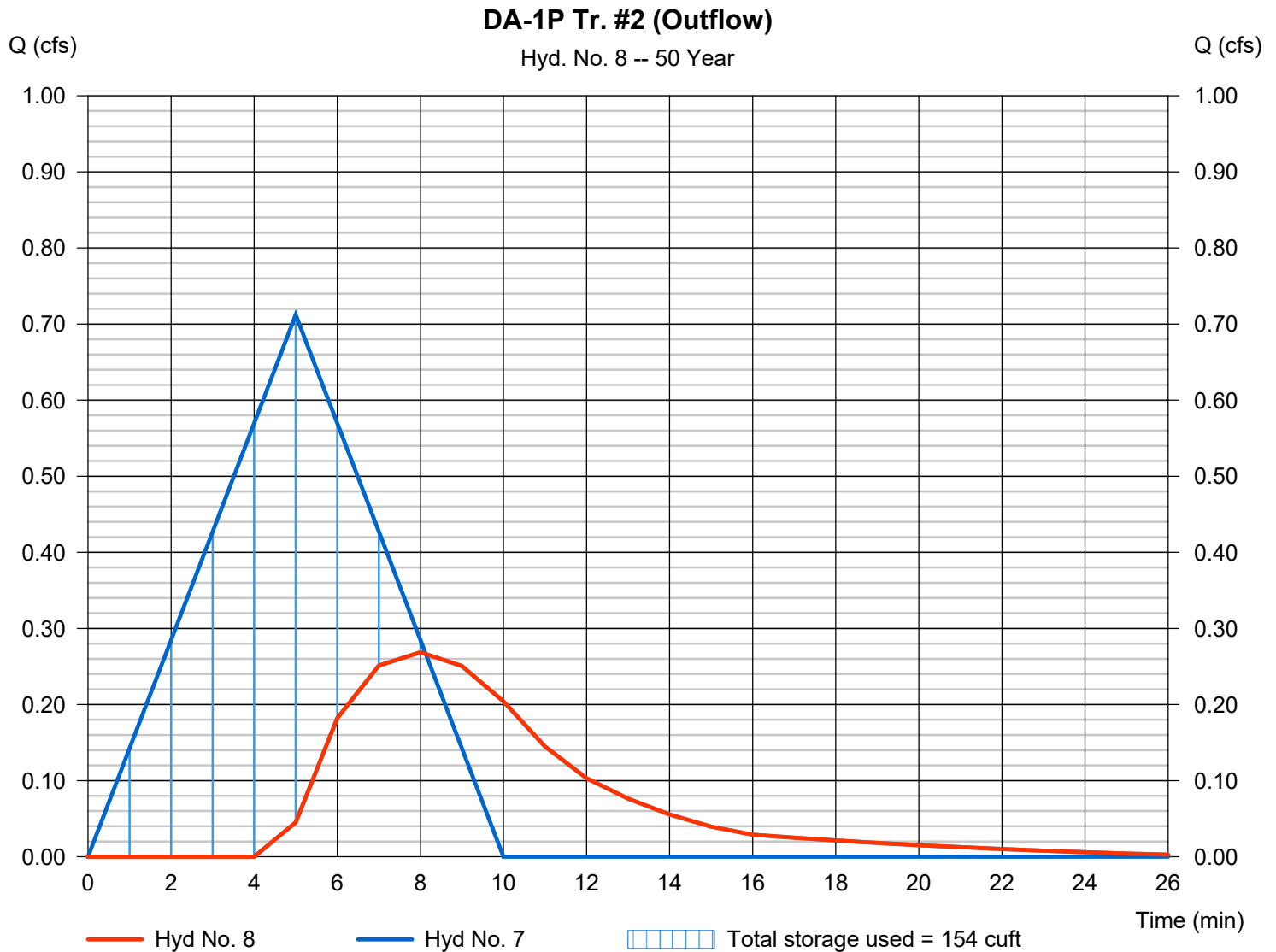
Hydrograph Report

Hyd. No. 8

DA-1P Tr. #2 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.269 cfs
Storm frequency	= 50 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 106 cuft
Inflow hyd. No.	= 7 - DA-1P Trench #2	Max. Elevation	= 260.27 ft
Reservoir name	= Trench #2	Max. Storage	= 154 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

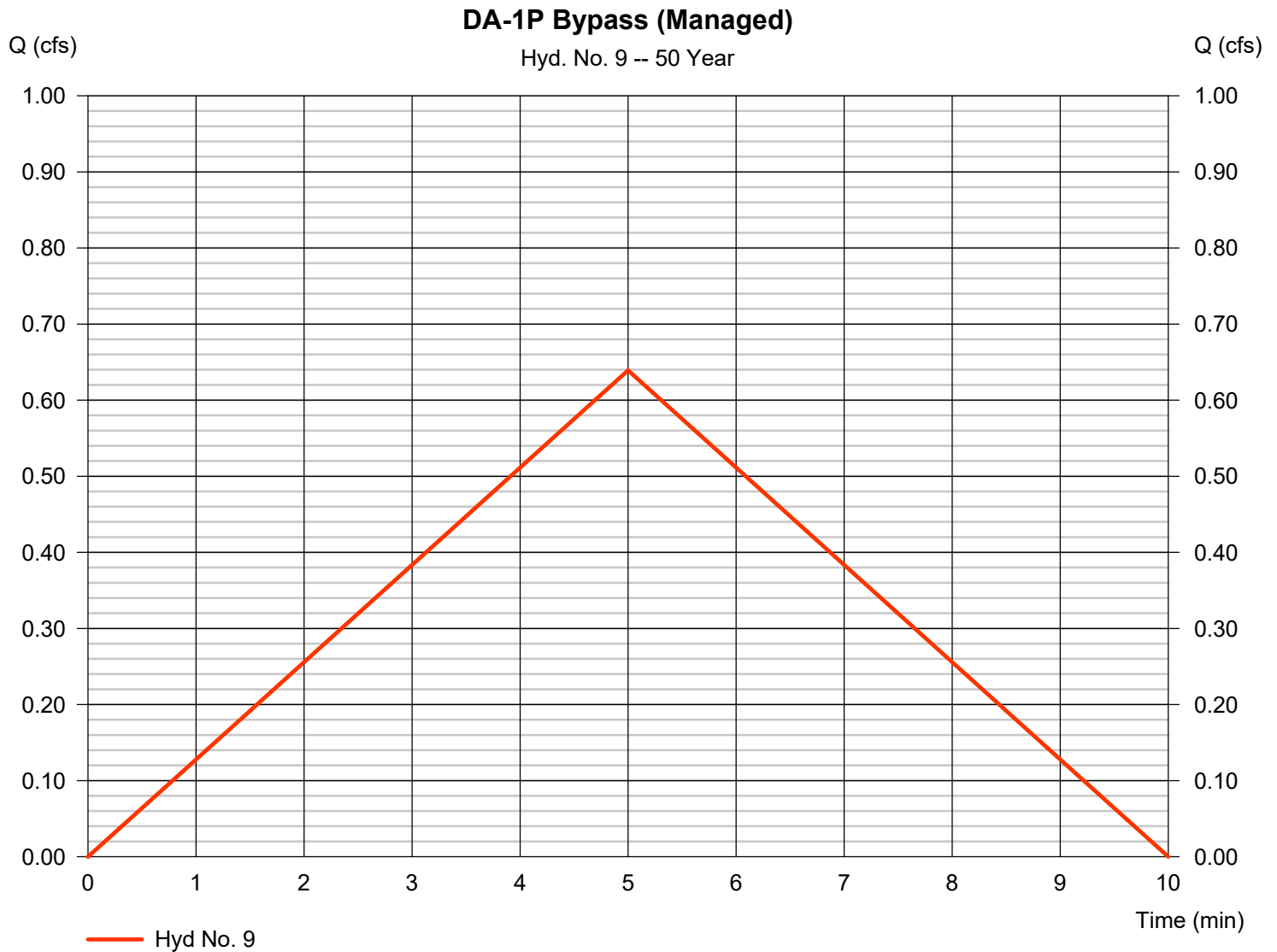


Hydrograph Report

Hyd. No. 9

DA-1P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.639 cfs
Storm frequency	= 50 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 192 cuft
Drainage area	= 0.170 ac	Runoff coeff.	= 0.49
Intensity	= 7.674 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

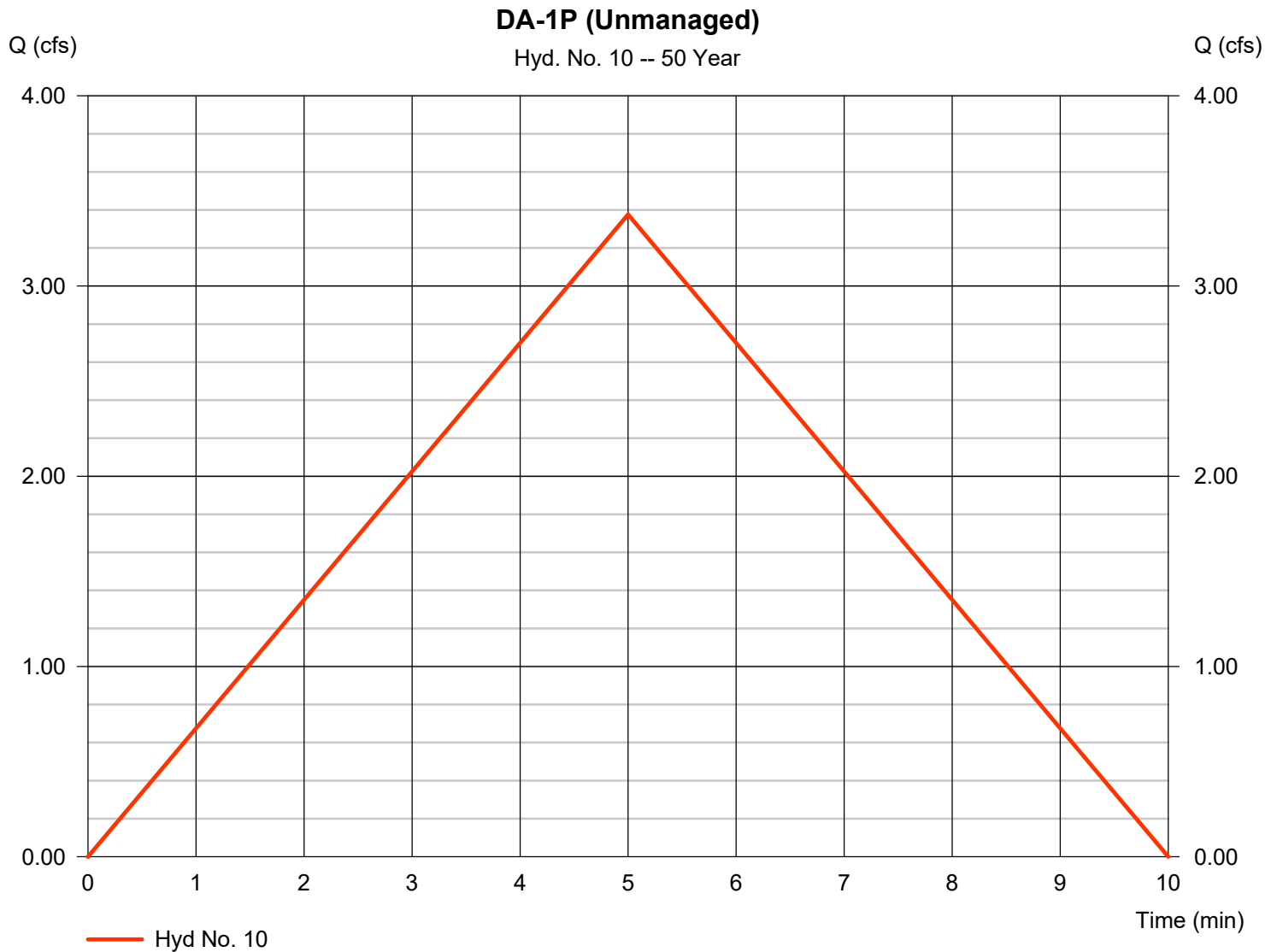


Hydrograph Report

Hyd. No. 10

DA-1P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 3.376 cfs
Storm frequency	= 50 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 1,013 cuft
Drainage area	= 1.000 ac	Runoff coeff.	= 0.44
Intensity	= 7.674 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



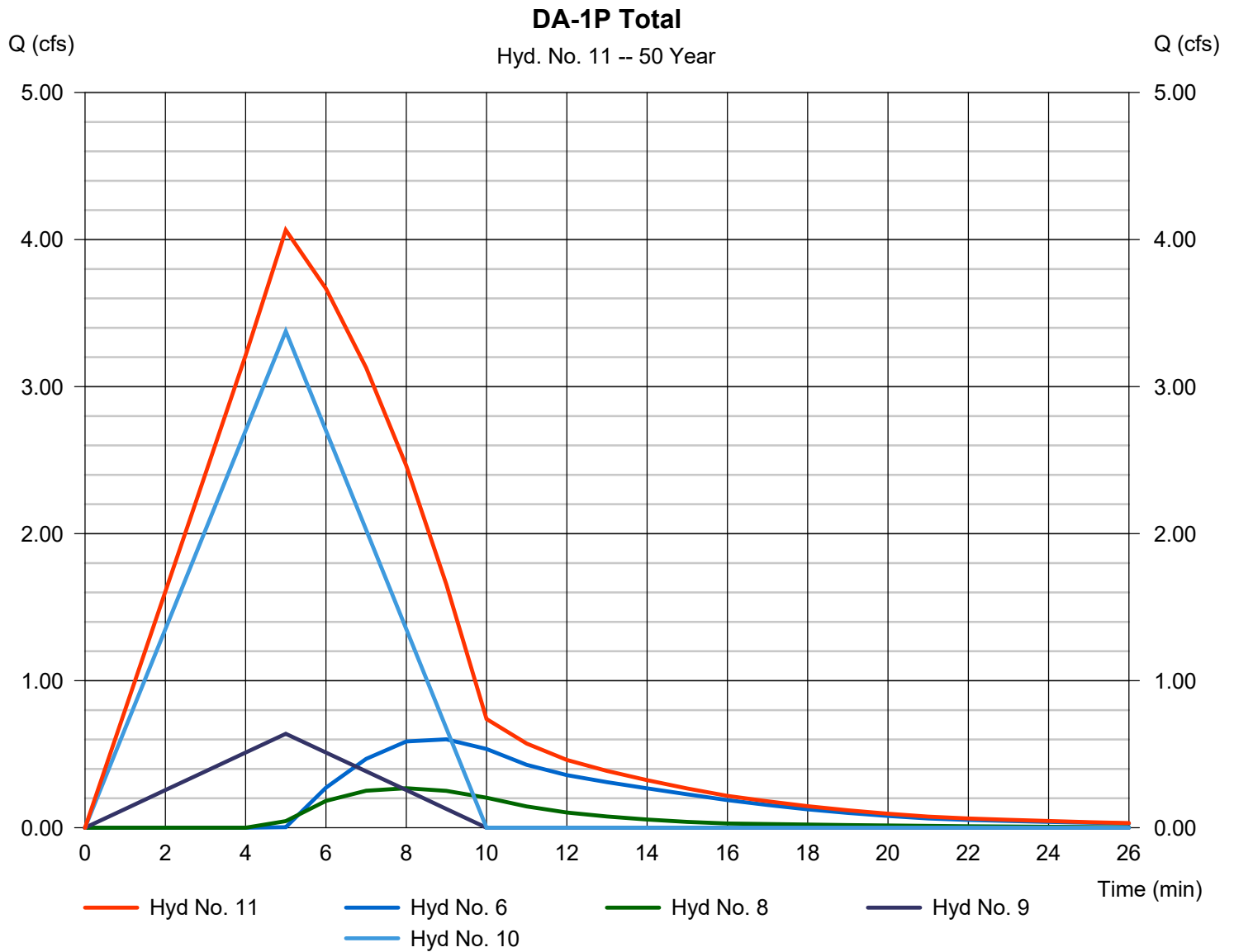
Hydrograph Report

Hyd. No. 11

DA-1P Total

Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 1 min
Inflow hyds. = 6, 8, 9, 10

Peak discharge = 4.065 cfs
Time to peak = 5 min
Hyd. volume = 1,618 cuft
Contrib. drain. area = 1.170 ac

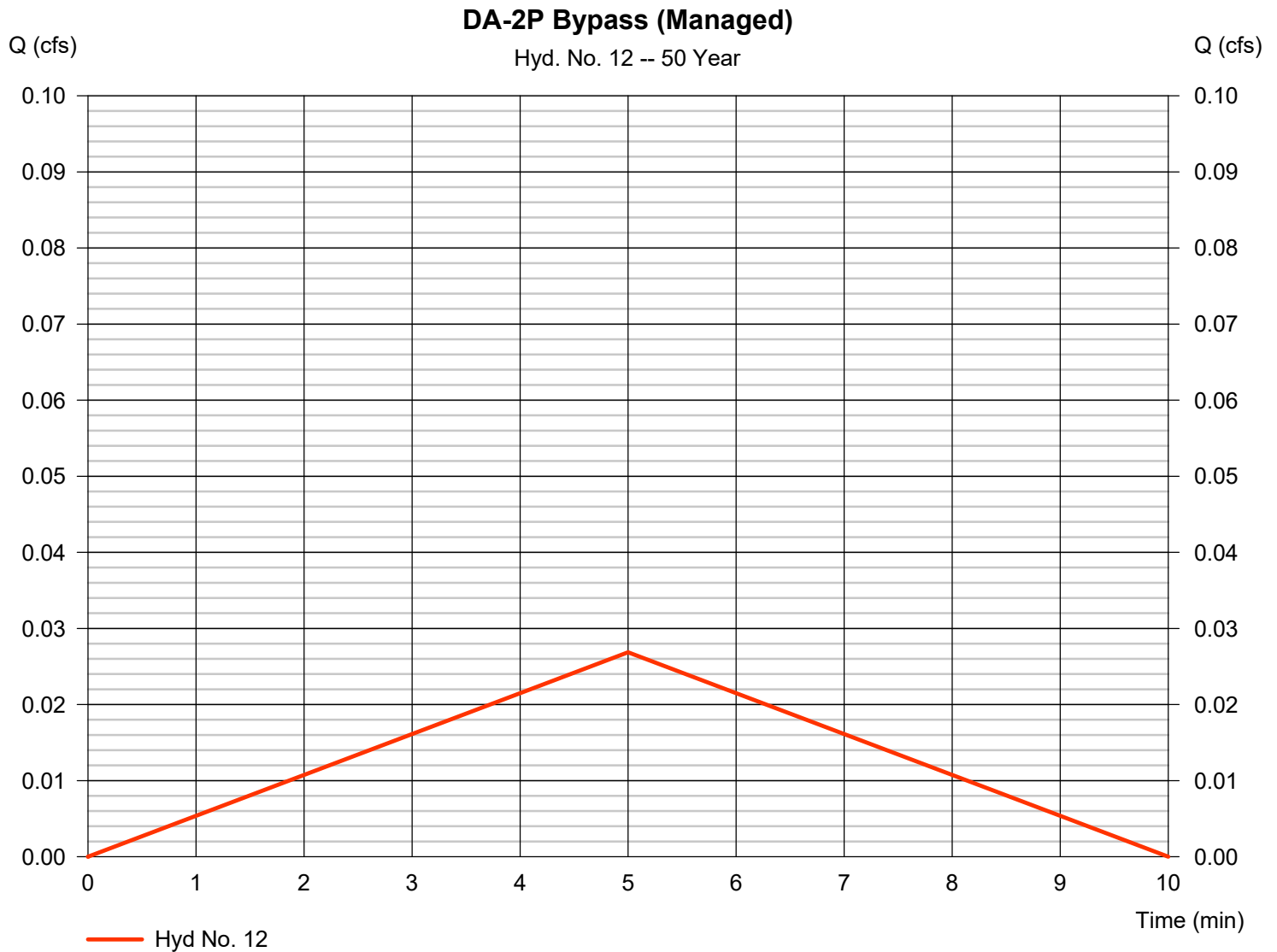


Hydrograph Report

Hyd. No. 12

DA-2P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.027 cfs
Storm frequency	= 50 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 8 cuft
Drainage area	= 0.010 ac	Runoff coeff.	= 0.35
Intensity	= 7.674 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hyd. No. 13

DA-2P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 2.741 cfs
Storm frequency	= 50 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 822 cuft
Drainage area	= 0.940 ac	Runoff coeff.	= 0.38
Intensity	= 7.674 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



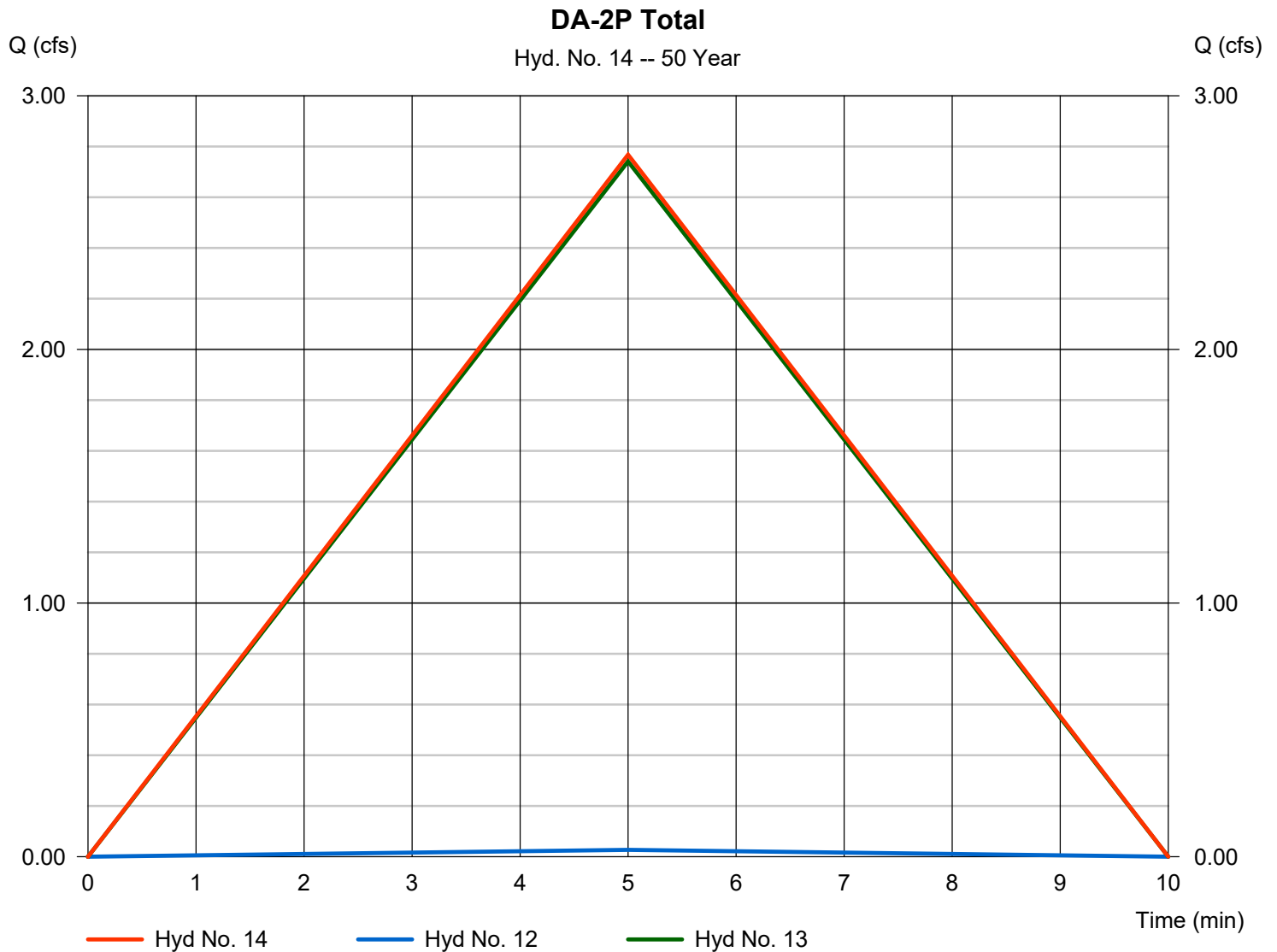
Hydrograph Report

Hyd. No. 14

DA-2P Total

Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 1 min
Inflow hyds. = 12, 13

Peak discharge = 2.768 cfs
Time to peak = 5 min
Hyd. volume = 830 cuft
Contrib. drain. area = 0.950 ac



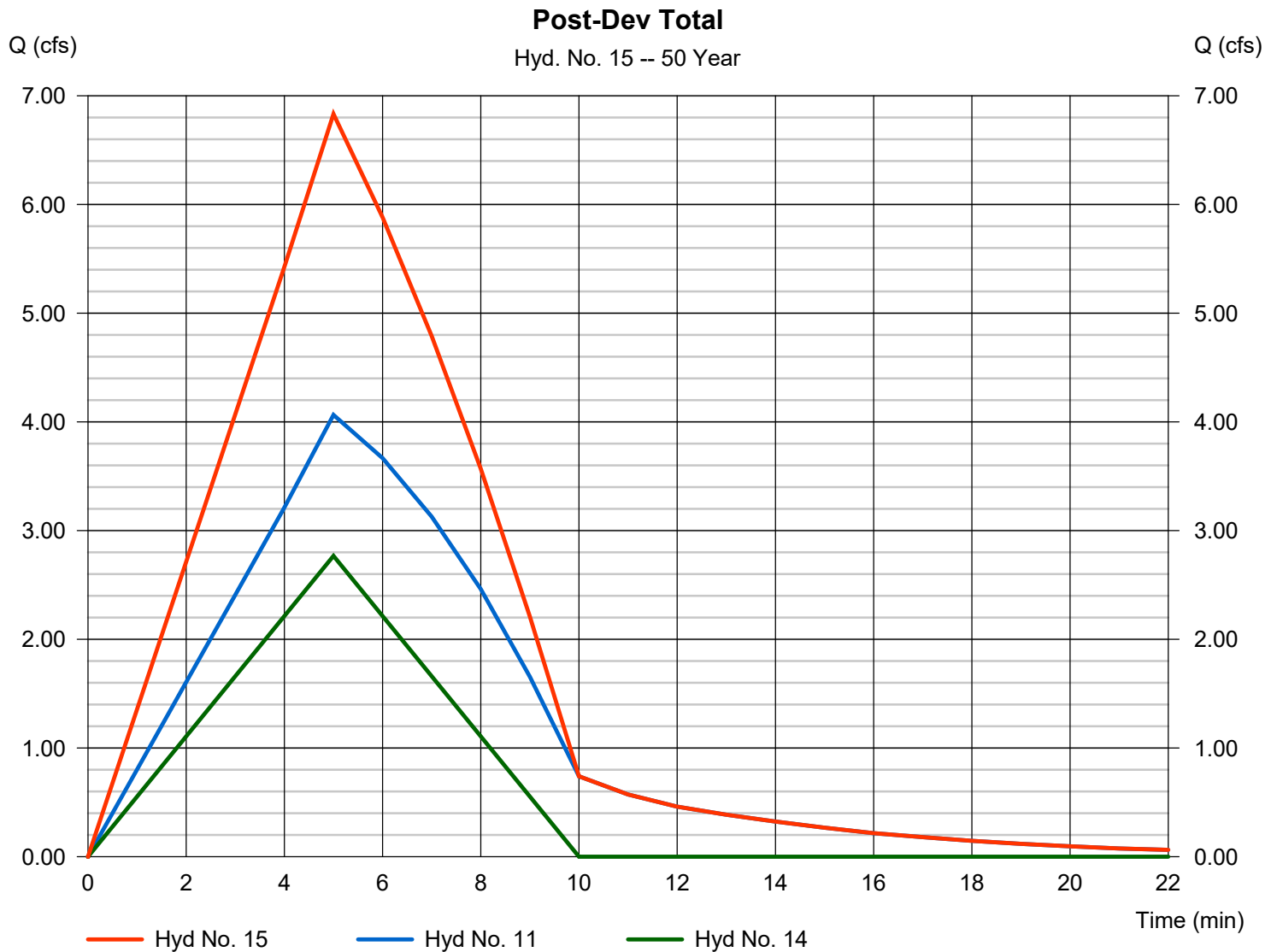
Hydrograph Report

Hyd. No. 15

Post-Dev Total

Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 1 min
Inflow hyds. = 11, 14

Peak discharge = 6.832 cfs
Time to peak = 5 min
Hyd. volume = 2,449 cuft
Contrib. drain. area = 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	4.754	1	5	1,426	----	----	----	DA-1E
2	Rational	3.232	1	5	970	----	----	----	DA-2E
3	Combine	7.986	1	5	2,396	1, 2	----	----	Pre-Dev Total
5	Rational	2.460	1	5	738	----	----	----	DA-1P Trench #1
6	Reservoir	0.672	1	9	351	5	251.88	600	DA-1P Tr. #1 (Outflow)
7	Rational	0.759	1	5	228	----	----	----	DA-1P Trench #2
8	Reservoir	0.295	1	8	120	7	260.30	160	DA-1P Tr. #2 (Outflow)
9	Rational	0.681	1	5	204	----	----	----	DA-1P Bypass (Managed)
10	Rational	3.598	1	5	1,079	----	----	----	DA-1P (Unmanaged)
11	Combine	4.377	1	5	1,755	6, 8, 9, 10	----	----	DA-1P Total
12	Rational	0.029	1	5	9	----	----	----	DA-2P Bypass (Managed)
13	Rational	2.921	1	5	876	----	----	----	DA-2P (Unmanaged)
14	Combine	2.950	1	5	885	12, 13	----	----	DA-2P Total
15	Combine	7.327	1	5	2,640	11, 14	----	----	Post-Dev Total
Rev-0.gpw					Return Period: 100 Year			Monday, 11 / 14 / 2022	

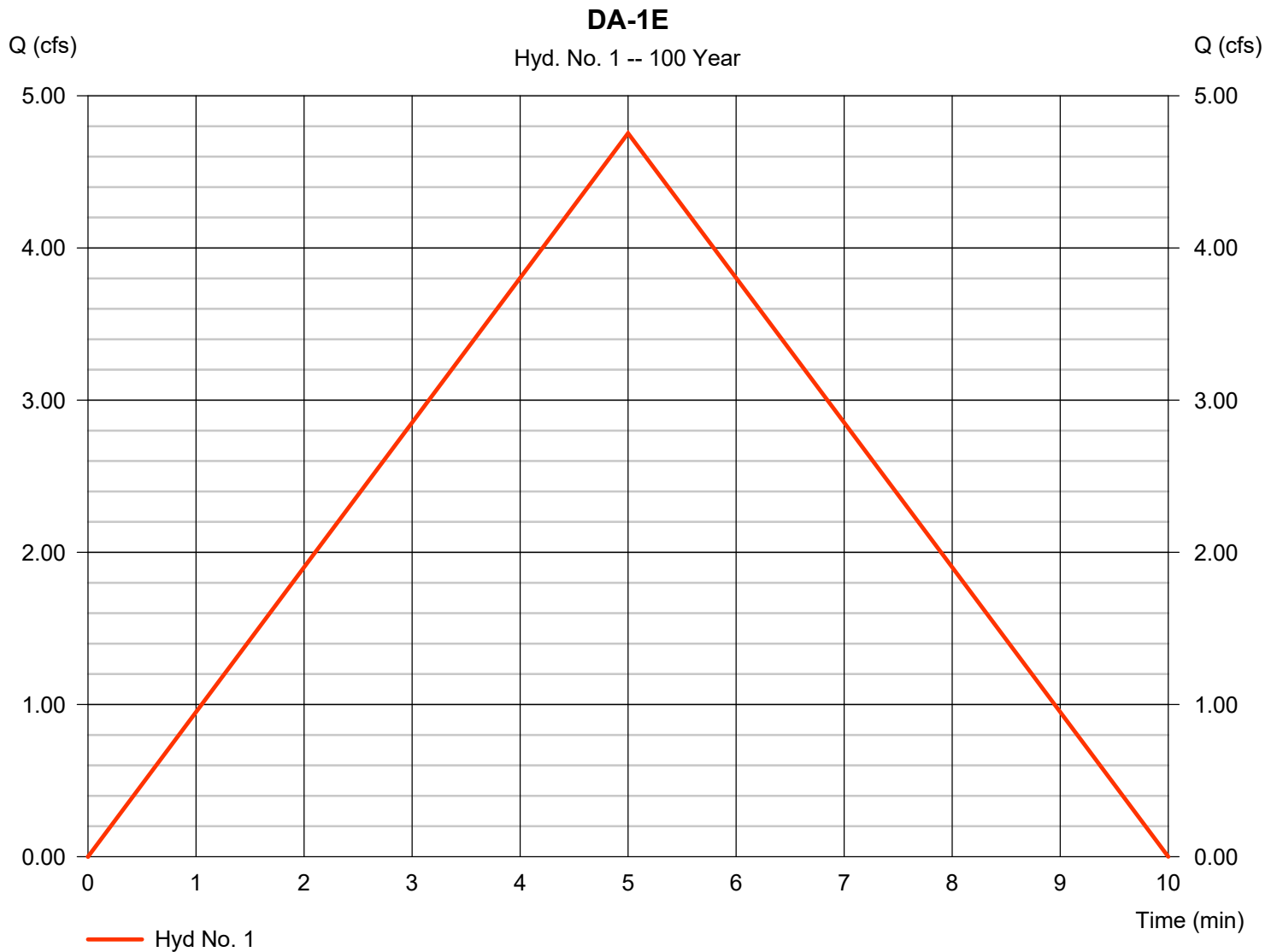
Hydrograph Report

Hyd. No. 1

DA-1E

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 1.710 ac
Intensity = 8.177 in/hr
IDF Curve = SampleFHA.idf

Peak discharge = 4.754 cfs
Time to peak = 5 min
Hyd. volume = 1,426 cuft
Runoff coeff. = 0.34
Tc by User = 5.00 min
Asc/Rec limb fact = 1/1

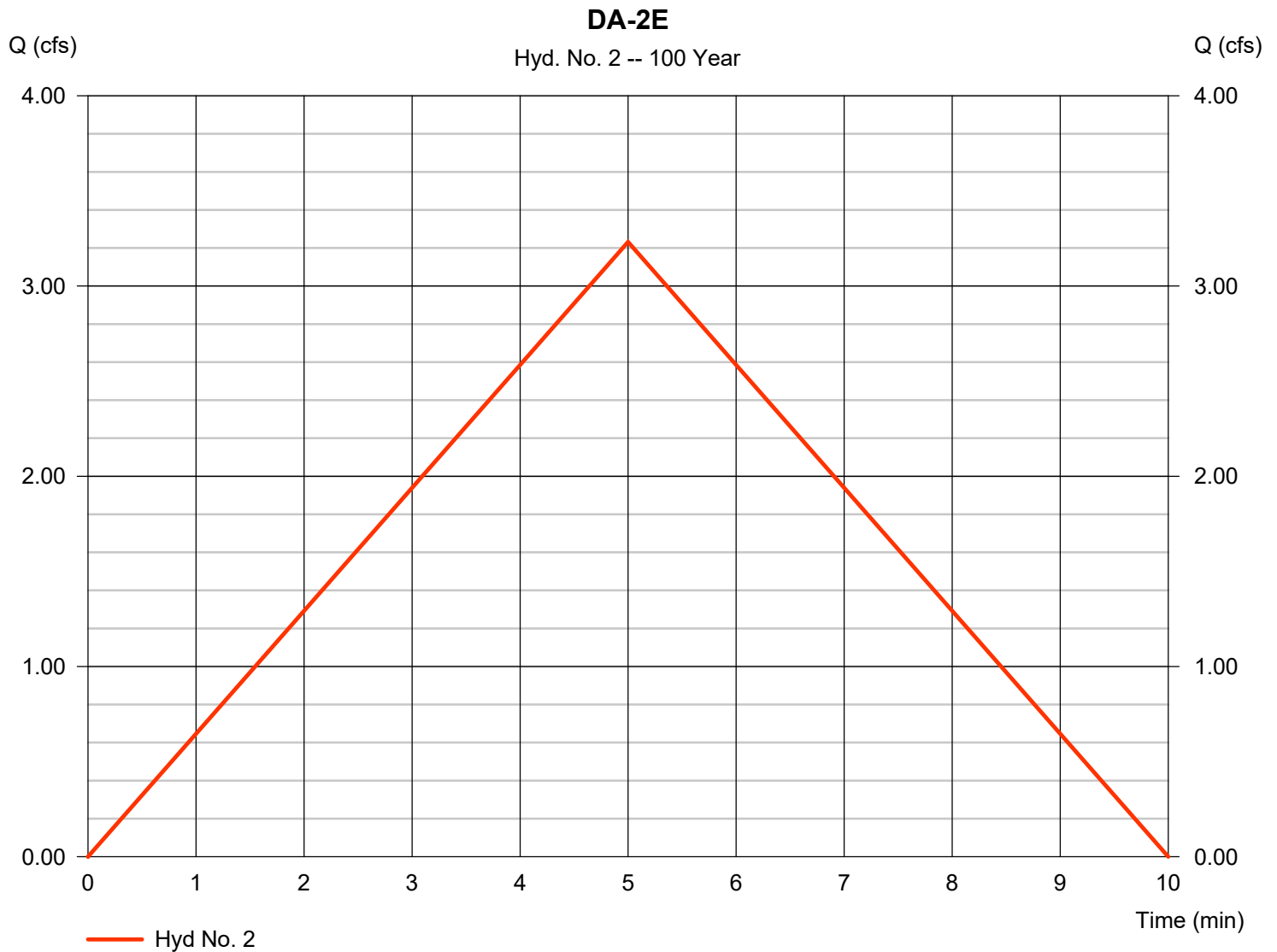


Hydrograph Report

Hyd. No. 2

DA-2E

Hydrograph type	= Rational	Peak discharge	= 3.232 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 970 cuft
Drainage area	= 1.040 ac	Runoff coeff.	= 0.38
Intensity	= 8.177 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



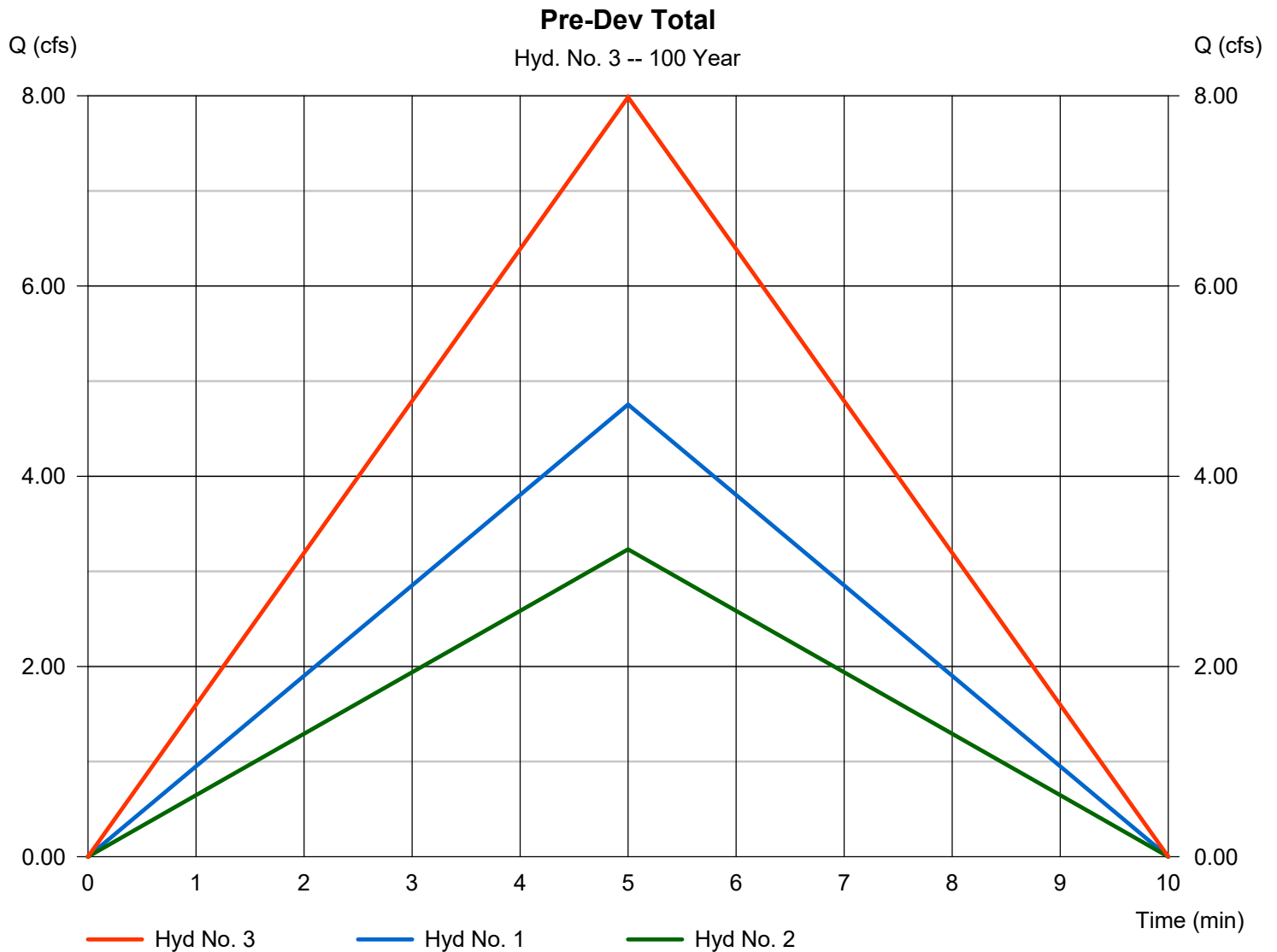
Hydrograph Report

Hyd. No. 3

Pre-Dev Total

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 1, 2

Peak discharge = 7.986 cfs
Time to peak = 5 min
Hyd. volume = 2,396 cuft
Contrib. drain. area = 2.750 ac

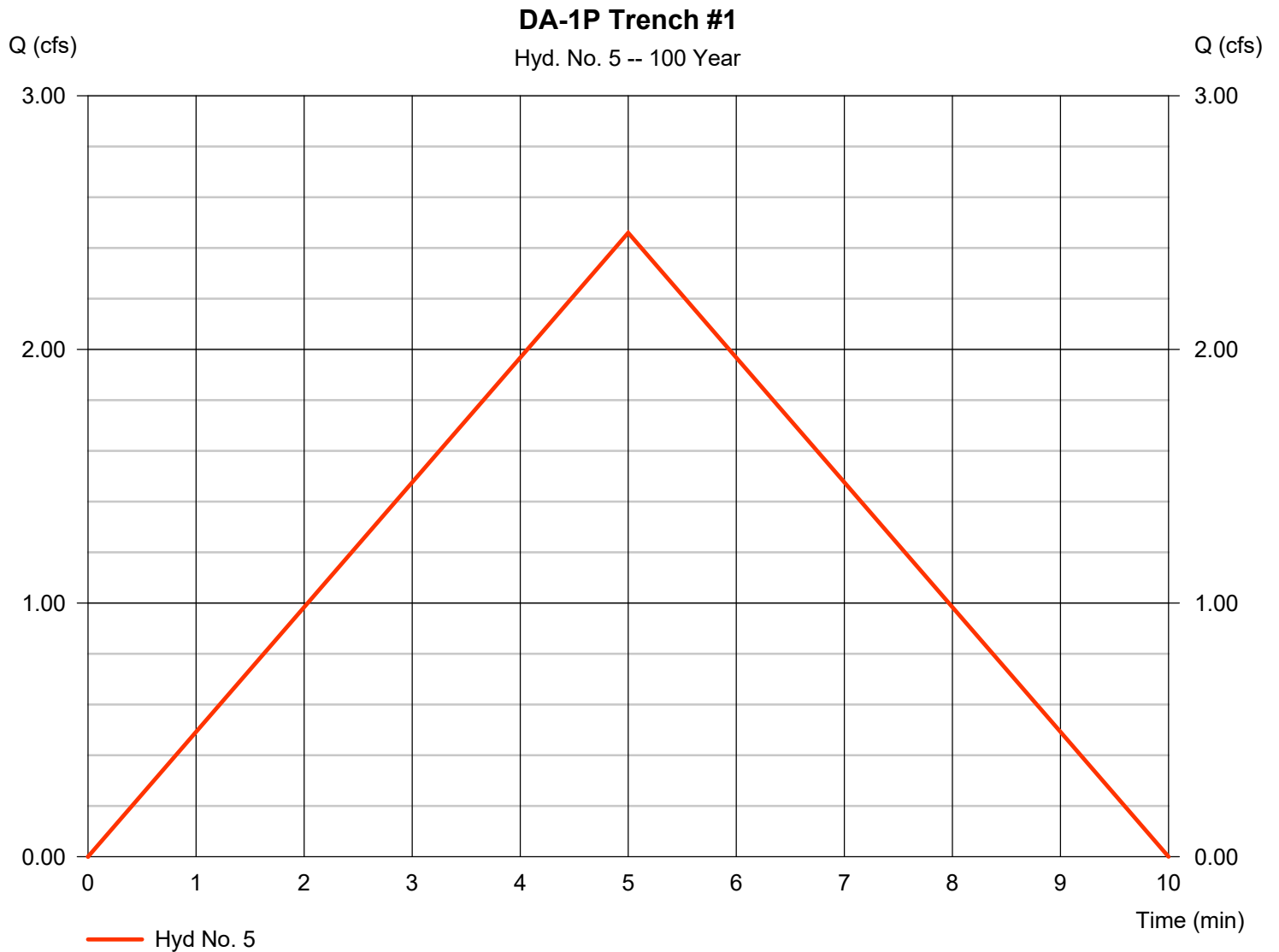


Hydrograph Report

Hyd. No. 5

DA-1P Trench #1

Hydrograph type	= Rational	Peak discharge	= 2.460 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 738 cuft
Drainage area	= 0.470 ac	Runoff coeff.	= 0.64
Intensity	= 8.177 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



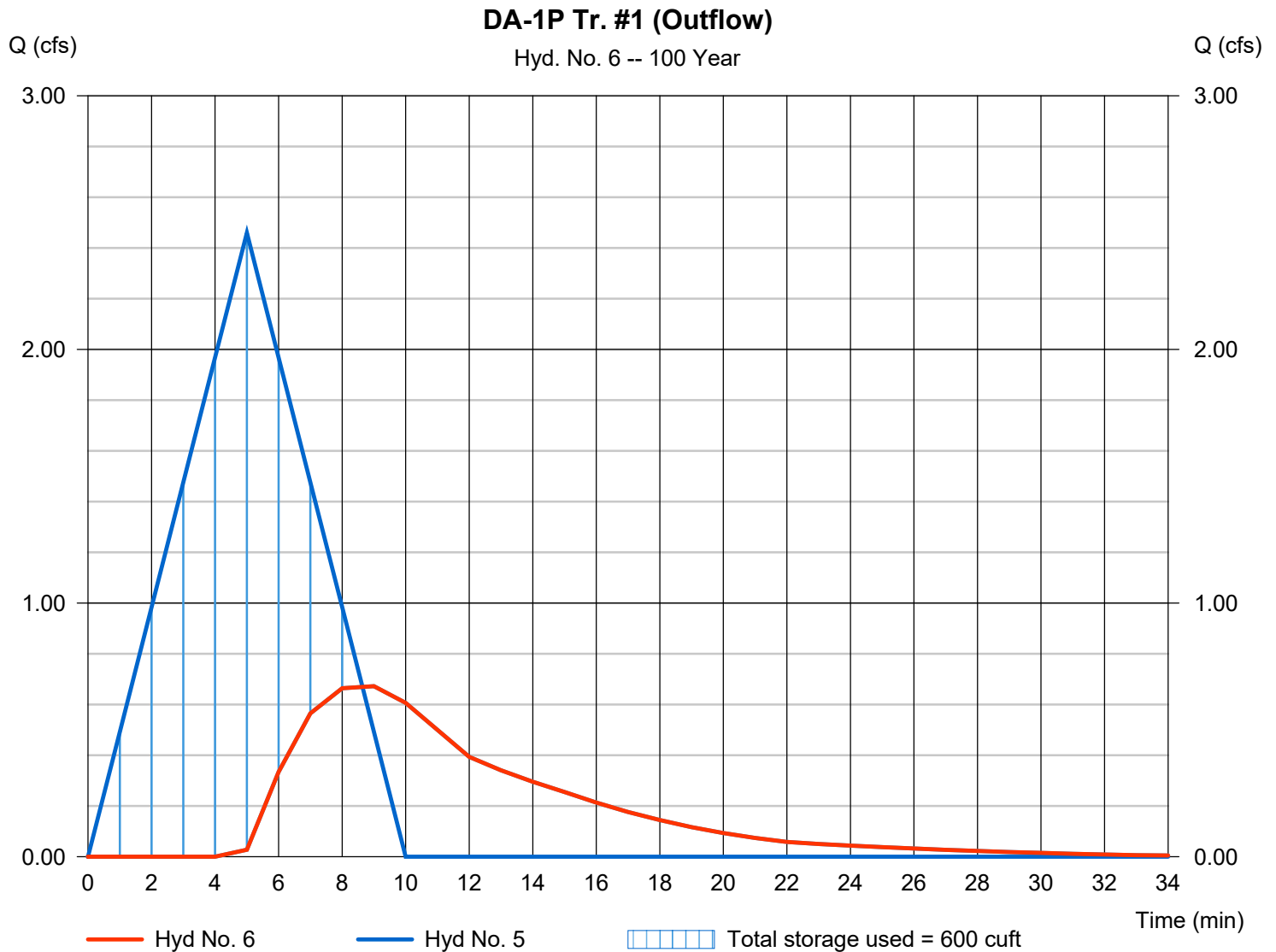
Hydrograph Report

Hyd. No. 6

DA-1P Tr. #1 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.672 cfs
Storm frequency	= 100 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 351 cuft
Inflow hyd. No.	= 5 - DA-1P Trench #1	Max. Elevation	= 251.88 ft
Reservoir name	= Trench #1	Max. Storage	= 600 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

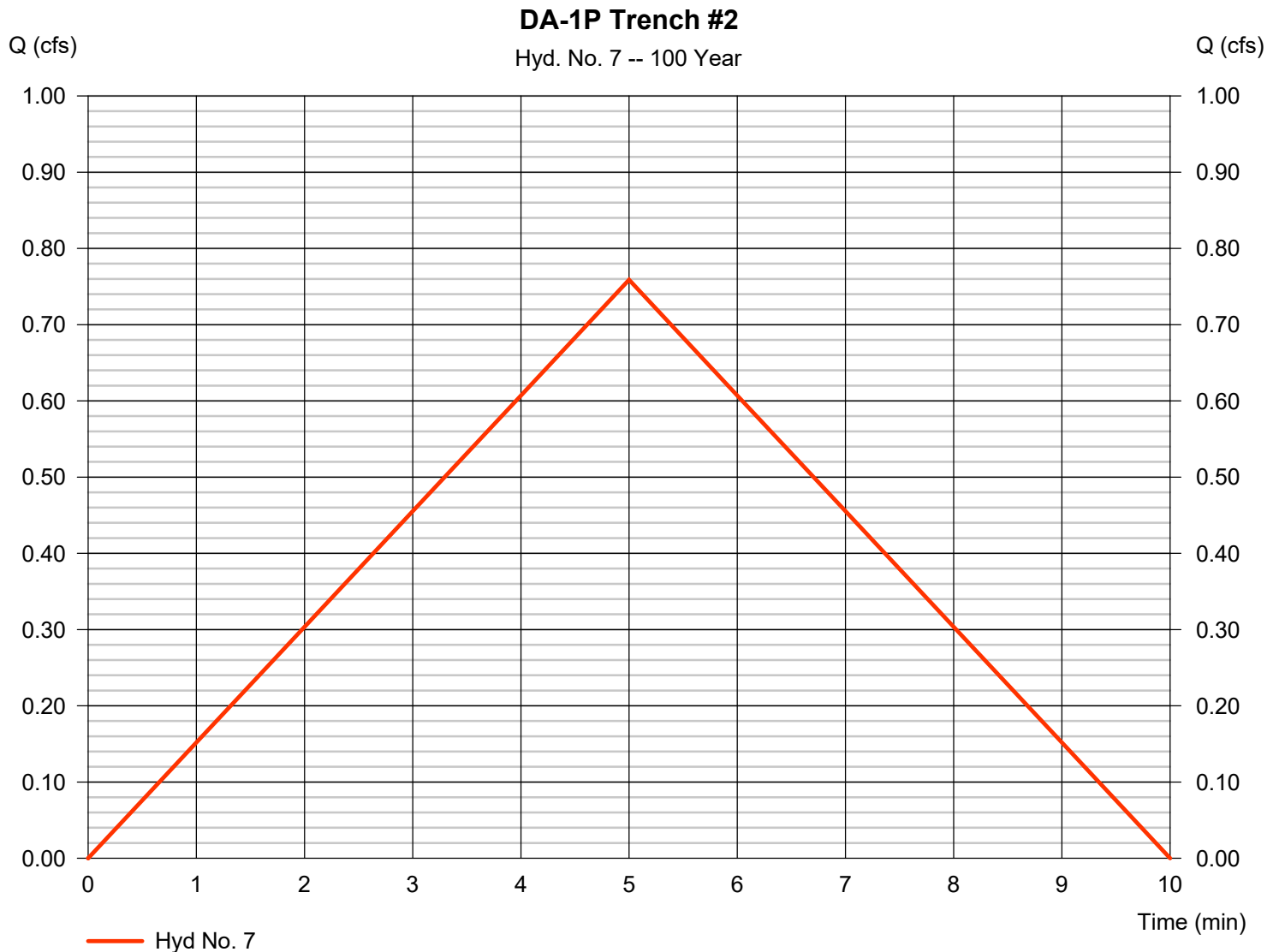


Hydrograph Report

Hyd. No. 7

DA-1P Trench #2

Hydrograph type	= Rational	Peak discharge	= 0.759 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 228 cuft
Drainage area	= 0.160 ac	Runoff coeff.	= 0.58
Intensity	= 8.177 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



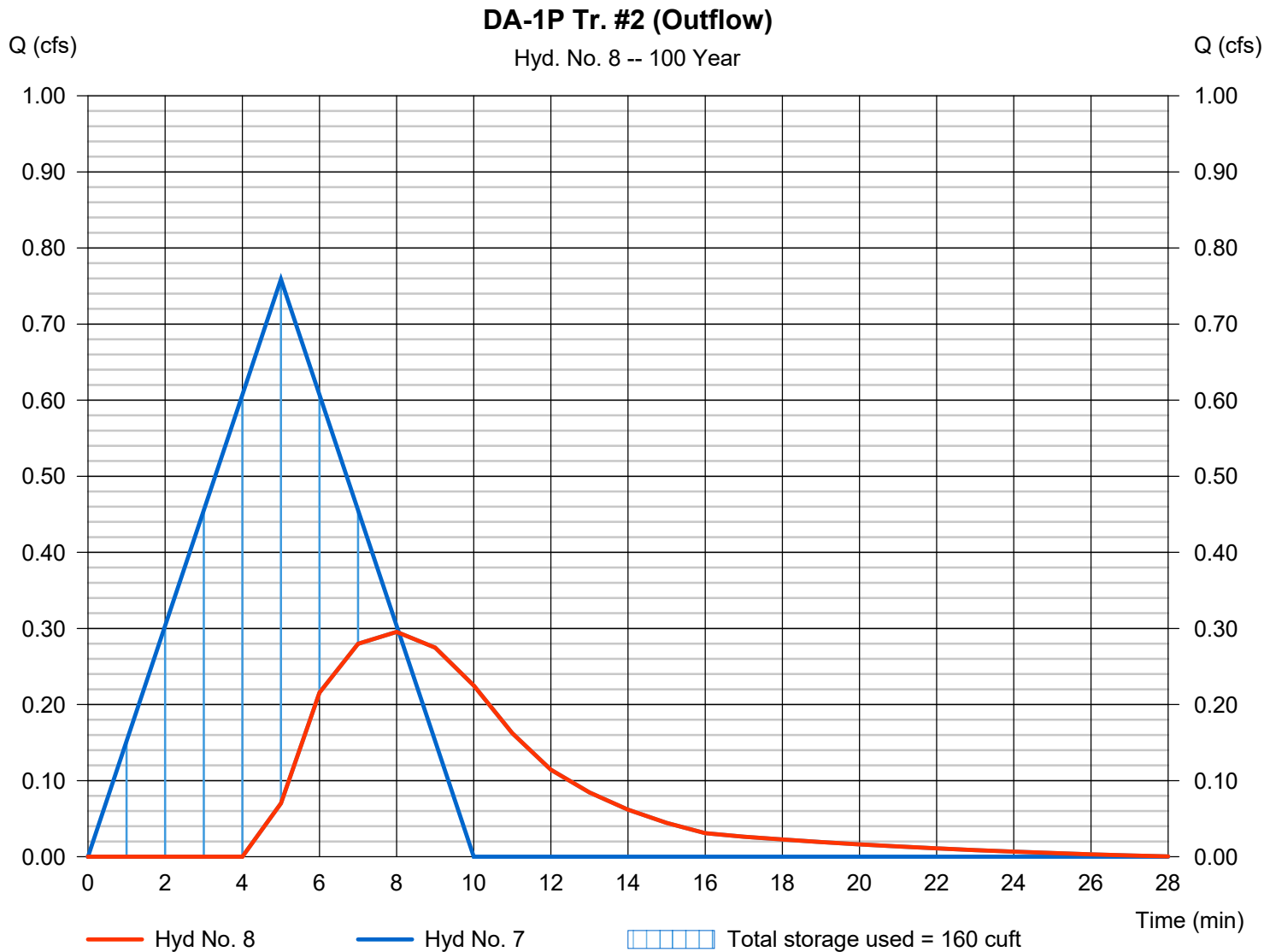
Hydrograph Report

Hyd. No. 8

DA-1P Tr. #2 (Outflow)

Hydrograph type	= Reservoir	Peak discharge	= 0.295 cfs
Storm frequency	= 100 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 120 cuft
Inflow hyd. No.	= 7 - DA-1P Trench #2	Max. Elevation	= 260.30 ft
Reservoir name	= Trench #2	Max. Storage	= 160 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

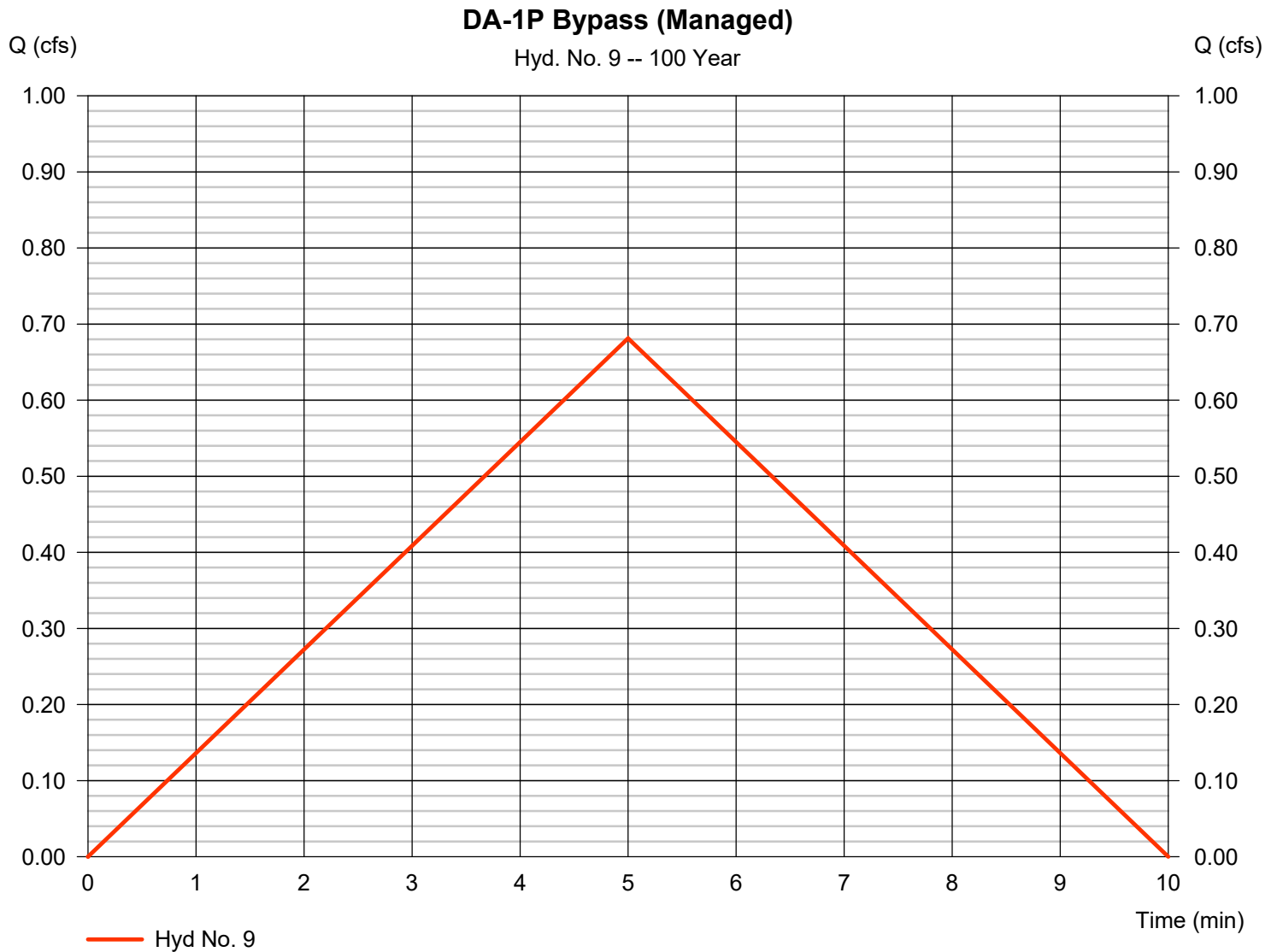


Hydrograph Report

Hyd. No. 9

DA-1P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.681 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 204 cuft
Drainage area	= 0.170 ac	Runoff coeff.	= 0.49
Intensity	= 8.177 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

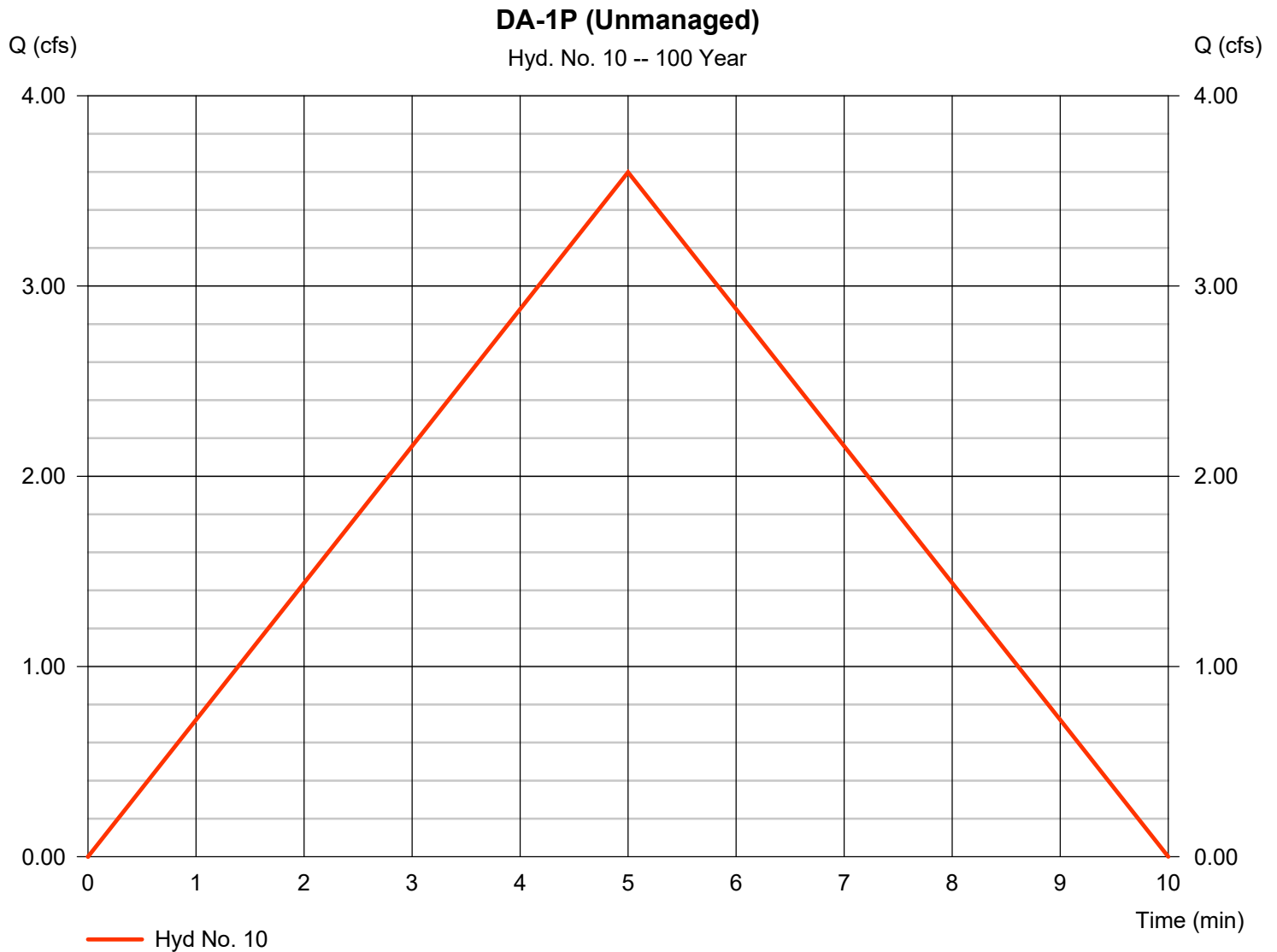


Hydrograph Report

Hyd. No. 10

DA-1P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 3.598 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 1,079 cuft
Drainage area	= 1.000 ac	Runoff coeff.	= 0.44
Intensity	= 8.177 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



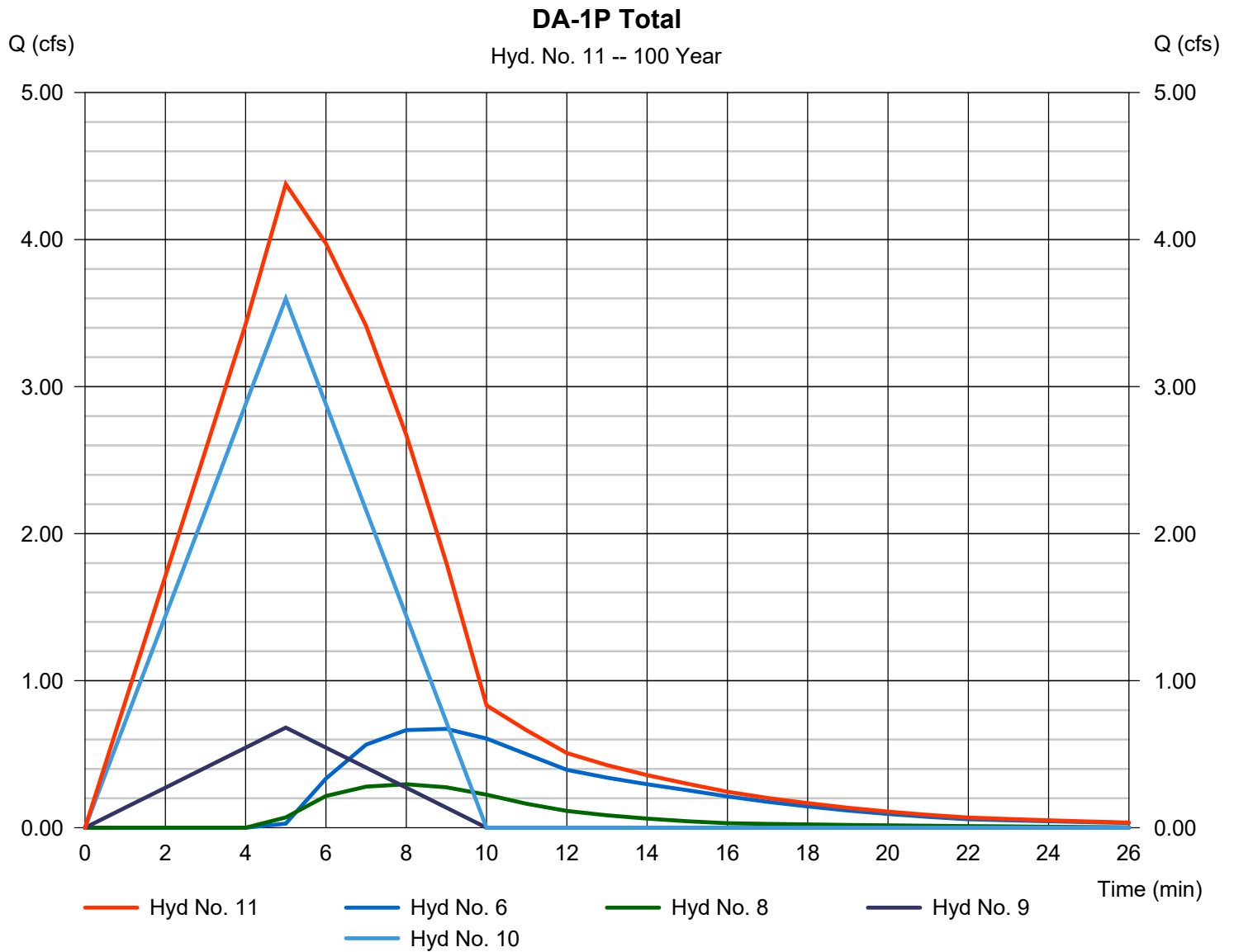
Hydrograph Report

Hyd. No. 11

DA-1P Total

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 6, 8, 9, 10

Peak discharge = 4.377 cfs
Time to peak = 5 min
Hyd. volume = 1,755 cuft
Contrib. drain. area = 1.170 ac

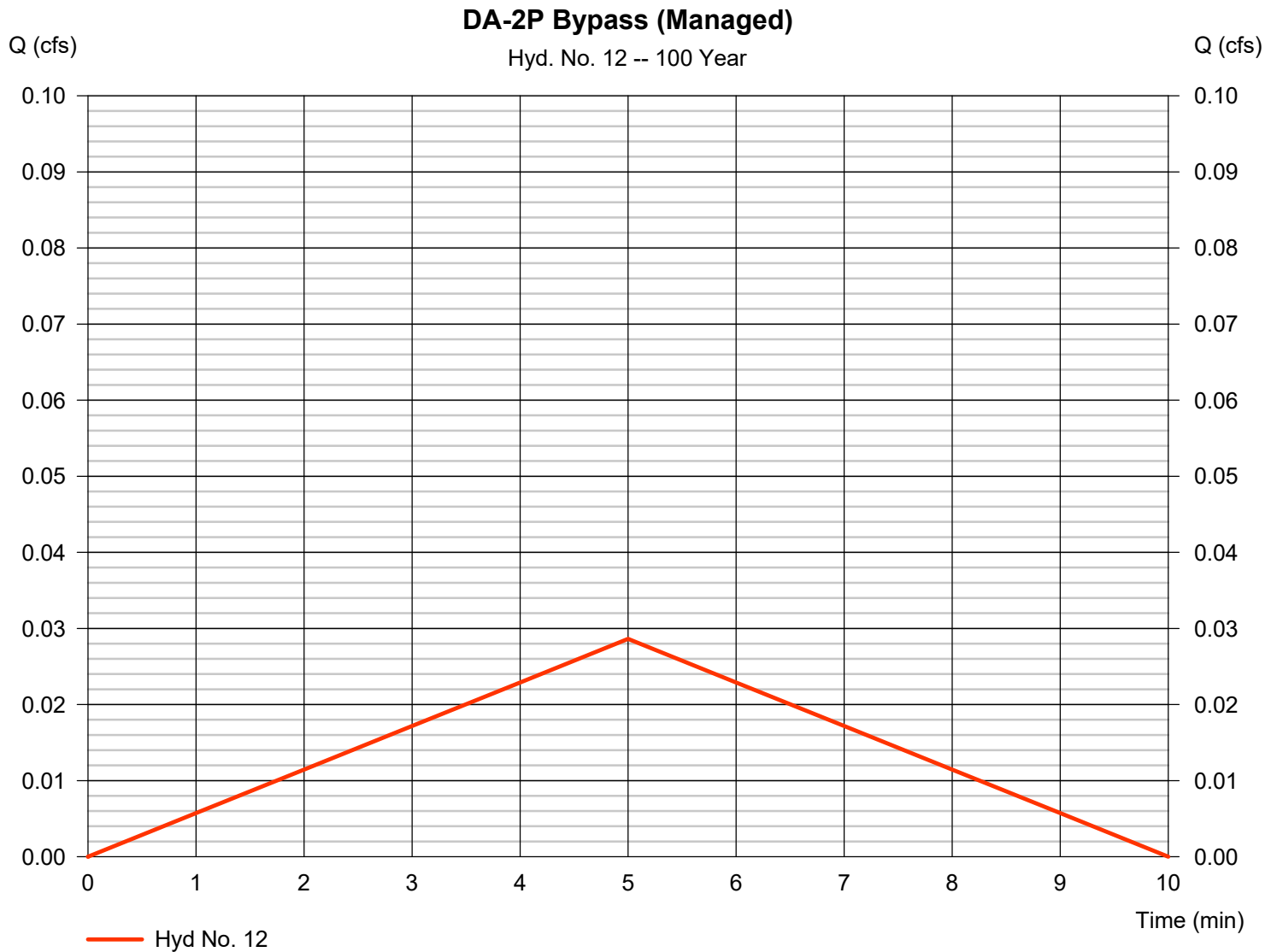


Hydrograph Report

Hyd. No. 12

DA-2P Bypass (Managed)

Hydrograph type	= Rational	Peak discharge	= 0.029 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 9 cuft
Drainage area	= 0.010 ac	Runoff coeff.	= 0.35
Intensity	= 8.177 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

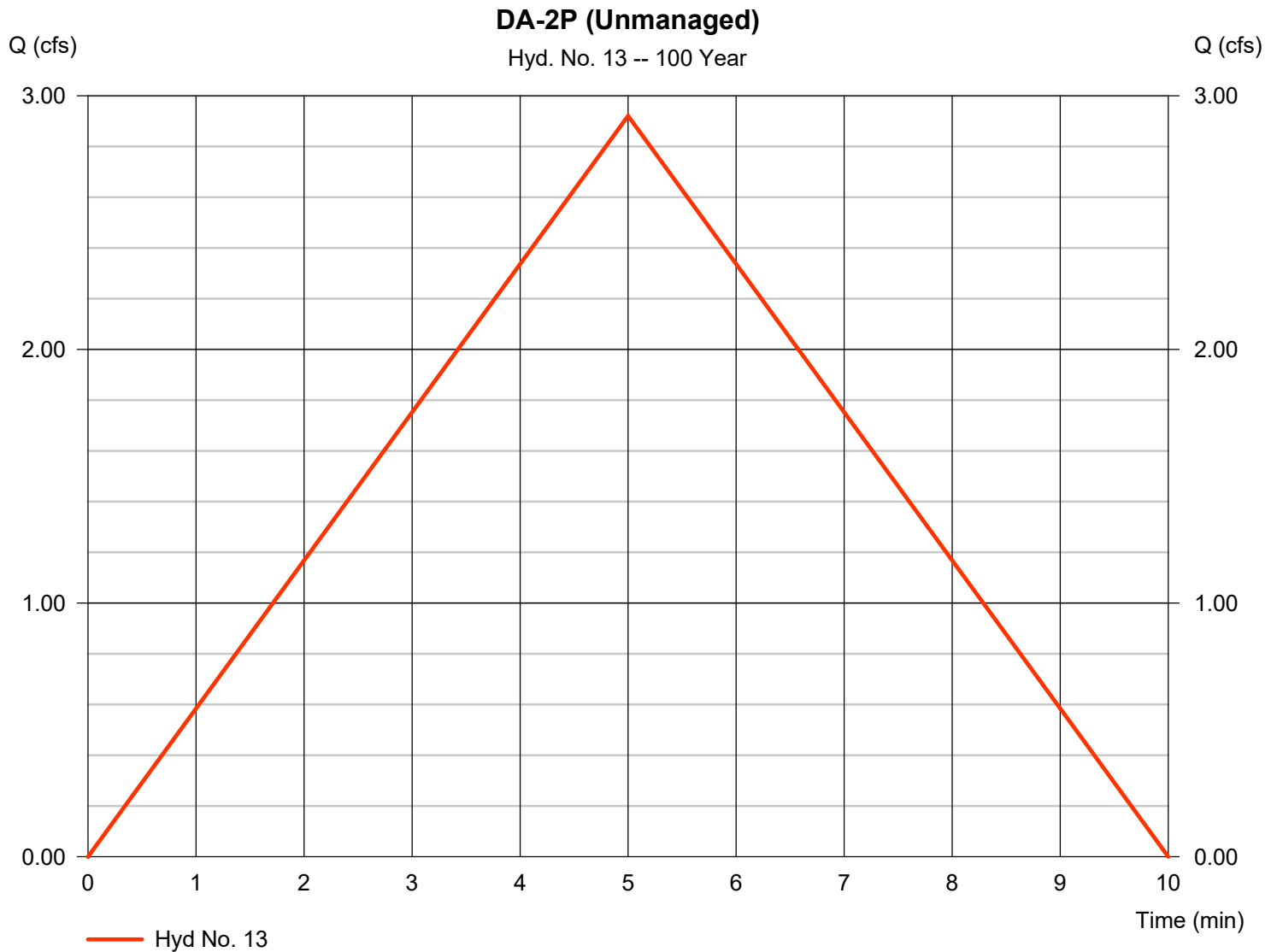


Hydrograph Report

Hyd. No. 13

DA-2P (Unmanaged)

Hydrograph type	= Rational	Peak discharge	= 2.921 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 876 cuft
Drainage area	= 0.940 ac	Runoff coeff.	= 0.38
Intensity	= 8.177 in/hr	Tc by User	= 5.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



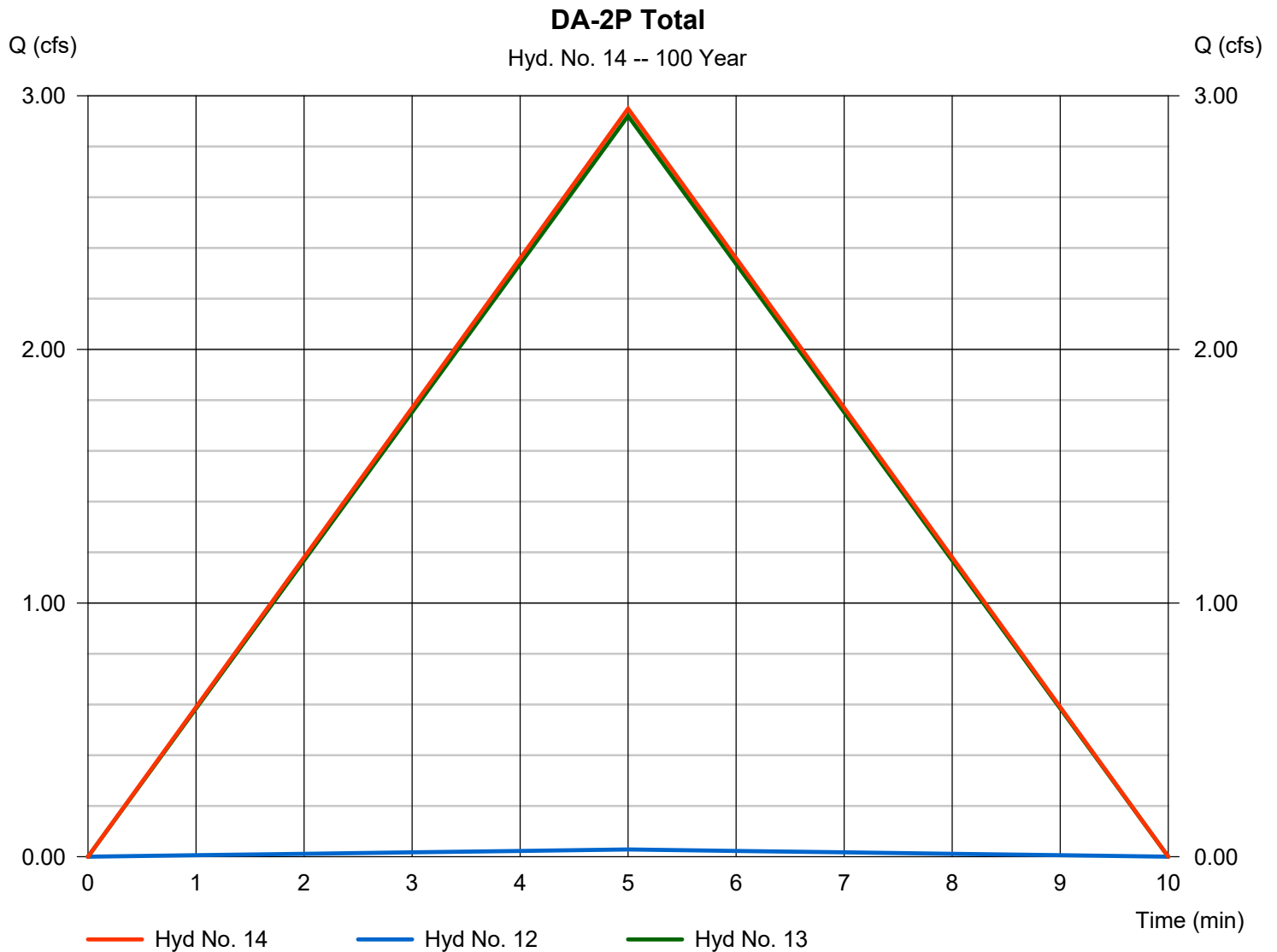
Hydrograph Report

Hyd. No. 14

DA-2P Total

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 12, 13

Peak discharge = 2.950 cfs
Time to peak = 5 min
Hyd. volume = 885 cuft
Contrib. drain. area = 0.950 ac



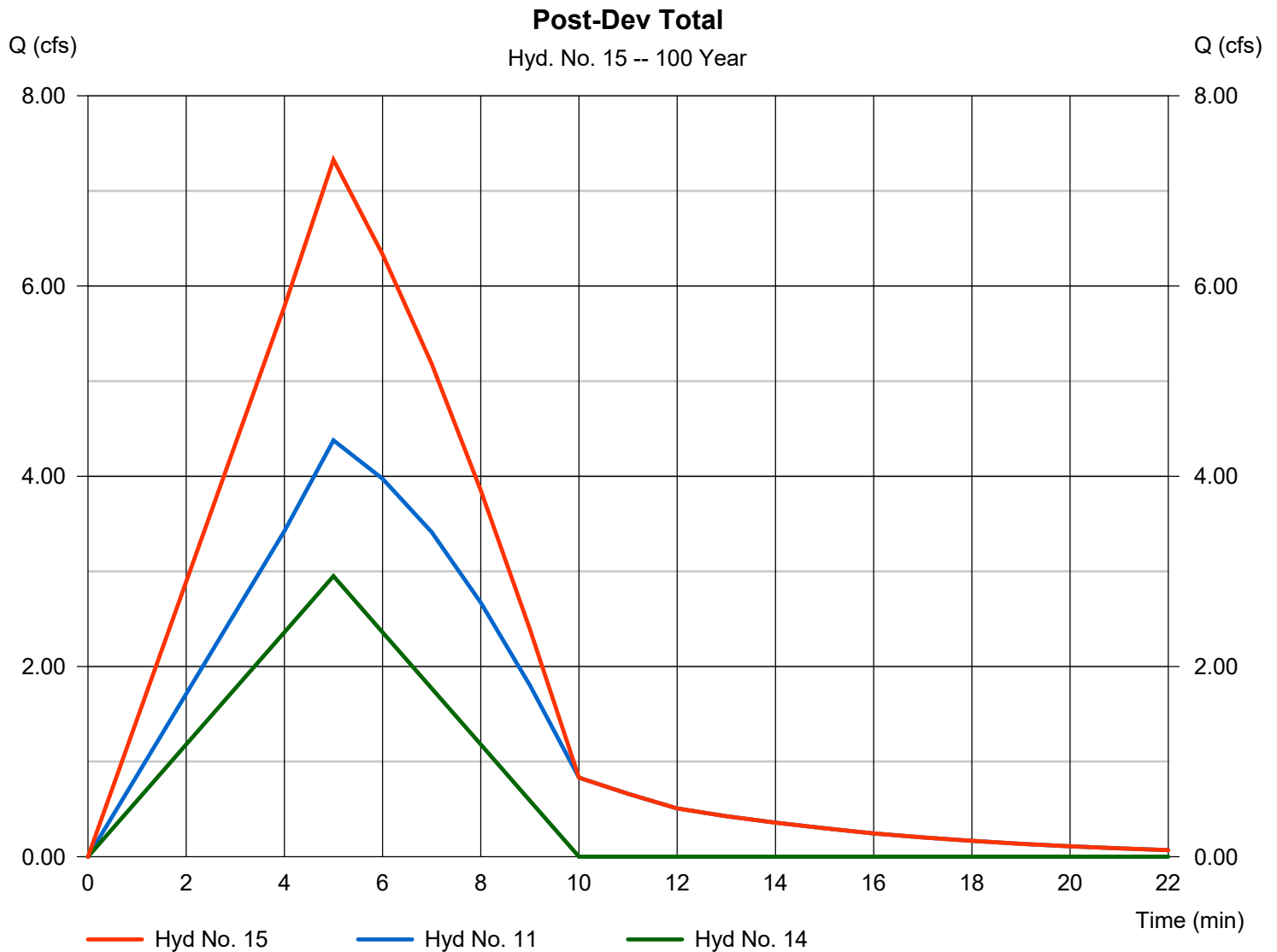
Hydrograph Report

Hyd. No. 15

Post-Dev Total

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 11, 14

Peak discharge = 7.327 cfs
Time to peak = 5 min
Hyd. volume = 2,640 cuft
Contrib. drain. area = 0.000 ac



Water Quality Volume Calculations

Project: The Herbert Weintraub Foundation Single Family Home & Addition

Description: Water Quality Volume

A = 0.913 Project Area (acres)
T = 0.324 Total Impervious Area (acres)
Dr = 0.135 Disconnection of Rooftop Runoff (acres)
Di = 0.180 Disconnection of Non-Rooftop Runoff (acres)
I = 0.99% Percent Impervious Cover

R = 0.05 Volumetric Runoff Coefficient, where $R = [0.05 + 0.009(I)]$

WQ = 0.008 Water Quality Volume (acre-ft), where $WQ = [(0.17)(R)(A)]$
= 338.65 (cf)

Infiltration Runoff Volume Calculations

Project: The Herbert Weintraub Foundation Single Family Home & Addition

Description: Recharge Volume - Trench #1

Hydrologic Soil Group: **A**

S = 0.38 Soil Specific Recharge Factor (inches)

A = 0.470 Project Area (acres)

X = 0.230 Impervious Area (acres)

I = 48.94 Percent Impervious Cover

R = 0.49 Volumetric Runoff Coefficient, where $R = [0.05 + 0.009(I)]$

Re = 0.0073 Recharge Volume (acre-ft), where $Re = [(S)(R)(A)] / 12$

= 317.95 (cf)

Infiltration Runoff Volume Calculations

Project: The Herbert Weintraub Foundation Single Family Home & Addition

Description: Recharge Volume - Trench #2

Hydrologic Soil Group: **A**

S = 0.38 Soil Specific Recharge Factor (inches)

A = 0.160 Project Area (acres)

X = 0.060 Impervious Area (acres)

I = 37.50 Percent Impervious Cover

R = 0.39 Volumetric Runoff Coefficient, where $R = [0.05 + 0.009(I)]$

Re = 0.0020 Recharge Volume (acre-ft), where $Re = [(S)(R)(A)] / 12$

= 85.52 (cf)

Pipe Capacity Calculations

Project: The Herbert Weintraub Foundation

Description: Yard Drain Calculations

Pipe Run:	YD01 - TRENCH #1	YD03 - TRENCH #1	YD04 - TRENCH #1	YD06 - TRENCH #2
Q (cfs):	1.69	0.57	0.49	0.38
Pipe Size (in.):	8	6	6	6
Material:	HDPE	HDPE	HDPE	HDPE
Slope (ft/ft):	0.0520	0.0760	0.0590	0.0200
Manning's n:	0.0120	0.0120	0.0120	0.0120
Flow Area (s.f.):	0.19	0.00	0.00	0.00
Wetted Perimeter (ft.):	1.10	0.00	0.00	0.00
Top Width (ft.):	0.66	0.49	0.49	0.50
Percent Full (%):	53.70	39.86	39.32	46.22
Maximum Discharge (cfs):	3.21	1.80	1.59	0.92
Full Flow Capacity (cfs):	2.99	1.68	1.48	0.86
Flow Depth (ft.):	0.36	0.20	0.20	0.23

Appendix A



R:\2022\PA\202215.00\CAD\DRAWINGS\EXHIBITS\DRAINAGE EXHIBIT\PA\202215.00-DRNE.08---LAYOUT: WHITE MARSH TWP, 740 GERMANTOWN PIKE_DAE.0

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 SITE CIVIL AND CONSULTING ENGINEERING
 PROGRAM MANAGEMENT
 LANDSCAPE ARCHITECTURE
 SUSTAINABLE DESIGN
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REVISIONS

REV	DATE	COMMENT	DRAWN BY	CHECKED BY

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PROJECT No.: PAA220215.00
 DRAWN BY: PAB
 CHECKED BY: CMC
 DATE: 07/26/2022
 CAD I.D.: PAA220215.00-DRNE.08

PROJECT:

DRAINAGE PLAN

FOR THE
HERBERT WEINTRAUB FOUNDATION
 PROPOSED SINGLE FAMILY HOME & ADDITION

740 GERMANTOWN PIKE
 WHITEMARSH TOWNSHIP
 LAFAYETTE HILL, PA
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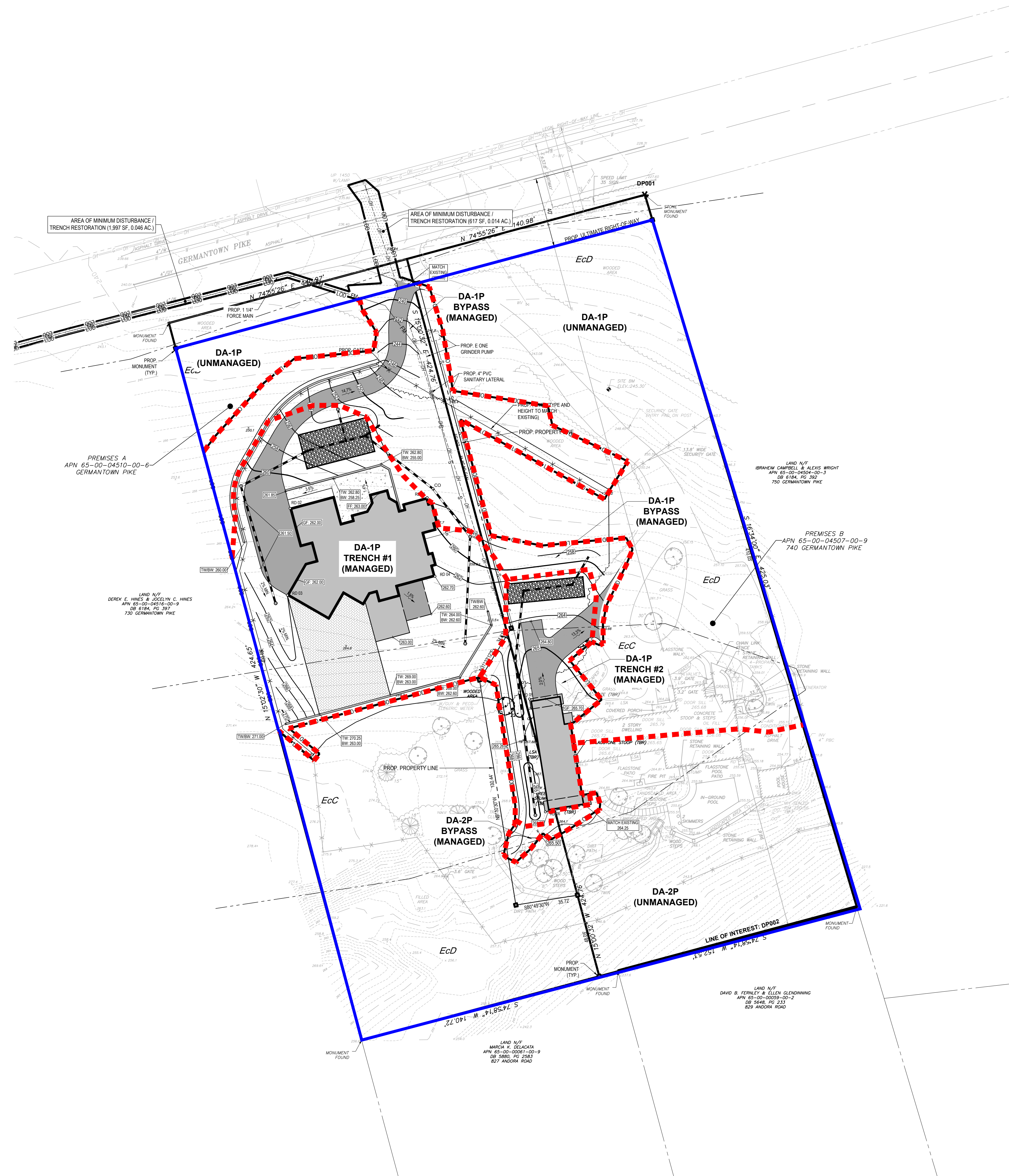
PROFESSIONAL ENGINEER
 PENNSYLVANIA LICENSE NO. PE045479E
 NEW JERSEY LICENSE NO. 24GE04507900

SHEET TITLE:
EXISTING DRAINAGE MAP

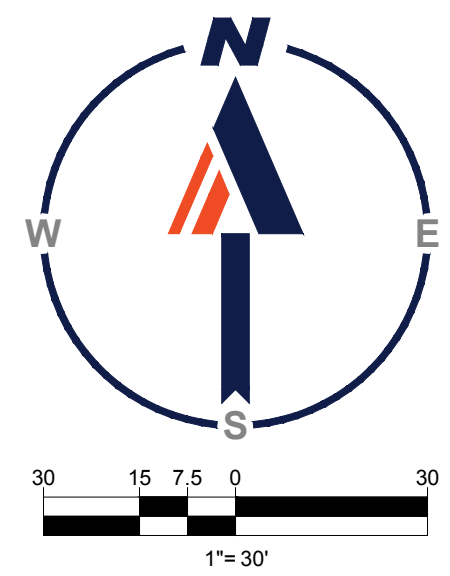
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ORG. DATE - 07/11/2022

Appendix B



LEGEND	
PROPOSED	
POST-DEV OVERALL DRAINAGE	
POST-DEV DRAINAGE	
POST-DEV DRAINAGE AREA	DP001 ON-SITE
POINT OF DISCHARGE	DP001



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PROJECT No.: PAA220215.00
 DRAWN BY: PAB
 CHECKED BY: CMC
 DATE: 07/26/2022
 CAD I.D.: PAA220215.00-DRNE.05

DRAINAGE PLAN

FOR THE
HERBERT WEINTRAUB FOUNDATION
 PROPOSED SINGLE FAMILY HOME & ADDITION

740 GERMANTOWN PIKE
 WHITEMARSH TOWNSHIP
 LAFAYETTE HILL, PA
 19444

BOHLER

1600 MANOR DRIVE, SUITE 200
 CHALFONT, PA 18914
 Phone: (215) 996-9100
 Fax: (215) 996-9102
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R.E. KLOS, JR.

PROFESSIONAL ENGINEER
 PENNSYLVANIA LICENSE NO. PE045479E
 NEW JERSEY LICENSE NO. 24GE04507900

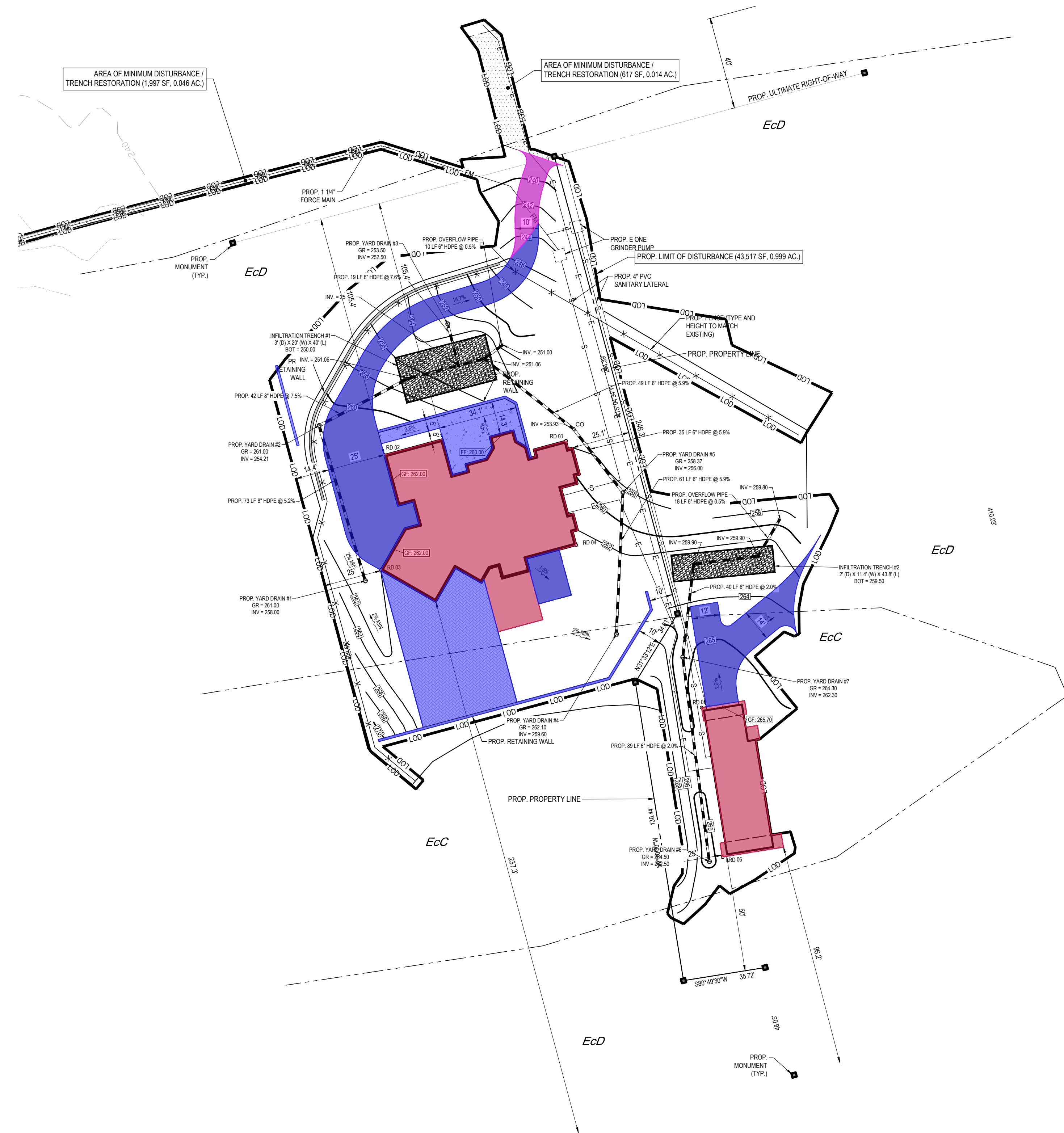
SHEET TITLE:
PROPOSED DRAINAGE MAP

SHEET NUMBER:
1

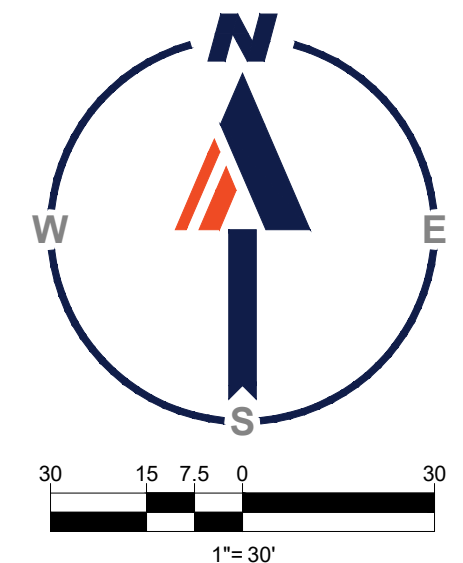
ORG. DATE - 07/11/2022

R:\2022\PA220215.00\CADD\DRAWINGS\EXHIBITS\DRAINAGE EXHIBIT\PA220215.00-DRNE.05---LAYOUT: WHITEMARSH TWP, 740 GERMANTOWN PIKE_DWG_0

Appendix C



LEGEND	
PROPOSED	
ROOFTOP DISCONNECT (5,892 SF)	
NON ROOFTOP DISCONNECT (7,833 SF)	
CONNECTED IMPERVIOUS (373 SF)	



REVISIONS				
REV	DATE	COMMENT	DRAWN BY	CHECKED BY



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PROJECT No.: PAA220215.00
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 CAD I.D.: PAA220215.00-IMP-0A

PROJECT:

DRAINAGE PLAN

FOR THE
HERBERT WEINTRAUB FOUNDATION
 PROPOSED SINGLE FAMILY HOME & ADDITION

740 GERMANTOWN PIKE
 WHITEMARSH TOWNSHIP
 LAFAYETTE HILL, PA
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R.E. KLOS, JR.

PROFESSIONAL ENGINEER
 PENNSYLVANIA LICENSE No. PE045479E
 NEW JERSEY LICENSE No. 24GE04507900

SHEET TITLE:

IMPERVIOUS DISCONNECT EXHIBIT

SHEET NUMBER:

1

ORG. DATE - 10/09/2022

Appendix D



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West Chester PA 19382

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CLIENT: The Herbert Weintraub Foundation LLC
PROJECT: 740 Germantown Pike
REQUIREMENT: PROFESSIONAL ENGINEERING SERVICES: Geotechnical/SWM
LOCATION: Whitmarsh Township, Montgomery County, PA
DATE: September 27th, 2022
ATTENTION: Joshua Levin, President via email

PURPOSE

The Purpose of this report is to present the Findings, Conclusions and Recommendations relative to the physical investigation performed at the above captioned project location.

INVESTIGATION

Steve Joran, P.E. of Ingram Engineering Services, Inc. (IES) was on site on September 6th, 2022 to conduct a series of test pit and double ring infiltrometer investigations within the proposed locations provided by the client. The purpose of the testing was to determine if subsurface infiltration was feasible for the design of stormwater management facilities and provide the necessary infiltration data to design those systems.

IES performed four (4) investigative test pit investigations and ran four (4) double ring infiltrometer tests. All testing was performed in accordance with the PA Stormwater BMP Manual, Appendix C: Site Evaluation and Soil Infiltration Testing. Test pit locations and elevations were provided to IES by the Client in the plan entitled *“Test Pit Location Plan for the Herbert Weintraub Foundation Proposed Single Family Home & Addition”* (Project No. PAA220215.00), dated 07/26/2022. IES utilized this plan and a Google Earth overlay to field locate the approximate test pit locations. Surface elevations were approximated utilizing the provided plan. Approximate test pit locations can be seen on the following page:



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FINDINGS

Soils Investigation:

TP #1

Test @ 24" BGS (Elev. 250.00)

<u>Depth BGS</u>	<u>Elevation</u>	<u>Soil Description</u>
0" to 5"	252.00 to 251.58	Dk brn TOPSOIL w/ heavy root mat
5" to 55"	251.58 to 247.42	Brn/lt brn f-m SAND w/ tr gravel, med dense

No GW or LZ Encountered





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TP #2

Test @ 78" BGS (Elev. 257.50)

<u>Depth BGS</u>	<u>Elevation</u>	<u>Soil Description</u>
0" to 4"	264.00 to 263.67	Dk brn TOPSOIL w/ heavy root mat
4" to 47"	263.67 to 260.08	Brn/lt brn f-m SAND w/ tr gravel and cobbles, med dense
47" to 103"	260.08 to 255.42	Reddish brn/lt brn/tan f-m SAND w/ some gravel, med dense

No GW or LZ Encountered





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TP #3

Test @ 36" BGS (Elev. 258.00)

<u>Depth BGS</u>	<u>Elevation</u>	<u>Soil Description</u>
0" to 3"	261.00 to 260.75	Dk brn TOPSOIL w/ heavy root mat
3" to 39"	260.75 to 257.75	Lt brn f-m SAND w/ some silt and gravel/cobbles, med dense to dense
39" to 66"	257.75 to 255.50	Lt brn cobbly gravelly f-m SAND w/ some weathered schist, dense to v dense, difficult excavating

***66" BGS = Machine Refusal Encountered (Bedrock LZ)
No GW Encountered***





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TP #4

Test @ 24" BGS (Elev. 259.50)

<u>Depth BGS</u>	<u>Elevation</u>	<u>Soil Description</u>
0" to 4"	261.50 to 261.17	Dk brn TOPSOIL w/ heavy root mat
4" to 48"	261.17 to 257.50	Lt brn cobbly gravelly f-m SAND w/ some weathered schist, dense to v dense, difficult excavating

48" BGS = Machine Refusal Encountered (Bedrock LZ)

No GW Encountered





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Infiltration Testing:

TP No. 1: 1/2", 3/8", 3/8", 3/8" → 3/8" Final Stabilized Reading w/ 10 min. intervals

INFILTRATION RATE: 2.25 INCHES/HOUR @ 24" BGS (Elev. 250.00)

TP No. 2: 3/4", 5/8", 5/8", 5/8" → 5/8" Final Stabilized Reading w/ 10 min. intervals

INFILTRATION RATE: 3.75 INCHES/HOUR @ 78" BGS (Elev. 257.50)

TP No. 3: 1", 3/4", 3/4", 3/4" → 3/4" Final Stabilized Reading w/ 10 min. intervals

INFILTRATION RATE: 4.50 INCHES/HOUR @ 36" BGS (Elev. 258.00)

TP No. 4: 1 1/4", 1", 1", 1" → 1" Final Stabilized Reading w/ 10 min. intervals

INFILTRATION RATE: 6.00 INCHES/HOUR @ 24" BGS (Elev. 259.50)

CONCLUSIONS/RECOMMENDATIONS

1. According to the *Natural Resources Conservation Service Web Soil Survey* the onsite soils consist of the Edgemont channery loam (8 to 15 percent slopes), Edgemont channery loam (15 to 25 percent slopes), and Urban land- Glenelg complex (8 to 25 percent slopes). These soils are rated as Hydric (3%), Hydric (3%), and Not Hydric (0%), respectively, as indicated by the Hydric Unit Map, See **Appendix A**.
2. The Design Engineer is recommended to use the above information for sizing of the Proposed Stormwater Management Facilities. IES recommends the Design Engineer utilize the unfactored rates with a slight rate reduction to ensure the longevity of the system given the presence of fine-grained soils and cohesive soil content based on the average infiltration testing results obtained at testing locations and corresponding depths within the vicinity of the proposed SWM facilities:
3. The BMP Manual states a factor of safety between 1 and 10 be used for design with a factor of safety of 2 being the recommended value, as well as a design infiltration rate between 0.1 to 10 inches per hour with a minimum 24-inch vertical separation between the facility bottom and any limiting layer.
4. Subgrade under the proposed infiltration facilities shall NOT be compacted or subject to excessive equipment traffic. Areas that where soils have been subjected to construction traffic shall be scarified to a minimum depth of 12-inches.
5. In the event an accumulation of fine-grained material and/or surface ponding is encountered within the subbase of the facility, material within that area shall be removed and replaced with acceptable material.



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6. IES recommends that a non-woven geofabric (permeability should be a minimum of 2 in/hr) be utilized to prevent the migration of fines into any stone. The geotextile fabric is recommended to not be utilized at the bottom of any infiltration facility as the liner is serving too often as a hydraulically restrictive material and creating a ‘bathtub’ effect, ergo – only utilize the geotextile on the sides and top of the facility.

7. It is recommended that a Soils Engineer or representative thereof is present on-site during the construction of the stormwater management system in order to ensure the system was constructed as designed and to oversee the excavation of the fine grained soils. Given the localized investigation, it is paramount that the entire bed bottom is verified to be situated within the correct infiltration stratum.

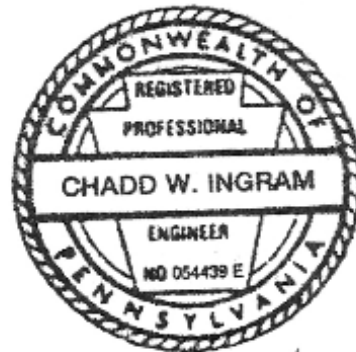
QUALIFICATIONS

Conclusions and Recommendations are based on the above Investigation and Findings. No other conclusions are to be drawn other than those specifically stated.

Very Truly Yours,

Chadd W. Ingram, P.E.
(DE, MD, NJ, PA)
President
Ingram Engineering Services, Inc.
484.947.5549 office x. 206
chadd@ingram-engineering.com
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Steve Joran, P.E. (PA)
Project Manager
Ingram Engineering Services, Inc.
484.947.5549 office x. 202
484.889.7453 mobile
steve@ingram-engineering.com





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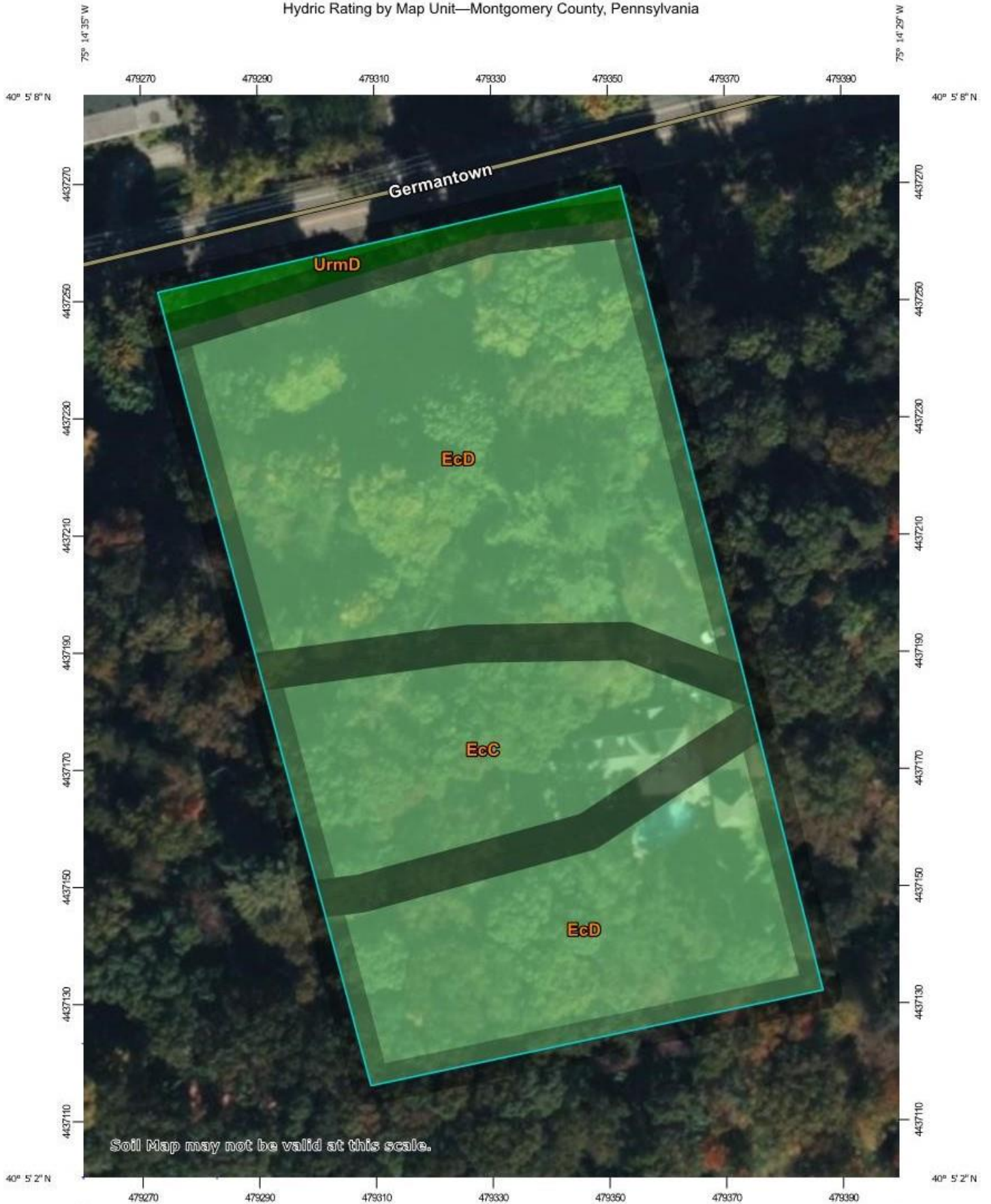
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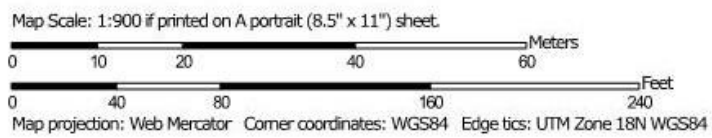
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Appendix A:
Hydric Soils Map

Hydric Rating by Map Unit—Montgomery County, Pennsylvania




Soil Map may not be valid at this scale.




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Soil Rating Lines

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Soil Rating Points

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  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 1:12,000.

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: Montgomery County, Pennsylvania
 Survey Area Data: Version 16, Sep 1, 2021

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.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EcC	Edgemont channery loam, 8 to 15 percent slopes	3	0.6	22.0%
EcD	Edgemont channery loam, 15 to 25 percent slopes	3	2.1	74.4%
UrmD	Urban land-Glenelg complex, 8 to 25 percent slopes	0	0.1	3.5%
Totals for Area of Interest			2.8	100.0%

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

PRELIMINARY / FINAL MINOR SUBDIVISION PLAN

FOR

THE HERBERT WEINTRAUB FOUNDATION

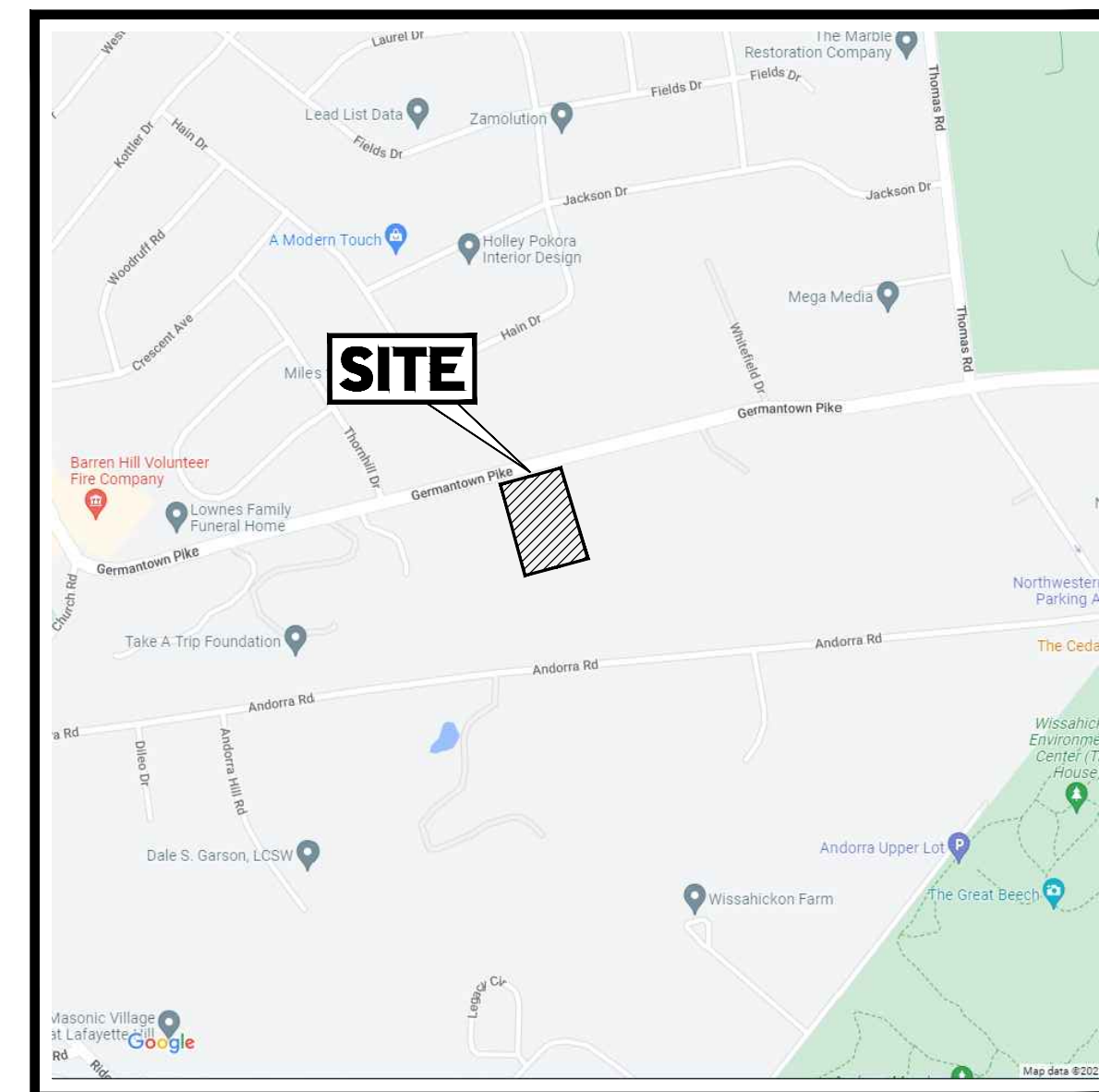
PROPOSED

PROPOSED SINGLE FAMILY HOME & ADDITION

740 GERMANTOWN PIKE, LAFAYETTE HILL
MONTGOMERY COUNTY, PENNSYLVANIA 9444
APN# 65-00-04510-00-6, 65-00-04507-00-9

WAIVERS REQUESTED FROM WHITEMARSH TOWNSHIP

- §105-12 REQUIRING PRELIMINARY & FINAL PLANS BE SUBMITTED SEPARATELY.
- §105-21(B)(1)(N) REQUIRING THE PLAN TO SHOW EXISTING FEATURES WITHIN 500' OF THE PROJECT SITE.
- §105-23(A)(1) REQUIRING THE PLAN BE DRAWN AT A SCALE OF ONE-INCH EQUALS 50 FEET OR ONE-INCH EQUALS 100 FEET.
- §105-23(B)(1)(O)(7) REQUIRING SIDEWALK TO BE SHOWN ON A PRELIMINARY PLAN.
- §105-30(A) REQUIRING STREET IMPROVEMENTS, INCLUDING CURBS AND SIDEWALK.
- §105-46 REQUIRING CURB BE PROVIDED IN ALL SUBDIVISIONS AND LAND DEVELOPMENTS.
- § 85-47(A) REQUIRING SIDEWALKS BE PROVIDED IN ALL SUBDIVISIONS AND LAND DEVELOPMENTS.
- §105-52 REQUIRING BUFFER YARDS.
- §105-53(D) REQUIRING THE OFFERING OF 10% OF THE TOTAL SITE AREA FOR PARK AND/OR RECREATIONAL USE.
- §105-73(A) REQUIRING THE ADDITION OF SIDEWALK.
- §105-74 REQUIRING CURB BE PROVIDED IN ALL SUBDIVISIONS AND LAND DEVELOPMENTS.



LOCATION MAP
SCALE: 1" = 800'
SOURCE: GOOGLE MAPS



AERIAL MAP
SCALE: 1" = 800'
SOURCE: NEARMAP.COM

PREPARED BY

BOHLER //

REVIEWED BY WHITEMARSH TOWNSHIP ENGINEER ON THIS _____ DAY OF _____, 20____

TOWNSHIP ENGINEER _____ DATE _____

APPROVED BY THE TOWNSHIP SUPERVISORS OF WHITEMARSH THIS _____ DAY OF _____, 20____

PRESIDENT _____
SECRETARY _____

THIS IS TO STATE THAT THE LANDOWNER ACKNOWLEDGES THAT THE STORMWATER BMPs ARE FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY THE TOWNSHIP.

LANDOWNER / APPLICANT _____

RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS IN NORRISTOWN, PENNSYLVANIA, IN PLAN BOOK NO. _____, PAGE NO. _____ ON THE _____ DAY OF _____, 20____.

MCPC NO. _____
PROCESSED AND REVIEWED. A REPORT HAS BEEN PREPARED BY THE MONTGOMERY COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODES.
CERTIFIED THIS DATE _____
FOR THE DIRECTOR
MONTGOMERY COUNTY PLANNING COMMISSION

DRAWING SHEET INDEX

SHEET TITLE	SHEET NUMBER
COVER SHEET	C-101
NOTES SHEET	C-102
EXISTING CONDITIONS/DEMOLITION PLAN	C-201
LOT LINE ADJUSTMENT PLAN	C-301
SITE PLAN	C-302
GRADING & UTILITY PLAN	C-501
SOIL EROSION AND SEDIMENT POLLUTION CONTROL PLAN	C-601
SOIL EROSION AND SEDIMENT POLLUTION CONTROL NOTES & DETAILS	C-602, C-603
LANDSCAPE PLAN	C-701
LANDSCAPE NOTES AND DETAILS	C-702
DETAILS SHEET	C-901

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PROJECT No.: PAA220215.00
DRAWN BY: JCF
CHECKED BY: CMC
DATE: 06/10/2024
CAD ID: PAA220215.00-CMDS-08

PROJECT:

**PRELIMINARY / FINAL
MINOR SUBDIVISION
PLAN**
FOR
**THE HERBERT
WEINTRAUB
FOUNDATION**
PROPOSED SINGLE FAMILY HOME
& ADDITION
740 GERMANTOWN PIKE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY
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PENNSYLVANIA LICENSE No. PE045479E
NEW JERSEY LICENSE No. 24GE04507900

SHEET TITLE:
COVER SHEET
SHEET NUMBER:
C-101
ORG. DATE - 06/10/2024

GENERAL NOTES

(Rev. 2/2021)

- 1. THESE PLANS ARE SOLELY BASED ON INFORMATION THE OWNER AND OTHERS PROVIDED TO BOHLER ENGINEERING, PENNSYLVANIA, LLC (HEREIN "BOHLER") PRIOR TO THE DATE ON WHICH THE ENGINEER OF RECORD OR BOHLER PREPARED THESE PLANS...
2. THE CONTRACTOR MUST STRICTLY COMPLY WITH THESE NOTES AND ALL SPECIFICATIONS/REPORTS CONTAINED HEREIN...
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST CONFIRM WITH THE ENGINEER OF RECORD AND BOHLER THAT THE LATEST EDITION OF THE DOCUMENTS AND/OR REFERENCES REFERENCED WITHIN THE PLAN REFERENCES ARE BEING USED FOR CONSTRUCTION...
4. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED...
5. THE CONTRACTOR MUST ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS/REPORTS AND CONDITIONS OF APPROVAL...
6. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST COORDINATE THE BUILDING LAYOUT BY CAREFULLY REVIEWING THE MOST CURRENT "AS-BUILT" MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLANS...
7. THE CONTRACTOR MUST REFER TO AND ENSURE COMPLIANCE WITH THE APPROVED ARCHITECTURAL/BUILDING PLANS OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRYPOINT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS...
8. THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND MEASUREMENTS SHOWN ON THESE PLANS...
9. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND MEASUREMENTS INCLUDED ON DESIGN DOCUMENTS HEREIN AND MUST NOT SCALE OFF THE DRAWINGS...
10. THE OWNER AND CONTRACTOR MUST BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY...
11. WHEN INCLUDED AS ONE OF THE REFERENCED DOCUMENTS, THE GEOTECHNICAL REPORT, SPECIFICATIONS AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS...
12. ENGINEER OF RECORD AND BOHLER ARE NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, HAS NO LIABILITY FOR ANY HAZARDOUS MATERIALS, HAZARDOUS SUBSTANCES, OR POLLUTANTS ON, ABOVE OR UNDER THE PROPERTY...
13. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN AND WHERE SHORING IS REQUIRED OR FOR INSTALLING ALL SHORING REQUIRED DURING CONSTRUCTION...
14. THE CONTRACTOR MUST EXERCISE EXTREME CAUTION WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC...
15. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE...
16. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN RECORDS TO DEMONSTRATE PROPER AND FULLY COMPLIANT DISPOSAL ACTIVITIES...
17. THE CONTRACTOR MUST REPAIR AT CONTRACTORS SOLE COST, ALL DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION...
18. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR AN INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE...
19. THE CONTRACTOR MUST IMMEDIATELY IDENTIFY IN WRITING, TO THE ENGINEER OF RECORD AND BOHLER, ANY CONDITIONS THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST...
20. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE...
21. ALL CONTRACTORS MUST CARRY AT LEAST THE MINIMUM AMOUNT OF THE SPECIFIED AND COMMERCIALY REASONABLE STANDARD WORKER'S COMPENSATION INSURANCE...
22. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK...
23. NEITHER THE PROFESSIONAL ACTIVITIES OF BOHLER, NOR THE PRESENCE OF BOHLER AND/OR ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES...
24. WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN BOHLER'S SCOPE OF SERVICES CONTRACTED WITH THE OWNER/DEVELOPER, BOHLER WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS...
25. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD AND BOHLER FOR ALL DEVIATIONS...
26. THE CONTRACTOR IS RESPONSIBLE FOR A MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS...
27. OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS IN STRICT ACCORDANCE WITH THE APPROVED PLANS AND DESIGN, AND FURTHER, THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY FAILURE TO SO MAINTAIN OR PRESERVE SITE AND/OR DESIGN FEATURES...
28. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES...

DEMOLITION NOTES

(Rev. 2/2021)

- 1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS...
2. THE CONTRACTOR MUST CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER AS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND ALL OTHER ADJACENT FACILITIES...
3. WHEN DEMOLITION-RELATED ACTIVITIES IMPACT ROADWAYS AND/OR ROADWAY RIGHT-OF-WAY, THE CONTRACTOR MUST PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE CURRENT FEDERAL HIGHWAY ADMINISTRATION 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' (MUTCD)...
4. THE DEMOLITION (AND/OR REMOVALS) PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION AND TO IDENTIFY ONLY CONDITIONS REGARDING ITEMS TO BE DEMOLISHED, REMOVED, AND/OR TO REMAIN...
5. THE CONTRACTOR MUST PROVIDE ALL METHODS AND MEANS NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES...
6. ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR JOB SITE SURVEY OR SUPERVISION...
7. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY, WHICH MUST INCLUDE, BUT IS NOT LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING, OTHER APPROPRIATE AND/OR NECESSARY SAFETY FEATURES AND ITEMS NECESSARY TO PROTECT THE PUBLIC...
8. PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY, THE CONTRACTOR MUST, IN WRITING, RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS AND/OR SPECIFICATIONS...
9. THE CONTRACTOR MUST BECOME FAMILIAR WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AND/OR DISCONNECTION...
10. PRIOR TO COMMENCING ANY DEMOLITION, THE CONTRACTOR MUST:
A. OBTAIN ALL REQUIRED PERMITS AND MAINTAIN THE SAME ON SITE FOR REVIEW BY THE ENGINEER AND ALL PUBLIC AGENCIES WITH JURISDICTION THROUGHOUT THE DURATION OF THE PROJECT...
B. NOTIFY AT A MINIMUM, THE MUNICIPAL ENGINEER, DESIGN ENGINEER, AND LOCAL SOIL CONSERVATION JURISDICTION, AT LEAST 72 BUSINESS HOURS PRIOR TO THE COMMENCEMENT OF WORK...
C. INSTALL THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE...
D. IN ACCORDANCE WITH THE STATE LAW, THE CONTRACTOR MUST CALL THE STATE ONE-CALL DAMAGE PROTECTION SYSTEM FOR UTILITY MARK OUT IN ADVANCE OF ANY EXCAVATION...
E. LOCATE AND PROTECT ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC...
F. PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING ANY DEMOLITION ACTIVITIES...
G. ARRANGE FOR AND COORDINATE WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) FOR THE TEMPORARY OR PERMANENT TERMINATION OF SERVICE...
H. ARRANGE FOR AND COORDINATE WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) REGARDING WORKING "OFF-PEAK" HOURS...
I. IN THE EVENT THE CONTRACTOR DISCOVERS ANY HAZARDOUS MATERIAL, THE REMOVAL OF WHICH IS NOT ADDRESSED IN THE PROJECT PLANS...
11. THE CONTRACTOR MUST NOT PERFORM ANY EARTH MOVEMENT ACTIVITIES, DEMOLITION OR REMOVAL OF FOUNDATION WALLS, FOOTINGS, OR OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE...
12. DEMOLITION ACTIVITIES AND EQUIPMENT MUST NOT USE OR INCLUDE AREAS OUTSIDE THE DEFINED PROJECT LIMIT LINE...
13. THE CONTRACTOR MUST BACKFILL ALL EXCAVATION RESULTING FROM, OR INCIDENTAL TO, DEMOLITION ACTIVITIES...
14. EXPLOSIVES MUST NOT BE USED WITHOUT PRIOR WRITTEN CONSENT FROM BOTH THE OWNER AND ALL APPLICABLE, NECESSARY AND REQUIRED GOVERNMENTAL AUTHORITIES...
15. IN ACCORDANCE WITH FEDERAL, STATE AND/OR LOCAL STANDARDS, THE CONTRACTOR MUST USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING IN THE AIR...
16. PAVEMENT MUST BE SAW CUT IN STRAIGHT LINES, ALL DEBRIS FROM REMOVAL OPERATIONS MUST BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION...
17. THE CONTRACTOR MUST MAINTAIN A RECORD SET OF PLANS WHICH INDICATES THE LOCATION OF EXISTING UTILITIES THAT ARE CAPPED, ABANDONED IN PLACE, OR RELOCATED DUE TO DEMOLITION ACTIVITIES...
18. THE CONTRACTOR MUST EMPTY, CLEAN AND REMOVE FROM THE SITE ALL UNDERGROUND STORAGE TANKS, IF ENCOUNTERED...
19. THE CONTRACTOR MUST IMMEDIATELY IDENTIFY IN WRITING, TO THE ENGINEER OF RECORD AND BOHLER, ANY CONDITIONS THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST...
20. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE...
21. ALL CONTRACTORS MUST CARRY AT LEAST THE MINIMUM AMOUNT OF THE SPECIFIED AND COMMERCIALY REASONABLE STANDARD WORKER'S COMPENSATION INSURANCE...
22. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK...
23. NEITHER THE PROFESSIONAL ACTIVITIES OF BOHLER, NOR THE PRESENCE OF BOHLER AND/OR ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES...
24. WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN BOHLER'S SCOPE OF SERVICES CONTRACTED WITH THE OWNER/DEVELOPER, BOHLER WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS...
25. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD AND BOHLER FOR ALL DEVIATIONS...
26. THE CONTRACTOR IS RESPONSIBLE FOR A MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS...
27. OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS IN STRICT ACCORDANCE WITH THE APPROVED PLANS AND DESIGN...
28. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES...

SITE LAYOUT NOTES

(Rev. 1/2020)

- 1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS...
2. PRIOR TO THE COMMENCEMENT OF GENERAL CONSTRUCTION, THE CONTRACTOR MUST INSTALL SOIL EROSION CONTROL, AND ANY STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MEASURES NECESSARY...
3. ALL DIRECTIONAL TRAFFIC SIGNING AND PAVEMENT STRIPPING MUST CONFORM TO THE LATEST STANDARDS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)...
4. THE LOCATIONS OF PROPOSED UTILITY POLES AND TRAFFIC SIGNS SHOWN ON THE PLANS ARE SCHEMATIC AND PRELIMINARY...
5. ALL DIMENSIONS SHOWN ARE TO BOTTOM FACE OF CURB, EDGE OF PAVEMENT, OR EDGE OF BUILDING...
6. BY GRAPHIC PLOTTING ONLY, SITE IS LOCATED IN FLOOD ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN...
7. THE AREA BETWEEN THE ULTIMATE AND LOCAL RIGHT-OF-WAY OF THE ROAD SHALL BE OFFERED TO THE AGENCY HAVING JURISDICTION.

DRAINAGE AND UTILITY NOTES

(Rev. 2/2021)

- GENERAL
1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS...
2. LOCATIONS OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE, AND THE CONTRACTOR MUST INDEPENDENTLY VERIFY AND CONFIRM THOSE LOCATIONS...
3. THE CONTRACTOR MUST VERTICALLY AND HORIZONTALLY LOCATE ALL UTILITIES AND SERVICES INCLUDING, BUT NOT LIMITED TO, GAS, WATER, ELECTRIC, SANITARY AND STORM, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC...
4. THE CONTRACTOR MUST FIELD VERIFY THE PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES BY USING A TEST PIT...
5. STORMWATER ROOF DRAIN LOCATIONS ARE BASED ON ARCHITECTURAL PLANS...
6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING SITE PLAN DOCUMENTS AND ARCHITECTURAL PLANS FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS...
7. ALL FILL COMPACTION AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION MUST BE EXACTLY AS PER THE RECOMMENDATIONS PROVIDED...
8. DURING THE INSTALLATION OF SANITARY, STORM, AND ALL UTILITIES, THE CONTRACTOR MUST MAINTAIN A CONTEMPORANEOUS AND THOROUGH RECORD OF CONSTRUCTION...
9. THE CONTRACTOR MUST ENSURE THAT ALL UTILITY TRENCHES LOCATED IN EXISTING PAVED ROADWAYS INCLUDING SANITARY, WATER AND STORM SYSTEMS...
10. FINAL LOCATIONS OF PROPOSED UTILITY POLES, AND/OR POLES TO BE RELOCATED ARE AT THE SOLE DISCRETION OF THE RESPECTIVE UTILITY COMPANY...
11. WATER SERVICE MATERIALS, BURIAL DEPTH, AND COVER REQUIREMENTS MUST BE SPECIFIED BY THE LOCAL UTILITY COMPANY...
12. THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT MUST BE ADJUSTED, AS NECESSARY...
13. THE CONTRACTOR MUST ENSURE THAT ALL UTILITY TRENCHES LOCATED IN EXISTING PAVED ROADWAYS, MUST BE REPAIRED IN ACCORDANCE WITH THE REFERENCED MUNICIPAL CODES...
14. VARIOUS ASPECTS OF THE UTILITY DESIGNS DEPICTED ON THE PLANS ARE SCHEMATIC IN ORDER TO PROVIDE PLAN CLARITY OR TO CONVEY A DESIGN INTENT...
15. THE CONTRACTOR MUST PROVIDE ALL METHODS AND MEANS NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES...
16. ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR JOB SITE SURVEY OR SUPERVISION...
17. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY, WHICH MUST INCLUDE, BUT IS NOT LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS...
18. PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY, THE CONTRACTOR MUST, IN WRITING, RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS AND/OR SPECIFICATIONS...
19. THE CONTRACTOR MUST BECOME FAMILIAR WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AND/OR DISCONNECTION...
20. PRIOR TO COMMENCING ANY DEMOLITION, THE CONTRACTOR MUST:
A. OBTAIN ALL REQUIRED PERMITS AND MAINTAIN THE SAME ON SITE FOR REVIEW BY THE ENGINEER AND ALL PUBLIC AGENCIES WITH JURISDICTION...
B. NOTIFY AT A MINIMUM, THE MUNICIPAL ENGINEER, DESIGN ENGINEER, AND LOCAL SOIL CONSERVATION JURISDICTION, AT LEAST 72 BUSINESS HOURS PRIOR TO THE COMMENCEMENT OF WORK...
C. INSTALL THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE...
D. IN ACCORDANCE WITH THE STATE LAW, THE CONTRACTOR MUST CALL THE STATE ONE-CALL DAMAGE PROTECTION SYSTEM FOR UTILITY MARK OUT...
E. LOCATE AND PROTECT ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC...
F. PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING ANY DEMOLITION ACTIVITIES...
G. ARRANGE FOR AND COORDINATE WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) FOR THE TEMPORARY OR PERMANENT TERMINATION OF SERVICE...
H. ARRANGE FOR AND COORDINATE WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) REGARDING WORKING "OFF-PEAK" HOURS...
I. IN THE EVENT THE CONTRACTOR DISCOVERS ANY HAZARDOUS MATERIAL, THE REMOVAL OF WHICH IS NOT ADDRESSED IN THE PROJECT PLANS...
21. THE CONTRACTOR MUST NOT PERFORM ANY EARTH MOVEMENT ACTIVITIES, DEMOLITION OR REMOVAL OF FOUNDATION WALLS, FOOTINGS, OR OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE...
22. DEMOLITION ACTIVITIES AND EQUIPMENT MUST NOT USE OR INCLUDE AREAS OUTSIDE THE DEFINED PROJECT LIMIT LINE...
23. THE CONTRACTOR MUST BACKFILL ALL EXCAVATION RESULTING FROM, OR INCIDENTAL TO, DEMOLITION ACTIVITIES...
24. EXPLOSIVES MUST NOT BE USED WITHOUT PRIOR WRITTEN CONSENT FROM BOTH THE OWNER AND ALL APPLICABLE, NECESSARY AND REQUIRED GOVERNMENTAL AUTHORITIES...
25. IN ACCORDANCE WITH FEDERAL, STATE AND/OR LOCAL STANDARDS, THE CONTRACTOR MUST USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING IN THE AIR...
26. PAVEMENT MUST BE SAW CUT IN STRAIGHT LINES, ALL DEBRIS FROM REMOVAL OPERATIONS MUST BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION...
27. THE CONTRACTOR MUST MAINTAIN A RECORD SET OF PLANS WHICH INDICATES THE LOCATION OF EXISTING UTILITIES THAT ARE CAPPED, ABANDONED IN PLACE, OR RELOCATED DUE TO DEMOLITION ACTIVITIES...
28. THE CONTRACTOR MUST EMPTY, CLEAN AND REMOVE FROM THE SITE ALL UNDERGROUND STORAGE TANKS, IF ENCOUNTERED...
29. THE CONTRACTOR MUST IMMEDIATELY IDENTIFY IN WRITING, TO THE ENGINEER OF RECORD AND BOHLER, ANY CONDITIONS THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST...
30. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE...
31. ALL CONTRACTORS MUST CARRY AT LEAST THE MINIMUM AMOUNT OF THE SPECIFIED AND COMMERCIALY REASONABLE STANDARD WORKER'S COMPENSATION INSURANCE...
32. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK...
33. NEITHER THE PROFESSIONAL ACTIVITIES OF BOHLER, NOR THE PRESENCE OF BOHLER AND/OR ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES...
34. WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN BOHLER'S SCOPE OF SERVICES CONTRACTED WITH THE OWNER/DEVELOPER, BOHLER WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS...
35. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD AND BOHLER FOR ALL DEVIATIONS...
36. THE CONTRACTOR IS RESPONSIBLE FOR A MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS...
37. OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS IN STRICT ACCORDANCE WITH THE APPROVED PLANS AND DESIGN...
38. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES...

SITE SPECIFIC NOTES

(Rev. 1/2020)

- 1. SURVEY: PLANS BY ASH ASSOCIATES, 785 TENNIS AVENUE, AMBLER, PA 19002 ENTITLED: "CONTRACT FEATURES PLAN FILE NO. 4281"
2. SURVEY: DRAWING ENTITLED: "740 GERMANTOWN PIKE SURVEY" PREPARED BY OTH, LLC RECEIVED ON 10-19-2020
3. GEOTECHNICAL REPORT (GOTERMATER): A REPORT BY INGRAM ENGINEERING SERVICES, INC. 16 HAGERTY BLVD., SUITE 400, WEST CHESTER, PA 19382 ENTITLED: "SWINGWATER CALCULATIONS" PROJECT: PAA220215.00 DATED 11/18/2021 REVISED 9/15/17
4. SWM REPORT: A REPORT BY BOHLER ENGINEERING 1600 MANOR DRIVE, SUITE 200, CHALFONT, PA 18914 ENTITLED: "GENERAL PROJECT DESCRIPTION AND SWM MAN-MADE CALCULATIONS" PROJECT: PAA220215.00 DATED 11/18/2021 REVISED 9/15/17
5. THE ABOVE REFERENCED DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THESE PLANS, HOWEVER, BOHLER ENGINEERING DOES NOT CERTIFY THE ACCURACY OF THE WORK REFERENCED OR DERIVED FROM THESE DOCUMENTS, BY OTHERS.

GRADING NOTES

(Rev. 2/2021)

- GENERAL
1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS...
2. SITE GRADING MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT...
3. THE CONTRACTOR IS REQUIRED TO SECURE ALL NECESSARY AND/OR REQUIRED PERMITS AND APPROVALS FOR ALL OFF-SITE MATERIAL SOURCES AND DISPOSAL FACILITIES...
4. THE CONTRACTOR IS FULLY RESPONSIBLE FOR VERIFYING EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCING ANY CONSTRUCTION...
5. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND REPLACING ALL UNSUITABLE MATERIALS WITH SUITABLE MATERIALS AS SPECIFIED IN THE GEOTECHNICAL REPORT...
6. IN THE EVENT OF A DISCREPANCY(IES) AND/OR A CONFLICT(S) BETWEEN PLANS, OR RELATIVE TO OTHER PLANS, THE GRADING PLAN TAKES PRECEDENCE AND CONTROLS...
7. THE CONTRACTOR IS RESPONSIBLE TO IMPORT FILL OR EXPORT EXCESS MATERIAL AS NECESSARY TO CONFORM TO THE PROPOSED GRADING, AND TO BACKFILL EXCAVATIONS FOR THE INSTALLATION OF UNDERGROUND IMPROVEMENTS...
8. THE CONTRACTOR MUST ENSURE THAT POSITIVE DRAINAGE IS PROVIDED IN BOTH PAVED AND LAWN AREAS AFTER CONSTRUCTION...
9. THE CONTRACTOR MUST ENSURE POSITIVE DRAINAGE AWAY FROM STRUCTURES...
10. WHERE SUBGRADE BUILDING AREAS ARE PROVIDED, THE CONTRACTOR MUST DETERMINE THE DEPTH TO GROUNDWATER AT THE LOCATION OF THE PROPOSED SUBGRADE BUILDING AREA...
11. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A GEOTECHNICAL ENGINEER AND IMPLEMENT RECOMMENDED STABILIZATION MEASURES FOR ANY CUT SLOPES IN EXCESS OF 2:1 AND/OR FILL SLOPES IN EXCESS OF 3:1...
12. ALL SLOPES 3:1 OR GREATER SHALL BE STABILIZED IN ACCORDANCE WITH THE PLANS OR GEOTECHNICAL SPECIFICATIONS...
13. THE TOP AND BOTTOM OF WALL ELEVATIONS (TW & BW) REPRESENT THE PROPOSED FINISHED GRADE AT THE FACE OF THE WALL...
14. ALL DISTURBED TOPSOIL ON THE SITE IS TO BE REDISTRIBUTED ON SITE IN AREAS NOT COVERED BY IMPERVIOUS SURFACES...
15. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER OF RECORD, IN WRITING, OF ANY DISCREPANCY(IES) AND/OR CONFLICT(S).

SITE SPECIFIC

- 8. THE CONTRACTOR MUST ENSURE THAT POSITIVE DRAINAGE IS PROVIDED IN BOTH PAVED AND LAWN AREAS AFTER CONSTRUCTION...
9. THE CONTRACTOR MUST ENSURE POSITIVE DRAINAGE AWAY FROM STRUCTURES...
10. WHERE SUBGRADE BUILDING AREAS ARE PROVIDED, THE CONTRACTOR MUST DETERMINE THE DEPTH TO GROUNDWATER...
11. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A GEOTECHNICAL ENGINEER AND IMPLEMENT RECOMMENDED STABILIZATION MEASURES...
12. ALL SLOPES 3:1 OR GREATER SHALL BE STABILIZED IN ACCORDANCE WITH THE PLANS OR GEOTECHNICAL SPECIFICATIONS...
13. THE TOP AND BOTTOM OF WALL ELEVATIONS (TW & BW) REPRESENT THE PROPOSED FINISHED GRADE...
14. ALL DISTURBED TOPSOIL ON THE SITE IS TO BE REDISTRIBUTED ON SITE IN AREAS NOT COVERED BY IMPERVIOUS SURFACES...

BOHLER ENGINEERING
SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

Table with columns: REV, DATE, COMMENT, DRAWN BY. Contains one revision entry for drawing 1802-04-0719.

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Table with columns: PROJECT No., DRAWN BY, CHECKED BY, DATE, CADD. Project: PAA220215.00-CMDS-08

PRELIMINARY / FINAL MINOR SUBDIVISION PLAN

FOR THE HERBERT WEINTRAUB FOUNDATION
PROPOSED SINGLE FAMILY HOME & ADDITION

740 GERMANTOWN PIKE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY
LAFAYETTE HILL, PENNSYLVANIA
19444

BOHLER ENGINEERING

1600 MANOR DRIVE, SUITE 200
CHALFONT, PA 18914
Phone: (215) 996-9100
Fax: (215) 996-9102
www.BohlerEngineering.com

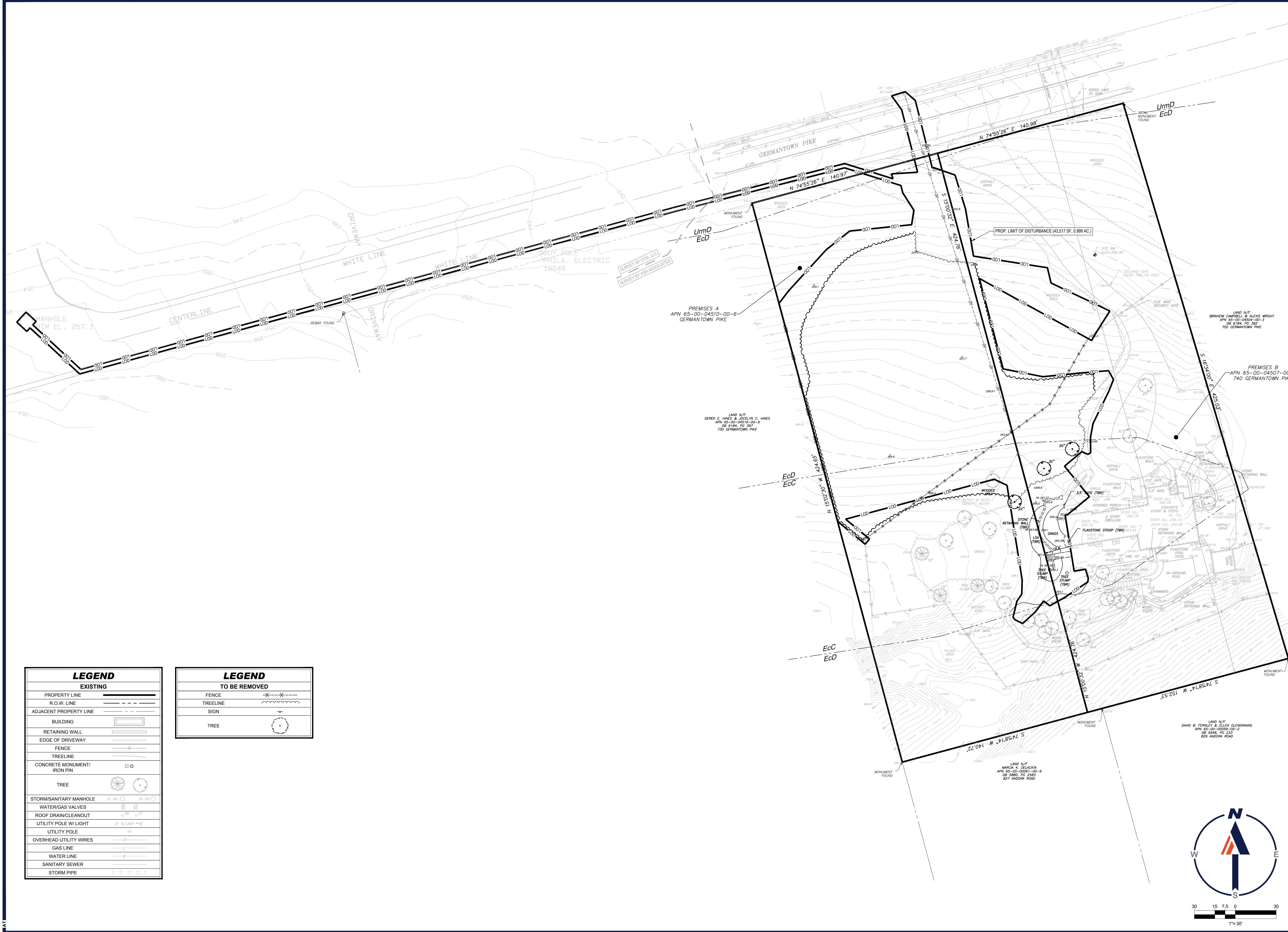
R.E. KLOS, JR.
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE NO. PE054576E
NEW JERSEY LICENSE NO. 24GE04502900

SHEET TITLE:

NOTES SHEET

SHEET NUMBER: C-102

ORG. DATE - 06/10/2024



LEGEND	
EXISTING	
PROPERTY LINE	—
R.O.W. LINE	- - - -
ADJACENT PROPERTY LINE	—
BUILDING	[Hatched Box]
RETAINING WALL	[Horizontal Line]
EDGE OF DRIVEWAY	[Dashed Line]
FENCE	[Crossed Line]
TREELINE	[Wavy Line]
CONCRETE MONUMENT/ IRON PIN	[Square with Circle]
TREE	[Circle with Lines]
STORM/SANITARY MANHOLE	[Circle with 'S' or 'SM']
WATER/GAS VALVES	[Circle with 'W' or 'G']
ROOF DRAIN/CLEANOUT	[Circle with 'R']
UTILITY POLE W/ LIGHT	[Circle with 'U']
UTILITY POLE	[Circle with 'U']
OVERHEAD UTILITY WIRES	[Dashed Line]
GAS LINE	[Line with 'G']
WATER LINE	[Line with 'W']
SANITARY SEWER	[Line with 'S']
STORM PIPE	[Line with 'ST']

LEGEND	
TO BE REMOVED	
FENCE	[Crossed Line with X]
TREELINE	[Wavy Line with X]
SIGN	[Circle with X]
TREE	[Circle with Lines and X]

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PROJECT No.:	PAA220215.00
DRAWN BY:	JCF
CHECKED BY:	CMC
DATE:	06/10/2024
CAD I.D.:	PAA220215.00-SUBD-08

PROJECT:
**PRELIMINARY / FINAL
 MINOR SUBDIVISION
 PLAN**
 FOR
**THE HERBERT
 WEINTRAUB
 FOUNDATION**
 PROPOSED SINGLE FAMILY HOME
 & ADDITION
 740 GERMANTOWN PIKE
 WHITEMARSH TOWNSHIP
 MONTGOMERY COUNTY
 LAFAYETTE HILL, PENNSYLVANIA
 19444

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R.E. KLOS, JR.
 PROFESSIONAL ENGINEER
 PENNSYLVANIA LICENSE No. PE045476E
 NEW JERSEY LICENSE No. 24GE04507900

SHEET TITLE:
**EXISTING
 CONDITIONS/
 DEMOLITION
 PLAN**
 SHEET NUMBER:
C-201
 ORG. DATE - 06/10/2024

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R:\2022\PA220215.00\CAD\DRAWINGS\PLAN SETS\SUBDIVISION PLANS\PA220215.00-SUBD-08-LOT LINE ADJUSTMENT

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 DATE: 08/10/2024
 CAD ID: PAA220215.00-SUBD-08

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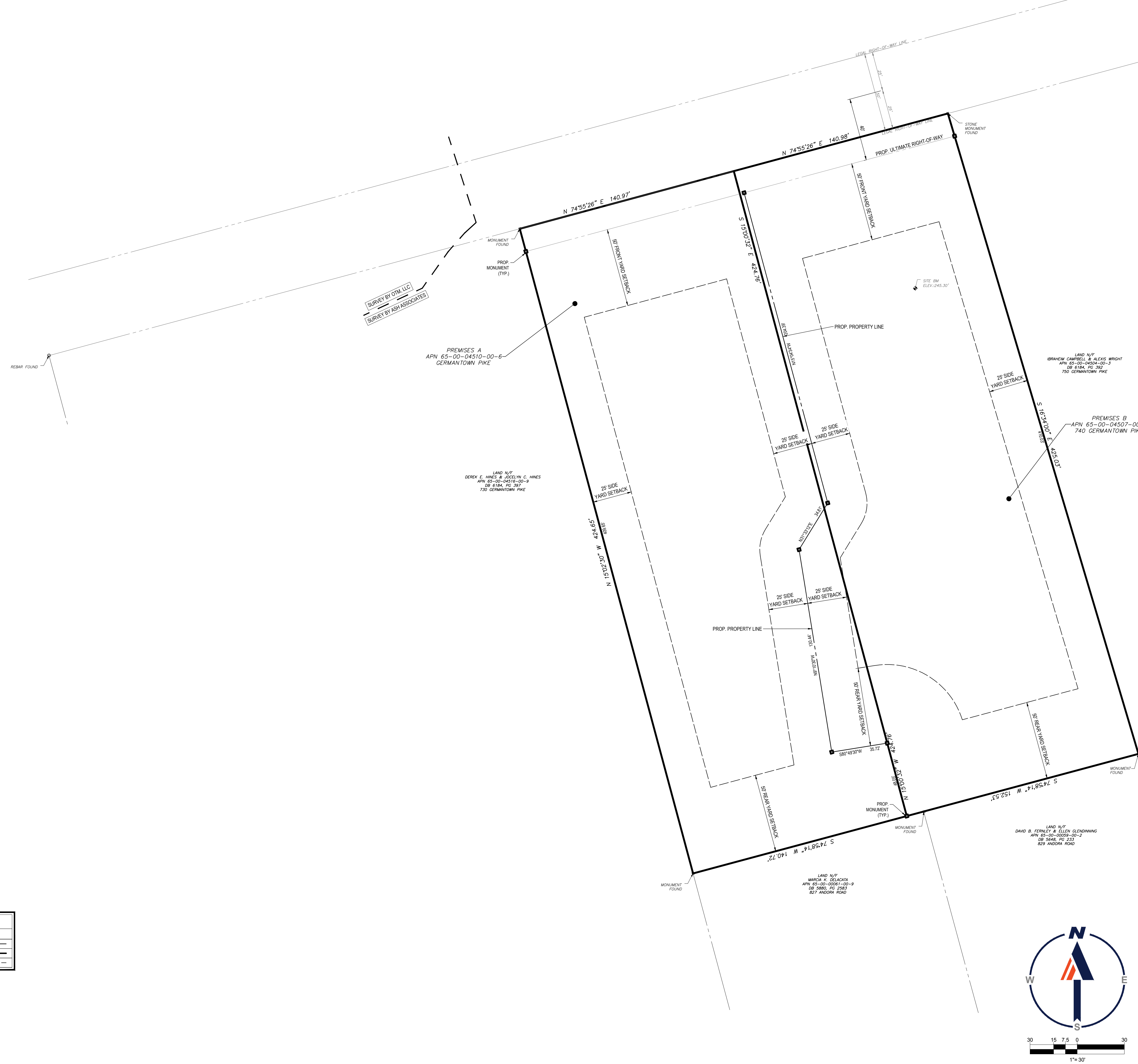
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SHEET TITLE:
**LOT LINE
 ADJUSTMENT
 PLAN**

SHEET NUMBER:
C-301

ORG. DATE - 06/10/2024

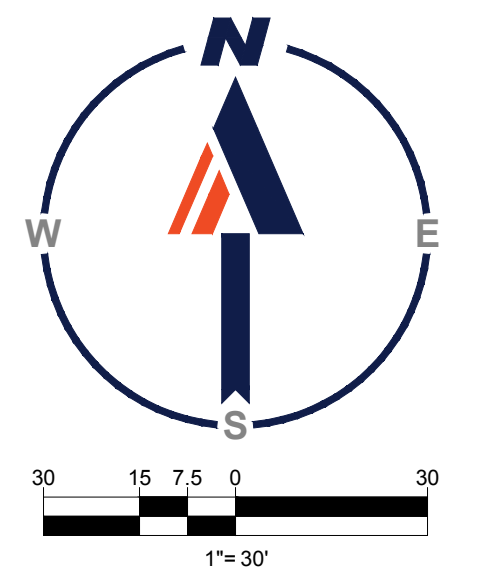


LEGEND
 EXISTING

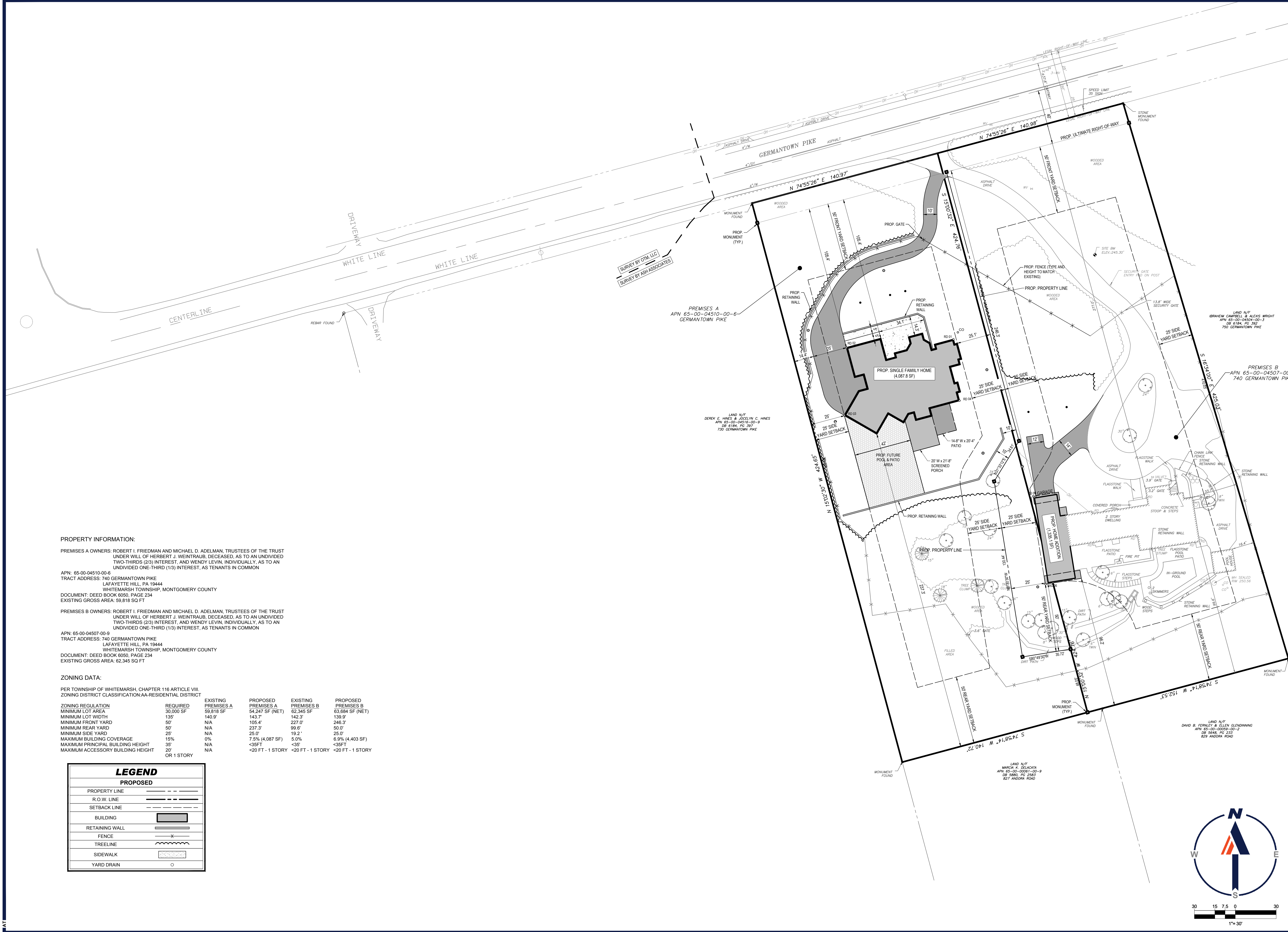
PROPERTY LINE	—————
R.O.W. LINE	- - - - -
ADJACENT PROPERTY LINE	—————
CONCRETE MONUMENT/ IRON PIN	□ ○

LEGEND
 PROPOSED

PROPERTY LINE	- - - - -
R.O.W. LINE	—————
SETBACK LINE	—————



AT



PROPERTY INFORMATION:

PREMISES A OWNERS: ROBERT I. FRIEDMAN AND MICHAEL D. ADELMAN, TRUSTEES OF THE TRUST UNDER WILL OF HERBERT J. WEINTRAUB, DECEASED, AS TO AN UNDIVIDED TWO-THIRDS (2/3) INTEREST, AND WENDY LEVIN, INDIVIDUALLY, AS TO AN UNDIVIDED ONE-THIRD (1/3) INTEREST, AS TENANTS IN COMMON

APN: 65-00-04510-00-6
TRACT ADDRESS: 740 GERMANTOWN PIKE
LAFAYETTE HILL, PA 19444
WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY
DOCUMENT: DEED BOOK 6050, PAGE 234
EXISTING GROSS AREA: 59,818 SQ FT

PREMISES B OWNERS: ROBERT I. FRIEDMAN AND MICHAEL D. ADELMAN, TRUSTEES OF THE TRUST UNDER WILL OF HERBERT J. WEINTRAUB, DECEASED, AS TO AN UNDIVIDED TWO-THIRDS (2/3) INTEREST, AND WENDY LEVIN, INDIVIDUALLY, AS TO AN UNDIVIDED ONE-THIRD (1/3) INTEREST, AS TENANTS IN COMMON

APN: 65-00-04507-00-9
TRACT ADDRESS: 740 GERMANTOWN PIKE
LAFAYETTE HILL, PA 19444
WHITEMARSH TOWNSHIP, MONTGOMERY COUNTY
DOCUMENT: DEED BOOK 6050, PAGE 234
EXISTING GROSS AREA: 62,345 SQ FT

ZONING DATA:

PER TOWNSHIP OF WHITEMARSH, CHAPTER 116 ARTICLE VIII
ZONING DISTRICT CLASSIFICATION: AA-RESIDENTIAL DISTRICT

ZONING REGULATION	REQUIRED	EXISTING PREMISES A	PROPOSED PREMISES A	EXISTING PREMISES B	PROPOSED PREMISES B
MINIMUM LOT AREA	30,000 SF	59,818 SF	54,247 SF (NET)	62,345 SF	63,664 SF (NET)
MINIMUM LOT WIDTH	135'	140.9'	143.7'	142.3'	139.9'
MINIMUM FRONT YARD	50'	N/A	105.4'	227.0'	246.3'
MINIMUM REAR YARD	50'	N/A	237.3'	99.6'	50.0'
MINIMUM SIDE YARD	25'	N/A	25.0'	19.2'	25.0'
MAXIMUM BUILDING COVERAGE	15%	0%	7.5% (4,087 SF)	5.0%	6.9% (4,403 SF)
MAXIMUM PRINCIPAL BUILDING HEIGHT	35'	N/A	<35FT	<35'	<35FT
MAXIMUM ACCESSORY BUILDING HEIGHT	20'	N/A	<20 FT - 1 STORY	<20 FT - 1 STORY	<20 FT - 1 STORY

LEGEND

PROPOSED

PROPERTY LINE	---
R.O.W. LINE	---
SETBACK LINE	---
BUILDING	[Solid Grey Box]
RETAINING WALL	[Hatched Box]
FENCE	[Line with 'X' marks]
TREELINE	[Wavy Line]
SIDEWALK	[Dashed Line]
YARD DRAIN	[Circle]

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CAD ID: PAA220215.00-SUBD-08

**PRELIMINARY / FINAL
MINOR SUBDIVISION
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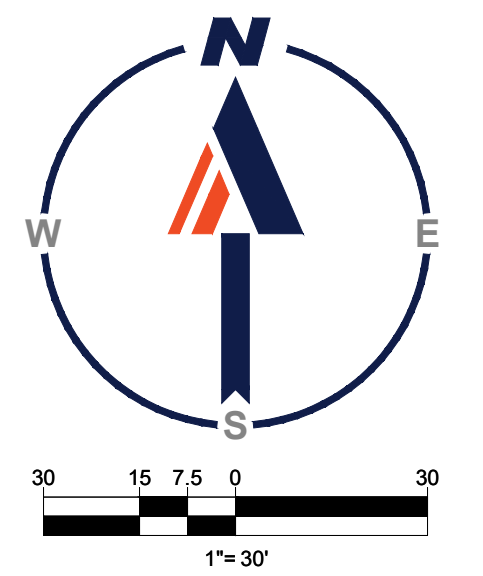
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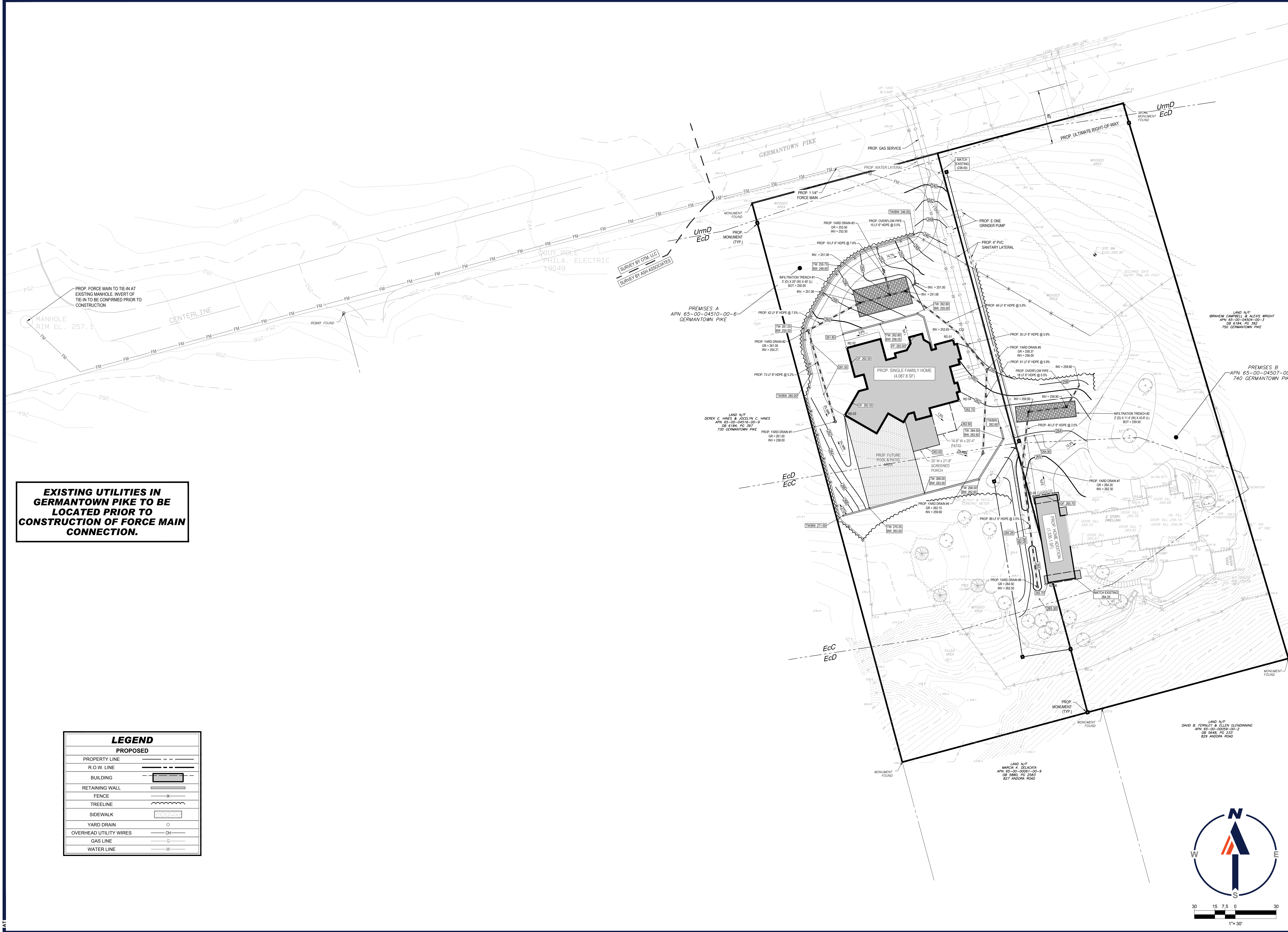
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SHEET TITLE:
SITE PLAN
SHEET NUMBER:
C-302
ORG. DATE - 06/10/2024

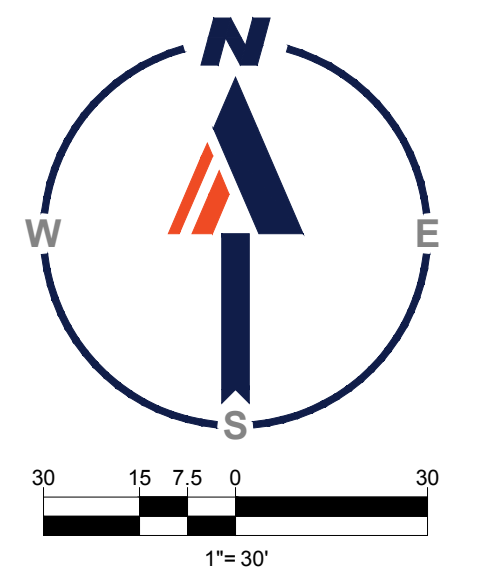


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EXISTING UTILITIES IN GERMANTOWN PIKE TO BE LOCATED PRIOR TO CONSTRUCTION OF FORCE MAIN CONNECTION.

LEGEND	
PROPOSED	
PROPERTY LINE	---
R.O.W. LINE	---
BUILDING	[Hatched Box]
RETAINING WALL	[Hatched Line]
FENCE	[Dashed Line]
TREELINE	[Wavy Line]
SIDEWALK	[Dotted Line]
YARD DRAIN	○
OVERHEAD UTILITY WIRES	OH
GAS LINE	G
WATER LINE	W



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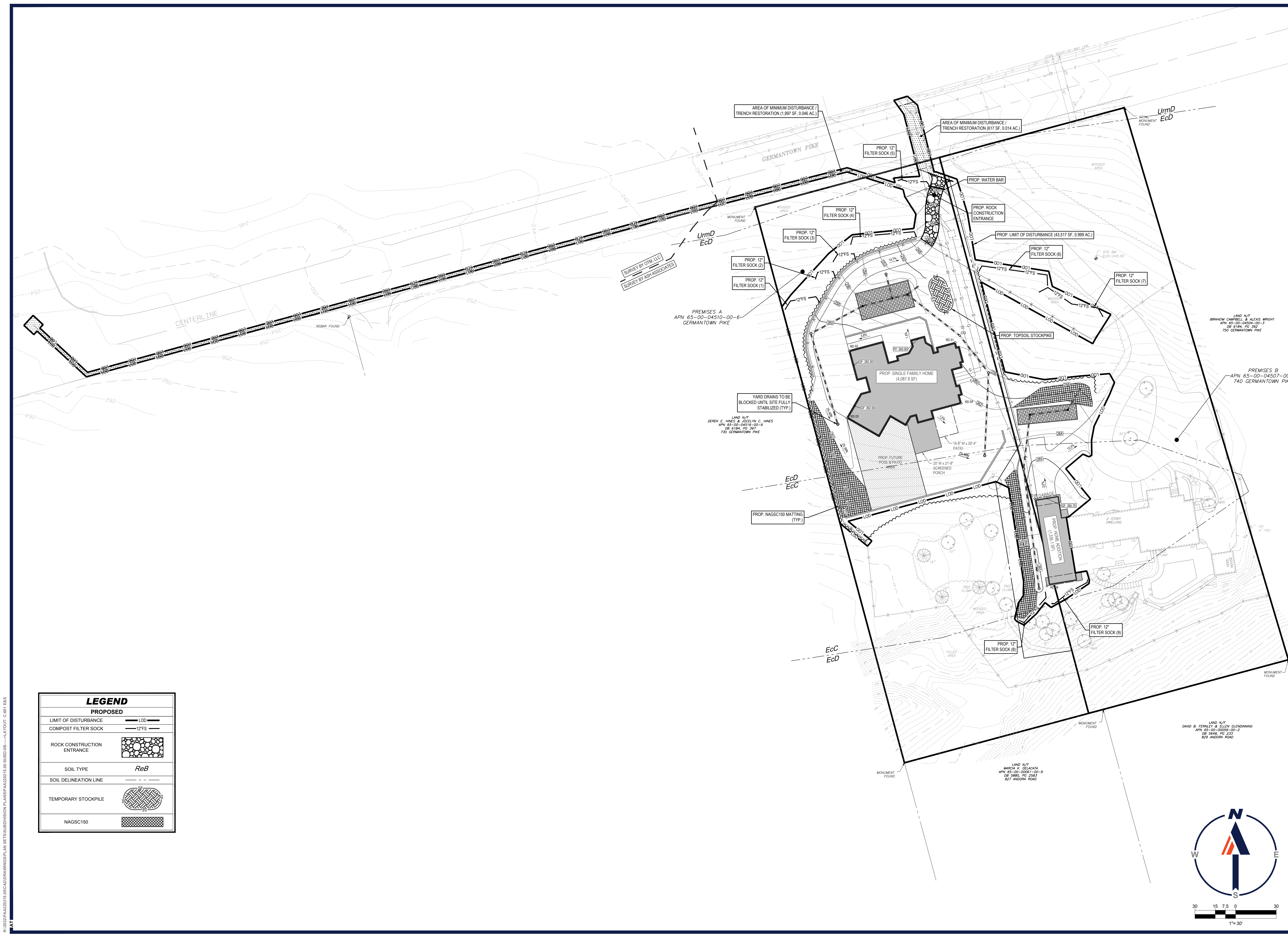
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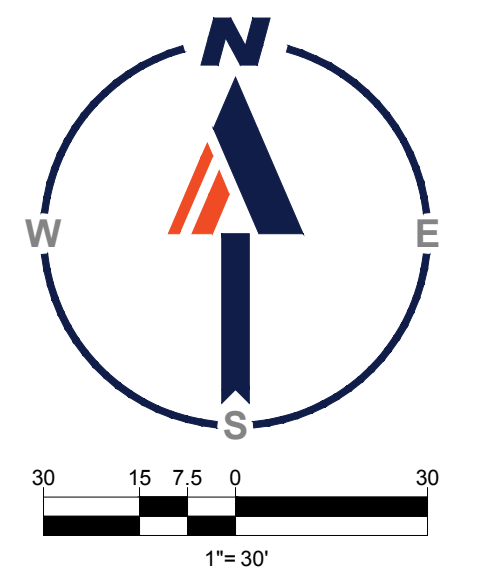
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 PENNSYLVANIA LICENSE No. PE045479E
 NEW JERSEY LICENSE No. 24GE04502900

SHEET TITLE:
**GRADING &
 UTILITY PLAN**
 SHEET NUMBER:
C-501
 ORG. DATE - 06/10/2024

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LEGEND	
PROPOSED	
LIMIT OF DISTURBANCE	LOD
COMPOST FILTER SOCK	12FS
ROCK CONSTRUCTION ENTRANCE	
SOIL TYPE	ReB
SOIL DELINEATION LINE	
TEMPORARY STOCKPILE	
NAGSC150	



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 NEW JERSEY LICENSE No. 24GE04507900

SHEET TITLE:
**SOIL EROSION
 & SEDIMENT
 POLLUTION
 CONTROL PLAN**
 SHEET NUMBER:
C-601

ORG. DATE - 06/10/2024

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 DATE: 06/10/2024
 CAD ID: PAA220215.00-CND5-08

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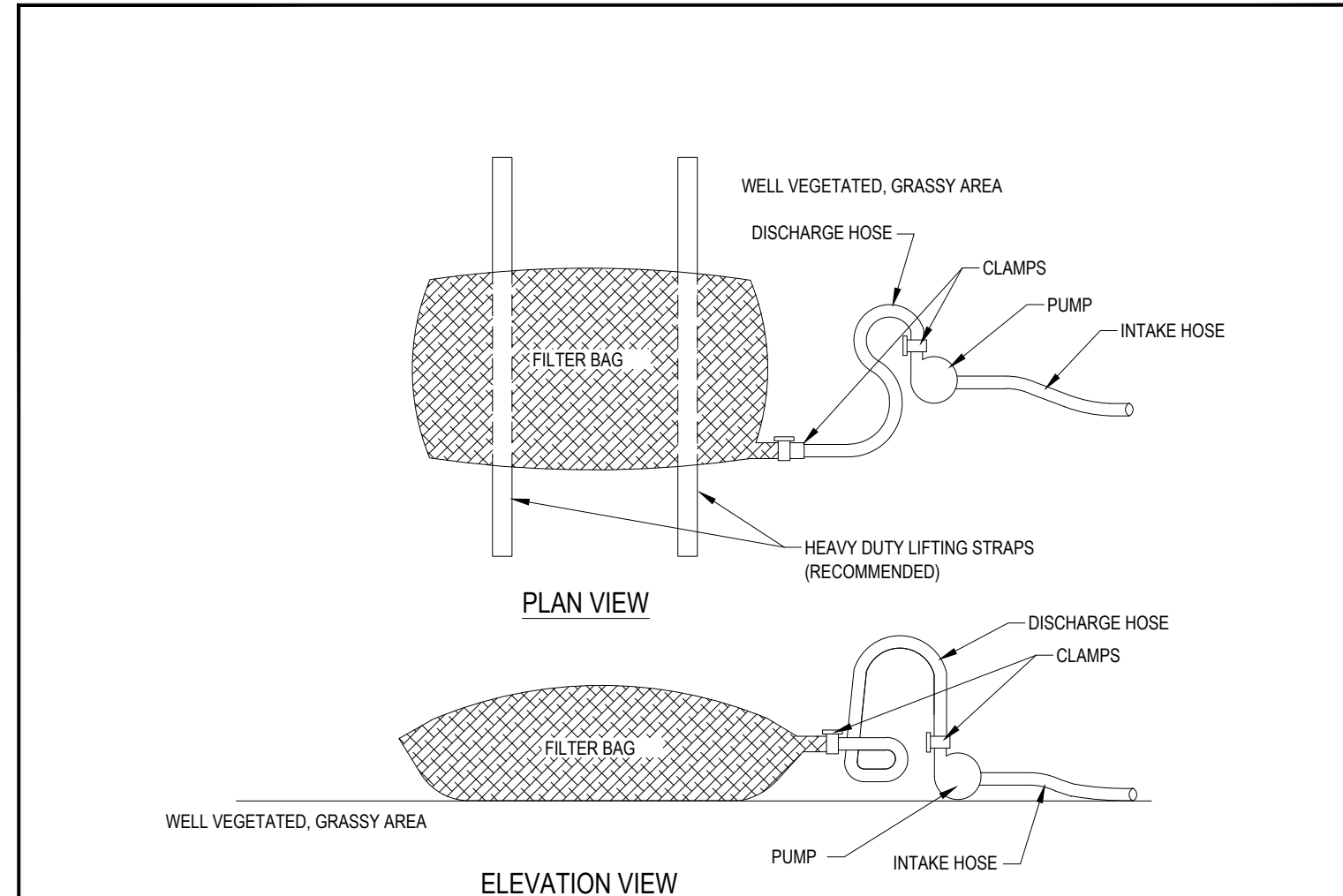
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SHEET TITLE:
**SOIL EROSION &
 SEDIMENT
 POLLUTION
 CONTROL DETAILS**

SHEET NUMBER:
C-603

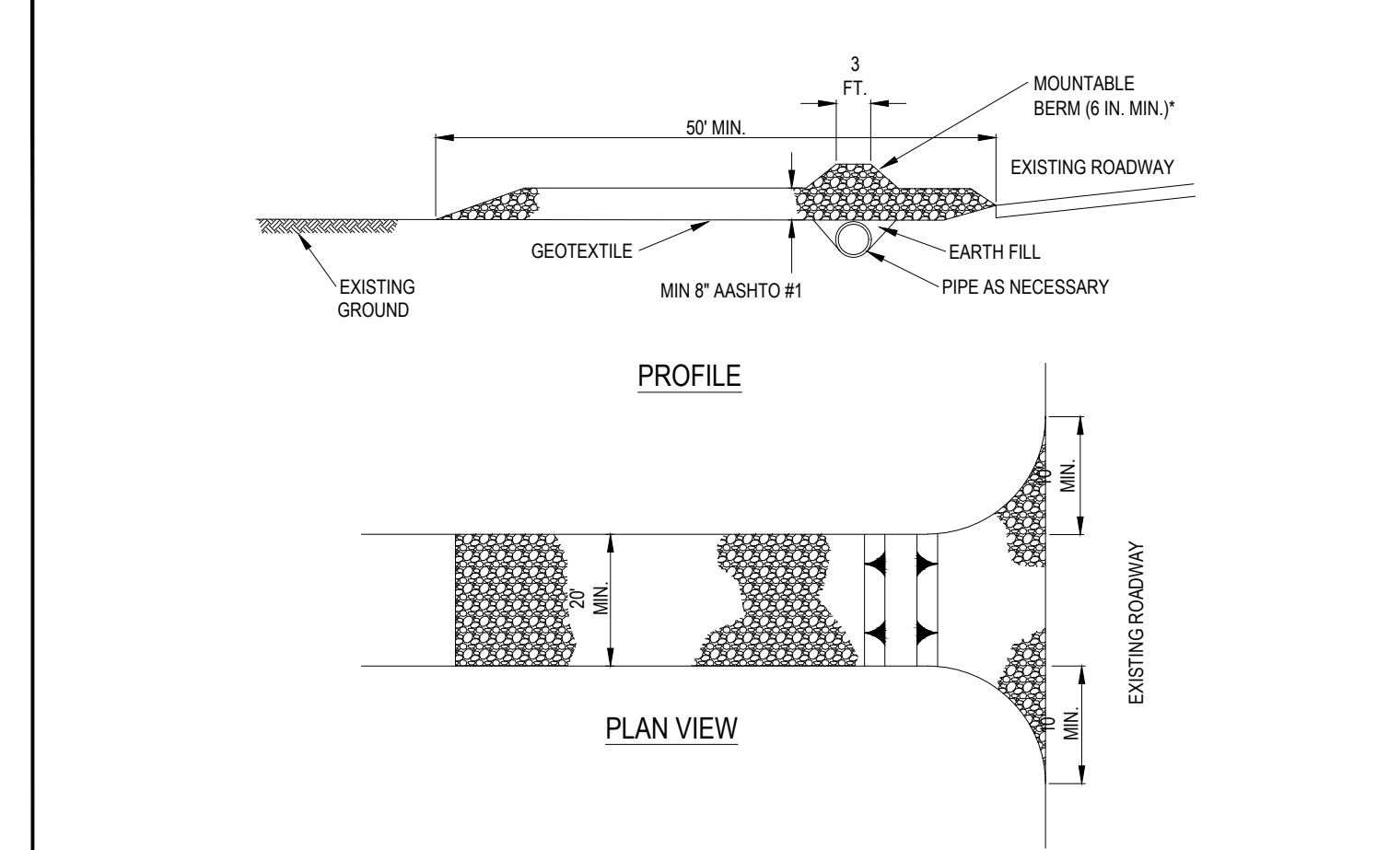
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NOTES:
 LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

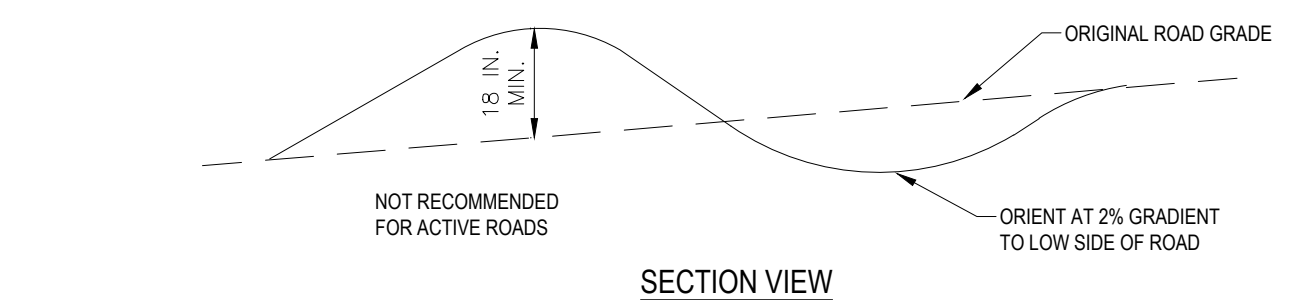
PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
 BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS, WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%, FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
 NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
 THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
 THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
 FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:
 REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
 RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
 MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
 MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

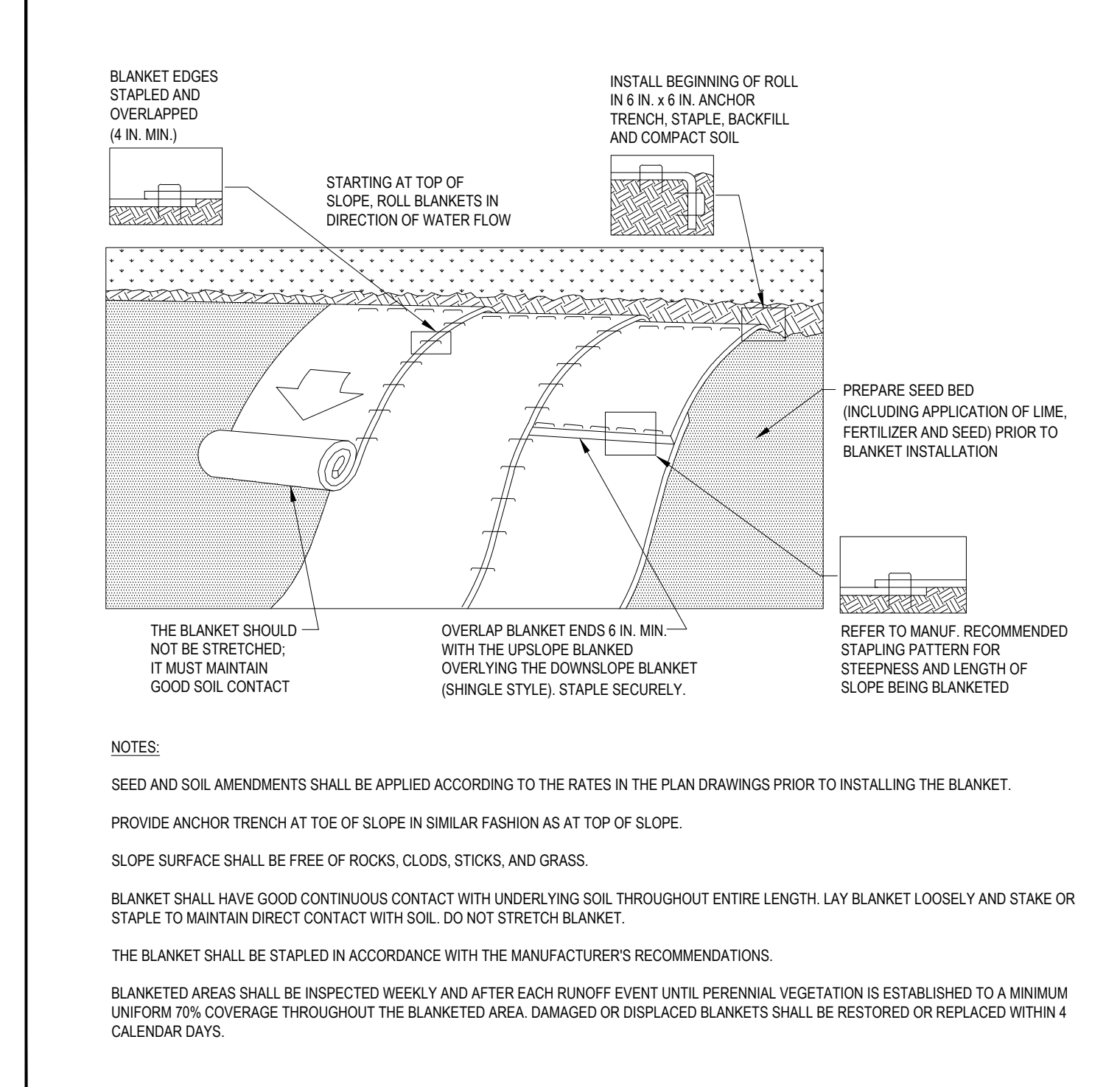


NOTES:
 WATERBARS SHALL DISCHARGE TO A STABLE AREA.
 WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.
 MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.
 WATERBARS ON RETIRED ROADWAYS, SKIDTRAILS, AND RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED.
 SEE PA DEP EROSION CONTROL MANUAL TABLE 3.1 FOR WATERBAR SPACING.

**#3-1 STANDARD CONSTRUCTION DETAIL #3-1
 ROCK CONSTRUCTION ENTRANCE**
 NOT TO SCALE

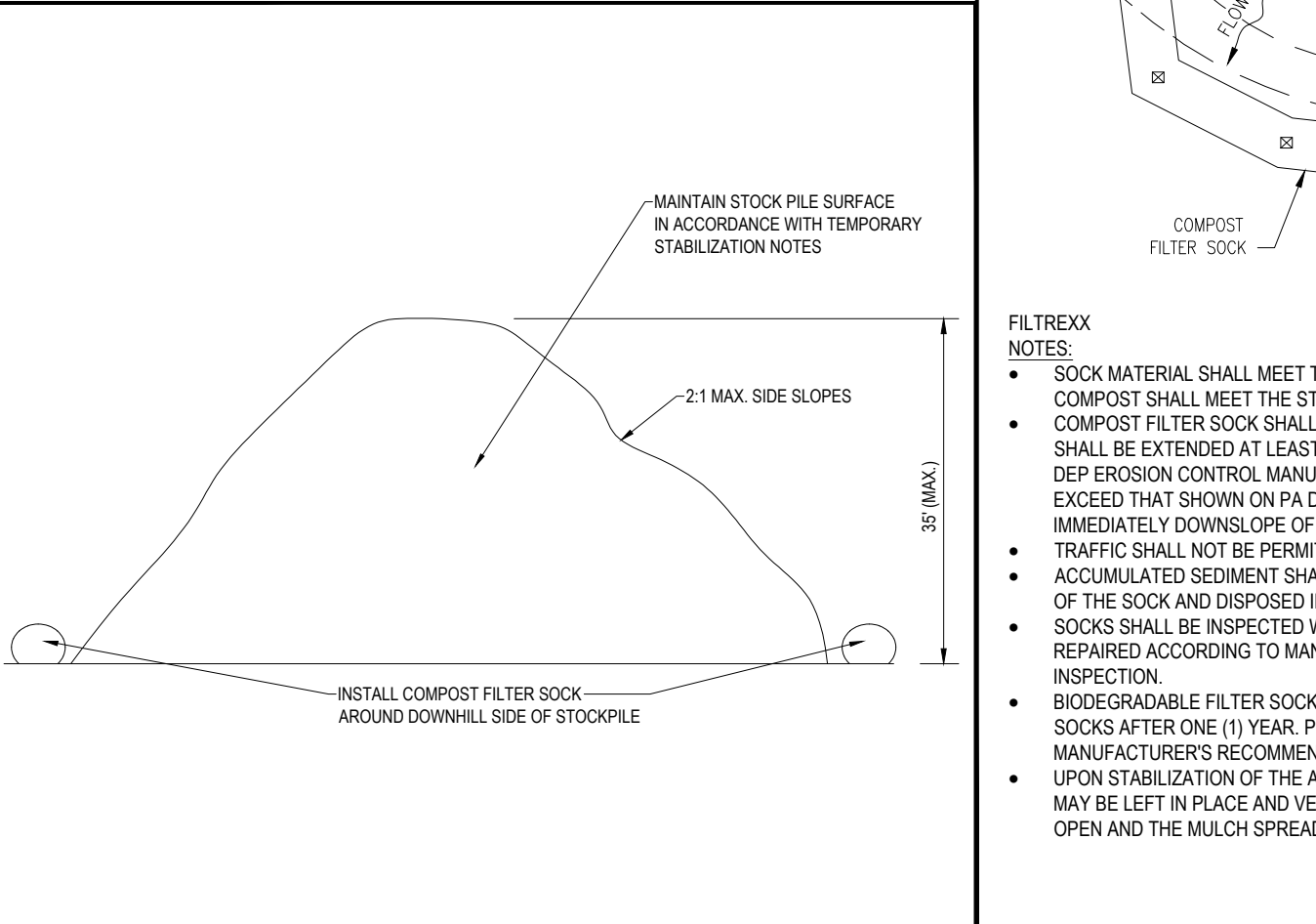
**#3-5 STANDARD CONSTRUCTION DETAIL #3-5
 WATERBAR**
 NOT TO SCALE

**#3-16 STANDARD CONSTRUCTION DETAIL #3-16
 PUMPED WATER FILTER BAG**
 NOT TO SCALE

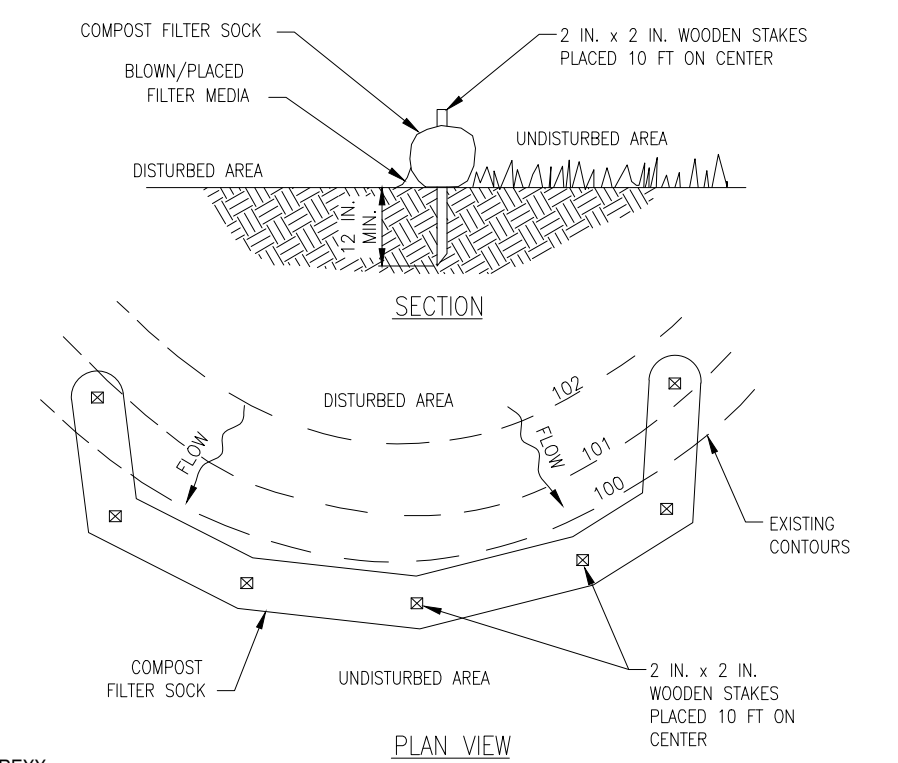


NOTES:
 SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
 PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
 SLOPE SURFACE SHALL BE FREE OF ROCKS, CLOUDS, STICKS, AND GRASS.
 BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
 THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

**#11-1 STANDARD CONSTRUCTION DETAIL #11-1
 EROSION CONTROL BLANKET INSTALLATION**
 NOT TO SCALE

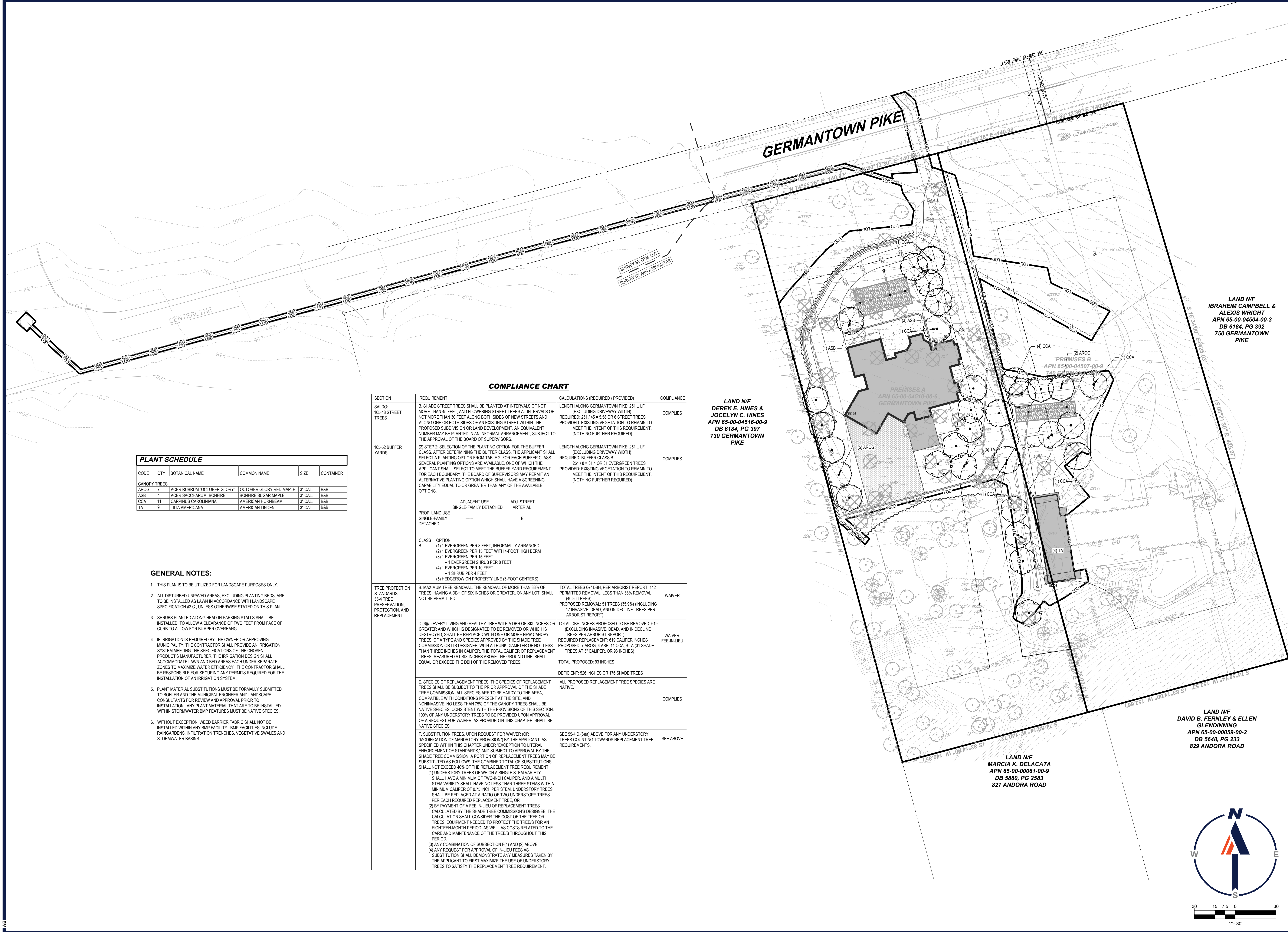


X-8 TEMPORARY SOIL STOCKPILE DETAIL
 NOT TO SCALE



FILTRIXX
 NOTES:
 SOCK MATERIAL SHALL MEET THE STANDARDS OF PA DEP EROSION CONTROL MANUAL TABLE 4.1.
 COMPOST SHALL MEET THE STANDARDS OF PA DEP EROSION CONTROL MANUAL TABLE 4.2
 COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST EIGHT (8) FEET UP SLOPE AT 45° TO THE MAIN SOCK ALIGNMENT (PA DEP EROSION CONTROL MANUAL FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON PA DEP EROSION CONTROL MANUAL FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
 TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
 ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
 SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
 BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER SIX (6) MONTHS. PHOTODEGRADABLE SOCKS AFTER ONE (1) YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

**#4-1 STANDARD CONSTRUCTION DETAIL #4-1
 COMPOST FILTER SOCK**
 NOT TO SCALE



CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CANOPY TREES					
AROG	17	ACER RUBRUM	OCTOBER GLORY	3" CAL	B&B
ASB	4	ACER SACCHARUM	BONFIRE	3" CAL	B&B
CCA	11	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	3" CAL	B&B
TA	9	TILIA AMERICANA	AMERICAN LINDEN	3" CAL	B&B

- GENERAL NOTES:**
- THIS PLAN IS TO BE UTILIZED FOR LANDSCAPE PURPOSES ONLY.
 - ALL DISTURBED UNPAVED AREAS, EXCLUDING PLANTING BEDS, ARE TO BE INSTALLED AS LAWN IN ACCORDANCE WITH LANDSCAPE SPECIFICATION #2.C., UNLESS OTHERWISE STATED ON THIS PLAN.
 - SHRUBS PLANTED ALONG HEAD-IN PARKING STALLS SHALL BE INSTALLED TO ALLOW A CLEARANCE OF TWO FEET FROM FACE OF CURB TO ALLOW FOR BUMPER OVERHANGS.
 - IF IRRIGATION IS REQUIRED BY THE OWNER OR APPROVING MUNICIPALITY, THE CONTRACTOR SHALL PROVIDE AN IRRIGATION SYSTEM MEETING THE SPECIFICATIONS OF THE CHOSEN PRODUCTS MANUFACTURER. THE IRRIGATION DESIGN SHALL ACCOMMODATE LAWN AND BED AREAS EACH UNDER SEPARATE ZONES TO MAXIMIZE WATER EFFICIENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ANY PERMITS REQUIRED FOR THE INSTALLATION OF AN IRRIGATION SYSTEM.
 - PLANT MATERIAL, SUBSTITUTIONS MUST BE FORMALLY SUBMITTED TO BOHLER AND THE MUNICIPAL ENGINEER AND LANDSCAPE CONSULTANTS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. ANY PLANT MATERIAL THAT ARE TO BE INSTALLED WITHIN STORMWATER BMP FEATURES MUST BE NATIVE SPECIES.
 - WITHOUT EXCEPTION, WEED BARRIER FABRIC SHALL NOT BE INSTALLED WITHIN ANY BMP FACILITY. BMP FACILITIES INCLUDE BANGROUES, INFILTRATION TRENCHES, VEGETATIVE SWALES AND STORMWATER BASINS.

COMPLIANCE CHART

SECTION	REQUIREMENT	CALCULATIONS (REQUIRED / PROVIDED)	COMPLIANCE
SALDO 105-48 STREET TREES	B. SHADE STREET TREES SHALL BE PLANTED AT INTERVALS OF NOT MORE THAN 30 FEET, AND FLOWERING STREET TREES AT INTERVALS OF NOT MORE THAN 30 FEET ALONG BOTH SIDES OF NEW STREETS AND ALONG ONE OR BOTH SIDES OF AN EXISTING STREET WITHIN THE PROPOSED SUBDIVISION OR LAND DEVELOPMENT. AN EQUIVALENT NUMBER MAY BE PLANTED IN AN INFORMAL ARRANGEMENT, SUBJECT TO THE APPROVAL OF THE BOARD OF SUPERVISORS.	LENGTH ALONG GERMANTOWN PIKE: 251 ± LF (EXCLUDING DRIVEWAY WIDTH) REQUIRED: 251 / 45 = 5.58 OR 6 STREET TREES PROVIDED: EXISTING VEGETATION TO REMAIN TO MEET THE INTENT OF THIS REQUIREMENT. (NOTHING FURTHER REQUIRED)	COMPLIES
105-52 BUFFER YARDS	(2) STEP 2: SELECTION OF THE PLANTING OPTION FOR THE BUFFER CLASS. AFTER DETERMINING THE BUFFER CLASS, THE APPLICANT SHALL SELECT A PLANTING OPTION FROM TABLE 2. FOR EACH BUFFER CLASS SEVERAL PLANTING OPTIONS ARE AVAILABLE. ONE OF WHICH THE APPLICANT SHALL SELECT TO MEET THE BUFFER YARD REQUIREMENT FOR EACH BOUNDARY. THE BOARD OF SUPERVISORS MAY PERMIT AN ALTERNATIVE PLANTING OPTION WHICH SHALL HAVE A SCREENING CAPABILITY EQUAL TO OR GREATER THAN ANY OF THE AVAILABLE OPTIONS.	LENGTH ALONG GERMANTOWN PIKE: 251 ± LF (EXCLUDING DRIVEWAY WIDTH) REQUIRED: BUFFER CLASS B 251 / 8 = 31.4 OR 31 EVERGREEN TREES PROVIDED: EXISTING VEGETATION TO REMAIN TO MEET THE INTENT OF THIS REQUIREMENT. (NOTHING FURTHER REQUIRED)	COMPLIES
PROP. LAND USE SINGLE-FAMILY DETACHED	ADJACENT USE: SINGLE-FAMILY DETACHED ADJ. STREET: ARTERIAL		
CLASS OPTION B	(1) 1 EVERGREEN PER 8 FEET, INFORMALLY ARRANGED (2) 1 EVERGREEN PER 15 FEET WITH 4-FOOT HIGH BERM (3) 1 EVERGREEN PER 15 FEET + 1 EVERGREEN SHRUB PER 8 FEET (4) 1 EVERGREEN PER 10 FEET (5) 1 SHRUB PER 4 FEET (6) HEDGEROW ON PROPERTY LINE (3-FOOT CENTERS)		
TREE PROTECTION STANDARDS: 55-4 TREE PRESERVATION, PROTECTION, AND REPLACEMENT	B. MAXIMUM TREE REMOVAL. THE REMOVAL OF MORE THAN 33% OF TREES, HAVING A DBH OF SIX INCHES OR GREATER, ON ANY LOT, SHALL NOT BE PERMITTED. D.(6)(a) EVERY LIVING AND HEALTHY TREE WITH A DBH OF SIX INCHES OR GREATER AND WHICH IS DESIGNATED TO BE REMOVED OR WHICH IS DESTROYED, SHALL BE REPLACED WITH ONE OR MORE NEW CANOPY TREES, OF A TYPE AND SPECIES APPROVED BY THE SHADE TREE COMMISSION OR ITS DESIGNEE, WITH A TRUNK DIAMETER OF NOT LESS THAN THREE INCHES IN CALIPER. THE TOTAL CALIPER OF REPLACEMENT TREES, MEASURED AT SIX INCHES ABOVE THE GROUND LINE, SHALL EQUAL OR EXCEED THE DBH OF THE REMOVED TREES. E. SPECIES OF REPLACEMENT TREES. THE SPECIES OF REPLACEMENT TREES SHALL BE SUBJECT TO THE PRIOR APPROVAL OF THE SHADE TREE COMMISSION. ALL SPECIES ARE TO BE HARDY TO THE AREA, COMPATIBLE WITH CONDITIONS PRESENT AT THE SITE, AND NONINVASIVE. NO LESS THAN 75% OF THE CANOPY TREES SHALL BE NATIVE SPECIES, CONSISTENT WITH THE PROVISIONS OF THIS SECTION. 100% OF ANY UNDERSTORY TREES TO BE PROVIDED UPON APPROVAL OF A REQUEST FOR WAIVER, AS PROVIDED IN THIS CHAPTER, SHALL BE NATIVE SPECIES. F. SUBSTITUTION TREES. UPON REQUEST FOR WAIVER (OR "MODIFICATION OF MANDATORY PROVISION") BY THE APPLICANT, AS SPECIFIED WITHIN THIS CHAPTER UNDER "EXCEPTION TO LITERAL ENFORCEMENT OF STANDARDS," AND SUBJECT TO APPROVAL BY THE SHADE TREE COMMISSION, A PORTION OF REPLACEMENT TREES MAY BE SUBSTITUTED AS FOLLOWS. THE COMBINED TOTAL OF SUBSTITUTIONS SHALL NOT EXCEED 40% OF THE REPLACEMENT TREE REQUIREMENT. (1) UNDERSTORY TREES OF WHICH A SINGLE STEM VARIETY SHALL HAVE A MINIMUM OF TWO-INCH CALIPER, AND A MULTI-STEM VARIETY SHALL HAVE NO LESS THAN THREE STEMS WITH A MINIMUM CALIPER OF 0.75 INCH PER STEM. UNDERSTORY TREES SHALL BE REPLACED AT A RATIO OF TWO UNDERSTORY TREES PER EACH REQUIRED REPLACEMENT TREE, OR (2) BY PAYMENT OF A FEE IN-LIEU OF REPLACEMENT TREES CALCULATED BY THE SHADE TREE COMMISSION'S DESIGNEE. THE CALCULATION SHALL CONSIDER THE COST OF THE TREE OR TREES, EQUIPMENT NEEDED TO PROTECT THE TREE/S FOR AN EIGHTEEN-MONTH PERIOD, AS WELL AS COSTS RELATED TO THE CARE AND MAINTENANCE OF THE TREE/S THROUGHOUT THIS PERIOD. (3) ANY COMBINATION OF SUBSECTION F.(1) AND (2) ABOVE. (4) ANY REQUEST FOR APPROVAL OF IN-LIEU FEES AS SUBSTITUTION SHALL DEMONSTRATE ANY MEASURES TAKEN BY THE APPLICANT TO FIRST MAXIMIZE THE USE OF UNDERSTORY TREES TO SATISFY THE REPLACEMENT TREE REQUIREMENT.	TOTAL TREES 6" DBH, PER ARBORIST REPORT: 142 PERMITTED REMOVAL: LESS THAN 33% REMOVAL (46.89 TREES) PROPOSED REMOVAL: 51 TREES (35.9%) (INCLUDING 17 INVASIVE, DEAD, AND IN DECLINE TREES PER ARBORIST REPORT) TOTAL DBH INCHES PROPOSED TO BE REMOVED: 619 (EXCLUDING INVASIVE, DEAD, AND IN DECLINE TREES PER ARBORIST REPORT) REQUIRED REPLACEMENT: 619 CALIPER INCHES PROPOSED: 7 AROG, 4 ASB, 11 CCA, 9 TA (31 SHADE TREES AT 3" CALIPER, OR 93 INCHES) TOTAL PROPOSED: 93 INCHES DEFICIENT: 526 INCHES OR 176 SHADE TREES ALL PROPOSED REPLACEMENT TREE SPECIES ARE NATIVE.	WAIVER WAIVER, FEE-IN-LIEU COMPLIES
		SEE 55-4.D.(6)(a) ABOVE FOR ANY UNDERSTORY TREES COUNTING TOWARDS REPLACEMENT TREE REQUIREMENTS.	SEE ABOVE

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DRAWN BY: JCF
CHECKED BY: CMC
DATE: 06/10/2024
CAD LID.: PAA220215.00-LSCP-08

**PRELIMINARY / FINAL
MINOR SUBDIVISION
PLAN**

FOR

**THE HERBERT
WEINTRAUB
FOUNDATION**

PROPOSED SINGLE FAMILY HOME
& ADDITION

740 GERMANTOWN PIKE
WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY
LAFAYETTE HILL, PENNSYLVANIA
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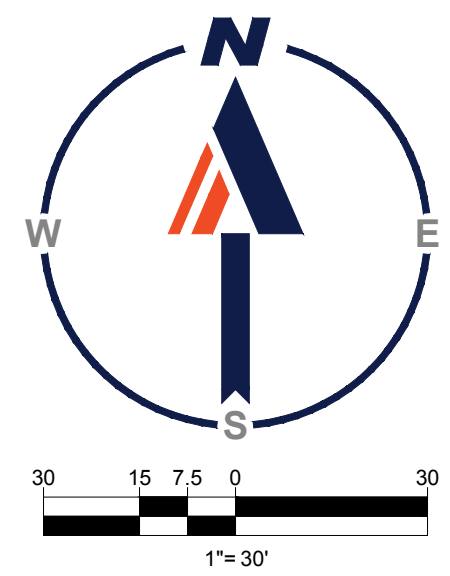
D.T. NORTH

REGISTERED LANDSCAPE ARCHITECT
PENNSYLVANIA LICENSE No. LA002729

SHEET TITLE:
**LANDSCAPE
PLAN**

SHEET NUMBER:
C-701

ORG. DATE - 06/10/2024



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4/11/2024

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Tree Inventory 740 Germantown Pike Lafayette Hill, PA 19444

On February 24, 2024 I met with Nick Rossini on the property at 740 Germantown Pike in Lafayette Hill, PA. We discussed the area that was going to be developed and the guidelines of the tree inventory that was going to be performed. The goal of this inventory was to list every tree's species, common name, diameter, and condition on inspection. I was given a landscape survey by Nick Rossini via email that had the trees identified on a topographical map. This survey was completed by Bohler documenting every tree 6" DBH and above. The tree numbers referenced in this survey can be seen on a PDF document included with this report. I spoke with D. Travis North on Friday April 5, 2024 to specify how this survey was to be completed. I decided the best method was to assign a unique number to each tree inventoried on the survey done by Bohler. On April 7, 2024 I completed the survey in person by verifying the location and diameter of each tree. The tree diameter was determined by taking a measurement of circumference 4.5 feet off the ground, and dividing that number by Pi (3.14). Then documenting the species and condition upon inspection. The tree rating system terms that were used were "good", "fair", "poor", and "dead". I have taken photos to document the trees that are in decline or dead and require removal. The following is how the tree conditions were defined:

Good: The tree has strong structure and is healthy and vigorous with no apparent problems. Trunks are solid with no bark damage and the crown is full. Roots show no signs of heaving or visible crossing, and there are no major wounds, decay, conks, or cavities.

Fair: The tree is in average condition. Structural problems may be present, including results of pruning for general care. Tree may have dead branches and some canopy loss. Wounds are minimal and there is no major decay.

Poor: The tree is in a general state of decline as indicated by major wounds, root heaving, dead limbs resulting in major canopy loss, and/or visible signs of decay indicated by major rot or fungal growth.

Dead: The tree is dead with no live leaves. Dead trees were excluded from data analysis, except for tree condition statistics and total number of trees inventoried.

Trees that were identified were also noted if they were considered invasive according to the list of Pennsylvania Department of Conservation and Natural Resources. Those tree species are:

Amur maple, *Acer ginnala*, is a small ornamental tree that spreads by numerous winged seeds.

Norway maple, *Acer platanoides*, a common street and lawn tree that frequently escapes cultivation.

Sycamore maple, *Acer pseudoplatanus*, a tall Eurasian tree invading urban and suburban woods in southern Pennsylvania.

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European black alder, *Alnus glutinosa*, is often found along streams and other wet areas.

Tree-of-heaven, *Ailanthus altissima*, grows throughout Pennsylvania. Another immigrant from China introduced as an ornamental.

Mimosa, *Albizia julibrissin*, has escaped cultivation to invade roadsides and woodland edges in eastern Pennsylvania.

Japanese angelica tree, *Aralia elata*, has sharp spines on the trunk and resembles our native devils walking stick.

Paper mulberry, *Broussonetia papyfera*, is a common, small ornamental tree from Asia.

White mulberry, *Morus alba*, is a fast-growing species that will hybridize with our native red mulberry, *Morus rubra*.

Princess-tree, empress-tree (PDF), *Paulownia tomentosa*, imported from China this purple-flowered tree has spread across southern Pennsylvania by winged seeds.

Cork tree, *Phellodendron amurense*, *P. japonicum*, *P. lavallei*, these Asian trees are problematic in urban and natural areas in southeastern Pennsylvania.

Callery or bradford pear, *Pyrus calleryana*, has established populations in fields and hedgerows in southeastern Pennsylvania.

Bee-bee tree, *Tetra dium daniellii*, is an uncommon landscape tree that is slowly spreading in south central and southeastern Pennsylvania.

Siberian elm, *Ulmus pumila*, a fast-growing tree reaching 50-70 feet high.

Below is the tree inventory that was taken on April 7, 2024. All "Poor" and "Dead" trees are recommended to be removed. Since this area is destined to become a construction site, the constant occupation of equipment and frequent occupation of workers merit the removal of these trees.

Tree No.	Common Name	Scientific Name	DBH	Condition
1	Honey Locust	<i>Gleditsia triacanthos</i>	15	Fair
2	Norway Maple	<i>Acer platanoides</i>	15	Fair
3	Norway Maple	<i>Acer platanoides</i>	26	Fair
4	Norway Maple	<i>Acer platanoides</i>	8	Fair
5	Norway Maple	<i>Acer platanoides</i>	18	Dead
6	Norway Maple	<i>Acer platanoides</i>	10	Fair
7	Norway Maple	<i>Acer platanoides</i>	8	Fair
8	Mountain laurel	<i>Kalmia latifolia</i>	6	Fair
9	Oak other	<i>Quercus</i> spp	21	Fair
10	Apple	<i>Malus</i> spp	10	Fair
11	Dogwood	<i>Cornus florida</i>	12	Dead
12	Red Maple	<i>Acer rubrum</i>	26	Fair

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Tree No.	Common Name	Scientific Name	DBH	Condition
13	Mountain Laurel	<i>Kalmia latifolia</i>	6	Fair
14	Red Maple	<i>Acer rubrum</i>	25	Fair
15	Black Cherry	<i>Prunus serotina</i>	6	Dead
16	Red Maple	<i>Acer rubrum</i>	6	Fair
17	Red Maple	<i>Acer rubrum</i>	6	Fair
18	Red Maple	<i>Acer rubrum</i>	6	Fair
19	Red Maple	<i>Acer rubrum</i>	6	Fair
20	Mountain Laurel	<i>Kalmia latifolia</i>	6	Fair
21	Red Maple	<i>Acer rubrum</i>	6	Fair
22	Black Walnut	<i>Juglans nigra</i>	33	Poor
23	Spruce	<i>Picea abies</i>	12	Fair
24	Red Maple	<i>Acer rubrum</i>	24	Fair
25	American Beech	<i>Fagus grandifolia</i>	20	Fair
26	Norway Maple	<i>Acer platanoides</i>	25	Fair
27	Red Oak	<i>Quercus rubra</i>	20	Poor
28	Swamp Maple	<i>Acer rubrum</i>	25	Fair
29	Norway Maple	<i>Acer platanoides</i>	25	Fair
30	Spuce	<i>Picea abies</i>	10	Fair
31	Spruce	<i>Picea abies</i>	12	Fair
32	Black Cherry	<i>Prunus serotina</i>	25	Dead
33	Black Cherry	<i>Prunus serotina</i>	18	Fair
34	Dogwood	<i>Cornus florida</i>	8	Fair
35	Apple	<i>Malus spp</i>	8	Fair
36	Black Cherry	<i>Prunus serotina</i>	28	Dead
37	Red maple	<i>Acer rubrum</i>	28	Fair
38	Red Maple	<i>Acer rubrum</i>	6	Fair
39	Red Maple	<i>Acer rubrum</i>	6	Fair

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Tree No.	Common Name	Scientific Name	DBH	Condition
40	Chestnut Oak	<i>Quercus montana</i>	20	Fair
41	Black Cherry	<i>Prunus serotina</i>	25	Fair
42	Dogwood	<i>Cornus florida</i>	6	Dead
43	American Beech	<i>Fagus grandifolia</i>	24	Fair
44	American Beech	<i>Fagus grandifolia</i>	25	Fair
45	Norway Maple	<i>Acer platanoides</i>	24	Fair
46	Swamp Maple	<i>Acer rubrum</i>	25	Fair
47	Black Cherry	<i>Prunus serotina</i>	34	Dead
48	Oak other	<i>Quercus spp</i>	42	Fair
49	Unknown	Unknown	16	Dead
50	Oak other	<i>Quercus spp</i>	18	Dead
51	Oak other	<i>Quercus spp</i>	24	Dead
52	Chestnut Oak	<i>Quercus spp</i>	30	Fair
53	American Beech	<i>Fagus grandifolia</i>	15	Fair
54	Oak other	<i>Quercus spp</i>	12	Poor
55	Oak other	<i>Quercus spp</i>	13	Dead
56	Oak other	<i>Quercus spp</i>	16	Poor
57	Oak other	<i>Quercus spp</i>	9	Dead
58	Oak other	<i>Quercus spp</i>	12	Fair
59	Oak other	<i>Quercus spp</i>	12	Poor
60	Red Maple	<i>Acer rubrum</i>	6	Fair
61	Unknown	Unknown	20	Poor
62	Chestnut Oak	<i>Quercus montana</i>	29	Dead
63	Oak	<i>Quercus spp</i>	10	Fair
64	Oak	<i>Quercus spp</i>	26	Fair
65	Hemlock	<i>Tsuga canadensis</i>	8	Fair
66	Hemlock	<i>Tsuga canadensis</i>	10	Fair

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Tree No.	Common Name	Scientific Name	DBH	Condition
67	Red Oak	Quercus rubra	30	Fair
68	Red Oak	Quercus rubra	34	Fair
69	Hemlock	Tsuga canadensis	8	Fair
70	Chinquapin Oak	Quercus muehlenbergii	26	Fair
71	Swamp Maple	Acer rubrum	32	Fair
72	White Pine	Pinus strobus	20	Fair
73	Pin Oak	Quercus palustris	24	Poor
74	Pin Oak	Quercus palustris	30	Poor
75	Red Maple	Acer rubrum	12	Fair
76	Chestnut Oak	Quercus montana	18	Fair
77	Chestnut Oak	Quercus montana	20	Fair
78	Chestnut Oak	Quercus montana	35	Fair
79	Hemlock	Tsuga canadensis	18	Fair
80	Chestnut Oak	Quercus montana	12	Fair
81	Unknown	Unknown	12	Dead
82	Oak other	Quercus spp	15	Fair
83	Chestnut Oak	Quercus montana	10	Fair
84	Oak other	Quercus spp	24	Fair
85	Oak other	Quercus spp	20	Fair
86	Oak other	Quercus spp	20	Dead
87	Hemlock	Tsuga canadensis	6	Fair
88	White Pine	Pinus strobus	35	Fair
89	Hemlock	Tsuga canadensis	8	Fair
90	Unknown	Unknown	6	Dead
91	White Pine	Pinus strobus	18	Dead
92	White Pine	Pinus strobus	34	Fair
93	Yew Bush	Taxus	6	Fair
94	Magnolia	Magnolia spp	8	Fair
95	Red Maple	Acer rubrum	15	Fair

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Tree No.	Common Name	Scientific Name	DBH	Condition
96	Red Maple	<i>Acer rubrum</i>	18	Fair
97	Unknown	Unknown	12	Dead
98	Norway Maple	<i>Acer platanoides</i>	8	Fair
99	Red Oak	<i>Quercus rubra</i>	38	Fair
100	Red Maple	<i>Acer rubrum</i>	18	Fair
101	Red Maple	<i>Acer rubrum</i>	15	Fair
102	Apple	<i>Malus spp</i>	6	Fair
103	Unknown	Unknown	6	Fair
104	Red Maple	<i>Acer rubrum</i>	18	Fair
105	White Oak	<i>Quercus alba</i>	25	Fair
106	Red Oak	<i>Quercus rubra</i>	13	Fair
107	Red Oak	<i>Quercus rubra</i>	8	Fair
108	Unknown	Unknown	28	Fair
109	Black Cherry	<i>Prunus serotina</i>	15	Fair
110	Oak other	<i>Quercus spp</i>	12	Fair
111	Black Cherry	<i>Prunus serotina</i>	18	Fair
112	Oak other	<i>Quercus spp</i>	15	Fair
113	Black Cherry	<i>Prunus serotina</i>	10	Fair
114	Black Cherry	<i>Prunus serotina</i>	10	Fair
115	Unknown	Unknown	6	Fair
116	Oak other	<i>Quercus spp</i>	34	Fair
117	Unknown	Unknown	24	Dead
118	American Holly	<i>Ilex opaca</i>	18	Fair
119	American Holly	<i>Ilex opaca</i>	6	Fair
120	White Oak	<i>Quercus alba</i>	30	Fair
121	Hemlock	<i>Tsuga canadensis</i>	8	Fair
122	Oak other	<i>Quercus spp</i>	12	Fair
123	Oak other	<i>Quercus spp</i>	15	Fair
124	Red Maple	<i>Acer rubrum</i>	18	Fair

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Tree No.	Common Name	Scientific Name	DBH	Condition
125	Red Oak	Quercus rubra	15	Fair
126	Red Oak	Quercus rubra	20	Fair
127	Oak other	Quercus spp	20	Poor
128	Oak other	Quercus spp	6	Fair
129	Oak other	Quercus spp	34	Fair
130	Dogwood	Cornus florida	6	Poor
131	Holly	Ilex opaca	12	Fair
132	Oak other	Quercus spp	32	Poor
133	Dogwood	Cornus florida	6	Fair
134	Walnut	Juglans nigra	10	Dead
135	Red Maple	Acer rubrum	26	Fair
136	Swamp Maple	Acer rubrum	28	Fair
137	Swamp Maple	Acer rubrum	30	Fair
138	Unknown	Unknown	26	Poor
139	Black Cherry	Prunus serotina	29	Poor
140	Hemlock	Tsuga canadensis	13	Fair
141	White Pine	Pinus strobus	30	Fair
142	Hemlock	Tsuga canadensis	16	Fair
143	Norway Maple	Acer platanoides	6	Fair
144	Hemlock	Tsuga canadensis	7	Dead
145	Norway Maple	Acer platanoides	10	Fair
146	Hemlock	Tsuga canadensis	10	Dead
147	Red Oak	Quercus rubra	27	Fair
148	White Pine	Pinus strobus	34	Fair
149	White Pine	Pinus strobus	17	Fair
150	Unknown	Unknown	18	Dead
151	Unknown	Unknown	17	Dead
152	Red Oak	Quercus rubra	26	Fair
153	Hemlock	Tsuga canadensis	9	Dead

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Tree No.	Common Name	Scientific Name	DBH	Condition
154	White Oak	Quercus alba	34	Dead
155	Elm	Ulmus spp.	18	Fair

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The following images are for the trees that need to be removed.

Tree No. 5 Unknown 15 DBH Dead. Completely decayed, dead collapsed trunk.

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Tree No. 11 Dogwood 12 DBH Dead Large cavity at base.



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ryanarborist@gmail.com



Tree No. 15 Black Cherry 6 DBH Dead. No visible budding, tip dieback.



Ryan Sormilich Arborist LLC

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Tree No. 22 Black Walnut 33 DBH Poor. Large cavity in trunk.



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Tree No. 27 Red Oak 20 DBH Poor. Tip dieback. Appears to be in decline. Deadwood throughout the canopy.



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Tree No. 32 Black Cherry 25 DBH Dead. Tip dieback. Dead wood in the canopy. Visible decay on the trunk.



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Tree No. 36 Black Cherry 28 DBH Dead. Tip dieback. Dead wood in the canopy.



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Tree No. 42 Dogwood 6 DBH Dead. No visible budding. Dead wood. Trunk decay.



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Tree No. 47 Black Cherry Dead. Large cavity at base of main lead. Dead wood / inward decay on tension wood side of wood.



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Tree No. 49 Unknown 16 DBH Dead. Completely dead, decayed, collapsing trunk.



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Tree No. 50 Oak 18 DBH Dead. No visible budding. Bark flaking off the trunk. Visible deadwood on majority of trunk circumference.



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Tree No. 51 Oak 24 DBH Dead. Bark falling off trunk. Visible decay / cavity.



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Tree No. 54 Oak 12 DBH Poor, Tree No. 55 Oak 13 DBH Dead, Tree No. 56 Oak 16 DBH Dead, Tree No. 57 Oak 9 DBH Dead, Tree No. 59 12 DBH Poor. Base decay, cavities.



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Tree No. 61 Unknown 20 DBH Poor. Bottom decay, bark falling off trunk.



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Tree No. 62 Chestnut Oak 29 DBH Dead. Tip dieback. Dead wood in the crown. Trunk decay.



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Tree No. 73 Pin Oak 24 DBH Poor. Tree appears stressed / in decline. Excessive watersprout growth on trunk. Old pruning wounds in the crown are not healing. Dead wood.



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Tree No. 74 Pin Oak 30 DBH Poor. Tree appears stressed / in decline. Excessive watersprout growth

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Tree No. 81 Unknown 12 DBH Dead. Completely decayed. Dead wood, bark falling off.



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Tree No. 86 Oak 20 DBH Dead. Dead wood, bark falling off. Pruned top not healing. Dead wood.



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Tree No. 90 Unknown 6 DBH Dead. No budding activity. Trunk decayed.



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Tree No. 91 White Pine 18 DBH Dead. Dead wood, bark falling off.

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Tree No. 97 Unknown 12 DBH Dead. Completely defoliated. Decayed base. Bark falling off.



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Tree No. 117 Unknown 24 DBH Dead. Tip die back, trunk decay / bark falling off.



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Tree No. 127 Oak 20 DBH Poor. Appears to be in decline. Crown dieback visible. Watersprout growth on trunk.



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Tree No. 130 Dogwood 6 DBH Poor. No budding activity, trunk decay. Tree No. 132 Oak 32 Poor
Tip die back, no visible budding.



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Tree No 134 Black Walnut 10 DBH Dead. Bark falling off, massive cavity.



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Tree 138 Unknown 26 DBH Poor. Small holes in trunk of tree facing home. Appears to indicate inward decay, compromised base.

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Tree No. 139 Black Cherry 29 DBH Poor. Tip die back, no budding activity.



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Tree No. 144 Hemlock 7 DBH Dead. Top severely damaged, branch die back



Tree No. 146 Hemlock 10 DBH. Dead. Severe dead wood, no visible healthy growth.

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Tree No 150 Unknown 18 DBH Dead. Tree No 151 Unknown 17 DBH Dead. Both trees covered in English Ivy. No visible leaf growth or canopy cover. Dead wood.

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Tree No. 153 Hemlock 9 DBH. Dead. Canopy die back. Dead wood. Covered in English Ivy.



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Tree No. 154 White Oak 34 DBH Dead. No visible canopy. Almost entirely dead wood. Bark falling off tree.



Ryan Sormilich Arborist LLC

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The trees were assessed visually looking for noticeable decay, dead wood, cavities, or other structural issues that may indicate decline or lead to death. Of the trees listed for removal, none were identified as being invasive. These inspections were completed on Sunday April 7, 2024. It is recommended that any tree listed "Fair" is reinspected within the next 3 years by a qualified ISA Certified Arborist to update any changes in the tree condition. Per the tree conditions listed in this report, "Fair" does not indicate safety or lack of issues that could lead to stress or decline. The visual assessment used for this survey is not able to identify any potential issue that is not visually distinctive. This report is prepared for Nick Rossini and D. Travis North of Bohler. No part of this report may be used for any purpose other than those deemed necessary by those two individuals (Nick Rossini, D. Travis North)

The opinions expressed in this report are based upon a reasonable degree of professional certainty by an ISA Certified Arborist.

A handwritten signature in black ink that reads "Ryan Sormilich". The signature is written in a cursive style.

Ryan Sormilich

4/11/24

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**MONTGOMERY COUNTY
PLANNING COMMISSION**

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SCOTT FRANCE, AICP
EXECUTIVE DIRECTOR

November 21, 2024

Mr. Charles L. Guttenplan, AICP
Director of Planning & Zoning Officer
Whitemarsh Township
616 Germantown Pike
Lafayette Hill, Pennsylvania 19444

Re: MCPC # 24-0225-001
Plan Name: Proposed Single Family Home & Addition to Existing Home (Lot Line Adjustment)
Situate: 740 Germantown Pike
2 lots /1 du/ comprising +/- 2.804 acres (122,163 SF)
Whitemarsh Township

Dear Mr. Guttenplan:

We have reviewed the above-referenced subdivision and land development in accordance with Section 502 of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on October 16, 2024 in an electronic submission to this office. We forward this letter as a report of our review.

BACKGROUND

The applicant, The Herbert Weintraub Foundation, LLC has submitted a preliminary subdivision and land development plan for the construction of a new single-family home, an addition to an existing home and a lot-line adjustment between the two lots. The plan shows the construction of a 4,087 SF single-family home with stormwater management improvements, and an access driveway arranged on a 1.37 acre lot, Tax Parcel-65-00-04510-00-6 (Premise 'A'). The plan shows a 1,333 SF building addition to an existing two-story home on Tax Parcel: 65-00-04507-00-9, (Premise B') and an adjustment in the lot line between these two parcels.

The development tract is situated in the township's AA- Residential Zoning District that requires a minimum lot area of 30,000 SF. According to recent aerial photography, the lot shown with the proposed new residence has extensive wooded areas within the development footprint and many trees will be impacted.



The applicant indicates that various forms of relief from the township's subdivision and land development code are being requested. A total of 11 waivers are requested, including waivers from the requirement for curbs and sidewalks and a landscape buffer yard.

RECOMMENDATION

The Montgomery County Planning Commission (MCPC) generally supports the applicant's preliminary land development plan and lot-line adjustment. In reviewing this proposal, we identified several concerns that the township should consider when conducting its review. One issue in particular is the need to ensure the integrity of the lot-line change so that the irregular property line is maintained. We have addressed this and provide several other comments below.

COMMENTS

1. Irregular Shape of Lot-Line Adjustment

The proposed lot-line between the two parcels is aligned in an irregular arrangement. While it appears to carve out the necessary lot area on Premise 'A' to address the dimensional lot requirements of the AA-Residential District, the township should assess whether the arrangement adequately addresses the requirement that lot line be substantially at right angles (90 degrees) to the street (§ 105.44.D).

We recommend the applicant use this or similar measures to delineate the property boundary. As this arrangement may create property concerns and issues between future owners, we suggest planting a row of trees of the same species close together to delineate the lot boundary which could, in less than 5-8 years become a 'living-fence'. One quick growing tree species well adapted for this arrangement is the Bald Cypress, *Taxodium distichum*. Additionally, the township could consider requiring the applicant to establish permanent property boundary markers and installing a new fence to outline the boundary line for the future as a condition of approval for the lot-line change.

2. Landscape Plan Improvements

a. Tree Removals and Replacements

The submitted plan does not include the required documentation that addresses Section 55-4. Tree Preservation, Protection and Replacement Requirements. We note that the residential footprint and surrounding development of the site will significantly impact the wooded tract. The applicant's submission does not include the required tree survey, removal plan and the tree replacements shown on the landscape plan, as required by Section 55.4.C.(4.). The applicant should provide the required documentation and address tree protection and the replacements to mitigate the development impacts on the site's tree canopy.

b. Placement of a Shade-Tree on the Property Line

The plan shows one American hornbeam tree (CCA) proposed for planting on the property line boundary line. The tree should not be planted in this location as it sets up a question of ownership and future maintenance. We recommend the applicant revise the plan and located the tree on the preferred property, and not directly on the property line.

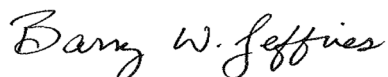
CONCLUSION

We wish to reiterate that MCPC generally supports the applicant's proposal but we believe that our recommendations regarding the irregular arrangement of the lot line and addressing the tree removals and replacements regulations of the township should be considered and addressed to your satisfaction.

Please note that the review comments and recommendations contained in this report are advisory to the municipality and final disposition for the approval of any proposal will be made by the municipality.

Should the governing body approve a final plat of this proposal, the applicant must present the plan to our office for seal and signature prior to recording with the Recorder of Deeds office. A paper copy bearing the municipal seal and signature of approval must be supplied for our files. Please print the assigned MCPC number # 24-0225-001.

Sincerely,



Barry W. Jeffries, ASLA , Senior Design Planner

Barry.Jeffries@montgomerycountypa.gov , 610.278.3444

c: The Herbert Weintraub Foundation, LLC Applicant
Corey Christian, Bohler Engineering PA, LLC, Applicant's Representative
Aaron Kostyk, Chair, Whitmarsh Township Municipal Planning Commission

Attachment A: Aerial Image of Site

Attachment B: Reduced Copy of Applicant's Proposed Site Plan

ATTACHMENT A & B



740 Germantown Pike
MCPC#240225001

Montgomery
County
Planning
Commission

Montgomery County Courthouse - Planning Commission
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